

# **amari metals** PRESSFITTINGS & TUBES

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There are a number of possible ways to join tubes and accessories in plumbing installations, including threaded joints, welding and inseparable joints using pressfitting of accessories (such as elbows, tees, couplings, etc.).

Our press system consists of a range of accessories, tubes and a pressfitting tool. This system makes it easy to quickly and safely install a wide range of civil, industrial and naval systems, with diameters ranging from 15 mm to 168.3 mm.

This wide range means that the press system can be used in any type of installation.

The main advantages of the system:

- Installation is quick and safe using this system
- The installation is reliable, even under severe use conditions
- Less labour is needed
- Resistant to corrosion
- Easy to handle
- No anti-fire measures are needed

#### Maximum pressure



# ◆○ APPLICATIONS



#### Drinking water

The press system AISI 316L stainless steel tubes and accessories have no effect on the perfect quality of drinking water.

The O-ring seal complies with recommendations for drinking water installations (EPDM O-ring seals are used for sanitation water installations).

Stainless steel is not recommended for installations which contain or transport sea water.

#### Solar power facilities

Solar power installations obtain heat energy from the Sun. This energy is captured by a solar collector and, once absorbed, it is conducted by a solar fluid (a mixture of steam and anti-freeze) to the heat accumulator.

We recommend that FKM (green) O-ring seals are used in such installations as they can withstand temperatures of up to 200°.

The anti-freezes used are basically chemical preparations based on glycol which lower the freezing point. These anti-freezes always contain other additives, and it is advisable to consult the manufacturer when such additives are used.

The main reasons for using stainless steel in such installations are: **low maintenance**, **better performance** and **less labour needed**.

### Sprinkler

Sprinkler systems consist of fixed tubing with fittings for connecting hoses and other outlet systems. These tubes can be divided into:

- Wet tubes: these are always full of water.
- Dry tubes: the tubes are filled by firefighters or by automatic devices which are activated in an emergency.

These installations are subject to the accreditation and approval conditions of insurance companies.

### Compressed air

Compressed air is used in a wide range of applications.

Service pressures in compressed air installations goes up to a maximum of 10 bar. However, tools frequently only require a maximum connection pressure of 6 bar.

Our press system can work with pressures up to 16 bar.

FKM (green) O-ring seals are used in such installations. These O-ring seals are used because there are often traces of oil in most compressed air installations. The standard O-ring (EPDM black) can be used when the volume of residual oil is below 1 mg/m<sup>3</sup>.

#### WELDED TUBES

Our welded stainless steel tubes are manufactured in accordance with the EN 10312 and EN 10.217-7 standards. This meets the 1.4404/1.4301 AISI 316L/AISI 304 standard under UNE EN 10088.

Ext. diameter Wall thickness x (mm)	Weight (Kg/m)	Water capacity (l/m)	Max tube pressure (bar)	Max accessory pressure (bar)
15 x 1.0	0.333	0.133	147	40
18 x 1.0	0.410	0.201	123	40
22 x 1.2	0.624	0.302	120	40
28 x 1.2	0.790	0.514	95	35
35 x 1.5	1.240	0.804	94	25
42 x 1.5	1.503	1.194	79	20
54 x 1.5	1.972	2.042	61	20
76.1 x 2	3.655	4.082	58	16
88.9 x 2	4.286	5.661	49	16
108 x 2	5.223	8.494	40	16
114.3 x 2	5.62	9.55	25	16
139.7 x 2	6.94	14.45	21	16
139.7 x 2.6	8.98	14.20	27	16
168.3 x 2	8.328	21.19	17	16
168.3 x 2.6	10.787	20.88	22	16



Format supplied: 6 metre lengths

Curvature radius: r = 3,5 x d



Surface supplied: The exterior and interior surfaces are smooth.

#### **CERTIFICATES**

As the manufacturer of the press system of stainless steel tubes and accessories, ISOTUBI S.L. has been awarded certificates from the most prestigious bodies in Europe.

The basis of the press system is the pressfitting of the accessory using an O-ring and tube. The O-ring is placed at the end of the accessory to make the joint watertight. The tube is then inserted into the accessory up to its limit and the joint is created by mechanical deformation using an electric-hydraulic tool.

M profile jaws or collars should always be used. In case of doubt, please ask our technical department.

## SYSTEM TECHNICAL SPECIFICATIONS

**Joint type:** O-ring resistant to hot water, ageing and the additives commonly used in drinking water. There are three kind of O-rings depending on its application (HNBR available also under request).

Fitting material: Stainless steel nº 1.4404 (AISI 316L). Characteristics:

- Hygienic, as demonstrated in many food and pharmaceutical industry applications.
- Minimum load loss, resulting in faster fluid flows.
- Excellent decorative finish avoiding need for additional painting or external protection costs.
- Less heat conduction than other materials.
- Good resistance to oxidation and good mechanical and deformation resistance at high temperatures.
- Environmentally friendly.

Joint type: Cold joint ideal for joining thinwall stainless steel pipes.

Working pressure: Max 16 bar

#### Working temperature:

- ♦ With EPDM O-ring (black) –20 °C to +110 °C
- ◆ With FKM O-ring (green) –20 °C to +200 °C
- ◆ With FKM O-ring (red) –10°C to +200 °C
- ◆ With HNBR O-ring (yellow) –20 °C a +70 °C

#### Wall-thickness of the fitting:

- 1.5 mm for diameters 15, 18, 22, 28, 35, 42, 54
- 2 mm for diameters 76.1, 88.9, 108, 114.3, 139.7, 168.3
- 2.6 mm for diameters 139.7, 168.3



NUMEPRESS FITTING with compression loop fitted



One of the most important elements in the system is the O-ring seal. A number of different O-ring seal versions have been developed which are resistant to ageing so that the press system can be used in as wide a range of installations as possible.



#### O-ring type

EPDM (Black) Ethylene rubber, resistant to ageing and hot water.

- Applications: Hot water, heating, fire protection and compressed air (oil-free)
- ◆ Temperature: From -20 °C to +110 °C

FKM (Green) Fluoroelastomer rubber

- Applications: Oils, hydrocarbons (except diesel), solar power installations, compressed air
- ◆ Temperature: From -20 °C to +200 °C

FKM (Red) Fluoroelastomer rubber

- Applications: Steam
- ◆ Temperature: From −10 °C to +200 °C

We use the appropriate O-ring seal for the type of fluid. Our technical department can provide advice on this.



#### PRESSFITTING TOOLS

The pressfitting tool can be manual, battery or electrically-powered. There is a corresponding easily exchangeable jaw for each diameter which is placed in the tool cylinder.

Most of the machines that exist in the market allow pressing NUMEPRESS fittings properly from diameter 15 mm to diameter 108 mm. Each diameter needs its own jaw or collar. A 32 Kn machine is required to obtain the optimal results. Please ask our technical department for XXL sizes tooling.





#### Assembly sequence

• Cut tube at right angle.

- Debur the tube internally and externally to avoid damaging the seal.
- Check the seal is properly placed. Do not use oil or grease.
- Rotate the tube slowly as you insert it in the joint until the limit.

- Mark the tube as a reference point.
- Place the pressfitting jaw in the machine and insert the fastening bolt until it fits.
- Open the jaw, place at a right angle and carry out the pressfitting.
- After the pressfitting: a longitudinal section of a pressfitted joint.





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