



VIKING JOHNSON

World leaders in pipe joints and repair products

Dedicated couplings and flange adaptors to suit most pipe materials - LARGE DIAMETER COUPLINGS



Large Diameter Couplings

over DN300/12"

Viking Johnson have been designing and manufacturing Large Diameter Couplings, Flange Adaptors and Stepped Couplings for over 70 years. Coupling products are produced to exacting specifications for some of the world's most prestigious pipeline projects.

Customer Specifications

The Viking Johnson couplings can be supplied in standard and special designs to suit a vast range of diameters and working pressures to suit virtually any customer requirement. This flexibility makes Viking Johnson the natural choice for almost any major pipeline project.

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 extensive in-house test facility and handling of the extensive documentation and inspection requirements often associated with large projects. PVC, etc. PE pipe can also be joined by the use of our AquaGrip range, specifically designed for polyethylene pipe characteristics.

Worldwide Distribution

With over 80 Distributors and Agents worldwide, local assistance is available from people who understand the country's language, culture and needs. This local knowledge and expertise has been invaluable to consultants, contractors and clients on many of the major pipeline projects worldwide.

Product Design and Testing

Viking Johnson uses the latest computer design techniques - finite element analysis, 3D surface modelling, stress analysis, etc. - to ensure the optimum performance in the field and best use of the available materials, without compromising quality. All products are developed and tested in our own research and development facility to ensure the highest performance on standard and special designs.

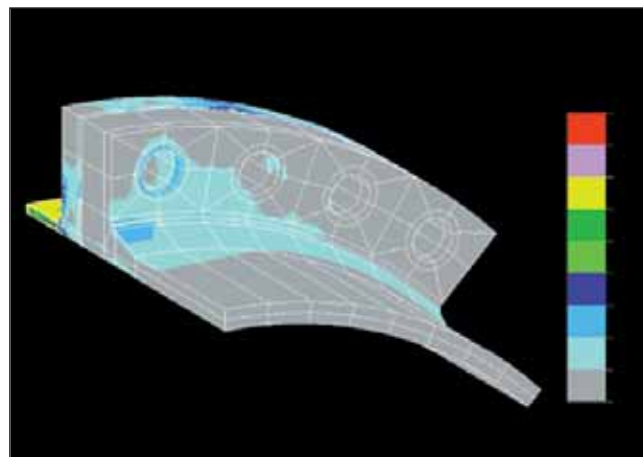
DESIGN CAPABILITY

Continual Design Review

As the recognised leading manufacturer of Large Diameter Coupling products, Viking Johnson employs the latest computer techniques to ensure that products remain at the very highest quality available. Techniques such as Finite Element Analysis and 3D Surface Modelling ensure that the best use of materials is made without compromising quality or performance. This expertise is complemented by Viking Johnsons' extensive research and development facility, which enables Viking Johnson to manufacture and test products to established designs or unique customer specifications.



3D Surface Modelling



Finite Element Analysis

Features and Benefits

Design Flexibility

Use of Viking Johnson Large Diameter Couplings range affords a maximum flexibility to the pipeline design and installation engineers. Each coupling centre sleeve is internally barrelled, allowing greater angular deflection. This can be utilised to accommodate misaligned pipes (using two couplings and an intermediate rocker pipe), post installation ground settlement, and long radius curvature in the pipeline whilst eliminating the need for specialist fittings. (Angular deflection details are contained in the Viking Johnson Design Data Brochure, VJ101).

Product Flexibility

Viking Johnson Large Diameter Couplings and Flange Adaptors are available in an enormous range of sizes to suit virtually any customer requirement. Products can be supplied to suit all standard and non-standard pipe diameters across the whole size range between DN350 and DN5000. 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.

Viking Johnson products can be used for connecting pipe materials including Steel, Ductile Iron, Cast Iron, Asbestos Cement, PVC, etc. PE pipe can also be joined by the use of our AquaGrip range, specifically designed for polyethylene pipe characteristics.

- Size range - DN350 to DN5000 to suit virtually any pipe outside diameter.
- Pressure range - up to PN100 (according to diameter).
- Expansion and Contraction - couplings can absorb up to 10mm, flange adaptors up to 5mm. Take up expansion movement on bridge crossings, in chambers and pump stations. Often eliminates the need for special expansion joints.
- Angular deflection - couplings up to 6°, depending on diameter. Connect misaligned pipes; take up ground settlement at structures; lay pipes to large radius bends.
- Flange adaptors are often used to permit dismantling of valves in flanged pipe systems. Viking Johnson Dismantling Joints incorporate our flange adaptors and come complete with tie rods.
- Connect most pipe materials - steel, ductile iron, cast iron, PVCu, ABS, asbestos cement, GRP, etc. Viking Johnson AquaGrip products can be used for polyethylene pipes (MDPE, HDPE, HPPE, etc)
- Simple installation in any weather and trench conditions, even underwater!
- No special tools or training required. Use only a standard spanner/wrench.

Gaskets

- Grade E, EPDM is standard to BS EN 681-1 for potable water, sewage and many other uses, except hydrocarbons
- Grade G, Nitrile, to BS 2494 Type G for natural gas, oil, fuels and many hydrocarbon products
- Other grades available to suit many specialist applications. Please ask for details, or see our Design Data brochure, VJ101.

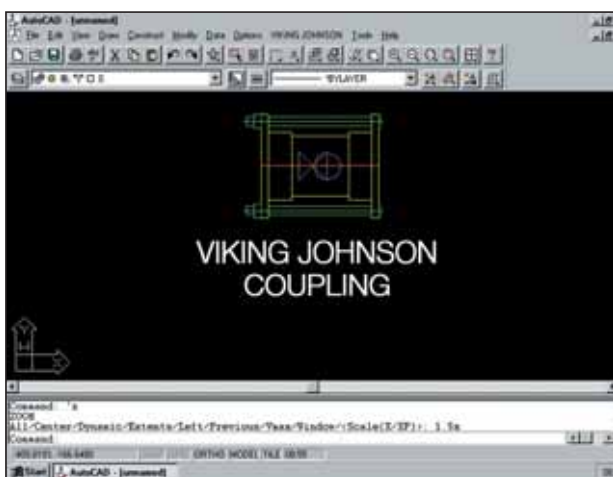
Corrosion protection

Rilsan Nylon 11 is the standard corrosion protection for Viking Johnson coupling products up to about DN1600. This coating provides a good level of protection for a wide range of installation conditions and is totally suitable for use with potable water and most petroleum-based products. For more details contact our Technical Sales Dept.

Other types of coating, such as fusion bonded epoxy, galvanising and metal sprayed finishes are also available to suit a wide range of applications.

Standards and approvals

- Designed and manufactured under an ISO 9001 accredited Quality Management System.
- Standard Viking Johnson couplings and flange adaptors conform to ANSI/AWWA C.219 for Bolted Mechanical Sleeve Type Couplings.
- Many national and international approvals including:
 - UK Water Byelaws Scheme (WBS)
 - Lloyds Register of Shipping
 - Det Norske Veritas
 - NSF61



Screen from Viking Johnson's CAD

VIKING JOHNSON

Project: River Ore, Scotland.
Large Diameter Couplings ranging from DN550(22") to DN1400 (56").
Project carried out by Morrison Construction
Client: East of Scotland Water Authority.



USA

Project: City of St. Louis Water Supply Scheme.
Large Diameter Wall Couplings and harnessed Flange Adaptors in sizes up to DN1800 (72").
The scheme involved installing interception chambers and associated valves into 3 mains carrying water from the Mississippi into St. Louis.



CHILE

Project: Rado Miro Tomic Mine, Chile.
DN400 (16") Viking Johnson Couplings used on 30km water supply line constructed from cement lined spiral welded 16" steel pipe.



- Worldwide Solutions



Project: Great Man Made River, Libya.

The purpose of the scheme is to transport water from beneath the Sahara Desert to the major towns on the Northern Coast of Libya. The largest Water Construction Scheme ever undertaken, this project used DN4000 (160") Viking Johnson Couplings & Flange Adaptors on the transmission pipelines.



Project: Nol Turesh Water Project, Kenya

DN550 (22") od. steel pipe taking water from the Nol Turesh springs in the foothills of Mt. Kilimanjaro to the towns of Sultan Hamud, Kajiado, Athi River and Machakos.



Project: New Zealand.

Tekapo 'B' Hydro Electric Scheme. DN4200 (168").



NEW ZEALAND

VIKING JOHNSON MAJOR PROJECT REFERENCE LIST

PROJECT NAME	CONTRACTOR	CONSULTANT	CLIENT	PRODUCT SPEC	PRESSURE	COUNTRY
River Ore	Morrison Construction	East of Scotland Water	East of Scotland Water Authority	DN560 (22") to DN1420 (56")	4 bar (60psi)	UK
Black Point Power Station	Maeda	Mouchel	China Light & Power	DN2000 (80") to DN2500 (100")	4 bar (60psi) & 3 bar (45psi)	Hong Kong
Fuchin Power Station Ash Line				DN1000 (40") to DN2000 (80")	Up to 80 bar (1200psi)	China
Water Supply from China	AOKI / PWT	Pypun Howard Humphries	H.K. W.S.D.	DN1500 (60") to DN2000 (80")	25 bar (360psi)	Hong Kong
North Lantau, Tai Ho Section Hong Kong Airport	China State	Mott MacDonald	L.E.J.V.	DN1800 (72")	25 bar (360psi)	Hong Kong
Rihand Power Station	International Combustion	International Combustion	N.T.P.C.	DN500 (20")	30 bar (435psi)	India
Flyde Coastal Water	Van Oord ACZ	Pipeline Developments Ltd	North West Water	AquaGrip DN1400 (54")	4 bar (60psi)	UK
Das Island 3rd Lng Train	CCI	Halcrow	M.E.W. Abu Dhabi	DN3100 (132") & DN3600 (144")	10 bar (150psi)	U.A.E.
Arab Potash, Raw Water Line	Arab Potash		Arab Potash	DN1000 (40") & DN1500 (60")	25 bar (360psi)	Jordan
Koraimat Project	A.C.D.M.		Ministry of New Communities	DN720 (29")	15 bar (220psi)	Egypt
Rado Miro Tomic Mine	Alvenius Chilena		Rado Miro Tomic Mine	Up to DN400 (16")	Up to 24 bar (345psi)	Chile
El Arish Project	EL Nasr		Ministry of Water	DN730 (29")	24 bar (345psi)	Egypt
Great Man Made River Project	Dong AH	Brown & Root	G.M.R.A.	Up to DN4000 (160")	up to 28 bar (420psi)	Libya
Quito North West	Coll Construcciones		EMAAP Quito Municipal Water Authority	Up to DN600 (24")	Up to 69 bar (1035psi) Test Pressure	Ecuador
Jeddah Fountain		Sete		DN800 (32")	45 bar (650psi)	Saudi Arabia
Nol Turesh Water Project	Recchi / Astaldi Consorzio	East African Consultants	Ministry of Water	DN550 (22")	80 bar (1160psi)	Kenya
Ras Abou Fontas	Marbani		Ministry of Electricity & Water	DN550 (22")	25 bar (360psi)	Qatar
Suez Canal North Syphons				DN2000 (80") & DN3200 (128")	Up to 40 bar (580psi)	Egypt
Taif, C3 Return Effluent Salt Line		John Taylor		DN813 (32.5")	60 bar (870psi)	Saudi Arabia
Bedminster Bridge - Bristol	Walter Lawrence	Eautech	Bristol Water	DN500 (20") up to DN560 (22") AquaGrip	Up to 6 bar (90psi)	UK
Channel Tunnel	Transmanche Link	Trouvin	Euro Tunnel	DN250 (10") DN400 (16")	Up to 30 bar (435psi)	UK - France
San Pedro River Adduction Scheme	Alvenius Chilena		Codelco	DN740 (30")	15 bar (220psi)	Chile
City of St Louis Water Supply Scheme	Condaire Inc.	Sverdrup Civil Inc.	City of St Louis Water	Up to DN1800 (72")	Up to 10 bar (150psi)	USA
Tekapo 'B' Hydro Electric Scheme			ECNZ	DN4200	Up to 24 bar (345psi)	New Zealand
Karachi W.T.P. II	P.W.T.	Matt MacDonald	K.W.S.B.	Up to DN1800 (72")	16 bar (240psi)	Pakistan
Pak Kong Treatment Works	AOKI	Wats Hawksley	H.K.W.S.D.	DN2200 (88")	16 bar (240psi)	Hong Kong
Muk Wu Pump Station		Pypun Howard Humphries	H.K.W.S.D.	DN2200 (88") DN2400 (96")	16 bar (240psi)	Hong Kong
Pathun Thani Treatment	Thames Water LEJV	Thames	B.M.A.	DN1800 (72")	16 bar (240psi)	Thailand
Sungai Pia Hydro Electric Plant	Whessoe	Whessoe	Tenega Nasional	DN2400 (96")	10 bar (240psi)	Malaysia
Tolo Harbour Effluent Scheme	Kier	Charles Haswell & Partner	H.K.D.S.D.	DN1400 (56")	16 bar (240psi)	Hong Kong

Standard Specification for Bolted Sleeve Type Couplings for Plain End Pipe

Bolted sleeve type couplings, stepped couplings and flange adaptors may be used for connecting plain ended steel, ductile iron, grey iron, uPVC and other rigid or semi-rigid pipe materials, subject to approval by the engineer. Couplings etc. shall be designed and manufactured in accordance with ANSI/AWWA C.219, except that elastomeric gaskets shall comply with BS.2494 Type W for potable water, Type D for sewage or Type G for gas and other hydrocarbon fluids. Manufacture shall be carried out within a quality system certified to ISO 9001. Certain pipe materials, such as GRP, fibre cement and polyethylene may require either specially designed coupling products, or standard couplings installed using special procedures as recommended by the manufacturer.

Surface Finish

RILSAN[®] Nylon 11

The standard finish for all Viking Johnson products is black Rilsan Nylon 11, one of the world's most sophisticated non hygroscopic engineering nylon coating materials, which is highly resistant to impact (even at low temperatures), corrosion, abrasion and chemical attack.

The Rilsan Nylon 11 finish has an extremely strong bond with the metal surface, unlike many other plastic or paint finishes.

The strong bond helps to prevent corrosion or oxidation even under severe chemical or physical attack and eliminates the need for additional below-ground protection methods such as shrink wrap sleeves, protective tapes or bitumen moulding.

Rilsan Nylon 11 is applied in-house, ensuring tight quality control for long term performance.

Double-Protected Bolts

Bolts and nuts are zinc plated and then Sheraplex coated for double protection.

Other Finishes

Other coatings such as shopcoat, hot dip galvanising, zinc spray and epoxy coating can be supplied as required.

Gaskets

- Long Life

All Viking Johnson components are designed to last the lifetime of the pipeline. Elastomeric sealing gaskets are manufactured to have at least a 50 year lifespan, but replacement is a simple matter, if required.

- In-House Manufacture

To maintain complete quality control, elastomeric components are manufactured within the Group by VIP-Heinke, one of the world's leading manufacturers of gaskets for the pipeline industry.

- Range of Gasket Materials

Standard gaskets supplied are EPDM, suitable for use at temperatures between -40°C and +90°C with potable water, strong oxidising chemicals, sewage etc. Nitrile, suitable for use at temperatures of -20°C to +100°C for natural gas, petroleum products, oils and compressed air, is also available.

HOW TO ORDER

When enquiring or ordering Large Diameter Coupling products from Viking Johnson, there are a number of facts which we require to ensure that the correct product for the application is provided.

The information that we require includes:

- Pipe Outside Diameter
- Outside Diameter Tolerances
- Pipe Material
- Pipe Coating (especially important on steel pipes)
- Pipe Coating Thickness
- Working and Test or Design Pressure
- Coating required
- Gasket grade required or medium conveyed
- Flange rating and / or drilling (for Flange Adaptors)
- If centre registers or locating plugs are required
- Any special packaging / carriage requirements
- Any special documentation / inspection requirements
- Any other special requirements



For further information on all Viking Johnson products and services contact our Marketing Department.



ISO 9001



ISO 14001

CRANE

A Crane Co. Company



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