

**aircom**  
PIPINGSYSTEM

AIR IS OUR FUTURE

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**ANNEX A**  
**QUICK LINE ASSEMBLY INSTRUCTIONS**

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**C025 2019**

# C O N T E N T S

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# OPTIMUM INSTALLATION

The AIRCOM system allows reducing installation, maintenance and system management costs.

However, the installation shall be optimally executed by authorised, qualified and specialised personnel, accurately following the provided instructions to obtain the expected reliability, security and performance results.

The lines shall always be slightly slanting towards a condensate collection and discharge point.

In order to guarantee constant maintenance of the system or a general intervention, it is advisable not to install the system underground. Provide inspection wells in case of underground installation.

Avoid conditions that may lead to excessive misalignment of the pipes. Lacking pipes alignment with the respective fittings may involve an incorrect position of the pipe end inside of the fitting and hence incorrect working conditions for the o-ring seal, and consequently possible untightness situations.

Support the heavier accessories and equipment of a given weight mounted installed on the piping system (e.g. valves, flex some flexible hoses, flanged expansion compensators, filters etc.) using dedicated, suitable supports, to be installed arranged directly upstream and downstream of the same such accessories or equipment. If not properly supported, the static weight of such additional components or accessories may involve over the time negative consequences on the correct alignment of the piping-fitting connections and hence lead e.g. to untightness conditions.

For same reason, direct hanging of heavier objects to parts of the piping, as e.g. hose reels or similar items hanging at droplegs, should be strictly avoided too.

Provide good sealing of the threads using appropriate products in the proper quantity required. and at the right amounts. In case of doubts, we recommend to contact our Technical Service for suggestions about possible sealing solutions.

For flanged connections it is recommended to always refer to our installation instructions and to make sure availability of a correctly trimmed torque wrench to ensure the proper tightening of the bolts (please be aware that flange-to-flange connections and flanged-fitting-to-flange connections require bolt tightening at different torque values!).

All supply system maintenance or modifications shall be carried out with the system empty.

Always provide for the possibility of disconnecting parts of the system that may be subject of maintenance, expansion or modifications thus avoiding total shutdown.

Within the Quick Line System, various options are available to this purpose thus offering high flexibility in layout:

“Sliding fittings” – similar to the usual straight fittings but without internal stop for the pipe (to be used in pairs, one sliding fitting at each end of the pipe section(s) that may require to be temporarily removed / disconnected); by proper operation they can be unscrewed and carefully slide onto the opposite pipe end, thus enabling easy removal from the side of the pipe section on which they were mounted. Reverse procedure to be followed for re-installation of the removed pipe section(s).

Flanged fittings – on larger piping sizes, pairs of flanged fittings coupled together flange-to-flange on both ends of a pipe section enable easy removal from the side of such section of pipe, after careful unscrewing of the bolts connecting the flange pairs. Please take care of respecting proper assembly procedure for flanged fittings, when reassembling together the removed part of piping.

Ball Valves and Butterfly Valves – such devices enable safe and reliable shut-off of branches of a piping network, to enable easy and safe disassembly of a part of it, so that their installation at “strategic” layout-specific places is also strongly recommended, e.g. upstream and downstream of a section or branch of piping subject to possible removal for maintenance/expansion/changes on the piping network.

## TOOLS REQUIRED FOR INSTALLATION

For the correct installation of AIRCOM systems it is advisable to use the following tools.

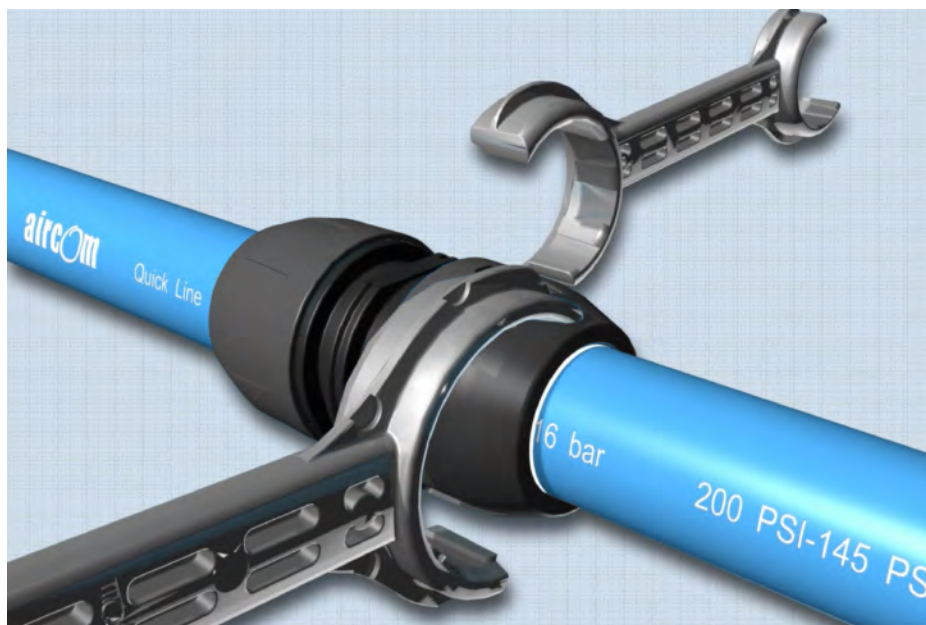
- CHAMFERING CONE for the correct external and internal de-burring of the pipe
- SPECIFIC WRENCH for Aircom wrench; allows efficient tightening.
- PIPE INSERTION METERE allows marking the correct insertion of the pipes of any diameter
- DRILL SCREWDRIVER during bracketing and during the installation of the rapid diversions.
- D.16-19 mm HOLE SAW which, being crucial during the assembly of rapid diversions, allows drilling which will allow the passage of the ideal about of air required by the opening.
- SCREWDRIVER during the bracketing for opening the pipe holder
- ALLEN WRENCH for tightening rapid diversions
- PIPE WRENCH blocks the body of the sleeve during installation
- GASKET LUBRICANT allows the correct lubrication of the gaskets allowing an easier insertion of the pipe hence avoiding the risk of cutting thereof. Without oils and mineral fats, it keeps the system clean
- MARKER for mounting fittings and accessories
- TAPE MEASURE for measuring heights, depths, inclinations, heights etc...
- PIPE CUTTER for correct vertical cutting of the pipe without forming burrs
- Band saw for correct cutting pipe
- DE-BURRING DEVICE for de-burring the hole created during



# ACCESSORIES AIRCOM: NUT WRENCH FOR HR-POLYMER FITTINGS

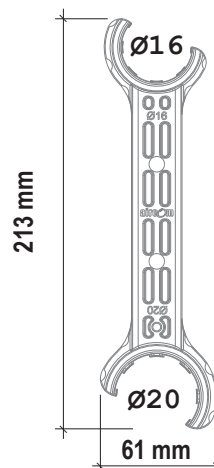
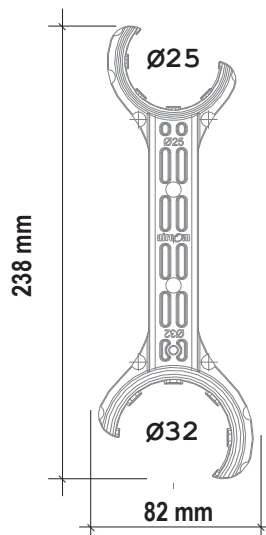
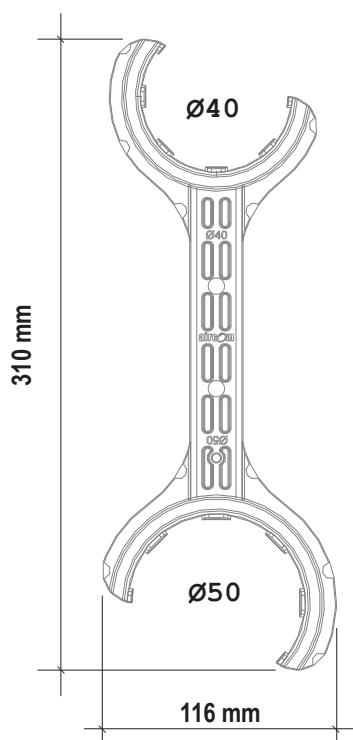
The AIRCOM wrench allows suitably tightening the nut wrench of the fittings without causing any damage, as it usually occurs with metal pipe wrenches.

It is specifically designed for AIRCOM fittings made of plastic or aluminium material.



The AIRCOM fittings wrenches allow an accurate tightening of the fitting.

The perfect fitting of the wrenches on the ferule shall allow tightening the component and activating the safety system.



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# ACCESSORIES: PIPE INSERTION METER

The AIRCOM “spline gauge” is an accessory required for the execution of safe mounting operations.

It allows marking on the pipe, as indicated in figures 1 and 2, the exact splining depth for all pipe measurements. Once inserted into the fitting, it will be easy to check the correct insertion depth of the pipe thus marked.

Splining marking

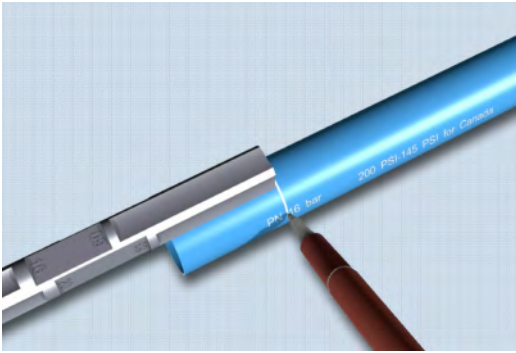


Fig.1

Correct insertion depth

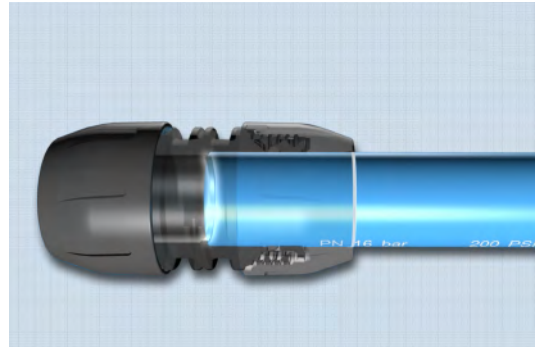
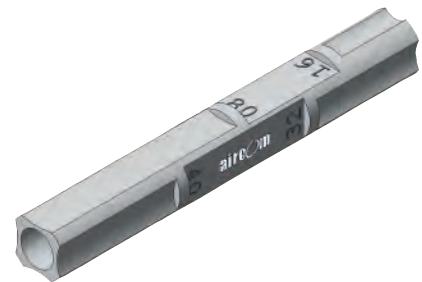
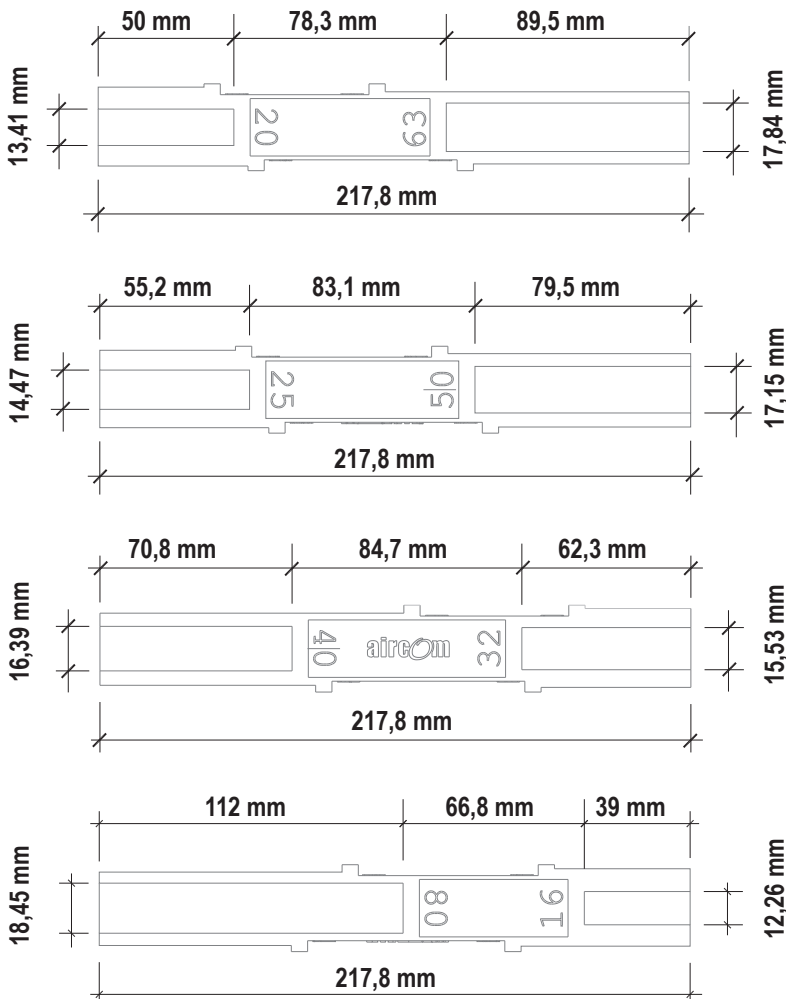


Fig.2

The marking, which can be carried out using a normal marker, shall be at least flushed with respect to the ferule as indicated in the figure.





# 16 mm - 63 mm HR POLYMER FITTINGS

## TRANSPORTABLE FLUIDS

- Compressed Air
- Inert gases
- Vacuum
- Others: please contact our technical department

## DIAMETERS

16 - 20 - 25 - 32 - 40 - 50 - 63

## MAX. VACUUM LEVEL

99% (10 mbar approx.)

## MAX. OPERATING PRESSURE

16 bar

## MAX. OPERATING TEMPERATURE

-15°C / +65°C



HR Polymer d. 40 mm

HR-Polymer nut

Clamping ring



Gasket



Fittings body

Push ring



## Thread

ISO 7 cylindrical male gas  
ISO 7 - NPT cylindrical male gas  
ISO 228 cylindrical female gas  
NPT conical female gas

## Reaction to fire

EN 13501-1:2007+A1:2009  
EN ISO11925-2:2010  
EN ISO13823:2010

## Technical features of the material

UNI-EN 1676 standard

Gasket: NBR 70 - ISO 1043

Thrust ring: Polyamide 6

Standard: ISO 1043

Tightening ring: X10CrNi18-8 stainless steel

Standard: UNI-EN 10088

Conical ring: Polyamide 6 - ISO 1043

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# 16 mm - 63 mm FITTINGS INSTALLATION

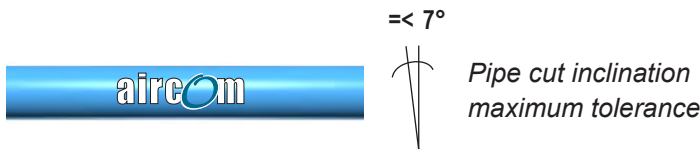
The "QUICK LINE" Aircom system is extremely easy, quick and does not require the use of expensive and complex equipment. Just a few operations and the joint is ready for use.

**ALWAYS CHECK FOR THE PRESENCE OF ALL COMPONENTS AND THE CORRECT INSERTION THERE OF**

**1**

After checking the condition of the surface of the pipe (there should be no evident scratches, abrasions, dents that could lead to leakages), perform a precise and straight cut at the desired measurement.

The cut shall be cut closest to a right angle (90° with respect to the axis of the pipe) as possible.



**2**

De-bur the previously executed cut at the external surface of the pipe and eliminate possible chippings and/or cut residue along the edge of the internal diameter.

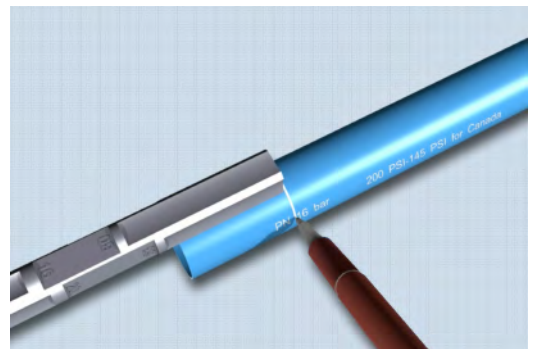
Eliminate the cut residue, dust, and impurities possibly present in the pipe with the aim of avoiding future problems to the pneumatic apparatus is important.



**3**

Untighten the ferule, by turning it by half rotation anticlockwise: the distance between the body and the ferule shall increase.

Mark the splining depth indicated by the special spline gauge (if available) on the pipe. The mark thus obtained shall indicate the point of arrival in the internal abutment of the fitting. This will allow avoiding incomplete insertions.

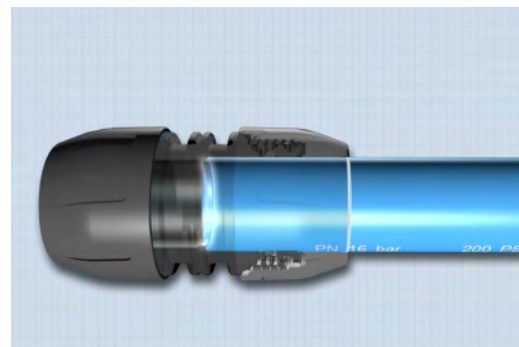




**4** Lubricate the end of the pipe and/or contact surface of the O-ring gasket using our AIRCOM lubricant so as to facilitate the operation.



**5** Insert the pipe into the fitting and push up to the stop of the pipe at the abutment at the bottom of the splining.



**AVOID THE USE OF SLIDING AGENTS, OILS, GREASES WHOSE COMPATIBILITY YOU ARE NOT SURE OF. IF NOT SURE, PLEASE CONTACT US!**

**6** Tightening shall be carried out by hand tightening up to the stop point and subsequently 180°, using a sector wrench.



**7** A correct tightening of the fitting shall position the nut wrench halfway the tightening marking point.



Joints executed using the "QUICK LINE" AIRCOM systems do not require waiting times after completion; pressurisation is instantaneous.

## ACCESSORIES AIRCOM: NUT WRENCH FOR ALUMINIUM FITTINGS

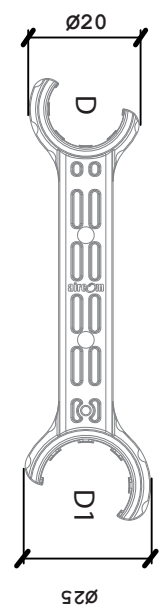
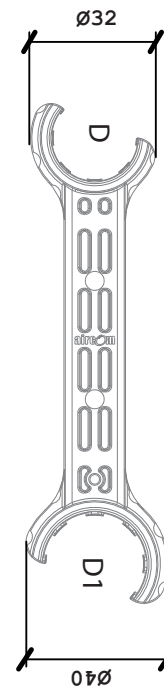
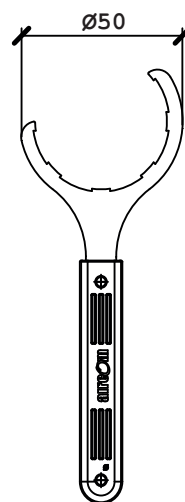
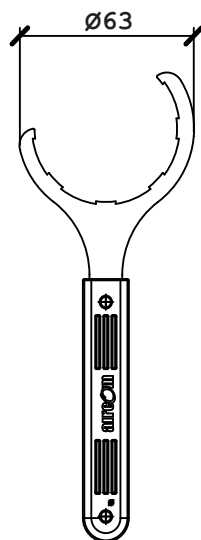
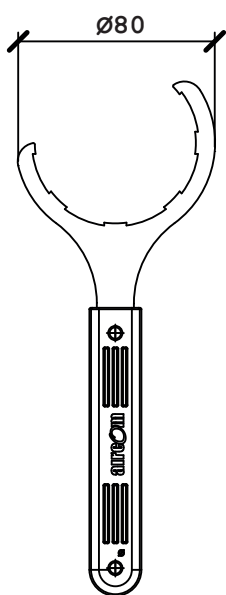
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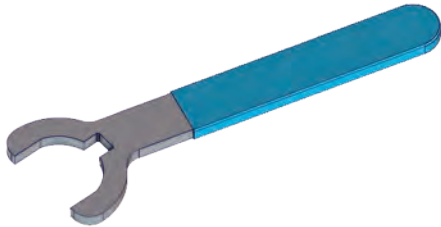
The perfect fitting of the wrenches on the ferule shall allow tightening the component and activating the safety system.



# ACCESSORIES AIRCOM: QUICK BODY HOLDER

The quick grip wrenches allow an accurate and safe installation of the aluminium fittings with the following diameters:  
20 mm - 25 mm - 32 mm - 50 mm.

Created specifically to hold the body of the fitting during the tightening of the ferule so as to avoid the use of inappropriate accessories that could ruin the fitting, such as the pipe wrench or pliers.



Quick grip holder for holding the aluminium fitting body



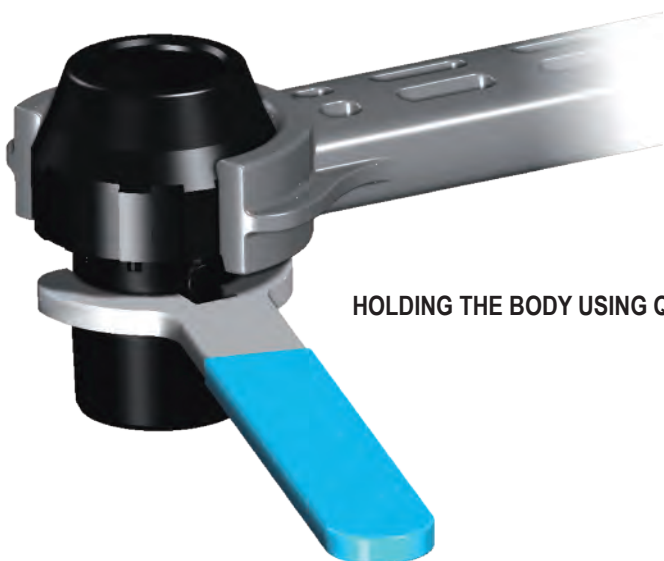
Nut wrench

## USING THE QUICK BODY HOLDER

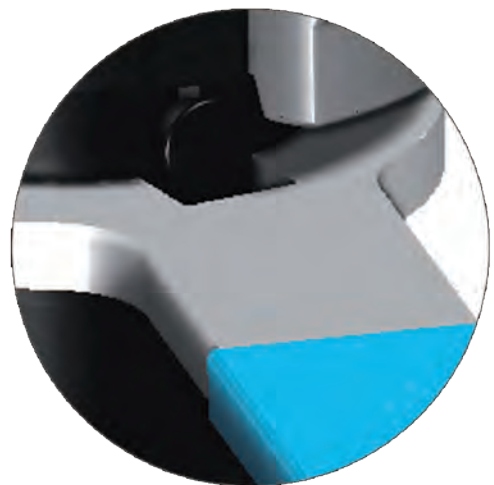


Using the QLCLE wrench, clamp the screw nut and then, using the QLCPR quick grip holder, hold the body of the fitting ensuring the holder cavity coincides with the cylindrical insert of the body.

Holding the body still, tighten the ferule making sure that the fitting is tightly tightened.



HOLDING THE BODY USING QLCPR



HOLDER CAVITY ON CYLINDRICAL PART OF THE FITTING

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Splining marking

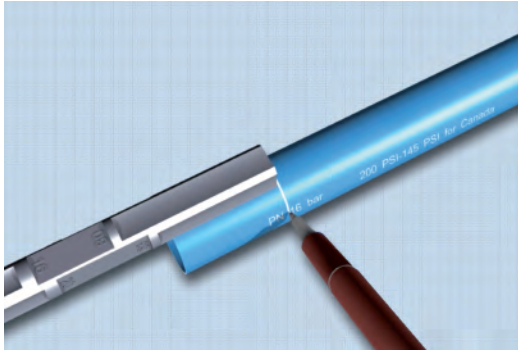


Fig.1

Correct insertion depth

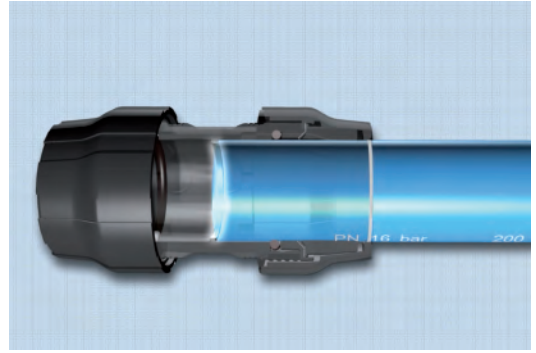


Fig.2

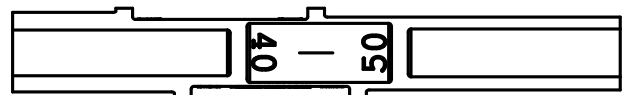
The marking, which can be carried out using a normal marker, shall be at least flushed with respect to the ferule as indicated in the figure.



The Quick Line Aluminium spline gauge line bears the AIRCOM ALUMINIUM indication on the side, thus making the product identifiable.



QLMISAL (lato) D. 32-63



QLMISAL (lato) D. 40-50



QLMISAL (lato) D. 80-25



QLMISAL (lato) D. 110-20

# 20 mm - 80 mm ALUMINIUM FITTINGS

## TRANSPORTABLE FLUIDS

- Compressed Air
- Inert gases
- Vacuum
- Others: please contact our technical department



## DIAMETERS

20 - 25 - 32 - 40 - 50 - 63 - 80

## MAX. VACUUM LEVEL

99% (10 mbar approx.)

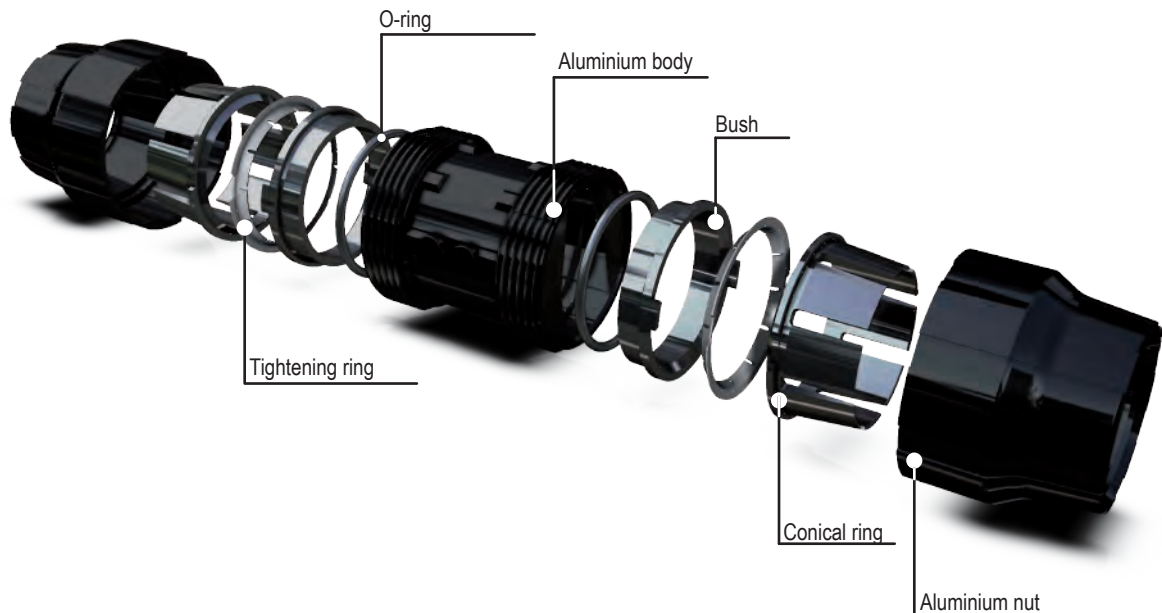
## MAXIMUM SERVICE PRESSURE

16 bar

## MAXIMUM TEMPERATURE

-30°C / +80°C

Aluminium coupling d. 40 mm



## Thread

ISO 7 cylindrical male gas  
 ISO 7 - NPT cylindrical male gas  
 ISO 228 cylindrical female gas  
 NPT conical female gas

## Reaction to fire

EN 13501-1:2007+A1:2009  
 EN ISO11925-2:2010  
 EN ISO13823:2010

## Technical features of the material

EN-AB 46100 Aluminium nut and bodies  
 UNI-EN 1676 standard

Gasket: NBR 70 - ISO 1043

Thrust ring: Polyamide 6  
 Standard: ISO 1043

Tightening ring: X10CrNi18-8 stainless steel  
 Standard: UNI-EN 10088

Conical ring: Polyamide 6 - ISO 1043

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## 20 mm - 80 mm FITTINGS INSTALLATION

The "QUICK LINE" Aircom system is extremely easy, quick and does not require the use of expensive and complex equipment. Just a few operations and the joint is ready for use.

### ALWAYS CHECK FOR THE PRESENCE OF ALL COMPONENTS AND THE CORRECT INSERTION THEREOF

1

After checking the condition of the surface of the pipe (there should be no evident scratches, abrasions, dents that could lead to leakages), perform a precise and straight cut at the desired measurement.

The cut shall be cut closest to a right angle (90° with respect to the axis of the pipe) as possible.



$\leq 7^\circ$



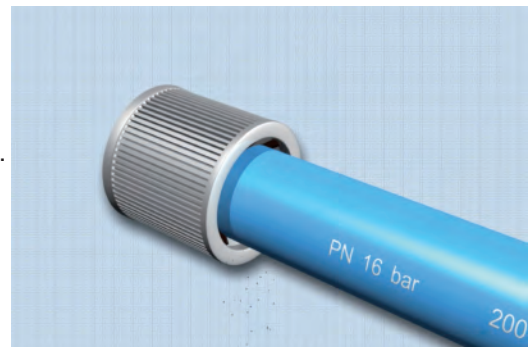
Pipe cut inclination  
maximum tolerance



2

De-bur the previously executed cut at the external surface of the pipe and eliminate possible chippings and/or cut residue along the edge of the internal diameter.

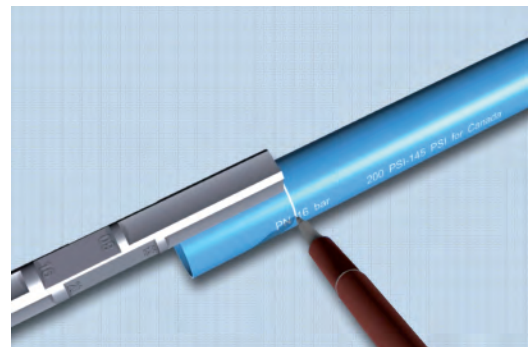
Eliminate the cut residue, dust, and impurities possibly present in the pipe with the aim of avoiding future problems to the pneumatic apparatus is important.



3

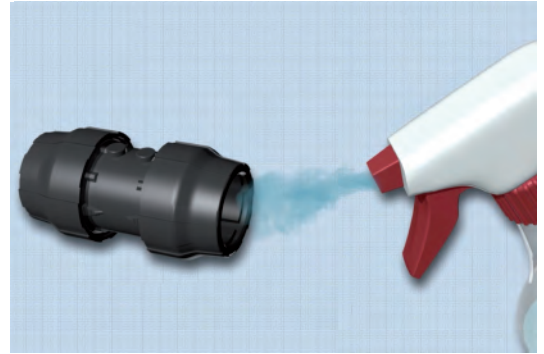
Untighten the ferule, by turning it by half rotation anticlockwise: the distance between the body and the ferule shall increase.

Mark the splining depth indicated by the special spline gauge (if available) on the pipe. The mark thus obtained shall indicate the point of arrival in the internal abutment of the fitting. This will allow avoiding incomplete insertions.

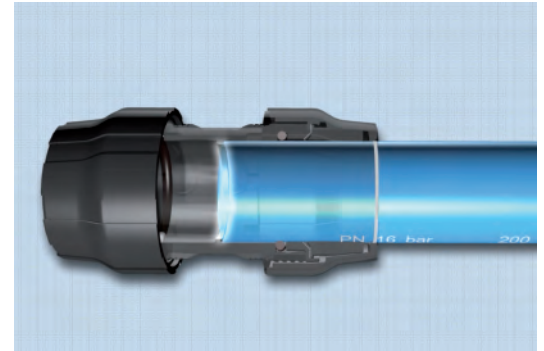




**4** Lubricate the end of the pipe and/or contact surface of the O-ring gasket using our AIRCOM lubricant so as to facilitate the operation.



**5** Insert the pipe into the fitting and push up to the stop of the pipe at the abutment at the bottom of the splining.



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**AVOID THE USE OF SLIDING AGENTS, OILS, GREASES WHOSE COMPATIBILITY YOU ARE NOT SURE OF.  
IF NOT SURE, PLEASE CONTACT US!**

---

**6** Tightening shall be carried out by hand tightening up to the stop point and subsequently 180°, using a sector wrench.



**7** A correct tightening of the fitting shall position the nut wrench halfway the tightening marking point.



Joints executed using the "QUICK LINE" AIRCOM systems do not require waiting times after completion; pressurisation is instantaneous.

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# 110 mm ALUMINIUM FITTINGS

## TRANSPORTABLE FLUIDS

- Compressed Air
- Inert gases
- Vacuum
- Others: please contact our technical department

## DIAMETERS

110

## MAXIMUM SERVICE PRESSURE

16 bar

## MAXIMUM TEMPERATURE

-30°C / +80°C



Aluminium coupling d. 110 mm



## Thread

ISO 228 - ISO 7 cylindrical female gas  
NPT conical female gas

## Reaction to fire

EN 13501-1:2007+A1:2009  
EN ISO11925-2:2010  
EN ISO13823:2010

## Technical features of the material

EN-AB 46100 Aluminium nut and bodies  
UNI-EN 1676 standard

Gasket: NBR 70 - ISO 1043

Thrust ring: Polyamide 6  
Standard: ISO 1043

Tightening ring: X10CrNi18-8 stainless steel  
Standard: UNI-EN 10088

# 110 mm FITTINGS INSTALLATION

The "QUICK LINE" Aircom system is extremely easy, quick and does not require the use of expensive and complex equipment. Just a few operations and the joint is ready for use.

Below is the process for the installation of a sleeve, valid for all components of the 110 mm line.

## ALWAYS CHECK FOR THE PRESENCE OF ALL COMPONENTS AND THE CORRECT INSERTION THEREOF

- 1** After checking the condition of the surface of the pipe (there should be no evident scratches, abrasions, dents that could lead to leakages), perform a precise and straight cut at the desired measurement.

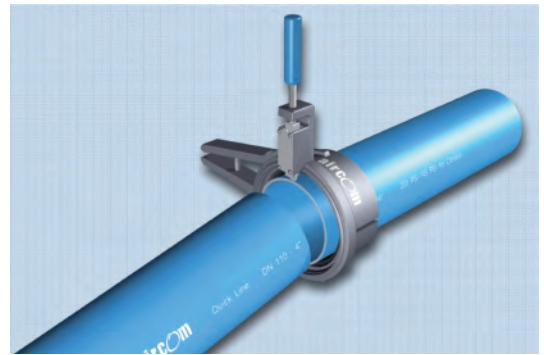


$\leq 7^\circ$



*Pipe cut inclination  
maximum tolerance*

The cut shall be cut closest to a right angle (90° with respect to the axis of the pipe) as possible.



- 2** De-bur the previously executed cut at the external surface of the pipe and eliminate possible chippings and/or cut residue along the edge of the internal diameter.

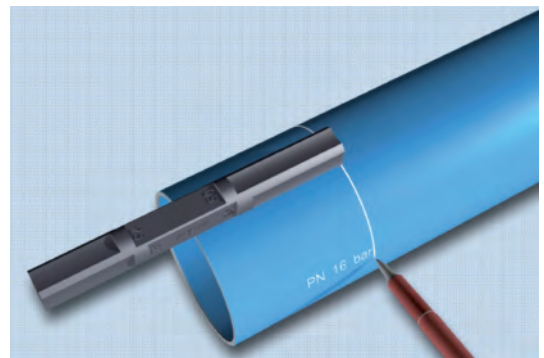
Eliminate the cut residue, dust, and impurities possibly present in the pipe with the aim of avoiding future problems to the pneumatic apparatus is important.



- 3** Untighten the screws of the ferule, so as to perfectly insert the pipe and move it to abutment.

Mark the splining depth indicated by the special spline gauge (if available) on the pipe. The mark thus obtained shall indicate the point of arrival in the internal abutment of the fitting.

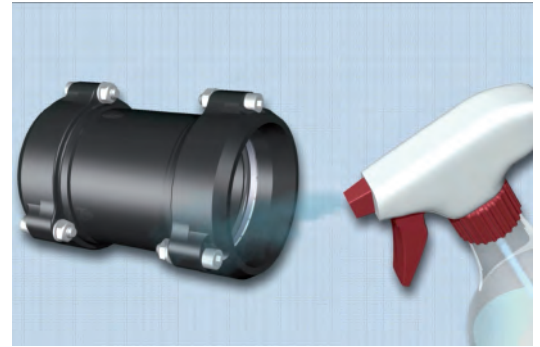
This will allow avoiding incomplete insertions.



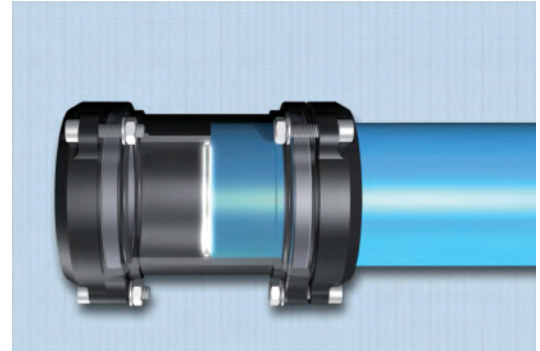
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- 4** Lubricate the end of the pipe and/or contact surface of the O-ring gasket using Vaseline or special sliding agents so as to facilitate the operation.



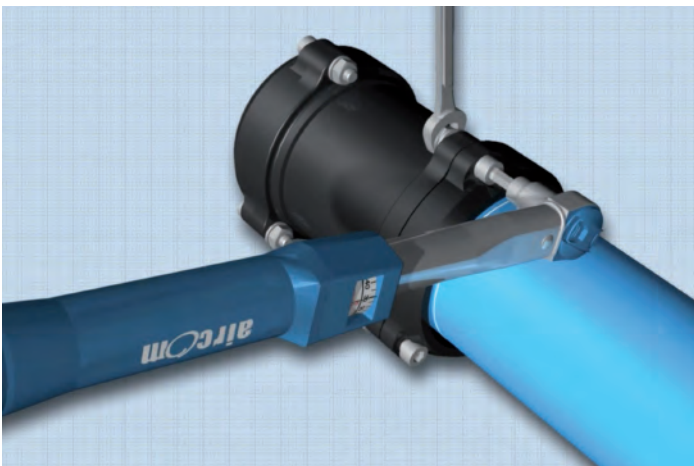
- 5** Insert the pipe into the fitting and push up to the stop of the pipe at the abutment at the bottom of the splining.



**AVOID THE USE OF SLIDING AGENTS, OILS, GREASES WHOSE COMPATIBILITY YOU ARE NOT SURE OF. IF NOT SURE, PLEASE CONTACT US!**

- 6** Use a torque wrench to tighten the screws of the ferules at 30 Nm, so as to tighten the ferule correctly.

Correctly tighten the 3 screws arranged on both ferules so as to have perfect joining with the body.



Use a wrench to hold the nut, so as to quicken the work and have greater tightening safety.

For further information, please contact our technical department.



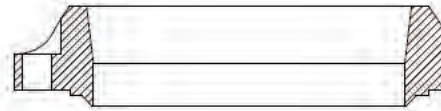
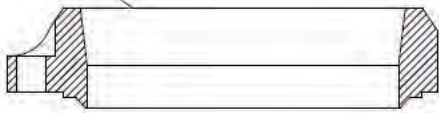
# CORRECT and ERRONEOUS ASSEMBLY OF THE 110 MM

**CORRECT**



**ERRONEOUS**

Aluminium nut

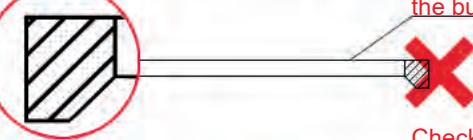
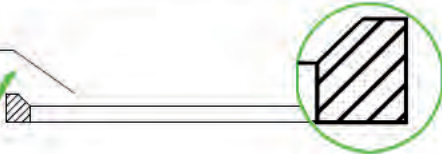


Tightening ring



Erroneous position of the tightening ring

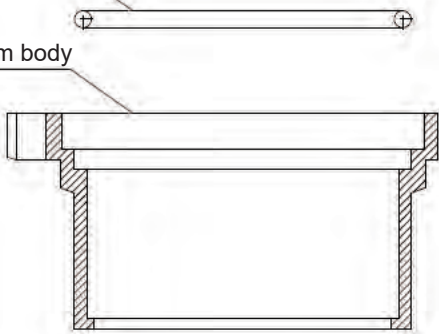
Bushing



Erroneous position of the bushing

O-ring

Aluminium body



Check for the presence of the O-ring



Loosen the bolts slightly before pushing the end of the pipe into the fitting.



Do not disassemble the fitting during the assembly operations.



For further information please contact our technical department.

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## **168 mm FITTINGS INSTALLATION**



**QLMAAL168**



**QLMAAFL168**



# PREPARATORY STEP FOR COUPLING INSTALLATION



## 1. CHECK PIPE ENDS:

The outside surface of the pipe, between the groove and the pipe end, must be smooth and free from indentations, projections (including weld seams), and roll marks to ensure a leak-tight seal.



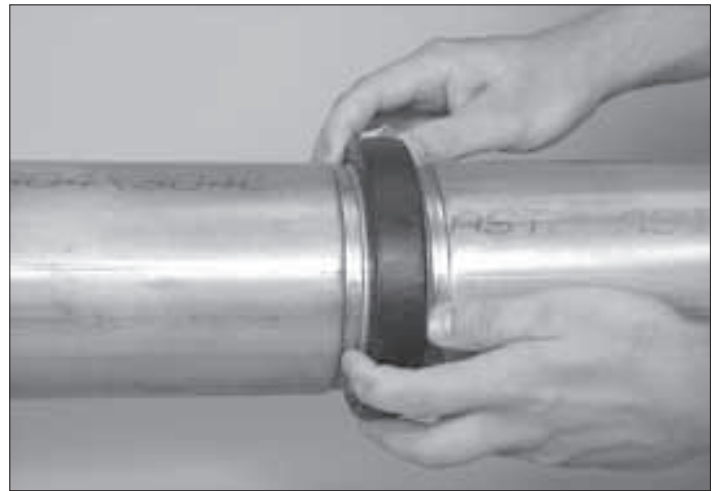
## 2. CHECK GASKET AND LUBRICATE:

Check the gasket to make sure it is suitable for the intended service. Apply a thin coat of AIRCOM lubricant to the gasket sealing lips and exterior.



## 3. POSITION GASKET:

Position the gasket over the pipe end. Make sure the gasket does not overhang the pipe end.



## 4. JOIN PIPE ENDS:

Align and bring the two pipe ends together. Slide the gasket into position and center it between the groove in each pipe end. Make sure no portion of the gasket extends into the groove in either pipe end.

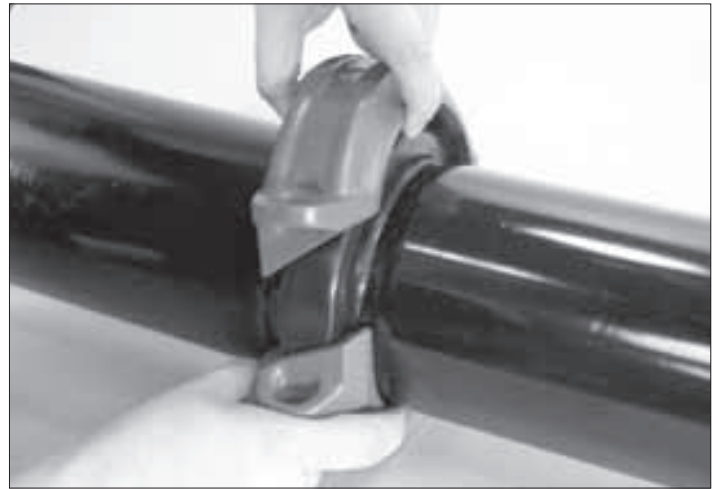
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1. Follow steps 1 – 4 of the “Preparatory Steps for Coupling Installation” section.



2. **ASSEMBLE HOUSINGS:** Insert one bolt into the housings, and thread the nut loosely onto the bolt to allow for the “swing-over” feature, as shown above.  
**NOTE:** The nut should be backed off no further than flush with the end of the bolt.



3. **INSTALL HOUSINGS:** Using the “swing-over” feature, install the housings over the gasket. Make sure the housings’ keys engage the grooves completely on both pipe ends.



4. **INSTALL REMAINING BOLT/NUTS**  
Install the remaining bolt, and thread the nut finger-tight onto the bolt. Make sure the oval neck of each bolt seats properly in the bolt hole.

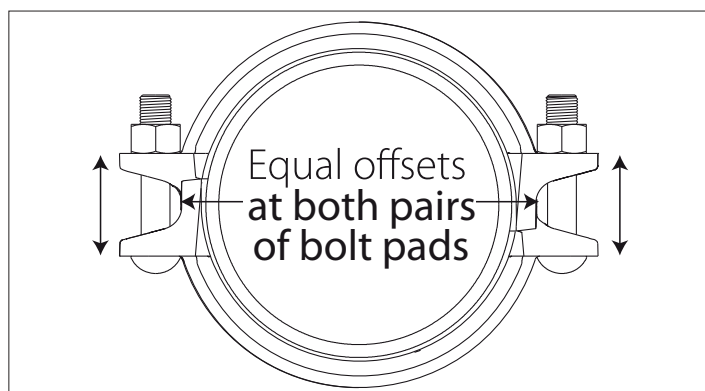
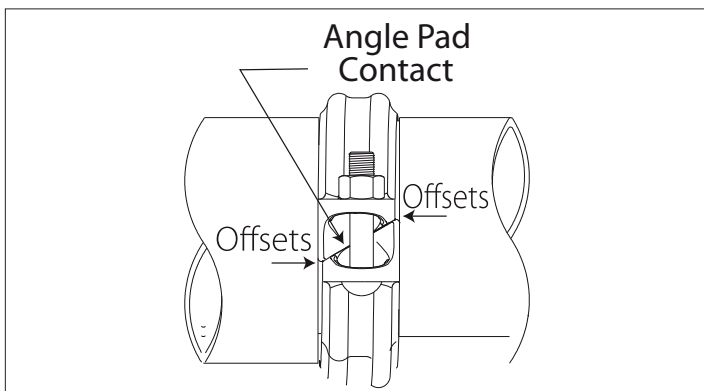
**! CAUTION**

- Make sure the gasket does not become rolled or pinched while installing the housings.  
Failure to follow this instruction could cause damage to the gasket, resulting in joint leakage.

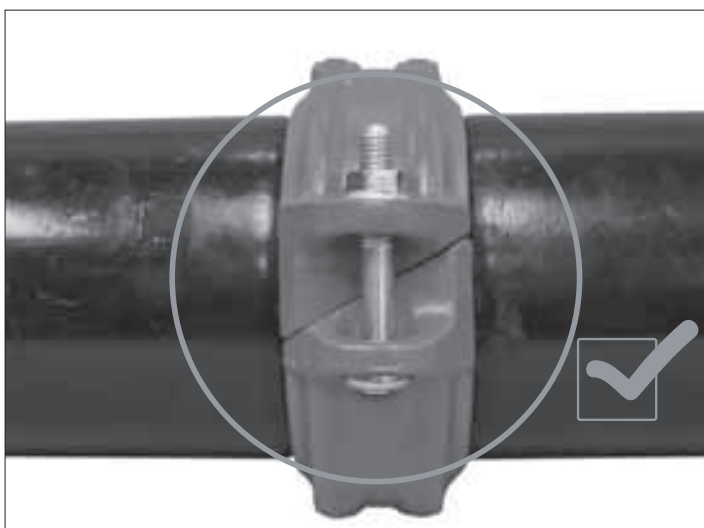
**Code: QLMAMARI168**



**5. TIGHTEN NUTS:** Tighten all nuts evenly by alternating sides until metal-to-metal contact occurs at the angle bolt pads. Make sure the housings' keys engage the grooves completely on both pipe ends and that the offsets are equal at the bolt pads. Equal, positive offsets are necessary to ensure a rigid joint (refer to the example above). **NOTE:** It is important to tighten all nuts evenly to prevent gasket pinching.



Exaggerated for clarity



**6.** Visually inspect the bolt pads at each joint to ensure metal-to-metal contact is achieved.

1. Follow steps 1 – 4 of the “Preparatory Steps for Coupling Installation” section.



2. **INSTALL HOUSINGS:** Install the housings over the gasket. Make sure the housings’ keys engage the grooves completely on both pipe ends.

3. **INSTALL BOLTS/NUTS:** Install the bolts, and thread a nut finger-tight onto each bolt. For couplings supplied with stainless steel hardware, apply an anti-sieze compound to the bolt threads. **NOTE:** Make sure the oval neck of each bolt seats properly in the bolt hole.

**! WARNING**

- For Coupling rigid, angle-bolt-pad couplings, the nuts must be tightened evenly by alternating sides until metal-to-metal contact occurs at the bolt pads.
- For Coupling rigid, angle-bolt-pad couplings, equal offsets must be present at the bolt pads.
- **Keep hands away from coupling openings during tightening.**

**Failure to follow these instructions could cause joint failure, serious personal injury, and property damage.**

**! CAUTION**

- **Make sure the gasket does not become rolled or pinched while installing the housings.**
- Failure to follow this instruction could cause damage to the gasket, resulting in joint leakage.**

**Code: QLMAFL168**

# ***FLANGE ADAPTER INSTALLATION***

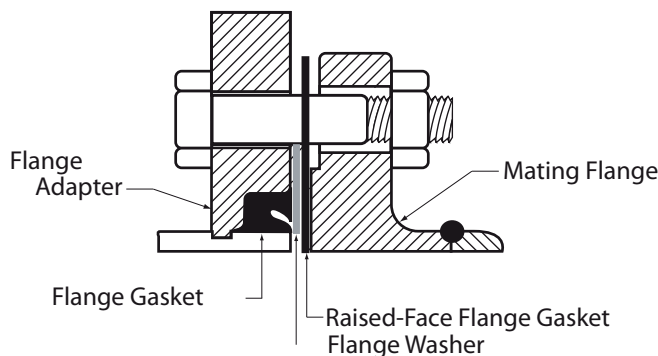


**QLMFLA168480D**

Flange Adapters require a smooth, hard surface at the mating flange face for proper sealing. Some applications, for which the Flange Adapter is otherwise well suited, do not provide an adequate mating surface. In such cases, a metal Flange Washer is recommended for insertion between the Flange Adapter and the mating flange to provide the necessary sealing surface.

- A. **When mating a Flange Adapter to a serrated flange** – a flange gasket shall be used against the serrated flange. The Flange Washer should then be inserted between the Flange Adapter and the flange gasket.
- B. **When mating a Flange Adapter to a wafer-type valve with rubber-lined and partially rubber-faced (smooth or not)** – a Flange Washer shall be placed between the valve and the Flange Adapter.
- C. **When mating a Flange Adapter to a rubber-faced flange, etc.** – the Flange Washer must be placed between the Flange Adapter and the rubber-faced flange.
- D. **When mating a Flange Adapter to components (valves, strainers, etc.) where the component flange face has an insert** – follow the same arrangement as if the Flange Adapter was being mated to a serrated flange. Refer to application “A” above.
- E. **Adapters** – the Flange Washer must be placed between the two Flange Adapters with the hinge points oriented 90° to each other. If one flange is not a AIRCOM Flange Adapter (i.e. flanged valve), a flange gasket must be placed against the non-AIRCOM Flange. The Flange Washer must then be inserted between the flange gasket and the Flange gasket.

**EXAMPLE:**



Exaggerated for Clarity





**1. CHECK PIPE ENDS:** The outside surface of the pipe, between the groove and the pipe end, must be smooth and free from indentations, projections (including weld seams), and roll marks to ensure a leak-tight seal. All oil, grease, loose paint, dirt, and cutting particles must be removed.



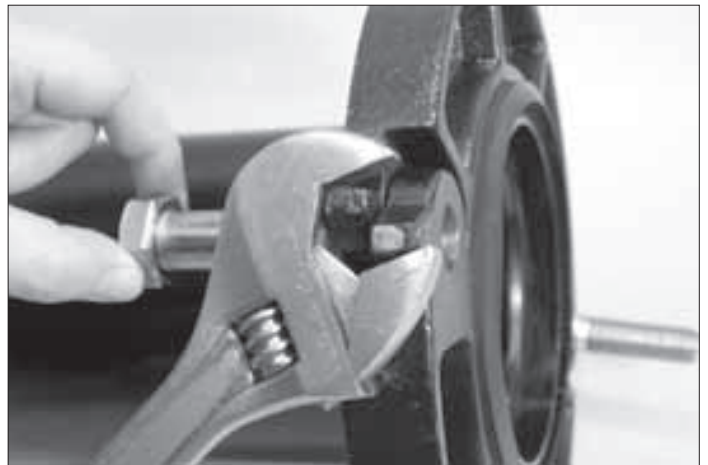
**2. CHECK GASKET AND LUBRICATE:** Check the gasket supplied to make sure it is suitable for the intended service. The color code identifies the gasket grade. Apply a thin coat of a AIRCOM lubricant to the gasket lips and exterior.



**3. INSTALL GASKET:** Install the gasket over the pipe end. Make sure the gasket is positioned properly, as shown above. **NOTE:** The lettering on the outside of the gasket must face the flange-adapter gasket pocket. When installed correctly, the lettering on the gasket will not be visible.



**4. INSTALL FLANGE ADAPTER:** Open the hinged flange adapter fully, and install the flange over the gasket. Make sure the flange key section engages the pipe groove properly.



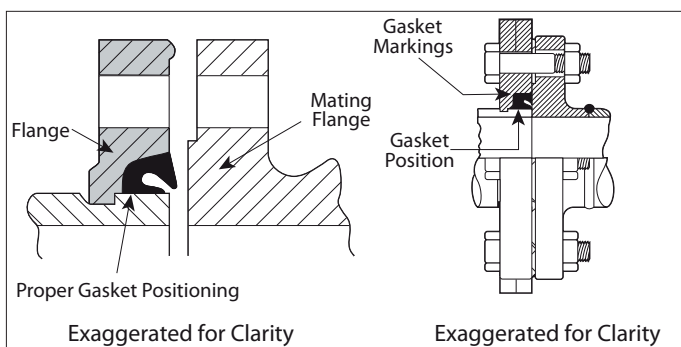
**5. INSERT MATING BOLTS:** Insert a standard, full-shank diameter assembly bolt through each of the two mating holes in the flange adapter. This will maintain the position of the flange in the pipe groove.

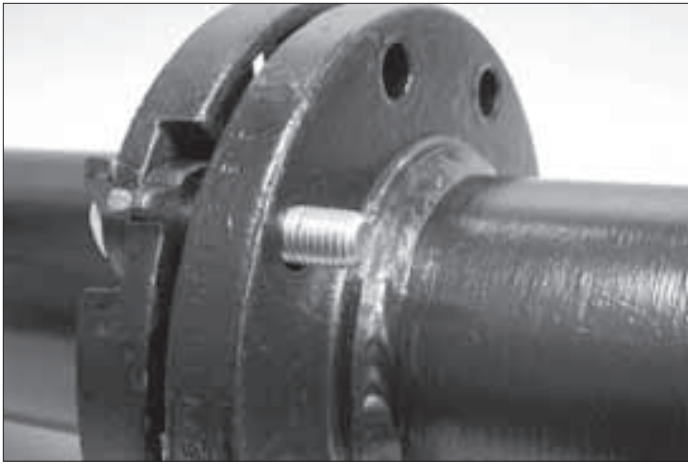


**5a.** Make sure the gasket is seated properly in the flange adapter.



Closure lugs are provided for ease of installation. If necessary, use an adjustable wrench to bring the flange holes into alignment. This will ease insertion of the

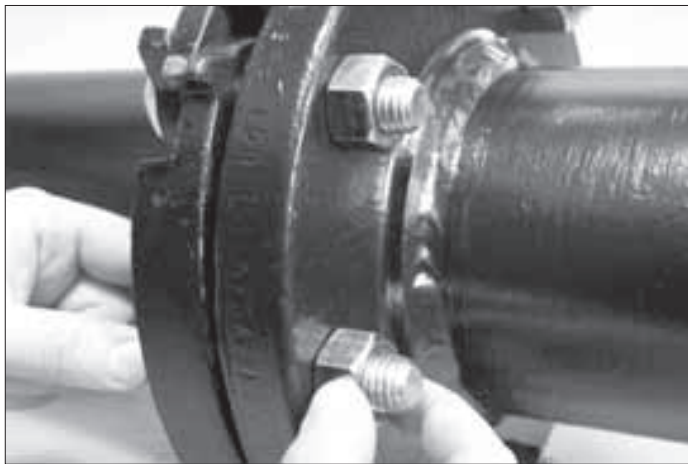




**6. JOIN FLANGE ADAPTER AND MATING FLANGE:** Join the flange adapter with the mating flange by aligning the bolt holes.



**6a.** Thread standard flange nuts finger-tight onto the two mating bolts.



**7. INSTALL REMAINING BOLTS/ NUTS:** Insert a standard, full-shank diameter assembly bolt through each remaining hole in the flange adapter/mating flange. Thread standard flange nuts finger-tight onto all bolts.



**8. TIGHTEN NUTS:** Tighten the nuts evenly, as with a regular flange assembly. Continue tightening until the flange faces come into firm, metal-to-metal contact or the standard, flange-bolt torque requirement is achieved.

## ***QUICK BRANCH PLUG INSTALLATION***



**QLDER168108**

**QLDER168128**

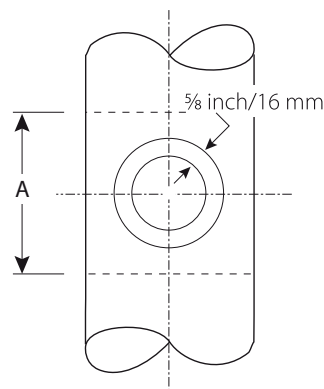
**QLDER168168**

**QLDER168208**

**QLDER168248**

## Pipe Preparation

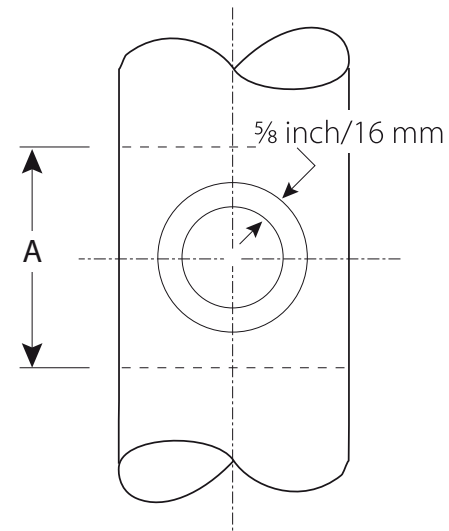
- Proper preparation of the hole is essential for sealing and performance. Make sure the correct hole saw size is being used. Refer to the Pipe Preparation Requirements" table.
- Holes MUST be drilled on the centerline of the pipe.
- Ensure that a  $\frac{5}{8}$ -inch/16-mm area around the hole is clean, smooth, and free from indentations and/or projections that could affect gasket sealing (refer to the sketch below). Remove any burrs and sharp or rough edges from the hole. Burrs and sharp edges might affect assembly, proper seating of the locating collar, flow from the outlet, or gasket sealing.
- The pipe around the entire circumference, within the "A" dimension shown in the sketch below, must be free from any dirt, scale, or projections that might prevent the housing from seating fully on the pipe. Refer to the Pipe Preparation Requirements" table.
- **DO NOT USE STYLE BOLTED BRANCH OUTLETS ON PVC PLASTIC PIPE.**



Exaggerated for clarity

## Pipe Preparation Requirements

Size	Hole Dimensions inches/mm		Surface Preparation "A" Dimension
	Nominal Outlet Size inches Actual mm	Minimum Hole Diameter/Hole Saw Size	Maximum Allowable Diameter  inches mm
All ½-inch/ 21.3 Outlets	1 ½ 38	1 ⅝ 41	3 ½ 89
All ¾-inch/ 26.9 Outlets	1 ½ 38	1 ⅝ 41	3 ½ 89
All 1-inch/ 33.7 Outlets	1 ½ 38	1 ⅝ 41	3 ½ 89
All 1 ¼-inch/ 42.4 Outlets	1 ¾ 44	1 ⅞ 48	4 102
All 1 ½-inch/ 48.3 Outlets	2 † 51	2 ⅞ 54	4 102
All 2-inch/ 60.3 Outlets	2 ½ ‡ 64	2 ⅝ 67	4 ½ 114
All 2 ½-inch/ 73.0 Outlets	2 ¾ 70	2 ⅞ 73	5 127
All 76.1-mm Outlets	2 ¾ 70	2 ⅞ 73	5 ½ 140
All 3-inch/ 88.9 Outlets	3 ½ 89	3 ⅝ 92	5 ½ 140
All 4-inch/ 114.3 Outlets	4 ½ 114	4 ⅝ 118	6 ½ 165
All 108.0-mm Outlets	4 ½ 114	4 ⅝ 118	6 ½ 165



Exaggerated for clarity

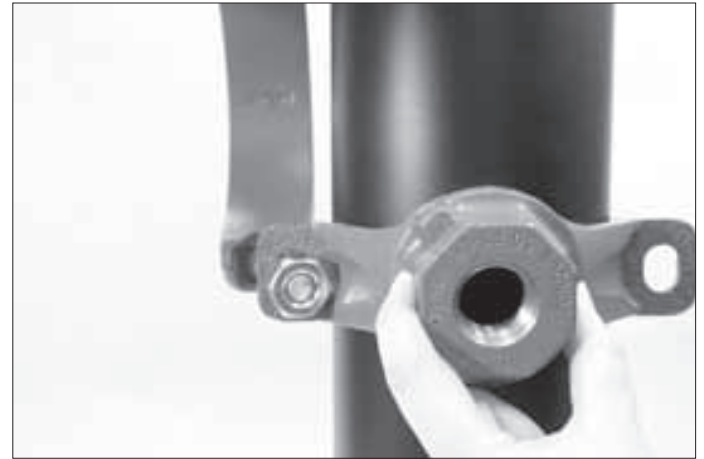
† 2 x 1 ½-inch/60.3 x 48.3-mm products require a 1 ¾-inch/44-mm hole.

‡ 8 x 2-inch/219.1 x 60.3-mm products require a 2 ¾-inch/70-mm size hole.



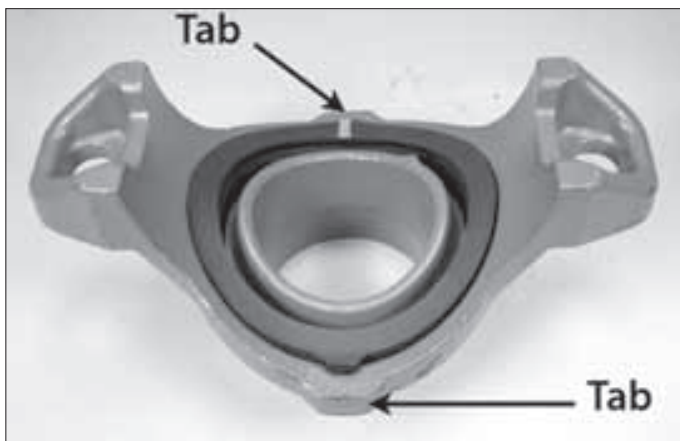


**1. ASSEMBLE HOUSINGS:** Insert a bolt into the two housings. Thread a nut loosely onto the end of the bolt.



**2. CHECK GASKET AND LUBRICATE:** Inspect the sealing surface of the gasket to make sure no debris is present.

#### Gasket



#### Gasket



**THE CORRECT GASKET IS SHIPPED WITH THE APPROPRIATE PRODUCT.**



**3. INSTALL HOUSINGS:** Rotate the lower housing so that it is positioned approximately 90° to the upper (outlet) housing, as shown above. Place the upper (outlet) housing onto the face of the pipe in line with the outlet hole cut into the pipe. Rotate the lower housing around the pipe.

3a. Make sure the locating collar engages the outlet hole properly. Check this engagement by rocking the upper (outlet) housing in the hole.



**4. INSTALL REMAINING BOLT/ NUT:** Insert the remaining bolt. Thread a nut onto the bolt finger-tight. **NOTE:** Make sure the oval neck of each bolt seats properly in the bolt hole.



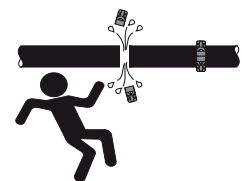
**5. TIGHTEN NUTS:** Make sure the locating collar is still positioned properly in the outlet hole. Tighten the nuts evenly by alternating sides until the upper (outlet) housing contacts the pipe completely.



### Lubricant Compatibility for Gaskets

Lubricant	Compatibility with Nitrile Gaskets	Compatibility with EPDM Gaskets
Lubricant, Soap-Based Solutions, Glycerin, or Silicone Release Agent	Good	Good
Hydrocarbon-Based Oils, or Petroleum-Based Greases	Good	Not Recommended

### WARNING



Failure to follow these instructions could result in serious personal injury, improper product installation, and/or property damage.

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## MULTILAYER PIPE - Instruction to use the flexible pipe

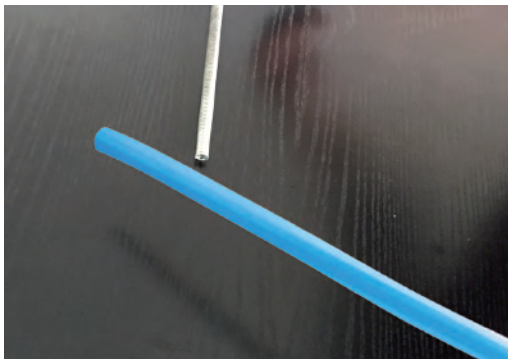
Owing to its bendability, with Aircom's multilayer pipe you will be able to easily overcome or bypass obstacles in your compressed air pipings such as pillars or corners without needing to use elbows.



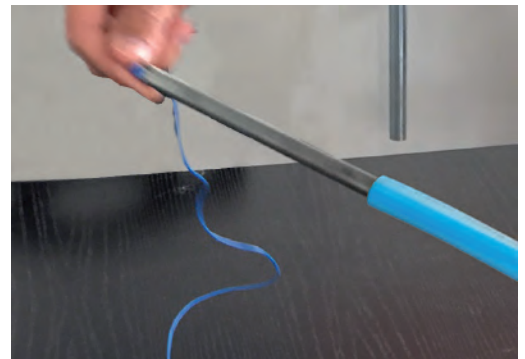
Cut the pipe with the special shear.



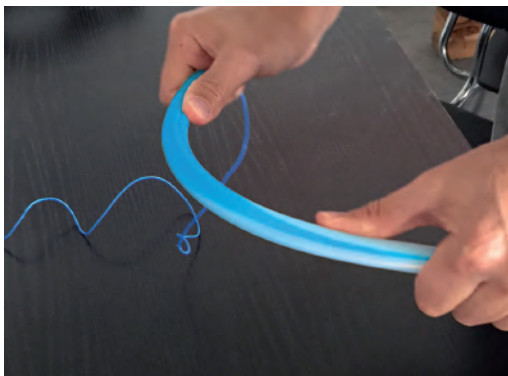
Use the calibrator tool to chamfer the pipe end and restore the correct shape after cutting.



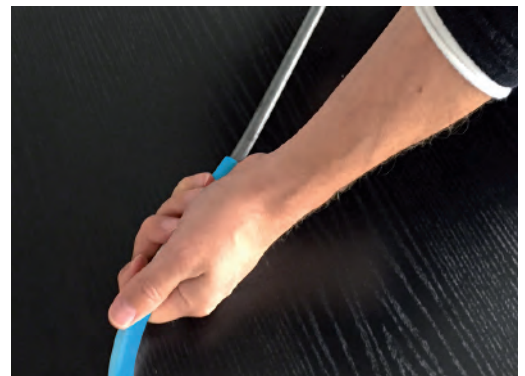
Insert the internal bending spring into the multilayer pipe to start bending the pipe.



Fix the bending spring with a lanyard, that will help pulling out the spring from the pipe after bending.



Bend the pipe by applying an uniform force across the whole length of the pipe section.



Pull the bending spring out of the pipe: you will obtain the required curve with an uniform bend. **NB** – With the outside bending spring you should proceed in a similar way (slide the bending spring over the pipe!).



### TO BE STRICTLY AVOIDED:

- A) Avoid repeated bending of the multilayer pipe at the same point (risk of damage!); for this function you should use QLFLEX.
- B) Avoid bending the pipe with sharp edges (risk of damage of the pipe structure!); use the appropriate bending springs.
- C) Do not weld, glue, punch or drill the multilayer pipe; use only dedicated mounting accessories.

# THREADED: VALVES, NIPPLES, CONNECTORS

The item normally comes assembled, so as to be directly inserted into the system.

In case one intends to insert a valve or threaded element, on the system or on an aluminium connectors, proceed as follows.

**1** Clean the threads accurately.

Avoid the presence of residues, burrs or impurities of various types preparing the components for the application of the DIRLOCK sealant.

**CLEAN THE THREADS ACCURATELY**

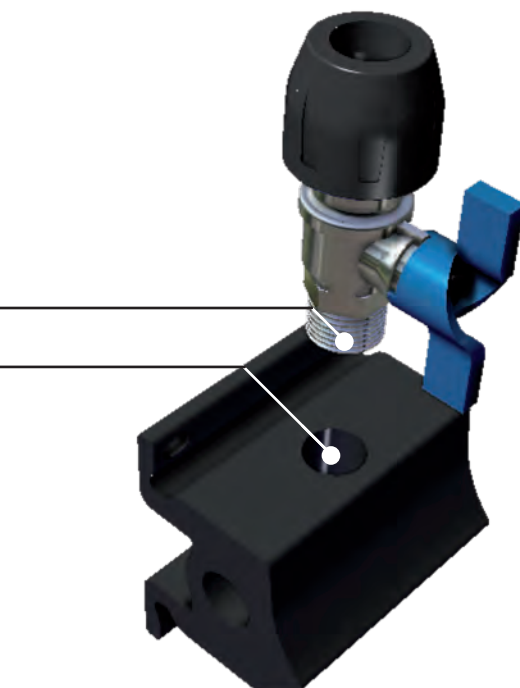
**2** Apply a small amount of DIRLOCK sealant on both threads.

Tighten the valve up to attaining the coupling and arrange the components in position.

**3** Wait for 12 hrs for the sealant to dry completely.

The component may be operated after 12 hrs.

**N.B.** For an easier mounting, remove the throttle valve, tighten the valve and mount the throttle valve again.



**INSTRUCTIONS VALID FOR THE CORRECT MOUNTING OF ALL AIRCOM THREADED ELEMENTS**

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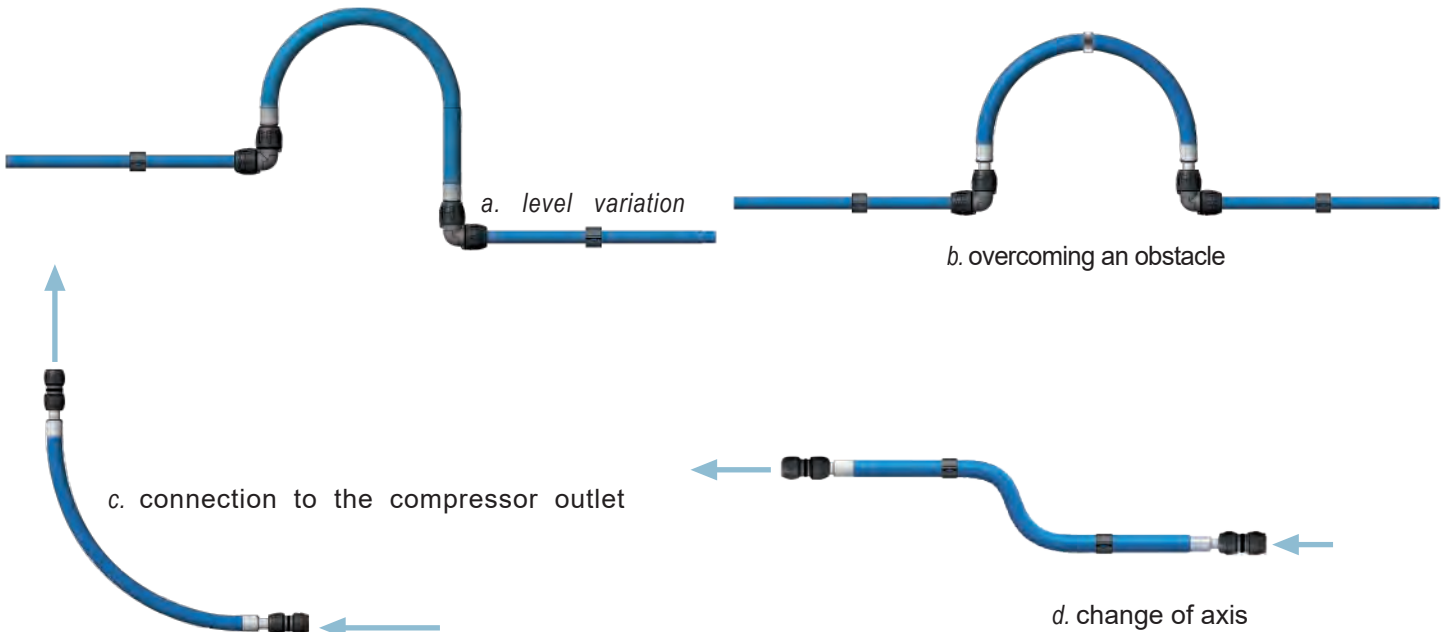
## FLEXIBLE PIPES: QLFLEX

**1** The QLFLEX flexible pipes are made of material capable of offering an optimal compatibility with the oils of the compressors and they are conceived to guarantee minimum overall dimensions and ease of installation.

**2** Actually, due to the presence of two aluminium studs at the ends thereof, the pipe may be directly connected to the Quick Line fittings installing it following the same instructions described for connecting the Quick Line to the aluminium pipe.

**3** The QLFLEX flexible pipe represents the ideal solution for the compensation of dilation or contraction in the presence of:

- a. level variation
- b. overcoming an obstacle
- c. connection to the compressor outlet
- d. change of axis



### RECOMMENDATIONS



- The QLFLEX pipe is neither cut nor de-burred
- The flexible pipe shall not be twisted for any reason whatsoever
- The pipe must always have a minimum curvature and never exceed the maximum curvature radius provided for
- Avoid passing the QLFLEX pipe on sharp edges

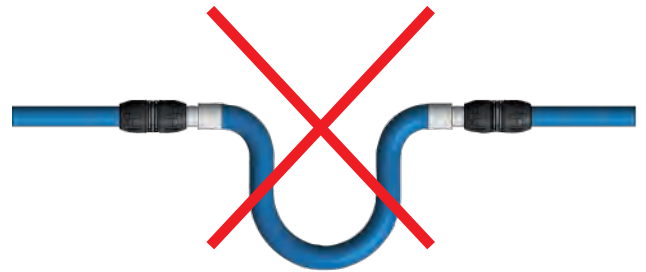
# DILATATION / CONTRACTION COMPENSATION

When using QLFLEX as a dilation and contraction compensator it is recommended to follow the following instructions so as to avoid malfunctions and damages due to erroneous use of the component.

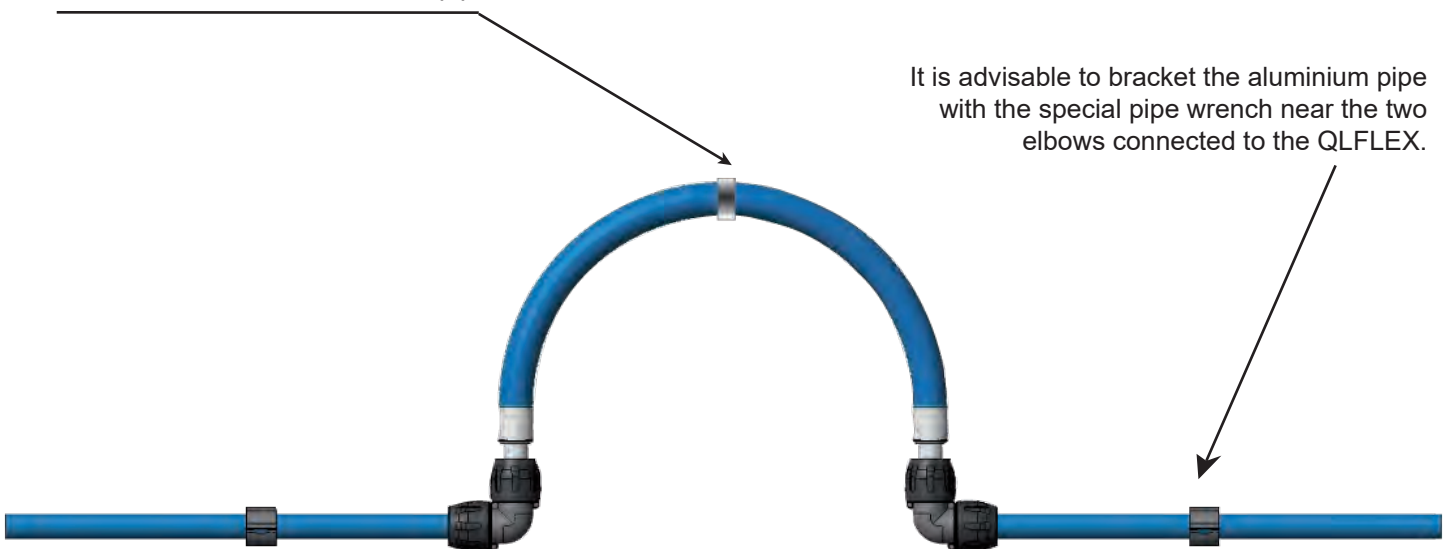
- a.** Obtain the so-called "LIRA" or "OMEGA" by connecting QLFLEX to two 90° elbow fittings and NEVER two sleeves aligned on the same plane.



- b.** "OMEGA" is always directed upwards so as to avoid the formation of condensate in the pipe.



- c.** It is advisable to provide a fixed point in QLFLEX with the use of an electrician collar fixed half way between the ends of the flexible pipe.



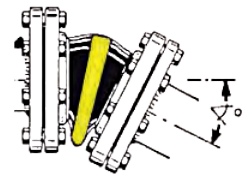
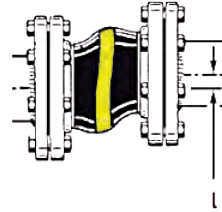
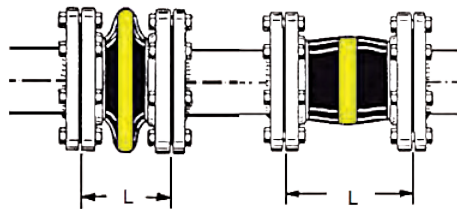
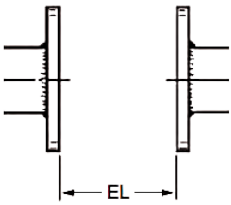
It is advisable to bracket the aluminium pipe with the special pipe wrench near the two elbows connected to the QLFLEX.

# FLANGED DILATION COMPENSATORS

When using DIRDIL as a flanged dilation and contraction compensator it is recommended to follow the following instructions so as to avoid malfunctions and damages deriving from the erroneous use of the component.

Minimum and maximum tolerance table.

EL INSTALLATION LENGTH		L AXIAL DILATION		l LATERAL DILATION	$\alpha^\circ$ ANGULAR DILATION
min	max	min	max	$\pm$ mm	$\pm$ $\alpha^\circ$
120	135	100	150	$\pm$ 30	$\pm$ 20



DIRDIL details:

40 Nm tightening torque for all diameters. (63 mm - 80 mm - 110 mm)  
Do not use solvents, adhesives, lubricants of any type for mounting

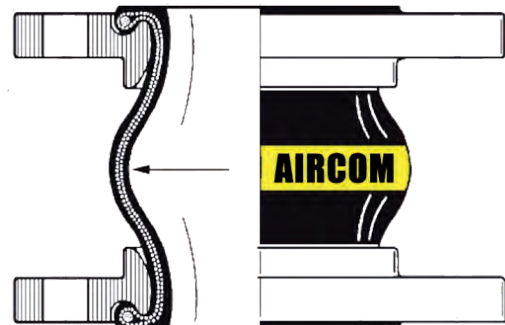
## Pressure and correction chart

PN 16 nominal pressure

Operating temperature	50°	70°	100°
-----------------------	-----	-----	------

Allowed movement according to the temperature	100%	80%	60%
---	------	-----	-----

Variable pressure depending on temperature	16 bar	12 bar	10 bar
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# INSTALLATION OF DILATION COMPENSATORS

## WARNING

Before mounting the DIRDIL dilation compensator, ensure that the joining surfaces are clean.

As shown in the figure, the positioning of the flanged fitting with the compensator must be accurate with the aim of ensuring the correct airflow without leakages.

Should the flange not be tightened correctly, the gasket may not be at contact with the fitting like shown in the figure.

In this case, tighten correctly and check the joints.

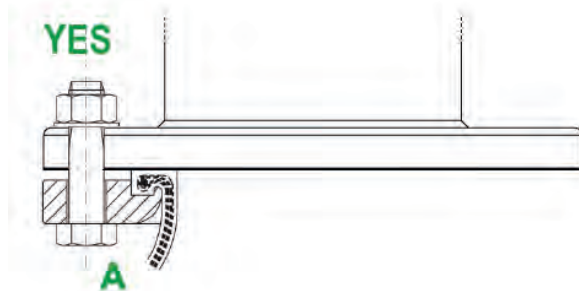
Consider the length during the installation of the joint, make reference to the table of maximum and minimum lengths indicated in the previous page.

## INSTALLATION

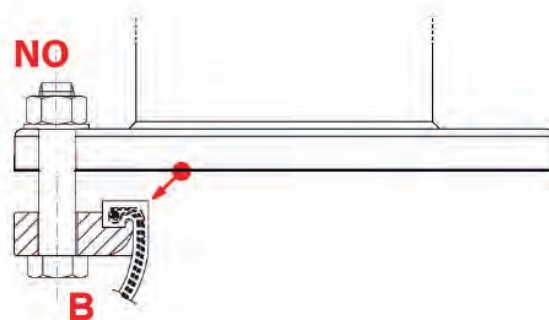
1. Clean the joint surfaces.
2. Perfectly align the flanges with respect to each other.
3. Introduce the bolts after aligning the flanges:
  - 3.1 It is advisable to use 8.8 zinc coated bolts or A 2.70 stainless steel; position the washers and bolts, tighten the entirety.
4. The bolts shall be tightened progressively uniformly in an alternating fashion according to a sequence diametrically opposite to the one indicated in the figure.
5. Tighten the bolts using a torque wrench.

Maintain the same tightening torque for the three sizes of the DIRDIL (Ø63 - Ø80 - Ø110) flanged compensator.

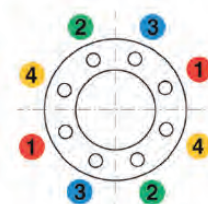
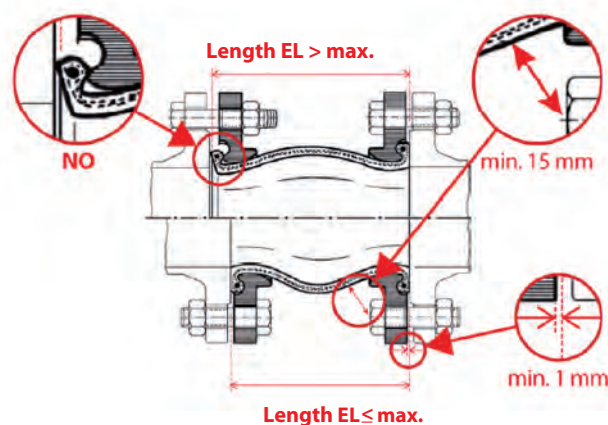
Tightening torque: **40 Nm**.



**FLANGE POSITIONED CORRECTLY (A)**



**FLANGE POSITIONED ERRONEOUSLY (B)**

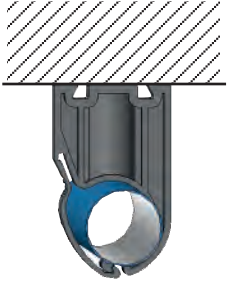


Bolts tightening torque for the 63 mm - 80 mm - 110 mm diameters (cross tightening is advisable) a 40 Nm

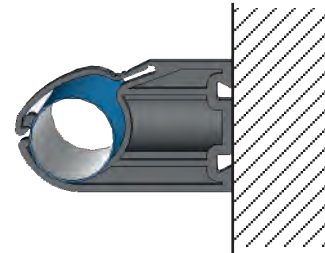
# BRACKETING SYSTEM

The bracketing of the aluminium pipe shall be carried out solely using special DIRFEM8 pipe wrench designed to allow the pipe to slide in case of possible dilations or contractions.

1

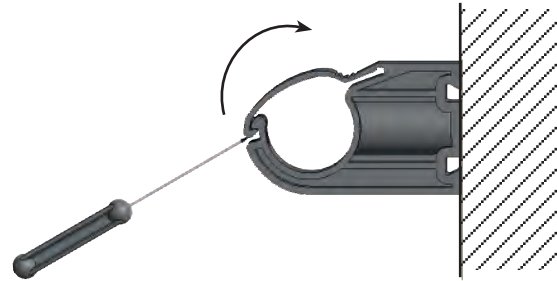


The DIRFEM8 pipe wrench was designed so as to be able to operate both in horizontal and vertical position.



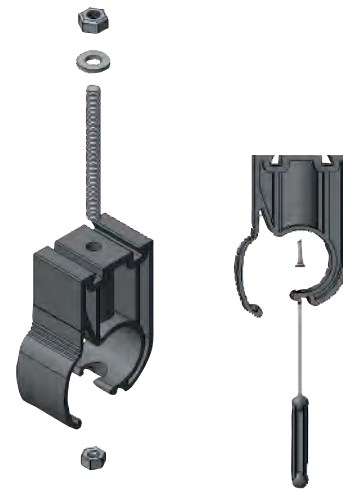
2

Use a screwdriver to open the pipe wrench by lifting the tab to closure level.



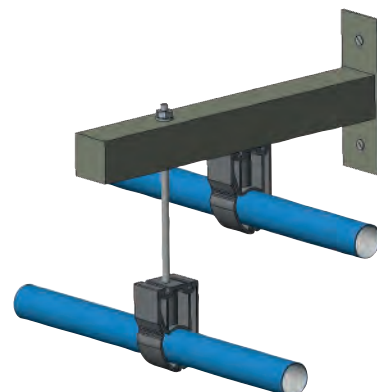
3

All pipe wrenches are provided, in their packaging, with an M8 hexagonal nut to be inserted, using a threaded bar, into the special seat provided in the support. In addition, self-thread screws with an expansion plug may be used in case of fixing on the wall and concrete



4

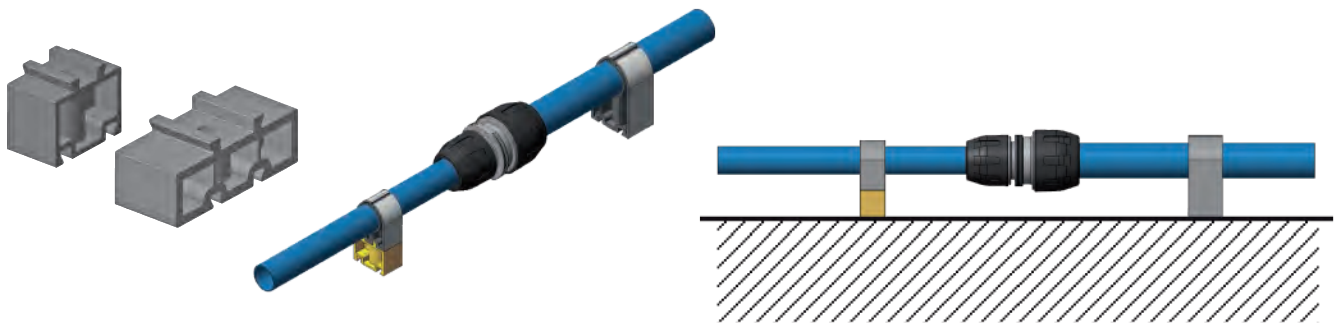
The pipe wrench can be fixed to any bracketing system using the same threaded bar and the relative counter-nut.





# 5

If necessary, DIRSPE spacers to be added to the pipe wrench base are also available.



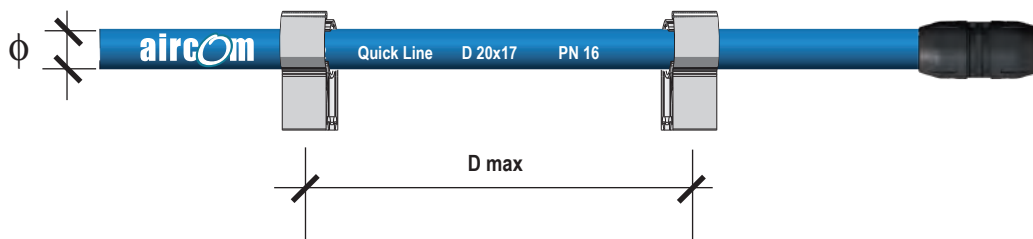
## SPACING THE SUPPORTS

All pipe wrenches are provided, in the packaging thereof, with an M8 hexagonal nut to be introduced, using a threaded bar, into the special seat provided in the support. In addition, self-thread screws with an expansion plug may be used in case of fixing on the wall and concrete.

The spacing of the supports is carried out according to the standard provided according to the diameter, temperature and weight of the transported fluid.

It is advisable to bracket the pipe wrench as indicated in the table for a correct installation and spacing of the supports for the various pipe diameters.

Diameter mm	Spacing expressed in metres depending on the temperature D max (m)		
	< 20°C	30°C	40°C
16	2	2	1,5
20	2,5	2	1,5
25	3	2,5	2
32	3,5	3	2,5
40	4	3,5	3
50	3,5	3	2,5
63	3,5	3	2,5
80	3,5	3	2,5
110	3,5	3	2,5



The sliding supports shall not be placed at contact with fittings or other accessories with the aim of not blocking the sliding of the pipe.

Should the horizontal or vertical pipes installed at a height in the range between 0 and 250 cm from the ground, it is advisable to double the number of supports with the aim of guaranteeing an optimal constraint of the pipe to the structure.

## QUICK BRANCH PLUG: Aluminium and Polymer

The AIRCOM diversion intakes are designed to allow the end user to obtain a quick branch plug without having to cut the bearing pipe.

In addition, due to the particular design of the component the opening air intake is arranged above the condensate formation level thus guaranteeing an optimal quality of air in the opening.



The rapid diversion intakes may also be used horizontally as the traversing starting point (with the hole in the upper part of the pipe) or to obtain a condensate discharge opening (with a hole in the lower part of the pipe).

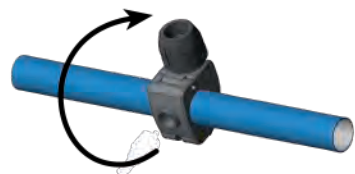
# QUICK BRANCH PLUG INSTALLATION: QLDERAL – QLDERPA



**1** Position the diversion according to the application needs.



**2** Accurately mark the preselected position near the reference notches.



**3** Rotate the diversion by 180° re-positioning it near the reference marks marked previously.



**4** Drill the pipe using the special DIRDRILL15 and DIRDRILL19 drill bits, according to the table below:

Summary table for the hole template in the diversions							
	Ø	Ø	Ø	Ø	Ø	Ø	Ø
	25	32	40	50	63	80	110
DIRDRILL 15 - 15mm	•	•					
DIRDRILL 19 - 19mm			•	•	•	•	•



**5** Remove the diversion intake and clean the hole using a special universal DIRVSBUNI de-burring device.



**6** Fix the diversion intake by once again aligning the reference notches to the obtained marks.

Fasten the pin with a 5-6 Nm torque using an Allen wrench.

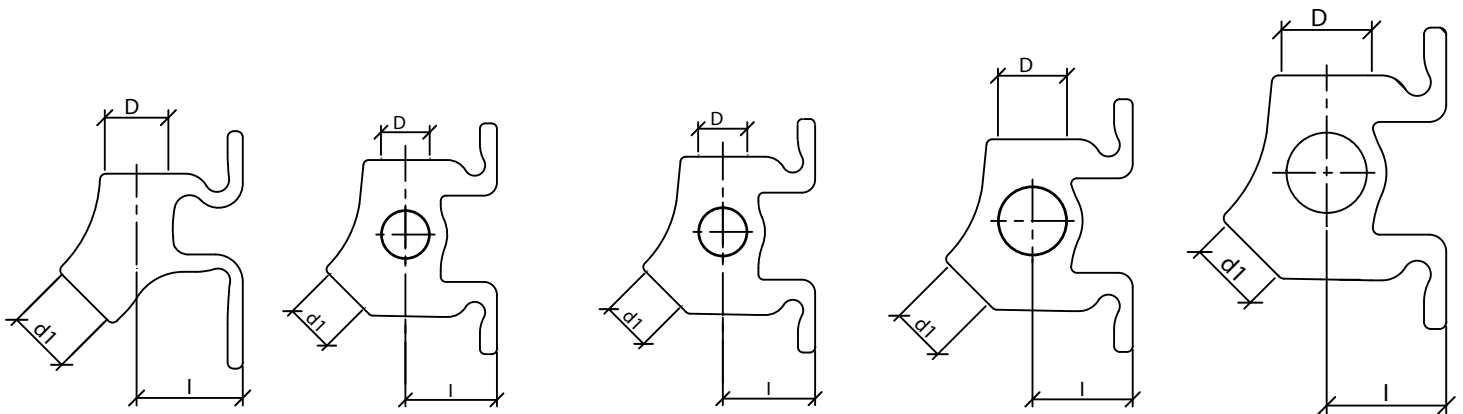
## WALL MOUNT MANIFOLD ALUMINIUM

The array of aluminium connectors is available in a wide range of models designed to meet all application needs and all compressed air supply needs.

In compliance with the safety philosophy which distinguishes the AIRCOM products, the aluminium connectors have conventional 1/2" outputs at 45° with respect to the fixing plane, so as to reduce the risk of direct ejection towards the operator.



The aluminium connectors have lateral holes with 1/2" or 3/4" thread indispensable for the connection to FRL groups, pressure reducers, manometers.



For further details on the aluminium connectors reference shall be made to our technical catalogue ANNEX A – Technical data sheet.



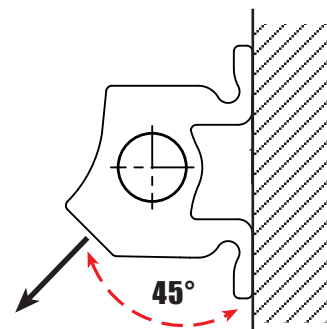
The aluminium connectors come in 5 models and they are all conceived in the ISO 228 as well as NPT thread.

# MOUNTING AND SAFETY - wall mount manifold

## SAFETY

The connectors have an output facing downwards at 45° with respect to the support base for ensuring possible injection of the fitting downwards thus reducing the risk of accident for the operator.

Use the QLSCI to avoid misalignment.



## DISCHARGING CONDENSATE AND NORMAL INSTALLATION

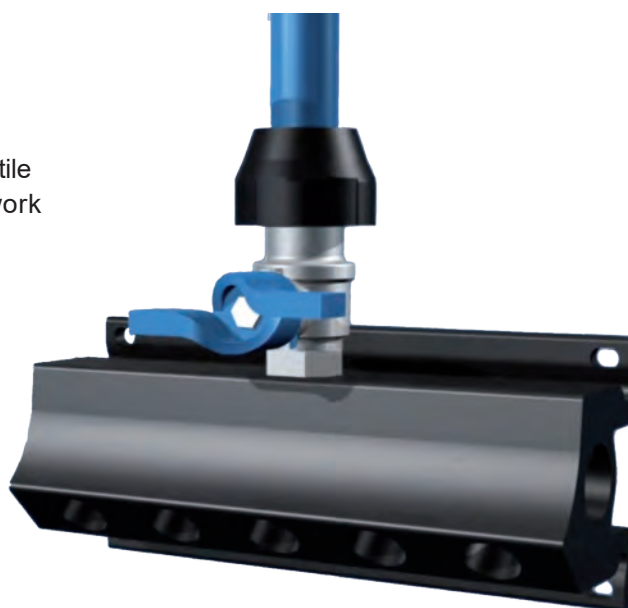
The aluminium connectors, just like the techno-polymer ones, are predisposed for the normal horizontal wall mounting.

The lateral outputs present on both sides also allow the installation of the connectors in series, so as to obtain useful solutions on board the machine or for work benches.

The 1/4" condensate discharge is normally closed. In order to discharge the condensate, drill the part using a 6 mm tip, clean and apply the special DIRVSP condensate discharge valve.

## WALL MOUNT MANIFOLD MULTIPLE

The seven outputs (two lateral and five front ones) allow versatile and targeted applications on board the machine or on work benches.



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## ACCESSORIES: ALUMINUM SPIGOT

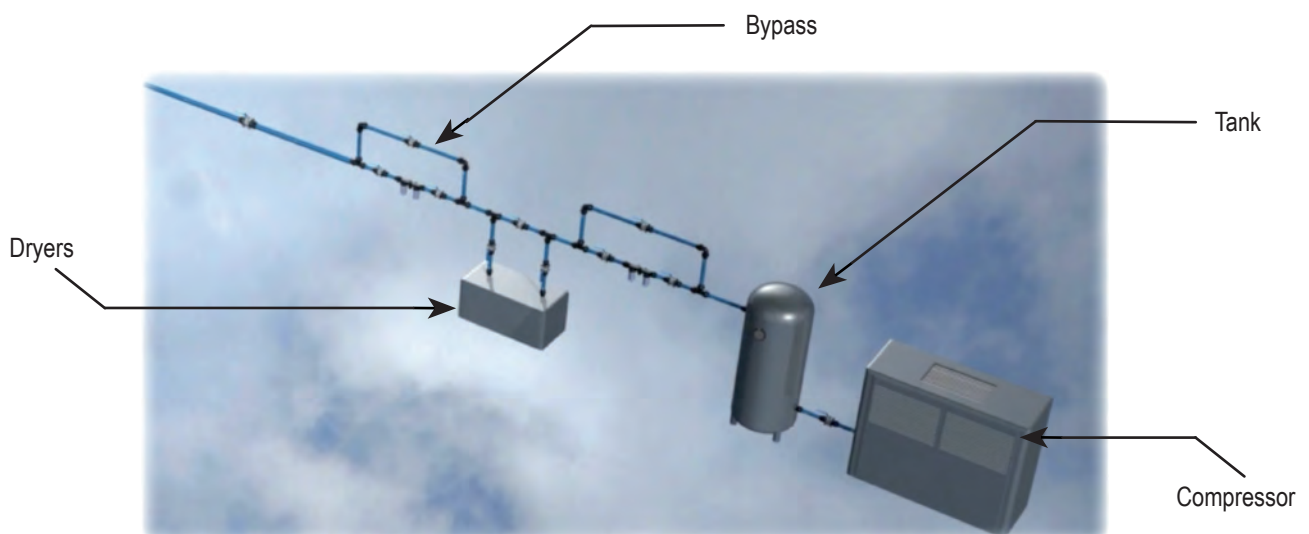
The male threaded spigot is a special hollow cylinder block in aluminum alloy with a male conic gas thread for airtight couplings according ISO 7-1 at one end and a plain pipe segment of size identical to QLTUAL pipe on the other end.

QLPUNM	Male threaded Quick line spigot				
Codice	Gr.	D	d	L (in)	L1 (in)
QLPUNM016038	0,029	16	3/8"	93	12
QLPUNM020048	0,035	20	1/2"	95	13
QLPUNM020068	0,045	20	3/4"	96	13
QLPUNM025088	0,076	25	1"	108	16
QLPUNM032108	0,137	32	1.1/4"	119	18
QLPUNM040128	0,182	40	1.1/2"	135	21
QLPUNM050168	0,241	50	2"	141	23
QLPUNM063168	0,300	63	2"	157	23
QLPUNM080248	0,734	80	3"	171	26



This product allows to reduce the fittings quantity in the compressor room for all the connections between the compressor and the treatment groups and relative by-passes.

All QUICK LINE fitting ends may rapidly be converted into pieces with ISO 7-1 male thread.



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(S. E. & O.)

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