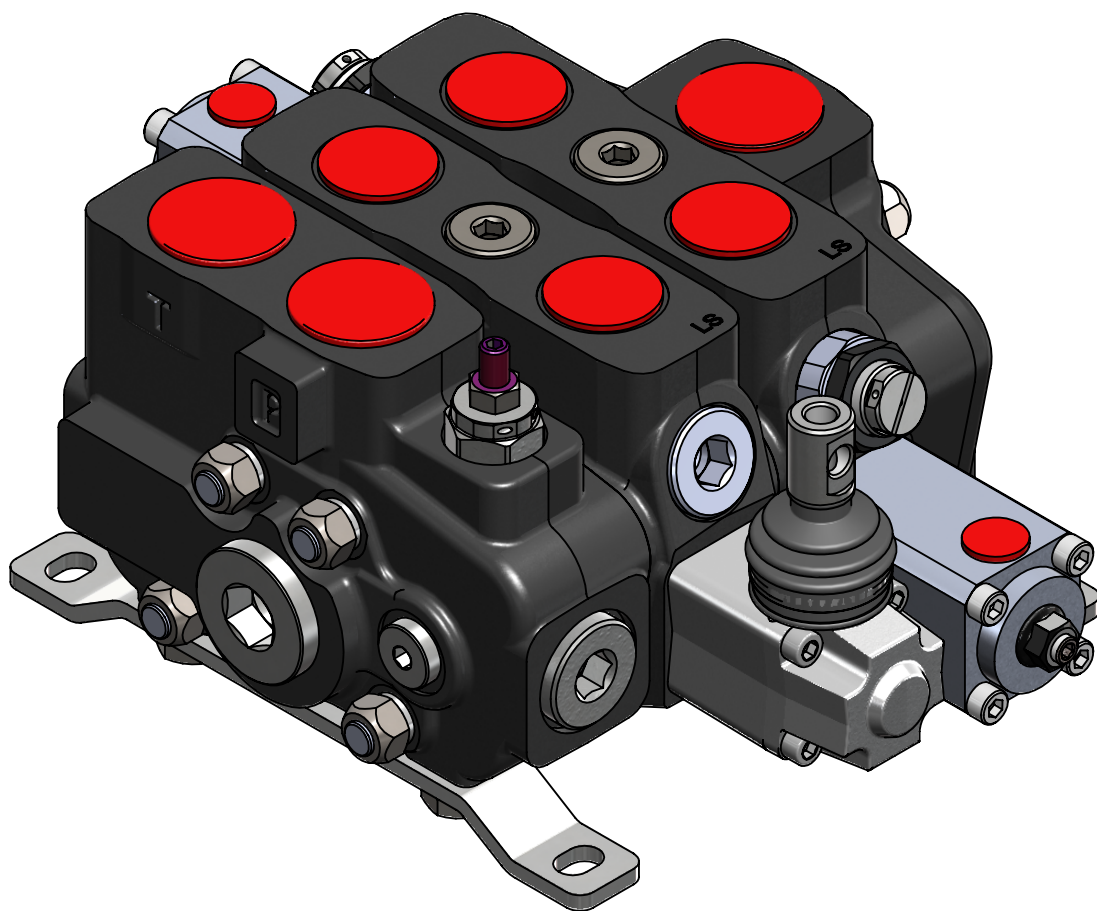

PLS180



Load sensing sectional control valve

Features

Simple, compact and heavy duty designed sectional valve from 1 to 12 sections for systems with fixed displacement pumps open center version) or variable displacement pumps with load-sensing compensator (closed center version)- Fitted with a main pressure relief valve and a load check valve on every working section.

- Load independent flow control.
- Available with only parallel circuit.
- A wide range of antishock-anticavitation port valves.
- Available manual and proportional hydraulic spool control kits.
- Diameter 20 mm (0.79 in) interchangeable spools.

Working conditions

Nominal flow rating	on inlet P	180 l/min	47 US gpm
	on ports A and B	160 l/min	42 US gpm
Max. pressure		315 bar	4600 psi
Standard stand by		14 bar	203 psi
Internal leakage (standard) A(B) to T	$\Delta p = 100 \text{ bar (1450 psi)}$ fluid and valve at $40^\circ\text{C (104}^\circ\text{F)}$	$5 \text{ cm}^3/\text{min}$	$0.30 \text{ in}^3/\text{min}$
Hydraulic fluid		Mineral based oil	
Fluid temperature	with NBR	from -20°C to 80°C	from -4°F to 176°F
	with FPM	from -20°C to 100°C	from -4°F to 212°F
Viscosity	operating range	from 15 to $75 \text{ mm}^2/\text{s}$	from 15 to 75 cSt
	min.	$12 \text{ mm}^2/\text{s}$	12 cSt
	max.	$400 \text{ mm}^2/\text{s}$	400 cSt
Max contamination level		-/19/16 - ISO 4406	NAS 1683 - class 10
Ambient temperature for working conditions		from -40°C to 60°C	from -40°F to 140°F

Reference standard

Standard		BSP	UN-UNF
Thread according to		ISO 228/1	ISO 263
		BS 2779	ANSI B1.1 unified
Cavity dimension according to	ISO	1179	11926
	SAE		J1926
	DIN	3852-2	

Additional information

This catalog shows the product in the most usual configurations. Please contact Sales Dpt. for more detail information or special request.

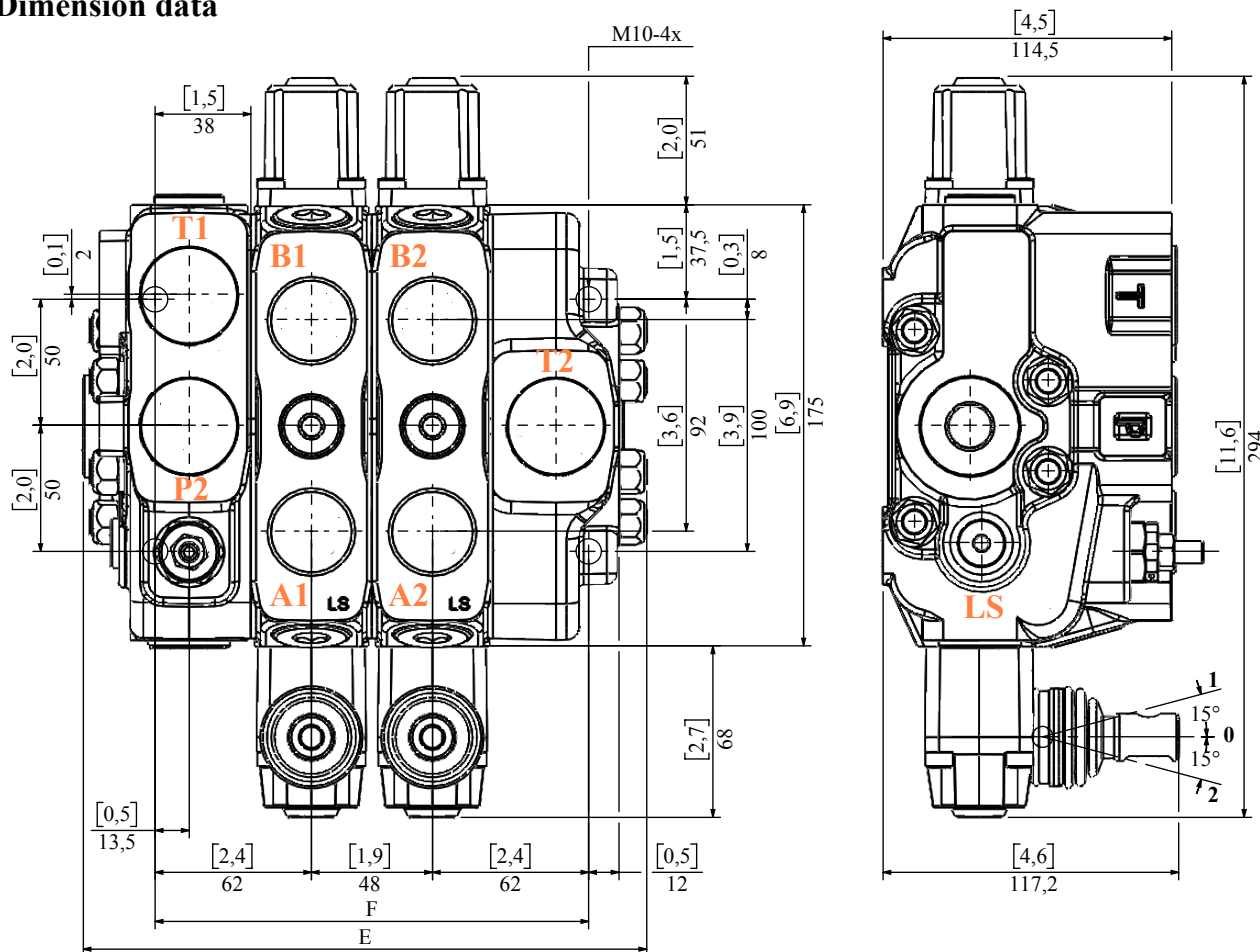
WARNING!

All specifications of this catalog refers to the standard product at this date. Badestnost is oriented to a continuous improvement and reserves the right to discontinue, modify or revise the specifications, without notice.

Badestnost is not responsible for any damage caused by an incorrect use of the product.

1st edition January 2017

Dimension data



Type	E		F		Weight	
	mm	in	mm	in	kg	lb
PLS180	175.5	6.91	124	4.88	13.8	30.4
2PLS180	223.5	8.80	172	6.77	19.2	42.3
3PLS180	271.5	10.69	220	8.66	24.6	54.2
4PLS180	319.5	12.58	268	10.55	30.0	66.2
5PLS180	367.5	14.47	316	12.44	35.4	78.1
6PLS180	415.5	16.36	364	14.33	40.8	90.0

Type	E		F		Weight	
	mm	in	mm	in	kg	lb
7PLS180	463.5	18.25	412	16.22	46.2	101.9
8PLS180	511.5	20.14	460	18.11	51.6	113.8
9PLS180	559.5	22.03	508	20.00	57.0	125.7
10PLS180	607.5	23.92	556	21.89	62.4	137.6
11PLS180	655.5	25.81	604	23.78	67.8	149.5
12PLS180	703.5	27.70	652	25.67	73.2	161.4

Port threads

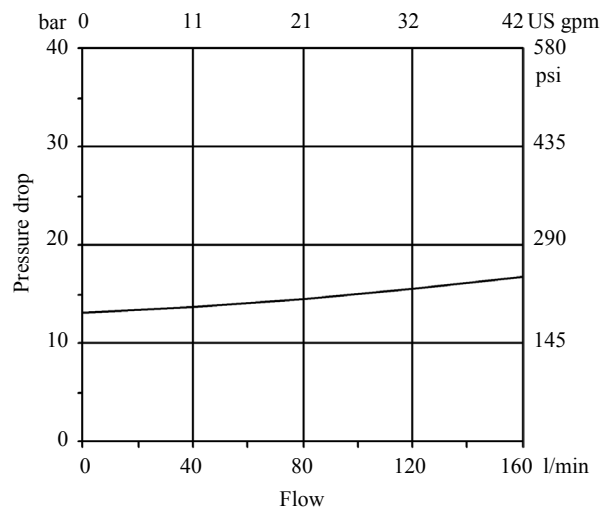
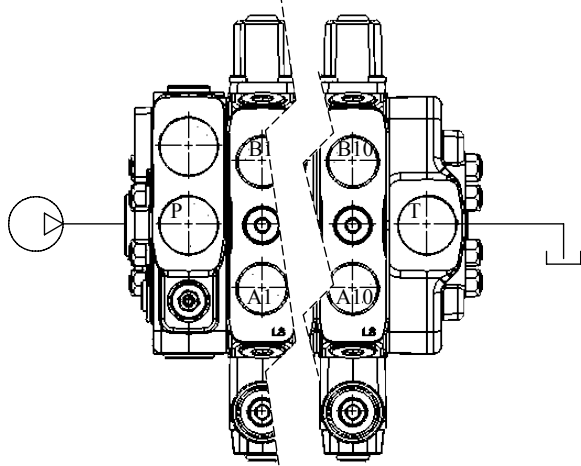
	BSP	UN-UNF
Order code	G	S
Inlet P - Outlet T	G 1	1 5/16-12 (SAE16)
Ports A and B	G 3/4	1 1/16-12 (SAE12)
Load sensing LS	G 1/4	9/16-18 (SAE 6)
Hydraulic pilot	G 1/4	9/16-18 (SAE 6)

PLS180

Performance data (pressure drop vs. flow)

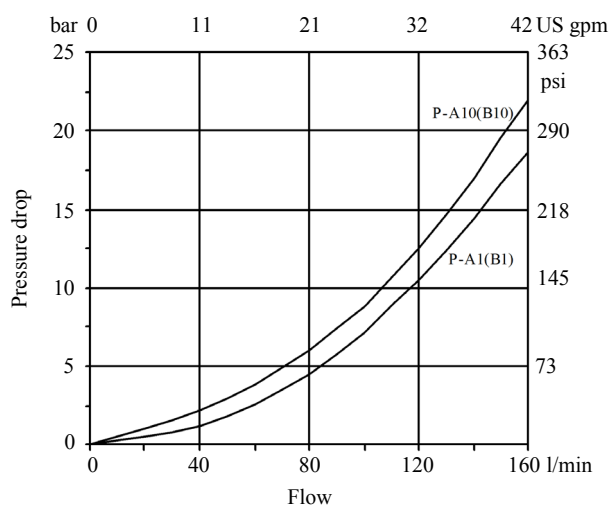
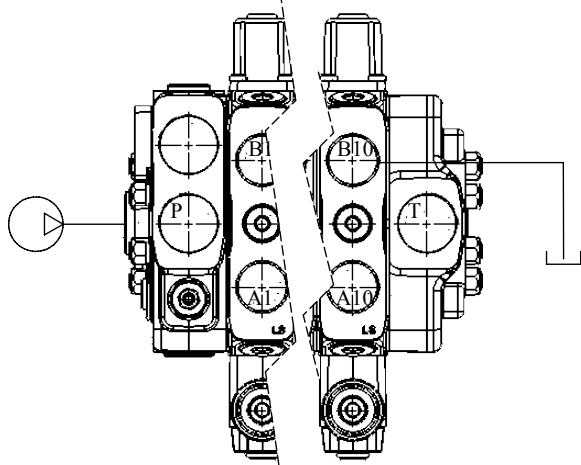
Pressure drop from P to T

From side inlet to side outlet



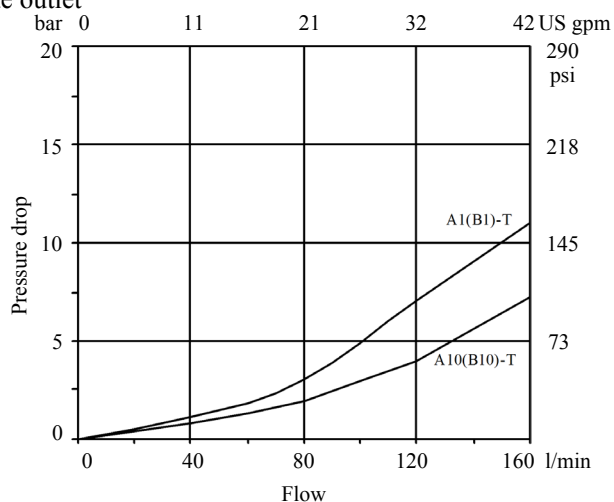
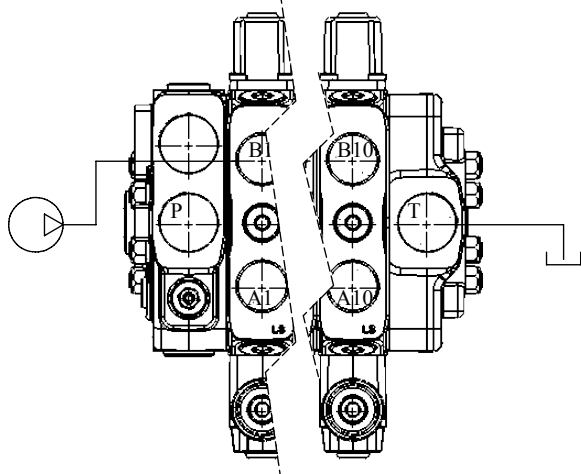
Pressure drop from P to A(B)

From side inlet to A port (spool in pos. 2) or B port (spool in pos. 1)



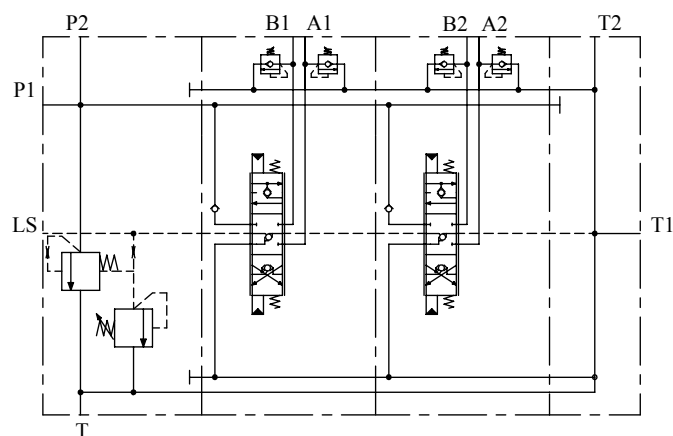
Pressure drop from A(B) to T

From A port (spool in pos. 2) or B port (spool in pos. 1) to side outlet



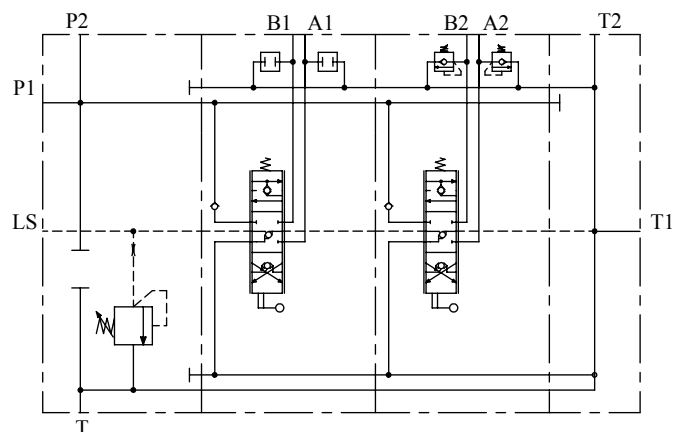
Hydraulic circuit

For open center circuit (fixed displacement pump)



Description example:
2PLS180/AM1(G4-210)/MO1H[AzD(G3-180)BzD(G3-200)]/MO1H[AzD(G3-150)BzD(G3-150)]/T1-G

For closed center circuit (variable displacement pump with Load-Sensing compensator)

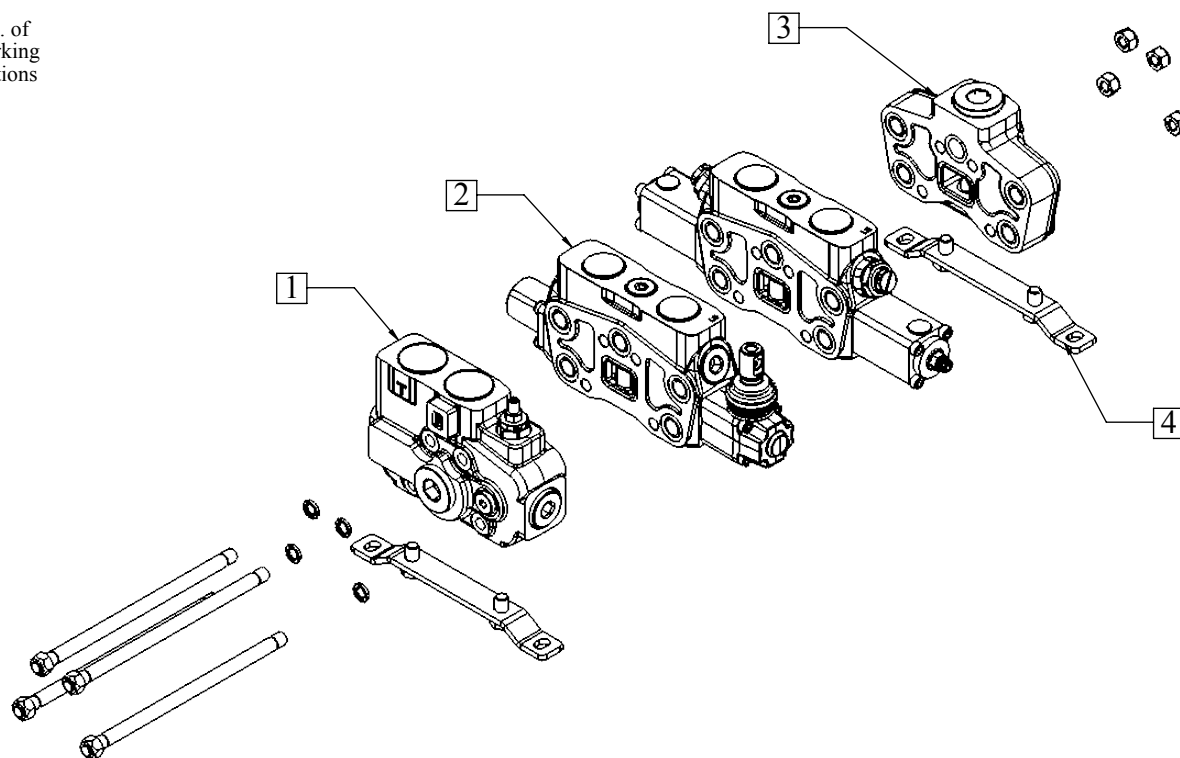


Description example:
2PLS180/AM1(G4-210)/MOs1KZ1[AoBo]/MO1KZ1[(AzD(G3-150)BzD(G3-150)]/T1-G

Complete sections orering code

2 PLS180/ AM2(G3-120) / MO1s(AoBo)KZ1 / MO1Ha(AzDBzD) /T2 - STAF G

↑
Qnt. of
working
sections



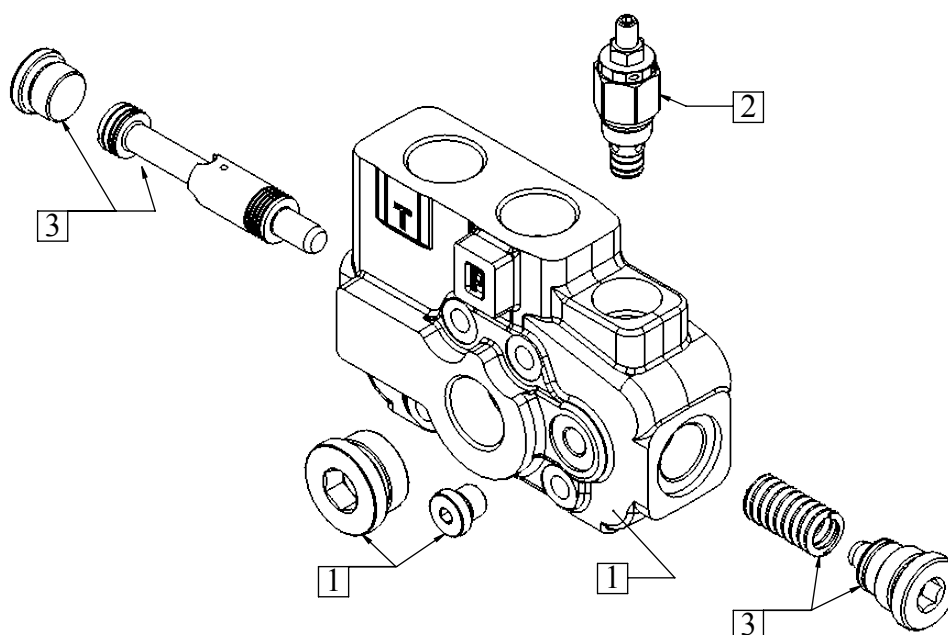
1. Inlet section	
Type	Description
AM2(G3-120)	For open center circuit, with L.S. pressure relief valve
AM2T(G3-120)	As previous with upper outlet closed
AN2(G3-120)	For closed center circuit, with L.S. pressure relief valve
AN2T(G3-120)	As previous with upper outlet closed
AP2(svp)	Without compensator and L.S. pressure relief valve
AP2T(svp)	As previous with upper outlet closed
2. Working section	
Type	Description
MO1s(AoBo)KZ1	Parallel circuit, lever control, no aux. relief valves
MO1(AzDBzD)KZ1	Parallel circuit, lever control, with aux. relief valves
MO1Ha(AzDBzD)	Parallel circuit, proportional hydraulic control with spool stroke limiter
3. Outlet section	
Type	Description
T	With ports plugged (T1 on the inlet section in use)
T1	With upper port plugged
T2	With side port plugged
4. Fixing bracket	
Type	Description
STAF	Bracket with fixing screws
5. Thread options	
Type	Description
G	BSP threads; P,T = G 1"; A,B = G 3/4"; LS, hydraulic pilots = G 1/4"
S	UN-UNF threads; P,T= SAE16;A,B= SAE12;LS, hydraulic pilots= SAE6

Inlet section ordering codes

PLS180 / AM 2 T (G3-120)

1: with upper inlet port closed
2: with side inlet port closed

Pressure relief valve settings bar

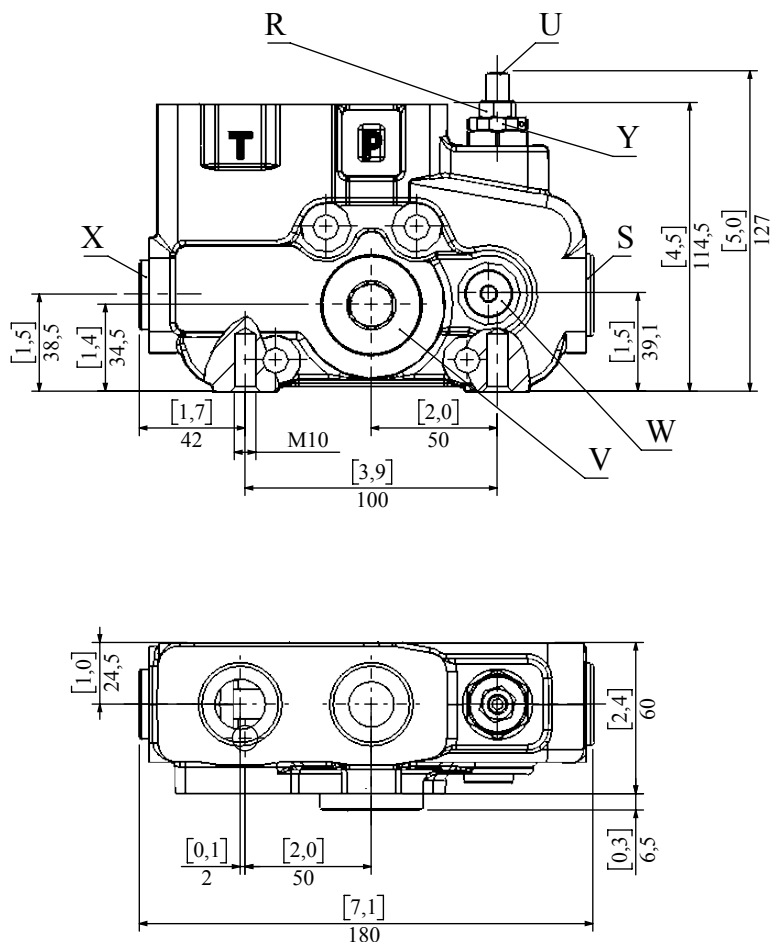


1. Inlet cover body	
Type	Description
AM	For fixed displacement pump, L.S. compensator (open center) with main relief valve arrangement
AN	For variable displacement pump (closed center) with main relief valve arrangement
AP	For variable displacement pump (closed center) without main relief valve arrangement
1. Inlet cover body	
Type	Description
svp	Relief valve blanking plug
LSD(G2)	Range 5-50 bar (72-720 psi) standard setting 30 bar (435 psi)
LSD(G3)	Range 50-200 bar (720-2900 psi) standard setting 150 bar (2150 psi)
LSD(G4)	Range 180-315 bar (2600-4550 psi), standard setting 250 bar (3600 psi)

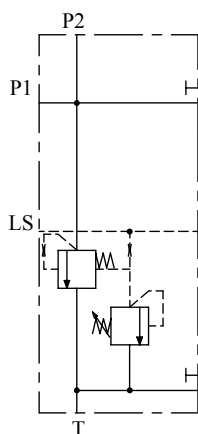
3. Compensator kit	
Code	Description
	Compensator kit, for AM section
	Compensator blanking kit, for AN and AP section

Dimensional data and hydraulic circuit (inlet section)

X = wrench 10 - 24 Nm (17.7 ft lb)
 Y = wrench 24 - 30 Nm (23.1 ft lb)
 W = wrench 6 - 24 Nm (17.7 ft lb)
 V = wrench 17 - 42 Nm (31 ft lb)
 U = allen wrench 4
 T = allen wrench 13
 R = wrench 12 - 42 Nm (31 ft lb)

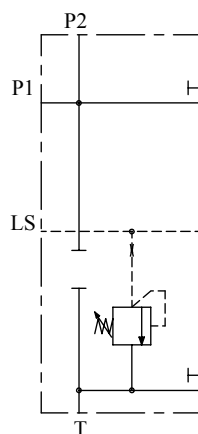


For fixed displacement pump, L.S. compensator (open center) with main relief valve



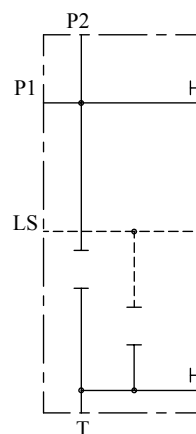
Description example:
AM2(G3-120)

For variable displacement pump, (closed center) with main relief valve



Description example:
AN2(G3-120)

For variable displacement pump, (closed center) without main relief valve

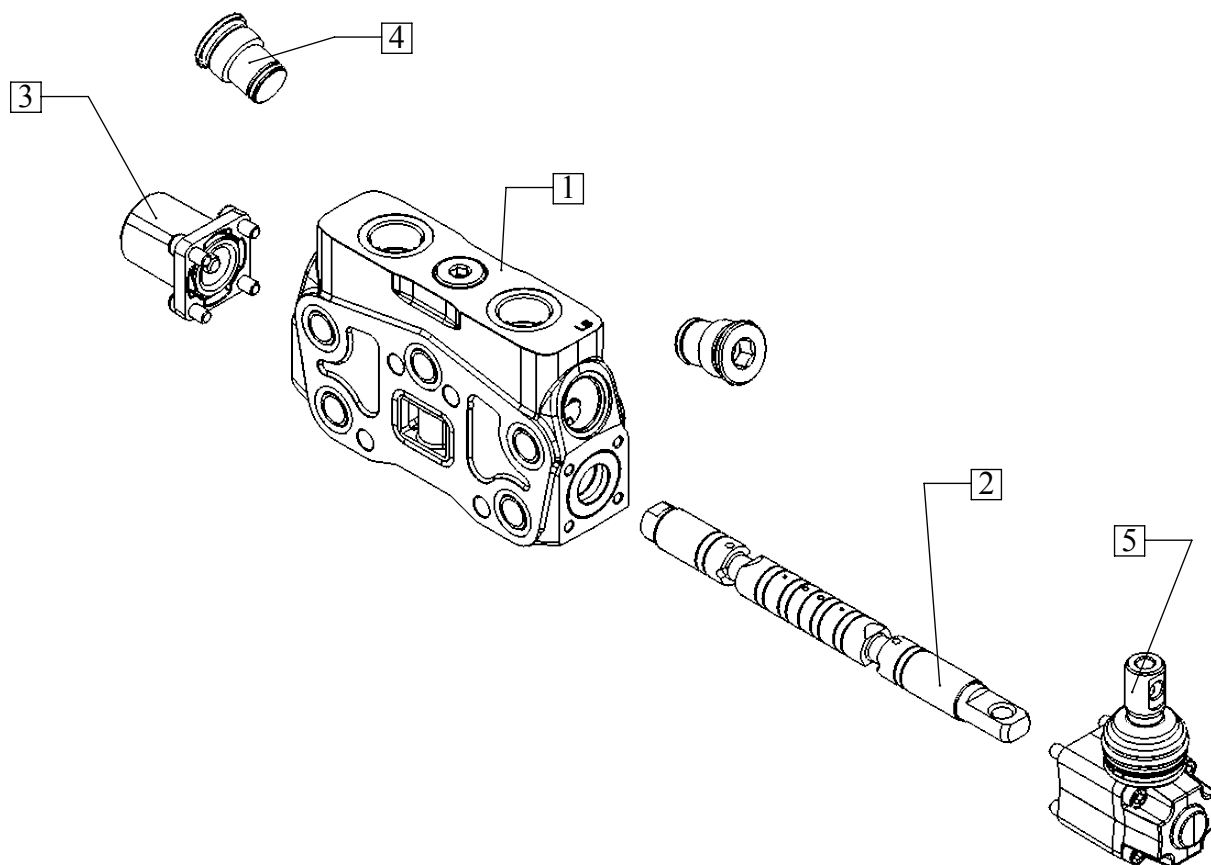


Description example:
APD2(G3-120)

Order code (mechanical control) working section

PLS180 / MOs 1 (AoBo) KZ1

2 3 4 5



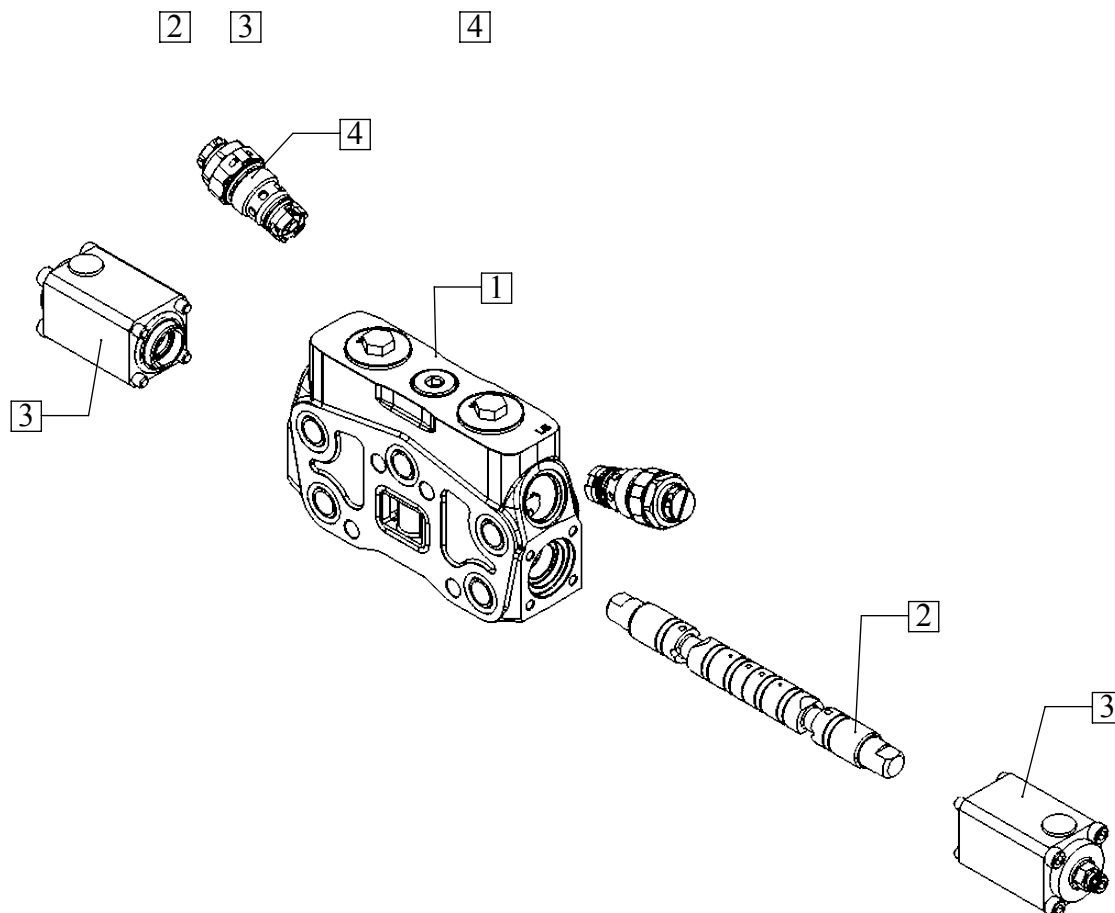
2. Spools	
Type	Description
Double acting, 3 position, with A and B closed in neutral position	
MQ	Up to 40 l/min (10.6 US gpm)
MO	Up to 80 l/min (21.1 US gpm)
MV	Up to 120 l/min (31.7 US gpm)
MZ	Up to 140 l/min (37 US gpm)
Double acting, 3 position, with A and B to tank in neutral position	
PV	Up to 120 l/min (31.7 US gpm)
PZ	Up to 140 l/min (37 US gpm)
3. Spool positioners	
Type	Description
1	With spring return in neutral position
2	With detent in pos. 1 and spring return from 2
3	With detent in pos. 2 and spring retrun from 1

4. Port valves	
Valves standard setting is referred to 10 l/min (2,64 US gpm) flow.	
Type	Description
o	Relief valve blanking plug
Anti-shock and anti-cavitation valve	
zD(G2)	Range 35-90 bar (510 - 1300 psi), standard setting 60 bar (870 psi)
zD(G3)	Range 100-250 bar (1450-3600 psi), standard setting 100 bar (1450 psi)
zD(G4)	Range 180-350 bar (2600-5100 psi), standard setting 160 bar (2100 psi)
5. Lever controls	
Type	Description
-	Without lever box, with dust-proof plate
KZ1	Standard lever box, lever pointing up
KZ01	Standard lever box, lever pointing down
V1	Flexible cable connection

PLS180

Order code (proportional hydraulic control) working section

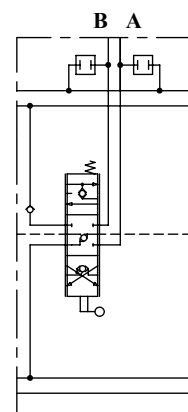
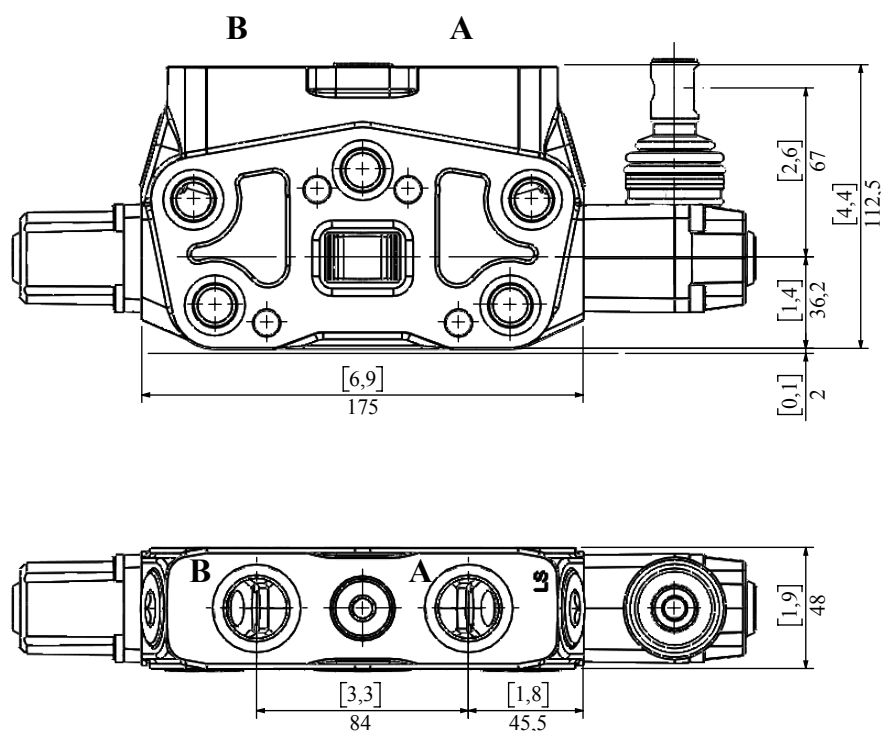
PLS180 / MO Ha [AzD(G3-100)BzD(G3-200)]



2. Spools	
Type	Description
Double acting, 3 position, with A and B closed in	
MQ	Up to 40 l/min (10.6 US gpm)
MO	Up to 80 l/min (21.1 US gpm)
MV	Up to 120 l/min (31.7 US gpm)
MZ	Up to 140 l/min (37 US gpm)
Double acting, 3 position, with A and B to tank in	
PV	Up to 120 l/min (31.7 US gpm)
PZ	Up to 140 l/min (37 US gpm)
3. Complete controls, hydraulic proportional	
Type	Description
H	Aluminum control kit. Range 5,8-19 bar (84 psi - 270 psi)
Ha	Aluminum control kit with stroke limiter. Range 5,8-19 bar (84 psi - 270 psi)

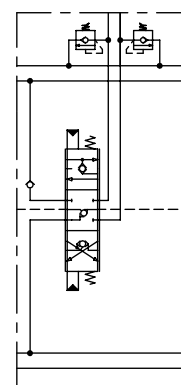
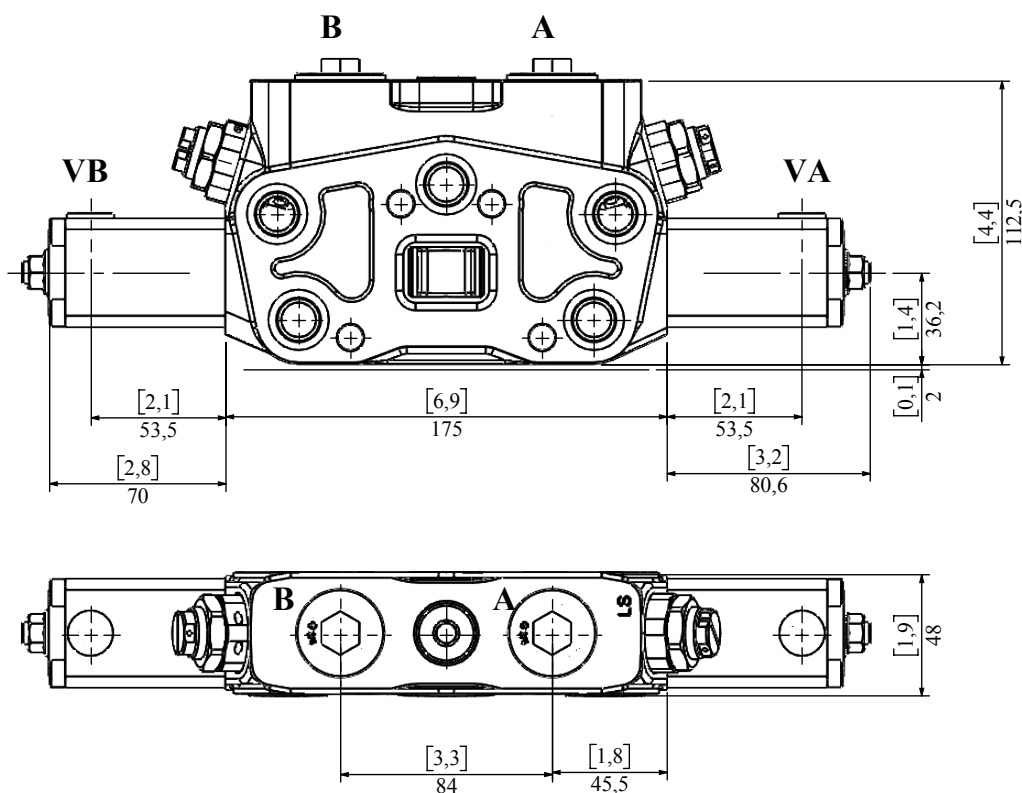
4. Port valves	
Valves standard setting is referred to 10 l/min (2,64	
Type	Description
o	Relief valve blanking plug
Anti-shock and anti-cavitation valve	
zD(G2)	Range 35-90 bar (510 - 1300 psi), standard setting 60 bar (870 psi)
zD(G3)	Range 100-250 bar (1450-3600 psi), standard setting 100 bar (1450 psi)
zD(G4)	Range 180-350 bar (2600-5100 psi), standard setting 160 bar (2100 psi)

Dimensional data and hydraulic circuit (mechanical control)



Description example
MOs1(AoBo)KZ1

Dimensional data and hydraulic circuit (proportional hydraulic control)

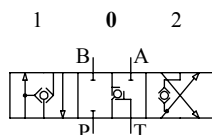


Description example
MOHa(AzDBzD)

Spools

Type MQ/MO/MV/MZ spool

Double acting, 3 position, with
A and B closed in neutral

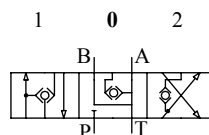


Spool stroke

position 1: + 7 mm (+ 0.28 in)
position 2: - 7 mm (- 0.28 in)

Type PV/PZ spool

Double acting, 3 position, with
A and B to tank in neutral

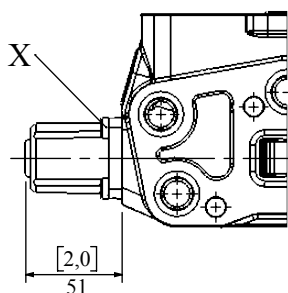
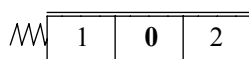


Spool stroke

position 1: + 7 mm (+ 0.28 in)
position 2: - 7 mm (- 0.28 in)

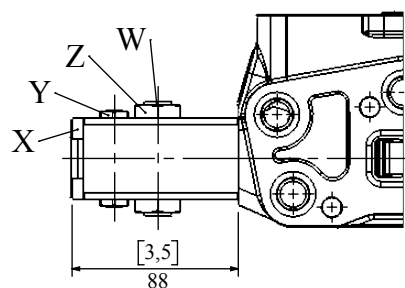
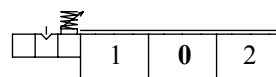
Spool positioners

Type 1 (spring return)



X = allen wrench 5 - 6,6 Nm (4.9 ft lb)

Type 0a (with friction)



X = wrench 5 - 9,8 Nm (7.2 ft lb)

W = allen wrench 4

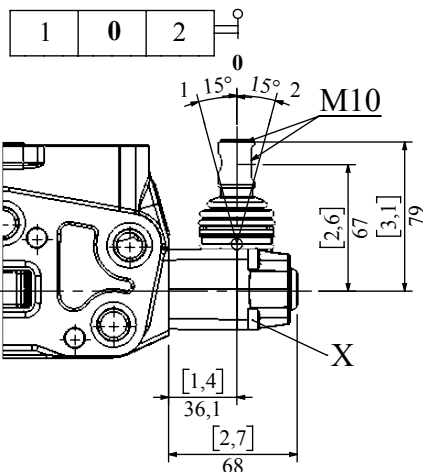
Y = wrench 15 - 42 Nm (31 ft lb)

Z = wrench 24 - manual tightening

Lever controls

Type KZ1(KZ01)

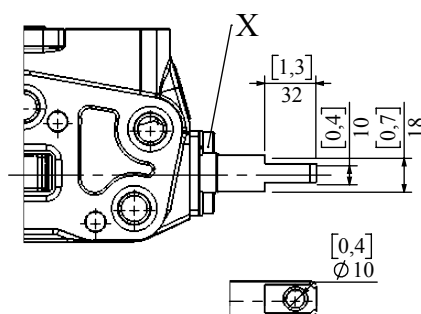
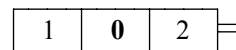
Aluminum pivot box with protective rubber bellow.
KZ1 -lever is up (as shown), KZ01 - lever is down.



X = allen wrench 5 - 9,8 Nm (7.2 ft lb)

Type SLP

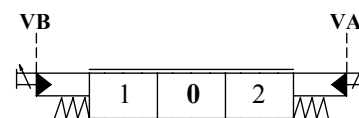
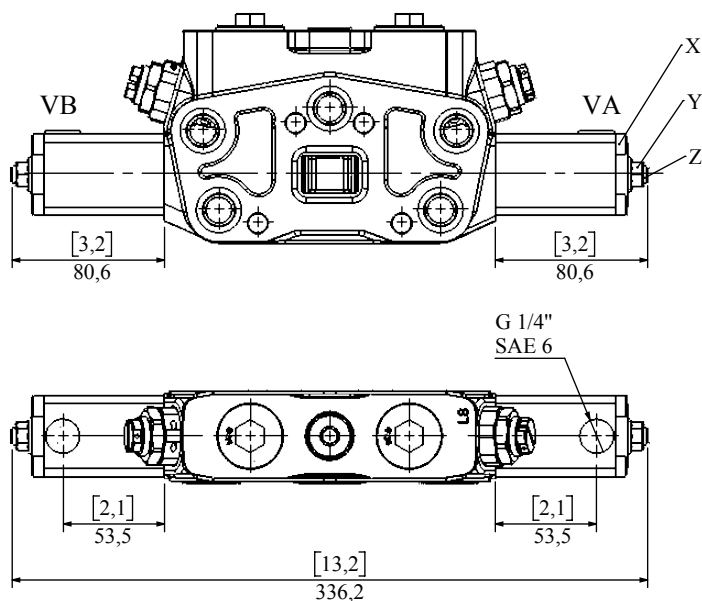
Mechanical control with dust-proof plate kit.



X = allen wrench 5 - 9,8 Nm (7.2 ft lb)

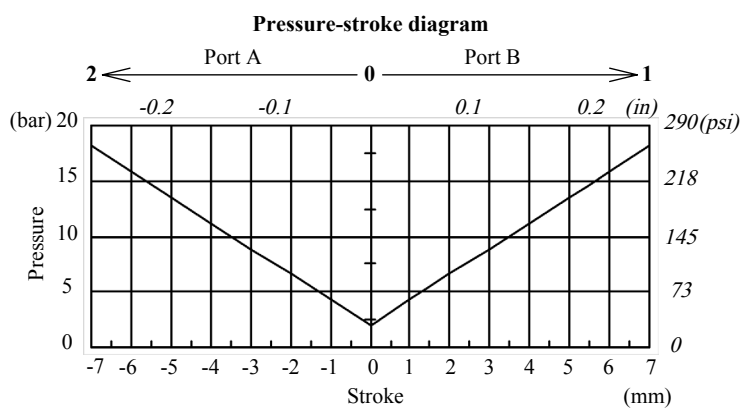
Proportional hydraulic control kit (Ha/H)

Ha - with adjustment, H - without adjustment



X = allen wrench 5 - 9,8 Nm (7.2 ft lb)
Y = wrench 13 - 24 Nm (17.7 ft lb)
Z = allen wrench 4

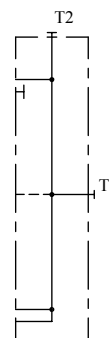
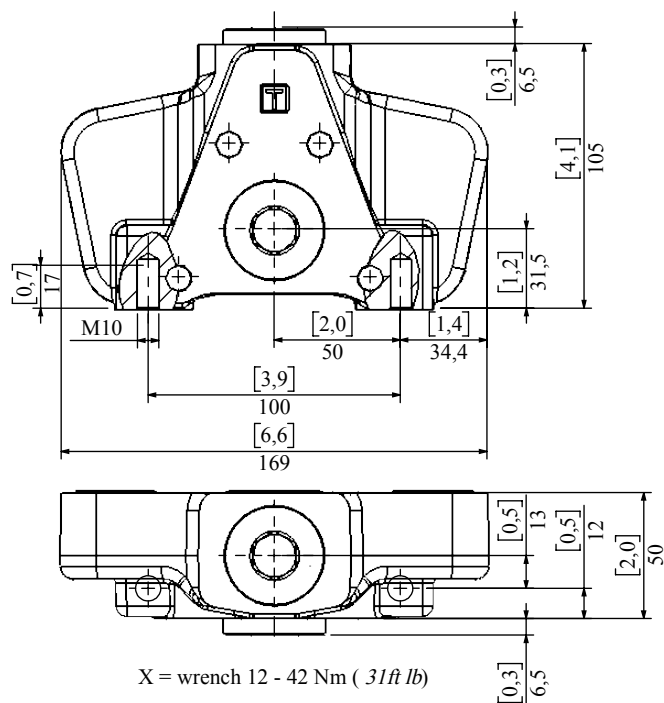
Features:
Pilot pressure.....:max. 50 bar (730 psi)



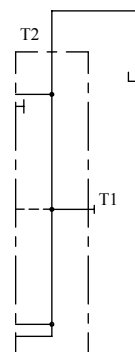
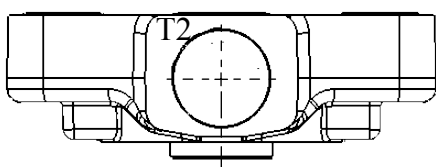
PLS180

Dimensional data and hydraulic circuit - outlet section

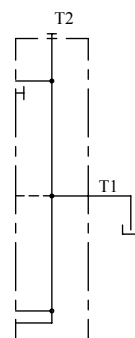
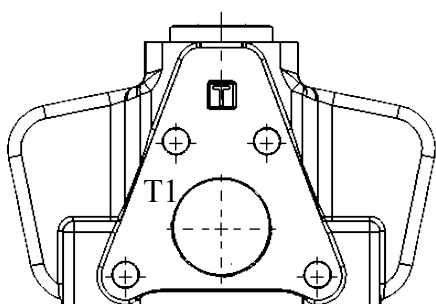
T type
with ports plugged (when inlet section code includes **T**)



T2
upper outlet



T1
side outlet



Badestnost

hydraulic components

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