VIKING JOHNSON®

PIONEERS IN PIPE SOLUTIONS

ISSUE 9

Portfolio

- COUPLINGS
- FLANGE ADAPTORS
- PIPE REPAIRS

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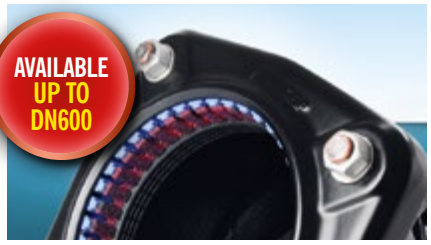

UltraGrip 89 - 108

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PE & Barrier pipe Solutions

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Applications

Water Products

Industrial

Gas Products

Applications including:
Oil based & petroleum products
Chemicals
Sewage
General industrial processing

Pipe Materials

Ductile Iron | Cast Iron | Steel | Stainless Steel | PVC | PE | HEP30 | GRP

ABS | Clay | Concrete | Asbestos Cement | Copper | Lead | PE Barrier Pipe

Note: The choice of gasket material must be appropriate for each service to ensure successful operation (see pages 369 - 370 for further information)

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Our Heritage

Crane Building Services & Utilities forms part of the Process Flow Technologies segment within Crane Co., which was founded in 1855, and is now a multi-industry manufacturer, a quoted company on the New York Stock Exchange with a market capitalisation of $8.8 billion *(September 2024)*.

Crane Limited was founded in 1919 making malleable iron fittings and valves and Crane Building Services & Utilities has been created as a result of Crane Ltd. acquiring Viking Johnson, Helden and WASK in 2003, and Hattersley in 2004. The most recent acquisition was Delta Fluid Products in 2008. Each of these companies has a long and distinguished history:

- Crane Limited founded in Ipswich in 1919
- Viking Johnson founded in Hitchin in the 1930's
- WASK founded in Keighley in 1888
- Delta Fluid Products founded in St Helens in 1900

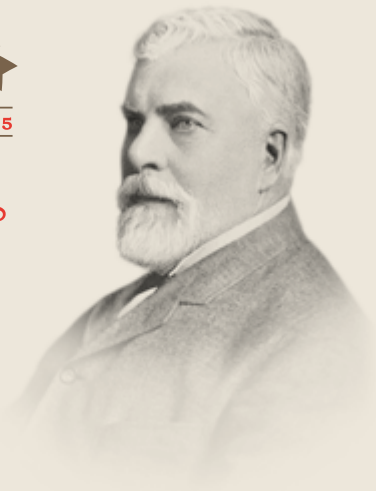
The name Crane speaks of who we are, what we stand for and how our customers perceive us: a company with history and tradition, but also a company that is innovative, quality minded and one which acts with integrity, still holding to the resolution of its founder.

Crane Co. was founded on 4th July 1855 by Richard Teller Crane who made the following resolution:

"I am resolved to conduct my business in the strictest honesty and fairness; to avoid all deception and trickery; to deal fairly with both customers and competitors; to be liberal and just towards employees; and to put my whole mind upon the business."

The essence of this resolution is the business policy of Crane Co. today.

CRANE CO. 1855 160 2015 · YEARS ·



Richard Teller Crane

Our Processes

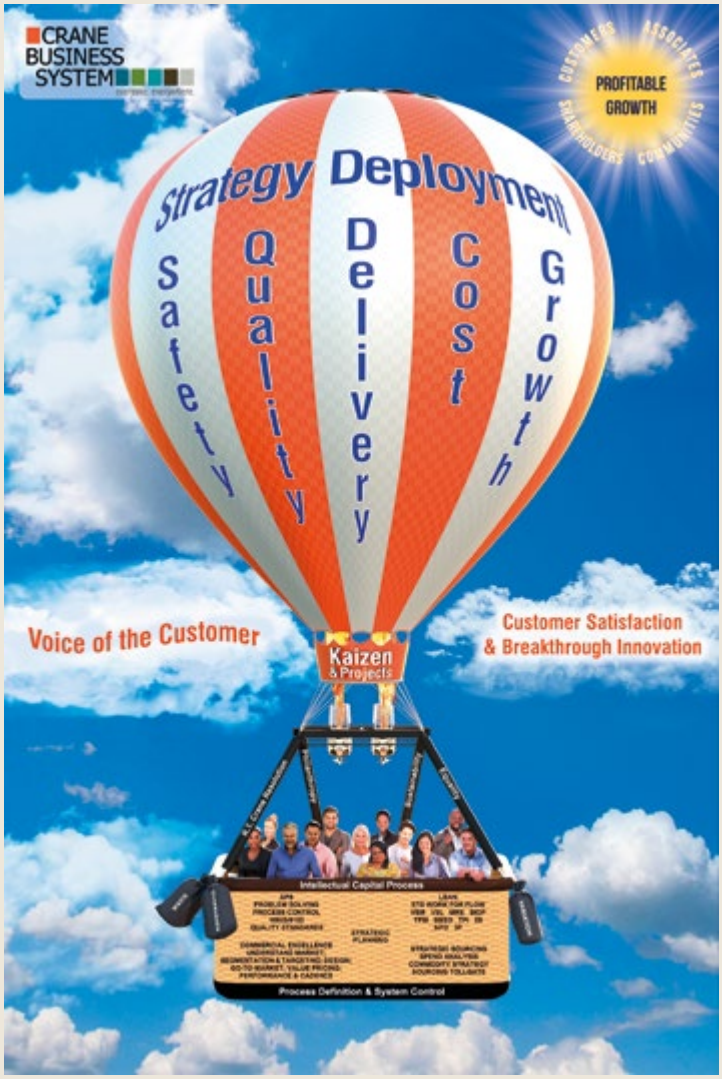
Operational Excellence is the Crane Business System that is the cornerstone of all our activities.

It ensures that each of our business units follows a systematic approach using a variety of tools to generate profitable growth by eliminating waste, reducing variability and focusing on customer needs.

- Lean manufacturing
- Kaizen projects to improve all processes
- Strategic selling, planning, and supply chain management
- Six Sigma tools to measure, map and reduce variability

Standard processes are in place throughout our value streams to improve our key metrics: Safety, Quality, Delivery, Leadtime and Cost to drive growth.

CRANE OPERATIONAL EXCELLENCE
everyone. everywhere.



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Our Sister Brands

WASK

Market leader in the supply of specialist mains and service fittings, along with pipeline equipment of the highest quality, WASK is renowned in the global gas distribution market. WASK Teeset and bagging-off equipment has become a standard in the UK gas industry and in many markets overseas.

SPERRYN GAS CONTROLS

Sperryn is a leading supplier of meter installation kits and emergency control valves for domestic, commercial and industrial applications. Using the latest design facilities and technologies, Sperryn regulators offer increased capacity, accuracy and lower pressure drops.

Helden®

Helden is a manufacturer of couplings, flange adaptors, and pipe repair solutions for the water, wastewater, gas and industrial markets.

POSIFLEX®

PosiFlex expansion joints provide relief for piping system stress caused by thermal and mechanical vibration and/or movement, and can also be utilised to overcome problems of noise. These flexible connectors are fabricated from a wide range of rubber compounds, open or filled, single or multiple arch and are designed to accommodate the needs of individual pipe systems moving materials as diverse as fluids, foodstuffs, chemicals or crude oil.

PosiFlex Expansion Joint

Helden Coupling

Sperryn Regulator

Crane FS EPICV Valve

Hattersley has a rich history dating back to 1897. Today Hattersley offers a variety of balancing commissioning solutions – for constant & variable flow systems, plus a range of general & public-health valves including thermal circulation valves that can help to prevent Legionnaires' Disease.

More recently Hattersley, has launched the SmartFlow range which offers enhanced electronic control for smart building applications.

NABIC™

One of the UK's leading suppliers of gunmetal safety valves, NABIC has long been recognised as the industry standard for commercial and industrial hot water applications. NABIC valves are ideal for hot water supply, heating, pump relief, bypass relief, outside installation and for use with different gases and liquids.

CRANE FLUID SYSTEMS

Crane FS has manufactured malleable iron fittings and general valves for more than 100 years. In addition, there is a full range of commissioning valves for static and variable flow, which serves the HVAC sector, as well as a range of public health valves, that are designed for hot and cold water systems.

These valve ranges are complemented by a new Connected Solutions portfolio which offers state of the art functionality, enabling building owners the ability to reduce energy costs and carbon emissions.

WASK PECAT Flange Adaptor

Hattersley Hook Up

NABIC Safety Relief Valve

Crane FS TCV & Tee

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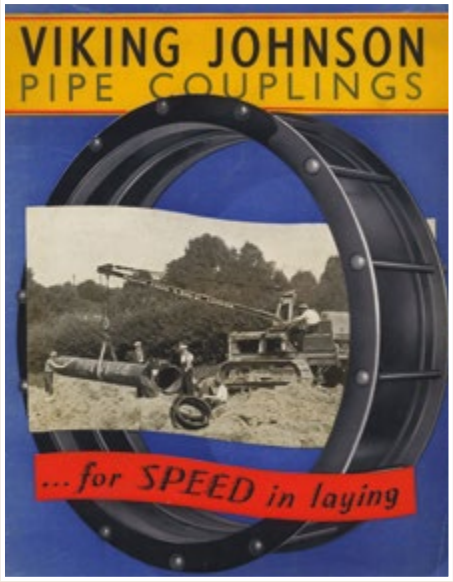
VIKING JOHNSON®

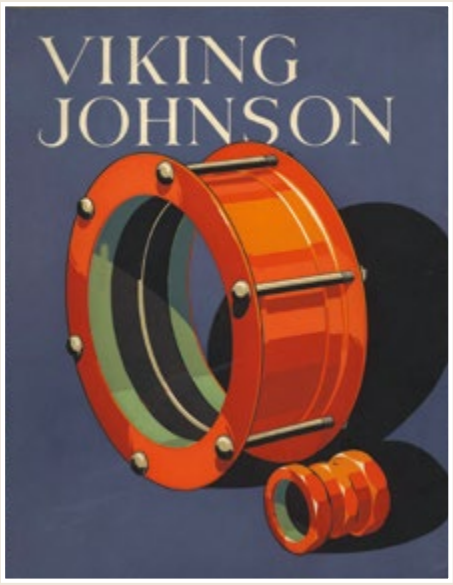
Times Past

Viking Johnson's roots date back to the 1930's when Johnson couplings were made by the Victaulic Company Ltd, part of the Stewarts & Lloyd steel group. The package of S&L steel pipe and Johnson couplings was very successful and installed on many pipeline projects worldwide.

1967 saw nationalisation of the major steel companies, including S&L, and Viking Johnson became part of British Steel Corporation's Tubes Division. This Company continued until 1983 when, under Margaret Thatcher's Conservative government, the non-steel making parts of BSC were privatised and Victaulic plc was formed through an employee buy-out. In 2003, Viking Johnson was one of several businesses bought by Crane Ltd.

In 2019, Crane Ltd celebrated its 100 years, with a history dating back to the 1st of July 1919 when Crane Co. purchased James E. Bennett & Sons, a Coppersmiths from London who had been an importer of Crane pipe fittings & valves.





CRANE LTD 19 19 100 20 19 YEARS OF GENIUS

CRANE CO. 1855 160 2015 YEARS

CRANE®

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Viking Johnson - Timeline

1855 Crane Co. founded

Richard Teller Crane

1861-65 American Civil War

1888 WASK founded by Walter A. Slingsby of Keighley (hence the acronym)

1903 Wright Brothers achieve sustained controlled powered flight

1904 Trans-Siberian Railway completed

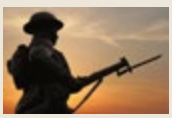
1908 London hosts Olympic Games

1912 Titanic sinks

1914 WW1 begins

1918 Women vote in a general election for the first time

1918 WW1 ends



1919 The Victory Pipe Joint Company was formed shortly after World War 1

1927 Company name was changed to Victaulic Company Ltd. Stewarts & Lloyds steel producers acquired 70% stake

1930 Original Johnson Couplings made by The Victaulic Company Ltd. (part of Stewarts & Lloyds group)

1933 Victaulic Joints supplied for the Sunderijal Hydro Electric Power Scheme, in Nepal, India

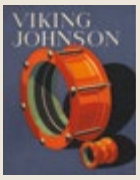
1938 Mallard breaks world speed record for steam locomotives

1939 WW2 begins

1942 Victaulic moved to ten acre green field site in Hitchin

1945 WW2 ends

1956 Viking Johnson Couplings Brochure



1966 England win the World Cup

1969 Neil Armstrong is the first man on the moon

1976 Concorde enters service

1979 Margaret Thatcher First female Prime Minister

1980 Introduction of many new products - MaxiFit, FlexLock, EasiClamp

1982 Falklands War

1983 Water pipelines in El Arish, Egypt

1989 Berlin Wall comes down

1990 AquaGrip, HandiClamp, Juno, MegaFit, LinerGrip

1992 The Great Man Made River, Libya

1993 Nelson Mandela wins Nobel Peace Prize

1994 Eurotunnel officially opens

1855 **1920** **1940** **1980**

2000

2000 UltraGrip, AquaFast

2004 Hattersley acquired by Crane Co.

2008 Delta Fluid Products acquired by Crane Co.

2009 Through Bore Hydrant SBWWI best product innovation award

2002 The Euro enters circulation

2003 Viking Johnson and WASK acquired by Crane Co.

2010 Next Generation UltraGrip and Remote Repair Clamp - the latter won SBWWI best product innovation award

2012 Felix Baumgartner sets world record for skydiving

2012 Multi-million pound investment in manufacturing plant at Hitchin

2012 London hosts Olympic Games. LinerGrips are supplied to the Olympic Village

2013 5 million MaxiFit sold worldwide

2014 Large Diameter high pressure couplings for the mining sector, Chile

2015 Liverpool WwTW Project

2015 Kingdom of Saudi Arabia, Riyadh Metro Project, relaying portable water system

2015 UltraGrip DN600

2015 Queen Elizabeth II becomes the longest reigning UK monarch

2017 AquaFast Large Diameter (355 – 450mm)

2018 A14 Cambridge AquaFast LD for Anglian Water

2019 Qatar Mega Reservoirs, Primary Reservoir Pumping Station

2019 Distributor Conference - Duxford

2021

2022 Viking Johnson Open Day 2022

2023 King Charles III coronation ceremony

2023 UltraGrip Amplified DN800 Nimes France

2024 Viking Johnson roadshow vehicle launched

2024 UltraGrip Amplified Range Extension DN900

2024 Viking Johnson IFAT 2024 Team

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The Great Man Made River, Libya
Couplings & Flange Adaptors - DN4000

World Leaders in what we do...

Viking Johnson is a world leader in the design, manufacture and supply of couplings, flange adaptors, and pipe repair solutions. Part of Crane Building Services & Utilities, Viking Johnson services the international water, wastewater, gas and industrial markets with a range of products that can be used to connect or repair many types of pipe material and are suitable for dedicated and wide tolerance applications, from 40mm to 4000mm in diameter.

The product portfolio offers an extensive and innovative choice of standard products, supplemented by bespoke solutions. All products are manufactured to the most demanding customer specifications.

Quality

For more than 90 years, Viking Johnson has delivered products that exceed market expectations. Our design team utilises the latest engineering design software and specifies manufacturing processes that ensure repeatability and longevity. Industry specifications are our starting point and to ensure a 50 year design life, Viking Johnson products undergo accelerated ageing regime in our in-house test facilities - providing customers with complete peace of mind.

Viking Johnson operates a quality management system accredited to ISO 9001 combined with an environmental policy accredited to ISO 14001.

Haweswater, Cumbria, UK
Large Diameter Flange Adaptors - DN1200

In addition, some product ranges and components have been approved by 3rd party organisations. These include -

- Marine - Bureau Veritas and ABS
- Potable water - WBS and ACS
- Specific regions - EMI Certificate of Constancy of Performance (Hungary), OVGW Certificaiotn (Austria), UBA Certificaiotn (Germany)
- Industry Standards -
  BS EN14525 (UltraGrip and MaxiFit)
  BS8561 (Amplified UltraGrip and AquaShield).

For a full list of standards, please refer to the Design Data section on page 333.

BS EN 14525
Ductile Iron
Couplings & Flange
Adaptors*

*See back cover for full specification

bsi. ISO 9001 Quality Management FM 00311
ISO 14001 Environmental Management EMS 553775

ABS TYPE APPROVED PRODUCT

kiwa approved product
UK WATER SUPPLY REGULATIONS

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L2

Design Life Expectancy • Design Life Expectancy •
50
YEARS

Manufacturing Excellence

Viking Johnson products have a design life expectancy of 50 years and form a crucial part of treatment, distribution and waste networks. To ensure the future integrity of a pipeline, it is vitally important that products are structurally sound and dimensionally stable. Most Viking Johnson products are manufactured in the UK, on a 14 acre manufacturing facility in Hitchin, by a skilled and experienced workforce. To produce a comprehensive range of over 7,000 product lines, from raw materials through fabrication, coating and finishing, every manufacturing step is carefully considered.

Flash Butt Welding

Using a dedicated large diameter coupling as an example, how it is welded and formed can affect the strength, longevity and accuracy of tolerances and the creation of a structurally sound and dimensionally stable product. Viking Johnson is one of the few manufacturers around the world that utilises flash butt welding for joining sleeves and rings, to ensure that the product will stand the test of time.

This technique forms a seamless joint between two metal surfaces and this process has many advantages over arc welding. Both processes are resistance welds (an electric current is used to create the weld) but flash butt welding delivers a consistent, quality weld that is free from oxides. Where flash butt welding is not feasible, Viking Johnson utilises submerged arc welding.

Cold Expansion

A theoretically sound weld is not sufficient and Viking Johnson (in line with AWWA C219 standards) goes a step further by cold expanding all welded sections. This not only tests the integrity of the weld but also:

- 100% tests the metal in the section
- Ensures that the section is circular and repeatedly so
- Increases the strength of the piece through work hardening

Viking Johnson's investment in processes and equipment ensures optimal product integrity through elimination of product performance variation.

Gasket Sealing

One of the fundamental components of a mechanical coupling is the rubber gasket which creates a seal between the pipe and the coupling. Most standards specify requirements for complying with hygiene regulations, but do not consider the performance of the product. Viking Johnson has gone further, by designing high quality rubber gaskets for a life expectancy of over 50 years. All Viking Johnson products have uniquely tailored gaskets solutions and this has been achieved by working closely with gasket manufacturers, developing and testing rubber materials and designs to ensure superior gasket performance in challenging site conditions.

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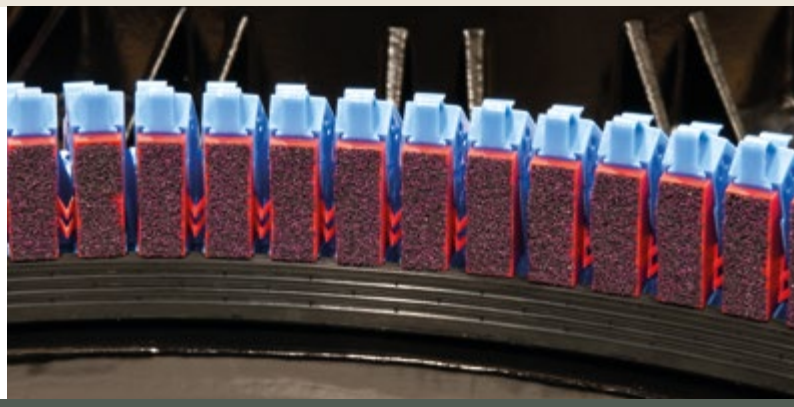
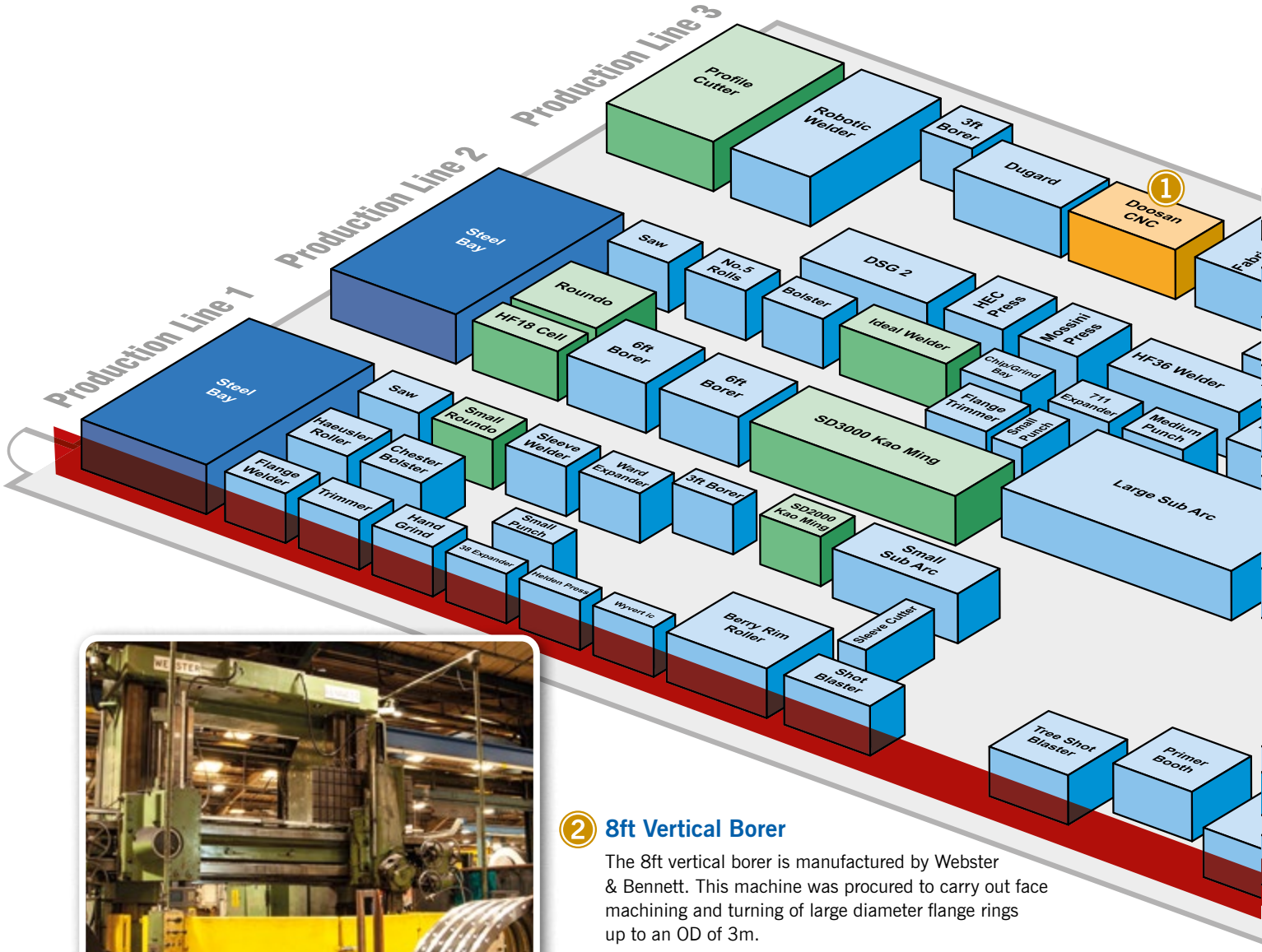


Large Product Manufacturing



2 8ft Vertical Borer

The 8ft vertical borer is manufactured by Webster & Bennett. This machine was procured to carry out face machining and turning of large diameter flange rings up to an OD of 3m.

This machine has a twin spindle that can carry out machining at twice the speed using ID & OD machining at the same time.

3 10ft Shot Blaster

This is a German Krapf & Lex machine bespoke for VJ applications. The table diameter is 3m and is used to shot blast large diameter sleeves, flange rings, adaptors and dismantling joint parts.

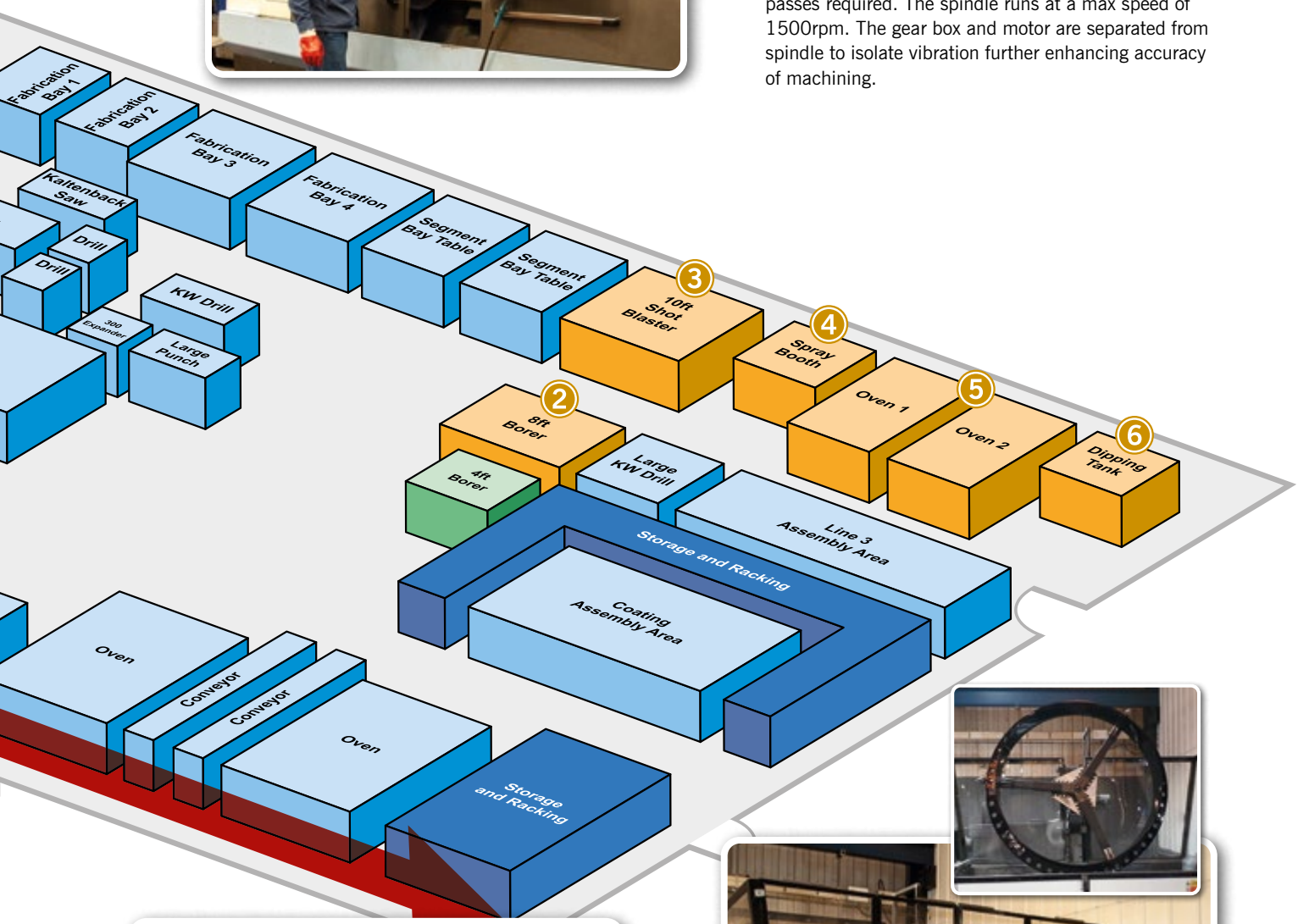
4 Spray Booth

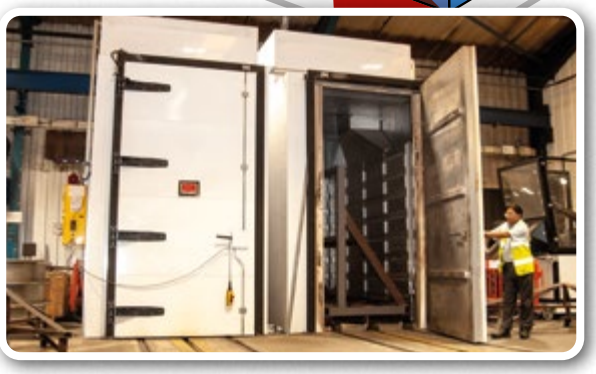
The spray booth is used for spraying Primgreen primer prior to applying a Rilsan coating.

1 Doosan CNC

The Doosan Puma 480L is a powerful heavy duty turning & cutting machine. It also offers rapid positioning and fast bi-directional turret indexing.

The 45kW spindle motor provides power for heavy stock removal greatly reducing the number of roughing passes required. The spindle runs at a max speed of 1500rpm. The gear box and motor are separated from spindle to isolate vibration further enhancing accuracy of machining.





5 Ovens

Manufactured by RDM, this is a twin box oven using 220kW Lanemark burners. The temperature range is between 150-320ºC. Internal space is 22m^3.

The products can be pulled out using large motor driving chains when product is hot and ready for coating.

6 Large Diameter Dipping Tank

The Dipping Tank is a bespoke machine used to carry out Rilsan coating on products up to 3m in outside diameter.

The jobs are loaded vertically and supported using an overhead crane. The operator has to be very skillful when controlling the rotation to ensure an even coating is applied to the product.

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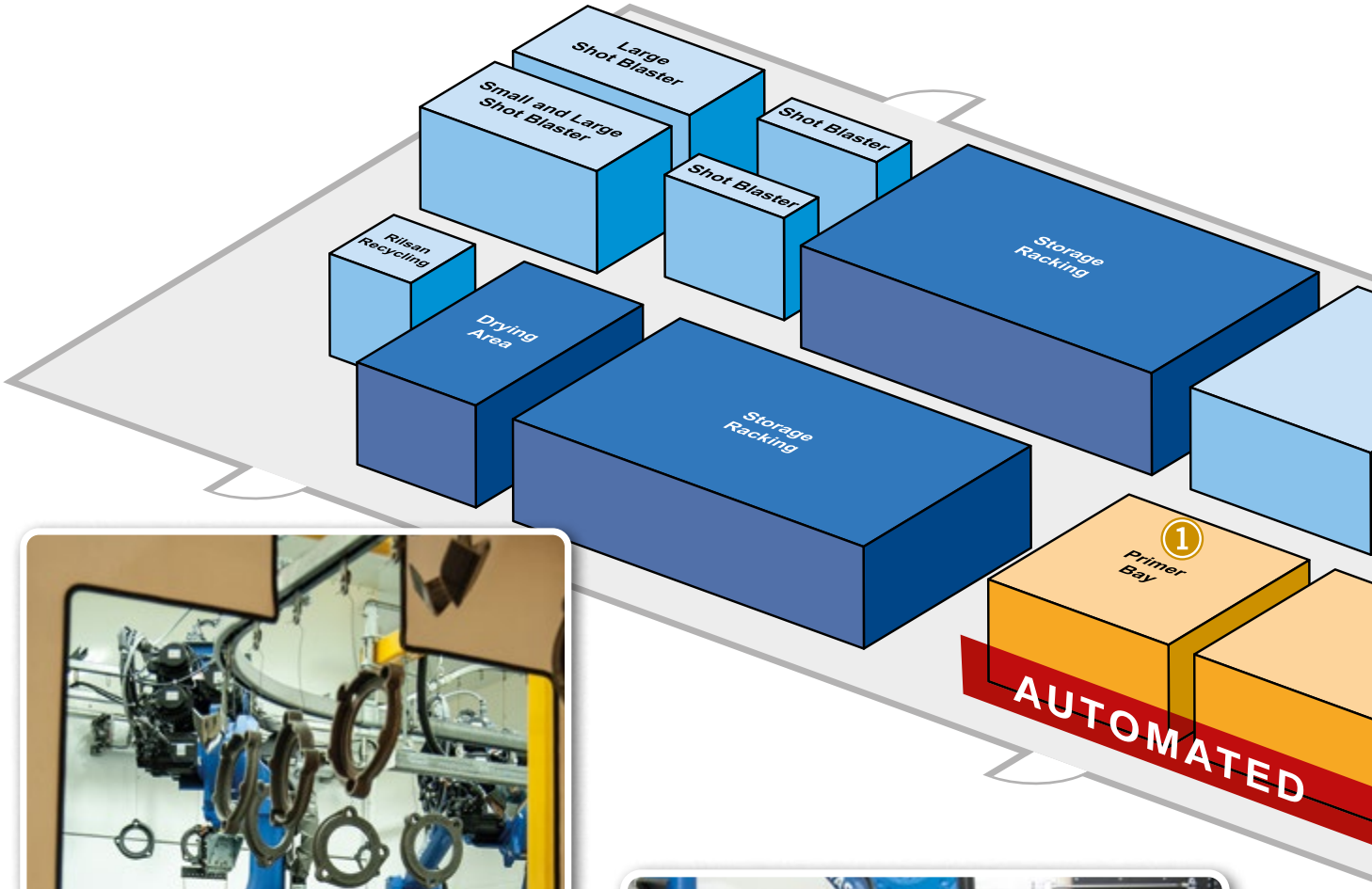
Small Product Manufacturing



3 Robotic Dipping & Coating Tanks

This is a two tank powder robotic dipping booth and powder recovery system to recycle and recover excess Rilsan that is left outside the tank.

Rilsan powder agitated using a Secomak blower to make it a fluidised bed for product coating to the required quality standard.

The Robot room consists of 4 robots, 2 on either side of the coating room. Manufactured by Yaskawa these 6 axis type robots have a handling capacity of 50kg and reach of 2061mm.

The Robots work in pairs as master-slave which is controlled by a Motoman DX200 controller. The controller unit can hold a large number of dipping programs for moving parts in different axes. It also provides built in Programmable Logic Controllers (PLC) for processing various parts very efficiently thus reducing process cycle time.

1 Primer Bay

This is RDM's fully modular twin spray booth with internal dimension of 66m^3.

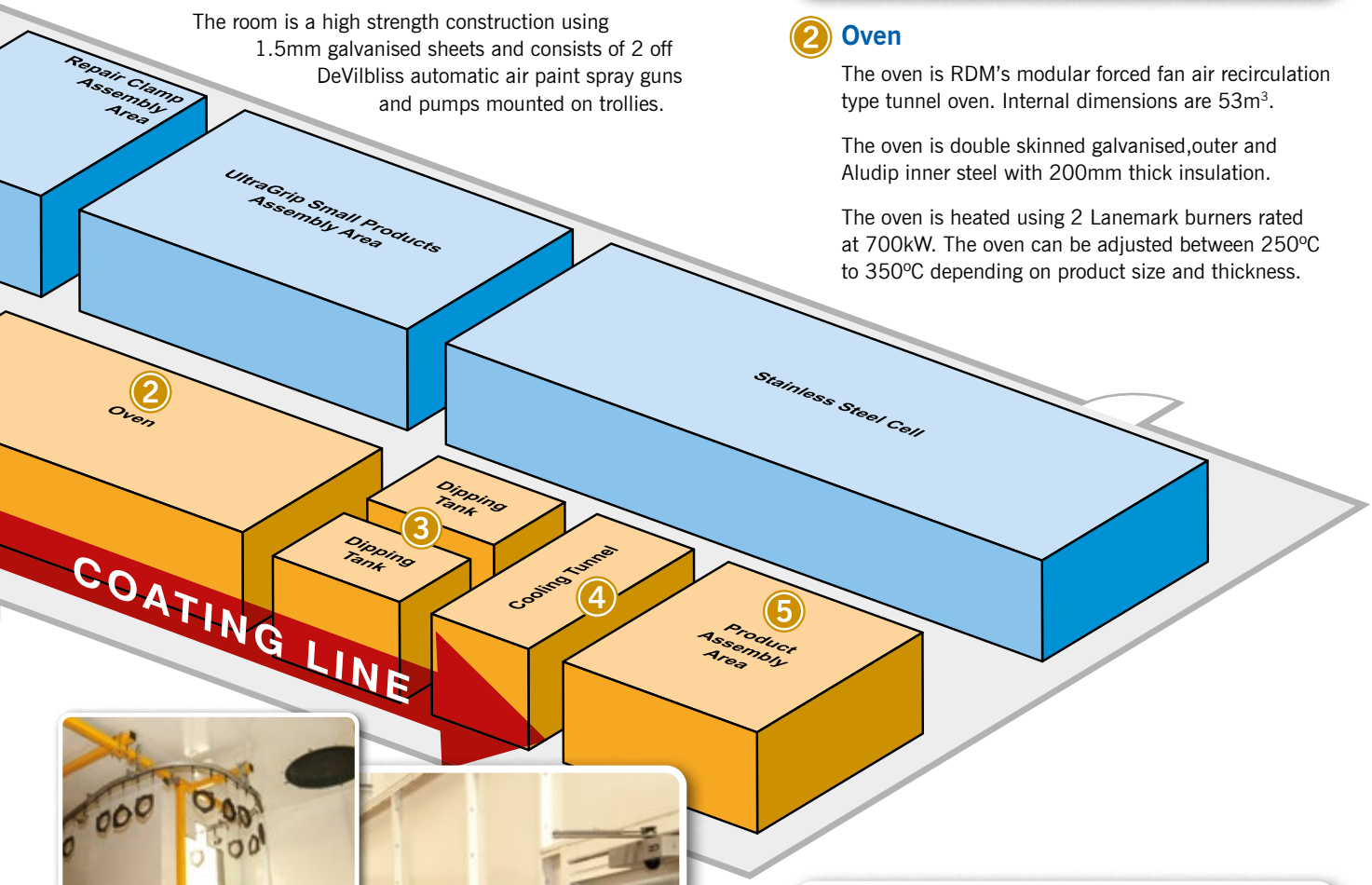
The room is a high strength construction using 1.5mm galvanised sheets and consists of 2 off DeVilbliss automatic air paint spray guns and pumps mounted on trollies.

2 Oven

The oven is RDM's modular forced fan air recirculation type tunnel oven. Internal dimensions are 53m^3.

The oven is double skinned galvanised,outer and Aludip inner steel with 200mm thick insulation.

The oven is heated using 2 Lanemark burners rated at 700kW. The oven can be adjusted between 250ºC to 350ºC depending on product size and thickness.



4 Cooling Tunnel

After the parts are dipped in the Rilsan powder tanks they enter the Cooling Tunnel for quick cooling.

The Cooling Tunnel is 10m long with conveyors indexing at defined timings. Inside the tunnel there are air blast fans targeting the products to cool them in preparation for assembly on a single piece flow line.

5 Product Assembly Areas

This is the area in which the parts are assembled after the coating and cooling process.

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Telephone: +44 (0)1462 443322

Large Diameter MaxiFit DN350 to DN600
Dismantling Joints DN350 to DN900
Large Diameter Dedicated 355 to 914mm OD

Leadtime: 10 Days

Dismantling Joints DN1000 to DN1800
Large Diameter Dedicated 914 to 1899mm OD
Large Diameter AquaGrip 355 to 800mm

Leadtime: 20 Days

Dismantling Joints DN2000 & Over
Large Diameter Dedicated 1900mm & Over
Small/Large Diameter Dedicated
Special Coating, Bolts & Gaskets

Consult Factory

Ongoing Investment - Improves Customer Leadtimes

Crane BS&U's multi-million pound investment in the Viking Johnson factory at Hitchin has strengthened its business model to deliver enhanced customer benefits in terms of 'best in class' service and products.

The investment has supported the creation of an entire linked value stream from the supply of raw materials through to the final manufacture of the products resulting in vastly improved lead times, product availability and plant flexibility.

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RILSAN®

Corrosion Protection - Rilsan Coating

A high quality, high performance finish requires careful preparation and a controlled environment.

Rilsan® powder coatings have been used in the water industry since 1967. It is a unique, high performance polyamide providing a high degree of corrosion protection for metal parts whilst being compliant with the most demanding drinking water regulations (WRAS, KIWA etc.).

Manufactured from a renewable raw material (castor oil), Rilsan® is an environmentally sound coating that does not release any volatile organic compounds and whose composition is free of any heavy metal based pigments and of curing agents.

To ensure their fittings meet their designated design life Viking Johnson uses Rilsan® as their corrosion protection coating on the majority of product lines. Selected not only for the coating's excellent protection against corrosion, Rilsan® withstands high levels of deformation making it ideal for Viking Johnson products that flex during bolt up. In addition, the coating resists impact damage, enabling it to withstand rough handling on site, during installation.

Shot Blasting

Full shot blasting of all component parts provides an optimum clean surface by removing rust and roughening the surface that ensures complete coating adhesion.

Product Priming

A dedicated booth ensures complete priming of components that prevents oxides forming prior to Rilsan® coating resulting in absolute coverage and improved adhesion.

Gas Fired Oven

Components are placed in gas fired ovens to raise the temperature of the metal in a controlled manner to defined temperatures that vary according to the geometry of item to support accurate coating applications.

Dipping in Fluidised Bed

The components are then dipped into a tank of Rilsan® where air is forced from the bottom ensuring the powder flows freely in a 'fluidised bed' that exhibits the same properties as a 'liquid' ensuring total contact on all surfaces. Agitating the hot metal component around in tank ensures no air pockets resulting in 100% coverage to the metalwork that delivers the required coating thickness of minimum 250 microns.

More frequent extreme weather events

Disrupting weather patterns, unpredictable water availability and contaminated water supplies can drastically effect the quantity & quality of water.

Water treatment is extremely critical for public health & environmental protection

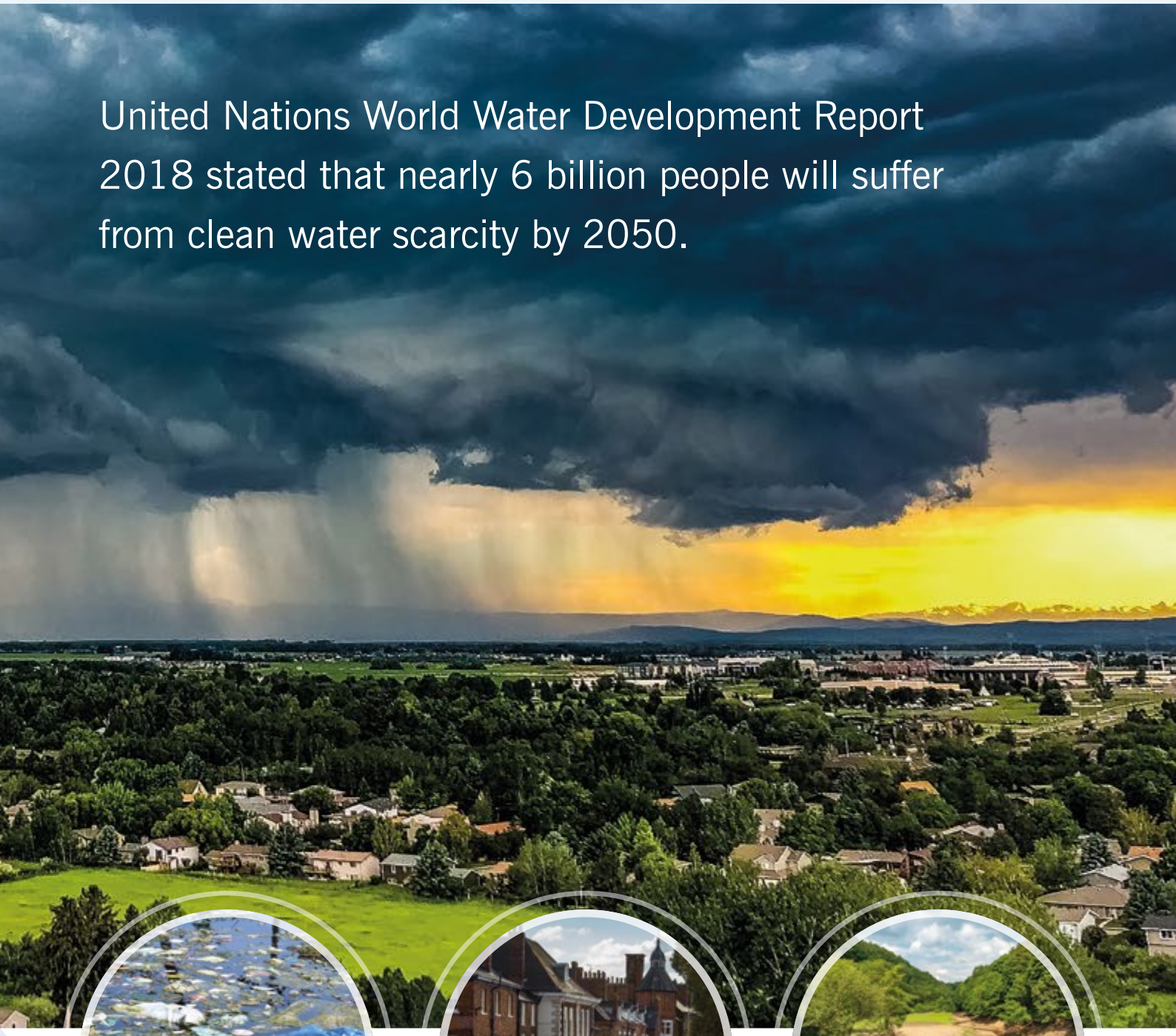
The primary goal of water treatment is to remove contamination and reduce impurities, to ensure it meets the required legal standards and that it is safe for its intended purposes such as drinking water for the population and ready to use for various industrial processes.

Viking Johnson manufacture fittings that are essential for the efficient and reliable operation of water treatment plants, ensuring the safe and consistent delivery of clean water to communities and industry.

Our connections achieve the following key benefits for the water treatment and environmental sector:

- Engineered for movement and expansion in the system to prevent stresses that lead to leaks or breakages
- Optimum access to critical assets enables easy routine maintenance to be completed
- Allow pipelines to be kept operational, through repair and maintenance programmes
- Designed for a long service life thereby reducing total infrastructure installed cost

United Nations World Water Development Report 2018 stated that nearly 6 billion people will suffer from clean water scarcity by 2050.



Water contamination

Flash flooding

Water shortages

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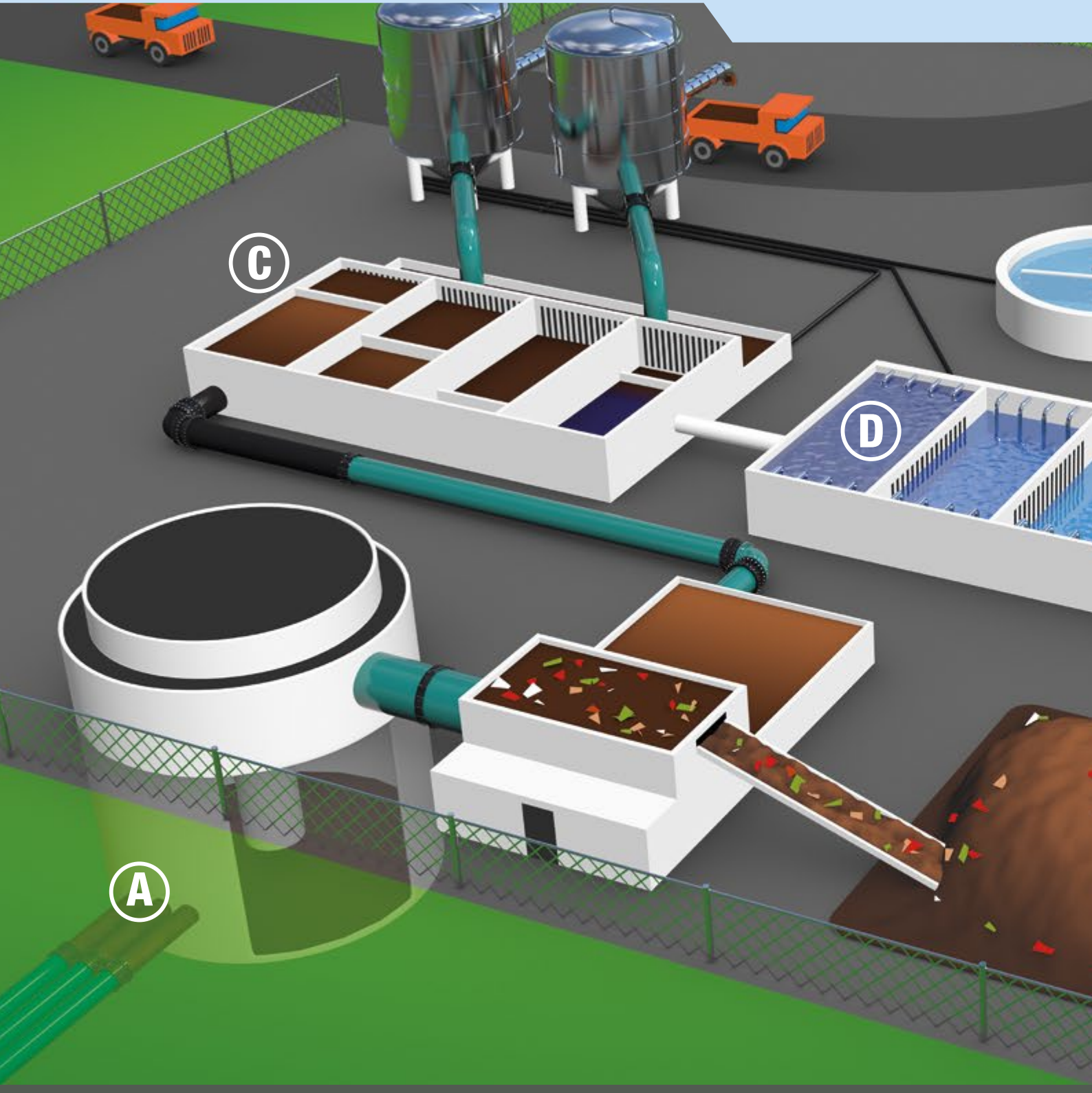
Sewage Wastewater Plant Facility

Wastewater is generated from residential, commercial and industrial applications and also from rainwater/surface run off.

The water treatment overview

A The wastewater is then transferred to a treatment facility via anetwork of pipes which are either pressurised to influence the flow of water (rising mains) or via gravity where the fluids flow due to gravitational pull.

B The wastewater is then screened where solid objects such as foods, plastics and wipes are collected and transported to landfill.



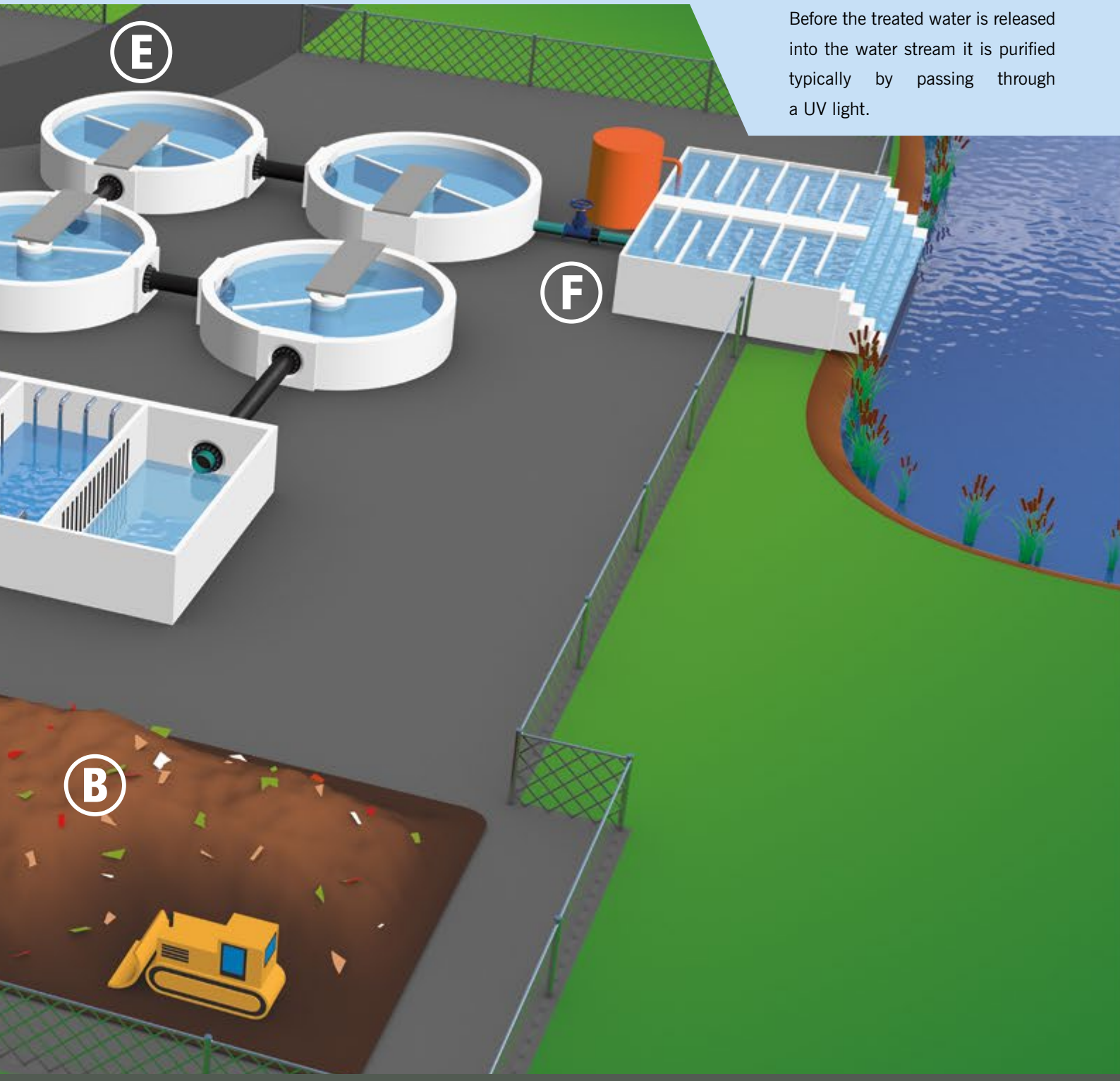
C The fluid is then settled in a tank(s), where then the liquids return to the flow for treatment, but any solids (sludge) is then extracted and can be used for beneficial purposes such as organic soil conditioner.

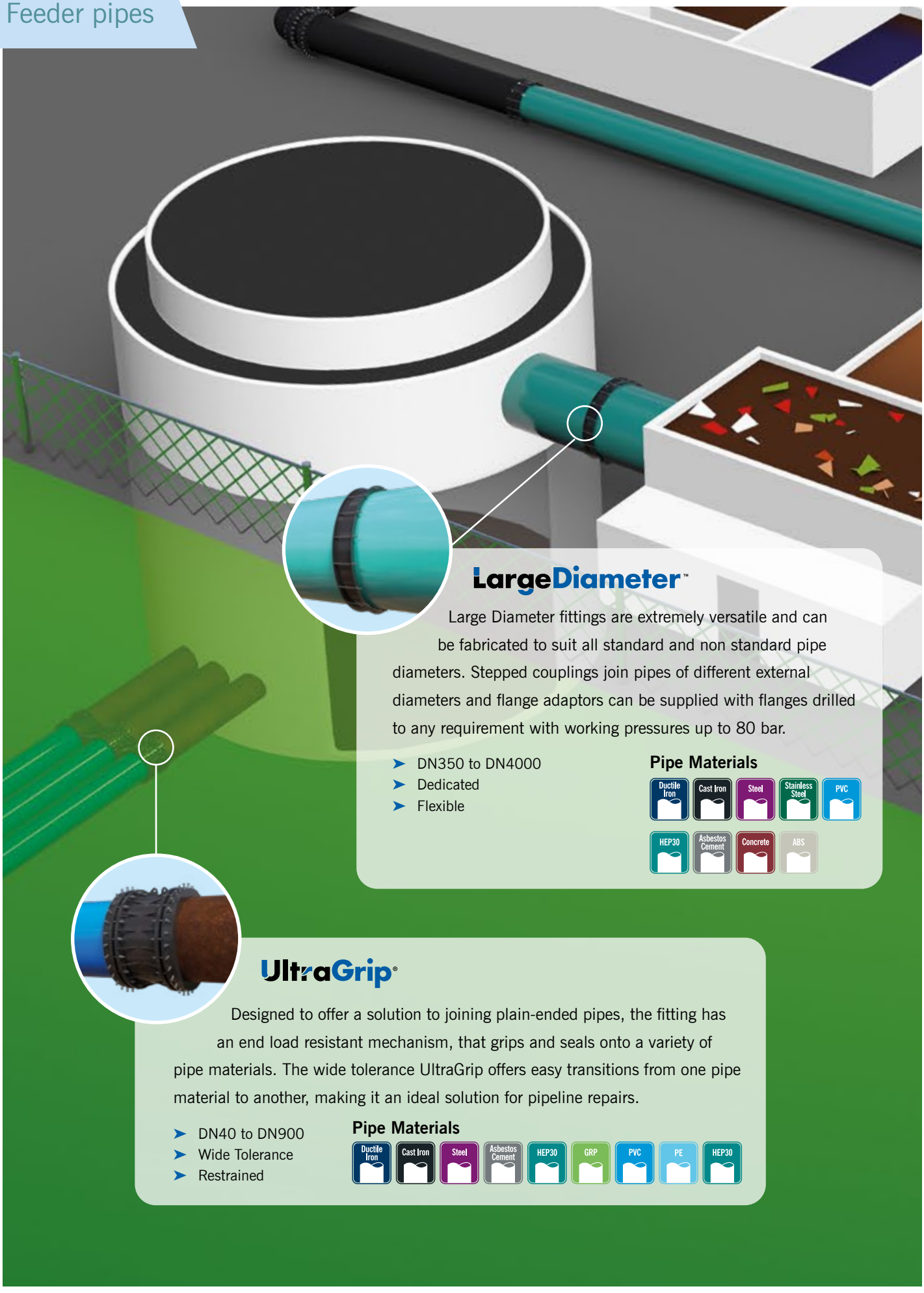
D The fluid then enters basins which increases the oxygen levels, which helps separate micro organisms such as phosphorous which is then removed from the effluent.

E The fluid then goes through a further separation/clarifier process that separates out other materials which are then recycled.

F The treated Water then goes through a series of filters, which removes any remaining solids but allows the treated water to pass.

Before the treated water is released into the water stream it is purified typically by passing through a UV light.





LargeDiameter™

Large Diameter fittings are extremely versatile and can be fabricated to suit all standard and non standard pipe diameters. Stepped couplings join pipes of different external diameters and flange adaptors can be supplied with flanges drilled to any requirement with working pressures up to 80 bar.

- DN350 to DN4000
- Dedicated
- Flexible

Pipe Materials

Ductile Iron | Cast Iron | Steel | Stainless Steel | PVC | HEP30 | Asbestos Cement | Concrete | ABS

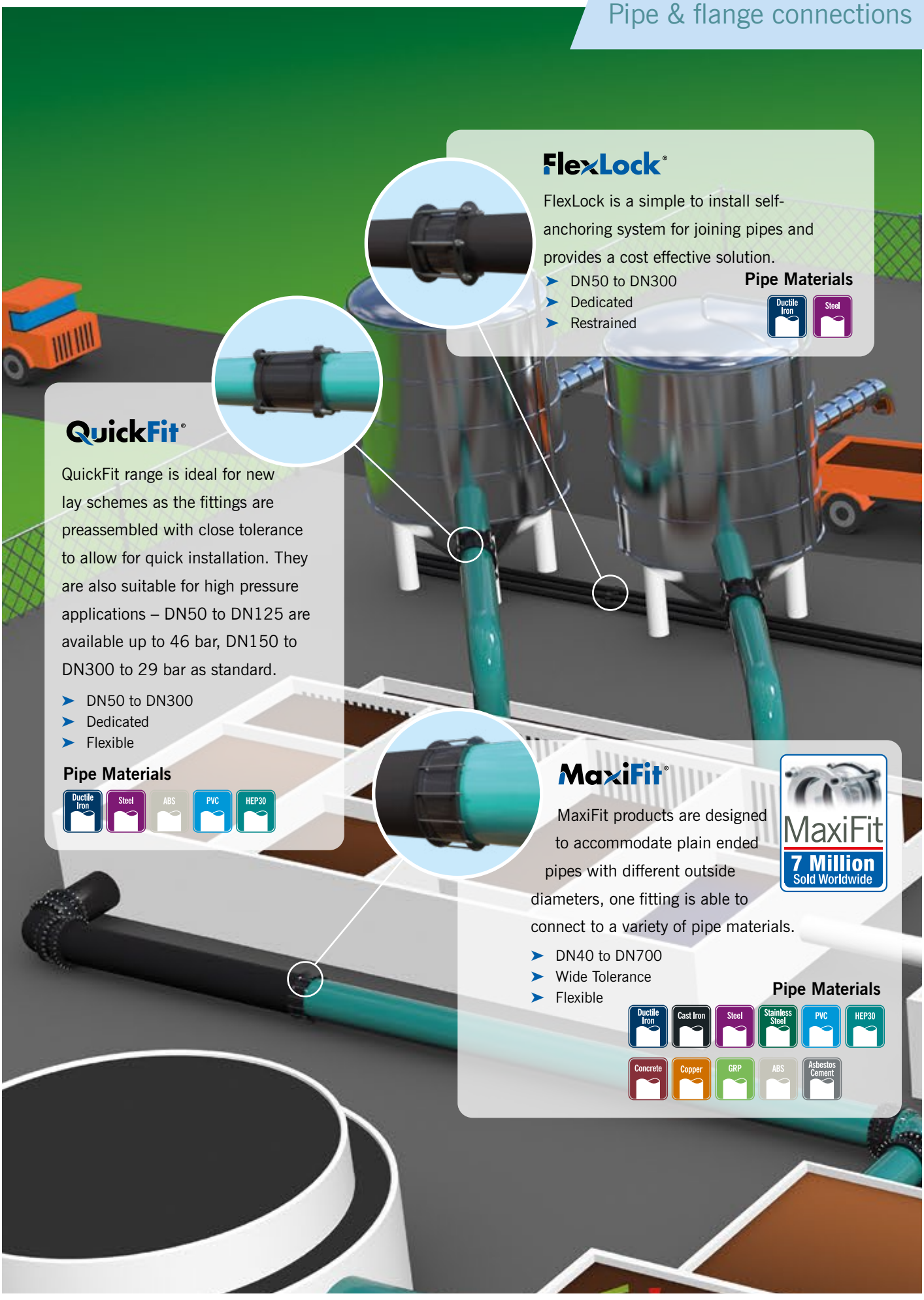
UltraGrip®

Designed to offer a solution to joining plain-ended pipes, the fitting has an end load resistant mechanism, that grips and seals onto a variety of pipe materials. The wide tolerance UltraGrip offers easy transitions from one pipe material to another, making it an ideal solution for pipeline repairs.

- DN40 to DN900
- Wide Tolerance
- Restrained

Pipe Materials

Ductile Iron | Cast Iron | Steel | Asbestos Cement | HEP30 | GRP | PVC | PE | HEP30



FlexLock®

FlexLock is a simple to install self-anchoring system for joining pipes and provides a cost effective solution.

- DN50 to DN300
- Dedicated
- Restrained

Pipe Materials

Ductile Iron | Steel

QuickFit®

QuickFit range is ideal for new lay schemes as the fittings are preassembled with close tolerance to allow for quick installation. They are also suitable for high pressure applications – DN50 to DN125 are available up to 46 bar, DN150 to DN300 to 29 bar as standard.

- DN50 to DN300
- Dedicated
- Flexible

Pipe Materials

Ductile Iron | Steel | ABS | PVC | HEP30

MaxiFit®

MaxiFit products are designed to accommodate plain ended pipes with different outside diameters, one fitting is able to connect to a variety of pipe materials.

MaxiFit 7 Million Sold Worldwide

- DN40 to DN700
- Wide Tolerance
- Flexible

Pipe Materials

Ductile Iron | Cast Iron | Steel | Stainless Steel | PVC | HEP30

Concrete | Copper | GRP | ABS | Asbestos Cement

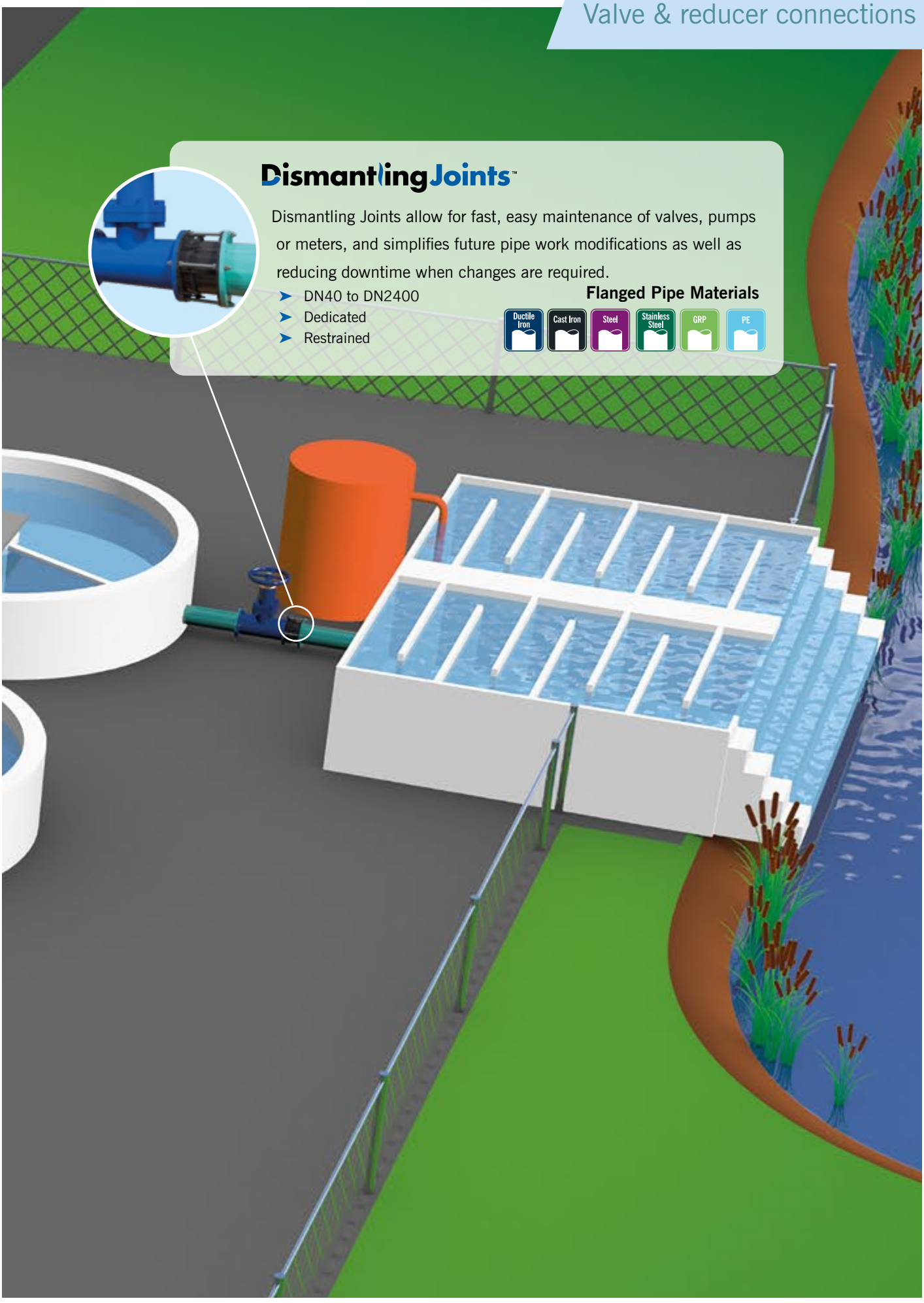
Wall inlet/outlet connections

WallCouplings™

Wall Couplings are held rigidly between the shutters, therefore removing the need for ‘boxing out’.

It also guarantees that leak paths, which are inevitably created when new concrete is poured onto old, are completely eliminated.

- DN80 and greater
- Dedicated



DismantlingJoints™

Dismantling Joints allow for fast, easy maintenance of valves, pumps or meters, and simplifies future pipe work modifications as well as reducing downtime when changes are required.

- DN40 to DN2400
- Dedicated
- Restrained

Flanged Pipe Materials

Ductile Iron | Cast Iron | Steel | Stainless Steel | GRP | PE

Ideal for Gas & Industrial Applications

Many of Viking Johnson's products can also be used for gas projects. These include FlexLock, HandiRange, MaxiFit, MegaFit and UltraGrip. Size range is from DN40 to DN600 (UltraGrip up to DN400) and gas pressures up to 6 bar.

FlexLock is available with nitrile gaskets for ductile iron and steel applications ideal for natural gas, petroleum and low aromatic fuels.

HandiRange is a repair product, ideal for corroded and cracked pipe work.

MaxiFit and MegaFit are universal pipe fittings for use on a wide range of pipe materials up to 6 bar.

UltraGrip has been specially designed with a unique profiled gasket for use on even badly corroded pipe surfaces for leaking ferrous gas mains.

Dismantling Joints, Large Diameter, QuickFit, Marine and Flow Control products are suitable for industrial applications. They are approved for use with oil-based and petroleum products, chemicals, sewage and other general industrial processing.

See the relevant product pages for full information.

Stadtwerke, Bielefeld, Germany
MegaFit - DN300

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UltraGrip® MaxiFit® EasiRange®

The Viking Johnson Roadshow Experience

Over 100 years of expertise can be delivered direct to your doorstep.

The Roadshow vehicle is available for on-site interactive demonstrations at your premises, with hands on guidance and training of what our products can offer, which product to use for typical repairs or new build applications, as well as insight and education on our latest innovations and industry trends.

What we provide

- The roadshows are staffed by our expert team of sales managers, engineers and products managers giving you direct access to the people behind our products.
- Product demonstration showcases to learn more about the Viking Johnson range.
- A live demonstration bench to get hands on with our solutions.
- Snacks and refreshments to keep you going.

If you are interested in having our roadshow vehicle visit your location, please contact us.

"Big thank you to the guys from Viking Johnson for providing some very welcomed product training at the Jewson Civils Norwich branch today."

Dan Wild, Business Development Manager,
Jewson Civils Frazer

"Great day with Viking Johnson delivering hands on training to our team and customers at Fusion Cambridge!"

Annie Ryan, Branch Manager,
Burdens Civils / Fusion Utilities

AquaFast® AquaGrip® AquaShield®

Dedicated

Ideal for new lay pipe schemes, dedicated products, in sizes up to DN4000, offer a cost effective solution for connecting plain ended pipes or to flanged equipment.

PE Solutions

A range of mechanical couplings and flange adaptors for all weather and site conditions providing a quick, easy way of joining or repairing PE pipe materials.

Wide Tolerance

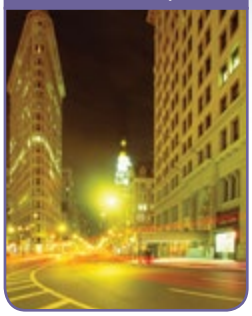
A range of couplings, reducing couplings and flange adaptors designed to accommodate plain ended pipe with differing outside diameters. One size covers a number of different pipe materials, making them ideal for repair and maintenance work reducing the need for a large stock holding.

Pipe Repair

A range of repair clamps and under pressure tapping products, featuring wide tolerances for repair and branch connections for pipes manufactured from a variety of materials.

Martigues Power Plant, France, Marseille, AquaGrip

Wastewater Treatment Plant, Lyon, France, Large Diameter



Madison Avenue, New York, USA, LinerGrip

Minera Copiapo, Chile, Large Diameter High Pressure

We Operate Around the World

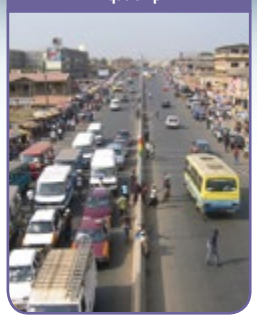
Anglesey, UK,
Universal EasiTee

ISE Valley Wellingborough, UK
UltraGrip Amplified

Stadtwerke Coesfeld,
Germany, UltraGrip

Prague Water, Czech,
UltraGrip Amplified

Nsawam Road, Ghana,
AquaGrip



Prague Water, Czech,
UltraGrip

Fujairah, UAE,
Dismantling Joint

Red Cross, Sri Lanka,
AquaGrip

Desalination Plant, Australia,
Large Diameter

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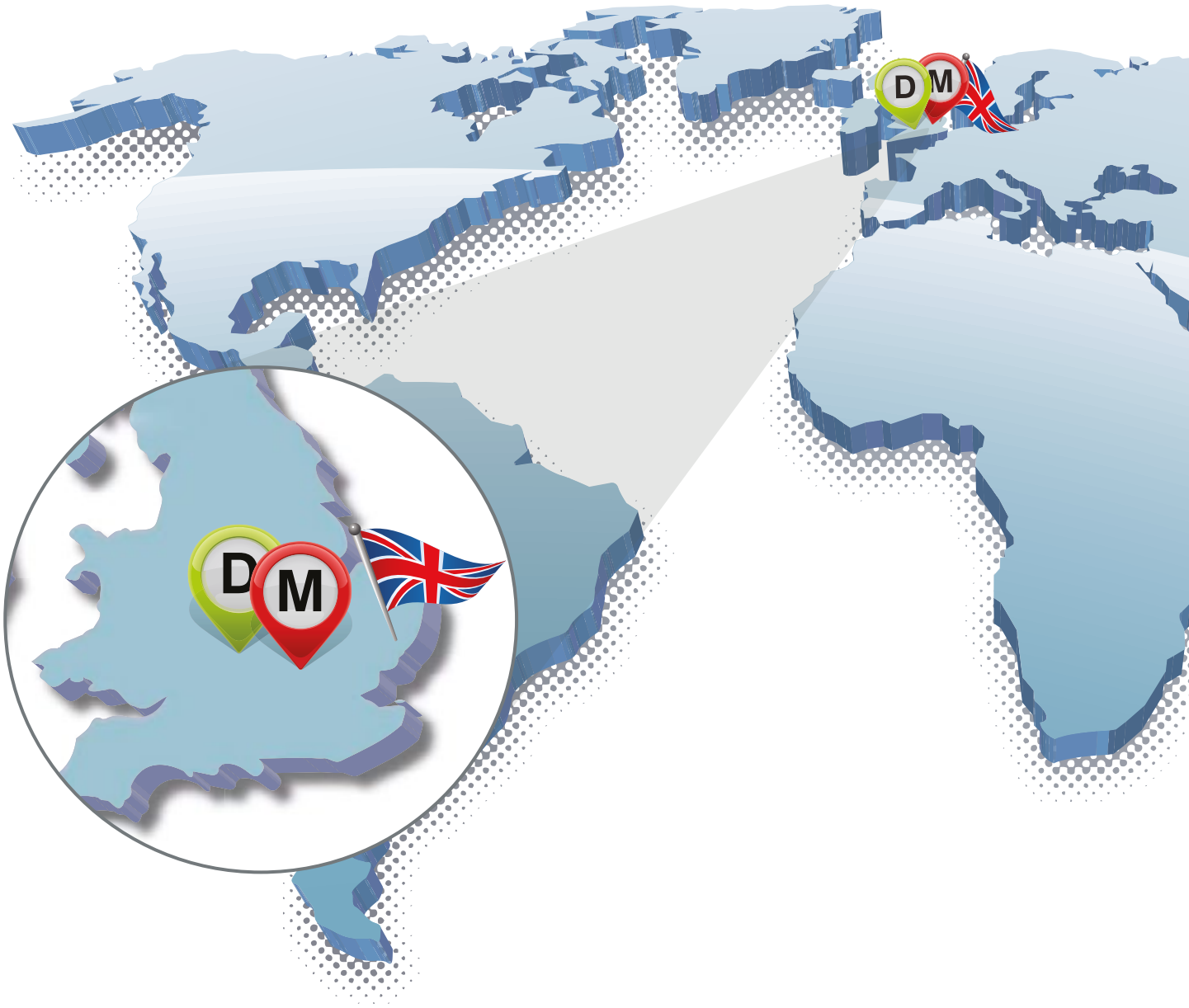
International Locations



Locations

Ipswich
(Headquarters)
Crane BS&U
Crane House
Epsilon Terrace
West Road, Ipswich
IP3 9FJ
UK
Tel: +44 (0)1473 277300

Hitchin
(Manufacturing)
Crane BS&U
46-48 Wilbury Way
Hitchin
Hertfordshire
SG4 0UD
UK
Tel: +44 (0)1462 443322

Northampton
(Distribution Centre)
Crane BS&U
Lower Farm Road
Moulton Park Industrial Estate
Northampton
NN3 6XF
UK
Tel: +44 (0)1604 817860

Dubai
Sales Office
Crane BS&U
Building 4, Office 901
The Galleries
PO BOX 17415
Downtown Jebel Ali
Dubai
UAE
Tel: +971 4816 5800

Dubai
(Distribution Centre)
Crane BS&U
Jebel Ali Free Zone
South Zone 2
PO BOX 17415
Dubai
UAE
Tel: +971 880 9989

Suzhou
(Manufacturing)
Suzhou Ltd
1 Runsheng Road
Shengpu Sip
Jiangsu Province
215126 Suzhou
China
Tel: +86 5126 28615 0088

Ningjin
(Manufacturing)
8 Youyi Street
Ningjin
00863195856825
China
Hebei
Tel: +86 319 5802730

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4th July 2019
Centenary Celebrations - Hitchin

Good People Make Good Things Happen

People are at the heart of our business. Our collaborative culture values human ingenuity and creativity, which allows our employees to develop personally and achieve professional career goals.

At Viking Johnson, new ideas are welcome along with equal doses of trust, respect and empowerment. A testament to this is our industry leading 'New Product Development Programme' that has consistently delivered world class innovative products.

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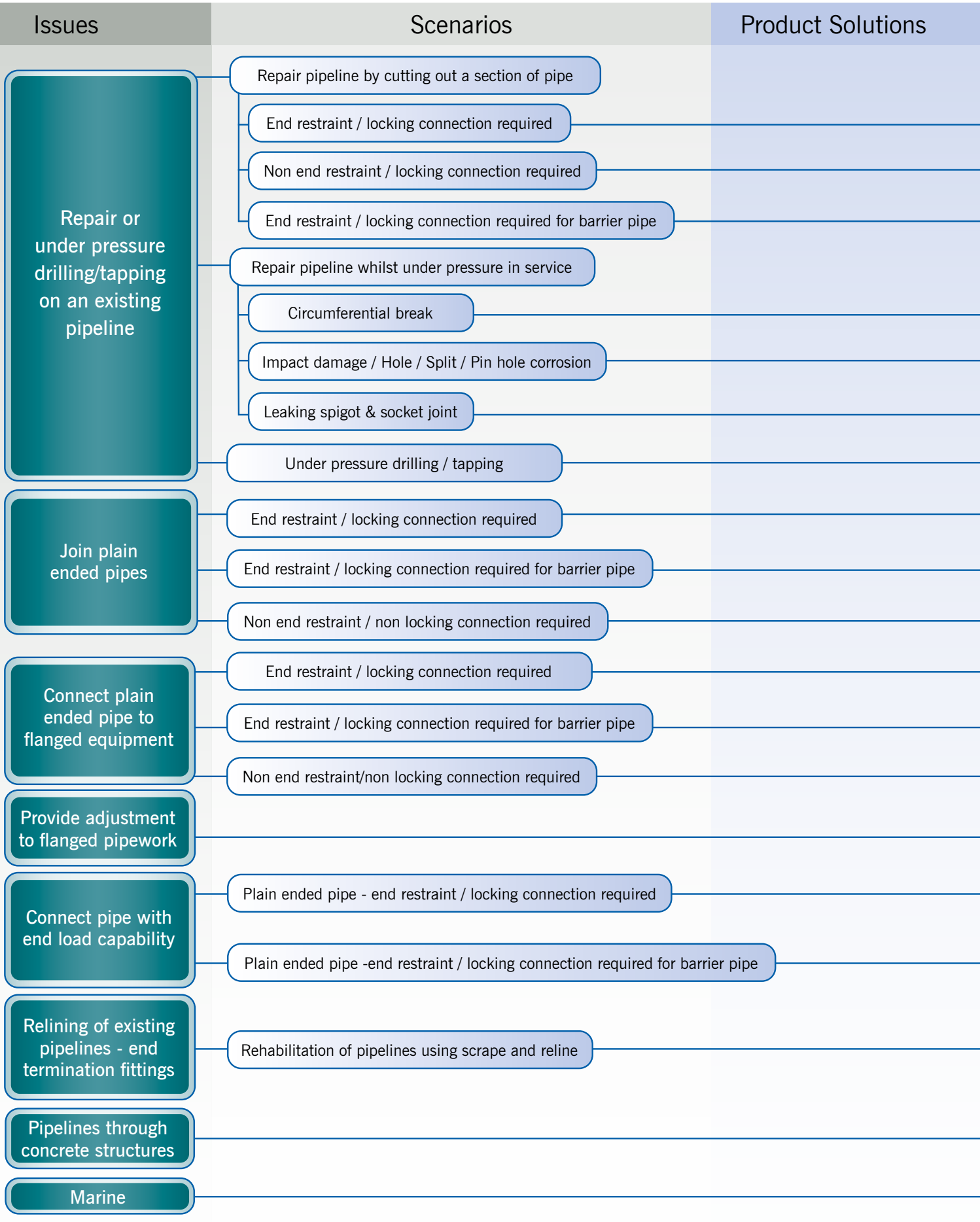
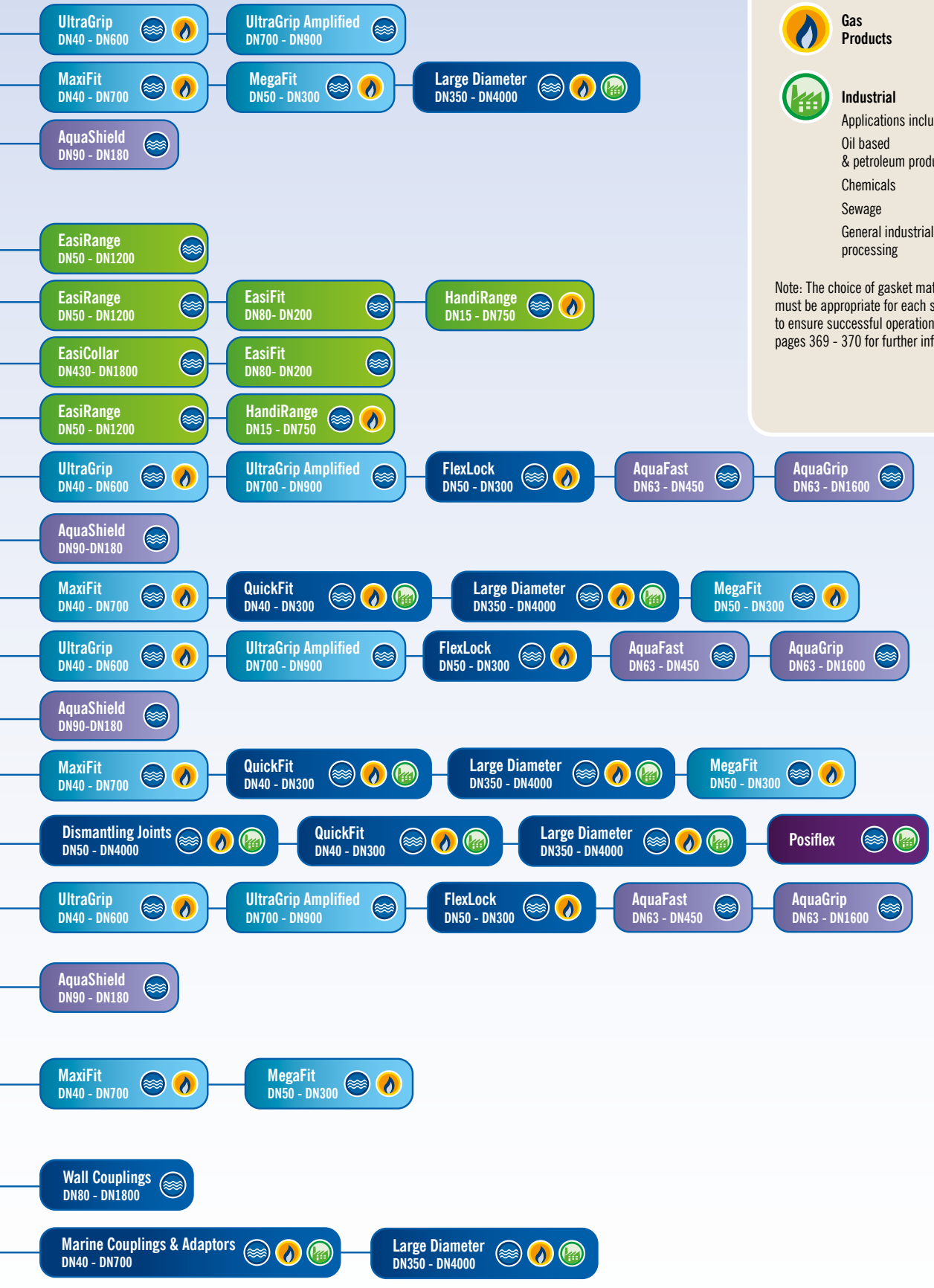
Typical Applications Selector



Wide Tolerance | PE & Barrier Pipe Solutions | Dedicated | Pipe Repairs | Expansion Joints

For product pipe size compatibility refer to the Viking Johnson OD Chart



For product pipe material and size compatibility refer to the Product Pipe Material Selector on page 46

Applications

- **Water Products**
- **Gas Products**
- **Industrial**
  Applications including:
  Oil based & petroleum products
  Chemicals
  Sewage
  General industrial processing

Note: The choice of gasket material must be appropriate for each service to ensure successful operation (see pages 369 - 370 for further information)

Pipe Materials

Ductile Iron | Cast Iron | Steel | Stainless Steel | PVC | PE | HEP30 | GRP | ABS | Clay | Concrete | Asbestos Cement | Copper | Lead | PE Barrier Pipe

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Chile - Near the City of Iquique

Extracting Sea Water Inland

Large Diameter High Pressure Couplings - DN300

Pumping station

Project

Water scarcity in Chile means there has been changes in legislation requiring mines typically located in water stressed regions to source their water for use in process operations from non-potable sources.

Client

Minera Copiapo

Distributor

Tubexa SA

Contractor

Minera Copiapo

Minera Copiapo developed a scheme to extract sea water and pump it inland to their process plant, which had three development phases:

Phase 1
Sea extraction & pipeline to from sea level to secondary pumping station 700m level on a steep incline

Phase 2
4,400m pipeline (DN300 steel) to first storage area (VJ Supplied 500 No. couplings operating at 52 and 75 bar working pressure)

Phase 3
6,800m pipeline changing from steel to PE and supplying other storage area

Crane BS&U are solely the provider of products and have no direct influence on, or take any responsibility for any working practices employed or depicted in the images enclosed to install such products.

Standard Outside Diameter Chart

NOMINAL BORE mm / inches	IMPERIAL CAST IRON & ASBESTOS CEMENT (TURNED END) BS1211 (1981) (UTI 27" NB) BS78 (1981) BS486 (1966)						STEEL ISO/4200 (1991)				BS EN 10255:2004	BS EN 10220:2002, BS EN 10216:2013 & BS EN 10217:2002 (pipe ends to BS EN 10311:2005 & BS EN 10224:2002)	API 5L (2000) & BS1600 (2000) UTI 36" NB	PVC-U		ABS	DUCTILE IRON	GRP	METRIC ASBESTOS CEMENT (TURNED END) BS486 (1990)		
	CLASS AB ONLY		CLASS CD ONLY		NON STD									BS3505 (1998) & BS EN 1452:2009	BS EN ISO 3506	BS5391 (1976)	BS EN 545:2010, BS EN 598:2007 BS EN 969:2002 DIN 28601, 28602, 28603, 28605	BS5480 (1990) (Typical UK sizes)	CLASS 15	CLASS 20	CLASS 25
	mm	inches	mm	inches	mm	inches	SER1	SER2	SER3	SER3											
15 / 0.5							21.3				21.3	21.4	21.4	21.4	21.4	21.4					
20 / 0.75							26.9	25.0	25.4		26.9	26.8	26.7	26.8	26.8	26.8					
25 / 1							33.7	32.0	30.0	35.0	33.7	33.6	33.4	33.6	33.6	33.6					
32 / 1.25							42.4	40.0	44.5		42.4	42.3	42.2	42.3	42.3	42.3					
40 / 1.5	55.9	2.20	55.9	2.20	57.0	2.25	48.3	57.0	54.0		48.3	48.3	48.3	48.3	48.3	48.3	56				
50 / 2	69.1	2.72	69.1	2.72			60.3	63.5			60.3	60.4	60.3	60.4	60.4	60.4	66				69
65 / 2.5	82.3	3.24	82.3	3.24	82.5	3.25	76.1	70.0	73.0		76.1	76.1	73.0		75.2		82				
80 / 3	95.5	3.76	95.5	3.76			88.9		82.5		88.9	88.9	88.9	88.9	88.9	88.8	98				96
90 / 3.5								101.6				101.6	101.6								
100 / 4	121.9	4.80	121.9	4.80			114.3	127.0	108.0		114.3	114.3	114.3	114.3	114.3	114.3	118				122
125 / 5	149.9	5.90	149.9	5.90			139.7	133.0	141.3	152.4	139.7	139.7	141.3	140.2	140.2		144				
150 / 6	177.3	6.98	177.3	6.98			168.3		159.0	177.8	165.1	168.3	168.3	168.3	168.3	168.3	170		177		177
175 / 7	204.7	8.06	204.7	8.06					193.7			193.7			193.8						
200 / 8	232.2	9.14	232.2	9.14			219.1					219.1	219.1	219.1	219.1	219.1	222	220	232	232	240
225 / 9	259.1	10.20	259.1	10.20					244.5			244.5			244.5				259	259	268
250 / 10	286.0	11.26	286.0	11.26			273.0					273.0	273.1	273.0	273.0		274	272	286	286	295
300 / 12	333.8	13.14	345.4	13.60			323.9					323.9	323.9	323.9	323.9		326	324	334	345	356
350 / 14	387.0	15.22	399.3	15.72			355.6					355.6	355.6	355.6	355.5		378	376	392	405	419
375 / 15	413.0	16.26	426.2	16.78																	
400 / 16	439.0	17.30	453.1	17.84			406.4					406.4	406.4	406.4	406.4		429	427	448	463	478
450 / 18	492.0	19.38	506.9	19.96			457.0					457.0	457.2	457.2	457.2		480	478	498	515	532
500 / 20	545.0	21.46	560.3	22.06			508.0					508.0	508.0	508.0	508.0		532	530	568	586	605
525 / 21	572.0	22.50	587.2	23.12																	
550 / 22	598.0	23.54	613.7	24.16					559.0			559.0	559.0		558.8						
600 / 24	650.0	25.60	667.0	26.26			610.0					610.0	609.6	609.6	609.6		635	633	654	672	691
650 / 26	703.0	27.66	720.3	28.36					660.0			660.0	660.4								
675 / 27	729.0	28.70	746.8	29.40																	
700 / 28	755.0	29.72	773.2	30.44			711.0					711.0	711.2				738	718	761	780	801
750 / 30	807.0	31.78	826.0	32.52				762.0				762.0	762.0						808	830	852
800 / 32	860.0	33.84	879.3	34.62			813.0					813.0	812.8				842	820	882	904	915
825 / 33	886.0	34.88	905.8	35.66																	
850 / 34	912.0	35.92							864.0			864.0	863.6						927	952	977
900 / 36	964.0	37.96	984.5	38.76			914.0					914.0	914.4				945	924	970	996	1024
1000 / 40	1068.0	42.06	1090.2	42.92			1016.0					1016.0	1016.0				1048	1027			
1050 / 42	1121.0	44.12	1143.0	45.00			1067.0	1168.0				1067.0	1066.8								
1100 / 44	1172.0	46.16					1118.0						1117.6				1152	1144			
1200 / 48	1277.0	50.26	1300.5	51.20			1219.0					1219.0	1219.2				1255	1228			
1300 / 52								1321.0					1320.8					1350			
1400 / 56							1422.0					1422.0	1422.4				1462	1449			
1600 / 64							1626.0					1626.0	1625.6				1668	1640			
1800 / 72							1829.0					1829.0	1828.8				1875	1844			
2000 / 80							2032.0					2032.0	2032.0				2082	2048			

PVC-U & POLYETHYLENE (METRIC). BS ISO 11922-1 (1997)	METRIC PVC-U & PE HAVE A DESIGNATED NOMINAL SIZE WHICH IS USUALLY THE SAME AS THE OUTSIDE DIAMETER. QUOTE PIPE CLASS, RATING OR WALL THICKNESS ON ENQUIRIES.																														
	16	20	25	32	40	50	63	75	90	110	125	140	160	180	200	225	250	280	315	355	400	450	500	560	630	710	800	900	1000	1200	1400	1600

PE BARRIER PIPE (METRIC). BS 8588	BARRIER PIPES HAVE A DESIGNATED NOMINAL SIZE WHICH IS USUALLY THE SAME AS THE OUTSIDE DIAMETER. QUOTE PIPE CLASS, RATING OR WALL THICKNESS ON ENQUIRIES.																						
	Nominal Size	25	32	40	50	63	75	90	110	125	140	160	180	200	225	250	280	315	255	400	450	500	560	630

Note: More details available on request

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Pipe Material Product Selector - Couplings, Stepped Couplings & Flange Adaptors

NOTE: This table provides guidance as to which Viking Johnson products are compatible with which pipe material. Please consult the product literature to obtain further details on final suitability.

Product Groups		Nominal Size Range (mm)	Ductile Iron	Cast Iron	Steel	Stainless Steel	PVC	HEP30	Polypropylene	MDPE/PE80	HDPE/PE100	PE Barrier Pipe	GRP	ABS	Clay	Concrete	Asbestos Cement	Copper	Lead
Wide Tolerance																			
MaxiFit (A, C)	Coupling	40 - 700	●	●	●	6	●	●	8	8	8		6	●	1	●	6	1	1
	Flange Adaptor	40 - 700	●	●	●	6	●	●	8	8	8		6	●	1	●	6	1	1
	Step Coupling	40 - 700	●	●	●	6	●	●	8	8	8		6	●	1	●	6	1	1
MegaFit (A, C)	Coupling	50 - 300	●	●	●	6	●	●					6	●	1	●	6		
	Flange Adaptor	50 - 300	●	●	●	6	●	●					6	●	1	●	6		
	Step Coupling	50 - 300	●	●	●	6	●	●					6	●	1	●	6		
UltraGrip (A, B)	Coupling	40 - 600	●	●	●		●	●	3	3	3		2				2		
	Flange Adaptor	40 - 600	●	●	●		5	5	3	3	3		2				2		
	Reducers	40 - 600	●	●	●		5	5	3	3	3		2				2		
	End Caps	50 - 300	●	●	●		5	5	3	3	3		2				2		
	Pecat	80 - 200	●	●	●		5	5											
UltraGrip Amplified (A, B)	Coupling	700 - 800	●	●	●		1		3	3	3						2		
	Flange Adaptor	700 - 800	●	●	●		1		3	3	3						2		
	Reducers	700 - 800	●	●	●		1		3	3	3						2		
Dedicated																			
FlexLock (A, B)	Coupling	50 - 300	●		●														
	Flange Adaptor	50 - 300	●		●														
QuickFit (A, C)	Coupling	40 - 300	●		●		●	●						●		●			
	Flange Adaptor	40 - 300	●		●		●	●						●		●			
Large Diameter Unfitted (A, C)	Coupling	350 & greater	●	●	●	6	●	●					6	●		●	6		
	Flange Adaptor	350 & greater	●	●	●	6	●	●					6	●		●	6		
	Step Coupling	350 & greater	●	●	●	6	●	●					6	●		●	6		
PE Solutions																			
AquaFast (A, B)	Coupling	63 - 315					●	●	●	●	●								
	LD Coupling	355 - 450								●	●								
	Flange Adaptor	63 - 315					●	●	●	●	●								
	LD Flange Adaptor	355 - 450								●	●								
AquaGrip (A, B)	Coupling	63 - 180							●	●	●								
	Flange Adaptor	63 - 180							●	●	●								
	Flange Adaptor	225 - 800								●	●								
	Flange Adaptor	900 & greater								●	●								
AquaShield (A, B)	Coupling	90 - 180									●	●							
	Flange Adaptor	90 - 180									●	●							
Pipe Repairs																			
EasiRange (A)	EasiClamp / Tap	50 - 600	●	●	●		4	4	4	4	4								
	Universal EasiTee	80 - 300	●	●	●														
	Matt Seal EasiTee / Tap	350 - 600	●	●	●														
	Ring Seal EasiTee	350 - 1200	●	●	●		●												
	EasiCollar	300 - 1200	●	●												●	●		
HandiRange (A)	HandiBand	15 - 50			●		●	●						●				●	
	HandiClamp / Tee	50 - 600	●	●	●	6	●	●	7	7	7		7	●		●	●	●	●

Note: A Viking Johnson product is suitable up to a stated working pressure rating for a given pipe material.

(A) Pipe material is suitable within Viking Johnson product OD tolerance range.
(B) Restrained Products - Accommodate end load forces due to internal pressure in pipe.
(C) Flexible Products - Do not accommodate end load and adequate external support must be provided.
(D) Restrained Products - Accommodate end load forces in accordance with PE liner unrestrained pressure capability.

(1) Please contact Viking Johnson Marketing department for further details.
(2) Only as Flex Version.
(3) Only as Gripping version with a support liner.
(4) Available up to DN200 (limited performance).
(5) May require a support liner - see technical literature.
(6) May require reduced bolt torque - Contact Viking Johnson.
(7) Limited performance.
(8) Short length up to and including 1m of PE when used with a support liner.

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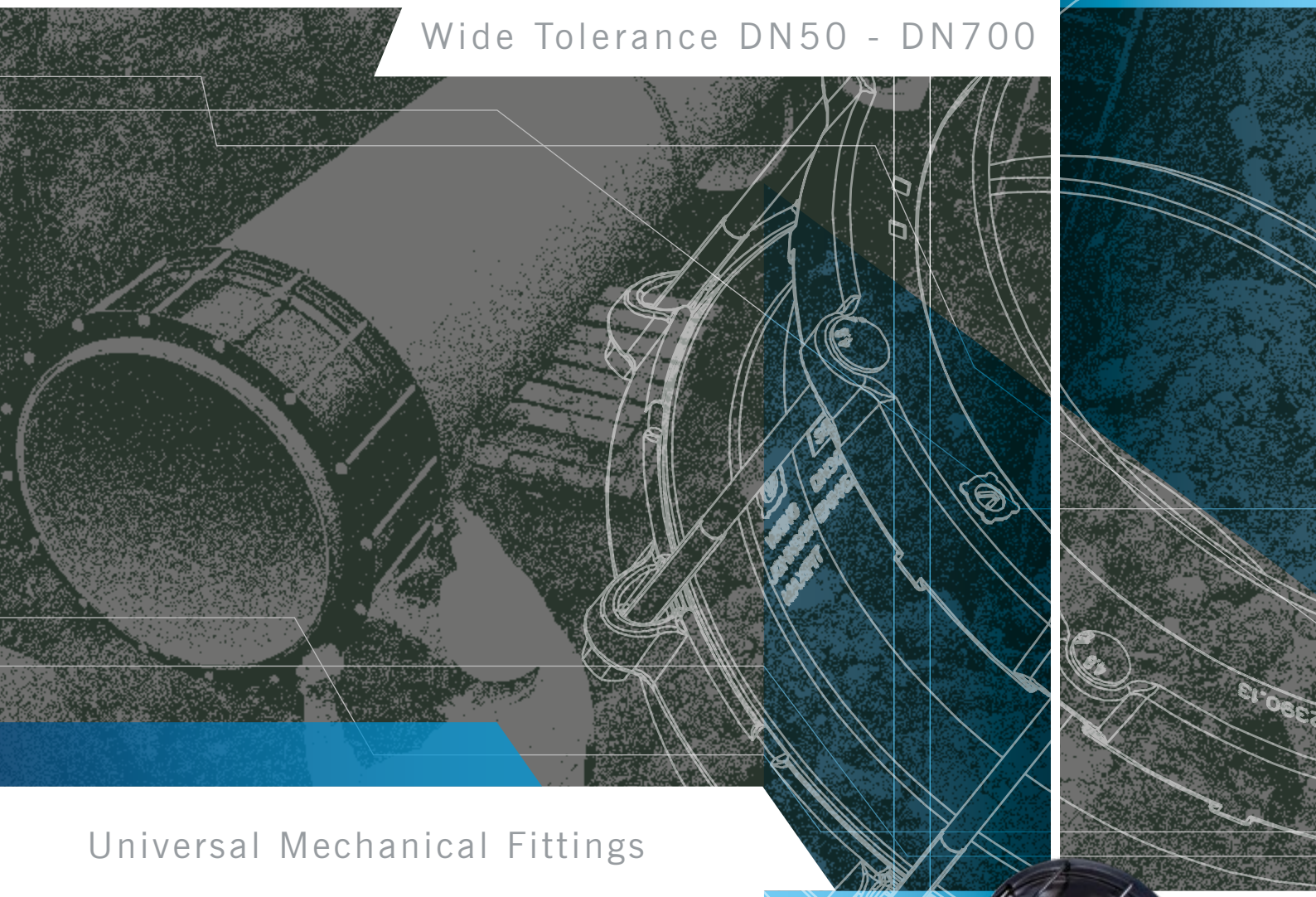
MaxiFit®

Wide Tolerance DN50 - DN700



Universal Mechanical Fittings

BS EN 14525
Ductile Iron
Couplings & Flange
Adaptors*

*See back cover for full specification

VIKING JOHNSON®

A Versatile Product for Pipe Jointing

MaxiFit universal pipe couplings are designed to accommodate plain ended pipes with different outside diameters. One fitting is able to connect a wide variety of pipe materials including steel, ductile iron, PVC, cast iron, GRP and asbestos cement pipes amongst others. The range includes the following product lines

- MaxiFit Plus – DN50 – DN150
- MaxiFit small diameter – DN40 – DN300
- MaxiFit large diameter – DN350 – DN700

The MaxiFit range is designed and manufactured under quality management systems to BS EN ISO 9001 and meets the requirements of the UK Water Regulations & BS EN 14525, with DN40 to DN300 being independently tested by BSI to verify conformance to this standard.

Wide Tolerance

With up to 34mm tolerance on the pipe OD it not only eases installation but can reduce the need for expensive and time consuming trial holes, reduce stock holding and increase stock turn over. MaxiFit is an adaptable and economic solution to most pipe connections.

All products in the range have a test pressure of 24 bar on water (9 bar on gas) and are suitable for 16 bar working pressure for water (6 bar on gas).

Extensive Range

The expansive range is available in sizes DN40 up to DN700 and includes MaxiFit couplings & MaxiFitXtra long sleeved couplings, MaxiStep reducing couplings, MaxiDaptor flange adaptors, MaxiCap, MaxiThread End Cap, MaxiFit Large Diameter couplings & flange adaptors & MaxiFit Plus couplings and flange adaptors.

The Flexible Solution for Pipe Repairs

Quick & Efficient Installation

The versatile range is pre-assembled with an innovative gasket which has 'slide easy' ribs that reduce friction on pipes at the upper tolerance range of the fitting, providing maximum sealing pressure, even on scored, pitted and corroded pipe surfaces. The captive non-rotating bolt heads require just a single spanner to install with just one standard bolt torque across the range. The MaxiFit Plus range offers better access to bolts when installing, even in narrow and congested trench conditions.

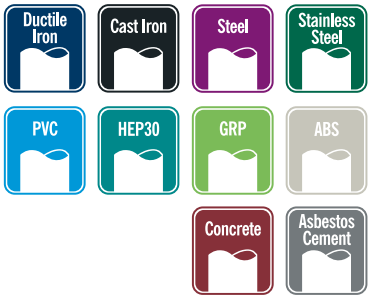
Versatile Repairs

It is the variety of pipe materials that the MaxiFit range is suitable for and the wide tolerance which makes it ideal for repair situations where a section of pipe must be cut out and replaced.

MaxiFit easily transitions between various pipe materials, making a simple, permanent and reliable repair whilst the wide tolerance means that only a few strategic sizes need to be kept in stock to cover many repair or emergency situations. MaxiFit Plus is ideal for repair situations in narrow trench area as the bolts are easily accessible.

PE Pipe* can even be used to affect a repair in rigid pipes, but as the MaxiFit range is not end restraint the length of PE used in the repair will need to be limited to 1 metre length of pipe on the standard MaxiFit Range and 2 metre length on the MaxiFitXtra.

Pipe Materials



***Note:** Copper pipe is problematic, contact Viking Johnson for guidance regarding suitability for application.

Use of limited lengths in repairs only

***Note:** MaxiFit can ONLY be used to make a repair that involves cutting out a section of pipe (cast iron, ductile iron, steel, AC) and inserting a short length of PE if and only if:

- The length of the PE does not exceed 1m if a standard MaxiFit is used and 2m if a MaxiFitXtra is used.
- A close fit support liner is used on the PE.

MaxiFit cannot be used to connect long lengths of PE pipe together at any time. This is only applicable for:

- MaxiFit Couplings
- MaxiFit Plus Couplings
- MaxiFitXtra Couplings

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United Kingdom - Canterbury

Emergency Repairs

MaxiFit Couplings - DN500

Project

Thousands of customers in the city had either no water or low water pressure.

MaxiFit Couplings were used for the emergency repair of a mains pipe in Canterbury.

Client

South East Water

Crane BS&U are solely the provider of products and have no direct influence on, or take any responsibility for any working practices employed or depicted in the images enclosed to install such products.

MaxiFit *Plus* Range

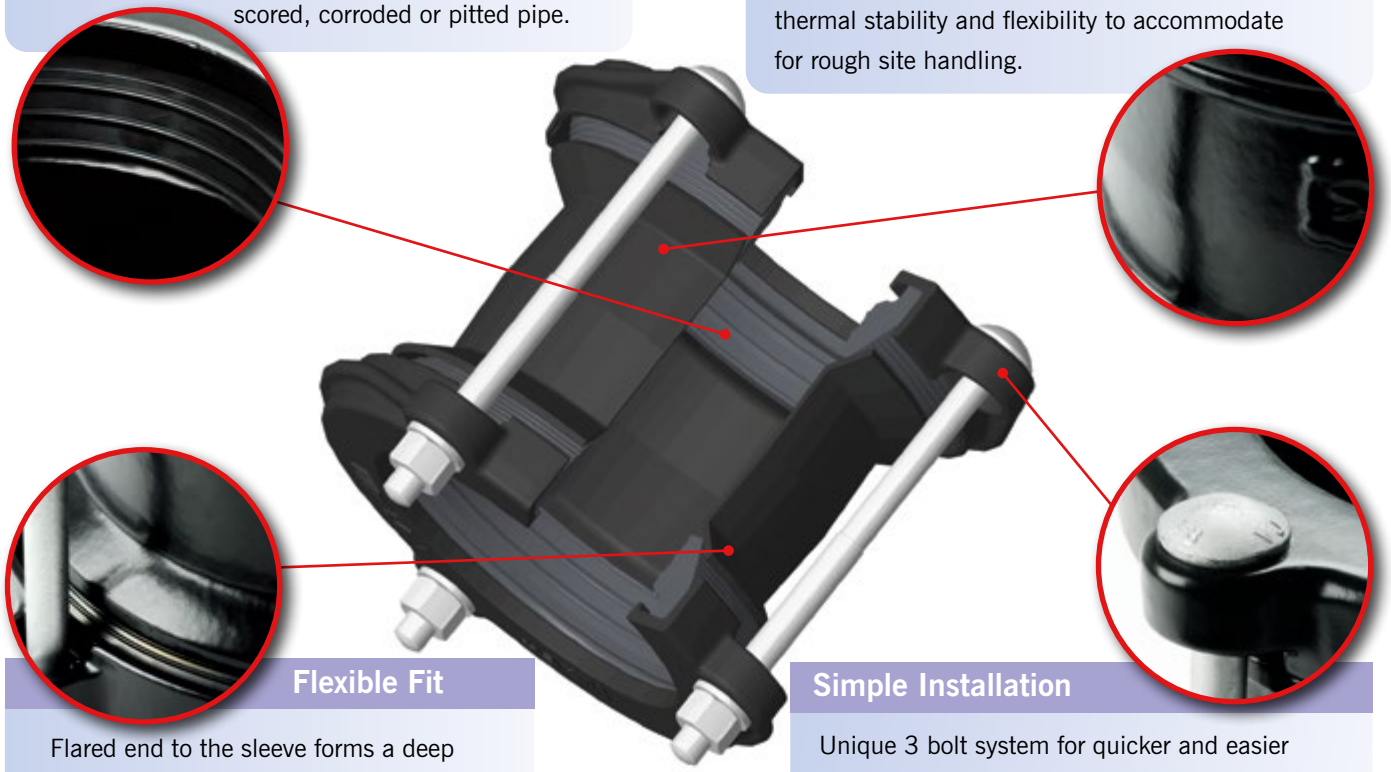
Product Design Benefits

Optimised Gasket Design

A unique gasket with distinctive circumferential ribs provides a 'slide easy' fit for maximum sealing on scored, corroded or pitted pipe.

Excellent Corrosion & Damage Resistance

Coated in black Rilsan Nylon 11 which is WRAS listed and has excellent resistance to impact, abrasion, weathering and chemicals. It also has good thermal stability and flexibility to accommodate for rough site handling.



Flexible Fit

Flared end to the sleeve forms a deep gasket chamber to give maximum possible pipe adjustment.

Simple Installation

Unique 3 bolt system for quicker and easier installation even in a narrow trench by using readily available hand tools.

Customer Benefits

- Unique three bolt design that allows quicker installation thereby reducing trench risk, available in sizes DN65, DN80 and DN100.
- MaxiFit Plus offers better leverage for torque.
- Better access to bolts especially when installing in narrow or harsh trench conditions.
- Design life expectancy of 50 years, established by rigorous 'Accelerated Age Testing' which subjects product to working pressure at 80°C for 1000 hours.
- Lighter product for easier handling, storage and shipping, thereby reducing costs. MaxiFit Plus available in sizes DN50 to DN150.
- Wide tolerance permits lower stock holding.
- All models accommodate angularity between pipes, allowing for normal pipeline movement caused by ground settlement.

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MaxiFit Range

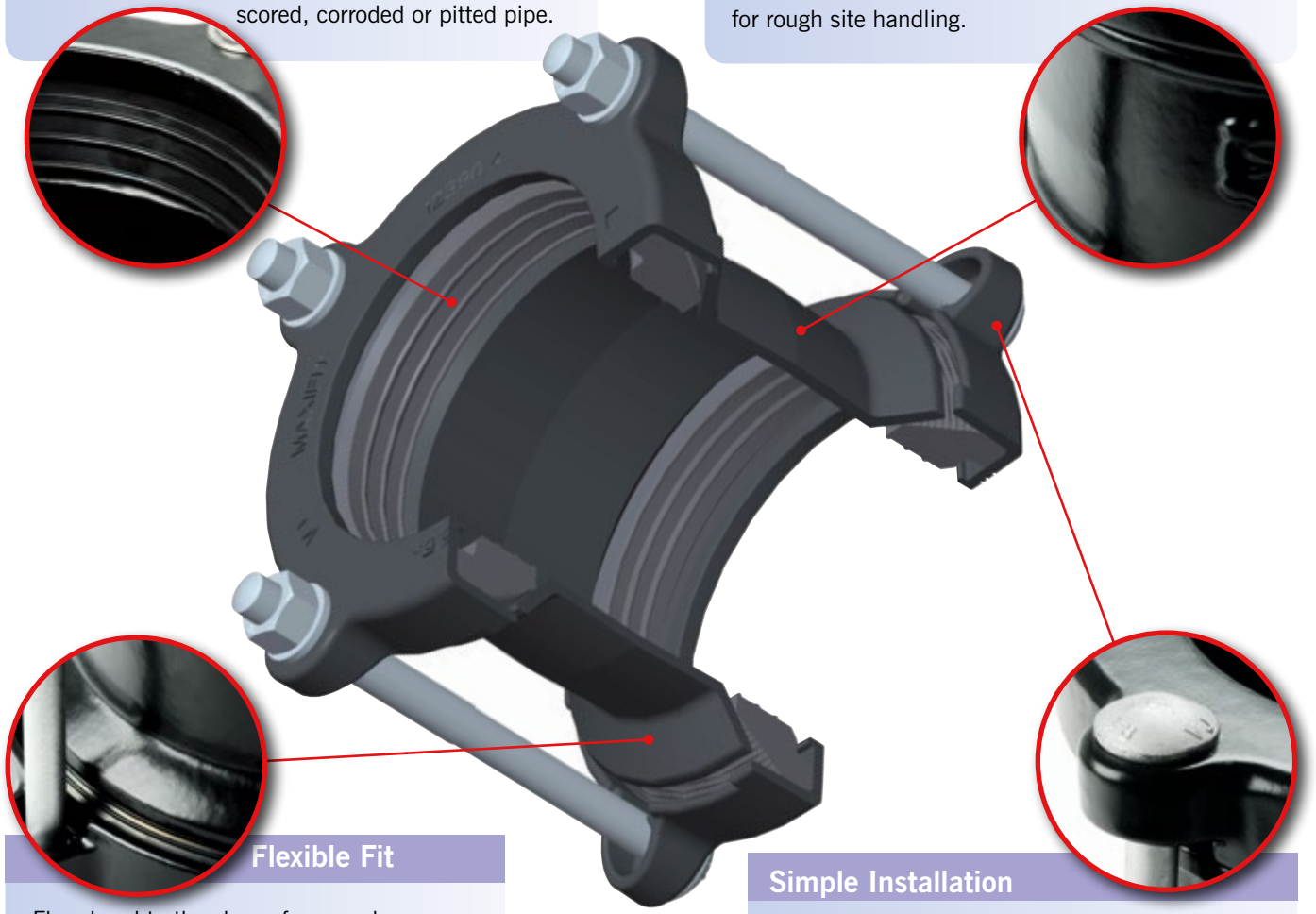
Product Design Benefits

Optimised Gasket Design

A unique gasket with distinctive circumferential ribs provides a 'slide easy' fit for maximum sealing on scored, corroded or pitted pipe.

Excellent Corrosion & Damage Resistance

Coated in black Rilsan Nylon 11 which is WRAS listed and has excellent resistance to impact, abrasion, weathering and chemicals. It also has good thermal stability and flexibility to accommodate for rough site handling.



Flexible Fit

Flared end to the sleeve forms a deep gasket chamber to give maximum possible pipe adjustment.

Simple Installation

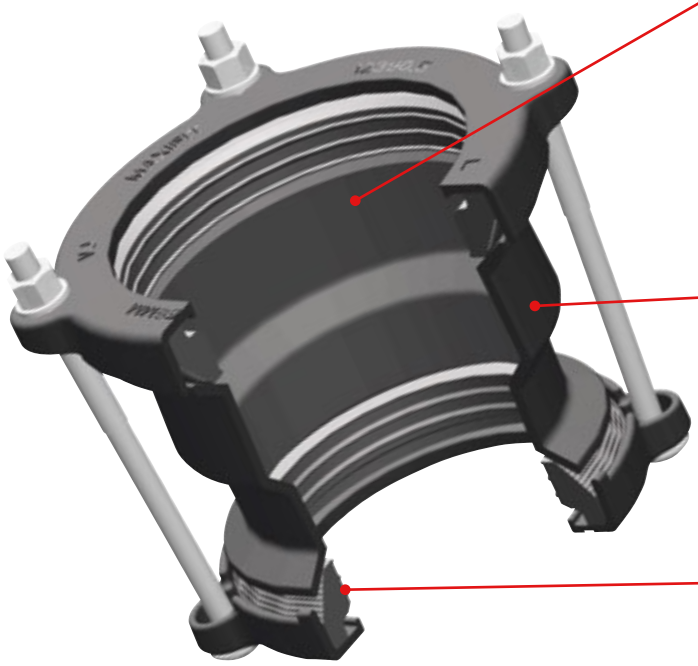
Captive, non-rotating bolt heads require just a torque wrench to install.

Customer Benefits

- Design life expectancy of 50 years, established by rigorous 'Accelerated Age Testing' which subjects product to working pressure at 80°C for 1000 hours.
- Wide tolerances permit lower stock holding.
- All models accommodate angularity between pipes which allows for normal pipeline movement caused by ground settlement. Couplings and reducing couplings allowing for 6° total angular deflection 3° total on the flange adaptors.

MaxiFit, MaxiFitXtra & MaxiStep

Product Design Benefits



Simple Installation

Available as standard and long sleeved versions, the MaxiFitXtra simplifies the installation further, allowing for greater cutting tolerances and a greater pipe insertion depth - sealing beyond corrosion damaged pipe ends to create a safe and permanent repair.

Excellent Repair Product

MaxiStep reducing couplings are designed to provide transitions between pipes of different nominal bores simplifying installations when repairing old pipe with new.

Accommodates Pipe Movement

All models accommodate angularity between pipes which allows for normal pipeline movement due to ground settlement. Couplings and reducing couplings allow for 6° total angular deflection.

MaxiDaptor

Product Design Benefits

Ultimate Flexibility

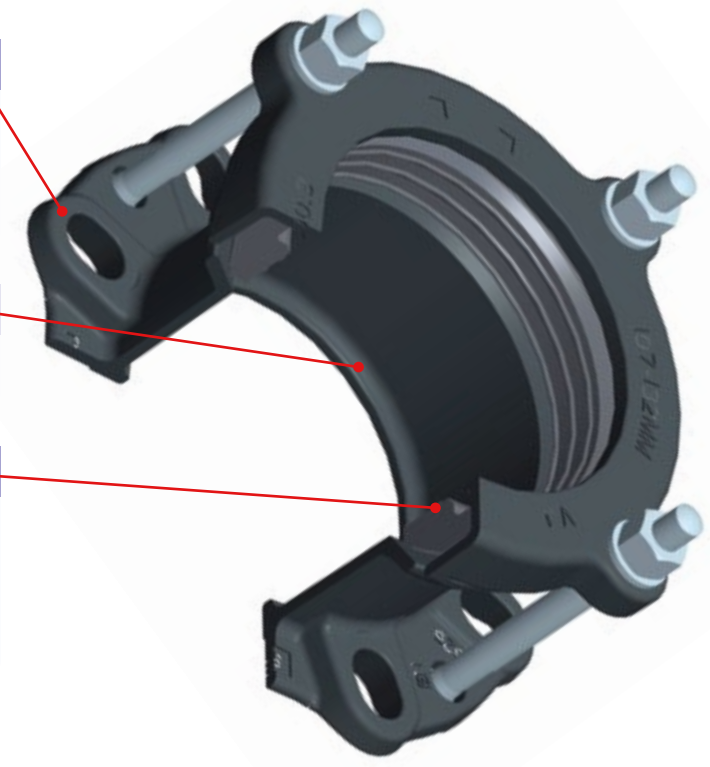
All cast flanges have multi drilling including; BS EN 1092-2, ISO 7005 1:1992, (PN10/16), BS10: 1962 (Table ADE), ANSI/AWWA.

Exceptional Sealing Capabilities

Flanges have an extended sealing face.

Accommodates Pipe Movement

All models accommodate angularity between pipes which allows for normal pipeline movement caused by to ground settlement. Flange adaptors have a total angular deflection of 3°.



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United Kingdom - Lancashire

Hodder Aqueduct

MaxiStep Reducing Coupling - DN700

Project

Relining & Cleaning Scheme - The 28 mile Hodder Aqueduct was originally constructed in 1925 by Flyde Water Board to supply water to Blackpool from Stocks reservoir.

Client

United Utilities

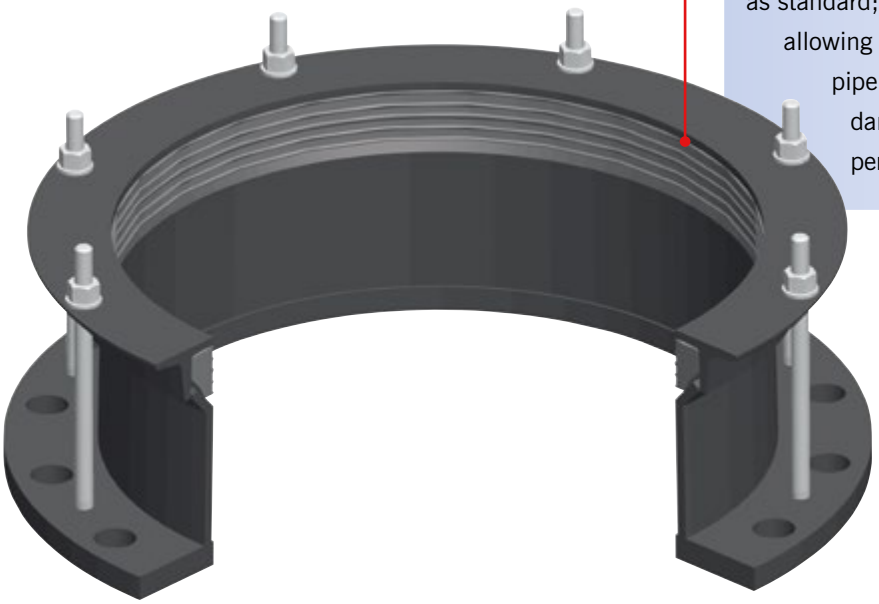
Crane BS&U are solely the provider of products and have no direct influence on, or take any responsibility for any working practices employed or depicted in the images enclosed to install such products.

MaxiFit Large Diameter

Product Design Benefits

Simple to Fit

All Large Diameter MaxiFit, MaxiStep & MaxiDaptor products (DN350 – DN700) have a long sleeve length as standard; this is a major benefit to the installer, allowing for greater cutting tolerances and a greater pipe insertion depth sealing beyond corrosion damaged pipe ends to create a safe and permanent repair.



MaxiCap & MaxiThread End Cap

Product Design Benefits

Designed for testing and blanking off a pipe end, although the assembly must have suitable external support to prevent movement under pressure. Alternatively, the MaxiCap provides a connection between a plain ended and a threaded pipe.

Dual Purpose

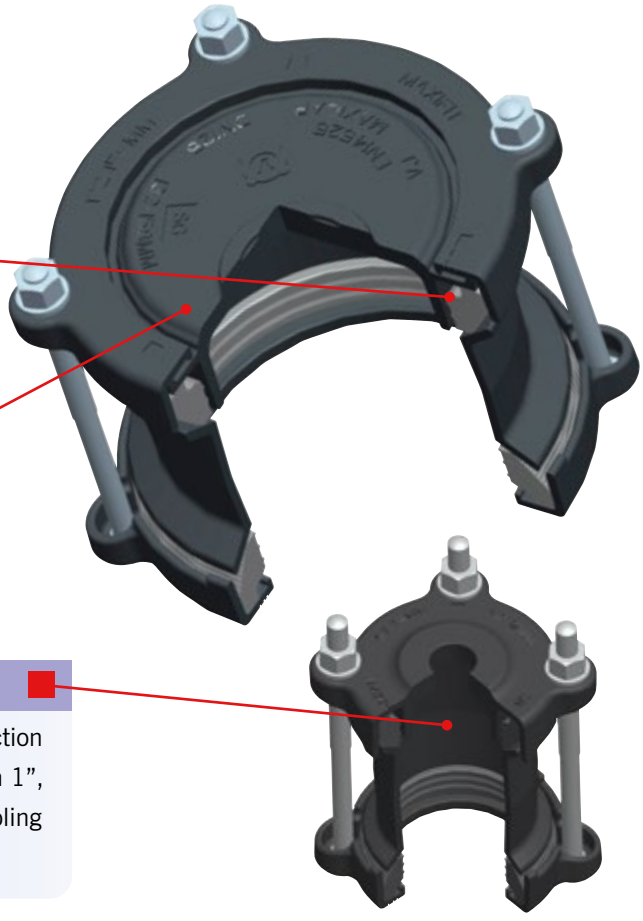
The MaxiCap end cap fits inside the end ring to the MaxiFit and can be drilled and tapped to form an outlet (up to 2" depending on size).

Enables Testing On-Site

Converts product to cap end for testing and blanking off (Although the assembly must have suitable external support to prevent movement under pressure).

Connects to Threaded Pipe

The MaxiThread threaded end cap is designed to provide a connection between plain-ended and threaded pipe. Outlets are available with 1", 1.25" and 1.5" BSP threads. It is constructed with a MaxiFit coupling body with one standard end ring and one threaded end ring.



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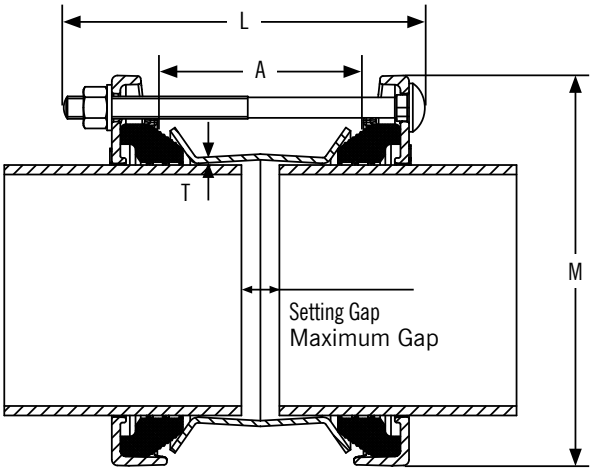
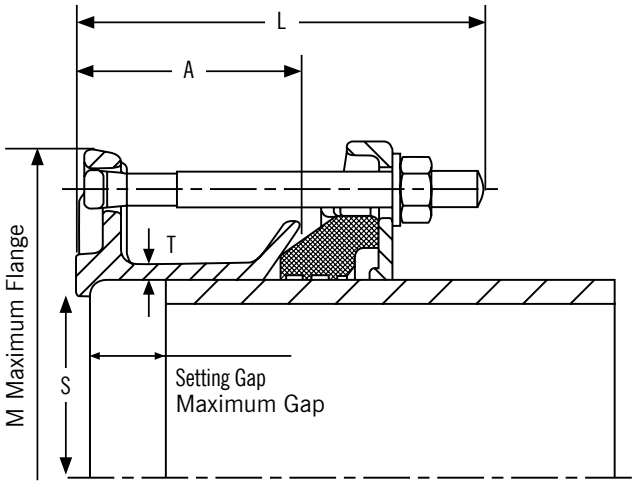
MaxiFit *Plus* Couplings, Flange Adaptors & End Caps

Datasheet 1/2

Coupling



Flange Adaptor



MaxiFit Plus Couplings & End Caps

Nominal Size (mm)	Size Range (mm)		Diameter (mm)	Overall Length (mm) L	Sleeve Length x Thickness	Sleeve	Setting Gap (mm)		Bolts No-Dia X Length	Gasket Mould	Weight (kg)	MaxiCap Available
	Min	Max	M		(A) x (T)		Min	Max				
DN50	57	74	154.5	190	95 x 3	Steel	20	40	4-M12 x 180	12392/1	2.7	✓
DN65	63	85	173.5	190	95 x 4.5	Ductile Iron	20	40	3-M12 x 180	12392/2	3.6	✓
DN65	63	85	173.5	190	95 x 3	Steel	20	40	3-M12 x 180	12392/2	3.2	✓
DN80	85	107	195.5	190	95 x 4.5	Ductile Iron	20	40	3-M12 x 180	12392/3	4.1	✓
DN80	85	107	195.5	190	95 x 3	Steel	20	40	3-M12 x 180	12392/3	3.7	✓
DN100	107	132	224.5	190	95 x 4.5	Ductile Iron	20	40	3-M12 x 180	12392/4	5.0	✓
DN100	107	132	224.5	190	95 x 3	Steel	20	40	3-M12 x 180	12392/4	4.5	✓
DN125	132	158	254.5	190	95 x 3	Steel	20	40	4-M12 x 180	12392/6	5.2	✓
DN150	158	184	280.5	190	95 x 3	Steel	20	40	4-M12 x 180	12392/7	6	✓

For other sizes of coupling, please see MaxiFit Coupling Datasheets.

MaxiFit Plus Flange Adaptors

Nominal Size (mm)	Size Range (mm)		Diameter (mm)	Bore (mm)	Overall Length (mm) L	Sleeve Length x Thickness	Flange Drilling Options				Setting Gap (mm)		Bolts No-Dia X Length	Gasket Mould	Weight (kg)
	Min	Max	M	S		(A) x (T)	Nom (DN)	Metric Drilling Specification	Nom (Inches)	Imperial Drilling Specification	Min	Max			
DN65	63	85	196.9	75	124	75 x 5	60	PN10 / 16	2.5"	ANSI 125/150	20	40	3-M12 x 115	12392/2	3.6
							65	PN10 / 16	3"	BS10 Table ADE ANSI 125/150					
							80	PN10 / 16 AS2129 CD AS4087 16							
DN80	85	107	202.5	101	124	75 x 5	80	PN10 / 16	3"	ANSI 125/150	20	40	3-M12 x 115	12392/3	3.8
									3.5"	BS10 Table ADE					
DN100	107	132	228	121	134	75 x 5	100	PN10 / 16 AS2129 CD AS4087 16	4"	BS10 Table ADE AWWA C207 D ANSI 125/150	20	40	3-M12 x 125	12392/4	4.7

For other sizes of flange adaptors, please see MaxiDaptor Datasheets.

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MaxiFit *Plus* Couplings, Flange Adaptors & End Caps

Datasheet 2/2

Technical Information

Working Pressure Rating

Water 16 bar

Gas 6 bar

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.8 bar to EN 14525

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Flange Drilling & Pressure Rating

While drilling patterns defined for the flange adaptors are compatible with the standards listed in the data sheet table, the rated working pressure of the product is as noted above.

Angularity

Couplings 6°

Flange Adaptors 3°

The above are for when the product is on maximum pipe outside diameters; can achieve larger ones with smaller pipe diameters.

Bolt Torque/Spanner

M12; Torque 55-65Nm on every bolt

Spanner size A/F 19mm

Temperature Rating of Product

EPDM -20°C to +90°C

Nitrile -20°C to +90°C

For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

End Load Due to Internal Pressure

MaxiFit DOES NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out.

Approvals

The following water contact materials used in MaxiFit are approved for use with potable water:-

Rilsan Nylon 11

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets

- WRAS

In addition to the above, MaxiFit range as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

DN40 to DN300 MaxiFit has been independently tested by BSI to confirm it meets the requirements of BS EN 14525

Materials & Relevant Standards

End Ring and Adaptor Body

Ductile Iron to BS EN 1563 Symbol EN GJS-450-10

Centre Sleeve

Sleeve material is rolled Steel to BS EN10025-2 grade S275 or Ductile Iron to BS EN1563 symbol EN GJS-450-10

Gasket

EPDM compound Grade E to BS EN 681-1, Type WA, WC

Nitrile compound to Grade G BS EN 682, Type G

Coating

Sleeve, Adaptor Body & End Ring:

- Rilsan Nylon 11 to WIS 4-52-01 Part 1

Bolts & Nuts:

- Sheraplex to WIS 4-52-03

Tee Bolts/Bolts

Standard - Steel to BS EN ISO 898-1 Property Class 4.8

Option - Stainless Steel to BS EN ISO 3506-1: grade A4 property class 50

Nuts

Standard - Steel to BS EN 4190 Grade 4

Option - Stainless Steel to BS EN ISO 3506-2: grade A4 property class 80

Washers

Stainless Steel to BS 1449:Part 2 Grade 304 S15

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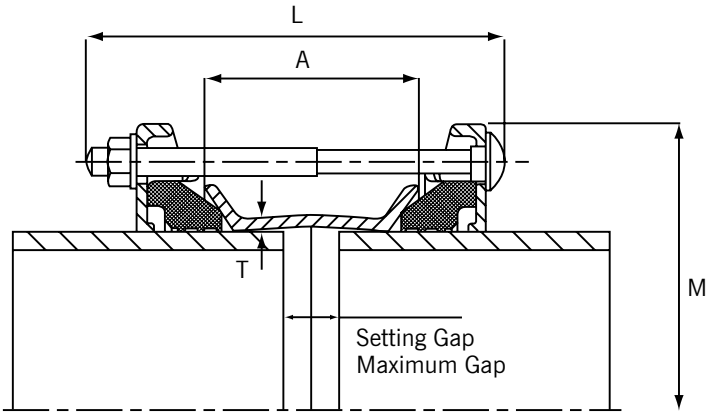
MaxiFit & MaxiFitXtra Couplings & End Caps

Datasheet 1/2

Coupling



MaxiFit Couplings - Standard Sleeve & End Caps

Nominal Size (mm)	Size Range (mm)		Diameter (mm)	Overall Length (mm)	Sleeve Length x Thickness	Setting Gap (mm)		Bolts No.-Dia x Length	Gasket Mould No.	Weight (kg)	MaxiCap Available	Maximum Threaded Outlet	MaxiFit Plus Available
	Min	Max	M	L	(A) x (T)	Min	Max						
DN40	47.9	59.5	149.5	190.0	100.0 x 4.5	20.0	40.0	2-M12 x 180	1637	3.1			
DN50	57.0	74.0	154.5	190.0	95.0 x 4.5	20.0	40.0	4-M12 x 180	12392/1	3.0	✓	1"	✓
DN65	63.0	85.0	173.5	190.0	95.0 x 4.5	20.0	40.0	4-M12 x 180	12392/2	3.6	✓	1"	✓
DN80	85.0	107.0	195.5	190.0	95.0 x 4.5	20.0	40.0	4-M12 x 180	12392/3	4.1	✓	2"	✓
DN100	107.0	132.0	224.5	190.0	95.0 x 4.5	20.0	40.0	4-M12 x 180	12392/4	5.0	✓	2"	✓
DN125	132.0	158.0	254.5	190.0	95.0 x 5.0	20.0	40.0	4-M12 x 180	12392/6	6.1	✓	2"	✓
DN150	158.0	184.0	280.5	190.0	95.0 x 5.0	20.0	40.0	4-M12 x 180	12392/7	7.0	✓	2"	✓
DN175	189.0	212.0	306.5	230.0	130.0 x 5.0	25.0	50.0	4-M12 x 220	12392/9	9.4	✓	2"	
DN200	218.0	244.0	342.5	230.0	130.0 x 5.0	25.0	50.0	4-M12 x 220	12392/10	10.9	✓	2"	
DN225	243.0	269.0	367.5	230.0	130.0 x 5.0	25.0	50.0	6-M12 x 220	12392/11	12.4	✓	2"	
DN250	266.0	295.0	399.5	230.0	130.0 x 5.0	25.0	50.0	6-M12 x 220	12392/12	14.6	✓	2"	
DN300	315.0	349.0	462.5	230.0	130.0 x 5.0	25.0	50.0	8-M12 x 220	12392/14	19.4	✓	2"	

MaxiFitXtra Couplings - Long Sleeve & End Caps

Nominal Size (mm)	Size Range (mm)		Diameter (mm)	Overall Length (mm)	Sleeve Length x Thickness	Setting Gap (mm)		Bolts No.-Dia x Length	Gasket Mould No.	Weight (kg)	MaxiCap Available	Maximum Threaded Outlet
	Min	Max	M	L	(A) x (T)	Min	Max					
DN50	57.0	74.0	154.5	285.0	200.0 x 5.5	20.0	140.0	4-M12 x 275	12392/1	4.6	✓	1"
DN65	63.0	85.0	173.5	285.0	190.0 x 5.5	20.0	130.0	4-M12 x 275	12392/2	5.2	✓	1"
DN80	85.0	107.0	195.5	285.0	200.0 x 5.5	20.0	140.0	4-M12 x 275	12392/3	6.3	✓	2"
DN100	107.0	132.0	224.5	285.0	190.0 x 5.5	20.0	130.0	4-M12 x 275	12392/4	7.2	✓	2"
DN125	132.0	158.0	254.5	285.0	190.0 x 6.0	20.0	130.0	4-M12 x 275	12392/6	9.0	✓	2"
DN150	158.0	184.0	280.5	285.0	190.0 x 6.0	20.0	130.0	4-M12 x 275	12392/7	10.3	✓	2"
DN175	189.0	212.0	306.5	285.0	190.0 x 6.0	25.0	110.0	4-M12 x 275	12392/9	12.1	✓	2"
DN200	218.0	244.0	342.5	285.0	190.0 x 6.0	25.0	110.0	4-M12 x 275	12392/10	14.1	✓	2"
DN225	243.0	269.0	367.5	350.0	250.0 x 6.0	25.0	165.0	6-M12 x 340	12392/11	18.6	✓	2"
DN250	266.0	295.0	399.5	350.0	250.0 x 6.0	25.0	165.0	6-M12 x 340	12392/12	21.4	✓	2"
DN300	315.0	349.0	462.5	350.0	240.0 x 6.0	25.0	155.0	8-M12 x 340	12392/14	27.0	✓	2"

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MaxiFit & MaxiFitXtra Couplings & End Caps

Datasheet 2/2

Technical Information

Working Pressure Rating

Water 16 bar

Gas 6 bar

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.8 bar to EN 14525

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Angularity

Couplings 6°

The above are for when the product is on maximum pipe outside diameters; can achieve larger ones with smaller pipe diameters.

Bolt Torque/Spanner

M12; Torque 55-65Nm on every bolt

Spanner size A/F 19mm

Temperature Rating of Product

EPDM -20°C to +90°C

Nitrile -20°C to +90°C

For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

End Load Due to Internal Pressure

MaxiFit DOES NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out.

Approvals

The following water contact materials used in MaxiFit are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

In addition to the above, MaxiFit range as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

DN40 to DN300 MaxiFit has been independently tested by BSI to confirm it meets the requirements of BS EN 14525

Materials & Relevant Standards

End Ring, Adaptor Body/Centre Sleeve and End Cap

Ductile Iron to BS EN 1563 Symbol EN GJS-450-10

Gasket

EPDM compound Grade E to BS EN 681-1, Type WA, WC

Nitrile compound to Grade G BS EN 682, Type G

Coating

Sleeve & End Ring:

- Rilsan Nylon 11 to WIS 4-52-01 Part 1

Bolts & Nuts:

- Sheraplex to WIS 4-52-03

Tee Bolts/Bolts

Steel to BS EN ISO 898-1 Property Class 4.8

Bolts

Standard - Steel to BS EN ISO 898-1: property class 4.8

Option - Stainless Steel to BS EN ISO 3506-1: grade A4 property class 50

Nuts

Standard - Steel to BS EN 4190 Grade 4

Option - Stainless Steel to BS EN ISO 3506-2: grade A4 property class 80

Washers

Stainless Steel to BS 1449:Part 2 Grade 304 S15

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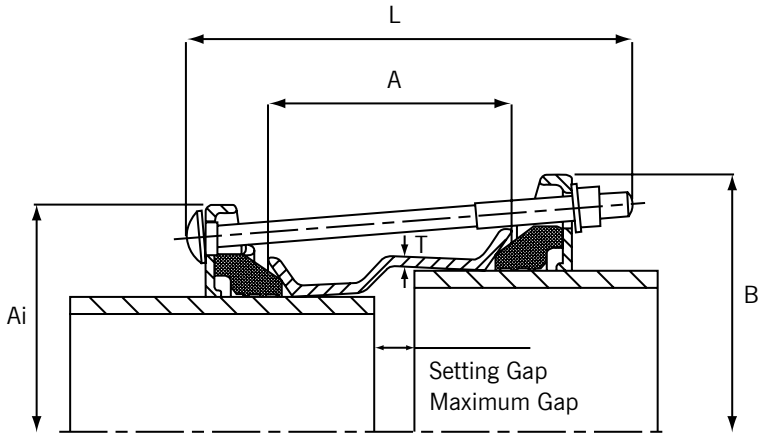
MaxiStep Reducing Couplings

Datasheet 1/2

Reducing Coupling



MaxiStep Reducing Couplings

Nom Size	Size Range (mm) Small End		Large End		Diameter (mm)		Overall Length (mm)	Sleeve Length x Thickness	Setting Gap (mm)		Bolts No.-Dia x Length	Gasket Mould No.		Weight (kg)
	Min	Max	Min	Max	Ai	B	L	(A) x (T)	Min	Max		Small End	Large End	
50/65	57.0	74.0	63.0	85.0	154.5	173.5	210.0	110.0 x 4.5	20.0	40.0	4-M12 x 200	12392/1	12392/2	3.5
50/80	57.0	74.0	85.0	107.0	154.5	195.5	210.0	110.0 x 4.5	20.0	40.0	4-M12 x 200	12392/1	12392/3	3.9
65/80	63.0	85.0	85.0	107.0	173.5	195.5	210.0	110.0 x 4.5	20.0	40.0	4-M12 x 200	12392/2	12392/3	4.2
80/100	85.0	107.0	107.0	132.0	195.5	224.5	210.0	110.0 x 4.5	20.0	40.0	4-M12 x 200	12392/3	12392/4	4.8
100/125	107.0	132.0	132.0	158.0	224.5	254.5	220.0	120.0 x 4.5	20.0	40.0	4-M12 x 210	12392/4	12392/6	6.2
125/150	132.0	158.0	158.0	184.0	254.5	280.5	220.0	120.0 x 5.0	20.0	40.0	4-M12 x 210	12392/6	12392/7	7.2
150/175	158.0	184.0	189.0	212.0	280.5	306.5	230.0	130.0 x 5.0	25.0	50.0	4-M12 x 220	12392/7	12392/9	8.8
175/200	189.0	212.0	218.0	244.0	306.5	342.5	230.0	130.0 x 5.0	25.0	50.0	4-M12 x 220	12392/9	12392/10	10.4
200/225	218.0	244.0	243.0	269.0	342.5	367.5	230.0	130.0 x 5.0	25.0	50.0	6-M12 x 220	12392/10	12392/11	12.2
225/250	243.0	269.0	266.0	295.0	367.5	399.5	230.0	130.0 x 5.0	25.0	50.0	6-M12 x 220	12392/11	12392/12	13.7

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MaxiStep Reducing Couplings

Datasheet 2/2

Technical Information

Working Pressure Rating

Water 16 bar

Gas 6 bar

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.8 bar to EN 14525

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Angularity

Reducing / Stepped Couplings 6°

The above are for when the product is on maximum pipe outside diameters; can achieve larger ones with smaller pipe diameters.

Bolt Torque/Spanner

M12; Torque 55-65Nm on every bolt

Spanner size A/F 19mm

Temperature Rating of Product

EPDM -20°C to +90°C

Nitrile -20°C to +90°C

For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

End Load Due to Internal Pressure

MaxiFit DOES NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out.

Approvals

The following water contact materials used in MaxiFit are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

In addition to the above, MaxiFit range as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

End Ring and Adaptor Body/Centre Sleeve

Ductile Iron to BS EN 1563 Symbol EN GJS-450-10

Gasket

EPDM compound Grade E to BS EN 681-1, Type WA, WC

Nitrile compound to Grade G BS EN 682, Type G

Coating

Sleeve & End Ring:

- Rilsan Nylon 11 to WIS 4-52-01 Part 1

Bolts & Nuts:

- Sheraplex to WIS 4-52-03

Tee Bolts/Bolts

Steel to BS EN ISO 898-1 Property Class 4.8

Bolts

Standard - Steel to BS EN ISO 898-1: property class 4.8

Option - Stainless Steel to BS EN ISO 3506-1: grade A4 property class 50

Nuts

Standard - Steel to BS EN 4190 Grade 4

Option - Stainless Steel to BS EN ISO 3506-2: grade A4 property class 80

Washers

Stainless Steel to BS 1449:Part 2 Grade 304 S15

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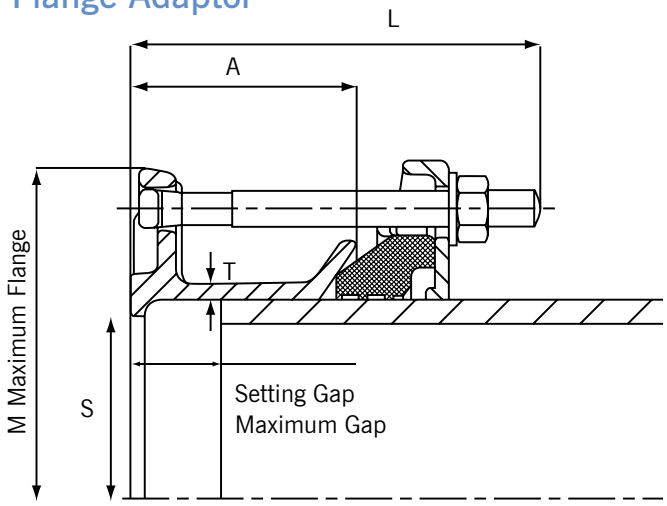
MaxiDaptor Flange Adaptors

Datasheet 1/2

Flange Adaptor



MaxiDaptor Flange Adaptors

Nom Size	Size Range (mm)		øDia (mm)	Bores (mm)	Overall Length (mm)	Sleeve Length x Thickness	Flange Drilling Options				Setting Gap (mm)		Bolts No.-Dia x Length	Gasket Mould No.	Weight (kg)	MaxiFit Plus Available
							Nom (DN)	Metric Drilling Specification	Nom (Inches)	Imperial Drilling Specification						
	Min	Max	M	S	L	(A) x (T)					Min	Max				
50	57.0	74.0	163.4	59.0	124.0	75.0 x 5.0	50	PN10 / 16	2"	ANSI 125/150	20.0	40.0	4-M12 x 115	12392/1	2.7	
									2.5"	BS10 Table ADE						
65	63.0	85.0	196.9	75.0	124.0	75.0 x 5.0	60	PN10 / 16	2.5"	ANSI 125/150	20.0	40.0	4-M12 x 115	12392/2	3.5	✓
							65	PN10 / 16								
							80	PN10 / 16 AS2129 CD AS4087 16	3"	BS10 Table ADE ANSI 125/150						
80	85.0	107.0	202.5	101.0	124.0	75.0 x 5.0	80	PN10 / 16	3"	ANSI 125/150	20.0	40.0	4-M12 x 115	12392/3	3.7	✓
									3.5"	BS10 Table ADE						
100	107.0	132.0	228.0	121.0	134.0	75.0 x 5.0	100	PN10 / 16 AS2129 CD AS4087 16	4"	BS10 Table ADE AWWA C207 D ANSI 125/150	20.0	40.0	4-M12 x 125	12392/4	4.4	✓
125	132.0	158.0	281.5	150.0	134.0	75.0 x 5.0	125	PN10 / 16 AS2129 CD	5"	BS10 Table ADE	20.0	40.0	4-M12 x 125	12392/6	5.6	
							150	PN10 / 16	6"	BS10 Table ADE AWWA C207 D ANSI 125/150						
150	158.0	184.0	281.2	173.0	134.0	75.0 x 5.0	150	PN10 / 16 AS4087 16 AS2129 CD	6"	BS10 Table AD AWWA C207 D ANSI 125/150	20.0	40.0	4-M12 x 125	12392/7	6.0	
175	189.0	212.0	336.5	202.0	133.0	75.0 x 5.0	150	PN10 / 16			25.0	40.0	4-M12 x 125	12392/9	8.3	
							200	PN10 / 16 AS2129 CD AS4087 16	8"	BS10 Table AD						
200	218.0	244.0	337.8	225.0	134.0	75.0 x 5.0	200	PN10 / 16 AS2129 CD	8"	BS10 Table AD AWWA C207 D ANSI 125/150	25.0	40.0	4-M12 x 125	12392/10	8.3	
225	243.0	269.0	401.5	252.0	144.0	85.0 x 5.0	250	PN10/16	10"	BS10 Table E	25.0	50.0	6-M12 x 135	12392/11	10.9	
250	266.0	295.0	402.1	277.0	146.0	85.0 x 5.0	250	PN10 / 16	10"	BS10 Table E	25.0	50.0	6-M12 x 135	12392/12	11.4	
300	315.0	349.0	457.8	329.0	155.0	100.0 x 5.0	300	PN10 / 16 AS2129 CD			25.0	60.0	6-M12 x 145	12392/14	14.8	

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MaxiDaptor Flange Adaptors

Datasheet 2/2

Technical Information

Working Pressure Rating

Water 16 bar

Gas 6 bar

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.8 bar to EN 14525

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Flange Drilling & Rated Pressure

While drilling patterns defined for the flange adaptors are compatible with the standards listed in the data sheet table, the rated working pressure of the product is as noted above.

Angularity

Flange Adaptors 3°

The above are for when the product is on maximum pipe outside diameters; can achieve larger ones with smaller pipe diameters.

Bolt Torque/Spanner

M12; Torque 55-65Nm on every bolt

Spanner size A/F 19mm

Temperature Rating of Product

EPDM -20°C to +90°C

Nitrile -20°C to +90°C

For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

End Load Due to Internal Pressure

MaxiFit DOES NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out.

Approvals

The following water contact materials used in MaxiDaptor are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

In addition to the above, MaxiFit range as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

DN40 to DN300 MaxiFit has been independently tested by BSI to confirm it meets the requirements of BS EN 14525

Materials & Relevant Standards

End Ring & Adaptor Body/Centre Sleeve

Ductile Iron to BS EN 1563 Symbol EN GJS-450-10

Gasket

EPDM compound Grade E to BS EN 681-1, Type WA, WC

Nitrile compound to Grade G BS EN 682, Type G

Coating

Adaptor Body & End Ring:

- Rilsan Nylon 11 to WIS 4-52-01 Part 1

Bolts & Nuts:

- Sheraplex to WIS 4-52-03

Tee Bolts/Bolts

Standard - Steel to BS EN ISO 898-1: property class 4.8

Option - Stainless Steel to BS EN ISO 3506-1: grade A4 property class 5

Nuts

Standard - Steel to BS EN 4190 Grade 4

Option - Stainless Steel to BS EN ISO 3506-2: grade A4 property class 80

Washers

Stainless Steel to BS 1449:Part 2 Grade 304 S15

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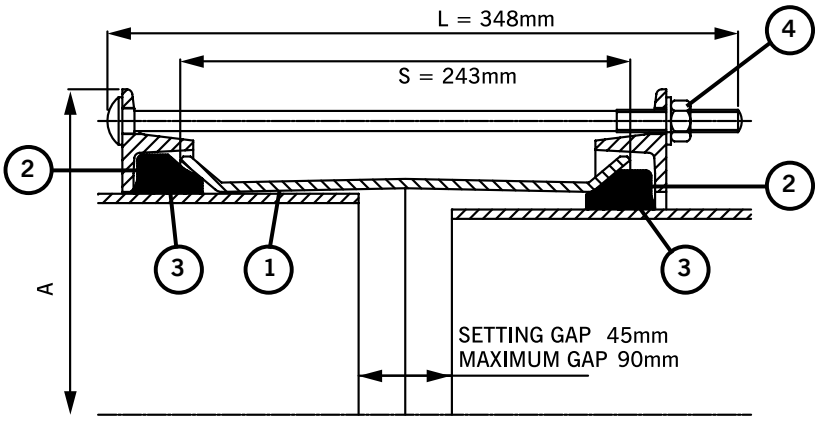
MaxiFit Large Diameter Couplings

Datasheet 1/2

Coupling



Key

1 = Sleeve
2 = End Ring
3 = Gasket
4 = Bolts, Nut & Washer

MaxiFit Large Diameter Couplings

OD Range		Dimensions	Gasket Mould No.	Bolts No.-Dia x Length	Weight (kg)
Min (mm)	Max (mm)	End Ring Diameter A (mm)			
351.0	368.0	478.0	6002	8-M12 x 340	30.1
374.5	391.5	501.5	1659	8-M12 x 340	31.9
386.0	403.0	513.0	6035	8-M12 x 340	32.6
394.3	411.3	521.5	1766	8-M12 x 340	33.2
404.8	421.8	532.0	1767	8-M12 x 340	34.0
412.0	429.0	539.0	6023	10-M12 x 340	35.1
418.2	435.2	545.0	1784	8-M12 x 340	34.9
425.0	442.0	552.0	1662	8-M12 x 340	35.5
434.5	451.5	561.5	1768	10-M12 x 340	37.0
439.0	456.0	566.0	6036	10-M12 x 340	37.3
447.2	464.2	574.0	1769	10-M12 x 340	37.9
455.0	472.0	582.0	6003	10-M12 x 340	38.5
467.0	484.0	594.0	6073	10-M12 x 340	39.3
476.0	493.0	603.0	1770	10-M12 x 340	39.9
487.0	504.3	614.5	1771	10-M12 x 340	40.7
492.0	509.0	619.0	6037	10-M12 x 340	41.1
501.9	518.9	629.0	1772	10-M12 x 340	41.8
510.0	527.0	637.0	6004	10-M12 x 340	42.3
515.0	532.0	642.0	6024	10-M12 x 340	42.8
527.0	544.0	654.0	1773	12-M12 x 340	44.1
540.1	557.1	667.0	1774	10-M12 x 340	44.5
546.0	563.0	673.0	6038	12-M12 x 340	45.5
555.3	572.3	682.5	1775	12-M12 x 340	46.1
565.0	582.0	692.0	1776	12-M12 x 340	46.8
582.2	599.2	709.0	1777	12-M12 x 340	48.0
593.0	610.0	720.0	6021	12-M12 x 340	48.8
601.0	618.0	728.0	6020	12-M12 x 340	49.4
613.0	630.0	740.0	6019	12-M12 x 340	50.3
618.0	635.0	745.0	6025	12-M12 x 340	50.6
630.0	647.0	757.0	1778	14-M12 x 340	52.0
645.2	662.2	772.0	1779	14-M12 x 340	53.0
654.0	671.0	781.0	6039	14-M12 x 340	53.8
662.0	679.0	789.0	1780	14-M12 x 340	54.3
675.0	692.0	802.0	6005	14-M12 x 340	55.2
689.0	706.0	816.0	10511/49	14-M12 x 340	56.3
695.0	712.0	822.0	6063	14-M12 x 340	56.7
710.0	727.0	837.0	6075	14-M12 x 340	57.7

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MaxiFit Large Diameter Couplings

Datasheet 2/2

Technical Information

Working Pressure Rating

Water 16 bar

Gas 6 bar

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Angularity

Couplings 6°

The above are for when the product is on maximum pipe outside diameters; can achieve larger ones with smaller pipe diameters.

Bolt Torque/Spanner

M12; Torque 55-65Nm on every bolt

Spanner size A/F 19mm

Temperature Rating of Product

EPDM -20°C to +90°C

Nitrile -20°C to +90°C

For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

End Load Due to Internal Pressure

MaxiFit DOES NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out.

Approvals

The following water contact materials used in MaxiFit are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

In addition to the above, MaxiFit range as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Sleeve

Rolled Steel to BS EN 10025-2 Grade S275

End Ring

Rolled Steel to BS EN 10025-2 Grade S275

Gasket

EPDM Grade “E” to BS EN 681-1 Type WA WRAS Listed

Nitrile compound to Grade G BS EN 682, Type G

Coating

Sleeve & End Ring:

- Rilsan Nylon 11 to WIS 4-52-01 Part 1

Bolts & Nuts:

- Sheraplex to WIS 4-52-03

Bolts

Standard - Steel to BS EN ISO 898-1 Property Class 4.8

Option - Stainless Steel to BS EN ISO 3506-1: grade A4 property class 50

Nuts

Standard - Steel to BS EN 4190 Grade 4

Option - Stainless Steel to BS EN ISO 3506-2: grade A4 property class 80

Washers

Stainless Steel to BS 1449:Part 2 Grade 304 S15

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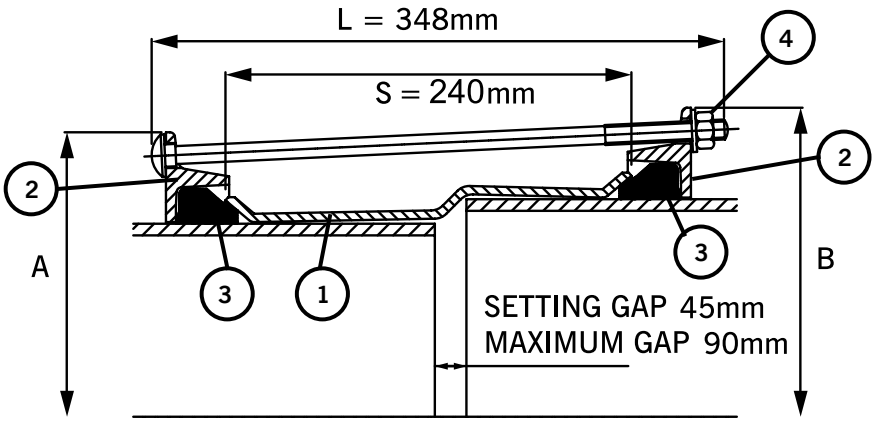
MaxiStep Large Diameter Expanded Sleeve Stepped Couplings

Datasheet 1/2

Expanded Sleeve Stepped Coupling



Key

1 = Sleeve
2 = End Ring
3 = Gasket
4 = Bolts, Nut & Washer

MaxiStep Expanded Sleeve Stepped Couplings

OD Range				Gasket Mould No.		Bolts No.-Dia x Length	Dimensions		Weight (kg)
Small End		Large End		Small End	Large End		End Ring Diameter		
Min (mm)	Max (mm)	Min (mm)	Max (mm)				Small End A (mm)	Large End B (mm)	
374.5	391.5	394.3	411.3	1659	1766	8-M12 x 340	501.5	521.5	32.1
374.5	391.5	404.8	421.8	1659	1767	8-M12 x 340	501.5	532.0	32.4
374.5	391.5	418.2	435.2	1659	1784	10-M12 x 340	501.5	545.0	33.1
386.0	403.0	412.0	429.0	6035	6023	10-M12 x 340	513.0	539.0	33.6
394.3	411.3	418.2	435.2	1766	1784	10-M12 x 340	521.5	545.0	34.1
404.8	421.8	418.2	435.2	1767	1784	10-M12 x 340	532.0	545.0	34.7
404.8	421.8	425.0	442.0	1767	1662	10-M12 x 340	532.0	552.0	34.8
425.0	442.0	434.5	451.4	1662	1768	10-M12 x 340	552.0	561.5	36.3
425.0	442.0	447.2	464.2	1662	1769	10-M12 x 340	552.0	574.0	36.5
425.0	442.0	455.0	472.0	1662	6003	10-M12 x 340	552.0	582.0	36.6
439.0	456.0	467.0	484.0	6036	6073	10-M12 x 340	566.0	594.0	37.8
455.0	472.0	467.0	484.0	6003	6073	10-M12 x 340	582.0	594.0	38.7
476.0	493.0	487.3	504.3	1770	1771	10-M12 x 340	603.0	614.5	40.1
476.0	493.0	501.9	518.9	1770	1772	10-M12 x 340	603.0	629.0	40.4
476.0	493.0	510.0	527.0	1770	6004	10-M12 x 340	603.0	637.0	40.5
492.0	509.0	510.0	527.0	6037	6004	10-M12 x 340	619.0	637.0	41.4
492.0	509.0	527.0	544.0	6037	1773	12-M12 x 340	619.0	654.0	42.2
501.9	518.9	527.0	544.0	1772	1773	12-M12 x 340	629.0	654.0	42.8
510.0	527.0	527.0	544.0	6004	1773	12-M12 x 340	637.0	654.0	43.1
527.0	544.0	540.1	557.1	1773	1774	12-M12 x 340	654.0	667.0	44.3
527.0	544.0	555.3	572.3	1773	1775	12-M12 x 340	654.0	682.5	44.6
527.0	544.0	566.5	583.5	1773	1776	12-M12 x 340	654.0	693.5	44.8
527.0	544.0	573.0	590.0	1773	6129	12-M12 x 340	654.0	700.0	44.9
527.0	544.0	582.2	599.2	1773	1777	12-M12 x 340	654.0	709.0	45.1
546.0	563.0	590.5	607.5	6038	6074	12-M12 x 340	673.0	717.5	46.3
598.0	615.0	630.0	647.0	6130	1778	14-M12 x 340	725.0	757.0	50.3
601.0	618.0	630.0	647.0	6020	1778	14-M12 x 340	728.0	757.0	50.4
601.0	618.0	645.2	662.2	6020	1779	14-M12 x 340	728.0	772.0	50.7
618.0	635.0	630.0	647.0	6025	1778	14-M12 x 340	745.0	757.0	51.3
630.0	647.0	645.2	662.2	1778	1779	14-M12 x 340	757.0	772.0	52.3
630.0	647.0	654.0	671.0	1778	6039	14-M12 x 340	757.0	781.0	52.4
630.0	647.0	662.0	679.0	1778	1780	14-M12 x 340	757.0	789.0	52.6
630.0	647.0	675.0	692.0	1778	6005	14-M12 x 340	757.0	802.0	52.8
654.0	671.0	710.0	727.0	6039	6075	14-M12 x 340	781.0	837.0	54.7
733.0	750.0	741.0	758.0	10511/46	10511/51	16-M12 x 340	860.0	868.0	60.1

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MaxiStep Large Diameter Expanded Sleeve Stepped Couplings

Datasheet 2/2

Technical Information

Working Pressure Rating

Water 16 bar

Gas 6 bar

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Angularity

Stepped Couplings 6°

The above are for when the product is on maximum pipe outside diameters; can achieve larger ones with smaller pipe diameters.

Bolt Torque/Spanner

M12; Torque 55-65Nm on every bolt

Spanner size A/F 19mm

Temperature Rating of Product

EPDM -20°C to +90°C

Nitrile -20°C to +90°C

For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

End Load Due to Internal Pressure

MaxiFit DOES NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out.

Approvals

The following water contact materials used in MaxiFit are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

In addition to the above, MaxiFit range as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Expanded Sleeve

Rolled Steel to BS EN 10025-2 Grade S275

End Ring

Rolled Steel to BS EN 10025-2 Grade S275

Gasket

EPDM Grade “E” to BS EN 681-1 Type WA WRAS Listed

Nitrile compound to Grade G BS EN 682, Type G

Coating

Sleeve & End Ring:

- Rilsan Nylon 11 to WIS 4-52-01 Part 1

Bolts & Nuts:

- Sheraplex to WIS 4-52-03

Bolts

Standard - Steel to BS EN ISO 898-1 Property Class 4.8

Option - Stainless Steel to BS EN ISO 3506-1: grade A4 property class 50

Nuts

Standard - Steel to BS EN 4190 Grade 4

Option - Stainless Steel to BS EN ISO 3506-2: grade A4 property class 80

Washers

Stainless Steel to BS 1449:Part 2 Grade 304 S15

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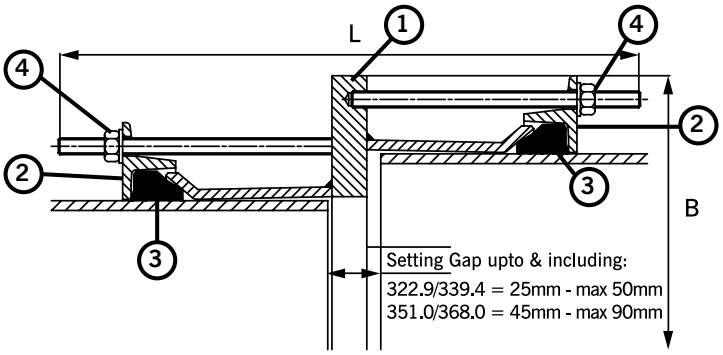
MaxiStep Large Diameter Make Up Ring Stepped Couplings

Datasheet 1/2

Make Up Ring Stepped Coupling



Key

1 = Sleeve
2 = End Ring
3 = Gasket
4 = Stud, Nut & Washer

MaxiStep Make Up Ring Stepped Couplings

OD Range				Gasket Mould		Studs		Dimensions		Weight ((kg))
Small End		Large End		Small End	Large End	Small End No.-Dia x Length	Large End No.-Dia x Length	Overall Diameter B (mm)	Overall Length L (mm)	
Min (mm)	Max (mm)	Min (mm)	Max (mm)							
315.0	332.0	351.0	368.0	8207/47	6002	8-M12 x 125	8-M12 x 205	478	326	39.3
315.0	332.0	367.0	384.0	8207/47	6097	8-M12 x 125	8-M12 x 190	494	316	45.6
315.0	332.0	374.5	391.5	8207/47	1659	8-M12 x 125	8-M12 x 205	502	335	47.3
315.0	332.0	404.8	421.8	8207/47	1767	8-M12 x 125	8-M12 x 205	532	335	53.1
315.0	332.0	418.2	435.2	8207/47	1784	8-M12 x 125	10-M12 x 205	545	337	58.6
322.9	339.4	374.5	391.5	1657	1659	8-M12 x 125	8-M12 x 205	502	331	46.7
351.0	368.0	367.0	384.0	6002	6097	8-M12 x 205	8-M12 x 205	494	410	43.7
351.0	368.0	374.5	391.5	6002	1659	8-M12 x 205	8-M12 x 205	502	410	44.9
351.0	368.0	394.3	411.3	6002	1766	8-M12 x 205	8-M12 x 205	522	410	48.1
351.0	368.0	527.0	544.0	6002	1773	8-M12 x 205	12-M12 x 205	654	423	96.0
367.0	384.0	374.5	391.5	6097	1659	8-M12 x 205	8-M12 x 205	502	410	44.2
374.5	391.5	412.0	429.0	1659	6023	8-M12 x 205	10-M12 x 205	539	410	54.0
374.5	391.5	425.0	442.0	1659	1662	8-M12 x 205	10-M12 x 205	552	411	56.6
394.3	411.3	404.8	421.8	1766	1767	8-M12 x 205	8-M12 x 205	532	410	47.1
394.3	411.3	425.0	442.0	1766	1662	8-M12 x 205	10-M12 x 205	552	410	50.8
394.3	411.3	447.2	464.2	1766	1769	8-M12 x 205	10-M12 x 205	574	415	59.6
404.8	421.8	434.5	451.5	1767	1768	8-M12 x 205	10-M12 x 205	562	420	51.9
404.8	421.8	439.0	456.0	1767	6036	8-M12 x 205	10-M12 x 205	566	415	56.9
404.8	421.8	447.2	464.2	1767	1769	8-M12 x 205	10-M12 x 205	574	415	58.6
404.8	421.8	467.0	484.0	1767	6073	8-M12 x 205	10-M12 x 205	594	415	62.8
412.0	429.0	425.0	442.0	6023	1662	10-M12 x 205	10-M12 x 205	552	410	50.0
418.2	435.2	434.5	451.5	1784	1768	10-M12 x 205	10-M12 x 205	562	411	51.3
418.2	435.2	455.0	472.0	1784	6003	10-M12 x 205	10-M12 x 205	582	415	59.4
425.0	442.0	476.0	493.0	1662	1770	10-M12 x 205	10-M12 x 205	603	411	63.2
425.0	442.0	487.0	504.0	1662	1771	10-M12 x 205	10-M12 x 205	615	411	65.7
425.0	442.0	527.0	544.0	1662	1773	10-M12 x 205	12-M12 x 205	654	392	81.6
425.0	442.0	555.3	572.3	1662	1775	10-M12 x 205	12-M12 x 205	683	421	92.3
425.0	442.0	565.0	582.0	1662	1776	10-M12 x 205	12-M12 x 205	692	422	95.9
439.0	456.0	527.0	544.0	6036	1773	10-M12 x 205	12-M12 x 205	654	419	78.7
447.2	464.2	476.0	493.0	1769	1770	10-M12 x 205	10-M12 x 205	603	410	56.7
447.2	464.2	487.0	504.3	1769	1771	10-M12 x 205	10-M12 x 205	615	415	63.7
447.2	464.4	455.0	472.0	1769	6003	10-M12 x 205	10-M12 x 205	582	411	52.9
476.0	493.0	527.0	544.0	1770	1773	10-M12 x 205	12-M12 x 205	654	415	69.7
492.0	509.0	555.3	572.3	6037	1775	10-M12 x 205	12-M12 x 205	683	416	76.1
501.9	518.9	540.1	557.1	1772	1774	10-M12 x 205	12-M12 x 205	667	411	69.7
527.0	544.0	598.0	615.0	1773	6130	12-M12 x 205	12-M12 x 205	725	413	83.9
527.0	544.0	601.0	618.0	1773	6020	12-M12 x 205	12-M12 x 205	728	417	85.2
527.0	544.0	630.0	647.0	1773	1778	12-M12 x 205	14-M12 x 205	757	422	101.0
527.0	544.0	645.2	662.2	1773	1779	12-M12 x 205	14-M12 x 205	772	423	108.0
527.0	544.0	675.0	692.0	1773	6005	12-M12 x 205	14-M12 x 205	802	412	122.0
565.0	582.0	582.2	599.2	1776	1777	12-M12 x 205	12-M12 x 205	709	401	67.0
565.0	582.0	601.0	618.0	1776	6020	12-M12 x 205	12-M12 x 205	728	415	76.5
566.5	583.5	601.0	618.0	1776	6020	12-M12 x 205	12-M12 x 205	728	415	76.5
582.2	599.2	601.0	618.0	1777	6020	12-M12 x 205	12-M12 x 205	728	410	69.1
582.2	599.2	630.0	647.0	1777	1778	12-M12 x 205	14-M12 x 205	757	421	83.2
598.0	615.0	630.0	647.0	6130	1778	14-M12 x 205	14-M12 x 205	757	411	80.0
601.0	618.0	630.0	647.0	6020	1778	14-M12 x 205	14-M12 x 205	757	411	79.5
601.0	618.0	675.0	692.0	6020	6005	14-M12 x 205	14-M12 x 205	802	419	99.0
630.0	647.0	689.0	706.0	1778	10511/49	14-M12 x 205	14-M12 x 205	816	418	94.9
630.0	647.0	710.0	727.0	1778	6075	14-M12 x 205	14-M12 x 205	837	420	106.0

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MaxiStep Large Diameter Make Up Ring Stepped Couplings

Datasheet 2/2

Technical Information

Working Pressure Rating

Water 16 bar

Gas 6 bar

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Angularity

Stepped Couplings 6°

The above are for when the product is on maximum pipe outside diameters; can achieve larger ones with smaller pipe diameters.

Bolt Torque/Spanner

M12; Torque 55-65Nm on every bolt

Spanner size A/F 19mm

Temperature Rating of Product

EPDM -20°C to +90°C

Nitrile -20°C to +90°C

For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

End Load Due to Internal Pressure

MaxiFit DOES NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out.

Approvals

The following water contact materials used in MaxiFit are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

In addition to the above, MaxiFit range as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Make Up Ring Sleeve

Mild Steel to BS EN 10025-2 Grade S275

Rolled Steel to BS EN 10025-2 Grade S275

End Ring

Rolled Steel to BS EN 10025-2 Grade S275

Gasket

EPDM Grade “E” to BS EN 681-1 Type WA WRAS Listed

Nitrile compound to Grade G BS EN 682, Type G

Coating

Sleeve & End Ring:

- Rilsan Nylon 11 to WIS 4-52-01 Part 1

Bolts & Nuts:

- Sheraplex to WIS 4-52-03

Bolts

Standard - Steel to BS EN ISO 898-1 Property Class 4.8

Option - Stainless Steel to BS EN ISO 3506-1: grade A4 property class 50

Nuts

Standard - Steel to BS EN 4190 Grade 4

Option - Stainless Steel to BS EN ISO 3506-2: grade A4 property class 80

Washers

Stainless Steel to BS 1449:Part 2 Grade 304 S15

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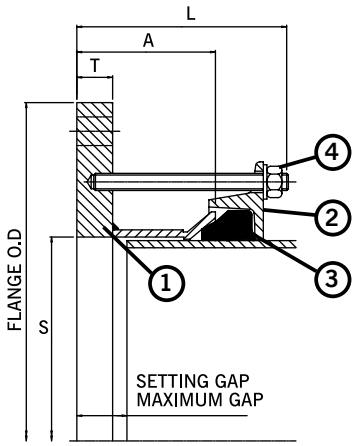
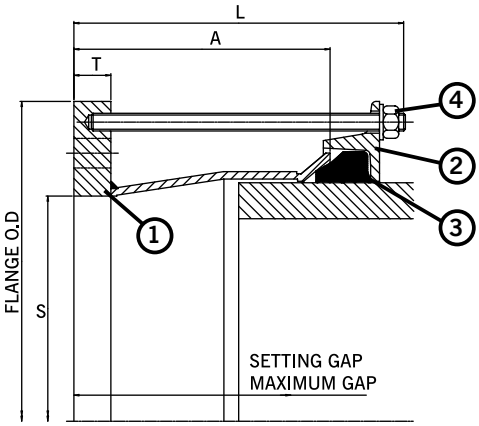
MaxiDaptor Large Diameter Flange Adaptors PN10 (OD 351.0 to 504.3)

Datasheet 1/4

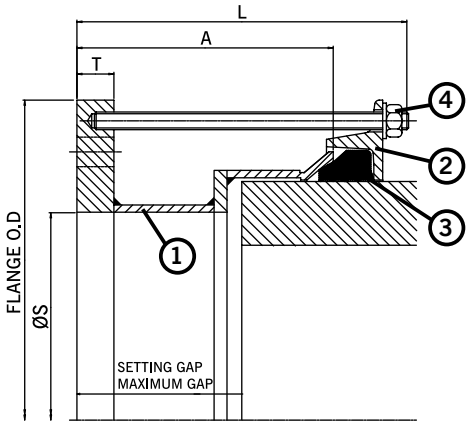
Flange Adaptor Fig. 1



Flange Adaptor Fig. 2



Flange Adaptor Fig. 3



Key

1 = Sleeve
2 = End Ring
3 = Gasket
4 = Stud, Nut & Washer

MaxiDaptor Flange Adaptors PN10

OD Range		Flange Details								Gasket Mould No.	Studs No.-Dia x Length	Setting Gap		Weight (kg)
Min (mm)	Max (mm)	Nom.	Drilling	Flange Diameter OD (mm)	Flange Bore S (mm)	Flange Thickness T (mm)	Fig.	Sleeve Length A (mm)	Overall Length L (mm)			Min (mm)	Max (mm)	
351.0	368.0	300	PN10	478.0	300.0	18	3	205	298	6002	6-M12 x 290	130	153	36.6
351.0	368.0	350	PN10	505.0	350.0	18	1	120	218	6002	8-M12 x 205	45	68	27.4
351.0	368.0	350	PN10	505.0	370.0	18	1	120	218	6002	8-M12 x 205	45	68	28.9
367.0	384.0	300	PN10	494.0	300.0	18	3	235	313	6097	6-M12 x 305	160	183	41.4
367.0	384.0	350	PN10	505.0	350.0	18	1	120	213	6097	8-M12 x 205	45	68	29.5
374.5	391.5	300	PN10	501.0	300.0	18	3	205	298	1659	6-M12 x 290	130	153	41.2
374.5	391.5	350	PN10	505.0	350.0	18	1	120	213	1659	8-M12 x 205	45	68	29.8
374.5	391.5	350	PN10	505.0	393.5	18	1	120	218	1659	8-M12 x 205	45	68	26.2
374.5	391.5	400	PN10	565.0	393.5	25	1	120	218	1659	8-M12 x 205	45	68	39.4
394.3	411.3	350	PN10	522.0	350.0	18	2	205	303	1766	8-M12 x 290	130	153	37.4
394.3	411.3	350	PN10	505.0	397.5	18	2	205	303	1766	8-M12 x 290	130	153	33.5
394.3	411.3	400	PN10	565.0	400.0	25	1	120	220	1766	8-M12 x 205	45	68	39.3
394.3	411.3	400	PN10	565.0	413.5	25	1	120	220	1766	8-M12 x 205	45	68	37.6
404.8	421.8	350	PN10	532.0	350.0	18	3	235	313	1767	8-M12 x 305	160	183	44.3
404.8	421.8	400	PN10	565.0	400.0	18	1	120	213	1767	8-M12 x 205	45	68	33.4
404.8	421.8	400	PN10	565.0	424.0	18	1	120	218	1767	8-M12 x 205	45	68	31.2
418.2	435.2	400	PN10	565.0	400.0	18	1	120	213	1784	8-M12 x 205	45	68	33.8
418.2	435.2	400	PN10	565.0	437.0	18	1	120	218	1784	8-M12 x 205	45	68	30.4
425.0	442.0	350	PN10	552.0	350.0	18	3	235	313	1662	8-M12 x 305	160	183	48.5
425.0	442.0	400	PN10	565.0	400.0	18	1	120	218	1662	8-M12 x 205	45	68	34.1
425.0	442.0	400	PN10	565.0	444.0	18	1	120	218	1662	8-M12 x 205	45	68	30.0
434.4	451.4	400	PN10	565.0	400.0	18	2	205	298	1768	8-M12 x 290	130	153	40.4
434.4	451.4	400	PN10	565.0	448.0	18	2	205	298	1768	8-M12 x 290	130	153	35.9
447.2	464.2	400	PN10	575.0	400.0	18	2	205	298	1769	8-M12 x 290	130	153	41.9
447.2	464.2	400	PN10	575.0	448.0	18	2	205	298	1769	8-M12 x 290	130	153	37.4
455.0	472.0	400	PN10	582.0	400.0	18	3	240	333	6003	8-M12 x 325	165	188	48.7
455.0	472.0	450	PN10	615.0	450.0	23	1	120	213	6003	10-M12 x 205	45	68	42.0
455.0	472.0	450	PN10	615.0	474.0	23	1	120	218	6003	10-M12 x 205	45	68	38.9
467.0	484.0	400	PN10	594.0	400.0	23	3	205	303	6073	8-M12 x 290	130	153	54.7
467.0	484.0	450	PN10	615.0	450.0	23	1	120	218	6073	10-M12 x 205	45	68	42.4
476.0	493.0	400	PN10	603.0	400.0	23	3	240	338	1770	8-M12 x 325	170	193	60.6
476.0	493.0	450	PN10	615.0	450.0	23	1	120	218	1770	10-M12 x 205	45	68	42.7
476.0	493.0	450	PN10	615.0	495.0	23	1	120	218	1770	10-M12 x 205	45	68	36.7
476.0	493.0	500	PN10	670.0	495.0	25	1	120	218	1770	10-M12 x 205	45	68	49.0
487.3	504.3	400	PN10	615.0	400.0	23	3	245	338	1771	8-M12 x 325	170	193	63.8
487.3	504.3	450	PN10	615.0	450.0	23	2	205	303	1771	10-M12 x 290	130	153	49.8
487.3	504.3	450	PN10	615.0	499.0	23	2	205	303	1771	10-M12 x 290	130	153	43.2
487.3	504.3	500	PN10	670.0	500.0	23	1	120	218	1771	10-M12 x 205	45	68	46.4

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MaxiDaptor Large Diameter Flange Adaptors PN10 (OD 351.0 to 504.3)

Datasheet 2/4

Technical Information

Working Pressure Rating

Water 10 bar

Gas 6 bar

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Angularity

Flange Adaptors 3°

The above are for when the product is on maximum pipe outside diameters; can achieve larger ones with smaller pipe diameters.

Bolt Torque/Spanner

M12; Torque 55-65Nm on every bolt

Spanner size A/F 19mm

Temperature Rating of Product

EPDM -20°C to +90°C

Nitrile -20°C to +90°C

For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

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MaxiFit DOES NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out.

Approvals

The following water contact materials used in MaxiFit are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

In addition to the above, MaxiFit range as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Flange Adaptor Body

Flange:

- Mild Steel to BS EN 10025-2 Grade S275

Sleeve:

- Rolled Steel to BS EN 10025-2 Grade S275

End Ring

Rolled Steel to BS EN 10025-2 Grade S275

Gasket

EPDM Grade “E” to BS EN 681-1 Type WA WRAS Listed

Nitrile compound to Grade G BS EN 682, Type G

Coating

Flange Adaptor Body & End Ring:

- Rilsan Nylon 11 to WIS 4-52-01 Part 1

Bolts & Nuts:

- Sheraplex to WIS 4-52-03

Studs

Standard - Steel to BS EN ISO 898-1 Property Class 4.8

Option - Stainless Steel to BS EN ISO 3506-1: grade A4 property class 50

Nuts

Standard - Steel to BS EN 4190 Grade 4

Option - Stainless Steel to BS EN ISO 3506-2: grade A4 property class 80

Washers

Stainless Steel to BS 1449:Part 2 Grade 304 S15

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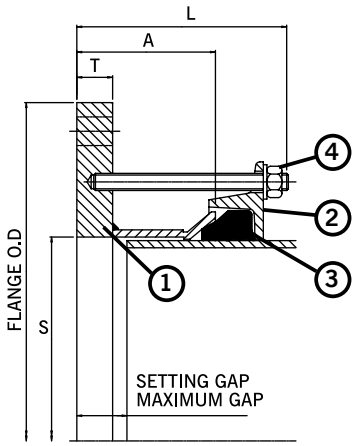
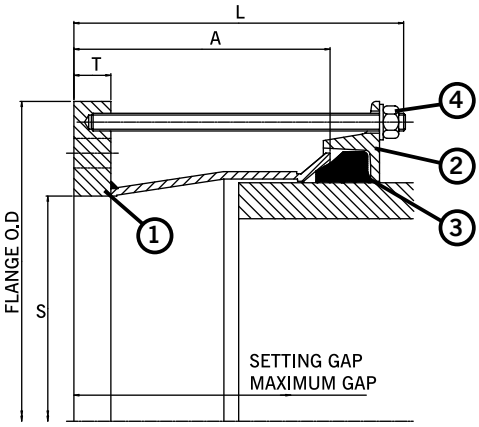
MaxiDaptor Large Diameter Flange Adaptors PN10 (OD 492.0 to 716.0)

Datasheet 3/4

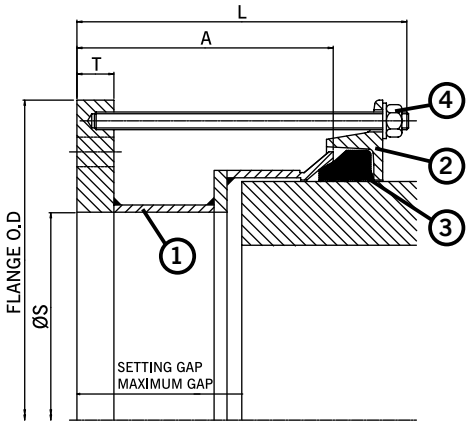
Flange Adaptor Fig. 1



Flange Adaptor Fig. 2



Flange Adaptor Fig. 3



Key

1 = Sleeve
2 = End Ring
3 = Gasket
4 = Stud, Nut & Washer

MaxiDaptor Flange Adaptors PN10

OD Range		Flange Details								Gasket Mould No.	Studs No.-Dia x Length	Setting Gap		Weight (kg)
Min (mm)	Max (mm)	Nom.	Drilling	Flange Diameter OD (mm)	Flange Bore S (mm)	Flange Thickness T (mm)	Fig.	Sleeve Length A (mm)	Overall Length L (mm)			Min (mm)	Max (mm)	
492.0	509.0	500	PN10	670.0	511.0	23	1	120	218	6037	10-M12 x 205	45	68	45.0
501.9	518.9	450	PN10	630.0	450.0	23	2	205	303	1772	10-M12 x 290	130	153	52.3
501.9	518.9	450	PN10	615.0	485.5	23	2	205	303	1772	10-M12 x 290	130	153	47.6
501.9	518.9	500	PN10	670.0	500.0	23	1	120	218	1772	10-M12 x 205	45	68	47.0
501.9	518.9	500	PN10	670.0	521.0	23	1	120	218	1772	10-M12 x 205	45	68	43.9
510.0	527.0	450	PN10	637.0	450.0	23	2	205	303	6004	10-M12 x 290	130	153	53.9
510.0	527.0	450	PN10	637.0	494.0	23	2	205	303	6004	10-M12 x 290	130	153	48.0
510.0	527.0	500	PN10	670.0	500.0	23	1	120	220	6004	10-M12 x 205	45	68	47.2
527.0	544.0	500	PN10	670.0	500.0	23	1	120	218	1773	10-M12 x 205	45	68	47.8
527.0	544.0	500	PN10	670.0	546.0	23	1	120	218	1773	10-M12 x 205	45	68	47.1
540.1	557.1	450	PN10	667.0	450.0	23	3	250	338	1774	10-M12 x 325	175	198	71.2
540.1	557.1	500	PN10	670.0	500.0	23	2	205	303	1774	10-M12 x 290	130	153	55.0
540.1	557.1	500	PN10	670.0	550.0	23	2	205	303	1774	10-M12 x 290	130	153	47.6
555.3	572.3	500	PN10	684.0	500.0	23	2	205	303	1775	10-M12 x 290	130	153	58.2
555.3	572.3	500	PN10	684.0	550.0	23	2	205	303	1775	10-M12 x 290	130	153	50.8
566.5	583.5	500	PN10	694.0	500.0	23	2	205	303	1776	10-M12 x 290	130	153	60.5
566.5	583.5	500	PN10	694.0	550.0	23	2	205	303	1776	10-M12 x 290	130	153	53.1
582.2	599.2	500	PN10	709.0	500.0	23	3	205	303	1777	10-M12 x 290	130	153	72.6
582.2	599.2	500	PN10	670.0	540.0	23	3	205	303	1777	10-M12 x 290	130	153	64.5
582.2	599.2	600	PN10	780.0	600.0	25	1	120	218	1777	10-M12 x 205	45	68	59.1
601.0	618.0	500	PN10	728.0	500.0	23	3	255	338	6020	10-M12 x 325	180	203	81.3
601.0	618.0	600	PN10	780.0	600.0	25	1	120	218	6020	10-M12 x 205	45	68	59.8
618.0	635.0	600	PN10	780.0	600.0	23	1	120	218	6025	10-M12 x 205	45	68	57.5
630.0	647.0	600	PN10	780.0	600.0	23	1	120	218	1778	10-M12 x 205	45	68	58.0
630.0	647.0	600	PN10	780.0	649.0	23	1	120	218	1778	10-M12 x 205	45	68	49.4
645.2	662.2	600	PN10	780.0	600.0	23	2	205	303	1779	10-M12 x 290	130	153	66.8
645.2	662.2	600	PN10	780.0	649.0	23	2	205	303	1779	10-M12 x 290	130	153	58.1
662.0	679.0	600	PN10	790.0	600.0	23	2	205	298	1780	10-M12 x 290	130	153	69.3
662.0	679.0	600	PN10	790.0	653.0	23	2	205	303	1780	10-M12 x 290	130	153	60.0
675.0	692.0	600	PN10	802.0	600.0	23	2	205	303	6005	10-M12 x 290	130	153	72.3
675.0	692.0	600	PN10	802.0	653.0	23	2	205	303	6005	10-M12 x 290	130	153	63.0
689.0	706.0	600	PN10	816.0	600.0	23	3	260	338	10511/49	10-M12 x 325	185	210	90.3
695.0	712.0	700	PN10	895.0	714.0	23	1	120	218	6063	12-M12 x 205	45	68	66.1
699.0	716.0	700	PN10	895.0	718.0	23	1	120	218	10511/50	12-M12 x 205	45	68	65.5

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MaxiDaptor Large Diameter Flange Adaptors PN10 (OD 492.0 to 716.0)

Datasheet 4/4

Technical Information

Working Pressure Rating

Water 10 bar

Gas 6 bar

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Angularity

Flange Adaptors 3°

The above are for when the product is on maximum pipe outside diameters; can achieve larger ones with smaller pipe diameters.

Bolt Torque/Spanner

M12; Torque 55-65Nm on every bolt

Spanner size A/F 19mm

Temperature Rating of Product

EPDM -20°C to +90°C

Nitrile -20°C to +90°C

For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

End Load Due to Internal Pressure

MaxiFit DOES NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out.

Approvals

The following water contact materials used in MaxiFit are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

In addition to the above, MaxiFit range as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Flange Adaptor Body

Flange:

- Mild Steel to BS EN 10025-2 Grade S275

Sleeve:

- Rolled Steel to BS EN 10025-2 Grade S275

End Ring

Rolled Steel to BS EN 10025-2 Grade S275

Gasket

EPDM Grade “E” to BS EN 681-1 Type WA WRAS Listed

Nitrile compound to Grade G BS EN 682, Type G

Coating

Flange Adaptor Body & End Ring:

- Rilsan Nylon 11 to WIS 4-52-01 Part 1

Bolts & Nuts:

- Sheraplex to WIS 4-52-03

Studs

Standard - Steel to BS EN ISO 898-1 Property Class 4.8

Option - Stainless Steel to BS EN ISO 3506-1: grade A4 property class 50

Nuts

Standard - Steel to BS EN 4190 Grade 4

Option - Stainless Steel to BS EN ISO 3506-2: grade A4 property class 80

Washers

Stainless Steel to BS 1449:Part 2 Grade 304 S15

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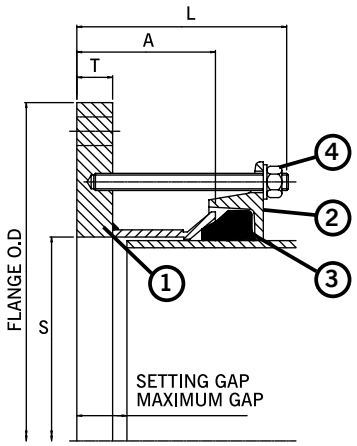
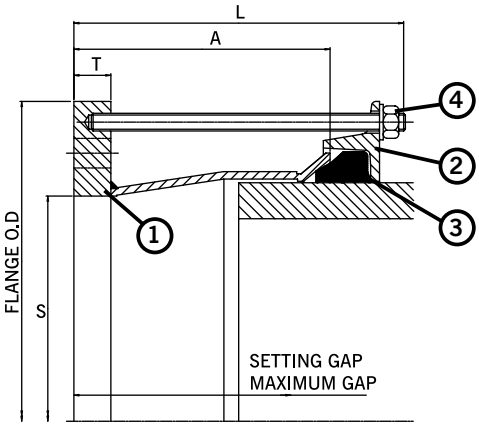
MaxiDaptor Large Diameter Flange Adaptors PN16 (OD 348.5 to 572.3)

Datasheet 1/4

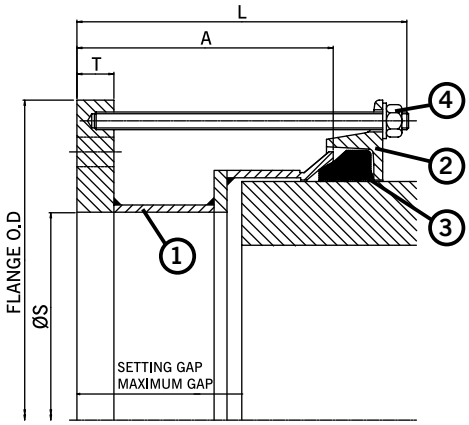
Flange Adaptor Fig. 1



Flange Adaptor Fig. 2



Flange Adaptor Fig. 3



Key

1 = Sleeve
2 = End Ring
3 = Gasket
4 = Stud, Nut & Washer

MaxiDaptor Flange Adaptors PN16

OD Range		Flange Details								Gasket Mould No.	Studs No.-Dia x Length	Setting Gap		Weight (kg)
Min (mm)	Max (mm)	Nom.	Drilling	Flange Diameter OD (mm)	Flange Bore S (mm)	Flange Thickness T (mm)	Fig.	Sleeve Length A (mm)	Overall Length L (mm)			Min (mm)	Max (mm)	
348.5	365.5	350	PN16	520.0	367.5	18	2	120	218	6008	8-M12 x 205	45	68	28.5
351.0	368.0	300	PN16	478.0	300.0	18	3	240	333	6002	6-M12 x 325	165	188	38.5
351.0	368.0	300	PN16	478.0	329.0	18	3	240	333	6002	6-M12 x 325	165	188	36.5
351.0	368.0	350	PN16	520.0	370.0	18	1	120	218	6002	8-M12 x 205	45	68	28.6
374.5	391.5	300	PN16	502.0	300.0	18	3	240	333	1659	6-M12 x 325	160	183	43.1
374.5	391.5	350	PN16	520.0	350.0	18	1	120	218	1659	8-M12 x 205	45	68	31.0
374.5	391.5	350	PN16	520.0	393.5	18	1	120	218	1659	8-M12 x 205	45	68	27.5
374.5	391.5	400	PN16	580.0	393.5	25	1	120	218	1659	8-M12 x 205	45	68	41.6
394.3	411.3	350	PN16	522.0	350.0	18	2	205	298	1766	8-M12 x 290	130	153	37.1
394.3	411.3	350	PN16	520.0	397.5	18	2	205	303	1766	8-M12 x 290	130	153	33.1
394.3	411.3	400	PN16	580.0	413.5	25	1	120	220	1766	8-M12 x 205	45	68	39.8
404.8	421.8	400	PN16	580.0	400.0	18	1	120	213	1767	8-M12 x 205	45	68	34.9
404.8	421.8	400	PN16	580.0	424.0	18	1	120	218	1767	8-M12 x 205	45	68	32.8
418.2	435.2	400	PN16	580.0	437.0	18	1	120	218	1784	8-M12 x 205	45	68	32.0
425.0	442.0	400	PN16	580.0	400.0	18	1	120	218	1662	8-M12 x 205	45	68	35.7
425.0	442.0	400	PN16	580.0	444.0	18	1	120	218	1662	8-M12 x 205	45	68	31.6
434.4	451.4	400	PN16	580.0	448.0	18	2	205	303	1768	8-M12 x 290	130	153	37.4
447.2	464.2	400	PN16	580.0	400.0	18	2	205	303	1769	8-M12 x 290	130	153	42.2
447.2	464.2	400	PN16	580.0	448.0	18	2	205	303	1769	8-M12 x 290	130	153	37.7
455.0	472.0	400	PN16	582.0	400.0	18	2	205	298	6003	8-M12 x 290	130	153	42.6
455.0	472.0	450	PN16	640.0	450.0	23	1	120	218	6003	10-M12 x 205	45	68	46.0
455.0	472.0	450	PN16	640.0	474.0	23	1	120	218	6003	10-M12 x 205	45	68	42.8
462.5	479.5	400	PN16	590.0	440.0	25	2	205	303	10511/40	8-M12 x 290	130	153	45.7
467.0	484.0	450	PN16	640.0	486.0	23	1	120	218	6073	10-M12 x 205	45	68	41.6
476.0	493.0	400	PN16	603.0	400.0	23	3	255	338	1770	8-M12 x 325	180	203	60.8
476.0	493.0	450	PN16	640.0	495.0	23	1	120	218	1770	10-M12 x 205	45	68	40.7
487.3	504.3	450	PN16	640.0	506.5	23	1	120	218	1771	10-M12 x 205	45	68	39.4
487.3	504.3	500	PN16	715.0	506.5	23	1	120	218	1771	10-M12 x 205	45	68	53.2
501.9	518.9	450	PN16	640.0	485.5	23	2	205	303	1772	10-M12 x 290	130	153	48.7
501.9	518.9	500	PN16	715.0	500.0	23	1	120	218	1772	10-M12 x 205	45	68	54.7
501.9	518.9	500	PN16	715.0	521.0	23	1	120	218	1772	10-M12 x 205	45	68	51.7
510.0	527.0	450	PN16	640.0	494.0	23	2	205	303	6004	10-M12 x 290	130	153	47.9
510.0	527.0	500	PN16	715.0	500.0	23	1	120	218	6004	10-M12 x 205	45	68	54.9
527.0	544.0	500	PN16	715.0	500.0	23	1	120	218	1773	10-M12 x 205	45	68	55.6
527.0	544.0	500	PN16	715.0	546.0	23	1	120	218	1773	10-M12 x 205	45	68	48.8
540.1	557.1	500	PN16	715.0	559.0	23	1	120	218	1774	10-M12 x 205	45	68	47.2
555.3	572.3	500	PN16	715.0	550.0	23	2	205	303	1775	10-M12 x 290	130	153	56.0
555.3	572.3	600	PN16	840.0	574.5	25	1	120	218	1775	10-M12 x 205	45	68	62.3

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MaxiDaptor Large Diameter Flange Adaptors PN16 (OD 348.5 to 572.3)

Datasheet 2/4

Technical Information

Working Pressure Rating

Water 16 bar

Gas 6 bar

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Angularity

Flange Adaptors 3°

The above are for when the product is on maximum pipe outside diameters; can achieve larger ones with smaller pipe diameters.

Bolt Torque/Spanner

M12; Torque 55-65Nm on every bolt

Spanner size A/F 19mm

Temperature Rating of Product

EPDM -20°C to +90°C

Nitrile -20°C to +90°C

For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

End Load Due to Internal Pressure

MaxiFit DOES NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out.

Approvals

The following water contact materials used in MaxiFit are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

In addition to the above, MaxiFit range as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Flange Adaptor Body

Flange:

- Mild Steel to BS EN 10025-2 Grade S275

Sleeve:

- Rolled Steel to BS EN 10025-2 Grade S275

End Ring

Rolled Steel to BS EN 10025-2 Grade S275

Gasket

EPDM Grade “E” to BS EN 681-1 Type WA WRAS Listed

Nitrile compound to Grade G BS EN 682, Type G

Coating

Flange Adaptor Body & End Ring:

- Rilsan Nylon 11 to WIS 4-52-01 Part 1

Bolts & Nuts:

- Sheraplex to WIS 4-52-03

Studs

Standard - Steel to BS EN ISO 898-1 Property Class 4.8

Option - Stainless Steel to BS EN ISO 3506-1: grade A4 property class 50

Nuts

Standard - Steel to BS EN 4190 Grade 4

Option - Stainless Steel to BS EN ISO 3506-2: grade A4 property class 80

Washers

Stainless Steel to BS 1449:Part 2 Grade 304 S15

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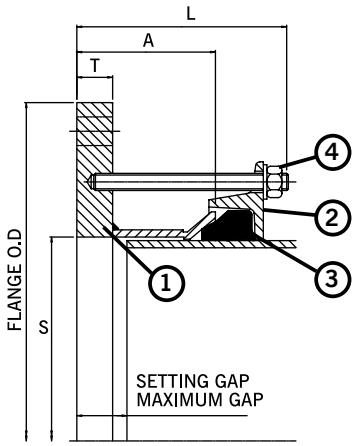
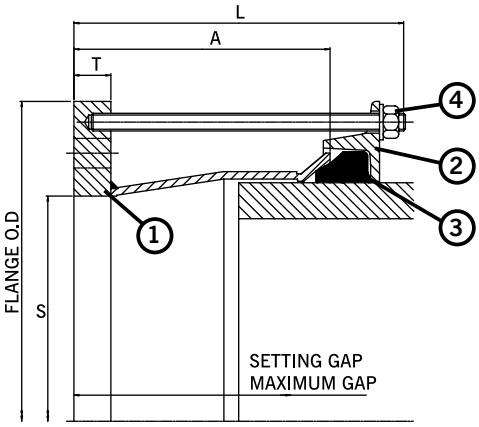
MaxiDaptor Large Diameter Flange Adaptors PN16 (OD 566.5 to 692.0)

Datasheet 3/4

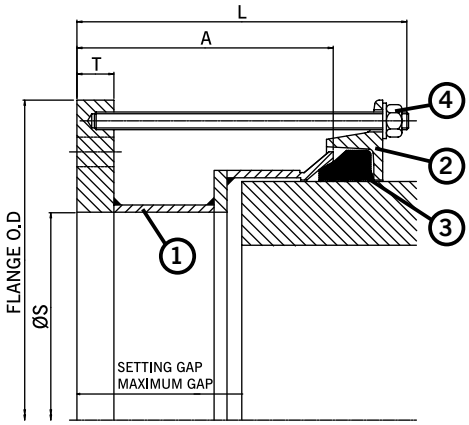
Flange Adaptor Fig. 1



Flange Adaptor Fig. 2



Flange Adaptor Fig. 3



Key

1 = Sleeve
2 = End Ring
3 = Gasket
4 = Stud, Nut & Washer

MaxiDaptor Flange Adaptors PN16

OD Range		Flange Details								Gasket Mould No.	Studs No.-Dia x Length	Setting Gap		Weight (kg)
Min (mm)	Max (mm)	Nom.	Drilling	Flange Diameter OD (mm)	Flange Bore S (mm)	Flange Thickness T (mm)	Fig.	Sleeve Length A (mm)	Overall Length L (mm)			Min (mm)	Max (mm)	
566.5	583.5	500	PN16	715.0	500.0	23	2	205	303	1776	10-M12 x 290	130	153	63.6
566.5	583.5	500	PN16	715.0	550.0	23	2	205	303	1776	10-M12 x 290	130	153	56.2
582.2	599.2	500	PN16	715.0	560.0	23	3	205	303	1777	10-M12 x 290	130	153	60.4
582.2	599.2	600	PN16	840.0	601.0	25	1	120	218	1777	10-M12 x 205	45	68	72.5
601.0	618.0	600	PN16	840.0	600.0	25	1	120	218	6020	10-M12 x 205	45	68	73.4
601.0	618.0	600	PN16	840.0	620.0	25	1	120	218	6020	10-M12 x 205	45	68	69.7
613.0	630.0	600	PN16	840.0	632.0	23	1	120	218	6019	10-M12 x 205	45	68	64.4
618.0	635.0	600	PN16	840.0	637.0	23	1	120	218	6025	10-M12 x 205	45	68	63.6
630.5	647.5	600	PN16	840.0	600.0	23	1	120	218	1778	10-M12 x 205	45	68	70.6
630.5	647.5	600	PN16	840.0	649.5	23	1	120	218	1778	10-M12 x 205	45	68	61.8
645.2	662.2	600	PN16	840.0	664.0	23	1	120	218	1779	10-M12 x 205	45	68	59.7
662.0	679.0	600	PN16	840.0	681.0	23	1	120	218	1780	10-M12 x 205	45	68	57.1
675.0	692.0	600	PN16	840.0	653.0	23	2	205	303	6005	10-M12 x 290	130	153	70.6

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MaxiDaptor Large Diameter Flange Adaptors PN16 (OD 566.5 to 692.0)

Datasheet 4/4

Technical Information

Working Pressure Rating

Water 16 bar

Gas 6 bar

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Angularity

Flange Adaptors 3°

The above are for when the product is on maximum pipe outside diameters; can achieve larger ones with smaller pipe diameters.

Bolt Torque/Spanner

M12; Torque 55-65Nm on every bolt

Spanner size A/F 19mm

Temperature Rating of Product

EPDM -20°C to +90°C

Nitrile -20°C to +90°C

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Approvals

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Rilsan Nylon 11:

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EPDM Gaskets:

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Materials & Relevant Standards

Flange Adaptor Body

Flange:

- Mild Steel to BS EN 10025-2 Grade S275

Sleeve:

- Rolled Steel to BS EN 10025-2 Grade S275

End Ring

Rolled Steel to BS EN 10025-2 Grade S275

Gasket

EPDM Grade “E” to BS EN 681-1 Type WA WRAS Listed

Nitrile compound to Grade G BS EN 682, Type G

Coating

Flange Adaptor Body & End Ring:

- Rilsan Nylon 11 to WIS 4-52-01 Part 1

Bolts & Nuts:

- Sheraplex to WIS 4-52-03

Studs

Standard - Steel to BS EN ISO 898-1 Property Class 4.8

Option - Stainless Steel to BS EN ISO 3506-1: grade A4 property class 50

Nuts

Standard - Steel to BS EN 4190 Grade 4

Option - Stainless Steel to BS EN ISO 3506-2: grade A4 property class 80

Washers

Stainless Steel to BS 1449:Part 2 Grade 304 S15

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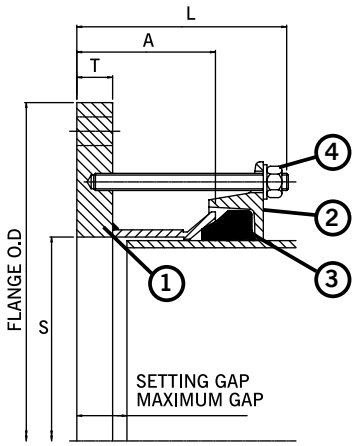
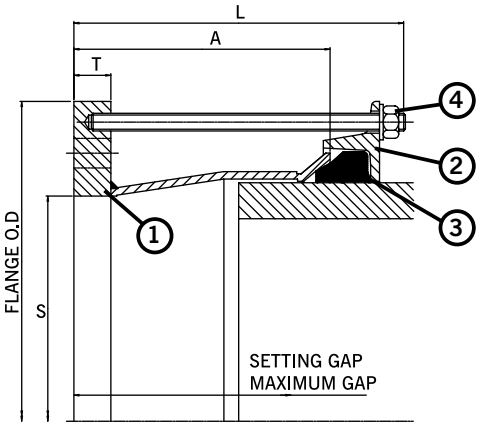
MaxiDaptor Large Diameter Flange Adaptors ANSI Flange Drilling

Datasheet 1/2

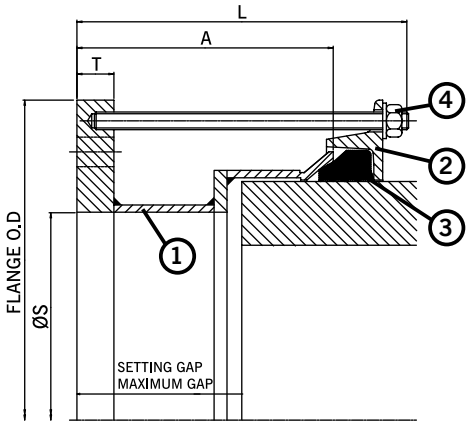
Flange Adaptor Fig. 1



Flange Adaptor Fig. 2



Flange Adaptor Fig. 3



Key

1 = Sleeve
2 = End Ring
3 = Gasket
4 = Stud, Nut & Washer

MaxiDaptor Flange Adaptors ANSI

OD Range		Flange Details								Gasket Mould No.	Studs No.-Dia x Length	Setting Gap		Weight (kg)
Min (mm)	Max (mm)	Nom.	Drilling	Flange Diameter OD (mm)	Flange Bore S (mm)	Flange Thickness T (mm)	Fig.	Sleeve Length A (mm)	Overall Length L (mm)			Min (mm)	Max (mm)	
351.0	368.0	14”	ANSI150	533.0	370.0	25	1	120	218	6002	6-M12 x 205	45	68	35.9
374.5	391.5	14”	ANSI150	533.0	393.5	25	1	120	218	1659	6-M12 x 205	45	68	34.0
386.0	403.0	14”	ANSI150	533.0	397.5	25	2	205	218	6035	6-M12 x 290	130	153	39.0
394.3	411.3	14”	ANSI150	533.0	397.5	25	2	205	218	1766	6-M12 x 290	130	153	39.2
404.8	421.8	16”	ANSI150	597.0	424.0	25	1	120	218	1767	8-M12 x 205	45	68	42.2
425.0	442.0	16”	ANSI150	597.0	444.0	25	1	120	218	1662	8-M12 x 205	45	68	40.3
434.4	451.4	16”	ANSI150	597.0	453.5	25	1	120	303	1768	8-M12 x 205	45	68	39.4
439.0	456.0	16”	ANSI150	597.0	458.0	25	1	120	303	6036	8-M12 x 205	45	68	39.0
447.2	464.2	16”	ANSI150	597.0	448.0	25	2	205	303	1769	8-M12 x 290	130	153	46.3
455.0	472.0	16”	ANSI150	597.0	448.0	25	2	205	303	6003	8-M12 x 290	130	153	46.4
455.0	472.0	18”	ANSI150	635.0	474.0	25	1	120	303	6003	8-M12 x 205	45	68	44.0
487.3	504.3	18”	ANSI150	635.0	499.0	25	2	205	303	1771	8-M12 x 290	130	153	47.8
492.0	509.0	18”	ANSI150	635.0	499.0	25	2	205	303	6037	8-M12 x 290	130	153	47.8
501.9	518.9	18”	ANSI150	635.0	499.0	25	2	205	303	1772	8-M12 x 290	130	153	48.0
510.0	527.0	18”	ANSI150	637.0	499.0	25	2	205	303	6004	8-M12 x 290	130	153	48.6
527.0	544.0	20”	ANSI150	698.0	546.0	25	1	120	303	1773	10-M12 x 205	45	68	47.9
540.1	557.1	20”	ANSI150	698.0	550.0	25	2	205	303	1774	10-M12 x 290	130	153	54.4
546.0	563.0	20”	ANSI150	698.0	550.0	25	2	205	303	6038	10-M12 x 290	130	153	54.8
555.3	572.3	20”	ANSI150	698.0	550.0	25	2	205	303	1775	10-M12 x 290	130	153	55.0
565.0	582.0	20”	ANSI150	698.0	550.0	25	2	205	303	1776	10-M12 x 290	130	153	55.1
582.2	599.2	20”	ANSI150	709.0	550.0	25	2	205	303	1777	10-M12 x 290	130	153	57.8
601.0	618.0	24”	ANSI150	813.0	620.0	25	1	120	218	6020	10-M12 x 205	45	68	63.3
630.0	647.0	24”	ANSI150	813.0	649.0	25	1	120	303	1778	10-M12 x 205	45	68	58.7
645.2	662.2	24”	ANSI150	813.0	653.0	25	2	205	303	1779	10-M12 x 290	130	153	66.7
654.0	671.0	24”	ANSI150	813.0	653.0	25	2	205	303	6039	10-M12 x 290	130	153	66.9
662.0	679.0	24”	ANSI150	813.0	653.0	25	2	205	303	1780	10-M12 x 290	130	153	67.0
675.0	692.0	24”	ANSI150	813.0	653.0	25	2	205	303	6005	10-M12 x 290	130	153	67.3

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MaxiDaptor Large Diameter Flange Adaptors ANSI Flange Drilling

Datasheet 2/2

Technical Information

Working Pressure Rating

Water 16 bar

Gas 6 bar

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Flange Drilling & Rated Pressure

While drilling patterns defined for the flange adaptors are compatible with the standards listed in the data sheet table, the rated working pressure of the product is as noted above.

Angularity

Flange Adaptors 3°

The above are for when the product is on maximum pipe outside diameters; can achieve larger ones with smaller pipe diameters.

Bolt Torque/Spanner

M12; Torque 55-65Nm on every bolt

Spanner size A/F 19mm

Temperature Rating of Product

EPDM -20°C to +90°C

Nitrile -20°C to +90°C

For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

End Load Due to Internal Pressure

MaxiFit DOES NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out.

Approvals

The following water contact materials used in MaxiFit are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

In addition to the above, MaxiFit range as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Flange Adaptor Body

Flange:

- Mild Steel to BS EN 10025-2 Grade S275

Sleeve:

- Rolled Steel to BS EN 10025-2 Grade S275

End Ring

Rolled Steel to BS EN 10025-2 Grade S275

Gasket

EPDM Grade “E” to BS EN 681-1 Type WA WRAS Listed

Nitrile compound to Grade G BS EN 682, Type G

Coatings

Flange Adaptor Body & End Ring:

- Rilsan Nylon 11 to WIS 4-52-01 Part 1

Bolts & Nuts:

- Sheraplex to WIS 4-52-03

Studs

Standard - Steel to BS EN ISO 898-1 Property Class 4.8

Option - Stainless Steel to BS EN ISO 3506-1: grade A4 property class 50

Nuts

Standard - Steel to BS EN 4190 Grade 4

Option - Stainless Steel to BS EN ISO 3506-2: grade A4 property class 80

Washers

Stainless Steel to BS 1449:Part 2 Grade 304 S15

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East Borneo - Samarinda

Leaking Pipework - Water Treatment Works

UltraGrip - DN400

Project

Problem - A 400 mm PE100 SDR 17 was leaking because customer had initially selected low grade compression fittings which were not able to grip the pipe. This pipe was taking raw water and transporting it to a local water treatment plant.

Solution - UltraGrip was installed to ensure a trouble free solution for a pipe that was leaking badly.

Client

PDAM Samarinda

Distributor

PT Duta Prima Utama - Jakarta

Crane BS&U are solely the provider of products and have no direct influence on, or take any responsibility for any working practices employed or depicted in the images enclosed to install such products.

MegaFit®

Wide Tolerance DN50 - DN300

Advanced Mechanical Jointing Technology

VIKING JOHNSON®

Universal Pipe Fittings

The MegaFit range of universal pipe fittings represent the very latest in mechanical pipe coupling technology, with products designed to connect plain ended pipes of the same nominal bore, with same or different outside diameters. One coupling is able to connect steel, ductile iron, uPVC, cast iron and asbestos cement pipes, thereby reducing stocks.

Simplifies Stock-holding & Installation

MegaFit products are designed for use in repair situations where the exact outside diameter of the pipes are unknown. An OD tolerance range of up to 34mm is offered, which has the effect of reducing stockholding, down to one size per nominal diameter, also simplifies installation.

Simple, Reliable Seal

The MegaFit range design incorporates end rings which are designed to enclose the gasket. The unique 'slide easy' gasket provides maximum sealing pressure, even on scored, pitted and corroded pipe surfaces through its distinctive circumferential ribs offering a simple installation and guaranteed seal.

Approved Quality

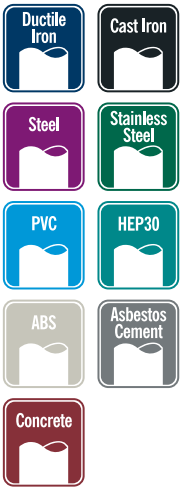
The MegaFit product range includes couplings and flange adaptors, which are available from DN50 (2") to DN300 (12"). All models are designed and manufactured under quality management systems to BS EN ISO 9001 and have been tested by Viking Johnson's comprehensive in-house research facilities and also conform to the American Water Works Association specification AWWA/ANSI C.219 for bolted couplings.

MegaFit Coupling

MegaDaptor Flange Adaptor

MegaFit Coupling

Pipe Materials



MegaFit Couplings and Flange Adaptors

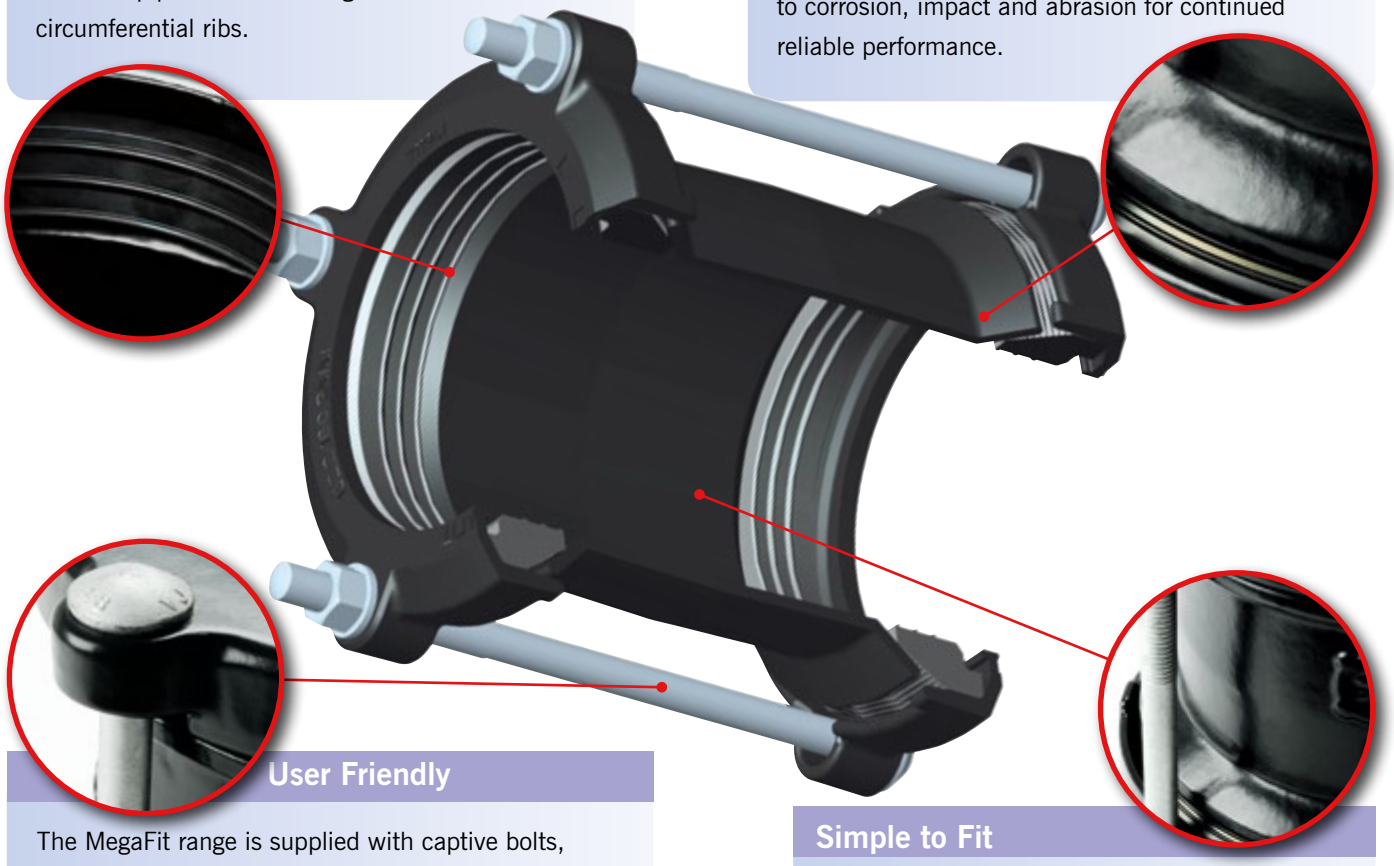
Product Design Benefits

Guaranteed Sealing

The unique, 'slide easy' gasket provides maximum sealing pressure, even on scored, pitted and corroded pipe surfaces through its distinctive circumferential ribs.

Excellent Corrosion Protection

Metal components are coated with Rilsan Nylon 11 which is WRAS approved for use with potable water. The nuts and bolts are Sheraplex coated to WIS 4-52-03, offering long term protection to corrosion, impact and abrasion for continued reliable performance.



User Friendly

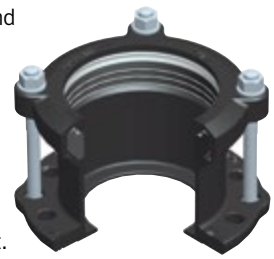
The MegaFit range is supplied with captive bolts, meaning that the nuts need only to be tightened, with a torque wrench, at one end, saving time and simplifying installation.

Simple to Fit

MegaFit includes an extended centre sleeve as standard to aid installation it allows for greater cutting tolerances and greater pipe insertion depths - sealing beyond corrosion damaged pipe ends.

Customer Benefits

- The MegaFit range is suitable for water and gas applications. Following extensive tests, the products can be guaranteed for a working pressure of 16 bar for water applications (test pressure 24 bar) and 6 bar for gas (test pressure 9 bar).
- With up to 34mm tolerance on the pipe OD, each product fits a range of pipe diameters and materials. It reduces the need for expensive and time consuming trial holes, reduces stock holding and increases stock turn. In all MegaFit is adaptable and economic solution to most pipe connections.
- For the discerning customer, the MegaFit range offers an extended sealing face, greater than other wide tolerance models. M16 bolts on DN100 models and above ensure a complete robust solution.
- MegaFit couplings accommodate angular deflection between pipes of up to 8° for couplings and 4° for flange adaptors, allowing for ease of installation and for pipeline movement such as ground settlement. This angular deflection can be utilised to lay pipelines to long radius curves, without the need for special fittings, saving both time and cost.



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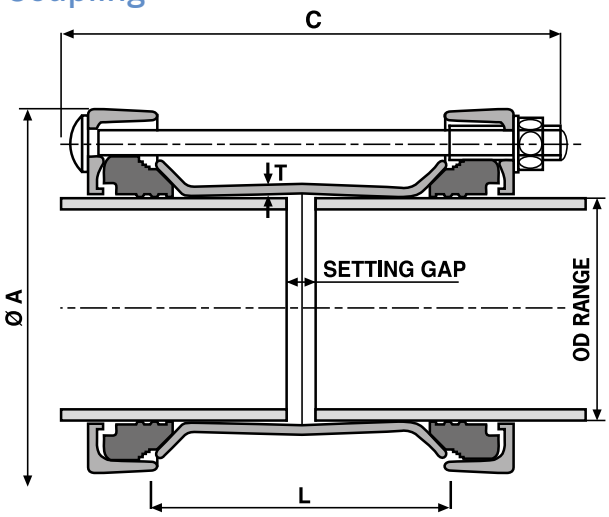
MegaFit Couplings

Datasheet 1/2

Coupling



Key

A = End Ring Diameter
C = Overall Length
L = Sleeve Length
T = Sleeve Thickness

MegaFit Couplings

DN	OD Range		Bolts No.-Dia x Length	A (mm)	C (mm)	Sleeve Length x Thickness L x T (mm)	Setting Gap		Gasket Mould No.	Weight (kg)
	Min (mm)	Max (mm)					Min (mm)	Max (mm)		
50	43.5	63.5	4-M12 x 235	151	242	144 x 5	18	60	6010	4.5
65	63.0	83.7	4-M12 x 235	171	242	144 x 5	18	60	6011	5.2
80	85.7	107.0	4-M12 x 260	192	267	170 x 5	18	100	6012	6.3
100	107.2	133.2	4-M16 x 290	231	300	180 x 5	18	110	6013	9.0
125	132.2	160.2	4-M16 x 290	265	300	180 x 5.5	18	110	6014	11.3
150	158.2	192.2	4-M16 x 340	308	350	213 x 5.5	18	130	6015	15.4
175	192.2	226.9	4-M16 x 340	344	350	215 x 7	18	130	6030	21.7
200	218.1	252.1	4-M16 x 340	369	350	220 x 8	18	135	6016	24.3
250	266.2	300.2	6-M16 x 420	417	430	300 x 8	18	215	6017	34.7
300	315.0	349.0	6-M16 x 420	466	430	300 x 8	18	215	6018	39.4

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MegaFit Couplings

Datasheet 2/2

Technical Information

Working Pressure Rating

Water 16 bar

Gas 6 bar

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Angularity

Couplings 8°

The above are for when the product is on maximum pipe outside diameters; can achieve larger ones with smaller pipe diameters.

Bolt Torque/Spanner

M12; Torque 55-65Nm on every bolt

M16; Torque 95-110Nm on every bolt

Temperature Rating of Product

EPDM -20°C to +90°C

Nitrile -20°C to +90°C

For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

End Load Due to Internal Pressure

MegaFit DOES NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out.

Approvals

The following water contact materials used in MegaFit are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

Materials & Relevant Standards

Sleeve*

SG ductile iron BS EN 1563, EN GJS-450-10

End Rings*

SG ductile iron BS EN 1563, EN GJS-450-10

Coatings

Centre Sleeve & End Rings:

- Rilsan Nylon 11 to WIS 4-52-01 Part 1

Bolts & Nuts:

- Sheraplex to WIS 4-52-03

Gasket

EPDM compound Grade 'E' to BS EN 681-1 WRAS approved

Nitrile compound to DIN 3535-3

Bolts

Steel to BS EN ISO 898 Property Class Grade 8.8 equivalent DIN 267 - Part 3:Class 8.8

Nuts

Steel to BS EN20898-2 Property Class 8.0

Washers

Stainless Steel to BS 1449:Pt2 grade 304 S15

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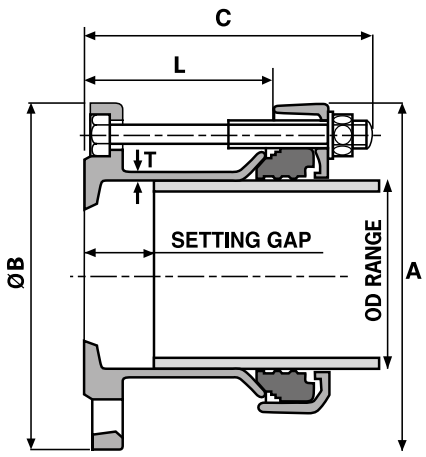
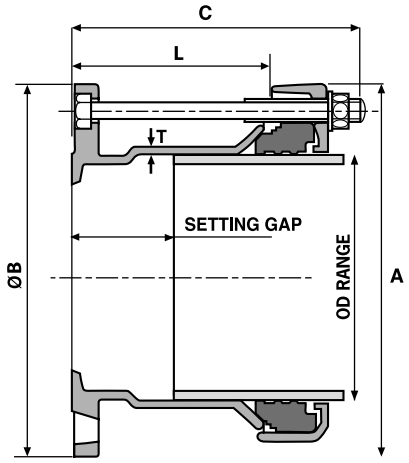
MegaDaptor Flange Adaptors

Datasheet 1/2

Flange Adaptor Fig. 1



Flange Adaptor Fig. 2



Key

A = End Ring Diameter
B = Flange Diameter
C = Overall Length
L = Sleeve Length
T = Sleeve Thickness

Flange adaptors designed to join pipes of various materials and outside diameters to flanges of the same nominal size*.

MegaDaptor Flange Adaptors

DN	OD Range (mm)		Flange Nominal	Flange Drilling	Flange Thickness (mm)	Bolts No.-Dia x Length	A (mm)	B (mm)	C (mm)	Sleeve Length x Thickness (L) x (T)	Setting Gap (mm)		Fig.	Gasket Mould No.	Weight (kg)
	Min	Max									Min	Max			
50	43.5	63.5	50	PN10/PN16	17.0	4-M12 x 125	151	167	131	80 x 6	25	35	1	6010	4.4
65	63.0	83.7	65	PN10/PN16	17.0	4-M12 x 125	171	185	132	80 x 6	25	35	1	6011	5.1
80	85.7	107.0	80	PN10/PN16	17.0	4-M12 x 145	192	200	154	100 x 6	30	60	1	6012	5.8
100	107.2	133.2	100	PN10/PN16	18.0	4-M16 x 180	231	234	191	130 x 6	57	85	2	6013	8.6
125	132.2	160.2	125	PN10/PN16	18.0	4-M16 x 160	265	268	171	111 x 6	28	65	1	6014	9.8
150	158.2	192.2	150	PN10/PN16	18.0	4-M16 x 210	303	317	220	150 x 6	70	100	2	6015	14.17
175*	192.2	226.9	200	PN10/PN16	18.0	4-M16 x 190	344	344	201	132 x 7	25	80	1	6030	17.2
200	218.1	252.1	200	PN10/PN16	18.0	4-M16 x 230	369	374	241	180 x 7	75	130	2	6016	20.4
250	266.2	300.2	250	PN10/PN16	20.0	6-M16 x 270	417	424	281	212 x 7	80	160	2	6017	27.5
300	315.0	349.0	300	PN10/PN16	21.5	6-M16 x 270	466	472	281	211 x 8	80	160	2	6018	34.3

*DN175 MegaDaptor supplied with DN200 flange.

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MegaDaptor Flange Adaptors

Datasheet 2/2

Technical Information

Working Pressure Rating

Water 16 bar

Gas 6 bar

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Angularity

Flange Adaptors 4°

The above are for when the product is on maximum pipe outside diameters; can achieve larger ones with smaller pipe diameters.

Bolt Torque/Spanner

M12; Torque 55-65Nm on every bolt

M16; Torque 95-110Nm on every bolt

Temperature Rating of Product

EPDM -20°C to +90°C

Nitrile -20°C to +90°C

For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

End Load Due to Internal Pressure

MegaFit DOES NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out.

Approvals

The following water contact materials used in MegaFit are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

Materials & Relevant Standards

Flange Adaptor Body*

SG ductile iron BS EN 1563, EN GJS-450-10

End Ring*

SG ductile iron BS EN 1563, EN GJS-450-10

Coatings

Adaptor Body & End Ring:

- Rilsan Nylon 11 to WIS 4-52-01 Part 1

Bolts & Nuts:

- Sheraplex to WIS 4-52-03

Gasket

EPDM compound Grade 'E' to BS EN 681-1 WRAS approved

Nitrile compound to DIN 3535-3

Bolts

Steel to BS EN ISO 898 Property Class Grade 8.8 equivalent DIN 267 - Part 3:Class 8.8

Nuts

Steel to BS EN20898-2 Property Class 8.0

Washers

Stainless Steel to BS 1449:Pt2 grade 304 S15

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Germany - Bielefeld

Replacement of Old Cast Iron Service Pipe

MegaFit Flange Adaptors - DN300

Project

A DN300 gas main pipeline was cut and a screwed ductile iron tee was installed to build a new service line connected by two MegaFit flange adaptors.

Client

Stadtwerke Bielefeld

Distributor

Friatec AG, Mannheim

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UltraGrip®

Wide Tolerance DN40 - DN600

Enhanced End-load Restraint Capabilities

BS EN 14525
Ductile Iron
Couplings & Flange
Adaptors*

*See back cover for full specification

VIKING JOHNSON®

Get to grips with **UltraGrip**

Key Benefits

- Grips and seals on the most corroded pipes
- Increased diameter range and wide tolerance delivers a reduction in stock holding costs
- Reversible bolts for quick and easy installation
- Easy on site handling delivered through world leading intelligent carrier design
- New design based on proven technology with enhancements to deliver longevity, reliability and total peace of mind
- High performance in both water (≤ DN600) and gas applications (≤ DN400)
- Innovative progressive gripping design ensures ultimate end load performance

An Advanced Design, Exceptional Performance

UltraGrip is designed to offer a solution to joining plain-ended pipes and contains an end load resistant mechanism that grips and seals onto a variety of pipe materials including Cast Iron, Ductile Iron, Steel, PVC and PE.

Bigger Sizes DN450 – DN600

Viking Johnson has extended the proven and successful UltraGrip range in sizes up to DN600. This will give the customer a single sealing and gripping product solution to cover the majority of the pipes installed in their underground water network. The larger sized UltraGrip has been methodologically engineered to support a progressive gripping mechanism through an enhanced design, which has a larger footprint to increase the area of actuation at the point of contact, resulting in an evenly distributed gripping function. It has also been designed to accommodate rough on-site handling through an intelligent carrier that maintains the gasket and grippers within the end ring, ensuring the fitting can be easily slid on to the pipe with no interference.

Industry Testing

Viking Johnson products undergo intensive performance testing to ensure the strength and integrity of all products meet industry standards.

- Accelerated Ageing Tests (AAT) to verify 50 year design life expectancy.
- UltraGrip has been tested on knurled and grooved pipe work to match typical pipe conditions found on many sites around the world.

Knurled and Grooved Pipe

Pipe Materials

Ductile Iron | Cast Iron | Steel | Asbestos Cement | HEP30 | GRP

Asbestos Cement & GRP pipe materials should not be used with the gripping version of UltraGrip.

PE Brochure for use with PVC & PE

PVC | PE | HEP30

***Note:** Due to the flexible nature of the plastic pipes, a close fit Stainless Steel internal support liner is required when PE Pipe or thin walled PVC is used to make a repair to prevent excessive pipe deformation which can occur when UltraGrip is installed.

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UltraGrip the Ultimate Gripping Technology

Progressive Gripping

One of the key components of UltraGrip is the progressive gripping mechanism, which enhances its end-load restraint capabilities as the internal pressure in the pipe increases. A unique gripper system is suitable for all recommended pipe materials and combined with an engineered intelligent carrier which ensures maximum gripping strength around the full pipe circumference. This is achieved through uniform movement during installation and bolt-up.

In addition, the grippers are removable, allowing UltraGrip to be converted to a flexible product to allow for axial movement. The gripper and seal sub-assembly can accommodate diameter pipe outside variation up to 54mm, depending on nominal size.

Gripping product
– to restrain axial loads

Flex product
– remove grippers

Hygienic Protective Caps

Protection caps have been introduced to keep the fitting clean and free from any contamination. The caps are made of recyclable material to minimise impact to the environment and ensure fittings are clean and ready for use on potable water (uti DN600) or gas (uti DN400) applications.

Corrosion Protection

UltraGrip metal components are coated with Rilsan Nylon 11, which is WRAS approved for use with potable water. Rilsan benefits include long term corrosion protection and resistance to impact damage. Additionally, the bolts and nuts are stainless steel coated with Delta Seal GZ, organic dry film, which prevents galling and provides long term corrosion protection.

Working Pressure & Temperature Ratings

Nominal Size	Gripping Product		Flex Product		Operating Temperature
	Gas	Water	Gas	Water	
DN40 to DN300	5 bar	16 bar	5 bar	16 bar	-20°C to +30°C
DN350 to DN400	5 bar	10 bar	5 bar	10 bar	
DN450 to DN600	N/A	10 bar	N/A	10 bar	

(Site Test Pressure – 1.5 times working pressure)

UltraGrip
End Cap

UltraGrip
Pecatadaptor

UltraGrip
Flange Adaptor

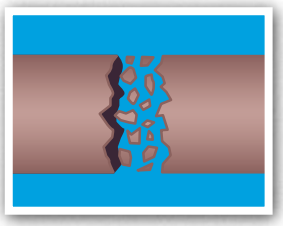
UltraGrip
Reducing Coupling

UltraGrip Coupling

The Perfect Partner for Difficult Repairs

Repair Solutions

UltraGrip offers the ideal solution for repairing severely damaged, corroded or completely shattered pipes in difficult trench conditions. In repair situations where a pipe section needs to be cut out, the UltraGrip range offers a versatile repair solution for a variety of different pipe sizes and pipe material as a result of the wide tolerance capability of UltraGrip products. Only a few strategic sizes need to be kept in stock to cover many repair or emergency situations.



Suitable for
Shattered Pipe

Ease of Installation

UltraGrip is easy to install on site. The product is pre-assembled to allow for quick positioning over the top and bottom tolerance pipe with reversible captive bolts requiring only a single spanner for tightening. An ideal product to choose when dealing with tricky site conditions such as confined spaces.

UltraGrip Support Liner for PE & PVC Pipes DN40 to DN600

Overview

Pipe Materials

PVC

PE

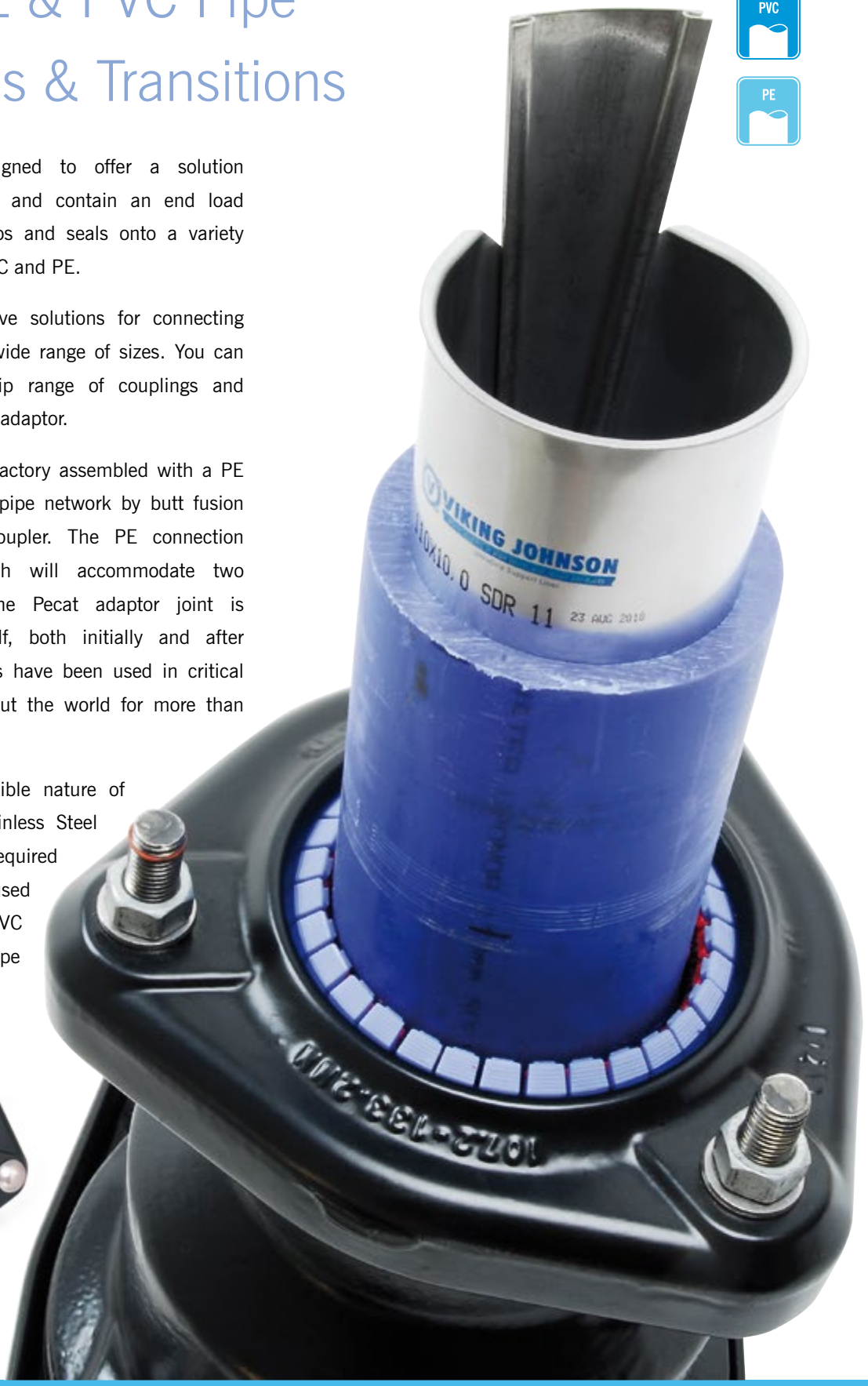
Ideal for PE & PVC Pipe Connections & Transitions

UltraGrip products are designed to offer a solution for joining plain-ended pipes and contain an end load resistant mechanism that grips and seals onto a variety of pipe materials, including PVC and PE.

UltraGrip offers two alternative solutions for connecting PE and rigid pipes across a wide range of sizes. You can choose between the UltraGrip range of couplings and adaptors or the UltraGrip Pecatadaptor.

UltraGrip Pecat adaptors are factory assembled with a PE tail, ready for jointing into a pipe network by butt fusion or using an electrofusion coupler. The PE connection is 500mm in length which will accommodate two electrofusion connections. The Pecat adaptor joint is stronger than the pipe itself, both initially and after years of service. Pecat fittings have been used in critical pipeline applications throughout the world for more than twenty years.

Please note that due to flexible nature of plastic pipes, a close fit Stainless Steel internal support liner is required when mechanical joints are used on PE pipes and thin walled PVC in order to prevent excessive pipe deformation which can occur.



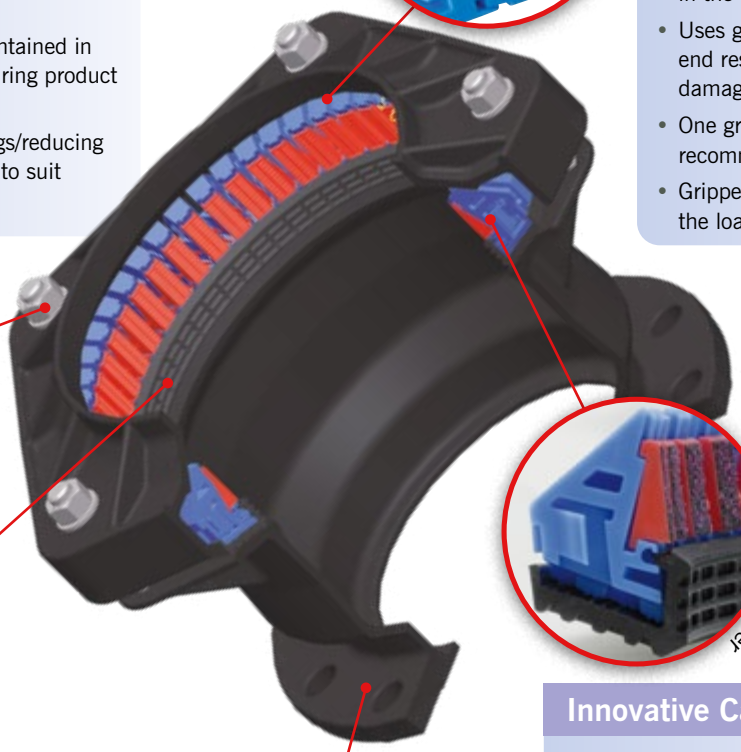
UltraGrip Pecatadaptor

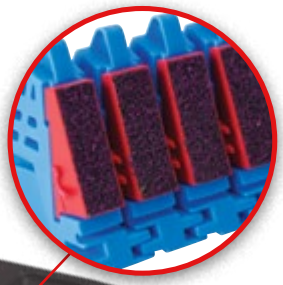
UltraGrip Couplings & Flange Adaptors

Product Design Benefits

Simple to Fit

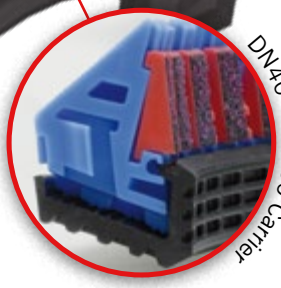
- Captive, non-rotating bolts across whole range requiring a single spanner to install.
- Gasket/gripper are fully contained in the end ring housing, ensuring product slides easily over pipes.
- Bolt orientation in couplings/reducing couplings can be reversed to suit site conditions.

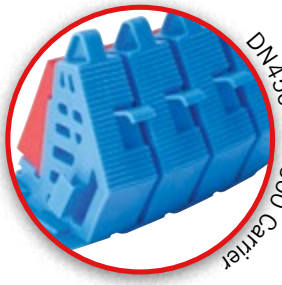




Progressive Gripping

- Progressive gripping technology, with increasing end load restraint capability as the internal pressure in the pipe increases.
- Uses grit and friction to mobilise end restraint forces, so will not damage the pipe surface.
- One gripper system suits all recommended pipe materials.
- Gripper has large footprint, reducing the load on the pipe surface.





Innovative Carrier Design

- Accommodates high tolerance on pipe outside diameter – up to 54mm.
- Interlocking “spring” and retention tab ensures gasket and grippers retract into and are retained in the housing of the end ring during transit.

Enhanced Gasket Sealing

- Patented Gasket Technology incorporates a waffle profile design, providing localised high pressure points on the pipe surface.
- EPDM (water quality approved) and Nitrile gaskets variants.

Multiple Flange Drilling

- As standard the flange adaptors are multi drilled to accommodate BS EN 1092-2 PN10 & 16.

Customer Benefits

- High performance in both water (uti DN600) and gas (uti DN400) applications verified through proven Accelerated Aging Tests (AAT).
- All water contact materials approved for use with potable water (WRAS).
- Full end load resistance capability at full angular deflection.
- Eliminates the need for using expensive thrust blocks through proven progressive mechanism that accommodates end load forces from internal pressure in the pipeline.
- Wide Tolerance offering “one size per nominal bore” up to DN400.
- Fully pre-assembled product ensures simple and quick onsite installation with product easily sliding over pipe.
- Reversible bolts offer flexibility to operators to select best means of installing fittings in applications with restricted access.
- Rough on site handling is accommodated through Rilsan coating that withstands high levels of deformation / impact damage.
- Intelligent carrier design that ensures gasket and grippers are contained within the end ring, ensuring the product arrives on site ready for installation on top tolerance pipe.

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UltraGrip Pecatadaptors & End Caps

Product Design Benefits

Long length of PE pipe for fusion jointing

- 500mm long PE100 SDR11 PE pipe which is factory assembled and can accommodate two electrofusion connections.

Reliable type 1 transition joint

- An integral Type 1 factory fitted connection between PE and UltraGrip end ready for fusion jointing into the network.
- The factory connection between PE and metal is stronger than the PE pipe.

Customer Benefits

- A reliable factory fitted and transition jointing solution for metal to PE pipes for customers who do not intend to make an on-site transition.
- An integral and full end load bearing solution from UltraGrip end to PE pipe which ensures longevity of the joint as the Pecatadaptor is stronger than the pipe itself.
- Fully pre-assembled product for simple on-site installation from metal to PE pipes.
- When making an electofusion connection to the network, the length of the PE pipe on the Pecatadaptor can accommodate two electrofusion connections, providing a second chance for correct installation.
- Reduced stock holding as the UltraGrip end can be fitted on a wide variety of pipe materials through the wide tolerance.

Sheraplex Bolts

- The End Caps are supplied with Sheraplex coated steel bolts to BS EN ISO 898-1, which offers long term corrosion protection and resistance to impact damage. This allows flexibility for reuse.

Connect to a threaded pipe

- The UltraGrip End Cap is designed with the option of a radial and axis boss in sizes ranging from 1/2" - 2" BSP outlets to act as an air inlet or air release points.

Customer Benefits

- The end caps are designed to either blank off a pipe end or use as a test end.
- Options for drilled and tapped bosses are available:
  - Axial - to act as an inlet/drainage point (Min= 1/2", Max=2", All sizes)
  - Radial - to act as air release/bleed hole (Min= 1/2", Max=2", depending on diameter)
- End caps supplied with Sheraplex coated steel bolts allow repeatable use without the need to lubricate threads.
- Option for stainless steel bolts available.

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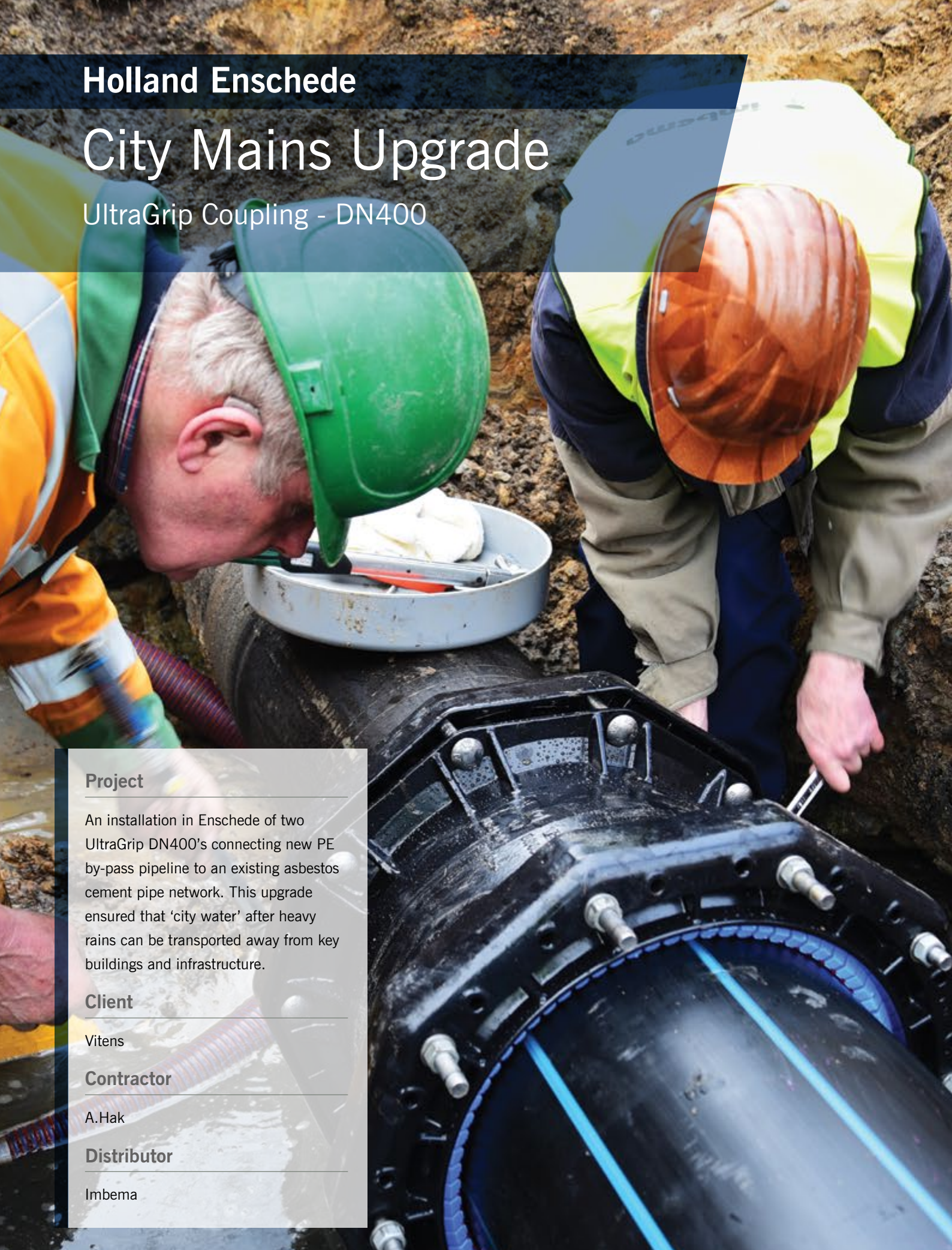
Holland Enschede

City Mains Upgrade

UltraGrip Coupling - DN400



Project

An installation in Enschede of two UltraGrip DN400's connecting new PE by-pass pipeline to an existing asbestos cement pipe network. This upgrade ensured that 'city water' after heavy rains can be transported away from key buildings and infrastructure.

Client

Vitens

Contractor

A.Hak

Distributor

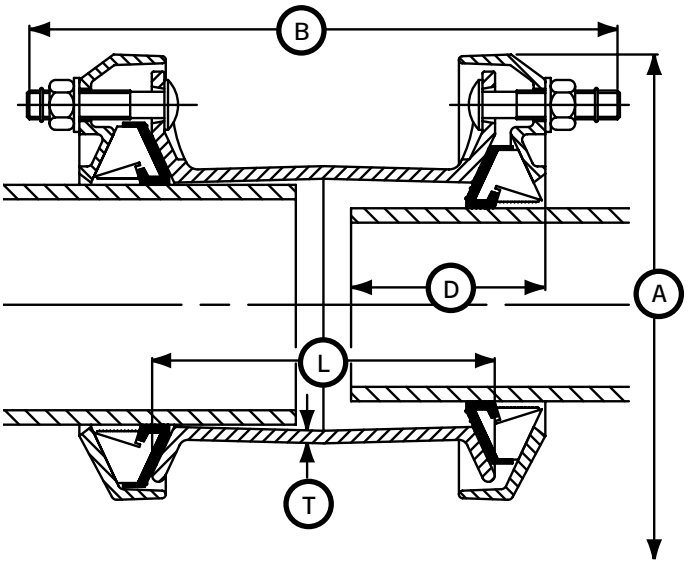
Imbema

Crane BS&U are solely the provider of products and have no direct influence on, or take any responsibility for any working practices employed or depicted in the images enclosed to install such products.

UltraGrip Couplings

Datasheet 1/2

Coupling



UltraGrip Couplings

Nom Size	Size Range		Insertion Depth (D)		Dimensions				Bolts		Weight (kg)
					Overall		Sleeve				
	Min	Max	Min	Max	A	B	L	T	No-size	Type	
40	43.5	63.5	65	95	168	262	144	7.0	6-M12 x 70	HRH	5.76
50	48.0	71.0	65	110	178	296	180	5.0	6-M12 x 70	CSX	6.13
65	63.0	83.7	65	95	189	262	144	7.0	6-M12 x 70	HRH	6.86
80	85.7	107.0	65	110	212	288	170	7.0	6-M12 x 70	HRH	8.54
100	107.0	133.2	90	125	280	342	180	7.0	6-M16 x 93	CSX	13.57
125	132.2	160.2	90	125	305	342	180	6.0	6-M16 x 93	CSX	14.51
150	158.2	192.2	90	135	339	386	213	6.5	8-M16 x 93	CSX	20.22
175	192.2	226.9	125	165	403	400	220	6.5	10-M16 x 93	CSX	33.22
200	218.1	256.0	125	165	432	400	220	6.5	10-M16 x 93	CSX	35.48
250	266.0	310.0	125	165	476	524	300	8.0	12-M16 x 120	CSX	52.88
300	315.0	356.0	125	200	522	524	300	8.0	16-M16 x 120	CSX	63.8
350	352.2	396.0	125	200	577	525	300	7.5	18-M16 x 120	CSX	74.58
400	398.2	442.0	125	200	623	525	300	7.5	20-M16 x 120	CSX	82.88
450	448.0	492.0	135	215	713	545	300	7.5	24-M16 x 140	HRH	139.03
500	498.0	552.0	155	215	803	565	300	7.5	18-M20 x 150	HRH	160.42
500	558.0	608.0	155	215	860	565	300	7.5	20-M20 x 150	HRH	175.02
600	604.0	648.0	195	255	900	565	300	7.5	24-M20 x 150	HRH	240.01
600	676.0	726.0	195	255	975	565	300	7.5	28-M20 x 150	HRH	267.38

Working Pressure & Temperature Ratings

Nominal Size	Gripping Product		Flex Product		Operating Temperature
	Gas	Water	Gas	Water	
DN40 to DN300	5 bar	16 bar	5 bar	16 bar	-20°C to +30°C
DN350 to DN400	5 bar	10 bar	5 bar	10 bar	
DN450 to DN600	N/A	10 bar	N/A	10 bar	

Notes:

1) Site Test Pressure – 1.5 times working pressure.
2) Factory Test Pressure – The minimum requirement in European Standards is 1.5 times working pressure plus 5 bar (e.g. 29 bar for 16 bar working pressure).
3) All water contact components are approved for use with Potable Water.

Bolt Torque	
	Nm
M12	55 - 70
M16	95 - 120
M20	210 - 230

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UltraGrip Couplings

Datasheet 2/2

Technical Information

Gripping product suitable for

Steel / Ductile iron / Grey cast iron / PE / PVC

Flex product suitable for

Steel / Ductile iron / Grey cast iron / PVC / Asbestos cement

Angularity

Couplings 8°

Support liners – PE and PVC pipes

A close fit support liner is required when used on:

- All PE pipes
- Thin walled PVC pipes

When used on thick walled PVC pipes a support liner is not required. Please contact Viking Johnson for further details.

Use of restrained couplings on exposed pipework

Above ground exposed pipework is subject to both loads from the internal pressure and those from temperature changes / thermal expansion, which can be substantially higher than those from internal pressure and cannot always be safely determined. For this reason it is recommended that the use of UltraGrip be restricted to buried pipelines, valve chambers and above ground indoor applications and not exposed to direct sunlight or excessive temperature changes (e.g. pump houses).

Approvals

The following water contact materials used in UltraGrip are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, KIWA

Gasket (EPDM):

- WRAS, KTW, DVGW, W270, KIWA

In addition to the above, UltraGrip range as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Gasket (Nitrile):

- DVGW Approved

DN40 to DN300 UltraGrip has been independently tested by BSI to confirm it meets the requirements of BS EN 14525.

Materials & Relevant Standards

End Rings & Centre Sleeve

S.G. Iron to BS EN 1563 Symbol EN-GJS-450-10

Gasket

EPDM Compound Grade E to BS EN 681-1

Nitrile Compound to Grade G BS EN 682, Type G

Gripper & Carrier

Acetal Copolymer Grade M25 or equivalent

Coatings

Cast/Metal Components:

- Rilsan Nylon 11 (Black)

Bolts:

- Delta Seal GZ - Silver

Nuts:

- Delta Seal GZ - Silver

Bolts

Standard - Stainless steel to BS EN 3506-1 Grade A2 Property Class 80 or 70

Option - Stainless steel to BS EN ISO 3506-1 Grade A4 Property Class 50

Nuts

Stainless Steel to BS EN 3506-2 Grade A4 Property Class 80

Washers

Stainless steel – BS1449:PT2 Grade 304 S15

Grit to Gripper

Corundum - aluminium oxide with a chemical composition of Al_2O_3 and a hexagonal crystal structure (rock-forming mineral that is found in igneous, metamorphic, and sedimentary rocks).

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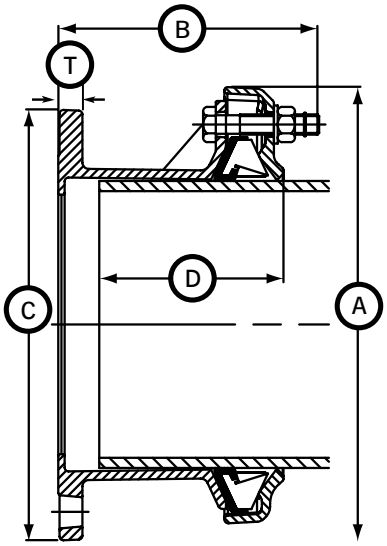
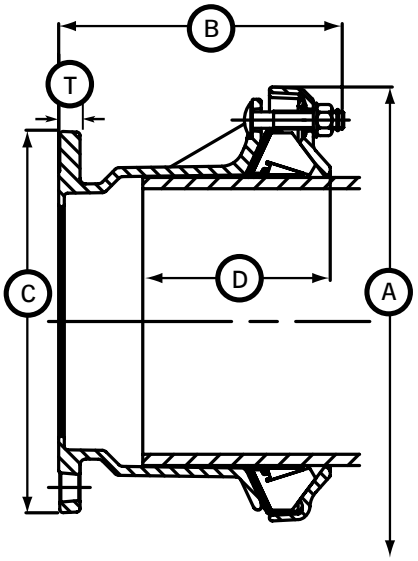
UltraGrip Flange Adaptors

Datasheet 1/2

Flange Adaptor Fig. 1



Flange Adaptor Fig. 2



UtraGrip Flange Adaptors

Nom Size	Size Range		Flange Nom Size	Flange Drilling	Fig.	Insertion Depth (D)		Dimensions				Bolts		Weight (kg)
	Min	Max				Min	Max	C	A	B	T	No-size	Type	
40	43.5	63.5	40	PN10,16	1	65	110	150	168	164	17.0	3-M12 x 70	HRH	4.4
40	43.5	63.5	50	PN10,16	1	65	110	165	168	164	17.0	3-M12 x 70	HRH	4.83
50	48.0	71.0	50	PN10,16	1	65	110	165	178	163	17.0	3-M12 x 70	CSX	4.83
65	63.0	83.7	60/65	PN10,16	1	65	110	185	189	162	17.0	3-M12 x 70	HRH	5.68
65	63.0	83.7	65	PN10,16	1	65	110	185	189	164	17.0	3-M12 x 70	HRH	5.87
80	85.7	107.0	80	PN10,16	1	65	110	200	212	164	17.0	3-M12 x 70	HRH	6.82
100	107.0	133.2	100	PN10,16	2	90	125	220	280	212	17.0	3-M16 x 90	HRH	10.17
125	132.2	160.2	100	PN10,16	2	90	135	220	305	243	17.0	3-M16 x 90	HRH	11.5
125	132.2	160.2	125	PN10,16	1	90	135	257	305	193	17.0	3-M16 x 90	HRH	11.19
125	132.2	160.2	150	PM10,16	1	90	135	285	305	194	17.0	3-M16 x 90	HRH	12.6
150	158.2	192.2	150	PN10,16	2	90	125	285	339	232	17.0	4-M16 x 90	HRH	14.72
175	192.2	226.9	200	PN10,16	2	125	165	340	403	263	18.0	5-M16 x 93	CSX	24.32
200	218.1	256.0	200	PN10,16	2	125	165	340	432	263	18.0	5-M16 x 93	CSX	25.75
250	266.0	310.0	250	PN10,16	2	125	165	404	476	323	20.0	6-M16 x 120	HRH	36.23
300	315.0	356.0	300	PN10,16	2	125	200	469	522	324	21.5	8-M16 x 120	HRH	44.5
350	352.2	396.0	350	PN10,16	2	125	200	520	577	333	21.5	9-M16 x 120	CSX	51.75
400	398.2	442.0	400	PN10,16	2	125	200	580	623	333	21.5	10-M16 x 120	CSX	58.46
450	448.0	492.0	400	PN10,16	2	135	215	580	713	413	24.0	12-M16 x 140	HRH	97.42
450	448.0	492.0	450	PN10,16	2	135	215	640	710	409	27.0	12-M16 x 140	HRH	101.0
500	498.0	552.0	500	PN10,16	2	155	215	715	803	398	27.5	9-M20 x 150	HRH	115.78
500	558.0	608.0	500	PN10,16	2	155	215	715	860	448	27.5	10-M20 x 150	HRH	130.09
600	604.0	648.0	600	PN10,16	2	195	255	840	900	454	31.0	12-M20 x 150	HRH	170.97
600	676.0	726.0	600	PN10,16	2	195	255	840	975	454	31.0	14-M20 x 150	HRH	195.36

Flange Drilling - All flanges are drilled to BS EN 1092 (formerly BS 4504) 7005 with the rating as per table*

** There are several parts to these standards to suit different flange materials:*
1. *BS EN 1092 PT1* **2.** *BS EN 1092 PT2* **3.** *BS EN 1092 PT3* **4.** *BS EN 1092 PT4* **5.** *ISO 7005-1* **6.** *ISO 7005-2* **7.** *ISO 7005-3*

Working Pressure & Temperature Ratings

Nominal Size	Gripping Product		Flex Product		Operating Temperature
	Gas	Water	Gas	Water	
DN40 to DN300	5 bar	16 bar	5 bar	16 bar	-20°C to +30°C
DN350 to DN400	5 bar	10 bar	5 bar	10 bar	
DN450 to DN600	N/A	10 bar	N/A	10 bar	

Notes:
1) Site Test Pressure – 1.5 times working pressure.
2) Factory Test Pressure – The minimum requirement in European Standards is 1.5 times working pressure plus 5 bar (e.g. 29 bar for 16 bar working pressure).
3) All water contact components are approved for use with Potable Water.

Bolt Torque	
	Nm
M12	55 - 70
M16	95 - 120
M20	210 - 230

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UltraGrip Flange Adaptors

Datasheet 2/2

Technical Information

Gripping product suitable for

Steel / Ductile iron / Grey cast iron / PE / PVC

Flex product suitable for

Steel / Ductile iron / Grey cast iron / PVC / Asbestos cement

Full flange sealing face suitable for

Water-type butterfly valves

Angularity

Flange Adaptors 4°

Support liners – PE and PVC pipes

A close fit support liner is required when used on:

- All PE pipes
- Thin walled PVC pipes

When used on thick walled PVC pipes a support liner is not required. Please contact Viking Johnson for further details.

Use of restrained couplings on exposed pipework

Above ground exposed pipework is subject to both loads from the internal pressure and those from temperature changes / thermal expansion, which can be substantially higher than those from internal pressure and cannot always be safely determined. For this reason it is recommended that the use of UltraGrip be restricted to buried pipelines, valve chambers and above ground indoor applications and not exposed to direct sunlight or excessive temperature changes (e.g. pump houses).

Approvals

The following water contact materials used in UltraGrip are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, KIWA

Gasket (EPDM):

- WRAS, KTW, DVGW, W270, KIWA

In addition to the above, UltraGrip range as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Gasket (Nitrile):

- DVGW Approved

DN40 to DN300 UltraGrip has been independently tested by BSI to confirm it meets the requirements of BS EN 14525.

Materials & Relevant Standards

End Ring & Adaptor Body/Centre Sleeve

S.G. Iron to BS EN 1563 Symbol EN-GJS-450-10

Gasket

EPDM Compound Grade E to BS EN 681-1

Nitrile Compound to Grade G BS EN 682, Type G

Gripper & Carrier

Acetal Copolymer Grade M25 or equivalent

Coatings

Cast/Metal Components:

- Rilsan Nylon 11 (Black)

Bolts:

- Delta Seal GZ - Silver

Nuts:

- Delta Seal GZ - Silver

Bolts

Standard - Stainless steel to BS EN 3506-1 Grade A2 Property Class 80 or 70

Option - Stainless steel to BS EN ISO 3506-1 Grade A4 Property Class 50

Nuts

Stainless Steel to BS EN 3506-2 Grade A4 Property Class 80

Washers

Stainless steel – BS1449:PT2 Grade 304 S15

Grit to Gripper

Corundum - aluminium oxide with a chemical composition of Al_2O_3 and a hexagonal crystal structure (rock-forming mineral that is found in igneous, metamorphic, and sedimentary rocks).

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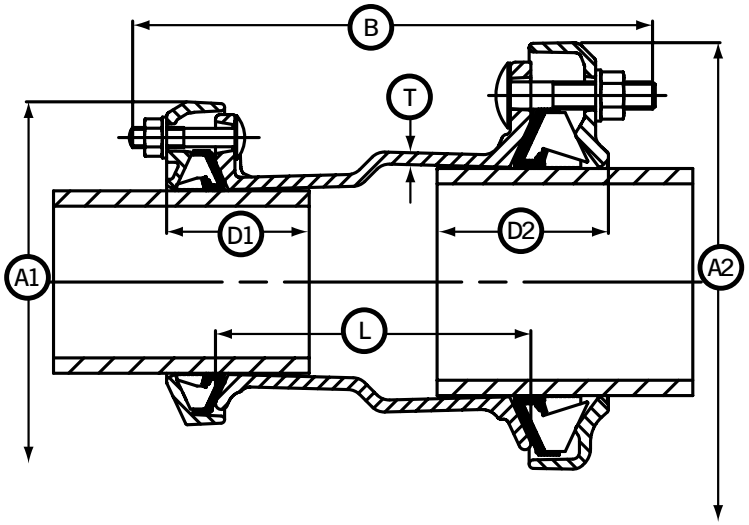
UltraGrip Reducing Couplings

Datasheet 1/2

Reducing Coupling



UtraGrip Reducing Couplings

Nom Size		Size Range				Insertion Depth				Dimensions					Bolts				Weight (kg)
Small End	Large End	Small End		Large End		Small End (D1)		Large End (D2)		Overall			Sleeve		Small End		Large End		
		Min	Max	Min	Max	Min	Max	Min	Max	A1	A2	B	L	T	Size	Type	Size	Type	
32	40	36.0	46.0	43.5	63.5	65	95	65	95	153	168	266	150	5.0	3-M12 x 70	CSX	3-M12 x 70	CSX	5.16
80	100	85.7	107.0	107.0	133.2	65	95	90	125	212	280	325	185	7.5	3-M12 x 70	HRH	3-M16 x 93	CSX	11.42
100	125	107.0	133.2	132.2	160.2	90	125	90	115	280	305	352	190	7.5	3-M16 x 93	CSX	3-M16 x 93	CSX	14.97
100	150	107.0	133.2	158.2	192.2	90	115	90	135	280	339	375	216	7.5	3-M16 x 93	CSX	4-M16 x 93	CSX	17.94
125	150	132.2	160.2	158.2	192.2	90	115	90	135	305	339	366	207	7.5	3-M16 x 93	CSX	4-M16 x 93	CSX	18.37
150	175	158.2	192.2	192.2	226.9	90	125	125	165	339	403	393	220	7.0	4-M16 x 93	CSX	5-M16 x 93	CSX	27.25
175	200	192.2	226.9	218.1	256.0	125	155	125	165	403	432	393	220	7.0	5-M16 x 93	CSX	5-M16 x 93	CSX	34.78
200	250	218.1	256.0	266.0	310.0	125	165	125	165	432	476	479	280	7.0	5-M16 x 93	CSX	6-M16 x 120	CSX	44.59
250	300	266.0	310.0	315.0	356.0	125	165	125	200	476	522	524	300	9.0	6-M16 x 120	CSX	8-M16 x 120	CSX	58.43
400	450	398.0	442.0	448.0	492.0	125	200	125	200	623	713	575	330	7.5	10-M16 x 120	CDX	12-M16 x 140	HRH	117.82
500	500	498.0	552.0	558.0	608.0	140	215	140	215	803	860	595	330	7.5	9-M20 x 150	HRH	9-M20 x 150	HRH	167.21
600	600	604.0	648.0	676.0	726.0	195	255	195	255	900	975	595	330	7.5	10-M20 x 150	HRH	10-M20 x 150	HRH	259.03

Working Pressure & Temperature Ratings

Nominal Size	Gripping Product		Flex Product		Operating Temperature
	Gas	Water	Gas	Water	
DN40 to DN300	5 bar	16 bar	5 bar	16 bar	-20°C to +30°C
DN350 to DN400	5 bar	10 bar	5 bar	10 bar	
DN450 to DN600	N/A	10 bar	N/A	10 bar	

Notes:

1) Site Test Pressure – 1.5 times working pressure.
2) Factory Test Pressure – The minimum requirement in European Standards is 1.5 times working pressure plus 5 bar (e.g. 29 bar for 16 bar working pressure).
3) All water contact components are approved for use with Potable Water.

Bolt Torque	
	Nm
M12	55 - 70
M16	95 - 120
M20	210 - 230

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UltraGrip Reducing Couplings

Datasheet 2/2

Technical Information

Gripping product suitable for

Steel / Ductile iron / Grey cast iron / PE / PVC

Flex product suitable for

Steel / Ductile iron / Grey cast iron / PVC / Asbestos cement

Angularity

Reducing Coupling 8°

Support liners – PE and PVC pipes

A close fit support liner is required when used on:

- All PE pipes
- Thin walled PVC pipes

When used on thick walled PVC pipes a support liner is not required. Please contact Viking Johnson for further details.

Use of restrained couplings on exposed pipework

Above ground exposed pipework is subject to both loads from the internal pressure and those from temperature changes / thermal expansion, which can be substantially higher than those from internal pressure and cannot always be safely determined. For this reason it is recommended that the use of UltraGrip be restricted to buried pipelines, valve chambers and above ground indoor applications and not exposed to direct sunlight or excessive temperature changes (e.g. pump houses).

Approvals

The following water contact materials used in UltraGrip are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, KIWA

Gasket (EPDM):

- WRAS, KTW, DVGW, W270, KIWA

In addition to the above, UltraGrip range as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Gasket (Nitrile):

- DVGW Approved

DN40 to DN300 UltraGrip has been independently tested by BSI to confirm it meets the requirements of BS EN 14525.

Materials & Relevant Standards

End Rings & Centre Sleeve

S.G. Iron to BS EN 1563 Symbol EN-GJS-450-10

Gasket

EPDM Compound Grade E to BS EN 681-1

Nitrile Compound to Grade G BS EN 682, Type G

Gripper & Carrier

Acetal Copolymer Grade M25 or equivalent

Coatings

Cast/Metal Components:

- Rilsan Nylon 11 (Black)

Bolts:

- Delta Seal GZ - Silver

Nuts:

- Delta Seal GZ - Silver

Bolts

Standard - Stainless steel to BS EN 3506-1 Grade A2 Property Class 80 or 70

Option - Stainless steel to BS EN ISO 3506-1 Grade A4 Property Class 50

Nuts

Stainless Steel to BS EN 3506-2 Grade A4 Property Class 80

Washers

Stainless steel – BS1449:PT2 Grade 304 S15

Grit to Gripper

Corundum - aluminium oxide with a chemical composition of Al_2O_3 and a hexagonal crystal structure (rock-forming mineral that is found in igneous, metamorphic, and sedimentary rocks).

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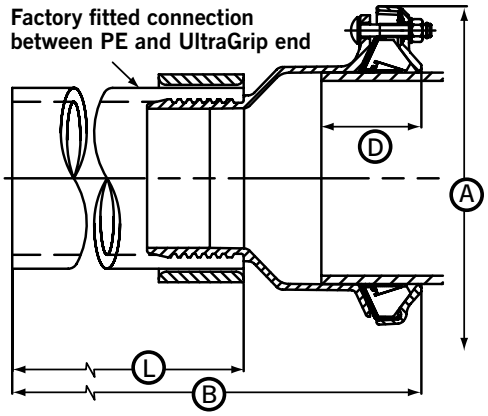
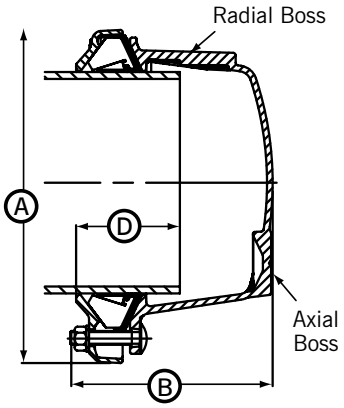
UltraGrip Pecatadaptors & End Caps

Datasheet 1/2

Pecatadaptor



End Cap



UltraGrip Pecatadaptors

Nom Size	Size Range		PE		Insertion Depth (D)		Dimensions			Bolts		Weight (kg)
							Overall		PE Pipe End			
	Min	Max	Size	Sdr	Min	Max	A	B	L	Size	Type	
80	85.7	107.0	90	11	65	95	212	682	496	3-M12 x 70	HRH	7.43
100	107.0	133.2	110	11	90	115	280	708	496	3-M16 x 93	CSX	12.23
100	107.0	133.2	125	11	90	115	280	701	496	3-M16 x 93	CSX	12.92
125	132.2	160.2	110	11	90	115	305	727	496	3-M16 x 93	CSX	13.84
125	132.2	160.2	125	11	90	115	305	721	496	3-M16 x 93	CSX	14.56
150	158.2	192.2	160	11	90	125	339	730	496	4-M16 x 93	CSX	20.7
150	158.2	192.2	180	11	90	125	339	727	496	4-M16 x 93	CSX	23.27
200	218.1	256.0	225	11	125	165	432	751	496	5-M16 x 93	CSX	36.22

UltraGrip End Caps

Nom Size	Size Range		Insertion Depth (D)		Boss				Dimensions		Bolts		Weight (kg)
					Axial		Radial						
	Min	Max	Min	Max	Min BSP	Max BSP	Min BSP	Max BSP	A	B	No-size	Type	
40	43.5	63.5	65	95	1/2"	2"	1/2"	3/4"	168	150	3-M12 x 70	CSX	3.34
65	63.0	83.7	65	95	1/2"	2"	1/2"	3/4"	189	150	3-M12 x 70	CSX	3.97
80	85.7	107.0	65	110	1/2"	2"	1/2"	3/4"	212	166	3-M12 x 70	CSX	4.84
100	107.0	133.2	90	125	1/2"	2"	1/2"	1"	280	197	3-M16 x 93	CSX	8.44
125	132.2	160.2	90	135	1/2"	2"	1/2"	1"	305	215	3-M16 x 93	CSX	10.12
150	158.2	192.2	90	135	1/2"	2"	1/2"	1"	339	219	4-M16 x 93	CSX	12.6
175	192.2	226.9	125	165	1/2"	2"	1/2"	1"	403	235	5-M16 x 93	CSX	19.54
200	218.1	256.0	125	165	1/2"	2"	1/2"	1 1/2"	432	237	5-M16 x 93	CSX	21.4
250	266.0	310.0	125	165	1/2"	2"	1/2"	2"	476	309	6-M16 x 120	CSX	32.46
300	315.0	356.0	125	200	1/2"	2"	1/2"	2"	522	310	8-M16 x 120	CSX	39.21

Working Pressure & Temperature Ratings

Nominal Size	Gripping Product		Flex Product		Operating Temperature
	Gas	Water	Gas	Water	
DN40 to DN300	5 bar	16 bar	5 bar	16 bar	-20°C to +30°C
DN350 to DN400	5 bar	10 bar	5 bar	10 bar	
DN450 to DN600	N/A	10 bar	N/A	10 bar	

Notes:

1) Site Test Pressure – 1.5 times working pressure.
2) Factory Test Pressure – The minimum requirement in European Standards is 1.5 times working pressure plus 5 bar (e.g. 29 bar for 16 bar working pressure).
3) All water contact components are approved for use with Potable Water.

Bolt Torque	
	Nm
M12	55 - 70
M16	95 - 120
M20	210 - 230

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UltraGrip Pecatadaptors & End Caps

Datasheet 2/2

Technical Information

Gripping product suitable for

Steel / Ductile iron / Grey cast iron / PE / PVC

Flex product suitable for

Steel / Ductile iron / Grey cast iron / PVC / Asbestos cement

Angularity

Pecatadaptor 4°

End Cap 4°

Support liners – PE and PVC pipes

A close fit support liner is required when used on:

- All PE pipes
- Thin walled PVC pipes

When used on thick walled PVC pipes a support liner is not required. Please contact Viking Johnson for further details.

Pecatadaptors length of PE accommodates:

- 2 Electrofusion connections

End Cap Optional - drilled & tapped bosses available:

- Axial – to act as inlet/drainage point (Min=1/2", Max=2" - all sizes)
- Radial – to act as air release/bleed hole (Min=1/2", Max=2" - depending on diameter)

End Cap Bolts

Sheraplex coated steel bolts to allow repeated use without the need to lubricate threads. Stainless steel bolts are optional.

Use of restrained couplings on exposed pipework

Above ground exposed pipework is subject to both loads from the internal pressure and those from temperature changes / thermal expansion, which can be substantially higher than those from internal pressure and cannot always be safely determined. For this reason it is recommended that the use of UltraGrip be restricted to buried pipelines, valve chambers and above ground indoor applications and not exposed to direct sunlight or excessive temperature changes (e.g. pump houses).

Approvals

The following water contact materials used in UltraGrip are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, KIWA

Gasket (EPDM):

- WRAS, KTW, DVGW, W270, KIWA

In addition to the above, UltraGrip range as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Gasket (Nitrile):

- DVGW Approved

DN40 to DN300 UltraGrip has been independently tested by BSI to confirm it meets the requirements of BS EN 14525.

Materials & Relevant Standards

End Rings & Centre Sleeve

S.G. Iron to BS EN 1563 Symbol EN-GJS-450-10

Completion Sleeve to Pecatadaptor

Mild Steel Tube to DIN1629 Grade ST52 or ST37-2

Gasket

EPDM Compound Grade E to BS EN 681-1

Nitrile Compound to Grade G BS EN 682, Type G

Coatings

Cast/Metal Components:

- Rilsan Nylon 11 (Black)

Coatings for Both bolts and Nuts:

- Delta Seal GZ - Silver

Option (End Caps with Grade 8 Steel Fasteners):

- Sheraplex to WIS 4-52-03

Gripper & Carrier

Acetal Copolymer Grade M25 or equivalent

Bolts

Standard - Stainless steel to BS EN 3506-1 Grade A2 Property Class 80 or 70

Option (End Caps only): Steel to BS EN ISO 898 Property Class Grade 8.8 equivalent DIN 267 - Part 3:Class 8.8

Option - Stainless steel to BS EN ISO 3506-1 Grade A4 Property Class 50

Nuts

Stainless Steel to BS EN 3506-2 Grade A4 Property Class 80

Option (End Caps only): Steel to BS EN20898-2 Property Class 8.0

Washers

Stainless steel – BS1449:PT2 Grade 304 S15

Grit to Gripper

Corundum - aluminium oxide with a chemical composition of Al_2O_3 and a hexagonal crystal structure (rock-forming mineral that is found in igneous, metamorphic, and sedimentary rocks).

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Germany - Memmingen

Maintenance on Water Pipe Network

UltraGrip Reducing Coupling - DN80/DN110 HDPE

Project

In Germany, many utility companies use HDPE pipe material for daily repair and renewal of existing pipe network.

A project in Memmingen, FriaGrip (UltraGrip) reducing coupling with a stainless steel support liner was installed to connect a cast iron pipe sized at DN80 to a new 110mm HDPE pipe.

Client

Stadtwerke Memmingen

Distributor

Aliaxis Germany

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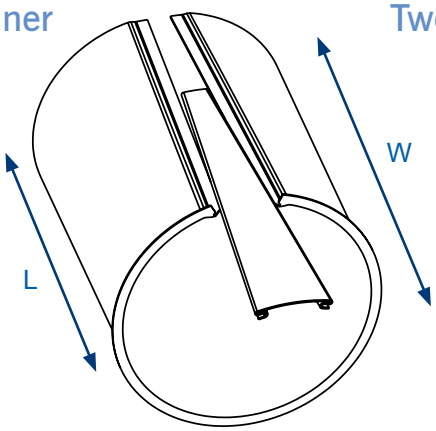
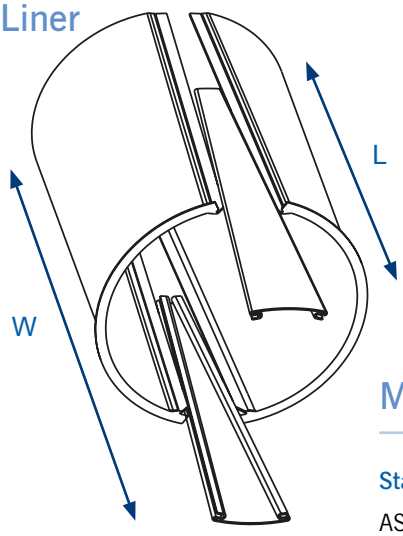
UltraGrip Support Liner for PE & PVC Pipes DN40 to DN600

Datasheet 1/1

One Part Liner



Two Part Liner



Materials

Stainless steel

ASTM, AISI 304

Table Key

✓= Requires a Support Liner and products available

A = Requires a support line, which is technically proven; contact Viking Johnson with regard to availability

– = Liners not available for this pipe size / SDR rating

Note: If PVC pipe wall thickness is thinner than stated in table contact Viking Johnson to verify availability of liners.

If a stainless steel liner is required, the dimensions will be as per the equivalent sized one for PE pipe.

UltraGrip Stainless Steel Support Liners

For PE Pipes

Pipe OD	PE pipes - Stainless steel support liners need and availability for different SDR ratings					Stainless steel support liner details			
	SDR9	SDR11	SDR13.6	SDR17	SDR21	T (mm)	L (mm)	W (mm)	No Wedges
40	–	✓	–	–	–	1.5	110	–	None
50	–	✓	–	✓	–	1.5	110	–	None
63	A	✓	✓	✓	✓	1.0	135	220	1
75	A	✓	A	✓	✓	1.0	135	220	1
90	A	✓	✓	✓	✓	1.0	135	220	1
110	A	✓	✓	✓	✓	1.0	150	220	1
125	A	✓	A	✓	✓	1.0	150	220	1
140	A	✓	A	✓	✓	1.0	150	220	1
160	A	✓	✓	✓	✓	1.0	175	220	1
180	A	✓	B	✓	✓	1.0	175	220	1
200	A	✓	A	✓	✓	2.0	210	220	1
225	A	✓	A	✓	✓	2.0	180	300	1
250	✓	✓	A	✓	✓	2.0	180	300	1
280	A	✓	✓	✓	✓	2.0	200	300	1
315	✓	✓	A	✓	✓	2.0	200	300	1
355	✓	✓	A	✓	✓	2.0	200	300	1
400	✓	✓	✓	✓	✓	2.0	200	300	1
450	A	✓	✓	✓	✓	3.0	240	300	2
500	A	✓	A	✓	A	3.0	240	300	2
560	A	✓	A	✓	A	3.0	240	300	2
630	A	✓	A	✓	A	3.0	240	300	2
710	A	✓	A	✓	A	3.0	240	300	2

For Metric PVC Pipes

Pipe OD	PVC pipes with wall thickness greater than that notes do not need a support liner when use with UltraGrip
63	3.4mm & Over
75	3.6mm & Over
90	4.3mm & Over
110	5.3mm & Over
125	6.0mm & Over
140	6.7mm & Over
160	7.7mm & Over
180	8.6mm & Over
200	9.6mm & Over
225	10.8mm & Over
250	11.9mm & Over
280	13.4mm & Over
315	15.0mm & Over
355	16.9mm & Over
400	19.1mm & Over
450	21.5mm & Over
500	23.9mm & Over
560	26.7mm & Over
630	30.0mm & Over

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Germany – Bremen

Valve Replacement on Cast Iron mains

UltraGrip Flange Adaptors – DN500

Project

A quick and efficient method of replacement of valves using DN500 UltraGrip Flange Adaptors

Client

Bremen – Germany

Distributor

Friatec AG, Manheim

Contractor

STEHNKE Bauunternehmung GmbH & Co. Bremen

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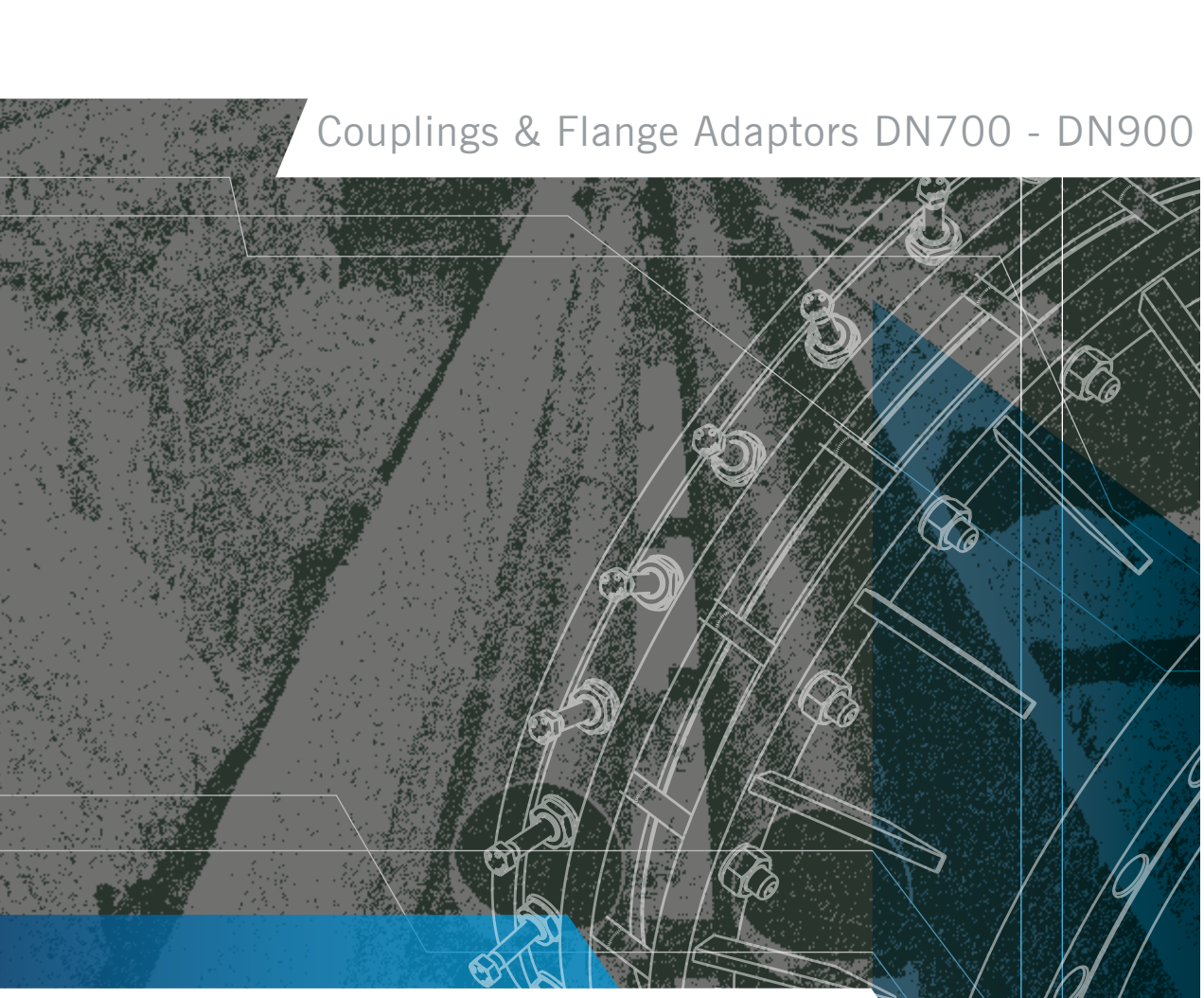
UltraGrip® AMPLIFIED

NEW

Couplings & Flange Adaptors DN700 - DN900



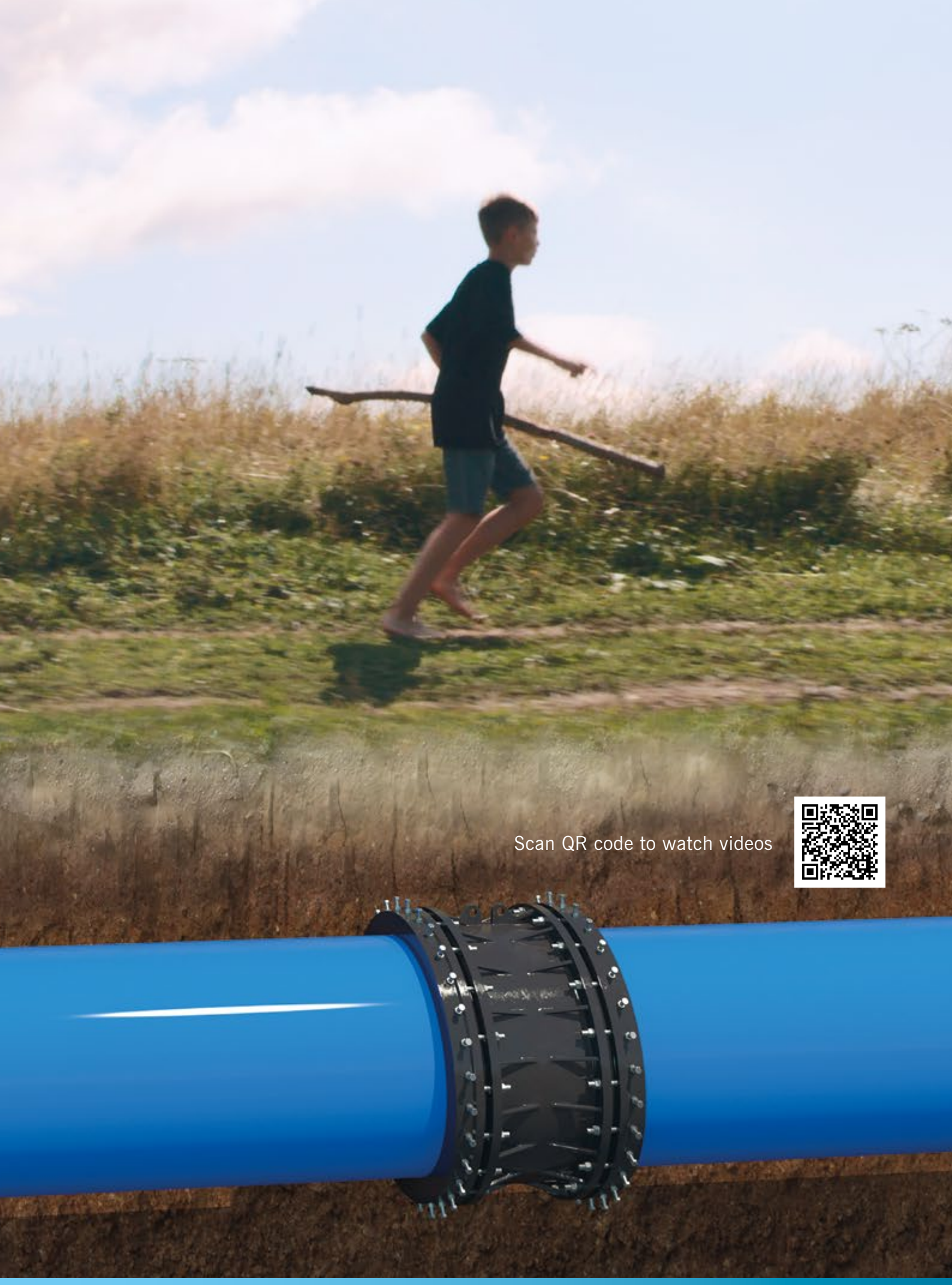
Performing for Generations to Come

VIKING JOHNSON®

UltraGrip®

Performing for Generations to Come

Telephone: +44 (0)1462 443322


Scan QR code to watch videos

Climate change is reshaping how Utilities operate

Adapting to Environmental Extremes

Many utilities around the world are finding a need to transport water over longer distances, and especially from regions with a surplus to drought stricken ones.

Consequently, the industry has sort more cost effective pipeline designs that utilise larger sizes and higher pressure ratings, with 16 bar becoming the standard working pressure across their networks.

A Perfect Partner for Infrastructure & Repairs

Viking Johnson, is a trusted industry name, with a rich history, dating back to the 1930's and internationally recognised for the design and manufacture of large diameter restrained couplings and flange adaptors.

The extension to the proven UltraGrip range of wide tolerance restrained fittings now includes DN700 to DN1200 sizes, which are ideal for new lay and large scale infrastructure projects.

Viking Johnson has made specification easy across the UltraGrip Amplified range. Couplings and reducing couplings are rated 10 bar and 16 bar with a choice of flange adaptors rated 10 bar and 16 bar. There is also a full set of 2D and 3D CAD and BIM models.

Couplings & Flange Adaptors

Wide Tolerance

UltraGrip Coupling

UltraGrip Reducing Coupling

UltraGrip Flange Adaptor

bimstore

STANDARD WORKING PRESSURE 16 bar

Upsized for the challenges ahead

Unique Restraining System

The UltraGrip restraint system is equipped with a unique sealing and gripping technology that allows water utilities contractors to repair pipelines faster, without the need for external restraints, like for example thrust blocks.

Advanced grip and seal technology

Dedicated Gasket Design

UltraGrip Amplified has adapted a proven, high performance wide tolerance gasket technology which provides maximum sealing pressure, even on scored, pitted and corroded pipe surfaces. It is a gasket technology which Viking Johnson has been using in their products, for the water industry since the 1980's with over 9 million units sold.

Versatile Fittings

UltraGrip is the perfect choice for water and wastewater applications for projects below or above ground* It is the ideal solution for joining diverse pipe materials such as Ductile Iron, Cast Iron, Steel, PE, MOPVC and Asbestos Cement.

Cast Iron to Steel

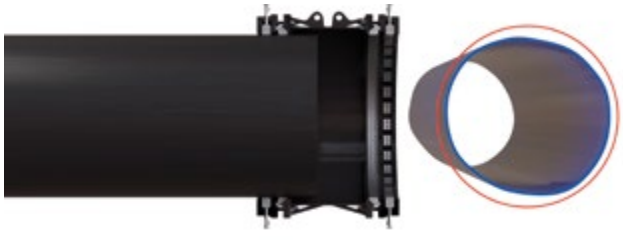
Steel to Asbestos Cement

Cast Iron to MOPVC

Ductile Iron to PE

Wide Tolerance

When pipes are distorted or out of round the UltraGrip's market leading 35mm tolerance provides more clearance to ensure a simple connection. The fitting can accommodate pipe distortion within the manufacturing tolerances and connects both the spigot end and mid barrel ductile iron pipe in one fitting as well as both class AB and CD cast iron.



Accommodates pipe distortion

*UltraGrip can be used in above ground applications, where it is not exposed to direct sunlight, and falls within the 40 degrees operating temperature range (between -20 and +60).

UltraGrip Amplified DN700 - DN1200

Big fittings that deliver results

For Peace of Mind

UltraGrip offers 4° angularity at each end covering the entire range including top and bottom tolerance. This feature eliminates the need for installers to measure the pipe to calculate the allowable angularity.

It also offers benefits on the design of new pipe networks as bends can be designed into the pipeline without use of specialist fittings and offers flexibility on installation covering pipe misalignment.

Ease of Installation

UltraGrip is easy to install on site even in narrow trenches. Installation is made simple with lifting eyes added for ease of manoeuvrability. The product is preassembled to allow for quick positioning over the top and bottom tolerance pipe with captive studs requiring only a single spanner for tightening when dealing with tricky site conditions.

Plus after installation there is no requirement to re-torque or to revisit after initial bolt up.

Exceptional Versatility for Large Scale Infrastructure Projects

4° Angularity across the range at both ends

Focused on sustainability

A Renewable Resource

All UltraGrip lines are coated in Rilsan Nylon, a bio sourced coating, manufactured from a renewable raw material of castor seeds, that grows easily in semi-arid regions, causing no deforestation and not competing with food production, making it a truly renewable material.

RILSAN®

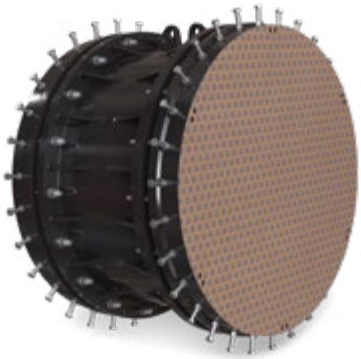
A Unique Bio Coating

Rilsan® powder coatings have been used in the water industry since 1967. It is a unique, high performance polyamide providing the highest degree of corrosion protection for metal parts whilst being compliant with the most demanding drinking water regulations (WRAS, KIWA etc.).

Selected not only for the coating's excellent protection against corrosion it also withstands rough high levels of deformation making it ideal for products that flex during bolt up.

Castor Scholarships

In 2022 Arkema awarded Viking Johnson one of the first Castor Scholarships as a selected global customer with a strong commitment to sustainability.



Biodegradable Protective Packaging

Protective caps have been introduced to keep the fitting clean and free from any contamination. The caps are made of biodegradable material to minimise impact to the environment and ensure fittings are clean and ready for use on potable water applications.

Focused on sustainability

Reducing Our Carbon Footprint

One of the core values within Crane Co. businesses is the elimination of waste throughout the organisation.

The Company also has a structured cadence and process to manage and measure progress of sustainability initiatives.

2030 Targets

10%↓
Reduction in water consumed per direct labor hour by 2030

20%↓
Reduction in greenhouse gas emissions per direct labor hour by 2030

20%↓
Reduction in electricity consumed per direct labor hour by 2030

15%↓
Reduction in solid non-hazardous waste per direct labor hour by 2030

Source Materials

UltraGrip is manufactured from 80% recycled steel. Utilising recycled steel uses up to 75% less energy than producing new fittings, from fresh raw materials and reduces waste by not having to extract minerals from the ground.

80% Recycled Steel

Concrete Removal

A key ingredient of concrete thrust block manufacturing is Cement which contributes up to 8% of global CO_2 emissions. UltraGrip minimises the need for thrust blocks because the enhanced gripping design accommodates end load forces from the internal pressure within pipelines.

Long Life Protection

UltraGrip has a 50 year design life expectancy which helps meet global climate targets in reducing carbon emissions. This minimises manufacturing, shipping, installation and repairs ensuring a better life style for generations to come.

Design Life Expectancy • 50 YEARS • Design Life Expectancy

Reduce Stock Holding

Stock holding can be kept to a minimum with careful placement of the tolerance range to cover core pipe materials.

CASE STUDY

Prague Water - UltraGrip Amplified

Viking Johnson has supplied UltraGrip couplings with flange adaptors to a key channel partner TRAN-SIG-MA. This is a refurbishment project of a pipeline network in Jeremiasova Street, in central Prague for the largest water and wastewater utility company in the Czech Republic, Prague Water. This water main is a critical city artery serving 85,000 people from a water storage station based outside the city, in Kopanina.

The project was complex and involved renewal of an existing DN800 steel water main pipeline by replacing a section with new ductile iron pipework, plus upgrading of an old existing gate valve with a new eccentric butterfly valve, to have better control of fluid flow, as well as adding in new hydrants to the system, connecting to a DN600 pipeline.

UltraGrip was the ideal in this situation as it was also able to cope with misalignment of the DN800 steel pipe which had an angular deflection of about 5 degrees and easily met the pressure requirements of 8 bar and can be fitted to a wide variety of pipe materials.

UltraGrip®

SECTOR

Pipeline renewal and upgrade

LOCATION

Prague 13, Jeremiasova Street

CLIENT / END USER

Prague Water

DISTRIBUTOR

TRAN-SIG-MA

Pražské vodovody a kanalizace

TRAN-SIG-MA

SPECIFICATION

2 x UltraGrip Amplified Flange Adaptors DN800
1 x UltraGrip Amplified Coupling DN800
2 x UltraGrip Flange Adaptors DN300

Viking Johnson (part of Crane BS &U) manufactures couplings, flange adaptors and associated fittings for the Utilities industries. Viking Johnson cannot make recommendations regarding the pipeline design, which includes all components, intended operational substances, introduced chemical species and materials. Any comments made by Viking Johnson regarding product compatibility apply only to Viking Johnson's product range.

UltraGrip Amplified Product Design Benefits

Cost Effective Pipelines

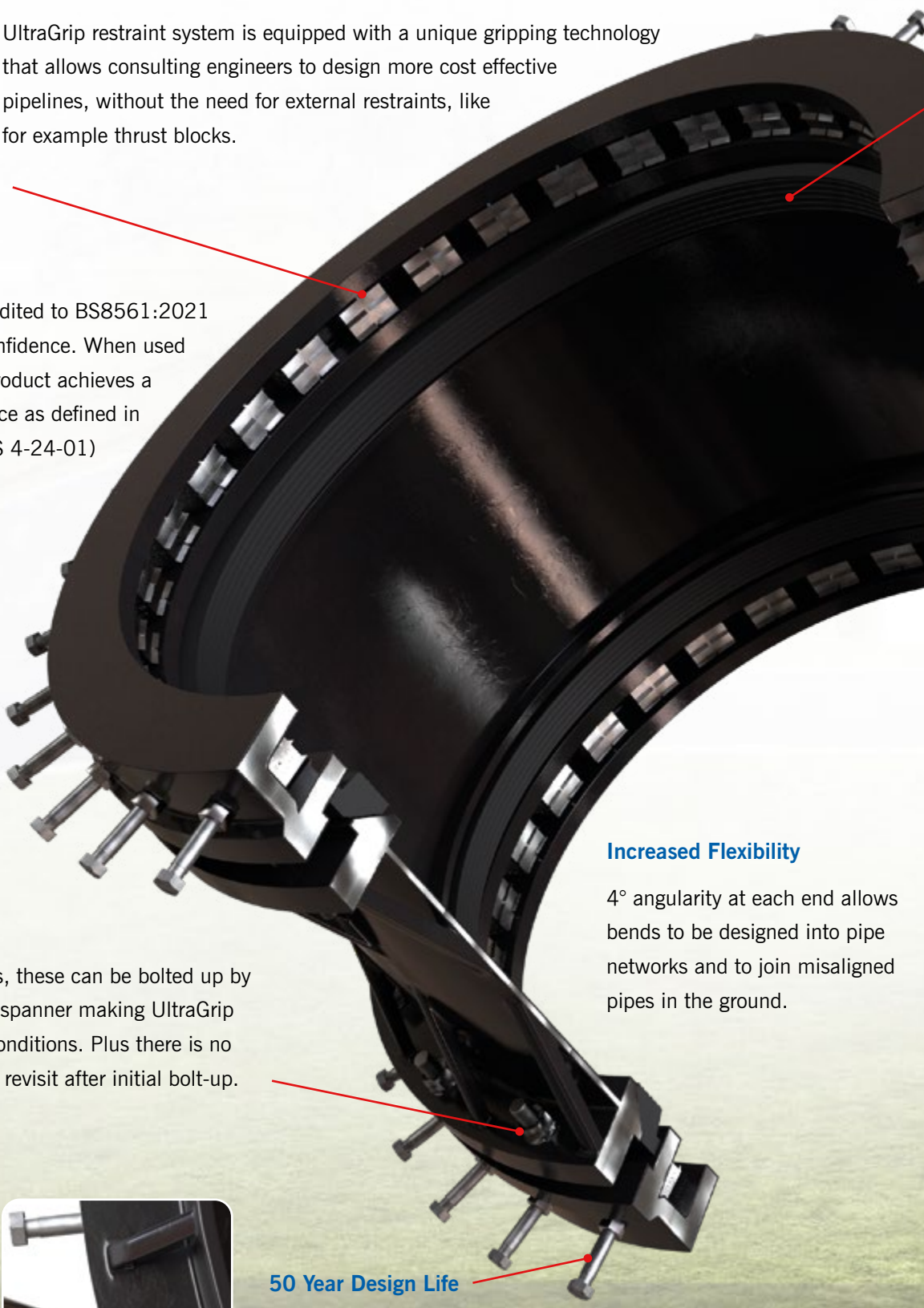
UltraGrip restraint system is equipped with a unique gripping technology that allows consulting engineers to design more cost effective pipelines, without the need for external restraints, like for example thrust blocks.

Long Term Performance

Product is third party accredited to BS8561:2021 which ensures end user confidence. When used on polyethylene pipe the product achieves a Type 2 end load performance as defined in IGN 4-01-02 (formally WIS 4-24-01) and end load performance to ISO 17885.*

Higher Pressures

16 bar product as standard, to support the growing requirement for higher operating pressure pipe networks.



Increased Flexibility

4° angularity at each end allows bends to be designed into pipe networks and to join misaligned pipes in the ground.

Simple to Fit

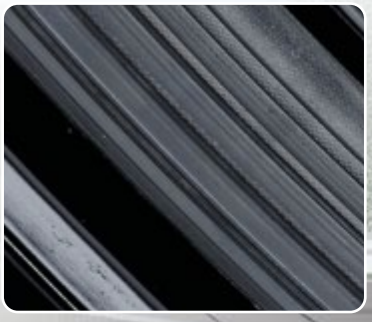
Supplied with captive studs, these can be bolted up by a technician using a single spanner making UltraGrip ideal for use in all trench conditions. Plus there is no requirement to re-torque or revisit after initial bolt-up.

50 Year Design Life

Along with extensive long term testing, and high performance gasket, the stainless steel bolts coated with dry film lubricant provide excellent corrosion resistance against degradation and maximises the longevity of the product.

*Certification applies to selected sizes only. Please contact us for full details.

DN700 - DN1200*



No Leakages

A proven, high performance wide tolerance, EPDM gasket technology which Viking Johnson has been using in their products for the water industry over the last 40 years.

Connects Various Pipe Materials

A 35mm tolerance ensures one size fits multiple pipe materials, and designed to allow for use on out of round and out of specification pipe.

Simple Repairs

Large setting gaps allow operative bigger tolerances for cutting and positioning pipes making it quicker and easier when undertaking repairs.

Ease of Handling

Installation made simple with incorporated lifting eyes for ease of manoeuvrability.

Working Pressure & Temperature Ratings

Nominal Size	Gripping Product		Flex Product		Operating Temperature
	Gas	Water	Gas	Water	
DN700	N/A	16 bar	N/A	16 bar	-20 to +60
DN800	N/A	16 bar	N/A	16 bar	
DN900	N/A	16 bar	N/A	16 bar	
DN1000	N/A	16 bar	N/A	16 bar	
DN1200	N/A	10 bar	N/A	10 bar	

Exhaustive testing & accreditations

Extensive Testing & Quality Endorsements

Viking Johnson products undergo vigorous testing regimes to ensure a long life, these includes finite element analysis (ANSYS) as well as extensive testing witnessed by third party test houses to verify compliance with the long term testing as defined in BS8561:2021, when used on Ductile Iron, Steel, PE, MOPVC, Cast Iron, and Asbestos Cement. For PE UltraGrip fittings also achieve an axial end load equivalent of a Type 2 performance as defined and tested by IGN 4-01-02:2017.*

In addition, the performance has been validated through extensive physical testing, including hydrostatic, pull-out, leak tightness, strength and resistance to distortion tests. Furthermore, pressure tests with shear load have been carried out on grooved pipe, to simulate typical corrosion and ground loading found in old pipelines.

Also the products can mobilise restraint and seal effectively in all situations, giving installers and end users confidence the products will perform.

*Certification applies to selected sizes only. Please contact us for full details.

Demonstration Centre

As part of the development of the UltraGrip range and for an enhanced customer experience, Viking Johnson has invested in a new Demonstration Centre.

The Centre enables simulations of real trench like conditions whilst testing product under pressure with both tensile and hydrostatic assessments. All the water used in these tests is provided by a sustainable rainwater harvesting system.

So, customers, contractors and technicians wishing to learn more about UltraGrip, can visit the Centre, view and handle the product whilst receiving essential hands on training.

UltraGrip is compliant with the industry standards as confirmed with WRc certification, which offers peace of mind and verifies the 50 years design life expectancy.

All water contact materials used in UltraGrip are approved for use with potable water; the gaskets are WRAS approved and the Rilsan Nylon coating has both WRAS and DWI certification.

CASE STUDY

ISE Valley & UltraGrip Amplified

Viking Johnson UltraGrip Amplified DN700's have been specified and installed at Stanton Cross on a new housing development near Wellingborough to repair an existing sewage mains which burst over the Christmas period in 2022. As a temporary measure 540 metres of overground piping was installed to handle the sewage while repairs were made to the existing 1970's pipe network.

Four Viking Johnson UltraGrip Amplified DN700 flange adaptors were chosen by Anglian Water One Alliance for the project to rejoin corroded ductile iron pipe sections where the pipe network on the estate changes direction.

UltraGrip is ideal for this type of work, and easily met the requirements for the 6 bar pipework rating for this repair project and as it is a restrained fitting allowed the contractor to remove and not replace expensive thrust blocks. The installation was also quick and easy.

"It has worked perfectly. There is a cost benefit of course, we would have been thrust blocking - time saved us probably a week plus a lot smaller excavation. Also our carbon footprint is a lot lower. This joint is perfect, worked lovely, it's all gone to plan."

Trevor Newman Site Foreman
@one Alliance (Barhale)

SECTOR
Repair Sewage mains

LOCATION
ISE Valley Wellingborough

CLIENT
Anglian Water @one Alliance

CONTRACTOR
Barhale, Skanska

DISTRIBUTOR
Wolseley

SPECIFICATION
Viking Johnson 4x UltraGrip Amplified Flange Adaptors DN700

UltraGrip®

love every drop anglianwater

@one

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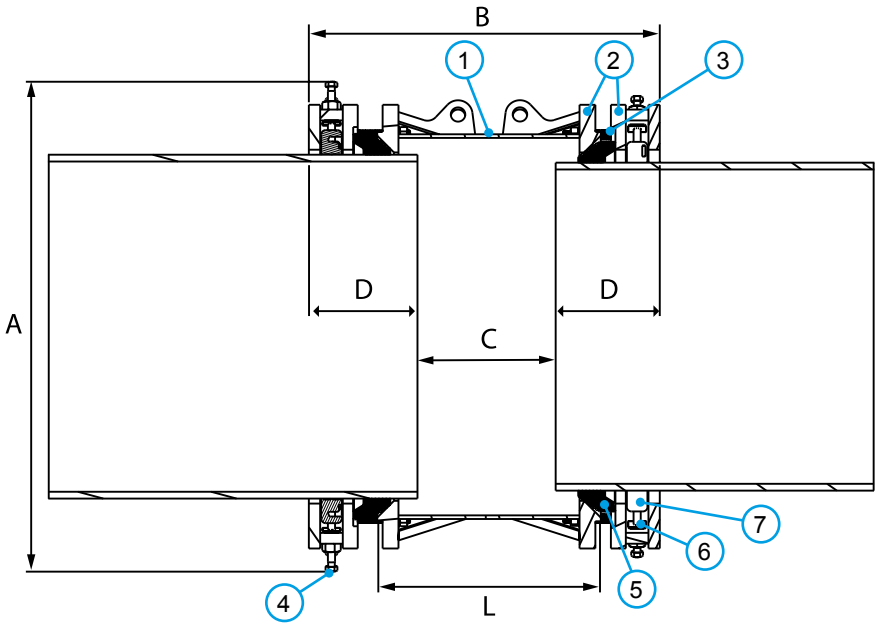
UltraGrip Amplified Couplings DN700 - DN800

Datasheet 1/2

Coupling



Key

1 = Centre Sleeve
2 = End Ring
3 = Studs
4 = Bolt, Nut & Washer
5 = Gasket
6 = Square Bush Nut
7 = Gripper

HAZARD WARNING: Lifting lugs, where provided, are designed/tested for lifting only the components to which they are attached. Failure to follow these instructions could result in property damage, serious personal injury or death.
The maximum safe working load of the lifting eye is equal to the product weight.

Couplings DN700 - DN800

Nom Size	Size Range (mm)		Insertion Depth (D) (mm)		Setting Gap (C) (mm)		Dimensions (mm)			Fasteners		Weight (kg)
							Overall		Sleeve			
	Min	Max	Min	Max	Min	Max	A	B	L	Axial Stud No-size	Radial Bolt No-size	
700	700	735	220	325	150	360	1085	800	495	32 x M20	48 x M16	559
700	727	762	220	325	150	360	1115	800	495	32 x M20	64 x M16	591
700	750	785	220	325	150	360	1135	800	495	32 x M20	48 x M16	592
800	789	824	220	325	160	370	1175	810	500	36 x M20	60 x M16	638
800	825	860	220	325	160	370	1210	810	500	36 x M20	80 x M16	684
800	853	888	220	325	160	370	1240	810	500	36 x M20	60 x M16	680

Connections based on standard pipe OD's*

Nom Size	Range		Ductile Iron	PE / MOPVC	Steel / FBE Coated Steel	Cast Iron	Asbestos Cement
	Min	Max					
DN700	700	735		710mm	DN700	26" (AB & CD)	26" (AB & CD)
DN700	727	762	DN700			27" (AB & CD)	27" (AB & CD)
DN700	750	785			DN750	28" (AB & CD)	28" (AB & CD)
DN800	789	824		800mm	DN800	30" (AB)	30" (AB)
DN800	825	860	DN800				
DN800	853	888				32" (AB & CD)	32" (AB & CD)

*The above table is for guidance only, please ensure the OD and material of the pipe is compatible before installation

Working Pressure & Temperature Ratings

Nominal Size	Gripping Product		Flex Product		Operating Temperature
	Gas	Water	Gas	Water	
DN700	N/A	16 bar	N/A	16 bar	-20 to +60
DN800	N/A	16 bar	N/A	16 bar	

Pipe Materials

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UltraGrip Amplified Couplings DN700 - DN800

Datasheet 2/2

Technical Information

Working pressure rating:

Water:

DN700 to DN800 = 16 bar

Gas:

Not approved

Site test pressure:

1.5 times working pressure

Angularity

Couplings 8°, +/- 4° angularity on each side

Gripping product suitable for

Ductile iron / PE (PE100, SDR 11, 17, 21, 26)
Steel / Cast iron / MOPVC (SDR 33)

Flex product suitable for

Ductile Iron / PE (PE100, SDR 11, 17, 21, 26)
Steel / Cast Iron / MOPVC / Asbestos Cement

Bolt Torque

	Recommended Bolt Torque (Nm) on every bolt				
	Bolt Size	Ductile Iron	PE-100	Steel & Cast Iron	MOPVC
Axial Fastener (For Gasket Engagement)	M20	190-210	190-210	190-210	190-210
Radial Fastener (For Grippers)	M16	175-185	140-150	110-120	95-105

For the full installation details and to ensure correct fitting, please refer to the UltraGrip DN700 DN800 installation instructions.

Temperature rating of product

Operating temperature -20°C to +60°C

Support liners – PE and MOPVC pipes

A close fit Viking Johnson support liner is required when used on:

- All PE pipes
- MOPVC pipes

Use of restrained couplings on exposed pipework

UltraGrip can be used in above ground applications, so long as the pipework is supported, it is not exposed to direct sunlight and falls within the 40°C operating temperature range (between -20°C and +60°C).

Approvals

The following water contact materials used in UltraGrip are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

Gasket (EPDM):

- WRAS, W270

Finished Product:

BS8561; WRc certification verifying that the product complies with BS8561 (Specification for mechanical fittings for use in the repair, connection and renovation of pressurized water supply pipelines — Requirements and test methods).

Polyethylene Pipe Pull Out Performance; WRc certification confirming on PE a Type 2 end load performance (defined in IGN 4-01-02:2017 [N3]) when tested in accordance with the method given in BS EN ISO 3501.

Materials & Relevant Standards

1) End Rings 2) Centre Sleeve

Mild steel to BS EN10025 Grade S355

3) Studs

Stainless steel – BS EN ISO 3506-1 Grade A4-80

4) Bolts

Stainless steel to BS EN ISO 3506-1 Grade A4-80

4) Nuts

Stainless steel – BS1449:PT2 ISO 3506-1 Grade A4-80

4) Washers

Stainless steel – BS1449:PT2 ISO 3506-1 Grade A4-50

5) Gasket

EPDM to BS EN 681-1

6) Square Bush Nut

Cast stainless steel to ASTM A487/A487M-21, Grade CA6NM Class A

7) Gripper

Stainless steel (Cast) PH 17-4 H925 to BS EN 10088-1

Retention Insert

Nylon 6

Coatings

End Rings / Centre Sleeve / Flange:

- Rilsan Nylon 11 (Black)

Bolts:

- Dry Film Lubricant GZ – Silver

Nuts:

- Dry Film Lubricant GZ – Silver

Gripper - None

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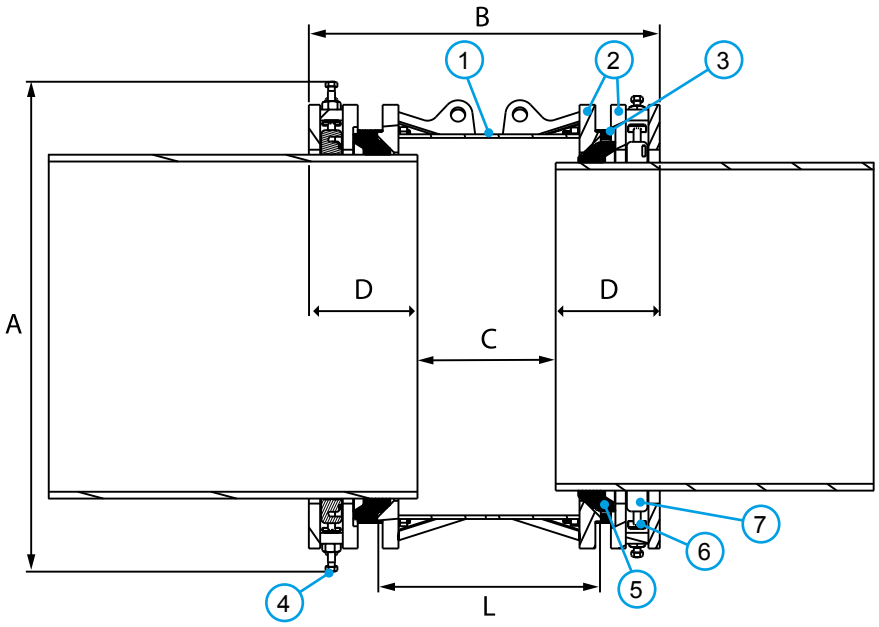
UltraGrip Amplified Couplings DN900

Datasheet 1/2

Coupling



Key

1 = Centre Sleeve
2 = End Ring
3 = Studs
4 = Bolt, Nut & Washer
5 = Gasket
6 = Square Bush Nut
7 = Gripper

HAZARD WARNING: Lifting lugs, where provided, are designed/tested for lifting only the components to which they are attached. Failure to follow these instructions could result in property damage, serious personal injury or death.
The maximum safe working load of the lifting eye is equal to the product weight.

Couplings DN900

Nom Size	Size Range (mm)		Insertion Depth (D) (mm)		Setting Gap (C) (mm)		Dimensions (mm)			Fasteners		Weight (kg)
							Overall		Sleeve			
	Min	Max	Min	Max	Min	Max	A	B	L	Axial Stud No-size	Radial Bolt No-size	
900	892	927	220	325	165	375	1280	815	500	44 x M20	76 x M16	705
900	926	961	220	325	165	375	1314	815	500	44 x M20	84 x M16	733
900	958	993	220	325	165	375	1346	815	500	44 x M20	76 x M16	780

Connections based on standard pipe OD's*

Nom Size	Range		Ductile Iron	PE	Steel / FBE Coated Steel	Cast Iron	Asbestos Cement
	Min	Max					
DN900	892	927		900mm	DN900	33" (CD) 34 (AB)	33" (CD) 34 (AB)
DN900	926	961	DN900				
DN900	958	993				36" (AB & CD)	36" (AB & CD)

*The above table is for guidance only, please ensure the OD and material of the pipe is compatible before installation

Working Pressure & Temperature Ratings

Nominal Size	Gripping Product		Flex Product		Operating Temperature
	Gas	Water	Gas	Water	
DN900	N/A	16 bar	N/A	16 bar	-20 to +60

Pipe Materials

Ductile Iron | PE | Steel | Cast Iron | Asbestos Cement

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UltraGrip Amplified Couplings DN900

Datasheet 2/2

Technical Information

Working pressure rating:

Water:

DN900 = 16 bar

Gas:

Not approved

Site test pressure:

1.5 times working pressure

Angularity

Couplings 8°, +/- 4° angularity on each side

Gripping product suitable for

Ductile iron / PE (PE100, SDR 13.6, 17, 21)
Steel / Cast iron

Flex product suitable for

Ductile Iron / PE (PE100, SDR 13.6, 17, 21)
Steel / Cast Iron / Asbestos Cement

Bolt Torque

	Recommended Bolt Torque (Nm) on every bolt			
	Bolt Size	**Ductile Iron**	**PE-100**	**Steel & Cast Iron**
Axial Fastener (For Gasket Engagement)	M20	190-210	190-210	190-210
Radial Fastener (For Grippers)	M16	190-210	140-150	110-120

For the full installation details and to ensure correct fitting, please refer to the UltraGrip DN900 installation instructions.

Temperature rating of product

Operating temperature -20°C to +60°C

Support liners – PE

A close fit Viking Johnson support liner is required when used on:

- All PE pipes

Use of restrained couplings on exposed pipework

UltraGrip can be used in above ground applications, so long as the pipework is supported, it is not exposed to direct sunlight and falls within the 40°C operating temperature range (between -20°C and +60°C).

Approvals

The following water contact materials used in UltraGrip are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

Gasket (EPDM):

- WRAS, W270

Materials & Relevant Standards

1) End Rings 2) Centre Sleeve

Mild steel to BS EN10025 Grade S355

3) Studs

Stainless steel – BS EN ISO 3506-1 Grade A4-80

4) Bolts

Stainless steel to BS EN ISO 3506-1 Grade A4-80

4) Nuts

Stainless steel – BS1449:PT2 ISO 3506-1 Grade A4-80

4) Washers

Stainless steel – BS1449:PT2 ISO 3506-1 Grade A4-50

5) Gasket

EPDM to BS EN 681-1

6) Square Bush Nut

Cast stainless steel to ASTM A487/A487M-21, Grade CA6NM Class A

7) Gripper

Stainless steel (Cast) PH 17-4 H925 to BS EN 10088-1

Retention Insert

Nylon 6

Coatings

End Rings / Centre Sleeve / Flange:

- Rilsan Nylon 11 (Black)

Bolts:

- Dry Film Lubricant GZ – Silver

Nuts:

- Dry Film Lubricant GZ – Silver

Gripper - None

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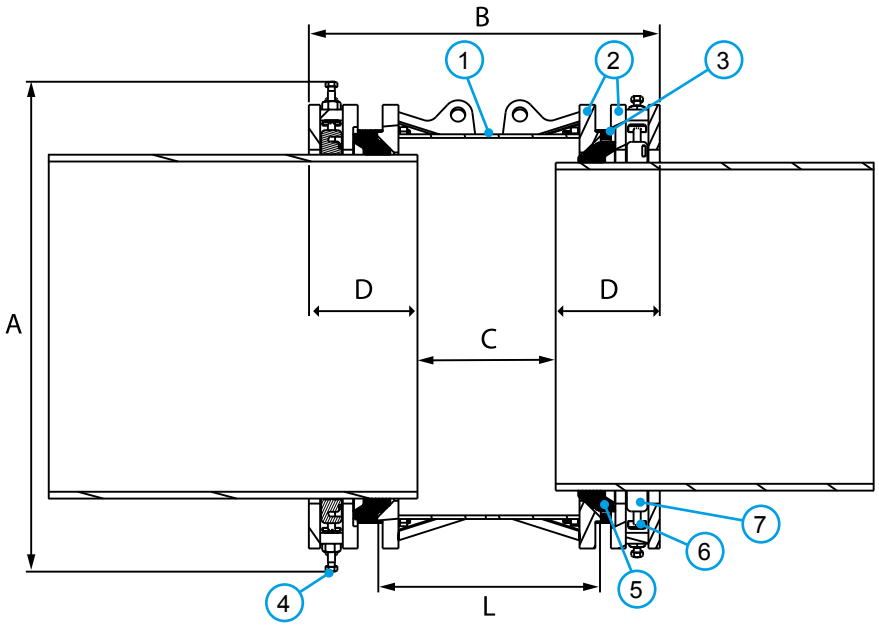
UltraGrip Amplified Couplings DN1000

Datasheet 1/2

Coupling



Key

1 = Centre Sleeve
2 = End Ring
3 = Studs
4 = Bolt, Nut & Washer
5 = Gasket
6 = Square Bush Nut
7 = Gripper

HAZARD WARNING: Lifting lugs, where provided, are designed/tested for lifting only the components to which they are attached. Failure to follow these instructions could result in property damage, serious personal injury or death.
The maximum safe working load of the lifting eye is equal to the product weight.

Couplings

Nom Size	Size Range (mm)		Insertion Depth (D) (mm)		Setting Gap (C) (mm)		Dimensions (mm)			Fasteners		Weight (kg)
							Overall		Sleeve			
	Min	Max	Min	Max	Min	Max	A	B	L	Axial Stud No-size	Radial Bolt No-size	
1000	995	1030	220	325	175	385	1382	825	480	52 x M20	96 x M16	830
1000	1031	1066	220	325	175	385	1418	825	480	52 x M20	100 x M16	864

Connections based on standard pipe OD's*

Nom Size	Range		Ductile Iron	PE	Steel / FBE Coated Steel	Cast Iron	Asbestos Cement
	Min	Max					
DN1000	995	1030		1000mm	DN1000		
DN1000	1031	1066	DN1000				

*The above table is for guidance only, please ensure the OD and material of the pipe is compatible before installation

Working Pressure & Temperature Ratings

Nominal Size	Gripping Product		Flex Product		Operating Temperature
	Gas	Water	Gas	Water	
DN1000	N/A	16 bar	N/A	16 bar	-20 to +60

Pipe Materials

Ductile Iron | PE | Steel | Cast Iron | Asbestos Cement

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UltraGrip Amplified Couplings DN1000

Datasheet 2/2

Technical Information

Working pressure rating:

Water:

DN1000 = 16 bar

Gas:

Not approved

Site test pressure:

1.5 times working pressure

Angularity

Couplings 8°, +/- 4° angularity on each side

Gripping product suitable for

Ductile iron / PE (PE100, SDR 17, 21, 26, 33)
Steel / Cast iron

Flex product suitable for

Ductile Iron / PE (PE100, SDR 17, 21, 26, 33)
Steel / Cast Iron / Asbestos Cement

Bolt Torque

	Recommended Bolt Torque (Nm) on every bolt			
	Bolt Size	**Ductile Iron**	**PE-100**	**Steel & Cast Iron**
Axial Fastener (For Gasket Engagement)	M20	190-210	190-210	190-210
Radial Fastener (For Grippers)	M16	220-250	140-150	110-120

For the full installation details and to ensure correct fitting, please refer to the UltraGrip DN1000 installation instructions.

Temperature rating of product

Operating temperature -20°C to +60°C

Support liners – PE

A close fit Viking Johnson support liner is required when used on:

- All PE pipes

Use of restrained couplings on exposed pipework

UltraGrip can be used in above ground applications, so long as the pipework is supported, it is not exposed to direct sunlight and falls within the 40°C operating temperature range (between -20°C and +60°C).

Approvals

The following water contact materials used in UltraGrip are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

Gasket (EPDM):

- WRAS, W270

Materials & Relevant Standards

1) End Rings 2) Centre Sleeve

Mild steel to BS EN10025 Grade S355

3) Studs

Stainless steel – BS EN ISO 3506-1 Grade A4-80

4) Bolts

Stainless steel to BS EN ISO 3506-1 Grade A4-80

4) Nuts

Stainless steel – BS1449:PT2 ISO 3506-1 Grade A4-80

4) Washers

Stainless steel – BS1449:PT2 ISO 3506-1 Grade A4-50

5) Gasket

EPDM to BS EN 681-1

6) Square Bush Nut

Cast stainless steel to ASTM A487/A487M-21, Grade CA6NM Class A

7) Gripper

Stainless steel (Cast) PH 17-4 H925 to BS EN 10088-1

Retention Insert

Nylon 6

Coatings

End Rings / Centre Sleeve / Flange:

- Rilsan Nylon 11 (Black)

Bolts:

- Dry Film Lubricant GZ – Silver

Nuts:

- Dry Film Lubricant GZ – Silver

Gripper - None

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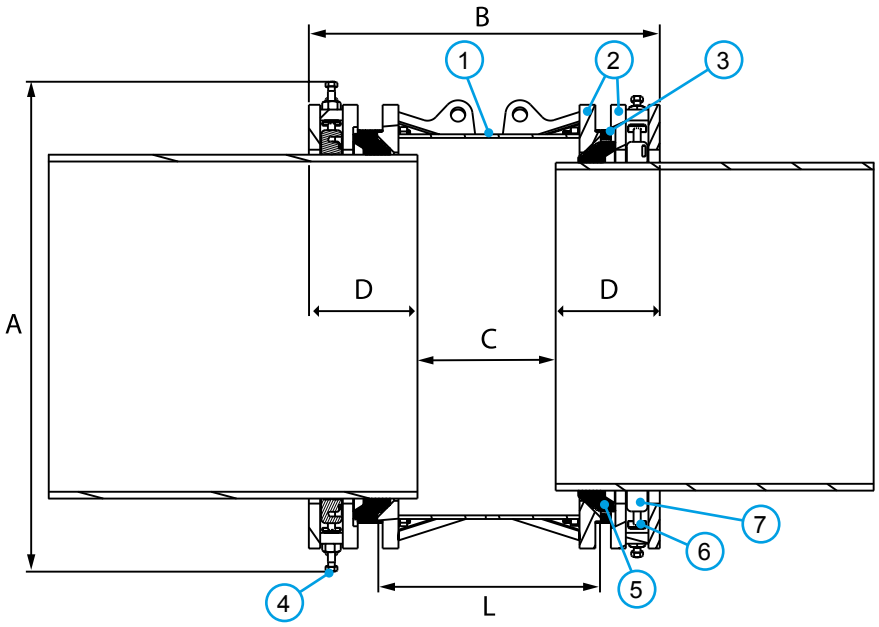
UltraGrip Amplified Couplings DN1200

Datasheet 1/2

Coupling



Key

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5 = Gasket
6 = Square Bush Nut
7 = Gripper

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The maximum safe working load of the lifting eye is equal to the product weight.

Couplings

Nom Size	Size Range (mm)		Insertion Depth (D) (mm)		Setting Gap (C) (mm)		Dimensions (mm)			Fasteners		Weight (kg)
							Overall		Sleeve			
	Min	Max	Min	Max	Min	Max	A	B	L	Axial Stud No-size	Radial Bolt No-size	
1200	1190	1225	220	245	175	385	1575	810	400	64 x M20	120 x M16	1005

Connections based on standard pipe OD's*

Nom Size	Range		Ductile Iron	PE	Steel / FBE Coated Steel	Cast Iron	Asbestos Cement
	Min	Max					
DN1200	1190	1225	N/A	1200mm	N/A	N/A	N/A

*The above table is for guidance only, please ensure the OD and material of the pipe is compatible before installation

Working Pressure & Temperature Ratings

Nominal Size	Gripping Product		Flex Product		Operating Temperature
	Gas	Water	Gas	Water	
DN1200	N/A	10 bar	N/A	10 bar	-20 to +60

Pipe Materials

PE

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UltraGrip Amplified Couplings DN1200

Datasheet 2/2

Technical Information

Working pressure rating:

Water:

DN1200 = 10 bar

Gas:

Not approved

Site test pressure:

1.5 times working pressure

Angularity

Couplings 8°, +/- 4° angularity on each side

Gripping product suitable for

PE (PE100, SDR 17, 21, 26, 33)

Flex product suitable for

PE (PE100, SDR 17, 21, 26, 33)

Bolt Torque

	Recommended Bolt Torque (Nm) on every bolt			
	Bolt Size	**Ductile Iron**	**PE-100**	**Steel & Cast Iron**
Axial Fastener (For Gasket Engagement)	M20	–	190-210	–
Radial Fastener (For Grippers)	M16	–	140-150	–

For the full installation details and to ensure correct fitting, please refer to the UltraGrip DN1200 installation instructions.

Temperature rating of product

Operating temperature -20°C to +60°C

Support liners – PE pipes

A close fit Viking Johnson support liner is required when used on:

- All PE pipes

Use of restrained couplings on exposed pipework

UltraGrip can be used in above ground applications, so long as the pipework is supported, it is not exposed to direct sunlight and falls within the 40°C operating temperature range (between -20°C and +60°C).

Approvals

The following water contact materials used in UltraGrip are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

Gasket (EPDM):

- WRAS, W270

Materials & Relevant Standards

1) End Rings 2) Centre Sleeve

Mild steel to BS EN10025 Grade S355

3) Studs

Stainless steel – BS EN ISO 3506-1 Grade A4-80

4) Bolts

Stainless steel to BS EN ISO 3506-1 Grade A4-80

4) Nuts

Stainless steel – BS1449:PT2 ISO 3506-1 Grade A4-80

4) Washers

Stainless steel – BS1449:PT2 ISO 3506-1 Grade A4-50

5) Gasket

EPDM to BS EN 681-1

6) Square Bush Nut

Cast stainless steel to ASTM A487/A487M-21, Grade CA6NM Class A

7) Gripper

Stainless steel (Cast) PH 17-4 H925 to BS EN 10088-1

Retention Insert

Nylon 6

Coatings

End Rings / Centre Sleeve / Flange:

- Rilsan Nylon 11 (Black)

Bolts:

- Dry Film Lubricant GZ – Silver

Nuts:

- Dry Film Lubricant GZ – Silver

Gripper - None

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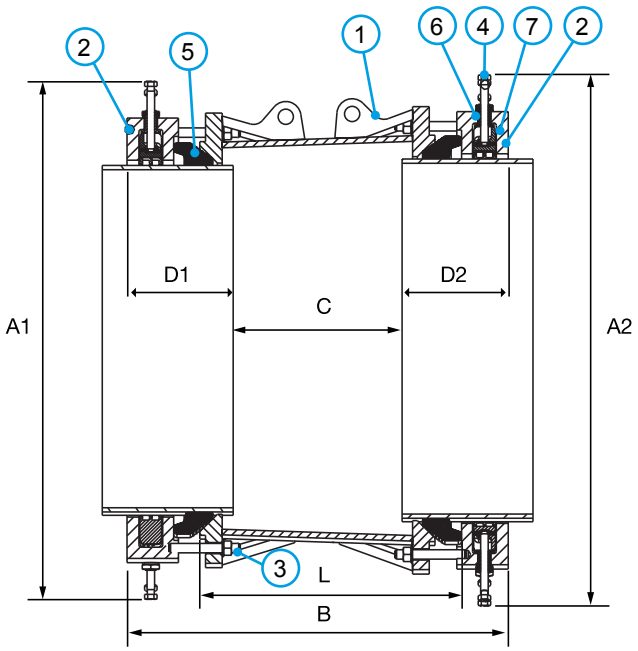
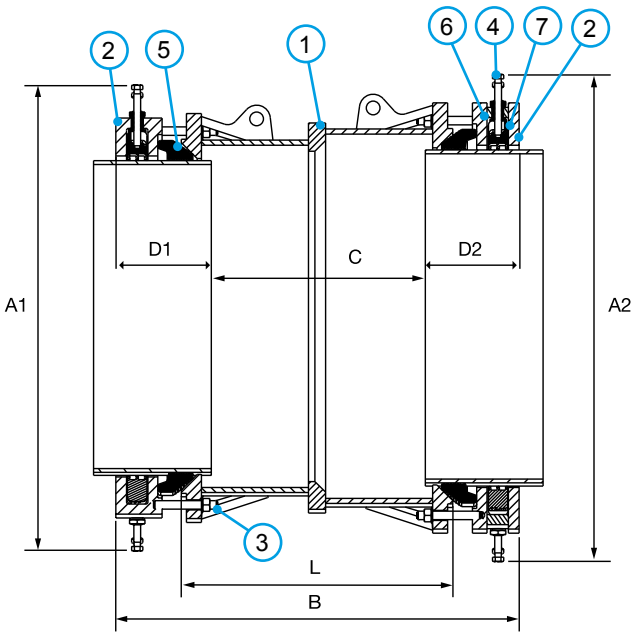
UltraGrip Amplified Reducing Couplings DN700 - DN800

Datasheet 1/2

Reducing Coupling Fig. A - Tapered sleeve design



Reducing Coupling Fig. B - Make up ring design



HAZARD WARNING: Lifting lugs, where provided, are designed/ tested for lifting only the components to which they are attached. Failure to follow these instructions could result in property damage, serious personal injury or death. The maximum safe working load of the lifting eye is equal to the product weight.

Key

1 = Centre Sleeve
2 = End Ring
3 = Studs
4 = Bolt, Nut & Washer
5 = Gasket
6 = Square Bush Nut
7 = Gripper

Reducing Couplings

Nom Size		Size Range				Insertion Depth				Setting Gap		Dimensions				Fasteners				Weight (kg)
Small End	Large End	Small End		Large End		Small End (D1)		Large End (D2)		(C)		Overall				Small End		Large End		
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	A1	A2	B	L	Radial Bolt No-size	Axial Bolt No-size	Radial Bolt No-size	Axial Bolt No-size	
Fig. A: Tapered Sleeve Design																				
700	700	700	735	727	762	220	245	220	245	310	360	1085	1115	800	494	24 X M16	16 X M20	32 X M16	16 X M20	580.03
700	700	727	762	750	785	220	245	220	245	310	360	1115	1135	800	494	32 X M16	16 X M20	24 X M16	16 X M20	611.58
700	800	727	762	789	824	220	245	220	245	315	365	1115	1175	805	496	32 X M16	16 X M20	30 X M16	18 X M20	635.71
800	800	825	860	853	888	220	245	220	245	320	370	1210	1240	810	496	40 X M16	18 X M20	30 X M16	18 X M20	705.17
Fig. B: Make Up Ring Design																				
700	700	700	735	750	785	220	245	220	245	450	500	1085	1135	940	634	24 X M16	16 X M20	24 X M16	16 X M20	666.69
700	800	700	735	789	824	220	245	220	245	455	505	1085	1175	945	496	24 X M16	16 X M20	30 X M16	18 X M20	635.71
800	800	789	824	825	860	220	245	220	245	460	510	1175	1210	950	638	30 X M16	18 X M20	40 X M16	18 X M20	1054.65
800	800	789	824	853	888	220	245	220	245	455	505	1175	1240	945	496	30 X M16	18 X M20	30 X M16	18 X M20	762.91

Connections based on standard pipe OD's*

Nom Size	Range		Ductile Iron	PE / MOPVC	Steel / FBE Coated Steel	Cast Iron	Asbestos Cement
	Min	Max					
DN700	700	735		710mm	DN700	26" (AB & CD)	26" (AB & CD)
DN700	727	762	DN700			27" (AB & CD)	27" (AB & CD)
DN700	750	785			DN750	28" (AB & CD)	28" (AB & CD)
DN800	789	824		800mm	DN800	30" (AB)	30" (AB)
DN800	825	860	DN800				
DN800	853	888				32" (AB & CD)	32" (AB & CD)

*The above table is for guidance only, please ensure the OD and material of the pipe is compatible before installation

Working Pressure & Temperature Ratings

Nominal Size	Gripping Product		Flex Product		Operating Temperature
	Gas	Water	Gas	Water	
DN700	N/A	16 bar	N/A	16 bar	-20 to +60
DN800	N/A	16 bar	N/A	16 bar	

Pipe Materials

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UltraGrip Amplified Reducing Couplings DN700 - DN800

Datasheet 2/2

Technical Information

Working pressure rating:

Water:

DN700 to DN800 = 16 bar

Gas:

Not approved

Site test pressure:

1.5 times working pressure

Angularity

Couplings 8°, +/- 4° angularity on each side

Gripping product suitable for

Ductile iron / PE (PE100, SDR 11, 17, 21, 26)
Steel / Cast iron / MOPVC (SDR 33)

Flex product suitable for

Ductile Iron / PE (PE100, SDR 11, 17, 21, 26)
Steel / Cast Iron / MOPVC / Asbestos Cement

Bolt Torque

	Recommended Bolt Torque (Nm) on every bolt				
	Bolt Size	Ductile Iron	PE-100	Steel & Cast Iron	MOPVC
Axial Fastener (For Gasket Engagement)	M20	190-210	190-210	190-210	190-210
Radial Fastener (For Grippers)	M16	175-185	140-150	110-120	95-105

For the full installation details and to ensure correct fitting, please refer to the UltraGrip DN700 DN800 installation instructions.

Temperature rating of product

Operating temperature -20°C to +60°C

Support liners – PE and MOPVC pipes

A close fit Viking Johnson support liner is required when used on:

- All PE pipes
- MOPVC pipes

Use of restrained couplings on exposed pipework

UltraGrip can be used in above ground applications, so long as the pipework is supported, it is not exposed to direct sunlight and falls within the 40°C operating temperature range (between -20°C and +60°C).

Approvals

The following water contact materials used in UltraGrip are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

Gasket (EPDM):

- WRAS, W270

Finished Product:

BS8561; WRc certification verifying that the product complies with BS8561 (Specification for mechanical fittings for use in the repair, connection and renovation of pressurized water supply pipelines — Requirements and test methods).

Polyethylene Pipe Pull Out Performance; WRc certification confirming on PE a Type 2 end load performance (defined in IGN 4-01-02:2017 [N3]) when tested in accordance with the method given in BS EN ISO 3501.

Materials & Relevant Standards

1) End Rings 2) Centre Sleeve

Mild steel to BS EN10025 Grade S355

3) Studs

Stainless steel – BS EN ISO 3506-1 Grade A4-80

4) Bolts

Stainless steel to BS EN ISO 3506-1 Grade A4-80

4) Nuts

Stainless steel – BS1449:PT2 ISO 3506-1 Grade A4-80

4) Washers

Stainless steel – BS1449:PT2 ISO 3506-1 Grade A4-50

5) Gasket

EPDM to BS EN 681-1

6) Square Bush Nut

Cast stainless steel to ASTM A487/A487M-21, Grade CA6NM Class A

7) Gripper

Stainless steel (Cast) PH 17-4 H925 to BS EN 10088-1

Retention Insert

Nylon 6

Coatings

End Rings / Centre Sleeve / Flange:

- Rilsan Nylon 11 (Black)

Bolts:

- Dry Film Lubricant GZ – Silver

Nuts:

- Dry Film Lubricant GZ – Silver

Gripper - None

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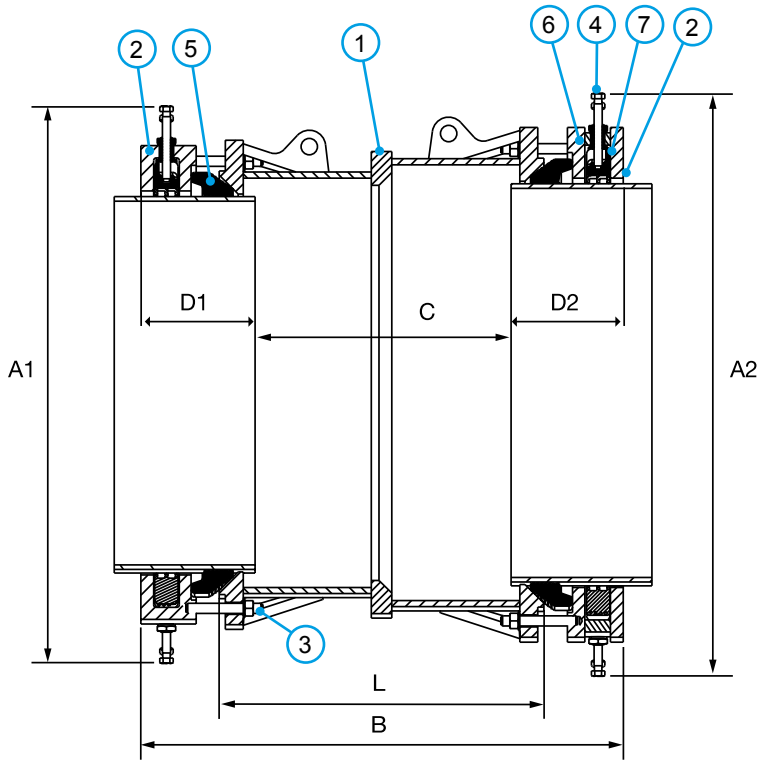
UltraGrip Amplified Reducing Couplings DN800 - DN900

Datasheet 1/2

Reducing Coupling - Make up ring design



Key

1 = Centre Sleeve
2 = End Ring
3 = Studs
4 = Bolt, Nut & Washer
5 = Gasket
6 = Square Bush Nut
7 = Gripper

HAZARD WARNING: Lifting lugs, where provided, are designed/tested for lifting only the components to which they are attached. Failure to follow these instructions could result in property damage, serious personal injury or death. The maximum safe working load of the lifting eye is equal to the product weight.

Reducing Couplings - Make up ring design

Nom Size		Size Range				Insertion Depth				Setting Gap		Dimensions				Fasteners				Weight (kg)
Small End	Large End	Small End		Large End		Small End (D1)		Large End (D2)		(C)		Overall				Small End		Large End		
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	A1	A2	B	L	Radial Bolt No-size	Axial Bolt No-size	Radial Bolt No-size	Axial Bolt No-size	
800	900	789	824	892	927	220	245	220	245	460	510	1180	1280	950	496	30 x M16	18 x M20	38 x M16	22 x M20	798
800	900	825	860	892	927	220	245	220	245	460	510	1210	1280	950	496	40 x M16	18 x M20	38 x M16	22 x M20	805
900	900	892	927	926	961	220	245	220	245	465	515	1280	1310	955	642	38 x M16	22 x M20	42 x M16	22 x M20	838
900	900	892	927	958	993	220	245	220	245	470	520	1280	1345	960	642	38 x M16	22 x M20	44 x M16	22 x M20	883
900	900	926	961	958	993	220	245	220	245	470	520	1315	1345	960	642	42 x M16	22 x M20	44 x M16	22 x M20	885

Connections based on standard pipe OD's*

Nom Size	Range		Ductile Iron	PE	Steel / FBE Coated Steel	Cast Iron	Asbestos Cement
	Min	Max					
DN800	789	824		800mm	DN800	30" (AB)	30" (AB)
DN800	825	860	DN800				
DN800	853	888				32" (AB & CD)	32" (AB & CD)
DN900	892	927		900mm	DN900	33" (CD) 34 (AB)	33" (CD) 34 (AB)
DN900	926	961	DN900				
DN900	958	993				36" (AB & CD)	36" (AB & CD)

*The above table is for guidance only, please ensure the OD and material of the pipe is compatible before installation

Working Pressure & Temperature Ratings

Nominal Size	Gripping Product		Flex Product		Operating Temperature
	Gas	Water	Gas	Water	
DN800	N/A	16 bar	N/A	16 bar	-20 to +60
DN900	N/A	16 bar	N/A	16 bar	

Pipe Materials

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UltraGrip Amplified Reducing Couplings DN800 - DN900

Datasheet 2/2

Technical Information

Working pressure rating:

Water:

DN800 to DN900 = 16 bar

Gas:

Not approved

Site test pressure:

1.5 times working pressure

Angularity

Couplings 8°, +/- 4° angularity on each side

Gripping product suitable for

Ductile iron / PE (DN800 PE 100 SDR 11, 17, 21, 26. DN900 PE 100 SDR 13.6, 17, 21)
Steel / Cast iron

Flex product suitable for

Ductile Iron / PE (DN800 PE 100 SDR 11, 17, 21, 26. DN900 PE 100 SDR 13.6, 17, 21)
Steel / Cast Iron / Asbestos Cement

Bolt Torque

	Recommended Bolt Torque (Nm) on every bolt			
	Bolt Size	Ductile Iron	PE-100	Steel & Cast Iron
Axial Fastener (For Gasket Engagement)	M20	190-210	190-210	190-210
Radial Fastener (For Grippers)	M16	190-210	140-150	110-120

For the full installation details and to ensure correct fitting, please refer to the UltraGrip DN900 installation instructions.

Temperature rating of product

Operating temperature -20°C to +60°C

Support liners – PE

A close fit Viking Johnson support liner is required when used on:

- All PE pipes

Use of restrained couplings on exposed pipework

UltraGrip can be used in above ground applications, so long as the pipework is supported, it is not exposed to direct sunlight and falls within the 40°C operating temperature range (between -20°C and +60°C).

Approvals

The following water contact materials used in UltraGrip are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

Gasket (EPDM):

- WRAS, W270

Materials & Relevant Standards

1) End Rings 2) Centre Sleeve

Mild steel to BS EN10025 Grade S355

3) Studs

Stainless steel – BS EN ISO 3506-1 Grade A4-80

4) Bolts

Stainless steel to BS EN ISO 3506-1 Grade A4-80

4) Nuts

Stainless steel – BS1449:PT2 ISO 3506-1 Grade A4-80

4) Washers

Stainless steel – BS1449:PT2 ISO 3506-1 Grade A4-50

5) Gasket

EPDM to BS EN 681-1

6) Square Bush Nut

Cast stainless steel to ASTM A487/A487M-21, Grade CA6NM Class A

7) Gripper

Stainless steel (Cast) PH 17-4 H925 to BS EN 10088-1

Retention Insert

Nylon 6

Coatings

End Rings / Centre Sleeve / Flange:

- Rilsan Nylon 11 (Black)

Bolts:

- Dry Film Lubricant GZ – Silver

Nuts:

- Dry Film Lubricant GZ – Silver

Gripper - None

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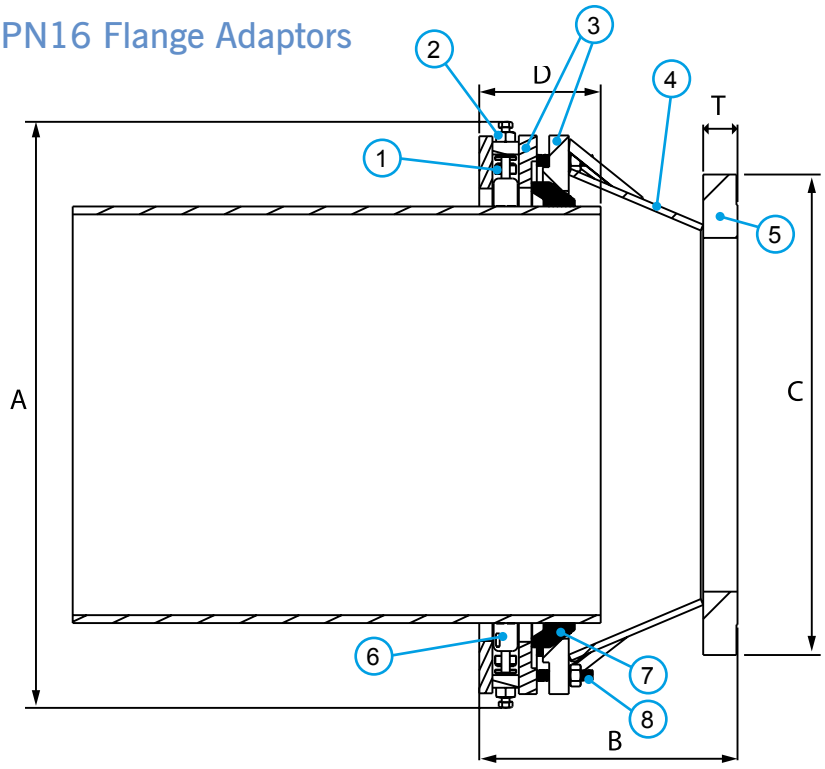
UltraGrip Amplified PN16 Flange Adaptors DN700 - DN800

Datasheet 1/2

PN16 Flange Adaptors



Key

1 = Square Bush Nut
2 = Bolt, Nut & Washer
3 = End Ring
4 = Centre Sleeve
5 = Flange Ring
6 = Gripper
7 = Gasket
8 = Studs

HAZARD WARNING: Lifting lugs, where provided, are designed/tested for lifting only the components to which they are attached. Failure to follow these instructions could result in property damage, serious personal injury or death.
The maximum safe working load of the lifting eye is equal to the product weight.

Flange Adaptors

Nom Size	Size Range		Flange Nom Size	Flange Drilling	Insertion Depth (D)		Setting Gap		Dimensions				Fasteners		Weight (kg)
	Min	Max			Min	Max	Min	Max	C	A	B	T*	Axial Stud No-size	Radial Bolt No-size	
700	700	735	600	PN16	220	245	475	500	840	1085	720	55	16 x M20	24 x M16	413
700	700	735	700	PN16	220	245	275	300	910	1085	520	63	16 x M20	24 x M16	437
700	727	762	700	PN16	220	245	275	300	910	1115	520	63	16 x M20	32 x M16	454
700	750	785	700	PN16	220	245	275	300	910	1135	520	63	16 x M20	24 x M16	455
800	789	824	700	PN16	220	245	525	550	910	1175	770	63	18 x M20	30 x M16	484
800	789	824	800	PN16	220	245	290	315	1025	1175	535	74	18 x M20	30 x M16	536
800	825	860	800	PN16	220	245	290	315	1025	1210	535	74	18 x M20	40 x M16	559
800	853	888	800	PN16	220	245	290	315	1025	1240	535	74	18 x M20	30 x M16	559

*Flange Drilling - All flanges are drilled to BS EN 1092 - part 1 and are raised face flanges *dimensions excluding 2mm raised flange.*

Connections based on standard pipe OD's*

Nom Size	Range		Ductile Iron	PE / MOPVC	Steel / FBE Coated Steel	Cast Iron	Asbestos Cement
	Min	Max					
DN700	700	735		710mm	DN700	26" (AB & CD)	26" (AB & CD)
DN700	727	762	DN700			27" (AB & CD)	27" (AB & CD)
DN700	750	785			DN750	28" (AB & CD)	28" (AB & CD)
DN800	789	824		800mm	DN800	30" (AB)	30" (AB)
DN800	825	860	DN800				
DN800	853	888				32" (AB & CD)	32" (AB & CD)

*The above table is for guidance only, please ensure the OD and material of the pipe is compatible before installation

Working Pressure & Temperature Ratings

Nominal Size	Gripping Product		Flex Product		Operating Temperature
	Gas	Water	Gas	Water	
DN700	N/A	16 bar	N/A	16 bar	-20 to +60
DN800	N/A	16 bar	N/A	16 bar	

Pipe Materials

Ductile Iron | PE | Steel | Cast Iron | MOPVC | Asbestos Cement

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UltraGrip Amplified PN16 Flange Adaptors DN700 - DN800

Datasheet 2/2

Technical Information

Working pressure rating:

Water:

DN700 to DN800 = 16 bar

Gas:

Not approved

Site test pressure:

1.5 times working pressure

Angularity

Flange Adaptor 4°

Gripping product suitable for

Ductile iron / PE (PE100, SDR 11, 17, 21, 26)
Steel / Cast iron / MOPVC (SDR 33)

Flex product suitable for

Ductile Iron / PE (PE100, SDR 11, 17, 21, 26)
Steel / Cast Iron / MOPVC / Asbestos Cement

Bolt Torque

	Recommended Bolt Torque (Nm) on every bolt				
	Bolt Size	Ductile Iron	PE-100	Steel & Cast Iron	MOPVC
Axial Fastener (For Gasket Engagement)	M20	190-210	190-210	190-210	190-210
Radial Fastener (For Grippers)	M16	175-185	140-150	110-120	95-105

For the full installation details and to ensure correct fitting, please refer to the UltraGrip DN700 DN800 installation instructions.

Temperature rating of product

Operating temperature -20°C to +60°C

Support liners – PE and MOPVC pipes

A close fit Viking Johnson support liner is required when used on:

- All PE pipes
- MOPVC pipes

Use of restrained couplings on exposed pipework

UltraGrip can be used in above ground applications, so long as the pipework is supported, it is not exposed to direct sunlight and falls within the 40°C operating temperature range (between -20°C and +60°C).

Approvals

The following water contact materials used in UltraGrip are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

Gasket (EPDM):

- WRAS, W270

Finished Product:

BS8561; WRc certification verifying that the product complies with BS8561 (Specification for mechanical fittings for use in the repair, connection and renovation of pressurized water supply pipelines — Requirements and test methods).

Polyethylene Pipe Pull Out Performance; WRc certification confirming on PE a Type 2 end load performance (defined in IGN 4-01-02:2017 [N3]) when tested in accordance with the method given in BS EN ISO 3501.

Materials & Relevant Standards

1) Square Bush Nut

Cast stainless steel to ASTM A487/A487M-21, Grade CA6NM Class A

2) Bolts

Stainless steel to BS EN ISO 3506-1 Grade A4-80

2) Nuts

Stainless steel – BS1449:PT2 ISO 3506-1 Grade A4-80

2) Washers

Stainless steel – BS1449:PT2 ISO 3506-1 Grade A4-50

3) End Rings 4) Centre Sleeve

Mild steel to BS EN10025 Grade S355

5) Flange Ring

S275 Mild Steel to BS EN 10025-2

6) Gripper

Stainless steel (Cast) PH 17-4 H925 to BS EN 10088-1

7) Gasket

EPDM to BS EN 681-1

8) Studs

Stainless steel – BS EN ISO 3506-1 Grade A4-80

Coatings

End Rings / Centre Sleeve / Flange:

- Rilsan Nylon 11 (Black)

Bolts:

- Dry Film Lubricant GZ – Silver

Nuts:

- Dry Film Lubricant GZ – Silver

Gripper - None

Retention Insert

Nylon 6

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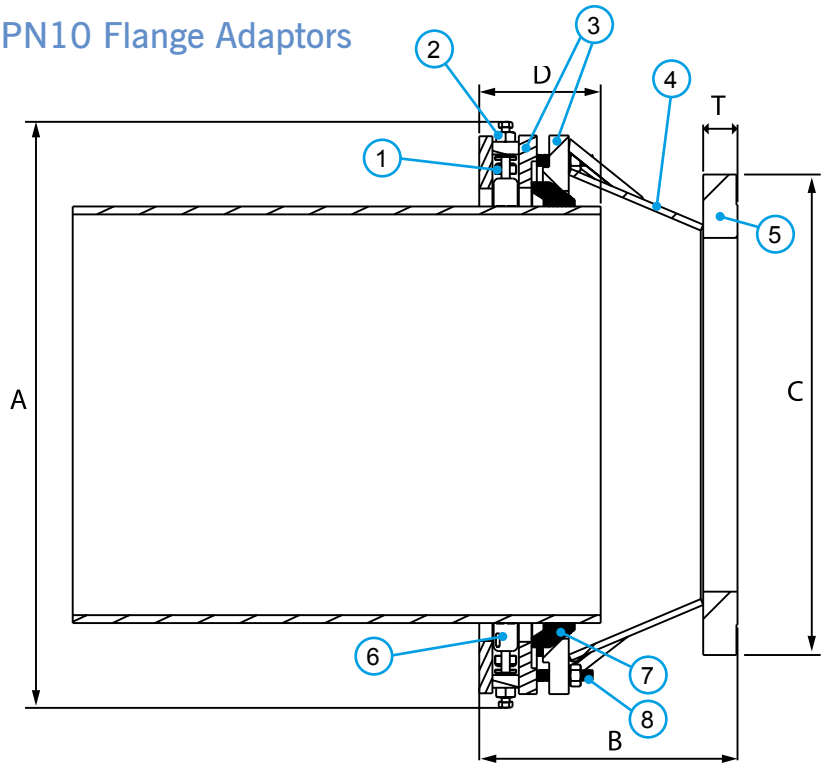
UltraGrip Amplified PN10 Flange Adaptors DN700 - DN800

Datasheet 1/2

PN10 Flange Adaptors



Key

1 = Square Bush Nut
2 = Bolt, Nut & Washer
3 = End Ring
4 = Centre Sleeve
5 = Flange Ring
6 = Gripper
7 = Gasket
8 = Studs

HAZARD WARNING: Lifting lugs, where provided, are designed/tested for lifting only the components to which they are attached. Failure to follow these instructions could result in property damage, serious personal injury or death.
The maximum safe working load of the lifting eye is equal to the product weight.

Flange Adaptors

Nom Size	Size Range		Flange Nom Size	Flange Drilling	Insertion Depth (D)		Setting Gap		Dimensions				Fasteners		Weight (kg)
	Min	Max			Min	Max	Min	Max	C	A	B	T*	Axial Stud No-size	Radial Bolt No-size	
700	700	735	600	PN10	220	245	550	575	780	1085	795	42	16 x M20	24 x M16	458
700	700	735	700	PN10	220	245	265	290	895	1085	510	50	16 x M20	24 x M16	437
700	727	762	700	PN10	220	245	265	290	895	1115	510	50	16 x M20	32 x M16	454
700	750	785	700	PN10	220	245	265	290	895	1135	510	50	16 x M20	24 x M16	455
800	789	824	700	PN10	220	245	415	440	895	1175	660	50	18 x M20	30 x M16	466
800	789	824	800	PN10	220	245	270	295	1015	1175	515	56	18 x M20	30 x M16	539
800	825	860	800	PN10	220	245	270	295	1015	1210	515	56	18 x M20	40 x M16	559
800	853	888	800	PN10	220	245	270	295	1015	1240	515	56	18 x M20	30 x M16	559

*Flange Drilling - All flanges are drilled to BS EN 1092 - part 1 and are raised face flanges *dimensions excluding 2mm raised flange.*

Connections based on standard pipe OD's*

Nom Size	Range		Ductile Iron	PE / MOPVC	Steel / FBE Coated Steel	Cast Iron	Asbestos Cement
	Min	Max					
DN700	700	735		710mm	DN700	26" (AB & CD)	26" (AB & CD)
DN700	727	762	DN700			27" (AB & CD)	27" (AB & CD)
DN700	750	785			DN750	28" (AB & CD)	28" (AB & CD)
DN800	789	824		800mm	DN800	30" (AB)	30" (AB)
DN800	825	860	DN800				
DN800	853	888				32" (AB & CD)	32" (AB & CD)

*The above table is for guidance only, please ensure the OD and material of the pipe is compatible before installation

Working Pressure & Temperature Ratings

Nominal Size	Gripping Product		Flex Product		Operating Temperature
	Gas	Water	Gas	Water	
DN700	N/A	10 bar	N/A	10 bar	-20 to +60
DN800	N/A	10 bar	N/A	10 bar	

Pipe Materials

Ductile Iron | PE | Steel | Cast Iron | MOPVC | Asbestos Cement

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UltraGrip Amplified PN10 Flange Adaptors DN700 - DN800

Datasheet 2/2

Technical Information

Working pressure rating:

Water:

DN700 to DN800 = 10 bar

Gas:

Not approved

Site test pressure:

1.5 times working pressure

Angularity

Flange Adaptor 4°

Gripping product suitable for

Ductile iron / PE (PE100, SDR 11, 17, 21, 26)
Steel / Cast iron / MOPVC (SDR 33)

Flex product suitable for

Ductile Iron / PE (PE100, SDR 11, 17, 21, 26)
Steel / Cast Iron / MOPVC / Asbestos Cement

Bolt Torque

	Recommended Bolt Torque (Nm) on every bolt				
	Bolt Size	Ductile Iron	PE-100	Steel & Cast Iron	MOPVC
Axial Fastener (For Gasket Engagement)	M20	190-210	190-210	190-210	190-210
Radial Fastener (For Grippers)	M16	175-185	140-150	110-120	95-105

For the full installation details and to ensure correct fitting, please refer to the UltraGrip DN700 DN800 installation instructions.

Temperature rating of product

Operating temperature -20°C to +60°C

Support liners – PE and MOPVC pipes

A close fit Viking Johnson support liner is required when used on:

- All PE pipes
- MOPVC pipes

Use of restrained couplings on exposed pipework

UltraGrip can be used in above ground applications, so long as the pipework is supported, it is not exposed to direct sunlight and falls within the 40°C operating temperature range (between -20°C and +60°C).

Approvals

The following water contact materials used in UltraGrip are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

Gasket (EPDM):

- WRAS, W270

Finished Product:

BS8561; WRc certification verifying that the product complies with BS8561 (Specification for mechanical fittings for use in the repair, connection and renovation of pressurized water supply pipelines — Requirements and test methods).

Polyethylene Pipe Pull Out Performance; WRc certification confirming on PE a Type 2 end load performance (defined in IGN 4-01-02:2017 [N3]) when tested in accordance with the method given in BS EN ISO 3501.

Materials & Relevant Standards

1) Square Bush Nut

Cast stainless steel to ASTM A487/A487M-21, Grade CA6NM Class A

2) Bolts

Stainless steel to BS EN ISO 3506-1 Grade A4-80

2) Nuts

Stainless steel – BS1449:PT2 ISO 3506-1 Grade A4-80

2) Washers

Stainless steel – BS1449:PT2 ISO 3506-1 Grade A4-50

3) End Rings 4) Centre Sleeve

Mild steel to BS EN10025 Grade S355

5) Flange Ring

S275 Mild Steel to BS EN 10025-2

6) Gripper

Stainless steel (Cast) PH 17-4 H925 to BS EN 10088-1

7) Gasket

EPDM to BS EN 681-1

8) Studs

Stainless steel – BS EN ISO 3506-1 Grade A4-80

Coatings

End Rings / Centre Sleeve / Flange:

- Rilsan Nylon 11 (Black)

Bolts:

- Dry Film Lubricant GZ – Silver

Nuts:

- Dry Film Lubricant GZ – Silver

Gripper - None

Retention Insert

Nylon 6

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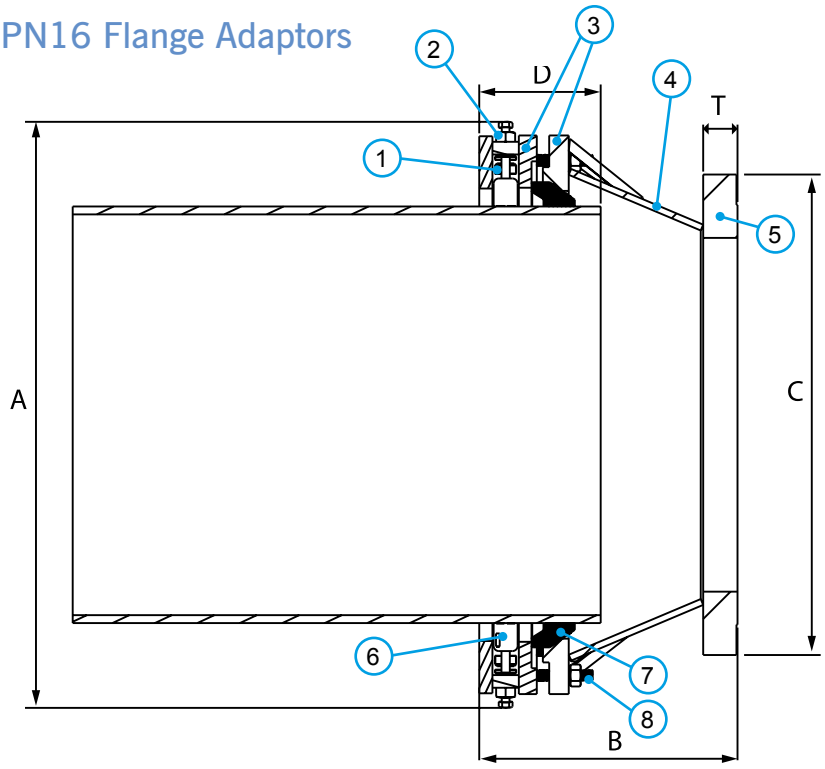
UltraGrip Amplified PN16 Flange Adaptors DN900

Datasheet 1/2

PN16 Flange Adaptors



Key

1 = Square Bush Nut
2 = Bolt, Nut & Washer
3 = End Ring
4 = Centre Sleeve
5 = Flange Ring
6 = Gripper
7 = Gasket
8 = Studs

HAZARD WARNING: Lifting lugs, where provided, are designed/tested for lifting only the components to which they are attached. Failure to follow these instructions could result in property damage, serious personal injury or death.
The maximum safe working load of the lifting eye is equal to the product weight.

Flange Adaptors PN16

Nom Size	Size Range		Flange Nom Size	Flange Drilling	Insertion Depth (D)		Setting Gap		Dimensions				Fasteners		Weight (kg)
	Min	Max			Min	Max	Min	Max	C	A	B	T*	Axial Stud No-size	Radial Bolt No-size	
900	892	927	800	PN16	220	245	540	565	1025	1279	785	74	22 x M20	38 x M16	636
900	892	927	900	PN16	220	245	300	325	1125	1279	545	82	22 x M20	38 x M16	624
900	926	961	900	PN16	220	245	500	525	1125	1315	745	82	22 x M20	42 x M16	694
900	958	993	900	PN16	220	245	500	525	1125	1345	745	82	22 x M20	38 x M16	718

*Flange Drilling - All flanges are drilled to BS EN 1092 - part 1 and are raised face flanges *dimensions excluding 2mm raised flange.*

Connections based on standard pipe OD's*

Nom Size	Range		Ductile Iron	PE	Steel / FBE Coated Steel	Cast Iron	Asbestos Cement
	Min	Max					
DN900	892	927		900mm	DN900	33" (CD) 34 (AB)	33" (CD) 34 (AB)
DN900	926	961	DN900				
DN900	958	993				36" (AB & CD)	36" (AB & CD)

*The above table is for guidance only, please ensure the OD and material of the pipe is compatible before installation

Working Pressure & Temperature Ratings

Nominal Size	Gripping Product		Flex Product		Operating Temperature
	Gas	Water	Gas	Water	
DN900	N/A	16 bar	N/A	16 bar	-20 to +60

Pipe Materials

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UltraGrip Amplified PN16 Flange Adaptors DN900

Datasheet 2/2

Technical Information

Working pressure rating:

Water:

DN900 = 16 bar

Gas:

Not approved

Site test pressure:

1.5 times working pressure

Angularity

Flange Adaptor 4°

Gripping product suitable for

Ductile Iron / PE (PE100, SDR 13.6, 17, 21)
Steel / Cast Iron

Flex product suitable for

Ductile Iron / PE (PE100, SDR 13.6, 17, 21)
Steel / Cast Iron / Abestos Cement

Bolt Torque

	Recommended Bolt Torque (Nm) on every bolt			
	Bolt Size	Ductile Iron	PE-100	Steel and Cast Iron
Axial Fastener (For Gasket Engagement)	M20	190-210	190-210	190-210
Radial Fastener (For Grippers)	M16	190-210	140-150	110-120

For the full installation details and to ensure correct fitting, please refer to the UltraGrip DN900 installation instructions.

Temperature rating of product

Operating temperature -20°C to +60°C

Support liners – PE

A close fit Viking Johnson support liner is required when used on:

- All PE pipes

Use of restrained couplings on exposed pipework

UltraGrip can be used in above ground applications, so long as the pipework is supported, it is not exposed to direct sunlight and falls within the 40°C operating temperature range (between -20°C and +60°C).

Approvals

The following water contact materials used in UltraGrip are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

Gasket (EPDM):

- WRAS, W270

Materials & Relevant Standards

1) Square Bush Nut

Cast stainless steel to ASTM A487/A487M-21, Grade CA6NM Class A

2) Bolts

Stainless steel to BS EN ISO 3506-1 Grade A4-80

2) Nuts

Stainless steel – BS1449:PT2 ISO 3506-1 Grade A4-80

2) Washers

Stainless steel – BS1449:PT2 ISO 3506-1 Grade A4-50

3) End Rings 4) Centre Sleeve

Mild steel to BS EN10025 Grade S355

5) Flange Ring

S275 Mild Steel to BS EN 10025-2

6) Gripper

Stainless steel (Cast) PH 17-4 H925 to BS EN 10088-1

7) Gasket

EPDM to BS EN 681-1

8) Studs

Stainless steel – BS EN ISO 3506-1 Grade A4-80

Coatings

End Rings / Centre Sleeve / Flange:

- Rilsan Nylon 11 (Black)

Bolts:

- Dry Film Lubricant GZ – Silver

Nuts:

- Dry Film Lubricant GZ – Silver

Gripper - None

Retention Insert

Nylon 6

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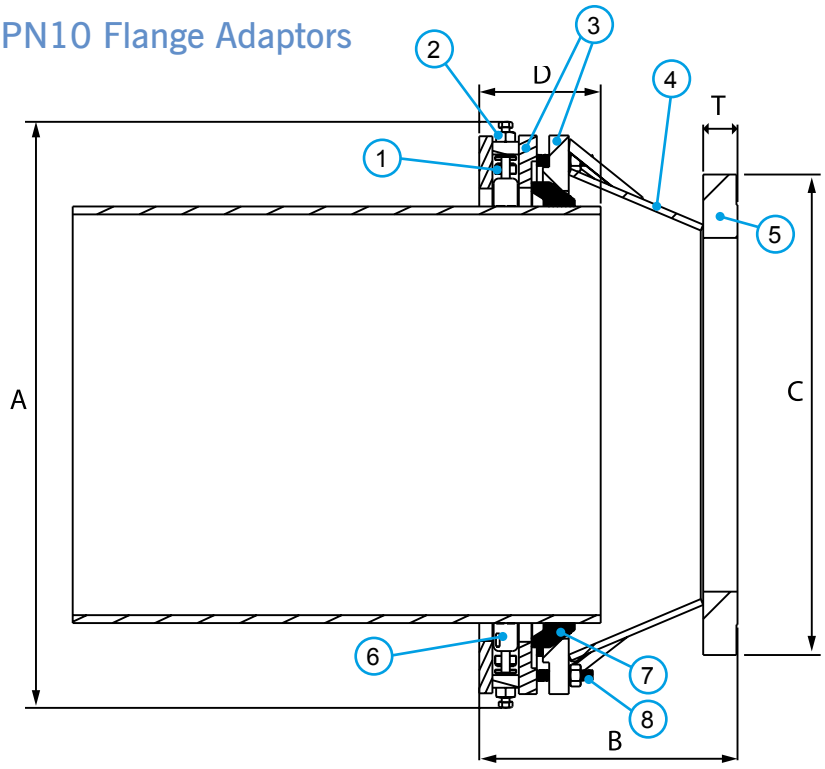
UltraGrip Amplified PN10 Flange Adaptors DN900

Datasheet 1/2

PN10 Flange Adaptors



Key

1 = Square Bush Nut
2 = Bolt, Nut & Washer
3 = End Ring
4 = Centre Sleeve
5 = Flange Ring
6 = Gripper
7 = Gasket
8 = Studs

HAZARD WARNING: Lifting lugs, where provided, are designed/tested for lifting only the components to which they are attached. Failure to follow these instructions could result in property damage, serious personal injury or death.
The maximum safe working load of the lifting eye is equal to the product weight.

Flange Adaptors PN10

Nom Size	Size Range		Flange Nom Size	Flange Drilling	Insertion Depth (D)		Setting Gap		Dimensions				Fasteners		Weight (kg)
	Min	Max			Min	Max	Min	Max	C	A	B	T*	Axial Stud No-size	Radial Bolt No-size	
900	892	927	800	PN10	220	245	525	550	1015	1279	770	56	22 x M20	38 x M16	588
900	892	927	900	PN10	220	245	280	305	1115	1279	525	62	22 x M20	38 x M16	563
900	926	961	900	PN10	220	245	380	405	1115	1315	625	62	22 x M20	42 x M16	605
900	958	993	900	PN10	220	245	430	455	1115	1345	675	62	22 x M20	38 x M16	643

*Flange Drilling - All flanges are drilled to BS EN 1092 - part 1 and are raised face flanges *dimensions excluding 2mm raised flange.*

Connections based on standard pipe OD's*

Nom Size	Range		Ductile Iron	PE	Steel / FBE Coated Steel	Cast Iron	Asbestos Cement
	Min	Max					
DN900	892	927		900mm	DN900	33" (CD) 34 (AB)	33" (CD) 34 (AB)
DN900	926	961	DN900				
DN900	958	993				36" (AB & CD)	36" (AB & CD)

*The above table is for guidance only, please ensure the OD and material of the pipe is compatible before installation

Working Pressure & Temperature Ratings

Nominal Size	Gripping Product		Flex Product		Operating Temperature
	Gas	Water	Gas	Water	
DN900	N/A	10 bar	N/A	10 bar	-20 to +60

Pipe Materials

Ductile Iron | PE | Steel | Cast Iron | Asbestos Cement

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UltraGrip Amplified PN10 Flange Adaptors DN900

Datasheet 2/2

Technical Information

Working pressure rating:

Water:

DN900 = 10 bar

Gas:

Not approved

Site test pressure:

1.5 times working pressure

Angularity

Flange Adaptor 4°

Gripping product suitable for

Ductile Iron / PE (PE100, SDR 13.6, 17, 21)
Steel / Cast Iron

Flex product suitable for

Ductile Iron / PE (PE100, SDR 13.6, 17, 21)
Steel / Cast Iron / Abestos Cement

Bolt Torque

	Recommended Bolt Torque (Nm) on every bolt			
	Bolt Size	Ductile Iron	PE-100	Steel and Cast Iron
Axial Fastener (For Gasket Engagement)	M20	190-210	190-210	190-210
Radial Fastener (For Grippers)	M16	190-210	140-150	110-120

For the full installation details and to ensure correct fitting, please refer to the UltraGrip DN900 installation instructions.

Temperature rating of product

Operating temperature -20°C to +60°C

Support liners – PE

A close fit Viking Johnson support liner is required when used on:

- All PE pipes

Use of restrained couplings on exposed pipework

UltraGrip can be used in above ground applications, so long as the pipework is supported, it is not exposed to direct sunlight and falls within the 40°C operating temperature range (between -20°C and +60°C).

Approvals

The following water contact materials used in UltraGrip are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

Gasket (EPDM):

- WRAS, W270

Materials & Relevant Standards

1) Square Bush Nut

Cast stainless steel to ASTM A487/A487M-21, Grade CA6NM Class A

2) Bolts

Stainless steel to BS EN ISO 3506-1 Grade A4-80

2) Nuts

Stainless steel – BS1449:PT2 ISO 3506-1 Grade A4-80

2) Washers

Stainless steel – BS1449:PT2 ISO 3506-1 Grade A4-50

3) End Rings 4) Centre Sleeve

Mild steel to BS EN10025 Grade S355

5) Flange Ring

S275 Mild Steel to BS EN 10025-2

6) Gripper

Stainless steel (Cast) PH 17-4 H925 to BS EN 10088-1

7) Gasket

EPDM to BS EN 681-1

8) Studs

Stainless steel – BS EN ISO 3506-1 Grade A4-80

Coatings

End Rings / Centre Sleeve / Flange:

- Rilsan Nylon 11 (Black)

Bolts:

- Dry Film Lubricant GZ – Silver

Nuts:

- Dry Film Lubricant GZ – Silver

Gripper - None

Retention Insert

Nylon 6

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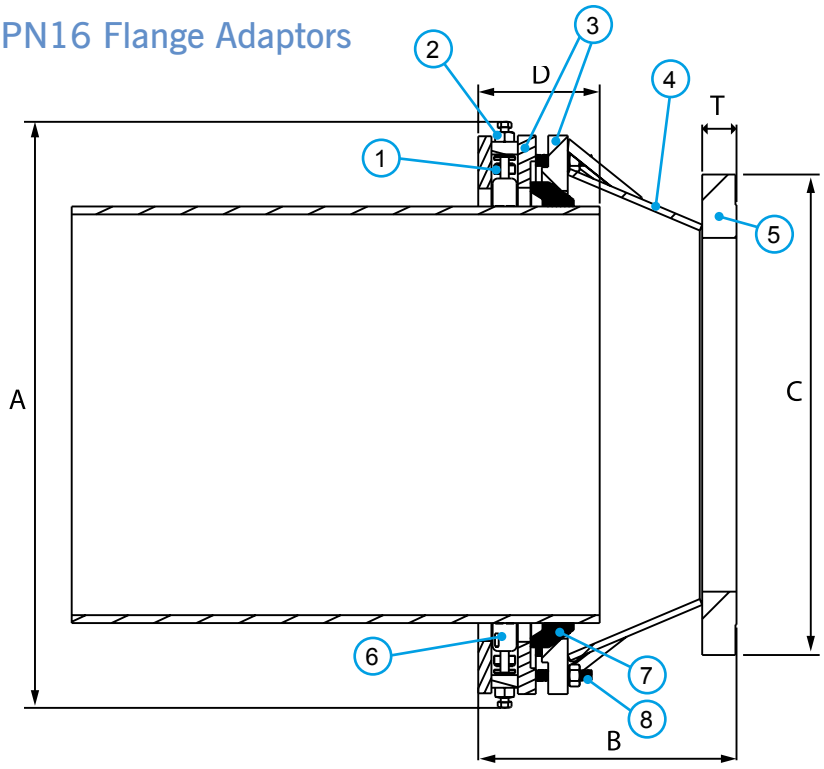
UltraGrip Amplified PN16 Flange Adaptors DN1000

Datasheet 1/2

PN16 Flange Adaptors



Key

1 = Square Bush Nut
2 = Bolt, Nut & Washer
3 = End Ring
4 = Centre Sleeve
5 = Flange Ring
6 = Gripper
7 = Gasket
8 = Studs

HAZARD WARNING: Lifting lugs, where provided, are designed/tested for lifting only the components to which they are attached. Failure to follow these instructions could result in property damage, serious personal injury or death.
The maximum safe working load of the lifting eye is equal to the product weight.

Flange Adaptors PN16

Nom Size	Size Range		Flange Nom Size	Flange Drilling	Insertion Depth (D)		Setting Gap		Dimensions				Fasteners		Weight (kg)
	Min	Max			Min	Max	Min	Max	C	A	B	T*	Axial Stud No-size	Radial Bolt No-size	
1000	995	1030	900	PN16	220	245	355	380	1255	1382	600	82	26 x M16	48 x M16	729
1000	995	1030	1000	PN16	220	245	360	385	1255	1382	605	90	26 x M16	48 x M16	817
1000	1031	1066	1000	PN16	220	245	515	540	1255	1418	760	90	26 x M16	50 x M16	893

*Flange Drilling - All flanges are drilled to BS EN 1092 - part 1 and are raised face flanges *dimensions excluding 2mm raised flange.*

Connections based on standard pipe OD's*

Nom Size	Range		Ductile Iron	PE	Steel / FBE Coated Steel	Cast Iron	Asbestos Cement
	Min	Max					
DN1000	995	1030		1000mm	DN1000		
DN1000	1031	1066	DN1000				

*The above table is for guidance only, please ensure the OD and material of the pipe is compatible before installation

Working Pressure & Temperature Ratings

Nominal Size	Gripping Product		Flex Product		Operating Temperature
	Gas	Water	Gas	Water	
DN1000	N/A	16 bar	N/A	16 bar	-20 to +60

Pipe Materials

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UltraGrip Amplified PN16 Flange Adaptors DN1000

Datasheet 2/2

Technical Information

Working pressure rating:

Water:

DN1000 = 16 bar

Gas:

Not approved

Site test pressure:

1.5 times working pressure

Angularity

Flange Adaptor 4°

Gripping product suitable for

Ductile Iron / PE (PE100, SDR 17, 21, 26, 33)
Steel / Cast Iron

Flex product suitable for

Ductile Iron / PE (PE100, SDR 17, 21, 26, 33)
Steel / Cast Iron / Abestos Cement

Bolt Torque

	Recommended Bolt Torque (Nm) on every bolt			
	Bolt Size	Ductile Iron	PE-100	Steel and Cast Iron
Axial Fastener (For Gasket Engagement)	M20	190-210	190-210	190-210
Radial Fastener (For Grippers)	M16	220-250	140-150	110-120

For the full installation details and to ensure correct fitting, please refer to the UltraGrip DN1000 installation instructions.

Temperature rating of product

Operating temperature -20°C to +60°C

Support liners – PE

A close fit Viking Johnson support liner is required when used on:

- All PE pipes

Use of restrained couplings on exposed pipework

UltraGrip can be used in above ground applications, so long as the pipework is supported, it is not exposed to direct sunlight and falls within the 40°C operating temperature range (between -20°C and +60°C).

Approvals

The following water contact materials used in UltraGrip are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

Gasket (EPDM):

- WRAS, W270

Materials & Relevant Standards

1) Square Bush Nut

Cast stainless steel to ASTM A487/A487M-21, Grade CA6NM Class A

2) Bolts

Stainless steel to BS EN ISO 3506-1 Grade A4-80

2) Nuts

Stainless steel – BS1449:PT2 ISO 3506-1 Grade A4-80

2) Washers

Stainless steel – BS1449:PT2 ISO 3506-1 Grade A4-50

3) End Rings 4) Centre Sleeve

Mild steel to BS EN10025 Grade S355

5) Flange Ring

S275 Mild Steel to BS EN 10025-2

6) Gripper

Stainless steel (Cast) PH 17-4 H925 to BS EN 10088-1

7) Gasket

EPDM to BS EN 681-1

8) Studs

Stainless steel – BS EN ISO 3506-1 Grade A4-80

Coatings

End Rings / Centre Sleeve / Flange:

- Rilsan Nylon 11 (Black)

Bolts:

- Dry Film Lubricant GZ – Silver

Nuts:

- Dry Film Lubricant GZ – Silver

Gripper - None

Retention Insert

Nylon 6

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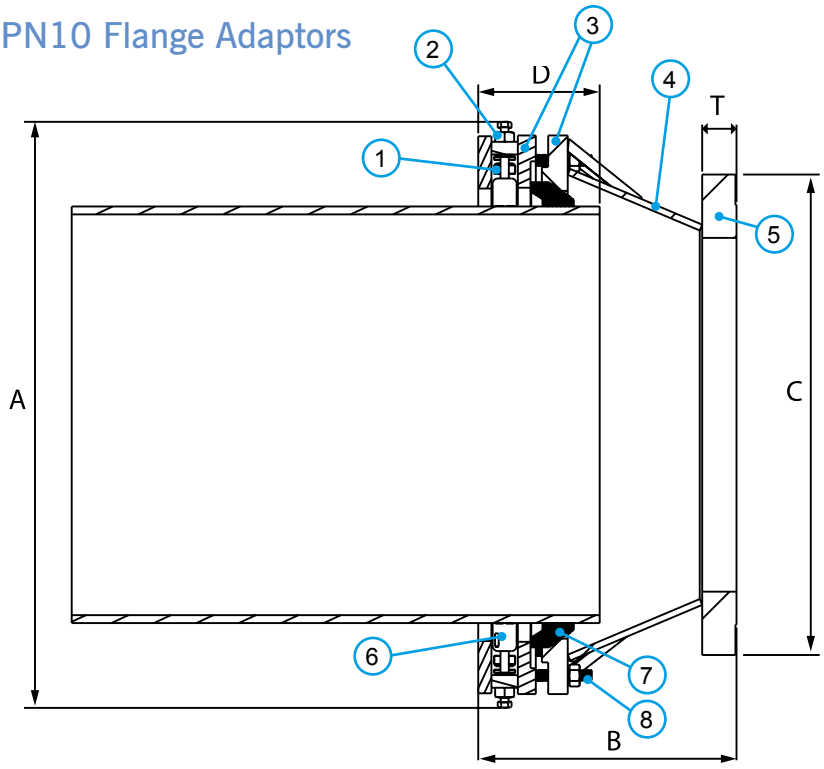
UltraGrip Amplified PN10 Flange Adaptors DN1000

Datasheet 1/2

PN10 Flange Adaptors



Key

1 = Square Bush Nut
2 = Bolt, Nut & Washer
3 = End Ring
4 = Centre Sleeve
5 = Flange Ring
6 = Gripper
7 = Gasket
8 = Studs

HAZARD WARNING: Lifting lugs, where provided, are designed/tested for lifting only the components to which they are attached. Failure to follow these instructions could result in property damage, serious personal injury or death.
The maximum safe working load of the lifting eye is equal to the product weight.

Flange Adaptors PN10

Nom Size	Size Range		Flange Nom Size	Flange Drilling	Insertion Depth (D)		Setting Gap		Dimensions				Fasteners		Weight (kg)
	Min	Max			Min	Max	Min	Max	C	A	B	T*	Axial Stud No-size	Radial Bolt No-size	
1000	995	1030	900	PN10	220	245	535	560	1230	1383	780	62	26 x M20	48 x M16	742
1000	995	1030	1000	PN10	220	245	345	370	1230	1383	590	70	26 x M20	48 x M16	725
1000	1031	1066	1000	PN10	220	245	445	470	1230	1418	690	70	26 x M20	50 x M16	780

*Flange Drilling - All flanges are drilled to BS EN 1092 - part 1 and are raised face flanges *dimensions excluding 2mm raised flange.*

Connections based on standard pipe OD's*

Nom Size	Range		Ductile Iron	PE	Steel / FBE Coated Steel	Cast Iron	Asbestos Cement
	Min	Max					
DN1000	995	1030		1000mm	DN1000		
DN1000	1031	1066	DN1000				

*The above table is for guidance only, please ensure the OD and material of the pipe is compatible before installation

Working Pressure & Temperature Ratings

Nominal Size	Gripping Product		Flex Product		Operating Temperature
	Gas	Water	Gas	Water	
DN1000	N/A	16 bar	N/A	16 bar	-20 to +60

Pipe Materials

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UltraGrip Amplified PN10 Flange Adaptors DN1000

Datasheet 2/2

Technical Information

Working pressure rating:

Water:

DN1000 = 10 bar

Gas:

Not approved

Site test pressure:

1.5 times working pressure

Angularity

Flange Adaptor 4°

Gripping product suitable for

Ductile Iron / PE (PE100, SDR 17, 21, 26, 33)
Steel / Cast Iron

Flex product suitable for

Ductile Iron / PE (PE100, SDR 17, 21, 26, 33)
Steel / Cast Iron / Abestos Cement

Bolt Torque

	Recommended Bolt Torque (Nm) on every bolt			
	Bolt Size	Ductile Iron	PE-100	Steel and Cast Iron
Axial Fastener (For Gasket Engagement)	M20	190-210	190-210	190-210
Radial Fastener (For Grippers)	M16	220-250	140-150	110-120

For the full installation details and to ensure correct fitting, please refer to the UltraGrip DN1000 installation instructions.

Temperature rating of product

Operating temperature -20°C to +60°C

Support liners – PE

A close fit Viking Johnson support liner is required when used on:

- All PE pipes

Use of restrained couplings on exposed pipework

UltraGrip can be used in above ground applications, so long as the pipework is supported, it is not exposed to direct sunlight and falls within the 40°C operating temperature range (between -20°C and +60°C).

Approvals

The following water contact materials used in UltraGrip are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

Gasket (EPDM):

- WRAS, W270

Materials & Relevant Standards

1) Square Bush Nut

Cast stainless steel to ASTM A487/A487M-21, Grade CA6NM Class A

2) Bolts

Stainless steel to BS EN ISO 3506-1 Grade A4-80

2) Nuts

Stainless steel – BS1449:PT2 ISO 3506-1 Grade A4-80

2) Washers

Stainless steel – BS1449:PT2 ISO 3506-1 Grade A4-50

3) End Rings 4) Centre Sleeve

Mild steel to BS EN10025 Grade S355

5) Flange Ring

S275 Mild Steel to BS EN 10025-2

6) Gripper

Stainless steel (Cast) PH 17-4 H925 to BS EN 10088-1

7) Gasket

EPDM to BS EN 681-1

8) Studs

Stainless steel – BS EN ISO 3506-1 Grade A4-80

Coatings

End Rings / Centre Sleeve / Flange:

- Rilsan Nylon 11 (Black)

Bolts:

- Dry Film Lubricant GZ – Silver

Nuts:

- Dry Film Lubricant GZ – Silver

Gripper - None

Retention Insert

Nylon 6

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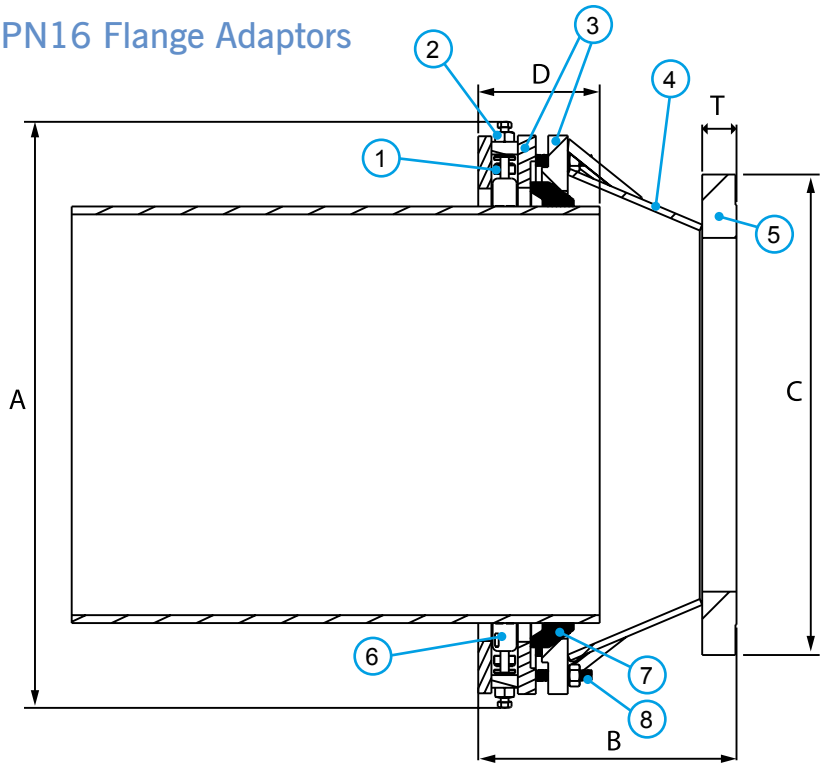
UltraGrip Amplified PN16 Flange Adaptors DN1200

Datasheet 1/2

PN16 Flange Adaptors



Key

1 = Square Bush Nut
2 = Bolt, Nut & Washer
3 = End Ring
4 = Centre Sleeve
5 = Flange Ring
6 = Gripper
7 = Gasket
8 = Studs

HAZARD WARNING: Lifting lugs, where provided, are designed/tested for lifting only the components to which they are attached. Failure to follow these instructions could result in property damage, serious personal injury or death.
The maximum safe working load of the lifting eye is equal to the product weight.

Flange Adaptors PN16

Nom Size	Size Range		Flange Nom Size	Flange Drilling	Insertion Depth (D)		Setting Gap		Dimensions				Fasteners		Weight (kg)
	Min	Max			Min	Max	Min	Max	C	A	B	T*	Axial Stud No-size	Radial Bolt No-size	
1200	1190	1225	1200	PN16	220	245	375	400	1485	1575	621	110	32 x M20	60 x M16	1000

*Flange Drilling - All flanges are drilled to BS EN 1092 - part 1 and are raised face flanges *dimensions excluding 2mm raised flange.*

Connections based on standard pipe OD's*

Nom Size	Range		Ductile Iron	PE	Steel / FBE Coated Steel	Cast Iron	Asbestos Cement
	Min	Max					
DN1200	1190	1225	N/A	DN1200	N/A	N/A	N/A

*The above table is for guidance only, please ensure the OD and material of the pipe is compatible before installation

Working Pressure & Temperature Ratings

Nominal Size	Gripping Product		Flex Product		Operating Temperature
	Gas	Water	Gas	Water	
DN1200	N/A	10 bar	N/A	10 bar	-20 to +60

Pipe Materials

PE

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UltraGrip Amplified PN16 Flange Adaptors DN1200

Datasheet 2/2

Technical Information

Working pressure rating:

Water:

DN1200 = 10 bar

Gas:

Not approved

Site test pressure:

1.5 times working pressure

Angularity

Flange Adaptor 4°

Gripping product suitable for

PE (PE100, SDR 17, 21, 26, 33)

Flex product suitable for

PE (PE100, SDR 17, 21, 26, 33)

Bolt Torque

	Recommended Bolt Torque (Nm) on every bolt			
	Bolt Size	Ductile Iron	PE-100	Steel and Cast Iron
Axial Fastener (For Gasket Engagement)	M20	–	190-210	–
Radial Fastener (For Grippers)	M16	–	140-150	–

For the full installation details and to ensure correct fitting, please refer to the UltraGrip DN1200 installation instructions.

Temperature rating of product

Operating temperature -20°C to +60°C

Support liners – PE

A close fit Viking Johnson support liner is required when used on:

- All PE pipes

Use of restrained couplings on exposed pipework

UltraGrip can be used in above ground applications, so long as the pipework is supported, it is not exposed to direct sunlight and falls within the 40°C operating temperature range (between -20°C and +60°C).

Approvals

The following water contact materials used in UltraGrip are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

Gasket (EPDM):

- WRAS, W270

Materials & Relevant Standards

1) Square Bush Nut

Cast stainless steel to ASTM A487/A487M-21, Grade CA6NM Class A

2) Bolts

Stainless steel to BS EN ISO 3506-1 Grade A4-80

2) Nuts

Stainless steel – BS1449:PT2 ISO 3506-1 Grade A4-80

2) Washers

Stainless steel – BS1449:PT2 ISO 3506-1 Grade A4-50

3) End Rings 4) Centre Sleeve

Mild steel to BS EN10025 Grade S355

5) Flange Ring

S275 Mild Steel to BS EN 10025-2

6) Gripper

Stainless steel (Cast) PH 17-4 H925 to BS EN 10088-1

7) Gasket

EPDM to BS EN 681-1

8) Studs

Stainless steel – BS EN ISO 3506-1 Grade A4-80

Coatings

End Rings / Centre Sleeve / Flange:

- Rilsan Nylon 11 (Black)

Bolts:

- Dry Film Lubricant GZ – Silver

Nuts:

- Dry Film Lubricant GZ – Silver

Gripper - None

Retention Insert

Nylon 6

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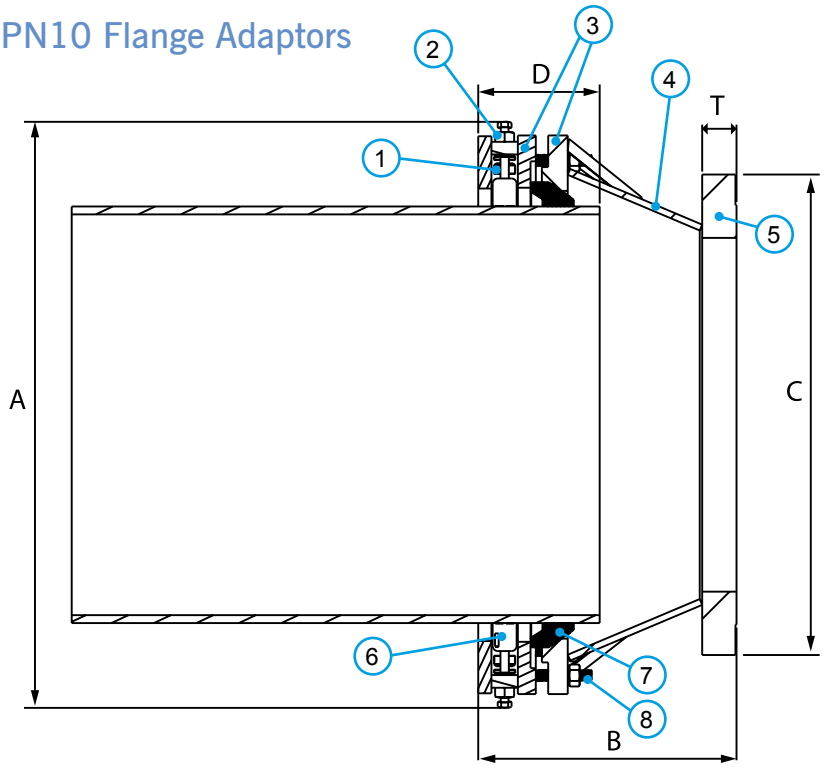
UltraGrip Amplified PN10 Flange Adaptors DN1200

Datasheet 1/2

PN10 Flange Adaptors



Key

1 = Square Bush Nut
2 = Bolt, Nut & Washer
3 = End Ring
4 = Centre Sleeve
5 = Flange Ring
6 = Gripper
7 = Gasket
8 = Studs

HAZARD WARNING: Lifting lugs, where provided, are designed/tested for lifting only the components to which they are attached. Failure to follow these instructions could result in property damage, serious personal injury or death.
The maximum safe working load of the lifting eye is equal to the product weight.

Flange Adaptors PN10

Nom Size	Size Range		Flange Nom Size	Flange Drilling	Insertion Depth (D)		Setting Gap		Dimensions				Fasteners		Weight (kg)
	Min	Max			Min	Max	Min	Max	C	A	B	T*	Axial Stud No-size	Radial Bolt No-size	
1200	1190	1225	1200	PN10	220	245	400	425	1455	1575	645	83	32 x M20	60 x M16	1010

*Flange Drilling - All flanges are drilled to BS EN 1092 - part 1 and are raised face flanges *dimensions excluding 2mm raised flange.*

Connections based on standard pipe OD's*

Nom Size	Range		Ductile Iron	PE	Steel / FBE Coated Steel	Cast Iron	Asbestos Cement
	Min	Max					
DN1200	1190	1225	N/A	DN1200	N/A	N/A	N/A

*The above table is for guidance only, please ensure the OD and material of the pipe is compatible before installation

Working Pressure & Temperature Ratings

Nominal Size	Gripping Product		Flex Product		Operating Temperature
	Gas	Water	Gas	Water	
DN1200	N/A	10 bar	N/A	10 bar	-20 to +60

Pipe Materials

PE

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UltraGrip Amplified PN10 Flange Adaptors DN1200

Datasheet 2/2

Technical Information

Working pressure rating:

Water:

DN1200 = 10 bar

Gas:

Not approved

Site test pressure:

1.5 times working pressure

Angularity

Flange Adaptor 4°

Gripping product suitable for

PE (PE100, SDR 17, 21, 26, 33)

Flex product suitable for

PE (PE100, SDR 17, 21, 26, 33)

Bolt Torque

	Recommended Bolt Torque (Nm) on every bolt			
	Bolt Size	Ductile Iron	PE-100	Steel and Cast Iron
Axial Fastener (For Gasket Engagement)	M20	–	190-210	–
Radial Fastener (For Grippers)	M16	–	140-150	–

For the full installation details and to ensure correct fitting, please refer to the UltraGrip DN1200 installation instructions.

Temperature rating of product

Operating temperature -20°C to +60°C

Support liners – PE

A close fit Viking Johnson support liner is required when used on:

- All PE pipes

Use of restrained couplings on exposed pipework

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Approvals

The following water contact materials used in UltraGrip are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

Gasket (EPDM):

- WRAS, W270

Materials & Relevant Standards

1) Square Bush Nut

Cast stainless steel to ASTM A487/A487M-21, Grade CA6NM Class A

2) Bolts

Stainless steel to BS EN ISO 3506-1 Grade A4-80

2) Nuts

Stainless steel – BS1449:PT2 ISO 3506-1 Grade A4-80

2) Washers

Stainless steel – BS1449:PT2 ISO 3506-1 Grade A4-50

3) End Rings 4) Centre Sleeve

Mild steel to BS EN10025 Grade S355

5) Flange Ring

S275 Mild Steel to BS EN 10025-2

6) Gripper

Stainless steel (Cast) PH 17-4 H925 to BS EN 10088-1

7) Gasket

EPDM to BS EN 681-1

8) Studs

Stainless steel – BS EN ISO 3506-1 Grade A4-80

Coatings

End Rings / Centre Sleeve / Flange:

- Rilsan Nylon 11 (Black)

Bolts:

- Dry Film Lubricant GZ – Silver

Nuts:

- Dry Film Lubricant GZ – Silver

Gripper - None

Retention Insert

Nylon 6

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Viking Johnson (part of Crane BS &U) manufactures couplings, flange adaptors and associated fittings for the Utilities industries. Viking Johnson cannot make recommendations regarding the pipeline design, which includes all components, intended operational substances, introduced chemical species and materials. Any comments made by Viking Johnson regarding product compatibility apply only to Viking Johnson's product range.

CASE STUDY

Nimes Metropole Mains Upgrade - UltraGrip Amplified

Viking Johnson UltraGrip Amplified was selected by Eau de Nimes Metropole to support the work of installing a new flow meter to collect water consumption data for analysis to locate leaks and minimising water loss in their network, something that is critical to all utilities in their drive to conserve water and save costs.

The water utility Eau de Nimes Metropole is part of the Veolia group and covers 39 municipalities serving a population of 260.000 people in Southern France. Aliaxis depot in Mèze, Viking Johnsons channel partner in France delivered the product to the water authority.

Viking Johnson supplied two UltraGrip Amplified DN800 flange adaptors and four UltraGrip DN500 flange adaptors for use in the modification to the network, which had to be completed over a two week period coinciding with a school shut down. The large excavation trench was actually located immediately outside the school gates !

The DN800 cast iron main, which is over 150 years old dating back to 1872, runs at a maximum of 7 bar and due to its size and weight had to be cut and removed in two pieces. Viking Johnson had no reservations about offering their new Amplified UltraGrip for this pipe material, as their extensive testing program included both the new pipe materials like Ductile Iron, Steel, PE, and MOPVC, but also a specially manufactured section grey cast iron pipe. The two DN800 UltraGrip Amplified flange adaptors were pre-fitted to reducers used to step down the pipe to DN500 for lowering into the trench and on one end a gate valve was then installed to control water flow as and when required. Installation was made easy from both the lifting eye on the Amplified UltraGrip assisting in the handling of the fittings along with the wide tolerance of the fitting providing good clearance when offering up to the existing pipe. Finally, four DN500 UltraGrip flange adaptors were used to connect the new sections of ductile iron pipe located up and downstream of the flow meter, which completed the modifications to the network.

While Eau de Nimes have used the smaller size UltraGrip couplings and flange adaptors on previous projects and been pleased with the reliable performance along with how easy they are to fit, this was the first time they had installed the new larger diameter DN800 UltraGrip Amplified fittings. The significant advantages of UltraGrip are they connect many different pipe materials, offer a wide tolerance that allows for some variation in the outside diameter of the pipe and the restraining mechanism accommodates the end load forces due to internal pressure in pipelines.

Mathieu Berart, who is responsible for the water network performance at Nimes Metropole Water Utility said

> “We will now be able to understand water flow during the day and at night a lot better. The installation team decided to use a Viking Johnson solution taking into consideration space constraints on site and the need for tolerance to accommodate the pipe outside diameter. It is a lot more practical to use a solution offering a wide tolerance when working on such a critical project.”

SECTOR
Upgrade water mains

LOCATION
Nimes, France

CLIENT
Veolia - Eau de Nimes Metropole

CONTRACTOR
Eau de Nimes Metropole

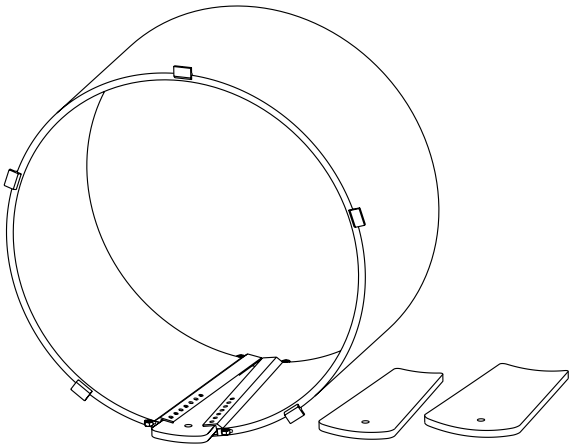
DISTRIBUTOR
Aliaxis, Mèze

SPECIFICATION
Viking Johnson 2 UltraGrip Amplified DN800 flange adaptors and 4 UltraGrip DN500 flange adaptors

UltraGrip Amplified Support Liner for PE & PVC Pipes DN700 to DN1200

Datasheet 1/1

Materials



Support liner & wedges

Mild steel – BS EN10025 Grade S275

Coatings

- Rilsan Nylon 11 (Black)

All DN700/DN800/DN900/DN1000/DN1200 UltraGrip products require a Viking Johnson approved support liner when used with PE and MOPVC. Please contact us regarding the availability.

Support liners for PE pipes

Pipe code	Pipe size (mm)	Pipe OD		Pipe ID		Wedge 1				Wedge 2				Wedge 3				Wedge 4			
		Min (mm)	Max (mm)	Min (mm)	Max (mm)	Min ID (mm)	Max ID (mm)	Short Edge (mm)	Long Edge (mm)	Min ID (mm)	Max ID (mm)	Short Edge (mm)	Long Edge (mm)	Min ID (mm)	Max ID (mm)	Short Edge (mm)	Long Edge (mm)	Min ID (mm)	Max ID (mm)	Short Edge (mm)	Long Edge (mm)
DN710-SDR11	710	710	716.4	567	587	555	565	50	100	566	571	85	135	572	582	103	153	583	587	120	170
DN710-SDR17	710	710	716.4	618	633	610	617	50	100	618	621	76	126	622	629	89	139	630	633	102	152
DN710-SDR21	710	710	716.4	635	649	626	633	50	100	634	641	76	126	642	645	89	139	646	649	102	152
DN710-SDR26	710	710	716.4	650	662	642	648	50	100	649	652	72	122	653	655	83	133	656	662	94	144
DN800-SDR11	800	800	807.2	640	662	627	638	50	100	639	644	88	138	645	656	107	157	657	661	126	176
DN800-SDR17	800	800	807.2	696	713	687	695	50	100	696	700	79	129	701	709	94	144	710	713	108	158
DN800-SDR21	800	800	807.2	716	731	708	715	50	100	716	723	76	126	724	727	89	139	728	731	102	152
DN800-SDR26	800	800	807.2	732	746	723	730	50	100	731	734	76	126	735	738	89	139	739	746	102	152
DN900-SDR13.6	900	900	908.1	754	775	743	753	50	100	754	764	88	138	760	770	107	157	765	776	126	176
DN900-SDR17	900	900	908.1	783	802	773	782	50	100	783	792	82	132	788	797	98	148	793	802	114	164
DN900-SDR21	900	900	908.1	805	822	796	804	50	100	805	813	79	129	810	818	94	144	814	822	108	158
DN1000-SDR17	1000	1000	1009	870	891	860	869	50	100	870	879	88	138	875	885	107	157	880	891	126	176
DN1000-SDR21	1000	1000	1009	895	914	886	894	50	100	895	903	85	135	900	909	103	153	904	914	120	170
DN1000-SDR26	1000	1000	1009	915	932	907	914	50	100	915	922	82	132	919	927	98	148	923	932	114	164
DN1000-SDR33	1000	1000	1009	933	948	926	932	50	100	933	939	79	129	937	944	94	144	940	948	108	158
DN12000-SDR17	1200	1200	1210	1031	1070	1032	1043	50	100	1044	1055	88	138	1050	1062	107	157	1056	1069	126	176
DN12000-SDR21	1200	1200	1210	1074	1096	1063	1073	50	100	1074	1084	85	135	1079	1090	103	153	1085	1096	120	170
DN12000-SDR26	1200	1200	1210	1098	1118	1088	1097	50	100	1098	1107	82	132	1103	1113	98	148	1108	1118	114	164
DN12000-SDR33	1200	1200	1210	1111	1138	1112	1119	50	100	1120	1127	76	126	1124	1132	89	139	1128	1137	102	152

Support liners for MOPVC pipes

Pipe code	Pipe size (mm)	Pipe OD		Pipe ID		Wedge 1				Wedge 2				Wedge 3				Wedge 4			
		Min (mm)	Max (mm)	Min (mm)	Max (mm)	Min ID (mm)	Max ID (mm)	Short Edge (mm)	Long Edge (mm)	Min ID (mm)	Max ID (mm)	Short Edge (mm)	Long Edge (mm)	Min ID (mm)	Max ID (mm)	Short Edge (mm)	Long Edge (mm)	Min ID (mm)	Max ID (mm)	Short Edge (mm)	Long Edge (mm)
DN710-SDR33	710	710	712	662	668	656	661	50	100	662	664	88	138	665	670	79	129	671	673	126	176
DN800-SDR33	800	800	802	746	753	739	745	50	100	746	749	72	122	750	756	83	133	757	759	102	152

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Dismantling Joints™

Dedicated DN40 - DN4000

Fully Restrained Double Flanged Fitting

VIKING JOHNSON®

Developed for Complete Versatility

The Dismantling Joint range was developed to provide greater versatility for the designer at the planning stage and the engineer in the installation stage of flanged pipe work systems and to allow for simple maintenance programmes.

Allows for Adjustment

The Dismantling Joints are double flanged fittings that accommodate up to 100mm (4") longitudinal adjustment and can be locked at the required length with the tie bars supplied. Not only does this system allow for fast, easy maintenance of valves, pumps or meters, it simplifies future pipe work modifications and reduces downtime when changes need to be made.

Easy to Install

The installation is also straightforward using just a spanner and torque wrench to tighten the high tensile steel or stainless steel tie bars. With fewer tie bars than flange holes that also act as flange jointing bolts, the installation process is quick and easy while offering a secure, rigid, fully end load resistant system with a pressure rating equal to that of the flange.

The Range

A comprehensive range is available from DN40 (1½") to DN4000 (144") with virtually any flange drilling or pressure rating supplied. Larger sizes and custom made Dismantling Joints can be designed and built on request.

Dismantling Joints

Flanged Pipe Materials

Dismantling Joint

Product Design Benefits

Full Flange Sealing

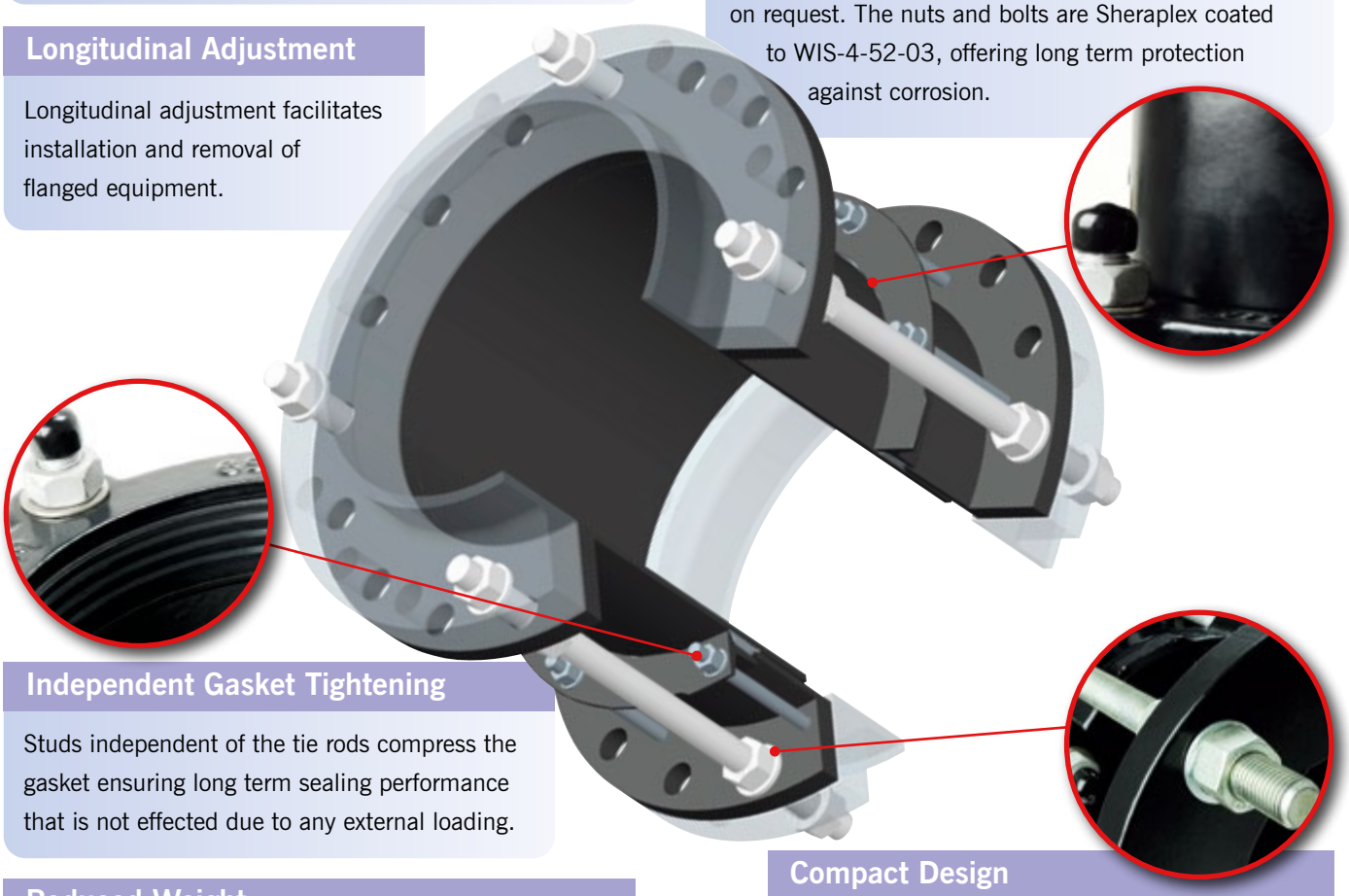
The flange of the spigot piece provides a full flange sealing area, making it ideal for applications where a full-face flange is required, e.g. wafer and butterfly valves.

Longitudinal Adjustment

Longitudinal adjustment facilitates installation and removal of flanged equipment.

Excellent Corrosion Protection

The flange adaptor and flange spigot are coated with WRAS approved Rilsan Nylon 11 providing excellent protection from transport, storage, site and corrosion damage. The tie bars are Zn^3 Zinc Plated as standard with other coatings, grades and finishes available on request. The nuts and bolts are Sheraplex coated to WIS-4-52-03, offering long term protection against corrosion.



Independent Gasket Tightening

Studs independent of the tie rods compress the gasket ensuring long term sealing performance that is not effected due to any external loading.

Reduced Weight

The use of high tensile steel in the tie rods reduces the number required to accommodate end load forces, reducing the overall weight of the product.

Compact Design

Harnessing is provided within the bolt circle, eliminating other complex anchoring systems and reducing space requirements.

Customer Benefits

- Viking Johnson's Dismantling Joints are particularly suitable for simplifying the installation and removal of isolation valves, control valves, check valves, non-return valves, flow metering valves, pump sets, pressure reducing valves, flanged pipe and fittings.
- The simplicity and versatility of the fittings make them suitable for many applications including pumping stations, water treatment works, sewage treatment works, plant rooms, meter chambers, power generation equipment, gas distribution stations.
- Studs independent of the tie rods compress the gasket allowing the use of smaller diameters than those in the flange connecting bolts so improving access for operatives during installation.
- Use of high tensile steel in the tie rods reduces the number required to accommodate the end load forces making it easier and quicker for operatives to install, especially in tight spaces, chambers and congested pump stations.

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Qatar - Doha

Dukhan Road Highway East Construction

Dismantling Joints - DN200/DN1200
Large Diameter Couplings
Large Diameter Flange Adapters

Project

Dukhan Highway, Qatar development consists of ten grade-separated interchange, seven camel underpasses and an 87km two way collector road which will create a strategic east-west highway.

Client

ASHGAL

Consultant

Parsons

Contractor

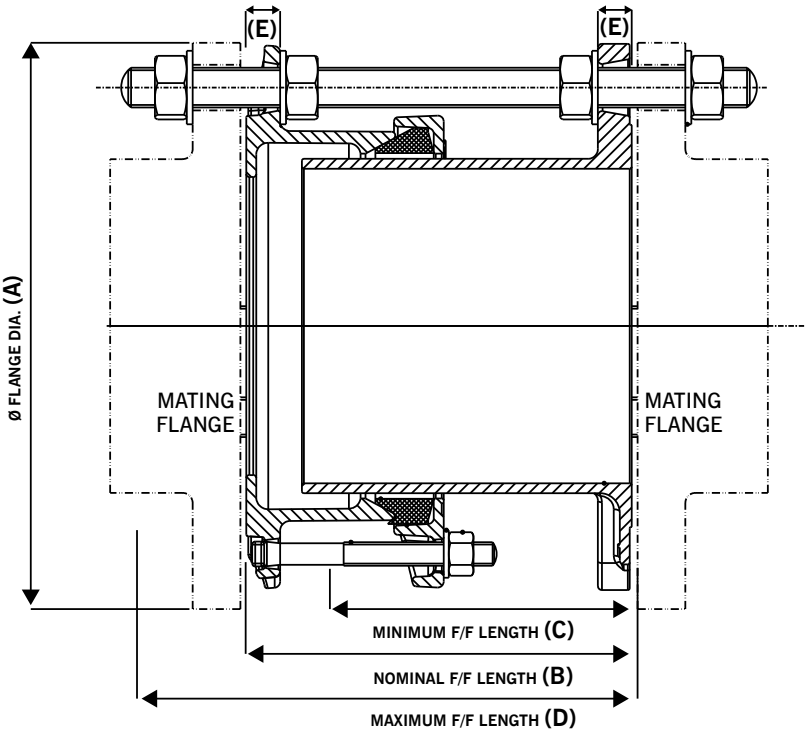
UNICORP

Crane BS&U are solely the provider of products and have no direct influence on, or take any responsibility for any working practices employed or depicted in the images enclosed to install such products.

Dismantling Joints Cast DN40 to DN300 (PN10,16,25,40)

Datasheet 1/4

Dismantling Joint (Cast)



Note: Maximum Longitudinal F/F Adjustment = Maximum F/F Length – Minimum F/F Length

Dismantling Joints (Standard Product)

Table provides details of standard product – for products offering longer flange dimensions and / or increased longitudinal adjustment contact Viking Johnson.

Flange Details					Flange to Flange Details			Tie Rod Details					
		Flange Thickness		Flange OD	Nominal Length	Minimum Length	Maximum Length	Steel Tie Rod			Stainless Steel Tie Rod		
Nom	Drilling	Flange Adaptor E (mm)	Spigot E (mm)	A (mm)	B (mm)	C (mm)	D (mm)	Dia x Length (mm)	No.	Total Weight of DJ (kg)	Dia x Length (mm)	No.	Total Weight of DJ (kg)
50	PN10,16,25,40	17	17	165	194	174	214	M16 x 300	4	6.9	M16 x 300	4	6.9
65	PN10,16	17	17	185	194	174	214	M16 x 300	4	7.7	M16 x 300	4	7.7
80	PN10,16,25,40	17	17	200	194	174	214	M16 x 300	4	9.4	M16 x 300	4	9.4
100	PN10,16	17	17	220	194	174	214	M16 x 300	4	10.4	M16 x 300	4	10.4
125	PN10,16	17	17	250	194	174	214	M16 x 300	4	11.9	M16 x 300	4	11.9
150	PN10,16	17	17	285	194	174	214	M20 x 310	4	15.8	M20 x 310	4	15.8
200	PN10	20	20	340	194	174	214	M20 x 310	4	21.6	M20 x 310	4	21.6
200	PN16	20	20	340	194	174	214	M20 x 310	4	21.6	M20 x 310	4	21.6
250	PN10	19	20	395	194	174	214	M20 x 310	4	28.9	M20 x 310	4	28.9
250	PN16	19	20	405	194	174	214	M24 x 330	4	31.6	M24 x 330	4	31.6
300	PN10	19	19	445	194	174	214	M20 x 310	4	32.8	M20 x 310	4	32.8
300	PN16	19	20	460	194	174	214	M24 x 330	4	35.4	M24 x 330	4	35.4

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Dismantling Joints Cast DN40 to DN300 (PN10,16,25,40)

Datasheet 2/4

Technical Information

Working Pressure Rating

Water - In accordance with the flange rating

Gas 6 bar

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Angularity

Dismantling joints are in essence double flanged pipe where the flange to flange dimension can be adjusted, and therefore are not able to accommodate any angularity.

Bolt Torque/Spanner

M12; Torque 55-65Nm on every bolt

Tie rods

Torque is a function of the flange connecting gasket, not supplied by Viking Johnson; consult flange gasket supplier.

Temperature Rating of Product

EPDM -20°C to +90°C

Nitrile -20°C to +90°C

For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

Approvals

The following water contact materials used in Dismantling Joints are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

Materials & Relevant Standards

Flange Drilling

BS EN 1092-2
(formerly BS4504), ISO7005

Cast Flange Adaptor Body & End Rings

Ductile Iron to BS EN1563:
Symbol EN-GJS-450-10

Cast Flange Spigot:

Ductile Iron to BS EN1563:
Symbol EN-GJS-450-10

Steel Spigot Options:

- Steel tube to BS EN10255
- Steel tube to BS EN10216-1: Grade P265TR1
- Rolled steel to BS EN10025-2: Grade S275

Gaskets

Standard:

- EPDM to BS EN681-1: Type WA

Other gasket grades are available contact Viking Johnson.

Coatings

Flange Adaptor, Spigot & End Ring:

- Rilsan Nylon 11 to WIS 4-52-01 Part 1

Option 1 Flange Adaptor bolts & Nuts:

- Sheraplex to WIS 4-52-03

Steel Tie Rods/Nuts:

- Zn^3 Zinc coated

Tie Rods, Studs, Nuts and Washers

The following two options are as standard variants:-

Option 1: Zinc Plated Steel

Tie Rods

ASTM A193 (Grade B7/MB7) equivalent to BS EN10269:+A1: Name 42CrMo4 (Yield 725N/mm²)

Tie Rod Nuts

ASTM A194 Grade 2H/M2H equivalent to BS EN20898-2: Property Class 8.00

Flange Adaptor Studs

Steel to BS EN ISO898-1: Property Class 4.8

Flange Adaptor Nuts

Steel to BS4190: Grade 4

Flange Adaptor Washers

Stainless Steel to BS1449:Part 2: Grade 304S15

Option 2: Stainless Steel

Tie Rods

Stainless Steel to BS EN3506-1: Grade A4 Property Class 70 (Yield 450N/mm²)

Tie Rod Nuts

Stainless Steel to BS EN3506-2: Grade A4 Property Class 80

Flange Adaptor Studs

Stainless Steel to
BS EN ISO 3506-1: grade A4 property class 50

Flange Adaptor Nuts

Stainless Steel to
BS EN ISO 3506-2: grade A4 property class 80

Flange Adaptor Washers

Stainless Steel to BS1449: Part 2: Grade 304S15

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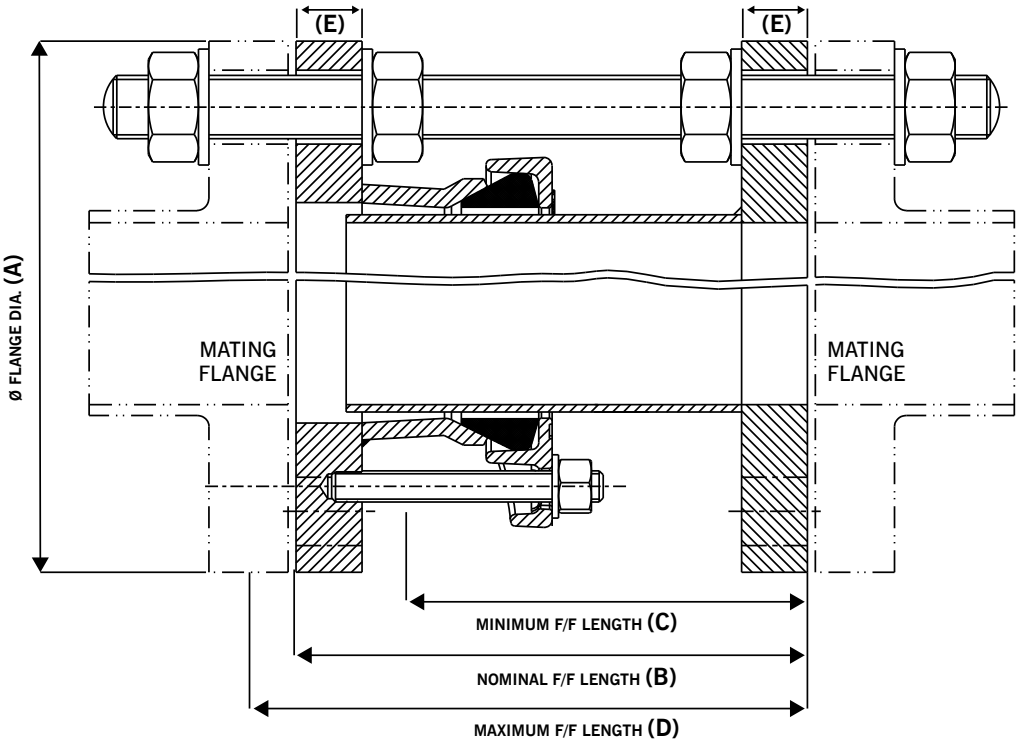
Dismantling Joints Fabricated DN40 to DN300 (PN10,16,25,40)

Datasheet 3/4

Dismantling Joint (Fabricated)



Note: Maximum Longitudinal F/F Adjustment = Maximum F/F Length – Minimum F/F Length

Dismantling Joints (Standard Product)

Table provides details of standard product – for products offering longer flange dimensions and / or increased longitudinal adjustment contact Viking Johnson.

Flange Details					Flange to Flange Details			Tie Rod Details					
		Flange Thickness		Flange OD	Nominal Length	Minimum Length	Maximum Length	Steel Tie Rod			Stainless Steel Tie Rod		
Nom	Drilling	Flange Adaptor E (mm)	Spigot E (mm)	A (mm)	B (mm)	C (mm)	D (mm)	Dia x Length (mm)	No.	Total Weight of DJ (kg)	Dia x Length (mm)	No.	Total Weight of DJ (kg)
40	PN10,16,25,40	18	18	150	187	167	207	M16 x 300	4	7.8	M16 x 300	4	7.8
100	PN25,40	25	25	235	194	174	214	M20 x 320	4	19.2	M20 x 320	4	19.2
125	PN25,40	25	25	270	194	174	214	M24 x 330	4	26.2	M24 x 330	4	26.2
150	PN25	25	25	300	194	174	214	M24 x 330	4	28.9	M24 x 330	4	28.9
150	PN40	25	25	300	194	174	214	M24 x 330	4	28.8	M24 x 330	4	28.8
200	PN25	25	25	360	194	174	214	M24 x 340	4	37.5	M24 x 340	4	37.5
200	PN40	25	25	375	194	174	214	M27 x 350	4	42.6	M27 x 350	4	42.6
250	PN25	25	25	425	194	174	214	M27 x 350	4	49.1	M27 x 350	4	49.1
250	PN40	25	25	450	194	174	214	M30 x 370	4	57.9	M30 x 370	4	57.9
300	PN25	25	25	485	194	174	214	M27 x 350	4	57.1	M27 x 350	4	57.1
300	PN40	25	25	515	194	174	214	M30 x 380	4	69.8	M30 x 380	4	69.8

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Dismantling Joints Fabricated DN40 to DN300 (PN10,16,25,40)

Datasheet 4/4

Technical Information

Working Pressure Rating

Water - In accordance with the flange rating

Gas 6 bar

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Angularity

Dismantling joints are in essence double flanged pipe where the flange to flange dimension can be adjusted, and therefore are not able to accommodate any angularity.

Bolt Torque/Spanner

M12; Torque 55-65Nm on every bolt

M16; Torque 95-110Nm on every bolt

Tie rods

Torque is a function of the flange connecting gasket, not supplied by Viking Johnson; consult flange gasket supplier.

Temperature Rating of Product

EPDM -20°C to +90°C

Nitrile -20°C to +90°C

For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

Approvals

The following water contact materials used in Dismantling Joints are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

Materials & Relevant Standards

Flange Drilling

BS EN1092-1
(formerly BS4504), ISO7005

Fabricated Flange Adaptor Body

Rolled Steel to BS EN 10025-2: Grade S275

End Rings

Rolled Steel to BS EN 10025-2: Grade S275

Ductile Iron to BS EN1563: Symbol EN-GJS-450-10

Sleeve Options

- Steel Tube to BS EN10255
- Steel Tube to BS EN10216-1: Grade P265TR1
- Rolled Steel to BS EN 10025-2: Grade S275

Fabricated Flange Spigot:

Rolled steel to BS EN10025-2: Grade S275

Steel Spigot Options:

- Steel tube to BS EN10255
- Steel tube to BS EN10216-1: Grade P265TR1
- Rolled steel to BS EN10025-2: Grade S275

Gaskets

Standard:

- EPDM to BS EN681-1: Type WA

Other gasket grades are available contact Viking Johnson.

Coatings

Flange Adaptor, Spigot & End Ring:

- Rilsan Nylon 11 to WIS 4-52-01 Part 1

Option 1 Flange Adaptor bolts & Nuts:

- Sheraplex to WIS 4-52-03

Steel Tie Rods/Nuts:

- Zn^3 Zinc coated

Tie Rods, Studs, Nuts and Washers

The following two options are as standard variants:-

Option 1: Zinc Plated Steel

Tie Rods

ASTM A193 (Grade B7/MB7) equivalent to BS EN10269:+A1: Name 42CrMo4 (Yield 725N/mm²)

Tie Rod Nuts

ASTM A194 Grade 2H/M2H equivalent to BS EN20898-2: Property Class 8.00

Flange Adaptor Studs

Steel to BS EN ISO898-1: Property Class 4.8

Flange Adaptor Nuts

Steel to BS4190: Grade 4

Flange Adaptor Washers

Stainless Steel to BS1449:Part 2: Grade 304S15

Option 2: Stainless Steel

Tie Rods

Stainless Steel to BS EN3506-1: Grade A4 Property Class 70 (Yield 450N/mm²)

Tie Rod Nuts

Stainless Steel to BS EN3506-2: Grade A4 Property Class 80

Flange Adaptor Studs

Stainless Steel to BS EN ISO 3506-1: grade A4 property class 50

Flange Adaptor Nuts

Stainless Steel to BS EN ISO 3506-2: grade A4 property class 80

Flange Adaptor Washers

Stainless Steel to BS1449: Part 2: Grade 304S15

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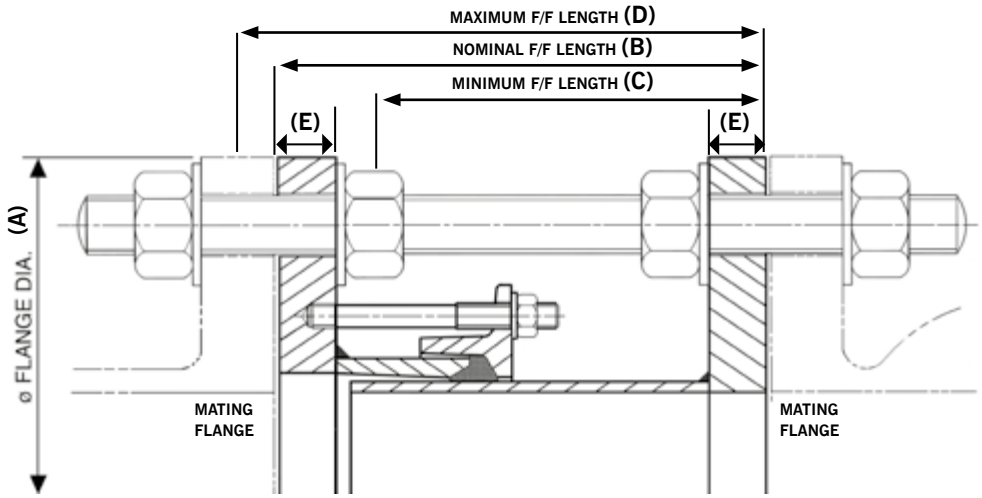
Dismantling Joints DN350 to DN2400 (PN10)

Datasheet 1/2

Dismantling Joint

(For diameters over DN2400 contact Viking Johnson)



Note: Maximum Longitudinal F/F Adjustment = Maximum F/F Length – Minimum F/F Length

Dismantling Joints (Standard Product)

Table provides details of standard product – for products offering longer flange dimensions and / or increased longitudinal adjustment contact Viking Johnson.

Flange Details				Flange To Flange Details			Tie Rod Details					
		Flange Thickness	Flange OD	Nominal Length	Minimum Length	Maximum Length	Steel Tie Rod			Stainless Steel Tie Rod		
Nom	Drilling	E (mm)	A (mm)	B (mm)	C (mm)	D (mm)	Dia x Length (mm)	No.	Total Weight of DJ (kg)	Dia x Length (mm)	No.	Total Weight of DJ (kg)
350	PN10	18	505	295	270	320	M20 x 430	4	57.7	M20 x 430	4	57.7
400	PN10	18	565	295	270	320	M24 x 440	4	68.9	M24 x 440	4	68.9
450	PN10	23	615	300	275	325	M24 x 450	5	87.2	M24 x 450	5	87.2
500	PN10	23	670	300	275	325	M24 x 460	5	97.1	M24 x 460	5	97.1
550	PN10	23	730	300	275	325	M27 x 470	5	112.0	M27 x 470	5	112.0
600	PN10	23	780	300	275	325	M27 x 470	5	120.0	M27 x 470	5	120.0
650	PN10	23	835	300	275	325	M27 x 480	6	132.0	M27 x 480	6	132.0
700	PN10	23	895	300	275	325	M27 x 480	6	146.0	M27 x 480	6	146.0
800	PN10	23	1015	300	275	325	M30 x 500	6	167.0	M30 x 500	8	169.0
900	PN10	25	1115	307	277	337	M30 x 520	7	211.0	M30 x 520	8	215.6
1000	PN10	25	1230	307	277	337	M33 x 530	7	246.0	M33 x 530	8	251.0
1100	PN10	25	1340	307	277	337	M33 x 540	8	276.0	M33 x 540	10	286.0
1200	PN10	38	1455	320	290	350	M36 x 570	8	414.0	M36 x 570	10	426.0
1300	PN10	38	1575	320	290	350	M39 x 590	8	475.0	M39 x 590	10	491.0
1400	PN10	38	1675	320	290	350	M39 x 600	9	509.0	M39 x 600	12	533.0
1500	PN10	38	1785	320	290	350	M39 x 610	9	606.0	M39 x 610	12	631.0
1600	PN10	38	1915	320	290	350	M45 x 630	10	731.0	M45 x 630	10	731.0
1800	PN10	38	2115	320	290	350	M45 x 650	11	829.0	M45 x 650	14	866.0
2000	PN10	60	2325	462	412	512	M45 x 830	12	1,412.0	M45 x 830	16	1,470.0
2200	PN10	60	2550	462	412	512	M52 x 860	13	1,699.0	M52 x 950	14	1,775.0
2400	PN10	60	2760	462	412	512	M52 x 880	14	1,878.0	M52 x 970	18	2,032.0

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Dismantling Joints DN350 to DN2400 (PN10)

Datasheet 2/2

Technical Information

Working Pressure Rating

Water - In accordance with the flange rating

Gas 6 bar

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Angularity

Dismantling joints are in essence double flanged pipe where the flange to flange dimension can be adjusted, and therefore are not able to accommodate any angularity.

Bolt Torque/Spanner

M12; Torque 55-65Nm on every bolt

M16; Torque 95-110Nm on every bolt

Tie rods

Torque is a function of the flange connecting gasket, not supplied by Viking Johnson; consult flange gasket supplier.

Temperature Rating of Product

EPDM -20°C to +90°C

Nitrile -20°C to +90°C

For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

Approvals

The following water contact materials used in Dismantling Joints are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

In addition to the above, the flange adaptor component in the Dismantling Joint has as a finished product KIWA certification verifying that it complies with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Flange Drilling

BS EN1092-1
(formerly BS4504), ISO7005

Fabricated Flange Adaptor Body

Rolled Steel to BS EN 10025-2: Grade S275

End Rings & Sleeve Options

- Rolled Steel to BS EN 10025-2: Grade S275
- Rolled Steel to BS EN 10025-2: Grade S355 (depending on section)

Flange

Rolled Steel to BS EN 10025-2: Grade S275

Spigot Options:

- Steel Tube to BS10216-1: Grade P265TR1
- Rolled steel to BS EN10025-2: Grade S275

Gaskets

Standard:

- EPDM to BS EN681-1: Type WA

Other gasket grades are available contact Viking Johnson.

Coatings

Flange Adaptor, Spigot & End Ring:

- Rilsan Nylon 11 to WIS 4-52-01 Part 1

Option 1 Flange Adaptor bolts & Nuts:

- Sheraplex to WIS 4-52-03

Steel Tie Rods/Nuts:

- Zn^3 Zinc coated

Tie Rods, Studs, Nuts and Washers

The following two options are as standard variants:-

Option 1: Zinc Plated Steel

Tie Rods

ASTM A193 (Grade B7/MB7) equivalent to BS EN10269:+A1: Name 42CrMo4 (Yield 725N/mm²)

Tie Rod Nuts

ASTM A194 Grade 2H/M2H equivalent to BS EN20898-2: Property Class 8.00

Flange Adaptor Studs

Steel to BS EN ISO898-1: Property Class 4.8

Flange Adaptor Nuts

Steel to BS4190: Grade 4

Flange Adaptor Washers

Stainless Steel to BS1449:Part 2: Grade 304S15

Option 2: Stainless Steel

Tie Rods

Stainless Steel to BS EN3506-1: Grade A4 Property Class 70 (Yield 450N/mm²)

Tie Rod Nuts

Stainless Steel to BS EN3506-2: Grade A4 Property Class 80

Flange Adaptor Studs

Stainless Steel to BS EN ISO 3506-1: grade A4 property class 50

Flange Adaptor Nuts

Stainless Steel to BS EN ISO 3506-2: grade A4 property class 80

Flange Adaptor Washers

Stainless Steel to BS1449: Part 2: Grade 304S15

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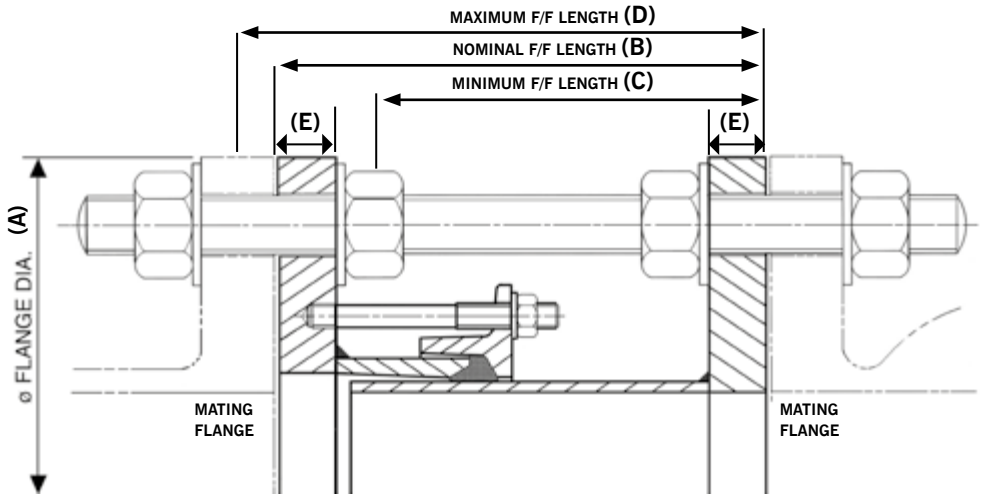
Dismantling Joints DN350 to DN2400 (PN16)

Datasheet 1/2

Dismantling Joint

(For diameters over DN2400 contact Viking Johnson)



Note: Maximum Longitudinal F/F Adjustment = Maximum F/F Length – Minimum F/F Length

Dismantling Joints (Standard Product)

Table provides details of standard product – for products offering longer flange dimensions and / or increased longitudinal adjustment contact Viking Johnson.

Flange Details				Flange To Flange Details			Tie Rod Details					
		Flange Thickness	Flange OD	Nominal Length	Minimum Length	Maximum Length	Steel Tie Rod			Stainless Steel Tie Rod		
Nom	Drilling	E (mm)	A (mm)	B (mm)	C (mm)	D (mm)	Dia x Length (mm)	No.	Total Weight of DJ (kg)	Dia x Length (mm)	No.	Total Weight of DJ (kg)
350	PN16	18	520	295	270	320	M24 x 450	4	63.4	M24 x 450	4	63.4
400	PN16	18	580	295	270	320	M27 x 460	4	75.2	M27 x 460	4	75.2
450	PN16	23	640	300	275	325	M27 x 470	5	99.0	M27 x 470	5	99.0
500	PN16	23	715	300	275	325	M30 x 480	5	121.0	M30 x 480	5	121.0
550	PN16	23	775	300	275	325	M30 x 490	5	134.0	M30 x 490	5	134.0
600	PN16	23	840	300	275	325	M33 x 500	5	154.0	M33 x 500	5	154.0
650	PN16	23	860	300	275	325	M33 x 510	6	153.0	M33 x 510	6	153.0
700	PN16	23	910	300	275	325	M33 x 520	6	162.0	M33 x 520	6	162.0
750	PN16	23	970	300	275	325	M33 x 530	6	177.0	M33 x 530	8	182.0
800	PN16	23	1025	300	275	325	M36 x 540	6	184.0	M36 x 540	8	190.5
900	PN16	25	1125	307	277	337	M36 x 570	7	232.0	M36 x 570	10	251.5
1000	PN16	25	1255	307	277	337	M39 x 590	7	282.0	M39 x 590	10	306.5
1100	PN16	38	1355	320	290	350	M39 x 610	8	406.0	M39 x 610	12	438.0
1200	PN16	38	1485	320	290	350	M45 x 640	8	505.0	M45 x 640	10	529.0
1300	PN16	38	1585	320	290	350	M45 x 650	8	533.0	M45 x 650	12	582.0
1400	PN16	38	1685	320	290	350	M45 x 660	9	583.0	M45 x 660	14	644.0
1500	PN16	38	1820	320	290	350	M52 x 690	9	760.0	M52 x 770	12	829.0
1600	PN16	38	1930	320	290	350	M52 x 710	10	850.0	M52 x 800	12	903.0
1800	PN16	38	2130	320	290	350	M52 x 730	11	962.0	M52 x 810	16	1,075.0
2000	PN16	60	2345	462	412	512	M56 x 930	12	1,662.0	M56 x 1020	18	1,899.0
2200	PN16	60	2555	462	412	512	M56 x 950	13	1,871.0	M56 x 1040	20	2,145.0
2400	PN16	60	2765	462	412	512	M56 x 980	16	2,144.0	M56 x 1070	24	2,468.0

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Dismantling Joints DN350 to DN2400 (PN16)

Datasheet 2/2

Technical Information

Working Pressure Rating

Water - In accordance with the flange rating

Gas 6 bar

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Angularity

Dismantling joints are in essence double flanged pipe where the flange to flange dimension can be adjusted, and therefore are not able to accommodate any angularity.

Bolt Torque/Spanner

M12; Torque 55-65Nm on every bolt

M16; Torque 95-110Nm on every bolt

Tie rods

Torque is a function of the flange connecting gasket, not supplied by Viking Johnson; consult flange gasket supplier.

Temperature Rating of Product

EPDM -20°C to +90°C

Nitrile -20°C to +90°C

For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

Approvals

The following water contact materials used in Dismantling Joints are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

In addition to the above, the flange adaptor component in the Dismantling Joint has as a finished product KIWA certification verifying that it complies with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Flange Drilling

BS EN1092-1
(formerly BS4504), ISO7005

Fabricated Flange Adaptor Body

Rolled Steel to BS EN 10025-2: Grade S275

End Rings & Sleeve Options

- Rolled Steel to BS EN 10025-2: Grade S275
- Rolled Steel to BS EN 10025-2: Grade S355 (depending on section)

Flange

Rolled Steel to BS EN 10025-2: Grade S275

Spigot Options:

- Steel Tube to BS10216-1: Grade P265TR1
- Rolled steel to BS EN10025-2: Grade S275

Gaskets

Standard:

- EPDM to BS EN681-1: Type WA

Other gasket grades are available contact Viking Johnson.

Coatings

Flange Adaptor, Spigot & End Ring:

- Rilsan Nylon 11 to WIS 4-52-01 Part 1

Option 1 Flange Adaptor bolts & Nuts:

- Sheraplex to WIS 4-52-03

Steel Tie Rods/Nuts:

- Zn^3 Zinc coated

Tie Rods, Studs, Nuts and Washers

The following two options are as standard variants:-

Option 1: Zinc Plated Steel

Tie Rods

ASTM A193 (Grade B7/MB7) equivalent to BS EN10269:+A1: Name 42CrMo4 (Yield 725N/mm²)

Tie Rod Nuts

ASTM A194 Grade 2H/M2H equivalent to BS EN20898-2: Property Class 8.00

Flange Adaptor Studs

Steel to BS EN ISO898-1: Property Class 4.8

Flange Adaptor Nuts

Steel to BS4190: Grade 4

Flange Adaptor Washers

Stainless Steel to BS1449:Part 2: Grade 304S15

Option 2: Stainless Steel

Tie Rods

Stainless Steel to BS EN3506-1: Grade A4 Property Class 70 (Yield 450N/mm²)

Tie Rod Nuts

Stainless Steel to BS EN3506-2: Grade A4 Property Class 80

Flange Adaptor Studs

Stainless Steel to BS EN ISO 3506-1: grade A4 property class 50

Flange Adaptor Nuts

Stainless Steel to BS EN ISO 3506-2: grade A4 property class 80

Flange Adaptor Washers

Stainless Steel to BS1449: Part 2: Grade 304S15

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Ein Karem Reservoir - Israel

Pump Station at Ein Karem Reservoir

Dismantling Joints Set - DN2400

Project

Viking Johnson has manufactured and supplied two DN2400 PN16 Dismantling Joints to Lirom Technical Equipment Ltd, their channel partner in Israel, for the Mekorot Water Company to be installed at Ein Karem Reservoir Pumping Station, located south west of Jerusalem. The project was designed by Tahal Engineers Ltd. based in Tel Aviv.
The new Pump Station is part of the The Fifth Line to Jerusalem which will serve 1 million people in the area and is scheduled to open in 2022.

The high performance Dismantling Joints are designed in accordance with AWWA C219, with the manufacturing process incorporating the use of flash butt welding cold expansion. This method increases the strength of the steel through work hardening, ensures roundness of manufacture and verifies structural integrity of the material with loads substantially greater than in service and negates the need for any works hydrostatic pressure testing.

The use of high tensile steel in the tie rods that carry the end load forces means there is an overall reduction in not only the weight of the product but also installation time.

The metal components are coated with Rilsan Nylon 11®,which is WRAS approved for use with potable water, and offers long term corrosion protection and resistance to impact damage. The nuts & bolts to the flange adaptor in the fitting are Sheraplex coated to WIS 4-52-03, which does not gall when re-used and offers a consistent “torque / load” ratio reducing the sensitivity during installation while providing long term corrosion protection.

Client

Mekorot Water Company

Crane BS&U are solely the provider of products and have no direct influence on, or take any responsibility for any working practices employed or depicted in the images enclosed to install such products.

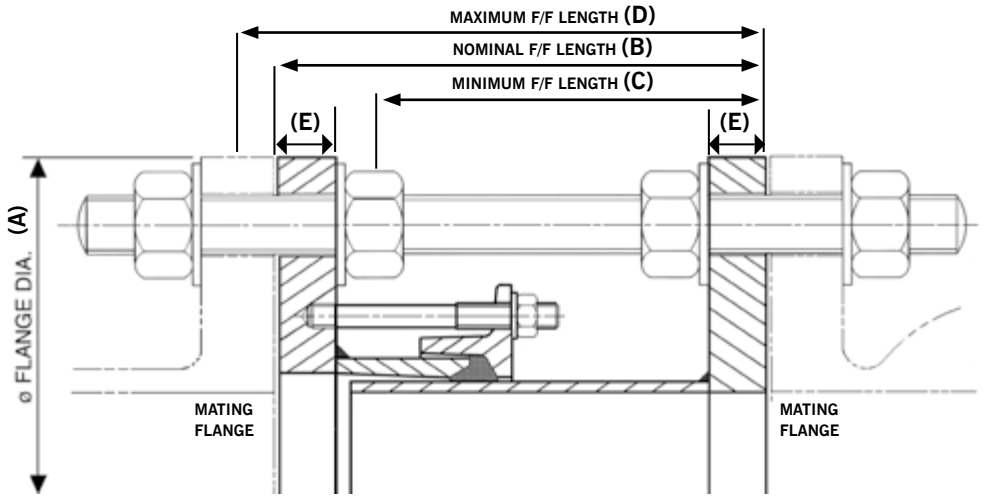
AVI CRANES

Dismantling Joints DN350 to DN1800 (PN25)

Datasheet 1/2

Dismantling Joint

(For diameters over DN1800 contact Viking Johnson)



Note: Maximum Longitudinal F/F Adjustment = Maximum F/F Length – Minimum F/F Length

Dismantling Joints (Standard Product)

Table provides details of standard product – for products offering longer flange dimensions and / or increased longitudinal adjustment contact Viking Johnson.

Flange Details				Flange To Flange Details			Tie Rod Details					
		Flange Thickness	Flange OD	Nominal Length	Minimum Length	Maximum Length	Steel Tie Rod			Stainless Steel Tie Rod		
Nom	Drilling	E (mm)	A (mm)	B (mm)	C (mm)	D (mm)	Dia x Length (mm)	No.	Total Weight of DJ (kg)	Dia x Length (mm)	No.	Total Weight of DJ (kg)
350	PN25	25	555	302	277	327	M30 x 480	4	91.1	M30 x 480	4	91.1
400	PN25	25	620	302	277	327	M33 x 490	4	109.0	M33 x 490	4	109.0
450	PN25	25	670	302	277	327	M33 x 500	5	122.0	M33 x 500	5	122.0
500	PN25	25	730	302	277	327	M33 x 510	5	137.0	M33 x 510	5	137.0
550	PN25	25	785	302	277	327	M36 x 530	5	155.0	M36 x 530	5	155.0
600	PN25	25	845	302	277	327	M36 x 540	5	170.0	M36 x 540	6	177.0
650	PN25	25	895	307	277	337	M36 x 550	6	199.0	M36 x 550	8	211.0
700	PN25	25	960	302	277	327	M39 x 570	6	212.0	M39 x 570	8	227.0
800	PN25	25	1085	307	277	337	M45 x 630	6	279.0	M45 x 630	8	302.0
900	PN25	25	1185	307	277	337	M45 x 630	7	317.0	M45 x 630	10	350.0
1000	PN25	38	1320	320	290	350	M52 x 660	7	520.0	M52 x 740	8	567.0
1200	PN25	38	1530	320	290	350	M52 x 690	8	637.0	M52 x 770	12	724.0
1400	PN25	60	1755	462	412	512	M56 x 890	9	1,181.0	M56 x 980	14	1,369.0
1600	PN25	60	1975	462	412	512	M56 x 920	10	1,514.0	M56 x 1010	16	1,740.0
1800	PN25	60	2185	462	412	512	M64 x 970	11	1,855.0	M64 x 1075	16	1,970.0

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Dismantling Joints DN350 to DN1800 (PN25)

Datasheet 2/2

Technical Information

Working Pressure Rating

Water - In accordance with the flange rating

Gas 6 bar

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Angularity

Dismantling joints are in essence double flanged pipe where the flange to flange dimension can be adjusted, and therefore are not able to accommodate any angularity.

Bolt Torque/Spanner

M12; Torque 55-65Nm on every bolt

M16; Torque 95-110Nm on every bolt

Tie rods

Torque is a function of the flange connecting gasket, not supplied by Viking Johnson; consult flange gasket supplier.

Temperature Rating of Product

EPDM -20°C to +90°C

Nitrile -20°C to +90°C

For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

Approvals

The following water contact materials used in Dismantling Joints are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

Materials & Relevant Standards

Flange Drilling

BS EN1092-1
(formerly BS4504), ISO7005

Fabricated Flange Adaptor Body

Rolled Steel to BS EN 10025-2: Grade S275

End Rings & Sleeve Options

- Rolled Steel to BS EN 10025-2: Grade S275
- Rolled Steel to BS EN 10025-2: Grade S355 (depending on section)

Flange

Rolled Steel to BS EN 10025-2: Grade S275

Spigot Options:

- Steel Tube to BS10216-1: Grade P265TR1
- Rolled steel to BS EN10025-2: Grade S275

Gaskets

Standard:

- EPDM to BS EN681-1: Type WA

Other gasket grades are available contact Viking Johnson.

Coatings

Flange Adaptor, Spigot & End Ring:

- Rilsan Nylon 11 to WIS 4-52-01 Part 1

Option 1 Flange Adaptor bolts & Nuts:

- Sheraplex to WIS 4-52-03

Steel Tie Rods/Nuts:

- Zn^3 Zinc coated

Tie Rods, Studs, Nuts and Washers

The following two options are as standard variants:-

Option 1: Zinc Plated Steel

Tie Rods

ASTM A193 (Grade B7/MB7) equivalent to BS EN10269:+A1: Name 42CrMo4 (Yield 725N/mm²)

Tie Rod Nuts

ASTM A194 Grade 2H/M2H equivalent to BS EN20898-2: Property Class 8.00

Flange Adaptor Studs

Steel to BS EN ISO898-1: Property Class 4.8

Flange Adaptor Nuts

Steel to BS4190: Grade 4

Flange Adaptor Washers

Stainless Steel to BS1449:Part 2: Grade 304S15

Option 2: Stainless Steel

Tie Rods

Stainless Steel to BS EN3506-1: Grade A4 Property Class 70 (Yield 450N/mm²)

Tie Rod Nuts

Stainless Steel to BS EN3506-2: Grade A4 Property Class 80

Flange Adaptor Studs

Stainless Steel to BS EN ISO 3506-1: grade A4 property class 50

Flange Adaptor Nuts

Stainless Steel to BS EN ISO 3506-2: grade A4 property class 80

Flange Adaptor Washers

Stainless Steel to BS1449: Part 2: Grade 304S15

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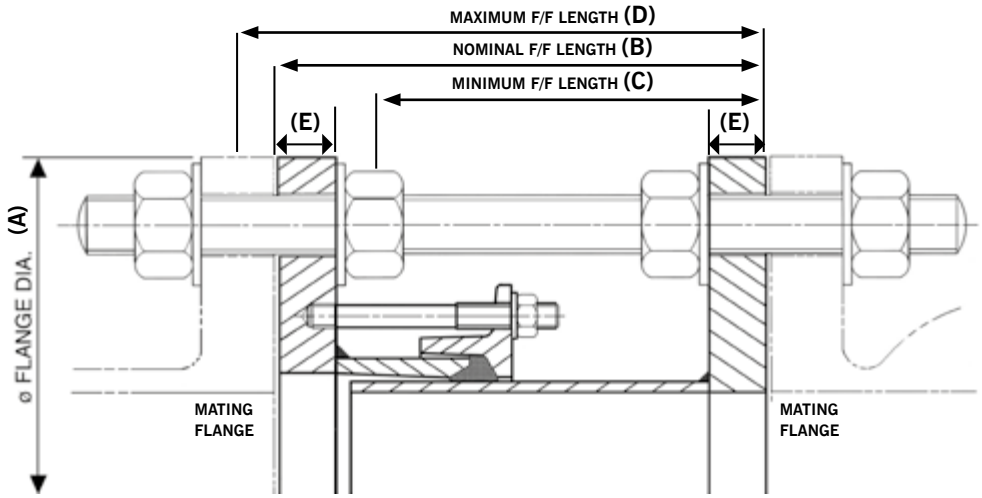
Dismantling Joints DN350 to DN1600 (PN40)

Datasheet 1/2

Dismantling Joint

(For diameters over DN1600 contact Viking Johnson)



Note: Maximum Longitudinal F/F Adjustment = Maximum F/F Length – Minimum F/F Length

Dismantling Joints (Standard Product)

Table provides details of standard product – for products offering longer flange dimensions and / or increased longitudinal adjustment contact Viking Johnson.

Flange Details				Flange To Flange Details			Tie Rod Details					
		Flange Thickness	Flange OD	Nominal Length	Minimum Length	Maximum Length	Steel Tie Rod			Stainless Steel Tie Rod		
Nom	Drilling	E (mm)	A (mm)	B (mm)	C (mm)	D (mm)	Dia x Length (mm)	No.	Total Weight of DJ (kg)	Dia x Length (mm)	No.	Total Weight of DJ (kg)
350	PN40	25	580	307	277	337	M33 x 520	4	111.0	M33 x 520	4	111.0
400	PN40	25	660	307	277	337	M36 x 540	4	138.0	M36 x 540	4	138.0
450	PN40	25	685	307	277	337	M36 x 550	5	148.0	M36 x 550	5	148.0
500	PN40	25	755	307	277	337	M39 x 570	5	178.0	M39 x 570	6	186.0
550	PN40	38	835	320	290	350	M45 x 600	5	289.0	M45 x 600	5	289.0
600	PN40	38	890	320	290	350	M45 x 620	5	313.0	M45 x 620	6	325.0
650	PN40	38	945	320	290	350	M45 x 630	6	350.0	M45 x 630	8	374.0
700	PN40	38	995	320	290	350	M45 x 640	6	375.0	M45 x 640	8	399.0
800	PN40	38	1140	320	290	350	M52 x 680	6	479.0	M52 x 760	8	544.0
900	PN40	38	1250	320	290	350	M52 x 700	7	570.0	M52 x 780	10	661.0
1000	PN40	38	1360	320	290	350	M52 x 720	8	661.0	M52 x 810	14	826.0
1200	PN40	38	1575	320	290	350	M56 x 780	10	863.0	M56 x 870	16	1,073.0
1400	PN40	60	1795	462	412	512	M56 x 980	14	1,640.0	M56 x 1070	22	1,937.0
1600	PN40	60	2025	462	412	512	M64 x 1040	14	1,988.0	M64 x 1140	20	2,318.0

Note: Stainless steel tie rods cannot accommodate this working pressure so not available.

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Dismantling Joints DN350 to DN1600 (PN40)

Datasheet 2/2

Technical Information

Working Pressure Rating

Water - In accordance with the flange rating

Gas 6 bar

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Angularity

Dismantling joints are in essence double flanged pipe where the flange to flange dimension can be adjusted, and therefore are not able to accommodate any angularity.

Bolt Torque/Spanner

M12; Torque 55-65Nm on every bolt

M16; Torque 95-110Nm on every bolt

Tie rods

Torque is a function of the flange connecting gasket, not supplied by Viking Johnson; consult flange gasket supplier.

Temperature Rating of Product

EPDM -20°C to +90°C

Nitrile -20°C to +90°C

For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

Approvals

The following water contact materials used in Dismantling Joints are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

Materials & Relevant Standards

Flange Drilling

BS EN1092-1
(formerly BS4504), ISO7005

Fabricated Flange Adaptor Body

Rolled Steel to BS EN 10025-2: Grade S275

End Rings & Sleeve Options:

- Rolled Steel to BS EN 10025-2: Grade S275
- Rolled Steel to BS EN 10025-2: Grade S355 (depending on section)

Flange

Rolled Steel to BS EN 10025-2: Grade S275

Spigot Options:

- Steel tube to BS10216-1: Grade P265TR1
- Rolled steel to BS EN10025-2: Grade S275

Gaskets

Standard:

- EPDM to BS EN681-1: Type WA

Other gasket grades are available contact Viking Johnson.

Coatings

Flange Adaptor, Spigot & End Ring:

- Rilsan Nylon 11 to WIS 4-52-01 Part 1

Option 1 Flange Adaptor bolts & Nuts:

- Sheraplex to WIS 4-52-03

Steel Tie Rods/Nuts:

- Zn^3 Zinc coated

Tie Rods, Studs, Nuts and Washers

The following two options are as standard variants:-

Option 1: Zinc Plated Steel

Tie Rods

ASTM A193 (Grade B7/MB7) equivalent to BS EN10269:+A1: Name 42CrMo4 (Yield 725N/mm²)

Tie Rod Nuts

ASTM A194 Grade 2H/M2H equivalent to BS EN20898-2: Property Class 8.00

Flange Adaptor Studs

Steel to BS EN ISO898-1: Property Class 4.8

Flange Adaptor Nuts

Steel to BS4190: Grade 4

Flange Adaptor Washers

Stainless Steel to BS1449:Part 2: Grade 304S15

Option 2: Stainless Steel

Tie Rods

Stainless Steel to BS EN3506-1: Grade A4 Property Class 70 (Yield 450N/mm²)

Tie Rod Nuts

Stainless Steel to BS EN3506-2: Grade A4 Property Class 80

Flange Adaptor Studs

Stainless Steel to BS EN ISO 3506-1: grade A4 property class 50

Flange Adaptor Nuts

Stainless Steel to BS EN ISO 3506-2: grade A4 property class 80

Flange Adaptor Washers

Stainless Steel to BS1449: Part 2: Grade 304S15

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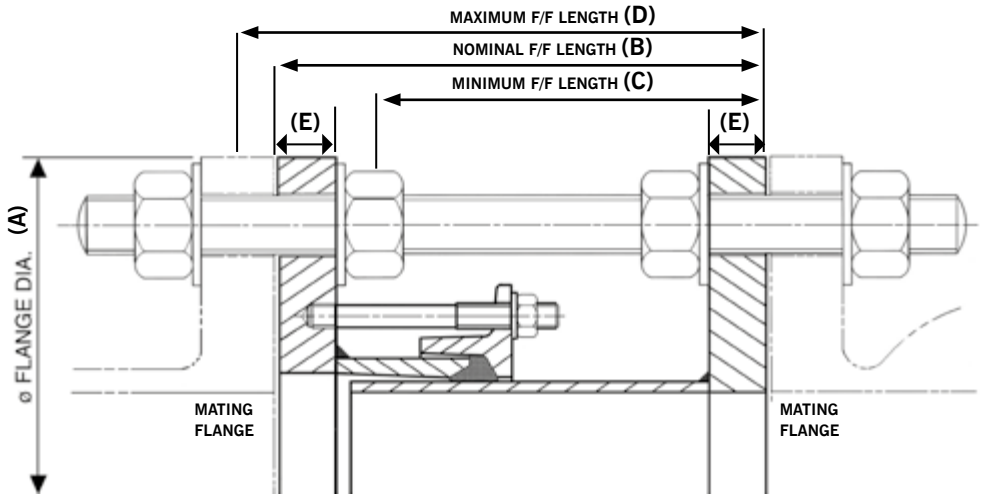
Dismantling Joints 4” to 40” AWWA (Class D)

Datasheet 1/2

Dismantling Joint

(For diameters over 40" contact Viking Johnson)



Note: Maximum Longitudinal F/F Adjustment = Maximum F/F Length – Minimum F/F Length

Dismantling Joints (Standard Product)

Table provides details of standard product – for products offering longer flange dimensions and / or increased longitudinal adjustment contact Viking Johnson.

Flange Details				Flange To Flange Details			Tie Rod Details				
Nom	Drilling	Flange Thickness	Flange OD	Nominal Length	Minimum Length	Maximum Length	Tie Rod Dia x Length	H.T Zinc Plated Steel H.T Steel BS4882 Grade MB7 Yield 725N/mm²		Stainless Steel Class 70 Yield 450N/mm²	
		E (mm)	A (mm)	B (mm)	C (mm)	D (mm)		No.	Total Weight of DJ (kg)	No.	Total Weight of DJ (kg)
4”	Class D	18	229	187	167	207	5/8” x 11 1/2”	4	14.2	4	14.2
6”	Class D	18	279	187	167	207	3/4” x 12”	4	19.7	4	19.7
8”	Class D	18	343	187	167	207	3/4” x 12”	4	27.5	4	27.5
10”	Class D	18	406	187	167	207	7/8” x 12”	4	35.4	4	35.4
12”	Class D	18	483	187	167	207	7/8” x 12 1/2”	4	48.3	4	48.3
14”	Class D	18	533	295	270	320	1” x 17 1/2”	4	69.3	4	69.3
16”	Class D	18	597	295	270	320	1” x 17 1/2”	4	79.7	4	79.7
18”	Class D	23	635	300	275	325	1 1/8” x 18 1/2”	4	98.3	4	98.3
20”	Class D	23	698	300	275	325	1 1/8” x 18 1/2”	5	115.0	5	115.0
24”	Class D	23	813	300	275	325	1 1/4” x 19”	5	143.0	5	143.0
28”	Class D	23	927	300	275	325	1 1/4” x 19”	7	176.0	7	176.0
30”	Class D	23	984	300	275	325	1 1/4” x 19”	7	189.0	7	189.0
32”	Class D	23	1060	300	275	325	1 1/2” x 20”	7	218.0	7	218.0
36”	Class D	25	1168	307	277	337	1 1/2” x 20 1/2”	8	278.0	8	278.0
40”	Class D	25	1289	307	277	337	1 1/2” x 20 1/2”	9	320.0	9	320.0

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Dismantling Joints 4” to 40” AWWA (Class D)

Datasheet 2/2

Technical Information

Working Pressure Rating

Water - In accordance with the flange rating

Gas 6 bar

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Angularity

Dismantling joints are in essence double flanged pipe where the flange to flange dimension can be adjusted, and therefore are not able to accommodate any angularity.

Bolt Torque/Spanner

M12; Torque 55-65Nm on every bolt

M16; Torque 95-110Nm on every bolt

Tie rods

Torque is a function of the flange connecting gasket, not supplied by Viking Johnson; consult flange gasket supplier.

Temperature Rating of Product

EPDM -20°C to +90°C

Nitrile -20°C to +90°C

For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

Approvals

The following water contact materials used in Dismantling Joints are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

Materials & Relevant Standards

Flange Drilling

ANSI/AWWA C207-01

Fabricated Flange Adaptor Body

Rolled Steel to BS EN 10025-2: Grade S275

End Rings Options:

- Ductile Iron to BS EN1563: Symbol EN-GJS-450-10
- Rolled Steel to BS EN 10025-2: Grade S275

Sleeve Options:

- Steel Tube to BS EN10255:
- Steel Tube to BS EN10216-1: Grade P265TR1
- Rolled Steel to BS EN 10025-2: Grade S275
- Rolled Steel to BS EN 10025-2: Grade S355 (depending on section)

Flange

Rolled Steel to BS EN 10025-2: Grade S275

Spigot Options:

- Steel Tube to BS EN10255
- Steel Tube to BS EN10216-1: Grade P265TR1
- Rolled Steel to BS EN 10025-2: Grade S275

Gaskets

Standard:

- EPDM to BS EN681-1: Type WA

Other gasket grades are available contact Viking Johnson.

Coatings

Flange Adaptor, Spigot & End Ring:

- Rilsan Nylon 11 to WIS 4-52-01 Part 1

Option 1 Flange Adaptor bolts & Nuts:

- Sheraplex to WIS 4-52-03

Steel Tie Rods/Nuts:

- Zn^3 Zinc coated

Tie Rods, Studs, Nuts and Washers

The following two options are as standard variants:-

Option 1: Zinc Plated Steel

Tie Rods

ASTM A193 (Grade B7/MB7) equivalent to BS EN10269:+A1: Name 42CrMo4 (Yield 725N/mm²)

Tie Rod Nuts

ASTM A194 Grade 2H/M2H equivalent to BS EN20898-2: Property Class 8.00

Flange Adaptor Studs

Steel to BS EN ISO898-1: Property Class 4.8

Flange Adaptor Nuts

Steel to BS4190: Grade 4

Flange Adaptor Washers

Stainless Steel to BS1449:Part 2: Grade 304S15

Option 2: Stainless Steel

Tie Rods

Stainless Steel to BS EN3506-1: Grade A4 Property Class 70 (Yield 450N/mm²)

Tie Rod Nuts

Stainless Steel to BS EN3506-2: Grade A4 Property Class 80

Flange Adaptor Studs

Stainless Steel to BS EN ISO 3506-1: grade A4 property class 50

Flange Adaptor Nuts

Stainless Steel to BS EN ISO 3506-2: grade A4 property class 80

Flange Adaptor Washers

Stainless Steel to BS1449: Part 2: Grade 304S15

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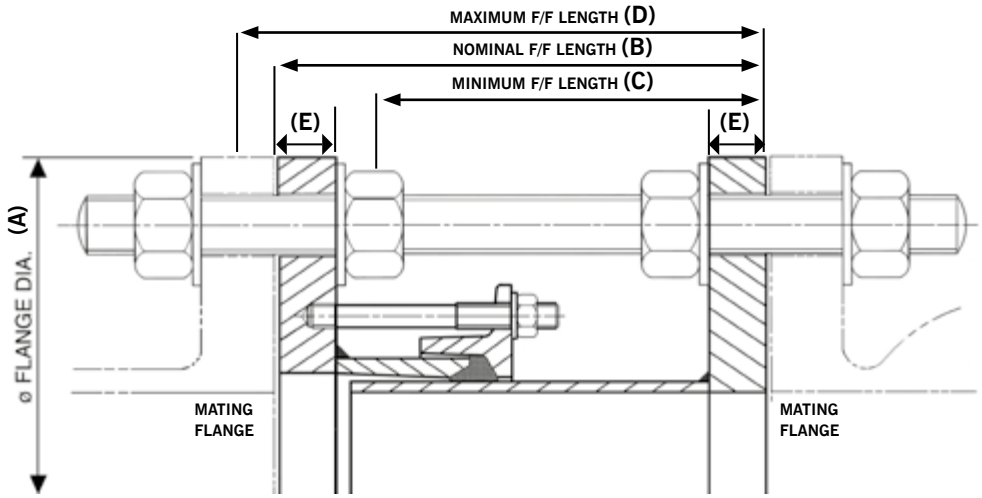
Dismantling Joints 3” to 40” (ANSI 150)

Datasheet 1/2

Dismantling Joint

(For diameters over 40" contact Viking Johnson)



Note: Maximum Longitudinal F/F Adjustment = Maximum F/F Length – Minimum F/F Length

Dismantling Joints (Standard Product)

Table provides details of standard product – for products offering longer flange dimensions and / or increased longitudinal adjustment contact Viking Johnson.

Flange Details				Flange To Flange Details			Tie Rod Details				
Nom	Drilling	Flange Thickness	Flange OD	Nominal Length	Minimum Length	Maximum Length	Tie Rod Dia x Length	H.T Zinc Plated Steel H.T Steel BS4882 Grade MB7 Yield 725N/mm²		Stainless Steel Class 70 Yield 450N/mm²	
		E (mm)	A (mm)	B (mm)	C (mm)	D (mm)		No.	Total Weight of DJ (kg)	No.	Total Weight of DJ (kg)
3”	ANSI 150	25	190	194	174	214	5/8” x 12 1/2”	4	14.0	4	14.0
4”	ANSI 150	25	229	194	174	214	5/8” x 12 1/2”	4	17.4	4	17.4
6”	ANSI 150	25	279	194	174	214	3/4” x 13”	4	23.8	4	23.8
8”	ANSI 150	25	343	194	174	214	3/4” x 13”	4	33.3	4	33.3
10”	ANSI 150	25	406	194	174	214	7/8” x 13 1/2”	4	43.0	4	43.0
12”	ANSI 150	25	483	194	174	214	7/8” x 13 1/2”	4	59.1	4	59.1
14”	ANSI 150	25	533	302	277	327	1” x 19”	4	82.8	4	82.8
16”	ANSI 150	25	597	302	277	327	1” x 19”	4	95.8	4	95.8
18”	ANSI 150	25	635	302	277	327	1 1/8” x 19”	4	103.0	4	103.0
20”	ANSI 150	25	698	302	277	327	1 1/8” x 19 1/2”	5	121.0	6	121.0
24”	ANSI 150	25	813	302	277	327	1 1/4” x 20 1/2”	5	151.0	6	151.8
28”	ANSI 150	25	927	302	277	327	1 1/4” x 22”	7	187.0	8	187.6
30”	ANSI 150	25	984	302	277	327	1 1/4” x 22 1/2”	7	202.0	10	218.0
32”	ANSI 150	25	1060	302	277	327	1 1/2” x 23”	7	225.0	8	233.0
36”	ANSI 150	25	1168	307	277	337	1 1/2” x 24 1/2”	8	291.0	10	308.0
40”	ANSI 150	38	1289	320	290	350	1 1/2” x 25”	9	441.0	12	467.0

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Dismantling Joints 3” to 40” (ANSI 150)

Datasheet 2/2

Technical Information

Working Pressure Rating

Water - In accordance with the flange rating

Gas 6 bar

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Angularity

Dismantling joints are in essence double flanged pipe where the flange to flange dimension can be adjusted, and therefore are not able to accommodate any angularity.

Bolt Torque/Spanner

M12; Torque 55-65Nm on every bolt

M16; Torque 95-110Nm on every bolt

Tie rods

Torque is a function of the flange connecting gasket, not supplied by Viking Johnson; consult flange gasket supplier.

Temperature Rating of Product

EPDM -20°C to +90°C

Nitrile -20°C to +90°C

For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

Approvals

The following water contact materials used in Dismantling Joints are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

Materials & Relevant Standards

Flange Drilling

ASME/ANSI B16.5/B16.47

Fabricated Flange Adaptor Body

Rolled Steel to BS EN 10025-2: Grade S275

End Rings Options:

- Ductile Iron to BS EN1563: Symbol EN-GJS-450-10
- Rolled Steel to BS EN 10025-2: Grade S275

Sleeve Options:

- Steel Tube to BS EN10255:
- Steel Tube to BS EN10216-1: Grade P265TR1
- Rolled Steel to BS EN 10025-2: Grade S275
- Rolled Steel to BS EN 10025-2: Grade S355 (depending on section)

Flange

Rolled Steel to BS EN 10025-2: Grade S275

Spigot Options:

- Steel Tube to BS EN10255:
- Steel Tube to BS EN10216-1: Grade P265TR1

Gaskets

Standard:

- EPDM to BS EN681-1: Type WA

Other gasket grades are available contact Viking Johnson.

Coatings

Flange Adaptor, Spigot & End Ring:

- Rilsan Nylon 11 to WIS 4-52-01 Part 1

Option 1 Flange Adaptor bolts & Nuts:

- Sheraplex to WIS 4-52-03

Steel Tie Rods/Nuts:

- Zn^3 Zinc coated

Tie Rods, Studs, Nuts and Washers

The following two options are as standard variants:-

Option 1: Zinc Plated Steel

Tie Rods

ASTM A193 (Grade B7/MB7) equivalent to BS EN10269:+A1: Name 42CrMo4 (Yield 725N/mm²)

Tie Rod Nuts

ASTM A194 Grade 2H/M2H equivalent to BS EN20898-2: Property Class 8.00

Flange Adaptor Studs

Steel to BS EN ISO898-1: Property Class 4.8

Flange Adaptor Nuts

Steel to BS4190: Grade 4

Flange Adaptor Washers

Stainless Steel to BS1449:Part 2: Grade 304S15

Option 2: Stainless Steel

Tie Rods

Stainless Steel to BS EN3506-1: Grade A4 Property Class 70 (Yield 450N/mm²)

Tie Rod Nuts

Stainless Steel to BS EN3506-2: Grade A4 Property Class 80

Flange Adaptor Studs

Stainless Steel to BS EN ISO 3506-1: grade A4 property class 50

Flange Adaptor Nuts

Stainless Steel to BS EN ISO 3506-2: grade A4 property class 80

Flange Adaptor Washers

Stainless Steel to BS1449: Part 2: Grade 304S15

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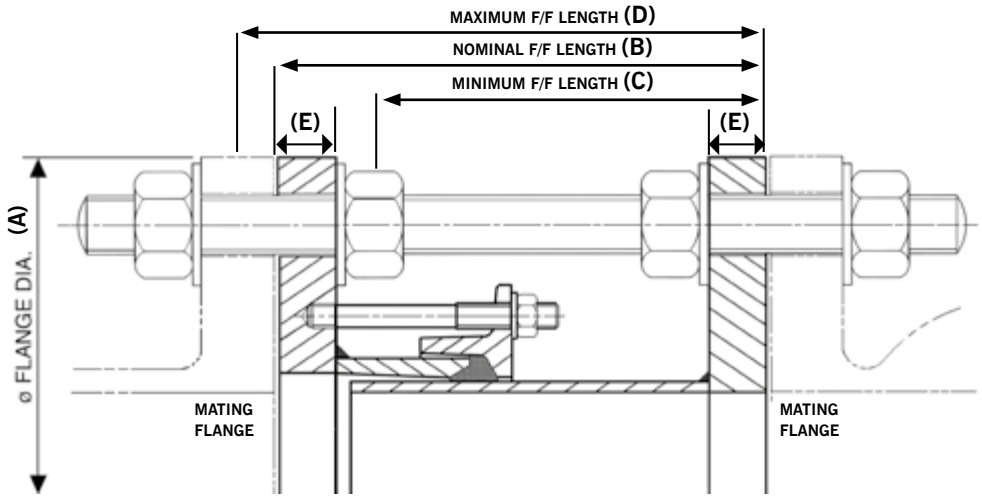
Dismantling Joints 3” to 40” (ANSI 300)

Datasheet 1/2

Dismantling Joint

(For diameters over 40" contact Viking Johnson)



Note: Maximum Longitudinal F/F Adjustment = Maximum F/F Length – Minimum F/F Length

Dismantling Joints (Standard Product)

Table provides details of standard product – for products offering longer flange dimensions and / or increased longitudinal adjustment contact Viking Johnson.

Flange Details				Flange To Flange Details			Tie Rod Details				
Nom	Drilling	Flange Thickness	Flange OD	Nominal Length	Minimum Length	Maximum Length	Tie Rod Dia x Length	H.T Zinc Plated Steel H.T Steel BS4882 Grade MB7 Yield 725N/mm²		Stainless Steel Class 70 Yield 450N/mm²	
		E (mm)	A (mm)	B (mm)	C (mm)	D (mm)		No.	Total Weight of DJ (kg)	No.	Total Weight of DJ (kg)
3”	ANSI 300	25	210	194	174	214	3/4” x 13”	4	19.3	4	19.3
4”	ANSI 300	25	254	194	174	214	3/4” x 13”	4	26.2	4	26.2
6”	ANSI 300	25	318	194	174	214	3/4” x 13 1/2”	4	32.1	4	32.1
8”	ANSI 300	25	381	194	174	214	7/8” x 14 1/2”	4	43.1	4	43.1
10”	ANSI 300	25	444	194	174	214	1” x 15”	4	63.0	6	60.8
12”	ANSI 300	25	521	194	174	214	1 1/8” x 16”	4	74.1	6	80.2
14”	ANSI 300	25	584	307	277	337	1 1/8” x 20 1/2”	5	117.0	8	129.0
16”	ANSI 300	25	648	307	277	337	1 1/4” x 21 1/2”	5	138.0	8	151.5
18”	ANSI 300	38	711	320	290	350	1 1/4” x 22”	6	220.0	10	241.0
20”	ANSI 300	38	775	320	290	350	1 1/4” x 22 1/2”	8	262.0	12	284.0
24”	ANSI 300	38	914	320	290	350	1 1/2” x 23 1/2”	8	359.0	12	393.0
28”	ANSI 300	38	1035	320	290	350	1 5/8” x 25”	7	427.0	12	489.0
30”	ANSI 300	38	1092	320	290	350	1 3/4” x 26”	8	500.0	12	551.0
32”	ANSI 300	38	1149	320	290	350	1 7/8” x 26 1/2”	8	546.0	14	646.0
36”	ANSI 300	38	1270	320	290	350	2” x 28”	10	676.0	14	749.0
40”	ANSI 300	60	1238	462	412	512	1 5/8” x 33 1/2”	16	844.0	26	958.0

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Dismantling Joints 3” to 40” (ANSI 300)

Datasheet 2/2

Technical Information

Working Pressure Rating

Water - In accordance with the flange rating

Gas 6 bar

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Angularity

Dismantling joints are in essence double flanged pipe where the flange to flange dimension can be adjusted, and therefore are not able to accommodate any angularity.

Bolt Torque/Spanner

M12; Torque 55-65Nm on every bolt

M16; Torque 95-110Nm on every bolt

Tie rods

Torque is a function of the flange connecting gasket, not supplied by Viking Johnson; consult flange gasket supplier.

Temperature Rating of Product

EPDM -20°C to +90°C

Nitrile -20°C to +90°C

For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

Approvals

The following water contact materials used in Dismantling Joints are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

Materials & Relevant Standards

Flange Drilling

ASME/ANSI B16.5/B16.47

Fabricated Flange Adaptor Body

Rolled Steel to BS EN 10025-2: Grade S275

End Rings Options:

- Ductile Iron to BS EN1563: Symbol EN-GJS-450-10
- Rolled Steel to BS EN 10025-2: Grade S275

Sleeve Options:

- Steel Tube to BS EN10255:
- Steel Tube to BS EN10216-1: Grade P265TR1
- Rolled Steel to BS EN 10025-2: Grade S275
- Rolled Steel to BS EN 10025-2: Grade S355 (depending on section)

Flange

Rolled Steel to BS EN 10025-2: Grade S275

Spigot Options:

- Steel Tube to BS EN10255:
- Steel Tube to BS EN10216-1: Grade P265TR1

Gaskets

Standard:

- EPDM to BS EN681-1: Type WA

Other gasket grades are available contact Viking Johnson.

Coatings

Flange Adaptor, Spigot & End Ring:

- Rilsan Nylon 11 to WIS 4-52-01 Part 1

Option 1 Flange Adaptor bolts & Nuts:

- Sheraplex to WIS 4-52-03

Steel Tie Rods/Nuts:

- Zn^3 Zinc coated

Tie Rods, Studs, Nuts and Washers

The following two options are as standard variants:-

Option 1: Zinc Plated Steel

Tie Rods

ASTM A193 (Grade B7/MB7) equivalent to BS EN10269:+A1: Name 42CrMo4 (Yield 725N/mm²)

Tie Rod Nuts

ASTM A194 Grade 2H/M2H equivalent to BS EN20898-2: Property Class 8.00

Flange Adaptor Studs

Steel to BS EN ISO898-1: Property Class 4.8

Flange Adaptor Nuts

Steel to BS4190: Grade 4

Flange Adaptor Washers

Stainless Steel to BS1449:Part 2: Grade 304S15

Option 2: Stainless Steel

Tie Rods

Stainless Steel to BS EN3506-1: Grade A4 Property Class 70 (Yield 450N/mm²)

Tie Rod Nuts

Stainless Steel to BS EN3506-2: Grade A4 Property Class 80

Flange Adaptor Studs

Stainless Steel to BS EN ISO 3506-1: grade A4 property class 50

Flange Adaptor Nuts

Stainless Steel to BS EN ISO 3506-2: grade A4 property class 80

Flange Adaptor Washers

Stainless Steel to BS1449: Part 2: Grade 304S15

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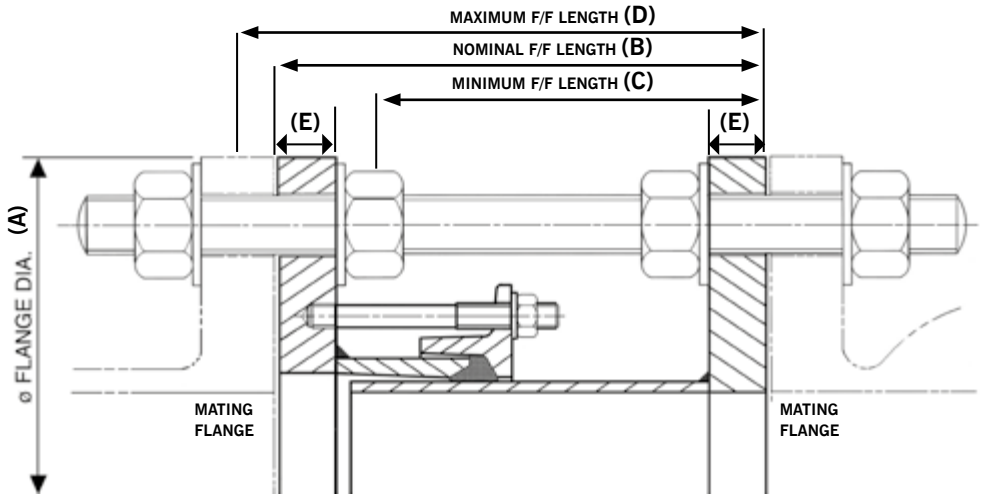
Dismantling Joints DN100 to DN1200 AS-4087 PN16

Datasheet 1/2

Dismantling Joint

(For diameters over 40" contact Viking Johnson)



Note: Maximum Longitudinal F/F Adjustment = Maximum F/F Length – Minimum F/F Length

Dismantling Joints (Standard Product)

Table provides details of standard product – for products offering longer flange dimensions and / or increased longitudinal adjustment contact Viking Johnson.

Flange Details				Flange To Flange Details			Tie Rod Details				
Nom	Drilling	Flange Thickness	Flange OD	Nominal Length	Minimum Length	Maximum Length	Tie Rod Dia x Length	Steel Tie Rod		Stainless Steel Tie Rod	
		E (mm)	A (mm)	B (mm)	C (mm)	D (mm)		No.	Total Weight of DJ (kg)	No.	Total Weight of DJ (kg)
100	AS4087-16	18	215	187	167	207	M16 x 300	4	12.7	4	12.7
150	AS4087-16	18	280	187	167	207	M16 x 300	4	18.3	4	18.3
200	AS4087-16	18	335	187	167	207	M16 x 300	4	24.4	4	24.4
225	AS4087-16	18	370	187	167	207	M16 x 300	4	29.2	4	29.2
250	AS4087-16	18	405	187	167	207	M20 x 300	4	34.3	4	34.3
300	AS4087-16	18	455	187	167	207	M20 x 320	4	40.5	4	40.5
375	AS4087-16	18	550	295	270	320	M24 x 440	4	65.9	4	65.9
400	AS4087-16	18	580	295	270	320	M24 x 440	4	70.6	4	70.6
450	AS4087-16	23	640	300	275	325	M24 x 450	4	92.2	6	96.6
500	AS4087-16	23	705	300	275	325	M24 x 460	4	105.8	8	114.6
600	AS4087-16	23	825	300	275	325	M27 x 480	4	134.1	8	146.1
700	AS4087-16	23	910	300	275	325	M27 x 500	6	150.0	10	162.4
750	AS4087-16	23	995	300	275	325	M30 x 500	5	177.7	10	197.4
800	AS4087-16	23	1060	300	275	325	M33 x 510	5	188.3	10	212.8
900	AS4087-16	25	1175	307	277	337	M33 x 540	8	266.2	12	286.6
1000	AS4087-16	25	1255	307	277	337	M33 x 540	8	271.8	12	292.1
1200	AS4087-16	38	1490	320	290	350	M33 x 580	12	495.0	20	538.0

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Dismantling Joints DN100 to DN1200 AS-4087 PN16

Datasheet 2/2

Technical Information

Working Pressure Rating

Water - In accordance with the flange rating

Gas 6 bar

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Angularity

Dismantling joints are in essence double flanged pipe where the flange to flange dimension can be adjusted, and therefore are not able to accommodate any angularity.

Bolt Torque/Spanner

M12; Torque 55-65Nm on every bolt

M16; Torque 95-110Nm on every bolt

Tie rods

Torque is a function of the flange connecting gasket, not supplied by Viking Johnson; consult flange gasket supplier.

Temperature Rating of Product

EPDM -20°C to +90°C

Nitrile -20°C to +90°C

For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

Approvals

The following water contact materials used in Dismantling Joints are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

Materials & Relevant Standards

Flange Drilling

AS-4087 PN16

Fabricated Flange Adaptor Body

Rolled Steel to BS EN 10025-2: Grade S275

End Rings Options:

- Ductile Iron to BS EN1563: Symbol EN-GJS-450-10
- Rolled Steel to BS EN 10025-2: Grade S275

Sleeve Options:

- Steel Tube to BS EN10255:
- Steel Tube to BS EN10216-1: Grade P265TR1
- Rolled Steel to BS EN 10025-2: Grade S275
- Rolled Steel to BS EN 10025-2: Grade S355 (depending on section)

Flange

Rolled Steel to BS EN 10025-2: Grade S275

Spigot Options:

- Steel Tube to BS EN10255
- Steel Tube to BS EN10216-1: Grade P265TR1
- Rolled Steel to BS EN 10025-2: Grade S275

Gaskets

Standard:

- EPDM to BS EN681-1: Type WA

Other gasket grades are available contact Viking Johnson.

Coatings

Flange Adaptor, Spigot & End Ring:

- Rilsan Nylon 11 to WIS 4-52-01 Part 1

Option 1 Flange Adaptor bolts & Nuts:

- Sheraplex to WIS 4-52-03

Steel Tie Rods/Nuts:

- Zn^3 Zinc coated

Tie Rods, Studs, Nuts and Washers

The following two options are as standard variants:-

Option 1: Zinc Plated Steel

Tie Rods

ASTM A193 (Grade B7/MB7) equivalent to BS EN10269:+A1: Name 42CrMo4 (Yield 725N/mm²)

Tie Rod Nuts

ASTM A194 Grade 2H/M2H equivalent to BS EN20898-2: Property Class 8.00

Flange Adaptor Studs

Steel to BS EN ISO898-1: Property Class 4.8

Flange Adaptor Nuts

Steel to BS4190: Grade 4

Flange Adaptor Washers

Stainless Steel to BS1449:Part 2: Grade 304S15

Option 2: Stainless Steel

Tie Rods

Stainless Steel to BS EN3506-1: Grade A4 Property Class 70 (Yield 450N/mm²)

Tie Rod Nuts

Stainless Steel to BS EN3506-2: Grade A4 Property Class 80

Flange Adaptor Studs

Stainless Steel to BS EN ISO 3506-1: grade A4 property class 50

Flange Adaptor Nuts

Stainless Steel to BS EN ISO 3506-2: grade A4 property class 80

Flange Adaptor Washers

Stainless Steel to BS1449: Part 2: Grade 304S15

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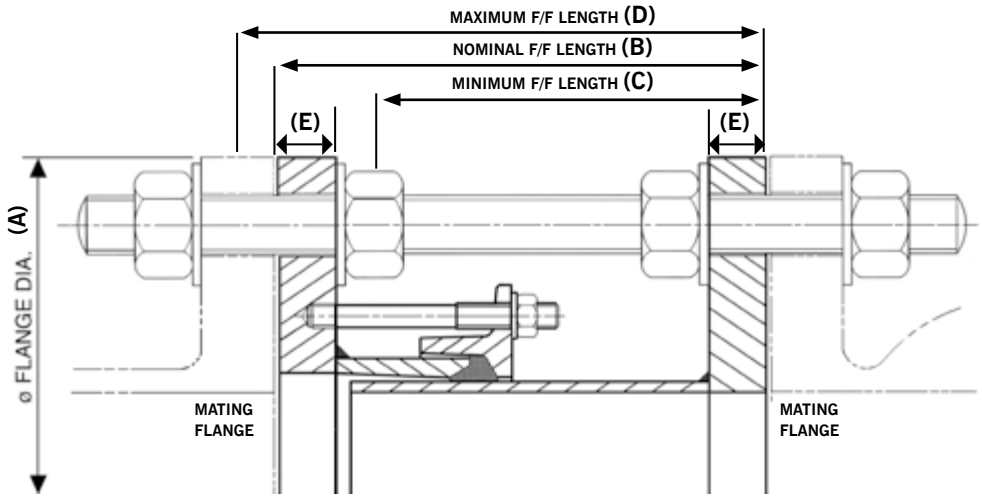
Dismantling Joints DN100 to DN1200 AS-4087 PN35

Datasheet 1/2

Dismantling Joint

(For diameters over 40" contact Viking Johnson)



Note: Maximum Longitudinal F/F Adjustment = Maximum F/F Length – Minimum F/F Length

Dismantling Joints (Standard Product)

Table provides details of standard product – for products offering longer flange dimensions and / or increased longitudinal adjustment contact Viking Johnson.

Flange Details				Flange To Flange Details			Tie Rod Details				
Nom	Drilling	Flange Thickness	Flange OD	Nominal Length	Minimum Length	Maximum Length	Tie Rod Dia x Length	Steel Tie Rod		Stainless Steel Tie Rod	
		E (mm)	A (mm)	B (mm)	C (mm)	D (mm)		No.	Total Weight of DJ (kg)	No.	Total Weight of DJ (kg)
100	AS4087-35	25	230	194	174	214	M16 x 320	4	17.2	4	17.2
150	AS4087-35	25	305	194	174	214	M20 x 330	4	28.8	4	28.8
200	AS4087-35	25	370	194	174	214	M20 x 350	4	38.3	4	38.3
225	AS4087-35	25	405	194	174	214	M24 x 350	4	41.6	4	41.6
250	AS4087-35	25	430	194	174	214	M24 x 360	4	48.9	4	48.9
300	AS4087-35	25	490	194	174	214	M24 x 360	4	61.1	6	68.6
375	AS4087-35	25	580	307	277	337	M27 x 500	4	99.7	6	105.9
400	AS4087-35	25	610	302	277	327	M27 x 490	5	99.8	8	108.9
450	AS4087-35	25	675	307	277	327	M30 x 520	5	131.8	8	143.8
500	AS4087-35	25	735	307	277	337	M30 x 520	6	153.5	8	161.6
600	AS4087-35	25	850	307	277	337	M33 x 575	6	190.0	10	209.0
700	AS4087-35	38	935	320	290	350	M33 x 580	8	298.0	14	330.0
750	AS4087-35	38	1015	320	290	350	M33 x 580	10	351.0	16	384.0
800	AS4087-35	38	1060	320	290	350	M33 x 590	12	363.0	20	406.0
900	AS4087-35	38	1185	320	290	350	M36 x 620	14	462.0	20	503.0
1000	AS4087-35	60	1275	462	412	512	M36 x 790	16	743.0	24	808.0
1200	AS4087-35	60	1530	462	412	512	M39 x 810	18	1047.0	30	1168.0

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Dismantling Joints DN100 to DN1200 AS-4087 PN35

Datasheet 2/2

Technical Information

Working Pressure Rating

Water - In accordance with the flange rating

Gas 6 bar

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Angularity

Dismantling joints are in essence double flanged pipe where the flange to flange dimension can be adjusted, and therefore are not able to accommodate any angularity.

Bolt Torque/Spanner

M12; Torque 55-65Nm on every bolt

M16; Torque 95-110Nm on every bolt

Tie rods

Torque is a function of the flange connecting gasket, not supplied by Viking Johnson; consult flange gasket supplier.

Temperature Rating of Product

EPDM -20°C to +90°C

Nitrile -20°C to +90°C

For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

Approvals

The following water contact materials used in Dismantling Joints are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

Materials & Relevant Standards

Flange Drilling

AS-4087 PN35

Fabricated Flange Adaptor Body

Rolled Steel to BS EN 10025-2: Grade S275

End Rings Options:

- Ductile Iron to BS EN1563: Symbol EN-GJS-450-10
- Rolled Steel to BS EN 10025-2: Grade S275

Sleeve Options:

- Steel Tube to BS EN10255:
- Steel Tube to BS EN10216-1: Grade P265TR1
- Rolled Steel to BS EN 10025-2: Grade S275
- Rolled Steel to BS EN 10025-2: Grade S355 (depending on section)

Flange

Rolled Steel to BS EN 10025-2: Grade S275

Spigot Options:

- Steel Tube to BS EN10255
- Steel Tube to BS EN10216-1: Grade P265TR1
- Rolled Steel to BS EN 10025-2: Grade S275

Gaskets

Standard:

- EPDM to BS EN681-1: Type WA

Other gasket grades are available contact Viking Johnson.

Coatings

Flange Adaptor, Spigot & End Ring:

- Rilsan Nylon 11 to WIS 4-52-01 Part 1

Option 1 Flange Adaptor bolts & Nuts:

- Sheraplex to WIS 4-52-03

Steel Tie Rods/Nuts:

- Zn^3 Zinc coated

Tie Rods, Studs, Nuts and Washers

The following two options are as standard variants:-

Option 1: Zinc Plated Steel

Tie Rods

ASTM A193 (Grade B7/MB7) equivalent to BS EN10269:+A1: Name 42CrMo4 (Yield 725N/mm²)

Tie Rod Nuts

ASTM A194 Grade 2H/M2H equivalent to BS EN20898-2: Property Class 8.00

Flange Adaptor Studs

Steel to BS EN ISO898-1: Property Class 4.8

Flange Adaptor Nuts

Steel to BS4190: Grade 4

Flange Adaptor Washers

Stainless Steel to BS1449:Part 2: Grade 304S15

Option 2: Stainless Steel

Tie Rods

Stainless Steel to BS EN3506-1: Grade A4 Property Class 70 (Yield 450N/mm²)

Tie Rod Nuts

Stainless Steel to BS EN3506-2: Grade A4 Property Class 80

Flange Adaptor Studs

Stainless Steel to BS EN ISO 3506-1: grade A4 property class 50

Flange Adaptor Nuts

Stainless Steel to BS EN ISO 3506-2: grade A4 property class 80

Flange Adaptor Washers

Stainless Steel to BS1449: Part 2: Grade 304S15

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United Arab Emirates - UAE

Fujairah Asia Power Co.

Dismantling Joint - DN2400

Project

Fujairah is an integrated water and power plant. The complex is capable of processing 591,000 m^3 of water per day.

Client

Fujairah Asia Power Company

Distributor

Glynwed France

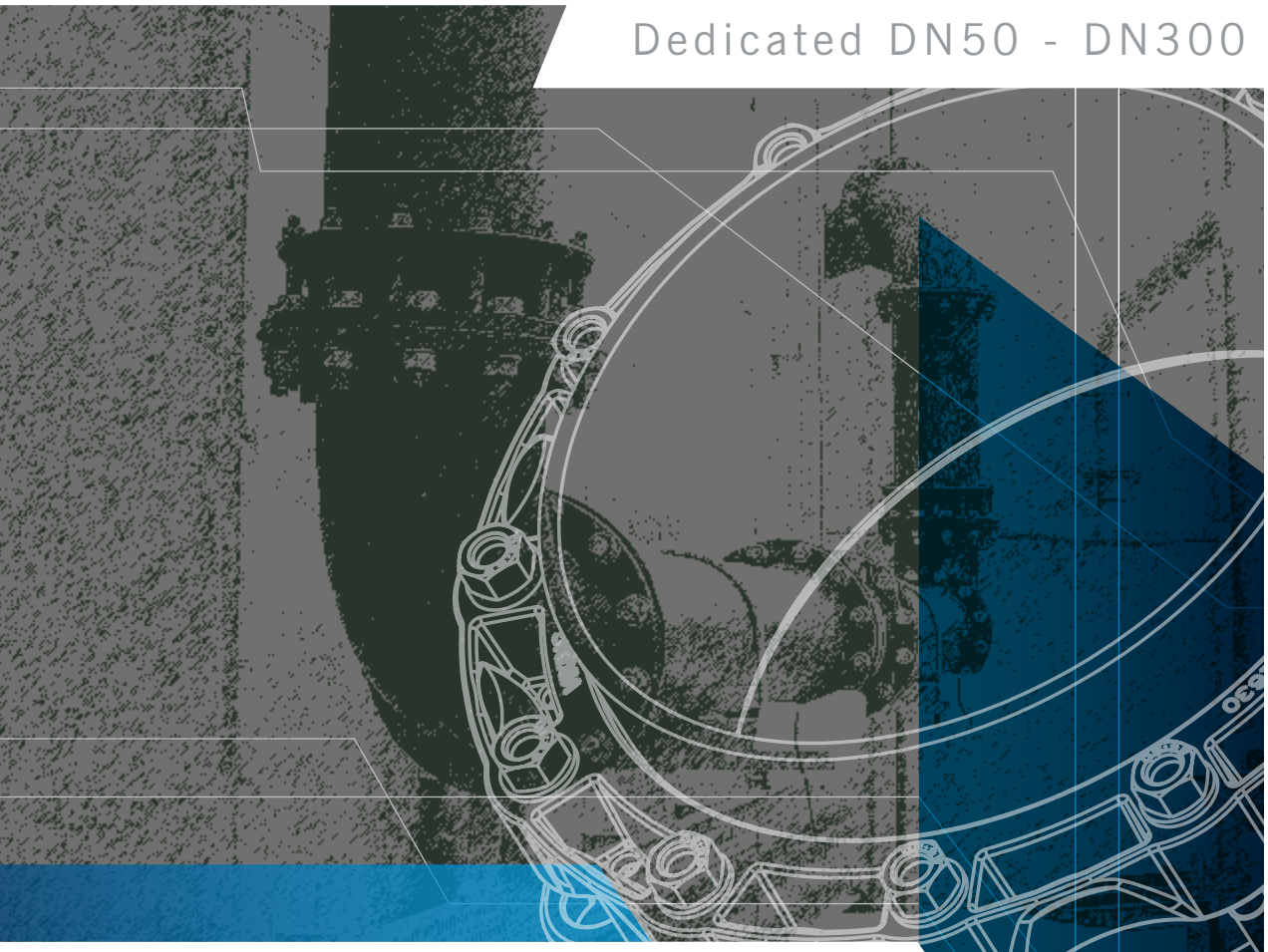
Contractor

OTV France MGP

Crane BS&U are solely the provider of products and have no direct influence on, or take any responsibility for any working practices employed or depicted in the images enclosed to install such products.

FlexLock®

Dedicated DN50 - DN300



Unrivalled Performance On Ductile Iron & Steel Pipes

VIKING JOHNSON®

Unique, Patented & Self Anchoring Joints for Ductile Iron or Steel Pipes

The FlexLock system provides a self-anchoring method of joining ductile iron or steel pipes and offers a cost effective, quick and simple alternative to traditional anchoring systems such as site welding, harnessing or thrust blocks.

Above Ground or Buried Application

FlexLock is a unique pipe jointing system that is fully end load bearing. Gaskets have embedded stainless steel teeth that grip the outer surface of the pipe, yet still allow for angular deflection of pipes in service. This prevents pipes from separating under pressure loads making FlexLock ideal for above ground and buried applications, soft ground conditions or temporary pipe work.

End Load Restraint

FlexLock works on the same compression joint principle as standard Viking Johnson products but as the compression bolts are tightened, the stainless steel teeth grip around the outside diameter of the pipe, providing a fully end load restraint joint. Internal pressure in the pipe causes the assembly to lock firmly providing a leak proof joint.

The FlexLock range consists of couplings and flange adaptors with nominal sizes from DN50 (2") up to DN300 (12") and are suitable for use on both gas and cold potable water pipelines with a maximum operating temperature of 40°C.

FlexLock Flange Adaptors

FlexLock Coupling

Pipe Materials

Ductile Iron

Steel

FlexLock Couplings & Flange Adaptors

Product Design Benefits

Suitable for Water & Gas

A FlexLock is supplied as standard with EPDM gaskets for water applications to EN 681. However it is also available with Nitrile gaskets to EN 682 suitable for natural gas, petroleum products, low aromatic fuels, sewage and drainage.

Excellent Corrosion Protection

Metal components are coated with Rilsan Nylon 11 which is WRAS approved for use with potable water. The nuts and bolts are Sheraplex coated to WIS 4-52-03, offering long term protection against corrosion, impact and abrasion to ensure continued reliable performance.

Unique Load Bearing Teeth

As the compression bolts are tightened, unique load bearing stainless steel teeth, that are moulded into the gasket grip around the outside diameter of the pipe, providing a fully end load restraint joint.

Customer Benefits

- FlexLock permits angular deflection between pipes (couplings ±6º / flange adaptors ±3º), allowing for normal pipeline movement such as ground settlement. Long radius curves can also be accommodated, reducing the need for special fittings.
- Cost effective – FlexLock provides significant cost savings compared to non-locking couplings with a harnessing system.
- Restrains pressure thrusts without thrust blocks at bends.
- Convert cut lengths of pipe into flanged pipes - allows use of pipe offcuts.
- Working Pressure of 16 bar on water up to and including DN200 and 10 bar for DN250 & DN300. For gas applications a working pressure of 6 bar can be achieved.
- FlexLock provides angular deflection in ANY plane unlike a harness assembly that can only provide angular deflection in one plane.

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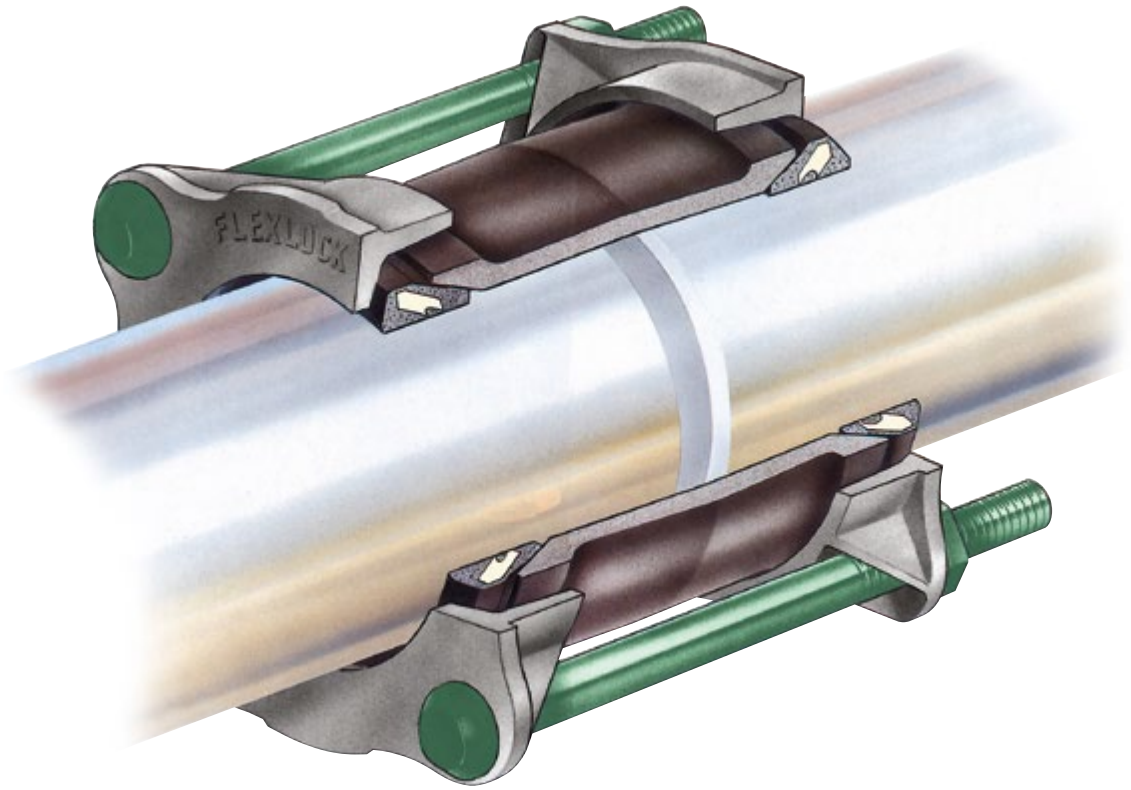
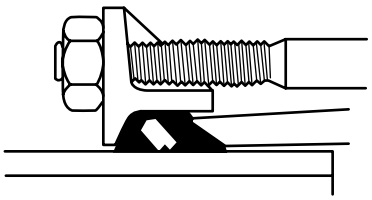
FlexLock Unique Sealing System

How FlexLock Works

FlexLock flange adaptors and couplings work on the same compression joint principle as standard Viking Johnson products. As the compression bolts are tightened, unique load bearing stainless steel teeth (moulded into the gasket) grip around the outside diameter of the pipe, providing a fully end load resistant joint. Internal pressure in the pipe causes the assembly to lock even more firmly.

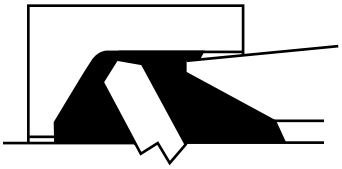


Step 1



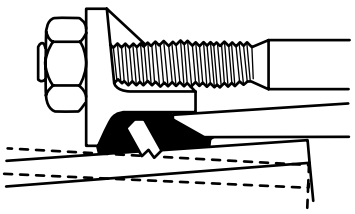
Tightening the bolts compresses the gaskets between the end rings and the centre sleeve, pressing the gasket on to the pipe and driving the edges of the steel teeth to grip on the pipe surface.

Step 2



Progressive tightening of the bolts drive the teeth into their correct locked position.

Step 3



When the bolts are tightened to their correct torque, the FlexLock coupling or flange adaptor is securely locked in position providing a leak proof joint whilst at the same time allowing the joint to compensate for angular movement within the pipeline.

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United Kingdom - Chesterfield

Pipe Upgrade

FlexLock Flange Adaptors - DN250

Project

FlexLock installed on ductile iron pipe.

Client

Yorkshire Water

Contractor

Black & Veatch

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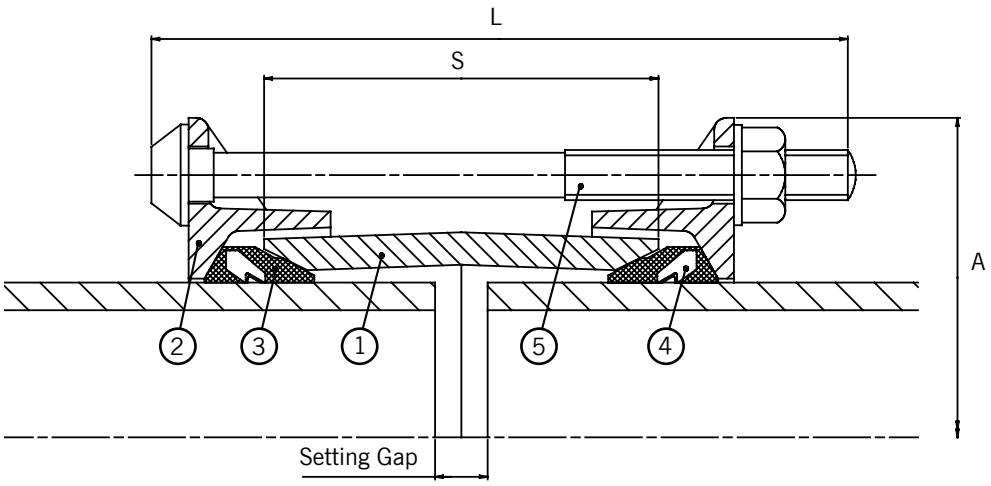
FlexLock Couplings

Datasheet 1/2

Coupling



Key

1 = Sleeve
2 = End Ring
3 = Gasket
4 = Gasket Gripper Teeth
5 = Bolts, Nut & Washer

FlexLock Couplings

Pipe Nom	Pipe OD (mm)	Pipe Material	Bolt Size No.-Dia x Length	Overall Length (L)	End Ring OD (A)	Sleeve Length x Thickness (mm) (S)	Setting Gap		Working Pressure (bar)		Gasket Mould	Coupling Weight (kg)
							Min	Max	Water	Gas		
DN50/2"	60.3	Steel	2-M12 x 145	157	135	80 x 5.5	15	30	16	6	1375	2.7
DN65/2.5"	76.1/77	Steel	2-M12 x 160	170	152	100 x 6.0	20	40	16	6	1394	3.2
DN80/3"	88.9	Steel	4-M12 x 160	170	163	100 x 6.0	20	40	16	6	1382	4.2
DN80/3"	98.0	Ductile Iron	4-M12 x 195	203	181	115 x 6.4	20	40	16	6	1630	5.2
DN100/4"	114.3	Steel	4-M12 x 170	188	195	100 x 6.0	20	40	16	6	1367	6.1
DN100/4"	118	Ductile Iron	4-M12 x 195	203	200	115 x 6.4	20	40	16	6	1618	5.6
DN150/6"	165.1	Steel	6-M12 x 170	188	254	100 x 7.2	20	40	16	6	1369	9.2
DN150/6"	168.3	Steel	6-M12 x 170	188	256	100 x 7.2	20	40	16	6	1369	9.3
DN150/6"	170	Ductile Iron	6-M12 x 170	178	256	100 x 7.2	20	40	16	6	1369	9.2
DN200/8"	219.1	Steel	8-M12 x 170	188	310	100 x 7.2	20	40	16	6	1370	11.9
DN200/8"	222	Ductile Iron	6-M16 x 195	206	316	115 x 6.4	20	40	16	6	1631	12.0
DN250/10"	273.0	Steel	12-M16 x 275	286	376	178 x 8.5	20	40	10	6	1737	32.2
DN250/10"	274	Ductile Iron	12-M16 x 275	286	376	178 x 8.5	20	40	10	6	1737	32.2
DN300/12"	323.9	Steel	12-M16 x 275	286	436	178 x 6.0	20	40	10	6	7667/8	33.7
DN300/12"	326	Ductile Iron	12-M16 x 275	286	436	178 x 6.0	20	40	10	6	7667/8	33.7

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FlexLock Couplings

Datasheet 2/2

Technical Information

Working Pressure Rating

Water:

- DN50 to DN200 = 16 bar
- DN250 to DN300 = 10 bar

Gas:

- DN50 to DN300 = 6 bar

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Angularity

Couplings 6°

Bolt Torque/Spanner

M12; Torque 55-65Nm on every bolt

M16; Torque 95-120Nm on every bolt

Temperature Rating of Product

EPDM -20°C to +40°C

Nitrile -20°C to +40°C

General Notes

- FlexLock is only suitable for use on Ductile Iron, Steel and Coated Steel Pipe
- For coated steel pipe the maximum permitted coating thickness is 500μ DFT. This is to ensure the stainless steel teeth properly grip onto the pipe surface to mobilize the end load capability of the products.
- Due to the surface characteristics of stainless steel pipe, FlexLock grippers are unable to achieve a guaranteed grip on the pipe surface.
- If the product has to be dismantled after installation then for reassembly a new gasket must be used, as there is a risk that the stainless steel teeth may become dislodged during this operation. These are available as spares from Viking Johnson by quoting gasket mould number from the table along with gasket compound.

Approvals

The following water contact materials used in FlexLock are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

In addition to the above, FlexLock range as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Centre Sleeve & End Ring Options:

- SG. Iron to BS 1563: Symbol EN-GJS-450-10
- Rolled Steel to: BS EN 10025: Grade S275

Coupling Body Options:

- Ductile Iron to BS EN 1563 EN-GJS-450-10
- Mild Steel to: BS EN 10025: Grade S275

Gasket

EPDM compound Grade E to BS EN 681-1

Nitrile compound Grade 'G' to BS EN 682-1

Gasket Gripper Teeth

Stainless Steel BS 3146: Part 2 Grade ANC2

Coatings

Body, Centre Sleeve, & End Rings:

- Rilsan Nylon 11 to WIS 4-52-01 Part 1

Bolts, Studs & Nuts:

- Sheraplex coated to WIS 4-52-03

Bolts

Cold Forged Steel Fasteners to: BS EN ISO898-1: Property Class 8.8

Nuts

Steel BS EN 20898-2: Property Class 8

Washers

BS 4320 Form B Stainless Steel BS 1449:PT2: Grade 304 S15

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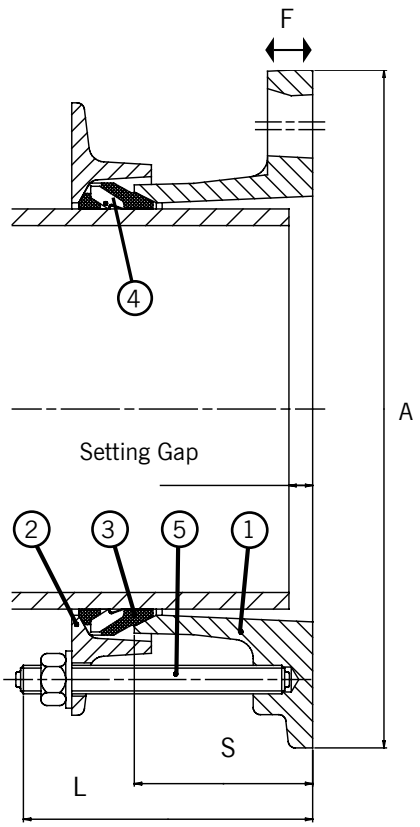
FlexLock Flange Adaptors

Datasheet 1/2

Flange Adaptor



Key

1 = Flange Adaptor
2 = End Ring
3 = Gasket
4 = Gasket Gripper Teeth
5 = Stud

FlexLock Flange Adaptors

Pipe Nom	Pipe OD (mm)	Pipe Material	Bolt Size No.-Dia x Length	Flange OD (A)	Overall Length (L)	Flange Thickness (mm) (F)	Sleeve Length (mm) (S)	Flange Nominal Drilling BS EN 1092-1	Working Pressure (bar)		Setting Gap		Gasket Mould	FA Weight (kg)
									Water	Gas	Min	Max		
DN50/2"	60.3	Steel	2-M12 x 115	160	123	16	75	50 PN10/16	16	6	10	30	1375	2.3
DN65/2.5"	76.1	Steel	2-M12 x 115	180	123	16	75	60/65 PN10/16	16	6	10	30	1394	2.6
DN80/3"	88.9	Steel	4-M12 x 115	195	123	16	75	80 PN10/16 90 PN6	16	6	10	30	1382	3.4
DN80/3"	98	Ductile Iron	4-M12 x 115	195	123	16	75	80 PN10/16 90 PN6	16	6	10	30	1630	4.0
DN100/4"	114.3	Steel	4-M12 x 115	215	123	16	75	100 PN10/16 110 PN6	16	6	10	30	1367	4.5
DN100/4"	118	Ductile Iron	4-M12 x 115	215	123	16	75	100 PN10/16	16	6	10	30	1618	4.4
DN150/6"	165.1	Steel	8-M12 x 115	285	127	25	75	150 PN10/16 6"E 6"ANSI 150	16	6	10	30	1369	9.3
DN150/6"	168.3	Steel	8-M12 x 115	286	123	19	75	150 PN10/16	16	6	10	30	1369	8.0
DN150/6"	170	Ductile Iron	8-M12 x 115	286	123	19	75	150 PN10/16	16	6	10	30	1369	8.0
DN200/8"	219.1	Steel	8-M12 x 115	341	123	19	75	200 PN10	10	6	10	30	1370	9.7
DN200/8"	219.1	Steel	8-M12 x 115	340	127	25	73	200 PN16	16	6	10	30	1370	15.2
DN200/8"	222	Ductile Iron	6-M16 x 125	341	137	19	75	200 PN16	16	6	10	30	1631	10.6
DN200/8"	222	Ductile Iron	8-M16 x 125	340	137	25	75	200 PN10 8"E	10	6	10	30	1631	13.9
DN250/10"	273.0	Steel	12-M16 x 125	405	137	19	90	250 PN10/16*	10	6	10	30	1737	16.4
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DN300/12"	326	Ductile Iron	12-M16 x 125	467	137	19	90	300 PN10/16*	10	6	10	30	7667/8	22.7

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FlexLock Flange Adaptors

Datasheet 2/2

Technical Information

Working Pressure Rating

Water:

- DN50 to DN200 = 16 bar
- DN250 to DN300 = 10 bar

Gas:

- DN50 to DN300 = 6 bar

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours

Flange Drilling

While DN250 to DN300 are supplied with PN16 drilling the rated working pressure (water) is only 10 bar as stated in the table.

Angularity

Flange Adaptors 3°

Bolt Torque/Spanner

M12; Torque 55-65Nm on every bolt

M16; Torque 95-120Nm on every bolt

Temperature Rating of Product

EPDM -20°C to +40°C

Nitrile -20°C to +40°C

General Notes

- FlexLock is only suitable for use on Ductile Iron, Steel and Coated Steel Pipe
- For coated steel pipe the maximum permitted coating thickness is 500μ DFT. This is to ensure the stainless steel teeth properly grip onto the pipe surface to mobilize the end load capability of the products.
- Due to the surface characteristics of stainless steel pipe, FlexLock grippers are unable to achieve a guaranteed grip on the pipe surface.
- If the product has to be dismantled after installation then for reassembly a new gasket must be used, as there is a risk that the stainless steel teeth may become dislodged during this operation. These are available as spares from Viking Johnson by quoting gasket mould number from the table along with gasket compound.

Approvals

The following water contact materials used in FlexLock are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

In addition to the above, FlexLock range as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

End Rings Options:

- SG. Iron to BS 1563: Symbol EN-GJS-450-10
- Rolled Steel to: BS EN 10025: Grade S275

Flange Adaptor Body Options:

- Ductile Iron to BS EN 1563 EN-GJS-450-10
- Mild Steel to: BS EN 10025: Grade S275

Gasket

EPDM compound Grade E to BS EN 681-1

Nitrile compound Grade 'G' to BS EN 682-1

Gasket Gripper Teeth

Stainless Steel BS 3146: Part 2 Grade ANC2

Coatings

Body, Centre Sleeve, & End Rings:

- Rilsan Nylon 11 to WIS 4-52-01 Part 1

Studs & Nuts:

- Sheraplex coated to WIS 4-52-03

Studs

Cold Forged Steel Fasteners to: BS EN ISO898-1: Property Class 8.8

Nuts

Steel BS EN 20898-2: Property Class 8

Washers

BS 4320 Form B Stainless Steel BS 1449:PT2: Grade 304 S15

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United Kingdom - Liverpool

West East Link Main

FlexLock - DN150
Large Diameter - DN800

Project

West East link transmission main.
The 53km pipeline runs from Prescot near Liverpool to Bury, near Manchester.

Client

United Utilities

Contractor

Murphys

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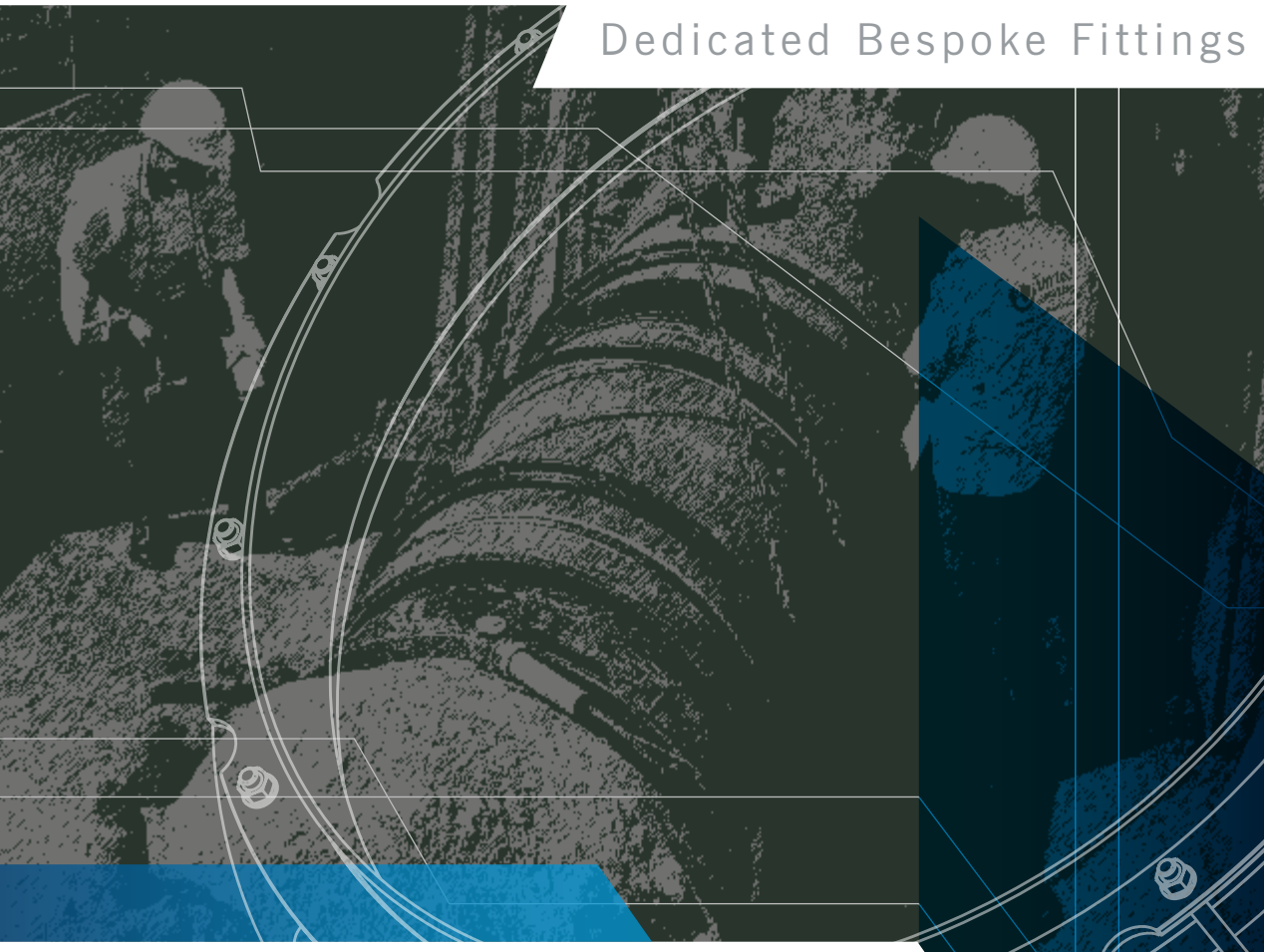
LargeDiameter™

Dedicated Bespoke Fittings



To Suit Any Pipe Specification

VIKING JOHNSON®

Robust, Reliable, Proven Solution for New Lay Pipes

Customer Specifications

The dedicated range is designed for use with new-lay pipes and other specified situations where the pipe material and nominal sizes are known in advance. Customers can choose from Viking Johnson's standard range or have them custom made to suit a range of diameters and working pressures. This flexibility makes Viking Johnson the natural choice for most major pipeline projects.

Design Liaison

Viking Johnson has worked with clients, consultants and contractors all over the world, assisting in the selection of the product most appropriate to each individual project. Such assistance can include detailed design co-operation with specifying engineers, site visits to aid successful installation, specially designed products to suit project requirements, proof testing in our comprehensive in-house test facility and handling of the extensive documentation and inspection requirements often associated with large projects.

Designed for Flexibility

For pipeline design and installation engineers, the Viking Johnson large diameter couplings are extremely versatile. Each coupling sleeve is internally barrelled, allowing greater angular deflection. Ideal when accommodating misaligned pipes.

Product Capability

Large diameter couplings and flange adaptors are available in a wide range of sizes to suit virtually any customer requirement. Products can be supplied to suit all standard and non standard pipe diameters from DN350 to DN4000. Stepped couplings join pipes of different external diameters and flange adaptors can be supplied with flanges drilled to any national or international standard, or to customers' own specification with a pressure up to 80 bar.

Approvals

All products are designed and manufactured under quality management systems certified to ISO 9001 and conform to the American Water Works Association's specification AWWA/ANSI C219 for bolted couplings.

Re-movable Locating Plugs - Prevent Coupling Creep

LD Dedicated couplings are available with removable locating plugs, to prevent coupling creep on above ground pipelines caused by repeated pipe movement from temperature variation, continuous vibrations and movement. The removable locating plug (optional) ensures the coupling can slide fully over the pipe ends for quick and simple installation. Once installed they engage between the pipe ends to prevent the coupling moving beyond fixed limits.

Pipe Materials

Large Diameter Couplings

Product Design Benefits

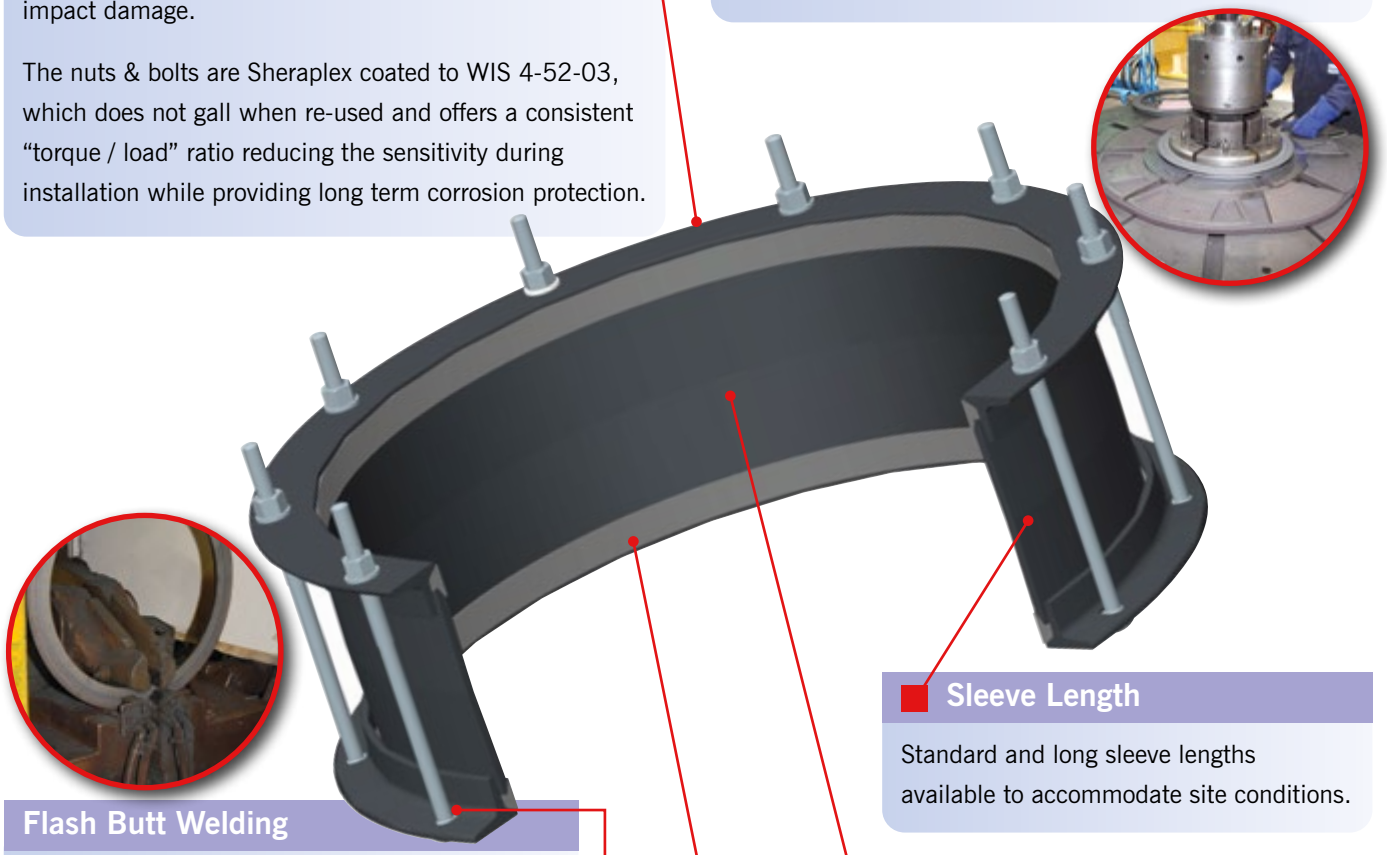
Corrosion Protection

Metal components are coated with Rilsan Nylon 11, which is WRAS approved for use with potable water, and offers long term corrosion protection and resistance to impact damage.

The nuts & bolts are Sheraplex coated to WIS 4-52-03, which does not gall when re-used and offers a consistent "torque / load" ratio reducing the sensitivity during installation while providing long term corrosion protection.

Cold Expansion

Conforming to AWWA C219 the end ring and centre sleeve are cold expanded, which increases the strength of the steel through work hardening, ensures roundness of manufacture and verifies structural integrity of the material with loads substantially greater than in service.



Flash Butt Welding

Flash butt welding used for end ring and centre sleeve ensuring a full penetration weld with totally homogeneous material and no impurities.

Captive Bolts

Captive non-rotating bolt heads require just a single spanner to install.

Sleeve Length

Standard and long sleeve lengths available to accommodate site conditions.

Internal Barrelling of Sleeve

Internal barrelling of sleeve to accommodate angular deflection of up to 6° (size dependant).

Various Gasket Grades

EPDM (water quality approved) and Nitrile gaskets as standard. Alternative exotic grades available for specialist applications (see Design Data for more details).

Customer Benefits

- Couplings can absorb up to 10mm expansion and contraction, which allows for movement on bridge crossings, in chambers and pump stations. Often eliminates the need for special expansion joints.
- Couplings can offer up to 6° of angular deflection; to allow for the connection of misaligned pipes, take up ground settlement at structures, lay pipes to large radius bends, etc.
- The standard finish for all Viking Johnson products is black Rilsan Nylon 11, which is highly resistant to impact, corrosion, abrasion and chemical attack. However, other coatings such as shopcoat, hot dip galvanising, zinc spray and epoxy coating can be supplied as required.

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Large Diameter Flange Adaptors

Product Design Benefits

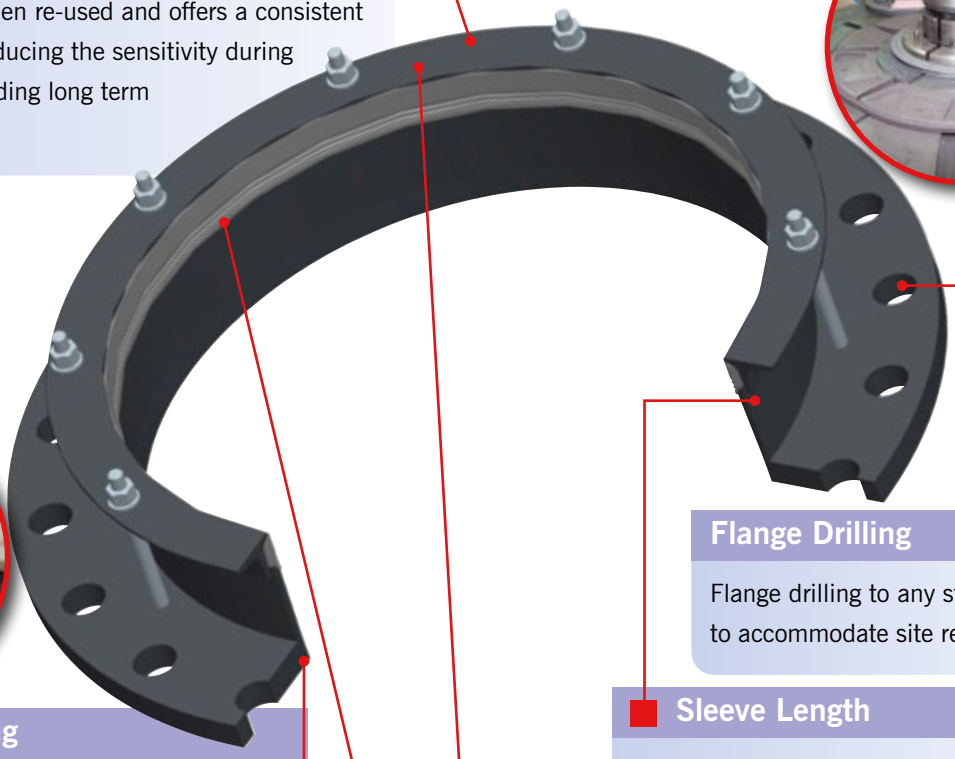
Corrosion Protection

Metal components are coated with Rilsan Nylon 11, which is WRAS approved for use with potable water, and offers long term corrosion protection and resistance to impact damage.

The nuts & bolts are Sheraplex coated to WIS 4-52-03, which does not gall when re-used and offers a consistent "torque / load" ratio reducing the sensitivity during installation while providing long term corrosion protection.

Cold Expansion

Conforming to AWWA C219 the end ring and centre sleeve are cold expanded, which increases the strength of the steel through work hardening, ensures roundness of manufacture and verifies structural integrity of the material with loads substantially greater than in service.



Flange Drilling

Flange drilling to any standard to accommodate site requirements.

Sleeve Length

Standard and long sleeve lengths available to accommodate site conditions.

Flash Butt Welding

Flash butt welding used for end ring and centre sleeve ensuring a full penetration weld with totally homogeneous material and no impurities.

End Load Forces

Notching of end ring permits the use of tie rods to harness the flange adaptor to accommodate end load forces.

Clear and Full Bore Flange

As standard flange adaptors are supplied with clear bore to slide over pipe for easy installation on site.

Full "S Bore" flange also available for use with wafer style (butterfly) valves.

Various Gasket Grades

EPDM (water quality approved) and Nitrile gaskets as standard. Alternative exotic grades available for specialist applications (see Design Data for more details).

Customer Benefits

- Flange adaptors can absorb up to 5mm expansion, which allows for movement on bridge crossings, in chambers and pump stations. Often eliminates the need for special expansion joints.
- Flange adaptors can offer up to 3° of angular deflection, to allow for the connection of miss aligned pipe to flange equipment and movement/ settlement in service.
- The standard finish for all Viking Johnson products is black Rilsan Nylon 11, which is highly resistant to impact, corrosion, abrasion and chemical attack. However, other coatings such as shopcoat, hot dip galvanising, zinc spray and epoxy coating can be supplied as required.

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Australia - Adelaide

Desalination Plant Transfer Pipeline

Large Diameter Flange Adaptor - DN1600

Project

The Desalination Plant has a capacity of up to 100 gigalitres and will provide Adelaide with up to half its annual water requirement. The huge size of the plant will be powered by sustainable energy sources and will ensure that the majority of the water supply is sourced from the sea with lesser reliance placed on the River Murray basin.

Client

South Australian Water
& South Australian Government

Contractor

McConnell Dowell

Distributor

Philmac

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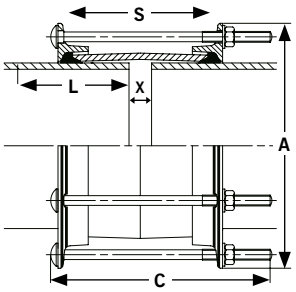
Large Diameter Couplings OD355.6 - 816

Datasheet 1/4

Coupling



Coupling Type	Coupling Section Type	Sleeve Length S (mm)	Dimensions (mm)		Setting Gap X (mm)		Bolt Details		
			Distance L	Overall C	Min.	Max.	Bolt Dia.	Length (mm)	Torque (Nm)
Standard Sleeve	LO2	150	150	243	25	50	M12	235	55 - 65
Long Sleeve	LO3	250	200	348	25	150	M12	340	55 - 65
Standard Sleeve	YF2	178	150	276	38	76	M16	265	95 - 120
Long Sleeve	YF3	250	200	351	38	150	M16	340	95 - 120
Standard Sleeve	A2E	178	150	276	38	76	M16	265	95 - 120
Long Sleeve	A2H	254	200	351	38	150	M16	340	95 - 120
Standard Sleeve	XSXG	254	200	411	57	117	M16	400	95 - 120

L= Distance back from end of pipe that must be rounded, meet tolerances, and free from any wrapping to ensure correct assembly.

Large Diameter Couplings

Pipe OD (mm)	Pipe Material	Working Pressure (bar)	Gasket Mould No.	Tolerance (mm) on Pipe OD for Distance L (mm)		Coupling Section Type		Bolts	Weight (kg)		Diameter A (mm)
				+	-	Standard Sleeve	Long Sleeve	No. x Dia	Standard Sleeve	Long Sleeve	
355.6	Steel & uPVC	23.2	J51LS	1.6	1.6	LO2	LO3	6 x M12	19.6	26.3	447
355.6	Steel	31.0	J51LS	1.6	1.6	LO2	LO3	8 x M12	20.0	26.9	447
358.6	Coated Steel	19.6	J51LS	1.6	1.6	LO2	LO3	6 x M12	19.7	26.5	450
358.6	Coated Steel	30.7	J51LS	1.6	1.6	LO2	LO3	8 x M12	20.2	27.1	450
378	Ductile Iron	29.2	J52LS	2.7	3.5	LO2	LO3	8 x M12	21.1	28.4	469
406.4	Steel & uPVC	27.2	J53LS	1.6	1.6	LO2	LO3	8 x M12	22.4	30.2	497
408.4	Coated Steel	27.0	J53LS	1.6	1.6	LO2	LO3	8 x M12	22.5	30.4	499
409.6	Coated Steel	27.0	J53LS	1.6	1.6	LO2	LO3	8 x M12	22.6	30.4	500
429	Ductile Iron	25.8	J54LS	2.8	4.0	LO2	LO3	8 x M12	23.6	31.7	520
457	Steel & uPVC	24.2	J55LS	1.6	1.6	LO2	LO3	8 x M12	24.9	33.5	548
460	Coated Steel	24.1	J55LS	1.6	1.6	LO2	LO3	8 x M12	25.0	33.7	551
480	Ductile Iron	23.1	J56LS	2.9	4.0	LO2	LO3	8 x M12	26.0	35.1	571
480	Ductile Iron	28.9	J56LS	2.9	4.0	LO2	LO3	10 x M12	26.5	35.7	571
508	Steel & uPVC	27.4	J57LS	1.6	1.6	LO2	LO3	10 x M12	27.8	37.4	598
511	Coated Steel	27.2	J57LS	1.6	1.6	LO2	LO3	10 x M12	27.9	37.6	602
532	Ductile Iron	26.1	J58LS	3.0	4.0	LO2	LO3	10 x M12	29.0	39.1	624
559	Steel & uPVC	24.9	J59LS	1.6	1.6	LO2	LO3	10 x M12	30.2	40.7	649
610	Steel & uPVC	22.9	J60LS	1.6	1.6	LO2	LO3	10 x M12	32.7	44.1	701
610	Steel	26.3	J60LS	1.6	1.6	LO2	LO3	12 x M12	33.1	44.6	701
613	Coated Steel	22.8	J60LS	1.6	1.6	LO2	LO3	10 x M12	32.8	44.3	704
613	Coated Steel	26.2	J60LS	1.6	1.6	LO2	LO3	12 x M12	33.2	44.8	704
635	Ductile Iron	22.0	J61LS	3.2	4.5	LO2	LO3	10 x M12	33.9	45.8	726
635	Ductile Iron	25.2	J61LS	3.2	4.5	LO2	LO3	12 x M12	34.3	46.3	726
660	Steel	24.3	J61LS	1.6	1.6	LO2	LO3	12 x M12	35.5	47.9	751
660	Steel	31.5	J61LS	1.6	1.6	YF2	YF3	10 x M16	62.6	74.5	770
663	Coated Steel	24.3	J61LS	1.6	1.6	LO2	LO3	12 x M12	35.7	48.1	754
663	Coated Steel	31.4	J61LS	1.6	1.6	YF2	YF3	10 x M16	62.9	74.8	773
711	Steel	22.6	J63LS	1.6	1.6	LO2	LO3	12 x M12	38.1	51.3	802
714	Coated Steel	22.4	J63LS	1.6	1.6	LO2	LO3	12 x M12	38.1	51.5	805
738	Ductile Iron	21.7	J63LS	3.4	4.5	LO2	LO3	12 x M12	39.3	53.1	830
738	Ductile Iron	28.2	J63LS	3.4	4.5	YF2	YF3	10 x M16	69.3	82.4	849
762	Steel	21.0	J64LS	1.6	1.6	LO2	LO3	12 x M12	40.4	54.6	852
762	Steel	27.3	J64LS	1.6	1.6	YF2	YF3	10 x M16	71.2	84.6	871
765	Coated Steel	21.0	J64LS	1.6	1.6	LO2	LO3	12 x M12	40.6	54.8	856
765	Coated Steel	27.2	J64LS	1.6	1.6	YF2	YF3	10 x M16	71.5	85.0	875
813	Steel	19.8	J65LS	1.6	1.6	LO2	LO3	14 x M12	43.3	58.5	903
816	Coated Steel	19.7	J65LS	1.6	1.6	LO2	LO3	14 x M12	43.3	58.7	906

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Large Diameter Couplings OD355.6 - 816

Datasheet 2/4

Technical Information

Viking Johnson manufacture couplings to any pipe OD and pressure. If the product required is not shown in any of our tables please contact Viking Johnson who can provide the relevant information.

Working Pressure Rating

For Water / Wastewater applications as detailed in Large Diameter Coupling Technical Data Table.

Gas 6 bar

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

End Load Due to Internal Pressure

Dedicated Couplings DO NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out from the coupling.

Temperature Rating of Product

EPDM -20°C to +90°C

Nitrile -20°C to +90°C

Other Gasket Grades Contact Viking Johnson.

For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

Approvals

The following water contact materials used in Large Diameter Dedicated products are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA.

EPDM Gaskets:

- WRAS

In addition to the above, LD Dedicated range as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Centre Sleeve & End Rings

Steel to BS EN10025-2: Grade S275JR

Gaskets: LO2/LO3/YF2/YF3

Rubber 80 IRHD Moulded Compound to BS EN681-1: Type WA,WC,WG

BS EN682: Type G

(other materials available on request)

Gaskets: A2E/A2H/XSXG

Rubber 70 IRHD Moulded Compound to BS EN681-1: Type WA, WC, WG

BS EN682: Type G

(other materials available on request)

Coatings

Body, Flange & End Ring:

- Rilsan Nylon 11 to WIS 4-52-01 Part 1

Nuts & Bolts:

- Sheraplex coated to WIS 4-52-03

Bolts

Steel to BS EN ISO898-1: Property Class 4.8

Nuts

Steel to BS4190: Grade 4

Washers

Stainless Steel to BS1449:Part 2: Grade 304S15

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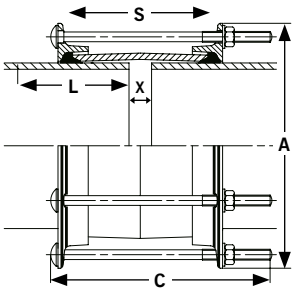
Large Diameter Couplings OD842 - 2038

Datasheet 3/4

Coupling



Coupling Type	Coupling Section Type	Sleeve Length S (mm)	Dimensions (mm)		Setting Gap X (mm)		Bolt Details		
			Distance L	Overall C	Min.	Max.	Bolt Dia.	Length (mm)	Torque (Nm)
Standard Sleeve	LO2	150	150	243	25	50	M12	235	55 - 65
Long Sleeve	LO3	250	200	348	25	150	M12	340	55 - 65
Standard Sleeve	YF2	178	150	276	38	76	M16	265	95 - 120
Long Sleeve	YF3	250	200	351	38	150	M16	340	95 - 120
Standard Sleeve	A2E	178	150	276	38	76	M16	265	95 - 120
Long Sleeve	A2H	254	200	351	38	150	M16	340	95 - 120
Standard Sleeve	XSXG	254	200	411	57	117	M16	400	95 - 120

L= Distance back from end of pipe that must be rounded, meet tolerances, and free from any wrapping to ensure correct assembly.

Large Diameter Couplings

Pipe OD (mm)	Pipe Material	Working Pressure (bar)	Gasket Mould No.	Tolerance (mm) on Pipe OD for Distance L		Coupling Section Type		Bolts	Weight (kg)		Diameter A (mm)
				+	-	Standard Sleeve	Long Sleeve	No. x Dia	Standard Sleeve	Long Sleeve	
842	Ductile Iron	18.9	J65LS	1.0	4.5	LO2	LO3	14 x M12	44.6	60.3	931
842	Ductile Iron	25.0	J65LS	1.0	4.5	YF2	YF3	12 x M16	78.7	93.6	950
842	Ductile Iron	29.1	J116M	1.0	4.5	A2E	A2H	14 x M16	103.4	122.7	965
864	Steel	17.9	J66LS	1.6	1.6	LO2	LO3	14 x M12	45.7	61.8	955
864	Steel	28.4	J116M	1.6	1.6	A2E	A2H	14 x M16	105.9	125.8	988
867	Coated Steel	17.8	J66LS	1.6	1.6	LO2	LO3	14 x M12	45.9	62.0	958
867	Coated Steel	28.2	J117M	1.6	1.6	A2E	A2H	14 x M16	106.3	126.2	992
914	Steel	16.0	J67LS	1.6	1.6	LO2	LO3	14 x M12	48.2	65.1	1005
914	Steel	26.8	J117M	1.6	1.6	A2E	A2H	14 x M16	111.6	132.4	1039
916	Coated Steel	16.0	J67LS	1.6	1.6	LO2	LO3	14 x M12	48.3	65.2	1007
916	Coated Steel	26.8	J117M	1.6	1.6	A2E	A2H	14 x M16	111.8	132.7	1041
945	Ductile Iron	22.0	J70LS	1.0	5.0	YF2	YF3	12 x M16	87.5	104.0	1054
945	Ductile Iron	25.9	J118M	1.0	5.0	A2E	A2H	14 x M16	115.0	136.5	1069
1016	Steel	19.6	J71LS	1.6	1.6	YF2	YF3	14 x M16	94.3	112.2	1125
1019	Coated Steel	19.4	J71LS	1.6	1.6	YF2	YF3	14 x M16	94.6	112.5	1129
1048	Ductile Iron	18.4	J71LS	1.0	5.0	YF2	YF3	14 x M16	96.9	115.3	1156
1048	Ductile Iron	26.8	J119M	1.0	5.0	A2E	A2H	16 x M16	127.1	151.0	1171
1067	Steel	17.7	J72LS	1.6	1.6	YF2	YF3	14 x M16	98.6	117.3	1177
1067	Steel	26.3	J119M	1.6	1.6	A2E	A2H	16 x M16	129.4	153.7	1192
1070	Coated Steel	17.6	J72LS	1.6	1.6	YF2	YF3	14 x M16	98.9	117.6	1180
1070	Coated Steel	26.2	J120M	1.6	1.6	A2E	A2H	16 x M16	129.7	154.1	1195
1118	Steel	16.2	J73LS	1.6	1.6	YF2	YF3	14 x M16	102.9	122.4	1227
1121	Coated Steel	16.0	J73LS	1.6	1.6	YF2	YF3	14 x M16	103.2	122.8	1231
1152	Ductile Iron	24.4	J121M	1.0	6.0	A2E	A2H	16 x M16	138.7	164.7	1275
1219	Steel	23.0	J121M	1.6	1.6	A2E	A2H	16 x M16	146.3	173.7	1343
1222	Coated Steel	23.0	J121M	1.6	1.6	A2E	A2H	16 x M16	146.6	174.1	1347
1255	Ductile Iron	25.2	J122M	1.0	6.0	A2E	A2H	18 x M16	151.0	179.4	1378
1422	Steel	24.5	J125M	1.6	3.0	A2E	A2H	20 x M16	170.5	202.6	1546
1426	Coated Steel	24.4	J125M	1.6	3.0	A2E	A2H	20 x M16	171.0	203.1	1551
1462	Ductile Iron	23.8	J125M	1.0	7.0	A2E	A2H	20 x M16	174.8	207.7	1585
1620	Steel	20.3	J127M	3.0	3.0	A2E	A2H	24 x M16	192.4	230.9	1745
1626	Coated Steel	20.2	J127M	3.0	3.0	A2E	A2H	24 x M16	194.2	231.7	1751
1668	Ductile Iron	19.2	J128M	1.0	7.0	A2E	A2H	24 x M16	199.4	237.0	1791
1829	Steel	16.0	J130M	3.0	3.0	A2E	A2H	24 x M16	217.5	258.5	1954
1835	Coated Steel	24.0	J184H	3.0	3.0	XSXG	-	32 x M16	378.4	-	1970
2032	Steel	22.1	J186H	3.0	3.0	XSXG	-	36 x M16	418.6	-	2167
2038	Coated Steel	22.0	J186H	3.0	3.0	XSXG	-	36 x M16	419.7	-	2173

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Large Diameter Couplings OD842 - 2038

Datasheet 4/4

Technical Information

Viking Johnson manufacture couplings to any pipe OD and pressure. If the product required is not shown in any of our tables please contact Viking Johnson who can provide the relevant information.

Working Pressure Rating

For Water / Wastewater applications as detailed in Large Diameter Coupling Technical Data Table.

Gas 6 bar

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

End Load Due to Internal Pressure

Dedicated Couplings DO NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out from the coupling.

Temperature Rating of Product

EPDM -20°C to +90°C

Nitrile -20°C to +90°C

Other Gasket Grades Contact Viking Johnson.

For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

Approvals

The following water contact materials used in Large Diameter Dedicated products are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA.

EPDM Gaskets:

- WRAS

In addition to the above, LD Dedicated range as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Centre Sleeve & End Rings

Steel to BS EN10025-2: Grade S275JR

Gaskets: LO2/LO3/YF2/YF3

Rubber 80 IRHD Moulded Compound to BS EN681-1: Type WA,WC,WG

BS EN682: Type G

(other materials available on request)

Gaskets: A2E/A2H/XSXG

Rubber 70 IRHD Moulded Compound to BS EN681-1: Type WA, WC, WG

BS EN682: Type G

(other materials available on request)

Coatings

Body, Flange & End Ring:

- Rilsan Nylon 11 to WIS 4-52-01 Part 1

Nuts & Bolts:

- Sheraplex coated to WIS 4-52-03

Bolts

Steel to BS EN ISO898-1: Property Class 4.8

Nuts

Steel to BS4190: Grade 4

Washers

Stainless Steel to BS1449:Part 2: Grade 304S15

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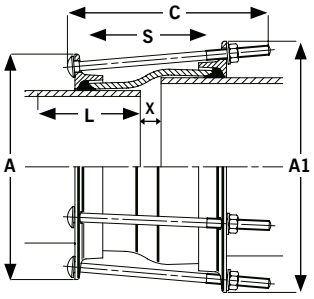
Large Diameter Stepped Couplings OD355.6 - 1222

Datasheet 1/2

Expanded Sleeve Stepped Coupling



Coupling Type	Coupling Section Type	Sleeve Length S (mm)	Dimensions (mm)		Setting Gap X (mm)		Bolt Details		
			Distance L	Overall C	Min.	Max.	Bolt Dia.	Length (mm)	Torque (Nm)
Standard Sleeve	LO2	150	150	243	25	50	M12	235	55 - 65
Long Sleeve	LO3	250	200	348	25	150	M12	340	55 - 65
Standard Sleeve	YF2	178	150	276	38	76	M16	265	95 - 120
Long Sleeve	YF3	250	200	351	38	150	M16	340	95 - 120
Standard Sleeve	A2E	178	150	276	38	76	M16	265	95 - 120
Long Sleeve	A2H	254	200	351	38	150	M16	340	95 - 120
Standard Sleeve	XSXG	254	200	411	57	117	M16	400	95 - 120

L= Distance back from end of pipe that must be rounded, meet tolerances, and free from any wrapping to ensure correct assembly.

Large Diameter Stepped Couplings

Pipe Details																					
Pipe OD (mm)		Pipe Material End 1	Tolerance on Pipe OD for Distance L		Pipe Material End 2	Tolerance on Pipe OD for Distance L		Working Pressure (bar)	Gasket Mould No.		Coupling Section Type		Bolts No. x Dia	Weight (kg)		Dimensions (mm)		Bolt Length		Dimensions Overall C	
End 1	End 2		(mm) +	(mm) -		(mm) +	(mm) -		End 1	End 2	Standard Sleeve	Long Sleeve		Standard Sleeve	Long Sleeve	Diameter A End 1	Diameter A1 End 2	Standard Sleeve	Long Sleeve	Standard Sleeve	Long Sleeve
355.6	378	Steel & uPVC	1.6	1.6	Ductile Iron	2.7	3.5	29.2	J51LS	J52LS	LO2	LO3	8 x M12	20.7	27.8	446	469	235	340	243	348
358.6	378	Coated Steel	1.6	1.6	Ductile Iron	2.7	3.5	29.2	J51LS	J52LS	LO2	LO3	8 x M12	20.7	27.8	450	469	235	340	243	348
406.4	429	Steel & uPVC	1.6	1.6	Ductile Iron	2.8	4.0	25.7	J53LS	J54LS	LO2	LO3	8 x M12	23.1	31.1	497	520	235	340	243	348
409.6	429	Coated Steel	1.6	1.6	Ductile Iron	2.8	4.0	25.7	J53LS	J54LS	LO2	LO3	8 x M12	23.2	31.2	499	520	235	340	243	348
457	480	Steel & uPVC	1.6	1.6	Ductile Iron	2.9	4.0	23.1	J55LS	J56LS	LO2	LO3	8 x M12	25.6	34.5	548	571	235	340	243	348
460	480	Coated Steel	1.6	1.6	Ductile Iron	2.9	4.0	23.1	J55LS	J56LS	LO2	LO3	8 x M12	25.7	34.5	551	571	235	340	243	348
480	508	Ductile Iron	2.9	4.0	Steel & uPVC	1.6	1.6	27.3	J56LS	J57LS	LO2	LO3	10 x M12	27.3	36.7	571	598	235	340	243	348
480	511	Ductile Iron	2.9	4.0	Coated Steel	1.6	1.6	27.2	J56LS	J57LS	LO2	LO3	10 x M12	27.5	36.9	571	602	235	340	243	348
508	532	Steel & uPVC	1.6	1.6	Ductile Iron	3.0	4.0	26.1	J57LS	J58LS	LO2	LO3	10 x M12	28.6	38.4	598	624	235	340	243	348
511	532	Coated Steel	1.6	1.6	Ductile Iron	3.0	4.0	26.1	J57LS	J58LS	LO2	LO3	10 x M12	28.6	38.5	602	624	235	340	243	348
610	635	Steel & uPVC	1.6	1.6	Ductile Iron	3.2	4.5	22.0	J60LS	J61LS	LO2	LO3	10 x M12	33.6	45.2	700	726	235	340	243	348
613	635	Coated Steel	1.6	1.6	Ductile Iron	3.2	4.5	22.0	J60LS	J61LS	LO2	LO3	10 x M12	33.6	45.2	703	726	235	340	243	348
711	738	Steel	1.6	1.6	Ductile Iron	3.4	4.5	21.7	J63LS	J63LS	LO2	LO3	12 x M12	39.0	52.5	802	830	235	340	243	348
714	738	Coated Steel	1.6	1.6	Ductile Iron	3.4	4.5	21.7	J63LS	J63LS	LO2	LO3	12 x M12	39.0	52.5	805	830	235	340	243	348
738	747	Ductile Iron	3.4	4.5	Cast Iron CD	3.3	3.3	21.3	J63LS	J63LS	LO2	LO3	12 x M12	39.4	53.2	830	839	235	340	243	348
738	755	Ductile Iron	3.4	4.5	Cast Iron AB	3.3	3.3	21.2	J63LS	J65LS	LO2	LO3	12 x M12	39.9	53.7	830	847	235	340	243	348
813	842	Steel	1.6	1.6	Ductile Iron	1.0	4.5	18.8	J65LS	J65LS	LO2	LO3	14 x M12	44.4	59.7	903	931	235	340	243	348
816	842	Coated Steel	1.6	1.6	Ductile Iron	1.0	4.5	18.8	J65LS	J65LS	LO2	LO3	14 x M12	44.4	59.8	906	931	235	340	243	348
826	842	Cast Iron CD	3.3	3.3	Ductile Iron	1.0	4.5	18.8	J65LS	J65LS	LO2	LO3	14 x M12	44.3	59.8	918	931	235	340	243	348
842	886	Ductile Iron	1.0	4.5	Cast Iron AB	3.3	3.3	17.0	J65LS	J65LS	-	LO3	14 x M12	-	62.7	931	978	-	340	-	348
906	945	Cast Iron CD	3.3	3.3	Ductile Iron	1.0	5.0	22.0	J67LS	J70LS	YF2	YF3	12 x M16	86.5	102.6	1017	1054	265	340	276	351
914	945	Steel	1.6	1.6	Ductile Iron	1.0	5.0	22.0	J67LS	J70LS	YF2	YF3	12 x M16	86.5	102.7	1005	1054	265	340	276	351
916	945	Coated Steel	1.6	1.6	Ductile Iron	1.0	5.0	22.0	J67LS	J70LS	YF2	YF3	12 x M16	86.5	102.7	1007	1054	265	340	276	351
945	964	Ductile Iron	1.0	5.0	Cast Iron AB	3.3	3.3	21.6	J70LS	J70LS	YF2	YF3	12 x M16	88.3	104.9	1054	1075	265	340	276	351
1016	1048	Steel	1.6	1.6	Ductile Iron	1.0	5.0	18.3	J71LS	J71LS	YF2	YF3	14 x M16	95.9	114.1	1125	1156	265	340	276	351
1019	1048	Coated Steel	1.6	1.6	Ductile Iron	1.0	5.0	18.3	J71LS	J71LS	YF2	YF3	14 x M16	95.9	114.2	1129	1156	265	340	276	351
1121	1152	Cast Iron AB	3.3	3.3	Ductile Iron	1.0	6.0	24.3	J120M	J121M	A2E	A2H	16 x M16	137.6	164.9	1247	1275	265	340	276	351
1219	1255	Steel	1.6	1.6	Ductile Iron	1.0	6.0	25.2	J120M	J132M	A2E	A2H	18 x M16	150.1	179.8	1344	1379	265	340	276	351
1222	1255	Coated Steel	1.6	1.6	Ductile Iron	1.0	6.0	25.2	J120M	J132M	A2E	A2H	18 x M16	150.1	179.8	1347	1379	265	340	276	351

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Large Diameter Stepped Couplings OD355.6 - 1222

Datasheet 2/2

Technical Information

Viking Johnson manufacture stepped couplings to any pipe OD and pressure. If the product required is not shown in any of our tables please contact Viking Johnson who can provide the relevant information.

Working Pressure Rating

For Water / Wastewater applications as detailed in Large Diameter Stepped Coupling Technical Data Table.

Gas 6 bar

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

End Load Due to Internal Pressure

Dedicated Couplings and Stepped Couplings DO NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out from the coupling.

Temperature Rating of Product

EPDM -20°C to +90°C

Nitrile -20°C to +90°C

Other Gasket Grades Contact Viking Johnson.

For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

Approvals

The following water contact materials used in Large Diameter Dedicated products are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA.

EPDM Gaskets:

- WRAS

In addition to the above, Large Diameter Dedicated range as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Centre Sleeve & End Rings

Steel to BS EN10025-2: Grade S275JR

Gaskets: LO2/LO3/YF2/YF3

Rubber 80 IRHD Moulded Compound to BS EN681-1: Type WA,WC,WG

BS EN682: Type G

(other materials available on request)

Gaskets: A2E/A2H/XSXG

Rubber 70 IRHD Moulded Compound to BS EN681-1: Type WA, WC, WG

BS EN682: Type G

(other materials available on request)

Coatings

Body, Flange & End Ring:

- Rilsan Nylon 11 to WIS 4-52-01 Part 1

Nuts & Bolts:

- Sheraplex coated to WIS 4-52-03

Bolts

Steel to BS EN ISO898-1: Property Class 4.8

Nuts

Steel to BS4190: Grade 4

Washers

Stainless Steel to BS1449:Part 2: Grade 304S15

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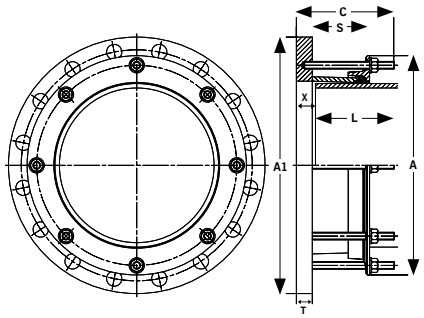
Large Diameter Flange Adaptors OD355 - 1016mm to BS EN 1092-1 PN10 Drilling

Datasheet 1/4

Flange Adaptor



Flange Adaptor Type	Flange Adaptor Section	Sleeve Length S (mm)	Distance L (mm)	Setting Gap X (mm)		Bolt Details		
				Min.	Max.	Bolt Dia.	Length (mm)	Torque (Nm)
Standard Sleeve	LO2	73	150	25	50	M12	140	55 - 65
Long Sleeve	LO3	123	200	25	100	M12	180	55 - 65
Standard Sleeve	YF2	87	150	32	76	M16	160	95 - 120
Long Sleeve	YF3	123	200	32	115	M16	190	95 - 120
Standard Sleeve	A2E	87	150	32	76	M16	160	95 - 120
Long Sleeve	A2H	125	200	32	115	M16	190	95 - 120
Standard Sleeve	XSXG	254	200	57	117	M16	400	95 - 120

L= Distance back from end of pipe that must be rounded, meet tolerances, and free from any wrapping to ensure correct assembly.

Large Diameter Flange Adaptors (BS EN 1092-1 PN10 Drilling)

Pipe OD (mm)	Pipe Material	Flange Drilling BS EN 1092-1		Tolerance on Pipe OD for Distance L		Gasket Mould No.	No. Notches In End Ring If Required	Flange Adaptor Section Type		Flange Adaptor Studs No. x Dia	Weight (kg)		Dimensions						Flange Adaptor Studs Length	
		Nominal	Drilling	(mm) +	(mm) -			Standard Sleeve	Long Sleeve		Standard Sleeve	Long Sleeve	Diameter A (mm)	Flange OD A1 (mm)	Flange Thickness T (mm)	Flange Bolts No. x Dia	Overall C Standard Sleeve (mm)	Overall C Long Sleeve (mm)	Standard Sleeve	Long Sleeve
355.6	Steel & uPVC	350	PN10	1.6	1.6	J51LS	4	LO2	LO3	8 x M12	22.8	26.2	446	505	18	16 x M20	148	188	140	180
358.6	Coated Steel	350	PN10	1.6	1.6	J51LS	4	LO2	LO3	8 x M12	22.6	26.1	450	505	18	16 x M20	148	188	140	180
378	Ductile Iron	350	PN10	2.7	3.5	J52LS	8	LO2	LO3	8 x M12	21.3	24.9	469	505	18	16 x M20	148	188	140	180
406.4	Steel & uPVC	400	PN10	1.6	1.6	J53LS	4	LO2	LO3	8 x M12	26.3	30.2	497	565	18	16 x M24	148	188	140	180
409.4	Coated Steel	400	PN10	1.6	1.6	J53LS	4	LO2	LO3	8 x M12	26.1	30.0	500	565	18	16 x M24	148	188	140	180
429	Ductile Iron	400	PN10	2.8	4.0	J54LS	8	LO2	LO3	8 x M12	24.5	28.6	520	565	18	16 x M24	148	188	140	180
457	Steel & uPVC	450	PN10	1.6	1.6	J55LS	5	LO2	LO3	10 x M12	33.5	37.9	548	615	23	20 x M24	153	193	140	180
460	Coated Steel	450	PN10	1.6	1.6	J55LS	5	LO2	LO3	10 x M12	33.2	37.6	551	615	23	20 x M24	153	193	140	180
480	Ductile Iron	450	PN10	2.9	4.0	J56LS	10	LO2	LO3	10 x M12	30.7	35.2	571	615	23	20 x M24	153	193	140	180
508	Steel & uPVC	500	PN10	1.6	1.6	J57LS	5	LO2	LO3	10 x M12	37.7	42.5	598	670	23	20 x M24	153	193	140	180
511	Coated Steel	500	PN10	1.6	1.6	J57LS	5	LO2	LO3	10 x M12	37.3	42.1	602	670	23	20 x M24	153	193	140	180
532	Ductile Iron	500	PN10	3.0	4.0	J58LS	10	LO2	LO3	10 x M12	34.3	39.3	624	670	23	20 x M24	153	193	140	180
610	Steel & uPVC	600	PN10	1.6	1.6	J60LS	5	LO2	LO3	10 x M12	45.9	51.6	700	780	23	20 x M27	153	193	140	180
613	Coated Steel	600	PN10	1.6	1.6	J60LS	5	LO2	LO3	10 x M12	45.4	51.1	703	780	23	20 x M27	153	193	140	180
635	Ductile Iron	600	PN10	3.2	4.5	J61LS	10	LO2	LO3	10 x M12	41.6	47.5	726	780	23	20 x M27	153	193	140	180
711	Steel	700	PN10	1.6	1.6	J63LS	Not Rqd.	LO2	LO3	12 x M12	56.1	62.7	802	895	23	24 x M27	153	193	140	180
714	Coated Steel	700	PN10	1.6	1.6	J63LS	6	LO2	LO3	12 x M12	55.6	62.2	805	895	23	24 x M27	153	193	140	180
738	Ductile Iron	700	PN10	3.4	4.5	J63LS	12	LO2	LO3	12 x M12	50.8	57.6	830	895	23	24 x M27	153	193	140	180
813	Steel	800	PN10	1.6	1.6	J65LS	Not Rqd.	LO2	LO3	12 x M12	68.2	75.7	903	1015	23	24 x M30	153	193	140	180
816	Coated Steel	800	PN10	1.6	1.6	J65LS	Not Rqd.	LO2	LO3	12 x M12	67.6	75.1	906	1015	23	24 x M30	153	193	140	180
842	Ductile Iron	800	PN10	1.0	4.5	J65LS	12	LO2	LO3	12 x M12	62.2	69.9	931	1015	23	24 x M30	153	193	140	180
914	Steel	900	PN10	1.6	1.6	J67LS	Not Rqd.	LO2	LO3	14 x M12	79.8	88.2	1005	1115	25	28 x M30	155	195	140	180
916	Coated Steel	900	PN10	1.6	1.6	J67LS	Not Rqd.	LO2	LO3	14 x M12	79.3	87.7	1007	1115	25	28 x M30	155	195	140	180
945	Ductile Iron	900	PN10	1.0	5.0	J70LS	14	YF2	YF3	14 x M16	89.3	97.5	1054	1115	25	28 x M30	169	199	160	190
1016	Steel	1000	PN10	1.6	1.6	J71LS	7	YF2	YF3	14 x M16	112.4	121.2	1125	1230	25	28 x M33	169	199	160	190

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Large Diameter Flange Adaptors OD355 - 1016mm to BS EN 1092-1 PN10 Drilling

Datasheet 2/4

Technical Information

Viking Johnson manufacture flange adaptors to any pipe OD and flange drilling. If the product required is not shown in any of our tables please contact Viking Johnson who can provide the relevant information.

Working Pressure Rating

For Water / Wastewater applications in accordance with flange rating.

Gas 6 bar

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

End Load Due to Internal Pressure

Dedicated Flange Adaptors DO NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out from the coupling.

Tie Rods

When using tie rods to provide restraint, depending on the pipe OD & flange drilling the flange adaptor end ring may need to be notched to allow the tie rod to pass over.

The Large Diameter Flange Adaptor Technical Data (BS EN 1092-1 PN10 Drilling) Table provides details on:

- Those products that do not require notching (i.e. there is no interference between the tie rods and end ring) - indicated by “Not Rqd.”
- Those products where there is interference between the tie rod and end ring and do require notching, with the number of notches provided as standard indicated.

Tie Rod Yield Strength

The number of notches indicated assumes the use of tie rods with a minimum yield strength of 725 N/mm^2.

If tie rods with a lower yield strength are used, then depending on the working pressure an increased number than that specified in the table may be required; in this situation please advise Viking Johnson of the number of notches and we will accommodate your requirements.

Temperature Rating of Product

EPDM -20°C to +90°C

Nitrile -20°C to +90°C

Other Gasket Grades Contact Viking Johnson.

For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

Approvals

The following water contact materials used in Large Diameter Dedicated products are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA.

EPDM Gaskets:

- WRAS

In addition to the above, Large Diameter Dedicated range as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Flange Body & End Ring

Steel to BS EN10025-2: Grade S275JR

Gaskets: LO2/LO3/YF2/YF3

Rubber 80 IRHD Moulded Compound to BS EN681-1: Type WA,WC,WG

BS EN682: Type G

(other materials available on request)

Gaskets: A2E/A2H/XSXG

Rubber 70 IRHD Moulded Compound to BS EN681-1: Type WA, WC, WG

BS EN682: Type G

(other materials available on request)

Coatings

Body, Flange & End Ring:

- Rilsan Nylon 11 to WIS 4-52-01 Part 1

Nuts & Studs:

- Sheraplex coated to WIS 4-52-03

Studs

Steel to BS EN ISO898-1: Property Class 4.8

Nuts

Steel to BS4190: Grade 4

Washers

Stainless Steel to BS1449:Part 2: Grade 304S15

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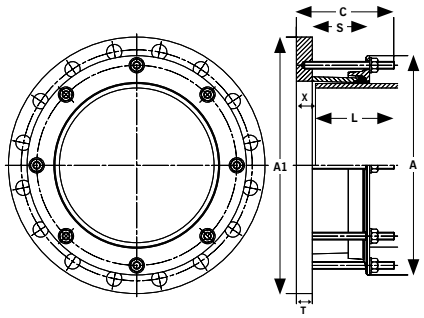
Large Diameter Flange Adaptors OD1019 - 1668mm to BS EN 1092-1 PN10 Drilling

Datasheet 3/4

Flange Adaptor



Flange Adaptor Type	Flange Adaptor Section	Sleeve Length S (mm)	Distance L (mm)	Setting Gap X (mm)		Bolt Details		
				Min.	Max.	Bolt Dia.	Length (mm)	Torque (Nm)
Standard Sleeve	LO2	73	150	25	50	M12	140	55 - 65
Long Sleeve	LO3	123	200	25	100	M12	180	55 - 65
Standard Sleeve	YF2	87	150	32	76	M16	160	95 - 120
Long Sleeve	YF3	123	200	32	115	M16	190	95 - 120
Standard Sleeve	A2E	87	150	32	76	M16	160	95 - 120
Long Sleeve	A2H	125	200	32	115	M16	190	95 - 120
Standard Sleeve	XSXG	254	200	57	117	M16	400	95 - 120

L= Distance back from end of pipe that must be rounded, meet tolerances, and free from any wrapping to ensure correct assembly.

Large Diameter Flange Adaptors (BS EN 1092-1 PN10 Drilling)

Pipe OD (mm)	Pipe Material	Flange Drilling BS EN 1092-1		Tolerance on Pipe OD for Distance L		Gasket Mould No.	No. Notches In End Ring If Required	Flange Adaptor Section Type		Flange Adaptor Studs No. x Dia	Weight (kg)		Dimensions						Flange Adaptor Studs Length	
		Nominal	Drilling	(mm) +	(mm) -			Standard Sleeve	Long Sleeve		Standard Sleeve	Long Sleeve	Diameter A (mm)	Flange OD A1 (mm)	Flange Thickness T (mm)	Flange Bolts No. x Dia	Overall C Standard Sleeve (mm)	Overall C Long Sleeve (mm)	Standard Sleeve	Long Sleeve
1019	Coated Steel	1000	PN10	1.6	1.6	J71LS	7	YF2	YF3	14 x M16	111.4	120.3	1129	1230	25	28 x M33	169	199	160	190
1048	Ductile Iron	1000	PN10	1.0	5.0	J71LS	14	YF2	YF3	14 x M16	102.9	112.0	1156	1230	25	28 x M33	169	199	160	190
1118	Steel	1100	PN10	1.6	1.6	J73LS	Not Rqd.	YF2	YF3	16 x M16	126.0	135.7	1227	1340	25	32 x M33	169	199	160	190
1121	Coated Steel	1100	PN10	1.6	1.6	J73LS	8	YF2	YF3	16 x M16	124.9	134.6	1231	1340	25	32 x M33	169	199	160	190
1152	Ductile Iron	1100	PN10	1.0	6.0	J121M	16	A2E	A2H	16 x M16	162.6	175.4	1275	1340	38	32 x M33	182	212	160	190
1219	Steel	1200	PN10	1.6	1.6	J74LS	Not Rqd.	YF2	YF3	16 x M16	141.8	152.3	1329	1455	25	32 x M36	169	199	160	190
1222	Coated Steel	1200	PN10	1.6	1.6	J74LS	Not Rqd.	YF2	YF3	16 x M16	201.1	214.7	1332	1455	25	32 x M36	169	212	160	190
1255	Ductile Iron	1200	PN10	1.0	6.0	J122M	16	A2E	A2H	16 x M16	183.0	196.9	1378	1455	38	32 x M36	182	212	160	190
1422	Steel	1400	PN10	1.6	3.0	J125M	9	A2E	A2H	18 x M16	245.5	261.2	1546	1675	38	36 x M39	182	212	160	190
1426	Coated Steel	1400	PN10	1.6	3.0	J125M	9	A2E	A2H	18 x M16	243.1	258.8	1550	1675	38	36 x M39	182	212	160	190
1462	Ductile Iron	1400	PN10	1.0	7.0	J125M	18	A2E	A2H	18 x M16	220.1	236.2	1585	1675	38	36 x M39	182	212	160	190
1620	Steel	1600	PN10	3.0	3.0	J127M	Not Rqd.	A2E	A2H	20 x M16	309.3	327.2	1745	1915	38	40 x M45	182	212	160	190
1626	Coated Steel	1600	PN10	3.0	3.0	J127M	Not Rqd.	A2E	A2H	20 x M16	304.7	322.6	1751	1915	38	40 x M45	182	212	160	190
1668	Ductile Iron	1600	PN10	1.0	7.0	J128M	20	A2E	A2H	20 x M16	275.2	293.6	1791	1915	38	40 x M45	182	212	160	190

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Large Diameter Flange Adaptors OD1019 - 1668mm to BS EN 1092-1 PN10 Drilling

Datasheet 4/4

Technical Information

Viking Johnson manufacture flange adaptors to any pipe OD and flange drilling. If the product required is not shown in any of our tables please contact Viking Johnson who can provide the relevant information.

Working Pressure Rating

For Water / Wastewater applications in accordance with flange rating.

Gas 6 bar

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

End Load Due to Internal Pressure

Dedicated Flange Adaptors DO NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out from the coupling.

Tie Rods

When using tie rods to provide restraint, depending on the pipe OD & flange drilling the flange adaptor end ring may need to be notched to allow the tie rod to pass over.

The Large Diameter Flange Adaptor Technical Data (BS EN 1092-1 PN10 Drilling) Table provides details on:

- Those products that do not require notching (i.e. there is no interference between the tie rods and end ring) - indicated by “Not Rqd.”
- Those products where there is interference between the tie rod and end ring and do require notching, with the number of notches provided as standard indicated.

Tie Rod Yield Strength

The number of notches indicated assumes the use of tie rods with a minimum yield strength of 725 N/mm^2.

If tie rods with a lower yield strength are used, then depending on the working pressure an increased number than that specified in the table may be required; in this situation please advise Viking Johnson of the number of notches and we will accommodate your requirements

Temperature Rating of Product

EPDM -20°C to +90°C

Nitrile -20°C to +90°C

Other Gasket Grades Contact Viking Johnson.

For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

Approvals

The following water contact materials used in Large Diameter Dedicated products are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA.

EPDM Gaskets:

- WRAS

In addition to the above, Large Diameter Dedicated range as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Flange Body & End Ring

Steel to BS EN10025-2: Grade S275JR

Gaskets: LO2/LO3/YF2/YF3

Rubber 80 IRHD Moulded Compound to BS EN681-1: Type WA,WC,WG

BS EN682: Type G

(other materials available on request)

Gaskets: A2E/A2H/XSXG

Rubber 70 IRHD Moulded Compound to BS EN681-1: Type WA, WC, WG

BS EN682: Type G

(other materials available on request)

Coatings

Body, Flange & End Ring:

- Rilsan Nylon 11 to WIS 4-52-01 Part 1

Nuts & Studs:

- Sheraplex coated to WIS 4-52-03

Studs

Steel to BS EN ISO898-1: Property Class 4.8

Nuts

Steel to BS4190: Grade 4

Washers

Stainless Steel to BS1449:Part 2: Grade 304S15

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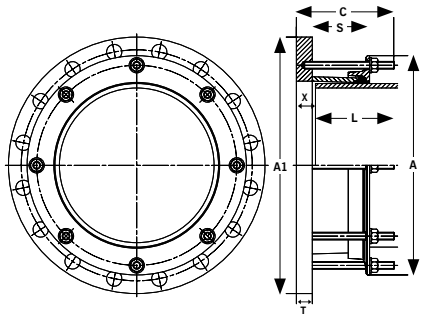
Large Diameter Flange Adaptors OD355 - 813mm to BS EN 1092-1 PN16 Drilling

Datasheet 1/4

Flange Adaptor



Flange Adaptor Type	Flange Adaptor Section	Sleeve Length S (mm)	Distance L (mm)	Setting Gap X (mm)		Bolt Details		
				Min.	Max.	Bolt Dia.	Length (mm)	Torque (Nm)
Standard Sleeve	LO2	73	150	25	50	M12	140	55 - 65
Long Sleeve	LO3	123	200	25	100	M12	180	55 - 65
Standard Sleeve	YF2	87	150	32	76	M16	160	95 - 120
Long Sleeve	YF3	123	200	32	115	M16	190	95 - 120
Standard Sleeve	A2E	87	150	32	76	M16	160	95 - 120
Long Sleeve	A2H	125	200	32	115	M16	190	95 - 120
Standard Sleeve	XSXG	254	200	57	117	M16	400	95 - 120

L= Distance back from end of pipe that must be rounded, meet tolerances, and free from any wrapping to ensure correct assembly.

Large Diameter Flange Adaptors (BS EN 1092-1 PN16 Drilling)

Pipe OD (mm)	Pipe Material	Flange Drilling BS EN 1092-1		Tolerance on Pipe OD for Distance L		Gasket Mould No.	No. Notches In End Ring If Required	Flange Adaptor Section Type		Flange Adaptor Studs No. x Dia	Weight (kg)		Dimensions						Flange Adaptor Studs Length	
		Nominal	Drilling	(mm) +	(mm) -			Standard Sleeve	Long Sleeve		Standard Sleeve	Long Sleeve	Diameter A (mm)	Flange OD A1 (mm)	Flange Thickness T (mm)	Flange Bolts No. x Dia	Overall C Standard Sleeve (mm)	Overall C Long Sleeve (mm)	Standard Sleeve	Long Sleeve
355.6	Steel & uPVC	350	PN16	1.6	1.6	J51LS	4	LO2	LO3	8 x M12	24.1	27.5	446	520	18	16 x M24	148	188	140	180
358.6	Coated Steel	350	PN16	1.6	1.6	J51LS	4	LO2	LO3	8 x M12	23.9	27.3	450	520	18	16 x M24	148	188	140	180
378	Ductile Iron	350	PN16	2.7	3.5	J52LS	8	LO2	LO3	8 x M12	22.5	26.3	469	520	18	16 x M24	148	188	140	180
406.4	Steel & uPVC	400	PN16	1.6	1.6	J53LS	4	LO2	LO3	8 x M12	27.9	31.8	497	580	18	16 x M27	148	188	140	180
409.4	Coated Steel	400	PN16	1.6	1.6	J53LS	4	LO2	LO3	8 x M12	27.7	31.6	500	580	18	16 x M27	148	188	140	180
429	Ductile Iron	400	PN16	2.8	4.0	J54LS	8	LO2	LO3	8 x M12	26.2	30.2	520	580	18	16 x M27	148	188	140	180
451	PVC & Hep30	450	PN16	0.0	1.0	J55LS	Not Rqd.	LO2	LO3	10 x M12	45.2	42.4	541	640	25	20 x M27	155	193	140	180
457	Steel & uPVC	450	PN16	1.6	1.6	J55LS	Not Rqd.	LO2	LO3	10 x M12	37.5	41.9	548	640	23	20 x M27	153	193	140	180
460	Coated Steel	450	PN16	1.6	1.6	J55LS	5	LO2	LO3	10 x M12	37.2	41.5	551	640	23	20 x M27	153	193	140	180
480	Ductile Iron	450	PN16	2.9	4.0	J56LS	10	LO2	LO3	10 x M12	34.7	39.3	571	640	23	20 x M27	153	193	140	180
508	Steel & uPVC	500	PN16	1.6	1.6	J57LS	Not Rqd.	LO2	LO3	10 x M12	45.5	50.3	598	715	23	20 x M30	153	193	140	180
511	Coated Steel	500	PN16	1.6	1.6	J57LS	Not Rqd.	LO2	LO3	10 x M12	45.1	49.9	602	715	23	20 x M30	153	193	140	180
532	Ductile Iron	500	PN16	3.0	4.0	J58LS	10	LO2	LO3	10 x M12	42.2	47.2	624	715	23	20 x M30	153	193	140	180
610	Steel & uPVC	600	PN16	1.6	1.6	J60LS	Not Rqd.	LO2	LO3	10 x M12	58.5	64.2	700	840	23	20 x M33	153	193	140	180
613	Coated Steel	600	PN16	1.6	1.6	J60LS	Not Rqd.	LO2	LO3	10 x M12	58.0	63.7	703	840	23	20 x M33	153	193	140	180
635	Ductile Iron	600	PN16	3.2	4.5	J61LS	Not Rqd.	LO2	LO3	10 x M12	54.5	60.4	726	840	23	20 x M33	153	193	140	180
711	Steel	700	PN16	1.6	1.6	J63LS	6	LO2	LO3	12 x M12	58.5	65.2	802	910	23	24 x M33	153	193	140	180
714	Coated Steel	700	PN16	1.6	1.6	J63LS	6	LO2	LO3	12 x M12	58.0	64.6	805	910	23	24 x M33	153	193	140	180
738	Ductile Iron	700	PN16	3.4	4.5	J63LS	12	LO2	LO3	12 x M12	53.1	59.9	830	910	23	24 x M33	153	193	140	180
813	Steel	800	PN16	1.6	1.6	J65LS	Not Rqd.	LO2	LO3	12 x M12	69.6	77.1	903	1025	23	24 x M36	153	193	140	180

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Large Diameter Flange Adaptors OD355 - 813mm to BS EN 1092-1 PN16 Drilling

Datasheet 2/4

Technical Information

Viking Johnson manufacture flange adaptors to any pipe OD and flange drilling. If the product required is not shown in any of our tables please contact Viking Johnson who can provide the relevant information.

Working Pressure Rating

For Water / Wastewater applications in accordance with flange rating.

Gas 6 bar

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

End Load Due to Internal Pressure

Dedicated Flange Adaptors DO NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out from the coupling.

Tie Rods

When using tie rods to provide restraint, depending on the pipe OD & flange drilling the flange adaptor end ring may need to be notched to allow the tie rod to pass over.

The Large Diameter Flange Adaptor Technical Data (BS EN 1092-1 PN16 Drilling) Table provides details on:

- Those products that do not require notching (i.e. there is no interference between the tie rods and end ring) - indicated by “Not Rqd.”
- Those products where there is interference between the tie rod and end ring and do require notching, with the number of notches provided as standard indicated.

Tie Rod Yield Strength

The number of notches indicated assumes the use of tie rods with a minimum yield strength of 725 N/mm^2.

If tie rods with a lower yield strength are used, then depending on the working pressure an increased number than that specified in the table may be required; in this situation please advise Viking Johnson of the number of notches and we will accommodate your requirements.

Temperature Rating of Product

EPDM -20°C to +90°C

Nitrile -20°C to +90°C

Other Gasket Grades Contact Viking Johnson.

For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

Approvals

The following water contact materials used in Large Diameter Dedicated products are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA.

EPDM Gaskets:

- WRAS

In addition to the above, Large Diameter Dedicated range as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Flange Body & End Ring

Steel to BS EN10025-2: Grade S275JR

Gaskets: LO2/LO3/YF2/YF3

Rubber 80 IRHD Moulded Compound to BS EN681-1: Type WA,WC,WG

BS EN682: Type G

(other materials available on request)

Gaskets: A2E/A2H/XSXG

Rubber 70 IRHD Moulded Compound to BS EN681-1: Type WA, WC, WG

BS EN682: Type G

(other materials available on request)

Coatings

Body, Flange & End Ring:

- Rilsan Nylon 11 to WIS 4-52-01 Part 1

Nuts & Studs:

- Sheraplex coated to WIS 4-52-03

Studs

Steel to BS EN ISO898-1: Property Class 4.8

Nuts

Steel to BS4190: Grade 4

Washers

Stainless Steel to BS1449:Part 2: Grade 304S15

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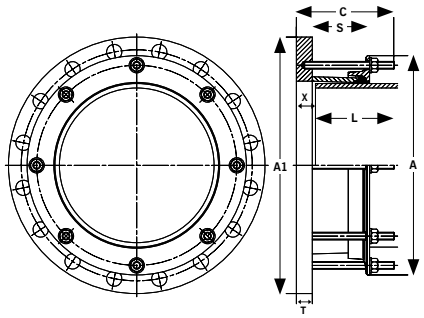
Large Diameter Flange Adaptors OD816 - 1668mm to BS EN 1092-1 PN16 Drilling

Datasheet 3/4

Flange Adaptor



Flange Adaptor Type	Flange Adaptor Section	Sleeve Length S (mm)	Distance L (mm)	Setting Gap X (mm)		Bolt Details		
				Min.	Max.	Bolt Dia.	Length (mm)	Torque (Nm)
Standard Sleeve	LO2	73	150	25	50	M12	140	55 - 65
Long Sleeve	LO3	123	200	25	100	M12	180	55 - 65
Standard Sleeve	YF2	87	150	32	76	M16	160	95 - 120
Long Sleeve	YF3	123	200	32	115	M16	190	95 - 120
Standard Sleeve	A2E	87	150	32	76	M16	160	95 - 120
Long Sleeve	A2H	125	200	32	115	M16	190	95 - 120
Standard Sleeve	XSXG	254	200	57	117	M16	400	95 - 120

L= Distance back from end of pipe that must be rounded, meet tolerances, and free from any wrapping to ensure correct assembly.

Large Diameter Flange Adaptors (BS EN 1092-1 PN16 Drilling)

Pipe OD (mm)	Pipe Material	Flange Drilling BS EN 1092-1		Tolerance on Pipe OD for Distance L		Gasket Mould No.	No. Notches In End Ring If Required	Flange Adaptor Section Type		Flange Adaptor Studs No. x Dia	Weight (kg)		Dimensions						Flange Adaptor Studs Length	
		Nominal	Drilling	(mm) +	(mm) -			Standard Sleeve	Long Sleeve		Standard Sleeve	Long Sleeve	Diameter A (mm)	Flange OD A1 (mm)	Flange Thickness T (mm)	Flange Bolts No. x Dia	Overall C Standard Sleeve (mm)	Overall C Long Sleeve (mm)	Standard Sleeve	Long Sleeve
816	Coated Steel	800	PN16	1.6	1.6	J65LS	6	LO2	LO3	12 x M12	68.9	76.4	906	1025	23	24 x M36	153	193	140	180
842	Ductile Iron	800	PN16	1.0	4.5	J65LS	12	LO2	LO3	12 x M12	63.4	71.1	931	1025	23	24 x M36	153	193	140	180
914	Steel	900	PN16	1.6	1.6	J67LS	7	LO2	LO3	14 x M12	81.3	89.7	1005	1125	25	28 x M36	155	195	140	180
916	Coated Steel	900	PN16	1.6	1.6	J67LS	7	LO2	LO3	14 x M12	80.8	89.2	1007	1125	25	28 x M36	155	195	140	180
945	Ductile Iron	900	PN16	1.0	5.0	J70LS	14	YF2	YF3	14 x M16	90.8	99.1	1054	1125	25	28 x M36	169	199	160	190
1016	Steel	1000	PN16	1.6	1.6	J71LS	7	YF2	YF3	14 x M16	119.8	128.6	1125	1255	25	28 x M39	169	199	160	190
1019	Coated Steel	1000	PN16	1.6	1.6	J71LS	7	YF2	YF3	14 x M16	118.9	127.7	1129	1255	25	28 x M39	169	199	160	190
1048	Ductile Iron	1000	PN16	1.0	5.0	J71LS	14	YF2	YF3	14 x M16	110.4	119.4	1156	1255	25	28 x M39	169	199	160	190
1118	Steel	1100	PN16	1.6	1.6	J73LS	8	YF2	YF3	16 x M16	129.8	139.5	1227	1355	25	32 x M39	169	199	160	190
1121	Coated Steel	1100	PN16	1.6	1.6	J73LS	8	YF2	YF3	16 x M16	128.7	138.5	1231	1355	25	32 x M39	169	199	160	190
1152	Ductile Iron	1100	PN16	1.0	6.0	J121M	16	A2E	A2H	16 x M16	168.0	180.9	1275	1355	38	32 x M39	182	212	160	190
1219	Steel	1200	PN16	1.6	1.6	J121M	8	A2E	A2H	16 x M16	217.4	230.9	1343	1485	38	32 x M45	182	212	160	190
1222	Coated Steel	1200	PN16	1.6	1.6	J121M	8	A2E	A2H	16 x M16	215.8	229.4	1347	1485	38	32 x M45	182	212	160	190
1255	Ductile Iron	1200	PN16	1.0	6.0	J122M	16	A2E	A2H	16 x M16	197.6	211.5	1378	1485	38	32 x M45	182	212	160	190
1422	Steel	1400	PN16	1.6	3.0	J125M	9	A2E	A2H	18 x M16	248.7	264.4	1546	1685	38	36 x M45	182	212	160	190
1426	Coated Steel	1400	PN16	1.6	3.0	J125M	9	A2E	A2H	18 x M16	246.1	261.9	1550	1685	38	36 x M45	182	212	160	190
1462	Ductile Iron	1400	PN16	1.0	7.0	J125M	18	A2E	A2H	18 x M16	223.3	239.4	1585	1685	38	36 x M45	182	212	160	190
1620	Steel	1600	PN16	3.0	3.0	J127M	Not Rqd.	A2E	A2H	20 x M16	315.9	333.7	1745	1930	38	40 x M52	182	212	160	190
1626	Coated Steel	1600	PN16	3.0	3.0	J127M	Not Rqd.	A2E	A2H	20 x M16	311.3	329.2	1751	1930	38	40 x M52	182	212	160	190
1668	Ductile Iron	1600	PN16	1.0	7.0	J128M	20	A2E	A2H	20 x M16	281.3	299.7	1791	1930	38	40 x M52	182	212	160	190

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Large Diameter Flange Adaptors OD816 - 1668mm to BS EN 1092-1 PN16 Drilling

Datasheet 4/4

Technical Information

Viking Johnson manufacture flange adaptors to any pipe OD and flange drilling. If the product required is not shown in any of our tables please contact Viking Johnson who can provide the relevant information.

Working Pressure Rating

For Water / Wastewater applications in accordance with flange rating.

Gas 6 bar

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

End Load Due to Internal Pressure

Dedicated Flange Adaptors DO NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out from the coupling.

Tie Rods

When using tie rods to provide restraint, depending on the pipe OD & flange drilling the flange adaptor end ring may need to be notched to allow the tie rod to pass over.

The Large Diameter Flange Adaptor Technical Data (BS EN 1092-1 PN16 Drilling) Table provides details on:

- Those products that do not require notching (i.e. there is no interference between the tie rods and end ring) - indicated by “Not Rqd.”
- Those products where there is interference between the tie rod and end ring and do require notching, with the number of notches provided as standard indicated.

Tie Rod Yield Strength

The number of notches indicated assumes the use of tie rods with a minimum yield strength of 725 N/mm^2.

If tie rods with a lower yield strength are used, then depending on the working pressure an increased number than that specified in the table may be required; in this situation please advise Viking Johnson of the number of notches and we will accommodate your requirements.

Temperature Rating of Product

EPDM -20°C to +90°C

Nitrile -20°C to +90°C

Other Gasket Grades Contact Viking Johnson.

For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

Approvals

The following water contact materials used in Large Diameter Dedicated products are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA.

EPDM Gaskets:

- WRAS

In addition to the above, Large Diameter Dedicated range as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Flange Body & End Ring

Steel to BS EN10025-2: Grade S275JR

Gaskets: LO2/LO3/YF2/YF3

Rubber 80 IRHD Moulded Compound to BS EN681-1: Type WA,WC,WG

BS EN682: Type G

(other materials available on request)

Gaskets: A2E/A2H/XSXG

Rubber 70 IRHD Moulded Compound to BS EN681-1: Type WA, WC, WG

BS EN682: Type G

(other materials available on request)

Coatings

Body, Flange & End Ring:

- Rilsan Nylon 11 to WIS 4-52-01 Part 1

Nuts & Studs:

- Sheraplex coated to WIS 4-52-03

Studs

Steel to BS EN ISO898-1: Property Class 4.8

Nuts

Steel to BS4190: Grade 4

Washers

Stainless Steel to BS1449:Part 2: Grade 304S15

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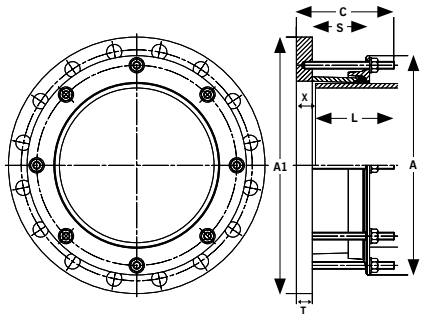
Large Diameter Flange Adaptors OD355 - 945mm to BS EN 1092-1 PN25 Drilling

Datasheet 1/4

Flange Adaptor



Flange Adaptor Type	Flange Adaptor Section	Sleeve Length S (mm)	Distance L (mm)	Setting Gap X (mm)		Bolt Details		
				Min.	Max.	Bolt Dia.	Length (mm)	Torque (Nm)
Standard Sleeve	LO2	73	150	25	50	M12	140	55 - 65
Long Sleeve	LO3	123	200	25	100	M12	180	55 - 65
Standard Sleeve	YF2	87	150	32	76	M16	160	95 - 120
Long Sleeve	YF3	123	200	32	115	M16	190	95 - 120
Standard Sleeve	A2E	87	150	32	76	M16	160	95 - 120
Long Sleeve	A2H	125	200	32	115	M16	190	95 - 120
Standard Sleeve	XSXG	254	200	57	117	M16	400	95 - 120

L= Distance back from end of pipe that must be rounded, meet tolerances, and free from any wrapping to ensure correct assembly.

Large Diameter Flange Adaptors (BS EN 1092-1 PN25 Drilling)

Pipe OD (mm)	Pipe Material	Flange Drilling BS EN 1092-1		Tolerance on Pipe OD for Distance L		Gasket Mould No.	No. Notches In End Ring If Required	Flange Adaptor Section Type		Flange Adaptor Studs No. x Dia	Weight (kg)		Dimensions						Flange Adaptor Studs Length	
		Nominal	Drilling	(mm) +	(mm) -			Standard Sleeve	Long Sleeve		Standard Sleeve	Long Sleeve	Diameter A (mm)	Flange OD A1 (mm)	Flange Thickness T (mm)	Flange Bolts No. x Dia	Overall C Standard Sleeve (mm)	Overall C Long Sleeve (mm)	Standard Sleeve	Long Sleeve
355.6	Steel	350	PN25	1.6	1.6	J51LS	Not Rqd.	LO2	LO3	8 x M12	34.4	37.8	446	555	25	16 x M30	155	195	140	180
358.6	Coated Steel	350	PN25	1.6	1.6	J51LS	Not Rqd.	LO2	LO3	8 x M12	34.1	37.5	450	555	25	16 x M30	155	195	140	180
378	Ductile Iron	350	PN25	2.7	3.5	J52LS	8	LO2	LO3	8 x M12	32.2	35.8	469	555	25	16 x M30	155	195	140	180
406.4	Steel	400	PN25	1.6	1.6	J53LS	Not Rqd.	LO2	LO3	8 x M12	40.7	44.6	497	620	25	16 x M33	155	195	140	180
409.4	Coated Steel	400	PN25	1.6	1.6	J53LS	Not Rqd.	LO2	LO3	8 x M12	40.4	44.3	500	620	25	16 x M33	155	195	140	180
429	Ductile Iron	400	PN25	2.8	4.0	J54LS	8	LO2	LO3	8 x M12	38.2	42.3	520	620	25	16 x M33	155	195	140	180
457	Steel	450	PN25	1.6	1.6	J55LS	Not Rqd.	LO2	LO3	10 x M12	44.4	48.8	548	670	25	20 x M33	155	195	140	180
460	Coated Steel	450	PN25	1.6	1.6	J55LS	Not Rqd.	LO2	LO3	10 x M12	44.1	48.4	551	670	25	20 x M33	155	195	140	180
480	Ductile Iron	450	PN25	2.9	4.0	J56LS	10	LO2	LO3	10 x M12	41.4	46.0	571	670	25	20 x M33	155	195	140	180
508	Steel	500	PN25	1.6	1.6	J57LS	Not Rqd.	LO2	LO3	10 x M12	50.9	55.7	598	730	25	20 x M33	155	195	140	180
511	Coated Steel	500	PN25	1.6	1.6	J57LS	Not Rqd.	LO2	LO3	10 x M12	50.4	55.3	602	730	25	20 x M33	155	195	140	180
532	Ductile Iron	500	PN25	3.0	4.0	J58LS	10	LO2	LO3	10 x M12	47.4	52.4	624	730	25	20 x M33	155	195	140	180
610	Steel	600	PN25	1.6	1.6	J60LS	Not Rqd.	LO2	LO3	10 x M12	62.7	68.4	700	845	25	20 x M36	155	195	140	180
613	Coated Steel	600	PN25	1.6	1.6	J60LS	Not Rqd.	LO2	LO3	10 x M12	62.2	67.9	703	845	25	20 x M36	155	195	140	180
635	Ductile Iron	600	PN25	3.2	4.5	J61LS	10	LO2	LO3	10 x M12	58.3	64.2	726	845	25	20 x M36	155	195	140	180
711	Steel	700	PN25	1.6	1.6	J63LS	Not Rqd.	LO2	LO3	12 x M12	74.2	81.0	802	960	25	24 x M39	155	195	140	180
714	Coated Steel	700	PN25	1.6	1.6	J63LS	Not Rqd.	LO2	LO3	12 x M12	69.4	76.1	805	960	25	24 x M39	155	195	140	180
738	Ductile Iron	700	PN25	3.4	4.5	J63LS	12	YF2	YF3	12 x M16	82.5	90.0	849	960	25	24 x M39	169	195	160	190
813	Steel	800	PN25	1.6	1.6	J65LS	Not Rqd.	YF2	YF3	12 x M16	106.5	113.6	922	1085	25	24 x M45	169	199	160	190
816	Coated Steel	800	PN25	1.6	1.6	J65LS	Not Rqd.	YF2	YF3	12 x M16	83.8	113.0	906	1085	25	24 x M45	169	199	160	190
842	Ductile Iron	800	PN25	1.0	4.5	J65LS	12	YF2	YF3	12 x M16	100.0	107.5	950	1085	25	24 x M45	169	199	160	190
914	Steel	900	PN25	1.6	1.6	J117M	7	A2E	A2H	14 x M16	168.6	137.1	1038	1185	38	28 x M45	182	212	160	190
916	Coated Steel	900	PN25	1.6	1.6	J117M	7	A2E	A2H	14 x M16	167.9	136.3	1041	1185	38	28 x M45	182	212	160	190
945	Ductile Iron	900	PN25	1.0	5.0	J118M	14	A2E	A2H	14 x M16	156.1	124.0	1069	1185	38	28 x M45	182	212	160	190

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Large Diameter Flange Adaptors OD355 - 945mm to BS EN 1092-1 PN25 Drilling

Datasheet 2/4

Technical Information

Viking Johnson manufacture flange adaptors to any pipe OD and flange drilling. If the product required is not shown in any of our tables please contact Viking Johnson who can provide the relevant information.

Working Pressure Rating

For Water / Wastewater applications in accordance with flange rating.

Gas 6 bar

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

End Load Due to Internal Pressure

Dedicated Flange Adaptors DO NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out from the coupling.

Tie Rods

When using tie rods to provide restraint, depending on the pipe OD & flange drilling the flange adaptor end ring may need to be notched to allow the tie rod to pass over.

The Large Diameter Flange Adaptor Technical Data (BS EN 1092-1 PN25 Drilling) Table provides details on:

- Those products that do not require notching (i.e. there is no interference between the tie rods and end ring) - indicated by “Not Rqd.”
- Those products where there is interference between the tie rod and end ring and do require notching, with the number of notches provided as standard indicated.

Tie Rod Yield Strength

The number of notches indicated assumes the use of tie rods with a minimum yield strength of 725 N/mm^2.

If tie rods with a lower yield strength are used, then depending on the working pressure an increased number than that specified in the table may be required; in this situation please advise Viking Johnson of the number of notches and we will accommodate your requirements.

Temperature Rating of Product

EPDM -20°C to +90°C

Nitrile -20°C to +90°C

Other Gasket Grades Contact Viking Johnson.

For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

Approvals

The following water contact materials used in Large Diameter Dedicated products are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA.

EPDM Gaskets:

- WRAS

In addition to the above, Large Diameter Dedicated range as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Flange Body & End Ring

Steel to BS EN10025-2: Grade S275JR

Gaskets: LO2/LO3/YF2/YF3

Rubber 80 IRHD Moulded Compound to BS EN681-1: Type WA,WC,WG

BS EN682: Type G

(other materials available on request)

Gaskets: A2E/A2H/XSXG

Rubber 70 IRHD Moulded Compound to BS EN681-1: Type WA, WC, WG

BS EN682: Type G

(other materials available on request)

Coatings

Body, Flange & End Ring:

- Rilsan Nylon 11 to WIS 4-52-01 Part 1

Nuts & Studs:

- Sheraplex coated to WIS 4-52-03

Studs

Steel to BS EN ISO898-1: Property Class 4.8

Nuts

Steel to BS4190: Grade 4

Washers

Stainless Steel to BS1449:Part 2: Grade 304S15

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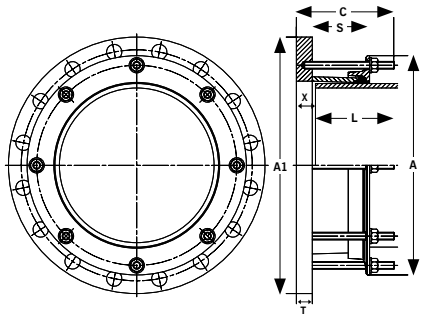
Large Diameter Flange Adaptors OD1016 - 1255mm to BS EN 1092-1 PN25 Drilling

Datasheet 3/4

Flange Adaptor



Flange Adaptor Type	Flange Adaptor Section	Sleeve Length S (mm)	Distance L (mm)	Setting Gap X (mm)		Bolt Details		
				Min.	Max.	Bolt Dia.	Length (mm)	Torque (Nm)
Standard Sleeve	LO2	73	150	25	50	M12	140	55 - 65
Long Sleeve	LO3	123	200	25	100	M12	180	55 - 65
Standard Sleeve	YF2	87	150	32	76	M16	160	95 - 120
Long Sleeve	YF3	123	200	32	115	M16	190	95 - 120
Standard Sleeve	A2E	87	150	32	76	M16	160	95 - 120
Long Sleeve	A2H	125	200	32	115	M16	190	95 - 120
Standard Sleeve	XSXG	254	200	57	117	M16	400	95 - 120

L= Distance back from end of pipe that must be rounded, meet tolerances, and free from any wrapping to ensure correct assembly.

Large Diameter Flange Adaptors (BS EN 1092-1 PN25 Drilling)

Pipe OD (mm)	Pipe Material	Flange Drilling BS EN 1092-1		Tolerance on Pipe OD for Distance L		Gasket Mould No.	No. Notches In End Ring If Required	Flange Adaptor Section Type		Flange Adaptor Studs No. x Dia	Weight (kg)		Dimensions						Flange Adaptor Studs Length	
		Nominal	Drilling	(mm) +	(mm) -			Standard Sleeve	Long Sleeve		Standard Sleeve	Long Sleeve	Diameter A (mm)	Flange OD A1 (mm)	Flange Thickness T (mm)	Flange Bolts No. x Dia	Overall C Standard Sleeve (mm)	Overall C Long Sleeve (mm)	Standard Sleeve	Long Sleeve
1016	Steel	1000	PN25	1.6	1.6	J119M	Not Rqd.	A2E	A2H	14 x M16	202.2	213.5	1140	1320	38	28 x M52	182	212	160	190
1019	Coated Steel	1000	PN25	1.6	1.6	J119M	Not Rqd.	A2E	A2H	14 x M16	200.7	212.1	1144	1320	38	28 x M52	182	212	160	190
1048	Ductile Iron	1000	PN25	1.0	5.0	J119M	14	A2E	A2H	14 x M16	188.3	199.9	1171	1320	38	28 x M52	182	212	160	190
1118	Steel	1100	PN25	1.6	1.6	J120M	Not Rqd.	A2E	A2H	16 x M16	218.1	230.6	1242	1420	38	32 x M52	182	212	160	190
1121	Coated Steel	1100	PN25	1.6	1.6	J120M	Not Rqd.	A2E	A2H	16 x M16	216.4	228.9	1246	1420	38	32 x M52	182	212	160	190
1152	Ductile Iron	1100	PN25	1.0	6.0	J121M	16	A2E	A2H	16 x M16	201.6	214.5	1275	1420	38	32 x M52	182	212	160	190
1219	Steel	1200	PN25	1.6	1.6	J121M	Not Rqd.	A2E	A2H	16 x M16	243.5	257.1	1343	1530	38	32 x M52	182	212	160	190
1222	Coated Steel	1200	PN25	1.6	1.6	J121M	Not Rqd.	A2E	A2H	16 x M16	242.0	255.6	1347	1530	38	32 x M52	182	212	160	190
1255	Ductile Iron	1200	PN25	1.0	6.0	J122M	16	A2E	A2H	16 x M16	224.8	243.4	1378	1530	38	32 x M52	182	212	160	190

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Large Diameter Flange Adaptors OD1016 - 1255mm to BS EN 1092-1 PN25 Drilling

Datasheet 4/4

Technical Information

Viking Johnson manufacture flange adaptors to any pipe OD and flange drilling. If the product required is not shown in any of our tables please contact Viking Johnson who can provide the relevant information.

Working Pressure Rating

For Water / Wastewater applications in accordance with flange rating.

Gas 6 bar

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

End Load Due to Internal Pressure

Dedicated Flange Adaptors DO NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out from the coupling.

Tie Rods

When using tie rods to provide restraint, depending on the pipe OD & flange drilling the flange adaptor end ring may need to be notched to allow the tie rod to pass over.

The Large Diameter Flange Adaptor Technical Data (BS EN 1092-1 PN25 Drilling) Table provides details on:

- Those products that do not require notching (i.e. there is no interference between the tie rods and end ring) - indicated by “Not Rqd.”
- Those products where there is interference between the tie rod and end ring and do require notching, with the number of notches provided as standard indicated.

Tie Rod Yield Strength

The number of notches indicated assumes the use of tie rods with a minimum yield strength of 725 N/mm^2.

If tie rods with a lower yield strength are used, then depending on the working pressure an increased number than that specified in the table may be required; in this situation please advise Viking Johnson of the number of notches and we will accommodate your requirements.

Temperature Rating of Product

EPDM -20°C to +90°C

Nitrile -20°C to +90°C

Other Gasket Grades Contact Viking Johnson.

For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

Approvals

The following water contact materials used in Large Diameter Dedicated products are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA.

EPDM Gaskets:

- WRAS

In addition to the above, Large Diameter Dedicated range as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Flange Body & End Ring

Steel to BS EN10025-2: Grade S275JR

Gaskets: LO2/LO3/YF2/YF3

Rubber 80 IRHD Moulded Compound to BS EN681-1: Type WA,WC,WG

BS EN682: Type G

(other materials available on request)

Gaskets: A2E/A2H/XSXG

Rubber 70 IRHD Moulded Compound to BS EN681-1: Type WA, WC, WG

BS EN682: Type G

(other materials available on request)

Coatings

Body, Flange & End Ring:

- Rilsan Nylon 11 to WIS 4-52-01 Part 1

Nuts & Studs:

- Sheraplex coated to WIS 4-52-03

Studs

Steel to BS EN ISO898-1: Property Class 4.8

Nuts

Steel to BS4190: Grade 4

Washers

Stainless Steel to BS1449:Part 2: Grade 304S15

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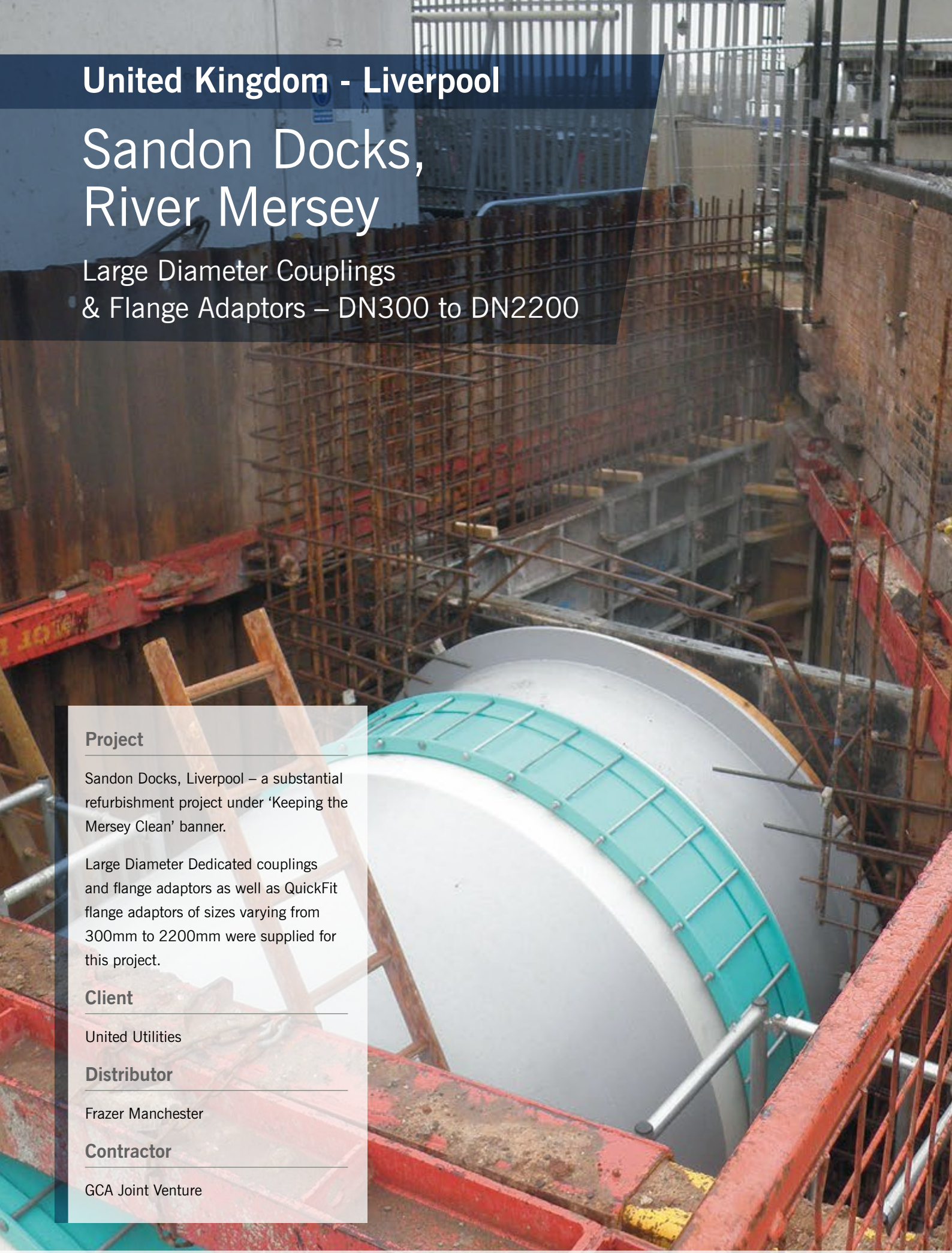
United Kingdom - Liverpool

Sandon Docks, River Mersey

Large Diameter Couplings & Flange Adaptors – DN300 to DN2200



Project

Sandon Docks, Liverpool – a substantial refurbishment project under 'Keeping the Mersey Clean' banner.

Large Diameter Dedicated couplings and flange adaptors as well as QuickFit flange adaptors of sizes varying from 300mm to 2200mm were supplied for this project.

Client

United Utilities

Distributor

Frazer Manchester

Contractor

GCA Joint Venture

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Large Diameter Order / Enquiry Form

Large Diameter is a bespoke product and Viking Johnson requires the following information to assist with the quotation process. This page can be copied from the brochure or a form fillable PDF is available on the website www.vikingjonson.com.

Please complete the form and send via email to: info@vikingjohnson.com

Company Name		Date	
Contact Name		Email	
Customer Address		Telephone	
		Fax	
		Quantity	
		Delivery Date	

Pipe Details

Outside Diameter		Pipe Coating (Especially important on steel pipes)	
Outside Diameter Tolerances		Pipe Coating Thickness	
Pipe Material (Please tick)		Working/Test/Design Pressure	

Ductile Iron	☐	Cast Iron	☐	Steel	☐	Stainless Steel	☐
PVC	☐	PE	☐	HEP30	☐	GRP	☐
ABS	☐	Clay	☐	Concrete	☐	Asbestos Cement	☐
Copper	☐	Lead	☐				

Other (Please specify)

Product Requirements

Coating Required		Flange Rating	
Gasket Grade Required or medium conveyed		Drilling Pattern	
		Locating Plugs (If required)	

Packaging & Carriage Requirements

Any Special Documents / Inspection Requirements

Any Other Special Requirements

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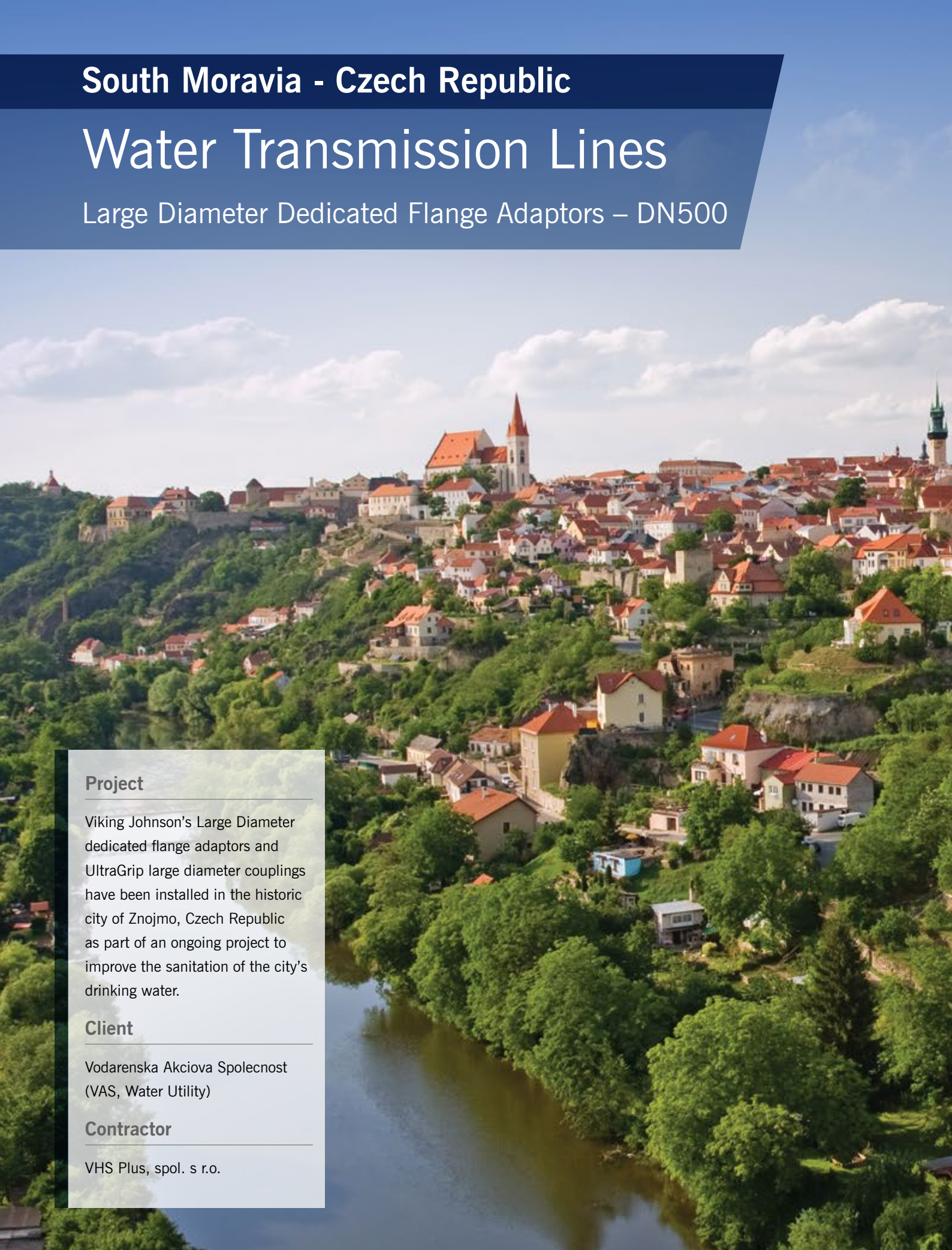
South Moravia - Czech Republic

Water Transmission Lines

Large Diameter Dedicated Flange Adaptors – DN500



Project

Viking Johnson's Large Diameter dedicated flange adaptors and UltraGrip large diameter couplings have been installed in the historic city of Znojmo, Czech Republic as part of an ongoing project to improve the sanitation of the city's drinking water.

Client

Vodarenska Akciova Spolecnost (VAS, Water Utility)

Contractor

VHS Plus, spol. s r.o.

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QuickFit®

Couplings & Flange Adaptors DN50 - DN300

Close Tolerance Pre-assembled Fittings

VIKING JOHNSON®

Dedicated Couplings & Flange Adaptors

The QuickFit coupling range is designed to connect plain ended pipes with similar outside diameters. The full range includes couplings and flange adaptors in nominal sizes between DN50 (2”) and DN300 (12”) and accommodates PVC, coated and uncoated steel and ductile iron pipe.

New Lay & High Pressure Applications

The QuickFit range is ideal for new lay schemes as the fittings are preassembled with close tolerance to allow for quick installation. They are also suitable for high pressure applications – DN50 to DN125 are available up to 46 bar, DN150 to DN300 to 29 bar as standard. Higher pressures are available as fabricated specials.

Transferring the End Load

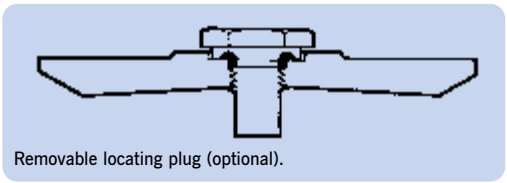
QuickFit flange adaptors are not end load-bearing products and in the event that the application requires restraining, tie rods can be used to transfer the end load forces to an anchor flange on the pipe. The design of QuickFit flange adaptors is such that there is sufficient clearance to allow the tie rods to pass over the end ring without the need for notching. This means that one product can be offered for both flexible and tied configurations, thus reducing stock holding.

Removable Locating Plugs – Prevent Coupling Creep

QuickFit couplings are available with removable locating plugs, to prevent coupling creep on above ground pipelines caused by repeated pipe movement from temperature variation, continuous vibrations and movement. The removable locating plug (optional) ensures the coupling can slide fully over the pipe ends for quick and simple installation. Once installed they engage between the pipe ends to prevent the coupling moving beyond fixed limits.

QuickFit Coupling

QuickFit Flange Adaptor



Removable locating plug (optional).

Standard Pipe Materials

Ductile Iron | ABS | Steel | PVC | HEP30

QuickFit Couplings

Product Design Benefits

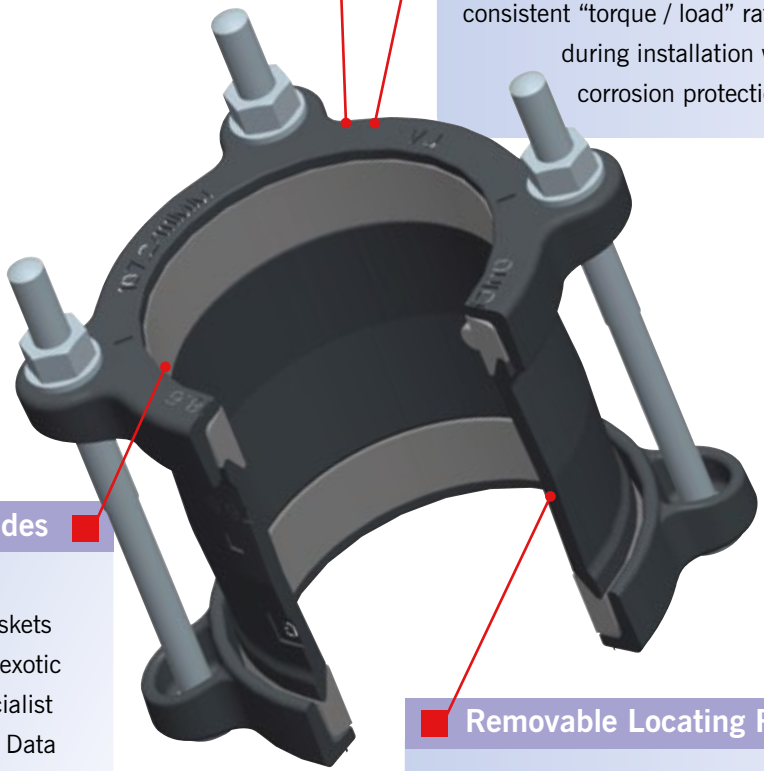
Simple to Fit

One size of captive, non-rotating bolt across whole range requiring a single spanner to install along with one bolt torque across range.

Corrosion Protection

Metal components are coated with Rilsan Nylon 11, which is WRAS approved for use with potable water, and offers long term corrosion protection and resistance to impact damage.

The nuts & bolts are Sheraplex coated to WIS 4-52-03, which does not gall when re-used and offers a consistent “torque / load” ratio reducing the sensitivity during installation while providing long term corrosion protection.



Various Gasket Grades

EPDM (water quality approved) and Nitrile gaskets as standard. Alternative exotic grades available for specialist applications (see Design Data for more details).

Removable Locating Plug

Optional feature is removal locating plug to prevent pipe creep on above ground pipework.

Customer Benefits

- QuickFit couplings allow 6° of angular deflection between pipes, accommodating movement in service (e.g. ground settlement) and making for easier installation (e.g. long radius curves and misaligned pipes with two fittings and a short length of pipe).
- QuickFit couplings allow 10mm of expansion & contraction, accommodating movement in service to relieve stress in the pipeline (e.g. temperature changes in pipelines).
- Stock reduction is accomplished through the tolerance on OD means that both steel and coated steel are covered in the same fitting.
- Rapid installation of new lay pipework through tolerances designed round steel, coated steel and ductile iron pipes and need to use simply 19mm A/F socket and torque wrench.
- Standard product supplied with Rilsan Nylon coating, EPDM gaskets and Sheraplex coated bolts making it ideal for water / waste water sector; other specialist coatings, bolt materials and exotic gasket grades are available for specialist applications are available (contact Viking Johnson for further advice).
- Fully galvanised version is available – see Marine Couplings section.

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QuickFit Flange Adaptors

Product Design Benefits

Flexible Flange Drilling

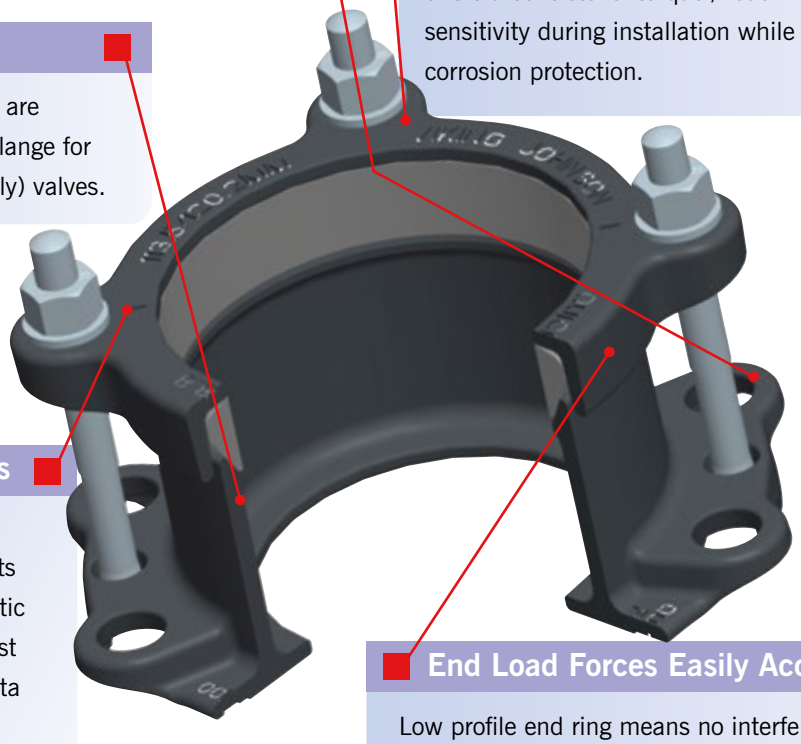
As standard the flange adaptors are multi drilled to accommodate BS EN 1092-2 PN10 & 16. Flange drilling to other standards available to accommodate site requirements (see Datasheets)

Full Bore Flange

As standard flange adaptors are supplied with full “S Bore” flange for use with wafer style (butterfly) valves.

Various Gasket Grades

EPDM (water quality approved) and Nitrile gaskets as standard. Alternative exotic grades available for specialist applications (see Design Data for more details).



Corrosion Protection

Metal components are coated with Rilsan Nylon 11, which is WRAS approved for use with potable water, and offers long term corrosion protection and resistance to impact damage.

The nuts & bolts are Sheraplex coated to WIS 4-52-03, which does not gall when re-used and offers a consistent “torque / load” ratio reducing the sensitivity during installation while providing long term corrosion protection.

End Load Forces Easily Accommodated

Low profile end ring means no interference with tie rods used to harness the flange adaptor to accommodate end load forces.

Customer Benefits

- QuickFit flange adaptors allow 3° angular deflection between pipes and flange equipment, accommodating movement in service (e.g. ground settlement) and making for easier installation.
- QuickFit flange adaptors allow 5mm expansion & contraction, accommodating movement in service to relieve stress in the pipeline (e.g. temperature changes in pipelines).
- Stock reduction is accomplished from:-
  - Use of low profile end rings that do not interfere with tie rods means standard flange adaptor can be used as either a flexible or harnessed version.
  - Tolerance on OD means that both steel and coated steel are covered in the same fitting.
- The full bore flange supplied as standard in QuickFit flange adaptors with BS EN 1092-2 PN10 & 16 drillings make them ideal for use with wafer style valves. All other flange adaptors come with either clear bore or full face options.
- Rapid installation of new lay pipework through tolerances designed round steel, coated steel and ductile iron pipes and need to use simply 19mm A/F socket and torque wrench.
- Standard product supplied with Rilsan Nylon coating, EPDM gaskets and Sheraplex coated bolts making it ideal for water / waste water sector; other specialist coatings, bolt materials and exotic gasket grades are available for specialist applications are available (contact Viking Johnson for further advice).
- Fully galvanised version is available – see Marine Couplings section.

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United Kingdom - Blackburn

Hyndburn Wastewater Treatment Plant

QuickFit - DN150

Project

QuickFits are installed on the transfer pipework to the pumping station and the perforated basket screens, at Hyndburn Wastewater Treatment Plant, which serves a population of 114,000 in the Great Harwood area of Blackburn.
A recent extension to the plant aims to increase the capacity of effluent treated each day.

Client

United Utilities

Contractor

Valves & Engineered Products

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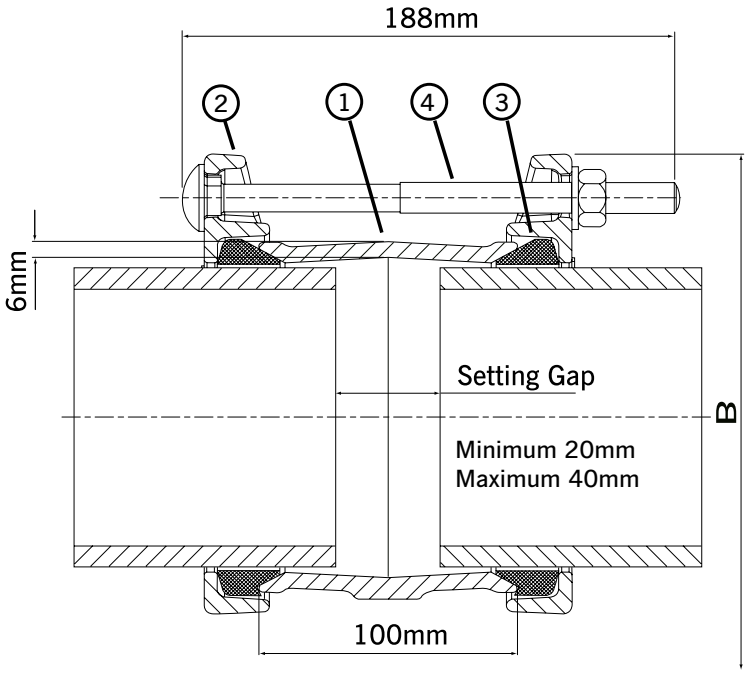
QuickFit Couplings

Datasheet 1/2

Coupling



Key

1 = Centre Sleeve
2 = End Ring
3 = Gasket
5 = Bolts, Nut & Washer

QuickFit Couplings

Size Range (mm)		Working Pressure (bar)	End Ring OD B (mm)	Bolt Size No.-Dia x Length	Gasket Mould No.	Weight (kg)
Min	Max					
47.9	51.3	46.6	136.0	2-M12 x 180	12477/41	2.22
59.5	63.3	46.6	148.0	2-M12 x 180	12477/1	2.51
75.3	79.1	46.6	164.0	2-M12 x 180	12477/5	2.89
88.1	91.9	46.6	177.0	4-M12 x 180	12477/7	3.81
95.8	100.2	46.6	185.0	4-M12 x 180	12477/10	4.00
107.2	111.0	46.6	196.0	4-M12 x 180	12477/12	4.26
113.5	120.2	46.6	205.0	4-M12 x 180	12477/15	4.48
138.9	142.7	44	228.0	4-M12 x 180	12477/19	5.02
158.2	162.0	38.8	254.0	4-M12 x 180	12477/21	6.32
167.5	172.3	36.9	264.0	4-M12 x 180	12477/24	6.59
192.9	196.7	32.2	292.0	4-M12 x 180	12477/26	8.06
218.3	224.4	35.8	319.0	4-M12 x 180	12477/29	8.89
272.2	276.5	34.8	372.0	6-M12 x 180	12477/34	11.15
323.1	328.6	29.5	424.0	6-M12 x 180	12477/37	12.76

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QuickFit Couplings

Datasheet 2/2

Technical Information

Working Pressure Rating

For Water / Wastewater applications as detailed in QuickFit Coupling Technical Data Table.

Gas 6 bar

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Angularity

Couplings 6°

Bolt Torque/Spanner

M12; Torque 55-65Nm on every bolt

Spanner size A/F 19mm

Temperature Rating of Product

EPDM -20°C to +90°C

Nitrile -20°C to +90°C

For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

End Load Due to Internal Pressure

QuickFit DOES NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out.

Approvals

The following water contact materials used in QuickFit are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

In addition to the above, QuickFit range as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Centre Sleeve & End Rings

Ductile Iron to BS EN1563: Symbol EN-GJS-450-10

Gaskets

EPDM to BS EN681-1, TYPE WA, WC

Nitrile to BS EN682:Type G

Other grades are available - contact Viking Johnson for details

Coatings

Centre Sleeve & End Rings:

- Rilsan Nylon 11 to WIS 4-52-01 Part 1

Other coatings available: Scotchkote, Galvanised

Tee bolts, CDX Bolts & Nuts:

- Sheraplex to WIS 4-52-03

Tee Bolts/Bolts

Standard - Steel to BS EN ISO 898-1: property class 4.8

Option - Stainless Steel to BS EN ISO 3506-1: grade A4 property class 50

Nuts

Standard - Steel to BS EN 20898-2: property class 8

Option - Stainless Steel to BS EN ISO 3506-2: grade A4 property class 80

Washers

Stainless Steel to BS1449:PART 2: GRADE 304S15

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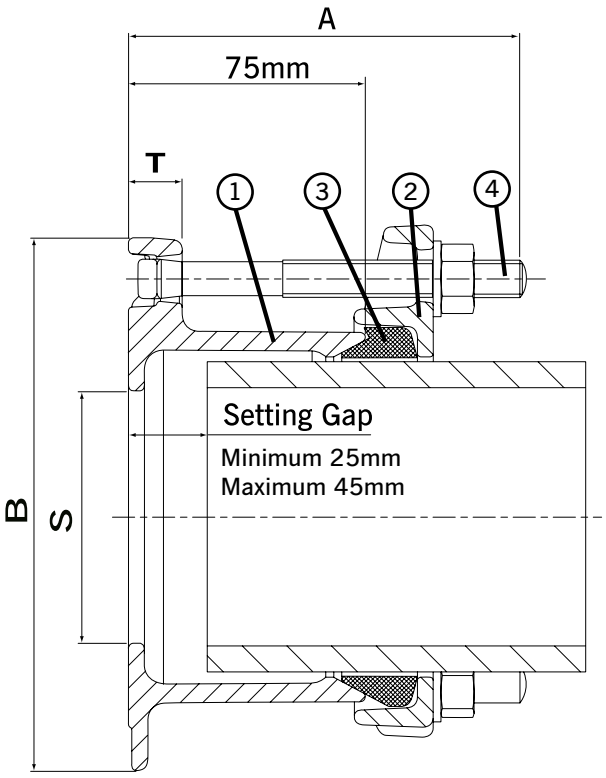
QuickFit Flange Adaptors - Standard Cast

Datasheet 1/2

Flange Adaptor



Key

1 = Centre Sleeve
2 = End Ring
3 = Gasket
5 = Bolts, Nut & Washer

QuickFit Flange Adaptors

Size Range (mm)		Flange Detail (mm)		Overall Length A (mm)	S Bore S (mm)	Flange Drilling	Bolt Size No.-Dia x Length	Gasket Mould No.	Weight (kg)
Min	Max	Flange OD (B)	Flange Thickness (T)						
59.5	63.3	161.0	17.0	125.0	50.0	50 PN10,16,25,40	2-M12 x 115	12477/1	2.28
75.3	79.1	181.0	17.0	125.0	65.0	65 PN10,16	2-M12 x 115	12477/5	2.66
88.1	91.9	196.0	17.0	126.0	80.0	80 PN10,16,25,40	4-M12 x 115	12477/7	3.48
95.8	100.2	196.0	17.0	126.0	80.0	80 PN10,16,25,40	4-M12 x 115	12477/10	3.59
107.2	111.0	216.0	17.0	126.0	100.0	100 PN10,16	4-M12 x 115	12477/12	3.91
113.5	120.2	216.0	17.0	126.0	100.0	100 PN10,16	4-M12 x 115	12477/15	4.03
138.9	142.7	246.0	17.0	126.0	125.0	125 PN10,16	4-M12 x 115	12477/19	4.71
158.2	162.0	284.0	17.0	126.0	150.0	150 PN10,16	4-M12 x 115	12477/21	5.76
167.5	172.3	284.0	17.0	126.0	150.0	150 PN10,16	4-M12 x 115	12477/24	5.87
192.9	196.7	339.0	20.0	126.0	199.0	200 PN10,16	4-M12 x 115	12477/26	8.43
218.3	224.4	339.0	20.0	126.0	200.0	200 PN10,16	4-M12 x 115	12477/29	8.49
272.2	276.5	405.0	20.0	129.0	250.0	250 PN10,16	6-M12 x 115	12477/34	11.38
323.1	328.6	455.0	20.0	129.0	300.0	300 PN10,16	6-M12 x 115	12477/37	13.04

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QuickFit Flange Adaptors - Standard Cast

Datasheet 2/2

Technical Information

Working Pressure Rating

Water 16 bar

Gas 6 bar

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Angularity

Flange Adaptor 3°

Bolt Torque/Spanner

M12; Torque 55-65Nm on every bolt

Spanner size A/F 19mm

Temperature Rating of Product

EPDM -20°C to +90°C

Nitrile -20°C to +90°C

For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

Tied Flange Adaptor

The design of the new QuickFit flange adaptor is such that there is sufficient clearance to allow tie rods (used to restrain them) to pass over without the need for notching

End Load Due to Internal Pressure

QuickFit DOES NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out.

Approvals

The following water contact materials used in QuickFit are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

In addition to the above, QuickFit range as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Centre Sleeve & End Rings

Ductile Iron to BS EN1563: Symbol EN-GJS-450-10

Gaskets

EPDM to BS EN681-1, TYPE WA, WC

Nitrile to BS EN682:Type G

Other grades are available - contact Viking Johnson for details

Coatings

Flange Adaptor Body & End Ring:

- Rilsan Nylon 11 to WIS 4-52-01 Part 1

Other coatings available: Scotchkote, Galvanised

Tee bolts, CDX Bolts & Nuts:

- Sheraplex to WIS 4-52-03

Tee Bolts/Bolts

Standard - Steel to BS EN ISO 898-1: property class 4.8

Option - Stainless Steel to BS EN ISO 3506-1: grade A4 property class 50

Nuts

Standard - Steel to BS EN 20898-2: property class 8

Option - Stainless Steel to BS EN ISO 3506-2: grade A4 property class 80

Washers

Stainless Steel to BS1449:PART 2: GRADE 304S15

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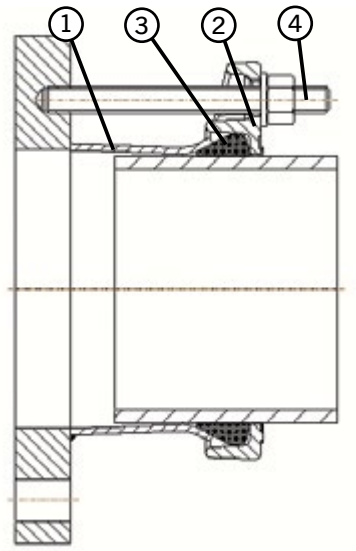
QuickFit Flange Adaptors - Fabricated (Standard Drillings)

Datasheet 1/4

Flange Adaptor



Key

1 = Body
2 = End Ring
3 = Gasket
5 = Studs

Y/N = ✓ = Can make QFFA with this drilling

✗ = Cannot make QFFA with this drilling

Tied? = ✓ = Can offer as tied FA – notching not required

✗ = Cannot offer as tied FA – bolts clash with end ring – cannot notch

Fabricated QuickFit Flange Adaptors - Standard Drillings Available

OD	Flange Details	BS EN 1092											
	Nom (mm)	PN2.5		PN6		PN10		PN16		PN25		PN40	
		Y/N	Tied?	Y/N	Tied?	Y/N	Tied?	Y/N	Tied?	Y/N	Tied?	Y/N	Tied?
059.5 - 063.3	50	✓	✗	✓	✗								
075.3 - 079.1	65	✓	✗	✓	✗					✓	✓	✓	✓
088.1 - 091.9	80	✓	✗	✓	✗								
095.8 - 100.2	80	✓	✗	✓	✗								
107.2 - 111.0	100	✓	✓	✓	✓					✓	✓	✓	✓
113.5 - 120.2	100	✓	✗	✓	✗					✓	✓	✓	✓
138.9 - 142.7	125	✓	✗	✓	✗					✓	✓	✓	✓
158.2 - 162.0	150	✓	✗	✓	✗					✓	✓	✗	✗
167.5 - 172.3	150	✓	✗	✓	✗					✓	✓	✗	✗
192.2 - 196.7	200	✓	✓	✓	✓					✓	✓	✗	✗
218.3 - 224.4	200	✓	✗	✓	✗					✓	✓	✗	✗
272.2 - 276.5	250	✓	✗	✓	✗					✓	✓	✗	✗
323.1 - 328.6	300	✓	✗	✓	✗					✗	✗	✗	✗

= Denotes standard cast product

OD	Flange Details	BS 10:1962 Table											
	Nom (")	A		D		E		F		H		J	
		Y/N	Tied?	Y/N	Tied?	Y/N	Tied?	Y/N	Tied?	Y/N	Tied?	Y/N	Tied?
059.5 - 063.3	2	✓	✗	✓	✗	✓	✗	✓	✓	✓	✓	✗	✗
075.3 - 079.1	2.5	✓	✗	✓	✗	✓	✗	✓	✓	✓	✓	✗	✗
088.1 - 091.9	3	✓	✗	✓	✗	✓	✗	✓	✓	✓	✓	✗	✗
095.8 - 100.2	3	✓	✗	✓	✗	✓	✗	✓	✓	✓	✓	✗	✗
107.2 - 111.0	4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
113.5 - 120.2	4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
138.9 - 142.7	5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
158.2 - 162.0	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
167.5 - 172.3	6	✓	✗	✓	✗	✓	✗	✓	✓	✓	✓	✗	✗
192.2 - 196.7	8	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗
218.3 - 224.4	8	✓	✓	✓	✓	✓	✗	✓	✓	✓	✓	✗	✗
272.2 - 276.5	10	✗	✗	✗	✗	✓	✓	✓	✓	✓	✓	✗	✗
323.1 - 328.6	12	✗	✗	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗

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QuickFit Flange Adaptors - Fabricated (Standard Drillings)

Datasheet 2/4

Technical Information

Working Pressure Rating

Water working pressure in accordance with the flange rating

Gas 6 bar

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Angularity

Flange Adaptor 3°

Bolt Torque/Spanner

M12; Torque 55-65Nm on every bolt

Spanner size A/F 19mm

Temperature Rating of Product

EPDM -20°C to +90°C

Nitrile -20°C to +90°C

For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

Approvals

The following water contact materials used in QuickFit are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

Materials & Relevant Standards

Flange

Steel to BS EN 10025-2: Grade S275JR

Sleeve Options:

- Steel Tube to BS EN 10216-1: Grade P265TRI
- Steel Tube to BS EN 10217-1:
- Steel BS EN10025-2: Grade S275JR

End Rings

Ductile Iron to BS EN1563: Symbol EN GJS-450-10

Gaskets

EPDM to BS EN681-1, TYPE WA, WC

Nitrile to BS EN682:Type G

Other grades are available - contact Viking Johnson for details

Tee Bolts/Bolts

Standard - Steel to BS EN ISO 898-1: property class 4.8

Option - Stainless Steel to BS EN ISO 3506-1: grade A4 property class 50

Nuts

Steel to BS EN 20898-2: property class 8

Option - Stainless Steel to BS EN ISO 3506-2: grade A4 property class 80

Washers

Stainless Steel to BS1449:PART 2: GRADE 304S15

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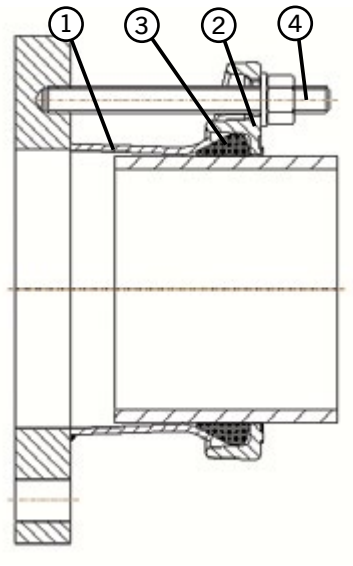
QuickFit Flange Adaptors - Fabricated (Standard Drillings)

Datasheet 3/4

Flange Adaptor



Key

1 = Body
2 = End Ring
3 = Gasket
5 = Studs

Y/N = ✓ = Can make QFFA with this drilling

✗ = Cannot make QFFA with this drilling

Tied? = ✓ = Can offer as tied FA – notching not required

✗ = Cannot offer as tied FA – bolts clash with end ring – cannot notch

Fabricated QuickFit Flange Adaptors - Standard Drillings Available

OD	Flange Details	ASME/ANSI B16.1/ASME B16.5 Class							
	Nom - (")	125		150		250		300	
		Y/N	Tied?	Y/N	Tied?	Y/N	Tied?	Y/N	Tied?
059.5 - 063.3	2	✓	✗	✓	✗	✓	✓	✗	✗
075.3 - 079.1	2.5	✓	✓	✓	✓	✓	✓	✗	✗
088.1 - 091.9	3	✓	✓	✓	✓	✓	✓	✗	✗
095.8 - 100.2	3	✓	✗	✓	✗	✓	✓	✗	✗
107.2 - 111.0	4	✓	✓	✓	✓	✓	✓	✗	✗
113.5 - 120.2	4	✓	✓	✓	✓	✓	✓	✗	✗
138.9 - 142.7	5	✓	✓	✓	✓	✓	✓	✗	✗
158.2 - 162.0	6	✓	✓	✓	✓	✓	✓	✗	✗
167.5 - 172.3	6	✓	✓	✓	✓	✓	✓	✗	✗
192.2 - 196.7	8	✓	✓	✓	✓	✗	✗	✗	✗
218.3 - 224.4	8	✓	✓	✓	✓	✓	✓	✗	✗
272.2 - 276.5	10	✓	✓	✓	✓	✗	✗	✗	✗
323.1 - 328.6	12	✓	✓	✓	✓	✗	✗	✗	✗

OD	Flange Details	AWWA C207 Class							
	Nom - (")	B		D		E		F	
		Y/N	Tied?	Y/N	Tied?	Y/N	Tied?	Y/N	Tied?
107.2 - 111.0	4	✓	✓	✓	✓	✓	✓	✓	✓
113.5 - 120.2	4	✓	✓	✓	✓	✓	✓	✓	✓
138.9 - 142.7	5	✓	✓	✓	✓	✓	✓	✓	✓
158.2 - 162.0	6	✓	✓	✓	✓	✓	✓	✓	✓
167.5 - 172.3	6	✓	✓	✓	✓	✓	✓	✓	✓
192.2 - 196.7	8	✓	✓	✓	✓	✓	✓	✓	✓
218.3 - 224.4	8	✓	✓	✓	✓	✓	✓	✓	✓
272.2 - 276.5	10	✓	✓	✓	✓	✓	✓	✗	✗
323.1 - 328.6	12	✓	✓	✓	✓	✓	✓	✗	✗

OD	Flange Details	AS2129 Table							
	Nom - (mm)	A		C		D		E	
		Y/N	Tied?	Y/N	Tied?	Y/N	Tied?	Y/N	Tied?
059.5 - 063.3	50	✓	✗	✓	✗	✓	✗	✓	✗
075.3 - 079.1	65	✓	✗	✓	✗	✓	✗	✓	✗
088.1 - 091.9	80	✓	✗	✓	✗	✓	✗	✓	✗
095.8 - 100.2	80	✓	✗	✓	✗	✓	✗	✓	✗
107.2 - 111.0	100	✓	✓	✓	✓	✓	✓	✓	✓
113.5 - 120.2	100	✓	✗	✓	✗	✓	✗	✓	✗
138.9 - 142.7	125	✓	✓	✓	✓	✓	✓	✓	✓
158.2 - 162.0	150	✓	✓	✓	✓	✓	✓	✓	✓
167.5 - 172.3	150	✓	✗	✓	✗	✓	✗	✓	✗
192.2 - 196.7	200	✓	✓	✓	✓	✓	✓	✓	✓
218.3 - 224.4	200	✓	✗	✓	✗	✓	✗	✓	✗
272.2 - 276.5	250	✗	✗	✗	✗	✗	✗	✓	✓
323.1 - 328.6	300	✗	✗	✓	✓	✓	✓	✓	✗

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QuickFit Flange Adaptors - Fabricated (Standard Drillings)

Datasheet 4/4

Technical Information

Working Pressure Rating

Water working pressure in accordance with the flange rating

Gas 6 bar

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Angularity

Flange Adaptor 3°

Bolt Torque/Spanner

M12; Torque 55-65Nm on every bolt

Spanner size A/F 19mm

Temperature Rating of Product

EPDM -20°C to +90°C

Nitrile -20°C to +90°C

For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

Approvals

The following water contact materials used in QuickFit are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

Materials & Relevant Standards

Flange

Steel to BS EN 10025-2: Grade S275JR

Sleeve Options:

- Steel Tube to BS EN 10216-1: Grade P265TRI
- Steel Tube to BS EN 10217-1:
- Steel BS EN10025-2: Grade S275JR

End Rings

Ductile Iron to BS EN1563: Symbol EN GJS-450-10

Gaskets

EPDM to BS EN681-1, TYPE WA, WC

Nitrile to BS EN682:Type G

Other grades are available - contact Viking Johnson for details

Tee Bolts/Bolts

Standard - Steel to BS EN ISO 898-1: property class 4.8

Option - Stainless Steel to BS EN ISO 3506-1: grade A4 property class 50

Nuts

Steel to BS EN 20898-2: property class 8

Option - Stainless Steel to BS EN ISO 3506-2: grade A4 property class 80

Washers

Stainless Steel to BS1449:PART 2: GRADE 304S15

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United Kingdom - Liverpool

Burst Water Main

Large Diameter Couplings

Project

Catastrophic mains burst in Huyton, Liverpool flooded many homes in the area. Viking Johnson supplied a pair of 1048mm x 1084mm ductile to iron cast stepped couplings to enable emergency repairs to be made quickly to the damaged section of pipe.

Client

United Utilities

Contractor

Enterprise

Crane BS&U are solely the provider of products and have no direct influence on, or take any responsibility for any working practices employed or depicted in the images enclosed to install such products.

Marine™

Couplings & Flange Adaptors DN50 - DN300

Simple Approved & Pre-assembled Fittings

VIKING JOHNSON®

Pre-assembled & Approved Fittings for Marine Applications

The proven Marine range has been designed and approved for use in marine environments. Alongside all the features and benefits of Viking Johnson's standard range, the marine fittings have attained international seals of approval from prominent marine authorities including American Bureau of Shipping (ABS) and Bureau Veritas.

Allowing for Movement

In marine installations, pipework is often anchored to the frame of the vessel so particular care must be taken to allow for the movement of pipework as the ship travels. Marine couplings and flange adaptors aim to relieve the strain and stress that pipework may experience on board.

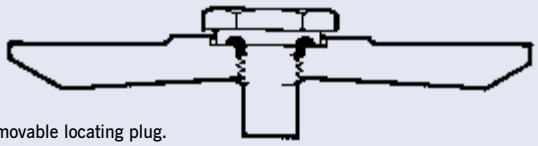
Enhanced Design Features

The Marine range has enhanced design features including a galvanized finish, nitrile gasket and a locating plug which prevents coupling creep caused by repeated pipe movement. The removable locating plug ensures the coupling can slide fully over the pipe ends to ease installation and when installed, they engage between the pipe ends preventing the coupling moving beyond fixed limits.

Typical Marine Applications

- Deck wash
- Sanitary supply
- Domestic fresh water
- Oil fuel transfer lines
- Scupper and discharge lines
- Cargo oil lines in tankers
- Hold-sounding pipes
- Inert gas
- Bilge lines
- Ballast lines
- Fuel and lubricating oil
- Filling and vent pipes
- Fresh and salt water systems

Note: Use on the above systems varies depending on the respective Marine Approval body; please consult with relevant one before using.



Removable locating plug.

Pipe Materials

Ductile Iron | Steel | PVC | GRP

Marine Couplings & Flange Adaptors

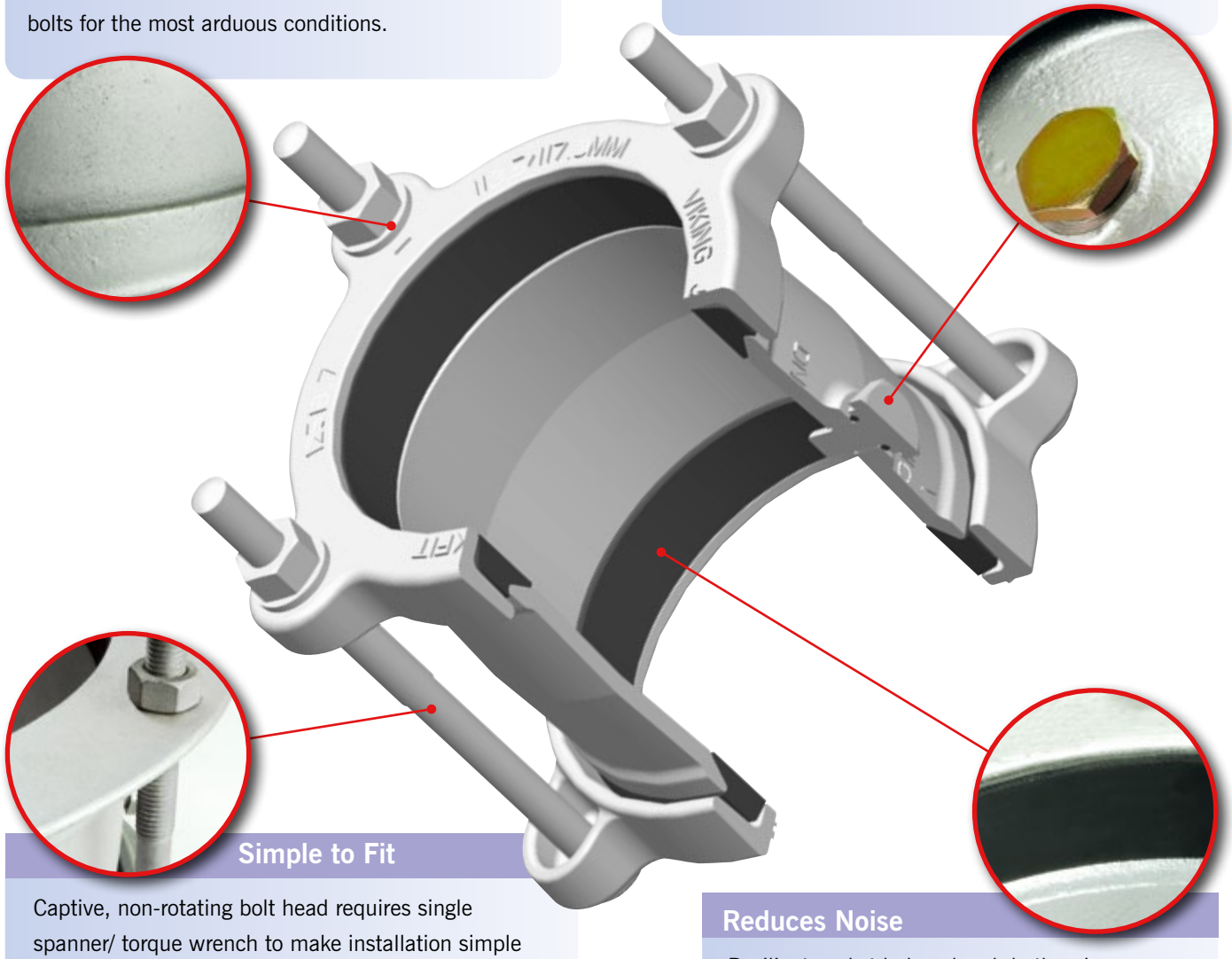
Product Design Benefits

Corrosion Protection

Available as standard with galvanised body and bolts for the most arduous conditions.

Fixed Fitting

Removable locating plug prevents coupling creep caused by continuous vibrations found onboard along with movement from temperature variations.



Simple to Fit

Captive, non-rotating bolt head requires single spanner/ torque wrench to make installation simple with one bolt size (M12) across range and one bolt torque (55-65Nm) for all pipe materials.

Reduces Noise

Resilient gasket helps absorb both noise and vibration.

Customer Benefits

- The Marine design allows angular movement, which caters for minor misalignment and pipe deflection with couplings up to 6º and flange adaptors to 3º. Vessel movement can be accommodated without using specialised fittings.
- Marine couplings are capable of accommodating 10mm of expansion/contraction per fitting, flange adaptors 5mm which reduces the need for supplementary expansion joints or bellows.
- Marine products up to DN300 are pre-assembled allowing quick and efficient installation, without the need for dismantling, even in the most difficult of conditions.

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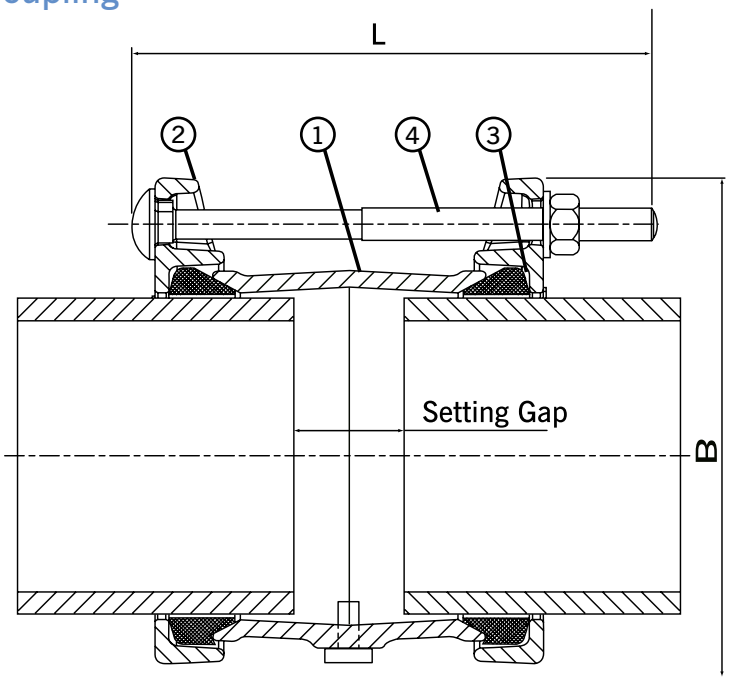
Marine Couplings

Datasheet 1/2

Coupling



Key

1 = Centre Sleeve
2 = End Ring
3 = Gasket
5 = Bolts, Nut & Washer

Marine Couplings

Pipe OD (mm)	W.P. (bar)	No. Plugs	End Ring OD B (mm)	L (mm)	Bolt Size No.-Dia x Length	Setting gap		Gasket Mould No.	Weight (kg)
						Min	Max		
047.9 - 051.3	46.6	1 Plug	136	188	2-M12 x 180	30	40	12477/41	2.22
059.5 - 063.3	46.6	1 Plug	148	188	2-M12 x 180	30	40	12477/1	2.51
075.3 - 079.1	46.6	1 Plug	164	188	2-M12 x 180	30	40	12477/5	2.89
088.1 - 091.9	46.6	1 Plug	177	188	4-M12 x 180	30	40	12477/7	3.81
107.2 - 111.0	46.6	1 Plug	196	188	4-M12 x 180	30	40	12477/12	4.26
113.5 - 120.2	46.6	1 Plug	205	188	4-M12 x 180	30	40	12477/15	4.48
138.9 - 142.7	44.0	1 Plug	228	188	4-M12 x 180	30	40	12477/19	5.02
158.2 - 162.0	38.8	1 Plug	254	188	4-M12 x 180	30	40	12477/21	6.32
167.5 - 172.3	36.9	1 Plug	264	188	4-M12 x 180	30	40	12477/24	6.59
192.2 - 196.7	32.2	2 Plug	292	188	4-M12 x 180	30	40	12477/26	8.06
218.3 - 224.4	35.8	2 Plug	319	188	4-M12 x 180	30	40	12477/29	8.89
272.2 - 276.5	34.8	2 Plug	372	188	6-M12 x 180	30	40	12477/34	11.15
323.1 - 328.6	29.5	2 Plug	424	188	6-M12 x 180	30	40	12477/37	12.76
355.6	23.2	2 Plug	446	243	6-M12 x 235	35	50	J51LS	19.60
406.4	27.2	2 Plug	497	243	8-M12 x 235	35	50	J53LS	22.40
457.0	24.2	3 Plug	548	243	8-M12 x 235	35	50	J55LS	24.90
508.0	27.4	3 Plug	598	243	10-M12 x 235	35	50	J57LS	27.80
560.0	24.9	3 Plug	649	243	10-M12 x 235	35	50	J59LS	30.20
610.0	22.9	3 Plug	700	243	10-M12 x 235	35	50	J60LS	32.70
660.0	24.3	3 Plug	751	243	12-M12 x 235	35	50	J61LS	35.50
711.0	22.6	3 Plug	802	243	12-M12 x 235	35	50	J63LS	38.00

Note: The above table is for steel pipe sizes - contact Viking Johnson for other pipe materials.

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Marine Couplings

Datasheet 2/2

Technical Information

Working Pressure Rating

For Water / Other Fluid applications as detailed in Marine Coupling Technical Data Table.

Gas 6 bar

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar.

Site Test Pressure

1.5 times working pressure for short duration (2 hours).

Angularity

Couplings 6°

Bolt Torque/Spanner

M12; Torque 55-65Nm on every bolt

Spanner size A/F 19mm

Temperature Rating of Product

EPDM -20°C to +90°C

Nitrile -20°C to +90°C

For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

End Load Due to Internal Pressure

Marine couplings / stepped couplings DO NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out.

Approvals

Viking Johnson marine couplings have the following shipping approvals:-

- ABS; Certificate of Design Assessments
- Bureau Veritas; Type Approval Certificate

Materials & Relevant Standards

Centre Sleeve & End Ring Options:

- Ductile Iron to BS EN1563 Symbol EN-GJS-450-10
- Steel to BS EN10025-2 Grade S275JR

Gaskets

EPDM to BS EN681-1, TYPE WA, WC

Nitrile to BS EN682 Type G

Other grades are available - contact Viking Johnson for details

Coating

Centre sleeve, End Ring, Bolts & Nuts:

- Galvanised

Locating Plug:

- Zn10

Bolts

Steel to BS EN ISO 898-1 property class 4.8

Option - Stainless Steel to BE EN ISO 3506-1: grade A4 property class 50

Nuts

Steel to BS EN 20898-2 property class 8

Option - Stainless Steel to BE EN ISO 3506-2: grade A4 property class 80

Washer

Stainless Steel to BS1449:Part 2 Grade 304S15

Locating Plugs

Steel to BS970: Part 3: Grade 230M07

Options

NBR Gasket without removable plugs

EPDM Gasket with removable plugs

EPDM Gasket without removable plugs

Flange adaptors available on request

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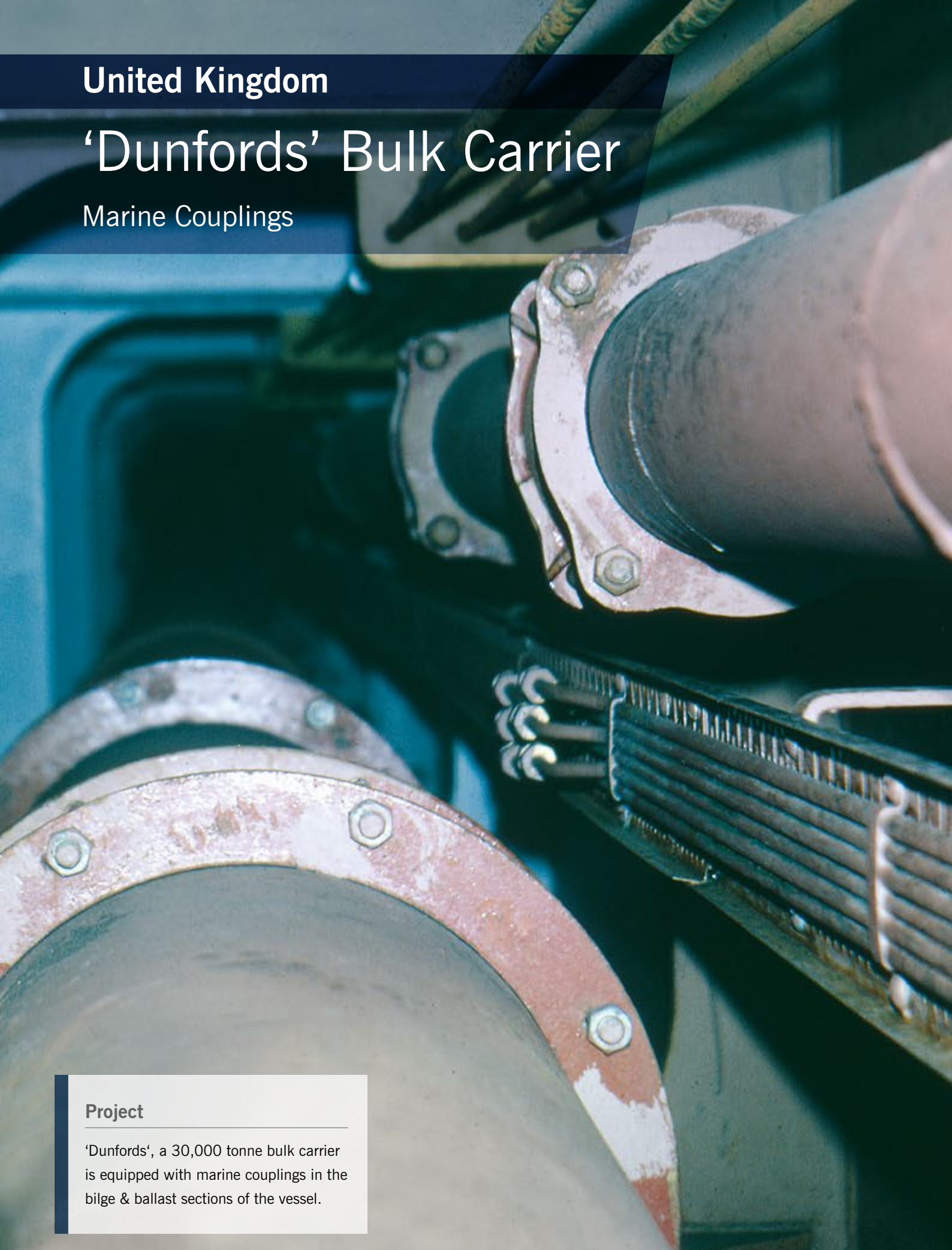
United Kingdom

‘Dunfords’ Bulk Carrier

Marine Couplings



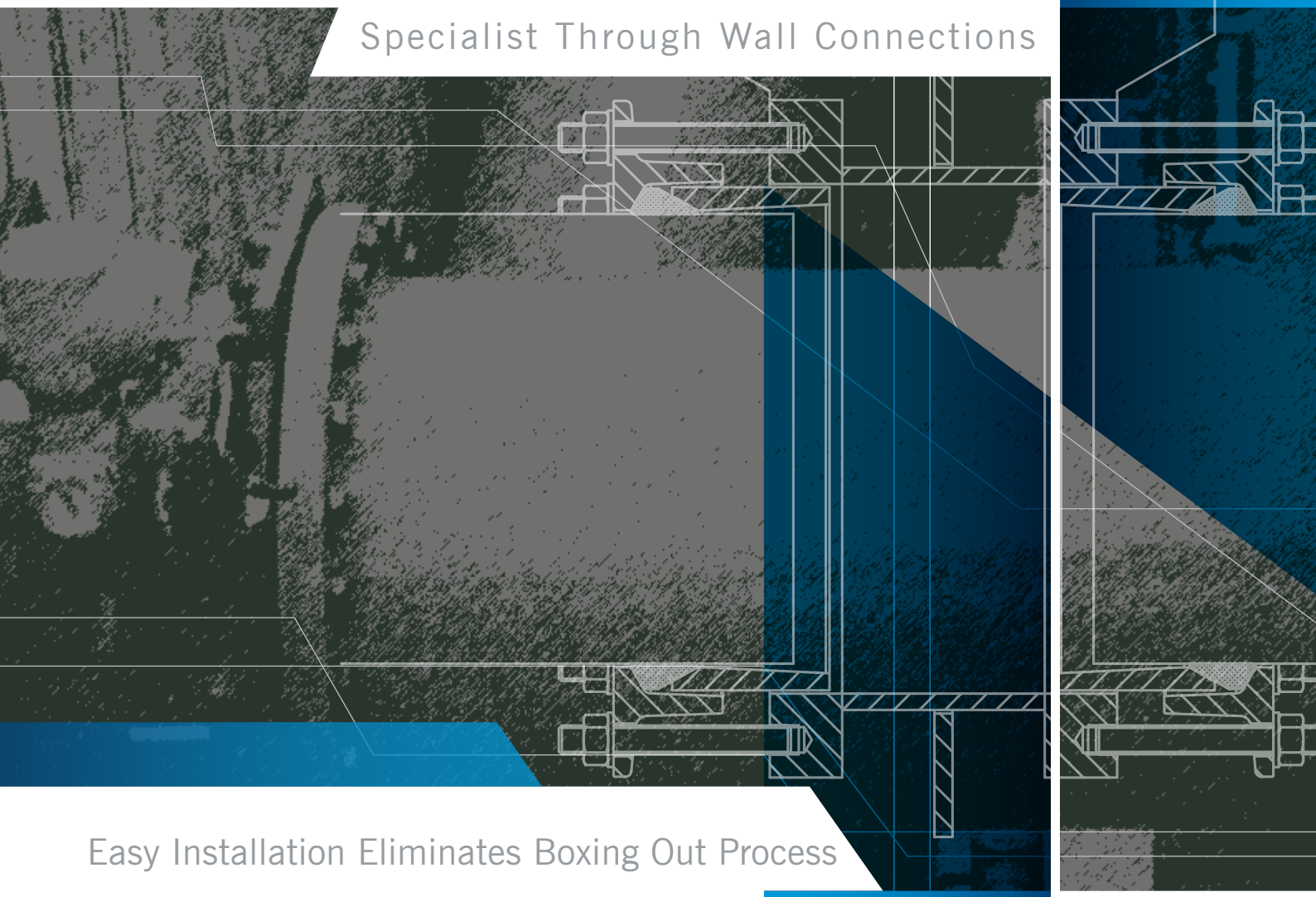
Project

‘Dunfords‘, a 30,000 tonne bulk carrier is equipped with marine couplings in the bilge & ballast sections of the vessel.

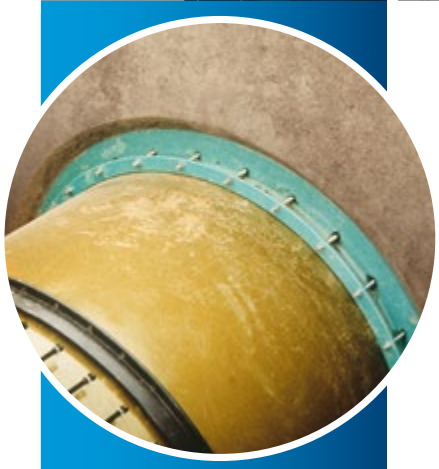
Crane BS&U are solely the provider of products and have no direct influence on, or take any responsibility for any working practices employed or depicted in the images enclosed to install such products.

WallCouplings™

Specialist Through Wall Connections



Easy Installation Eliminates Boxing Out Process

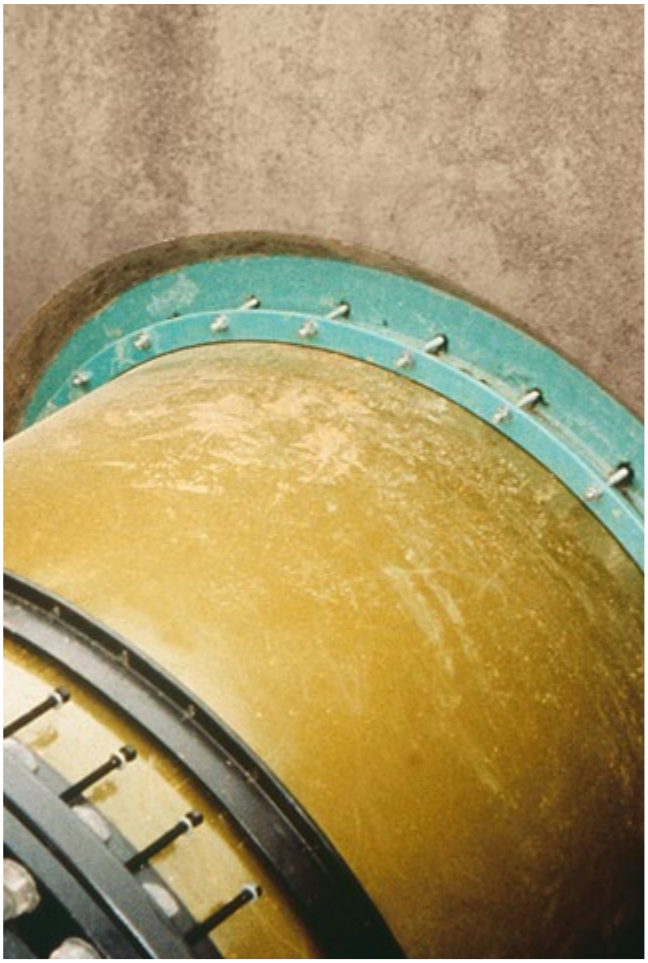


VIKING JOHNSON®

The Perfect Solution for Passing Pipes Through Walls

Old Practice

The normal procedure for passing pipes through walls is to leave a substantial cut-out in the wall during the original concrete pouring process. Later, the contractor will pass a 'puddle pipe' through the cut-out, and build an intricate 'letter-box' shutter around it. New concrete is then poured into the void to encapsulate the puddle pipe. Not only is this a time consuming process, but very often the puddle pipe moves with the pour and settles to a less than suitable alignment.



Easier Installation

By utilising a Viking Johnson wall coupling which is held rigidly between the shutters, the 'boxing out' process is eliminated. This means that pouring the wall is a simplified and is a single step process. It also guarantees that leak paths, which are inevitably set up when new concrete is poured onto old, are completely eliminated.

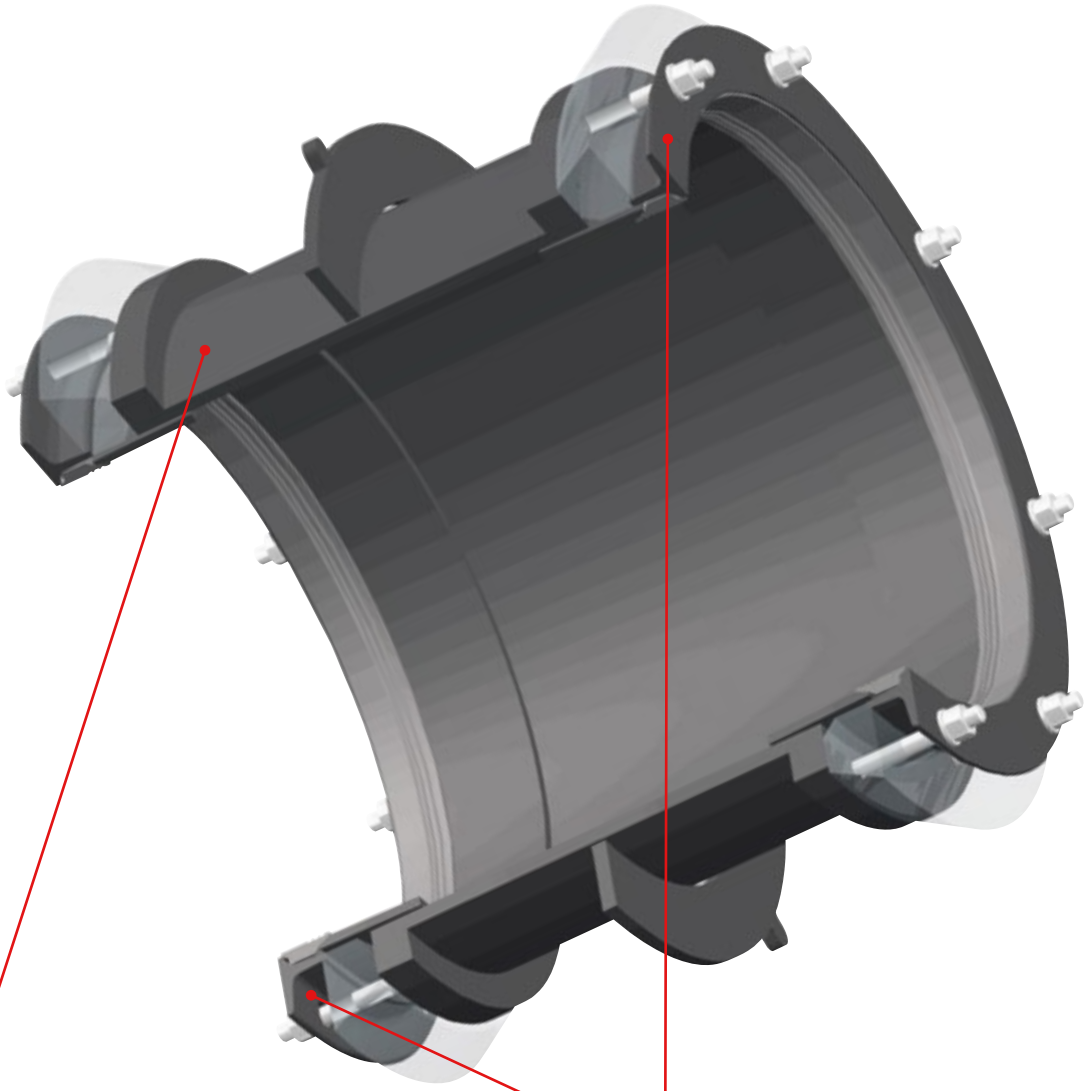
Using a standard Type 1 Viking Johnson wall coupling gives a versatile coupling either side of the wall where pipes can either be passed through or inserted into each side. This system allows for misalignment or angular deflection of up to 3° on each side of the wall. In addition, the use of a Viking Johnson wall coupling ensures that, on the outside of the structure, the first 'rocker' or settlement coupling is built into the shear face of the wall – exactly where it is required. It also means that only one further versatile coupling is needed to form the settlement 'rocker' instead of two. Consequently the installed cost can be drastically reduced, particularly where a large number of through the wall joints appear on a building, for instance in a gravity treatment works.

Structural Strength of Concrete Wall

Viking Johnson strongly recommends the user ensures that the wall is structurally capable of withstanding the resultant forces induced by the system working pressure and any other related influence.

Wall Couplings - Type 1

Product Design Benefits



Corrosion Protection

Metal components are coated with Rilsan Nylon 11 which is WRAS approved for use with potable water and offers a long term protection to corrosion, impact and abrasion to ensures continued reliable performance.

Flexible Fit

Using a standard Type 1 Viking Johnson wall coupling gives a flexible coupling either side of the wall where pipes can either be passed through or inserted into each side. This allows for slight misalignment or angular deflection on each side of the wall.

Customer Benefits

- Straightforward for Civil Contractor to position the pipe.
- Easy to secure and prevent movement of the pipe work.
- Large formwork panels can be reused as there is no need to make holes in the shuttering.
- No need for a contractor to come back and cast in pipes or 'make good' the wall surface after casting pipes.
- Ensures good bond between wall and pipe.
- Installed cost can be drastically reduced particularly where a large number of through the wall joints appear on a structure e.g. in a gravity treatment works.

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Wall Couplings - Type 1

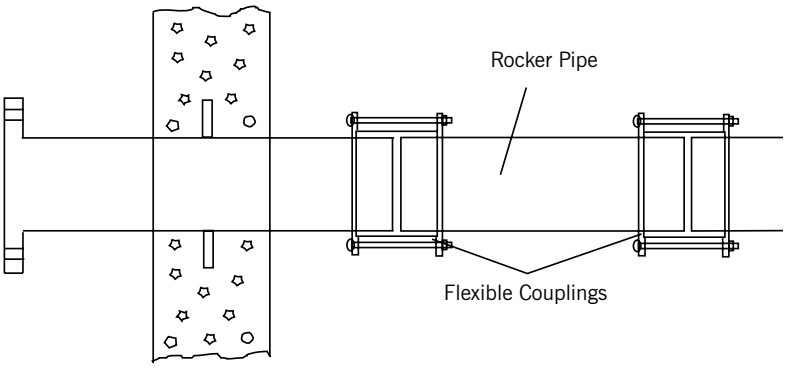
Installation Benefits

Conventional Method with a Puddle Pipe

In civil projects with reinforced concrete work & pipework it is inevitable that there will be a need to pass a pipe through a concrete wall.

Traditional methods to accommodate pipework are:-

- Box Out a section and come back later to cast in pipe.
- Cast In the Puddle Pipe, by cutting the formwork to include the pipe when pouring main wall.



Traditional Methods Disadvantages:

Boxing Out

- Make up formwork for box out that will only have one use.
- Never get a good surface finish between old and new concrete.
- Potential weak joint between old and new concrete.

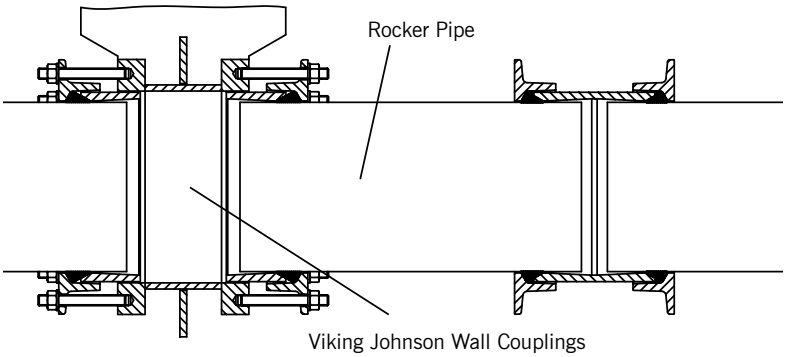
Casting In

- Civil contractor has to position pipe at correct level and location in wall.
- When pouring large walls there is always a risk of movement of formwork and therefore cannot always get pipework accurately positioned.
- Formwork can only be used for one concrete pour.

In addition to the problems with casting in the puddle pipe, two flexible couplings are required along with a rocker pipe to accommodate ground movement.

Viking Johnson Wall Coupling Method

Designed to fit flush between formwork panels and coming with various end configurations to accommodate site conditions, Viking Johnson Wall Couplings provide an alternative means of passing a pipe through a wall or slab, that also offers the following advantages.



Wall Coupling Advantages:

- Easier for civil contractor to position pipe at correct level & location in wall.
- Easier to secure wall coupling to prevent risk of movement during pouring of concrete.
- Large formwork panels can be re-used.
- No need to come back to wall to cast in pipes.
- No need to “make good” wall surface after pouring secondary concrete around pipe.

In addition, the use of a Viking Johnson wall coupling ensures that, on the outside of the structure, the first ‘rocker’ or settlement coupling is built into the shear face of the wall – exactly where it is required. It also means that only one further versatile coupling is needed to form the settlement ‘rocker’ instead of two.

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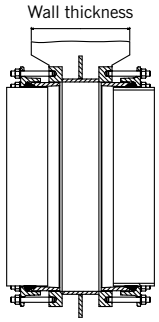
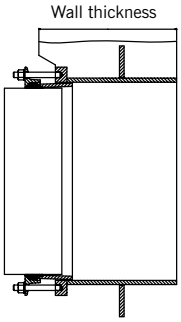
Wall Coupling Variations

Datasheet 1/1

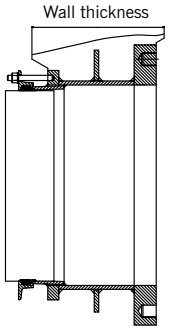
The Viking Johnson Wall Coupling is available in nine variations:



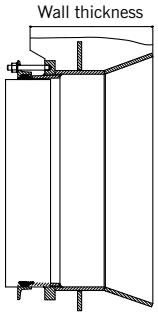
Type 1 Coupling / Coupling



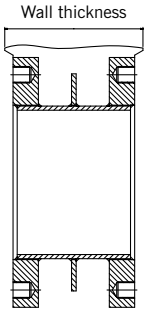
Type 2 Coupling / Plain End



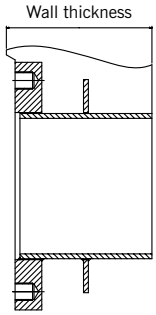
Type 3 Coupling / Flange



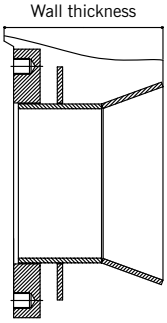
Type 4 Coupling / Bellmouth



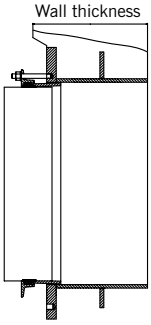
Type 5 Flange / Flange



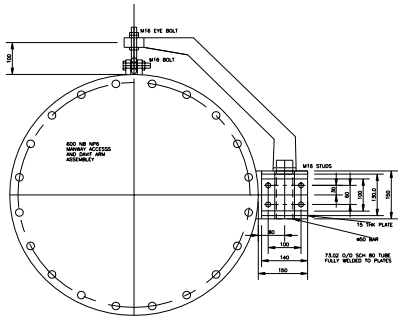
Type 6 Flange / Plain End



Type 7 Flange / Bellmouth



Type 8 Harnessing



Type 9 Man Entry

Viking Johnson Wall Couplings are patented products - UK Patent No. 2263323B, US Patent No.5505499.

Materials, Relevant Standards & Approvals

Body, Centre Sleeve & End Rings:

DN80 to DN300:

- Carbon steel to BS EN 10025: Grade S275JR
- Ductile iron to BS EN 1563: Symbol EN-GJS-450-10

DN350 to DN1800:

- Carbon steel to BS EN 10025: Grade S275JR

Gasket

EPDM to BS EN 681 Part 1 Type WA

Coatings

Wall Coupling Bodies & End Rings:

- Standard Rilsan Nylon 11.
- Optional - Scotchkote 206N fusion bonded epoxy.

Studs:

- Sheraplex coated to WIS 4-52-03.

Tee Bolts or Stud

Steel to BS EN ISO 898-1: Property Class 4.8

Washers

Stainless Steel to BS 1449: Part 2: Grade 304S15

Approvals

The following water contact materials used in Wall Couplings are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

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Wall Couplings Order / Enquiry Form

Wall Couplings are a bespoke product and Viking Johnson requires the following information to assist with the quotation process. This page can be copied from the brochure or a form fillable PDF is available on the website www.vikingjonson.com.

Please complete the form and send via email to: info@vikingjohnson.com

Company Name		Date	
Contact Name		Email	
Customer Address		Telephone	
		Fax	
		Quantity	
		Delivery Date	
Customer Reference No.		Fab No.	

Specifications

Nominal Diameter	
Quantity	

Viking Johnson strongly recommends the user ensures that the wall is structurally capable of withstanding the resultant forces induced by the system working pressure and any other related influences.

1st End (Please Tick)	Man Entry	☐	Coupling	☐	Flanged	☐	Plain End	☐	Bellmouth	☐	Harness ☐
2nd End (Please Tick)	Man Entry	☐	Coupling	☐	Flanged	☐	Plain End	☐	Bellmouth	☐	Harness ☐

Wall Thickness	
Actual OD of Pipe	

Pipe Material (Please Tick)	Carbon Steel	☐	Stainless Steel	☐	D.I.	☐	G.R.P	☐	Concrete	☐	PVC-U ☐
Other please specify											

Fluid Flowing			
If Flanged, Flange Details			
If Harnessed - Stud Details (Please Tick)	No. ☐	Diameter ☐	
Working Pressure		Puddle Flange (Please Tick)	Yes ☐ No ☐

Any Other Details

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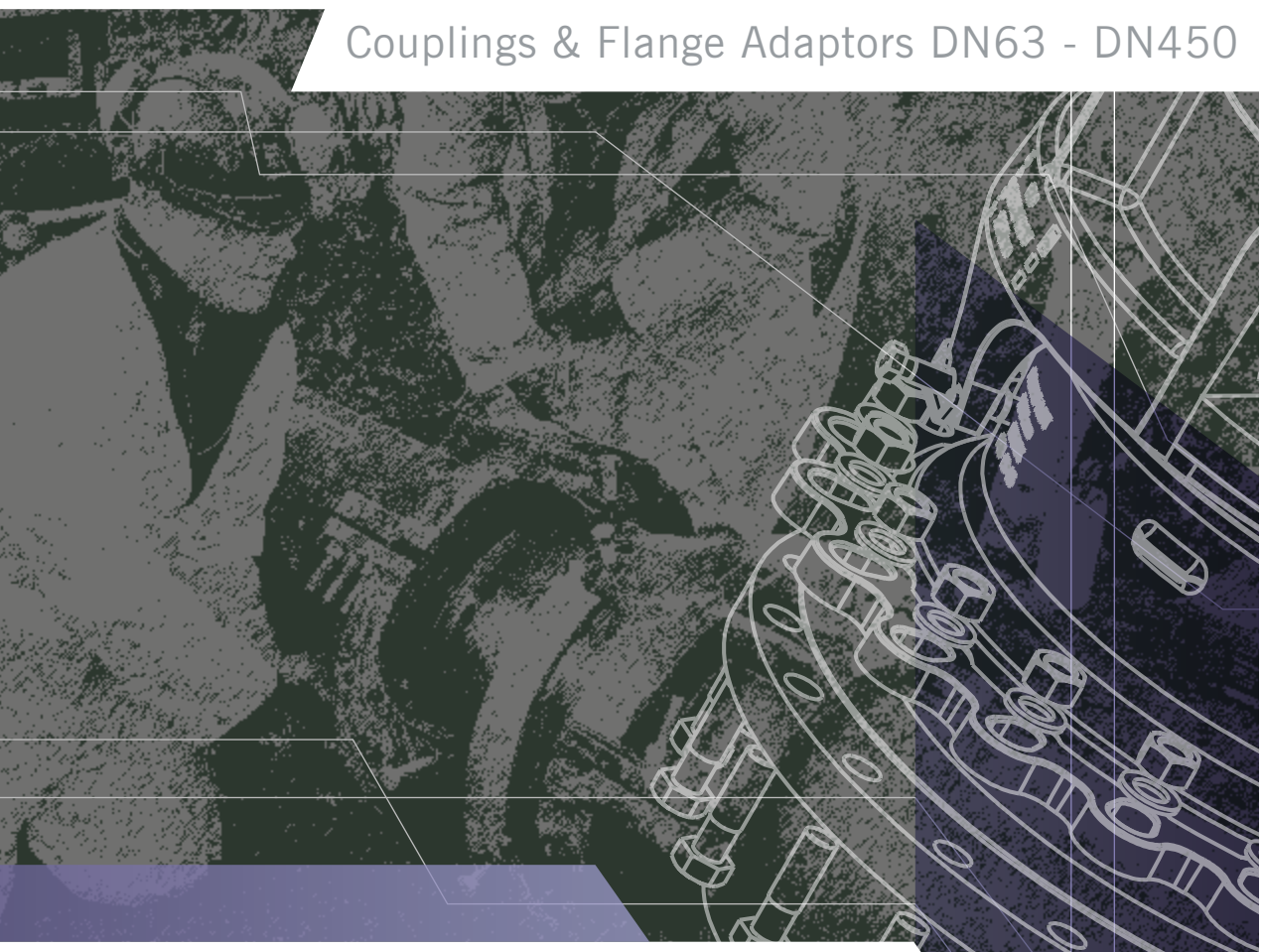
AquaFast®

Couplings & Flange Adaptors DN63 - DN450



Responsive Connections
For Polyethylene & PVC Pipes

VIKING JOHNSON®

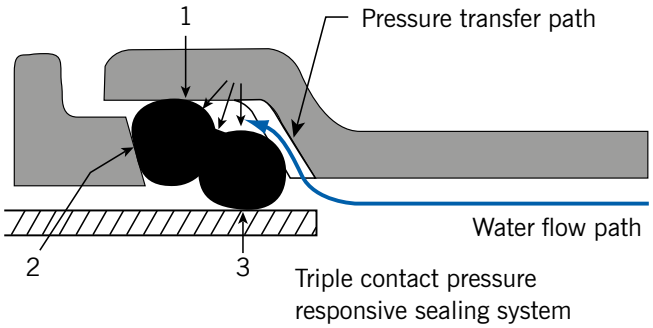
Designed & Engineered to Simplify Polyethylene & PVC Pipe Connections

Effortless Installation

AquaFast's unique pressure sealing system offers a simple and reliable solution for connecting Polyethylene & PVC pipe. With a visual indicator confirming correct fitment and no special skills or tools required, installing AquaFast is effortless and quicker than other systems. In addition, an enhanced gripping mechanism ensures fittings slide easily into position during installation and provide full end load restraint in service negating the need for thrust blocks to prevent pipe pull out.

On-the-spot Repairs

From start to finish, AquaFast offers benefits to the installer. Supplied fully assembled and with an improved design that delays gripper engagement, AquaFast slides effortlessly over coiled and oval pipe making it easy for installers to correctly position the product in narrow trench conditions. Needing no specialist equipment, simply a "rag and a spanner", AquaFast can be installed in all-weather conditions and this, coupled with a design that does not need a support liner, means the product is ideal for on-the-spot connections in both new lay and repair / maintenance work.



Simple Jointing

Using only a standard spanner to tighten fewer bolts (only two per fitting up to 125mm) until the visual indicator confirms correct fitment AquaFast provides operatives with simple means of joining Polyethylene pipes. The metal-to-metal positive stop indicating mobilisation of the gripper and gasket sealing mechanisms removes the need for a torque wrench and prevents over tightening of the bolts while ensuring optimum assembly to every time.

Transitional Connections

AquaFast couplings & flange adaptors are available from 63mm to 315mm OD. Designed to work on both Polyethylene pipe in both PE80 and PE100 material SDR 11, 17/17.6 without a support liner, they can also be used to connect metric PVC pipe, so AquaFast is ideal for PE/PVC transitional connections.

AquaFast Coupling

AquaFast Flange Adaptor

Pipe Materials

PE PVC

Refer to Datasheet for exact specification

Note: All water contact materials approved for use with potable water by WRAS.

AquaFast Couplings & Flange Adaptors 63mm to 315mm

Product Design Benefits

Simple to Install

- Captive, non-rotating bolts across whole range requiring a single spanner to install.
- Increased bore dimensions and inclusion of resistors to prevent early engagement of gripper ensures AquaFast slides easily over pipe.

Positive Stop

- Correct installation confirmed through visual indication with metal to metal contact between three components (end ring, intermediate ring and sleeve / flange adaptor body).

Flexible Flange Drilling

- As standard the flange adaptors are multi drilled to accommodate BS EN 1092-2 PN10 & 16.

Efficient Gasket Sealing Technology

- Double 'O' ring gasket provides localised high pressure contact points generating efficient seal on pipe surface.
- EPDM (water quality approved) gaskets.

Corrosion Protection

- Metal components are coated with Rilsan Nylon 11, which is WRAS approved for use with potable water, and offers long term corrosion protection impact abrasion resistance.
- The nuts & bolts are Sheraplex coated to WIS 4-52-03, which does not gall when re-used and provides long term corrosion protection.

Unique Progressive Sealing and Gripping Mechanism

- Patented gasket and gripper design delivers low pressure / load to outside of pipe at initial bolt up eliminating the need for support liner.
- Water transfer path uses internal pressure to increase gasket compression at contact points.
- As system pressure increases the initial gripper engagement with the pipe is enhanced through progressive gripping.

Customer Benefits

- Ideal for pumped sewage line as no support liner is required meaning a clear unrestricted bore. Additionally, Rilsan abrasion resistance coating accommodates any solids any solids in sewage.
- 50 years design life expectancy is assured through "Accelerated Aging Testing" that simulates lifecycle of the product and Rilsan Nylon coating to metal works for corrosion protections as well as Sheraplex coated bolts to WIS 4-52-03.
- Rough on site handling accommodated by Rilsan coating.
- Simple onsite installation as the product comes pre-assembled hence easily slides over the round pipe. The resistor ensures gripper remains fully contained in housing until bolt up is complete.
- Reduced number of bolts ensures the product can be always orientated to facilitate easy access for bolt up.
- Minimal damage to pipe as progressive gripping system only penetrates sufficiently to mobilise and load forces from internal pressure and other loads in PE Pipe.
- All water contact materials approved for use with potable water (WRAS).
- Fully restrained fitting, designed to meet the performance requirements of BS EN 12842, ISO 17885 and IGN 4-01-02 (formally WIS 4-24-01).

Flange Adaptor

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Overview

Designed for simplified & dependable trench installation every time

Simple to Install

AquaFast Large Diameter is quick and easy to install providing an alternative solution to electrofusion and butt fusion for all weather and trench conditions. It is a simple fit and forget installation designed with the minimum number of bolts and without the need for an internal liner or expensive trench equipment.

Quality

Patents are pending on this innovative product designed and manufactured under quality systems to BS EN ISO 9001 and the requirements of UK & European Water Regulations.

Reduced Stock Holding

And now just 10 sizes will cover a range of multiple SDR's offering a significant reduction in traditional stockholding and allowing distributors and water utilities opportunity to have stock to cover all eventualities with off-the-shelf availability.

Innovative Design ideal for Oval Pipes

Viking Johnson has built in a high tolerance for AquaFast to fit with oval pipes and negating the need to utilise expensive and time consuming re-rounding tools.

Fully Corrosion Protected

WRAS approved black Rilsan Nylon 11 coating provides excellent corrosion and damage resistance to impact, abrasion, weathering and chemicals.

Resists Pull-out

Improved gripping mechanism offers end load restraint, resisting pipe pull out, allowing the coupling and flange adaptor to be suitable for use in climatic regions where temperatures range from -20°C up to 60°C. AquaFast has been designed to meet the performance requirements of BS EN 12842, ISO 178875 (supersedes ISO 12436.2) and IGN 4-01-02 Type 2 (formerly WIS 4-24-01).

Pipe Material

Refer to Datasheet for exact specification

AquaFast Large Diameter Couplings & Flange Adaptors 355mm to 450mm

Product Design Benefits

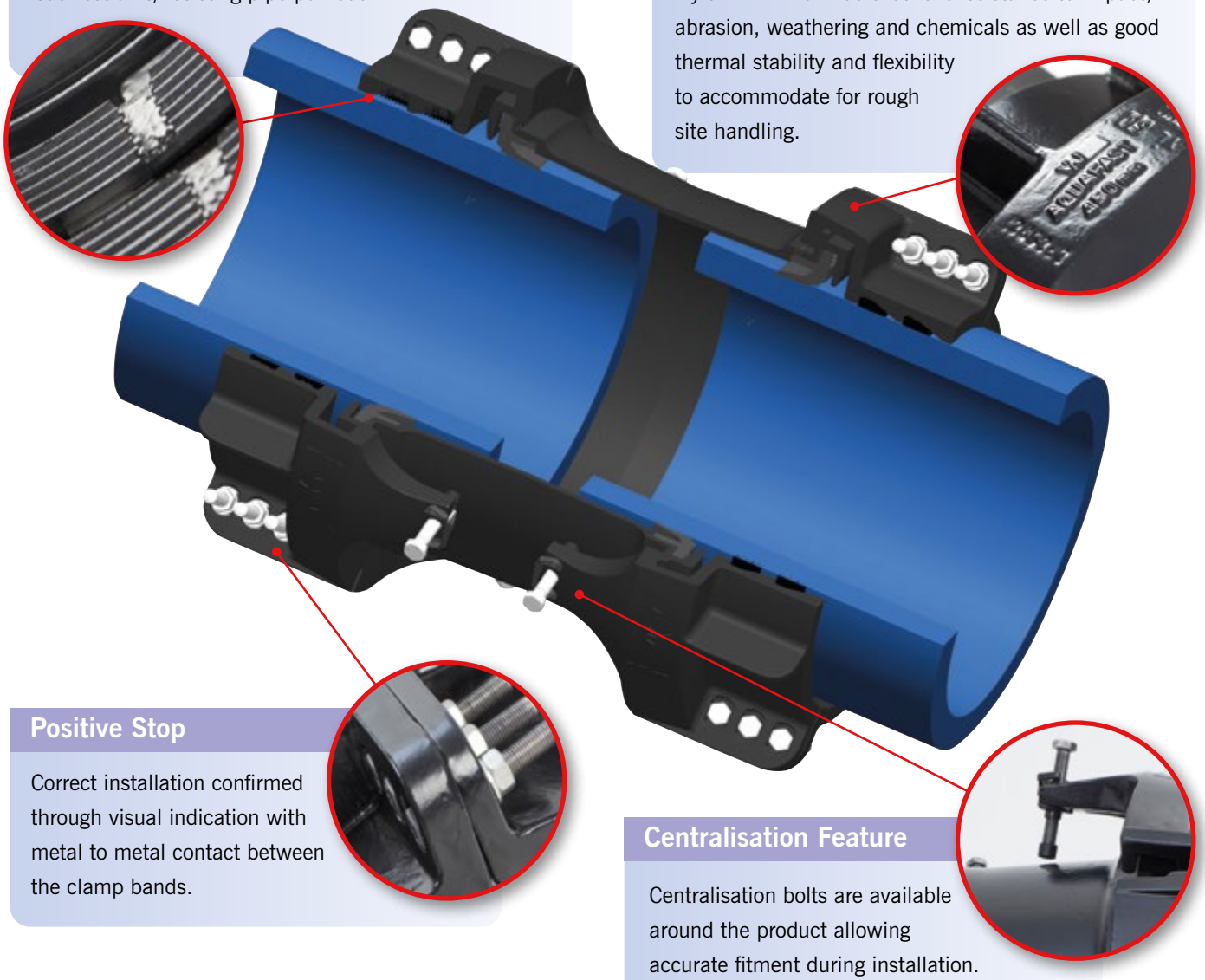
RILSAN®

Innovative Gripping

An enhanced gripping mechanism offers Type 2 end load restraint, resisting pipe pull out.

Corrosion Protection

All cast components are fully coated in Black Rilsan Nylon 11 which has excellent resistance to impact, abrasion, weathering and chemicals as well as good thermal stability and flexibility to accommodate for rough site handling.



Positive Stop

Correct installation confirmed through visual indication with metal to metal contact between the clamp bands.

Centralisation Feature

Centralisation bolts are available around the product allowing accurate fitment during installation.

Customer Benefits

- Coupling can be used for repair - no internal restriction ideal for Sewage applications.
- Suitable for connecting pipes in wet/submerged conditions and above ground applications.
- No requirement for a support liner, torque wrench or any other specialist equipment on site.
- Easy to centralise on the pipe.
- Reduced stockholding - One product can connect one nominal pipe size with common SDRs (11, 17/17.6 and 21).
- 50 years design life expectancy.
- Reusability - No spares required for multiple installations.
- Saves time and effort as Contractor only has to identify PE pipe nominal size to select correct fitting.
- Fittings comes fully assembled.
- Minimal number of bolts to tighten.

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United Kingdom - A14

Cambridge to Huntingdon A14

AquaFast Couplings up to DN355

Project

£1.5 billion investment to decommission a number of existing potable water and foul water pipelines which the new carriageway will be built over and put in place over 22km of new pipelines to ensure Anglian Water can continue to provide services to its customers.

Client

Anglian Water

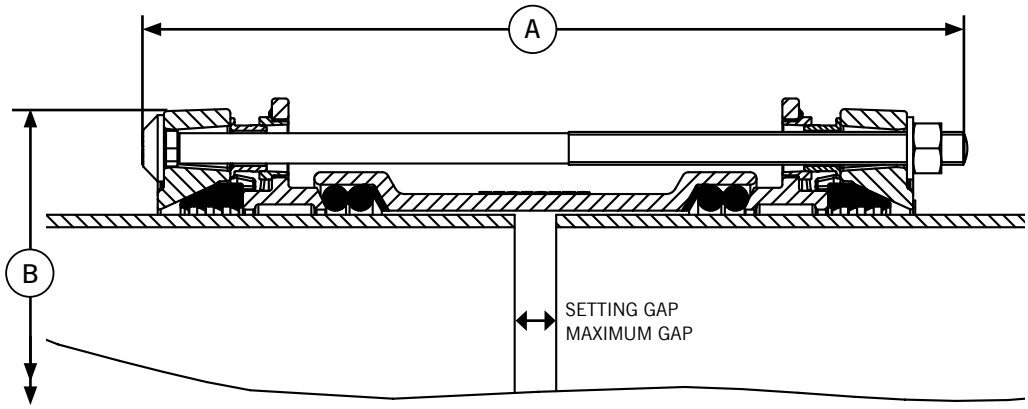
Crane BS&U are solely the provider of products and have no direct influence on, or take any responsibility for any working practices employed or depicted in the images enclosed to install such products.

CAT4
makita

AquaFast Couplings 63mm to 315mm

Datasheet 1/2

Coupling



AquaFast Couplings

Pipe OD	Bolt Size No.-Dia x Length	Dimensions (mm)		Setting Gap (mm)	Max Gap (mm)	Weight (kg)
		A max	B dia			
63	2-M12 x 250	257	144	20	30	4.2
75	2-M12 x 250	257	156	20	30	4.7
90	2-M12 x 250	257	171	20	30	5.3
110	2-M12 x 250	257	192	20	30	6.4
125	2-M12 x 250	257	207	20	30	7.1
140	4-M12 x 250	257	221	20	30	8.4
160	4-M12 x 250	257	241	20	30	9.2
180	4-M12 x 375	382	272	30	50	18.0
200	4-M12 x 375	382	292	30	50	20.4
225	4-M16 x 385	395	328	30	50	24.8
250	6-M16 x 385	395	352	30	50	31.5
280	6-M16 x 385	395	382	30	50	33.6
315	6-M16 x 385	395	417	30	50	38.7

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DR11904_18_04_2025_ISSUE 9

AquaFast Couplings 63mm to 315mm

Datasheet 2/2

Technical Information

Working Pressure Rating

Water 16 bar

Gas not approved

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Pipe Material / Support Liner

When used on the following pipe materials AquaFast does not need a support liner:-

- MDPE (PE80) and HPPE (PE100) in SDR ratings 11 & 17
- PVC pipe (metric dimensions)
  - PVC-O (16 bar rated pipe)
  - PVC-U (10 bar rated pipe)

Angularity

Couplings 1.5°

Bolt Torque

Torque Wrench; Tighten using spanner of sufficient length to ensure enough leverage is applied to cause resistors to collapse evenly until fitting the metal to metal positive stop is achieved.

Specialist Equipment

None required, only a rag to clean pipe and a spanner or wrench. The length of the Spanner or Torque Wrench used to tighten the bolts must be sufficiently long to ensure enough leverage is applied to cause resistors to collapse evenly until fitting the metal to metal positive stop is achieved.

Temperature Rating of Product

EPDM -20°C to +40°C

AquaFast is not suitable for use on heating systems with fluctuating temperatures.

End Load Due to Internal Pressure

AquaFast Fully restrained fitting, designed to meet the performance requirements of BS EN 12842, ISO 17885 and IGN 4-01-02 (formally WIS 4-24-01).

Approvals

The following water contact materials used in AquaFast are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

In addition to the above, AquaFast as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Centre Sleeve, End Ring & Flange Adaptor Body

Ductile iron to BS EN 1563 Symbol EN-GJS-450-10

Gripper Ring

Ductile iron to BS EN 1563 Symbol EN-GJS-450-10

Intermediate Ring

Ductile iron to BS EN 1563 Symbol EN-GJS-450-10

Gasket (EPDM)

BS EN 681-1 Type WA/BS 6920 hardness to 70 IRHD

Resisters

Free cutting Mild Steel (Grade Y15) Zn^3 Zinc coated

Bolts

BS EN ISO 898-1 Property class 8.8

Option - Stainless Steel BS EN ISO3506-1 Grade A2 Property Class 70

(Stainless steel available as special order)

Nuts

Steel to BS EN20898-2 Property Class 8

Option - Stainless Steel BS EN ISO3506-2 Grade A4 Property Class 80

(Stainless steel available as special order)

Washers

BS 1449:Part 2 Grade 304S15

Coatings

Centre Sleeve, End Ring, Flange Adaptor body & intermediate ring:

- Rilsan Nylon 11

Gripper:

- Cataphoretic coating

Bolts & Nuts:

- Sheraplex to WIS 4-52-03

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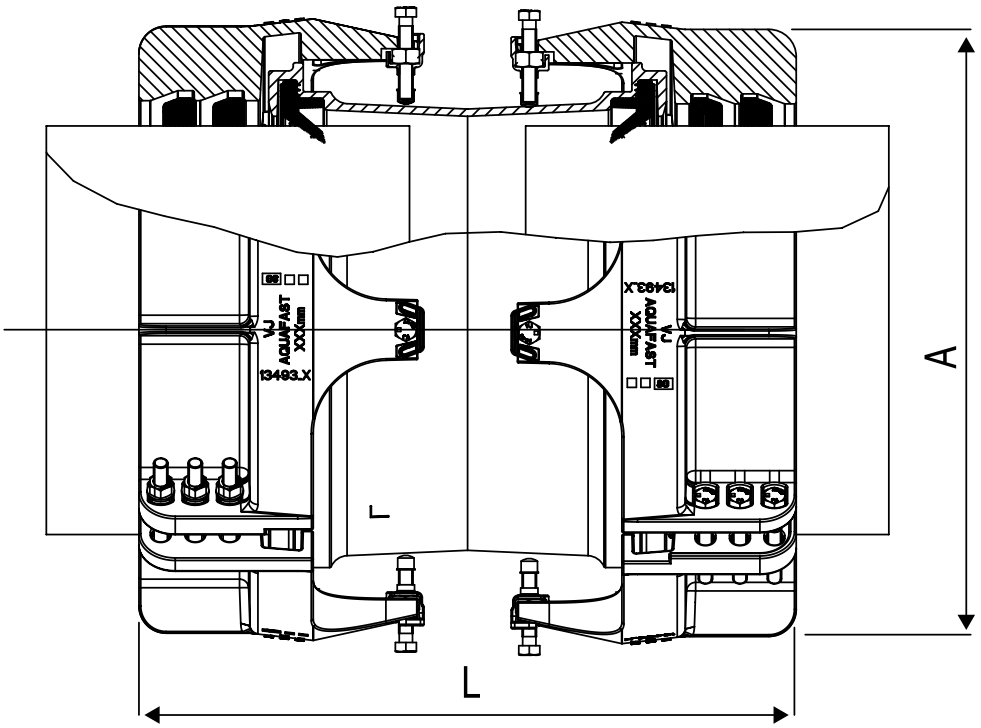
AquaFast Large Diameter Couplings 355mm to 450mm

Datasheet 1/2

Coupling



AquaFast Couplings

Nominal Size	Working Pressure (water) bar	Bolts size No dia x length	Insertion Depth (mm)	Setting gap (based on nominal insertion depth)	Outer Dimensions (mm)			Weight (kg)
					Clamp band outer diameter (A)		Length (L)	
			Nom		Installed	Uninstalled		
355	16	24-M16 x 120	241	210	540	571	692	213.3
400	16	24-M16 x 120	247	210	585	618	704	231.3
450	16	24-M16 x 120	255	210	635	670	720	253.3

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AquaFast Large Diameter Couplings 355mm to 450mm

Datasheet 2/2

Technical Information

Working Pressure Rating

Water 16 bar

Gas not approved

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.8 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Pipe Material / Support Liner

When used on the following pipe materials AquaFast does not need a support liner:-

- MDPE (PE80) in SDR ratings 11 & 17/17.6
- HPPE (PE100) in SDR ratings 11, 17/17.6 & 21

Angularity (in accordance with BS EN 12842)

Couplings 1.0°

Bolt Torque

Torque Wrench; Tighten using spanner of sufficient length to ensure enough leverage is applied to cause resistors to collapse evenly until fitting the metal to metal positive stop is achieved.

Specialist Equipment

None required, only a rag to clean pipe and a spanner or wrench. The length of the Spanner or Torque Wrench used to tighten the bolts must be sufficiently long to ensure enough leverage is applied to cause resistors to collapse evenly until fitting the metal to metal positive stop is achieved.

Temperature Rating of Product

EPDM -20°C to +60°C

AquaFast is not suitable for use on heating systems with fluctuating temperatures.

End Load Due to Internal Pressure

AquaFast Fully restrained fitting, and has been designed to meet the performance requirements of BS EN 12842, ISO 178875 (supersedes ISO 12436.2) and IGN 4-01-02 Type 2 (formerly WIS 4-24-01).

Approvals

The following water contact materials used in AquaFast are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

In addition to the above, AquaFast as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Flange Adaptor Body, Centre Sleeve, Clamp Bands & Gripper Ring

Ductile iron to BS EN 1563 Symbol EN-GJS-450-10

Gasket

EPDM Grade 'E' to BS EN 681-1:1996 Type WA WRAS listed

Coatings

Body, Sleeve, Intermediate Ring & End Ring

- Rilsan Nylon 11 to WIS 4-52-01 Part 1

Nuts and Bolts:

- Delta Seal GZ - Silver

Gripper:

- Cataphoretic coating

Bolts

Standard - Stainless Steel BS EN ISO3506-1 Grade A2-70

Nuts

Standard - Stainless Steel BS EN ISO3506-2 Grade A4-80

Washers

Stainless Steel to BS1449: Part 2:1983 Grade 304S15

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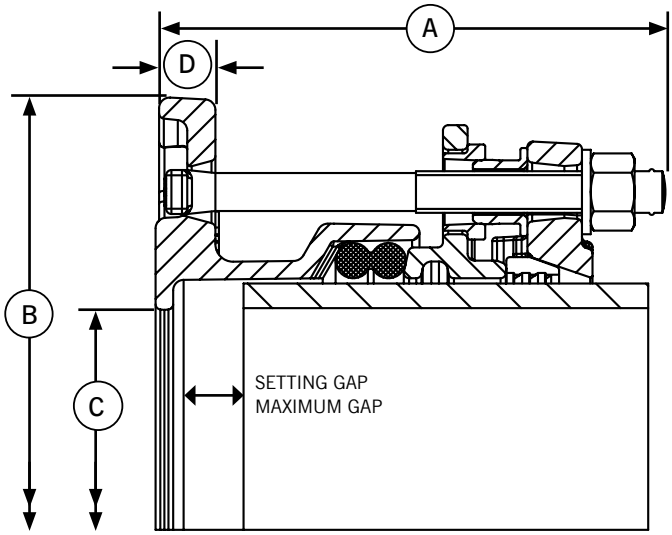
AquaFast Flange Adaptors 63mm to 315mm

Datasheet 1/2

Flange Adaptor



AquaFast Flange Adaptors

Pipe OD	Flange Drillings	Tee Bolt Size No.-Dia x Length	Dimensions (mm)		Bore C (mm)	Flange Thickness D (mm)	Setting Gap (mm)	Max Gap (mm)	Weight (kg)
			A max	B dia					
63	50/65 PN10,16	2-M12 x 135	144	185	50	17	20	25	4.4
75	65/80 PN10,16	2-M12 x 135	144	200	65	17	20	25	4.8
90	65/80 PN10,16	2-M12 x 135	144	200	80	17	20	25	5.0
110	100 PN10,16	2-M12 x 135	144	229	100	17	20	25	6.1
125	100/125 PN10,16	2-M12 x 135	144	250	100	17	20	25	7.2
140	125 PN10,16	4-M12 x 135	144	250	125	17	20	25	7.4
160	150 PN10,16	4-M12 x 135	144	285	150	17	20	25	8.5
180	150 PN10,16	4-M12 x 190	199	285	150	17	25	35	12.4
200	200 PN10,16	4-M12 x 190	200	343	190	18	25	35	15.4
225	200 PN10,16	4-M16 x 195	205	343	190	18	25	35	16.9
250	250 PN10,16	6-M16 x 195	207	406	240	20	25	35	22.5
280	250 PN10,16	6-M16 x 195	207	406	270	20	25	35	22.1
315	300 PN10,16	6-M16 x 195	208	483	300	21.5	25	35	28.2

All flanges drilled to BS EN 1092-1 (formerly BS 4504) /BS EN ISO 7005 PN10 and PN16

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AquaFast Flange Adaptors 63mm to 315mm

Datasheet 2/2

Technical Information

Working Pressure Rating

Water 16 bar

Gas not approved

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Pipe Material / Support Liner

When used on the following pipe materials AquaFast does not need a support liner:-

- MDPE (PE80) and HPPE (PE100) in SDR ratings 11 & 17
- PVC pipe (metric dimensions)
  - PVC-O (16 bar rated pipe)
  - PVC-U (10 bar rated pipe)

Flange Drilling

All flange drilled to BS EN 1902-2 (formerly BS 4504) /BS EN ISO 7005 PN10 and PN16

Angularity (in accordance with BS EN 12842)

Flange Adaptors 1.5°

Bolt Torque

Torque Wrench; Tighten using spanner of sufficient length to ensure enough leverage is applied to cause resistors to collapse evenly until fitting the metal to metal positive stop is achieved.

Specialist Equipment

None required, only a rag to clean pipe and a spanner or wrench. The length of the Spanner or Torque Wrench used to tighten the bolts must be sufficiently long to ensure enough leverage is applied to cause resistors to collapse evenly until fitting the metal to metal positive stop is achieved.

Temperature Rating of Product

EPDM -20°C to +40°C

AquaFast is not suitable for use on heating systems with fluctuating temperatures.

End Load Due to Internal Pressure

AquaFast Fully restrained fitting, designed to meet the performance requirements of BS EN 12842, ISO 17885 and IGN 4-01-02 (formally WIS 4-24-01).

Approvals

The following water contact materials used in AquaFast are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

In addition to the above, AquaFast as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Centre Sleeve, End Ring & Flange Adaptor Body

Ductile iron to BS EN 1563 Symbol EN-GJS-450-10

Gripper Ring

Ductile iron to BS EN 1563 Symbol EN-GJS-450-10

Intermediate Ring

Ductile iron to BS EN 1563 Symbol EN-GJS-450-10

Gasket (EPDM)

BS EN 681-1 Type WA/BS 6920 hardness to 70 IRHD

Resisters

Free cutting Mild Steel (Grade Y15) Zn^3 Zinc coated

Bolts

BS EN ISO 898-1 Property class 8.8

Option - Stainless Steel BS EN ISO3506-1 Grade A2 Property Class 70

(Stainless steel available as special order)

Nuts

Steel to BS EN20898-2 Property Class 8

Option - Stainless Steel BS EN ISO3506-2 Grade A4 Property Class 80

(Stainless steel available as special order)

Washers

BS 1449:Part 2 Grade 304S15

Coatings

Centre Sleeve, End Ring, Flange Adaptor body & intermediate ring:

- Rilsan Nylon 11

Gripper:

- Cataphoretic coating

Bolts & Nuts:

- Sheraplex to WIS 4-52-03

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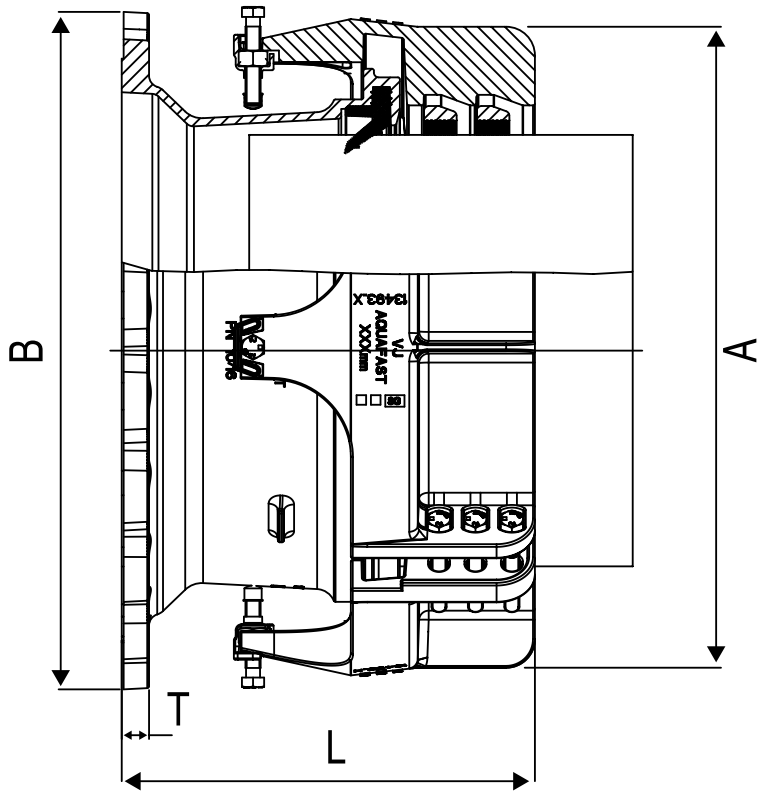
AquaFast Large Diameter Flange Adaptors 355mm to 450mm

Datasheet 1/2

Flange Adaptor



AquaFast Flange Adaptors

Nominal Size	Flange Drilling	Working Pressure (water) bar	Bolts size No dia x length	Insertion Depth (mm)			Setting gap (based on nominal insertion depth)	Outer Dimensions (mm)					Weight (kg)
				Min	Nom	Max		Clamp Band Outer Diameter (A)		Length (L)	Flange Outer Diameter (B)	Flange Thickness (T)	
								Installed	Uninstalled				
355	300 PN10,16	16	12-M16 x 120	284	304	324	197	540	571	501	455	22.5	122.2
355	350 PN10,16	16	12-M16 x 120	284	304	324	117	540	571	421	520	23.5	120.0
400	350 PN10,16	16	12-M16 x 120	289	309	329	183	585	618	492	520	23.5	134.4
400	400 PN10,16	16	12-M16 x 120	290	310	330	117	585	618	427	580	25	132.0
450	400 PN10,16	16	12-M16 x 120	298	318	338	109	635	670	427	580	25	142.9
450	450 PN10,16	16	12-M16 x 120	298	318	338	117	635	670	435	640	27	147.2
450	500 PN10,16	16	12-M16 x 120	298	318	338	117	635	670	435	715	28.5	155.4

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AquaFast Large Diameter Flange Adaptors 355mm to 450mm

Datasheet 2/2

Technical Information

Working Pressure Rating

Water 16 bar

Gas not approved

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.8 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Pipe Material / Support Liner

When used on the following pipe materials AquaFast does not need a support liner:-

- MDPE (PE80) in SDR ratings 11 & 17/17.6
- HPPE (PE100) in SDR ratings 11, 17/17.6 & 21

Angularity (in accordance with BS EN 12842)

Flange Adaptors 1.0°

Bolt Torque

Torque Wrench; Tighten using spanner of sufficient length to ensure enough leverage is applied to cause resistors to collapse evenly until fitting the metal to metal positive stop is achieved.

Specialist Equipment

None required, only a rag to clean pipe and a spanner or wrench. The length of the Spanner or Torque Wrench used to tighten the bolts must be sufficiently long to ensure enough leverage is applied to cause resistors to collapse evenly until fitting the metal to metal positive stop is achieved.

Temperature Rating of Product

EPDM -20°C to +60°C

AquaFast is not suitable for use on heating systems with fluctuating temperatures.

End Load Due to Internal Pressure

AquaFast Fully restrained fitting, and has been designed to meet the performance requirements of BS EN 12842, ISO 17885 and IGN 4-01-02 (formally WIS 4-24-01).

Approvals

The following water contact materials used in AquaFast are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

In addition to the above, AquaFast as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Flange Adaptor Body, Centre Sleeve, Clamp Bands & Gripper Ring

Ductile iron to BS EN 1563 Symbol EN-GJS-450-10

Gasket

EPDM Grade 'E' to BS EN 681-1:1996 Type WA WRAS listed

Coatings

Body, Sleeve, Intermediate Ring & End Ring

- Rilsan Nylon 11 to WIS 4-52-01 Part 1

Nuts and Bolts:

- Delta Seal GZ - Silver

Gripper:

- Cataphoretic coating

Bolts

Standard - Stainless Steel BS EN ISO3506-1 Grade A2-70

Nuts

Standard - Stainless Steel BS EN ISO3506-2 Grade A4-80

Washers

Stainless Steel to BS1449: Part 2:1983 Grade 304S15

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France - Villiers Adam City

Making Drinking Water Systems More Reliable

AquaFast Flange Adapters

Project

Viking Johnsons AquaFast product has been selected to provide a bespoke solution for SETHA Bobingy. AquaFast products have been selected due to their progressive sealing system and reusable benefits for pressure tests.

Client

SEDIF

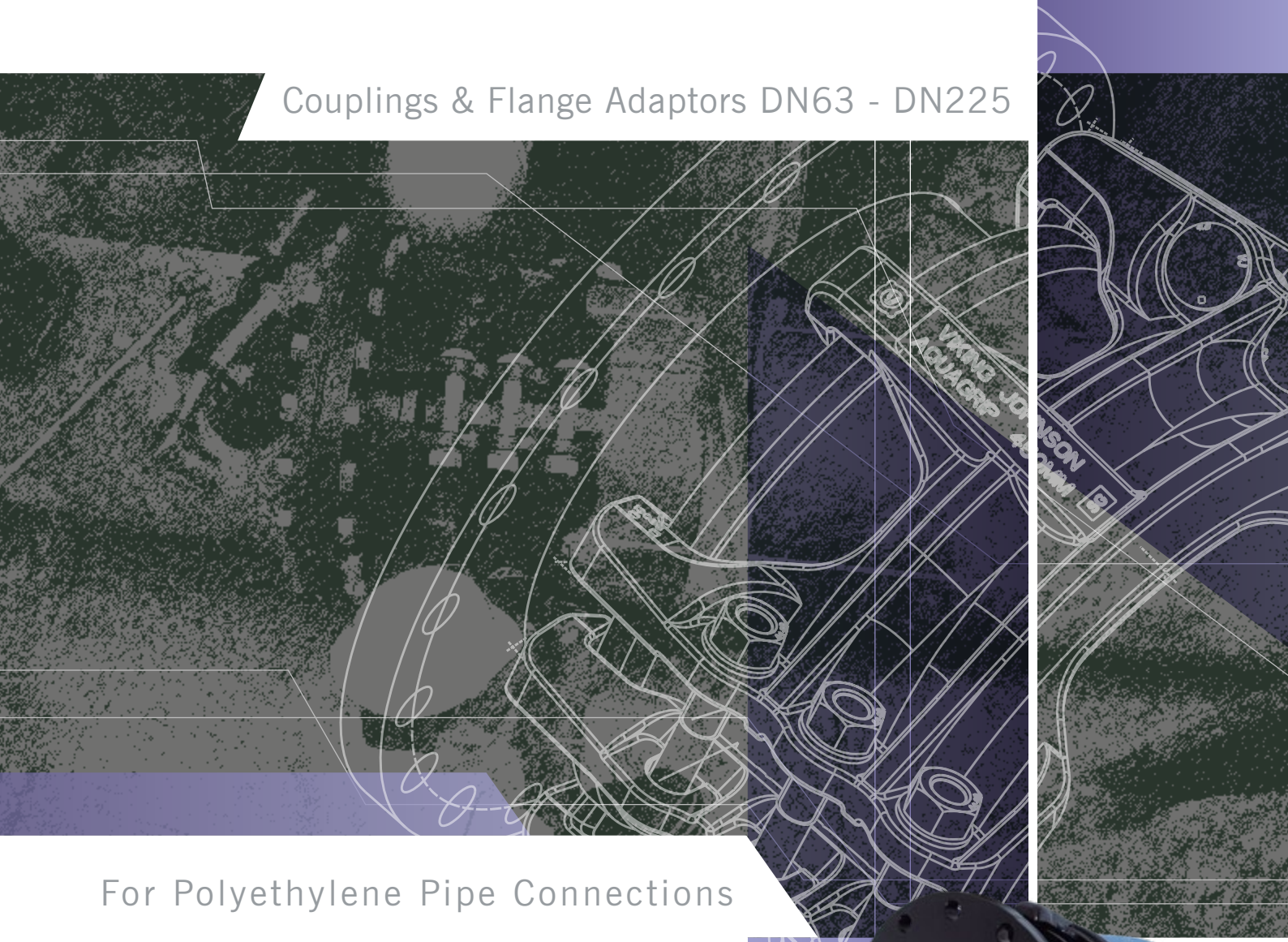
Contractor

SETHA Bobingy (Sade)

Crane BS&U are solely the provider of products and have no direct influence on, or take any responsibility for any working practices employed or depicted in the images enclosed to install such products.

AquaGrip®

Couplings & Flange Adaptors DN63 - DN225



For Polyethylene Pipe Connections

VIKING JOHNSON®

A High Performance Polyethylene Pipe Jointing System

The AquaGrip range was developed in response to demand for a simple, high performance end load restraint (Type 1) mechanical method of joining polyethylene pipe. AquaGrip products are designed to support and grip PE pipe to prevent pipe collapse and pullout.

Easy & Safe to Fit

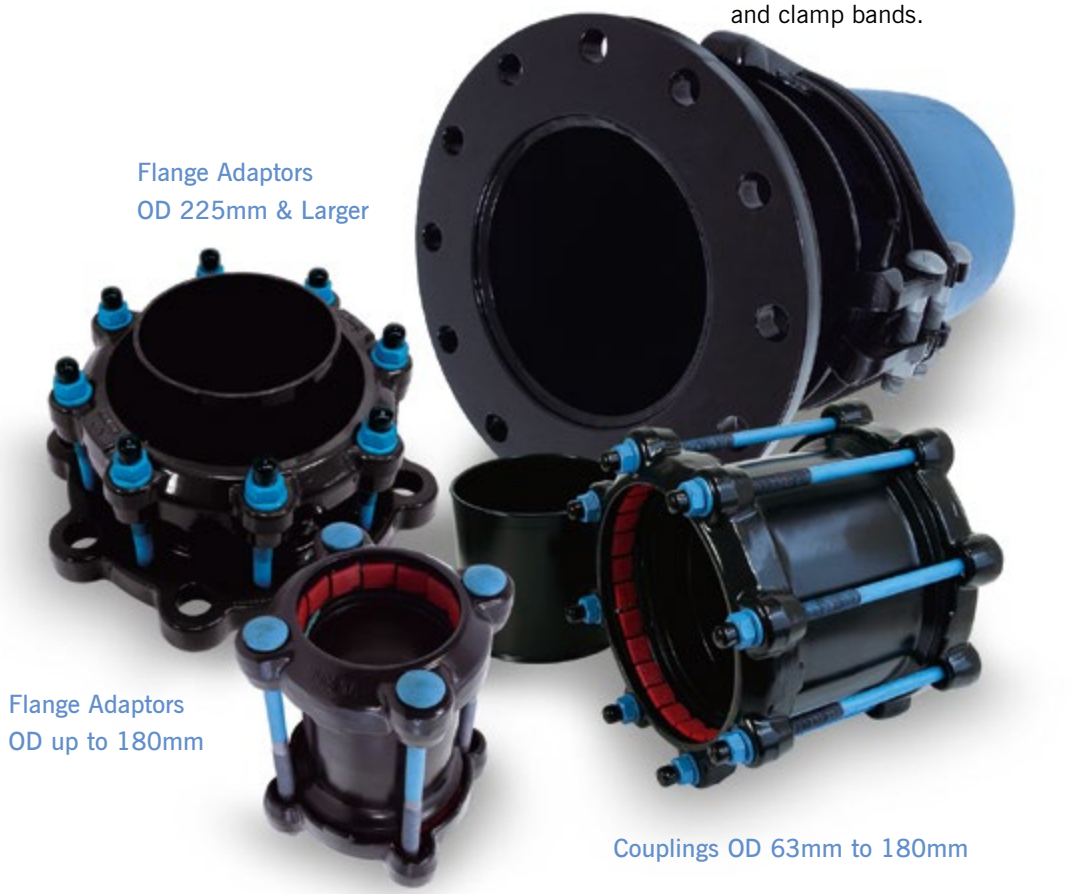
The range requires no special skills or complicated tools to fit, a suitably calibrated torque wrench is the only specialist tool required. The ability to rotate the flange bolt holes and the lightweight, compact design provide easier handling and quicker installation.

On-the-spot Repairs

Another key benefit of the AquaGrip range is 'all-weather installation'. It can be installed under wet conditions without shelters, and even under water. It is ideal for on-the-spot repairs - no need for fusion jointing equipment when unexpected problems arise!

High Performance

Once fitted the product range offers axial restraint and is designed and tested to meet the full Type 1 performance requirements of IGN 4-01-02 (formally WIS 4-24-01) in all sizes up to 450mm. Full Type 2 performance is achieved on larger sizes. It is designed to equal or exceed the pressure capabilities of MDPE (PE80) and HDPE (PE100) pipe and has total corrosion protection with Rilsan Nylon coated body and clamp bands.



Flange Adaptors
OD 225mm & Larger

Flange Adaptors
OD up to 180mm

Couplings OD 63mm to 180mm

Pipe Material

PE

AquaGrip Couplings & Flange Adaptors up to 180mm

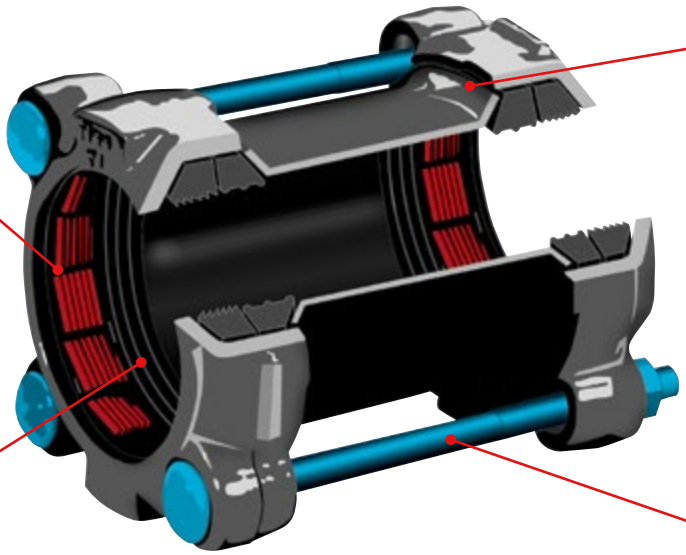
Product Design Benefits

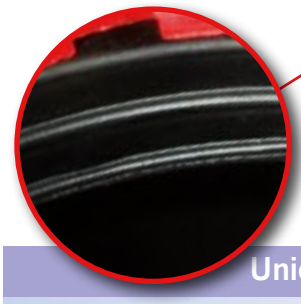
Exceptional Grip

The combination of the acetal grippers and separate internal support liner gives AquaGrip an end load gripping capability of Type 1 to IGN 4-01-02 (formally WIS 4-24-01).
This means that the joint is stronger than the PE pipe itself.

Designed to Last

The sleeve or body are fully coated in black Rilsan Nylon 11 which has excellent resistance to impact, abrasion, weathering and chemicals as well as good thermal stability and flexibility to accommodate for rough site handling.
It is also WRAS listed.





Unique Gasket

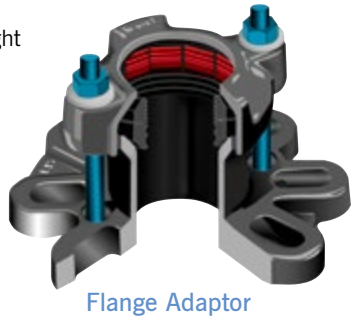
The EPDM gasket (Compound 80 IRHD Grade E) is suitable for water and sewage applications between a temperature range of -10°C to +40°C.

Corrosion Resistance

Sheraplex coated nuts & bolts offer excellent corrosion resistance and eliminates galling of coating in threads allowing repeated dismantling and installation of products if required.

Customer Benefits

- Slip-on coupling without centre stop or obstruction making it easier to make repairs to existing pipelines.
- No need to dismantle products to install.
- Same size bolt throughout range means just one torque wrench for all pipe sizes.
- Substantial axial pipe adjustment up to 50mm - ideal for making pipe and valve insertions into existing lines. No need for precise cutting of the pipes or for machined pipe ends.
- Versatile range. Straight couplings for simple, convenient repairs, or new lay connections. Flange adaptors to introduce valves and flanged fittings or connect to existing flanged pipework.
- Supplied complete with liners for PE pipes.
- AquaGrip has been tested and found to comply with the requirements of the Water Supply (Water Fittings) Regulations 1999 for England and Wales, the Water Byelaws 2000 Scotland and the Water Regulations Northern Ireland.
- Flange adaptors and straight couplings designed to the full Type 1 performance requirements of WIS 4-24-01.



Flange Adaptor

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AquaGrip Flange Adaptors 225mm to 1600mm

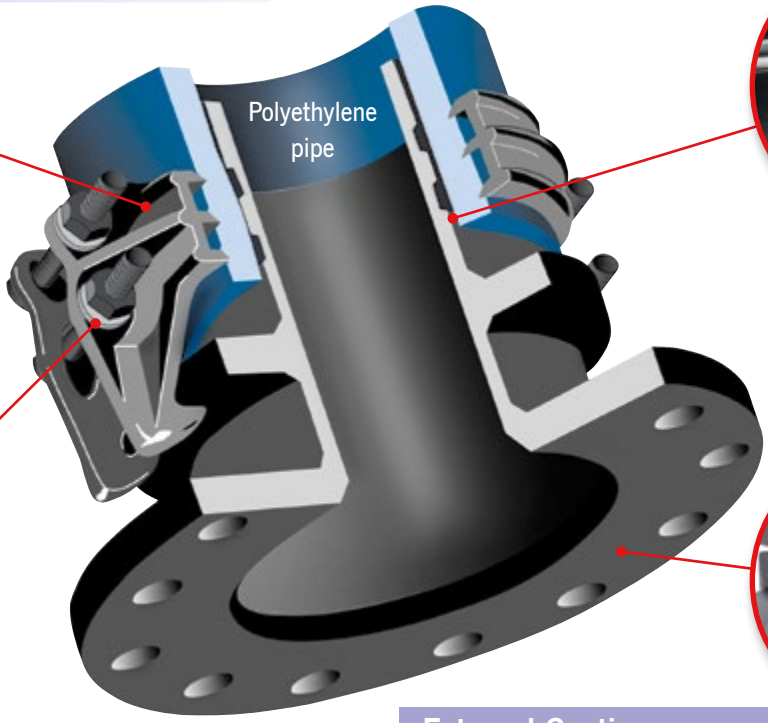
Product Design Benefits

Exceptional End Restraint

Uniquely designed clamp locks onto the anchoring shoulder, providing maximum end load restraint.

Reliable Seal

The flanged body incorporates an internal support liner which carries the double ridged gasket(s) that seals on the inside of the PE pipe. The inside of the pipe is well protected from casual on-site damage, so the seal remains secured.



Corrosion Resistance

Bolts, nuts and washers are plated in zinc, and then Grey Flurene® 177, a low friction coating which offers excellent corrosion resistance.

External Coating

The body, clamp band and liner are fully coated in Black Rilsan Nylon 11 which has excellent resistance to impact, abrasion, weathering and chemicals as well as good thermal stability and flexibility to accommodate for rough site handling. It is WRAS listed.

Customer Benefits

- Large size flange adaptors seal on the inside of the pipe ensuring a quick and reliable seal and greater customer confidence.
- Available in sizes up to 1600mm.
- Connects to other types of pipe via a flange connection, ideal for replacing damaged pipe lengths with new pipe or introducing flanged fittings, such as metal valves, into a polyethylene pipeline.
- AquaGrip is available with reduced bore flanges which can reduce valve fitting costs e.g. 315mm pipe OD x 250mm flange, 500mm pipe OD x 450mm flange.
- Ideal for structural lining in conjunction with mains refurbishment techniques such as Swage-Line® RollDown® and Die Draw®.
- Uniquely designed clamp bands lock onto the anchoring shoulder, providing maximum end restraint.
- Tackles problem of misshapen polyethylene pipe ends.
- Generous cutting tolerance can compensate for cutting inaccuracy (40mm minimum tolerance).
- UK Water Regulations Advisory Scheme (WRAS) approved and designed to meet the performance requirements of IGN 4-01-02 (formally WIS 4-24-01) Type 1 in sizes up to and including 450mm and Type 2 of sizes 500mm and above.

Please note that these products may require the use of heating mats. Please contact the Marketing Department on +44 (0) 1462 443322 for details.

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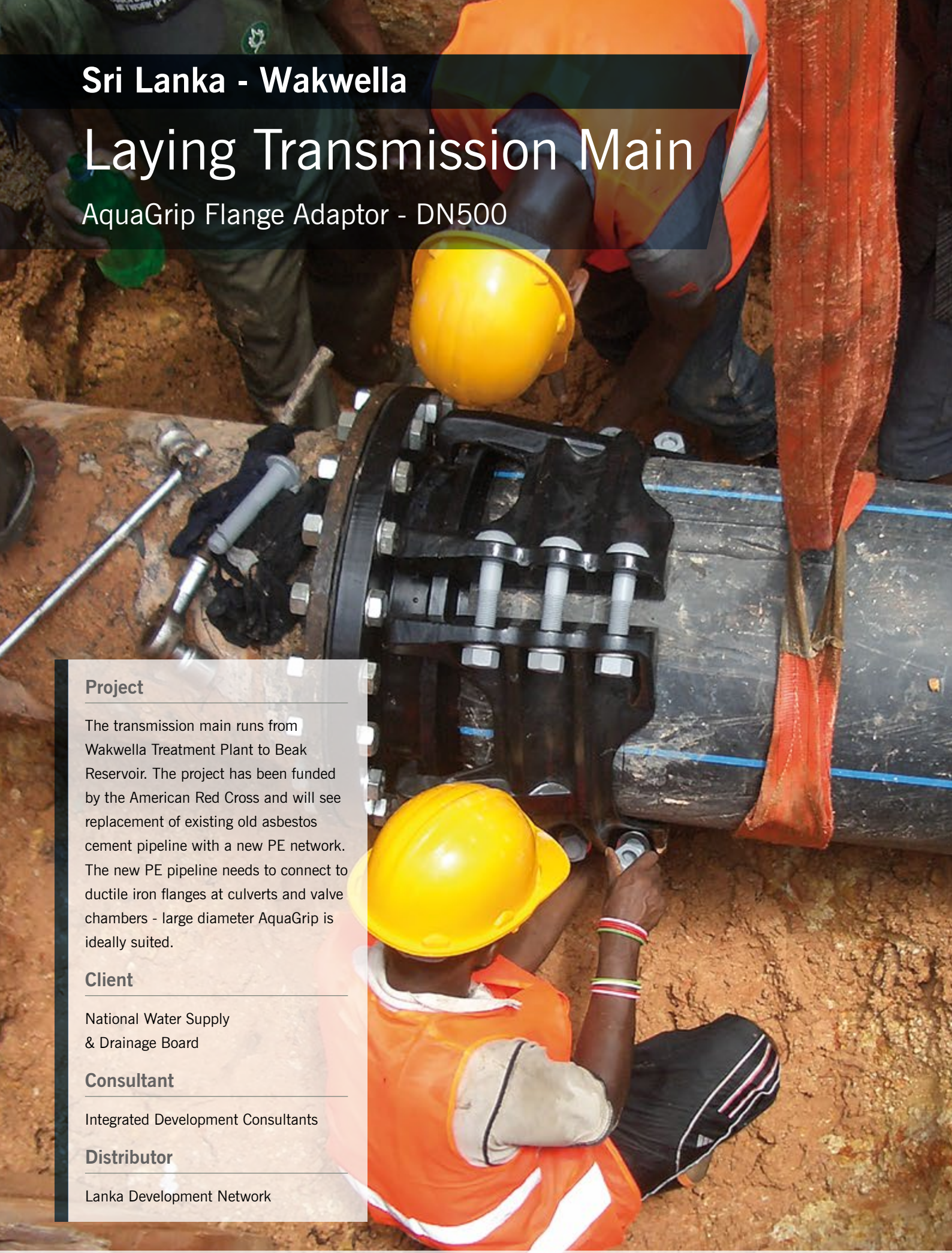
Sri Lanka - Wakwella

Laying Transmission Main

AquaGrip Flange Adaptor - DN500



Project

The transmission main runs from Wakwella Treatment Plant to Beak Reservoir. The project has been funded by the American Red Cross and will see replacement of existing old asbestos cement pipeline with a new PE network. The new PE pipeline needs to connect to ductile iron flanges at culverts and valve chambers - large diameter AquaGrip is ideally suited.

Client

National Water Supply
& Drainage Board

Consultant

Integrated Development Consultants

Distributor

Lanka Development Network

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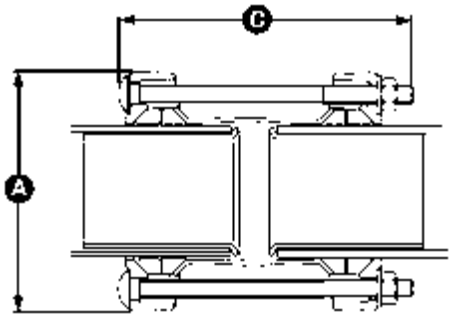
AquaGrip Couplings & Flange Adaptors up to 180mm

Datasheet 1/2

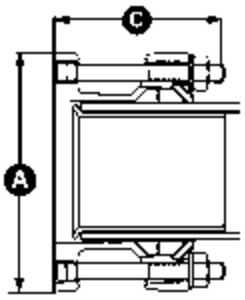
Coupling



AquaGrip Coupling Assembly (joins PE pipe to PE pipe)

Pipe OD	Dimensions (mm)		No. of Bolts	Bolts size (mm)	Gasket Mould No.	Weight (kg)
	A	C				
63	144	208	2	M12 x 200	6001	2.4
90	167.5	208	4	M12 x 200	1785	3.8
110	188	208	4	M12 x 200	1786	5.4
125	203	208	4	M12 x 200	1787	5.8
160	240	223	8	M12 x 215	1788	9.0
180	257.5	223	8	M12 x 215	1789	9.8

Flange Adaptor



AquaGrip Flange Adaptor Assembly (joins PE pipe to flanged equipment)

Pipe OD	Dimensions (mm)		No. of T-Bolts	T-Bolt size (mm)	Flange specification nom (mm)	Gasket Mould No.	Weight (kg)
	A	C					
63	200	123	2	M12 x 115	50/80 PN10/16	6001	3.6
90	200	123	4	M12 x 115	80 PN10/16	1785	3.8
110	220	123	4	M12 x 115	100 PN10 & 16	1786	4.2
125	220	123	4	M12 x 115	100 PN10 & 16	1787	4.3
160	285	129	8	M12 x 115	150 PN10 & 16	1788	8.1
180	285	129	8	M12 x 115	150 PN10 & 16	1789	8.5

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AquaGrip Couplings & Flange Adaptor up to 180mm

Datasheet 2/2

Technical Information

Working Pressure Rating

Water 16 bar

Gas not approved

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Pipe Material / Support Liner

AquaGrip can be used on the following pipe materials with a Viking Johnson support liner:-

- MDPE (PE80) and HPPE (PE100) in SDR ratings 11, 17, 17,6, & 21
- MDPE (PE80) and HPPE (PE100) in SDR26 is also available for 125mm and 160mm

Angularity (in accordance with BS EN 12842)

Couplings 1.5° per end

Flange Adaptors 1.5°

Bolt Torque/Spanner

Torque 55-65Nm on every bolt

Spanner size A/F 19mm

Temperature Rating of Product

EPDM -20°C to +40°C

AquaGrip is not suitable for use on heating systems with fluctuating temperatures.

End Load Due to Internal Pressure

AquaFast Fully restrained fitting, and has been designed to meet the performance requirements of BS EN 12842, ISO 178875 (supersedes ISO 12436.2) and ISO 4-01-02 Type 1 (formerly WIS 4-24-01).

Approvals

The following water contact materials used in AquaGrip are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

In addition to the above, AquaGrip as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

End Rings & Flange Adaptor Body

SG iron to BS EN 1563 Symbol EN-GJS-450-10.

Centre Sleeve/Liners

Mild steel to BS EN 10025 Grade S 275

Gasket

EPDM compound 80 IRHD Grade 'E' to BS EN 681-1 Type WA.

Coating

Flange Adaptor Body, Centre Sleeve & End Rings:

- Rilsan Nylon 11 to WIS 4-52-01

Bolts:

- Blue Sheraplex followed by dry film lubricant (Ilex).

Bolts

To BS EN ISO 898-1 Property Class 4.8.

Nuts

To BS 4190 Grade 4.

Washers

Stainless steel - BS 1449: PT2 Grade 304 S 15

Gripper

Acetal copolymer Grade M90 or equivalent.

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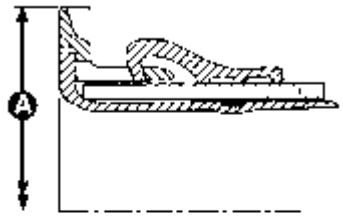
AquaGrip Flange Adaptors 225mm to 1600mm

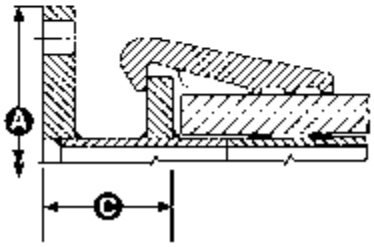
Datasheet 1/2

Flange Adaptor

225mm - 280mm



315mm - 800mm



Note:

*SDR = Standard Dimensional Ratio

$= \frac{\text{Pipe OD}}{\text{Wall Thickness}}$

** The chart introduces the popular flange drillings. Other drillings may be possible - contact Viking Johnson for further details

AquaGrip Flange Adaptors (joins PE pipe to flanged equipment)

Pipe OD	SDR Rating *				Flange Drilling **	Pressure Rating	Dimensions		No. of Bolts	Bolt Size	Weight (kg) (approx)	Gasket - 13022/			
	11	17/17.6	21	26/33			A (mm)	C (mm)				11	17/17.6	21	26/33
225	✓	✓	✓	✓	200	PN16	340	-	4	M16 x 130	15	1763	1685	1685	1685
250	✓	✓	✗	✓	200	PN16	340	-	4	M16 x 130	24	1655	1686	1686	1686
250	✓	✓	✓	✓	250	PN16	405	-	4	M16 x 130	23	1685	1686	1686	1686
280	✓	✓	✓	✓	250	PN16	405	-	4	M16 x 130	32	1686	1713	1713	1687
315	✓	✓	✓	✓	250	PN16	405	170	4	M20 x 120	48	4	24	6	6
355	✓	✓	✓	✓	300	PN16	460	138	6	M20 x 120	65	6	32	34	8
355	✓	✓	✓	✓	350	PN16	520	138	6	M20 x 120	65	6	32	34	8
400	✓	✓	✓	✓	400	PN16	580	134	9	M20 x 120	95	34	9	25	25
450	✓	✓	✓	✓	400	PN16	580	134	9	M27 x 150	160	25	11	12	12
450	✓	✓	✓	✓	450	PN16	640	134	9	M27 x 150	186	25	11	12	12
500	✓	✓	✓	✓	400	PN16	580	175	9	M27 x 150	169	11	26	27	13
500	✓	✓	✓	✓	450	PN16	640	134	9	M27 x 150	169	11	26	27	13
500	✓	✓	✓	✓	500	PN16	715	134	9	M27 x 150	199	11	26	27	13
560	✓	✓	✓	✓	450	PN16	640	235	12	M27 x 150	200	27	28	14	14
560	✓	✓	✓	✓	500	PN16	715	180	12	M27 x 150	248	27	28	14	14
630	✓	✓	✓	✓	600	PN16	840	220	12	M27 x 150	311	14	15	15	29
710	✗	✓	✓	✓	700	PN16	910	310	12	M27 x 150	311	–	16	35	35/36
800	✗	✓	✓	✓	700	PN16	910	270	15	M27 x 150	470	–	31	18	19
800	✗	✓	✓	✓	800	PN16	1025	270	15	M27 x 150	497	–	31	18	19
900	✗	✓	✓	✓	900	PN16	1125		15	M33 x 160	800	–	36	20	37
1000	✗	✓	✓	✓	1000	PN16	1255	Contact Viking Johnson	18	M33 x 160	1107	–	20	20	20
1200	✗	✗	✗	✓	1200	PN16	1485		18	M33 x 180	1127	–	–	–	22
1400	✗	✗	✗	✓	1400	PN16	1685		18	M33 x 180	1582	–	–	–	23
1600	✗	✗	✗	✓	1600	PN16	1930		24	M33 x 180	1808	–	–	–	–

✓ Product installation requires heating mats at all temperatures.

✓ Product installation requires heating mats if temperature of bore to the pipe falls below +5°C.

✗ PE pipe wall too thick – do not have a product.

For confirmation of other sizes please contact our Marketing Department.

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AquaGrip Flange Adaptors 225mm to 1600mm

Datasheet 2/2

Technical Information

Working Pressure Rating

Water 16 bar

Gas not approved

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Pipe Material / Support Liner

AquaGrip can be used on both MDPE (PE80) and HPPE (PE100) with SDR ratings as defined in the table on the previous page.

Angularity (in accordance with BS EN 12842)

Flange Adaptors 1.5°

Bolt Torque/Spanner

Successful installation of LD AquaGrip flange adaptors requires the following bolt torque to be achieved on all clamp band bolts:-

- M16 bolts 95 - 110Nm
- M20 bolts 190 - 215Nm
- M27 bolts 350 - 405Nm
- M33 bolts 675 - 750Nm

Temperature Rating of Product

EPDM -20°C to +40°C

AquaGrip is not suitable for use on heating systems with fluctuating temperatures.

End Load Due to Internal Pressure

AquaFast Fully restrained fitting, and has been designed to meet the performance requirements of BS EN 12842, ISO 178875 (supersedes ISO 12436.2) and ISO 4-01-02 (formerly WIS 4-24-01) Type 1 for sizes up to and including 450mm, Type 2 for sizes 500mm and above.

Approvals

The following water contact materials used in AquaGrip are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

In addition to the above, AquaGrip as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Flange adaptor body

280mm and below: SG iron to BS EN 1563
Symbol EN-GJS-450-10.

315mm and above: mild steel to BS EN10025 Grade S275.

Clamp band

SG iron (225mm to 800mm) to BS EN 1563
Symbol EN-GJS-450-10.

Mild steel to BS EN10025 Grade S275 (900mm to 1600mm).

Liner

(225 -280mm sizes): aluminium to BS1490 Grade LM 27M.

Gaskets

70 IRHD EPDM to BS EN 681-1 Type WA. WRAS listed.

Coatings

Flange Adaptor Body, Clamp Bands & Liners:

- Rilsan Nylon 11 (Black), WRAS listed.

Bolts, Nuts & Washers:

- Zinc plated followed by Grey Flurene® 177.

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France - Marseille

Martigues Thermal Power Plant

AquaGrip Flange Adaptor - DN350

Project

The Martigues power plant is located on the shores of the Mediterranean 30km from Marseille. The existing power plant comprises of 4 oil fired 250mw units. Two of these are to be transformed into state of the art gas fired combined cycle units.

Client

EDF

Contractor

Cari TP Nice

Distributor

Aliaxis France

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AquaShield®

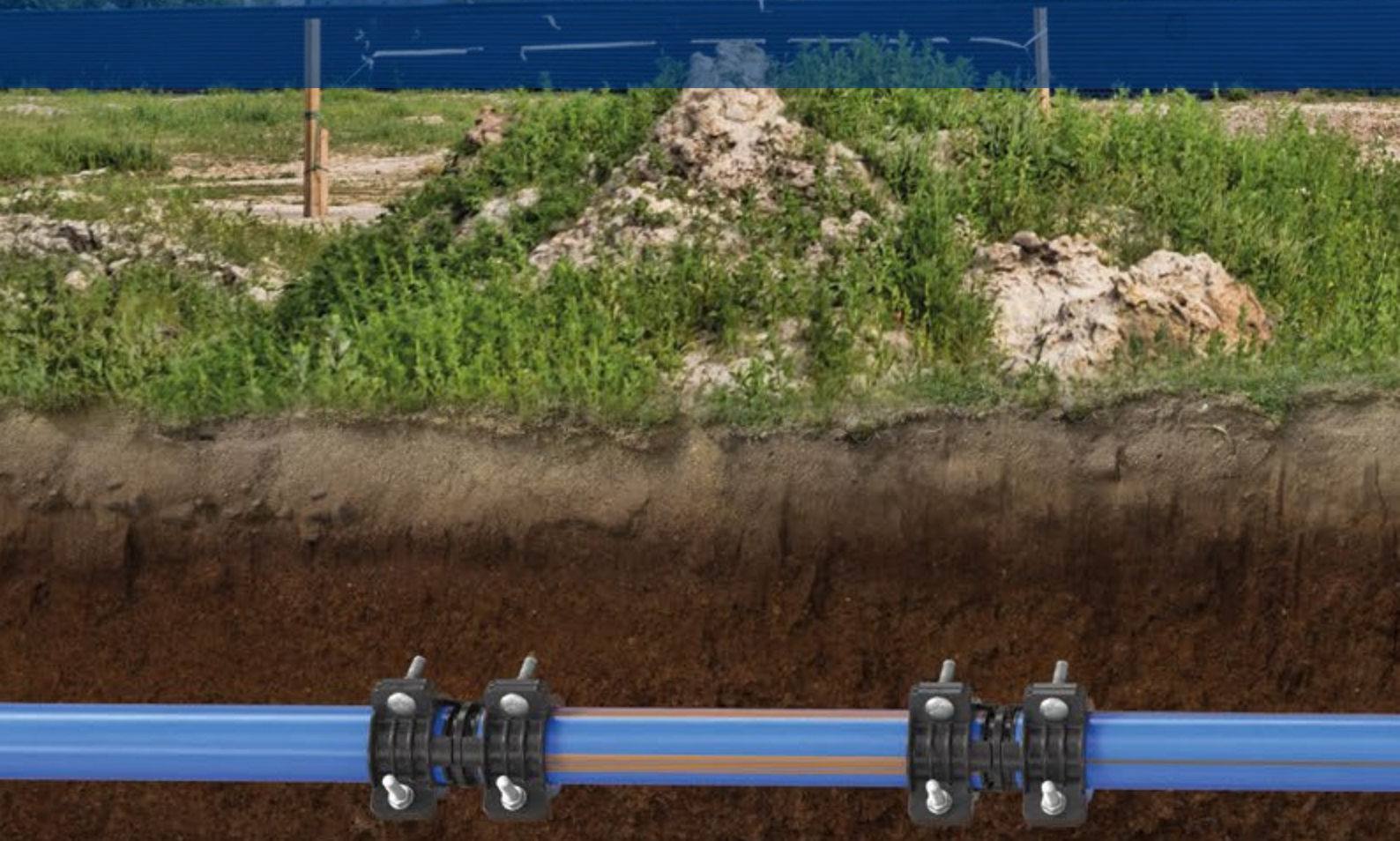
Couplings & Flange Adaptors

AquaShield® - Universal Fittings For Barrier Pipes
DN90 / DN125 / DN180

Brownfield Sites

Brownfield sites gained political significance after the UK government set a national target in February 1998 to ensure 60 per cent of all new housing developments were to be built on brownfield land. This land had been previously developed for industrial or commercial purposes and may have also been contaminated owing to its prior use.

Brownfield development is preferable to building on the green belt and has been reinforced as established government planning policy in subsequent years especially with the growing demand to encourage and support sustainable solutions.



AquaShield fittings are compatible with standard PE and market leading barrier pipe brands.

AquaShield® - Unique Fittings for Barrier Pipe Connections

Consequently, there has been a demand for barrier pipe and the connections required between pipework to protect water supplies for households and businesses from possible contamination.

However, up until now a key unsolved client issue has been that no independently certified solution for joining pipe systems from different manufacturers is available.

And although connections can be made by electrofusion this often involves heavy and expensive equipment and trained operators. **This is where AquaShield® can help.**

AquaShield Couplings & Flange Adaptors

Overview

The AquaShield® Solution

AquaShield® is a non-permeable universal fitting, available as a coupling or a flange adaptor to be used on new installations and repairs to connect different barrier pipe systems reliably.

These fittings prevent contaminants entering water networks by sealing the barrier pipe from within while keeping the outer layer of the barrier pipe intact. It can also be used as a transition to a standard PE water network.

AquaShield® is rated to 16 bar working pressure and has a unique gripping mechanism offering IGN 4-01-02 Type 1 (formally WIS 4-24-01) type-1 end load restraint which means the pipe will fail before the fitting.

Unique Gripping Technology

AquaShield® forms a leak-tight seal without the need for a gasket simply by torquing up the bolts. The spigot profile design ensures a firm and secure connection is made from inside the pipe.

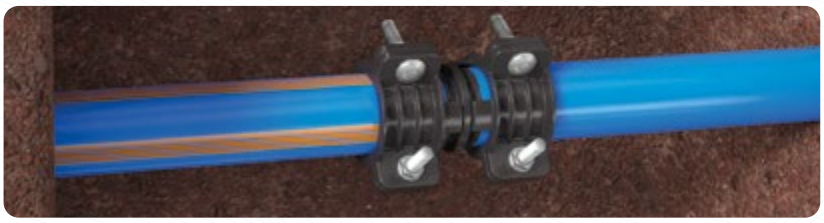
AquaShield® Universal Fitting Examples for Barrier Pipes

AquaShield® can be used to connect barrier pipes from different manufacturers*. See examples below:-

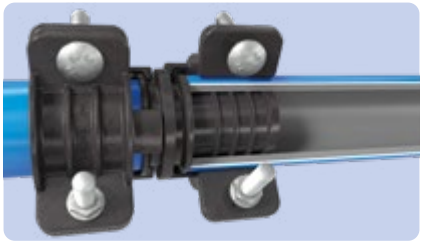
AquaShield® Couplings are compatible to connect two PURITON® barrier pipes.

AquaShield® Couplings are compatible to connect PROTECTA-LINE® to PURITON® barrier pipe.

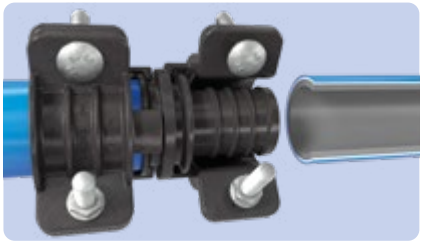
AquaShield® Couplings are compatible to connect SLA® to standard PE pipe.



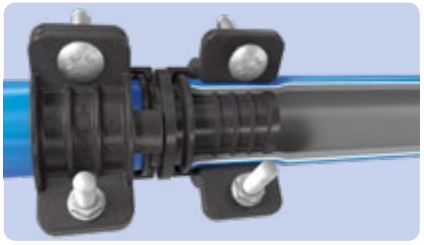
AquaShield® Flange Adaptors are compatible to connect all barrier pipe brands stated in the data sheet. Below is an example of connection between PROTECTA-LINE®, valve and PE pipe.



1. Loosen bolts slightly and slide pipe on



2. Push pipe on to spigot and check is visible in indicator window



3. Tighten bolts sequentially and incrementally

AquaShield Couplings & Flange Adaptors

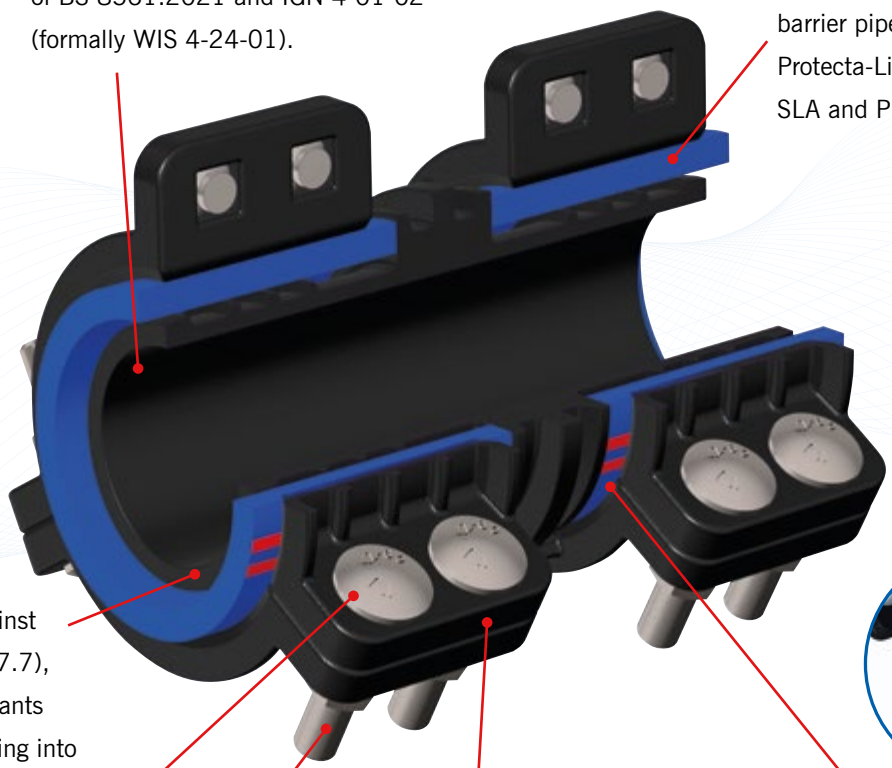
Product Design Benefits

AquaShield® is simple to install and comes preassembled with captive and reversible stainless steel bolts, which makes it quick and easy to slide onto the pipe and tighten up with only a single spanner or a wrench. There is no requirement for pipe surface preparation and no need to wrap after installation. Fittings have a 50 year design life expectancy and have been independently tested and approved to BS 8561:2021 and certified by WRc and RINA for permeation against contaminants as per BS 8588:2017 (section 7.7).

Long life Protection 50 year design life expectancy is assured through accelerated ageing tests that simulates the life cycle of the product.

Fully restrained, Type-1 fitting designed to meet the performance requirements of BS 8561:2021 and IGN 4-01-02 (formally WIS 4-24-01).

Universal fitting that interconnects all major barrier pipe brands including Protecta-Line, Puriton, SLA and PE 100.



Independently tested against BS 8588:2017 (section 7.7), which prevents contaminants from the ground penetrating into the water supply.

No secondary re-torque necessary.

Visual indicator for correct installation.

Stainless steel nuts and bolts coated with dry film lubricant, which provides long term corrosion protection.

As with all Viking Johnson products, AquaShield® utilises Rilsan: a bio coating made from castor oil which is highly protective and environmentally sustainable.

RILSAN®

AquaShield® Flange Adaptor

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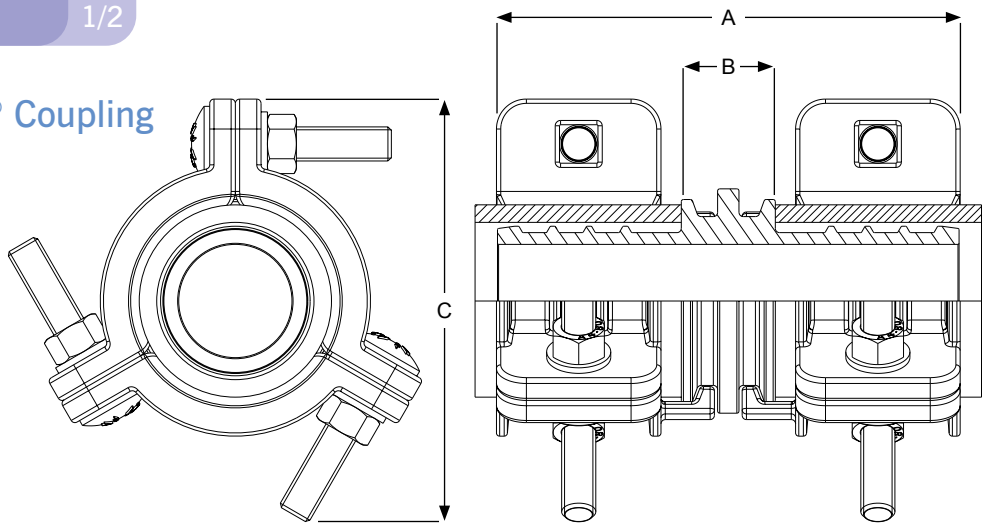
AquaShield Couplings & Flange Adaptors DN90

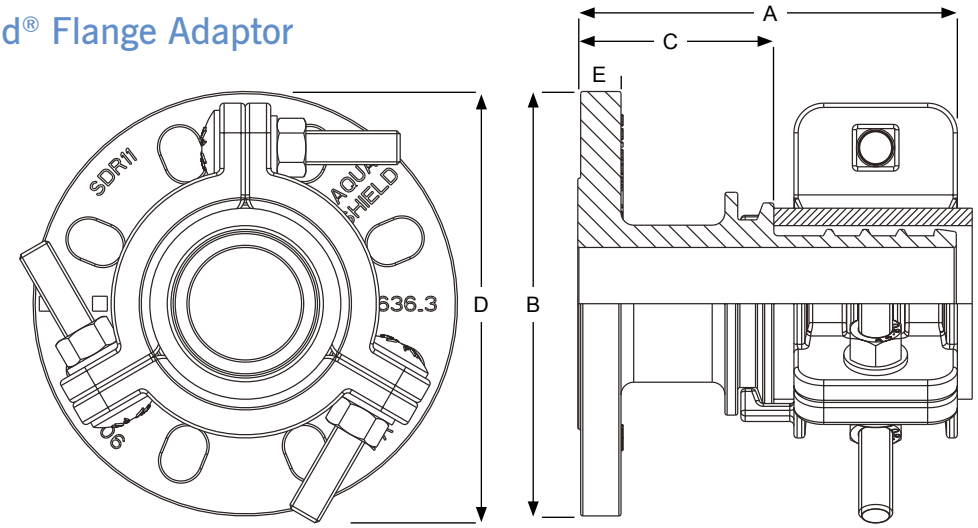
Datasheet 1/2

AquaShield® Coupling



Pipe OD	SDR Rating	Dimensions (mm)			Clamp Band Bolts		Weight (kg)
		A	B	C	No. of Bolts	Bolts size	
90	11	217	45	198	6	M16 x 80	10.2
90	17	217	45	198	6	M16 x 80	10.2

AquaShield® Flange Adaptor



Pipe OD	SDR Rating	Flange Drilling		Dimensions (mm)					Clamp Band Bolts		Weight (kg)
		Nom (DN)	Metric Drilling Specification	A	B	C	D	E	No. of Bolts	Bolts size	
90	11	DN65 / DN80	PN10 / 16	179	200	93	198	20.34	3	M16 x 80	9.9
90	17	DN65 / DN80	PN10 / 16	179	200	93	198	20.34	3	M16 x 80	9.9

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AquaShield Couplings & Flange Adaptors DN90

Datasheet 2/2

Technical Information

Working Pressure Rating

Water 16 bar

Gas not approved

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.8 bar to BS 8561

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Pipe Material

Compatible† with following barrier pipe materials:-

- GPS Protecta-Line
- Radius Puriton
- Egeplast SLA

In addition, works on standard PE 100 Pipe to BS EN 12001:2011/2012

In all cases the SDR rating must be either 11 or 17.

Angularity

Not Applicable

Bolt Torque/Spanner

Torque 200-210Nm on every bolt

Spanner size A/F 24mm

Temperature Rating of Product

-20°C to +40°C

For optimal installation temperature, please refer to the installation manual.

End Load Due to Internal Pressure

AquaShield® fully restrained fitting, designed to meet the performance requirements of BS 8561:2021 and IGN 4-01-02 (formally WIS 4-24-01).

Approvals

The following water contact materials used in AquaShield® are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

Permeation test in accordance with BS 8588:2017 (section 7.7) conducted and independently verified by RINA test laboratory.

Verification of compliance with BS 8561:2021 and BS 8588:2017 (section 7.7) by Water Research Centre (WRc).

KIWA UK Reg4 Approval (Pending).

Materials & Relevant Standards

Coupling, Flange Adaptor & Clamp Bands

SG Iron to BS EN 1563 Symbol EN-GJS-450-10

Bolts

Stainless Steel grade A2-70

Nuts

Stainless Steel grade A4-80

Coatings:

Cast/Metal Components:

- Rilsan Nylon 11 (Black)

Bolts and Nuts:

- Delta Seal Silver GZ

* Disclaimer: Crane Limited is not affiliated, associated and is not in any way connected with Radius Systems Limited, Glynwed Pipe Systems Limited, Aliaxis Holdings UK Limited or Egeplast International GmbH and does not produce or sell products on their behalf.

† Relevant tests have been conducted and certifications obtained in accordance with BS 8588:2017 (section 7.7) and BS 8561:2021 for the barrier pipe materials listed above.

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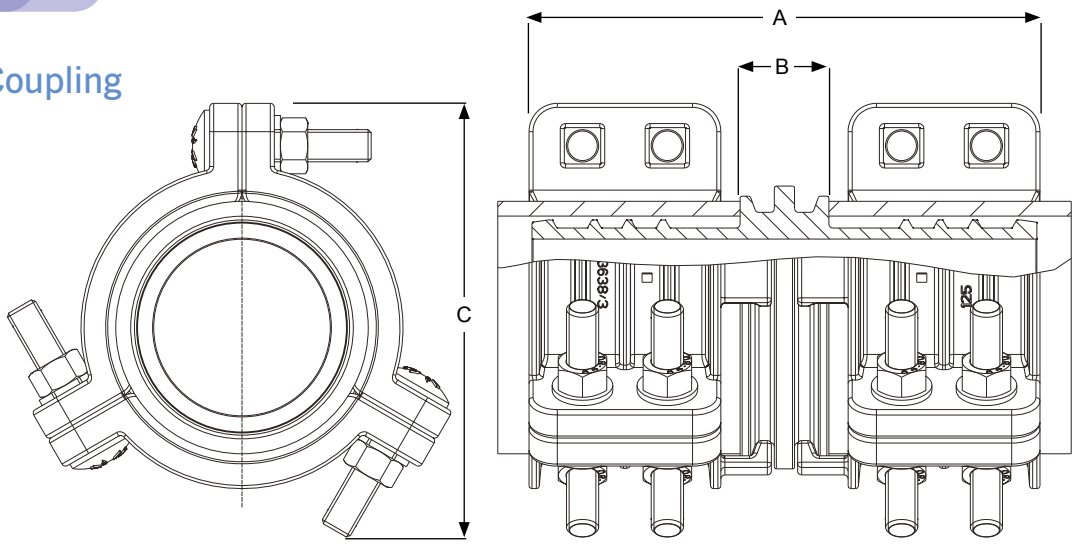
AquaShield Couplings & Flange Adaptors DN125

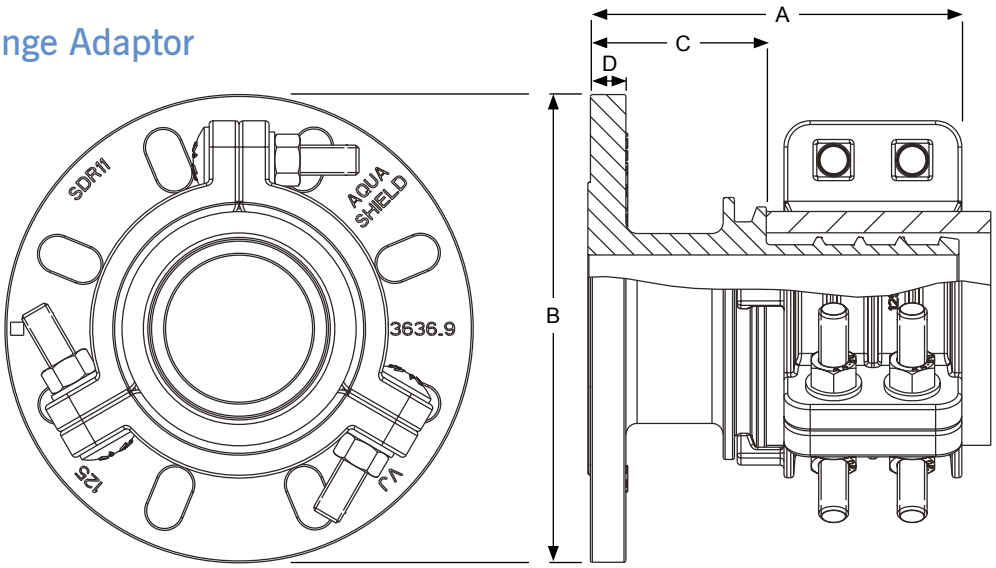
Datasheet 1/2

AquaShield® Coupling



Pipe OD	SDR Rating	Dimensions (mm)			Clamp Band Bolts		Weight (kg)
		A	B	C	No. of Bolts	Bolts size	
125	11	253	44	221	12	M16 x 80	17.2
125	17	253	44	221	12	M16 x 80	17.2

AquaShield® Flange Adaptor



Pipe OD	SDR Rating	Flange Drilling		Dimensions (mm)				Clamp Band Bolts		Weight (kg)
		Nom (DN)	Metric Drilling Specification	A	B	C	D	No. of Bolts	Bolts size	
125	11	DN100 / DN125	PN10 / 16	250	200	95	20.3	6	M16 x 80	16.1
125	17	DN100 / DN125	PN10 / 16	250	200	95	20.3	6	M16 x 80	16.1

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AquaShield Couplings & Flange Adaptors DN125

Datasheet 2/2

Technical Information

Working Pressure Rating

Water 16 bar

Gas not approved

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.8 bar to BS 8561

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Pipe Material

Compatible† with following barrier pipe materials:-

- GPS Protecta-Line
- Radius Puriton
- Egeplast SLA

In addition, works on standard PE 100 Pipe to BS EN 12001:2011/2012

In all cases the SDR rating must be either 11 or 17.

Angularity

Not Applicable

Bolt Torque/Spanner

Torque 200-210Nm on every bolt

Spanner size A/F 24mm

Temperature Rating of Product

-20°C to +40°C

For optimal installation temperature, please refer to the installation manual.

End Load Due to Internal Pressure

AquaShield® fully restrained fitting, designed to meet the performance requirements of BS 8561:2021 and IGN 4-01-02 (formally WIS 4-24-01).

Approvals

The following water contact materials used in AquaShield® are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

Permeation test in accordance with BS 8588:2017 (section 7.7) conducted and independently verified by RINA test laboratory.

Verification of compliance with BS 8561:2021 and BS 8588:2017 (section 7.7) by Water Research Centre (WRc).

KIWA UK Reg4 Approval (Pending).

Materials & Relevant Standards

Coupling, Flange Adaptor & Clamp Bands

SG Iron to BS EN 1563 Symbol EN-GJS-450-10

Bolts

Stainless Steel grade A2-70

Nuts

Stainless Steel grade A4-80

Coatings:

Cast/Metal Components:

- Rilsan Nylon 11 (Black)

Bolts and Nuts:

- Delta Seal Silver GZ

* Disclaimer: Crane Limited is not affiliated, associated and is not in any way connected with Radius Systems Limited, Glynwed Pipe Systems Limited, Aliaxis Holdings UK Limited or Egeplast International GmbH and does not produce or sell products on their behalf.

† Relevant tests have been conducted and certifications obtained in accordance with BS 8588:2017 (section 7.7) and BS 8561:2021 for the barrier pipe materials listed above.

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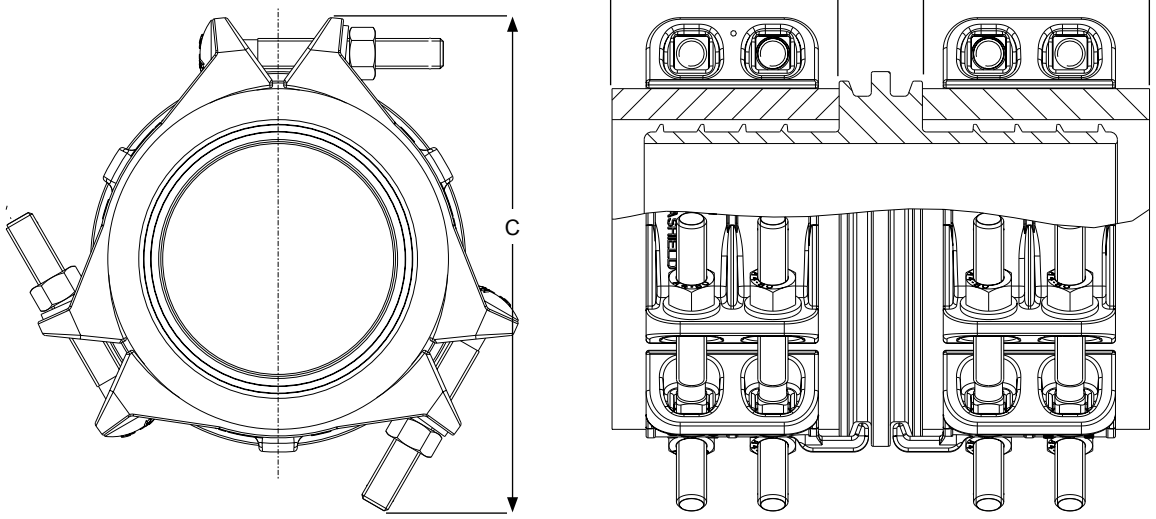
AquaShield Couplings & Flange Adaptors DN180

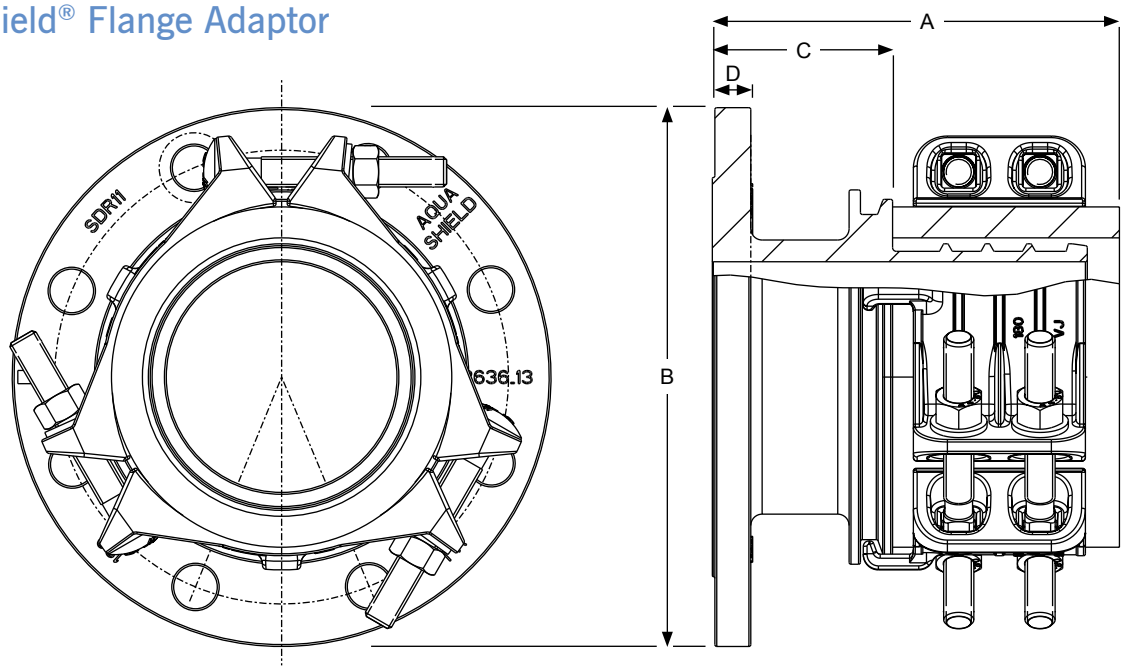
Datasheet 1/2

AquaShield® Coupling



Pipe OD	SDR Rating	Dimensions (mm)			Clamp Band Bolts		Weight (kg)
		A	B	C	No. of Bolts	Bolts size	
180	11	261	44	248	12	M16 x 120	20.8
180	17	261	44	248	12	M16 x 120	20.8

AquaShield® Flange Adaptor



Pipe OD	SDR Rating	Flange Drilling		Dimensions (mm)				Clamp Band Bolts		Weight (kg)
		Nom (DN)	Metric Drilling Specification	A	B	C	D	No. of Bolts	Bolts size	
180	11	DN150	PN10 / 16	285	197	95	20.3	6	M16 x 120	20.1
180	17	DN150	PN10 / 16	285	197	95	20.3	6	M16 x 120	20.1

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AquaShield Couplings & Flange Adaptors DN180

Datasheet 2/2

Technical Information

Working Pressure Rating

Water 16 bar

Gas not approved

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.8 bar to BS 8561

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Pipe Material

Compatible† with following barrier pipe materials:-

- GPS Protecta-Line
- Radius Puriton
- Egeplast SLA

In addition, works on standard PE 100 Pipe to BS EN 12001:2011/2012

In all cases the SDR rating must be either 11 or 17.

Angularity

Not Applicable

Bolt Torque/Spanner

Torque 200-210Nm on every bolt

Spanner size A/F 24mm

Temperature Rating of Product

-20°C to +40°C

For optimal installation temperature, please refer to the installation manual.

End Load Due to Internal Pressure

AquaShield® fully restrained fitting, designed to meet the performance requirements of BS 8561:2021 and IGN 4-01-02 (formally WIS 4-24-01).

Approvals

The following water contact materials used in AquaShield® are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

Permeation test in accordance with BS 8588:2017 (section 7.7) conducted and independently verified by RINA test laboratory.

Verification of compliance with BS 8561:2021 and BS 8588:2017 (section 7.7) by Water Research Centre (WRc).

KIWA UK Reg4 Approval (Pending).

Materials & Relevant Standards

Coupling, Flange Adaptor & Clamp Bands

SG Iron to BS EN 1563 Symbol EN-GJS-450-10

Bolts

Stainless Steel grade A2-70

Nuts

Stainless Steel grade A4-80

Coatings:

Cast/Metal Components:

- Rilsan Nylon 11 (Black)

Bolts and Nuts:

- Delta Seal Silver GZ

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AquaShield®

Couplings & Flange Adaptors

DN90 / DN125 / DN180

Unique Fittings For Making Barrier Pipe Connections

There has been a demand for barrier pipe solutions to protect water supplies for households and businesses from possible contamination on brownfield sites.

However, up until now a key unsolved client issue has been that no independently certified solution for joining pipe systems from different barrier pipe manufacturers has been available.

This has now been resolved with the introduction of the AquaShield range.

EasiRange®

A Versatile Rapid Solution for Pipe Repair & Tapping

EasiClamp, EasiTap, EasiTee,
EasiCollar & EasiFit

VIKING JOHNSON®

NEW

EasiFit®
Encapsulate
Repair & Restore

The Simple, yet advanced repair and under pressure tapping solution

The Viking Johnson EasiRange has been developed to provide a comprehensive range of pipe repair and tapping products to serve the needs of today's water industry. The EasiRange of products includes:-

Repair Clamps	DN50 to DN700	EasiClamp
	DN350 to DN600	MattSeal EasiTap
Under Pressure Tapping (½" to 2" D&T outlets)	DN50 to DN700	EasiTap
	DN350 to DN600	MattSeal EasiTap
Under Pressure Tees (Flanged Outlets)	DN50 to DN300	Universal EasiTee
	DN350 to DN600	MattSeal EasiTee
	DN350 to DN1200	RingSeal EasiTee
Repairing Spigot & Socket Joints	DN350 to DN1200	EasiCollar

Repair Clamps & Under Pressure Tapping (½" to 2" D&T Outlets)

In the size range DN50 to DN700, as standard the EasiClamp and EasiTap products come in two halves with four self-retaining bolts that reduces the potential for them being lost during installation. A key advantage of this variant is once the product has been installed over the damaged pipe, selective tightening of the four bolts allows an operatives to re-align pipes with circumferential breaks that have moved apart in service. In addition, with the four bolt variant Viking Johnson has introduced a new Stainless Steel bolt option on the established EasiClamp and EasiTap repair range. This will give the customer an enhanced corrosion protection and increase the longevity of the product.

Pipe Materials

Ductile Iron | Cast Iron | Steel 2 | PVC 1, 2 | Asbestos Cement 1 | Concrete 3

[1] Not suitable for EasiTee
[2] Not suitable for EasiCollar
[3] Only suitable for EasiCollar

EasiRange

Overview

In the three high volumes sizes (DN80, DN100 and DN150) a hinged two-bolt variant is available. This clamp consists of two halves that are hinged and can be fully opened to permit quicker and easier fitting on the pipe. Unlike the four-bolt clamps, where the operative has to position the two halves of the clamp on either side of the pipe, the hinged two-bolt clamp is simply fully opened, positioned over the top of pipe and then under it's self-weight the hinged halves drop, close and are locked into position by the two patented self-retaining bolts. While this easier means of installation reduces the length of time an operative is working adjacent to the damaged pipe, with only two bolts there is limited scope to re-align fractured pipe making this more suitable for pinhole corrosion, impact damage and longitudinal fractures.

The two-bolt hinged repair clamp also incorporates lugs that will facilitate connection to equipment that can install the clamp from the trench side, negating the need for an operator to enter the excavation. This, along with the self-locating bolts that lock into position when the clamp is on the pipe means the fittings are ready for the future when keyhole vacuum excavation is used to access pipelines to undertake repairs.

For the sizes DN350 to DN600, the Viking Johnson MattSeal EasiTap is used for both repairing pipes and to tap an outlet. Fabricated in steel with a 24mm tolerance on outside diameter and always supplied with a D&T outlet that can be left open while installing on a pressurised damaged pipe to relieve the pressure, these products provide an ideal means to repair larger diameter mains.

In all cases, the iron bodied EasiClamp and EasiTap products provide a permanent repair / outlet that is as strong as the original pipe.

Repair Clamps are ideal for

Circumferential breaks | Corrosion holes | Impact damage | Longitudinal cracks

Under Pressure Tees (Flanged Outlets)

Universal EasiTee (DN50 to DN300) features a pipe outside diameter tolerance of up to 26mm, meaning that one fitting will suite the majority of pipe ODs for the same nominal bore, and combining this with the ability to have a flanged outlet the same size as the host pipe makes this an ideal product to stock. The unique "swing over bolts" also makes installing easy in the field as there is reduced chance of losing components in the trench.

For the larger diameters (DN350 and over), Viking Johnson offers two options:-

MattSeal EasiTee (DN350 to DN600)

Fabricated in steel and incorporating the full waffle gasket offering a 12mm tolerance, this range allows the installer to take a branch outlet of the same diameter as the host pipe. Ideal for use on cast iron pipes the waffle gasket prevents leakage caused by potential stress fractures induced in cast iron mains when installing the branch outlet.

RingSeal EasiTee (DN350 to DN1200)

Fabricated in steel but using a gasket that seals around the outlet cut into the host pipe, RingSeal offers a lighter weight and more cost effective product that is ideal for steel and ductile iron pipe, or where on cast iron pipe the flanged outlet less than 70% of the host pipe diameter.

The datasheets for the two products provides more information on when best to use MattSeal and RingSeal EasiTee products.

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EasiRange

Overview

Repairing Spigot & Socket Joints

EasiCollar is an adaptable repair collar that provides an effective, permanent repair to leaking spigot and socket joints; once installed, the gasket reinforces the seal of the spigot and socket joint. Installation can take place whilst the mains pressure is on, avoiding costly shutdowns that disrupt supply to customers and once installed EasiCollar provides a permanent repair with no need for any future maintenance.

Permanent Seal

EasiClamp, EasiTap, and EasiTee (Universal and Matt Seal) products guarantee a reliable, permanent seal even on badly corroded pipes. A unique feature of these products is Viking Johnson's 100% circumferential 'Waffle' gasket, which provides a leak tight seal and also caters for circumferential or longitudinal cracks. The EPDM gasket, which is WRAS approved for use with potable water, ensures a reliable and permanent leak tight solution with working pressure of 16 bar and site test pressure of 24 bar.

RingSeal EasiTee uses a twin seal gasket to provide a permanent seal at the point of tapping.

Minimise Stockholding

Wide tolerance range – each fitting (EasiClamp, EasiTap and Universal EasiTee) will suit a number of popular pipe materials of the same nominal bore.

High Strength

The range has been manufactured using the latest technology minimising raw material usage. EasiRange products (EasiClamp, EasiTap and Universal EasiTee) are constructed from ductile and/or malleable iron or steel half housings. The products will support and seal around the pipe for the full length of the body, ensuring that sealing effectiveness is maintained in all circumstances.

Ease of Installation

All products can be installed under pressure, in all weather conditions meaning there is no need for costly mains shut down or disruption to customers. EasiClamp and EasiTap products feature self-retaining bolts and Universal EasiTee feature a unique 'swing over' bolt to aid installation, which reduces the potential loss of bolts during installation.

No specialist installation equipment is required and can be installed using simply a torque wrench to confirm correct bolt torque.

EasiClamp & EasiTap - 4 Bolt

Product Design Benefits

Corrosion Protection

All cast components are fully coated in Black Rilsan Nylon 11 which has excellent resistance to impact, abrasion, weathering and chemicals as well as good thermal stability and flexibility to accommodate for rough site handling.

High Strength

The strength of the ductile iron housings will provide permanent support and seal around the pipe.

Industry Testing

Viking Johnson products undergo intensive performance testing to ensure the strength and integrity of all products meet industry standards.

- Accelerated Ageing Tests (AAT) to verify 50 year design life expectancy.
- EasiRange has been tested on knurled and grooved pipe work to match typical pipe conditions found on many sites around the world.

Permanent Seal

The 100% 'Waffle' gasket provides a reliable and permanent leak tight seal even on circumferential or longitudinal cracks.

Enhanced Lifespan

Product comes as standard with grade 4.8 steel bolts that are Sheraplex coated bolts to WIS 4-52-03 Option exists for grade A2 Stainless Steel bolts coated with dry film lubricant.

Both provides excellent corrosion resistance against degradation and maximizes long life

Customer Benefits.

- Can be installed under pressure:
  - No costly mains shutdown.
  - No disruption to customers.
  - No dirty water complaints.
- Enables easy repair in conditions where other pipes are in close proximity.
- A reliable and permanent leak tight seal on circumferential or longitudinal cracks.
- Available from DN50 to DN300.

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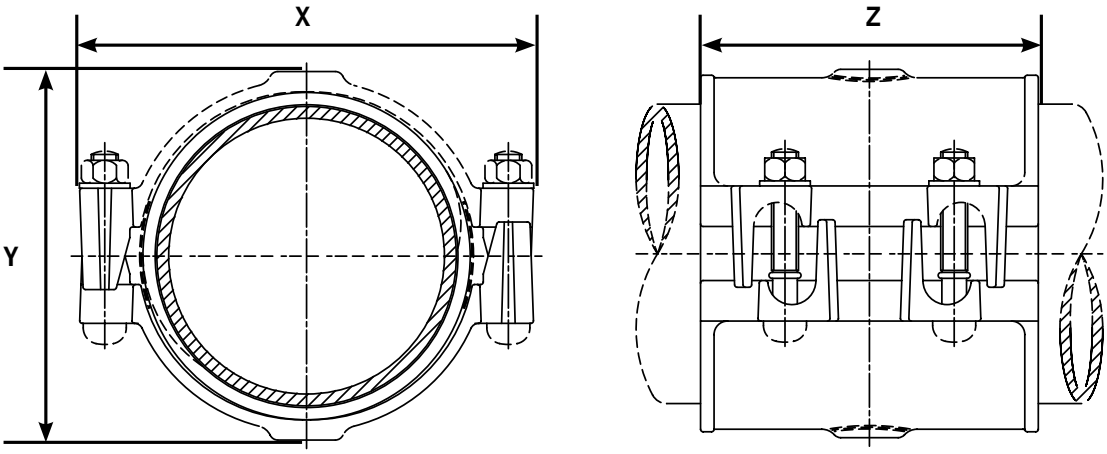
EasiClamp & EasiTap - 4 Bolt (D&T / D&T Boss)

Datasheet 1/2

EasiClamp - 4 Bolt



EasiClamp & EasiTap - 4 Bolt D&T Boss

Nominal Diameter		OD Range		Dimensions			Bolt Size No.-Dia x Length	Weight (kg)	Outlet BSP Threaded Size
		Min (mm)	Max (mm)	X (mm)	Y (Max) (mm)	Z (mm)			
2”	DN50	66.0	75.0	150	110	200	4-M12 x 65mm	4.1	3/4”
2 1/2”	DN65	75.0	84.0	159	119	200	4-M12 x 65mm	4.4	3/4”
3”	DN80	92.3	103.0	184	145	200	4-M16 x 95mm	4.9	3/4”
4”	DN100	115.0	125.6	211	167	200	4-M16 x 95mm	6.0	1/2”, 3/4”or 1”
5”	DN125	141.0	153.9	239	182	200	4-M16 x 95mm	7.5	3/4” or 1”
6”	DN150	166.0	181.2	267	217	200	4-M16 x 95mm	8.3	3/4” or 1”
7”	DN175	200.0	210.0	296	238	200	4-M16 x 95mm	9.0	3/4” or 1”
8”	DN200	216.5	226.0	313	269	200	4-M16 x 95mm	9.5	1”
8”	DN200	230.2	243.5	328	281	200	4-M16 x 95mm	10.8	3/4” or 1”
9”	DN225	243.0	267.0	362	307	212	4-M16 x 120mm	13.6	3/4” or 1”
10”	DN250	269.0	294.0	395	322	250	6-M16 x 120mm	18.5	1/2”, 3/4”or 1”
12”	DN300	323.0	349.0	450	387	300	8-M16 x 120mm	25.2	1/2”, 3/4”or 1”

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EasiClamp & EasiTap - 4 Bolt (D&T / D&T Boss)

Datasheet 2/2

Technical Information

Working Pressure Rating

Water 16 bar

Gas not approved

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Angularity

Four Bolt EasiClamp fittings are not able to accommodate any angularity.

Bolt Torque/Spanner

M12; Torque 55-65Nm on every bolt

Spanner size A/F 19mm

M16; Torque 95-110Nm on every bolt

Spanner size A/F 24mm

Temperature Rating of Product

EPDM -20°C to +40°C

Four bolt EasiClamp is are not suitable for use on heating systems with fluctuating temperatures.

End Load Due to Internal Pressure

Four bolt EasiClamp and EasiTap DO NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out from the clamp.

Approvals

The following water contact materials used in four bolt EasiClamp and EasiTap are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

In addition to the above, four bolt EasiClamp and EasiTap as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Housing

Plain Housing:

- Ductile Iron to BS EN 1563 SYMBOL EN-GJS-450-10

Tapped Housing (Boss):

- Ductile Iron to BS EN 1563 SYMBOL EN-GJS-450-10

Tapped Housing (Outlet) Options:

- Ductile Iron to BS EN 1563 SYMBOL EN-GJS-450-10
- Malleable Cast Iron to BS EN 1562 SYMBOL EN-GJMB-350-10

Bridging Plate

Stainless Steel to BS1449: Part 2 Grade 304S15 2B Finish

Gasket

BS EN681-1 60 IRHD

Coatings

Plain Housing:

- Rilsan Nylon 11 to WIS 4-52-01 (Part1)

Tapped Housing:

- Rilsan Nylon 11 to WIS 4-52-01 (Part1)

Bolts & Nuts:

- Sheraplex to WIS 4-52-03

Bolts

Standard - Steel to BS EN ISO 898-1 Property Class 4.8

Option - Stainless Steel to BS EN ISO3506-1 Grade A2 Property Class 70

Nuts

Standard - Steel to BS 4190 Grade 4

Option - Stainless Steel to BS EN ISO3506-2 Grade A4 Property Class 80

Washers

Standard - Stainless Steel to BS 1449:Part 2 Grade 304 S15

Option - Stainless Steel to BS EN ISO3506-1 Grade A2 Property Class 50

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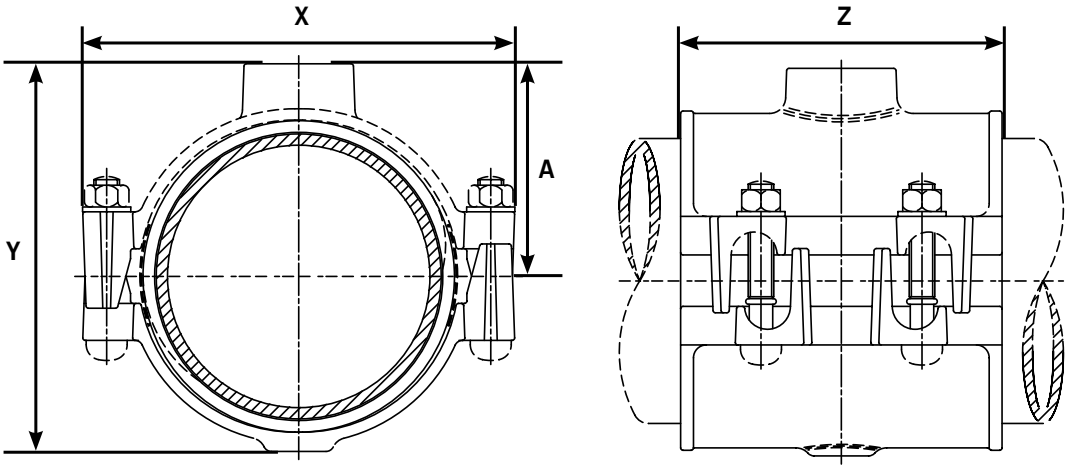
EasiClamp & EasiTap - 4 Bolt (D&T / D&T Outlet)

Datasheet 1/2

EasiTap - 4 Bolt



EasiTap - 4 Bolt D&T Outlet

Nominal Diameter	OD Range		Dimensions				Bolt Size No.-Dia x Length	Weight (kg)	Outlet BSP Threaded Size
	Min (mm)	Max (mm)	X (mm)	Y (Max) (mm)	Z (mm)	A (mm)			
3”	92.3	103.0	184	173	200	92	4-M16 x 95mm	5.0	1 1/2 or 2” BSP
4”	115.0	125.6	211	195	200	102	4-M16 x 95mm	6.0	2” BSP
5”	141.0	153.9	239	210	200	120	4-M16 x 95mm	7.5	2” BSP
6”	166.0	181.2	267	245	200	130	4-M16 x 95mm	8.3	2” BSP
7”	200.0	210.0	296	266	200	146	4-M16 x 95mm	9.0	2” BSP
200	216.5	226.0	313	292	200	153	4-M16 x 95mm	10.0	2” BSP
8”	230.2	243.5	332	309	200	161	4-M16 x 95mm	10.8	2” BSP
9”	243.0	267.0	362	330	212	180	4-M16 x 120mm	13.7	2” BSP
10”	269.0	294.0	395	347	250	194	6-M16 x 120mm	18.7	2” BSP
12”	323.0	349.0	450	412	300	221	8-M16 x 120mm	25.4	2” BSP

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EasiClamp & EasiTap - 4 Bolt (D&T / D&T Outlet)

Datasheet 2/2

Technical Information

Working Pressure Rating

Water 16 bar

Gas not approved

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Angularity

Four Bolt EasiTap fittings are not able to accommodate any angularity.

Bolt Torque/Spanner

M12; Torque 55-65Nm on every bolt

Spanner size A/F 19mm

M16; Torque 95-110Nm on every bolt

Spanner size A/F 24mm

Temperature Rating of Product

EPDM -20°C to +40°C

Four bolt EasiClamp and EasiTap are not suitable for use on heating systems with fluctuating temperatures.

End Load Due to Internal Pressure

Four bolt EasiClamp and EasiTap DO NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out from the clamp.

Approvals

The following water contact materials used in four bolt EasiClamp and EasiTap are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

In addition to the above, four bolt EasiClamp and EasiTap as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Housing

Plain Housing:

- Ductile Iron to BS EN 1563 SYMBOL EN-GJS-450-10

Tapped Housing (Boss):

- Ductile Iron to BS EN 1563 SYMBOL EN-GJS-450-10

Tapped Housing (Outlet) Options:

- Ductile Iron to BS EN 1563 SYMBOL EN-GJS-450-10
- Malleable Cast Iron to BS EN 1562 SYMBOL EN-GJMB-350-10

Bridging Plate

Stainless Steel to BS1449: Part 2 Grade 304S15 2B Finish

Gasket

BS EN681-1 60 IRHD

Coatings

Plain Housing:

- Rilsan Nylon 11 to WIS 4-52-01 (Part1)

Tapped Housing:

- Rilsan Nylon 11 to WIS 4-52-01 (Part1)

Bolts & Nuts:

- Sheraplex to WIS 4-52-03

Bolts

Standard - Steel to BS EN ISO 898-1 Property Class 4.8

Option - Stainless Steel to BS EN ISO3506-1 Grade A2 Property Class 70

Nuts

Standard - Steel to BS 4190 Grade 4

Option - Stainless Steel to BS EN ISO3506-2 Grade A4 Property Class 80

Washers

Standard - Stainless Steel to BS 1449:Part 2 Grade 304 S15

Option - Stainless Steel to BS EN ISO3506-1 Grade A2 Property Class 50

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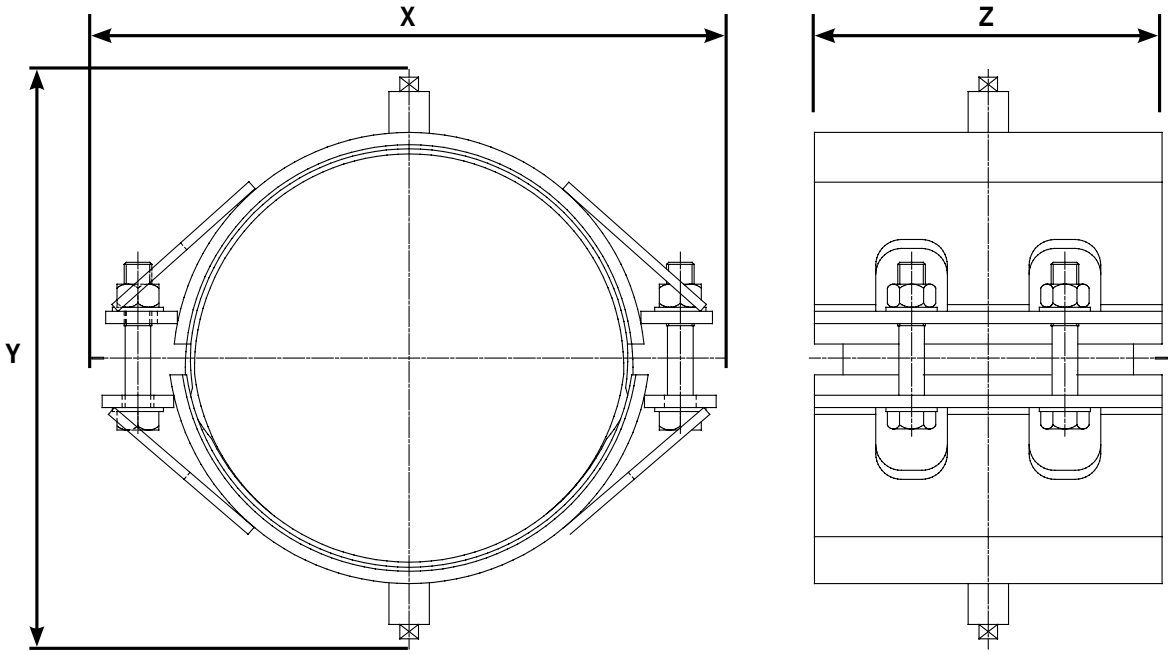
EasiClamp & EasiTap Large Diameter

Datasheet 1/2

EasiClamp Large Diameter



EasiClamp Large Diameter

Nominal Diameter		OD Range		Dimensions			Bolt Size No.-Dia x Length	Weight (kg)	Outlet BSP Threaded Size	Working Pressure
		Min (mm)	Max (mm)	X (mm)	Y (Max) (mm)	Z (mm)				
14"	DN350	372	396	586	542	340	4-M30 x 160mm	69	1" BSP	16 bar
16"	DN400	420	444	636	590	340	4-M30 x 160mm	111	1" BSP	16 bar
18"	DN450	468	492	687	639	340	4-M30 x 160mm	119	1" BSP	16 bar
20"	DN500	520	544	748	685	340	4-M30 x 160mm	176	1" BSP	16 bar
24"	DN600	621	645	913	794	340	4-M33 x 180mm	297	1" BSP	16 bar
28"	DN700	726	752	1022	900	340	4-M33 x 180mm	326	1" BSP	10 bar

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EasiClamp & EasiTap Large Diameter

Datasheet 2/2

Technical Information

Working Pressure Rating

Water, up to 24", 16 bar, from 28", 10 bar

Gas not approved

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Angularity

EasiClamp and EasiTap fittings are not able to accommodate any angularity.

Bolt Torque/Spanner

M30; Torque 550-575Nm on every bolt

Spanner size A/F 46mm

M33; Torque 615-645Nm on every bolt

Spanner Size A/F 50mm

Temperature Rating of Product

EPDM -20°C to +40°C

EasiClamp and EasiTap fittings are not suitable for use on heating systems with fluctuating temperatures.

End Load Due to Internal Pressure

EasiClamp and EasiTap DO NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out from the clamp.

Approvals

The following water contact materials used in four bolt EasiClamp and EasiTap are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

Materials & Relevant Standards

Housing

Plain Housing:

- Steel to BS EN10025-2:Grade S275JR

Tapped Housing (Boss):

- Steel to BS EN10025

Bridging Plate

Stainless Steel to BS1449: Part 2 Grade 304S15 2B Finish

Plug

Leaded Gunmetal to BS1400: Designation LG2

Gasket

60 IRHD EPDM to BS2494:W WFBS listed

Coatings

Plain Housing:

- Rilsan Nylon 11 to WIS 4-52-01 (Part1)

Tapped Housing:

- Rilsan Nylon 11 to WIS 4-52-01 (Part1)

Bolts & Nuts:

- Sheraplex to WIS 4-52-03

Bolts

Standard - Steel to BS EN ISO 898-1 Property Class 4.8

Nuts

Standard - Steel to BS EN20898-2 Propety Class 8.0

Washers

Steel to BS EN10083 Part 1 Grade C22E

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EasiClamp & EasiTap Hinged - 2 Bolt

Product Design Benefits

Corrosion Protection

All cast components are fully coated in Black Rilsan Nylon 11 which has excellent resistance to impact, abrasion, weathering and chemicals as well as good thermal stability and flexibility to accommodate for rough site handling.

Exceptional Grip

The two halves are hinged, fully opening to permit quick and easy fitting on the pipe. There are no pins which removes any risk from bimetallic corrosion.

High Strength

The strength of the ductile iron housings will provide permanent support and seal around the pipe.

Permanent Seal

The 100% 'Waffle' gasket provides a reliable and permanent leak tight seal even on circumferential or longitudinal cracks.

Self Locating Bolts

Patented self retaining bolts not only prevent the loss of components in the trench but also self locate allowing blind assembly. The double locking mechanism automatically locks into position once the product is fully wrapped around the pipe allowing the operator to use both hands to position over the leak.

Universal EasiTee

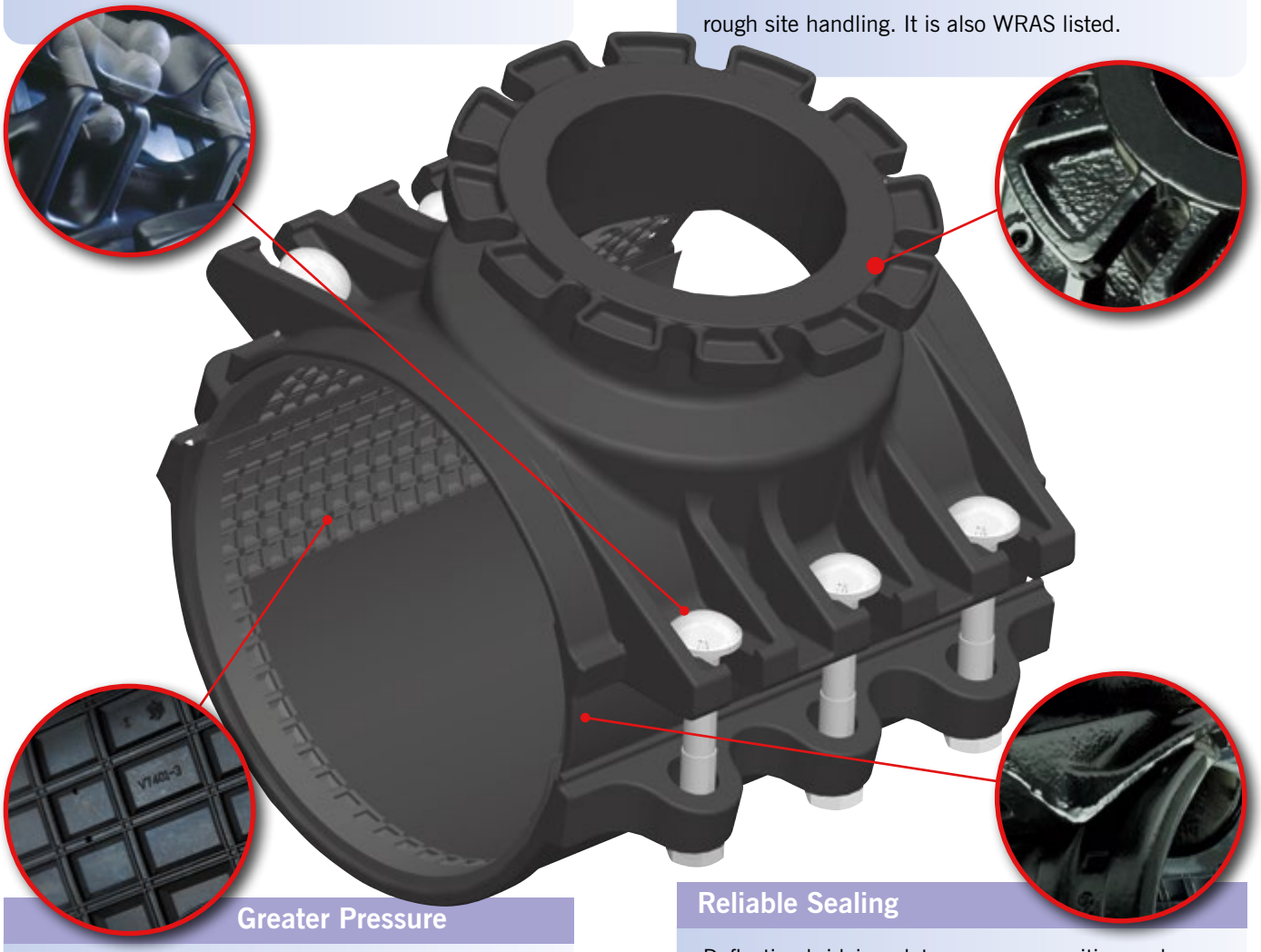
Product Design Benefits

Simple Installation

Universal EasiTee products feature a unique “swing over” bolt to aid installation.

Excellent Corrosion Protection

The sleeve or body are fully coated in Black Rilsan Nylon 11 which has excellent resistance to impact, abrasion, weathering and chemicals as well as good thermal stability and flexibility to accommodate for rough site handling. It is also WRAS listed.



Greater Pressure

Flurene coated bolts offer higher load to torque capabilities achieving a greater gasket pressure.

Reliable Sealing

Deflecting bridging plate ensures a positive seal every time.

Customer Benefits

- Branch outlets available up to the same size as main.
- Can be installed under pressure:
  - No costly mains shutdown.
  - No disruption to customers.
  - No dirty water complaints.
- Up to 24mm pipe size tolerance to suit a number of popular pipe materials of the same nominal bore and reduce stock holding.
- Constructed from ductile iron, the Universal EasiTee will support and seal around the pipe for the full length of the body, ensuring that sealing effectiveness is maintained in all circumstances.
- Available from DN80 to DN300.
- Available with various flange connections.

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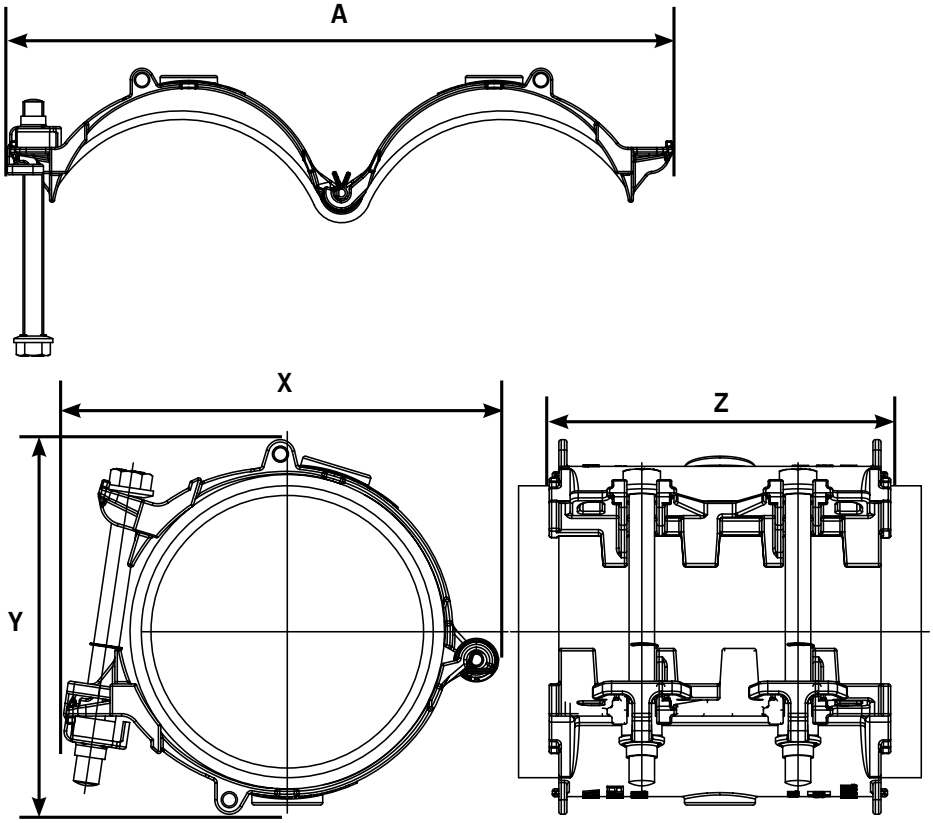
EasiClamp & EasiTap Hinged - 2 Bolt (D&T / D&T Boss)

Datasheet 1/2

EasiClamp Hinged - 2 Bolt



EasiClamp Hinged - 2 Bolt

Nominal Diameter	OD Range		Overall Dimensions				Bolt Size No.-Dia x Length	Gasket Mould No.	Weight (kg)
	Min (mm)	Max (mm)	X (mm)	Y (mm)	Z (mm)	A (mm)			
3”	92.3	103	182	175	212	347	2-M16 x 165	13094	4.8
4”	115	125.6	207	186	212	395	2-M16 x 165	13095	5.3
6”	166	181.2	264	233	212	512	2-M16 x 185	13096	6.9

EasiTap Hinged - 2 Bolt D&T Boss

Nominal Diameter	OD Range		Overall Dimensions				Bolt Size No.-Dia x Length	Gasket Mould No.	Weight (kg)	Standard BSP Threaded Boss Size	Non Standard BSP Threaded Boss Size
	Min (mm)	Max (mm)	X (mm)	Y (mm)	Z (mm)	A (mm)					
3”	92.3	103	182	175	212	347	2-M16 x 165	13094	4.8	0.75” BSP	0.5” BSP
4”	115	125.6	207	186	212	395	2-M16 x 165	13095	5.3	1” BSP	0.5” BSP 0.75” BSP
6”	166	181.2	264	233	212	512	2-M16 x 185	13096	6.9	1” BSP	0.5” BSP 0.75” BSP

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EasiClamp & EasiTap Hinged - 2 Bolt (D&T / D&T Boss)

Datasheet 2/2

Technical Information

Working Pressure Rating

Water 16 bar

Gas not approved

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Angularity

Two Bolt Remote EasiClamp and EasiTap fittings are not able to accommodate any angularity.

Bolt Torque/Spanner

M16; Torque 95-110Nm on every bolt

Spanner size A/F 24mm

Temperature Rating of Product

EPDM -20°C to +40°C

Two bolt Remote EasiClamp and EasiTap are not suitable for use on heating systems with fluctuating temperatures.

End Load Due to Internal Pressure

Two bolt Remote EasiClamp and EasiTap DO NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out from the clamp.

Approvals

The following water contact materials used in two bolt Remote EasiClamp and EasiTap are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

In addition to the above, two bolt Remote EasiClamp and EasiTap as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Housing

Ductile Iron to BS EN1563 Symbol EN-GJS-450-10

Bridging Plate

Stainless Steel BS1449:PART 2 GRADE 304S15 2B Finish

Hinge Clip / Retaining Clip / Bolt Retainer Clip

Acetal M25-04 Natural (HOECHST)

Gasket

BS EN681-1 60 IRHD

Coatings

Body:

- Rilsan Nylon 11 to WIS 4-52-01 (Part1)

Bolts and Anti-Rotation Nuts:

- Sheraplex to WIS 4-52-03

Spherical Washer:

- Galvanised

Bolts

Standard - Steel to BS EN ISO 898-1 Property Class 4.8

Anti-Rotation Nut

Cast or Machined Steel. Min Yield Strength = 275N/mm^2. Ultimate Tensile Strength = 430N/mm^2. Elongation = 23%

Spherical Washer

Ductile Iron to BS EN1563 Symbol EN-GJS-450-10

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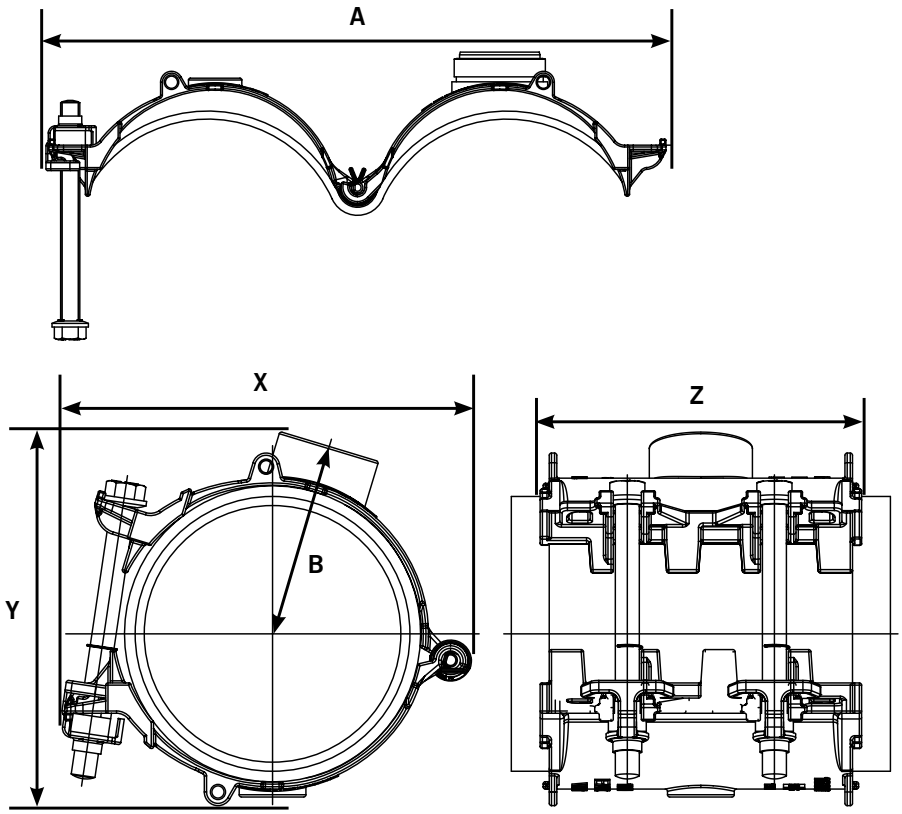
EasiTap Hinged - 2 Bolt (D&T / D&T Outlet)

Datasheet 1/2

EasiTap Hinged - 2 Bolt



EasiTap Hinged - 2 Bolt D&T Outlet

Nominal Diameter	OD Range		Overall Dimensions					Bolt Size No.-Dia x Length	Gasket Mould No.	Weight (kg)	Outlet - BSP Threaded Size
	Min (mm)	Max (mm)	X (mm)	Y (mm)	Z (mm)	A (mm)	B (mm)				
3”	92.3	103	182	185	212	347	86	2-M16 x 165	13094	5.0	2”BSP
4”	115	125.6	207	200	212	395	93	2-M16 x 165	13095	5.5	2”BSP
6”	166	181.2	264	247	212	512	122	2-M16 x 185	13096	7.1	2”BSP

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EasiTap Hinged - 2 Bolt (D&T / D&T Outlet)

Datasheet 2/2

Technical Information

Working Pressure Rating

Water 16 bar

Gas not approved

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Angularity

Two Bolt Remote EasiTap fittings are not able to accommodate any angularity.

Bolt Torque/Spanner

M16; Torque 95-110Nm on every bolt

Spanner size A/F 24mm

Temperature Rating of Product

EPDM -20°C to +40°C

Two bolt Remote EasiTap is not suitable for use on heating systems with fluctuating temperatures.

End Load Due to Internal Pressure

Two bolt Remote EasiTap DO NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out from the clamp.

Approvals

The following water contact materials used in two bolt Remote EasiTap are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

In addition to the above, two bolt Remote EasiTap as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Housing

Ductile Iron to BS EN1563 Symbol EN-GJS-450-10

Bridging Plate

Stainless Steel BS1449:PART 2 GRADE 304S15 2B Finish

Hinge Clip / Retaining Clip / Bolt Retainer Clip

Acetal M25-04 Natural (HOECHST)

Gasket

BS EN681-1 60 IRHD

Coatings

Body:

- Rilsan Nylon 11 to WIS 4-52-01 (Part1)

Bolts and Anti-Rotation Nuts:

- Sheraplex to WIS 4-52-03

Spherical Washer:

- Galvanised

Bolts

Standard - Steel to BS EN ISO 898-1 Property Class 4.8

Anti-Rotation Nut

Cast or Machined Steel. Min Yield Strength = 275N/mm^2. Ultimate Tensile Strength = 430N/mm^2. Elongation = 23%

Spherical Washer

Ductile Iron to BS EN1563 Symbol EN-GJS-450-10

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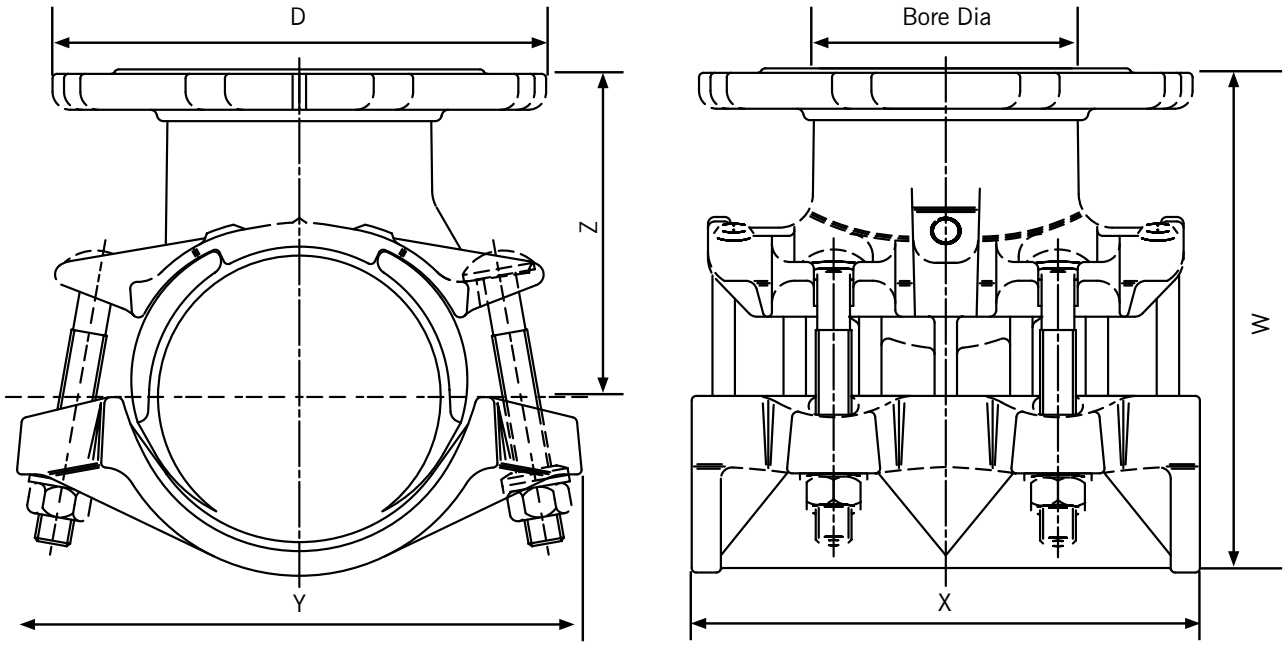
Universal EasiTee

Datasheet 1/2

Universal EasiTee



Universal EasiTee

Pipe OD Size Range (mm)		Branch Drilling		Plain Mould No.	Branch Mould No.	Dimensions (mm)					Minimum Bore Dia (mm)	Bolt Size No.-Size x length	Weight (kg)
Min	Max	Nom	Spec			D	W	X	Y	Z			
85.4	103.0	80	PN 10,16	1792	1791	200	205	213	193	128	76.0	4-M16 x 110	9.0
111.8	129.4	80/100	PN 10,16	1741	1740	200	228	227	252	146	103.0	4-M16 x 130	10.5
165.2	184.4	80/100	PN 10,16	1743	1742	200	275	269	305	165	103.0	4-M16 x 130	18.7
165.2	184.4	150	PN 10,16	1743	1742	285	275	269	305	165	153.0	4-M16 x 130	20.9
215.9	239.7	80/100	PN 10,16	1745	1744	200	365	319	385	228	103.0	6-M20 x 140	25.4
215.9	239.7	150	PN 10,16	1745	1744	285	365	319	385	228	154.0	6-M20 x 140	28.0
215.9	239.7	200	PN 16	1745	1744	340	365	319	385	228	205.0	6-M20 x 140	29.5
269.2	293.5	80/100	PN 10,16	1747	1746	200	424	368	462	260	103.0	6-M20 x 140	49.1
269.2	293.5	150	PN 10,16	1747	1746	285	424	368	462	260	154.0	6-M20 x 140	51.2
269.2	293.5	200	PN 16	1747	1746	340	424	368	462	260	206.0	6-M20 x 140	52.3
269.2	293.5	250	PN 16	1747	1746	405	424	368	462	260	256.0	6-M20 x 140	56.6
323.1	349.0	80/100	PN 10,16	1749	1748	200	478	439	534	290	103.0	6-M24 x 160	58.7
323.1	349.0	150	PN 10,16	1749	1748	285	478	439	534	290	154.0	6-M24 x 160	61.0
323.1	349.0	200	PN 16	1749	1748	340	478	439	534	290	205.0	6-M24 x 160	62.5
323.1	349.0	250	PN 16	1749	1748	405	478	439	534	290	255.0	6-M24 x 160	66.0
323.1	349.0	300	PN 16	1749	1748	460	478	439	534	290	304.0	6-M24 x 160	66.0

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Universal EasiTee

Datasheet 2/2

Technical Information

Working Pressure Rating

Water 16 bar

Gas not approved

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Angularity

Universal EasiTee fittings are not able to accommodate any angularity.

Bolt Torque/Spanner:

M16; Torque 95-110Nm on every bolt

Spanner size A/F 24mm

M20; Torque 150-165Nm on every bolt

Spanner size A/F 30mm

M24; Torque 285-300Nm on every bolt

Spanner size A/F 36mm

Temperature Rating of Product

EPDM -20°C to +40°C

Universal EasiTee is not suitable for use on heating systems with fluctuating temperatures.

Loads from Drilling Equipment and Valve / Branch Pipework

Universal EasiTee is not designed to accommodate / resist the loads from the under pressure drilling equipment, which needs to be supported externally during the operation to drill into the main. In addition, the valve and branch pipework needs to be adequately supported to ensure none of the dead / live loads are imposed in the branch outlet in the Universal EasiTee.

Approvals

The following water contact materials used in Universal EasiTee are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

In addition to the above, Universal EasiTee as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Housing

Flanged Housing:

- Ductile Iron to BS EN1563 SYMBOL EN-GJS-450-10

Plain Housing:

- Ductile Iron to BS EN1563 SYMBOL EN-GJS-450-10

Bridging Plate

Ductile Iron to BS EN1563 SYMBOL EN-GJS-450-10

Gasket

BS EN681-1 60 IRHD

Coatings

Flanged, Plain Housing & Bridging Plate:

- Rilsan Nylon 11 to WIS 4-52-01 (Part1)

Bolts & Nuts (standard Option):

- Flurene coated

Bolts

Steel to BS EN ISO 898-1 Property Class 4.8 or
Steel to BS EN 10083: Part 1 Grade 2.C.22

Nuts

Steel to BS 4190 Grade 4

Spherical Washers

Pearlite Malleablle Iron to BS EN 1562 Symbol EN-GJMW-400-5

Washers

Stainless Steel to BS 1449: Part 2 Grade 304 S15

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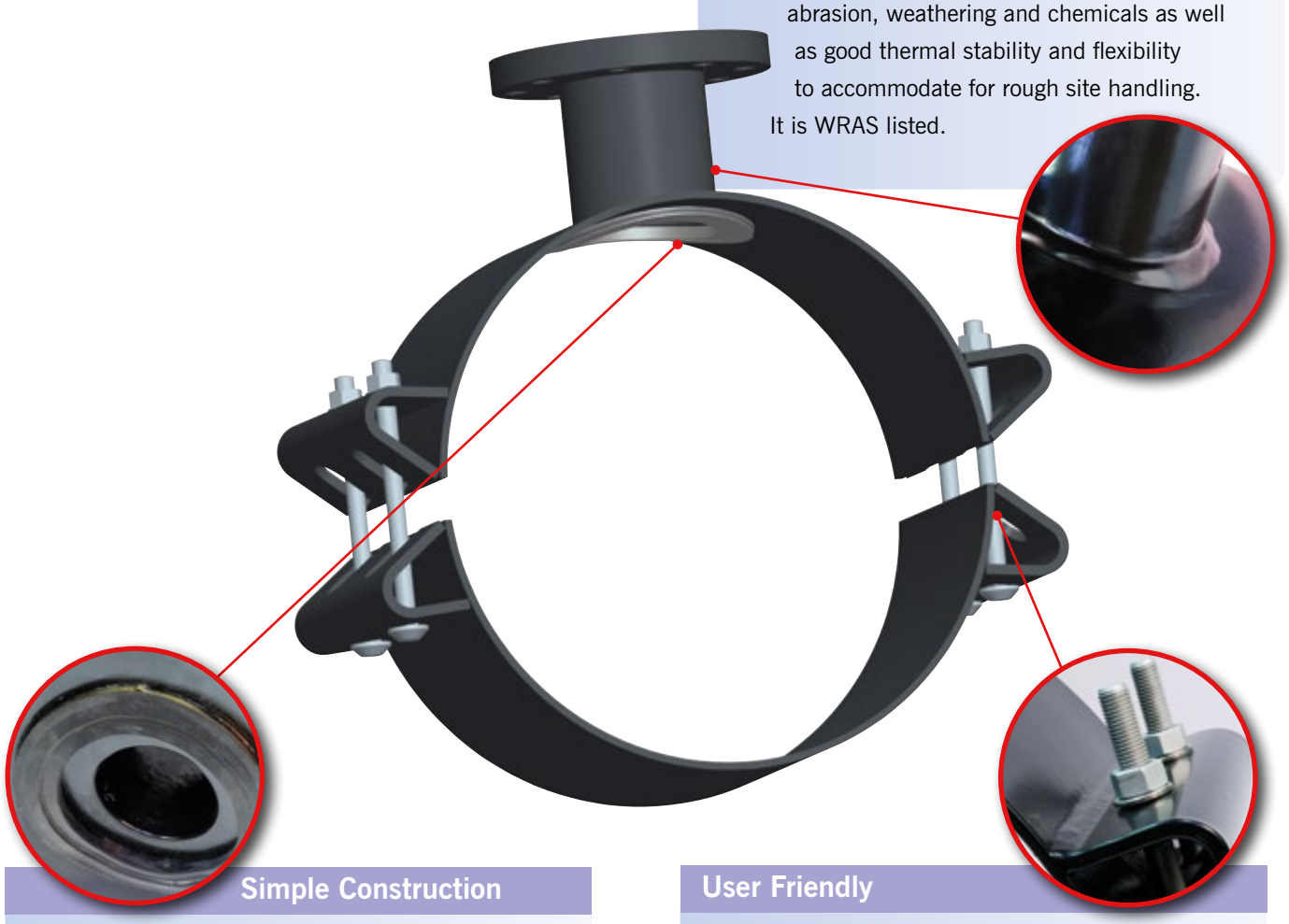
RingSeal EasiTee

Product Design Benefits

Excellent Corrosion Protection

The sleeve or body are fully coated in Black Rilsan Nylon 11 which has excellent resistance to impact, abrasion, weathering and chemicals as well as good thermal stability and flexibility to accommodate for rough site handling. It is WRAS listed.



Simple Construction

Fabricated from carbon steel, with a circular gasket positioned at the base of the branch connection, makes the RingSeal EasiTee both a lighter and cost-effective alternative to the MattSeal EasiTee.

User Friendly

Sheraplex coated bolts offers a consistent torque/load ratio improving the factor of safety and sensitivity to installer error and eliminates galling of the coating in the threads.

Customer Benefits

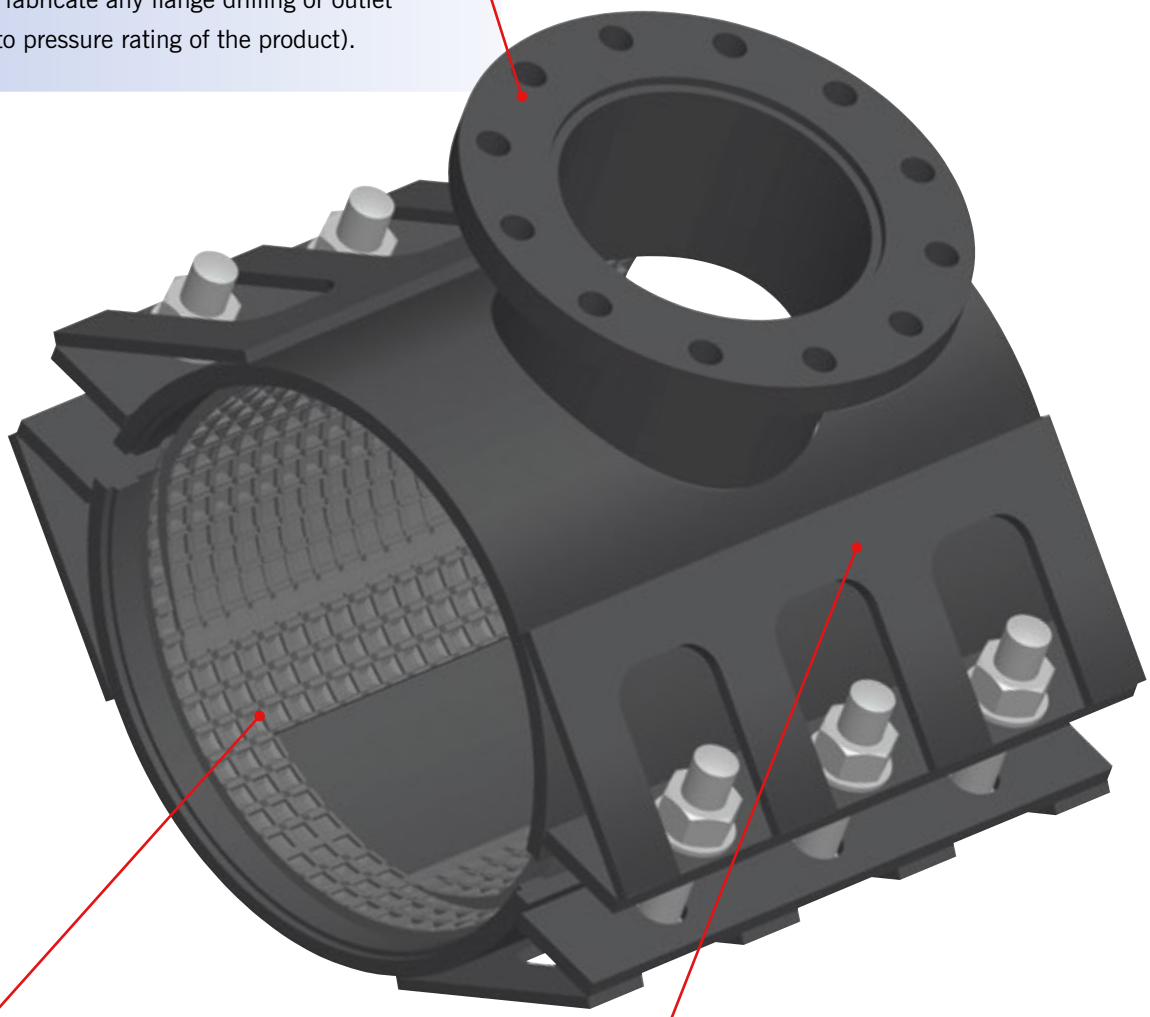
- Lightweight and quick to install.
- Up to DN600 branch (however, if the pipe is grey cast iron the branch must be limited to 70% of the main line size).
- Can be installed under pressure:
  - No costly mains shutdown.
  - No disruption to customers.
  - No dirty water complaints.
- Available from DN350 to DN1200.
- Ability to fabricate any flange drilling or outlet (subject to pressure rating of the product).

MattSeal EasiTee

Product Design Benefits

Flexible

Ability to fabricate any flange drilling or outlet (subject to pressure rating of the product).



Reliable Sealing

The waffle gasket is designed to fully surround the pipe within the housing offering optimal sealing.

Excellent Corrosion Protection

The sleeve or body are fully coated in Black Rilsan Nylon 11 which has excellent resistance to impact, abrasion, weathering and chemicals as well as good thermal stability and flexibility to accommodate for rough site handling and is WRAS listed.

Customer Benefits

- Branch outlets from DN80 up to the same size as main, even on old grey cast iron pipe.
- Can be installed under pressure:
  - No costly mains shutdown.
  - No disruption to customers.
  - No dirty water complaints.
- Up to 12mm pipe size tolerance to suit a number of popular pipe materials of the same nominal bore. Reducing stock holding.
- Available from DN350 to DN600.

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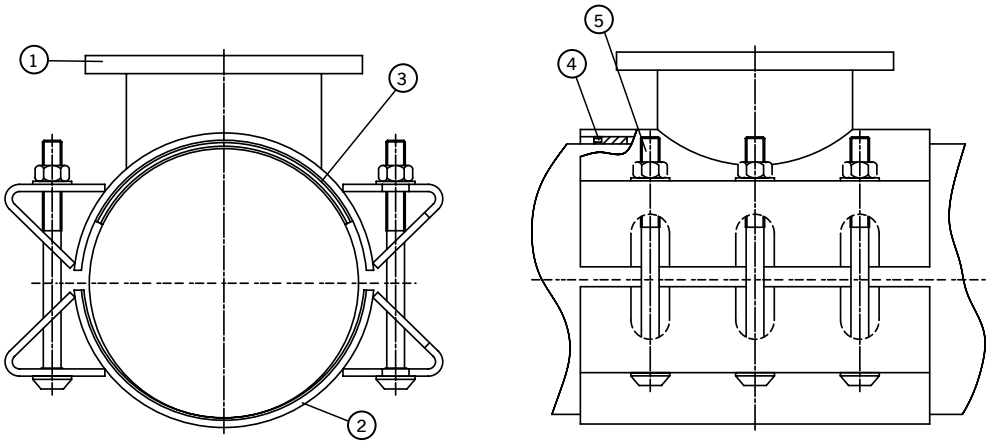
RingSeal EasiTee

Datasheet 1/2



Key

1 = Branch Housing
2 = Plain Housing
3 = Gasket
4 = Gasket retainer
5 = Bolt, Nut & Washer

RingSeal EasiTee – Branch Outlet Sizes Available for Suitable Pipe Materials

The Following table provides details on branch outlet that is possible on various pipe materials for RingSeal.
If the outlet/nom size is not available, see MattSeal EasiTee as alternative.

Host / Main		Flanged Outlet										
Nom	Dia	DN80	DN100	DN150	DN200	DN250	DN300	DN350	DN400	DN450	DN500	DN600
Steel and Ductile Iron Pipe Material												
DN350	14”	✓	✓	✓	✓	✓	✓	✓	-	-	-	-
DN400	16”	✓	✓	✓	✓	✓	✓	✓	-	-	-	-
DN450	18”	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-
DN500	20”	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-
DN600	24”	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
DN700	28”	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
DN800	32”	✓	✓	✓	✓	✓	✓	✓	-	-	-	-
DN900	36”	✓	✓	✓	✓	✓	✓	-	-	-	-	-
DN1000	40”	✓	✓	✓	✓	✓	-	-	-	-	-	-
DN1100	44”	✓	✓	✓	✓	✓	-	-	-	-	-	-
DN1200	48”	✓	✓	✓	✓	✓	-	-	-	-	-	-
Cast Iron Pipe Material												
DN350	14”	✓	✓	✓	✓	-	-	-	-	-	-	-
DN400	16”	✓	✓	✓	✓	✓	-	-	-	-	-	-
DN450	18”	✓	✓	✓	✓	✓	✓	-	-	-	-	-
DN500	20”	✓	✓	✓	✓	✓	✓	✓	-	-	-	-
-	21”	✓	✓	✓	✓	✓	✓	✓	-	-	-	-
-	22”	✓	✓	✓	✓	✓	✓	✓	-	-	-	-
DN600	24”	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-
-	26”	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-
-	27”	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-
DN700	28”	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-
-	30”	✓	✓	✓	✓	✓	✓	✓	-	-	-	-
DN800	32”	✓	✓	✓	✓	✓	✓	✓	-	-	-	-
-	33”	✓	✓	✓	✓	✓	✓	-	-	-	-	-
-	34”	✓	✓	✓	✓	✓	✓	-	-	-	-	-
DN900	36”	✓	✓	✓	✓	✓	✓	-	-	-	-	-
DN1000	40”	✓	✓	✓	✓	✓	-	-	-	-	-	-
-	42”	✓	✓	✓	✓	✓	-	-	-	-	-	-
DN1100	44”	✓	✓	✓	✓	✓	-	-	-	-	-	-
DN1200	48”	✓	✓	✓	✓	✓	-	-	-	-	-	-

RingSeal EasiTee products are manufactured to order. For detailed dimensional data please contact Viking Johnson.

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RingSeal EasiTee

Datasheet 2/2

Technical Information

Working Pressure Rating

Water 16 bar

Gas not approved

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Angularity

RingSeal EasiTee fittings are not able to accommodate any angularity.

Bolt Torque/Spanner:

M16; Torque 95-110Nm on every bolt

Spanner size A/F 24mm

Temperature Rating of Product

EPDM -20°C to +40°C

RingSeal EasiTee is not suitable for use on heating systems with fluctuating temperatures.

Loads from Drilling Equipment and Valve / Branch Pipework

RingSeal EasiTee is not designed to accommodate / resist the loads from the under pressure drilling equipment, which needs to be supported externally during the operation to drill into the main. In addition, the valve and branch pipework needs to be adequately supported to ensure none of the dead / live loads are imposed in the branch outlet in the RingSeal EasiTee.

Approvals

The following water contact materials used in RingSeal EasiTee are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

In addition to the above, RingSeal EasiTee as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Branch Housing:

Steel BS EN10025-2 Grade S275JR
Steel tube to BS EN 10216-1 Grade P265TRI
or Steel tube to BS EN 10255

Plain Housing

Steel BS EN10025-2 Grade S275JR

Gasket

Rubber BS EN681-1 70 Hardness Grade EPDM

Gasket Retainer

Steel BS EN10025-2 Grade S275JR

Coatings

Branch Housing:

- Rilsan Nylon 11 to WIS 4-52-01 (Part1)

Plain Housing:

- Rilsan Nylon 11 to WIS 4-52-01 (Part1)

Gasket Retainer:

- Zinc Plate to BS1706:1990 Fe/Zn8 c1 B

Bolt, Nut & Washer:

- Sheraplex coated to WIS 4-52-03

Bolt

Steel BS EN ISO 898-1 Property Class 8.8

Nuts

Steel BS EN20898-2 Property Class 8.0

Washers

Stainless Steel BS EN ISO3506-1 Grade A2
Property Class 50 (304)

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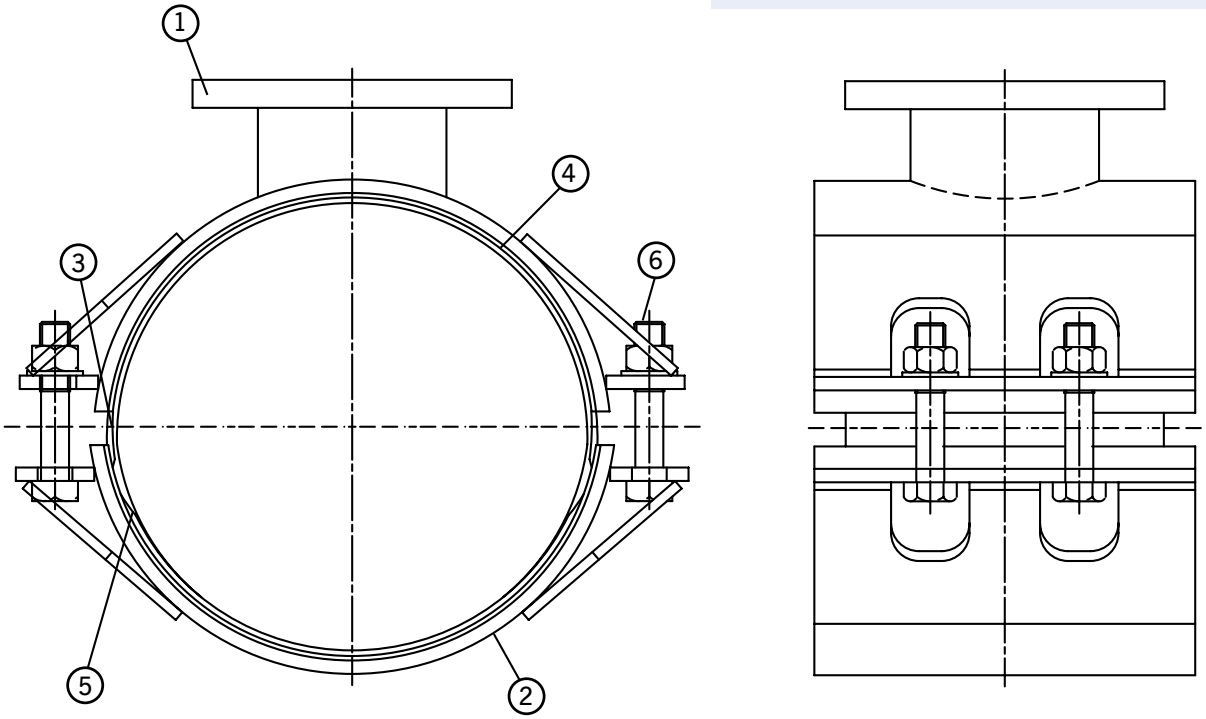
MattSeal EasiTee

Datasheet 1/2

Key

1 = Branch Housing
2 = Plain Housing
3 = Bridge Plate
4 = Saddle Gasket
5 = Housing Gasket
6 = Bolt, Nut & Washer



MattSeal EasiTee – Branch Outlet Sizes Available for Suitable Pipe Materials

The Following table provides details on branch outlet that is possible on various pipe materials for MattSeal.
If the outlet/nom size is not available, see RingSeal EasiTee as alternative.

Host / Main		Flanged Outlet										
Nom	Dia	DN80	DN100	DN150	DN200	DN250	DN300	DN350	DN400	DN450	DN500	DN600
Steel and Ductile Iron Pipe Material												
DN350	14”	✓	✓	✓	✓	✓	✓	✓	-	-	-	-
DN400	16”	✓	✓	✓	✓	✓	✓	✓	-	-	-	-
DN450	18”	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-
DN500	20”	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-
DN600	24”	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cast Iron Pipe Material												
DN350	14”	✓	✓	✓	✓	✓	✓	✓	-	-	-	-
DN400	16”	✓	✓	✓	✓	✓	✓	✓	-	-	-	-
DN450	18”	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-
DN500	20”	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-
-	21”	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-
-	22”	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-
DN600	24”	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

MattSeal EasiTee products are manufactured to order. For detailed dimensional data please contact Viking Johnson.

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MattSeal EasiTee

Datasheet 2/2

Technical Information

Working Pressure Rating

Water 16 bar

Gas not approved

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Angularity

MattSeal EasiTee fittings are not able to accommodate any angularity.

Bolt Torque/Spanner:

M16; Torque 95-110Nm on every bolt

Spanner size A/F 24mm

M20; Torque 150-165Nm on every bolt

Spanner size A/F 30mm

M24; Torque 285-300Nm on every bolt

Spanner size A/F 36mm

M30; Torque 550-575Nm on every bolt

Spanner size A/F 46mm

M36; Torque 615-645Nm on every bolt

Spanner size A/F 50mm

Temperature Rating of Product

EPDM -20°C to +40°C

MattSeal EasiTee is not suitable for use on heating systems with fluctuating temperatures.

Loads from Drilling Equipment and Valve / Branch Pipework

MattSeal EasiTee is not designed to accommodate / resist the loads from the under pressure drilling equipment, which needs to be supported externally during the operation to drill into the main. In addition, the valve and branch pipework needs to be adequately supported to ensure none of the dead / live loads are imposed in the branch outlet in the MattSeal EasiTee.

Approvals

The following water contact materials used in MattSeal EasiTee are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

In addition to the above, MattSeal EasiTee as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Branch Housing

Steel BS EN10025-2 Grade S275JR

Steel Tube Options:

- BS EN 10216-1 Grade P265TRI
- BS EN 10255

Plain Housing

Steel BS EN10025-2 Grade S275JR

Bridging Plate

Stainless Steel BS1449:Part 2 Grade 304S15

Saddle Gasket

60 IRHD EPDM to BS EN681-1

Housing Gasket

60 IRHD EPDM to BS EN681-1

Coatings

Branch Housing:

- Rilsan Nylon 11 to WIS 4-52-01 (Part1)

Plain Housing:

- Rilsan Nylon 11 to WIS 4-52-01 (Part1)

Bolts

Steel BS EN ISO898-1 Property Class 4.8

Nuts

Steel BS4190 Grade 4

Washers

Steel BS EN10083:Part 1 Grade C22E

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MattSeal EasiTap

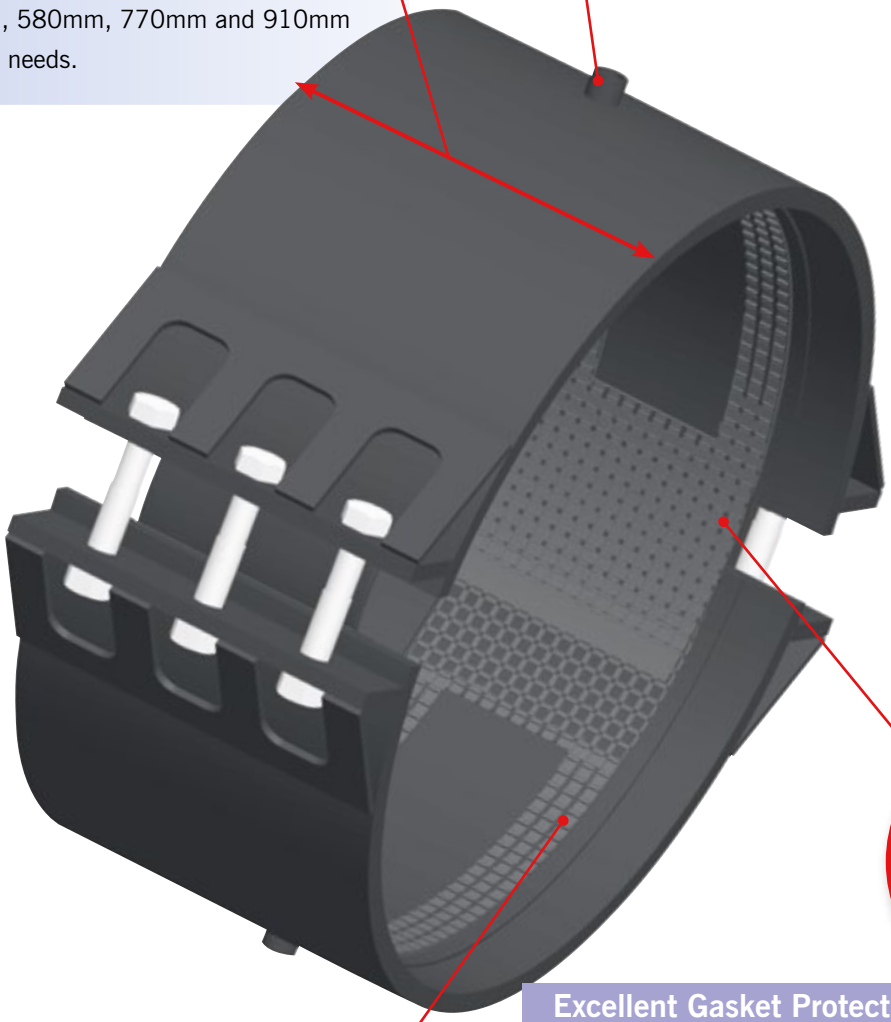
Product Design Benefits

Flexible Lengths Offering

Ability to fabricate to any of these standard lengths 340mm, 460mm, 580mm, 770mm and 910mm to suit your repair needs.

Options to meet your Tapping Needs

Advanced design with the option of with a 1/2", 1" or 2" BSP outlet.



Reliable Sealing

The waffle gasket is designed to fully surround the pipe within the housing offering optimal sealing.

Excellent Gasket Protection

The sleeve or body are fully coated in Black Rilsan Nylon 11 which has excellent resistance to impact, abrasion, weathering and chemicals as well as good thermal stability and flexibility to accommodate for rough site handling and is WRAS listed.

Customer Benefits

- Permanent repair for DN350 to DN1000 pipes. Large sizes may be available.*
- Reduced stock holding offered with up to 24mm tolerance on pipe size to suit a number of popular pipe materials of the same nominal bore.
- The waffle gasket design is proven to give a very level of sealing, even on old corroded pipe.
- Can be installed under pressure:
  - No costly mains shutdown.
  - No disruption to customers.
  - No dirty water complaints.
- Product available in multiple lengths and can be tailored to suit repair length of longitudinal cracks, corrosion holes and impact damage.

***Contact Viking Johnson Technical Department for more information.**

EasiCollar

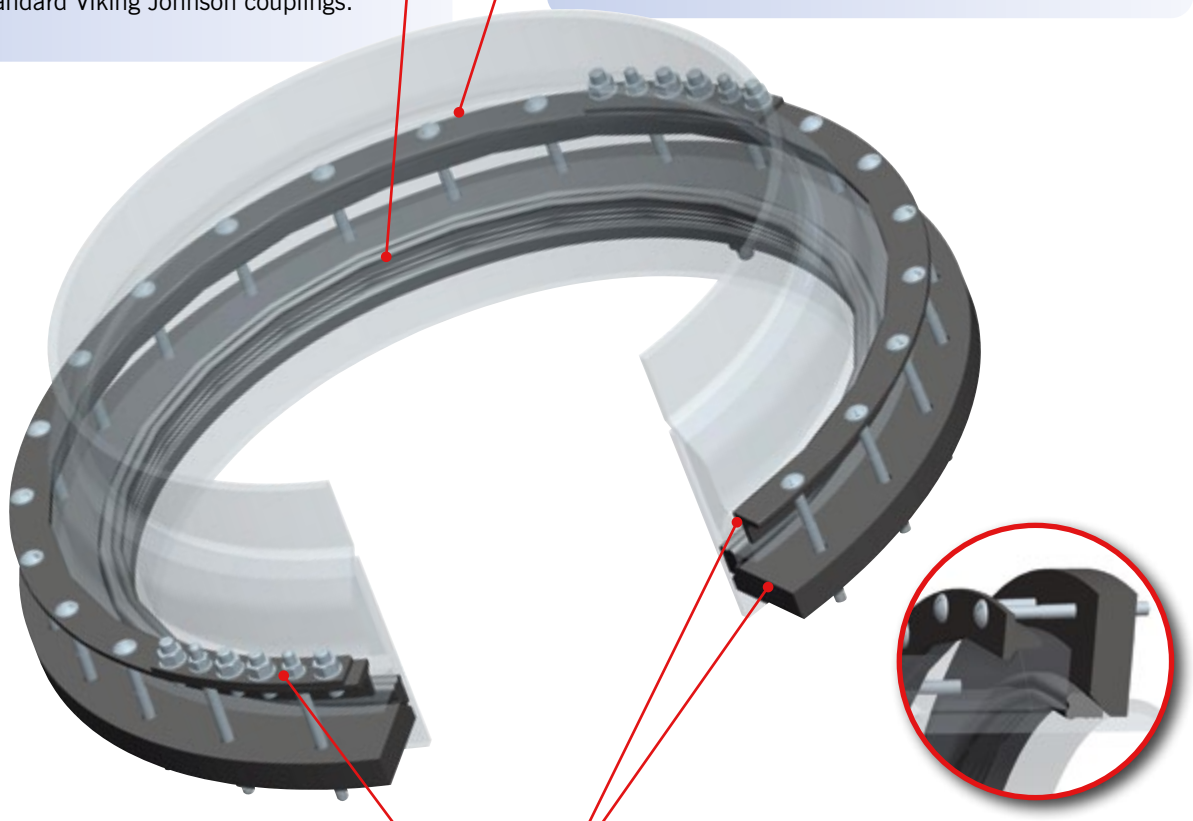
Product Design Benefits

Proven Sealing Capability

EasiCollar has a gasket that presses against the old caulking and provides a new seal on the face of the socket and pipe surface. It creates a flexible joint that uses the same basic sealing method as standard Viking Johnson couplings.

Excellent Corrosion Protection

The sleeve or body are fully coated in Black Rilsan Nylon 11 which has excellent resistance to impact, abrasion, weathering and chemicals as well as good thermal stability and flexibility to accommodate for rough site handling. It is also WRAS listed.



User Friendly

Sheraplex coated bolts offer an improved torque/load ratio and eliminates galling of coating in threads.

Simple Solution to Renew Old Joints

Two rings are assembled in segments around the pipe, one in front of the socket and around the gasket, the other as an anchorage behind the socket. When the connecting bolts are tightened, pressure is created in the gasket to seal the leaking joint.

Customer Benefits

- Repair collar for spigot and sock joints suitable for:
  - Old spigot and socket iron pipes.
  - Cast iron double collars.
  - Asbestos cement collars.
  - Concrete.
- Can be installed under pressure:
  - No costly mains shutdown.
  - No disruption to customers.
- Available from DN300 to DN1200.
- No additional lead caulking.
- EasiCollar is generally made to order, taking into account the particular dimensions of the pipe and socket.

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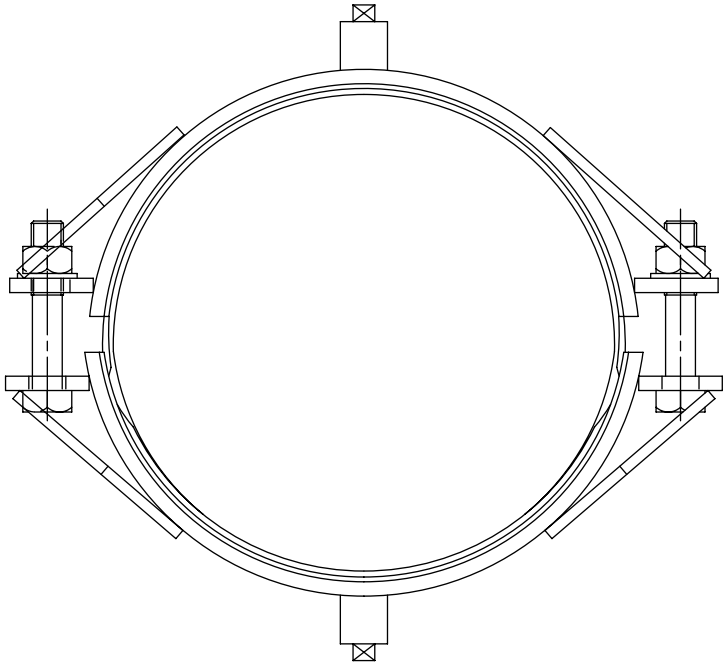
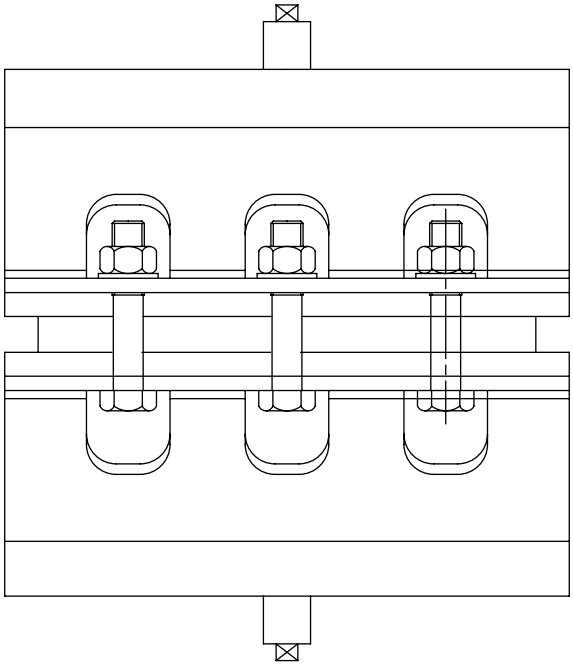
MattSeal EasiTap

Datasheet 1/2





Working Pressure Ratings

Nominal Size	Working Pressure
Up to DN700	16 Bar
>DN700	Up to 16 Bar

Pipe Materials

Ductile Iron | Cast Iron | Steel

MattSeal EasiTap products are manufactured to order. For detailed dimensional data please contact Viking Johnson.

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MattSeal EasiTap

Datasheet 2/2

Technical Information

Working Pressure Rating (Up to DN700)

Water 16 bar

Gas not approved

For sizes over DN700 contact Viking Johnson.

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Angularity

MattSeal EasiTee fittings are not able to accommodate any angularity.

Bolt Torque/Spanner:

M16; Torque 95-110Nm on every bolt

Spanner size A/F 24mm

M20; Torque 150-165Nm on every bolt

Spanner size A/F 30mm

M24; Torque 285-300Nm on every bolt

Spanner size A/F 36mm

M30; Torque 550-575Nm on every bolt

Spanner size A/F 46mm

M36; Torque 615-645Nm on every bolt

Spanner size A/F 50mm

Temperature Rating of Product

EPDM -20°C to +40°C

MattSeal EasiTee is not suitable for use on heating systems with fluctuating temperatures.

Loads from Drilling Equipment and Valve / Branch Pipework

MattSeal EasiTee is not designed to accommodate / resist the loads from the under pressure drilling equipment, which needs to be supported externally during the operation to drill into the main. In addition, the valve and branch pipework needs to be adequately supported to ensure none of the dead / live loads are imposed in the branch outlet in the MattSeal EasiTee.

Approvals

The following water contact materials used in MattSeal EasiTee are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

In addition to the above, MattSeal EasiTee as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

1) Housing

Steel BS EN10025-2 Grade S275JR

Outlet Steel tube to BS EN 10255

2) Bridging Plate

Stainless Steel BS1449:Part 2 Grade 304S15

3) Saddle Gasket

60 IRHD EPDM to BS EN681-1

4) Housing Gasket

60 IRHD EPDM to BS EN681-1

5) Bolts, Nuts and Washers

Bolts - Steel BS EN ISO898-1 Property Class 4.8

Nuts - Steel BS4190 Grade 4

Washers - Steel BS EN10083:Part 1 Grade C22E

Finish Specification

1) Housing - Rilsan Nylon II

2) Bolt - Sheraplex coated to WIS 4-52-03

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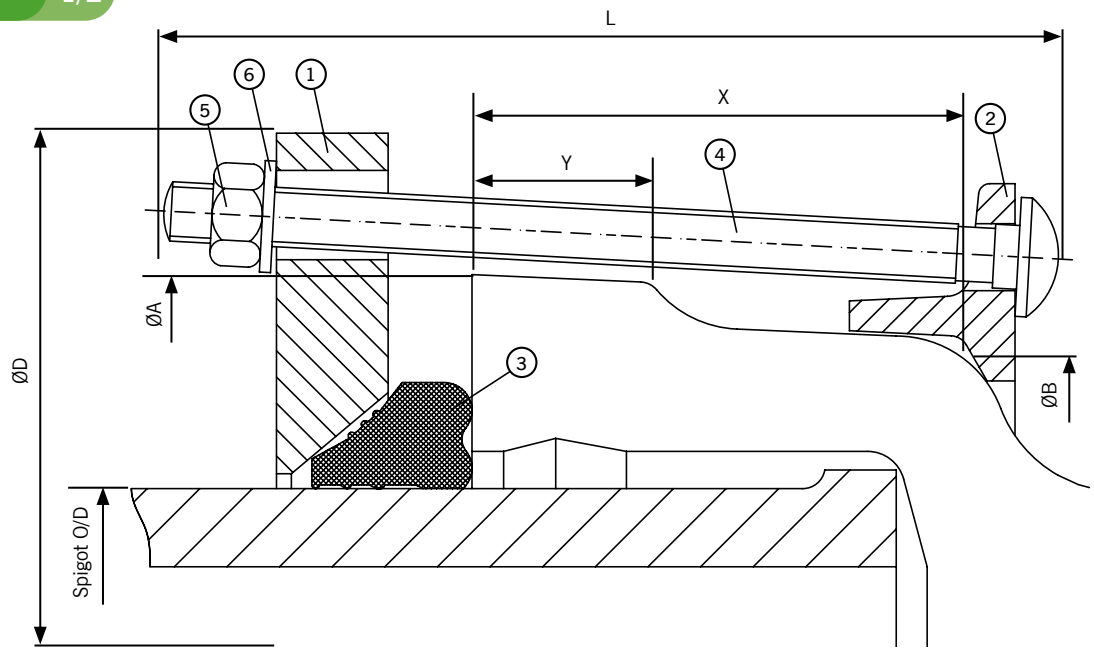
EasiCollar DN300 to DN1200

Datasheet 1/2



EasiCollar to suit Cast Iron*

Pipe nom **		L (mm)	ØD (mm)
mm	inches		
80	3 AB CD	-	-
100	4 AB CD	-	-
125	5 AB CD	-	-
150	6 AB CD	-	-
200	8 AB CD	-	-
225	9 AB CD	-	-
250	10 AB CD	-	-
300	12 AB	261	527
300	12 CD	261	550
350	14 AB	261	585
350	14 CD	261	611
375	15 AB	261	614
375	15 CD	261	641
400	16 AB	261	642
400	16 CD	261	671
450	18 AB	261	703
450	18 CD	261	734
500	20 AB	261	751
500	20 CD	261	783
525	21 AB	261	781
525	21 CD	261	813
600	24 AB	286	867
600	24 CD	286	902
675	27 AB	286	954
675	27 CD	286	990
750	30 AB	286	1057
750	30 CD	286	1076
825	33 AB	286	1143
825	33 CD	286	1164
900	36 AB	286	1228
900	36 CD	286	1249
1050	42 AB	286	1400
1050	42 CD	286	1423
1200	48 AB	286	1570
1200	48 CD	286	1595

* Other pipe materials and spigot and socket dimensions may be catered for. Please see EasiCollar Features & Benefits for pipe materials.

** Larger sizes available on request.

NB: Sizes 80mm - 250mm will also suit Ductile Iron spigot & sockets with the same nominal bore.

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EasiCollar DN300 to DN1200

Datasheet 2/2

Technical Information

Working Pressure Rating

Water 16 bar

Gas not approved

For sizes over DN700 contact Viking Johnson.

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Angularity

EasiCollar fittings are able to accommodate angularity in line with what the spigot and socket joint can accommodate.

Bolt Torque/Spanner:

M16; Torque 95-110Nm on every bolt

Spanner size A/F 24mm

M20; Torque 150-165Nm on every bolt

Spanner size A/F 30mm

Temperature Rating of Product

EPDM -20°C to +40°C

EasiCollar is not suitable for use on heating systems with fluctuating temperatures.

Approvals

The following water contact materials used in EasiCollar are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

Materials & Relevant Standards

Materials

1) Compression Flange - Steel BS EN10025-2 Grade S275JR
2) Anchor End Ring - Steel BS EN10025-2 Grade S275JR
3) Gasket - 61 IRHD EPDM Compound Ref. CVE61
4) Bolts - Steel BS EN ISO 898-1 Property Class 4.8
5) Nuts - Steel BS4190 Grade 4
6) Washers - Stainless Steel to BS1449:Part 2 Grade 304 S15

Finish Specification

Compression Flange (Part 1) Rilsan Nylon II - Black

Anchor End Ring (Part 2) Rilsan Nylon II - Black

Bolts and Nuts - Sheraplex coated to WIS 4-52-03

Note: Due to the number of different types of spigot and socket joints, with varying tolerances, when enquiring about EasiCollar a form is available with the dimensions required, please contact the Marketing Department for more information.

EasiCollar products are manufactured to order. For detailed dimensional data please contact Viking Johnson.

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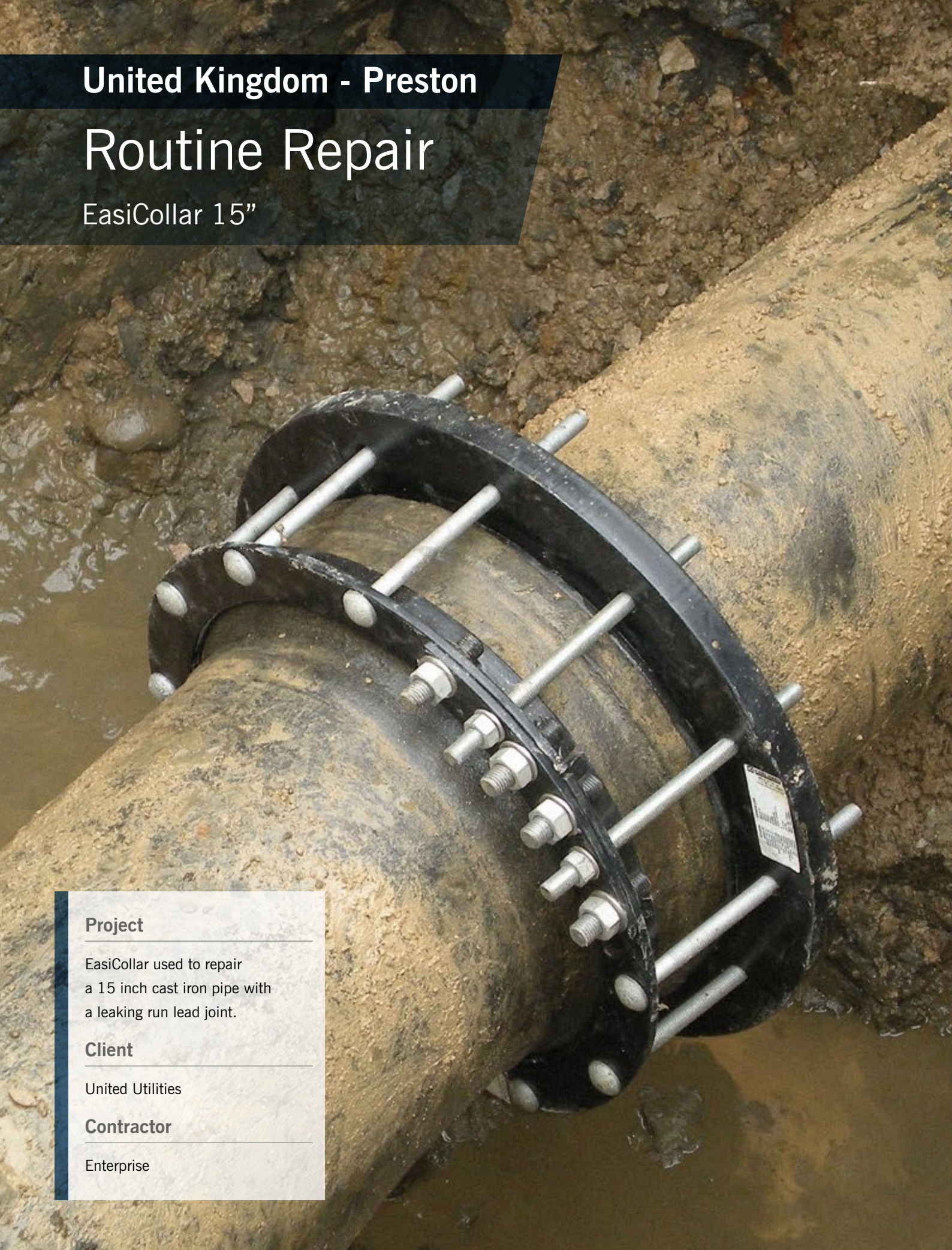
United Kingdom - Preston

Routine Repair

EasiCollar 15”



Project

EasiCollar used to repair a 15 inch cast iron pipe with a leaking run lead joint.

Client

United Utilities

Contractor

Enterprise

Crane BS&U are solely the provider of products and have no direct influence on, or take any responsibility for any working practices employed or depicted in the images enclosed to install such products.

EasiCollar Order / Enquiry Form

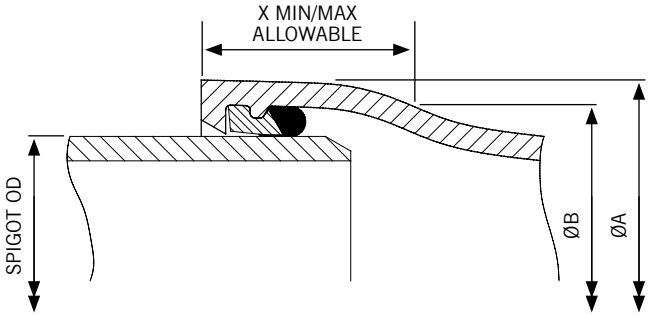
EasiCollar is a bespoke product and Viking Johnson requires the following information to assist with the quotation process. This page can be copied from the brochure or a form fillable PDF is available on the website www.vikingjonson.com.

Please complete the form and send via email to: info@vikingjohnson.com

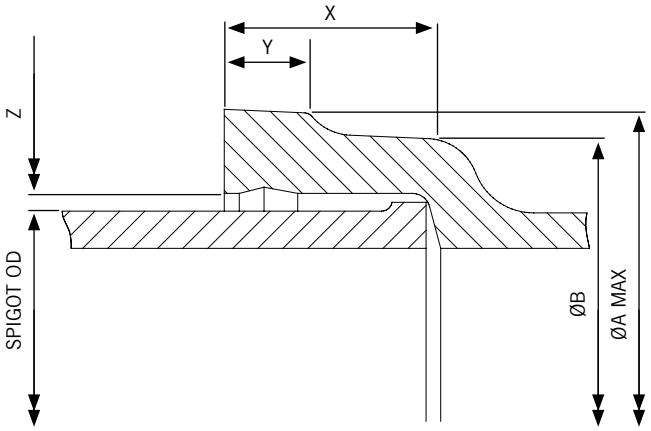
Product Details	
Delivery Time/Date*	
Spigot OD (Max)	
Dim A	
Dim B	
Dim X	
Dim Y	
Dim Z	
Pipe Material	
Pipe Markings / Class Rating	

Contact Details	
Company Name	
Contact Name	
Customer Address	
Email	
Telephone	
Fax	

Ductile Iron



Cast Iron



* For fast turnaround deliveries, surcharges will be applied. Prices available on request.

Please note:

Due to the number of different types of spigot and socket joints, with varying tolerances, when ordering/enquiring about the product it would help if you could provide us with some basic information.

Please use cross sectional drawing and form to record dimensions, photocopy and send back to us with this information.

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United Kingdom - Anglesey

Systems Maintenance

Universal EasiTee - DN300

Project

Upgrading network - making an under pressure connection to an existing cast iron water main.

Client

Welsh Water

Contractor

Daniel Contractor Limited

Crane BS&U are solely the provider of products and have no direct influence on, or take any responsibility for any working practices employed or depicted in the images enclosed to install such products.

NEW

EasiFit®

Encapsulate - Repair & Restore

An ideal under pressure repair solution for damaged pipelines

DN80 - DN200

VIKING JOHNSON®

A smart design for sealing leaks and restoring pipe connections under mains pressure

Encapsulation collars are essential when repairing damaged pipe sections without full replacement. EasiFit enables live repairs under pressure, avoiding costly shut-offs and maintaining supply — ideal for emergency response and planned maintenance.

By reducing leakage, minimising customer disruption, and supporting compliance with regulatory targets, EasiFit helps utilities improve operational efficiency within AMP frameworks. It's a fast, low-impact solution for ageing networks under pressure.

Wide tolerance applications
8° Angularity to accommodate oval or irregular pipe shapes, and pipe misalignment.

Stainless steel nuts and bolts for corrosion protection

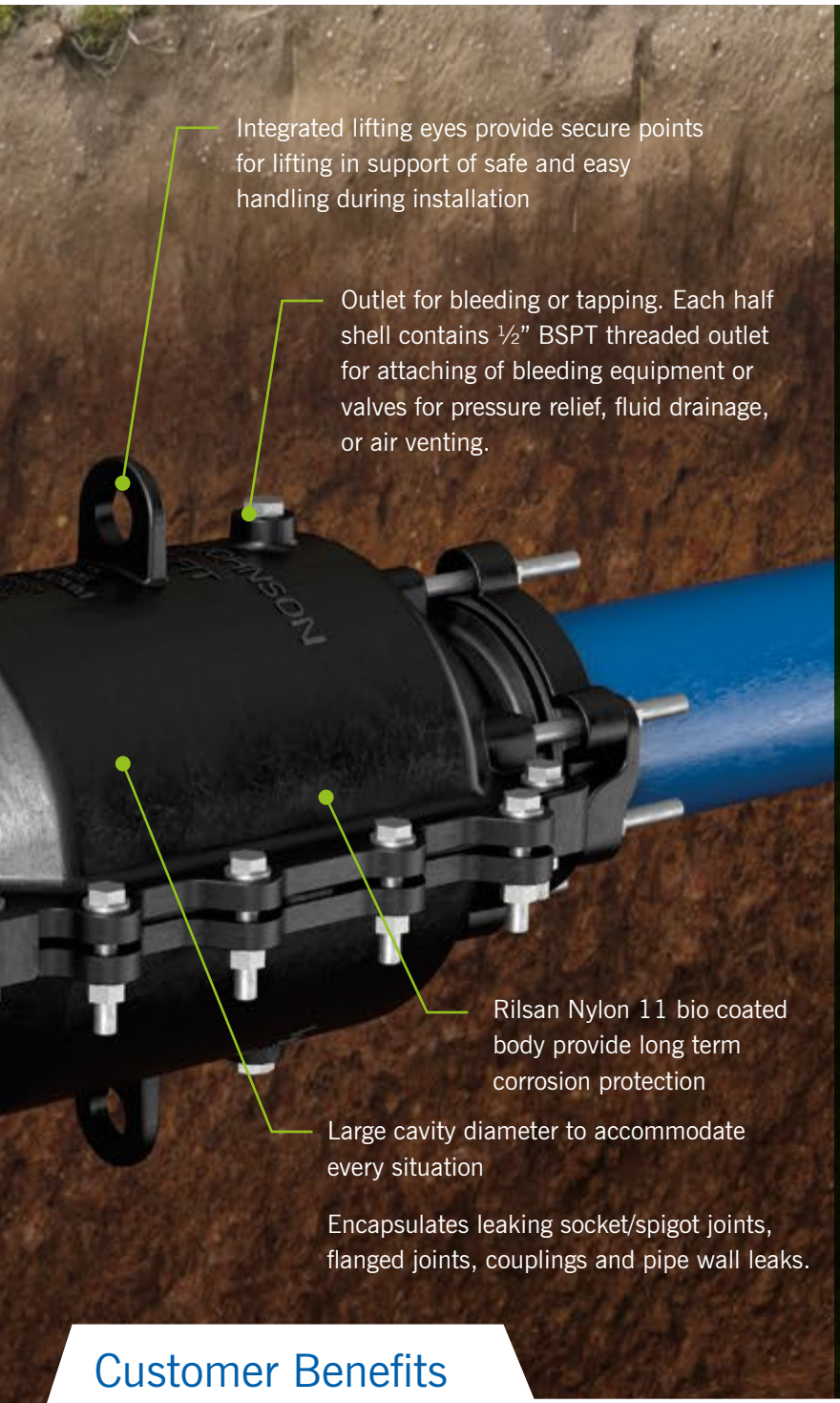
Suitable for cast iron (CI), ductile iron (DI), asbestos cement (AC), and steel pipes.

Designed to withstand working pressures up to 16 bar.

Overview

EasiFit is suitable for both potable water and wastewater applications. The encapsulation collar provides the perfect solution for permanent under-pressure repairs of socket/spigot joints, flanged joints, couplings and pipe wall leaks on ductile iron, cast iron, asbestos cement and steel pipelines.

It also supports emergency response, planned maintenance, and strategic resilience upgrades, making them a versatile and cost-effective solution in modern water network management.



Repair solutions

Encapsulate leaking spigot/socket joints

Encapsulate leaking mechanical couplings

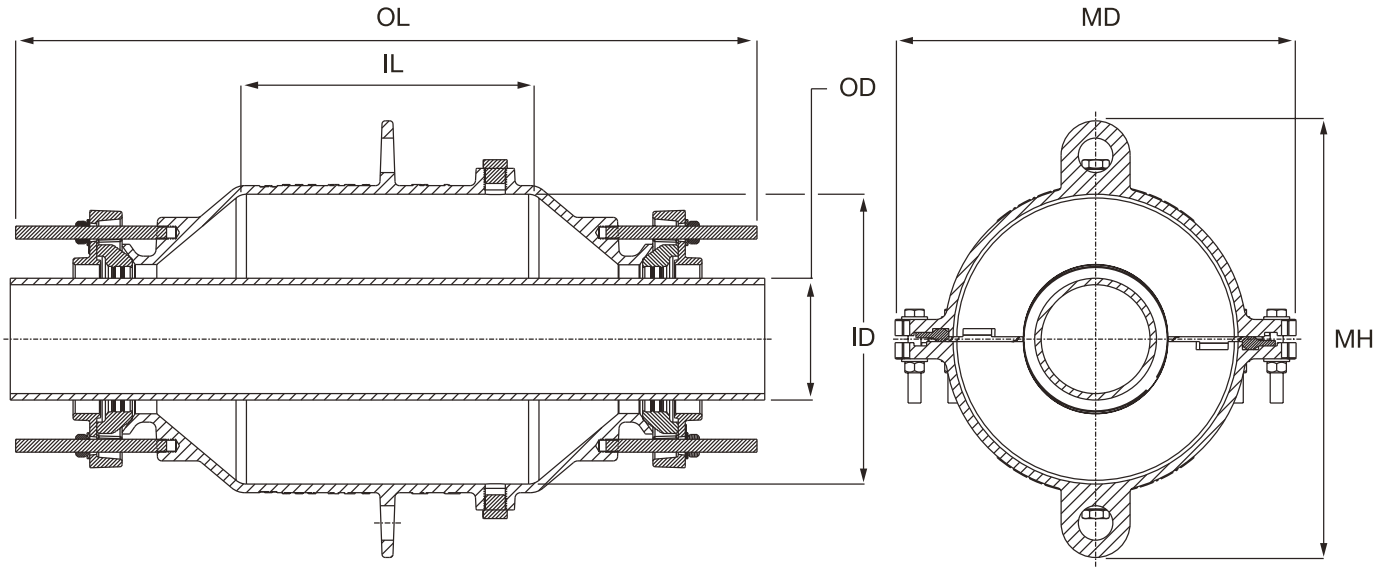
Encapsulate leaking flanged joints

Customer Benefits

- 16 bar working pressure.
- Repairs for leaking joints: spigot and socket joints, mechanical couplings, or flanged joints.
- Complies with BS8561 and KIWA standards & tested to BS851 and KIWA requirements
- Can be installed while the pipeline is still pressurised. Avoids water shut-off, chlorination, and sampling - minimising disruption to customers.
- React quickly to urgent emergency repairs to quickly restore integrity to damaged sections.
- Permanent sealing providing a long-term solution with WRAS-approved seals and coatings.
- Universal fitting that is suitable for ductile iron, cast iron, asbestos cement and steel pipelines.
- Large setting gaps allow operative bigger tolerances for cutting and positioning pipes.

EasiFit - Encapsulation Collar - DN80 - DN200

Datasheet 1/2



EasiFit Encapsulation Collar

Nominal Diameter		OD Range (mm)		MD (mm)	MH (mm)	Internal Diameter (ID) mm	Internal Length (IL) mm	Overall Length (OL) mm	Bolts No. Dia x Length	Studs No. Dia x Length	Weight (Kg)
Inches	mm	Min	Max								
3”	80	87.9	101.6	347	376	233	258.6	686	12-M12 x 70	12-M12 x 140	37
4”	100	113	127	372	405	259	258.6	687	12-M12 x 70	12-M12 x 140	39
6”	150	163.9	180.6	451	482.5	335	296.7	750	12-M12 x 70	12-M12 x 140	60
8”	200	219	240.6	486.2	518	372.5	334.8	799	12-M12 x 70	12-M12 x 140	73

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EasiFit - Encapsulation Collar - DN80 - DN200

Datasheet 2/2

Technical Information

Working Pressure Rating

Water 16 bar.

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.8 bar.

Site Test Pressure

1.5 times working pressure for short duration (2 hours).

Angularity

EasiFit fittings are able to accommodate total angular deflection between failed pipe joints of up to 8°.

Bolt Torque/Spanner:

M12; Torque 80-100Nm on every bolt

Spanner size A/F 19mm

Temperature Rating of Product

Operating temperature -20°C to +60°C

End Load Due to Internal Pressure

EasiFit DOES NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out.

Pressure release outlet

1/2" BSPT threaded

Approvals

The following water contact materials used in EasiFit are approved for use with potable water:-

Rilsan Nylon 11:

- WRAS, DVGW, W270, ACS & KIWA

EPDM Gaskets:

- WRAS

Product:

BS8561, KIWA (Internally tested as per requirements)

Materials & Relevant Standards

Housing Shells

Ductile Iron to BS EN 1563 Symbol EN GJS-450-10

End Rings

Ductile Iron to BS EN 1563 Symbol EN GJS-450-10

Gaskets

EPDM compound Grade E to BS EN 681-1, Type WA, WC

Coatings

Body:

- Rilsan Nylon 11 to WIS 4-52-01 (Part1)

Bolts/Studs/Nuts/Washers:

- DeltaSeal to WIS 4-52-03

Bolts

Stainless steel - BS EN ISO 3506-1 Grade A4-80

Studs

Stainless steel - BS EN ISO 3506-1 Grade A4-80

Nuts

Stainless steel - BS EN ISO 3506-2 Grade A4-80

Washers

Stainless steel - BS1449:PT2 Grade 304 S15

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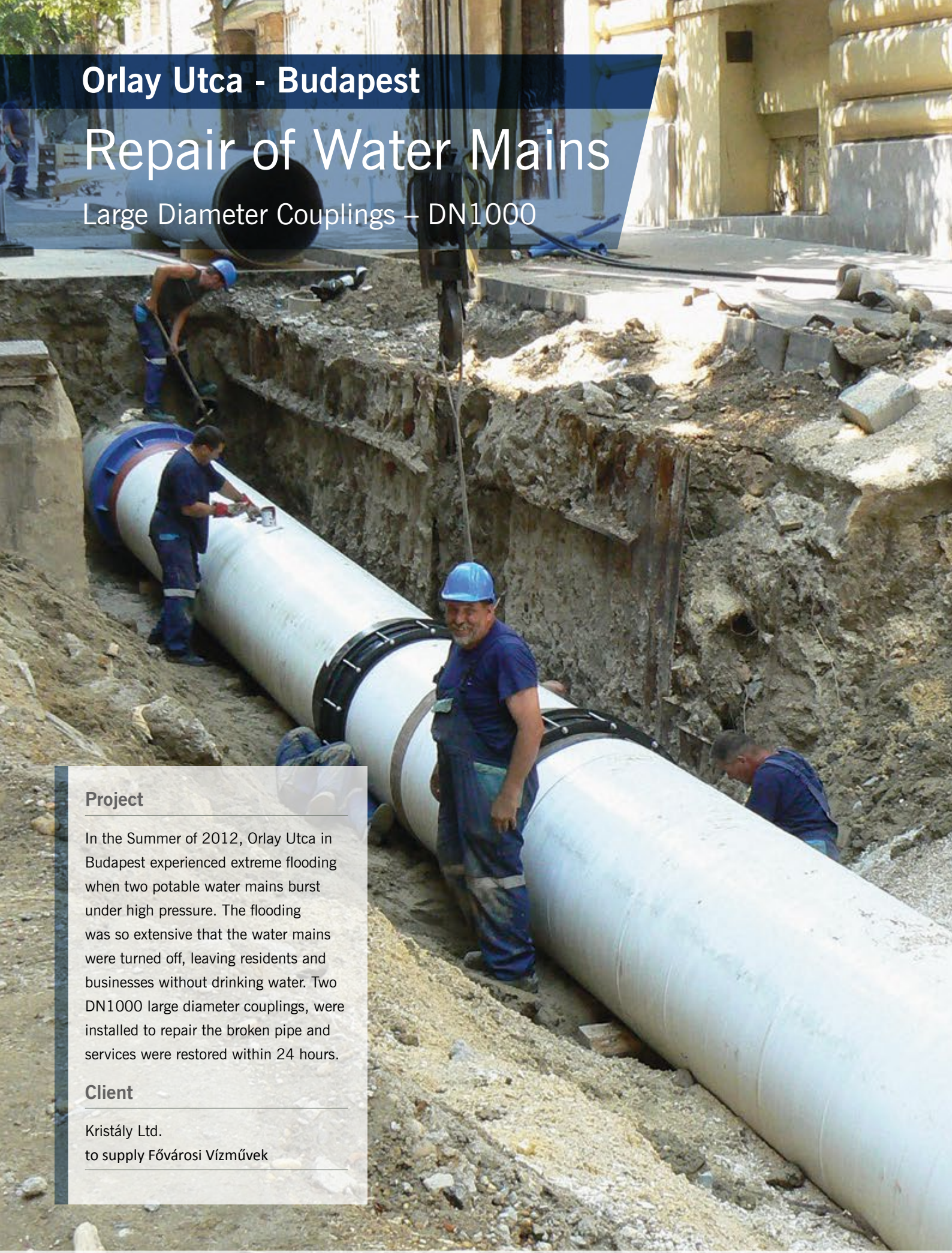
Orlay Utca - Budapest

Repair of Water Mains

Large Diameter Couplings – DN1000



Project

In the Summer of 2012, Orlay Utca in Budapest experienced extreme flooding when two potable water mains burst under high pressure. The flooding was so extensive that the water mains were turned off, leaving residents and businesses without drinking water. Two DN1000 large diameter couplings, were installed to repair the broken pipe and services were restored within 24 hours.

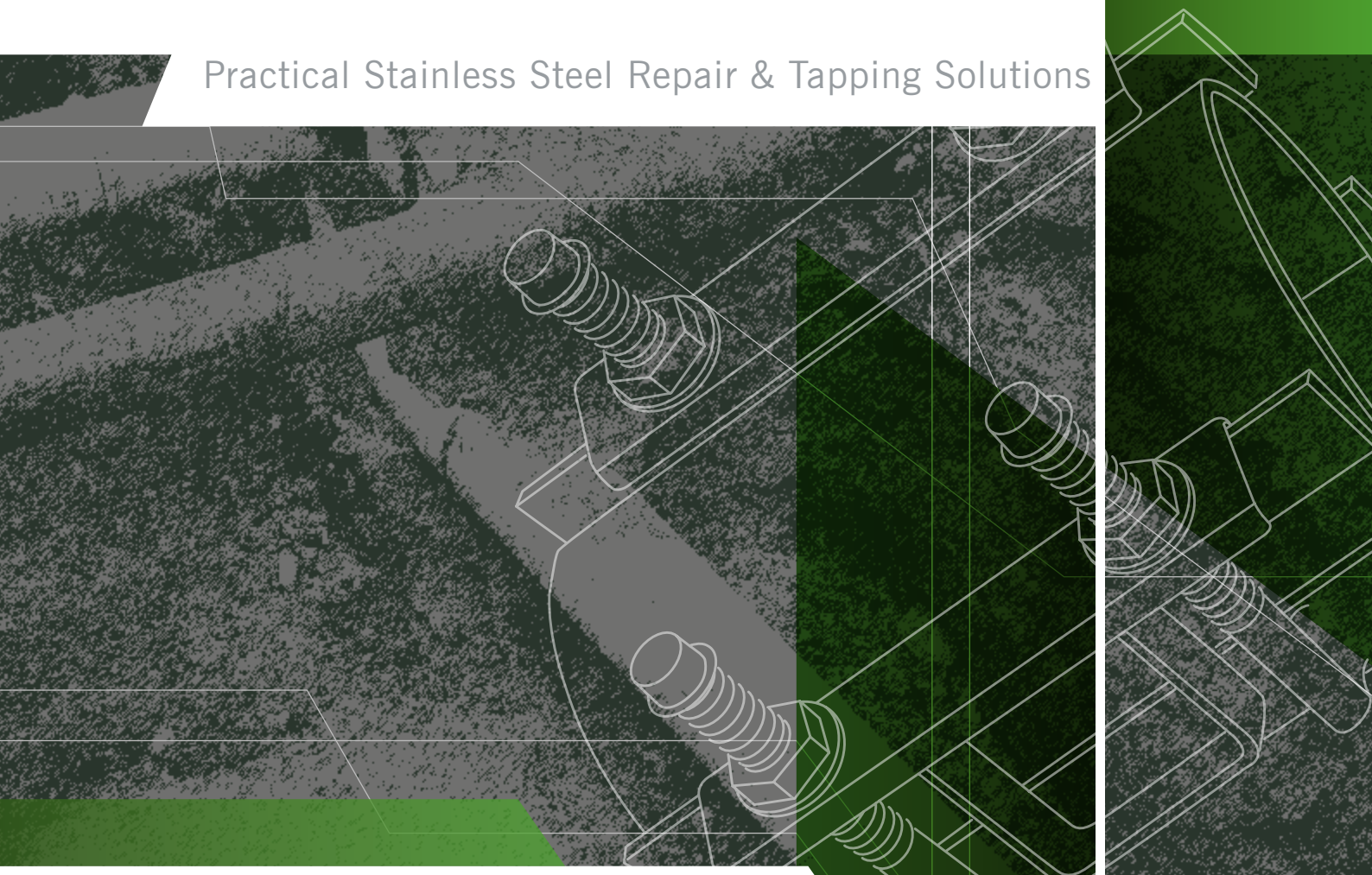
Client

Kristály Ltd.
to supply Fővárosi Vízművek

Crane BS&U are solely the provider of products and have no direct influence on, or take any responsibility for any working practices employed or depicted in the images enclosed to install such products.

HandiRange®

Practical Stainless Steel Repair & Tapping Solutions



HandiClamp, HandiTap, HandiTee & HandiBand

VIKING JOHNSON®

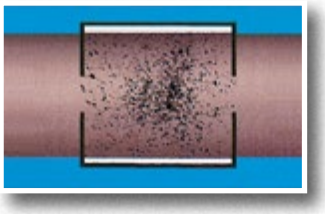
A Permanent Repair Solution for Small Bore Pipes

The HandiRange is a comprehensive range of stainless steel repair and tapping products, designed to serve the needs of today's water industry. The HandiRange comprises HandiClamp, HandiTap, HandiTee and HandiBand.

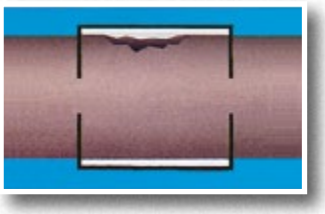
Available in various clamp lengths and suitable for virtually any pipe material, HandiRange products are available with either EPDM or Nitrile gaskets, with a maximum operating temperature of 40°C.

HandiClamp is constructed from 100% stainless steel and offers permanent repair for many types of pipe damage from DN50 (2") to DN1000 (40"). The HandiTap range offers the same design and construction features as the HandiClamp but has various female BSP outlet options, offering a quick, cost effective method of replacing service connections under pressure. The HandiTee range is extremely useful to make simple flanged connections on pipelines under pressure due to its lightweight and easy installation. Finally, HandiBand is a high quality repair clamp designed for localised damage on small bore pipes DN15 to DN50 (1/2" – 2").

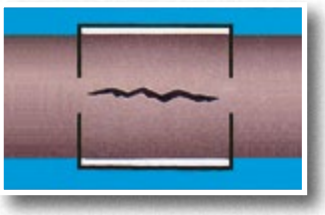
Ideal For



Corrosion holes



Impact damage



Longitudinal cracks

Note: HandiRange products will repair localised damage only. The maximum diameter of the hole in PE pipe that can be repaired by HandiClamp varies according to pipe diameter and clamp length.

Pipe Materials

HandiRange Repair & Tapping Solutions

Product Design Benefits

Corrosion Protection

Components constructed of fully-passivated stainless steel (Grade 304) with no need for any further protection on site (e.g. on-site wrapping). Bolts are secured with Dacromet coated nuts to prevent galling.

Easy Installation

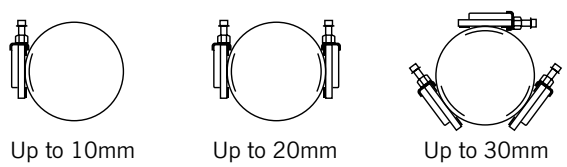
Rapid installation in poor site conditions, made easy with simple, 'flip-over' action and self retaining bolts.

First Time Seal

All encompassing waffle gasket offers a guaranteed reliable seal even on badly corroded pipes.

Customer Benefits

- No specialist equipment required, standard under-pressure equipment can be used with HandiTap and HandiTee.
- No costly mains shutdown with HandiTap and HandiTee, allowing branch connections whilst under pressure.
- Reduced stock holding due to wide tolerance in the range.



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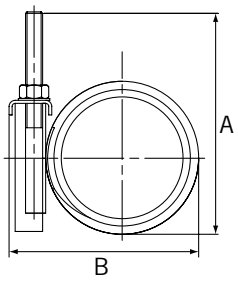
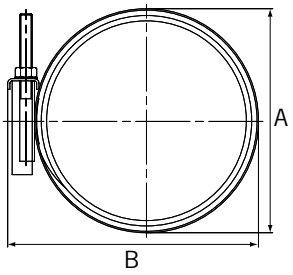
HandiClamp & HandiTap Single Band

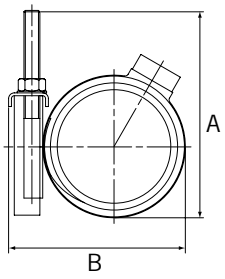
Datasheet 1/2

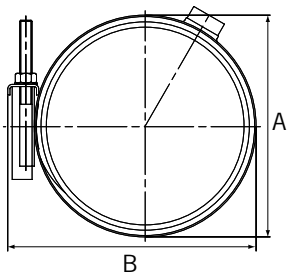
HandiClamp Single Band





HandiTap Single Band





HandiClamp & HandiTap Single Band

OD Range (mm)	A (mm)	B (mm)	Max Outlet Size*	Working** Pressure (bar)		Clamp Length***											
						150 (mm)		200 (mm)		250 (mm)		300 (mm)		400 (mm)		500 (mm)	
						Bolt Details		Bolt Details		Bolt Details		Bolt Details		Bolt Details		Bolt Details	
			BSP	Water	Gas	No.-Dia x Length	Weight (kg)	No.-Dia x Length	Weight (kg)	No.-Dia x Length	Weight (kg)	No.-Dia x Length	Weight (kg)	No.-Dia x Length	Weight (kg)	No.-Dia x Length	Weight (kg)
44 - 48	141	77	1.25" BSP	24.0	4.0	2-M12 x 135	1.13	2-M12 x 135	1.35	3-M12 x 135	1.89	3-M12 x 135	2.10				
48 - 52	143	82	1.25" BSP	24.0	4.0	2-M12 x 135	1.15	2-M12 x 135	1.37	3-M12 x 135	1.93	3-M12 x 135	2.14				
54 - 58	146	88	1.5" BSP	24.0	4.0	2-M12 x 135	1.18	2-M12 x 135	1.41	3-M12 x 135	1.98	3-M12 x 135	2.20				
58 - 64	148	92	1.5" BSP	24.0	4.0	2-M12 x 135	1.20	2-M12 x 135	1.44	3-M12 x 135	2.01	3-M12 x 135	2.24				
60 - 67	149	94	1.5" BSP	24.0	4.0	2-M12 x 135	1.21	2-M12 x 135	1.45	3-M12 x 135	2.03	3-M12 x 135	2.26				
63 - 70	151	97	1.5" BSP	24.0	4.0	2-M12 x 135	1.23	2-M12 x 135	1.47	3-M12 x 135	2.05	3-M12 x 135	2.29				
68 - 76	153	102	1.5" BSP	24.0	4.0	2-M12 x 135	1.25	2-M12 x 135	1.51	3-M12 x 135	2.09	3-M12 x 135	2.34				
75 - 83	157	109	1.5" BSP	24.0	4.0	2-M12 x 135	1.29	2-M12 x 135	1.55	3-M12 x 135	2.15	3-M12 x 135	2.41				
82 - 89	160	116	1.5" BSP	20.0	4.0	2-M12 x 135	1.36	2-M12 x 135	1.60	3-M12 x 135	2.21	3-M12 x 135	2.48				
87 - 96	163	121	1.5" BSP	20.0	4.0	2-M12 x 135	1.38	2-M12 x 135	1.63	3-M12 x 135	2.25	3-M12 x 135	2.53	4-M12 x 135	3.38		
95 - 105	167	129	2.0" BSP	20.0	4.0	2-M12 x 135	1.49	2-M12 x 135	1.77	3-M12 x 135	2.42	3-M12 x 135	2.73	4-M12 x 135	3.65		
102 - 112	170	136	2.0" BSP	20.0	4.0	2-M12 x 135	1.54	2-M12 x 135	1.83	3-M12 x 135	2.49	3-M12 x 135	2.83	4-M12 x 135	3.78		
113 - 123	176	147	2.0" BSP	20.0	4.0	2-M14 x 135	1.67	2-M14 x 135	1.98	3-M14 x 135	2.70	3-M14 x 135	3.05	4-M14 x 135	4.07		
120 - 131	179	154	2.0" BSP	12.0	3.0	2-M14 x 135	1.71	2-M14 x 135	2.09	3-M14 x 135	2.84	3-M14 x 135	3.21	4-M14 x 135	4.29		
132 - 142	185	166	2.0" BSP	12.0	3.0			2-M14 x 135	2.17	3-M14 x 135	2.94	3-M14 x 135	3.34	4-M14 x 135	4.47		
135 - 145	187	169	2.0" BSP	12.0	3.0			2-M14 x 135	2.19	3-M14 x 135	2.97	3-M14 x 135	3.37	4-M14 x 135	4.51		
147 - 157	193	181	2.0" BSP	12.0	3.0			2-M14 x 135	2.28	3-M14 x 135	3.08	3-M14 x 135	3.50	4-M14 x 135	4.68		
151 - 161	195	185	2.0" BSP	12.0	3.0			2-M14 x 135	2.31	3-M14 x 135	3.11	3-M14 x 135	3.54	4-M14 x 135	4.73		
160 - 170	199	194	2.0" BSP	12.0	3.0			2-M14 x 135	2.39	3-M14 x 135	3.22	3-M14 x 135	3.67	4-M14 x 135	4.91		
167 - 178	203	201	2.0" BSP	12.0	3.0			2-M14 x 135	2.44	3-M14 x 135	3.28	3-M14 x 135	3.75	4-M14 x 135	5.00		
176 - 187	207	210	2.0" BSP	12.0	3.0			2-M14 x 135	2.50	3-M14 x 135	3.36	3-M14 x 135	3.84	4-M14 x 135	5.13		
186 - 196	212	220	2.0" BSP	12.0	3.0			2-M14 x 135	2.58	3-M14 x 135	3.45	3-M14 x 135	3.95	4-M14 x 135	5.27		
193 - 203	216	227	2.0" BSP	12.0	3.0			2-M14 x 135	2.63	3-M14 x 135	3.51	3-M14 x 135	4.02	4-M14 x 135	5.37		
200 - 210	219	234	2.0" BSP	12.0	3.0			2-M14 x 135	2.88	3-M14 x 135	3.83	3-M14 x 135	4.40	4-M14 x 135	5.88		
215 - 225	227	249	2.0" BSP	12.0	3.0			2-M14 x 135	3.00	3-M14 x 135	3.98	3-M14 x 135	4.59	4-M14 x 135	6.12	5-M14 x 135	7.71
219 - 229	229	253	2.0" BSP	12.0	3.0			2-M14 x 135	3.03	3-M14 x 135	4.02	3-M14 x 135	4.64	4-M14 x 135	6.19	5-M14 x 135	7.79
230 - 240	239	264	2.0" BSP	10.0	2.5					3-M14 x 135	4.13	3-M14 x 135	4.77	4-M14 x 135	6.37	5-M14 x 135	8.02
237 - 247	246	271	2.0" BSP	10.0	2.5					3-M14 x 135	4.21	3-M14 x 135	4.86	4-M14 x 135	6.48	5-M14 x 135	8.16
240 - 250	249	274	2.0" BSP	10.0	2.5					3-M14 x 135	4.23	3-M14 x 135	4.89	4-M14 x 135	6.53	5-M14 x 135	8.22
250 - 260	259	284	2.0" BSP	10.0	2.5					3-M14 x 135	4.33	3-M14 x 135	5.01	4-M14 x 135	6.69	5-M14 x 135	8.42
257 - 267	266	291	2.0" BSP	10.0	2.5					3-M14 x 135	4.41	3-M14 x 135	5.10	4-M14 x 135	6.80	5-M14 x 135	8.56
261 - 271	270	295	2.0" BSP	10.0	2.5					3-M14 x 135	4.45	3-M14 x 135	5.15	4-M14 x 135	6.87	5-M14 x 135	8.64
270 - 280	279	304	2.0" BSP	10.0	2.5					3-M14 x 135	4.54	3-M14 x 135	5.26	4-M14 x 135	7.02	5-M14 x 135	8.83
280 - 291	289	314	2.0" BSP	10.0	2.5					3-M14 x 135	4.64	3-M14 x 135	5.38	4-M14 x 135	7.18	5-M14 x 135	9.03
290 - 300	299	324	2.0" BSP	6.0	1.5					3-M14 x 135	4.74	3-M14 x 135	5.50	4-M14 x 135	7.34	5-M14 x 135	9.23
300 - 310	308	333	2.0" BSP	6.0	1.5					3-M14 x 135	4.84	3-M14 x 135	5.62	4-M14 x 135	7.50	5-M14 x 135	9.43
310 - 320	319	343	2.0" BSP	6.0	1.5					3-M14 x 135	4.94	3-M14 x 135	5.74	4-M14 x 135	7.67	5-M14 x 135	9.64
315 - 325	328	349	2.0" BSP	6.0	1.5					3-M14 x 135	5.00	3-M14 x 135	5.81	4-M14 x 135	7.75	5-M14 x 135	9.74
320 - 330	329	354	2.0" BSP	6.0	1.5					3-M14 x 135	5.04	3-M14 x 135	5.86	4-M14 x 135	7.83	5-M14 x 135	9.84
330 - 340	339	364	2.0" BSP	6.0	1.5					3-M14 x 135	5.15	3-M14 x 135	5.99	4-M14 x 135	7.99	5-M14 x 135	10.04
340 - 350	349	374	2.0" BSP	6.0	1.5					3-M14 x 135	5.25	3-M14 x 135	6.11	4-M14 x 135	8.15	5-M14 x 135	10.24
350 - 360	359	384	2.0" BSP	6.0	1.5					3-M14 x 135	5.35	3-M14 x 135	6.23	4-M14 x 135	8.32	5-M14 x 135	10.45

*This is the maximum size BSP outlet offered. Smaller outlets are available: 0.75", 1.0", 1.25", 1.5", 1.75", 2.0".**The rated working pressures quoted above for water applications are based on worst case scenarios including circumferential cracks. When used to repair pipelines with less severe damage and dependant on the pipe surface, higher working pressures may be achieved.
***When using HandiRange products on PE pipe, consideration to clamp length must be given, please contact the Viking Johnson Marketing Department for more details.

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HandiClamp & HandiTap Single Band

Datasheet 2/2

Technical Information

Working Pressure Rating

- Water = In accordance the rating as defined in the tables
- Gas = In accordance the rating as defined in the tables

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar.

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Angularity

HandiClamp & HandiTap fittings are not able to accommodate any angularity.

Bolt Torque/Spanner

- M12; Torque = 55-65Nm on every bolt
- M14; Torque = 70–80 Nm on every bolt
- M16; Torque = 95-110Nm on every bolt

Temperature Rating of Product

- EPDM = -20°C to +40°C
- Nitrile = 20°C to +40°C

Note: HandiClamp & HandiTap are not suitable for use on heating systems with fluctuating temperatures

End Load Due to Internal Pressure

HandiClamp & HandiTap fittings DO NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out from the clamp.

Approvals

The following water contact materials used in HandiClamp are approved for use with potable water:-

EPDM Gaskets:

- WRAS

In addition to the above, HandiClamp & HandiTap range as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Body & Plates

Shell, channel plate, bridging plate, lug plate & nut plate
Stainless Steel to BS1449:Part 2 GRADE 304S15

Gasket

- EPDM to BS EN681-1, TYPE WA, WC 60 IRHD
- Nitrile to BS EN682, Type G 60 IRHD

Studs

Stainless Steel to BS EN ISO3506-1
GRADE A2 Property Class 50

Nuts

Stainless Steel to BS EN ISO 3506-2
GRADE A4 Property Class 80

Washers

Stainless Steel BS1449:PART 2 GRADE 304S15

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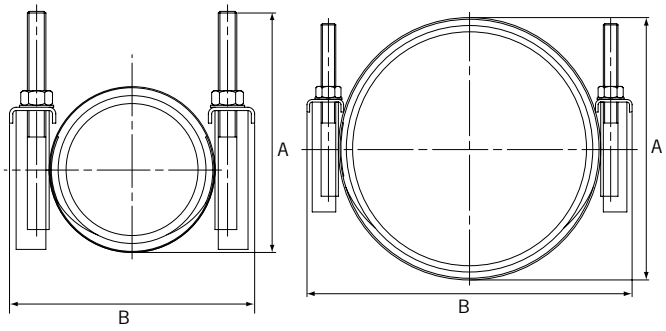
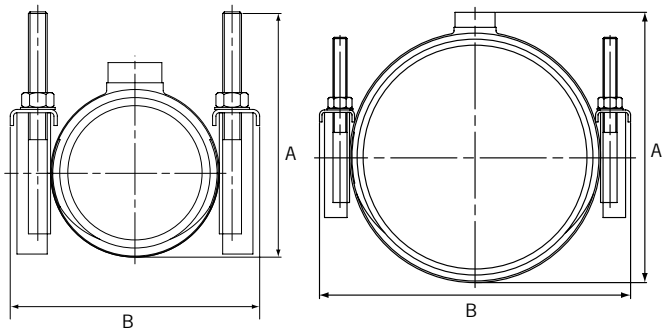
HandiClamp & HandiTap Double Band

Datasheet 1/2

HandiClamp Double Band



HandiTap Double Band



HandiClamp & HandiTap Double Band

OD Range (mm)	A (mm)	B (mm)	Max Outlet Size*	Working Pressure (bar)**		Clamp Length***							
						200 (mm)		250 (mm)		300 (mm)		400 (mm)	
						Bolt Details		Bolt Details		Bolt Details		Bolt Details	
			BSP	Water	Gas	No.-Dia x Length	Weight (kg)	No.-Dia x Length	Weight (kg)	No.-Dia x Length	Weight (kg)	No.-Dia x Length	Weight (kg)
88 - 110	163	122	1.0” BSP	20.0	4.0	4-M12 x 135	2.50	6-M12 x 135	3.76	6-M12 x 135	4.14	8-M12 x 135	5.69
108 - 128	173	142	1.5” BSP	20.0	4.0	4-M12 x 135	2.67	6-M12 x 135	3.97	6-M12 x 135	4.40	8-M12 x 135	6.03
113 - 133	176	147	1.5” BSP	20.0	4.0	4-M14 x 135	2.77	6-M14 x 135	4.09	6-M14 x 135	4.54	8-M14 x 135	6.22
120 - 140	179	154	1.5” BSP	12.0	3.0	4-M14 x 135	2.81	6-M14 x 135	4.15	6-M14 x 135	4.61	8-M14 x 135	6.31
130 - 150	184	164	1.5” BSP	12.0	3.0	4-M14 x 135	2.88	6-M14 x 135	4.24	6-M14 x 135	4.72	8-M14 x 135	6.46
140 - 160	189	173	2.0” BSP	12.0	3.0	4-M14 x 135	2.95	6-M14 x 135	4.33	6-M14 x 135	4.82	8-M14 x 135	6.59
150 - 170	194	184	2.0” BSP	12.0	3.0	4-M14 x 135	3.07	6-M14 x 135	4.47	6-M14 x 135	4.99	8-M14 x 135	6.82
159 - 180	199	192	2.0” BSP	12.0	3.0	4-M14 x 135	3.13	6-M14 x 135	4.55	6-M14 x 135	5.09	8-M14 x 135	6.95
168 - 189	203	201	2.0” BSP	12.0	3.0	4-M14 x 135	3.19	6-M14 x 135	4.63	6-M14 x 135	5.18	8-M14 x 135	7.07
170 - 190	204	204	2.0” BSP	12.0	3.0	4-M14 x 135	3.21	6-M14 x 135	4.65	6-M14 x 135	5.21	8-M14 x 135	7.11
175 - 195	207	208	2.0” BSP	12.0	3.0	4-M14 x 135	3.24	6-M14 x 135	4.69	6-M14 x 135	5.26	8-M14 x 135	7.17
190 - 210	214	224	2.0” BSP	12.0	3.0	4-M14 x 135	3.35	6-M14 x 135	4.82	6-M14 x 135	5.42	8-M14 x 135	7.39
205 - 225	222	239	2.0” BSP	12.0	3.0	4-M14 x 135	3.67	6-M14 x 135	5.22	6-M14 x 135	5.90	8-M14 x 135	8.03
210 - 230	224	243	2.0” BSP	12.0	3.0	4-M14 x 135	3.71	6-M14 x 135	5.27	6-M14 x 135	5.95	8-M14 x 135	8.10
216 - 238	227	250	2.0” BSP	12.0	3.0	4-M14 x 135	3.76	6-M14 x 135	5.33	6-M14 x 135	6.03	8-M14 x 135	8.20
220 - 242	229	254	2.0” BSP	10.0	2.5	4-M14 x 135	3.79	6-M14 x 135	5.37	6-M14 x 135	6.08	8-M14 x 135	8.27
240 - 260	248	273	2.0” BSP	10.0	2.5	4-M14 x 135	3.95	6-M14 x 135	5.57	6-M14 x 135	6.32	8-M14 x 135	8.59
243 - 263	252	277	2.0” BSP	10.0	2.5	4-M14 x 135	3.98	6-M14 x 135	5.60	6-M14 x 135	6.36	8-M14 x 135	8.64
255 - 275	264	289	2.0” BSP	10.0	2.5	4-M14 x 135	4.07	6-M14 x 135	5.73	6-M14 x 135	6.65	8-M14 x 135	8.83
272 - 292	280	306	2.0” BSP	10.0	2.5	4-M14 x 135	4.21	6-M14 x 135	5.90	6-M14 x 135	6.71	8-M14 x 135	9.11
282 - 302	290	315	2.0” BSP	6.0	1.5	4-M14 x 135	4.29	6-M14 x 135	6.00	6-M14 x 135	6.83	8-M14 x 135	9.27
295 - 315	304	329	2.0” BSP	6.0	1.5	4-M14 x 135	4.40	6-M14 x 135	6.13	6-M14 x 135	6.99	8-M14 x 135	9.48
307 - 327	316	341	2.0” BSP	6.0	1.5	4-M14 x 135	4.50	6-M14 x 135	6.25	6-M14 x 135	7.14	8-M14 x 135	9.68
315 - 335	323	348	2.0” BSP	6.0	1.5	4-M14 x 135	4.56	6-M14 x 135	6.33	6-M14 x 135	7.23	8-M14 x 135	9.80
319 - 339	328	353	2.0” BSP	6.0	1.5	4-M14 x 135	4.59	6-M14 x 135	6.38	6-M14 x 135	7.28	8-M14 x 135	9.88
322 - 344	330	355	2.0” BSP	6.0	1.5	4-M14 x 135	4.62	6-M14 x 135	6.40	6-M14 x 135	7.32	8-M14 x 135	9.92
333 - 353	342	367	2.0” BSP	6.0	1.5			6-M14 x 135	6.52	6-M14 x 135	7.45	8-M14 x 135	10.10
341 - 361	350	375	2.0” BSP	6.0	1.5			6-M14 x 135	6.60	6-M14 x 135	7.55	8-M14 x 135	10.23
365 - 385	374	399	2.0” BSP	5.0	1.25			6-M14 x 135	6.84	6-M14 x 135	7.84	8-M14 x 135	10.62
396 - 416	405	430	2.0” BSP	5.0	1.25			6-M14 x 135	7.16	6-M14 x 135	8.22	8-M14 x 135	11.13
410 - 430	419	444	2.0” BSP	4.9	1.22			6-M14 x 135	7.30	6-M14 x 135	8.39	8-M14 x 135	11.35

*This is the maximum size BSP outlet offered. Smaller outlets are available: 0.75”, 1.0”, 1.25”, 1.5”, 1.75”, 2.0”.**The rated working pressures quoted above for water applications are based on worst case scenarios including circumferential cracks. When used to repair pipelines with less severe damage and dependant on the pipe surface, higher working pressures may be achieved.
***When using HandiRange products on PE pipe, consideration to clamp length must be given, please contact the Viking Johnson Marketing Department for more details.

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HandiClamp & HandiTap Double Band

Datasheet 2/2

Technical Information

Working Pressure Rating

- Water = In accordance the rating as defined in the tables
- Gas = In accordance the rating as defined in the tables

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar.

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Angularity

HandiClamp & HandiTap fittings are not able to accommodate any angularity.

Bolt Torque/Spanner

- M12; Torque = 55-65Nm on every bolt
- M14; Torque = 70–80 Nm on every bolt
- M16; Torque = 95-110Nm on every bolt

Temperature Rating of Product

- EPDM = -20°C to +40°C
- Nitrile = 20°C to +40°C

Note: HandiClamp & HandiTap are not suitable for use on heating systems with fluctuating temperatures

End Load Due to Internal Pressure

HandiClamp & HandiTap fittings DO NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out from the clamp.

Approvals

The following water contact materials used in HandiClamp are approved for use with potable water:-

EPDM Gaskets:

- WRAS

In addition to the above, HandiClamp & HandiTap range as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Body & Plates

Shell, channel plate, bridging plate, lug plate & nut plate
Stainless Steel to BS1449:Part 2 GRADE 304S15

Gasket

- EPDM to BS EN681-1, TYPE WA, WC 60 IRHD
- Nitrile to BS EN682, Type G 60 IRHD

Studs

Stainless Steel to BS EN ISO3506-1
GRADE A2 Property Class 50

Nuts

Stainless Steel to BS EN ISO 3506-2
GRADE A4 Property Class 80

Washers

Stainless Steel BS1449:PART 2 GRADE 304S15

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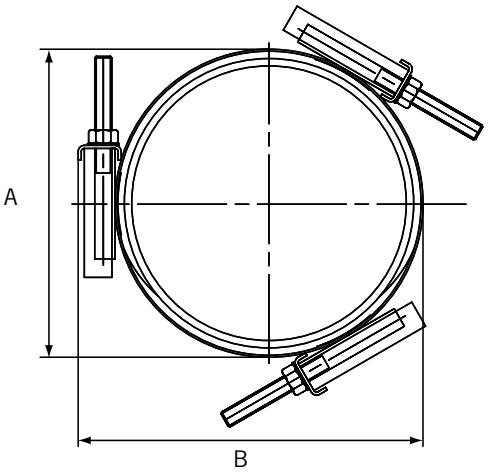
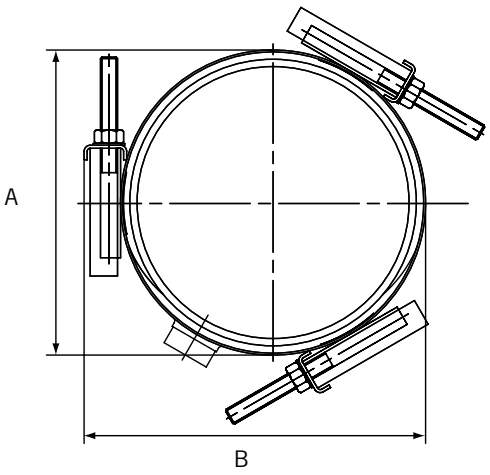
HandiClamp & HandiTap Triple Band

Datasheet 1/2

HandiClamp Triple Band



HandiTap Triple Band



HandiClamp & HandiTap Triple Band

OD Range (mm)	A (mm)	B (mm)	Max Outlet Size*	Working** pressure (bar)		Clamp Length***							
						300 (mm)		400 (mm)		500 (mm)		600 (mm)	
						Bolt Details		Bolt Details		Bolt Details		Bolt Details	
			BSP	Water	Gas	No.-Dia x Length	Weight (kg)	No.-Dia x Length	Weight (kg)	No.-Dia x Length	Weight (kg)	No.-Dia x Length	Weight (kg)
270 - 300	279	303	2.0" BSP	7.4	1.9	9-M14 x 135	9.23	12-M14 x 135	12.34	15-M14 x 135	15.58	18 - M14 x 135	17.95
310 - 340	319	344	2.0" BSP	6.5	1.6	9-M14 x 135	9.72	12-M14 x 135	12.99	15-M14 x 135	16.40	18 - M14 x 135	18.93
335 - 365	344	369	2.0" BSP	6.0	1.5	9-M14 x 135	10.02	12-M14 x 135	13.39	15-M14 x 135	16.90	18 - M14 x 135	19.53
340 - 370	349	374	2.0" BSP	6.0	1.5	9-M14 x 135	10.08	12-M14 x 135	13.47	15-M14 x 135	17.00	18 - M14 x 135	19.65
360 - 390	369	394	2.0" BSP	5.6	1.4	9-M14 x 135	10.33	12-M14 x 135	13.79	15-M14 x 135	17.40	18 - M14 x 135	20.14
385 - 415	393	418	2.0" BSP	5.2	1.3	9-M14 x 135	10.63	12-M14 x 135	14.19	15-M14 x 135	17.91	18 - M14 x 135	20.74
395 - 425	404	429	2.0" BSP	5.1	1.3	9-M14 x 135	10.75	12-M14 x 135	14.36	15-M14 x 135	18.12	18 - M14 x 135	21.00
410 - 440	418	443	2.0" BSP	4.9	1.2	9-M14 x 135	10.93	12-M14 x 135	14.60	15-M14 x 135	18.41	18 - M14 x 135	21.35
420 - 450	429	454	2.0" BSP	4.8	1.2	9-M14 x 135	11.06	12-M14 x 135	14.77	15-M14 x 135	18.62	18 - M14 x 135	21.60
435 - 465	444	469	2.0" BSP	4.6	1.1	9-M14 x 135	11.24	12-M14 x 135	15.01	15-M14 x 135	18.93	18 - M14 x 135	21.97
440 - 470	449	474	2.0" BSP	4.5	1.1	9-M14 x 135	11.30	12-M14 x 135	15.09	15-M14 x 135	19.03	18 - M14 x 135	22.09
450 - 480	458	483	2.0" BSP	4.4	1.1	9-M14 x 135	11.42	12-M14 x 135	15.25	15-M14 x 135	19.22	18 - M14 x 135	22.32
475 - 505	483	508	2.0" BSP	4.2	1.1	9-M16 x 135	13.89	12-M16 x 135	18.55	15-M16 x 135	23.35	18 - M16 x 135	27.27
485 - 515	494	519	2.0" BSP	4.1	1.0	9-M16 x 135	14.06	12-M16 x 135	18.77	15-M16 x 135	23.62	18 - M16 x 135	27.60
505 - 535	514	539	2.0" BSP	4.0	1.0	9-M16 x 135	14.38	12-M16 x 135	19.19	15-M16 x 135	24.15	18 - M16 x 135	28.24
510 - 540	519	544	2.0" BSP	3.9	1.0	9-M16 x 135	14.45	12-M16 x 135	19.29	15-M16 x 135	24.28	18 - M16 x 135	28.39
520 - 550	529	554	2.0" BSP	3.8	1.0	9-M16 x 135	14.62	12-M16 x 135	19.51	15-M16 x 135	24.56	18 - M16 x 135	28.72
530 - 560	539	564	2.0" BSP	3.8	0.9	9-M16 x 135	14.77	12-M16 x 135	19.72	15-M16 x 135	24.81	18 - M16 x 135	29.02
535 - 565	543	568	2.0" BSP	3.7	0.9	9-M16 x 135	14.84	12-M16 x 135	19.82	15-M16 x 135	24.94	18 - M16 x 135	29.18
560 - 590	568	593	2.0" BSP	3.6	0.9	9-M16 x 135	15.24	12-M16 x 135	20.34	15-M16 x 135	25.59	18 - M16 x 135	29.96
570 - 600	579	604	2.0" BSP	3.5	0.9	9-M16 x 135	15.40	12-M16 x 135	20.56	15-M16 x 135	25.87	18 - M16 x 135	30.30
585 - 615	594	619	2.0" BSP	3.4	0.9	9-M16 x 135	15.65	12-M16 x 135	20.89	15-M16 x 135	26.27	18 - M16 x 135	30.78
610 - 640	619	644	2.0" BSP	3.3	0.8	9-M16 x 135	16.04	12-M16 x 135	21.41	15-M16 x 135	26.93	18 - M16 x 135	31.57
640 - 670	648	673	2.0" BSP	3.1	0.8	9-M16 x 135	16.51	12-M16 x 135	22.03	15-M16 x 135	27.71	18 - M16 x 135	32.50
670 - 700	679	704	2.0" BSP	3.0	0.7	9-M16 x 135	16.99	12-M16 x 135	22.68	15-M16 x 135	28.51	18 - M16 x 135	33.47
680 - 710	689	714	2.0" BSP	2.9	0.7	9-M16 x 135	17.14	12-M16 x 135	22.88	15-M16 x 135	28.77	18 - M16 x 135	33.77

*This is the maximum size BSP outlet offered. Smaller outlets are available: 0.75", 1.0", 1.25", 1.5", 1.75", 2.0".**The rated working pressures quoted above for water applications are based on worst case scenarios including circumferential cracks. When used to repair pipelines with less severe damage and dependant on the pipe surface, higher working pressures may be achieved.
***When using HandiRange products on PE pipe, consideration to clamp length must be given, please contact the Viking Johnson Marketing Department for more details.

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HandiClamp & HandiTap Triple Band

Datasheet 2/2

Technical Information

Working Pressure Rating

- Water = In accordance the rating as defined in the tables
- Gas = In accordance the rating as defined in the tables

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar.

Site Test Pressure

1.5 times working pressure for short duration (2 hours)

Angularity

HandiClamp & HandiTap fittings are not able to accommodate any angularity.

Bolt Torque/Spanner

- M12; Torque = 55-65Nm on every bolt
- M14; Torque = 70–80 Nm on every bolt
- M16; Torque = 95-110Nm on every bolt

Temperature Rating of Product

- EPDM = -20°C to +40°C
- Nitrile = 20°C to +40°C

Note: HandiClamp & HandiTap are not suitable for use on heating systems with fluctuating temperatures

End Load Due to Internal Pressure

HandiClamp & HandiTap fittings DO NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out from the clamp.

Approvals

The following water contact materials used in HandiClamp are approved for use with potable water:-

EPDM Gaskets:

- WRAS

In addition to the above, HandiClamp & HandiTap range as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Body & Plates

Shell, channel plate, bridging plate, lug plate & nut plate

Stainless Steel to BS1449:Part 2 GRADE 304S15

Gasket

- EPDM to BS EN681-1, TYPE WA, WC 60 IRHD
- Nitrile to BS EN682, Type G 60 IRHD

Studs

Stainless Steel to BS EN ISO3506-1
GRADE A2 Property Class 50

Nuts

Stainless Steel to BS EN ISO 3506-2
GRADE A4 Property Class 80

Washers

Stainless Steel BS1449:PART 2 GRADE 304S15

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HandiBand

Datasheet 1/1

3” = 1 Bolt
6” = 2 Bolts

HandiBand

Nom Dia	OD Range	Working Pressure (bar)		Clamp Length
		Water	Gas	
0.50”	15.0 - 22.0	7.0	1.8	3” (75mm)
0.50”	15.0 - 22.0	7.0	1.8	6” (150mm)
0.75”	26.0 - 30.0	7.0	1.8	3” (75mm)
0.75”	26.0 - 30.0	7.0	1.8	6” (150mm)
1.00”	33.0 - 37.0	7.0	1.8	3” (75mm)
1.00”	33.0 - 37.0	7.0	1.8	6” (150mm)
1.25”	42.0 - 45.0	7.0	1.8	3” (75mm)
1.25”	42.0 - 45.0	7.0	1.8	6” (150mm)
1.50”	48.0 - 54.0	7.0	1.8	3” (75mm)
1.50”	48.0 - 54.0	7.0	1.8	6” (150mm)
2.00”	60.0 - 64.0	7.0	1.8	3” (75mm)
2.00”	60.0 - 64.0	7.0	1.8	6” (150mm)

Technical Information

Pressure Rating

- Water = In accordance the rating as defined in the tables
- Gas = In accordance the rating as defined in the tables

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar.

Site Test Pressure

1.5 times working pressure for short duration (2 hours).

Angularity

HandiBand fittings are not able to accommodate any angularity.

Temperature Rating of Product

- EPDM = -20°C to +40°C
- Nitrile = 20°C to +40°C

NOTE: HandiBand is not suitable for use on heating systems with fluctuating temperatures

End Load Due to Internal Pressure

HandiBand fittings DO NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out from the clamp.

Materials & Relevant Standards

Shell

Stainless Steel to BS1449:Part2 Grade 304 / Steel No. 1.4301

Lugs

Whitehart malleable cast iron equivalent to BS EN 1562 Grade ENGJMW-400-5

Studs/Nuts

Mild steel to BS EN ISO 898-1 Property class 4.6

Gasket

- EPDM to BS EN681-1, TYPE WA, WC 60 IRHD
- Nitrile to BS EN682, Type G 60 IRHD

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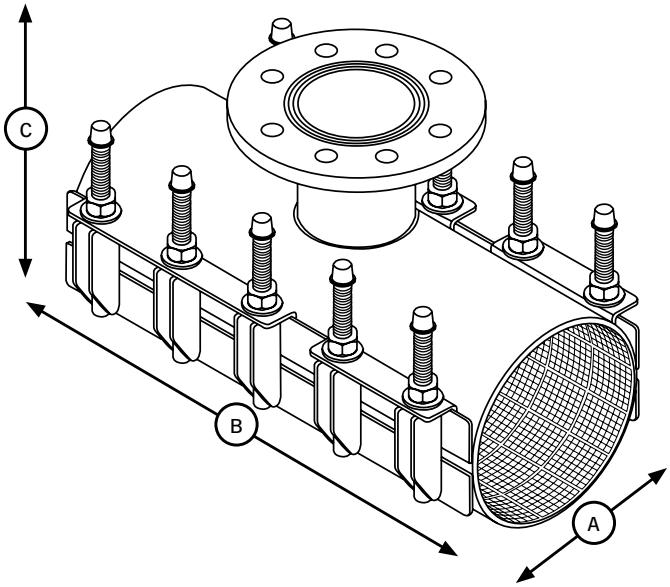
HandiRange - The pipe repair product that seals first time even on badly corroded pipes.

HandiTee DN80 to DN250 Clamp Length 300 to 500mm

Datasheet 1/8

HandiTee



HandiTee Under Pressure Tapping Tee

DN (mm)	OD Range (mm)	Working Pressure		Length of Clamp (mm)											
				300				400				500			
		Gas (bar)	Water (bar)	Max Flange Nom & Flange Drilling	A (mm)	B (mm)	C (mm)	Max Flange Nom & Flange Drilling	A (mm)	B (mm)	C (mm)	Max Flange Nom & Flange Drilling	A (mm)	B (mm)	C (mm)
80	88-110	4.0	16.0	DN65 PN10/16	140	300	260	DN65 PN10/16	140	400	260	DN65 PN10/16	140	500	260
80	100-120	4.0	16.0	DN65 PN10/16	140	300	260	DN80 PN10/16	140	400	260	DN80 PN10/16	140	500	260
100	108-128	3.0	12.0	DN65 PN10/16	160	300	280	DN80 PN10/16	160	400	280	DN80 PN10/16	160	500	280
100	114-134	3.0	12.0	DN65 PN10/16	160	300	280	DN80 PN10/16	160	400	280	DN80 PN10/16	160	500	280
100	120-140	3.0	12.0	DN65 PN10/16	160	300	280	DN80 PN10/16	160	400	280	DN80 PN10/16	160	500	280
100	130-150	3.0	12.0	DN65 PN10/16	160	300	280	DN80 PN10/16	160	400	280	DN100 PN10/16	160	500	280
125	133-155	3.0	12.0	DN65 PN10/16	185	300	305	DN100 PN10/16	185	400	305	DN100 PN10/16	185	500	305
125	135-155	3.0	12.0	DN65 PN10/16	185	300	305	DN125 PN10/16	185	400	305	DN125 PN10/16	185	500	305
125	140-160	3.0	12.0	DN65 PN10/16	185	300	305	DN125 PN10/16	185	400	305	DN125 PN10/16	185	500	305
150	158-180	3.0	12.0	DN65 PN10/16	210	300	330	DN125 PN10/16	210	400	330	DN125 PN10/16	210	500	330
150	165-185	3.0	12.0	DN65 PN10/16	210	300	330	DN125 PN10/16	210	400	330	DN125 PN10/16	210	500	330
150	168-189	3.0	12.0	DN65 PN10/16	210	300	330	DN125 PN10/16	210	400	330	DN125 PN10/16	210	500	330
150	170-190	3.0	12.0	DN65 PN10/16	210	300	330	DN150 PN10/16	210	400	330	DN150 PN10/16	210	500	330
150	176-196	3.0	12.0	DN65 PN10/16	210	300	330	DN150 PN10/16	210	400	330	DN150 PN10/16	210	500	330
150	180-200	3.0	12.0	DN65 PN10/16	210	300	330	DN150 PN10/16	210	400	330	DN150 PN10/16	210	500	330
150	190-210	3.0	12.0	DN65 PN10/16	210	300	330	DN150 PN10/16	210	400	330	DN150 PN10/16	210	500	330
150	195-217	3.0	12.0	DN65 PN10/16	210	300	330	DN150 PN10/16	210	400	330	DN150 PN10/16	210	500	330
150	205-225	3.0	12.0	DN65 PN10/16	210	300	330	DN150 PN10/16	210	400	330	DN150 PN10/16	210	500	330
200	210-230	3.0	12.0	DN65 PN10/16	260	300	380	DN150 PN10/16	260	400	380	DN150 PN10/16	260	500	380
200	216-238	3.0	10.0	DN65 PN10/16	260	300	380	DN150 PN10/16	260	400	380	DN150 PN10/16	260	500	380
200	225-246	3.0	10.0	DN65 PN10/16	260	300	380	DN150 PN10/16	260	400	380	DN150 PN10/16	260	500	380
200	230-250	3.0	10.0	DN65 PN10/16	260	300	380	DN150 PN10/16	260	400	380	DN150 PN10/16	260	500	380
225	240-260	3.0	10.0	DN65 PN10/16	285	300	405	DN150 PN10/16	285	400	405	DN200 PN10	285	500	405
225	250-270	3.0	10.0	DN65 PN10/16	285	300	405	DN150 PN10/16	285	400	405	DN200 PN10	285	500	405
250	260-280	3.0	10.0	DN65 PN10/16	310	300	430	DN150 PN10/16	310	400	430	DN200 PN10	310	500	430
250	269-289	3.0	10.0	DN65 PN10/16	310	300	430	DN150 PN10/16	310	400	430	DN200 PN10	310	500	430
250	273-293	3.0	10.0	DN65 PN10/16	310	300	430	DN150 PN10/16	310	400	430	DN200 PN10	310	500	430
250	282-302	3.0	10.0	DN65 PN10/16	310	300	430	DN150 PN10/16	310	400	430	DN200 PN10	310	500	430

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HandiTee DN80 to DN250 Clamp Length 300 to 500mm

Datasheet 2/8

Technical Information

Pressure Rating

- Water = In accordance the rating as defined in the tables.
- Gas = In accordance the rating as defined in the tables.

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar.

Site Test Pressure

1.5 times working pressure for short duration (2 hours).

Angularity

HandiTee fittings are not able to accommodate any angularity.

Bolt Torque/Spanner

M16; Torque = 95-120Nm on every bolt

Temperature Rating of Product

- EPDM = -20°C to +40°C
- Nitrile = 20°C to +40°C

Note: HandiTee is not suitable for use on heating systems with fluctuating temperatures

End Load Due to Internal Pressure

HandiTee fittings DO NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out from the clamp.

Loads from Drilling Equipment and Valve / Branch Pipework

HandiTee is not designed to accommodate / resist the loads from the under pressure drilling equipment, which needs to be supported externally during the operation to drill into the main. In addition, the valve and branch pipework needs to be adequately supported to ensure none of the dead / live loads are imposed in the branch outlet in the HandiTee.

Approvals

The following water contact materials used in HandiTee are approved for use with potable water:-

- EPDM Gaskets; WRAS

Materials & Relevant Standards

Body & Plates

Shell, channel plate, bridging plate, lug plate & nut plate
Stainless Steel AISI 304 (A2)

Gasket

EPDM as standard, Nitrile option

Flange Outlets

Stainless Steel AISI 304, flanges according to DIN2576 varying from DN50 up to DN300

Bolts

Stainless Steel AISI 304 (A2); M16
(metric thread according DIN267),
thread is PTFE coated to prevent galling

Nuts

Stainless Steel AISI 304 (A2). M16 according DIN934

Washers

Stainless Steel BS1449:PART 2 GRADE 304S15

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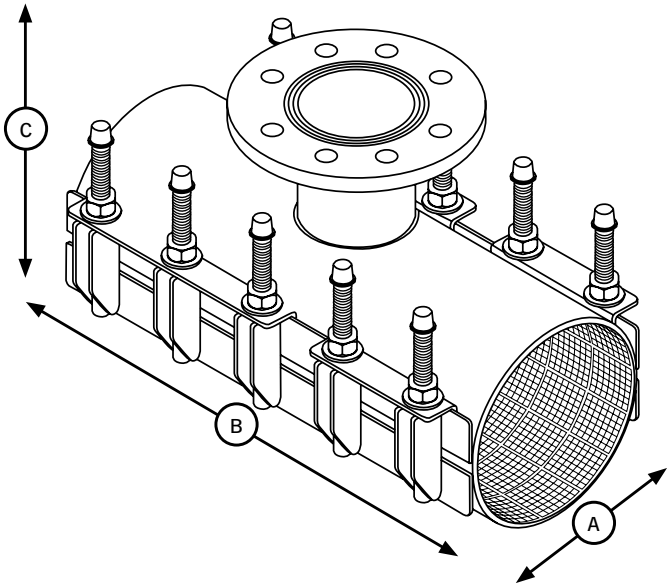
HandiTee DN80 to DN250 Clamp Length 600 to 1000mm

Datasheet 3/8

HandiTee



HandiTee Under Pressure Tapping Tee

DN (mm)	OD Range (mm)	Working Pressure		Length of Clamp (mm)											
				600				800				1000			
		Gas (bar)	Water (bar)	Max Flange Nom & Flange Drilling	A (mm)	B (mm)	C (mm)	Max Flange Nom & Flange Drilling	A (mm)	B (mm)	C (mm)	Max Flange Nom & Flange Drilling	A (mm)	B (mm)	C (mm)
80	88-110	4.0	16.0	DN65 PN10/16	140	600	260								
80	100-120	4.0	16.0	DN80 PN10/16	140	600	260								
100	108-128	3.0	12.0	DN80 PN10/16	160	600	280								
100	114-134	3.0	12.0	DN80 PN10/16	160	600	280								
100	120-140	3.0	12.0	DN80 PN10/16	160	600	280								
100	130-150	3.0	12.0	DN100 PN10/16	160	600	280								
125	133-155	3.0	12.0	DN100 PN10/16	185	600	305								
125	135-155	3.0	12.0	DN125 PN10/16	185	600	305								
125	140-160	3.0	12.0	DN125 PN10/16	185	600	305								
150	158-180	3.0	12.0	DN125 PN10/16	210	600	330								
150	165-185	3.0	12.0	DN125 PN10/16	210	600	330								
150	168-189	3.0	12.0	DN125 PN10/16	210	600	330								
150	170-190	3.0	12.0	DN150 PN10/16	210	600	330								
150	176-196	3.0	12.0	DN150 PN10/16	210	600	330	Not Available				Not Available			
150	180-200	3.0	12.0	DN150 PN10/16	210	600	330								
150	190-210	3.0	12.0	DN150 PN10/16	210	600	330								
150	195-217	3.0	12.0	DN150 PN10/16	210	600	330								
150	205-225	3.0	12.0	DN150 PN10/16	210	600	330								
200	210-230	3.0	12.0	DN150 PN10/16	260	600	380								
200	216-238	3.0	10.0	DN150 PN10/16	260	600	380								
200	225-246	3.0	10.0	DN150 PN10/16	260	600	380								
200	230-250	3.0	10.0	DN150 PN10/16	260	600	380								
225	240-260	3.0	10.0	DN200 PN10	285	600	405								
225	250-270	3.0	10.0	DN200 PN10	285	600	405								
250	260-280	3.0	10.0	DN200 PN10	310	600	430								
250	269-289	3.0	10.0	DN200 PN10	310	600	430								
250	273-293	3.0	10.0	DN200 PN10	310	600	430								
250	282-302	3.0	10.0	DN200 PN10	310	600	430								

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HandiTee DN80 to DN250 Clamp Length 600 to 1000mm

Datasheet 4/8

Technical Information

Pressure Rating

- Water = In accordance the rating as defined in the tables.
- Gas = In accordance the rating as defined in the tables.

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar.

Site Test Pressure

1.5 times working pressure for short duration (2 hours).

Angularity

HandiTee fittings are not able to accommodate any angularity.

Bolt Torque/Spanner

M16; Torque = 95-120Nm on every bolt

Temperature Rating of Product

- EPDM = -20°C to +40°C
- Nitrile = 20°C to +40°C

Note: HandiTee is not suitable for use on heating systems with fluctuating temperatures

End Load Due to Internal Pressure

HandiTee fittings DO NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out from the clamp.

Loads from Drilling Equipment and Valve / Branch Pipework

HandiTee is not designed to accommodate / resist the loads from the under pressure drilling equipment, which needs to be supported externally during the operation to drill into the main. In addition, the valve and branch pipework needs to be adequately supported to ensure none of the dead / live loads are imposed in the branch outlet in the HandiTee.

Approvals

The following water contact materials used in HandiTee are approved for use with potable water:-

- EPDM Gaskets; WRAS

Materials & Relevant Standards

Body & Plates

Shell, channel plate, bridging plate, lug plate & nut plate
Stainless Steel AISI 304 (A2)

Gasket

EPDM as standard, Nitrile option

Flange Outlets

Stainless Steel AISI 304, flanges according to DIN2576 varying from DN50 up to DN300

Bolts

Stainless Steel AISI 304 (A2); M16
(metric thread according DIN267),
thread is PTFE coated to prevent galling

Nuts

Stainless Steel AISI 304 (A2). M16 according DIN934

Washers

Stainless Steel BS1449:PART 2 GRADE 304S15

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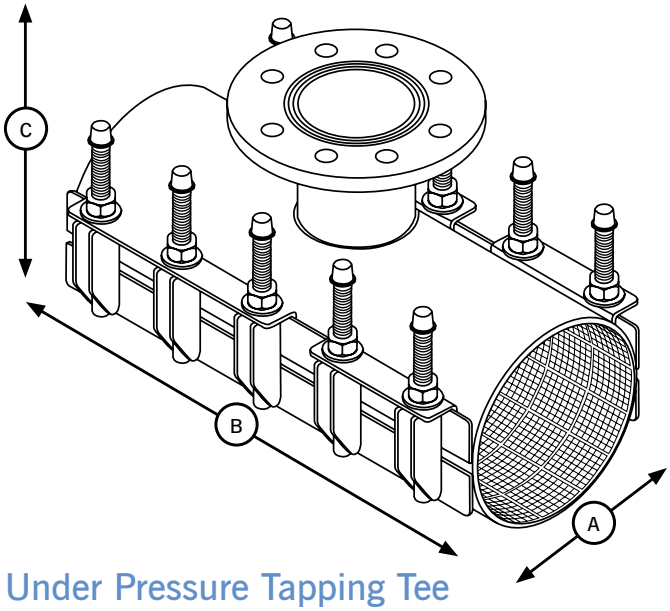
HandiTee DN300 to DN750 Clamp Length 300 to 500mm

Datasheet 5/8

HandiTee



HandiTee Under Pressure Tapping Tee

DN (mm)	OD Range (mm)	Working Pressure		Length of Clamp (mm)											
				300				400				500			
		Gas (bar)	Water (bar)	Max Flange Nom & Flange Drilling	A (mm)	B (mm)	C (mm)	Max Flange Nom & Flange Drilling	A (mm)	B (mm)	C (mm)	Max Flange Nom & Flange Drilling	A (mm)	B (mm)	C (mm)
300	295-315	3.0	10.0	DN65 PN10/16	360	300	480	DN150 PN10/16	360	400	480	DN200 PN10	360	500	480
300	314-334	3.0	10.0	DN65 PN10/16	360	300	480	DN150 PN10/16	360	400	480	DN200 PN10	360	500	480
300	322-344	3.0	10.0	DN65 PN10/16	360	300	480	DN150 PN10/16	360	400	480	DN200 PN10	360	500	480
300	335-355	3.0	10.0	DN65 PN10/16	360	300	480	DN150 PN10/16	360	400	480	DN200 PN10	360	500	480
300	347-367	3.0	10.0					DN150 PN10/16	360	400	480	DN200 PN10	360	500	480
350	350-368	3.0	10.0					DN150 PN10/16	410	400	530	DN200 PN10	410	500	530
350	360-380	3.0	10.0					DN150 PN10/16	410	400	530	DN200 PN10	410	500	530
350	365-385	3.0	10.0					DN150 PN10/16	410	400	530	DN200 PN10	410	500	530
350	382-402	3.0	10.0					DN150 PN10/16	410	400	530	DN200 PN10	410	500	530
350	396-420	3.0	10.0					DN150 PN10/16	410	400	530	DN200 PN10	410	500	530
400	404-424	3.0	10.0					DN150 PN10/16	460	400	580	DN200 PN10	460	500	580
400	410-430	3.0	10.0					DN150 PN10/16	460	400	580	DN200 PN10	460	500	580
400	420-440	2.0	6.0									DN200 PN10	460	500	580
450	435-455	2.0	6.0									DN200 PN10	510	500	630
450	468-488	2.0	6.0									DN200 PN10	510	500	630
450	485-505	2.0	6.0									DN200 PN10	510	500	630
500	532-552	2.0	6.0									DN200 PN10	560	500	680
500	545-575	2.0	6.0									DN200 PN10	560	500	680
500	568-498	2.0	6.0									DN200 PN10	560	500	680
600	588-618	2.0	6.0									DN200 PN10	660	500	780
600	608-638	2.0	6.0												
600	628-658	2.0	6.0												
600	648-678	2.0	6.0												
600	668-698	2.0	6.0												
600	688-718	2.0	6.0												
700	708-738	2.0	6.0												
700	728-758	2.0	6.0												
750	748-778	2.0	6.0												
750	768-798	2.0	6.0												

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HandiTee DN300 to DN750 Clamp Length 300 to 500mm

Datasheet 6/8

Technical Information

Pressure Rating

- Water = In accordance the rating as defined in the tables.
- Gas = In accordance the rating as defined in the tables.

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar.

Site Test Pressure

1.5 times working pressure for short duration (2 hours).

Angularity

HandiTee fittings are not able to accommodate any angularity.

Bolt Torque/Spanner

M16; Torque = 95-120Nm on every bolt

Temperature Rating of Product

- EPDM = -20°C to +40°C
- Nitrile = 20°C to +40°C

Note: HandiTee is not suitable for use on heating systems with fluctuating temperatures

End Load Due to Internal Pressure

HandiTee fittings DO NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out from the clamp.

Loads from Drilling Equipment and Valve / Branch Pipework

HandiTee is not designed to accommodate / resist the loads from the under pressure drilling equipment, which needs to be supported externally during the operation to drill into the main. In addition, the valve and branch pipework needs to be adequately supported to ensure none of the dead / live loads are imposed in the branch outlet in the HandiTee.

Approvals

The following water contact materials used in HandiTee are approved for use with potable water:-

- EPDM Gaskets; WRAS

Materials & Relevant Standards

Body & Plates

Shell, channel plate, bridging plate, lug plate & nut plate
Stainless Steel AISI 304 (A2)

Gasket

EPDM as standard, Nitrile option

Flange Outlets

Stainless Steel AISI 304, flanges according to DIN2576 varying from DN50 up to DN300

Bolts

Stainless Steel AISI 304 (A2); M16
(metric thread according DIN267),
thread is PTFE coated to prevent galling

Nuts

Stainless Steel AISI 304 (A2). M16 according DIN934

Washers

Stainless Steel BS1449:PART 2 GRADE 304S15

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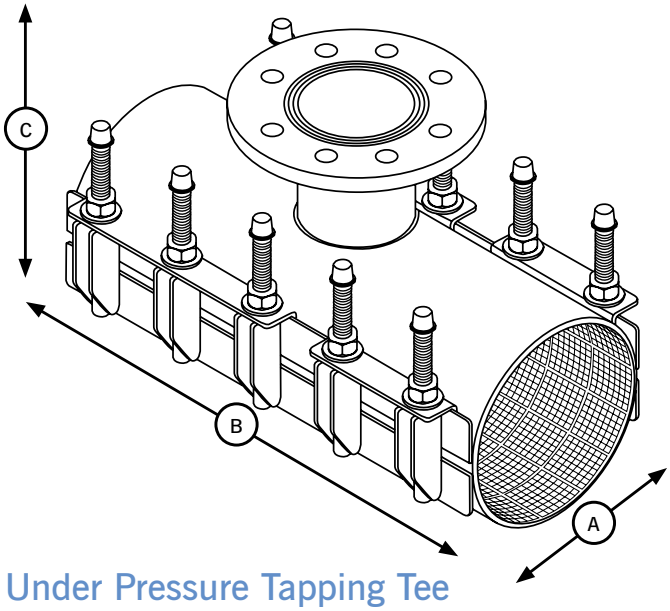
HandiTee DN300 to DN750 Clamp Length 600 to 1000mm

Datasheet 7/8

HandiTee



HandiTee Under Pressure Tapping Tee

DN (mm)	OD Range (mm)	Working Pressure		Length of Clamp (mm)											
				600				800				1000			
		Gas (bar)	Water (bar)	Max Flange Nom & Flange Drilling	A (mm)	B (mm)	C (mm)	Max Flange Nom & Flange Drilling	A (mm)	B (mm)	C (mm)	Max Flange Nom & Flange Drilling	A (mm)	B (mm)	C (mm)
300	295-315	3.0	10.0	DN200 PN10	360	600	480								
300	314-334	3.0	10.0	DN250 PN10	360	600	480								
300	322-344	3.0	10.0	DN250 PN10	360	600	480								
300	335-355	3.0	10.0	DN250 PN10	360	600	480								
300	347-367	3.0	10.0	DN250 PN10	360	600	480								
350	350-368	3.0	10.0	DN250 PN10	410	600	530								
350	360-380	3.0	10.0	DN250 PN10	410	600	530								
350	365-385	3.0	10.0	DN250 PN10	410	600	530	DN300 PN10	410	800	530	DN300 PN10	410	1000	530
350	382-402	3.0	10.0	DN250 PN10	410	600	530	DN300 PN10	410	800	530	DN300 PN10	410	1000	530
350	396-420	3.0	10.0	DN250 PN10	410	600	530	DN300 PN10	410	800	530	DN300 PN10	410	1000	530
400	404-424	3.0	10.0	DN250 PN10	460	600	580	DN300 PN10	460	800	580	DN300 PN10	460	1000	580
400	410-430	3.0	10.0	DN250 PN10	460	600	580	DN300 PN10	460	800	580	DN300 PN10	460	1000	580
400	420-440	2.0	6.0	DN250 PN10	460	600	580	DN300 PN10	460	800	580	DN300 PN10	460	1000	580
450	435-455	2.0	6.0	DN250 PN10	510	600	630	DN300 PN10	510	800	630	DN300 PN10	510	1000	630
450	468-488	2.0	6.0	DN250 PN10	510	600	630	DN300 PN10	510	800	630	DN300 PN10	510	1000	630
450	485-505	2.0	6.0	DN250 PN10	510	600	630	DN300 PN10	510	800	630	DN300 PN10	510	1000	630
500	532-552	2.0	6.0	DN250 PN10	560	600	680	DN300 PN10	560	800	680	DN300 PN10	560	1000	680
500	545-575	2.0	6.0	DN250 PN10	560	600	680	DN300 PN10	560	800	680	DN300 PN10	560	1000	680
500	568-498	2.0	6.0	DN250 PN10	560	600	680	DN300 PN10	560	800	680	DN300 PN10	560	1000	680
600	588-618	2.0	6.0	DN250 PN10	660	600	780	DN300 PN10	660	800	780	DN300 PN10	660	1000	780
600	608-638	2.0	6.0	DN250 PN10	660	600	780	DN300 PN10	660	800	780	DN300 PN10	660	1000	780
600	628-658	2.0	6.0	DN250 PN10	660	600	780	DN300 PN10	660	800	780	DN300 PN10	660	1000	780
600	648-678	2.0	6.0	DN250 PN10	660	600	780	DN300 PN10	660	800	780	DN300 PN10	660	1000	780
600	668-698	2.0	6.0	DN250 PN10	660	600	780	DN300 PN10	660	800	780	DN300 PN10	660	1000	780
600	688-718	2.0	6.0	DN250 PN10	660	600	780	DN300 PN10	660	800	780	DN300 PN10	660	1000	780
700	708-738	2.0	6.0	DN250 PN10	760	600	880	DN300 PN10	760	800	880	DN300 PN10	760	1000	880
700	728-758	2.0	6.0	DN250 PN10	760	600	880	DN300 PN10	760	800	880	DN300 PN10	760	1000	880
750	748-778	2.0	6.0	DN250 PN10	810	600	930	DN300 PN10	810	800	930	DN300 PN10	810	1000	930
750	768-798	2.0	6.0	DN250 PN10	810	600	930	DN300 PN10	810	800	930	DN300 PN10	810	1000	930

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HandiTee DN300 to DN750 Clamp Length 600 to 1000mm

Datasheet 8/8

Technical Information

Pressure Rating

- Water = In accordance the rating as defined in the tables.
- Gas = In accordance the rating as defined in the tables.

Vacuum Pressure

Capable of accommodating a vacuum pressure of -0.7 bar.

Site Test Pressure

1.5 times working pressure for short duration (2 hours).

Angularity

HandiTee fittings are not able to accommodate any angularity.

Bolt Torque/Spanner

M16; Torque = 95-120Nm on every bolt

Temperature Rating of Product

- EPDM = -20°C to +40°C
- Nitrile = 20°C to +40°C

Note: HandiTee is not suitable for use on heating systems with fluctuating temperatures

End Load Due to Internal Pressure

HandiTee fittings DO NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out from the clamp.

Loads from Drilling Equipment and Valve / Branch Pipework

HandiTee is not designed to accommodate / resist the loads from the under pressure drilling equipment, which needs to be supported externally during the operation to drill into the main. In addition, the valve and branch pipework needs to be adequately supported to ensure none of the dead / live loads are imposed in the branch outlet in the HandiTee.

Approvals

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- EPDM Gaskets; WRAS

Materials & Relevant Standards

Body & Plates

Shell, channel plate, bridging plate, lug plate & nut plate
Stainless Steel AISI 304 (A2)

Gasket

EPDM as standard, Nitrile option

Flange Outlets

Stainless Steel AISI 304, flanges according to DIN2576 varying from DN50 up to DN300

Bolts

Stainless Steel AISI 304 (A2); M16
(metric thread according DIN267),
thread is PTFE coated to prevent galling

Nuts

Stainless Steel AISI 304 (A2). M16 according DIN934

Washers

Stainless Steel BS1449:PART 2 GRADE 304S15

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Sold Worldwide

- A VERSATILE SOLUTION FOR PIPE JOINTING
- UP TO 34MM TOLERANCE ON THE PIPE OD
- THE EXPANSIVE RANGE IS AVAILABLE IN SIZES DN40 UP TO DN700
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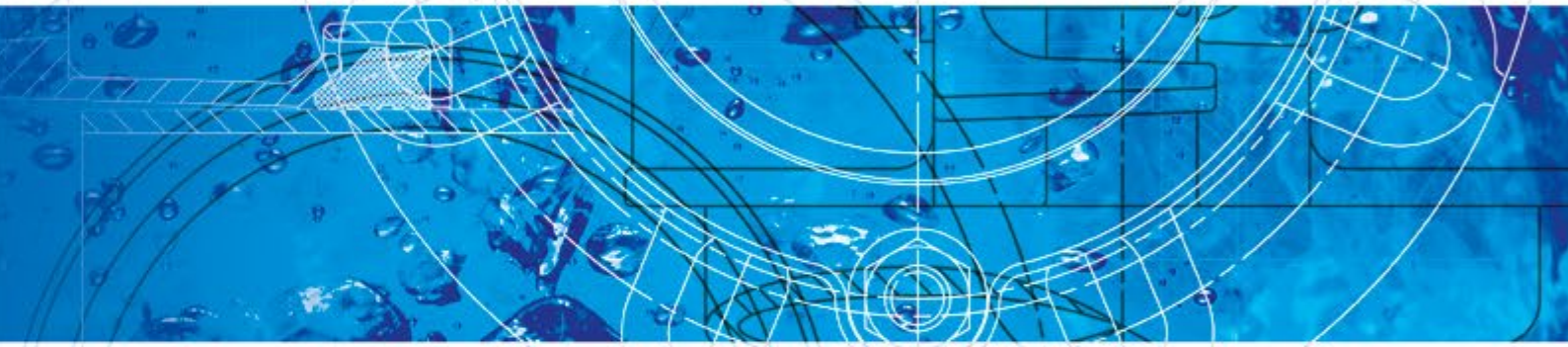
Technical
Design Data
Advanced Solutions for Pipe Technology



Important Notice

The technical, performance data, specifications, dimensions and all other information published in the Design Data section supersede all previously published information.

All data contained herein is subject to change without notice.

The information given in the following pages is intended as a general guide to the proper design and installation of practical piping systems using Viking Johnson products. It is not intended as a substitute for competent, professional advice, which should always be sought in the design of any piping system. Good piping practice should always prevail and recommended design pressures, temperatures, tolerances and loads should never be exceeded.

Special conditions often exist for which the information given here is not specifically suited and specialist engineering advice should be obtained. As with any other piping system, the specific advantages and limitations of Viking Johnson products should be considered when designing a system using Viking Johnson products. The suggestions made here do not set out to give specific solutions to actual installation problems but to give ideas on which to base your own unique solutions.

While every effort has been made to ensure its accuracy, Viking Johnson make no express or implied warranty of any kind in respect of the information contained in this brochure or the materials referred to herein. Any person making use of the information contained here does so entirely at their own risk and assumes any and all liability resulting from such use.

The information contained within this section applies specifically to Viking Johnson products only, and is not intended to apply to any other bolted sleeve type coupling product.

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Glossary of Terms

The following abbreviations are used in this brochure:

OD	-	Pipe outside diameter
NB	-	Nominal bore
DN	-	Nominal diameter, in millimetres
PN	-	Nominal pressure, in bar (1 bar = 0.1 MPa = 0.1 N/mm^2 ≈ 14.5 lbf/in^2)
CI	-	Grey cast iron
DI	-	Ductile iron
PE	-	Polyethylene
MDPE	-	Medium density polyethylene (PE80)
HDPE	-	High density polyethylene (PE100)
AC	-	Asbestos cement
GRP	-	Glass reinforced plastics
PVC-U	-	Unplasticised polyvinyl chloride
ABS	-	Acrylonitrile butadiene styrene
EPDM	-	Ethylene propylene diene monomer
NBR	-	Nitrile butadiene rubber
WRAS	-	Water Regulations Advisory Scheme
PCD	-	Pitch circle diameter
SDR	-	Standard diameter to wall thickness ratio

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Glossary of Standards

Glossary of Standards

The following standards are used in this brochure:

ANSI B16.1	-	Specification for cast iron pipe flanges and flange fittings
AWWA/ANSI C219	-	Specification for bolted, sleeve type couplings for plain ended pipes
BS 10	-	Specification for flanges and bolting for pipes, valves and fittings
BS 750	-	Specification for underground fire hydrants and surface box frames and covers
BS 4504	-	Specification for circular flanges for pipes, valves, fittings, PN designated
BS EN 681	-	Specification for elastomeric seals. Material requirements for pipe joint seals used in water and drainage applications. Part 1: Vulcanized rubber
BS EN 682	-	Specification for elastomeric seals. Materials requirements for seals used in pipes and fittings carrying gas and hydrocarbon fluids
BS EN 1074-2	-	Specification for Isolation valves for water supply. Fitness for purpose requirements and appropriate verification tests.
BS EN 1074-6	-	Specification for Hydrants for water supply. Fitness for purpose requirements and appropriate verification tests.
BS EN 1092-1	-	Specification for flanges and their joints. Circular flanges for pipes, valves, fittings and accessories, PN designated. Part 1: Steel flanges
BS EN 1092-2	-	Flanges and their joints. Circular flanges for pipes, valves, fittings and accessories, PN designated - Part 2: Cast iron flanges
BS EN 14339	-	Specification for underground fire hydrants
BS EN 14525	-	Specification for ductile iron wide tolerance couplings and flange adaptors for use with pipes of different materials
BS EN ISO 9001	-	Quality management system requirements
BS EN ISO 14001	-	Environmental management systems requirements
ISO 7005	-	Specification for metallic flanges Part 1: Steel flanges
ISO 17885:2015	-	Specification for plastics piping systems – Mechanical fittings for pressure piping systems
WIS-4-24-01 (obsolete)	-	Specification for mechanical fittings and joints including flanges for PE pipes for the conveyance of cold potable water for the size range 90-100 made of metal or plastics or a combination of both
WIS-4-52-03	-	Specification for anti-corrosion coatings on threaded fasteners
IGN 4-01-02	-	The determination of end-loads for the performance testing of fittings for polyethylene pipe

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Design & Specifications of Piping Systems

The Viking Johnson system is suitable for an enormous range of pipework applications and it is therefore impossible to give a comprehensive list of potential uses. In general terms, the system is suitable for virtually any pipeline, above or below ground level, working within the following typical parameters:

Working Pressure

Up to 80 bar (1450psi), according to size and type of product. Up to full vacuum. Higher pressures are available on request.

Temperature

Limited by gasket grade used, but within the range -60°C to +200°C (-75°F to +390°F)

Note: At elevated temperatures, accelerated gasket relaxation will occur, leading to reduced life of fitting

Suitable for

Water, gas, oil, petrochemicals, sewage, powdered solids, granular solids, air. Subject to gasket grade used and product/ pipe limitations.

Location

Above or below ground (subject to certain limitations according to product type and pipe material).

Backed by many years of design and manufacturing experience, the Viking Johnson system is a complete and cost-effective answer to almost all pipeline installation problems.

Compare the following benefits with those offered by alternative pipe jointing systems:

- ISO 9001 certification is proof of our exacting quality standards.
- ISO 14001 certification is proof of our environmental credentials.
- Exclusive Viking Johnson gaskets, moulded to exacting specifications, assure perfect lifetime sealing, meeting all relevant Standards.
- Size range extends from DN15 (0.5") to more than DN4000 (160").
- The Viking Johnson system is designed for plain-ended pipes, eliminating threading, bevelling, welding or flanging.
- The system can joint most types of pipes, valves or meters.
- By specifying Viking Johnson, installation delays caused by adverse weather conditions are overcome, particularly relevant to PE installation.
- You can rely on Viking Johnson products. Their dependability has been demonstrated for more than 85 years in all conditions of service.
- On-site jointing equipment - with Viking Johnson products all you need is a spanner and a torque wrench.
- The simplicity of our design assures you of couplings which will assemble quickly, easily and accurately every time. Company representatives are available to offer technical advice to the installer.
- As a mechanical jointing system it can eliminate the need for specialist labour or on-site fabrication.
- Viking Johnson couplings are protected against corrosion with a range of specialised coatings. Please state coating required when ordering.
- Viking Johnson has over 100 agents and distributors worldwide, in addition to an exclusive distributor network throughout the UK.

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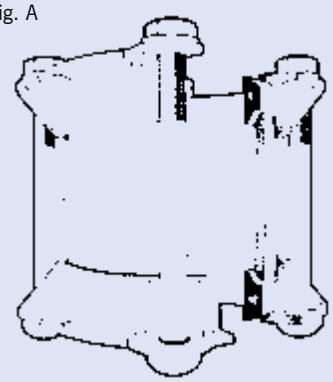
The Concept

All Large Diameter Dedicated Viking Johnson couplings, stepped couplings, flange adaptors, MaxiFit, QuickFit, MegaFit, UltraGrip, FlexLock and AquaGrip (up to DN180) operate on the same basic compression principle.

How it Works

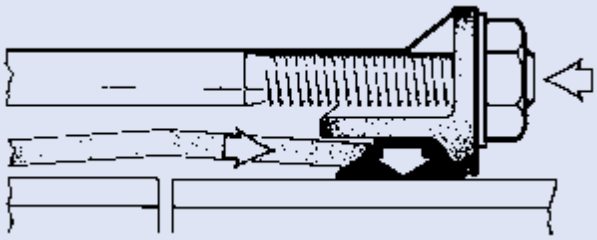
The Viking Johnson coupling (Fig. A) comprises a centre sleeve located between two end rings. Wedge-shaped elastomeric gaskets separate the sleeve and end rings. As the captive 'D' head bolts are tightened, the end rings are drawn together, compressing the gaskets between the end rings and the centre sleeve onto the surface of the pipe to form an effective, leak-proof seal (Fig. B).

Fig. A



Cutaway illustration of Viking Johnson straight coupling.

Fig. B

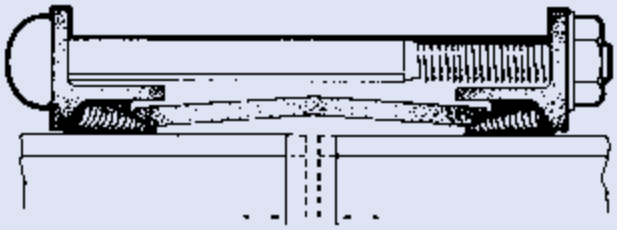


Tightening the bolts compresses the gasket between the end ring and the centre sleeve, forcing the gasket to seal onto the pipe surface.

Features

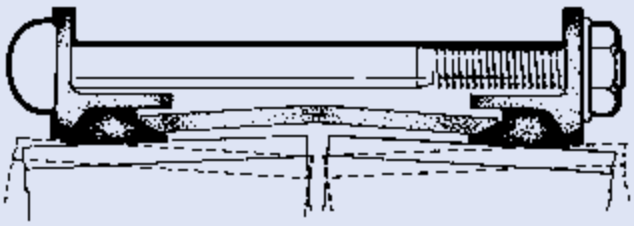
The basic concept of the Viking Johnson coupling means that it can be used on plain-ended pipe, removing the need for costly and time-consuming pipe end preparation. The Viking Johnson coupling is also capable of absorbing expansion and contraction which occurs in pipelines as a result of temperature fluctuations, without the need for special expansion joints (Fig. C). In addition, it can accommodate enough angular deflection to allow for pipeline movement or ground settlement, or to provide for long radius curves without the necessity of incorporating purpose-made bends (Fig. D).

Fig. C



Gaskets deform to accommodate expansion and contraction.

Fig. D



Flexible gasket and centre sleeve clearance allows angular movement.

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System Overview

Pipe Materials

Most rigid and semi-rigid pipe materials can be joined with Viking Johnson coupling products:- steel (including stainless steel), grey cast iron, ductile iron, asbestos cement, uPVC, GRP, concrete, polyethylene and ABS.

Of these, the rigid materials with high strength capabilities, such as steel, grey cast iron, ductile iron and concrete can be joined using standard Viking Johnson couplings without revision to our normal fitting instructions.

Certain lower strength materials, such as clayware and the lower classes of asbestos cement pipe, may need reduced bolt torques to avoid pipe damage. Glass reinforced plastic (GRP) pipe is relatively flexible and its structure may be damaged by high gasket pressures. Reduced bolt torques are also recommended for this pipe material (details available on request).

Polyethylene (PE) pipe is produced in various types and with various performance capabilities. All exhibit the tendency to creep i.e. change shape when loaded. The use of standard Viking Johnson couplings may result in leakage or pipe pull-out. Viking Johnson AquaGrip and AquaFast products are both specifically designed to join PE pipe either to another PE pipe or to flanged equipment or other pipe materials. Certain sizes of EasiClamp are also suitable for use on repairs to PE pipe. UltraGrip may be used on PE pipe if a supporting internal liner is also used.

See page 46 for a table that lists which Viking Johnson products will work on which standard pipe material.

Pipe Outside Diameters

Dedicated Viking Johnson couplings and flange adaptors may be specified for any pipe size between DN50 (2") and DN4000 (160"), even for outside diameters not covered by recognised pipe standards. Since Viking Johnson couplings fit over the outside of the pipe, it is essential that the OD is specified at time of enquiry/order.

Pipe Tolerances

Viking Johnson couplings give their optimum performance when they are a close fit on the pipe. Seal effectiveness depends on the pressure which the gasket applies to the pipe surface. Undersized pipes may mean a loss in pressure rating.

Many pipe standards quote the main pipe barrel tolerance separately from the tolerance on the pipe ends.

Unless otherwise informed, Viking Johnson products are designed to accommodate the pipe end outside diameter and associated tolerance from the relevant industry specification for the pipe material concerned. In the event that the pipe outside diameter and tolerances are not in accordance with the standard then guidance should be sought from Viking Johnson on how these can be accommodated in our products.

Pipe Ovality

Moderate ovality, especially in large diameter steel or ductile iron pipes, can frequently be rectified by selective bolt tightening to give a uniform annular gap between pipe and coupling. More severe ovality, up to a limit of about ±1% of diameter, may be corrected by jacking, taking care not to damage the internal lining of the pipe.

Pipes having local stiffening near the ends may be impossible to correct or shape by these methods and good circularity is essential if couplings are to be fitted successfully.

N.B. The Viking Johnson MaxiFit, MegaFit and UltraGrip ranges of Universal Coupling products can accommodate larger pipe tolerances and ovality, see separate brochures for details.

Diameter Measurement

The most reliable method of measuring OD is by circumference measurement. This eliminates the effects of ovality and, provided that ovality is moderate, it is almost always possible to correct during assembly. Circumference measurement may be carried out using either a purpose-made circumference tape which reads out directly as an effective diameter, or it is possible to use an ordinary tape wrapped around the pipe and the resulting circumference value converted to effective diameter by dividing the result by $\pi(= 3.142)$.

If pipe calipers are available, these can give a useful further indication of pipe shape and the possible need for special sizing of the coupling. If in doubt, contact Viking Johnson for further advice.

Pipe Coatings

Many pipes are finished with a coating of some description, which can affect pipe O.D. Allowance must be made for these coatings in the manufacturing size of the coupling, or installation of the coupling may be difficult or impossible. Very thick pipe wrappings (typically several millimetres thick) must be removed at pipe ends so that the coupling will seat either on the bare pipe or on a high quality thinner paint film. It is important that details of the intended pipe corrosion protection are made known to us when ordering so that the correct size of coupling can be produced. Alternatively, we must be informed of the finished pipe diameter including all coatings, with appropriate tolerances.

Pipe Surface Finish

The Viking Johnson system relies on good uniform contact of the gaskets with the pipe surface.

It is important to ensure that the pipe ends, in the areas where the coupling gaskets will seat, are free from loose surface deposits, bumps, dents, score marks, weld beads, flat spots and the like, or the full pressure capability of the coupling may not be realised.

Working Pressure

The working pressure capability of a coupling varies with its size and construction. It is also dependent upon correct pipe tolerances and surface finish. Wider pipe OD tolerances than those specified will result in a reduction in pressure capability. For most pipe materials, the actual test pressure will be lower than that of the coupling and will be determined by the pipe capability or class. Similarly the pressure rating of a flange adaptor will be determined by the rating of the main flange (eg. PN16 = 16 bar working pressure, 24 bar test).

When assembled onto the pipe(s), the pressure rating of the completed assembly will be that of the lowest rated component. Under normal circumstances working pressures are up to 2/3 of the maximum test pressure shown in any Viking Johnson literature appropriate schedule.

Operating Temperature

The operating temperature of Viking Johnson couplings is determined by the temperature rating of the gaskets and on coating type. Different grades of gaskets are available to suit various temperature ranges as well as different chemical resistance requirements. For details see the Gaskets section (pages 369-370). Most Viking Johnson Couplings are supplied with Rilsan Nylon 11 coating which has a maximum operating temperature of 90°C.

For higher temperatures, alternative coatings may be necessary.

Viking Johnson couplings operate at their maximum efficiency under conditions of relatively constant temperature. If temperature fluctuations occur or at elevated temperatures >60°C, retightening of the bolts may be required. For this reason, where maintenance-free operation is required, Viking Johnson couplings are not recommended as a pipe jointing system for central heating or similar systems which do not operate at a relatively constant temperature.

Chemical Resistance

The chemical resistance of a Viking Johnson coupling is determined by suitability of the gaskets and by the chemical resistance of the internal surfaces of the coupling sleeve. If the coupling is coated with Rilsan, epoxy, etc. it is necessary to ensure that this material is chemically suitable for contact with the pipe contents. Chemical resistance of the gaskets and coatings may be checked with the chart on page 372 or by contacting Viking Johnson.

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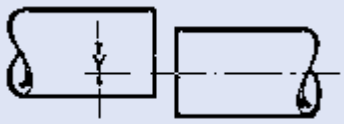
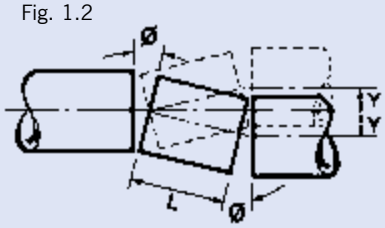
Angular Deflection

Fig. 1.1



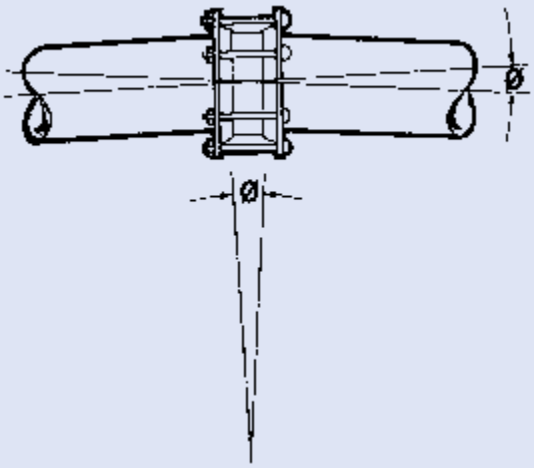
Lateral displacement (Y) can be accommodated using two couplings.

Fig. 1.2



Length of closing pipe (L) depends on maximum angularity (Ø).

Fig. 1.3



Angular deflection (ø). Up to 6° in smaller pipes, reducing to 1° in larger diameters.

Each dedicated Viking Johnson coupling or flange adaptor will allow for a setting angularity (Ø) as shown in Table 1.1.

The ability of Viking Johnson couplings to accommodate angular deflection, either on installation or in service, can be used in a number of valuable ways:

a) To take up minor misalignment or lateral displacement in straight pipes, eg. at closing lengths.
b) To accommodate ground settlement.
c) To lay pipes to long radius curves without special bends.

a) Lateral Displacement

Lateral displacement between two pipes can be easily accommodated using two couplings and an appropriate length of closing pipe which can be allowed to angulate (Fig 1.1 & 1.2).

A SINGLE COUPLING CANNOT ACCOMMODATE LATERAL DISPLACEMENT.

The length, L, of the closing pipe can be calculated from the closing length Table 1.2.

b) Ground Settlement

Ground settlement, for example where a pipe leaves an underground structure, may be accommodated using a pair of Viking Johnson couplings. In this case, pipe trenches are excavated below the pipe invert to allow for pipe bedding. If this bedding is to be flexible (eg. granular fill), some settlement will inevitably occur when the trench is backfilled. (Fig. 1.4)

To minimise stresses in pipe 1, coupling A should be installed as close as possible to the structure. The two couplings A and B allow pipe 2 to angulate to take up settlement Y. The minimum length of pipe 2 is determined using the Closing Length Table in Table 1.2. The structural strength of the pipe in bending may need to be considered.

Alternatively, a Viking Johnson wall coupling can be used instead of pipe 1 and coupling A.

Table 1.1

SETTING ANGULARITY TABLE - DEDICATED RANGE		
Coupling Size	**Angle**	**Inclination**
Up to DN450 (18")	± 6°	1 in 10
Over DN450 - DN600 (18" - 24")	± 5°	1 in 12
Over DN600 - DN750 (24" - 30")	± 4°	1 in 15
Over DN750 - DN1200 (30" - 48")	± 3°	1 in 20
Over DN1200 - DN1800 (48" - 72")	± 2°	1 in 30
Over DN1800 (72")	± 1°	1 in 60
Flange Adaptor Size		
Up to DN450 (18")	± 3°	1 in 20
Over DN450 - DN600 (18" - 24")	± 2.5°	1 in 24
Over DN600 - DN750 (24" - 30")	± 2°	1 in 30
Over DN750 - DN1200 (30" - 48")	± 1.5°	1 in 40
Over DN1200 - DN1800 (48" - 72")	± 1°	1 in 60
Over DN1800 (72")	± 0.5°	1 in 120

The above schedules represent the maximum angular deflection for each size range and should only be used when the pipes will not move in service. For other conditions it is recommended to halve these figures to allow for in-service flexibility.

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Angular Deflection

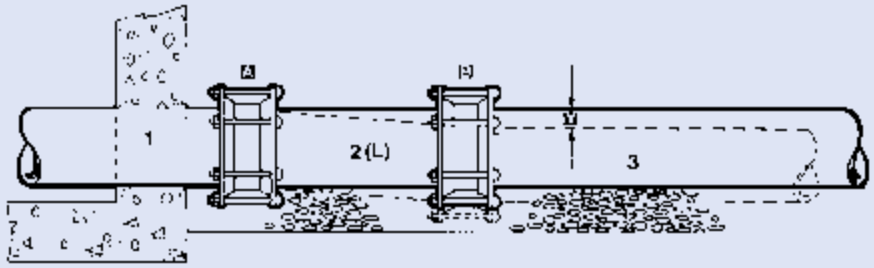
Table 1.2 CLOSING LENGTH TABLE (see Fig. 1.2 & 1.4)	
Pipe Nominal Diameter	**L, Minimum Length (mm)**
Up to DN450 (18")	Displacement Y x 10
Over DN450 - DN600 (18" - 24")	Displacement Y x 12
Over DN600 - DN750 (24" - 30")	Displacement Y x 15
Over DN750 - DN1200 (30" - 48")	Displacement Y x 20
Over DN1200 - DN1800 (48" - 72")	Displacement Y x 30
Over DN1800 (72")	Displacement Y x 60

EXAMPLE: Pipe OD = 711mm
Lateral displacement to be accommodated = 90mm
Minimum closing length = 90 x 15 = 1350mm

EXAMPLE: Pipe OD = 28"
Lateral displacement to be accommodated = 4"
Minimum closing length = 4 x 15 = 60"

NOTE: For Viking Johnson flange adaptors these lengths must be doubled.

Fig. 1.4



Ground Settlement. Displacement **Y** *can be accommodated using two couplings* **A** *and* **B**

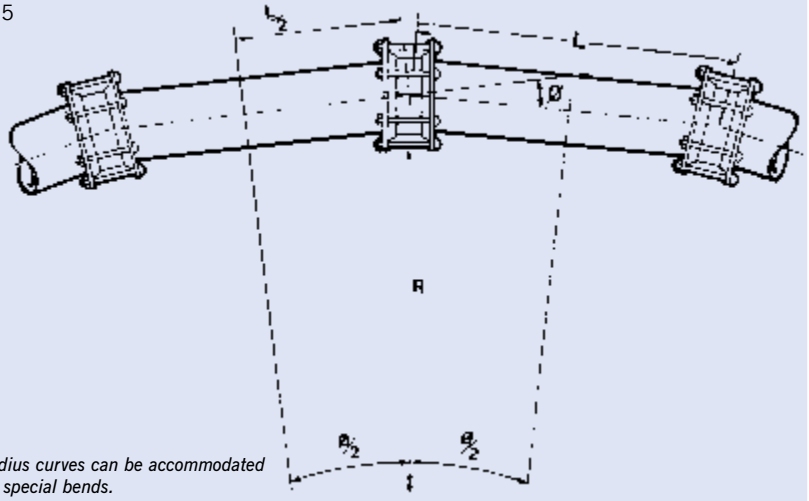
c) Long Radius Curves

Using Viking Johnson couplings it is possible to lay a pipeline to long radius curves, taking a small angular deflection at each coupling, without the need for special large-angle bends with associated thrust blocks. This method can be used to avoid major obstacles on cross-country pipelines or follow the line of roads or streams, etc. using the equation given below.

$$R = \frac{L}{2 \sin 1/2\,\phi} \quad \text{Or} \quad \phi = 2 \sin^{-1} \left(\frac{L}{2R}\right)$$

Where L *= pipe length*
ϕ *= angular deflection*
r *= radius of curve*

Fig. 1.5



Long radius curves can be accommodated without special bends.

See minimum radius Table 1.3

NB: In an above ground pipeline, lateral pressure thrusts will need to be restrained by the support system. Buried pipes laid to a curve will normally receive sufficient support from the trench backfill material.

Table 1.3

MINIMUM RADIUS TABLE						
Pipe diameter	**<DN450**	**>DN450-600**	**>DN600-750**	**>DN750-1200**	**>DN1200-1800**	**>DN1800**
	18"	**18" - 24"**	**24" - 30"**	**30" - 48"**	**48" - 72"**	**72"**
Nominal Angle ø	**6°**	**5°**	**4°**	**3°**	**2°**	**1°**
Pipe Length (L)	**Minimum Radius (R)**					
3m (10ft)	29m (95ft)	34m (110ft)	43m (140ft)	57m (185ft)	86m (280ft)	172m (565ft)
6m (20ft)	57m (187ft)	69m (225ft)	86m (280ft)	115m (375ft)	172m (565ft)	344m (1130ft)
9m (30ft)	86m (280ft)	103m (335ft)	129m (425ft)	172m (565ft)	258m (845ft)	516m (1690ft)
12m (40ft)	115m (375ft)	138m (450ft)	172m (565ft)	229m (750ft)	344m (1130ft)	688m (2260ft)

Other radii may be calculated using the formula given above. **NOTE:** These minimum radii do not allow any in-service movement.

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Setting Gap

Viking Johnson couplings are used to join pipes flexibly, so that if there is pipe or ground movement during the life of the pipeline, the coupling will accommodate this without leakage. However, such movement will result in relative longitudinal and/or angular displacement of the pipes within the coupling.

Under normal conditions, adjacent pipe ends should not make contact with each other in service. If there is insufficient gap so that pipes do touch, the pipeline will tend to buckle as temperatures increase and pipe end damage may occur. At the other extreme, if the pipe end gap is too large on installation, there is a risk that pipes may pull out past the gasket(s) of the coupling leading to leakage and failure of the pipeline.

It is therefore necessary to ensure that pipe end gaps are set within specified limits during installation of the coupling to ensure that neither situation occurs.

We give a Recommended Setting Gap for all sizes of Viking Johnson coupling and flange adaptor, which specifies the normal initial gap between adjacent pipe ends such that if the full recommended angularity or expansion occurs in service, the pipe ends should not touch together causing damage. (see Table 1.4)

Similarly, we also give a Maximum Recommended Gap which ensures that even with full recommended angularity there should not be any risk of pipe ends pulling out past the coupling or flange adaptor gasket, leading to leakage.

(see Fig. 1.6 and Table 1.4)

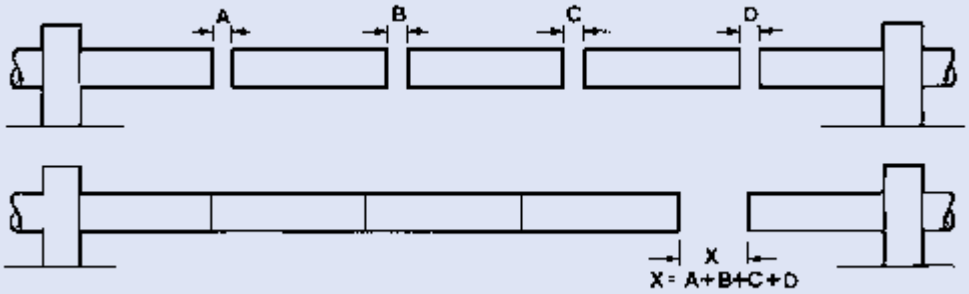
For pipes above ground, it is possible for unanchored pipes to shunt together after installation, opening up a large gap between pipes at certain points. Such pipe movement must be controlled to ensure that the Maximum Permissible Gap is not exceeded, or there may be a risk of the pipe pulling out of the coupling. Soil friction acting on pipes laid below ground normally prevents any such pipe shunting movement.

The Maximum Permissible Gap, measured on the centreline, should not be exceeded in service. Consideration of actual thermal movement or deflection conditions may lead to different initial setting gaps.

When couplings are specified with a locating plug, the Recommended Setting Gap should be increased by the diameter of the pin or plug (9.5mm or 12.7mm). However, the Maximum Permissible Gap should not be increased.

Where the standard Viking Johnson sleeve length is found to be insufficient, longer sleeved couplings and flange adaptors can be supplied.

Fig. 1.6



a) Pipes laid straight with equal setting gaps.
b) Accumulated gap (X) on straight pipeline must not exceed maximum permissible value given in Setting Gap Table.

Table 1.4

SETTING GAP TABLE				
Coupling Sleeve Width	Nominal Size (D)	Recommended Setting Gap		Maximum Permissible Gap (x)
		Couplings	Flange Adaptors	
100mm	DN50 (2") to DN300 (12")	20mm	20mm	40mm
150mm	DN350 (14") to DN900 (36")	25mm	25mm	50mm
178mm	DN1000 (40") to DN1800 (72")	40mm	30mm	75mm
254mm	Over DN1800 (72")	55mm	55mm	115mm

General guide for dedicated couplings, see fitting instructions related to each product type for further details.

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Pressure Forces

All pipelines under pressure are subject to longitudinal forces which tend to separate the component parts of the pipeline. Consider the case of pressure acting on a blank end (Fig 1.7). The force, F, necessary to prevent pipe separation is given by:

$$F = \frac{p \pi d^2}{4}$$

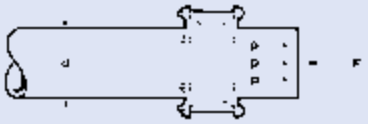
Where d = pipe OD
p = internal pressure.

Example:

d = 508mm OD.
p = 16 bar = 1.6 N/mm^2
Then $F = \frac{1.6 \times \pi \times 508^2}{4}$ =
324293 N = 324.3 kN =
33.07 tonnes

It is important to appreciate the magnitude of the end thrusts which can result from internal pressure in a pipeline. These longitudinal forces are particularly important in flexibly jointed pipelines, such as those jointed with Viking Johnson standard couplings. The pipeline designer must carefully consider not only the magnitude of these forces but also the means of resisting them to prevent failure of the pipeline.

Fig. 1.7



Longitudinal pressure forces acting at a blank end.

Pressure thrusts will be produced at all changes of direction, eg. bends, tees, etc. and at cap ends, valves and reducers. Unless these thrusts are restrained locally at the point at which they are developed, pipe components may move under the load, leading to failure.

Even small diameter pipes may pull out of couplings at modest pressures unless proper external restraint is provided, especially if the pipe system is subjected to temperature or pressure fluctuations, vibration or external loadings.

With surface or above-ground pipelines it is generally necessary to take full account of the thrusts produced by internal pressures and to restrain them with thrust blocks, anchorages or tie bars. At a bend, there is a force, R, tending to push the bend outwards (Fig. 1.8).

In this case there must be sufficient anchorage to resist resultant force R. In a buried system a thrust block (Fig. 1.8a) may be used to resist R.

$$R = \frac{p \pi d^2}{2} \sin \frac{\phi}{2}$$

where d = *pipe outside diameter*
p = *internal pressure*

and ϕ = *angle of the bend*

NOTE: *Any consistent set of units is suitable.*

VIKING JOHNSON FLEXIBLE COUPLINGS DO NOT RESIST LONGITUDINAL THRUST LOADINGS, AND PIPE PULL-OUT WILL OCCUR UNLESS THE LOADS ARE RESTRAINED BY OTHER MEANS.

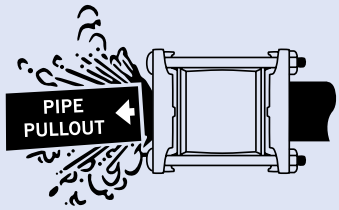
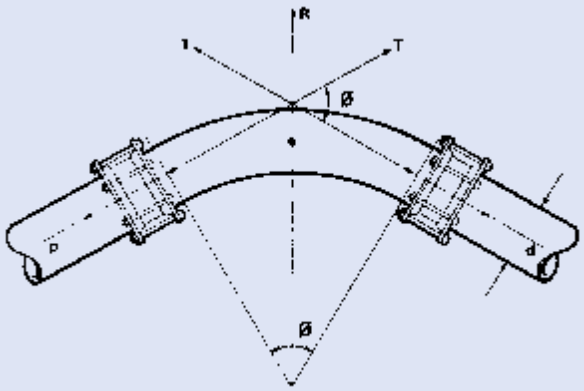
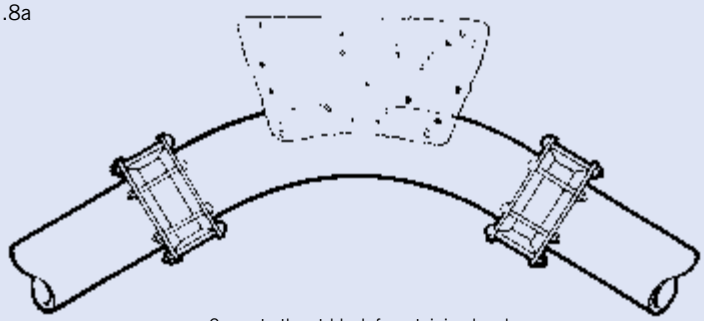


Fig. 1.8



Longitudinal pressure forces acting at a bend.

Fig. 1.8a



Concrete thrust block for retaining bend.

Coupling Movement Under Pressure

Internal pressure will mainly cause pipe movement if there is inadequate restraint. However it can also cause coupling movement. A Viking Johnson stepped coupling is in effect a reducer, and internal pressure will tend to push it towards the smaller diameter pipe. Under normal circumstances, i.e. modest diameter reduction, buried service, standard water pressures etc., soil and pipe friction are sufficient to prevent coupling movement. However, for larger diameter and for above ground service, and in particular higher pressures, the pressure thrust acting on the stepped coupling sleeve can be sufficient to cause coupling movement and consequent disengagement. Positive steps must be taken to restrain the coupling to prevent movement. This may take the form of harness rods, stops on the pipe or within the coupling or encasement in concrete. For further advice, please contact Viking Johnson Technical Support.

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Accommodating End Load System

Below ground, pipe thrusts can normally be restrained by means of concrete thrust blocks at bends, valves, etc. However, above ground this is more difficult. In such circumstances it may be necessary to provide a harness assembly, attached to the pipes on both sides of the coupling. This consists of one or more pairs of tie bolts located in either harness lugs welded to the pipe (Fig. 1.9 (a)) or attached by other means, eg. flanges cast on. Accommodating pipe thrusts in above ground applications with Viking Johnson standard coupling products requires either external brackets / pipe supports or the use of harness assemblies attached to the pipe some distance back from each joint. Harness assemblies consist of one or more pairs of tie rods located in lugs / flanges welded to the pipe a short distance away from the joint. The design of the harness lug assembly has to include for the transfer of end load forces via the tie rods into the pipe wall, and it is essential to verify that the interface between the lug and pipe wall is sufficiently strong enough to accommodate these loads. For this reason Viking Johnson deem that the responsibility of the design for the harness lugs lies with the pipe manufacturer and therefore we are not able to include these as part of our product offering.

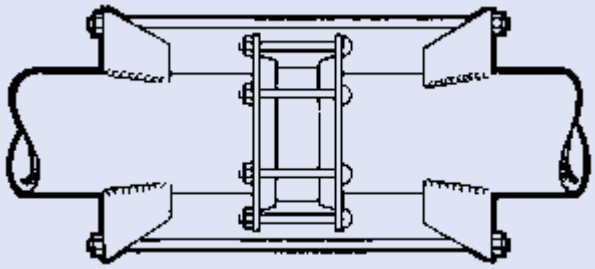
Use of a single pair of tie rods permits angularity between pipes in one plane, eg. to permit ground settlement.

Flange adaptors can also be prepared for harness assembly. Here, a number of the flange bolts are replaced with long tie bars (Fig 1.9 (b))*.

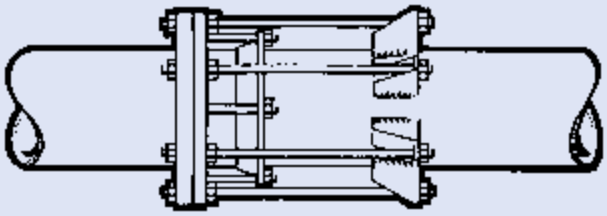
Harnessed flange adaptors used with a flanged spigot (Fig. 1.9 (c)) give a simple, cost-effective method of providing a demountable joint in an otherwise flanged system. Viking Johnson provide the complete package for Fig 1.9 (c).

When a flange adaptor is harnessed (or a Dismantling Joint used), there will be no resultant angular deflection, or in service expansion capability within the joint, unless special arrangements are specified beforehand.

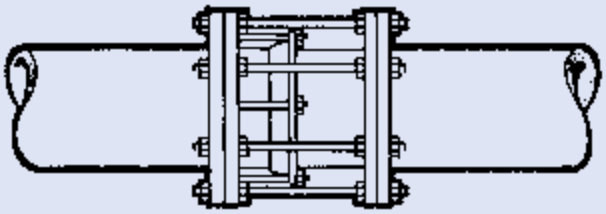
Fig. 1.9



a) Harness assembly for straight or stepped coupling to prevent pipe separation under pressure.
(It may be necessary to reinforce the pipe wall locally to the harness assembly to resist pipe distortion.)



b) Harness assembly with flange adaptor.



c) Flange adaptor with flanged spigot (supplied complete as the Viking Johnson Dismantling Joint).

** NOTE: If a flange adaptor is to be used in a tied arrangement, it may be necessary to notch the end ring to ensure sufficient clearance for the tie bars. If notified beforehand, Viking Johnson can incorporate notching of the end rings during manufacture. (Please note that the Viking Johnson MaxiDaptor cannot be notched).*

For ductile iron flange systems, it is normally recommended that the end ring is notched to accommodate a number of tie bars equal to half the quantity of main flange bolts. For steel flange systems, this number may be reduced.

Alternative Viking Johnson Products

Viking Johnson has within its comprehensive range specialist products capable of accommodating end load forces these include:-

FlexLock
Dedicated flange adaptors and couplings for steel and ductile iron pipes.

UltraGrip
Wide tolerance couplings, flange adaptors, end caps and reducers for most pipe materials. (For below ground installations)

Dismantling Joint
Double flanged adjustable spool piece in a variety of flanges.

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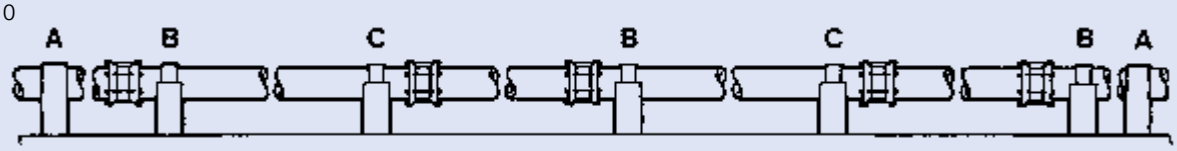
Pipe Support

Pipes laid above ground, usually with supports at specified locations, must transfer all the weight of pipe and contents, plus any pressure-related forces, through those supports.

Fig. 1.10 shows a standard method of supporting a pipeline where subsidence is expected and which allows freedom of movement within the capabilities of the Viking Johnson couplings while anchoring and supporting the pipes. Alternate pipe lengths are fully supported between two couplings, provided that the clear pipe span does not exceed 10 metres (30ft).

This pipe span distance does not apply to MaxiFit, MegaFit or New QuickFit as anchored couplings. Contact Viking Johnson for details. Intermediate anchors (B) are necessary to prevent any cumulative pipe creep, with full thrust anchors (A) at the ends of long runs or at major changes in direction.

Fig. 1.10



Method of supporting pipes where subsidence is expected.
A. Anchor at end of each straight run. B. Intermediate anchor points. C. Guide supports or cradles.

Anchored Couplings

The Viking Johnson Anchored Coupling (Fig. 1.11) provides an alternative method of supporting pipes above ground. Brackets welded to the centre sleeve of the coupling can be bolted directly to the supporting structure without the need for specially shaped saddles, straps, etc., thus reducing installation costs and greatly improving laying times. The brackets are capable of withstanding the thrust produced by maximum angularity and will support a 10 metre (30ft) long pipe filled with water.

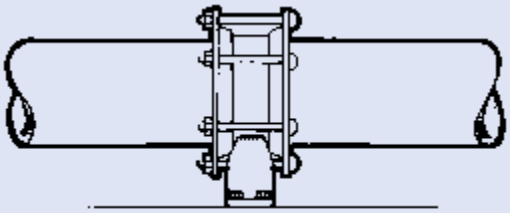
Anchored couplings may be bolted to the structure in any orientation (ie. bolted to a ceiling, side wall, etc.), provided that the pipeline is substantially horizontal. Useful when installing a number of pipes in a confined space i.e. a pipe duct. Anchor brackets are not designed to withstand longitudinal or lateral forces due to external pressure thrusts.

Large diameter (>DN1600/54") or heavy section couplings may require a reinforced saddle around the anchor brackets.

The use of locating plugs with anchored couplings is recommended to help control pipe movement.

(Please note that MaxiFit, MegaFit and New QuickFit couplings are not available, as anchored couplings.)

Fig. 1.11



Viking Johnson anchored coupling.

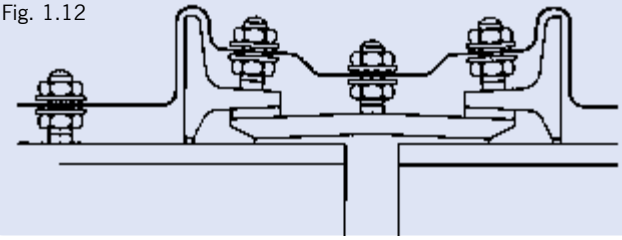
Important:
1. Harness assemblies should not normally be used in conjunction with anchored couplings.

2. Ensure that sufficient clearance is allowed between the coupling and the plinth to permit full assembly of ALL bolts.

Cathodic Protection

If specified, Viking Johnson couplings can be included in a pipe system that is to have cathodic protection. They can be supplied with a threaded stud on the centre sleeve and end rings, such that electrical connections can be made across and including the coupling. Contact Viking Johnson for further details. See Fig. 1.12.

Fig. 1.12



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Locating Plugs

Couplings installed above ground may tend to creep along the pipe with repeated pipe movement, temperature variation or vibration. This can be restrained by using couplings fitted with removable locating plugs, which prevent the coupling from moving beyond fixed limits Fig. 1.14.

Removable locating plugs enable single pipe removal. Once the locating plug is removed, the end rings can be slackened off and the gaskets and centre sleeve can be slid along the pipe to expose the joint. The pipe can then be removed.

Normally it is unnecessary to use locating plugs in couplings below ground since soil friction will ensure that the couplings remain in their correct position relative to the pipes. However, locating plugs can provide a useful method of coupling centralisation over the pipe ends.

Removable locating plugs are only available on Dedicated couplings.

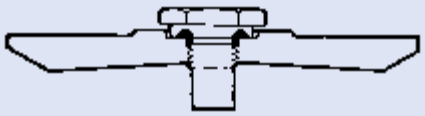
Removable locating plugs are available Zinc plated or stainless steel.

For Dedicated Viking Johnson couplings, locating plugs are produced in the following standard sizes-

Pipe OD	Thread Diameter	Peg Diameter
up to 914mm (36")	0.25" BSP	9.5mm (0.375")
over 914mm* (36")	0.5" BSP	12.7mm (0.5")

**may be used on smaller diameter heavy section couplings.*

Fig. 1.14



a) Removable locating plug.

Inclined Pipelines

Where Viking Johnson couplings are to be installed in pipelines laid on significant slopes, it is important to consider the restraint of the component of self-weight acting parallel to the axis of the pipeline, to stop the pipe sliding down the slope (Fig. 1.15).

Below ground pipelines will receive significant restraint from backfill loading and therefore less extra axial restraint will be necessary than for above ground pipelines, but the gravity forces still need to be considered in a proper engineering assessment of the design.

On above ground pipelines the Viking Johnson couplings should be fitted with locating plugs to ensure the coupling's location relative to the pipe ends.

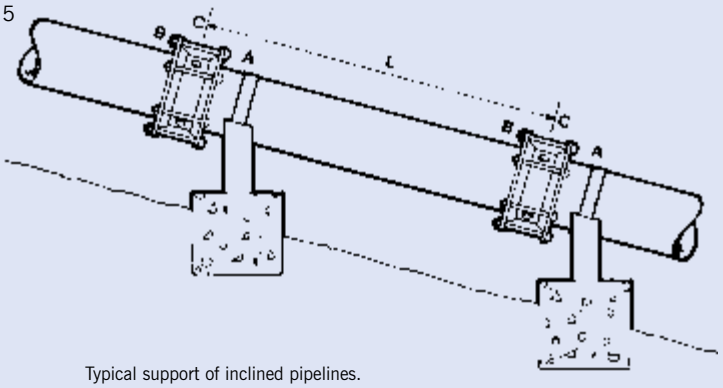
N.B. Locating plugs are not designed to restrain pipe self-weight, axial forces or other pipeline thrusts, only to restrain the coupling itself, ie the pipes must be fixed.

Where the length L of pipe to be supported by the Viking Johnson couplings does not exceed 10 metres (30ft), it is normally desirable to anchor one end, A, of each pipe in position relative to the ground, allowing the other end, B, to be supported by coupling C and to move axially with temperature fluctuations as shown. Its limitations are detailed in Expansion and Contraction (refer to page 364).

Pipeline anchorage must be designed to restrain all axial forces due to self-weight, fluid friction and pressure. The pipe support design will be determined by pipe diameter, pressure, wall thickness, pipe inclination to horizontal, etc and is beyond the scope of this brochure. Certain diameter, pipe length and inclination conditions may necessitate the use of supports on both sides of the coupling. In this instance one support should be fixed, the other sliding to permit thermal movement. It is essential that accurate pipe alignment is observed to prevent excessive shear stress in the coupling.

In certain cases of limited diameter and inclination to the horizontal it may be possible to permit the use of Viking Johnson anchored couplings to both support and restrain the pipes. In this instance the pipe self-weight axial loads are restrained by the coupling locating plug and Viking Johnson should be contacted for specific design recommendations before proceeding.

Fig. 1.15



Typical support of inclined pipelines.

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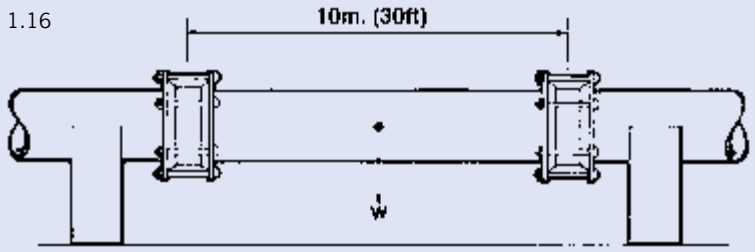
Shear Strength

Fig. 1.16



Shear Strength

Up to DN1500 (60"), Dedicated Viking Johnson couplings are capable of withstanding a shear force corresponding to the weight of a 10 metre (30ft) length of water-filled pipe of the diameter for which the couplings were designed, when supported between two couplings. This also applies to flange adaptors. In the case of stepped couplings the maximum shear resistance is that of the smaller end of the coupling - Fig. 1.16.

External superimposed forces will reduce the maximum clear span. MaxiFit and MegaFit Wide Range couplings are not generally suitable for this duty and the pipe should be adequately supported to prevent sagging and coupling rotation.

Expansion & Contraction

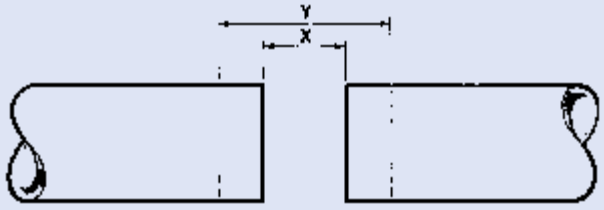
Viking Johnson couplings and flange adaptors can accommodate significant regular expansion and contraction movement in a pipe system, usually enough to remove the need for special expansion jointing products. This is achieved by deformation of the gaskets rather than by sliding on the pipe surface. Most expansion movements due to normal ambient temperature variations can be accommodated using Viking Johnson couplings.

Under certain circumstances, e.g. occasional or long-term movement, it may be possible to allow for increased expansion and contraction, but this should not be attempted without first contacting Viking Johnson.

Stepped couplings permit the same total expansion movement as straight couplings. However, pressure thrust may act on the stepped coupling causing the stepped coupling to move along the pipe with repeated expansion movement. Restraint for the coupling will be required.

	Maximum Relative Pipe Movement, Y-X (all sizes)
Couplings	10mm
Flange Adaptors	5mm

Fig. 1.17



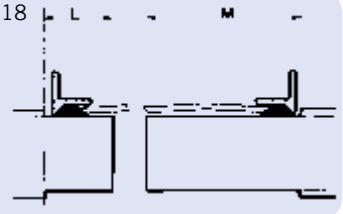
Expansion and contraction y - x = 10mm (0.375")

Pipe End Preparation

As stated earlier in System Overview (Page 356 - Pipe Surface Finish and Pipe Tolerances) it is important to remember:

a) Within the area of the seal, pipe surfaces should be round, clean, smooth and free from bumps, dents, score marks, flat spots etc.
b) Tolerances Should be in accordance with industry standards / specifications, if pressure ratings are to be maintained.

Fig. 1.18



In the Pipe End Preparation Table (Table 1.6) dimension L is the distance back from the end of the pipes which must be rounded where necessary to meet the tolerances required. It is also the distance back from the end of the pipe from which any pipe wrapping should be removed to permit coupling assembly.

This applies equally to coupling sleeves with or without locating plugs.

Where it is required to slide the coupling completely on to one pipe end, any wrapping must be cut back or obstructions removed, for minimum distance M.

Table 1.6

PIPE END PREPARATION TABLE		
Sleeve Length	Dimension L for normal coupling assembly	Dimension M for closing connections (wrapping cut back)
100mm	100mm	150mm
150mm	150mm	225mm
178mm	150mm	250mm
254mm	200mm	300mm

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Couplings

Straight Couplings are used for joining pipes of the same material or pipes of different materials but having the same outside diameter.

Available in 3mm size increments from DN350 (19") nom. up to DN4000 (160") nom. in standard form.

Couplings can be supplied with removable locating plug.

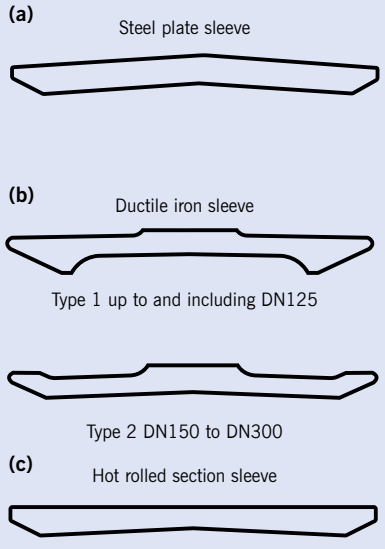
Heavy Duty Couplings, with strengthened end rings and sleeves are available for higher working pressures.

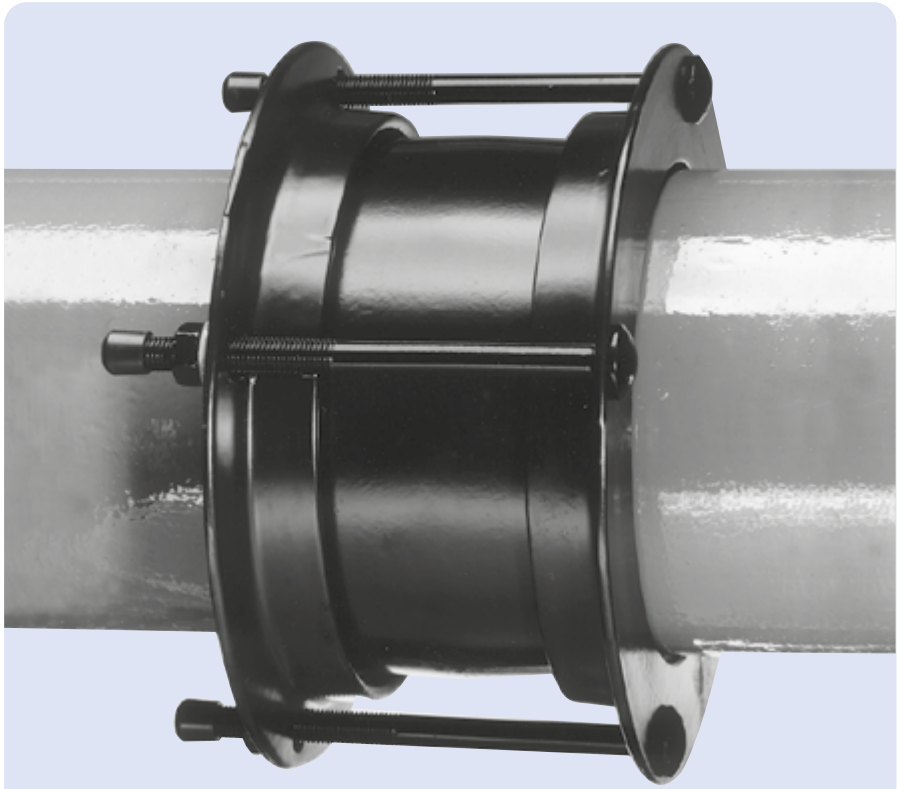
Long Sleeve Couplings, to take up larger pipe end gaps or cutting inaccuracies can also be supplied.

When using couplings, care must be taken to ensure that pipes are within the accepted tolerances, if pressure ratings are to be maintained.

When used on coated pipe, thickness of coating must be considered to be in **addition** to the pipe outside diameter.

Fig. 1.19





Straight Coupling

Bolts

Sheraplex coated bolts are supplied as standard. Galvanised or stainless steel bolts are also available. (Some products may have a limited range of bolt coatings for performance reasons.)

Locating Plugs

Locating plugs are manufactured from carbon steel as standard, zinc plated. They are also available in stainless steel.

Marine Couplings

Couplings specified for marine use are supplied complete with galvanised bolts, zinc plated locating plugs and Grade G nitrile gaskets.

Heavy Section Couplings

Heavy duty couplings with strengthened end rings and sleeves are available in sizes from DN250 (10") nom.

Coupling Sleeve Design

Within the range of Dedicated couplings there are variations of centre sleeve design, depending on the size and application.

Standard Sleeve

There are three types of standard sleeve for differing pipe sizes: (see Fig. 1.19)

a) Steel plate sleeve
b) Ductile iron sleeve
c) Hot rolled section sleeve

Coupling sleeve design is dependent on diameter and at the discretion of Viking Johnson.

These standard sleeves do not have an integral centre register within the sleeve, enabling couplings to be slipped back along the pipe for pipe cleaning, repair and maintenance.

NOTE
Viking Johnson Flexible couplings do not resist longitudinal thrust loadings, and pipe pull-out will occur unless the loads are restrained by other means.

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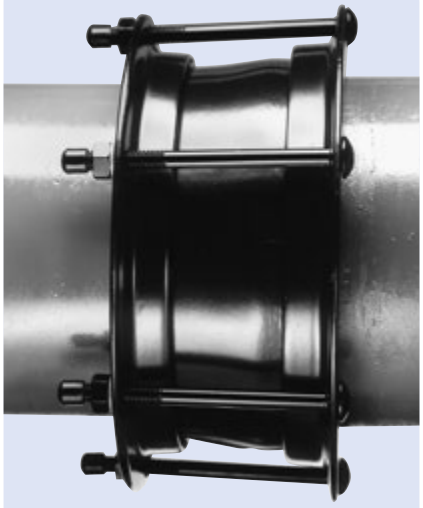
Stepped Couplings

Make-Up Ring Stepped Coupling



Expanded Sleeve Stepped Coupling

Stepped Couplings are used to connect pipes of different outside diameters and/or pipes of different materials.

Pressure Rating

Pressure ratings for stepped couplings are equivalent to either:

- the rating specified in the straight coupling schedules for the larger of the two pipe sizes involved, or
- the lower of the individual pressure rating of the two.

Coupling Movement

When stepped or wide range couplings are used to join pipes of different outside diameters, it is essential to ensure that the stepped coupling cannot be forced along the smaller diameter pipe by internal pressure forces. This does not normally apply to the standard range of stepped couplings using expanded sleeves in a below ground service at moderate pressures. This is particularly important above ground and/or where a stepped coupling is used as an expansion joint. Regular inspection of the coupling position against a previously applied mark is strongly recommended, especially in above ground installations. (See also Pressure Forces, page 360).

Stepped Coupling Sleeve Design

To accommodate the variety of sizes and combinations required, the centre sleeve of stepped couplings will be one of the three basic designs:

A. Expanded Sleeve

For the standard stepped connections (same nominal size, different materials), an expanded one-part sleeve, made as a casting or of rolled steel, is normally supplied (see Fig. 1.25a).

B. Make-Up Ring Sleeve

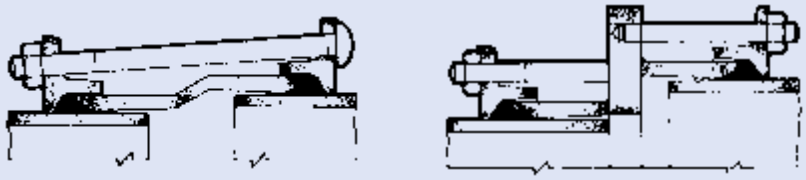
Where large steps between pipe sizes are required, a three-part welded sleeve is fabricated with studs fitted to the centre plate of the coupling instead of bolts. (Fig. 1.25b).

NOTE
For non-standard couplings the customer is encouraged to ask for an overall dimension drawing of the stepped coupling offered.

NOTE
Viking Johnson Flexible couplings do not resist longitudinal thrust loadings, and pipe pull-out will occur unless the loads are restrained by other means.

Fig. 1.25

(a) **(b)**



Expanded sleeve *Make-up ring sleeve*

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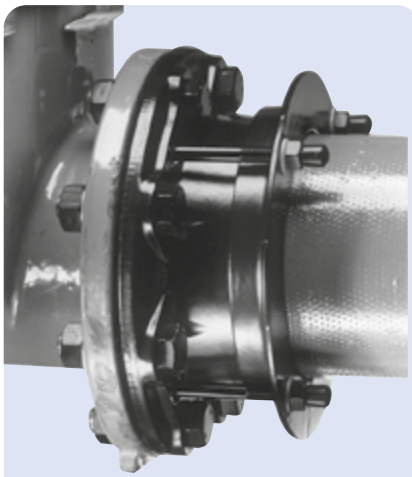
Flange Adaptors



QuickFit Flange Adaptor

Flange adaptors are used to enable plain-ended pipe to be connected either to flanged pipe or to flanged valves and other fittings.

Raised Face Flanges

Viking Johnson flange adaptors are provided with flat mating faces. These are suitable for bolting to both flat and raised faces. The same gasket loading characteristics can be obtained as with a raised face assembly. To obtain a satisfactory seal, the radial contact dimension or ledge (K on Fig. 1.20) should be a minimum of 8mm.

Pressure Ratings

Viking Johnson flange adaptors are supplied to suit the pressure rating of the flange, unless specifically ordered otherwise. The overall pressure rating of the assembled adaptor will be equal to that of the lower rated component, either pipe or flange. e.g. PN10 flange adaptors have a flange rated at a working pressure of 10 bar (150 psi). The coupling component of the flange adaptor will invariably have a higher pressure rating than the flange.

Dedicated Flange Adaptors

Are available in four basic forms with different sleeve designs:

Straight Sleeve

The standard form of flange adaptor has a straight sleeve and a flat face. (Fig. 1.21).

Expanded Sleeve (See note (i))

Specifically for use with very thick walled pipe such as asbestos cement or concrete, the expanded sleeve can also be used when the nominal sizes of the flange and the pipe are different (e.g. connecting DN350 (14") pipe to a DN300 (12") valve). See Fig. 1.22.

Typical Dimensions

Nom. flange size:
> DN300 (12")
B= 160mm H= 57mm
B= 235mm H= 82mm

Always confirm dimensional details before ordering.

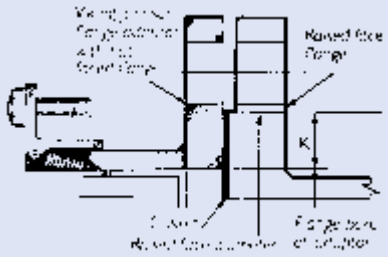
Tapped Flange (See note (i))

As an alternative to the expanded sleeve, mismatched components may be joined using a tapped flange (Fig. 1.23). Studs, instead of flange bolts, are used to make the connection to the mating flange. Dimension B on Fig. 1.23 varies with the flange thickness C, relative to the tapping diameter. (This design is not suitable for some flange arrangements.)

'S' Bore

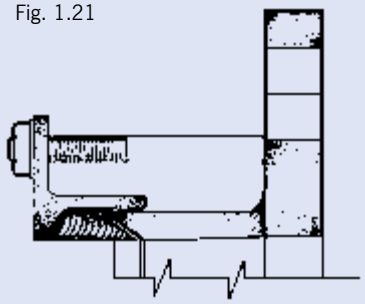
Flange adaptor with full flange faces suitable for use with wafer style (butterfly) valves are available see Fig. 1.24.

Fig. 1.20



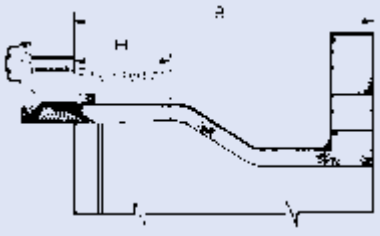
Mating to a raised face flange

Fig. 1.21



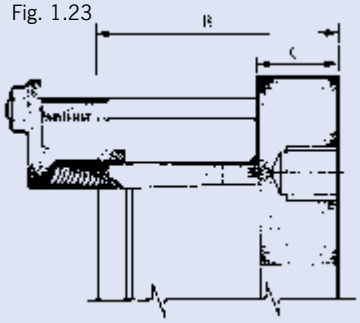
Straight sleeve

Fig. 1.22



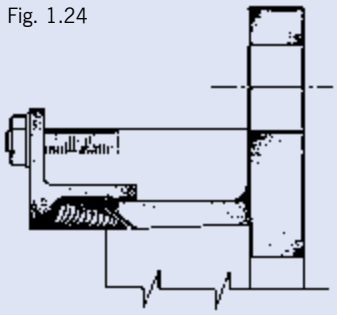
Expanded sleeve

Fig. 1.23



Tapped flange

Fig. 1.24



'S' bore flange

NOTE
(i) Customer approval of the supply of this design is generally sought prior to purchase.

NOTE
Viking Johnson Flexible couplings do not resist longitudinal thrust loadings, and pipe pull-out will occur unless the loads are restrained by other means.

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Flange Comparison Chart

Nominal Size	Table	Diameter		P.C.D.		Hole Dia.		Bolt Dia.		No. Bolts
		mm	inch	mm	inch	mm	inch	mm	inch	
DN80/3"	PN10/16	200	7.9	160	6.3	18	0.7	16	0.625	8
	BS10 ADE	184	7.25	146	5.75	17	0.688	16	0.625	4
	ANSI 125/150	190	7.5	152	6	19	0.75	16	0.625	4
DN100/4"	PN10/16	220	8.67	180	7.1	18	0.7	16	0.625	8
	BS10 AD	216	8.5	178	7	17	0.688	16	0.625	4
	BS10 E	216	8.5	178	7	17	0.688	16	0.625	8
	ANSI 125/150	229	9	191	7.5	19	0.75	16	0.625	8
DN150/6"	PN10/16	285	11.22	240	9.45	22	0.875	20	0.79	8
	BS10 A	279	11	235	9.25	17	0.688	16	0.625	4
	BS10 D	279	11	235	9.25	17	0.688	16	0.625	8
	BS10 E	279	11	235	9.25	22	0.875	19	0.75	8
	ANSI 125/150	279	11	241	9.5	22	0.875	19	0.75	8
DN200/8"	PN10	340	13.4	295	11.6	22	0.875	20	0.79	8
	PN16	340	13.4	295	11.6	22	0.875	20	0.79	12
	BS10 AD	337	13.25	292	11.5	17	0.688	16	0.625	8
	BS10 E	337	13.25	292	11.5	22	0.875	19	0.75	8
	ANSI 125/150	343	13.5	298	11.75	22	0.875	19	0.75	8
DN250/10"	PN10	395	15.55	350	13.78	22	0.875	20	0.79	12
	PN16	405	15.55	355	14	26	1.03	24	0.95	12
	BS10 AD	406	16	356	14	22	0.875	19	0.75	8
	BS10 E	406	16	356	14	22	0.875	19	0.75	12
	ANSI 125/150	406	16	362	14.25	25	1	22	0.875	12
DN300/12"	PN10	445	17.5	400	15.75	22	0.875	20	0.79	12
	PN16	460	18.2	410	16.15	26	1.03	24	0.95	12
	BS10 A	457	18	406	16	22	0.875	19	0.75	8
	BS10 D	457	18	406	16	22	0.875	19	0.75	12
	BS10 E	457	18	406	16	25	1	22	0.875	12
	ANSI 125/150	483	19	432	17	25	1	22	0.875	12
DN350/14"	PN10	505	19.88	460	18.11	22	0.875	20	0.79	16
	PN16	520	20.47	470	18.50	26	1.03	24	0.95	16
	BS10 A	527	20.75	470	18.5	25	1	22	0.875	8
	BS10 DE	527	20.75	470	18.5	25	1	22	0.875	12
	ANSI 125/150	533	21	476	18.75	29	1.125	25	1	12
DN400/16"	PN10	565	22.24	515	20.28	26	1.03	24	0.95	16
	PN16	580	22.83	525	20.67	30	1.20	27	1.07	16
	BS10 ADE	578	22.75	521	20.5	25	1	22	0.875	12
	ANSI 125/150	597	23.5	540	21.25	29	1.125	25	1	16
DN450/18"	PN10	615	24.21	565	22.24	26	1.03	24	0.95	20
	PN16	640	25.20	585	23.03	30	1.20	27	1.07	20
	BS10 AD	641	25.25	584	23	25	1	22	0.875	12
	BS10 E	641	25.25	584	23	25	1	22	0.875	16
	ANSI 125/150	635	25	578	22.75	32	1.25	29	1.125	16
DN500/20"	PN10	670	26.38	620	24.41	26	1.03	24	0.95	20
	PN16	715	28.15	650	25.59	33	1.30	30	1.20	20
	BS10 A	705	27.75	642	25.25	25	1	22	0.875	12
	BS10 DE	705	27.75	642	25.25	25	1	22	0.875	16
	ANSI 125/150	698	27.5	635	25	32	1.25	29	1.125	20
DN600/24"	PN10	780	30.71	725	28.54	30	1.20	27	1.07	20
	PN16	840	33.07	770	30.31	36	1.42	33	1.30	20
	BS10 A	826	32.5	756	29.75	29	1.125	25	1	12
	BS10 D	826	32.5	756	29.75	29	1.125	25	1	16
	BS10 E	826	32.5	756	29.75	32	1.25	29	1.125	16
	ANSI 125/150	813	32	749	29.5	35	1.375	32	1.25	20

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Gaskets

Introduction

The quality and performance of the gaskets is a crucial factor in the efficiency of any compression-fit pipe joint. It is the gasket which absorbs the forces applied by the expansion and contraction of the pipes, the angular movements and even the weight of the pipe itself. To do this successfully, the gasket must retain its flexibility and compressive stress throughout its operational life.

Viking Johnson gaskets are made in accordance with BS EN 681 for water and BS EN 682 for gas, which specifies stringent requirements for physical and chemical properties, aimed at giving the best possible long-term performance.

Gasket Types

Fitted Gaskets

All straight couplings, stepped couplings and flange adaptors in the QuickFit, MegaFit, UltraGrip and MaxiFit products, are normally supplied ready-assembled with the gaskets already in position. Making assembly of the product quicker and easier.

Removal of the gaskets prior to or during assembly of the coupling is neither necessary, nor recommended.

Unfitted Gaskets

Wedge-shaped gaskets are supplied as standard with Dedicated couplings, stepped couplings and flange adaptors in sizes DN350 (14") and over. Unfitted gaskets are always stretched onto the pipe during installation.

Bonded Gaskets

Certain Viking Johnson products, such as EasiClamp, EasiTee etc, are supplied with waffle type gaskets that are bonded into position. These gaskets are not replaceable.

Gasket Grade Selection

Viking Johnson products offer a variety of gasket grades to suit the widest possible range of applications. In order to ensure maximum gasket life in the intended application, proper selection is essential, See table on page 372.

Many factors need to be considered in deciding on the best grade for a specific service. Temperature is the primary consideration, with type and concentration of the product carried, duration and continuity of service also to be considered. Temperatures higher than the maximum quoted for each grade will lead to accelerated deterioration of the gaskets.

Fluctuating and / or Elevated Temperature

Whilst gasket compounds used in coupling type products may be capable of accommodating fluctuating or elevated temperatures (>60ºC) the relaxation rate of the elastomeric seals will increase, thus reducing the life expectancy of the joint. The failure mode is likely to be leakage of the seal between the coupling and pipe outside diameter, which, on the basis that there is sufficient travel on the bolts and the metal components are not touching, can be rectified by tightening the bolts. In the event that the metal components are touching, replacement of the gaskets in the coupling will be required.

Standard Gaskets

Unless otherwise specified, Viking Johnson couplings are supplied with Grade E (EPDM) gaskets as standard in all sizes. Grade E is suitable for potable water, drainage and sewage applications but is NOT suitable for use with natural gas, hydrocarbon fuels and lubricants. For gas, oil and fuel applications Grade G (nitrile) should normally be specified.

For QuickFit and Dedicated range only: where special usage conditions apply, eg. special chemical requirements, low flammability (eg. in confined spaces such as tunnels) or higher temperature resistance, a range of non-standard gasket materials is available, normally to special order. For further information on gasket suitability, contact Viking Johnson.

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Summary of Gaskets

Grade E - Ethylene Propylene (EPDM)
BS EN 681-1 WRAS approved.
Colour flash: Green
Temperature range: -40°C to +90°C (-40°F to 195°F) - (Note 1)
Suitable for: potable water, sewage, many strong and oxidising chemicals, some food applications.
NOT suitable for: Gas petroleum products, oily compressed air or hydrocarbon fuels and lubricants.

Grade G - Nitrile (NBR)
BS EN 682 Type G.
Colour flash: Silver
Temperature range: -20°C to +100°C (-4°F to 212°F) - (Note 1)
Suitable for: natural gas, petroleum products, low aromatic fuels (generally <30% aromatic content), oily compressed air and sewage applications.
NOT suitable for: potable water.

SPECIALIST GASKETS - AVAILABLE ON REQUEST FOR DEDICATED AND QUICKFIT COUPLING RANGE ONLY

Grade V - Polychloroprene
Colour flash: Yellow
Temperature range: -30°C to +90°C (-22°F to 195°F) - (Note 1)
Suitable for: Good resistance to ageing, weathering, ozone, oxidation, acids, most inorganic chemicals, vegetable and animal fats. Low flammability.
NOT suitable for: chlorinated hydrocarbons, aromatic solvents.

Grade C - Epichlorhydrin
Colour flash: White with 'ECO' superimposed.
Temperature range: -45°C to +110°C (-50°F to 230°F) - (Note 1)
Suitable for: petroleum products, including low aromatic fuels (<30% aromatic content) and oily compressed air.
NOT suitable for: Aqueous media.

Grade A - Polyacrylic
Colour flash: Purple
Temperature range: -10°C to +130°C (15°F to 265°F) - (Note 1)
Suitable for: Hot transformer and lubricating oils, petroleum products and low aromatic fuels (<30% aromatic content).
NOT suitable for: Water and steam.

Grade O - Fluoroelastomer
Colour flash: Blue
Temperature range: -5°C to +180°C (25°F to 350°F) - (Note 1)
(+100°C (212°F) on water and steam)
Suitable for: Petroleum products, aromatic fuels, hydraulic fluids, oxidising acids and organic liquids.
NOT suitable for: Ketones.

Grade L - Silicone
Colour flash: Red gasket material
Temperature range: -60°C to +200°C (-75°F to 395°F) (dry heat), - (Note 1)
-60°C to +120°C (-75°F to 250°F) (wet heat) - (Note 1)
Suitable for: Dry heat conditions, neutral aqueous and some chemical solutions.
NOT suitable for: Petroleum based products or high mechanical abuse applications.

Note 1: Use on applications with fluctuating and / or elevated temperatures may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule. **Note 2:** The above temperatures for each gasket type apply to the maximum rating of the gasket and not the finished product. See relevant technical datasheet for temperature rating of product.

Storage

Stored correctly, gaskets maintain full operational performance and maximum life expectancy. Please observe the following storage conditions.

- Store in a cool dark place and, where possible, in black polythene sacks which exclude light, especially ultra-violet.
- Store away from sunlight, electrical discharges and sparking electric motors.
- Storage temperature should be below 20°C (70°F) and preferably below 15°C (60°F).
- Always store gaskets in an unstressed condition - never hang on hooks, nails, handrails, etc., even for a short time.

Safety Note

Rubber gaskets should never be disposed of by burning, as harmful by-products can be produced. Never handle incinerated or fire damaged gaskets without proper protective clothing.

Lubrication

IMPORTANT: It is strongly recommended that unfitted gaskets are lubricated prior to fitting. Failure to apply lubricant can cause difficulty in fitting and may result in gasket creep under load. This may cause bolt torques to drop, thus necessitating re-tightening.

Renewal of Gaskets

If, for any reason, it becomes necessary to renew a gasket in a Viking Johnson coupling or flange adaptor (where the product cannot be fully dismantled and removed from the pipe), a strip of the correct section gasket material should be cut square about 6mm longer than the pipe circumference and inserted into the tapered recess of the sleeve. Care should be taken that the cut ends of the gasket butt together before bolting up the end rings - glueing the cut ends together prior to bolt-up may assist in this. Gasket strip can be purchased as strip from Viking Johnson.

NOTE: Reference should be made to the grade of gasket material required and coupling type. Alternatively, use a gasket of the same cross-section but a larger diameter and cut this squarely to produce a strip sufficiently long to wrap around the pipe.

Chemical Resistance

The various gasket grades mentioned in this section, in addition to having different operating temperatures, are resistant to different chemicals. When designing a piping system it is important to verify that the correct gasket grade is specified.

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Corrosion Protection

Product Coatings

A number of factory applied coatings are available to ensure full protection against corrosion:

Rilsan Nylon 11

Rilsan Nylon 11 is a thermoplastic polyamide powder coating produced from a renewable raw material of plant origin (Castor Oil). Applied by dipping in a fluidised bed, it forms a durable protection with excellent resistance to impact, abrasion, weathering, many chemicals and with good thermal stability and flexibility. Rilsan Nylon 11 provides all the corrosion protection you need for the majority of buried and above ground service applications and eliminates the need for any further protection, such as on-site wrapping. For specific chemical resistance information, please check the chemical resistance chart at the end of the section, or ask for specific recommendations.

Rilsan Nylon 11 is both WRAS and DWI approved, is suitable for use with potable water and has a maximum operating temperature rating of 90°C (195°F) for water service.

Site repair of localised surface damage, e.g. through careless handling, is straightforward using the special two-pack repair kit.

Most Viking Johnson products are supplied with this protection as standard. Rilsan Nylon 11 Black meets the requirements of WIS 4-52-01 Part 1 and EN 10310 and is our standard Rilsan coating colour, since this provides the optimum resistance to sunlight exposure during storage and provides a responsible coating solution that also helps to protect our environment.

Fusion Bonded Epoxy (FBE)

If required, Viking Johnson products may be supplied with Fusion Bonded Epoxy (FBE) coating, which uses thermosetting compounds and offer excellent corrosion protection and resistance to a wide range of organic and inorganic chemicals. Many may be used in contact with potable water. FBE coatings generally offer good resistance to soil compaction and cathodic disbondment. Continuous maximum temperature capability of 90°C (195°F) on water service. Site repair is possible using special repair packs.

Galvanising

A hot dip process giving a zinc coating in conformity with BS EN ISO 1461. Certain Viking Johnson products may be specified with this coating. Other specialist coatings can be supplied according to customer requirements.

Bolt Coatings

Depending on product and market/application, bolts may be coated in the following corrosion-protection systems:

Sheraplex	- low friction compound coating based on sheradising and fluoropolymer
Galvanised	- a metallic zinc coating
Flurene 177	- a low friction coating, mainly used for AquaGrip and EasiTee products
Delta Seal GZ - Silver	- anti-galling organic coating for stainless steel nuts and bolts

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Chemical Resistance Chart

CHEMICAL COMPOSITION	GASKET / GRADE	RILSAN	SCOTCHKOTE	CHEMICAL COMPOSITION	GASKET / GRADE	RILSAN	SCOTCHKOTE
Acetic Acid, up to 10%	E,G,V	✓	✓	Hydrogen, Gas	E, G, V	✓	✓
Acetone	E	✓	✓	Hydrogen Sulphide	E, V	✓	✓
Acetylene	E,G	?	?	Kerosene	G, A, O	✓	✓
Air, oil free	E,G	✓	✓	Ketones	E	✓	✓
Air, oily	G, A	✓	✓	Lubricating Oil, Refined	G, O	✓	✓
Alcohol - butyl, ethyl, methyl	E, G	✓	✓	Methane	G, A, O	✓	✓
Aluminium Hydroxide	E	✓	?	Methyl Ethyl Ketone	E	✓	✓
Alums, all types	E, G, V	✓	✓	Mineral Oils	G	✓	✓
Ammonia Gas, cold	E, G, V	✓	✓	Naphtha	O	✓	✓
Ammonium Bicarbonate	E, G	✓	✓	Natural Gas	G	✓	✓
Ammonium Nitrate	E, G	✓	✓	Nitric Acid, to 10%	E	?	✓
Animal Oils/Fats	G	✓	✓	Nitrogen	E, G, V	✓	✓
Aviation Fuel	G, C, O	✓	✓	Oil, Crude Sour	G, O	✓	✓
Benzene	O	✓	✓	Oxygen	E	✓	✓
Blast Furnace Gas	O	?	?	Ozone	E	✓	✓
Bleach Solutions	E	✓	✓	Petroleum Oils	G, O	✓	✓
Brine	E, G, V	✓	✓	Phenol (Carbolic Acid)	O	✓	✓
Butane Gas	G, V	✓	✓	Polyvinyl Acetate	E	✓	✓
Calcium Chloride	E, G, V	✓	✓	Potassium Chloride	E, G, V	✓	✓
Calcium Hydroxide	E, G, V	✓	✓	Potassium Hydroxide	E, V	✓	✓
Calcium Hypochlorite (Bleach)	E	✓	✓	Potassium Permanganate	G	?	?
Carbon Tetrachloride	O	?	✓	Propane Gas	T	✓	✓
Caustic Soda	E, V, G	✓	✓	Sewage	E, G, V	✓	✓
Chlorine (dry)	E	?	?	Sodium Bicarbonate	E, G, V	✓	✓
Coke Oven Gas	G, O	?	?	Sodium Carbonate	E	✓	✓
Copper Sulphate	E, G, V	✓	✓	Sodium Chloride	E, G, V	✓	✓
De-ionised Water	E, G, V	✓	✓	Sodium Hydroxide, to 50%	E, V	✓	✓
Detergents	E, G, V	✓	✓	Sodium Hypochlorite, to 20%	E, G	✓	✓
Developing Fluids	G, V	?	?	Styrene	O	✓	?
Diesel Oil	G, O	✓	✓	Sulphuric Acid, to 25%, 66°C (150°F)	E	✓ (10%)	✓
Ethane	G	✓	✓	Toluene	O	✓	✓
Ethylene	G, O	✓	✓	Turpentine	G	✓	✓
Ethylene Glycol	E, G, V	✓	✓	Vegetable Oils	E, G	✓	✓
Fuel Oil	G, O	✓	✓	Vinyl Acetate	E	?	?
Gasoline, Leaded & Unleaded (<30% aromatics)	G, O	✓	✓	Vinyl Chloride	O	?	?
Glycerine (Glycerol)	E, G, V	✓	✓	Water, to 90°C (195°F)	E	✓	✓
Glycols	E, G, V	✓	✓	Water, Potable	E	✓	✓
Hexane	G, O	✓	✓	Water - Waste, Seawater	E, G, V	✓	✓
Hydrochloric Acid, Cold to 50%	E, O	?	✓	White Spirit	G	✓	✓

For advice on any chemical not listed here, please contact Viking Johnson for further details

✓ Good Resistance ? Contact* Viking Johnson *for further advice

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Jeddah - Saudi Arabia

King Abdulaziz Airport Development

Large Diameter Couplings DN850 to DN1200

Project

Airport extension – a state of the art facility designed to increase the airport's capacity to 30 million passengers a year.

Dedicated couplings from sizes DN850 to DN1200 were installed in advanced chilled water systems.

Client

Airport Authority in Saudi

Distributor

Rezayat Trading Company

Contractor

ORASCOM

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Serbia - Vojvodina, North

Water Irrigation Channel - Tisa River

Large Diameter Dedicated Couplings - DN1200

Project

A new 14km Irrigation pipeline connecting 2 plain ended GRP pipes.

Large Diameter Dedicated Couplings DN1200 were installed to help transport water to an accumulation reservoir which is used to irrigate agricultural areas of Serbia that grow corn, apples and many other types of fruit and vegetables.

The contractor DTD Severna Backa said the installation was easy and fast, and they appreciated the high quality of the gasket as it was able to be installed at close to 0°C with no problems.

Client

Vovodina Vode

Distributor

ALIAXIS Serbia

Contractor

DTD Severna Backa

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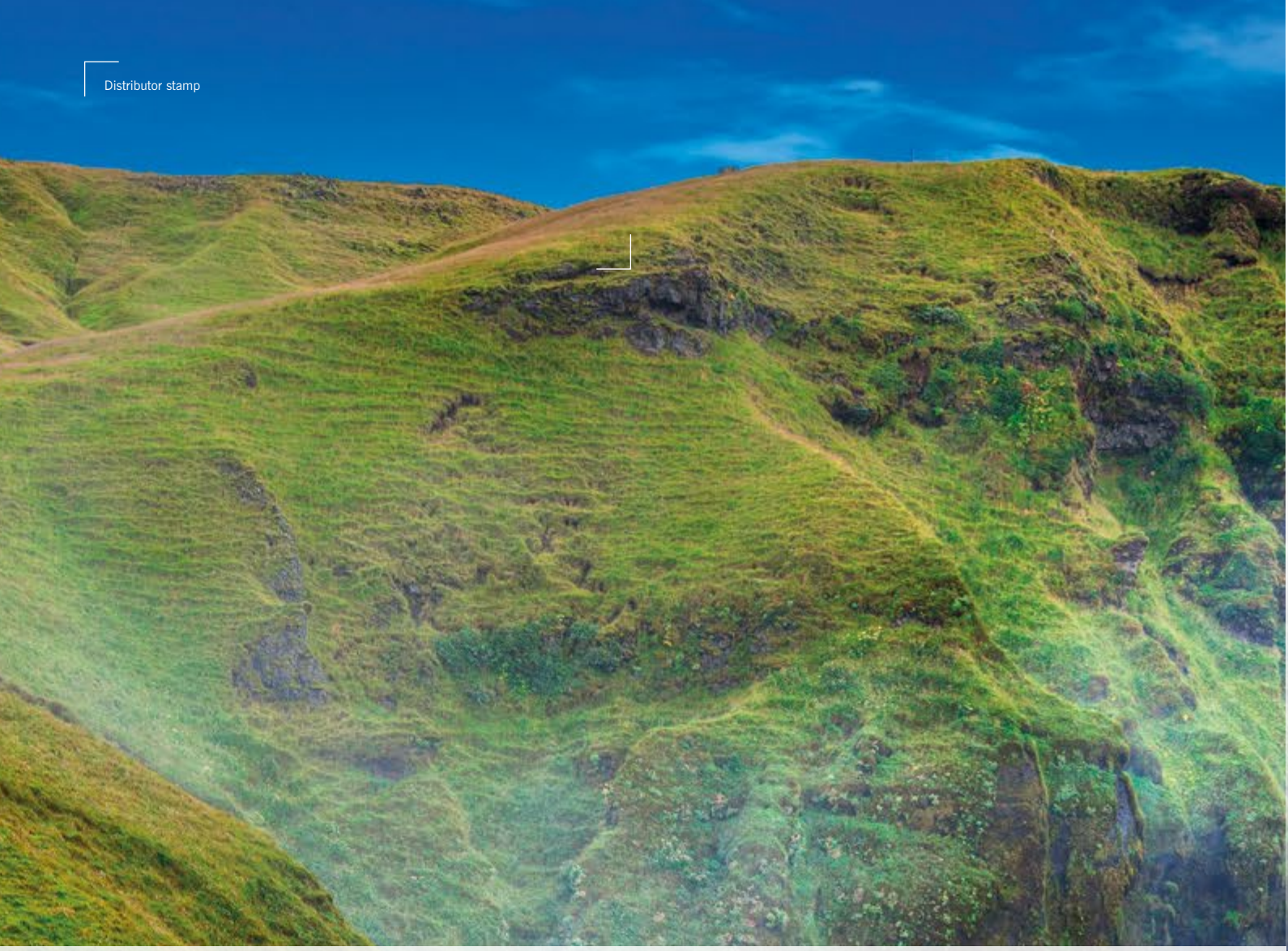

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