Applications

Water Products

Gas Products

Industrial Applications including:

- Oil based & petroleum products
- Chemicals
- Sewage
- General industrial processing

Pipe Materials Selector 34

Datasheet Index 255

Pipe Materials

- ABS
- Clay
- Concrete
- Aluminum
- Bronze
- Copper
- Cast

Note: The choice of gasket material must be appropriate for each service to ensure successful operation (see pages 251-254 for further information)
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Dubai - United Arab Emirates

Sewage Pumping Station

Dismantling Joints
Various sizes up to DN1600

Project
DS161 - Sewage Pumping Station

Client
Dubai Municipality

Contractor
Hedley International Emirates Contracting LLC
(Now called Bin Hafeez Contracting)

Consultant
ACE International

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

Helden started life in the 1970’s as part of the worldwide Dresser Corporation but in the early 1990’s, the Dresser Couplings facility in the Netherlands was purchased by Victaulic PLC and the company name was changed to Helden Couplings. In 1995, Victaulic PLC was acquired by Glynwed Pipe Systems and the Dutch operation became GPS Couplings BV. In 2003, the GPS coupling businesses were sold to Crane Ltd. and the Helden brand became part of Crane Building Services & Utilities portfolio of products.

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

Helden today are pioneers in the manufacturing of couplings, flange adaptors, and pipe repair solutions for the water, wastewater, gas and industrial markets.
Our Heritage

Crane Building Services & Utilities forms part of the Fluid Handling Group within Crane Co., which was founded in 1855, and is now a multi-industry manufacturer that generated net sales of $3.3bn in 2018.

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

- Crane Limited founded in Ipswich in 1919
- Viking Johnson founded in Hitchin in the 1930’s
- WASK founded in Keighley in 1888
- Delta Fluid Products founded in St Helens in 1900
- Helden founded in the Netherlands in the 1970’s

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

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

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

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

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

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

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

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

**POSIFLEX**

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

**SPERRYN GAS CONTROLS**

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

**WASK**

Market leader in the supply of specialist mains and service fittings, along with pipeline equipment of the highest quality, WASK is renowned in the global gas distribution market. WASK Teeset and bagging-off equipment has become a standard in the UK gas industry and in many markets overseas. Latest additions to the range include a unique riser and lateral modular system which allows PE pipework to supply gas into single or multiple occupancy dwellings.
For over 100 years the Hattersley brand has become synonymous with quality, reliability and excellent service.

A variety of traditional valves, including ball, butterfly, check, gate & globe valves as well as a range of balancing solutions - for constant & variable flow systems are available. In addition there is a range of public health valves which includes thermal circulation valves which help to prevent Legionnaires’ disease.

NABIC™

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

Crane Fluid Systems has manufactured for more than 100 years a range of malleable iron and bronze pipe fittings, traditional valves, as well as a range of commissioning valves for static and variable flow systems which includes a PICV terminal unit range.

Wade™

An extensive range of low and medium pressure, brass compression fittings, valves and accessories. The range also covers SISTEM-P and compact push-in fittings, nickel-plated BSP fittings, quick release couplings, and tubing.
Crane Building Services & Utilities - Timeline

1855
- Crane Co. founded
- Richard Teller Crane

1855-65
- American Civil War

1861
- WASK founded by Walter A. Slingsby of Keighley (hence the acronym)

1865
- Trans-Siberian Railway completed

1888
- London hosts Olympic Games

1903
- Wright Brothers achieve sustained controlled powered flight

1904
- Original Johnson Couplings made by The Victaulic Company Ltd. (part of Stewarts & Lloyds group)

1908
- WW1 begins

1912
- Titanic sinks

1914
- WW1

1918
- Women vote in a general election for the first time
- WW1 ends

1920
- The Victory Pipe Joint Company was formed shortly after World War 1

1923
- Mallard breaks world speed record for steam locomotives

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

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

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

1938
- Victaulic moved to ten acre green field site in Hitchin

1939
- WW2 begins

1940
- 1942
- 1945
- 1966
- 1976
- 1980

1942
- WW2 ends
- Original Johnson Couplings made by The Victaulic Company Ltd. (part of Stewarts & Lloyds group)

1945
- England win the World Cup
- Neil Armstrong is the first man on the moon

1966
- Concorde enters service

1976
- Introduction of many new products - MaxiFit, FlexLock, EasiClamp

1879
- Margaret Thatcher First female Prime Minister

1980
- Margaret Thatcher First female Prime Minister

Telephone: +44 (0)1462 443322
<table>
<thead>
<tr>
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<th>Event</th>
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<tr>
<td>1983</td>
<td>Richard Noble breaks World Land Speed Record</td>
</tr>
<tr>
<td>1989</td>
<td>Berlin Wall comes down</td>
</tr>
<tr>
<td>1990</td>
<td>Water pipelines in El Arish, Egypt</td>
</tr>
<tr>
<td>1992</td>
<td>Helden, WASK and Viking Johnson acquired by Crane Co.</td>
</tr>
<tr>
<td>1993</td>
<td>Nelson Mandela wins Nobel Peace Prize</td>
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<tr>
<td>1994</td>
<td>Eurotunnel officially opens</td>
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<tr>
<td>1998</td>
<td>Delta Fluid Products acquired by Crane Co.</td>
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<tr>
<td>1998</td>
<td>Through Bore Hydrant SBWWI best product innovation award</td>
</tr>
<tr>
<td>1999</td>
<td>Large Diameter high pressure couplings for the mining sector, Chile</td>
</tr>
<tr>
<td>2000</td>
<td>Helden, AquaFast</td>
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<td>2002</td>
<td>The Euro enters circulation</td>
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<td>2003</td>
<td>Next Generation UltraGrip and Remote Repair Clamp - the latter won SBWWI best product innovation award</td>
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<td>2004</td>
<td>Hattersley acquired by Crane Co.</td>
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<td>2005</td>
<td>UltraGrip, AquaFast</td>
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<td>2008</td>
<td>Delta Fluid Products acquired by Crane Co.</td>
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<td>2009</td>
<td>London hosts Olympic Games, LinerGrips are supplied to the Olympic Village</td>
</tr>
<tr>
<td>2010</td>
<td>Large Diameter DN600</td>
</tr>
<tr>
<td>2012</td>
<td>Multi-million pound investment in manufacturing plant at Hitchin</td>
</tr>
<tr>
<td>2013</td>
<td>Lincoln hosts Olympic Games, LinerGrips are supplied to the Olympic Village</td>
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<tr>
<td>2014</td>
<td>Large Diameter high pressure couplings for the mining sector, Chile</td>
</tr>
<tr>
<td>2015</td>
<td>Polyester and steel pipe connection</td>
</tr>
<tr>
<td>2017</td>
<td>Through Bore Hydrant SBWWI best product innovation award</td>
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<tr>
<td>2018</td>
<td>Multi-million pound investment in manufacturing plant at Hitchin</td>
</tr>
<tr>
<td>2019</td>
<td>Queen Elizabeth II becomes the longest reigning UK monarch</td>
</tr>
<tr>
<td>2020</td>
<td>5 million MaxiFit sold worldwide</td>
</tr>
<tr>
<td>2021</td>
<td>6 million MaxiFit sold worldwide</td>
</tr>
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World Leaders in what we do...

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

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

Quality

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

Helden operates a quality management system accredited to ISO 9001 combined with an environmental policy accredited to ISO 14001.
Helden products have a design life expectancy of 50 years and form a crucial part of treatment, distribution and waste networks. To ensure the future integrity of a pipeline, it is vitally important that products are structurally sound and dimensionally stable. Most Helden products are manufactured in the UK, on a 14 acre manufacturing facility in Hitchin, by a skilled and experienced workforce. To produce a comprehensive range of over 7,000 product lines, from raw materials through fabrication, coating and finishing, every manufacturing step is carefully considered.

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

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

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

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

Helden’s investment in processes and equipment ensures optimal product integrity through elimination of product performance variation.

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

Phase 1 Investment 2011-12

Phase 2 Investment 2019-20

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

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

10ft Shot Blaster
This is a German Krapf & Lex machine bespoke for Helden applications. The table diameter is 3m and is used to shot blast large diameter sleeves, flange rings, adaptors and dismantling joint parts.

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

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

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

Ovens

Manufactured by RDM, this is a twin box oven using 220kW Lanemark burners. The temperature range is between 150-320ºC. Internal space is 22m³.

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

Large Diameter Dipping Tank

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

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

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

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

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

The Robots work in pairs as master-slave which is controlled by a Motoman DX200 controller. The controller unit can hold a large number of dipping programs for moving parts in different axes. It also provides built in Programmable Logic Controllers (PLC) for processing various parts very efficiently thus reducing process cycle time.
Primer Bay
This is RDM’s fully modular twin spray booth with internal dimension of 66m³.

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

Oven
The oven is RDM’s modular forced fan air recirculation type tunnel oven. Internal dimensions are 53m³.

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

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

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

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

Product Assembly Areas
This is the area in which the parts are assembled after the coating and cooling process.
Ongoing Investment - Improves Customer Leadtimes

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

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

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

Leadtime: 10 Days

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

Leadtime: 20 Days

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

Consult Factory
International Locations

Locations

Ipswich
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(Manufacturing)
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Ningjin
00863195856825
China
Hebei
Tel: +86 319 5802730
Corrosion Protection - Rilsan Coating

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

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

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

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

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

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

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

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

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

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

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

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

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

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

See the relevant product pages for full information.
4th July 2019
Centenary Celebrations - Hitchin
Good People Make Good Things Happen

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

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

**Repair or under pressure drilling/tapping on an existing pipeline**
- Repair pipeline by cutting out a section of pipe
  - End restraint/locking connection required
  - Non end restraint/locking connection required
- Repair pipeline whilst under pressure in service
  - Circumferential break
  - Impact damage • Hole • Split • Pin hole corrosion
  - Leaking spigot & socket joint
- Under pressure drilling/tapping
  - End restraint/locking connection required
  - Non end restraint/non locking connection required

**Join plain ended pipes**
- End restraint/locking connection required
- Non end restraint/non locking connection required

**Connect plain ended pipe to flanged equipment**
- End restraint/locking connection required
- Non end restraint/non locking connection required

**Provide adjustment to flanged pipework**

**Connect pipe with end load capability**
- Plain ended pipe- end restraint/locking connection required

**Relining of existing pipelines - end termination fittings**
- Rehabilitation of pipelines using scrape and reline
  - Rehabilitation of pipelines using thin walled polyethylene liners

**Pipelines through concrete structures**

**Marine**

**Flow Control**
For product pipe material and size compatibility refer to the Product Pipe Material Selector on page 34.

Applications

Water Products

Gas Products

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

Note: The choice of gasket material must be appropriate for each service to ensure successful operation (see pages 251-254 for further information).
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### Standard Outside Diameter Chart

#### NOMINAL BORE

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#### IMPERIAL CAST IRON & ASBESTOS CEMENT (TURNED END)

- BS1211 (1981) (UTI 27" NB)
- BS78 (1981) BS486 (1966)
- BS EN 10225-2004
- BS EN 10255:2004 & BS EN 10217-2002
- BS EN 10216:2013 & BS EN 10224:2002

#### STEEL

- ISO/4200 (1991)
- BS EN 10053:2019 & BS EN 1620-2006
- BS EN 649:2019
- BS EN 10220:2002 & BS EN 10217-2002
- BS EN 10216:2013 & BS EN 10224:2002
- BS EN 10220:2002

#### PVC-U & POLYETHYLENE

- PVC-U & POLYETHYLENE

### PVC-U & POLYETHYLENE

- METRIC PVC-U & PE HAVE A DESIGNATED NOMINAL BORE WHICH IS USUALLY THE SAME AS THE OUTSIDE DIAMETER.

### METRIC

- BS ISO 11922-1 (1997)

### Note:

More details available on request

www.helden-web.com

Helden

33
# Pipe Material Product Selector For Couplings, Stepped Couplings & Flange Adaptors

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

<table>
<thead>
<tr>
<th>Product Groups</th>
<th>Nominal Size Range (mm)</th>
<th>Ductile Iron</th>
<th>Cast Iron</th>
<th>Stainless Steel</th>
<th>PVC</th>
<th>PEX</th>
<th>Polypropylene</th>
<th>MDPE/PE80</th>
<th>MDPE/PE100</th>
<th>GRP</th>
<th>ABS</th>
<th>Clay</th>
<th>Concrete</th>
<th>Alkali Resistant</th>
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**Note:** A Heldens product is suitable up to a stated working pressure rating for a given pipe material.

(A) Pipe material is suitable within Heldens product OD tolerance range.

(B) Restrained Products - Accommodate end load forces due to internal pressure in pipe.

(C) Flexible Products - Do not accommodate end load and adequate external support must be provided.

(D) Restrained Products - Accommodate end load forces in accordance with PE liner unrestrained pressure capability.

(1) Please contact Heldens Marketing department for further details.

(2) Only as Flex Version.

(3) Only as Gripping version with a support liner.

(4) Available up to DN200 (limited performance).

(5) May require a support liner - see technical literature.

(6) May require reduced bolt torque - Contact Heldens.

(7) Limited performance.

(8) Short length up to and including 1m of PE when used with a support liner.
Now Includes MaxiFit Plus

MaxiFit
Wide Tolerance Range
Mechanical Pipe Fitting Technology

BS EN 14525
Ductile Iron
Couplings & Flange Adapters*

VC 669122

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

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

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

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

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

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

Overview

The Flexible Solution for Pipe Repairs

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

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

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

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

Pipe Materials

- Ductile Iron
- Cast Iron
- Steel
- Stainless Steel
- PVC
- HEPPO
- GRP
- ABS
- Concrete
- Asbestos Cement
- Copper

Use of limited lengths in repairs only

*Note: MaxiFit can ONLY be used to make a repair that involves cutting out a section of pipe (cast iron, ductile iron, steel, AC) and inserting a short length of PE if and only if:
- The length of the PE does not exceed 1m if a standard MaxiFit is used and 2m if a MaxiFitXtra is used.
- A close fit support liner is used on the PE.
- MaxiFit cannot be used to connect long lengths of PE pipe together at any time. This is only applicable for:
  - MaxiFit Couplings
  - MaxiFit Plus Couplings
  - MaxiFitXtra Couplings
**MaxiFit Plus** Range

**Product Design Benefits**

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

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

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

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

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

Product Design Benefits

Optimised Gasket Design
A unique gasket with distinctive circumferential ribs provides a ‘slide easy’ fit for maximum sealing on scored, corroded or pitted pipe.

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

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

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

Customer Benefits

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

Product Design Benefits

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

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

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

MaxiDaptor

Product Design Benefits

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

- **Exceptional Sealing Capabilities**
  Flanges have an extended sealing face.

- **Accommodates Pipe Movement**
  All models accommodate angularity between pipes which allows for normal pipeline movement caused by to ground settlement. Flange adaptors have a total angular deflection of 3°.
MaxiFit Large Diameter

Product Design Benefits

Simple to Fit

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

MaxiCap & MaxiThread End Cap

Product Design Benefits

Simple to Fit

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

MaxiCap & MaxiThread End Cap

Product Design Benefits

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### MaxiFit Plus Couplings, Flange Adaptors & End Caps

#### MaxiFit Plus Couplings & End Caps

<table>
<thead>
<tr>
<th>Nominal Size (mm)</th>
<th>Size Range (mm)</th>
<th>Diameter (mm)</th>
<th>Overall Length (mm)</th>
<th>Sleeve Length x Thickness (mm)</th>
<th>Sleeve Setting Gap (mm)</th>
<th>Bolts No-Dia X Length (mm)</th>
<th>Gasket Mould</th>
<th>Weight (kg)</th>
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For other sizes of coupling, please see MaxiFit Coupling Datasheets.

#### MaxiFit Plus Flange Adaptors

<table>
<thead>
<tr>
<th>Nominal Size (mm)</th>
<th>Size Range (mm)</th>
<th>Bore (mm)</th>
<th>Overall Length (mm)</th>
<th>Sleeve Length x Thickness (mm)</th>
<th>Flange Drilling Options</th>
<th>Setting Gap (mm)</th>
<th>Bolts No-Dia X Length (mm)</th>
<th>Gasket Mould</th>
<th>Weight (kg)</th>
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<td></td>
<td></td>
<td>PN10 / 16</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>PN10 / 16</td>
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<td>PN10 / 16</td>
<td>80 x 5</td>
<td>3-M12 x 115</td>
<td>12392/3</td>
<td>3.8</td>
<td></td>
</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>PN10 / 16</td>
<td>80 x 5</td>
<td>3-M12 x 115</td>
<td>12392/4</td>
<td>4.7</td>
<td></td>
</tr>
<tr>
<td>DN100</td>
<td>107</td>
<td>132</td>
<td>228</td>
<td>75 x 5</td>
<td>PN10 / 16</td>
<td>100 x 5</td>
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<td></td>
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For other sizes of flange adaptors, please see MaxiDaptor Datasheets.

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**MaxiFit Plus** Couplings, Flange Adaptors & End Caps

### Technical Information

**Working Pressure Rating**
- Water: 16 bar
- Gas: 6 bar

**Vacuum Pressure**
- Capable of accommodating a vacuum pressure of -0.7 bar

**Site Test Pressure**
- 1.5 times working pressure for short duration (2 hours)

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

**Angularity**
- Couplings: 6°
- Flange Adaptors: 3°

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

**Bolt Torque/Spanner**
- M12; Torque 55-65Nm on every bolt
- Spanner size A/F 19mm

**Temperature Rating of Product**
- EPDM: -20°C to +90°C
- Nitrile: -20°C to +90°C

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

**End Load Due to Internal Pressure**
MaxiFit DOES NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out.

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

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

DN40 to DN300 MaxiFit has been independently tested by BSI to confirm it meets the requirements of BS EN 14525 (VG 669122)

**Materials & Relevant Standards**

**End Ring and Adaptor Body**
- Ductile Iron to BS EN 1563 Symbol EN GJS-450-10

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

**Gasket**
- EPDM compound Grade E to BS EN 681-1, Type WA, WC
- Nitrile compound to Grade G BS EN 682, Type G

**Coating**
- Sleeve, Adaptor Body & End Ring:
  - Rilsan Nylon 11 to WIS 4-52-01 Part 1
  - Bolts & Nuts:
  - Sheraplex to WIS 4-52-03
- Stainless Steel to BS 1449:Part 2 Grade 304 S15

**Tee Bolts/Bolts**
- Standard - Steel to BS EN ISO 898-1 Property Class 4.8
- Option - Stainless Steel to BS EN ISO 3506-1: grade A4 property class 50

**Nuts**
- Standard - Steel to BS EN 4190 Grade 4
- Option - Stainless Steel to BS EN ISO 3506-2: grade A4 property class 80

**Washers**
- Stainless Steel to BS 1449:Part 2 Grade 304 S15

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MaxiFit & MaxiFitXtra Couplings & End Caps

Datasheet 1/2

Coupling

MaxiFit Couplings - Standard Sleeve & End Caps

<table>
<thead>
<tr>
<th>Nominal Size (mm)</th>
<th>Size Range (mm)</th>
<th>Diameter (mm)</th>
<th>Overall Length (mm)</th>
<th>Sleeve Length x Thickness (A x T)</th>
<th>Setting Gap (mm)</th>
<th>Bolts No.-Dia x Length</th>
<th>Gasket Mould No.</th>
<th>Weight (kg)</th>
<th>MaxiCap Available</th>
<th>Maximum Threaded Outlet</th>
<th>MaxiFit Plus Available</th>
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MaxiFitXtra Couplings - Long Sleeve & End Caps

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<th>Nominal Size (mm)</th>
<th>Size Range (mm)</th>
<th>Diameter (mm)</th>
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<th>Sleeve Length x Thickness</th>
<th>Setting Gap (mm)</th>
<th>Bolts No.-Dia x Length</th>
<th>Gasket Mould No.</th>
<th>Weight (kg)</th>
<th>MaxiCap Available</th>
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<td>4-M12 x 275</td>
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<td>10.3</td>
<td>✓</td>
<td>2&quot;</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>DN175</td>
<td>189.0 - 212.0</td>
<td>306.5 - 285.0</td>
<td>190.0 x 6.0</td>
<td>25.0 - 110.0</td>
<td>4-M12 x 275</td>
<td>12392/9</td>
<td>12.1</td>
<td>✓</td>
<td>2&quot;</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>DN200</td>
<td>218.0 - 244.0</td>
<td>342.5 - 285.0</td>
<td>190.0 x 6.0</td>
<td>25.0 - 110.0</td>
<td>4-M12 x 275</td>
<td>12392/10</td>
<td>14.1</td>
<td>✓</td>
<td>2&quot;</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>DN225</td>
<td>243.0 - 269.0</td>
<td>367.5 - 350.0</td>
<td>250.0 x 6.0</td>
<td>25.0 - 165.0</td>
<td>6-M12 x 340</td>
<td>12392/11</td>
<td>18.6</td>
<td>✓</td>
<td>2&quot;</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>DN250</td>
<td>266.0 - 295.0</td>
<td>399.5 - 350.0</td>
<td>250.0 x 6.0</td>
<td>25.0 - 165.0</td>
<td>6-M12 x 340</td>
<td>12392/12</td>
<td>21.4</td>
<td>✓</td>
<td>2&quot;</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>DN300</td>
<td>315.0 - 349.0</td>
<td>462.5 - 350.0</td>
<td>240.0 x 6.0</td>
<td>25.0 - 155.0</td>
<td>8-M12 x 340</td>
<td>12392/14</td>
<td>27.0</td>
<td>✓</td>
<td>2&quot;</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

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MaxiFit & MaxiFitXtra Couplings & End Caps

Technical Information

**Working Pressure Rating**
- Water 16 bar
- Gas 6 bar

**Vacuum Pressure**
Capable of accommodating a vacuum pressure of -0.7 bar

**Site Test Pressure**
1.5 times working pressure for short duration (2 hours)

**Angularity**
Couplings 6°
The above are for when the product is on maximum pipe outside diameters; can achieve larger ones with smaller pipe diameters.

**Bolt Torque/Spanner**
- M12; Torque 55-65Nm on every bolt
- Spanner size A/F 19mm

**Temperature Rating of Product**
- EPDM -20°C to +90°C
- Nitrile -20°C to +90°C

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

**End Load Due to Internal Pressure**
MaxiFit DOES NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out.

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

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

DN40 to DN300 MaxiFit has been independently tested by BSI to confirm it meets the requirements of BS EN 14525 (VC 669122)

**Materials & Relevant Standards**

**End Ring, Adaptor Body/Centre Sleeve and End Cap**
- Ductile Iron to BS EN 1563 Symbol EN GJS-450-10

**Gasket**
- EPDM compound Grade E to BS EN 681-1, Type WA, WC
- Nitrile compound to Grade G BS EN 682, Type G

**Coating**
- Sleeve & End Ring:
  - Rilsan Nylon 11 to WIS 4-52-01 Part 1
  - Sheraplex to WIS 4-52-03

- Bolts & Nuts:
  - Steel to BS EN ISO 898-1: property class 4.8
  - Stainless Steel to BS EN ISO 3506-1: grade A4 property class 50

- Washers
  - Stainless Steel to BS 1449:Part 2 Grade 304 S15

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MaxiStep Reducing Couplings

Datasheet 1/2

Reducing Coupling

![Diagram of a reducing coupling with dimensions labeled L, A, and B.]

### MaxiStep Reducing Couplings

<table>
<thead>
<tr>
<th>Nom Size</th>
<th>Size Range (mm)</th>
<th>Diameter (mm)</th>
<th>Overall Length (mm)</th>
<th>Sleeve Length x Thickness</th>
<th>Setting Gap (mm)</th>
<th>Bolts No.-Dia x Length</th>
<th>Gasket Mould No.</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Small End</td>
<td>Large End</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Min</td>
<td>Max</td>
<td>Min</td>
<td>Max</td>
<td>Min</td>
<td>Max</td>
<td>(A) x (T)</td>
<td>Min</td>
</tr>
<tr>
<td>50/65</td>
<td>57.0</td>
<td>74.0</td>
<td>63.0</td>
<td>85.0</td>
<td>154.5</td>
<td>173.5</td>
<td>210.0</td>
<td>110.0 x 4.5</td>
</tr>
<tr>
<td>50/80</td>
<td>57.0</td>
<td>74.0</td>
<td>85.0</td>
<td>107.0</td>
<td>154.5</td>
<td>195.5</td>
<td>210.0</td>
<td>110.0 x 4.5</td>
</tr>
<tr>
<td>65/80</td>
<td>63.0</td>
<td>85.0</td>
<td>85.0</td>
<td>107.0</td>
<td>173.5</td>
<td>195.5</td>
<td>210.0</td>
<td>110.0 x 4.5</td>
</tr>
<tr>
<td>80/100</td>
<td>85.0</td>
<td>107.0</td>
<td>107.0</td>
<td>132.0</td>
<td>195.5</td>
<td>224.5</td>
<td>210.0</td>
<td>110.0 x 4.5</td>
</tr>
<tr>
<td>100/125</td>
<td>107.0</td>
<td>132.0</td>
<td>132.0</td>
<td>158.0</td>
<td>224.5</td>
<td>254.5</td>
<td>220.0</td>
<td>120.0 x 4.5</td>
</tr>
<tr>
<td>125/150</td>
<td>132.0</td>
<td>158.0</td>
<td>158.0</td>
<td>184.0</td>
<td>254.5</td>
<td>280.5</td>
<td>220.0</td>
<td>120.0 x 5.0</td>
</tr>
<tr>
<td>150/175</td>
<td>158.0</td>
<td>184.0</td>
<td>189.0</td>
<td>212.0</td>
<td>280.5</td>
<td>306.5</td>
<td>230.0</td>
<td>130.0 x 5.0</td>
</tr>
<tr>
<td>175/200</td>
<td>189.0</td>
<td>212.0</td>
<td>218.0</td>
<td>244.0</td>
<td>306.5</td>
<td>342.5</td>
<td>230.0</td>
<td>130.0 x 5.0</td>
</tr>
<tr>
<td>200/225</td>
<td>218.0</td>
<td>244.0</td>
<td>243.0</td>
<td>269.0</td>
<td>342.5</td>
<td>367.5</td>
<td>230.0</td>
<td>130.0 x 5.0</td>
</tr>
<tr>
<td>225/250</td>
<td>243.0</td>
<td>269.0</td>
<td>266.0</td>
<td>295.0</td>
<td>367.5</td>
<td>399.5</td>
<td>230.0</td>
<td>130.0 x 5.0</td>
</tr>
</tbody>
</table>

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MaxiStep Reducing Couplings

Datasheet 2/2

Technical Information

<table>
<thead>
<tr>
<th>Working Pressure Rating</th>
<th>Temperature Rating of Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water 16 bar</td>
<td>EPDM -20°C to +90°C</td>
</tr>
<tr>
<td>Gas 6 bar</td>
<td>Nitrile -20°C to +90°C</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vacuum Pressure</th>
<th>For use on applications with fluctuating and / or elevated temperatures (&gt; 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capable of accommodating a vacuum pressure of -0.7 bar</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Site Test Pressure</th>
<th>End Load Due to Internal Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5 times working pressure for short duration (2 hours)</td>
<td>MaxiFit DOES NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Angularity</th>
<th>Approvals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reducing / Stepped Couplings 6°</td>
<td>The following water contact materials used in MaxiFit are approved for use with potable water:</td>
</tr>
</tbody>
</table>

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

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

DN40 to DN300 MaxiFit has been independently tested by BSI to confirm it meets the requirements of BS EN 14525 (VC 669122)

<table>
<thead>
<tr>
<th>Bolt Torque/Spanner</th>
<th>Tee Bolts/Bolts</th>
</tr>
</thead>
<tbody>
<tr>
<td>M12; Torque 55-65Nm on every bolt</td>
<td>Steel to BS EN ISO 898-1 Property Class 4.8</td>
</tr>
<tr>
<td>Spanner size A/F 19mm</td>
<td></td>
</tr>
</tbody>
</table>

Materials & Relevant Standards

<table>
<thead>
<tr>
<th>End Ring and Adaptor Body/Centre Sleeve</th>
<th>Tee Bolts/Bolts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ductile Iron to BS EN 1563 Symbol EN GJS-450-10</td>
<td>Steel to BS EN ISO 898-1 Property Class 4.8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gasket</th>
<th>Bolts</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPDM compound Grade E to BS EN 681-1, Type WA, WC</td>
<td>Standard - Steel to BS EN ISO 898-1: property class 4.8</td>
</tr>
<tr>
<td>Nitrile compound to Grade G BS EN 682, Type G</td>
<td>Option - Stainless Steel to BS EN ISO 3506-1: grade A4 property class 50</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Coating</th>
<th>Nuts</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sleeve &amp; End Ring:</strong></td>
<td><strong>Nuts</strong></td>
</tr>
<tr>
<td>➤ Rilsan Nylon 11 to WIS 4-52-01 Part 1</td>
<td>Standard - Steel to BS EN 4190 Grade 4</td>
</tr>
<tr>
<td>Bolts &amp; Nuts:</td>
<td>Option - Stainless Steel to BS EN ISO 3506-2: grade A4 property class 80</td>
</tr>
<tr>
<td>➤ Sheraplex to WIS 4-52-03</td>
<td>Washers</td>
</tr>
<tr>
<td><strong>Bolts</strong></td>
<td>Stainless Steel to BS 1449: Part 2 Grade 304 S15</td>
</tr>
</tbody>
</table>

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## MaxiDaptor Flange Adaptors

### Flange Adaptor

![Flange Adaptor Diagram]

### MaxiDaptor Flange Adaptors

<table>
<thead>
<tr>
<th>Nom Size (DN)</th>
<th>Metric Drilling Specification</th>
<th>Nom (mm)</th>
<th>Imperial Drilling Specification</th>
<th>Min (mm)</th>
<th>Max</th>
<th>No.-Dia</th>
<th>Length x Thickness</th>
<th>Setting Gap (mm)</th>
<th>MaxiFit Plus Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>PN10/16</td>
<td>50</td>
<td>2&quot; ANSI 125/150</td>
<td>20.0</td>
<td>40.0</td>
<td>4-M12 x 115</td>
<td>12392/1</td>
<td>2.7</td>
<td></td>
</tr>
<tr>
<td>65</td>
<td>PN10/16</td>
<td>60/65/80</td>
<td>2.5&quot; ANSI 125/150</td>
<td>20.0</td>
<td>40.0</td>
<td>4-M12 x 115</td>
<td>12392/2</td>
<td>3.5</td>
<td></td>
</tr>
<tr>
<td>80</td>
<td>PN10/16</td>
<td>80</td>
<td>3&quot; ANSI 125/150</td>
<td>20.0</td>
<td>40.0</td>
<td>4-M12 x 115</td>
<td>12392/3</td>
<td>3.7</td>
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<tr>
<td>100</td>
<td>PN10/16 AS2129 CD AS4087 16</td>
<td>100</td>
<td>4&quot; BS10 Table ADE</td>
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<td>40.0</td>
<td>4-M12 x 125</td>
<td>12392/4</td>
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<tr>
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<td>125</td>
<td>5&quot; BS10 Table ADE</td>
<td>20.0</td>
<td>40.0</td>
<td>4-M12 x 125</td>
<td>12392/6</td>
<td>5.6</td>
<td></td>
</tr>
<tr>
<td>150</td>
<td>PN10/16 AS2129 CD AS4087 16</td>
<td>150</td>
<td>6&quot; BS10 Table ADE</td>
<td>20.0</td>
<td>40.0</td>
<td>4-M12 x 125</td>
<td>12392/7</td>
<td>6.0</td>
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</tr>
<tr>
<td>175</td>
<td>PN10/16 AS2129 CD AS4087 16</td>
<td>175</td>
<td>8&quot; BS10 Table ADE</td>
<td>25.0</td>
<td>40.0</td>
<td>4-M12 x 125</td>
<td>12392/8</td>
<td>8.3</td>
<td></td>
</tr>
<tr>
<td>200</td>
<td>PN10/16 AS2129 CD</td>
<td>200</td>
<td>10&quot; BS10 Table ADE</td>
<td>25.0</td>
<td>40.0</td>
<td>4-M12 x 125</td>
<td>12392/9</td>
<td>10.9</td>
<td></td>
</tr>
<tr>
<td>225</td>
<td>PN10/16 AS2129 CD</td>
<td>225</td>
<td>12&quot; BS10 Table ADE</td>
<td>25.0</td>
<td>50.0</td>
<td>6-M12 x 135</td>
<td>12392/10</td>
<td>14.8</td>
<td></td>
</tr>
<tr>
<td>250</td>
<td>PN10/16 AS2129 CD</td>
<td>250</td>
<td>14&quot; BS10 Table ADE</td>
<td>25.0</td>
<td>50.0</td>
<td>6-M12 x 135</td>
<td>12392/11</td>
<td>11.4</td>
<td></td>
</tr>
<tr>
<td>300</td>
<td>PN10/16 AS2129 CD</td>
<td>300</td>
<td>16&quot; BS10 Table ADE</td>
<td>25.0</td>
<td>60.0</td>
<td>6-M12 x 145</td>
<td>12392/14</td>
<td>14.8</td>
<td></td>
</tr>
</tbody>
</table>

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MaxiDaptor Flange Adaptors

Technical Information

Working Pressure Rating
Water 16 bar
Gas 6 bar

Vacuum Pressure
Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure
1.5 times working pressure for short duration (2 hours)

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

Angularity
Flange Adaptors 3°
The above are for when the product is on maximum pipe outside diameters; can achieve larger ones with smaller pipe diameters.

Bolt Torque/Spanner
M12; Torque 55-65Nm on every bolt
Spanner size A/F 19mm

Temperature Rating of Product
EPDM -20°C to +90°C
Nitrile -20°C to +90°C
For use on applications with fluctuating and/or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

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

Approvals
The following water contact materials used in MaxiDaptor
are approved for use with potable water:-
Rilsan Nylon 11:
➤ WRAS, AS/NZS 4020, DVGW, W270, ACS & KIWA
EPDM Gaskets:
➤ WRAS, AS/NZS 4020
In addition to the above, MaxiFit range as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.
DN40 to DN300 MaxiFit has been independently tested by BSI to confirm it meets the requirements of BS EN 14525 (VC 669122)

Materials & Relevant Standards

End Ring & Adaptor Body/Centre Sleeve
Ductile Iron to BS EN 1563 Symbol EN GJS-450-10

Gasket
EPDM compound Grade E to BS EN 681-1, Type WA, WC
Nitrile compound to Grade G BS EN 682, Type G

Coating
Adaptor Body & End Ring:
➤ Rilsan Nylon 11 to WIS 4-52-01 Part 1
Bolts & Nuts:
➤ Sheraplex to WIS 4-52-03

Tee Bolts/Bolts
Standard - Steel to BS EN ISO 898-1: property class 4.8
Option - Stainless Steel to BS EN ISO 3506-1:
grade A4 property class 5

Nuts
Standard - Steel to BS EN 4190 Grade 4
Option - Stainless Steel to BS EN ISO 3506-2:
grade A4 property class 80

Washers
Stainless Steel to BS 1449:Part 2 Grade 304 S15

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MaxiFit Large Diameter Couplings

### Dimensions

<table>
<thead>
<tr>
<th>OD Range (mm)</th>
<th>End Ring Diameter A (mm)</th>
<th>Gasket Mould No.</th>
<th>Bolts No.-Dia x Length</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>351.0 - 588.0</td>
<td>478.0</td>
<td>6002</td>
<td>8-M12 x 340</td>
<td>30.1</td>
</tr>
<tr>
<td>374.5 - 591.5</td>
<td>501.5</td>
<td>1659</td>
<td>8-M12 x 340</td>
<td>31.9</td>
</tr>
<tr>
<td>386.0 - 513.0</td>
<td>521.5</td>
<td>6035</td>
<td>8-M12 x 340</td>
<td>32.6</td>
</tr>
<tr>
<td>394.3 - 521.5</td>
<td>5166</td>
<td>8-M12 x 340</td>
<td>33.2</td>
<td></td>
</tr>
<tr>
<td>404.8 - 532.0</td>
<td>1767</td>
<td>8-M12 x 340</td>
<td>34.0</td>
<td></td>
</tr>
<tr>
<td>412.0 - 539.0</td>
<td>6023</td>
<td>10-M12 x 340</td>
<td>35.1</td>
<td></td>
</tr>
<tr>
<td>418.2 - 545.0</td>
<td>1784</td>
<td>8-M12 x 340</td>
<td>34.9</td>
<td></td>
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<tr>
<td>425.0 - 552.0</td>
<td>1662</td>
<td>8-M12 x 340</td>
<td>35.5</td>
<td></td>
</tr>
<tr>
<td>434.5 - 561.5</td>
<td>1768</td>
<td>10-M12 x 340</td>
<td>37.0</td>
<td></td>
</tr>
<tr>
<td>439.0 - 566.0</td>
<td>6036</td>
<td>10-M12 x 340</td>
<td>37.3</td>
<td></td>
</tr>
<tr>
<td>447.2 - 574.0</td>
<td>1769</td>
<td>10-M12 x 340</td>
<td>37.9</td>
<td></td>
</tr>
<tr>
<td>455.0 - 582.0</td>
<td>6003</td>
<td>10-M12 x 340</td>
<td>38.5</td>
<td></td>
</tr>
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<td>467.0 - 594.0</td>
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<td>52.0</td>
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<td>53.0</td>
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<td>6039</td>
<td>14-M12 x 340</td>
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<td>689.0 - 816.0</td>
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<td>14-M12 x 340</td>
<td>56.3</td>
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<td>56.7</td>
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<td>6075</td>
<td>14-M12 x 340</td>
<td>57.7</td>
<td></td>
</tr>
</tbody>
</table>

**Key:**
- 1 = Sleeve
- 2 = End Ring
- 3 = Gasket
- 4 = Bolts, Nut & Washer

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Technical Information

**Working Pressure Rating**
- Water 16 bar
- Gas 6 bar

**Vacuum Pressure**
Capable of accommodating a vacuum pressure of -0.7 bar

**Site Test Pressure**
1.5 times working pressure for short duration (2 hours)

**Angularity**
Couplings 6°
The above are for when the product is on maximum pipe outside diameters; can achieve larger ones with smaller pipe diameters.

**Bolt Torque/Spanner**
- M12; Torque 55-65Nm on every bolt
- Spanner size A/F 19mm

**Temperature Rating of Product**
- EPDM -20°C to +90°C
- Nitrile -20°C to +90°C
For use on applications with fluctuating and/or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

**End Load Due to Internal Pressure**
MaxiFit DOES NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out.

**Approvals**
The following water contact materials used in MaxiFit are approved for use with potable water:-
- Rilsan Nylon 11:
  - WRAS, AS/NZS 4020, DVGW, W270, ACS & KIWA
- EPDM Gaskets:
  - WRAS, AS/NZS 4020
In addition to the above, MaxiFit range as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

**Sleeve**
Rolled Steel to BS EN 10025-2 Grade S275

**End Ring**
Rolled Steel to BS EN 10025-2 Grade S275

**Gasket**
EPDM Grade “E” to BS EN 681-1 Type WA WRAS Listed
Nitrile compound to Grade G BS EN 682, Type G

**Coating**
Sleeve & End Ring:
- Rilsan Nylon 11 to WIS 4-52-01 Part 1
Bolts & Nuts:
- Sheraplex to WIS 4-52-03

**Bolts**
Standard - Steel to BS EN ISO 898-1 Property Class 4.8
Option - Stainless Steel to BS EN ISO 3506-1: grade A4 property class 50

**Nuts**
Standard - Steel to BS EN 4190 Grade 4
Option - Stainless Steel to BS EN ISO 3506-2: grade A4 property class 80

**Washers**
Stainless Steel to BS 1449:Part 2 Grade 304 S15

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**MaxiStep Large Diameter Expanded Sleeve Stepped Couplings**

Expanded Sleeve Stepped Coupling

![Diagram of Expanded Sleeve Stepped Coupling]

**Key**

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

**MaxiStep Expanded Sleeve Stepped Couplings**

<table>
<thead>
<tr>
<th>OD Range</th>
<th>Small End (mm)</th>
<th>Large End (mm)</th>
<th>Gasket Mould No.</th>
<th>Bolts</th>
<th>Dimensions</th>
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<tbody>
<tr>
<td></td>
<td>Min</td>
<td>Max</td>
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<td>No.-Dia x Length</td>
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<td>654.0</td>
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<td>12-M12 x 340</td>
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<tr>
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<td>802.0</td>
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## Technical Information

<table>
<thead>
<tr>
<th>Working Pressure Rating</th>
<th>Temperature Rating of Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water 16 bar</td>
<td>EPDM -20°C to +90°C</td>
</tr>
<tr>
<td>Gas 6 bar</td>
<td>Nitrile -20°C to +90°C</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Vacuum Pressure</th>
<th>For use on applications with fluctuating and/or elevated temperatures (&gt; 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capable of accommodating a vacuum pressure of -0.7 bar</td>
<td>End Load Due to Internal Pressure</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Site Test Pressure</th>
<th>MaxiFit DOES NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5 times working pressure for short duration (2 hours)</td>
<td>Approvals</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Angularity</th>
<th>The following water contact materials used in MaxiFit are approved for use with potable water:-</th>
</tr>
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<tbody>
<tr>
<td>Stepped Couplings 6°</td>
<td>Rilsan Nylon 11:</td>
</tr>
<tr>
<td></td>
<td>➤ WRAS, AS/NZS 4020, DVGW, W270, ACS &amp; KIWA</td>
</tr>
<tr>
<td>The above are for when the product is on maximum pipe outside diameters; can achieve larger ones with smaller pipe diameters.</td>
<td>EPDM Gaskets:</td>
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<tr>
<td></td>
<td>➤ WRAS, AS/NZS 4020</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bolt Torque/Spanner</th>
<th>In addition to the above, MaxiFit range as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.</th>
</tr>
</thead>
<tbody>
<tr>
<td>M12; Torque 55-65Nm on every bolt</td>
<td>Approvals</td>
</tr>
<tr>
<td>Spanner size A/F 19mm</td>
<td>The following water contact materials used in MaxiFit are approved for use with potable water:-</td>
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## Materials & Relevant Standards

<table>
<thead>
<tr>
<th>Expanded Sleeve</th>
<th>Bolts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rolled Steel to BS EN 10025-2 Grade S275</td>
<td>Standard - Steel to BS EN ISO 898-1 Property Class 4.8</td>
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| End Ring                | Option - Stainless Steel to BS EN ISO 3506-1: |
|-------------------------| grade A4 property class 50 |

<table>
<thead>
<tr>
<th>Gasket</th>
<th>Nuts</th>
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<tbody>
<tr>
<td>EPDM Grade “E” to BS EN 681-1 Type WA WRAS Listed</td>
<td>Standard - Steel to BS EN 4190 Grade 4</td>
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</table>

| Nitrile compound to Grade G BS EN 682, Type G | Option - Stainless Steel to BS EN ISO 3506-2: |

<table>
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<tr>
<th>Coating</th>
<th>grade A4 property class 80</th>
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<tr>
<td>Sleeve &amp; End Ring:</td>
<td>Washers</td>
</tr>
<tr>
<td>➤ Rilsan Nylon 11 to WIS 4-52-01 Part 1</td>
<td>Standard - Stainless Steel to BS 1449:Part 2 Grade 304 S15</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Bolts &amp; Nuts:</th>
<th>Washers</th>
</tr>
</thead>
<tbody>
<tr>
<td>➤ Sheraplex to WIS 4-52-03</td>
<td>Stainless Steel to BS 1449:Part 2 Grade 304 S15</td>
</tr>
</tbody>
</table>

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**MaxiStep Large Diameter Make Up Ring Stepped Couplings**

### Make Up Ring Stepped Coupling

![Diagram of Make Up Ring Stepped Coupling](image)

**Key**

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

### MaxiStep Make Up Ring Stepped Couplings

<table>
<thead>
<tr>
<th>OD Range</th>
<th>Gasket Mould</th>
<th>Studs</th>
<th>Dimensions</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min (mm)</td>
<td>Max (mm)</td>
<td>Small End</td>
<td>Large End</td>
<td>Overall Diameter</td>
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<td>315.0</td>
<td>332.0</td>
<td>820/47</td>
<td>6002</td>
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<td>315.0</td>
<td>332.0</td>
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<td>8-M12 x 125</td>
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<td>332.0</td>
<td>820/47</td>
<td>1659</td>
<td>8-M12 x 205</td>
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<td>315.0</td>
<td>332.0</td>
<td>820/47</td>
<td>1767</td>
<td>8-M12 x 205</td>
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<td>315.0</td>
<td>332.0</td>
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<td>332.0</td>
<td>820/47</td>
<td>1784</td>
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**Vacuum Pressure**
Capable of accommodating a vacuum pressure of -0.7 bar

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1.5 times working pressure for short duration (2 hours)

**Angularity**
Stepped Couplings 6°
The above are for when the product is on maximum pipe outside diameters; can achieve larger ones with smaller pipe diameters.

**Bolt Torque/Spanner**
M12; Torque 55-65Nm on every bolt
Spanner size A/F 19mm

### Materials & Relevant Standards

**Make Up Ring Sleeve**
Mild Steel to BS EN 10025-2 Grade S275
Rolled Steel to BS EN 10025-2 Grade S275

**End Ring**
Rolled Steel to BS EN 10025-2 Grade S275

**Gasket**
EPDM Grade “E” to BS EN 681-1 Type WA WRAS Listed
Nitrile compound to Grade G BS EN 682, Type G

**Coating**
Sleeve & End Ring:
- Rilsan Nylon 11 to WIS 4-52-01 Part 1
Bolts & Nuts:
- Sheraplex to WIS 4-52-03

**Bolts**
Standard - Steel to BS EN ISO 898-1 Property Class 4.8
Option - Stainless Steel to BS EN ISO 3506-1:
grade A4 property class 50

**Nuts**
Standard - Steel to BS EN 4190 Grade 4
Option - Stainless Steel to BS EN ISO 3506-2:
grade A4 property class 80

**Washers**
Stainless Steel to BS 1449:Part 2 Grade 304 S15

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

### Datasheet

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### MaxiDaptor Flange Adaptors PN10

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### Key

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

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### Working Pressure Rating
- Water 10 bar
- Gas 6 bar

### Vacuum Pressure
Capable of accommodating a vacuum pressure of -0.7 bar

### Site Test Pressure
1.5 times working pressure for short duration (2 hours)

### Angularity
Flange Adaptors 3°
The above are for when the product is on maximum pipe outside diameters; can achieve larger ones with smaller pipe diameters.

### Bolt Torque/Spanner
- M12; Torque 55-65Nm on every bolt
- Spanner size A/F 19mm

### Temperature Rating of Product
- EPDM -20°C to +90°C
- Nitrile -20°C to +90°C
For use on applications with fluctuating and/or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

### End Load Due to Internal Pressure
MaxiFit DOES NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out.

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

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

### Materials & Relevant Standards

#### Flange Adaptor Body
- **Flange:**
  - Mild Steel to BS EN 10025-2 Grade S275
  - Rolled Steel to BS EN 10025-2 Grade S275
- **End Ring:**
  - Rolled Steel to BS EN 10025-2 Grade S275
- **Gasket:**
  - EPDM Grade “E” to BS EN 681-1 Type WA WRAS Listed
  - Nitrile compound to Grade G BS EN 682, Type G
- **Coating:**
  - Rilsan Nylon 11 to WIS 4-52-01 Part 1
  - Bolts & Nuts:
    - Sheraplex to WIS 4-52-03

#### Studs
- Standard - Steel to BS EN ISO 898-1 Property Class 4.8
  - Option - Stainless Steel to BS EN ISO 3506-1:
    - grade A4 property class 50

#### Nuts
- Standard - Steel to BS EN 4190 Grade 4
  - Option - Stainless Steel to BS EN ISO 3506-2:
    - grade A4 property class 80

#### Washers
- Stainless Steel to BS 1449:Part 2 Grade 304 S15

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

**Datasheet**

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**Key**

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

**Working Pressure Rating**
- Water 10 bar
- Gas 6 bar

**Vacuum Pressure**
Capable of accommodating a vacuum pressure of -0.7 bar

**Site Test Pressure**
1.5 times working pressure for short duration (2 hours)

**Angularity**
Flange Adaptors 3°
The above are for when the product is on maximum pipe outside diameters; can achieve larger ones with smaller pipe diameters.

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Spanner size A/F 19mm

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Materials & Relevant Standards

**Flange Adaptor Body**
- Flange:
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  - Rolled Steel to BS EN 10025-2 Grade S275
- End Ring
  - Rolled Steel to BS EN 10025-2 Grade S275
- Gasket
  - EPDM Grade “E” to BS EN 681-1 Type WA WRAS Listed
  - Nitrile compound to Grade G BS EN 682, Type G
- Coating
  - Flange Adaptor Body & End Ring:
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  - Bolts & Nuts:
    - Sheraplex to WIS 4-52-03

**Studs**
- Standard - Steel to BS EN ISO 898-1 Property Class 4.8
- Option - Stainless Steel to BS EN ISO 3506-1:
  - grade A4 property class 50

**Nuts**
- Standard - Steel to BS EN 4190 Grade 4
- Option - Stainless Steel to BS EN ISO 3506-2:
  - grade A4 property class 80

**Washers**
- Stainless Steel to BS 1449:Part 2 Grade 304 S15
MaxiDaptor Large Diameter Flange Adaptors PN16 (OD 348.5 to 572.3)

Datasheet

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MaxiDaptor Flange Adaptors PN16

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

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Technical Information

Working Pressure Rating
Water 16 bar
Gas 6 bar

Vacuum Pressure
Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure
1.5 times working pressure for short duration (2 hours)

Angularity
Flange Adaptors 3°
The above are for when the product is on maximum pipe outside diameters; can achieve larger ones with smaller pipe diameters.

Bolt Torque/Spanner
M12; Torque 55-65Nm on every bolt
Spanner size A/F 19mm

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EPDM -20°C to +90°C
Nitrile -20°C to +90°C
For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

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Approvals
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Rilsan Nylon 11:
➤ WRAS, AS/NZS 4020, DVGW, W270, ACS & KIWA
EPDM Gaskets:
➤ WRAS, AS/NZS 4020
In addition to the above, MaxiFit range as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

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Flange Adaptor Body
Flange:
➤ Mild Steel to BS EN 10025-2 Grade S275
Sleeve:
➤ Rolled Steel to BS EN 10025-2 Grade S275

End Ring
Rolled Steel to BS EN 10025-2 Grade S275

Gasket
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Nitrile compound to Grade G BS EN 682, Type G

Coating
Flange Adaptor Body & End Ring:
➤ Rilsan Nylon 11 to WIS 4-52-01 Part 1
Bolts & Nuts:
➤ Sheraplex to WIS 4-52-03

Studs
Standard - Steel to BS EN ISO 898-1 Property Class 4.8
Option - Stainless Steel to BS EN ISO 3506-1:
grade A4 property class 50

Nuts
Standard - Steel to BS EN 4190 Grade 4
Option - Stainless Steel to BS EN ISO 3506-2:
grade A4 property class 80

Washers
Stainless Steel to BS 1449:Part 2 Grade 304 S15

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

Datasheet 3/4

MaxiDaptor Flange Adaptors PN16

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1.5 times working pressure for short duration (2 hours)

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

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- Spanner size A/F 19mm

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- Nitrile -20°C to +90°C
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- EPDM Gaskets:
  - WRAS, AS/NZS 4020
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- Rolled Steel to BS EN 10025-2 Grade S275
- End Ring
  - Rolled Steel to BS EN 10025-2 Grade S275
- Gasket
  - EPDM Grade “E” to BS EN 681-1 Type WA WRAS Listed
  - Nitrile compound to Grade G BS EN 682, Type G
- Coating
  - Flange Adaptor Body & End Ring:
    - Rilsan Nylon 11 to WIS 4-52-01 Part 1
    - Bolts & Nuts:
      - Sheraplex to WIS 4-52-03

**Studs**
- Standard - Steel to BS EN ISO 898-1 Property Class 4.8
- Option - Stainless Steel to BS EN ISO 3506-1:
  - grade A4 property class 50

**Nuts**
- Standard - Steel to BS EN 4190 Grade 4
- Option - Stainless Steel to BS EN ISO 3506-2:
  - grade A4 property class 80

**Washers**
- Stainless Steel to BS 1449:Part 2 Grade 304 S15

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MaxiDaptor Large Diameter Flange Adaptors ANSI Flange Drilling

Datasheet

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Gas 6 bar

**Vacuum Pressure**
Capable of accommodating a vacuum pressure of -0.7 bar

**Site Test Pressure**
1.5 times working pressure for short duration (2 hours)

**Flange Drilling & Rated Pressure**
While drilling patterns defined for the flange adaptors are compatible with the standards listed in the data sheet table, the rated working pressure of the product is as noted above

**Angularity**
Flange Adaptors 3°
The above are for when the product is on maximum pipe outside diameters; can achieve larger ones with smaller pipe diameters.

**Bolt Torque/Spanner**
M12; Torque 55-65Nm on every bolt  
Spanner size A/F 19mm

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Nitrile compound to Grade G BS EN 682, Type G

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Universal Pipe Fittings

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

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

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

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

Product Design Benefits

**Guaranteed Sealing**

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

**Excellent Corrosion Protection**

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

**User Friendly**

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

**Simple to Fit**

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

**Customer Benefits**

- The MegaFit range is suitable for water and gas applications. Following extensive tests, the products can be guaranteed for a working pressure of 16 bar for water applications (test pressure 24 bar) and 6 bar for gas (test pressure 9 bar).

- With up to 34mm tolerance on the pipe OD, each product fits a range of pipe diameters and materials. It reduces the need for expensive and time consuming trial holes, reduces stock holding and increases stock turn. In all MegaFit is adaptable and economic solution to most pipe connections.

- For the discerning customer, the MegaFit range offers an extended sealing face, greater than other wide tolerance models. M16 bolts on DN100 models and above ensure a complete robust solution.

- MegaFit couplings accommodate angular deflection between pipes of up to 8° for couplings and 4° for flange adaptors, allowing for ease of installation and for pipeline movement such as ground settlement. This angular deflection can be utilised to lay pipelines to long radius curves, without the need for special fittings, saving both time and cost.
# MegaFit Couplings

## Datasheet

### Couplings & Flange Adaptors

### Wide Tolerance

#### DR10457_05_2020_ISSUE 6

**Coupling**

![Coupling Diagram](image)

#### MegaFit Couplings

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<th>C (mm)</th>
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<th>Setting Gap Min (mm)</th>
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**Key**

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

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Technical Information

**Working Pressure Rating**
Water 16 bar
Gas 6 bar

**Vacuum Pressure**
Capable of accommodating a vacuum pressure of -0.7 bar

**Site Test Pressure**
1.5 times working pressure for short duration (2 hours)

**Angularity**
Couplings 8°
The above are for when the product is on maximum pipe outside diameters; can achieve larger ones with smaller pipe diameters.

**Bolt Torque/Spanner**
M12; Torque 55-65Nm on every bolt
M16; Torque 95-110Nm on every bolt

**Temperature Rating of Product**
EPDM -20°C to +90°C
Nitrile -20°C to +90°C
For use on applications with fluctuating and/or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

**End Load Due to Internal Pressure**
MegaFit DOES NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out.

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

Materials & Relevant Standards

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

**End Rings**
SG ductile iron BS EN 1563, EN GJS-450-10

**Coatings**
Centre Sleeve & End Rings:
➤ Rilsan Nylon 11 to WIS 4-52-01 Part 1
Bolts & Nuts:
➤ Sheraplex to WIS 4-52-03

**Gasket**
EPDM compound Grade ‘E’ to BS EN 681-1 WRAS approved
Nitrile compound to DIN 3535-3

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

**Nuts**
Steel to BS EN20898-2 Property Class 8.0

**Washers**
Stainless Steel to BS 1449:Pt2 grade 304 S15

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MegaDaptor Flange Adaptors

Datasheet 1/2

Flange Adaptor Type 1

Flange Adaptor Type 2

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

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

MegaDaptor Flange Adaptors

<table>
<thead>
<tr>
<th>DN</th>
<th>OD Range (mm)</th>
<th>Flange Nominal</th>
<th>Flange Drilling</th>
<th>Flange Thickness (mm)</th>
<th>Bolts No.-Dia x Length</th>
<th>A (mm)</th>
<th>B (mm)</th>
<th>C (mm)</th>
<th>Sleeve Length x Thickness (L x T)</th>
<th>Setting Gap (mm)</th>
<th>Type</th>
<th>Gasket Mould No.</th>
<th>Weight (kg)</th>
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<td>2 6018</td>
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*DN175 MegaDaptor supplied with DN200 flange.

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Technical Information

**Working Pressure Rating**
- Water: 16 bar
- Gas: 6 bar

**Vacuum Pressure**
Capable of accommodating a vacuum pressure of -0.7 bar

**Site Test Pressure**
1.5 times working pressure for short duration (2 hours)

**Angularity**
Flange Adaptors 4°
The above are for when the product is on maximum pipe outside diameters; can achieve larger ones with smaller pipe diameters.

**Bolt Torque/Spanner**
- M12: Torque 55-65Nm on every bolt
- M16: Torque 95-110Nm on every bolt

**Temperature Rating of Product**
- EPDM: -20°C to +90°C
- Nitrile: -20°C to +90°C
For use on applications with fluctuating and/or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

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

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

Materials & Relevant Standards

**Flange Adaptor Body**
SG ductile iron BS EN 1563, EN GJS-450-10

**End Ring**
SG ductile iron BS EN 1563, EN GJS-450-10

**Coatings**
- Adaptor Body & End Ring:
  - Rilsan Nylon 11 to WIS 4-52-01 Part 1
  - Sheraplex to WIS 4-52-03

**Gasket**
EPDM compound Grade ‘E’ to BS EN 681-1 WRAS approved
Nitrile compound to DIN 3535-3

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

**Nuts**
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**Washers**
Stainless Steel to BS 1449:Pt2 grade 304 S15

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NOW AVAILABLE UP TO DN600

Optimum Wide Tolerance & Full End Restraint

UltraGrip

Generation

Next

BS EN 14525
Ductile Iron
Couplings & Flange Adapters*

VC 669122

*See back cover for full specification
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.

**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.

**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.

*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>
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<td></td>
<td>Gas</td>
<td>Water</td>
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<tr>
<td>DN40 to DN300</td>
<td>5 bar</td>
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<td>5 bar</td>
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<td>DN350 to DN400</td>
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<td>DN450 to DN600</td>
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<td>10 bar</td>
<td>N/A</td>
</tr>
</tbody>
</table>

(Site Test Pressure – 1.5 times working pressure)
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.

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.

Suitable for Shattered Pipe
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.

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.

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.

Wide Tolerance

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.

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.

www.helden-web.com
Next Generation UltraGrip Couplings

Ddatasheet 1/2

Coupling

UltraGrip Couplings

<table>
<thead>
<tr>
<th>Nom Size</th>
<th>Size Range</th>
<th>Insertion Depth (D)</th>
<th>Dimensions Overall</th>
<th>Sleeves</th>
<th>Bolts</th>
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<td>339 386 213 6.5</td>
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<td>20.22</td>
<td></td>
</tr>
<tr>
<td>175</td>
<td>192.2 226.9</td>
<td>125 165</td>
<td>403 400 220 6.5</td>
<td>10-M16 x 93 CSX</td>
<td>33.22</td>
<td></td>
</tr>
<tr>
<td>200</td>
<td>218.1 256.0</td>
<td>125 165</td>
<td>432 400 220 6.5</td>
<td>10-M16 x 93 CSX</td>
<td>35.48</td>
<td></td>
</tr>
<tr>
<td>250</td>
<td>266.0 310.0</td>
<td>125 165</td>
<td>476 524 300 8.0</td>
<td>12-M16 x 120 CSX</td>
<td>52.88</td>
<td></td>
</tr>
<tr>
<td>300</td>
<td>315.0 356.0</td>
<td>125 200</td>
<td>522 524 300 8.0</td>
<td>16-M16 x 120 CSX</td>
<td>63.8</td>
<td></td>
</tr>
<tr>
<td>350</td>
<td>352.2 396.0</td>
<td>125 200</td>
<td>577 525 300 7.5</td>
<td>16-M16 x 120 CSX</td>
<td>74.58</td>
<td></td>
</tr>
<tr>
<td>400</td>
<td>398.2 442.0</td>
<td>125 200</td>
<td>623 525 300 7.5</td>
<td>20-M16 x 120 CSX</td>
<td>82.88</td>
<td></td>
</tr>
<tr>
<td>450</td>
<td>448.0 492.0</td>
<td>135 215</td>
<td>713 545 300 7.5</td>
<td>24-M16 x 140 HRH</td>
<td>139.03</td>
<td></td>
</tr>
<tr>
<td>500</td>
<td>498.0 552.0</td>
<td>155 215</td>
<td>803 565 300 7.5</td>
<td>18-M20 x 150 HRH</td>
<td>160.42</td>
<td></td>
</tr>
<tr>
<td>600</td>
<td>604.0 648.0</td>
<td>195 255</td>
<td>900 565 300 7.5</td>
<td>20-M20 x 150 HRH</td>
<td>175.02</td>
<td></td>
</tr>
<tr>
<td>600</td>
<td>676.0 726.0</td>
<td>195 255</td>
<td>975 565 300 7.5</td>
<td>28-M20 x 150 HRH</td>
<td>267.38</td>
<td></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></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>M/A</td>
<td>10 bar</td>
<td>N/A</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.

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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 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).
Flange Adaptor Type 1

Flange Adaptor Type 2

UltraGrip Flange Adaptors

- **Nominal Size**
- **Size Range**
- **Flange Nom Size**
- **Flange Drilling**
- **Type**
- **Insertion Depth (D)**
- **Dimensions**
- **Bolts**
- **Weight (kg)**

### 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

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

### Bolt Torque

- **M12**: 55 - 70Nm
- **M16**: 95 - 120Nm
- **M20**: 210 - 230Nm

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

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Reducing Coupling

**UltraGrip Reducing Couplings**

### Nominal Size Gripping Product

<table>
<thead>
<tr>
<th>Nominal Size</th>
<th>Gripping Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>DN40 to DN300</td>
<td>5 bar</td>
</tr>
<tr>
<td>DN350 to DN400</td>
<td>5 bar</td>
</tr>
<tr>
<td>DN450 to DN600</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### Flex Product

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

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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
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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).

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**UltraGrip Pecatadaptors**

<table>
<thead>
<tr>
<th>Nom Size</th>
<th>Size Range (PE)</th>
<th>PE Insertion Depth</th>
<th>Dimensions Overall</th>
<th>PE Pipe End</th>
<th>Bolts</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>43.5 - 63.5</td>
<td>Min 65 Max 95</td>
<td>1/2&quot; 2&quot; 1/2&quot; 3/4&quot;</td>
<td>168 150</td>
<td>3-M12 x 70 CSX</td>
<td>3.34</td>
</tr>
<tr>
<td>65</td>
<td>63.0 - 83.7</td>
<td>Min 65 Max 95</td>
<td>1/2&quot; 2&quot; 1/2&quot; 3/4&quot;</td>
<td>189 150</td>
<td>3-M12 x 70 CSX</td>
<td>3.97</td>
</tr>
<tr>
<td>80</td>
<td>85.7 - 107.0</td>
<td>Min 65 Max 110</td>
<td>1/2&quot; 2&quot; 1/2&quot; 3/4&quot;</td>
<td>212 166</td>
<td>3-M12 x 70 CSX</td>
<td>4.84</td>
</tr>
<tr>
<td>100</td>
<td>107.0 - 133.2</td>
<td>Min 90 Max 125</td>
<td>1/2&quot; 2&quot; 1/2&quot; 1&quot;</td>
<td>280 197</td>
<td>3-M16 x 93 CSX</td>
<td>8.44</td>
</tr>
<tr>
<td>125</td>
<td>132.2 - 160.2</td>
<td>Min 90 Max 135</td>
<td>1/2&quot; 2&quot; 1/2&quot; 1&quot;</td>
<td>305 215</td>
<td>3-M16 x 93 CSX</td>
<td>10.12</td>
</tr>
<tr>
<td>150</td>
<td>158.2 - 192.2</td>
<td>Min 90 Max 125</td>
<td>1/2&quot; 2&quot; 1/2&quot; 1&quot;</td>
<td>339 219</td>
<td>4-M16 x 93 CSX</td>
<td>12.6</td>
</tr>
<tr>
<td>175</td>
<td>192.2 - 226.9</td>
<td>Min 90 Max 135</td>
<td>1/2&quot; 2&quot; 1/2&quot; 1&quot;</td>
<td>403 235</td>
<td>5-M16 x 93 CSX</td>
<td>19.54</td>
</tr>
<tr>
<td>200</td>
<td>218.1 - 256.0</td>
<td>Min 90 Max 125</td>
<td>1/2&quot; 2&quot; 1/2&quot; 1&quot;</td>
<td>432 237</td>
<td>5-M16 x 93 CSX</td>
<td>21.4</td>
</tr>
<tr>
<td>250</td>
<td>256.0 - 310.0</td>
<td>Min 125 Max 165</td>
<td>1/2&quot; 2&quot; 1/2&quot; 2&quot;</td>
<td>476 309</td>
<td>6-M16 x 120 CSX</td>
<td>32.46</td>
</tr>
<tr>
<td>300</td>
<td>350.0 - 356.0</td>
<td>Min 125 Max 200</td>
<td>1/2&quot; 2&quot; 1/2&quot; 2&quot;</td>
<td>522 310</td>
<td>8-M16 x 120 CSX</td>
<td>39.21</td>
</tr>
</tbody>
</table>

**UltraGrip End Caps**

<table>
<thead>
<tr>
<th>Nom Size</th>
<th>Size Range</th>
<th>Insertion Depth</th>
<th>Dimensions Overall</th>
<th>PE Pipe End</th>
<th>Bolts</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>80</td>
<td>85.7 - 107.0</td>
<td>Min 65 Max 95</td>
<td>1/2&quot; 2&quot; 2&quot; 3/4&quot;</td>
<td>212 166</td>
<td>3-M12 x 70 CSX</td>
<td>3.34</td>
</tr>
<tr>
<td>100</td>
<td>107.0 - 133.2</td>
<td>Min 90 Max 115</td>
<td>1/2&quot; 2&quot; 2&quot; 3/4&quot;</td>
<td>280 701</td>
<td>3-M16 x 93 CSX</td>
<td>12.92</td>
</tr>
<tr>
<td>125</td>
<td>132.2 - 160.2</td>
<td>Min 90 Max 115</td>
<td>1/2&quot; 2&quot; 2&quot; 3/4&quot;</td>
<td>305 721</td>
<td>3-M16 x 93 CSX</td>
<td>13.64</td>
</tr>
<tr>
<td>150</td>
<td>158.2 - 192.2</td>
<td>Min 90 Max 125</td>
<td>1/2&quot; 2&quot; 2&quot; 3/4&quot;</td>
<td>339 730</td>
<td>4-M16 x 93 CSX</td>
<td>20.7</td>
</tr>
<tr>
<td>200</td>
<td>218.1 - 256.0</td>
<td>Min 125 Max 165</td>
<td>1/2&quot; 2&quot; 2&quot; 3/4&quot;</td>
<td>432 751</td>
<td>5-M16 x 93 CSX</td>
<td>36.22</td>
</tr>
</tbody>
</table>

**Working Pressure & Temperature Ratings**

<table>
<thead>
<tr>
<th>Nominal Size</th>
<th>Gripping Product Gas</th>
<th>Water</th>
<th>Flex Product Gas</th>
<th>Water</th>
<th>Operating Temperature</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>DN40 to DN50</td>
<td>5 bar 16 bar</td>
<td>5 bar 16 bar</td>
<td>1/2&quot; -20°C to +30°C</td>
<td>1/2&quot; -20°C to +30°C</td>
<td>1.5 times working pressure.</td>
<td></td>
</tr>
<tr>
<td>DN350 to DN400</td>
<td>5 bar 10 bar</td>
<td>5 bar 10 bar</td>
<td>1/2&quot; -20°C to +30°C</td>
<td>1/2&quot; -20°C to +30°C</td>
<td>1.5 times working pressure plus 5 bar (e.g., 29 bar for 16 bar working pressure).</td>
<td></td>
</tr>
<tr>
<td>DN450 to DN600</td>
<td>N/A 10 bar</td>
<td>N/A 10 bar</td>
<td>1/2&quot; -20°C to +30°C</td>
<td>1/2&quot; -20°C to +30°C</td>
<td>All water contact components are approved for use with Potable Water.</td>
<td></td>
</tr>
</tbody>
</table>

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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.

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

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

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**UltraGrip Support Liner For PE & PVC Pipes**

**Datasheet**

**One Part Liner**

**Two Part Liner**

---

**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 PE Pipes

<table>
<thead>
<tr>
<th>Pipe OD</th>
<th>PE pipes - Stainless steel support liners need and availability for different SDR ratings</th>
<th>Stainless steel support liner details</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SDR9 SDR11 SDR11.6 SDR17 SDR21</td>
<td>T (mm)</td>
</tr>
<tr>
<td>40</td>
<td>– ✓ – – – –</td>
<td>1.5</td>
</tr>
<tr>
<td>50</td>
<td>– ✓ – ✓ – –</td>
<td>1.5</td>
</tr>
<tr>
<td>63</td>
<td>A ✓ ✓ ✓ ✓ ✓</td>
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</tr>
<tr>
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</tr>
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<tr>
<td>160</td>
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</tr>
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<td>180</td>
<td>A ✓ ✓ B ✓ ✓ ✓</td>
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</tr>
<tr>
<td>200</td>
<td>A ✓ ✓ A ✓ ✓ ✓</td>
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</table>

---

### For Metric PVC Pipes

**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>
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<tr>
<td>75</td>
<td>3.6mm &amp; Over</td>
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<tr>
<td>90</td>
<td>4.3mm &amp; Over</td>
</tr>
<tr>
<td>110</td>
<td>5.3mm &amp; Over</td>
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<tr>
<td>125</td>
<td>6.0mm &amp; Over</td>
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<tr>
<td>140</td>
<td>6.7mm &amp; Over</td>
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<tr>
<td>160</td>
<td>7.7mm &amp; Over</td>
</tr>
<tr>
<td>180</td>
<td>8.6mm &amp; Over</td>
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<td>200</td>
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<td>225</td>
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<td>250</td>
<td>11.9mm &amp; Over</td>
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<tr>
<td>280</td>
<td>13.4mm &amp; Over</td>
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<tr>
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<td>16.9mm &amp; Over</td>
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<td>400</td>
<td>19.1mm &amp; Over</td>
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<td>560</td>
<td>26.7mm &amp; Over</td>
</tr>
<tr>
<td>630</td>
<td>30.0mm &amp; Over</td>
</tr>
</tbody>
</table>

---

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 pipes.

---

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Flexible Dismantling Joint Range
Fully Restrained Double Flanged Fitting
Developed for Complete Versatility

The Dismantling Joint range was developed to provide greater versatility for the designer at the planning stage and the engineer in the installation stage of flanged pipe work systems and to allow for simple maintenance programmes.

Allows for Adjustment
The Dismantling Joints are double flanged fittings that accommodate up to 100mm (4”) longitudinal adjustment and can be locked at the required length with the tie bars supplied. Not only does this system allow for fast, easy maintenance of valves, pumps or meters, it simplifies future pipe work modifications and reduces downtime when changes need to be made.

Easy to Install
The installation is also straightforward using just a spanner and torque wrench to tighten the high tensile steel or stainless steel tie bars. With fewer tie bars than flange holes that also act as flange jointing bolts, the installation process is quick and easy while offering a secure, rigid, fully end load resistant system with a pressure rating equal to that of the flange.

The Range
A comprehensive range is available from DN40 (1½”) to DN4000 (144”) with virtually any flange drilling or pressure rating supplied. Larger sizes and custom made Dismantling Joints can be designed and built on request.
Dismantling Joint

Product Design Benefits

**Full Flange Sealing**

The flange of the spigot piece provides a full flange sealing area, making it ideal for applications where a full-face flange is required, e.g. wafer and butterfly valves.

**Excellent Corrosion Protection**

The flange adaptor and flange spigot are coated with WRAS approved Rilsan Nylon 11 providing excellent protection from transport, storage, site and corrosion damage. The tie bars are Zn² Zinc Plated as standard with other coatings, grades and finishes available on request. The nuts and bolts are Sheraplex coated to WIS-4-52-03, offering long term protection against corrosion.

**Longitudinal Adjustment**

Longitudinal adjustment facilitates installation and removal of flanged equipment.

**Compact Design**

Harnessing is provided within the bolt circle, eliminating other complex anchoring systems and reducing space requirements.

**Independent Gasket Tightening**

Studs independent of the tie rods compress the gasket ensuring long term sealing performance that is not effected due to any external loading.

**Reduced Weight**

The use of high tensile steel in the tie rods reduces the number required to accommodate end load forces, reducing the overall weight of the product.

Customer Benefits

➤ Helden’s Dismantling Joints are particularly suitable for simplifying the installation and removal of isolation valves, control valves, check valves, non-return valves, flow metering valves, pump sets, pressure reducing valves, flanged pipe and fittings.

➤ The simplicity and versatility of the fittings make them suitable for many applications including pumping stations, water treatment works, sewage treatment works, plant rooms, meter chambers, power generation equipment, gas distribution stations.

➤ Studs independent of the tie rods compress the gasket allowing the use of smaller diameters than those in the flange connecting bolts so improving access for operatives during installation.

➤ Use of high tensile steel in the tie rods reduces the number required to accommodate the end load forces making it easier and quicker for operatives to install, especially in tight spaces, chambers and congested pump stations.

www.helden-web.com
Dismantling Joints (Standard Product)

Table provides details of standard product – for products offering longer flange dimensions and / or increased longitudinal adjustment contact Helden.

<table>
<thead>
<tr>
<th>Nom</th>
<th>Drilling</th>
<th>Flange Details</th>
<th>Flange to Flange Details</th>
<th>Tie Rod Details</th>
<th>Flange Adaptor &amp; Spigot Manufacture</th>
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<tbody>
<tr>
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<td>Flange Thickness</td>
<td>Flange OD</td>
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<tr>
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<td>PN40</td>
<td>25 25 300</td>
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<td>M20 x 310</td>
<td>4 21.6</td>
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<td>M20 x 310</td>
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<td>19 20 405</td>
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<td>M30 x 380</td>
<td>4 69.8</td>
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</tbody>
</table>

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Dismantling Joints DN40 to DN300 (PN10,16,25,40)

Datasheet 2/2

Technical Information

**Working Pressure Rating**
Water - In accordance with the flange rating
Gas 6 bar

**Vacuum Pressure**
Capable of accommodating a vacuum pressure of -0.7 bar

**Site Test Pressure**
1.5 times working pressure for short duration (2 hours)

**Angularity**
Dismantling joints are in essence double flanged pipe where the flange to flange dimension can be adjusted, and therefore are not able to accommodate any angularity.

**Bolt Torque/Spanner**
M12; Torque 55-65Nm on every bolt
M16; Torque 95-110Nm on every bolt

**Tie rods**
Torque is a function of the flange connecting gasket, not supplied by Helden; consult flange gasket supplier.

**Temperature Rating of Product**
EPDM -20°C to +90°C
Nitrile -20°C to +90°C
For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

**Approvals**
The following water contact materials used in Dismantling Joints are approved for use with potable water:-
Rilsan Nylon 11:
➤ WRAS, AS/NZS 4020, DVGW, W270, ACS & KIWA
EPDM Gaskets:
➤ WRAS, AS/NZS 4020
In addition to the above, the flange adaptor component in the Dismantling Joint has as a finished product KIWA certification verifying that it complies with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

**Flange Drilling**
BS EN1092-1
(formerly BS4504), ISO7005

**Cast Flange Adaptor Body & End Rings**
Ductile Iron to BS EN1563:
Symbol EN-GJS-450-10

**Fabricated Flange Adaptor Body & End Rings**
Rolled Steel to BS EN 10025-2:
Grade S275

**Sleeve Options**
➤ Steel Tube to BS EN10255
➤ Steel Tube to BS EN10216-1:
Grade P265TR1
➤ Rolled Steel to BS EN 10025-2:
Grade S275

**Cast Flange Spigot:**
Ductile Iron to BS EN1563:
Symbol EN-GJS-450-10

**Fabricated Flange Spigot:**
Rolled steel to BS EN10025-2:
Grade S275

**Steel Spigot Options:**
➤ Steel tube to BS EN10255
➤ Steel tube to BS EN10216-1:
Grade P265TR1
➤ Rolled steel to BS EN 10025-2:
Grade S275

**Gaskets**
Standard:
➤ EPDM to BS EN681-1: Type WA
Other gasket grades are available contact Helden.

**Coatings**
Flange Adaptor, Spigot & End Ring:
➤ Rilsan Nylon 11 to WIS 4-52-01 Part 1

Option 1 Flange Adaptor bolts & Nuts:
➤ Sheraplex to WIS 4-52-03
Steel Tie Rods/Nuts:
➤ Zn² Zinc coated

Tie Rods, Studs, Nuts and Washers
The following two options are as standard variants:-

**Option 1: Zinc Plated Steel**

**Tie Rods**
ASTM A193 (Grade B7/MB7)
equivalent to BS EN10269:+A1:
Name 42CrMo4 (Yield 725N/mm²)

**Tie Rod Nuts**
ASTM A194 Grade 2H/M2H
equivalent to BS EN20898-2:
Property Class 8.00

**Flange Adaptor Studs**
Steel to BS EN ISO898-1:
Property Class 4.8

**Flange Adaptor Nuts**
Steel to BS4190: Grade 4

**Flange Adaptor Washers**
Stainless Steel to BS1449: Part 2:
Grade 304S15

**Option 2: Stainless Steel**

**Tie Rods**
Stainless Steel to BS EN3506-1:
Grade A4 Property Class 70
(Yield 450N/mm²)

**Tie Rod Nuts**
Stainless Steel to BS EN3506-2:
Grade A4 Property Class 80

**Flange Adaptor Studs**
Stainless Steel to BS EN ISO 3506-1: grade A4 property class 50

**Flange Adaptor Nuts**
Stainless Steel to BS EN ISO 3506-2: grade A4 property class 80

**Flange Adaptor Washers**
Stainless Steel to BS1449: Part 2: Grade 304S15

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Dismantling Joints DN350 to DN2400 (PN10)

Dismantling Joint
(For diameters over DN2400 contact Helden)

![Diagram of Dismantling Joint]

**Note:** Maximum Longitudinal Adjustment = Maximum Length – Minimum Length

Dismantling Joints (Standard Product)

Table provides details of standard product – for products offering longer flange dimensions and / or increased longitudinal adjustment contact Helden.

<table>
<thead>
<tr>
<th>Nom</th>
<th>Drilling</th>
<th>Flange Details</th>
<th>Flange To Flange Details</th>
<th>Tie Rod Details</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Flange Thickness</td>
<td>Flange OD</td>
<td>Nominal Length</td>
</tr>
<tr>
<td></td>
<td></td>
<td>E (mm)</td>
<td>A (mm)</td>
<td>B (mm)</td>
</tr>
<tr>
<td>350</td>
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Dismantling Joints DN350 to DN2400 (PN10)

**Technical Information**

**Working Pressure Rating**
- Water - In accordance with the flange rating
- Gas 6 bar

**Vacuum Pressure**
Capable of accommodating a vacuum pressure of -0.7 bar

**Site Test Pressure**
1.5 times working pressure for short duration (2 hours)

**Angularity**
Dismantling joints are in essence double flanged pipe where the flange to flange dimension can be adjusted, and therefore are not able to accommodate any angularity.

**Bolt Torque/Spanner**
- M12; Torque 55-65Nm on every bolt
- M16; Torque 95-110Nm on every bolt

**Tie rods**
Torque is a function of the flange connecting gasket, not supplied by Helden; consult flange gasket supplier.

**Temperature Rating of Product**
- EPDM -20°C to +90°C
- Nitrile -20°C to +90°C

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

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

In addition to the above, the flange adaptor component in the Dismantling Joint has as a finished product KIWA certification verifying that it complies with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

**Materials & Relevant Standards**

**Flange Drilling**
- BS EN1092-1 (formerly BS4504), ISO7005

**Fabricated Flange Adaptor Body**
- Rolled Steel to BS EN 10025-2: Grade S275

**End Rings & Sleeve Options**
- Rolled Steel to BS EN 10025-2: Grade S275
- Rolled Steel to BS EN 10025-2: Grade S355 (depending on section)

**Flange**
- Rolled Steel to BS EN 10025-2: Grade S275

**Spigot Options:**
- Steel Tube to BS10216-1: Grade P265TR1
- Rolled steel to BS EN10025-2: Grade S275

**Gaskets**
Standard:
- EPDM to BS EN681-1: Type WA
- Other gasket grades are available contact Helden.

**Coatings**
- Flange Adaptor, Spigot & End Ring:
  - Rilsan Nylon 11 to WIS 4-52-01 Part 1
  - Sheraplex to WIS 4-52-03
- Steel Tie Rods/Nuts:
  - Zn7 Zinc coated

**Tie Rods, Studs, Nuts and Washers**
The following two options are as standard variants:-

**Option 1: Zinc Plated Steel**

**Tie Rods**
- ASTM A193 (Grade B7/MB7)
- Equivalent to BS EN10269:+A1; Name 42CrMo4 (Yield 725N/mm²)

**Tie Rod Nuts**
- ASTM A194 Grade 2H/M2H
- Equivalent to BS EN20898-2: Property Class 8.00

**Flange Adaptor Studs**
- Steel to BS EN ISO898-1: Property Class 4.8

**Flange Adaptor Nuts**
- Steel to BS4190: Grade 4

**Flange Adaptor Washers**
- Stainless Steel to BS1449:Part 2: Grade 304S15

**Option 2: Stainless Steel**

**Tie Rods**
- Stainless Steel to BS EN3506-1: Grade A4 Property Class 70 (Yield 450N/mm²)

**Tie Rod Nuts**
- Stainless Steel to BS EN3506-2: Grade A4 Property Class 80

**Flange Adaptor Studs**
- Stainless Steel to BS ISO 3506-1: grade A4
- Property class 50

**Flange Adaptor Nuts**
- Stainless Steel to BS ISO 3506-2: grade A4
- Property class 80

**Flange Adaptor Washers**
- Stainless Steel to BS1449: Part 2: Grade 304S15
## Dismantling Joints DN350 to DN2400 (PN16)

### Dismantling Joint

(For diameters over DN2400 contact Helden)

![Diagram of Dismantling Joint](image)

**Note:** Maximum Longitudinal Adjustment = Maximum Length – Minimum Length

### Dismantling Joints (Standard Product)

The table provides details of standard product – for products offering longer flange dimensions and / or increased longitudinal adjustment contact Helden.

<table>
<thead>
<tr>
<th>Nom</th>
<th>Drilling</th>
<th>Flange Details</th>
<th>Flange To Flange Details</th>
<th>Tie Rod Details</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Flange Thickness E (mm)</td>
<td>Flange OD A (mm)</td>
<td>Nominal Length B (mm)</td>
</tr>
<tr>
<td>350</td>
<td>PN16</td>
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<td>520</td>
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</tr>
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<td>60</td>
<td>2765</td>
<td>462</td>
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</tbody>
</table>

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Dismantling Joints DN350 to DN2400 (PN16)

Technical Information

Working Pressure Rating
Water - In accordance with the flange rating
Gas 6 bar

Vacuum Pressure
Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure
1.5 times working pressure for short duration (2 hours)

Angularity
Dismantling joints are in essence double flanged pipe where the flange to flange dimension can be adjusted, and therefore are not able to accommodate any angularity.

Bolt Torque/Spanner
M12; Torque 55-65Nm on every bolt
M16; Torque 95-110Nm on every bolt

Tie rods
Torque is a function of the flange connecting gasket, not supplied by Helden; consult flange gasket supplier.

Temperature Rating of Product
EPDM -20°C to +90°C
Nitrile -20°C to +90°C
For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

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

In addition to the above, the flange adaptor component in the Dismantling Joint has as a finished product KIWA certification verifying that it complies with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Flange Drilling
BS EN1092-1
(formerly BS4504), ISO7005

Fabricated Flange Adaptor Body
Rolled Steel to BS EN 10025-2:
Grade S275

End Rings & Sleeve Options
- Rolled Steel to BS EN 10025-2:
  Grade S275
- Rolled Steel to BS EN 10025-2:
  Grade S355
  (depending on section)

Flange
Rolled Steel to BS EN 10025-2:
Grade S275

Spigot Options:
- Steel Tube to BS10216-1:
  Grade P265TR1
- Rolled steel to BS EN10025-2:
  Grade S275

Gaskets
Standard:
- EPDM to BS EN681-1: Type WA
Other gasket grades are available contact Helden.

Coatings
Flange Adaptor, Spigot & End Ring:
- Rilsan Nylon 11 to WIS 4-52-01 Part 1
Option 1 Flange Adaptor bolts & Nuts:
- Sheraplex to WIS 4-52-03
Steel Tie Rods/Nuts:
- Zn+ Zinc coated

Tie Rods, Studs, Nuts and Washers
The following two options are as standard variants:-

Option 1: Zinc Plated Steel

Tie Rods
ASTM A193 (Grade B7/M7) equivalent to BS EN10269:+A1:
Name 42CrMo4 (Yield 725N/mm²)

Tie Rod Nuts
ASTM A194 Grade 2H/M2H equivalent to BS EN20898-2:
Property Class 8.00

Flange Adaptor Studs
Steel to BS EN ISO898-1:
Property Class 4.8

Flange Adaptor Nuts
Steel to BS4190: Grade 4

Flange Adaptor Washers
Stainless Steel to BS1449:Part 2:
Grade 304S15

Option 2: Stainless Steel

Tie Rods
Stainless Steel to BS EN3506-1:
Grade A4 Property Class 70
(Yield 450N/mm²)

Tie Rod Nuts
Stainless Steel to BS EN3506-2:
Grade A4 Property Class 80

Flange Adaptor Studs
Stainless Steel to
BS EN ISO 3506-1: grade A4
property class 50

Flange Adaptor Nuts
Stainless Steel to
BS EN ISO 3506-2: grade A4
property class 80

Flange Adaptor Washers
Stainless Steel to BS1449:
Part 2: Grade 304S15

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Dismantling Joints DN350 to DN1800 (PN25)

Datasheet

Dismantling Joint
(For diameters over DN1800 contact Helden)

Note: Maximum Longitudinal Adjustment = Maximum Length – Minimum Length

Dismantling Joints (Standard Product)
Table provides details of standard product – for products offering longer flange dimensions and / or increased longitudinal adjustment contact Helden.

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<thead>
<tr>
<th>Nom Drilling</th>
<th>Flange Thickness</th>
<th>Flange OD</th>
<th>Nominal Length</th>
<th>Minimum Length</th>
<th>Maximum Length</th>
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<td>327</td>
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<td>307</td>
<td>277</td>
<td>337</td>
<td>M45 x 630</td>
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<td>M64 x 970</td>
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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.
Dismantling Joint
(For diameters over DN1600 contact Helden)

![Diagram of Dismantling Joint]

**Note:** Maximum Longitudinal Adjustment = Maximum Length – Minimum Length

Dismantling Joints (Standard Product)
Table provides details of standard product – for products offering longer flange dimensions and / or increased longitudinal adjustment contact Helden.

<table>
<thead>
<tr>
<th>Nom</th>
<th>Drilling</th>
<th>Flange Details</th>
<th>Flange To Flange Details</th>
<th>Tie Rod Details</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Flange Thickness</td>
<td>Flange OD</td>
<td>Nominal Length</td>
</tr>
<tr>
<td></td>
<td></td>
<td>E (mm)</td>
<td>A (mm)</td>
<td>B (mm)</td>
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<td>1600</td>
<td>PN40</td>
<td>60</td>
<td>2025</td>
<td>462</td>
</tr>
</tbody>
</table>

**Note:** Stainless steel tie rods cannot accommodate this working pressure so not available.

---

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Dismantling Joints DN350 to DN1600 (PN40)

Technical Information

Working Pressure Rating
Water - In accordance with the flange rating
Gas 6 bar

Vacuum Pressure
Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure
1.5 times working pressure for short duration (2 hours)

Angularity
Dismantling joints are in essence double flanged pipe where the flange to flange dimension can be adjusted, and therefore are not able to accommodate any angularity.

Bolt Torque/Spanner
M12; Torque 55-65Nm on every bolt
M16; Torque 95-110Nm on every bolt

Tie rods
Torque is a function of the flange connecting gasket, not supplied by Helden; consult flange gasket supplier.

Temperature Rating of Product
EPDM -20°C to +90°C
Nitrile -20°C to +90°C
For use on applications with fluctuating and / or elevated temperatures (> -60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

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

Materials & Relevant Standards

Flange Drilling
BS EN1092-1 (formerly BS4504), ISO7005

Fabricated Flange Adaptor Body
Rolled Steel to BS EN 10025-2:
Grade S275

End Rings & Sleeve Options:
- Rolled Steel to BS EN 10025-2:
  Grade S275
- Rolled Steel to BS EN 10025-2:
  Grade S355 (depending on section)

Flange
Rolled Steel to BS EN 10025-2:
Grade S275

Spigot Options:
- Steel tube to BS10216-1:
  Grade P265TR1
- Rolled steel to BS EN10025-2:
  Grade S275

Gaskets
Standard:
- EPDM to BS EN681-1: Type WA
Other gasket grades are available contact Helden.

Coatings
Flange Adaptor, Spigot & End Ring:
- Rilsan Nylon 11 to WIS 4-52-01 Part 1
Option 1 Flange Adaptor bolts & Nuts:
- Sheraplex to WIS 4-52-03
Steel Tie Rods/Nuts:
- ZnZ Zinc coated

Tie Rods, Studs, Nuts and Washers
The following two options are as standard variants:-

Option 1: Zinc Plated Steel

Tie Rods
ASTM A193 (Grade B7/MB7) equivalent to BS EN10269:+A1:
Name 42CrMo4 (Yield 725N/mm²)

Tie Rod Nuts
ASTM A194 Grade 2H/M2H equivalent to BS EN20898-2:
Property Class 8.00

Flange Adaptor Studs
Steel to BS EN ISO898-1:
Property Class 4.8

Flange Adaptor Nuts
Steel to BS4190: Grade 4

Flange Adaptor Washers
Stainless Steel to BS1449:Part 2:
Grade 304S15

Option 2: Stainless Steel

Tie Rods
Stainless Steel to BS EN3506-1:
Grade A4 Property Class 70 (Yield 450N/mm²)

Tie Rod Nuts
Stainless Steel to BS EN3506-2:
Grade A4 Property Class 80

Flange Adaptor Studs
Stainless Steel to BS EN ISO 3506-1:
grade A4 property class 50

Flange Adaptor Nuts
Stainless Steel to BS EN ISO 3506-2:
grade A4 property class 80

Flange Adaptor Washers
Stainless Steel to BS1449:
Part 2: Grade 304S15
Dismantling Joint
(For diameters over 40" contact Helden)

Dismantling Joints (Standard Product)
Table provides details of standard product – for products offering longer flange dimensions and / or increased longitudinal adjustment contact Helden.

<table>
<thead>
<tr>
<th>Nom</th>
<th>Drilling</th>
<th>Flange Details</th>
<th>Flange To Flange Details</th>
<th>Tie Rod Details</th>
<th>H.T Zinc Plated Steel H.T Steel BS4882 Grade MB7 Yield 725N/mm²</th>
<th>Stainless Steel Class 70 Yield 450N/mm²</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Flange Thickness</td>
<td>Flange OD</td>
<td>Nominal Length</td>
<td>Minimum Length</td>
<td>Maximum Length</td>
</tr>
<tr>
<td>4&quot;</td>
<td>Class D</td>
<td>18</td>
<td>229</td>
<td>187</td>
<td>167</td>
<td>207</td>
</tr>
<tr>
<td>6&quot;</td>
<td>Class D</td>
<td>18</td>
<td>279</td>
<td>187</td>
<td>167</td>
<td>207</td>
</tr>
<tr>
<td>8&quot;</td>
<td>Class D</td>
<td>18</td>
<td>343</td>
<td>187</td>
<td>167</td>
<td>207</td>
</tr>
<tr>
<td>10&quot;</td>
<td>Class D</td>
<td>18</td>
<td>406</td>
<td>187</td>
<td>167</td>
<td>207</td>
</tr>
<tr>
<td>12&quot;</td>
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<td>18</td>
<td>483</td>
<td>187</td>
<td>167</td>
<td>207</td>
</tr>
<tr>
<td>14&quot;</td>
<td>Class D</td>
<td>18</td>
<td>533</td>
<td>295</td>
<td>270</td>
<td>320</td>
</tr>
<tr>
<td>16&quot;</td>
<td>Class D</td>
<td>18</td>
<td>597</td>
<td>295</td>
<td>270</td>
<td>320</td>
</tr>
<tr>
<td>18&quot;</td>
<td>Class D</td>
<td>23</td>
<td>635</td>
<td>300</td>
<td>275</td>
<td>325</td>
</tr>
<tr>
<td>20&quot;</td>
<td>Class D</td>
<td>23</td>
<td>698</td>
<td>300</td>
<td>275</td>
<td>325</td>
</tr>
<tr>
<td>24&quot;</td>
<td>Class D</td>
<td>23</td>
<td>813</td>
<td>300</td>
<td>275</td>
<td>325</td>
</tr>
<tr>
<td>28&quot;</td>
<td>Class D</td>
<td>23</td>
<td>927</td>
<td>300</td>
<td>275</td>
<td>325</td>
</tr>
<tr>
<td>30&quot;</td>
<td>Class D</td>
<td>23</td>
<td>984</td>
<td>300</td>
<td>275</td>
<td>325</td>
</tr>
<tr>
<td>32&quot;</td>
<td>Class D</td>
<td>23</td>
<td>1060</td>
<td>300</td>
<td>275</td>
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</tr>
<tr>
<td>36&quot;</td>
<td>Class D</td>
<td>25</td>
<td>1168</td>
<td>307</td>
<td>277</td>
<td>337</td>
</tr>
</tbody>
</table>
| 40" | Class D  | 25              | 1289      | 307            | 277            | 337            | 1 1/2" x 20 1/2"  | 9   | 320.0                     | 9   | 320.0  

Note: Maximum Longitudinal Adjustment = Maximum Length – Minimum Length

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Dismantling Joints 4” to 40” AWWA (Class D)

Datasheet 2/2

Technical Information

Working Pressure Rating
Water - In accordance with the flange rating
Gas 6 bar

Vacuum Pressure
Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure
1.5 times working pressure for short duration (2 hours)

Angularity
Dismantling joints are in essence double flanged pipe where the flange to flange dimension can be adjusted, and therefore are not able to accommodate any angularity.

Bolt Torque/Spanner
M12; Torque 55-65Nm on every bolt
M16; Torque 95-110Nm on every bolt

Tie rods
Torque is a function of the flange connecting gasket, not supplied by Helden; consult flange gasket supplier.

Temperature Rating of Product
EPDM -20°C to +90°C
Nitrile -20°C to +90°C

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

Approvals
The following water contact materials used in Dismantling Joints are approved for use with potable water:-
Rilsan Nylon 11:
➤ WRAS, AS/NZS 4020, DVGW, W270, ACS & KIWA
EPDM Gaskets:
➤ WRAS, AS/NZS 4020

Materials & Relevant Standards

Flange Drilling
ANSI/AWWA C207-01

Fabricated Flange Adaptor Body
Rolled Steel to BS EN 10025-2: Grade S275

End Rings Options:
➤ Ductile Iron to BS EN1563: Symbol EN-GJS-450-10
➤ Rolled Steel to BS EN 10025-2: Grade S275

Sleeve Options:
➤ Steel Tube to BS EN10255:
➤ Steel Tube to BS EN10216-1:
  Grade P265TR1
➤ Rolled Steel to BS EN 10025-2: Grade S275
➤ Rolled Steel to BS EN 10025-2: Grade S355 (depending on section)

Flange
Rolled Steel to BS EN 10025-2: Grade S275

Spigot Options:
➤ Steel Tube to BS EN10255
➤ Steel Tube to BS EN10216-1:
  Grade P265TR1
➤ Rolled Steel to BS EN 10025-2: Grade S275

Gaskets
Standard:
➤ EPDM to BS EN681-1: Type WA
Other gasket grades are available contact Helden.

Coatings
Flange Adaptor, Spigot & End Ring:
➤ Rilsan Nylon 11 to
  WIS 4-52-01 Part 1
Option 1 Flange Adaptor bolts & Nuts:
➤ Sheraplex to WIS 4-52-03
Steel Tie Rods/Nuts:
➤ Zn3 Zinc coated

Tie Rods, Studs, Nuts and Washers
The following two options are as standard variants:-

Option 1: Zinc Plated Steel

<table>
<thead>
<tr>
<th>Tie Rods</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTM A193 (Grade B7/MB7) equivalent to BS EN10269:+A1: Name 42CrMo4 (Yield 725N/mm²)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tie Rod Nuts</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTM A194 Grade 2H/M2H equivalent to BS EN20898-2: Property Class 8.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Flange Adaptor Studs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steel to BS EN ISO898-1: Property Class 4.8</td>
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</table>

<table>
<thead>
<tr>
<th>Flange Adaptor Nuts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steel to BS4190: Grade 4</td>
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</table>

<table>
<thead>
<tr>
<th>Flange Adaptor Washers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stainless Steel to BS1449:Part 2: Grade 304S15</td>
</tr>
</tbody>
</table>

Option 2: Stainless Steel

<table>
<thead>
<tr>
<th>Tie Rods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stainless Steel to BS EN3506-1: Grade A4 Property Class 70 (Yield 450N/mm²)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tie Rod Nuts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stainless Steel to BS EN3506-2: Grade A4 Property Class 80</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Flange Adaptor Studs</th>
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</thead>
<tbody>
<tr>
<td>Stainless Steel to BS EN ISO 3506-1: grade A4 property class 50</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Flange Adaptor Nuts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stainless Steel to BS EN ISO 3506-2: grade A4 property class 80</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Flange Adaptor Washers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stainless Steel to BS1449: Part 2: Grade 304S15</td>
</tr>
</tbody>
</table>

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Dismantling Joints 3” to 40” (ANSI 150)

Datasheet 1/2

Dismantling Joint
(For diameters over 40” contact Helden)

![Diagram showing dimensions of a dismantling joint]

Note: Maximum Longitudinal Adjustment = Maximum Length – Minimum Length

Dismantling Joints (Standard Product)
Table provides details of standard product – for products offering longer flange dimensions and / or increased longitudinal adjustment contact Helden.

<table>
<thead>
<tr>
<th>Nom.</th>
<th>Drilling</th>
<th>Flange Thickness E (mm)</th>
<th>Flange OD A (mm)</th>
<th>Flange Nominal Length B (mm)</th>
<th>Flange Minimum Length C (mm)</th>
<th>Flange Maximum Length D (mm)</th>
<th>Tie Rod Dia x Length</th>
<th>H.T Zinc Plated Steel H.T Steel BS4882 Grade MB7 Yield 725N/mm²</th>
<th>Stainless Steel Class 70 Yield 450N/mm²</th>
</tr>
</thead>
<tbody>
<tr>
<td>3”</td>
<td>ANSI 150</td>
<td>25</td>
<td>190</td>
<td>194</td>
<td>174</td>
<td>214</td>
<td>5/8” x 12 1/2”</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>4”</td>
<td>ANSI 150</td>
<td>25</td>
<td>229</td>
<td>194</td>
<td>174</td>
<td>214</td>
<td>5/8” x 12 1/2”</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>6”</td>
<td>ANSI 150</td>
<td>25</td>
<td>279</td>
<td>194</td>
<td>174</td>
<td>214</td>
<td>3/4” x 13”</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>8”</td>
<td>ANSI 150</td>
<td>25</td>
<td>343</td>
<td>194</td>
<td>174</td>
<td>214</td>
<td>3/4” x 13”</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>10”</td>
<td>ANSI 150</td>
<td>25</td>
<td>406</td>
<td>194</td>
<td>174</td>
<td>214</td>
<td>7/8” x 13 1/2”</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>12”</td>
<td>ANSI 150</td>
<td>25</td>
<td>483</td>
<td>194</td>
<td>174</td>
<td>214</td>
<td>7/8” x 13 1/2”</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>14”</td>
<td>ANSI 150</td>
<td>25</td>
<td>533</td>
<td>302</td>
<td>277</td>
<td>327</td>
<td>1” x 19</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>16”</td>
<td>ANSI 150</td>
<td>25</td>
<td>597</td>
<td>302</td>
<td>277</td>
<td>327</td>
<td>1” x 19</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>18”</td>
<td>ANSI 150</td>
<td>25</td>
<td>635</td>
<td>302</td>
<td>277</td>
<td>327</td>
<td>1 1/8” x 19”</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>20”</td>
<td>ANSI 150</td>
<td>25</td>
<td>698</td>
<td>302</td>
<td>277</td>
<td>327</td>
<td>1 1/8” x 19 1/2”</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>24”</td>
<td>ANSI 150</td>
<td>25</td>
<td>813</td>
<td>302</td>
<td>277</td>
<td>327</td>
<td>1 1/4” x 20 1/2”</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>28”</td>
<td>ANSI 150</td>
<td>25</td>
<td>927</td>
<td>302</td>
<td>277</td>
<td>327</td>
<td>1 1/4” x 22”</td>
<td>7</td>
<td>8</td>
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<tr>
<td>30”</td>
<td>ANSI 150</td>
<td>25</td>
<td>984</td>
<td>302</td>
<td>277</td>
<td>327</td>
<td>1 1/4” x 22 1/2”</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>32”</td>
<td>ANSI 150</td>
<td>25</td>
<td>1060</td>
<td>302</td>
<td>277</td>
<td>327</td>
<td>1 1/2” x 23”</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>36”</td>
<td>ANSI 150</td>
<td>25</td>
<td>1168</td>
<td>307</td>
<td>277</td>
<td>337</td>
<td>1 1/2” x 24 1/2”</td>
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<td>10</td>
</tr>
<tr>
<td>40”</td>
<td>ANSI 150</td>
<td>38</td>
<td>1289</td>
<td>320</td>
<td>290</td>
<td>350</td>
<td>1 1/2” x 25”</td>
<td>9</td>
<td>12</td>
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</tbody>
</table>

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## Dismantling Joints 3” to 40” (ANSI 150)

### Technical Information

#### Working Pressure Rating
- Water - In accordance with the flange rating
- Gas 6 bar

#### Vacuum Pressure
- Capable of accommodating a vacuum pressure of -0.7 bar

#### Site Test Pressure
- 1.5 times working pressure for short duration (2 hours)

#### Angularity
- Dismantling joints are in essence double flanged pipe where the flange to flange dimension can be adjusted, and therefore are not able to accommodate any angularity.

#### Bolt Torque/Spanner
- M12; Torque 55-65Nm on every bolt
- M16; Torque 95-110Nm on every bolt

#### Tie rods
- Torque is a function of the flange connecting gasket, not supplied by Helden; consult flange gasket supplier.

#### Temperature Rating of Product
- EPDM -20°C to +90°C
- Nitrile -20°C to +90°C
- For use on applications with fluctuating and/or elevated temperatures (> -60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

### Materials & Relevant Standards

#### Flange Drilling
- ASME/ANSI B16.5/B16.47

#### Fabricated Flange Adaptor Body
- Rolled Steel to BS EN 10025-2:
  - Grade S275

#### End Rings Options:
- Ductile Iron to BS EN1563:
  - Symbol EN-GJS-450-10
- Rolled Steel to BS EN 10025-2:
  - Grade S275

#### Sleeve Options:
- Steel Tube to BS EN10255:
- Steel Tube to BS EN10216-1:
  - Grade P265TR1
- Rolled Steel to BS EN 10025-2:
  - Grade S275
- Rolled Steel to BS EN 10025-2:
  - Grade S355
  (depending on section)

#### Flange
- Rolled Steel to BS EN 10025-2:
  - Grade S275

#### Spigot Options:
- Steel Tube to BS EN10255:
- Steel Tube to BS EN10216-1:
  - Grade P265TR1

#### Gaskets
- Standard:
  - EPDM to BS EN681-1: Type WA
- Other gasket grades are available contact Helden.

#### Coatings
- Flange Adaptor, Spigot & End Ring:
- Rilsan Nylon 11 to
  - WIS 4-52-01 Part 1
- Option 1 Flange Adaptor bolts & Nuts:
- Sheraplex to WIS 4-52-03
- Steel Tie Rods/Nuts:
- Zn3 Zinc coated

#### Tie Rods, Studs, Nuts and Washers
- The following two options are as standard variants:-

<table>
<thead>
<tr>
<th>Option 1: Zinc Plated Steel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tie Rods</td>
</tr>
<tr>
<td>ASTM A193 (Grade B7/MB7)</td>
</tr>
<tr>
<td>equivalent to BS EN10269:+A1</td>
</tr>
<tr>
<td>Name 42CrMo4 (Yield 725N/mm²)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Option 2: Stainless Steel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tie Rods</td>
</tr>
<tr>
<td>Stainless Steel to BS EN3506-1:</td>
</tr>
<tr>
<td>(Yield 450N/mm²)</td>
</tr>
</tbody>
</table>

| Tie Rod Nuts                |
| Stainless Steel to BS EN3506-2: | Grade A4 Property Class 80 |

| Flange Adaptor Studs        |
| Stainless Steel to BS EN ISO 3506-1: | Grade A4 property class 50 |

| Flange Adaptor Nuts         |
| Stainless Steel to BS EN ISO 3506-2: | Grade A4 property class 80 |

| Flange Adaptor Washers      |
| Stainless Steel to BS1449:Part 2: | Grade 304S15 |

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<tr>
<th>Flange Details</th>
<th>Flange To Flange Details</th>
<th>Tie Rod Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nom Drilling</td>
<td>Flange Thickness (E mm)</td>
<td>Flange OD (A mm)</td>
</tr>
<tr>
<td>----------------</td>
<td>--------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>3” ANSI 300</td>
<td>25</td>
<td>210</td>
</tr>
<tr>
<td>4” ANSI 300</td>
<td>25</td>
<td>254</td>
</tr>
<tr>
<td>6” ANSI 300</td>
<td>25</td>
<td>318</td>
</tr>
<tr>
<td>8” ANSI 300</td>
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<td>381</td>
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<tr>
<td>10” ANSI 300</td>
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<tr>
<td>12” ANSI 300</td>
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<td>28” ANSI 300</td>
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<td>30” ANSI 300</td>
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<td>32” ANSI 300</td>
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<td>1149</td>
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<tr>
<td>36” ANSI 300</td>
<td>38</td>
<td>1270</td>
</tr>
<tr>
<td>40” ANSI 300</td>
<td>60</td>
<td>1238</td>
</tr>
</tbody>
</table>

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EPDM Gaskets:
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Fabricated Flange Adaptor Body
Rolled Steel to BS EN 10025-2:
Grade S275

End Rings Options:
> Ductile Iron to BS EN1563:
  Symbol EN-GJS-450-10
> Rolled Steel to BS EN 10025-2:
  Grade S275

Sleeve Options:
> Steel Tube to BS EN10255:
> Steel Tube to BS EN10216-1:
  Grade P265TR1
> Rolled Steel to BS EN 10025-2:
  Grade S275
> Rolled Steel to BS EN 10025-2:
  Grade S355
  (depending on section)

Flange
Rolled Steel to BS EN 10025-2:
Grade S275

Spigot Options:
> Steel Tube to BS EN10255:
> Steel Tube to BS EN10216-1:
  Grade P265TR1

Gaskets
Standard:
> EPDM to BS EN681-1: Type WA
Other gasket grades are available contact Helden.

Coatings
Flange Adaptor, Spigot & End Ring:
> Rilsan Nylon 11 to
  WIS 4-52-01 Part 1
Option 1 Flange Adaptor bolts & Nuts:
> Sheraplex to WIS 4-52-03
Steel Tie Rods/Nuts:
> Zn² Zinc coated

Tie Rods, Studs, Nuts and Washers
The following two options are as standard variants:-

Option 1: Zinc Plated Steel

Tie Rods
ASTM A193 (Grade B7/MB7) equivalent to BS EN10269:+A1:
Name 42CrMo4 (Yield 725N/mm²)

Tie Rod Nuts
ASTM A194 Grade 2H/M2H equivalent to BS EN20898-2:
Property Class 8.00

Flange Adaptor Studs
Steel to BS EN ISO898-1:
Property Class 4.8

Flange Adaptor Nuts
Steel to BS4190: Grade 4

Flange Adaptor Washers
Stainless Steel to BS1449:Part 2:
Grade 304S15

Option 2: Stainless Steel

Tie Rods
Stainless Steel to BS EN3506-1:
Grade A4 Property Class 70
(Yield 450N/mm²)

Tie Rod Nuts
Stainless Steel to BS EN3506-2:
Grade A4 Property Class 80

Flange Adaptor Studs
Stainless Steel to
BS EN ISO 3506-1: grade A4
property class 50

Flange Adaptor Nuts
Stainless Steel to
BS EN ISO 3506-2: grade A4
property class 80

Flange Adaptor Washers
Stainless Steel to BS1449:
Part 2: Grade 304S15

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Crane BS&U are solely the provider of products and have no direct influence on, or take any responsibility for any working practices employed or depicted in the images enclosed to install such products.
Unrivalled FlexLock
Couplings & Flange Adaptors
For Ductile Iron or Steel Pipes
Unique, Patented & Self Anchoring Joints for Ductile Iron or Steel Pipes

The FlexLock system provides a self-anchoring method of joining ductile iron or steel pipes and offers a cost effective, quick and simple alternative to traditional anchoring systems such as site welding, harnessing or thrust blocks.

Above Ground or Buried Application
FlexLock is a unique pipe jointing system that is fully end load bearing. Gaskets have embedded stainless steel teeth that grip the outer surface of the pipe, yet still allow for angular deflection of pipes in service. This prevents pipes from separating under pressure loads making FlexLock ideal for above ground and buried applications, soft ground conditions or temporary pipe work.

End Load Restraint
FlexLock works on the same compression joint principle as standard Helden products but as the compression bolts are tightened, the stainless steel teeth grip around the outside diameter of the pipe, providing a fully end load restraint joint. Internal pressure in the pipe causes the assembly to lock firmly providing a leak proof joint.

The FlexLock range consists of couplings and flange adaptors with nominal sizes from DN50 (2”) up to DN300 (12”) and are suitable for use on both gas and cold potable water pipelines with a maximum operating temperature of 40°C.
FlexLock Couplings & Flange Adaptors

Product Design Benefits

Suitable for Water & Gas

A FlexLock is supplied as standard with EPDM gaskets for water applications to EN 681. However it is also available with Nitrile gaskets to EN 682 suitable for natural gas, petroleum products, low aromatic fuels, sewage and drainage.

Excellent Corrosion Protection

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

Unique Load Bearing Teeth

As the compression bolts are tightened, unique load bearing stainless steel teeth, that are moulded into the gasket grip around the outside diameter of the pipe, providing a fully end load restraint joint.

Customer Benefits

- FlexLock permits angular deflection between pipes (couplings ±6° / flange adaptors ±3°), allowing for normal pipeline movement such as ground settlement. Long radius curves can also be accommodated, reducing the need for special fittings.
- Cost effective – FlexLock provides significant cost savings compared to non-locking couplings with a harnessing system.
- Restrains pressure thrusts without thrust blocks at bends.
- Convert cut lengths of pipe into flanged pipes - allows use of pipe offcuts.
- Working Pressure of 16 bar on water up to and including DN200 and 10 bar for DN250 & DN300. For gas applications a working pressure of 6 bar can be achieved.
- FlexLock provides angular deflection in ANY plane unlike a harness assembly that can only provide angular deflection in one plane.

www.helden-web.com
**FlexLock** Unique Sealing System

**How FlexLock Works**

FlexLock flange adaptors and couplings work on the same compression joint principle as standard Helden products. As the compression bolts are tightened, unique load bearing stainless steel teeth (moulded into the gasket) grip around the outside diameter of the pipe, providing a fully end load resistant joint. Internal pressure in the pipe causes the assembly to lock even more firmly.

Tightening the bolts compresses the gaskets between the end rings and the centre sleeve, pressing the gasket on to the pipe and driving the edges of the steel teeth to grip on the pipe surface.

Progressive tightening of the bolts drive the teeth into their correct locked position.

When the bolts are tightened to their correct torque, the FlexLock coupling or flange adaptor is securely locked in position providing a leak proof joint whilst at the same time allowing the joint to compensate for angular movement within the pipeline.
FlexLock Couplings

<table>
<thead>
<tr>
<th>Pipe Nom</th>
<th>Pipe OD (mm)</th>
<th>Pipe Material</th>
<th>Bolt Size No.-Dia x Length</th>
<th>Overall Length (L)</th>
<th>End Ring OD (A)</th>
<th>Sleeve Length x Thickness (mm) (S)</th>
<th>Setting Gap</th>
<th>Working Pressure (bar)</th>
<th>Gasket Mould</th>
<th>Coupling Weight (kg)</th>
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</thead>
<tbody>
<tr>
<td>DN50/2”</td>
<td>60.3</td>
<td>Steel</td>
<td>2-M12 x 145</td>
<td>157</td>
<td>135</td>
<td>80 x 5.5</td>
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<td>152</td>
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<td>1394</td>
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<tr>
<td>DN80/3”</td>
<td>88.9</td>
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<td>4-M12 x 160</td>
<td>170</td>
<td>163</td>
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<td>20-40</td>
<td>16 6</td>
<td>1382</td>
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<tr>
<td>DN80/3”</td>
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<td>Ductile Iron</td>
<td>4-M12 x 195</td>
<td>203</td>
<td>181</td>
<td>115 x 6.4</td>
<td>20-40</td>
<td>16 6</td>
<td>1630</td>
<td>5.2</td>
</tr>
<tr>
<td>DN100/4”</td>
<td>114.3</td>
<td>Steel</td>
<td>4-M12 x 170</td>
<td>188</td>
<td>195</td>
<td>100 x 6.0</td>
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<td>203</td>
<td>200</td>
<td>115 x 6.4</td>
<td>20-40</td>
<td>16 6</td>
<td>1618</td>
<td>5.6</td>
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<tr>
<td>DN150/6”</td>
<td>155.1</td>
<td>Steel</td>
<td>6-M12 x 170</td>
<td>188</td>
<td>254</td>
<td>100 x 7.2</td>
<td>20-40</td>
<td>16 6</td>
<td>1369</td>
<td>9.2</td>
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<td>DN150/6”</td>
<td>158.3</td>
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<td>256</td>
<td>100 x 7.2</td>
<td>20-40</td>
<td>16 6</td>
<td>1369</td>
<td>9.3</td>
</tr>
<tr>
<td>DN150/6”</td>
<td>170</td>
<td>Ductile Iron</td>
<td>6-M12 x 170</td>
<td>178</td>
<td>256</td>
<td>100 x 7.2</td>
<td>20-40</td>
<td>16 6</td>
<td>1369</td>
<td>9.2</td>
</tr>
<tr>
<td>DN200/8”</td>
<td>219.1</td>
<td>Steel</td>
<td>8-M12 x 170</td>
<td>188</td>
<td>310</td>
<td>100 x 7.2</td>
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<td>316</td>
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<td>12-M16 x 275</td>
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<td>376</td>
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<td>10 6</td>
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<td>DN250/10”</td>
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<td>Ductile Iron</td>
<td>12-M16 x 275</td>
<td>286</td>
<td>376</td>
<td>178 x 8.5</td>
<td>20-40</td>
<td>10 6</td>
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<td>32.2</td>
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<td>DN300/12”</td>
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<td>Steel</td>
<td>12-M16 x 275</td>
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<td>436</td>
<td>178 x 6.0</td>
<td>20-40</td>
<td>10 6</td>
<td>7667/8</td>
<td>33.7</td>
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<tr>
<td>DN300/12”</td>
<td>326</td>
<td>Ductile Iron</td>
<td>12-M16 x 275</td>
<td>286</td>
<td>436</td>
<td>178 x 6.0</td>
<td>20-40</td>
<td>10 6</td>
<td>7667/8</td>
<td>33.7</td>
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</table>

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**FlexLock Couplings**

**Datasheet** 2/2

### Technical Information

**Working Pressure Rating**
- **Water:**
  - DN50 to DN200 = 16 bar
  - DN250 to DN300 = 10 bar
- **Gas:**
  - DN50 to DN300 = 6 bar

**Vacuum Pressure**
Capable of accommodating a vacuum pressure of -0.7 bar

**Site Test Pressure**
1.5 times working pressure for short duration (2 hours)

**Angularity**
Couplings 6°

**Bolt Torque/Spanner**
- M12; Torque 55-65Nm on every bolt
- M16; Torque 95-120Nm on every bolt

**Temperature Rating of Product**
- EPDM: -20°C to +40°C
- Nitrile: -20°C to +40°C

### General Notes

- FlexLock is only suitable for use on Ductile Iron, Steel and Coated Steel Pipe
- For coated steel pipe the maximum permitted coating thickness is 500μ DFT. This is to ensure the stainless steel teeth properly grip onto the pipe surface to mobilize the end load capability of the products.
- Due to the surface characteristics of stainless steel pipe, FlexLock grippers are unable to achieve a guaranteed grip on the pipe surface.
- If the product has to be dismantled after installation then for reassembly a new gasket must be used, as there is a risk that the stainless steel teeth may become dislodged during this operation. These are available as spares from Helden by quoting gasket mould number from the table along with gasket compound.

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

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

### Materials & Relevant Standards

**Centre Sleeve & End Ring Options:**
- SG. Iron to BS 1563: Symbol EN-GJS-450-10
- Rolled Steel to: BS EN 10025: Grade S275

**Coupling Body Options:**
- Ductile Iron to BS EN 1563-EN-GJS-450-10
- Mild Steel to: BS EN 10025: Grade S275

**Gasket**
- EPDM compound Grade E to BS EN 681-1
- Nitrile compound Grade ‘G’ to BS EN 682-1

**Gasket Gripper Teeth**
Stainless Steel BS 3146: Part 2 Grade ANC2

**Coatings**
Body, Centre Sleeve, & End Rings:
- Rilsan Nylon 11 to WIS 4-52-01 Part 1
- Sheraplex coated to WIS 4-52-03

**Bolts**
Cold Forged Steel Fasteners to: BS EN ISO898-1: Property Class 8.8

**Nuts**
Steel BS EN 20898-2: Property Class 8

**Washers**
BS 4320 Form B Stainless Steel BS 1449:PT2: Grade 304 S15

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FlexLock Flange Adaptors

Datasheet 1/2

Flange Adaptor

Key
1 = Flange Adaptor
2 = End Ring
3 = Gasket
4 = Gasket Gripper Teeth
5 = Stud

FlexLock Flange Adaptors

<table>
<thead>
<tr>
<th>Pipe Nom</th>
<th>Pipe OD (mm)</th>
<th>Pipe Material</th>
<th>Bolt Size</th>
<th>Overall Length (L)</th>
<th>Flange Thickness (mm) (F)</th>
<th>Sleeve Length (mm) (S)</th>
<th>Flange Nominal Drilling</th>
<th>Working Pressure (bar)</th>
<th>Setting Gap</th>
<th>Gasket Mould</th>
<th>FA Weight (kg)</th>
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<td>DN50/2&quot;</td>
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<td>2-M12 x 115</td>
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<td>75</td>
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<td>75</td>
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Technical Information

Working Pressure Rating

Water:
➤ DN50 to DN200 = 16 bar
➤ DN250 to DN300 = 10 bar

Gas:
➤ DN50 to DN300 = 6 bar

Vacuum Pressure
Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure
1.5 times working pressure for short duration (2 hours)

Flange Drilling

While DN250 to DN300 are supplied with PN1616 drilling the rated working pressure (water) is only 10 bar as stated in the table.

Angularity

Flange Adaptors 3°

Bolt Torque/Spanner

M12; Torque 55-65Nm on every bolt
M16; Torque 95-120Nm on every bolt

Temperature Rating of Product

EPDM -20°C to +40°C
Nitrile -20°C to +40°C

Materials & Relevant Standards

End Rings Options:
➤ SG. Iron to BS 1563: Symbol EN-GJS-450-10
➤ Rolled Steel to: BS EN 10025: Grade S275

Flange Adaptor Body Options:
➤ Ductile Iron to BS EN 1563 EN-GJS-450-10
➤ Mild Steel to: BS EN 10025: Grade S275

Gasket

EPDM compound Grade E to BS EN 681-1
Nitrile compound Grade ‘G’ to BS EN 682-1

Gasket Gripper Teeth
Stainless Steel BS 3146: Part 2 Grade ANC2

General Notes

➤ FlexLock is only suitable for use on Ductile Iron, Steel and Coated Steel Pipe
➤ For coated steel pipe the maximum permitted coating thickness is 500μ DFT. This is to ensure the stainless steel teeth properly grip onto the pipe surface to mobilize the end load capability of the products.
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The following water contact materials used in FlexLock are approved for use with potable water:

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➤ WRAS, AS/NZS 4020, DVGW, W270, ACS & KIWA

EPDM Gaskets:
➤ WRAS, AS/NZS 4020

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

Coatings

Body, Centre Sleeve, & End Rings:
➤ Rilsan Nylon 11 to WIS 4-52-01 Part 1
Studs & Nuts:
➤ Sheraplex coated to WIS 4-52-03

Studs
Cold Forged Steel Fasteners to: BS EN ISO898-1:
Property Class 8.8

Nuts
Steel BS EN 20898-2: Property Class 8

Washers
BS 4320 Form B Stainless Steel BS 1449:PT2: Grade 304 S15

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Large Diameter
Fittings to Suit any Pipe Specification
Large Diameter
Overview

Robust, Reliable, Proven Solution for New Lay Pipes

Customer Specifications
The dedicated range is designed for use with new-lay pipes and other specified situations where the pipe material and nominal sizes are known in advance. Customers can choose from Helden’s standard range or have them custom made to suit a range of diameters and working pressures. This flexibility makes Helden the natural choice for most major pipeline projects.

Design Liaison
Helden has worked with clients, consultants and contractors all over the world, assisting in the selection of the product most appropriate to each individual project. Such assistance can include detailed design co-operation with specifying engineers, site visits to aid successful installation, specially designed products to suit project requirements, proof testing in our comprehensive in-house test facility and handling of the extensive documentation and inspection requirements often associated with large projects.

Designed for Flexibility
For pipeline design and installation engineers, the Helden large diameter couplings are extremely versatile. Each coupling sleeve is internally barrelled, allowing greater angular deflection. Ideal when accommodating misaligned pipes.

Product Capability
Large diameter couplings and flange adaptors are available in a wide range of sizes to suit virtually any customer requirement. Products can be supplied to suit all standard and non-standard pipe diameters from DN350 to DN4000. Stepped couplings join pipes of different external diameters and flange adaptors can be supplied with flanges drilled to any national or international standard, or to customers’ own specification with a pressure up to 80 bar.

Approvals
All products are designed and manufactured under quality management systems certified to ISO 9001 and conform to the American Water Works Association’s specification AWWA/ANSI C219 for bolted couplings.

Re-movable Locating Plugs - Prevent Coupling Creep
LD Dedicated couplings are available with removable locating plugs, to prevent coupling creep on above ground pipelines caused by repeated pipe movement from temperature variation, continuous vibrations and movement. The removable locating plug (optional) ensures the coupling can slide fully over the pipe ends for quick and simple installation. Once installed they engage between the pipe ends to prevent the coupling moving beyond fixed limits.

Pipe Materials

Helden Large Diameter products are bespoke for enquiries please complete our online form fillable PDF which is available on the website www.helden-web.com.
Large Diameter Couplings

Product Design Benefits

**Corrosion Protection**

Metal components are coated with Rilsan Nylon 11, which is WRAS approved for use with potable water, and offers long term corrosion protection and resistance to impact damage.

The nuts & bolts are Sheraplex coated to WIS 4-52-03, which does not gall when re-used and offers a consistent “torque / load” ratio reducing the sensitivity during installation while providing long term corrosion protection.

**Flash Butt Welding**

Flash butt welding used for end ring and centre sleeve ensuring a full penetration weld with totally homogeneous material and no impurities.

**Captive Bolts**

Captive non-rotating bolt heads require just a single spanner to install.

**Cold Expansion**

Conforming to AWWA C219 the end ring and centre sleeve are cold expanded, which increases the strength of the steel through work hardening, ensures roundness of manufacture and verifies structural integrity of the material with loads substantially greater than in service.

**Sleeve Length**

Standard and long sleeve lengths available to accommodate site conditions.

**Internal Barrelling of Sleeve**

Internal barrelling of sleeve to accommodate angular deflection of up to 6° (size dependant).

**Various Gasket Grades**

EPDM (water quality approved) and Nitrile gaskets as standard. Alternative exotic grades available for specialist applications (see Design Data for more details).

**Customer Benefits**

- Couplings can absorb up to 10mm expansion and contraction, which allows for movement on bridge crossings, in chambers and pump stations. Often eliminates the need for special expansion joints.

- Couplings can offer up to 6° of angular deflection; to allow for the connection of misaligned pipes, take up ground settlement at structures, lay pipes to large radius bends, etc.

- The standard finish for all Helden products is black Rilsan Nylon 11, which is highly resistant to impact, corrosion, abrasion and chemical attack. However, other coatings such as shopcoat, hot dip galvanising, zinc spray and epoxy coating can be supplied as required.

www.helden-web.com
Clear and Full Bore Flange
As standard flange adaptors are supplied with clear bore to slide over pipe for easy installation on site.

Full “S Bore” flange also available for use with wafer style (butterfly) valves.

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

Various Gasket Grades
EPDM (water quality approved) and Nitrile gaskets as standard. Alternative exotic grades available for specialist applications (see Design Data for more details).

Customer Benefits
➤ Flange adaptors can absorb up to 5mm expansion, which allows for movement on bridge crossings, in chambers and pump stations. Often eliminates the need for special expansion joints.
➤ Flange adaptors can offer up to 3° of angular deflection, to allow for the connection of miss aligned pipe to flange equipment and movement/settlement in service.
➤ The standard finish for all Helden products is black Rilsan Nylon 11, which is highly resistant to impact, corrosion, abrasion and chemical attack. However, other coatings such as shopcoat, hot dip galvanising, zinc spray and epoxy coating can be supplied as required.

Corrosion Protection
Metal components are coated with Rilsan Nylon 11, which is WRAS approved for use with potable water, and offers long term corrosion protection and resistance to impact damage.

The nuts & bolts are Sheraplex coated to WIS 4-52-03, which does not gall when re-used and offers a consistent “torque / load” ratio reducing the sensitivity during installation while providing long term corrosion protection.

Cold Expansion
Conforming to AWWA C219 the end ring and centre sleeve are cold expanded, which increases the strength of the steel through work hardening, ensures roundness of manufacture and verifies structural integrity of the material with loads substantially greater than in service.

Flange Drilling
Flange drilling to any standard to accommodate site requirements.

Sleeve Length
Standard and long sleeve lengths available to accommodate site conditions.

Flash Butt Welding
Flash butt welding used for end ring and centre sleeve ensuring a full penetration weld with totally homogeneous material and no impurities.
**Large Diameter Couplings OD355.6 - 816**

### Couplings

**Coupling Type**
- Standard Sleeve
- Long Sleeve
- Standard Sleeve
- Long Sleeve
- Standard Sleeve
- Standard Sleeve

**Coupling Section Type**
- LO2
- LO3
- YF2
- YF3
- A2E
- XSG

**Dimensions (mm)**
- Distance L
- Overall C
- Min.
- Max.

**Setting Gap X (mm)**
- Bolt Dia.
- Length (mm)
- Torque (Nm)

**Coupling OD355.6**

<table>
<thead>
<tr>
<th>Coupling Type</th>
<th>Coupling Section Type</th>
<th>Sleeve Length</th>
<th>Dimensions</th>
<th>Setting Gap</th>
<th>Bolt Details</th>
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L = Distance back from end of pipe that must be rounded, meet tolerances, and free from any wrapping to ensure correct assembly.

### Large Diameter Couplings

<table>
<thead>
<tr>
<th>Pipe OD (mm)</th>
<th>Pipe Material</th>
<th>Working Pressure (bar)</th>
<th>Gasket mould No.</th>
<th>Tolerance (mm) on Pipe OD for Distance L (mm)</th>
<th>Coupling Section Type</th>
<th>Bolts</th>
<th>Weight (kg)</th>
<th>Diameter A (mm)</th>
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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.
Helden manufacture couplings to any pipe OD and pressure. If the product required is not shown in any of our tables please contact Helden who can provide the relevant information.

**Working Pressure Rating**

For Water / Wastewater applications as detailed in Large Diameter Coupling Technical Data Table.

- Gas 6 bar

**Vacuum Pressure**

Capable of accommodating a vacuum pressure of -0.7 bar

**Site Test Pressure**

1.5 times working pressure for short duration (2 hours)

**End Load Due to Internal Pressure**

Dedicated Couplings DO NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out from the coupling.

**Temperature Rating of Product**

- EPDM -20°C to +90°C
- Nitrile -20°C to +90°C

Other Gasket Grades Contact Helden.

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

**Approvals**

The following water contact materials used in Large Diameter Dedicated products are approved for use with potable water:-

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

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

**Materials & Relevant Standards**

### Centre Sleeve & End Rings

- Steel to BS EN10025-2: Grade S275JR

### Gaskets

**Gaskets: LO2/LO3/YF2/YF3**

- Rubber 80 IRHD Moulded Compound to BS EN681-1:
  - Type WA, WC, WG
  - BS EN682: Type G
- (other materials available on request)

**Gaskets: A2E/A2H/XSXG**

- Rubber 70 IRHD Moulded Compound to BS EN681-1:
  - Type WA, WC, WG
  - BS EN682: Type G
- (other materials available on request)

### Coatings

**Body, Flange & End Ring:**

- Rilsan Nylon 11 to WIS 4-52-01 Part 1
- Sheraplex coated to WIS 4-52-03

### Bolts

- Steel to BS EN ISO898-1: Property Class 4.8

### Nuts

- Steel to BS4190: Grade 4

### Washers

- Stainless Steel to BS1449:Part 2: Grade 304S15

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Large Diameter Couplings OD842 - 2038

Couplings & Flange Adaptors

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

Helden manufacture couplings to any pipe OD and pressure. If the product required is not shown in any of our tables please contact Helden who can provide the relevant information.

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Gas 6 bar

Vacuum Pressure

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

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

Materials & Relevant Standards

Centre Sleeve & End Rings
Steel to BS EN10025-2: Grade S275JR

Gaskets: LO2/LO3/YF2/YF3
Rubber 80 IRHD Moulded Compound to BS EN681-1:
Type WA, WC, WG
BS EN682: Type G
(other materials available on request)

Gaskets: A2E/A2H/XSXG
Rubber 70 IRHD Moulded Compound to BS EN681-1:
Type WA, WC, WG
BS EN682: Type G
(other materials available on request)

Coatings

Body, Flange & End Ring:
➤ Rilsan Nylon 11 to WIS 4-52-01 Part 1
Nuts & Bolts:
➤ Sheraplex coated to WIS 4-52-03

Bolts

Steel to BS EN ISO898-1: Property Class 4.8

Nuts

Steel to BS4190: Grade 4

Washers

Stainless Steel to BS1449:Part 2: Grade 304S15

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**Large Diameter Stepped Couplings OD355.6 - 1222**

### Expanded Sleeve Stepped Coupling

![Diagram of expanded sleeve stepped coupling](image)

### Large Diameter Stepped Couplings

<table>
<thead>
<tr>
<th>Pipe OD (mm)</th>
<th>Pipe Material End 1</th>
<th>Tolerance on Pipe OD for Distance L</th>
<th>Pipe Material End 2</th>
<th>Tolerance on Pipe OD for Distance L</th>
<th>Working Pressure (bar)</th>
<th>Gasket Mould No.</th>
<th>Coupling Section Type</th>
<th>No. x Dia</th>
<th>Weight (kg)</th>
<th>Dimensions (mm)</th>
<th>Bolt Length</th>
<th>Dimensions Overall C</th>
</tr>
</thead>
</table>
### Technical Information

**Helden manufacture stepped couplings to any pipe OD and pressure. If the product required is not shown in any of our tables please contact Helden who can provide the relevant information.**

**Working Pressure Rating**

For Water / Wastewater applications as detailed in Large Diameter Stepped Coupling Technical Data Table.

Gas 6 bar

**Vacuum Pressure**

Capable of accommodating a vacuum pressure of -0.7 bar

**Site Test Pressure**

1.5 times working pressure for short duration (2 hours)

**End Load Due to Internal Pressure**

Dedicated Couplings and Stepped Couplings DO NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out from the coupling.

**Temperature Rating of Product**

EPDM -20°C to +90°C

Nitrile -20°C to +90°C

Other Gasket Grades Contact Helden.

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

**Approvals**

The following water contact materials used in Large Diameter Dedicated products are approved for use with potable water:-

Rilsan Nylon 11:

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

EPDM Gaskets:

➤ WRAS, AS/NZS 4020

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

### Materials & Relevant Standards

**Centre Sleeve & End Rings**

Steel to BS EN10025-2: Grade S275JR

**Gaskets:**

- **LO2/LO3/YF2/YF3**
  - Rubber 80 IRHD Moulded Compound to BS EN681-1:
    - Type WA, WC, WG
    - BS EN682: Type G
    - (other materials available on request)

- **A2E/A2H/XSXG**
  - Rubber 70 IRHD Moulded Compound to BS EN681-1:
    - Type WA, WC, WG
    - BS EN682: Type G
    - (other materials available on request)

**Coatings**

Body, Flange & End Ring:

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

Nuts & Bolts:

➤ Sheraplex coated to WIS 4-52-03

**Bolts**

Steel to BS EN ISO898-1: Property Class 4.8

**Nuts**

Steel to BS4190: Grade 4

**Washers**

Stainless Steel to BS1449:Part 2: Grade 304S15
### Helden Large Diameter Flange Adaptors OD355 - 1016mm to BS EN 1092-1 PN10 Drilling

#### Flange Adaptor

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

### Flange Adaptor

<table>
<thead>
<tr>
<th>Flange Adaptor Type</th>
<th>Flange Adaptor Section</th>
<th>Sleeve Length S (mm)</th>
<th>Distance L (mm)</th>
<th>Setting Gap X (mm)</th>
<th>Bolt Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Sleeve</td>
<td>L02</td>
<td>73</td>
<td>150</td>
<td>25</td>
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<tr>
<td>Long Sleeve</td>
<td>YF3</td>
<td>123</td>
<td>200</td>
<td>32</td>
<td>M16</td>
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<tr>
<td>Standard Sleeve</td>
<td>A2E</td>
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<td>150</td>
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<td>Standard Sleeve</td>
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### Large Diameter Flange Adaptors (BS EN 1092-1 PN10 Drilling)

<table>
<thead>
<tr>
<th>Pipe OD (mm)</th>
<th>Pipe Material</th>
<th>Flange Drilling BS EN 1092-1</th>
<th>Tolerance on Pipe OD for Distance L</th>
<th>Flange Drilling Type</th>
<th>Flange Adaptor Section</th>
<th>Setting Gap X (mm)</th>
<th>Bolt Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>355.6</td>
<td>Steel &amp; uPVC</td>
<td>350 PN10</td>
<td>1.6</td>
<td>1.6</td>
<td>J51LS</td>
<td>8 x M12</td>
<td>22.8</td>
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<tr>
<td>358.6</td>
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<td>350 PN10</td>
<td>1.6</td>
<td>1.6</td>
<td>J51LS</td>
<td>8 x M12</td>
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<tr>
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<td>800 PN10</td>
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<td>J65LS</td>
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<td>945</td>
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<td>1.6</td>
<td>J68LS</td>
<td>8 x M12</td>
<td>33.2</td>
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<td>1016</td>
<td>Steel</td>
<td>1000 PN10</td>
<td>1.6</td>
<td>1.6</td>
<td>J71LS</td>
<td>8 x M12</td>
<td>33.2</td>
</tr>
</tbody>
</table>

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Technical Information

Helden manufacture flange adaptors to any pipe OD and flange drilling. If the product required is not shown in any of our tables please contact Helden who can provide the relevant information.

Working Pressure Rating
For Water / Wastewater applications in accordance with flange rating.
Gas 6 bar

Vacuum Pressure
Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure
1.5 times working pressure for short duration (2 hours)

End Load Due to Internal Pressure
Dedicated Flange Adaptors DO NOT resist end load due to the internal pressure – adequate external restraint must be provided to prevent pipe pull out from the coupling.

Tie Rods
When using tie rods to provide restraint, depending on the pipe OD & flange drilling the flange adaptor end ring may need to be notched to allow the tie rod to pass over.

The Large Diameter Flange Adaptor Technical Data (BS EN 1092-1 PN10 Drilling) Table provides details on:
➤ Those products that do not require notching (i.e. there is no interference between the tie rods and end ring) - indicated by “Not Rqd.”
➤ Those products where there is interference between the tie rod and end ring and do require notching, with the number of notches provided as standard indicated.

Tie Rod Yield Strength
The number of notches indicated assumes the use of tie rods with a minimum yield strength of 725 N/mm².
If tie rods with a lower yield strength are used, then depending on the working pressure an increased number than that specified in the table may be required; in this situation please advise Helden of the number of notches and we will accommodate your requirements.

Temperature Rating of Product
EPDM -20°C to +90°C
Nitrile -20°C to +90°C
Other Gasket Grades Contact Helden.
For use on applications with fluctuating and/or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

Approvals
The following water contact materials used in Large Diameter Dedicated products are approved for use with potable water:-
Rilsan Nylon 11:
➤ WRAS, AS/NZS 4020, DVGW, W270, ACS & KIWA.
EPDM Gaskets:
➤ WRAS, AS/NZS 4020
In addition to the above, Large Diameter Dedicated range as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Flange Body & End Ring
Steel to BS EN10025-2: Grade S275JR

Gaskets: LO2/LO3/YF2/YF3
Rubber 80 IRHD Moulded Compound to BS EN681-1: Type WA, WC, WG
BS EN682: Type G
(other materials available on request)

Gaskets: A2E/A2H/XSXG
Rubber 70 IRHD Moulded Compound to BS EN681-1: Type WA, WC, WG
BS EN682: Type G
(other materials available on request)

Coatings
Body, Flange & End Ring:
➤ Rilsan Nylon 11 to WIS 4-52-01 Part 1
Nuts & Studs:
➤ Sheraplex coated to WIS 4-52-03

Studs
Steel to BS EN ISO898-1: Property Class 4.8

Nuts
Steel to BS4190: Grade 4

Washers
Stainless Steel to BS1449:Part 2: Grade 304S15

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Large Diameter Flange Adaptors OD1019 - 1668mm to BS EN 1092-1 PN10 Drilling

Datasheet 3/4

Flange Adaptor

![Flange Adaptor diagram]

<table>
<thead>
<tr>
<th>Flange Adaptor Type</th>
<th>Flange Adaptor Section</th>
<th>Sleeve Length S (mm)</th>
<th>Distance L (mm)</th>
<th>Setting Gap X (mm)</th>
<th>Bolt Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Sleeve</td>
<td>L02</td>
<td>73</td>
<td>150</td>
<td>25</td>
<td>M12</td>
</tr>
<tr>
<td>Long Sleeve</td>
<td>L03</td>
<td>123</td>
<td>200</td>
<td>25</td>
<td>M12</td>
</tr>
<tr>
<td>Standard Sleeve</td>
<td>YF2</td>
<td>87</td>
<td>150</td>
<td>32</td>
<td>M16</td>
</tr>
<tr>
<td>Long Sleeve</td>
<td>YF3</td>
<td>123</td>
<td>200</td>
<td>32</td>
<td>M16</td>
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<tr>
<td>Standard Sleeve</td>
<td>A2E</td>
<td>87</td>
<td>150</td>
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<tr>
<td>Long Sleeve</td>
<td>A2H</td>
<td>125</td>
<td>200</td>
<td>32</td>
<td>M16</td>
</tr>
<tr>
<td>Standard Sleeve</td>
<td>X3XG</td>
<td>254</td>
<td>200</td>
<td>57</td>
<td>M16</td>
</tr>
</tbody>
</table>

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

Large Diameter Flange Adaptors (BS EN 1092-1 PN10 Drilling)

<table>
<thead>
<tr>
<th>Pipe OD (mm)</th>
<th>Pipe Material</th>
<th>Flange Drilling BS EN 1092-1</th>
<th>Tolerance on Pipe OD for Distance L</th>
<th>Flange Adaptor Section Type</th>
<th>Weight (kg)</th>
<th>Dimensions</th>
<th>Flange Adaptor Studs Length</th>
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</thead>
<tbody>
<tr>
<td>1019</td>
<td>Coated Steel</td>
<td>1000</td>
<td>1.6 x 1.6</td>
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1.5 times working pressure for short duration (2 hours)

End Load Due to Internal Pressure
Dedicated Flange Adaptors DO NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out from the coupling.

Tie Rods
When using tie rods to provide restraint, depending on the pipe OD & flange drilling the flange adaptor end ring may need to be notched to allow the tie rod to pass over.

The Large Diameter Flange Adaptor Technical Data (BS EN 1092-1 PN10 Drilling) Table provides details on:
- Those products that do not require notching (i.e. there is no interference between the tie rods and end ring) - indicated by “Not Rqd.”
- Those products where there is interference between the tie rod and end ring and do require notching, with the number of notches provided as standard indicated.

Tie Rod Yield Strength
The number of notches indicated assumes the use of tie rods with a minimum yield strength of 725 N/mm².
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<table>
<thead>
<tr>
<th>Flange Body &amp; End Ring</th>
<th>Coatings</th>
</tr>
</thead>
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<tr>
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<td>Nuts &amp; Studs:</td>
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<td>BS EN682: Type G</td>
<td>► Sheraplex coated to WIS 4-52-03</td>
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Coatings

Stainless Steel to BS1449:Part 2: Grade 304S15

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Large Diameter Flange Adaptors OD355 - 813mm to BS EN 1092-1 PN16 Drilling

Datasheet 1/4

Flange Adaptor

![Flange Adaptor Diagram](image)

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

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

<table>
<thead>
<tr>
<th>Pipe Od (mm)</th>
<th>Pipe Material</th>
<th>Flange Drilling BS EN 1092-1</th>
<th>Tolerance on Pipe OD for Distance L</th>
<th>Flange Adaptor Section Type</th>
<th>Flange Adaptor Studs No. x Dia</th>
<th>Weight (kg)</th>
<th>Dimensions</th>
<th>Flange Adaptor Studs Length</th>
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Technical Information

Helden manufacture flange adaptors to any pipe OD and flange drilling. If the product required is not shown in any of our tables please contact Helden who can provide the relevant information.

Working Pressure Rating
For Water / Wastewater applications in accordance with flange rating.
Gas 6 bar

Vacuum Pressure
Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure
1.5 times working pressure for short duration (2 hours)

End Load Due to Internal Pressure
Dedicated Flange Adaptors DO NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out from the coupling.

Tie Rods
When using tie rods to provide restraint, depending on the pipe OD & flange drilling the flange adaptor end ring may need to be notched to allow the tie rod to pass over.

The Large Diameter Flange Adaptor Technical Data (BS EN 1092-1 PN16 Drilling) Table provides details on:
➤ Those products that do not require notching (i.e. there is no interference between the tie rods and end ring) - indicated by “Not Rqd.”
➤ Those products where there is interference between the tie rod and end ring and do require notching, with the number of notches provided as standard indicated.

Tie Rod Yield Strength
The number of notches indicated assumes the use of tie rods with a minimum yield strength of 725 N/mm².
If tie rods with a lower yield strength are used, then depending on the working pressure an increased number than that specified in the table may be required; in this situation please advise Helden of the number of notches and we will accommodate your requirements.

Temperature Rating of Product
EPDM -20°C to +90°C
Nitrile -20°C to +90°C
Other Gasket Grades Contact Helden.
For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

Approvals
The following water contact materials used in Large Diameter Dedicated products are approved for use with potable water:-
Rilsan Nylon 11:
➤ WRAS, AS/NZS 4020, DVGW, W270, ACS & KIWA.
EPDM Gaskets:
➤ WRAS, AS/NZS 4020
In addition to the above, Large Diameter Dedicated range as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Flange Body & End Ring
Steel to BS EN10025-2: Grade S275JR

Gaskets: L02/L03/YF2/YF3
Rubber 80 IRHD Moulded Compound to BS EN681-1: Type WA, WC, WG
BS EN682: Type G
(other materials available on request)

Gaskets: A2E/A2H/XSXG
Rubber 70 IRHD Moulded Compound to BS EN681-1: Type WA, WC, WG
BS EN682: Type G
(other materials available on request)

Coatings
Body, Flange & End Ring:
➤ Rilsan Nylon 11 to WIS 4-52-01 Part 1
Nuts & Studs:
➤ Sheraplex coated to WIS 4-52-03

Studs
Steel to BS EN ISO898-1: Property Class 4.8

Nuts
Steel to BS4190: Grade 4

Washers
Stainless Steel to BS1449:Part 2: Grade 304S15

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### Large Diameter Flange Adaptors OD816 - 1668mm to BS EN 1092-1 PN16 Drilling

#### Flange Adaptor

![Flange Adaptor Diagram]

**Flange Adaptor Type** | **Flange Adapter Section** | **Sleeve Length S (mm)** | **Distance L (mm)** | **Setting Gap X (mm)** | **Bolt Details** |
--- | --- | --- | --- | --- | --- |
Standard Sleeve | LO2 | 73 | 150 | 25 | M12 | 140 | 55 - 65 |
Long Sleeve | LO3 | 123 | 200 | 25 | M12 | 180 | 55 - 65 |
Standard Sleeve | YF2 | 87 | 150 | 32 | M16 | 160 | 95 - 120 |
Long Sleeve | YF3 | 123 | 200 | 32 | M16 | 190 | 95 - 120 |
Standard Sleeve | A2E | 87 | 150 | 32 | M16 | 160 | 95 - 120 |
Long Sleeve | A2H | 125 | 200 | 32 | M16 | 190 | 95 - 120 |
Standard Sleeve | XSXG | 254 | 200 | 57 | M16 | 400 | 95 - 120 |

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

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

<table>
<thead>
<tr>
<th>Pipe OD (mm)</th>
<th>Pipe Material</th>
<th>Flange Drilling BS EN 1092-1</th>
<th>Tolerance on Pipe OD for Distance L</th>
<th>Flange Adaptor Section Type</th>
<th>Flange Adaptor Studs No. x Dia</th>
<th>Weight (kg)</th>
<th>Dimensions</th>
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**Technical Information**

**Tie Rod Yield Strength**

The number of notches indicated assumes the use of tie rods with a minimum yield strength of 725 N/mm².

If tie rods with a lower yield strength are used, then depending on the working pressure an increased number than that specified in the table may be required; in this situation please advise Helden of the number of notches and we will accommodate your requirements.

**Temperature Rating of Product**

- EPDM -20°C to +90°C
- Nitrile -20°C to +90°C

Other Gasket Grades Contact Helden.

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

**Approvals**

The following water contact materials used in Large Diameter Dedicated products are approved for use with potable water:-

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

- EPDM Gaskets:
  ➤ WRAS, AS/NZS 4020

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

**Materials & Relevant Standards**

**Flange Body & End Ring**

Steel to BS EN10025-2: Grade S275JR

Gaskets: LO2/LO3/YF2/YF3

Rubber 80 IRHD Moulded Compound to BS EN681-1:
➤ Type WA, WC, WG
➤ BS EN682: Type G

(other materials available on request)

Gaskets: A2E/A2H/XSXG

Rubber 70 IRHD Moulded Compound to BS EN681-1:
➤ Type WA, WC, WG
➤ BS EN682: Type G

(other materials available on request)

**Coatings**

Body, Flange & End Ring:
➤ Rilsan Nylon 11 to WIS 4-52-01 Part 1

Nuts & Studs:
➤ Sheraplex coated to WIS 4-52-03

**Studs**

Steel to BS EN ISO898-1: Property Class 4.8

**Nuts**

Steel to BS4190: Grade 4

**Washers**

Stainless Steel to BS1449:Part 2: Grade 304S15

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

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<th>Pipe Material</th>
<th>Flange Drilling BS EN 1092-1</th>
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<th>Net Width of Ring</th>
<th>Flange Adaptor Section Type</th>
<th>Flange Adaptor Studs No. x Dia</th>
<th>Weight (kg)</th>
<th>Dimensions</th>
<th>Flange Adaptor Studs Length</th>
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<td>124.0</td>
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</table>
Helden manufacture flange adaptors to any pipe OD and flange drilling. If the product required is not shown in any of our tables please contact Helden who can provide the relevant information.

**Working Pressure Rating**
For Water / Wastewater applications in accordance with flange rating.
Gas 6 bar

**Vacuum Pressure**
Capable of accommodating a vacuum pressure of -0.7 bar

**Site Test Pressure**
1.5 times working pressure for short duration (2 hours)

**End Load Due to Internal Pressure**
Dedicated Flange Adaptors DO NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out from the coupling.

**Tie Rods**
When using tie rods to provide restraint, depending on the pipe OD & flange drilling the flange adaptor end ring may need to be notched to allow the tie rod to pass over.

The Large Diameter Flange Adaptor Technical Data (BS EN 1092-1 PN25 Drilling) Table provides details on:
- Those products that do not require notching (i.e. there is no interference between the tie rods and end ring) - indicated by “Not Rqd.”
- Those products where there is interference between the tie rod and end ring and do require notching, with the number of notches provided as standard indicated.

**Tie Rod Yield Strength**
The number of notches indicated assumes the use of tie rods with a minimum yield strength of 725 N/mm².
If tie rods with a lower yield strength are used, then depending on the working pressure an increased number than that specified in the table may be required; in this situation please advise Helden of the number of notches and we will accommodate your requirements.

**Temperature Rating of Product**
EPDM -20°C to +90°C
Nitrile -20°C to +90°C
Other Gasket Grades Contact Helden.
For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

**Approvals**
The following water contact materials used in Large Diameter Dedicated products are approved for use with potable water:
- Rilsan Nylon 11:
  - WRAS, AS/NZS 4020, DVGW, W270, ACS & KIWA.
- EPDM Gaskets:
  - WRAS, AS/NZS 4020
In addition to the above, Large Diameter Dedicated range as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

**Materials & Relevant Standards**

**Flange Body & End Ring**
Steel to BS EN10025-2: Grade S275JR

Gaskets: LO2/LO3/YF2/YF3
Rubber 80 IRHD Moulded Compound to BS EN681-1:
- Type WA, WC, WG
- BS EN682: Type G
(other materials available on request)

Gaskets: A2E/A2H/XSXG
Rubber 70 IRHD Moulded Compound to BS EN681-1:
- Type WA, WC, WG
- BS EN682: Type G
(other materials available on request)

**Coatings**
Body, Flange & End Ring:
- Rilsan Nylon 11 to WIS 4-52-01 Part 1
- Sheraplex coated to WIS 4-52-03

**Studs**
Steel to BS EN ISO898-1: Property Class 4.8

**Nuts**
Steel to BS4190: Grade 4

**Washers**
Stainless Steel to BS1449:Part 2: Grade 304S15

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.
Large Diameter Flange Adaptors OD1016 - 1255mm to BS EN 1092-1 PN25 Drilling

Datasheet 3/4

Flange Adaptor

<table>
<thead>
<tr>
<th>Flange Adaptor Type</th>
<th>Sleeve Length S (mm)</th>
<th>Distance L (mm)</th>
<th>Setting Gap X (mm)</th>
<th>Bolt Details</th>
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<td>150</td>
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<td>Long Sleeve</td>
<td>123</td>
<td>200</td>
<td>32</td>
<td>M12</td>
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<tr>
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<td>150</td>
<td>25</td>
<td>M16</td>
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<tr>
<td>Long Sleeve</td>
<td>123</td>
<td>200</td>
<td>32</td>
<td>M16</td>
</tr>
<tr>
<td>Standard Sleeve</td>
<td>87</td>
<td>150</td>
<td>25</td>
<td>M16</td>
</tr>
<tr>
<td>Long Sleeve</td>
<td>125</td>
<td>200</td>
<td>32</td>
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<tr>
<td>Standard Sleeve</td>
<td>254</td>
<td>200</td>
<td>57</td>
<td>M16</td>
</tr>
</tbody>
</table>

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

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

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www.helden-web.com
Technical Information

Helden manufacture flange adaptors to any pipe OD and flange drilling. If the product required is not shown in any of our tables please contact Helden who can provide the relevant information.

Working Pressure Rating
For Water / Wastewater applications in accordance with flange rating.
Gas 6 bar

Vacuum Pressure
Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure
1.5 times working pressure for short duration (2 hours)

End Load Due to Internal Pressure
Dedicated Flange Adaptors DO NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out from the coupling.

Tie Rods
When using tie rods to provide restraint, depending on the pipe OD & flange drilling the flange adaptor end ring may need to be notched to allow the tie rod to pass over.

The Large Diameter Flange Adaptor Technical Data (BS EN 1092-1 PN25 Drilling) Table provides details on:
➤ Those products that do not require notching (i.e. there is no interference between the tie rods and end ring) - indicated by “Not Rqd.”
➤ Those products where there is interference between the tie rod and end ring and do require notching, with the number of notches provided as standard indicated.

Tie Rod Yield Strength
The number of notches indicated assumes the use of tie rods with a minimum yield strength of 725 N/mm².
If tie rods with a lower yield strength are used, then depending on the working pressure an increased number than that specified in the table may be required; in this situation please advise Helden of the number of notches and we will accommodate your requirements.

Temperature Rating of Product
EPDM -20°C to +90°C
Nitrile -20°C to +90°C
Other Gasket Grades Contact Helden.
For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

Approvals
The following water contact materials used in Large Diameter Dedicated products are approved for use with potable water:-
Rilsan Nylon 11:
➤ WRAS, AS/NZS 4020, DVGW, W270, ACS & KIWA.
EPDM Gaskets:
➤ WRAS, AS/NZS 4020
In addition to the above, Large Diameter Dedicated range as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Flange Body & End Ring
Steel to BS EN10025-2: Grade S275JR

Gaskets: LO2/LO3/YF2/YF3
Rubber 80 IRHD Moulded Compound to BS EN681-1: Type WA,WC, WG
BS EN682: Type G
(other materials available on request)

Gaskets: A2E/A2H/XSXG
Rubber 70 IRHD Moulded Compound to BS EN681-1: Type WA, WC, WG
BS EN682: Type G
(other materials available on request)

Body, Flange & End Ring:
➤ Rilsan Nylon 11 to WIS 4-52-01 Part 1
Nuts & Studs:
➤ Sheraplex coated to WIS 4-52-03

Studs
Steel to BS EN ISO898-1: Property Class 4.8

Nuts
Steel to BS4190: Grade 4

Washers
Stainless Steel to BS1449:Part 2: Grade 304S15

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QuickFit
Couplings & Flange Adaptors
Close Tolerance Preassembled Fittings
Dedicated Couplings & Flange Adaptors

The QuickFit coupling range is designed to connect plain ended pipes with similar outside diameters. The full range includes couplings and flange adaptors in nominal sizes between DN50 (2”) and DN300 (12”) and accommodates PVC, coated and uncoated steel and ductile iron pipe.

New Lay & High Pressure Applications
The QuickFit range is ideal for new lay schemes as the fittings are preassembled with close tolerance to allow for quick installation. They are also suitable for high pressure applications – DN50 to DN125 are available up to 46 bar, DN150 to DN300 to 29 bar as standard. Higher pressures are available as fabricated specials.

Transferring the End Load
QuickFit flange adaptors are not end load-bearing products and in the event that the application requires restraining, tie rods can be used to transfer the end load forces to an anchor flange on the pipe. The design of QuickFit flange adaptors is such that there is sufficient clearance to allow the tie rods to pass over the end ring without the need for notching. This means that one product can be offered for both flexible and tied configurations, thus reducing stock holding.

Removable Locating Plugs – Prevent Coupling Creep
QuickFit couplings are available with removable locating plugs, to prevent coupling creep on above ground pipelines caused by repeated pipe movement from temperature variation, continuous vibrations and movement. The removable locating plug (optional) ensures the coupling can slide fully over the pipe ends for quick and simple installation. Once installed they engage between the pipe ends to prevent the coupling moving beyond fixed limits.
QuickFit Couplings

Product Design Benefits

**Simple to Fit**

One size of captive, non-rotating bolt across whole range requiring a single spanner to install along with one bolt torque across range.

**Corrosion Protection**

Metal components are coated with Rilsan Nylon 11, which is WRAS approved for use with potable water, and offers long term corrosion protection and resistance to impact damage.

The nuts & bolts are Sheraplex coated to WIS 4-52-03, which does not gall when re-used and offers a consistent “torque / load” ratio reducing the sensitivity during installation while providing long term corrosion protection.

**Various Gasket Grades**

EPDM (water quality approved) and Nitrile gaskets as standard. Alternative exotic grades available for specialist applications (see Design Data for more details).

**Removable Locating Plug**

Optional feature is removal locating plug to prevent pipe creep on above ground pipework.

**Customer Benefits**

- QuickFit couplings allow 6° of angular deflection between pipes, accommodating movement in service (e.g. ground settlement) and making for easier installation (e.g. long radius curves and misaligned pipes with two fittings and a short length of pipe).

- QuickFit couplings allow 10mm of expansion & contraction, accommodating movement in service to relieve stress in the pipeline (e.g. temperature changes in pipelines).

- Stock reduction is accomplished through the tolerance on OD means that both steel and coated steel are covered in the same fitting.

- Rapid installation of new lay pipework through tolerances designed round steel, coated steel and ductile iron pipes and need to use simply 19mm A/F socket and torque wrench.

- Standard product supplied with Rilsan Nylon coating, EPDM gaskets and Sheraplex coated bolts making it ideal for water / waste water sector; other specialist coatings, bolt materials and exotic gasket grades are available for specialist applications are available (contact Helden for further advice).

- Fully galvanised version is available – see Marine Couplings section.
QuickFit Flange Adaptors

Product Design Benefits

Flexible Flange Drilling
As standard the flange adaptors are multi drilled to accommodate BS EN 1092-1 PN10 & 16. Flange drilling to other standards available to accommodate site requirements (see Datasheets)

Full Bore Flange
As standard flange adaptors are supplied with full “S Bore” flange for use with wafer style (butterfly) valves.

Various Gasket Grades
EPDM (water quality approved) and Nitrile gaskets as standard. Alternative exotic grades available for specialist applications (see Design Data for more details).

Corrosion Protection
Metal components are coated with Rilsan Nylon 11, which is WRAS approved for use with potable water, and offers long term corrosion protection and resistance to impact damage.

The nuts & bolts are Sheraplex coated to WIS 4-52-03, which does not gall when re-used and offers a consistent “torque / load” ratio reducing the sensitivity during installation while providing long term corrosion protection.

End Load Forces Easily Accommodated
Low profile end ring means no interference with tie rods used to harness the flange adaptor to accommodate end load forces.

Customer Benefits

➤ QuickFit flange adaptors allow 3° angular deflection between pipes and flange equipment, accommodating movement in service (e.g. ground settlement) and making for easier installation.

➤ QuickFit flange adaptors allow 5mm expansion & contraction, accommodating movement in service to relieve stress in the pipeline (e.g. temperature changes in pipelines).

➤ Stock reduction is accomplished from:-
  ● Use of low profile end rings that do not interfere with tie rods means standard flange adaptor can be used as either a flexible or harnessed version.
  ● Tolerance on OD means that both steel and coated steel are covered in the same fitting.

➤ The full bore flange supplied as standard in QuickFit flange adaptors with BS EN 1092-1 PN10 & 16 drillings make them ideal for use with wafer style valves. All other flange adaptors come with either clear bore or full face options.

➤ Rapid installation of new lay pipework through tolerances designed round steel, coated steel and ductile iron pipes and need to use simply 19mm A/F socket and torque wrench.

➤ Standard product supplied with Rilsan Nylon coating, EPDM gaskets and Sheraplex coated bolts making it ideal for water / waste water sector; other specialist coatings, bolt materials and exotic gasket grades are available for specialist applications are available (contact Helden for further advice).

➤ Fully galvanised version is available – see Marine Couplings section.
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Technical Information

Working Pressure Rating
For Water / Wastewater applications as detailed in QuickFit Coupling Technical Data Table.
Gas 6 bar

Vacuum Pressure
Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure
1.5 times working pressure for short duration (2 hours)

Angularity
Couplings 6°

Bolt Torque/Spanner
M12; Torque 55-65Nm on every bolt
Spanner size A/F 19mm

Temperature Rating of Product
EPDM -20°C to +90°C
Nitrile -20°C to +90°C
For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

End Load Due to Internal Pressure
QuickFit DOES NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out.

Approvals
The following water contact materials used in QuickFit are approved for use with potable water:-
Rilsan Nylon 11:
➤ WRAS, AS/NZS 4020, DVGW, W270, ACS & KIWA
EPDM Gaskets:
➤ WRAS, AS/NZS 4020
In addition to the above, QuickFit range as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Centre Sleeve & End Rings
Ductile Iron to BS EN1563: Symbol EN-GJS-450-10

Gaskets
EPDM to BS EN681-1, TYPE WA, WC
Nitrile to BS EN682:Type G
Other grades are available - contact Helden for details

Coatings
Centre Sleeve & End Rings:
➤ Rilsan Nylon 11 to WIS 4-52-01 Part 1
Other coatings available: Scotchkote, Galvanised
Tee bolts, CDX Bolts & Nuts:
➤ Sheraplex to WIS 4-52-03

Tee Bolts/Bolts
Standard - Steel to BS EN ISO 898-1: property class 4.8
Option - Stainless Steel to BS EN ISO 3506-1:
grade A4 property class 50

Nuts
Standard - Steel to BS EN 20898-2: property class 8
Option - Stainless Steel to BS EN ISO 3506-2:
grade A4 property class 80

Washers
Stainless Steel to BS1449:PART 2: GRADE 304S15

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QuickFit Flange Adaptors - Standard Cast

Datasheet 1/2

Flange Adaptor

Key
1 = Centre Sleeve
2 = End Ring
3 = Gasket
5 = Bolts, Nut & Washer

QuickFit Flange Adaptors

<table>
<thead>
<tr>
<th>Size Range (mm)</th>
<th>Flange Detail (mm)</th>
<th>Overall Length A (mm)</th>
<th>S Bore S (mm)</th>
<th>Flange Drilling</th>
<th>Bolt Size No.-Dia x Length</th>
<th>Gasket Mould No.</th>
<th>Weight (kg)</th>
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<tbody>
<tr>
<td>Min</td>
<td>Max</td>
<td>Flange OD (B)</td>
<td>Flange Thickness (T)</td>
<td>50 PN10,16,25,40</td>
<td>2-M12 x 115</td>
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<td>59.5</td>
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<td>20.0</td>
<td>129.0</td>
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</table>

Minimum 25mm
Maximum 45mm

Setting Gap

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www.helden-web.com
Technical Information

Working Pressure Rating
Water 16 bar
Gas 6 bar

Vacuum Pressure
Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure
1.5 times working pressure for short duration (2 hours)

Angularity
Flange Adaptor 3°

Bolt Torque/Spanner
M12; Torque 55-65Nm on every bolt
Spanner size A/F 19mm

Temperature Rating of Product
EPDM -20°C to +90°C
Nitrile -20°C to +90°C

Tied Flange Adaptor
The design of the new QuickFit flange adaptor is such that there is sufficient clearance to allow tie rods (used to restrain them) to pass over without the need for notching

End Load Due to Internal Pressure
QuickFit DOES NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out.

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

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

Materials & Relevant Standards

Centre Sleeve & End Rings
Ductile Iron to BS EN1563: Symbol EN-GJS-450-10

Gaskets
EPDM to BS EN681-1, TYPE WA, WC
Nitrile to BS EN682: Type G
Other grades are available - contact Helden for details

Coatings
Flange Adaptor Body & End Ring:
- Rilsan Nylon 11 to WIS 4-52-01 Part 1
Other coatings available: Scotchkote, Galvanised

Tee Bolts/Bolts
Standard - Steel to BS EN ISO 898-1: property class 4.8
Option - Stainless Steel to BS EN ISO 3506-1:
grade A4 property class 50

Nuts
Standard - Steel to BS EN 20898-2: property class 8
Option - Stainless Steel to BS EN ISO 3506-2:
grade A4 property class 80

Washers
Stainless Steel to BS1449:PART 2: GRADE 304S15

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Flange Adaptor

Fabricated QuickFit Flange Adaptors - Standard Drillings Available

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<tr>
<th>OD</th>
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<tr>
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<td>095.8 - 100.2</td>
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<td>158.2 - 162.0</td>
<td>150</td>
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<tr>
<td>167.5 - 172.3</td>
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<td>218.3 - 224.4</td>
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<tr>
<td>323.1 - 328.6</td>
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Technical Information

**Working Pressure Rating**
Water working pressure in accordance with the flange rating
Gas: 6 bar

**Vacuum Pressure**
Capable of accommodating a vacuum pressure of -0.7 bar

**Site Test Pressure**
1.5 times working pressure for short duration (2 hours)

**Angularity**
Flange Adaptor 3°

**Bolt Torque/Spanner**
M12; Torque 55-65Nm on every bolt
Spanner size A/F 19mm

**Temperature Rating of Product**
EPDM: -20°C to +90°C
Nitrile: -20°C to +90°C

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

**Approvals**
The following water contact materials used in QuickFit are approved for use with potable water:-
Rilsan Nylon 11:
➤ WRAS, AS/NZS 4020, DVGW, W270, ACS & KIWA

EPDM Gaskets:
➤ WRAS, AS/NZS 4020

Materials & Relevant Standards

**Flange**
Steel to BS EN 10025-2: Grade S275JR

**Sleeve Options:**
➤ Steel Tube to BS EN 10216-1: Grade P265TRI
➤ Steel Tube to BS EN 10217-1:
➤ Steel BS EN10025-2: Grade S275JR

**End Rings**
Ductile Iron to BS EN1563: Symbol EN GJS-450-10

**Gaskets**
EPDM to BS EN681-1, TYPE WA, WC
Nitrile to BS EN682:Type G

Other grades are available - contact Helden for details

**Temperature Rating of Product**
EPDM: -20°C to +90°C
Nitrile: -20°C to +90°C

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

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Rilsan Nylon 11:
➤ WRAS, AS/NZS 4020, DVGW, W270, ACS & KIWA

EPDM Gaskets:
➤ WRAS, AS/NZS 4020

**Tee Bolts/Bolts**
Standard - Steel to BS EN ISO 898-1: property class 4.8
Option - Stainless Steel to BS EN ISO 3506-1: grade A4 property class 50

**Nuts**
Steel to BS EN 20898-2: property class 8
Option - Stainless Steel to BS EN ISO 3506-2: grade A4 property class 80

**Washers**
Stainless Steel to BS1449:PART 2: GRADE 304S15

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**QuickFit Flange Adaptors - Fabricated (Standard Drillings)**

**Datasheet**

**Flange Adaptor**

Key

1 = Body
2 = End Ring
3 = Gasket
4 = Studs

**Fabricated QuickFit Flange Adaptors - Standard Drillings Available**

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<tr>
<td>323.1 - 328.6</td>
<td>300</td>
<td>✓</td>
</tr>
</tbody>
</table>
```

**Key**

- **Y/N** = ✓ = Can make QFFA with this drilling
- X = Cannot make QFFA with this drilling
- **Tied?** = ✓ = Can offer as tied
  - FA – notching not required
- X = Cannot offer as tied
  - FA – bolts clash with end ring – cannot notch

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Technical Information

**Working Pressure Rating**
Water working pressure in accordance with the flange rating
Gas 6 bar

**Vacuum Pressure**
Capable of accommodating a vacuum pressure of -0.7 bar

**Site Test Pressure**
1.5 times working pressure for short duration (2 hours)

**Angularity**
Flange Adaptor 3°

**Bolt Torque/Spanner**
M12; Torque 55-65Nm on every bolt
Spanner size A/F 19mm

**Temperature Rating of Product**
EPDM -20°C to +90°C
Nitrile -20°C to +90°C
For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

**Approvals**
The following water contact materials used in QuickFit are approved for use with potable water:-
Rilsan Nylon 11:
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EPDM Gaskets:
➤ WRAS, AS/NZS 4020

Materials & Relevant Standards

**Flange**
Steel to BS EN 10025-2: Grade S275JR

**Sleeve Options:**
➤ Steel Tube to BS EN 10216-1: Grade P265TRI
➤ Steel Tube to BS EN 10217-1:
➤ Steel BS EN10025-2: Grade S275JR

**End Rings**
Ductile Iron to BS EN1563: Symbol EN GJS-450-10

**Gaskets**
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Other grades are available - contact Helden for details

**Tee Bolts/Bolts**
Standard - Steel to BS EN ISO 898-1: property class 4.8
Option - Stainless Steel to BS EN ISO 3506-1: grade A4 property class 50

**Nuts**
Steel to BS EN 20898-2: property class 8
Option - Stainless Steel to BS EN ISO 3506-2: grade A4 property class 80

**Washers**
Stainless Steel to BS1449:PART 2: GRADE 304S15

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Simple Marine
Couplings & Flange Adaptors
Approved & Pre-assembled Fittings
Pre-assembled & Approved Fittings for Marine Applications

The proven Marine range has been designed and approved for use in marine environments. Alongside all the features and benefits of Helden’s standard range, the marine fittings have attained international seals of approval from prominent marine authorities including American Bureau of Shipping (ABS) and Bureau Veritas.

Allowing for Movement
In marine installations, pipework is often anchored to the frame of the vessel so particular care must be taken to allow for the movement of pipework as the ship travels. Marine couplings and flange adaptors aim to relieve the strain and stress that pipework may experience on board.

Enhanced Design Features
The Marine range has enhanced design features including a galvanized finish, nitrile gasket and a locating plug which prevents coupling creep caused by repeated pipe movement. The removable locating plug ensures the coupling can slide fully over the pipe ends to ease installation and when installed, they engage between the pipe ends preventing the coupling moving beyond fixed limits.

Typical Marine Applications

- Deck wash
- Sanitary supply
- Domestic fresh water
- Oil fuel transfer lines
- Scupper and discharge lines
- Cargo oil lines in tankers
- Hold-sounding pipes
- Inert gas
- Bilge lines
- Ballast lines
- Fuel and lubricating oil
- Filling and vent pipes
- Fresh and salt water systems

Note: Use on the above systems varies depending on the respective Marine Approval body; please consult with relevant one before using.
Marine Couplings & Flange Adaptors

Product Design Benefits

**Corrosion Protection**
Available as standard with galvanised body and bolts for the most arduous conditions.

**Fixed Fitting**
Removable locating plug prevents coupling creep caused by continuous vibrations found onboard along with movement from temperature variations.

**Simple to Fit**
Captive, non-rotating bolt head requires single spanner/torque wrench to make installation simple with one bolt size (M12) across range and one bolt torque (55-65Nm) for all pipe materials.

**Reduces Noise**
Resilient gasket helps absorb both noise and vibration.

Customer Benefits

- The Marine design allows angular movement, which caters for minor misalignment and pipe deflection with couplings up to 6° and flange adaptors to 3°. Vessel movement can be accommodated without using specialised fittings.

- Marine couplings are capable of accommodating 10mm of expansion/contraction per fitting, flange adaptors 5mm which reduces the need for supplementary expansion joints or bellows.

- Marine products up to DN300 are pre-assembled allowing quick and efficient installation, without the need for dismantling, even in the most difficult of conditions.
## Marine Couplings

### Datasheet 1/2

**Coupling**

![Coupling Diagram]

### Key

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

### Table: Marine Couplings

<table>
<thead>
<tr>
<th>Pipe OD (mm)</th>
<th>W.P. (bar)</th>
<th>No. Plugs</th>
<th>End Ring OD B (mm)</th>
<th>L (mm)</th>
<th>Bolt Size No.-Dia x Length</th>
<th>Setting gap</th>
<th>Gasket Mould No.</th>
<th>Weight (kg)</th>
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<td>J63LS</td>
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**Note:** The above table is for steel pipe sizes - contact Helden for other pipe materials.

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Technical Information

Working Pressure Rating
For Water / Other Fluid applications as detailed in Marine Coupling Technical Data Table.
Gas 6 bar

Vacuum Pressure
Capable of accommodating a vacuum pressure of -0.7 bar.

Site Test Pressure
1.5 times working pressure for short duration (2 hours).

Temperature Rating of Product
EPDM -20°C to +90°C
Nitrile -20°C to +90°C
For use on applications with fluctuating and / or elevated temperatures (> 60°C) may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule.

End Load Due to Internal Pressure
Marine couplings / stepped couplings DO NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out.

Approvals
Helden marine couplings have the following shipping approvals:-
➤ ABS; Certificate of Design Assessments
➤ Bureau Veritas; Type Approval Certificate

Materials & Relevant Standards

Centre Sleeve & End Ring Options:
➤ Ductile Iron to BS EN1563 Symbol EN-GJS-450-10
➤ Steel to BS EN10025-2 Grade S275JR

Gaskets
EPDM to BS EN681-1, TYPE WA, WC
Nitrile to BS EN682 Type G
Other grades are available - contact Helden for details

Coating
Centre sleeve, End Ring, Bolts & Nuts:
➤ Galvanised
Locating Plug:
➤ Zn10

Bolts
Steel to BS EN ISO 898-1 property class 4.8

Nuts
Steel to BS EN 20898-2 property class 8

Washer
Stainless Steel to BS1449:Part 2 Grade 304S15

Locating Plugs
Steel to BS970: Part 3: Grade 230M07

Options

NBR Gasket without removable plugs
EPDM Gasket with removable plugs
EPDM Gasket without removable plugs

Flange adaptors available on request

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Marine range - Internationally approved & designed to withstand the most arduous conditions
Specialist

Wall Couplings
The Perfect Through Wall Connection
The Perfect Solution for Passing Pipes Through Walls

Old Practice
The normal procedure for passing pipes through walls is to leave a substantial cut-out in the wall during the original concrete pouring process. Later, the contractor will pass a ‘puddle pipe’ through the cut-out, and build an intricate ‘letter-box’ shutter around it. New concrete is then poured into the void to encapsulate the puddle pipe. Not only is this a time consuming process, but very often the puddle pipe moves with the pour and settles to a less than suitable alignment.

Easier Installation
By utilising a Helden wall coupling which is held rigidly between the shutters, the ‘boxing out’ process is eliminated. This means that pouring the wall is a simplified and is a single step process. It also guarantees that leak paths, which are inevitably set up when new concrete is poured onto old, are completely eliminated.

Using a standard Type 1 Helden wall coupling gives a versatile coupling either side of the wall where pipes can either be passed through or inserted into each side. This system allows for misalignment or angular deflection of up to 3º on each side of the wall. In addition, the use of a Helden wall coupling ensures that, on the outside of the structure, the first ‘rocker’ or settlement coupling is built into the shear face of the wall – exactly where it is required. It also means that only one further versatile coupling is needed to form the settlement ‘rocker’ instead of two. Consequently the installed cost can be drastically reduced, particularly where a large number of through the wall joints appear on a building, for instance in a gravity treatment works.

Structural Strength of Concrete Wall
Helden strongly recommends the user ensures that the wall is structurally capable of withstanding the resultant forces induced by the system working pressure and any other related influence.
Using a standard Type 1 Helden wall coupling gives a flexible coupling either side of the wall where pipes can either be passed through or inserted into each side. This allows for slight misalignment or angular deflection on each side of the wall.

Customer Benefits

- Straightforward for Civil Contractor to position the pipe.
- Easy to secure and prevent movement of the pipe work.
- Large formwork panels can be reused as there is no need to make holes in the shuttering.
- No need for a contractor to come back and cast in pipes or ‘make good’ the wall surface after casting pipes.
- Ensures good bond between wall and pipe.
- Installed cost can be drastically reduced particularly where a large number of through the wall joints appear on a structure e.g. in a gravity treatment works.

Flexible Fit

Metal components are coated with Rilsan Nylon 11 which is WRAS approved for use with potable water and offers a long term protection to corrosion, impact and abrasion to ensures continued reliable performance.
Conventional Method with a Puddle Pipe

In civil projects with reinforced concrete work & pipework it is inevitable that there will be a need to pass a pipe through a concrete wall.

Traditional methods to accommodate pipework are:-

- Box Out a section and come back later to cast in pipe.
- Cast In the Puddle Pipe, by cutting the formwork to include the pipe when pouring main wall.

Helden Wall Coupling Method

Designed to fit flush between formwork panels and coming with various end configurations to accommodate site conditions, Helden Wall Couplings provide an alternative means of passing a pipe through a wall or slab, that also offers the following advantages.

Traditional Methods Disadvantages:

- Boxing Out
  - Make up formwork for box out that will only have one use.
  - Never get a good surface finish between old and new concrete.
  - Potential weak joint between old and new concrete.

- Casting In
  - Civil contractor has to position pipe at correct level and location in wall.
  - When pouring large walls there is always a risk of movement of formwork and therefore cannot always get pipework accurately positioned.
  - Formwork can only be used for one concrete pour.

In addition to the problems with casting in the puddle pipe, two flexible couplings are required along with a rocker pipe to accommodate ground movement.

Wall Coupling Advantages:

- Easier for civil contractor to position pipe at correct level & location in wall.
- Easier to secure wall coupling to prevent risk of movement during pouring of concrete.
- Large formwork panels can be re-used.
- No need to come back to wall to cast in pipes.
- No need to “make good” wall surface after pouring secondary concrete around pipe.

In addition, the use of a Helden wall coupling ensures that, on the outside of the structure, the first ‘rocker’ or settlement coupling is built into the shear face of the wall – exactly where it is required. It also means that only one further versatile coupling is needed to form the settlement ‘rocker’ instead of two.
Materials, Relevant Standards & Approvals

Body, Centre Sleeve & End Rings:
DN80 to DN300:
➤ Carbon steel to BS EN 10025:
  Grade S275JR
➤ Ductile iron to BS EN 1563:
  Symbol EN-GJS-450-10
  DN350 to DN1800:
  ➤ Carbon steel to BS EN 10025:
    Grade S275JR

Gasket
EPDM to BS EN 681 Part 1 Type WA

Coatings
Wall Coupling Bodies & End Rings:
➤ Standard Rilsan Nylon 11.
➤ Optional - Scotchkote 206N fusion bonded epoxy.
  Studs:
  ➤ Sheraplex coated to WIS 4-52-03.

Tee Bolts or Stud
Steel to BS EN ISO 898-1:
  Property Class 4.8

Washers
Stainless Steel to BS 1449:
  Part 2: Grade 304S15

Approvals
The following water contact materials used in Wall Couplings are approved for use with potable water:-
Rilsan Nylon 11:
➤ WRAS, AS/NZS 4020, DVGW, W270, ACS & KIWA
EPDM Gaskets:
➤ WRAS, AS/NZS 4020

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Wall Couplings Order / Enquiry Form

Wall Couplings are a bespoke product and Helden requires the following information to assist with the quotation process. This page can be copied from the brochure, completed and sent via email to: info@helden-web.com.

Or a form fillable PDF is available on the website www.helden-web.com.

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Date</th>
<th>Email</th>
</tr>
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<td>1st End (Please Tick)</td>
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<td>Coupling</td>
</tr>
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<td>2nd End (Please Tick)</td>
<td>Man Entry</td>
<td>Coupling</td>
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<td>Wall Thickness</td>
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<td>Actual OD of Pipe</td>
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<td>Stainless Steel</td>
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<td>Pipe Material (Please Tick)</td>
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<td>If Harnessed - Stud Details</td>
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<td>Working Pressure</td>
<td>Puddle Flange (Please Tick)</td>
<td>Yes</td>
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<tr>
<td>Any Other Details</td>
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<td></td>
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</table>

Helden strongly recommends the user ensures that the wall is structurally capable of withstanding the resultant forces induced by the system working pressure and any other related influences.
Responsive AquaFast
Couplings & Flange Adaptors
For Polyethylene & PVC Connections

NOW AVAILABLE
355 TO 450 DIAMETER
EASIER FITTING ON OVAL OR COILED PIPES
NOW AVAILABLE IN 280MM DIAMETER
AquaFast Couplings & Flange Adaptors 63mm to 315mm

Overview

Designed & Engineered to Simplify Polyethylene & PVC Pipe Connections

Effortless Installation
AquaFast’s unique pressure sealing system offers a simple and reliable solution for connecting Polyethylene & PVC pipe. With a visual indicator confirming correct fitment and no special skills or tools required, installing AquaFast is effortless and quicker than other systems. In addition, an enhanced gripping mechanism ensures fittings slide easily into position during installation and provide full end load restraint in service negating the need for thrust blocks to prevent pipe pull out.

Simple Jointing
Using only a standard spanner to tighten fewer bolts (only two per fitting up to 125mm) until the visual indicator confirms correct fitment AquaFast provides operatives with simple means of joining PE pipes. The metal-to-metal positive stop indicating mobilisation of the gripper and gasket sealing mechanisms removes the need for a torque wrench and prevents over tightening of the bolts while ensuring optimum assembly to every time.

On-the-spot Repairs
From start to finish, AquaFast offers benefits to the installer. Supplied fully assembled and with an improved design that delays gripper engagement, AquaFast slides effortlessly over coiled and oval pipe making it easy for installers to correctly position the product in narrow trench conditions. Needing no specialist equipment, simply a “rag and a spanner”, AquaFast can be installed in all-weather conditions and this, coupled with a design that does not need a support liner, means the product is ideal for on-the-spot connections in both new lay and repair / maintenance work.

Transitional Connections
AquaFast couplings & flange adaptors are available from 63mm to 315mm OD. Designed to work on both Polyethylene pipe in both PE80 and PE100 material SDR 11, 17/17.6 without a support liner, they can also be used to connect metric PVC pipe, so AquaFast is ideal for PE/PVC transitional connections.

Note: All water contact materials approved for use with potable water by WRAS.
# AquaFast Couplings & Flange Adaptors 63mm to 315mm

## Product Design Benefits

### Simple to Install
- Captive, non-rotating bolts across whole range requiring a single spanner to install.
- Increased bore dimensions and inclusion of resistors to prevent early engagement of gripper ensures AquaFast slides easily over pipe.

### Efficient Gasket Sealing Technology
- Double ‘O’ ring gasket provides localised high pressure contact points generating efficient seal on pipe surface.
- EPDM (water quality approved) gaskets.

### Corrosion Protection
- Metal components are coated with Rilsan Nylon 11, which is WRAS approved for use with potable water, and offers long term corrosion protection impact abrasion resistance.
- The nuts & bolts are Sheraplex coated to WIS 4-52-03, which does not gall when re-used and provides long term corrosion protection.

### Positive Stop
- Correct installation confirmed through visual indication with metal to metal contact between three components (end ring, intermediate ring and sleeve / flange adaptor body).

### Flexible Flange Drilling
- As standard the flange adaptors are multi drilled to accommodate BS EN 1092-1 PN10 & 16.

### Unique Progressive Sealing and Gripping Mechanism
- Patented gasket and gripper design delivers low pressure / load to outside of pipe at initial bolt up eliminating the need for support liner.
- Water transfer path uses internal pressure to increase gasket compression at contact points.
- As system pressure increases the initial gripper engagement with the pipe is enhanced through progressive gripping.

### Customer Benefits
- Ideal for pumped sewage line as no support liner is required meaning a clear unrestricted bore. Additionally, Rilsan abrasion resistance coating accommodates any solids any solids in sewage.
- 50 years design life expectancy is assured through “Accelerated Aging Testing” that simulates lifecycle of the product and Rilsan Nylon coating to metal works for corrosion protections as well as Sheraplex coated bolts to WIS 4-52-03.
- Rough on site handling accommodated by Rilsan coating.
- Simple onsite installation as the product comes pre-assembled hence easily slides over the round pipe. The resistor ensures gripper remains fully contained in housing until bolt up is complete.
- Reduced number of bolts ensures the product can be always orientated to facilitate easy access for bolt up.
- Minimal damage to pipe as progressive gripping system only penetrates sufficiently to mobilise and load forces from internal pressure and other loads in PE Pipe.
- All water contact materials approved for use with potable water (WRAS).
- Fully restrained fitting, designed to meet the performance requirements of WIS4-24-01 Type 2 and ISO17885.
AquaFast Large Diameter Couplings & Flange Adaptors 355mm to 450mm

Overview

Designed for simplified & dependable trench installation every time.

Simple to Install
AquaFast Large Diameter is quick and easy to install providing an alternative solution to electrofusion and butt fusion for all weather and trench conditions. It is a simple fit and forget installation designed with the minimum number of bolts and without the need for an internal liner or expensive trench equipment.

Quality
Patents are pending on this innovative product designed and manufactured under quality systems to BS EN ISO 9001 and the requirements of UK & European Water Regulations.

Reduced Stock Holding
And now just 10 sizes will cover a range of multiple SDR's offering a significant reduction in traditional stockholding and allowing distributors and water utilities opportunity to have stock to cover all eventualities with off-the-shelf availability.

Innovative Design ideal for Oval Pipes
Helden has built in a high tolerance for AquaFast to fit with oval pipes and negating the need to utilise expensive and time consuming re-rounding tools.

Fully Corrosion Protected
WRAS approved black Rilsan Nylon 11 coating provides excellent corrosion and damage resistance to impact, abrasion, weathering and chemicals.

Resists Pull-out
Improved gripping mechanism offers end load restraint, resisting pipe pull out, allowing the coupling and flange adaptor to be suitable for use in climatic regions where temperatures range from -20°C up to 60°C. AquaFast has been designed to meet the performance requirements of BS EN 12842, WIS 4-24-01 Type 2 and ISO 17855 (supersedes ISO 14236.2)

Pipe Material
AquaFast Large Diameter Couplings & Flange Adaptors 355mm to 450mm

Product Design Benefits

Innovative Gripping

An enhanced gripping mechanism offers Type 2 end load restraint, resisting pipe pull out.

Corrosion Protection

All cast components are fully coated in Black Rilsan Nylon 11 which has excellent resistance to impact, abrasion, weathering and chemicals as well as good thermal stability and flexibility to accommodate for rough site handling.

Positive Stop

Correct installation confirmed through visual indication with metal to metal contact between the clamp bands.

Centralisation Feature

Centralisation bolts are available around the product allowing accurate fitment during installation.

Customer Benefits

➤ Coupling can be used for repair - no internal restriction ideal for Sewage applications.
➤ Suitable for connecting pipes in wet/submerged conditions and above ground applications.
➤ No requirement for a support liner, torque wrench or any other specialist equipment on site.
➤ Easy to centralise on the pipe.
➤ Reduced stockholding - One product can connect one nominal pipe size with common SDRs (11, 17/17.6 and 21).
➤ 50 years design life expectancy.
➤ Reusability - No spares required for multiple installations.
➤ Saves time and effort as Contractor only has to identify PE pipe nominal size to select correct fitting.
➤ Fittings comes fully assembled.
➤ Minimal number of bolts to tighten.
AquaFast Couplings 63mm to 315mm

Datasheet

Coupling

![Coupling Diagram]

AquaFast Couplings

<table>
<thead>
<tr>
<th>Pipe OD</th>
<th>Bolt Size No.-Dia x Length</th>
<th>Dimensions (mm)</th>
<th>Setting Gap (mm)</th>
<th>Max Gap (mm)</th>
<th>Weight (kg)</th>
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</thead>
<tbody>
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<td>63</td>
<td>2-M12 x 250</td>
<td>A max 257 B dia 144</td>
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<td>75</td>
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<td>90</td>
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<td>110</td>
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<td>4-M12 x 375</td>
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<td>6-M16 x 385</td>
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<tr>
<td>280</td>
<td>6-M16 x 385</td>
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<td>50</td>
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<tr>
<td>315</td>
<td>6-M16 x 385</td>
<td>A max 395 B dia 417</td>
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AquaFast Couplings 63mm to 315mm

Datasheet 2/2

Technical Information

Working Pressure Rating
Water 16 bar
Gas not approved

Vacuum Pressure
Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure
1.5 times working pressure for short duration (2 hours)

Pipe Material / Support Liner
When used on the following pipe materials AquaFast does not need a support liner:-
➤ MDPE (PE80) and HPPE (PE100) in SDR ratings 11 & 17
➤ MOPVC (16 bar rated pipe)

Angularity
Couplings 1.5°

Bolt Torque/Spanner
Torque; None, simply tighten until correct installation confirmed through visual indication with metal to metal contact between three components (end ring, intermediate ring and sleeve).

Temperature Rating of Product
EPDM -20°C to +40°C
AquaFast is not suitable for use on heating systems with fluctuating temperatures.

End Load Due to Internal Pressure
AquaFast Fully restrained fitting, designed to meet the performance requirements of WIS4-24-01 Type 2 and ISO17885.

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

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

Materials & Relevant Standards

Centre Sleeve, End Ring & Flange Adaptor Body
Ductile iron to BS EN 1563 Symbol EN-GJS-450-10

Gripper Ring
Ductile iron to BS EN 1563 Symbol EN-GJS-450-10

Intermediate Ring
Ductile iron to BS EN 1563 Symbol EN-GJS-450-10

Gasket (EPDM)
BS EN 681-1 Type WA/BS 6920 hardness to 70 IRHD

Resisters
Free cutting Mild Steel (Grade Y15) Zn³ Zinc coated

Bolts
BS EN ISO 898-1 Property class 8.8
Option - Stainless Steel BS EN ISO3506-1 Grade A2 Property Class 70
(SStainless steel available as special order)

Nuts
Steel to BS EN20898-2 Property Class 8
Option - Stainless Steel BS EN ISO3506-2 Grade A4 Property Class B0
(SStainless steel available as special order)

Washers
BS 1449:Part 2 Grade 304S15

Coatings
Centre Sleeve, End Ring, Flange Adaptor body & intermediate ring:
➤ Rilsan Nylon 11
Gripper:
➤ Cataphoretic coating
Bolts & Nuts:
➤ Sheraplex to WIS 4-52-03

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### AquaFast Large Diameter Couplings 355mm to 450mm

**Datasheet**

**Coupling**

![Coupling Diagram](image)

**AquaFast Couplings**

<table>
<thead>
<tr>
<th>Nominal Size</th>
<th>Working Pressure (water) bar</th>
<th>Bolts size No dia x length</th>
<th>Insertion Depth (mm)</th>
<th>Setting gap (based on nominal insertion depth)</th>
<th>Outer Dimensions (mm)</th>
<th>Weight (kg)</th>
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<td>210</td>
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<td>24-M16 x 120</td>
<td>247</td>
<td>210</td>
<td>585</td>
<td>231.3</td>
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<tr>
<td>450</td>
<td>16</td>
<td>24-M16 x 120</td>
<td>255</td>
<td>210</td>
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<td>253.3</td>
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AquaFast Large Diameter Couplings 355mm to 450mm

Datasheet 2/2

Technical Information

Working Pressure Rating
Water 16 bar
Gas not approved

Vacuum Pressure
Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure
1.5 times working pressure for short duration (2 hours)

Pipe Material / Support Liner
When used on the following pipe materials AquaFast does not need a support liner:-
➤ MDPE (PE80) in SDR ratings 11 & 17/17.6
➤ HPPE (PE100) in SDR ratings 11, 17/17.6 & 21

Angularity (in accordance with BS EN 12842)
Couplings 1.0°

Bolt Torque/Spanner
Torque: None, simply tighten until correct installation confirmed Correct installation confirmed through visual indication with metal to metal contact between the clamp bands.

Temperature Rating of Product
EPDM -20°C to +60°C
AquaFast is not suitable for use on heating systems with fluctuating temperatures.

End Load Due to Internal Pressure
AquaFast Fully restrained fitting, and has been designed to meet the performance requirements of BS EN 12842, WIS 4-24-01 Type 2 and ISO 17855 (supersedes ISO 14236.2).

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

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

Materials & Relevant Standards

Flange Adaptor Body, Centre Sleeve, Clamp Bands & Gripper Ring
Ductile iron to BS EN 1563 Symbol EN-GJS-450-10

Gasket
EPDM Grade ‘E’ to BS EN 681-1:1996 Type WA WRAS listed

Coatings
Body, Sleeve, Intermediate Ring & End Ring
➤ Rilsan Nylon 11 to WIS 4-52-01 Part 1
Nuts and Bolts:
➤ Sheraplex coated to WIS 4-52-03
Gripper:
➤ Cataphoretic coating

Bolts
Standard - Stainless Steel BS EN ISO3506-1 Grade A2-70

Nuts
Standard - Stainless Steel BS EN ISO3506-2 Grade A4-80

Washers
Stainless Steel to BS1449: Part 2:1983 Grade 304S15

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AquaFast Flange Adaptors 63mm to 315mm

Datasheet

Flange Adaptor

AquaFast Flange Adaptors

<table>
<thead>
<tr>
<th>Pipe OD</th>
<th>Flange Drillings</th>
<th>Tee Bolt Size No.-Dia x Length</th>
<th>Dimensions (mm)</th>
<th>Bore C (mm)</th>
<th>Flange Thickness D (mm)</th>
<th>Setting Gap (mm)</th>
<th>Max Gap (mm)</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>63</td>
<td>50/65 PN10,16</td>
<td>2-M12 x 135</td>
<td>144</td>
<td>185</td>
<td>50</td>
<td>17</td>
<td>20</td>
<td>25</td>
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<td>75</td>
<td>65/80 PN10,16</td>
<td>2-M12 x 135</td>
<td>144</td>
<td>200</td>
<td>65</td>
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<td>75</td>
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<td>144</td>
<td>200</td>
<td>65</td>
<td>17</td>
<td>20</td>
<td>25</td>
</tr>
<tr>
<td>90</td>
<td>65/80 PN10,16</td>
<td>2-M12 x 135</td>
<td>144</td>
<td>200</td>
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<td>110</td>
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<td>2-M12 x 135</td>
<td>144</td>
<td>229</td>
<td>100</td>
<td>17</td>
<td>20</td>
<td>25</td>
</tr>
<tr>
<td>125</td>
<td>100/125 PN10,16</td>
<td>2-M12 x 135</td>
<td>144</td>
<td>250</td>
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<td>140</td>
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<td>144</td>
<td>250</td>
<td>125</td>
<td>17</td>
<td>20</td>
<td>25</td>
</tr>
<tr>
<td>160</td>
<td>150 PN10,16</td>
<td>4-M12 x 135</td>
<td>144</td>
<td>285</td>
<td>150</td>
<td>17</td>
<td>20</td>
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</tr>
<tr>
<td>180</td>
<td>150 PN10,16</td>
<td>4-M12 x 190</td>
<td>199</td>
<td>285</td>
<td>150</td>
<td>17</td>
<td>25</td>
<td>35</td>
</tr>
<tr>
<td>200</td>
<td>200 PN10,16</td>
<td>4-M12 x 190</td>
<td>200</td>
<td>343</td>
<td>190</td>
<td>18</td>
<td>25</td>
<td>35</td>
</tr>
<tr>
<td>225</td>
<td>200 PN10,16</td>
<td>4-M16 x 195</td>
<td>205</td>
<td>343</td>
<td>190</td>
<td>18</td>
<td>25</td>
<td>35</td>
</tr>
<tr>
<td>250</td>
<td>250 PN10,16</td>
<td>6-M16 x 195</td>
<td>207</td>
<td>406</td>
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<td>20</td>
<td>25</td>
<td>35</td>
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<tr>
<td>280</td>
<td>250 PN10,16</td>
<td>6-M16 x 195</td>
<td>207</td>
<td>406</td>
<td>270</td>
<td>20</td>
<td>25</td>
<td>35</td>
</tr>
<tr>
<td>315</td>
<td>300 PN10,16</td>
<td>6-M16 x 195</td>
<td>208</td>
<td>483</td>
<td>300</td>
<td>21.5</td>
<td>25</td>
<td>35</td>
</tr>
</tbody>
</table>

All flanges drilled to BS EN 1092-1 (formerly BS 4504) / BS EN ISO 7005 PN10 and PN16

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Technical Information

Working Pressure Rating
Water 16 bar
Gas not approved

Vacuum Pressure
Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure
1.5 times working pressure for short duration (2 hours)

Pipe Material / Support Liner
When used on the following pipe materials AquaFast does not need a support liner:-
➤ MDPE (PE80) and HPPE (PE100) in SDR ratings 11 & 17
➤ MOPVC (16 bar rated pipe)

Flange Drilling
All flange drilled to BS EN 1092-1 (formerly BS 4504) /BS EN ISO 7005 PN10 and PN16

Angularity (in accordance with BS EN 12842)
Flange Adaptors 1.5°

Bolt Torque/Spanner
Torque: None, simply tighten until correct installation confirmed through visual indication with metal to metal contact between three components (end ring, intermediate ring and adaptor body).

Temperature Rating of Product
EPDM -20°C to +40°C
AquaFast is not suitable for use on heating systems with fluctuating temperatures.

End Load Due to Internal Pressure
AquaFast Fully restrained fitting, designed to meet the performance requirements of WIS4-24-01 Type 2 and ISO17885.

Approvals
The following water contact materials used in AquaFast are approved for use with potable water:-
Rilsan Nylon 11:
➤ WRAS, AS/NZS 4020, DVGW, W270, ACS & KIWA
EPDM Gaskets:
➤ WRAS, AS/NZS 4020
In addition to the above, AquaFast as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Centre Sleeve, End Ring & Flange Adaptor Body
Ductile iron to BS EN 1563 Symbol EN-GJS-450-10

Gripper Ring
Ductile iron to BS EN 1563 Symbol EN-GJS-450-10

Intermediate Ring
Ductile iron to BS EN 1563 Symbol EN-GJS-450-10

Gasket (EPDM)
BS EN 681-1 Type WA/BS EN 6920 hardness to 70 IRHD

Resisters
Free cutting Mild Steel (Grade Y15) Zn³ Zinc coated

Bolts
BS EN ISO 898-1 Property class 8.8
Option - Stainless Steel BS EN ISO3506-1 Grade A2 Property Class 70
(SStainless steel available as special order)

Nuts
Steel to BS EN20898-2 Property Class 8
Option - Stainless Steel BS EN ISO3506-2 Grade A4 Property Class 80
(SStainless steel available as special order)

Washers
BS 1449:Part 2 Grade 304S15

Coatings
Centre Sleeve, End Ring, Flange Adaptor body & intermediate ring:
➤ Rilsan Nylon 11
Gripper:
➤ Cataphoretic coating
Bolts & Nuts:
➤ Sheraplex to WIS 4-52-03

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### AquaFast Large Diameter Flange Adaptors 355mm to 450mm

**Datasheet**

#### Flange Adaptor

![Flange Adaptor Diagram]

### AquaFast Flange Adaptors

<table>
<thead>
<tr>
<th>Nominal Size</th>
<th>Flange Drilling</th>
<th>Working Pressure (water)</th>
<th>Bolts size No dia x length</th>
<th>Insertion Depth (mm)</th>
<th>Setting gap (based on nominal insertion depth)</th>
<th>Outer Dimensions (mm)</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Min</td>
<td>Nom</td>
<td>Max</td>
<td>Installed</td>
</tr>
<tr>
<td>355</td>
<td>300 PN10,16</td>
<td>16</td>
<td>12-M16 x 120</td>
<td>284</td>
<td>304</td>
<td>324</td>
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<td>355</td>
<td>350 PN10,16</td>
<td>16</td>
<td>12-M16 x 120</td>
<td>284</td>
<td>304</td>
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<td>400</td>
<td>350 PN10,16</td>
<td>16</td>
<td>12-M16 x 120</td>
<td>289</td>
<td>309</td>
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<td>400</td>
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<td>16</td>
<td>12-M16 x 120</td>
<td>290</td>
<td>310</td>
<td>330</td>
<td>117</td>
</tr>
<tr>
<td>450</td>
<td>400 PN10,16</td>
<td>16</td>
<td>12-M16 x 120</td>
<td>298</td>
<td>318</td>
<td>338</td>
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<tr>
<td>450</td>
<td>450 PN10,16</td>
<td>16</td>
<td>12-M16 x 120</td>
<td>298</td>
<td>318</td>
<td>338</td>
<td>117</td>
</tr>
<tr>
<td>450</td>
<td>500 PN10,16</td>
<td>16</td>
<td>12-M16 x 120</td>
<td>298</td>
<td>318</td>
<td>338</td>
<td>117</td>
</tr>
</tbody>
</table>

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Technical Information

**Working Pressure Rating**
- Water: 16 bar
- Gas: not approved

**Vacuum Pressure**
Capable of accommodating a vacuum pressure of -0.7 bar

**Site Test Pressure**
1.5 times working pressure for short duration (2 hours)

**Pipe Material / Support Liner**
When used on the following pipe materials AquaFast does not need a support liner:
- MDPE (PE80) in SDR ratings 11 & 17/17.6
- HPPE (PE100) in SDR ratings 11, 17/17.6 & 21

**Angularity (in accordance with BS EN 12842)**
Flange Adaptors 1.0°

**Bolt Torque/Spanner**
Torque: None, simply tighten until correct installation confirmed. Correct installation confirmed through visual indication with metal to metal contact between the clamp bands.

**Temperature Rating of Product**
- EPDM: -20°C to +60°C
- AquaFast is not suitable for use on heating systems with fluctuating temperatures.

**End Load Due to Internal Pressure**
AquaFast Fully restrained fitting, and has been designed to meet the performance requirements of BS EN 12842, WtS 4-24-01 Type 2 and ISO 17855 (supersedes ISO 14236.2).

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

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

**Materials & Relevant Standards**

**Flange Adaptor Body, Centre Sleeve, Clamp Bands & Gripper Ring**
Ductile iron to BS EN 1563 Symbol EN-GJS-450-10

**Gasket**
EPDM Grade ‘E’ to BS EN 681-1:1996 Type WA WRAS listed

**Coatings**
- Body, Sleeve, Intermediate Ring & End Ring
  - Rilsan Nylon 11 to WIS 4-52-01 Part 1
- Nuts and Bolts:
  - Sheraplex coated to WIS 4-52-03
- Gripper:
  - Cataphoretic coating

**Bolts**
- Standard - Stainless Steel BS EN ISO3506-1 Grade A2-70

**Nuts**
- Standard - Stainless Steel BS EN ISO3506-2 Grade A4-80

**Washers**
- Stainless Steel to BS1449: Part 2:1983 Grade 304S15
Crane BS&U are solely the provider of products and have no direct influence on, or take any responsibility for any working practices employed or depicted in the images enclosed to install such products.
AquaGrip
Unique Couplings & Flange Adaptors
For Polyethylene Pipe Connections
AquaGrip Overview

A High Performance Polyethylene Pipe Jointing System

The AquaGrip range was developed in response to demand for a simple, high performance end load restraint (Type 1) mechanical method of joining polyethylene pipe. AquaGrip products are designed to support and grip PE pipe to prevent pipe collapse and pullout.

Easy & Safe to Fit
The range requires no special skills or complicated tools to fit, a suitably calibrated torque wrench is the only specialist tool required. The ability to rotate the flange bolt holes and the lightweight, compact design provide easier handling and quicker installation.

On-the-spot Repairs
Another key benefit of the AquaGrip range is ‘all-weather installation’. It can be installed under wet conditions without shelters, and even under water. It is ideal for on-the-spot repairs - no need for fusion jointing equipment when unexpected problems arise!

High Performance
Once fitted the product range offers axial restraint and is designed and tested to meet the full Type 1 performance requirements of WIS 4-24-01 in all sizes up to 450mm. Full Type 2 performance is achieved on larger sizes. It is designed to equal or exceed the pressure capabilities of MDPE (PE80) and HDPE (PE100) pipe and has total corrosion protection with Rilsan Nylon coated body and clamp bands.
AquaGrip Couplings & Flange Adaptors up to 180mm

Product Design Benefits

**Exceptional Grip**
The combination of the acetal grippers and separate internal support liner gives AquaGrip an end load gripping capability of Type 1 to WIS 4-24-01. This means that the joint is stronger than the PE pipe itself.

**Unique Gasket**
The EPDM gasket (Compound 80 IRHD Grade E) is suitable for water and sewage applications between a temperature range of -10°C to +40°C.

**Corrosion Resistance**
Sheraplex coated nuts & bolts offer excellent corrosion resistance and eliminates galling of coating in threads allowing repeated dismantling and installation of products if required.

**Designed to Last**
The sleeve or body are fully coated in black Rilsan Nylon 11 which has excellent resistance to impact, abrasion, weathering and chemicals as well as good thermal stability and flexibility to accommodate for rough site handling. It is also WRAS listed.

**Customer Benefits**
- Slip-on coupling without centre stop or obstruction making it easier to make repairs to existing pipelines.
- No need to dismantle products to install.
- Same size bolt throughout range means just one torque wrench for all pipe sizes.
- Substantial axial pipe adjustment up to 50mm - ideal for making pipe and valve insertions into existing lines. No need for precise cutting of the pipes or for machined pipe ends.
- Versatile range. Straight couplings for simple, convenient repairs, or new lay connections. Flange adaptors to introduce valves and flanged fittings or connect to existing flanged pipework.
- Supplied complete with liners for PE pipes.
- AquaGrip has been tested and found to comply with the requirements of the Water Supply (Water Fittings) Regulations 1999 for England and Wales, the Water Byelaws 2000 Scotland and the Water Regulations Northern Ireland.
- Flange adaptors and straight couplings designed to the full Type 1 performance requirements of WIS 4-24-01.
AquaGrip Flange Adaptors 225mm to 1600mm

Product Design Benefits

**Exceptional End Restraint**
Uniquely designed clamp locks onto the anchoring shoulder, providing maximum end load restraint.

**Corrosion Resistance**
Bolts, nuts and washers are plated in zinc, and then Grey Flurene® 177, a low friction coating which offers excellent corrosion resistance.

**Reliable Seal**
The flanged body incorporates an internal support liner which carries the double ridged gasket(s) that seals on the inside of the PE pipe. The inside of the pipe is well protected from casual on-site damage, so the seal remains secured.

**External Coating**
The body, clamp band and liner are fully coated in Black Rilsan Nylon 11 which has excellent resistance to impact, abrasion, weathering and chemicals as well as good thermal stability and flexibility to accommodate for rough site handling. It is WRAS listed.

Customer Benefits

- Large size flange adaptors seal on the inside of the pipe ensuring a quick and reliable seal and greater customer confidence.
- Available in sizes up to 1600mm.
- Connects to other types of pipe via a flange connection, ideal for replacing damaged pipe lengths with new pipe or introducing flanged fittings, such as metal valves, into a polyethylene pipeline.
- AquaGrip is available with reduced bore flanges which can reduce valve fitting costs e.g. 315mm pipe OD x 250mm flange, 500mm pipe OD x 450mm flange.
- Ideal for structural lining in conjunction with mains refurbishment techniques such as Swage-Line® RollDown® and Die Draw®.
- Uniquely designed clamp bands lock onto the anchoring shoulder, providing maximum end restraint.
- Tackles problem of misshapen polyethylene pipe ends.
- Generous cutting tolerance can compensate for cutting inaccuracy (40mm minimum tolerance).
- UK Water Regulations Advisory Scheme (WRAS) approved and designed to meet the performance requirements of WIS 4-24-01 (Type 1 performance to WIS 4-24-01 up to 450mm SDR 11, other sizes / SDR's minimum Type 2).

Please note that these products may require the use of heating mats. Please contact the Marketing Department on +44 (0) 1462 443322 for details.
AquaGrip Couplings & Flange Adaptors up to 180mm

Datasheet 1/2

Coupling

![Coupling Diagram]

AquaGrip Coupling Assembly (joins PE pipe to PE pipe)

<table>
<thead>
<tr>
<th>Pipe OD</th>
<th>Dimensions (mm)</th>
<th>No. of Bolts</th>
<th>Bolts size (mm)</th>
<th>Gasket Mould No.</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>63</td>
<td>144 208</td>
<td>2</td>
<td>M12 x 200</td>
<td>6001</td>
<td>2.4</td>
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<td>90</td>
<td>167.5 208</td>
<td>4</td>
<td>M12 x 200</td>
<td>1785</td>
<td>3.8</td>
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<tr>
<td>110</td>
<td>188 208</td>
<td>4</td>
<td>M12 x 200</td>
<td>1786</td>
<td>5.4</td>
</tr>
<tr>
<td>125</td>
<td>203 208</td>
<td>4</td>
<td>M12 x 200</td>
<td>1787</td>
<td>5.8</td>
</tr>
<tr>
<td>160</td>
<td>240 223</td>
<td>8</td>
<td>M12 x 215</td>
<td>1788</td>
<td>9.0</td>
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<tr>
<td>180</td>
<td>257.5 223</td>
<td>8</td>
<td>M12 x 215</td>
<td>1789</td>
<td>9.8</td>
</tr>
</tbody>
</table>

Flange Adaptor

![Flange Adaptor Diagram]

AquaGrip Flange Adaptor Assembly (joins PE pipe to flanged equipment)

<table>
<thead>
<tr>
<th>Pipe OD</th>
<th>Dimensions (mm)</th>
<th>No. of T-Bolts</th>
<th>T-Bolt size (mm)</th>
<th>Flange specification nom (mm)</th>
<th>Gasket Mould No.</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>63</td>
<td>200 123</td>
<td>2</td>
<td>M12 x 115</td>
<td>50/80 PN10/16</td>
<td>6001</td>
<td>3.6</td>
</tr>
<tr>
<td>90</td>
<td>200 123</td>
<td>4</td>
<td>M12 x 115</td>
<td>80 PN10/16</td>
<td>1785</td>
<td>3.8</td>
</tr>
<tr>
<td>110</td>
<td>220 123</td>
<td>4</td>
<td>M12 x 115</td>
<td>100 PN10 &amp; 16</td>
<td>1786</td>
<td>4.2</td>
</tr>
<tr>
<td>125</td>
<td>220 123</td>
<td>4</td>
<td>M12 x 115</td>
<td>100 PN10 &amp; 16</td>
<td>1787</td>
<td>4.3</td>
</tr>
<tr>
<td>160</td>
<td>285 129</td>
<td>8</td>
<td>M12 x 115</td>
<td>150 PN10 &amp; 16</td>
<td>1788</td>
<td>8.1</td>
</tr>
<tr>
<td>180</td>
<td>285 129</td>
<td>8</td>
<td>M12 x 115</td>
<td>150 PN10 &amp; 16</td>
<td>1789</td>
<td>8.5</td>
</tr>
</tbody>
</table>

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AquaGrip Couplings & Flange Adaptor up to 180mm

Technical Information

Working Pressure Rating
Water 16 bar
Gas not approved

Vacuum Pressure
Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure
1.5 times working pressure for short duration (2 hours)

Pipe Material / Support Liner
AquaGrip can be used on the following pipe materials with a Helden support liner:-
- MDPE (PE80) and HPPE (PE100) in SDR ratings 11, 17, 17.6, & 21
- MDPE (PE80) and HPPE (PE100) in SDR26 is also available for 125mm and 160mm

Angularity (in accordance with BS EN 12842)
Couplings 1.5° per end
Flange Adaptors 1.5°

Bolt Torque/Spanner
Torque 55-65Nm on every bolt
Spanner size A/F 19mm

Temperature Rating of Product
EPDM -20°C to +40°C
AquaGrip is not suitable for use on heating systems with fluctuating temperatures.

End Load Due to Internal Pressure
AquaFast Fully restrained fitting, and has been designed to meet the performance requirements of BS EN 12842, WIS 4-24-01 Type 1 and ISO 17855 (supersedes ISO 14236.2).

Approvals
The following water contact materials used in AquaGrip are approved for use with potable water:-
- Rilsan Nylon 11:
  - WRAS, AS/NZS 4020, DVGW, W270, ACS & KIWA
- EPDM Gaskets:
  - WRAS, AS/NZS 4020
In addition to the above, AquaGrip as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

End Rings & Flange Adaptor Body
SG iron to BS EN 1563 Symbol EN-GJS-450-10.

Centre Sleeve/Liners
Mild steel to BS EN 10025 Grade S 275

Gasket
EPDM compound 80 IRHD Grade ‘E’ to BS EN 681-1 Type WA.

Coating
Flange Adaptor Body, Centre Sleeve & End Rings:
- Rilsan Nylon 11 to WIS 4-52-01
- Blue Sheraplex followed by dry film lubricant (Ilex).

Bolts
To BS EN ISO 898-1 Property Class 4.8.

Nuts
To BS 4190 Grade 4.

Washers
Stainless steel - BS 1449: PT2 Grade 304 S 15

Gripper
Acetal copolymer Grade M90 or equivalent.

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AquaGrip Flange Adaptors 225mm to 1600mm

Flange Adaptor

AquaGrip Flange Adaptors (joins PE pipe to flanged equipment)

<table>
<thead>
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<th>Flange Drilling **</th>
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<th>Dimensions</th>
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<td>1600 PN16</td>
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<td>24 M33 x 180</td>
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</tbody>
</table>

✓ Product installation requires heating mats at all temperatures.
✓ Product installation requires heating mats if temperature of bore to the pipe falls below +5°C.
✗ PE pipe wall too thick – do not have a product.

For confirmation of other sizes please contact our Marketing Department.

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.

www.helden-web.com
Working Pressure Rating
Water 16 bar
Gas not approved

Vacuum Pressure
Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure
1.5 times working pressure for short duration (2 hours)

Pipe Material / Support Liner
AquaGrip can be used on both MDPE (PE80) and HPPE (PE100) with SDR ratings as defined in the table on the previous page.

Angularity (in accordance with BS EN 12842)
Flange Adaptors 1.5°

Bolt Torque / Spanner
Successful installation of LD AquaGrip flange adaptors requires the following bolt torque to be achieved on all clamp band bolts:-
➤ M16 bolts 95 - 110Nm
➤ M20 bolts 190 - 215Nm
➤ M27 bolts 350 - 405Nm
➤ M33 bolts 675 - 750Nm

Temperature Rating of Product
EPDM -20°C to +40°C
AquaGrip is not suitable for use on heating systems with fluctuating temperatures.

End Load Due to Internal Pressure
AquaFast Fully restrained fitting, and has been designed to meet the performance requirements of BS EN 12842, WIS 4-24-01 Type 1 and ISO 17855 (supersedes ISO 14236.2) for all sizes / SDR ratings up to 450mm and as a minimum Type 2 for large diameters.

Approvals
The following water contact materials used in AquaGrip are approved for use with potable water:-
Rilsan Nylon 11:
➤ WRAS, AS/NZS 4020, DVGW, W270, ACS & KIWA
EPDM Gaskets:
➤ WRAS, AS/NZS 4020
In addition to the above, AquaGrip as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Flange adaptor body
280mm and below: SG iron to BS EN 1563 Symbol EN-GJS-450-10.
315mm and above: mild steel to BS EN10025 Grade S275.

Clamp band
SG iron (225mm to 800mm) to BS EN 1563 Symbol EN-GJS-450-10.
Mild steel to BS EN10025 Grade S275 (900mm to 1600mm).

Liner
(225 - 280mm sizes): aluminium to BS1490 Grade LM 27M.

Gaskets
70 IRHD EPDM to BS EN 681-1 Type WA. WRAS listed.

Coatings
Flange Adaptor Body, Clamp Bands & Liners:
➤ Rilsan Nylon 11 (Black), WRAS listed.
Bolts, Nuts & Washers:
➤ Zinc plated followed by Grey Flurene® 177.
EasiRange

Versatile

EasiClau, EasiTap, EasiTee & EasiCollar
A Rapid Solution for Pipe Repair & Tapping

NOW AVAILABLE WITH STAINLESS STEEL BOLTS
The Helden EasiRange has been developed to provide a comprehensive range of pipe repair and tapping products to serve the needs of today’s water industry. The EasiRange of products includes:

<table>
<thead>
<tr>
<th>Repair Clamps</th>
<th>DN50 to DN300</th>
<th>EasiClamp</th>
</tr>
</thead>
<tbody>
<tr>
<td>DN350 to DN600</td>
<td>MattSeal EasiTap</td>
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<tr>
<td>Under Pressure Tapping</td>
<td></td>
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<tr>
<td>(½” to 2” D&amp;T outlets)</td>
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<tr>
<td>DN50 to DN300</td>
<td>EasiTap</td>
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<td>DN350 to DN600</td>
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<tr>
<td>Under Pressure Tees</td>
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<tr>
<td>(Flanged Outlets)</td>
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<td>DN50 to DN300</td>
<td>Universal EasiTee</td>
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<td>DN350 to DN600</td>
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<tr>
<td>DN350 to DN1200</td>
<td>RingSeal EasiTee</td>
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<tr>
<td>Repairing Spigot &amp;</td>
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<tr>
<td>Socket Joints</td>
<td>DN350 to DN1200</td>
<td>EasiCollar</td>
</tr>
</tbody>
</table>

**Pipe Materials**

- Ductile Iron
- Cast Iron
- Steel
- PVC
- asbestos cement
- Concrete

**Repair Clamps & Under Pressure Tapping**

(½” to 2” D&T Outlets)

In the size range DN50 to DN300, as standard the EasiClamp and EasiTap products come in two halves with four self-retaining bolts that reduces the potential for them being lost during installation. A key advantage of this variant is once the product has been installed over the damaged pipe, selective tightening of the four bolts allows an operatives to re-align pipes with circumferential breaks that have moved apart in service. In addition, with the four bolt variant Helden has introduced a new Stainless Steel bolt option on the established EasiClamp and EasiTap repair range. This will give the customer an enhanced corrosion protection and increase the longevity of the product.
EasiRange

Overview

In the three high volumes sizes (DN80, DN100 and DN150) a hinged two-bolt variant is available. This clamp consists of two halves that are hinged and can be fully opened to permit quicker and easier fitting on the pipe. Unlike the four-bolt clamps, where the operative has to position the two halves of the clamp on either side of the pipe, the hinged two-bolt clamp is simply fully opened, positioned over the top of pipe and then under its self-weight the hinged halves drop, close and are locked into position by the two patented self-retaining bolts. While this easier means of installation reduces the length of time an operative is working adjacent to the damaged pipe, with only two bolts there is limited scope to re-align fractured pipe making this more suitable for pinhole corrosion, impact damage and longitudinal fractures.

The two-bolt hinged repair clamp also incorporates lugs that will facilitate connection to equipment that can install the clamp from the trench side, negating the need for an operator to enter the excavation. This, along with the self-locating bolts that lock into position when the clamp is on the pipe means the fittings are ready for the future when keyhole vacuum excavation is used to access pipelines to undertake repairs.

For the sizes DN350 to DN600, the Helden MattSeal EasiTap is used for both repairing pipes and to tap an outlet. Fabricated in steel with a 24mm tolerance on outside diameter and always supplied with a D&T outlet that can be left open while installing on a pressurised damaged pipe to relieve the pressure, these products provide an ideal means to repair larger diameter mains.

In all cases, the iron bodied EasiClamp and EasiTap products provide a permanent repair / outlet that is as strong as the original pipe.

Repair Clamps are ideal for

Under Pressure Tees (Flanged Outlets)

Universal EasiTee (DN50 to DN300) features a pipe outside diameter tolerance of up to 26mm, meaning that one fitting will suite the majority of pipe ODs for the same nominal bore, and combining this with the ability to have a flanged outlet the same size as the host pipe makes this an ideal product to stock. The unique “swing over bolts” also makes installing easy in the field as there is reduced chance of losing components in the trench.

For the larger diameters (DN350 and over), Helden offers two options:-

MattSeal EasiTee (DN350 to DN600)

Fabricated in steel and incorporating the full waffle gasket offering a 12mm tolerance, this range allows the installer to take a branch outlet of the same diameter as the host pipe. Ideal for use on cast iron pipes the waffle gasket prevents leakage caused by potential stress fractures induced in cast iron mains when installing the branch outlet.

RingSeal EasiTee (DN350 to DN1200)

Fabricated in steel but using a gasket that seals around the outlet cut into the host pipe, RingSeal offers a lighter weight and more cost effective product that is ideal for steel and ductile iron pipe, or where on cast iron pipe the flanged outlet less than 70% of the host pipe diameter.

The datasheets for the two products provides more information on when best to use MattSeal and RingSeal EasiTee products.
Repairing Spigot & Socket Joints
EasiCollar is an adaptable repair collar that provides an effective, permanent repair to leaking spigot and socket joints; once installed, the gasket reinforces the seal of the spigot and socket joint. Installation can take place whilst the mains pressure is on, avoiding costly shutdowns that disrupt supply to customers and once installed EasiCollar provides a permanent repair with no need for any future maintenance.

Permanent Seal
EasiClamp, EasiTap, and EasiTee (Universal and Matt Seal) products guarantee a reliable, permanent seal even on badly corroded pipes. A unique feature of these products is Helden’s 100% circumferential ‘Waffle’ gasket, which provides a leak tight seal and also cater for circumferential or longitudinal cracks. The EPDM gasket, which is WRAS approved for use with potable water, ensures a reliable and permanent leak tight solution with working pressure of 16 bar and site test pressure of 24 bar.

Ring$eal EasiTee uses a twin seal gasket to provide a permanent seal at the point of tapping.

Minimise Stockholding
Wide tolerance range – each fitting (EasiClamp, EasiTap and Universal EasiTee) will suit a number of popular pipe materials of the same nominal bore.

High Strength
The range has been manufactured using the latest technology minimising raw material usage. EasiRange products (EasiClamp, EasiTap and Universal EasiTee) are constructed from ductile and/or malleable iron or steel half housings. The products will support and seal around the pipe for the full length of the body, ensuring that sealing effectiveness is maintained in all circumstances.

Ease of Installation
All products can be installed under pressure, in all weather conditions meaning there is no need for costly mains shut down or disruption to customers. EasiClamp and EasiTap products feature self-retaining bolts and Universal EasiTee feature a unique ‘swing over’ bolt to aid installation, which reduces the potential loss of bolts during installation.

No specialist installation equipment is required and can be installed using simply a torque wrench to confirm correct bolt torque.
EasiClamp & EasiTap - 4 Bolt

Product Design Benefits

**Corrosion Protection**

All cast components are fully coated in Black Rilsan Nylon 11 which has excellent resistance to impact, abrasion, weathering and chemicals as well as good thermal stability and flexibility to accommodate for rough site handling.

**High Strength**

The strength of the ductile iron housings will provide permanent support and seal around the pipe.

**Permanent Seal**

The 100% ‘Waffle’ gasket provides a reliable and permanent leak tight seal even on circumferential or longitudinal cracks.

**Enhanced Lifespan**

Product comes as standard with grade 4.8 steel bolts that are Sheraplex coated bolts to WIS 4-52-03. Option exists for grade A2 Stainless Steel bolts coated with dry film lubricant. Both provides excellent corrosion resistance against degradation and maximizes long life.

**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.
➤ EasiRange has been tested on knurled and grooved pipe work to match typical pipe conditions found on many sites around the world.

**Customer Benefits.**

➤ Can be installed under pressure:
  • No costly mains shutdown.
  • No disruption to customers.
  • No dirty water complaints.
➤ Enables easy repair in conditions where other pipes are in close proximity.
➤ A reliable and permanent leak tight seal on circumferential or longitudinal cracks.
➤ Available from DN50 to DN300.
EasiClamp & EasiTap Hinged - 2 Bolt

Product Design Benefits

**Corrosion Protection**

All cast components are fully coated in Black Rilsan Nylon 11 which has excellent resistance to impact, abrasion, weathering and chemicals as well as good thermal stability and flexibility to accommodate for rough site handling.

**Exceptional Grip**

The two halves are hinged, fully opening to permit quick and easy fitting on the pipe. There are no pins which removes any risk from bimetallic corrosion.

**High Strength**

The strength of the ductile iron housings will provide permanent support and seal around the pipe.

**Permanent Seal**

The 100% ‘Waffle’ gasket provides a reliable and permanent leak tight seal even on circumferential or longitudinal cracks.

**Self Locating Bolts**

Patented self retaining bolts not only prevent the loss of components in the trench but also self locate allowing blind assembly. The double locking mechanism automatically locks into position once the product is fully wrapped around the pipe allowing the operator to use both hands to position over the leak.

**Self Locating Bolts**

Patented self retaining bolts not only prevent the loss of components in the trench but also self locate allowing blind assembly. The double locking mechanism automatically locks into position once the product is fully wrapped around the pipe allowing the operator to use both hands to position over the leak.
Universal EasiTee

Product Design Benefits

Simple Installation
Universal EasiTee products feature a unique “swing over” bolt to aid installation.

Excellent Corrosion Protection
The sleeve or body are fully coated in Black Rilsan Nylon 11 which has excellent resistance to impact, abrasion, weathering and chemicals as well as good thermal stability and flexibility to accommodate for rough site handling. It is also WRAS listed.

Greater Pressure
Flurene coated bolts offer higher load to torque capabilities achieving a greater gasket pressure.

Reliable Sealing
Deflecting bridging plate ensures a positive seal every time.

Customer Benefits

➤ Branch outlets available up to the same size as main.
➤ Can be installed under pressure:
  • No costly mains shutdown.
  • No disruption to customers.
  • No dirty water complaints.
➤ Up to 24mm pipe size tolerance to suit a number of popular pipe materials of the same nominal bore and reduce stock holding.
➤ Constructed from ductile iron, the Universal EasiTee will support and seal around the pipe for the full length of the body, ensuring that sealing effectiveness is maintained in all circumstances.
➤ Available from DN80 to DN300.
➤ Available with various flange connections.
RingSeal EasiTee

Product Design Benefits

**Simple Construction**

Fabricated from carbon steel, with a circular gasket positioned at the base of the branch connection, makes the RingSeal EasiTee both a lighter and cost-effective alternative to the MattSeal EasiTee.

**Excellent Corrosion Protection**

The sleeve or body are fully coated in Black Rilsan Nylon 11 which has excellent resistance to impact, abrasion, weathering and chemicals as well as good thermal stability and flexibility to accommodate for rough site handling. It is WRAS listed.

**User Friendly**

Sheraplex coated bolts offers a consistent torque/load ratio improving the factor of safety and sensitivity to installer error and eliminates galling of the coating in the threads.

**Customer Benefits**

- Lightweight and quick to install.
- Up to DN600 branch (however, if the pipe is grey cast iron the branch must be limited to 70% of the main line size).
- Can be installed under pressure:
  - No costly mains shutdown.
  - No disruption to customers.
  - No dirty water complaints.
- Available from DN350 to DN1200.
- Ability to fabricate any flange drilling or outlet (subject to pressure rating of the product).
MattSeal EasiTee

Product Design Benefits

**Flexible**

Ability to fabricate any flange drilling or outlet (subject to pressure rating of the product).

**Reliable Sealing**

The waffle gasket is designed to fully surround the pipe within the housing offering optimal sealing.

**Excellent Corrosion Protection**

The sleeve or body are fully coated in Black Rilsan Nylon 11 which has excellent resistance to impact, abrasion, weathering and chemicals as well as good thermal stability and flexibility to accommodate for rough site handling and is WRAS listed.

Customer Benefits

- Branch outlets from DN80 up to the same size as main, even on old grey cast iron pipe.
- Can be installed under pressure:
  - No costly mains shutdown.
  - No disruption to customers.
  - No dirty water complaints.
- Up to 12mm pipe size tolerance to suit a number of popular pipe materials of the same nominal bore. Reducing stock holding.
- Available from DN350 to DN600.
**MattSeal EasiTap**

**Product Design Benefits**

**Flexible Lengths Offering**

Ability to fabricate to any of these standard lengths 340mm, 460mm, 580mm, 770mm and 910mm to suit your repair needs.

**Options to meet your Tapping Needs**

Advanced design with the option of with a 1/2", 1" or 2" BSP outlet.

**Reliable Sealing**

The waffle gasket is designed to fully surround the pipe within the housing offering optimal sealing.

**Excellent Gasket Protection**

The sleeve or body are fully coated in Black Rilsan Nylon 11 which has excellent resistance to impact, abrasion, weathering and chemicals as well as good thermal stability and flexibility to accommodate for rough site handling and is WRAS listed.

**Customer Benefits**

- Permanent repair for DN350 to DN1000 pipes. Large sizes may be available.*
- Reduced stock holding offered with up to 24mm tolerance on pipe size to suit a number of popular pipe materials of the same nominal bore.
- The waffle gasket design is proven to give a very level of sealing, even on old corroded pipe.

- Can be installed under pressure:
  - No costly mains shutdown.
  - No disruption to customers.
  - No dirty water complaints.
- Product available in multiple lengths and can be tailored to suit repair length of longitudinal cracks, corrosion holes and impact damage.

*Contact Helden Technical Department for more information.
**Product Design Benefits**

**Proven Sealing Capability**
EasiCollar has a gasket that presses against the old caulking and provides a new seal on the face of the socket and pipe surface. It creates a flexible joint that uses the same basic sealing method as standard Helden couplings.

**User Friendly**
Sheraplex coated bolts offer an improved torque/load ratio and eliminates galling of coating in threads.

**Excellent Corrosion Protection**
The sleeve or body are fully coated in Black Rilsan Nylon 11 which has excellent resistance to impact, abrasion, weathering and chemicals as well as good thermal stability and flexibility to accommodate for rough site handling. It is also WRAS listed.

**Simple Solution to Renew Old Joints**
Two rings are assembled in segments around the pipe, one in front of the socket and around the gasket, the other as an anchorage behind the socket. When the connecting bolts are tightened, pressure is created in the gasket to seal the leaking joint.

**Customer Benefits**

- Repair collar for spigot and sock joints suitable for:
  - Old spigot and socket iron pipes.
  - Cast iron double collars.
  - Asbestos cement collars.
  - Concrete.

- Can be installed under pressure:
  - No costly mains shutdown.
  - No disruption to customers.

- Available from DN300 to DN1200.

- No additional lead caulking.

- EasiCollar is generally made to order, taking into account the particular dimensions of the pipe and socket.
EasiClamp & EasiTap - 4 Bolt (D&T / D&T Boss)

Datasheet 1/2

EasiClamp - 4 Bolt

EasiClamp & EasiTap - 4 Bolt D&T Boss

<table>
<thead>
<tr>
<th>Nominal Diameter</th>
<th>OD Range</th>
<th>Dimensions</th>
<th>Bolt Size No.-Dia x Length</th>
<th>Weight (kg)</th>
<th>Outlet BSP Threaded Size</th>
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</thead>
<tbody>
<tr>
<td>2” DN50</td>
<td>Min 66.0 Max 75.0</td>
<td>X 150, Y 110, Z 200</td>
<td>4-M12 x 65mm</td>
<td>4.1</td>
<td>3/4”</td>
</tr>
<tr>
<td>2 1/2” DN65</td>
<td>Min 75.0 Max 84.0</td>
<td>X 159, Y 119, Z 200</td>
<td>4-M12 x 65mm</td>
<td>4.4</td>
<td>3/4”</td>
</tr>
<tr>
<td>3” DN80</td>
<td>Min 92.3 Max 103.0</td>
<td>X 184, Y 145, Z 200</td>
<td>4-M16 x 95mm</td>
<td>4.9</td>
<td>3/4”</td>
</tr>
<tr>
<td>4” DN100</td>
<td>Min 115.0 Max 125.6</td>
<td>X 211, Y 167, Z 200</td>
<td>4-M16 x 95mm</td>
<td>6.0</td>
<td>1/2&quot;, 3/4&quot; or 1”</td>
</tr>
<tr>
<td>5” DN125</td>
<td>Min 141.0 Max 153.9</td>
<td>X 239, Y 182, Z 200</td>
<td>4-M16 x 95mm</td>
<td>7.5</td>
<td>3/4” or 1”</td>
</tr>
<tr>
<td>6” DN150</td>
<td>Min 166.0 Max 181.2</td>
<td>X 267, Y 217, Z 200</td>
<td>4-M16 x 95mm</td>
<td>8.3</td>
<td>3/4” or 1”</td>
</tr>
<tr>
<td>7” DN175</td>
<td>Min 200.0 Max 210.0</td>
<td>X 296, Y 238, Z 200</td>
<td>4-M16 x 95mm</td>
<td>9.0</td>
<td>3/4” or 1”</td>
</tr>
<tr>
<td>8” DN200</td>
<td>Min 216.5 Max 226.0</td>
<td>X 313, Y 269, Z 200</td>
<td>4-M16 x 95mm</td>
<td>9.5</td>
<td>1”</td>
</tr>
<tr>
<td>8” DN200</td>
<td>Min 230.2 Max 243.5</td>
<td>X 328, Y 281, Z 200</td>
<td>4-M16 x 95mm</td>
<td>10.8</td>
<td>3/4” or 1”</td>
</tr>
<tr>
<td>9” DN225</td>
<td>Min 243.0 Max 267.0</td>
<td>X 362, Y 307, Z 212</td>
<td>4-M16 x 120mm</td>
<td>13.6</td>
<td>3/4” or 1”</td>
</tr>
<tr>
<td>10” DN250</td>
<td>Min 269.0 Max 294.0</td>
<td>X 395, Y 322, Z 250</td>
<td>6-M16 x 120mm</td>
<td>18.5</td>
<td>1/2&quot;, 3/4” or 1”</td>
</tr>
<tr>
<td>12” DN300</td>
<td>Min 323.0 Max 349.0</td>
<td>X 450, Y 387, Z 300</td>
<td>8-M16 x 120mm</td>
<td>25.2</td>
<td>1/2”, 3/4” or 1”</td>
</tr>
</tbody>
</table>

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EasiClamp & EasiTap - 4 Bolt (D&T / D&T Boss)

Datasheet 2/2

Technical Information

Working Pressure Rating
Water 16 bar
Gas not approved

Vacuum Pressure
Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure
1.5 times working pressure for short duration (2 hours)

Angularity
Four Bolt EasiClamp fittings are not able to accommodate any angularity.

Bolt Torque/Spanner
M12; Torque 55-65Nm on every bolt
Spanner size A/F 19mm

M16; Torque 95-110Nm on every bolt
Spanner size A/F 24mm

Temperature Rating of Product
EPDM -20°C to +40°C
Four bolt EasiClamp is are not suitable for use on heating systems with fluctuating temperatures.

End Load Due to Internal Pressure
Four bolt EasiClamp and EasiTap DO NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out from the clamp.

Approvals
The following water contact materials used in four bolt EasiClamp and EasiTap are approved for use with potable water:
- Rilsan Nylon 11:
  - WRAS, AS/NZS 4020, DVGW, W270, ACS & KIWA
- EPDM Gaskets:
  - WRAS, AS/NZS 4020
In addition to the above, four bolt EasiClamp and EasiTap as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Housing
Plain Housing:
- Ductile Iron to BS EN 1563 SYMBOL EN-GJS-450-10
- Tapped Housing (Boss):
- Ductile Iron to BS EN 1563 SYMBOL EN-GJS-450-10
- Tapped Housing (Outlet) Options:
- Ductile Iron to BS EN 1563 SYMBOL EN-GJS-450-10
- Malleable Cast Iron to BS EN 1562 SYMBOL EN-GJMB-350-10

Bridging Plate
Stainless Steel to BS1449: Part 2 Grade 304S15 2B Finish

Gasket
BS EN681-1 60 IRHD

Coatings
Plain Housing:
- Rilsan Nylon 11 to WIS 4-52-01 (Part1)
Tapped Housing:
- Rilsan Nylon 11 to WIS 4-52-01 (Part1)

Bolts & Nuts:
- Sheraplex to WIS 4-52-03

Bolts
Standard - Steel to BS EN ISO 898-1 Property Class 4.8
Option - Stainless Steel to BS EN ISO3506-1
Grade A2 Property Class 70

Nuts
Standard - Steel to BS 4190 Grade 4
Option - Stainless Steel to BS EN ISO3506-2
Grade A4 Property Class 80

Washers
Standard - Stainless Steel to BS 1449:Part 2 Grade 304 S15
Option - Stainless Steel to BS EN ISO3506-1
Grade A2 Property Class 50

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EasiClamp & EasiTap - 4 Bolt (D&T / D&T Outlet)

Datasheet

EasiTap - 4 Bolt

![Diagram of EasiTap - 4 Bolt]

EasiTap - 4 Bolt D&T Outlet

<table>
<thead>
<tr>
<th>Nominal Diameter</th>
<th>OD Range</th>
<th>Dimensions</th>
<th>Bolt Size No.-Dia x Length</th>
<th>Weight (kg)</th>
<th>Outlet BSP Threaded Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>3&quot;</td>
<td>92.3 - 103.0</td>
<td>X: 184, Y: 173, Z: 200, A: 92</td>
<td>4-M16 x 95mm</td>
<td>5.0</td>
<td>1 1/2 or 2&quot; BSP</td>
</tr>
<tr>
<td>4&quot;</td>
<td>115.0 - 125.6</td>
<td>X: 211, Y: 195, Z: 200, A: 102</td>
<td>4-M16 x 95mm</td>
<td>6.0</td>
<td>2&quot; BSP</td>
</tr>
<tr>
<td>5&quot;</td>
<td>141.0 - 153.9</td>
<td>X: 239, Y: 210, Z: 200, A: 120</td>
<td>4-M16 x 95mm</td>
<td>7.5</td>
<td>2&quot; BSP</td>
</tr>
<tr>
<td>6&quot;</td>
<td>166.0 - 181.2</td>
<td>X: 267, Y: 245, Z: 200, A: 130</td>
<td>4-M16 x 95mm</td>
<td>8.3</td>
<td>2&quot; BSP</td>
</tr>
<tr>
<td>7&quot;</td>
<td>200.0 - 210.0</td>
<td>X: 296, Y: 266, Z: 200, A: 146</td>
<td>4-M16 x 95mm</td>
<td>9.0</td>
<td>2&quot; BSP</td>
</tr>
<tr>
<td>8&quot;</td>
<td>216.5 - 226.0</td>
<td>X: 313, Y: 292, Z: 200, A: 153</td>
<td>4-M16 x 95mm</td>
<td>10.0</td>
<td>2&quot; BSP</td>
</tr>
<tr>
<td>9&quot;</td>
<td>230.2 - 243.5</td>
<td>X: 332, Y: 309, Z: 200, A: 161</td>
<td>4-M16 x 95mm</td>
<td>10.8</td>
<td>2&quot; BSP</td>
</tr>
<tr>
<td>10&quot;</td>
<td>243.0 - 267.0</td>
<td>X: 362, Y: 330, Z: 212, A: 180</td>
<td>4-M16 x 120mm</td>
<td>13.7</td>
<td>2&quot; BSP</td>
</tr>
<tr>
<td>12&quot;</td>
<td>269.0 - 294.0</td>
<td>X: 395, Y: 347, Z: 250, A: 194</td>
<td>6-M16 x 120mm</td>
<td>18.7</td>
<td>2&quot; BSP</td>
</tr>
</tbody>
</table>

Weight (kg) includes 4-M16 bolts

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EasiClamp & EasiTap - 4 Bolt (D&T / D&T Outlet)

Technical Information

Working Pressure Rating
Water 16 bar
Gas not approved

Vacuum Pressure
Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure
1.5 times working pressure for short duration (2 hours)

Angularity
Four Bolt EasiTap fittings are not able to accommodate any angularity.

Bolt Torque/Spanner
M12; Torque 55-65Nm on every bolt
Spanner size A/F 19mm
M16; Torque 95-110Nm on every bolt
Spanner size A/F 24mm

Temperature Rating of Product
EPDM -20°C to +40°C
Four bolt EasiClamp and EasiTap are not suitable for use on heating systems with fluctuating temperatures.

End Load Due to Internal Pressure
Four bolt EasiClamp and EasiTap DO NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out from the clamp.

Approvals
The following water contact materials used in four bolt EasiClamp and EasiTap are approved for use with potable water:-

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

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

Materials & Relevant Standards

Housing
Plain Housing:
- Ductile Iron to BS EN 1563 SYMBOL EN-GJS-450-10
- Tapped Housing (Boss):
  - Ductile Iron to BS EN 1563 SYMBOL EN-GJS-450-10
  - Tapped Housing (Outlet) Options:
    - Ductile Iron to BS EN 1563 SYMBOL EN-GJS-450-10
    - Malleable Cast Iron to BS EN 1562 SYMBOL EN-GJMB-350-10

Bridging Plate
Stainless Steel to BS1449: Part 2 Grade 304S15 2B Finish

Gasket
BS EN681-1 60 IRHD

Coatings
Plain Housing:
- Rilsan Nylon 11 to WIS 4-52-01 (Part1)
- Tapped Housing:
  - Rilsan Nylon 11 to WIS 4-52-01 (Part1)
Bolts & Nuts:
- Sheraplex to WIS 4-52-03

Bolts
Standard - Steel to BS EN ISO 898-1 Property Class 4.8
Option - Stainless Steel to BS EN ISO3506-1 Property Class 70

Nuts
Standard - Steel to BS 4190 Grade 4
Option - Stainless Steel to BS EN ISO3506-2 Grade A4 Property Class 80

Washers
Standard - Stainless Steel to BS 1449:Part 2 Grade 304 S15
Option - Stainless Steel to BS EN ISO3506-1 Grade A2 Property Class 50

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EasiClamp & EasiTap Hinged - 2 Bolt (D&T / D&T Boss)

Datasheet 1/2

EasiClamp Hinged - 2 Bolt

![Diagram of EasiClamp Hinged - 2 Bolt]

<table>
<thead>
<tr>
<th>Nominal Diameter</th>
<th>OD Range</th>
<th>Overall Dimensions</th>
<th>Bolt Size No.-Dia x Length</th>
<th>Gasket Mould No.</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Min (mm)</td>
<td>Max (mm)</td>
<td>X (mm)</td>
<td>Y (mm)</td>
<td>Z (mm)</td>
</tr>
<tr>
<td>3&quot;</td>
<td>92.3</td>
<td>103</td>
<td>182</td>
<td>175</td>
<td>212</td>
</tr>
<tr>
<td>4&quot;</td>
<td>115</td>
<td>125.6</td>
<td>207</td>
<td>186</td>
<td>212</td>
</tr>
<tr>
<td>6&quot;</td>
<td>166</td>
<td>181.2</td>
<td>264</td>
<td>233</td>
<td>212</td>
</tr>
</tbody>
</table>

EasiTap Hinged - 2 Bolt D&T Boss

<table>
<thead>
<tr>
<th>Nominal Diameter</th>
<th>OD Range</th>
<th>Overall Dimensions</th>
<th>Bolt Size No.-Dia x Length</th>
<th>Gasket Mould No.</th>
<th>Weight (kg)</th>
<th>Standard BSP Threaded Boss Size</th>
<th>Non Standard BSP Threaded Boss Size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Min (mm)</td>
<td>Max (mm)</td>
<td>X (mm)</td>
<td>Y (mm)</td>
<td>Z (mm)</td>
<td>A (mm)</td>
<td></td>
</tr>
<tr>
<td>3&quot;</td>
<td>92.3</td>
<td>103</td>
<td>182</td>
<td>175</td>
<td>212</td>
<td>347</td>
<td>2-M16 x 165</td>
</tr>
<tr>
<td>4&quot;</td>
<td>115</td>
<td>125.6</td>
<td>207</td>
<td>186</td>
<td>212</td>
<td>395</td>
<td>2-M16 x 165</td>
</tr>
<tr>
<td>6&quot;</td>
<td>166</td>
<td>181.2</td>
<td>264</td>
<td>233</td>
<td>212</td>
<td>512</td>
<td>2-M16 x 185</td>
</tr>
</tbody>
</table>

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EasiClamp & EasiTap Hinged - 2 Bolt (D&T / D&T Boss)

Datasheet 2/2

Technical Information

**Working Pressure Rating**
- Water 16 bar
- Gas not approved

**Vacuum Pressure**
Capable of accommodating a vacuum pressure of -0.7 bar

**Site Test Pressure**
1.5 times working pressure for short duration (2 hours)

**Angularity**
Two Bolt Remote EasiClamp and EasiTap fittings are not able to accommodate any angularity.

**Bolt Torque/Spreader**
M16; Torque 95-110Nm on every bolt
Spanner size A/F 24mm

**Temperature Rating of Product**
EPDM -20°C to +40°C
Two bolt Remote EasiClamp and EasiTap are not suitable for use on heating systems with fluctuating temperatures.

**End Load Due to Internal Pressure**
Two bolt Remote EasiClamp and EasiTap DO NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out from the clamp.

**Approvals**
The following water contact materials used in two bolt Remote EasiClamp and EasiTap are approved for use with potable water:-
- Rilsan Nylon 11:
  - WRAS, AS/NZS 4020, DVGW, W270, ACS & KIWA
- EPDM Gaskets:
  - WRAS, AS/NZS 4020

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

Materials & Relevant Standards

**Housing**
Ductile Iron to BS EN1563 Symbol EN-GJS-450-10

**Bridging Plate**
Stainless Steel BS1449:PART 2 GRADE 304S15 2B Finish

**Hinge Clip / Retaining Clip / Bolt Retainer Clip**
Acetal M25-04 Natural (HOECHST)

**Gasket**
BS EN681-1 60 IRHD

**Temperature Rating of Product**
EPDM -20°C to +40°C
Two bolt Remote EasiClamp and EasiTap are not suitable for use on heating systems with fluctuating temperatures.

**End Load Due to Internal Pressure**
Two bolt Remote EasiClamp and EasiTap DO NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out from the clamp.

**Approvals**
The following water contact materials used in two bolt Remote EasiClamp and EasiTap are approved for use with potable water:-
- Rilsan Nylon 11:
  - WRAS, AS/NZS 4020, DVGW, W270, ACS & KIWA
- EPDM Gaskets:
  - WRAS, AS/NZS 4020

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

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

**Anti-Rotation Nut**
Cast or Machined Steel. Min Yield Strength = 275N/mm². Ultimate Tensile Strength = 430N/mm². Elongation = 23%

**Spherical Washer**
Ductile Iron to BS EN1563 Symbol EN-GJS-450-10
EasiTap Hinged - 2 Bolt (D&T / D&T Outlet)

Datasheet

EasiTap Hinged - 2 Bolt

---

### Nominal Diameter

<table>
<thead>
<tr>
<th>Nominal Diameter</th>
<th>OD Range</th>
<th>Overall Dimensions</th>
<th>Bolt Size</th>
<th>Gasket Mould No.</th>
<th>Weight (kg)</th>
<th>Outlet - BSP Threaded Size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Min (mm)</td>
<td>Max (mm)</td>
<td>X (mm)</td>
<td>Y (mm)</td>
<td>Z (mm)</td>
<td>A (mm)</td>
</tr>
<tr>
<td>3&quot;</td>
<td>92.3</td>
<td>103</td>
<td>182</td>
<td>185</td>
<td>212</td>
<td>347</td>
</tr>
<tr>
<td>4&quot;</td>
<td>115</td>
<td>125.6</td>
<td>207</td>
<td>200</td>
<td>212</td>
<td>395</td>
</tr>
<tr>
<td>6&quot;</td>
<td>166</td>
<td>181.2</td>
<td>264</td>
<td>247</td>
<td>212</td>
<td>512</td>
</tr>
</tbody>
</table>

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EasiTap Hinged - 2 Bolt (D&T / D&T Outlet)

Datasheet 2/2

Technical Information

Working Pressure Rating
Water 16 bar
Gas not approved

Vacuum Pressure
Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure
1.5 times working pressure for short duration (2 hours)

Angularity
Two Bolt Remote EasiTap fittings are not able to accommodate any angularity.

Bolt Torque/Spanner
M16; Torque 95-110Nm on every bolt
Spanner size A/F 24mm

Temperature Rating of Product
EPDM -20°C to +40°C
Two bolt Remote EasiTap is not suitable for use on heating systems with fluctuating temperatures.

End Load Due to Internal Pressure
Two bolt Remote EasiTap DO NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out from the clamp.

Approvals
The following water contact materials used in two bolt Remote EasiTap are approved for use with potable water:-
Rilsan Nylon 11:
➤ WRAS, AS/NZS 4020, DVGW, W270, ACS & KIWA
EPDM Gaskets:
➤ WRAS, AS/NZS 4020
In addition to the above, two bolt Remote EasiTap as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Housing
Ductile Iron to BS EN1563 Symbol EN-GJS-450-10

Bridging Plate
Stainless Steel BS1449:PART 2 GRADE 304S15 2B Finish

Hinge Clip / Retaining Clip / Bolt Retainer Clip
Acetal M25-04 Natural (HOECHST)

Gasket
BS EN681-1 60 IRHD

Coatings
Body:
➤ Rilsan Nylon 11 to WIS 4-52-01 (Part1)
Bolts and Anti-Rotation Nuts:
➤ Sheraplex to WIS 4-52-03
Spherical Washer:
➤ Galvanised

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

Anti-Rotation Nut
Cast or Machined Steel. Min Yield Strength = 275N/mm². Ultimate Tensile Strength = 430N/mm². Elongation = 23%

Spherical Washer
Ductile Iron to BS EN1563 Symbol EN-GJS-450-10

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### Universal EasiTee Datasheet

#### Universal EasiTee

<table>
<thead>
<tr>
<th>Pipe OD Size Range (mm)</th>
<th>Branch Drilling</th>
<th>Plain Mould No.</th>
<th>Branch Mould No.</th>
<th>Dimensions (mm)</th>
<th>Minimum Bore Dia (mm)</th>
<th>Bolt Size No.-Size x length</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>85.4 - 103.0</td>
<td>80</td>
<td>PN 10,16</td>
<td>1792</td>
<td>1791</td>
<td>200 - 205 - 213 - 193 - 128</td>
<td>76.0 - 4-M16 x 110</td>
<td>9.0</td>
</tr>
<tr>
<td>111.8 - 129.4</td>
<td>80/100</td>
<td>PN 10,16</td>
<td>1797</td>
<td>1798</td>
<td>200 - 228 - 227 - 252 - 146</td>
<td>103.0 - 4-M16 x 130</td>
<td>10.5</td>
</tr>
<tr>
<td>162.5 - 184.4</td>
<td>80</td>
<td>PN 10,16</td>
<td>1793</td>
<td>1794</td>
<td>200 - 275 - 269 - 305 - 165</td>
<td>103.0 - 4-M16 x 130</td>
<td>18.7</td>
</tr>
<tr>
<td>162.5 - 184.4</td>
<td>150</td>
<td>PN 10,16</td>
<td>1795</td>
<td>1796</td>
<td>200 - 275 - 269 - 305 - 165</td>
<td>103.0 - 4-M16 x 130</td>
<td>18.7</td>
</tr>
<tr>
<td>215.9 - 239.7</td>
<td>80</td>
<td>PN 10,16</td>
<td>1797</td>
<td>1798</td>
<td>200 - 365 - 319 - 385 - 228</td>
<td>103.0 - 6-M20 x 140</td>
<td>25.4</td>
</tr>
<tr>
<td>215.9 - 239.7</td>
<td>150</td>
<td>PN 10,16</td>
<td>1797</td>
<td>1798</td>
<td>200 - 365 - 319 - 385 - 228</td>
<td>103.0 - 6-M20 x 140</td>
<td>25.4</td>
</tr>
<tr>
<td>269.2 - 293.5</td>
<td>80/100</td>
<td>PN 10,16</td>
<td>1797</td>
<td>1798</td>
<td>200 - 424 - 368 - 462 - 260</td>
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</table>

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Universal EasiTee

Technical Information

Working Pressure Rating
Water 16 bar
Gas not approved

Vacuum Pressure
Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure
1.5 times working pressure for short duration (2 hours)

Angularity
Universal EasiTee fittings are not able to accommodate any angularity.

Bolt Torque/Spanner:
M16; Torque 95-110Nm on every bolt
Spanner size A/F 24mm
M20; Torque 150-165Nm on every bolt
Spanner size A/F 30mm
M24; Torque 285-300Nm on every bolt
Spanner size A/F 36mm

Temperature Rating of Product
EPDM -20°C to +40°C
Universal EasiTee is not suitable for use on heating systems with fluctuating temperatures.

Loads from Drilling Equipment and Valve / Branch Pipework
Universal EasiTee is not designed to accommodate / resist the loads from the under pressure drilling equipment, which needs to be supported externally during the operation to drill into the main. In addition, the valve and branch pipework needs to be adequately supported to ensure none of the dead / live loads are imposed in the branch outlet in the Universal EasiTee.

Approvals
The following water contact materials used in Universal EasiTee are approved for use with potable water:-
Rilsan Nylon 11:
➤ WRAS, AS/NZS 4020, DVGW, W270, ACS & KIWA
EPDM Gaskets:
➤ WRAS, AS/NZS 4020
In addition to the above, Universal EasiTee as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Housing
Flanged Housing:
➤ Ductile Iron to BS EN1563 SYMBOL EN-GJS-450-10
Plain Housing:
➤ Ductile Iron to BS EN1563 SYMBOL EN-GJS-450-10

Bridging Plate
Ductile Iron to BS EN1563 SYMBOL EN-GJS-450-10

Gasket
BS EN681-1 60 IRHD

Coatings
Flanged, Plain Housing & Bridging Plate:
➤ Rilsan Nylon 11 to WIS 4-52-01 (Part1)

Bolts
Steel to BS EN ISO 898-1 Property Class 4.8 or
Steel to BS EN 10083: Part 1 Grade 2.C.22

Nuts
Steel to BS 4190 Grade 4

Spherical Washers
Pearlite Malleable Iron to BS EN 1562 Symbol EN-GJMW-400-5

Washers
Stainless Steel to BS 1449: Part 2 Grade 304 S15

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RingSeal EasiTee

Datasheet 1/2

RingSeal EasiTee – Branch Outlet Sizes Available for Suitable Pipe Materials

The following table provides details on branch outlet that is possible on various pipe materials for RingSeal.

If the outlet/nom size is not available, see MattSeal EasiTee as alternative.

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<tr>
<th>Host / Main Flanged Outlet</th>
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<th>DN200</th>
<th>DN250</th>
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<th>DN400</th>
<th>DN450</th>
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<th>DN600</th>
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</table>

**Key**

1 = Branch Housing
2 = Plain Housing
3 = Gasket
4 = Gasket retainer
5 = Bolt, Nut & Washer

RingSeal EasiTee products are manufactured to order. For detailed dimensional data, please contact Helden.

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Technical Information

Working Pressure Rating
Water 16 bar
Gas not approved

Vacuum Pressure
Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure
1.5 times working pressure for short duration (2 hours)

Angularity
RingSeal EasiTee fittings are not able to accommodate any angularity.

Bolt Torque/Spanner:
M16; Torque 95-110Nm on every bolt
Spanner size A/F 24mm

Temperature Rating of Product
EPDM -20°C to +40°C
RingSeal EasiTee is not suitable for use on heating systems with fluctuating temperatures.

Loads from Drilling Equipment and Valve / Branch Pipework
RingSeal EasiTee is not designed to accommodate / resist the loads from the under pressure drilling equipment, which needs to be supported externally during the operation to drill into the main. In addition, the valve and branch pipework needs to be adequately supported to ensure none of the dead / live loads are imposed in the branch outlet in the RingSeal EasiTee.

Approvals
The following water contact materials used in RingSeal EasiTee are approved for use with potable water:-
Rilsan Nylon 11:
➤ WRAS, AS/NZS 4020, DVGW, W270, ACS & KIWA
EPDM Gaskets:
➤ WRAS, AS/NZS 4020
In addition to the above, RingSeal EasiTee as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Materials & Relevant Standards

Branch Housing:
Steel BS EN10025-2 Grade S275JR
Steel tube to BS EN 10216-1 Grade P265TRI or Steel tube to BS EN 10255

Plain Housing
Steel BS EN10025-2 Grade S275JR

Gasket
Rubber BS EN681-1 70 Hardness Grade EPDM

Gasket Retainer
Steel BS EN10025-2 Grade S275JR

Coatings
Branch Housing:
➤ Rilsan Nylon 11 to WIS 4-52-01 (Part1)
Plain Housing:
➤ Rilsan Nylon 11 to WIS 4-52-01 (Part1)
Gasket Retainer:
➤ Zinc Plate to BS1706:1990 Fe/Zn8 c1 B
Bolt, Nut & Washer:
➤ Sheraplex coated to WIS 4-52-03

Bolt
Steel BS EN ISO 898-1 Property Class 8.8

Nuts
Steel BS EN20898-2 Property Class 8.0

Washers
Stainless Steel BS EN ISO3506-1 Grade A2 Property Class 50 (304)

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MattSeal EasiTee – Branch Outlet Sizes Available for Suitable Pipe Materials

The following table provides details on branch outlet that is possible on various pipe materials for MattSeal. If the outlet/nom size is not available, see RingSeal EasiTee as alternative.

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<tr>
<th>Host / Main</th>
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<td>DN500</td>
<td>✓</td>
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<tr>
<td>DN600</td>
<td>✓</td>
</tr>
</tbody>
</table>

Key:
1 = Branch Housing  
2 = Plain Housing  
3 = Bridge Plate  
4 = Saddle Gasket  
5 = Housing Gasket  
6 = Bolt, Nut & Washer

MattSeal EasiTee products are manufactured to order. For detailed dimensional data please contact Helden.

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**MattSeal EasiTee**

### Technical Information

**Working Pressure Rating**
- Water: 16 bar
- Gas: Not approved

**Vacuum Pressure**
- Capable of accommodating a vacuum pressure of -0.7 bar

**Site Test Pressure**
- 1.5 times working pressure for short duration (2 hours)

**Angularity**
- MattSeal EasiTee fittings are not able to accommodate any angularity.

**Bolt Torque/Spanner:**
- M16: Torque 95-110Nm on every bolt
- Spanner size A/F 24mm
- M20: Torque 150-165Nm on every bolt
- Spanner size A/F 30mm
- M24: Torque 285-300Nm on every bolt
- Spanner size A/F 36mm
- M30: Torque 550-575Nm on every bolt
- Spanner size A/F 46mm
- M36: Torque 615-645Nm on every bolt
- Spanner size A/F 50mm

**Temperature Rating of Product**
- EPDM: -20°C to +40°C
- MattSeal EasiTee is not suitable for use on heating systems with fluctuating temperatures.

**Loads from Drilling Equipment and Valve / Branch Pipework**
- MattSeal EasiTee is not designed to accommodate / resist the loads from the under pressure drilling equipment, which needs to be supported externally during the operation to drill into the main. In addition, the valve and branch pipework needs to be adequately supported to ensure none of the dead / live loads are imposed in the branch outlet in the MattSeal EasiTee.

**Approvals**
- The following water contact materials used in MattSeal EasiTee are approved for use with potable water:-
  - Rilsan Nylon 11:
    - WRAS, AS/NZS 4020, DVGW, W270, ACS & KIWA
  - EPDM Gaskets:
    - WRAS, AS/NZS 4020
- In addition to the above, MattSeal EasiTee as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

### Materials & Relevant Standards

**Branch Housing**
- Steel BS EN10025-2 Grade S275JR
- Steel Tube Options:
  - BS EN 10216-1 Grade P265TRI
  - BS EN 10255

**Plain Housing**
- Steel BS EN10025-2 Grade S275JR

**Bridging Plate**
- Stainless Steel BS1449:Part 2 Grade 304S15

**Saddle Gasket**
- 60 IRHD EPDM to BS EN681-1

**Housing Gasket**
- 60 IRHD EPDM to BS EN681-1

**Coatings**
- Branch Housing:
  - Rilsan Nylon 11 to WIS 4-52-01 (Part1)
- Plain Housing:
  - Rilsan Nylon 11 to WIS 4-52-01 (Part1)

**Bolts**
- Steel BS EN ISO898-1 Property Class 4.8

**Nuts**
- Steel BS4190 Grade 4

**Washers**
- Steel BS EN10083:Part 1 Grade C22E

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MattSeal EasiTap products are manufactured to order. For detailed dimensional data please contact Helden.

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Working Pressure Ratings

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<tr>
<th>Nominal Size</th>
<th>Working Pressure</th>
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<td>16 Bar</td>
</tr>
<tr>
<td>&gt; DN700</td>
<td>Up to 16 Bar</td>
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</tbody>
</table>

Pipe Materials

- Ductile Iron
- Cast Iron
- Steel
Technical Information

Working Pressure Rating (Up to DN700)
Water 16 bar
Gas not approved
For sizes over DN700 contact Helden.

Vacuum Pressure
Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure
1.5 times working pressure for short duration (2 hours)

Angularity
MattSeal EasiTee fittings are not able to accommodate any angularity.

Bolt Torque/Spanner:
M16; Torque 95-110Nm on every bolt
Spanner size A/F 24mm
M20; Torque 150-165Nm on every bolt
Spanner size A/F 30mm
M24; Torque 285-300Nm on every bolt
Spanner size A/F 36mm
M30; Torque 550-575Nm on every bolt
Spanner size A/F 46mm
M36; Torque 615-645Nm on every bolt
Spanner size A/F 50mm

Materials & Relevant Standards

1) Housing
Steel BS EN10025-2 Grade S275JR
Outlet Steel tube to BS EN 10255

2) Bridging Plate
Stainless Steel BS1449:Part 2 Grade 304S15

3) Saddle Gasket
60 IRHD EPDM to BS EN681-1

4) Housing Gasket
60 IRHD EPDM to BS EN681-1

5) Bolts, Nuts and Washers
Bolts - Steel BS EN ISO898-1 Property Class 4.8
Nuts - Steel BS4190 Grade 4
Washers - Steel BS EN10083:Part 1 Grade C22E

Finish Specification
1) Housing - Rilsan Nylon II
2) Bolt - Sheraplex coated to WIS 4-52-03

Temperature Rating of Product
EPDM -20°C to +40°C
MattSeal EasiTee is not suitable for use on heating systems with fluctuating temperatures.

Loads from Drilling Equipment and Valve / Branch Pipework
MattSeal EasiTee is not designed to accommodate / resist the loads from the under pressure drilling equipment, which needs to be supported externally during the operation to drill into the main. In addition, the valve and branch pipework needs to be adequately supported to ensure none of the dead / live loads are imposed in the branch outlet in the MattSeal EasiTee.

Approvals
The following water contact materials used in MattSeal EasiTee are approved for use with potable water:
Rilsan Nylon 11:
➤ WRAS, AS/NZS 4020, DVGW, W270, ACS & KIWA
EPDM Gaskets:
➤ WRAS, AS/NZS 4020
In addition to the above, MattSeal EasiTee as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

Temperature Rating of Product
EPDM -20°C to +40°C
MattSeal EasiTee is not suitable for use on heating systems with fluctuating temperatures.

Loads from Drilling Equipment and Valve / Branch Pipework
MattSeal EasiTee is not designed to accommodate / resist the loads from the under pressure drilling equipment, which needs to be supported externally during the operation to drill into the main. In addition, the valve and branch pipework needs to be adequately supported to ensure none of the dead / live loads are imposed in the branch outlet in the MattSeal EasiTee.

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The following water contact materials used in MattSeal EasiTee are approved for use with potable water:
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EPDM Gaskets:
➤ WRAS, AS/NZS 4020
In addition to the above, MattSeal EasiTee as a finished product has KIWA certification verifying that the above products comply with the requirements of the Water Supply (Water Fittings) Regulations for England and Wales 1999, the Water Byelaws 2000, Scotland and the Water Regulations Northern Ireland.

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### EasiCollar to suit Cast Iron*

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<th>L (mm)</th>
<th>ØD (mm)</th>
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<tr>
<td>1200</td>
<td>48 CD</td>
<td>286 1595</td>
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</tbody>
</table>

* Other pipe materials and spigot and socket dimensions may be catered for. Please see EasiCollar Features & Benefits for pipe materials.

** Larger sizes available on request.

NB: Sizes 80mm - 250mm will also suit Ductile Iron spigot & sockets with the same nominal bore.
EasiCollar DN300 to DN1200

Technical Information

Working Pressure Rating
Water 16 bar
Gas not approved
For sizes over DN700 contact Helden.

Vacuum Pressure
Capable of accommodating a vacuum pressure of -0.7 bar

Site Test Pressure
1.5 times working pressure for short duration (2 hours)

Angularity
EasiCollar fittings are able to accommodate angularity in line with what the spigot and socket joint can accommodate.

Bolt Torque/Spanner:
M16; Torque 95-110Nm on every bolt
Spanner size A/F 24mm
M20; Torque 150-165Nm on every bolt
Spanner size A/F 30mm

Temperature Rating of Product
EPDM -20°C to +40°C
EasiCollar is not suitable for use on heating systems with fluctuating temperatures.

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

Materials & Relevant Standards

Materials
1) Compression Flange - Steel BS EN10025-2 Grade S275JR
2) Anchor End Ring - Steel BS EN10025-2 Grade S275JR
3) Gasket - 61 IRHD EPDM Compound Ref. CVE61
4) Bolts - Steel BS EN ISO 898-1 Property Class 4.8
5) Nuts - Steel BS4190 Grade 4
6) Washers - Stainless Steel to BS1449:Part 2 Grade 304 S15

Finish Specification
Compression Flange (Part 1) Rilsan Nylon II - Black
Anchor End Ring (Part 2) Rilsan Nylon II - Black
Bolts and Nuts - Sheraplex coated to WIS 4-52-03

Note: Due to the number of different types of spigot and socket joints, with varying tolerances, when enquiring about EasiCollar a form is available with the dimensions required, please contact the Marketing Department for more information.

EasiCollar products are manufactured to order. For detailed dimensional data please contact Helden.

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**EasiCollar Order / Enquiry Form**

EasiCollar is a bespoke product and Helden requires the following information to assist with the quotation process. This page can be copied from the brochure, completed and sent via email to: info@helden-web.com.

**Or a form fillable PDF is available on the website www.helden-web.com.**

### Product Details

<table>
<thead>
<tr>
<th><strong>Delivery Time/Date</strong>*</th>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>Spigot OD (Max)</strong></td>
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</tr>
<tr>
<td><strong>Dim A</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Dim B</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Dim X</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Dim Y</strong></td>
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</tr>
<tr>
<td><strong>Dim Z</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Pipe Material</strong></td>
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</tr>
<tr>
<td><strong>Pipe Markings / Class Rating</strong></td>
<td></td>
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</table>

### Contact Details

<table>
<thead>
<tr>
<th><strong>Company Name</strong></th>
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</thead>
<tbody>
<tr>
<td><strong>Contact Name</strong></td>
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</tr>
<tr>
<td><strong>Customer Address</strong></td>
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<td><strong>Email</strong></td>
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<tr>
<td><strong>Telephone</strong></td>
<td></td>
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<tr>
<td><strong>Fax</strong></td>
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</tr>
</tbody>
</table>

* For fast turnaround deliveries, surcharges will be applied. Prices available on request.

**Please note:**

Due to the number of different types of spigot and socket joints, with varying tolerances, when ordering/enquiring about the product it would help if you could provide us with some basic information. Please use cross sectional drawing and form to record dimensions, photocopy and send back to us with this information.

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HandiRange

HandiClau, HandiTap, HandiTee & HandiBand
Stainless Steel Repair & Tapping Solutions
A Permanent Repair Solution for Small Bore Pipes

The HandiRange is a comprehensive range of stainless steel repair and tapping products, designed to serve the needs of today’s water industry. The HandiRange comprises HandiClamp, HandiTap, HandiTee and HandiBand.

Available in various clamp lengths and suitable for virtually any pipe material, HandiRange products are available with either EPDM or Nitrile gaskets, with a maximum operating temperature of 40°C.

HandiClamp is constructed from 100% stainless steel and offers permanent repair for many types of pipe damage from DN50 (2”) to DN1000 (40”). The HandiTap range offers the same design and construction features as the HandiClamp but has various female BSP outlet options, offering a quick, cost effective method of replacing service connections under pressure. The HandiTee range is extremely useful to make simple flanged connections on pipelines under pressure due to its lightweight and easy installation. Finally, HandiBand is a high quality repair clamp designed for localised damage on small bore pipes DN15 to DN50 (1/2” – 2”).

**Ideal For**

- Corrosion holes
- Impact Damage
- Longitudinal Cracks

Note: HandiRange products will repair localised damage only. The maximum diameter of the hole in PE pipe that can be repaired by HandiClamp varies according to pipe diameter and clamp length.

**Pipe Materials**

- Ductile Iron
- Cast Iron
- Stainless Steel
- Steel
- PVC
- PE
- NER10
- GRP
- ABS
- Clay
- Concrete
- Asbestos Cement
- Copper
- Lead
**Corrosion Protection**

Components constructed of fully-passivated stainless steel (Grade 304) with no need for any further protection on site (e.g. on-site wrapping). Bolts are secured with Dacromet coated nuts to prevent galling.

**Easy Installation**

Rapid installation in poor site conditions, made easy with simple, ‘flip-over’ action and self retaining bolts.

**First Time Seal**

All encompassing waffle gasket offers a guaranteed reliable seal even on badly corroded pipes.

**Customer Benefits**

- No specialist equipment required, standard under-pressure equipment can be used with HandiTap and HandiTee.
- No costly mains shutdown with HandiTap and HandiTee, allowing branch connections whilst under pressure.
- Reduced stock holding due to wide tolerance in the range.
**HandiClamp & HandiTap Single Band**

### HandiClamp Single Band

### HandiTap Single Band

### HandiClamp & HandiTap Single Band

<table>
<thead>
<tr>
<th>OD Range (mm)</th>
<th>A (mm)</th>
<th>B (mm)</th>
<th>Max Outlet Size**</th>
<th>Working** Pressure (bar)</th>
<th>Clamp Length***</th>
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<td>147</td>
<td>164</td>
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<td>2.0 M14 x 135</td>
<td>120 - 131</td>
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<td>2.0 M14 x 135</td>
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</table>

**This is the maximum size BSP outlet offered. Smaller outlets are available: 0.75", 1.0", 1.25", 1.5", 1.75", 2.0".**

**The rated working pressures quoted above for water applications are based on worst case scenarios including circumferential cracks. When used to repair pipelines with less severe damage and dependent on the pipe surface, higher working pressures may be achieved.**

***When using HandiRange products on PE pipe, consideration to clamp length must be given, please contact the Helden Marketing Department for more details.

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Working Pressure Rating
➤ Water = In accordance the rating as defined in the tables
➤ Gas = In accordance the rating as defined in the tables

Vacuum Pressure
Capable of accommodating a vacuum pressure of -0.7 bar.

Site Test Pressure
1.5 times working pressure for short duration (2 hours)

Angularity
HandiClamp & HandiTap fittings are not able to accommodate any angularity.

Bolt Torque/Spanner
➤ M12; Torque = 55-65Nm on every bolt
➤ M14; Torque = 70–80 Nm on every bolt
➤ M16; Torque = 95-110Nm on every bolt

Temperature Rating of Product
➤ EPDM = -20°C to +40°C
➤ Nitrile = 20°C to +40°C

Note: HandiClamp & HandiTap are not suitable for use on heating systems with fluctuating temperatures

End Load Due to Internal Pressure
HandiClamp & HandiTap fittings DO NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out from the clamp.

Approvals
The following water contact materials used in HandiClamp are approved for use with potable water:-
EPDM Gaskets:
➤ WRAS, AS/NZS 4020

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

Materials & Relevant Standards

Body & Plates
Shell, channel plate, bridging plate, lug plate & nut plate
Stainless Steel to BS1449:Part 2 GRADE 304S15

Gasket
➤ EPDM to BS EN681-1, TYPE WA, WC 60 IRHD
➤ Nitrile to BS EN682, Type G 60 IRHD

Studs
Stainless Steel to BS EN ISO3506-1
GRADE A2 Property Class 50

Nuts
Stainless Steel to BS EN ISO 3506-2
GRADE A4 Property Class 80

Washers
Stainless Steel BS1449:PART 2 GRADE 304S15
HandiClamp & HandiTap Double Band

Datasheet

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➤ M12; Torque = 55-65Nm on every bolt
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Temperature Rating of Product
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Note: HandiClamp & HandiTap are not suitable for use on heating systems with fluctuating temperatures

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EPDM Gaskets:
➤ WRAS, AS/NZS 4020

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

Materials & Relevant Standards

Body & Plates
Shell, channel plate, bridging plate, lug plate & nut plate
Stainless Steel to BS1449:Part 2 GRADE 304S15

Gasket
➤ EPDM to BS EN681-1, TYPE WA, WC 60 IRHD
➤ Nitrile to BS EN682, Type G 60 IRHD

Studs
Stainless Steel to BS EN ISO3506-1
GRADE A2 Property Class 50

Nuts
Stainless Steel to BS EN ISO 3506-2
GRADE A4 Property Class 80

Washers
Stainless Steel BS1449:PART 2 GRADE 304S15

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HandiClamp & HandiTap Triple Band

HandiClamp Triple Band

HandiTap Triple Band

**This is the maximum size BSP outlet offered. Smaller outlets are available: 0.75”, 1.0”, 1.25”, 1.5”, 1.75”, 2.0”.

**The rated working pressures quoted above for water applications are based on worst case scenarios including circumferential cracks. When used to repair pipelines with less severe damage and dependent on the pipe surface, higher working pressures may be achieved.

***When using HandiRange products on PE pipe, consideration to clamp length must be given, please contact the Helden Marketing Department for more details.

<table>
<thead>
<tr>
<th>OD Range (mm)</th>
<th>A (mm)</th>
<th>B (mm)</th>
<th>Max Outlet Size*</th>
<th>Working** pressure (bar)</th>
<th>Clamp Length****</th>
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<tbody>
<tr>
<td>270 - 300</td>
<td>279</td>
<td>303</td>
<td>2.0” BSP</td>
<td>7.4</td>
<td>9-M14 x 135</td>
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<tr>
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<td>9-M14 x 135</td>
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<td>340 - 370</td>
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<tr>
<td>360 - 390</td>
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<td>9-M14 x 135</td>
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<tr>
<td>385 - 415</td>
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<td>9-M14 x 135</td>
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<td>474</td>
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<td>9-M14 x 135</td>
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<td>4.4</td>
<td>9-M14 x 135</td>
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<tr>
<td>475 - 505</td>
<td>483</td>
<td>508</td>
<td>2.0” BSP</td>
<td>4.2</td>
<td>9-M14 x 135</td>
</tr>
<tr>
<td>485 - 515</td>
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<td>519</td>
<td>2.0” BSP</td>
<td>4.1</td>
<td>9-M14 x 135</td>
</tr>
<tr>
<td>505 - 535</td>
<td>514</td>
<td>539</td>
<td>2.0” BSP</td>
<td>4.0</td>
<td>9-M14 x 135</td>
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<tr>
<td>510 - 540</td>
<td>519</td>
<td>544</td>
<td>2.0” BSP</td>
<td>3.9</td>
<td>9-M14 x 135</td>
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<tr>
<td>520 - 550</td>
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<td>530 - 560</td>
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<td>535 - 565</td>
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<tr>
<td>560 - 590</td>
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<td>9-M16 x 135</td>
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<td>570 - 600</td>
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<td>585 - 615</td>
<td>610</td>
<td>644</td>
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<td>9-M16 x 135</td>
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<td>610 - 640</td>
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<td>670 - 700</td>
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<tr>
<td>680 - 710</td>
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<td>714</td>
<td>2.0” BSP</td>
<td>2.9</td>
<td>9-M16 x 135</td>
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<table>
<thead>
<tr>
<th>300 (mm)</th>
<th>400 (mm)</th>
<th>500 (mm)</th>
<th>600 (mm)</th>
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<tbody>
<tr>
<td>Weight (kg)</td>
<td>Weight (kg)</td>
<td>Weight (kg)</td>
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<td>No.-Dia x Length</td>
<td>No.-Dia x Length</td>
<td>No.-Dia x Length</td>
<td>No.-Dia x Length</td>
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<tr>
<td>9-M14 x 135</td>
<td>12-M14 x 135</td>
<td>15-M14 x 135</td>
<td>18-M14 x 135</td>
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<tr>
<td>9-M16 x 135</td>
<td>12-M16 x 135</td>
<td>15-M16 x 135</td>
<td>18-M16 x 135</td>
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<td>9-M16 x 135</td>
<td>12-M16 x 135</td>
<td>15-M16 x 135</td>
<td>18-M16 x 135</td>
</tr>
</tbody>
</table>

Bolt Details

*When using HandiRange products on PE pipe, consideration to clamp length must be given, please contact the Helden Marketing Department for more details.

DR10457_05_2020_ISSUE 6
Technical Information

**Working Pressure Rating**

- Water = In accordance the rating as defined in the tables
- Gas = In accordance the rating as defined in the tables

**Vacuum Pressure**

Capable of accommodating a vacuum pressure of -0.7 bar.

**Site Test Pressure**

1.5 times working pressure for short duration (2 hours)

**Angularity**

HandiClamp & HandiTap fittings are not able to accommodate any angularity.

**Bolt Torque/Spanner**

- M12; Torque = 55-65Nm on every bolt
- M14; Torque = 70-80 Nm on every bolt
- M16; Torque = 95-110Nm on every bolt

**Temperature Rating of Product**

- EPDM = -20°C to +40°C
- Nitrile = 20°C to +40°C

**End Load Due to Internal Pressure**

HandiClamp & HandiTap fittings DO NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out from the clamp.

**Approvals**

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

- EPDM Gaskets:
  - WRAS, AS/NZS 4020
- Studs
  - Stainless Steel to BS EN ISO3506-1
  - GRADE A2 Property Class 50
- Nuts
  - Stainless Steel to BS EN ISO 3506-2
  - GRADE A4 Property Class 80
- Washers
  - Stainless Steel BS1449:PART 2 GRADE 304S15

Materials & Relevant Standards

**Body & Plates**

Shell, channel plate, bridging plate, lug plate & nut plate
Stainless Steel to BS1449:Part 2 GRADE 304S15

**Gasket**

- EPDM to BS EN681-1, TYPE WA, WC 60 IRHD
- Nitrile to BS EN682, Type G 60 IRHD

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**Pressure Rating**

➤ Water = In accordance the rating as defined in the tables
➤ Gas = In accordance the rating as defined in the tables

**Vacuum Pressure**

Capable of accommodating a vacuum pressure of -0.7 bar.

**Site Test Pressure**

1.5 times working pressure for short duration (2 hours).

**Angularity**

HandiBand fittings are not able to accommodate any angularity.

---

**Materials & Relevant Standards**

**Shell**

Stainless Steel to BS1449:Part2 Grade 304 / Steel No. 1.4301

**Lugs**

Whitehart malleable cast iron equivalent to BS EN 1562 Grade ENGJMW-400-5

**Studs/Nuts**

Mild steel to BS EN ISO 898-1 Property class 4.6

**Gasket**

➤ EPDM to BS EN681-1, TYPE WA, WC 60 IRHD
➤ Nitrile to BS EN682, Type G 60 IRHD

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## HandiTee DN80 to DN250 Clamp Length 300 to 500mm

### Datasheet

**HandiTee**

**DN80 to DN250 Clamp Length 300 to 500mm**

### HandiTee Under Pressure Tapping Tee

<table>
<thead>
<tr>
<th>DN (mm)</th>
<th>OD Range (mm)</th>
<th>Working Pressure</th>
<th>Length of Clamp (mm)</th>
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<tbody>
<tr>
<td></td>
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<td>500</td>
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</table>

<table>
<thead>
<tr>
<th></th>
<th>Gas (bar)</th>
<th>Water (bar)</th>
<th>Max Flange Nom &amp; Flange Drilling</th>
<th>A (mm)</th>
<th>B (mm)</th>
<th>C (mm)</th>
<th>Max Flange Nom &amp; Flange Drilling</th>
<th>A (mm)</th>
<th>B (mm)</th>
<th>C (mm)</th>
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<tbody>
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</table>

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**HandiTee DN80 to DN250 Clamp Length 300 to 500mm**

**Technical Information**

**Pressure Rating**
- Water = In accordance the rating as defined in the tables.
- Gas = In accordance the rating as defined in the tables.

**Vacuum Pressure**
Capable of accommodating a vacuum pressure of -0.7 bar.

**Site Test Pressure**
1.5 times working pressure for short duration (2 hours).

**Angularity**
HandiTee fittings are not able to accommodate any angularity.

**Bolt Torque/Spanner**
M16; Torque = 95-120Nm on every bolt

**Temperature Rating of Product**
- EPDM = -20°C to +40°C
- Nitrile = 20°C to +40°C

**Note:** HandiTee is not suitable for use on heating systems with fluctuating temperatures

**End Load Due to Internal Pressure**
HandiTee fittings DO NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out from the clamp.

**Loads from Drilling Equipment and Valve / Branch Pipework**
HandiTee is not designed to accommodate / resist the loads from the under pressure drilling equipment, which needs to be supported externally during the operation to drill into the main. In addition, the valve and branch pipework needs to be adequately supported to ensure none of the dead / live loads are imposed in the branch outlet in the HandiTee.

**Approvals**
The following water contact materials used in HandiTee are approved for use with potable water:-
- EPDM Gaskets; WRAS, AS/NZS 4020

**Materials & Relevant Standards**

**Body & Plates**
Shell, channel plate, bridging plate, lug plate & nut plate
Stainless Steel AISI 304 (A2)

**Gasket**
EPDM as standard, Nitrile option

**Flange Outlets**
Stainless Steel AISI 304, flanges according to DIN2576 varying from DN50 up to DN300

**Bolts**
Stainless Steel AISI 304 (A2); M16 (metric thread according DIN267), thread is PTFE coated to prevent galling

**Nuts**
Stainless Steel AISI 304 (A2). M16 according DIN934

**Washers**
Stainless Steel BS1449:PART 2 GRADE 304S15
## HandiTee DN80 to DN250 Clamp Length 600 to 1000mm

### Datasheet

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### HandiTee Under Pressure Tapping Tee

<table>
<thead>
<tr>
<th>DN (mm)</th>
<th>OD Range (mm)</th>
<th>Working Pressure</th>
<th>Length of Clamp (mm)</th>
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When using HandiRange products on PE pipe, consideration to clamp length must be given, please contact the Helden Marketing Department for more details.
**HandiTee** DN80 to DN250 Clamp Length 600 to 1000mm

**Datasheet** 4/8

## Technical Information

### Pressure Rating
- **Water** = In accordance the rating as defined in the tables.
- **Gas** = In accordance the rating as defined in the tables.

### Vacuum Pressure
Capable of accommodating a vacuum pressure of -0.7 bar.

### Site Test Pressure
1.5 times working pressure for short duration (2 hours).

### Angularity
HandiTee fittings are not able to accommodate any angularity.

### Bolt Torque/Spanner
M16; Torque = 95-120Nm on every bolt

### Temperature Rating of Product
- **EPDM** = -20°C to +40°C
- **Nitrile** = 20°C to +40°C

**Note:** HandiTee is not suitable for use on heating systems with fluctuating temperatures

### End Load Due to Internal Pressure
HandiTee fittings DO NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out from the clamp.

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### Approvals
The following water contact materials used in HandiTee are approved for use with potable water:-
- **EPDM Gaskets; WRAS, AS/NZS 4020**

## Materials & Relevant Standards

### Body & Plates
- **Shell, channel plate, bridging plate, lug plate & nut plate**
  Stainless Steel AISI 304 (A2)

### Gasket
- **EPDM as standard, Nitrile option**

### Flange Outlets
- **Stainless Steel AISI 304, flanges according to DIN2576 varying from DN50 up to DN300**

### Bolts
- **Stainless Steel AISI 304 (A2); M16**
  (metric thread according DIN267),
  thread is PTFE coated to prevent galling

### Nuts
- **Stainless Steel AISI 304 (A2). M16 according DIN934**

### Washers
- **Stainless Steel BS1449:PART 2 GRADE 304S15**

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When using HandiRange products on PE pipe, consideration to clamp length must be given, please contact the Helden Marketing Department for more details.
**HandiTee DN300 to DN750 Clamp Length 300 to 500mm**

**Technical Information**

**Pressure Rating**
- **Water** = In accordance the rating as defined in the tables.
- **Gas** = In accordance the rating as defined in the tables.

**Vacuum Pressure**
Capable of accommodating a vacuum pressure of -0.7 bar.

**Site Test Pressure**
1.5 times working pressure for short duration (2 hours).

**Angularity**
HandiTee fittings are not able to accommodate any angularity.

**Bolt Torque/Spanner**
M16; Torque = 95-120Nm on every bolt

**Temperature Rating of Product**
- **EPDM** = -20°C to +40°C
- **Nitrile** = 20°C to +40°C

**Note:** HandiTee is not suitable for use on heating systems with fluctuating temperatures

**End Load Due to Internal Pressure**
HandiTee fittings DO NOT resist end load due to the internal pressure - adequate external restraint must be provided to prevent pipe pull out from the clamp.

**Loads from Drilling Equipment and Valve / Branch Pipework**
HandiTee is not designed to accommodate / resist the loads from the under pressure drilling equipment, which needs to be supported externally during the operation to drill into the main. In addition, the valve and branch pipework needs to be adequately supported to ensure none of the dead / live loads are imposed in the branch outlet in the HandiTee.

**Approvals**
The following water contact materials used in HandiTee are approved for use with potable water:
- **EPDM Gaskets; WRAS, AS/NZS 4020**

**Materials & Relevant Standards**

**Body & Plates**
Shell, channel plate, bridging plate, lug plate & nut plate Stainless Steel AISI 304 (A2)

**Gasket**
EPDM as standard, Nitrile option

**Flange Outlets**
Stainless Steel AISI 304, flanges according to DIN2576 varying from DN50 up to DN300

**Bolts**
Stainless Steel AISI 304 (A2); M16 (metric thread according DIN267), thread is PTFE coated to prevent galling

**Nuts**
Stainless Steel AISI 304 (A2). M16 according DIN934

**Washers**
Stainless Steel BS1449:PART 2 GRADE 304S15

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**HandiTee Under Pressure Tapping Tee**

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<th>DN (mm)</th>
<th>OD Range (mm)</th>
<th>Working Pressure</th>
<th>Gas (bar)</th>
<th>Water (bar)</th>
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Important Notice

The technical, performance data, specifications, dimensions and all other information published in the Design Data section supersede all previously published information.

All data contained herein is subject to change without notice.

The information given in the following pages is intended as a general guide to the proper design and installation of practical piping systems using Helden products. It is not intended as a substitute for competent, professional advice, which should always be sought in the design of any piping system. Good piping practice should always prevail and recommended design pressures, temperatures, tolerances and loads should never be exceeded.

Special conditions often exist for which the information given here is not specifically suited and specialist engineering advice should be obtained. As with any other piping system, the specific advantages and limitations of Helden products should be considered when designing a system using Helden products. The suggestions made here do not set out to give specific solutions to actual installation problems but to give ideas on which to base your own unique solutions.

While every effort has been made to ensure its accuracy, Helden make no express or implied warranty of any kind in respect of the information contained in this brochure or the materials referred to herein. Any person making use of the information contained here does so entirely at their own risk and assumes any and all liability resulting from such use.

The information contained within this section applies specifically to Helden products only, and is not intended to apply to any other bolted sleeve type coupling product.

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Glossary of Terms

The following abbreviations are used in this brochure:

- OD - Pipe outside diameter
- NB - Nominal bore
- DN - Nominal diameter, in millimetres
- PN - Nominal pressure, in bar
  \( (1\text{ bar} = 0.1\text{ MPa} = 0.1\text{ N/mm}^2 \approx 14.5\text{ lbf/in}^2) \)
- CI - Grey cast iron
- DI - Ductile iron
- PE - Polyethylene
- MDPE - Medium density polyethylene (PE80)
- HDPE - High density polyethylene (PE100)
- AC - Asbestos cement
- GRP - Glass reinforced plastics
- PVC-U - Unplasticised polyvinyl chloride
- ABS - Acrylonitrile butadiene styrene
- EPDM - Ethylene propylene diene monomer
- NBR - Nitrile butadiene rubber
- WRAS - Water Regulations Advisory Scheme
- PCD - Pitch circle diameter
- SDR - Standard diameter to wall thickness ratio
The following standards are used in this brochure:

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<thead>
<tr>
<th>Standard</th>
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<tr>
<td>ANSI B16.1</td>
<td>Specification for cast iron pipe flanges and flange fittings</td>
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<td>AWWA/ANSI C219</td>
<td>Specification for bolted, sleeve type couplings for plain ended pipes</td>
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<td>Specification for flanges and bolting for pipes, valves and fittings</td>
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<td>Specification for underground fire hydrants and surface box frames and covers</td>
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<td>Specification for circular flanges for pipes, valves, fittings, PN designated</td>
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<td>Specification for elastomeric seals. Material requirements for pipe joint seals used in water and drainage applications. Part 1: Vulcanized rubber</td>
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<tr>
<td>BS EN 682</td>
<td>Specification for elastomeric seals. Materials requirements for seals used in pipes and fittings carrying gas and hydrocarbon fluids</td>
</tr>
<tr>
<td>BS EN 1074-2</td>
<td>Specification for Isolation valves for water supply. Fitness for purpose requirements and appropriate verification tests.</td>
</tr>
<tr>
<td>BS EN 1074-6</td>
<td>Specification for Hydrants for water supply. Fitness for purpose requirements and appropriate verification tests.</td>
</tr>
<tr>
<td>BS EN 1092-1</td>
<td>Specification for flanges and their joints. Circular flanges for pipes, valves, fittings and accessories, PN designated. Part 1: Steel flanges</td>
</tr>
<tr>
<td>BS EN 14339</td>
<td>Specification for underground fire hydrants</td>
</tr>
<tr>
<td>BS EN 14525</td>
<td>Specification for ductile iron wide tolerance couplings and flange adaptors for use with pipes of different materials</td>
</tr>
<tr>
<td>BS EN ISO 9001</td>
<td>Quality management system requirements</td>
</tr>
<tr>
<td>BS EN ISO 14001</td>
<td>Environmental management systems requirements</td>
</tr>
<tr>
<td>ISO 7005</td>
<td>Specification for metallic flanges Part 1: Steel flanges</td>
</tr>
<tr>
<td>ISO 17885:2015</td>
<td>Specification for plastics piping systems – Mechanical fittings for pressure piping systems</td>
</tr>
<tr>
<td>WIS-4-24-01</td>
<td>Specification for mechanical fittings and joints including flanges for PE pipes for the conveyance of cold potable water for the size range 90-100 made of metal or plastics or a combination of both</td>
</tr>
<tr>
<td>WIS-4-52-03</td>
<td>Specification for anti-corrosion coatings on threaded fasteners</td>
</tr>
</tbody>
</table>

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The Helden system is suitable for an enormous range of pipework applications and it is therefore impossible to give a comprehensive list of potential uses. In general terms, the system is suitable for virtually any pipeline, above or below ground level, working within the following typical parameters:

**Location**
Above or below ground (subject to certain limitations according to product type and pipe material).

Backed by many years of design and manufacturing experience, the Helden system is a complete and cost-effective answer to almost all pipeline installation problems.

Compare the following benefits with those offered by alternative pipe jointing systems:

- ISO 9001 certification is proof of our exacting quality standards.
- ISO 14001 certification is proof of our environmental credentials.
- Exclusive Helden gaskets, moulded to exacting specifications, assure perfect lifetime sealing, meeting all relevant Standards.
- Size range extends from DN15 (0.5") to more than DN5000 (200”).
- The Helden system is designed for plain-ended pipes, eliminating threading, bevelling, welding or flanging.
- The system can joint most types of pipes, valves or meters.
- By specifying Helden, installation delays caused by adverse weather conditions are overcome, particularly relevant to PE installation.
- You can rely on Helden products. Their dependability has been demonstrated for more than 85 years in all conditions of service.
- On-site jointing equipment - with Helden products all you need is a spanner and a torque wrench.
- The simplicity of our design assures you of couplings which will assemble quickly, easily and accurately every time. Company representatives are available to offer technical advice to the installer.
- As a mechanical jointing system it can eliminate the need for specialist labour or on-site fabrication.
- Helden couplings are protected against corrosion with a range of specialised coatings. Please state coating required when ordering.
- Helden has over 100 agents and distributors worldwide, in addition to an exclusive distributor network throughout the UK.

**Working Pressure**
Up to 80 bar (1450psi), according to size and type of product. Up to full vacuum. Higher pressures are available on request.

**Temperature**
Limited by gasket grade used, but within the range -60°C to +200°C (-75°F to +390°F)

**Note:** At elevated temperatures, accelerated gasket relaxation will occur, leading to reduced life of fitting.

**Suitable for**
Water, gas, oil, petrochemicals, sewage, powdered solids, granular solids, air. Subject to gasket grade used and product/pipe limitations.
The Concept

**All Large Diameter Dedicated Helden couplings, stepped couplings, flange adaptors, MaxiFit, QuickFit, MegaFit, UltraGrip, FlexLock and AquaGrip (up to DN180) operate on the same basic compression principle.**

**How it Works**

The Helden coupling (Fig. A) comprises a centre sleeve located between two end rings. Wedge-shaped elastomeric gaskets separate the sleeve and end rings. As the captive ‘D’ head bolts are tightened, the end rings are drawn together, compressing the gaskets between the end rings and the centre sleeve onto the surface of the pipe to form an effective, leak-proof seal (Fig. B).

**Features**

The basic concept of the Helden coupling means that it can be used on plain-ended pipe, removing the need for costly and time-consuming pipe end preparation. The Helden coupling is also capable of absorbing expansion and contraction which occurs in pipelines as a result of temperature fluctuations, without the need for special expansion joints (Fig. C). In addition, it can accommodate enough angular deflection to allow for pipeline movement or ground settlement, or to provide for long radius curves without the necessity of incorporating purpose-made bends (Fig. D).
Pipe Materials
Most rigid and semi-rigid pipe materials can be joined with Helden coupling products - steel (including stainless steel), grey cast iron, ductile iron, asbestos cement, uPVC, GRP concrete, polyethylene and ABS.

Of these, the rigid materials with high strength capabilities, such as steel, grey cast iron, ductile iron and concrete can be joined using standard Helden couplings without revision to our normal fitting instructions.

Certain lower strength materials, such as clayware and the lower classes of asbestos cement pipe, may need reduced bolt torques to avoid pipe damage. Glass reinforced plastic (GRP) pipe is relatively flexible and its structure may be damaged by high gasket pressures. Reduced bolt torques are also recommended for this pipe material (details available on request).

Polyethylene (PE) pipe is produced in various types and with various performance capabilities. All exhibit the tendency to creep i.e. change shape when loaded. The use of standard Helden couplings may result in leakage or pipe pull-out. Helden AquaGrip and AquaFast products are both specifically designed to join PE pipe either to another PE pipe or to flanged equipment or other pipe materials. Certain sizes of EasiClamp are also suitable for use on repairs to PE pipe. UltraGrip may be used on PE pipe if a supporting internal liner is also used.

See page 34 for a table that lists which Helden products will work on which standard pipe material.

Pipe Outside Diameters
Dedicated Helden couplings and flange adaptors may be specified for any pipe size between DN50 (2”) and DN5000 (200”), even for outside diameters not covered by recognised pipe standards. Since Helden couplings fit over the outside of the pipe, it is essential that the OD is specified at time of enquiry/order.

Pipe Tolerances
Helden couplings give their optimum performance when they are a close fit on the pipe. Seal effectiveness depends on the pressure which the gasket applies to the pipe surface. Undersized pipes may mean a loss in pressure rating.

Many pipe standards quote the main pipe barrel tolerance separately from the tolerance on the pipe ends.

Unless otherwise informed, Helden products are designed to accommodate the pipe end outside diameter and associated tolerance from the relevant industry specification for the pipe material concerned. In the event that the pipe outside diameter and tolerances are not in accordance with the standard then guidance should be sought from Helden on how these can be accommodated in our products.

Pipe Ovality
Moderate ovality, especially in large diameter steel or ductile iron pipes, can frequently be rectified by selective bolt tightening to give a uniform annular gap between pipe and coupling. More severe ovality, up to a limit of about ±1% of diameter may be corrected by jacking, taking care not to damage the internal lining of the pipe.

Pipes having local stiffening near the ends may be impossible to correct or shape by these methods and good circularity is essential if couplings are to be fitted successfully.

N.B. The Helden MaxiFit, MegaFit and UltraGrip ranges of Universal Coupling products can accommodate larger pipe tolerances and ovality, see separate brochures for details.

Diameter Measurement
The most reliable method of measuring OD is by circumference measurement. This eliminates the effects of ovality and, provided that ovality is moderate, it is almost always possible to correct during assembly. Circumference measurement may be carried out using either a purpose-made circumference tape which reads out directly as an effective diameter, or it is possible to use an ordinary tape wrapped around the pipe and the resulting circumference value converted to effective diameter by dividing the result by \( \pi \). If pipe calipers are available, these can give a useful further indication of pipe shape and the possible need for special sizing of the coupling. If in doubt, contact Helden for further advice.

Pipe Coatings
Many pipes are finished with a coating of some description, which can affect pipe O.D. Allowance must be made for these coatings in the manufacturing size of the coupling, or installation of the coupling may be difficult or impossible. Very thick pipe wrappings (typically several millimetres thick) must be removed at pipe ends so that the coupling will seat either on the bare pipe or on a high quality thinner paint film. It is important that details of the intended pipe corrosion protection are made known to us when ordering so that the correct size of coupling can be produced. Alternatively, we must be informed of the finished pipe diameter including all coatings, with appropriate tolerances.

Pipe Surface Finish
The Helden system relies on good uniform contact of the gaskets with the pipe surface.

It is important to ensure that the pipe ends, in the areas where the coupling gaskets will seat, are free from loose surface deposits, bumps, dents, score marks, weld beads, flat spots and the like, or the full pressure capability of the coupling may not be realised.

Working Pressure
The working pressure capability of a coupling varies with its size and construction. It is also dependent upon correct pipe tolerances and surface finish. Wider pipe OD tolerances than those specified will result in a reduction in pressure capability. For most pipe materials, the actual test pressure will be lower than that of the coupling and will be determined by the pipe capability or class. Similarly the pressure rating of a flange adaptor will be determined by the rating of the main flange (eg. PN16 = 16 bar working pressure, 24 bar test).

When assembled onto the pipe(s), the pressure rating of the completed assembly will be that of the lowest rated component. Under normal circumstances working pressures are up to 2/3 of the maximum test pressure shown in any Helden literature appropriate schedule.

Operating Temperature
The operating temperature of Helden couplings is determined by the temperature rating of the gaskets and on coating type. Different grades of gaskets are available to suit various temperature ranges as well as different chemical resistance requirements. For details see the Gaskets section (pages 251-252).

Most Helden Couplings are supplied with Rilsan Nylon 11 coating which has a maximum operating temperature of 90°C.

For higher temperatures, alternative coatings may be necessary.

Helden couplings operate at their maximum efficiency under conditions of relatively constant temperature. If temperature fluctuations occur or at elevated temperatures >60°C, retightening of the bolts may be required. For this reason, where maintenance-free operation is required, Helden couplings are not recommended as a pipe jointing system for central heating or similar systems which do not operate at a relatively constant temperature.

Chemical Resistance
The chemical resistance of a Helden coupling is determined by suitability of the gaskets and by the chemical resistance of the internal surfaces of the coupling sleeve. If the coupling is coated with Rilsan, epoxy, etc. it is necessary to ensure that this material is chemically suitable for contact with the pipe contents. Chemical resistance of the gaskets and coatings may be checked with the chart on page 254 or by contacting Helden.
Angular Deflection

Each dedicated Helden coupling or flange adaptor will allow for a setting angularity (Ø) as shown in Table 1.1.

The ability of Helden couplings to accommodate angular deflection, either on installation or in service, can be used in a number of valuable ways:

a) To take up minor misalignment or lateral displacement in straight pipes, eg. at closing lengths.

b) To accommodate ground settlement.

c) To lay pipes to long radius curves without special bends.

a) Lateral Displacement

Lateral displacement between two pipes can be easily accommodated using two couplings and an appropriate length of closing pipe which can be allowed to angulate (Fig 1.1 & 1.2).

A SINGLE COUPLING CANNOT ACCOMMODATE LATERAL DISPLACEMENT.

The length, L, of the closing pipe can be calculated from the closing length Table 1.2.

b) Ground Settlement

Ground settlement, for example where a pipe leaves an underground structure, may be accommodated using a pair of Helden couplings. In this case, pipe trenches are excavated below the pipe invert to allow for pipe bedding. If this bedding is to be flexible (eg. granular fill), some settlement will inevitably occur when the trench is backfilled. (Fig. 1.4)

To minimise stresses in pipe 1, coupling A should be installed as close as possible to the structure. The two couplings A and B allow pipe 2 to angulate to take up settlement Y. The minimum length of pipe 2 is determined using the Closing Length Table in Table 1.2. The structural strength of the pipe in bending may need to be considered.

Alternatively, a Helden wall coupling can be used instead of pipe 1 and coupling A.

Table 1.1

<table>
<thead>
<tr>
<th>Coupling Size</th>
<th>Angle</th>
<th>Inclination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to DN450 (18&quot;)</td>
<td>± 6°</td>
<td>1 in 10</td>
</tr>
<tr>
<td>Over DN450 - DN600 (18&quot; - 24&quot;)</td>
<td>± 5°</td>
<td>1 in 12</td>
</tr>
<tr>
<td>Over DN600 - DN750 (24&quot; - 30&quot;)</td>
<td>± 4°</td>
<td>1 in 15</td>
</tr>
<tr>
<td>Over DN750 - DN1200 (30&quot; - 48&quot;)</td>
<td>± 3°</td>
<td>1 in 20</td>
</tr>
<tr>
<td>Over DN1200 - DN1800 (48&quot; - 72&quot;)</td>
<td>± 2°</td>
<td>1 in 30</td>
</tr>
<tr>
<td>Over DN1800 (72&quot;)</td>
<td>± 1°</td>
<td>1 in 60</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Flange Adaptor Size</th>
<th>Angle</th>
<th>Inclination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to DN450 (18&quot;)</td>
<td>± 3°</td>
<td>1 in 20</td>
</tr>
<tr>
<td>Over DN450 - DN600 (18&quot; - 24&quot;)</td>
<td>± 2.5°</td>
<td>1 in 24</td>
</tr>
<tr>
<td>Over DN600 - DN750 (24&quot; - 30&quot;)</td>
<td>± 2°</td>
<td>1 in 30</td>
</tr>
<tr>
<td>Over DN750 - DN1200 (30&quot; - 48&quot;)</td>
<td>± 1.5°</td>
<td>1 in 40</td>
</tr>
<tr>
<td>Over DN1200 - DN1800 (48&quot; - 72&quot;)</td>
<td>± 1°</td>
<td>1 in 60</td>
</tr>
<tr>
<td>Over DN1800 (72&quot;)</td>
<td>± 0.5°</td>
<td>1 in 120</td>
</tr>
</tbody>
</table>

The above schedules represent the maximum angular deflection for each size range and should only be used when the pipes will not move in service. For other conditions it is recommended to halve these figures to allow for in-service flexibility.

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Angular Deflection

Table 1.2

<table>
<thead>
<tr>
<th>Pipe Nominal Diameter</th>
<th>CLOSING LENGTH TABLE (see Fig. 1.2 &amp; 1.4)</th>
<th>L, Minimum Length (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to DN450 (18”)</td>
<td></td>
<td>Displacement Y x 10</td>
</tr>
<tr>
<td>Over DN450 - DN600 (18” - 24”)</td>
<td></td>
<td>Displacement Y x 12</td>
</tr>
<tr>
<td>Over DN600 - DN750 (24” - 30”)</td>
<td></td>
<td>Displacement Y x 15</td>
</tr>
<tr>
<td>Over DN750 - DN1200 (30” - 48”)</td>
<td></td>
<td>Displacement Y x 20</td>
</tr>
<tr>
<td>Over DN1200 - DN1800 (48” - 72”)</td>
<td></td>
<td>Displacement Y x 30</td>
</tr>
<tr>
<td>Over DN1800 (72”)</td>
<td></td>
<td>Displacement Y x 60</td>
</tr>
</tbody>
</table>

EXAMPLE: Pipe OD = 711mm
Lateral displacement to be accommodated = 90mm
Minimum closing length = 90 x 15 = 1350mm

EXAMPLE: Pipe OD = 28”
Lateral displacement to be accommodated = 4”
Minimum closing length = 4 x 15 = 60”

NOTE: For Helden flange adaptors these lengths must be doubled.

Fig. 1.4

Ground Settlement, Displacement Y can be accommodated using two couplings A and B.

CLOSING LENGTH TABLE (see Fig. 1.2 & 1.4)

NB: In an above ground pipeline, lateral pressure thrusts will need to be restrained by the support system. Buried pipes laid to a curve will normally receive sufficient support from the trench backfill material.

Table 1.3

<table>
<thead>
<tr>
<th>Pipe diameter</th>
<th>MINIMUM RADIUS TABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal Angle</td>
<td>&lt;DN450</td>
</tr>
<tr>
<td>18”</td>
<td>6°</td>
</tr>
<tr>
<td>6°</td>
<td></td>
</tr>
<tr>
<td>5°</td>
<td></td>
</tr>
<tr>
<td>4°</td>
<td></td>
</tr>
<tr>
<td>3°</td>
<td></td>
</tr>
<tr>
<td>2°</td>
<td></td>
</tr>
<tr>
<td>1°</td>
<td></td>
</tr>
</tbody>
</table>

Where L = pipe length
ø = angular deflection
r = radius of curve

See minimum radius Table 1.3

Other radii may be calculated using the formula given above. NOTE: These minimum radii do not allow any in-service movement.

Fig. 1.5

Long radius curves can be accommodated without special bends.

See minimum radius Table 1.3

NB: In an above ground pipeline, lateral pressure thrusts will need to be restrained by the support system. Buried pipes laid to a curve will normally receive sufficient support from the trench backfill material.

Table 1.3

<table>
<thead>
<tr>
<th>Pipe Length (L)</th>
<th>Minimum Radius (R)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3m (10ft)</td>
<td>29m (95ft)</td>
</tr>
<tr>
<td>6m (20ft)</td>
<td>57m (187ft)</td>
</tr>
<tr>
<td>9m (30ft)</td>
<td>86m (280ft)</td>
</tr>
<tr>
<td>12m (40ft)</td>
<td>115m (375ft)</td>
</tr>
</tbody>
</table>

Other radii may be calculated using the formula given above. NOTE: These minimum radii do not allow any in-service movement.

240 Helden Design Data
Telephone: +44 (0)1462 443322
Helden couplings are used to join pipes flexibly, so that if there is pipe or ground movement during the life of the pipeline, the coupling will accommodate this without leakage. However, such movement will result in relative longitudinal and/or angular displacement of the pipes within the coupling.

Under normal conditions, adjacent pipe ends should not make contact with each other in service. If there is insufficient gap so that pipes do touch, the pipeline will tend to buckle as temperatures increase and pipe end damage may occur. At the other extreme, if the pipe end gap is too large on installation, there is a risk that pipes may pull out past the gasket(s) of the coupling leading to leakage and failure of the pipeline.

It is therefore necessary to ensure that pipe end gaps are set within specified limits during installation of the coupling to ensure that neither situation occurs.

We give a Recommended Setting Gap for all sizes of Helden coupling and flange adaptor, which specifies the normal initial gap between adjacent pipe ends such that if the full recommended angularity or expansion occurs in service, the pipe ends should not touch together causing damage. (see Table 1.4)

Similarly, we also give a Maximum Recommended Gap which ensures that even with full recommended angularity there should not be any risk of pipe ends pulling out past the coupling or flange adaptor gasket, leading to leakage. (see Fig. 1.6 and Table 1.4)

For pipes above ground, it is possible for unanchored pipes to shunt together after installation, opening up a large gap between pipes at certain points. Such pipe movement must be controlled to ensure that the Maximum Permissible Gap is not exceeded, or there may be a risk of the pipe pulling out of the coupling. Soil friction acting on pipes laid below ground normally prevents any such pipe shunting movement.

The Maximum Permissible Gap, measured on the centreline, should not be exceeded in service. Consideration of actual thermal movement or deflection conditions may lead to different initial setting gaps.

When couplings are specified with a locating plug, the Recommended Setting Gap should be increased by the diameter of the pin or plug (9.5mm or 12.7mm). However, the Maximum Permissible Gap should not be increased.

Where the standard Helden sleeve length is found to be insufficient, longer sleeved couplings and flange adaptors can be supplied.

### Table 1.4

<table>
<thead>
<tr>
<th>Coupling Sleeve Width</th>
<th>Nominal Size (D)</th>
<th>Recommended Setting Gap</th>
<th>Maximum Permissible Gap (x)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Couplings Flange Adaptors</td>
<td></td>
</tr>
<tr>
<td>100mm</td>
<td>DN50 (2&quot;) to DN300 (12&quot;)</td>
<td>20mm 20mm</td>
<td>40mm</td>
</tr>
<tr>
<td>150mm</td>
<td>DN350 (14&quot;) to DN900 (36&quot;)</td>
<td>25mm 25mm</td>
<td>50mm</td>
</tr>
<tr>
<td>178mm</td>
<td>DN1000 (40&quot;) to DN1800 (72&quot;)</td>
<td>40mm 30mm</td>
<td>75mm</td>
</tr>
<tr>
<td>254mm</td>
<td>Over DN1800 (72&quot;)</td>
<td>55mm 55mm</td>
<td>115mm</td>
</tr>
</tbody>
</table>

General guide for dedicated couplings, see fitting instructions related to each product type for further details.

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Pressure Forces

All pipelines under pressure are subject to longitudinal forces which tend to separate the component parts of the pipeline. Consider the case of pressure acting on a blank end (Fig 1.7). The force, F, necessary to prevent pipe separation is given by:

\[ F = \frac{p \cdot d^2}{4} \]

Where \( d \) = pipe OD
\( p \) = internal pressure.

Example:

\( d = 508\text{mm} \) OD.
\( p = 16 \text{ bar} = 1.6 \text{ N/mm}^2 \)
Then \( F = \frac{1.6 \times 508^2}{4} = 324.3 \text{ kN} = 33.07 \text{ tonnes} \)

Pressure thrusts will be produced at all changes of direction, eg. bends, tees, etc. and at cap ends, valves and reducers. Unless these thrusts are restrained locally at the point at which they are developed, pipe components may move under the load, leading to failure.

Even small diameter pipes may pull out of couplings at modest pressures unless proper external restraint is provided, especially if the pipe system is subjected to temperature or pressure fluctuations, vibration or external loadings.

With surface or above-ground pipelines it is generally necessary to take full account of the thrusts produced by internal pressures and to restrain them with thrust blocks, anchorages or tie bars. At a bend, there is a force, R, tending to push the bend outwards (Fig. 1.8).

In this case there must be sufficient anchorage to resist resultant force R. In a buried system a thrust block (Fig. 1.8a) may be used to resist R.

\[ R = \frac{p \times d^2 \sin \theta}{2} \]

where \( d \) = pipe outside diameter
\( p \) = internal pressure
and \( \theta \) = angle of the bend

NOTE: Any consistent set of units is suitable.

Helden flexible couplings do not resist longitudinal thrust loadings, and pipe pull-out will occur unless the loads are restrained by other means.

Coupling Movement Under Pressure

Internal pressure will mainly cause pipe movement if there is inadequate restraint. However it can also cause coupling movement. A Helden stepped coupling is in effect a reducer, and internal pressure will tend to push it towards the smaller diameter pipe. Under normal circumstances, i.e. modest diameter reduction, buried service, standard water pressures etc., soil and pipe friction are sufficient to prevent coupling movement. However, for larger diameter and for above ground service, and in particular higher pressures, the pressure thrust acting on the stepped coupling sleeve can be sufficient to cause coupling movement and consequent disengagement. Positive steps must be taken to restrain the coupling to prevent movement. This may take the form of harness rods, stops on the pipe or within the coupling or encasement in concrete.

For further advice, please contact Helden Technical Support.
Below ground, pipe thrusts can normally be restrained by means of concrete thrust blocks at bends, valves, etc. However, above ground this is more difficult. In such circumstances it may be necessary to provide a harness assembly, attached to the pipes on both sides of the coupling. This consists of one or more pairs of tie bolts located in either harness lugs welded to the pipe (Fig. 1.9 (a)) or attached by other means, eg. flanges cast on. Accommodating pipe thrusts in above ground applications with Helden standard coupling products requires either external brackets / pipe supports or the use of harness assemblies attached to the pipe some distance back from each joint. Harness assemblies consist of one or more pairs of tie rods located in lugs / flanges welded to the pipe a short distance away from the joint. The design of the harness lug assembly has to include for the transfer of end load forces via the tie rods into the pipe wall, and it is essential to verify that the interface between the lug and pipe wall is sufficiently strong enough to accommodate these loads. For this reason Helden deem that the responsibility of the design for the harness lugs lies with the pipe manufacturer and therefore we are not able to include these as part of our product offering.

Use of a single pair of tie rods permits angularity between pipes in one plane, eg. to permit ground settlement.

Flange adaptors can also be prepared for harness assembly. Here, a number of the flange bolts are replaced with long tie bars (Fig 1.9 (b))*.

Harnessed flange adaptors used with a flanged spigot (Fig. 1.9 (c)) give a simple, cost-effective method of providing a demountable joint in an otherwise flanged system. Helden provide the complete package for Fig 1.9 (c).

When a flange adaptor is harnessed (or a Dismantling Joint used), there will be no resultant angular deflection, or in service expansion capability within the joint, unless special arrangements are specified beforehand.

* NOTE: If a flange adaptor is to be used in a tied arrangement, it may be necessary to notch the end ring to ensure sufficient clearance for the tie bars. If notified beforehand, Helden can incorporate notching of the end rings during manufacture. (Please note that the Helden Maxi/Daptor cannot be notched).

For ductile iron flange systems, it is normally recommended that the end ring is notched to accommodate a number of tie bars equal to half the quantity of main flange bolts. For steel flange systems, this number may be reduced.

**Alternative Helden Products**

Helden has within its comprehensive range specialist products capable of accommodating end load forces these include:-

**FlexLock**
Dedicated flange adaptors and couplings for steel and ductile iron pipes.

**UltraGrip**
Wide tolerance couplings, flange adaptors, end caps and reducers for most pipe materials. (For below ground installations)

**Dismantling Joint**
Double flanged adjustable spool piece in a variety of flanges.

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Pipe Support

Pipes laid above ground, usually with supports at specified locations, must transfer all the weight of pipe and contents, plus any pressure-related forces, through those supports. Fig. 1.10 shows a standard method of supporting a pipeline where subsidence is expected and which allows freedom of movement within the capabilities of the Helden couplings while anchoring and supporting the pipes. Alternate pipe lengths are fully supported between two couplings, provided that the clear pipe span does not exceed 10 metres (30ft).

Fig. 1.10 shows a standard method of supporting a pipeline where subsidence is expected and which allows freedom of movement within the capabilities of the Helden couplings while anchoring and supporting the pipes. Alternate pipe lengths are fully supported between two couplings, provided that the clear pipe span does not exceed 10 metres (30ft).

Anchored Couplings

The Helden Anchored Coupling (Fig. 1.11) provides an alternative method of supporting pipes above ground. Brackets welded to the centre sleeve of the coupling can be bolted directly to the supporting structure without the need for specially shaped saddles, straps, etc., thus reducing installation costs and greatly improving laying times. The brackets are capable of withstanding the thrust produced by maximum angularity and will support a 10 metre (30ft) long pipe filled with water.

Anchored couplings may be bolted to the structure in any orientation (i.e. bolted to a ceiling, side wall, etc.), provided that the pipeline is substantially horizontal. Useful when installing a number of pipes in a confined space i.e. a pipe duct. Anchor brackets are not designed to withstand longitudinal or lateral forces due to external pressure thrusts.

Large diameter (>DN1600/54") or heavy section couplings may require a reinforced saddle around the anchor brackets.

The use of locating plugs with anchored couplings is recommended to help control pipe movement.

(Please note that MaxiFit, MegaFit and New QuickFit couplings are not available, as anchored couplings.)

Important:
1. Harness assemblies should not normally be used in conjunction with anchored couplings.
2. Ensure that sufficient clearance is allowed between the coupling and the plinth to permit full assembly of ALL bolts.

Cathodic Protection

If specified, Helden couplings can be included in a pipe system that is to have cathodic protection. They can be supplied with a threaded stud on the centre sleeve and end rings, such that electrical connections can be made across and including the coupling. Contact Helden for further details. See Fig. 1.12.

This pipe span distance does not apply to MaxiFit, MegaFit or New QuickFit as anchored couplings. Contact Helden for details. Intermediate anchors (B) are necessary to prevent any cumulative pipe creep, with full thrust anchors (A) at the ends of long runs or at major changes in direction.
Locating Plugs

Couplings installed above ground may tend to creep along the pipe with repeated pipe movement, temperature variation or vibration. This can be restrained by using couplings fitted with removable locating plugs, which prevent the coupling from moving beyond fixed limits Fig. 1.14.

Removable locating plugs enable single pipe removal. Once the locating plug is removed, the end rings can be slackened off and the gaskets and centre sleeve can be slid along the pipe to expose the joint. The pipe can then be removed.

Normally it is unnecessary to use locating plugs in couplings below ground since soil friction will ensure that the couplings remain in their correct position relative to the pipes. However, locating plugs can provide a useful method of coupling centralisation over the pipe ends.

Removable locating plugs are only available on Dedicated couplings.

**Removable locating plugs are available Zinc plated or stainless steel.**

*For Dedicated Helden couplings, locating plugs are produced in the following standard sizes-

<table>
<thead>
<tr>
<th>Pipe OD</th>
<th>Thread Diameter</th>
<th>Peg Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>up to 914mm (36&quot;)</td>
<td>0.25&quot; BSP</td>
<td>9.5mm (0.375&quot;)</td>
</tr>
<tr>
<td>over 914mm* (36&quot;)</td>
<td>0.5&quot; BSP</td>
<td>12.7mm (0.5&quot;)</td>
</tr>
</tbody>
</table>

*may be used on smaller diameter heavy section couplings.

Inclined Pipelines

Where Helden couplings are to be installed in pipelines laid on significant slopes, it is important to consider the restraint of the component of self-weight acting parallel to the axis of the pipeline, to stop the pipe sliding down the slope (Fig. 1.15).

Below ground pipelines will receive significant restraint from backfill loading and therefore less extra axial restraint will be necessary than for above ground pipelines, but the gravity forces still need to be considered in a proper engineering assessment of the design.

On above ground pipelines the Helden couplings should be fitted with locating plugs to ensure the coupling’s location relative to the pipe ends.

**N.B. Locating plugs are not designed to restrain pipe self-weight, axial forces or other pipeline thrusts, only to restrain the coupling itself, ie the pipes must be fixed.**

Where the length L of pipe to be supported by the Helden couplings does not exceed 10 metres (30ft), it is normally desirable to anchor one end, A, of each pipe in position relative to the ground, allowing the other end, B, to be supported by coupling C and to move axially with temperature fluctuations as shown. Its limitations are detailed in Expansion and Contraction (refer to page 246).

Pipeline anchorage must be designed to restrain all axial forces due to self-weight, fluid friction and pressure. The pipe support design will be determined by pipe diameter, pressure, wall thickness, pipe inclination to horizontal, etc and is beyond the scope of this brochure. Certain diameter, pipe length and inclination conditions may necessitate the use of supports on both sides of the coupling. In this instance one support should be fixed, the other sliding to permit thermal movement. It is essential that accurate pipe alignment is observed to prevent excessive shear stress in the coupling.

In certain cases of limited diameter and inclination to the horizontal it may be possible to permit the use of Helden anchored couplings to both support and restrain the pipes. In this instance the pipe self-weight axial loads are restrained by the coupling locating plug and Helden should be contacted for specific design recommendations before proceeding.

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.
Two couplings. This also applies to flange adaptors. In the case of stepped couplings the maximum shear resistance is that of the smaller end of the coupling - Fig. 1.16.

External superimposed forces will reduce the maximum clear span. MaxiFit and MegaFit Wide Range couplings are not generally suitable for this duty and the pipe should be adequately supported to prevent sagging and coupling rotation.

### Expansion & Contraction

Helden couplings and flange adaptors can accommodate significant regular expansion and contraction movement in a pipe system, usually enough to remove the need for special expansion jointing products. This is achieved by deformation of the gaskets rather than by sliding on the pipe surface. Most expansion movements due to normal ambient temperature variations can be accommodated using Helden couplings.

Under certain circumstances, e.g. occasional or long-term movement, it may be possible to allow for increased expansion and contraction, but this should not be attempted without first contacting Helden.

Stepped couplings permit the same total expansion movement as straight couplings. However, pressure thrust may act on the stepped coupling causing the stepped coupling to move along the pipe with repeated expansion movement. Restraint for the coupling will be required.

### Pipe End Preparation

As stated earlier in System Overview (Page 238 - Pipe Surface Finish and Pipe Tolerances) it is important to remember:

a) Within the area of the seal, pipe surfaces should be round, clean, smooth and free from bumps, dents, score marks, flat spots etc.

b) Tolerances Should be in accordance with industry standards / specifications, if pressure ratings are to be maintained.

In the Pipe End Preparation Table (Table 1.6) dimension L is the distance back from the end of the pipes which must be rounded where necessary to meet the tolerances required. It is also the distance back from the end of the pipe from which any pipe wrapping should be removed to permit coupling assembly.

This applies equally to coupling sleeves with or without locating plugs.

Where it is required to slide the coupling completely on to one pipe end, any wrapping must be cut back or obstructions removed, for minimum distance M.

<table>
<thead>
<tr>
<th>Sleeve Length</th>
<th>Dimension L for normal coupling assembly</th>
<th>Dimension M for closing connections (wrapping cut back)</th>
</tr>
</thead>
<tbody>
<tr>
<td>100mm</td>
<td>100mm</td>
<td>150mm</td>
</tr>
<tr>
<td>150mm</td>
<td>150mm</td>
<td>225mm</td>
</tr>
<tr>
<td>178mm</td>
<td>150mm</td>
<td>250mm</td>
</tr>
<tr>
<td>254mm</td>
<td>200mm</td>
<td>300mm</td>
</tr>
</tbody>
</table>
**Straight Couplings**

* Straight Couplings are used for joining pipes of the same material or pipes of different materials but having the same outside diameter.

Available in 3mm size increments from DN350 (19") nom. up to DN5000 (200") nom. in standard form.

Couplings can be supplied with removable locating plug.

Heavy Duty Couplings, with strengthened end rings and sleeves are available for higher working pressures.

Long Sleeve Couplings, to take up larger pipe end gaps or cutting inaccuracies can also be supplied.

When using couplings, care must be taken to ensure that pipes are within the accepted tolerances, if pressure ratings are to be maintained.

When used on coated pipe, thickness of coating must be considered to be in addition to the pipe outside diameter.

---

**Bolts**

Sheraplex coated bolts are supplied as standard. Galvanised or stainless steel bolts are also available. (Some products may have a limited range of bolt coatings for performance reasons.)

**Locating Plugs**

Locating plugs are manufactured from carbon steel as standard, zinc plated. They are also available in stainless steel.

**Marine Couplings**

Couplings specified for marine use are supplied complete with galvanised bolts, zinc plated locating plugs and Grade G nitrile gaskets.

**Heavy Section Couplings**

Heavy duty couplings with strengthened end rings and sleeves are available in sizes from DN250 (10") nom.

---

**Coupling Sleeve Design**

Within the range of Dedicated couplings there are variations of centre sleeve design, depending on the size and application.

**Standard Sleeve**

There are three types of standard sleeve for differing pipe sizes: (see Fig. 1.19)

a) Steel plate sleeve  
b) Ductile iron sleeve  
c) Hot rolled section sleeve

Coupling sleeve design is dependent on diameter and at the discretion of Helden.

These standard sleeves do not have an integral centre register within the sleeve, enabling couplings to be slipped back along the pipe for pipe cleaning, repair and maintenance.

---

**NOTE**

Helden Flexible couplings do not resist longitudinal thrust loadings, and pipe pull-out will occur unless the loads are restrained by other means.
Stepped Couplings

Stepped Couplings are used to connect pipes of different outside diameters and/or pipes of different materials.

Pressure Rating
Pressure ratings for stepped couplings are equivalent to either:

- the rating specified in the straight coupling schedules for the larger of the two pipe sizes involved, or
- the lower of the individual pressure rating of the two.

Coupling Movement
When stepped or wide range couplings are used to join pipes of different outside diameters, it is essential to ensure that the stepped coupling cannot be forced along the smaller diameter pipe by internal pressure forces. This does not normally apply to the standard range of stepped couplings using expanded sleeves in a below ground service at moderate pressures. This is particularly important above ground and/or where a stepped coupling is used as an expansion joint. Regular inspection of the coupling position against a previously applied mark is strongly recommended, especially in above ground installations. (See also Pressure Forces, page 242.

NOTE
For non-standard couplings the customer is encouraged to ask for an overall dimension drawing of the stepped coupling offered.

NOTE
Helden Flexible couplings do not resist longitudinal thrust loadings, and pipe pull-out will occur unless the loads are restrained by other means.

Fig. 1.25
(a) Expanded sleeve
(b) Make-up ring sleeve
Flange Adaptors

Flange adaptors are used to enable plain-ended pipe to be connected either to flanged pipe or to flanged valves and other fittings.

Raised Face Flanges
Helden flange adaptors are provided with flat mating faces. These are suitable for bolting to both flat and raised faces. The same gasket loading characteristics can be obtained as with a raised face assembly. To obtain a satisfactory seal, the radial contact dimension or ledge (K on Fig. 1.20) should be a minimum of 8mm.

Pressure Ratings
Helden flange adaptors are supplied to suit the pressure rating of the flange, unless specifically ordered otherwise. The overall pressure rating of the assembled adaptor will be equal to that of the lower rated component, either pipe or flange. e.g. PN10 flange adaptors have a flange rated at a working pressure of 10 bar (150 psi). The coupling component of the flange adaptor will invariably have a higher pressure rating than the flange.

Dedicated Flange Adaptors
Are available in four basic forms with different sleeve designs:

Straight Sleeve
The standard form of flange adaptor has a straight sleeve and a flat face. (Fig. 1.21).

Expanded Sleeve (See note (i))
Specifically for use with very thick walled pipe such as asbestos cement or concrete, the expanded sleeve can also be used when the nominal sizes of the flange and the pipe are different (e.g. connecting DN350 (14”) pipe to a DN300 (12”) valve). See Fig. 1.22.

Typical Dimensions
Nom. flange size:
> DN300 (12”)
B= 160mm H= 57mm
B= 235mm H= 82mm
Always confirm dimensional details before ordering.

Tapped Flange (See note (i))
As an alternative to the expanded sleeve, mismatched components may be joined using a tapped flange (Fig. 1.23). Studs, instead of flange bolts, are used to make the connection to the mating flange. Dimension B on Fig. 1.23 varies with the flange thickness C, relative to the tapping diameter. (This design is not suitable for some flange arrangements.)

‘S’ Bore
Flange adaptor with full flange faces suitable for use with wafer style (butterfly) valves are available see Fig. 1.24.

NOTE
(i) Customer approval of the supply of this design is generally sought prior to purchase.

NOTE
Helden Flexible couplings do not resist longitudinal thrust loadings, and pipe pull-out will occur unless the loads are restrained by other means.
Flange Comparison Chart
Nominal
Size
DN80/3"

DN100/4"

DN150/6"

DN200/8"

DN250/10"

DN300/12"

DN350/14"

DN400/16"

DN450/18"

DN500/20"

DN600/24"

250

Diameter

P.C.D.

Hole Dia.

Bolt Dia.

mm

inch

mm

inch

mm

inch

mm

inch

No.
Bolts

PN10/16

200

7.9

160

6.3

18

0.7

16

0.625

8

BS10 ADE

184

7.25

146

5.75

17

0.688

16

0.625

4

ANSI 125/150

190

7.5

152

6

19

0.75

16

0.625

4

PN10/16

220

8.67

180

7.1

18

0.7

16

0.625

8

BS10 AD

216

8.5

178

7

17

0.688

16

0.625

4

BS10 E

216

8.5

178

7

17

0.688

16

0.625

8

ANSI 125/150

229

9

191

7.5

19

0.75

16

0.625

8

PN10/16

285

11.22

240

9.45

22

0.875

20

0.79

8

BS10 A

279

11

235

9.25

17

0.688

16

0.625

4

BS10 D

279

11

235

9.25

17

0.688

16

0.625

8

BS10 E

279

11

235

9.25

22

0.875

19

0.75

8

ANSI 125/150

279

11

241

9.5

22

0.875

19

0.75

8

PN10

340

13.4

295

11.6

22

0.875

20

0.79

8

PN16

340

13.4

295

11.6

22

0.875

20

0.79

12

BS10 AD

337

13.25

292

11.5

17

0.688

16

0.625

8

BS10 E

337

13.25

292

11.5

22

0.875

19

0.75

8

ANSI 125/150

343

13.5

298

11.75

22

0.875

19

0.75

8

PN10

395

15.55

350

13.78

22

0.875

20

0.79

12

PN16

405

15.55

355

14

26

1.03

24

0.95

12

Table

BS10 AD

406

16

356

14

22

0.875

19

0.75

8

BS10 E

406

16

356

14

22

0.875

19

0.75

12

ANSI 125/150

406

16

362

14.25

25

1

22

0.875

12

PN10

445

17.5

400

15.75

22

0.875

20

0.79

12

PN16

460

18.2

410

16.15

26

1.03

24

0.95

12

BS10 A

457

18

406

16

22

0.875

19

0.75

8

BS10 D

457

18

406

16

22

0.875

19

0.75

12

BS10 E

457

18

406

16

25

1

22

0.875

12

ANSI 125/150

483

19

432

17

25

1

22

0.875

12

PN10

505

19.88

460

18.11

22

0.875

20

0.79

16

PN16

520

20.47

470

18.50

26

1.03

24

0.95

16

BS10 A

527

20.75

470

18.5

25

1

22

0.875

8

BS10 DE

527

20.75

470

18.5

25

1

22

0.875

12

ANSI 125/150

533

21

476

18.75

29

1.125

25

1

12

PN10

565

22.24

515

20.28

26

1.03

24

0.95

16

PN16

580

22.83

525

20.67

30

1.20

27

1.07

16

BS10 ADE

578

22.75

521

20.5

25

1

22

0.875

12

ANSI 125/150

597

23.5

540

21.25

29

1.125

25

1

16

PN10

615

24.21

565

22.24

26

1.03

24

0.95

20

PN16

640

25.20

585

23.03

30

1.20

27

1.07

20

BS10 AD

641

25.25

584

23

25

1

22

0.875

12

BS10 E

641

25.25

584

23

25

1

22

0.875

16

ANSI 125/150

635

25

578

22.75

32

1.25

29

1.125

16

PN10

670

26.38

620

24.41

26

1.03

24

0.95

20

PN16

715

28.15

650

25.59

33

1.30

30

1.20

20

BS10 A

705

27.75

642

25.25

25

1

22

0.875

12

BS10 DE

705

27.75

642

25.25

25

1

22

0.875

16

ANSI 125/150

698

27.5

635

25

32

1.25

29

1.125

20

PN10

780

30.71

725

28.54

30

1.20

27

1.07

20

PN16

840

33.07

770

30.31

36

1.42

33

1.30

20

BS10 A

826

32.5

756

29.75

29

1.125

25

1

12

BS10 D

826

32.5

756

29.75

29

1.125

25

1

16

BS10 E

826

32.5

756

29.75

32

1.25

29

1.125

16

ANSI 125/150

813

32

749

29.5

35

1.375

32

1.25

20

Helden Design Data

Telephone: +44 (0)1462 443322


The quality and performance of the gaskets is a crucial factor in the efficiency of any compression-fit pipe joint. It is the gasket which absorbs the forces applied by the expansion and contraction of the pipes, the angular movements and even the weight of the pipe itself. To do this successfully, the gasket must retain its flexibility and compressive stress throughout its operational life.

Helden gaskets are made in accordance with BS EN 681 for water and BS EN 682 for gas, which specifies stringent requirements for physical and chemical properties, aimed at giving the best possible long-term performance.

Fitted Gaskets
All straight couplings, stepped couplings and flange adaptors in the QuickFit, MegaFit, UltraGrip and MaxiFit products, are normally supplied ready-assembled with the gaskets already in position. Making assembly of the product quicker and easier.

Removal of the gaskets prior to or during assembly of the coupling is neither necessary, nor recommended.

Unfitted Gaskets
Wedge-shaped gaskets are supplied as standard with Dedicated couplings, stepped couplings and flange adaptors in sizes DN350 (14”) and over. Unfitted gaskets are always stretched onto the pipe during installation.

Bonded Gaskets
Certain Helden products, such as EasiClamp, EasiTee etc, are supplied with waffle type gaskets that are bonded into position. These gaskets are not replaceable.

Gasket Grade Selection
Helden products offer a variety of gasket grades to suit the widest possible range of applications. In order to ensure maximum gasket life in the intended application, proper selection is essential, See table on page 254.

Many factors need to be considered in deciding on the best grade for a specific service. Temperature is the primary consideration, with type and concentration of the product carried, duration and continuity of service also to be considered. Temperatures higher than the maximum quoted for each grade will lead to accelerated deterioration of the gaskets.

Fluctuating and / or Elevated Temperature
Whilst gasket compounds used in coupling type products may be capable of accommodating fluctuating or elevated temperatures (>60°C) the relaxation rate of the elastomeric seals will increase, thus reducing the life expectancy of the joint. The failure mode is likely to be leakage of the seal between the coupling and pipe outside diameter, which, on the basis that there is sufficient travel on the bolts and the metal components are not touching, can be rectified by tightening the bolts. In the event that the metal components are touching, replacement of the gaskets in the coupling will be required.

Standard Gaskets
Unless otherwise specified, Helden couplings are supplied with Grade E (EPDM) gaskets as standard in all sizes. Grade E is suitable for potable water, drainage and sewage applications but is NOT suitable for use with natural gas, hydrocarbon fuels and lubricants. For gas, oil and fuel applications Grade G (nitrile) should normally be specified.

For QuickFit and Dedicated range only: where special usage conditions apply, eg. special chemical requirements, low flammability (eg. in confined spaces such as tunnels) or higher temperature resistance, a range of non-standard gasket materials is available, normally to special order. For further information on gasket suitability, contact Helden.

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Summary of Gaskets

Grade E - Ethylene Propylene (EPDM)
BS EN 681-1 WRAS approved.
Colour flash: Green
Temperature range: -40°C to +90°C (-40°F to 195°F) - (Note 1)
Suitable for: potable water, sewage, many strong and oxidising chemicals, some food applications.
NOT suitable for: Gas petroleum products, oily compressed air or hydrocarbon fuels and lubricants.

Grade G - Nitrile (NBR)
BS EN 682 Type G.
Colour flash: Silver
Temperature range: -20°C to +100°C (-4°F to 212°F) - (Note 1)
Suitable for: natural gas, petroleum products, low aromatic fuels (generally <30% aromatic content), oily compressed air and sewage applications.
NOT suitable for: potable water.

Specialist Gaskets - Available on request for dedicated and Quickfit Coupling Range only

Grade V - Polychloroprene
Colour flash: Yellow
Temperature range: -30°C to +90°C (-22°F to 195°F) - (Note 1)
Suitable for: Good resistance to ageing, weathering, ozone, oxidation, acids, most inorganic chemicals, vegetable and animal fats. Low flammability.
NOT suitable for: chlorinated hydrocarbons, aromatic solvents.

Grade C - Epichlorhydrin
Colour flash: White with 'ECO' superimposed.
Temperature range: -45°C to +110°C (-50°F to 230°F) - (Note 1)
Suitable for: petroleum products, including low aromatic fuels (<30% aromatic content) and oily compressed air.
NOT suitable for: Aqueous media.

Grade A - Polyacrylic
Colour flash: Purple
Temperature range: -10°C to +130°C (15°F to 265°F) - (Note 1)
Suitable for: Hot transformer and lubricating oils, petroleum products and low aromatic fuels (<30% aromatic content).
NOT suitable for: Water and steam.

Grade O - Fluoroelastomer
Colour flash: Blue
Temperature range: -5°C to +180°C (25°F to 350°F) - (Note 1)
(+100°C (212°F) on water and steam)
Suitable for: Petroleum products, aromatic fuels, hydraulic fluids, oxidising acids and organic liquids.
NOT suitable for: Ketones.

Grade L - Silicone
Colour flash: Red gasket material
Temperature range: -60°C to +200°C (-75°F to 395°F) (dry heat), - (Note 1)
-60°C to +120°C (-75°F to 250°F) (wet heat) - (Note 1)
Suitable for: Dry heat conditions, neutral aqeous and some chemical solutions.
NOT suitable for: Petroleum based products or high mechanical abuse applications.

Note 1: Use on applications with fluctuating and / or elevated temperatures may require regular maintenance to re-tighten the bolts and must be included in any maintenance schedule. Note 2: The above temperatures for each gasket type apply to the maximum rating of the gasket and not the finished product. See relevant technical datasheet for temperature rating of product.

Storage
Stored correctly, gaskets maintain full operational performance and maximum life expectancy. Please observe the following storage conditions.
➤ Store in a cool dark place and, where possible, in black polythene sacks which exclude light, especially ultra-violet.
➤ Store away from sunlight, electrical discharges and sparking electric motors.
➤ Storage temperature should be below 20°C (70°F) and preferably below 15°C (60°F).
➤ Always store gaskets in an unstressed condition - never hang on hooks, nails, handrails, etc., even for a short time.

Safety Note
Rubber gaskets should never be disposed of by burning, as harmful by-products can be produced. Never handle incinerated or fire damaged gaskets without proper protective clothing.

Lubrication
IMPORTANT: It is strongly recommended that unfitted gaskets are lubricated prior to fitting. Failure to apply lubricant can cause difficulty in fitting and may result in gasket creep under load. This may cause bolt torques to drop, thus necessitating re-tightening.

Renewal of Gaskets
If, for any reason, it becomes necessary to renew a gasket in a Helden coupling or flange adaptor (where the product cannot be fully dismantled and removed from the pipe), a strip of the correct section gasket material should be cut square about 6mm longer than the pipe circumference and inserted into the tapered recess of the sleeve. Care should be taken that the cut ends of the gasket butt together before bolting up the end rings - glueing the cut ends together prior to bolt-up may assist in this. Gasket strip can be purchased as strip from Helden.

NOTE: Reference should be made to the grade of gasket material required and coupling type. Alternatively, use a gasket of the same cross-section but a larger diameter and cut this squarely to produce a strip sufficiently long to wrap around the pipe.

Chemical Resistance
The various gasket grades mentioned in this section, in addition to having different operating temperatures, are resistant to different chemicals. When designing a piping system it is important to verify that the correct gasket grade is specified.
A number of factory applied coatings are available to ensure full protection against corrosion:

Rilsan Nylon 11
Rilsan Nylon 11 is a thermoplastic polyamide powder coating produced from a renewable raw material of plant origin (Castor Oil). Applied by dipping in a fluidised bed, it forms a durable protection with excellent resistance to impact, abrasion, weathering, many chemicals and with good thermal stability and flexibility. Rilsan Nylon 11 provides all the corrosion protection you need for the majority of buried and above ground service applications and eliminates the need for any further protection, such as on-site wrapping. For specific chemical resistance information, please check the chemical resistance chart at the end of the section, or ask for specific recommendations.

Rilsan Nylon 11 is both WRAS and DWI approved, is suitable for use with potable water and has a maximum operating temperature rating of 90°C (195°F) for water service.

Site repair of localised surface damage, e.g. through careless handling, is straightforward using the special two-pack repair kit.

Most Helden products are supplied with this protection as standard. Rilsan Nylon 11 Black meets the requirements of WIS 4-52-01 Part 1 and EN 10310 and is our standard Rilsan coating colour, since this provides the optimum resistance to sunlight exposure during storage and provides a responsible coating solution that also helps to protect our environment.

Fusion Bonded Epoxy (FBE)
Many Helden products may be specified with FBE coating, such as 3M’s Scotchkote 206N. FBE coatings are thermosetting compounds and offer excellent corrosion protection and resistance to a wide range of organic and inorganic chemicals. Many may be used in contact with potable water. FBE coatings generally offer good resistance to soil compaction and cathodic disbondment. Continuous maximum temperature capability of 90°C (195°F) on water service. Site repair is possible using special repair packs.

Galvanising
A hot dip process giving a zinc coating in conformity with BS EN ISO 1461. Certain Helden products may be specified with this coating. Other specialist coatings can be supplied according to customer requirements.

Bolt Coatings
Depending on product and market/application, bolts may be coated in the following corrosion-protection systems:

Sheraplex - low friction compound coating based on sheradising and fluoropolymer
Galvanised - a metallic zinc coating
Flurene 177 - a low friction coating, mainly used for AquaGrip and EasiTee products
Stainless steel - bolts may be supplied in either grade 304 or 316 stainless steel
Geomet - anti-galling coating for stainless steel nuts
Gleitmo - dry film coating for stainless steel bolts

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.
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<th>GASKET / GRADE</th>
<th>RILSAN</th>
<th>SCOTCHKOTE</th>
<th>CHEMICAL COMPOSITION</th>
<th>GASKET / GRADE</th>
<th>RILSAN</th>
<th>SCOTCHKOTE</th>
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</thead>
<tbody>
<tr>
<td>Acetic Acid, up to 10%</td>
<td>E, G, V</td>
<td>✓</td>
<td>✓</td>
<td>Hydrogen, Gas</td>
<td>E, G, V</td>
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<td>✓</td>
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<td>Acetone</td>
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<td>✓</td>
<td>Hydrogen Sulphide</td>
<td>E, V</td>
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<td>Acetylene</td>
<td>E, G</td>
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<td>?</td>
<td>Kerosene</td>
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<td>Air, oil free</td>
<td>E, G</td>
<td>✓</td>
<td>✓</td>
<td>Ketones</td>
<td>E</td>
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<td>Air, oily</td>
<td>G, A</td>
<td>✓</td>
<td>✓</td>
<td>Lubricating Oil, Refined</td>
<td>G, O</td>
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<td>Alcohol - butyl, ethyl, methyl</td>
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<td>✓</td>
<td>Methane</td>
<td>G, A, O</td>
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<td>Aluminium Hydroxide</td>
<td>E</td>
<td>✓</td>
<td>?</td>
<td>Methyl Ethyl Ketone</td>
<td>E</td>
<td>✓</td>
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<tr>
<td>Alums, all types</td>
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<td>✓</td>
<td>Mineral Oils</td>
<td>G</td>
<td>✓</td>
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<tr>
<td>Ammonia Gas, cold</td>
<td>E, G, V</td>
<td>✓</td>
<td>✓</td>
<td>Naphtha</td>
<td>O</td>
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<td>Ammonium Bicarbonate</td>
<td>E, G</td>
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<td>✓</td>
<td>Natural Gas</td>
<td>G</td>
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<td>Ammonium Nitrate</td>
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<td>✓</td>
<td>Nitric Acid, to 10%</td>
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<td>Animal Oils/Fats</td>
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<td>✓</td>
<td>Nitrogen</td>
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<td>Aviation Fuel</td>
<td>G, C, O</td>
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<td>✓</td>
<td>Oil, Crude Sour</td>
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<td>Benzene</td>
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<td>Oxygen</td>
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<td>Blast Furnace Gas</td>
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<td>?</td>
<td>Ozone</td>
<td>E</td>
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<tr>
<td>Bleach Solutions</td>
<td>E</td>
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<td>✓</td>
<td>Petroleum Oils</td>
<td>G, O</td>
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<tr>
<td>Brine</td>
<td>E, G, V</td>
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<td>✓</td>
<td>Phenol (Carbolic Acid)</td>
<td>O</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Butane Gas</td>
<td>G, V</td>
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<td>✓</td>
<td>Polyvinyl Acetate</td>
<td>E</td>
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<tr>
<td>Calcium Chloride</td>
<td>E, G, V</td>
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<td>✓</td>
<td>Potassium Chloride</td>
<td>E, G, V</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Calcium Hydroxide</td>
<td>E, G, V</td>
<td>✓</td>
<td>✓</td>
<td>Potassium Hydroxide</td>
<td>E, V</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Calcium Hypochlorite (Bleach)</td>
<td>E</td>
<td>✓</td>
<td>✓</td>
<td>Potassium Permanganate</td>
<td>G</td>
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<tr>
<td>Carbon Tetrachloride</td>
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<td>✓</td>
<td>Propane Gas</td>
<td>T</td>
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<td>Caustic Soda</td>
<td>E, V, G</td>
<td>✓</td>
<td>✓</td>
<td>Sewage</td>
<td>E, G, V</td>
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<tr>
<td>Chlorine (dry)</td>
<td>E</td>
<td>?</td>
<td>?</td>
<td>Sodium Bicarbonate</td>
<td>E, G, V</td>
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<td>✓</td>
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<tr>
<td>Coke Oven Gas</td>
<td>G, O</td>
<td>?</td>
<td>?</td>
<td>Sodium Carbonate</td>
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<td>✓</td>
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<tr>
<td>Copper Sulphate</td>
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<td>✓</td>
<td>Sodium Chloride</td>
<td>E, G, V</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>De-ionised Water</td>
<td>E, G, V</td>
<td>✓</td>
<td>✓</td>
<td>Sodium Hydroxide, to 50%</td>
<td>E, V</td>
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<td>✓</td>
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<tr>
<td>Detergents</td>
<td>E, G, V</td>
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<td>✓</td>
<td>Sodium Hypochlorite, to 20%</td>
<td>E, G</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Developing Fluids</td>
<td>G, V</td>
<td>?</td>
<td>?</td>
<td>Styrene</td>
<td>O</td>
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<td>?</td>
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<tr>
<td>Diesel Oil</td>
<td>G, O</td>
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<td>✓</td>
<td>Sulphuric Acid, to 25%, 66°C (150°F)</td>
<td>E</td>
<td>✓</td>
<td>✓ (10%)</td>
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<tr>
<td>Ethane</td>
<td>G</td>
<td>✓</td>
<td>✓</td>
<td>Toluene</td>
<td>O</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Ethylene</td>
<td>G, O</td>
<td>✓</td>
<td>✓</td>
<td>Turpentine</td>
<td>G</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Ethylene Glycol</td>
<td>E, G, V</td>
<td>✓</td>
<td>✓</td>
<td>Vegetable Oils</td>
<td>E, G</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Fuel Oil</td>
<td>G, O</td>
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<td>✓</td>
<td>Vinyl Acetate</td>
<td>E</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>Gasoline, Leaded &amp; Unleaded (&lt;30% aromatics)</td>
<td>G, O</td>
<td>✓</td>
<td>✓</td>
<td>Vinyl Chloride</td>
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<td>?</td>
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<tr>
<td>Glycerine (Glycerol)</td>
<td>E, G, V</td>
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<td>✓</td>
<td>Water, to 90°C (195°F)</td>
<td>E</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Glycols</td>
<td>E, G, V</td>
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<td>✓</td>
<td>Water, Potable</td>
<td>E</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Hexane</td>
<td>G, O</td>
<td>✓</td>
<td>✓</td>
<td>Water - Waste, Seawater</td>
<td>E, G, V</td>
<td>✓</td>
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<tr>
<td>Hydrochloric Acid, Cold to 50%</td>
<td>E, O</td>
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<td>✓</td>
<td>White Spirit</td>
<td>G</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

For advice on any chemical not listed here, please contact Helden for further details
✓ Good Resistance  ? Contact Helden for further advice
**Applications**

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

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**Wide Tolerance**

**UltraGrip up to DN600**

**Dismantling Joints**

**Dedicated PE Solutions Clamps & Taps**

**AquaFast Large Diameter**

**EasiRange 2 & 4 Bolt**

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- Environmental Management System accredited to ISO 14001.
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**ISSUE 6**

*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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