



PRESS STAINLESS STEEL

UP TO 54 MM PRESS-FITTED WITH M OR V PROFILE!

 SUPERIOR PRICING & QUALITY  20 YEAR WARRANTY  12 MM - 108 MM



PRODUCT CATALOGUE

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Press stainless steel

 <p>Straight coupling 2 x press</p>	 <p>Sliding coupling with abutment 2 x press</p>	 <p>Reduced coupling 2 x press</p>	 <p>Push-in coupling press x push-in</p>	 <p>Straight coupling press x conical male</p>
 <p>Straight coupling press x long female</p>	 <p>Push-in coupling Conical male x push-in</p>	 <p>Push-in coupling Long female x push-in</p>	 <p>Long push-in elbow push-in x female</p>	 <p>Long push-in elbow Push-in x press</p>
 <p>Stop end 1 x press</p>	 <p>Elbow 45° 2 x press</p>	 <p>Elbow 90° 2 x press</p>	 <p>Push-in elbow 45° Push-in x press</p>	 <p>Push-in elbow 90° Push-in x press</p>
 <p>Elbow 90° conical male x press</p>	 <p>Elbow 90° Long female x press</p>	 <p>Elbow 90° level-closed male x female</p>	 <p>Elbow 90° flat seal female x press</p>	 <p>Elbow 90° 2 x press</p>
 <p>Elbow 90° conical male x press</p>	 <p>Elbow 90° press x long female</p>	 <p>Push-in elbow 90° 2 x push-in</p>	 <p>Tee coupling 3 x press</p>	 <p>Tee coupling, reduced 3 x press</p>

 <p>Tee coupling press x long female x press</p>	 <p>Wall plate long female x press</p>	 <p>Wall plate with universal flange press x female x press</p>	 <p>Wall plate with sound muffler female x press</p>	 <p>Wall plate spacer for 2018</p>
 <p>Backplate flange coupling PN16 1 x press</p>	 <p>Buckle coupling flat seal, press x female</p>	 <p>2-piece coupling press x female</p>	 <p>3-piece coupling flat seal, press x male</p>	 <p>3-piece coupling flat seal, press x female</p>
 <p>3-piece coupling flat seal, press x female</p>	 <p>3-piece coupling 2 x press</p>	 <p>Reduced socket Female x male</p>	 <p>Reduced socket Female x male</p>	 <p>Threaded coupling 2 x male</p>
 <p>Adapter 2 x push-in</p>	 <p>Axial compensator 2 x press</p>	 <p>Cross-over elbow 2 x press</p>	 <p>Cross-over elbow, short 2 x push-in</p>	 <p>Adapter socket with anchor plate</p>
 <p>Adapter nipple with nut</p>	 <p>Pipe with collar and nut for discharging thaw water</p>	 <p>Wall plate with universal flange press x female x press</p>	 <p>Mounting set, 2 wall plates</p>	 <p>Mounting set, 2 double wall plates</p>

BONFIX STAINLESS STEEL PRESS FITTINGS

BONFIX Stainless steel system press fittings (RVS)

The BONFIX stainless steel installation system comprises of premium BONFIX system press fittings provided with a black EPDM sealing ring (ethylene-propylene-diene) rubber. All BONFIX RVS press couplings are manufactured from the material coded 1.4404 / AISI 316L and 1.4408 (fittings with threaded end). The material coded 1.4404 / AISI 316L contains an increased molybdenum content of $\geq 2.3\%$ molybdenum and a reduced carbon content, below the standard value of 1.4401. This has created a material that is not only equal in quality, but also possesses significantly greater resistance to corrosion.

The BONFIX RVS press system has been tested to comply with industry standards DVGW GW 541 and W 534 and certified by DVGW, WRAS, KIWA- ATA and the large European certification institutes.

BONFIX stainless steel press fittings in the 12 mm to 54 mm range are long-profile. The larger diameter material is designed with a short profile and can be fitted with an M-profile press tool only.

BONFIX RVS Press fittings with black EPDM ring			
Application range	Size/pressure/markings	Sealing ring	Tool
<ul style="list-style-type: none"> • Drinking water • Heating • Treated water • Cooling water • Dry compressed air • Industry • Sprinkler* • Fire extinguishing systems 	d = 12 – 108 mm maximum 16 bar	EPDM Colour: black Max. permanent temperature: -30 °C up to 120 °C	d = 12 – 54 mm Choice of press tools and tongs or chains d = 64 – 108 mm press-fit with M-profile only
Thread type: Connecting thread: R/Rp thread as per EN 10226, Securing thread (nut): G thread as per ISO 228			

* Contact BONFIX for assembly instructions.

PIPES

BONFIX RVS press fittings must be installed in combination with BONFIX approved stainless steel pipes compliant with GW 541 and EN 10312. All pipe used must be CE-certified and delivered with a performance testimonial based on CPR (Construction Products Regulation). Contact BONFIX for a list of sales outlets.

CORROSION RESISTANCE

The premium construction material -1.4404 (AISI 316L) - and high-precision passivated surface of pipes and fittings ensure excellent corrosion resistance.

BONFIX LEAK BEFORE PRESSED (LBP) FUNCTION

BONFIX stainless steel press fittings are supplied with a Leak Before Pressed (LBP) function when used in combination with BONFIX pipes. Fittings supplied with an LBP function always leak water during the prescribed pressure test BEFORE they are pressed. This way it can be quickly established if there are any unfinished pressings. After having been correctly fitted and pressed, the press fittings are air and watertight.

BENEFITS:

- Press-fitted with M OR V profile tongs (up to 54mm).
- High-precision, passivated surfaces for excellent corrosion resistance and hygiene
- Leak detection.
- Push & Stay function: pipe and fitting instantly secured; fitting cannot slide over pipe.
- A very practical solution especially with vertical installations.
- Quick and fire-safe fitting: A fast, time-efficient and safe system for cold-pressing of stainless steel pipes.
- BONFIX installation systems are therefore highly suitable for renovation work.
- Wide range: 15mm to 108mm.



* Above benefits are guaranteed only if the quality of the pipe satisfies BONFIX recommendation. For details and sales outlets contact: verkoop@bonfix.nl or PH. 088 46 00 794.

LENGTWISE EXPANSION OF PIPES

Heat-conducting pipes expand at different rates, depending on the construction material and temperature variations. Where a pipe is constrained from expanding under thermal influence the resultant mechanical stressed may exceed specified tolerances, causing damage to the pipe (usually fractures due to metal fatigue). This can be prevented by allowing the pipe sufficient room to expand.

Matière première	Coefficient de dilatation thermique $\alpha [10^{-6} K^{-1}]$ 20 à 100 °C	$\Delta \ell$ [mm] pour $\ell_0 = 10m$ $\Delta T = 50 K$
Acier inox	16,5	8,3
Cuivre	16,6	8,3
Tube en acier galvanisé	12,0	6,0
Tube stratifié	23,0	11,0

Heat expansion of various materials $\Delta \ell = \alpha \cdot \ell_0 \cdot \Delta T$

To compensate for heat-induced variation in pipe length as specified above per construction material, the flexibility in the pipe system can be used. This is achieved by installing a sufficient number of soft-yielding bends at the corners in the pipe system. Holding brackets must be installed in such places as to allow for a sufficient rate of expansion.

Basic principle: always leave sufficient room for expansion between two fixed points.

If the pipe system does not have sufficient room to allow for expansion, a provision must be installed with the aid of special components, e.g. flexible metal compensators. Where sufficient space is available a U-pipe compensator can be installed.

With built-in installation work heat expansion must be freely allowed by wrapping pipes with a sufficiently thick chloride-free, elastic insulation material. Unless a fixed point has been prepared, ceiling ducts especially must be padded with care and precision.

ASSEMBLY INSTRUCTIONS

The minimum required spacing and clearance of pipes with respect to walls, corners and wall recesses can be determined on the basis of the below diagrams and tables.

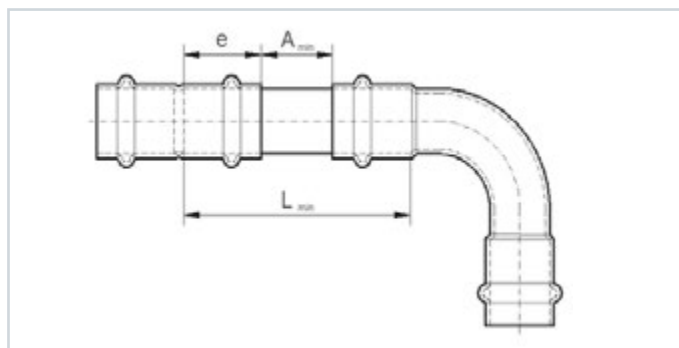


figure 1:
Minimum spacing between two press points (see table below)

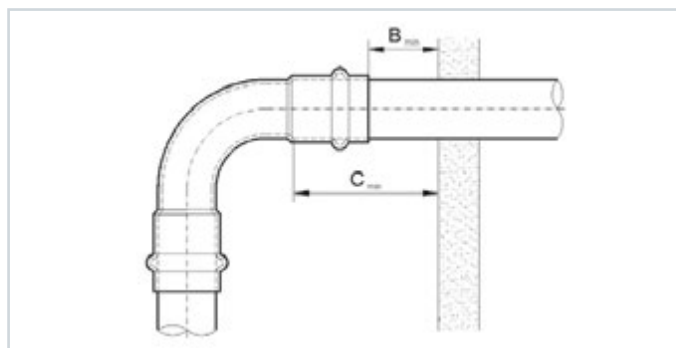


figure 2:
Minimum clearance from wall (see next table)

Ext. pipe diameter in mm	Nominal width DN	Push-in depth in mm e	Minimum distance in mm			
			A _{min}	L _{min}	B _{min}	C _{min}
15	12	25	10	60	60	85
18	15	25	10	60	60	85
22	20	28	10	66	60	88
28	25	29	10	68	60	89
35	32	30	20	70	60	90
42	40	38	20	96	60	98
54	50	44	30	108	60	103
76,1	65	50	30	130	60	110
88,9	80	56	30	142	60	116
108	100	70	30	170	60	130

table 1:
Minimum distance between two press points and between wall and press point

TOLERATED BEND RADIUS

Stainless steel, copper and steel galvanised pipe can be cold-bent within specified limits using the appropriate bending equipment. The bend radius measured in the neutral fibre of the elbow, for pipe systems constructed of rustproof steel and steel galvanised pipe, must not be less than $r = 3.5 \times d$. For copper pipe a bend radius of at least $r = 3 \times d$ must be adhered to. Important: a cylindrical pipe section of sufficient length should be available for completing the pipe system after bending.

Where the dimensions provided in the table above are exceeded, the responsibility for a perfect bending result rests with the manufacturer of the bending device. Pipe systems can be cold-bent up to a maximum pipe diameter of 28mm.

ATTACHING THE PIPE

Pipe abutments serve two purposes:

1. sealing the pipe;
2. controlling pipe expansion due to temperature fluctuation.

There are two types of collars or attachment points:

1. fixed collars to fasten the pipe without movement;;
2. sliding collars to allow for axial friction.

Determining the attachment points

A pipe with no change of direction or expansion compensation device must be attached at a single point only. With long pipes, we recommend installing the collar piece in the centre, to enable expansion in both directions. This is also a very effective solution with vertical pipes running through multiple floor levels, as it provides leeway for bi-directional expansion and reduces stress on the arms.

No fixed points (anchors) must be attached to fittings. Axially shifting collars can be used to avoid hazardous, fixed points.

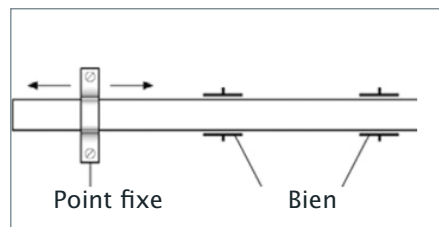


figure A
Anchoring the pipe: straight pipe, single point of attachment only: good

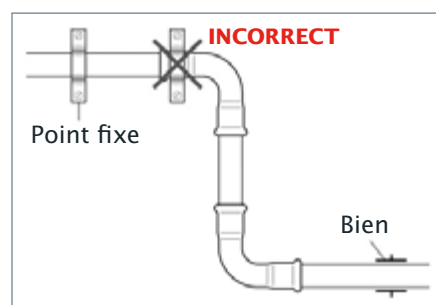


figure B
Anchoring the pipe: fixed point on fitting: incorrect

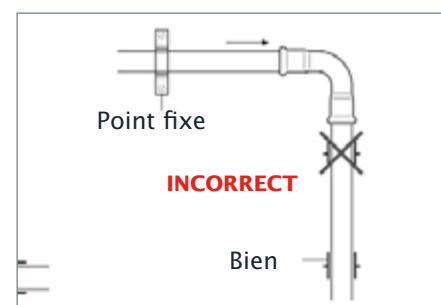


figure C
Anchoring the pipe: sliding sleeve too close to fitting: incorrect

INSTALLATION COMBINED WITH COMPONENTS MADE OF OTHER MATERIAL

Stainless steel press fittings by BONFIX and AISI 316L stainless steel pipe can be connected to other stainless steel and bronze fittings and brackets without any problems. However, a connection with a thermally galvanised, carbon steel or other non-stainless steel fitting or bracket may result in contact corrosion. This can be prevented by installing a bracket or intermediate section made of plastic or bronze of at least 50mm in length.

Minimum spacing

For correct installation of pipes, minimum spacing and clearances must be observed, depending on various factors:

1. Spacing between anchor points

Anchor points must be chosen at appropriate distances. Where anchor points are crowded (too closely spaced) this may impede the ability of the pipe to absorb expansion. On the other hand, where anchor points sit too far apart this may result in increased vibration and or excessive noise. The table below provides recommended spacing applicable in most situations:

Horizontal :

Pipe	15	18	22	28	35	42	54	64	76,1	88,9	108
Spacing (m)	1,2		1,8		2,4		2,7	3,0			

Vertical :

Pipe	15	18	22	28	35	42	54	64	76,1	88,9	108
Spacing (m)	1,8		2,4		3,0		3,6				

2. Clearance for operating press tool

Sufficient clear space must be allowed for operating the press tool and avoiding obstacles, depending on the size of the press tool. The table above (see previous page) provides instructions for minimum required clear space.

3. Spacing between fittings

Where two press fittings are installed too close together, it may be difficult to achieve a perfectly tight connection. The table (see previous page) shows the minimum required spacing between fittings.

WHY A LONG PROFILE WITH BONFIX STAINLESS STEEL PRESS FITTINGS?

Press fittings can be effected in either of the following two ways:

- on 2 levels (red copper and steel galvanised press);
- on 3 levels (stainless steel press).

In deciding whether to press at either 2 or 3 levels, the following aspects must be factored in:

- the material used;
- deformation properties of the used material;
- type of deformation.

Additionally, in selecting a pressing system, bear in mind that BONFIX products are designed for unique press compatibility. The press fittings can be pressed with either an M profile or V profile press tool, up to a pipe diameter of 54 mm max.

For red copper and steel galvanised material, a short profile (2 levels) has been elected, whereas for stainless steel (3 levels) a long profile has been elected based in the fact that stainless steel, as a class of material, possesses different deformation properties than those observed in red copper or steel galvanised material.

INSTALLATION INSTRUCTIONS

- **Cutting the pipe**

Cut the pipe at a perfectly square angle using a pipe cutter, cutting machine, or fine-toothed saw. Allow sufficient depth for the fitting to be fed into the connecting pipe.



- **Deburring and calibrating the pipe**

When cut to the right length the pipe must be carefully deburred inside and out with an electric or hand-operate deburrer, calibrating device or file. It is essential to avoid damaging the sealing ring when the pipe is inserted into the fitting as this could result in a leaking connection. All burs must be removed absolutely.



- **Checking position of sealing ring**

Prior to installing the fittings the position of the sealing rings in their toroidal seats must be checked. If necessary, rinse with water to facilitate leading the pipe into the fitting. Also, both pipe and fitting must be checked for any metal or dirt particles. Remove any remaining metal or dirt particles.



- **Feeding pipe into fitting and marking**

Lead pipe into fitting with a slight rotating movement until abutting the stop. To assure a perfect and secure connection mark the pipe with a felt pad at the point where it meets the fitting. This will tell you if the pipe has shifted before or after pressing. Templates are available for marking. Contact BONFIX via verkoop@bonfix.nl or (PH) 088 46 00 794.



Important: oil, fat, glue or any such substance are not be used, in any circumstance!

- **Fitting jaws in the press tool**

The press machine must be fitted with either an M-shaped or V-shaped jaw, corresponding with the diameter of the fitting to be installed. Refer to the manufacturer's instructions for use of the appliance and fitting directions.



- **Pressing large diameters using a clamp**

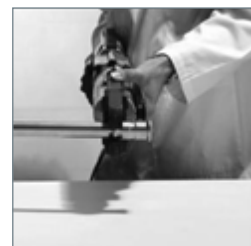
When pressing large diameter pipe (67, 76.1, 88.9, 108 mm) we recommend securing the pipe in place with a clamp to make sure the correct positioning is achieved.




- **Pressing**

For a successful, reliable press connection, make sure the insides of the jaws of the clamping device perfectly fit the toroidal grip of the fitting.

The fitting is pressed by clenching the jaws of the device. This must occur in a single motion to avoid damaging the seal. **Do not** interrupt the press operation; finish the press in a smooth, single motion.



 Press tools must be regularly cleaned and well maintained. The tools must be calibrated once yearly to qualify for warranty on the system.

GENERAL REQUIREMENTS

Testing the connections

When the system has been installed it must be tested for leakages. Drinking water systems and hot water systems are routinely tested by running water through the system at a pressure not less than 1.5 x normal operational pressure. If no leaks are established during the test run, we recommend cleaning the pipes thoroughly before filling the system with water. Gas systems are tested by importing air or gas into the system at a minimum pressure of 10 bar.

Sound insulation

Pipes are capable of transferring sound and noise from a variety of sources (pumps, valves, etc.). For this reason, they must be insulated with an elastic material to prevent direct contact with collars, walls etc.

Heat insulation

Hot water pipe systems must be insulated as per regulations for energy efficiency of hot water installations. The insulation material also protects from incidental physical contact.

Cold insulation

In order to prevent condensation and dripping, cold water pipes must be insulated also. Stainless steel systems must not be insulated with a material containing chloride compounds.

Frost protection

If the pipe system is exposed to the risk of freezing, the pipes must be wrapped with a sufficiently thick insulating material or protected using an anti-freeze agent to prevent leakage due to loose connections, swollen pipes and / or fractured pipes.

GUARANTEE

The use of original BONFIX press fittings together with an appropriate quality pipe and approved press tool are your guarantee of a long-life system, provided these technical instructions for design and constructing of the system are observed.

Damage and / or loss resulting from a material or manufacturing fault are fully recoverable under insurance.



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