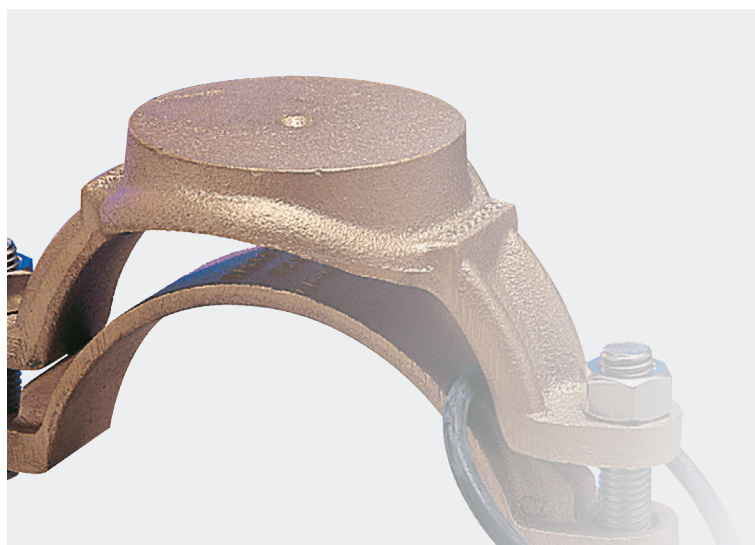


**TALBOT
GUNMETAL STRAPS AND FERRULES**



Gunmetal service connections

Straps and Ferrules for Mains to Service Pipe Connections

The Talbot range of Self Tapping Ferrule Straps, Swivel Ferrules and Flat Boss Straps can be used to connect PE pipes to almost any type and size of mains pipe material from 32mm in diameter.

- Straps are available up to 315mm in diameter as standard with larger sizes available on request.
- Ferrules can be inserted directly into suitable mains pipe of any size as long as both wall section and wall strength allow.



General application

Talbot straps and ferrules can be used to take service pipe connections from mains of 1" (32mm) to 12" (315mm) using ferrule outlets of 20mm (1/2") to 63mm (2") for PE pipe. Talbot straps are simply clamped onto the pipe needing no specialised equipment to fit so can be installed easily in wet and congested trench conditions, offering many benefits over welded systems.

All fittings are WRAS listed with the exception of recent additions which may have been submitted but not yet tested.

Range

- Gunmetal Self Tapping Ferrule Straps
- Swivel Ferrules
- Flat Boss Straps

Safety

As with all industrial products it is important to take adequate safety precautions such as the use of adequate protective clothing like gloves, overalls, eye protection and safety footwear during installation, use and maintenance of these products.

Benefits

- Available in a range of self tapping ferrule straps and flat boss straps to suit mains pipe from 32mm.
- Ferrules are available 1/2 to 2" 20mm to 63mm outlets
- Design and selection of materials gives high strength for reliable installation and light weight for easy handling
- Quick and efficient installation onto all common pipe materials in virtually any trench condition, wet or dry
- Prolonged life of fitting due to the high quality corrosion resistant materials used

Technical data

Pressures: Working: 16 bar Test: 24 bar

The pressures stated above apply with water temperatures up to 20°C

Temperature: Up to 40°C

For further information relating to operating temperatures please contact our customer service department at the telephone number shown on the back page.

Sizes:

Mains pipe: From 32mm

Stems: 1/2" - 2"

Outlets: 20mm (1/2") - 63mm (2")

Materials:

Metals: Gunmetal BS EN 1982 Grade CC491K (BS1400 LG2)

Aluminium bronze

BS EN 12164 Grade CW307G

Plastics: Acetal or Polypropylene

Fasteners: Stainless steel (A4 or A2)

Seals: Nitrile or EPDM

Technical help

For further technical data, product specifications and general information please contact us.

Gunmetal service connections

Straps and Ferrules for Mains to Service Pipe Connections

Talbot Gunmetal Self Tapping Ferrule Straps

Talbot Gunmetal Self Tapping Ferrule Straps for PE, PVC and AC pipe incorporate an integral ferrule with a self contained cutter, eliminating the need for drilling machines. Straps are made from gunmetal with an aluminium bronze cutter making the product durable and corrosion resistant. The strap uses a specially designed cutter, which tests show greatly reduces the risk of bursting a PVC main or creating a swarf blockage whilst cutting.

No Special Equipment or Controlled Conditions Needed

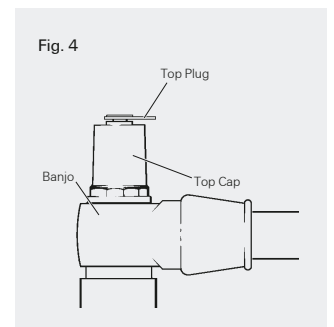
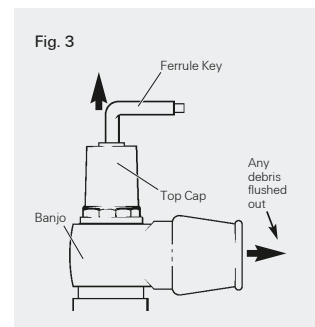
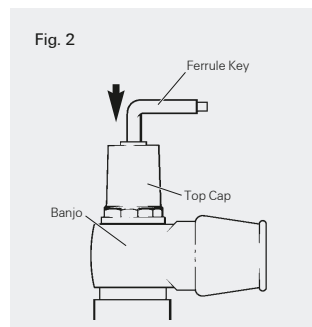
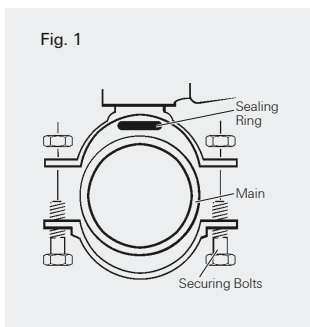
The fitting has an integral cutter and requires only a spanner and standard ferrule key to install and carry out the drilling operation, dry or underpressure and in wet and congested trench conditions making it a viable alternative to electrofusion

Integral Cutter

The integral cutter is designed to greatly reduce the risk of fracturing PVC pipe during the drilling procedure. Its design also reduces the chance of swarf blockage whilst tapping by retaining the polyethylene/PVC slug. The cutter also provides a shut off facility once the tapping has been made.



Gunmetal Straps Instructions



The design of Talbot Straps make them very simple to use. For easy, trouble free installation the steps detailed below should be followed.

After selecting the correctly sized strap for the main, check that the cutter is retracted up into the stem and does not protrude through the bottom of the strap.

1. For the gunmetal strap, fit the top half of the strap on the main ensuring that the sealing ring is correctly positioned between the main and the underside of the strap boss (see Fig. 1). Locate the bottom half of the strap below the top half and, using the two nuts and bolts provided, bolt the two halves together and tighten evenly. Make sure that the strap sits squarely on the main and then tighten each nut a further two and a half turns, a torque setting of approximately 10 lb/ft (13.6 Nm)
2. Remove the plastic/gunmetal top plug and using the ferrule key, screw down the self tapping cutter/plug until it 'bottoms' on the seat (see Fig. 2). Do not over-tighten, a torque of no more than 10 Nm, 7.4 lb/ft is needed.
3. Wind the cutter/plug back to allow a small amount of water to go to waste to flush out any debris (see Fig.3).

4. Wind the cutter/plug back down onto its seat to seal off the connection (do not overtighten).
5. Connect the service pipe to the banjo .
6. Ensure the top cap is tightened down on to the banjo (hand tight plus a 1/2 turn, 15 Nm - 11 lb/ft) then wind the cutter/plug back to seal in the top cap (do not overtighten, a torque of no more than 6 Nm, 4.4 lb/ft is needed).
7. Replace the plastic/gunmetal top plug.

Gunmetal service connections

Straps and Ferrules for Mains to Service Pipe Connections

Talbot Swivel Ferrules

The Talbot Swivel Ferrule provides a quick, permanent, leak free service connection, consisting of a stem with an inner plug for valve isolation and a 360° swivel outlet at 90° to the stem. The ferrule outlet provides a direct connection to the service line from 1/2" to 2" nominal bore diameter (20mm to 63mm PE pipe OD) via an integral joint in the ferrule banjo so no adaptor is needed. The ferrule will provide service connections dry or underpressure directly into cast iron, ductile iron and steel mains. Asbestos cement and PVC mains can also be tapped via a Talbot Flat Boss Strap. (See page 6)

Quick and simple to install

Quick, permanent, leak free connection provided by a tried and tested design

Extensive range

A range has been developed which enables the user to make connections to almost any type of mains and service pipe, either underpressure or dry

Robust and long lasting

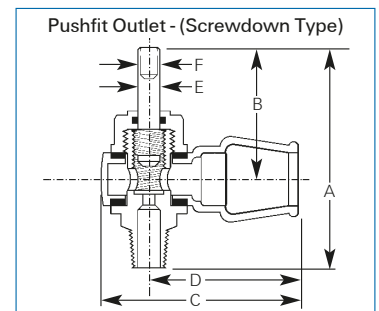
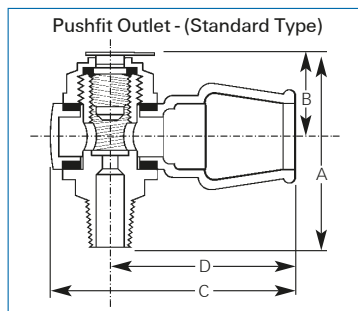
Talbot ferrules can provide years of service in even the most aggressive soil and water conditions.

Reliable and leak free

Specifically designed to operate at pressures up to 16 bar (240 psi) subject to the ratings of pipe and strap if used

Notes

Ferrules should not be inserted directly into PVC or AC mains. The walls of these pipes are not strong enough to hold the stem. The manufacturers of ductile iron and steel mains pipe should be consulted for their specific recommendations regarding tapping directly into these pipe materials. Typically it is advised that the nominal diameter of the tapping should not exceed 1/4 of the nominal diameter of the main for direct ferrule insertion without a strap or 1/3 of the nominal diameter when a strap is used. For tapings larger than this a Tapping Tee should be used. (for further information on the UPE range of Tapping Tees please refer to the separate data sheet: Underpressure Tees (reference number TUPE007)



Standard Pattern Swivel Ferrule Dimensions

DN (stem/banjo)	1/2" x 20mm (1/2")		3/4" x 25mm (3/4")		1" x 32mm (1")		1 1/4" x 40mm (1 1/4")		1 1/2" x 50mm (1 1/2")		2" x 63mm (2")		1 1/2" x 2" 63mm (2")	
	Plastic	GM	Plastic	GM	Plastic	GM	Plastic	GM	Plastic	GM	Plastic	GM	Plastic	GM
Banjo Type	Plastic	GM	Plastic	GM	Plastic	GM	Plastic	GM	Plastic	GM	Plastic	GM	Plastic	GM
A (mm) Open	108	108	105	105	116	116	150	150	151	151	168	168	151	151
A (mm) Close	92	92	90	90	97	97	123	123	130	130	137	137	130	130
B (mm) Open	58	58	58	58	65	65	92	92	93	93	100	100	93	93
B (mm) Close	42	42	42	42	46	46	65	65	72	72	70	70	72	72
C (mm)	97	76	102	95	115	118	144	144	173	166	201	192	201	192
D (mm)	73	54	78	74	88	90	110	110	131	131	152	152	152	152

Screwdown Pattern Swivel Ferrule Dimensions

DN (stem/banjo)	1/2" x 20mm (1/2")		3/4" x 25mm (3/4")		1" x 32mm (1")		1 1/4" x 40mm (1 1/4")		1 1/2" x 50mm (1 1/2")		2" x 63mm (2")		1 1/2" x 2" 63mm (2")	
	Plastic	GM	Plastic	GM	Plastic	GM	Plastic	GM	Plastic	GM	Plastic	GM	Plastic	GM
Banjo Type	Plastic	GM	Plastic	GM	Plastic	GM	Plastic	GM	Plastic	GM	Plastic	GM	Plastic	GM
A (mm) Open	108	108	105	105	116	116	150	150	151	151	168	168	151	151
A (mm) Close	92	92	90	90	97	97	123	123	130	130	137	137	130	130
B (mm) Open	58	58	58	58	65	65	92	92	93	93	100	100	93	93
B (mm) Close	42	42	42	42	46	46	65	65	72	72	70	70	72	72
C (mm)	97	76	83	83	107	107	144	144	173	166	201	192	201	192
D (mm)	54	54	61	61	79	79	110	110	131	131	152	152	152	152
E (mm)	11	11	11	11	16	16	20	20	22	22	25	25	25	25
F (mm)	10	10	10	10	10	10	13	13	17	17	19	19	19	19

Talbot service connections

Straps and Ferrules for Mains to Service Pipe Connections

Standard Pattern Swivel Ferrule

General

The ferrules shall be designed with a Pushfit outlet for PE pipe. All ferrules shall be designed as a main stem with a 360° swivel outlet at 90° with control of water flow via a threaded inner plug. The inlet shall be a male taper thread to BS EN10226-1 (BS21), ISO 7/1. The ferrule shall be designed for use underground and to handle potable water at temperatures of up to 40°C. The ferrule shall work at pressures up to 16 bar (240 psi) without leakage.

Description of Design

The design of the ferrule will permit service pipe installations via conventional drilling and tapping machines, underpressure or dry, with or without service saddles. The design of the ferrule shall further permit use with conventional drilling machines mounted onto the ferrule/strap assembly to drill the main via the ferrule stem, dry or underpressure.

Construction

The ferrule stem, banjo, inner plug and top cap shall be manufactured of gunmetal to BS EN 1982 Grade CC491k (BS1400 LG2) or acetal thermoplastic polymer in the case of 1/2" to 1" only, (a plastic banjo to be available for 1 1/4" to 2" outlets.) The banjo washers and the 1 1/4" to 2" top cap washer shall be manufactured in EPDM rubber to BS 2494. The 1/2" to 1" top cap washer shall be manufactured in Polypropylene or Nitrile Rubber and shall provide the seal between the outer body and ferrule stem. The ingress of dirt will be prevented by a plastic top plug. The Pushfit joint for PE pipe shall consist of the following:

- Grip Ring
- 'O' Ring
- Nose Cone Liner:

In order to meet the requirements of the WRAS it is necessary to use a liner or insert with metric MDPE service pipe to BS6572 and BS 6730. The liner is not an integral part of the Pushfit joint and for polyethylene pipe other than MDPE, use of the liner is optional. If a liner is not used the joint will still substantially exceed most international performance requirements.

Screwdown Pattern Swivel Ferrule

General

The ferrules shall be designed with a pushfit outlet for PE pipe. All ferrules shall be designed as a main stem with a 360° swivel outlet at 90° with control of water flow via a threaded inner plug. The inlet shall be a male taper thread to BS EN10226-1 (BS21), ISO 7/1. The ferrule shall be designed for use underground and to handle potable water at temperatures of up to 40°C. The ferrule shall be capable of working at pressures up to 16 bar (240 psi) without leakage. The ferrule shall be easily 'shut off' by means of a spindle extending from the top cap.

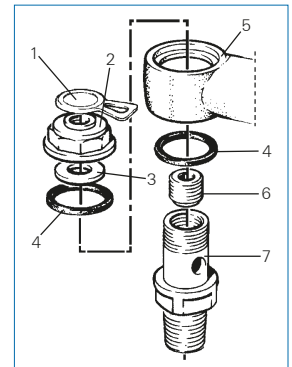
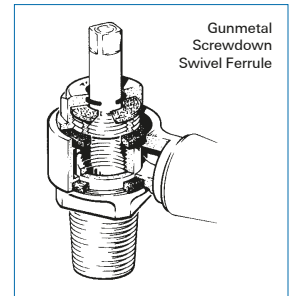
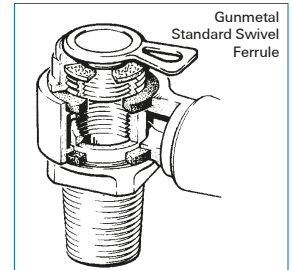
The design of the ferrule shall permit service pipe installation via conventional drilling and tapping machines dry or underpressure, with or without service saddles. The design of the ferrule shall further permit use with conventional drilling machines which mount onto the ferrule / strap assembly to drill the main via the ferrule stem waterway, dry or underpressure.

Construction

The ferrule stem, banjo, threaded spindle and top cap shall be manufactured of gunmetal to BS EN 1982 Grade CC491k (BS1400 LG2). The banjo washers and the 1 1/4" to 2" top cap washer shall be manufactured in EPDM rubber to BS 2494. The 1/2" to 1" top cap washer shall be manufactured in Polypropylene or Nitrile Rubber and shall provide the sealing between the outer body and ferrule stem. The Pushfit joint for PE pipe shall consist of the following:

- Grip Ring
- 'O' Ring
- Nose Cone Liner:

In order to meet the requirements of the WRAS it is necessary to use a liner or insert with metric MDPE service pipe to BS6572 and BS 6730. The liner is not an integral part of the Pushfit joint and for polyethylene pipe other than MDPE, use of the liner is optional. If a liner is not used the joint will still substantially exceed most international performance requirements.



Item Description

- 1 Top plug
- 2 Top Cap
- 3 Top Cap Washer
- 4 Banjo Washer
- 5 Banjo
- 6 Inner plug
- 6a Spindle inner plug
(Screwdown Ferrule only, not illustrated)
- 7 Stem



Gunmetal service connections

Straps and Ferrules for Mains to Service Pipe Connections

Talbot Flat Boss Straps

Talbot flat boss straps are designed for making service connections into PVC, asbestos cement, cast iron, ductile iron and steel mains. A ferrule can then be inserted into the main via the strap boss using drilling and tapping equipment whilst the main is pressurised or dry. The Talbot flat boss strap range provides maximum thread engagement into the boss of the strap and tappings from 1/2" to 2" can be made into most flat boss straps. Alternatively the strap can be pre-drilled and tapped and fitted with a ferrule prior to delivery for use on asbestos cement and PVC mains. The wall of the pipe is then simply drilled using under pressure drilling equipment. Talbot solid flat boss straps can also be used as blanking straps for sealing existing holes in mains after removal of a ferrule. Talbot flat boss straps are made from corrosion resistant materials to give years of trouble free service. Note: flat boss straps can be supplied with a 3/8" pilot hole through the boss to help the drilling and tapping process.

Quick and simple to install

Quick, permanent, leak free connection provided by a tried and tested design

Extensive range

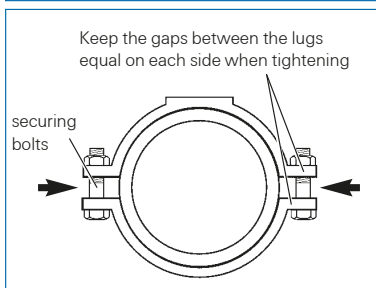
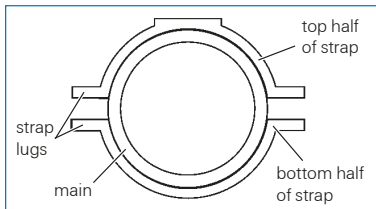
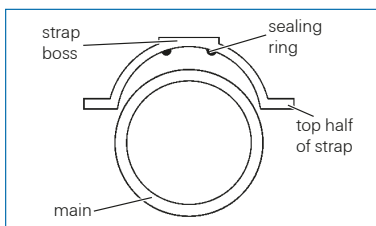
A range has been developed which enables the user to make connections to almost any type of mains pipe, either underpressure or dry.

Robust and long lasting

Straps made from gunmetal are immune to corrosion and so give years of trouble free service.

Reliable and leak free

Provides maximum thread engagement for leak free connections suitable for a working pressure up to 16 bar (240 psi).



Flat Boss Strap Assembly Instructions

For easy trouble free installation the steps detailed below should be followed:

1. Select the correct size and type of strap for the main.
2. Place the sealing ring in the groove in the underside of the strap boss (many straps are supplied with the sealing ring pre-bonded into position making assembly even easier) and position the upper half of the strap on the main ensuring that the sealing ring remains snug in the groove.
3. Locate the bottom of the strap under the main below the top half of the strap.
4. Using the two nuts and bolts provided bolt the two halves together ensuring the bolts point upwards. Finger tighten the bolts evenly, keeping the gaps between the lugs equal on each side.
5. Check that the strap sits squarely on the main then hand tighten each nut. Tighten each nut a further two and a half turns or to a torque setting of approximately 10 lb/ft (13.6Nm). The strap is now secured to the main.

- Talbot recommend the use of a strap on ductile iron pipes below 12" (300mm) in diameter as the wall thickness is generally less than that of cast iron pipes and insufficient to tap directly without risking the threads stripping.
- Always ensure that the correct type and size of strap is used for the main.
- Always use a strap on asbestos cement, PVC and PE mains.
- Always have the strap pre-drilled by Talbot if the service valve size is known. This will make the tapping of the connection easier on site.
- Always take care when fitting the strap and ensure that the 'O' ring or sealing ring is correctly in place under the boss of the strap.
- Never over tighten the bolts on the strap. This can cause damage to the lugs or leaks to occur due to distortions in the pipe.
- Never attempt to cut the same size thread into existing, pre-drilled and tapped straps. Cutting the new thread will damage the old one.

Range Information

The following tables are intended to act as a general guideline only. For further, more detailed information on the Talbot range of straps and ferrules, please contact the Talbot Customer Service Department at the telephone number shown below.

Gunmetal and Acetal Swivel Ferrules - Screwdown and Standard Types

Inlet Size	Outlet Size				
	20mm/1/2"	25mm/3/4"	32mm/1"	50mm/1 1/2"	63mm/2"
1/2"	✓	✓	-	-	-
3/4"	✓	✓	✓	-	-
1"	-	-	✓	-	-
1 1/2"	-	-	-	✓	✓
2"	-	-	-	-	✓

All sizes of Talbot ferrule are available in both standard and screwdown configurations and are all supplied with Talbot Pushfit for PE outlets

- 20mm/1/2" - 63mm/2" banjos are available in gunmetal or acetal/polypropylene



Gunmetal Self Tapping Ferrule Straps

Size of strap Tolerance	Type of Pipe			Stem Size		
	PE	PVC	AC	20mm (1/2")	25mm (3/4")	32mm (1")
32mm - 33.7mm	✓	✓	-	✓	✓	-
48.1mm-50.4mm	✓	✓	-	✓	✓	-
60.2mm - 64.2mm	✓	✓	-	✓	✓	-
73mm - 76mm	✓	✓	-	✓	✓	✓
88mm - 92mm	✓	✓	-	✓	✓	✓
96mm - 101mm	-	-	✓	✓	✓	-
110mm - 118mm	✓	✓	-	✓	✓	✓
122mm - 130mm	✓	-	✓	✓	✓	✓
138mm - 146mm	✓	✓	-	✓	✓	✓
155mm - 163mm	✓	✓	✓	✓	✓	✓
165mm - 173mm	-	✓	-	✓	✓	✓
177mm - 185mm	✓	-	✓	✓	✓	✓
195mm - 203mm	✓	✓	-	✓	✓	✓
217mm - 225mm	✓	✓	-	✓	✓	✓
238mm - 246mm	-	-	✓	✓	✓	-
250mm - 258mm	✓	-	-	✓	✓	✓
268mm - 276mm	-	✓	✓	✓	✓	✓
276mm - 284mm	✓	-	-	✓	✓	✓
294mm - 302mm	-	-	✓	✓	✓	-
315mm - 316mm	✓	-	-	✓	✓	✓
322mm - 330mm	-	✓	-	✓	✓	✓



When tapping AC or Plastic Pipes, the wall thickness of the pipe must be considered.

AC pipes:

If the wall thickness is likely to exceed 18mm at the point of tapping. This may occur on pipes over 6"/150mm diameter.

Plastic pipes:

If the wall thickness is likely to exceed 19mm at the point of tapping. This may occur on some SDR ratings of plastic pipes over 200mm in diameter.

- 20mm (1/2"), 25mm (3/4") and 32mm (1") banjos are available in gunmetal or acetal, please specify when ordering.
- Cutters are not available for use in 1" stems for AC pipe

Gunmetal Flat Boss Straps



Size of strap Tolerance	Type of Pipe						Size of Tapping					
	CI	DI	PE	PVC	Steel	AC	No tapping	1/2"	3/4"	1"	1 1/2"	2"
32mm - 33.7mm	-	-	✓	✓	✓	-	✓	✓	✓	-	-	-
48.1mm-50.4mm	-	-	✓	✓	✓	-	✓	✓	✓	-	-	-
60.2mm - 64.2mm	-	-	✓	✓	✓	-	✓	✓	✓	-	-	-
73mm - 76mm	-	-	✓	✓	-	-	✓	✓	✓	✓	-	-
88mm - 92mm	-	-	✓	✓	✓	-	✓	✓	✓	✓	✓	-
96mm - 101mm	-	✓	-	-	-	✓	✓	✓	✓	✓	✓	-
110mm - 118mm	-	✓	✓	✓	✓	-	✓	✓	✓	✓	✓	✓
122mm - 130mm	-	✓	✓	-	-	✓	✓	✓	✓	✓	✓	✓
138mm - 146mm	-	✓	✓	✓	✓	-	✓	✓	✓	✓	✓	✓
155mm - 183mm	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
165mm - 173mm	-	✓	✓	✓	-	-	✓	✓	✓	✓	✓	✓
177mm - 185mm	-	-	✓	✓	-	✓	✓	✓	✓	✓	✓	✓
195mm - 203mm	-	-	✓	✓	-	-	✓	✓	✓	✓	✓	✓
217mm - 225mm	-	✓	✓	✓	✓	-	✓	✓	✓	✓	✓	✓
229mm - 237mm	-	-	-	-	-	✓	✓	✓	✓	✓	✓	✓
238mm - 246mm	-	-	-	-	✓	✓	✓	✓	✓	✓	✓	✓
250mm - 258mm	-	-	✓	✓	-	-	✓	✓	✓	✓	✓	✓
259mm - 267mm	-	-	-	-	-	✓	✓	✓	✓	✓	✓	✓
268mm - 276mm	-	✓	-	✓	-	-	✓	✓	✓	✓	✓	✓
322mm - 330mm	-	-	✓	✓	✓	-	✓	✓	✓	✓	✓	✓

- Straps are supplied thin pattern as standard. Thick pattern alternatives available to order.
- Flat boss straps over 300mm can be made to order
- Flat boss straps can be supplied with a 3/8" hole through the boss to help in the drilling and tapping process.
- The size of the strap boss may restrict the size of the maximum allowed tapping. See the above table for further details.

Standard Outside Pipe Diameter Guide Chart

Nominal Bore	Metric Plastic Metric PVC MOPVC PE Hep30	Imperial Cast Iron and A C (turned end) BS1211 (up to & including 27" NB) BS78, BS486			Steel									UPVC		ABS	Ductile Iron	GRP	Metric AC (turned end) BS486		
		Class AB Only	Class CD Only	Non Standard	ISO/4200			BS1387	BS3600 & BS3601 (pipe ends to BS534)	API 5L & BS1600 (up to & including 36"NB)	BS3505	BS3506	BS5391	BS4772 DIN28601 DIN28602 DIN28603 DIN28605 EN545	BS5480	Class 15	Class 20	Class 25			
					Series 1	Series 2	Series 3														
25mm 1"	25				33.7	32.0	30.0	35.0	33.7	33.6	33.4	33.6	33.6	33.6							
32mm 1.25"	32				42.4	40.0	44.5		42.4	42.3	42.2	42.3	42.3	42.3							
40mm 1.5"	40	55.9	55.9 2.20	57.0 2.20	48.3 2.25	57.0	54.0		48.3	48.3	48.3	48.3	48.3	48.3	56.0 DIN28601						
50mm 2"	50	69.1 2.72	69.1 2.72		60.3	63.5			60.3	60.3	60.3	60.3	60.3	60.3	66.0 DIN28605						69.0
63mm	63																				
65mm 2.5"	65	82.3 3.24	82.3 3.24	82.5 3.25	76.1	70.0	73.0		76.1	76.1	76.1	75.2	75.2		82.0 DIN28605						
75mm	75																				
80mm 3"	80	95.5 3.76	95.5 3.76		88.9		82.5		88.9	88.9	88.9	88.9	88.9	88.9	98.0						96.0
90mm 3.5"	90				101.6	101.6				101.6	101.6										
100mm 4"	100	121.9 4.80	121.9 4.80		114.3	127.0	108.0		114.3	114.3	114.3	114.3	114.3	114.3	118.0						122.0
110mm	110																				
125mm 5"	125	149.4 5.90	149.9 5.90		139.7	133.0	141.3	152.4	139.7	139.7	141.3	140.2	140.2		144.0 DIN28601/3						
140mm	140																				
150mm 6"	150	177.3 6.98	177.3 6.98		168.3		159.0	177.8	165.1	168.3	168.3	168.3	168.3	168.3	170.0		177.0				177.0
160mm	160																				
175mm 7"	175	204.7 8.06	204.7 8.06				193.7			193.7			193.7								
180mm	180																				
200mm 8"	200	232.2 9.14	232.2 9.14		219.1					219.1	219.1	219.1	219.1	219.1	222.0	222.0	232.0	232.0	240.0		
225mm 9"	225	259.1 10.20	259.1 10.20				244.5			244.5			244.5				259.0	259.0	268.0		
250mm 10"	250	286.0 11.26	286.0 11.26		273.0					273.0	273.1	273.0	273.0		274.0	272.0	286.0	286.0	295.0		
280mm	280																				
300mm 12"	300	333.8 13.14	345.4 13.6		323.9					323.9	323.9	323.9	323.9		326.0	324.0	334.0	345.0	356.0		
315mm	315																				
350mm 14"	350	386.6 15.22	399.3 15.72		355.6					355.6	355.6	355.6	355.6		378.0	376.0	392.0	405.0	419.0		
355mm	355																				
375mm 15"	375	413.0 16.26	426.2 16.78																		
400mm 16"	400	439.0 17.30	453.1 17.84		406.4					406.4	406.4	406.4	406.4		429.0	427.0	448.0	463.0	478.0		
450mm 18"	450	492.3 19.38	506.9 19.96		457.0					457.0	457.0	457.0	457.0		480.0 (BS only)	478.0	498.0	515.0	532.0		
500mm 20"	500	545.1 21.46	560.3 22.06		508.0					508.0	508.0	508.0	508.0		532.0	530.0	568.0	586.0	605.0		
525mm 21"	525	571.5 22.50	587.2 23.12																		
550mm 22"	550	597.9 23.54	613.7 24.16				559.0			559.0	559.0		559.0								
560mm	560																				
600mm 24"	600	650.2 25.60	667.0 26.26		610.0					610.0	610.0	610.0	610.0		635.0	633.0	654.0	672.0	691.0		

The technical data and performance may be modified without prior notice depending on the technical advances.