"The Fusion Group Strategy is to become the customers’ preferred partner as the leading innovator, manufacturer and supplier of products and services for gas and water polyethylene pipeline systems, worldwide..."
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### Global PE Product Offer
For further information about the Fusion Group product range; download the Global PE Product Offer from our website - [www.fusiongroup.com](http://www.fusiongroup.com)

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Fusion Group Limited pioneered polyethylene pipe jointing in the UK and across the globe. Fusion became a member of the AVK Group of Companies in 2017. A partnership that has resulted in a broader product and service offer and strengthened manufacturing base.

Products and Innovations
Fusion designs and manufactures electrofusion fittings, creates polyethylene fabrications, and distributes electrofusion boxes, automatic butt fusion machines and tooling. Fusion also offers an extensive range of spigot fittings. Our products are used in a multitude of applications worldwide, from gas and water infrastructure, to mining, energy and agricultural projects. Our people are valued for their knowledge and experience of polyethylene and their passion to deliver innovation.

World Class Manufacturing
Fusion has extensive manufacturing, test and inspection facilities and have integrated lean principles of continuous improvement within its manufacturing culture.

Fusion is much more than just manufacturing, it has world class facilities which give confidence to an end product which is fully traceable: right down to the core components.

High Standards
With ISO9001, ISO/TS 29001 certification and multi-national approvals, both Fusion and AVK believe in much more than just passing the finished product on to the consumer, but to give them the quality assurance they need on all the products supplied to the utilities industry.

Products meet and often exceed the highest standards of safety and durability, as well as being regularly audited by various institutions such as Bureau Veritas, AMI, KIWA, BSI, DVGW, INSTA-CERT and others.
The global PE product overview brochure for gas and water features PE ball and butterfly valves, electrofusion, spigot and transition fittings, access systems and associated equipment and ancillaries.

For the full range visit our website: www.fusiongroup.com

CUSTOMER PROMISES

Our unique selling propositions enable us to give eight important promises to our customers:

SOLUTIONS, NOT ONLY PRODUCTS

GLOBAL LEADERSHIP AND LOCAL COMMITMENT

QUALITY IN EVERY STEP

PROMPT RESPONSE

LASTING INNOVATIONS

TOTAL SAVINGS

A LONG-TERM PARTNERSHIP

TO BE EFFECTIVE AND EASY
Body and spigots manufactured from high performance PE100. This material can be welded to all PE100 and PE80 pipes.

The valves are equipped with a weather seal avoiding ingress of ground water and dirt into the operating mechanism.

All spigot ends are delivered with double spigot length allowing for a second electrofusion weld if the first one fails.

All Certus Series 85/30 valves are designed with a clearway bore (sizes d20, 32, 63, 90, 110 and 160mm only) ensuring no additional pressure drop and greater flow through the valve for the same pressure. The clearway bore allows for pigging of pipes.

The spigots are butt welded to the body. Visual beads reassuring joint quality for each weld.

The spigot ends are machined on the inside as well as on the outside, guaranteeing a uniform wall thickness, allowing for optimal welding of electrofusion couplers and the smooth inner surface prevents deposits and will minimise flow resistance.

The floating ball principle and special shaped ball seats are designed to ensure sealing at all times and be less affected by dirt or debris.

If the valve is over torqued, the topcap is designed to fail before the valve seals, thus preventing a leak to atmosphere. The safety topcap can be replaced easily under live conditions.

Triple O-ring construction around the stem guaranteeing sealing safety at all times, even during ground movement.

The intentionally over-designed stem is extremely strong and of the anti blow-out type.

The seat retainer design ensures the ball seat is kept in place at all times. This optimal design prevents the ball seat from being dislodged, which guarantees a good functionality throughout the years.

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The **Certus Series 85/30** is an extensive range of PE ball valves up to d180 used for isolation of water and gas service to both domestic and commercial premises.

The Certus PE100 ball valves are manufactured at AVK Syntec, a modern purpose built and well equipped manufacturing facility complying with the international standard ISO/TS 29001:2010 quality management system, uses state of the art machinery and methods to produce high quality products.

Every valve is individually tested and given a unique serial number which can be traced as far back as the raw polyethylene material. All of the manufacturing processes are managed to the exacting standards of the ISO 9001 certification and ISO/TS 29001:2010.

These robust PE ball valves have been extensively and independently type tested against worldwide leading standards such as GIS/V7: Part 2, EN 1555-4. Full documented records of type testing are maintained by AVK and are available on request.

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**CERTUS™ PE BALL VALVES**
SERIES 85/30
PE100
GIS/V7 Part 2
EN 1555-4
ISO4437-4
EN12201-4
D20-180

**CERTUS™ INSTALLATION KIT**
SERIES 85
Fits the d20, 32, 40, 63 and 90mm CERTUS™ PE Ball Valves
Available with or without lid

**CERTUS™ 50MM SQUARE DRIVE TEE KEY**
SERIES 85/00
To suit CERTUS™ PE Ball Valves
Length range 750-1500mm
The Magnus Series 85/50 is an extensive range of PE ball valves up to d180 used for isolation of water and gas service to both domestic and commercial premises.

The range have been extensively and independently type tested against worldwide leading standards such as EN1555-4, ISO4437-4 and EN12201-4 for water applications.

Magnus ball valves have undergone additional testing over and above that required in the specification. This ensures that the valve is suitable for distribution systems and environments anywhere in the world.

The extensive Magnus ball valve range consists of multiple sizes starting at d25 up to d180. Depending on the requested pressure rating the valves are available with SDR11 or SDR 17 spigot ends. The selected materials are tested and approved for GAS and WATER applications.

The valves are rated as MOP10 for GAS applications and PN16 for WATER applications.

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Body and spigots manufactured from high performance PE100-RC. This material is extremely resistant to slow crack propagation and can be welded to all PE100 and PE80 pipes.

The valves are equipped with a weather seal avoiding ingress of ground water and dirt into the operating mechanism.

All spigot ends are delivered with the double spigot length option allowing for a second electrofusion weld if the first one fails.

All Magnus valves are designed with a full bore ensuring a reduced pressure drop and greater flow through the valve for the same pressure. The large bore allows for pigging of pipes.

The spigots are butt welded to the body. Visual beads reassuring joint quality for each weld in complete pipe line.

The stem is of the anti blow-out type and has a double O-ring seal to guarantee safety at all times.

The spigot ends are machined on the inside as well as on the outside, guaranteeing a uniform wall thickness, allowing for optimal welding of electrofusion couplers and the smooth inner surface prevents deposits and will minimise flow resistance.

The stem is of the anti blow-out type and has a double O-ring seal to guarantee safety at all times.

The floating ball principle and special shaped ball seat with large sealing surface are designed to ensure sealing at all times and be less affected by dirt or debris that might be in the pipeline.

The spigots are butt welded to the body. Visual beads reassuring joint quality for each weld in complete pipe line.

The stem is of the anti blow-out type and has a double O-ring seal to guarantee safety at all times.

The spigot ends are machined on the inside as well as on the outside, guaranteeing a uniform wall thickness, allowing for optimal welding of electrofusion couplers and the smooth inner surface prevents deposits and will minimise flow resistance.

All Magnus valves are designed with a full bore ensuring a reduced pressure drop and greater flow through the valve for the same pressure. The large bore allows for pigging of pipes.

The valves are equipped with a weather seal avoiding ingress of ground water and dirt into the operating mechanism.

Due to the internal and external drive the valves can be operated by all standardised spindles.

If the valve is over torqued during opening or closing, the connector is designed to fail before the valve seals, thus preventing a leak to atmosphere. The safety connector can be replaced under live conditions.

The flexible spindle shaft ensures equal compression around the O-rings when loaded by internal pressure. At the same time the groove will adapt to any deformation as a result of upstream pressure on the ball when the valve is in the closed position.

The spigots are butt welded to the body. Visual beads reassuring joint quality for each weld in complete pipe line.

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The spigot ends are machined on the inside as well as on the outside, guaranteeing a uniform wall thickness, allowing for optimal welding of electrofusion couplers and the smooth inner surface prevents deposits and will minimise flow resistance.
TIMESAVER™
PE BUTTERFLY VALVES
FOR GAS AND WATER

The Series 89 Timesaver butterfly valves are designed for quick, direct heat butt fusion or electrofusion into HDPE piping systems up to d315 (DN300). The Series 89 leak-free system enables ease of installation and eliminates the need for flange adaptors, spacers, backing rings, nuts, bolts or gaskets.

360°C incremental positioning lever
standard for d63-180 (DN50 - 150);
gearboxes standard on d200 and above

Stem extensions available
from d300 to 2700mm, in
150mm increments

 Phenolic seat ring with bonded NBR
  on butterfly, dual-containment
  and wafer valves

ASTM A582 316 stainless steel stems and discs on
butterfly, dual-containment and wafer valves

IPS valve sizes range from
d63 - 315 (DN50 through 300)
with larger sizes and DIPS available
upon request

The Timesaver Series 89 valves (excluding the wafer valve) are designed for butt fusion or electrofusion into HDPE piping systems. The Series 89 leak-free system enables ease of installation and eliminates the need for flange adaptors, spacers, backing rings, nuts, bolts or gaskets.

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FUSIBLE BUTTERFLY VALVE

Series 89 fusible butterfly valves are designed for butt-fusion or electrofusion into HDPE piping systems. The Series 89 leak-free system enables ease of installation and eliminates the need for flange adaptors, spacers, backing rings, nuts, bolts or gaskets.

FUSIBLE DUAL CONTAINMENT BUTTERFLY VALVE

Series 890, dual-containment butterfly valves include a second pipe housing. This unit can be fused into new or existing dual-containment (double wall) HDPE pipelines, eliminating the need for valve boxes or vaults.

WAVER BUTTERFLY VALVE

The Series 891 wafer butterfly valve utilises existing flanges, eliminating the need for valve spacers. The wafer valve is preferred in applications where easy access into piping systems is needed.
FUSAMATIC™
ELECTROFUSION FITTINGS
FOR GAS AND WATER

Fusion Group’s Fusamatic division is a world leader in the manufacture of electrofusion fittings.

All Fusion’s electrofusion fittings are individually inspected using a computerised monitoring system that utilises advanced barcode technology. The barcode provides full individual fitting traceability right down to the polymer batch.

Together, electrofusion fittings and polyethylene pipes enable utilities, designers and contractors to create fully welded pipe networks. The production quality, reliability and flexibility of Fusion’s electrofusion fittings provides the certainty and peace of mind needed for polyethylene pipe jointing.

Sizes
Sizes range from d20 to 630+, d710 to 1200 available on request

Pressure Ratings
All fittings are manufactured in virgin PE100 black polyethylene and pressure rated up to 10 bar for gas applications and 16 bar for water applications, unless stated otherwise.

NOTE: For UK gas applications (GIS PL2 Part 4) the maximum operating pressure can be either 5.5 bar or 7 bar dependant on the Class rating. For more detailed information contact us.

SDR Ratings
The appropriate pipe SDR rating for electrofusion fittings is in accordance with the list below:

FITTING SIZES BELOW 63mm - Pipe SDR11
- Coupler
- Elbow
- Reducer
- Equal tee
- Tapping tee
- Branch saddle
- Transition fittings

FITTING SIZES 63mm AND ABOVE - Pipe SDR11 to 17.6
- Coupler
- Elbow
- Reducer
- Equal tee
- Tapping tee*
- Branch saddle
- Hydrant products
- Transition fittings

* Tapping tees for 63mm mains only are not suitable for SDR17 pressurised pipe applications.

Testing can be carried out on SDR rated pipe outside the stated ranges if required. Please contact Fusion’s sales team on +44 (0)1246 268666 for details.

Testing
Fusamatic branded electrofusion fittings are tested, accredited and approved against many international performance standards* including:

- Kitemark GIS/PL2-4
- Kitemark GIS/PL2-6
- AS/NZS 4129, Watermark and ISO Type 5 Licence
- EN 1555-3
- UNI EN 1555-3
- INSTA SBC EN 1555-3
- EN 12201-3
- UNI EN 12201-3
- INSTA SBC EN 12201-3
- EN ISO 15494
- UNI EN ISO 15494
- WRAS
- ACS
- DVGW GW 335-B2-B1
- KIWA BRL-K17105

*Due to size and fitting type regulations across standards, some items listed in this brochure may not be certified under the standards listed above. Please contact Fusion’s sales team on +44 (0)1246 268666 before placing your order.
**Fusamatic Pin**

Invented by Fusion, the Fusamatic pin provides a totally automatic method for ensuring the correct welding parameters are used. Within each Fusamatic pin is a resistor. When the electrofusion box is connected to the fitting, the Fusamatic pin enables it to automatically identify the correct fusion time required to make the joint. All the operator has to do is press go!

**Indicators**

Pressure, created by the expanding molten plastic in the jointing area (inside the fitting) during the electrofusion process, will force out the indicator lugs. This is a visible sign that the necessary jointing pressure has been achieved.

**Moulded-in welding parameters**

Manual welding parameters are moulded into the body of all Fusion's fittings. Information provided includes fitting size, material (PE100), applicable pipe SDRs, weld parameters, and pressure ratings for gas and water applications.

**Permanently marked batch number**

The injection moulded batch number is just one of numerous quality control identifiers on each Fusamatic fitting. It is replicated on the fitting's barcode.

**Barcode / QR Code**

Quality control is central to the success of Fusion's fittings. The unique barcode configuration, including QR code provides full traceability of raw material for each individual fitting and welding information when used in conjunction with electrofusion boxes equipped with a barcode scanner.
GLOBAL PE PRODUCT OVERVIEW

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FUSAMATIC™
ELECTROFUSION FITTINGS
FOR GAS AND WATER
GLOBAL PE PRODUCT OVERVIEW

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AVK INSTALLATION TRACKER IS THE NEW ASSET MANAGEMENT SYSTEM* FROM AVK FOR VALVES, FITTINGS AND ASSOCIATED PRODUCTS. UTILISING A NEW, PURPOSE BUILT, USER FRIENDLY MOBILE APP & WEB PORTAL.

AVK installation tracker uses a QR/barcode platform, designed to give full traceability of your assets providing the data on each installed asset, and gives the opportunity to review the quality of the joints and the installation. This, combined with a unique GPS pin location and a picture of each installation, ensures that you have a complete, accurate and auditable record of every installation. Furthermore, all the data recorded can be exported into standard data formats for integration into the clients existing mapping system.

* Patent pending.

FULL TRACEABILITY IN A FEW SIMPLE STEPS...

The QR code is generated when the asset successfully passes all the relevant test procedures. It assigns a unique serial number for the product which is linked to the full material and test records. When installed the data record becomes complete from raw material to accurate position and application.
GLOBAL PE PRODUCT OVERVIEW

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**INCREASED ASSET TRACEABILITY**

**RECORD INDIVIDUAL ASSET INSTALLATIONS**

**ACCURATE GPS PIN LOCATION**

**VISUALLY AUDIT THE INSTALLATION QUALITY**

**EXPORTABLE DATA INTO STANDARD FORMATS**

**PERIODIC INSTALLATION AUDIT REPORT AVAILABLE**

---

**AVK INSTALLATION TRACKER HAS ALL YOU NEED TO MANAGE FUTURE TRACEABILITY**

Access to the recorded data, collected from the app is via a user friendly web portal providing at a glance accurate records.

- **Scan the QR / barcode using the App**
- **The pin shows asset location**
- **Accurate GPS pin gives location**
- **Asset location on map (colours represent different pressures)**
- **Secure Customer log in**
- **Verify pictorial record**
- **Data record includes: asset type, materials, size, pressure and who installed the asset**
- **Take an installation picture**

---

**THE APP**

**WEB PORTAL**
The Fusion range of spigot fittings is one of the most extensive in the world, with over 3,000 different product lines.

Fusion have a whole range of moulded, machined and butt welded spigots including elbows, bends, tees, stub flanges and many more in a range of different sizes and SDR's needed for polyethylene pipe jointing. Our spigot range allows for complicated yet high performance pipeline systems with a more diverse range of fittings than electrofusion, especially for larger diameter fittings.

Manufacturing
All Fusamatic branded spigots are manufactured from PE100 virgin polyethylene polymer supplied by recognised international market leaders such as Borealis and Ineos. All materials comply with the requirements of relevant standards including EN 12201 for drainage, sewerage and potable water, and EN 1555 for gas. The recommended temperature range for Fusamatic spigots is +5˚C and +40˚C with butt fusion jointing methods, or between -10˚C and +40˚C using Fusamatic electrofusion systems.

International performance standards and regulations
Fusamatic branded spigots have the following international approvals:
- EN1555-3
- EN12201-3
- INSTA SBC EN 12201-3
- INSTA SBC EN 1555-3
- AS/NZS 4129 and ISO Type 5
- WRAS (UK)

*Due to size and fitting type regulations across standards, some items listed in this brochure may not be certified under the standards listed above. Please contact Fusion’s sales team on +44 (0)1246 268666 before placing your order.

Sizes
Note: SDR ratings, brand supplied and stated diameters are subject to availability.

Contact us for specific details on +44 (0)1246 268666 or via the website - www.fusiongroup.com

Backings Rings
Fusion are able to provide a range of backing rings for mechanical connections in galvanised, stainless and polypropylene coated steel.

These can be supplied drilled in accordance to local standards, but typically available in stock for EN 1092 - PN10, EN 1092 - PN16 and ANSI Class 150.

Other ancillary items such as gaskets and bolting sets can be provided upon request.

Applications
- Potable water mains, service pipes and house connections
- Gas transmission, distribution and house connections
- Wastewater systems including sewers
- Water and wastewater treatment plants
- Rain water and grey water collection
- Syphonic roof drainage
- Trenchless pipeline techniques including directional drilling
- Pumped slurry systems in mines and quarries
- Ducting for electrical, telecommunications and fibre optic cabling including subsea
- Open water and marine fish cages
- Industrial applications including process pipework and compressed air networks
- Agricultural irrigation
**90º ELBOW**
PE100
SDR 11 - Water PN16 / Gas 10 Bar
SDR 17 - Water PN10 / Gas 6 Bar
SDR 7.4 - Water PN25
SDR 9 - Water PN20
d20-500

**45º ELBOW**
PE100
SDR 11 - Water PN16 / Gas 10 Bar
SDR 17 - Water PN10 / Gas 6 Bar
SDR 7.4 - Water PN25
SDR 9 - Water PN20
d20-500

**90º MULTI BEND**
PE100
SDR 11 - Water PN16 / Gas 10 Bar
SDR 17 - Water PN10 / Gas 6 Bar
SDR 7.4 - Water PN25
SDR 9 - Water PN20
d32-315

**90º BEND – SHORT SPIGOT**
PE100
SDR 11 - Water PN16 / (Gas 10 Bar-upon request)
SDR 17 - Water PN10 / (Gas 6 Bar-upon request)
SDR 9 - Water PN5
d20-500

**SEAMLESS BEND 90º**
PE100
SDR 11 - Water PN16 / (Gas 10 Bar-upon request)
SDR 17 - Water PN10 / (Gas 6 Bar-upon request)
SDR 9 - Upon request
d32-900

**SEAMLESS BEND 60º**
PE100
SDR 11 - Water PN16 / (Gas 10 Bar-upon request)
SDR 17 - Water PN10 / (Gas 6 Bar-upon request)
SDR 7.4 - Water PN25
SDR 9 - Upon request
d32-900

**SEAMLESS BEND 45º**
PE100
SDR 11 - Water PN16 / (Gas 10 Bar-upon request)
SDR 17 - Water PN10 / (Gas 6 Bar-upon request)
SDR 7.4 - Water PN25
SDR 9 - Upon request
d32-900

**SEAMLESS BEND 11º**
PE100
SDR 11 - Water PN16 / (Gas 10 Bar-upon request)
SDR 17 - Water PN10 / (Gas 6 Bar-upon request)
SDR 7.4 - Water PN25
SDR 9 - Upon request
d32-900

**EQUAL TEE**
PE100
SDR 11 - Water PN16 / Gas 10 Bar
SDR 17 - Water PN10 / Gas 6 Bar
SDR 7.4 - Water PN25
SDR 9 - Water PN20
d20-630

**REDUCING TEE**
PE100
SDR 11 - Water PN16 / Gas 10 Bar
SDR 17 - Water PN10 / Gas 6 Bar
SDR 7.4 - Water PN25
SDR 9 - Water PN20
d50x25-630x250

**REDUCING TEE – SHORT SPIGOT**
PE100
SDR 11 - Water PN16 / (Gas 10 Bar-upon request)
SDR 17 - Water PN10 / (Gas 6 Bar-upon request)
SDR 7.4 - Water PN25
SDR 9 - Water PN20
d20-500

**REDUCING AND EQUAL TEE – SHORT SPIGOT**
PE100
SDR 11 - Water PN16 / (Gas 10 Bar-upon request)
SDR 17 - Water PN10 / (Gas 6 Bar-upon request)
d90x32-180x125

d20-630

d50x25-630x250

d90x32-180x125

d20-630

d50x25-630x250

d90x32-180x125

**REDUCING AND EQUAL TEE (MACHINED)**
PE100
SDR 11 - Water PN16 / (Gas 10 Bar-upon request)
SDR 17 - Water PN10 / (Gas 6 Bar-upon request)
d90x32-180x125

d20-630

d50x25-630x250

d90x32-180x125

**REDUCING AND EQUAL TEE – SHORT SPIGOT (MACHINED)**
PE100
SDR 11 - Water PN16 / (Gas 10 Bar-upon request)
SDR 17 - Water PN10 / (Gas 5 Bar-upon request)
d90x32-180x125

d20-630

d50x25-630x250

d90x32-180x125

**45º ANGLE BRANCH TEE**
PE100
SDR 11 - Water PN16 / Gas 10 Bar
SDR 17 - Water PN10 / Gas 6 Bar
d63x45-250x45
GLOBAL PE PRODUCT OVERVIEW

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SPIGOT FITTINGS
FOR GAS AND WATER

Y PIECE
PE100
SDR 11 - Water PN16
Gas 10 Bar
SDR 17 - Water PN10 / Gas 6 Bar
SDR 9 - Water PN20
d25x20-1000x900

CROSS PIECE
PE100
SDR 11 - Water PN16 / Gas 10 Bar
SDR 17 - Water PN10 / Gas 6 Bar
SDR 7.4 - Water PN25
d63-355

REDUCER
PE100
SDR 11 - Water PN16 / Gas 10 Bar
SDR 17 - Water PN10 / Gas 6 Bar
SDR 7.4 - Water PN25
d25x20-1200x1000

REDUCER – SHORT SPIGOT
PE100
SDR11 - Water PN16 / (Gas 10 Bar-upon request)
SDR 17 - Water PN10 / (Gas 6 Bar-upon request)
SDR 7.4 - Water PN25
d25x20-1200x1000

REDUCER – SHORT SPIGOT
PE100
SDR 11 - Water PN16
SDR 17 - Water PN10
SDR 33 - Water PN5
d160x90-1200x1000

ECCENTRIC REDUCER
PE100
SDR 11 - Water PN16
SDR 17 - Water PN10
SDR 9 - Water PN20
SDR 33 - Water PN5
d250-1200

ECCENTRIC REDUCER – SHORT SPIGOT
PE100
SDR 11 - Water PN16
SDR 17 - Water PN10
SDR 33 - Water PN5
d160x90-1200x1000

STUB FLANGE ADAPTOR
PE100
SDR 11 - Water PN16 / Gas 10 Bar
SDR 17 - Water PN10 / Gas 6 Bar
SDR 7.4 - Water PN25
SDR 9 - Water PN20
d20-1200

STUB FLANGE ADAPTOR
PE100
SDR 11 - Water PN16 / Gas 10 Bar
SDR 17 - Water PN10 / Gas 6 Bar
SDR 7.4 - Water PN25
SDR 9 - Water PN20
d20-1200

STUB FLANGE ADAPTOR
PE100
SDR 11 - Water PN16 / Gas 10 Bar
SDR 17 - Water PN10 / Gas 6 Bar
SDR 7.4 - Water PN25
SDR 9 - Water PN20
d20-1200

STUB FLANGE ADAPTOR
PE100
SDR 11 - Water PN16 / Gas 10 Bar
SDR 17 - Water PN10 / Gas 6 Bar
SDR 7.4 - Water PN25
SDR 9 - Water PN20
d20-1200

FLANGE - POLYPROPYLENE WITH STEEL CORE
EN1092-1 - PN 16 Drilling
EN1092-1 - PN 10 Drilling
ANSI B16.5 - C150 Drilling
d20-630 (Pipe Diameter)

FLANGE – GALVANISED AND STAINLESS STEEL
EN1092 - PN16 Drilling
EN1092 - PN10 Drilling
d20-630 (Pipe Diameter)

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LONG SPIGOT PUDDLE FLANGE - EPDM
PE100
SDR11
SDR17
Water tight 3 bar up to d315
Water tight 1 bar d355 and above d90-630

FULL FACE GASKETS - EPDM / NBR DUO
EDPM - WATER
NBR - GAS
EN1092 - PN16 Drilling
EN1092 - PN10 Drilling
d20-630
Transition fittings are a quick and easy way to connect various types of metallic pipes to PE pipe systems, using either a traditional flange, threaded or a modern SupaGrip™ fitting.

All fittings supplied by Fusion are manufactured according to the appropriate industry standards with the mechanical joint between the metal and PE fully end loading.

There is a varied range of fittings available under the title transition fittings including valves, elbows, and straight transitions from d25 to 250 PE in both PE80 and PE100 materials.

- Electrofusion coupling for quick and easy installation onto existing PE pipe
- Mechanical coupler is designed to be universal fit
- Lifting eye on sizes with a weight exceeding 10 kilos (DN 100-300)
- Assembled male or female transition adaptor with coupler allows metric to threaded imperial connections.
- Patented SupaGrip™ sealing support system with flexible bracket
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1. **Fusion Male transition coupler for GAS and WATER**
   Suitable for electrofusion welding on site but also available separately for manifold applications or pre fabrication. Other materials and threads are available upon request depending on specialist applications. A simple but effective solution for house connections, used by many operators internationally.

2. **Supa Maxi™ range of universal tensile for WATER.**
   The patented SupaGrip™ sealing support system with flexible bracket ensures full support of the gasket and full tensile strength on all pipe types up to PN16. Supa Maxi™ couplings are very easy to mount with the possibility of ±4° angular deflection, the permanent protection caps, the lifting eye and that they are tightened from the sleeve side with no need for re-tightening the bolts.

3. **Donkin Mechanical Coupler for GAS**
   The Series 604 mechanical coupler with PE tail has been designed as a transition fitting to join metallic and PE gas pipes. The mechanical coupler is designed to be universal in most diameters whilst the PE end is available in SDR17 PE80 pipe suitable for the low and medium pressure network.

4. **Meter Module Riser Fittings for GAS**
   The Series 218 Meter Module Riser Fittings are transition fittings designed to connect the underground PE pipework to the Emergency Control Valve at the inlet of a Meter Module. They can also be used on the outlet pipework to transition back to PE from the steel. Small diameters are available with threaded ends and the larger sizes with PN16 flanges for easy connection.
TRANSITION FITTINGS
FOR GAS AND WATER

MALE TRANSITION COUPLER
PE100
Water PN16
Gas 10 Bar
d25x¾” - 63x2”

FEMALE TRANSITION COUPLER
PE100
Water PN16
Gas 10 Bar
d25x¾” - 63x2”

MALE TRANSITION 90° ELBOW
PE100
Water PN16
Gas 10 Bar
d25x¾” - 63x2”

FEMALE TRANSITION 90° ELBOW
PE100
Water PN16
Gas 10 Bar
d25x¾” - 63x2”

MALE TRANSITION 45° ELBOW
PE100
Water PN16
Gas 10 Bar
d32x1” - 63x2”

FEMALE TRANSITION 45° ELBOW
PE100
Water PN16
Gas 10 Bar
d32x1” - 63x2”

TRANSITION ADAPTOR
BRASS (NOT COATED) – MALE
PE100
SDR11
Water PN16
Gas 10 Bar
d20x½” - 125x4”

TRANSITION ADAPTOR
BRASS (NOT COATED) – FEMALE
PE100
SDR11
Water PN16
Gas 10 Bar
d20x½” - 125x4”

TRANSITION ADAPTOR
BRASS DZR – MALE
PE100
SDR11
Water PN16
Gas 10 Bar
d20x½” - 125x4”

TRANSITION ADAPTOR
BRASS DZR – FEMALE
PE100
SDR11
Water PN16
Gas 10 Bar
d20x½” - 125x4”

TRANSITION ADAPTOR
STAINLESS STEEL – MALE
PE100
SDR11
Water PN16
Gas 10 Bar
d20x½” - 63x2”

TRANSITION ADAPTOR
STAINLESS STEEL – FEMALE
PE100
SDR11
Water PN16
Gas 10 Bar
d20x½” - 63x2”

PE – STEEL TRANSITION PIECE (WELDABLE END)
PE100
SDR11 – Water PN16 / Gas 10 Bar
SDR17 – Water PN10 / Gas upon request
d25x¾” - 125x16”

PE – STEEL TRANSITION PIECE (THREADED END)
PE100
SDR11
Water PN16
Gas 10 Bar
d25x¾” - 125x16”

PE – STEEL CURVED TRANSITION PIECE (THREADED END)
PE100
SDR11
Water PN16
Gas 10 Bar
d25x¾” - 63x2”

SUPA MAXI™ TRANSITION COUPLING
SERIES 635
PN16
Ductile Iron
EN 14525
DN60-300

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FLOW LIMITORS
FOR GAS AND WATER

Series 310 Flow Limitor range of emergency shut-off valves provide service line safety, service line theft protection and automatic shut off.

Should gas flow exceed limits the flow limitor will simultaneously trip and shut-off the gas, remaining closed until repairs have been made. Once the fault has been rectified, a small bleed-by flow enables the service to regain pressure, equalising the pressure with the main. The unit will automatically reset for normal operation without intervention.

The range consists of products that fit in the service pipe, tapping tee outlet and also integrated into electrofusion reducers. Sizes range from d25 to 32 with products approved to standards such as GIS/EFV1, MSS SP 115 or BGE/S/V/5.

Features
- Tamper proof and maintenance free.
- Direction of flow indicator permanently moulded into the valve to ensure correct installation.
- Automatic self-acting operation.
- Installation at any angle.
- Bleed-by design provides automatic reset.
- All units are individually tested.

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EQUIPMENT AND ANCILLARIES

Fusion Group supplies a comprehensive range of equipment and ancillary tooling to help you achieve perfect joints across all pipe diameters.

- **GATOR - AUTOMATIC BUTT FUSION**
  Gator 180, 250, 315 and 400

- **GATOR LINERS**
  Liners to maximise the size of the Gator automatic butt fusion machine
  180 – 400mm

- **MANUAL BUTT FUSION**
  Welda 160 - 1200

- **MANUAL BUTT FUSION LINERS**
  Liners to maximise the size of the manual butt fusion machine
  160-1200mm

- **EXTERNAL DEBEADERS**
  To remove external beads after butt fusion
  125-400mm
  355-630mm
  400-900mm

- **INTERNAL DEBEADERS**
  To remove internal beads after butt fusion
  110-400mm
  (450mm with adaptor)

- **CLEARBORE INTERNAL DEBEADER**
  To remove internal beads after butt fusion
  Specifically designed for cable ducting applications
  110-250mm

- **PIPE LIFTER 400**
  Assists with ejection and movement of polyethylene pipes during the welding process
  Up to 400mm

- **PIPE SUPPORT ROLLERS**
  To assist in the butt fusion welding process
  63-315mm
  63-400mm
  315-630mm

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### EQUIPMENT AND ANCILLARIES

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Specifications</th>
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<td>Welds Fusamatic fittings from 20 – 630mm</td>
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<tr>
<td>SBOX LITE 220V – ELECTROFUSION</td>
<td>Welds Fusamatic fittings from 20-125mm</td>
<td></td>
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<tr>
<td>UNIPREP SCRAPER</td>
<td>To prepare pipe ends prior to electrofusion</td>
<td>63-250mm, 90-400mm, 125-500mm, 450-710mm</td>
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<tr>
<td>UNIVERSAL SCRAPER</td>
<td>To prepare pipe ends prior to electrofusion</td>
<td>63-250mm</td>
</tr>
<tr>
<td>MINI CLAMPS</td>
<td>For alignment and restraint of pipe and electrofusion fittings for service connections</td>
<td>20, 25 and 32mm</td>
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<tr>
<td>MINI AND MAXI POSI CLAMPS</td>
<td>For alignment and restraint of pipe and electrofusion fittings</td>
<td>MinPosi (20-40mm), MaxPosi (32-63mm)</td>
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<tr>
<td>VERSACLAMP</td>
<td>For alignment and restraint of pipe and electrofusion fittings</td>
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<tr>
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<td>For alignment and restraint of pipe and electrofusion fittings</td>
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<td>STRAP CLAMP 200 STRAIGHT</td>
<td>For alignment and restraint of pipe and electrofusion fittings</td>
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<td>STRAP CLAMP 500 STRAIGHT</td>
<td>For alignment and restraint of pipe and electrofusion fittings</td>
<td>160–500mm</td>
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<tr>
<td>STRAP CLAMP TITAN 200</td>
<td>For alignment and restraint of pipe and electrofusion fittings</td>
<td>40–200mm</td>
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<td>STRAP CLAMP TITAN 500</td>
<td>For alignment and restraint of pipe and electrofusion fittings</td>
<td>160–500mm</td>
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<tr>
<td>T-ADAPTOR</td>
<td>Add on tool to enable strap clamps to be used for clamping tees</td>
<td>40–200mm, 160–500mm</td>
</tr>
<tr>
<td>STRAP CLAMP TITAN 500</td>
<td>For alignment and restraint of pipe and electrofusion fittings</td>
<td>160–500mm</td>
</tr>
</tbody>
</table>

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### Global PE Product Overview

**HYDRAULIC PIPE CLAMPS**

Hydraulically powered re-rounding and positioning clamps for supporting and restraining large diameter pipes and couplers

- 400–900mm

**REROUNDING/POST SQUEEZE OFF CLAMPS**

For re-rounding pipe after squeeze off has been applied

- 50–250mm

**REROUNDING TOOLS**

Re-rounding tools for use on polyethylene coiled or oval pipe prior to electrofusion

- 20–32mm
- 40–90mm
- 110–250mm

**MINI SQUEEZE TOOL**

For use on SDR11 service pipes

- 16–32mm

**SERVICE SQUEEZE TOOL**

Squeeze tool for flowstopping on pipe

- 16–63mm

**MECHANICAL SQUEEZE TOOL**

Squeeze tool for flowstopping on pipe

- 63–125mm

**200 HYDRAULIC MAINS SQUEEZE TOOL**

Hydraulic squeeze tool for flowstopping on pipe

- 63–200mm

**250 MAINS SQUEEZE TOOL**

Mains squeeze tool for flowstopping on pipe

- 180–250mm

**400 MAINS SQUEEZE TOOL**

Mains squeeze tool for flowstopping on pipe

- 250–400mm

**GENERATORS**

Manufactured to power electrofusion control boxes and automatic butt fusion machines

- 5KVA / 7.5KVA
- Petrol or Diesel

**SECATEURS**

Secateurs for cutting polyethylene pipe

- 16–42mm
- 20–63mm

**FASTCUT DRILL**

For use with large diameter electrofusion branch saddles

- 250–500mm

**JUMBO PIPE CUTTER**

For cutting polyethylene pipe

- 160–355mm
- 355–630mm
- 355–800mm

**HAND SCRAPER**

Used for scraping pipe areas prior to electrofusion

- 1.5“
- 2.5“

**GUILLOTINE CUTTER**

For cutting polyethylene pipe

- 63–125mm
- 63–225mm
- 63–315mm

**CUTTER KEY**

Drive key tools for service/tapping tee integral cutters with 12mm hexagonal drives

**TEST CAPS**

A range of reusable caps for the pressure testing of service/tapping tee fittings

- 32 and 63mm

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Fusion offers a very comprehensive range of surface boxes in various material combinations: synthetic body with synthetic lids, synthetic body with cast iron lids, synthetic body with ductile iron surface plate/lid as well as cast iron body and lid.

**Boundary Boxes**
The AVK PENTOBOX range of Water Meter Boundary Boxes, comprises of a class leading, composite Grade B surface box able to withstand an 8 tonne loading and allowing, if required, Automated Meter Reading Technology (AMR). With patented push-fit connections in d20, 25 and 32mm, ½" HG and also ¾" BSP Female threaded.

**Surface boxes**
Surface boxes are available in a floating design and a fixed/ floating reversible design. The reversible surface box allows for deflection and internal fixation of telescopic extension spindles from both ends.

The fixed surface boxes of grey cast iron are height adjustable using ductile iron distance rings of a height of 10-50 mm.

**Fixed height surface boxes**
Our fixed height synthetic surface boxes are DIN DVGW approved and designed to withstand heavy traffic loads. Therefore, they are often used in medium and heavy duty application areas.

Our Futura range is a lightweight and price competitive version and is often used in light to medium duty application areas.

**Height adjustable surface boxes**
Fusion offers a wide range of DIN DVGW approved height adjustable surface boxes specifically designed for tarmac installation. The use of height adjustable surface boxes enables easy and precise installation thanks to flexible positioning of the top part. The top part ensures a safe and lasting alignment with the road surface preventing costly and time consuming corrections after installation and when roads are renovated.

As with all valves, best practice techniques should be used during installation and operation. To aid this process a series of recommended accessories is available, this includes a reliable installation and access system and retrofit extension spindles.

The valve access system consists of a support base, down pipe, surface box adaptor and surface box. The support base creates stability for the valve and avoids twisting of the pipe, but it also absorbs high loads and centres the down pipe installed on top of the valve ensuring valve operation at all times. The adaptor and surface box complete the valve access system. Besides giving access to the lower buried valve the surface box can bear media identification for easy recognition and, if required, customer specific logos.

**Fixed Height Surface Box for Service Connection Valves**
SERIES 80/32-200
Square top
Cast iron lid
PA+ body

**Height Adjustable Surface Box for Service Connection Valves according to DIN 4057**
SERIES 80/32-100
Cast iron lid
PA+ body
Fusion’s wide range of surface boxes granting access to lower buried valves at all times.

Ideal transition between surface box and down pipe by use of a surface box adaptor.

Flexible height adjustment with cut to length down pipe.

CERTUS™ or MAGNUS™ PE ball valve for a quick and easy connection using Electrofusion couplings to the existing pipeline.

Robust support base avoids twisting of the pipe and offers stability.

AVK PENTOBOX WATER METER BOUNDARY BOX GRADE B VERSION, SEALED SERIES 8054/5211 BS 5834-1:2017 PN16 Polypropylene frame d20-32, ¾” BSP, ½” HG

AVK PENTOBOX WATER METER BOUNDARY BOX GRADE B VERSION, SEALED SERIES 8054/2211 BS 5834-1:2017 PN16 Polypropylene frame d20-32, ¾” BSP, ½” HG

AVK PENTOBOX WATER METER BOUNDARY BOX, CONTAMINATED GROUND GRADE B VERSION, SEALED SERIES 8054/52-002 BS 5834-1:2017 PN16 Polypropylene frame ¾” BSP

AVK PENTOBOX WATER METER BOUNDARY BOX GRADE C VERSION, SEALED SERIES 8054/6211 BS 5834-1:2017 PN16 Polypropylene frame d25-32, ¾” BSP, ½” HG

AVK PENTOBOX WATER METER BOUNDARY BOX, DOUBLE OUTLET GRADE B VERSION, SEALED SERIES 8054/53 BS 5834-1:2017 PN16 Polypropylene frame d25-32, ¾” BSP, ½” HG

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