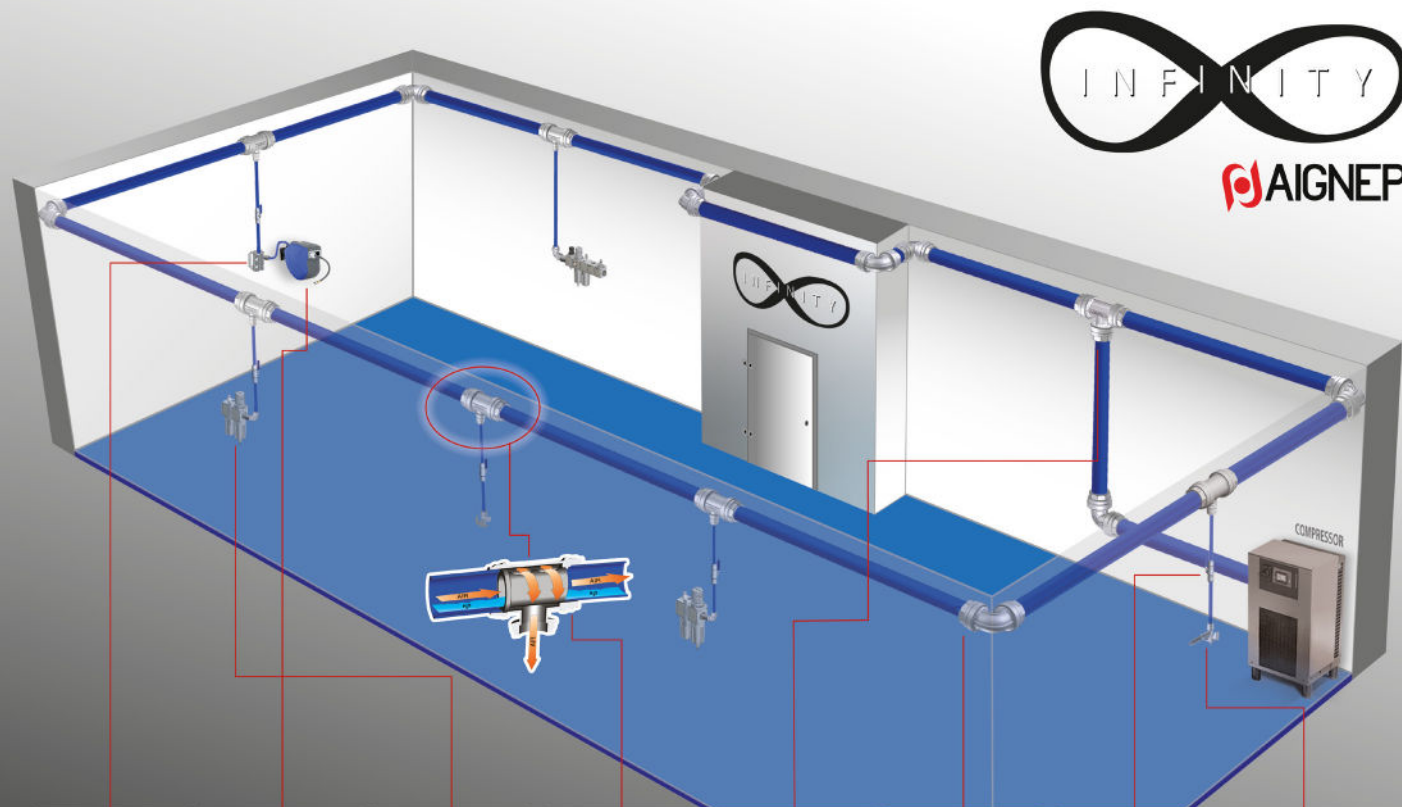
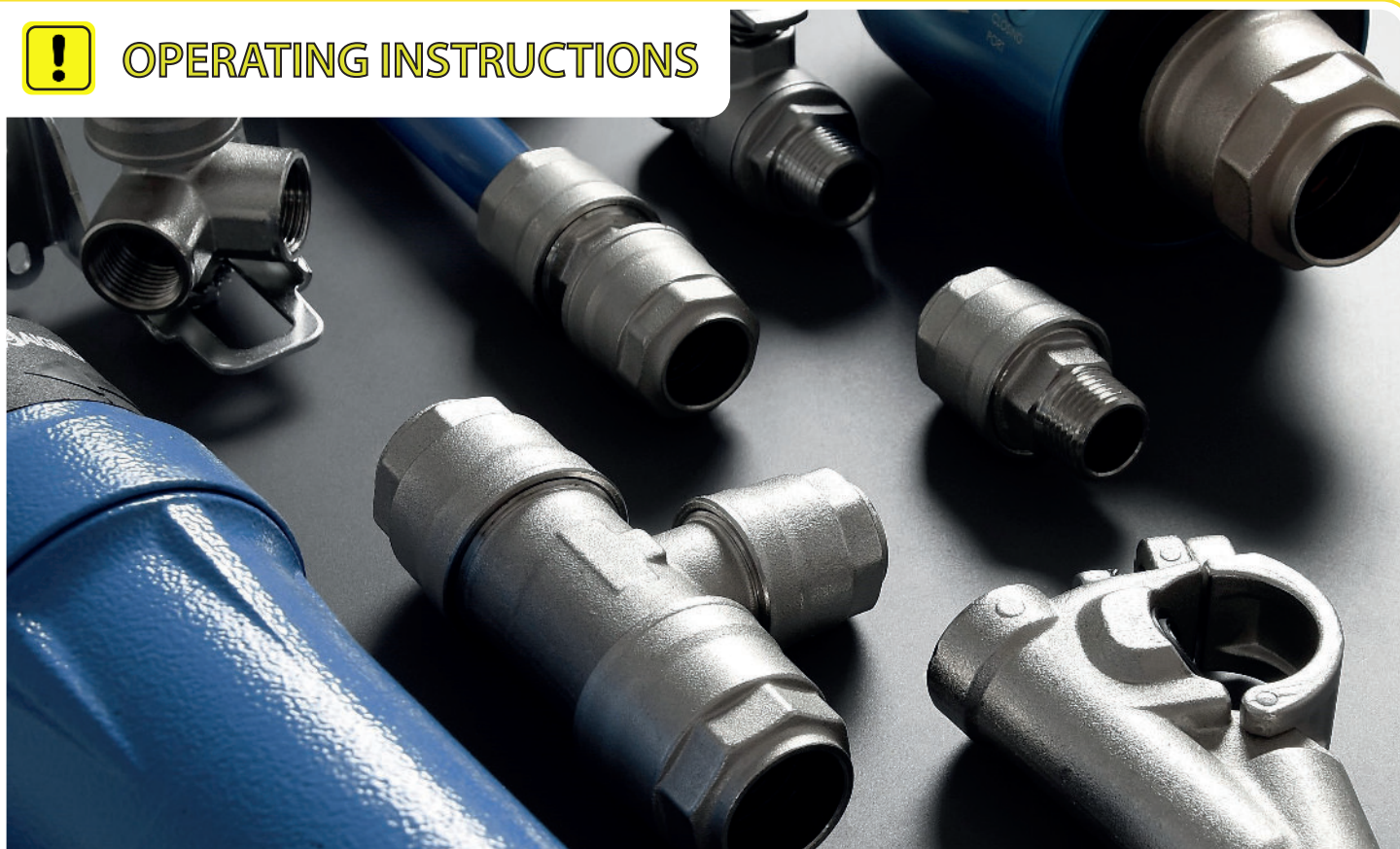


! OPERATING INSTRUCTIONS



ISO CERTIFIED



Aignep is certified to UNI EN ISO 9001:2015: international standard for company quality management systems.

COMPLIANCE 2014/68/UE



Infinity® products satisfy the requirements of 2014/68/UE (PED: Pressure Equipment Directive).

REACH COMPLIANCE



All Infinity® products comply with REACH standard EC N°1907 / 2006 concerning restrictions of chemical hazardous substances.

ROHS COMPLIANCE



All Infinity® products comply with ROHS directives: 2011/65/UE concerning restrictions of dangerous substances in appliances.

ASME B31.1 / B31.3



Infinity® products satisfy the requirements of ASME B31.1 and ASME B31.3

CRN COMPLIANCE



Infinity has Full CRN Approval, conforming to the (TSSA) Technical Standards & Safety Authority

QUALICOAT COMPLIANCE



Chemical pre-treatments on Infinity® products comply with UNI 9921 - DIN 50939 - ASTM D 1730 - MIL C 5541 - UNI 9983 - BS 6496 - AAMA 603-605.

ABSENCE OF SILICONE



Infinity® products are silicon-free , in order to guarantee the highest purity level of air.

FIRE RESISTANCE



All Infinity® products are not flammable and they limit flame spread according to UNI EN 13501-1 : 2005. Class A2 - d1 - d0.

COMPLIANCE ISO 8573-1



Infinity® system is tested in order to fully comply the norm. The Infinity® products do not contaminate the inner fluid.


Operating conditions

INFINITY pipes and fittings are designed to convey compressed air, vacuum and inert gases (ask to our technical office for compatibility with inert gases).

INFINITY cannot be used to convey the finished products such as water, food products, chemicals, industrial powders, etc.

INFINITY cannot be buried in walls or floors. Inspectable ducts must be used for inwall or underfloor installation.

INFINITY cannot be used as supports for other industrial pipes or electrical ducts.

INFINITY must be protected against vibrations, violent shocks, extreme weather conditions, animal excrements.

INFINITY must be protected against salt spray environment. Tubes and fittings must be shielded.

INFINITY fittings and tubes are extremely resistant to UV radiations. However we recommend shielding them in case of prolonged exposure.


IMPORTANT SAFETY INFORMATION

- PLEASE READ CAREFULLY AND FOLLOW ALL INSTRUCTIONS BEFORE INSTALLING AND USING THIS PRODUCT
- System designer and installer must follow sound established engineering practices while installing Infinity piping system.
- System designer and installer must comply with all applicable national and local laws, including but not limited to all applicable plumbing, fire, and building codes.
- Installation, augmentation and repair of Infinity piping system must be performed by an authorized professional.
- Installers must follow all safety procedures and use all Personal Protective Equipment (PPE), including but not limited to safety glasses, gloves, hardhat, hearing protection, appropriate footwear and safety harnesses, while installing the Infinity Piping System.
- When working at heights, installers must use a harness for personal protection. Installers must ensure that tools are securely fastened to prevent them from falling.
- Additional site- or company-specific safety equipment and procedures may be required during installation.
- System designer and installer must ensure the system is isolated and depressurized while working on the Infinity piping system. All local safety regulations and Lock Out /Tag Out procedures must be followed (ex. OSHA for US.). Special care must always be taken to prevent suffocation risks when working with other gases than air.


INSTALLATION GUIDELINES (90259 - 90250 - 90975 - 90976 - 90260 - 90986 - 90010)

INFINITY genuine pipes and fittings only should be used when installing, adjusting or repairing an INFINITY system.

INFINITY full length pipes delivered from factory are ready for connection with fittings. Installers must use the specified equipment to cut the pipe. The cut of pipe must be perpendicular. Installers must always deburr pipes inside and outside after cutting. Installers must remove residual cutting material from pipes.

INFINITY most recommended form of installation for the primary line is a loop. For safety reasons INFINITY primary line must be installed at minimum 2,5 mt (8.2 ft.) from the ground.

INFINITY primary line should be installed with a 1-2% slope to convey condensing water and impurities to drainage points installed further down. Installer must use the proper drop fittings (90700 - 90705 - 90710 - 90720 - 90721 - 90725 - 90726) to convey and remove residual water or impurity from the primary line.

INFINITY drainage fittings must be installed at specific height between 1-1,2 mt (3,2-4 ft.).

INFINITY ball valves (codici) are full flow. For safety, quick inspection and further modifications, we recommend to foresee the installation of ball valves along the primary line or nearby a branch point to secondary lines.



Installation equipment

- Installers must follow all safety procedures and use all Personal Protective Equipment (PPE), including but not limited to safety glasses, gloves, hardhat, hearing protection, appropriate footwear and safety harnesses, while installing the Infinity Piping System. When working at heights, installers must use a harness for personal protection. Installers must ensure that tools are securely fastened to prevent them from falling.
- To make installation quicker and safer, we recommend tools such as tightening wrenches, torque wrenches, as long as they respect high quality standards.
- The necessary tools for a safe installation are:

90870	90880	90881	90885
			
90254	90241	90242	90249
			
90249 (Ø 80 - Ø 110 - Ø 168)	VAL03		
			



System testing

- 1 Before using the INFINITY system installers must follow all safety procedures and use all Personal Protective Equipment (PPE), including but not limited to safety glasses, gloves, hardhat, hearing protection, appropriate footwear and safety harnesses, while installing the Infinity Piping System. When working at heights, installers must use a harness for personal protection. Installers must ensure that tools are securely fastened to prevent them from falling.
- 2 Before using the INFINITY system installers must ensure that the compressor room is spacious, well ventilated and insulated.
- 3 Before using the INFINITY system, installers must ensure that all fittings and tubes are properly connected according to specific installation instructions and the necessary test controls.
- 4 Before using the INFINITY system installers must ensure that tubes are fixed correctly to the supports.
- 5 At initial start up of the INFINITY system, apply a test pressure of 1 bar (15 psi) to identify leakage or imperfect joints. After performing an inspection, increase the pressure gradually and constantly (max. 1 bar every 5 minutes). Keep performing inspections for leakages or imperfect connections until the final pressure.



Disassembly of Infinity Piping System

- System designer and installer must ensure the system is isolated and depressurized while working on the Infinity piping system. All local safety regulations and Lock Out /Tag Out procedures must be followed (ex. OSHA for US). Special care must always be taken to prevent suffocation risks when working with other gases than air.
- Loosen nut to disengage bite ring (clamping washer). With nut loosen you still may need to push tube into fitting to release bite ring.
- Pull tube out of fitting.
- Follow installation instructions for reassembling Infinity Piping System.

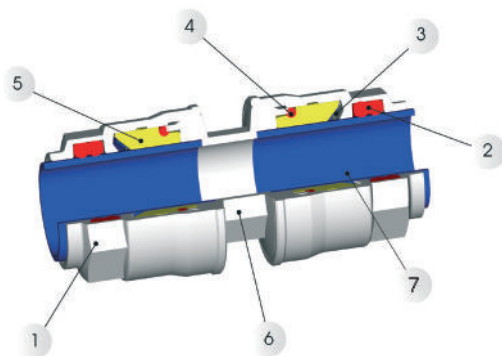


TECHNICAL SPECIFICATIONS

Component Parts and Materials

- 1 Nickel-Plated Brass Nut
- 2 (NBR or Nitrile Rubber) Double-Lipped Seal
- 3 304 AISI Stainless Steel (Bite-Ring or Clamping Washer)
- 4 (NBR / Nitrile Rubber) O-Ring Seal
- 5 Technopolymer Guide-Collar
- 6 Nickel-Plated Brass Body
- 7 6060-T6 Extruded Aluminum Powder Coated Tube
- 8 Aluminum Fittings Options in 50 & 63 mm

PUSH IN:
 Ø 20 mm
 Ø 25 mm
 Ø 32 mm
 Ø 40 mm
 Ø 50 mm
 Ø 63 mm



Reference Standard

1907/2006
REACH

2011/65/CE
RoHS

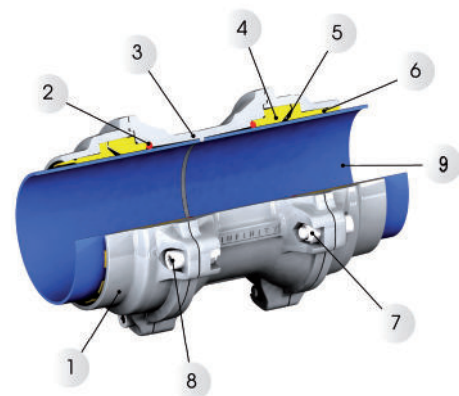
PED
2014/68/UE

SILICON
FREE

Component Parts and Materials

- 1 Nut made in aluminium with finished surface treatment
- 2 O-RING Seal made in NBR
- 3 Body made in aluminium with finished surface treatment
- 4 Safety Ring made in Technopolymeric
- 5 Clamping Washer made in AISI 301
- 6 Tube-guide Ring made in technopolymeric
- 7 Selflocking Nut in Zinc-Plated Steel
- 8 TCEI Screw in Zinc-Plated Steel
- 9 Extruded Alluminium tube calibrated and powder coated

PUSH IN:
 Ø 80 mm
 Ø 110 mm
 Ø 168 mm



Pressure Rating

Vacuum ~ 232 PSI
-0.99 bar ~ 20 bar
-0.099 MPa ~ 2.0 MPa



Temperatures Rating

-4° F ~ 176° F
-20° C ~ 80° C

- Approved for indoor and outdoor applications
- Not approved for bare underground installation



Threads

- Male and Female NPT threads conform with ANSI/ASME standard B1.20.1

Technical characteristics to the tubes	
Extruded aluminium	UNI 9006/1 Al Mg 0.5 Si 0.4 Fe 0.2
Designations UNI EN 573-3	EN AW 6060 T6
Surface treatment	Electrostatic painting
Specific weight	2.70 Kg/dm ³
Expansion coefficient	0.024 mm/(m °C)



Fluids

- Compressed air
- Vacuum
- Inert Gases - i.g. Nitrogen & Argon



Assembly

Ø 20 - Ø 25 - Ø 32 - Ø 40

Fittings of Ø 20 - Ø 25 - Ø 32 - Ø 40 are supplied assembled and pre torqued.

- 1 Inspect fittings and tube for damage. System components may be damaged during shipment and handling at the job site
- 2 Inspect and deburr tube.
- 3 Insert tube into fitting and firmly push in to seat at bottom of fitting.
- 4 In case of fitting disassembling, use the torque specifications in the chart below to re-assemble the fitting.

1



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3

Ø mm	Torque specifications
20	3 Nm (26 In - lbs)
25	3 Nm (26 In - lbs)
32	4 Nm (35 In - lbs)
40	6.5 Nm (58 In - lbs)

Assembly

Ø 50 - Ø 63

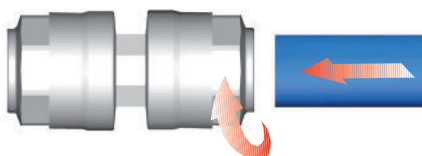
Fittings of Ø 50 - Ø 63 are supplied pre-assembled with nut loosened for ease of insertion.

- 1 Inspect fittings and tube for damage. System components may be damaged during shipment and handling at the job site
- 2 Inspect and deburr tube.
- 3 Insert tube into fitting, firmly push in to seat at bottom of fitting.
- 4 Tighten nut onto fitting following the torque specifications in the chart.

1



2



3

Ø mm	Torque specifications
50	75 Nm (55 ft - lbs)
63	85 Nm (63 ft - lbs)
Aluminium	
50	75 Nm (55 ft - lbs)
63	85 Nm (63 ft - lbs)

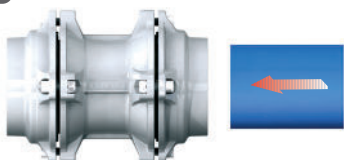
Assembly

Ø 80 - Ø 110 - Ø 168

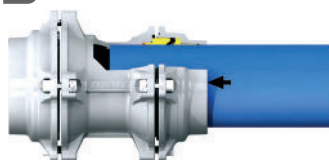
Fittings of Ø 80 - Ø 110 - Ø 168 are supplied pre-assembled with 4-6 nuts and bolts, loosened for ease of insertion.

- 1 Inspect fittings and tube for damage. System components may be damaged during shipment and handling at the job site
- 2 Inspect and deburr tube.
- 3 Insert tube into fitting, firmly push in to seat at bottom of fitting.
- 4 Tighten nuts and bolts following the torque specifications and sequence in the chart and diagram below.

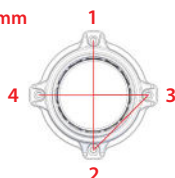
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Ø 80 mm - Ø 110 mm



Ø 168 mm



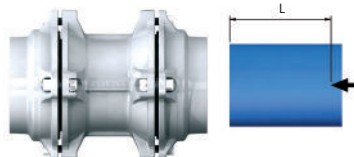
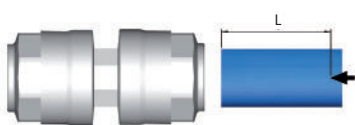
Ø mm	Torque specifications
80	30 Nm (22 ft - lbs)
110	30 Nm (22 ft - lbs)
168	60 Nm (44 ft - lbs)



Tube connection

Ø 20 - Ø 25 - Ø 32 - Ø 40 - Ø 50 - Ø 63 - Ø 80 - Ø 110 - Ø 168

- Mark tube depth for visual verification that the tube is seated properly.
- Verify tube is seated into body of fitting and fitting nut is tightened.
- Tube Insertion Depths.



Ø mm	L mm
20	31.5
25	38.5
32	46
40	52
50	63.5
63	57.5
80	91
110	125.5
168	193



Assembly

- 1 To connect the pipe system to the air system component, use flanged adapter 90013 or 90014 (ANSI 150-LB). Insert gasket 90017 between air system component flange and flange adapter 90013 or 90014 (ANSI 150-LB) . Torque 8 nuts and bolts.
- 2 Connect fittings to start the pipeline. Insert tube into fitting, firmly push in to seat at bottom of fitting.
- 3 Tighten nuts and bolts following the torque specifications and sequence in the chart and diagram.
- 4 Finished assembly.

1

COMPRESSOR

90017

90019 *

90013 - 90014 (ANSI 150-LB)

2

3

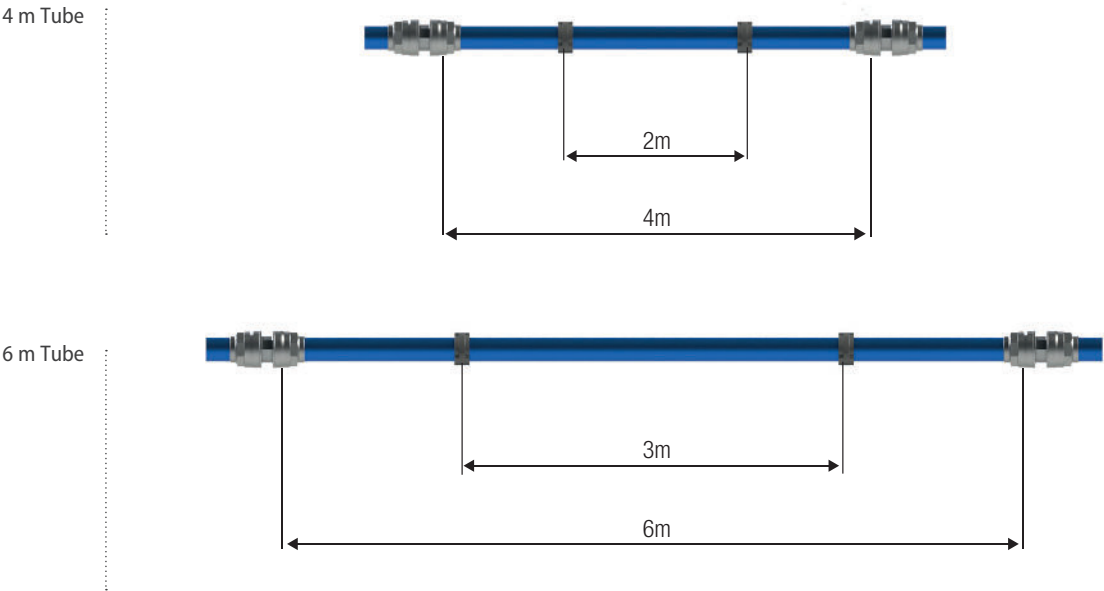
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Ø mm	Torque specifications
80	30 Nm (22 ft - lbs)
110	30 Nm (22 ft - lbs)
168	60 Nm (44 ft - lbs)

4

HANGING AND SUPPORTING INFINITY PIPING SYSTEM

- Installer must follow all national and local codes for hanging a piping system
- Aignep recommends the following hanging and support for Infinity Piping System




Expansion and shrinkage due to the heat

Installer needs to understand and consider linear expansion/contraction while hanging Infinity Piping System.

To calculate the linear expansion - shrinkage we can use the following formula:

$$\Delta L = \Delta T \times L \times \alpha \quad \text{i.e.:$$

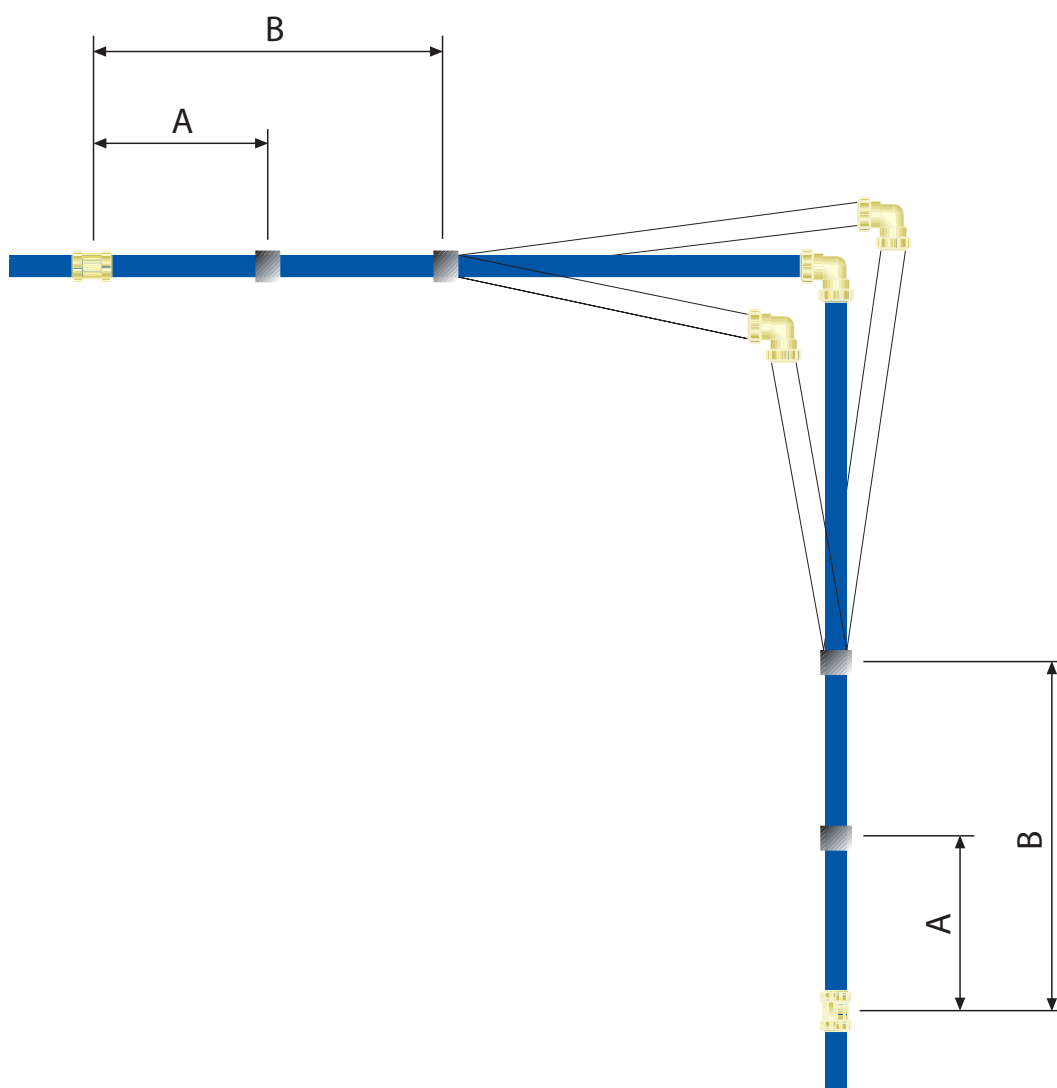
ΔL = Linear expansion - shrinkage in mm

ΔT = Heat variation between the operating temperature and the installation one at °C

L = Tube length in m

α = Linear expansion factor, for the aluminium
it is 0.024 mm/m °C

- The installation have to be positioned, considering at the two ends free space which permits the expansion - shrinkage and supports have to be fixed as showed in the picture:

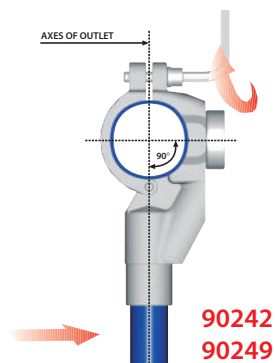
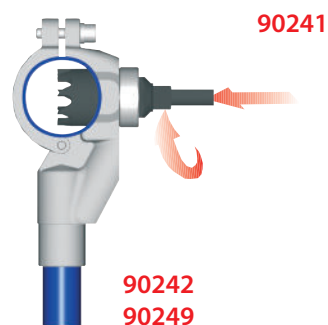
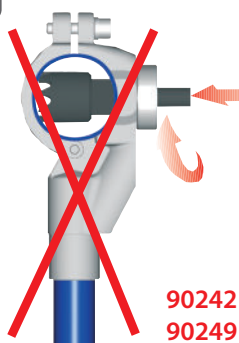



Assembly (90235-90236-90237)

A saddle clamp allows the installer to set up a new drop in an existing system without removing tubes.

- 1 Depressurize the system.
- 2 Mount jig 90242 or 90249 for the correct tube and outlet size.
Be careful that jig bore must intersect the axis of tube drop.
It is possible, if needed, to mount a 20mm tube to the drilling jig for ease of positioning.
- 3 Drill the tube with correct hole saw 90241.
- 4 Do not damage inside of tube with hole saw.
- 5 Remove jig and clean up any residual material.
- 6 Mount and tighten saddle clamp 90240 or 90249. Be careful that the lip seal lies into the hole correctly.

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Assembly 90253

- 1 Mount the saddle clamp Art.90253 on tube and screw it carefully – open the valve.
- 2 Mount the drilling tool Art.90252 on valve and screw it carefully.
- 3 Mount the drill on the drilling tool Art.90252 and drill the tube till the stop.
- 4 Remove the drill and pull back the drill tip; close the valve before removing the drilling tool.

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4




Assembly 90620

- 1 Remove the nut.
- 2 Mount art 90620 to reduce pipe diameter
- * Follow the torque specifications

90620
BODY REDUCER

1 - Remove the nut

2 - Mount art. 90620

Ø mm	Torque specifications
20	3 Nm (26 In - lbs)
25	3 Nm (26 In - lbs)
32	4 Nm (35 In - lbs)
40	6.5 Nm (58 In - lbs)
50	75 Nm (55 ft - lbs)
63	85 Nm (63 ft - lbs)
Aluminium	
50	75 Nm (55 ft - lbs)
63	85 Nm (63 ft - lbs)



Assembly 90620

- 1 Remove the flange
- 2 Mount art. 90630+90010 to reduce pipe diameter
Mount art. 90631+90011 (NPTF) to reduce pipe diameter
- * Follow the torque specifications

90630
90631 (NPTF)
FEMALE REDUCER

1 - Remove the flange

2 - Mount art. 90630+90010
2 - Mount art. 90631+90011 (NPTF)

Ø mm	Torque specifications
80	30 Nm (22 ft - lbs)
110	30 Nm (22 ft - lbs)
168	60 Nm (44 ft - lbs)



Reducing fittings 90012 - 90621 - 90626 - 90628

- Reducing fittings have grooves intentionally machined for the bite ring (clamp washer) to engage.
- Installer must ensure the reducer is fully seated into the accepting fitting for the bite ring (clamp washer) to properly engage the machined groove

90012
TUBE-TUBE REDUCER
side without groove

90621
REDUCER
side with groove

90626 (NPTF)
FEMALE REDUCER
side with groove

90628 (NPTF)
MALE REDUCER
side with groove



** Please contact one of the following Aignep branches with any questions, concerns or additional information needed prior, during or after the installation of Infinity piping system.*



Aignep si riserva il diritto di variare modelli e ingombri senza preavviso.
Aignep reserves the right to vary models and dimensions without notice.
Aignep behält sich das Recht vor, Daten ohne Ankündigung zu ändern.
Aignep se réserve le droit de modifier les données sans préavis.
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Aggiornamento - Updated - Mise a jour - Atualização: 01/2023



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