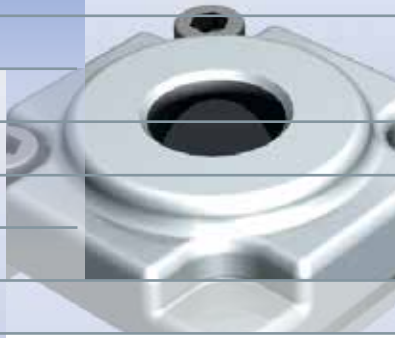


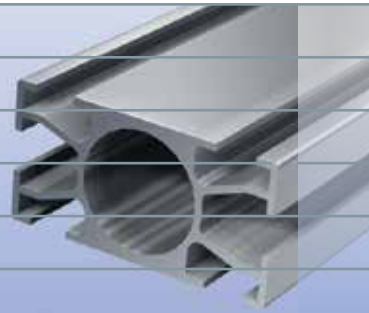
*simple assembly*



*patented*

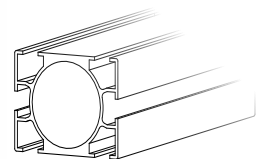


*economical*



**AN INNOVATIVE  
ALUMINUM - PIPEWORK SYSTEM**

**kaissair**<sup>®</sup>



**COMPRESSED-AIR SYSTEMS**

# KAISAIR - AN INNOVATIVE PIPEWORK SYSTEM WITH GREATER VALUE

Unique and flexible all-aluminum system, diameter range: 20 mm to 100 mm

Profile and round tube change with the same connectors

Quick and easy installation

Greater air flow using the same pipe diameter

Leak-proof and non-dissipative thanks to a double o-ring seal

System is expandable under working pressure without a ball valve for a trouble-free production process

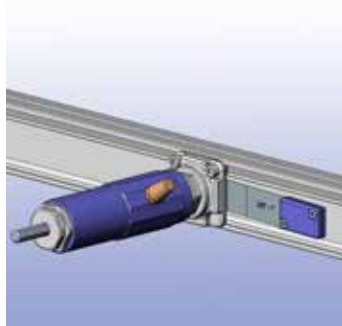
## Advantages

### ✓ INOVATIVE



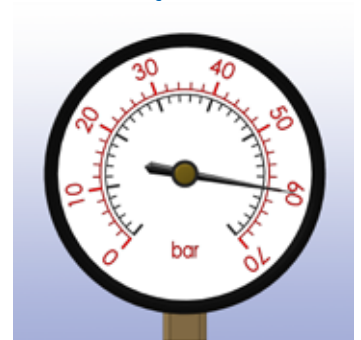
Kaisair is a patented aluminium connector system with a diameter range from Ø20-100mm. It's easy to assemble, flexible and safe. Kaisair can switch between profile tubes PROFI, SEMI and round tube ECO, with the same connector parts.

### ✓ FLEXIBLE, ECONOMICAL



Using unique components, Kaisair can be adapted to your production even while under operating pressure. This enables your production process to proceed undisturbed. The advantages are low installation, maintenance and operating costs.

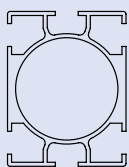
### ✓ GUARANTEED QUALITY



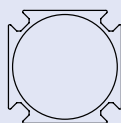
All Kaisair components have been tested by the German TÜV testing centre at 60 bar. With a safety factor of 4, the system is approved by the southern German TÜV up to an operating pressure of 15 bar. This is confirmed with a TÜV certificate.

## Kaisair systems:

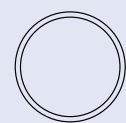
### SYSTEM PROFI



### SYSTEM SEMI



### SYSTEM ECO



## CONCLUSION

The essential benefits for your production are maximum compressed air quality, increased flexibility and economic viability due to significant time-savings.

## SYSTEM ECO Ø20, Ø25, Ø38, Ø50, Ø75

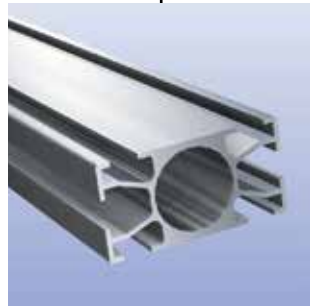
The aluminium tubes can be combined with all profile connectors.



## SYSTEM SEMI Ø25, Ø38, Ø50



## SYSTEM PROFI Ø25, Ø38, Ø50, Ø75, Ø100



### PROFILE PIPES

Extruded aluminum profile pipes form the key element of our system. Their advantages are: great stability, light weight and an absolutely smooth inner surface of the pipes. We supply profile pipes with the inner pipe diameters of 25, 38, 50, 75 and 100 mm with natural or anodized surfaces.



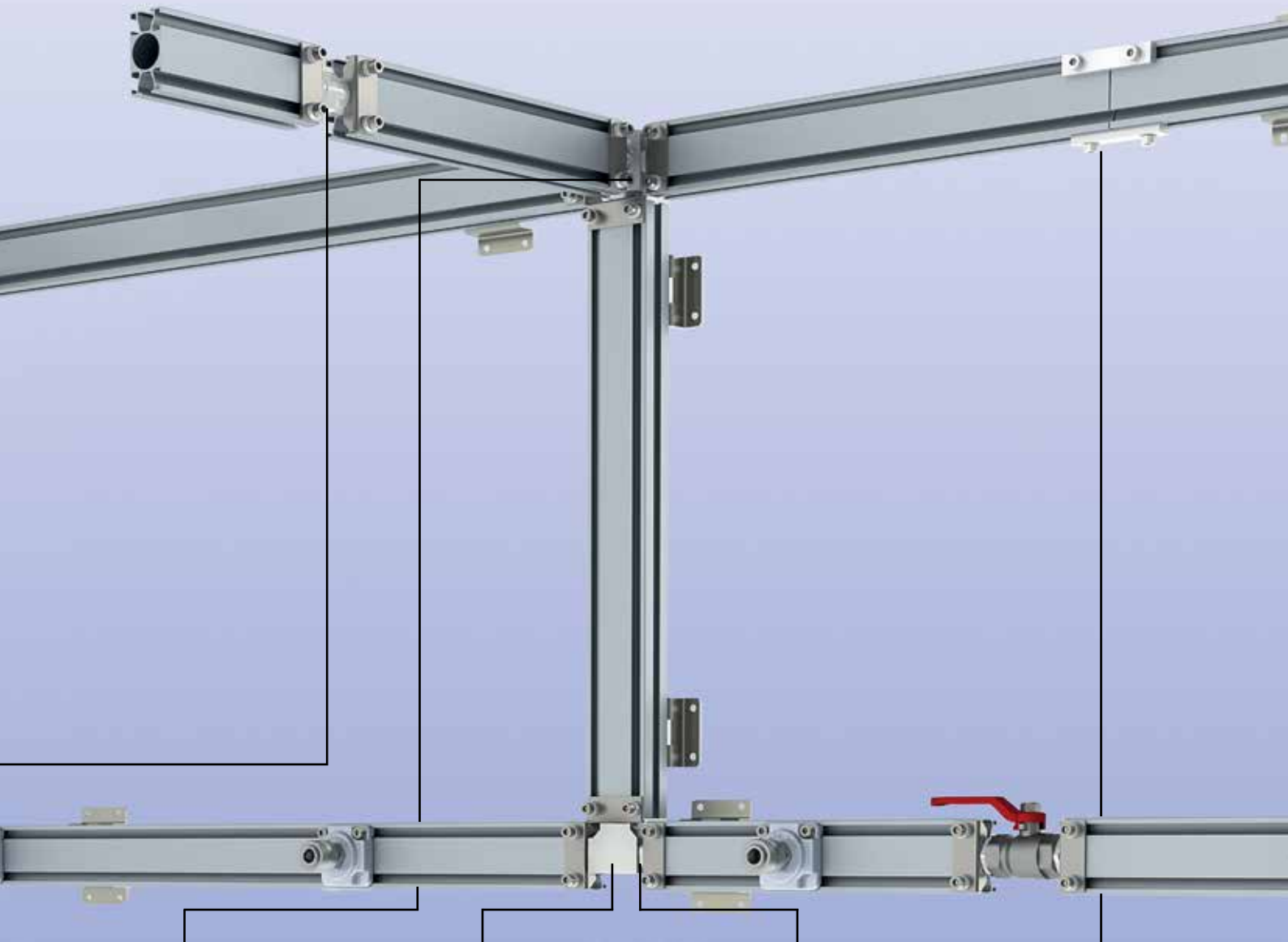
### OUTLET-PLATE

The Kaisair outlet-plate is secured by slotting it into the profile groove. Next, the screws are tightened with a quarter turn past the finger-tight position. Drilling while the system is under working pressure **without using a ball valve** is made possible by using the Kaisair drilling template and the Kaisair gate valve.



### EXTENDER

The extender can compensate expansions and contractions of the materials caused by heat or coldness. If you have a linear installation of pipes longer than 30 m, we recommend you to use extenders in regular intervals. Using extenders you can replace profile pipes in preinstalled systems.



### 3-WAY NODE

In addition to the standard L-joint, we offer a versatile 3-way node which can be used as an L-joint or a T-joint. Once it is installed it can be converted from the L-joint into the T-joint.



### 5-WAY NODE

We supply our versatile 5-way node as a 2-way-, 3-way-, 4-way- or 5-way node. Once it is installed it can be converted. It offers great flexibility.



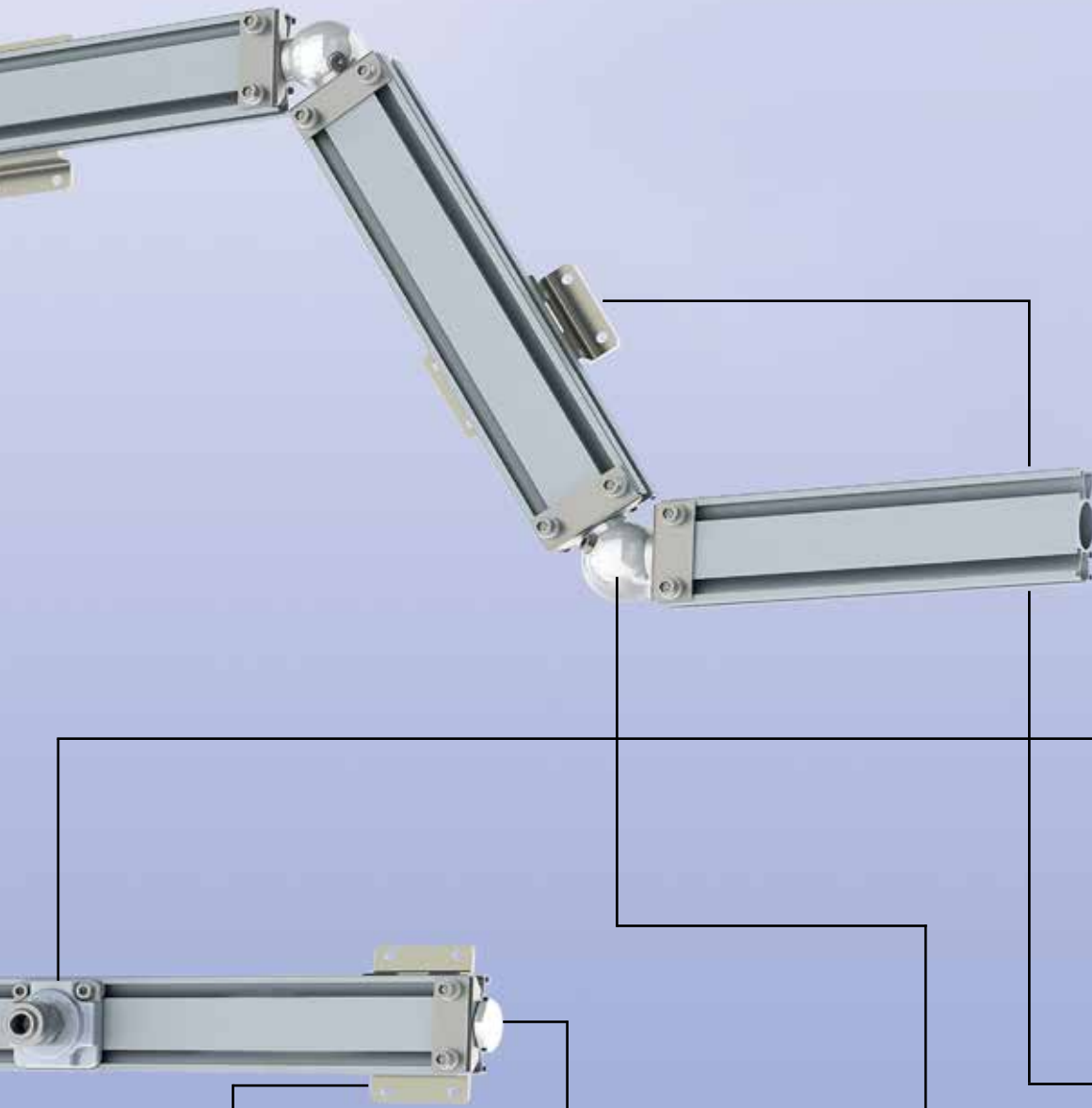
### SOCKET

The socket permits versatile joins with the kaisair nodes. It is also used at the outlet plate when further horizontal pipe connections are attached.



### STRAIGHT CONNECTOR

The straight connector is used for quick and easy extension of the system pipes. Clamping strips that are attached opposite to each other fasten the profile pipes.



### DRILL-TEMPLATE

Drilling under operating pressure without ball valve through use of the kaisair drill-template and the kaisair shut-off gate valve.



### OUTLET-PLATE

Setting an outlet-plate in the system under pressure (approx. 2 min per plate)  
**no disassembly of the pipe necessary.**



### HOLDING PLATE

The holding plate is used to secure the pipes to the individual connecting elements. The holding plate is attached at the groove of the connecting element and put on the pipe. Next, the screws are tightened with a quarter turn past the finger-tight position. For the pipe diameters of 25, 38, 50, 75 mm only one holding plate per connection is needed.



### END PLUG

The end plug seals the final line when no ring line is attached. The end plug IG is available in all current sizes and can be attached in various spots.



### VARIOBALL

The unique varioball helps you to bridge angles and inclines. Mounting angles starting at 80° can be set continuously. The enormous flexibility of our varioball allows you to install your pipe directly at inclines.



### WALL BRACKET H20

Simple clip-on fixing. The kaisair system pipe remains moveable and can be slid in any direction. This is a great advantage, because the position of the wall bracket can still be determined during installation and potential expansions and contractions due to heat can be compensated. Thanks to the great stability of the pipe, a wall fixing is only required every 3 m.

# SYSTEM COMPARISON

**kaisair**<sup>®</sup>  
COMPRESSED AIR SYSTEMS

**OTHER  
SYSTEME**

## CROSS OR DISTRIBUTER



- market leading 5-way nodes
- maximum flexibility during assembly
- a 3-way node L-joint can be converted into a T-joint with no disassembly necessary

System can be expanded **without disassembling** other components



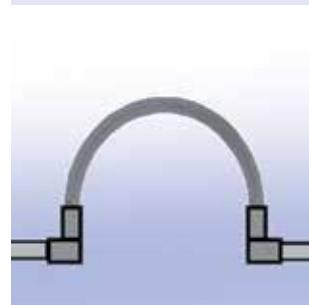
- only possible with two or three T-joints
- only possible by offsetting the axis

System expansion only possible by **disassembly** and replacement of system components

## ANGLES AND INCLINES



- the unique varioball enables you to compensate for slopes and inclines
- **high safety** level by using homogenous material
- achieve a secure fixture **at any room angle** without downtimes



Weak points:

- **risk of system breakdowns** due to use of a flexible barbed tube connection

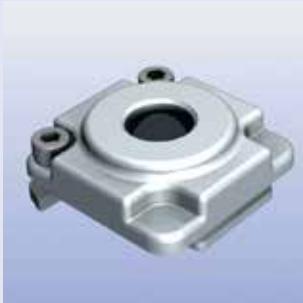
## WALL OFFSETS OR OBSTACLES



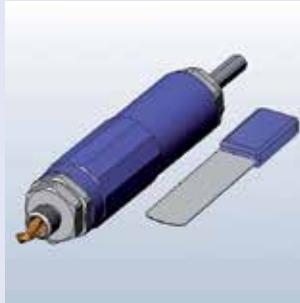
The *kaisair* node is **rotatable** within the system! A varioball connection allows you to avoid difficult corners or ledges **with few parts**.



- only 90° angles possible
- **many components needed**
- **extensive** pre-assembly



- attachment of an outlet plate during working pressure (approx. 2 min per plate)
- **No disassembly of the pipes necessary**



- drilling **while the system is under working pressure** by using the kaisair drilling template and the kaisair gate valve.



OUTLET POINTS

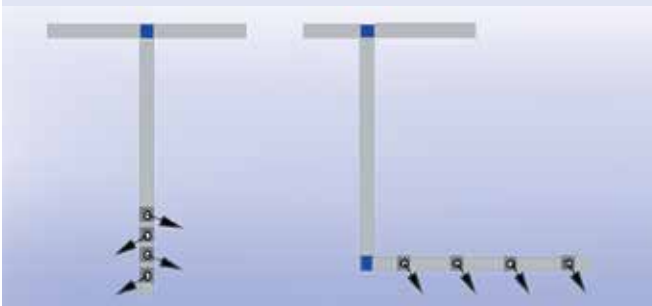
**Round Pipe System**

- must be depressurized.
- 1. Measuring of the outlet point
- 2. Disassembly of the pipe element
- 3. Drilling and cleaning of the pipe
- 4. Fixing the outlet
- 5. Assembly

**Profile Pipe System**

- time consuming assembly due to the great number of components
- extensive assembly work in difficult to access areas

DISTRIBUTOR

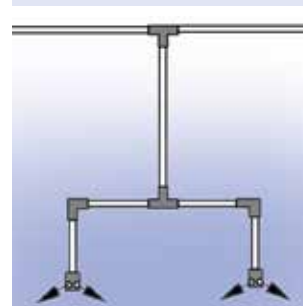


**Option 1**

- space-saving arrangement

**Option 2**

- outlet is situated in working area



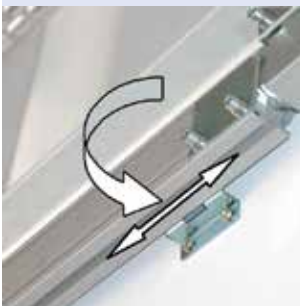
**Round Pipe System**

- only two outlet points per pipe
- more components and time-consuming installation

**Profile Pipe System**

- extensive installation

WALL FIXINGS



- **instant** clip-on fixings
- pipes can be repositioned by sliding the pipes along the tracks
- fixings only necessary every 3 m
- simple wall fixing

**Round Pipe System**

- fixings every 1.5 m, or else unstable
- difficult and time-consuming installation

**Profile Pipe System**

- time-consuming pre-assembly of many small components
- no repositioning possible

MATERIALS

- all-aluminum system
- Temperature range: -40°C to +120 °C
- Working pressure 15 bar
- also liquids

**Round Pipe System**

- mix of materials
- connecting components made of plastics
- Temperatures up to max. 60°C maximum
- no liquids

## NOTICE

Compressed air is a clean medium, but can be expensive if your system is prone to leaks, an expensive medium. Existing leaks can spread quickly. Leaks in the compressor, in the distributor and in the work station often lead to disruption in production which causes increasing operating costs.

It is not unusual that some compressed air networks lose 25-30% of their capacity. A study by the VDMA showed that even pressure losses of 40-60% are not uncommon.

## COSTS DUE TO LEAKS

The following table shows the costs that can arise due to leaks in the system.

Leakage hole diameter mm	Loss of compressed air at a working pressure of 6 bar l/s	Energy loss kW	€/a <sup>1)</sup>
1	1,3	0,3	526,-
3	11,1	3,1	5.431,-
5	31,0	8,3	14.542,-
10	124,0	33,0	57.816,-

1) 1 kW x 0,20€ x 6.760 operating hours per year

# kaissair

System varies according to operation and production processes. The pipe diameter of your system will be estimated based on length and consumption. Please feel free to contact us. We help you with any questions you might have.

Our successfully proven system can also be used for liquid medium.



Installation example in the plant and machinery industry



Industrial hall construction



Vertical pipe connection solved using the outlet platet



The varioball adapts and solves any problem.



## REQUIRED PIPE DIAMETERS FOR DIFFERENT PIPE LENGTHS

VOLUME FLOW			98.4 ft	164 ft	328 ft	656 ft	1312 ft	1640 ft	2624 ft	3608 ft	4920 ft
l/min	m <sup>3</sup> /h	cfm	30 m	50 m	100 m	200 m	400 m	500 m	800 m	1100 m	1500 m
500	30	295	25	25	25	25	25	25	25	25	25
750	45	442	25	25	25	25	25	25	25	25	38
1500	90	884	25	25	25	25	38	38	38	38	38
3000	180	1767	25	25	38	38	38	38	50	50	50
5000	300	2946	25	38	38	38	50	50	50	50	75
7000	420	4124	38	38	38	50	50	50	75	75	75
9000	540	5302	38	38	50	50	50	75	75	75	75
11000	660	6481	38	38	50	50	75	75	75	75	75
13000	780	7659	38	38	50	50	75	75	75	75	75
15000	900	8837	38	50	50	75	75	75	75	75	100
17000	1020	10015	38	50	50	75	75	75	75	100	100
19000	1140	11194	50	50	50	75	75	75	100	100	100
21000	1260	12372	50	50	50	75	75	75	100	100	100
23000	1380	13550	50	50	75	75	75	75	100	100	100
25000	1500	14729	50	50	75	75	75	100	100	100	100
27000	1620	15907	50	50	75	75	100	100	100	100	100

(Values for a pressure of 8 bar, 0.1 bar pressure loss and a 1.5 fittings factor)

Our system was tested by TÜV.



# kaisair

Please see our general terms and conditions and  
our assembly instructions at [www.kaisair.de](http://www.kaisair.de)

kaisair -  
*if everything were  
this easy...*

kaisair   
COMPRESSED-AIR SYSTEMS

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Patent- Nr. EP 1224416