Specification text

The compression fittings series APL, conforming to UNI EN ISO 21003-3, UNI EN 1254-3 and to Ministerial Decree 174, are designed and produced to increase their sealing characteristics and reduce installation times, thus assisting plumbers in system assembly. Provided with double O-Ring seals and with a polyamide lock-ring supporting the pipe sleeve, these fitting are used in sanitary water and heating systems and are available in a range of types and sizes from Ø16 to Ø32.

The APL system

The new APL compression coupling system has been developed to reach the highest safety level during installation; fittings that are not tight will **leak during pressure testing** (at up to a test pressure of 6 bar) and can be immediately identified.

The seal between pipe and fitting is guaranteed by the profile of the compression fitting and by the presence of two O-Rings **[2]** positioned in the fitting itself. Using a compression unit with suitable jaws [see the notes below on pressing profiles] the fitting **[4]** is permanently deformed and the compression force in turn deforms the multi-layer pipe onto the specific profile.

The lock-ring **[3]** has inspection slots that allow to check the correct coupling between pipe and fitting. The thickness of the lock-ring is such as to support high pressures even in the presence of large temperature changes. This ring is in steel type AISI 304 which has been subjected to a further solubilisation treatment for stress relief and to avoid uneven stress developing in time; this heat treatment cancels the stress memory of the material, avoiding any future cracks and leaks.

The presence of the ring **[3]** insulates the aluminium pipe from the brass pipe, thus avoiding electro-chemical corrosion effects.
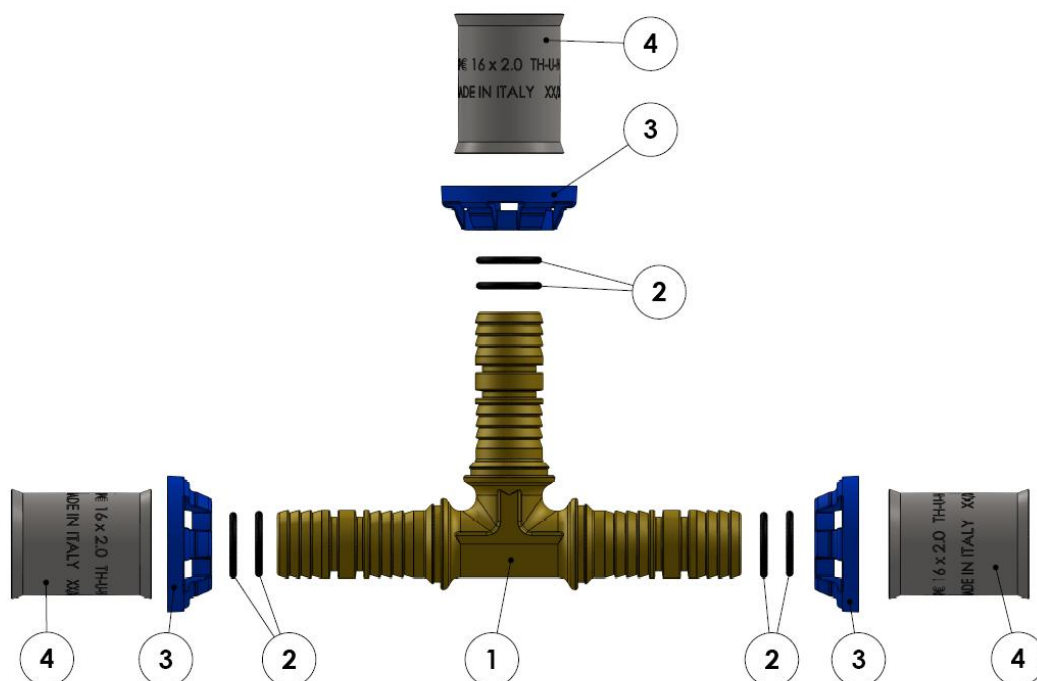
N.	Description	Materials and conformity
1	Body	Brass CW612N CW617N Conforms to UNI EN 12164; UNI EN 12165; UNI EN 12168
2	O-Ring	Peroxide-cured EPDM 70 SCH Conforms to EN 681.1
3	Pipe lock-ring support	B2800 (polyamide)
4	Lock-ring sleeve	Steel AISI 304 Conforms to UNI EN 10088-2

Differing from fittings to be tightened, the coupling in compression fittings has the special characteristic of being **immovable**: this means that the APL fitting, when compressed correctly, undergoes a permanent deformation that guarantees long-term sealing. For this reason, compression fittings are the only type of coupling that can be used and guaranteed in embedded systems.

Technical characteristics

Field of application:	Sanitary and heating systems
Fluids in use:	Drinking water, technical water (heating etc.)¸ glycol-water mixtures
Glycol percentage:	max 30%
Temperature range:	From -25°C to 120 °C
Working pressure:	max 16 bar
Pipe types:	Multi-layer PE-Xb/AL/PE-Xb (conforming to UNI 21003)

The system composed by APL fittings and APE Multylayer pipe has been certified by :

KIWA certificate number :K25301
DVGW certificate number : DW-8501CR0411

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**PARTITA IVA/VAT NUMBER IT 00673760989 CODICE FISCALE IT 02025720174**

COMPRESSION PROFILES

The new APL series fittings can be installed using various compression profiles (TH, H, U): to obtain a perfect connection between fitting and pipe and guarantee the best conditions of system performance, it is of fundamental importance to use pressure tools with suitable compression profiles and with dedicated dies.

The following table shows the compression profile to be used as a function of the diameter:

Diameter			
Ø16 (2.0)	TH	H	U
Ø20 (2.0)	TH	H	U
Ø26 (3.0)	TH	H	
Ø32 (3.0)	TH	H	

The illustrations below show the correct position for the crimping tool in relation to the profile: crimping must take place at the correct position with respect to the O-rings, in order to ensure the fitting's tightness.

TH: Ø16 – Ø20 – Ø26 – Ø32	**H:** Ø16 – Ø20 – Ø26 – Ø32	**U:** Ø16 – Ø20
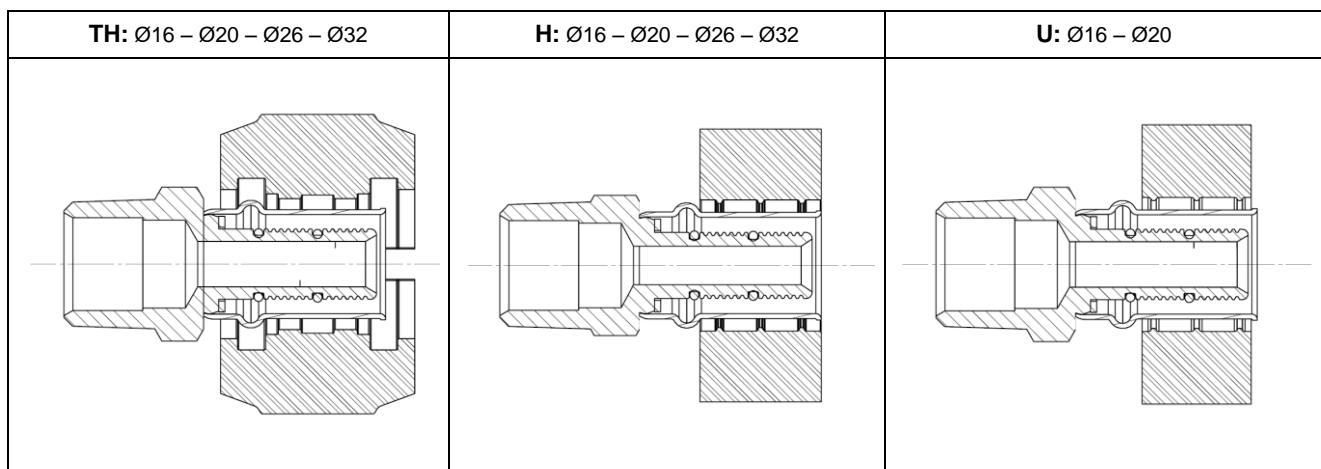
Before proceeding to crimp the fittings, always:
1. Ensure that you have chosen the correct crimping tool for the fitting. If the wrong tool, or a tool that does not correspond to the diameter of the pipe (e.g. use of Ø25 on sleeve Ø26) is used, the fitting will never provide a tight seal.
2. Ensure that the crimping tool profile is correct, referring to the table above.
3. Choose original profiles (e.g. REMS tool with KLAUKE jaws or vice-versa): profiles do not always work properly when not used with the original tool.
4. Ensure that the crimping tool profile is not damaged, that the tool is not faulty or worn and that the tool lever springs are not broken or faulty.
5. When using a battery operated crimping tool, check that the battery charge is sufficient for effective crimping.
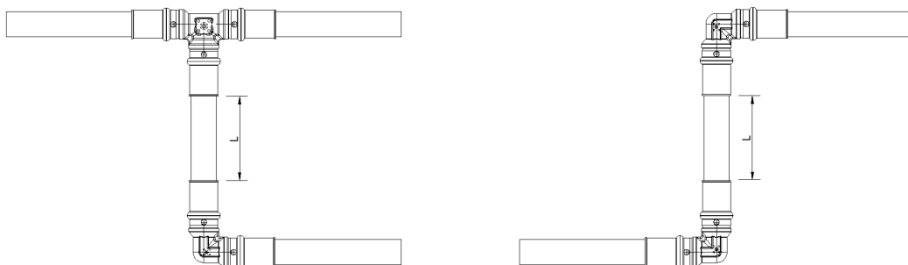
CRIMPING DIMENSIONS

When crimping a sleeve, it is necessary to bear the size of the crimping tool in mind. The following are the minimum crimping distances for a number of applications:
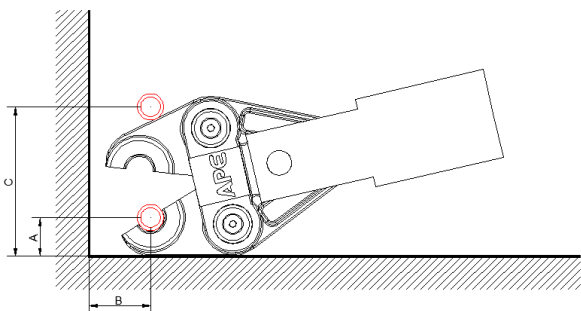
Diameter	A (mm)	B (mm)	C (mm)
Ø16 (2.0)	25	35	93
Ø20 (2.0)	25	35	95
Ø26 (3.0)	25	35	98
Ø32 (3.0)	25	35	102

Following are the minimum pressing distances between fittings in the APL series:

| Diameter	L (mm)
Ø16 (2.0)	70
Ø20 (2.0)	70
Ø26 (3.0)	70
Ø32 (3.0)	80

It is best to prevent fittings from moving by creating anchor points, especially in long pipelines, to avoid that the forces generated by expansion of the pipe not be unloaded onto the fittings.

WARNING:

When using screw fittings DO NOT USE HEMP when coupling. Use the specific sealant part no. COLLA5811.

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RECOMMENDATIONS FOR CORRECT CRIMPING

1. It is important for the crimping tool to operate evenly and relatively slowly.
2. When crimping, the crimping and pressing tools must be kept perpendicular to the fitting axis.
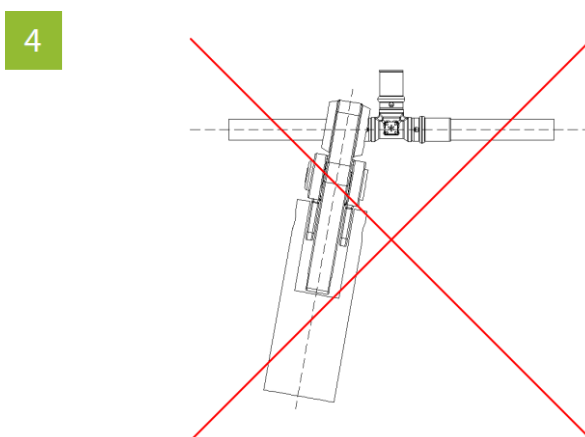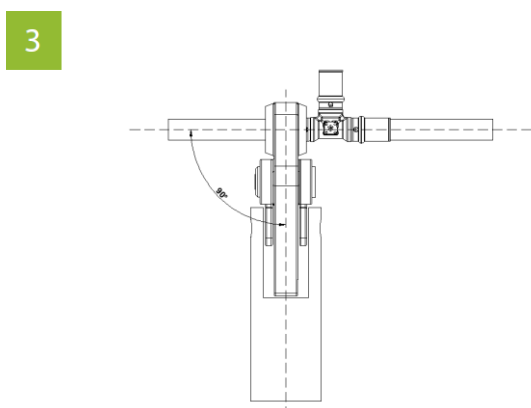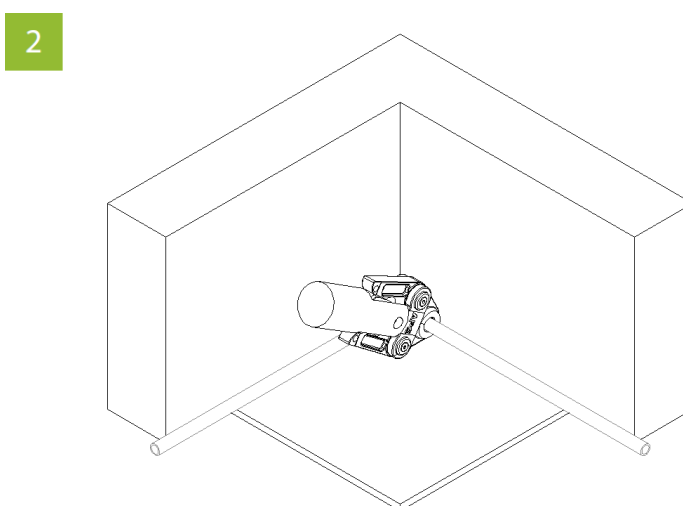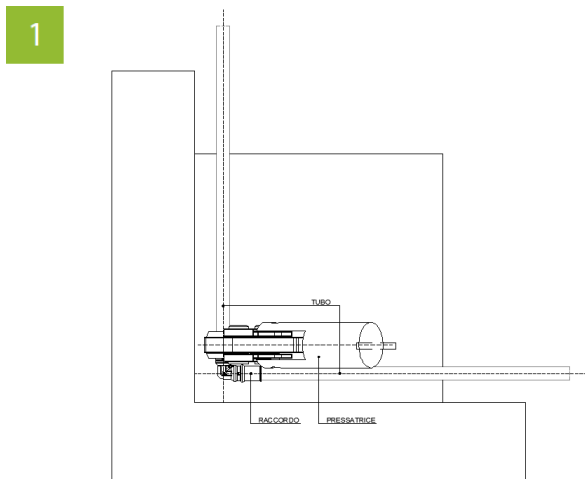
3. When crimping, the tools must not touch walls, floors or ceilings. The two crimping tools must move in synchrony: if either of them slackens its grip in any way, the sleeve will not be crimped evenly. This occurs frequently especially in installations set on floors/ceilings or when the tool is not positioned correctly.

MAINTENANCE

1. Crimping tools must be inspected at least once a year, checking the tolerances on the crimping imprint. The maintenance service issues a document (or invoice) confirming the inspection.