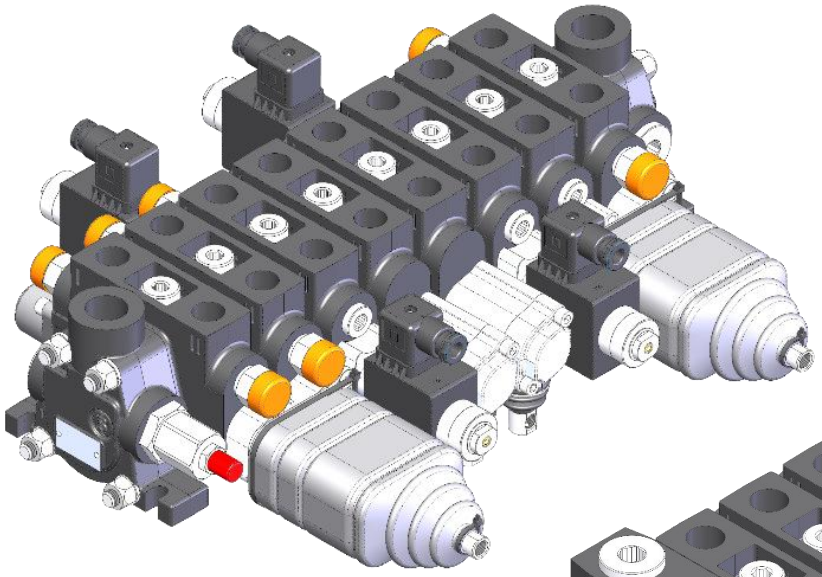
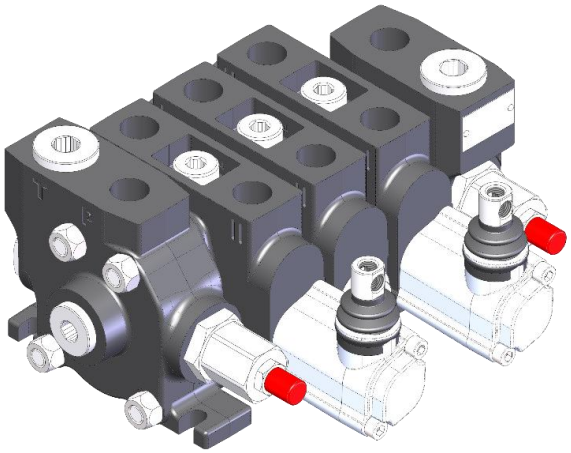
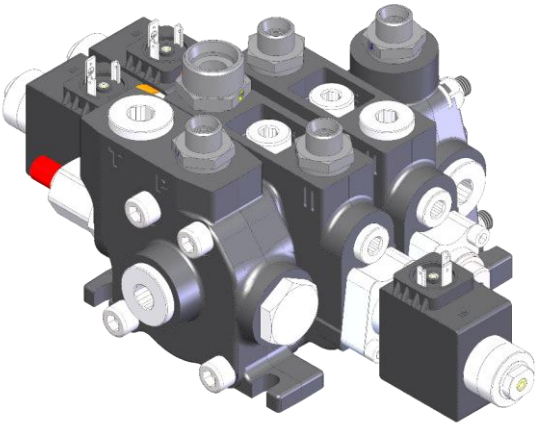
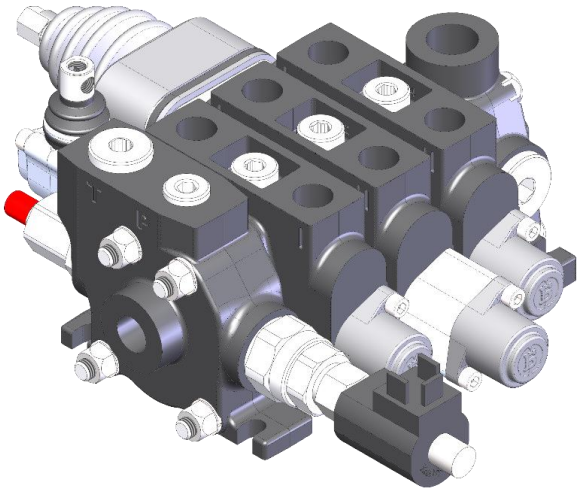
ZC70









Badestnost
hydraulic components

Features

Simple compact and heavy duty designed sectional valve from 1 to 10 sections for open and closed centre hydraulic systems.

- Fitted with a main pressure relief valve and a load check valve on each section
- Available with parallel, tandem and series circuits
- Optional power beyond port for parallel and tandem circuit
- Diameter 18 mm *0.71 in* interchangeable spools.
- A wide variety of options
- Floating spools and kits, kick out spools and kits do not require additional machining on the body
- Actuation – manual, pneumatic, electro-pneumatic, hydraulic, electro-hydraulic, with solenoid and remote with flexible cables spool control kits.

Additional information

This catalogue shows the product in the most standard configuration. For special requests please contact sales.

WARNING!

All specifications of this catalogue refer to the standard product at this date. Badestnost, oriented in continuous improvement, reserves the right to discontinue, modify or revise specifications, without notice.

First edition 05-2026

Working conditions

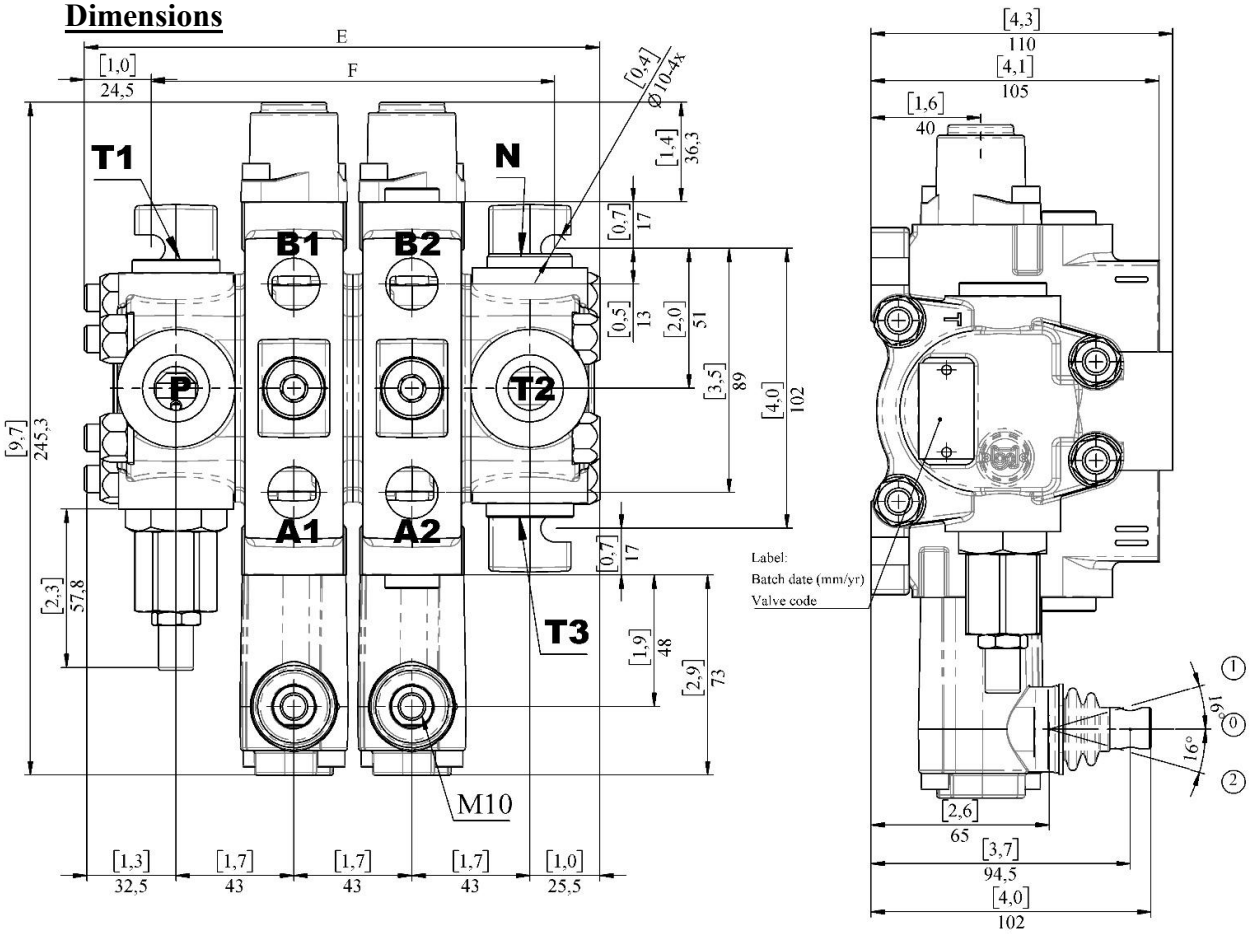
Nominal flow rating		80 l/min	*21.1 US gpm*
Operating pressure (max.)	*parallel and tandem*	315 bar	*4600 psi*
	Series	225 bar	*3263 psi*
Back pressure (max.)	*outlet port T, static*	35 bar	*508 psi*
Internal leakage (min.) A(B) to T	*Δp = 100 bar (1450 psi) fluid and valve at 40 °C (104 °F)*	8 cm^3/min	*0.48 in^3/min*
Hydraulic fluid		Mineral based oil	
Fluid temperature	*with NBR seals*	from -20 °C to 80 °C	*from -4 °F to 176 °F*
	with FPM (Viton) seals	from -20 °C to 100 °C	*from -4 °F to 212 °F*
Viscosity	*operating range*	from 15 to 75 mm^2/s	*from 15 to 75 cSt*
	min.	12 mm^2/s	*12 cSt*
	max.	400 mm^2/s	*400 cSt*
Permisable degree of fluid contamination		-/19/16 - ISO 4406	*NAS 1683 - class 10*
Ambient temperature	with mechanical devices	from -40 °C to 60 °C	*from -40 °F to 140 °F*
	with pneumatic and hydraulic devices devices	from -30 °C to 60 °C	*from -22 °F to 140 °F*
	with electric devices	from -20 °C to 50 °C	*from -4 °F to 140 °F*

Standard threads

		Refernce standard			
		BSP	UN-UNF	Metric	NPTF
Thread according to		ISO 228/1	ISO 263	ISO 262	Ansi B1.20.3
		BS 2779	ANSI B1.1 unified		
Cavity dimension according to	ISO	1179	11926	9974-1	
	SAE		J1926	J2244	J476a
	DIN 3852-2 (Shape X or Y)			3852-1 (Shape X or Y)	

Port threadings and codes					
Codes:	**G12**	**G34**	**G***	**S8**	**S10**
Main ports	BSP	BSP	BSP	UN-UNF	UN-UNF
Inlet P1, P2	G1/2-14	G3/4-14	G1/2-14	3/4-16 (SAE8)	7/8-14 (SAE10)
Outlet port T1	G3/4-14	G3/4-14	G3/4-14	1 1/16-12 (SAE12)	1 1/16-12 (SAE12)
Outlet port T2	G1/2-14	G3/4-14	G3/4-14	3/4-16 (SAE8)	7/8-14 (SAE10)
Outlet port T3	G3/4-14	G3/4-14	G3/4-14	1 1/16-12 (SAE12)	1 1/16-12 (SAE12)
Working ports, A and B	G1/2-14	G1/2-14	G1/2-14	3/4-16 (SAE8)	7/8-14 (SAE10)
Control pilot ports					
Pneuamtic	1/8-27 NPTF	1/8-27 NPTF	1/8-27 NPTF	1/8-27 NPTF	1/8-27 NPTF
Hydraulic	G1/4-19	G1/4-19	G1/4-19	9/16-18 (SAE6)	9/16-18 (SAE6)

Dimensions

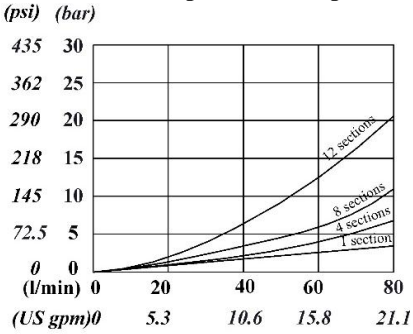


TYPE	E		F		Weight	
	mm	*in*	mm	*in*	kg	*lb*
ZC70	145	*5.71*	104	*4.09*	6.80	*15.0*
2ZC70	188	*7.40*	147	*5.79*	10.00	*22.0*
3ZC70	231	*9.09*	190	*7.48*	13.20	*29.1*
4ZC70	274	*10.79*	233	*9.2*	16.40	*36.1*
5ZC70	317	*12.5*	276	*10.9*	19.60	*43.2*
6ZC70	360	*14.2*	319	*12.6*	22.80	*50.3*

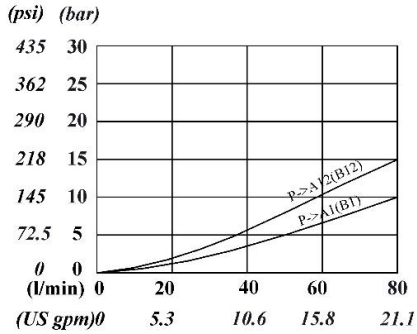
TYPE	E		F		Weight	
	mm	*in*	mm	*in*	kg	*lb*
7ZC70	403	*15.9*	362	*14.3*	26.00	*57.3*
8ZC70	446	*17.6*	405	*15.9*	29.20	*64.4*
9ZC70	489	*19.3*	448	*17.6*	32.40	*71.4*
10ZC70	532	*20.9*	491	*19.3*	35.60	*78.5*
11ZC70	575	*22.6*	534	*21.0*	38.80	*85.5*
12ZC70	618	*24.3*	577	*22.7*	42.00	*92.6*

Performance data

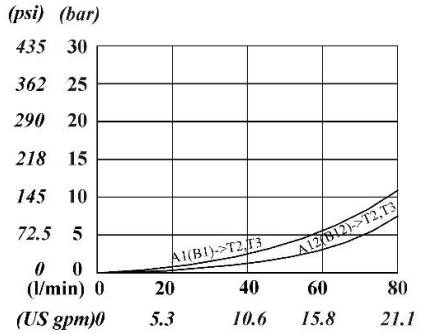
P->T pressure drop



P-> A(B) pressure drop

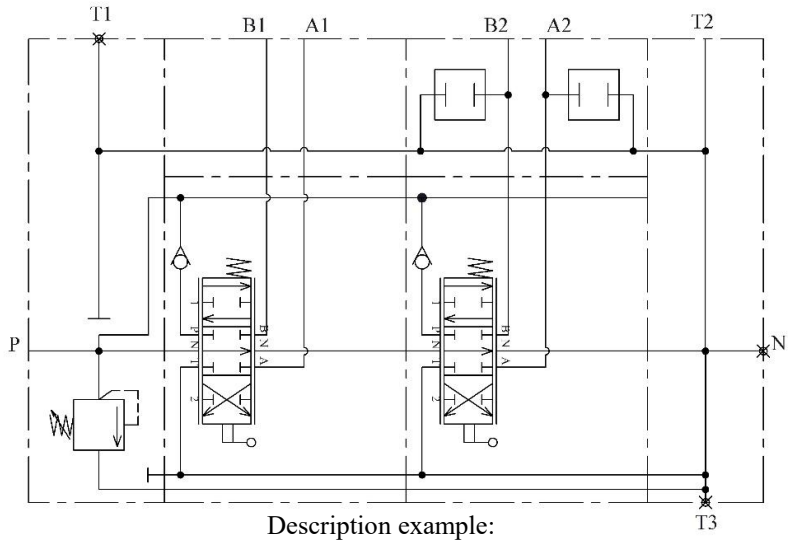


A(B)->T pressure drop



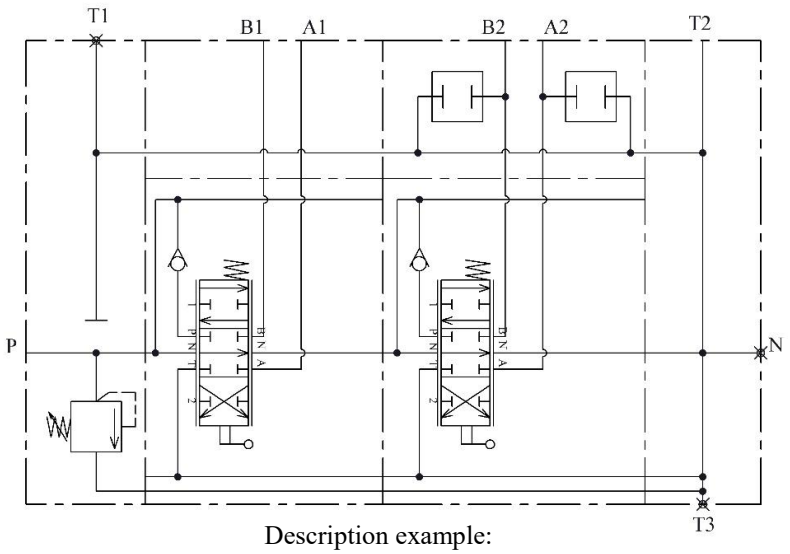
Hydraulic circuits

Parallel circuit



Description example:
2ZC70/N2/**P**A1KZ1/**P**A1KZ1(AoBo)/T2-G34

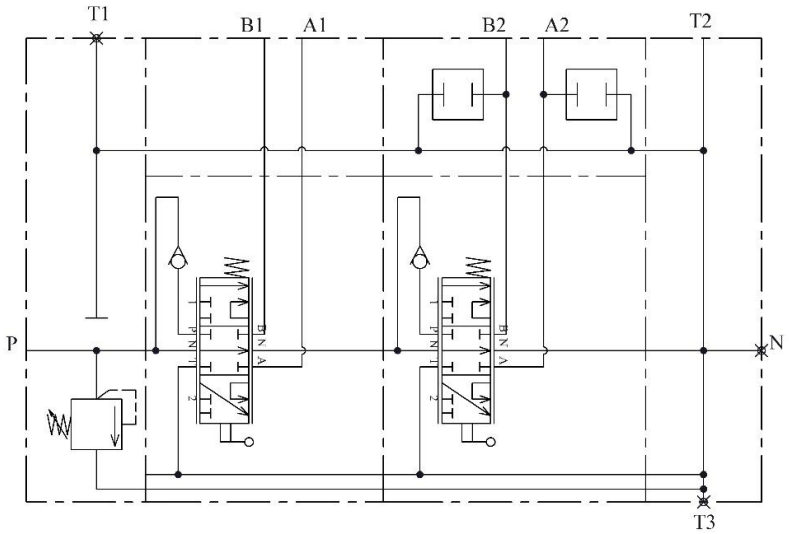
Tandem circuit



Description example:
2ZC70/N2/**T**A1KZ1/**T**A1KZ1(AoBo)/T2-G34

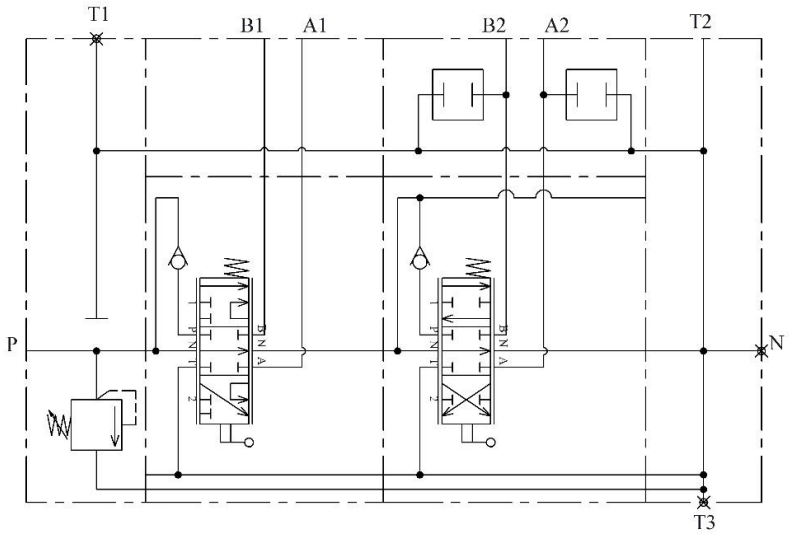
Hydraulic circuits

Series circuit*



Description example:
2ZC70/N2/**S**As1KZ1/**S**As1KZ1(AoBo)/T2-G34

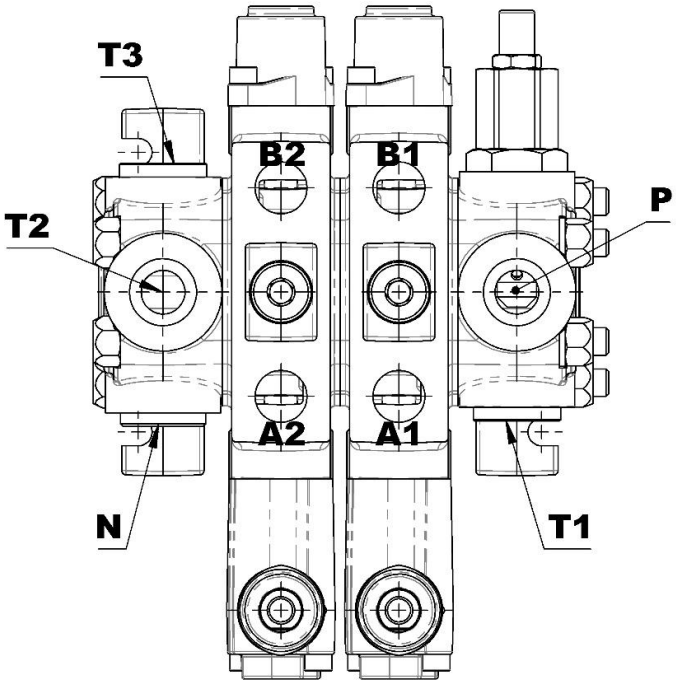
Mixed circuit**

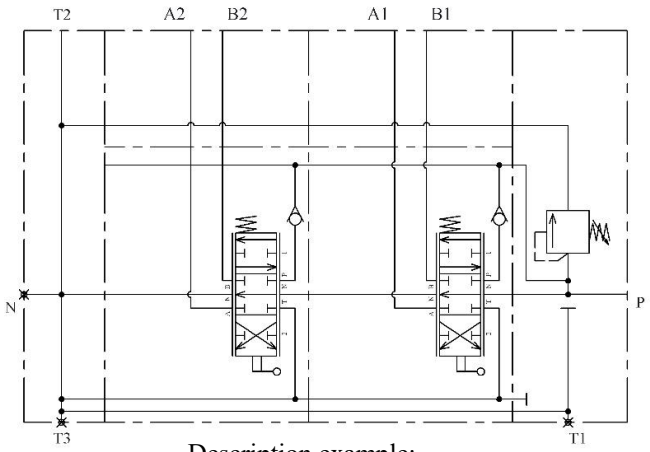


Description example:
2ZC70/N2/**S**As1KZ1/TA1KZ1(AoBo)/T2-G34

*NOTE – The flows P->A and P->B, on series spool, are reversed
Parallel section downstream can be used only after **Tandem section.

Directional valve with right inlet,





Description example:
2ZC70/N2/2x(P**R**A1KZ1)/T2-G34

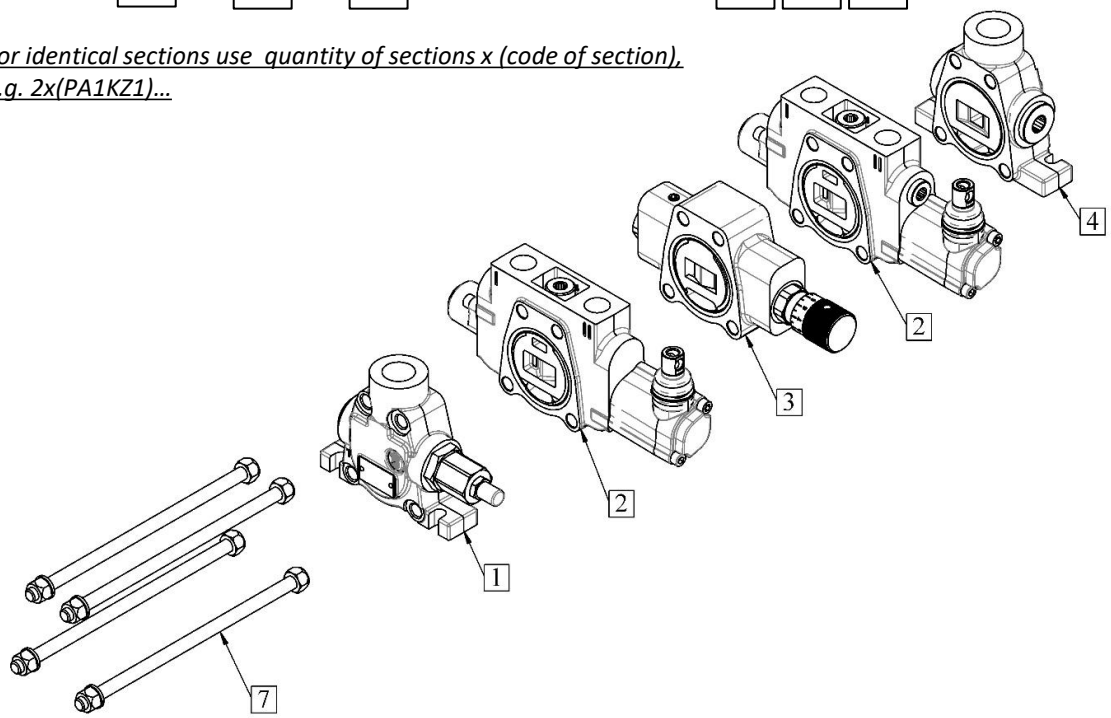
Order code, complete

First section *Following sections*

2ZC70/N2/PA1KZ1/DF/PA1KZ1(AoBo)/T2-G-BP

1 2 3 4 5 6

For identical sections use quantity of sections x (code of section), e.g. 2x(PA1KZ1)…



1 Complete inlet covers	
Type	*Description*
N1	*Top inlet P and backside outlet port T1 with relief valve*
N2	*Top inlet P and backside outlet port T1 plugged with relief valve*
L1	*Side inlet P1 with relief valve for left inlet valves (standard)*
L2	*Top inlet with relief valve for left inlet valves (standard)*
L3	*Side inlet with relief valve for right inlet valves*
L4	*Top inlet with relief valve for right inlet valves*

2 Complete working sections	
PA1KZ1	*Parallel circuit, double acting spool with spring return and lever control*
PA1KZ1(AoBo)	*Parallel circuit, prearranged for port valves, double acting spool with spring return and lever control*
TA1KZ1	*Tandem circuit, double acting spool with spring return and lever control*
TA1KZ1(AoBo)	*Tandem circuit, prearranged for port valves, double acting spool with spring return and lever control*
SAs1KZ1	*Series circuit, double acting spool with spring return and lever control*
SAs1KZ1(AoBo)	*Series circuit, prearranged for port valves, double acting spool with spring return and lever control*

Order code, complete

3	Intermediate sections
DF	*Pressure cmpensated flow divider section, excess flow goes to tank*
IM.C	*Intermediate inlet with relief valve, which combines the flow from the by-pass line of previous sections*
IM.S	*Intermediate inlet with relief valve, which separates the flow from the by-pass line to tank.*
CS1	*Intermediate outlet cover*
OM-C2T	*Intermediate outlet cover with high pressure carry over and outlet, to be used in combination with two inlet covers on both sides of the valve (N or L)*
OM-C2LC2R	*Intermediate outlet cover with two separate high pressure carry over lines, to be used in combination with two inlet covers N*

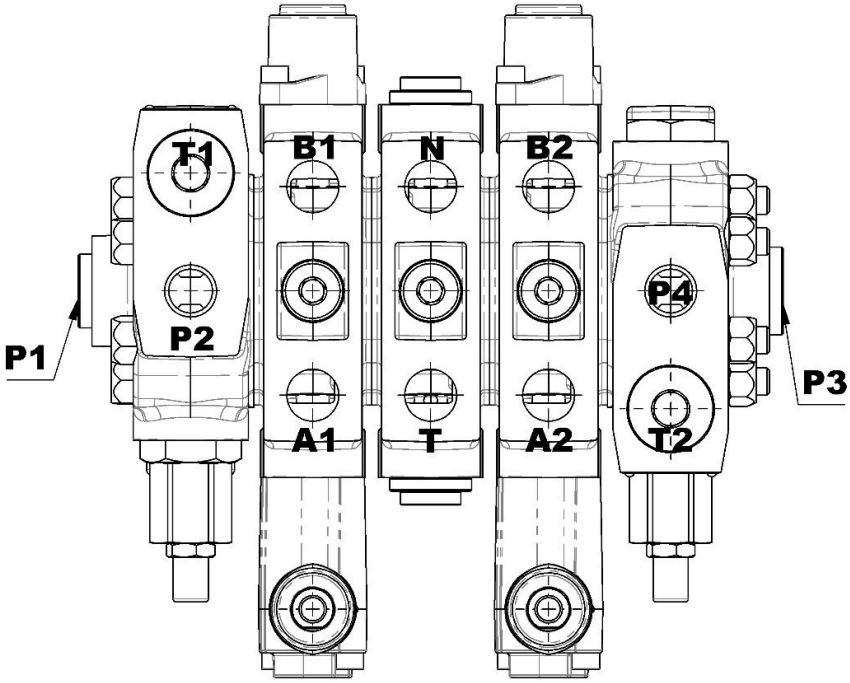
4	Complete outlet cover
T1	*Outlet cover ports (T2, T3) plugged, in use only inlet cover low pressure port T1, to be used in combination N1 only*
T2	*Outlet cover with top outlet T2*
T3	*Outlet cover with front outlet T3*
T3C2	*Back carry over port C2 with top port high pressure T2 (plugged) and front port low pressure T3*
T1C2	*Back carry over port C2 with top port high pressure T2 (plugged) and front port low pressure T3 (plugged), outlet port T1, to be used in combination with N1 only*

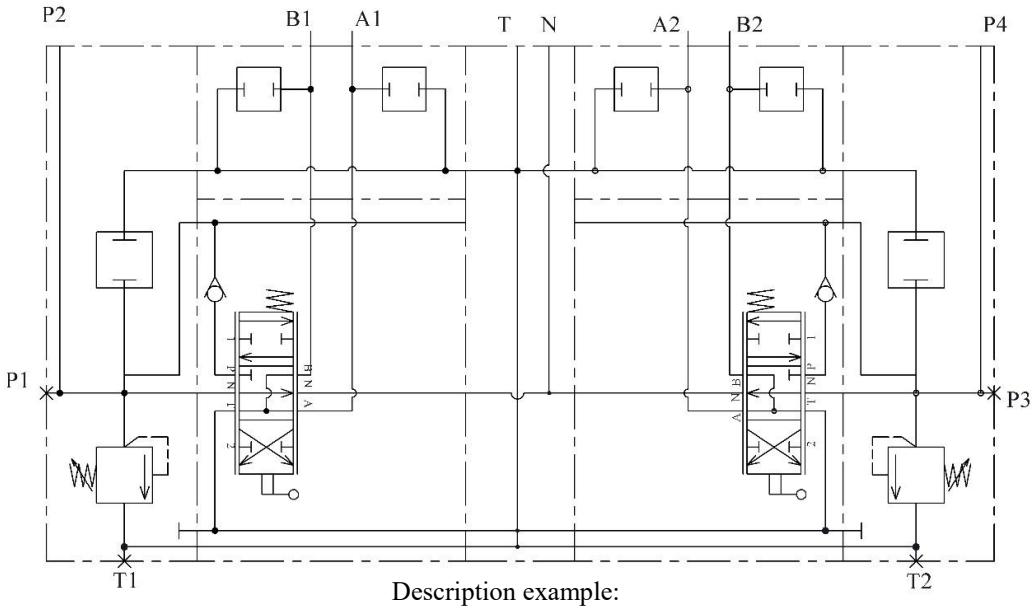
5	Valve Threading - refer to page 3

6	Coating and plating
	Valve body is phoshpated, steel parts Zn plated, spools either Ni, or Cr plating (omit in valve description)
BP	Painting

7	Assembly kit (tie rod kit)
1S	*Tie rod kit for 1 section*
2S	*Tie rod kit for 2 section*
3S	*Tie rod kit for 3 section*
4S	*Tie rod kit for 4 section*
5S	*Tie rod kit for 5 section*
6S	*Tie rod kit for 6 section*
7S	*Tie rod kit for 7 section*
8S	*Tie rod kit for 8 section*
9S	*Tie rod kit for 9 section*
10S	*Tie rod kit for 10 section*

Directional control valve with two inlets





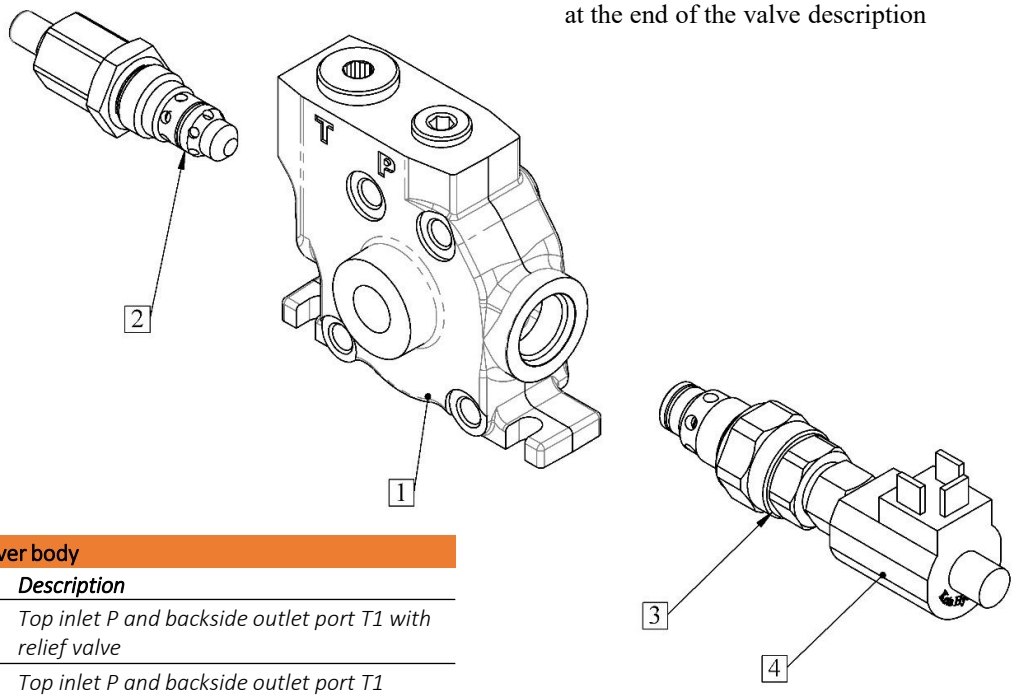
Description example:
2ZC70/L2/PD1KZ1/OM.C2T/PRD1KZ1/L4-G34

Inlet cover, order code

L3 (250) (ELP) - 24V - G - BP

1 2 3 4 5 6

When inlet cover is part of a valve, the voltage (4), threading (5) and plating (6) go at the end of the valve description



1	Inlet cover body
Type	*Description*
N1	*Top inlet P and backside outlet port T1 with relief valve*
N2	*Top inlet P and backside outlet port T1 plugged with relief valve*
L1	*Side inlet P1 with relief valve for left inlet valves (standard)*
L2	*Top inlet with relief valve for left inlet valves (standard)*
L3	*Side inlet with relief valve for right inlet valves*
L4	*Top inlet with relief valve for right inlet valves*

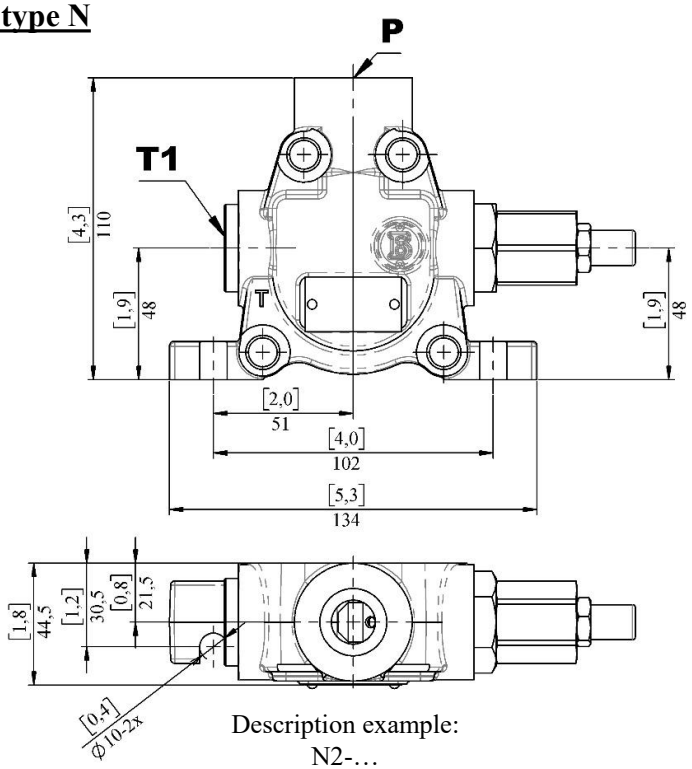
2	Relief valve option
omit	*Range 50-315 bar / 725 to 4270 psi* standard setting at 180 bar / 2610 *psi*
svp	*Relief valve blanking plug*

Standard setting is referred to 12 l/min flow, example for relief valve with a preset valve at 250 bar with cap nut for fixed setting (250-FV)

3	Unloader valve option
ELP	*With screw emergency*

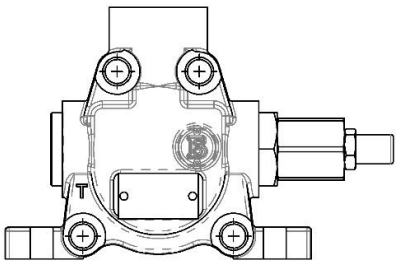
4	Coil for unloader valve
12V	*12V coil*
24V	*24V coil*
12V(DT)	*12V DT coil*
24V(DT)	*24V DT coil*
5	Valve Threading - refer to page 3
6	Coating and plating
	Valve body is phoshpated, steel parts Zn plated, spools either Ni, or Cr plating (omit in valve description)
BP	Painting

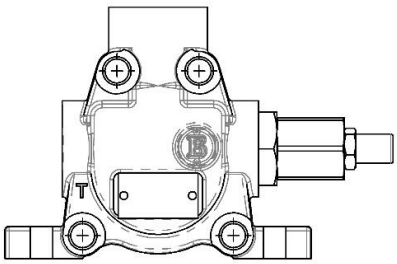
Inlet cover – type N

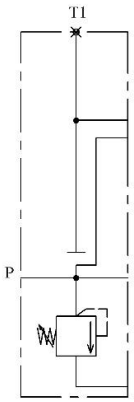


Description example:
N2-…

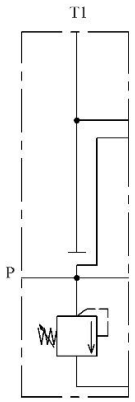
Inlet cover open tank port, to be used in combination with T1





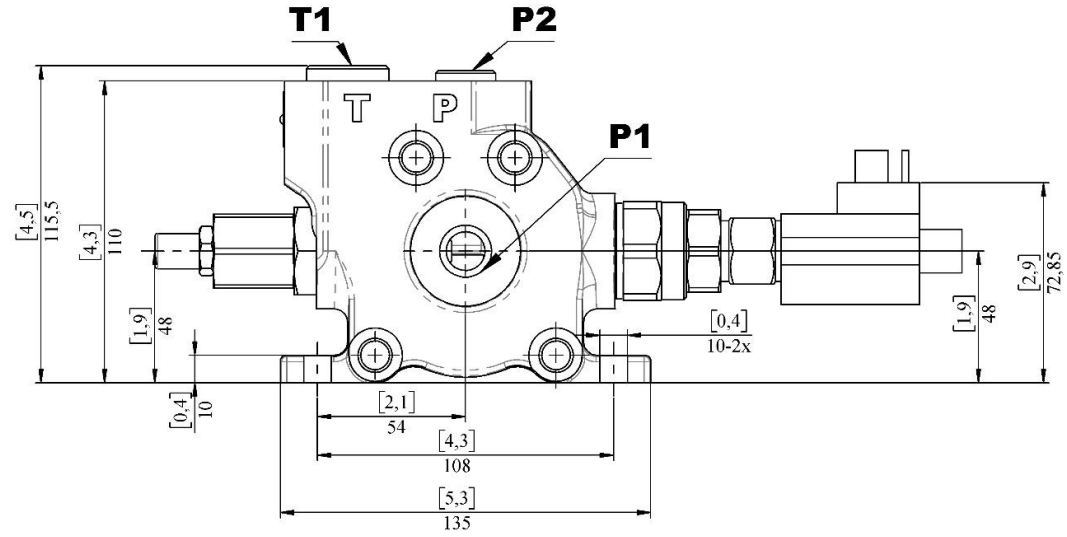


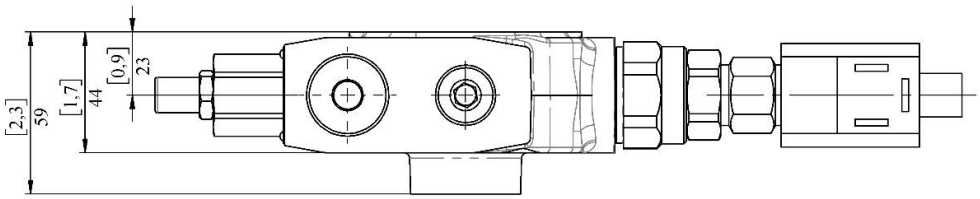
Description example:
N2-…



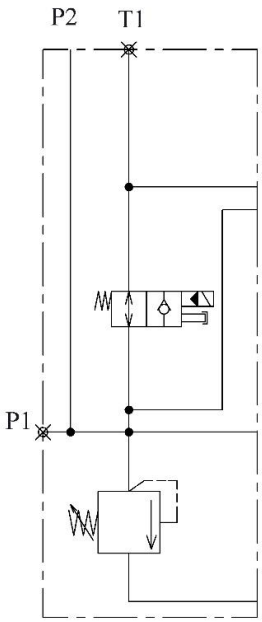
Description example:
N1-…

Order code for inlet cover L



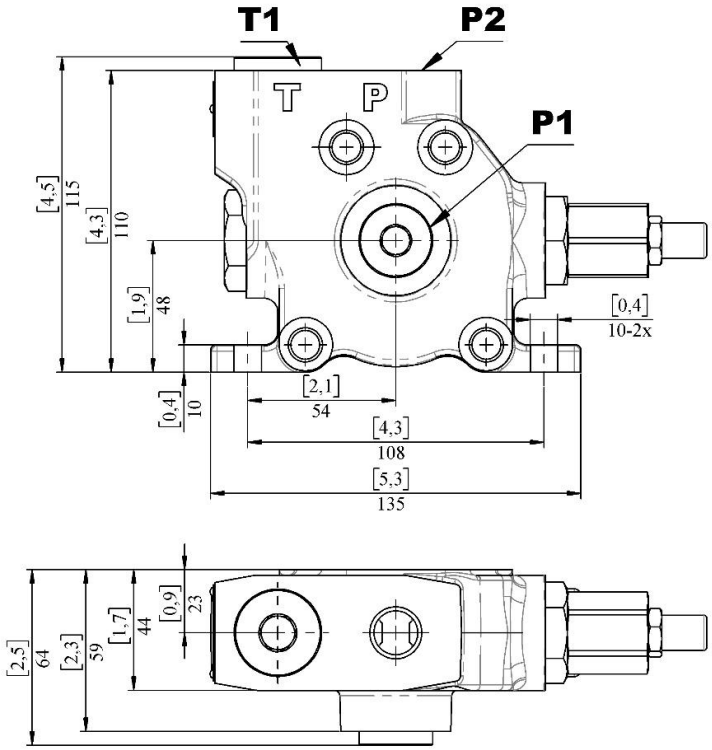


Inlet cover with unloader valve option and side inlet; Main relief valve set at 220 bar and does not have cap nut (FV).

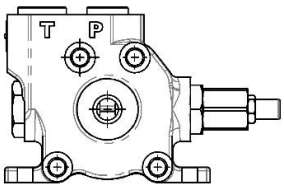


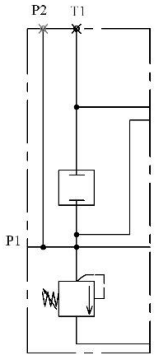
Description example:
L3(220)(ELP)-24V-…

Order code for inlet cover L



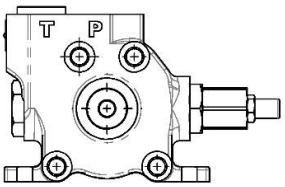
Inlet cover with top inlet and relief for left hand side configuration

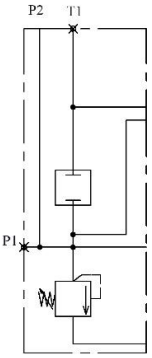




Description example: L1-…

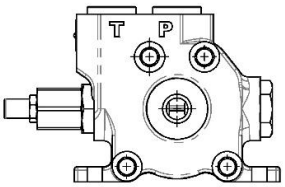
Inlet cover with side inlet and relief for left hand side configuration

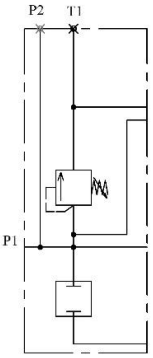




Description example: L2-…

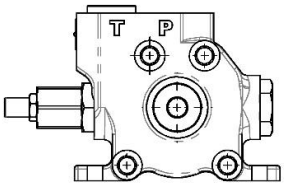
Inlet cover with top inlet and relief for right hand side configuration

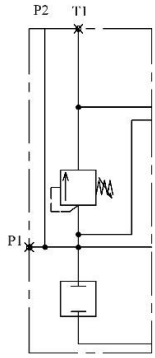




Description example: L3-…

Inlet cover with side inlet and relief for right hand side configuration





Description example: L4-…

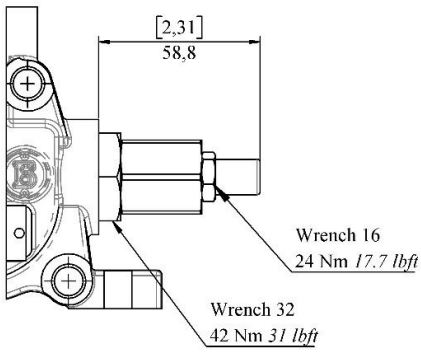
Inlet relief valve

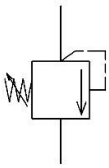
(280 – FV)

Steel cap nut for pre-set pressure

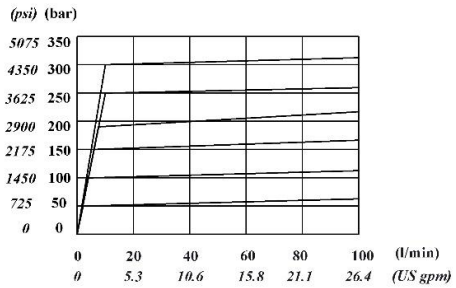
Pressure setting, if not specified – standard pressure setting 180 bar / 2610 psi

Standard main relief valve configuration

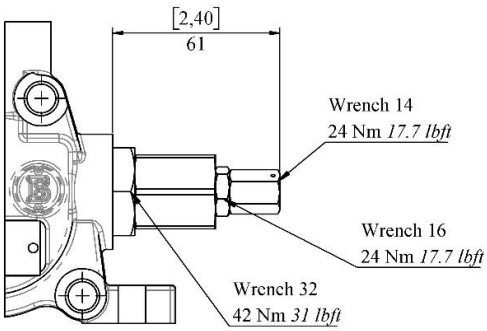


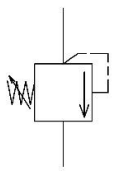


Valve setting range, with only one spring type

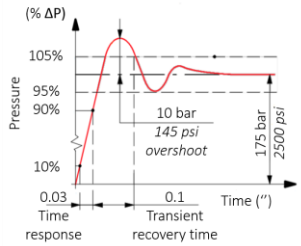


Main relief valve configuration with cap nut **(FV)**

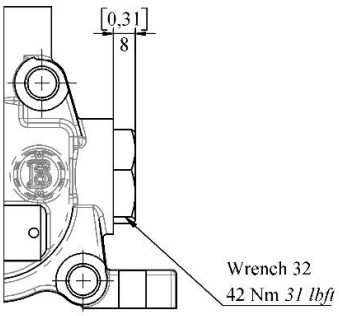


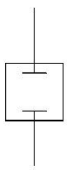


Time response



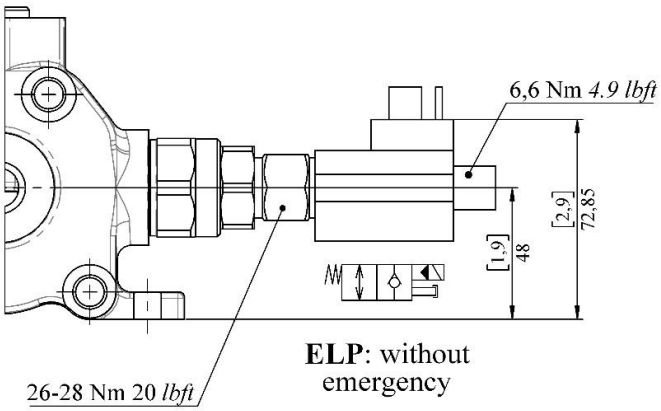
Without main relief valve – blanking plug only **(svp)**

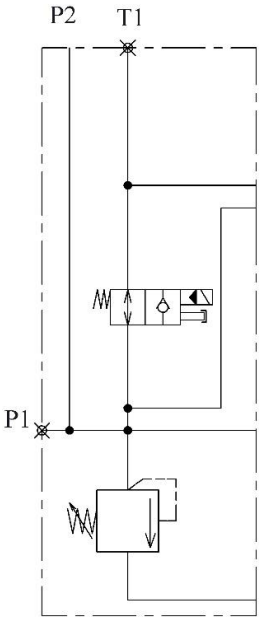




Unloader valve - ELP

Unloader valve can be used only with inlet cover type L

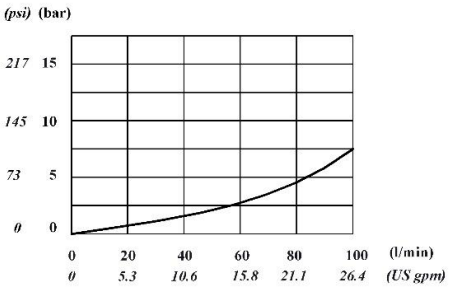




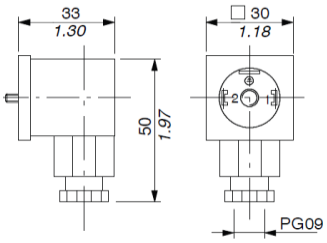
Features

Nominal flow.....100 l/min *26.4 US gpm*
Max. pressure.....315 bar *4600 psi*
Internal leakage.....3 ccm/min @ 100 bar *0.18 cin/min @1450 psi*

Pressure drop valve



Connector specifications 2P+T according to ISO 4400 / EN175301-803



Sections, order code

P A 1 KZ 1 (Az(D4-315)Bo) - G /ZC70

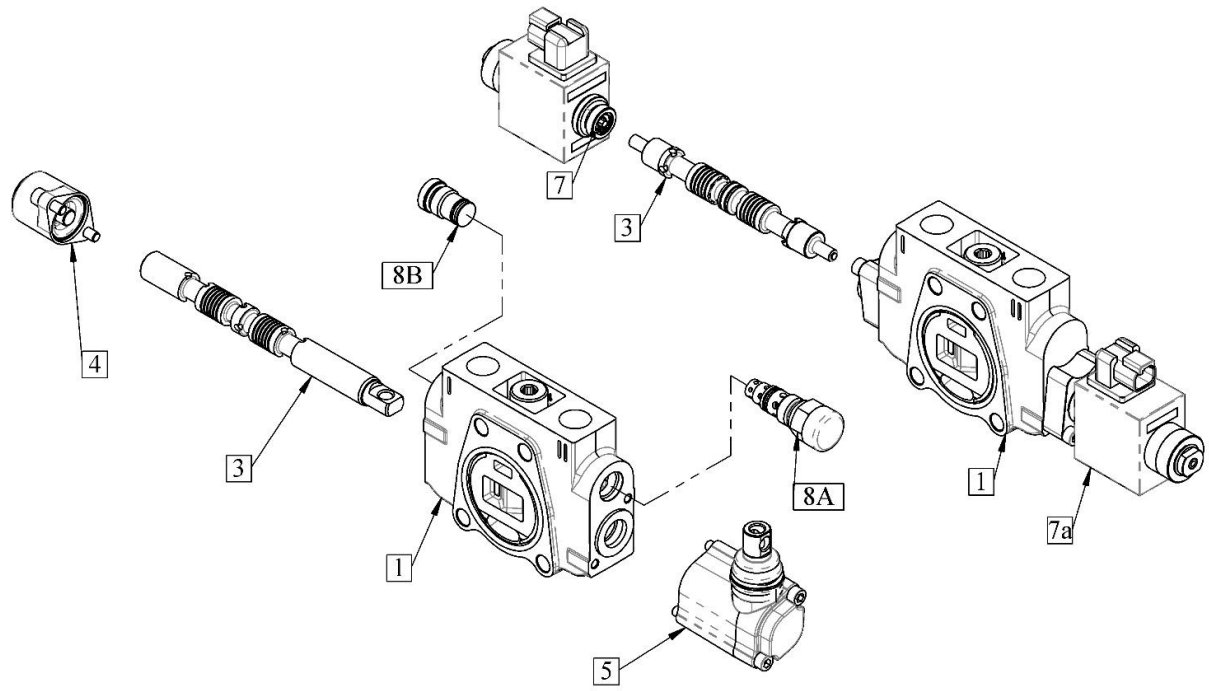
1 3 4 5 6 8A 8B

Threading options page 3

P A ES3 – 12V(DT) - G /ZC70

1 3 7 7a

Threading options page 3



Sections, order code

1	Body type
Type	*Description*
P	*Parallel body circuit*
T	*Tandem body circuit*
S	*Series body circuit*

IF pos. 8 from the section decription is missing the valve body kit does not have the required bores for auxiliary valves.

2	Position with respect to pump inlet
Type	*Description*
omit	*Left hand configuraton, pump port is on the left-hand side with respect to the control*
R	*Right hand configuration, pump port is on the right-hand side with respect to the control*

3	Spool options
Type	*Description*
A	*Double acting, 3 position, with A and B closed in pos. 0*
Af	*Double acting, 3 position, with A and B closed in pos. 0, fine metering*
B	*Single acting on A, 3 positions, B plugged, requires a plug.*
C	*Single acting on B, 3 positions, A plugged, requires a plug.*
D	*Double acting, 3 position, with A and B opened to tank in pos. 0*
E	*Double acting, 3 position, B opened to tank in pos. 0*
F	*Double acting, 3 position, A opened to tank in pos. 0*
Special spools for particular positioner kits	
K	*Double acting, 4 positions, floating circuit in 4th position with spool out, only available in left hand configuration*
L	*Double acting, 4 positions, floating circuit in 4th position with spool in, only available in right hand configuration*
Ak	*Double acting, 3 position, with A and B closed in pos. 0 for pressure release option (kick out)*
Dk	*Double acting, 3 position, with A and B opened to tank in pos. 0 for pressure release option (kick out)*
Lk	*Double acting, 4 positions, floating circuit in 4th position with spool in, only available in left hand configuration with pressure release (kick out) from pos. 1 and pos. 2 (requires kit 42)*
Kk	*Double acting, 4 positions, floating circuit in 4th position with spool out, only available in right hand configuration with pressure release (kick out) from pos. 1 and pos.2 (requires kit 46)*
*Special spools for Series sections "**S**"*	
SA	*Double acting, 3 position, with A and B closed in pos. 0; In pos. 1 A goes to by-pass line; in pos. 2 B goes to by-pass line N*
SD	*Double acting, 3 position, with A and B opened to tank in pos. 0; In pos. 1 A goes to by-pass line; in pos. 2 B goes to by-pass line N*

4	Spool positioners (side B)
Type	*Description*
1	*With spring return in pos. 0*
1C	*With spring return in pos. 0, soft spring*
1Z	*With spring return in pos. 0 and pin with M8 male thread for dual control*
1rAB	*With spring return in pos. 0 and stroke adjustments both directions*
1E	*With spring return in pos. 0 and microswtich included*
1D(M8)	*With spring return in pos 0 and pin with M8 female thread for dual control*
1T	*With spring return in pos. 0 with teton (push piston)*
14	*Spring return in pos. 0, no microswitch kit included*
4	*2 positions, with spring return in pos. 0 from pos. 2*
5	*2 positions, with spring return in pos. 0 from pos. 1*
6	*2 positions, with spring return in pos. 1 from pos. 2*
7	*2 positions, with spring return in pos. 2 from pos. 1*
7Z	*2 positions, with spring return in pos. 2 from pos. 1 and pin with M8 male thread for dual control*
7T	*2 positions, with spring return in pos. 2 from pos. 1 with teton (push piston)*
7D(M8)	*2 positions, with spring return in pos. 2 from pos. 1, and pin with M8 female thread for dual control*
7zS1	*2 positions, with spring return in pos. 2 from pos. 1 with special tie rod kit M8 for dual control*

Sections, order code

4	Spool positioners (side B) continue
8	*Detent in positions 0, 1 and 2*
8Z	*Detent in positions 0, 1 and 2, and pin with M8 male thread for dual control*
8F	*Friction detent with infinite positions limit with pos. 0, 1 and 2*
9	*Detent in positions 1 and 0*
10	*Detent in positions 0 and 2*
11	*Detent in positions 1 and 2*
11B	*Detent in positions 1 and 2, and spring return to pos. 0*
2	*With detent in position 1 and spring return in pos. 0*
3	*With detent in position 2 and spring return in pos. 0*
3D(M8)	*With detent in position 2 and spring return in pos. 0 and pin with M8 female thread for dual control*
6B3	*2 positions, with spring return in pos. 2 from pos. 1 with detent in pos. 2*
7B2	*2 positions, with spring return in pos. 1 from pos. 2 with detent in pos. 1*
1V2	*With spring return in pos. 0 for flexible cable control*
8V2	*Detent in positions 0, 1 and 2 for flexible cable control*
1H	*Proportional hydraulic control- single side*
1P	*ON/OFF pneumatic control*
1EP	*ON/OFF electro-pneumatic control*
1ED3	*ON/OFF electro-hydraulic control*
Particular positioner kits for special spools	
12	*4 position with spring return in pos. 0 and detent in float position - only for spool L*
13	*Detent in 4 positions - only for spool L*
16	*4 position with spring return in pos. 0 and detent in float position - only for spool K*
15	*Detent in 4 positions - only for spool K*
31	*3 position detent with pressure release (kick out) from pos. 1 and 2*
32	*3 position detent with pressure release (kick out) from pos. 1 and spring return from pos. 2*
33	*3 position detent with pressure release (kick out) from pos. 2 and spring return from pos. 1*
42	*4 position detent with pressure release (kick out) from pos. 1 and 2 only for spool Lk*
46	*4 position detent with pressure release (kick out) from pos. 1 and 2 only for spool Kk*
461	*4 position detent with pressure release (kick out) from pos. 2 only for spool Kk*
462	*4 position detent with pressure release (kick out) from pos. 1 only for spool Kk*
*Particular positioner kits for "**S**" section*	
1S	*With spring return in pos. 0*
2S	*With detent in position 1 and spring return in pos. 0*
3S	*With detent in position 2 and spring return in pos. 0*
8S	*Detent in positions 0, 1 and 2*
10S	*Detent in positions 0 and 2*
5	**Spool controls (side A)**
	without lever box, with plate
KZ	*Lever box for M10*
KZe	*Lever box for M10, extreme conditions*
KZT	*Lever box for M8 with teton (push piston)*
KI	*Lever box, collet type, horizontal Ø9 mm*
KY	*Lever box, collet type, vertical Ø9 mm*
*Adding a **0** after the first part of the code will make the execution rotated 180°, lever will face the bottom of the valve, not the ports eg. **KZ0***	
KZV	*Safety lever box, vertical configuration*
KZH	*Safety lever box, horizontal configuration*
SLP	*without lever box with dustproof plate*
V1	*Flexible cable connection*
ju+1	*Joystick lever for 2 sections with pivot 1 o-clock*
ju+2	*Joystick lever for 2 sections with pivot at 11 o-clock*
ju+3	*Joystick lever for 2 sections with pivot 7 o-clock*
ju+4	*Joystick lever for 2 sections with pivot at 5 o-clock*
Optional ball type handle (jb+...), and custom lengths	
6	**Handle options**
1	*M10x170*
Custom lengths and bends available	
7	**Complete controls**
ES	*Single acting solenoid kit*
H3	*Dual side proportional hydraulic control*
H3a	*Dual side proportional hydraulic control with stroke adjustment*

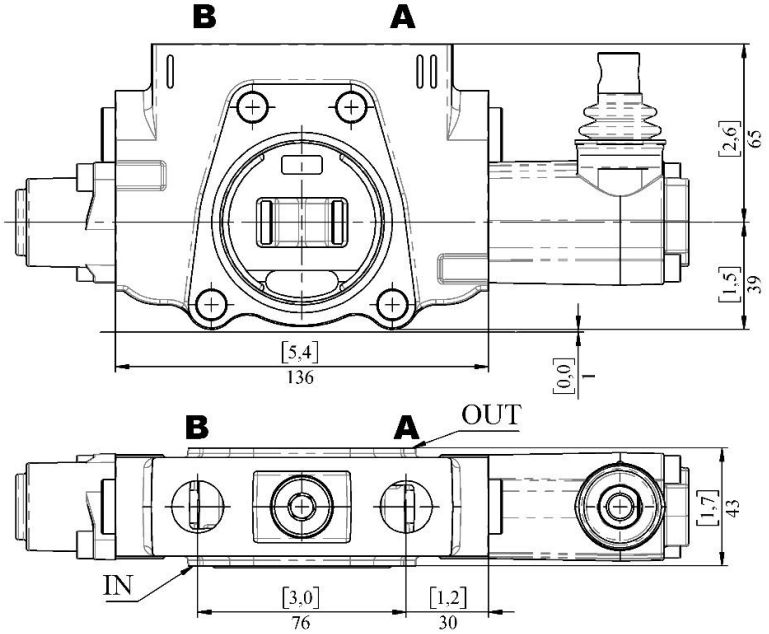
Sections, order code

7a	Coil specifications
12V	*12V coil*
24V	*24V coil*
12V	*12V DT coil*
24V	*24V DT coil*
7b	**Connectors**
	By default, connectors are not included
(C)	*Connector for the particular coil is included*

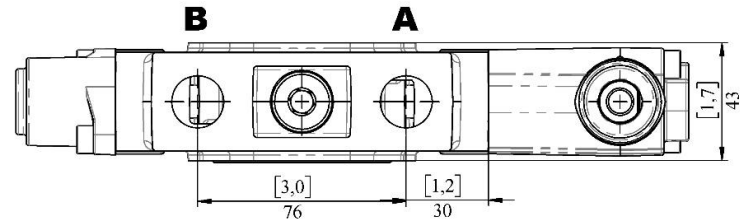
8	Auxiliary (Port) relief valves
omit	*Valve body without pre-machined bores for auxliary valves.*
o	*Relief valve blanking plug*
x	*Anti-cavitational valve*
Anti-shock valve	
y(D2-120)	*Range 50-120 bar / 725 to 1740 psi* standard setting at 120 bar / *1740 psi*
y(120-250)	*Range 120-250 bar / 1740 to 3625 psi* setting other than 180 bar / 2610 *psi*
y(D4-220)	*Range 220-315 bar / 3190 to 4570 psi* standard setting at 220 bar / *3190 psi*
Anti-shock and anti-cavitational valve	
z(D2-120)	*Range 50-120 bar / 725 to 1740 psi* standard setting at 120 bar / *1740 psi*
z(120-250)	*Range 120-250 bar / 1740 to 3625 psi* setting other than 180 bar / 2610 *psi*
z(D4-220)	*Range 220-315 bar / 3190 to 4570 psi* standard setting at 220 bar / *3190 psi*
(FV)	*Fixed valve setting and sealing*

Sections, dimension data and circuit

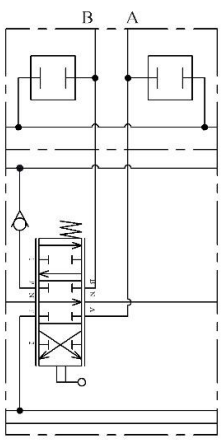
P-type section (parallel)
Section with port valve arrangement
(Dimensions are same for P, T, and S)



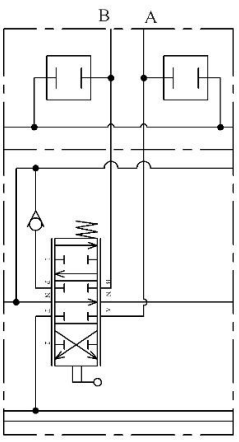
P-type section (parallel)
Section without port valve arrangement
(Dimensions are same for P, T, and S)



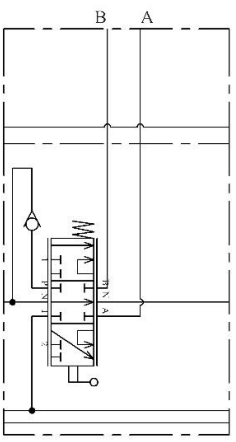
P-type
(with port relief)



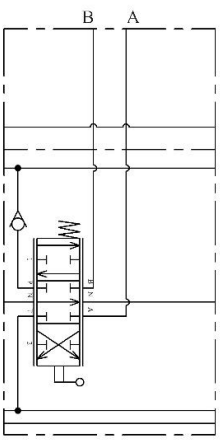
T-type
(with port relief)



S-type
(without port relief)

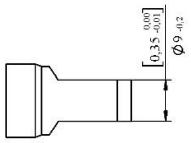


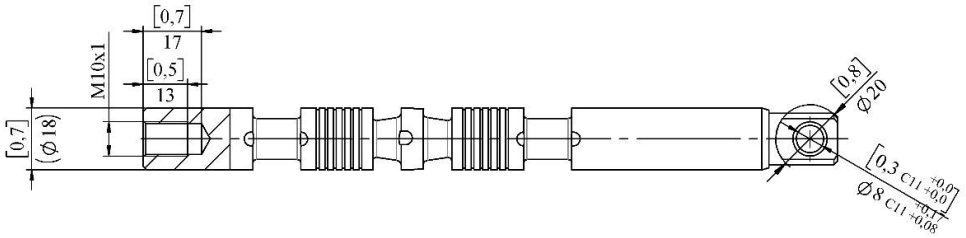
P-type
(without port relief)

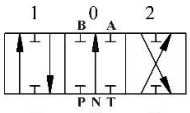


Spool types

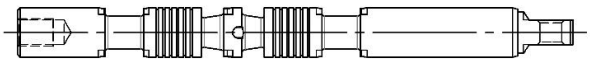
All spools have the ends shown in the drawing below. These ends are necessary to join the spool to the controls on side A and positioners on side B.
Sectional valves are symmetric – so all spools are left and right version "**R**", depending on the direction in which the spool is installed.

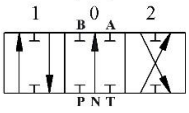




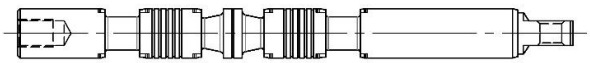


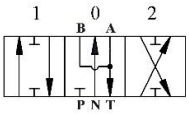
A — Double acting spool, work ports closed in neutral position.



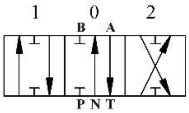


Af — Double acting spool, high metering, work ports closed in neutral position.

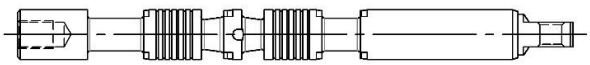


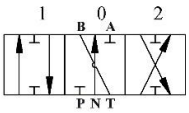


D — Double acting spool, work ports open to tank in neutral position.

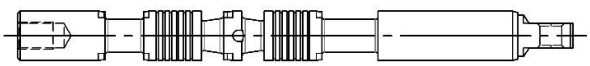


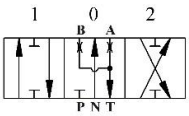
E — Double acting spool, work port B open to tank in neutral position.



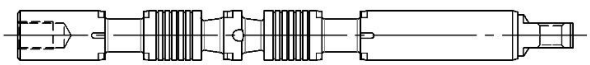


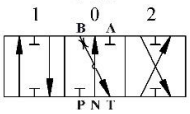
F — Double acting spool, work port A open to tank in neutral position.



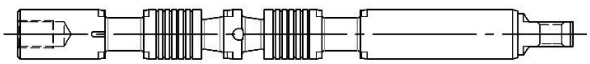


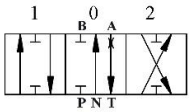
Dd — Double acting spool, closed center, work ports partially open to tank



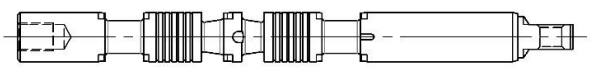


Ed — Double acting spool, closed center, work port B partially open to tank



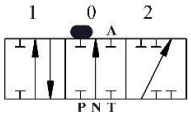


Fd — Double acting spool, closed center, work port A partially open to tank



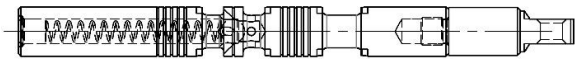
Spool types

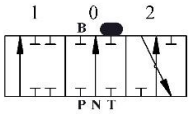
Spools for single-acting cylinders:



B

Single acting on A, 3 position, B plugged

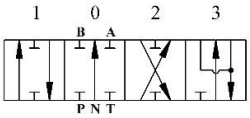




C

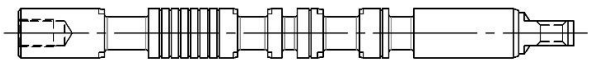
Single acting on B, 3 positons, A plugged

Spools with floating position, to be assembled with particular positioner kits

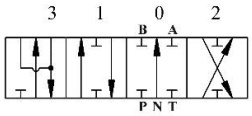


L

Double acting, 4 positions, floating circuit in 4th postion with spool in

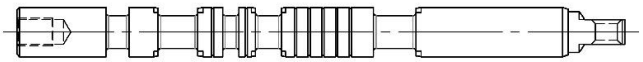


Spool L to be assembled with positioner kits 12 and 13 only.



K

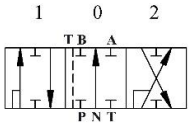
Double acting, 4 positions, floating circuit in 4th postion with spool out



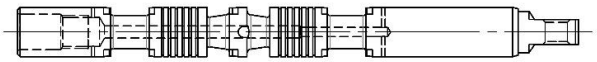
Spool K to be assembled with positioner kits 15 and 16 only.

Spool types

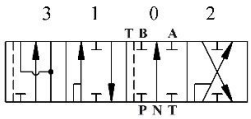
Spools for kick out kits:



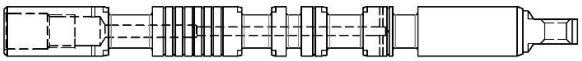
Ak Double acting spool, work ports closed in neutral position.



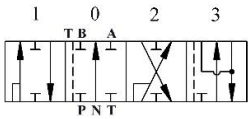
Spool Ak to be assembled with positioner kits – 31, 32, and 33.



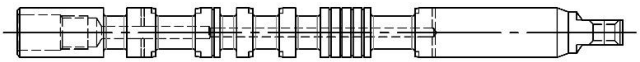
Lk Double acting, 4 positions, floating circuit in 4th postion with spool in



Spool Lk to be assembled with positioner kits 42 only.



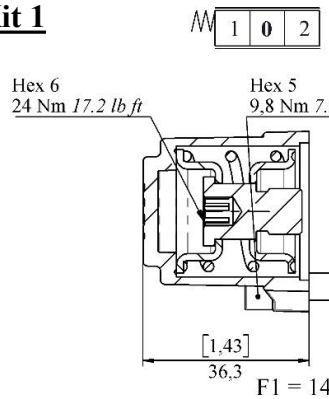
Kk Double acting, 4 positions, floating circuit in 4th postion with spool out



Spool Kk to be assembled with positioner kits 46 only.

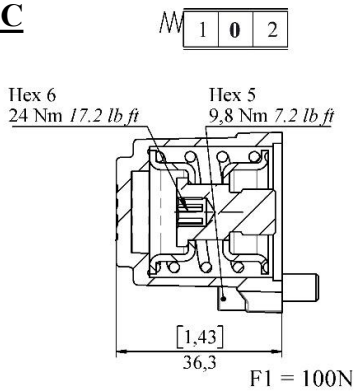
Spool positioner (B-side)

Kit 1



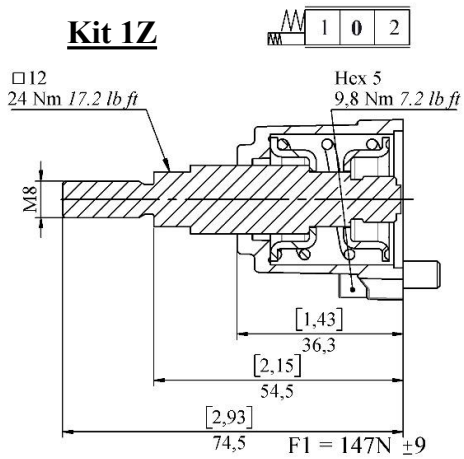
F1 = 147N ±9
F2 = 229N ±10

Kit 1C



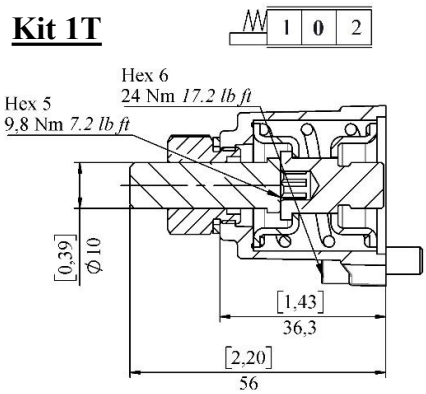
F1 = 100N ±9
F2 = 130N ±10

Kit 1Z



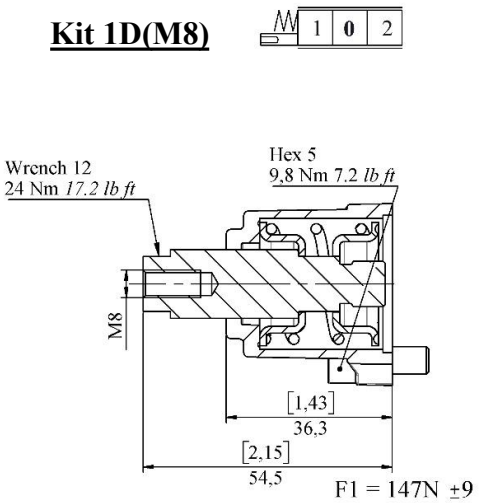
F1 = 147N ±9
F2 = 229N ±10

Kit 1T



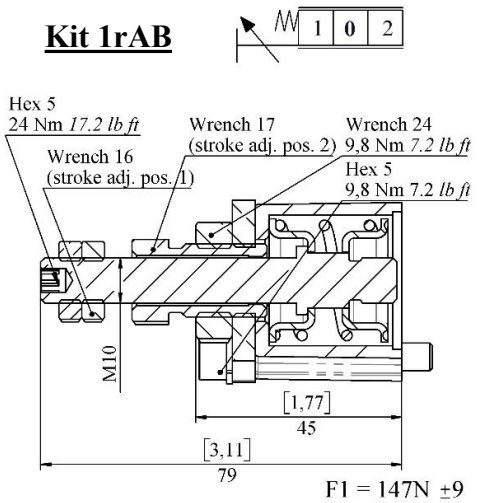
F1 = 147N ±9
F2 = 229N ±10

Kit 1D(M8)



F1 = 147N ±9
F2 = 229N ±10

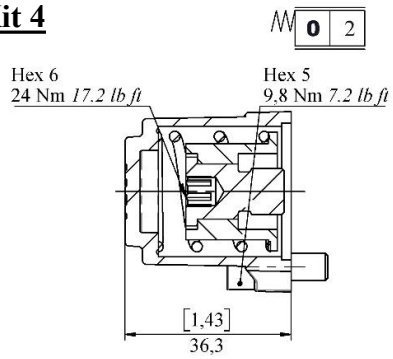
Kit 1rAB



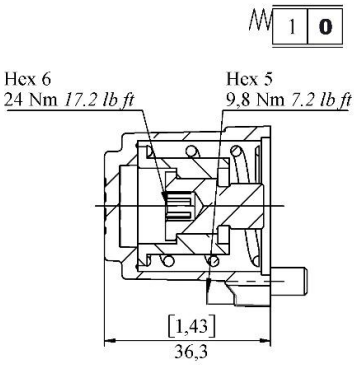
F1 = 147N ±9
F2 = 229N ±10

Spool positioner (B-side)

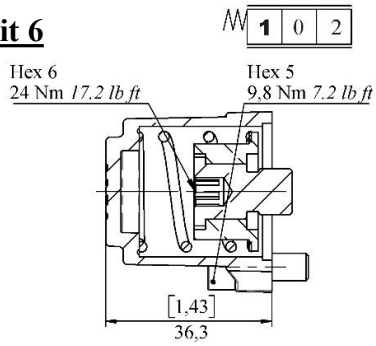
Kit 4



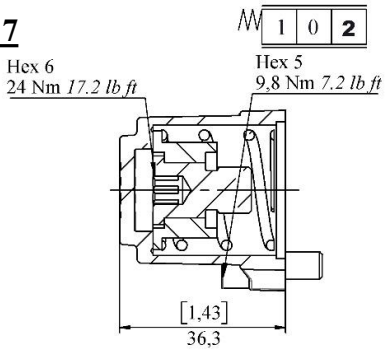
Kit 5



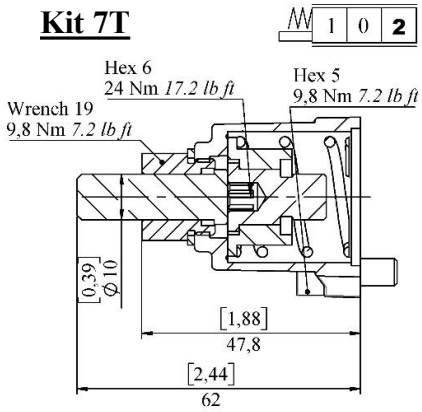
Kit 6



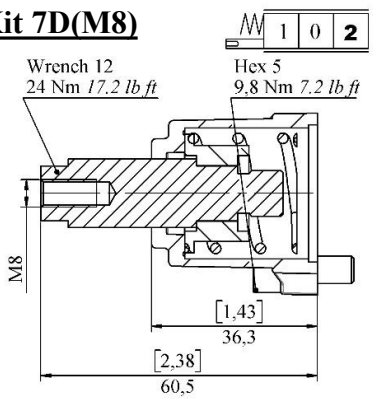
Kit 7



Kit 7T

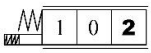


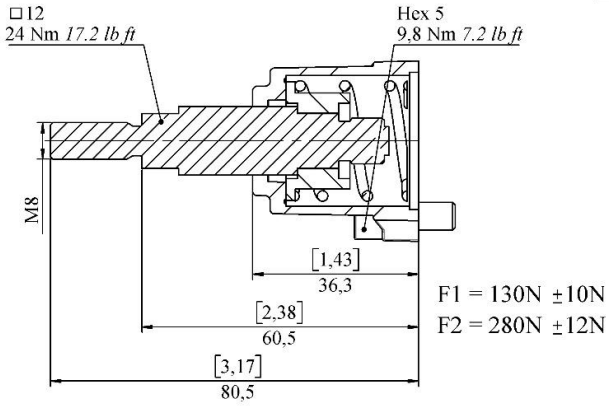
Kit 7D(M8)



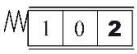
Spool positioners (B-side)

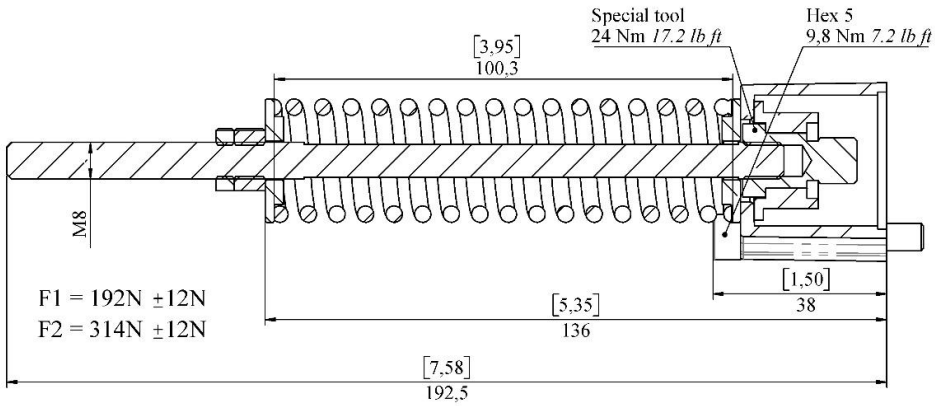
Kit 7Z



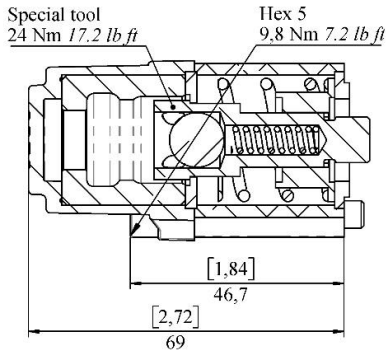


Kit 7zS1

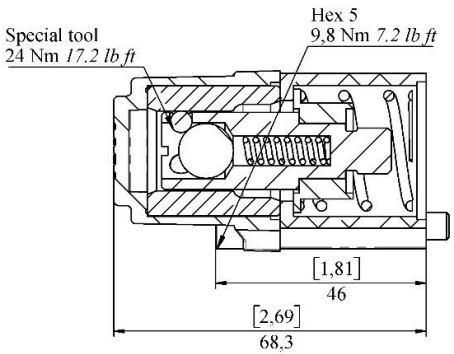




Kit 6B3

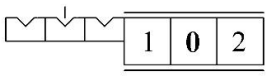


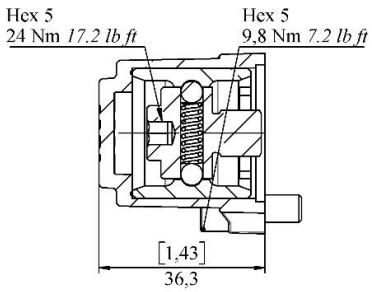
Kit 7B2



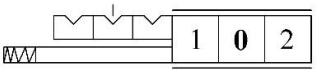
Spool positioners (B-side)

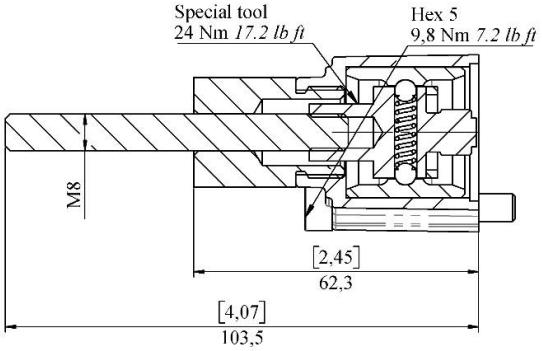
Kit 8



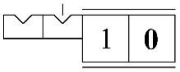


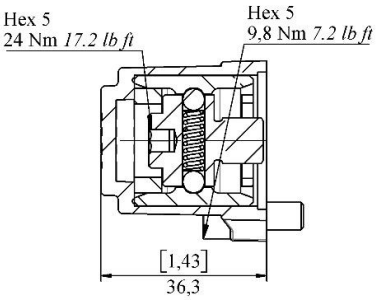
Kit 8Z



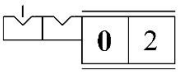


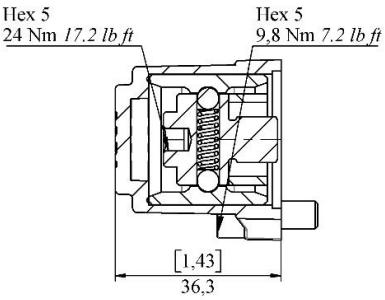
Kit 9



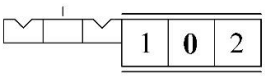


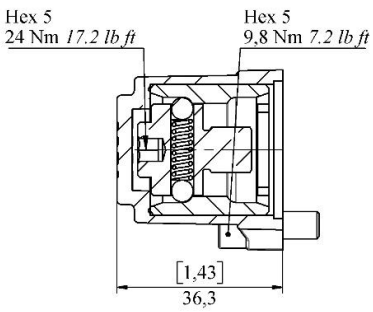
Kit 10



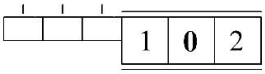


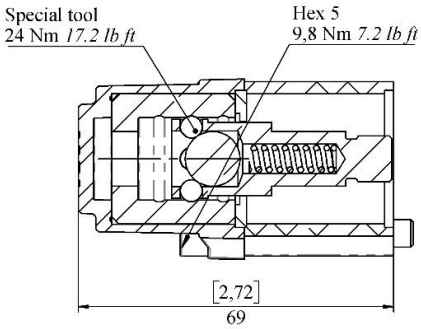
Kit 11





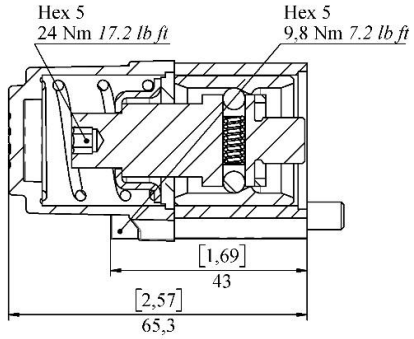
Kit 8F

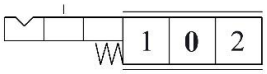




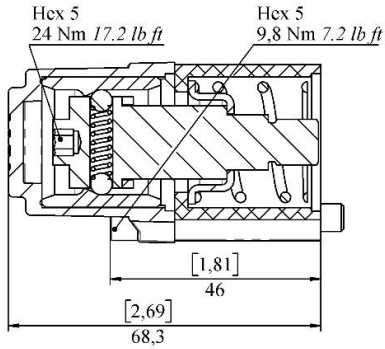
Spool positioners (B-side)

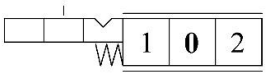
Kit 2: *3 position, spring return from pos. 2 to pos. 0 and detent in pos. 1*



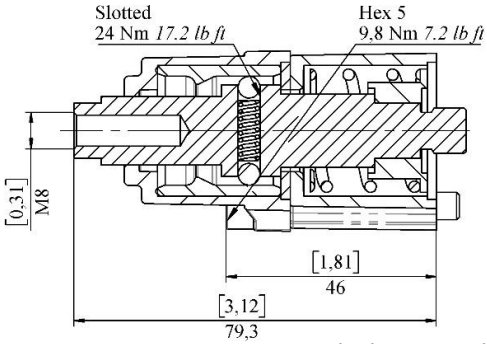


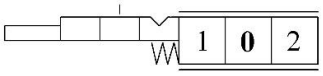
Kit 3: *3 position, spring return from pos. 1 and detent in pos. 2*



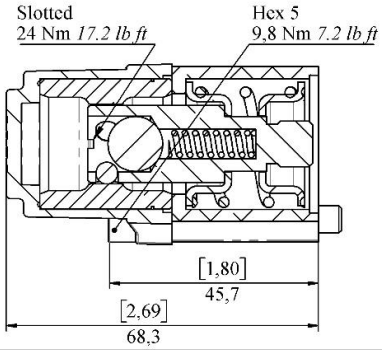


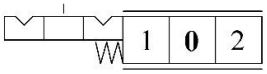
Kit 3D(M8): *3 position, spring return from pos. 1 and detent in pos. 2 and pin with thread M8 for dual control*





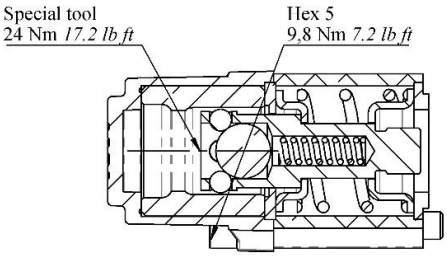
Kit 11B: *2 position, with detent in both positions and spring return to neutral from either direction*

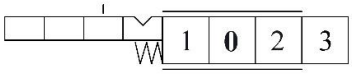




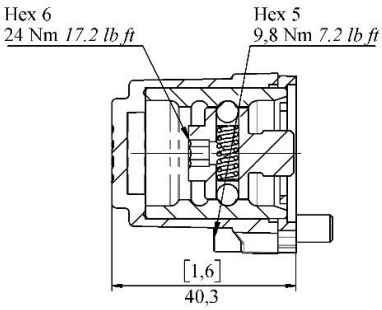
Particular spool positioners kits for floating spool L (float when spool IN)

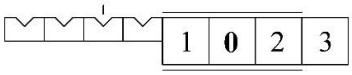
Kit 12: *four position, return to neutral from 1 and 2 and detent in float*





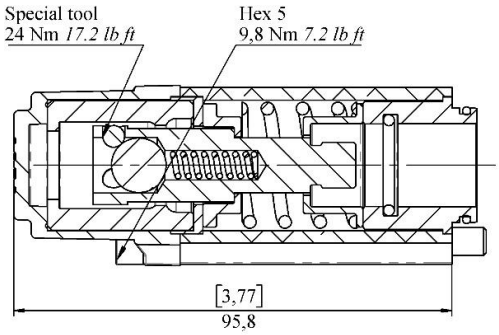
Kit 13: *four position detent*

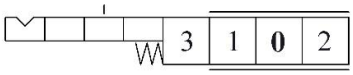




Particular spool positioners kits for floating spool K (float when spool OUT)

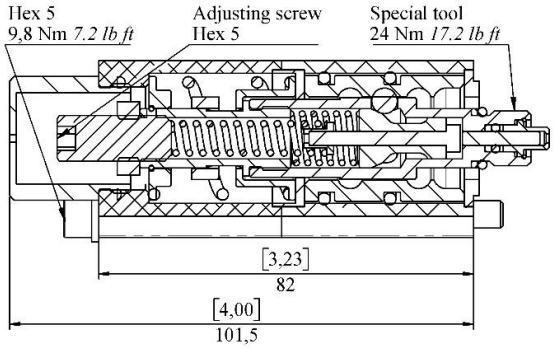
Kit 16: *four position, return to neutral from 1 and 2 and detent in float*

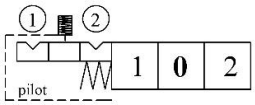




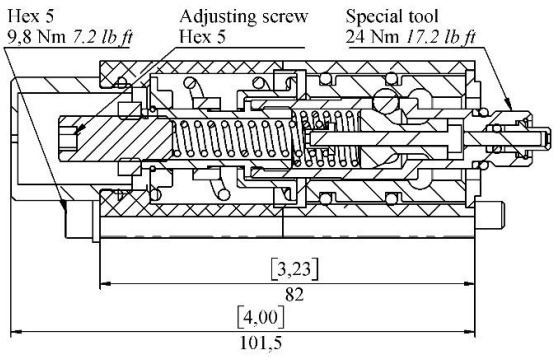
Particular spool positioners kits for pressure release kits (kick out)

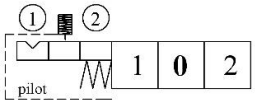
Kit 31: *3 position with detent and pressure release from pos. 1 and pos. 2*



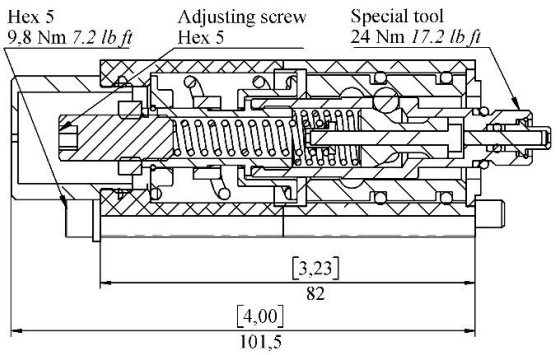


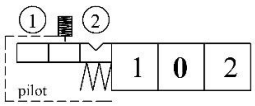
Kit 32: *3 position with detent and pressure release from pos. 1 and spring return from pos. 2*





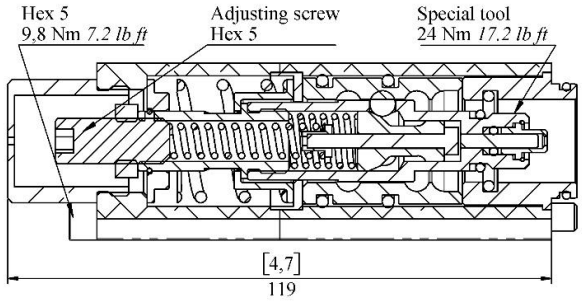
Kit 33: *3 position with detent and pressure release from pos. 2 and spring return from pos. 1*

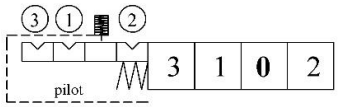




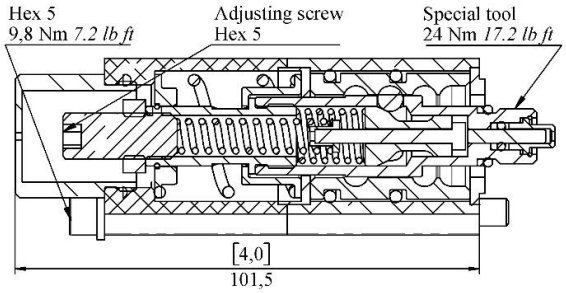
Particular spool positioners kits for pressure release kits (kick out)

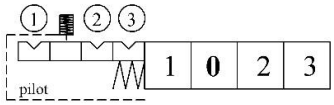
Kit 46: *four position, pressure release from pos. 1 and pos. 2 to pos. 0, float positioner spool OUT*



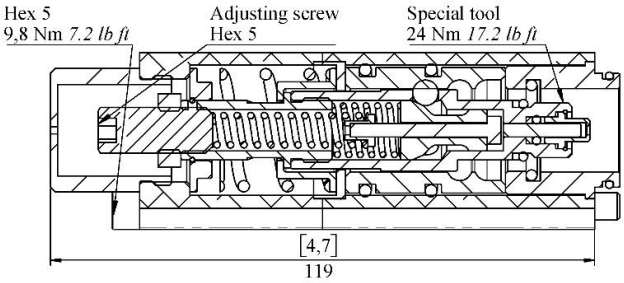


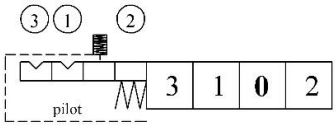
Kit 42: *four position, pressure release from pos. 1 and pos. 2 to pos. 0, float position spool IN*





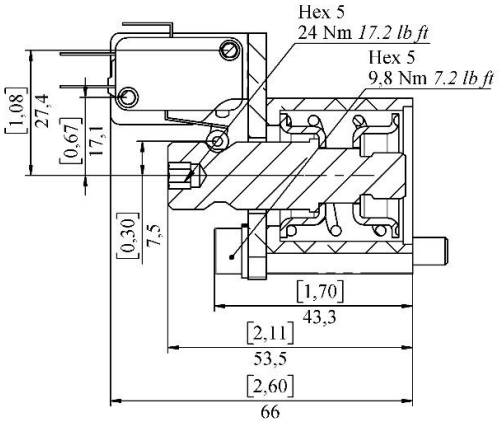
Kit 462: *four position, pressure release from pos. 2 and spring return from pos. 1, and float position available*

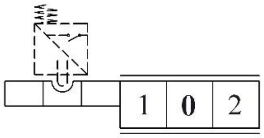




Particular spool positioners kits for microswitch

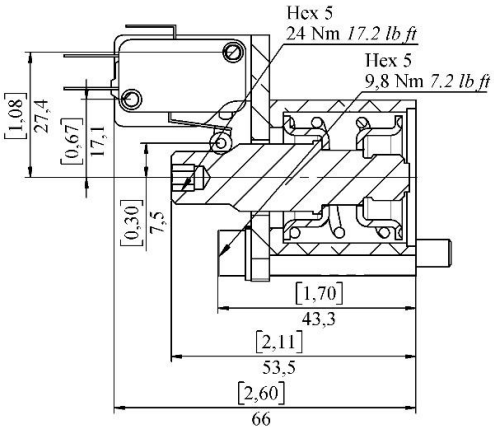
Kit 1E for *double acting spool A or D*

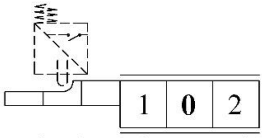




For double acting spool A

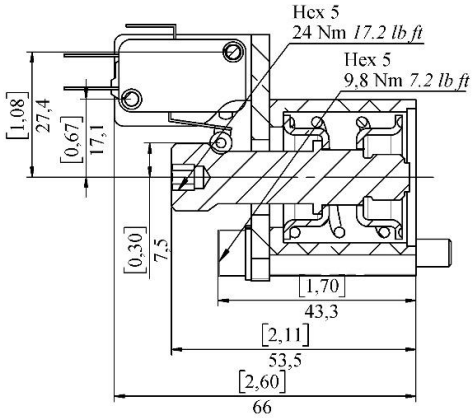
Kit 1E for *single acting spool B*

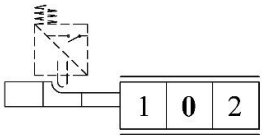




For single acting spool B

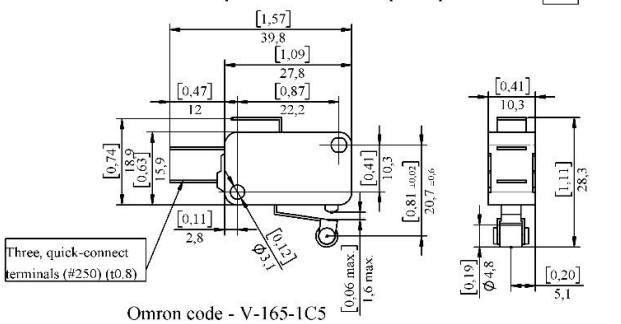
Kit 1E for *single acting spool C*





For single acting spool C

Microswich specification for spool positioner 1E

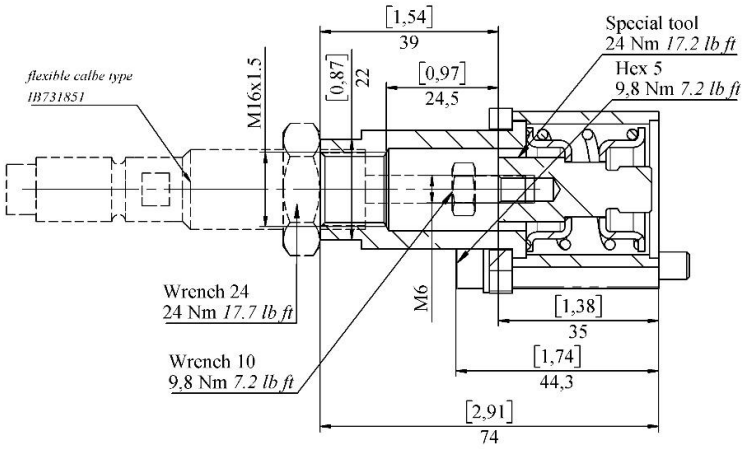


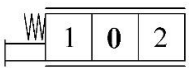
Omron code - V-165-1C5

Needs a special bracket to be assembled with spool positioners

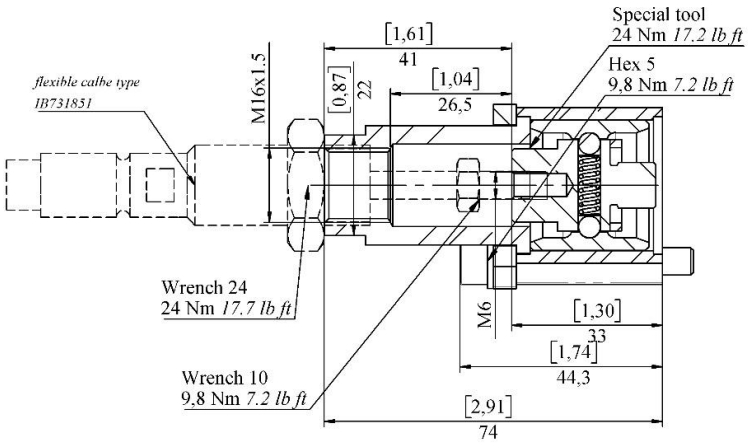
Spool positioner for flexible cable connection (side B)

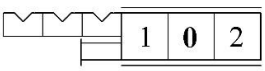
Kit 1V2





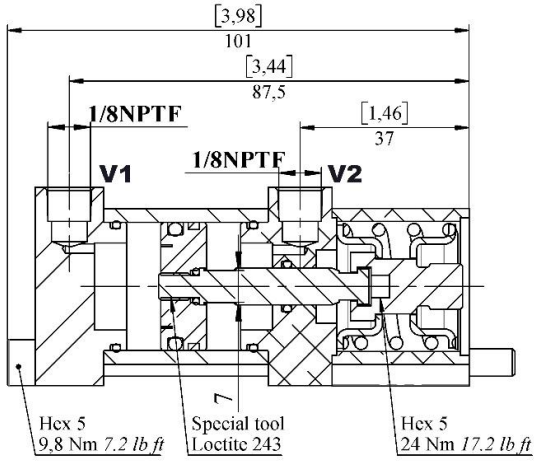
Kit 8V2

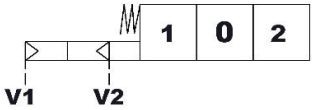




More information regarding controls, cable lengths, and ordering codes see page for flexible cable control V1 (Side A)

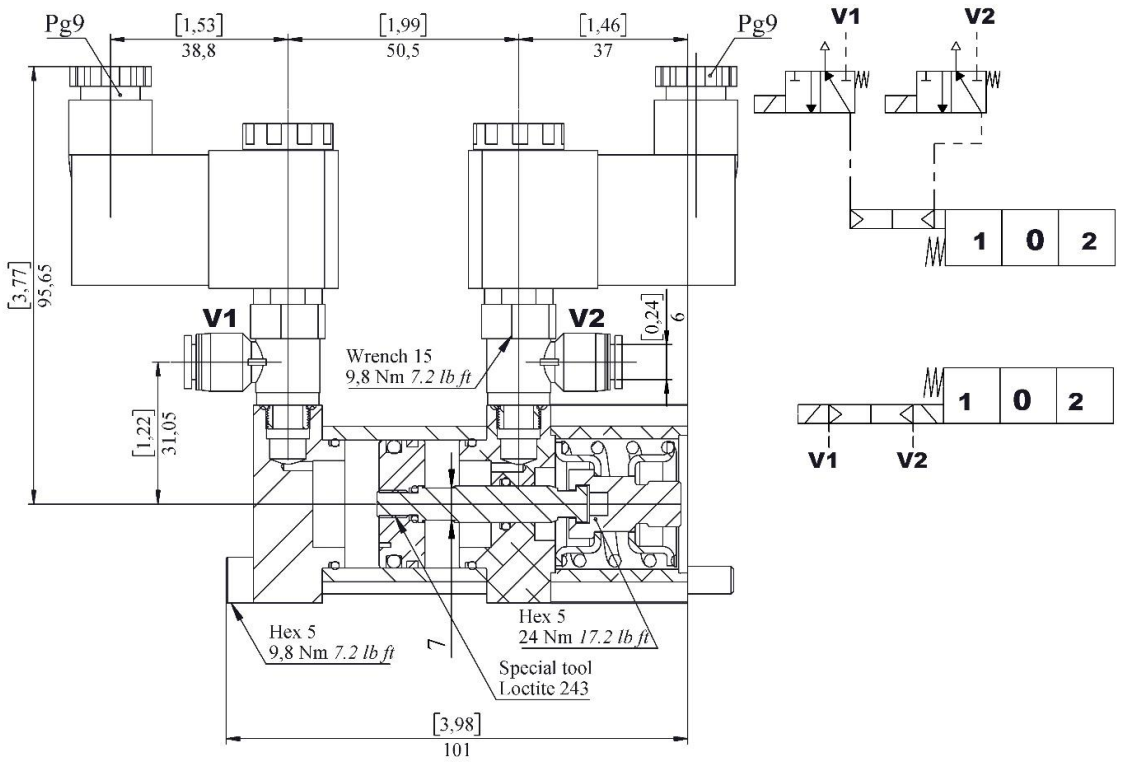
ON/OFF Pneumatic kit - 1P



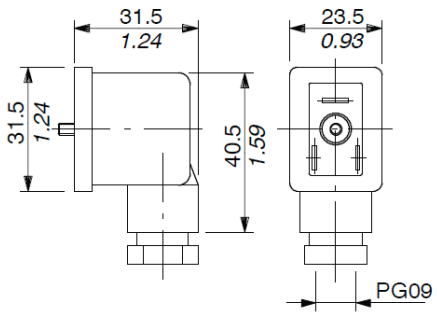


Operating features		
Pilot pressure	min	6 bar / *87 psi*
	max.	10 bar / *145 psi*

ON/OFF Electro pneumatic kit - 1PE



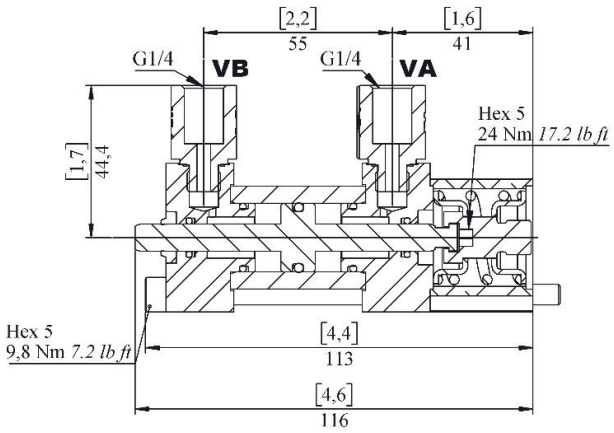
Connector specifications:

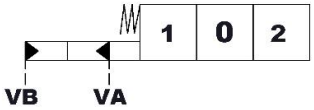


Operating features		
Pilot pressure	min	6 bar / *87 psi*
	max.	10 bar / *145 psi*
COIL specifications		
Nominal voltage tolerance		±10 %
Power rating		4,8 W
Nominal current		0,4 A - 12 VDC
		0,2 A - 24 VDC
Coil insulation		Class F
Weather protection		IP65
Duty cycle		100%

Connector is always included in 1EP control

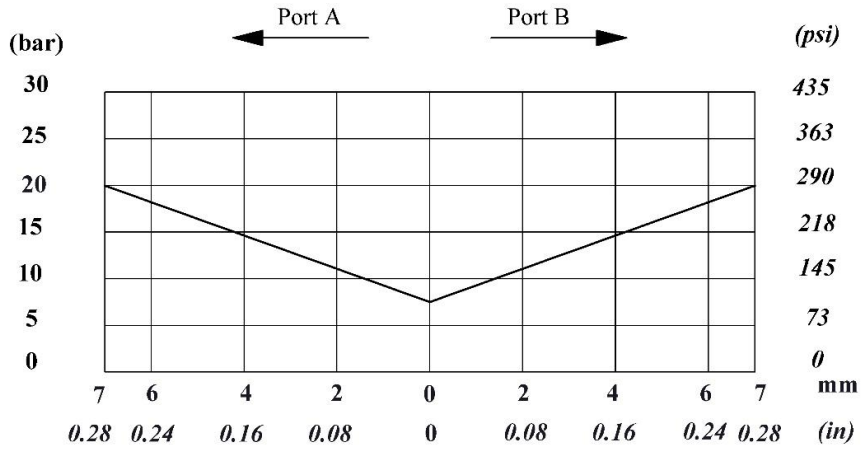
Proportional hydraulic, single side kit - 1H





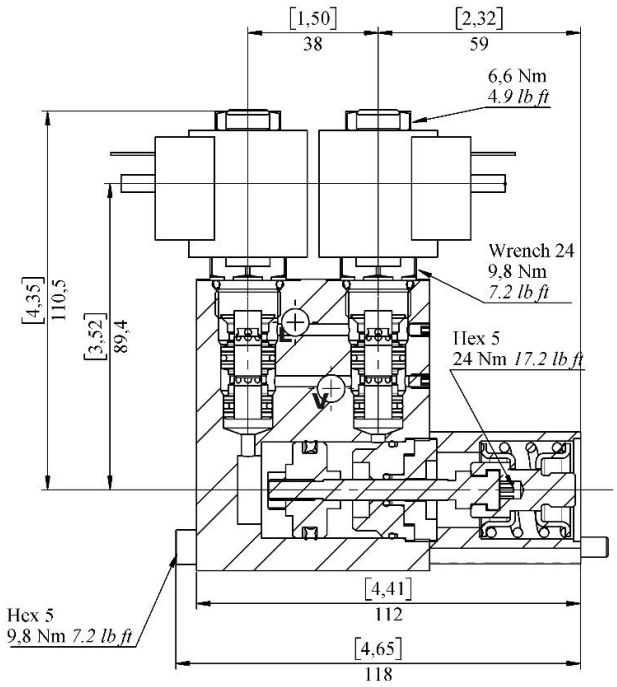
Operating features	
Pilot pressure	max. 50 bar / *725 psi*

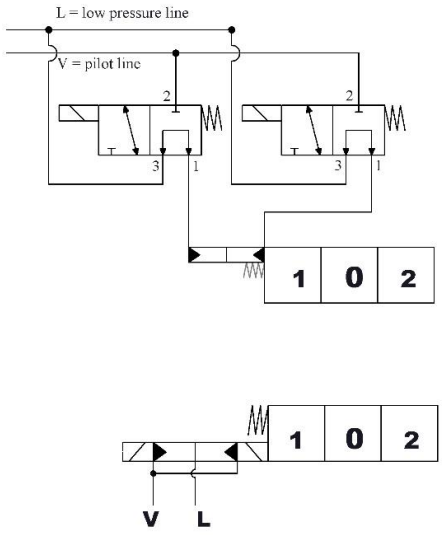
Pilot pressure - stroke diagram



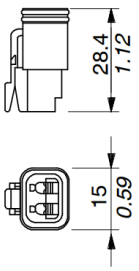
ON/OFF electro-hydraulic kit - 1ED3

With spring return to neutral position

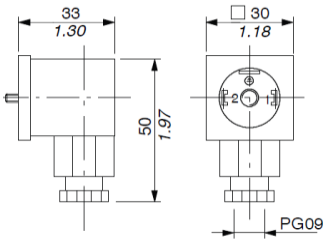




Connector specifications
2 poles, type Deutsch DT06-2S
Male housing with female ends



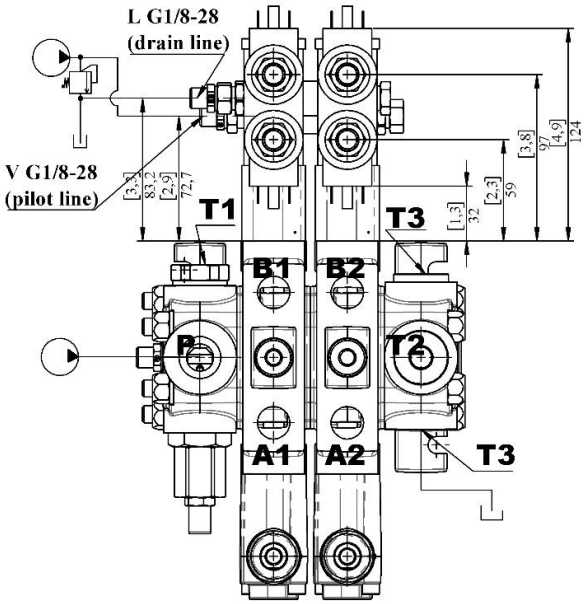
Connector specifications
2P+T according to
ISO 4400 / EN175301-803

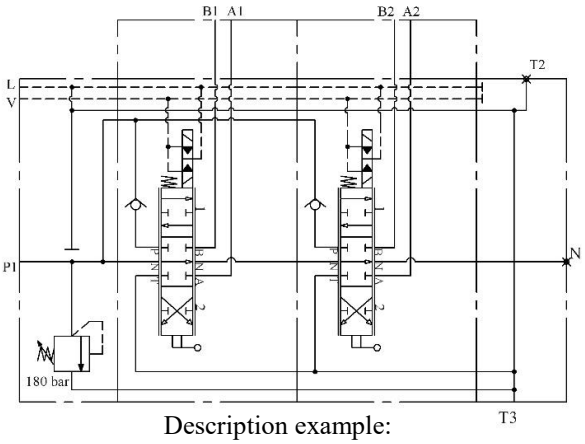


Operating features		
Pilot pressure	min	10 bar / *145 psi*
	max.	50 bar / *725 psi*
Back pressure on drain L	max.	25 bar / *360 psi*

COIL specifications	
Nominal voltage tolerance	±10 %
Power rating	21 W
Nominal current	1,75 A - 12 VDC
	0,87 A - 24 VDC
Coil insulation	Class F
Weather protection	IP65
Duty cycle	100%

ON/OFF electro-hydraulic kit - 1ED3 with external drain

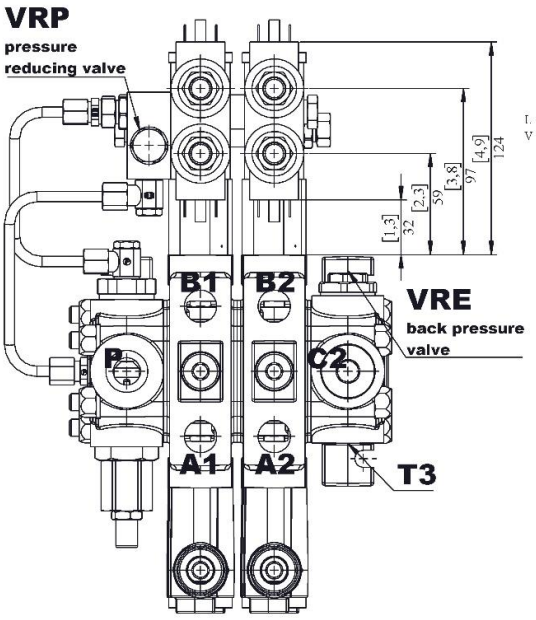


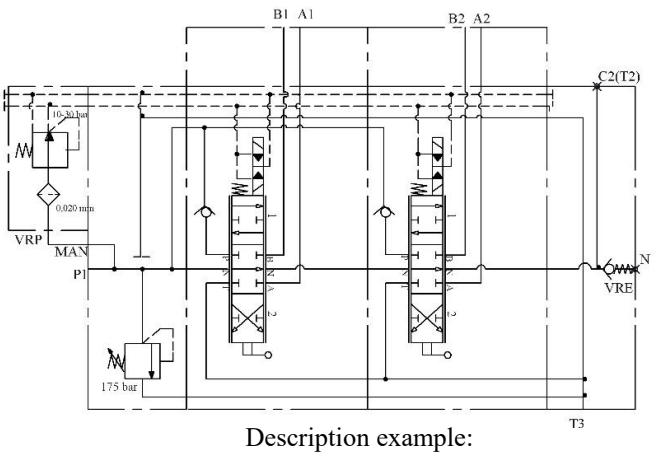


Description example:
2ZC70/N2/2x(PA1ED3KZ1)/T3-24V-G34

ON/OFF electro-hydraulic kit - 1ED3 with pilot and drain lines

Kit consists of pressure reducing valve, VRP, back pressure valve VRE and pipes

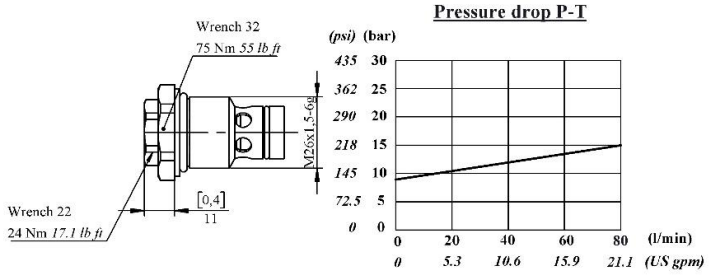




Description example:
2ZC70/N2/VRP/2x(PA1ED3KZ1)/T3(VRE)-24V-G34

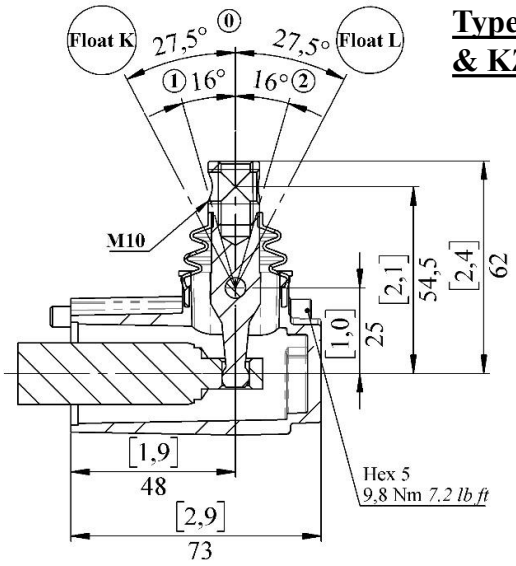
Back pressure valve (VRE) specifications

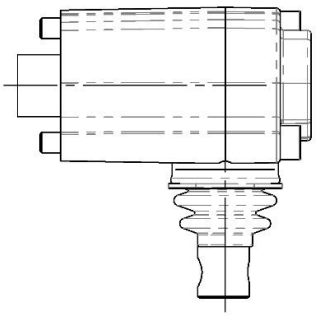
Valve is assembled on the bypass flow port N to provide pilot pressure to the actuator



Lever control (Side A) – *aluminum cap, with protection booth lever pivot box*

Type KZ & KZe

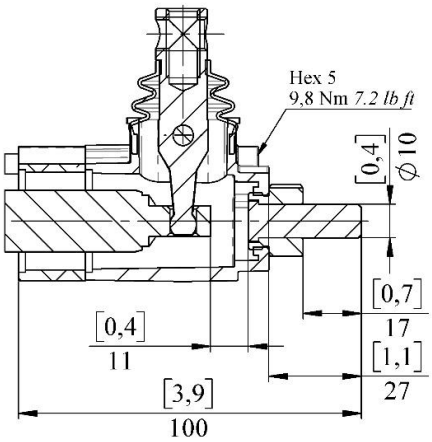




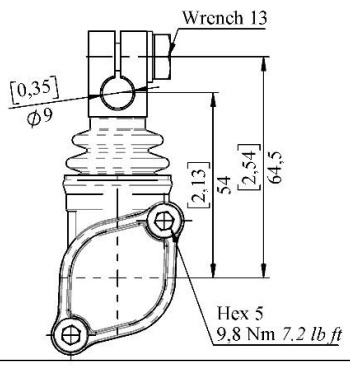
180º rotated – KZ0

Note: For L spool lever kit KZ, KZe, and KZ0 consists of two part (similar to KZT)

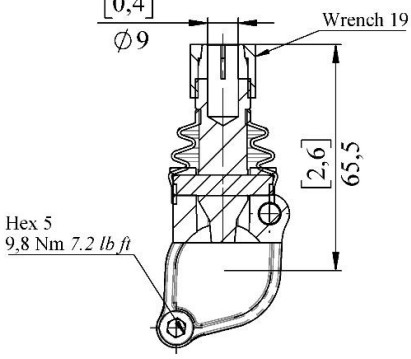
Kit KZT



Type KI

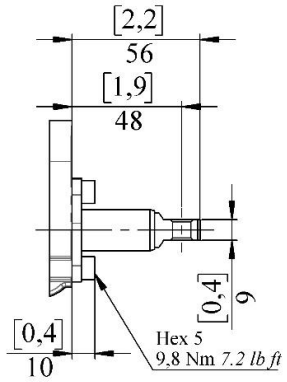


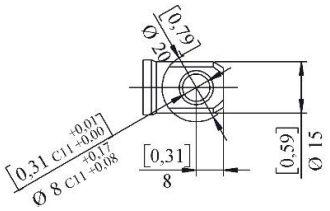
Type KY



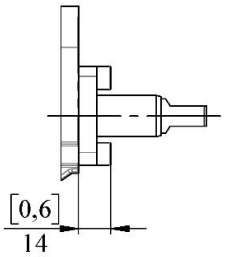
Other control arrangements (side A)

If in the order code side A is left blank, omit control type will be supplied:



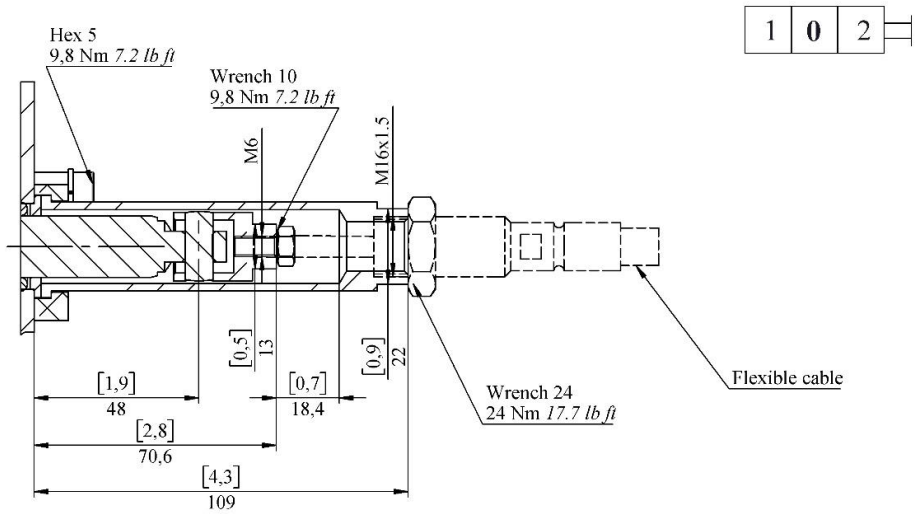


Type SLP

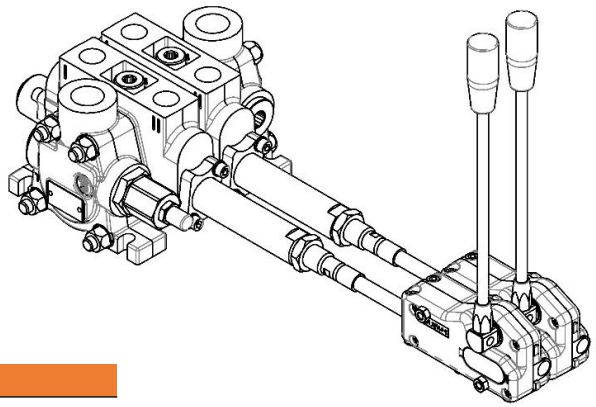


Mechanical control with dust-proof plate

Cable remote control – V1

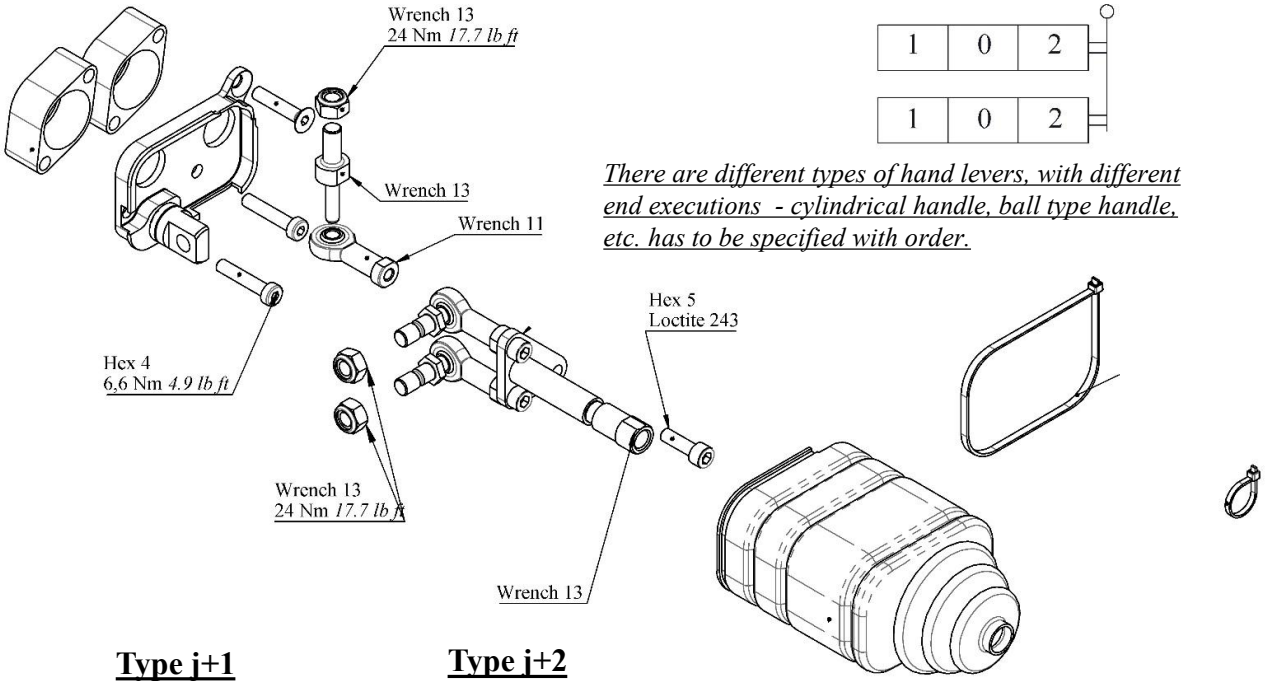


V1 cable remote control for spool L has a particular kit



Controls for flexible cables	
3335	*Mechanical joystick control for 2 spools without buttons*
3375	*Mechanical joystick control for 2 spools with 1 button*
6008	*Mechanical joystick control for 2 spools with 2 buttons*
IS 3047	*Single lever control*
IS 3076	*Single lever control with antireverse lock*
Flexible cable opitons code + length	
IT-731133	*1.00 m*
IT-731134	*1.50 m*
IT-731135	*2.00 m*
IT-731136	*2.50 m*
IT-731137	*3.00 m*
IT-731138	*3.50 m*
IT-731139	*4.00 m*

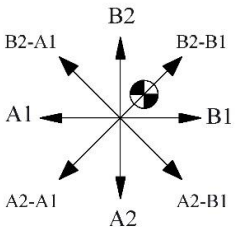
Mechanical joystick for two section control



There are different types of hand levers, with different end executions - cylindrical handle, ball type handle, etc. has to be specified with order.

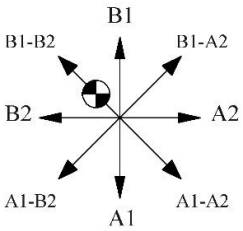
Type j+1

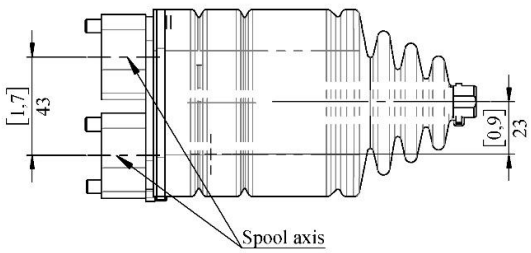
Pivot is above right



Type j+2

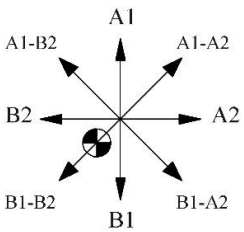
Pivot is above left





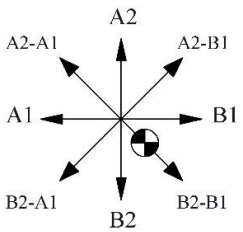
Type j+3

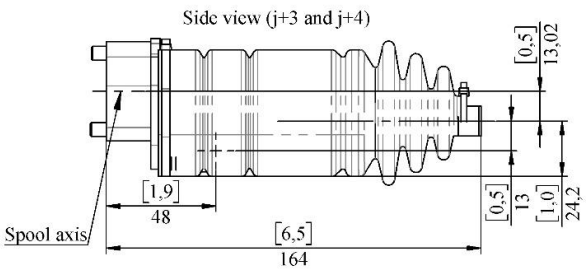
Pivot is bottom left



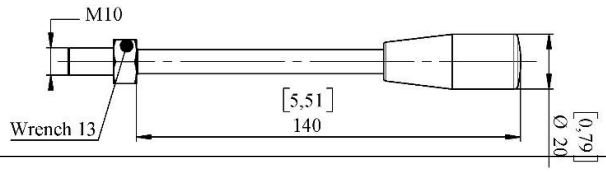
Type j+4

Pivot is bottom right



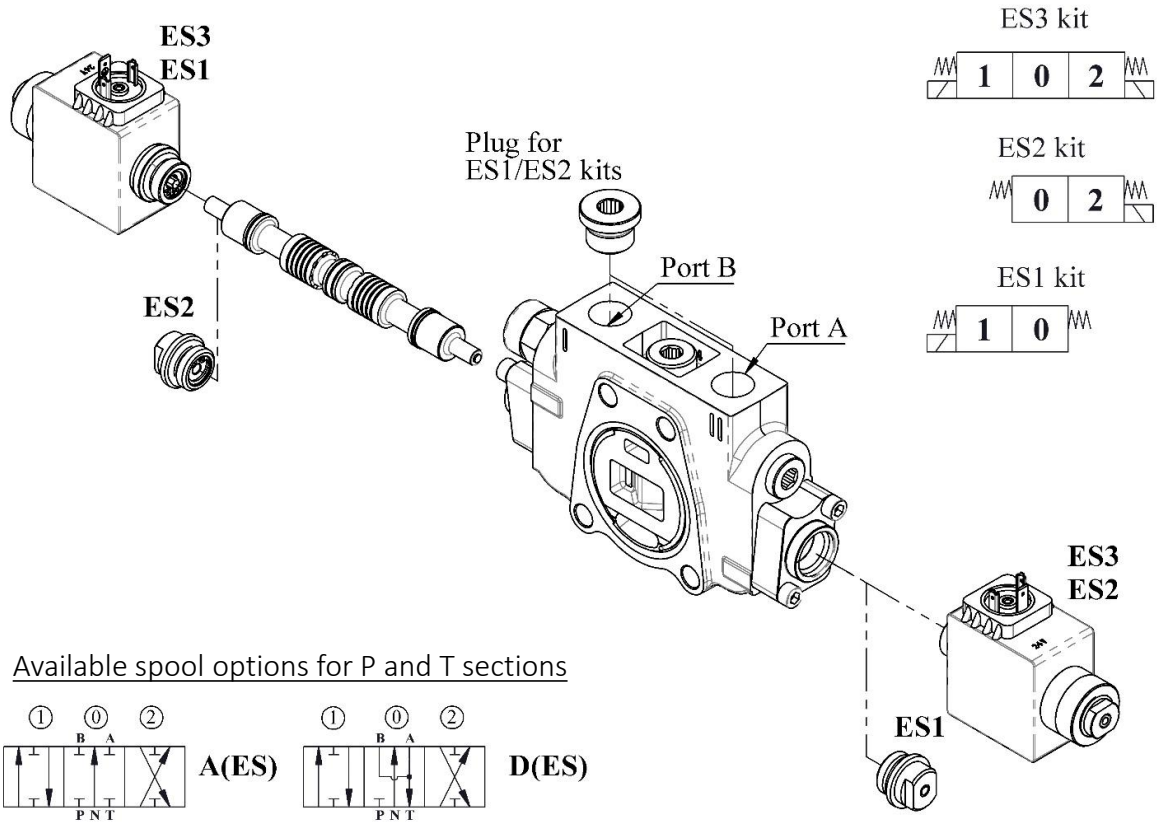


Standard hand lever dimensions

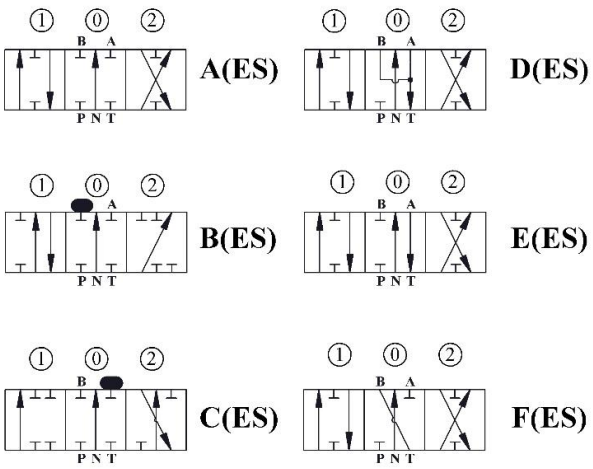


Example description with standard lever:
2ZC70N2/(PA1.PA1(AzBz))(ju+3)/T 2-G34 or another possible description:
2ZC70N2/(2x(PA1(AoBo)))(ju+3)/T 2-G34

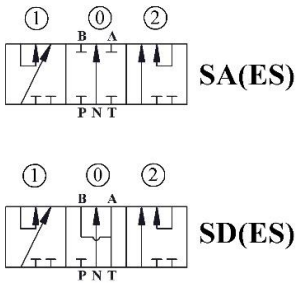
Complete control – single acting ON/OFF solenoid control



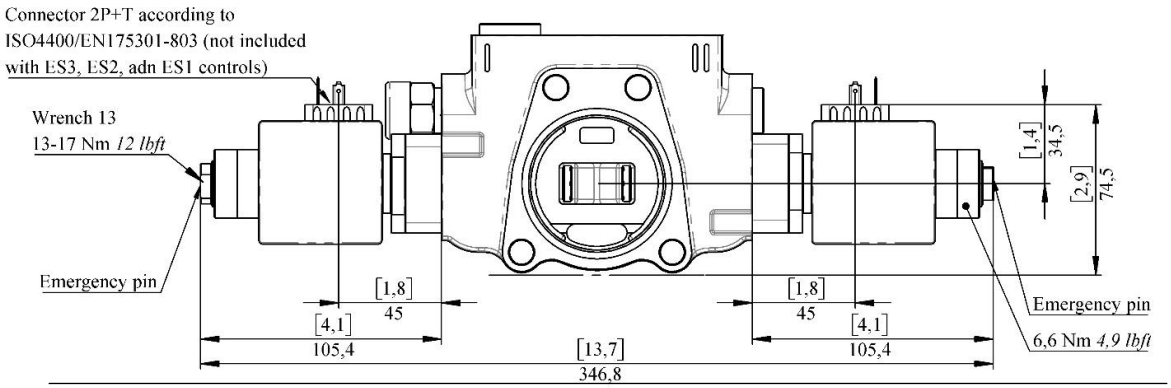
Available spool options for P and T sections



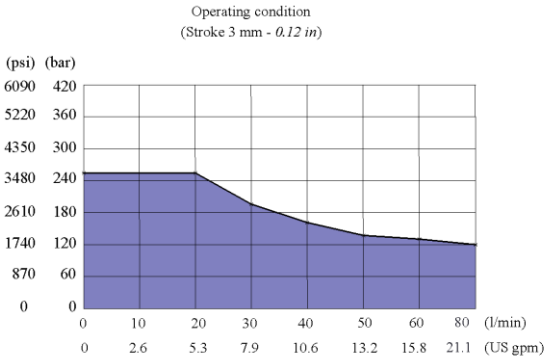
Available spool for S section



Example description: 3ZC70/N2/SAES3/TAES3/PAES3(AoBz)/T2-G34



Complete control – single acting ON/OFF solenoid control



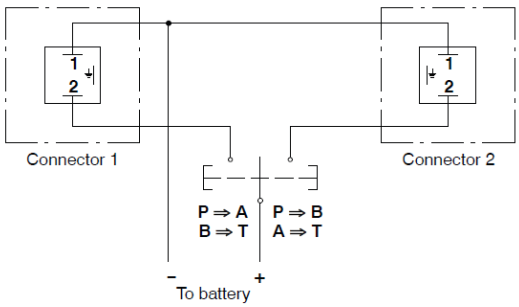
Operating features

Internal leakage (min.) A(B) to T Δp = 100 bar (1450 psi) fluid and valve at 40 oC (104 oF)	min. 15 cm^3/min *0.91 in^3/min*

COIL specifications

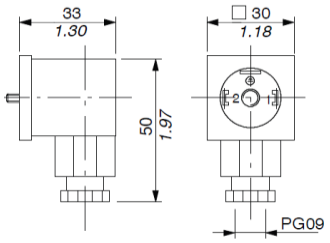
Nominal voltage tolerance	±10 %
Power rating	60 W
Current	5 A - 12 VDC
	2.5 A - 24 VDC
Weather protection	IP65
Coil insulation	Class H
Duty cycle	100%

Electric wiring example

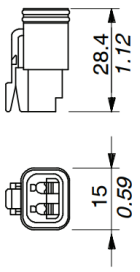


Connector specifications per type of coils available

2P+T according to ISO 4400 / EN175301-803

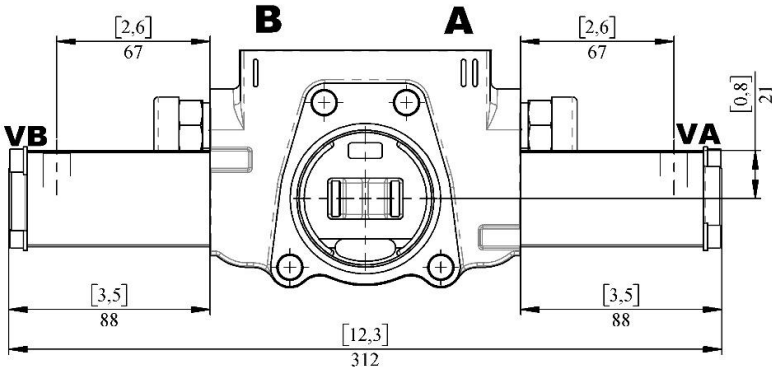


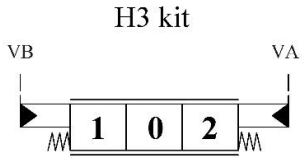
Connector specifications
2 poles, type Deutsch DT06-2S
Male housing with female ends

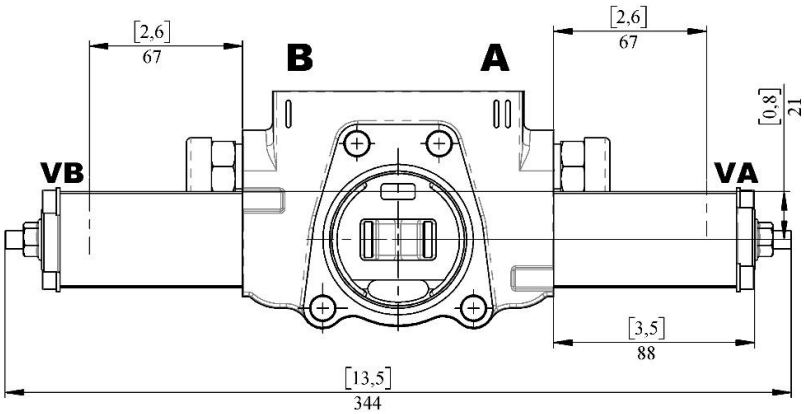


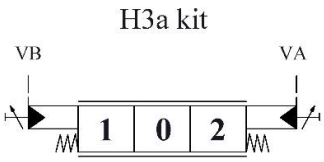
Complete control – proportional hydraulic control H3

It can be used with standard spools, without seals on the spools; can be used only with P and T sections.

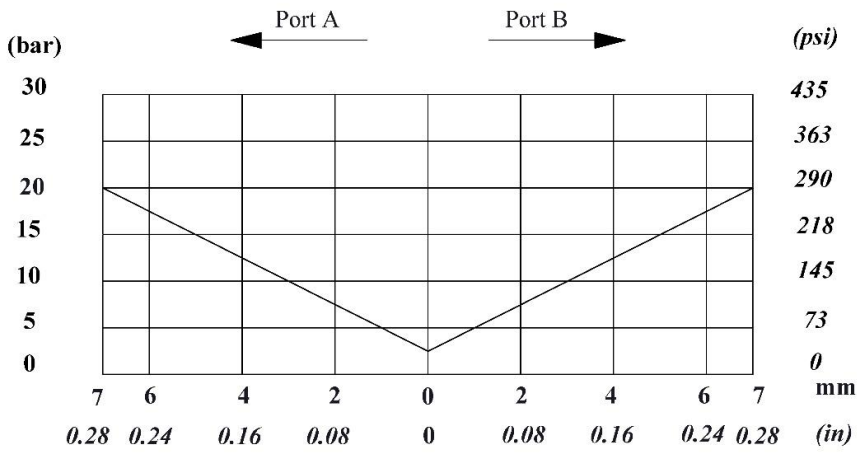








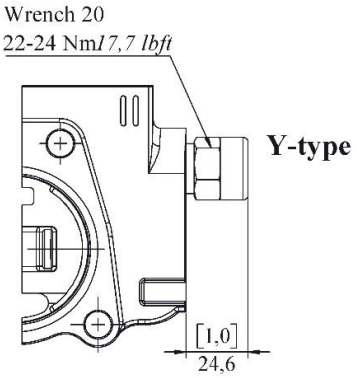
Pilot pressure - stroke diagram

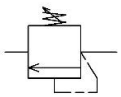


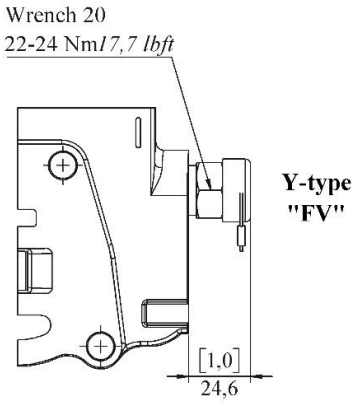
Max. pilot pressure....30 bar

Port valves

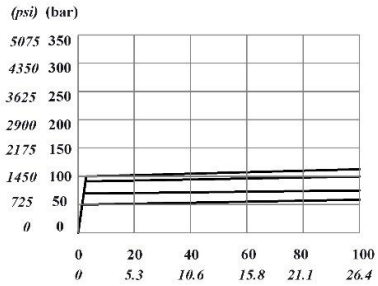
Y-type anti-shock valves



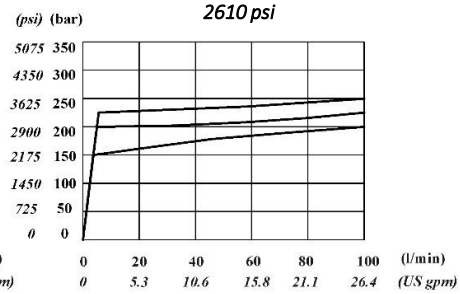




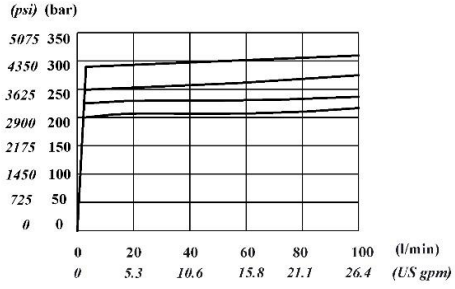
Spring D2: Range 50 - 120 bar / 725 psi to 1740 psi, standard setting at 125 bar / 1740 psi



Standard spring (no name): Range 120 - 250 bar / 1740 psi to 3625 psi, standard setting at 180 bar / 2610 psi

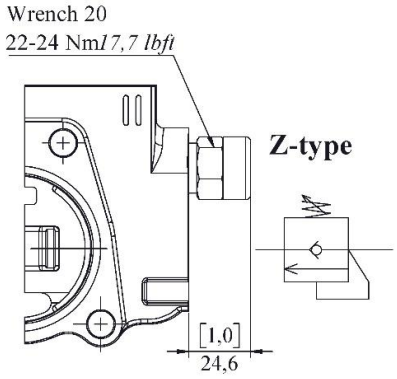


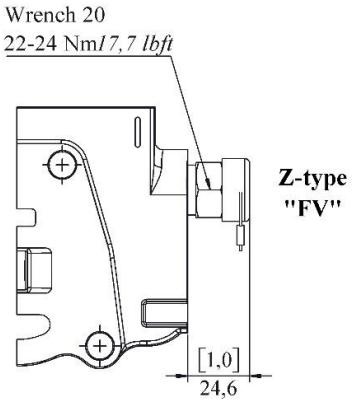
Spring D4: Range 220-315 bar / 3190 psi to 4570 psi, standard setting at 220 bar / 3190 psi



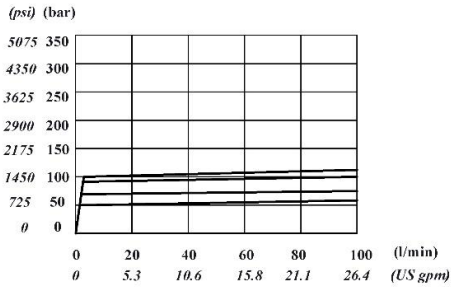
Port valves

Z-type anti-shock and anti-cavitation valves

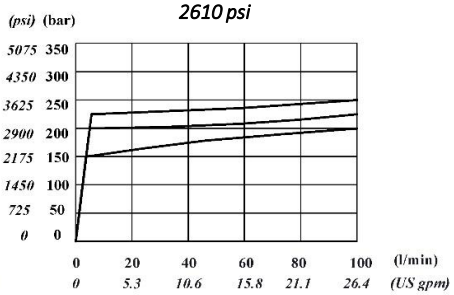




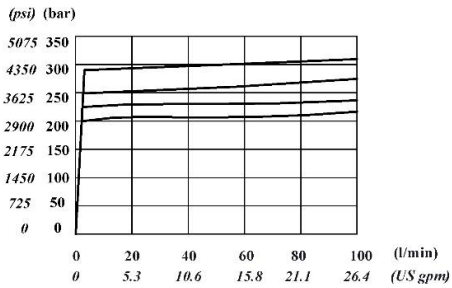
Spring D2: Range 50 - 120 bar / 725 psi to 1740 psi, standard setting at 125 bar / 1740 psi



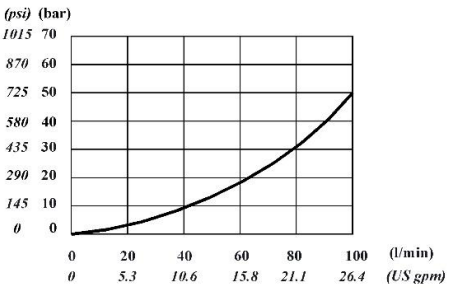
Standard spring (no name): Range 120 - 250 bar / 1740 psi to 3625 psi, standard setting at 180 bar / 2610 psi



Spring D4: Range 220-315 bar / 3190 psi to 4570 psi, standard setting at 220 bar / 3190 psi

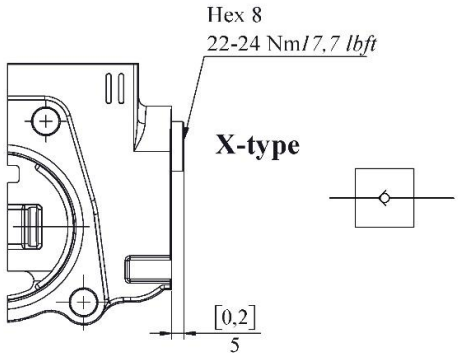


Pressure drop through anti-cavitation valve

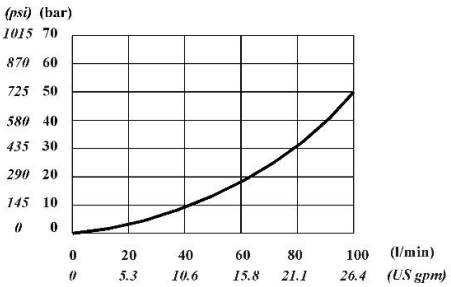


Port valves

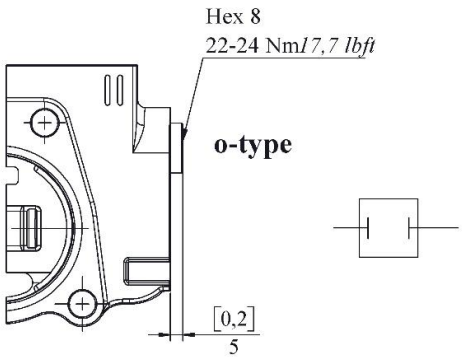
Anti-cavitation valve



Pressure drop through anti-cavitation valve



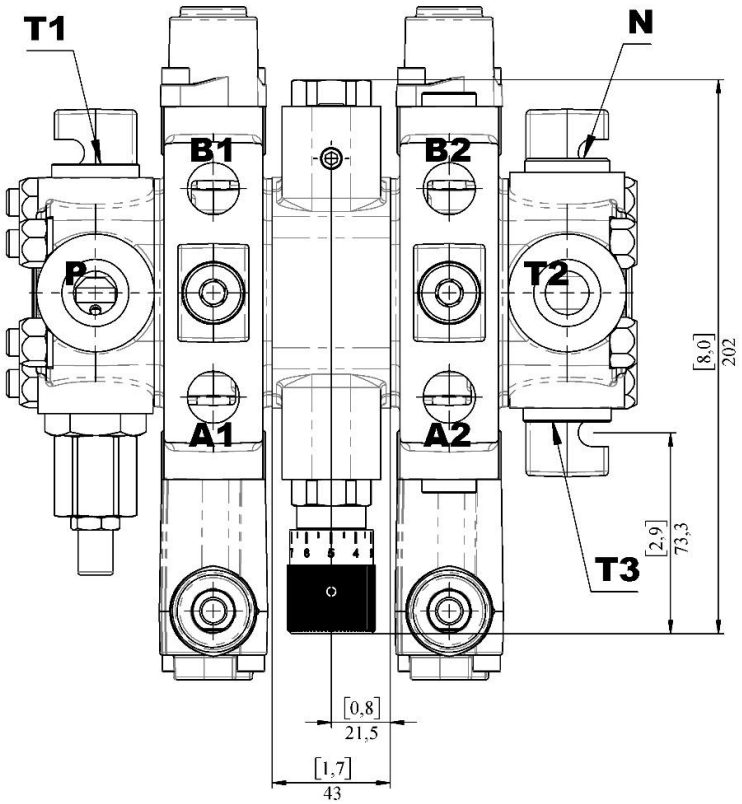
Valve blanking plug

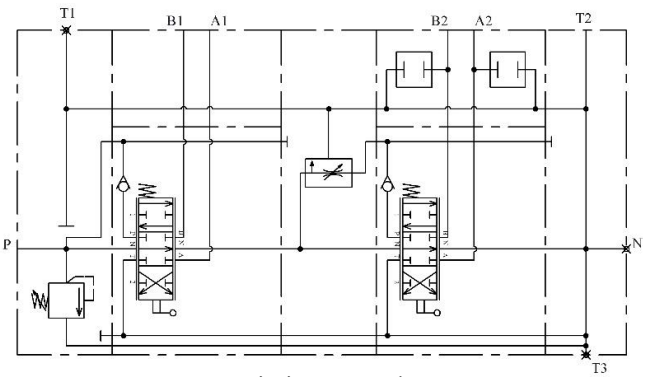


Middle covers

DF pressure compensate flow divider section

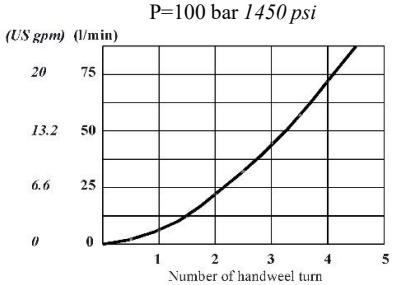
The flow on the downstream sections can be adjusted from 0 to 80 l/min *21 US gpm* by means of graduated handwheel; exceeding flow goes to tank.



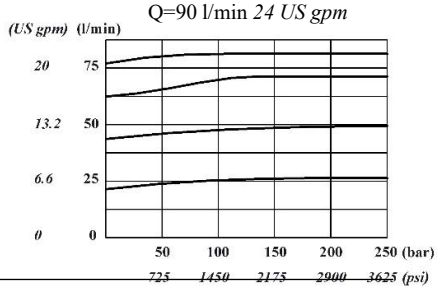


Description example:
2ZC70/N2/PA1KZ1/DF/PA1KZ1(AoBo)/T2-G34

Flow regulation diagram
P=100 bar *1450 psi*

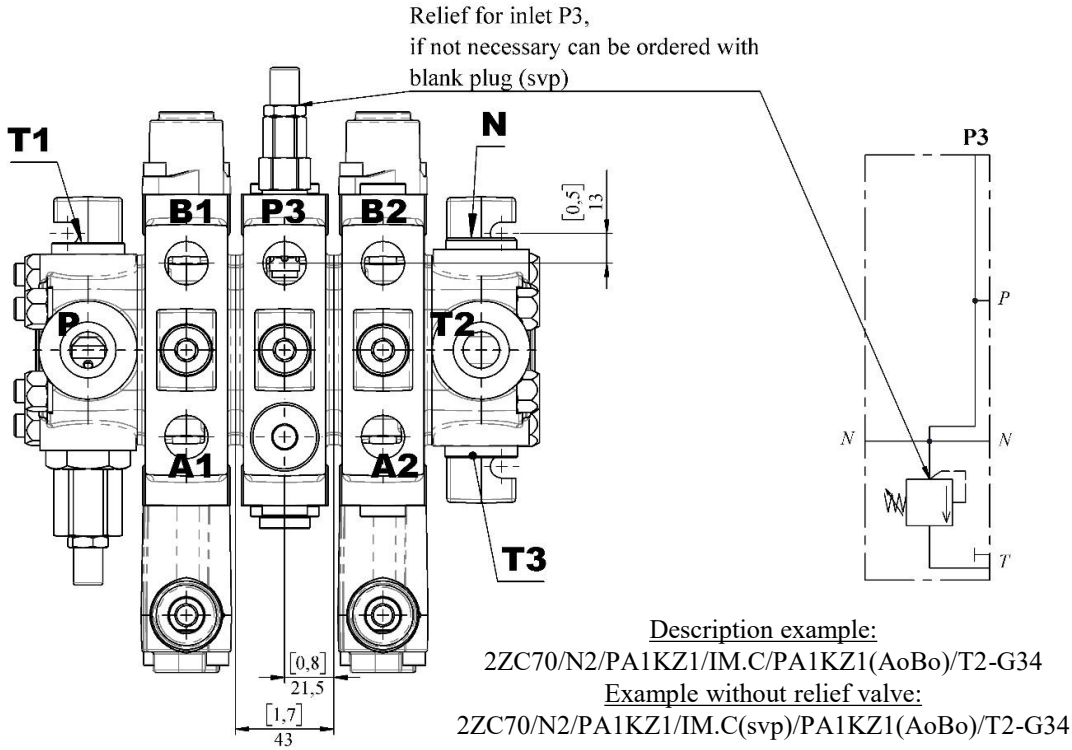


Pressure-flow diagram
Q=90 l/min *24 US gpm*



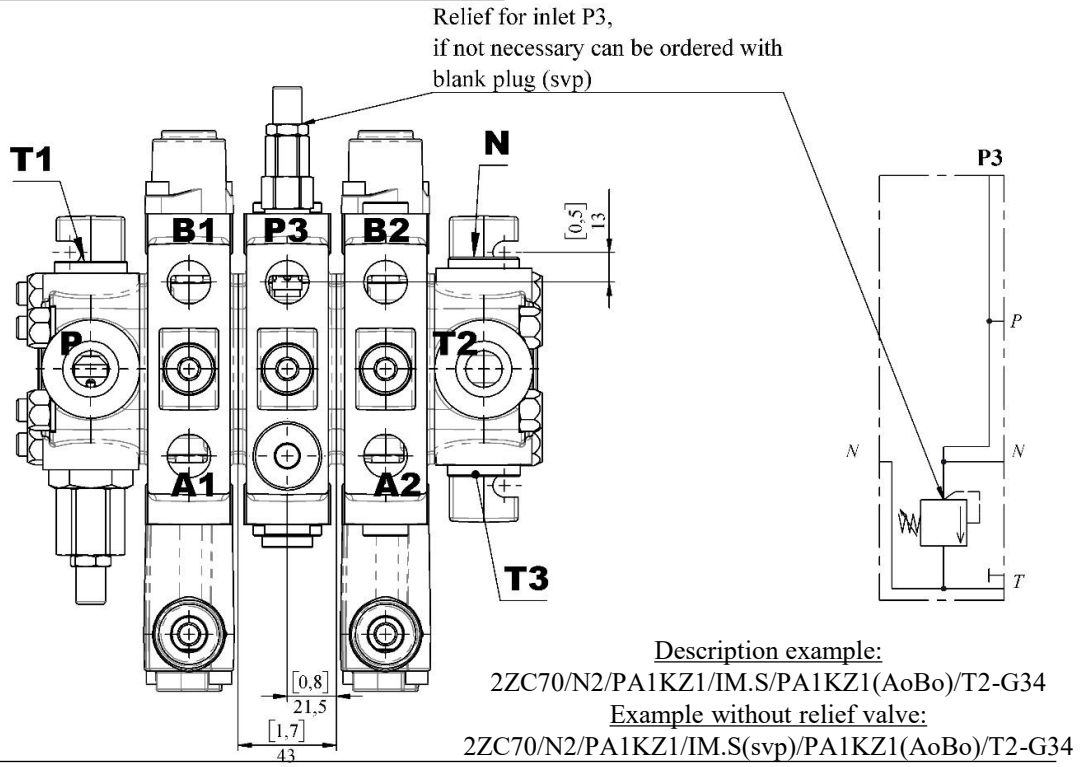
Middle covers

IM.C Middle inlet section adding a second flow to the sections downstream



Description example:
2ZC70/N2/PA1KZ1/IM.C/PA1KZ1(AoBo)/T2-G34
Example without relief valve:
2ZC70/N2/PA1KZ1/IM.C(svp)/PA1KZ1(AoBo)/T2-G34

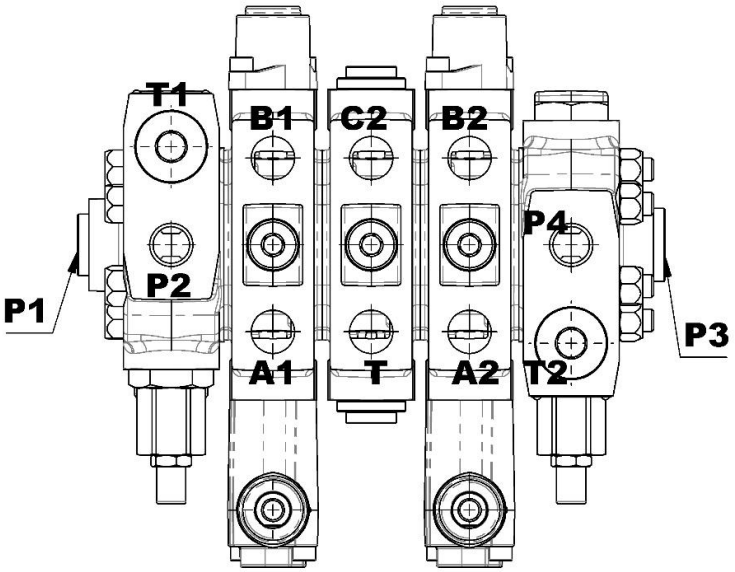
IM.S Middle inlet section interrupting the flow from inlet cover and providing a separate flow to the sections downstream

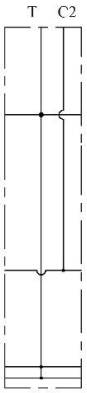


Description example:
2ZC70/N2/PA1KZ1/IM.S/PA1KZ1(AoBo)/T2-G34
Example without relief valve:
2ZC70/N2/PA1KZ1/IM.S(svp)/PA1KZ1(AoBo)/T2-G34

Middle covers

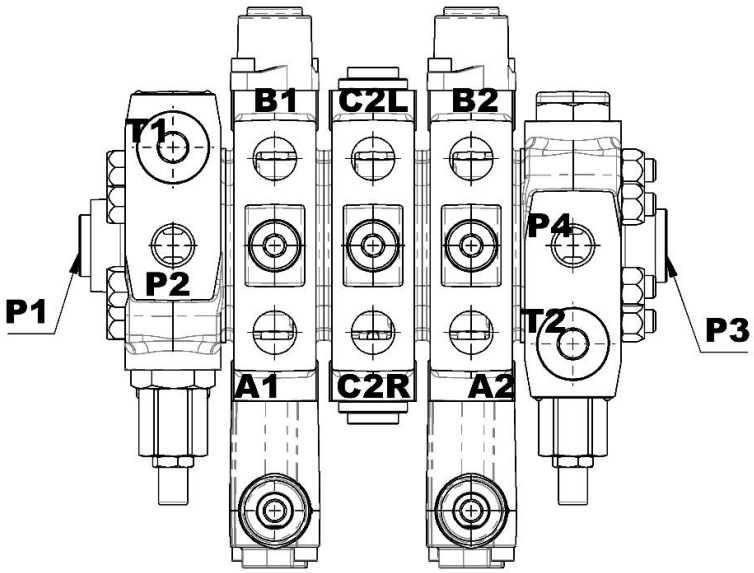
OM.C2T Middle outlet section with high pressure line and tank line for dual inlet cover schematic

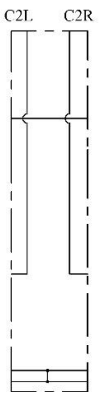




Description example:
2ZC70/L2/PD1KZ1/OM.C2T/PRD1KZ1/L4-G34

OM.C2TC2R Middle outlet section with dual high-pressure lines for dual inlet cover schematic and use of T1

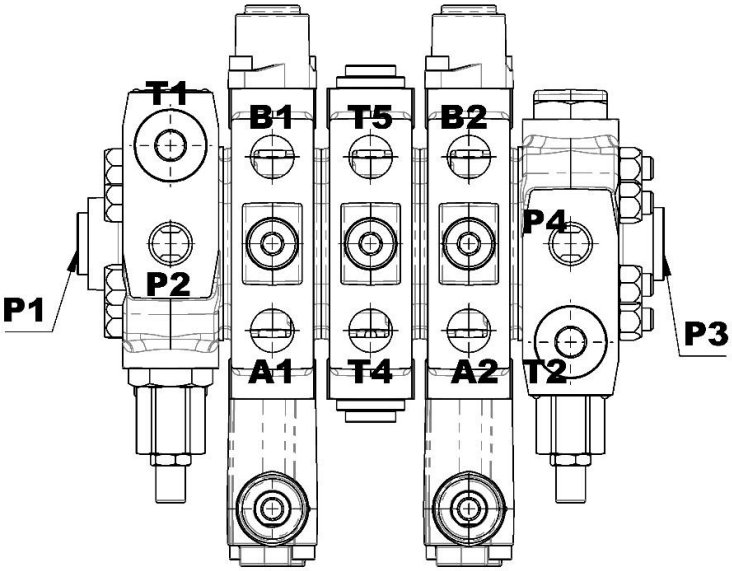




Description example:
2ZC70/L2/PD1KZ1/OM.C2L.C2R/PRD1KZ1/L4-G34

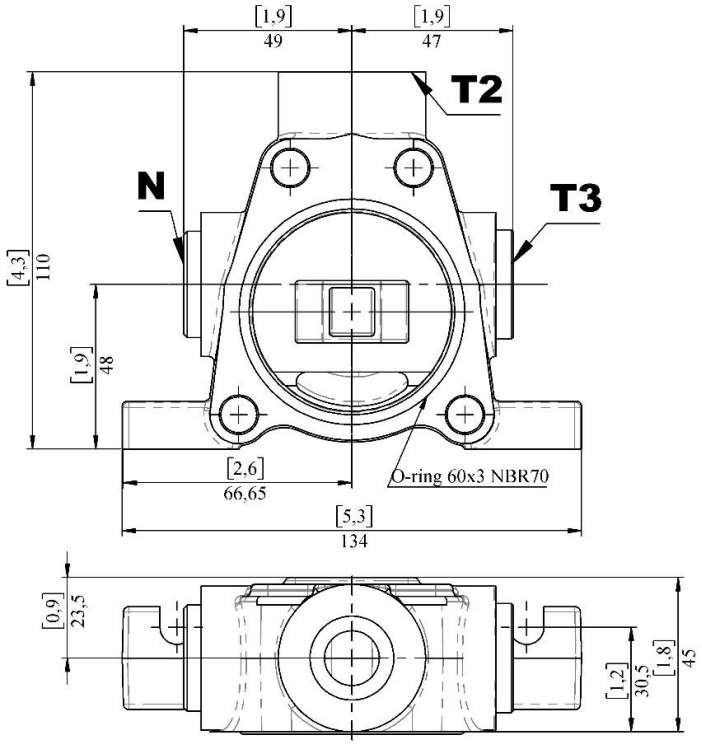
Middle covers

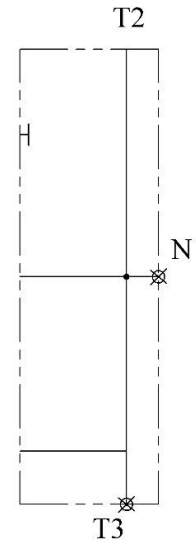
CS Middle outlet section with two additional outlet ports T4, and T5



Description example:
2ZC70/L2/PD1KZ1/CS/PRD1KZ1/L4-G34

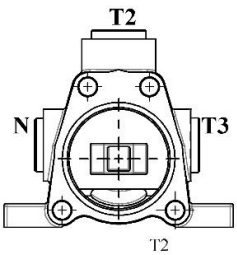
Outlet cover

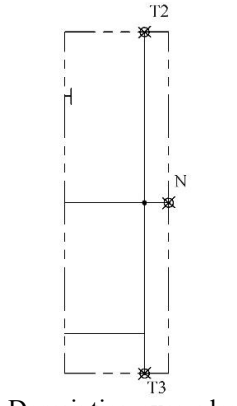




Description example:
T2-G34

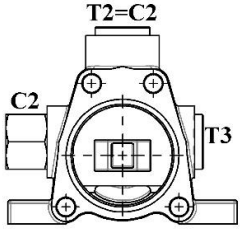
Outlet cover with tank port on the inlet cover (T1)

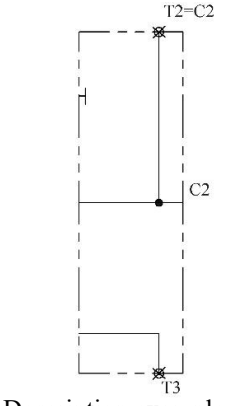




Description example:
T1-G34

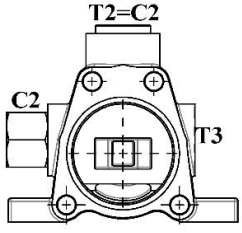
Outlet cover with HPCO C2 and tank port on the inlet cover (T1)

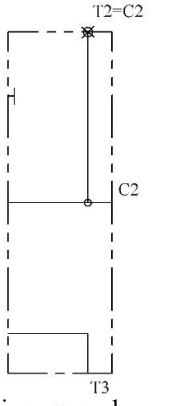




Description example:
T1-C2-G34

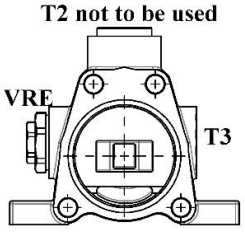
Outlet cover with HPCO C2 and tank port T3

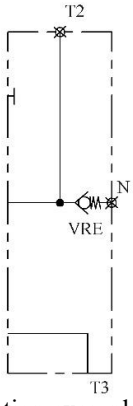




Description example:
T3-C2-G34

Outlet cover with VRE (back pressure valve for ED3 control) and tank port T3





Description example:
T3(VRE)-G34

Note: Closed centre system can be achieved by plugging C2 port with standard plug