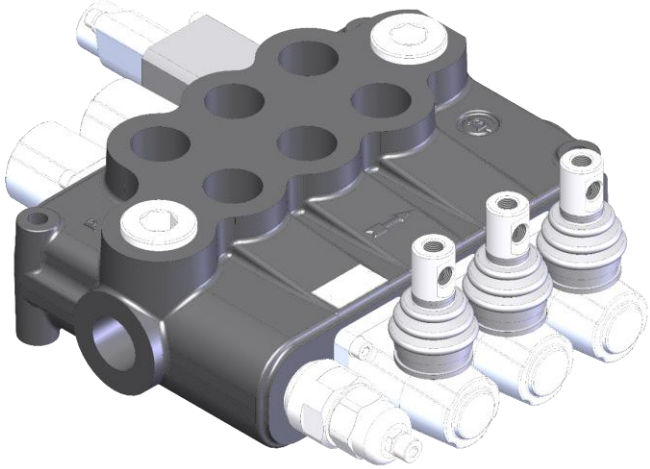
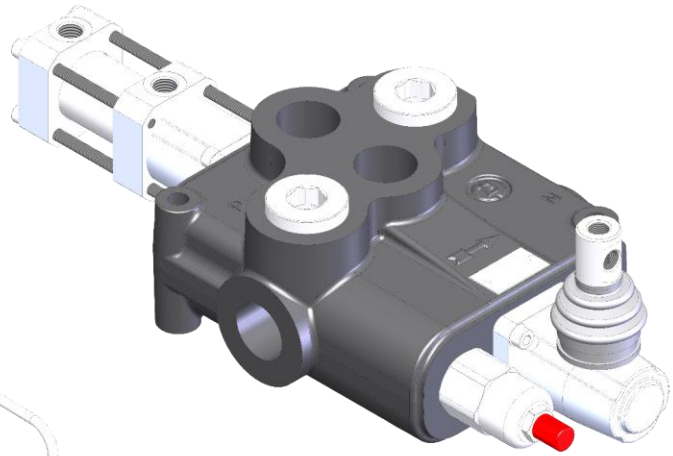
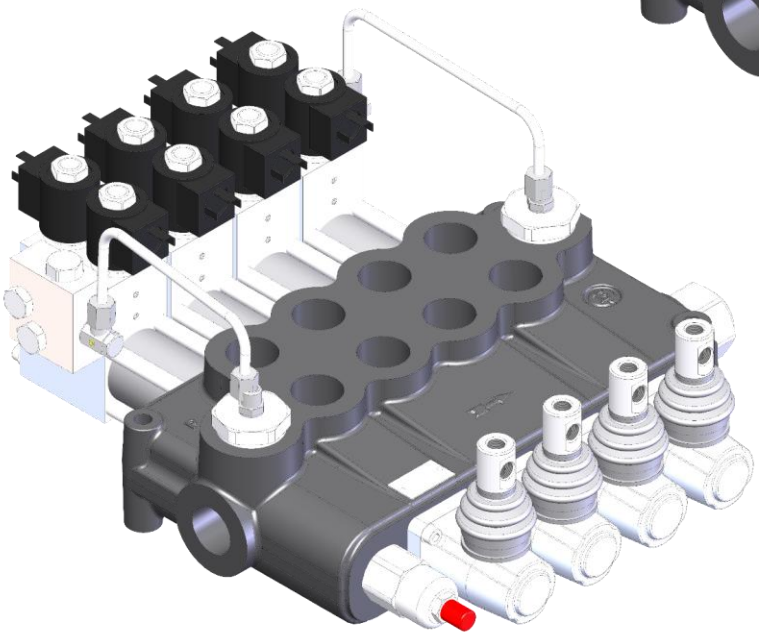
P120







P120

Simple compact and heavy duty designed monoblock from 1 to 4 sections for open and closed centre hydraulic systems.

- Fitted with a main pressure relief valve and a load check valve
- Available with parallel circuit
- Optional power beyond port
- Diameter 25 mm *0.98 in* interchangeable spools.
- A wide variety of options
- Floating spools and kits, regenerative spools kits and kick out kits require additional machining on the body
- Actuation – manual, pneumatic, electro-pneumatic, hydraulic, electro-hydraulic, and with remote with flexible cable 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 to continuous improvement, reserves the right to discontinue, modify or revise specifications without notice.

First edition 06-2026

Working conditions

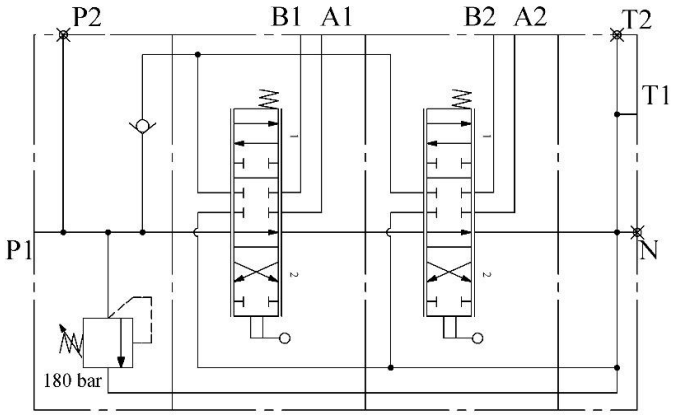
Nominal flow rating		160 l/min	*42.2 US gpm*
Operating pressure (max.)	*parallel*	315 bar	*4600 psi*
Back pressure (max.)	*outlet port T, static*	35 bar	*508 psi*
Internal leakage (min.) A(B) to T	*Δp = 100 bar (1450 psi) fluid and valve at 40 °C (104 °F)*	8 cm^3/min	*0.48 in^3/min*
Hydraulic fluid		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*

Standard threads

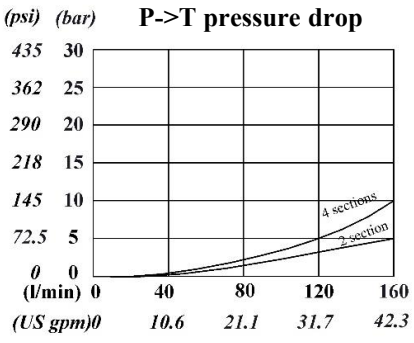
Refernce standard					
		BSP	UN-UNF	Metric	NPTF
Thread according to		ISO 228/1	ISO 263	ISO 262	Ansi B1.20.3
		BS 2779	ANSI B1.1 unified		
Cavity dimension according to	ISO	1179	11926	9974-1	
	SAE		J1926	J2244	J476a
	DIN 3852-2 (Shape X or Y)			3852-1 (Shape X or Y)	

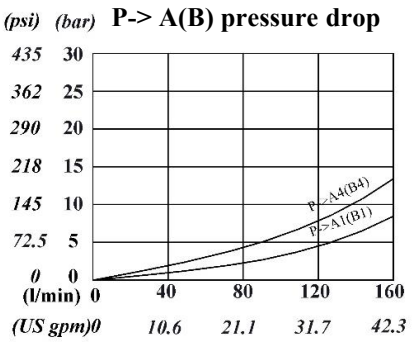
Port threadings and codes						
Codes:	**G**	**G34**	**NPTF**	**S16**	**S12**	**S12-2**
Main ports	BSP	BSP	NPTF	UN-UNF	UN-UNF	UN-UNF
Inlets P	G1-11	G3/4-14	3/4-14NPTF	1 5/16-12UN (SAE16)	1 5/16-12UN (SAE16)	1 1/16-12UN (SAE12)
Outlets T	G1-11	G1-11	1-11.5NPTF	1 5/16-12UN (SAE16)	1 5/16-12UN (SAE16)	1 5/16-12UN (SAE16)
Working ports A and B	G1-11	G3/4-14	3/4-14NPTF	1 5/16-12UN (SAE16)	1 1/16-12UN (SAE12)	1 1/16-12UN (SAE12)
Control pilot ports						
Pneuamtic	1/8-27 NPTF	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)	G1/4-19

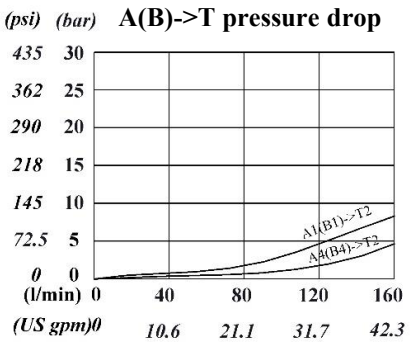
Hydraulic circuits



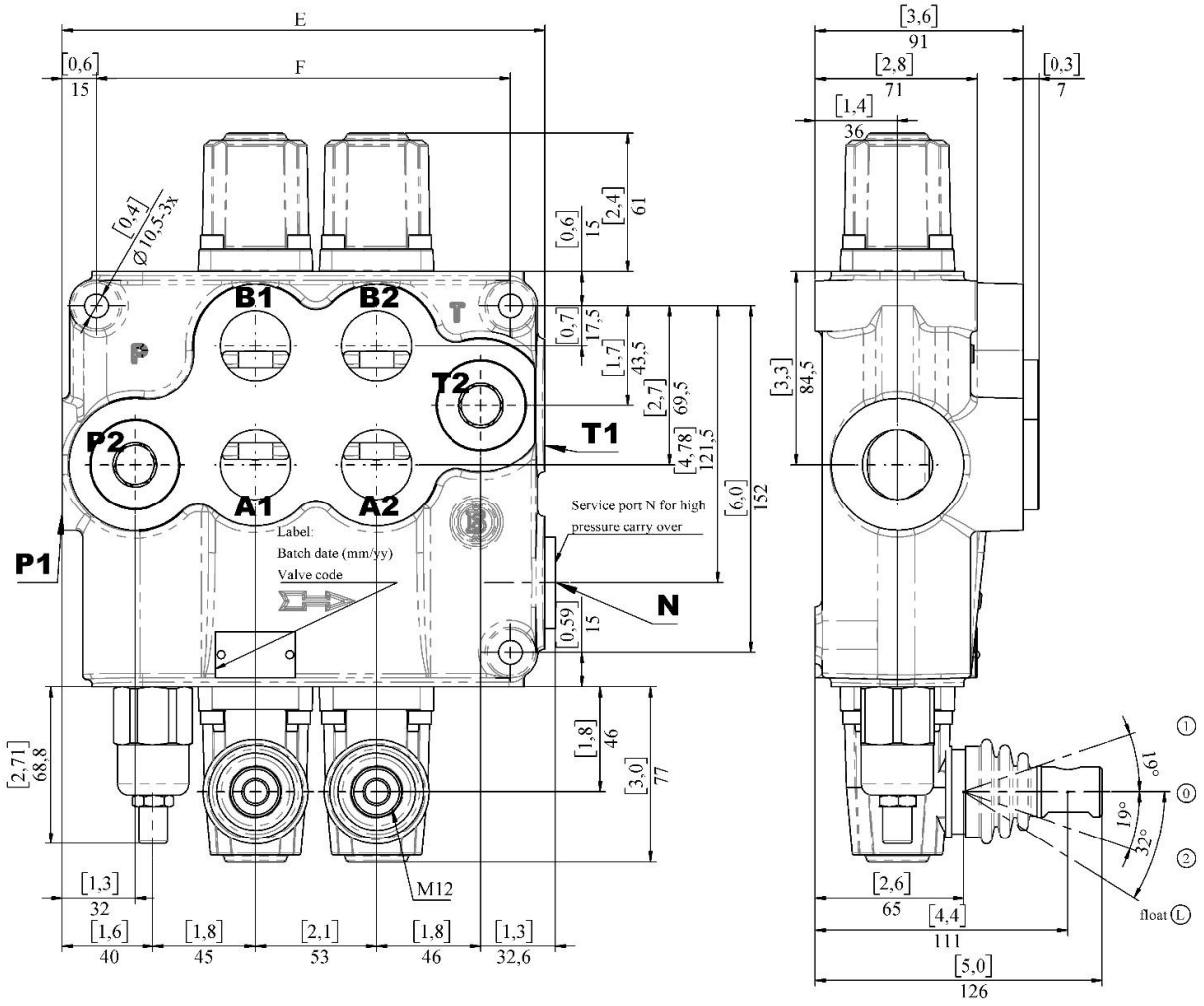
Performance





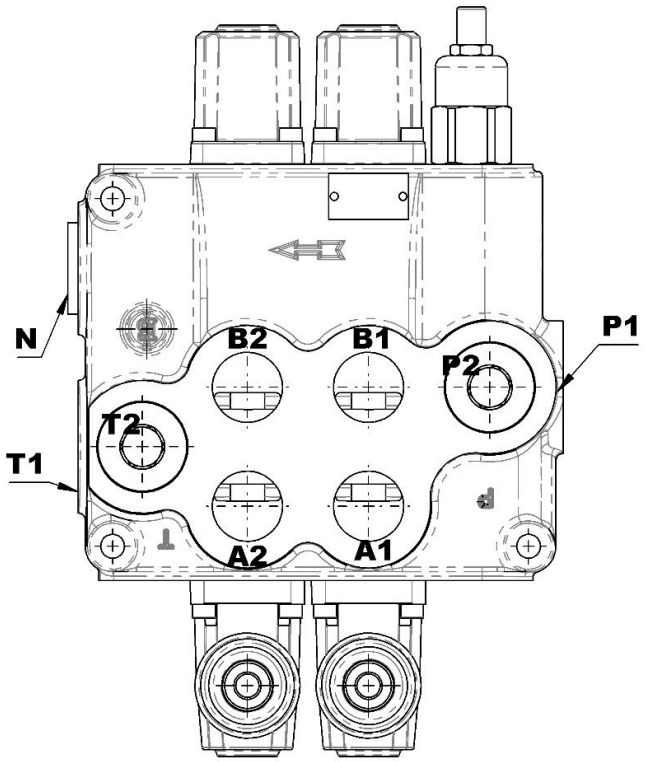


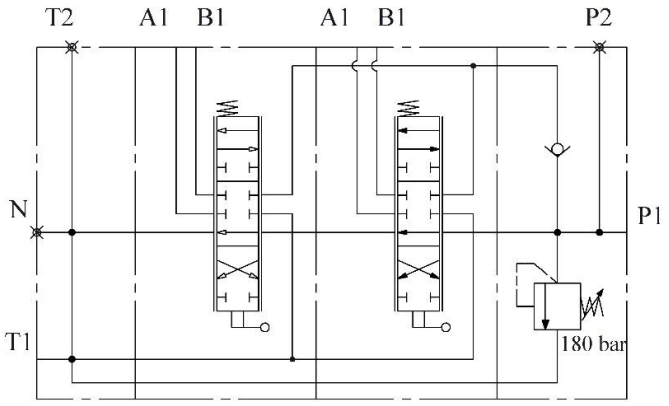
Dimensions



TYPE	E		F		Weight	
	mm	*in*	mm	*in*	kg	*lb*
P120	159	*6.26*	129	*5.08*	13.00	*28.7*
02P120	212	*8.35*	182	*7.17*	18.30	*40.3*
03P120	265	*10.43*	235	*9.25*	23.60	*52.0*
04P120	318	*12.52*	288	*11.3*	28.90	*63.7*

Right hand version





Order code, complete

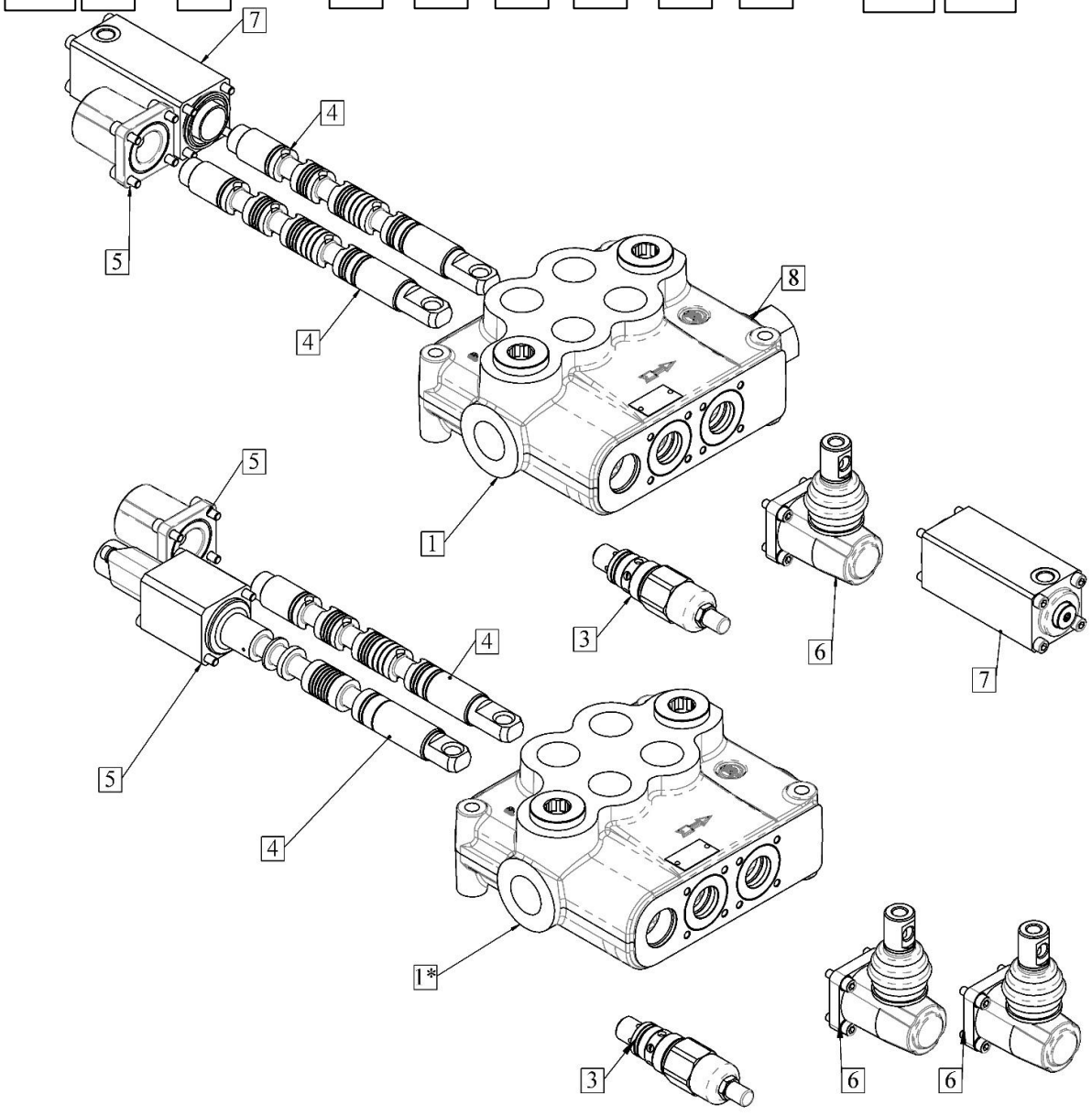
First section *Following sections*

02P120 (250) /A 1 KZ1/A H3– C2 – G - Zn

1 2 3 4 5 6 7 8 10 11

02P120 (250) /Uk 1732 KZ1/ A 1 KZ 1 – G - Zn

1* 2 3 4 5 6 4 5 6 10 11



1* Body is additionally machined for kick out and regenerative spool

Order code

1	Body kits
Type	*Description*
P120	*Parallel, 1 section with side and top ports*
02P120	*Parallel, 2 section, common check valve*
03P120	*Parallel, 3 section, common check valve*
04P120	*Parallel, 4 section, common check valve*
For spools with floating function, regenerative function, and kick out function, body has to be additionally machined for each spool	

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

3	Inlet relief options
Type	*Description*
omit	Direct acting pressure relief valve range 50 to 315 bar *725 psi to 4570 psi standard setting at 180 bar / 2610 psi*
(P-180)	Pilot operated pressure relief valve range 50 to 315 bar *725 psi to 4570 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 without check valve (250-sok-FV)	

4	Spool options
Type	*Description*
A	*Double acting, 3 position, with A and B closed in neutral*
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 neutral*
E	*Double acting, 3 position, B opened to tank in neutral*
F	*Double acting, 3 position, A opened to tank in neutral*
Special spools for particular positioner kits	
Us	*Double acting, 4 positions, regenerative position in between neutral and position 2, spool in*
L	*Double acting, 4 positions, floating circuit in 4th position with spool in (only available for left hand version)*
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)*
Uk	*Double acting, 4 positions, regenerative position in between neutral and position 2, spool for pressur erelease option (kick out)*

5	Spool positioners (side B)
Type	*Description*
1	*With spring return in neutral*
1D	*With spring return in neutral, hard spring*
4	*2 positions, with spring return in neutral from pos. 2*
5	*2 positions, with spring return in neutral 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*
7T	*2 positions, with spring return in pos. 2 from pos. 1 with teton (feedback pin)*
7D(M10)	*2 positions, with spring return in pos. 2 from pos. 1, and pin with M10 female thread for dual control*
8	*Detent in positions neutral, 1 and 2*
9	*Detent in positions neutral, 1 and 0*
10	*Detent in positions neutral, 0 and 2*
11	*Detent in positions neutral, 1 and 2*
2	*With detent in position 1 and spring return in neutral position*
3	*With detent in position 2 and spring return in neutral position*
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	
17	*4 position with spring return from pos. 2, soft stop at (regenerative) before pos. 2 and detent in pos. 1*
12	*4 position with spring return in neutral and detent in float position - only for spool L*
13	*Detent in 4 positions - only for spool L*
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*
1732	*4 position with spring return from pos. 2, soft stop at (regenerative) before pos. 2 and pressure release detent in pos. 1*

Order code, continue

6	**Spool controls (side A)**
KZ	*Lever box for M12*
KZ0	*Lever box for M12, rotatad 180 °*
KZT	*Lever box for M12 with teton (push piston)*
SLP	*without lever box with dustproof plate*
V1	*Flexible cable connection*
6a	**Handle options**
1	*M10x170*
7	**Complete controls**
H3	*Proportional hydraulic control dual side*
A26	*Control with rotation (CW-CCW)*
8	**Outlet port options**
	M36x1,5 plug on port N
C	*Closed center plug*
C2	*G1-12 high pressure carry-over sleeve*
C2(S16)	*For SAE threading - SAE16 high pressure carry-over sleeve*
C2(S12)	*For SAE threading - SAE12 high pressure carry-over sleeve*
C2(NPTF)	*For NPTF threading - 1-11.5NPTF high pressure carry-over sleeve*
VRE	*Back pressure valve*
9	**Inlet outlet selection**
	Side ports open, plugs on top ports P2&T2, standard configuration (omit in valve description)
22	*Top ports open, plugs on side ports*
12	*Side inlet, top outlet, else plugged*
21	*Top inlet, side outlet, else plugged*
10	**Valve Threading - refer to page 3**
11	**Coating and plating**
	Valve body is phoshpated, steel parts Zn plated, spools either Ni, or Cr plating (omit in valve description)
Zn	Valve body - Zinc plated
BP	Painting

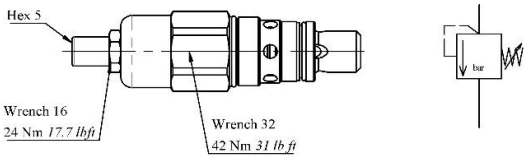
Inlet relief options

P-280

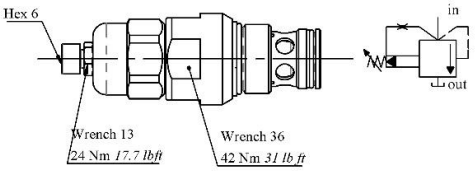
Pressure setting, if not specified – standard pressure setting per spring (p.8)

Omit – direct acting relief valve, P – pilot operated relief valve

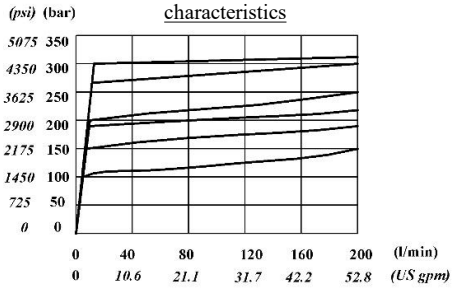
Direct acting relief valve



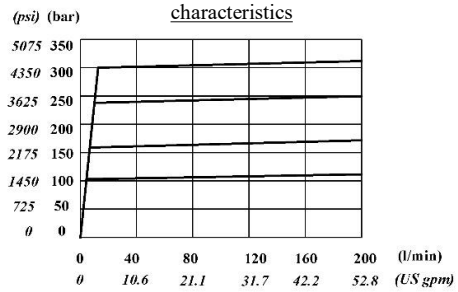
Pilot opereated relief valve



Relief valve type "D" performance characteristics

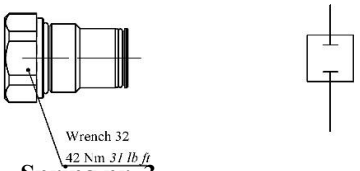


Relief valve type "P" performance characteristics



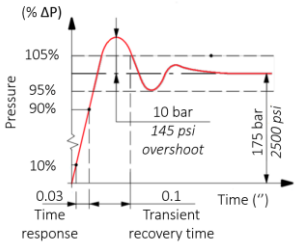
All pressure settings are for a single type spring

svp– relief valve blanking plug



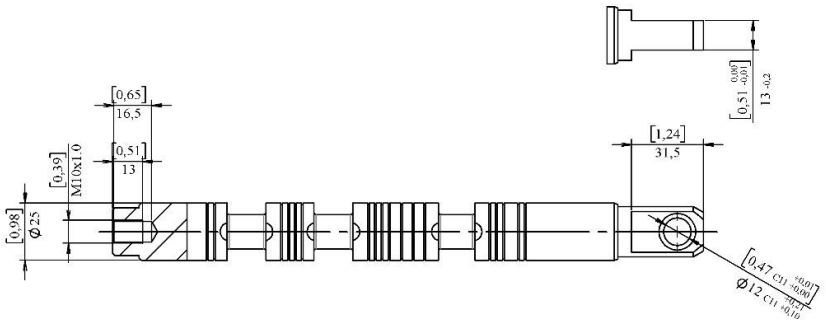
Spring nr. 3

Time response

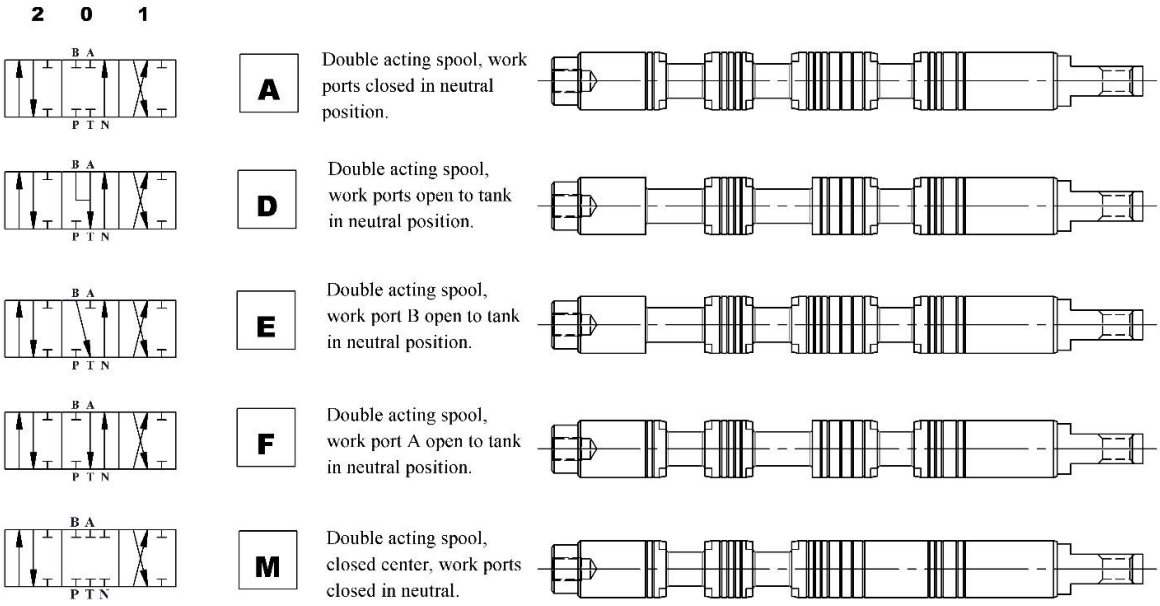


Spool types

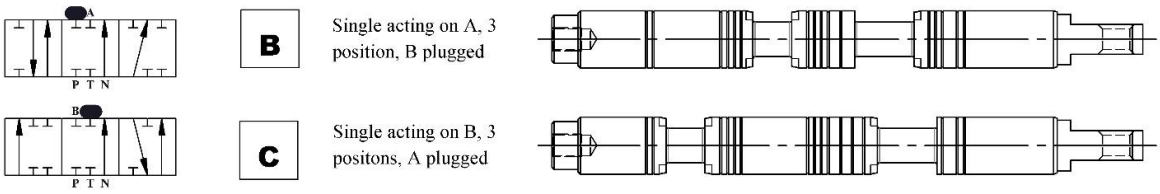
All spools have the ends shown in the drawing below. These ends are necessary to join the spool to the controls on side A and positioners on side B.



Double acting spools



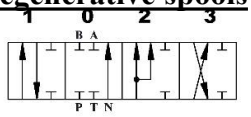
Single acting spools



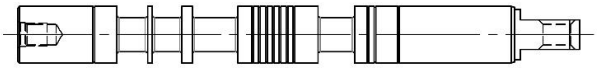
- All spools have “R” version for right version of the valve, exceptions are Us, and L.
- To order right hand version of a spools, add “R” behind the spool description e.g. AR, BR, CR, etc.
- To order low leakage version of spools, add “n” behind the spool description e.g. An, Bn, Cn, etc.

Spool options, continue

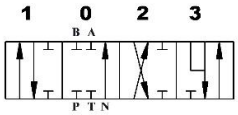
Regenerative spools



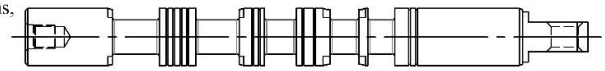
Us Double acting, 4 positions, regenerative position



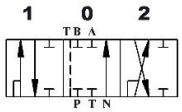
Floating spools



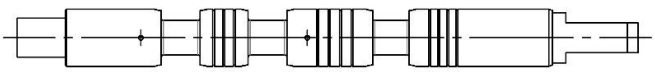
L Double acting, 4 positions, floating circuit in 4th postion with spool in

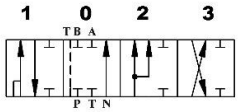


Kick out spools

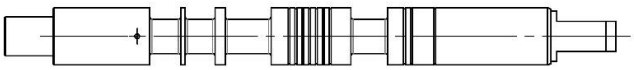


Ak Double acting spool, work ports closed in neutral position.



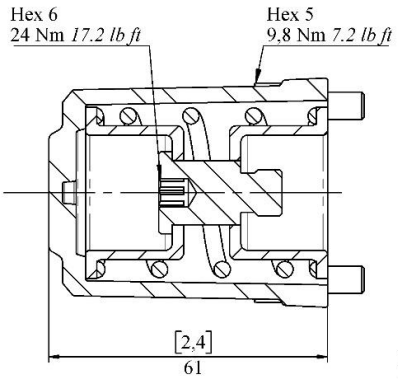


Uk Double acting, 4 positions, regenerative position



Spool positioners (B-side)

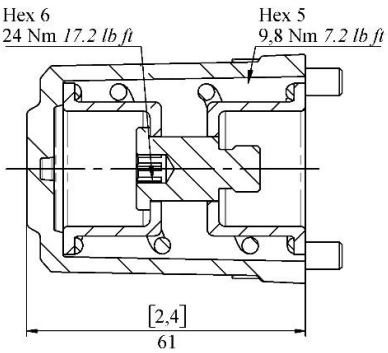
Kit 1



1	0	2

F1 = 172 N ±20
F2 = 301 N ±20

Kit 1D

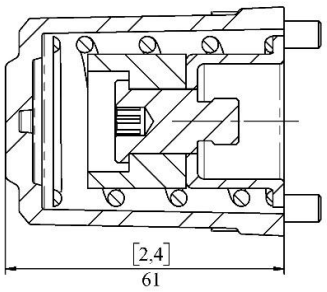


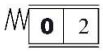
1	0	2

F1 = 320N ±30
F2 = 500N ±30

Spool positioners (B-side)

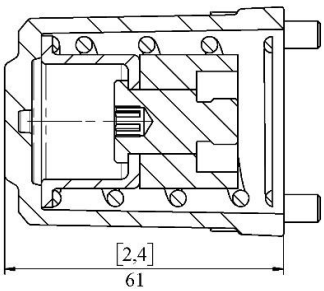
Kit 4

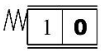




F1 = 172 N ±20
F2 = 301 N ±20

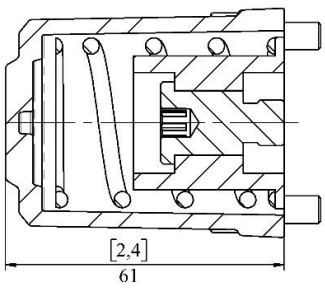
Kit 5

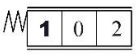




F1 = 172 N ±20
F2 = 301 N ±20

Kit 6

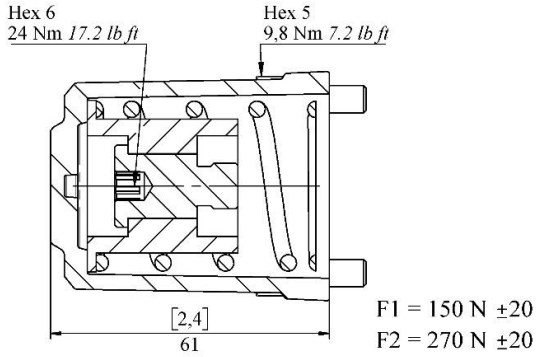


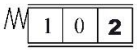


F1 = 150 N ±20
F2 = 270 N ±20

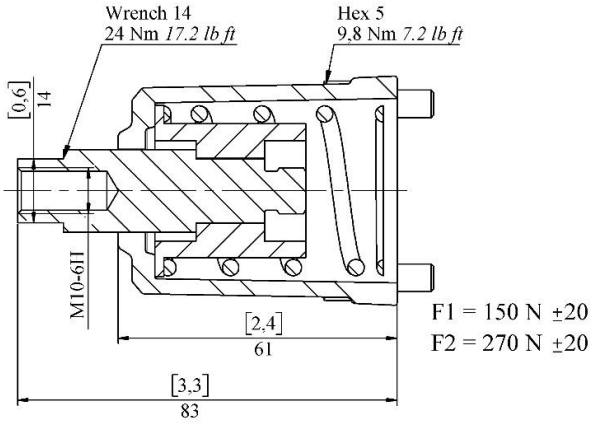
Spool positioners (B-side)

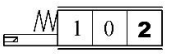
Kit 7



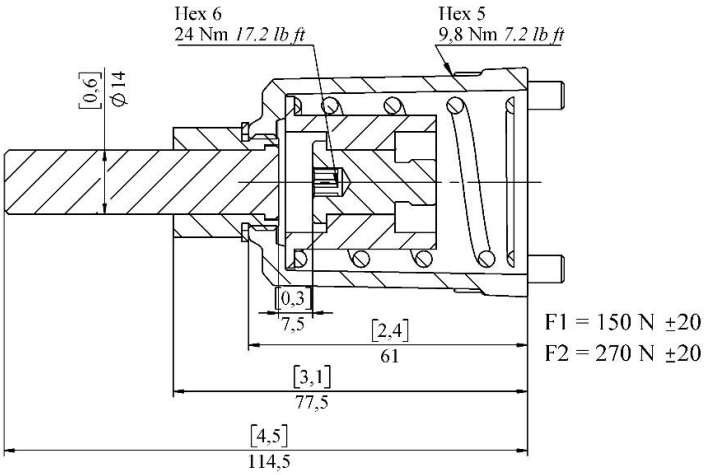


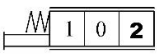
Kit 7T





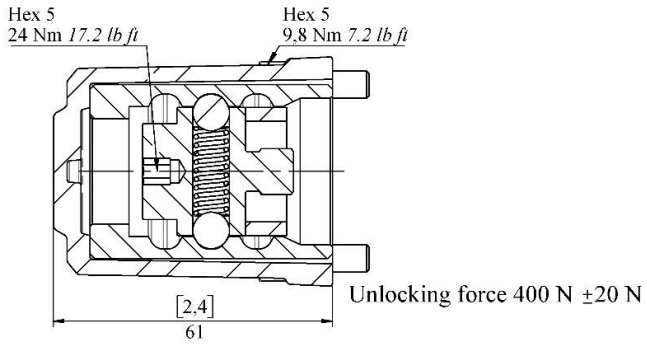
Kit 7D(M10)

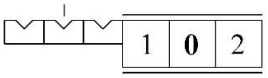




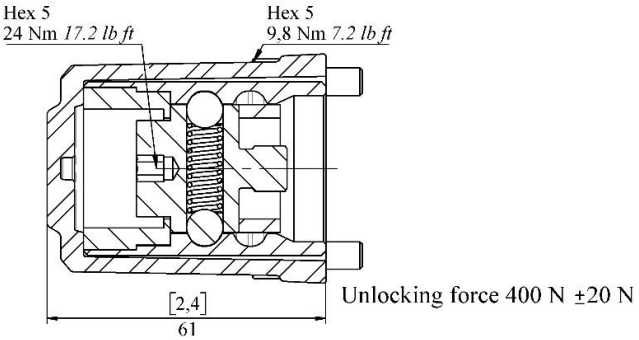
Spool positioners (B-side)

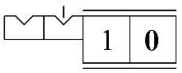
Kit 8



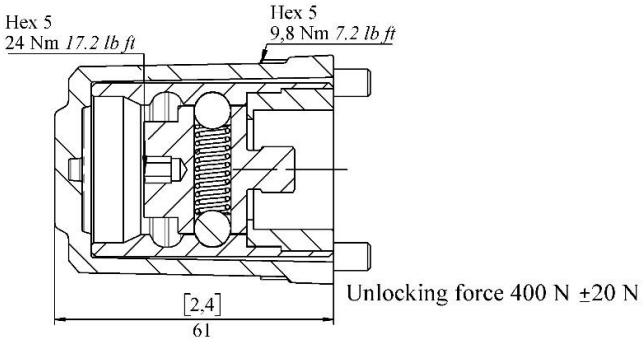


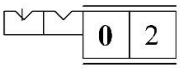
Kit 9



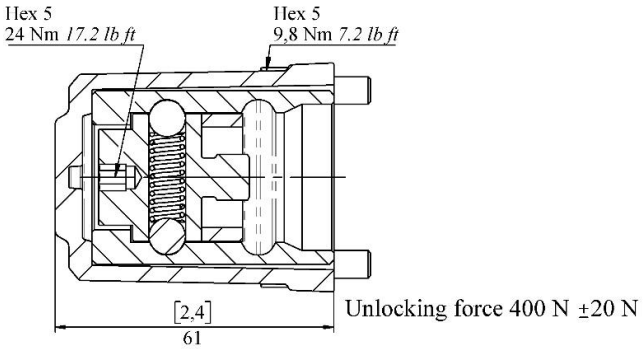


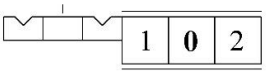
Kit 10





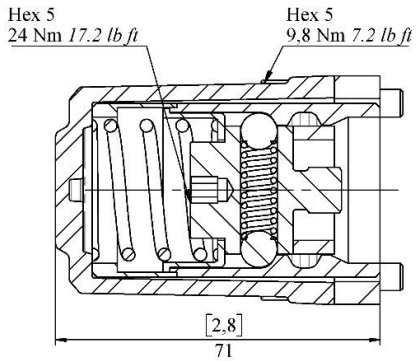
Kit 11

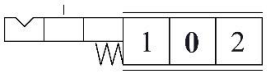




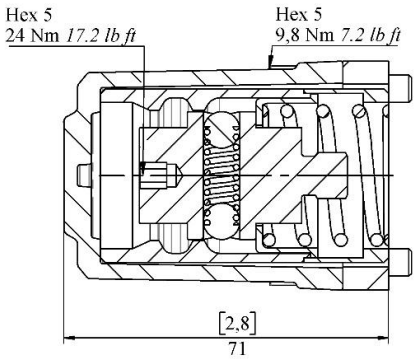
Spool positioners (B-side)

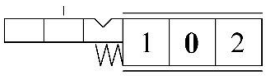
Kit 2: *3 position, spring return from pos. 2 to pos. 0 and detent in pos. 1*





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

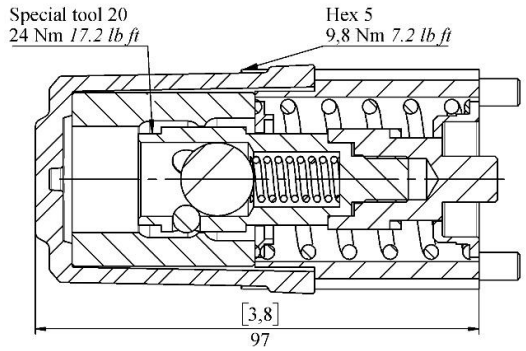


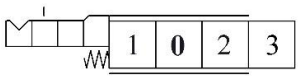


Spool positioners (B-side)

Particular kits for regenerative spool Us

Kit 17

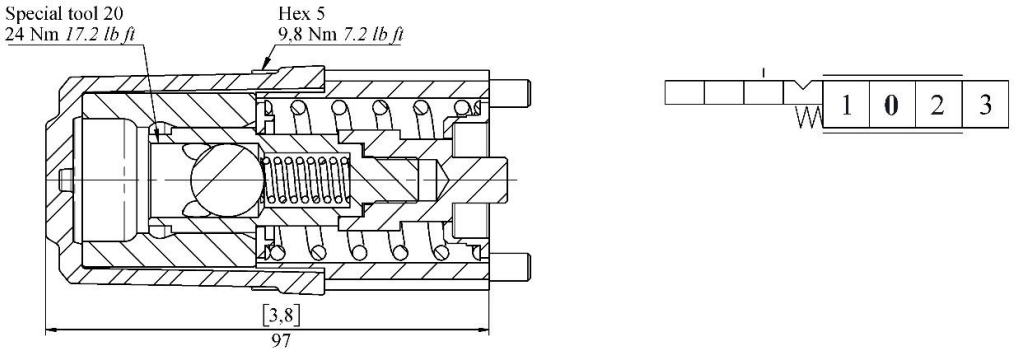




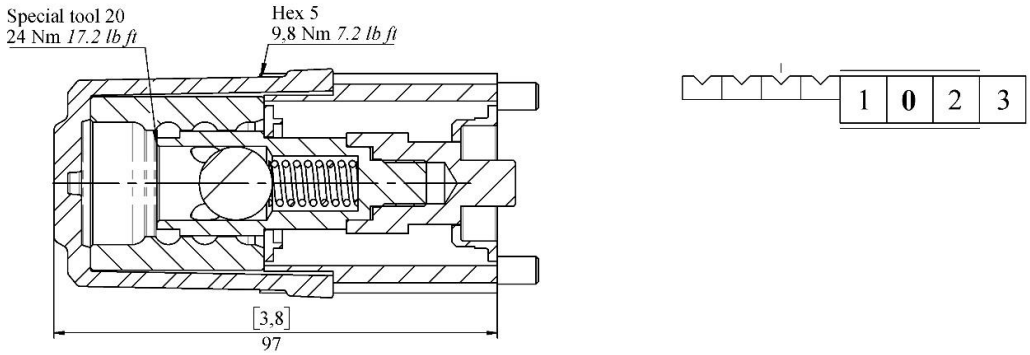
Kit 17 can be used only with spool Us and requires specially machined spool bore

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*



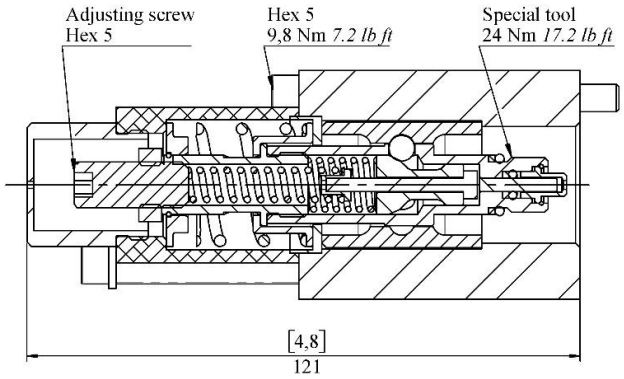
Kit 13: *four position detent*

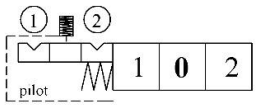


Kits 13 and 17 can be used only with spool L and require specially machined spool bore

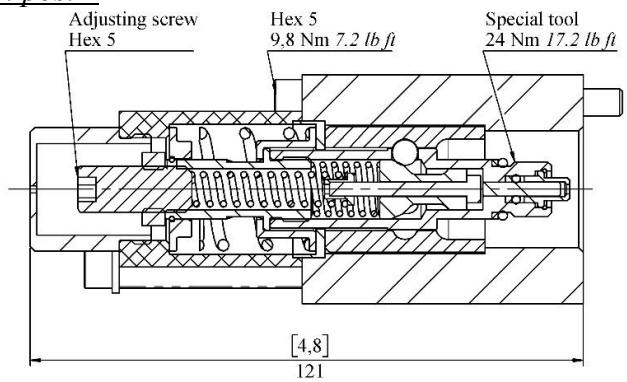
Particular spool positioners kits for pressure release kits (kick out)

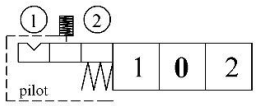
Kit 31: *3 position with detent and pressure release from pos. 1 and pos. 2*



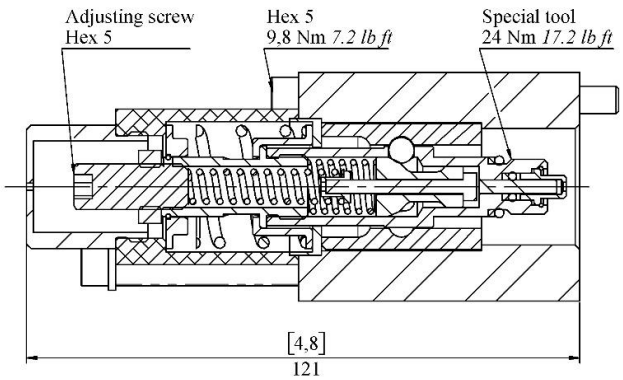


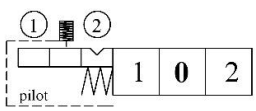
Kit 32: *3 position with detent and pressure release from pos. 1 and spring return from pos. 2*





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

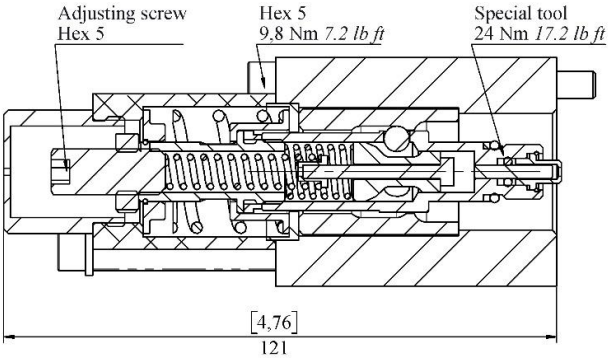


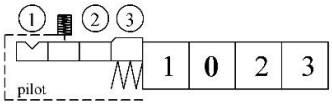


Kits 31, 32, and 33 can be used only with kick out spools and require machined body for kick out

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

Kit 1732: *four position, pressure release from pos. 1 and spring return from pos. 2 (soft stop) and pos. 3 (regenerative position)*

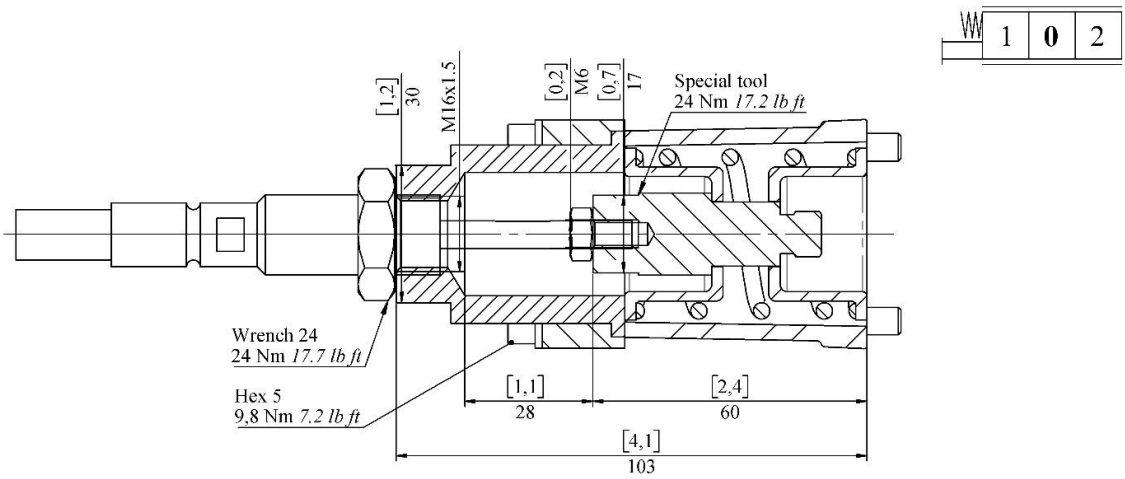




Kits 1732 requires specially machined spool bore for the regenerative schematic and kick out body

Spool positioner for flexible cable connection (side B)

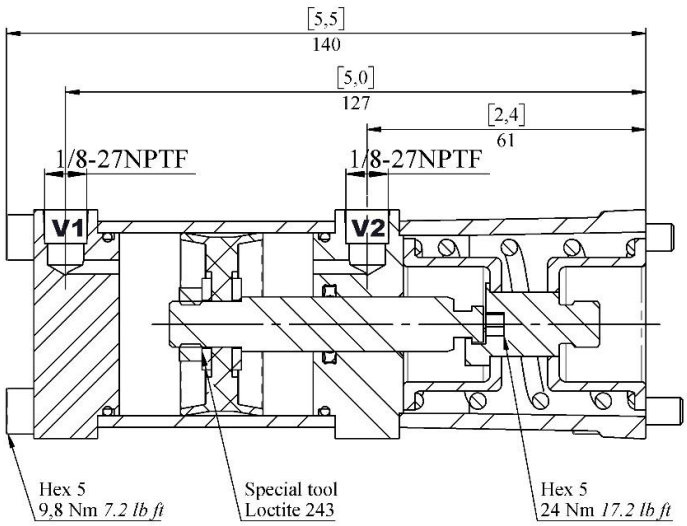
Kit 1V2

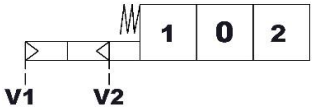


More information regarding controls, cable lengths, and ordering codes see page for flexible cable control V1 (Side A)

ON/OFF Pneumatic kit - 1P

With spring return to neutral position

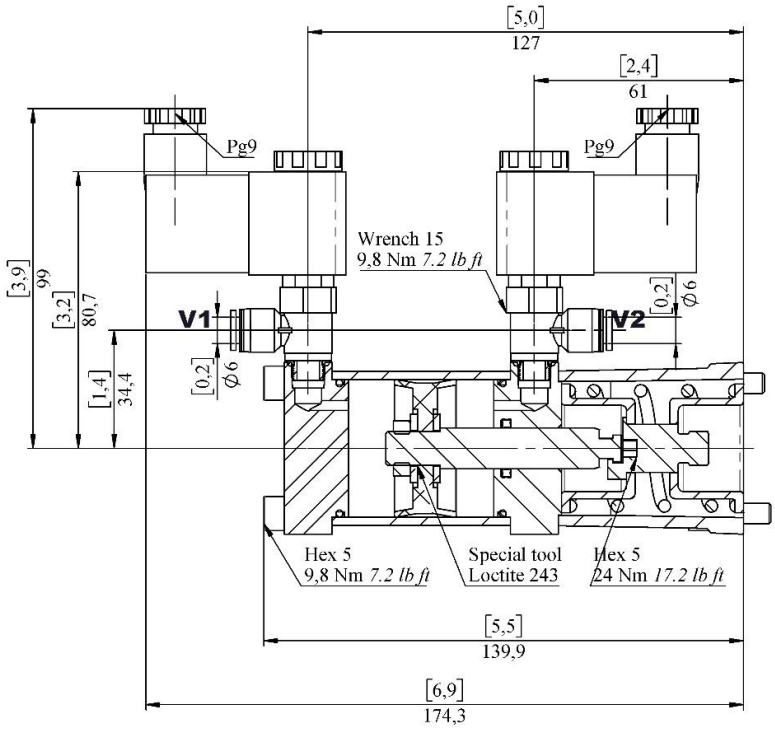


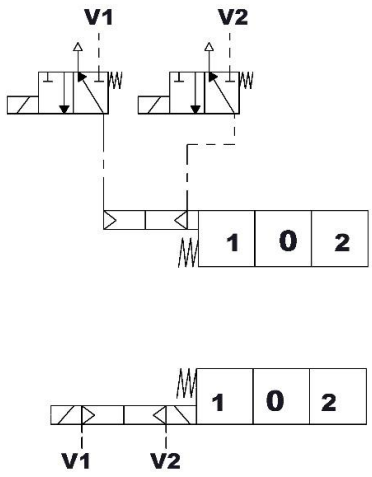


Operating features		
Pilot pressure	min	5,5 bar / *73 psi*
	max.	10 bar / *145 psi*

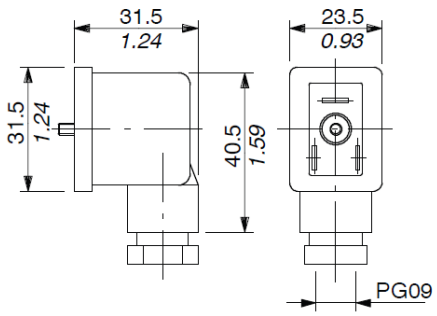
ON/OFF Electro pneumatic kit – 1EP

With spring return to neutral position





Connector specifications:

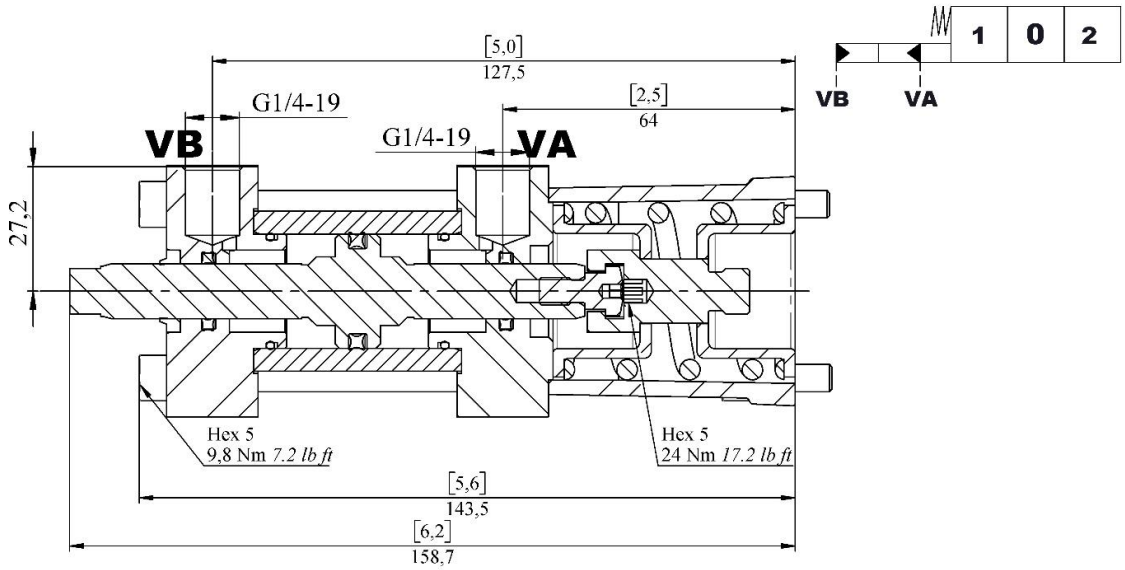


Operating features		
Pilot pressure	min	5,5 bar / *73 psi*
	max.	10 bar / *145 psi*
COIL specifications		
Nominal voltage tolerance		±10 %
Power rating		4,8 W
Nominal current		0,4 A - 12 VDC
		0,2 A - 24 VDC
Coil insulation		Class F
Weather protection		IP65
Duty cycle		100%

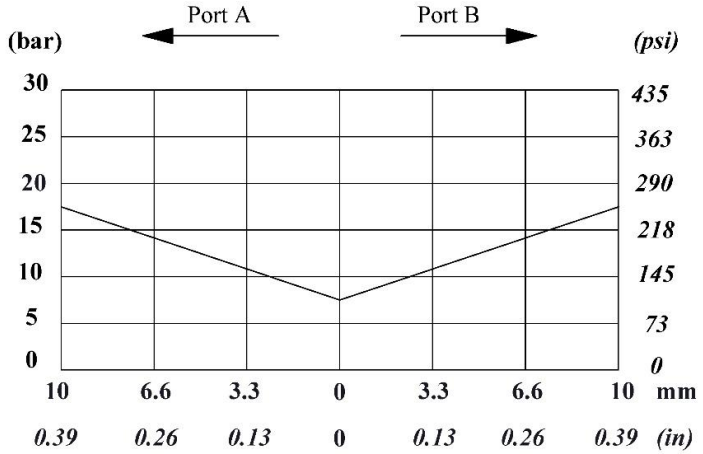
Connector is always included in 1EP control

Proportional hydraulic, single side kit - 1H

With spring return to neutral position



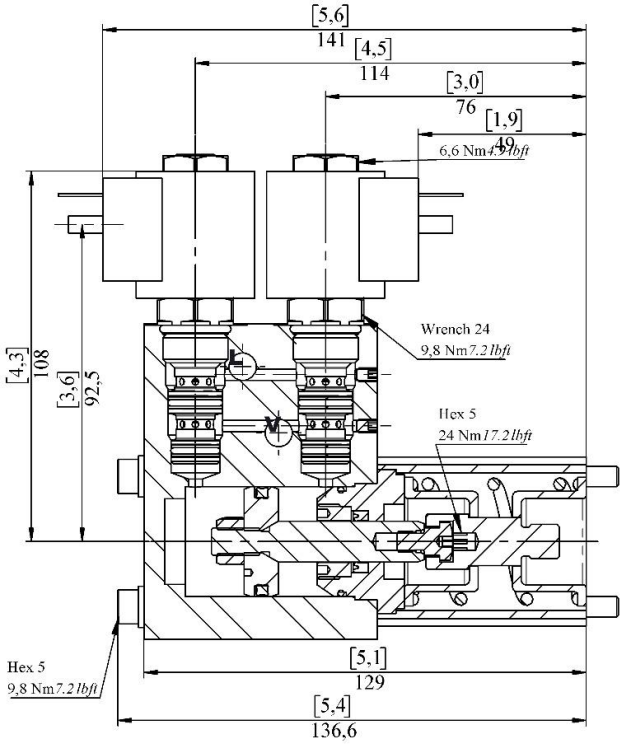
Pilot pressure - stroke diagram

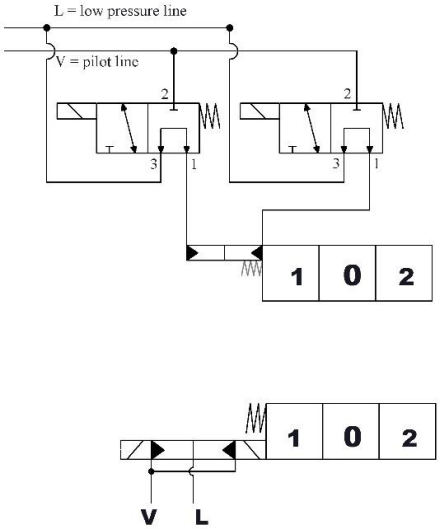


Operating features		
Pilot pressure	max.	50 bar / *725 psi*

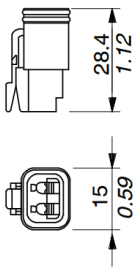
ON/OFF electro-hydraulic kit - 1ED3

With spring return to neutral position

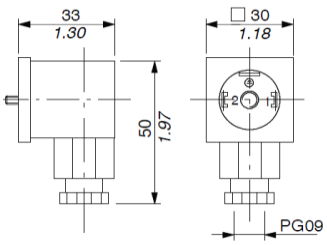




Connector specifications
2 poles, type Deutsch DT06-2S
Male housing with female ends



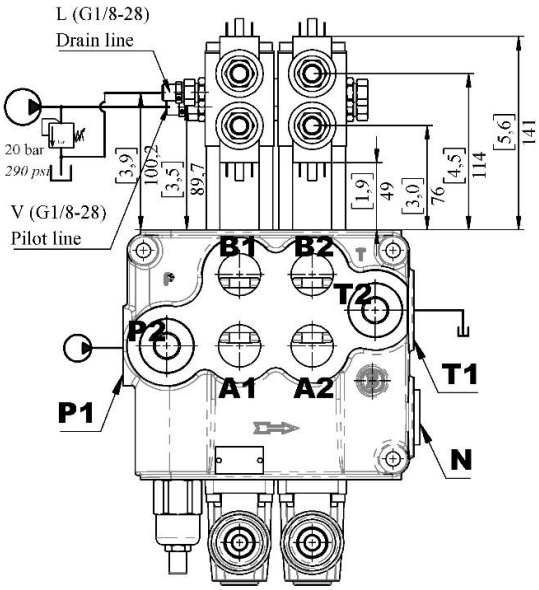
Connector specifications
2P+T according to
ISO 4400 / EN175301-803

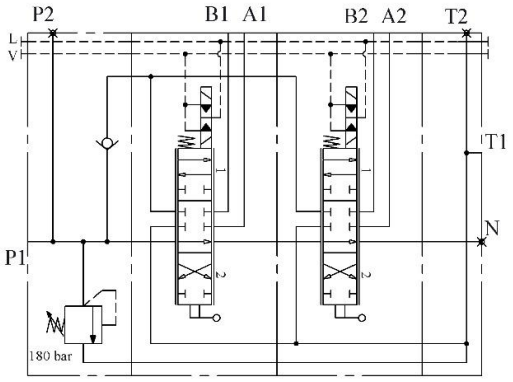


Operating features		
Pilot pressure	min	10 bar / *145 psi*
	max.	50 bar / *725 psi*
Back pressure on drain L	max.	25 bar / *360 psi*

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%

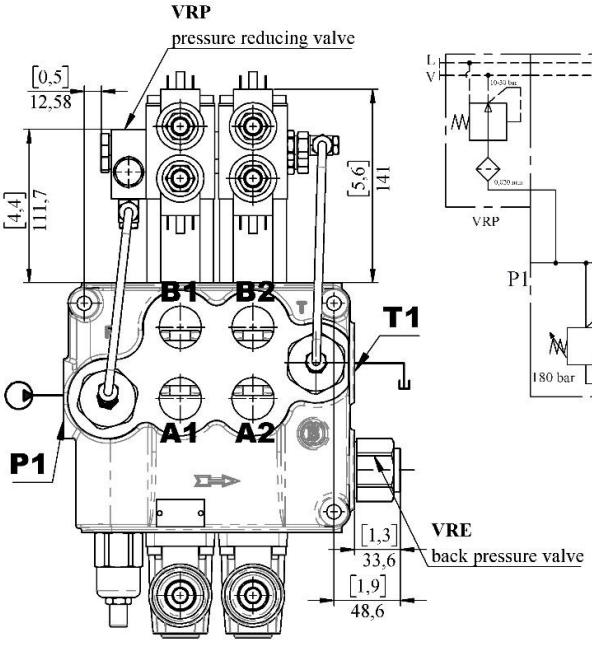
ON/OFF electro-hydraulic kit - 1ED3 with external drain

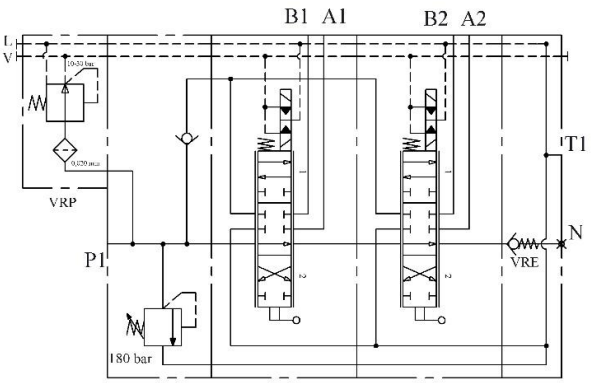




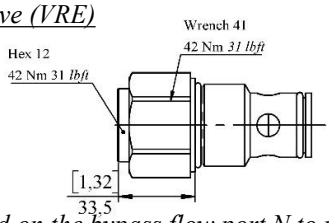
ON/OFF electro-hydraulic kit - 1ED3 with pilot and drain lines

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

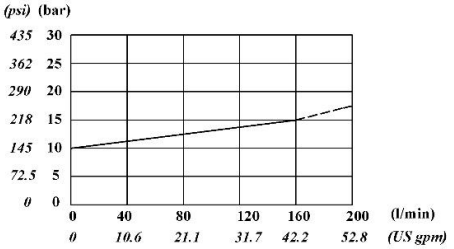




Back pressure valve (VRE)



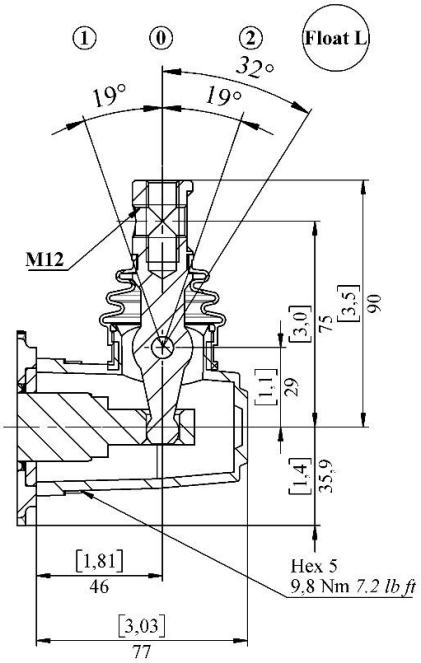
Pressure drop P-T

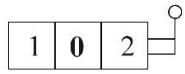


Valve is assembled on the bypass flow port N to provide pilot pressure to the actuator

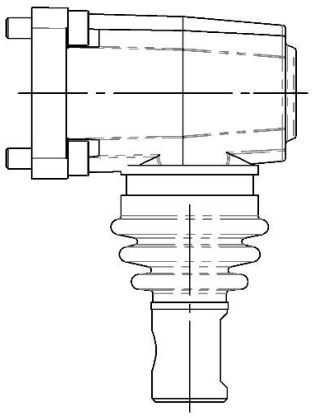
Lever control (Side A) – *aluminum cap, with protection booth lever pivot box*

Type KZ & KZ0

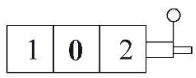




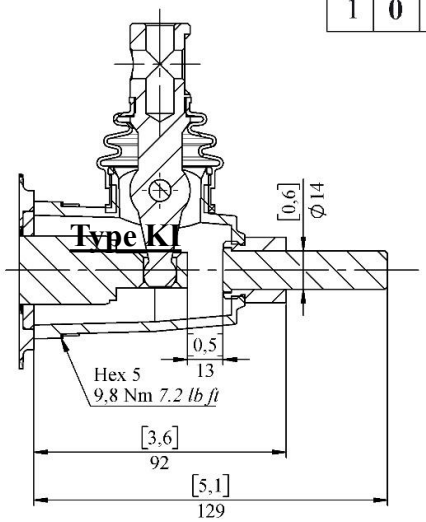
180º rotated – KZ0



Kit KZT

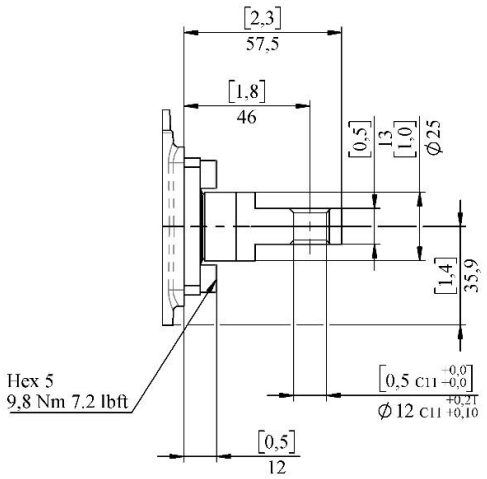


Type KT

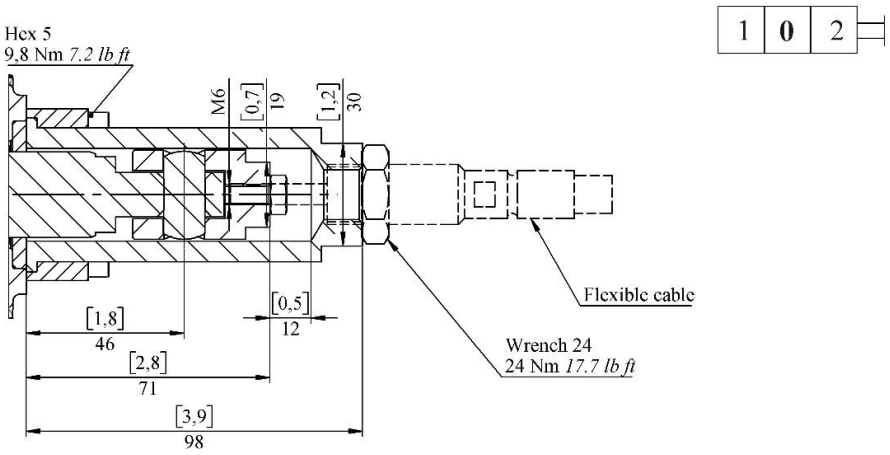


Mechanical control with dust-proof plate SLP (Side A)

1	0	2

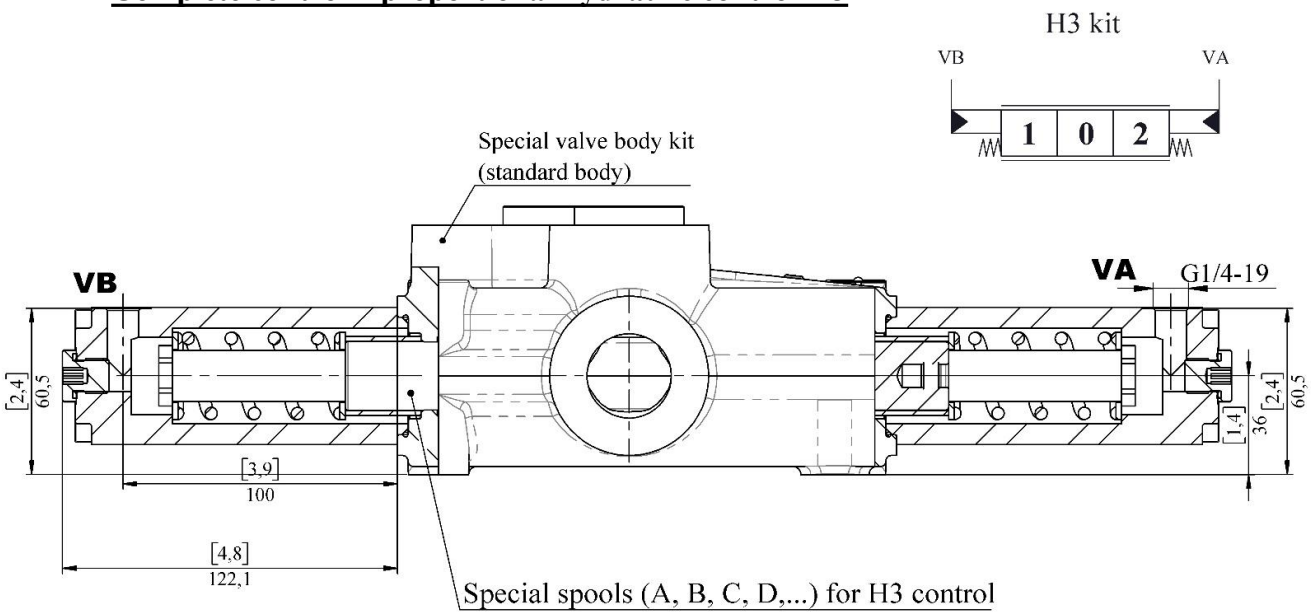


Cable remote control – V1 (Side A)

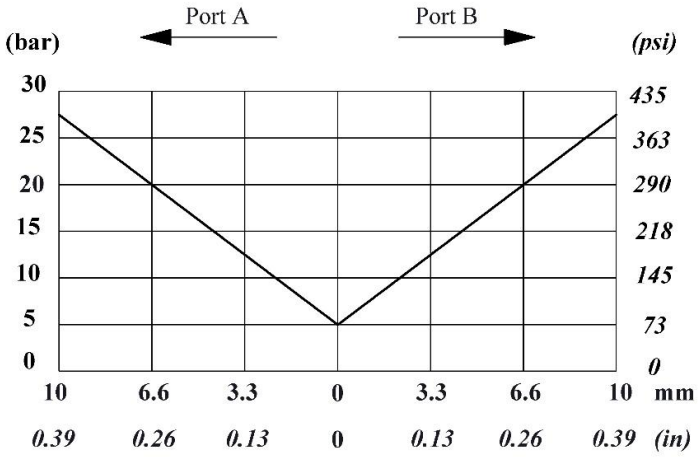


Controls for flexible cables	
3335	*Mechanical joystick control for 2 spools without buttons*
3375	*Mechanical joystick control for 2 spools with 1 button*
6008	*Mechanical joystick control for 2 spools with 2 buttons*
IS 3047	*Single lever control*
IS 3076	*Single lever control with antireverse lock*
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*

Complete control – proportional hydraulic control H3

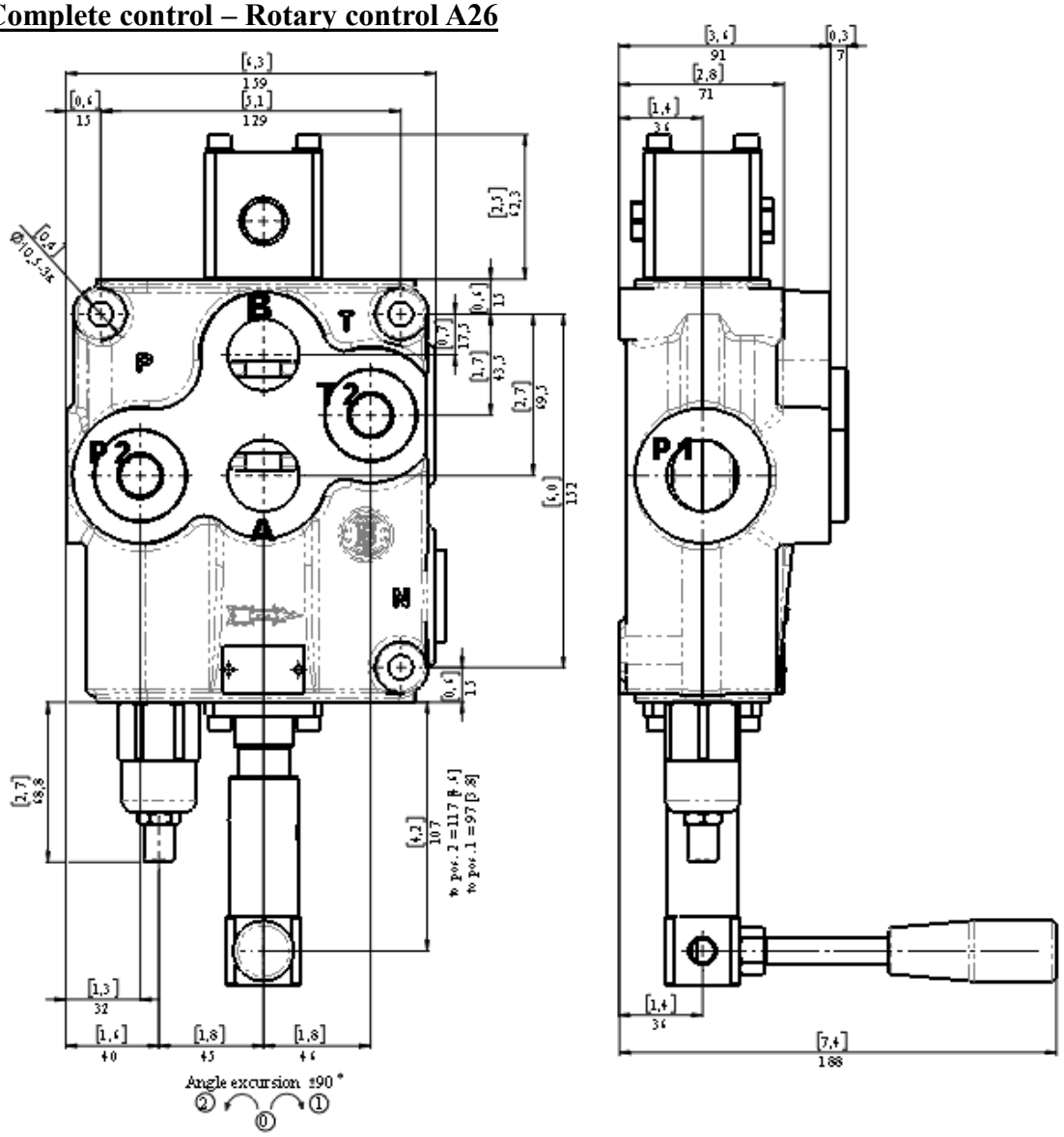


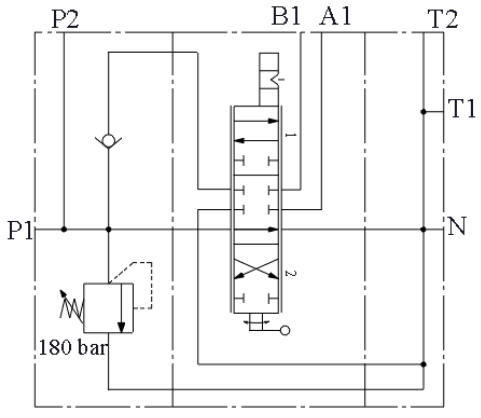
Pilot pressure - stroke diagram

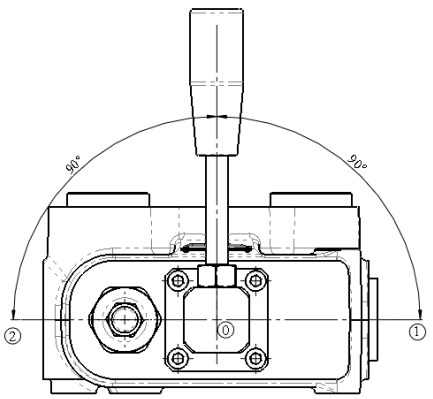


Max. pilot pressure....50 bar

Complete control – Rotary control A26

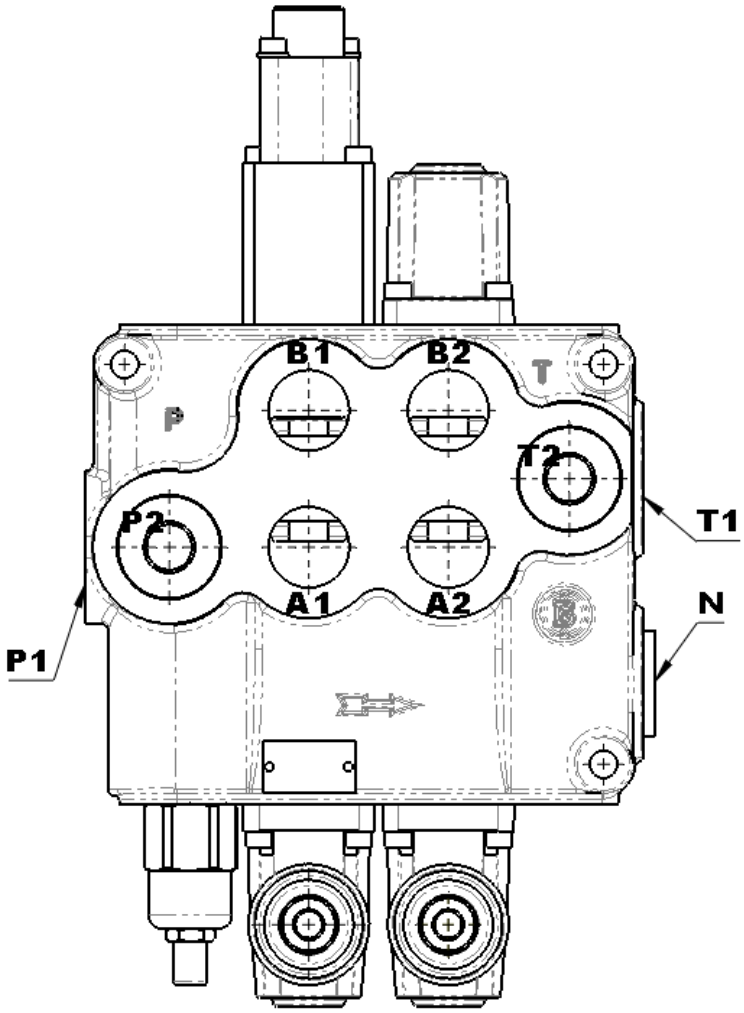


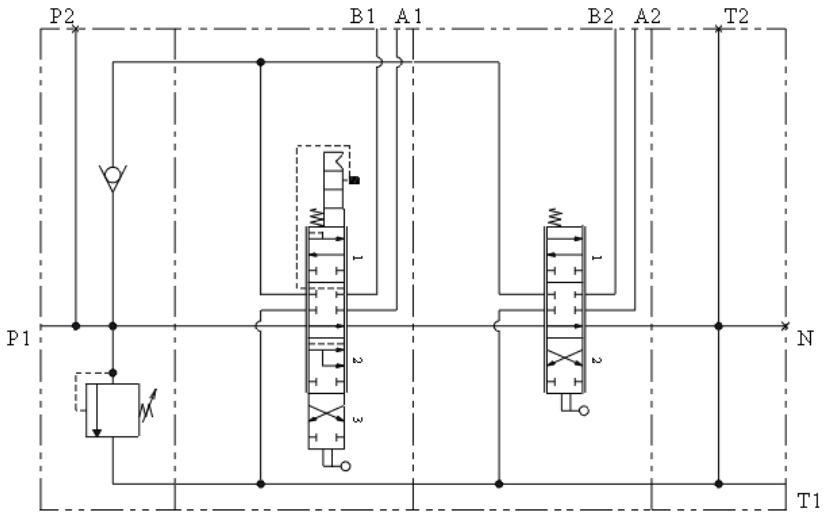




Example order code: P120/A26-G

Specialized valve for log-splitting machine with regenerative function and kick out

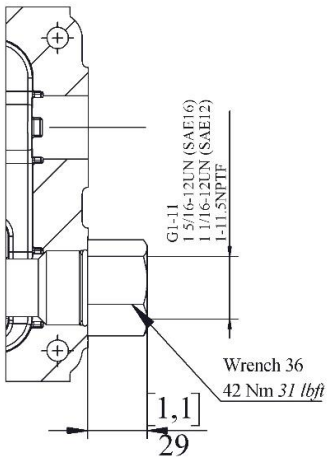


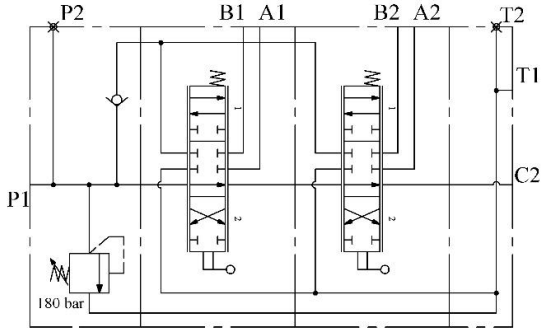


Outlet port options

It is possible to have open centre, closed centre and high pressure carry-over (power beyond)
If in the order code before the thread specification port N is plugged with standard M36x1,5 (non standard sealing)

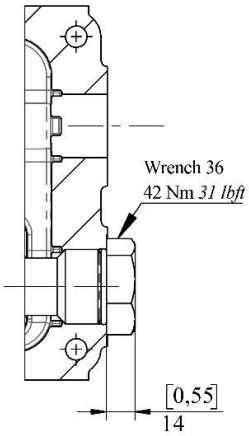
C2 - with carry-over (high pressure carry over)

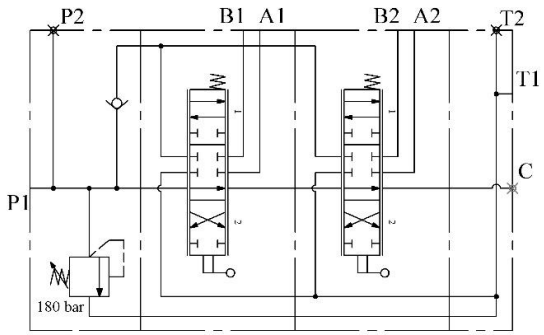




Description example:
02P120/2x(A1KZ1)-C2-G

C – closed center





Description example:
02P120/2x(A1KZ1)-C-G