

lubrication systems



DUAL-LINE SYSTEMS

Accessories

End line pressure switch - fittings - junction - piping



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Bilinear Systems

Bilinear systems are used on large machines and can lubricate points positioned at significant distances.

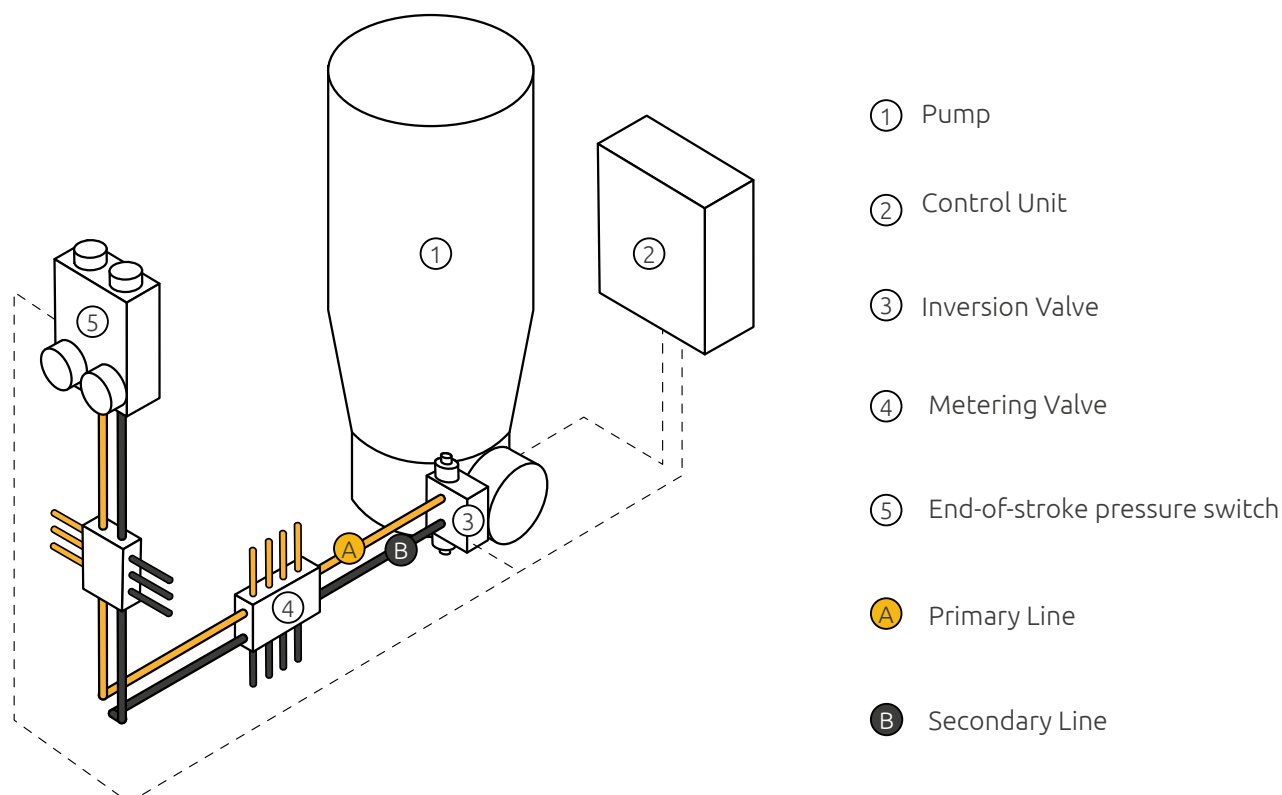
System Structure

These systems use two lines that operate alternately, with dosing valves positioned along them. A pump capable of handling pressures of up to 400 bar powers the system on two lines: one will be under pressure, while the other is in discharge mode connected to the reservoir (via a reversing valve). In some cases, an end-of-line pressure switch can be installed. The control unit is usually installed near the pump.

System Operation

The operation is based on a double alternating cycle. In the first cycle, the lubricant is pumped into the main line (A), moving the pilot pistons and subsequently the dosing pistons in one direction. All the lubricant located under the dosing piston is sent to the lubrication point while simultaneously filling the upper chamber of the dosing piston.

When the pressure set on the pressure switch or hydraulic reverser is reached, the pump switches the main line (A) to discharge into the reservoir and starts pumping into the main line (B). The pilot and dosing pistons move in the opposite direction, and the cycle repeats.



End line pressure switch

5N.PFL.C / 5N.PFL.G



The pressure switch is generally installed upstream of the last lubricant distributor in the main pressure line. It checks the system is working properly.

It can send a signal when the system is done lubricating

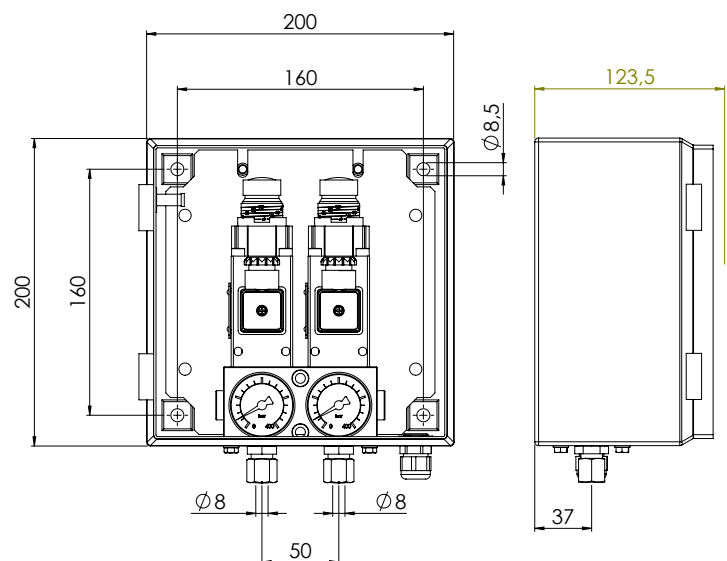
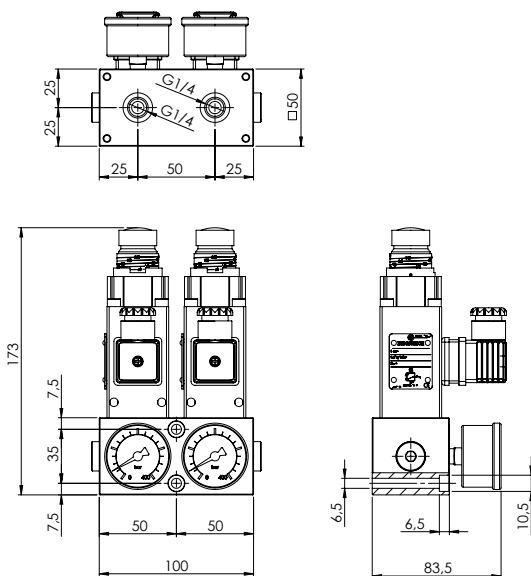
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Body	Steel
Working range	40 – 400 BAR $\pm$ 2%
Seals	Nbr + teflon
Protection rating	IP-65 connector in accordance to UNI EN 175301-803 (DIN43650)
Max fluid temperature	100° C
Electrical features	5 A / 14 VDC / 125 VAC / 250 VAC 4 A / 30 VDC
Fixed hysteresis	~10% of the set value
Max safety pressure	90 bar
Mechanical life	10 ⁶ Operations
Electrical contact	SPDT Silver

Ordering codes

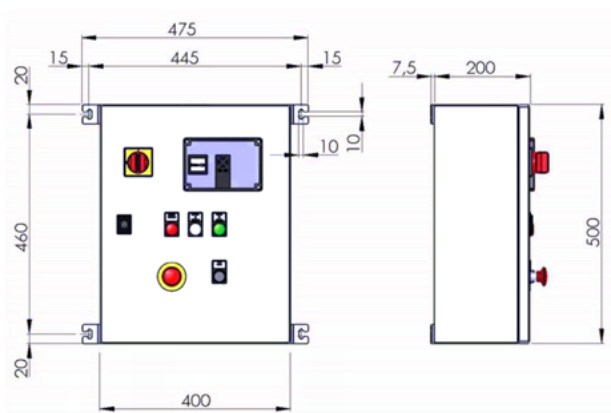
Boxed 5N.PFL.C

Unboxed 5N.PFL.G



Control unit

5N.TW..IN.CU



TW.IN-CU is a latest generation electrical device suitable for controlling double line lubrication systems in which you want to monitor and control all the functions.

All the functions and program choices are made via the front panel controls of the PLC on the outside of the closing door.

The electrical equipment operates by setting the machine pause or pulse time and a working time. The cycle consists of a pump start-up signal reception from the pressure switch line 1 or line 2 for inversion. If this signal is not received, an alarm is generated.

Start-up is also possible from an external pulse.

Power supply

Power supply on request. Possibility for a separated power for input and output circuits.

Controls

Dual line system control and remote for hydraulic inverter, min/max capacitive level (reed), continuous level ultrasound, thermal protection, remote alarm free contact, start/reset local/remote selector, pump-on remote contact.

Triggers and switches

Emergency button, main switch, door blocking switch.

Electric contacts

Additional terminal board, power contacts for inversion control (electromagnetic or electropneumatic), remote alarm free contact.

Structure

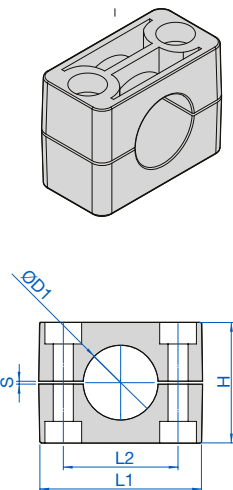
Painted steel box IP55.

Ordering Codes	Power Supply Voltage	Reversing valve power	Technical data	
5.CU.115.24	115 V	24 V DC	Power supply voltage	110V~ - 230V~ - 400V~ - 460V~
5.CU.230.24	230 V	24 V DC	Absorption	2 W (In Stop) - 10 W (In Start)
5.CU.480.24	480 V	24 V DC	Operating temperature	- 10 °C ÷ + 70 °C
5.CU.115.115	115 V	115 V	Storage temperature	- 20°C ÷ + 80 °C
5.CU.230.230	230 V	230 V	Operating humidity	90% max
			Frequency	50/60 Hz

Metallic tubes

Tube Ø	Steel	SS316.L
Ø 6 X 4	30.316.6	30.316.6.AISI
Ø 8 X 6	30.316.8	30.316.8.AISI
Ø 10 X 8	30.316.10	30.316.10.AISI
Ø 12 X 9	30.316.12	30.316.12.AISI
Ø 16 X 12	30.316.16	30.316.16.AISI
Ø 20 X 16	30.316.20	30.316.20.AISI
Ø 25 X 20	30.316.25	30.316.25.AISI
Ø 30 X 24	30.316.30	30.316.30.AISI

Single pipe clip



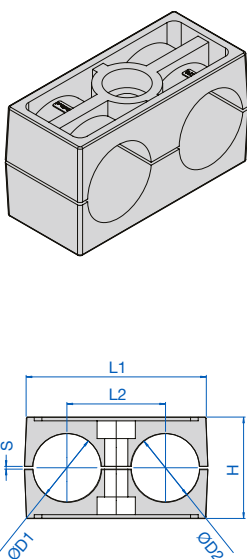
Single pipe clip with welding plate

Tube	Code clip	Code plate
Tube Ø 6 mm	TW.C2.06.PP	TW.08.P2.M6
Tube Ø 8 mm	TW.C2.08.PP	
Tube Ø 10 mm	TW.C2.10.PP	
Tube Ø 12 mm	TW.C2.12.PP	
Tube Ø 16 mm	TW.C2.6.PP	TW.08.P3.M6

Dimensions

ØD1	6	8	10	12	16
L1	37	37	37	37	42
H	27	27	27	27	33

Twin pipe clip



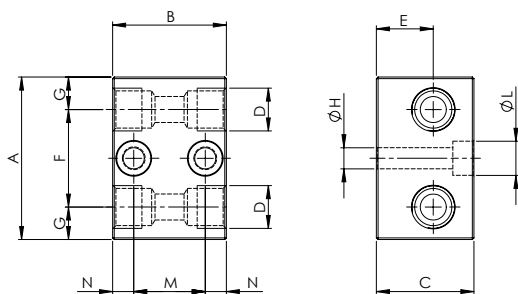
Twin pipe clip with welding plate

Tube	Code clip	Code plate
Tube Ø 10 mm	TW.CF1.10.PP	TW.08.P.CF1
Tube Ø 12 mm	TW.CF1.12.PP	
Tube Ø 16 mm	TW.CF2.16.PP	TW.08.P.CF2
Tube Ø 20 mm	TW.CF3.20.PP	TW.08.P.CF3
Tube Ø 25 mm	TW.CF3.25.PP	
Tube Ø 30 mm	TW.CF4.30.PP	TW.08.P.CF4

Dimensions

ØD1	10-10	12-12	16-16	20-20	25-25	30-30
L1	36	36	53	67		81
H	27	27	29	37		42
L2	20	20	27	36		45

Stright dual line

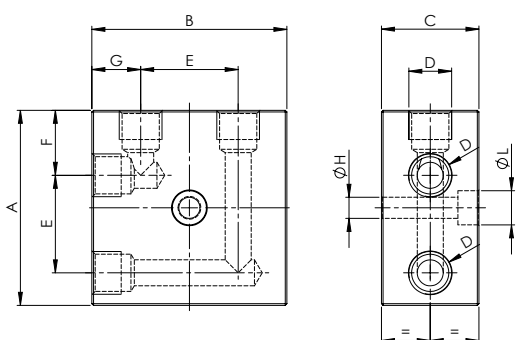


Steel	SS316.L	D
01.180.1	01.180.1.AISI	1/4" BSP
01.180.2	01.180.2.AISI	3/8" BSP

Dimensions

D	A	B	C	E	F	G	H	L	M	N
1/4" BSP	50	35	30	17,5	30	10	6,5	10,5	22	6,5
3/8" BSP	80	40	32	27	33	15	6,5	10,5	28	11

90° dual line

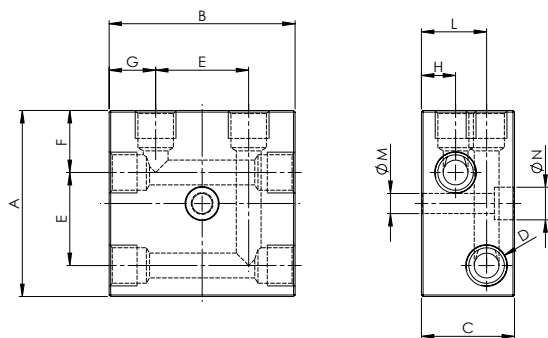


Steel	SS316.L	D
01.180.3	01.180.3.AISI	1/4" BSP
01.180.4	01.180.4.AISI	3/8" BSP

Dimensions

D	A	B	C	E	F	G	H	L
1/4" BSP	60	60	30	30	20	15	6,5	10,5
3/8" BSP	80	96	50	50	19	23	8,5	13,5

T dual line

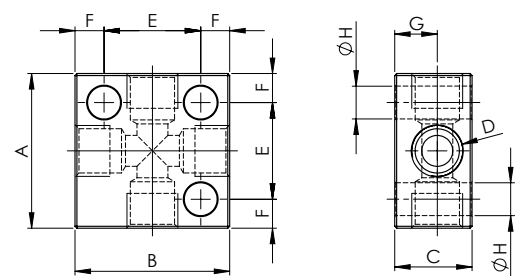


Steel	SS316.L	D
01.180.5	01.180.5.AISI	1/4" BSP
01.180.6	01.180.6.AISI	3/8" BSP

Dimensions

D	A	B	C	E	F	G	H	L	M	N
1/4" BSP	60	60	30	30	20	15	11	21	6,5	10,5
3/8" BSP	80	96	50	50	19	23	21,5	33,5	8,5	13,5

X dual line

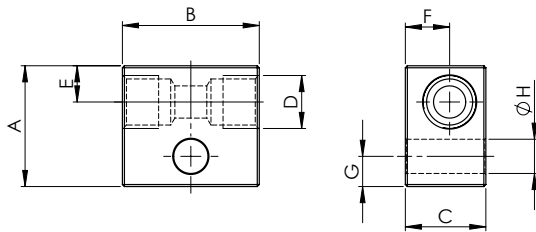


Steel	SS316.L	D
01.180.7	01.180.7.AISI	1/4" BSP
01.180.8	01.180.8.AISI	3/8" BSP

Dimensions

D	A	B	C	E	F	G	H	L	M	N
1/4" BSP	60	70	30	30	15	20	11	21	6,5	10,5
3/8" BSP	100	96	50	50	25	23	21,5	33,5	8,5	13,5

Stright single line

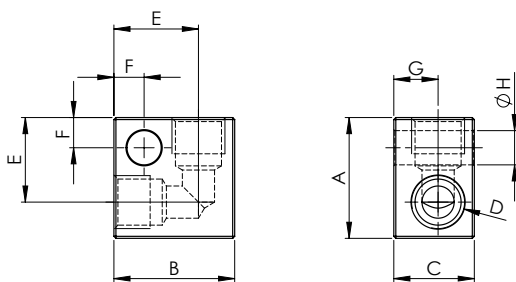


Steel	SS316.L	D
01.180.9	01.180.9.AISI	1/4" BSP
01.181.0	01.181.0.AISI	3/8" BSP

Dimensions

D	A	B	C	E	F	G	H
1/4" BSP	30	34	20	9	11	7,5	8,5
3/8" BSP	40	45	25	15	12,5	7,5	8,5

90° single line

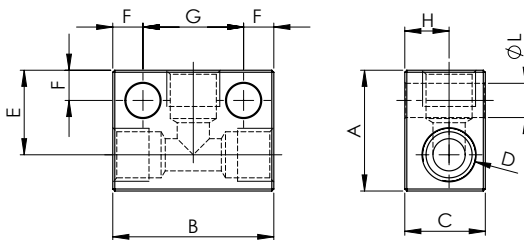


Steel	SS316.L	D
01.181.1	01.181.1.AISI	1/4" BSP
01.181.2	01.181.2.AISI	3/8" BSP

Dimensions

D	A	B	C	E	F	G	H
1/4" BSP	30	30	20	21	7,5	11	8,5
3/8" BSP	40	40	30	28	7,5	15	8,5

T single line

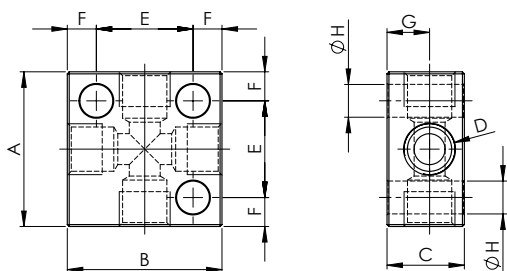


Steel	SS316.L	D
01.181.3	01.181.3.AISI	1/4" BSP
01.181.4	01.181.4.AISI	3/8" BSP

Dimensions

D	A	B	C	E	F	G	H
1/4" BSP	40	40	20	25	7,5	11	8,5
3/8" BSP	50	50	30	35	7,5	15	8,5

X single line



Steel	SS316.L	D
01.181.5	01.181.5.AISI	1/4" BSP
01.181.6	01.181.6.AISI	3/8" BSP

Dimensions

D	A	B	C	E	F	G	H	L
1/4" BSP	30	40	20	21	7,5	25	11	8,5
3/8" BSP	40	50	30	28	7,5	35	15	8,5

Stright fitting



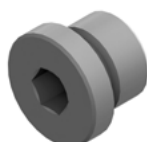
Main line

Tube Ø	Thread	Steel	SS316.L
12 mm	3/8" BSP	TW.100517	TW.110517
16 mm	3/8" BSP	TW.100537	TW.110537

Outlet line

Tube Ø	Thread	Steel	SS316.L
6 mm	1/4" BSP	TW.100524	TW.110524
8 mm	1/4" BSP	TW.100505	TW.110505
10 mm	1/4" BSP	TW.100506	TW.110506

Plug with seals



Main line

Thread	Steel	SS316.L
3/8" BSP	TW.107603	TW.117603

Outlet line

Thread	Steel	SS316.L
1/4" BSP	TW.107602	TW.117602

Junction fittings



Junction stright fitting

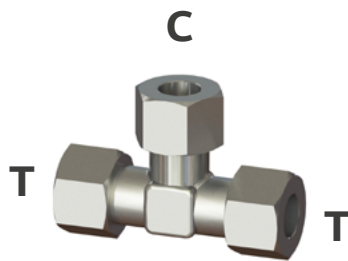
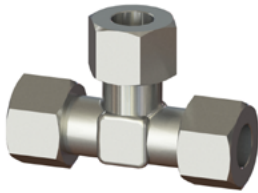
Tube Ø	Steel	SS316.L
6 mm	TW.103504	TW.113504
8 mm	TW.103505	TW.113505
10 mm	TW.103506	TW.113506
12 mm	TW.103507	TW.113507
16 mm	TW.103519	TW.113519
20 mm	TW.103520	TW.113520
25 mm	TW.103521	TW.113521
30 mm	TW.103522	TW.113522

Reduction fitting



Tube Ø T	Tube Ø C	Steel	SS316.L
16 mm	12 mm	TW.104130	TW.114130
20 mm	12 mm	TW.104133	TW.114133
20 mm	16 mm	TW.104134	TW.114134
25 mm	16 mm	TW.104135	TW.114135
25 mm	20 mm	TW.104136	TW.114136
30 mm	20 mm	TW.104137	TW.114137
30 mm	25 mm	TW.104138	TW.114138

T junction fitting



Junction T fitting

Tube Ø	Steel	SS316.L
6 mm	TW.103904	TW.113904
8 mm	TW.103905	TW.113905
10 mm	TW.103906	TW.113906
12 mm	TW.103907	TW.113907
16 mm	TW.103919	TW.113919
20 mm	TW.103920	TW.113920
25 mm	TW.103921	TW.113921
30 mm	TW.103922	TW.113922

Reduction T fitting

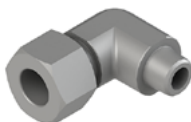
Tube Ø T	Tube Ø C	Steel	SS316.L
16 mm	12 mm	TW.104551	TW.114551
20 mm	12 mm	TW.104554	TW.114554
20 mm	16 mm	TW.104555	TW.114555
25 mm	16 mm	TW.104557	TW.114557
25 mm	20 mm	TW.104558	TW.114558

Elbow junction



Tube Ø	Steel	SS316.L
6 mm	TW.103804	TW.113804
8 mm	TW.103805	TW.113805
10 mm	TW.103806	TW.113806
12 mm	TW.103807	TW.113807
16 mm	TW.103819	TW.113819
20 mm	TW.103820	TW.113820
25 mm	TW.103821	TW.113821
30 mm	TW.103822	TW.113822

Fitting for point



Stright

Tube Ø	Thread	Steel	SS316.L
6 mm	1/8" BSP	TW.100504	TW.110504
8 mm	1/8" BSP	TW.100525	TW.110525

90°

Tube Ø	Thread	Steel	SS316.L
6 mm	1/8" BSP	TW.102004	TW.112004
8 mm	1/8" BSP	TW.102025	TW.102025

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