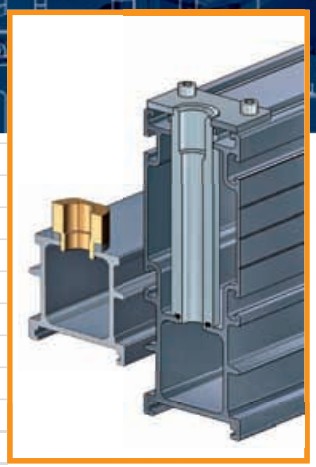

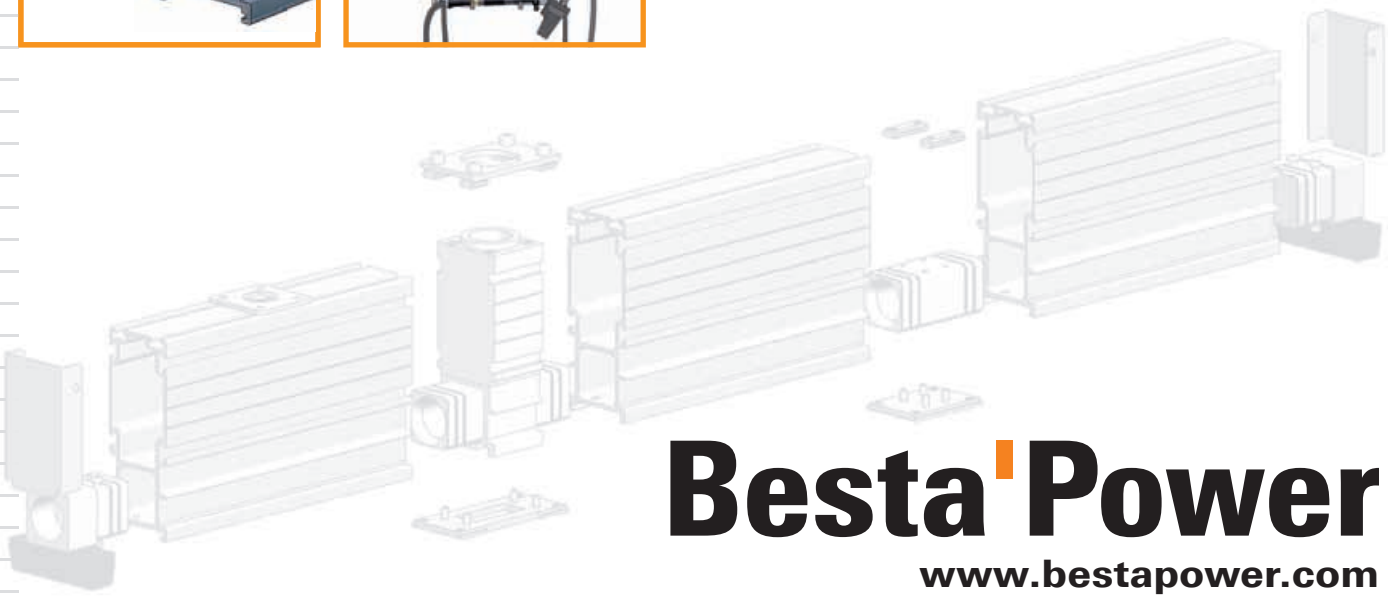

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Contents

Signs and symbols

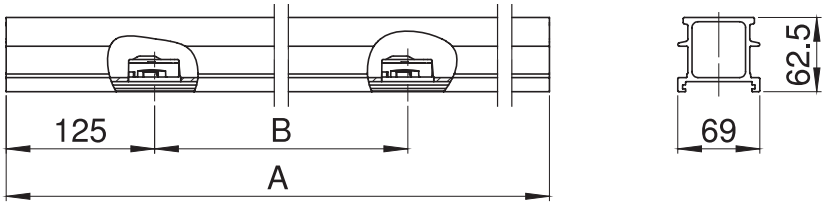
Notice: To prevent damages to equipment, property and the environment

⚠ Dangerous situation that can lead to injury or death

Rail sections A62

The compressed air rail has the following functions:

a) Energy carrier system:
   - supply of compressed air
   - mounting of a conductor rail
b) Support for tapping valves and connection plates
c) Rail for work stations, tool holders and carriages
d) Support for accessories, energy carrier system etc.



Using coupling pieces, the rails can be linked to form tracks of any length. They are made from a hollow aluminium section and are suitable for dry and lubricated compressed air (also respiratory air). All components are silicone-free.

The four basic versions

1. Rails with integrated tapping valves for tapping carriages. Table 1
2. Rails without tapping valves and connection plates, e.g. for drawing air via fixed tapping points (type 6720) or tapping screw fittings (type 6850). Table 2
3. Rails with integrated connection plates for direct hose connection. Table 3
4. Rails with integrated outlet connectors, e.g. for energy carrier systems. Table 4

1. Rails with integrated tapping valves

Table 1

Type		12101.1	12102.1	12103.1	12104.1	12104.1013
Length A	mm	1500	3000	4500	6000	6000
Spacing B	mm	--	1500	1500	1500	750
No. of tapping valves	qty	1	2	3	4	8
Weight	kg	4.1	8.2	12.3	16.4	17.0

2. Rails without tapping valves or connection plates

Table 2

Type		12101.2	12102.2	12103.2	12104.2
Length A	mm	1500	3000	4500	6000
Weight	kg	4.0	7.9	11.8	15.8

3. Rails with integrated connection plates G1/2"

Table 3

Type		12101.3	12102.3	12103.3	12104.3
Length A	mm	1500	3000	4500	6000
Spacing B	mm	--	1500	1500	1500
No. of connection plates	qty	1	2	3	4
Threaded connection	T	1/2"	1/2"	1/2"	1/2"
Weight	kg	4.1	8.2	12.3	16.4

4. Rails with outlet connectors M24x1-G1/2"

Table 4

Type			12102.4	12103.4	12104.4
Length A	mm		3000	4500	6000
Spacing	mm		1500	1500	1500/4500
No. of outlet connector	qty		1	1	2
Weight	kg		8.0	11.9	16.0

5. Rail specification A62

Air-conducting cross-section	2098 mm^2 (>2" for round cross-section)
Geometrical moment of inertia	45.2 cm^4
Weight	2.63 kg/m
Load capacity	80 kg with 2 m bracing
Operating pressure p1	min. 2 bar, max. 10 bar
Rail material	aluminium, colourless anodized
Tapping valves material	aluminium, black anodized, various elastomers
Connection plate material	aluminium, black anodized
Seal material	NBR (Perbunan), silicone-free, oil-resistant

6. Special versions

Non-standard lengths

The rails are available in non-standard lengths according to customer specification. Length: max. 6000 mm. The position and number of tapping valves or connection plates have to be specified by the customer.

Non-standard tapping valve and connection plate spacing

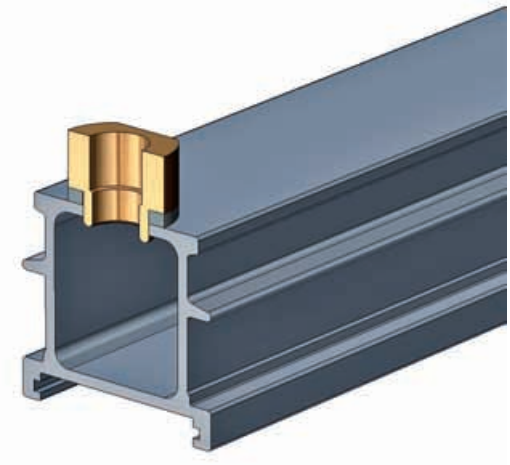
Available based on customer specification. Minimum spacing: 250 mm.

Interchangeability of tapping valves and connection plates

Interchangeability is ensured. The components can also be replaced at a later date after the rail has been assembled (in pressureless state). Tapping valves and connection plates can be combined in the same rail section. Care must be taken to avoid the tapping carriages passing the connection plates if compressed air hoses or plugs are used.

Condensate drain for A62

Rails with an additional hole (25 mm dia.) in the top surface of the rail can be supplied as an option. Condensate drain type 7275 (see datasheet B03E).



Type 6850 Outlet connector M24x1-G1/2"

For drawing air directly via an M24x1 hole in the top surface of the rail, e.g. for supplying an energy carrier system (see data sheet L01E).

Assembly instruction	Tightening torque: 40 Nm, 27 mm
Connection thread	G 1/2" ISO 228-1
Material	Screw fitting: brass Sealing ring: PA6.6
Weight	0.1 kg

Notice: Hose connectors see data sheet H02E.
The hole (25 mm dia. or M24x1) in the upper surface of the rail is drilled in the factory as specified in the order.

Rail sections A180

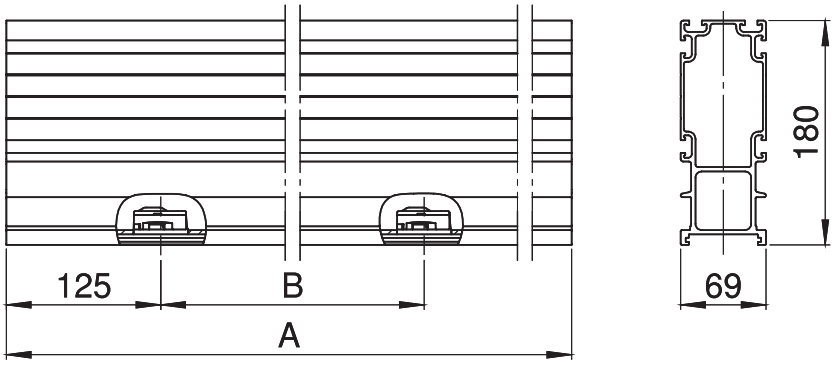
The compressed air rail has the following functions:

a) Energy carrier system:
- supply of compressed air
- mounting of a conductor rail

b) Support for tapping valves and connection plates

c) Rail for work stations, tool holders and carriages

d) Support for accessories, energy carrier system etc.



Using coupling pieces, the rails can be linked to form tracks of any length. They are made from a hollow aluminium section and are suitable for dry and lubricated compressed air (also respiratory air). All components are silicone-free.

The four basic versions

1. Rails with integrated tapping valves for tapping carriages. Table 1
2. Rails without tapping valves and connection plates, e.g. for drawing air via outlet type 12580. Table 2
3. Rails with integrated connection plates for direct hose connection. Table 3
4. Rails with integrated air outlet ports, e.g. for energy carrier systems. Table 4

1. Rails with integrated tapping valves

Table 1

Type		12201.1	12202.1	12203.1	12204.1	12204.1013
Length A	mm	1500	3000	4500	6000	6000
Spacing B	mm	--	1500	1500	1500	750
No. of tapping valves	qty	1	2	3	4	8
Weight	kg	8.7	17.4	26.1	34.8	35.4

The standard tapping valve spacing is 1500 mm, or 750 mm if more flexibility is required. Depending on the application and the required system flexibility, rail sections with fewer tapping points may be used.

2. Rails without tapping valves or connection plates

Table 2

Type		12201.2	12202.2	12203.2	12204.2
Length A	mm	1500	3000	4500	6000
Weight	kg	8.7	17.3	25.8	34.4

3. Rails with integrated connection plates G1/2"

Table 3

Type		12201.3	12202.3	12203.3	12204.3
Length A	mm	1500	3000	4500	6000
Spacing B	mm	--	1500	1500	1500
No. of connection plates	qty	1	2	3	4
Threaded connection	T	1/2"	1/2"	1/2"	1/2"
Weight	kg	8.7	17.4	26.1	34.8

4. Rails with air outlet ports G1/2"

Table 4

Type			12202.4	12203.4	12204.4
Length A	mm		3000	4500	6000
Spacing	mm		1500	1500	1500/4500
No. of air outlet ports	qty		1	1	2
Weight	kg		17.9	26.4	35.6

5. Rail specification A180

Air-conducting cross-section	2098 mm^2 (>2" for round section)
Geometrical moment of inertia	748.5 cm^4
Weight	5.7 kg/m
Load capacity	120 kg as point load with 6 m bracing
Load capacity with additional peripheral equipment	80 kg point load and 10 kg/m linear load with 6 m bracing, other combinations are possible
Operating pressure p1	min. 2 bar, max. 10 bar
Rail material	aluminium, colourless anodized
Tapping valve material	aluminium, black anodized, various elastomers
Connection plate material	aluminium, black anodized
Seal material	NBR (Perbunan), silicone-free, oil-resistant

6. Special versions

Non-standard lengths

The rails are available in non-standard lengths according to customer specification. Length: max. 6000 mm. The position and number of tapping valves or connection plates have to be specified by the customer.

Non-standard tapping valve and connection plate spacing

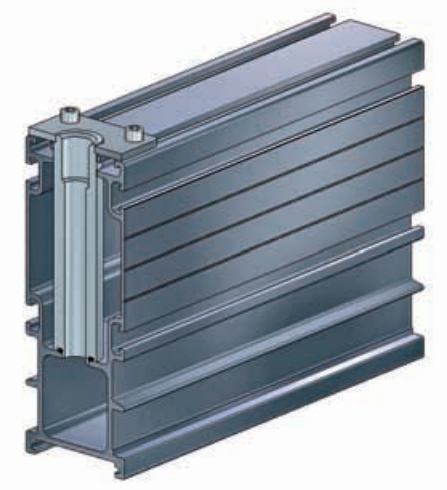
Available based on customer specification. Minimum spacing: 250 mm.

Interchangeability of tapping valves and connection plates

Interchangeability is ensured. The components can also be replaced at a later date after the rail has been assembled (in pressureless state). Tapping valves and connection plates can be combined in the same rail section. Care must be taken to avoid the tapping carriages passing the connection plates if compressed air hoses or plugs are used.

Condensate drain for A180

Condensate drain type 12696 (see data sheet B03E) can be screwed into outlet G 1/2" as an option.



Type 12580 Air outlet port G1/2"

For drawing air directly via tapping tube G 1/2", e.g. for supplying an energy carrier system (see data sheet L01E).

Connection thread	G 1/2" ISO 228-1
Material	aluminium, colourless anodized O-ring, NBR (Perbunan)
Weight	0.6 kg

Notice: Hose connectors see data sheet H02E.

The hole for outlet G 1/2" on the top surface of the rail can only be produced in the factory. It cannot be drilled by the customer at a later stage.

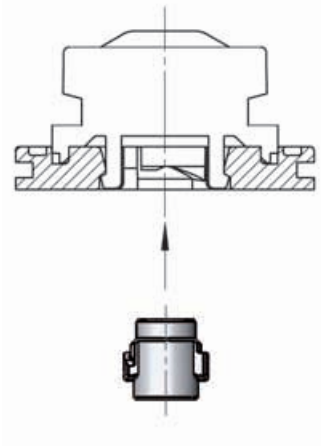
6. Accessories and spare parts

Type 6600 Tapping valves

At least one spare tapping valve should be available at all times, because in the event of a defect the whole track is affected. The valves can be used for lubricated and dry air. The valves are supplied complete with 2 retaining clips and O-ring.

Notice: Valves must be replaced in pressureless state. Use a screw clamp to press the plate against the rail and push the retaining clip out to the side.

Material	Plate/clip	aluminium, black anodized
	Valve	elastomer, plastic
	O-ring	NBR (Perbunan)
Weight		0.15 kg



Type 6644 Valve lock

For locking the tapping valve with a bayonet catch. Once locked the tapping point is no longer accessible, and the tapping carriage will pass it without docking. The valve lock can be removed with an Allen key (4 mm) at any time.

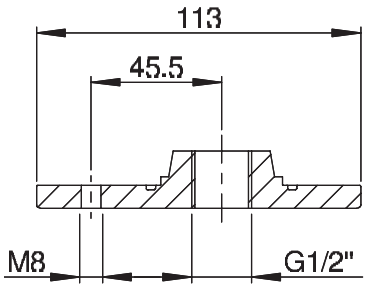
Material	plastic, red

Type 7253 Connection plate G 1/2"

At least one spare connection plate should be available at all times, because in the event of a defect the whole track is affected. The connection plates can be used for lubricated and dry air. They are supplied complete with 2 retaining clips and O-ring.

Notice: Valves must be replaced in pressureless state. Use a screw clamp to press the plate against the rail and push the retaining clip out to the side.

Connection thread	G 1/2"	ISO 228-1
Thread for ring	M8	
Material	Plate/clip	aluminium, black anodized
	O-ring	NBR (Perbunan)
Weight		0.15 kg

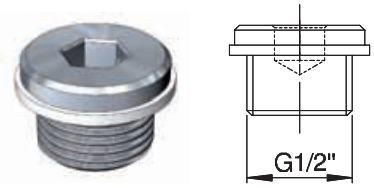


Type 7254 Connection plate G 3/4"

as 7253 but with G 3/4" thread

Type 7250 Sealing plate

as 7253 but without tapped hole G 1/2"



Type 6723 Plug for connection plate

Thread	G 1/2"	ISO 228-1
Material	Plug	steel, blue zinc-plated
	Gasket	PVC hard

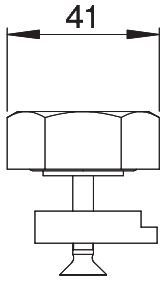
Notice: Work stations, tapping and tool carriages etc. cannot pass the plug!

Type 6623 Rail end stop

Can be screwed to any end piece as limit stop for tapping and tool carriages, work stations etc.

Material	elastomer, NBR (Perbunan)
Weight	0.15 kg

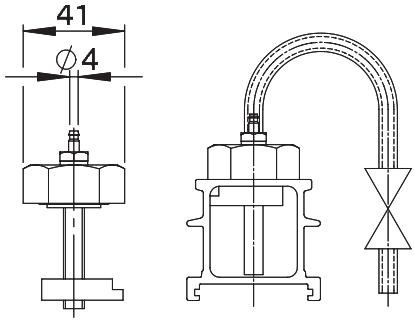
Each end piece (see data sheet D01E) is supplied with a rail end stop.



Type 7270 Plug for A62

The plugs can be used to seal unused holes
(25 mm dia.) on the top surface of A62 rail sections.

Material	Plug	aluminium, red anodized
	Plate	steel, black zinc-plated
	O-ring	NBR (Perbunan)
Weight		0.1 kg

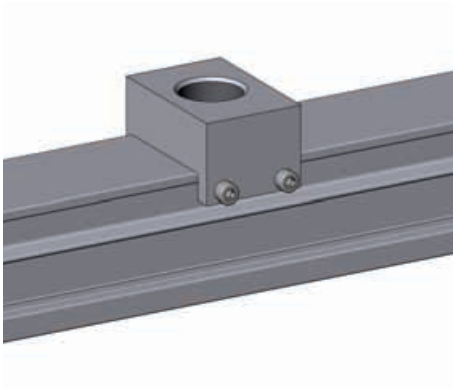


Type 7275 Condensate drain for A62

An optional condensate drain can be installed on the top surface of A62 rail sections, see data sheet B01E, page 2. Drain hose (inside diameter: 4 mm) and vent valve are not part of our scope of delivery.
Weight, material see plug type 7270.

Type 12696 Condensate drain for A180

See data sheet B02E, page 2.

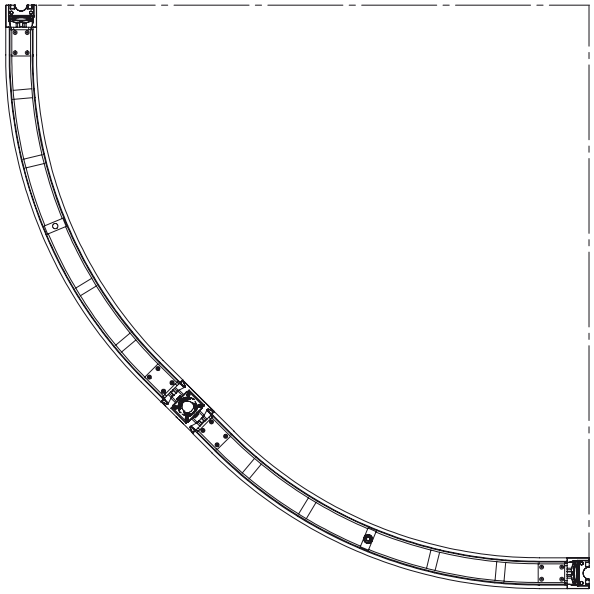


Type 6860 Fixed tapping point A62, G 1"

The fixed tapping point can be used as inlet or outlet, e.g. for stationary consumers. It can be installed anywhere on the top surface of the A62 rail sections by two screws, although preferably not directly above tapping valves or connection plates. Tapping and tool carriages, work stations etc. can pass the fixed tapping point without problem. (see assembly instructions LPI01Z and LPP13Z).

Connection thread	G 1" ISO 228-1
Sealing surface	for flat seal, DIN 3852
Material	aluminium, colorless anodized
Weight	0.25 kg

Curved rails can be combined with straight rail pieces as required. The rail coupling and the pre-assembled flange (see page 2) are used for this purpose.
Curved rails enable configuration of continuous ring lines. To increase stability and reduce wear they are made from steel. If a tapping point is required, it can be configured using a straight rail section with a minimum length of 276 mm (type 6993.1) between the two curved segments.
Curved rails are available with or without air feed-through (1" hose). (See page 2)

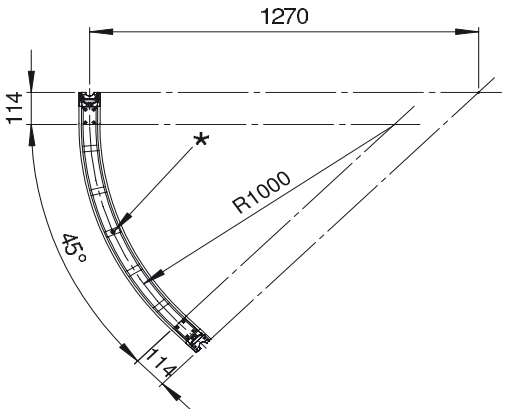


1. Curved rails

Table 1

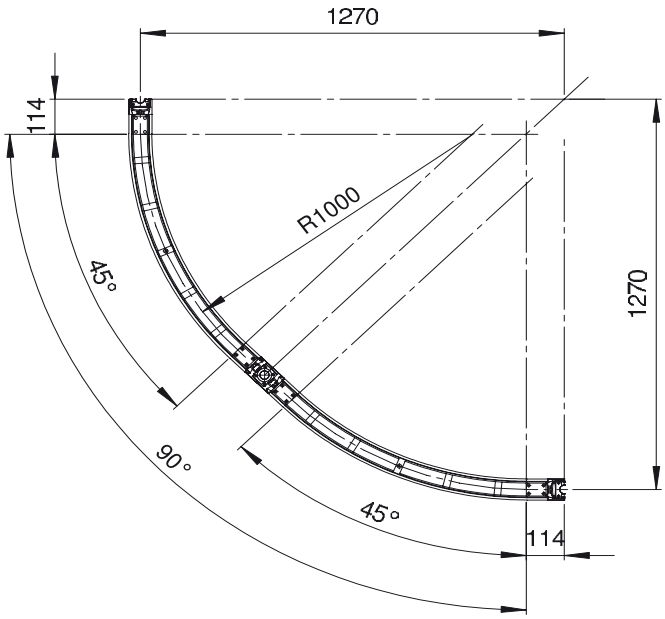
Without air feed-through **With air feed-through (max. 10 bar)**		**7202** **7202.1**
Radius R	mm	1000
Angle	°	45
Weight	kg	4.5
Rail material		steel, QPQ treated, black
Rail flange material		aluminium, black anodized, various elastomers
Seal material		O-rings: NBR (Perbunan), silicone-free

45° bend

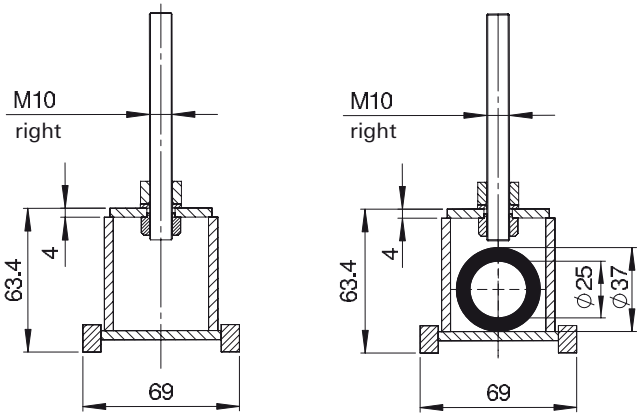


* fastening point, thread M10 right-handed

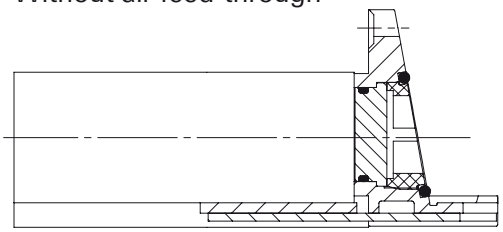
90° bend, assembled from 2 x 45°



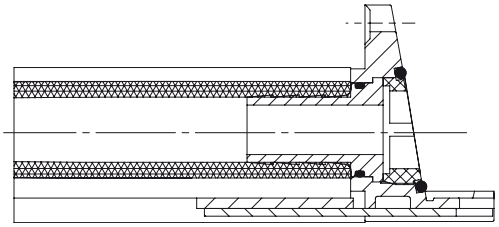
Section view
Without air feed-through With air feed-through



Rail end
Without air feed-through



With air feed-through



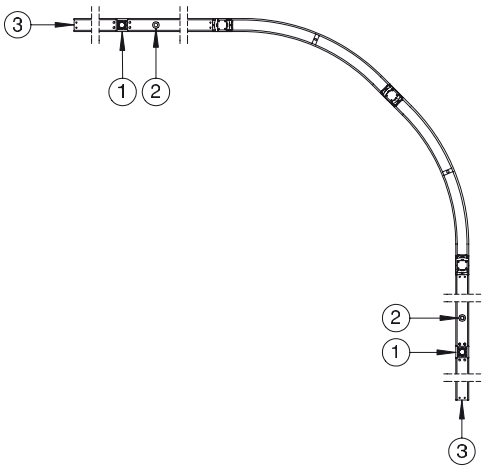
2. External air feed-through

The straight rail segments separated by the curved rail (with/without air feed-through) may by supplied externally using the following installation types:

1 Inlet coupling with G 1 1/4"
connection A62 (type 12510)
A180 (type 12530)

2 1/2" outlet or
fixed tapping point G 1"
A62 (type 6850, 6720)

3 Feeding of both segments via end piece
G 1 1/4" A62/180 (type 12550)



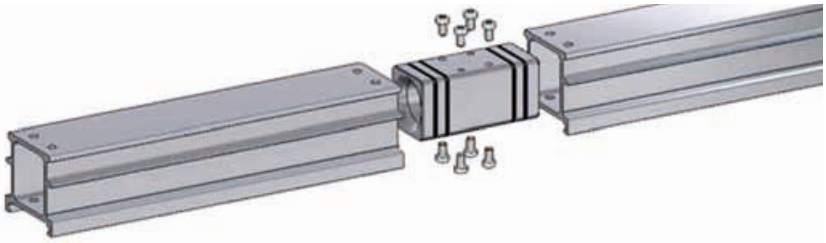
3. Options and Notice

90° bend
90° bends are assembled from two 45° bends and a rail coupling (type 6607) (no separate article number).

Mounting
In 90° bends the curved pieces should additionally be suspended at the centre of the curve for stability reasons (see page 1, fastening point). A threaded nut M10, right handed, is welded into the curved rail.

Type 6607 Rail coupling
Simple rail connector for connecting curved rail sections with straight rail sections A62 / A180.
Material aluminium, black anodized
Weight 0.4 kg

Type 6114.1 Rail flange, complete
The rail flange is required for attaching the coupling to the straight rail section A62 / A180.
Material aluminium, black anodized
Weight 0.4 kg

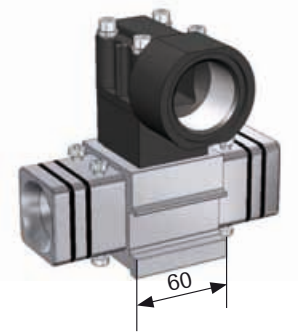


The rail couplings serve as connection elements for rail sections, type A62. They are screwed directly to the rail section and sealed with O-rings. All coupling types are interchangeable and can be passed by tapping and tool carriages, work stations, etc. The length of coupling type 12500 has no influence on the overall length of the installation. Only the lengths of the rail sections are to be added.
If an inlet coupling or a coupling with ball valve is used, the overall length of the installation increases by 60 mm per coupling piece.

1. Rail couplings A62

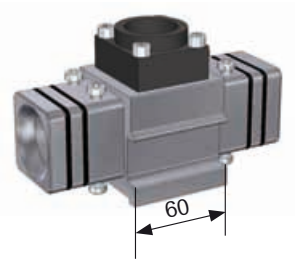
Type 12500 Coupling A62
Standard rail coupling, to connect any type of straight or rail.

Material		aluminium, colourless anodized
Weight		0.3 kg



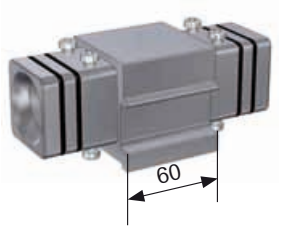
Type 12510 Inlet coupling A62 with lateral connection G 1 1/4"
Coupling with lateral air connection as inlet or outlet, e.g. for stationary air consumers.

Lateral connection thread		G 1 1/4" ISO 228-1
Sealing face, connection thread		for flat seals, DIN 3852
Material	Coupling	aluminium, colourless anodized
	Lat. conn.	aluminium, black anodized
Weight		1.2 kg



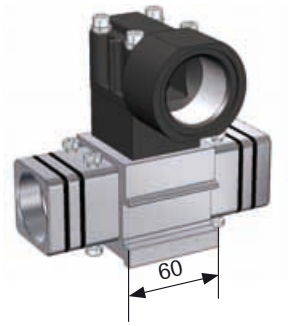
Type 12511 Inlet coupling A62 with vertical connection G 1"
Coupling as Type 12510, but with vertical air connection G 1" as inlet or outlet, e.g. for stationary air consumers.

Vertical connection thread		G 1" ISO 228-1
Sealing face, connection thread		for flat seals, DIN 3852
Material		aluminium, colourless anodized
Weight		0.8 kg



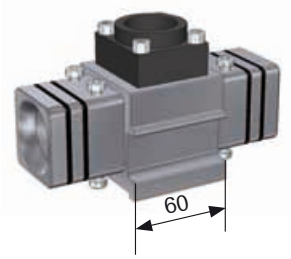
Type 12512 Coupling A62 with ball valve
Coupling with ball valve to isolate rail sections. Manually operated from the rail underside.

Material	Coupling	aluminium, colourless anodized
	Valve	plastic, chrome-plated brass
Weight		0.8 kg



Type 12513 Inlet coupling A62
with ball valve and lateral connection G 1 1/4"
Combination of coupling types 12510 and 12512. This coupling enables isolation of one of the two rail sections, but not both at the same time.

Lateral connection thread		G 1 1/4" ISO 228-1
Sealing face, connection thread		for flat seals, DIN 3852
Material	Coupling	aluminium, colourless anodized
	Lat. conn.	aluminium, black anodized
	Valve	plastic, chrome-plated brass
Weight		1.3 kg



Type 12514 Inlet coupling A62
with ball valve and vertical connection G 1"
Combination of coupling types 12511 and 12512. This coupling enables isolation of one of the two rail sections, but not both at the same time.

Vertical connection thread		G 1" ISO 228-1
Sealing face, connection thread		for flat seals, DIN 3852
Material	Coupling	aluminium, colourless anodized
	Valve	plastic, chrome-plated brass
Weight		0.9 kg

2. Notice

Filter, shut-off valve

If the rail couplings are used as an air inlet an appropriate air filter (minimum 30-40 µm) should be fitted before the inlet in order to prevent contamination of the rail section. If non-corrosive piping is used between a decentralized filter station and the Bestapower system, an additional filter at the air inlet is generally not necessary. Depending on the installation and layout of the supply piping it is advisable to have a flexible arrangement between pipework and Bestapower inlet (e.g. with a hose). The Bestapower system does not generate any contamination.
The installation of a shut-off valve at the air inlet(s) is recommended, but the requirement entirely depends on the layout of the supply line.

Bestapower means:
clean air in - clean air out! Clean compressed air extends the service life of your tools!

Stationary compressed air consumers

In order not to limit the flexibility of the tapping and tool carriages unnecessarily, we recommend supplying stationary compressed air consumers (e.g. handling units, machines) through rail couplings with lateral or vertical connection. If the position of the coupling is not convenient, the fixed tapping point type 6720 (see data sheet B03E) can be used as an alternative.

Suspension

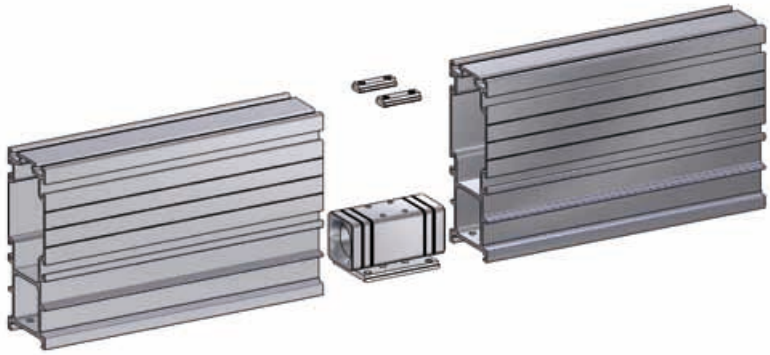
Hangers (see data sheet E01E) should be placed near a coupling piece to guarantee optimum sealing between coupling and rail.

Curved rail sections

A rail flange type 6114.1 and a rail coupling type 6607 (see data sheet B04E) are required for connecting curved rail sections with the rail section.

Rail connections A180

The rail couplings serve as connection elements for rail sections, type A180. They are screwed directly to the rail section and sealed with O-rings.
All coupling types are interchangeable and can be passed by tapping and tool carriages, work stations, etc. The length of coupling type 12501 has no influence on the overall length of the installation. Only the lengths of the rail sections are to be added.
If an inlet coupling is used, the overall length of the installation increases by 60 mm per coupling piece.



1. Rail couplings A180

Type 12501 Coupling A180
Simple coupling with connection plate for connecting any type of straight rail.

Material	aluminium, colourless anodized
Weight	0.5 kg

Type 12530 Inlet coupling A180
with vertical G 1 1/4" connection
Coupling with vertical connection as inlet or outlet, e.g. for stationary air consumers.

Vertical connection thread	G 1 1/4" ISO 228-1
Sealing face, connection thread	for flat seals, DIN 3852
Material	aluminium, colourless anodized
Weight	1.9 kg

Type 12531 Inlet coupling A180
with ball valve and vertical connection G 1 1/4"
Coupling as type 12530, but with additional ball valve, to isolate rail sections. Manually operated from the rail underside.

Vertical connection thread		G 1 1/4" ISO 228-1
Sealing face, connection thread		for flat seals, DIN 3852
Material	Coupling	aluminium, colourless anodized
	Valve	plastic, chrome-plated brass
Weight		2.0 kg

2. Notice

Filter, shut-off valve

If the rail couplings are used as an air inlet an appropriate air filter (minimum 30-40 µm) should be fitted before the inlet in order to prevent contamination of the rail section. If non-corrosive piping is used between a decentralized filter station and the Bestapower system, an additional filter at the air inlet is generally not necessary. Depending on the installation and layout of the supply piping it is advisable to have a flexible arrangement between pipework and Bestapower inlet (e.g. with a hose). The Bestapower system does not generate any contamination.
The installation of a shut-off valve at the air inlet(s) is recommended, but the requirement entirely depends on the layout of the supply line.

Bestapower means:
clean air in - clean air out! Clean compressed air extends the service life of your tools!

Stationary compressed air consumers

In order not to limit the flexibility of the tapping and tool carriages unnecessarily, we recommend supplying stationary compressed air consumers (e.g. handling units, machines) through rail couplings with vertical connection.

Suspension

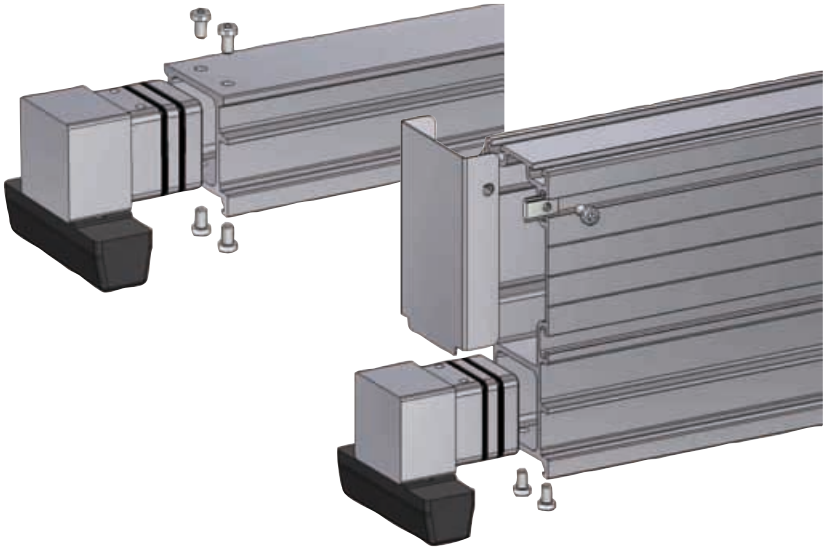
Whenever possible, hangers (see data sheet E02E) should be placed near a coupling piece to guarantee optimum sealing between coupling and rail.

Curved rail sections

A rail flange type 6114.1 and a rail coupling type 6607 (see data sheet B04E) is required for connecting curved rail sections with the rail section. The load limit of the curved rail sections is lower than that of rail section A180. The suspension must be designed accordingly.

End pieces A62 / A180

The end pieces serve as rail termination or as axial air inlet. They are screwed to the face of the rail section and sealed with O-rings. Each rail termination is supplied with a rail end stop as limit stop for tapping and tool carriages, work stations etc.



1. End piece with G 1 1/4"

Type 12550 End piece G 1 1/4" and end stop
Axial air inlet for all straight rail sections

Connection thread		G 1 1/4" ISO 228-1
Sealing face, connection thread		for flat seals, DIN 3852
Material	Termination	aluminium, colourless anodized
	End stop	elastomer, NBR (Perbunan)
Weight		0.4 kg

2. End piece, blind

Type 12551 End piece, blind, and end stop
Rail termination for all straight rail sections

Material	Termination	aluminium, colourless anodized
	End stop	elastomer, NBR (Perbunan)
Weight		0.6 kg

3. Cover plate A180

Type 12620 Cover plate A180
As termination of the upper profile opening

Connection	2 sliding blocks M6
Material	aluminium, colourless anodized
Weight	0.1 kg

4. Notice

Axial air inlet

Connection pieces must either have a parallel pipe thread (ISO 228-1) with a flat seal or a taper thread (ISO 7-1). Taper threads must be sealed with sealing fluid. NPT threads must not be used.

Filter, shut-off valve

If the rail couplings are used as an air inlet an appropriate air filter (minimum 30-40 µm) should be fitted before the inlet in order to prevent contamination of the rail section. If non-corrosive piping is used between a decentralized filter station and the Bestapower system, an additional filter at the air inlet is generally not necessary. Depending on the installation and layout of the supply piping it is advisable to have a flexible arrangement between pipework and Bestapower inlet (e.g. with a hose). The Bestapower system does not generate any contamination.
The installation of a shut-off valve at the air inlet(s) is recommended, but the requirement entirely depends on the layout of the supply line.

Bestapower means:
clean air in - clean air out! Clean compressed air extends the service life of your tools!

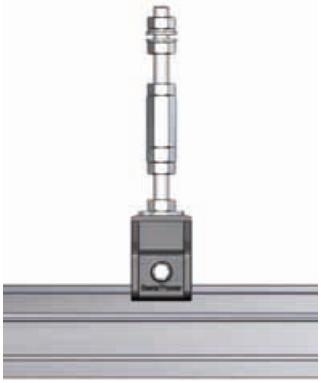
End stop

To avoid tapping and tool carriages, work stations etc. sliding off the rail, the rail end stop as supplied must be fitted.

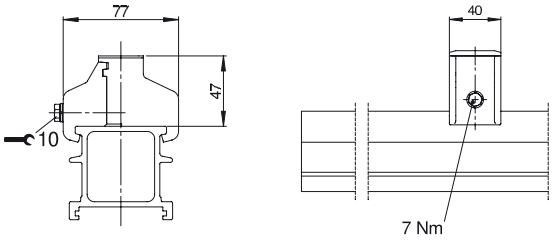
Rail mounting A62

Data sheet no. **E01E**
Issue: March 2010

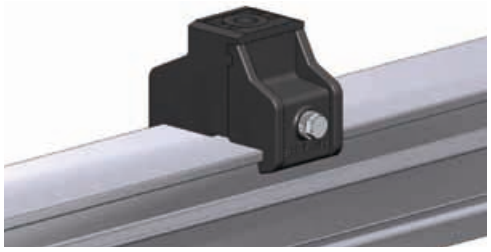
In order to allow linear thermal expansion of the aluminium rails two different hangers are available. The fixed point hanger (red) must only be used once per track, preferably next to the inlet. It fixes the rail in all three planes.
The sliding hanger (black) is used for all other suspension points and allows linear expansion of the track. Depending on the attached load, the spacing between the suspension points is approx. 2 to 3 m.
Whenever possible, one hanger should always be positioned close to the rail connector (see page 2).
Notice: Torque for hangers: approx. 7 Nm (10).



1. Hanger

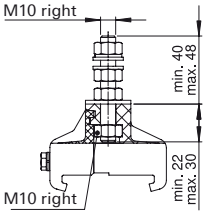


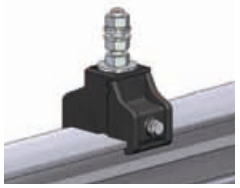
Fixed point hanger	**Type 6624**	**Type 6625**
Fastening nut	**M10 RH**	**M10 LH**
	yellow passivated	blue passivated
Colour	red	red
Material	polyamide 6.6	polyamide 6.6
Weight	0.1 kg	0.1 kg



Sliding hanger	**Type 6626**	**Type 6627**
Fastening nut	**M10 RH**	**M10 LH**
	yellow passivated	blue passivated
Colour	black	black
Material	polyamide 6.6	polyamide 6.6
Weight	0.1 kg	0.1 kg

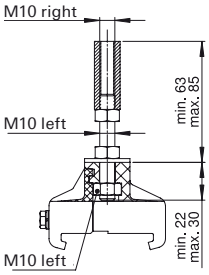
2. Bolt sets





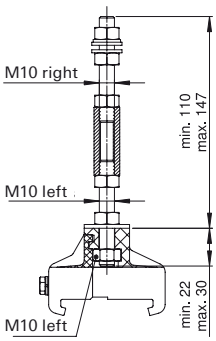
Type 6628 Threaded bolt set

RH parts	yellow passivated
Thread	**M10 RH**
To fit hangers	Type 6624 / 6626 (M10 RH)
Weight	0.1 kg



Type 6629 Turnbuckle half set

LH parts	blue passivated
Thread	**M10 LH**
To fit hangers	Type 6625 / 6627 (M10 LH)
Weight	0.2 kg



Type 6630 Turnbuckle set

RH parts	yellow passivated
LH parts	blue passivated
Thread	**M10 LH / RH**
To fit hangers	Type 6625 / 6627 (M10 LH)
Weight	0.3 kg

Notice:
In combination with turnbuckle set type 6630, hangers with LH thread, type 6625/6627 must be used.

3. Notice

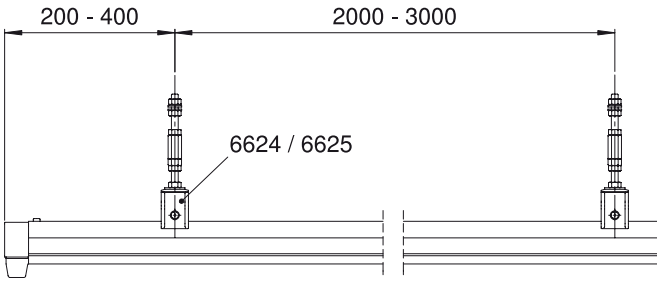
Bolt sets

Instead of the bolt sets listed on the front page, other components, e.g. threaded bars M10, supplied by the customer, may be used.

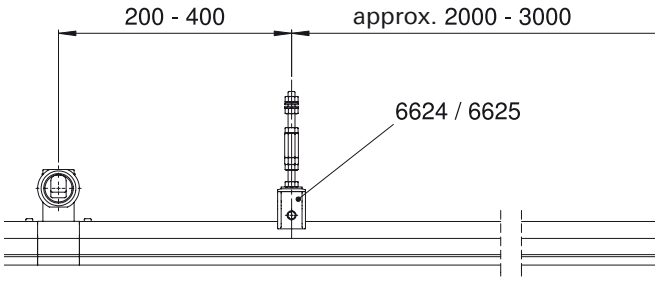
4. Mounting of additional components

The fixed point hangers can also be used to mount additional components such as energy carrier systems, conductor rails (see data sheets L01E, M01E), lamps etc.

5. Positioning of fixed point hanger



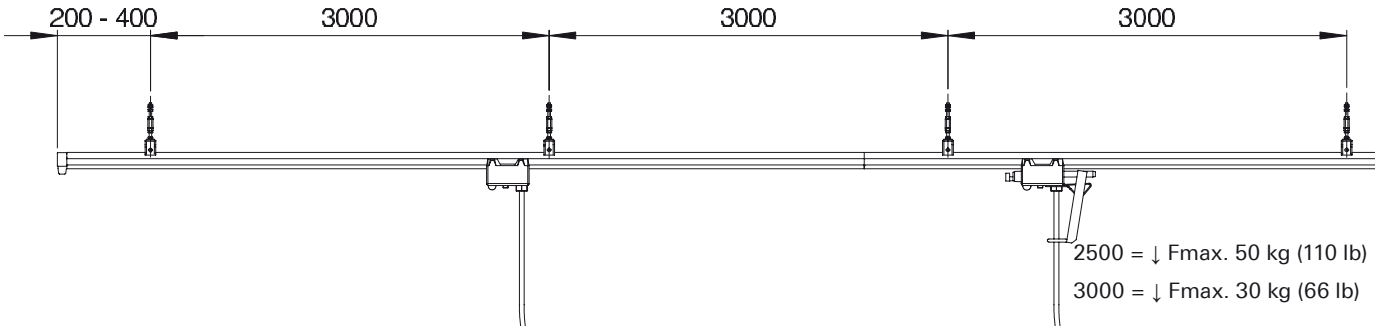
For each rail track one fixed point hanger (red) type 6624 or 6625 is required only.



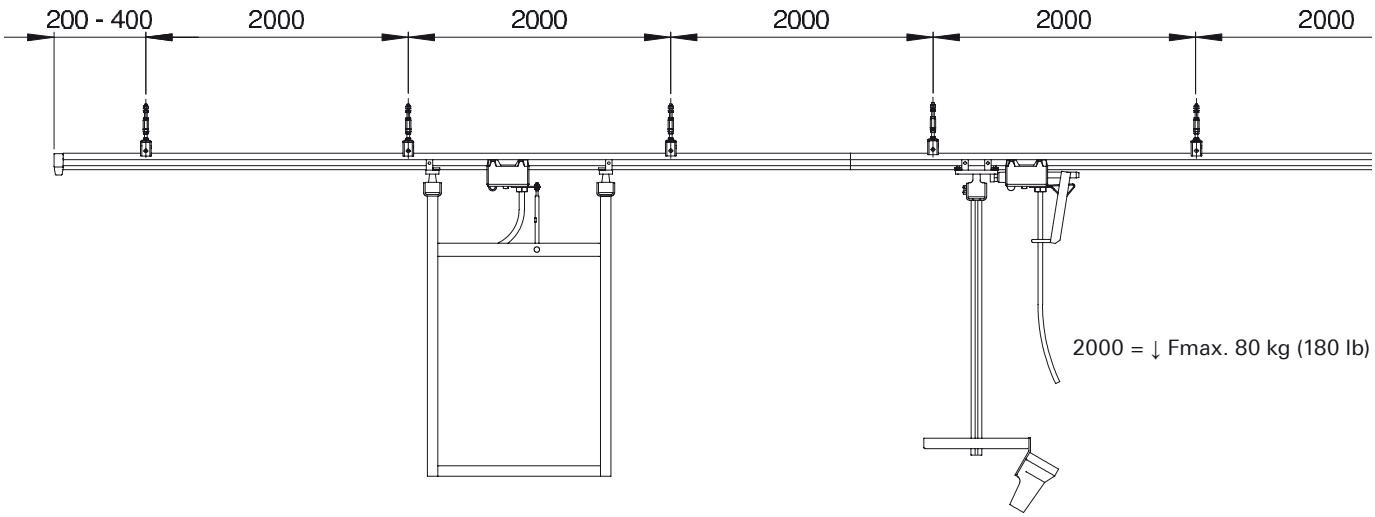
The fixed point hanger should always be positioned close to an air inlet (e.g. axial air inlet type 12550 or inlet coupling type 12510/12511).

6. Spacing between hangers

6.1. Installations without work stations, tool holders etc., max. spacing 3000 mm



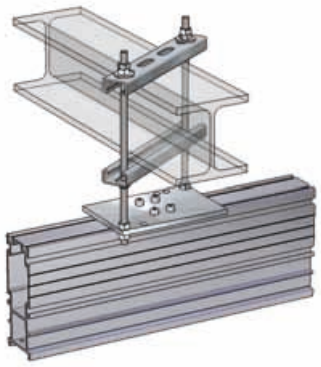
6.2. Installations with work stations, tool holders etc., max. spacing 2000 mm



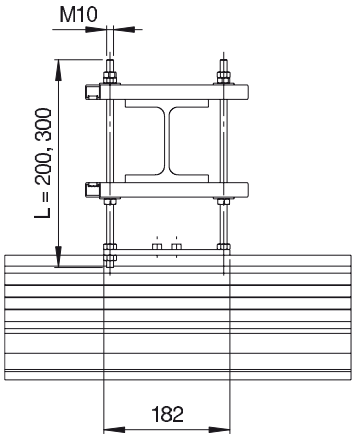
Rail mounting A180

Data sheet no. **E02E**
Issue: March 2010

Various fastening options are available for securing the rail mounting, type A180, at the steel structure of the hall. The mounting plate is suitable for a wide range of standard beams in conjunction with common mounting rails. In order to allow linear thermal expansion of the rails, sliding mounting plates should be used. The fixed mounting plate must be used once per rail track only, preferably next to the inlet. Girder clamps can be used if necessary.
If cable suspension is required, this can be realized with cable mounting elements and fixed sliding blocks.
Due to the high load carrying capability the maximum spacing between fasteners is 6 m for 120 kg point load or 80 kg with 10 kg/m linear load.



1. Mounting plate

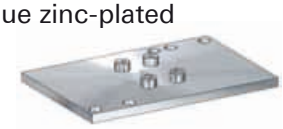


Type 12641 Mounting plate, fixed

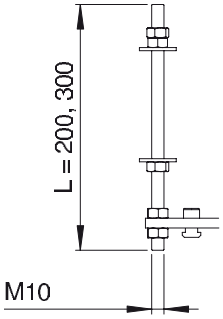
Sliding block, fixed	Type 12611, 2 x
Material	steel, blue zinc-plated
Weight	1.4 kg

Type 12642 Sliding mounting plate

Sliding block (black)	Type 12613, 2 x
Material	steel, blue zinc-plated
Weight	1.4 kg

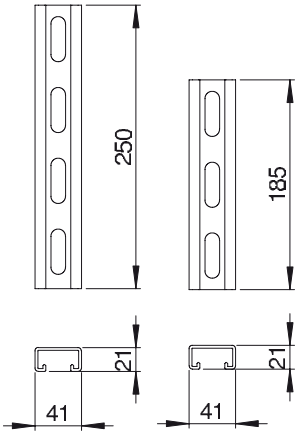


1.1 Clamping sets



Type 12650 Clamping set 300/150
Suitable for beams up to 150 mm wide.

Threaded rod	2 x, M10x300
Mounting rail	2 x, length 250 mm
Material	steel, blue zinc-plated
Weight	1.4 kg



Type 12651 Clamping set 300/90
Suitable for beams up to 90 mm wide.

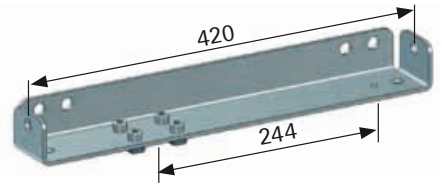
Threaded rod	2 x, M10x300
Mounting rail	2 x, length 185 mm
Material	steel, blue zinc-plated
Weight	1.2 kg

Type 12652 Clamping set 200/90
Suitable for beams up to 90 mm wide (with shorter threaded rod).

Threaded rod	2 x, M10x200
Mounting rail	2 x, length 185 mm
Material	steel, blue zinc-plated
Weight	1.0 kg

2. Cable mounting

Cable mounting is a further option for suspending the A180 section from the steel structure of the hall. The cable sets are not part of the scope of supply and have to be provided by the customer.

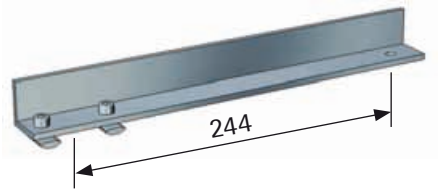


Type 12640 Cable mounting

Sliding block, fixed	Type 12611, 2 x
Material	steel, blue zinc-plated
Weight	1.5 kg

3. Fastening angle

The fastening angle can be used to mount peripheral elements such as lamps at the A180 section. The fasteners for the peripheral elements are not part of the scope of supply.



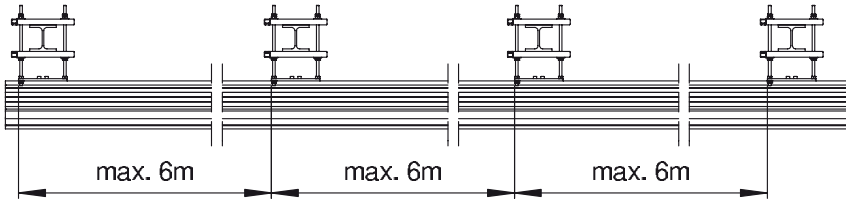
Type 12632 Fastening angle

Sliding block	swivelling, 2 x
Material	steel, blue zinc-plated
Weight	0.8 kg

4. Suspension

4.1 Mounting example with mounting plate and clamping set

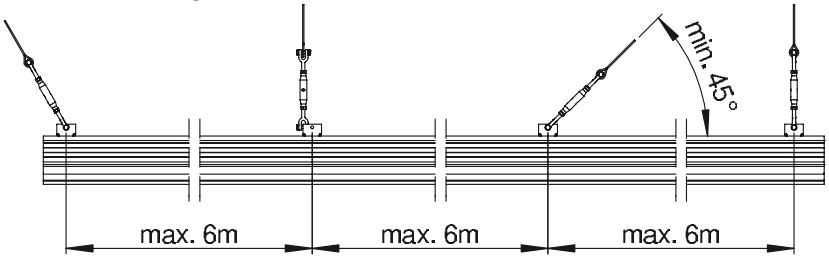
Due to the high load carrying capability of the A180 section the fasteners can be placed anywhere within the 6 m spacing.



↓ Fmax. 120 kg (264 lb) for point load
↓ Fmax. 80 kg (176 lb) and 10 kg/m linear load

4.2 Mounting example with cable mounting

Due to the high load carrying capability of the A180 section the fasteners can be placed anywhere within the 6 m spacing.



↓ Fmax. 120 kg (264 lb) for point load
↓ Fmax. 80 kg (176 lb) and 10 kg/m linear load

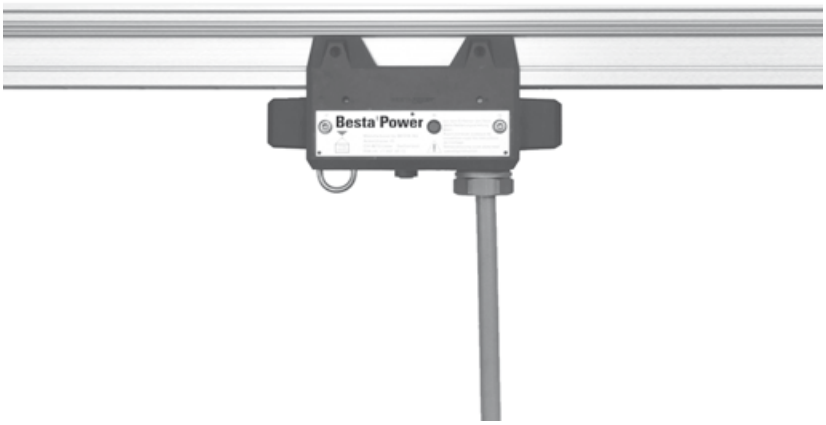
4.3 Shear forces

Threaded rods can be used for lateral stabilization of the track and for absorbing shear forces. The rods should preferably be installed at the start and the end, and every 24 to 30 metres.

5. Fastening of additional elements

The A180 section can also be used to mount additional elements such as energy carrier systems, conductor rails (see data sheet L01E, M01E), cable ducts, lamps etc.

Tapping carriages are ideal for applications where the air consumer is moving, i.e. not stationary.
The operating range of the tapping carriages is only limited by the length of the installation or other workstations / tapping carriages. All tapping carriages can be used for lubricated or dry air. They are used in combination with rails with integrated tapping valves (data sheets B01E and B02E / Table 1).
All components used are silicone-free.



1. Four basic tapping carriage types

1. without arrangement for FRL units
2. with arrangement for 3/8" FRL units
3. with attached 1/2" FRL units
4. with attached injection lubricator

FRL: F = Filter, R = Regulator, L = Lubricator

2. Basic equipment for carriage types 1 to 4

- Hook to fix spring retainer or balancer.
- Connection thread G 1/4" for pressure gauge, underside of carriage.
- Fixing slots to accommodate buffer, detaching device or carriage coupling.
- Connection thread for hose set (NW 3/8", 1/2").

3. Tapping carriages without arrangement for FRL units. Type 8670

The low cost type tapping carriage for all applications where air preparation and/or regulation is not required. The carriage can be used for a pressure range of min. 2 bar to max. 10 bar and is regarded economical for flow rates up to approx. 1500 Nl/min, max. approx. 2000 Nl/min.
Detailed description see data sheet F02E.

4. Tapping carriages with arrangement to attach 3/8" FRL units. Type 8614

Depending on the requirement, 3/8" tapping carriages can be equipped with 1 or 2 FRL components, which allow individual air preparation and/or regulation near the air consumer.
Because of the integrated check valves, these carriages can also be operated without any FRL units attached. Hence, FRL components can also be fitted at a later date. The carriage can be used for a pressure range of min. 2 bar to max. 10 bar and is regarded as economical for flow rates up to 850 Nl/min., max. approx. 1200 Nl/min.
Detailed description see data sheet F03E.

5. Tapping carriages with attached 1/2" FRL units. Types 8702.1, 8702.2, 8702.3, 8702.4, 8702.8, 8702.9

1/2" carriages are recommended for use whenever the flow rate is above the economical volume for the 3/8" carriages. These 1/2" carriages are not operative without a FRL component attached. The carriage can be used for a pressure range of min. 2 bar to max. 10 bar and is regarded as economical for flow rates up to 1500 Nl/min., max. approx. 2000 Nl/min.
Detailed description see data sheet F04E.

6. Tapping carriages with attached 1/2" injection lubricator. Type 8714A

This 1/2" tapping carriage allows adjustable oil injection. The oil is either injected at the hose inlet, or, if a coaxial oil tube in the air hose is used, directly before the consumer/tool.
Detailed description see data sheet F05E.

7. Track rollers

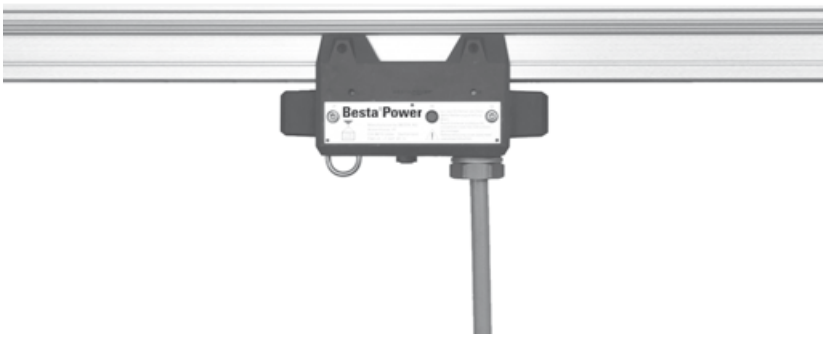
All tapping carriages are supplied with steel track rollers as standard (roller bearing with specially ground radius). As an option track rollers with a PUR coating are available. PUR wheels are useful in case of special requirements with regard to smooth operation. Part numbers with suffix for PUR wheels: e.g. 8614 >> 8614-PUR.

8. Detailed description

Tapping carriages without FRL units	data sheet F02E
3/8" tapping carriages with FRL units	data sheet F03E
3/8" FRL units, assembly kit	data sheet F03E
1/2" tapping carriages with FRL units	data sheet F04E
Tapping carriages with injection lubricator	data sheet F05E
Hose set and spare parts	data sheet F10E
Detaching devices	data sheet G01E
Tool carriages	data sheets H01E, H02E
Load carriers, cable trolleys	data sheet I01E
Work stations	data sheets K01E, K02E
Tool holders	data sheets K03E, K04E

1. Basic equipment

- Hook to fix spring retainer or balancer.
- Connection thread G 1/4" for pressure gauge, underside of carriage.
- Fixing slots to accommodate buffer, detaching device or carriage coupling.
- Connection thread for hose set (NW 3/8", 1/2").



2. Tapping carriages without arrangement for FRL units

Low cost tapping carriage for all applications where air preparation and/or regulation is not required. Since the use of a filter at each rail inlet is required, additional filtration on the tapping carriage is not necessary for most applications.
These tapping carriages are characterised by simple functional design and high flow rate.

Type 8670 Tapping carriage

Operating pressure p1	min. 2 bar, max. 10 bar
Flow rate Q	see data sheet S01E at 6 bar, approx. 2000 Nl/min. economical 1500 Nl/min.
Max. load on hook	approx. 20 kg
Material	aluminium, various plastic materials
Weight	1.8 kg

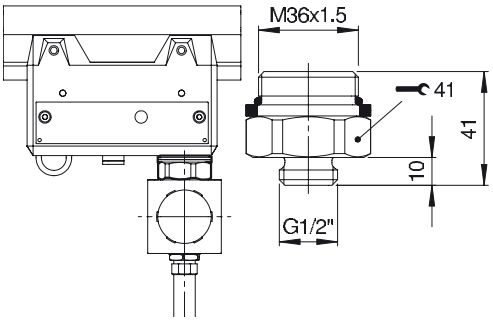
3. Accessories

The tapping carriages are equipped to accommodate the following parts:

Hose set	required for smooth operation of the tapping carriages	data sheet F10E
Buffer, pressure gauge	can be attached if required; buffers protect the carriages against collision forces	data sheet F10E
Detaching devices	can be attached if required	data sheet G01E
Tool carriages	can be attached if required	data sheets H01E, H02E
Load carriers	can be attached if required	data sheet I01E

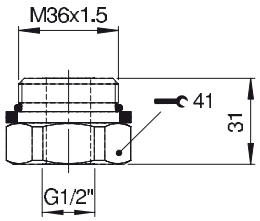
All tapping carriages can be combined with work stations or tool holders, see data sheets K02E-K04E.

4. Special accessories for tapping carriage



Type 6229 Reducer M36-G 1/2" external thread
The reducer (complete with O-ring and two spacers) can be fitted to the tapping carriage instead of tube nut type 6639 and allows connection of an air fuse or a regulator, for example.

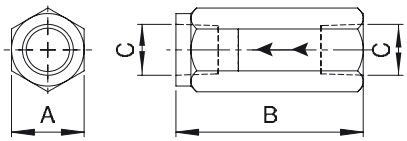
Connection thread for carriage		M36x1.5
Connection thread for accessory		G 1/2" ISO 228-1
Materials	Reducer	aluminium, blue anodized
	Spacers	aluminium, colourless anodized
	O-rings	NBR (Perbunan)
Weight		0.1 kg



Type 6292 Reducer M36-G 1/2" internal thread
The reducer (complete with O-ring and two spacers) can be fitted to the tapping carriage instead of tube nut type 6639 and allows connection of a hose (other than Parker push-lock).

Connection thread for carriage		M36x1.5
Connection thread for accessory		G 1/2" ISO 228-1
Materials:	Reducer	aluminium, blue anodized
	Spacers	aluminium, colourless anodized
	O-rings	NBR (Perbunan)
Weight:		0.1 kg

Type 6293 Reducer M36-G 3/4" internal thread
(as 6292, but with G 3/4" thread)

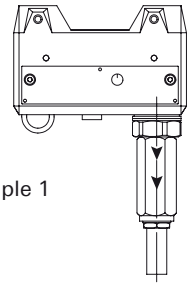


Type 6717 Air fuse 3/8"
Type 6718 Air fuse 1/2"
The air fuse is an automatic shut-off valve with automatic reset and fixed setting. It prevents uncontrolled escape of air in the event of a burst hose. If the flow exceeds a certain value (e.g. in the event of a burst hose), the valve closes and remains until the pressure has equalized again.
Notice: The minimum pressure directly depends on the hose length. For further details please contact us.

Materials:	Body	aluminium
	Valve	brass
	Spring	stainless steel

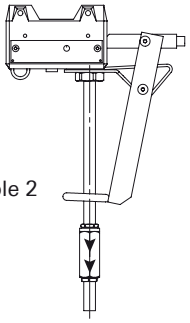
Type	Norgren no.	A (mm)	B (mm)	C	Residual closing pressure (bar)	Closing flow (l/s) [1]	Flow rate (l/s) [1]	Weight kg
6717	T60C3890	24	62	G 3/8"	0.14	19.4	13.5	0.065
6718	T60C4890	31.75	78	G 1/2"	0.14	32.2	23.2	0.15

[1] at 7 bar primary pressure



Example 1

If no detaching device is used, the air fuse can be fitted directly to the tapping carriage, e.g. with a reducer type 6229 (example 1).
If a detaching device is used the air fuse must be fitted below the detaching device (example 2).



Example 2

1. Basic equipment

- Hook to fix spring retainer or balancer.
- Check valves and fastening threads to accommodate 3/8" FRL units, type Hoerbiger Airfit Swing.
- Pressure gauge connection thread G 1/4", underside of carriage.
- Fixing slots to accommodate buffer, detaching device or carriage coupling.
- Connection thread for hose set (NW 3/8", 1/2").

FRL: F = Filter, R= Regulator, L = Lubricator

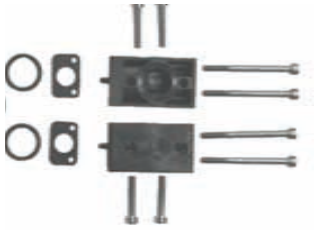
2. Tapping carriages with arrangement to attach 3/8" FRL units

The tapping carriage allows individual air preparation on site. The modular design enables 1 or 2 FRL units to be used. The same tapping carriage can also be operated without any FRL units. FRL units can therefore be added at a later date.
Provided filtered air is supplied to the Bestapower system as recommended, an additional filter on the carriage is not required in general. For larger volumes 1/2" tapping carriage should be used.

Type 8614 Tapping carriage

Operating pressure p1	min. 2 bar, max. 10 bar
Flow rate Q	see data sheet S01E economical 850 Nl/min. (with FRL unit) at 6 bar, approx. 1200 Nl/min.
Max. load on hook	approx. 20 kg
Material	aluminium, various plastic materials
Weight	1.8 kg

3. Assembly kit and coupling set to fit 3/8" FRL units



Type 6657 Assembly kit
Assembly kit with mounting instruction for all single FRL components for tapping carriage 8614.

Material of angle flange	plastic
O-rings/gaskets	NBR (Perbunan)
Screws	M4

Type 6658 Coupling set
Additionally required to connect two FRL components.

O-ring	NBR (Perbunan)
Screws/nuts	M4

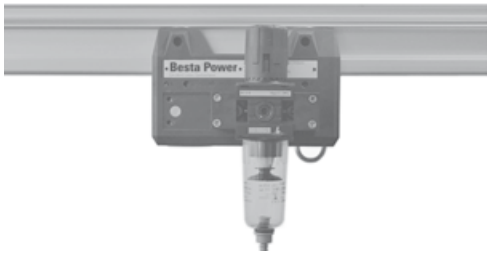
4. Accessories

The tapping carriages are equipped to accommodate the following parts:

Hose set	required for smooth operation of the tapping carriages	Data sheet F10E
Buffer, pressure gauge	can be attached if required buffers protect the carriages against collision forces	Data sheet F10E
Detaching devices	can be attached if required	data sheet G01E
Tool carriages	can be attached if required	data sheets H01E, H02E
Load carriers	can be attached if required	data sheet I01E

All tapping carriages can be combined with work stations or tool holders, see data sheets K02E-K04E.

5. 3/8" Service units (Hoerbiger Airfit Swing) for tapping carriage type 8614



Type 6616A Filter/regulator combination unit 3/8", SK-3/8-BP

Operating pressure inlet p1	min. 2 bar, max. 10 bar
Operating pressure outlet p2	max. 8 bar
Filter element (white)	30 µm (5 µm possible, yellow)
Filter efficiency	90 %
Flow rate	see data sheet S01E
Weight	0.35 kg

Type 6617A Filter 3/8", SF-3/8-BP

Operating pressure inlet p1	min. 2 bar, max. 10 bar
Filter element (white)	30 µm (5 µm possible, yellow)
Filter efficiency	90 %
Flow rate	see data sheet S01E
Weight	0.25 kg

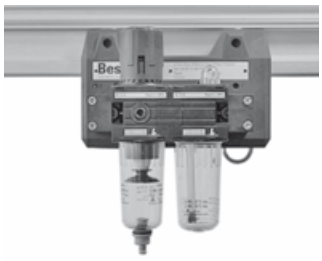
Type 6618A Regulator 3/8", SR-3/8-BP

Operating pressure inlet p1	min. 2 bar, max. 10 bar
Operating pressure outlet p2	max. 8 bar
Flow rate	see data sheet S01E
Weight	0.30 kg
Option:	Pressure gauge type 7411 with G 1/8" connection, for direct installation at 3/8" regulator

Type 6619A Mist lubricator 3/8", SL-3/8-BP

Operating pressure inlet p1	min. 2 bar, max. 10 bar
Oil capacity	max. 45 cm^3
Flow rate	see data sheet S01E
Weight	0.35 kg

6. Combination of service units



Filter/regulator with mist lubricator

Filter and regulator

Regulator and mist lubricator

Filter and mist lubricator

7. Type with bowl guard

All F+L units with a plastic bowl can also be supplied with a metal bowl guard. Part numbers with suffix US, e.g. 6616A **>>** 6616AUS.
Retrofitting is possible.

1. Basic equipment

- Hook to fix spring retainer or balancer.
- Pressure gauge connection thread G 1/4", underside of carriage
- Fixing slots to accommodate buffer, detaching device or carriage coupling.
- Connection thread for hose set (NW 3/8", 1/2").

FRL: F = Filter, R = Regulator, L = Lubricator

2. Tapping carriages with attached 1/2" FRL units

The tapping carriage allows individual air preparation on site. The modular design enables 1 or 2 FRL units, type Hoerbiger Airfit Comfort, to be used. Providing filtered air is supplied to the Bestapower system as recommended, an additional filter on the carriage is not required in general.

Notice:

These 1/2" tapping carriages cannot be operated without FRL units attached.

Type 8702.1 Tapping carriage with 1/2" filter/regulator combination unit, CK-1/2-BP

Operating pressure inlet p1	min. 2 bar, max. 10 bar
Operating pressure outlet p2	max. 8 bar
Flow rate Q	see data sheet S01E at 6 bar, approx. 2000 Nl/min.*
Filter element (white)	30 µm (5 µm possible)
Filter efficiency	95 %
Max. load on hook	approx. 20 kg
Tapping carriage material	aluminium, plastics
Weight	2.7 kg

Type 8702.2 Tapping carriage with 1/2" filter, CF-1/2-BP

Operating pressure inlet p1	min. 2 bar, max. 10 bar
Flow rate Q	see data sheet S01E at 6 bar, approx. 2000 Nl/min.*
Filter element (white)	30 µm (5 µm possible)
Filter efficiency	95 %
Max. load on hook	approx. 20 kg
Tapping carriage material	aluminium, plastics
Weight	2.3 kg

Type 8702.3 Tapping carriage with 1/2" regulator, CR-1/2-BP

Operating pressure inlet p1	min. 2 bar, max. 10 bar
Operating pressure outlet p2	max. 8 bar
Flow rate Q	see data sheet S01E at 6 bar, approx. 2000 Nl/min.*
Max. load on hook	approx. 20 kg
Tapping carriage material	aluminium, plastics
Weight	2.4 kg

Option: Pressure gauge type 7411.2 with G 1/4"
Connection for direct installation at regulator 1/2"

* economical 1500 Nl/min.

Type 8702.4
Tapping carriage with 1/2" mist lubricator, CL-1/2-BP

Operating pressure inlet p1	min. 2 bar, max. 10 bar
Flow rate Q	see data sheet S01E at 6 bar, approx. Nl/min.*
Oil capacity	max. 120 cm^3
Max. load on hook	approx. 20 kg
Tapping carriage material	aluminium, plastics
Weight	2.3 kg

Type 8702.8
Tapping carriage with 1/2" regulator and mist lubricator, CR-1/2-BP and CL-1/2-BP

Operating pressure inlet p1	min. 2 bar, max. 10 bar
Operating pressure outlet p2	max. 8 bar
Flow rate Q	see data sheet S01E at 6 bar, approx. Nl/min.*
Oil capacity	max. 120 cm^3
Max. load on hook	approx. 20 kg
Tapping carriage material	aluminium, plastics
Weight	3.6 kg

Type 8702.9 Tapping carriage with 1/2" filter/regulator combination and mist lubricator (without photo; CK-1/2-BP and CL-1/2-BP)

3. Type with bowl guard

All F+L units with a plastic bowl can also be supplied with a metal bowl guard (retrofitting is difficult).

Article number with suffix US, e.g. 8702.1 >> 8702.1US

⚠ FRL units shall be used for industrial applications with compressed air only. Pneumatic components may only be installed when the compressed air system is pressureless >> Risk of injury.

Notice: The plastic bowl of filter and mist lubricator must not get in contact with the following media (neither in liquid or vaporous form):acetone, benzene, brake fluid, chloroform, acetic acid, glycerol, ethyl alcohol, carbon disulfide, tri-tetra and per compounds, toluene, xylene (thinner), flame-resistant synthetic oils (e.g. based on phosphoric acid ester etc.). If in doubt please contact your supplier.

4. Accessories

The tapping carriages are equipped to accommodate the following parts:

Hose set	required for smooth operation of the tapping carriages	Data sheet F10E
Buffer, pressure gauge	can be attached if required buffers protect the carriages against collision forces	Data sheet F10E
Detaching devices	can be attached if required	data sheet G01E
Tool carriages	can be attached if required	data sheets H01E, H02E
Load carriers	can be attached if required	data sheet I01E

All tapping carriages can be combined with work stations or tool holders, see data sheets K02E-K04E.

1. Basic equipment

- Hook to fix spring retainer or balancer.
- Pressure gauge connection thread G 1/4", underside of carriage.
- Fixing slots to accommodate buffer, detaching device or carriage coupling.
- Connection thread for hose set (NW 3/8", 1/2").

2. Injection lubricator system Hoerbiger Oilfit

In contrast to an oil mist lubricator, with an injection lubricator the oil can be delivered in a separate oil tube close to the consumer. With the air flow sensor the airflow is converted into a pulsed air signal, hence the injection lubricator feeds oil per operating pulse.

3. Tapping carriage with attached 1/2" injection lubricator

The tapping carriage with injection lubricator (Hoerbiger Oilfit System) allows precise adjustable oil injection. The oil can be atomized either:

a) directly at the hose set, at the outlet of the tapping carriage, or

b) directly near the consumer, by using a coaxial oil tube inside the air hose.
Also for this type of tapping carriage, attention must be paid that only filtered air (min. 40 µm) is supplied to the Bestapower System. The economical flow rate is at approx. 1500 Nl/min., at 6 bar.

Notice:
These 1/2" tapping carriages cannot be operated without the injection lubricator attached.

Type 8714A Tapping carriages with injection lubricator

Operating pressure inlet p1		min. 3 bar, max. 10 bar (control medium)
Flow rate Q		see data sheet S01E (min. approx. 400 Nl/min.) max. approx. 2000 Nl/min.
Max. load on hook		approx. 20 kg
Tapping carriage material		aluminium, plastics
Weight incl. lubricator		2.8 kg
Lubricant		mineral oil according to DIN 51524 and 51525
Viscosity		20-765 mm^2/s (=cST), (=2.9-100°E)
Oil feed per stroke		3-30 mm^3 adjustable
Feed stroke		per operating pulse
Reservoir capacity		max. 250 cm^3
Oil feed		gravity feed from reservoir
Connection size		capillary tube dia. 2.5 / 1.5 mm
for oil tube		in the control lever at the tapping carriage
Material	Lubricator housing	aluminium
	Reservoir	plastic (PETP)

4. Application with or without coaxial oil tube

The tapping carriage with injection lubricator can be used with or without a coaxial oil tube in the compressed-air hose. Both methods, with or without oil tube, do have advantages and disadvantages, which should be considered for each application individually.

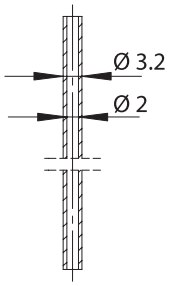
4.1 Application without coaxial oil tube:

Due to the oil atomization directly at the outlet of the tapping carriage, i.e. just before the hose set (straight Push-lok hose), the oil can settle on the inside of the air hose. Because of the large surface (inner tube of the hose) the air can thoroughly and continuously absorb the lubricant. In case of excessive lubrication, oil can collect at the lowest point of a slack hose, which can result in over-oiling of the tool.

4.2 Application with coaxial oil tube:

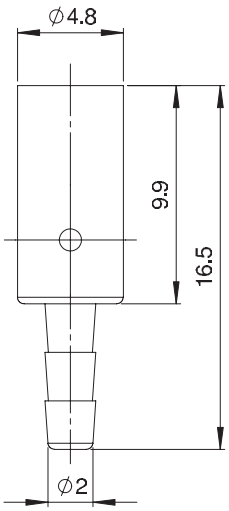
The lubricant is supplied in the coaxial oil tube directly close to the consumer. Even if the hose is slack, no oil will collect at the lowest point. Before the first use, the oil tube must be filled with oil. We therefore recommend to use pre-filled oil tubes. For continuity of oil supply and the convenience of quick release and attachment of any extension air-hoses we recommend the use of quick release couplings with connecting nipple (higher pressure loss to be considered). To avoid over-oiling and draining of oil from oil line, a non-return valve should be fitted to the end of the capillary oil tube at consumer end. On the tapping carriage, the capillary oil tube is directly fitted to a relevant nipple.

5. Coaxial oil tube



Type 6719 Capillary oil tube, prefilled (for 6735)

Lubricant	general purpose oil (according to ISO 32)
Outside diameter d_a	3.2 mm (0,125 in.)
Inside diameter d_i	2.0 mm (0.080 in.)
Material	Nylon (flexible)
Colour	transparent
Length	per metre



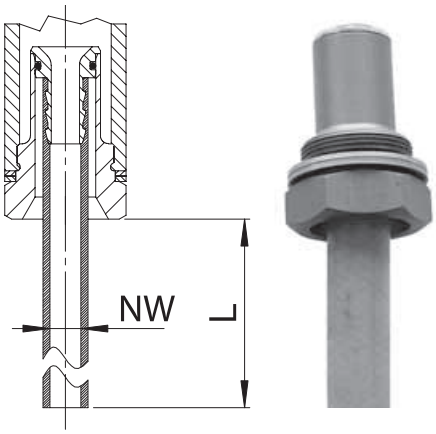
Type 6735 Capillary non-return valve

Nipple size	to suit 2.0 mm capillary oil tube (6719)
Material	brass housing, ball NBR

1. Hose set

Consisting of Push-lok hose (Besta standard: Parker 801, grey) with fitted nipple and complete with tube nut (O-ring and two spacers). The other hose end is free to connect the consumer. The tool can be mounted directly at the hose end or via a coupling.
For a smooth undocking and docking process, a hose set of min. 300 mm length is imperative. Over this length, the movement of the hose must not be restricted. The Parker Push-lok type hose offers convenient and tight sealing between nipple and hose without additional hose clamp.

Notice: Parker Push-lok hose 801, blue is available on request.



Hose set

Hose	NW 1/2" (13 mm)	NW 3/8" (9.5 mm)
Length L (m)	**Type**	**Type**
0.3	6615	6654
1.0	6615.1	6654.1
2.0	6615.2	6654.2
3.0	6615.3	6654.3
4.0	6615.4	6654.4
5.0	6615.5	6654.5
6.0	6615.6	6654.6
7.0	6615.7	6654.7
8.0	6615.8	6654.8
9.0	6615.9	6654.9

2. Spare parts for hose set

Notice:
Hose type 801 is silicone-free. For more stringent requirements, e.g. paint processing we recommend hose type 837BM. This hose is free of any wetting disturbing substances.
Further information on request.

Push-lok hose (Parker 801, grey)

Hose	NW 1/2" (13 mm)	NW 3/8" (9.5 mm)
Length L (m)	**Type**	**Type**
0.3	6641	6642
1.0	6641.1	6642.1
2.0	6641.2	6642.2
3.0	6641.3	6642.3
4.0	6641.4	6642.4
5.0	6641.5	6642.5
6.0	6641.6	6642.6
7.0	6641.7	6642.7
8.0	6641.8	6642.8
9.0	6641.9	6642.9
Weight	0.19 kg/m	0.41 kg/m

Nipple
Joins Push-lok hose and tube nut. The nipple is designed to hold the hose securely and seal it without using a hose clamp.

Type	6677	6678
Push-lok hose	NW 1/2"	NW 3/8"
Material	steel, QPQ treated, black	
Weight	0.05 kg	

Type 6639 Tube nut
The tube nut joins carriage with the Push-lok hose and nipple. It screws into the tapping carriage and seals with an O-ring complete with two spacers.
The Push-lok hose with nipple is pushed through the tube nut with the shaft part pointing upwards (see page 1).

Connection thread		M36x1.5
Materials	Hose nut	aluminium, blue anodized
	Spacers	aluminium, colourless anodized
	O-rings	NBR (Perbunan)
Weight		0.1 kg

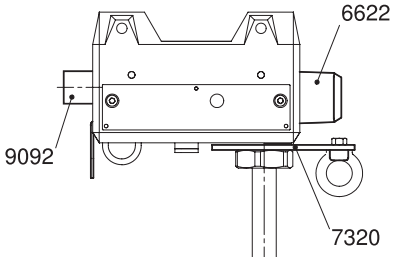
3. Accessories for tapping carriages

Type 6622 Buffer
Buffers protect tapping carriages against collision forces. The tapping carriage are equipped with the required fixing slots.

Material	Plate	steel, blue zinc-plated
	Buffer	elastomer, NBR (Perbunan)
Weight		0.17 kg

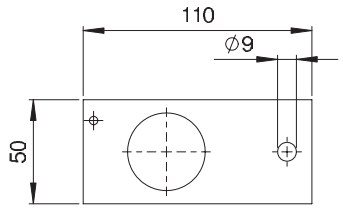
Type 6621 Pressure gauge
For individual pressure reading on each tapping carriage. The connection thread G 1/4" is located on the underside of the tapping carriage.

Connection	rear G 1/4" ISO 228-1
Scale	0-16 bar
Gasket	copper compression washer



Type 7411 Pressure gauge to fit 3/8" regulators directly.

Connection	rear G 1/8" ISO 228-1
Scale	0-10 bar
Gasket	plastic



Type 7411.2 Pressure gauge to fit 1/2" regulators directly.
Techn. data see type 7411, but connection G 1/4".

Type 7320 Plate
To fix a release handle, in case undocking is not possible by pulling on the air hose.

Material	steel, black

Notice
Plate 7320 replaces the 2 spacers on the tube nut. Application see data sheet K03E, tool holder, example 3.
Detaching chain complete with plate, type 9002, see data sheet K04E.

Type 9092 Securing bracket with buffer
Securing bracket, e.g. to hold or secure a spring retainer etc. The buffer protects the tapping carriage against small collision forces.

Material	bracket	steel, black
	buffer	elastomer NBR (Perbunan)
Max. load		20 kg
Weight		0.1 kg

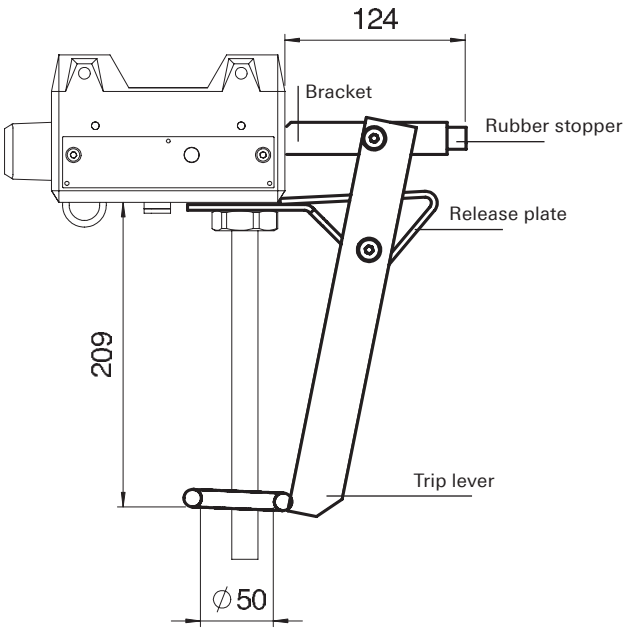
Detaching devices can be fitted (or retrofitted) to any type of tapping carriage. They enable undocking of the tapping carriage from the tapping valve without the need of vertically pulling on the hose.
Simply by deflecting the hose sideways in the working direction, or approx. 50° crosswise, the tapping carriage will undock.
The deflection will create enough momentum to move the carriage to the next tapping point.

1. Application

Detaching devices are always used when a carriage cannot be disengaged manually, e.g. during assembly work inside a car body, or whenever convenient automatic detaching is desirable for economic, ergonomic or safety reasons.

2. Mechanical detaching device

The mechanical type is the most economical detaching device and serves the purpose for most applications. It is particularly suitable for use in rough operating conditions. To operate a detaching device, it is necessary to use a hose set with straight hose (details see data sheet F10E). Should any spiral hoses be coupled for extension, they should not be stretched in order to avoid high acceleration moments.

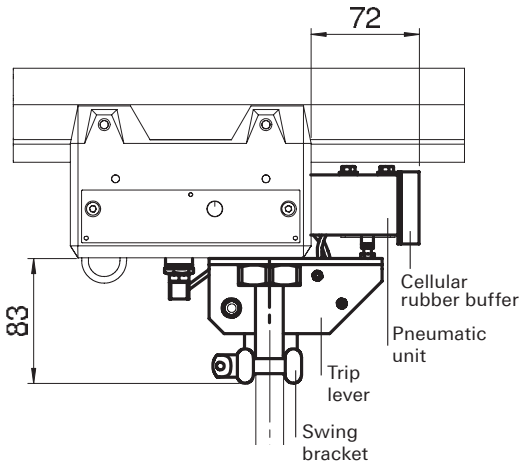


Type 9000 Mechanical detaching device

Consisting of	release plate, bracket with rubber stopper, trip lever with ball bearing and guide ring for hose
Mounting	fixing slots in the tapping carriage
Release force	approx. 40 N (at 45° deflection)
Weight	1.5 kg

3. Pneumatic detaching devices

The pneumatic detaching device operates very smoothly and is used in applications with more stringent ergonomics requirements. To operate a detaching device, it is necessary to use a hose set with straight hose (details see data sheet F10E). Should any spiral hoses be coupled for extension, they should not be stretched in order to avoid high acceleration moments.

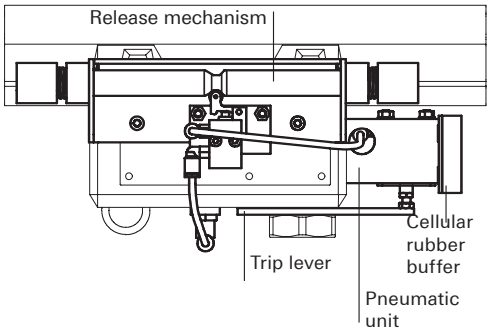


Type 9600 Pneumatic detaching device

Consisting of	pneumatic unit, trip lever, swing bracket, cellular rubber buffer
Operating pressure	max. 7 bar
Mounting	fixing slots in the tapping carriage
Release force	approx. 10 N (at 45° deflection)
Weight	1.0 kg

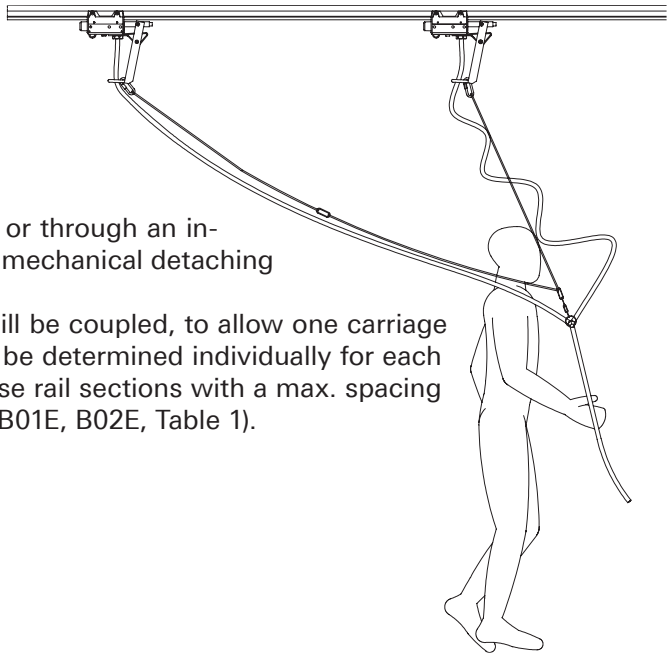
4. Forced pneumatic detaching device

The forced pneumatic detaching device is used in applications where several tapping carriages have to be moved simultaneously, for example for returning to the starting point in a work area. The release mechanism enables the automatic forced detaching of the individual tapping carriage from each other. To operate a detaching device, it is necessary to use a hose set with straight hose (details see data sheet F10E).



Type 9610 Forced pneumatic detaching device

Consisting of	pneumatic unit, trip lever, release mechanism, cellular rubber buffer
Operating pressure	max. 7 bar
Mounting	fixing slots in the tapping carriage
Release force	approx. 10 N
Weight	1.0 kg

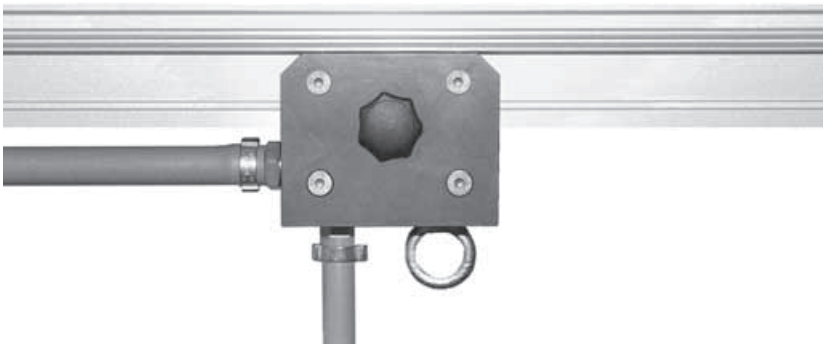


5. Tandem units, Type 9096

To supply a consumer continuously with air, directly or through an intermediary buffer vessel, two tapping carriages with mechanical detaching device can be used.
By using different hose lengths, the two carriages will be coupled, to allow one carriage always to be docked. The lengths of the hoses must be determined individually for each application. For a tandem function it is essential to use rail sections with a max. spacing of 750 mm between tapping valves (see data sheets B01E, B02E, Table 1).
For additional information please contact us.

Tool carriages

Tool carriages are useful for hanging balancers and air powered tools and whenever compressed air is needed within a limited distance.
The combination with a tapping carriage allows the use of several tools and provides an unlimited action radius.
Air supply to the carriage is according to data sheet H02E, page 2.

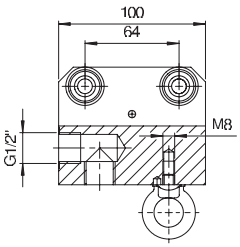


1. Standard equipment for all tool carriages

- Connection thread G 1/2" for inlet port.
- Connection thread G 1/2" for tool supply.
- Eye bolt with safety plate acc. to DIN 432 to fix spring retainer or balancer
- Star knob to lock carriage in required position.

FRL: F = Filter, R = Regulator, L = Lubricator

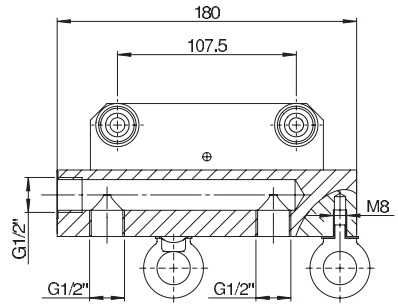
2. Tool carriage for 1 tool without arrangement to attach FRL units



Type 8802 Tool carriage

Operating pressure p1	max. 10 bar
Flow rate Q	max. approx. 2000 Nl/min.
Max. load on hook	approx. 20 kg
Material	aluminium, black anodized steel, black
Weight	1.5 kg
Inlet port	G 1/2" ISO 228/1
Outlet port	G 1/2" ISO 228/1
Thread for eye bolt	M8 (1 eye bolt)
Curve-going	yes

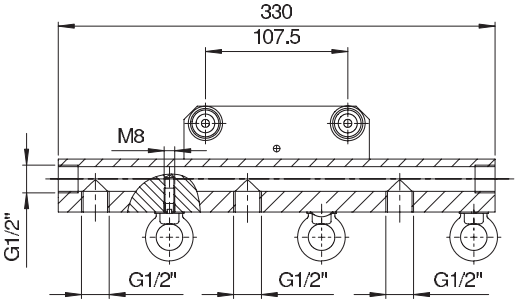
3. Tool carriage for 2 tools without arrangement to attach FRL units



Type 8812 Tool carriage

Operating pressure p1	max. 10 bar
Flow rate Q	max. approx. 2000 Nl/min.
Max. load on hook	approx. 20 kg per eye bolt
Material	aluminium, black anodized steel, black
Weight	2.5 kg
Inlet port	G 1/2" ISO 228/1
Outlet port	G 1/2" ISO 228/1
Thread for eye bolt	2 x M8 (2 eye bolts)
Curve-going	yes

4. Tool carriage for 3 tools without arrangement to attach FRL units



Type 8822 Tool carriage

Operating pressure p1	max. 10 bar
Flow rate Q	max. approx. 2000 Nl/min.
Max. load on hook	approx. 20 kg per eye bolt
Material	aluminium, black anodized steel, black
Weight	4.0 kg
Inlet port	G 1/2" ISO 228/1
Outlet port	G 1/2" ISO 228/1
Thread for eye bolt	3 x M8 (3 eye bolts)
Curve-going	yes

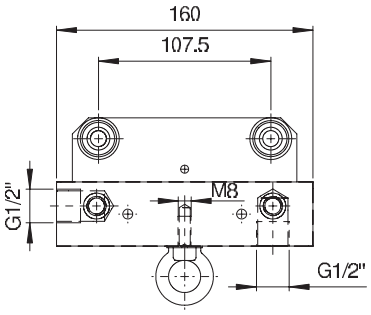
5. Tool carriages with arrangement to fit 3/8" FRL units

These tool carriages can be used with 1 or 2 FRL components. Since the use of a filter on each air inlet to the rail system is obligatory, an additional filter on the carriage is generally not necessary. To fit the FRL components, assembly kit 6657 and coupling set 6658 (when 2 components) as described in data sheet F03E are used. If only one FRL component is used, adaptor type 7462 is required in addition to assembly kit 6657. See data sheet H02E.

Pressure gauge: Type 7411 for the direct installation at 3/8" regulator. See data sheet F10E.

Notice: These tool carriage are not operative without FRL units.

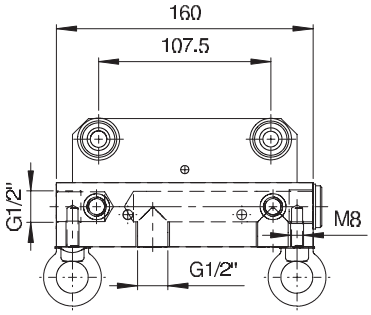
6. Tool carriage for 1 tool with arrangement to attach 3/8" FRL units



Type 8852 Tool carriage

Operating pressure p1	max. 10 bar
Flow rate Q	economical 800 Nl/min. at 6 bar, approx. 1200 Nl/min.
Max. load on hook	approx. 20 kg
Material	aluminium, black anodized steel, black
Weight	2.5 kg
Inlet port	G 1/2" ISO 228/1
Outlet port	G 1/2" ISO 228/1
Thread for eye bolt	M8 (1 eye bolts)
Curve-going	yes

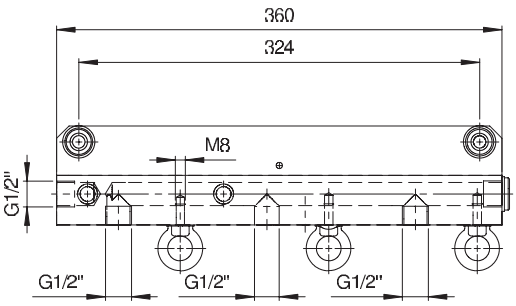
7. Tool carriage for 2 tools with arrangement to attach 3/8" FRL units



Type 8862 Tool carriage

Operating pressure p1	max. 10 bar
Flow rate Q	economical 800 Nl/min. at 6 bar, approx. 1200 Nl/min.
Max. load on hook	approx. 20 kg per eye bolt
Material	aluminium, black anodized steel, black
Weight	2.5 kg
Inlet port	G 1/2" ISO 228/1
Outlet port	G 1/2" ISO 228/1
Thread for eye bolt	2 x M8 (2 eye bolts)
Curve-going	yes

8. Tool carriage for 3 tools with arrangement to attach FRL units

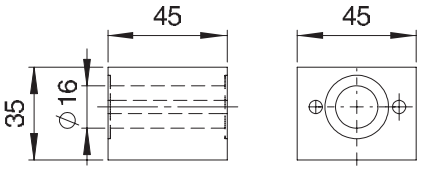


Type 8872 Tool carriage

Operating pressure p1	max. 10 bar
Flow rate Q	economical 800 Nl/min. at 6 bar, approx. 1200 Nl/min.
Max. load on hook	approx. 20 kg per eye bolt
Material	aluminium, black anodized steel, black
Weight	4.0 kg
Inlet port	G 1/2" ISO 228/1
Outlet port	G 1/2" ISO 228/1
Thread for eye bolt	3 x M8 (3 eye bolts)
Curve-going	no

9. Adapter for 3/8" FRL components (Hoerbiger Airfit Swing) for tool carriages

If only one FRL component is used, in addition to assembly kit 6657 (see data sheet F03E) an adaptor type 7462 (complete with O-ring and 2 screws M4x70 mm) must be used to compensate the distance between the connection bores.



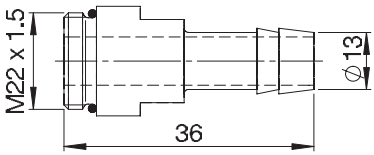
Type 7462 Adapter

Operating pressure	10 bar
Material	aluminium, black anodized
O-ring	NBR (Perbunan)
Bore	dia. 5 mm
Weight	0.2 kg

10. Hose nozzles

10.1. Special hose nozzle for tapping carriage

This hose nozzle is required to link a tool carriage with a tapping carriage. The hose nozzle is connected to control lever at the front of the tapping carriage, instead of the plug fitted (see example on page 2).
The hose nozzle is suitable for Parker Push-lok type hoses. No additional hose clamp is required.

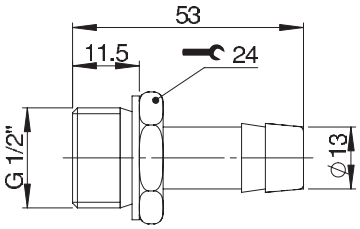


Type 6032 Hose nozzle 1/2" for Parker Push-lok hose

Connection to tapping carriage	M22x1.5
Hose dia. inside	13 mm (1/2")
Material	aluminium, colourless anodized
O-ring	NBR (Perbunan)
Weight	0.03 kg

10.2. Parker hose nozzles

These hose nozzles can be used to fit tool carriages, connection plates or manifolds. They are especially suitable for Parker Push-lok type hoses, which can be fitted without additional hose clamp.

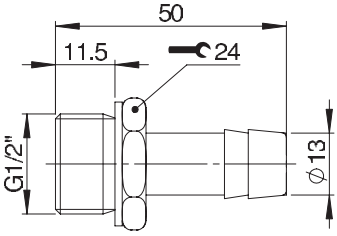


Type 6062 Hose nozzle G 1/2", dia. 13 mm

Thread	G 1/2" ISO 228-1
Hose dia. inside	13 mm (1/2")
Material	brass
Sealing ring	PVDF
Weight	0.05 kg

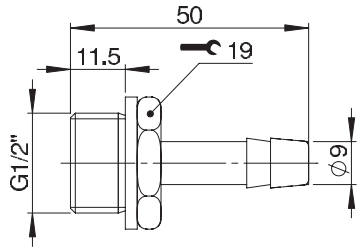
10.3. Standard hose nozzles

These hose nozzles with parallel thread can be used to fit tool carriages, connection plates or manifolds. The hose (also Parker Push-lok type) must be secured with a 1-ear hose clamp (see page 2).



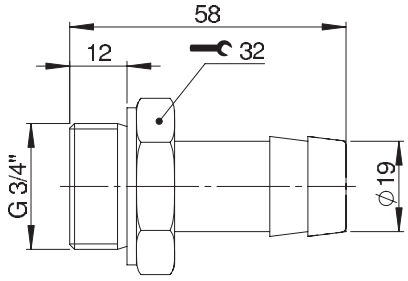
Type 6790 Hose nozzle G 1/2", dia. 13 mm

Thread	G 1/2" ISO 228-1
Hose dia. inside	13 mm (1/2")
Material	brass
Sealing ring	PVDF
Weight	0.05 kg



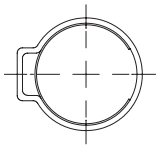
Type 6797 Hose nozzle G 1/2", dia. 9 mm

Thread	G 1/2" ISO 228-1
Hose dia. inside	9 mm (3/8")
Material	brass
Sealing ring	PVDF
Weight	0.03 kg



Type 6792 Hose nozzle G 3/4", dia. 19 mm

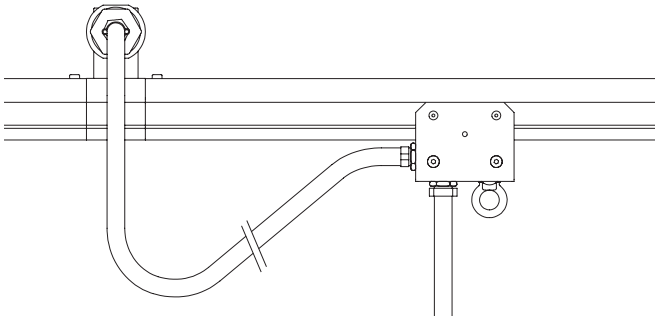
Thread	G 3/4" ISO 228-1
Hose dia. inside	19 mm (3/4")
Material	brass
Sealing ring	PVDF
Weight	0.1 kg



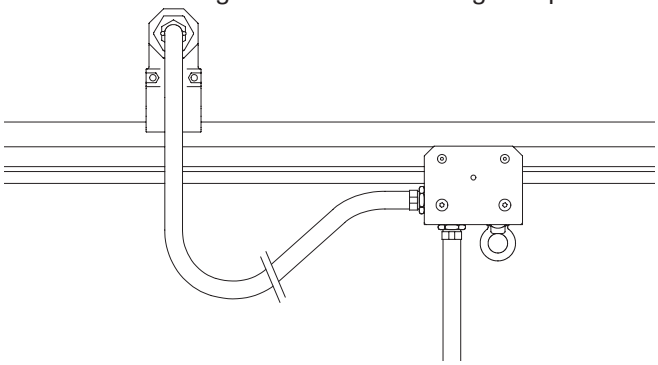
Type 2767.56 1-ear hose clamp 20.0 mm
Type 2767.57 1-ear hose clamp 22.5 mm
Type 2767.58 1-ear hose clamp 18.5 mm

11. Air supply for A62 section

The air supply to the tool carriages at the A62 section can be arranged with the following components.



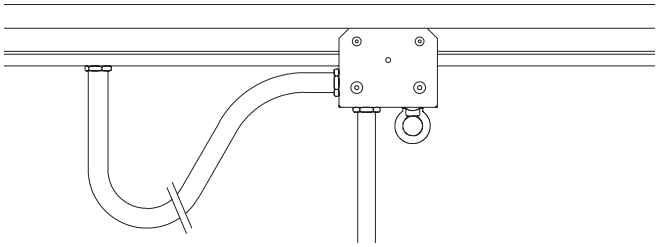
Rail coupling with lateral
G 1 1/4" connection, data sheet C01E



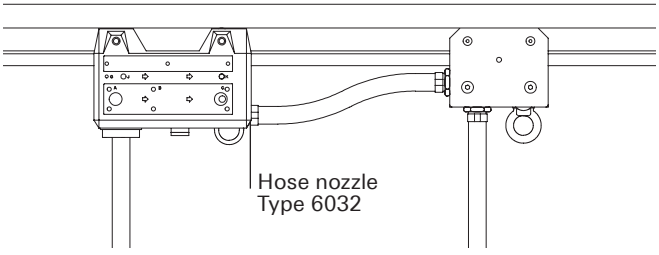
Fixed tapping point at any position,
data sheet B03E

12. Air supply for A62 and A180 sections

The air supply to the tool carriages can be arranged with the following components.



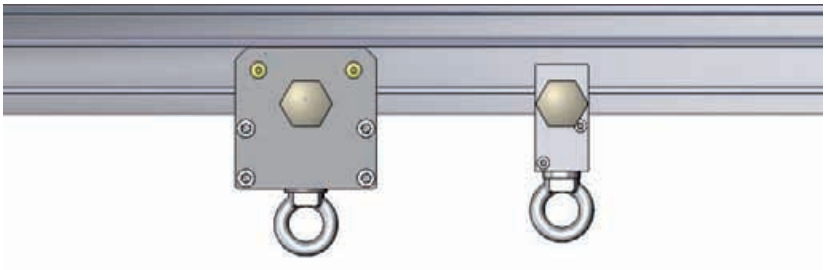
Connection plate,
data sheets B01E, B02E



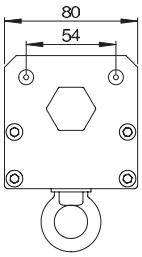
Tapping carriage,
data sheet F01E

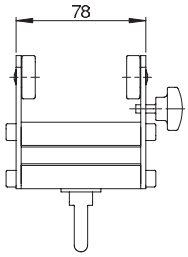
Load carriers can be used to hold tools or any other additional load. They can be linked directly with tapping carriages. For information on tool carriages to accommodate several air tools see data sheet H01E.

Cable trolleys in festoon systems can operate with flat and round cables.



1. Suspension elements

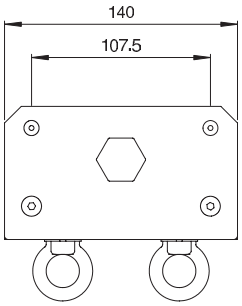


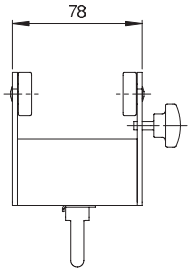


Type 6750 Load carrier

Fixation grooves are provided on the underside and at the side.

Material, carriage	side plates	steel, black
	body	aluminium section 40/80, colourless anodized
Max. load		approx. 20 kg
Weight		1 kg
Scope of supply		1 eye bolt M8 incl. sliding block, star knob
Curve-going		yes

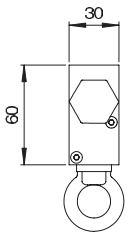


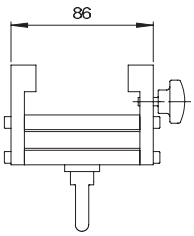


Type 6753 Load carrier

Two M8 mounting holes are provided on the underside. Further holes can be drilled if required, also on the side.

Material, carriage	side plates	steel, black
	body	aluminium, black anodized
Max. load[1)]		approx. 20 kg per eye bolt
Weight		2 kg
Scope of supply		2 eye bolts M8[2)], star knob
Curve-going		yes





Type 6733 Holder

The holder can be fixed at any position. Fixation grooves are provided on the underside and at the side.

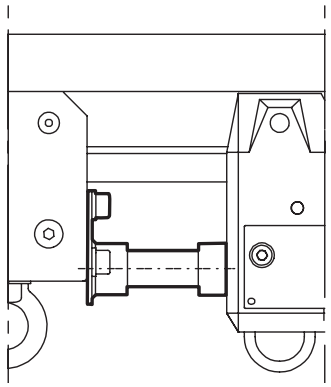
Material	aluminium, colourless anodized
Max. load	approx. 20 kg
Weight	0.3 kg
Scope of supply	1 eye bolt M8 incl. sliding block M8 and star knob

Notice

1) The load carriers are approved for loads up to 80 kg. However, for loads >20 kg criteria such as possible dynamic loads must be considered, and the spacing between hangers must be checked. Please contact us for further information.

2) with safety plate according to DIN 432

2. Connection elements



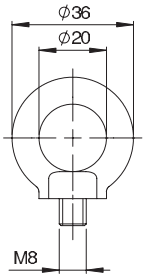
Type 9022.6 Coupling with buffer element
To link tapping carriage with load carrier type 6753.

Mounting	tapping carriage	fixing slots
	carriage	screwed connection
Buffer element		elastomer, NBR (Perbunan)
Weight		0.25 kg

Type 9022.7 Coupling with buffer element
As 9022.6, but to link tapping carriage with load carrier type 6750.

Mounting	tapping carriage	fixing slots
	carriage	screwed connection with sliding block
Buffer element		elastomer, NBR (Perbunan)
Weight		0.25 kg

3. Individual and spare parts

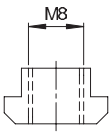


Type 2786 Eye bolt, machined, with safety plate
(for carrier 6753)

Material	steel, zinc-plated
Thread	M8
Weight	0.05 kg

Type 2786.011 Eye bolt, without safety plate
(for carrier 6750, holder 6733)

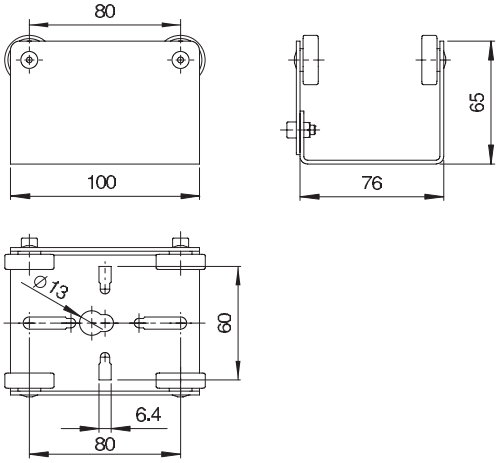
Material	steel, zinc-plated
Thread	M8
Weight	0.05 kg



Type 2787 Sliding block

Material	steel, zinc-plated
Thread	M8
Weight	0.01 kg

4. Cable trolley

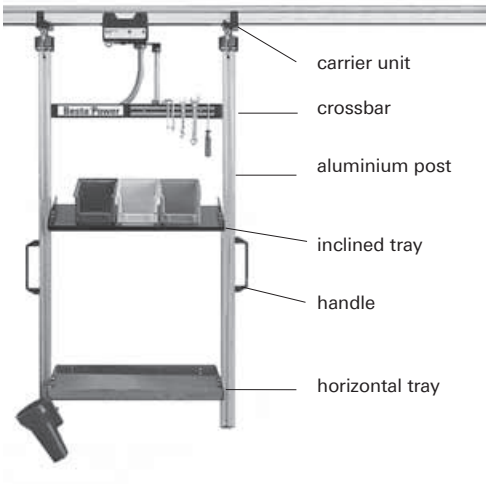


Type 9063 Cable trolley
Trolley for flat and round cables. The universal bore arrangement allows to fit common cable clips and cable saddles. The cable trolley cannot be linked with a tapping carriage directly.

Material	steel, black
Max. load	20 kg
Weight	0.45 kg

Application example see data sheet N01E.

Work stations are ideal to conveniently deposit tools, assembly parts, measuring equipment etc. at the work place. The modular design offers flexibility to meet individual requirements regarding ergonomics, productivity and user comfort.
Work stations can be used with or without energy supply. The air supply can either be arranged with a tapping carriage or in combination with an energy carrier system. If required, electric power supply can also be integrated, always in consideration of local regulations. Depending on the range of travel, conductor rails, energy carrier systems, loose cables or cable reels can be used.
Type 91xx and 93xx are available as special versions for use with curved rail sections.



Standard condition as delivered

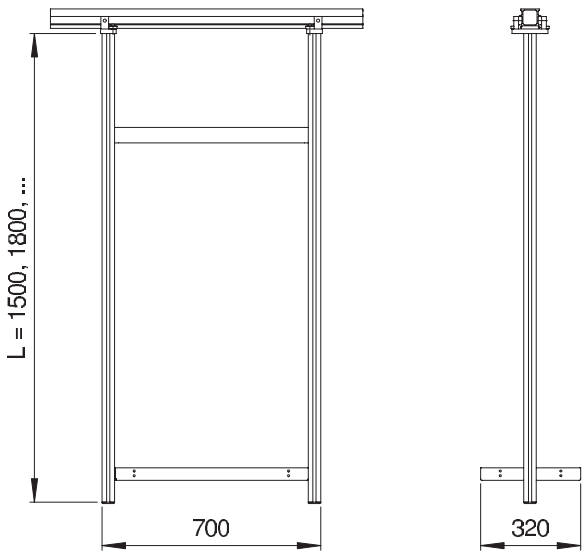
Work stations are supplied semi-assembled as follows:

- Carrier units fitted to vertical posts. If a hinge set and/or positive safety device is included, this is also fitted (for easier assembly on site profile end caps are packed loose).
- Trays are supplied loose, but complete with sliding blocks and screws.
- Crossbars are supplied loose. Any detaching devices and manifolds will be fitted to same.
- Hose sets, holsters, handles are supplied loose, but always complete with the required number of fasteners.

Special delivery condition

On request work stations can be supplied completely assembled (for packing reasons certain items like hoses etc. will always be shipped loose). There will be a surcharge for complete assembly and packing.

1. Work station (without compressed air supply)



Type 91xx
The basic model 91 xx includes the following items:
2 carrier units with guide rollers
2 posts, aluminium section 40/40 mm, length: 1500 mm, complete with section end caps
1 crossbar, steel, black
1 horizontal tray, 620x320x40 mm, sheet steel, black, with rubber mat

max. load on tray	30 kg
max. load on work station (for heavier loads please ask)	60 kg
Weight of work station (L 1500 mm)	14 kg

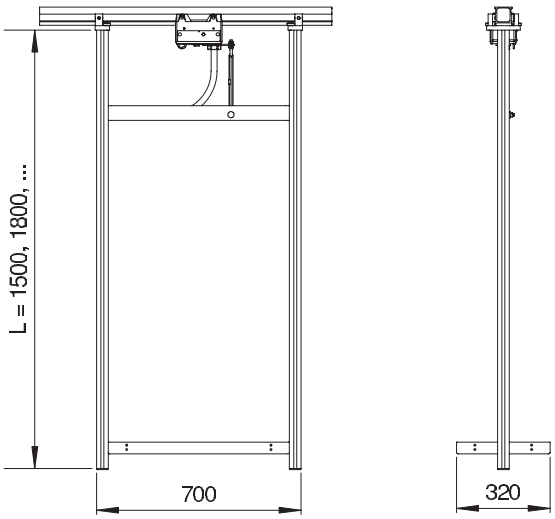
Additional equipment (options):

- post length L: 1800, 2000, 2500 mm
- additional tray: horizontal or inclined type
- handles
- hinge set 25° (increases overall length: L +78 mm)
- positive safety device
- holsters
- additional crossbar (e.g. lower type)

Details see Additional equipment, data sheet K02E.

2. Work station with mechanical detaching device

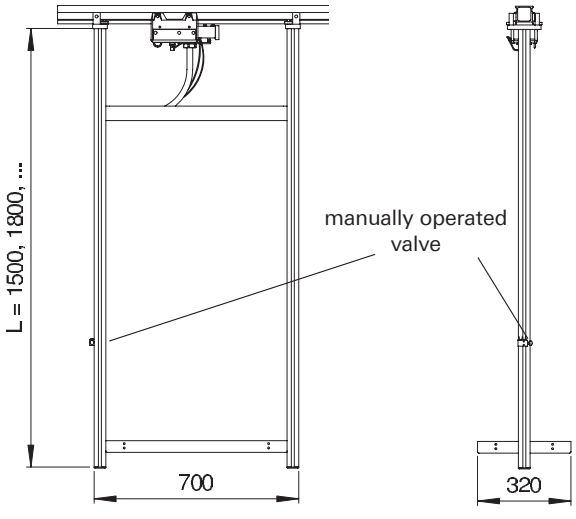
The mechanical detaching device is linked with a tapping carriage. By axial movement of the work station along the rail, the tapping carriage is undocked.



Notice:
Tapping carriages are not part of the work station and must be ordered separately. see data sheets F01E-F05E.

3. Work station with pneumatic detaching device

The pneumatic detaching device is fitted to a tapping carriage. Detaching is done with a manually operated release valve on the LH post. By activating the valve several tapping points can be passed conveniently without docking. Once the valve is released, the carriage will automatically dock again at the next tapping point.



Notice:
Tapping carriages are not part of the work station and must be ordered separately. see data sheets F01E-F05E.

Type 92 xx (without tapping carriage)
The basic model 92 xx includes the following items:

2 carrier units with guide rollers
2 posts, aluminium section 40/40 mm, length: 1500 mm, complete with section end caps
1 mechanical detaching device
1 crossbar, steel, black
1 horizontal tray, 620x320x40 mm, sheet steel, black, with rubber mat

max. load on tray	30 kg
max. load on work station	60 kg

(for heavier loads please ask)

Required accessories:
- hose set, complete with tube nut, nipple and hose clamps
- manifold with 3 outlet ports G 1/2"

Additional equipment (options):
- post length L: 1800, 2000, 2500 mm
- additional tray: horizontal or inclined type
- handles
- hinge set 25° (increases overall length: L +78 mm)
- positive safety device
- holsters
- additional crossbar (e.g. lower type)

Details see Additional equipment, data sheet K02E.

Type 93 xx (without tapping carriage)
The basic model 93 xx includes the following items:

2 carrier units with guide rollers
2 posts, aluminium section 40/40 mm, length: 1500 mm, complete with section end caps
1 pneumatic detaching device with manually operated valve (LH side)
1 crossbar, steel, black
1 horizontal tray, 620x320x40 mm, sheet steel, black, with rubber mat

max. load on tray	30 kg
max. load on work station	60 kg

(for heavier loads please ask)

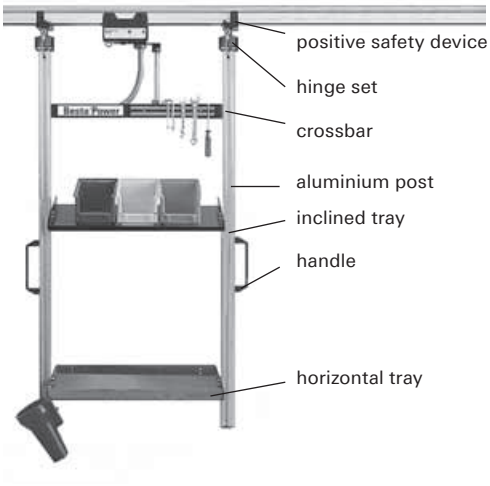
Required accessories:
- hose set, complete with tube nut, nipple and hose clamps
- manifold with 3 outlet ports G 1/2"

Additional equipment (options):
- post length L: 1800, 2000, 2500 mm
- additional tray: horizontal or inclined type
- handles
- hinge set 25° (increases overall length: L +78 mm)
- positive safety device
- holsters
- additional crossbar (e.g. lower type)
- manually operated valve (RH side, on request)

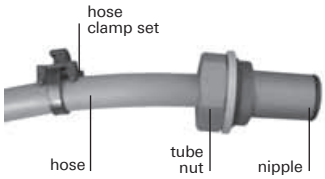
Details see Additional equipment, data sheet K02E.

Additional equipment

All basic models as described in data sheet K01E can be equipped with additional components to meet individual requirements.
Work stations of type 92xx and 93xx (with detaching device) are operated in combination with a tapping carriage and therefore must be equipped with a hose set and a manifold.
The final part number for the complete work station will be automatically issued with the order processing.



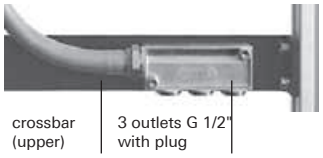
1. Additional equipment for work stations types 92xx and 93xx (with detaching device)



Type 9015 Hose set 1/2"
Parker Push-lok hose 1/2" (type 801, grey) complete with tube nut and hose nipple to fit tapping carriage. Length of hose 2.5 m, free end (no coupling supplied). The hose set is supplied with hose clamps to be fitted to the vertical post, preferably on LH-side. Weight 0.6 kg.

Type 9016 Hose set 3/8"
As 9015, but Parker Push-lok hose 3/8". Weight 0.5 kg.

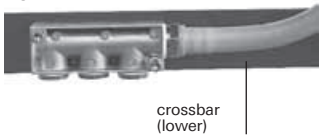
Fig. 1



Type 9017 Manifold with 3 outlet ports G 1/2" (Fig. 1)
This manifold can be fitted to the upper crossbar. It is supplied complete with connecting hose (Parker 801 - 1/2", length approx. 400 mm), tube nut and nipple to fit to the tapping carriage. The outlet ports are sealed with plugs. Weight 0.6 kg.

Type 9018 Manifold (Fig. 2)
As 9017, but for mounting at the lower crossbar. (Parker 801 - 1/2", length: post length L + approx. 900 mm). The lower crossbar must be ordered separately, see type 9001.

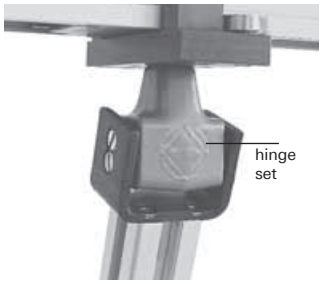
Fig. 2



Type 9001 Crossbar (Fig. 2)
An additional crossbar can be fitted to the lower end of the post, to position a manifold, for example. Weight 1.6 kg. See manifold type 9018.

Notice: For reason of stability all work stations, incl. type 91xx with a post length L ≧ 2000 mm must be fitted with an additional crossbar.

2. Additional equipment for work station types 91xx, 92xx, 93xx



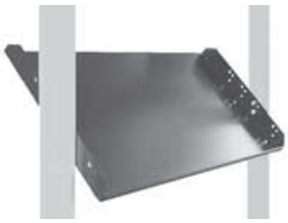
Type 9012 Hinge set 25° (1set = 2 pcs.)
The hinge set allows lateral deflection of the workstation by 25° to each side. It is a safety feature, e.g. to avoid jamming between work station and any obstruction like a conveyor system etc. and also to protect the installation against the impact of any heavy lateral force.
The hinge set is fitted between the carrier unit and the aluminium post.

Notice: All work stations with a post length L ≧ 2500 mm must be fitted with this item. The hinge set adds 78 mm to the overall length of a basic work station! Weight 1.1 kg (set).

Type 9013 Positive safety device (set of 2)

The positive safety device is an additional safety feature to secure the post to the carrier unit with a wire rope. It will stop the post from falling down in case of any inexpert handling or overstress, e.g. overloading the work station or impact of excessive mechanical stress on it. It can be used in combination with or without a hinge set (see type 9012).

Weight	0.2 kg (set)



Type 9019 Inclined tray, 620 x 320 mm

The inclined tray suitable as a container for small parts or as storage area for documents etc. It is fitted to the aluminium posts with sliding blocks at an angle of 10° or 45°.

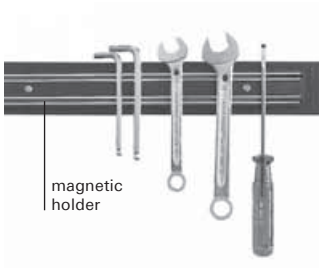
Max. load	30 kg
Material	steel, black
Weight	5.4 kg

Type 9010 Horizontal tray, 620 x 320 mm

The horizontal tray with rubber mat is suitable for holding parts or equipment used on work benches or assembly lines. It has holes on each side to accommodate tool holsters.

Max. load	30 kg
Material	steel, black
Weight	4.3 kg

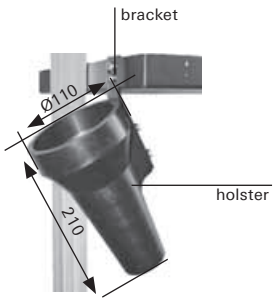
Notice:
1 horizontal tray is included in each basic type.



Type 9011 Magnetic holder

The magnetic holder can be fitted to the upper crossbar and will hold tools or any other metal parts simply by magnetic attraction. (The tools shown are not included).

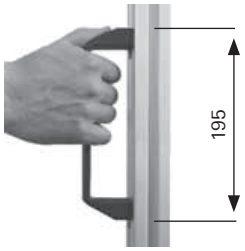
Length	350 mm
Weight	0.4 kg



Type 9014 Holster complete with bracket

The holster is designed to hold medium-sized tools. Holster (type 7405) and bracket (type 7408) are also available as single items.

Material	bracket	steel, black
	holster	elastomer, NBR (Perbunan)
Weight		0.9 kg



Type 9008 Handle

For added handling comfort a handle can be fitted to the vertical post. Sliding blocks allow easy mounting at any desired height.

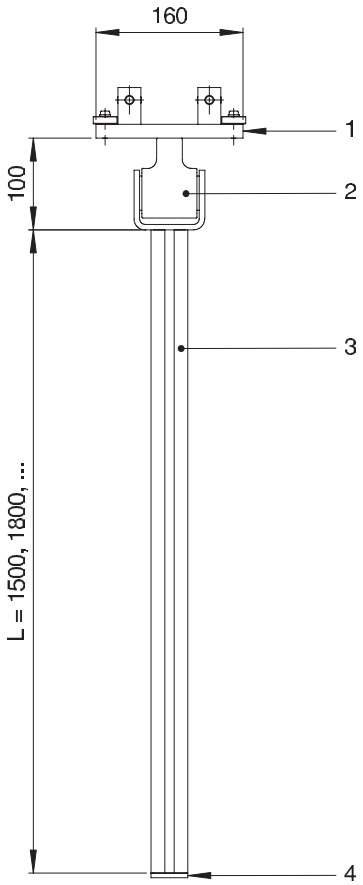
Material	PA black, fibreglass-reinforced
Weight	0.1 kg

Tool holders are ideal to conveniently deposit tools and assembly parts at the work place. The modular design offers flexibility to meet individual requirements regarding ergonomics, productivity and user comfort.
Tool holders can be used with or without energy supply. The air supply can either be arranged with a tapping carriage or in combination with an energy carrier system.
The carrier unit offers superior rolling characteristics and can be used in curved sections (also in combination with a tapping carriage)
The hinge set, a safety feature, also offers damping of the tapping carriage during docking and undocking. Tool holders are only supplied with a hinge set.

Standard condition as delivered

Tool holders are supplied semi-assembled as follows:
- Carrier unit (1), hinge set (2), vertical post (3) and closing plate (4) are assembled.
  If supplied with a positive safety device and/or a limit stop, these will also be fitted.
- Sliding blocks are pre-fitted to the post.
- All other components are supplied loose.

1. Tool holders (basic type)



Type 95xx
The basic model 95 xx includes the following items:
1 carrier unit with guide rollers and buffer
1 hinge set 25°
1 post, aluminium section 40/40 mm, L = 1500 mm
1 closing plate (aluminium)

max. load on tool holder: 40 kg
(for heavier loads please ask)

Weight of tool holder (L = 1500mm): 5 kg

Additional equipment (options):
- post length L: 1800, 2000, 2500, 3000 mm
  (special post lengths on request)
- horizontal tray
- handle
- positive safety device
- hose set
- holster etc.

Details see Additional equipment data sheet K04E

Application examples

Example 1
Horizontal tray (without compressed air supply).
Weight*: approx. 8 kg (tool holder only)

Example 2
Holster and tapping carriage coupled with mechanical detaching device.
Weight*: approx. 6 kg (tool holder only)

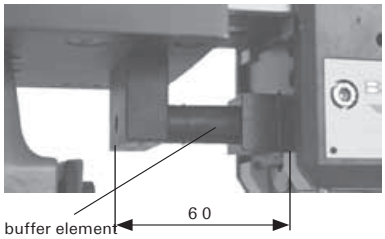
Example 3
Horizontal tray, holster and handle, coupled with tapping carriage and detaching chain.
Weight*: approx. 9 kg (tool holder only)

Example 4
Horizontal tray, holster, angle holder and handle. Continuous air supply with energy carrier system.
Weight*: approx. 10 kg (tool holder only)

*weights with post length 1.5 m

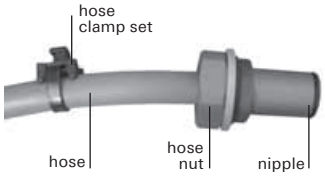
Additional equipment

Depending on the requirement, the basic model can be equipped with additional components.

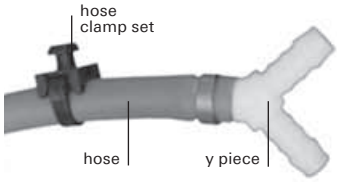


Type 9022 Coupling with buffer element
The coupling is used to link a tool holder with a tapping carriage. The buffer element has a damping effect during docking and undocking and allows usage of the unit also on curved rails.

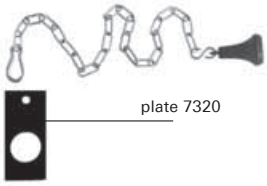
Material	flange	steel, black
	plate	aluminium, black anodized
Buffer element		elastomer, NBR (Perbunan)
Weight		0.3 kg



Type 9044 Hose set 1/2", L = 2.5 m
Parker Push-lok hose 1/2" (type 801, grey) complete with tube nut and hose nipple to fit tapping carriage. Length of hose 2.5 m, free end (no coupling supplied). The hose set is supplied with 2 hose clamps. Weight 0.7 kg
Type 9034 Hose set 1/2", L=1.0 m, weight 0.4 kg
Type 9035 Hose set 3/8", L=1.0 m, weight 0.3 kg
Type 9045 Hose set 3/8", L=2.5 m, weight 0.5 kg

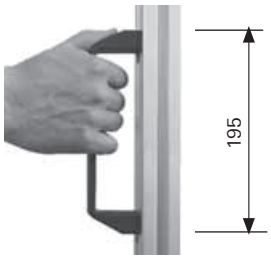


Type 9038 Y distributor 1/2", L=1.0 m
As type 9034, but complete with a Y distributor piece to supply 2 air tools, incl. one hose clamp. Weight 0.4 kg
Type 9040 Y Distributor 3/8", L=1.0 m, weight 0.3 kg



Type 9002 Detaching chain (complete with plate 7320)
This detaching chain is used when undocking of a tapping carriage is not possible by pulling on the hose
(see data sheet K03E, example 3).

Material	steel chain	zinc-plated / plastic handle
	plate	steel, black
Chain length		as post length of tool holder
Weight		0.35 kg (L=1.5 m)



Type 9008 Handle
For added handling comfort a handle can be fitted to the vertical post. Sliding blocks allow easy mounting at any desired height.

Material	PA black, fibreglass-reinforced
Weight	0.1 kg

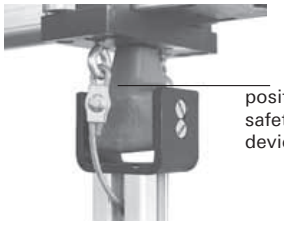
Type 9014 Holster complete with bracket
The holster is fitted to the horizontal tray (see data sheet K02E)

Type 9030 Holster complete with long bracket
This holster (same dimensions as type 9014) is to be fitted to the post directly. It can be adjusted in height by 20 cm.

Material	bracket	steel, black
	holster	elastomer, NBR (Perbunan)
Weight		1.0 kg

Type 9067 Bracket for bulkhead coupling
Bracket to mount a quick release coupling with bulkhead.
Bore for bulkhead, d=21 mm

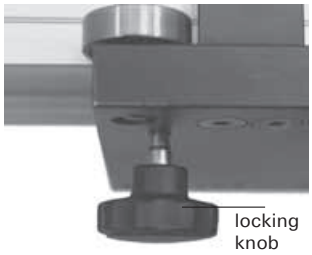
Material	steel, black
Weight	0.2 kg



Type 9013.1 Positive safety device

The positive safety device is an additional safety feature to secure the post to the carrier unit with a wire rope. It will stop the post from falling down in case of any inexpert handling or overstress, e.g. overloading of the tool holder or impact of excessive mechanical stress on it.

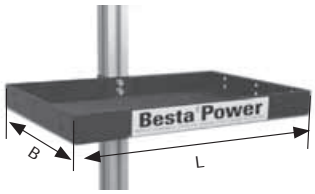
Weight	0.1 kg



Type 9043 Locking knob

The locking knob can be used to position the tool holder on the rail.

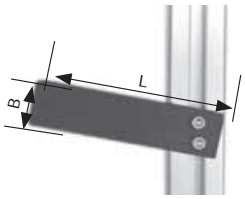
Material	PA6.6, black
Weight	0.01 kg



Type 9007.5 Horizontal tray 400 x 250 mm

Tray with rubber mat to accommodate material boxes, small tools etc. Fixation holes for tool holster type 9014.

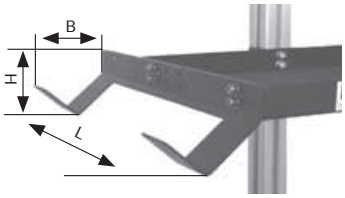
Material	steel, black
Weight	2.6 kg



Type 9007.6 Holder

This holder is designed to accommodate angle grinders.

Material	steel, black
Dimensions mm	L 160, W 35, thickness 3
Weight	0.2 kg



Type 9007.7 Angle holder

The angle holder can be used for angled screw runners and for other tools. The holder can be fitted to the horizontal tray 9007.5 (not suitable for horizontal tray type 9010, data sheet K02E).

Material	steel, black
Dimensions mm	L 360, W 140, H 122
Weight	0.9 kg

Type 9007.71 Angle holder

As type 9007.7, but with sliding blocks to fit directly to vertical post.

Type 9068 Mounting plate for FRL

This plate can be used to fit FRL units to the vertical section of a tool holder.

Material	steel, black
Weight	0.2 kg

Type 9047 Mounting plate for manifold

As plate 9068, but for manifold type 9042.

Type 9031 Limit stop

The limit stop prevents lateral deflection of the tool holder in the event of high strain. In combination with an energy carrier system (see data sheet L01E) the limit stop can be fitted opposite the connection bracket only.

Material	steel, black
Weight	0.2 kg

Energy carrier system for air, power and data

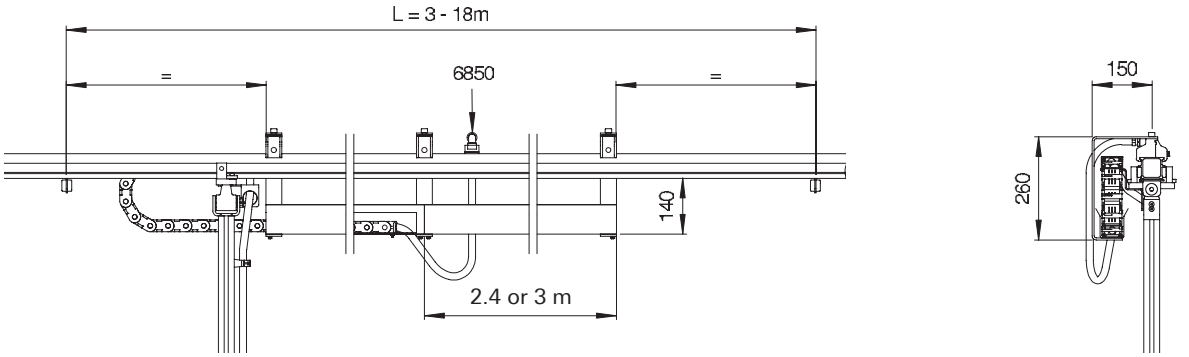
The energy carrier system offers continuous energy supply (compressed air and/or electric power to a consumer over a distance of 3 to 18 metres. The system may be integrated in an existing Bestapower installation and can be positioned anywhere along the rail.
The energy is supplied through the air hose and/or a power cable inside the energy chain. (Electric components are not included). Weight of a 6 m energy carrier system: approx. 15 kg.

Standard condition as delivered

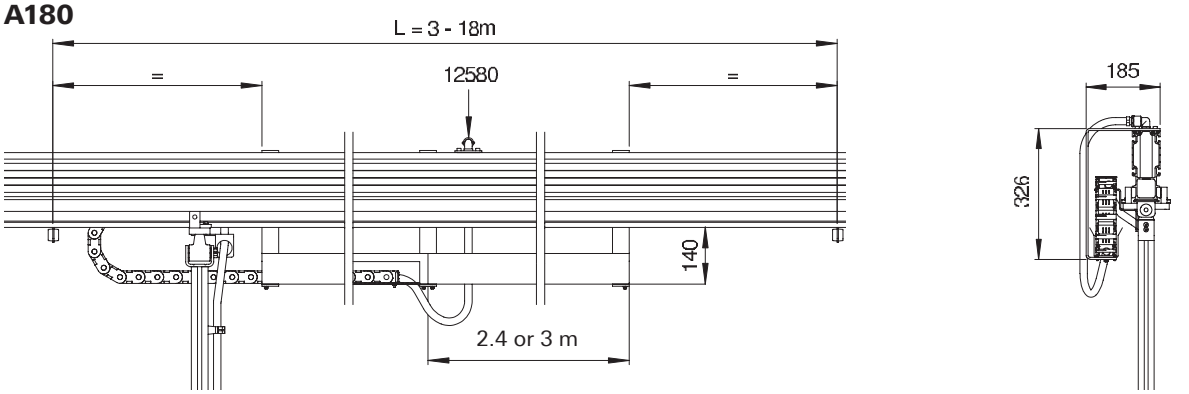
Energy carrier systems are supplied as follows:
- Duct, chain and hose are pre-assembled. The brackets and hangers are enclosed loose.
- Optional additional equipment is supplied loose.

Energy carrier system (basic type)

A62



A180



Energy supply (compressed air)
Compressed air is supplied through an air outlet on the rail.

Examples for A62:
- through outlet connection type 6850
- through inlet couplings (data sheet C01E)
- through fixed point outlet type 6720

Examples for A180:
- through air outlet type 12580
- through inlet couplings (data sheet C02E)

Type 94xx for A62
Type 130xx for A180
The basic unit includes the following items:
1-7 ducts incl. brackets (L = 3-18 m)
Material: sheet steel, light grey powder-coated
1 highly flexible PVC hose (CXL12), silicone-free
standard length: L 1/2 + 5 m
1 energy chain incl. fixing elements
1 link plate
2 adjustable stoppers

Additional equipment (options): see page 2

Additional equipment

Depending on the application the basic system can be equipped with the following items.

Type 9026.5 Hose clamp set
The cable binding block, which can be inserted into the groove of the work station is used to attached the hose.

Material	PA black, fibreglass-reinforced
Weight	0.01 kg

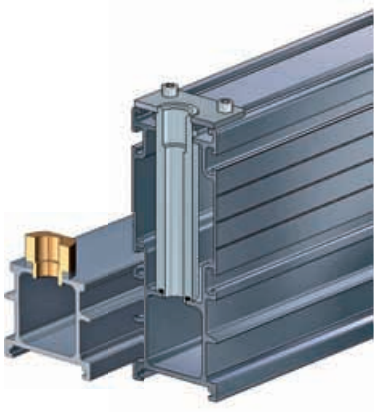
Type 9026.6 Hose clamp set
Used to attach the hose to the crossbar.

Type 9027 Connection set E
Reducer R1 1/4" - G 1/2" for tapping the air supply through a coupling via a G 1 1/4" connection.
Complete with hose nipple 1/2" and hose clamp.

Material	brass
Weight	1.0 kg

Type 9028 Connection set F
As above, but this connection set is used for tapping air via a G 1" connection.

Material	brass
Weight	0.85 kg



Tapping air through G 1/2" connection thread
Air is tapped directly at the top surface of the rail through a hose nozzle (see data sheet H02E).

Type 6850 Outlet connector M24x1 G 1/2" for A62

Material	connector	brass
	sealing ring	PA6.6
Weight		0.1 kg
Assembly instruction		torque 40 Nm, width A/F 27 mm

Type 12580 Air outlet G 1/2" for A180

Material	tapping tube	aluminium, colourless anodized
	O-ring	NBR (Perbunan)
Weight		0.3 kg

Type 6623 Rail end stopper
Can be fitted to any rail end flange and serves as an end stopper for carrier units or tool carriers.

Material	elastomer, NBR (Perbunan)
Weight	0.15 kg

Type 9025 Adjustable stopper
This stopper can be positioned anywhere along the underside of the rail, and it can be used as a buffer on both sides.

Material	steel, black elastomer, NBR (Perbunan)
Weight	0.1 kg

Type 9094 Manifold 3xG 1/2"
The manifold can be fitted to the post of the workstation or the tool holder using sliding blocks. It is intended for use at the open end of the highly flexible hose (CXL12) and is supplied complete with 3 hose clamp sets. One outlet port is factory sealed with a plug.

Material	aluminium, colourless anodized
Weight	0.3 kg

Festoon systems can be designed for electric power cables, data communication links, and compressed air hoses. They offer a continuous energy supply within a defined working area or cycle.

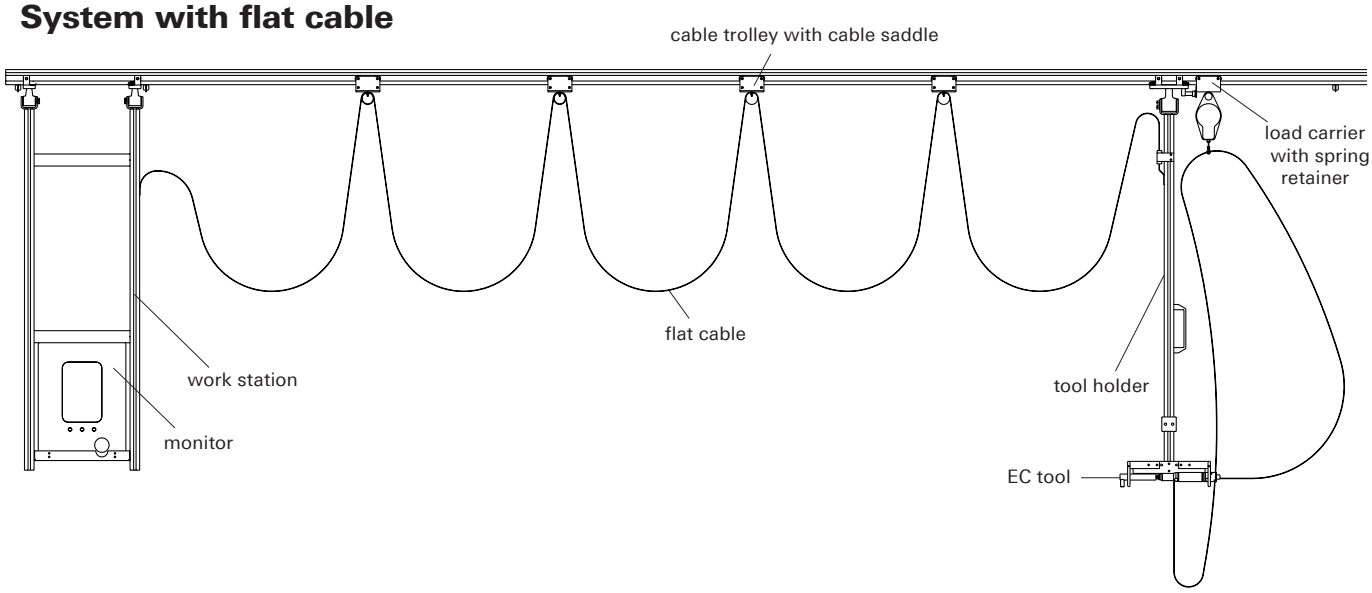
(Power and data cables are not part of our product range).

1. Systems for electric power and / or data cables

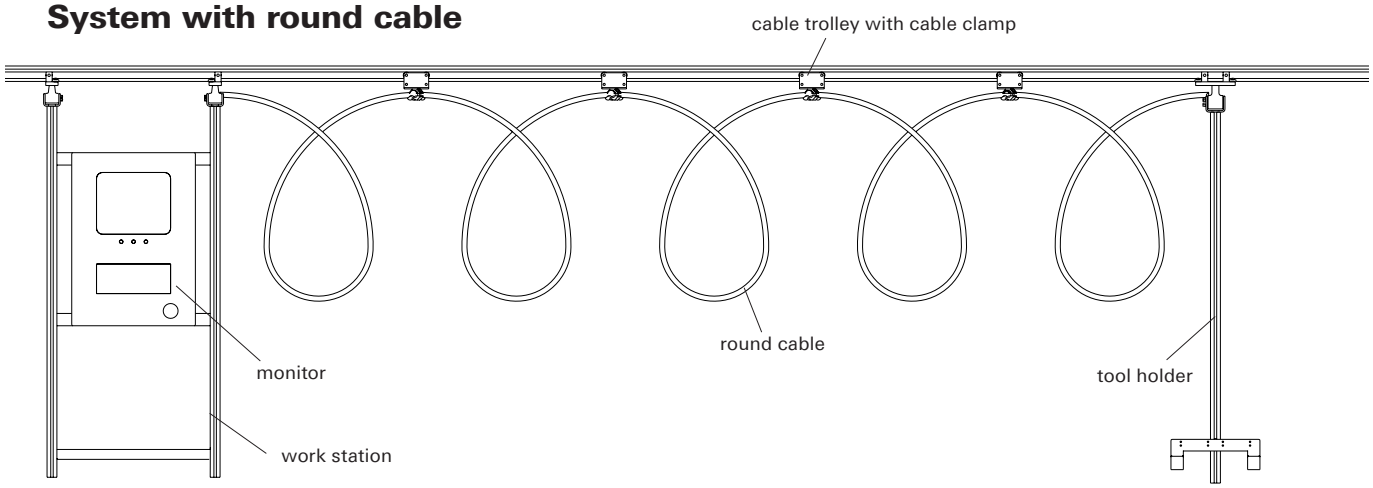
The Bestapower festoon systems can be used for flat and round cables. Typical applications are workstations with electronically controlled torque drivers (e.g. Tensor systems from Atlas Copco, CVI systems from Georges Renault, Stanley systems etc.).
Festoon systems offer stationary or flexible use of monitor and tool and can easily be integrated with existing or new Bestapower installations, without the need for an additional parallel installation (e.g. C-rail system etc.).

Basic system modules are:
- Monitor support unit (similar to work station type 91xx, see data sheet K01E)
- Tool holder (see data sheet K03E)
- Cable trolley, cable clamps and cable saddles

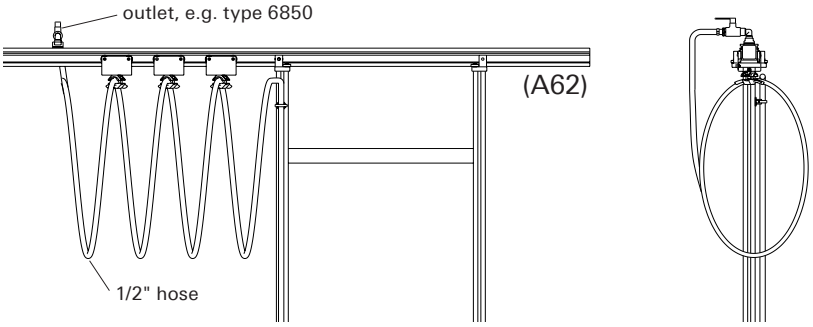
System with flat cable



System with round cable



2. Systems with 1/2" compressed air hose



Festoon systems can be combined with work stations and tool holders (see data sheets K01E-K04E).
The air is supplied through an air outlet on the rail (see data sheets B01E, B02E), or with a coupling (see data sheets C01E, C02E).
With a festoon system with compressed-air hose, the rather large space requirement for the air hose arrangement may need to be taken into consideration. As an alternative we therefore recommend using an energy carrier system.

3. Accessories for festoon systems

Type 9063 Cable trolley
The tow trolley is used for flat and round cables or air hoses. The universal bore arrangement allows to fit common cable clips and cable saddles. Dimensions of bore arrangement see data sheet I01E.

Material	steel, black
Max. load	20 kg
Weight	0.45 kg

Type 9063.81 Cable saddle
Cable saddle for flat cables, complete with 2 mushroom head bolts and plastic hinge nuts.

For flat cables	with max. width 44 mm
Material	plastic, yellow
Weight	0.05 kg

Type 9063.82 Cable saddle
Cable saddle for flat cables, complete with 2 M5 Allan screws and hex. head nuts.

For flat cables	with max. width 44 mm, min. thickness 4 mm
Material	plastic, blue
Weight	0.02 kg

Type 9063.84 Cable clamp, small
A complete cable clamp for round cables with 10-16 mm dia., including a ball joint and mounting screws.

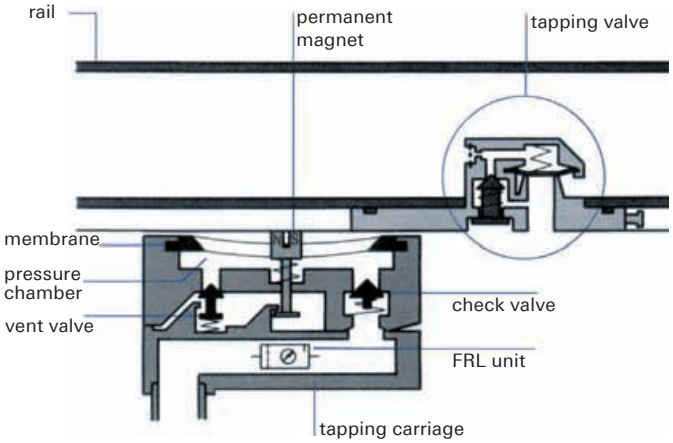
Material	plastic, yellow
Weight	0.08 kg

Type 9063.87 Cable clamp, large
A complete cable clamp for round cables with 17-25 mm dia., including a ball joint and mounting screws
(also suitable for 1/2" compressed-air hose).

Material	plastic, yellow
Weight	0.10 kg

Tapping carriage / tapping valve

Figures 1-8 show the main steps during docking and undocking of the tapping carriage. The check valve integrated in the tapping carriage keeps the carriage, FRL unit and the air hose pressurized while pressurized while moving to another tapping valve (Fig. 8), hence no loss of air during moving.
The process of undocking the carriage is a matter of hundredth of a second and is done by air power only. There is no mechanical link between tapping carriage and tapping valve, hence no mechanical wear or damage due to improper handling is possible.



1. Undocked

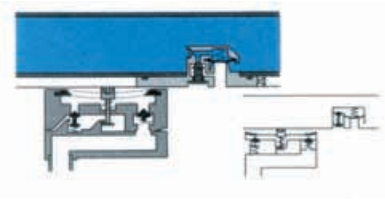
The tapping valve is closed. The tapping carriage is unpressurized and freely movable.

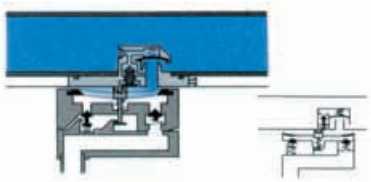
2. Docking

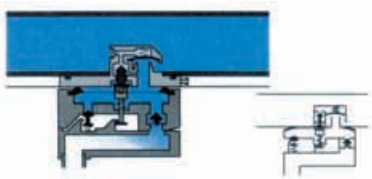
As soon as the tapping carriage arrives at a tapping point, the permanent magnet opens the tapping valve. Compressed air flows into the pressure chamber of the tapping carriage.

3. Docked

The tapping valve remains open. The pressure chamber is filled, causing the membrane in the tapping carriage to be pressed against the valve flange. The pressure opens the check valve, and pressure builds up in the hose.







4. Docked without air tapping

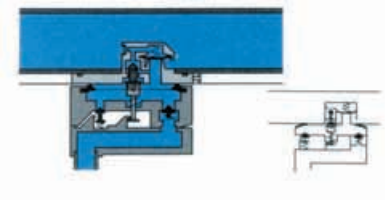
As soon as the pressure in the compressed air rail, the tapping carriage and in the hose is equalized, the tapping valve and the check valve close automatically.

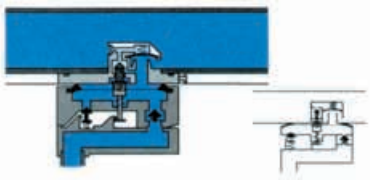
5. Docked with air tapping

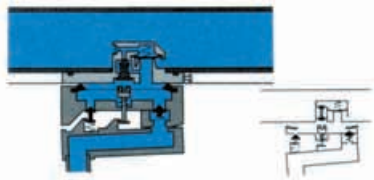
As soon as compressed air drawn the check valve and the tapping valve open. Compressed air flows to the consumer.

6. Undocking: phase 1

The permanent magnet is released from the tapping valve by pulling the hose. The tapping valve closes, thereby interrupting the air supply. The check valve is closed.





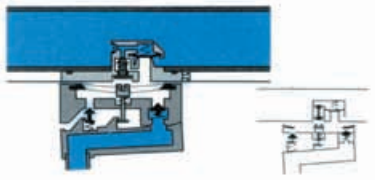


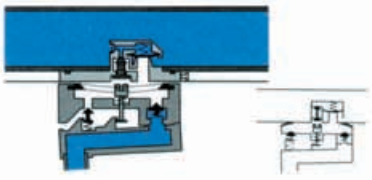
7. Undocking: phase 2

The vent valve opens. The pressure chamber is vented, causing the membrane in the tapping carriage to become detached from the valve flange.

8. Undocked

The tapping carriage is now freely movable. The check valve remains closed, so that the hose remains pressurized until the next docking procedure.

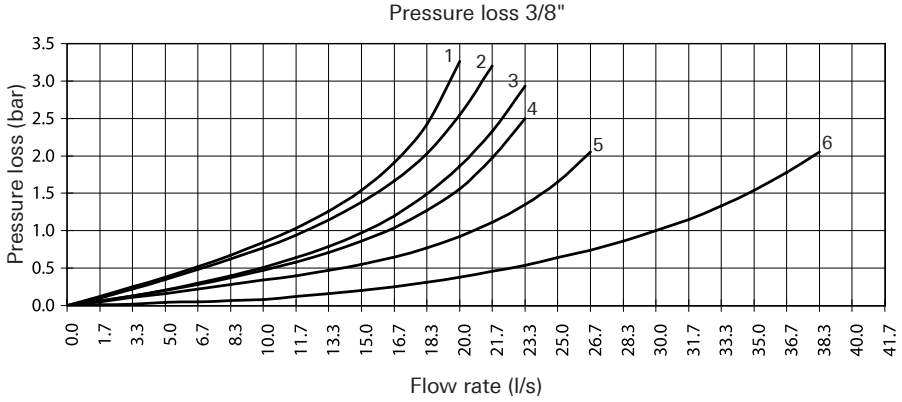


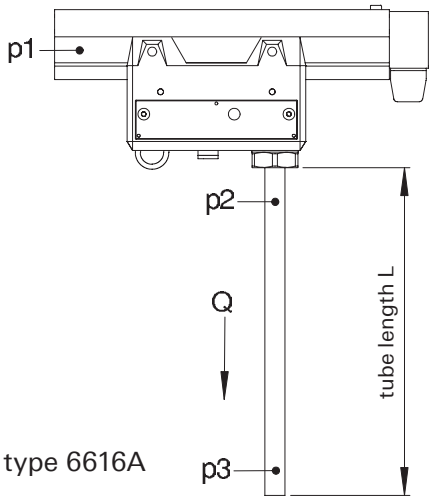


1. Tapping carriage

Type 8614 with or without 3/8" FRL components (see data sheet F03E)

Pressure loss (p1 - p2) in the tapping carriage at supply pressure p1 = 6 bar, push-lock hose (p2 - p3), p2 = 6 bar



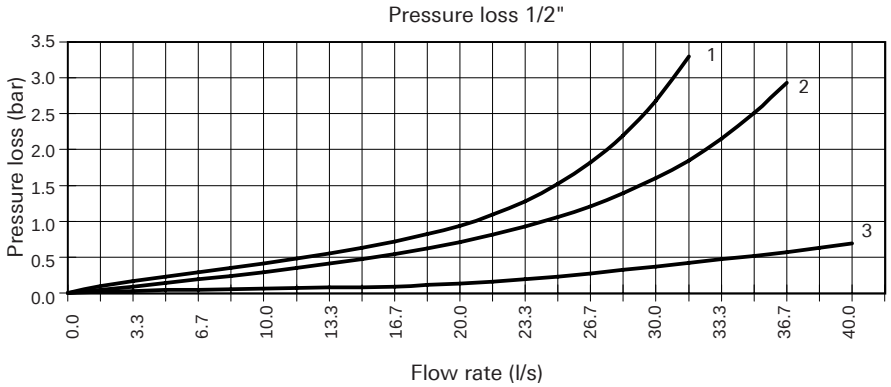


1 with filter/regulator type 6616A and lubricator type 6619A
2 with regulator type 6618A and lubricator type 6619A
3 with filter type 6617A, or lubricator type 6619A, or filter/regulator type 6616A
4 with regulator type 6618A, or regulator 6618A and filter 6617A
5 tapping carriage type 8614 without FRL
6 Parker push-lock hose, type 801, 3/8", length 3.0 m

2. Tapping carriage

Type 8670, 8702.1, 8702.2, 8702.3, 8702.4, 8702.8, 8702.9 with 1/2" FRL components
(see data sheets F02E, F04E)

Pressure loss (p1 - p2) in the tapping carriage at supply pressure p1 = 6 bar, push-lock hose (p2 - p3), p2 = 6 bar



6.7 l/s = 402 l/min.
13.3 l/s = 798 l/min.
16.7 l/s = 1002 l/min.
23.3 l/s = 1398 l/min.
26.7 l/s = 1602 l/min.
33.3 l/s = 1998 l/min.
36.7 l/s = 2202 l/min.

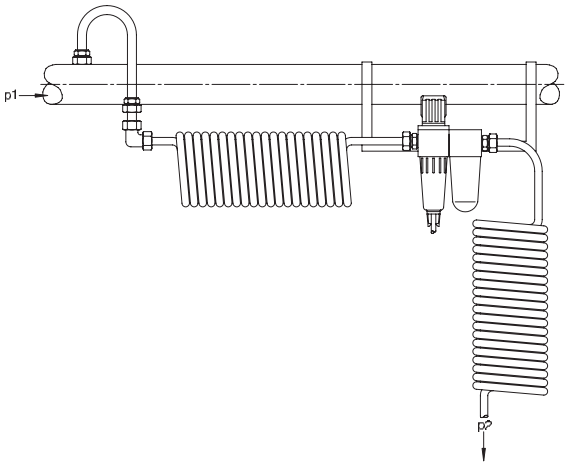
1 tapping carriage type 8702.8 or 8702.9 with 2 FRL components
2 tapping carriage type 8670 without FRL, or
type 8702.1, 8702.2, 8702.3, 8702.4 with 1 FRL component each*
3 Parker push-lock hose, type 801, 1/2", length 4.0 m

*) The differences in pressure loss for 1/2" with 1 FRL component or without is very small, so that only one curve is shown in the diagram.

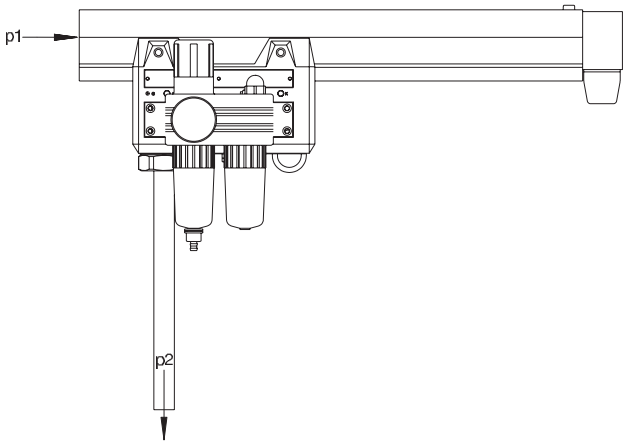
3. Comparison of pressure loss between Bestapower and conventional system

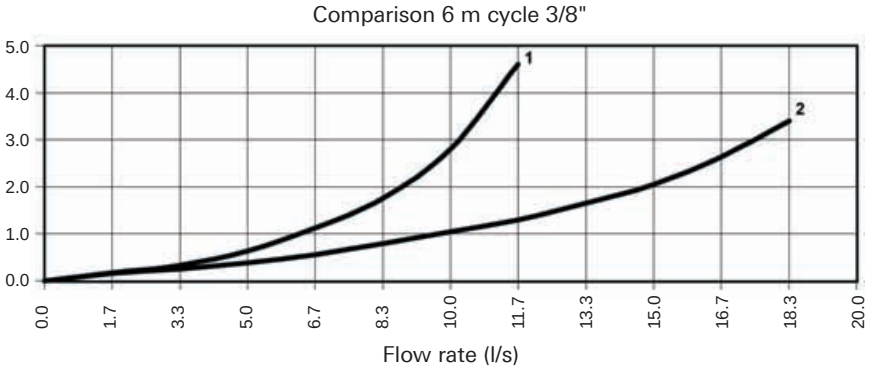
Pressure loss (p1 - p2), 6 metre work cycle, 3/8" FRL unit (filter/regulator and lubricator), vertical hose 3/8" x 5 metre working length (p1 = 6 bar)

Conventional, Curve 1



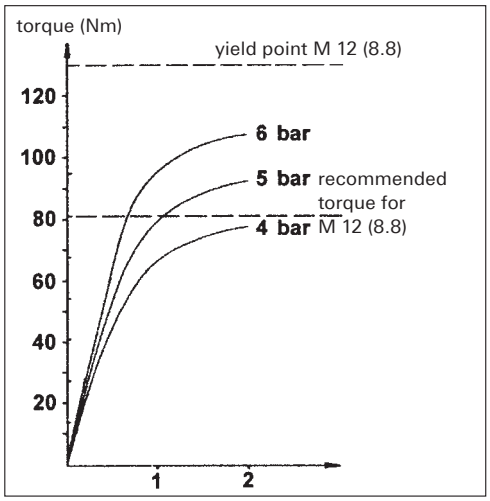
Bestapower, Curve 2

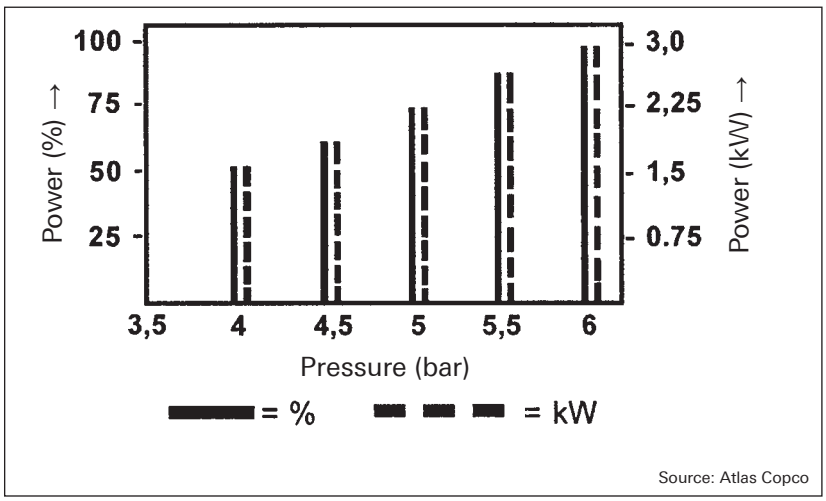


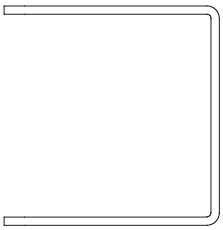


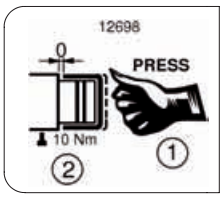
4. Torque and tool performance

In addition to higher energy costs, pressure loss has a direct impact on tool performance. The two graphs below (source: Atlas Copco) illustrate how tool performance decreases with reduced supply pressure, e.g. 1 bar pressure loss results in 25% less power.

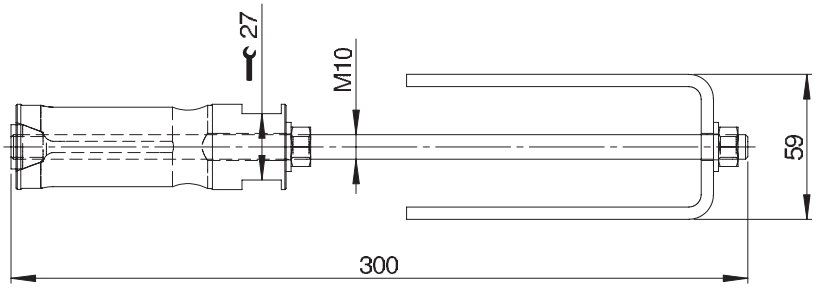




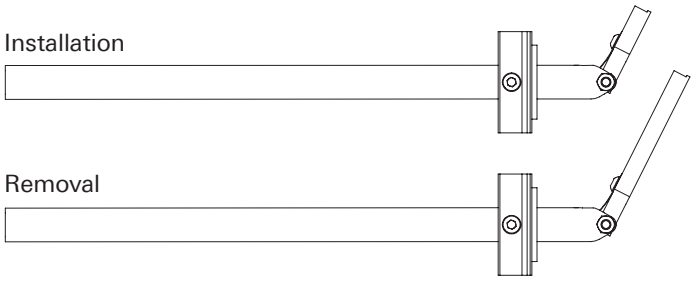




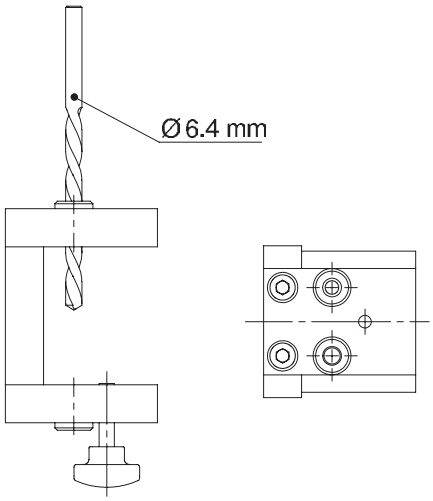
Type 12698 Assembly device
The assembly device ensures the correct coupling installation depth during installation in the rail section (limit stop).

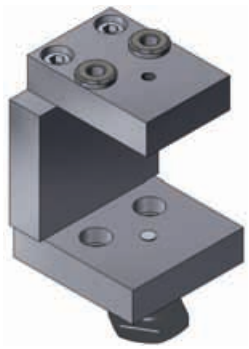


Type 12697 Pull-out device
This devices is required for pulling out the coupling 12500 / 12501 from the rail section.
(See Product-Information LPP18)



Type 12699 Displacement device
This device can be used for moving couplings into position after installation in order to enable removal of a rail section.
(See Product-Information LPP17)





Type 6350 Drill jig
The drill jig is used for precise drilling of the holes required for mounting the coupling on trimmed A62/A180 rail sections.
(See Product-Information LPP15)

The drill is not included.

1. For deburring drill holes
2. For deburring the cutting edge

The blades are stashed into the knob of the deburring-tool.

Type 12695 Deburring Set
This tool can be used for deburring the cutting edges of the trimmed rail section and the drill holes.

Notice:
Correct deburring prevents damage to the O-rings and leakage.
(See Product-Information LPP15)