



Transair® Installation Guide

Essential Instructions

Aluminum Pipe Section

Pipe to Pipe Connectors

Quick Assembly Brackets

Transair® Flexible Hose

Fixture Accessories



Essential Instructions

Features

- Compressor outlets (absorption of vibration)
- To bypass obstacles and join different levels
- Expansion loops
- Resistant to mineral and synthetic compressor oils
- Fire resistant (conforms to ISO 8030 standard for compressed air flexible hose and to EN 12.115 standard for vacuum flexible hose)

General

Prior to the installation of a Transair® compressed air distribution system, the installer should ensure that the installation area complies with any regulations applicable to areas exposed to explosive hazards (in particular the effect of static electricity in a silo area). Transair® should be installed downstream of the compressed air receiver, or after the dryer. Flexible Transair® hose can be installed at the start of the system in order to eliminate any sources of vibration and to facilitate maintenance operations. When maintaining or modifying a Transair® system, the relevant section should be vented prior to the commencement of any work. Installers should use only Transair® components and accessories, in particular Transair® pipe clips and fixture clamps. The technical properties of the Transair® components, as described in the Transair® catalog, must be respected.

Pressurizing the system

Once the Transair® installation has been installed and prior to pressurizing, the installer should complete all tests, inspections and compliance checks as stated in any contract and according to sound engineering practice and current local regulations.

Transair® pipe and hoses

Transair® pipe should be protected from mechanical impact, particularly if exposed to collision with fork-lift trucks or when sited in an environment with moving overhead loads. Similarly, rotation of the pipe and pipe supports should be avoided. Transair® pipe must not be welded. Flexible Transair® hoses should be used in accordance with the recommendations of the installation guidelines.

Note: In certain situations, Transair® aluminum pipe may be formed with a bend - please contact us for further information.

Specifications:

Max. working pressure for flexible hose used for compressed air*: 188 PSI from -4° to +140° F (12.9 bar from -20° to +60° C)
232 PSI from -4° to +115° F (15.9 bar from -20° to +46.1° C)

Vacuum: 98.7% (29.6" Hg)

Working Temperature -4° to +140° F (-20° to +60° C)

* Please consult us for higher temperature requirements

Expansion / contraction

Expansion and contraction of the system should be calculated prior to installation. The system designer and installer should calculate the elongation or retraction of each Transair® line according to the recommendations in this installation guide.

Component assembly

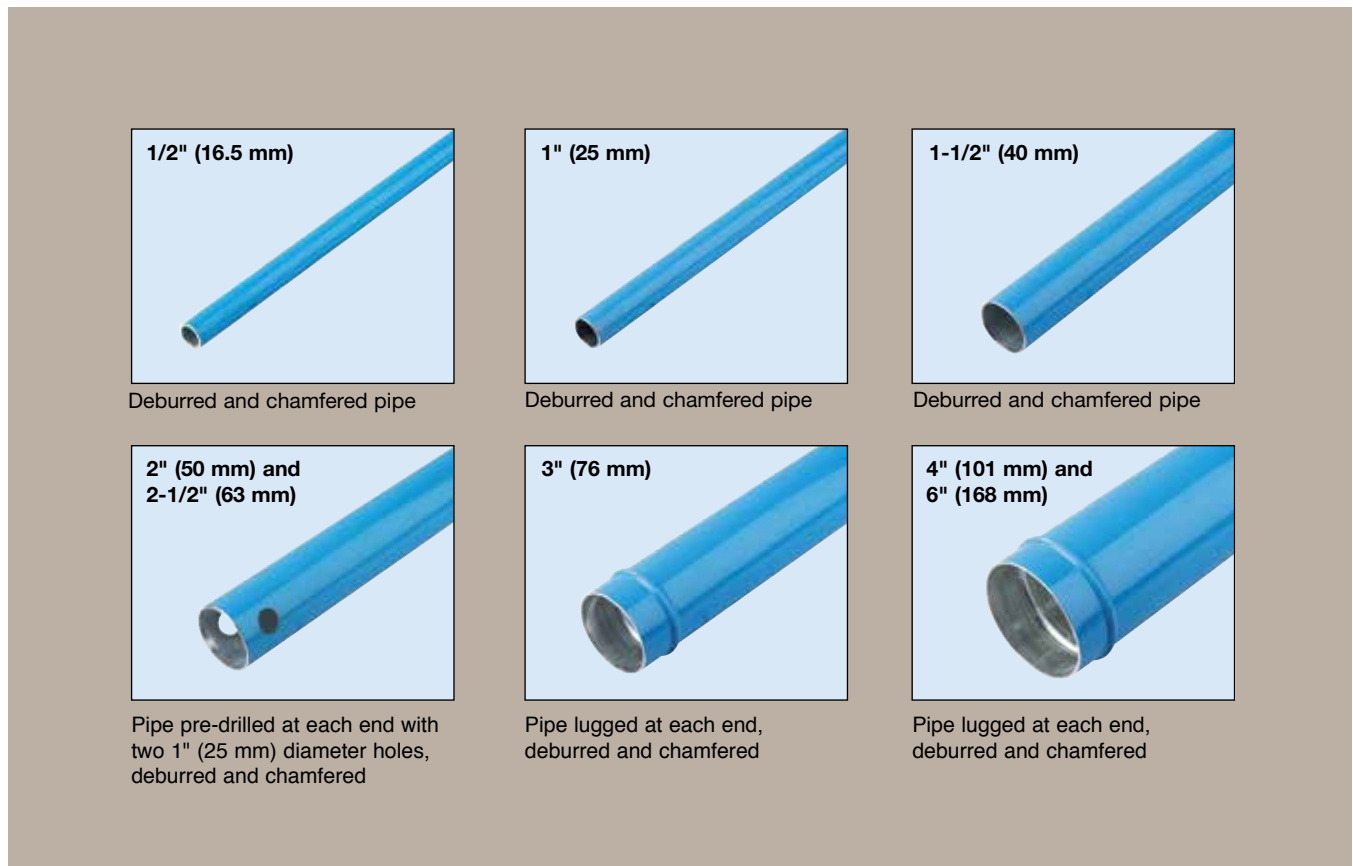
Transair® components are provided with assembly instructions for their correct use - simply follow the methods and recommendations stated in this document.

Transair® installations - situations to avoid

- Installation within a solid mass (concrete, foam, etc.)
- The hanging of any external equipment to Transair® pipe
- The use of Transair® for grounding, or as a support for electrical equipment
- Exposure to chemicals that are incompatible with Transair® components (please contact us for further details)

Sound engineering practice for the optimization of an air pipe system

- When installing a Transair® system, the work should be performed in accordance with good engineering practice.
- Bends and bypasses represent sources of pressure drop. To avoid excessive pressure loss, use modular consoles to offset the network and to bypass obstacles. Keep in-line pipe diameter reductions to a minimum.
- Maintain a consistent level of good quality air by use of adequate filtration at the compressor outlet.
- The diameter of the pipe will influence pressure drop and the operation of point-of-use equipment. Select the diameter according to the required flow rate and acceptable pressure drop at the point of use.
- Position drops should be as close as possible to the point of use.



Presentation

Transair® aluminum pipe is supplied ready for use. No particular preparation (cutting, deburring, chamfering, etc.) is required.

Thanks to the rigidity of Transair® aluminum pipe, temperature-related expansion / contraction is reduced to a minimum. The Transair® system retains its straightness, and hence its performance, over time (reduction of pressure drop caused by surface friction).

Transair® aluminum pipe is calibrated and fits perfectly with all Transair® components. Each connection is automatically secured and the seal is optimized, which minimizes corrosion to the internal surface.

Transair® aluminum pipe has a protective powder coating (Qualicoat certified) and is thus protected from external corrosion. Its color allows the system to be immediately identified and gives a clean and aesthetic overall appearance.

Standard colors available:

- Blue (RAL 5012/bs1710)
- Gray (RAL 7001)
- Green (RAL 6029)

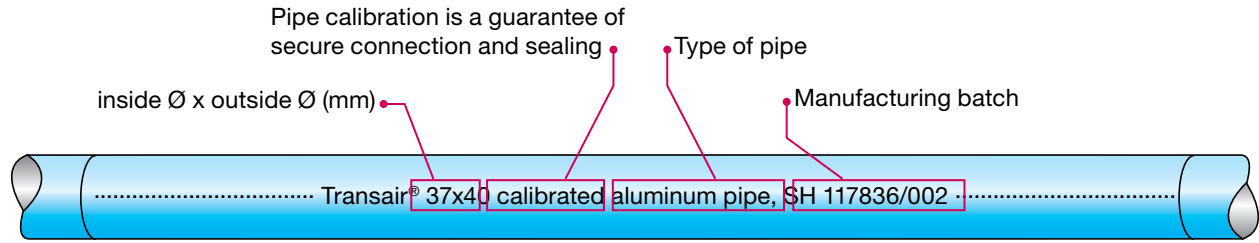
(Please contact us for other colors)

Transair® aluminum pipe is available in seven diameters from 1/2" to 6".

Applications

Transair® 1/2" to 6" aluminum pipe has been specially designed for compressed air, vacuum and inert gases (argon, nitrogen) – please contact us for other fluids.

Marking

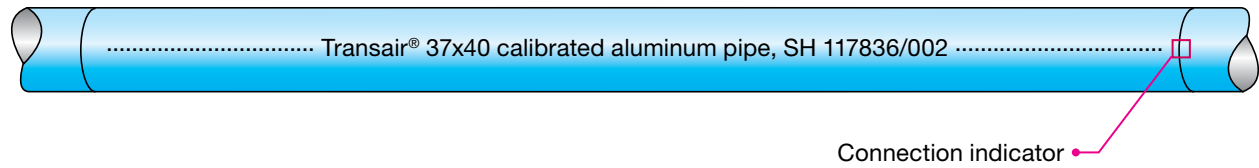


The transported fluid can be instantly identified by the color of the pipe

- ex: Blue pipe → compressed air system
- ex: Gray pipe → vacuum system
- ex: Green pipe → inert gas system

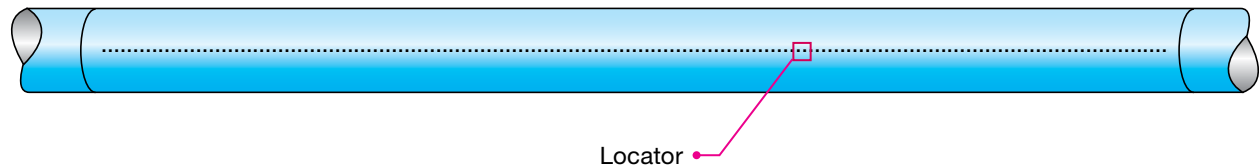
Connection indicator

Only on 1/2" to 1 1/2" aluminum pipe



Drilling locator: mark lines for correct drilling

Only on 1/2" to 2 1/2" aluminum pipe

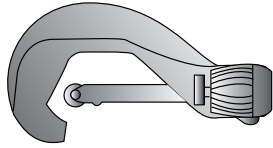


Drilling locators are used to correctly position Transair® brackets onto the pipe. There are two locators on each pipe. The second locator is used to position a second bracket perpendicular to a first bracket.

Aluminum Pipe Section

1/2" to 1-1/2"

Tools



Pipe cutter for aluminum pipe
ref. 6698 03 01



Chamfer tool for aluminum pipe
ref. 6698 04 01

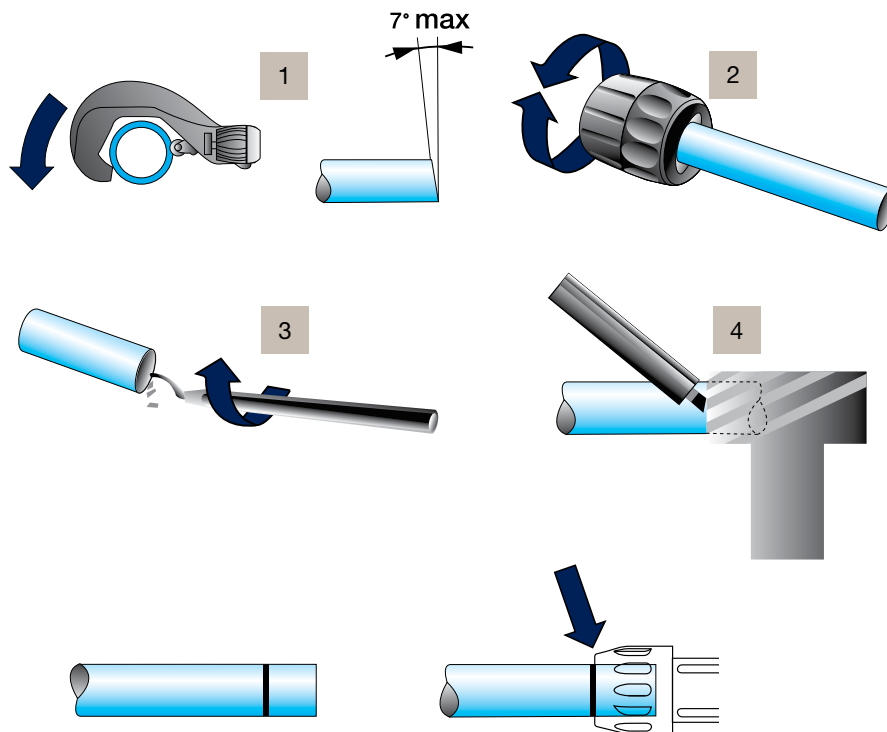


Deburring tool for aluminum pipe
ref. 6698 04 02



Marking tool for aluminum pipe
ref. 6698 04 03

Procedure

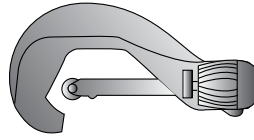


1. Cutting the pipe:
place the pipe in the pipe cutter
position the blade onto the pipe
rotate the pipe cutter around the pipe
while gently tightening the wheel
2. Carefully chamfer the outer edges
3. Deburr the inner end of the pipe
4. Trace the connection indicator
using the marking tool

The insertion lengths for 1/2", 1" and 1 1/2" connectors are 25 mm, 27 mm and 45 mm respectively, with the exception of the end cap (6625), for which the insertion lengths are of 39 mm, 42 mm and 64 mm respectively.

2" to 2-1/2"

Tools



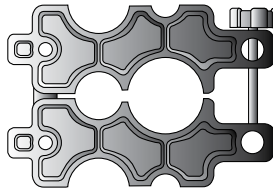
Pipe cutter for aluminum pipe ref. 6698 03 01



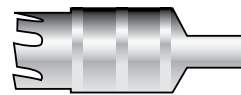
Chamfer ref. 6698 04 01



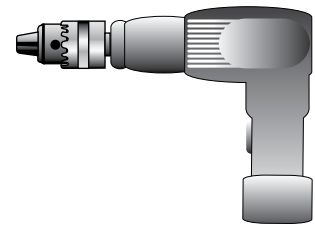
Deburring tool for aluminum pipe ref. 6698 04 02



Drilling jig for aluminum pipe ref. 6698 01 02

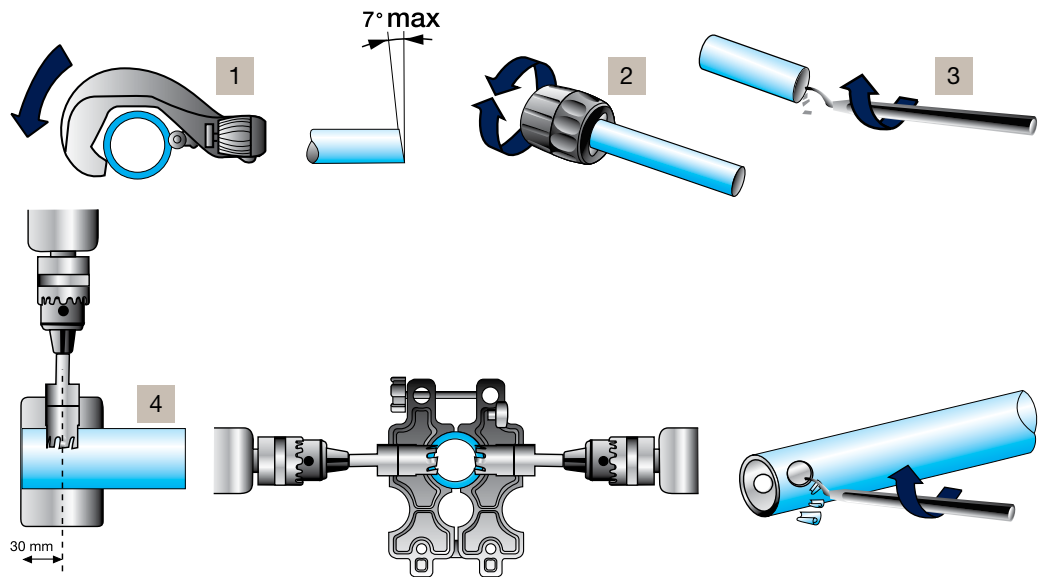


Drilling tool for aluminum pipe ref. 6698 02 01



Drill

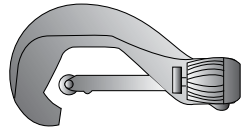
Procedure



1. Cutting the pipe:
place the pipe in the pipe cutter position the blade on the pipe rotate the pipe cutter around the pipe while gently tightening the wheel
2. Carefully chamfer the outer edges
3. Deburr the inner end of the pipe
4. Drill the two clamp holes using the drilling jig (6698 01 03) and the 1" drilling tool (6698 02 01). Loosen the jig, release the pipe, then deburr both holes. Ensure that all outer and inner surfaces are smooth and clear of burrs and potential sharp edges.

3" to 6"

Tools



Pipe cutter for aluminum pipe ref. 6698 03 01 (3") or EW08 00 03 (4" - 6")



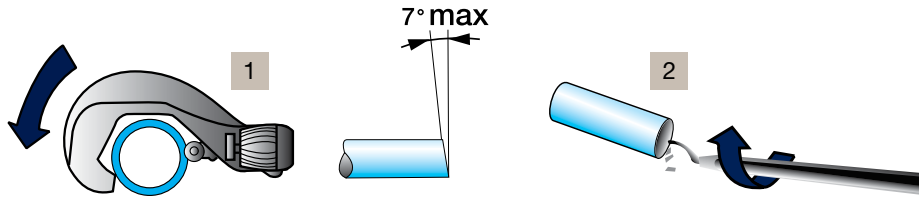
Deburring tool ref. 6698 04 02



Portable tool kit ref. EW01 00 02



Pipe forming jaw set ref. EW02 L1 00 (3") or EW02 L3 00 (4") or EW02 L8 00 (6")



1. Cutting the pipe:
place the pipe in the pipe cutter - position the blade on the pipe - rotate the pipe cutter around the pipe while gently tightening the wheel

2. Carefully deburr the outer and inner edges of the pipe

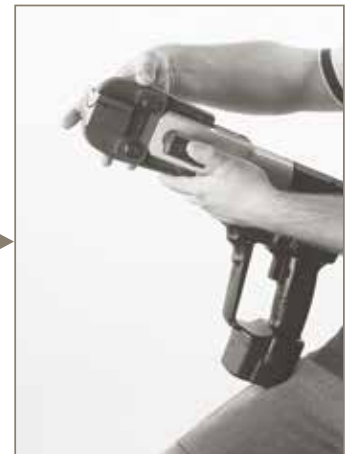
Procedure



Open the retaining pin at the front of the machine by pressing the jaw release button



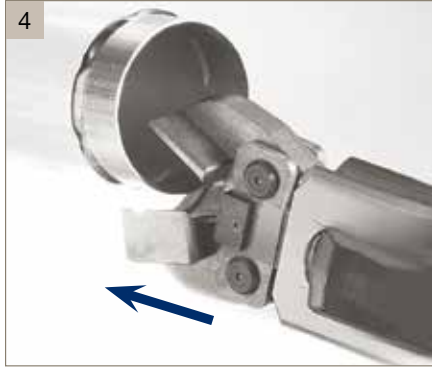
Place the jaws in the housing



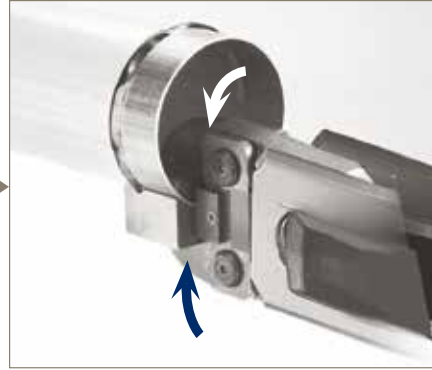
Lock in position by closing the retaining pin

3. Creating the lugs for 3", 4" or 6" cut pipe

Procedure



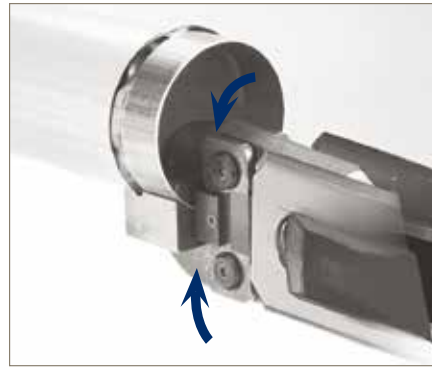
Manually open the jaws of the clamp and insert the aluminum pipe into the clamp as far as it will go



Release the jaws. Press the trigger and crimp the tube until a 'snap' sound is heard



Re-open the two jaws to remove the pipe and rotate the pipe slightly



Renew the operation until the required minimum number of lugs for each diameter is achieved

	Ø 3"	Ø 4"	Ø 6"
Minimum. Number of Lugs	5	6	10

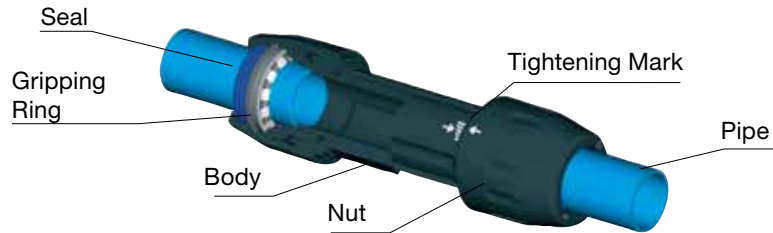
Important: Do not overlap the lugs!

Pipe to Pipe Connectors

1/2"
to
1-1/2"



Instant connection by means of a gripping ring



The 1/2" to 1 1/2" connectors instantly connect to Transair® aluminum pipe. Simply insert the pipe into the connector up to the connector insertion mark. The internal gripping ring is then automatically secured and the connection is complete.

2"
2-1/2"



Snap ring quick-fit connection

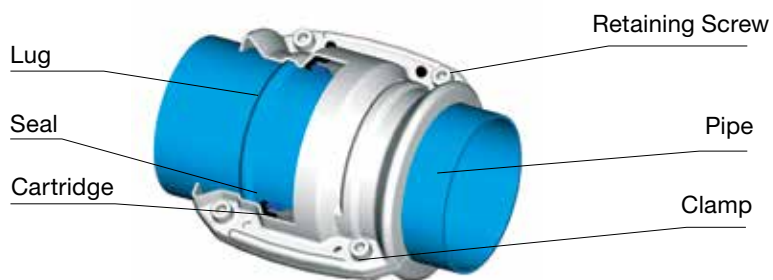


The 2" and 2 1/2" connectors are quickly secured to Transair® aluminum pipe by means of a snap ring, which makes the connector fully integrated with the pipe. Connection is achieved by simply tightening the nut.

3"
to
6"



Clamp quick-fit connection



The 3" to 6" clamps secure instantly to Transair® aluminum pipe. Simply position the formed pipe within the Transair® cartridge, which acts as a seal.

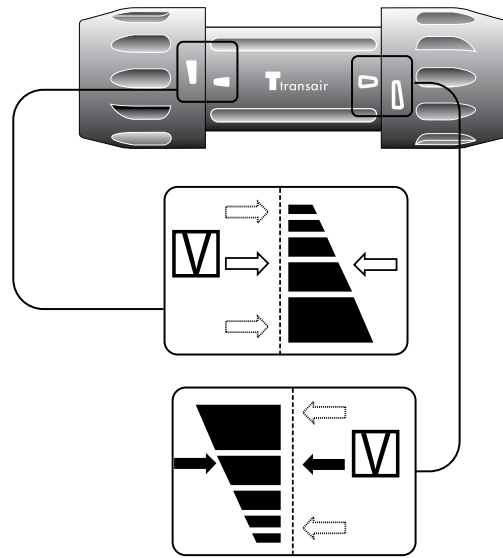
Close the Transair® clamp to secure the connection and finally tighten the four retaining screws.

Pre-assembled tightening indicators for 1/2", 1" and 1-1/2" connectors

There are important visual markings on the bodies and nuts of Transair® 1/2", 1" and 1 1/2" connectors. These are represented by solid and empty arrows and indicate the optimum torque. When assembling Transair® connectors, the nuts are tightened to a pre-defined torque on the body of the connector. This torque guarantees the seal and safety of each connection.

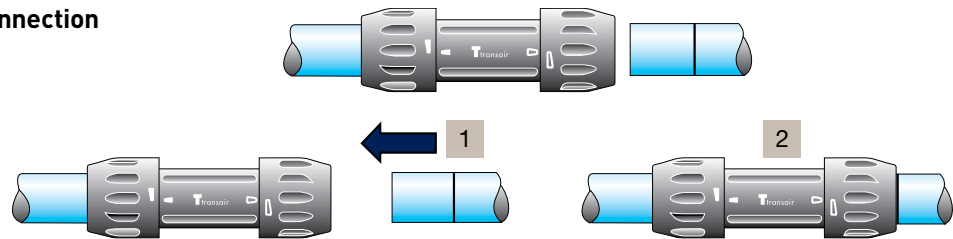
Before using 1/2", 1" or 1 1/2" connectors, ensure that the arrow marks are correctly aligned with each other.

There is no need to loosen the nuts prior to joining 1/2", 1" and 1 1/2" connectors to Transair® aluminum pipe.

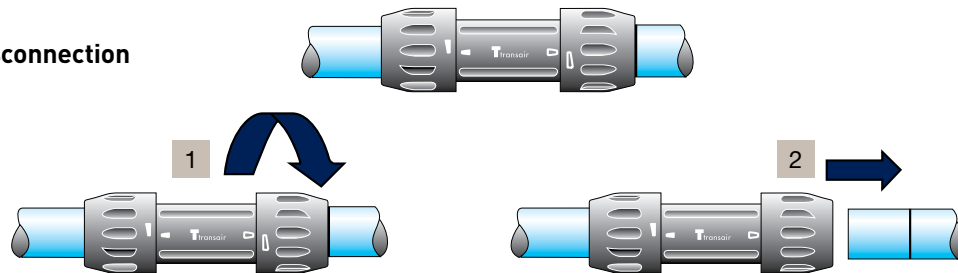


1/2"
to
1-1/2"

Connection



Disconnection



Lateral dismantling: see page 70 of this catalog.

Simply insert the pipe into the connector up to the connection mark. To disconnect, unscrew the nut by one half turn and remove the pipe.

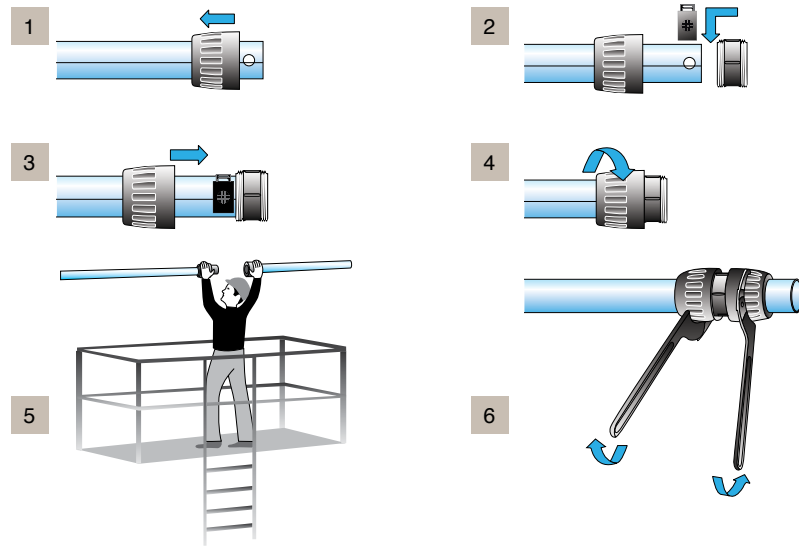
The insertion length is greater for end caps than for other Transair® connectors. The connection mark should be applied to the pipe by means of a marker and tape measure, using the following values:

- 1 1/2": 16.5 mm
- 1 3/4": 25 mm
- 2 1/2": 40 mm

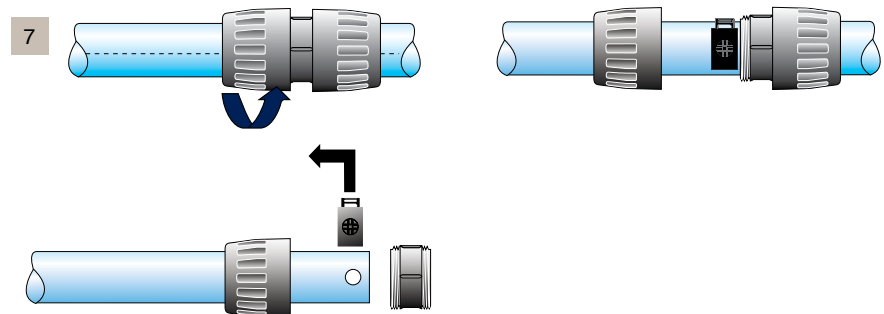
Note – when using end caps (ref. 6625)

2" to 2-1/2"

Connection



Disconnection



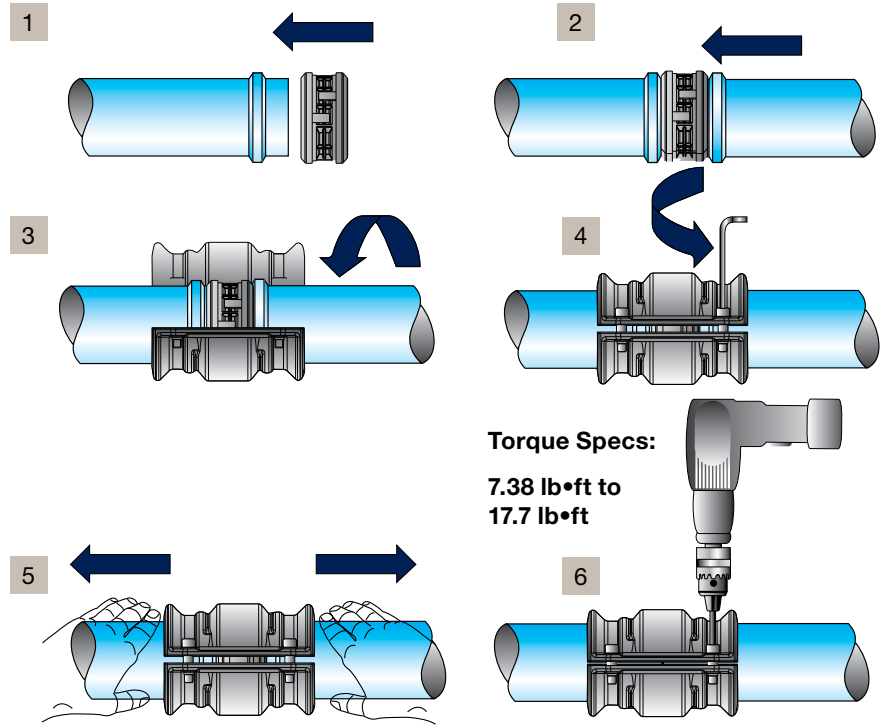
Lateral dismantling: see page 70 of this catalog.

1. Unscrew one of the connector nuts and fit over the pipe
2. Position the double clamp ring in the appropriate housings (two holes at the end of the pipe)
3. Bring the nut towards the body, which were previously positioned at the end of the pipe, until it stops against the double clamp
4. Tighten the nut by hand
5. Bring the two pipes together
6. Complete the assembly by 1/2 rotation with Transair® tightening spanners (ref. 6698 05 03)
7. To disconnect, perform the same operations in reverse order

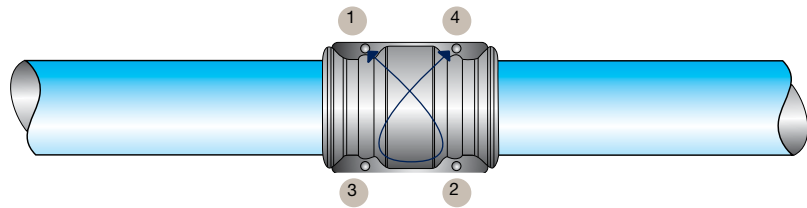
Connection / Disconnection

3"
to
6"

Connection



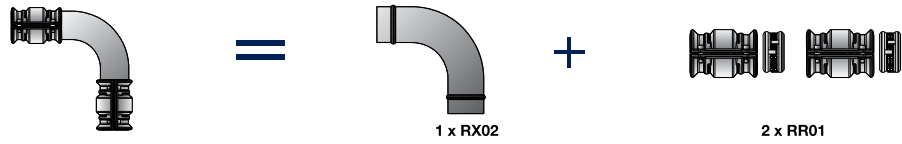
For effective clamp sealing, screw tightening should be performed on alternate sides of the clamp as shown below:



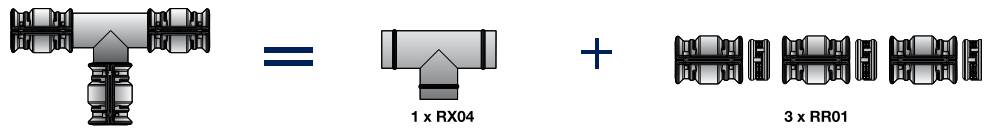
To disconnect, perform the same operations in reverse order.

Practical examples — Various 3" and 4" configurations

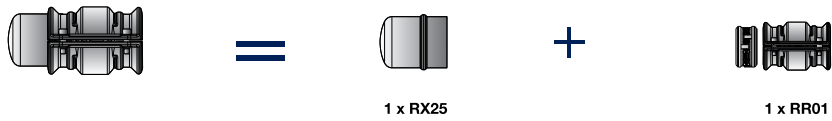
Changing direction with a 90° elbow



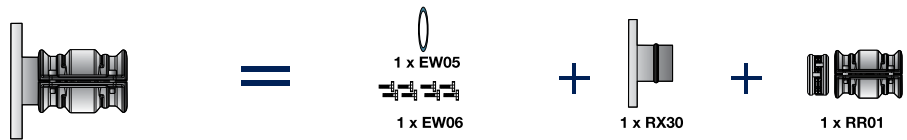
Changing direction with a tee



Connecting an end cap



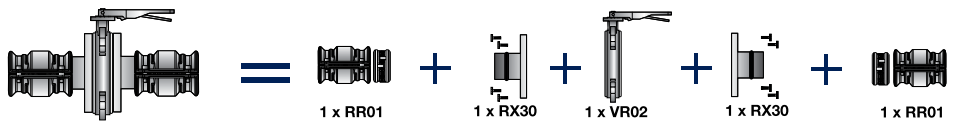
Connecting a circular flange and a connector



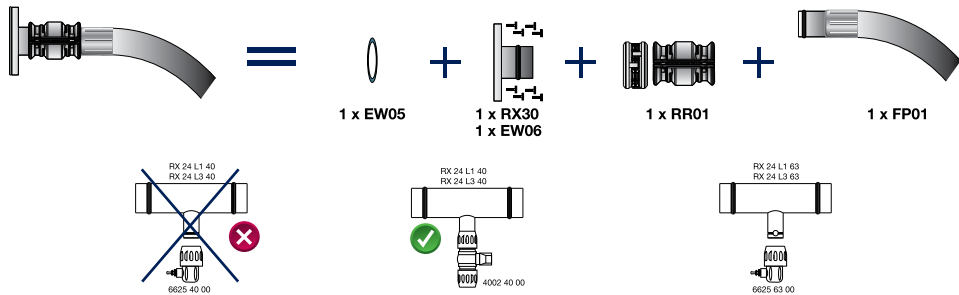
Reduction from 4" to 3"



Connecting a butterfly valve

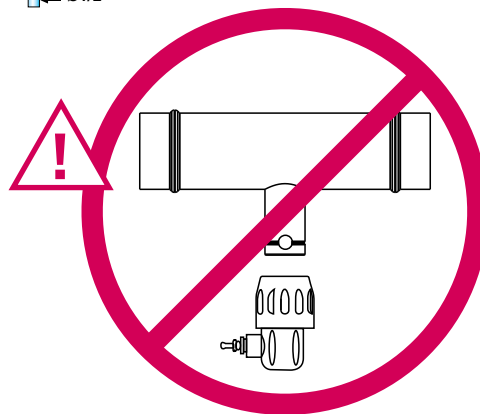
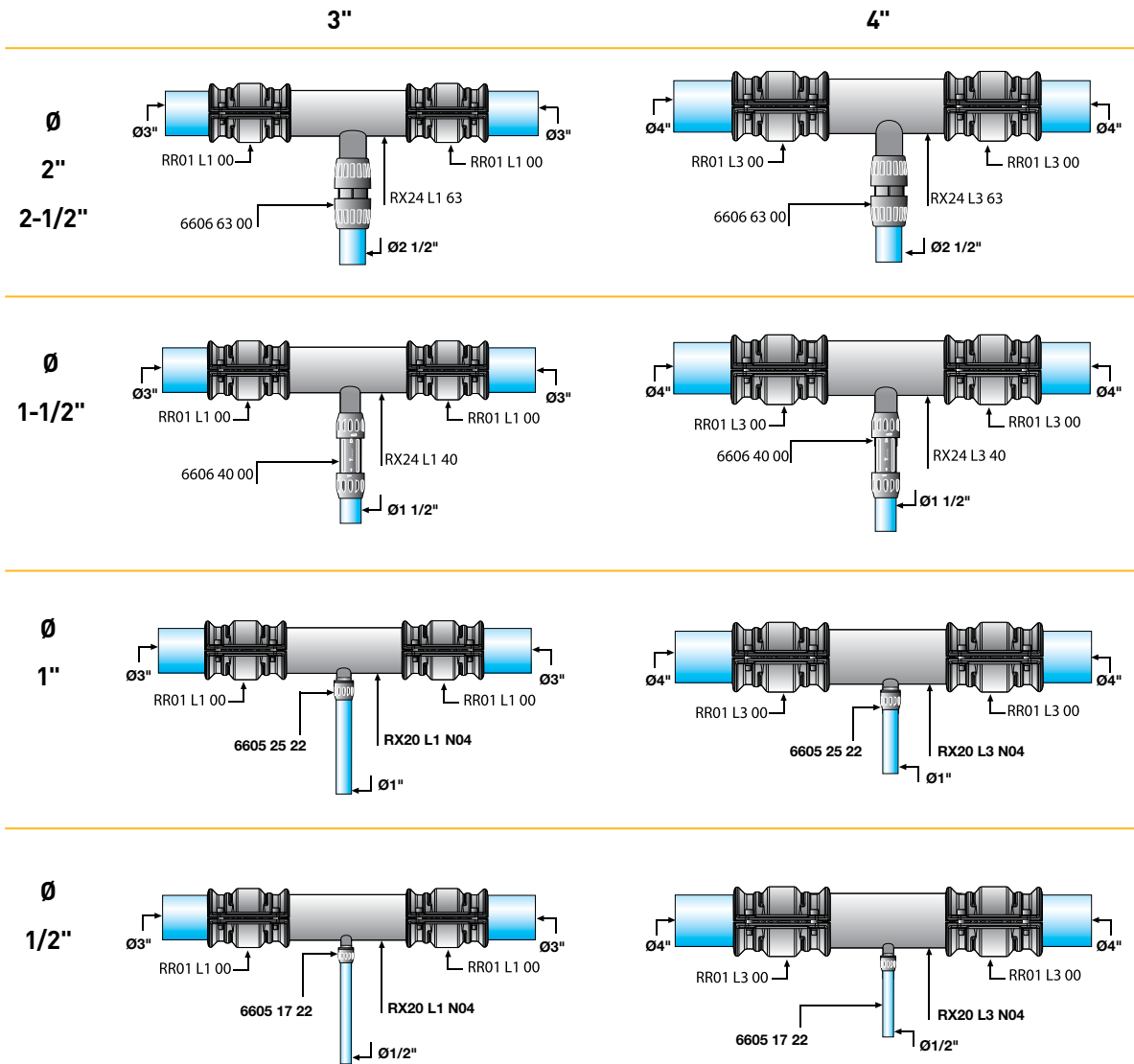


Connecting a flexible hose and a circular flange



Practical Examples

Connecting a Transair® 3" to 4" system to a Transair® 2 1/2", 2", 1 1/2", 1" or 1/2" system



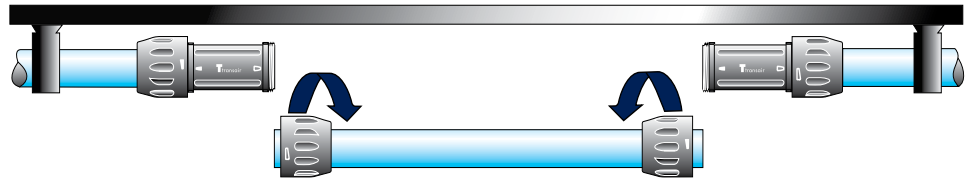
Reducing Tee

RX24 L1 40
RX24 L3 40

6625 40 00

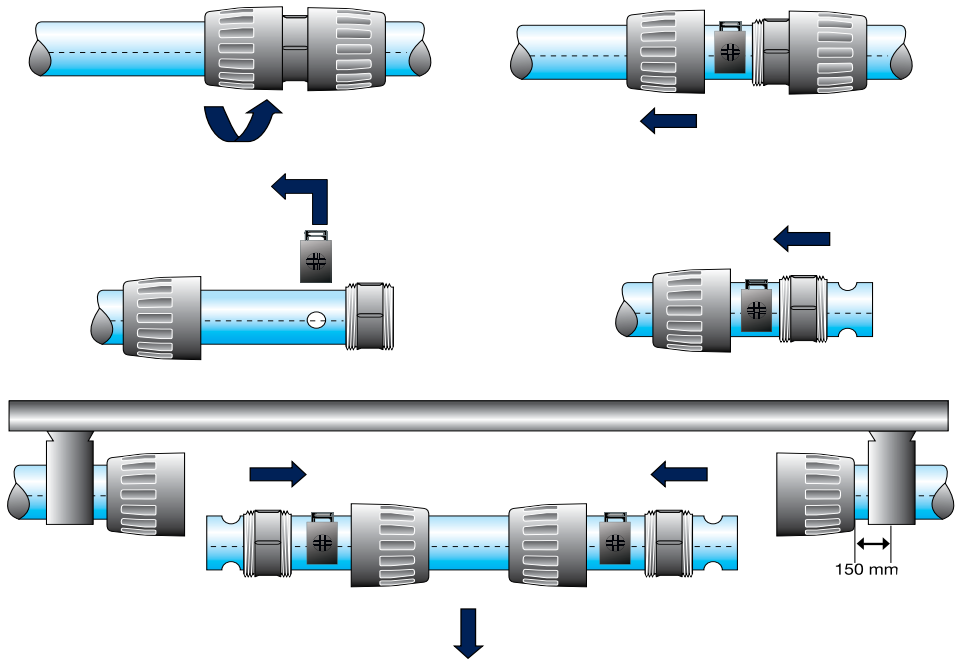
Lateral dismantling

1/2"
to
1-1/2"



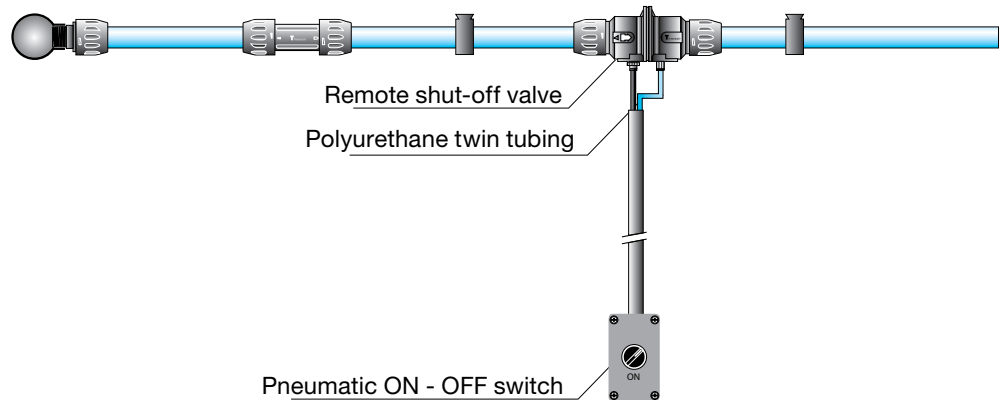
Loosen the nuts located on the side of the pipe to be removed and slide them along the pipe. Then remove the pipe.

2"
2-1/2"



1. Loosen the connector nuts on the ends of the pipe to be removed
2. Slide them along the pipe
3. Remove the snap rings from their housings
4. Slide the clamps and the connector body along the pipe which is to be removed
5. Repeat the operation at the other end of the pipe and laterally remove the pipe, complete with the assembly components

Transair® 1-1/2" remote shut-off valve



Application

The Transair® 1 1/2" remote shut-off valve allows network supply to be rapidly and safely opened and closed either at ground level or by remote control.

The Transair® remote shut-off valve guarantees:

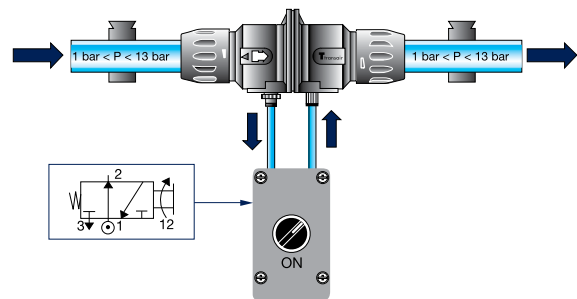
- Personal safety, by eliminating all hazards related to working at heights
- Servicing speed, by removing the need for special access equipment (ladder, platform etc)

Operating principle

Single acting valve - normally closed.

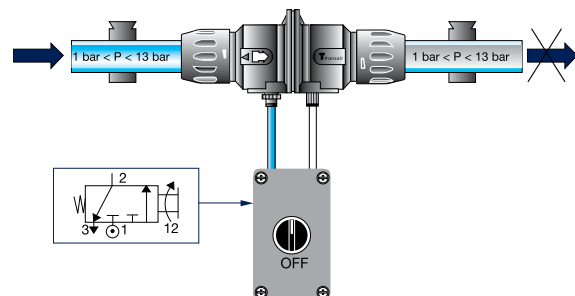
For compressed air systems:

The valve control pressure can be taken upstream of the isolating valve, with no external power supply. Control is performed through the control unit connected to the valve by means of a push-in connector.



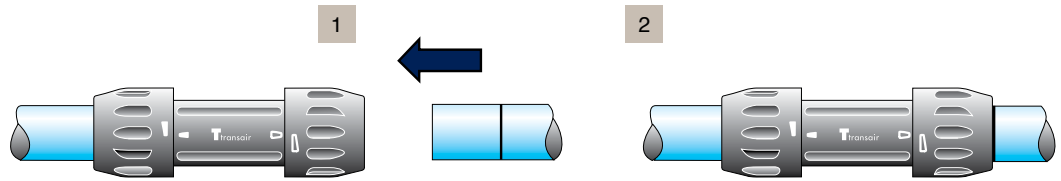
For vacuum systems:

A compressed air supply external to the control unit is required, and the corresponding valve port must be closed in order to prevent loss.

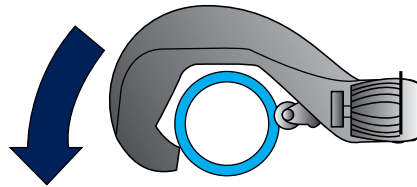


Do's

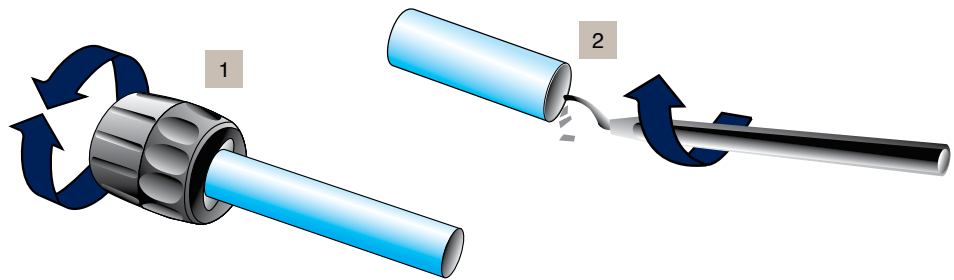
Connection



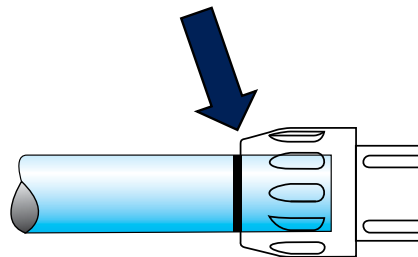
Use a pipe cutter



Carefully chamfer and deburr the pipe after cutting or drilling

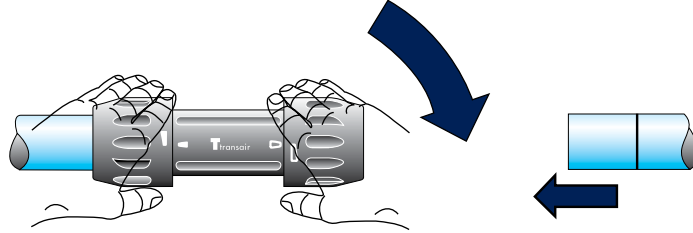


Check that the pipe is correctly positioned in the connector

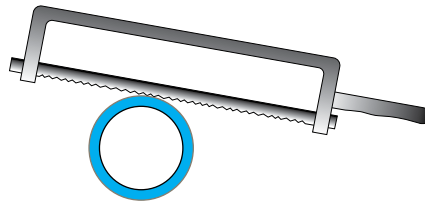


Don'ts

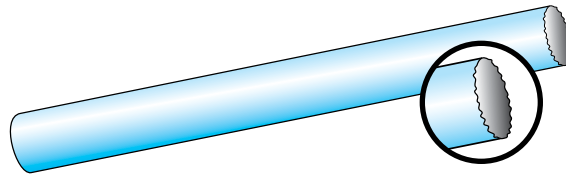
Loosen the nuts during assembly



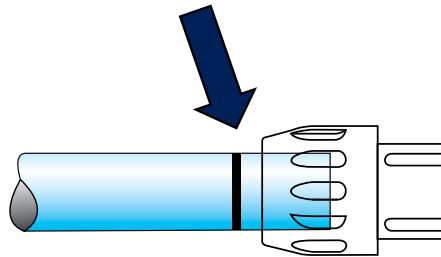
Cut the pipe with a saw



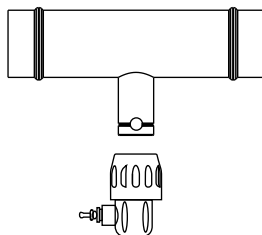
Use non-deburred pipe



Fail to make the pipe secure



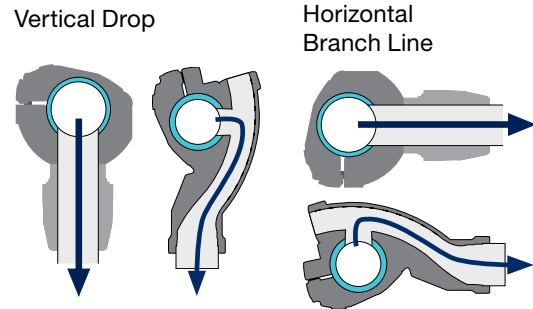
Connect 1-1/2" end cap to reducing tee



Quick Assembly Brackets

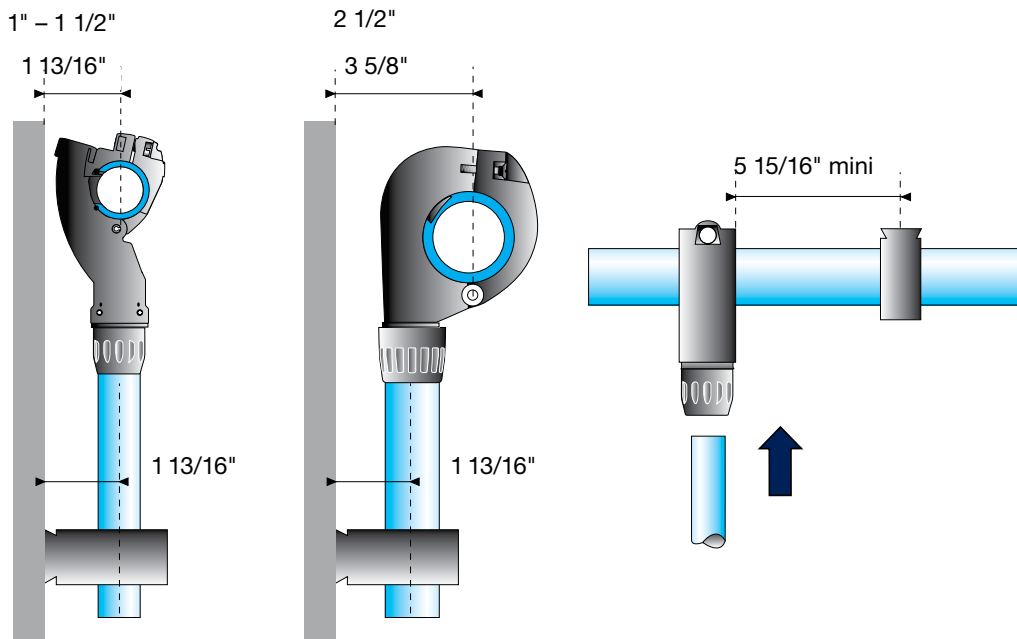
General

The easy addition of a new drop or bypass onto an existing length of pipe is an important consideration of any air pipe system. Transair® quick assembly brackets are designed for this very purpose, without the need to cut the pipe. A "swan neck" built into the brackets retains condensate water in the main line. Thanks to its small size, the Transair® quick assembly bracket facilitates new additions in the tightest places and can be used for connecting horizontal branch lines and vertical drops.



Specific Instructions for Installing a Bracket

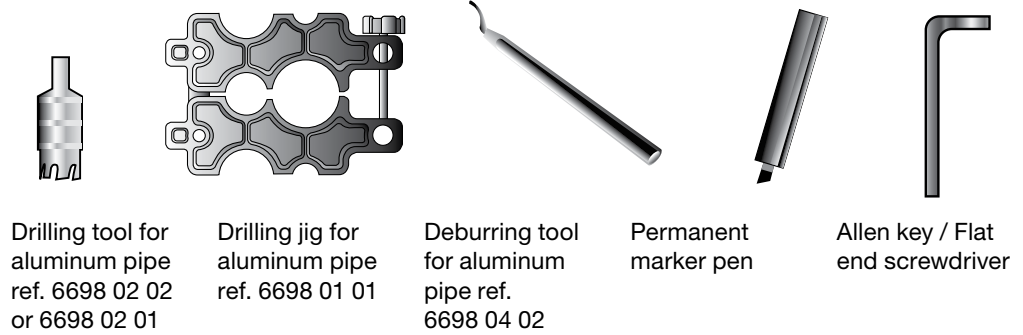
For the 1" and 1 1/2" Transair® quick assembly brackets, the pipe center to wall distance is equal to the bracket center to wall distance, i.e. 1 13/16". For the 2 1/2" Transair® quick assembly brackets, the pipe center to wall distance is 90mm and the 1" and 1 1/2" bracket center distance is 1 13/16". Furthermore, Transair® clips should be fitted at a distance of at least 5 15/16"



Installing a quick assembly bracket

To 1" or
1-1/2" pipe

Tools required



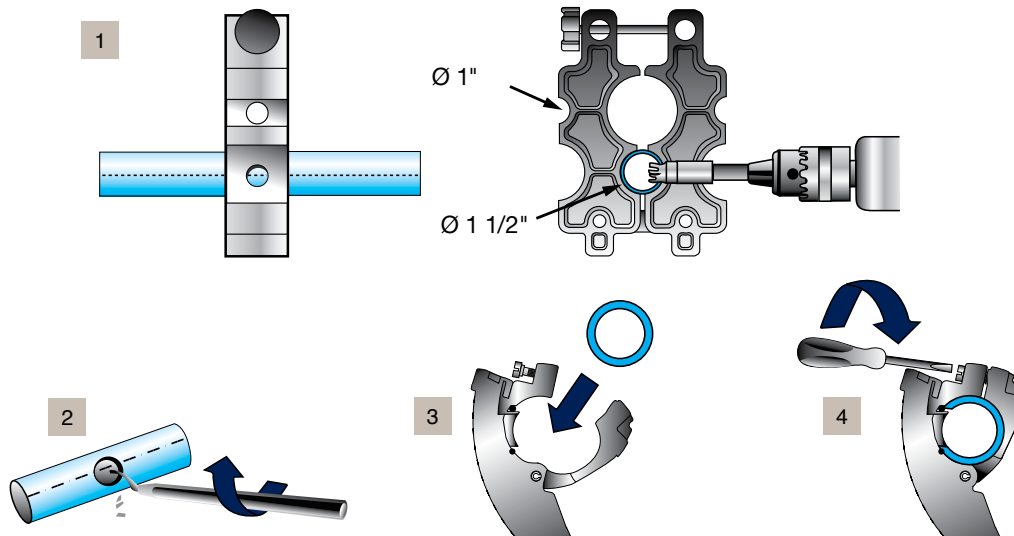
Drilling tool for aluminum pipe
ref. 6698 02 02
or 6698 02 01

Drilling jig for aluminum pipe
ref. 6698 01 01

Deburring tool for aluminum
pipe ref.
6698 04 02

Permanent
marker pen

Allen key / Flat
end screwdriver



Procedure

1. Mark the pipe at the desired position for the bracket, using the same locator mark when several take-off points need to be aligned uniformly. Place the drilling jig ref. 6698 01 01 in a vice or on the floor.
To drill a hole in 1 1/2" pipe, loosen the retaining bolt in the jig by turning the knob and place the pipe in the jig. The locator mark on the pipe should be aligned with the appropriate guide marks on the side of the jig. Two guide lines on either side of the jig provide a rapid indication of whether the pipe is correctly positioned (the guide lines match the locator marks on the pipe). Close the jig, tighten the bolt and drill a hole using the appropriate drilling tool:
 - 1": 1/2" hole > ref. 6698 02 02 drilling tool

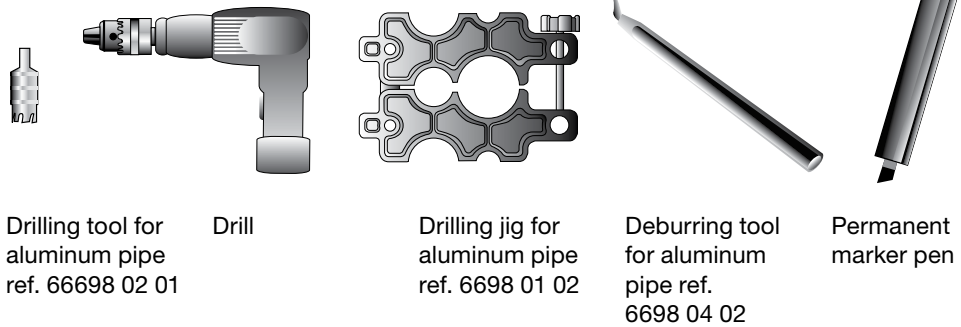
- 1 1/2": 1" hole > ref. 6698 02 01 drilling tool
Recommended rotation speed: 650 rpm
Note: drill without lubrication.
2. Release the pipe, remove any chips and deburr the circular hole. Repeat the operation for the number of brackets that you wish to fit.
 3. Position the quick assembly bracket using its location pin
 4. Tighten the screw

Note: The jig's second drilling guide corresponds to the minimum distance for fitting two adjacent brackets.

Installing a bracket

On 2" and
2-1/2" pipe

Tools required



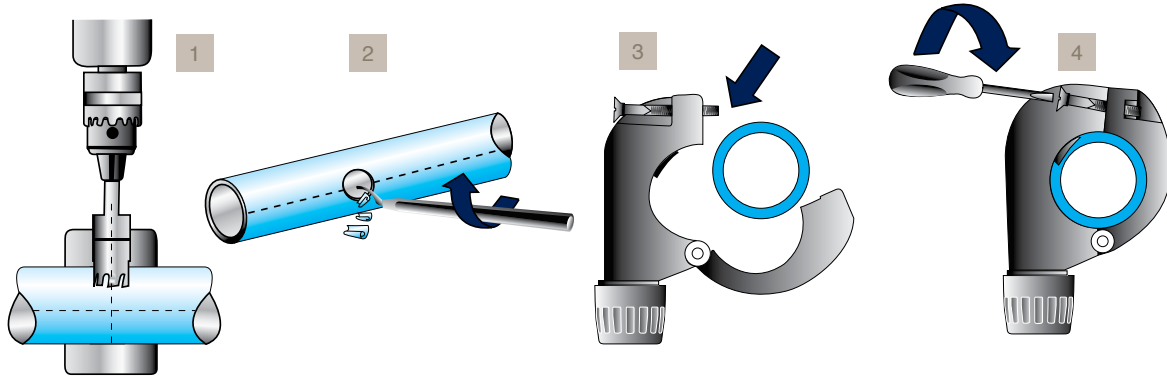
Drilling tool for
aluminum pipe
ref. 66698 02 01

Drill

Drilling jig for
aluminum pipe
ref. 6698 01 02

Deburring tool
for aluminum
pipe ref.
6698 04 02

Permanent
marker pen

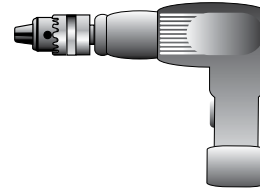


Procedure

1. Mark the pipe at the desired position for the bracket. The mark should be placed on one of the locator marks so that multiple brackets are correctly aligned, when several take-off points are required. Place the 2 1/2" drilling jig in a vice or on the floor and place the pipe in the jig. Ensure that the line marked on the pipe is centred within the drilling guide: two marks on either side of the jig's upper side provide a rapid indication of the pipe's positioning. Tighten the locking clamp to secure the pipe and drill using the 1" drilling tool. [Recommended rotation speed: 650 rpm] Note: Drill without lubrication.
2. Loosen the locking clamp and release the pipe, remove any chips and deburr the hole. Repeat the operation for the number of brackets that you wish to fit.
3. Position the quick assembly bracket using its location hole
4. Tighten the screw

Installing a bracket

On 3", 4"
or 6" pipe

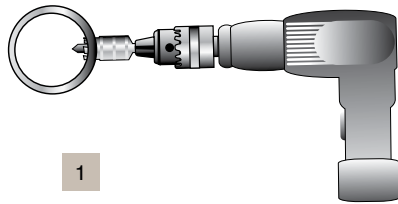


Tools required

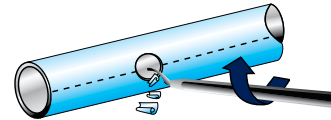
Drilling tool for aluminum pipe ref. EW09 00 30 (3" - 4") or EW09 00 51 / EW09 00 64 (6")

Deburring tool for aluminum pipe ref. 6698 04 02

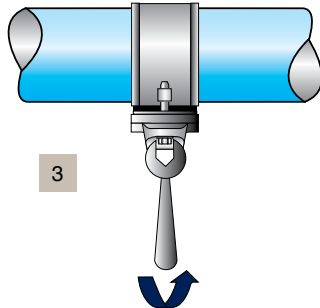
Drill



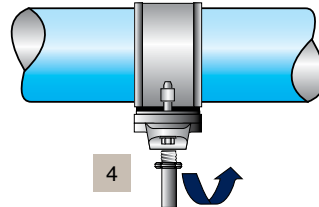
1



2



3



4

Procedure

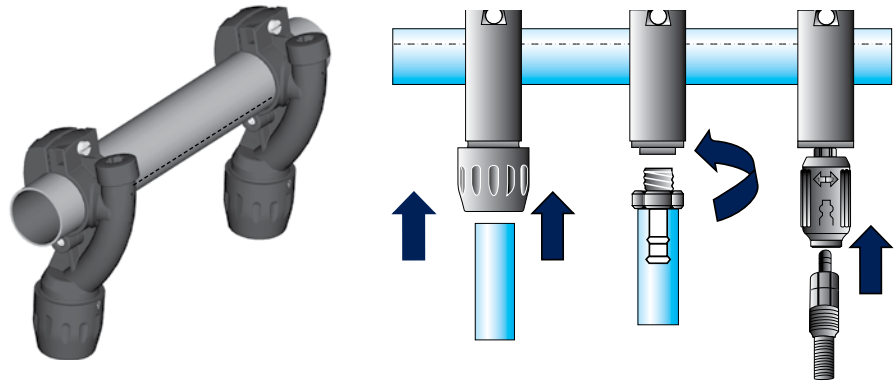
1. Drill the aluminum pipe at the desired position using drilling tool ref.
2. Carefully deburr the pipe
3. Position bracket ref. RR63 and fully tighten the two screws
4. Screw on male adapter

Practical examples

Using the same locator mark

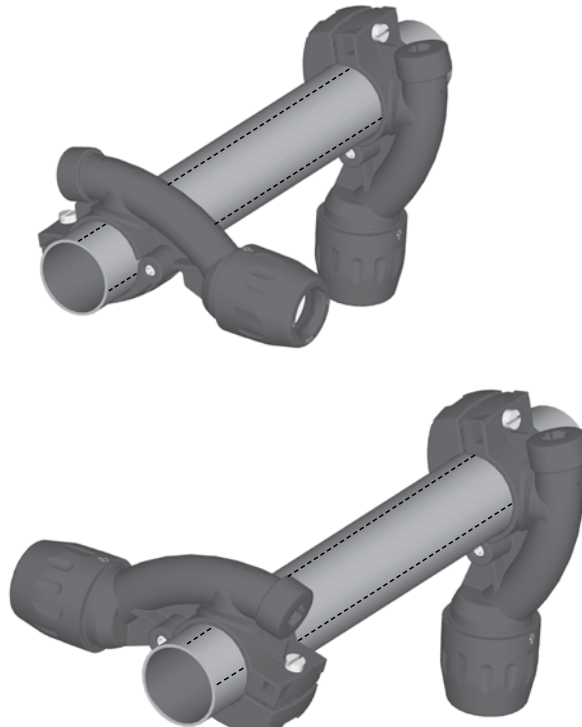
Creating vertical and horizontal take-off points

Adding a vertical bracket



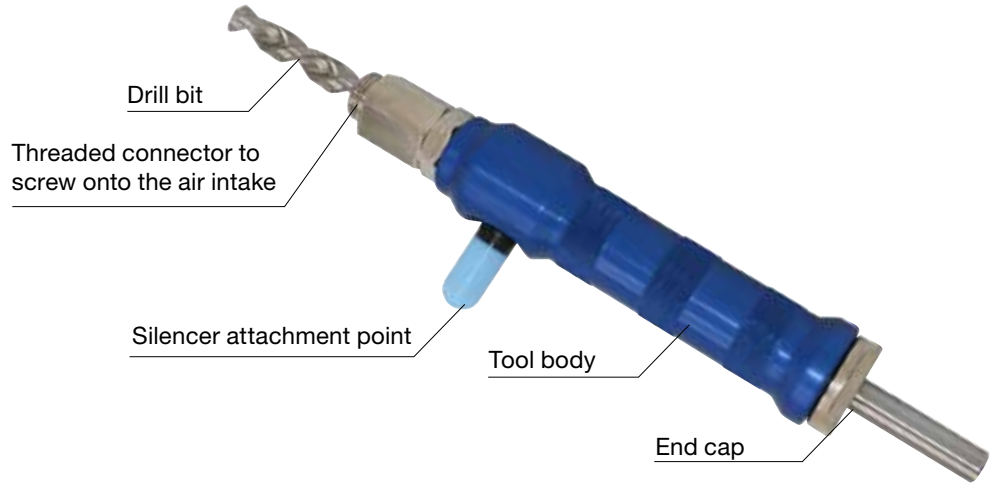
Adding an off-set bracket

Using two locator marks

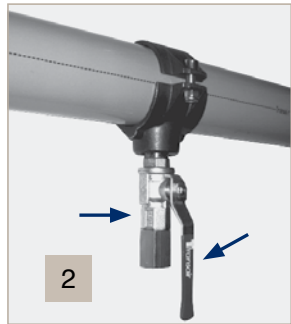


Installing a quick assembly bracket

Installing a bracket to a pressurized system



Use the under pressure drilling tool to fit a bracket to an existing pressurized system. This can be simply done with use of a standard drill.



Procedure

1. Position the pressurized system bracket and fully tighten the two screws
2. Screw the assembly onto the ball valve and ensure that the valve is open
3. Screw the drilling tool onto the ball valve until complete
4. Remove the drill and close the ball valve immediately and dismantle the drilling tool

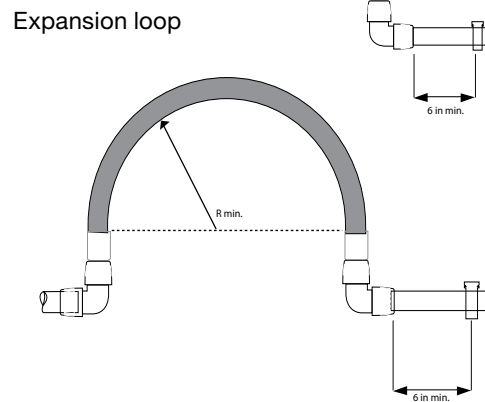
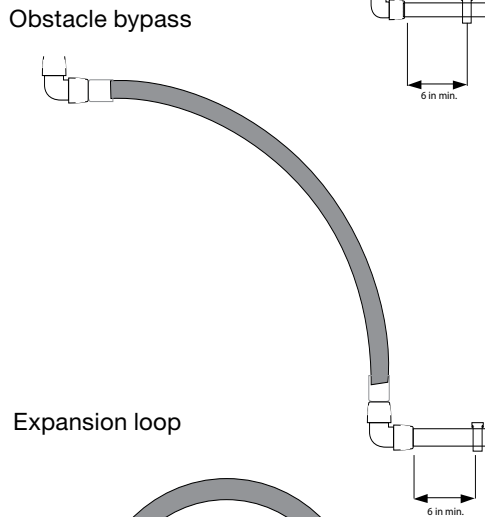
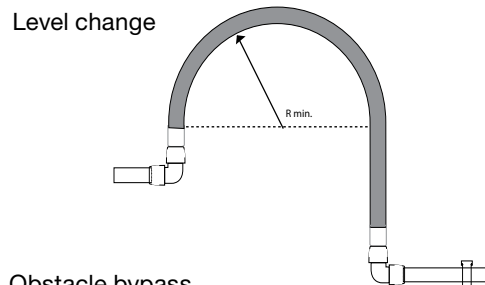
Transair® Flexible Hose

General

Transair® flexible hose can be easily connected to other Transair® components and can be rapidly installed without prior preparation or cutting. Thanks to its small

Applications

Ø (IN)	Ø (MM)	LENGTH (IN)	TRANSAIR®	R MIN (IN)
1	25	22	1001E25 00 01	4
1	25	59	1001E25 00 03	4
1	25	79	1001E25 00 04	4
1 1/2	40	45	1001E40 00 02	16
1 1/2	40	79	1001E40 00 04	16
1 1/2	40	118	1001E40 00 05	16
2	50	39	1001E50 00 09	11
2	50	78	1001E50 00 04	11
2 1/2	63	55	1001E63 00 08	12
2 1/2	63	118	1001E63 00 05	26
2 1/2	63	157	1001E63 00 06	26
3	76	59	FP01 L1 01	14
3	76	79	FP01 L1 02	14
4	101	79	FP01 L3 01	18
4	101	118	FP01 L3 03	18



Safety

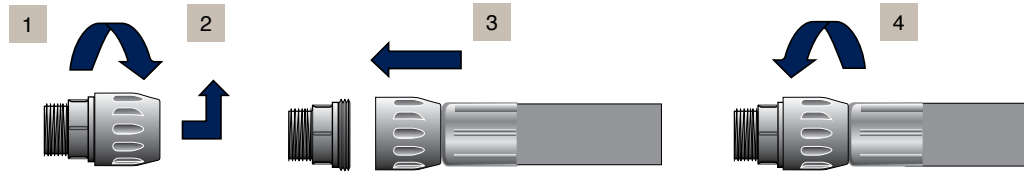
Anti-whiplash straps

In order to avoid the risk of whiplash accidents, Transair® recommends the use of anti-whiplash straps, which are placed on either side of the connection. If Transair® flexible tube is exposed to tear, the anti-whiplash assembly prevents it from snaking (safety device in accordance with ISO 4414 standard).

Flexible Hose Connections

1/2" to 1-1/2"

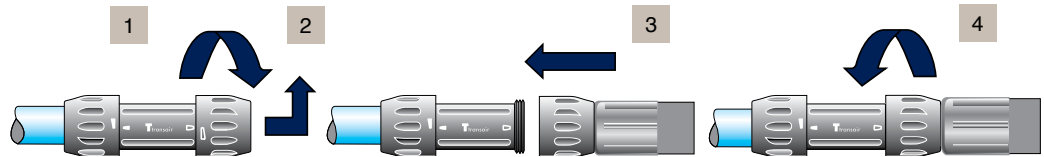
Using a male threaded fitting



Procedure

1. Loosen the nut on the stud fitting
2. Remove it
3. Move the swaged end of the hose onto the exposed stud thread

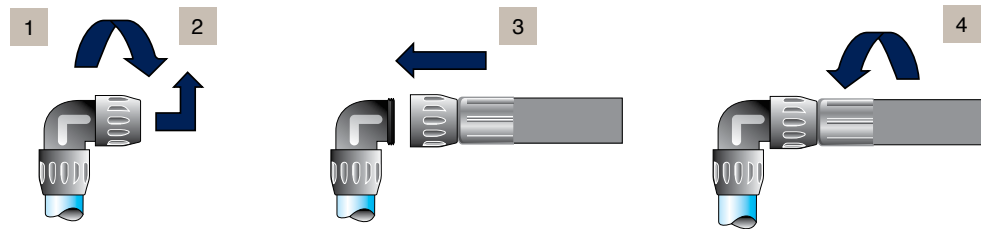
Using a pipe to pipe connector



Procedure

1. Loosen the nut on the connector
2. Remove it
3. Move the swaged end of the hose onto the connector thread

Using a 90° elbow



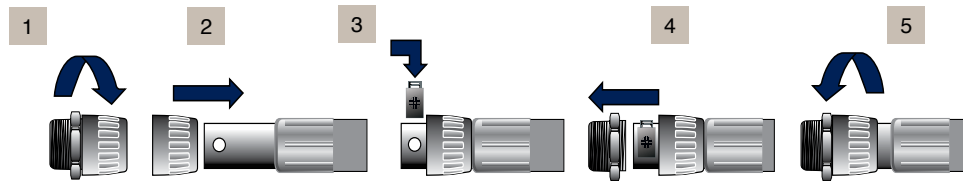
Procedure

1. Loosen the nut on the elbow
2. Remove it
3. Move the swaged end of the hose onto the elbow thread

Flexible Hose Connections

2"
2-1/2"

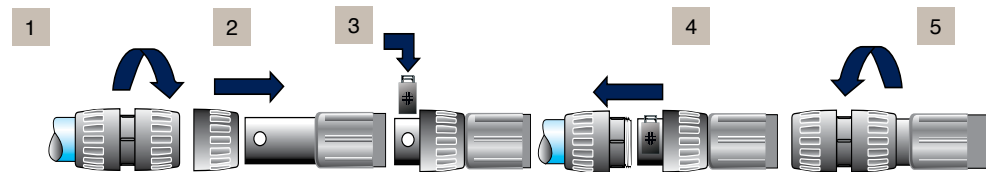
Using a male threaded fitting



Procedure

1. Loosen the nut on the stud fitting and remove it
2. Place the nut over the swaged end of the flexible hose
3. Place the pipe connector clamps in the housings on the hose
4. Slide the nut forward to the end of the flexible hose and assemble onto the male thread

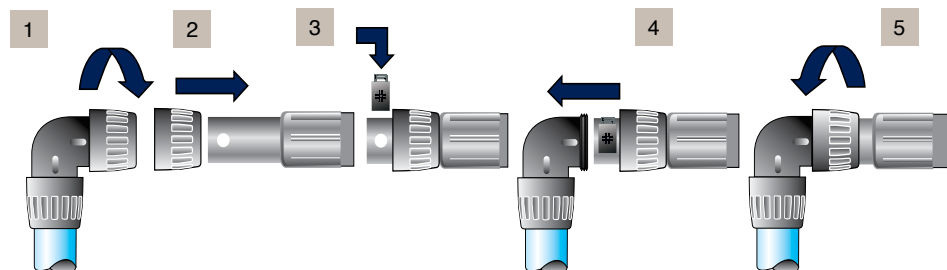
Using a pipe to pipe connector



Procedure

1. Loosen the nut on the connector and remove it
2. Fit it over the swaged end of the flexible hose
3. Place the pipe connector clamps in the housings on the hose
4. Slide the nut forward to the end of the flexible hose, until it touches the clamps

Using a 90° elbow



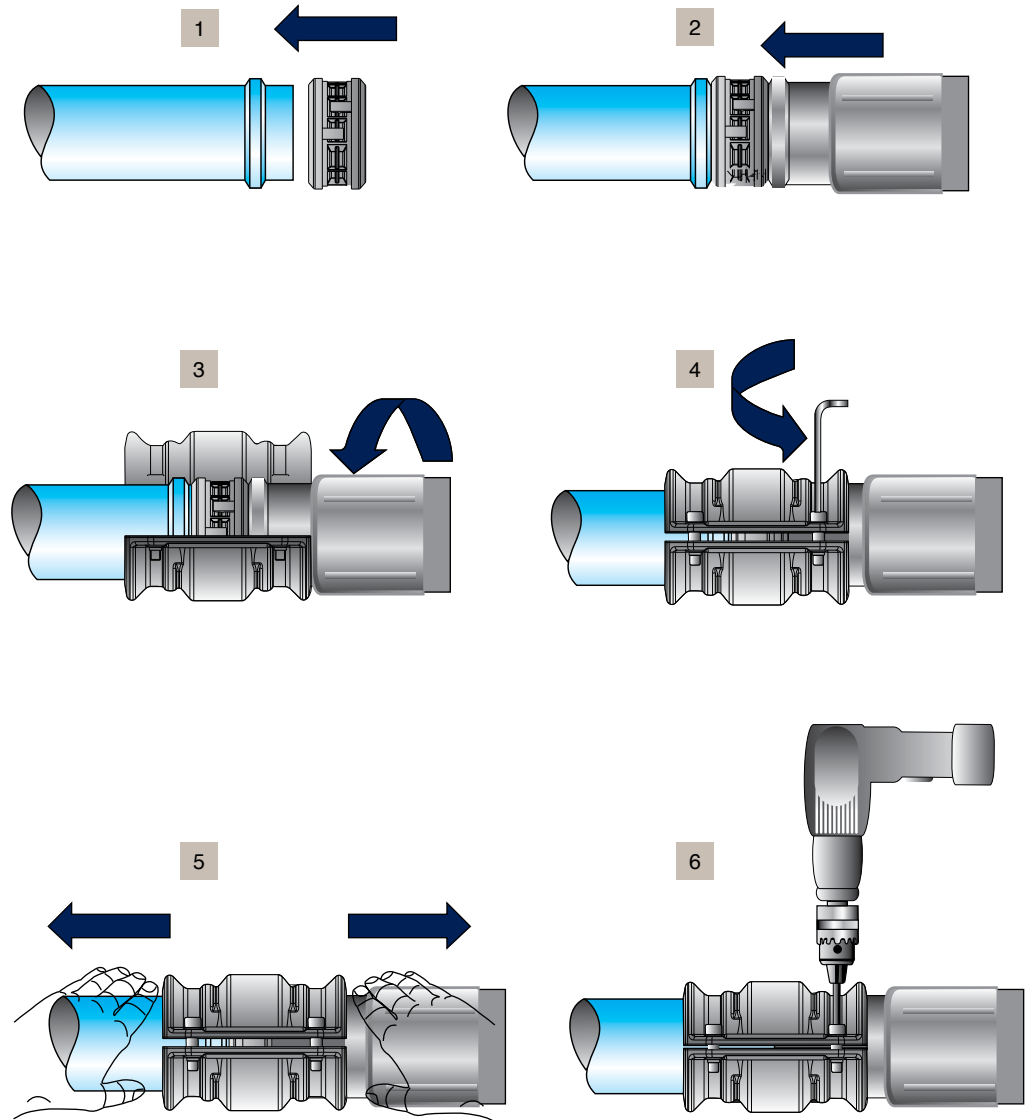
Procedure

1. Loosen the nut on the elbow and remove it
2. Fit it over the swaged end of the flexible hose
3. Place the elbow clamps in the housings on the hose
4. Slide the nut forward to the end of the flexible hose, until it touches the clamps

Flexible Hose Connections

3" to 6"

Using a steel clamp



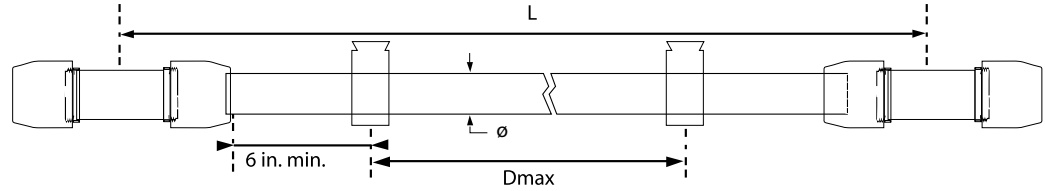
Do's & Dont's

Do

Don't

Fixture Accessories

Transair® clip for 1/2" to 2-1/2" rigid pipe



The Transair® fixing clip is the basic component for mounting pipe when installing a 1/2" – 2 1/2" Transair® aluminum system. This clip allows expansion and contraction of the pipe to occur freely.

To ensure good system stability, we recommend the use of at least two clips per pipe. Transair® aluminum pipe should only be mounted using Transair® and should not be substituted by any other type of components.

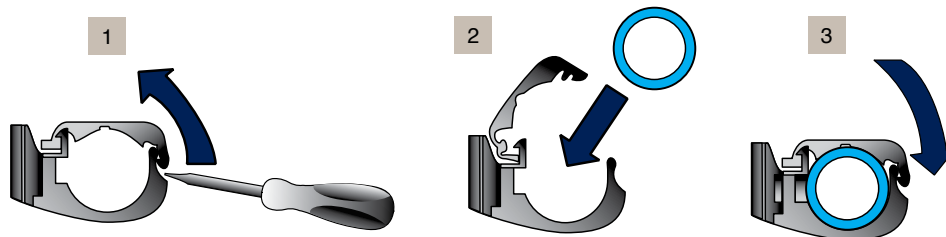
Properties

- Transair® fixing clips for 1/2" – 1 1/2": 1/4" nuts
- Transair® fixing clips for 2" – 2 1/2" systems: 3/8" nuts

Ø (IN)	Ø (MM)	L (FT)	DMAX (FT)
1/2	16.5	10	8
1	25	10	8
1	25	20	10
1 1/2	40	10	8
1 1/2	40	20	10
2	50	10	10
2	50	20	10
2 1/2	63	20	10

Procedure

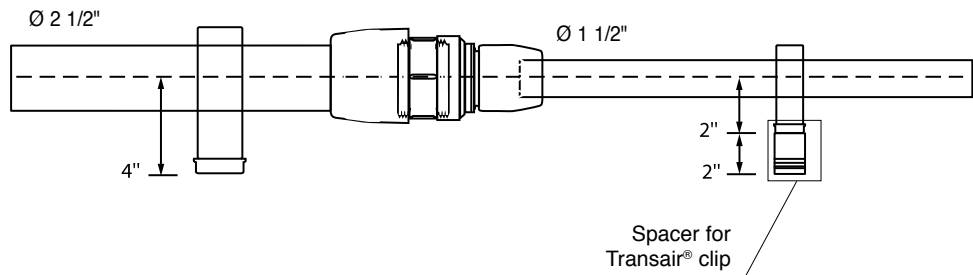
1. Place the clip as required and open it using a screwdriver
2. Insert the pipe into the clip
3. Close the clip



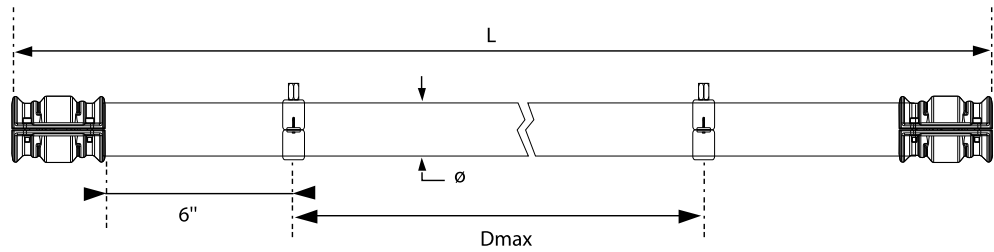
Spacer



Example:



Transair® fixing clips for 3" to 6" systems

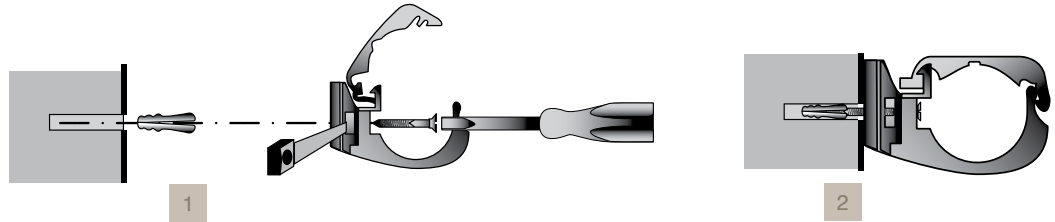


To ensure good system stability, we recommend the use of at least two fixing clips per length of pipe. Transair® fixing clips for 3" – 6" systems: 3/8" thread.

ø (IN)	ø (MM)	L (FT)	DMAX (FT)
3	76	20	16
4	101	20	16
6	168	20	16

Supporting a Transair® system

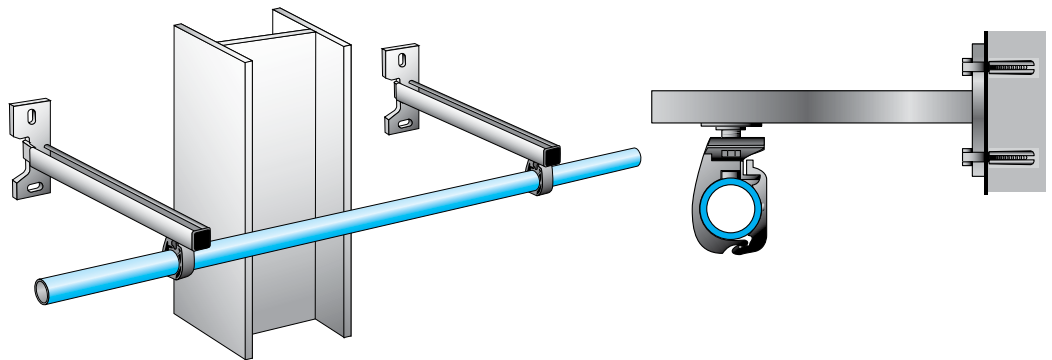
Directly onto a wall



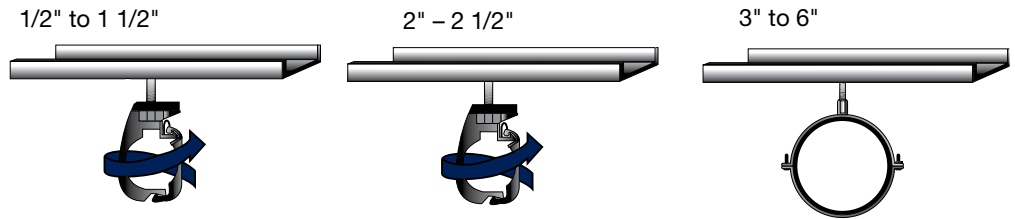
Offset from a wall

1. Remove the nut at the base of the pipe clip using a screwdriver and insert the screw by passing it through the clip
2. Tighten the screw

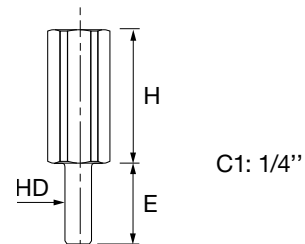
U-channel type mounting bracket



U-channel assemblies are used to offset systems and to bypass obstacles.



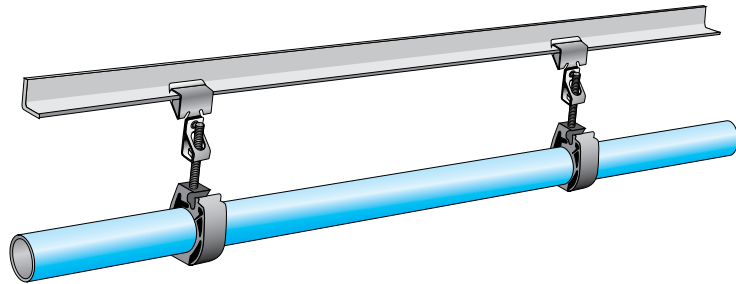
Threaded rod adapter



The Transair® threaded rod adaptor allows 1/2", 1" and 1 1/2" Transair® pipe clips to be easily suspended under 3/8" threaded rod.

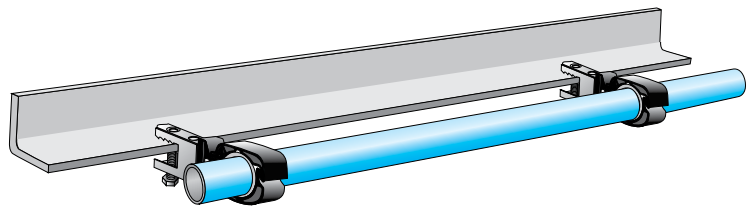
Supporting a Transair® system

On a metal beam



Push-on type beam clamps

Using beam clamps*



Screw type beam clamps

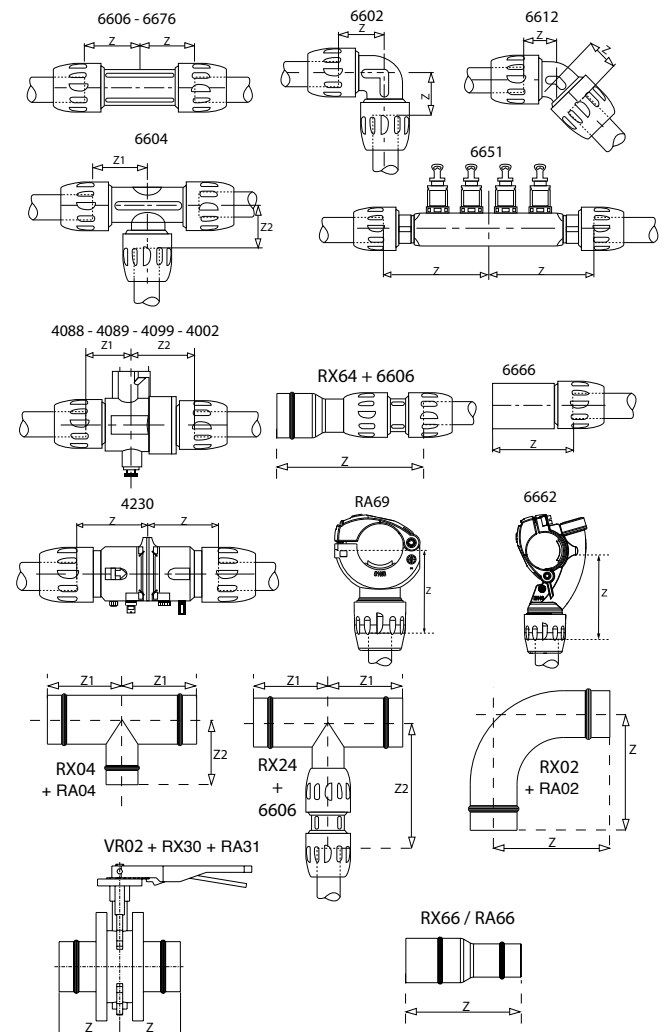
*Beam clamps are not available for purchase through Parker Hannifin



Practical Information

	Z	Z1	Z2
4002 40 00	-	4 13/16	2 1/4
4002 63 00	-	3 5/16	3 7/8
4089 17 00	-	1 1/8	1 11/16
4099 17 00	-	1 1/8	1 11/16
4099 25 00	-	1 9/16	2 3/16
4230 00 40	3 3/8	-	-
6612 25 00	1 1/8	-	-
6612 40 00	1 3/4	-	-
6612 63 00	2 3/8	-	-
6602 17 00	1 1/4	-	-
6602 25 00	1 9/16	-	-
6602 40 00	2 7/16	-	-
6602 50 00	2 1/4	-	-
6602 63 00	2 3/8	-	-
6604 17 00	-	1 5/16	1 1/4
6604 25 00	-	1 7/8	1 9/16
6604 40 00	-	2 1/4	2 1/4
6604 50 00	-	2 3/16	2 3/16
6604 63 00	-	2 7/16	2 7/16
6604 63 40	-	2 7/16	4 9/16
6606 17 00	1 5/16	-	-
6606 25 00	1 7/8	-	-
6606 40 00	2 1/4	-	-
6606 50 00	1	-	-
6606 63 00	1	-	-
6651 25 12 04	4 1/4	-	-
6651 40 12 04	5 15/16	-	-
6662 25 00	1 7/8	-	-
6662 25 17	3 1/4	-	-
6662 40 17	3 1/2	-	-
6662 40 25	3 1/4	-	-
6662 50 25	2 5/16	-	-
6662 63 25	3	-	-
6666 17 25	2	-	-
6666 25 40	2 13/16	-	-
6676 25 00	1 7/8	-	-
6676 40 00	2 1/4	-	-
6676 50 00	1	-	-
6676 63 00	1	-	-
RA02 L8 00	7 1/4	-	-
RA04 L8 00	-	7 1/16	7 5/16
RA04 L8 L3	-	6 1/2	7 5/16
RA04 L8 L1	-	6 1/2	7 5/16
RA04 L8 63	-	6 1/2	8 11/16
RA66 L8 L1	210	-	-
RA66 L8 L3	210	-	-
RA69 25 17	1 7/8	-	-
RA69 40 25	2 1/4	-	-
RA69 50 25	2 5/8	-	-

	Z	Z1	Z2
RX02 L1 00	7 7/16	-	-
RX02 L3 00	8 11/16	-	-
RX04 L1 00	-	5 11/16	5 11/16
RX04 L3 00	-	6 1/8	5 5/16
RX04 L3 L1	-	6 1/8	5 5/16
RX24 L1 40	-	5 11/16	4 1/8
RX24 L1 63	-	5 11/16	6 7/16
RX24 L3 40	-	6 1/8	4 5/8
RX24 L3 63	-	6 1/8	6 15/16
RX64 L1 63	13 7/8	-	-
RX64 L3 63	14 5/8	-	-
RX66 L3 L1	7 5/8	-	-
VR02 L1 00	4 9/16	-	-
VR02 L3 00	4 7/8	-	-
VR02 L8 00	5 1/16	-	-



Expansion / Contraction

L: length of Transair® straight line to be installed (in m)

ΔT : difference between temperature when installing and maximum operating temperature (in °C)

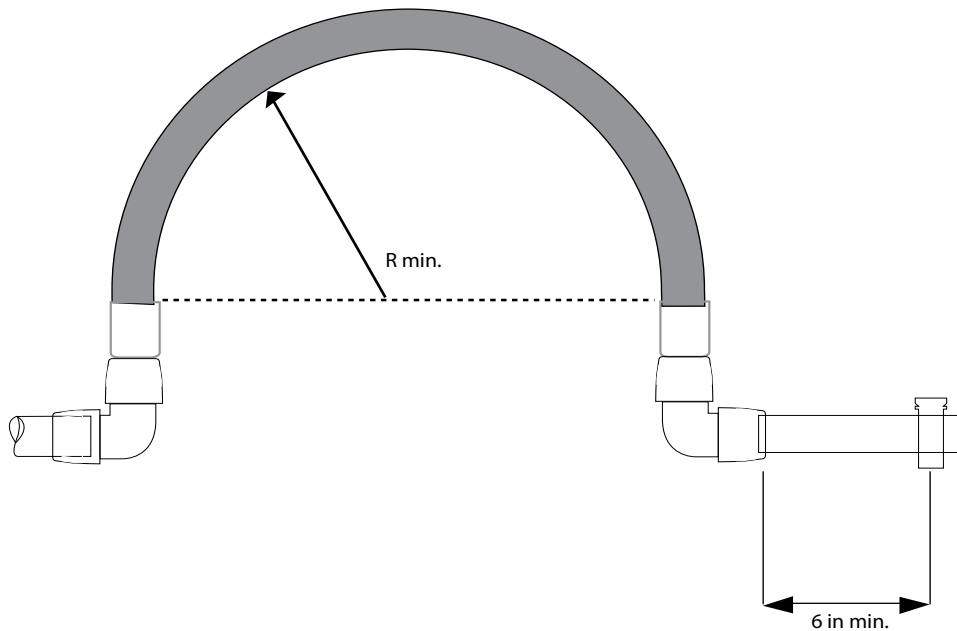
ΔL : line length variation (in mm)

For Transair® 1/2" – 4" aluminum pipe systems:

$$\Delta L = (a \times L) + (0.024 \times L \times \Delta T)$$

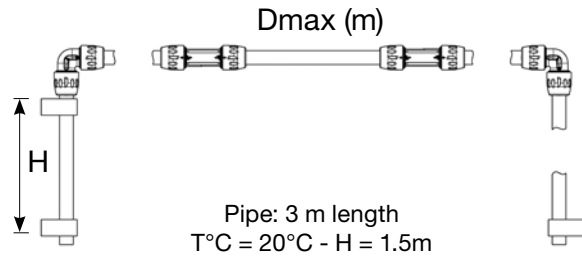
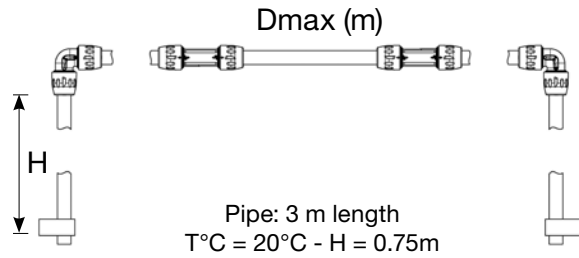
1. Expansion related to pipe retraction in the connector
2. Expansion related to temperature variations

	Ø 1/2"	Ø 1"	Ø 1 1/2"	Ø 2"	Ø 2 1/2"	Ø 3"	Ø 4"
9 FT PIPE	A=0.06	A=0.20	A=0.40	A=0.56	A=0.73	A=1.0	A=1.0
20 FT PIPE	-	A=0.10	A=0.20	A=0.29	A=0.38	A=0.50	A=0.50



Practical Information

Example



Case no. 1:

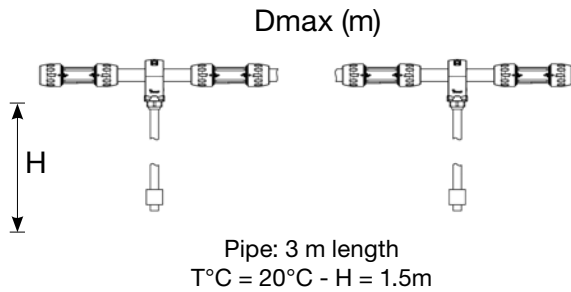
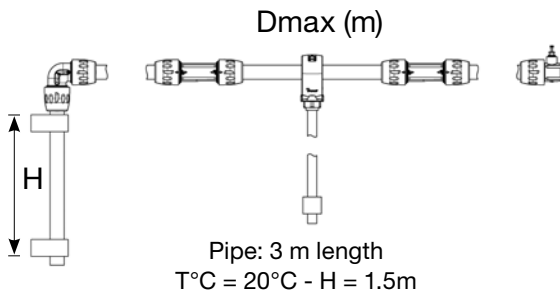
Maximum distance, without expansion loop, from a fixed point dependant on Transair® diameter (2 elbows)

Ø TRANSAIR®	1/2	1	1 1/2	2	2 1/2	3	4
DMAX. (M)	50	40	30	24	24	15	15

Case no. 2:

Maximum distance, without expansion loop, dependant on Transair® diameter

Ø TRANSAIR®	1/2	1	1 1/2	2	2 1/2	3	4
DMAX. (M)	50	40	30	24	24	15	15



Case no. 3:

Maximum distance for installing a bracket, without expansion loop, dependant on Transair® diameter (1 elbow - 1 bracket)

Ø TRANSAIR®	1/2	1	1 1/2	2	2 1/2	3	4
DMAX. (M)	48	38	30	25	25	7.5	7.5

Case no. 4:

Maximum distance for installing a bracket, without expansion loop, dependant on Transair® diameter (2 brackets)

Ø TRANSAIR®	1/2	1	1 1/2	2	2 1/2	3	4
DMAX. (M)	80	70	55	40	40	15	15

Practical Information

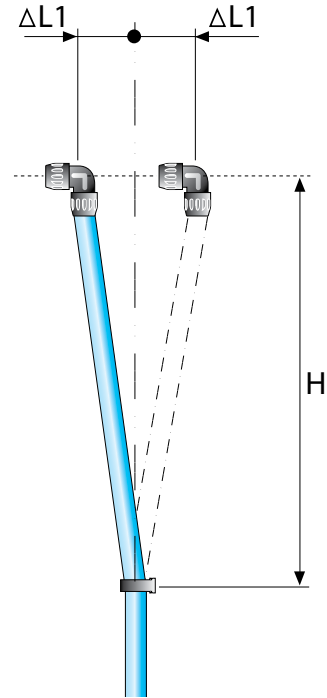
Direction change

In addition to expansion loops, changes of direction are another method of compensating for expansion and contraction.

- For Transair® 1/2" to 2 1/2" aluminum pipe systems

$H = 29.5"$ $\Delta L1 = 0.6"$

$H = 59.1"$ $\Delta L1 = 1.2"$



Using an elbow

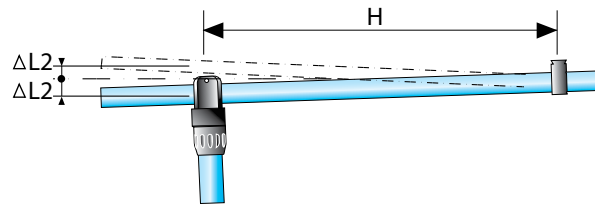
- For Transair® 3" to 6" aluminum pipe systems

$H = 29.5"$ $\Delta L1 = 3/8"$

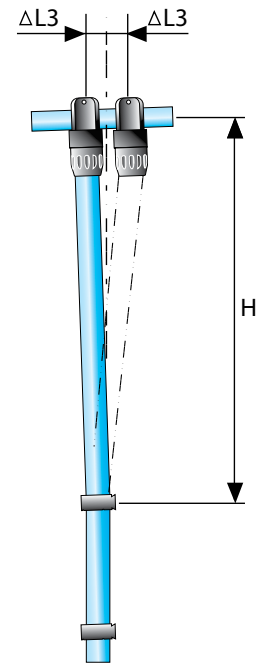
$H = 59.1"$ $\Delta L1 = 6/8"$

Using a quick assembly bracket

- For Transair® 1/2" to 2 1/2" aluminum pipe systems



Ø1 (IN)	Ø2 (IN)	H (FT)	ΔL2 (IN)	ΔL3 (IN)
1	1/2	5	1/2	1
1	1	5	1/2	1
1 1/2	1/2	5	1/2	1
1 1/2	1	5	1/2	1
2	1/2	5	1/2	1
2	1	5	1/2	1
2 1/2	1	5	1/2	1



The length variation ΔL , calculated for the Transair® line, must always be equal to or less than $\Delta L2$ and $\Delta L3$. If this is not the case, then an expansion loop, using Transair® flexible hose, must be added.

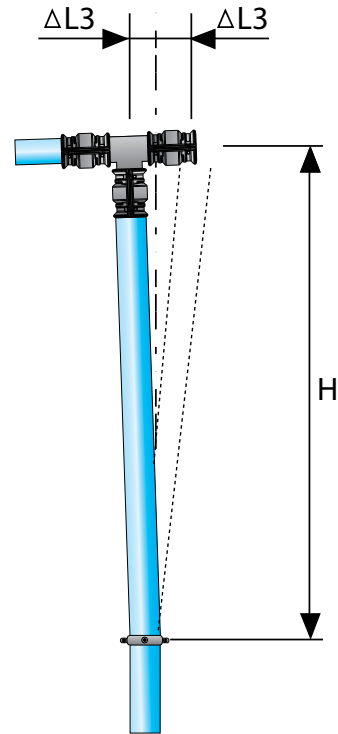
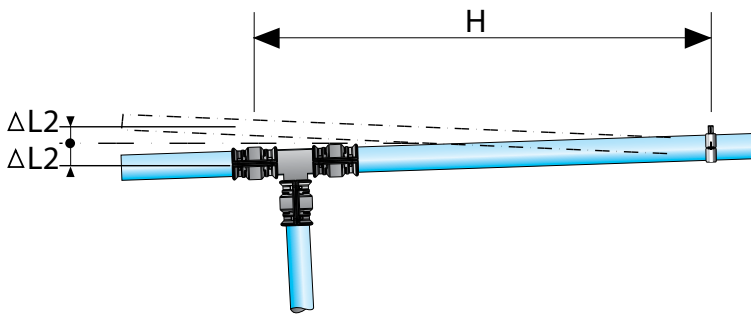
Practical Information

Expansion / Contraction

Changing direction with a tee

For Transair® 3" - 6" aluminum pipe systems

Ø	Ø (MM)	H (FT)	ΔL2 MAXI (IN)	ΔL3 MAXI (IN)
3	76	2 1/2	3/8	3/8
4	101	2 1/2	3/8	3/8
6	168	2 1/2	3/8	3/8



Practical Information

Conversion charts

Length

INCH (IN)	FOOT (FT)	METER (M)	MILLIMETER (MM)	YARD (YD)
0.39	0.03	0.01	10	0.01
0.79	0.07	0.02	20	0.02
1.18	0.10	0.03	30	0.03
1.57	0.13	0.04	40	0.04
1.97	0.16	0.05	50	0.05
2.36	0.20	0.07	60	0.06
2.76	0.23	0.08	70	0.07
3.15	0.26	0.09	80	0.08
3.54	0.30	0.10	90	0.09
3.94	0.33	0.11	100	0.10
5.91	0.49	0.16	150	0.15
7.87	0.66	0.22	200	0.20
9.84	0.82	0.27	250	0.25
11.81	0.98	0.33	300	0.30
13.78	1.15	0.38	350	0.35
15.75	1.31	0.44	400	0.40
17.72	1.48	0.49	450	0.45
19.69	1.64	0.55	500	0.50
21.65	1.80	0.60	550	0.55
23.62	1.97	0.65	600	0.60
27.56	2.30	0.76	700	0.70
31.50	2.62	0.87	800	0.80
35.43	2.95	0.98	900	0.90
39.37	3.28	1.09	1000	1.00

Pressure

BAR	KILO PASCAL (KPA)	ATMOSPHERE (ATM)	PSI	TORR (MM HG)
1	100	0.99	14.50	750
2	200	1.97	29.00	1 500
3	300	2.96	43.50	2 250
4	400	3.95	58.00	3 000
5	500	4.93	72.50	3 750
6	600	5.92	87.00	4 500
7	700	6.91	101.50	5 250
8	800	7.90	116.00	6 000
9	900	8.88	130.50	6 750
10	1000	9.87	145.00	7 500
11	1100	10.86	159.50	8 250
12	1200	11.84	174.00	9 000
13	1300	12.83	188.50	9 750
14	1400	13.82	203.00	10 500
15	1500	14.80	217.50	11 250
16	1600	15.79	232.00	12 000
20	2000	19.74	290.00	15 000

Practical Information

Flow Rate

LITERS PER SECOND (L/S)	LITERS PER MINUTE (L/MIN)	CUBIC METERS PER MINUTE (M3/MIN)	CUBIC METERS PER HOUR (M3/H)	CUBIC FEET PER MINUTE (CFM)
10	600	0.60	36	21
20	1 200	1.20	72	42
30	1 800	1.80	108	64
40	2 400	2.40	144	85
50	3 000	3.00	180	106
60	3 600	3.60	216	127
70	4 200	4.20	252	148
80	4 800	4.80	288	169
90	5 400	5.40	324	191
100	6 000	6.00	360	212
150	9 000	9.00	540	318
200	12 000	12.00	720	424
250	15 000	15.00	900	530
300	18 000	18.00	1 080	635
350	21 000	21.00	1 260	741
400	24 000	24.00	1 440	847
450	27 000	27.00	1 620	953
500	30 000	30.00	1 800	1 059
550	33 000	33.00	1 980	1 165
600	36 000	36.00	2 160	1 271
700	42 000	42.00	2 520	1 483
800	48 000	48.00	2 880	1 694
900	54 000	54.00	3 240	1 906
1 000	60 000	60.00	3 600	2 118

Air Consumption Values

TOOLS	TYPICAL CFM CONSUMPTION AT AN OPERATING PRESSURE OF 87 PSI (5.9 bar)
SMALL PROCESS CONTROLS, INSTRUMENTATION, PNEUMATIC LOGIC UNITS	4
PAINT SPRAY GUN, SMALL IMPACT WRENCH, LIGHT/MEDIUM DRILL, BLOWGUN	FROM 5 TO 18
POLISHER, SCREWDRIVER	25
SHEET METAL CUTTER, LARGE IMPACT WRENCH, AUTOMATIC PLANE	28
SMALL AUTOMATIC MACHINES, MISCELLANEOUS TOOLING	32
LARGE TOOLS, POWER MACHINES AND ASSOCIATED EQUIPMENT	36
AIR HOIST, GRINDER	74

Transair® systems in use



Packaging
Transair® 1-1/2" (40 mm) and 1" (25 mm)



Manufacturing
Transair® 1" (25 mm) to 6" (168 mm)



Automotive
Transair® 1-1/2" (40 mm)



Food and beverage
Transair® 1" (25 mm)



Manufacturing
SCOUT™ 2-1/2" (63 mm)



Alternative energy
Transair® 2-1/2" (63 mm) and 3" (76 mm)

Transair® systems in use



Manufacturing
SCOUT™ 2" (50 mm)



Pharmaceutical
Transair® 2-1/2" (63 mm)



Industrial
Transair® 4" (101 mm)



Outdoor installation
Transair® 6" (168 mm)



Railways
Transair® 2-1/2" (63 mm)



Inert gas
Transair® 3" (76 mm)

MFP **AUTOMATION** **ENGINEERING**

