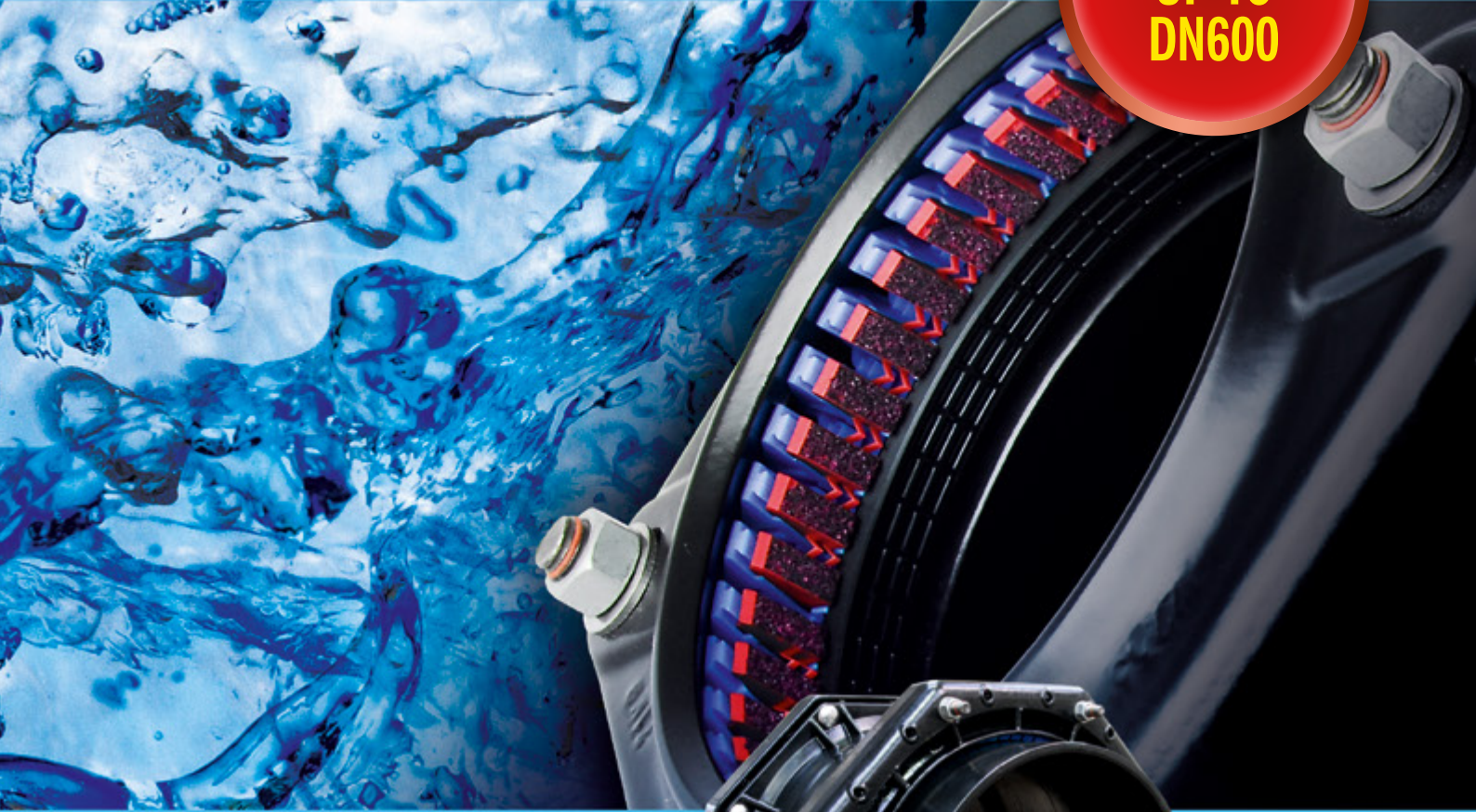


Next

# Generation UltraGrip

Optimum Wide Tolerance & Full End Restraint

AVAILABLE  
UP TO  
DN600



BS EN 14525  
Ductile Iron  
Couplings & Flange  
Adaptors\*

VC 673979

\*See back cover for full specification



 **VIKING JOHNSON**®

PIONEERS IN PIPE SOLUTIONS

**CRANE** BUILDING SERVICES & UTILITIES



# 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 (uti DN600) and gas applications (uti DN400)
- Innovative progressive gripping design ensures ultimate end load performance



# An Advanced Design, Exceptional Performance

Next Generation 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.

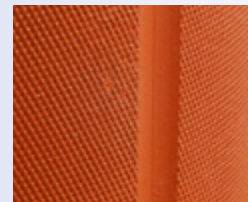
## Bigger Sizes DN450 – DN600

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

Couplings & Flange Adaptors

Wide Tolerance



**AVAILABLE UP TO DN600**

## Pipe Materials



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

## PE Brochure for use with PVC & PE



**\*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.



# Next Generation UltraGrip

## Overview

## 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

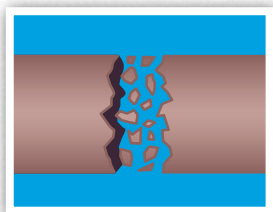
# Next Generation UltraGrip

## Overview

## 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.

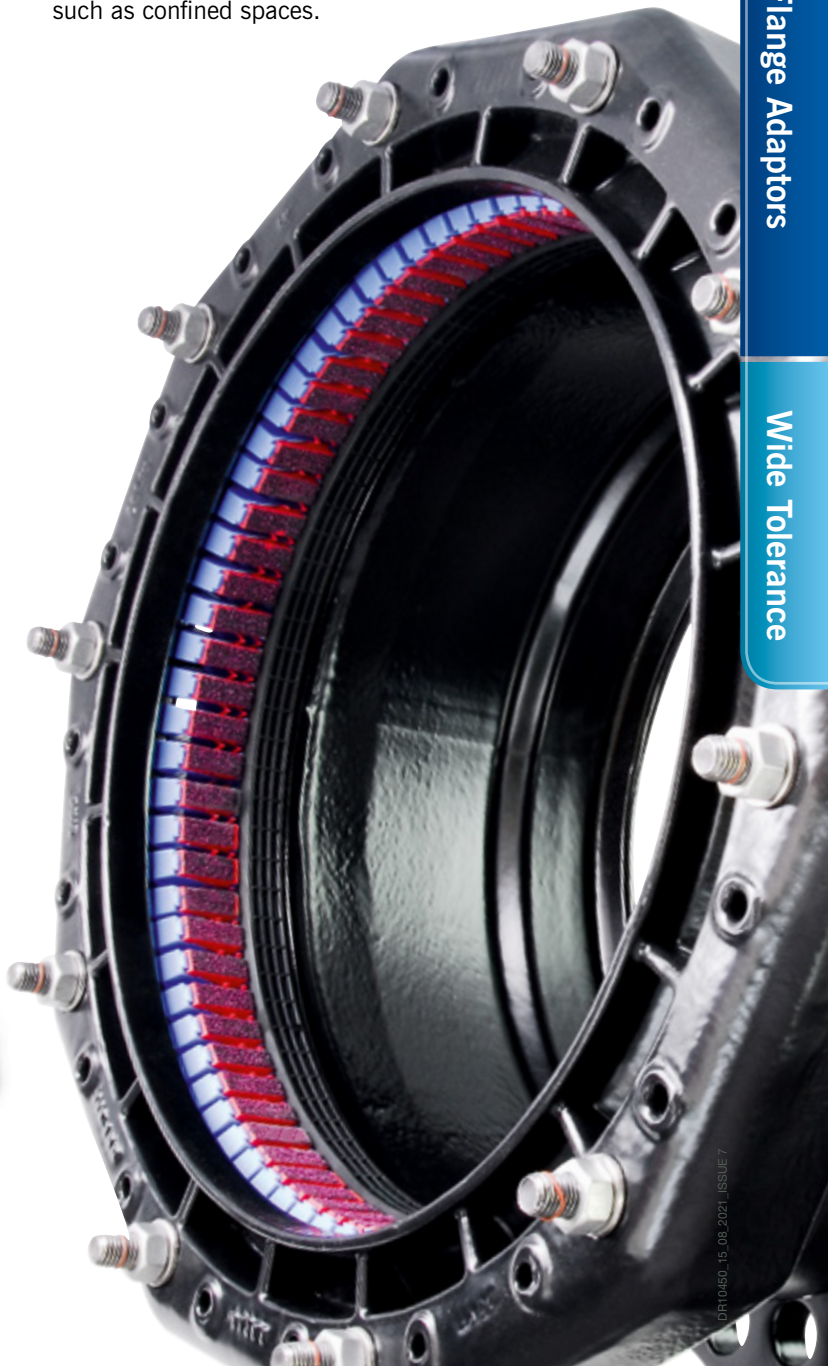


Suitable for  
Shattered Pipe



### 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.



Couplings & Flange Adaptors

Wide Tolerance





## Pipe Materials



## Overview

## 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 Pecat adaptor.

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 Pecat adaptor



# Next Generation 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.

### Enhanced Gasket Sealing

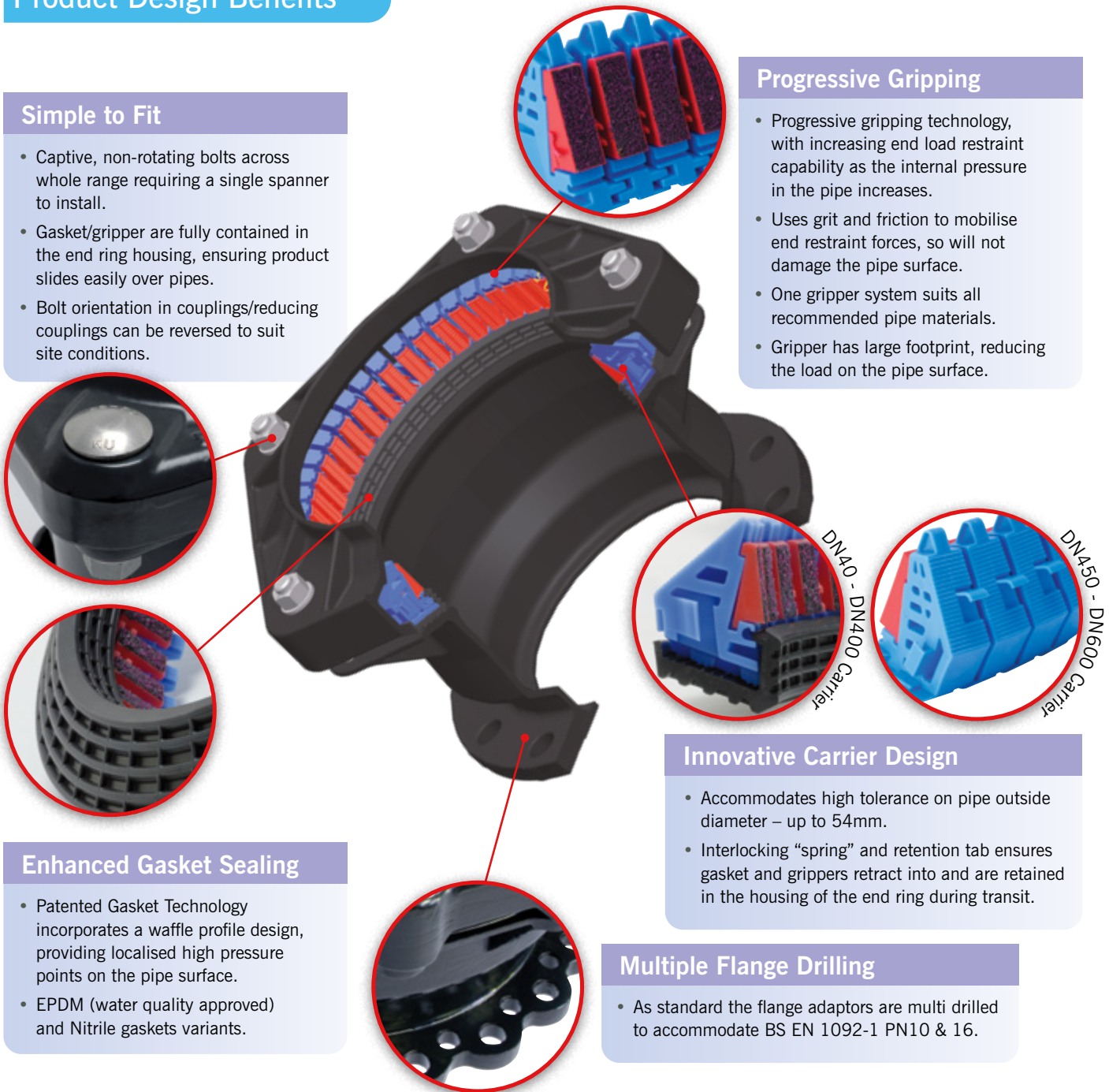
- Patented Gasket Technology incorporates a waffle profile design, providing localised high pressure points on the pipe surface.
- EPDM (water quality approved) and Nitrile gaskets variants.

### 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.

### Multiple Flange Drilling

- As standard the flange adaptors are multi drilled to accommodate BS EN 1092-1 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.

# Next Generation 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 electrofusion 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.



**Holland Enschede**

# City Mains - Connecting new PE by-pass pipeline to an existing asbestos cement pipe network

UltraGrip Coupling DN400

## Project

An installation in Enschede of two DN400 UltraGrips. Upgrade ensures that 'city water' after heavy rains can be transported away from key buildings and infrastructure.

## Client

Vitens

## Contractor

A.Hak

## Distributor

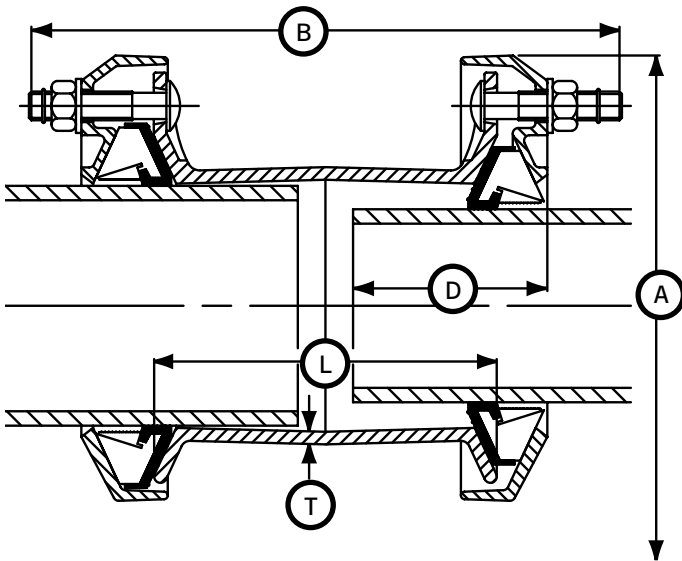
Imbema

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# Next Generation UltraGrip Couplings

## Coupling



## UltraGrip Couplings

Nom Size	Size Range		Insertion Depth (D)		Dimensions				Bolts		Weight (kg)
	Min	Max	Min	Max	Overall		Sleeve		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
<b>M12</b>	55 - 70
<b>M16</b>	95 - 120
<b>M20</b>	210 - 230

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## 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, AS/NZS 4020

Gasket (EPDM):

- ▶ WRAS, KTW, DVGW, W270, KIWA & AS/NZS 4020

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 DN600 UltraGrip has been independently tested by BSI to confirm it meets the requirements of BS EN 14525 (VC 673979).

## 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

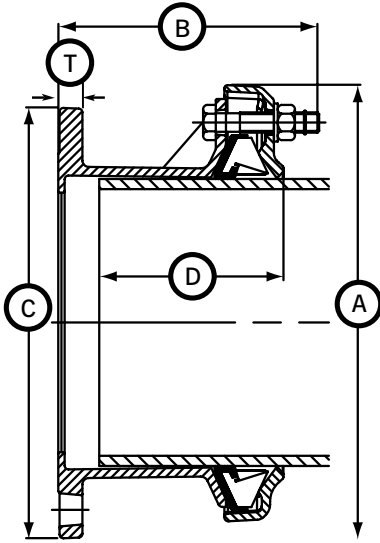
### Grit to Gripper

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).

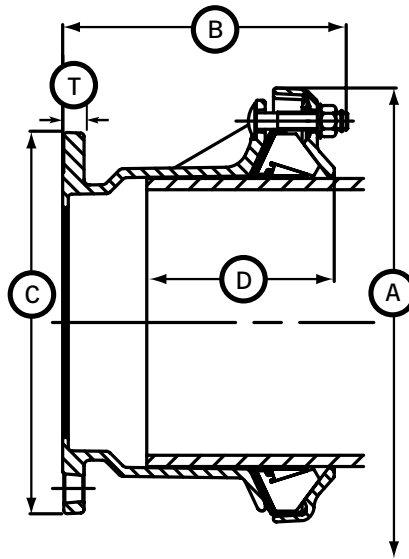
# Next Generation UltraGrip Flange Adaptors

Datasheet 1/2

## Flange Adaptor Type 1



## Flange Adaptor Type 2



## UltraGrip Flange Adaptors

Nom Size	Size Range		Flange Nom Size	Flange Drilling	Type	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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# Next Generation 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, AS/NZS 4020

Gasket (EPDM):

- ▶ WRAS, KTW, DVGW, W270, KIWA & AS/NZS 4020

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 DN600 UltraGrip has been independently tested by BSI to confirm it meets the requirements of BS EN 14525 (VC 673979).

## 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

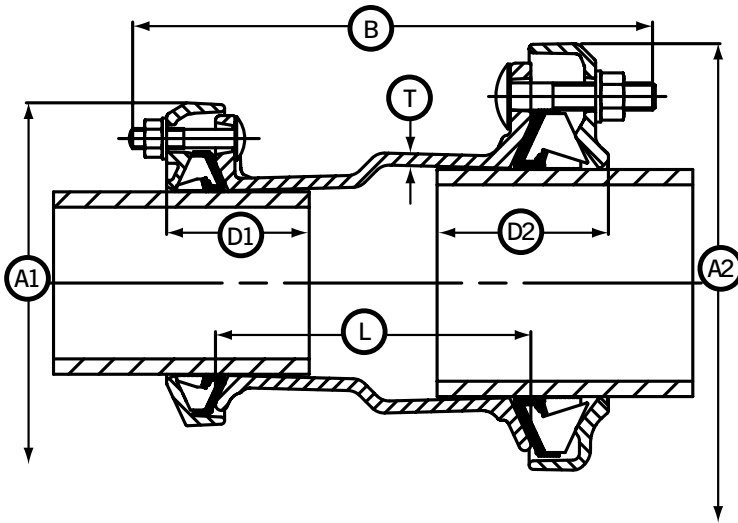
Corundum - aluminium oxide with a chemical composition of  $Al_2O_3$  and a hexagonal crystal structure (rock-forming mineral that is found in igneous, metamorphic, and sedimentary rocks).

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# Next Generation UltraGrip Reducing Couplings

Datasheet 1/2

## Reducing Coupling



## UltraGrip 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
<b>M12</b>	55 - 70
<b>M16</b>	95 - 120
<b>M20</b>	210 - 230

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# Next Generation UltraGrip Reducing Couplings

Datasheet

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## 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, AS/NZS 4020

Gasket (EPDM):

- ▶ WRAS, KTW, DVGW, W270, KIWA & AS/NZS 4020

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 DN600 UltraGrip has been independently tested by BSI to confirm it meets the requirements of BS EN 14525 (VC 673979).

## 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

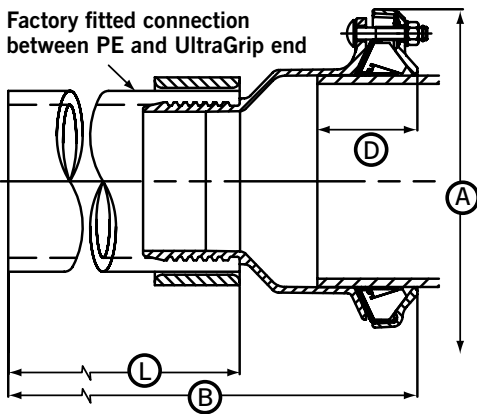
Corundum - aluminium oxide with a chemical composition of  $Al_2O_3$  and a hexagonal crystal structure (rock-forming mineral that is found in igneous, metamorphic, and sedimentary rocks).

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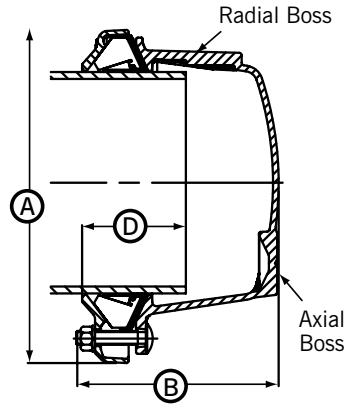
# Next Generation UltraGrip Pecatadaptors & End Caps

Datasheet 1/2

## Pecatadaptor



## End Cap



## UltraGrip Pecatadaptors

Nom Size	Size Range		PE		Insertion Depth (D)		Dimensions			Bolts		Weight (kg)
	Min	Max	Size	Sdr	Min	Max	Overall	PE Pipe End	Size	Type		
							A	B	L			
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)
	Min	Max	Min	Max	Axial		Radial		A	B	No-size	Type	
					Min BSP	Max BSP	Min BSP	Max BSP					
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
<b>M12</b>	55 - 70
<b>M16</b>	95 - 120
<b>M20</b>	210 - 230

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# Next Generation UltraGrip Pecatadaptors & End Caps

Datasheet

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## 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)

## 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)

Bolts:

- Pecatadaptors: Delta Seal GZ - Silver
- End Caps: Sheraplex to WIS 4-52-03

Nuts:

- Delta Seal GZ - Silver

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### 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, AS/NZS 4020

Gasket (EPDM):

- WRAS, KTW, DVGW, W270, KIWA & AS/NZS 4020

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 DN600 UltraGrip has been independently tested by BSI to confirm it meets the requirements of BS EN 14525 (VC 673979).

### 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 - 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).



Germany - Memmingen

# Maintenance on Water Pipe Network

Next Generation 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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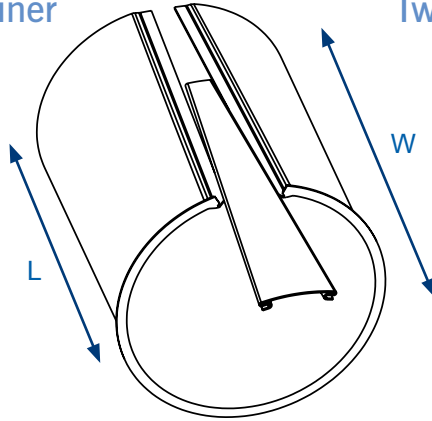


# UltraGrip Support Liner For PE & PVC Pipes

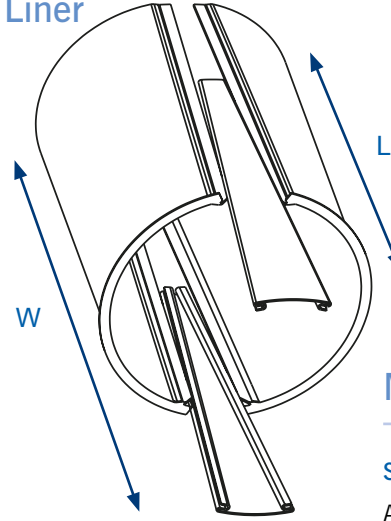
Datasheet

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## 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 DN500 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

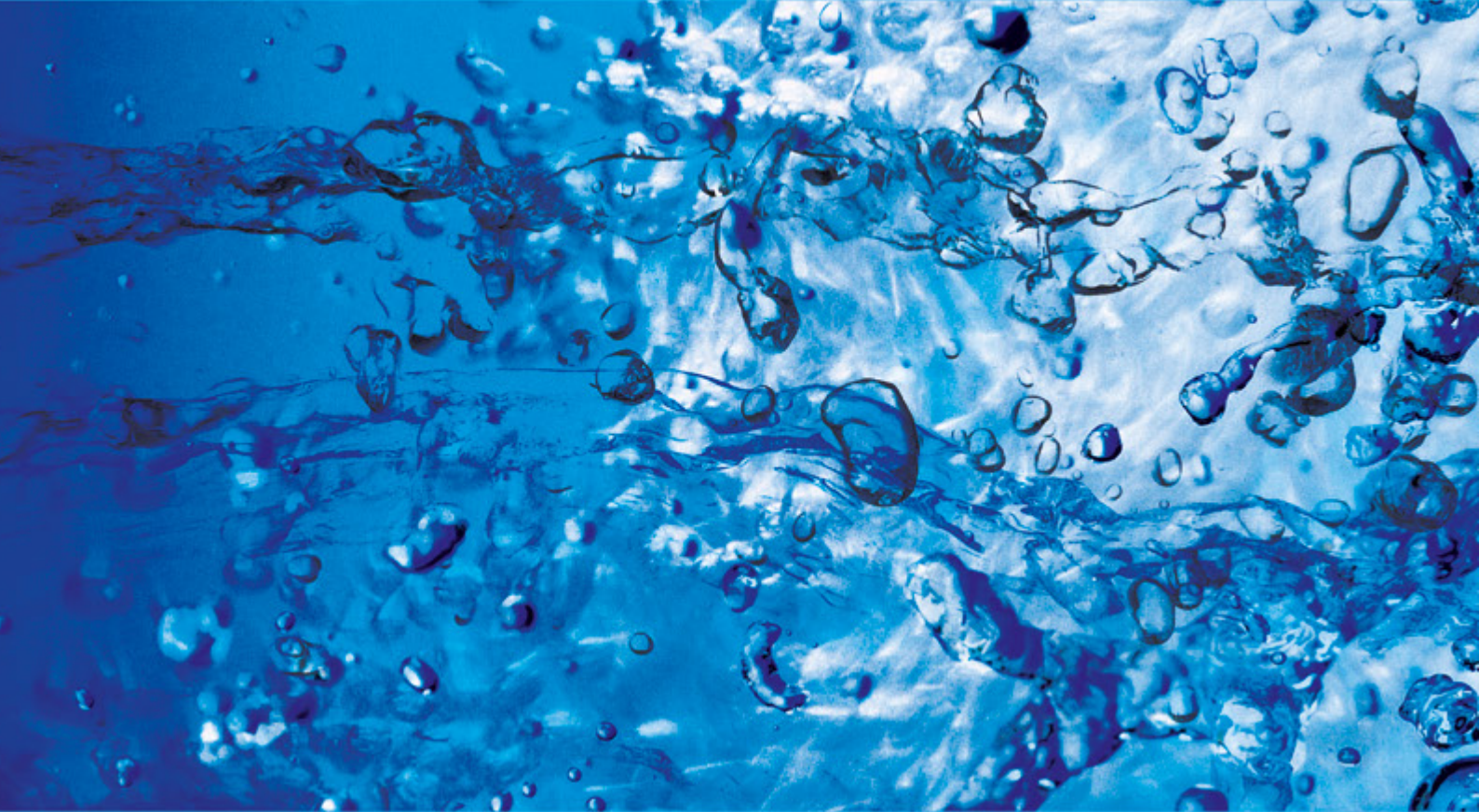
Friatec AG, Manheim

## Contractor

STEHNKE Bauunternehmung  
GmbH & Co. Bremen

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\*BS EN 14525 - Ductile Iron wide tolerance couplings and flange adaptors for use with pipes of different materials : ductile iron, steel, PVC-U, PE, fibre-cement.

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