

HOSE SYSTEM

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About Hose Systems

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General Information

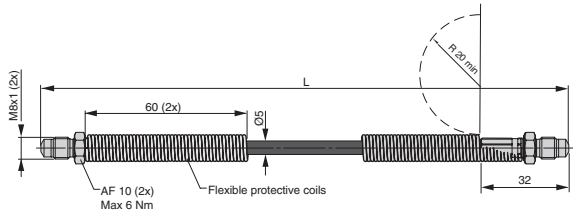
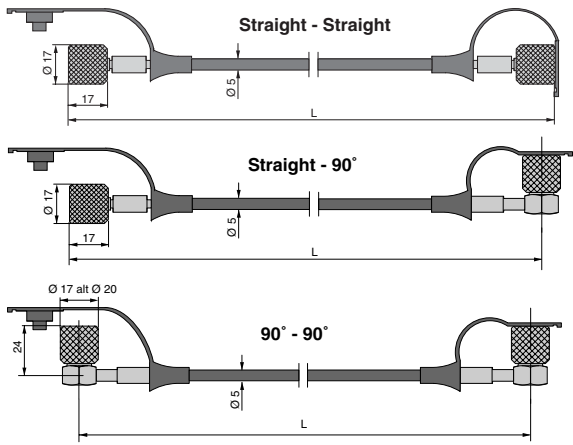
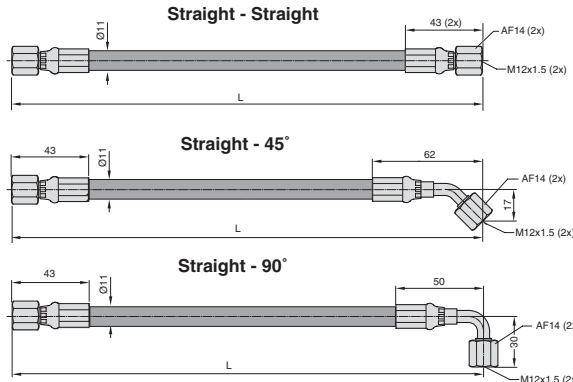
1

Connecting one or more gas springs to form a Hose-System with a common gas pressure may often be advantageous from a press technique and/or safety perspective.

Gas springs when connected in a Hose-System to a single Control Block can be easily charged and discharged without needing to open the press tool and remove the individual gas springs. The system pressure can also be remotely monitored and if need be, easily adjusted via the Quick Release Coupling and Discharge Valve.

Strömsholmen offers three different Hose-Systems for linking gas springs, namely the **Micro-Hose**, **EZ-Hose** and **EO24-Hose** systems. Please note: JIC-Hose system has now been replaced by the EO24-Hose system. Please contact your local distributor for more details.

Strömsholmen has carefully selected all hoses, couplings and other component parts to ensure that they fully comply with the highest requirement standards. The various components have been subjected to rigorous testing, including endurance tests, static leakage tests and performance tests.

Hose System	Description	
<p>Micro-Hose</p>	 <p>The Micro-Hose system is our most compact hose system, specially designed to allow gas springs with M6 charge ports to be linked together. Please note: Can also be used with G 1/8" charge ports via an adapter.</p>	
<p>EZ-Hose</p>	 <p>The EZ-Hose system is based on components that have couplings with O-ring seals, which allows hoses to be attached using only finger strength. The EZ-Hose system is a well-proven, robust system that has, for many years, been the standard used in the French automotive industry.</p>	
<p>EO24-Hose</p>	 <p>The EO24-Hose system is mainly for use where Pressure Tanks are being incorporated into the hose system, or where gas flow within the hose is required, for example when using the Passive Spring-KP in a Controllable Gas Spring system.</p>	

About Control Blocks

Strömsholmen offers a wide range of Control Blocks for gas pressure monitoring and adjustment.

(See Block 4.2/2 for more information).

About Pressure Tanks

It is possible to reduce the pressure rise within your Hose System by incorporating a Pressure Tank. This will therefore increase the total volume of gas within your system.

(See Pressure Tanks 4.6/2 for more information)

About Hose Crimping Equipment

Strömsholmen offers all equipment necessary to make up your Hose System by press fitting hoses to couplings.

(See Hose Crimping Equipment 4.7/2 for more information)

CAUTION!

Do not modify the product in any way.

For more information on hoses/linked systems, please contact Strömsholmen (www.kaller.com) or your local Kaller distributor.

General Precautions

For reasons of performance and safety, it is important the following points are considered when creating a Hose-System:

- When one or more gas springs are connected to a hoses/linked system, the replenishing valve in each spring must first be removed.
- Position the Control Block in the tool where it will be protected from mechanical damage and on a level higher than the gas springs in the system to minimise the loss of lubrication oil when discharging the gas.
- Use only nitrogen (N₂) gas. The use of other gas types could result in personal injury or failure of the gas spring/Control Block.
- Never exceed the maximum gas charging pressure, which is marked on the side of the gas spring tube.
- Generally the maximum charging pressure at 20°C is 150 bar for standard press tool gas springs.
- All the valves on the Control Block should be closed during operation.
- All gas springs that are hoses/linked together should be of the same size and type.
- To avoid gas leakage, use only components that have been tested by Strömsholmen.
- We do not recommend hoses/linked systems be attached to gas springs mounted using the FC or FCS flanges as there is a risk the gas spring may rotate whilst in operation.
Please note: The FCSC Flange can be used instead with a Hose-System
- **Do not use Control Blocks that are fitted with a Rupture Screw for gas springs with a charging pressure of 180 bar at 20°C.**

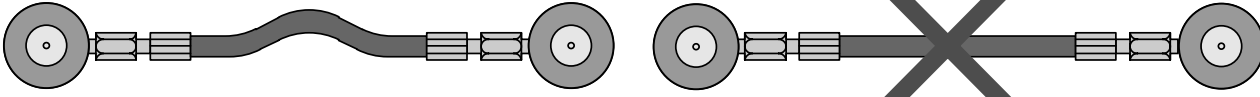
Hose Installation Guidelines

1

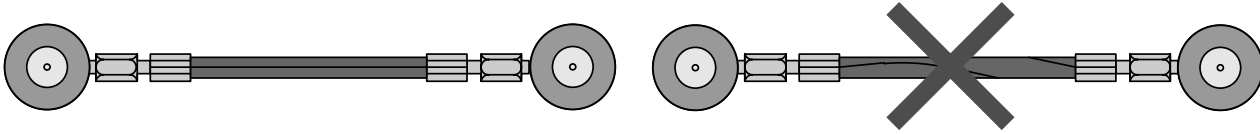
Never exceed the maximum values given for pressure and temperature for the hoses. Make sure all hoses and couplings are perfectly clean before fitting. For hose systems including Pressure Tanks the EO24-Hose system should be used.

Correct

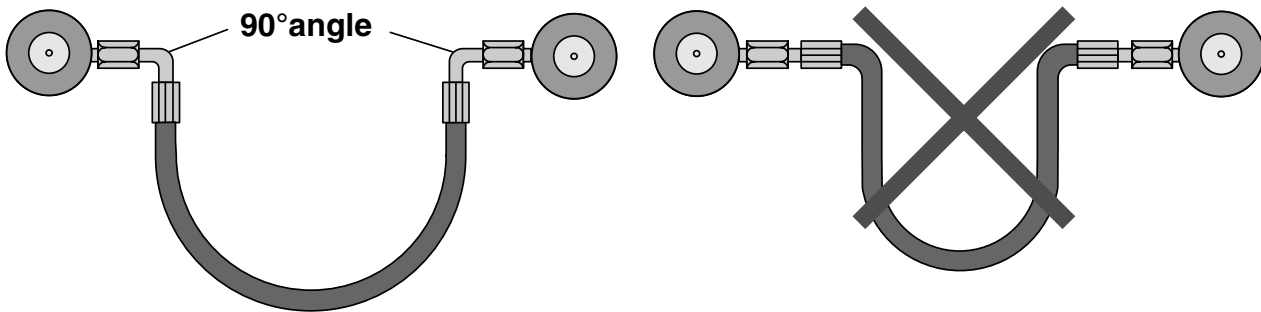
Incorrect



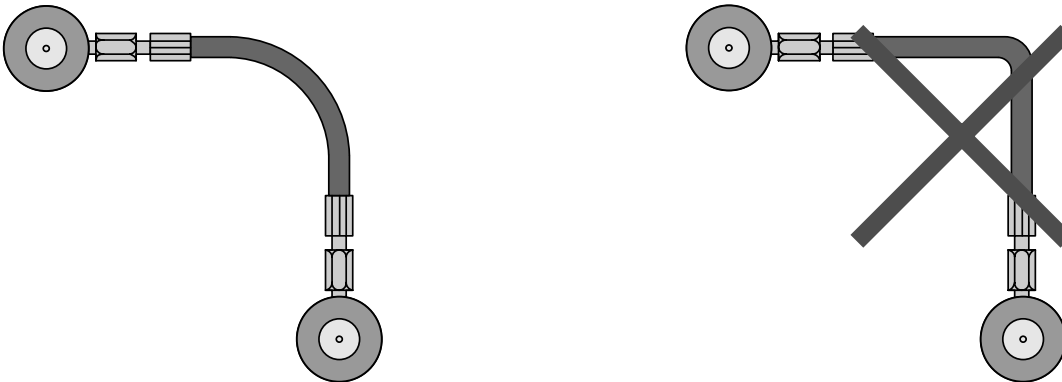
Select a hose length that will allow for a certain amount of play.



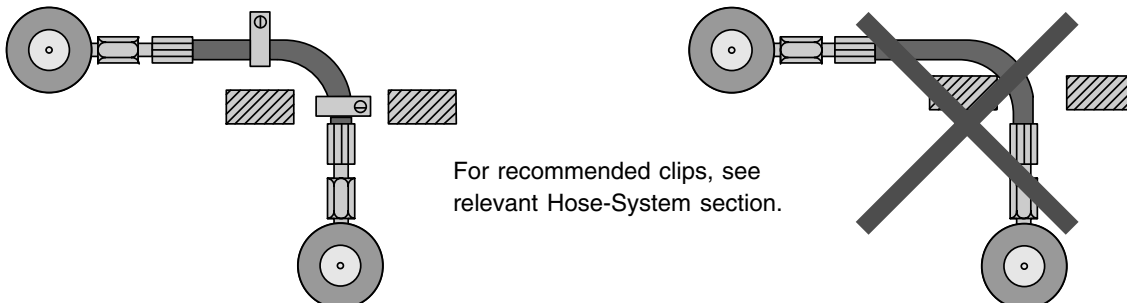
The longitudinal marking on the hose must not be twisted after fitting.



Select hose couplings that avoid sharp bends in the hose.



Never go below the recommended minimum bend radius of the hose.



For recommended clips, see relevant Hose-System section.

Fix the hose correctly to avoid mechanical damage.

Blocks and Accessories

Charging Block, 3014206



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Control Block, 3116114-XX



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Control Block, 4017241



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Control Block, 2014325



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Section Control Blocks



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Multi-Coupling Blocks



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Charging & Control Block Accessories

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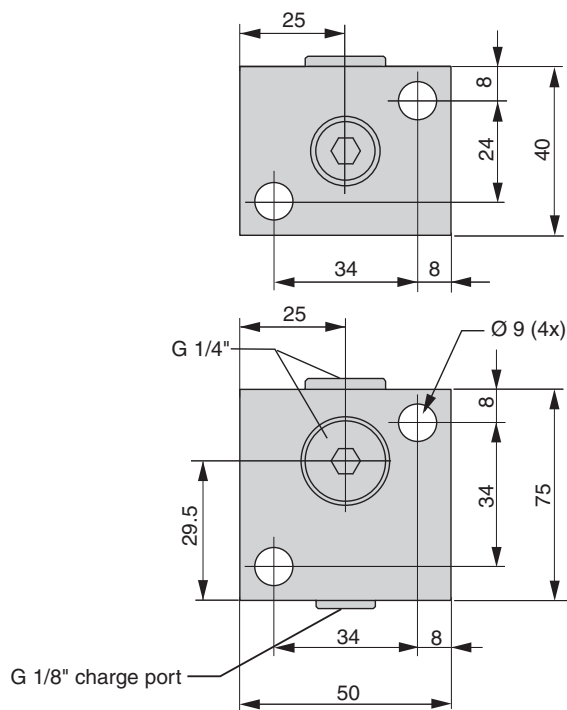
Micro Block



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Charging Block

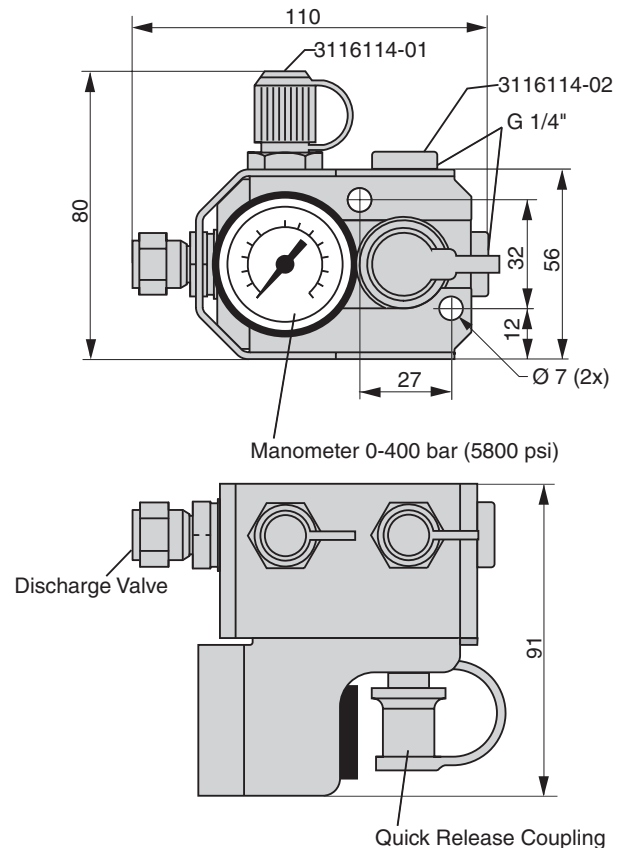
Order No. 3014206



The 3014206 Charging Block comes with two G1/4" connection ports and a G1/8" charge port, identical to that found on standard gas springs.

The G1/8" charge port allows gas charging of the Hose System using the gas spring charging armature.

One of the G1/4" connection ports can also be used to connect a Pressure Relief Safety Screw (See *Charging & Control Block Accessories* for more info)

Control Block**Order No.****3116114-01** (with 2 pcs EZ-Hose G1/4" adapters)**3116114-02** (with all ports plugged)

2

The 3116114 Control Block is a very compact aluminium block with protective stainless steel cover and complies with the CNOMO standard.

This block is intended for continuous monitoring of gas pressure in the Hose System.

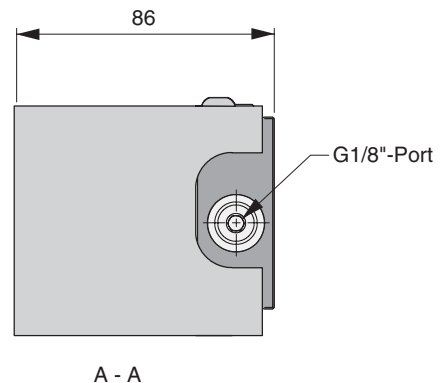
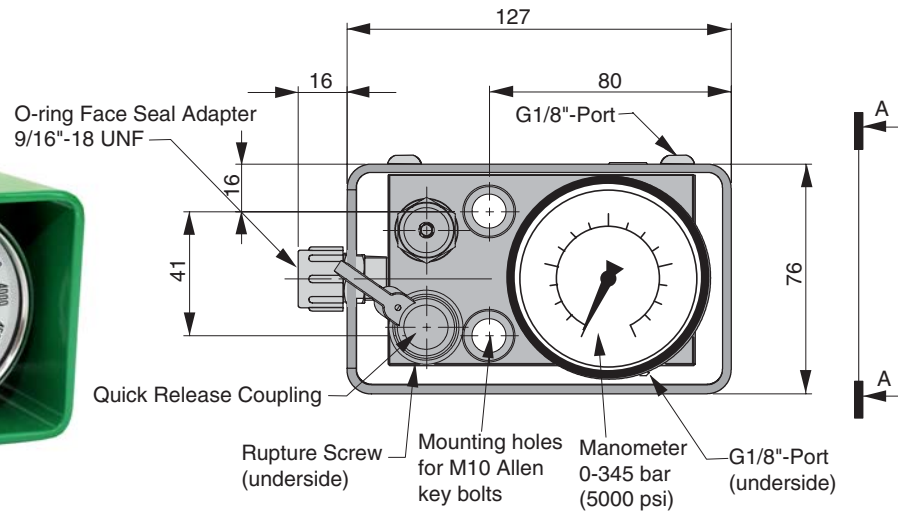
It is fitted with manometer (0-400 bar/5800 psi), Quick Release Coupling for gas charging and Discharge Valve for gas evacuation.

The block contains three G1/4" connection ports, one of which can be used to connect a Pressure Relief Safety Screw.

Control Block

Order No. 4017241

2



The 4017241 Control Block is a compact aluminium block with protective steel cover that complies with the Ford and GM North American die standards.

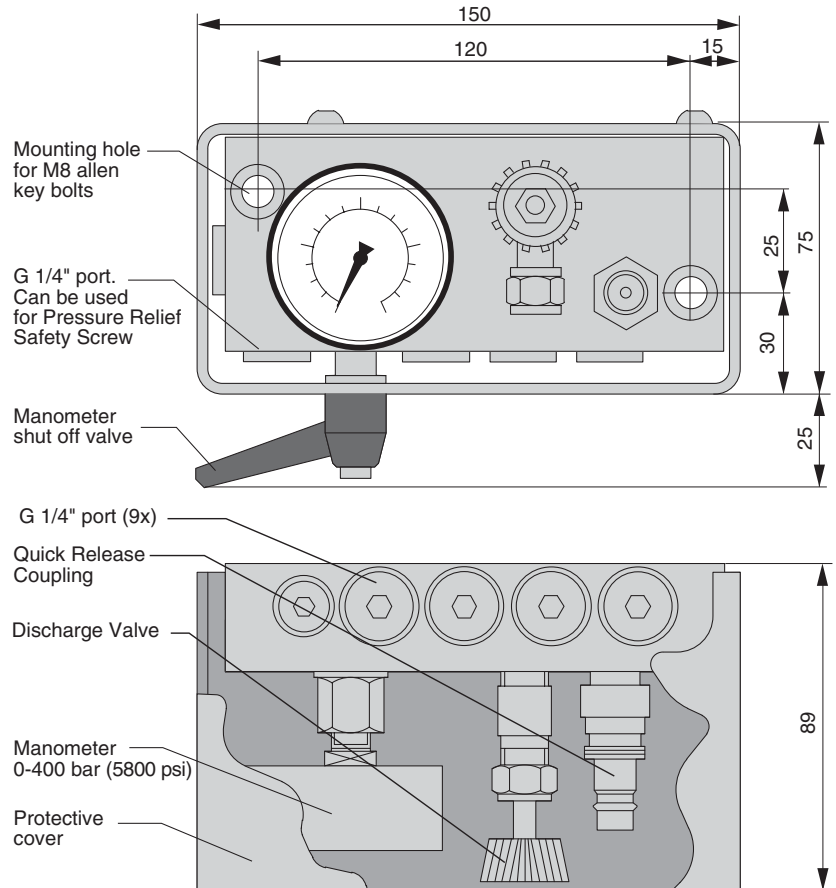
This block is intended for continuous monitoring of gas pressure in the Hose System.

It is fitted with manometer (0-345 bar/5000 psi), Quick Release Coupling for gas charging, Discharge Valve for gas evacuation and Rupture Screw for over pressure protection.

The block contains four G1/8" connection ports, with the left hand port being supplied with a 9/16"-18 UNF O-ring face sealed hose adapter.

Control Block

Order No. 2014325



The 2014325 Control Block is a compact aluminium block with protective steel cover and also contains a manometer shut off valve.

This block is intended for continuous monitoring of gas pressure in the Hose System when the manometer shut off valve is open. The shut off valve can subsequently be closed in order to protect the manometer from pressure pulsations during operation, thus prolonging its service life.

The Control Block is fitted with manometer (0-400 bar/5800 psi), Quick Release Coupling for gas charging and Discharge Valve for gas evacuation.

The block contains nine G1/4" connection ports, four on the upper side, four on the underside and one on the right hand side.

Section Control Blocks

Order No.

2014422-XX (Without Manometer Shut-off Valve)

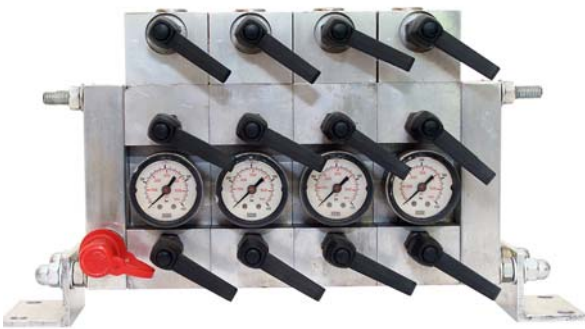
2014839-XX (With Manometer Shut-off Valve)

2

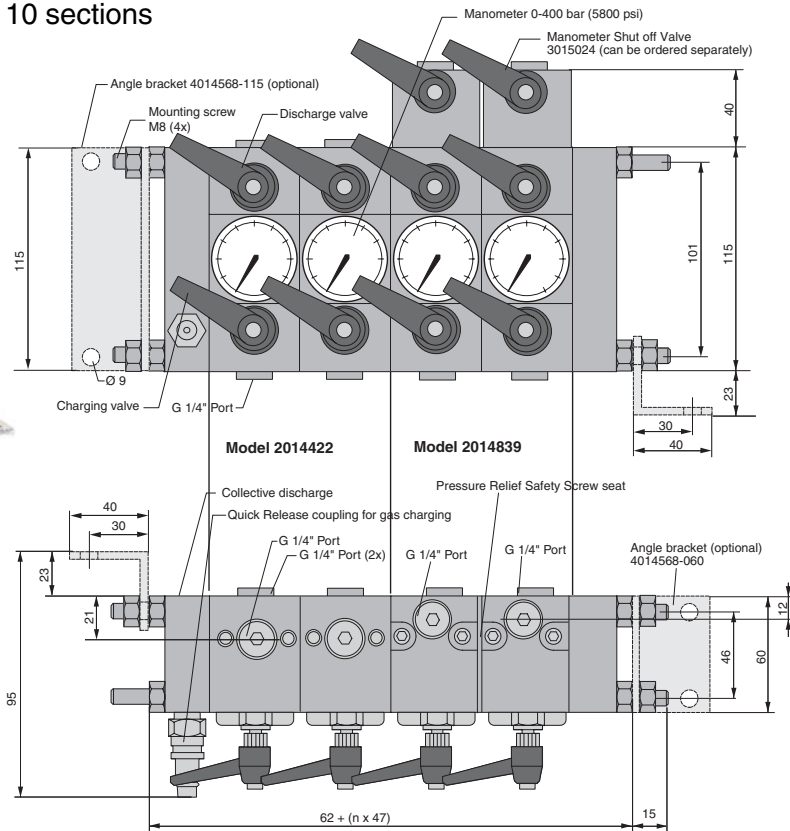
Order examples:

2014422-05 Section Control Block containing 5 sections

2014839-10 Section Control Block with Manometer Shut-off Valve containing 10 sections



(Example above - Order No.2014839-04)



The 2014422-XX and 2014839-XX Section Control Blocks are manufactured in aluminium and allow separate Hose Systems to be connected to each block section.

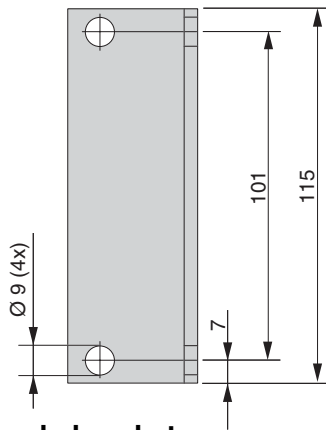
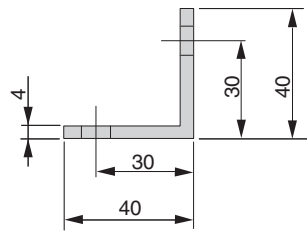
Having separate Hose Systems within the tool allows the operator to set gas pressures in each Hose System independently.

Each block section is fitted with a manometer (0-400 bar/5800 psi), Charging Valve for gas charging, Discharge Valve for gas evacuation and seat for Pressure Relief Safety Screw over pressure protection attachment.

Section Control Block 2014422-XX contains four G1/4" connection ports per block section.

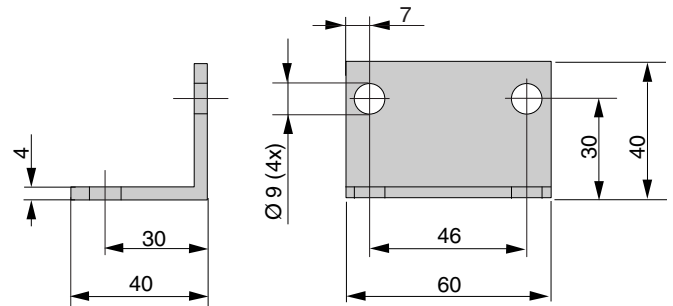
Section Control Block with Manometer Shut-off Valve 2014839-XX is fitted with an additional shut-off valve which when closed, protects the manometer from pressure pulsations during operation, thus prolonging its service life. Each block section contains three standard G1/4" connection ports and two G1/4" connection ports that can be shut-off from the manometer.

The Section Control Blocks are expandable to the required number (n) of block sections. A maximum of 10 block sections can be connected together, with a common Quick Release Coupling on the far left hand edge for gas charging.

Section Control Block Accessories**Angle bracket****Order No. 4014568-115**

Angle bracket 4014568-115 is used for wall mounting of Section Control Blocks 2014422-XX and 2014839-XX.

Two brackets, steel washers and nuts are included with each order.

**Angle bracket****Order No: 4014568-060**

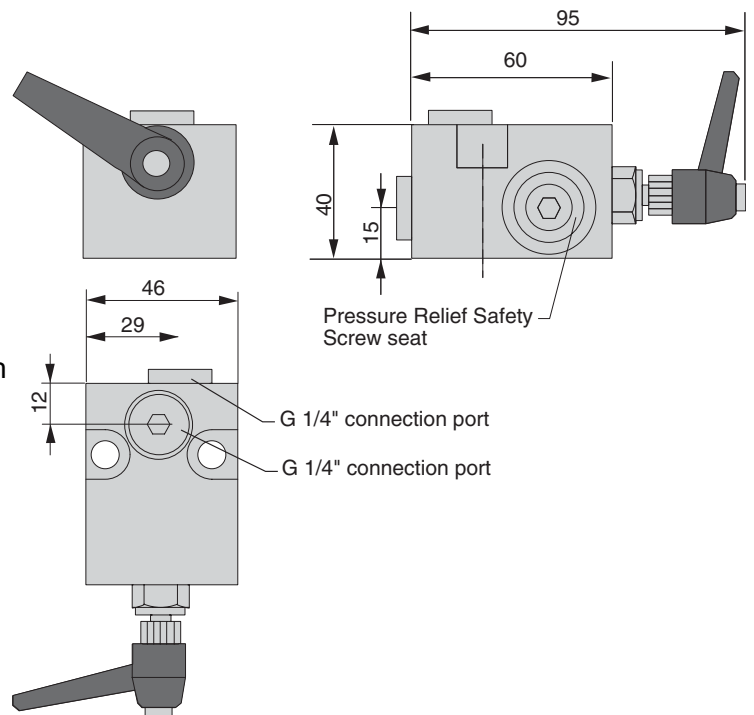
Angle bracket 4014568-060 is used for floor mounting of Section Control Blocks 2014422-XX and 2014839-XX.

Two brackets, steel washers and nuts are included with each order.

Manometer Shut-off valve**Order No. 3015024**

Manometer Shut-off valve 3015024 is manufactured in high-alloy aluminium. The valve has two G 1/4" connections and seating for Pressure Relief Safety Screw attachment. The valve can be subsequently fitted to section block 2014422-XX.

O-rings and fixing bolts are included with each order. The Manometer Shut-off valve is supplied with all connection ports plugged.



Multi-Coupling Blocks

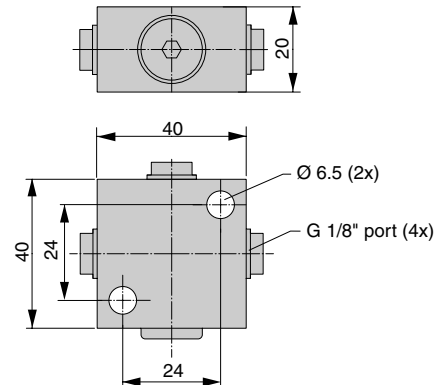
Order No. 4017032

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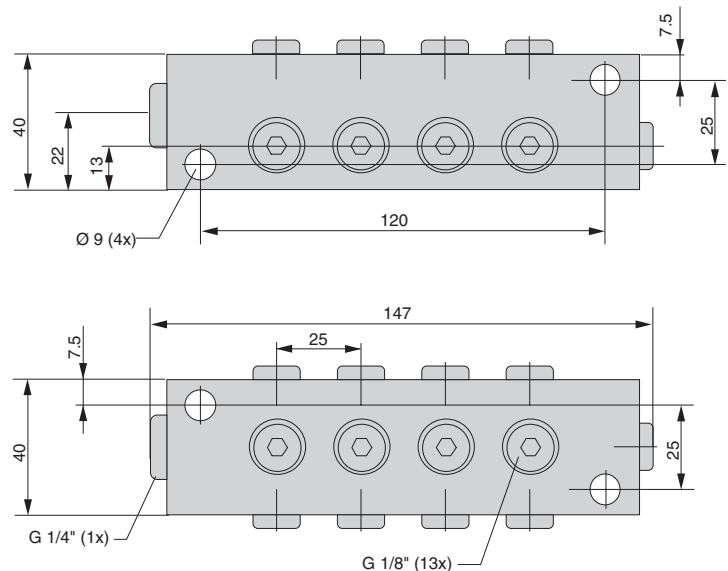


This is a small and compact block for linking hoses. The block contains four G 1/8" connection ports.

On delivery one of the ports is fitted with a sealing plug, while the other ports are fitted with plastic protective covers only.



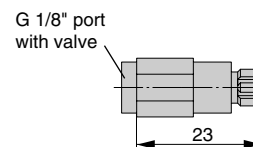
Order No. 3015044



The Multi-coupling Block 3015044 is manufactured in steel and contains thirteen G1/8" and one G1/4" connection ports.

On delivery, all ports are fitted with sealing plugs.

Valve Adapter 3015303-01 is available as an accessory and can be fitted to one of the G1/8" connection ports. The adapter contains the same G1/8" valve port as found on standard gas springs. The Multi-coupling Block can then be used as a charging block to enable gas charging and evacuation using gas spring charging equipment.



Valve adapter 3015303-01

KALLER® Charging & Control Block Accessories

Pressure Switch

Order No. 4021247 (Straight Cable Contact)

Order No. 4121247 (90° Cable Contact)

The Semi-Electronic Pressure switch is ideal for gas pressure monitoring in hoses/linked systems and can be connected to both Control Blocks and Distribution Blocks that have G1/4" connection ports.

The pressure switch contains two separate set-points:

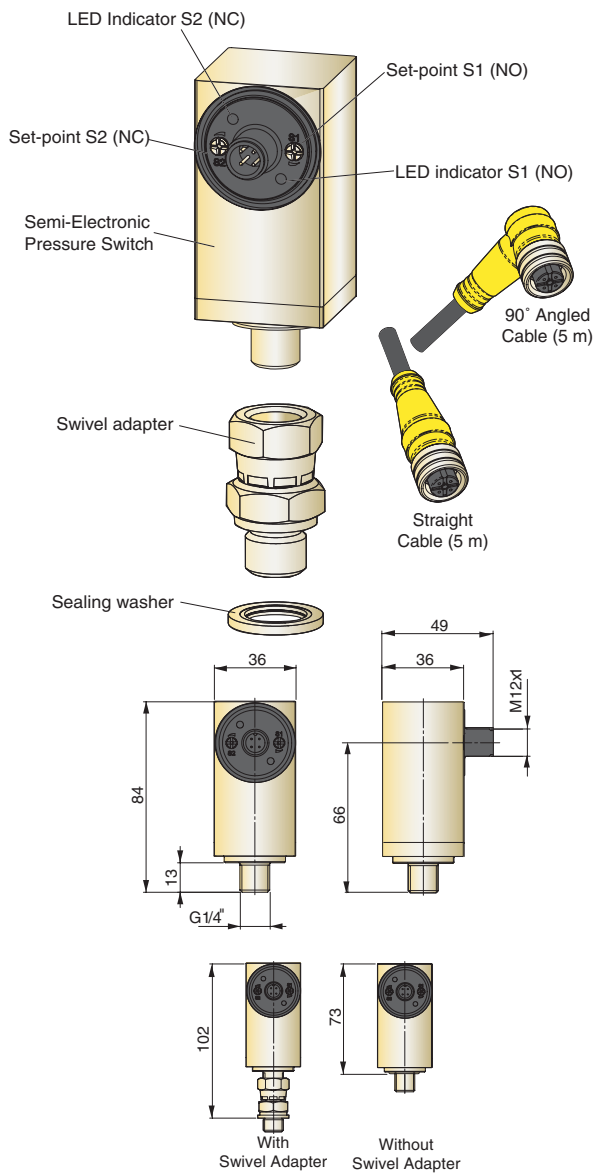
- S1 - Normally Open (NO)
- S2 - Normally Closed (NC)

These set-points can be easily adjusted to either make or break an electrical circuit if the system pressure should drop below or rise above the set trigger pressures.

For example:

If S1 is set to 100 bar and S2 is set to 200 bar, then S1 will make a circuit connection if the system pressure falls below 100 bar. S2 will break a circuit connection if the system pressure rises above 200 bar. The set-points can be used simultaneously or individually depending what system pressures require monitoring.

Electrical connection.....	M12 x 1 (4-pin)
Pressure connection.....	G 1/4"
Protection class.....	IP65
Working range.....	25 -250 bar
Max. pressure.....	500 bar
Voltage.....	10 - 30 VDC
Current.....	max. 100 mA
Temperature range.....	-20 to +80 °C
Max. deviation.....	≤ 1% of end value



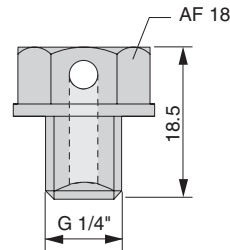
Pressure Switch is delivered complete with Sealing Washer, Swivel Adapter and 5 m cable with either straight or 90° angle contact (see Order No.)

Pressure Relief Safety Screw, Order No. 502179

The G1/4" Pressure Relief Safety Screw can be attached to a Hose System to protect hoses and system components from excessively high gas pressures.

The static rupture pressure is 360 bar ± 5% at +20°C and to achieve maximum service life, the Screw should not be exposed to dynamic pressure pulsations exceeding 275 bar.

Please Note! The G1/4" Pressure Relief Safety Screw is not recommended for Hose Systems where initial gas charging pressure at 20°C exceeds 150 bar.



We reserve the right to add, delete or modify components without notification.

All dimensions are stated in mm. All dimensions are nominal unless tolerance is stated.

Gas Charging Equipment

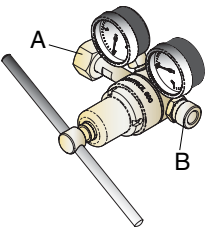
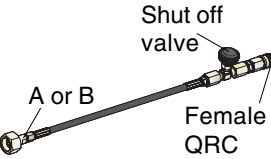
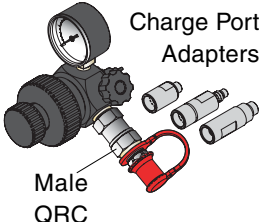

Our Gas Charging Equipment is available with or without a Pressure Regulator (recommended with) for nitrogen gas charging of self contained gas springs and/or hosed systems and is delivered in a robust and portable plastic case. As standard, charging hose comes with the length of 2 metres.

2

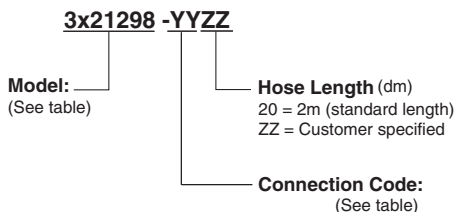
Different countries have different bottle connections. Make sure the correct connection code is selected according to table below. When ordering equipment including regulator, charging hose connection thread is always according to B. If ordered without regulator the connection on the hose is according to A.

Hosed systems can be charged via a Control Block using the female quick release coupling (QRC) with shut-off valve. By attaching the Control Armature with male QRC, self contained gas springs can be charged using a suitable Charge Port Adapter.

The following tables show the various combinations of Gas Charging Equipment available:

Order No.	Pressure Regulator:	Charging Hose	Control Armature: 4215072	Protective Case: 503919
				
3021298 - YYZZ	X	X	X	X
3121298 - YYZZ	--	X	X	X
3221298 - YYZZ	X	X	--	X
3421298 - YYZZ	X	X	X	--
3521298 - YYZZ	--	X	X	--
3621298 - YYZZ	X	X	--	--
3721298 - YYZZ	--	X	--	--

Connection Code (YY)	Country example	Threads		Pressure Regulator Can be ordered separately using. Order No.*
		A Bottle Connection	B Regulator Connection	
01	Sweden	W24.32x1/4" Female	W24.32x1/4"	4021296
02	India	G 5/8" Male	W24.32x1/4"	4121296
03	China	G 5/8" Female	W24.32x1/4"	4221296
04	UK	G 3/8" Female	W24.32x1/4"	--

How to order

*When connecting Pressure Regulator to Charging Hose, connection must be according to B. Connection B with W24.32x1/4" female for charging hose can be ordered separately, Order No. 4013715.

Micro-Hose

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Micro-Hose Adapters	Page 4.3/3
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Micro-Hose Control Block	Page 4.3/7
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Installation Examples, Micro-Hose System	Page 4.3/8
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3

Micro-Hose System

The Micro-Hose System is our most compact Hose System available and was originally designed to allow M6 side charging ports to be hoses together.

G1/8" and G1/4" connection ports can also be connected to the Micro-Hose System with the use of an appropriate adapter.

3

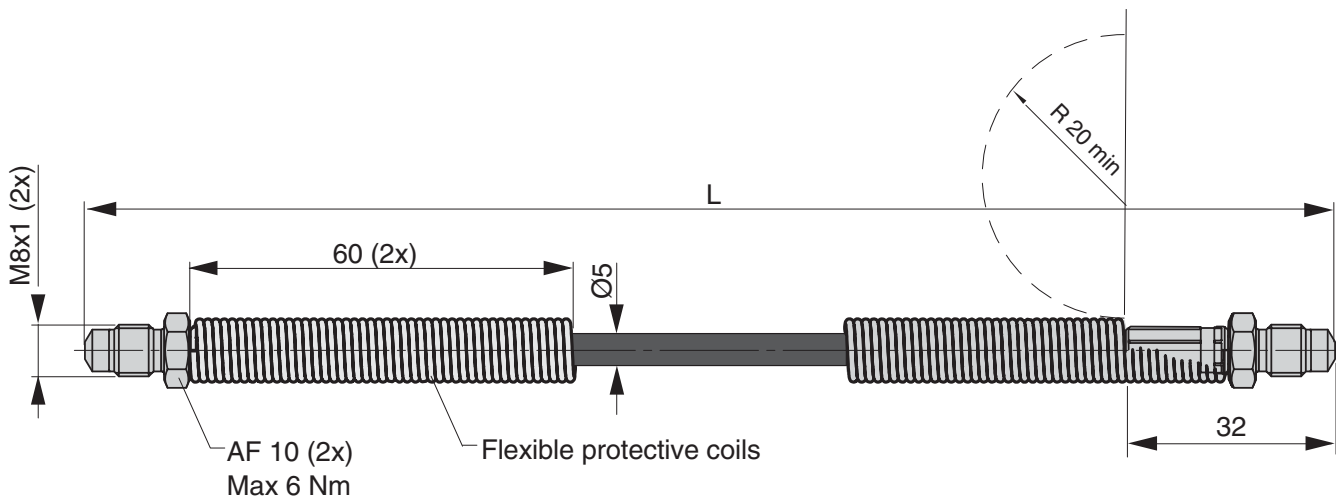
Please note however, the Micro-Hose System is not intended for use with Pressure Tanks, instead we recommend the EO24-Hose System or its equivalent.

A number of different standard hose lengths are available (see table below). Custom hose lengths can also be ordered **from 150 mm upwards**. Subsequent numbers are added to the order number according to the length required, e.g. hose length 2500 mm = Order No. 4018807-2500

Min. bend radius	20 mm
Temp. range	- 20 to + 80°C
Rupture pressure	2000 bar
Max. dynamic working pressure	500 bar



Micro-/EZ-Hose clip, **Order No. 502646**
(Can be used to secure hoses using an M5 screw)



Torque settings for Micro-Hose components.

Order No	L (mm)
4018807-0200	200
4018807-0300	300
4018807-0400	400
4018807-0630	630
4018807-0800	800
4018807-1000	1000
4018807-1500	1500
4018807-2000	2000
4018807-XXXX	XXXX*

Order No.	Micro-Hose part	Torque
4018788	Micro-Plug	6 Nm
503762	Adapter M6-M6	
503763	Adapter M6-M8x1	
503767	45° Two-way adapter	
503768	90° One-way adapter	
503769	180° Two-way adapter	
4018807-XXXX	Micro-Hose M8x1	

* For customer specified lengths

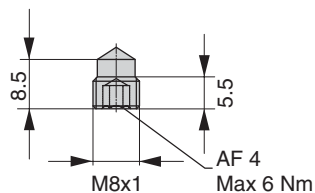
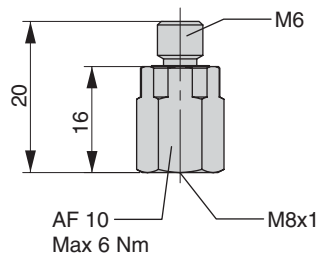
M6 charge port to Micro-Hose Adapters

M6 to M8x1
Order No. 503763

M6 charge port to Micro-Hose

Micro-Plug
Order No. 4018788

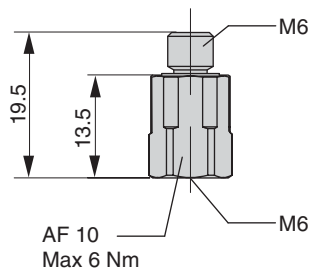
For use with Micro-Hose adapters and Control Block



3

M6 to M6
Order No. 503762

Extension for gas springs using foot mounts

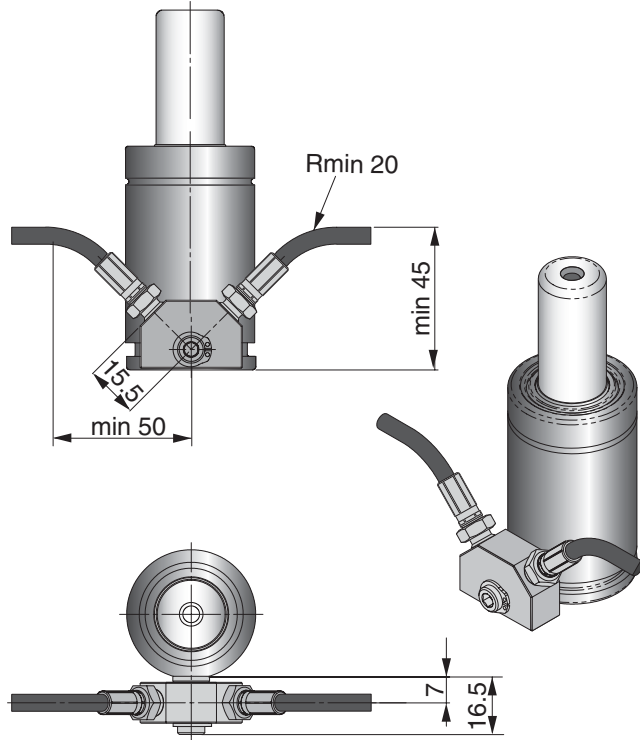
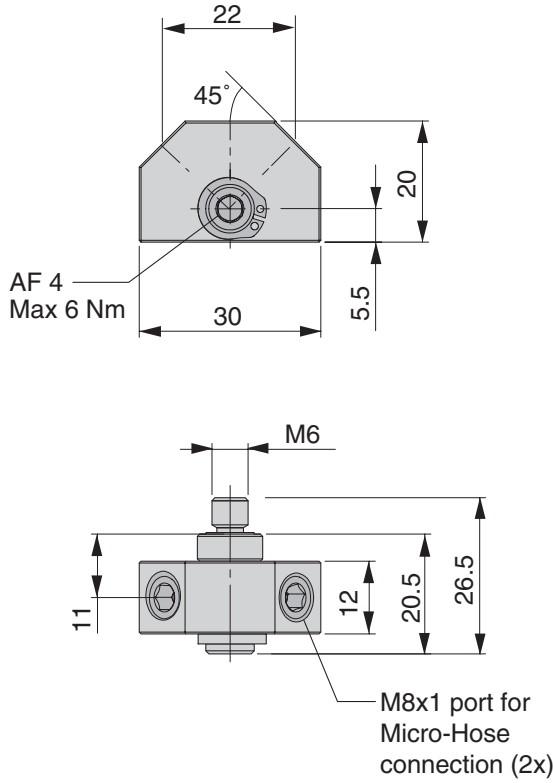


Micro-Hose Adapters



45° Adapter

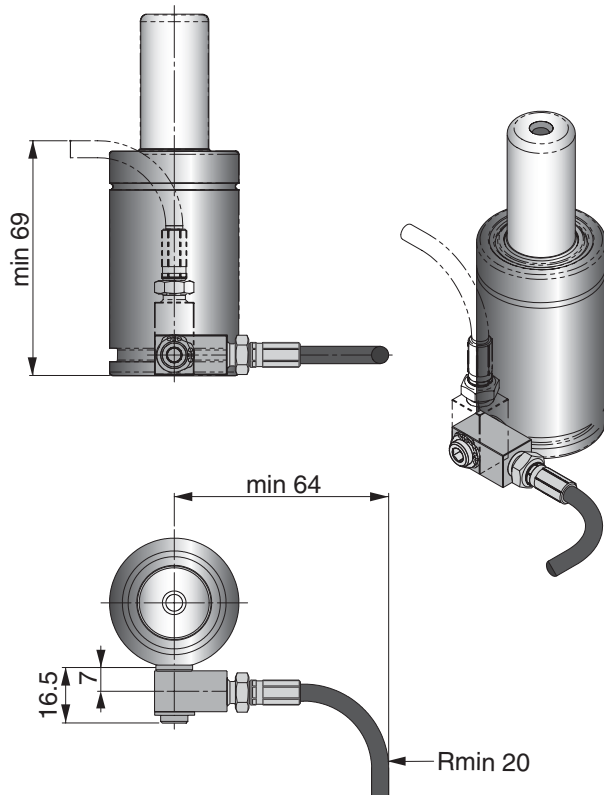
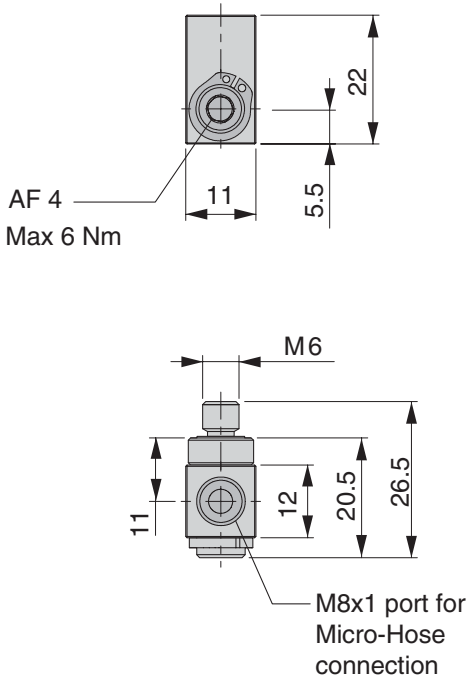
Order No. 503767



Installation Example:
45° Adapter, Micro-Hose System

90° One-way Adapter

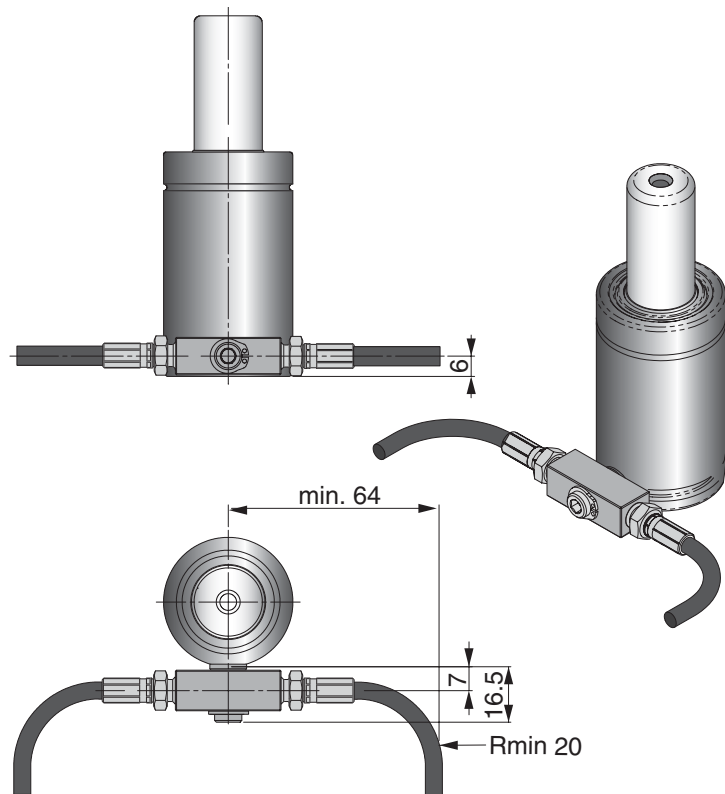
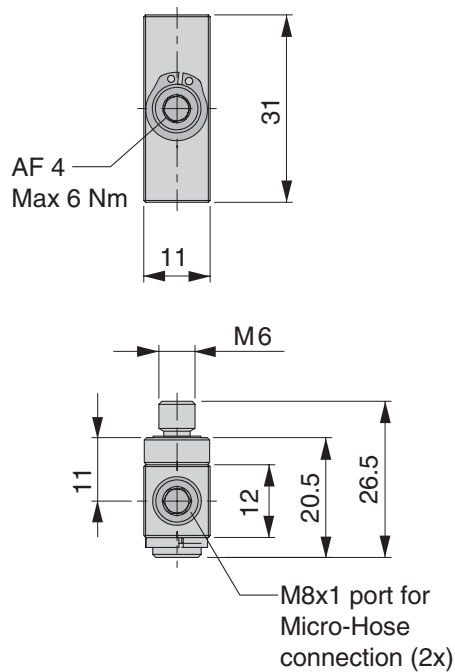
Order No. 503768



Installation Example:
90° Adapter, Micro-Hose System

180° Adapter

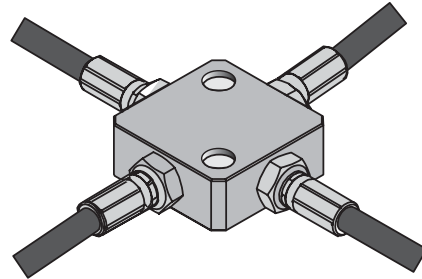
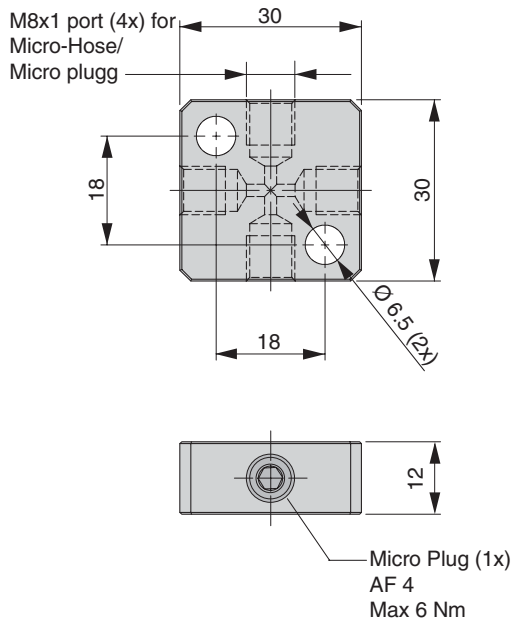
Order No. 503769



Installation Example:
180° Adapter, Micro-Hose System

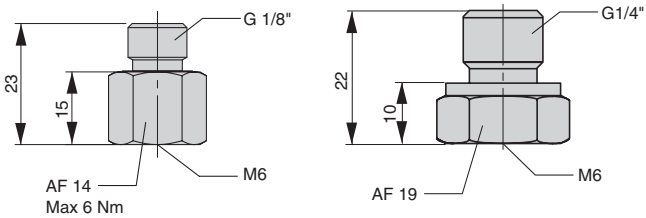
Four-way Connection Block

Order No. 3020363



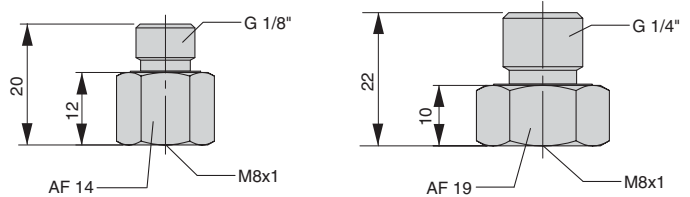
Micro-Hose Adapters for G1/8" and G1/4" Connection Ports

G 1/8" to M6
Order No. 503764

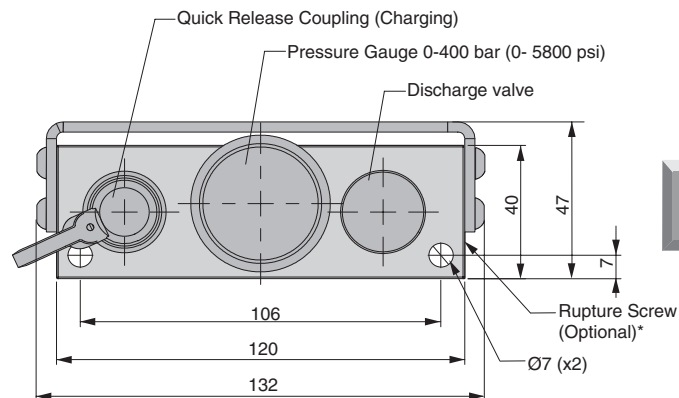


For connection to angled Micro-Hose Adapters

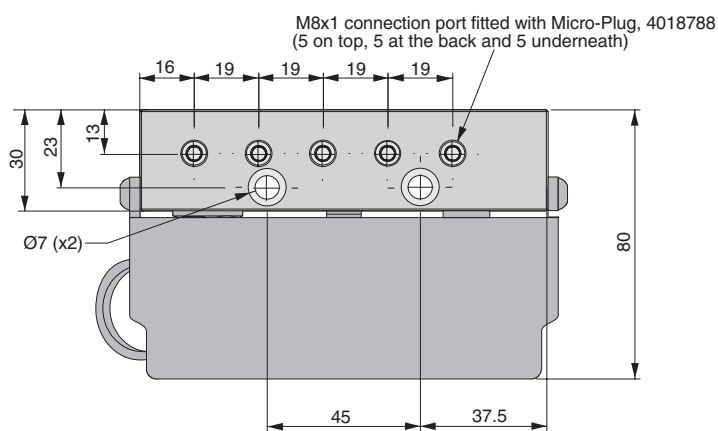
G 1/4" to M6
Order No. 503966



For connection to Micro-Hose

Micro-Hose Control Block**Order No. 3018772** (without Rupture Screw)**Order No. 3118772** (with Rupture Screw)

3



The Micro-Hose Control Block is a very compact aluminium block with protective stainless steel cover and has been designed especially for the Micro-Hose System.

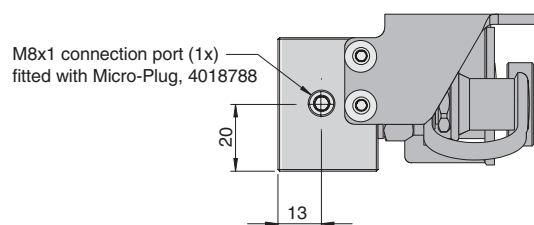
This block is intended for continuous monitoring of gas pressure in the Hose System.

It is fitted with manometer (0-400 bar/5800 psi), Quick Release Coupling for gas charging and Discharge Valve for gas evacuation.

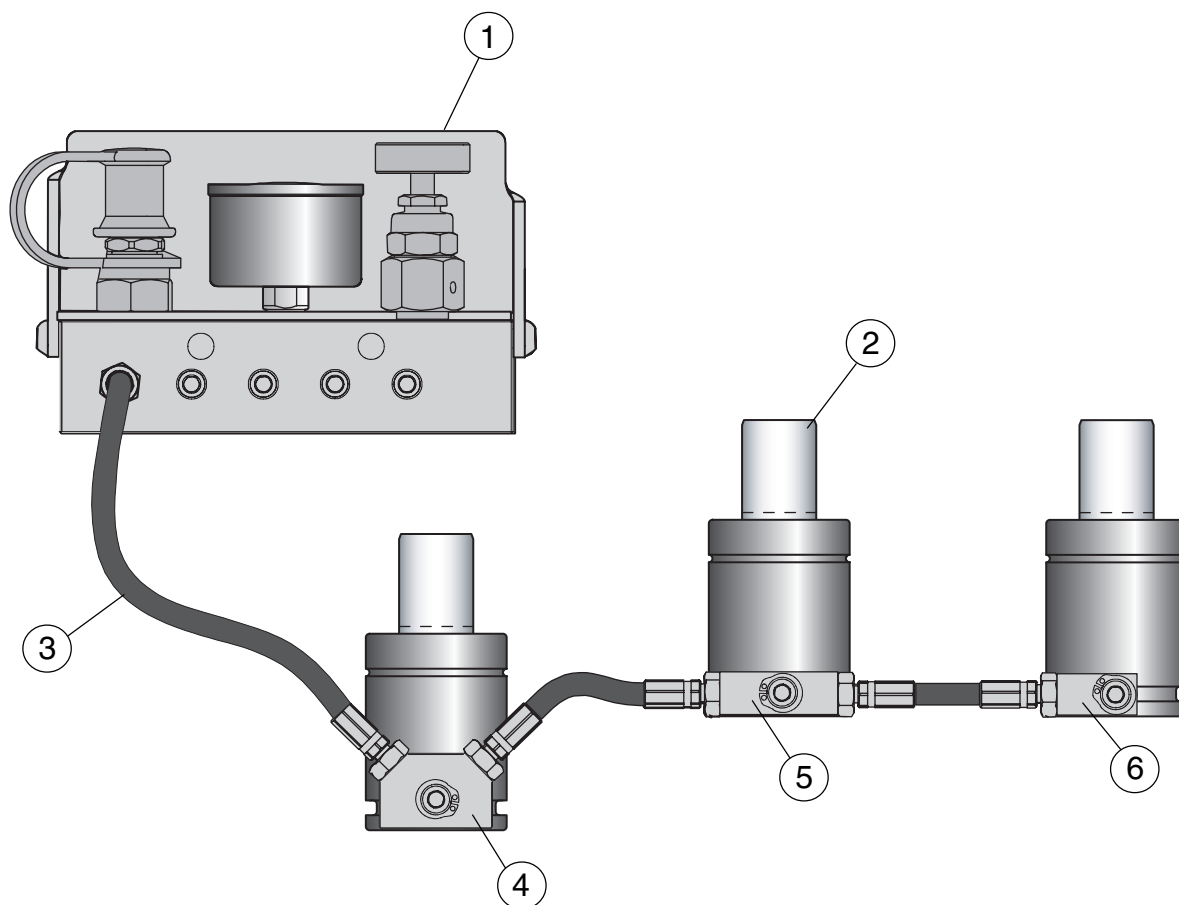
The block contains sixteen M8x1 connection ports, which are plugged on delivery, and is available in two versions:

3018772 (without Rupture Screw)**3118772** (with Rupture Screw*)

*Please note, Rupture Screws are not recommended for use where initial gas charging pressure at 20°C exceeds 150 bar.



Micro-Hose System



Position	Quantity	Description	Order No
1	1	Micro-Hose Control Block	3018772
2	3	Gas Spring	X 350-XXX
3	3	Micro-Hose	4018807-XXXX
4	1	45° Adapter	503767
5	1	180° Adapter	503769
6	1	90° Adapter	503768

EZ-Hose

EZ-Hose System

Page 4.4/2

EZ-Hose Adapters

Page 4.4/3

Installation Examples, EZ-Hose System

Page 4.4/7

EZ-Hose System

The EZ-Hose System is our most popular Hose System. It is a very compact and versatile O-ring sealed Hose System that allows connections to be tightened by hand. G1/8" and G1/4" connection ports can be connected to the EZ-Hose System with the use of an appropriate adapter. Please note however, the EZ-Hose System is not intended for use with Pressure Tanks, instead we recommend the EO24-Hose System or its equivalent. A number of different standard hose lengths are available (see table below). Custom hose lengths can also be ordered **from 150 mm upwards**. Subsequent numbers are added to the order number according to the length required, e.g. hose length 2500 mm = Order No. 4014974-2500

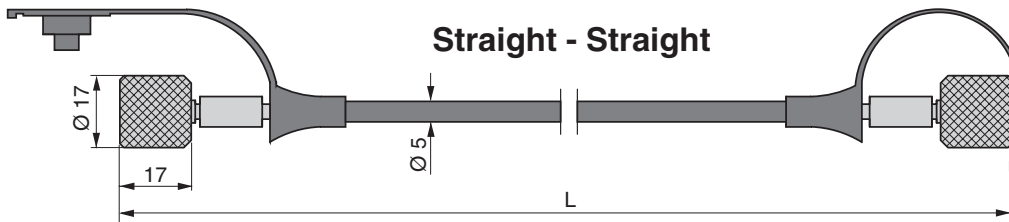
4

Min. bend radius	20 mm
Temp. range	- 20 to + 80°C
Rupture pressure	2000 bar
Max. dynamic working pressure	500 bar



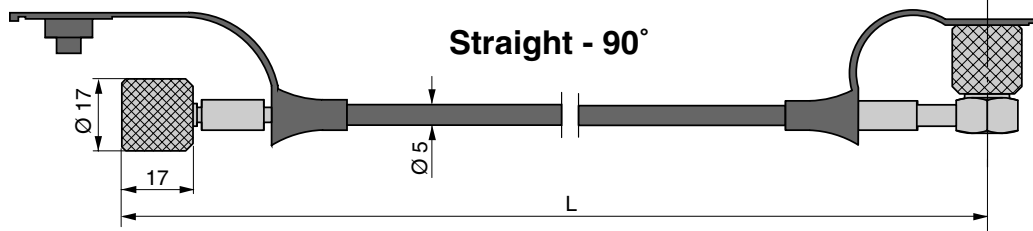
EZ-/Micro-Hose clip, **Order No. 502646**
(Can be used to secure hoses using an M5 screw.)

Order No. 4014974-XXXX



Order No.	L (mm)
4014974-0200	200
4014974-0300	300
4014974-0400	400
4014974-0480	480
4014974-0630	630
4014974-0800	800
4014974-1000	1000
4014974-1500	1500
4014974-2000	2000
4014974-XXXX*	XXXX

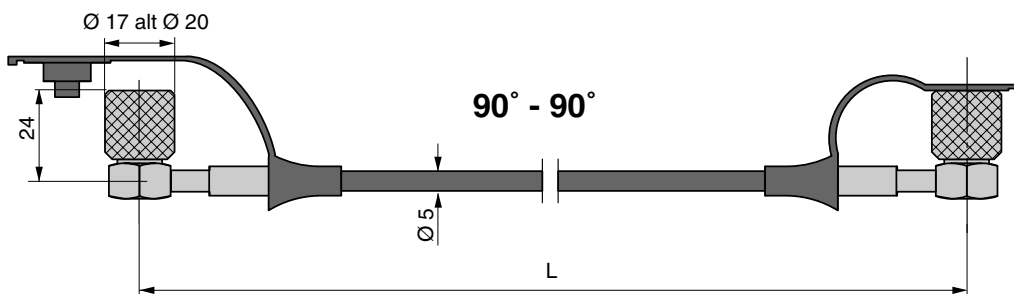
Order No. 4017568-XXXX



Order No.	L (mm)
4017568-0200	200
4017568-0300	300
4017568-0400	400
4017568-0480	480
4017568-0630	630
4017568-0800	800
4017568-1000	1000
4017568-1500	1500
4017568-2000	2000
4017568-XXXX*	XXXX

Order No. 4117568-XXXX

(To avoid twisting the hose we recommend hose 4017568 together with angle adapter.)



Order No.	L (mm)
4117568-0200	200
4117568-0300	300
4117568-0400	400
4117568-0480	480
4117568-0630	630
4117568-0800	800
4117568-1000	1000
4117568-1500	1500
4117568-2000	2000
4117568-XXXX*	XXXX

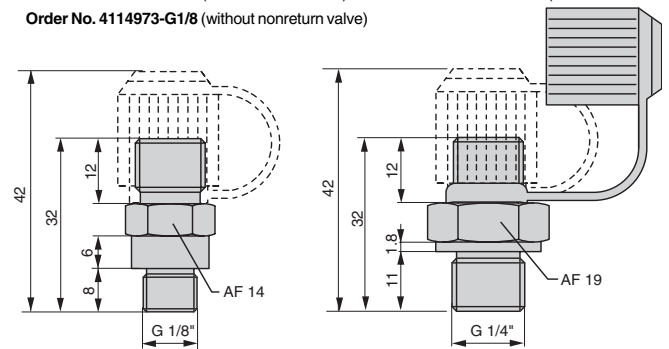
EZ-Hose Adapters

Hose adapters are available with three different connecting threads: G 1/8", G 1/4" or 7/16".

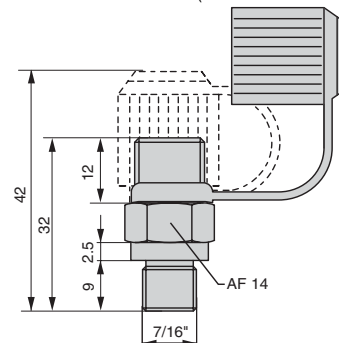
The adapter with G 1/4" thread fits most control blocks.

The version without the nonreturn valve (4114973-G 1/8) is recommended for gas springs. There is a risk, when fitting the adapter with nonreturn valve directly to a gas spring, that the valve is not properly opened if a bad hose connecting is made; thus preventing the gas spring from being discharged.

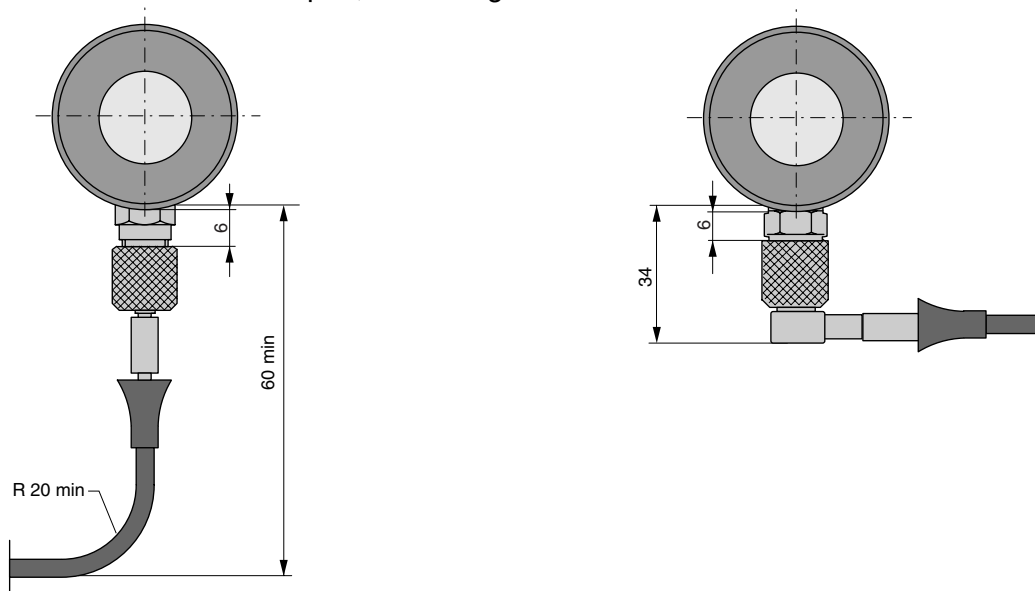
Order No. 4014973-G1/8 (with nonreturn valve) Order No. 4014973-G1/4 (with nonreturn valve)
Order No. 4114973-G1/8 (without nonreturn valve)



Order No. 4114973-7/16 (without nonreturn valve)

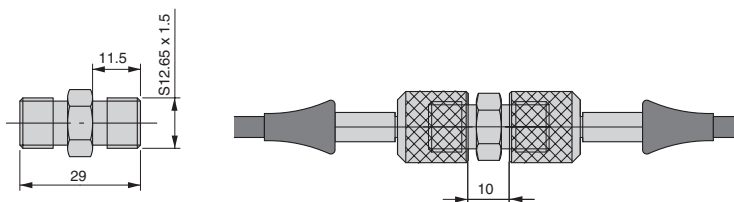


Installation dimensions for hose adapter, with straight and 90° hose



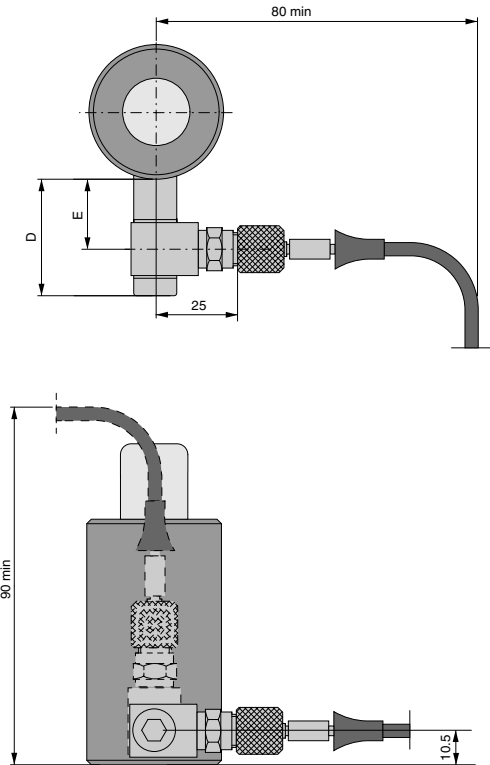
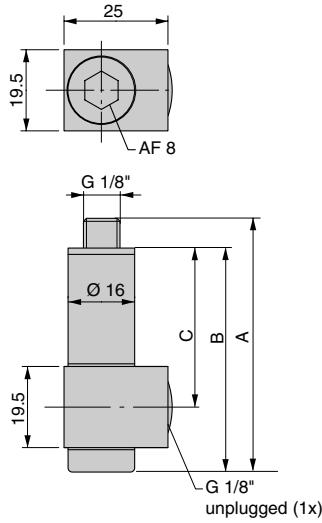
Joining Coupling

Coupling for joining of EZ-Hoses, Order No. 503674.



Angle Adapter

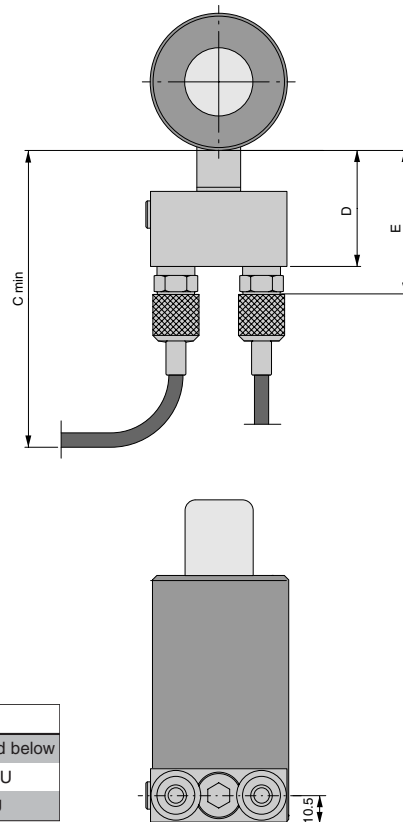
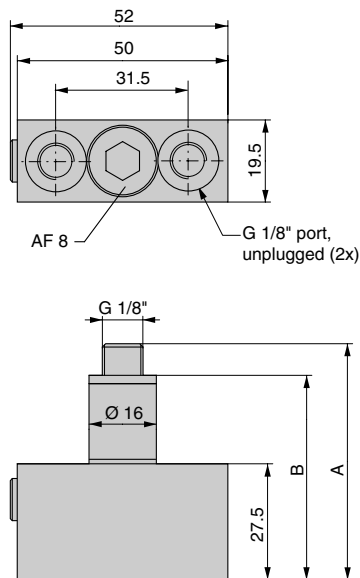
Order No. 4016050-XX



Order No	A	B	C	D	E	Suitable together with mounts
4016050-01	40	32.5	17	26	11	All applicable mounts, except those mentioned below
4016050-02	54	46.5	31	40.5	25	FU/FF/FFC 500, 750, 1500, 3000 + K/KU
4016050-03	61	53.5	38	47.5	32	FU/FF/FFC 5000, 7500, 10000 + K/KU

Front Adapter

Order No. 4017314-XX

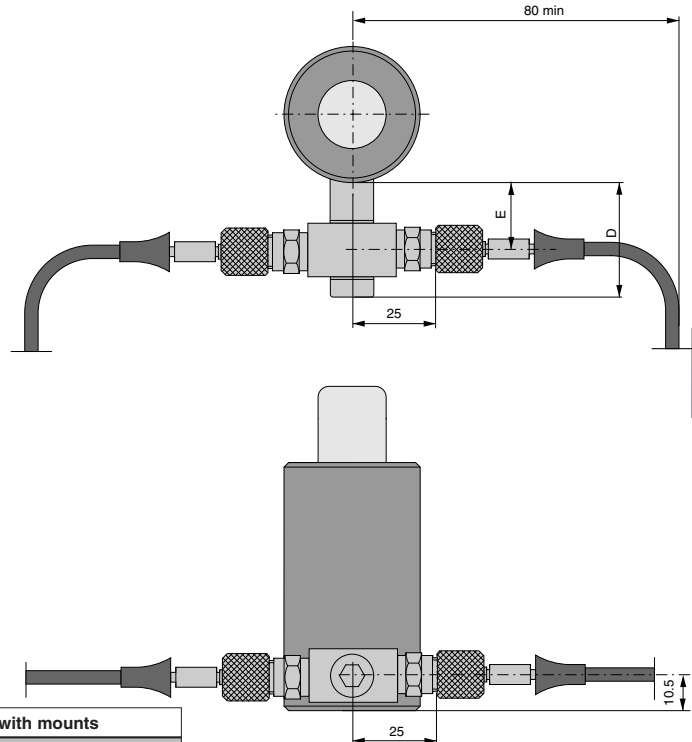
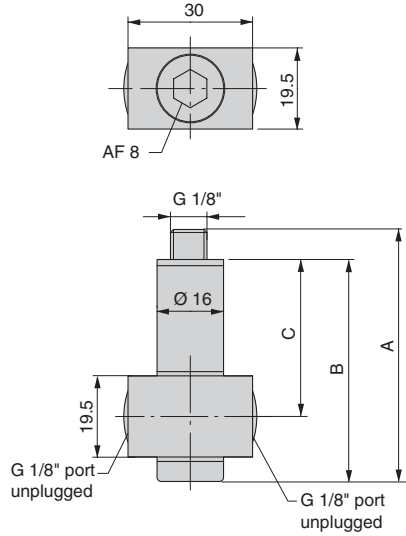


Order No	A	B	C	D	E	Suitable together with mounts
4017314-01	42	34.5	95	28.5	40	All applicable mounts, except those mentioned below
4017314-02	56	48.5	110	42.5	54	FU/FF/FFC 500, 750, 1500, 3000 + K/KU
4017314-03	63	55.5	115	49.5	61	FU/FF/FFC 5000, 7500, 10000 + K/KU

KALLER® EZ-Hose Adapters

Two-way Adapter

Order No. 4016051-XX

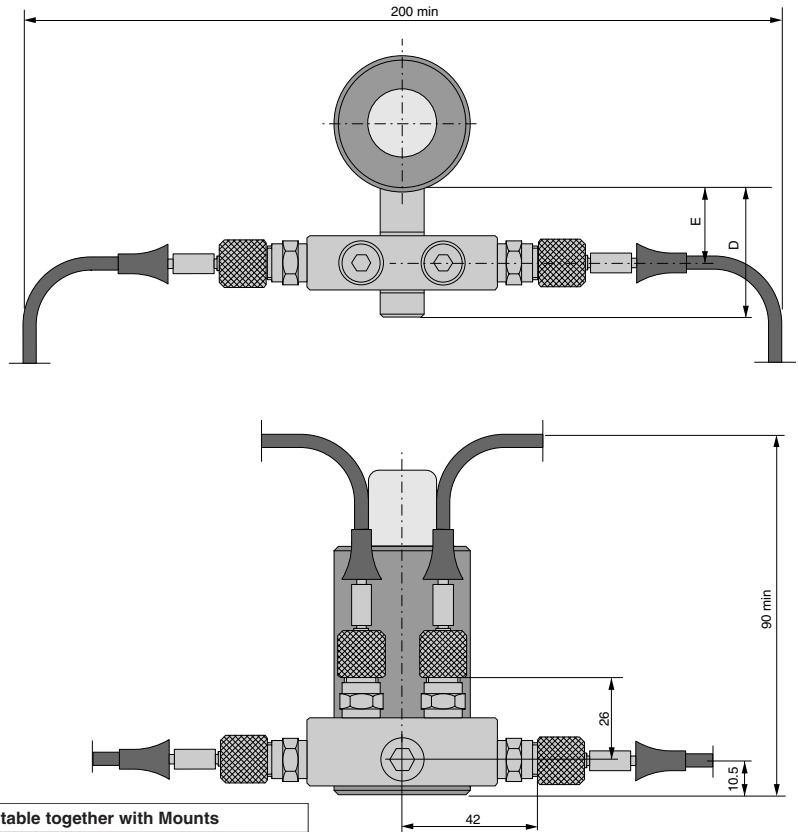
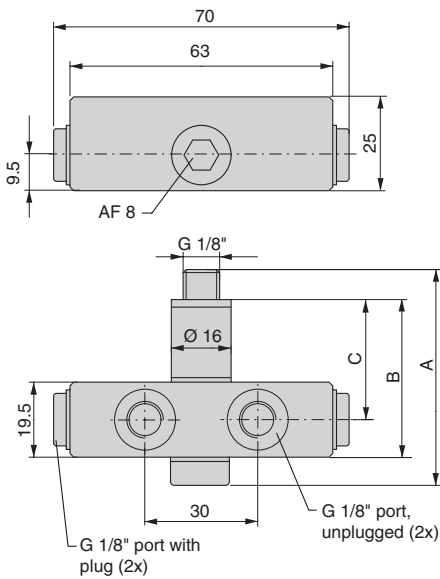


4

Order No	A	B	C	D	E	Suitable together with mounts
4016051-01	40	32.5	17	26.5	11	All applicable mounts except those mentioned below
4016051-02	54	46.5	31	40.5	25	FU/FF/FFC 500, 750, 1500, 3000 + K/KU
4016051-03	61	53.5	38	47.5	32	FU/FF/FFC 5000, 7500, 10000 + K/KU

Four-way Adapter

Order No. 4015035-XX

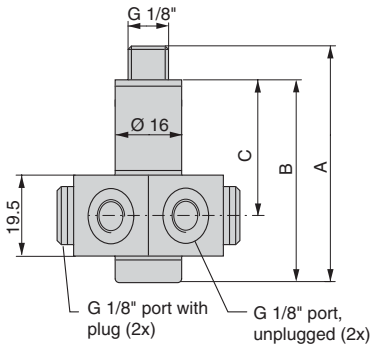
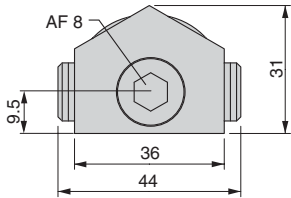


Order No.	A	B	C	D	E	Suitable together with Mounts
4015035-01	40	32.5	17	26.5	11	All applicable mounts, except those mentioned below
4015035-02	54	46.5	31	40.5	25	FU/FF/FFC 500, 750, 1500, 3000 + K/KU
4015035-03	61	53.5	38	47.5	32	FU/FF/FFC 5000, 7500, 10000 + K/KU

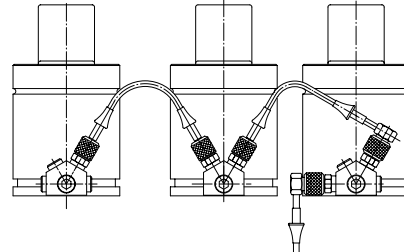
We reserve the right to add, delete or modify components without notification.

All dimensions are stated in mm.
All dimensions are nominal unless tolerance is stated.

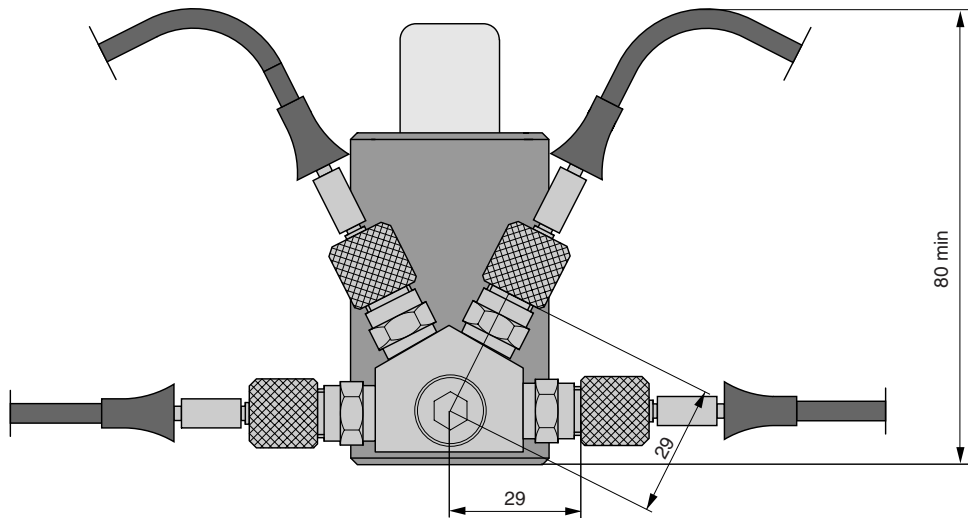
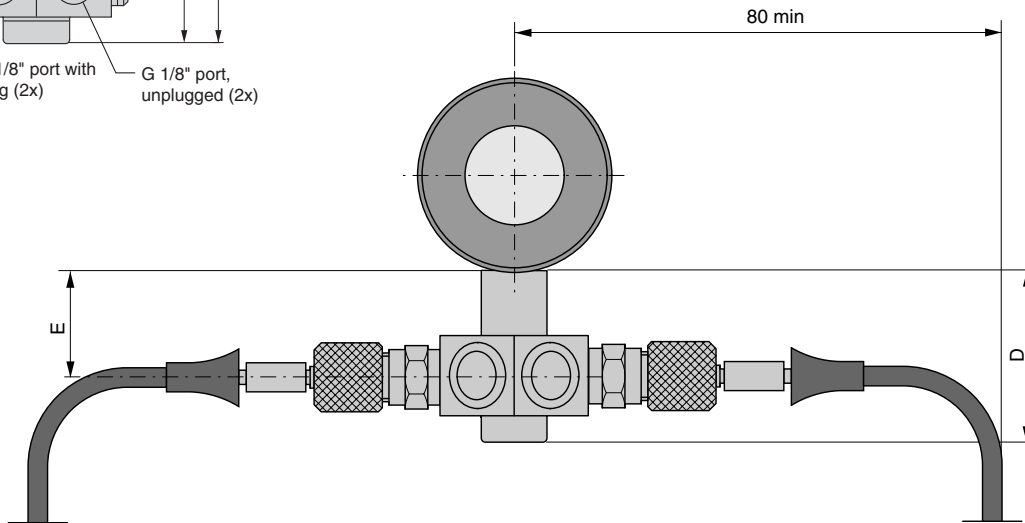
Multi-way Adapter 3017191-XX



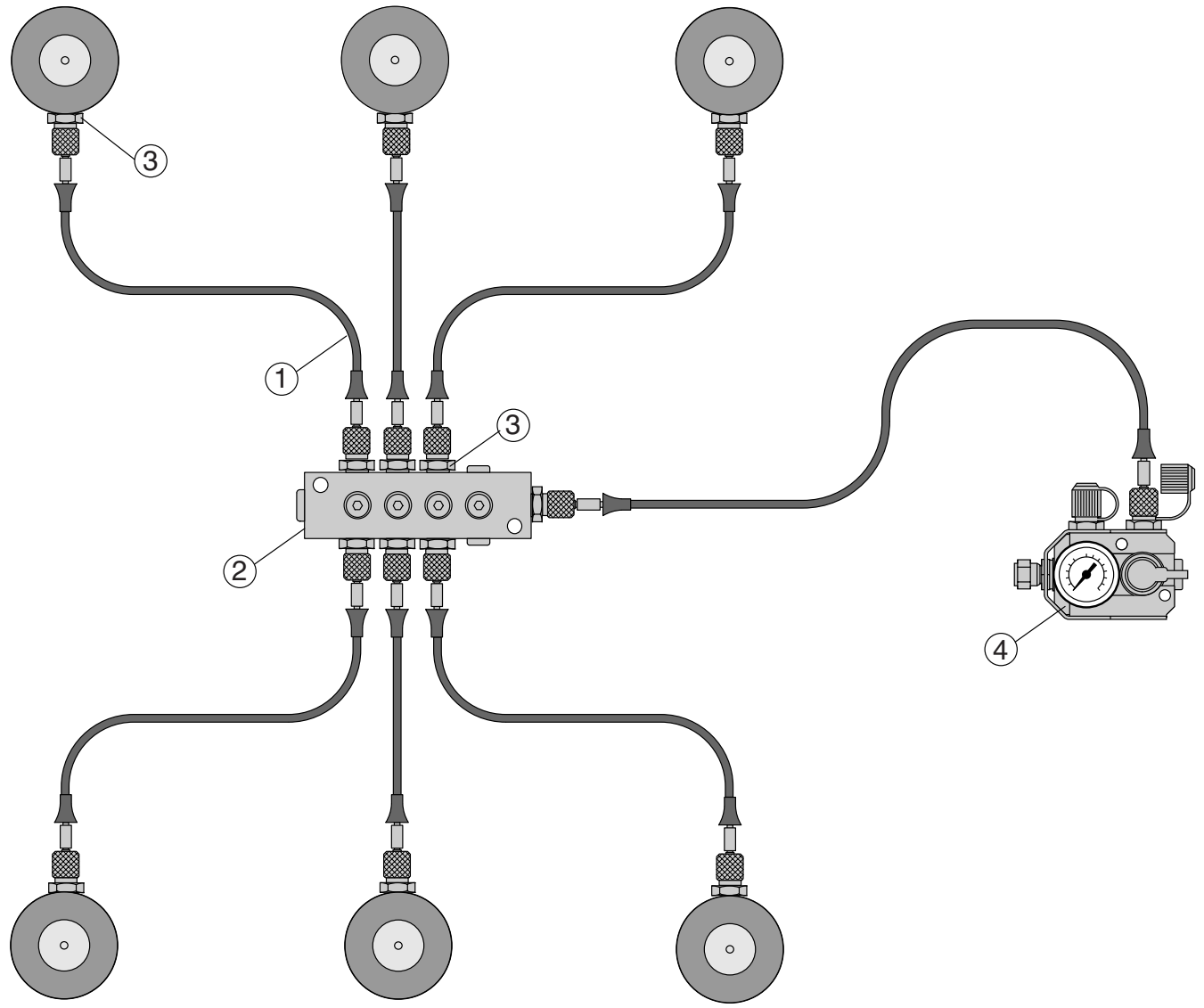
Order No	A	B	C	D	E	Suitable together with mounts
3017191-01	40	32.5	17	26.5	11	All applicable mounts, except those mentioned below
3017191-02	54	45.5	31	40.5	25	FU/FF/FFC 500, 750, 1500, 3000 + K/KU
3017191-03	61	53.5	38	47.5	32	FU/FF/FFC 5000, 7500, 10000 + K/KU



This adapter is very suitable when the distance between gas springs is short.



Installation Examples, EZ-Hose System



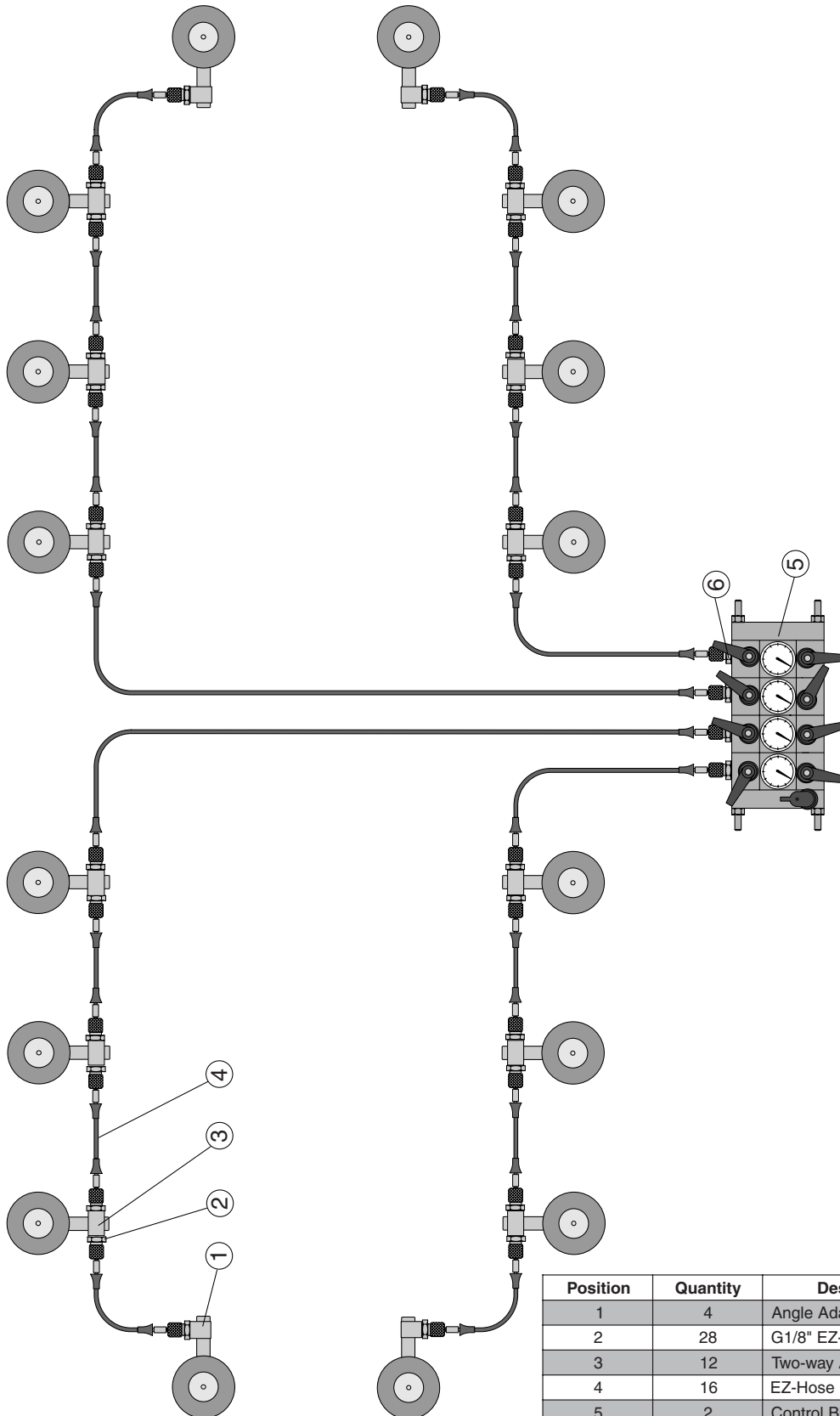
Position	Quantity	Description	Order No
1	7	EZ-Hose	4014974-XXXX
2	1	Multi-Coupling Block	3015044
3	13	G1/8" EZ-Hose Adapter	4114973-G1/8
4	1	Control Block	3116114-01

We reserve the right to add, delete or modify components without notification.

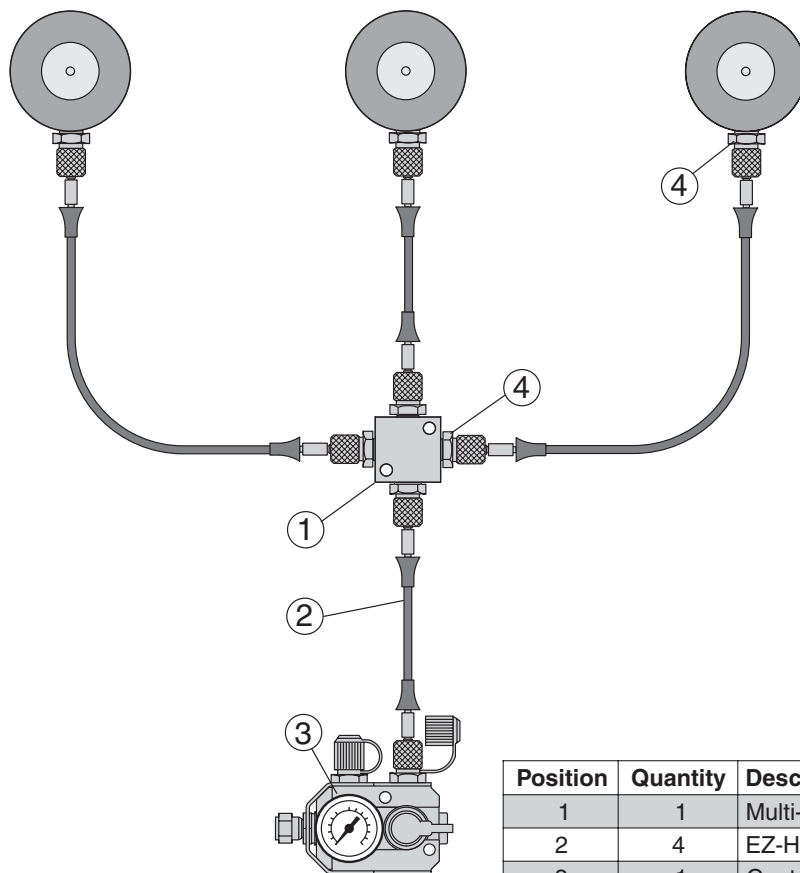
All dimensions are stated in mm.
All dimensions are nominal unless tolerance is stated.

Installation Examples, EZ-Hose system

4

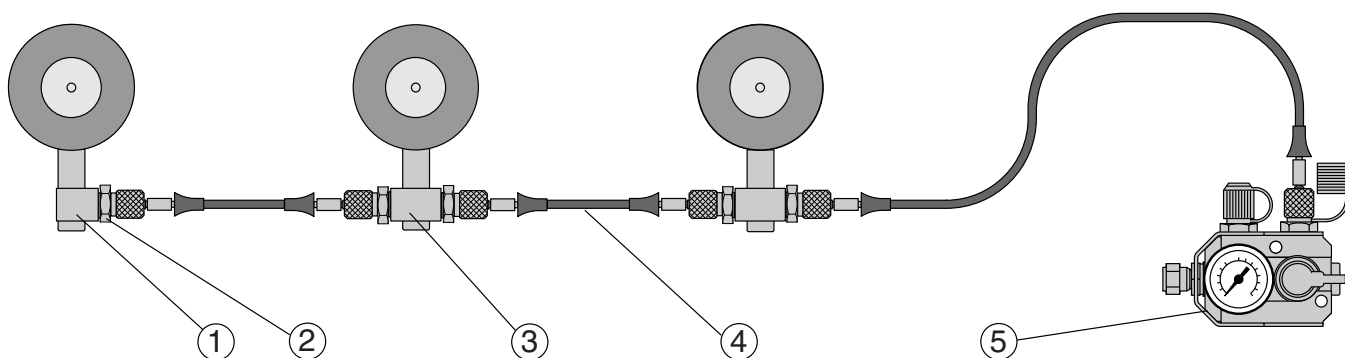


Position	Quantity	Description	Order No
1	4	Angle Adapter	4016050-xx
2	28	G1/8" EZ-Hose Adapter	4114973-G1/8
3	12	Two-way Adapter	4016050
4	16	EZ-Hose	4014974-xxxx
5	2	Control Block	2014422-04
6	4	G1/4" EZ-Hose Adapter	4014973-G1/4

Installation Examples, EZ-Hose system

Position	Quantity	Description	Order No.
1	1	Multi-Coupling Block	4017032
2	4	EZ-Hose	4014974-XXXX
3	1	Control Block	3116114-01
4	7	G1/8" EZ-Hose Adapter	4114973-G1/8

4



Position	Quantity	Description	Order No.
1	1	Angle Adapter	4016051
2	5	G1/8" EZ-Hose adapter	4114973-G1/8
3	2	Two-way Adapter	4016051-xx
4	3	EZ-Hose	4014974-xxxx
5	1	Control Block	3116114-01

EO24-Hose

EO24-Hose System	Page 4.5/2
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EO24-Hose Adapters	Page 4.5/4
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Installation Examples, EO24-Hose System	Page 4.5/5
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5

JIC-Hose

JIC-Hose System	Page 4.5/6
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JIC-Hose Adapters	Page 4.5/8
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Installation Examples, JIC-Hose System	Page 4.5/9
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**Being phased out
& replaced by EO24**

EO24-Hose System

The EO24-Hose System is our largest Hose System available and is recommended when Pressure Tanks are being used in the Hose System.

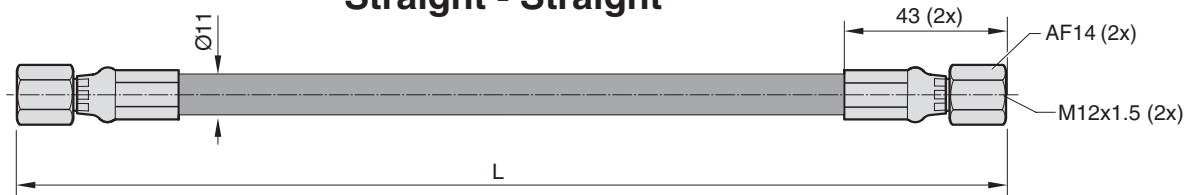
G1/8" and G1/4" connection ports can be connected to the EO24-Hose System with the use of an appropriate adapter.

Custom-made hose lengths can be ordered **from 150 mm upwards**. Subsequent numbers are added to the order number according to the length required, e.g. hose length 2500 mm = Order No. 3x20857-2500

EO24-Hose and EO24-Hose Couplings for Crimping are also sold separately, for information on hose crimping, see Hose Crimping Equipment.

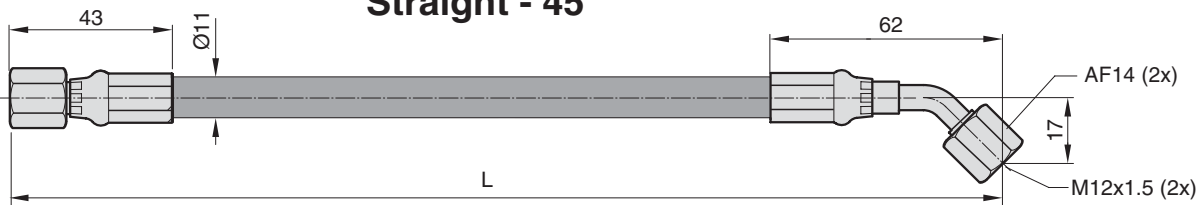
5

Straight - Straight



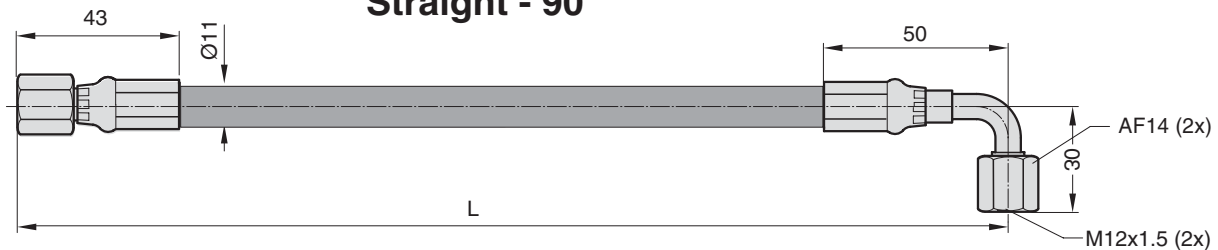
Order No. 3020857-XXXX

Straight - 45°



Order No. 3120857-XXXX

Straight - 90°



Order No. 3220857-XXXX

EO24-Hose

We recommend the EO24-Hose System if Pressure Tanks are being used.



EO24-hose clip, **Order No. 502322**
Can be used to secure hoses using an M6 screw.

NOTE! The hose must be cleaned internally after cutting!

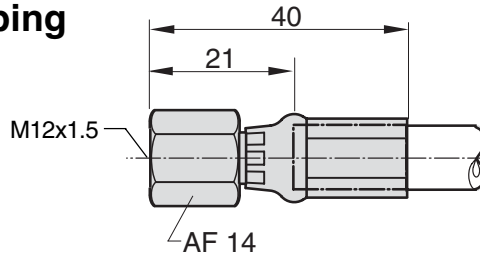
Material	Thermoplastic
Dimension	3/16" (exterior 11 mm)
Volume	18 ml/metre
Standard	SAE 100 R8 or ISO 3949 II
Outer casing	Perforated
Min. bend radius	40 mm
Temp. range	-40°C to +93°C
Max. dynamic working pressure ..	345 bar
Min. rupture pressure	1380 bar at 20°C



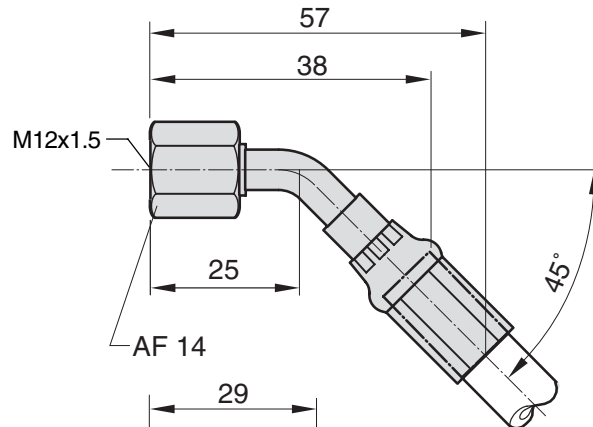
Order No. 502319

EO24-Hose Couplings for Crimping

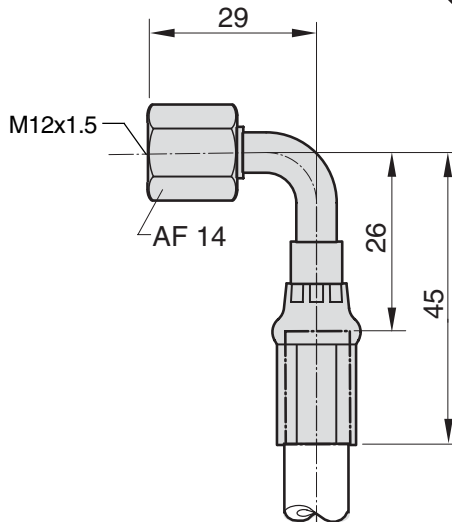
EO24 Straight
Order No. 504141



EO24 45° Elbow
Order No. 504142

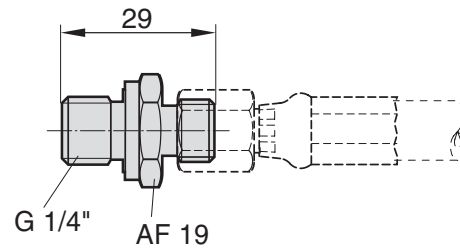
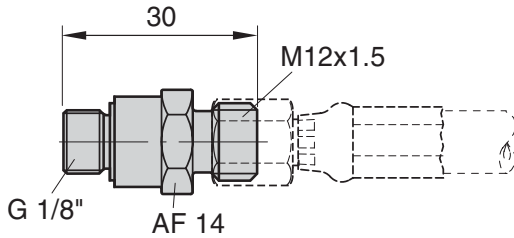


EO24 90° Elbow
Order No. 504143



The EO24-Hose coupling system has M12x1.5 threads for connection between hose and adapter. G 1/8" or G 1/4" are used for connecting to springs and blocks.

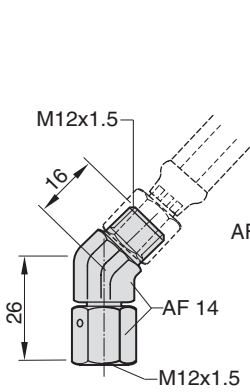
EO24-Hose Adapters



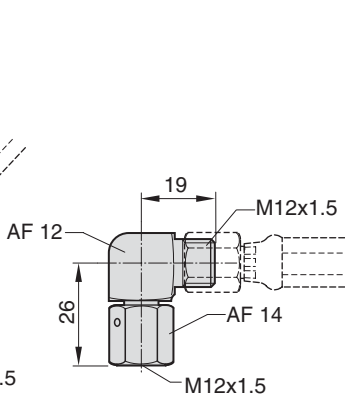
Straight G 1/8" adapter
(for gas springs and Coupling Blocks)
Order No. 503593

Straight G 1/4" adapter
(for Control Blocks)
Order No. 504144

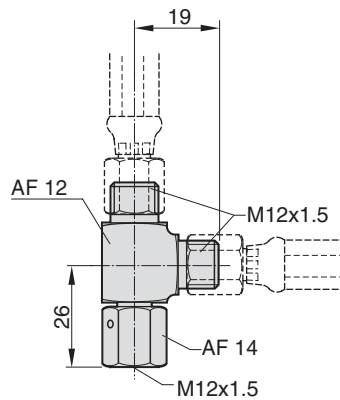
Adapter to Hose Couplings



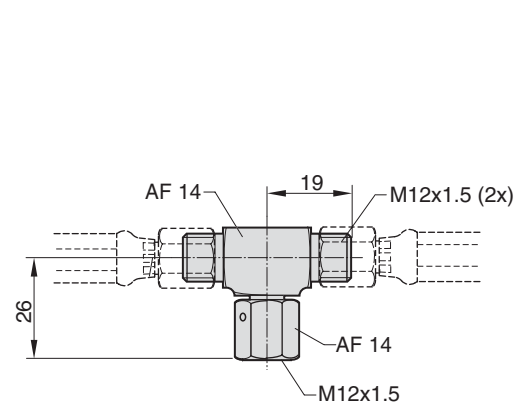
45° angle coupling
Order No. 504145



90° angle coupling
Order No. 504146

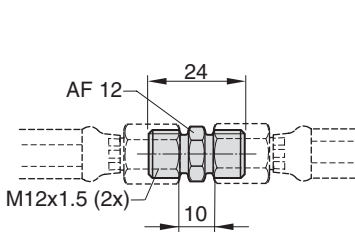


L-coupling
Order No. 504147

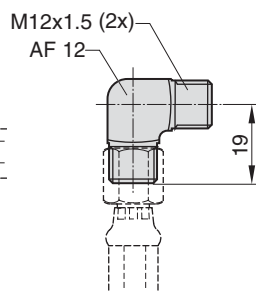


T-coupling
Order No. 504148

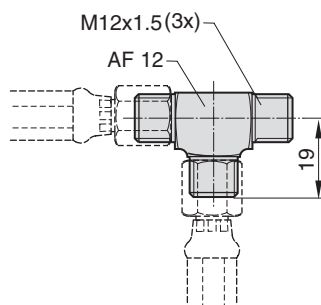
Hose to Hose Couplings



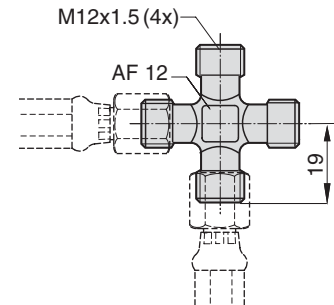
Straight coupling
Order No. 504149



90° Angle coupling
Order No. 504150

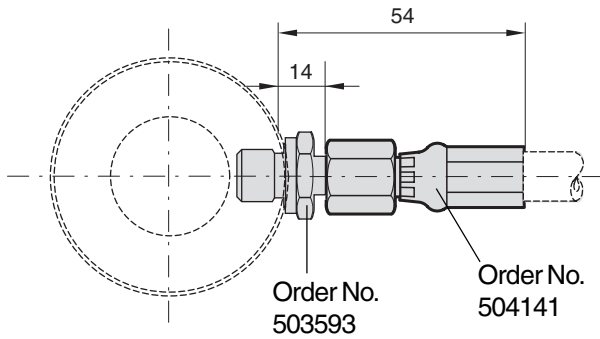


T-coupling
Order No. 504151

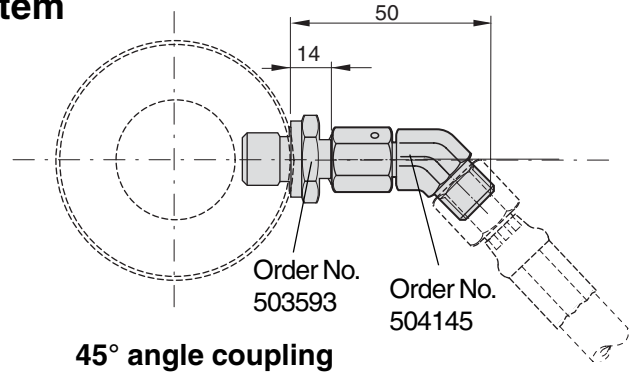


4-way coupling
Order No. 504152

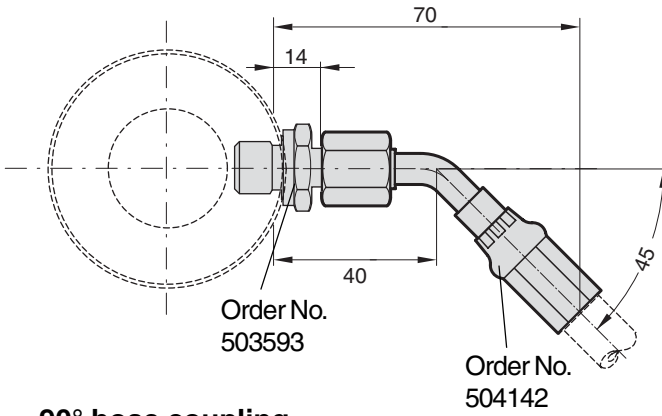
Installation Examples, E024-Hose System



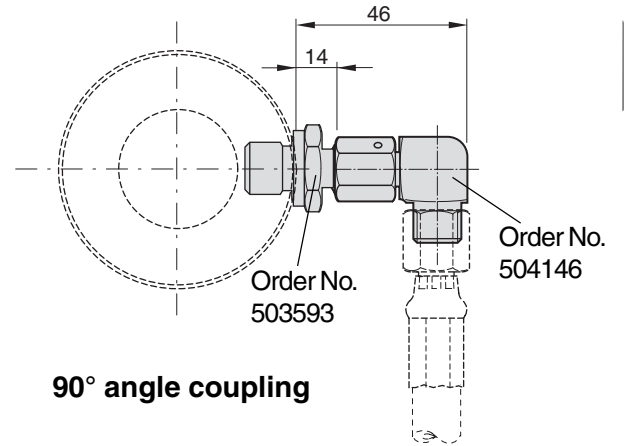
Straight hose coupling



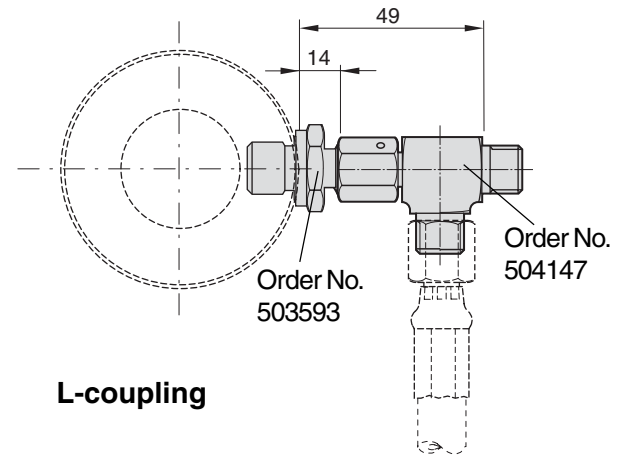
45° angle coupling



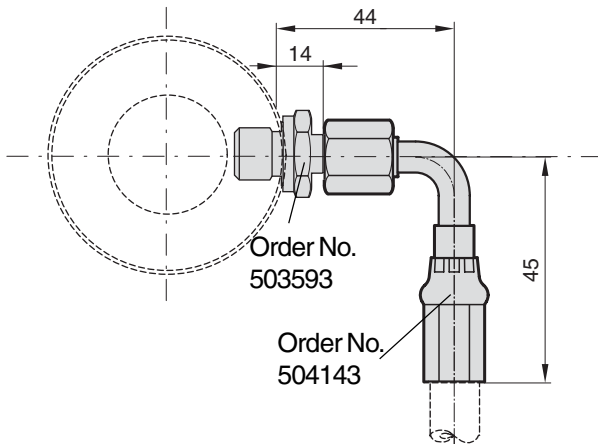
90° hose coupling



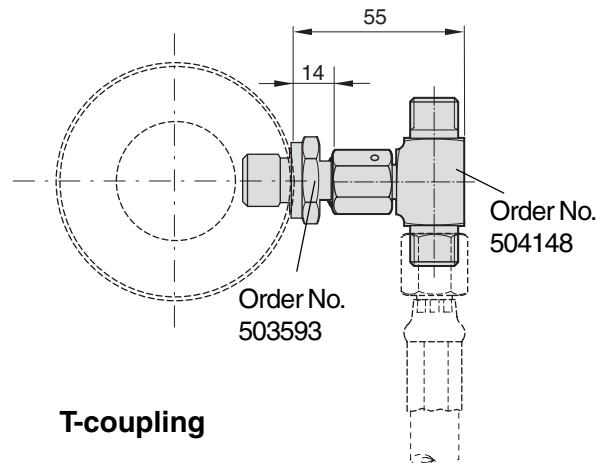
90° angle coupling



L-coupling



45° hose coupling



T-coupling

We reserve the right to add, delete or modify components without notification.

All dimensions are stated in mm. All dimensions are nominal unless tolerance is stated.

JIC-Hose System

The JIC-Hose System is our largest Hose System available and is recommended when Pressure Tanks are being used in the Hose System.

G1/8" and G1/4" connection ports can be connected to the JIC-Hose System with the use of an appropriate adapter.

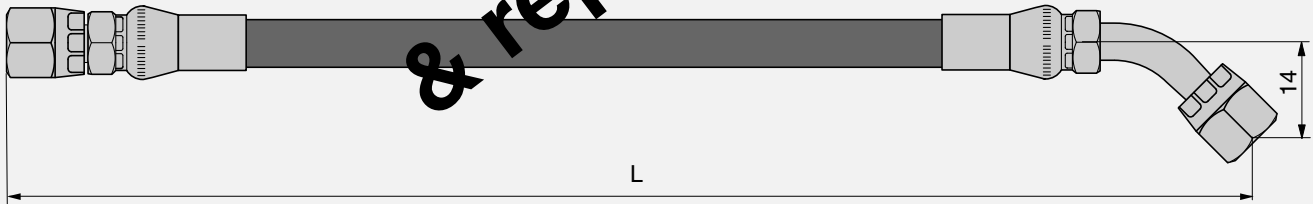
Custom-made hose lengths can be ordered **from 150 mm upwards**. Subsequent numbers are added to the order number according to the length required, e.g. hose length 2500 mm = Order No. 3X18451-2500

JIC-Hose and hose fittings are also sold separately for those wishing to crimp the hoses themselves (for info on hose crimping, see *Hose Crimping Equipment*)

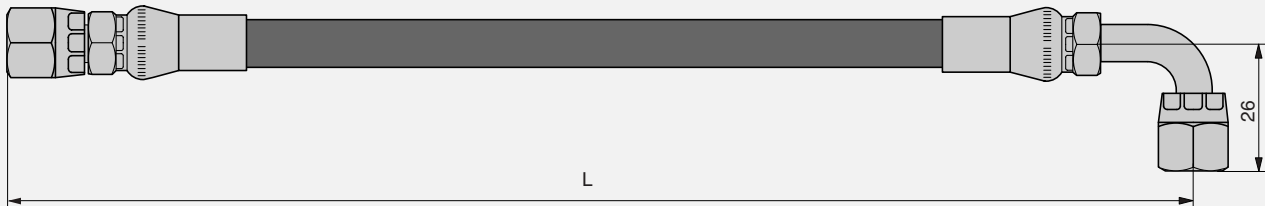
5



Straight - Straight
Order No. 3018451-XXXX



Straight - 45°
Order No. 3118451-XXXX



Straight - 90°
Order No. 3218451-XXXX

Being phased out
& replaced by EO24

JIC-Hose

We recommend the JIC-Hose System if pressure tanks are being used.



JIC hose clip, **Order No. 502322**
Can be used to secure hoses using an M6 screw.

NOTE! The hose must be cleaned internally after cutting!

Material	Thermoplastic
Dimension	3/16" (exterior 11 mm)
Volume	18 ml/metre
Standard	SAE 100 R8 or ISO 3949 II
Outer casing	Perforated
Min. bend radius	40 mm
Temp. range	-40°C to +93°C
Max. dynamic working pressure ..	345 bar
Min. rupture pressure	1380 bar at 20°C

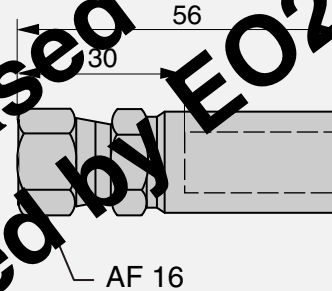


Order No. 502319

5

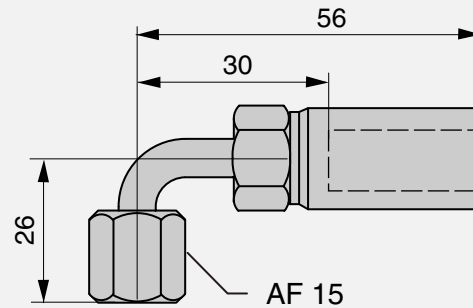
JIC-Hose Couplings for Crimping

Straight
JIC 37° UNF 7/16" - 20
Order No. 502316

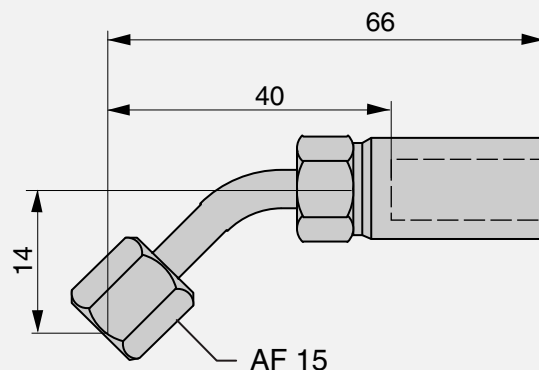


**Being phased out
& replaced by EO24**

90° elbow
JIC 37° UNF 7/16" - 20
Order No. 502317



45° elbow
JIC 37° UNF 7/16" - 20
Order No. 502318

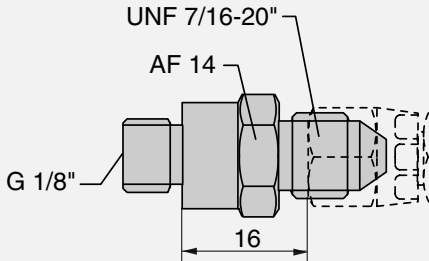


All couplings are intended for press joining with the hose.

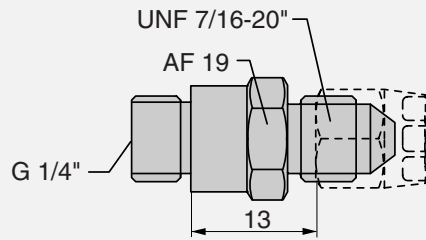
We reserve the right to add, delete or modify components without notification.
All dimensions are stated in mm.
All dimensions are nominal unless tolerance is stated.

The KALLER JIC-Hose coupling system has UNF 7/16" – 20 – JIC 37° threads for connection between hose and adapter. G 1/8" or G 1/4" are used for connecting to springs and blocks. The sealing washer to the gas spring is fitted to the adapters and is included in the order no. for the adapters.

JIC-Hose Adapters

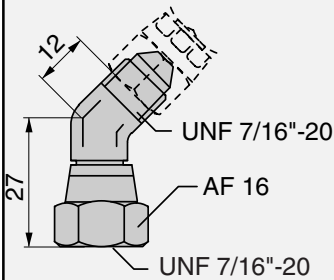


Straight G 1/8" adapter
(to springs and coupling adapters)
Order No. 4013994-01

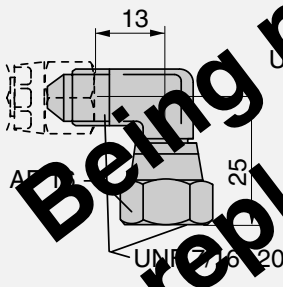


Straight G 1/4" adapter
(to control blocks)
Order No. 401625

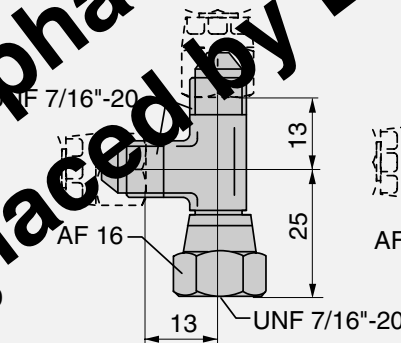
Coupling adapters



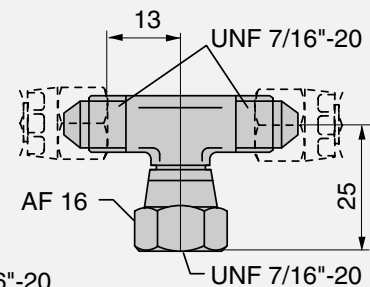
45° angle coupling
Order No. 502164



90° angle coupling
Order No. 502165

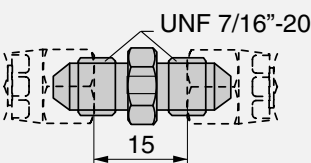


L-coupling
Order No. 502166

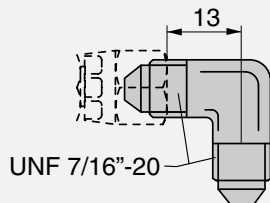


T-coupling
Order No. 502167

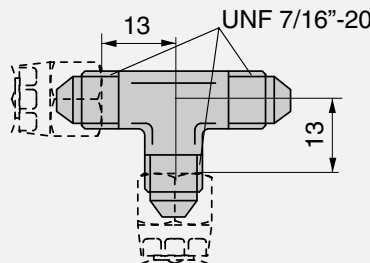
Hose to hose couplings



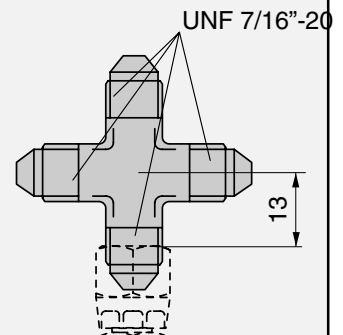
Straight coupling
Order No. 502168



90° Angle coupling
Order No. 502169



T-coupling
Order No. 502170

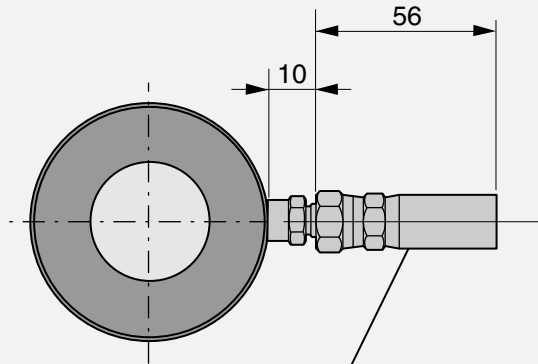


4-way coupling
Order No. 502171

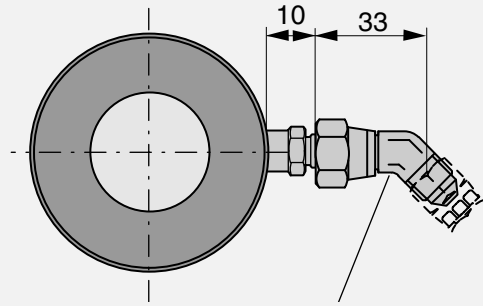
**Being phased out
& replaced by EO24**

Installation Examples, JIC-Hose System

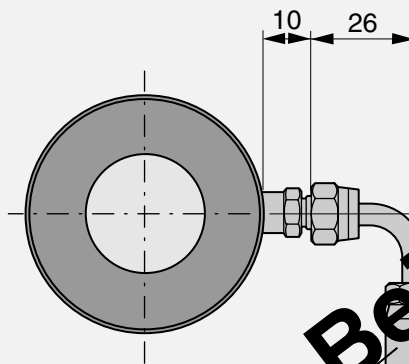
Top view



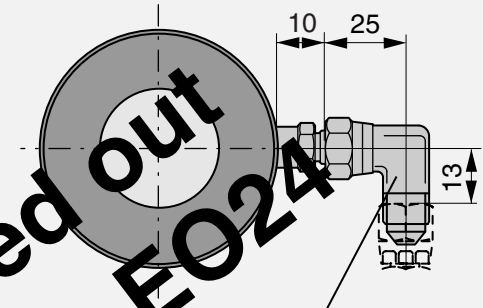
Straight hose coupling
Order No. 502316



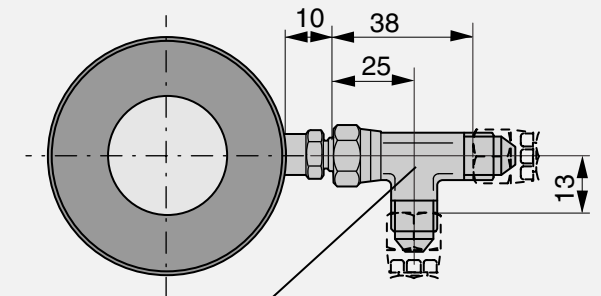
45° angle coupling
Order No. 502164



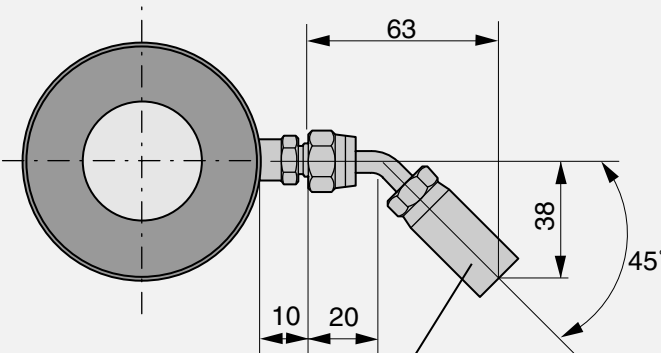
90° hose coupling
Order No. 502317



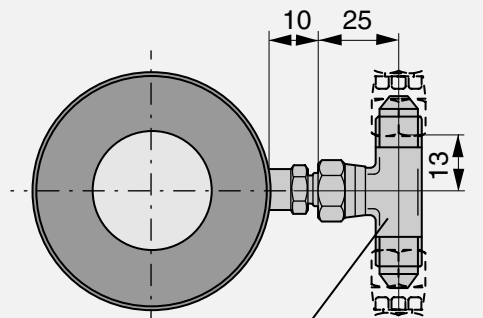
90° angle coupling
Order No. 502165



L-coupling
Order No. 502166



45° hose coupling
Order No. 502318



T-coupling
Order No. 502167

**Being phased out
& replaced by EO24**

5

Pressure Tanks

About Pressure Tanks



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Pressure Tank Accessories

Page 4.6/3

Installation Guidelines

Page 4.6/4

About Pressure Tanks



Pressure Tanks are used together with the EO24-Hose system (or its equivalent) in applications where a low pressure/force build-up in the Hose System is advantageous (e.g. for deep draw tooling applications).

By incorporating a Pressure Tank(s) into your Hose System, the overall gas volume in the Hose System increases, which causes the pressure/force build-up to be kept to a minimum.

Apart from the technical advantage of having a low pressure/force build-up in the Hose System, the service lifetime of the gas springs connected in the Hose System is also improved.

See *Installation Examples*, Page 4.6/4 for more info.

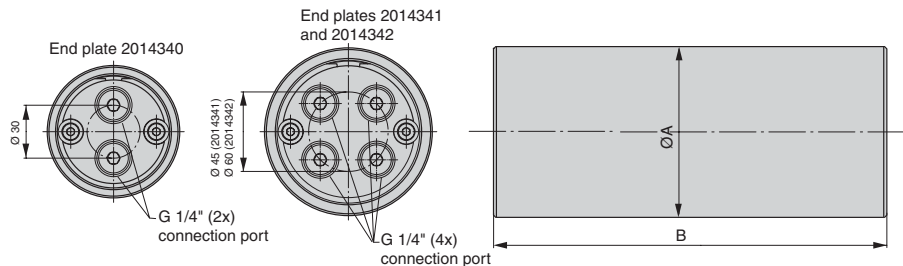
Please Note!

6

Before incorporating pressure tanks into your Hose System, you may want to consider whether it is possible to use a longer nominal stroke gas spring of the same model or even a TB gas spring with the same nominal stroke length.

Both methods will have the effect of increasing the internal gas volume in your Hose System, thus reducing the pressure/force build-up.

Order No.	Volume (l)	Ø A	B
2014340-025	0.25	75	170
2014340-050	0.5	75	250
2014340-100	1.0	75	410
2014341-100	1.0	95	300
2014341-200	2.0	95	500
2014341-300	3.0	95	700
2014341-400	4.0	95	900
2014342-200	2.0	120	360
2014342-400	4.0	120	615
2014342-800	8.0	120	1125



Approximate calculation of isothermal pressure force build-up:

$$\text{Pressure force build-up} \approx \frac{V_{PT} + (n \cdot V_{GS})}{V_{PT} + (n \cdot (V_{GS} - S \cdot A))}$$

V_{PT} = Volume of Pressure Tank (l) (see table above)

V_{GS} = Gas volume of gas spring (l) (see respective spring model)

S = Stroke length of gas spring (dm) (see respective spring model)

A = Piston rod area of gas spring (dm²) (see adjacent table)

n = Number of gas springs

Example:

Ten TU 5000 gas springs with stroke length 50 mm are connected to a Hose-System with an 8 litre Pressure Tank (2014342-800).

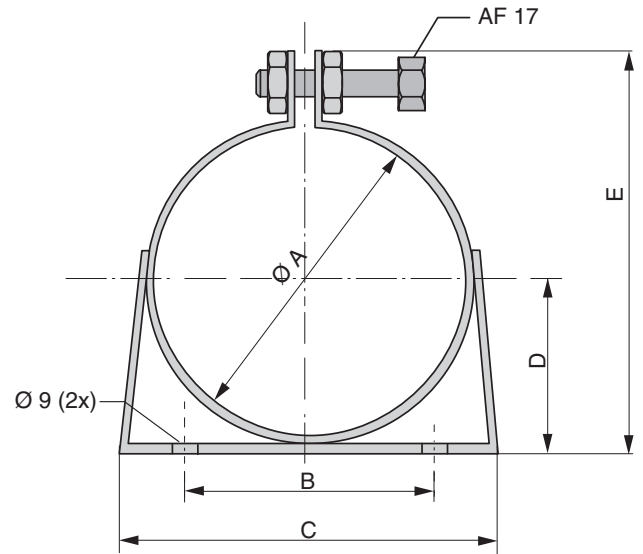
$$\text{Pressure force build-up} \approx \frac{8 + (10 \cdot 0.51)}{8 + (10 \cdot (0.51 - 0.5 \cdot 0.332))} \approx 1.145$$

Gas Spring Size (daN)	Piston Rod Area (dm ²)
500	0.031
750	0.049
1500	0.102
3000	0.196
5000	0.332
7500	0.503
10000	0.709

Bracket fixtures for Pressure Tanks

The bracket consists of a rubber-covered ring of galvanised sheet steel and is used to secure the Pressure Tank, preferably with one bracket at each end. If the tank is mounted vertically it should also rest on a solid support, see figures below.

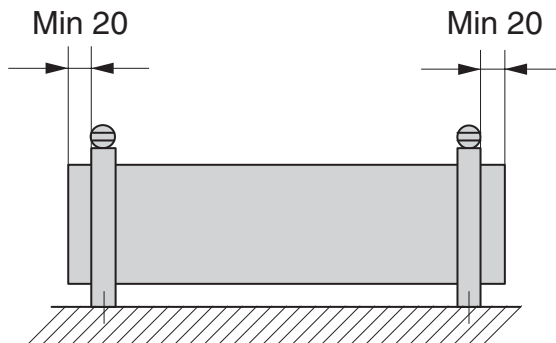
Order No.	Ø A	B	C	D	E
500558	75	80	105	41.5	102
500559	95	100	145	51.5	122
500560	120	100	145	64	147



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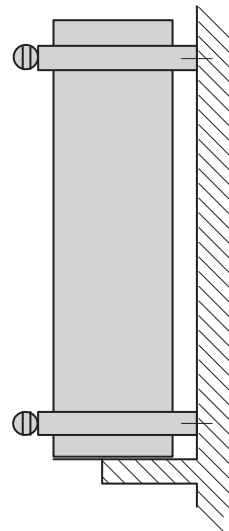
Fixing bracket assembly

Horizontal

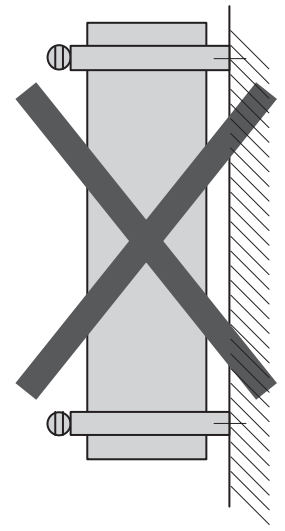


Vertical

Correct



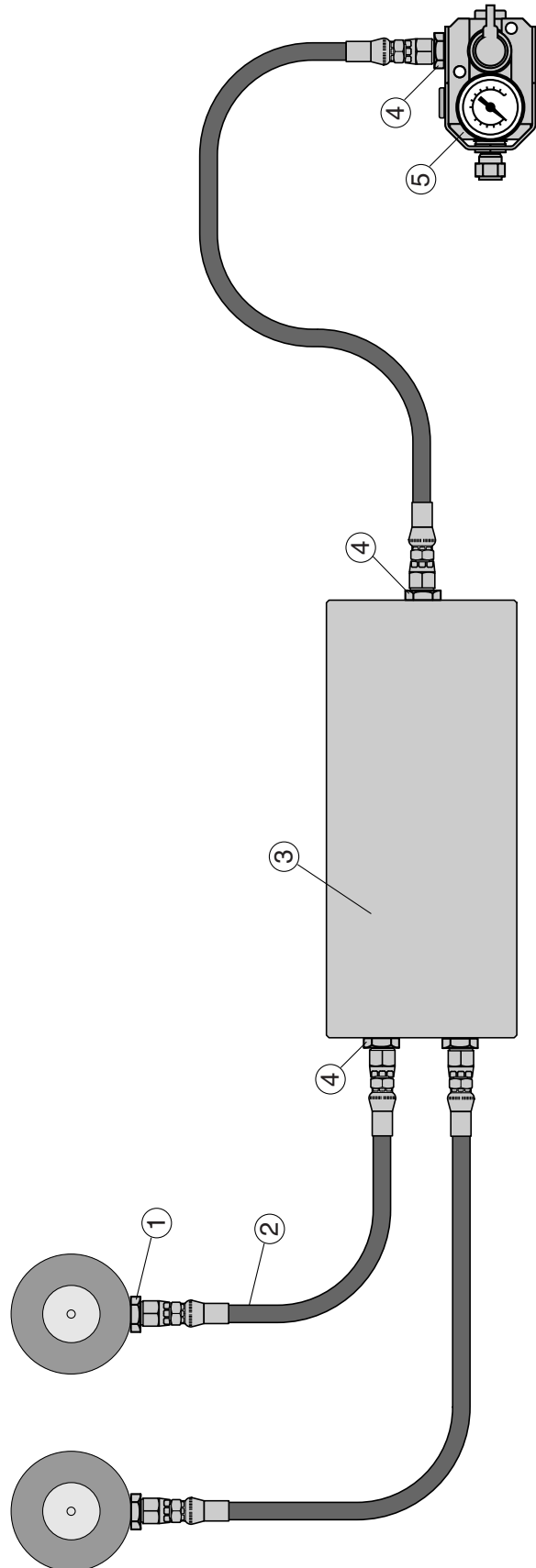
Incorrect



Installation Example, Pressure Tank with EO24-Hose System

Please note the following before installing a Pressure Tank into your Hose System:

- Use only hoses designed to allow for gas flow, such as the EO24-Hose system or its equivalent.
- Connect a Control Block to one of the Pressure Tank's connection ports,
- For optimal function each gas spring should be directly connected to one of the Pressure Tank's connection ports.



Position	Quantity	Description	Order No.
1	2	G1/8" EO24-Hose Adapter	4014019
2	3	EO24-Hose	3020857-XXXX
3	1	Pressure tank	201434X-XXXX
4	4	G1/4" EO24-Hose Adapter	504144
5	1	Control Block	3116114-02

Hose Crimping Equipment

JIC-Hose Manual Crimping Equipment

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EO24-Hose Manual Crimping Equipment

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Manual Crimping Equipment for JIC-Hose



Press jaws
Order No. 502336



Press device, for 90° and 45° couplings
Order No. 502338



Press
Order No. 502334



Press device, for straight couplings
Order No. 502337

Manual Crimping Equipment for Micro-Hose, EZ-Hose, EO24-Hose and JIC-Hose

Our Hose Crimping Equipment can be used for Micro-, EZ-, JIC- and our latest EO24-Hose systems

- Hand-operated hydraulic pump or pneumatically operated version
- Fitted with precision micrometer for accurate hose crimping
- Can be used to crimp straight, 45° and 90° fittings for all Hose Systems
- Lubrication free crimping
- Crimping force: 90 kN
- Size: 500 x 420 x 440
- Weight: 27 kg

Crimp die Micro-, EZ-Hose
Order No. 504195

Crimp die EO-24-, JIC-Hose
Order No. 504196



Hand-operated version
(no crimping die included)
Order No. 3021381

Pneumatic-operated version
(no crimping die included)
Order No. 3121381

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Hose cutting pliers
Order No. 502839