

GAS LINK SYSTEM

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Finnveden standard

Kaller is the Finnveden standard for gas springs, hydraulic cams and roller cams.

In the downloads here you find the Finnveden part numbers for all Kaller parts that are Finnveden standard.

- **GREEN:** Preference 1. The items that are “first choice” for Finnveden.

- **UNCOLOURED:** Items that are not provided with Finnveden can be used after confirmation from Finnveden. Please contact responsible engineer.

About Gas Link Systems

General Information

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General Information

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

Gas springs when connected in a Link 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.

KALLER offers three different Systems for linking gas springs, namely the **Micro EO24™** Hose and Tube system, **EZ-Hose** and **EO24-Hose** systems.

Please note: Micro-Hose system has now been replaced by the Micro EO24™ Hose and Tube system. Please contact your local distributor for more details.

KALLER 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.

Gas Link System	Description
Micro EO24™ Hose and Tube System 	<p>The Micro EO24™ is a combined hose and tube system where the Hose System is a Dual Seal System and 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. Not interchangeable with old Micro-Hose System.</p>
	<p>The Micro EO24™ Tube is a system where all connections are soft sealed and self crimping. This ensures leak proof tube joints. The tubes are easily cut into correct lengths and can be bent into the desired</p>
EZ-Hose	<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>
EO24-Hose 	<p>The EO24-Hose system is mainly for larger gas springs with G 1/8" ports. EO24-Hose is recommended any time high gas flow is required, for example when using the Passive Spring-KP in a Controllable Gas Spring system.</p>

General Precautions

1 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 minimize 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 KALLER.
- **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.**

About Control Blocks

KALLER offers a wide range of Control Blocks for gas pressure monitoring and adjustment. (See Block 4.2 for more information).

About Hose Crimping Equipment

KALLER offers all equipment necessary to make up your Hose System by press fitting hoses to couplings. (See Hose Crimping Equipment 4.6 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.

Fitting Assembly Guidelines EO24 and Micro EO24™

1 Assembly of straight port connections, two-, three- and four-way adapters and port plugs

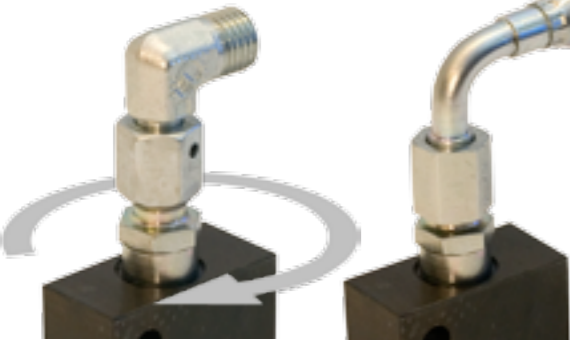


1. Screw until hand-tight



2. Then tighten wrench-tight (if possible use torque according to next page)

Assembly of swivel nut fittings and hose ends

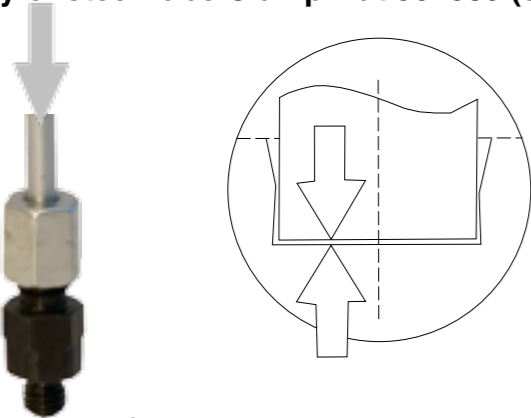


1. Screw on nut until the O-ring is fully compressed (hand-tight)



2. Then tighten until sharp increase of resistance ¼ to ½ turn (if possible use torque according to next page)

Assembly of steel Tube Clamp Nut 504589 (see also page 4.3/4 for more information)



1. Press tube-end firmly into the assembly cone

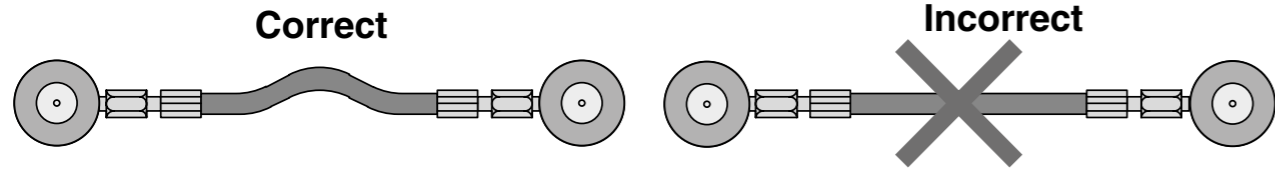


2. Then tighten until sharp increase of resistance approximately 1 turn (if possible use torque according to next page)

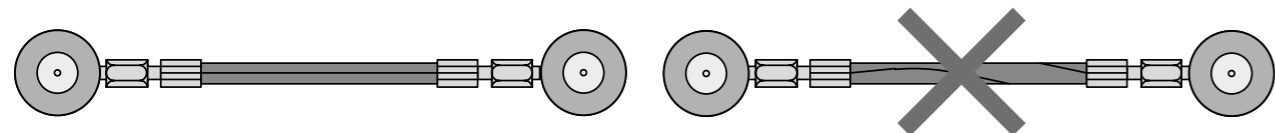
Component	Thread Size	Nominal Torque (Nm)
Micro EO24 Port adapters	M6	7
Micro EO24 Hose end	M8	7
Micro EO24 Tube Nut	M8	7
Port Plug	M6	2
EO24/EZ Port adapters	G1/8"	18
	G1/4"	35
EO24 Swivel nut fitting	M12	16
EO24 Hose end	M12	16
EZ Hose end	S12,65x1.5	Hand tight
Port Plug	G1/8"	13
	G1/4"	30

Hose Installation Guidelines

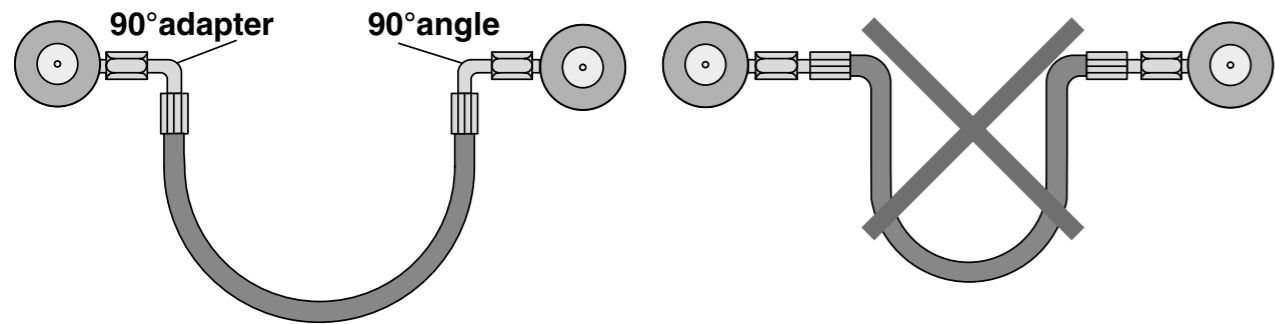
1 Never exceed the maximum values given for pressure and temperature for the hoses. Make sure all hoses and couplings are perfectly clean before fitting.



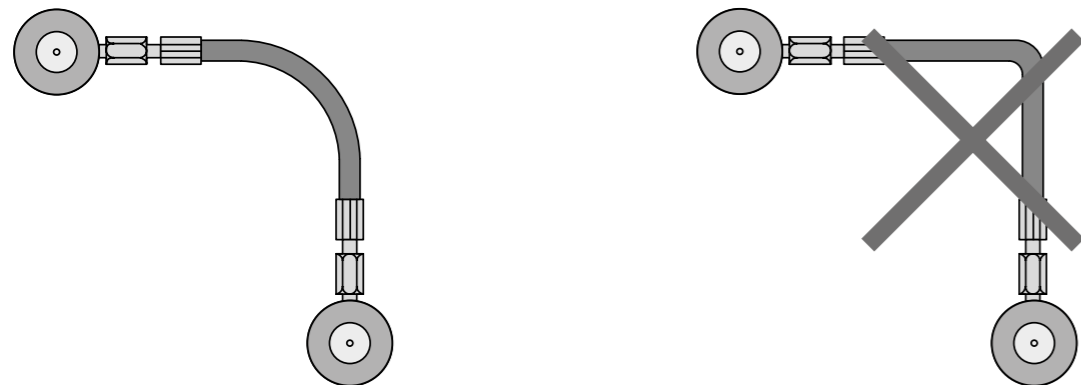
Select a hose length that will allow for a certain amount of play.



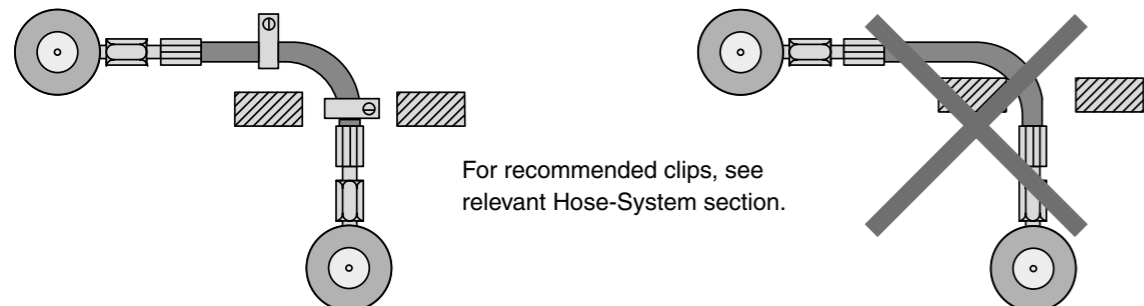
The longitudinal marking on the hose must not be twisted after fitting.



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



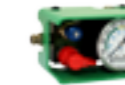
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Control Block, 3116114-XX



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Control Block, 4017241



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Control Block, 2014325



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Section Control Block



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Multi-Coupling Blocks



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Charging & Control Block Accessories

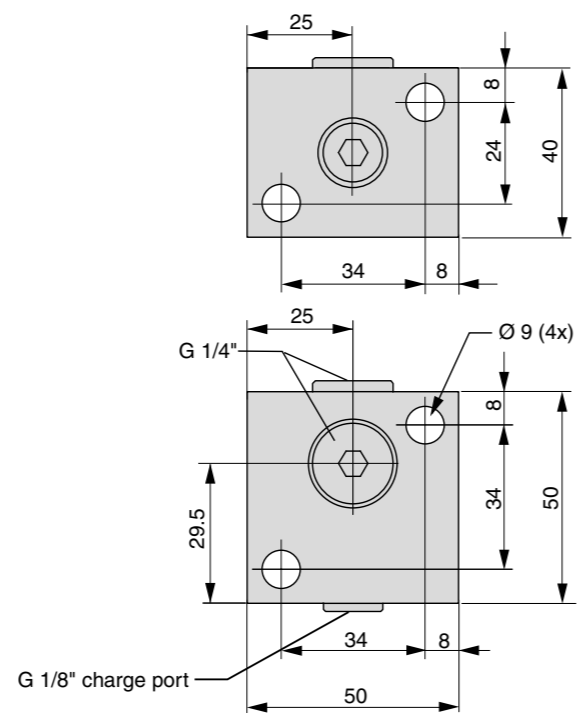
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Micro EO24™ Block

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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.

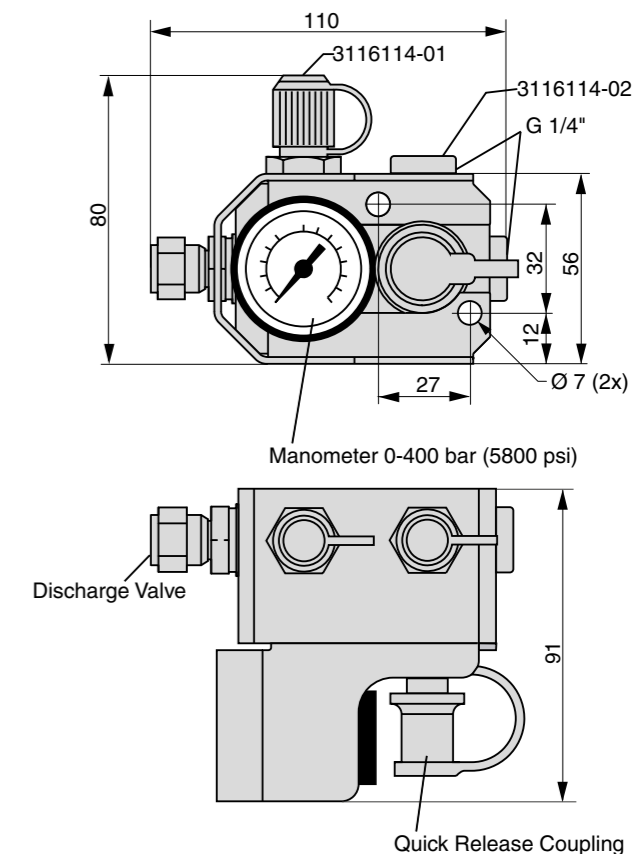
The G1/8" charge port allows gas charging of the Hose System using the gas spring charging armature. One of the G1/4" connection ports can also be used to connect a Pressure Relief Safety Screw (See *Charging & Control Block Accessories* for more info)

Control Block

Order No.

3116114-01 (with 2 pcs EZ-Hose G1/4" adapters)

3116114-02 (with all ports plugged)



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

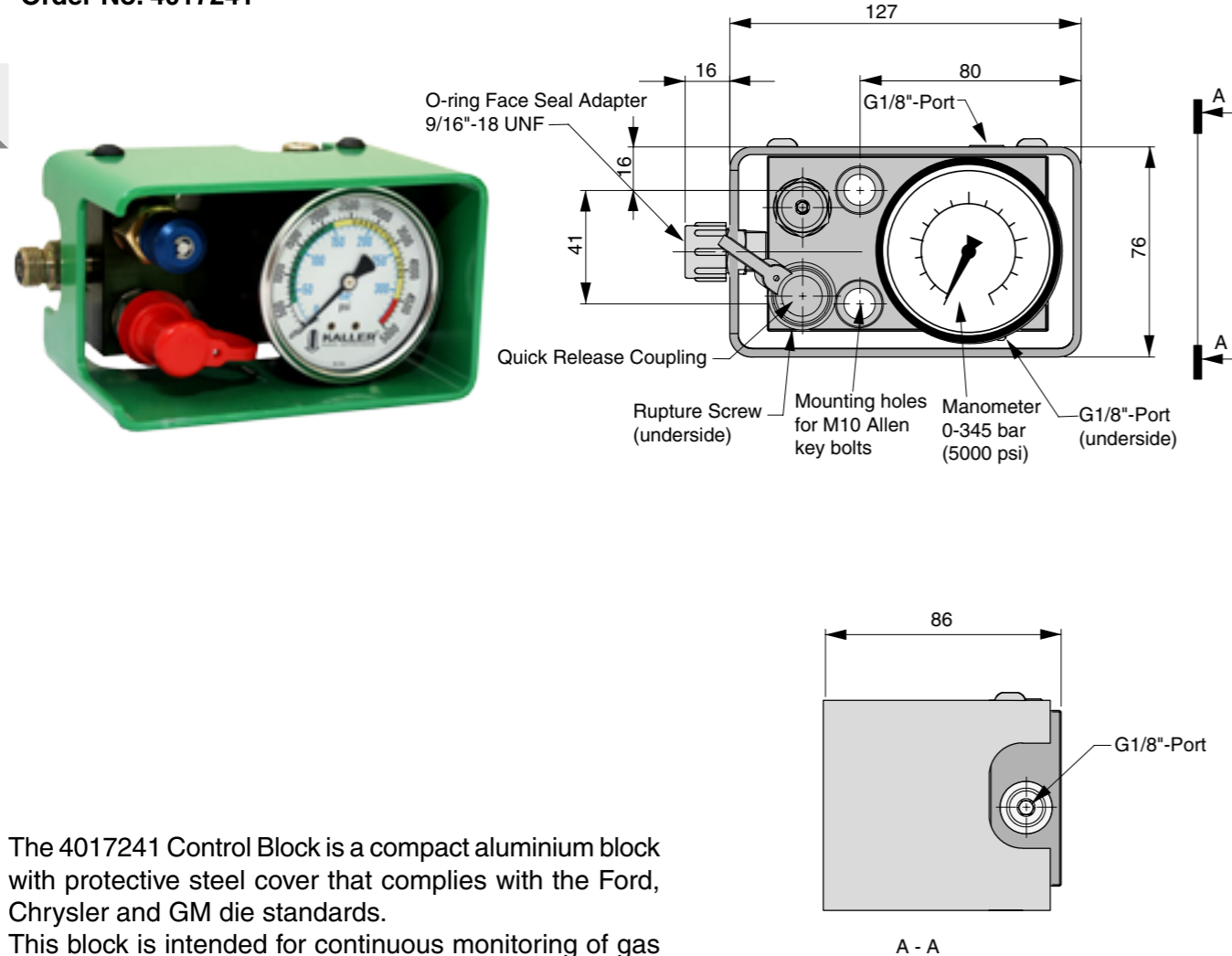
This block is intended for continuous monitoring of gas pressure in the Hose System.

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



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

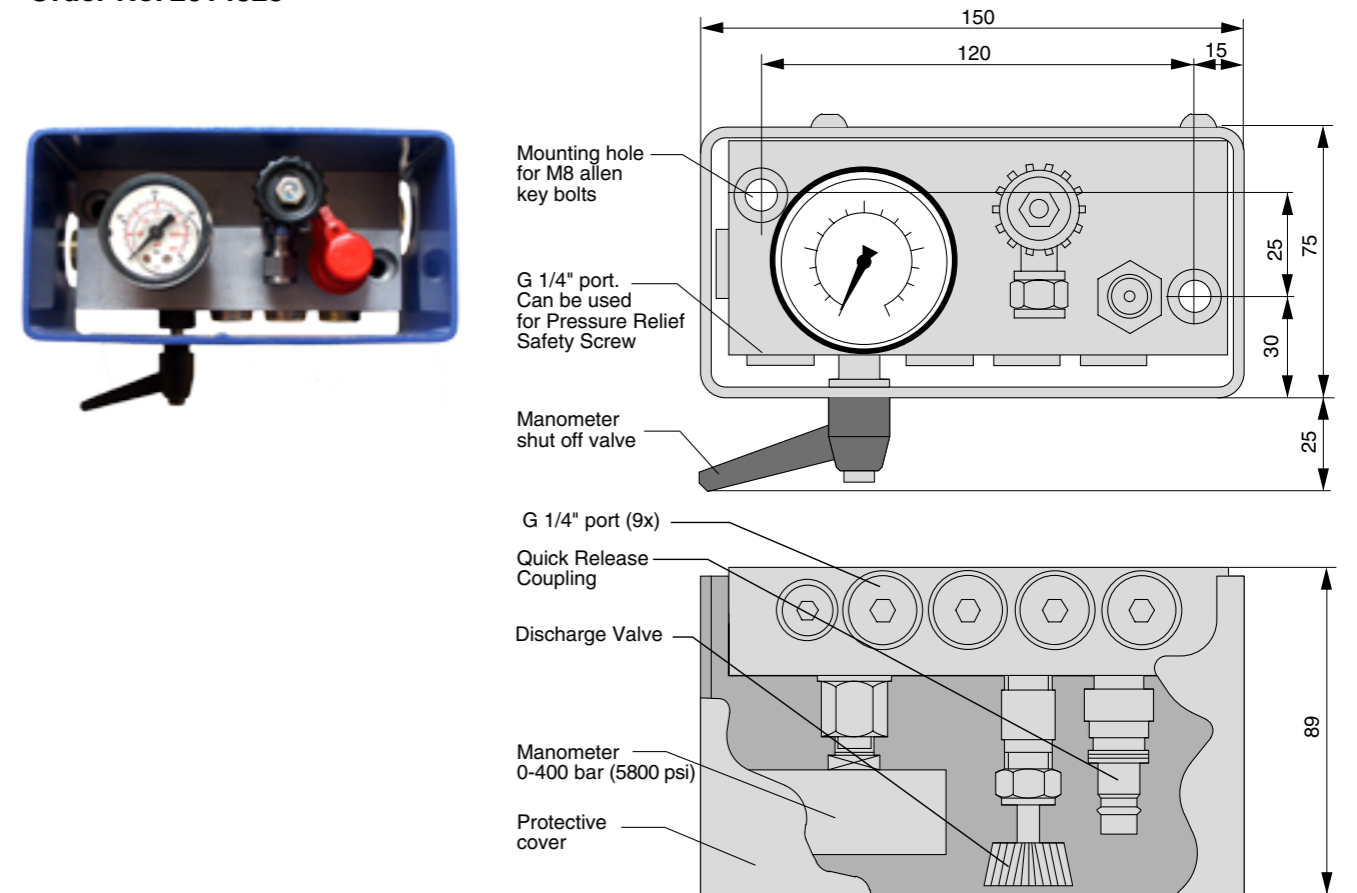
This block is intended for continuous monitoring of gas pressure in the Hose System.

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. It can also be used with EO24 and EZ-hose systems.

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.

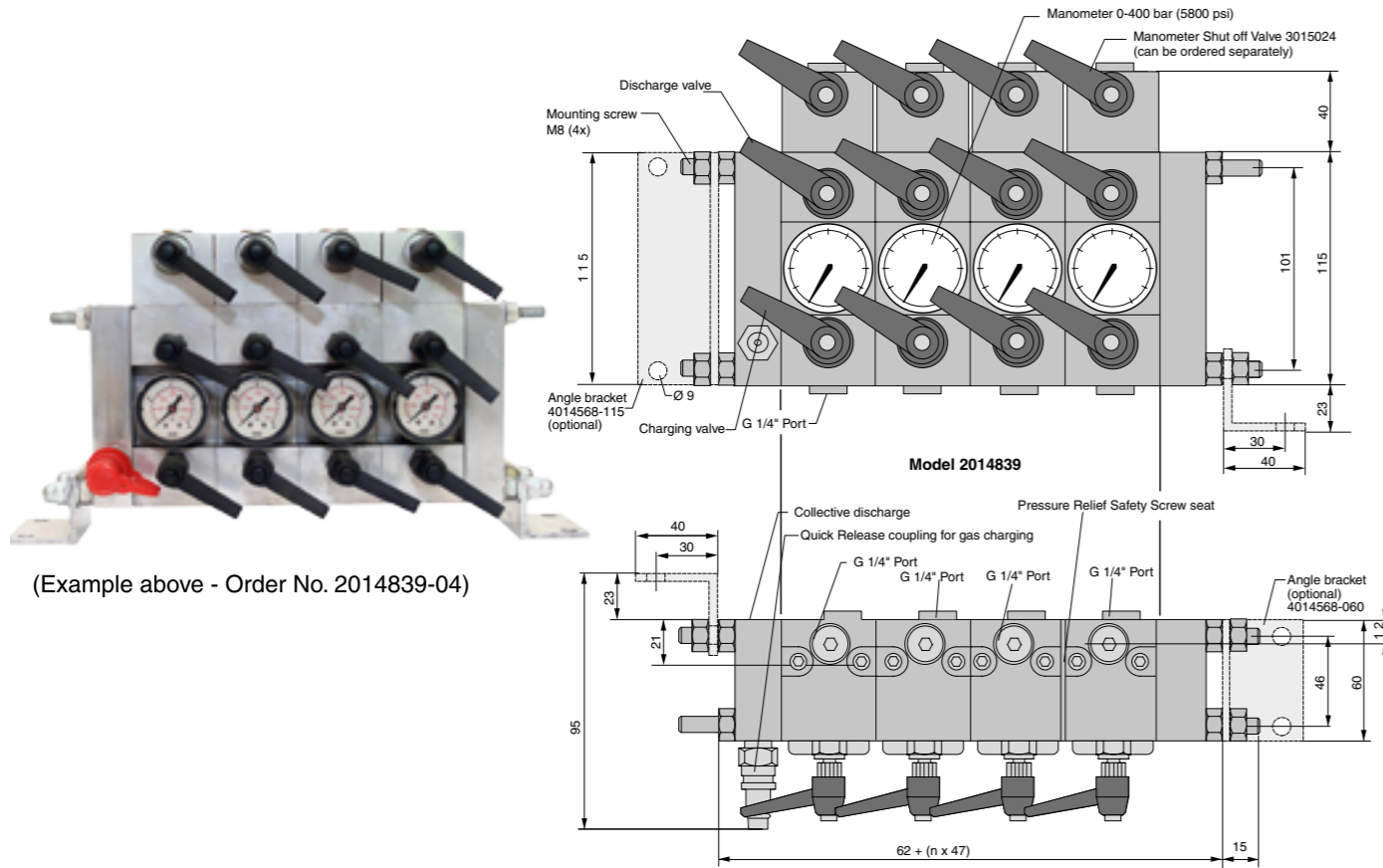
This block is intended for continuous monitoring of gas pressure in the Hose System when the manometer shut off valve is open. The shut off valve can subsequently be closed in order to protect the manometer from pressure pulsations during operation, thus prolonging its service life.

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 Block

Order No.
2014839-XX (With Manometer Shut-off Valve)

2 Order examples:
2014839-10 Section Control Block with Manometer Shut-off Valve containing 10 sections



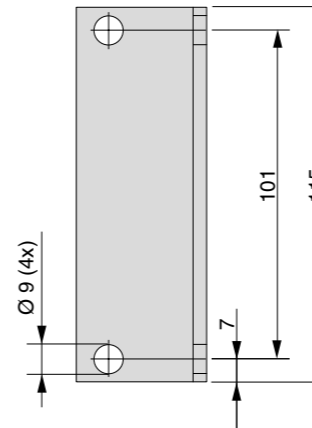
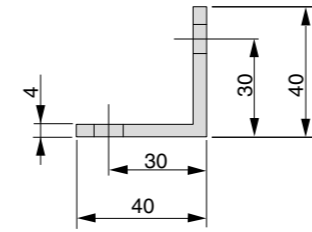
(Example above - Order No. 2014839-04)

The 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. 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.

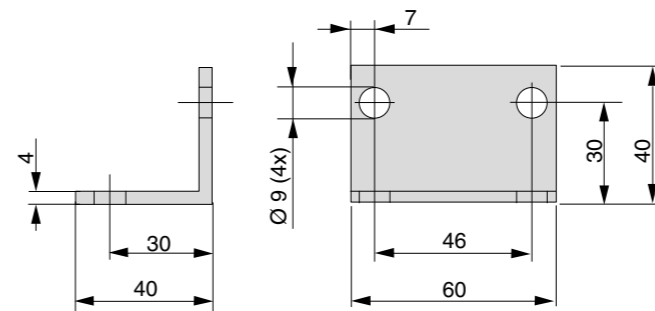
Section Control Block Accessories

**Angle bracket**

Order No. 4014568-115

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

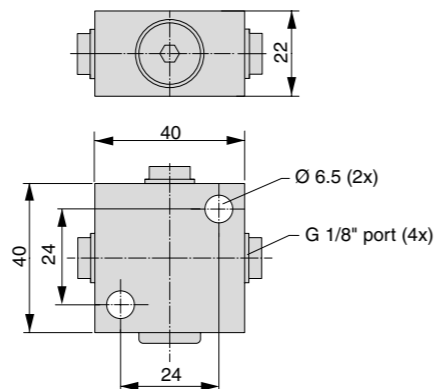
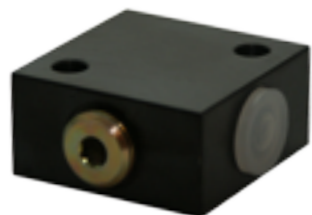
Two brackets, steel washers and nuts are included with each order.

Charging & Control Blocks



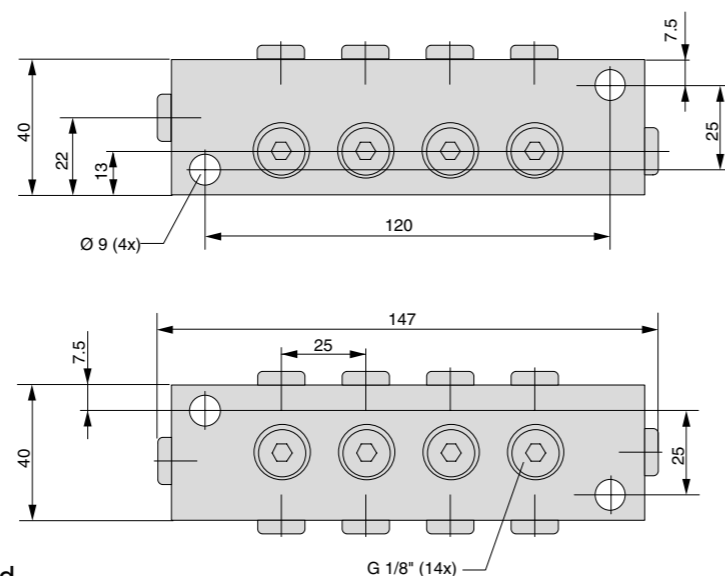
Multi-Coupling Blocks

Order No. 4017032



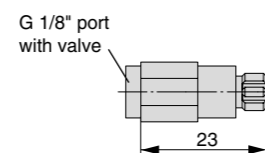
This is a small and compact block for linking hoses. The block contains four G 1/8" connection ports. On delivery one of the ports is fitted with a sealing plug, while the other ports are fitted with plastic protective covers only.

Order No. 3015044



The Multi-coupling Block 3015044 is manufactured in steel and contains fourteen G1/8" 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

Notes



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:

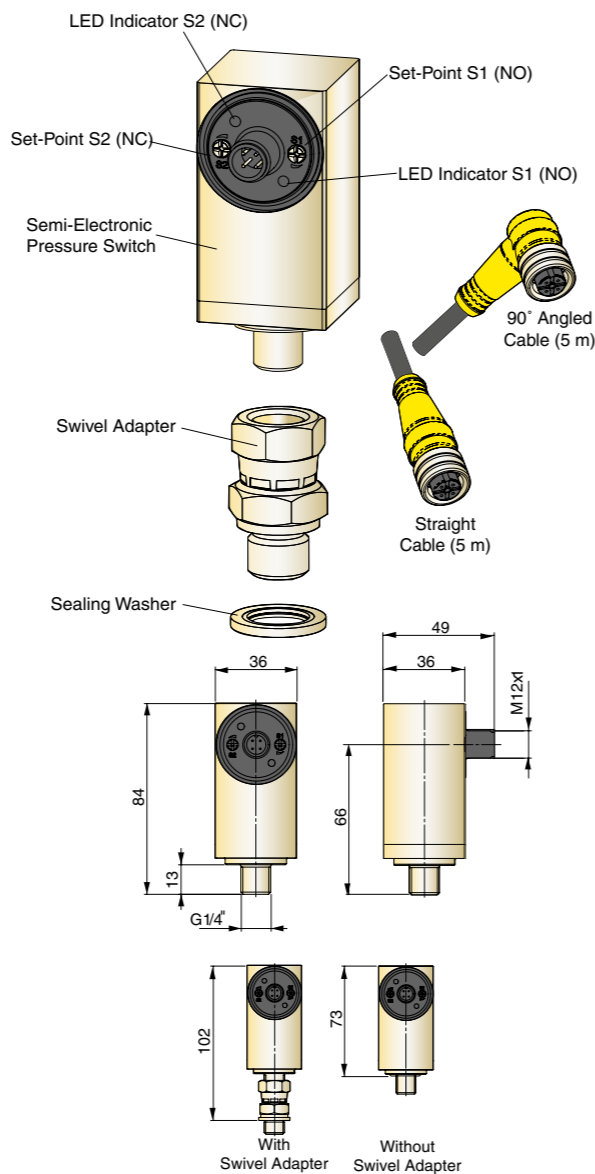
- S1 - Normally Open (NO)
- S2 - Normally Closed (NC)

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.

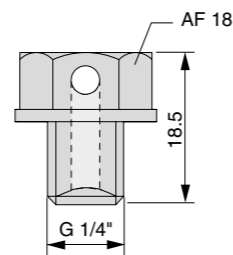
Electrical connection.....M12 x 1 (4-pin)
 Pressure connection.....G 1/4"
 Protection class.....IP65
 Working range.....25 -250 bar
 Max. pressure.....500 bar
 Voltage.....10 - 30 VDC
 Current.....max. 100 mA
 Temperature range.....-20 to +80 °C
 Max. deviation.....≤ 1% of end value



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.



Digital Monitoring Kit

In accordance with GM standard 90.25.225, there is now a Digital Monitoring Kit available which comes with block (3022143) and a 5 m cable with a straight cable contact.

The Monitoring Kit can be connected to any hoses system for monitoring the pressure inside the hoses system. The Pressure Switch is a compact and electronic switch and is equipped with a 4 digit digital display which can show the pressure in either bar, PSI or MPa.

The display can also be rotated in two axes so there is no need for a swivel adapter to get the display in the direction desired.

The Pressure Switch has two switching outputs that are easily programmed by the keys on the front. Pressure working range is 0 up to 400 bar.

Digital Monitoring Kit complete

Order No. 3021172

Digital Pressure Switch (separately without block and cable)

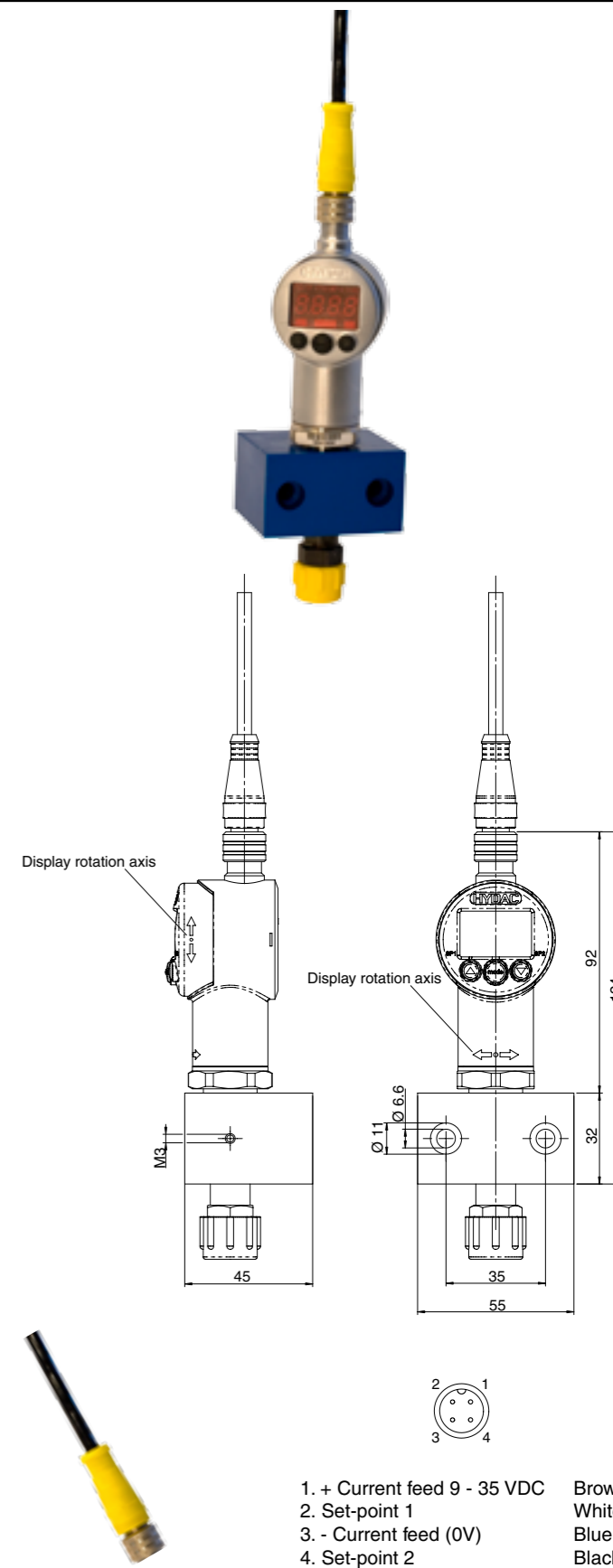
Order No. 504107

Cable (5 m) with straight cable contact

Order No. 504105

Pressure Switch Data:

Setpoints 2 PNP transistor switching outputs
 Electrical connection M12x1 (4-pin)
 Pressure connection G1/4"
 Protection class IP67
 Working range 0 - 400 bar
 Max. pressure 800 bar
 Burst pressure 2000 bar
 Voltage 9 - 35 VDC
 Switching current max. 1.2 A
 Current consumption ≤ 35 mA (inactive switching outputs)
 Temperature range -25 to +80 °C
 Weight 120 g
 Max. deviation ≤ ±1 % (relative to full measuring range)



Straight cable (5 m)

Charging & Control Block Accessories

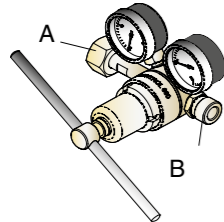
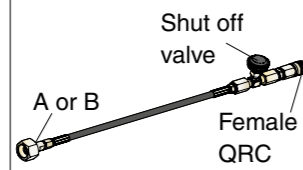
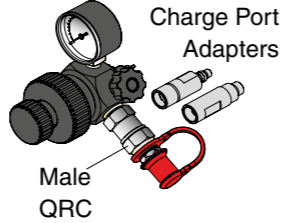

Gas Charging Equipment

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.

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.

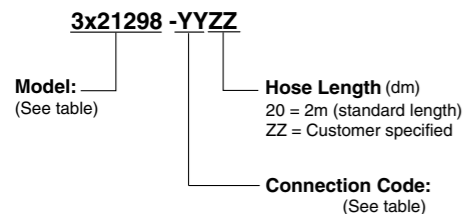
Hosed systems can be charged via a Control Block using the female quick release coupling (QRC) with shut-off valve. By attaching the Control Armature with male QRC, self contained gas springs can be charged using a suitable Charge Port Adapter.

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	W24.32x1/14"	4021296
02	India	G 5/8" Male	W24.32x1/14"	4121296
03	China	G 5/8" Female	W24.32x1/14"	4221296
04	UK	G 3/8" Female	W24.32x1/14"	--

How to order:



*When connecting Pressure Regulator to Charging Hose, connection must be according to B. Connection B with W24.32x1/14" female for charging hose can be ordered separately, Order No. 4013715.

Micro EO24™ Hose and Tube System

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Micro EO24™ Block	Page 4.3/8

Micro EO24™ Hose and Tube System

The Micro EO24™ Hose and Tube System is our most compact, soft sealed gas linking system. It is a flexible system including both a dual seal hose system and a soft sealed tube system using the same adapters.

3



Micro EO24™ Hose and Tube can now be combined in the same gas link system.

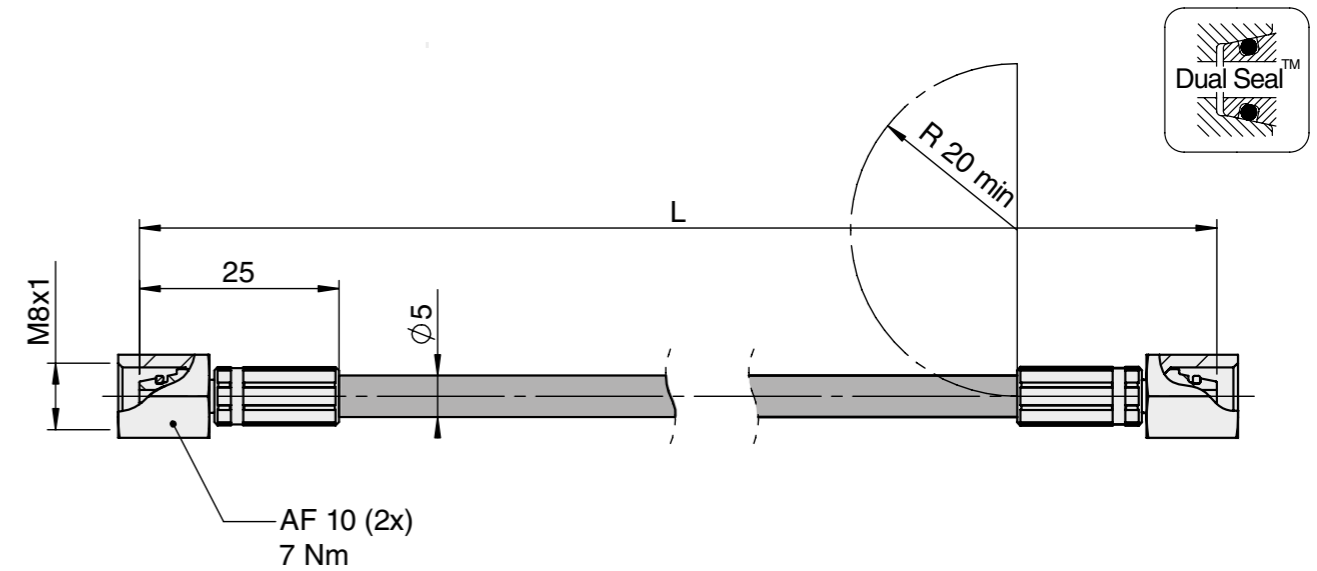
Micro EO24™ Hose

The Micro EO24™ Hose is a Dual Seal System and our most compact hose system available and takes full benefit of the two integrated metal and soft sealing systems. This ensures double leak proof joints as well as rotational protection.

The Hose System shares the same adapters and connectors as the Micro EO24™ Tube System resulting in a wide range of flexible installation possibilities.

G1/8" and G1/4" ports can also be connected to the Micro EO24™ with the use of an appropriate adapter. A number of different standard hose lengths are available (see table below). Custom hose lengths can also be ordered **from 100 mm upwards**. Subsequent numbers are added to the order number according to the length required, e.g. hose length 2500 mm = Order No. 4023500-2500

3



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

F	Order No	L (mm)
	4023500-0100	100
	4023500-0200	200
	4023500-0300	300
	4023500-0400	400
	4023500-0630	630
	4023500-0800	800
	4023500-1000	1000
	4023500-1500	1500
	4023500-2000	2000
	4023500-XXXX	XXXX*

* For customer specified lengths.

Basic Information

Material Polyamide, black
 Dimension Ø 5 mm exterior (5/64)
 Volume 3 ml/metre
 Outer casing Perforated
 Min. bend radius 20 mm
 Max dynamic working pressure 475 bar
 Min. burst pressure 1900 bar at +20° C
 Operating temperature -20 - +80°C

Micro EO24™ Tube



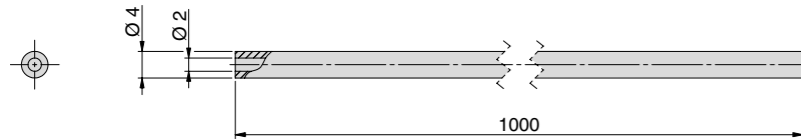
Micro EO24™ Tube

The Micro EO24™ Tube is a system for linking gas springs together. As the name suggests, Micro EO24™ Tube is a tube system where all connections are soft sealed and self crimping. This ensures leak proof tube joints. The tubes are easily cut into correct lengths and can be bent into the desired radius with a tube bending tool or even by hand.

There are numerous options for connecting tubes to gas springs and Control Blocks. Various adapters are available allowing Micro EO24™ Tube to connect to almost all KALLER gas springs and Control Blocks. All adapters and their dimensions are displayed on the following pages.

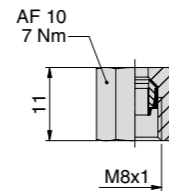
Tube
(delivered in 1 m lengths)

Order No. 504594



Clamp Nut

Order No. 504589



Using Micro EO24™ Tube

To cut the tube a hacksaw can be used.

Note! Cutting angle 90°±1°. If a regular tube cutter or cutting pliers are used, the tube might become clogged resulting in zero or limited gas flow. After cutting, the tube is to be deburred both inside and outside (max. 0.3x45° alt. R0.3) using the Tube Deburring Tool below. Make sure the tube is cleaned after cutting and deburring. Use compressed air to remove all loose particles. Fit the Clamp Nut onto the adapter.

Note! Do not tighten! Run the tube through the nut until it stops (~12 mm from the top surface of the nut). When tightening the nut, use a torque of 7 Nm. Recommended tools to have available are: hacksaw, tube cutting fixture, tube bending tool, deburring tool, compressed air and a torque wrench (AF 10 mm, 7 Nm).



Tube Deburring Tool
Order No. 505096

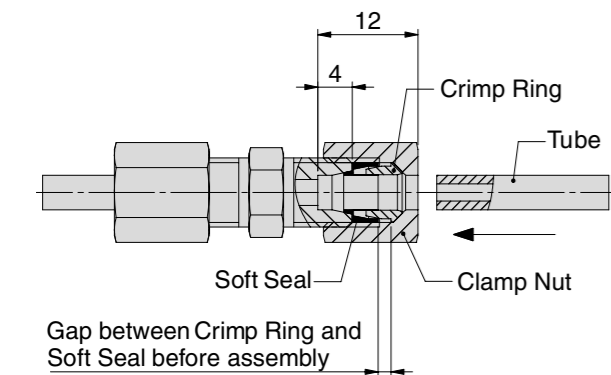


Tube Bending Tool (Bend radius 20 mm)
Order No. 504711

Basic Information

- Tube external diameter..... Ø 4 mm
- Tube internal diameter..... Ø 2 mm
- Min. bend radius.....12 mm (3 x e.d.)
- Tube material..... Seamless steel tube St. 37.4
(Parker Order No. R04X1CF)
- Max. dynamic pressure (system)..... 430 bar
- Min. burst pressure (system)..... 1100 bar
- Max. working temperature.....100 °C *

* Micro EO24™ Tube for high temperature applications is available on request.



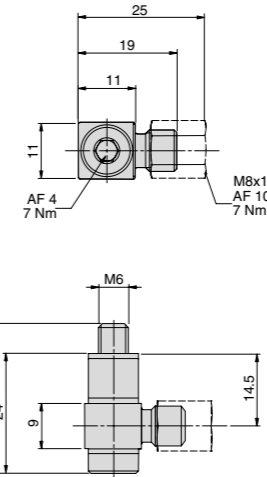
Micro EO24™ Adapters

Adapters for Gas Spring Charge Ports

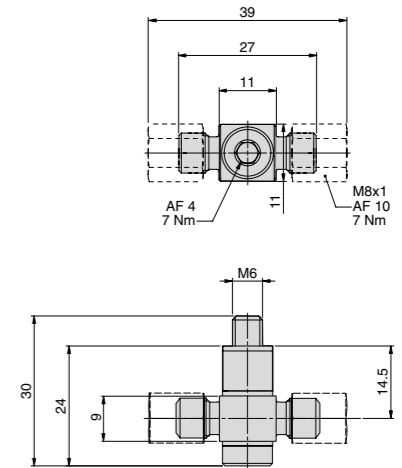
To use adapters 4022059, 4022061, 4024092 and 4024348 together with G1/8" Charging Ports, use adapter (G1/8" to M6, **Order No. 503764**) from Micro EO24™ system.

Note! When using tubes order Clamp Nut No. 504589 separately.

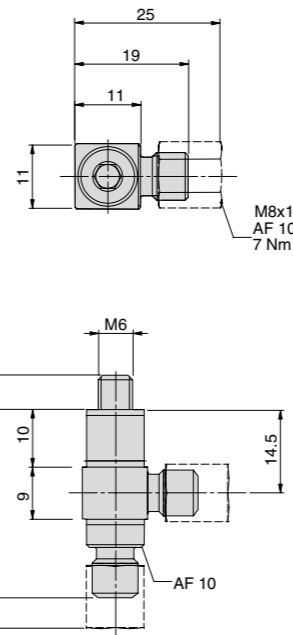
One-way M6 adapter
90° elbow
Order No. 4022059



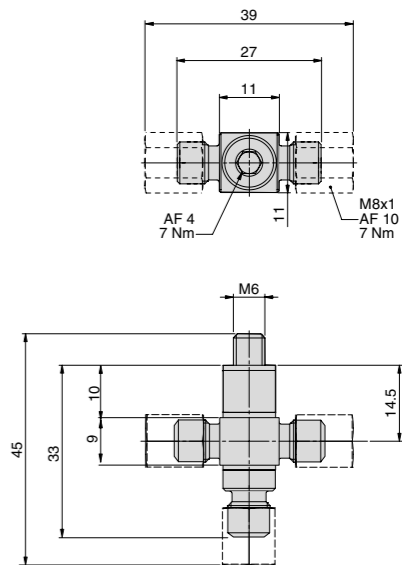
Two-way M6 adapter
Order No. 4022061



Two-way M6 adapter
90° elbow
Order No. 4024092

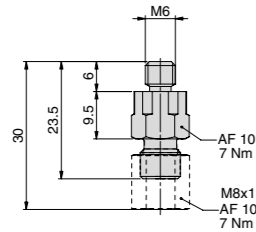


Three-way M6 adapter
Order No. 4024348



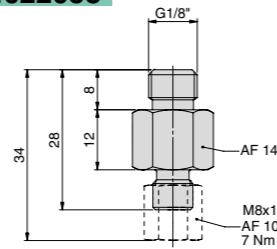
M6 Straight Adapter

Order No. 4022057



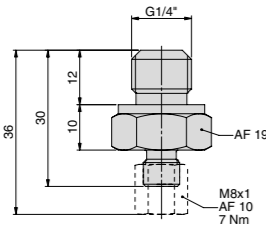
G1/8" Straight Adapter

Order No. 4022058



G1/4" Straight Adapter

Order No. 4022063

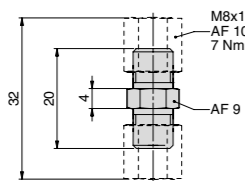


Hose to Hose, Tube to Tube or Hose to Tube Couplings

Note! When using tubes order Clamp Nut No. 504589 separately.

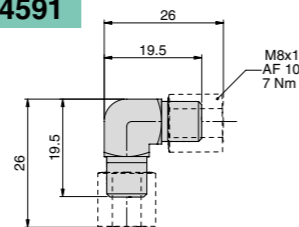
Two-way Coupling straight

Order No. 504590



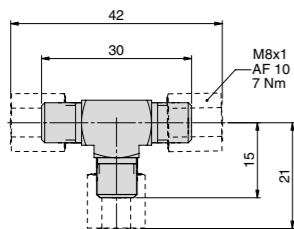
Two-way Coupling 90° elbow

Order No. 504591



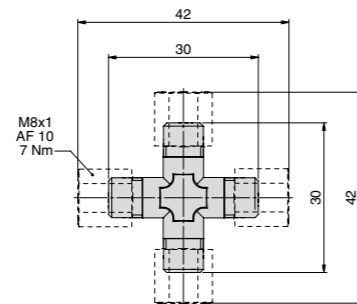
Three-way Coupling

Order No. 504592



Four-way Coupling

Order No. 504593

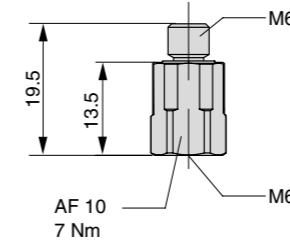


M6 charge port to Micro EO24™ Hose and Tube Adapters

M6 to M6

Order No. 503762

Extension for gas springs using foot mounts



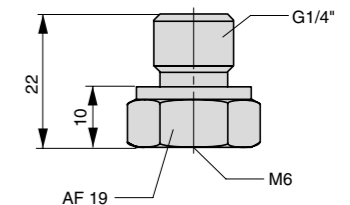
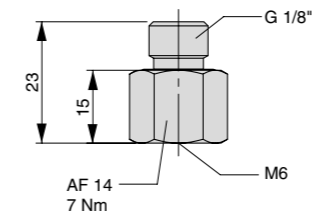
Micro EO24™ Hose and Tube Adapters for G1/8" and G1/4" Connection Ports

G 1/8" to M6

Order No. 503764

G 1/4" to M6

Order No. 503966

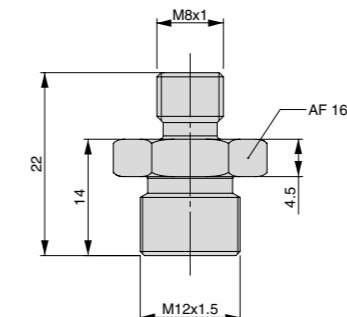


For connection to angled Micro EO24™ Hose Adapters

Micro EO24™ Hose and Tube Adapter for EO24 M12 hose

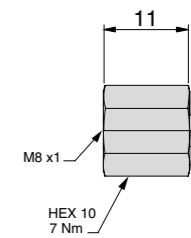
M8 to M12

Order No. 4024351



Micro EO24™ End Plug

Order No. 4024353



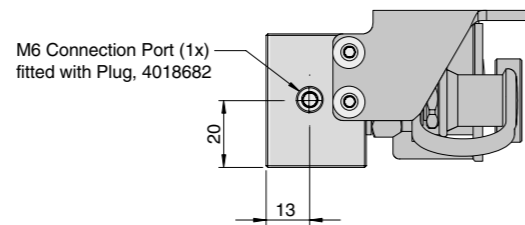
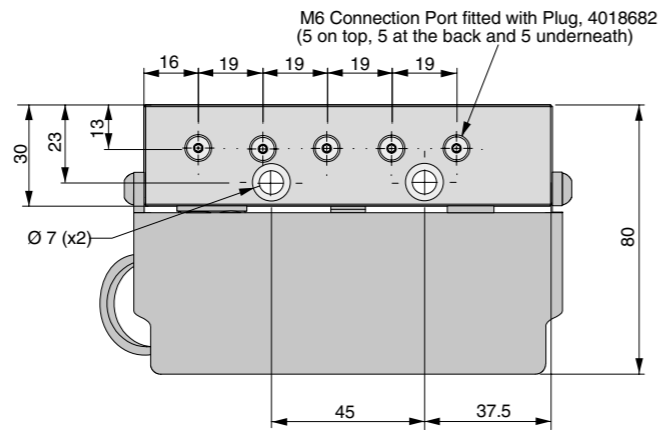
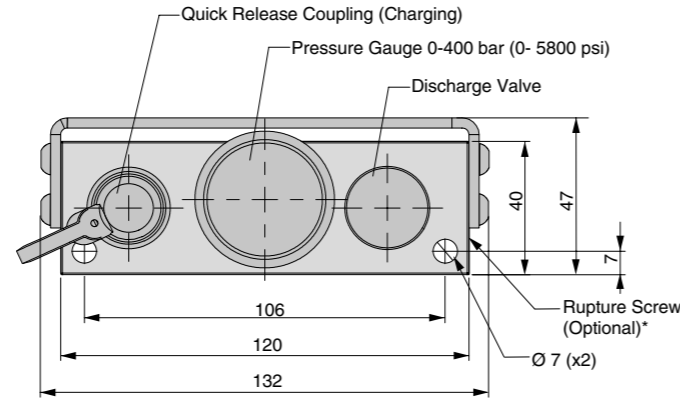
Micro EO24™ System



Micro EO24™ Control Block

Order No. 3023888 (without Rupture Screw)

Order No. 3123888 (with Rupture Screw)



The Micro EO24™ Control Block is a very compact block with protective stainless steel cover and has been designed especially for the Micro EO24™ System.

This block is intended for continuous monitoring of gas pressure in the Hose and Tube 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 M6 connection ports, which are plugged on delivery, and is available in two versions:

3023888 (without Rupture Screw)

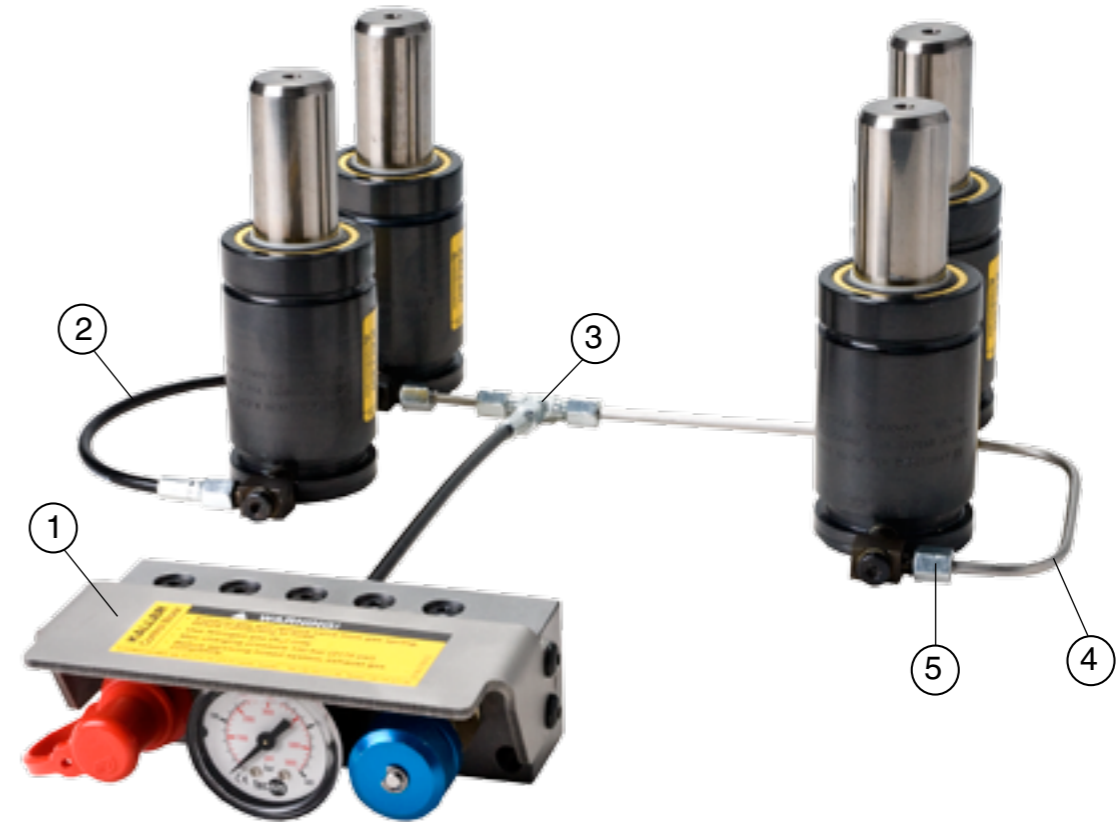
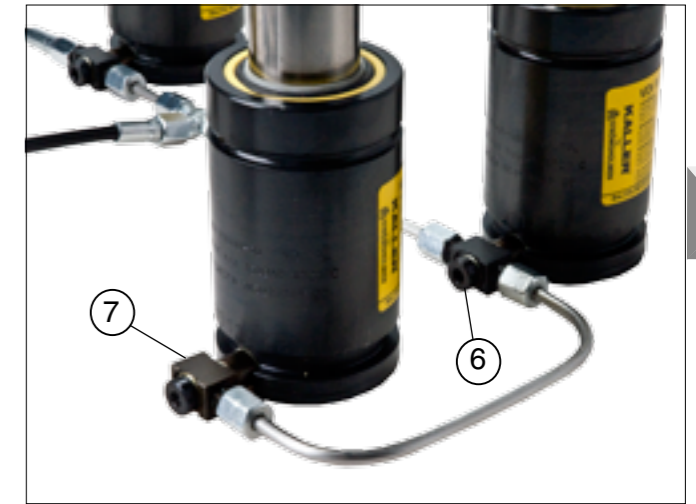
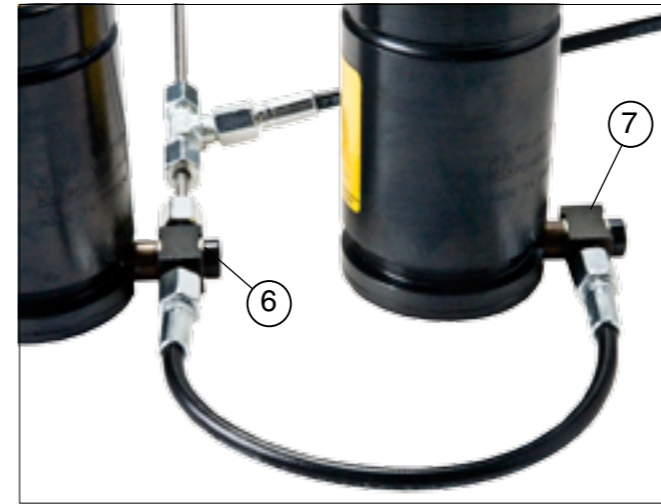
3123888 (with Rupture Screw*)

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



Micro EO24™ System

Micro EO24™ Hose and Tube System, installation example



Position	Quantity	Description	Order No
1	1	Micro EO24™ Control Block	3023888
2	2	Micro EO24™ Hose	4023500-XXXX
3	1	Three-way Coupling	504592
4	1	Micro EO24™ Tube	504594
5	6	Clamp Nut	504589
6	1	Two-way M6 Adapter	4022061
7	2	One-way M6 Adapter, 90° Elbow	4022059

Notes

EZ-Hose

EZ-Hose System

Page 4.4/2

EZ-Hose Adapters

Page 4.4/3

Installation Examples, EZ-Hose System

Page 4.4/8

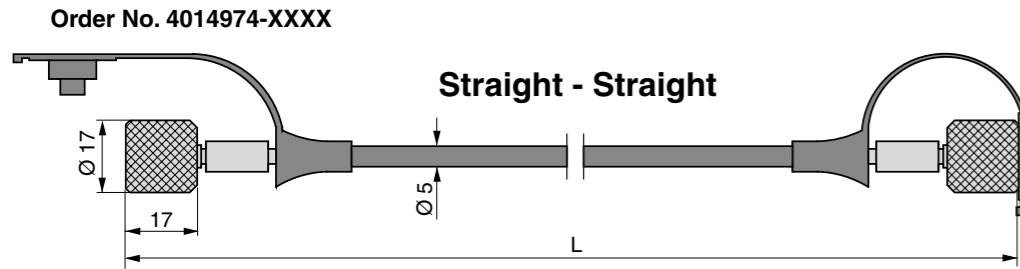
EZ-Hose System

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. 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

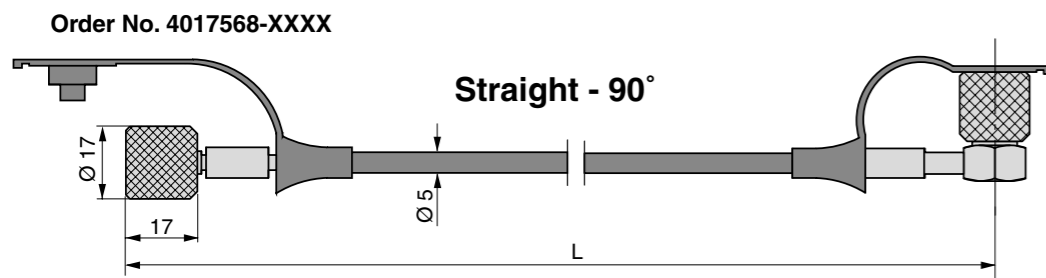
Min. bend radius	20 mm
Temp. range	- 20 to + 80°C
Rupture pressure	2000 bar
Max. dynamic working pressure	500 bar



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

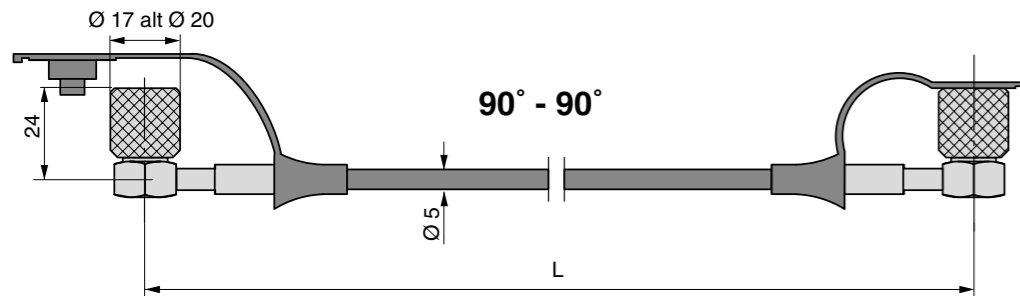


Order No.	L (mm)
4014974-0200	200
4014974-0300	300
4014974-0400	400
4014974-0630	630
4014974-0800	800
4014974-1000	1000
4014974-1500	1500
4014974-2000	2000
4014974-XXXX*	XXXX



Order No.	L (mm)
4017568-0200	200
4017568-0300	300
4017568-0400	400
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-XXXX together with angle adapter.)



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

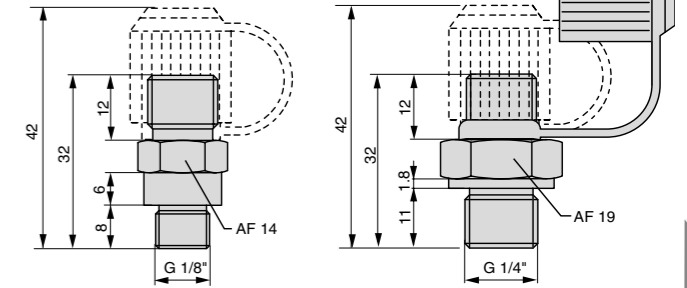
* For customer specified lengths.

EZ-Hose Adapters

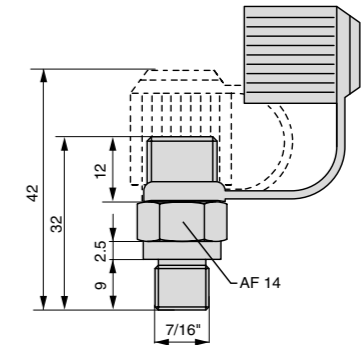
Hose adapters are available with three different connecting threads: G 1/8", G 1/4" or 7/16". The adapter with G 1/4" thread fits most control blocks.

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 connection is made; thus preventing the gas spring from being discharged.

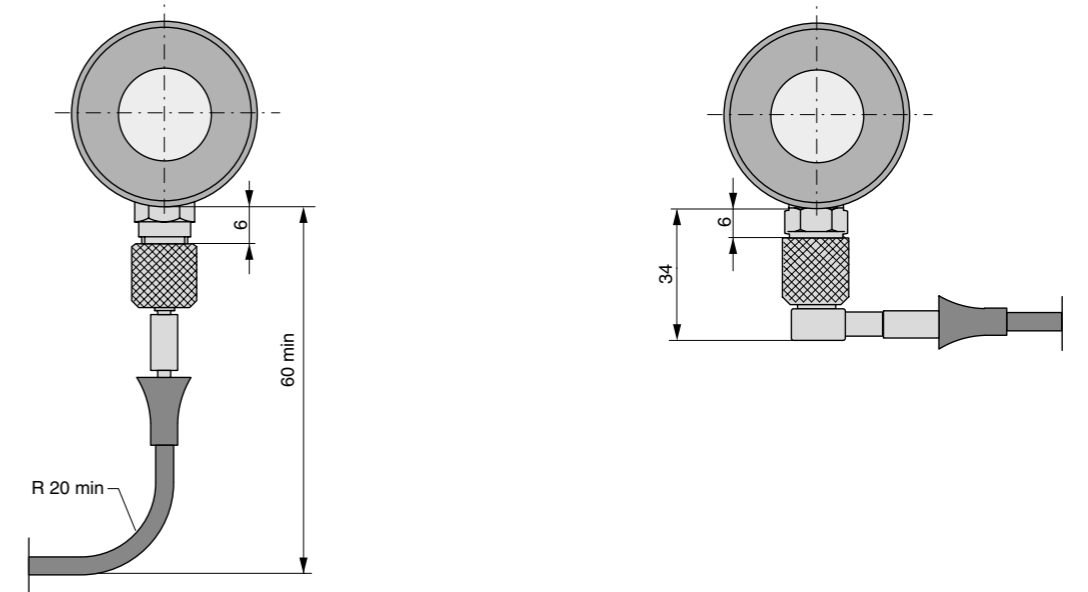
Order No. 4114973-G1/8 (without nonreturn valve)
Order No. 4014973-G1/4 (with nonreturn valve)



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

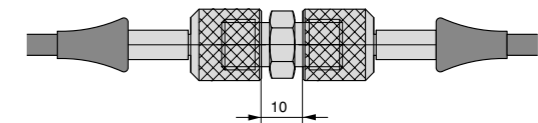
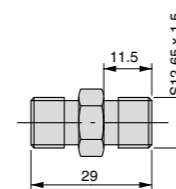


Installation dimensions for hose adapter, with straight and 90° hose



Joining Coupling

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

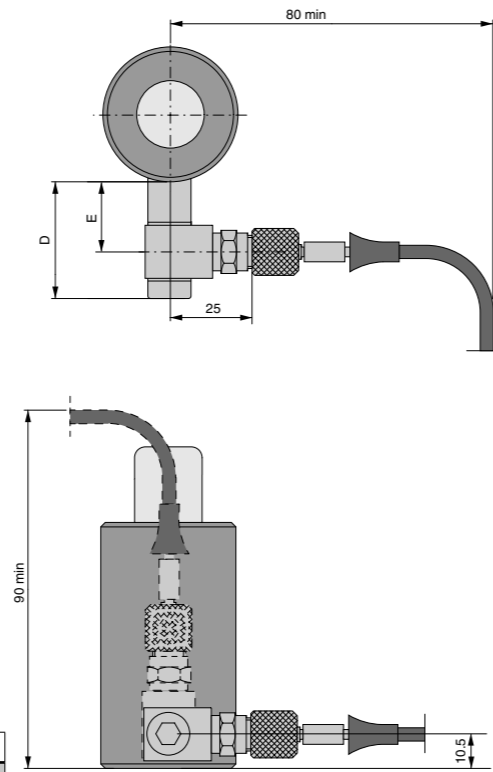
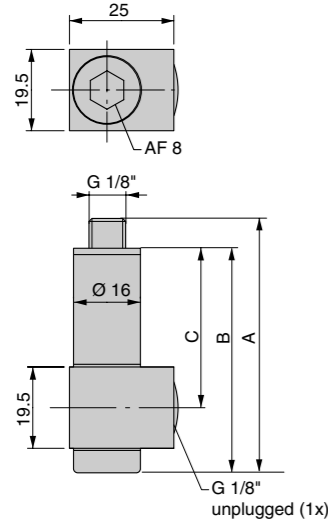


EZ-Hose Adapters



Angle Adapter

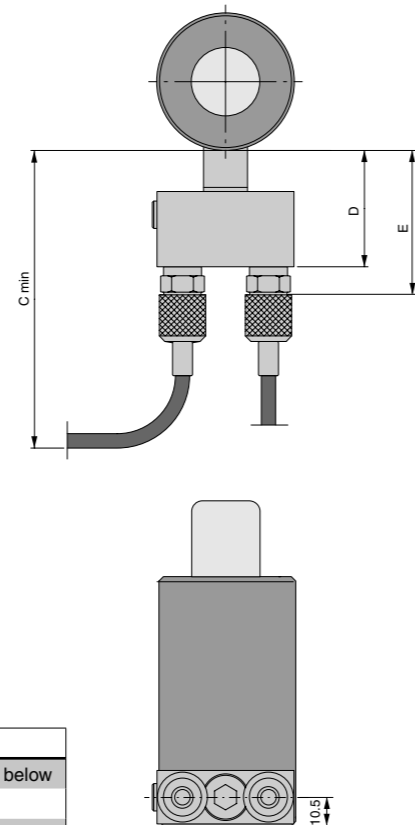
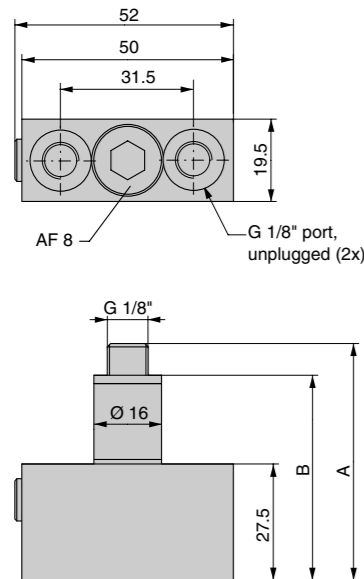
Order No. 4016050-XX



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	FFC 500, 750, 1500, 3000 + K
4016050-03	61	53.5	38	47.5	32	FFC 5000, 7500, 10000 + K

Front Adapter

Order No. 4017314-XX



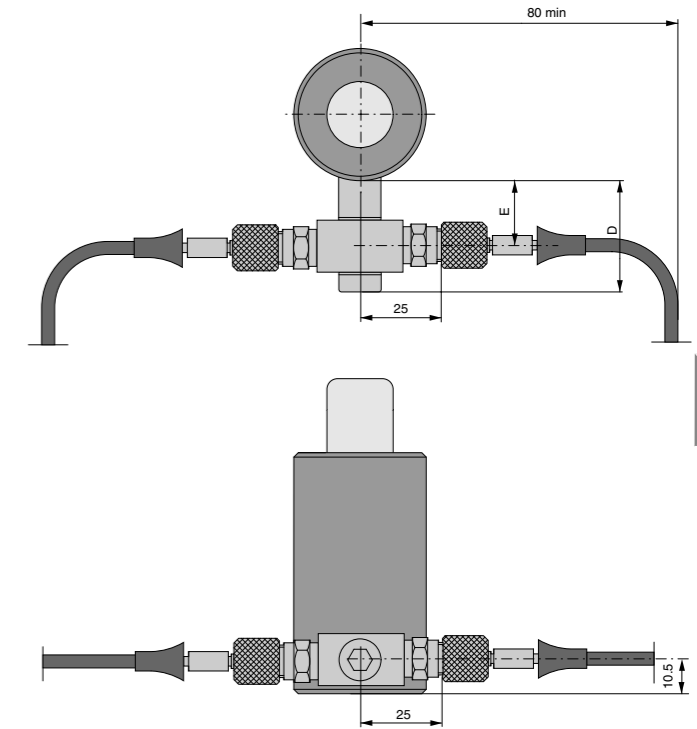
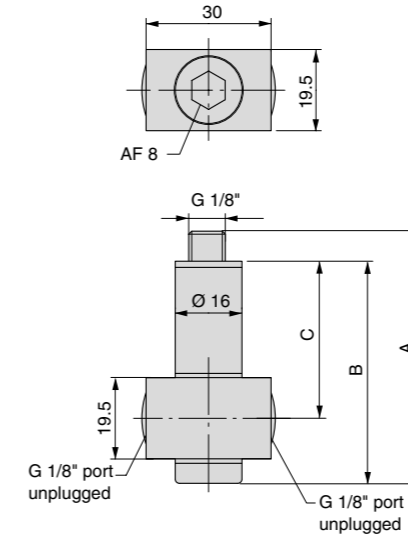
Order No	A	B	C	D	E	Suitable together with mounts
4017314-01	42	34.5	95	28.5	40	All applicable mounts, except those mentioned below
4017314-02	56	48.5	110	42.5	54	FFC 500, 750, 1500, 3000 + K
4017314-03	63	55.5	115	49.5	61	FFC 5000, 7500, 10000 + K

EZ-Hose Adapters



Two-way Adapter

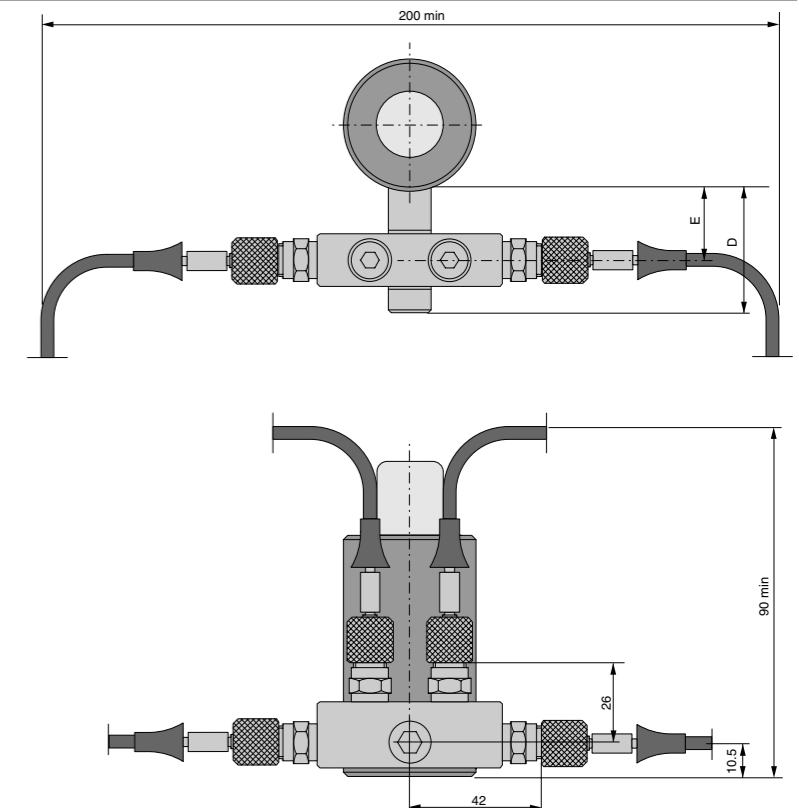
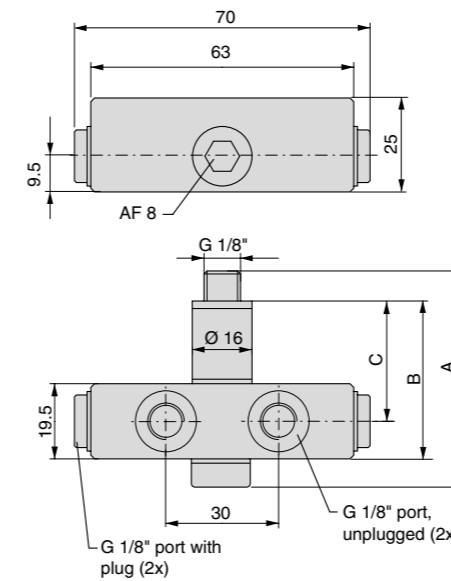
Order No. 4016051-XX



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	FFC 500, 750, 1500, 3000 + K
4016051-03	61	53.5	38	47.5	32	FFC 5000, 7500, 10000 + K

Four-way Adapter

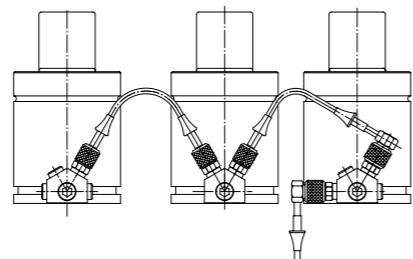
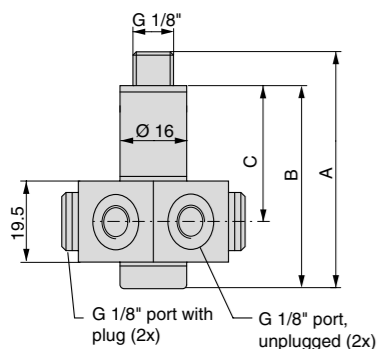
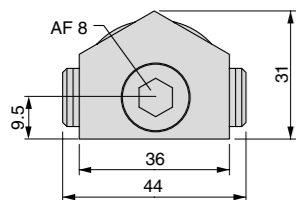
Order No. 4015035-XX



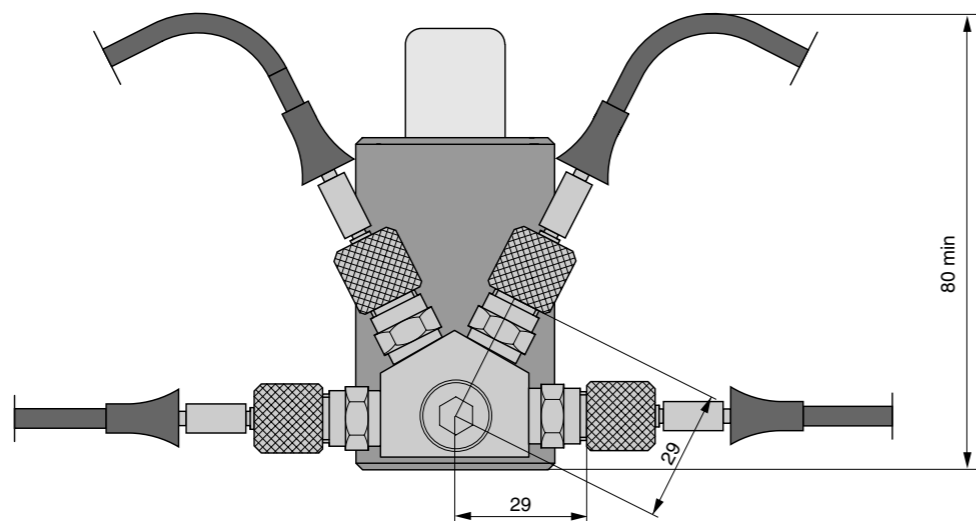
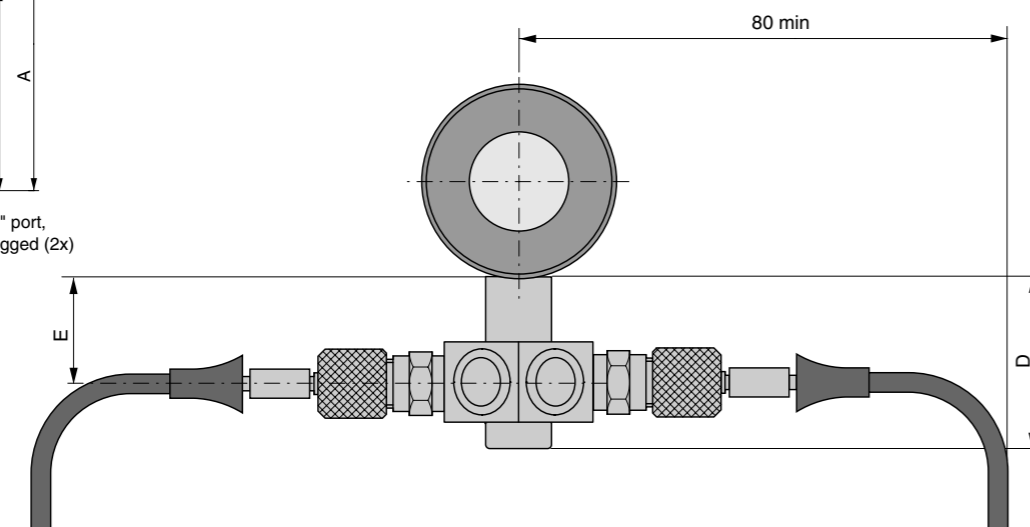
Order No.	A	B	C	D	E	Suitable together with Mounts
4015035-01	40	32.5	17	26.5	11	All applicable mounts, except those mentioned below
4015035-02	54	46.5	31	40.5	25	FFC 500, 750, 1500, 3000 + K
4015035-03	61	53.5	38	47.5	32	FFC 5000, 7500, 10000 + K

Multi-way Adapter

Order No. 3017191-XX



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

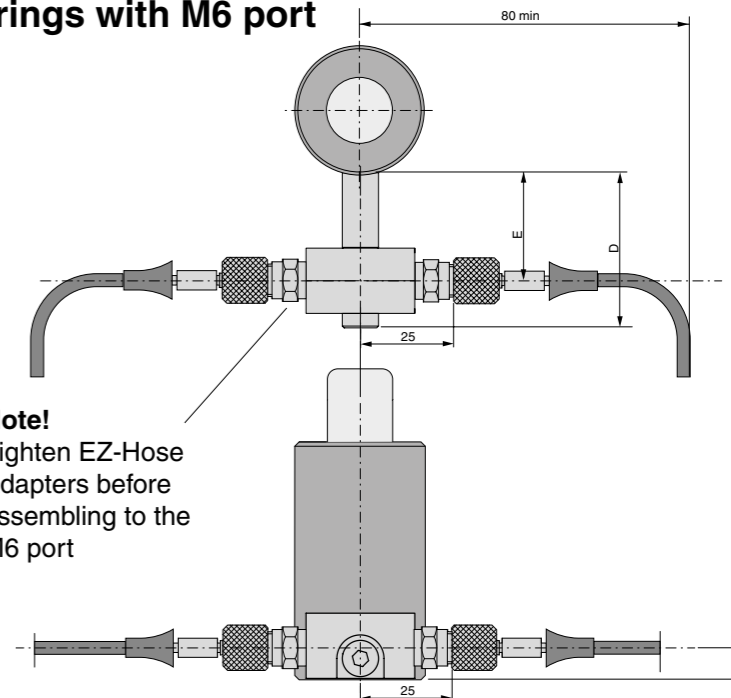
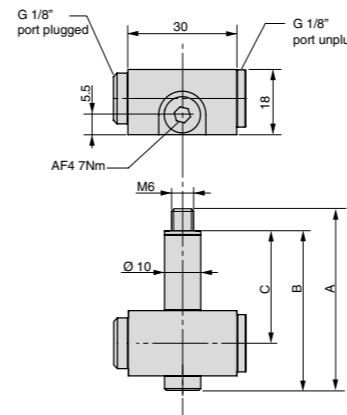


Order No	A	B	C	D	E	Suitable together with mounts
3017191-01	40	32.5	17	26.5	11	All applicable mounts, except those mentioned below
3017191-02	54	45.5	31	40.5	25	FFC 500, 750, 1500, 3000 + K
3017191-03	61	53.5	38	47.5	32	FFC 5000, 7500, 10000 + K

Two-way Adapter for gas springs with M6 port

Order No. 4023519

Order No. 4023506



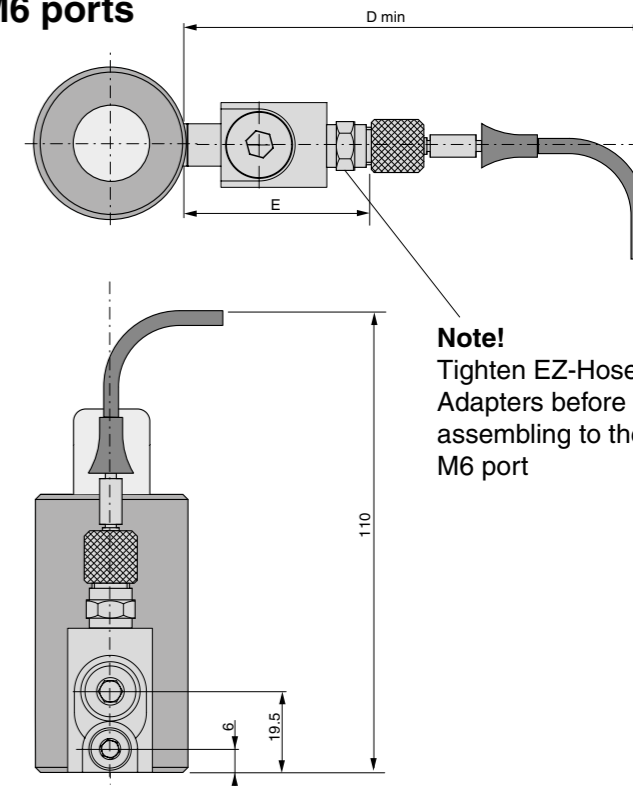
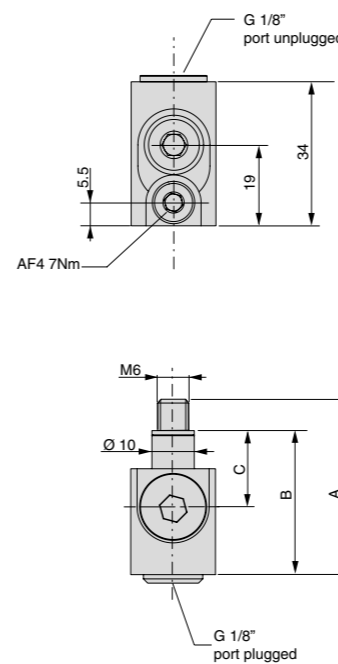
Note!
Tighten EZ-Hose Adapters before assembling to the M6 port

Order No	A	B	C	D	E	Suitable together with mounts
4023519	36	30	17	25.5	12.5	All applicable mounts, except those mentioned below
4023506	49	44	31	39.5	26.5	FFC 500, 750, 1500 + K

Angle Adapter for gas springs with M6 ports

Order No. 4023520

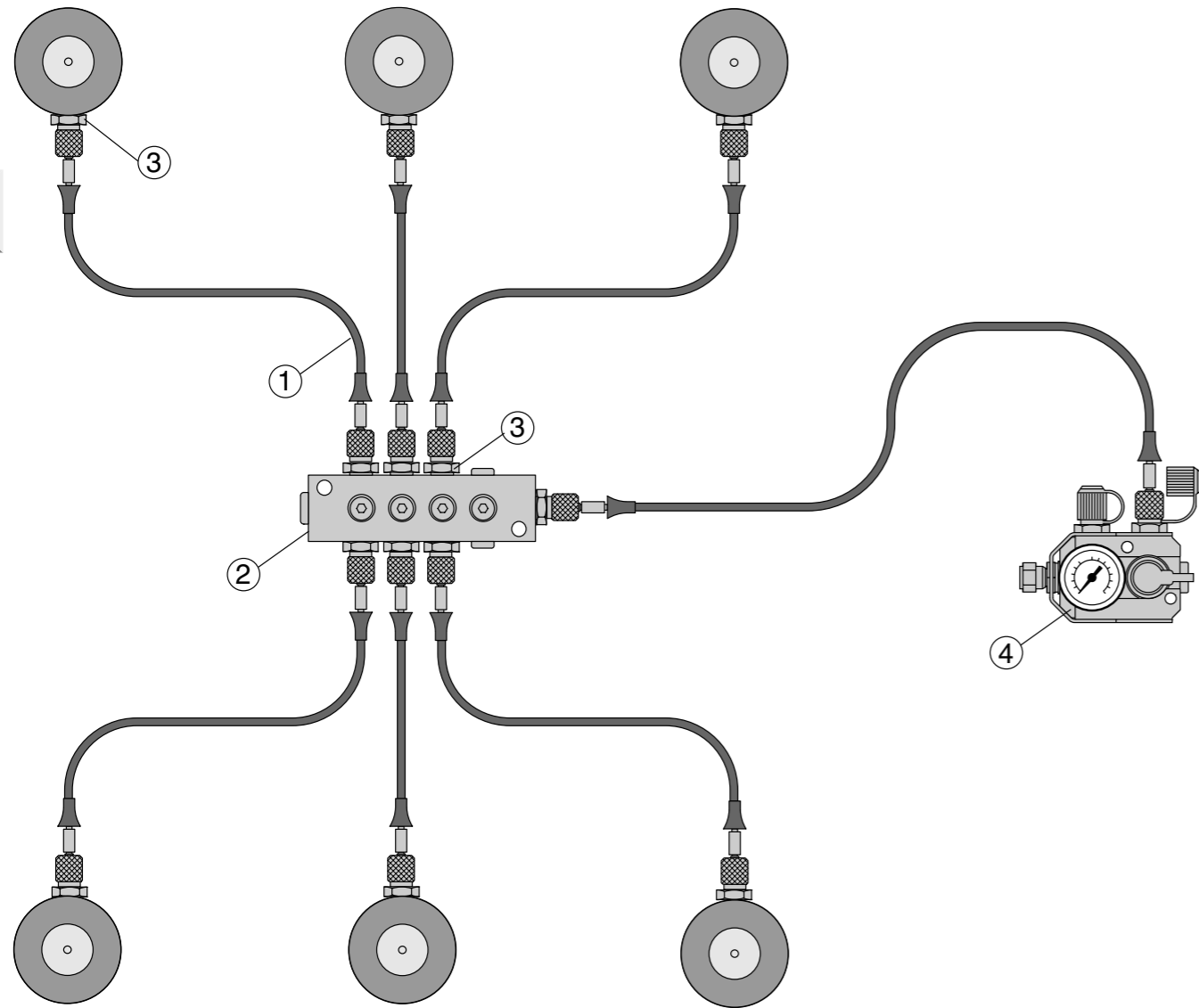
Order No. 4023518



Note!
Tighten EZ-Hose Adapters before assembling to the M6 port

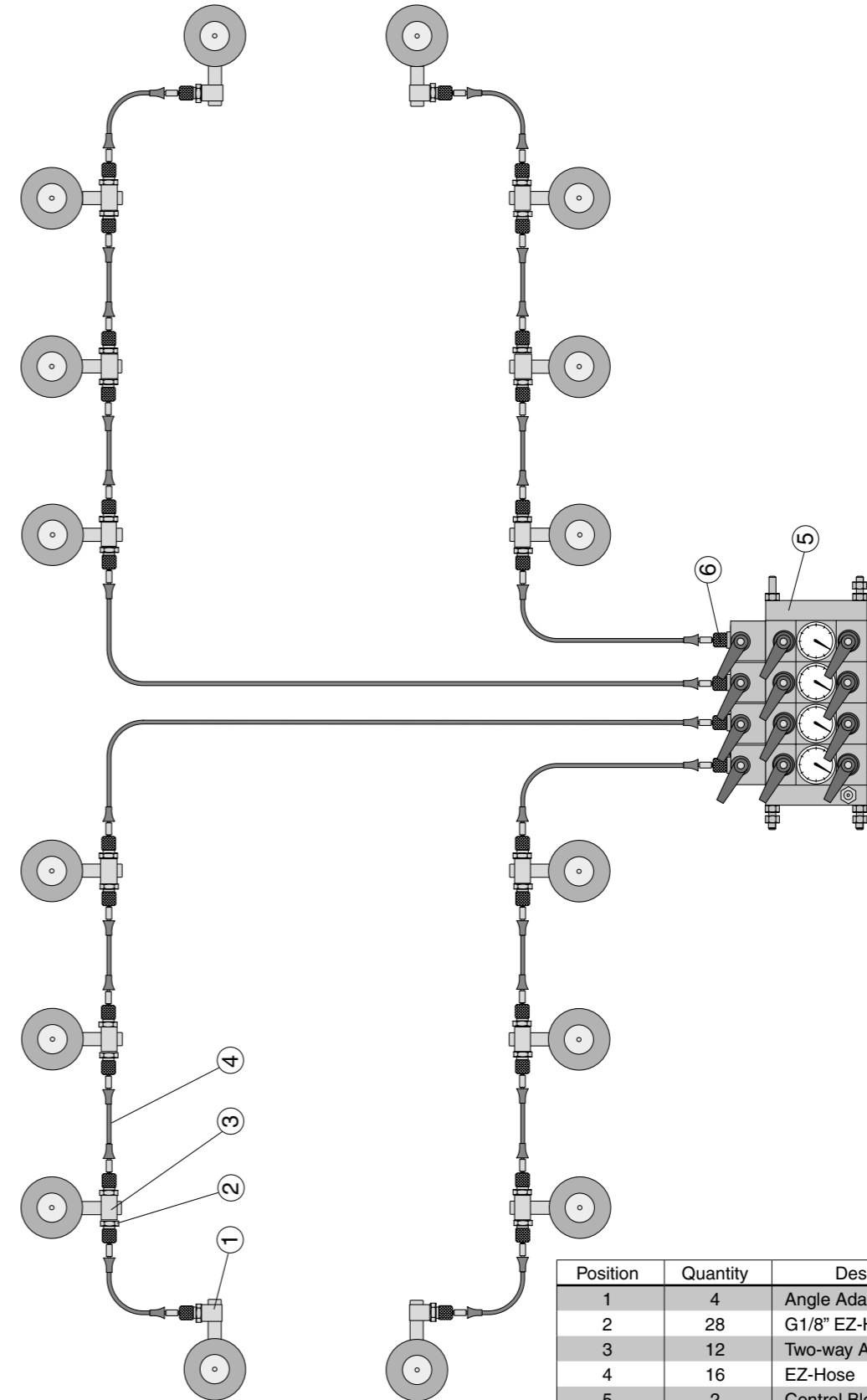
Order No	A	B	C	D	E	Suitable together with mounts
4023520	39	34	18	110	45	All applicable mounts, except those mentioned below
4023518	51	46	30	120	57	FFC 500, 750, 1500 + K

Installation Examples, EZ-Hose System

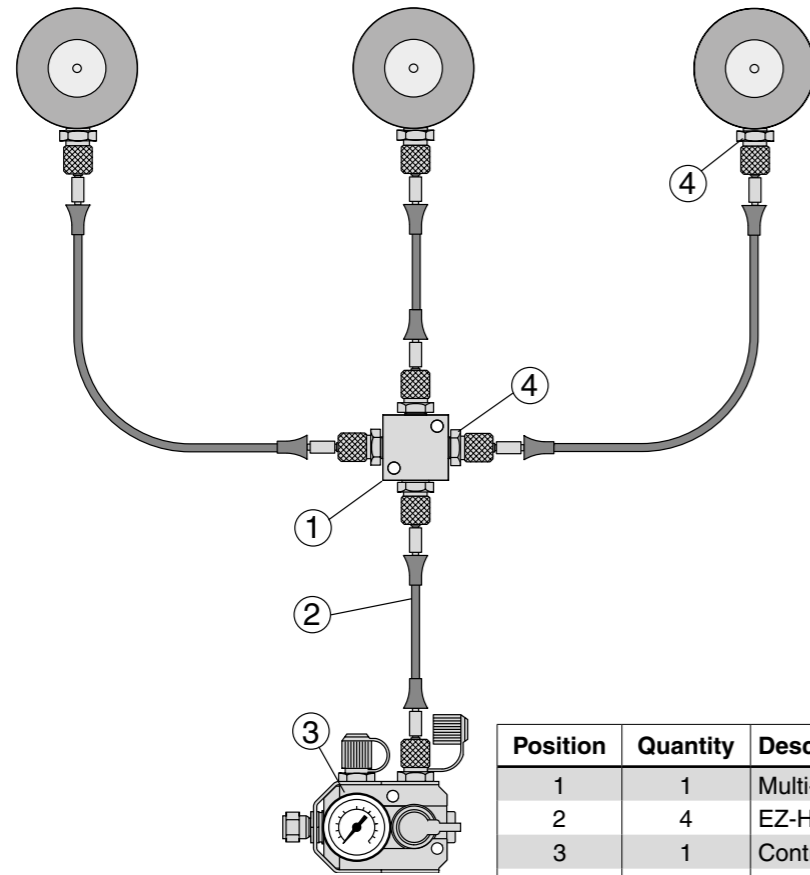


Position	Quantity	Description	Order No
1	7	EZ-Hose	4014974-XXXX
2	1	Multi-Coupling Block	3015044
3	13	G1/8" EZ-Hose Adapter	4114973-G1/8
4	1	Control Block	3116114-01

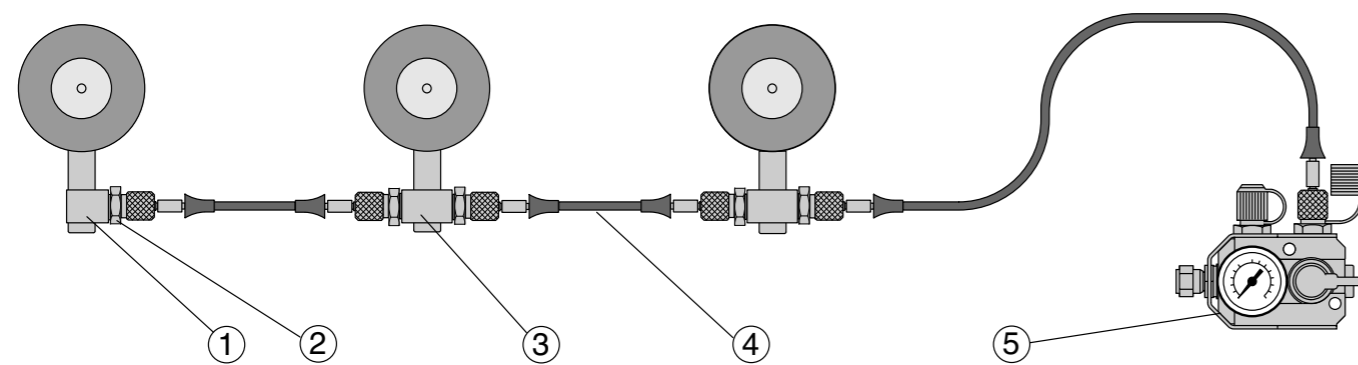
Installation Examples, EZ-Hose system



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	4016051-xx
4	16	EZ-Hose	4014974-xxxx
5	2	Control Block	2014839-04
6	4	G1/4" EZ-Hose Adapter	4014973-G1/4



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



Position	Quantity	Description	Order No.
1	1	Angle Adapter	4016050-xx
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

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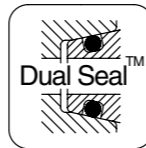
EO24-Hose Adapters

Page 4.5/4

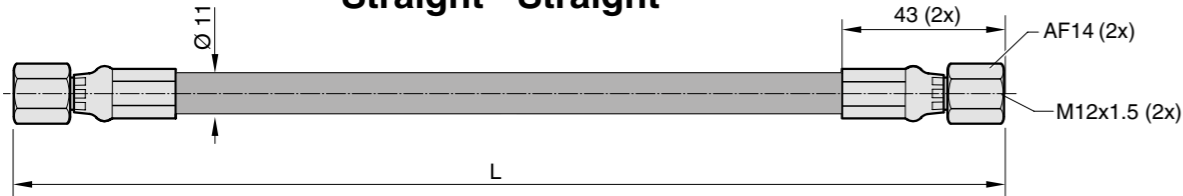
Installation Examples, EO24-Hose System **Page 4.5/5**

EO24-Hose System

The EO24-Hose System is our largest Hose System available. 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 120 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 page 4.6/2.

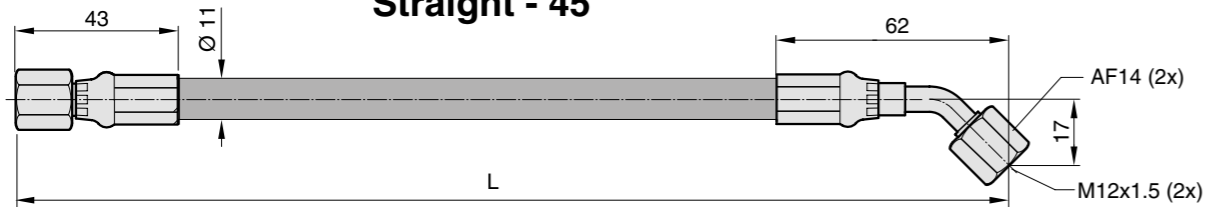


Straight - Straight



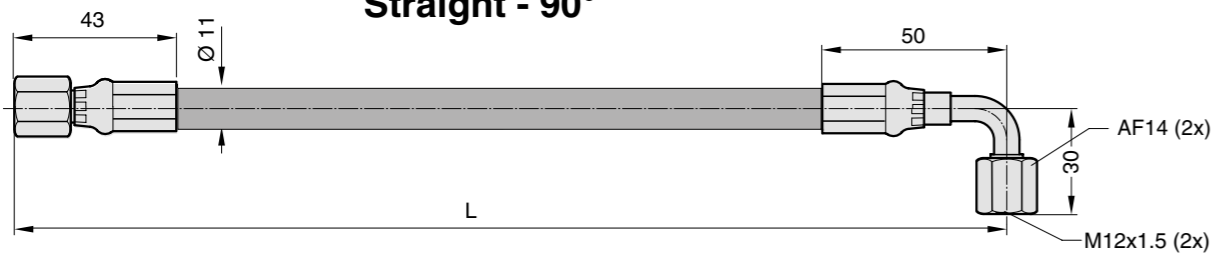
Order No. 3020857-XXXX

Straight - 45°



Order No. 3120857-XXXX

Straight - 90°



Order No. 3220857-XXXX

EO24-Hose

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



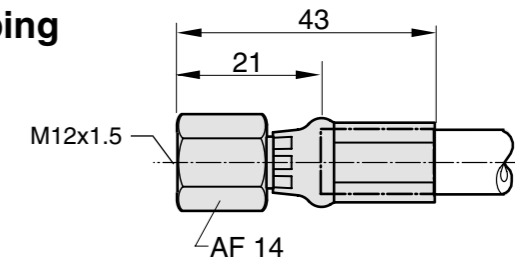
EO24-hose clip, **Order No. 502322**
 Can be used to secure hoses using an M6 screw.



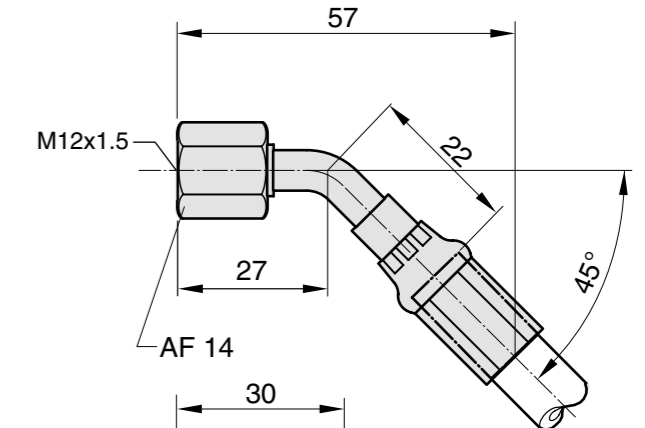
Order No. 502319

EO24-Hose Couplings for Crimping

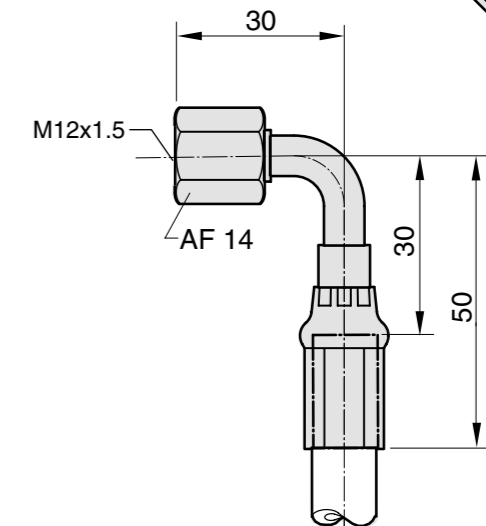
EO24 Straight
Order No. 504141



EO24 45° Elbow
Order No. 504142

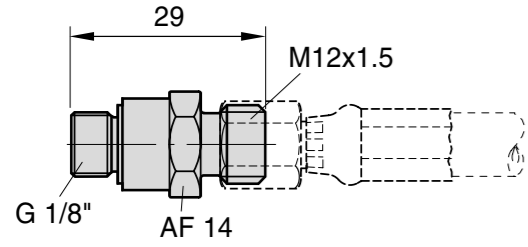


EO24 90° Elbow
Order No. 504143

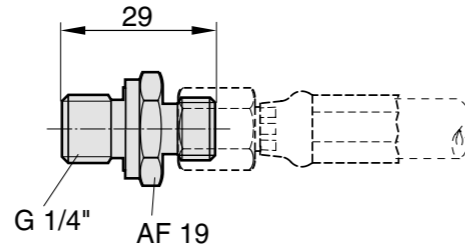


The EO24-Hose coupling system has M12x1.5 threads for connection between hose and adapter. G 1/8" or G 1/4" are used for connecting to springs and blocks.

EO24-Hose Adapters

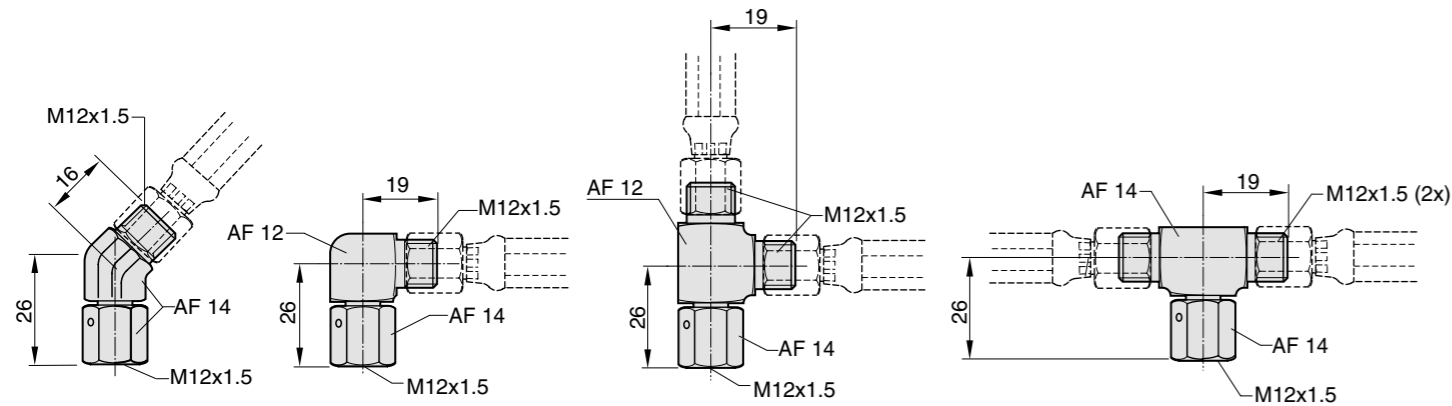


Straight G 1/8" adapter
(for gas springs and Coupling Blocks)
Order No. 503593



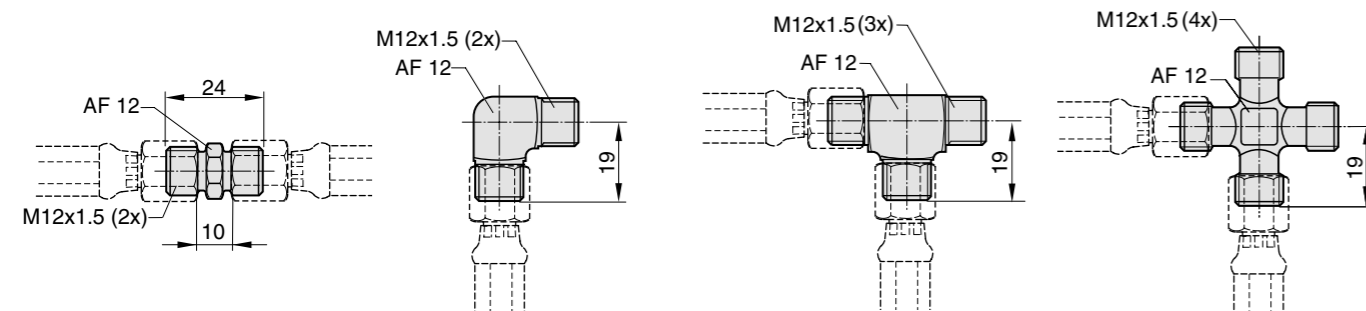
Straight G 1/4" adapter
(for Control Blocks)
Order No. 504144

Adapter to Hose Couplings



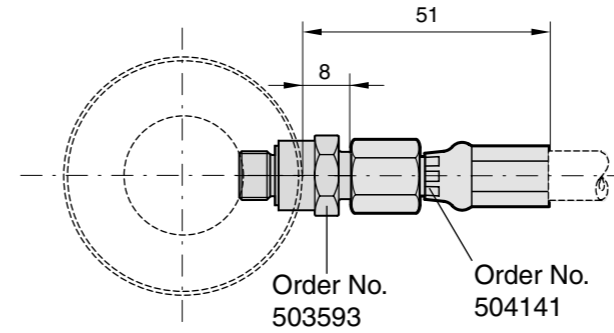
45° angle coupling **Order No. 504145** 90° angle coupling **Order No. 504146**
L-coupling **Order No. 504147** T-coupling **Order No. 504148**

Hose to Hose Couplings

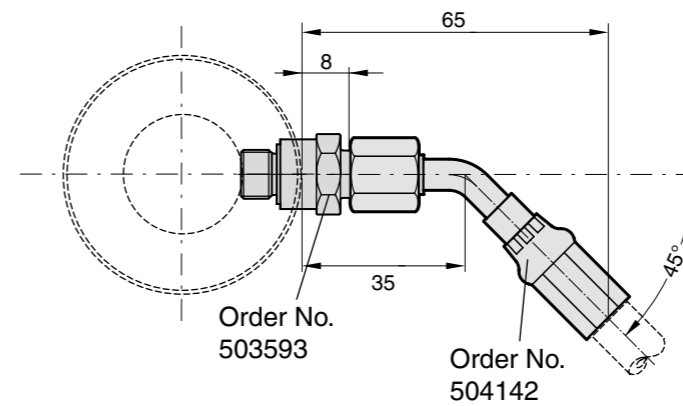


Straight coupling **Order No. 504149** 90° Angle coupling **Order No. 504150**
T-coupling **Order No. 504151** 4-way coupling **Order No. 504152**

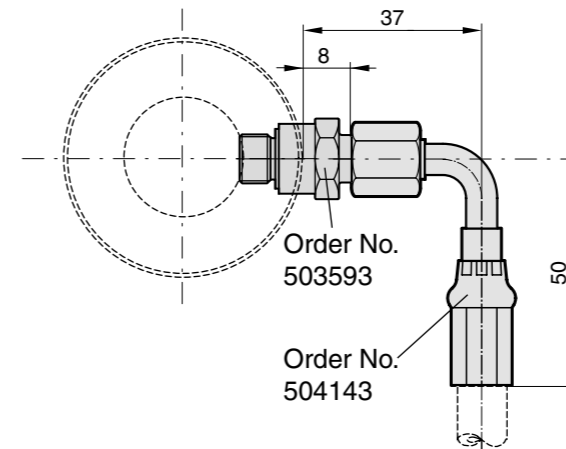
Installation Examples, EO24-Hose System



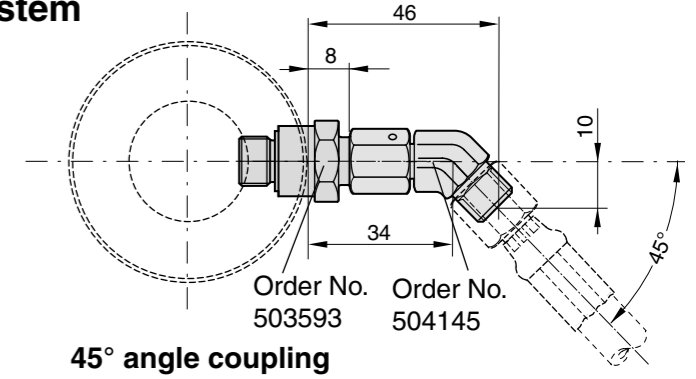
Straight hose coupling



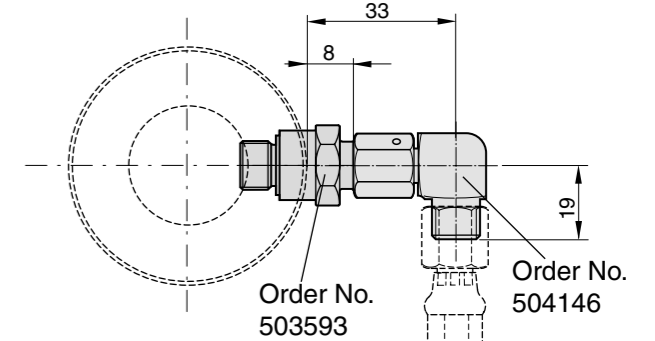
45° hose coupling



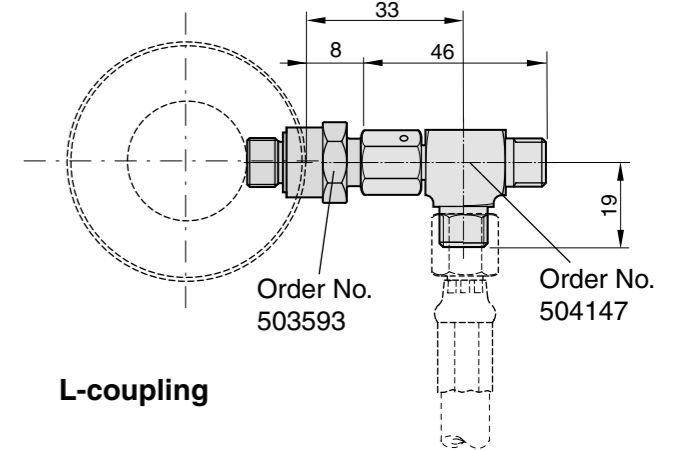
90° hose coupling



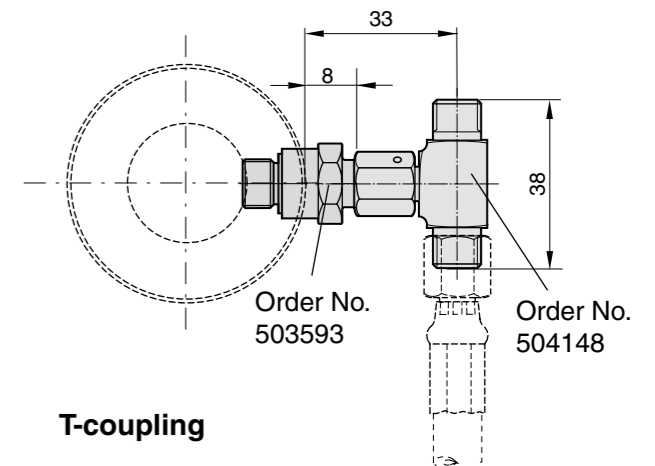
45° angle coupling



90° angle coupling



L-coupling



T-coupling

Hose Crimping Equipment

Pneumatic-Operated

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Hose Crimping Equipment

Crimping Equipment for Micro EO24™, EZ-Hose, EO24-Hose

Our Hose Crimping Equipment can be used for Micro EO24™, EZ- and EO24-Hose systems

- Pneumatically-Operated Hydraulic Pump
- Mechanical stop for accurate hose crimping
- Can be used to crimp straight, 45° and 90° fittings
- Lubrication free crimping
- Crimping force: 300 kN
- Size: 380 x 305 x 685
- Weight: 32 kg
- Press instructions included No. 8200-1288

Crimp die Micro EO24™,
EZ-Hose

Order No. 3024010



Crimp die EO24

Order No. 504196



Pneumatic-operated Crimping Press.

Order No. 3121381

(Crimping die not included)

Below is a list of the order numbers of the various couplings and hoses that can be ordered from us:

Hose System	Order Numbers			
	Separate Hose (in metres)	Straight Hose Connector	45° Hose Connector	90° Hose Connector
Micro EO24™	505081-XX	505082	N/A	N/A
EZ	503810-XX	503962	N/A	503963*
EO24	502319-XX	504141	504142	504143

Where: -XX is no. of metres of hose required (eg. -10 indicates length 10 metres)

* You cannot crimp EZ-Hose 90° - 90° using Crimp die 3024010



Stop Tool
(for Micro EO24™ hose end assembly)
Order No. 4024183



Hose cutting plier
Order No. 502839

Notes

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The Safer Choice

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2 GAS SPRINGS INCLUDING STANDARD MOUNTS

3 SPECIAL MOUNTS

4 GAS LINK SYSTEM

5 PROBLEM SOLVERS AND ACCESSORIES

6 LIFTERS

7 MACHINE AND VEHICLES

8 SERVICE AND MAINTENANCE

9 PIERCING AND FORMING UNITS / CAMS

10 CONTROLLABLE GAS SPRINGS



For more information see our website

www.kaller.com