Large Diameter
Fittings to Suit any Pipe Specification
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

![Pipe Materials Icon]
**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.

**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.

**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.

**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.
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.

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.

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.

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.

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.

End Load Forces

Notching of end ring permits the use of tie rods to harness the flange adaptor to accommodate end load forces.

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).
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

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.
### Large Diameter Couplings OD355.6 - 816

#### Coupling

<table>
<thead>
<tr>
<th>Coupling Type</th>
<th>Coupling Section Type</th>
<th>Sleeve Length</th>
<th>Dimensions (mm)</th>
<th>Setting Gap X (mm)</th>
<th>Bolt Details</th>
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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
Nitride -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, AS/NZS 4020, DVGW, W270, ACS & KIWA.
- **EPDM Gaskets**: WRAS, AS/NZS 4020

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**

### Coupling

![Coupling Diagram]

**Large Diameter Couplings**

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<thead>
<tr>
<th>Pipe OD (mm)</th>
<th>Pipe Material</th>
<th>Working Pressure (bar)</th>
<th>Gasket Mould No.</th>
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**L** = Distance back from end of pipe that must be rounded, meet tolerances, and free from any wrapping to ensure correct assembly.

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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.

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, AS/NZS 4020, DVGW, W270, ACS & KIWA.
EPDM Gaskets:
➤ WRAS, AS/NZS 4020

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
Large Diameter Stepped Couplings OD355.6 - 1222

Datasheet

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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)

**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.

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- **Rilsan Nylon 11:**
  - WRAS, AS/NZS 4020, DVGW, W270, ACS & KIWA.
- **EPDM Gaskets:**
  - WRAS, AS/NZS 4020

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

#### Flange Adaptor

- **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)

<table>
<thead>
<tr>
<th>Pipe OD (mm)</th>
<th>Pipe Material</th>
<th>Flange Drilling BS EN 1092-1</th>
<th>Tolerance on Pipe OD for Distance L</th>
<th>Gasket Round No.</th>
<th>Flange Adaptor Section Type</th>
<th>Flange Adaptor Studs No. x Dia</th>
<th>Weight (kg)</th>
<th>Dimensions</th>
<th>Overall C Standard Sleeve (mm)</th>
<th>Overall C Long Sleeve (mm)</th>
<th>Flange Adaptor Studs Length</th>
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<tr>
<td>355.6</td>
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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/mm².
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, AS/NZS 4020, DVGW, W270, ACS & KIWA.
- EPDM Gaskets:
  - WRAS, AS/NZS 4020
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
- 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
### Large Diameter Flange Adaptors (BS EN 1092-1 PN10 Drilling)

<table>
<thead>
<tr>
<th>Pipe OD (mm)</th>
<th>Pipe Material</th>
<th>Flange Drilling BS EN 1092-1</th>
<th>Flange Adaptor Section Type</th>
<th>Distance L (mm)</th>
<th>Setting Gap X (mm)</th>
<th>Weight (kg)</th>
<th>Dimensions</th>
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</table>

**Flange Adaptor Diagram**

- L = Distance back from end of pipe that must be rounded, meet tolerances, and free from any wrapping to ensure correct assembly.

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Gas 6 bar

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Capable of accommodating a vacuum pressure of -0.7 bar

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1.5 times working pressure for short duration (2 hours)

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Nitrile -20°C to +90°C
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**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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Flange Adaptor

Large Diameter Flange Adaptors OD 355 - 813mm to BS EN 1092-1 PN16 Drilling

Datasheet

Large Diameter Flange Adaptors (BS EN 1092-1 PN16 Drilling)

<table>
<thead>
<tr>
<th>Pipe OD (mm)</th>
<th>Pipe Material</th>
<th>Flange Drilling BS EN 1092-1</th>
<th>Tolerance on Pipe OD for Distance L</th>
<th>Flange Adaptor Type</th>
<th>Flange Adaptor Section</th>
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<th>Distance L (mm)</th>
<th>Setting Gap X (mm)</th>
<th>Bolt Details</th>
<th>Weight (kg)</th>
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<td>50</td>
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<td>140 180</td>
</tr>
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</table>
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/mm².
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, AS/NZS 4020, DVGW, W270, ACS & KIWA.

EPDM Gaskets:
➤ WRAS, AS/NZS 4020

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

<table>
<thead>
<tr>
<th>Flange Adaptor Type</th>
<th>Flange Adaptor Section</th>
<th>Sleeve Length S (mm)</th>
<th>Distance L (mm)</th>
<th>Setting Gap X (mm)</th>
<th>Bolt Details</th>
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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)

<table>
<thead>
<tr>
<th>Pipe OD (mm)</th>
<th>Pipe Material</th>
<th>Flange Drilling BS EN 1092-1</th>
<th>Tolerance on Pipe OD for Distance L</th>
<th>Flange Adaptor Section Type</th>
<th>Weight (kg)</th>
<th>Dimensions</th>
<th>Flange Adaptor Studs Length</th>
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**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/mm².
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

**Approvals**
The following water contact materials used in Large Diameter Dedicated products are approved for use with potable water:
- Rilsan Nylon 11:
  - WRAS, AS/NZS 4020, DVGW, W270, ACS & KIWA.
- EPDM Gaskets:
  - WRAS, AS/NZS 4020

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)
- 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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Flange Adaptor

<table>
<thead>
<tr>
<th>Flange Adaptor Type</th>
<th>Flange Adaptor Section</th>
<th>Sleeve Length S (mm)</th>
<th>Distance L (mm)</th>
<th>Setting Gap X (mm)</th>
<th>Bolt Details</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Min.</td>
<td>Max.</td>
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<td></td>
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<td>Standard Sleeve</td>
<td>L02</td>
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<td>150</td>
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<td>M12</td>
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<td>Long Sleeve</td>
<td>L03</td>
<td>123</td>
<td>200</td>
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<td>M12</td>
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<tr>
<td>Standard Sleeve</td>
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<td>Standard Sleeve</td>
<td>XSXG</td>
<td>254</td>
<td>200</td>
<td>57</td>
<td>M16</td>
</tr>
</tbody>
</table>

L = Distance back from end of pipe that must be rounded, meet tolerances, and free from any wrapping to ensure correct assembly.

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Large Diameter Flange Adaptors (BS EN 1092-1 PN25 Drilling)

<table>
<thead>
<tr>
<th>Pipe OD (mm)</th>
<th>Pipe Material</th>
<th>Flange Drilling BS EN 1092-1</th>
<th>Tolerance on Pipe OD for Distance L</th>
<th>Flange Adaptor Section Type</th>
<th>Flange Adaptor Studs No. x dia.</th>
<th>Flange Adaptor Studs Length</th>
<th>Standard Sleeve</th>
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<td>358.6</td>
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<td>L02</td>
<td>10 x M12</td>
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<td>L19</td>
<td>14 x M12</td>
</tr>
</tbody>
</table>
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/mm².
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

**Approvals**
The following water contact materials used in Large Diameter Dedicated products are approved for use with potable water:-
- Rilsan Nylon 11:
  - WRAS, AS/NZS 4020, DVGW, W270, ACS & KIWA.
- EPDM Gaskets:
  - WRAS, AS/NZS 4020

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: L02/L03/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

Large Diameter Flange Adaptors (BS EN 1092-1 PN25 Drilling)

<table>
<thead>
<tr>
<th>Pipe OD (mm)</th>
<th>Pipe Material</th>
<th>Flange Drilling BS EN 1092-1</th>
<th>Tolerance on Pipe OD for Distance L</th>
<th>Gasket No. In End Ring</th>
<th>Flange Adaptor Section Type</th>
<th>Flange Adaptor Section</th>
<th>Flange Adaptor Studs No. x Dia</th>
<th>Weight (kg)</th>
<th>Dimensions</th>
<th>Flange Adaptor Studs Length</th>
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<td>1000 P25</td>
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<td>A2E A2H</td>
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<td>38 32 x M52</td>
<td>1212 1212</td>
<td>160 190</td>
<td></td>
</tr>
</tbody>
</table>

L = Distance back from end of pipe that must be rounded, meet tolerances, and free from any wrapping to ensure correct assembly.

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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, AS/NZS 4020, DVGW, W270, ACS & KIWA.
EPDM Gaskets:
➤ WRAS, AS/NZS 4020
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.

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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
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BS EN682: Type G
(other materials available on request)

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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

River Mersey (Sandon Docks)

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

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.
## 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.vikingjohnson.com.

**Please complete the form and send via email to:** info@vikingjohnson.com

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Date</th>
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<tbody>
<tr>
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<td>Email</td>
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<td>Customer Address</td>
<td>Telephone</td>
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<td>Fax</td>
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### Pipe Details

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<thead>
<tr>
<th>Outside Diameter</th>
<th>Pipe Coating (Especially important on steel pipes)</th>
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<tbody>
<tr>
<td>Outside Diameter Tolerances</td>
<td>Pipe Coating Thickness</td>
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<tr>
<td>Pipe Material (Please tick)</td>
<td>Working/Test/Design Pressure</td>
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- Ductile Iron
- Cast Iron
- Steel
- Stainless Steel
- PVC
- PE
- ABS
- Clay
- Concrete
- HEP30
- GRP
- Lead
- Asbestos Cement
- Other (Please specify)

### Product Requirements

<table>
<thead>
<tr>
<th>Coating Required</th>
<th>Flange Rating</th>
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<td>Gasket Grade Required or medium conveyed</td>
<td>Drilling Pattern</td>
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<td>Locating Plugs (If required)</td>
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</table>

### Packaging & Carriage Requirements


### Any Special Documents / Inspection Requirements


### Any Other Special Requirements


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.
■ Designed and manufactured under quality management systems in accordance with BS EN ISO 9001.
■ Environmental Management System accredited to ISO 14001.
■ For full terms and conditions, please visit our website.

To visit our Video Library go to: www.youtube.com/user/CraneBSU

www.vikingjohnson.com

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