



**FUSAMATIC™**  
**LARGE DIAMETER ELECTROFUSION**  
**ELBOWS AND EQUAL TEES**  
**FOR GAS AND WATER**



# MISSION

“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...”

## 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**

# ABOUT



**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 customer, 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.

For further information on the Fusion Group product range download the Global PE Product Offer brochure from our website - [www.fusiongroup.com](http://www.fusiongroup.com)  
The Global PE Product Offer brochure features our extensive product range; PE ball and butterfly valves, electrofusion, spigot and transition fittings, access systems and associated equipment and ancillaries.



# FUSAMATIC™ LARGE DIAMETER ELECTROFUSION ELBOWS AND EQUAL TEES



## Features and Benefits

- Now available with 4mm or 4.7mm Fusamatic automatic welding pins supplied as standard - providing a totally automatic method for ensuring the correct welding parameters are used.
- Single coil design - one fusion cycle per fitting for time efficient installation.
- Suitable for jointing in ambient temperatures between -10°C and +40°C
- No temperature compensation required - single fusion time across installation temperature range.

Manufactured in our world-class facilities, a new range of large diameter electrofusion elbows and equal tees in sizes 200, 225 and 250mm.

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.

### Sizes

Fusamatic large diameter electrofusion elbows and equal tees are available in the following size range: 200mm, 225mm and 250mm. Elbows are available in 90° or 45° degrees.

An extension to our existing product range, Fusamatic electrofusion equal tees and 90° elbows are now available in sizes d20-250mm. 45° elbows are now available in sizes d32-250mm.

### Pressure / SDR ratings

Fusamatic large diameter electrofusion elbows and equal tees are manufactured in PE100 black polyethylene and pressure rated up to 16 bar for water applications and 10 bar for gas applications.

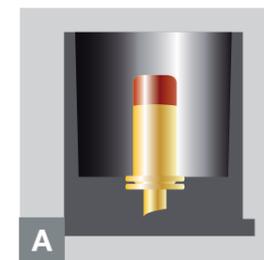
The appropriate pipe SDR range for Fusamatic large diameter electrofusion elbows and equal tees is as per the list below:

- 200mm - 225mm: SDR11 - 17.6
- 250mm: SDR11 - 21

### Specifications

All Fusamatic large diameter electrofusion elbows and equal tees are tested and have 3rd party approval against the following standards:

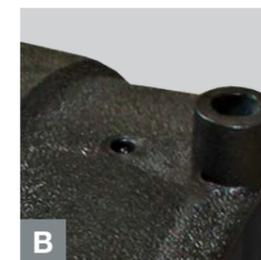
- EN12201-3 / UNI EN12201-3
- EN1555-3 / UNI EN1555-3
- ISO 4427-3
- ISO 4437-3
- MS1058 Part 3
- AS/NZS 4129 and ISO Type 5
- AS/NZS 4129 and WaterMark Level 1



A

### Fusamatic Pin

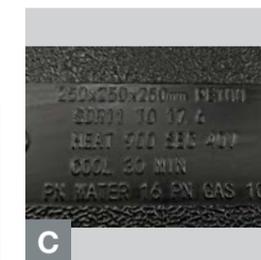
Invented by Fusion, the Fusamatic pin provides a totally automatic method for ensuring the correct welding parameters are used. Within each Fusamatic pin is a resistor. When the electrofusion box is connected to the fitting, the Fusamatic pin enables it to automatically identify the correct fusion time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



B

### 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.



C

### 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.



D

### 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.



E

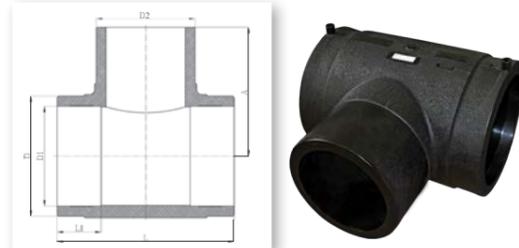
### Barcode / QR Code

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.



# Large Diameter Equal Tee

- Specification**
- PE100
  - Water PN16
  - Gas 10 Bar
  - 200 / 225mm: Pipe SDR range SDR11 - 17.6
  - 250mm: Pipe SDR range SDR11 - 21
  - d200 - 250
- 4mm and 4.7mm manual fittings available upon request



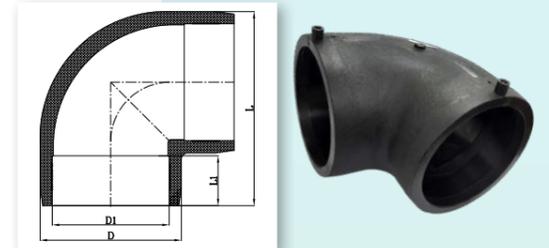
4mm Auto Pin Fitting Code	4.7mm Auto Pin Fitting Code	Fitting Size	L	L1	D	D1	D2	A	Fusion Time	Cooling Time	Weight	Box Quantity	Box Size (W X L X D)	Delivery Code 4mm Auto	Delivery Code 4.7mm Auto
ETBKHFA200	ETBKHA200	200	358	90	242	200	200	260	440	20	7.3	1	400 x 280 x 400	A	C
ETBKHFA225	ETBKHA225	225	406	105	271	225	225	285	600	30	9.4	1	420 x 310 x 440	A	C
ETBKHFA250	ETBKHA250	250	448	105	303	250	250	314	900	30	14.1	1	470 x 340 x 490	A	C

Fusamatic electrofusion equal tees are now available in sizes ranging from d20 - 250mm.

Visit our website [www.fusiongroup.com](http://www.fusiongroup.com) to view the full range.

# Large Diameter 90° Elbow

- Specification**
- PE100
  - Water PN16
  - Gas 10 Bar
  - 200 / 225mm: Pipe SDR range SDR11 - 17.6
  - 250mm: Pipe SDR range SDR11 - 21
  - d200 - 250



4mm Auto Pin Fitting Code	4.7mm Auto Pin Fitting Code	Fitting Size	L	L1	D	D1	Fusion Time	Cooling Time	Weight	Box Quantity	Box Size (W X L X D)	Delivery Code 4mm Auto	Delivery Code 4.7mm Auto
EBKHFA200X90	EBKHA200X90	200	335	90	243	200	440	20	5.2	2	370 x 560 x 340	A	C
EBKHFA225X90	EBKHA225X90	225	376	100	274	225	600	30	7.4	2	400 x 600 x 390	A	C
EBKHFA250X90	EBKHA250X90	250	409	115	304	250	900	30	9.7	1	440 x 340 x 460	A	C

Fusamatic electrofusion 90° elbows are now available in sizes ranging from d20 - 250mm.

Visit our website [www.fusiongroup.com](http://www.fusiongroup.com) to view the full range.

## Delivery Codes

Products are categorised into 3 delivery codes which are based on our delivery commitments, these are as follows:

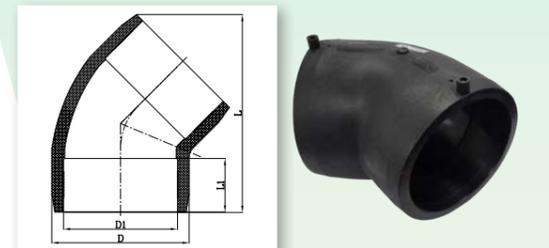
- A = Available ex-stock, or up to 6 weeks**
- B = Up to 6 weeks**
- C = Upon enquiry**

The above lead times are provided as an indication only and are manufacturing replenishment times in the event of a stock-out.

If your request is of an urgent nature, please email [sales@fusiongroup.com](mailto:sales@fusiongroup.com) or telephone +44(0)1246 268666 for further details regarding delivery commitments.

# Large Diameter 45° Elbow

- Specification**
- PE100
  - Water PN16
  - Gas 10 Bar
  - 200 / 225mm: Pipe SDR range SDR11 - 17.6
  - 250mm: Pipe SDR range SDR11 - 21
  - d200 - 250



4mm Auto Pin Fitting Code	4.7mm Auto Pin Fitting Code	Fitting Size	L	L1	D	D1	Fusion Time	Cooling Time	Weight	Box Quantity	Box Size (W X L X D)	Delivery Code 4mm Auto	Delivery Code 4.7mm Auto
EBKHFA200X45	EBKHA200X45	200	350	90	243	200	440	20	4.1	2	370 x 560 x 340	A	C
EBKHFA225X45	EBKHA225X45	225	377	100	274	225	600	30	5.6	2	400 x 600 x 390	A	C
EBKHFA250X45	EBKHA250X45	250	421	115	304	250	900	30	7.1	1	440 x 340 x 460	A	C

Fusamatic electrofusion 45° elbows are now available in sizes ranging from d32 - 250mm.

Visit our website [www.fusiongroup.com](http://www.fusiongroup.com) to view the full range.

# TYPICAL APPLICATION SCHEMATIC

## EXAMPLE OF PRODUCT RANGE

Fusion Group are here to support you with a full package of products for your gas and water infrastructure project. For the full range visit our website [www.fusiongroup.com](http://www.fusiongroup.com)

**New**  
Extended range  
of electrofusion  
elbows and tees



**A NEW range of large diameter electrofusion elbows and equal tees**  
Sizes 200, 225 and 250mm | Elbows available in 90° and 45°



**Electrofusion coupler**  
Sizes 20 - 630mm



**Large diameter branch saddle (LDBS)**  
Simple, safe and cost-effective live connections on water and gas networks  
Sizes 250 - 630mm | 150, 200 and 250 NP16 outlet size



**Stub flange adaptor**  
Sizes range from 20 - 1200mm



**Multiseal tapping tee**  
Delivering security, safety and speed at the point of installation  
Stackload or underclamp  
Sizes range from 40 - 355mm  
20, 25, 32, 40, 50 and 63mm outlets



**Series 158 under pressure drilling valve - GAS**  
Clear bore construction valve for use in under pressure gas distribution systems.



**Series 555 cast iron gate valve - GAS**  
Flanged gate valve for the isolation of natural and manufactured gas.



**Series 21 resilient seated gate valve - WATER**  
Resilient seat, wedge gate valve for isolation purposes in water and sewage networks.

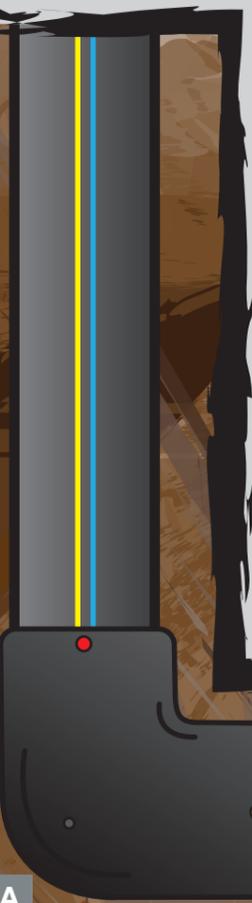
**Product G:** Compatible with Fusion's large diameter branch saddle (LDBS) range to facilitate underpressure drilling installations.



**SBOX Max - Electrofusion**  
The SBOX Max electrofusion welding machine gives you functionality, reliability and is capable of welding electrofusion fittings for gas, water and other pressure pipe applications from 20 - 630mm



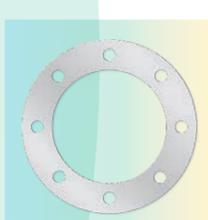
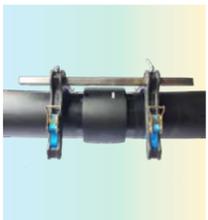
**Gator - Automatic Butt Fusion**  
The Gator range of automatic butt fusion machines have been designed and developed to be used on gas and water pressure polyethylene pipes for distribution networks. Various options available to weld pipe in the size range 63 - 400mm

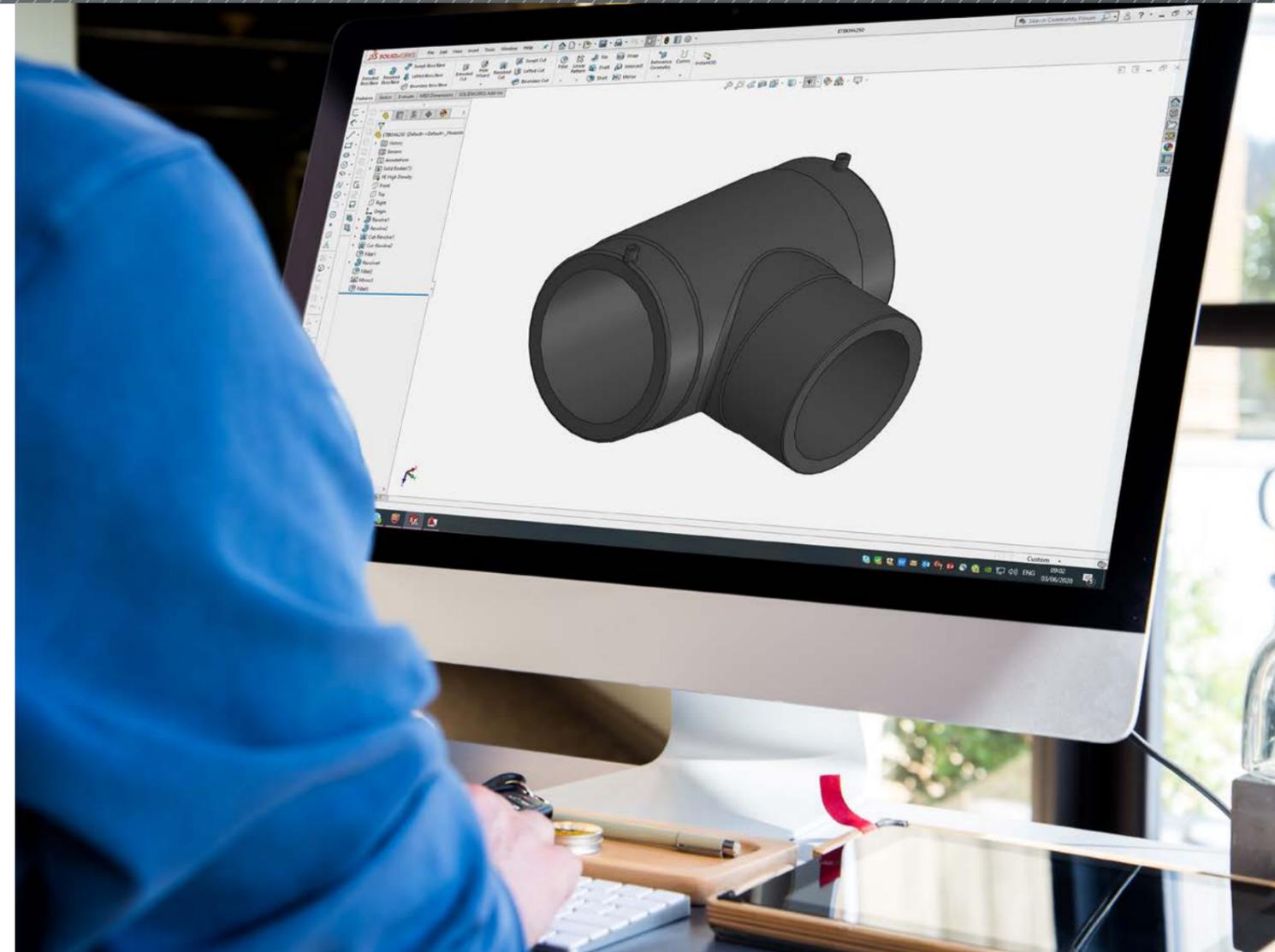


# ASSOCIATED PRODUCTS PRODUCT SELECTOR GUIDE

# BIM AND CAD MODELS 2D AND 3D DRAWING DATA

Fusion Group are a leading innovator, manufacturer and supplier of products and services for gas and water polyethylene pipeline systems. For the full range visit our website [www.fusiongroup.com](http://www.fusiongroup.com)

	<b>90° ELBOW</b> PE100 Water PN16 Gas 10 Bar d20-250		<b>45° ELBOW</b> PE100 Water PN16 Gas 10 Bar d32-250		<b>EQUAL TEE</b> PE100 Water PN16 Gas 10 Bar d20-250
	<b>REDUCER</b> PE100 SDR 11 - Water PN16 / Gas 10 Bar SDR 17 - Water PN10 / Gas 6 Bar SDR 7.4 - Water PN25 SDR 9 - Water PN20 d25x20-1000x900		<b>STUB FLANGE ADAPTOR</b> 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		<b>STUB FLANGE ADAPTOR - CHAMFERED (SUITABLE FOR BUTTERFLY VALVES)</b> PE100 SDR 11 - Water PN16 / Gas 10 Bar SDR 17 - Water PN10 / Gas 6 Bar d160-1000
	<b>FLANGE - POLYPROPYLENE WITH STEEL CORE</b> EN1092-1 - PN 16 Drilling EN1092-1 - PN 10 Drilling ANSI B16.5 - C150 Drilling d20-630 (Pipe Diameter)		<b>FLANGE - GALVANISED AND STAINLESS STEEL</b> EN1092 - PN16 Drilling EN1092 - PN10 Drilling d20-630 (Pipe Diameter)		<b>FULL FACE GASKETS - EPDM / NBR DUO</b> EDPM - WATER NBR - GAS EN1092 - PN16 Drilling EN1092 - PN10 Drilling d20-630
	<b>SBOX MAX - ELECTROFUSION</b> Welds Fusumatic fittings from d20 - 630mm		<b>ALIGNMENT CLAMPS</b> For alignment and restraint of pipe and electrofusion fittings  250mm		<b>STRAP CLAMP 500 STRAIGHT</b> For alignment and restraint of pipe and electrofusion fittings  160-500mm
	<b>STRAP CLAMP TITAN 500</b> For alignment and restraint of pipe and electrofusion fittings  160-500mm		<b>UNIPREP SCRAPER</b> To prepare pipe ends prior to electrofusion  63-250mm 90-400mm 125-500mm 450-710mm		<b>UNIVERSAL SCRAPER</b> To prepare pipe ends prior to electrofusion  63-250mm
	<b>PIPE SUPPORT ROLLERS</b> To assist in the butt fusion welding process  63-315mm 63-400mm 315-630mm		<b>GUILLOTINE CUTTER</b> For cutting polyethylene pipe  63-125mm 63-225mm 63-315mm	<b>Global PE Product Offer</b> For further information on the Fusion Group product range; download the Global PE Product Offer from our website - <a href="http://www.fusiongroup.com">www.fusiongroup.com</a>	



## Direct access to Fusion's BIM and CAD models at [www.fusiongroup.com](http://www.fusiongroup.com)

Visit the Fusion Group website - [www.fusiongroup.com](http://www.fusiongroup.com) for direct access to Fusion's BIM and CAD models, in .dxf, .igs and .step file formats.

The models provide customers with the ability to transfer 2D and 3D drawing data between a variety of CAD and BIM infrastructure design systems.



**Fusion Group Limited**

Chesterfield  
Derbyshire  
S41 9PZ  
England, UK

T: +44 (0) 1246 268666  
E: [sales@fusiongroup.com](mailto:sales@fusiongroup.com)  
[www.fusiongroup.com](http://www.fusiongroup.com)

