>Installation guide

> The golden rules of installation

> Installation instructions

> 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® catalogue, must be respected.

> Commissioning the installation

Once the Transair® installation has been installed and prior to commissioning, 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.
NB: In certain situations, Transair® aluminium pipe may be formed with a bend - please contact us for further information.

> Expansion / contraction

Expansion and contraction of the system are automatically catered for by correct 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.), especially underground

> the hanging of any external equipment to Transair® pipe

> the use of Transair® for earthing, 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 pipework 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.
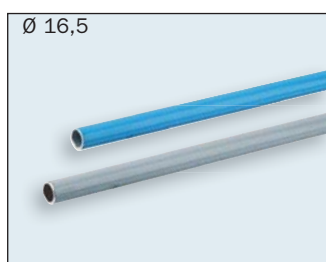
> Never encase the network in order to facilitate maintenance or servicing.

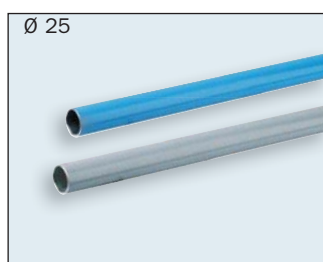> Position drops as close as possible to the point of use.

> General

> Presentation

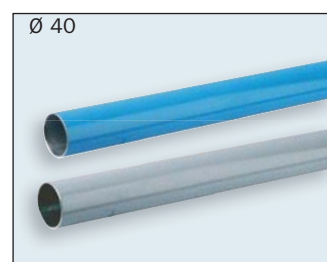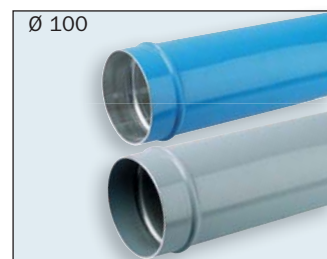| Ø 16,5	Ø 25	Ø 40
Deburred and chamfered pipe	Deburred and chamfered pipe	Deburred and chamfered pipe

Ø 63	Ø 76	Ø 100
Pipe pre-drilled at each end with two 22 mm diameter holes, deburred and chamfered	Pipe lugged at each end, deburred and chamfered	Pipe lugged at each end, deburred and chamfered

Transair® aluminium pipe is supplied «ready for use».

No particular preparation (cutting, deburring, chamfering, etc.) is required.

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

Transair® aluminium pipe is calibrated and fits perfectly with all Transair® components. Each connection is automatically secured and the seal is optimized.
The use of Transair® aluminium pipe minimises corrosion to the internal surface (self-protection of the pipe by the formation of alumina oxide).

Transair® aluminium pipe has a protective lacquer coating (QUALICOAT certified) and is thus protected from external aggression. It's colour allows the network to be immediately identified and gives a clean and aesthetic overall appearance.

Standard colours available:
· blue (RAL 5012/BS1710)
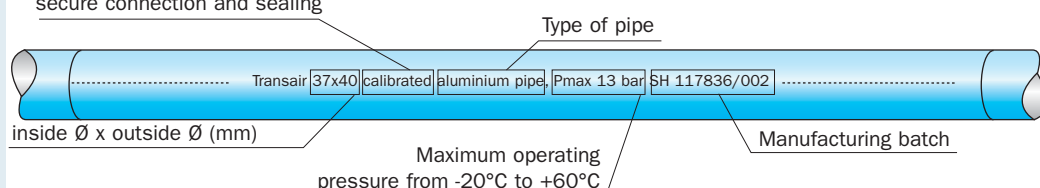· grey (RAL 7001)
(please contact us for other colours)

Transair® aluminium pipe is available in 6 diameters and 2 lengths: 3 metres and 6 metres (please contact us for other lengths).

> Applications

Transair® Ø 16.5 - Ø 25 - Ø 40 - Ø 63 - Ø 76 - Ø 100 aluminium pipe has been specially designed for the creation of primary and secondary networks for compressed air, vacuum and neutral gases (argon, nitrogen) - please contact us for other fluids

> Marking

Pipe calibration is a guarantee of secure connection and sealing

Type of pipe

Transair 37x40 calibrated aluminium pipe, Pmax 13 bar SH 117836/002

inside Ø x outside Ø (mm)

Maximum operating pressure from -20°C to +60°C

Manufacturing batch

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

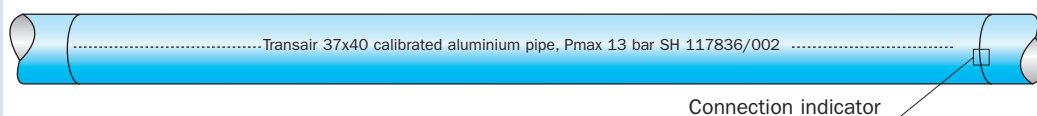Blue pipe ⟶ compressed air network
Grey pipe ⟶ vacuum network

> Identification

This identification may also be done by applying adhesive labels directly onto the pipe

AIR / LUFT / AERE

VIDE / VACUUM / VACIO

> Connection indicator

Only on Ø 16.5 - Ø 25 - Ø 40 aluminium pipe

Transair 37x40 calibrated aluminium pipe, Pmax 13 bar SH 117836/002

Connection indicator

> Drilling locator : «mark» lines for correct drilling

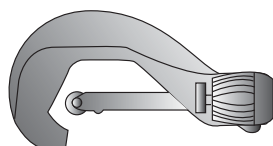**Only on Ø 16.5 - Ø 25 - Ø 40 - Ø 63 aluminium pipe**
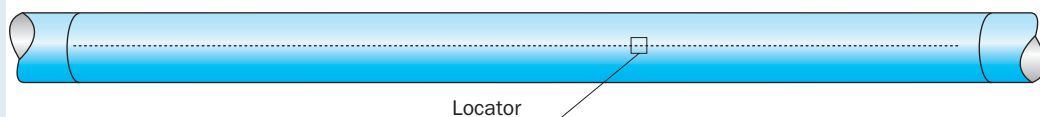
Locator

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.

> Transair® aluminium pipe

> Aluminium pipe section

> Ø 16,5 Ø 25 - Ø 40

> Tools

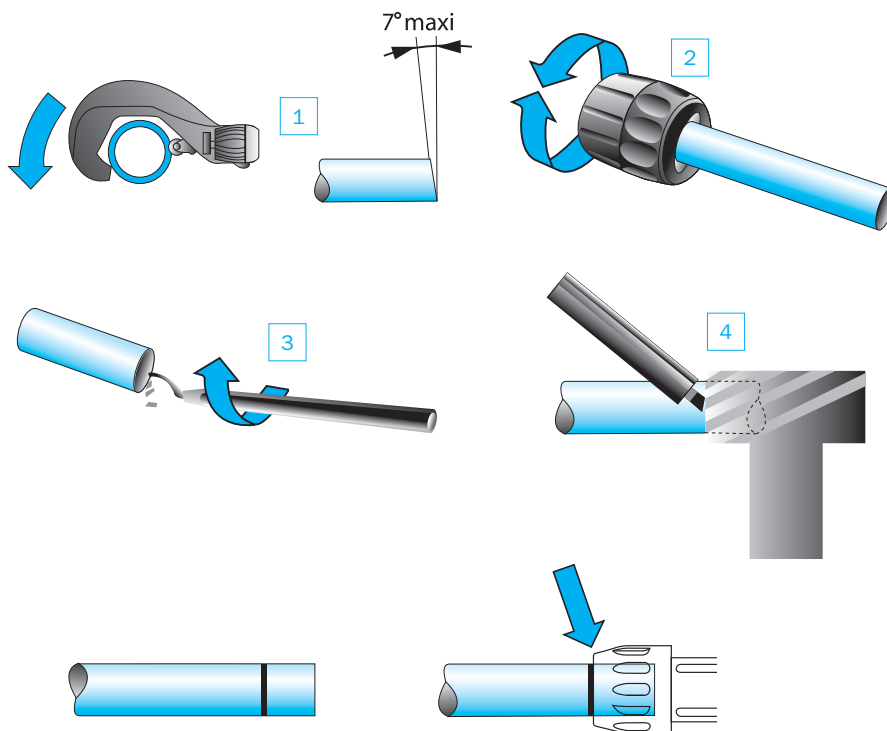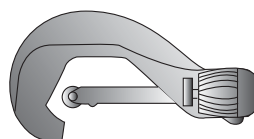| Pipe cutter for aluminium pipe ref. 6698 03 01 | Chamfer tool for aluminium pipe ref. 6698 04 01 | Deburring tool for aluminium pipe ref. 6698 04 02 | Marking tool for aluminium pipe ref. 6698 04 03 |

> Procedure

7° maxi

1

2

3

4

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 - Also deburr the inner end of the pipe

4 - Trace the connection indicator using the marking tool.

The insertion lengths for Ø 16,5 - Ø 25 - Ø 40 connectors are 25 mm, 27 mm and 45 mm respectively, with the exception of the end cap, ref. 6625, for which the insertion lengths are of 39 mm, 42 mm and 64 mm respectively.
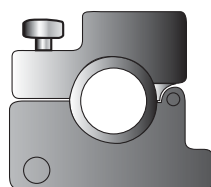
> Ø 63

> Tools

Pipe cutter for
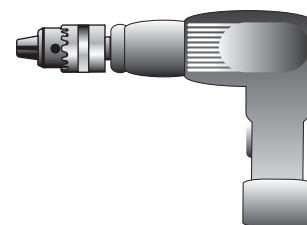aluminium pipe
ref. 6698 03 01

File

Deburring tool for
aluminium pipe
ref. 6698 04 02

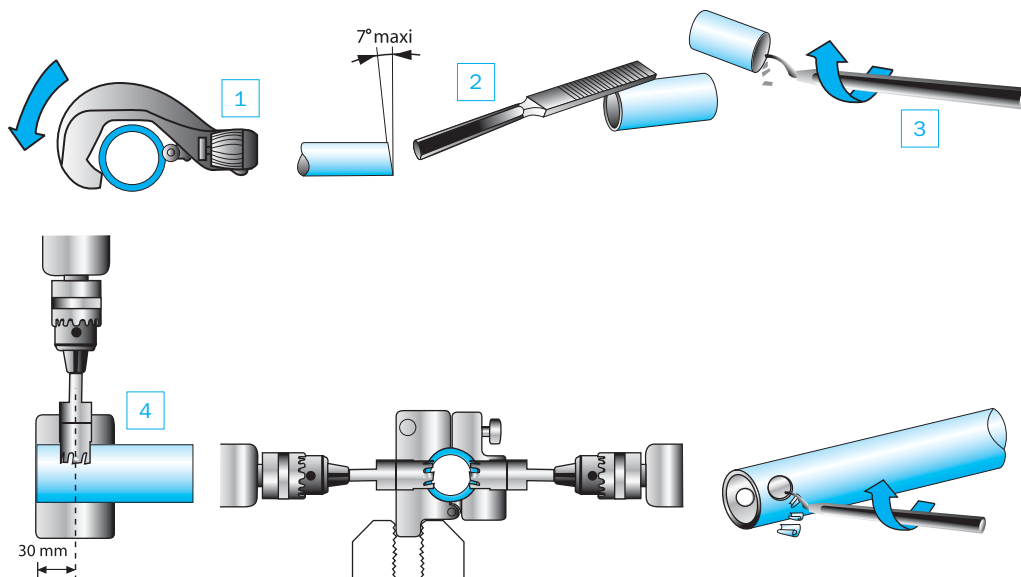Drilling jig for
aluminium pipe
ref. 6698 01 02

Drilling tool for
aluminium pipe
ref. 6698 02 01

Drill

> Procedure

7° maxi

1

2

3

4

30 mm

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 - Also deburr the inner end of the pipe

4 - Drill the two clamp holes using the drilling jig
   (6698 01 02) and the Ø 22 mm 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
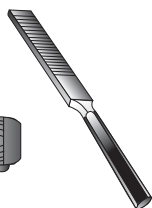   swarf and potential sharp edges.

> Transair® aluminum pipe

> Aluminum pipe section

> Ø 76 - Ø 100

> Tools
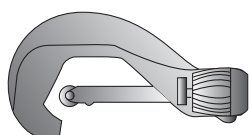
Pipe cutter for
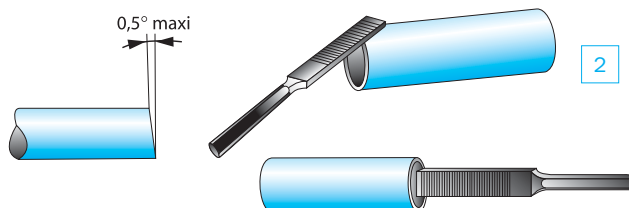aluminium pipe
ref. EW08 00 01

File

Portable tool kit ref.
EW01 00 01 (220V) or
EW01 00 03 (110V)

Pipe forming jaw set ref.
EW02 L1 00 (Ø 76) or
EW02 L3 00 (Ø 100)

> 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.

0,5° maxi

2 – Carefully deburr and chamfer the outer and inner
edges of the pipe with a file.

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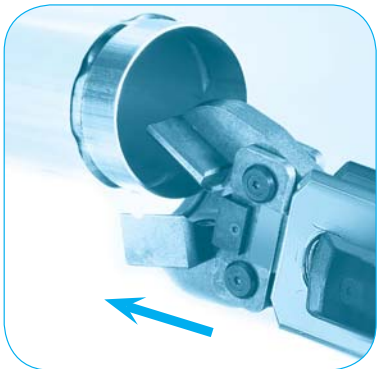the jaw release button*

Place the jaws in the housing.

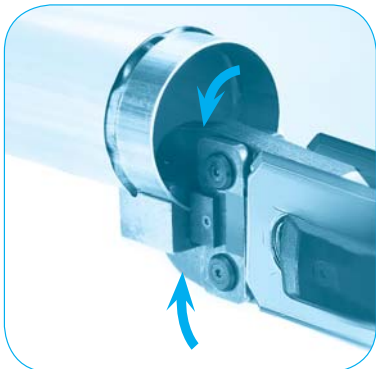Lock in position by closing the
retaining pin.

3 - Creating the lugs for Ø 76 or Ø 100 cut pipe

> **Procedure**

3

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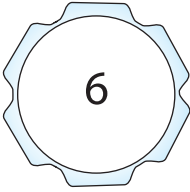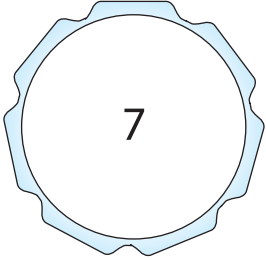

Release the jaws. Press the trigger and crimp the tube until a 'snap' sound is heard.

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.
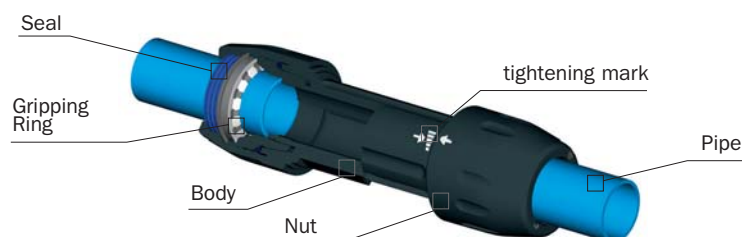
	Ø 76	Ø 100
Min. number of lugs	6	7

Important: do not overlap the lugs!

> **General**

Instant connection by means of a gripping ring

Seal

Gripping
Ring

tightening mark

Body

Nut

Pipe

Ø 16,5, Ø 25 and Ø 40 connectors secure instantly 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.

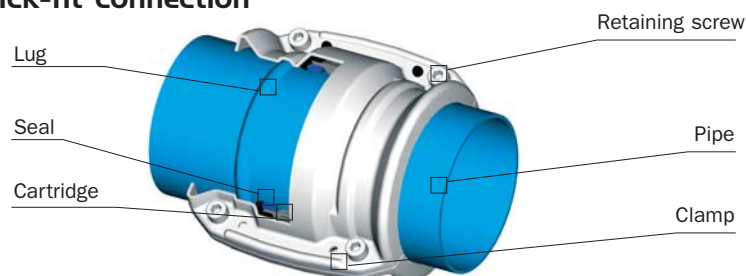## Double clamp quick-fit connection

Seal

Clamp

Body

Nut

Pipe

Ø 63 connectors are quickly secured to Transair® aluminum pipe by means of a double clamp which makes the connector

fully integrated with the pipe. Connection is achieved by simply tightening the nut.

Clamp quick-fit connection

Lug

Seal

Cartridge

Retaining screw

Pipe

Clamp

Ø 76 and Ø 100 clamps secure instantly to Transair® aluminium 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 4 retaining screws.

There are important visual markings on the bodies and nuts of Transair® Ø 16,5, Ø 25 and Ø 40 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.
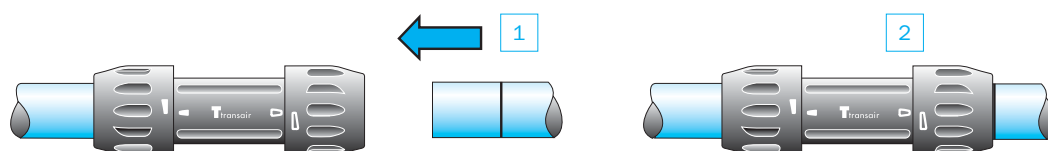
There is no need to loosen the nuts prior to joining Ø 16,5, Ø 25 and Ø 40 connectors to Transair® aluminum pipe.

> **Pre-assembled tightening indicators for Ø 16,5, Ø 25 and Ø 40 connectors.**
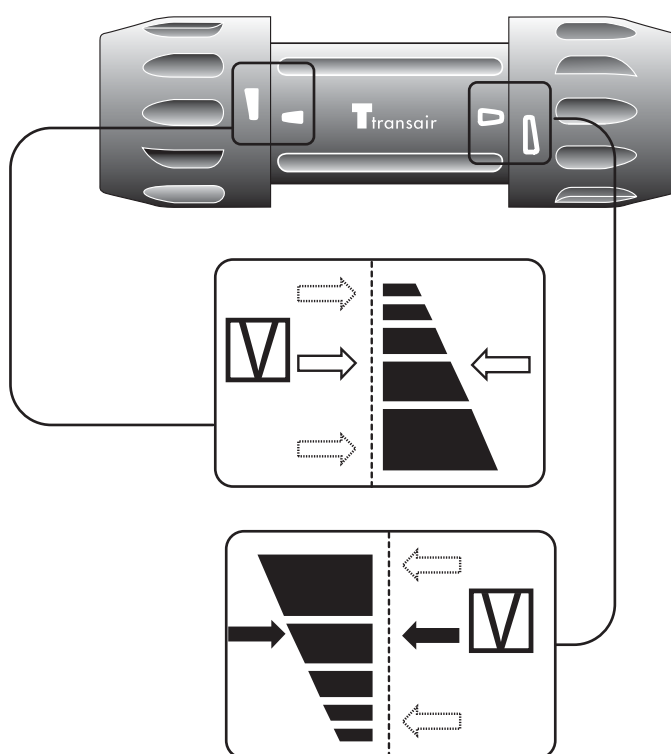
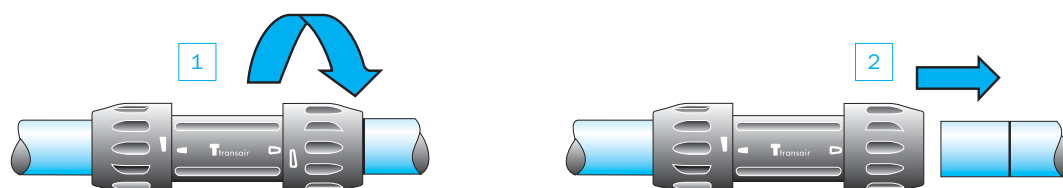Before using Ø 16,5, Ø 25 or Ø 40 connectors, ensure that these arrow marks are correctly aligned with each other.

> Connection / disconnection

Connection

Disconnection

> Ø 16,5
Ø 25
Ø 40

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.

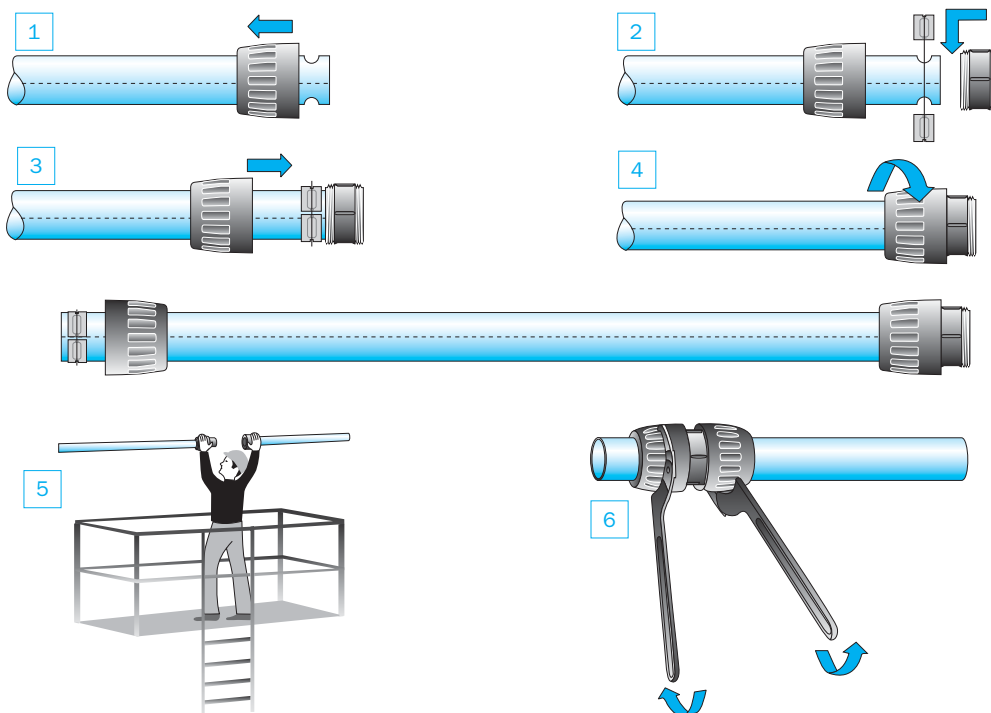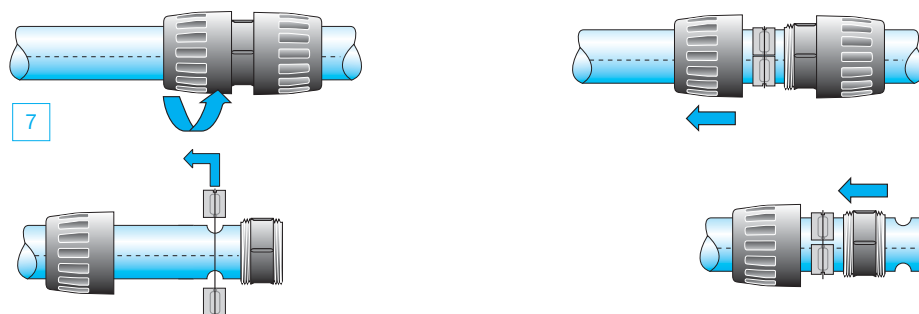> NB – when using end caps (ref. 6625)

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:

· Ø 16.5: 39 mm
· Ø 25: 42 mm
· Ø 40: 64 mm

> Ø 63

Connection

1

2

3

4

5

6

Disconnection

7

1 - Unscrew one of the connector nuts and fit over the pipe.

2 - Position the double clamp ring in the appropriate housings (2 holes at the end of the pipe).

3 - Bring the nut towards the body, that has been previously positioned at the end of the pipe, until it stops against the double clamp.
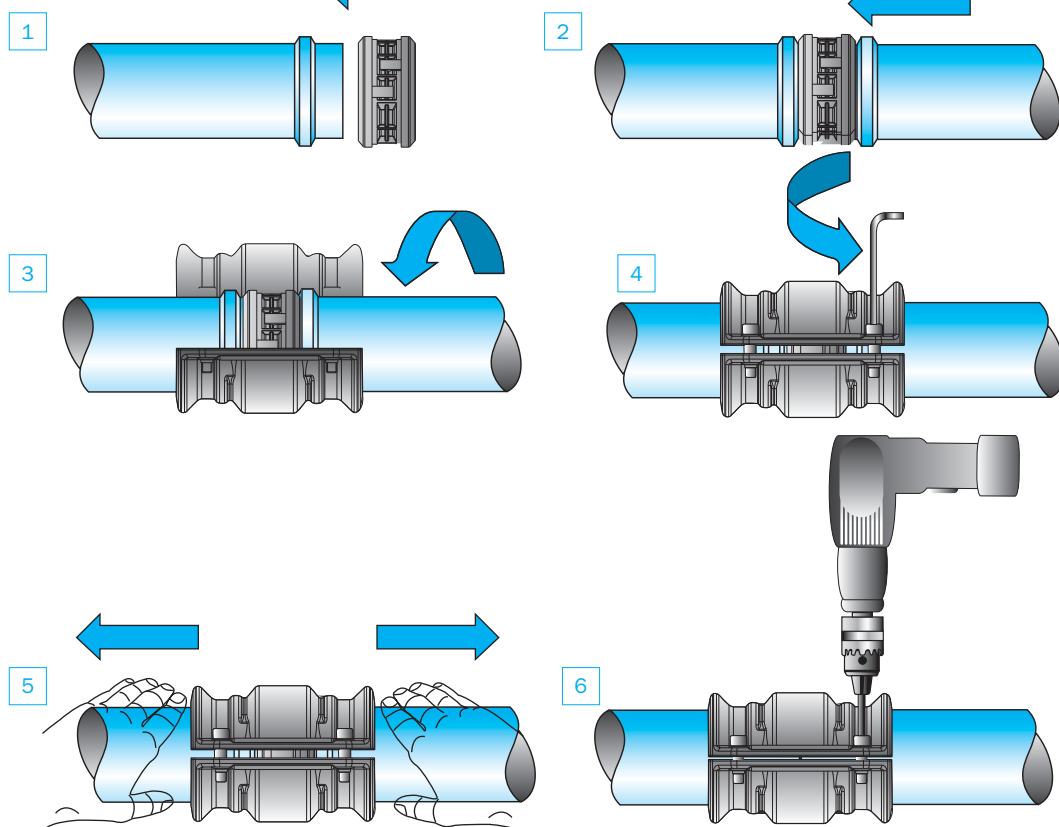
4 - Tighten the nut by hand.

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.

Lateral dismantling: see page 72 of this guide.

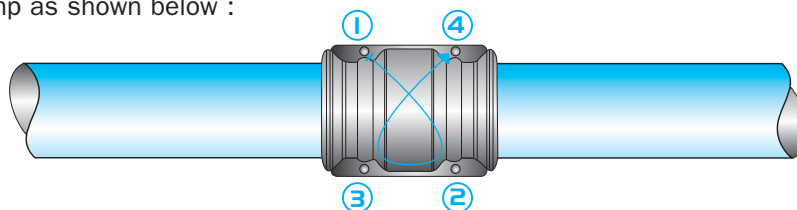## > Connection / disconnection

Connection

> Ø 76
> Ø 100

1 - Slip the cartridge over the end of the first pipe
    fully up to the shoulder.
2 - Bring the second pipe to the cartridge and slide
    fully up to the shoulder.
3 - Position the clamp over the cartridge / pipe
    assembly.
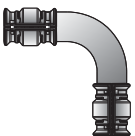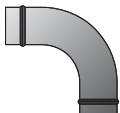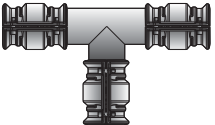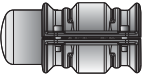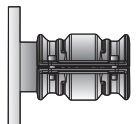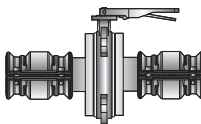
4 - Hand tighten the pre-fitted screws with an Allen
    key.
5 - Pull the pipes fully back towards the outside of
    the clamp.
6 - Fully tighten the clamp screws.
tightening torque mini:10Nm
Maximum tightening torque : final closure of clamps

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 Ø 76 and Ø 100 configurations

> Changing direction with a 90° elbow

= 1 x RX02 + 2 x RR01

> Changing direction with a tee piece

= 1 x RX04 + 3 x RR01

> Connecting an end cap

= 1 x RX25 + 1 x RR01

> Connecting a circular flange and a connector

= 1 x EW05 / 1 x EW06 + 1 x RX30 + 1 x RR01

> Reduction from Ø 100 to Ø 76

Ø 100 ... Ø 76 = 1 x RR01 L3 00 + 1 x RX66 L3 L1 + 1 x RR01 L1 00

> Connecting a butterfly valve

= 1 x RR01 + 1 x RX30 + 1 x VR02 + 1 x RX30 + 1 x RR01

> Connecting a flexible hose and a circular flange

= 1 x EW05 + 1 x RX30 / 1 x EW06 + 1 x RR01 + 1 x FP01

RX 24 L1 40
RX 24 L3 40
6625 40 00

RX 24 L1 40
RX 24 L3 40
4002 40 00

RX 24 L1 63
RX 24 L3 63
6625 63 00
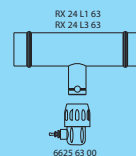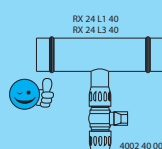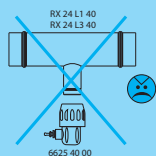
> Practical examples

> Connecting
a Transair®
Ø 76
or
Ø 100
network

to a
Transair®
Ø 63
Ø 40
Ø 25
Ø 16.5
network

	Ø 76	Ø 100
Ø 63	Ø76 — RR01 L1 00 — 6606 63 00 — RX24 L1 63 — Ø63 — Ø76 — RR01 L1 00	Ø100 — RR01 L3 00 — 6606 63 00 — RX24 L3 63 — Ø63 — Ø100 — RR01 L3 00
Ø 40	Ø76 — RR01 L1 00 — 6606 40 00 — RX24 L1 40 — Ø40 — Ø76 — RR01 L1 00	Ø100 — RR01 L3 00 — 6606 40 00 — RX24 L3 40 — Ø40 — Ø100 — RR01 L3 00
Ø 25	Ø76 — RR01 L1 00 — 6605 25 21 — RX23 L1 04 — Ø25 — Ø76 — RR01 L1 00	Ø100 — RR01 L3 00 — 6605 25 21 — RX23 L3 04 — Ø25 — Ø100 — RR01 L3 00
Ø 16,5	Ø76 — RR01 L1 00 — 6605 17 21 — RX23 L1 04 — Ø16,5 — Ø76 — RR01 L1 00	Ø100 — RR01 L3 00 — 6605 17 21 — RX23 L3 04 — Ø16 5 — Ø100 — RR01 L3 00

Minimum pipe centre-to-centre mounting distances for Ø 76 and Ø 100 tees

ØD1(mm)	ØD2(mm)	A(mm)	Bmini(mm)
100	100	90	470
100	76	80	410
100	63	90	327
100	40	46	225
100	25	46	215
100	16,5	46	200
76	76	80	420
76	63	90	314
76	40	46	212
76	25	46	202
76	16,5	46	187

Minimum pipe centre-to-centre mounting distances for Ø 76 and Ø 100 brackets

ØD1(mm)	ØD2(mm)	A(mm)	Bmini(mm)
100	25	46	250
76	25	46	240
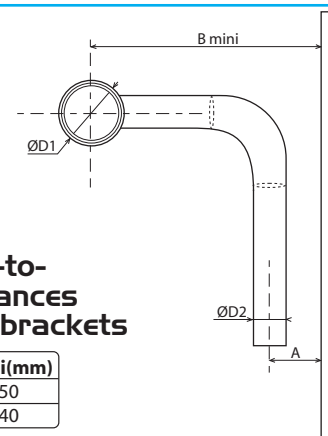
> System modification

> Replacing a pipe-to-pipe connector with a tee

For diameters Ø 16.5 - Ø 25 - Ø 40 only
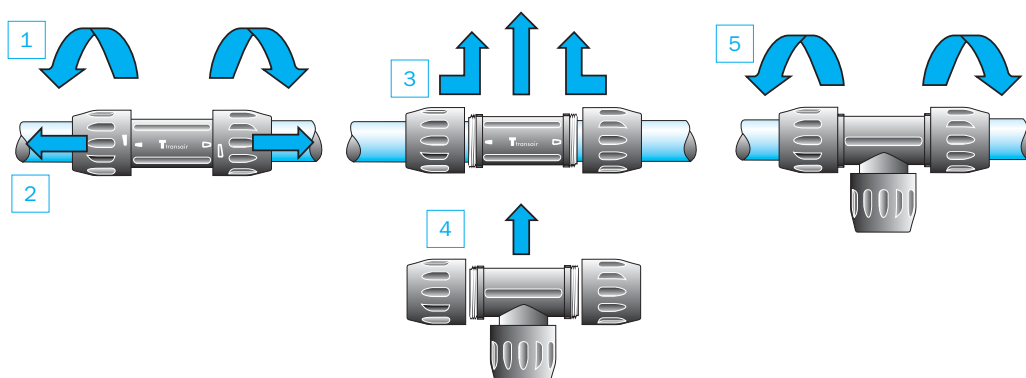
1 - Loosen the 2 nuts.
2 - Slide them along the pipe on either side of the connector.
3 - Remove the body of the connector, together with the nuts.

4 - Slide the nuts of the tee and position the body of the tee between the 2 pipes such that the solid and empty arrows are facing each other.
5 - Re-tighten the nuts until the empty and solid arrows are aligned with each other.

> Replacing a pipe-to-pipe connector with a ball valve

For diameters Ø 16.5 - Ø 25 - Ø 40 only
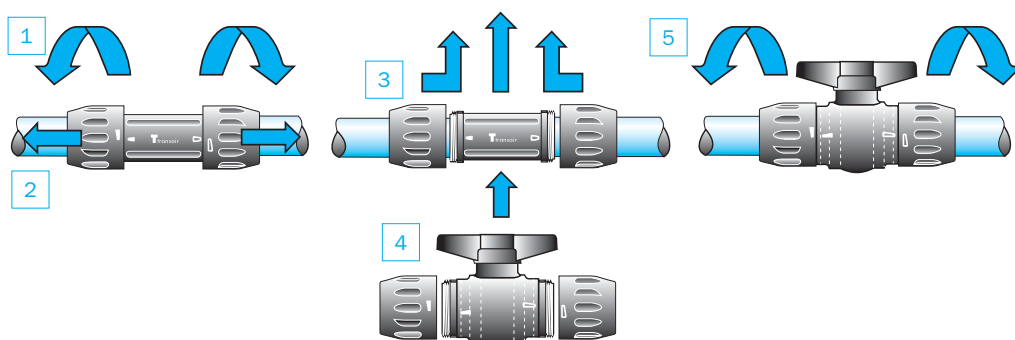
1 - Loosen the 2 nuts.
2 - Slide them along the pipe on either side of the connector.
3 - Remove the body of the connector, together with the nuts. Slide on the ball valve nuts.

4 - Position the body of the tee between the 2 pipes so that the empty and solid arrows are facing each other
5 - Re-tighten the nuts until the empty and solid arrows are aligned with each other.

> Transair® connectors

> Practical examples

> Lateral dismantling

> Ø 16,5 Ø 25 Ø 40
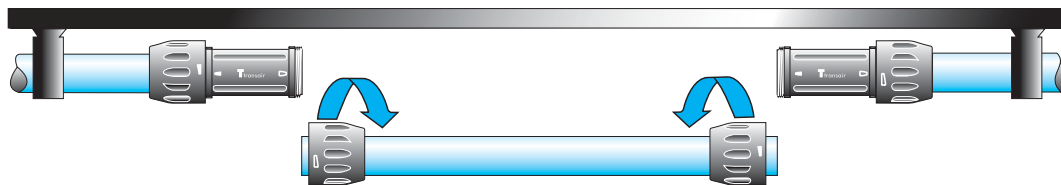
Loosen the nuts located on the side of the pipe to be removed and slide them along the pipe.
Then remove the pipe

> Ø 63

150 mm mini
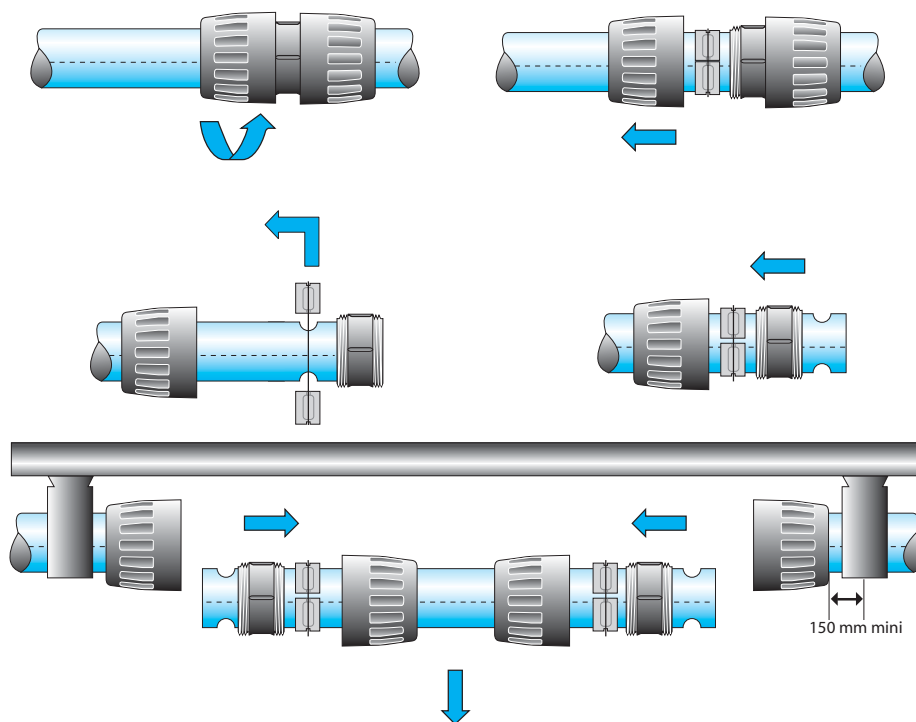
1 - Loosen the connector nuts on the ends of the pipe to be removed
2 - Slide them along the pipe.
3 - Remove the clamp rings from their housings.

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® Ø 40 remote shut-off valve

Remote shut-off valve
Polyurethane twin tubing
Pneumatic ON - OFF switch

> Application
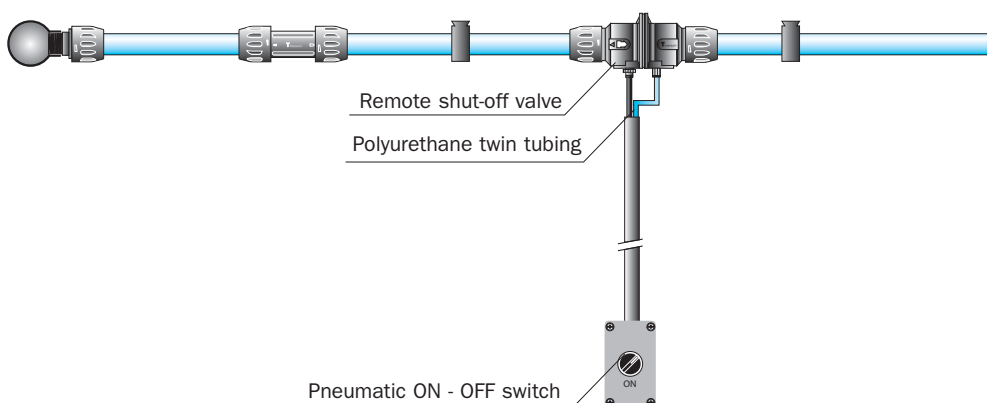
Assembled by simple and fast connection to aluminium pipe, the Transair® Ø 40 remote shut-off valve allows network supply to be rapidly and safely opened and closed either at ground level or by remote control.
The Transair® remote shut-off valve thus guarantees :
· Personal safety, by eliminating all 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 networks :

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.
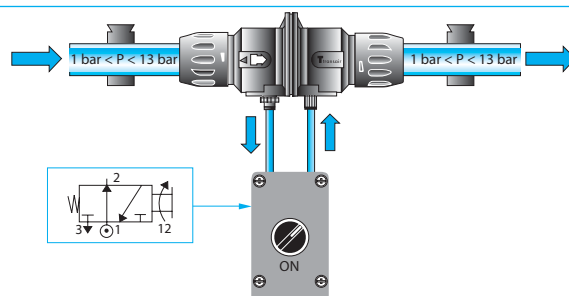
For vacuum networks :

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

1 bar < P < 13 bar

1 bar < P < 13 bar
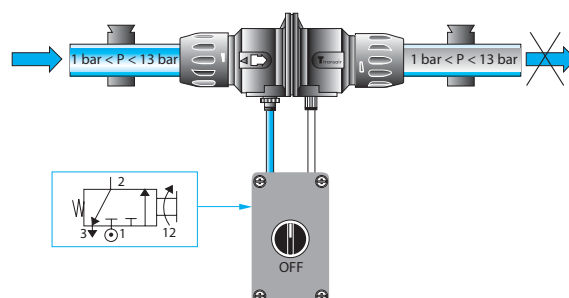
> Transair® connectors

> ## > Do's
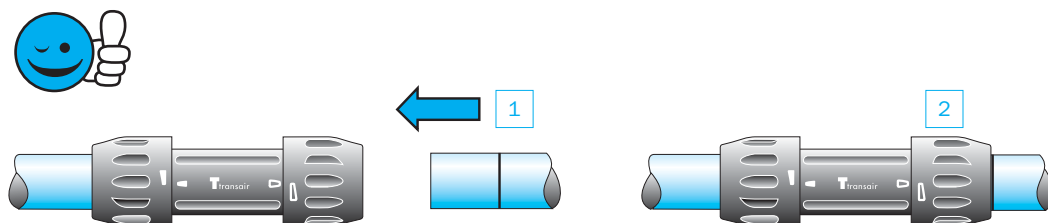
> Connection	
> Use a pipe cutter	
> Carefully chamfer and deburr the pipe after cutting or drilling	
> Check that the pipe is correctly positioned in the connector	
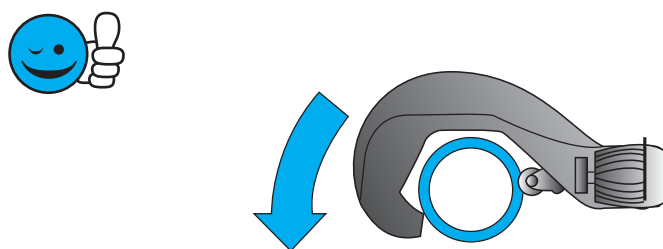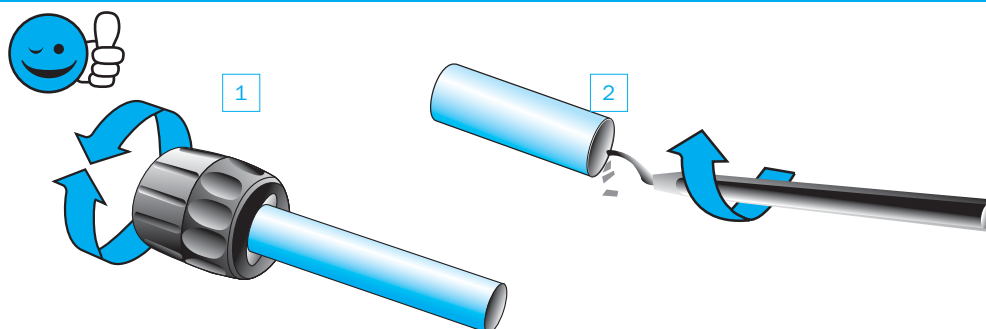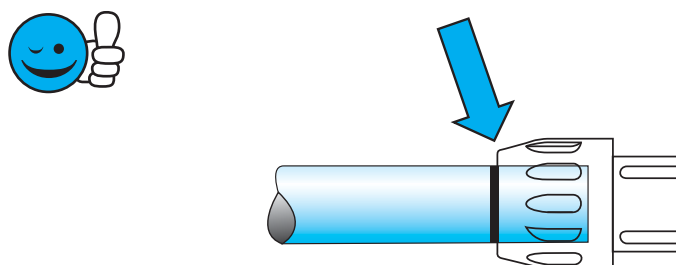
> Don'ts

> Loosen the nuts during assembly		
> Cut the pipe with a saw		
> Use non-deburred pipe		
> Fail to make the pipe secure		
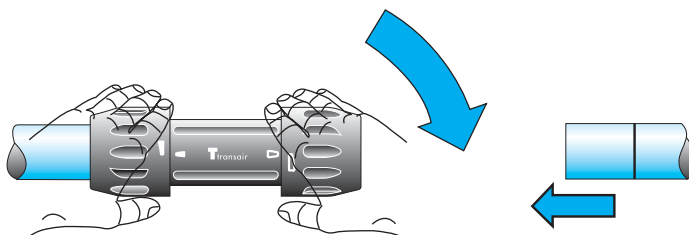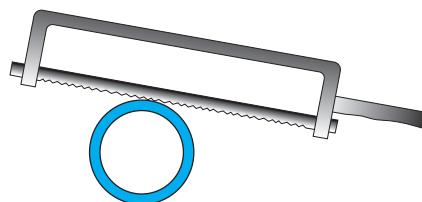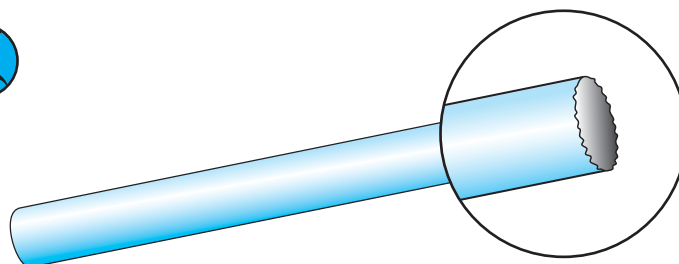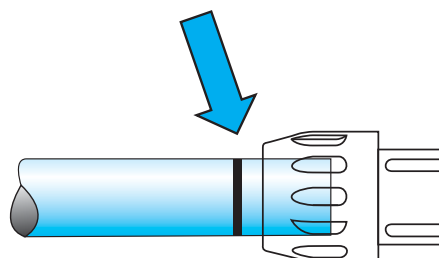
> Transair® quick assembly brackets

> General

The easy addition of a new drop or bypass onto an existing length of pipe is an important consideration for any air pipework system.

Transair® quick assembly brackets are designed for this very purpose, without the need to cut the pipe.

A «swans 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.

Vertical Drop   **Horizontal branch liae**
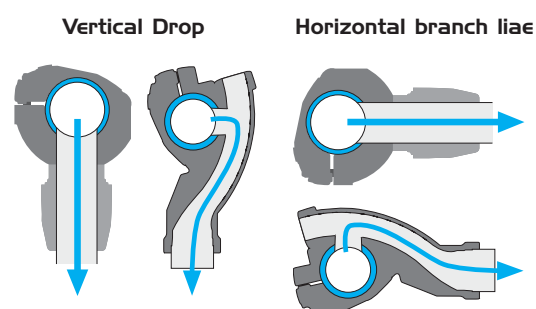
> Specific instructions for fitting a bracket

Ø 25 - Ø 40   **Ø 63**

46 mm   90 mm

150 mm mini

46 mm   46 mm
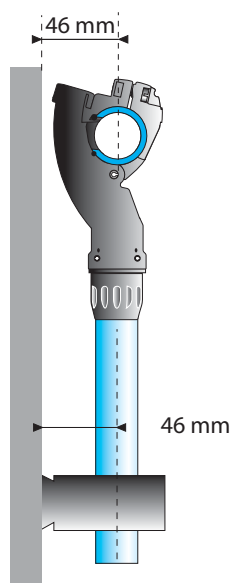
For Ø 25 and Ø 40 Transair® quick assembly brackets, the pipe centre to wall distance is equal to the bracket centre to wall distance, i.e. 46mm.
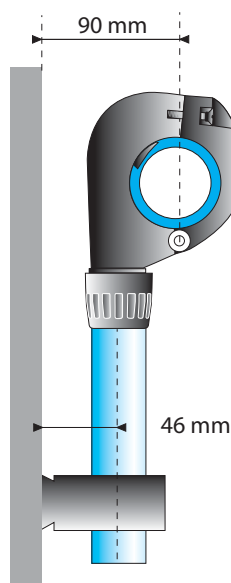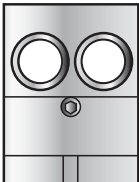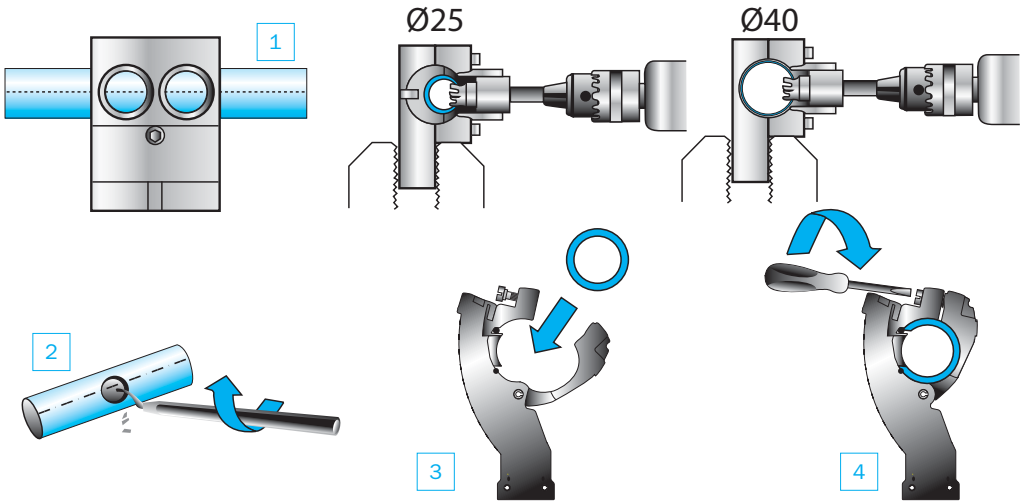
For Ø 63 Transair® quick assembly brackets the pipe centre to wall distance is 90mm and the Ø 25 and Ø 40 bracket centre distance is 46mm.
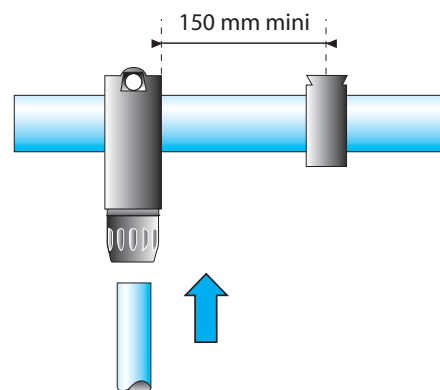
Furthermore, Transair® clips should be fitted at a distance of at least 150mm from a quick assembly bracket in order to allow for the expansion / contraction of aluminium pipe

> Fitting a quick assembly bracket

> To Ø 25 Ø 40 pipe					
> Tools required	Drilling tool for aluminium pipe ref. 6698 02 02 6698 02 01	Drilling jig for aluminium pipe ref. 6698 01 01	Deburring tool for aluminium pipe ref. 6698 04 02	Permanent marker pen	Allen key / Flat end screwdriver

> Procedure

Ø25   Ø40

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 Ø 40 hole, remove the retaining bolt in the jig using an allen key 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 and drill a hole using the appropriate drilling tool :
· Ø 25 : Ø 16 hole > ref. 6698 02 02 drilling tool
· Ø 40 : Ø 22 hole > ref. 6698 02 01 drilling tool
Recommended rotation speed: 650 rpm
NB : drill without lubrication.

2 - Release the pipe, deburr and remove any swarf and the cut circular piece of pipe. 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 nut.

Remark : the jig's second drilling guide corresponds to the minimum distance for fitting two adjacent brackets or a "double hole" quick assembly bracket ref 6662 25 00 / 6662 40 00

> Transair® quick assembly brackets

> Fitting a bracket

> On Ø 63 pipe

> Tools required

Drilling tool for
aluminium pipe
ref. 6698 02 01
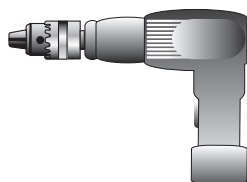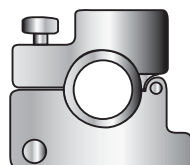
Drill

Drilling jig for
aluminium pipe
ref. 6698 01 02

Deburring tool for
aluminium pipe
ref. 6698 04 02

Permanent
marker pen
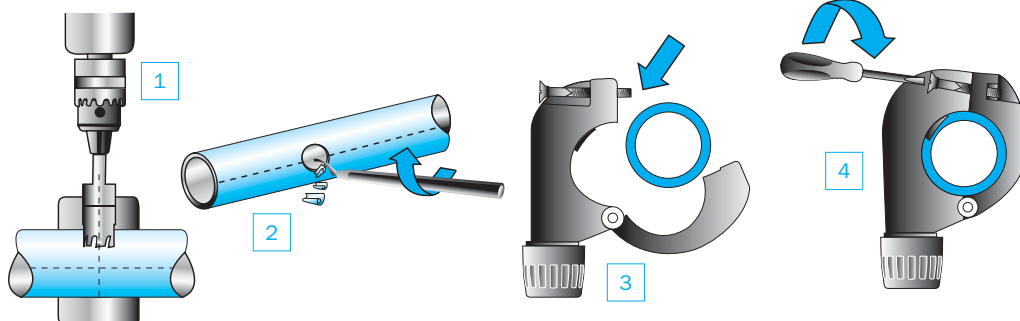
> Procedure

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 Ø 63 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: 2 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 Ø 22 drilling tool. [Recommended rotation speed: 650 rpm] NB: drill without lubrication.

2 - Loosen the locking clamp and release the pipe, deburr and remove any swarf and the cut circular aluminum piece of pipe. 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 nut.

> **On Ø 76 Ø 100 pipe**

> **Tools required**

Drilling tool for aluminium pipe, ref. EW09 00 30

Deburring tool for aluminium pipe ref. 6698 04 02
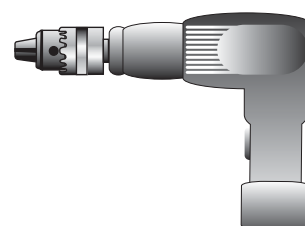
Drill

> **Procedure**
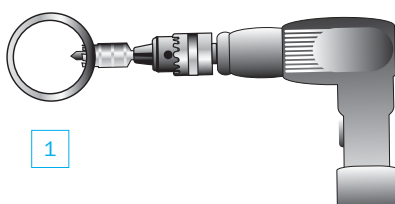
1
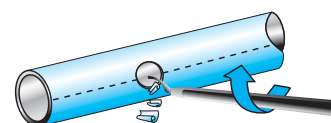
2
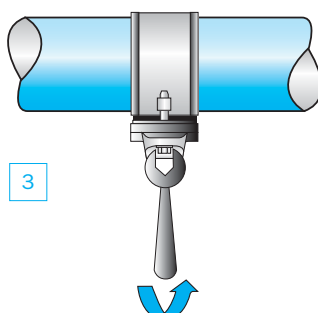
3
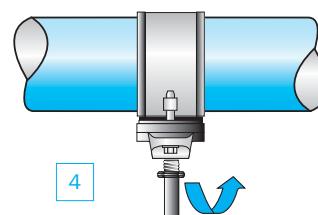
4

1 - Drill the aluminum pipe at the desired position using drilling tool ref. EW09 00 30

2 - Carefully deburr the pipe

3 - Position bracket ref. RR61 and fully tighten the 2 screws

4 - Screw on male adapter ref. 6621 25 34

NB: adapter ref. 6621 25 34, in combination with bracket ref. RR61, is used to create a Ø 25 take-off point from Ø 76 or Ø 100 pipe

> Transair® quick assembly brackets

> Practical examples

Using the same locator mark
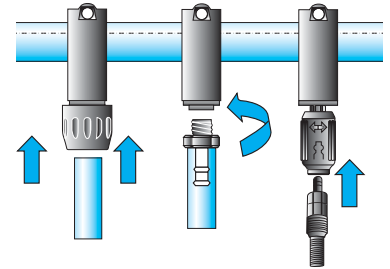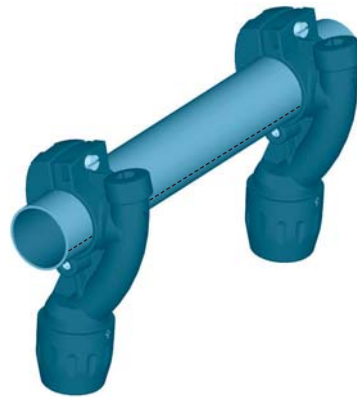
Using 2 locator marks
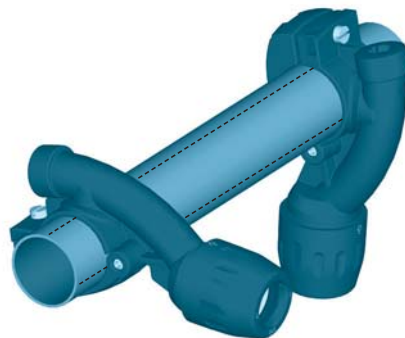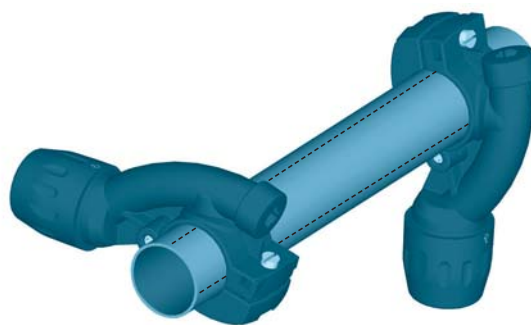
> Fitting a bracket to a pressurised system

> Tools required

Drill bit

Threaded connector to screw onto the air intake

Silencer attachment point

Tool body

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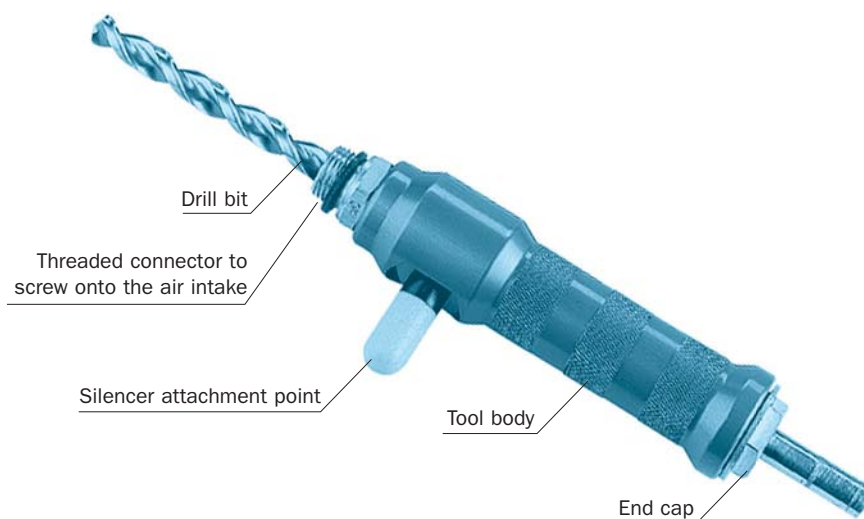
Use the under pressure drilling tool to fit a bracket to an existing pressurised system. This can be simply done with use of a standard drill

> Procedure
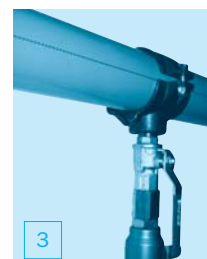
1 - Position the pressurised system bracket and fully tighten the 2 screws.
2 - Screw the assembly onto the ball valve. Ensure that the valve is open.

3 - Screw the drilling tool onto the ball valve. Drill fully.
4 - Remove the drill and close the ball valve immediately. 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 is small bend radius, it requires minimum space and avoids mechanical stress within the network.

Robust, Transair® flexible hose is resistant to both compressor oils and to fire

> Level change

R mini.

150 mm mini

> Obstacle bypass

150 mm mini.

> Expansion loop

R mini.

150 mm mini

> Applications

Ø (mm)	Length (mm)	Transair®	Rmini (mm)
25	570	1001E25 00 01	100
25	1500	1001E25 00 03	100
25	2000	1001E25 00 04	100
25	570	1001E25V00 01	75
25	1500	1001E25V00 03	75
25	2000	1001E25V00 04	75
40	1150	1001E40 00 02	400
40	2000	1001E40 00 04	400
40	3000	1001E40 00 05	400
40	950	1001E40V00 07	160
40	2000	1001E40V00 04	160
40	3000	1001E40V00 05	160
63	1400	1001E63 00 08	300
63	3000	1001E63 00 05	650
63	4000	1001E63 00 06	650
63	3000	1001E63V00 05	250
63	4000	1001E63V00 06	250
76	1500	FP01 L1 01	350
76	2000	FP01 L1 02	350
100	2000	FP01 L3 01	450
100	3000	FP01 L3 03	450
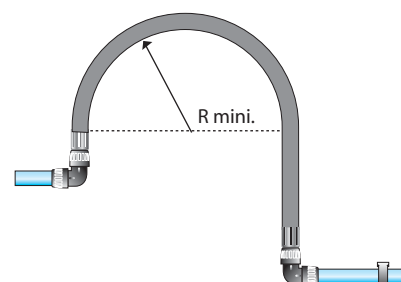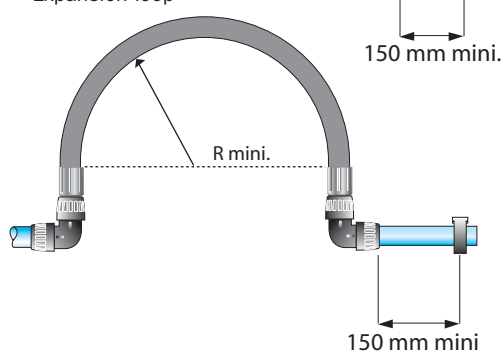
> Safety

> Anti-whiplash straps

In order to avoid the risk of whiplash accidents Transair® recommends the use of anti-whiplash straps, 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).

> Network connection

> Ø 16,5
Ø 25
Ø 40

> Using a male stud fitting
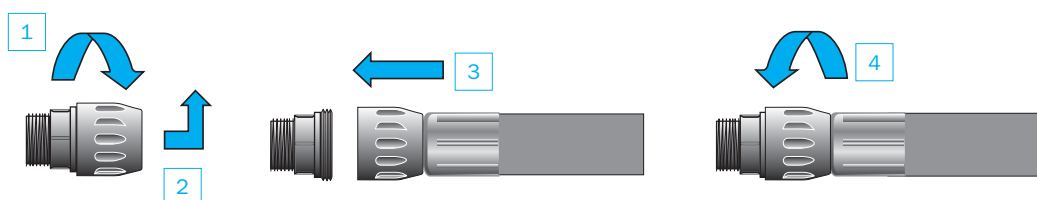
1 - Loosen the nut on the stud fitting

2 - Remove it

3 - Move the swaged end of the hose

onto the exposed stud thread.

4 - Tighten the nut.

> Using a pipe to pipe connector
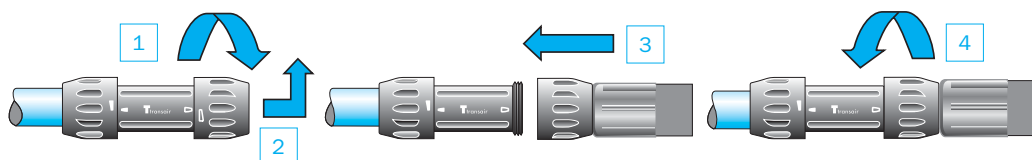
1 - Loosen the nut on the connector

2 - Remove it

3 - Move the swaged end of the hose

onto the connector thread.

4 - Tighten the nut.

> Using a 90° elbow
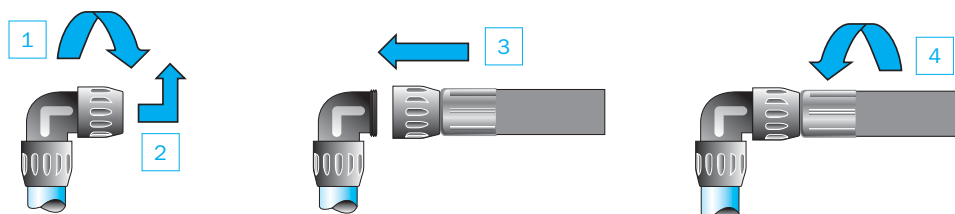
1 - Loosen the nut on the elbow

2 - Remove it

3 - Move the swaged end of the hose onto towards the elbow thread

4 - Tighten the nut.

> Network connection

> Ø 63

> Using a male stud fitting
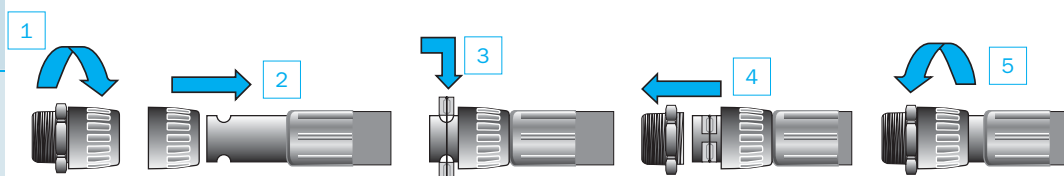
1 - Loosen the nut on the stud fitting and remove it
2 - Place the nut over the swaged end of the flexible hose
3 - Place the pipe connector clamps in the housings on the hose.

4 - Slide the nut forward to the end of the flexible hose ,and assemble onto the male thread.
5 - Tighten the nut using the Ø 63 spanner set

> Using a pipe to pipe connector
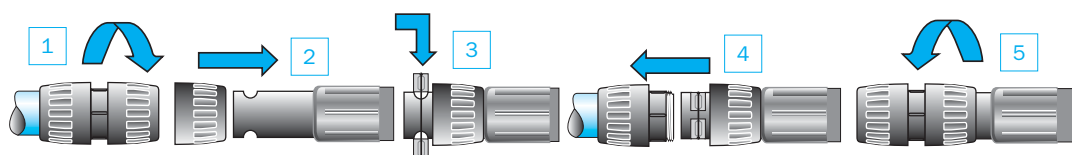
1 - Loosen the nut on the connector and remove it

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.

5 - Tighten the nut using the Ø 63 spanner set

> Using a 90° elbow
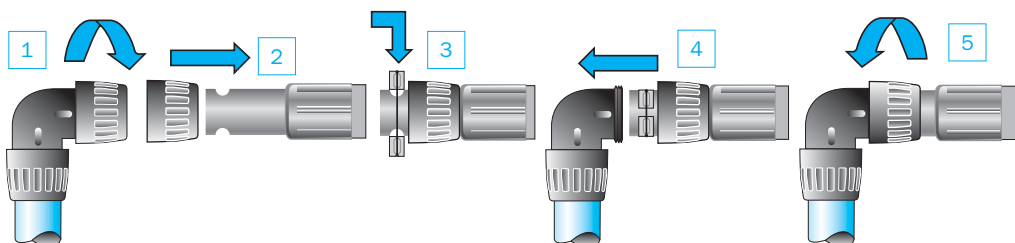
1 - Loosen the nut on the elbow and remove it
2 - Fit it over the swaged end of the flexible hose
3 - Place the elbow clamps in the housings on the hose

4 - Slide the nut forward to the end of the flexible hose, until it touches the clamps
5 - Tighten the nut using the Ø 63 spanner set

> Ø 76 - 100

> Using a steel clamp
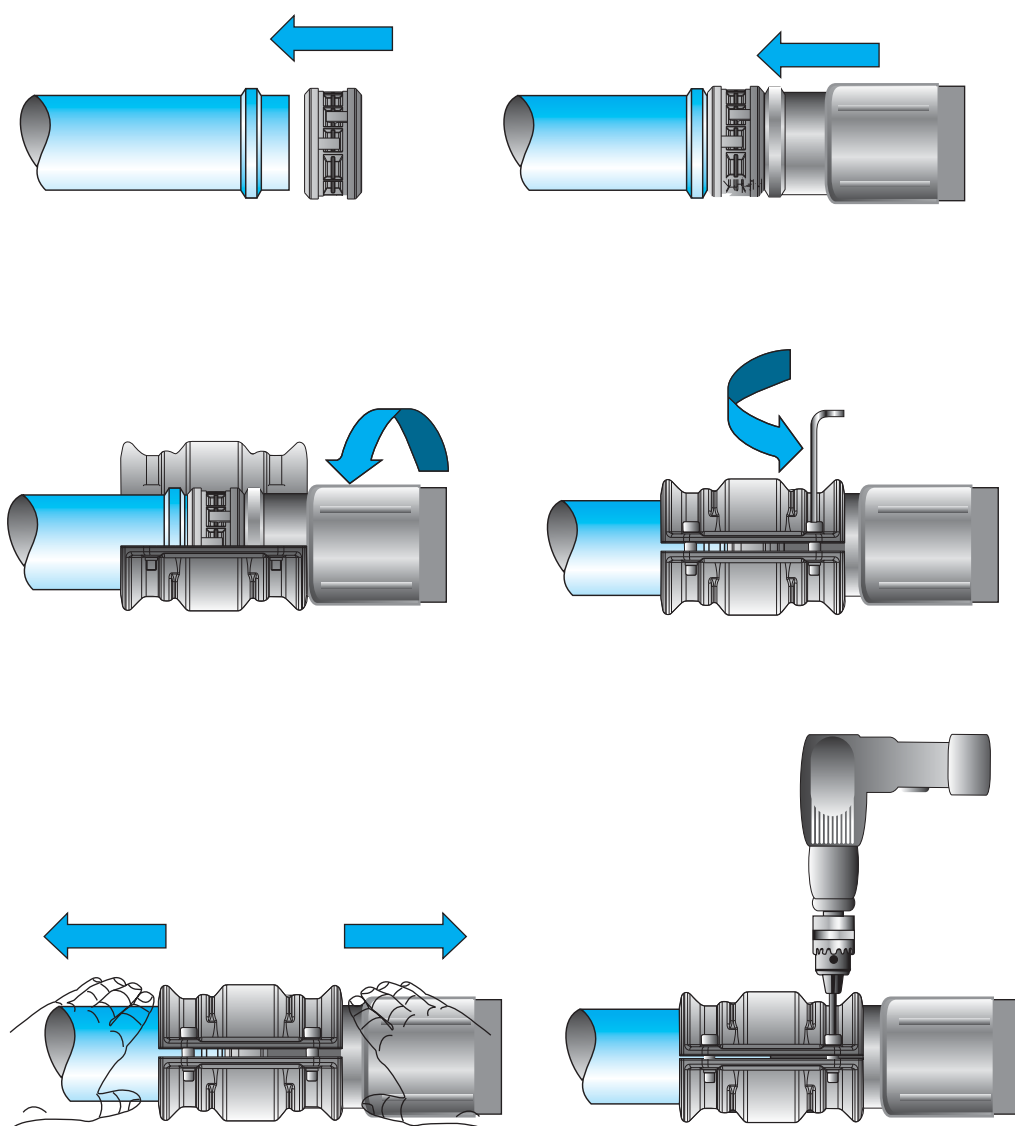
> Transair® flexible hose

> Do's / Don'ts

> Do's
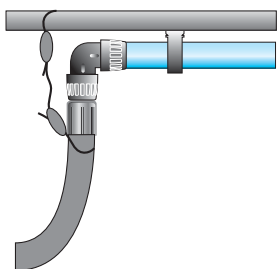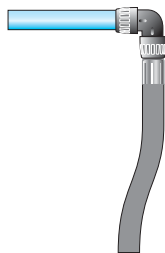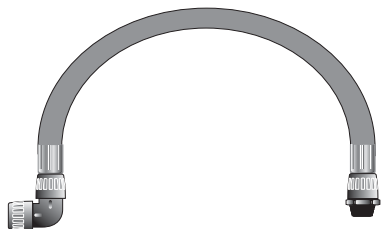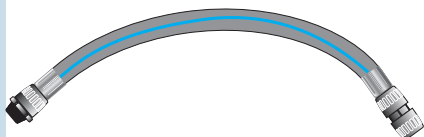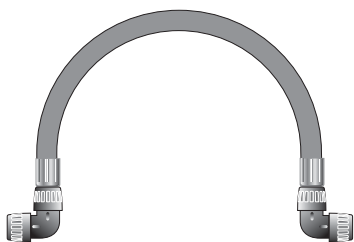
> Don'ts
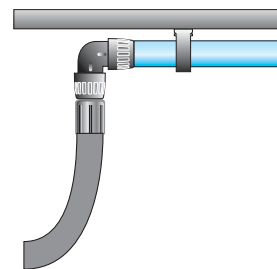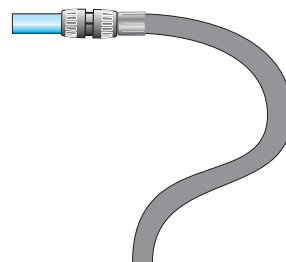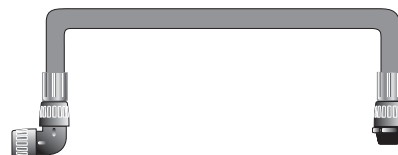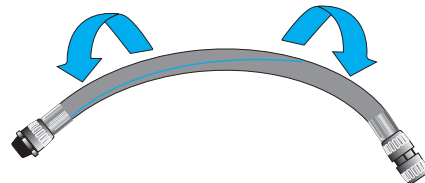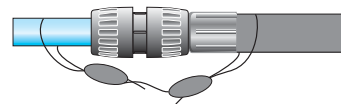
> Installation

> Columns

Floor, wall attachment
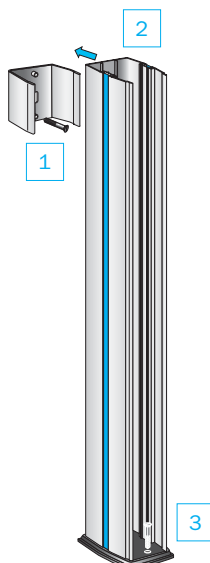
1 - Fix the bracket to the wall
2 - Clip on the column
3 - Screw the base to the floor

Floor, ceiling attachment
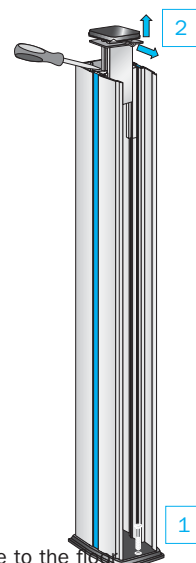
1 - Fix the base to the floor
2 - Release the cylinder to lock the column in position

> Modules

1 - Measure and saw to the required height and module spacing

PVC tube 1025V

Tailpiece adaptor for PVC tube EF26

Female stud fitting ref. 3114 14 17TR

Plug ref. 3126 14 00TR
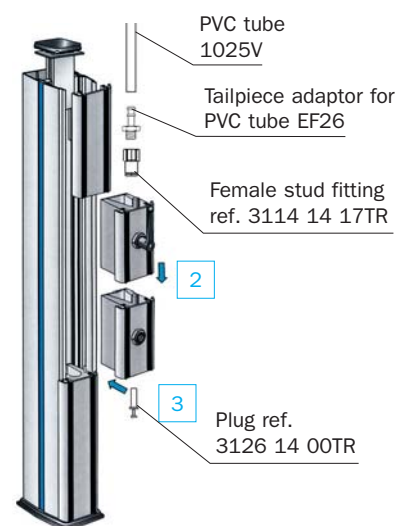
2 - Connect the modules together
3 - Clip into place on the column

> ## Transair® attachments

> ### Transair® clip for Ø 16.5, Ø 25, Ø 40 and Ø 63 rigid pipe
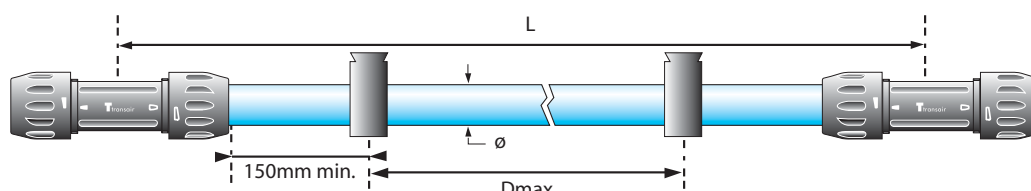
The Transair® fixing clip is the basic component for mounting pipe when installing.
Ø 16,5 – Ø 25 – Ø 40 – Ø 63 Transair® aluminium networks. Only this clip should be used since it since it allows expansion and contraction of the pipe to occur freely.

To ensure good system stability, we recommend the use of at least 2 clips per pipe.

Transair® aluminium pipe should only be mounted using these clips. They should not be substituted by any other type of clip or fixing.

Ø	L (m)	Dmax (m)
16,5	3	2,5
25	3	2,5
25	6	3
40	3	2,5
40	6	4
63	3	2,5
63	6	4

> ### Properties

- Transair® fixing clips for Ø 16,5 - Ø 25 - Ø 40: M6 nuts
- Transair® fixing clips for Ø 63 networks: M10 nuts

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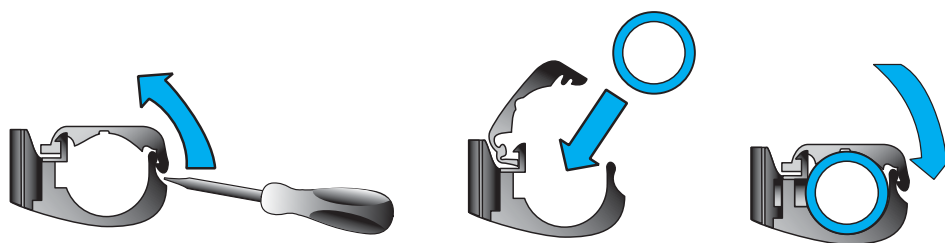
1 - Place the clip as required and open it using a screwdriver.
2 - Insert the pipe into the clip.
3 - Close the clip.

> Spacer

The Transair® 6697 00 03 spacer is used for fitting a run of Transair® pipe using different diameters.

Example :

Ø 63

Ø 40

90 mm

46 mm

44 mm

Spacer for Transair® clip
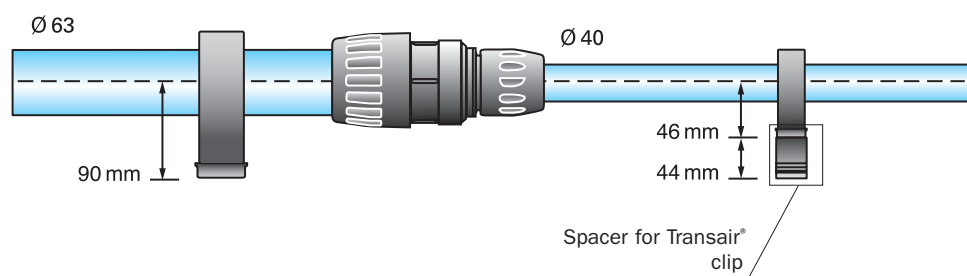
> Transair® fixing clip for Ø 76 - Ø 100 networks

L

ø

150 mm mini
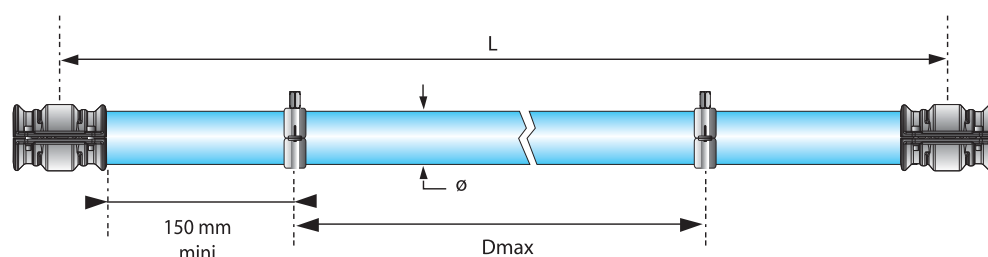
Dmax

Ø	L (m)	Dmax (m)
76	3	2,5
76	6	5
100	3	2,5
100	6	5

To ensure good network stability, we recommend the use of at least 2 fixing clips per length of pipe

Transair® fixing clips for Ø 76 and Ø 100 networks: M8/M10 thread

> Supporting a Transair® system

> Directly onto a wall

> Offset from a wall

1

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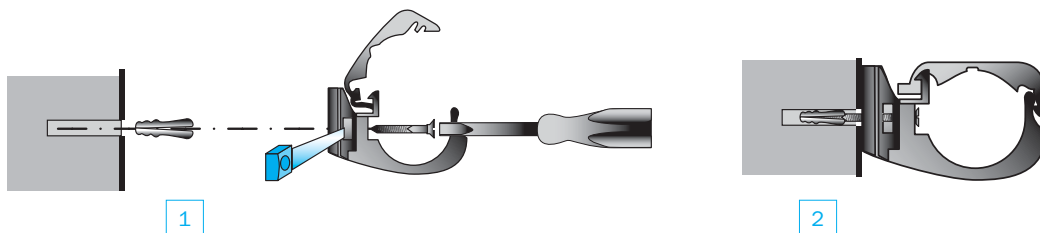
1 - Remove the nut at the base of the
    pipe clip using a screwdriver. Insert the
    screw by passing it through the clip.
2 - Tighten the screw.

> U- channel type mounting bracket
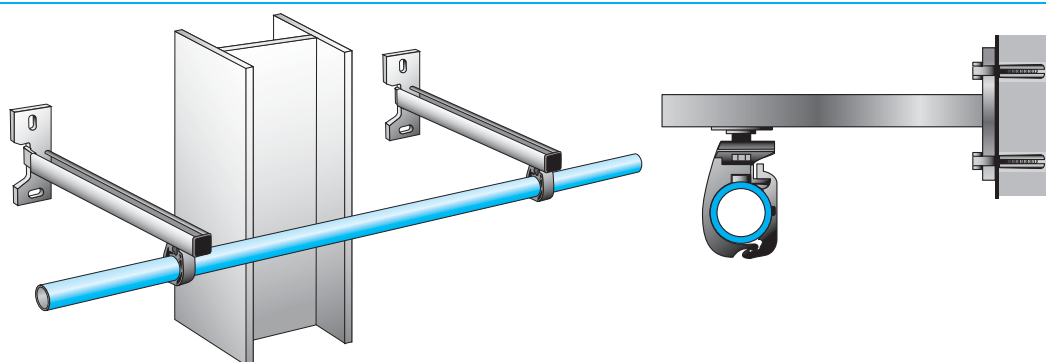
U-channel assemblies are used to offset networks and to bypass obstacles.
They comprise sectional rail ref. 6699 01 01 and a series of attachment accessories
66 99 01 02.

For offsetting a Ø 63 / Ø 76 and Ø 100 air system, we recommend the use of the rail clip
attachment assembly ref. 6699 01 03.
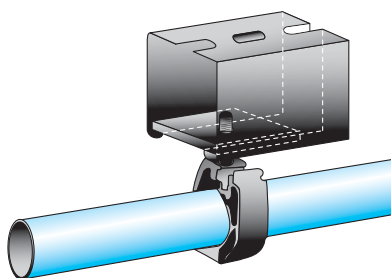
Ø 63
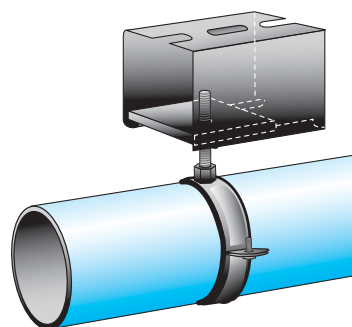
Ø 76 - Ø 100

> Beneath a cabletray
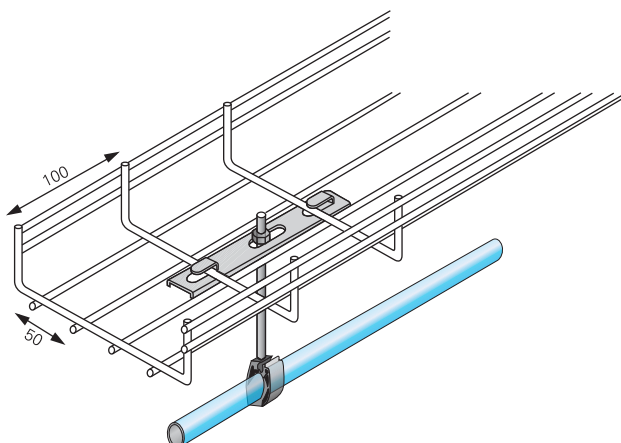
Use the under-cabletray attachment ref. 6699 10 03 and suspend with threaded rod up to M10 diameter

This attachment can be used to suspend networks from Ø 16.5 to Ø 100.

> Threaded rod adapter

Ø 16,5 - Ø 25 - Ø 40   Ø 63   Ø 76 - Ø 100

C1 : M6
C2 : M8 ou M10
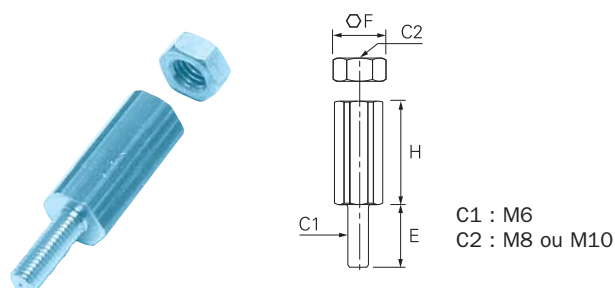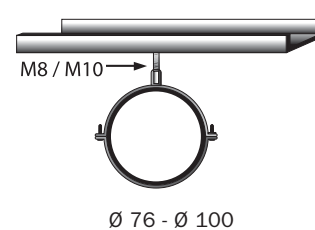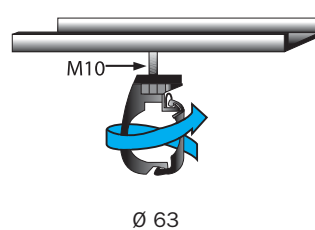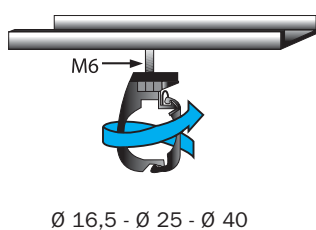
Handy!
The Transair® threaded rod adaptor allows Ø 16,5 , Ø 25 and Ø 40 Transair® pipe clips to be easily suspended under M8 or M10 threaded rod. C2: M8 or M10.

> Supporting a Transair® network

> On a metal beam

> Using beam clamps

Position the clamps ref. 6699 02 onto the RSJ or beam in accordance with the minimum recommended number of attachments per length of pipe and the required distance between attachments, according to the diameter of the pipe
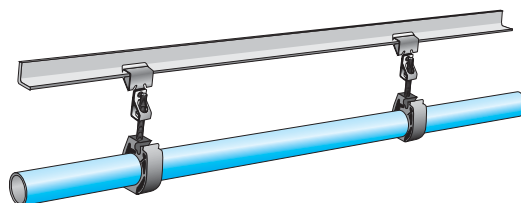
Push-on type beam clamps

Position the clamps ref. 6699 03 onto the RSJ or beam in accordance with the minimum recommended number of attachments per length of pipe and the required distance between attachments, according to the diameter of the pipe
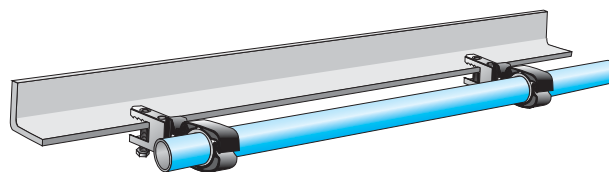
Screw type beam clamps

> U-channel brackets
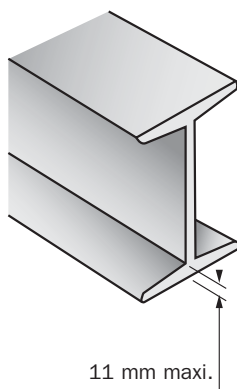
11 mm maxi.
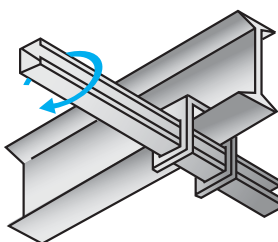
Horizontal assembly
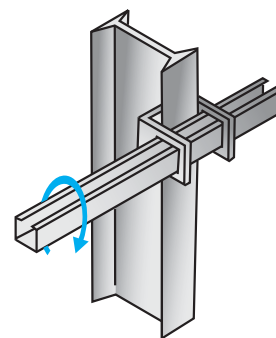
Vertical assembly

Position the RSJ brackets ref. 6999 03 02 on either side of the girder profile, then slide through the U-channel sectional rail.

> Under Canalis®

> KN
(40 to 100A)
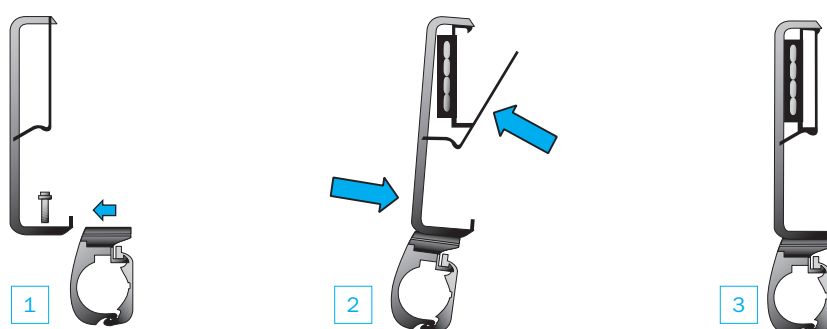
1 - Mount the Transair® pipe clip onto the KN attachment.
2 - Suspend the attachment from the Canalis® network and clip into place
3 - The support is ready.

> KS
(100 to 800A)
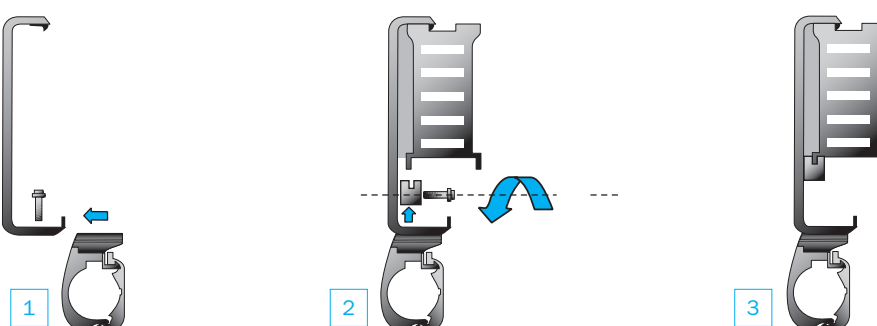
1 - Mount the Transair® pipe clip onto the KS attachment.
2 - Suspend the attachment from the Canalis® network and secure with a screw.
3 - The support is ready.

> Z dimensions

Transair®	Z (mm)	ZI (mm)	Z2 (mm)
4002 40 00	-	57	57
4002 63 00	-	84	98
4012 63 00	-	84	98
4089 17 00	-	29	42
4089 25 00	-	40	55
4099 17 00	-	29	42
4099 25 00	-	40	55
4230 00 40	85	-	-
6612 25 00	29	-	-
6612 40 00	45	-	-
6602 17 00	31	-	-
6602 25 00	40	-	-
6602 40 00	62	-	-
6602 63 00	61	-	-
6604 17 00	-	34	31
6604 25 00	-	48	40
6604 40 00	-	57	57
6604 63 00	-	61	61
6604 63 40	-	61	116
6606 17 00	33	-	-
6606 25 00	48	-	-
6606 40 00	57	-	-
6606 63 00	25	-	-
6651 25 12 04	107	-	-
6651 40 12 04	150	-	-
6662 25 00	52	-	-
6662 25 17	59	-	-
6662 40 17	75	-	-
6662 40 25	68	-	-
6662 63 25	75	-	-
6666 17 25	50	-	-
6666 25 40	71	-	-
6676 17 00	33	-	-
6676 25 00	48	-	-
6676 40 00	57	-	-
6676 63 00	25	-	-
RA69 25 17	47,5	-	-
RA69 40 25	61	-	-
RX02 L1 00	189	-	-
RX02 L3 00	221	-	-
RX04 L1 00	-	145	145
RX04 L3 00	-	155	135
RX04 L3 L1	-	155	135
RX23 L1 04	145	-	-
RX23 L3 04	155	-	-
RX24 L1 40	-	145	228
RX24 L1 63	-	145	285
RX24 L3 40	-	155	241
RX24 L3 63	-	155	298
RX64 L1 63	352	-	-
RX64 L3 63	372	-	-
VR02 L1 00	116	-	-
VR02 L3 00	123	-	-

6606 - 6676

6602

6612

6604

6651

4089 - 4099 - 4002

RX64 + 6606

6666

4230

RA69

6662

RX04

RX24 + 6606

RX02

VR02
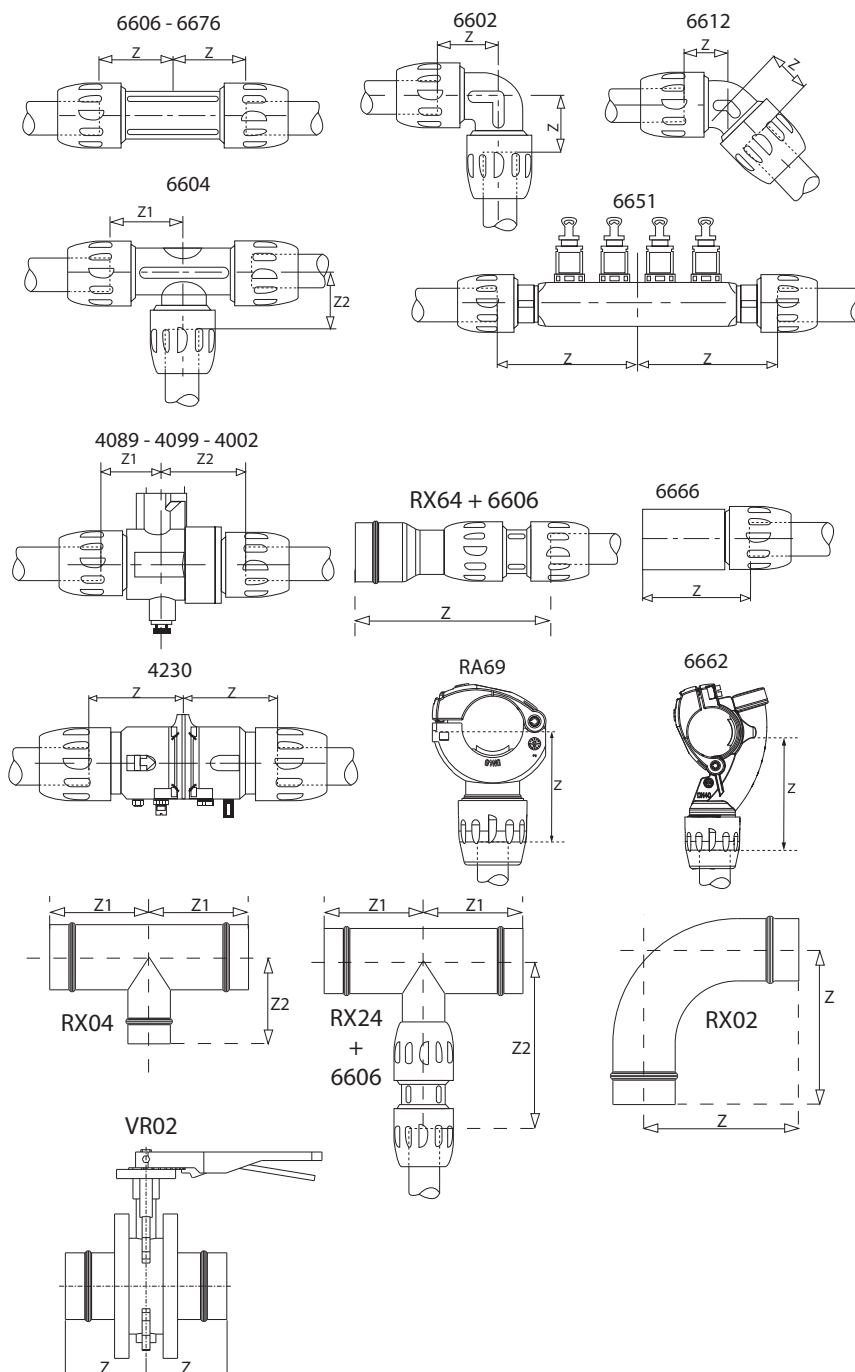
> Expansion / contraction

In order to compensate for the effects of expansion and contraction due to variations in temperature, any fluctuations in the length of the Transair® aluminium pipe network should be calculated.

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

$\triangle$T : difference between temperature when installing and maximum operating temperature (in °C)

$\triangle$L: line length variation (in mm)

For Transair® Ø 16.5 - Ø 25 - Ø 40 - Ø 63 - Ø 76 - Ø 100 aluminium pipe networks :

$$\triangle L = \underbrace{(a \times L)}_{1} + \underbrace{(0.024 \times L \times \triangle T)}_{2}$$

1 - Expansion related to pipe retraction in the connector

2 - Expansion related to temperature variations

	Ø 16.5	Ø 25	Ø 40	Ø 63	Ø 76	Ø 100
3 m pipe	a=0,06	a=0,20	a=0,40	a=0,73	a=1,0	a=1,0
6 m pipe	-	a=0,10	a=0,20	a=0,38	a=0,50	a=0,50

The following tables give the length variations in mm according to network length, diameter and temperature variation, for Transair® aluminium pipe

$\triangle$T = 15°C

3 m pipe

L (m)	Ø 16.5	Ø 25	Ø 40	Ø 63	Ø 76	Ø 100
30	13	17	23	34	37	37
40	17	22	30	45	50	50
50	21	28	38	56	62	62
60	25	34	46	67	74	74
70	29	36	53	78	87	87
80	34	45	61	90	99	99

6 m pipe

L (m)	Ø 25	Ø 40	Ø 63	Ø 76	Ø 100
30	14	17	22	22	22
40	18	22	30	30	30
50	23	28	37	37	37
60	28	34	44	44	44
70	29	39	52	52	52
80	37	45	59	59	59

$\triangle$T = 20°C

3 m pipe

L (m)	Ø 16.5	Ø 25	Ø 40	Ø 63	Ø 76	Ø 100
30	16	20	26	37	40	40
40	22	27	35	50	53	53
50	27	34	44	62	66	66
60	32	41	53	74	79	79
70	38	43	62	87	92	92
80	43	54	70	99	106	106

6 m pipe

L (m)	Ø 25	Ø 40	Ø 63	Ø 76	Ø 100
30	17	20	26	25	25
40	23	27	34	33	33
50	29	34	43	41	41
60	35	41	52	49	49
70	36	48	60	57	57
80	46	54	69	66	66

> Expansion / contraction

△T = 25°C

3 m pipe

L (m)	Ø 16.5	Ø 25	Ø 40	Ø 63	Ø 76	Ø 100
30	20	24	30	41	42	42
40	26	32	40	54	56	56
50	33	40	50	68	70	70
60	40	48	60	82	84	84
70	46	50	70	95	98	98
80	53	64	80	109	112	112

6 m pipe

L (m)	Ø 25	Ø 40	Ø 63	Ø 76	Ø 100
30	21	24	29	27	27
40	28	32	39	36	36
50	35	40	49	45	45
60	42	48	59	54	54
70	43	56	69	63	63
80	56	64	78	72	72

△T = 30°C

3 m pipe

L (m)	Ø 16.5	Ø 25	Ø 40	Ø 63	Ø 76	Ø 100
30	23	28	34	44	44	44
40	31	37	45	59	59	59
50	39	46	56	74	74	74
60	47	55	67	89	89	89
70	55	57	78	104	104	104
80	62	74	90	118	118	118

6 m pipe

L (m)	Ø 25	Ø 40	Ø 63	Ø 76	Ø 100
30	25	28	33	29	29
40	33	37	44	39	39
50	41	46	55	49	49
60	49	55	66	59	59
70	50	64	77	69	69
80	66	74	88	78	78

> $\triangle T = 35°C$

3 m pipe

L (m)	Ø 16,5	Ø 25	Ø 40	Ø 63	Ø 76	Ø 100
30	27	31	37	48	47	47
40	36	42	50	64	62	62
50	45	52	62	80	78	78
60	54	62	74	96	94	94
70	63	64	87	112	109	109
80	72	83	99	128	125	125

6 m pipe

L (m)	Ø 25	Ø 40	Ø 63	Ø 76	Ø 100
30	28	31	37	32	32
40	38	42	49	42	42
50	47	52	61	53	53
60	56	62	73	64	64
70	57	73	85	74	74
80	75	83	98	85	85

> **Example**

Dmax (m) — Pipe: 3 m length — T°C = 20°C - H = 0,75m
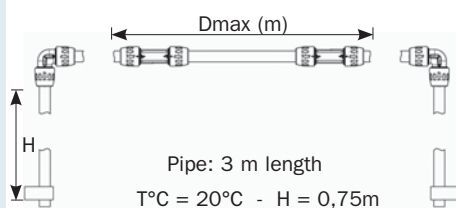
Case no. 1:
Maximum distance, without expansion loop, from a fixed point dependant on Transair® diameter (2 elbows)

Ø Transair®	16,5	25	40	63	76	100
Dmax. (m)	50	40	30	24	15	15

Dmax (m) — Fixed point — Pipe: 3 m length — T°C = 20°C - H = 1,5m
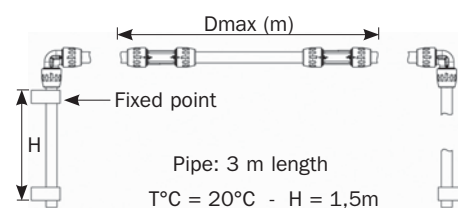
Case no. 2:
Maximum distance, without expansion loop, dependant on Transair® diameter (2 elbows - 1 fixed point)

Ø Transair®	16,5	25	40	63	76	100
Dmax. (m)	50	40	30	25	15	15

Dmax (m) — Pipe: 3 m length — T°C = 20°C - H = 1,5m
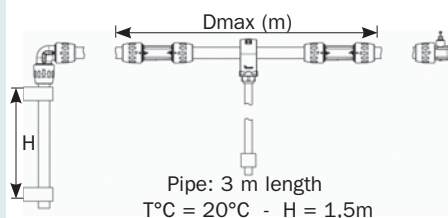
Case no. 3:
Maximum distance for fitting a bracket, without expansion loop, dependant on Transair® diameter (1 elbow - 1 bracket)

Ø Transair®	16,5	25	40	63	76	100
Dmax. (m)	48	38	30	25	7,5	7,5

Dmax (m) — Pipe: 3 m length — T°C = 20°C - H = 1,5m
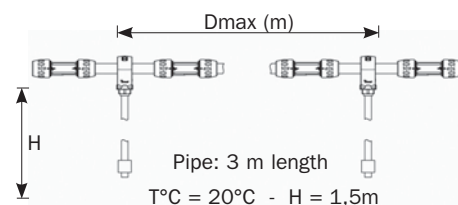
Case no. 4:
Maximum distance for fitting a bracket, without expansion loop, dependant on Transair® diameter (2 brackets)

Ø Transair®	16,5	25	40	63	76	100
Dmax. (m)	80	70	55	40	15	15

> Practical information

> Expansion / contraction

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

> Direction change

> Using an elbow

> **For Transair®**
Ø 16.5 - Ø 25 - Ø 40 - Ø 63
aluminium pipe networks

H= 0,75 m	$\triangle$L1= 15 mm
H= 1,50 m	$\triangle$L1= 30 mm

> **For Transair®**
Ø 76 - Ø 100
aluminium pipe networks

H= 0,75 m	$\triangle$L1= 10 mm
H= 1,50 m	$\triangle$L1= 20 mm

> Using a quick assembly bracket

> **For Transair® Ø 16.5 - Ø 25 - Ø 40 - Ø 63**
aluminium pipe networks
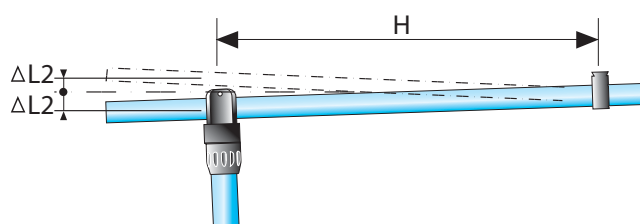
Ø1	Ø2	H (m)	$\triangle$L2 (mm)	$\triangle$L3 (mm)
25	16,5	1,5	13	26
25	25	1,5	13	26
40	16,5	1,5	13	26
40	25	1,5	13	26
63	25	1,5	13	26
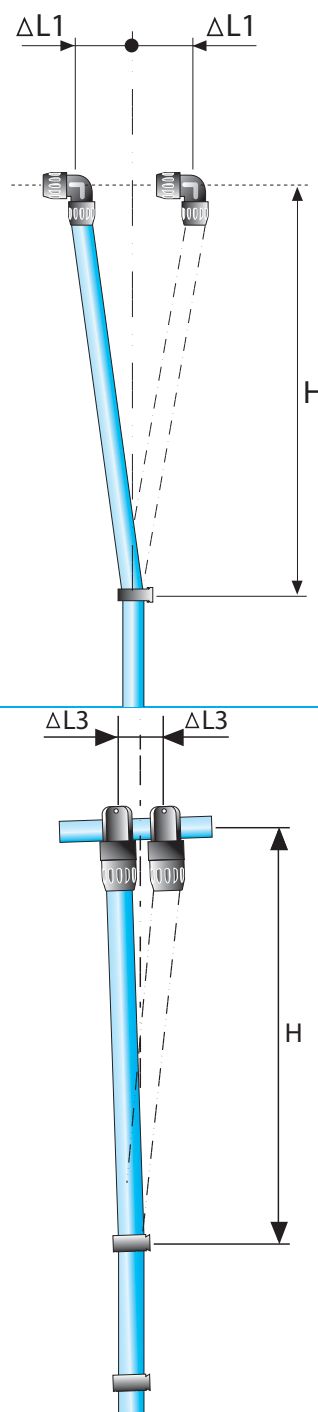
The length variation $\triangle$L, calculated for the Transair® line, must always be equal to or less than $\triangle$L2 and $\triangle$L3.
If this is not the case, then an expansion loop, using Transair® flexible hose, must be added.

> **For Transair® Ø 76 -Ø 100 aluminium pipe networks**

> **Changing direction with a tee piece**
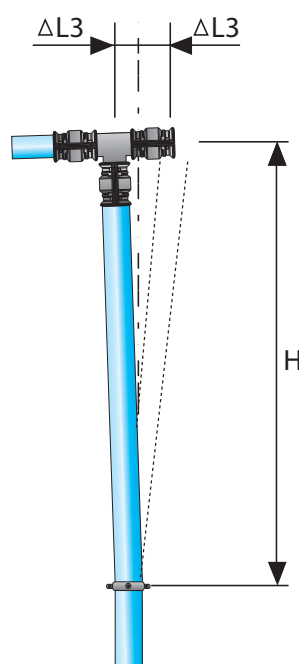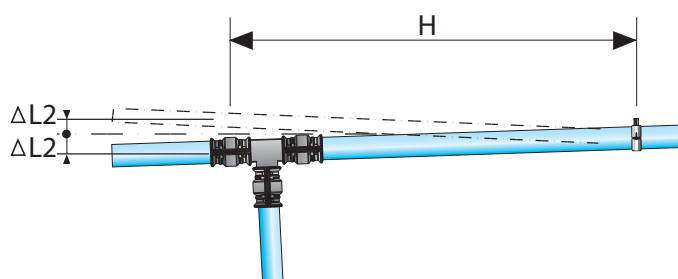
Ø	H (m)	ΔL2 maxi (mm)	ΔL3 maxi (mm)
76	0,75	10	10
100	0,75	10	10

> Practical information

> Conversion charts

> Length

millimetre (mm)	metre (m)	inch (in)	foot (ft)	yard (yd)
10	0,01	0,39	0,03	0,01
20	0,02	0,79	0,07	0,02
30	0,03	1,18	0,10	0,03
40	0,04	1,57	0,13	0,04
50	0,05	1,97	0,16	0,05
60	0,06	2,36	0,20	0,07
70	0,07	2,76	0,23	0,08
80	0,08	3,15	0,26	0,09
90	0,09	3,54	0,30	0,10
100	0,10	3,94	0,33	0,11
150	0,15	5,91	0,49	0,16
200	0,20	7,87	0,66	0,22
250	0,25	9,84	0,82	0,27
300	0,30	11,81	0,98	0,33
350	0,35	13,78	1,15	0,38
400	0,40	15,75	1,31	0,44
450	0,45	17,72	1,48	0,49
500	0,50	19,69	1,64	0,55
550	0,55	21,65	1,80	0,60
600	0,60	23,62	1,97	0,65
700	0,70	27,56	2,30	0,76
800	0,80	31,50	2,62	0,87
900	0,90	35,43	2,95	0,98
1 000	1,00	39,37	3,28	1,09

> 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

> Flow rate

litres per second (l/s)	litres per minute (l/min)	cubic metres per minute (m³/min)	cubic metres 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 consumption at an operating pressure of 6 bar (Nm³/h)
Small process controls, instrumentation, pneumatic logic units	7
Paint spray gun, small impact wrench, light/medium drill, blowgun	From 9 to 30
Polisher, screwdriver	42
Sheet metal cutter, large impact wrench, automatic plane	48
Small automatic machines, miscellaneous tooling	54
Large tools, power machines and associated equipment	61
Air hoist, grinder	126

Quality control department (Metallurgy)

Transair® Ø 25
Direct drops and offset drops

Maintenance workshop (Automotive)

Transair® Ø 25
Main network fixed under RSJ
Offset drops from a quick
assembly bracket

Production workshop (Plastics processing)

Transair® Ø 40
Supply of machinery from
a swerved drop

Main compressed air
pipework system
(Aeronautics)
Transair® Ø 100 and Ø 40

Outside compressor room
(Furniture industry)
Transair® Ø 76
90° change of direction

Compressor room
(Electronics)
Transair® Ø 40 and Ø 16,5

Assembly workshop (Mechanics)

Transair® Ø 63 and Ø 25
Offset main network from
U-channel and threaded rod

Manufacturing cell (Automotive)

Transair® Ø 76 and Ø 40
Reduction from Ø 76 to Ø 40
Double outlet

Laboratory (Chemistry)

Transair® Ø 40
Instant connection

**Laboratory
(Packaging)**

Transair® Ø 63 and Ø 25
Offset drops from a quick
assembly bracket

**Repair workshop
(Garage trade)**

Transair® Ø 25 and Ø 16,5
Wall brackets, FRL and
Transair® hose reel

**Machinery
(Watchmaking)**

Transair® Ø 25