

ASSEMBLY INSTRUCTIONS

We advise users to read pages 1 to 7 before beginning assembly

Intended Use

The *kaisair* pipe system is designed for use with compressed-air and vacuum systems up to 15 bar. *kaisair* are not liable for any damage caused by misuse.

Assembly

The following equipment is needed for assembly:

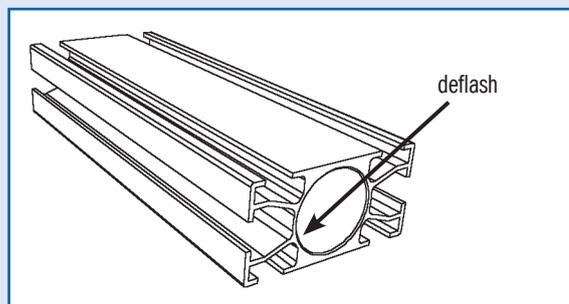
- Circular saw
- A SW4 and a SW5 Allen key
- Torque wrench up to 25 N/m
- (Torque wrench up to 50 N/m by varioball Ø 75)
- Pipe deburrer
- Lubricant
- A hand drill
- *kaisair* drilling template

Warning!

Always adhere to your country's safety regulations!

Preparation of the *kaisair* pipes

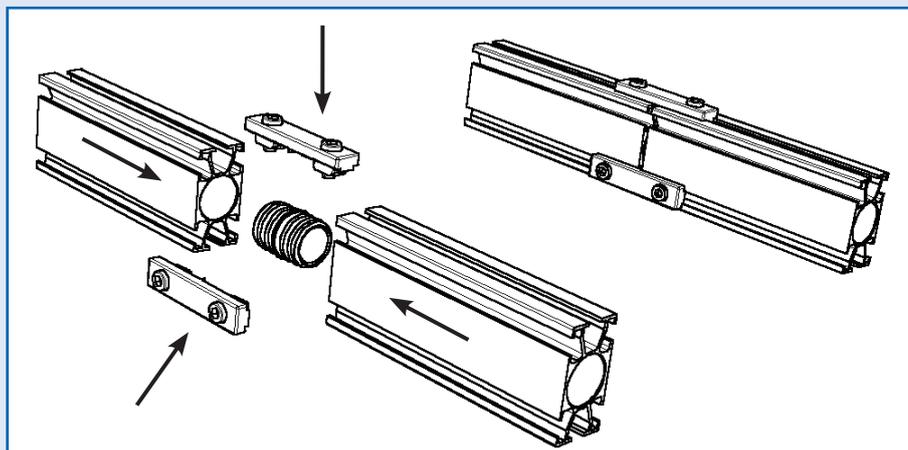
The profile pipes are delivered in 6m lengths. A circular saw suitable for aluminium should be used to cut to length. After cutting the pipes they should be carefully deburred with a pipe deburrer to avoid damage of the O-ring when joining the pipes. The pipes should then be cleaned of any shavings or splinters. Dampening of the inside of the pipes makes assembly easier.



Making a horizontal join Step 1

Join two deburred lengths of pipe together using a straight connector. Finally fit the two clamping strips / clamping plates. It is essential to fit the clamping strips / clamping plates horizontally, regardless of which profile grooves are used. Number of clamping strips / clamping plates used:

- Ø 25 / Ø 38 : 2 St. clamping strips
- Ø 50 : 4 St. clamping strips
- Ø 75 / Ø 100 : 2 St. clamping plates

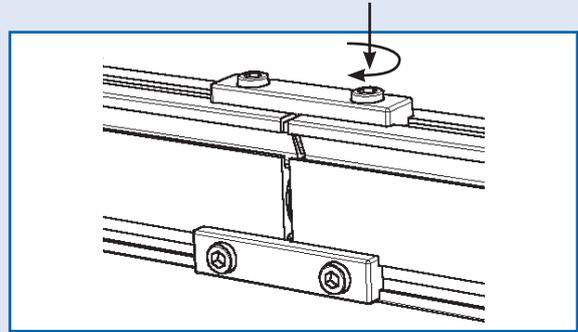


Making a horizontal join

Step 2

Hand tighten the screws in the clamping strips and clamping plates by turning them 90° in a clockwise direction until a resistance allows no further turning. Then tighten the screws with a torque wrench according to the following table.

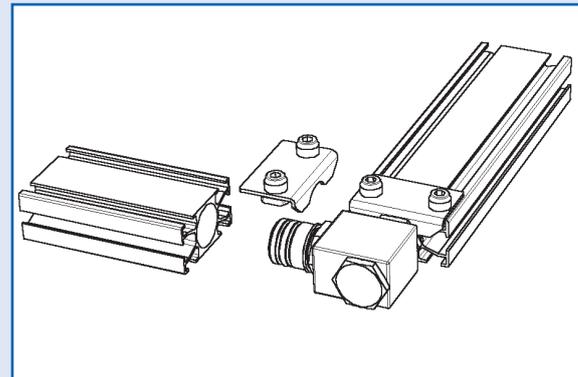
Pipe diameter	Tightening torque
Ø 25, Ø 38, Ø 50	10 N/m
Ø 75	14 N/m
Ø 100	18 N/m



Making angle joins

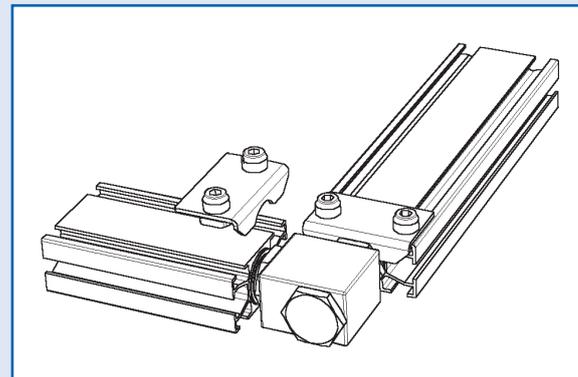
Step 1

Join the required number of deburred pipes together using a 3-way or 5-way node or an L-connector. Make sure the pipes are flush with the connector.



Step 2

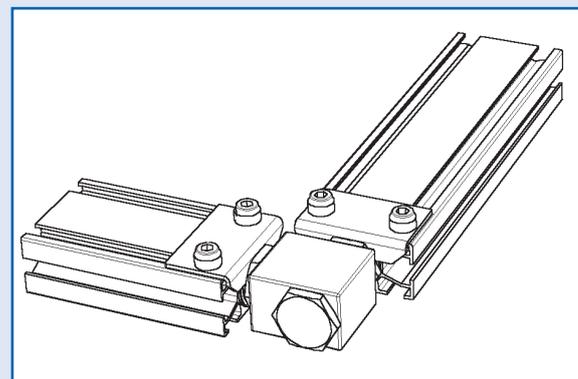
Fit the fixing plate in the T-groove and push down into the gap between the join and the nut on the wider side of the profile pipe.



Step 3

Hand tighten the screws in the fixing plate by turning them 90° in a clockwise direction until a resistance allows no further turning. Then tighten the screws with a torque wrench according to the following table. All profile pipes from an L-connector and from 3-way or 5-way nodes have to be connected to a fixing plate. When using a pipe diameter of 100 use two opposing fixing plates.

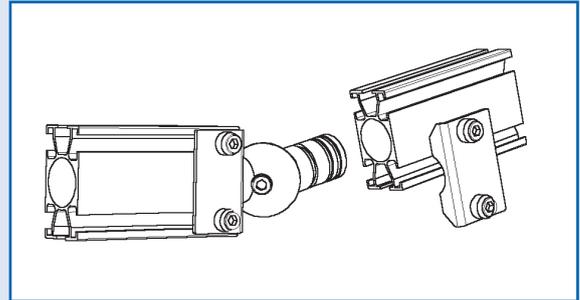
Pipe diameter	Tightening torque
Ø 25, Ø 38, Ø 50	10 N/m
Ø 75	14 N/m
Ø 100	18 N/m



Making stepless angle joins

Step 1

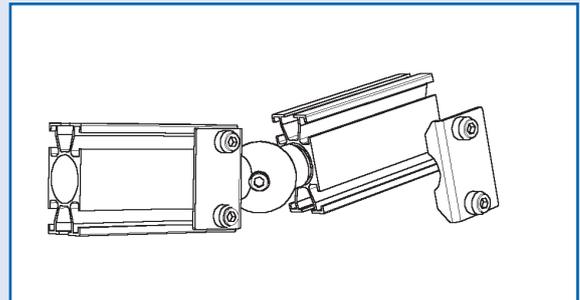
Join two deburred pipes with a varioball. Ensure the pipes are flush with the connector. Fit the fixing plate in the T-groove and push down into the gap between the join and the nut on the wider side of the profile pipe.



Step 2

Hand tighten the screws in the fixing plate by turning them 90° in a clockwise direction until a resistance allows no further turning. Then tighten the screws with a torque wrench according to the following table.

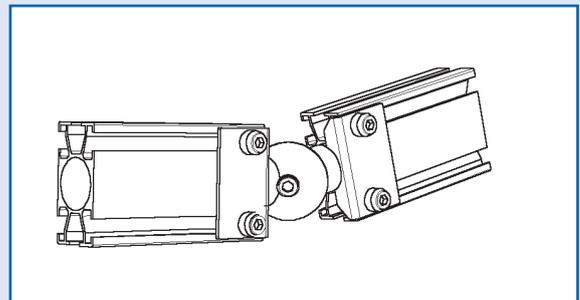
Pipe diameter	Tightening torque
Ø 25, Ø 38, Ø 50	10 N/m
Ø 75	14 N/m
Ø 100	18 N/m



Step 3

Using a torque wrench tighten the single screw inside the varioball according to the following table, so that the angle is locked in place.

Pipe diameter	Tightening torque
Ø 25, Ø 38	10 N/m
Ø 50	25 N/m
Ø 75	50 N/m



Making an outlet point

We recommend fitting of the outlet plates after setting up the main system as drilling under slight pressure reduces time lost due to removing shavings from the profile pipes.

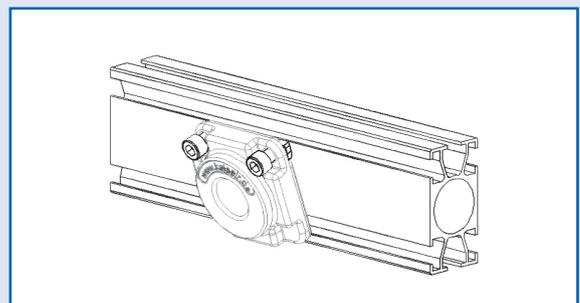
Safety information:

Please wear ear protection and safety glasses when fitting the outlet plates under pressure!



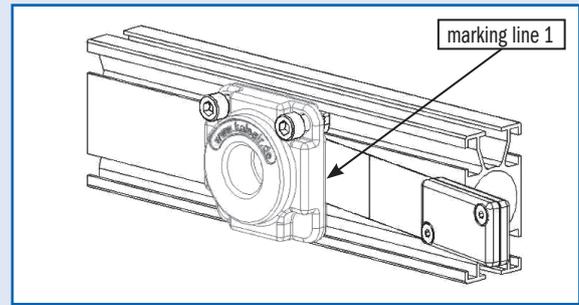
Step 1

Mark the outlet point. Moisten the surface of the pipe and the O-ring of the outlet plate with acid-free grease. At an angle of approximately 30° attach the outlet plate into the lower T-groove located on the broad side of the pipe.



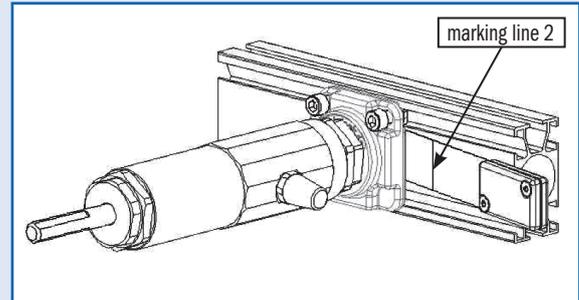
Step 2

Slide the outlet plate into the second T-groove. Secure the two screws in the outlet plate with an Allan key SW 5 by turning them 90° in a clockwise direction until a resistance allows no further turning. Tighten the screws to the torque of 8 N/m. Now slide the gate valve into the groove between the pipe and the outlet plate up to the first marking line.



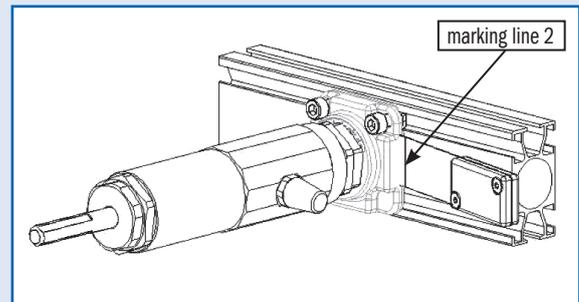
Step 3

Screw the drilling template into the outlet plate. Drill through the profile pipe using a standard drilling machine. The shavings will collect in the drilling template. The pressure will escape through the filter in the drilling template.



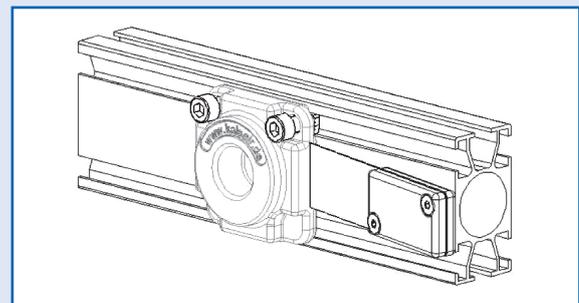
Step 4

Remove the drilling machine. Slide the gate valve sideways up to the second marking line.



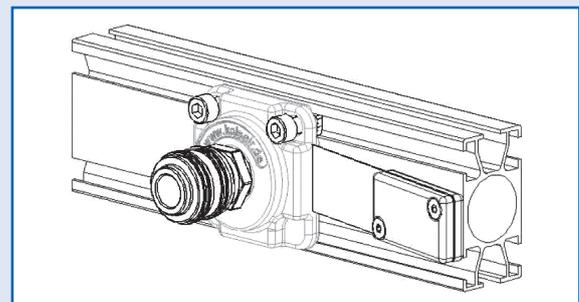
Step 5

Screw out the drilling template. The gate valve will prevent air outflow.



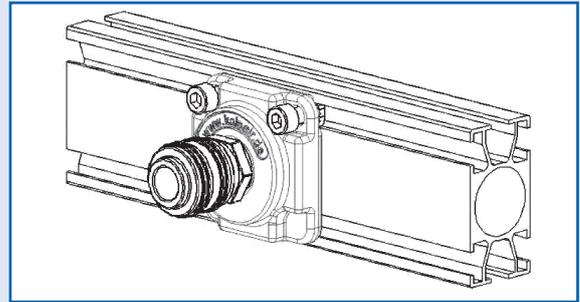
Step 6

Screw in a coupling or create a connection to a load.



Step 7

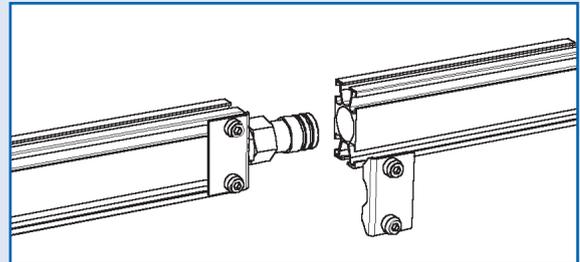
Check the connection and then take out the gate valve.



Making a horizontal extension join

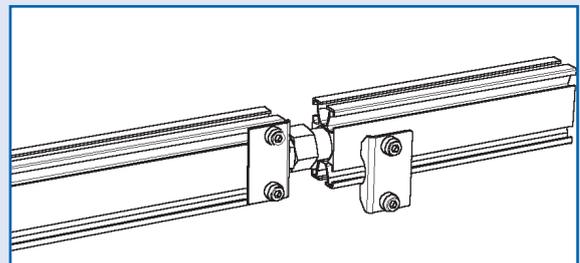
Step 1

We advise you to use expansion connectors at regular intervals when using lines of over 30 m. Join two deburred profile pipes with an extension connector. Put a fixing plate into the narrow groove next to the collar and into the T-grooves on the broad side of the pipe.



Step 2

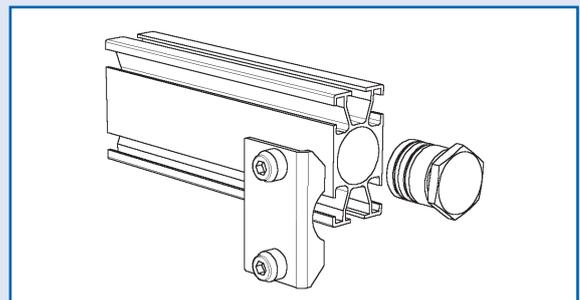
Put another fixing plate into the wide groove next to the hexagon and into the T-grooves on the broad side of the pipe. Hand tighten the screws in the fixing plate by turning them 90° in a clockwise direction until a resistance allows no further turning. Then tighten the screws to 10 N/m. When using the pipe diameter 38 two opposing fixing plates have to be used in the wider groove. When using pipe diameter 50 two opposing fixings have to be used in each groove.



Closing a system

Step 1

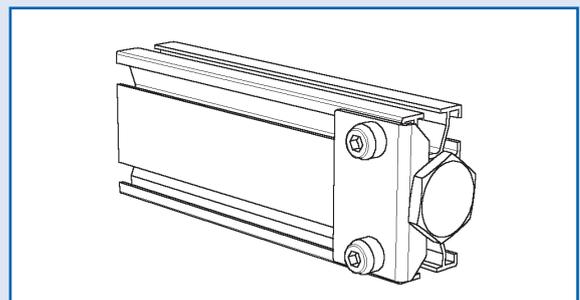
Push the plug into the pipe up until the collar. Put the fixing plate into the T-grooves and into the groove between hexagon and collar on the broad side of the pipe.



Step 2

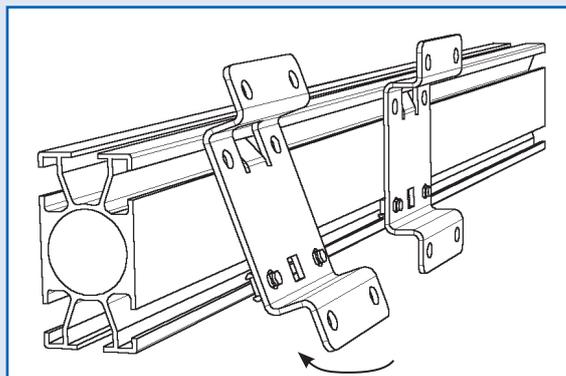
Hand tighten the screws in the fixing plate by turning them 90° in a clockwise direction until a resistance allows no further turning. Then tighten the screws with a torque wrench according to the following table. When using a pipe diameter of 100 use two opposing fixing plates.

Pipe diameter	Tightening torque
Ø 25, Ø 38, Ø 50	10 N/m
Ø 75	14 N/m
Ø 100	18 N/m



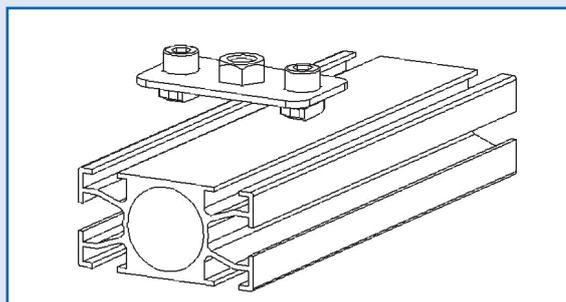
Fixing the wall brackets H20 and H50

Slot the protruding lip of the wall bracket into one of the grooves on the broad side of the pipe. Then push the wall bracket into the second groove. The pipe should be secured with wall brackets every 2.5 m. For ceiling attachment alternate between the left and the right groove when fastening the protruding lip of the wall brackets.

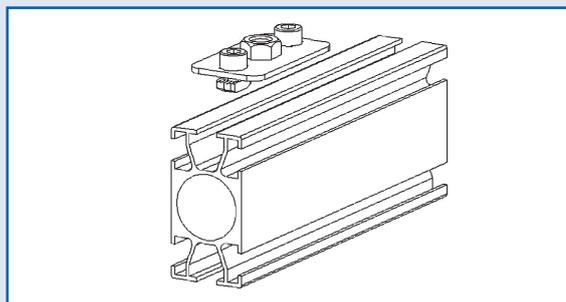


Fixing the wall brackets vario

Slot the wall bracket into the T-grooves on the broad side of the pipe. Hand tighten the screws in the wall bracket by turning them 90° in a clockwise direction until a resistance allows no further turning. Then tighten the screws to 10 N/m max.



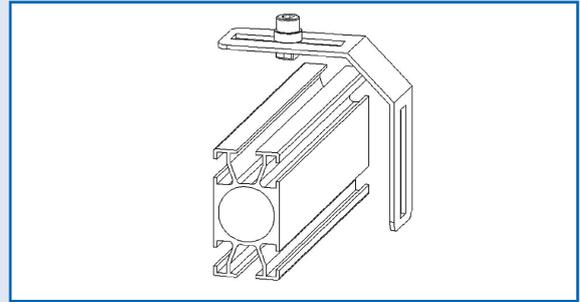
Slot the wall bracket into the T-grooves on the narrow side of the pipe. Hand tighten the screws in the fixing plate by turning them 90° in a clockwise direction until a resistance allows no further turning. Then tighten the screws to 10 N/m max.



Fixing the wall bracket slim

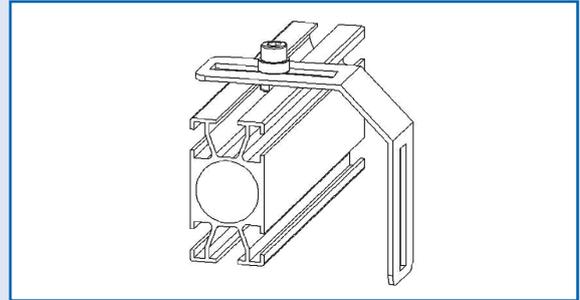
Step 1

Insert the slot tenon into the wall bracket. Hand tighten the screw by turning it 90° in a clockwise direction.



Step 2

Slot the T-groove into the slot tenon on the broad side or on the narrow side of the pipe. Hand tighten the screws in the fixing plate by turning them 90° in a clockwise direction until a resistance allows no further turning. Then tighten the screws to 10 N/m max.



Activating the system

- Ensure correct assembly of all connecting elements
- Check all screws with a torque wrench
- Pressurise the system to 2 bar
- Check the entire system for leaks
- Gradually raise the system pressure to working level
- Close off inlet
- Check again for leaks
- Bring the system to a halt and check for pressure loss
- During release of the system only assembly personnel should be present
- Mark the pipes according to the flow substances e.g. green for compressed air

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