



# FONDERIES OHANNES KASSARDJIAN S.A.L.

Leading Foundries in the Middle East since 1939







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# History

In the year 1939 was established in Lebanon the first Foundry of the Middle East specializing in the manufacture of Brass, Gunmetal & Cast Iron Products used for water.

Since then the trade mark OK that refers to the first initials of the Founder, Mr. Ohannes Kassardjian, has been a symbol of high quality and reliability.

This Company has gathered the means of success throughout the years of its long existence:

- Up to date equipments and means of production.
- High level of Technology and Experience.
- Managerial skills and Development Research capabilities.
- Honorability and security in performance.

Following its inception, the Company has developed into one of the major foundries in the Middle East, constantly striving to enhance its technical know-how and to develop its production facilities with the major concern of supplying quality products to the Water Authorities and Contractors.





# Manufacturing Division of Gunmetal and Brass Fittings for House Potable Water Service Connections

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# **1. Swivel Ferrules**







# 1 SWIVEL FERRULES

The OK FOUNDRIES® Swivel Ferule 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 under pressure directly into cast iron, ductile iron and steel mains. Asbestos cement, PVC, PE and GRP mains can also be tapped via the Flat Boss Strap.

Ferrules should not be inserted directly into PVC or AC mains. The wall of these pipes is not strong enough to hold the stem.

The manufacturers of ductile iron and steel main 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 the strap is used. For tappings larger than this a Tapping Tee should be used.

#### Quick and simple to install

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

#### Extensive range

The range has been developed to enable the user in making connections to almost any type of mains and service pipe, either under pressure or dry.

## Robust and long lasting

Ferrules provide years of service in even the most aggressive soil conditions.

## Reliable and leak free

Specifically designed to operate at pressures up to 18 bar subject to the ratings of pipe and strap if used.

# Standard Pattern Swivel Balancing Ferrule

#### • General

The ferrules are designed with a pushfit or compression outlet for PE pipe. All ferrules are designed as a main stem with a 360° swivel outlet at 90° with control of water flow via a threaded inner plug. The inlet is male taper thread to BS 21 (ISO 7/1). The ferrule is designed for use underground and to handle potable water at temperature of up to 85°C. The ferrule works at pressures up to 18 bar (270 psi) without leakage.

#### • Description of Design

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



The pushfit joint for PE pipe shall consist of the following: Grip ring and 'O' ring

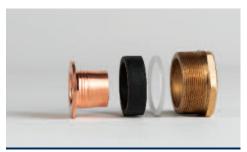


Standard pattern Swivel Balancing Ferrule - Push-fit type





■ Screwdown Pattern Swivel Ferrule - Compression type



 The compression for PE pipe shall consist of the following: A serrated copper insert, a friction washer, a compression gland and a thrust nut

# | Gunmetal Swivel Ferrules -Screwdown & Standard Types |

| Inlet Size | Outlet Size |      |      |      |      |  |  |  |  |  |
|------------|-------------|------|------|------|------|--|--|--|--|--|
|            | 20mm        | 25mm | 32mm | 50mm | 63mm |  |  |  |  |  |
| 1/2"       | ✓.          | ✓*   |      |      |      |  |  |  |  |  |
| 3/4"       | ✓.          | ✓.   |      |      |      |  |  |  |  |  |
| 1″         |             |      | ✓*   |      |      |  |  |  |  |  |
| 1.1/2"     |             |      |      | ✓.   |      |  |  |  |  |  |
| 2″         |             |      |      | ✓*   | ✓.   |  |  |  |  |  |

#### Construction

The ferrule stem, banjo, inner plug and top cap are manufactured of gunmetal/bronze to BS 1400 LG2. The banjo washers and the top cap washer are manufactured in EPDM rubber to BS 2494 (WRAS approved).

# Screwdown Pattern Swivel Ferrule

#### General

The ferrules are designed with a Push Fit or Compression outlet for PE pipe. All ferrules are designed as a main stem with a 360° swivel outlet at 90° with control of water flow via a threaded inner plug. The inlet is a male taper thread to BS 21 (ISO 7/1). The ferrule is designed for use underground and to handle potable water of up to 85° C. The ferrule is capable of working at pressures up to 18 bar (270 psi) without leakage. The ferrule is easily "shut off" by means of a spindle extending from the top cap.

#### • Description of Design

The design of the ferrule permits service pipe installation via conventional drilling and tapping machines dry or under pressure, with or without service saddles. The design of the ferrule further permits use with conventional drilling machines mounted onto the ferrule/strap assembly to drill the main via the ferrule stem, dry or under pressure.

#### Construction

The ferrule stem, banjo, threaded spindle and top cap are manufactured of gunmetal/bronze to BS 1400 LG2. The banjo washers and the top cap washer are manufactured in EPDM rubber to BS 2494 (WRAS approved), the friction washer is made from polypropylene, the serrated insert is in copper C.106 to BS 1172 or BS 2871 part 2: 1972 "C".

#### Nominal Sizes

1/2", 3/4", 1", 1.1/4", 1.1/2" and 2".

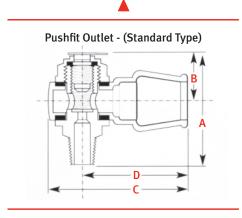
#### Notes

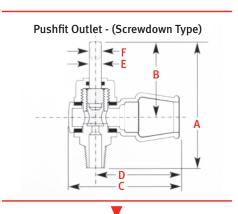
- All materials used in the Swivel Ferrule are WRAS listed and have been selected to give the best possible overall performance.
- Ferrules are designed for use underground and for handling potable water at temperature of up to 85° C.
- Swivel Ferrules can be supplied in one of the following two versions:
  - a. With main stem with inner plug and spindle for valve isolation and a 360° swivel outlet at 90° to the stem (these are designated as Screw-down type), with control of water flow via the threaded inner plug.
  - **b.** With inner plug and top plug (without spindle) for valve isolation and a 360° swivel outlet at 90° to the axis of the inlet, with control of water flow via the turning of the threaded inner plug with a key (these designated as Standard-Pattern type).



# | Standard Pattern Swivel Ferrule Dimensions (in mm) |

| DN             | 1/2" (2            | 20mm)                 | 3/4" (2            | 25mm)                 | 1" (3:             | 2mm)                  | 1 1/2"             | (50mm)                | 2" (6              | 3mm)                  | 1 1/2" x 2         | ?" (63mm)             |
|----------------|--------------------|-----------------------|--------------------|-----------------------|--------------------|-----------------------|--------------------|-----------------------|--------------------|-----------------------|--------------------|-----------------------|
| Outlet<br>Type | Push Fit<br>for PE | Compression<br>for PE |
| Α              | 86                 | 86                    | 82                 | 82                    | 94                 | 94                    | 106                | 106                   | 120                | 120                   |                    | 106                   |
| В              | 38                 | 38                    | 38                 | 38                    | 44                 | 44                    | 50                 | 50                    | 48                 | 48                    |                    | 50                    |
| С              | 88                 | 75                    | 100                | 87                    | 122                | 95                    | 195                | 150                   | 219                | 159                   | 219                | 138                   |
| D              | 61                 | 52                    | 79                 | 62                    | 94                 | 67                    | 154                | 110                   | 172                | 112                   | 172                | 97                    |





# | Screwdown Pattern Swivel Ferrule Dimensions (in mm) |

| DN             | 1/2" (             | 20mm)                 | 3/4" (2            | 25mm)                 | 1" (3              | 2mm)                  | 1 1/2"             | (50mm)                | 2" (6:             | 3mm)                  | 1 1/2" x 2         | 2" (63mm)             |
|----------------|--------------------|-----------------------|--------------------|-----------------------|--------------------|-----------------------|--------------------|-----------------------|--------------------|-----------------------|--------------------|-----------------------|
| Outlet<br>Type | Push Fit<br>for PE | Compression<br>for PE |
| A open         | 108                | 108                   | 105                | 105                   | 116                | 116                   | 151                | 151                   | 168                | 168                   |                    | 151                   |
| A closed       | 92                 | 92                    | 90                 | 90                    | 97                 | 97                    | 130                | 130                   | 137                | 137                   |                    | 130                   |
| B open         | 58                 | 58                    | 58                 | 58                    | 65                 | 65                    | 93                 | 93                    | 100                | 100                   |                    | 93                    |
| B closed       | 42                 | 42                    | 42                 | 42                    | 46                 | 46                    | 72                 | 72                    | 70                 | 70                    |                    | 72                    |
| С              | 88                 | 75                    | 100                | 87                    | 122                | 95                    | 195                | 150                   | 219                | 159                   | 219                | 138                   |
| D              | 61                 | 52                    | 79                 | 62                    | 94                 | 67                    | 154                | 110                   | 172                | 112                   | 172                | 97                    |
| Е              | 11                 | 11                    | 11                 | 11                    | 16                 | 16                    | 22                 | 22                    | 25                 | 25                    | 25                 | 25                    |
| F              | 10                 | 10                    | 10                 | 10                    | 12.7               | 12.7                  | 19                 | 19                    | 19                 | 19                    | 19                 | 19                    |





# | Self Tapping Ferrule Straps |

OK FOUNDRIES® 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. Self Tapping Ferrule Straps are made from gunmetal bronze to BS 1400 LGL making the product durable and corrosion resistant. The Self Tapping Ferrule Strap also uses a specially designed cutter, which greatly reduces the risk of bursting a PVC main or creating a swarf blockage whilst cutting. The Self Tapping Ferrule Strap is capable of working at pressure up to 18 bar without leakage.

#### 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 under pressure and in wet and congested trench conditions making it a viable alternative to electro fusion.

#### • Integral Cutter

The integral cutter is designed to greatly reduce the risk of fracturing 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 Self Tapping Ferrule Straps

| Outlet Ø<br>of the Pipe | Туре | of Pipe |      |      |      |      |      |
|-------------------------|------|---------|------|------|------|------|------|
|                         | PE   | PVC     | 20mm | 25mm | 32mm | 50mm | 63mm |
| 63mm                    | ✓'   | ✓.      | ✓.   | ✓*   | ✓.   |      |      |
| 90mm                    | ✓'   | ✓.      | ✓.   | ✓'   | ✓:   |      |      |
| 110mm                   | ✓:   | ✓.      | ✓:   | ✓:   | ✓:   | ✓.   | ✓.   |
| 125mm                   | ✓:   | ✓.      | √.   | √.   | ✓.   | ✓:   | ✓.   |
| 160mm                   | ✓:   | ✓.      | ✓:   | ✓:   | ✓:   | ✓.   | ✓.   |
| 180mm                   | ✓:   |         | ✓:   | ✓:   | ✓:   | ✓:   | ✓:   |
| 225mm                   | ✓:   | ✓.      | ✓:   | ✓.   | ✓:   | ✓.   | ✓:   |
| 280mm                   | ✓:   |         | √.   | ✓:   | ✓:   | ✓:   | ✓.   |
| 315mm                   | ✓:   |         | ✓:   | ✓:   | ✓:   | ✓:   | ✓*   |



Fig. 1

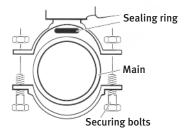
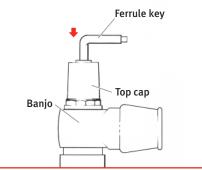
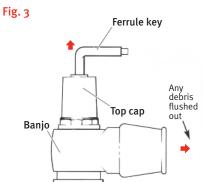
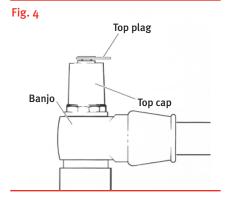


Fig. 2







#### • Installation Instruction For Self Tapping Ferrule Straps

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

- 1. 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.
- **2.** 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).
- **3.** Remove the 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.
- **4.** Wind the cutter/plug back to allow a small amount of water to go to waste to flush out any debris (see Fig.3).
- **5.** Wind the cutter/plug back down onto its seat to seal off the connection (do not over tighten).
- **6.** Connect the service pipe to the banjo.
- 7. Ensure the top cap is tightened down on to the banjo then wind the cutter/plug back to seal in the top cap (do not over tighten, a torque of no more than 6 Nm, 4.4 lb/ft is needed).

The connection is now made.

#### Construction

- The self tapping Ferrule Straps are manufactured from gunmetal bronze to BS 1400 grade LG2 (BS EN 1982 grade CC49 1K).
- The sealing rings ('O' rings) are made in EPDM rubber that is WRAS certified for use in contact with potable water up to 85°C.
- The bolts and nuts are made in stainless steel to BS 1449 or ISO 3506 grade 316 (A4).





2. Flat Boss Saddle Straps



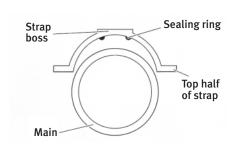


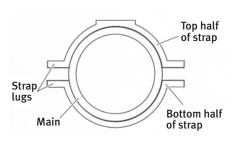


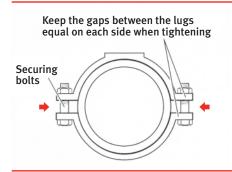
# 2 FLAT BOSS SADDLE STRAPS



■ Flat Boss Strap







OK FOUNDRIES® Flat Boss Straps are designed for making service connections into PVC, asbestos cement pipes, cast iron and ductile iron pipes, PE and GRP pipes, steel pipes.

A ferrule can then be inserted into the main via the Strap Boss using drilling and tapping equipment whilst the main is pressurized or dry.

The Flat Boss Strap range provides maximum thread engagement into the boss of 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.

Solid Flat Boss Straps can also be used as blanking straps for sealing existing holes in mains after removal of a ferrule.

#### Quick and simple to install

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

#### Extensive range

A range has been developed to enable user to make connections to almost any type of mains pipe, either under pressure or dry.

#### Robust and long lasting

Flat Boss Straps are made from corrosion resistant materials (Gunmetal to BS 1400 LG2) to give years of trouble free service.

#### Reliable and leak free

Provide maximum thread engagement for leak free connections suitable for a working pressure up to 20 bar (300 psi).

## Flat Boss Strap Assembly Instructions

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

- 1. Select the correct size and type of the 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 pf 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 (13.6 Nm).

The strap is now secured to the main.





Flat Boss Strap

#### **Notes**

- OK FOUNDRIES® 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 OK FOUNDRIES® if the service valve size is known. This will make the tapping on 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.

# Flat Boss Straps Technical Specifications

Flat boss strap are of single band design, shaped to the pipe diameter to which is to be fitted.

All straps shall be in two parts, top and bottom, bolted at both sides, are fitted with a rubber sealing gasket, and available undrilled, pre-drilled with a 3/8" hole or drilled, and tapped for tapered internal pipe threads in accordance with ISO 7/1 and BS 21.

All straps accept ferrules up to 2" in size and are supplied with fully threaded bolts and nuts.

OK FOUNDRIES® straps are capable of withstanding a working pressure up to 20 bar (300 psi) without leaking.

#### • Description of Design

The design of the strap is suitable for use with PVC, AC, Steel, DI, CI, GRP and PE mains.

The design is suitable for use with conventional drilling and tapping machines that mount onto the strap assembly.

The design is suitable for use with standard pattern 360° swivel ferrules.

#### Construction

The straps are manufactured from Gunmetal Bronze to BS 1400 grade LG2 (BS EN 1982 grade CC49 1K).

The sealing ring ('O'-ring) is in EPDM rubber that is WRAS certified for use in contact with potable water up to 85°C.

The bolts and nuts are made in stainless steel to BS 1449 or ISO 3506 grade 316 (A4).



- Saddles Straps are available from 63mm up to 500mm in diameter.
- All Straps are designed with a groove underneath the boss, into which the "O" ring seal fits.
- Upon specific request, Saddle Straps can be supplied with the boss tapped with female BSP taper threads to BS 21.
- Markings are engraved and/or cast. Saddle Straps are legibly marked with the OK FOUNDRIES® trademark and with the nominal size of the distribution main they are able to accommodate.
- Nominal sizes of Saddles (in Millimeters)
   63, 80, 100, 125, 150, 200, 225, 250, 300, 350, 400, 450, 500.

# | Gunmetal Flat Boss Straps |

| Nominal Ø of the Pipe |    | T  | ype of Pip | e   |            |               |      | Size of 1 | Tapping    |          |          |
|-----------------------|----|----|------------|-----|------------|---------------|------|-----------|------------|----------|----------|
| in mm                 | DI | PE | PVC        | GRE | AC         | No<br>Tapping | 1/2" | 3/4"      | 1"         | 1.1/2"   | 2″       |
| 60.2 - 64.2           |    | ✓* | ✓*         |     |            | ✓*            | ✓*   | ✓*        | ✓*         |          |          |
| 88 - 92               |    | ✓* | ✓'         |     |            | ✓.            | ✓'   | ✓*        | ✓'         | /        | <b>✓</b> |
| 96 - 101              |    | #  | *          |     | ✓*         | ✓*            | ✓*   | ✓*        | <b>√</b> ° | <b>✓</b> | ✓        |
| 110 - 118             | ✓' | ✓* | ✓'         | ✓.  |            | ✓.            | ✓'   | ✓*        | ✓'         | /        | <b>✓</b> |
| 122 - 130             |    | ž. | 1          |     | ✓.         | ✓.            | ✓.   | ✓.        | ✓.         | ✓        | 1        |
| 138 - 146             | ✓' | ✓. | ✓'         | ✓.  |            | ✓*            | ✓'   | ✓'        | ✓'         | 1        | <b>✓</b> |
| 155 - 183             | ✓* | ✓* | ✓*         | ✓*  | <b>√</b> * | ✓.            | ✓*   | ✓'        | ✓*         | ✓        | ✓        |
| 165 - 173             | ✓' | ✓. | ✓'         | ✓.  |            | ✓*            | ✓'   | ✓'        | ✓'         | 1        | <b>✓</b> |
| 177 - 185             |    | ✓* | ✓*         |     | <b>√</b> * | ✓.            | ✓*   | ✓'        | ✓*         | ✓        | ✓        |
| 217 - 225             | ✓' | ✓. | ✓'         | ✓.  |            | ✓.            | ✓'   | ✓'        | ✓'         | 1        | <b>✓</b> |
| 229 - 237             |    | #  | #          |     | ✓*         | ✓*            | ✓*   | ✓*        | ✓*         | ✓        | ✓        |
| 238 - 246             |    | ź  | ź          |     | ✓'         | ✓*            | ✓'   | ✓*        | <b>√</b> ° | <b>✓</b> | ✓        |
| 250 - 258             |    | ✓* | ✓*         |     |            | ✓.            | ✓*   | ✓'        | ✓*         | ✓        | ✓        |
| 253 - 270             |    | ź  | ź          |     | ✓'         | ✓*            | ✓'   | ✓*        | <b>√</b> ° | <b>✓</b> | ✓        |
| 268 - 276             | ✓' | ź  | ✓*         | ✓*  |            | ✓*            | ✓*   | ✓*        | ✓*         | ✓        | ✓        |
| 285 - 300             |    | ź  | ź          |     | ✓.         | ź             | ź    | d d       | ź          |          |          |
| 315 - 330             | ✓' | ✓. | ✓.         | ✓.  |            | ✓.            | ✓.   | ✓*        | ✓.         | ✓        | ✓        |
| 325 - 340             | ✓' | ✓' | ✓.         | ✓.  |            | ✓.            | ✓'   | ✓.        | ✓.         | ✓        | <b>✓</b> |
| 340 - 355             |    | *  | f          |     | ✓*         | ✓.            | ✓.   | ✓*        | ✓.         | ✓        | ✓        |
| 345 - 360             |    | ź  | ź          |     | ✓.         | ✓.            | ✓.   | ✓.        | ✓.         | ✓        | ✓        |
| 370 - 385             |    | ź  |            |     | ✓*         | *             | ź    | d         |            |          |          |
| 425 - 440             | ✓' | ✓' | ✓.         | ✓.  |            | ✓'            | ✓.   | ✓.        | ✓.         | ✓        | 1        |
| 440 - 455             |    | #  | ź          |     | ✓*         | ✓*            | ✓*   | ✓.        | ✓*         | ✓        | ✓        |
| 505 - 520             | ✓' | *  | *          |     |            | ✓.            | ✓'   | ✓.        | ✓.         | ✓        | ✓        |
| 515 - 530             |    | ź  | ź          |     | ✓*         | ✓*            | ✓*   | ✓.        | ✓*         | ✓        | ✓        |
| 530 - 545             | ✓' | f  |            |     |            | ✓.            | ✓'   | ✓.        | ✓'         | ✓        | ✓        |



# | Standard Outside Pipe Diameter Guide Chart |

| Nominal<br>Bore | Metric<br>Plastic          | Imperia<br>(   | l Cast Iron a                     | and A C<br>) | UV      | PC      | ABS     | Ductile<br>Iron   | GRP     |          | Metric AC<br>turned end | )        |
|-----------------|----------------------------|----------------|-----------------------------------|--------------|---------|---------|---------|---|---------|----------|-------------------------|----------|
|                 | Metric PVC<br>MO PVC<br>PE | BS 1211 (      | up to & includin<br>BS 78, BS 486 | ng 27" NB)   | BS 3505 | BS 3506 | BS 5391 | BS 4772<br>DIN 28601<br>DIN 28602<br>DIN 28603<br>DIN 28605<br>EN 545 | BS 5480 | Class 15 | Class 20                | Class 25 |
|                 | Hep₃O                      | Class AB Only  | Class CD Only                     | Non Standard |         |         |         | DIN 28603<br>DIN 28605<br>EN 545                                      |         |          |                         |          |
| 25mm<br>1"      | 25                         |                |                                   |              | 33.6    | 33.6    | 33.6    |   |         |          |                         |          |
| 32mm<br>1.25"   | 32                         |                |                                   |              | 42.3    | 42.3    | 42.3    |   |         |          |                         |          |
| 40mm<br>1.5"    | 40                         | 55.9           | 55.9<br>2.20                      | 57.0<br>2.20 | 48.3    | 48.3    | 48.3    | 56.0<br>DIN28601  |         |          |                         |          |
| 50mm<br>2"      | 50                         | 69.1<br>2.72   | 69.1<br>2.72                      |              | 60.3    | 60.3    | 60.3    | 66.0<br>DIN28605  |         |          |                         | 69.0     |
| 63mm            | 63                         |                |                                   |              |         |         |         |   |         |          |                         |          |
| 65mm<br>2.5"    | 65                         | 82.3<br>3.24   | 82.3<br>3.24                      | 82.5<br>3.25 | 75.2    | 75.2    |         | 82.0<br>DIN28605  |         |          |                         |          |
| 75mm            | 75                         |                |                                   |              |         |         |         |   |         |          |                         |          |
| 80mm<br>3"      | 80                         | 95.5<br>3.76   | 95.5<br>3.76                      |              | 88.9    | 88.9    | 88.9    | 98.0  |         |          |                         | 96.0     |
| 90mm<br>3.5″    | 90                         |                |                                   |              |         |         |         |   |         |          |                         |          |
| 100mm<br>4"     | 100                        | 121.9<br>4.80  | 121.9<br>4.80                     |              | 114.3   | 114.3   | 114.3   | 118.0   |         |          |                         | 122.0    |
| 110mm           | 110                        |                |                                   |              |         |         |         |   |         |          |                         |          |
| 125mm<br>5"     | 125                        | 149.4<br>5.90  | 149.9<br>5.90                     |              | 140.2   | 140.2   |         | 144.0<br>DIN28601/3   |         |          |                         |          |
| 140mm           | 140                        |                |                                   |              |         |         |         |   |         |          |                         |          |
| 150mm<br>6"     | 150                        | 177.3<br>6.98  | 177.3<br>6.98                     |              | 168.3   | 168.3   | 168.3   | 170.0   |         | 177.0    |                         | 177.0    |
| 160mm           | 160                        |                |                                   |              |         |         |         |   |         |          |                         |          |
| 175mm<br>7"     | 175                        | 204.7<br>8.06  | 204.7<br>8.06                     |              |         | 193.7   |         |   |         |          |                         |          |
| 180mm           | 180                        |                |                                   |              |         |         |         |   |         |          |                         |          |
| 200mm<br>8"     | 200                        | 232.2<br>9.14  | 232.2<br>9.14                     |              | 219.1   | 219.1   | 219.1   | 222.0   | 222.0   | 232.0    | 232.0                   | 240.0    |
| 225mm<br>9″     | 225                        | 259.1<br>10.20 | 259.1<br>10.20                    |              |         | 244.5   |         |   |         | 259.0    | 259.0                   | 268.0    |
| 250mm<br>10"    | 250                        | 286.0<br>11.26 | 286.0<br>11.26                    |              | 273.0   | 273.0   |         | 274.0   | 272.0   | 286.0    | 286.0                   | 295.0    |
| 280mm           | 280                        |                |                                   |              |         |         |         |   |         |          |                         |          |
| 300mm<br>12"    | 300                        | 333.8<br>13.14 | 345.4<br>13.6                     |              | 323.9   | 323.9   |         | 326.0   | 324.0   | 334.0    | 345.0                   | 356.0    |
| 315mm           | 315                        |                |                                   |              |         |         |         |   |         |          |                         |          |
| 350mm<br>14"    | 350                        | 386.6<br>15.21 | 399.3<br>15.72                    |              | 355.6   | 355.6   |         | 378.0   | 376.0   | 392.0    | 405.0                   | 419.0    |
| 355mm           | 355                        |                |                                   |              |         |         |         |   |         |          |                         |          |
| 375mm<br>15"    | 375                        | 413.0<br>16.26 | 426.2<br>16.78                    |              |         |         |         |   |         |          |                         |          |
| 400mm<br>16"    | 400                        | 439.0<br>17.30 | 453.1<br>17.84                    |              | 406.4   | 406.4   |         | 429.0   | 427.0   | 448.0    | 463.0                   | 478.0    |
| 450mm<br>18"    | 450                        | 492.3<br>19.38 | 506.9<br>19.96                    |              | 457.0   | 457.0   |         | 480.0<br>(BS only)  | 478.0   | 498.0    | 515.0                   | 432.0    |
| 500mm<br>20"    | 500                        | 545.1<br>21.46 | 560.3<br>22.06                    |              | 508.0   | 508.0   |         | 532.0   | 530.0   | 568.0    | 586.0                   | 605.0    |
| 525mm<br>21"    | 525                        | 571.5<br>22.50 | 587.2<br>23.12                    |              |         |         |         |   |         |          |                         |          |
| 550mm<br>22″    | 550                        | 597.9<br>23.54 | 613.7<br>24.16                    |              |         | 559.0   |         |   |         |          |                         |          |
| 560mm           | 560                        |                |                                   |              |         |         |         |   |         |          |                         |          |
| 600mm<br>24"    | 600                        | 650.2<br>25.60 | 667.0<br>26.26                    |              | 610.0   | 610.0   |         | 635.0   | 633.0   | 654.0    | 672.0                   | 691.0    |



3. Valves and Stopcocks









Stopcock with Crutch Head



■ Stopcock with the Spindle Shielded



■ Stopcock with Square Head

# **3 VALVES & STOPCOCKS**

The range of Stopcocks consists of many individual types, all of which give excellent performance characteristics. The range is available with the following ends or a combination thereof:

- Ends with parallel female (BSP) threads that comply with the requirements of BS 2779 and BS 21.
- Pushfit-type ends for polyethylene pipes that comply with the requirements of BS 1972, BS 1973, BS 3284 and BS 3796.
- Compression-type ends for polyethylene pipes that comply with the requirements of BS 1972, BS 1973, BS 3284 and BS 3796.

The OK FOUNDRIES® Stopcocks, depending on the type of pipe for which they are designed, are suitable for the maximum working pressures and temperatures specified in the previous sections of this catalogue as applicable.

Stopcocks conform to the requirements of BS 1010: Part 2 and BS 5433.

They can be supplied in one of the following versions:

- With Crutch Head.
- With the Spindle Shielded so as to prevent unauthorized operation with a wrench, the spindle being of such size that it can be operated by a standard key operator and the shield being of sufficient depth so that when the valve is fully open, the spindle remains recessed in the shield to a depth of 5mm. The shield having two holes drilled opposite each other at its open end to allow insertion of a sealing wire. The Stopcock can be provided with a detachable key operator.
- With **Square Head** for T- key operation.

OK FOUNDRIES® Gunmetal Stopcocks are highly resistant to corrosion and provide years of service in even the most aggressive soil conditions.

Gunmetal Stopcocks are available in 20, 25, 32, 40, 50 and 63mm as well as their imperial equivalents: 1/2", 3/4", 1", 1.1/4", 1.1/2" and 2.

#### Materials

- All metallic components are in Gunmetal to BS 1400 LG2 cast.
- The sealing washer is in EPDM rubber that is WRAS certified for use in contact with potable water up to 85°C.
- The head seal "O" ring is in EPDM rubber that is WRAS-certified for use in contact with potable water up to 85°C.
- The gland packing material is in high tenacity polyacrylic yarn treated with PTFE and WRAS-certified for use with potable water up to 85°C. As well as, a washer can be fitted in EPDM rubber that is WRAS-certified for use with potable water up to 85°C.
- Other components in the outlet end socket, depending on the type of pipe, are in materials as specified in the relevant section in the preceding pages of this catalogue.

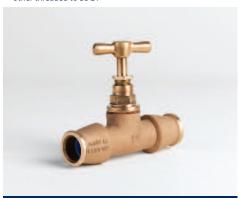




■ Stopcock with crutch head, double compression ends



 Stopcock with crutch head, one end pushfit type and other threaded to BS 21



■ Stopcock with crutch head, double pushfit ends



Lockable brass valve with female threaded ends

# | Threading |

- All threads are of Whitworth form and right-handed, and comply with the requirements of BS 1010: Part 2 and BS 5433.
- Inlet and outlet threads of stopcocks with BSP (parallel) female threaded ends comply with the requirements of BS 2779.

# Bore

• The area of waterway throughout the valve body is not less than the area of a circle of diameter equal to the bore of the seating.

# Dimensions

Dimensions for valve bodies and components (including wall thickness and thickness of screwed ends) satisfy the dimensional requirements of BS 1010: Part 2 and BS 5433.

# | Testing |

Every stopcock is tested against leaking and sweating in the assembled condition both in the fully closed position (seat test) and in the fully open position (body test), by applying a hydraulic pressure of not less than 21 bar.

# Marking

- Markings are engraved and/or cast. Each stopcock is legibly marked with the following:
  - a. OK® Foundries Trademark.
  - b. BS.
  - c. Nominal size.
  - d. Direction of flow.











■ Gunmetal Male Adaptor - Pushfit Type



■ Gunmetal Male Adaptor - Compression Type



Gunmetal Female Adaptor

# **4** GUNMETAL FITTINGS

Made from corrosion immune materials, OK FOUNDRIES® Gunmetal Fittings provides years of trouble free service in even the most arduous of ground conditions.

# Fittings Cover a Variety of Pipe Material and Size

- Fittings for metric and imperial PE pipe, 20mm (1/2") to 63mm (2")
- Fittings for steel threaded pipe, 1/2" to 2" BSP.
- Fittings for copper pipe, 15mm to 54mm

When ordering fittings for PE pipes, it is necessary to state the British Standard number for the pipe together with the nominal size of the pipe stated in the said standard, and the class of the pipe, e.g. BS 1972, 1/2 class C.

OK FOUNDRIES® Pushfit Fittings for PE pipe are suitable for polyethylene pipes that comply with the requirements of BS 1972, BS 1973, BS 3284, BS 3796 and ISO 4427.

#### | Benefits |

• Ease and quickness of installation: the pipe is easily inserted into the grip ring and pass-through the rubber "O" ring that provides the seal.

# Sealing

Any pullout tensile action either by hand or as a result of the rise in
water pressure, is resisted by the tightening of the "O" ring and the
grip ring as both would be pushed down the taper of the fitting,
thus increasing the sealing pressure against the pipe and body of
the fitting.

# Strength

• The joint and the fitting are tested to 48 bars, and the pipe will fail before either the connection or the fitting does.

#### Standards

 Pushfit joint meets the requirements of WIS No. 4-32-11, ISO 3458, ISO 3459, ISO 3501 and ISO 3503.

# Suitability

 The fittings are suitable for the maximum working service pressures and temperatures specified for the pipes in BS 1972, BS 1973, BS 3284 or BS 3796 as applicable, namely 18 bar at 85°C.





Gunmetal Coupler Straight



■ Elbow, Gunmetal Meter Union



■ Gunmetal Fittings (equal tee, compression type for PE pipes)

#### Materials

- The fittings are in Gunmetal to BS 1400 LG2 cast.
- The "O" ring is in EPDM rubber that is WRAS-certified for use in contact with potable water up to 85°C.
- The grip ring is in Hostaform C13031® acetal copolymer material or equivalent.

## Compression Fittings for PE Pipe

Including Poly Adapters, can be supplied in one of the following two versions, the only difference between the two versions being the size of the copper insert:

- Fittings for PE pipes to BS 1972 class "C": these will also fit PE pipes to BS 1973 class "C".
- Fittings for PE pipes to BS 3284 class "C": these will also fit PE pipes to BS 3796 class "C" and four PE Pipes to ISO 4427.

## | Benefits |

• Ease of installation: no need for special tools for making the joint.

## Sealing

 Any pullout tensile action either by hand or as a result of the rise in water pressure, is resisted by compression of the rubber ring, thus retaining the pipe even more securely while maintaining a watertight seal.

# Strength

• The joint and the fitting are tested to 48 bars, and the pipe will fail before either the connection or the fitting does.

#### Standards

 Compression Fittings for PE pipe conform with the requirements of BS 864: Part 3 Type A. Compression joint for PE pipe meets the requirements of BS 5114, ISO 3458, ISO 3459, ISO 3501 and ISO 3503.

# | Suitability |

 The fittings are suitable for the maximum working service pressures and temperatures specified for the pipes in BS 1972, BS 1973, BS 3284 or BS 3796 as applicable. Moreover, they are capable of working at a continuous pressure of 18 bars without leaking and a temperature of up to 85°C.





■ Copper Alloy Gauge



■ Bi Metallic Flange

# | Materials |

- The fittings are in Gunmetal to BS 1400 LG2 cast.
- The thrust nuts are in Gunmetal to BS 1400 LG2 cast.
- The serrated insert is in copper C.106 to BS 1172 or BS 2871 part 2: 1972 "C".
- The compression washer is in EPDM rubber that is WRAS-certified for use in contact with potable water up to 85°C.
- The friction washer is in Polypropylene.
- The compression fitting can be used on either metric or imperial PE pipes from 20mm to 63mm in diameter.
- The extensive range of compression fittings covers the majority of operational requirements with stopcocks and ferrules also being available with the compression outlet.

# Range of Compression Fittings

- Equal Connectors
- Reducing Connectors
- Male Threaded Adaptors
- Female Threaded Adaptors
- Equal Tees
- Un-equal Tees
- 90° Elbows
- Reducing Bushes

# | Technical Data |

- Sizes: 20mm (1/2") to 63mm (2")
- Thread Types: BS 21 (ISO 7/1), (BS EN 10226), BS EN ISO 228, (BS 2779).





#### ■ Pushfit connection



Compression connection

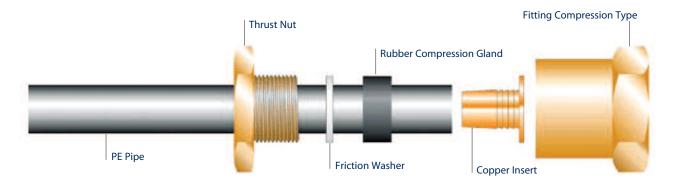
# | Installation |

#### • Pushfit Connection

The end of the pipe should first be beveled and the pipe inserted fully into the fitting with a slight twist, while ensuring that it passes two points of resistance

## • Compression Connection

- Ensure that the end of the pipe has a straight square face
- Insert the thrust nut (threads facing outwards), then the friction washer, then the rubber compression ring, into the pipe.
- Knock the copper insert into the pipe until its face touches the insert flange. This should be done with care so as not to damage the insert flange.
- Push the rubber compression ring and the friction washer against the insert flange and locate this assembly into the compression end of the fitting.
- Hand-tighten fully the thrust nut into the compression end of the fitting, then tighten it further about 11/2-to-2 turns using a spanner.





# | Marking |

Markings are engraved and/or cast. Each fitting is legibly marked with the OK® trademark, the size of the fitting in either mm or inches (depending on client's requirements), and the nominal size of the PE pipe for which it is designed.













Long Adaptor



■ Long Adaptor



Cutting the tube



■ Tightening of the cap nut

# 5 "OK" BRASS COMPRESSION FITTINGS -TYPE 'A' FOR COPPER PIPES

## | General Information |

 "OK" type 'A' non-manipulative standard compression fittings are manufactured in accordance with EN 1254:1998 (formerly BS 864-2) for use with copper tube to BS EN1057:1996 (formerly BS 2871: Part 1)

# Design

- "OK" fittings are designed to comply with relevant Standards and to minimise flow restriction.
- The symmetrical compression ring provides a seal within the cone
  of the fitting and a two point seal on the tube.
- The compression ring is compressed between two differing tapers within cap nut and fitting respectively.

## Dimensions

- From ½" up to 2" From 15mm up to 54mm
- Material: Brass CZ122 to BS 2874 (CuZn40Pb2)
   Or CW617N to EN 12165.

#### | Making a Joint |

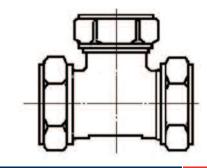
- 1• Ensure that the tube and the fitting sizes are compatible. Cut the tube end square but ensure the tube retains its shape. The tube will then make even contact with the tube stop in the body of the fitting. The use of an appropriate tube cutter is recommended where practicable.
- 2. Remove any burrs from the tube, both inside and out.
- 3. Where necessary, insert a suitable tube liner.
- 4• One of two methods can be employed for making the joint.
  a) The tube can be firmly inserted into the "OK" compression fitting without removing the cap nut and compression ring. Care should be taken to ensure that the compression ring is in the correct position and that the tube makes firm contact with the tube stop in the body of the fitting.
  - b) The cap nut and compression ring can be removed, located onto the tube in logical sequence, and the tube fully inserted into the "OK" compression fitting.
- 5• In both cases, tightening of the cap nut is effected by hand as far as possible, followed by the recommended minimum number of turns with a suitable spanner.



# **5** "OK" BRASS COMPRESSION FITTINGS - TYPE 'A'

# Equal Tee, Compression Type 'A', Copper x Copper x Copper (CxCxC)

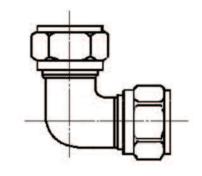
| Size   |                    |  |  |  |  |  |
|--------|--------------------|--|--|--|--|--|
| Inch   | mm                 |  |  |  |  |  |
| 1/2"   | 15mm x 15mm x 15mm |  |  |  |  |  |
| 3/4"   | 22mm x 22mm x 22mm |  |  |  |  |  |
| 1"     | 28mm x 28mm x 28mm |  |  |  |  |  |
| 1.1/2" | 42mm x 42mm x 42mm |  |  |  |  |  |
| 2"     | 54mm x 54mm x 54mm |  |  |  |  |  |



8000-C

# 90° Elbow, Compression Type 'A', Copper x Copper (CxC)

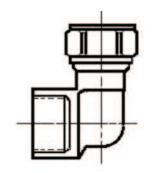
| Size   |             |  |  |  |  |  |
|--------|-------------|--|--|--|--|--|
| Inch   | mm          |  |  |  |  |  |
| 1/2"   | 15mm x 15mm |  |  |  |  |  |
| 3/4"   | 22mm x 22mm |  |  |  |  |  |
| 1"     | 28mm x 28mm |  |  |  |  |  |
| 1.1/2" | 42mm x 42mm |  |  |  |  |  |
| 2"     | 54mm x 54mm |  |  |  |  |  |
|        |             |  |  |  |  |  |



8100-C

# | 90° Female Elbow, Compression Type 'A', Female x Copper (FxC) |

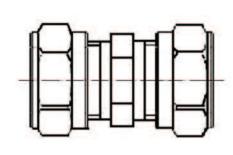
| Size   |               |  |  |  |  |  |  |
|--------|---------------|--|--|--|--|--|--|
| Inch   | mm            |  |  |  |  |  |  |
| 1/2"   | ½" x 15mm     |  |  |  |  |  |  |
| 3/4"   | ¾" x 22mm     |  |  |  |  |  |  |
| 1"     | 1" x 28mm     |  |  |  |  |  |  |
| 1.1/2" | 1.1/2" x 42mm |  |  |  |  |  |  |
| 2"     | 2" x 54mm     |  |  |  |  |  |  |



8100-FC

# Straight Coupling, Compression Type 'A', Female x Copper (FxC)

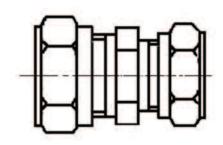
| Size   |             |  |  |  |  |  |
|--------|-------------|--|--|--|--|--|
| Inch   | mm          |  |  |  |  |  |
| 1/2"   | 15mm x 15mm |  |  |  |  |  |
| 3/4"   | 22mm x 22mm |  |  |  |  |  |
| 1"     | 28mm x 28mm |  |  |  |  |  |
| 1.1/2" | 42mm x 42mm |  |  |  |  |  |
| 2"     | 54mm x 54mm |  |  |  |  |  |
|        |             |  |  |  |  |  |





## | Straight Reducer Coupling, Compression Type 'A', Copper x Copper (CxC) |

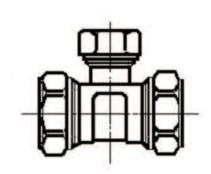
| Size          |             |
|---------------|-------------|
| Inch          | mm          |
| 3/4" x 1/2"   | 22mm x 15mm |
| 1" x 1/2"     | 28mm x 15mm |
| 1"x 3/4"      | 28mm x 22mm |
| 1.1/2" x 3/4" | 42mm x 22mm |
| 1.1/2" x 1"   | 42mm x 28mm |
| 2" x 1"       | 54mm x 28mm |
| 2" x 1.1/2"   | 54mm x 42mm |



8300-C

## Unequal Tee, Compression Type 'A', Copper x Copper x Copper (CxCxC)

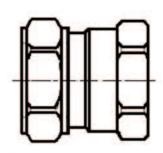
| Size          |                    |  |
|---------------|--------------------|--|
| Inch          | mm                 |  |
| 3/4" x 1/2"   | 22mm x 22mm x 15mm |  |
| 1/2" x 3/4"   | 15mm x 15mm x 22mm |  |
| 1" x 1/2"     | 28mm x 28mm x 15mm |  |
| 1"x 3/4"      | 28mm x 28mm x 22mm |  |
| 1.1/2" x 1/2" | 42mm x 42mm x 15mm |  |
| 1.1/2" x 3/4" | 42mm x 42mm x 22mm |  |
| 1.1/2" x 1"   | 42mm x 42mm x 28mm |  |
| 2" x 3/4"     | 54mm x 54mm x 22mm |  |
| 2" x 1"       | 54mm x 54mm x 28mm |  |
| 2" x 1.1/2"   | 54mm x 54mm x 42mm |  |
|               |                    |  |



8400-C

## | Female Coupling, Compression Type 'A', Female x Copper (FxC) |

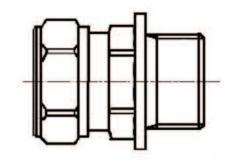
| Size   |               |
|--------|---------------|
| Inch   | mm            |
| 1/2"   | 1/2" x 15mm   |
| 1/2"   | 1/2" x 22mm   |
| 3/4"   | 3/4" x 15mm   |
| 3/4"   | 3/4" x 22mm   |
| 1"     | 1" x 22mm     |
| 1"     | 1" x 28mm     |
| 1.1/2" | 1.1/2" x 28mm |
| 1.1/2" | 1.1/2" x 42mm |
| 2"     | 2" x 42mm     |
| 2"     | 2" x 54mm     |
|        |               |





## | Male Coupling, Compression Type 'A', Male x Copper (MxC) |

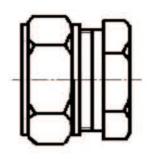
| Size   |               |
|--------|---------------|
| Inch   | mm            |
| 1/2"   | 1/2" x 15mm   |
| 1/2"   | 1/2" x 22mm   |
| 3/4"   | 3/4" x 15mm   |
| 3/4"   | 3/4" x 22mm   |
| 1"     | 1" x 22mm     |
| 1"     | 1" x 28mm     |
| 1.1/2" | 1.1/2" x 28mm |
| 1.1/2" | 1.1/2" x 42mm |
| 2"     | 2" x 42mm     |
| 2"     | 2" x 54mm     |
|        |               |



8500-2

## End Cap, Compression Type 'A', Copper (C)

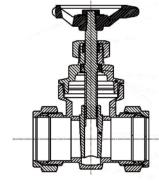
| Size |  |
|------|--|
| mm   |  |
| 15mm |  |
| 22mm |  |
| 28mm |  |
| 42mm |  |
| 54mm |  |
|      |  |



8950

## Brass Gate Valve, Compression Type 'A', Copper x Copper (CxC)

| Size        |  |  |
|-------------|--|--|
| mm          |  |  |
| 15mm x 15mm |  |  |
| 22mm x 22mm |  |  |
| 28mm x 28mm |  |  |
| 42mm x 42mm |  |  |
| 54mm x 54mm |  |  |
|             |  |  |



R47-CA

TYPE A COMPRESSION FITTINGS or non-manipulative fittings enable the installer to make a compression joint without carrying out any work on the tube ends other than ensuring that they are clean, burr free, and cut square.



## 5 "OK" GUNMETAL COMPRESSION FITTINGS AND VALVES - TYPE 'B' FOR COPPER PIPES (Manipulative Type)



#### | Technical Data |

- 1• Sizes: a- From ½" up to 2" b- From 15mm up to 54mm
- 2• Threads Type: BS 21 (ISO 7/1)
- 3• Suitability:
  The Fittings are suitable for the maximum working service pressure and temperatures specified for the copper tubes to BS-2871, and are capable of working at a continuous pressure of 18 bars without leaking and a temperature of up to 85°C.

#### Ease for installation

• "OK" Gunmetal Fittings, Compression Type 'B' to connect Copper Pipes, Manufactured in accordance with BS 864-2, Type 'B', manipulative type with 2 Locking Rings (Adaptor and Compensating Ring).

#### Material

- The Body and The Compression Nuts are in Gunmetal to BS 1400 LG2 Cast (BS EN 1982 grade CC491K).
- The Locking Rings (Adaptor and Compensating Ring) are made of Brass Rod to BS 2874 CZ132 or CZ121.

The robust and easy to use OK range of Type 'B' Fittings are suitable for use with half hard copper tube to BS 2871 Part 1 Table 'Y'/ EN 1057 R 220-250.

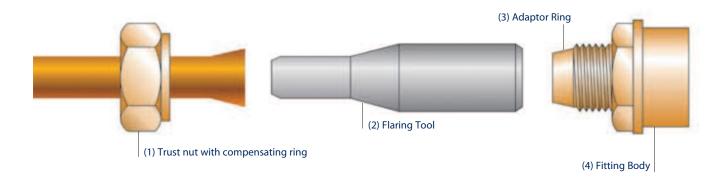
#### The Specifications of Copper Pipes

| Tube Nominal<br>Size | Outside Diameter (mm) |        | Nominal Wall | Thikness     |
|----------------------|-----------------------|--------|--------------|--------------|
|                      | Max.                  | Min.   | Thickness mm | Sheathing mm |
| 15mm                 | 15.045                | 14.965 | 1.0          | 1.0          |
| 22mm                 | 22.055                | 21.975 | 1.2          | 1.0          |
| 28mm                 | 28.055                | 27.975 | 1.2          | 1.0          |
| 42mm                 | 42.07                 | 41.99  | 1.5          | 1.6          |
| 54mm                 | 54.07                 | 53.99  | 2.0          | 1.6          |



## "OK" Gunmetal Compression Fittings and Valves Type 'B', for Copper Pipes Assembly Instructions

- 1• Disassemble the end of the fitting to be connected, slide the integral compression nut and compensating ring (1) assembly over the pipe end. .
- 2• Using an appropriately sized flaring tool (2) bell out the end of the copper pipe by dealing a few blows with a hammer.
- 3. Insert the parallel end of the adaptor piece in the fitting socket and locate the flared tube end onto the tapered face of the adaptor piece.
- 4• Push the pipe over the adaptor to be between the 2 rings and Re assemble the fitting ensuring that the pipe sits snugly against the cone of the ring (3) on the fitting body (4). Tighten the compression nut fully to create an end load resistant and watertight connection.



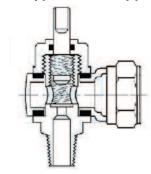
Type 'B' Compression Fittings or Manipulative Fittings require the installer to flare the copper tube end before the joint is assembled.



## 5 | "OK" GUNMETAL COMPRESSION FITTINGS AND VALVES - TYPE 'B'

Gunmetal Screw Down Pattern, Swivel Balancing Ferrule, Compression Type 'B', for Copper Pipes

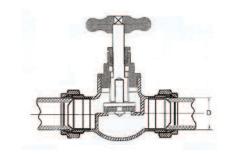
| Size   |             |
|--------|-------------|
| Inch   | mm          |
| 1/2"   | 1/2″x15mm   |
| 3/4"   | 3/4"x22mm   |
| 1"     | 1"x28mm     |
| 1.1/2" | 1.1/2″x42mm |
| 2"     | 2"x54mm     |



4820-C

## Gunmetal Stop Valve, Compression Type 'B', Copper x Copper (C x C)

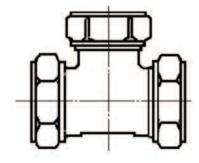
| Size   |             |
|--------|-------------|
| Inch   | mm          |
| 1/2"   | 15mm x 15mm |
| 3/4"   | 22mm x 22mm |
| 1″     | 28mm x 28mm |
| 1.1/2" | 42mm x 42mm |
| 2"     | 54mm x 54mm |



6812-CB

## Gunmetal Equal Tee, Compression Type 'B', Copper x Copper x Copper (C x C x C)

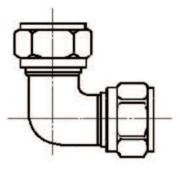
| Size   |                    |
|--------|--------------------|
| Inch   | mm                 |
| 1/2"   | 15mm x 15mm x 15mm |
| 3/4"   | 22mm x 22mm x 22mm |
| 1"     | 28mm x 28mm x 28mm |
| 1.1/2" | 42mm x 42mm x 42mm |
| 2"     | 54mm x 54mm x 54mm |



7000-CB

## Gunmetal 90° Elbow, Compression Type 'B', Copper x Copper (C x C)

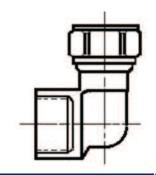
| Size   |             |
|--------|-------------|
| Inch   | mm          |
| 1/2"   | 15mm x 15mm |
| 3/4"   | 22mm x 22mm |
| 1"     | 28mm x 28mm |
| 1.1/2" | 42mm x 42mm |
| 2"     | 54mm x 54mm |
|        |             |





## Gunmetal 90° Female Elbow, Compression Type 'B', Female x Copper (F x C)

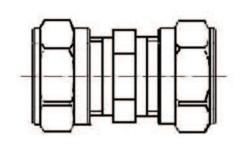
| Size   |             |
|--------|-------------|
| Inch   | mm          |
| 1/2"   | 1/2″x15mm   |
| 3/4"   | 3/4"x22mm   |
| 1"     | 1″x28mm     |
| 1.1/2" | 1.1/2″x42mm |
| 2"     | 2"x54mm     |



7100-FCB

## | Gunmetal Straight Coupling, Compression Type 'B', Copper x Copper (C x C) |

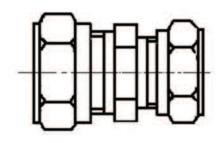
| Size         |                            |
|--------------|----------------------------|
| Inch         | mm                         |
| 1/2"         | 15mm x 15mm                |
| 3/4"         | 22mm x 22mm                |
| 1"           | 28mm x 28mm                |
| 1.1/2"       | 42mm x 42mm                |
| 2"           | 54mm x 54mm                |
| 1"<br>1.1/2" | 28mm x 28mm<br>42mm x 42mm |



7200-CB

## | Gunmetal Straight Reducer Coupling, Compression Type 'B', Copper x Copper (C x C) |

| Size          |             |
|---------------|-------------|
| Inch          | mm          |
| 3/4" x 1/2"   | 22mm x 15mm |
| 1" x 1/2"     | 28mm x 15mm |
| 1"x 3/4"      | 28mm x 22mm |
| 1.1/2" x 3/4" | 42mm x 22mm |
| 1.1/2" x 1"   | 42mm x 28mm |
| 2" x 1"       | 54mm x 28mm |
| 2" x 1.1/2"   | 54mm x 42mm |

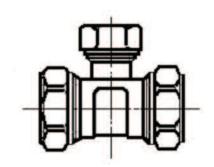


7300-CB



## | Gunmetal Unequal Tee, Compression Type 'B', Copper x Copper x Copper (C x C x C)

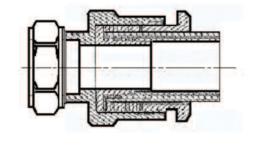
| Size          |                    |
|---------------|--------------------|
| Inch          | mm                 |
| 3/4" x 1/2"   | 22mm x 22mm x 15mm |
| 1/2" x 3/4"   | 15mm x 15mm x 22mm |
| 1" x 1/2"     | 28mm x 28mm x 15mm |
| 1"x 3/4"      | 28mm x 28mm x 22mm |
| 1.1/2" x 1/2" | 42mm x 42mm x 15mm |
| 1.1/2" x 3/4" | 42mm x 42mm x 22mm |
| 1.1/2" x 1"   | 42mm x 42mm x 28mm |
| 2" x 3/4"     | 54mm x 54mm x 22mm |
| 2" x 1"       | 54mm x 54mm x 28mm |
| 2" x 1.1/2"   | 54mm x 54mm x 42mm |
|               |                    |



7400-CB

# | Gunmetal Universal Transition Coupling (UTC) Type 'B', PE x Copper , (PE x C) to connect PE Pipes with Copper Pipes |

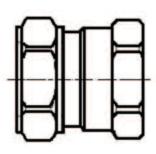
| Size   |             |
|--------|-------------|
| Inch   | mm          |
| 1/2"   | 20mm x 15mm |
| 3/4"   | 25mm x 22mm |
| 1"     | 32mm x 28mm |
| 1.1/2" | 50mm x 42mm |
| 2"     | 63mm x 54mm |



7500

## | Gunmetal Female Coupling, Compression Type 'B', Female x Copper (Fl x C) |

| Size   |               |
|--------|---------------|
| Inch   | mm            |
| 1/2"   | 1/2" x 15mm   |
| 3/4"   | 3/4" x 22mm   |
| 1″     | 1" x 28mm     |
| 1.1/2" | 1.1/2" x 42mm |
| 2"     | 2" x 54mm     |
|        |               |

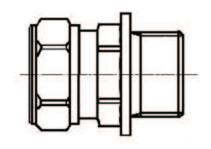


7550-F



## | Gunmetal Male Coupling, Compression Type 'B', Male x Copper (MI x C) |

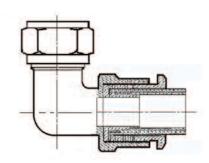
| Size   |             |
|--------|-------------|
| Inch   | mm          |
| 1/2"   | 1/2″x15mm   |
| 3/4"   | 3/4"x22mm   |
| 1"     | 1″x28mm     |
| 1.1/2″ | 1.1/2″x42mm |
| 2"     | 2"x54mm     |
|        |             |



7550-M

## | Gunmetal Transition 90° Elbow Compression Type 'B', PE x Copper, (PE x C) to connect PE Pipes with Copper Pipes |

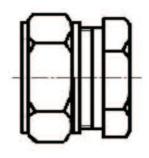
| Size   |             |
|--------|-------------|
| Inch   | mm          |
| 1/2"   | 20mm x 15mm |
| 3/4"   | 25mm x 22mm |
| 1"     | 32mm x 28mm |
| 1.1/2" | 50mm x 42mm |
| 2"     | 63mm x 54mm |



7600

## | Gunmetal End Cap, Compression Type 'B', Copper (C) |

| Size   |      |
|--------|------|
| Inch   | mm   |
| 1/2"   | 15mm |
| 3/4"   | 22mm |
| 1"     | 28mm |
| 1.1/2" | 42mm |
| 2"     | 54mm |
|        |      |



7950-CB









#### **Gunmetal Standard Pattern Swivel Balancing Ferrule**

**Pushfit Type** 

#### Material

Fully Gunmetal Bronze to BS 1400 Grade LG2 (BS EN 1982 Grade CC491K)

#### Sizes & Dimensions

1/2" BSPT x 20mm outlet1.1/4" BSPT x 40mm outlet3/4" BSPT x 25mm outlet1.1/2" x 50mm outlet1" BSPT x 32mm outlet2" x 63mm outlet



#### 4820 AS

#### Description

#### **Gunmetal Screwdown Pattern Swivel Balancing Ferrule**

**Pushfit Type** 

#### Material

Fully Gunmetal Bronze to BS 1400 Grade LG2 (BS EN 1982 Grade CC491K)

#### Sizes & Dimensions

1/2" BSPT x 20mm outlet1.1/2" x 50mm outlet3/4" BSPT x 25mm outlet2" x 63mm outlet1" BSPT x 32mm outlet1" BSPT x 1" outlet1.1/4" BSPT x 40mm outlet



#### 4820 A

#### Description

#### **Gunmetal Screwdown Pattern Swivel Balancing Ferrule**

**Compression Type** 

#### Material

Fully Gunmetal Bronze to BS 1400 Grade LG2 (BS EN 1982 Grade CC491K)

#### Sizes & Dimensions

1/2" BSPT x 20mm outlet1.1/4" BSPT x 40mm outlet3/4" BSPT x 25mm outlet1.1/2" x 50mm outlet1" BSPT x 32mm outlet2" x 63mm outlet



#### 4820 B

#### Description

#### **Gunmetal Saddles to suit AC Pipes**

available untapped and can be supplied drilled and tapped according to the Client's requirements from 1/2" up to 2"  $\,$ 

#### Material

Gunmetal Bronze to BS 1400 Grade LG2 (BS EN 1982 grade CC491K), Bolts & Nuts Stainless Steel Grade A4 (AISI 316)

#### Sizes & Dimensions

DN of AC pipe (in mm): 75, 80, 100, 125, 150, 200, 225, 250, 300, 350, 400, 450, 500





#### **Gunmetal Saddles to suit DI, PE & GRE Pipes**

available untapped and can be supplied drilled and tapped according to the Client's requirements from 1/2" up to 2"

#### Material

Gunmetal Bronze to BS 1400 Grade LG2 (BS EN 1982 Grade CC491K), Bolts & Nuts Stainless Steel Grade A4 (AISI 316)

#### Sizes & Dimensions

DN of DI, PE & GRE pipe (in mm): 75, 80, 100, 125, 150, 200, 250, 300, 350, 400, 450, 500



4822

#### Description

#### **Gunmetal Stopcock with Crutch Head**

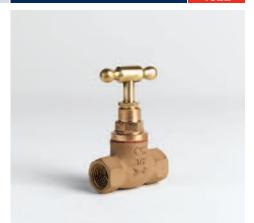
according to BS 1010, Female Threaded (BSP to BS 21)

#### Material

Gunmetal Bronze to BS 1400 Grade LG2 (BS EN 1982 Grade CC491K), Crutch & Stem in Brass

#### Sizes & Dimensions

| 1/2" | 1.1/4" |
|------|--------|
| 3/4" | 1.1/2" |
| 1"   | 2"     |



2089

#### Description

#### **Gunmetal Lockable Stopcock**

with Key according to BS 1010, Female Threaded (BSP to BS 21)

#### Materia

Fully Gunmetal Bronze to BS 1400 Grade LG2 (BS EN 1982 Grade CC491K)

### Sizes & Dimensions

| 1/2" | 1.1/4" |
|------|--------|
| 3/4" | 1.1/2" |
| 1"   | 2"     |



4776

#### Description

#### **Gunmetal Stopcock with Square Head**

Double Compression Ends for connecting PE Pipes, Compression Type

#### Material

Fully Gunmetal Bronze to BS 1400 Grade LG2 (BS EN 1982 Grade CC491K)

#### Sizes & Dimensions

| 20mm | 40mm |
|------|------|
| 25mm | 50mm |
| 32mm | 63mm |





#### **Gunmetal Stopcock for Connecting G.I. with P.E. Pipes**

Pushfit or Compression Type (Supplied with Square or Crutch head)

#### Material

Fully Gunmetal Bronze to BS 1400 Grade LG2 (BS EN 1982 Grade CC491K)

#### Sizes & Dimensions

1.2" x 20mm 1.1/2" x 50mm 3/4" x 25mm 2" x 63mm

1" x 32mm



#### 6812 A

#### Description

#### **Gunmetal Stopcock for Connecting P.E. with P.E. Pipes**

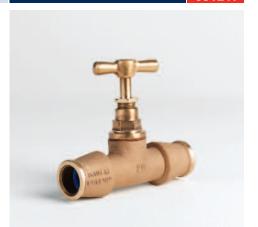
Pushfit Type (Supplied with Square or Crutch head)

#### Material

Fully Gunmetal Bronze to BS 1400 Grade LG2 (BS EN 1982 Grade CC491K)

#### Sizes & Dimensions

20mm 40mm 25mm 50mm 32mm 63mm



#### 6812 B

#### Description

#### **Gunmetal Stopcock with Crutch Head**

Double Compression Ends for connecting PE Pipes, **Compression Type** 

#### Material

Fully Gunmetal Bronze to BS 1400 Grade LG2 (BS EN 1982 Grade CC491K)

#### Sizes & Dimensions

20mm 40mm 25mm 50mm 32mm 63mm



#### Description

#### **Gunmetal Self Tapping Ferrule Strap**

Pushfit Type

#### Material

Gunmetal Bronze to BS 1400 Grade LG2 (BS EN 1982 Grade CC491K),

#### Sizes & Dimensions

63 x 25mm, 63 x 32mm

90 x 25mm, 90 x 32mm

110 x 25mm, 110 x 32mm, 110 x 50mm

160 x 25mm, 160 x 32mm, 160 x 50mm

225 x 25mm, 225 x 32mm, 225 x 50mm





#### **Gunmetal Self Tapping Ferrule Strap**

Pushfit Type

#### Material

Gunmetal Bronze to BS 1400 Grade LG2 (BS EN 1982 Grade CC491K), The Self Drilling Cutter is of Aluminum Bronze

### Sizes & Dimensions

63 x 20mm, 63 x 25mm, 63 x 32mm 110 x 20mm, 110 x 25mm, 110 x 32mm, 110 x 50mm, 110 x 63mm 125 x 20mm, 125 x 25mm, 125 x 32mm, 125 x 50mm, 125 x 63mm



4819 D

#### Description

#### **Forged Brass Gate Valve**

with Female Threaded Ends, (BSP to BS 21)

Brass to BS 5154:1991 (BS 2874)

#### Sizes & Dimensions

| 1/2" | 1.1/4′ |
|------|--------|
| 3/4" | 1.1/2′ |
| 1"   | 2"     |



#### Description

#### **Forged Lockable Brass Gate Valve**

with Female Threaded Ends (BSP to BS 21)

#### Material

Brass to BS 5154:1991 (BS 2874)

#### Sizes & Dimensions

| 1/2" | 1.1/4" |
|------|--------|
| 3/4" | 1.1/2" |
| 1"   | 2"     |



R 47 B

#### Description

#### **Gunmetal Gate Valve**

To BS 5154 with Female Threaded Ends, (BSP to BS 21)

Gunmetal Bronze to BS 1400 Grade LG2 (BS EN 1982 Grade CC491K)

#### Sizes & Dimensions

| 1/2" | 1.1/4" |
|------|--------|
| 3/4" | 1.1/2" |
| 1"   | 2"     |





#### **Gunmetal Male Adaptor**

Pushfit Type

#### Material

Fully Gunmetal Bronze to BS 1400 Grade LG2 (BS EN 1982 Grade CC491K)

#### Sizes & Dimensions

 1/2" BSPT x 20mm
 1.1/2" BSPT x 50mm

 3/4" BSPT x 25mm
 2" BSPT x 63mm

 1" BSPT x 32mm
 1/2" BSPT x 32mm

 1.1/4" BSPT x 40mm



4821 A

#### Description

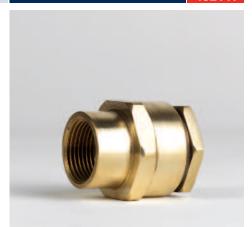
#### **Gunmetal Female Adaptor**

Compression Type

#### Material

Fully Gunmetal Bronze to BS 1400 Grade LG2 (BS EN 1982 Grade CC491K)

#### Sizes & Dimensions



4500-1

#### Description

#### **Gunmetal Male Adaptor**

**Compression Type** 

#### Material

Fully Gunmetal Bronze to BS 1400 Grade LG2 (BS EN 1982 Grade CC491K)

#### Sizes & Dimensions

 1/2" BSPT x 20mm
 1.1/4" BSPT x 40mm

 3/4" BSPT x 25mm
 1.1/2" BSPT x 50mm

 1" BSPT x 32mm
 2" BSPT x 63mm



4500-2

#### Description

### **Elbow, Gunmetal Meter Union**

Pushfit Type

#### Material

Fully Gunmetal Bronze to BS 1400 Grade LG2 (BS EN 1982 Grade CC491K)

#### Sizes & Dimensions

3/4" x 20mm





#### **Gunmetal Coupler Straight**

Pushfit Type

#### Material

Fully Gunmetal Bronze to BS 1400 Grade LG2 (BS EN 1982 Grade CC491K)

#### Sizes & Dimensions

3/4" x 20mm



#### Description

#### **Gunmetal Fittings**

such as Equal Tees, Reducer Tees, Reducers, Elbows and others, Compression or Pushfit Type

#### Material

Fully Gunmetal Bronze to BS 1400 Grade LG2 (BS EN 1982 Grade CC491K)

#### Sizes & Dimensions

From 1/2" up to 2"



#### Description

### **Bi Metallic Flange**

consisting

#### Material

Consisting of 2 pieces:

- Cast Iron Flange to BS 4622, Drilled according to BS 4504 with Electrostatically Fusion Bonded Polyester Coating
- Gunmetal to BS 1400 LG2 Insert

#### Sizes & Dimensions

2" x 54mm



#### 6990

#### Description

#### **Copper Alloy Gauge**

#### Material

Gunmetal Bronze to BS 1400 Grade LG2 (BS EN 1982 Grade CC491K & Brass to BS 5154:1991 (BS 2874)

#### Sizes & Dimensions

1/2"



## **7.** Certificates







THE INTERNATIONAL CERTIFICATION NETWORK

# CERTIFICATE

IQNet and
DQS GmbH Deutsche Gesellschaft zur Zertifizierung von Managementsystemen
hereby certify that the company

## Fonderies Ohannes H. Kassardjian s.a.l. (OK Foundries s.a.l.)

OK Foundries-Kfarchima Beirut, Lebanon

has implemented and maintains a Quality Management System.

#### Scope:

Design, development, manufacturing and assembly of cast iron, brass, gunmetal and aluminum castings and products

Through an audit, documented in a report, it was verified that the management system fulfills the requirements of the following standard:

ISO 9001: 2015

 Valid from
 2016-02-10

 Valid until
 2019-02-09

 Date of certification
 2016-02-10

Registration number: DE-290520 QM15



Michael Drechsel President of IQNet G. Blechschmidt

Götz Blechschmidt

Managing Director of DQS GmbH

**IQNet Partners\***:

AENOR Spain AFNOR Certification France AIB-Vincotte International Belgium APCER Portugal CCC Cyprus CISQ Italy CQC China CQM China CQS Czech Republic Cro Cert Croatia DQS Holding GmbH Germany FCAV Brazil FONDONORMA Venezuela ICONTEC Colombia IMNC Mexico Inspecta Certification Finland INTECO Costa Rica IRAM Argentina JQA Japan KFQ Korea MIRTEC Greece MSZT Hungary Nemko AS Norway NSAI Ireland PCBC Poland Quality Austria Austria RR Russia SIGE Mexico SII Israel SIQ Slovenia SIRIM QAS International Malaysia SQS Switzerland SRAC Romania TEST St Petersburg Russia TSE Turkey YUQS Serbia IQNet is represented in the USA by: AFNOR Certification, CISQ, DQS Holding GmbH and NSAI Inc.

\* The list of IQNet partners is valid at the time of issue of this certificate. Updated information is available under www.ignet-certification.com







## CERTIFICATE



This is to certify that

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OK Foundries-Kfarchima Beirut, Lebanon

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Valid from 2016-02-10

Valid until 2019-02-09

Date of certification 2016-02-10



DQS GmbH

G. Blechschundt

Götz Blechschmidt Managing Director







#### FONDERIES OHANNES KASSARDJIAN S.A.L.

Leading Foundries in the Middle East Since 1939