NOW AVAILABLE UP TO DN600

Generation
UltraGrip
Optimum Wide Tolerance & Full End Restraint
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**
Helden 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.

**Pipe Materials**
- Ductile Iron
- Cast Iron
- Steel
- Asbestos Cement
- HEP10
- GRP

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

**Available up to DN600**

**Industry Testing**
Helden 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.

*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.*
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.

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 are stainless steel coated with Gleitmo/dry film lubricant and the nuts are Geomet coated, which prevents galling and provides long term corrosion protection.

Working Pressure & Temperature Ratings

<table>
<thead>
<tr>
<th>Nominal Size</th>
<th>Gripping Product</th>
<th>Flex Product</th>
<th>Operating Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Gas</td>
<td>Water</td>
<td>Gas</td>
</tr>
<tr>
<td>DN40 to DN300</td>
<td>5 bar</td>
<td>16 bar</td>
<td>5 bar</td>
</tr>
<tr>
<td>DN350 to DN400</td>
<td>5 bar</td>
<td>10 bar</td>
<td>5 bar</td>
</tr>
<tr>
<td>DN450 to DN600</td>
<td>N/A</td>
<td>10 bar</td>
<td>N/A</td>
</tr>
</tbody>
</table>

(Site Test Pressure – 1.5 times working pressure)
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.

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

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 Pecatadaptor.

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

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

www.helden-web.com
UltraGrip Couplings

### Nominal Size

<table>
<thead>
<tr>
<th>Nominal Size</th>
<th>Size Range</th>
<th>Insertion Depth (D)</th>
<th>Dimensions</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Min Max</td>
<td>Overall A</td>
<td>Sleeve B L T</td>
</tr>
<tr>
<td>40</td>
<td>DN40 to DN300</td>
<td>43.5 63.5</td>
<td>168 262</td>
<td>144 7.0</td>
</tr>
<tr>
<td>50</td>
<td>DN350 to DN400</td>
<td>48.0 71.0</td>
<td>178 296</td>
<td>180 5.0</td>
</tr>
<tr>
<td>65</td>
<td>DN450 to DN600</td>
<td>63.0 83.7</td>
<td>189 262</td>
<td>144 7.0</td>
</tr>
<tr>
<td>80</td>
<td></td>
<td>85.7 107.0</td>
<td>212 288</td>
<td>170 7.0</td>
</tr>
<tr>
<td>100</td>
<td></td>
<td>107.0 132.2</td>
<td>280 342</td>
<td>180 7.0</td>
</tr>
<tr>
<td>125</td>
<td></td>
<td>132.2 160.2</td>
<td>305 342</td>
<td>180 6.0</td>
</tr>
<tr>
<td>150</td>
<td></td>
<td>158.2 192.2</td>
<td>339 386</td>
<td>213 6.5</td>
</tr>
<tr>
<td>175</td>
<td></td>
<td>192.2 226.9</td>
<td>403 400</td>
<td>220 6.5</td>
</tr>
<tr>
<td>200</td>
<td></td>
<td>218.1 256.0</td>
<td>432 400</td>
<td>220 6.5</td>
</tr>
<tr>
<td>250</td>
<td></td>
<td>266.0 310.0</td>
<td>476 524</td>
<td>300 8.0</td>
</tr>
<tr>
<td>300</td>
<td></td>
<td>315.0 356.0</td>
<td>522 524</td>
<td>300 8.0</td>
</tr>
<tr>
<td>350</td>
<td></td>
<td>352.2 396.0</td>
<td>577 525</td>
<td>300 7.5</td>
</tr>
<tr>
<td>400</td>
<td></td>
<td>398.2 442.0</td>
<td>623 525</td>
<td>300 7.5</td>
</tr>
<tr>
<td>450</td>
<td></td>
<td>448.0 492.0</td>
<td>713 545</td>
<td>300 7.5</td>
</tr>
<tr>
<td>500</td>
<td></td>
<td>498.0 552.0</td>
<td>803 565</td>
<td>300 7.5</td>
</tr>
<tr>
<td>550</td>
<td></td>
<td>558.0 608.0</td>
<td>860 565</td>
<td>300 7.5</td>
</tr>
<tr>
<td>600</td>
<td></td>
<td>604.0 648.0</td>
<td>975 565</td>
<td>300 7.5</td>
</tr>
<tr>
<td>650</td>
<td></td>
<td>676.0 726.0</td>
<td>975 565</td>
<td>300 7.5</td>
</tr>
</tbody>
</table>

### Working Pressure & Temperature Ratings

<table>
<thead>
<tr>
<th>Nominal Size</th>
<th>Gripping Product</th>
<th>Flex Product</th>
<th>Operating Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>DN40 to DN300</td>
<td>Gas 5 bar</td>
<td>Water 16 bar</td>
<td>-20°C to +30°C</td>
</tr>
<tr>
<td>DN350 to DN400</td>
<td>5 bar</td>
<td>10 bar</td>
<td></td>
</tr>
<tr>
<td>DN450 to DN600</td>
<td>N/A</td>
<td>10 bar</td>
<td></td>
</tr>
</tbody>
</table>

**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.
**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 Helden 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:
- Gleitmo 900 (Dry Film Lubricant)
Nuts:
- Geomet 500

**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 \( \text{Al}_2\text{O}_3 \) and a hexagonal crystal structure (rock-forming mineral that is found in igneous, metamorphic, and sedimentary rocks).

---

Every effort has been made to ensure that the information contained in this publication is accurate at the time of publishing. Crane Ltd assumes no responsibility or liability for typographical errors or omissions or for any misinterpretation of the information within the publication and reserves the right to change without notice.
Next Generation UltraGrip Flange Adaptors

Datasheet 1/2

Every effort has been made to ensure that the information contained in this publication is accurate at the time of publishing. Crane Ltd assumes no responsibility or liability for typographical errors or omissions or for any misinterpretation of the information within the publication and reserves the right to change without notice.

UltraGrip Flange Adaptors

<table>
<thead>
<tr>
<th>Nominal Size</th>
<th>Size Range</th>
<th>Flange Nom Size</th>
<th>Flange Drilling</th>
<th>Type</th>
<th>Insertion Depth (D)</th>
<th>Dimensions</th>
<th>Bolts</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>43.5 - 43.5</td>
<td>40</td>
<td>PN10.16</td>
<td></td>
<td>1</td>
<td>C: 65</td>
<td>A: 110</td>
<td>T: 17.0</td>
</tr>
<tr>
<td></td>
<td>43.5 - 43.5</td>
<td>50</td>
<td>PN10.16</td>
<td></td>
<td>1</td>
<td>C: 65</td>
<td>A: 110</td>
<td>T: 17.0</td>
</tr>
<tr>
<td>50</td>
<td>48.0</td>
<td>50</td>
<td>PN10.16</td>
<td></td>
<td>1</td>
<td>C: 65</td>
<td>A: 110</td>
<td>T: 17.0</td>
</tr>
<tr>
<td>65</td>
<td>63.0</td>
<td>63.0</td>
<td>PN10.16</td>
<td></td>
<td>1</td>
<td>C: 65</td>
<td>A: 110</td>
<td>T: 17.0</td>
</tr>
<tr>
<td>80</td>
<td>85.7</td>
<td>80</td>
<td>PN10.16</td>
<td></td>
<td>1</td>
<td>C: 65</td>
<td>A: 110</td>
<td>T: 17.0</td>
</tr>
<tr>
<td>100</td>
<td>107.0</td>
<td>100</td>
<td>PN10.16</td>
<td></td>
<td>2</td>
<td>C: 90</td>
<td>A: 125</td>
<td>T: 17.0</td>
</tr>
<tr>
<td></td>
<td>133.2</td>
<td>100</td>
<td>PN10.16</td>
<td></td>
<td>2</td>
<td>C: 90</td>
<td>A: 135</td>
<td>T: 17.0</td>
</tr>
<tr>
<td>125</td>
<td>126.0</td>
<td>125</td>
<td>PN10.16</td>
<td></td>
<td>1</td>
<td>C: 90</td>
<td>A: 135</td>
<td>T: 17.0</td>
</tr>
<tr>
<td>150</td>
<td>158.2</td>
<td>150</td>
<td>PN10.16</td>
<td></td>
<td>2</td>
<td>C: 90</td>
<td>A: 125</td>
<td>T: 17.0</td>
</tr>
<tr>
<td>175</td>
<td>192.2</td>
<td>175</td>
<td>PN10.16</td>
<td></td>
<td>2</td>
<td>C: 125</td>
<td>A: 165</td>
<td>T: 17.0</td>
</tr>
<tr>
<td>200</td>
<td>218.1</td>
<td>200</td>
<td>PN10.16</td>
<td></td>
<td>2</td>
<td>C: 125</td>
<td>A: 165</td>
<td>T: 17.0</td>
</tr>
<tr>
<td>250</td>
<td>266.0</td>
<td>250</td>
<td>PN10.16</td>
<td></td>
<td>2</td>
<td>C: 125</td>
<td>A: 165</td>
<td>T: 17.0</td>
</tr>
<tr>
<td>300</td>
<td>315.0</td>
<td>300</td>
<td>PN10.16</td>
<td></td>
<td>2</td>
<td>C: 125</td>
<td>A: 200</td>
<td>T: 17.0</td>
</tr>
<tr>
<td>350</td>
<td>352.2</td>
<td>350</td>
<td>PN10.16</td>
<td></td>
<td>2</td>
<td>C: 125</td>
<td>A: 200</td>
<td>T: 17.0</td>
</tr>
<tr>
<td>400</td>
<td>398.2</td>
<td>400</td>
<td>PN10.16</td>
<td></td>
<td>2</td>
<td>C: 125</td>
<td>A: 200</td>
<td>T: 17.0</td>
</tr>
<tr>
<td>450</td>
<td>448.0</td>
<td>450</td>
<td>PN10.16</td>
<td></td>
<td>2</td>
<td>C: 125</td>
<td>A: 200</td>
<td>T: 17.0</td>
</tr>
<tr>
<td>500</td>
<td>498.0</td>
<td>500</td>
<td>PN10.16</td>
<td></td>
<td>2</td>
<td>C: 125</td>
<td>A: 200</td>
<td>T: 17.0</td>
</tr>
<tr>
<td>600</td>
<td>604.0</td>
<td>600</td>
<td>PN10.16</td>
<td></td>
<td>2</td>
<td>C: 195</td>
<td>A: 255</td>
<td>T: 17.0</td>
</tr>
<tr>
<td>676.0</td>
<td>726.0</td>
<td>600</td>
<td>PN10.16</td>
<td></td>
<td>2</td>
<td>C: 195</td>
<td>A: 255</td>
<td>T: 17.0</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Nominal Size</th>
<th>Gripping Product Gas Water</th>
<th>Flex Product Gas Water</th>
<th>Operating Temperature -20°C to +30°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>DN40 to DN300</td>
<td>5 bar 16 bar 16 bar</td>
<td>5 bar 10 bar 10 bar</td>
<td></td>
</tr>
<tr>
<td>DN350 to DN400</td>
<td>5 bar 10 bar 10 bar</td>
<td>5 bar 10 bar 10 bar</td>
<td></td>
</tr>
<tr>
<td>DN450 to DN600</td>
<td>N/A 10 bar N/A</td>
<td>N/A 10 bar N/A</td>
<td></td>
</tr>
</tbody>
</table>

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

| Socket Head Cap Screw M12 | Nm 55 - 70 |
| Socket Head Cap Screw M16 | Nm 95 - 120 |
| Socket Head Cap Screw M20 | Nm 210 - 230 |

Every effort has been made to ensure that the information contained in this publication is accurate at the time of publishing. Crane Ltd assumes no responsibility or liability for typographical errors or omissions or for any misinterpretation of the information within the publication and reserves the right to change without notice.
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 Helden 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:
- Gleitmo 900 (Dry Film Lubricant)
Nuts:
- Geomet 500

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 \( \text{Al}_2\text{O}_3 \) and a hexagonal crystal structure (rock-forming mineral that is found in igneous, metamorphic, and sedimentary rocks).

Every effort has been made to ensure that the information contained in this publication is accurate at the time of publishing. Crane Ltd assumes no responsibility or liability for typographical errors or omissions or for any misinterpretation of the information within the publication and reserves the right to change without notice.
Reducing Coupling

UltraGrip Reducing Couplings

<table>
<thead>
<tr>
<th>Nominal Size</th>
<th>Size Range</th>
<th>Insertion Depth</th>
<th>Dimensions</th>
<th>Bolts</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small End</td>
<td>Large End</td>
<td>Small End</td>
<td>Large End</td>
<td>Small End (D1)</td>
<td>Large End (D2)</td>
</tr>
<tr>
<td>32</td>
<td>40</td>
<td>36.0</td>
<td>43.5</td>
<td>63.5</td>
<td>65</td>
</tr>
<tr>
<td>80</td>
<td>100</td>
<td>85.7</td>
<td>133.2</td>
<td>133.2</td>
<td>107.0</td>
</tr>
<tr>
<td>100</td>
<td>125</td>
<td>107.0</td>
<td>133.2</td>
<td>160.2</td>
<td>90</td>
</tr>
<tr>
<td>100</td>
<td>150</td>
<td>107.0</td>
<td>133.2</td>
<td>158.2</td>
<td>90</td>
</tr>
<tr>
<td>125</td>
<td>150</td>
<td>132.2</td>
<td>160.2</td>
<td>158.2</td>
<td>90</td>
</tr>
<tr>
<td>150</td>
<td>175</td>
<td>158.2</td>
<td>192.2</td>
<td>192.2</td>
<td>90</td>
</tr>
<tr>
<td>175</td>
<td>200</td>
<td>192.2</td>
<td>226.9</td>
<td>218.1</td>
<td>125</td>
</tr>
<tr>
<td>200</td>
<td>250</td>
<td>218.1</td>
<td>256.0</td>
<td>266.0</td>
<td>125</td>
</tr>
<tr>
<td>250</td>
<td>300</td>
<td>266.0</td>
<td>310.0</td>
<td>356.0</td>
<td>125</td>
</tr>
<tr>
<td>300</td>
<td>400</td>
<td>398.0</td>
<td>442.0</td>
<td>492.0</td>
<td>125</td>
</tr>
<tr>
<td>400</td>
<td>500</td>
<td>498.0</td>
<td>552.0</td>
<td>580.0</td>
<td>140</td>
</tr>
<tr>
<td>500</td>
<td>600</td>
<td>604.0</td>
<td>648.0</td>
<td>726.0</td>
<td>195</td>
</tr>
</tbody>
</table>

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.

Working Pressure & Temperature Ratings

<table>
<thead>
<tr>
<th>Nominal Size</th>
<th>Gripping Product</th>
<th>Operating Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>DN40 to DN300</td>
<td>5 bar, 16 bar</td>
<td>-20°C to +30°C</td>
</tr>
<tr>
<td>DN350 to DN400</td>
<td>5 bar, 10 bar</td>
<td></td>
</tr>
<tr>
<td>DN450 to DN600</td>
<td>N/A, 10 bar</td>
<td></td>
</tr>
</tbody>
</table>

Every effort has been made to ensure that the information contained in this publication is accurate at the time of publishing. Crane Ltd assumes no responsibility or liability for typographical errors or omissions or for any misinterpretation of the information within the publication and reserves the right to change without notice.
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 Helden 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:
➤ Gleitmo 900 (Dry Film Lubricant)
Nuts:
➤ Geomet 500

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 Al₂O₃ and a hexagonal crystal structure (rock-forming mineral that is found in igneous, metamorphic, and sedimentary rocks).
Next Generation UltraGrip Pecatadaptors & End Caps

Datasheet

Every effort has been made to ensure that the information contained in this publication is accurate at the time of publishing. Crane Ltd assumes no responsibility or liability for typographical errors or omissions or for any misinterpretation of the information within the publication and reserves the right to change without notice.

UltraGrip Pecatadaptors

<table>
<thead>
<tr>
<th>Nom Size</th>
<th>Size Range</th>
<th>PE</th>
<th>Insertion Depth (D)</th>
<th>Dimensions Overall</th>
<th>PE Pipe End</th>
<th>Bolts Size</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>80</td>
<td>85.7 - 107.0</td>
<td>90</td>
<td>11</td>
<td>65 - 95</td>
<td>212 - 682</td>
<td>496</td>
<td>3-M12 x 70</td>
</tr>
<tr>
<td>100</td>
<td>107.0 - 133.2</td>
<td>110</td>
<td>11</td>
<td>90 - 115</td>
<td>280 - 708</td>
<td>496</td>
<td>3-M16 x 93</td>
</tr>
<tr>
<td>125</td>
<td>133.2 - 160.2</td>
<td>125</td>
<td>11</td>
<td>90 - 115</td>
<td>305 - 727</td>
<td>496</td>
<td>3-M16 x 93</td>
</tr>
<tr>
<td>150</td>
<td>160.2 - 192.2</td>
<td>160</td>
<td>11</td>
<td>90 - 125</td>
<td>339 - 730</td>
<td>496</td>
<td>4-M16 x 93</td>
</tr>
<tr>
<td>200</td>
<td>256.0 - 225.1</td>
<td>225</td>
<td>11</td>
<td>125 - 165</td>
<td>432 - 751</td>
<td>496</td>
<td>5-M16 x 93</td>
</tr>
</tbody>
</table>

UltraGrip End Caps

<table>
<thead>
<tr>
<th>Nom Size</th>
<th>Size Range</th>
<th>Insertion Depth (D)</th>
<th>Dimensions Axial</th>
<th>Dimensions Radial</th>
<th>Bolts Size</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>43.5 - 63.5</td>
<td>65</td>
<td>95</td>
<td>1/2&quot; - 2&quot;</td>
<td>1/2&quot; - 3/4&quot;</td>
<td>168 - 150</td>
</tr>
<tr>
<td>65</td>
<td>63.0 - 83.7</td>
<td>65</td>
<td>95</td>
<td>1/2&quot; - 2&quot;</td>
<td>1/2&quot; - 3/4&quot;</td>
<td>189 - 150</td>
</tr>
<tr>
<td>80</td>
<td>85.7 - 107.0</td>
<td>65</td>
<td>110</td>
<td>1/2&quot; - 2&quot;</td>
<td>1/2&quot; - 3/4&quot;</td>
<td>212 - 166</td>
</tr>
<tr>
<td>100</td>
<td>107.0 - 133.2</td>
<td>90</td>
<td>125</td>
<td>1/2&quot; - 2&quot;</td>
<td>1/2&quot; - 1&quot;</td>
<td>280 - 197</td>
</tr>
<tr>
<td>125</td>
<td>133.2 - 160.2</td>
<td>90</td>
<td>135</td>
<td>1/2&quot; - 2&quot;</td>
<td>1/2&quot; - 1&quot;</td>
<td>305 - 215</td>
</tr>
<tr>
<td>150</td>
<td>160.2 - 192.2</td>
<td>90</td>
<td>135</td>
<td>1/2&quot; - 2&quot;</td>
<td>1/2&quot; - 1&quot;</td>
<td>339 - 219</td>
</tr>
<tr>
<td>175</td>
<td>192.2 - 226.9</td>
<td>125</td>
<td>165</td>
<td>1/2&quot; - 2&quot;</td>
<td>1/2&quot; - 1&quot;</td>
<td>403 - 235</td>
</tr>
<tr>
<td>200</td>
<td>218.1 - 256.0</td>
<td>125</td>
<td>165</td>
<td>1/2&quot; - 2&quot;</td>
<td>1/2&quot; - 1&quot;</td>
<td>432 - 237</td>
</tr>
<tr>
<td>250</td>
<td>266.0 - 310.0</td>
<td>125</td>
<td>165</td>
<td>1/2&quot; - 2&quot;</td>
<td>1/2&quot; - 2&quot;</td>
<td>476 - 309</td>
</tr>
<tr>
<td>300</td>
<td>315.0 - 356.0</td>
<td>125</td>
<td>165</td>
<td>1/2&quot; - 2&quot;</td>
<td>1/2&quot; - 2&quot;</td>
<td>522 - 310</td>
</tr>
</tbody>
</table>

Working Pressure & Temperature Ratings

<table>
<thead>
<tr>
<th>Nominal Size</th>
<th>GRIpping Product</th>
<th>Flex Product</th>
<th>Operating Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>DN40 to DN300</td>
<td>5 bar</td>
<td>5 bar</td>
<td>-20°C to +30°C</td>
</tr>
<tr>
<td>DN350 to DN400</td>
<td>10 bar</td>
<td>10 bar</td>
<td></td>
</tr>
<tr>
<td>DN450 to DN600</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Bolt Size</th>
<th>Nm</th>
</tr>
</thead>
<tbody>
<tr>
<td>M12</td>
<td>55 - 70</td>
</tr>
<tr>
<td>M16</td>
<td>95 - 120</td>
</tr>
<tr>
<td>M20</td>
<td>210 - 230</td>
</tr>
</tbody>
</table>

Every effort has been made to ensure that the information contained in this publication is accurate at the time of publishing. Crane Ltd assumes no responsibility or liability for typographical errors or omissions or for any misinterpretation of the information within the publication and reserves the right to change without notice.
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 Helden for further details.

Pecatadapters length of PE accommodates:
➤ 2 Electrofusion connections

End Cap Optional - drilled & tapped bosses available:
➤ Axial – to act as inlet/drainage point
   (Min=1/2", Max=2" - all sizes)
➤ Radial – to act as air release/bleed hole
   (Min=1/2", Max=2" - depending on diameter)

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

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

Approvals
The following water contact materials used in UltraGrip are approved for use with potable water:
Rilsan Nylon 11:
➤ WRAS, KIWA, 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

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: Gleitmo 900 (Dry Film Lubricant)
➤ End Caps: Sheraplex to WIS 4-52-03
Nuts:
➤ Geomet 500

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 Al₂O₃ and a hexagonal crystal structure (rock-forming mineral that is found in igneous, metamorphic, and sedimentary rocks).

Every effort has been made to ensure that the information contained in this publication is accurate at the time of publishing. Crane Ltd assumes no responsibility or liability for typographical errors or omissions or for any misinterpretation of the information within the publication and reserves the right to change without notice.
## UltraGrip Stainless Steel Support Liners

### For PE Pipes

<table>
<thead>
<tr>
<th>Pipe OD</th>
<th>T (mm)</th>
<th>L (mm)</th>
<th>W (mm)</th>
<th>No Wedges</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>1.5</td>
<td>110</td>
<td>–</td>
<td>None</td>
</tr>
<tr>
<td>50</td>
<td>1.5</td>
<td>110</td>
<td>–</td>
<td>None</td>
</tr>
<tr>
<td>63</td>
<td>1.0</td>
<td>135</td>
<td>220</td>
<td>1</td>
</tr>
<tr>
<td>75</td>
<td>1.0</td>
<td>135</td>
<td>220</td>
<td>1</td>
</tr>
<tr>
<td>90</td>
<td>1.0</td>
<td>135</td>
<td>220</td>
<td>1</td>
</tr>
<tr>
<td>110</td>
<td>1.0</td>
<td>150</td>
<td>220</td>
<td>1</td>
</tr>
<tr>
<td>125</td>
<td>1.0</td>
<td>150</td>
<td>220</td>
<td>1</td>
</tr>
<tr>
<td>140</td>
<td>1.0</td>
<td>150</td>
<td>220</td>
<td>1</td>
</tr>
<tr>
<td>160</td>
<td>1.0</td>
<td>175</td>
<td>220</td>
<td>1</td>
</tr>
<tr>
<td>180</td>
<td>1.0</td>
<td>175</td>
<td>220</td>
<td>1</td>
</tr>
<tr>
<td>200</td>
<td>2.0</td>
<td>210</td>
<td>220</td>
<td>1</td>
</tr>
<tr>
<td>225</td>
<td>2.0</td>
<td>180</td>
<td>300</td>
<td>1</td>
</tr>
<tr>
<td>250</td>
<td>2.0</td>
<td>180</td>
<td>300</td>
<td>1</td>
</tr>
<tr>
<td>280</td>
<td>2.0</td>
<td>200</td>
<td>300</td>
<td>1</td>
</tr>
<tr>
<td>315</td>
<td>2.0</td>
<td>200</td>
<td>300</td>
<td>1</td>
</tr>
<tr>
<td>355</td>
<td>2.0</td>
<td>200</td>
<td>300</td>
<td>1</td>
</tr>
<tr>
<td>400</td>
<td>2.0</td>
<td>200</td>
<td>300</td>
<td>1</td>
</tr>
<tr>
<td>450</td>
<td>3.0</td>
<td>240</td>
<td>300</td>
<td>2</td>
</tr>
<tr>
<td>500</td>
<td>3.0</td>
<td>240</td>
<td>300</td>
<td>2</td>
</tr>
<tr>
<td>560</td>
<td>3.0</td>
<td>240</td>
<td>300</td>
<td>2</td>
</tr>
<tr>
<td>630</td>
<td>3.0</td>
<td>240</td>
<td>300</td>
<td>2</td>
</tr>
<tr>
<td>710</td>
<td>3.0</td>
<td>240</td>
<td>300</td>
<td>2</td>
</tr>
</tbody>
</table>

**Table Key**

✓ = Requires a Support Liner and products available

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

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

### UltraGrip Stainless Steel Support Liners

**For Metric PVC Pipes**

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

**Materials**

Stainless steel

ASTM, AISI 304

Note: If PVC pipe wall thickness is thinner than stated in table contact Helden 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.
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.

We hope our communications have an impact on you - but not the environment - we have taken steps to ensure this brochure is printed on Forestry Stewardship Council material and the paper is made by a totally chlorine free process.

*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.

Every effort has been made to ensure that the information contained in this publication is accurate at the time of publishing. Crane Ltd assumes no responsibility or liability for typographical errors or omissions or for any misinterpretation of the information within the publication and reserves the right to change without notice.