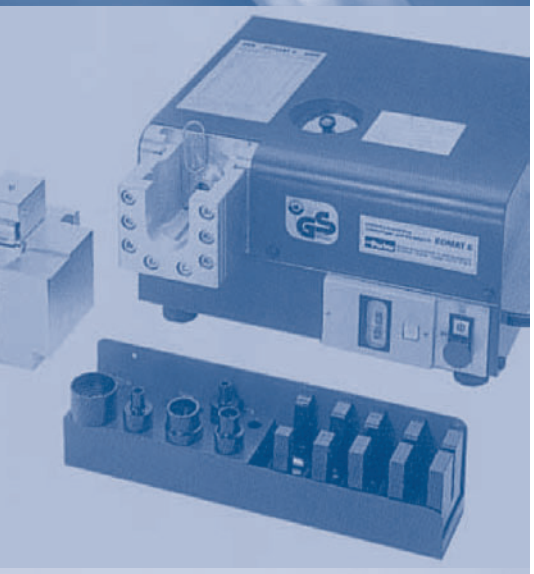
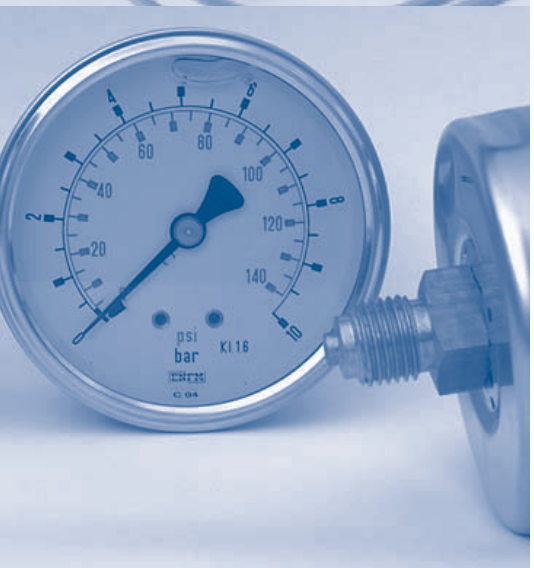








Group 5

Metric DIN Fittings
Tubes and Clamps
MCS and
Pressure Gauges

FLUID CONTROL®

INDEX

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3-6	Technical Information and Specifications for the Assembly of Metric DIN Fittings
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16-17	Clamps for Hydraulic Tubes
18-20	Mini Control System (MCS) Series 620
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26	Manometers

We have certified industrial plumbers with offshore certificates.

Contact us about your piping projects.

We are certified and have experience in:

Metric DIN Fittings (standard DIN fittings), Flare Fittings, A-lok and Autoclave.

We also have equipment and machinery for rent.

Fitting Assembly (For steel and copper tubes)

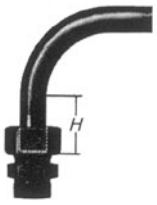
For serial assemblies it is recommended to use the VOMO pre-assembly tools.

Stainless steel tubes and tube connections with smooth pipe sockets must be pre-assemblied using VOMO pre-assembly tools.

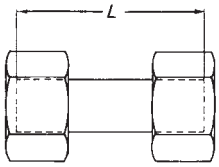
A) TUBE PREPARATION

1 Minimum height (H) for straight tube end

The straight tube end H must not deviate from the roundness and straightness which exceeds the tube tolerance measurements according to DIN 2391.



Minimum length (L) for short tubes



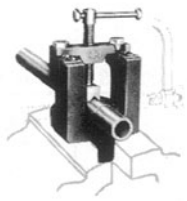
Series	LL				L										S									
Tube OD	4	5	6	8	6	8	10	12	15	18	22	28	35	42	6	8	10	12	14	16	20	25	30	38
H min	24	25	25	26	31	31	33	33	36	38	42	42	48	48	35	35	37	37	43	43	50	54	58	65
L min	30	32	32	33	39	39	42	42	45	48	53	53	60	60	44	44	47	47	54	54	63	68	73	82

2



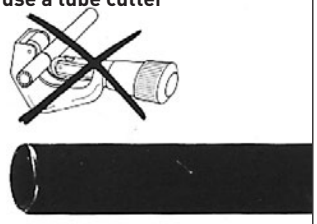
The tube is cut at a right angle. 1/2° angle deviation from tube axis allowed.

3



A tube sawing tool simplifies the right angle cutting.

4 Do not use a tube cutter



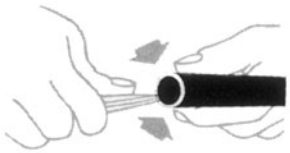
a) Tube cut with tube cutter: large burr



b) Sawn-off tube: almost no burr

B) LUBRICATION

5



Lightly deburr the I.D. and O.D. of the tube.

6

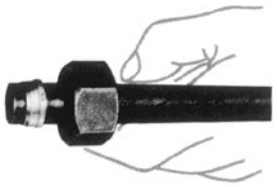


Lubricate thread and cone of fitting body or hardened pre-assembly tool, as well as the progressive ring and nut threads.

Fitting Assembly (for steel and copper tubes)

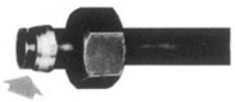
C) TUBE ASSEMBLY

7



Slip nut and progressive ring over tube.

8



Correct

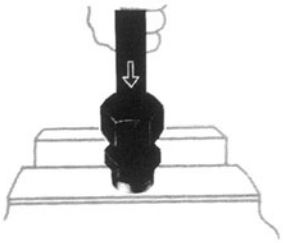


Incorrect

Check that they are in the proper orientation.

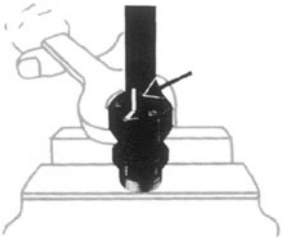
D) ASSEMBLY

9



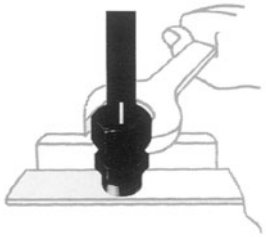
Screw nut onto fitting body or hardened pre-assembly tool until finger-tight or light wrench resistance. Hold tube against the shoulder in the cone of the fitting body or hardened pre-assembly tool.

10



Mark nut and tube in the finger-tight or light wrench-resistant position.

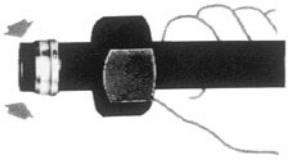
11



Tighten nut 1 ½ turns if using the fitting body (1 ¼ turns if using the hardened pre-assembly tool). The tube must not turn with the nut. The stop edge in the progressive ring limits over tightening by sharply increasing the tightening torque.

E) PRE-SET INSPECTION

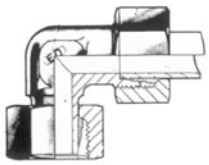
12*



Remove the nut and tube from the fitting and check if a visible collar fills the space completely in front of the first cutting edge. If not, tighten slightly. It does not matter if ring can be rotated on tube end.

F) ASSEMBLY OF FACTORY PRE-ASSEMBLED FITTINGS

13

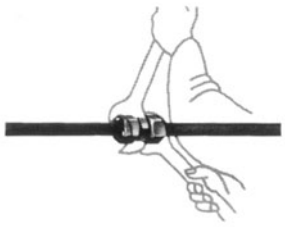


All factory pre-assembled fittings (EW, ET, EL, EGE, MAVE) are assembled in the corresponding socket with approx. 1/2 turn of the nut past the point of clear noticeable force increase. All connection parts are treated with a lubricant.

*After disassembly, the pipe ends are inserted in the same internal wives in the fitting where assembly was completed.

G) RE-ASSEMBLY

14



Re-install using the installation procedures previously covered. Another wrench must be used to prevent movement of the fitting body.

The nominal pressure (PN) and working pressure (PB) listed in this catalogue show the maximum allowable working pressure including pressure peaks. Hereby it must be taken into account the temperature and pressure reductions that are listed in the tables below.

Types with PN specifications: 4 times. Types with PB specifications: complete fitting min. 2.5 times. Tube connection 4 times (unless otherwise stated). Pressure- and security specification requires that the assembly is carried out in accordance with installation regulations:

Fittings Material	Temp. Range	Pressure Reduction
Steel	40 to +120°c	-
Brass	60 to +175°c	30%
AISI 316	60 to + 20°c	-
AISI 316	+ 50°c	4%
Stainless steel	+ 100°c	11%
Stainless steel	+ 200°c	20%
Stainless steel	+ 300°c	29%
Stainless steel	+ 400°c	33%

HIGH-PRESSURE FITTINGS

Metric DIN Fittings Original DIN 2353 EO-2 Soft-seal fittings

As a part of Parker New Generation metric DIN fittings, the Dry Technology EO-2 Plus Concept proven worldwide has been further developed. EO2-Plus means maximum pressure capability, as well as a new chromium6-free surface with significantly higher corrosion resistance, and greatly reduced tightening torques for larger sized fittings.

The common feature of all EO2-Plus fittings is elastomeric seals on all joints. These are also now available in FKM (e.g. Viton®)* for applications with higher temperatures or aggressive media. This assures leak free operation without retightening – even under extreme working conditions. The easy handling, time and cost saving features, and many assembly advantages of the unique EO2-Plus functional nuts have made EO2-Plus fittings increasingly popular.

EO2-Plus is designed for metric tube and based on German Standards DIN 3861 and DIN 2353, which today are represented by the international standard ISO 8434-1. EO2-Plus is available in "L"- and "S"-Series.

Features, advantages and benefits of EO2-Plus fittings

Naturally all advantages of the proven EO-2 soft sealed technology are also present in EO2-Plus, however, the new EO2-Plus Generation additionally offers the following:

• **Plus: Highest corrosion resistance** – The corrosion resistance is increased by 400% to more than 500 hours. to white rust.

• **Plus: Increased pressure** – Due to the application of even better materials combined with the special processing of individual components, EO2-Plus can be used in applications of up to 800 bar (S series) and 500 bar (L series). EO2-Plus considerably exceeds the DIN/ ISO requirements and guarantees a 4-fold design factor. Thanks to the higher pressure levels, less expensive "L" series fittings can now be used instead of the heavier "S" series, which also is of benefit in limited or tight space applications.

• **Plus: EO-LUB** – Due to the special treatment of the larger sized nuts by the EO-LUB procedure (25S/28L and larger), the tightening torques of EO2-Plus fittings have been reduced by 25%. This makes assembly easier and prevents under-assembly, the most common reason for tube fitting failure.

• **Plus: Chromium6-free** – Due to its chromium6-free treated surface, Parker Metric DIN Fittings now meets the requirements to be expected in the automotive industry and the expected requirements issued by the European Parliament to eliminate the use of materials and surfaces containing chromium 6. The removal of chromium 6 reflects Parker's ongoing commitment to an environmentally clean and safe production process.

• **Plus: Worldwide availability** – EO2-Plus is available worldwide and meets the requirements of the applicable standards for 24° cutting ring fittings.

STANDARDS

EO tube fittings are produced according to DIN 2353
Tube end DIN 3861/ISO 3834

APPROVALS

Det Norske Veritas
Germanischer Lloyd
Lloyds Register of Shipping
Bureau Veritas
Register UdSSR
And others

HIGH-PRESSURE FITTINGS

Metric DIN 2353 Steel Cutting Ring Fittings

Metric DIN steel fittings are produced in materials according to DIN 3859. The fittings comes with chromated surface protection (A3c) except weld fittings that come with phosphated and oiled body and the chromated nut.

The stated operating pressures are either test pressure (PB) or the nominal pressure (PN) according to DIN 2401, part 1 Working temperature for steel fittings is -40 to + 120°C.

Metric DIN steel cutting rings fittings are in stock as bodies, or assembled. The fitting bodies can be used with EO-2 functional nut or with the standard nut and progressive ring, this is more flexible for customers who want to use EO-2 on problem areas and standard EO DPR in less critical locations. All fitting bodies with a male thread comes with ED soft-sealing and all combination fittings have a swivel nut with O-ring on the inner cone.

NB! The price of all fitting bodies in the price list is without nut(s) and the cutting ring(s). Price for stainless steel is included nut(s) and the cutting ring(s).

EO-2 Soft-seal Fittings

Consists of a standard fitting body and a loose function nut in FM which is a nut with a fixed cutting ring and a soft-seal retain ring. The function nuts come in two versions; FM with chromated steel nut and retain ring and cutting ring, and FM-SSA with blank-galvanized nut and retain ring and stainless steel cutting ring. FM SSA is intended for use on stainless steel tubes. EO-2 fittings do not come assembled from stock in Norway, but can be delivered assembled from the plant.

EO-DPR Progressive Ring Fittings

Consists of a standard fitting body and a loose nut M and a loose progressive cutting ring DPR. Some types are still delivered from stock in Norway with body, progressive ring and nut assembled, but because of the strong increase in sales of fitting bodies, most complete fittings will be omitted from stock in Norway.

Metric DIN 2353 Stainless Steel Cutting Ring Fittings

Stainless steel EO fittings are made of stainless steel AISI 316Ti (X6CrNiMoTi - WS 1.4571). All nuts are EO-DUR treated, this is a special patented surface treatment and chemical nickel-plating developed by Parker. The treatment results in a noticeable friction-factor reduction and creates a smoother and easier installation and significantly reduced risk of cold welding.

The fitting bodies can be used with EO-2 functional nut or with a standard nut and progressive ring. This is more flexible for customers who want to use EO-2 on problem areas and standard EO-DPR in less critical locations. All fitting bodies with a male thread comes with soft seals ED and all combination fittings have a swivel nut with O-ring on the inner cone.

EO-2 Stainless Steel Soft-seal Fittings:

Consists of a standard fitting body and loose function nut FM-71 which is a nut with a fixed stainless steel seal/retain ring with Viton soft seals. EO-2 fittings do not come assembled from stock in Norway, but can be delivered assembled from the plant.

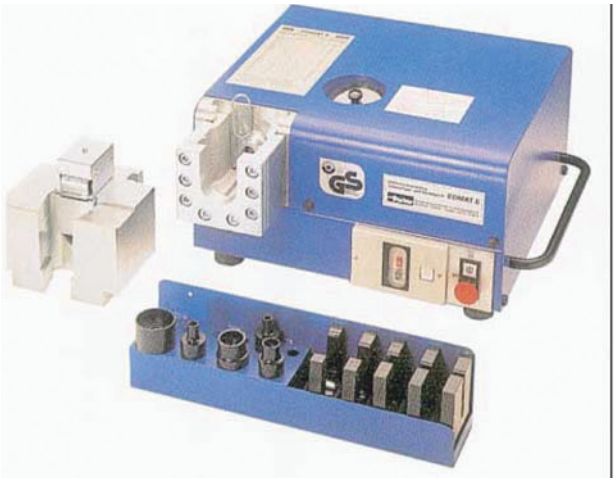
EO-DPR Stainless Steel Progressive Ring Fittings:

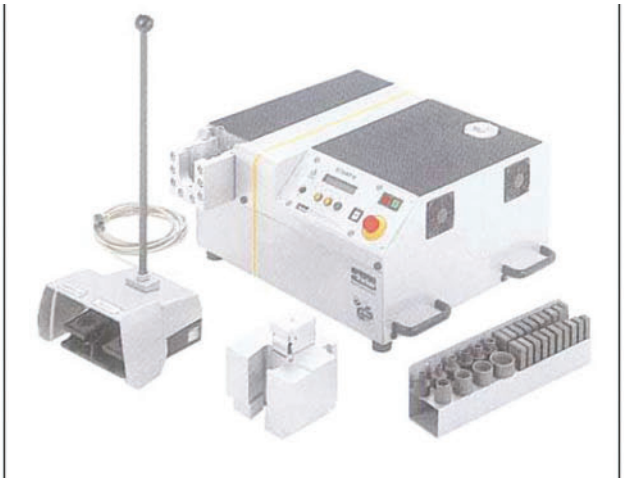
Consists of a standard fitting body and a loose nut M-EODUR and a loose progressive cutting ring DPR-71. EO_DPR stainless steel fittings do not come assembled from stock in Norway, but can be delivered assembled from the plant.

The stated operating pressures are either test pressure (PB), or the nominal pressure (PN) according to DIN 2401. Part 1, at working temperature ÷ 60 to + 20°C. The working pressure is under revision. At temperatures over room temperature, the following pressure reductions applies:

+ 50°C	4%
+ 100°C	11%
+ 200°C	20%
+ 300°C	29%
+ 400°C	33%

Assembly Tools





Eomat - Pre-assembly and Flaring Machine

EOMAT II

Electric/hydraulic cutting ring pre-assembly machine. Comes with loose pre-assembly and 37o tube flaring fixture.

Tube dimension:	6-42 mm
Voltage:	220v/50Hz - 1 fase (alt. 380V)
External dim.:	245 x 540 x 420 mm
Weight:	60 kg

EOMAT III

Electric/hydraulic pre-assembly and flaring machine cutting ring and electronic control. The machine sets itself when registrating tube material and dimension. Comes as a base model with loose pre-assembly and 37o tube flaring fixture.

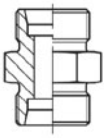
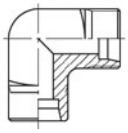
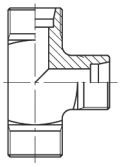
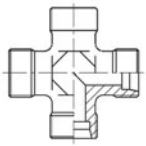
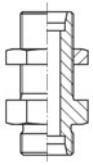
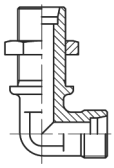
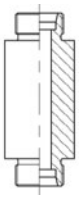
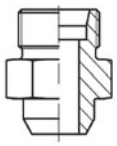
Tube dimension:	6-42 mm
Voltage:	20v/50Hz - 1 fase (alt. 380V)
External dim.:	690 x 530 x 320 mm
Weight:	100 kg

Prices for the purchase or rental on request

For stainless steel, add SS behind Part No. Other dimensions and material qualities on request.
More information about products on our website: www.fluidcontrol.no

Standards:
Carbon steel materials according to DIN 3859, chromated. Working temperature -40 to +120°C
Stainless steel (AISI 316). Nuts over 12 mm are silvered on the threads. Working temperature -60 to +120°C

For working pressure, see table on page 11

Tube O.D.	Thread	Straight Connection Part No.	90° Angle Connection Part No.	Tee Connection Part No.	Cross Connection Part No.	Straight Bulkhead Part No.	90° Bulkhead Part No.	Weldable Bulkhead Part No.	Weldable Connection Part No.
6L	M12x1.5	G06L	W06L	T06L	K06L	SV06L	WSV06L	ESV06L	AS06L
8L	M14x1.5	G08L	W08L	T08L	K08L	SV08L	WSV08L	ESV08L	AS08L
10L	M16x1.5	G10L	W10L	T10L	K10L	SV10L	WSV10L	ESV10L	AS10L
12L	M18x1.5	G12L	W12L	T12L	K12L	SV12L	WSV12L	ESV12L	AS12L
15L	M22x1.5	G15L	W15L	T15L	K15L	SV15L	WSV15L	ESV15L	AS15L
18L	M26x1.5	G18L	W18L	T18L	K18L	SV18L	WSV18L	ESV18L	AS18L
22L	M30x2.0	G22L	W22L	T22L	K22L	SV22L	WSV22L	ESV22L	AS22L
28L	M36x2.0	G28L	W28L	T28L	K28L	SV28L	WSV28L	ESV28L	AS28L
35L	M45x2.0	G35L	W35L	T35L	K35L	SV35L	WSV35L	ESV35L	AS35L
42L	M52x2.0	G42L	W42L	T42L	K42L	SV42L	WSV42L	ESV42L	AS42L
6S	M14x1.5	G06S	W06S	T06S	K06S	SV06S	WSV06S	ESV06S	AS06S
8S	M16x1.5	G08S	W08S	T08S	K08S	SV08S	WSV08S	ESV08S	AS08S
10S	M18x1.5	G10S	W10S	T10S	K10S	SV10S	WSV10S	ESV10S	AS10S
12S	M20x1.5	G12S	W12S	T12S	K12S	SV12S	WSV12S	ESV12S	AS12S
14S	M22x1.5	G14S	W14S	T14S	K14S	SV14S	WSV14S	ESV14S	AS14S
16S	M24x1.5	G16S	W16S	T16S	K16S	SV16S	WSV16S	ESV16S	AS16S
20S	M30x2.0	G20S	W20S	T20S	K20S	SV20S	WSV20S	ESV20S	AS20S
25S	M36x2.0	G25S	W25S	T25S	K25S	SV25S	WSV25S	ESV25S	AS25S
30S	M42x2.0	G30S	W30S	T30S	K30S	SV30S	WSV30S	ESV30S	AS30S
38S	M52x2.0	G38S	W38S	T38S	K38S	SV38S	WSV38S	ESV38S	AS38S

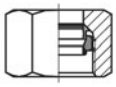
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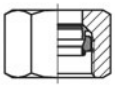
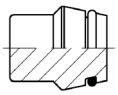
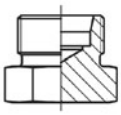
For stainless steel, add SS behind Part No. Other dimensions and material qualities on request.
More information about products on our website: www.fluidcontrol.no

Standards:
Carbon steel materials according to DIN 3859, chromated. Working temperature -40 to +120°C
Stainless steel (AISI 316). Nuts over 12 mm are silvered on the threads. Working temperature -60 to +120°C

For working pressure, see table on page 11



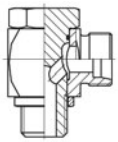
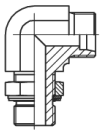
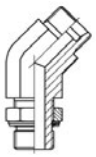
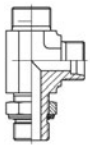
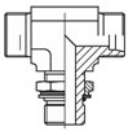
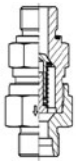
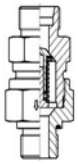



Tube O.D.	Thread	Nut E0 Part No.	Steel Cutting Ring E0 Part No.	Steel Functional Nut w/ Fixed Cutting Ring E02 Part No.	Support Ring w/ Soft-seal E02 Part No.	Steel Functional Nut w/ Stainless Steel Fixed Cutting Ring E02 Part No.	Plug w/ O-ring for Fitting Body Part No.	Plug for Tube Ends Part No.	VOMO Pre-assembly tool Part No.
6L	M12x1.5	M06L	DPR06	FM06L	DOZ06L	FM06LSSA	VKA06	ROV06L	VOMO06L
8L	M14x1.5	M08L	DPR08	FM08L	DOZ08L	FM08LSSA	VKA08	ROV08L	VOMO08L
10L	M16x1.5	M10L	DPR10	FM10L	DOZ10L	FM10LSSA	VKA10	ROV10L	VOMO10L
12L	M18x1.5	M12L	DPR12	FM12L	DOZ12L	FM12LSSA	VKA12	ROV12L	VOMO12L
15L	M22x1.5	M15L	DPR15	FM15L	DOZ15L	FM15LSSA	VKA15	ROV15L	VOMO15L
18L	M26x1.5	M18L	DPR18	FM18L	DOZ18L	FM18LSSA	VKA18	ROV18L	VOMO18L
22L	M30x2.0	M22L	DPR22	FM22L	DOZ22L	FM22LSSA	VKA22	ROV22L	VOMO22L
28L	M36x2.0	M28L	DPR28	FM28L	DOZ28L	FM28LSSA	VKA28	ROV28L	VOMO28L
35L	M45x2.0	M35L	DPR35	FM35L	DOZ35L	FM35LSSA	VKA35	ROV35L	VOMO35L
42L	M52x2.0	M42L	DPR42	FM42L	DOZ42L	FM42LSSA	VKA42	ROV42L	VOMO42L
6S	M14x1.5	M06S	DPR06	FM06S	DOZ06S	FM06SSSA	VKA06	ROV06S	VOMO06S
8S	M16x1.5	M08S	DPR08	FM08S	DOZ08S	FM08SSSA	VKA08	ROV08S	VOMO08S
10S	M18x1.5	M10S	DPR10	FM10S	DOZ10S	FM10SSSA	VKA10	ROV10S	VOMO10S
12S	M20x1.5	M12S	DPR12	FM12S	DOZ12S	FM12SSSA	VKA12	ROV12S	VOMO12S
14S	M22x1.5	M14S	DPR14	FM14S	DOZ14S	FM14SSSA	VKA14	ROV14S	VOMO14S
16S	M24x1.5	M16S	DPR16	FM16S	DOZ16S	FM16SSSA	VKA16	ROV16S	VOMO16S
20S	M30x2.0	M20S	DPR20	FM20S	DOZ20S	FM20SSSA	VKA20	ROV20S	VOMO20S
25S	M36x2.0	M25S	DPR25	FM25S	DOZ25S	FM25SSSA	VKA25	ROV25S	VOMO25S
30S	M42x2.0	M30S	DPR30	FM30S	DOZ30S	FM30SSSA	VKA30	ROV30S	VOMO30S
38S	M52x2.0	M38S	DPR38	FM38S	DOZ38S	FM38SSSA	VKA38	ROV38S	VOMO38S

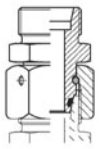
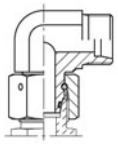
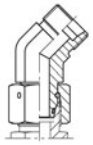
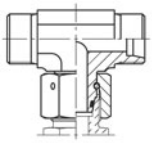
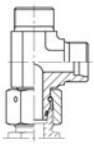
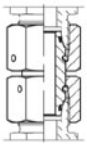
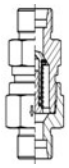
For stainless steel, add SS behind Part No. Other dimensions and material qualities on request.
More information about products on our website: www.fluidcontrol.no

For working pressure, see table on page 11

Tube O.D.	Thread BSP Parallel	Banjo w/ Soft Seal Part No.	90° Adjustable Elbow Male Part No.	45° Adjustable Elbow Male Part No.	Tee Adjustable w/ Swivel Part No.	Tee Adjustable w/ Swivel Part No.	Non-return Valve Part No.	Non-return Valve Part No.
6L	1/8	WH06LR	WEE06LR	VEE06LR	LEE06LR	TEE06LR	RHV06LR	RHZ06LR
8L	1/4	WH08LR	WEE08LR	VEE08LR	LEE08LR	TEE08LR	RHV08LR	RHZ08LR
10L	3/8	WH10LR	WEE10LR	VEE10LR	LEE10LR	TEE10LR	RHV10LR	RHZ10LR
12L	3/8	WH12LR	WEE12LR	VEE12LR	LEE12LR	TEE12LR	RHV12LR	RHZ12LR
15L	1/2	WH15LR	WEE15LR	VEE15LR	LEE15LR	TEE15LR	RHV15LR	RHZ15LR
18L	1/2	WH18LR	WEE18LR	VEE18LR	LEE18LR	TEE18LR	RHV18LR	RHZ18LR
22L	3/4	WH22LR	WEE22LR	VEE22LR	LEE22LR	TEE22LR	RHV22LR	RHZ22LR
28L	1	WH28LR	WEE28LR	VEE28LR	LEE28LR	TEE28LR	RHV28LR	RHZ28LR
35L	1.1/4	WH35LR	WEE35LR	VEE35LR	LEE35LR	TEE35LR	RHV35LR	RHZ35LR
42L	1.1/2	WH42LR	WEE42LR	VEE42LR	LEE42LR	TEE42LR	RHV42LR	RHZ42LR
6S	1/4	WH06SR	WEE06SR	VEE06SR	LEE06SR	TEE06SR	RHV06SR	RHZ06SR
8S	1/4	WH08SR	WEE08SR	VEE08SR	LEE08SR	TEE08SR	RHV08SR	RHZ08SR
10S	3/8	WH10SR	WEE10SR	VEE10SR	LEE10SR	TEE10SR	RHV10SR	RHZ10SR
12S	3/8	WH12SR	WEE12SR	VEE12SR	LEE12SR	TEE12SR	RHV12SR	RHZ12SR
14S	1/2	WH14SR	WEE14SR	VEE14SR	LEE14SR	TEE14SR	RHV14SR	RHZ14SR
16S	1/2	WH16SR	WEE16SR	VEE16SR	LEE16SR	TEE16SR	RHV16SR	RHZ16SR
20S	3/4	WH20SR	WEE20SR	VEE20SR	LEE20SR	TEE20SR	RHV20SR	RHZ20SR
25S	1	WH25SR	WEE25SR	VEE25SR	LEE25SR	TEE25SR	RHV25SR	RHZ25SR
30S	1.1/4	WH30SR	WEE30SR	VEE30SR	LEE30SR	TEE30SR	RHV30SR	RHZ30SR
38S	1.1/2	WH38SR	WEE38SR	VEE38SR	LEE38SR	TEE38SR	RHV38SR	RHZ38SR

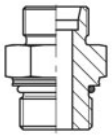
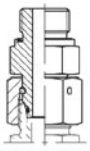
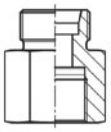
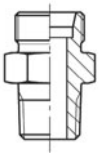
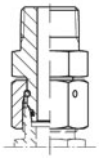
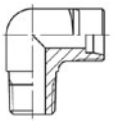
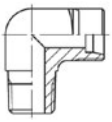
For working pressure, see table on page 11

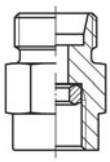
Tube O.D.	Thread Metric	Distance Adapter w/ Swivel Part No.	90° Adjustable Elbow Male Part No.	45° Adjustable Elbow Male Part No.	Tee Adjustable w/ Swivel Part No.	Tee Adjustable w/ Swivel Part No.	Straight Adjustable Swivel Nut Part No.	Non-return Valve Part No.
6L	M12x1.5	DA06L	EW06L	EV06L	ET06L	EL06L	GZ06L	RHD06L
8L	M14x1.5	DA08L	EW08L	EV08L	ET08L	EL08L	GZ08L	RHD08L
10L	M16x1.5	DA10L	EW10L	EV10L	ET10L	EL10L	GZ10L	RHD10L
12L	M18x1.5	DA12L	EW12L	EV12L	ET12L	EL12L	GZ12L	RHD12L
15L	M22x1.5	DA15L	EW15L	EV15L	ET15L	EL15L	GZ15L	RHD15L
18L	M26x1.5	DA18L	EW18L	EV18L	ET18L	EL18L	GZ18L	RHD18L
22L	M30x2.0	DA22L	EW22L	EV22L	ET22L	EL22L	GZ22L	RHD22L
28L	M36x2.0	DA28L	EW28L	EV28L	ET28L	EL28L	GZ28L	RHD28L
35L	M45x2.0	DA35L	EW35L	EV35L	ET35L	EL35L	GZ35L	RHD35L
42L	M52x2.0	DA42L	EW42L	EV42L	ET42L	EL42L	GZ42L	RHD42L
6S	M14x1.5	DA06S	EW06S	EV06S	ET06S	EL06S	GZ06S	RHD06S
8S	M16x1.5	DA08S	EW08S	EV08S	ET08S	EL08S	GZ08S	RDH08S
10S	M18x1.5	DA10S	EW10S	EV10S	ET10S	EL10S	GZ10S	RHD10S
12S	M20x1.5	DA12S	EW12S	EV12S	ET12S	EL12S	GZ12S	RHD12S
14S	M22x1.5	DA14S	EW14S	EV14S	ET14S	EL14S	GZ14S	RHD14S
16S	M24x1.5	DA16S	EW16S	EV16S	ET16S	EL16S	GZ16S	RHD16S
20S	M30x2.0	DA20S	EW20S	EV20S	ET20S	EL20S	GZ20S	RHD20S
25S	M36x2.0	DA25S	EW25S	EV25S	ET25S	EL25S	GZ25S	RHD25S
30S	M42x2.0	DA30S	EW30S	EV30S	ET30S	EL30S	GZ30S	RHD30S
38S	M52x2.0	DA38S	EW38S	EV38S	ET38S	EL38S	GZ38S	RHD 38S

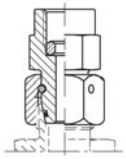
For stainless steel, add SS behind Part No. Other dimensions and material qualities on request.
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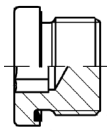
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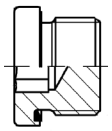
For working pressure, see table on page 11								
Tube O.D.	**Thread BSP/ NPT**	**Male Connector BSPP Part No.**	**Swivel Connector BSPP Part No.**	**Female Connector BSPP Part No.**	**Male Connector NPT Part No.**	**Male Swivel Connector NPT Part No.**	**90° Male Elbow NPT Part No.**	**90° Male Elbow BSPT Part No.**
6L	1/8	GE06LR	EGE06LR	GAI06LR	GE06LN		WE06LN	WE06LR
6L	1/4	GE06LR04			GE06LN04			
6L	3/8	GE06LR06						
6L	1/2	GE06LR08						
8L	1/8	GE08LR02			GE08LN02			
8L	1/4	GE08LR	EGE08LR	GAI08LR	GE08LN		WE08LN	WE08LR
8L	3/8	GE08LR06						
8L	1/2	GE08LR08						
10L	1/4	GE10LR	EGE10LR	GAI10LR	GE10LN	EGE10LN	WE10LN	WE10LR
10L	3/8	GE10LR06		GAI10LR06	GE10LN06			
10L	1/2	GE10LR08		GAI10LR08	GE10LN08			
12L	1/4	GE12LR04	EGE12LR04					
12L	3/8	GE12LR	EGE12LR	GAI12LR			WE12LN	WE12LR
12L	1/2	GE12LR08	EGE12LR08					
12L	3/4	GE12LR12						
15L	3/8	GE15LR06						
15L	1/2	GE15LR	EGE15LR	GAI15LR	GE15LN		WE12LN	WE12LR
15L	3/4	GE15LR12						
18L	3/8	GE18LR06						
18L	1/2	GE18LR	EGE18LR	GAI18LR	GE18LN		WE18LN	WE18LR
18L	3/4	GE18LR12						
22L	1/2	GE22LR08						
22L	3/4	GE22LR	EGE22LR	GAI22LR	GE22LN		WE22LN	WE22LR
28L	3/4	GE28LR12			GE28LN			
28L	1	GE28LR	EGE28LR	GAI28LR	GE28LN	EGE28LN		
35L	1	GE35LR16						
35L	1.1/4	GE35LR	EGE35LR	GAI35LR	GE35LN		WE35LN	WE35LR
42L	1.1/4	GE42LR20	EGE42LR20					
42L	1.1/2	GE42LR	EGE42LR	GAI42LR	GE42LN		WE42LN	WE42LR
6S	1/4	GE06SR	EGE06SR	GAI06SR	GE06SN	EGE06SN	WE06SN	WE06SR
6S	3/8	GE06SR06			GE06SN06			
6S	1/2	GE06SR08						
8S	1/4	GE08SR	EGE08SR	GAI08SR	GE08SN	EGE08SN	WE08SN	WE08SR
8S	3/8	GE08SR06						
10S	1/4	GE10SR04			GE10SN04			
10S	3/8	GE10SR	EGE10SR	GAI10SR	GE10SN		WE10SN	WE10SR
10S	1/2	GE10SR08			GE10SN08			
12S	1/4	GE12SR04	EGE12SR04		GE12SN04			
12S	3/8	GE12SR	EGE12SR	GAI12SR	GE12SN		WE12SN	WE12SR
12S	1/2	GE12SR08	EGE12SR08		GE12SN08			
14S	3/8	GE14SR06					WE14SN	WE14SR
14S	1/2	GE14SR	EGE14SR	GAI14SR				
16S	3/8	GE16SR06						
16S	1/2	GE16SR	EGE16SR	GAI16SR	GE16SN		WE16SN	WE16SR
16S	3/4	GE16SR12						
20S	1/2	GE20SR08						
20S	3/4	GE20SR	EGE20SR	GAI20SR	GE20SN	EGE20SN	WE20SN	WE20SR
25S	3/4	GE25SR12						
25S	1	GE25SR	EGE25SR	GAI25SR	GE25SN	EGE25SN	WE25SN	WE25SR
30S	1	GE30SR16	EGE30SR16					
30S	1.1/4	GE30SR	EGE30SR	GAI30SR	GE30SN		WE30SN	WE30SR
38S	1.1/4	GE38SR20	EGE38SR20					
38S	1.1/2	GE38SR	EGE38SR	GAI38SR	GE38SN		WE38SN	WE38SR

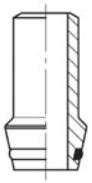
For stainless steel, add SS behind Part No. Other dimensions and material qualities on request.
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For working pressure, see table on page 11				For working pressure, see table on page 11		For working pressure, see table on page 11		For working pressure, see table on page 11	
Tube O.D.	Thread BSP Parallel	Pressure Gauge Con. BSPP Part No.	Sw. Pressure Gauge Con. BSPP Part No.	Thread BSP parallel	Blanking Plug BSPP Part No.	Thread MM parallel	Blanking Plug Metric Part No.	Tube O.D.	O-ring Weld Nipple Part No.
6L	1/4	MAV06LR	MAVE06LR	1/8	VSTI02	M08x1.5	VSTIM08	8	SKA08X2
8L	1/4	MAV08LR	MAVE08LR	1/4	VSTI04	M10x1.0	VSTIM10	10	SKA10X2
10L	1/4	MAV10LR	MAVE10LR	3/8	VSTI06	M12x1.5	VSTIM12	12	SKA12X2.5
12L	1/4	MAV12LR	MAVE12LR	1/2	VSTI08	M14x1.5	VSTIM14	15	SKA15X2.5
6S	1/4		MAVE06SR04	3/4	VSTI12	M16x1.5	VSTIM16	16	SKA16X3
6S	1/2	MAV06SR	MAVE06SR	1	VSTI16	M18x1.5	VSTIM18	18	SKA18X2.5
8S	1/4		MAVE08SR04	1.1/4	VSTI20	M20x1.5	VSTIM20	20	SKA20X2.5
8S	1/2	MAV08SR	MAVE08SR	1.1/2	VSTI24	M22x1.5	VSTIM22	20	SKA20X3
10S	1/4		MAVE10SR04	2	VSTI32	M26x1.5	VSTIM26	25	SKA25X3
10S	1/2	MAV10SR	MAVE10SR			M30x1.5	VSTIM30	28	SKA28X3
12S	1/4		MAVE12SR04			M33x2.0	VSTIM33	30	SKA30X4
12S	1/2	MAV12SR	MAVE12SR			M42x2.0	VSTIM42	35	SKA35X4
						M48x2.0	VSTIM48	38	SKA38X5

Working Pressure Table for Metric DIN steel fittings

*Pressure for some dimensions deviate from this table.

Tube O.D.	FM FM SSA	AS, DA EGE R+N GE R+N* ET, EL, EV, EW GZ, GZR, GR MAV, MAVE GAI M ROV VKA RED* K, W, G, T WSV, SV, ESV	VEE R WEE R LEE R TEE R	WH	GAI R	WE R*
6L	500	500	420	315	500	315
8L	500	500	420	315	500	315
10L	500	500	420	315	500	315
12L	400	400	400	315	400	315
15L	400	400	400	315	400	315
18L	400	400	400	315	400	315
22L	250	250	250	160	250	160
28L	250	250	250	160	250	160
35L	250	250	250	160	250	160
42L	250	250	250	160	250	160
6S	800	900	500	400	630	400
8S	800	900	500	400	630	400
10S	800	900	400	400	630	400
12S	800	900	400	400	630	400
14S	530	700	-	400	700	630
16S	530	630	400	400	400	400
20S	530	630	400	250	400	400
25S	420	630	400	250	400	250
30S	420	420	250	250	400	160
38S	420	420	250	250	315	160

BSP Thread	VSTI R
1/8	500
1/4	500
3/8	500
1/2	500
3/4	500
1	500
1.1/4	400
1.1/2	400
2	250

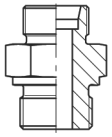
Largest BSP Thread	RI
1/8	630
1/4	630
3/8	630
1/2	630
3/4	400
1	400
1.1/4	400
1.1/2	315
2	250

Metric Thread	VSTI M
8	500
10	500
12	500
14	500
16	500
18	500
20	500
22	500
26	500
30	500
33	500
42	400
48	400

5

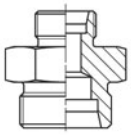
For stainless steel, add SS behind Part No. Other dimensions and material qualities on request.
More information about products on our website: www.fluidcontrol.no

For working pressure, see table on page 11



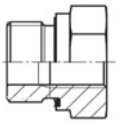
Tube O.D.	Thread Metric	Male Connector Metric Part No.
6L	M10x1.0	GE06LM
8L	M12x1.5	GE08LM12
8L	M18x1.5	GE08LM18
10L	M14x1.5	GE10LM
10L	M16x1.5	GE10LM16
10L	M18x1.5	GE10LM18
10L	M22x1.5	GE10LM22
12L	M14x1.5	GE12LM14
12L	M16x1.5	GE12LM
12L	M18x1.5	GE12LM18
12L	M22x1.5	GE12LM22
15L	M16x1.5	GE15LM16
15L	M18x1.5	GE15LM
15L	M22x1.5	GE15LM22
18L	M18x1.5	GE18LM18
18L	M22x1.5	GE18LM
22L	M22x1.5	GE22LM22
22L	M26x1.5	GE22LM
28L	M33x2.0	GE28LM
35L	M42x2.0	GE35LM
42L	M48x2.0	GE42LM
6S	M12x1.5	GE06SM
8S	M14x1.5	GE08SM
10S	M16x1.5	GE10SM
12S	M18x1.5	GE12SM
12S	M22x1.5	GE12SM22
14S	M20x1.5	GE14SM
16	M18x1.5	GE16SM18
16	M22x1.5	GE16SM
20	M27x2.0	GE20SM
25	M33x2.0	GE25SM
30	M42x2.0	GE30SM
38	M48x2.0	GE38SM

For working pressure, see table on page 11



Tube 1 O.D.	Tube 2 O.D.	Straight Reducer Part No.
8L	6L	GR0806L
10L	6L	GR1006L
10L	8L	GR1008L
12L	6L	GR1206L
12L	8L	GR1208L
12L	10L	GR1210L
15L	10L	GR1510L
15L	12L	GR1512L
18L	10L	GR1810L
18L	12L	GR1812L
18L	15L	GR1815L
22L	12L	GR2212L
22L	15L	GR2215L
22L	18L	GR2218L
28L	18L	GR2818L
28L	22L	GR2822L
35L	22L	GR3522L
35L	28L	GR3528L
8S	6S	GR0806S
10S	6S	GR1006S
10S	8S	GR1008S
12S	6S	GR1206S
12S	8S	GR1208S
12S	10S	GR1210S
14S	10S	GR1410S
14S	12S	GR1412S
16S	12S	GR1612S
16S	14S	GR1614S
20S	10S	GR2010S
20S	12S	GR2012S
20S	16S	GR2016S
25S	16S	GR2516S
25S	20S	GR2520S
30S	20S	GR3020S
30S	25S	GR3025S
38S	30S	GR3830S

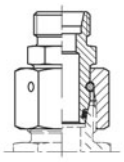
For working pressure, see table on page 11



Male Thread BSPP	Female Thread BSPP	Thread Reducer/ Expander BSPP Part No.
1/8	1/4	RI0204
1/8	3/8	RI0206
1/4	1/8	RI0402
1/4	3/8	RI0406
1/4	1/2	RI0408
1/4	3/4	RI0412
3/8	1/8	RI0602
3/8	1/4	RI0604
3/8	1/2	RI0608
3/8	3/4	RI0612
1/2	1/8	RI0802
1/2	1/4	RI0804
1/2	3/8	RI0806
1/2	3/4	RI0812
1/2	1	RI0816
1/2	1.1/4	RI0820
3/4	1/4	RI1204
3/4	3/8	RI1206
3/4	1/2	RI1208
3/4	1	RI1216
3/4	1.1/4	RI1220
3/4	1.1/2	RI1224
1	1/4	RI1604
1	3/8	RI1606
1	1/2	RI1608
1	3/4	RI1612
1	1.1/4	RI1620
1	1.1/2	RI1624
1.1/4	1/2	RI2008
1.1/4	3/4	RI2012
1.1/4	1	RI2016
1.1/4	1.1/2	RI2024
1.1/2	1/2	RI2408
1.1/2	3/4	RI2412
1.1/2	1	RI2416
1.1/2	1.1/4	RI2420
2	1.1/2	RI3224

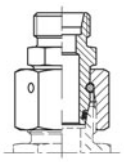
For stainless steel, add SS behind Part No. Other dimensions and material qualities on request.
More information about products on our website: www.fluidcontrol.no

For working pressure, see table on page 11



Tube 1 O.D.	Thread 1 Metric	Tube 1 O.D.	Thread 2 Metric	Male Connector Metric Light Series Part No.
8	M14x1.5	6	M12x1.5	RED0806L
10	M16x1.5	6	M12x1.5	RED1006L
10	M16x1.5	8	M14x1.5	RED1008L
12	M18x1.5	6	M12x1.5	RED1206L
12	M18x1.5	8	M14x1.5	RED1208L
12	M18x1.5	10	M16x1.5	RED1210L
15	M22x1.5	6	M12x1.5	RED1506L
15	M22x1.5	8	M14x1.5	RED1508L
15	M22x1.5	10	M16x1.5	RED1510L
15	M22x1.5	12	M18x1.5	RED1512L
18	M26x1.5	6	M12x1.5	RED1806L
18	M26x1.5	8	M14x1.5	RED1808L
18	M26x1.5	10	M16x1.5	RED1810L
18	M26x1.5	12	M18x1.5	RED1812L
18	M26x1.5	15	M22x1.5	RED1815L
22	M30x2.0	6	M12x1.5	RED2206L
22	M30x2.0	8	M14x1.5	RED2208L
22	M30x2.0	10	M16x1.5	RED2210L
22	M30x2.0	12	M18x1.5	RED2212L
22	M30x2.0	15	M22x1.5	RED2215L
22	M30x2.0	18	M26x1.5	RED2218L
28	M36x2.0	6	M12x1.5	RED2806L
28	M36x2.0	8	M14x1.5	RED2808L
28	M36x2.0	10	M16x1.5	RED2810L
28	M36x2.0	12	M18x1.5	RED2812L
28	M36x2.0	15	M22x1.5	RED2815L
28	M36x2.0	18	M26x1.5	RED2818L
28	M36x2.0	22	M30x2.0	RED2822L
35	M45x2.0	6	M12x1.5	RED3506L
35	M45x2.0	8	M14x1.5	RED3508L
35	M45x2.0	10	M16x1.5	RED3510L
35	M45x2.0	12	M18x1.5	RED3512L
35	M45x2.0	15	M22x1.5	RED3515L
35	M45x2.0	18	M26x1.5	RED3518L
35	M45x2.0	22	M30x2.0	RED3522L
35	M45x2.0	28	M36x2.0	RED3528L
42	M52x2.0	6	M12x1.5	RED4206L
42	M52x2.0	8	M14x1.5	RED4208L
42	M52x2.0	10	M16x1.5	RED4210L
42	M52x2.0	12	M18x1.5	RED4212L
42	M52x2.0	15	M22x1.5	RED4215L
42	M52x2.0	18	M26x1.5	RED4218L
42	M52x2.0	22	M30x2.0	RED4222L
42	M52x2.0	28	M36x2.0	RED4228L
42	M52x2.0	35	M45x2.0	RED4235L

For working pressure, see table on page 11



Tube 1 O.D.	Thread 1 Metric	Tube 1 O.D.	Thread 2 Metric	Male Connector Metric Strong Series Part No.
8	M16x1.5	6	M14x1.5	RED0806S
10	M18x1.5	6	M14x1.5	RED1006S
10	M18x1.5	8	M16x1.5	RED1008S
12	M20x1.5	6	M14x1.5	RED1206S
12	M20x1.5	8	M16x1.5	RED1208S
12	M20x1.5	10	M18x1.5	RED1210S
14	M22x1.5	6	M14x1.5	RED1406S
14	M22x1.5	8	M16x1.5	RED1408S
14	M22x1.5	10	M18x1.5	RED1410S
14	M22x1.5	12	M20x1.5	RED1412S
16	M24x1.5	6	M14x1.5	RED1606S
16	M24x1.5	8	M16x1.5	RED1608S
16	M24x1.5	10	M18x1.5	RED1610S
16	M24x1.5	12	M20x1.5	RED1612S
16	M24x1.5	14	M22x1.5	RED1614S
20	M30x2.0	6	M14x1.5	RED2006S
20	M30x2.0	8	M16x1.5	RED2008S
20	M30x2.0	10	M18x1.5	RED2010S
20	M30x2.0	12	M20x1.5	RED2012S
20	M30x2.0	14	M22x1.5	RED2014S
20	M30x2.0	16	M24x1.5	RED2016S
25	M36x2.0	6	M14x1.5	RED2506S
25	M36x2.0	8	M16x1.5	RED2508S
25	M36x2.0	10	M18x1.5	RED2510S
25	M36x2.0	12	M20x1.5	RED2512S
25	M36x2.0	14	M22x1.5	RED2514S
25	M36x2.0	16	M24x1.5	RED2516S
25	M36x2.0	20	M30x2.0	RED2520S
30	M42x2.0	6	M14x1.5	RED3006S
30	M42x2.0	8	M16x1.5	RED3008S
30	M42x2.0	10	M18x1.5	RED3010S
30	M42x2.0	12	M20x1.5	RED3012S
30	M42x2.0	14	M22x1.5	RED3014S
30	M42x2.0	16	M24x1.5	RED3016S
30	M42x2.0	20	M30x2.0	RED3020S
30	M42x2.0	25	M36x2.0	RED3025S
38	M52x2.0	6	M14x1.5	RED3806S
38	M52x2.0	8	M16x1.5	RED3808S
38	M52x2.0	10	M18x1.5	RED3810S
38	M52x2.0	12	M20x1.5	RED3812S
38	M52x2.0	14	M22x1.5	RED3814S
38	M52x2.0	16	M24x1.5	RED3816S
38	M52x2.0	20	M30x2.0	RED3820S
38	M52x2.0	25	M36x2.0	RED3825S
38	M52x2.0	30	M42x2.0	RED3830S

5

Hydraulic Tube
ST. 37.4
DIN 2391 C/DIN 2445

Seamless cold-drawn precision steel tubes in materials ST.37.4, according to DIN 2391 C/DIN 2445. Annealed and phosphated.
Temperature range: -40° to + 120° without pressure reduction.
Standard lengths: 6 m. Available with certificate
DIN 50049, 3.1

# Part No.	OD+WT mm	bar 1	bar 2	bar	kg/m
239-06x1.0	6x1.0	252	458	1358	0.07
239-06x1.5	6x1.5	477	755	2082	0.17
239-08x1.0	8x1.0	184	330	996	0.17
239-08x1.5	8x1.5	342	528	1421	0.17
239-10x1,5	10x1,5	267	406	1393	0.31
239-10x2.0	10x2.0	395	571	1537	0.40
239-12x1.5	12x1.5	218	330	887	0.39
239-12x2.0	12x2.0	321	459	1235	0.49
239-14x2.0	14x2.0	271	384	1033	0.59
239-15x1.5	15x1.5	172	257	692	0.50
239-15x2.0	15x2.0	251	355	947	0.64
239-16x2.0	16x2.0	234	330	887	0.69
239-16x2.5	16x1.5	313	425	1145	0.83
239-18x1.5	18x1.5	142	211	568	0.61
239-18x2.0	18x2.0	206	289	778	0.79
239-20x2.0	20x2.0	184	257	692	0.89
239-20x3.0	20x3.0	308	406	1092	1.25
239-22x1.5	22x1.5	115	172	456	0.76
239-22x2.0	22x2.0	166	323	624	0.99
239-25x2.0	25x2.0	145	202	543	1.13
239-25x2.5	25x2.5	192	257	692	1.39
239-25x3.0	25x3.0	241	315	847	1.63
239-25x4.0	25x4.0	343	437	1178	2.07
239-28x2.0	28x2.0	129	179	481	1.28
239-30x3.0	30x3.0	198	257	692	2.00
239-30x4.0	30x4.0	279	355	955	2.51
239-38x4.0	38x4.0	216	272	733	3.55
239-38x5.0	38x5.0	281	349	940	4.07
239-42x3.0	42x3.0	138	179	481	2.89

Working pressure
1: Bending, tolerance and corrosion included.
2: For straight pipes, tolerance is included but not bending and corrosion.

Hydraulic Tube DIN
AISI 316 L
ASTM-S269, DIN 2391 C

Seamless stainless precision steel tubes in materials AISI 316 (1.440), produced according to ASTM A269, DIN 2391C. Annealed and stained.
Available with certificate DIN 50049, 3.1
Standard lengths: 6 m.

# Part No.	OD+WT mm	bar	bar	kg/m
269-06x1.0	6x1.0	525	2120	0.07
269-08x1.0	8x1.0	379	1514	0.17
269-08x1.5	8x1.5	605	2446	0.24
269-10x1,5	10x1.5	467	1871	0.31
269-10x2.0	10x2.0	654	2650	0.40
269-12x1.5	12x1.5	381	1514	0.39
269-12x2.0	12x2.0	528	2120	0.49
269-15x1.5	15x1.5	298	1178	0.50
269-16x1.5	16x1.5	278	1093	0.54
269-16x2.0	16x2.0	382	1514	0.69
269-18x1.5	18x1.5	245	964	0.61
269-18x2.0	18x2.0	335	1325	0.79
269-20x2.0	20x2.0	299	1178	0.89
269-20x2.5	20x3.0	382	1514	1.08
269-22x2.0	22x2.0	299	1060	0.99
269-25x2.0	25x2.0	235	922	1.13
269-25x2.5	25x2.5	299	1178	1.39
269-25x3.0	25x3.0	364	1448	1.63
269-25x4.0	25x4.0	504	2019	2.07
269-28x2.0	28x2.0	208	815	1.28
269-30x2.5	30x2.5	246	964	1.70
269-30x3.0	30x3.0	298	1178	2.00
269-30x4.0	30x4.0	410	1631	3.35
269-35x2.5	35x2.5	209	815	2.00
269-35x3.0	35x3.0	252	994	2.37
269-38x3.0	38x3.0	231	909	2.59
269-38x4.0	38x4.0	316	1247	3.38
269-38x5.0	38x5.0	404	1606	4.07
269-42x2.5	42x2.5	177	671	2.43
269-42x3.0	42x3.0	208	815	2.89

Working pressure:
Bending, tolerance and corrosion included.
Burst pressure:
Factor based on the failure limit and tensile strength.
Polished tubes on request

Hydraulic Tube Imperial
AISI 316 L

Seamless stainless precision steel tubes in materials AISI 316.
Produced according to ASTM A-269
Available with certificate DIN 50049, 3.1
Safety factor 4:1 in the temperature range -40°C
to + 120°C
Standard lengths: 6 m.

# Part No.	 OD+WT inch	 psi
269T-04x028	1/4"x0.028	4000
269T-04x035	1/4"x0.035	5100
269T-04x049	1/4"x0.049	7500
269T-04x065	1/4"x0.065	10300
269T-06x035	3/8"x0.035	3300
269T-06x049	3/8"x0.049	4800
269T-06x065	3/8"x0.065	6600
269T-08x035	1/2"x0.035	2500
269T-08x049	1/2"x0.049	3500
269T-08x065	1/2"x0.065	4800
269T-08x083	1/2"x0.083	6300
269T-12x049	3/4"x0.049	2400
269T-12x065	3/4"x0.065	3300
269T-12x083	3/4"x0.083	4300
269T-12x095	3/4"x0.095	5000
269T-12x109	3/4"x0.109	5800
269T-16x065	1"x0.065	2400
269T-16x083	1"x0.083	3200
269T-16x095	1"x0.095	3700
269T-16x109	1"x0.109	4200
269T-16x120	1"x0.120	4700

Polished tubes on request

Clamp Parts

CONSTRUCTION:
Tube clamps according to DIN 3015, parts 1-3.
The upper and lower clamp halves are identical. The ribs of the clamping holes are stroke- and vibration-reducing and take up energy in the pipe axis direction. High sound absorption is guaranteed. Because of the construction the clamps are easy to clean.

ASSEMBLY:
Assembly on to metal welding plates: Place welding plates on a base appropriate for the load. Make sure that the clamps are properly aligned. Clamp lower clamp halve onto welding plate, insert tube, place upper clamp halve onto lower halve and fasten with the screws. Attention must be paid to the bias (after completed assembly, clamp halves may not be in contact!) Do not weld with fitted plastic clamp! Extended welding plates may be screw-fastened to the base.
Assembly on support rails: Support rails are available in pieces of 1 m or 2 m length. Weld on support rail or screw-fasten with fastening angle bracket. Insert support rail nuts in rail and turn until stoppage. Clamp lower clamp half on support rail nuts, insert tube, place upper clamp halve onto lower halve and fasten with the screws. Attention must be paid to the bias (after completed assembly, the clamp halves may not be in contact!)
Construction assembly: Clamp lower clamp halve on welding plate or support rail respectively, insert tube, place upper clamp halve on lower halve and fasten with fixing screws. The fixing screw juts out from the upper clamp halve. The application of a locking plate securely fastens the fixing screw and prevents twisting. Clamp on second clamp halve on to the fixing screws etc.

MATERIAL QUALITY:
Bottom and Top Plates: Carbon steel FE 35 is galvanized, or AISI 316 L. Support rails: Carbon steel FE 35.
For clamp parts in AISI 316 Add SS behind Part No.

Clamp Parts - Single Clamps

Clamps Group	Pipe O.D. mm	Pipe O.D. inch	Top Plate	Bottom Plate	Hexagon Head Screw	Stacking Bolt	Locking Plate for AFN	Rail Nut	Rail
1	Group 1		DPN-1	AP-1	KS-M6X30	AFN-1	SB	SM	TS
2	Group 2		DPN-2	AP-2	KS-M6X35	AFN-2	SB	SM	TS
3	Group 3		DPN-3	AP-3	KS-M6X40	AFN-3	SB	SM	TS
4	Group 4		DPN-4	AP-4	KS-M6X45	AFN-4	SB	SM	TS
5	Group 5		DPN-5	AP-5	KS-M6X60	AFN-5	SB	SM	TS

Clamp Parts - Double Clamps

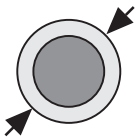
Clamps Group	Pipe O.D. mm	Pipe O.D. inch	Top Plate	Bottom Plate	Hexagon Head Screw	Stacking Bolt Double	Locking Plate for RAFN	Rail Nut	Rail
1	Group 1		RDPN-1	RAP-1	KS-M6X35	AFN-2	RSB	SM	TS
2	Group 2		RDPN-2	RAP-2	KS-M8X35	RAFN-2	RSB	RSM	RTS
3	Group 3		RDPN-3	RAP-3	KS-M8X45	RAFN-3	RSB	RSM	RTS
4	Group 4		RDPN-4	RAP-4	KS-M8X50	RAFN-4	RSB	RSM	RTS
5	Group 5		RDPN-5	RAP-5	KS-M8X60	RAFN-5	RSB	RSM	RTS

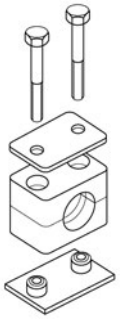
COMPLETE CLAMP AND CLAMP HALVES
Clamp Halves comes in pairs.
Standard clamps are available in Polypropylene.
For complete Polyamide (PA), Rubber (GU) and Aluminium (AL) clamps, add PA, GU or AL behind Part No.

Complete clamps consist of a base plate for welding, 2 clamps halves, top plate and screws.

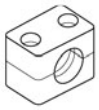
TEMPERATURE RANGE FOR CLAMPS:

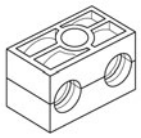
Polypropylene	-30°C to + 90°C
Polyamide (PA)	-40°C to + 120°C
Rubber (GU)	-50°C to + 120°C
Aluminium (AL)	to + 300°C





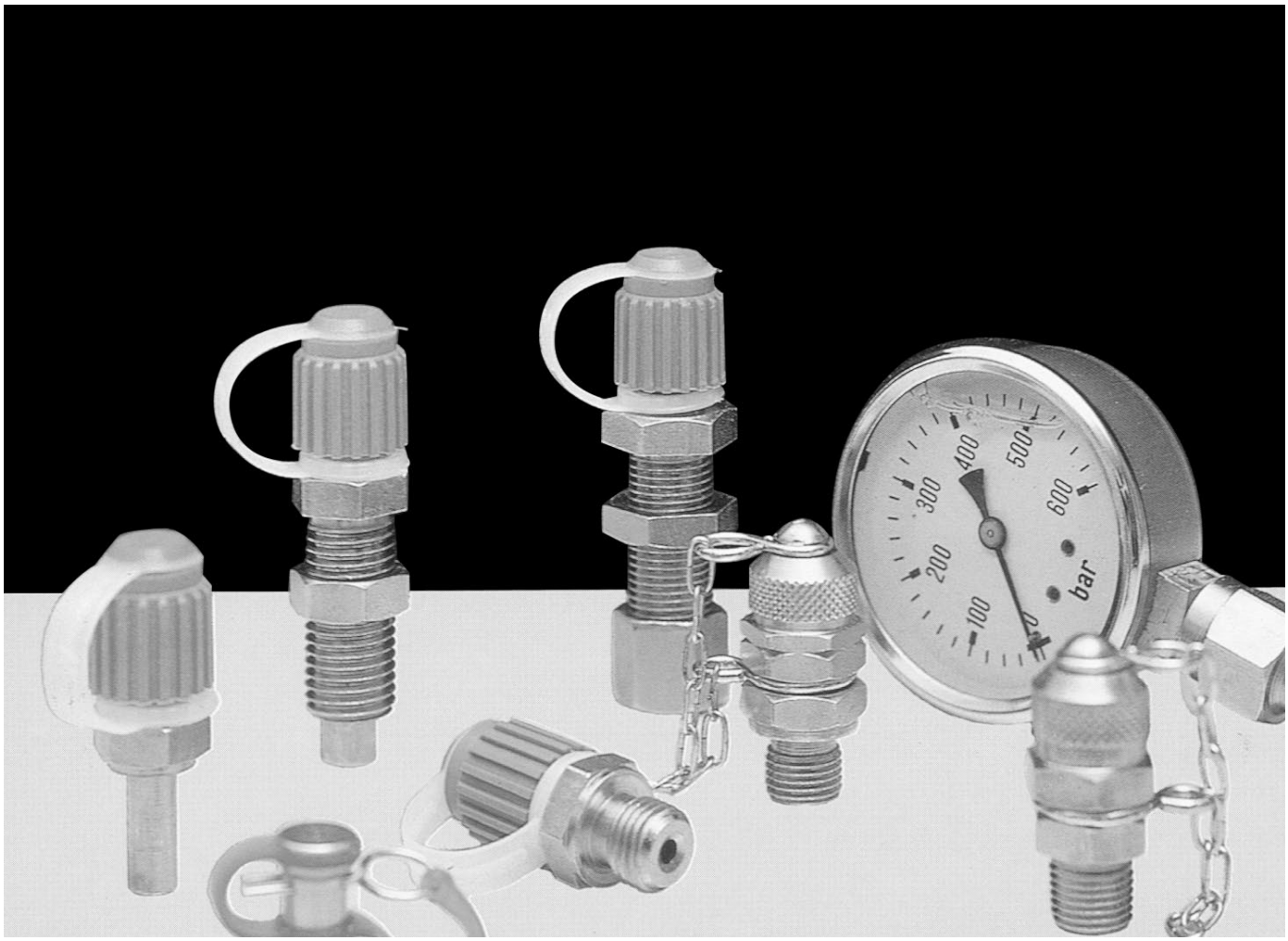






Clamps Group	Pipe O.D. mm	Pipe O.D. inch	Single Clamps Complete	Double Clamps Complete	Single Clamps 2 halves	Double Clamps 2 halves
1	6.0		5555-106	5556-106	NP-106	RNP-106
	6.4	1/4	5555-1064	5556-1064	NP-1064	RNP-1064
	8.0	5/16	5555-108	5556-108	NP-108	RNP-108
	9.5	3/8	5555-1095	5556-1095	NP-1095	RNP-1095
	10.0		5555-110.0	5556-110.0	NP-110.0	RNP-110.0
	12.0		5555-112	5556-112	NP-112	RNP-112
2	12.7	1/2	5555-2127	5556-2127	NP-2127	RNP-2127
	13.5		5555-2135	5556-2135	NP-2135	RNP-2135
	14.0		5555-214	5556-214	NP-214	RNP-214
	15.0		5555-215	5556-215	NP-215	RNP-215
	16.0	5/8	5555-216	5556-216	NP-216	RNP-216
	17.2		5555-2172	5556-2172	NP-2172	RNP-2172
	18.0		5555-218	5556-218	NP-218	RNP-218
3	19.0	3/4	5555-319	5556-319	NP-319	RNP-319
	20.0		5555-320	5556-320	NP-320	RNP-320
	21.3		5555-3213	5556-3213	NP-3213	RNP-3213
	22.0		5555-322	5556-322	NP-322	RNP-322
	23.0		5555-323	5556-323	NP-323	RNP-323
	25.0	1	5555-325	5556-325	NP-325	RNP-325
4	26.9		5555-4269	5556-4269	NP-4269	RNP-4269
	28.0		5555-428	5556-428	NP-428	RNP-428
	30.0		5555-430	5556-430	NP-430	RNP-430
5	32.0	1.1/4	5555-532	5556-532	NP-532	RNP-532
	33.7		5555-5337	5556-5337	NP-5337	RNP-5337
	35.0		5555-535	5556-535	NP-535	RNP-535
	38.0	1.1/2	5555-538	5556-538	NP-538	RNP-538
	40.0		5555-540	5556-540	NP-540	RNP-540
	42.0		5555-542	5556-542	NP-542	RNP-542

M16 x 2 - 630 BAR



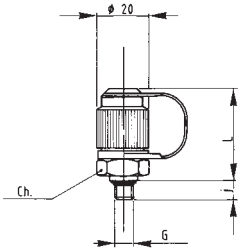
MINI CONTROL SYSTEM
- QUICK RELEASE COUPLINGS FOR PRESSURE MEASUREMENT

- For measurement of high pressure, low pressure or under-pressure
- For ventilation of cylinders and hydraulic systems
- For extraction of oil samples
- For connection of pressure gauges and pressure switches
- Connects easily under pressure
- Small dimensions, robust construction
- External thread entry before the valve opens

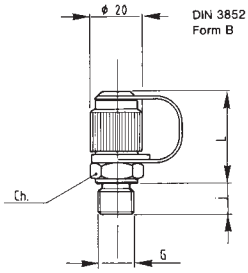
M16 x 2 - 630 BAR

For AISI 316, add SS behind Part No.

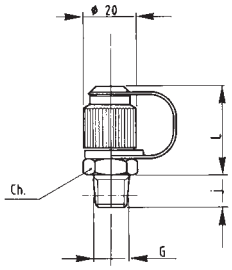
Test Point with threaded connection



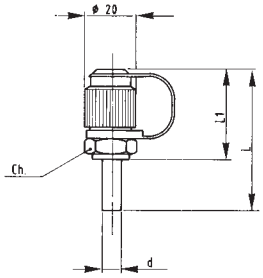
Test Point with threaded connection



Test Point with threaded connection



Test Point with pipe socket



With Steel Cap Part No.	Dimensions G	L mm	Ch mm	J mm
01.008.01	M8 x 1	36	17	8.5
01.010.01	M10 x 1	36	17	8.5
01.014.01	M14 x 1,5 ISO 6149	36	19	10,0
01.404.01	7/16" –20 UNF	36	17	9.0
01.406.01	9/16" –18 UNF	36	19	10.0
01.010.11	M10 x 1	36	17	8.5
01.012.11	M12 x 1,5	36	17	12
01.014.11	M14 x 1,5	36	19	12
01.016.11	M16 x 1,5	36	22	12
01.202.21	1/8" BSP	36	17	8
01.204.21	1/4" BSP	36	19	12
01.206.21	3/8" BSP	36	22	14

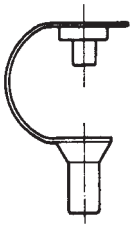
Adapter with BSP male delivered with ED seal

01.202.31	1/8" –28 BSPT	34	17	8
01.204.31	1/4" –19 BSPT	34	17	12
01.206.31	3/8" –19 BSPT	34	22	16
01.302.31	1/8" –27 NPTF	34	17	9.5
01.304.31	1/4" –18 NPTF	34	17	14
01.306.31	3/8" –18 NPTF	34	22	16

With Steel Cap Part No.	Dimensions d mm	Ch mm	L mm	L_1 mm
03.006.51	6	17	56	36
03.008.51	8	17	56	36
03.010.51	10	17	56	36
03.012.51	12	17	56	36

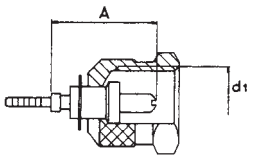
Hose couplings for Mini control system

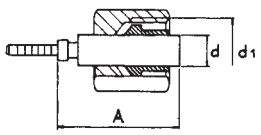
For hoses, see catalogue group 2 page 6

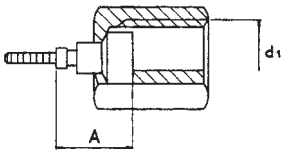


Couplings Part No. are complete with pressure sleeves, and include sleeves with dust plugs for M16x2 screw couplings.

All stated dimensions are including plastic dust cap.







M16x2 Nut Connection

Part No.	A mm	d mm	d1 mm	P.max bar
801.10.162	19		M16x2	640

Pipe Socket Coupling

801.32.006	24	6	M14x1.5	640
801.32.008	24	8	M16x1.5	640

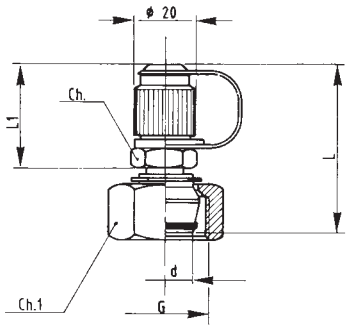
Pressure Gauge Coupling

801.50.204	25		1/4" BSP	640
801.50.208	25		1/2" BSP	640

M16 x 2 - 630 BAR

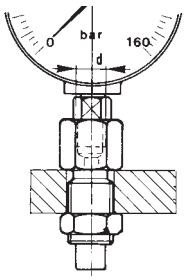
5

Test Point With Threaded Connection With 24° Cone Adapter (DIN 2553)



Part No.	Dimensions d mm	Ch mm	Ch1 mm	L1 mm	G mm	P max bar
02.010.61	10	17	19	36	M16 x 1.5	315
02.012.61	12	17	22	36	M18 x 1.5	315
02.015.61	15	17	27	36	M22 x 1.5	315
02.018.61	18	17	32	36	M26 x 1.5	315
02.022.61	22	17	36	36	M30 x 2	160
02.028.61	28	17	41	36	M36 x 2	160
02.035.61	35	17	50	36	M45 x 2	160
02.042.61	42		60	36	M52 x 2	160
02.110.61	10	17	22	36	M18 x 1.5	630
02.112.61	12	17	22	36	M20 x 1.5	630
02.114.61	14	17	27	36	M22 x 1.5	630
02.116.61	16	17	30	36	M24 x 1.5	400
02.120.61	20	17	36	36	M30 x 2	400
02.125.61	25	17	46	36	M36 x 2	400
02.130.61	30	17	50	36	M42 x 2	400
02.138.61	38	17	60	36	M52 x 2	315

Pressure Gauge Bulk Head With Pressure Suppressor

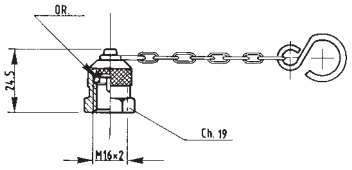


Part No.	Thread	Dimensions Ch mm	Ch$_1$ mm	L mm	L$_1$ mm
08.204.00.1	1/4" BSP	19	19	50	18
08.208.00.1	1/2" BSP	27	19	58	18

PLASTIC DUST CAP

Part No. 03.620.00





STEEL DUST CAP

Part No. 03.620.01

All stated dimensions are including plastic dust cap.

NB! Other material qualities on request

SensoControl®

ServiceJunior



Hand-held measuring devices
ServiceJunior: Perfect and simple measuring. On top of easy operating capturing pressure peaks in hydraulic system can be done immediately.
Measuring and displaying pressure very precise due to 4 digital display. Pressure peaks captured by displaying MAX reading.
ServiceJunior is powered by a battery.

Complete ServiceJunior Kit
- incl. Test Point Adapters and Test Hoses
- Ready to start

SensoControl®

Serviceman Series





The SensoControl® Serviceman Kits (SC-500-01, SC-510-01) are basic equipment to measure pressure, temperature, flow and rotational speed in hydraulics. Simple to operate; particularly suitable for on-site use.

All **SensoControl®** handmeters are provided with sensor recognition. The measuring ranges are automatically scaled and shown on the display. This prevents measuring errors and makes time-consuming adjustment work unnecessary.

SensoControl®

ServiceMaster Series



The **ServiceMaster** is a multi-channel handmeter for the simultaneous measuring of important hydraulic values: **all hydraulic parameters, such as pressure, differential pressure, flow and hydraulic power can be measured, displayed, stored and processed.**



SCKIT-250/350 – Basic and extended Kits in order to measure up to 3 hydraulic data simultaneously.

ServiceMaster Series





SensoControl® handmeters and complete measuring systems are perfectly suited measuring tools for every application. Whether they are used in the industrial area, in mobile hydraulics, for service or repair: measuring and processing of hydraulic values is the basis of safe trouble shooting. The systematic search of errors with modern means is something the service engineer simply cannot do without.

To meet the requirements in both modern industrial hydraulics and complex mobile hydraulics, we offer a range of different models.
SCKIT-400/450 – Advanced Kits for complete diagnosis including software and printer. Up to 6 channels can be measured, displayed and analyzed.

SensoControl®

Pressure Controller SCPSD



Easy handling, high functionality and longterm stability service life are the main characteristics of the electronic **Pressure Controller SCPSD.**

Features:
- Bar/PSI/MPa
- compact design
- can be swivelled
- robust housing (IP 67)
- easy operation
- 2 switching outputs
- 4 limit values
- adjustable analogue output
- delay times (damping)
- hysteresis/window function
- password

If the pressure is to be displayed, or if rapid switching or analogue signals, which have to be adjusted simply and without additional calibration, are required, then the SCPSD is the ideal solution.

Temperature Controller SCPSD



Easy operation and high functionality are the main characteristics from the electronic **Temperature Controller SCTSD.**

Features:
- °C and °F
- compact design
- can be swivelled
- robust housing (IP 67)
- easy operation
- 2 switching outputs
- 4 limit values
- adjustable analogue output
- delay times (damping)
- hysteresis/window function
- password

If the temperature is to be displayed or temperature-dependent switching or analogue signals, which need to be adjusted simply and without additional calibration, are required, then the SCTSD is the ideal solution.

Pressure Sensors SCP/SCPT



Longterm stability, robust compact housing and protection from interference are the main characteristics of the electronic pressure sensor SCP.

Features:
- long term stability
- stainless steel housing
- G 1/2 + G 1/4 BSPP
- compact design
- relative and absolute pressure
- combi-sensor for pressure and temperature

If pressure is to be captured reliably in the long term and if compact dimensions are needed, the SCP is appropriate. If a temperature signal is additionally required, the combi-sensor is the solution.

Temperature Sensor SCT



Compact design and high working pressure are the characteristics of the electronic temperature sensor **SCT**.

Features:
- working pressure up to 630 bar
- compact design
- stainless steel housing
- easy set-up
- –50°C to 250°C
- 0/4 ... 20 mA

If temperatures are to be measured at higher pressures and if a compact design is needed, then the SCT is used.

5

SensoControl®

Adaptors SCA



Broad range of measuring points and adaptors in galvanized finish for rapid, clean and simple adoption of sensors and measuring equipment to hydraulic systems. Plug and screw designs with various threads and seal forms are available.

For a complete **SensoControl®** catalog, see the product pages on our website www.fluidcontrol.no.

SCE-020 Panel Instrument



Plenty of connections, flexible display and many outputs are the main characteristics of panel instrument **SCE-020**.

Features:
- Inputs: Current
  Voltage
  Frequency
- Units freely selectable
- Adjustable display range
- Outputs: Switch
  Analogue output
- Serial interface: RS 232

To display easily and flexibly various measurement values, panel instrument **SCE-020** is used.

SCE-100 Process Manager



Plenty of connections, flexible dual display and universal evaluation possibilities are the main characteristics of the **Process Manager SCE-100.**
Features:
- dual display
- units selectable
- 4 switch outputs
- 8 limit values
- serial interface RS 232
- min. and max. memory
- difference display
- differential switch output
- built-in clock
- password protection

If various measurement values are to be displayed simultaneously and several switch outputs are needed, the **Process Manager SCE 100** is used (eg. difference signal of two sensors or tank temperature monitoring).

Pressure Gauge - AISI 304

- Brass connection parts
- 1/4" BSP connection
- 63 mm stainless steel AISI 304 case
- BAR and PSI dial

Measuring Range BAR	Bottom Connection	Back Connection
-1,5/1	T213-0	T214-0
1	T213-001	T214-001
6	T213-006	T214-006
10	T213-010	T214-010
16	T213-016	T214-016
25	T213-025	T214-025
40	T213-040	T214-040
60	T213-060	T214-060
100	T213-100	T214-100
250	T213-250	T214-250
400	T213-400	T214-400
600	T213-600	T214-600



We can deliver pressure gauges with 100 mm dial and other special pressure gauges on request. Specify measuring range, connection type, material quality and if the pressure gauge shall be liquid-sealed.

Pressure Gauge - AISI 316

- 1/4" NPT connection
- 63 mm stainless steel AISI 316 case
- BAR and PSI dial

Measuring Range BAR	Bottom Connection	Back Connection
-1.5/1	T211-0	T212-0
1	T211-001	T212-001
6	T211-006	T212-006
10	T211-010	T212-010
16	T211-016	T212-016
25	T211-025	T212-025
40	T211-040	T212-040
60	T211-060	T212-060
100	T211-100	T212-100
250	T211-250	T212-250
400	T211-400	T212-400
600	T211-600	T212-600



Bar for panel mounting	T216-0
Front flange for panel mounting	T217-0
Back flange	T218-0

Other combinations available on request.



Air Pressure Gauge

- 1/4" BSP connection
- 30 mm plastic case
- BAR dial

Measuring range BAR	Bottom Connection
10	T210-010
16	T210-016

Measuring range: 10 bar

Connection	Back Connection
1/8"	T220-010
1/4"	T221-010