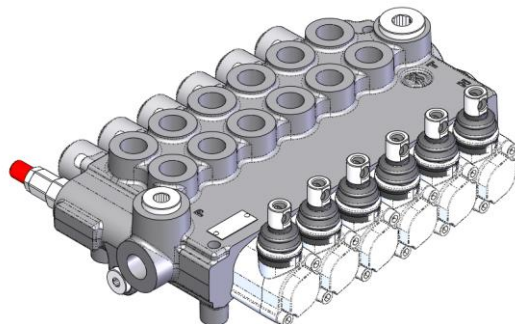
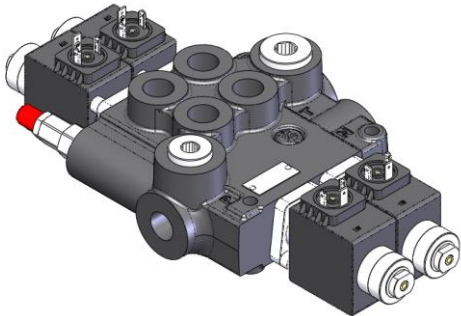
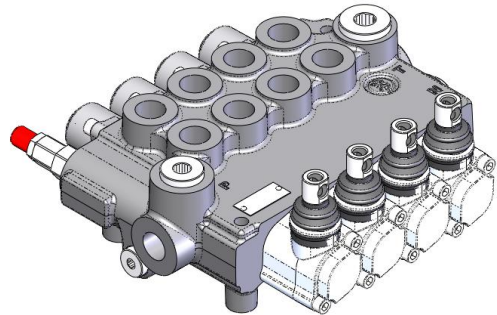
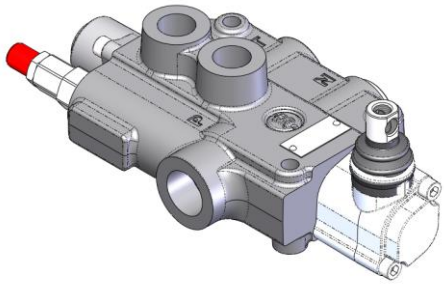
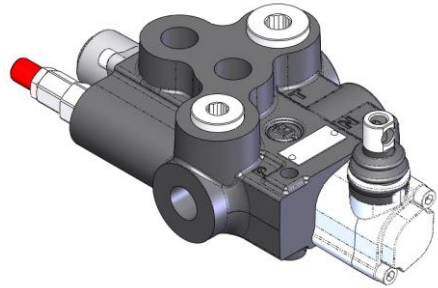
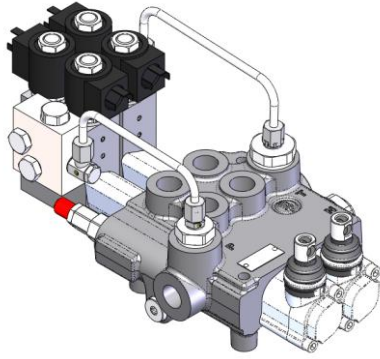


# Z80

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## **Features**

Simple compact and heavy duty designed monoblock from 1 to 6 sections for open and closed centre hydraulic systems.

- Fitted with a main pressure relief valve and a load check valve (optionally individual check valve per spool).
- Available with parallel and tandem circuit
- 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, regenerative 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.

**BADESTNOST IS NOT RESPONSIBLE FOR ANY DAMAGE CAUSED BY AN  
INCORRECT USE OF THE PRODUCT**

**First edition 09-2025**

**Working conditions**

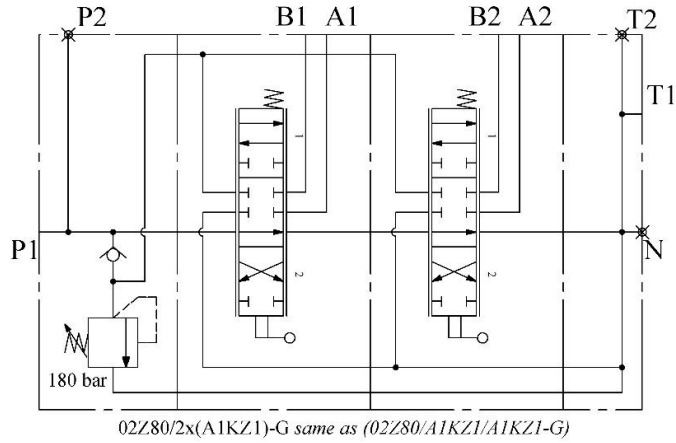
Nominal flow rating		80 l/min	21.1 US gpm
Operating pressure (max.)	<i>parallel and tandem</i>	315 bar	46000 psi
Back pressure (max.)	<i>outlet port T, static</i>	35 bar	508 psi
Internal leakage (min.) A(B) to T	$\Delta p = 100 \text{ bar (1450 psi) fluid and valve at } 40 \text{ }^\circ\text{C (104 }^\circ\text{F)}$	8 cm <sup>3</sup> /min	0.48 in <sup>3</sup> /min
Hydraulic fluid		Mineral based oil	
Fluid temperature	<i>with NBR seals</i>	from -20 °C to 80 °C	<i>from -4 °F to 176 °F</i>
	<i>with FPM (Viton) seals</i>	from -20 °C to 100 °C	<i>from -4 °F to 212 °F</i>
Viscosity	<i>operating range</i>	from 15 to 75 mm <sup>2</sup> /s	<i>from 15 to 75 cSt</i>
	<i>min.</i>	12 mm <sup>2</sup> /s	12 cSt
	<i>max.</i>	400 mm <sup>2</sup> /s	400 cSt
Permissible degree of fluid contamination		-/19/16 - ISO 4406 NAS 1683 - class 10	
Ambient temperature	<i>with mechanical devices</i>	from -40 °C to 60 °C	<i>from -40 °F to 140 °F</i>
	<i>with pneumatic and hydraulic devices</i>	from -30 °C to 60 °C	<i>from -22 °F to 140 °F</i>
	<i>with electric devices</i>	from -20 °C to 50 °C	<i>from -4 °F to 140 °F</i>

**Standard threads**

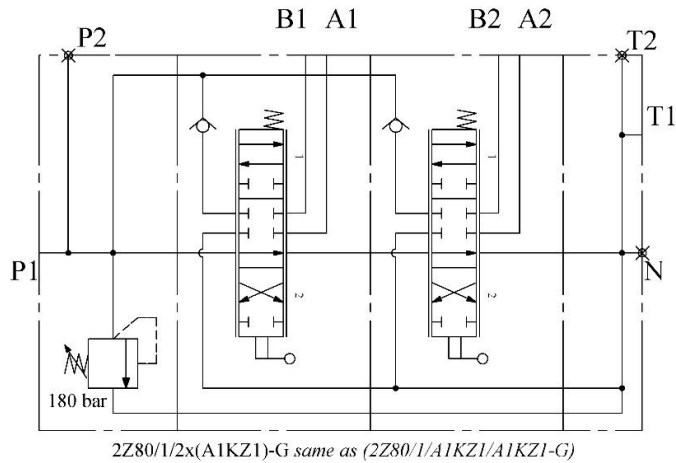
	Reference standard			
	BSP	UN-UNF	Metric	NPTF
Thread according to	ISO 228/1	ISO 263	ISO 262	Ansi B1.20.3
	BS 2779	ANSI B1.1 unified		
Cavity dimension according to	ISO 1179	11926	9974-1	
	SAE	J1926	J2244	J476a
	DIN 3852-2 (Shape X or Y)		3852-1 (Shape X or Y)	
Port threadings and codes				
Codes:	G	S	NPTF	M
Main ports	BSP	UN-UNF	NPTF	Metric
Inlet P	G1/2	7/8-14 (SAE10)	1/2NPTF	M22x1.5
Outlet port T	G3/4	1 1/16-12 (SAE12)	3/4NPTF	M26x1.5
Working ports A and B	G1/2	7/8-14 (SAE10)	1/2NPTF	M22x1.5
Control pilot ports				
Pneumatic	1/8-27 NPTF	1/8-27 NPTF	1/8-27 NPTF	1/8-27 NPTF
Hydraulic	G1/4	9/16-18 (SAE6)	9/16-18 (SAE6)	G1/4

**Hydraulic circuits**

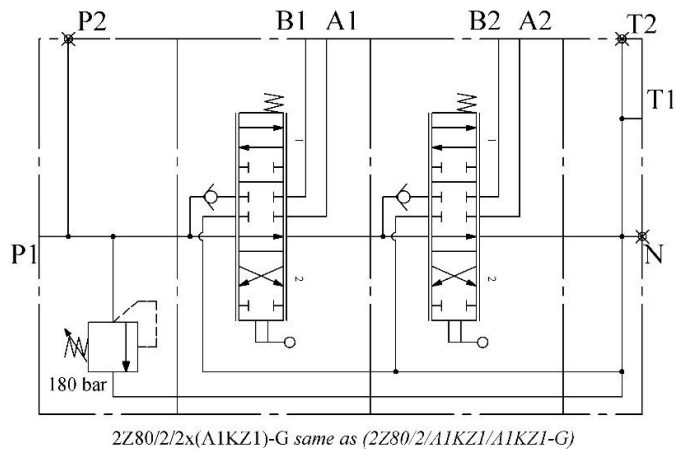
Standard configuration – parallel body, common check valve – 1 to 6 spools



Standard configuration – parallel body, individual check valve – 1 to 6 spools



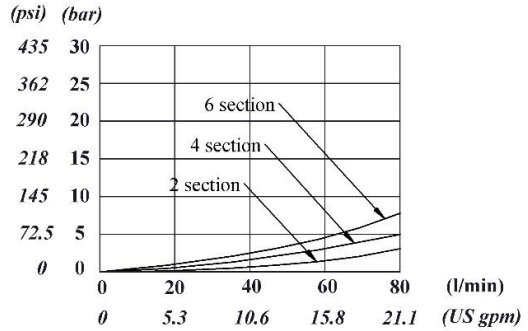
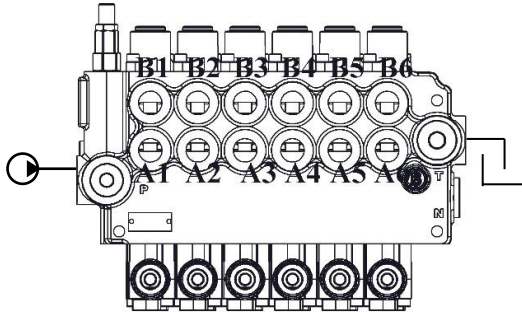
Standard configuration – tandem body, individual check valve – 1 to 6 spools



## Performance data

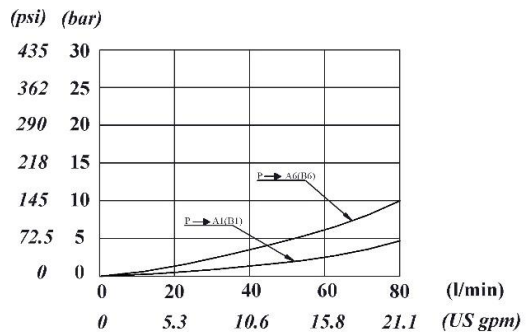
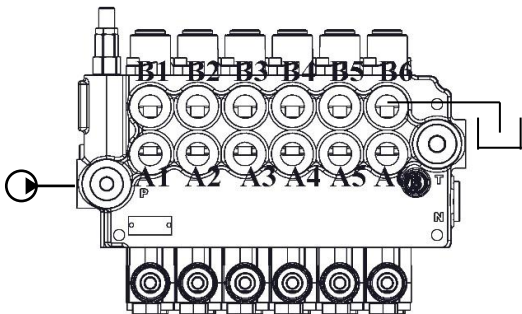
### Open centre

From side inlet to side outlet



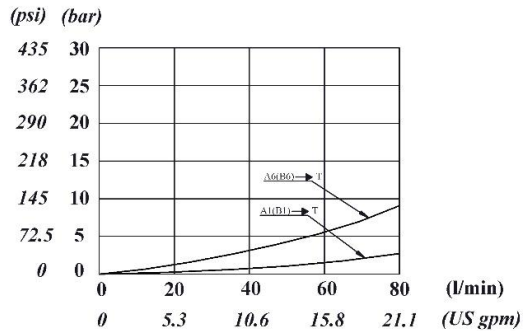
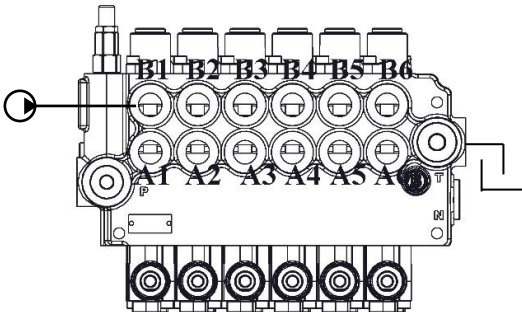
### Inlet to work port

From side inlet to A port spool in position 2 or B port spool in position 1



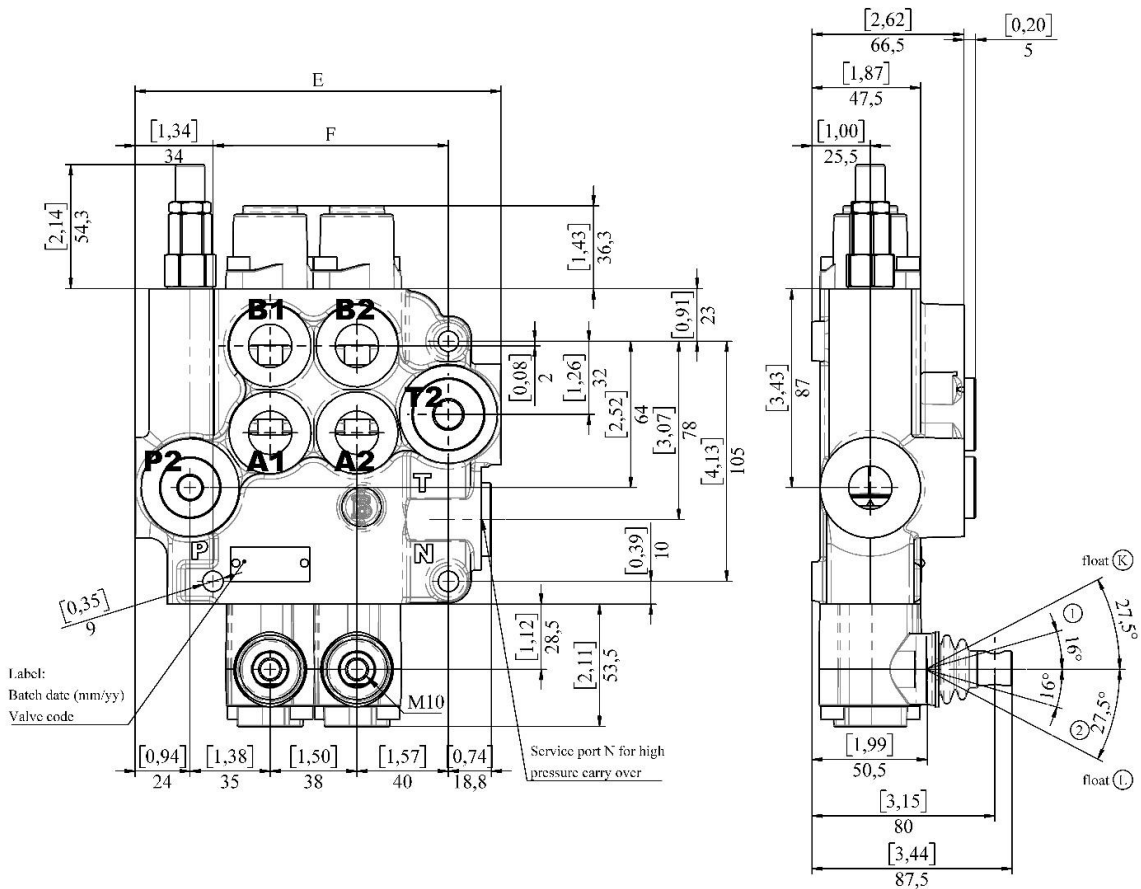
### Work port to outlet

From A port spool in position 1 or B port spool in position 2 to side outlet



## Dimensions

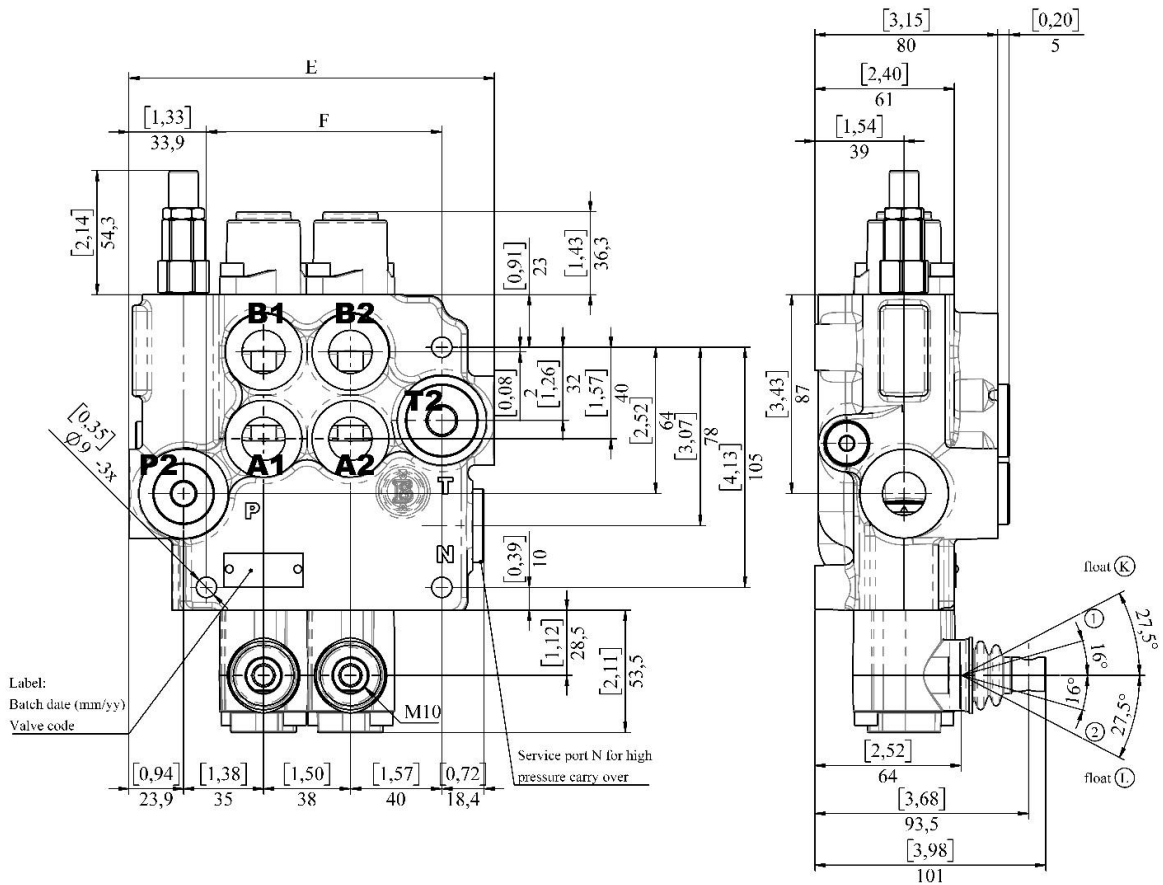
This drawing refers to a directional control valve with 2 working sections with common check valve



Note: Float K is presented on the drawing above just to show the convention for direction, Z80 can have float K (spool out) only in right hand version of the valve. For example code will be (Z80R/K16KZ1-G)

## Dimensions

This drawing refers to a directional control valve with 2 working sections with individual check valve per spool (refer to next page for the body with individual check valves)

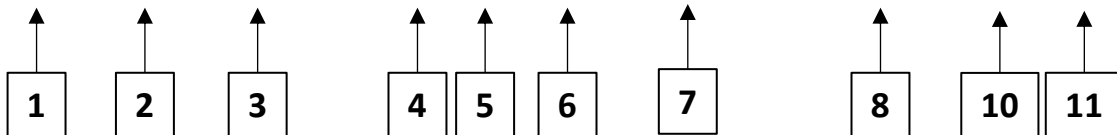


Note: Float K is presented on the drawing above just to show the convention for direction, Z80 can have float K (spool only) in right hand version of the valve. For example code will be (Z80R/K16KZ1-G)

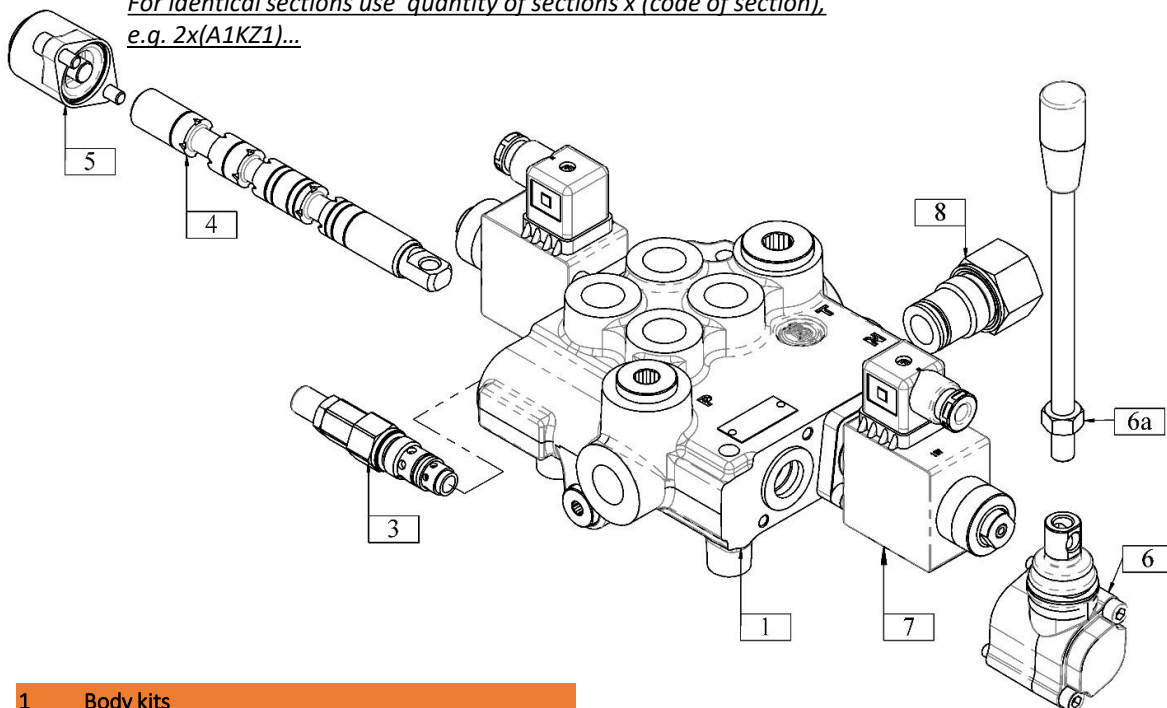
TYPE	E		F		Weight	
	mm	in	mm	in	kg	lb
Z80	111	4.37	65	2.56	3.90	8.6
Z80PT	122	4.80	65	2.56	4.55	10.0
Z280	160	6.30	103	4.06	7.20	15.9
Z380	198	7.80	141	5.55	9.5	20.9
Z480	236	9.29	179	7.0	11.60	25.6
Z580	274	10.8	217	8.5	13.90	30.6
Z680	312	12.3	255	10.0	16.00	35.3

### Order code, complete

**ZZ80/1/ (D4-280-FV)/A**      *First section*      *Following sections*  
**1 KZ1/A ES3- 12V(C)-C2-G - Zn**



For identical sections use quantity of sections x (code of section),  
 e.g. 2x(A1KZ1)...



### 1 Body kits

Type	Description
Z80	Parallel, 1 section
Z80PT	Parallel, 1 section with side and top ports
Z80CV	Parallel, 1 section (3-and 4- way valve with single spool and extra plug)
02Z80	Parallel, 2 section, common check valve
03Z80	Parallel, 3 section, common check valve
04Z80	Parallel, 4 section, common check valve
05Z80	Parallel, 5 section, common check valve
06Z80	Parallel, 6 section, common check valve
2Z80/1/	Parallel, 2 section, individual check valves
3Z80/1/	Parallel, 3 section, individual check valves
4Z80/1/	Parallel, 4 section, individual check valves
5Z80/1/	Parallel, 5 section, individual check valves
6Z80/1/	Parallel, 6 section, individual check valves
2Z80/2/	Tandem, 2 section, individual check valves
3Z80/2/	Tandem, 3 section, individual check valves
4Z80/2/	Tandem, 4 section, individual check valves
5Z80/2/	Tandem, 5 section, individual check valves
6Z80/2/	Tandem, 6 section, individual check valves

Valve bodies for "K" pressure release positioners (31-32-33-42-46) and spools "k" (kick out bodies)

2ZK80/1/	Parallel, 2 section, individual check valves
3ZK80/1/	Parallel, 3 section, individual check valves
4ZK80/1/	Parallel, 4 section, individual check valves
5ZK80/1/	Parallel, 5 section, individual check valves
6ZK80/1/	Parallel, 6 section, individual check valves
2ZK80/2/	Tandem, 2 section, individual check valves
3ZK80/2/	Tandem, 3 section, individual check valves
4ZK80/2/	Tandem, 4 section, individual check valves
5ZK80/2/	Tandem, 5 section, individual check valves
6ZK80/2/	Tandem, 6 section, individual check valves

### 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

**Order code, continue****3 Inlet relief options**

Type	Description
omit	Range 120-250 bar / 1740 to 3625 psi standard setting at 180 bar / 2610 psi
(D2-120)	Range 50-120 bar / 725 to 1740 psi standard setting at 120 bar / 1740 psi
(120-250)	Range 120-250 bar / 1740 to 3625 psi setting other than 180 bar / 2610 psi
(D4-220)	Range 220-315 bar / 3190 to 4570 psi standard setting at 220 bar / 3190 psi
(sok)	Without check valve
(svp)	Relief valve blanking plug
(FV)	Fixed valve setting and steel cap nut

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 (D4-250-sok-FV)

**4 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
M	Double acting, 3 position, blocked by-pass channel for closed center circuit

**Special spools for particular positioner kits**

Us	Double acting, 4 positions, regenerative position in between pos. 0 and position 2, spool in
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)
Bk	Single acting on A, 3 positions, B plugged, requires a plug; for pressure release option (kick out)

Ck	Single acting on B, 3 positions, A plugged, requires a plug; 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)
Ek	Double acting, 3 position, B opened to tank in pos. 0 for pressure release option (kick out)
Fk	Double acting, 3 position, A 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)
Uk	Double acting, 4 positions, regenerative position in between pos. 0 and position 2, spool in with pressure release (kick out) from pos. 2 (requires kit 1732)

**5 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 microswitch 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

**Order code, continue**

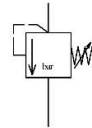
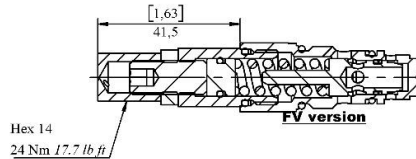
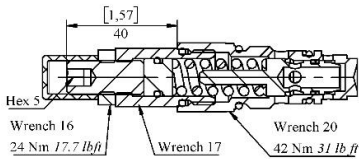
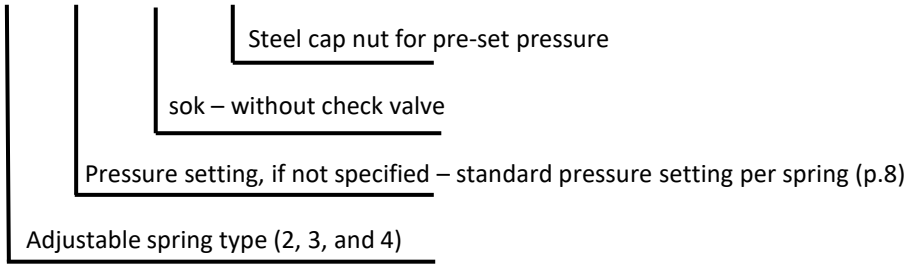
7Z	2 positions, with spring return in pos. 2 from pos. 1 and pin with M8 male thread for dual control	16	4 position with spring return in pos. 0 and detent in float position - only for spool K
7T	2 positions, with spring return in pos. 2 from pos. 1 with teton (push piston)	15	Detent in 4 positions - only for spool K
7D(M8)	2 positions, with spring return in pos. 2 from pos. 1, and pin with M8 female thread for dual control	31	3 position detent with pressure release (kick out) from pos. 1 and 2
7zS1	2 positions, with spring return in pos. 2 from pos. 1 with special tie rod kit M8 for dual control	32	3 position detent with pressure release (kick out) from pos. 1 and spring return from pos. 2
8	Detent in positions 0, 1 and 2	33	3 position detent with pressure release (kick out) from pos. 2 and spring return from pos. 1
8Z	Detent in positions 0, 1 and 2, and pin with M8 male thread for dual control	42	4 position detent with pressure release (kick out) from pos. 1 and 2 only for spool Lk
8F	Friction detent with infinite positions limit with pos. 0, 1 and 2	46	4 position detent with pressure release (kick out) from pos. 1 and 2 only for spool Kk
9	Detent in positions 1 and 0	1732	4 position with spring return to pos. 0 from pos. 2, soft stop at (regenerative) before pos. 2 and detent in pos. 1 with pressure release from it (kick out) to pos. 0
10	Detent in positions 0 and 2	<b>6 Spool controls (side A)</b>	
11	Detent in positions 1 and 2	without lever box, with plate	
11B	Detent in positions 1 and 2, and spring return to pos. 0	KZ	Lever box for M10
2	With detent in position 1 and spring return in pos. 0	KZe	Lever box for M10, extreme conditions
3	With detent in position 2 and spring return in pos. 0	KZT	Lever box for M8 with teton (push piston)
3D(M8)	With detent in position 2 and spring return in pos. 0 and pin with M8 female thread for dual control	KI	Lever box, collet type, horizontal Ø9 mm
6B3	2 positions, with spring return in pos. 2 from pos. 1 with detent in pos. 2	KY	Lever box, collet type, vertical Ø9 mm
7B2	2 positions, with spring return in pos. 1 from pos. 2 with detent in pos. 1	Adding a <b>0</b> 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. <b>KZ0</b>	
1V2	With spring return in pos. 0 for flexible cable control	KZV	Safety lever box, vertical configuration
8V2	Detent in positions 0, 1 and 2 for flexible cable control	KZH	Safety lever box, horizontal configuration
1H	Proportional hydraulic control- single side	SLP	without lever box with dustproof plate
1P	ON/OFF pneumatic control	V1	Flexible cable connection
1EP	ON/OFF electro-pneumatic control	ju+1	Joystick lever for 2 sections with pivot 1 o'clock
1ED3	ON/OFF electro-hydraulic control	ju+2	Joystick lever for 2 sections with pivot at 11 o'clock
Particular positioner kits for special spools			
6	2 positions, with spring return in pos. 1 from pos. 2 for spool Us	ju+3	Joystick lever for 2 sections with pivot 7 o'clock
17	4 position with spring return to pos. 0 from pos. 2, soft stop at (regenerative) before pos. 2 and detent in pos. 1	ju+4	Joystick lever for 2 sections with pivot at 5 o'clock
12	4 position with spring return in pos. 0 and detent in float position - only for spool L	Optional ball type handle (jb+...), and custom lengths	
13	Detent in 4 positions - only for spool L	<b>6a Handle options</b>	
		1	M10x170
		Custom lengths and bends available	
		<b>7 Complete controls</b>	
		ES	Single acting solenoid kit
		A26	Control with rotation (CW-CCW)

**Order code, continue**

<b>7a</b>	<b>Coil specifications</b>
12V	12V coil
24V	24V coil
12V	12V DT coil
24V	24V DT coil
<b>7b</b>	<b>Connectors</b>
	<i>By default, connectors are not included</i>
(C)	<i>Connector for the particular coil is included</i>
<b>8</b>	<b>Outlet port options</b>
	<i>BSP G3/4 plug on port N</i>
C	<i>Closed center plug</i>
C2	<i>G3/4 high pressure carry-over sleeve</i>
C2(12)	<i>G1/2 high pressure carry-over sleeve</i>
C2(S)	<i>For SAE threading - SAE12 high pressure carry-over sleeve</i>
C2(NPTF)	<i>For NPTF threading - 3/4NPTF high pressure carry-over sleeve</i>
VRE	<i>Back pressure valve</i>
<b>9</b>	<b>Inlet outlet selection</b>
	<i>Side ports open, plugs on top ports P2&amp;T2, standard configuration (omit in valve description)</i>
22	<i>Top ports open, plugs on side ports</i>
12	<i>Side inlet, top outlet, else plugged</i>
21	<i>Top inlet, side outlet, else plugged</i>
<b>10</b>	<b>Valve Threading - refer to page 3</b>
<b>11</b>	<b>Coating and plating</b>
	<i>Valve body is phosphated, steel parts Zn plated, spools either Ni, or Cr plating (omit in valve description)</i>
Zn	Valve body - Zinc plated
BP	Painting

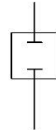
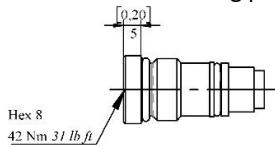
## Inlet relief options

### D4-280-sok-FV



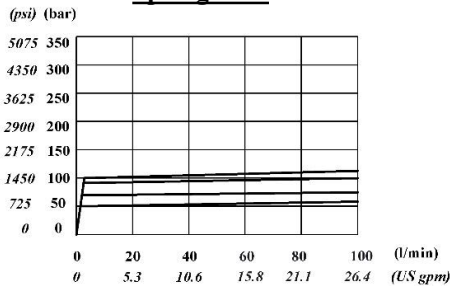
Note: Check valve is not shown

### sok – relief valve blanking plug

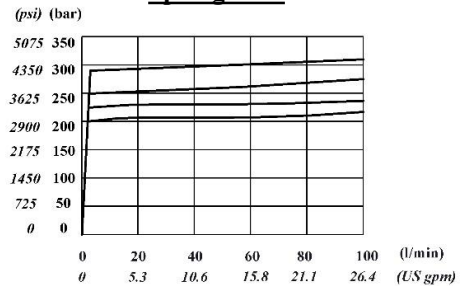


## Relief valve type “D” performance characteristics

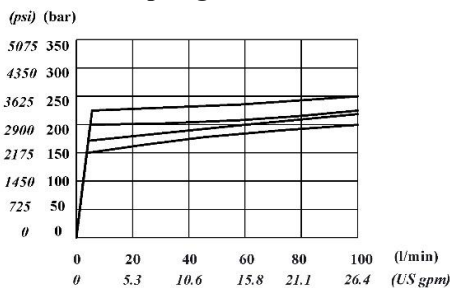
### Spring nr. 2



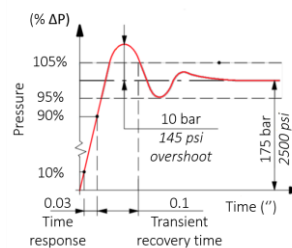
### Spring nr. 4



### Spring nr. 3

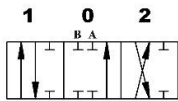
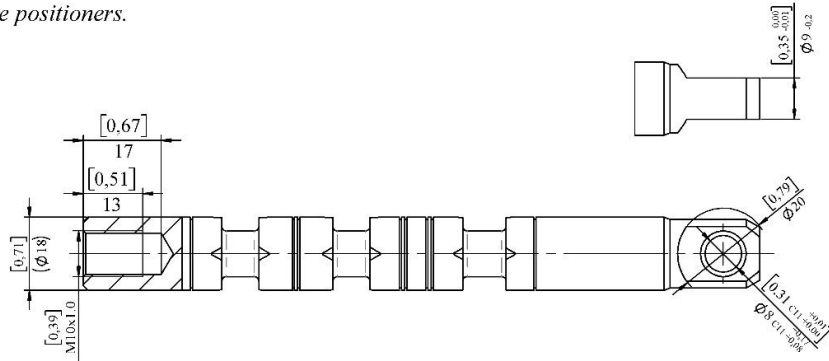


### Time response

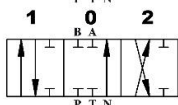
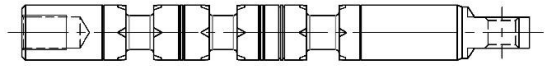


## Spool options:

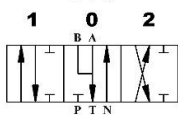
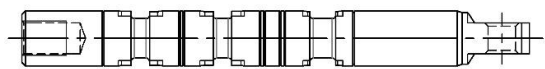
Badestnost standard spool have the ends shown in the drawing below. These end spool are necessary to join it the controls and the positioners.



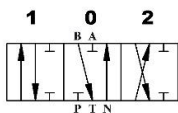
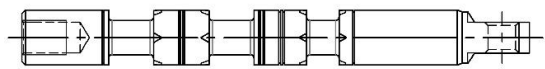
**A** Double acting spool, work ports closed in neutral position.



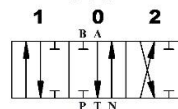
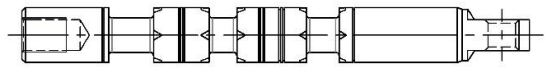
**Af** Double acting spool, high metering, work ports closed in neutral position.



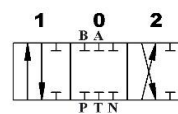
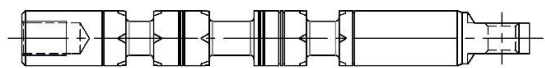
**D** Double acting spool, work ports open to tank in neutral position.



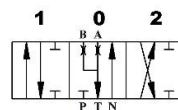
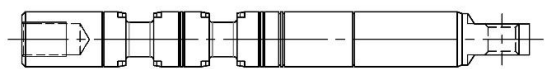
**E** Double acting spool, work port B open to tank in neutral position.



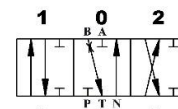
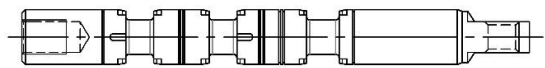
**F** Double acting spool, work port A open to tank in neutral position.



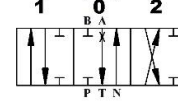
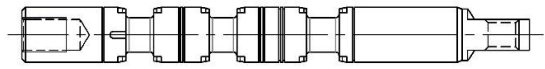
**M** Double acting spool, closed center, work ports closed in neutral.



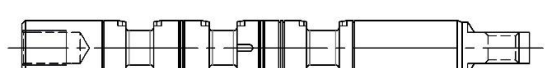
**Dd** Double acting spool, closed center, work ports partially open to tank



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

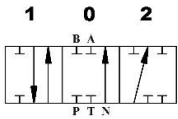


**Fd** Double acting spool, closed center, work port A partially open to tank

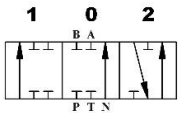
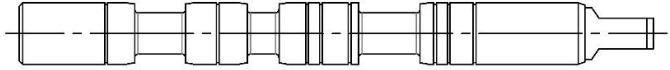


## Spool options, continue

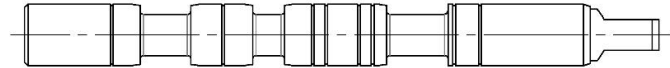
### Single acting spools



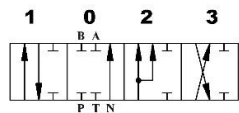
Single acting on A, 3 position, B plugged



Single acting on B, 3 positions, A plugged



### Regenerative spools

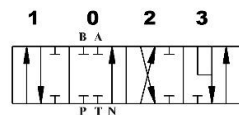


Double acting, 4 positions, regenerative position

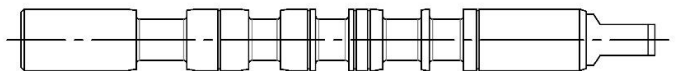


Spool *Us* requires spool positioner - 6 or 17, and it is available to valves **ONLY** with left hand configuration (P on left with respect to lever control)

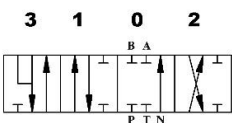
### Floating spools



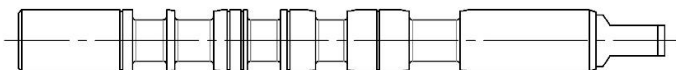
Double acting, 4 positions, floating circuit in 4th position with spool in



Spool *L* requires spool positioner - 12 or 13, and it is available to valves **ONLY** with "R" right hand configuration (P on right with respect to lever control)



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



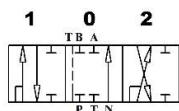
Spool *K* requires spool positioner - 16 or 15, and it is available to valves **ONLY** with left hand configuration (P on left with respect to lever control)

**All spools have "R" version for right version of the valve, exceptions are *Us*, *K* 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

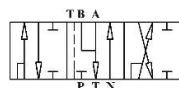
Spools for pressure release detent kits “kick out” – require additionally machined valve body (ZK)

### Standard double acting



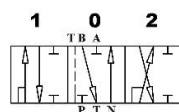
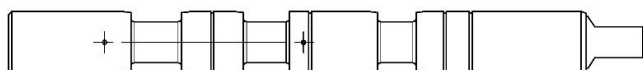
**Ak**

Double acting spool, work ports closed in neutral position.



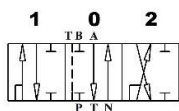
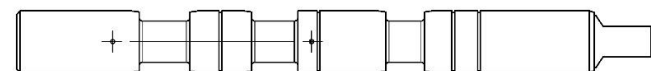
**Dk**

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



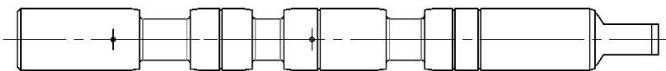
**Ek**

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

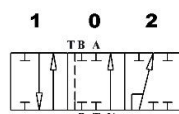


**Fk**

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

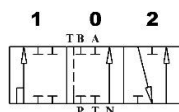
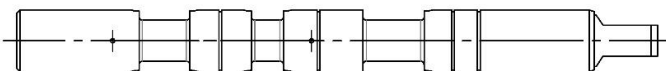


### Single acting



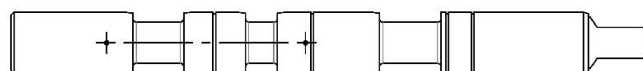
**Bk**

Single acting on A, 3 position, B plugged



**Ck**

Single acting on B, 3 positions, A plugged



All spools have “R” version for right version of the valve, exceptions are Uk, Kk and Lk.

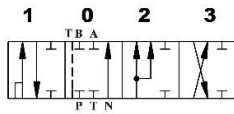
To order right hand version of a spools, add “R” behind the spool description e.g. AkR, BkR, CkR, etc.

To order low leakage version of spools, add “n” behind the spool description e.g. Akn, Bkn, Ckn, etc.

## Spool options, continue

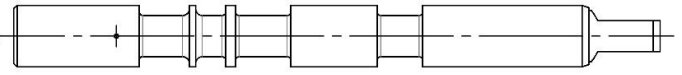
Spools for pressure release detent kits “kick out” – require additionally machined valve body (ZK)

### Regenerative



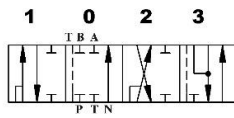
**Uk**

Double acting, 4 positions, regenerative position



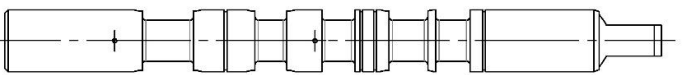
Spool Uk requires spool positioner – 1732 and it is available to valves ONLY with left hand configuration (P on left with respect to lever control)

### Floating

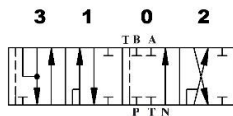


**Lk**

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

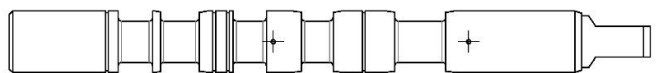


Spool Lk requires spool positioner - 42 and it is available to valves ONLY with "R" right hand configuration (P on right with respect to lever control)



**Kk**

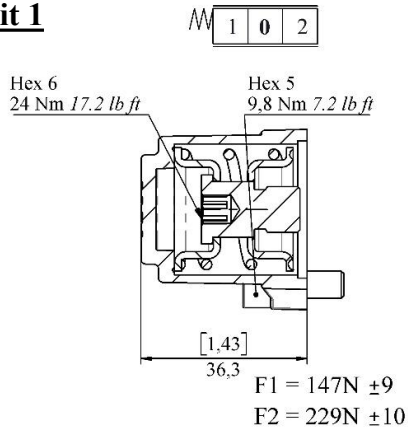
Double acting, 4 positions, floating circuit in 4th position with spool out



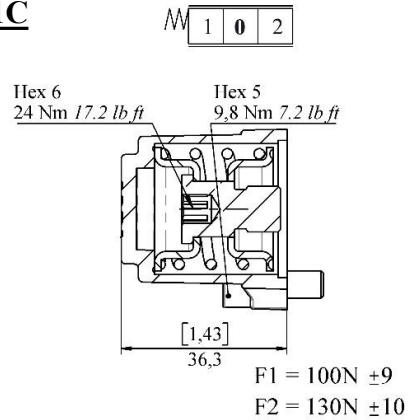
Spool Kk requires spool positioner - 46 and it is available to valves ONLY with left hand configuration (P on left with respect to lever control)

## Spool positioners (B-side)

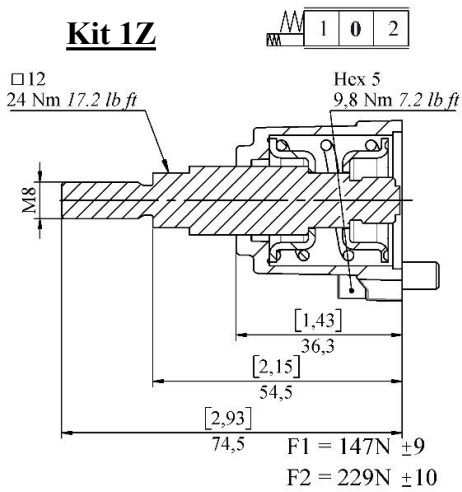
### Kit 1



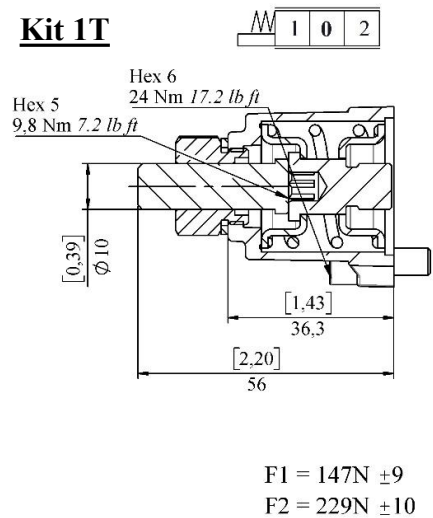
### Kit 1C



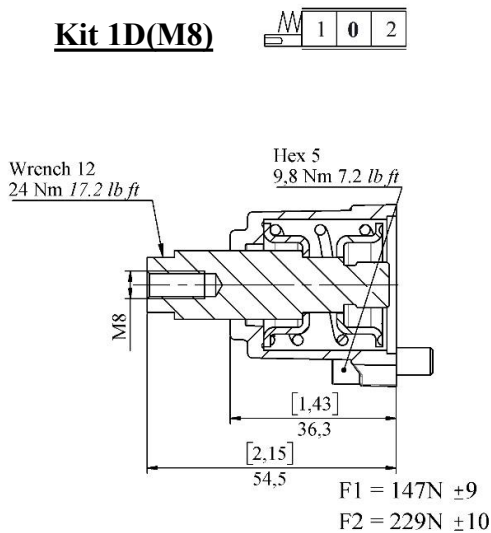
### Kit 1Z



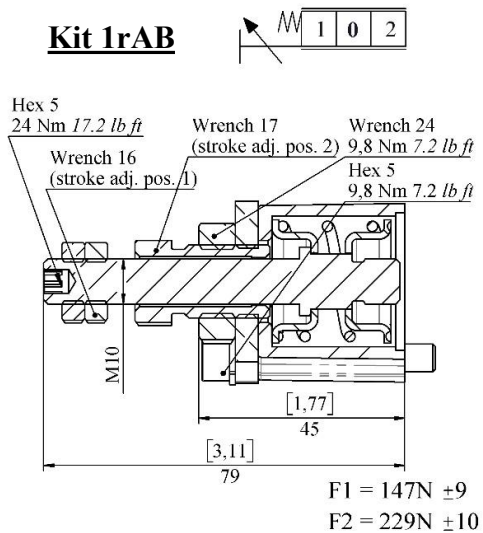
### Kit 1T



### Kit 1D(M8)

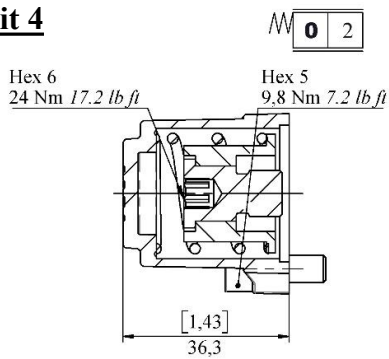


### Kit 1rAB

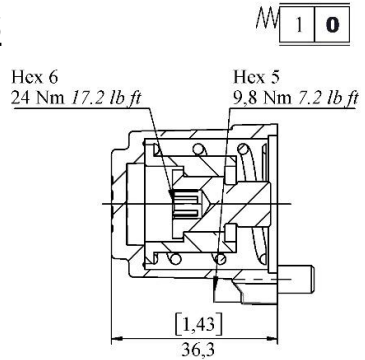


## Spool positioners (B-side)

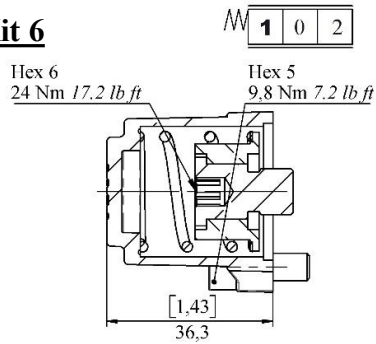
**Kit 4**



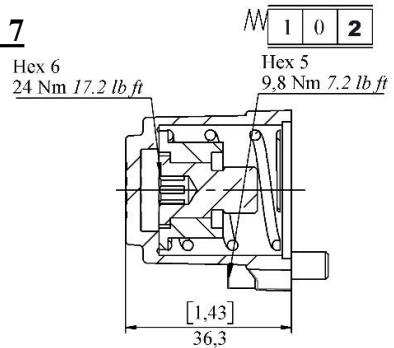
**Kit 5**



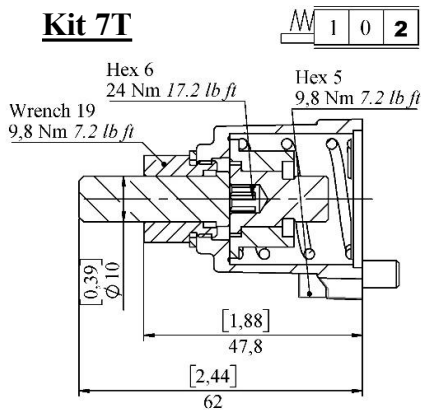
**Kit 6**



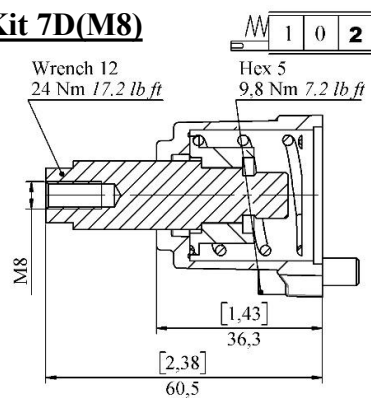
**Kit 7**



**Kit 7T**

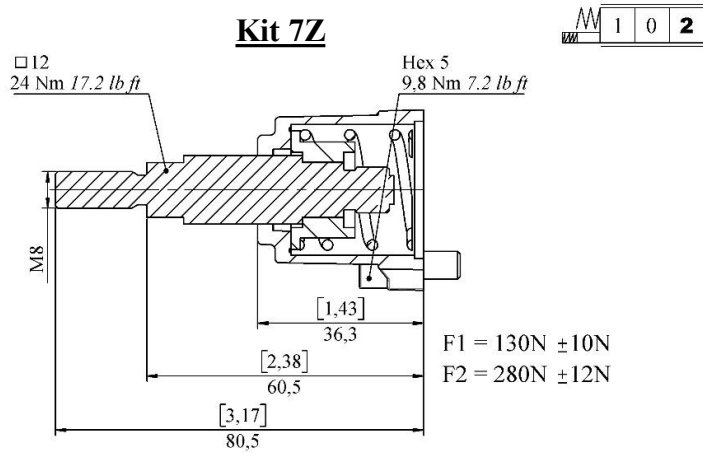


**Kit 7D(M8)**

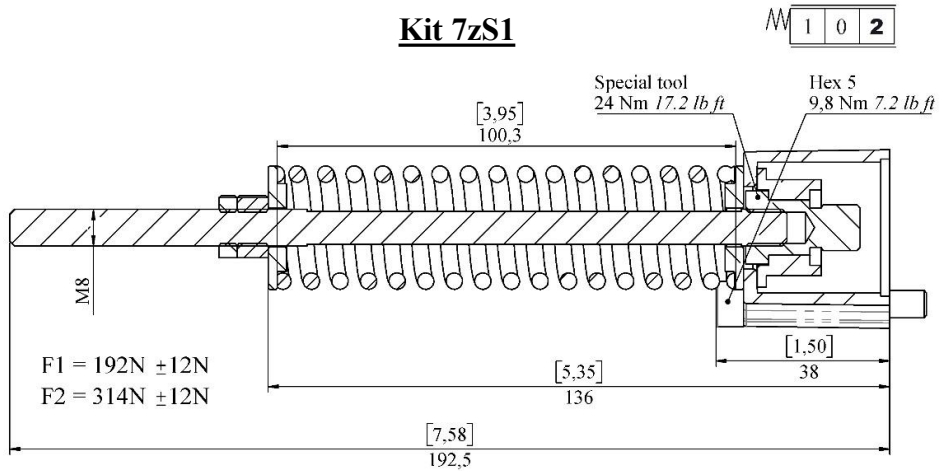


## Spool positioners (B-side)

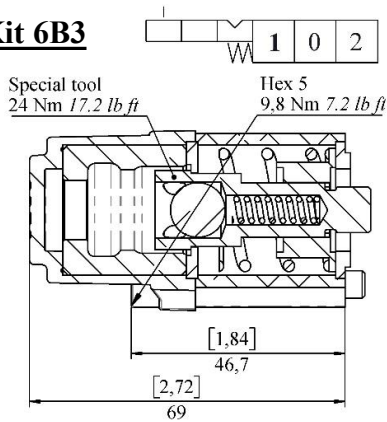
### Kit 7Z



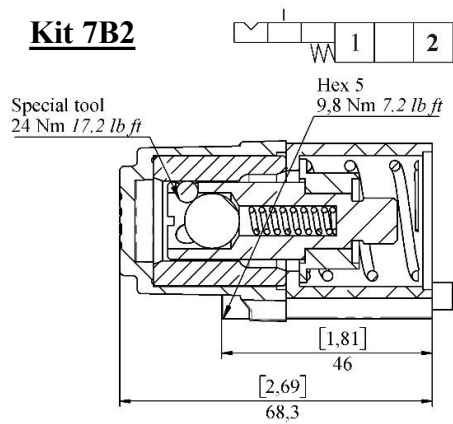
### Kit 7zS1



### Kit 6B3

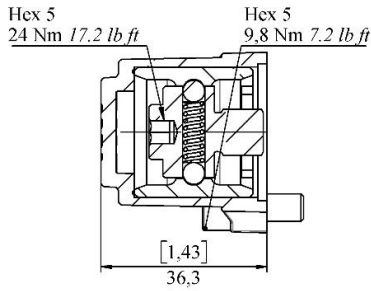
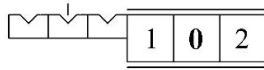


### Kit 7B2

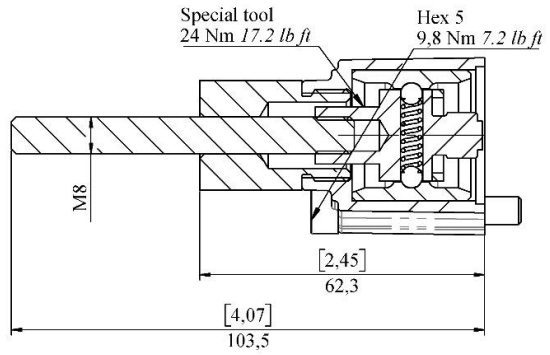
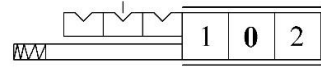


**Spool positioners (B-side)**

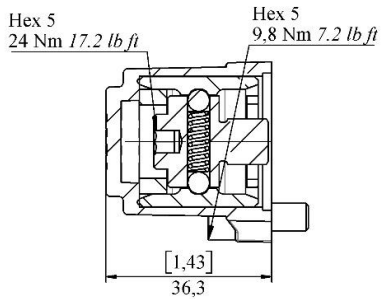
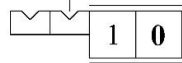
**Kit 8**



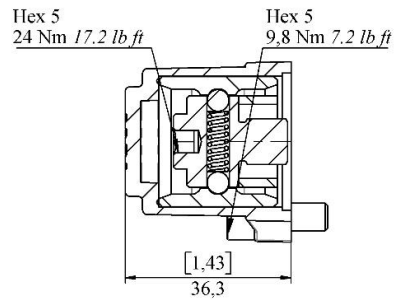
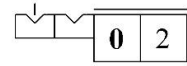
**Kit 8Z**



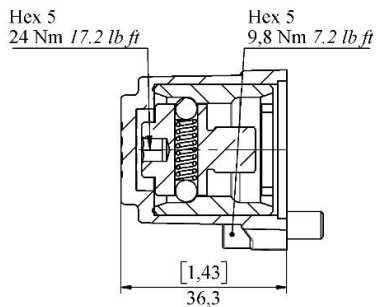
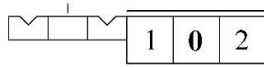
**Kit 9**



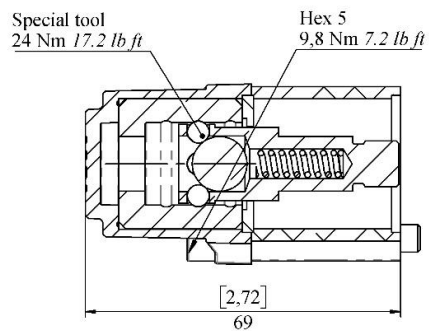
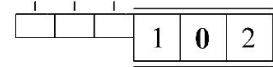
**Kit 10**



**Kit 11**

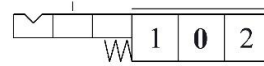
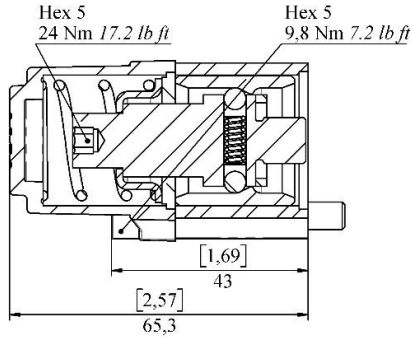


**Kit 8F**

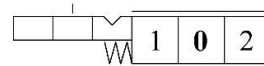
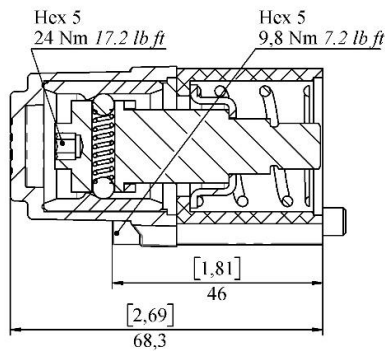


### Spool positioners (B-side)

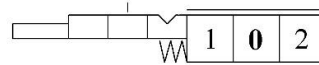
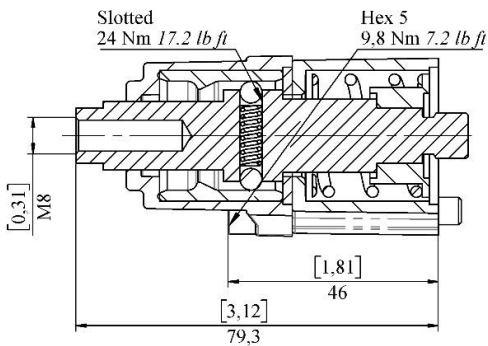
**Kit 2:** *3 position, spring return from pos. 2 to pos. 0 and detent in pos. 1*



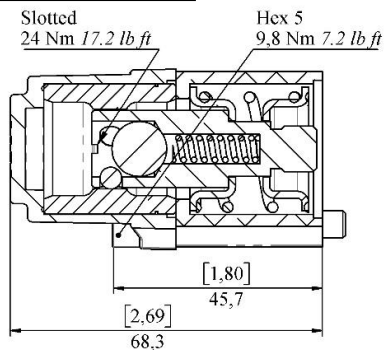
**Kit 3:** *3 position, spring return from pos. 1 and detent in pos. 2*



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

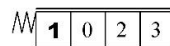
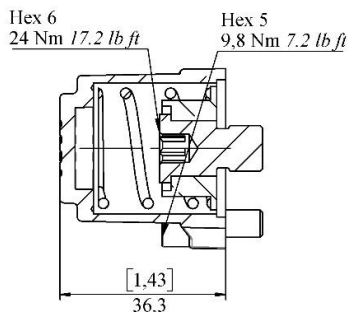


**Kit 11B:** *2 position, with detent in both positions and spring return to neutral from either direction*

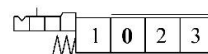
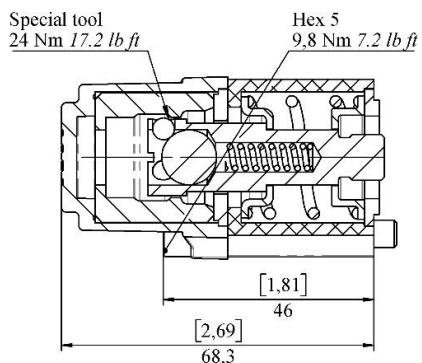


**Particular spool positioners kits for regenerative spools**

**Kit 6 for Us**



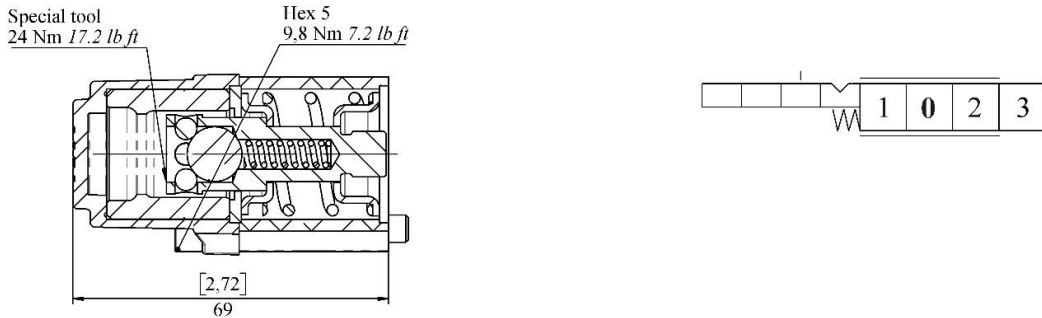
**Kit 17**



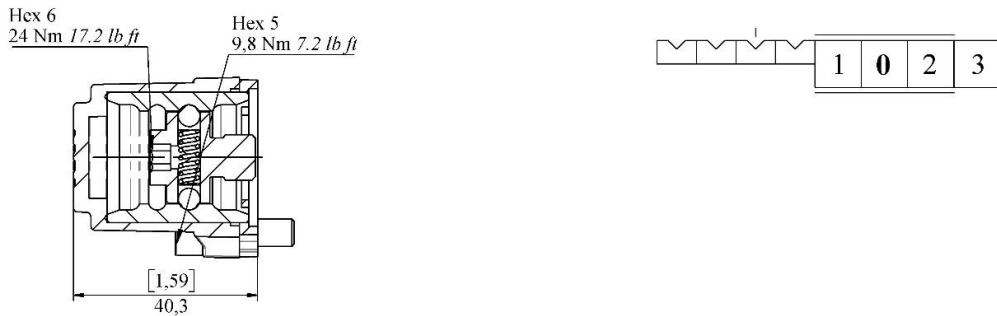
*Regen can be used only on standard configuration valve with left inlet (with respect to the lever)*

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

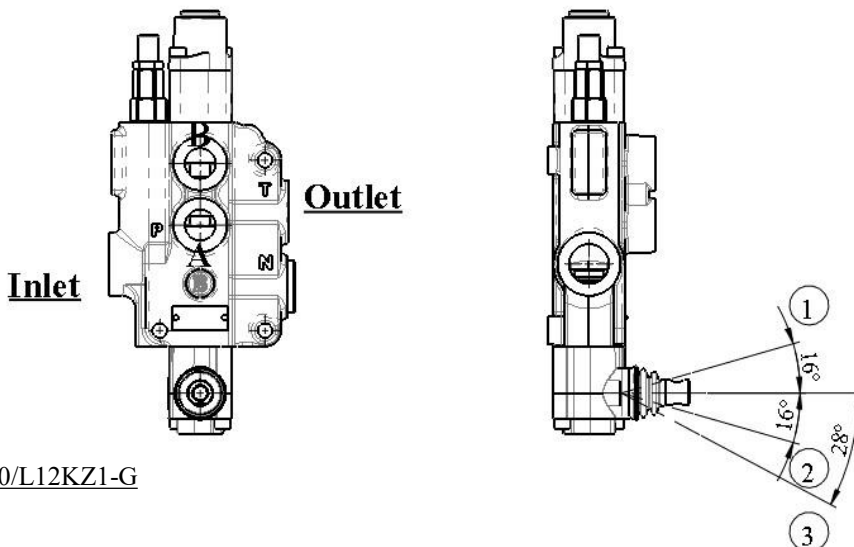
**Kit 12: four position, return to neutral from 1 and 2 and detent in float**



**Kit 13: four position detent**



**Limitations of floating sections for Z80 for kits 12 and 13**

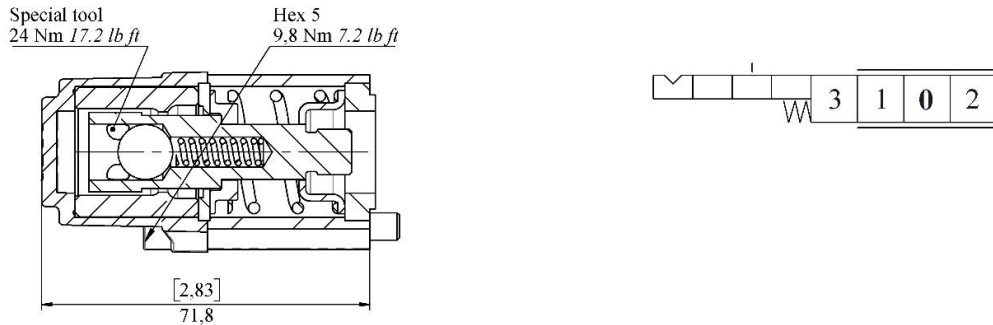


Z80/L12KZ1-G

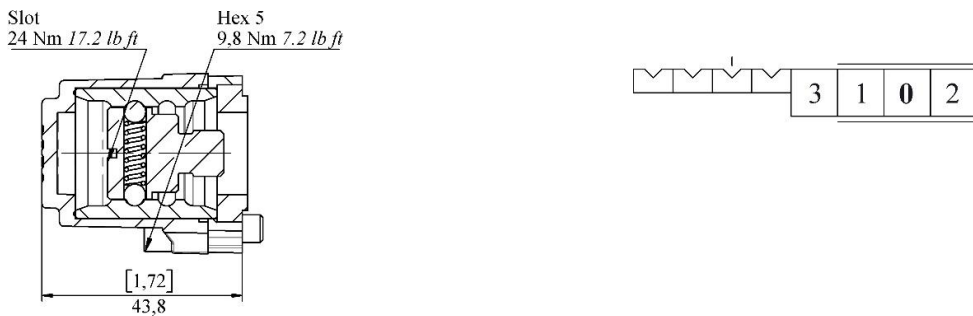
*Floating spool IN (L12 and L13) can be used only on standard configuration valve with left inlet (with respect to the lever)*

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

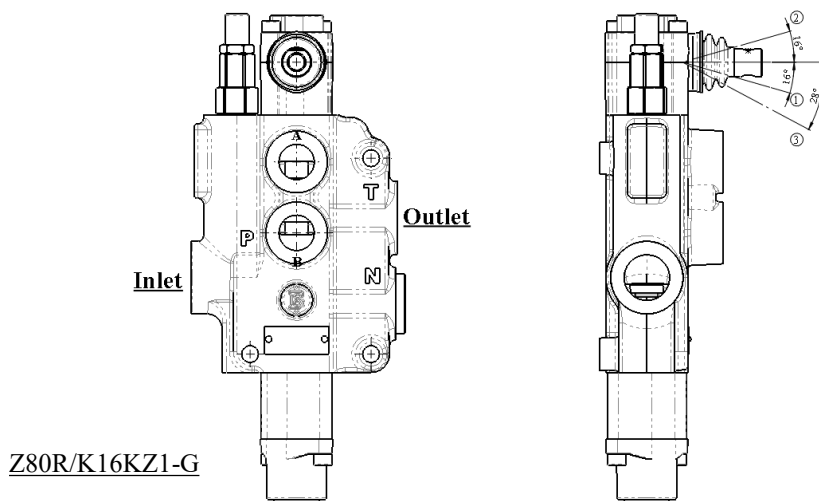
**Kit 16:** *four position, return to neutral from 1 and 2 and detent in float*



**Kit 15:** *four position detent*



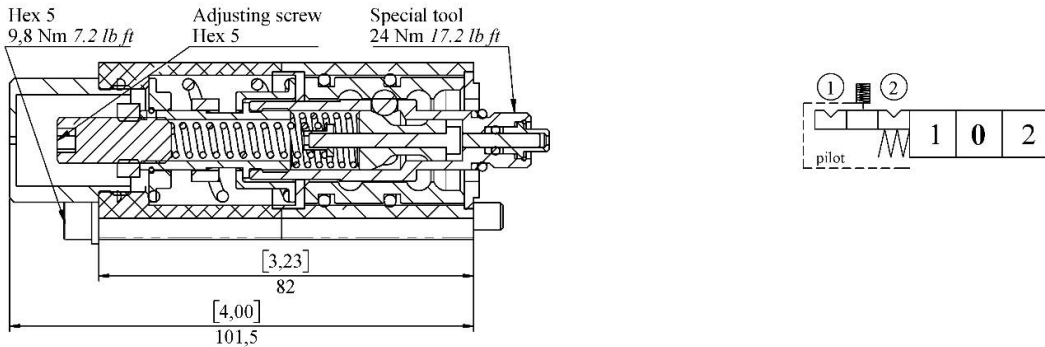
## Limitations of floating sections for Z80 for kits 16 and 15



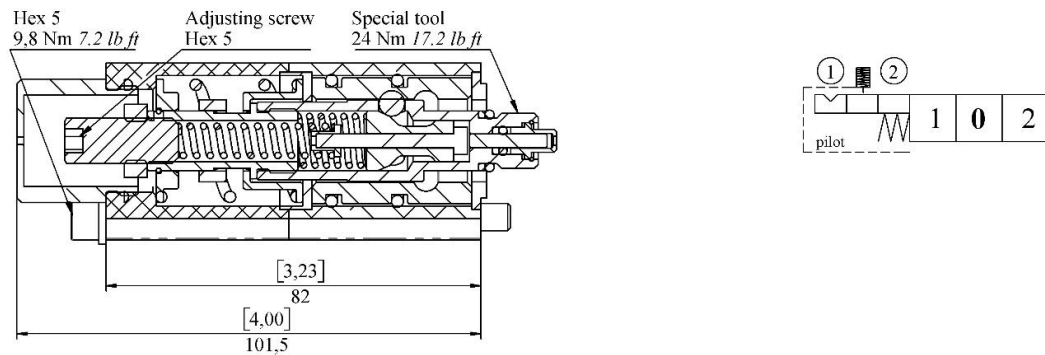
*Floating spool OUT (K16 and K13) can be used only on “R” configuration valve with right inlet (with respect to the lever)*

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

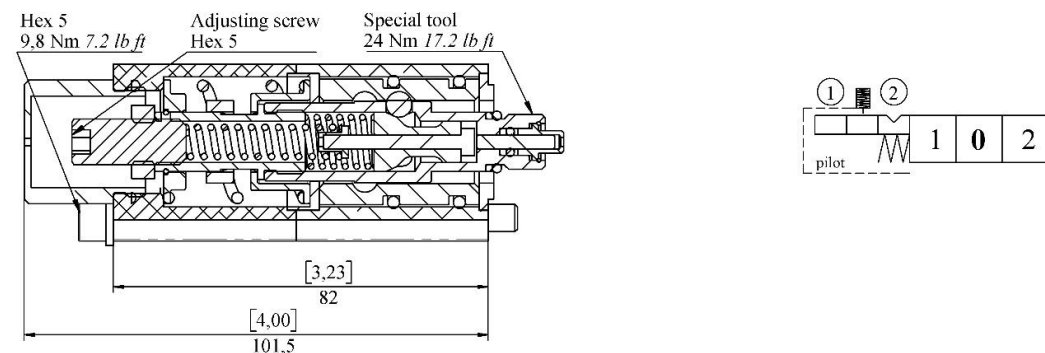
**Kit 31: 3 position with detent and pressure release from pos. 1 and pos. 2**



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

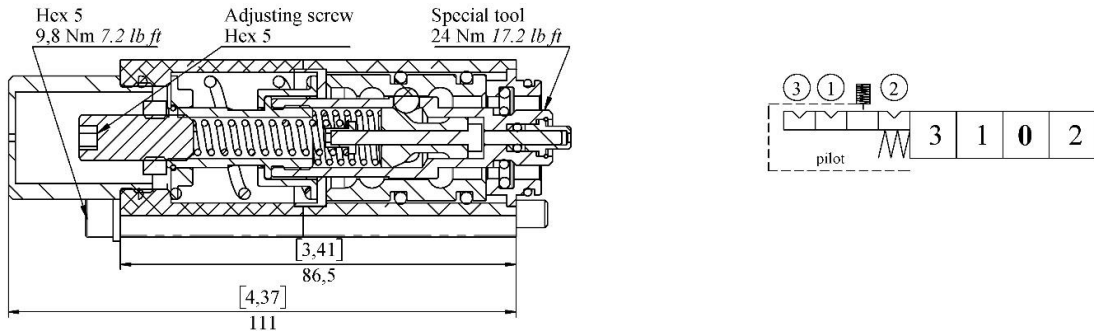


**Kit 33: 3 position with detent and pressure release from pos. 2 and spring return from pos. 1**

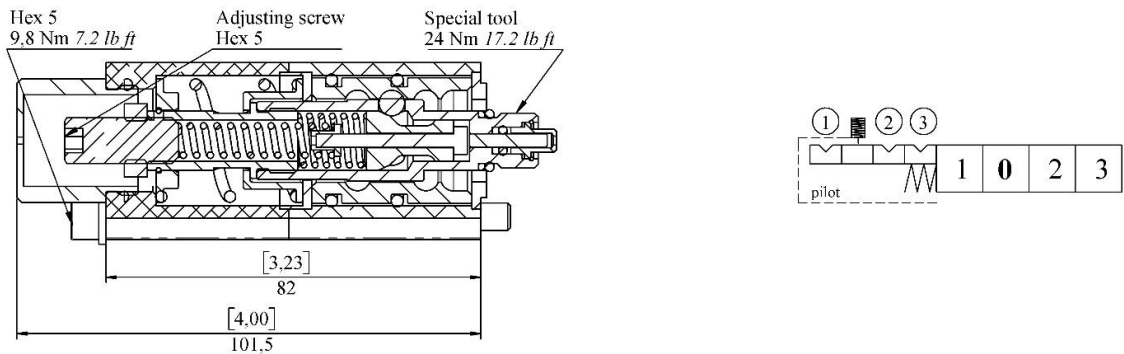


**Particular spool positioners kits for pressure release kits (kick out)**

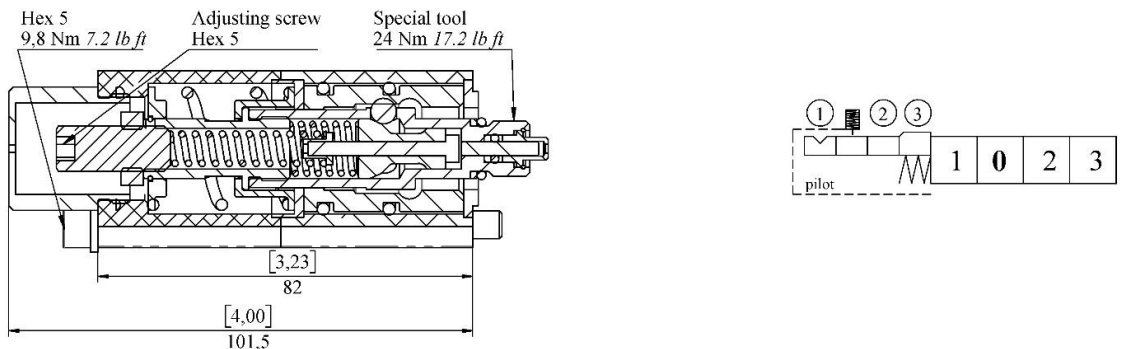
**Kit 46:** *four position, pressure release from pos. 1 and pos. 2 to pos. 0, float spool out; can be used only on “R” valve (right inlet)*



**Kit 42:** *four position, pressure release from pos. 1 and pos. 2 to pos. 0, float spool in; can be used only on standard valve (left inlet)*

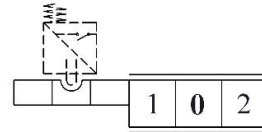
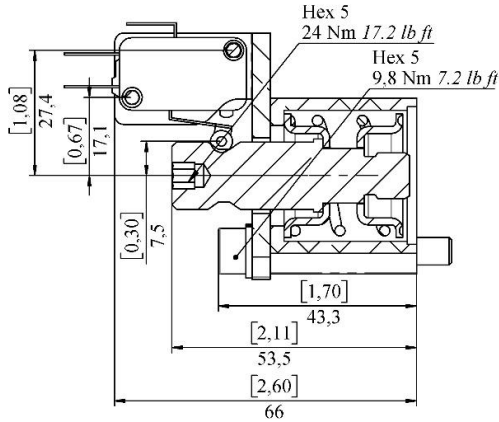


**Kit 1732:** *four position, pressure release from pos. 1 and spring return from pos. 2 (soft stop) and pos. 3 (regenerative position); can be used only on standard valve (left inlet)*



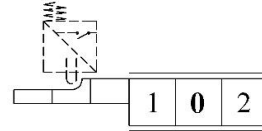
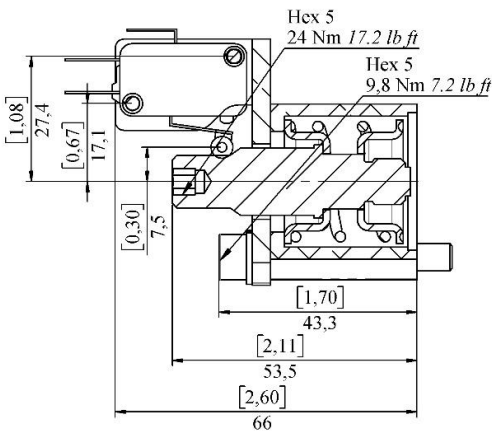
## Particular spool positioners kits for microswitch

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



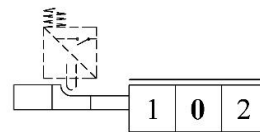
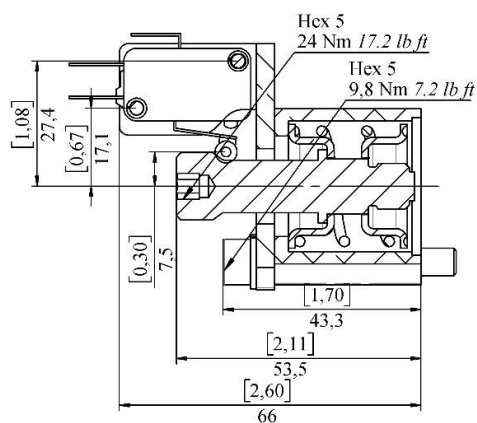
For double acting spool A

### Kit 1E for single acting spool B



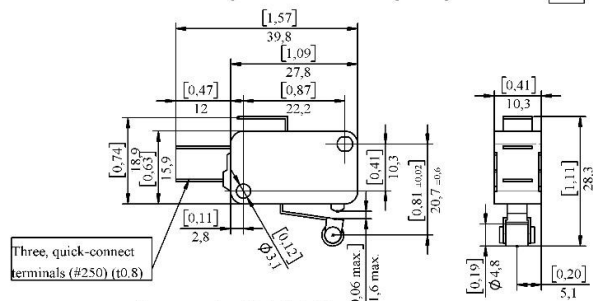
For single acting spool B

### Kit 1E for single acting spool C



For single acting spool C

### Microswitch specification for spool positioner 1E

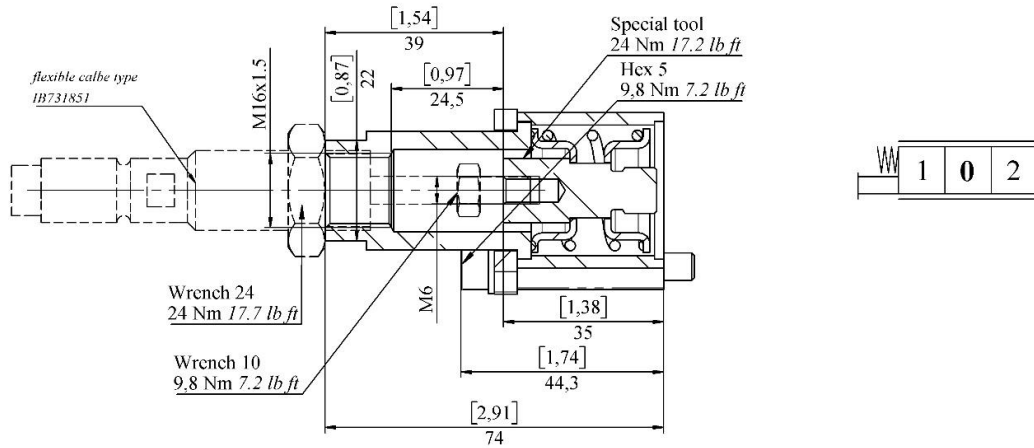


Omron code - V-165-1C5

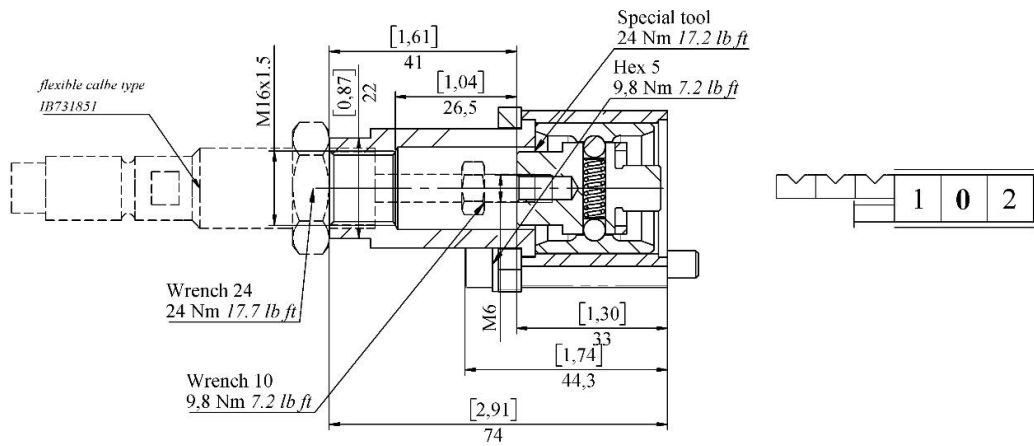
Needs a special bracket to be assembled with spool positioners

**Spool positioner for flexible cable connection (side B)**

**Kit 1V2**

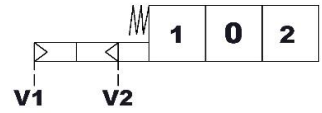
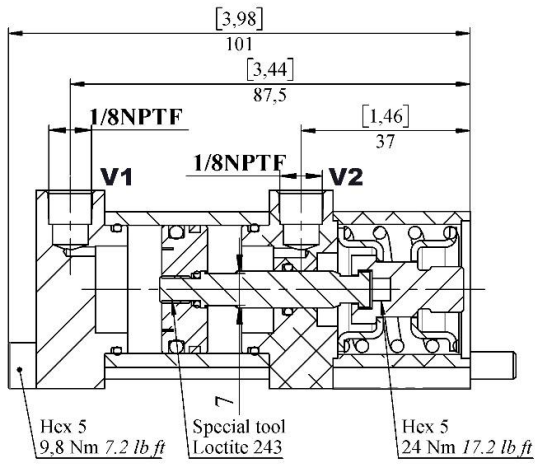


**Kit 8V2**



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

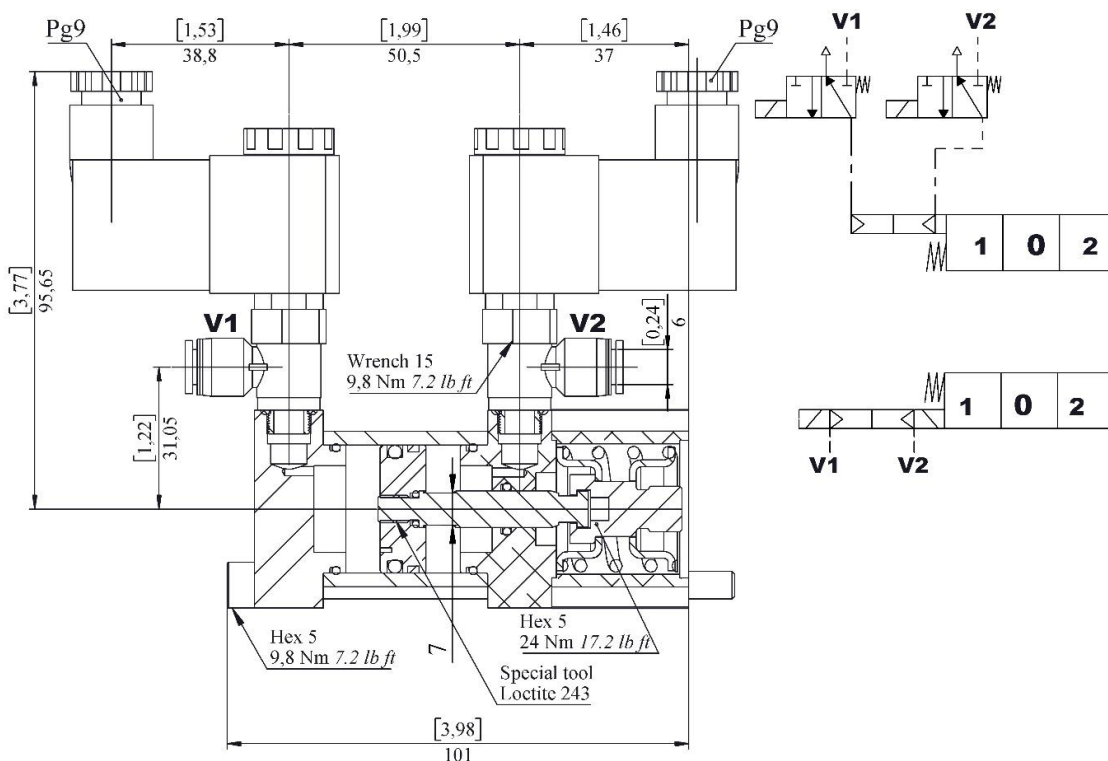
**ON/OFF Pneumatic kit - P**



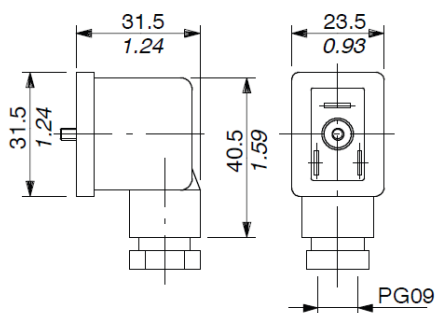
**Operating features**

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

## ON/OFF Electro pneumatic kit - PE



### Connector specifications:



### Operating features

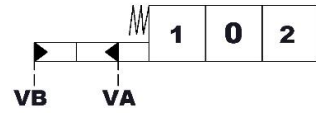
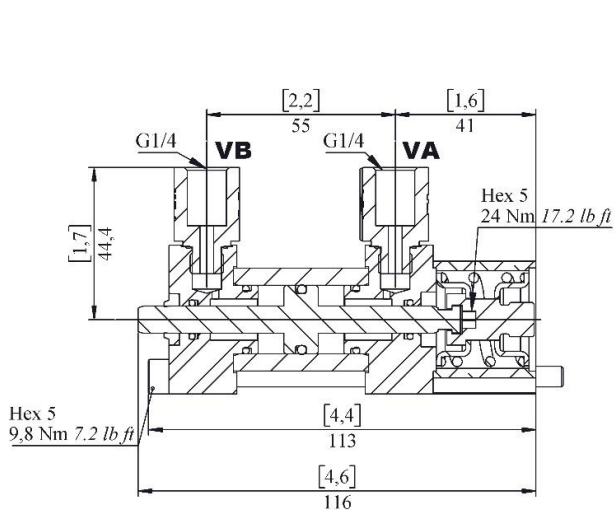
Pilot pressure	min	6 bar / 87 psi
	max.	10 bar / 145 psi

### 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*

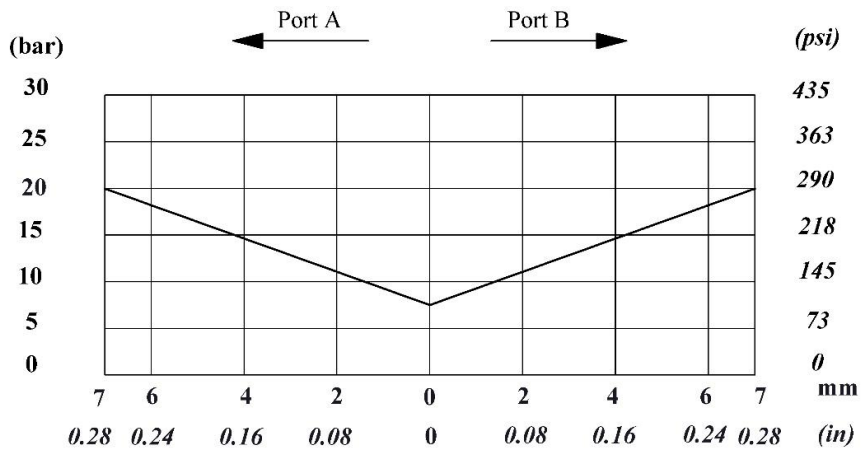
## Proportional hydraulic, single side kit - H



### Operating features

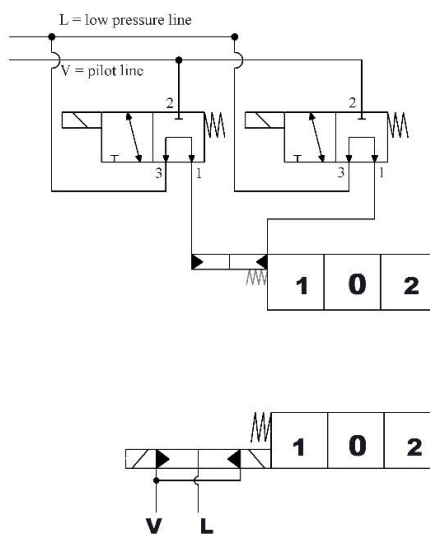
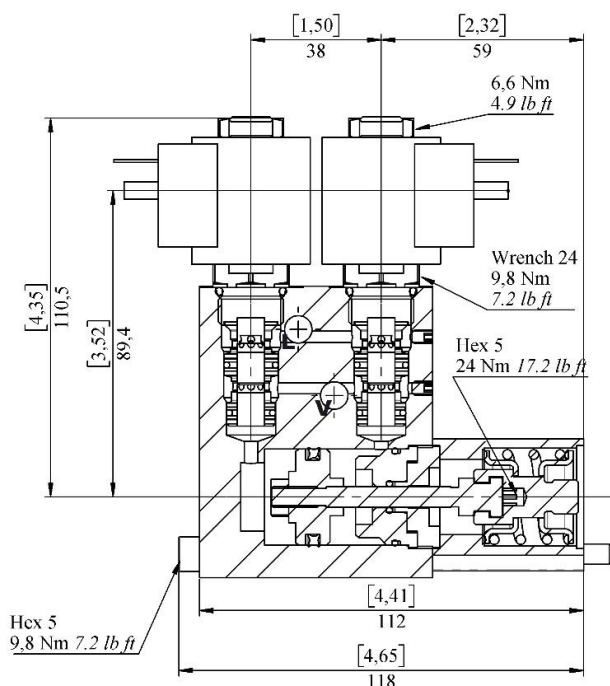
Pilot pressure max. 50 bar / 725 psi

### Pilot pressure - stroke diagram

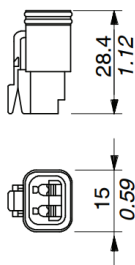


## ON/OFF electro-hydraulic kit - 1ED3

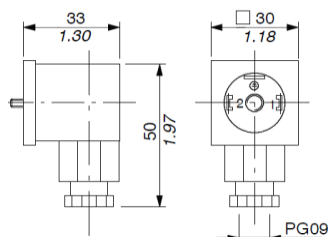
*With spring return to neutral position*



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



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



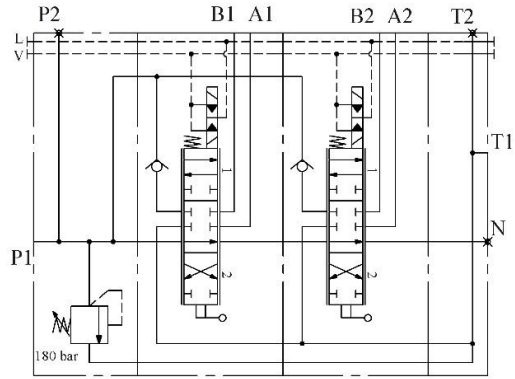
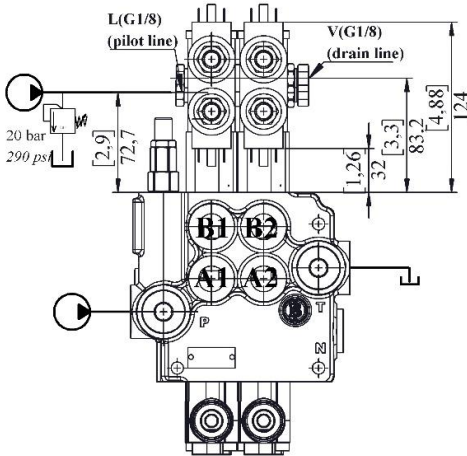
### Operating features

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**

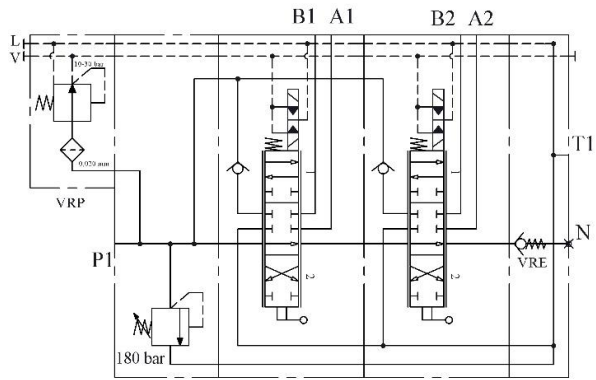
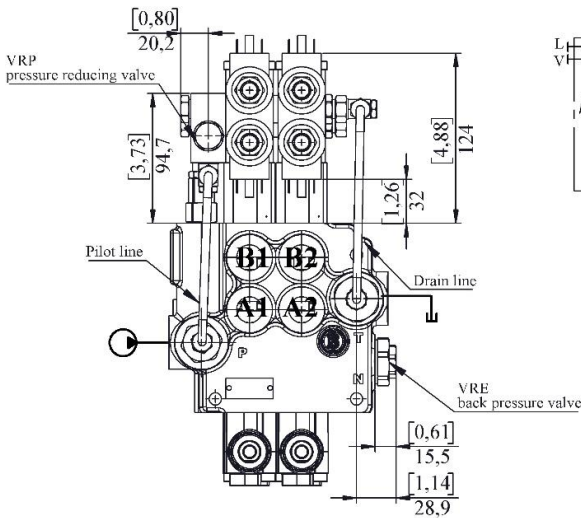


Description example:

2Z80/1/2x(A1ED3KZ1)-12V-G

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

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

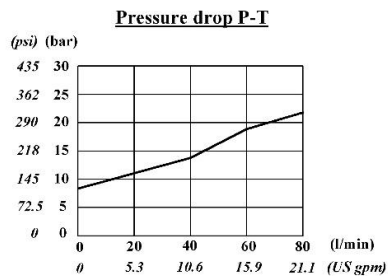
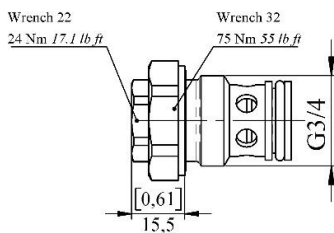


Description example:

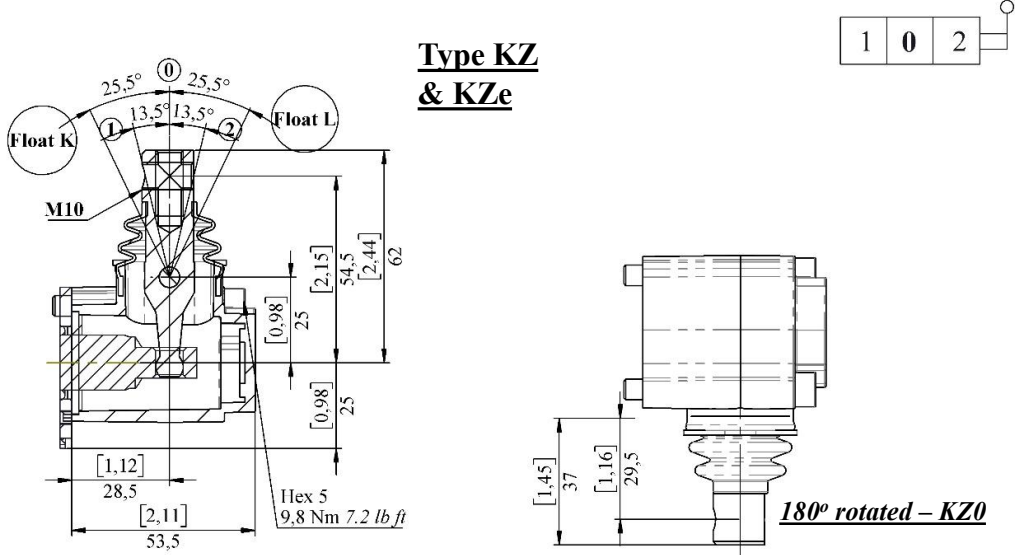
2Z80/1/VRP/2x(A1ED3KZ1)-VRE-12V-G

**Back pressure valve (VRE) specifications**

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

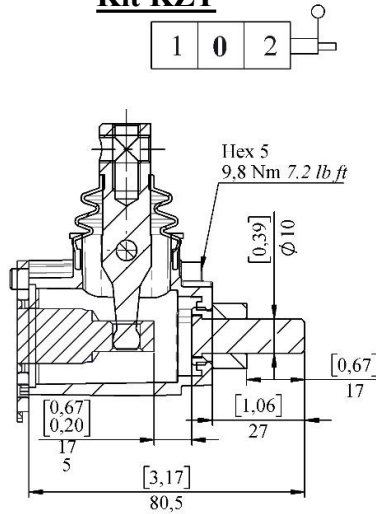


**Lever control (Side A) – aluminum cap, with protection booth lever pivot box**

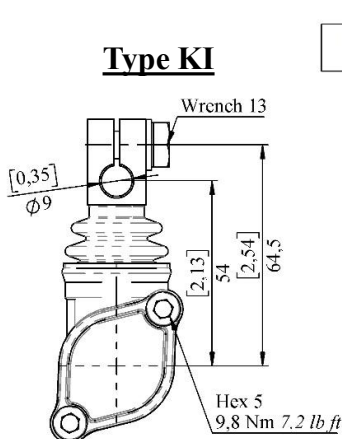


Float L & K only available in certain configuration refer to pages – 19 & 20

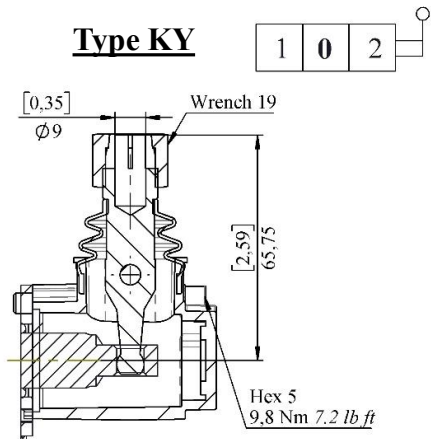
**Kit KZT**



**Type KI**



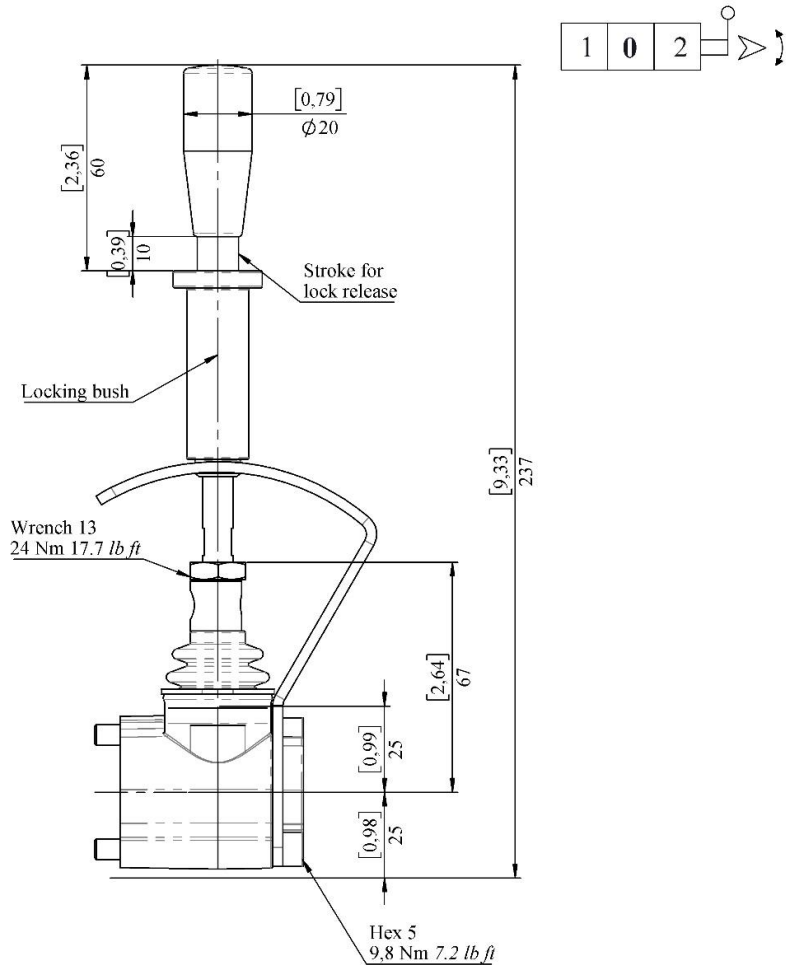
**Type KY**



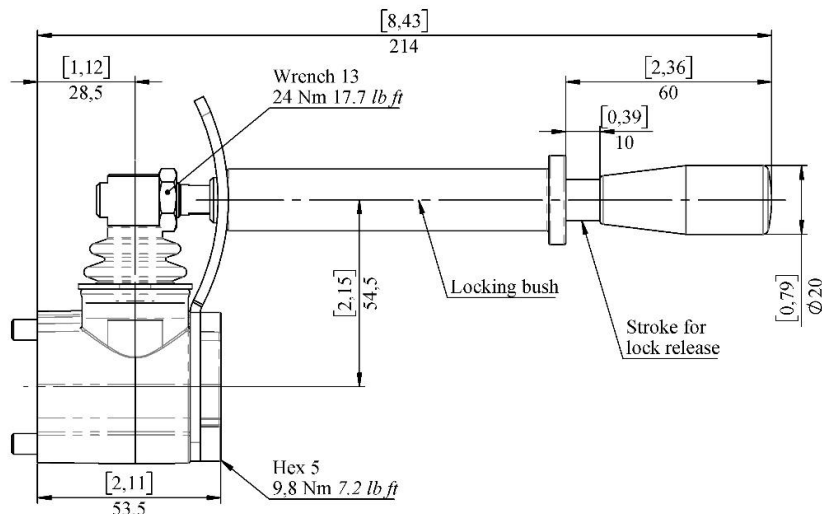
**Special lever controls (side A)**

*Safety levers with lock in neutral complete with hand lever; lift hand lever knob to operate.*

**Type KZV**

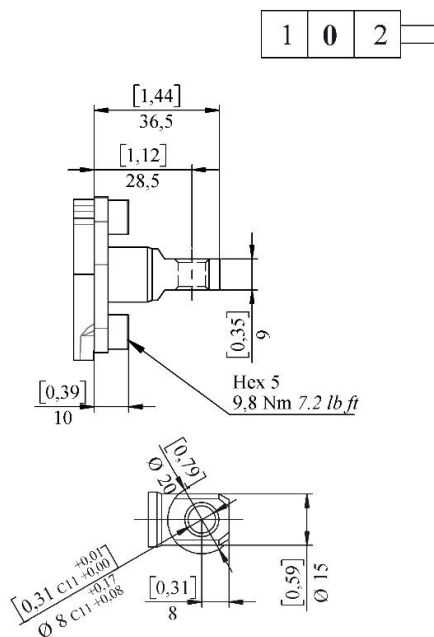


**Type KZH**

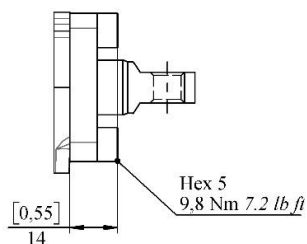


**Other control arrangements (side A)**

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

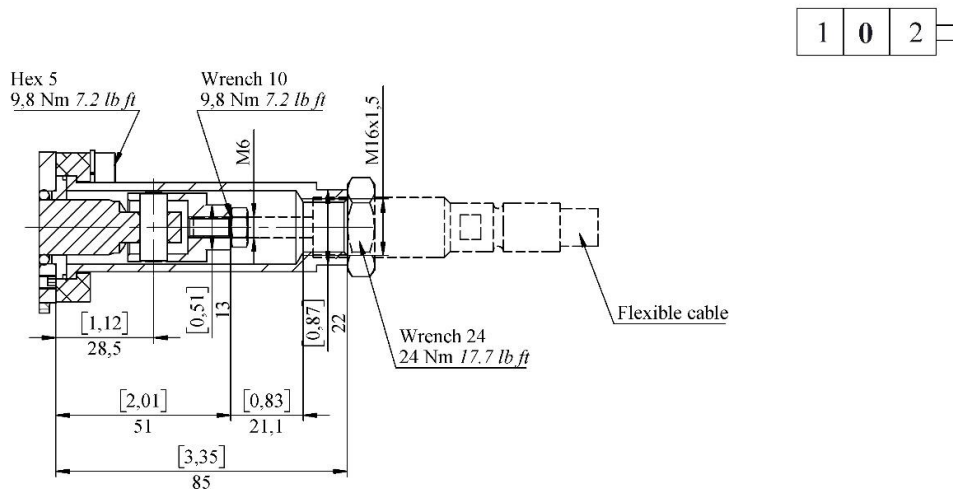


**Type SLP**

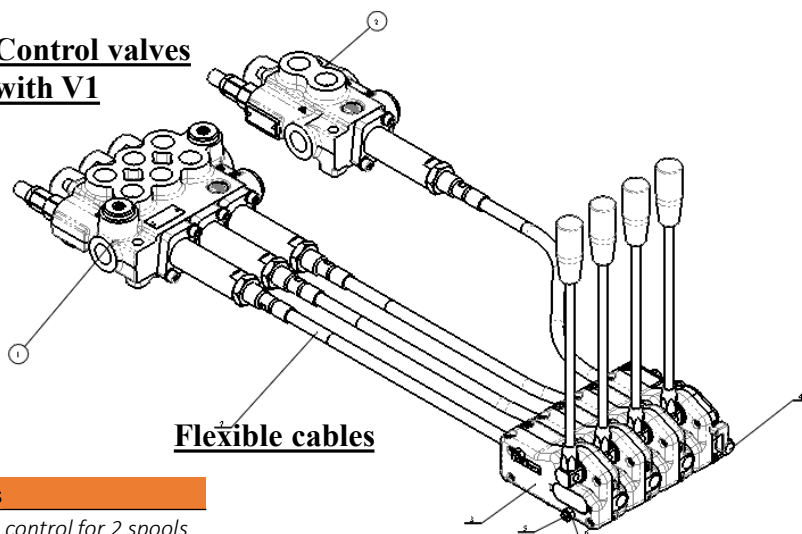


*Mechanical control with dust-proof plate*

## Cable remote control – V1



### Control valves with V1



### Flexible cables

#### Controls for flexible cables

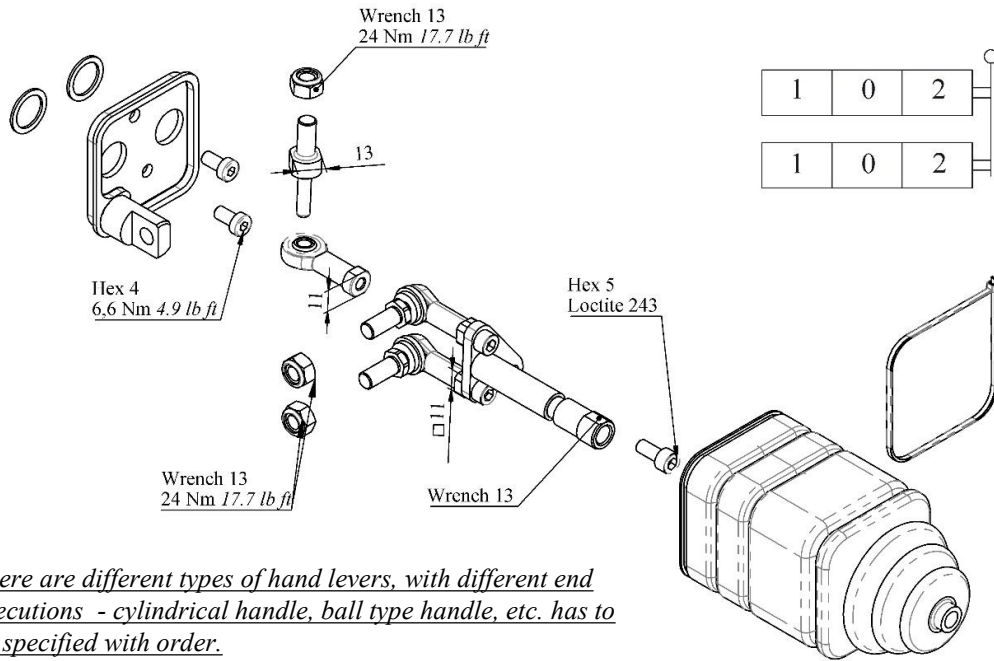
3335	Mechanical joystick control for 2 spools without buttons
3375	Mechanical joystick control for 2 spools with 1 button
6008	Mechanical joystick control for 2 spools with 2 buttons
IS 3047	Single lever control
IS 3076	Single lever control with antireverse lock

#### Flexible cable options 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

### Remote controls

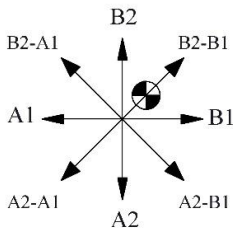
## Mechanical joystick for two section control



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

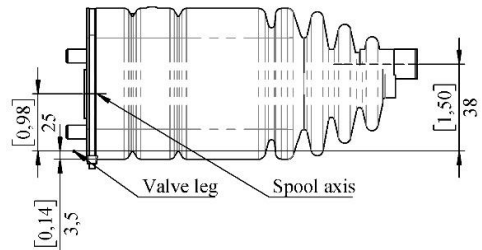
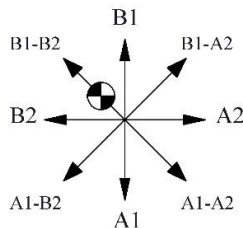
### Type j+1

*Pivot is above right*



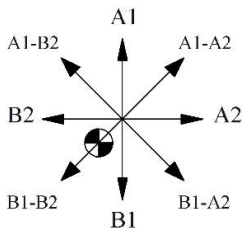
### Type j+2

*Pivot is above left*



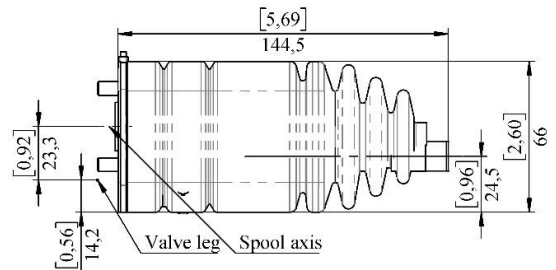
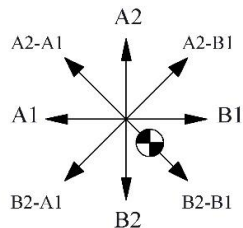
### Type j+3

*Pivot is bottom left*

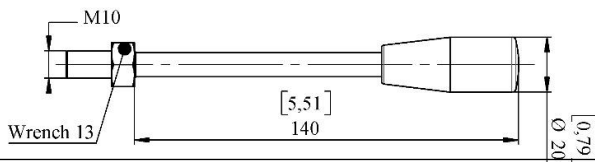


### Type j+4

*Pivot is bottom right*



### Standard hand lever dimensions



Example order code with standard lever:

2Z80/1/(A1A1)(ju+3)-G

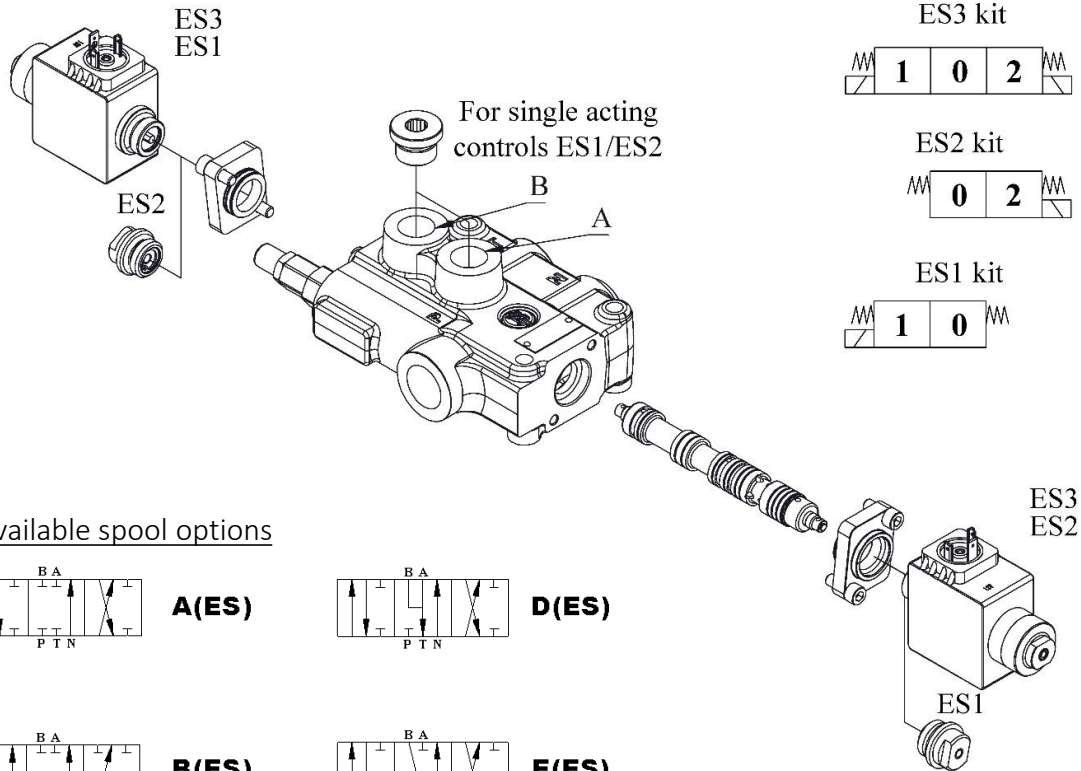
alternative (same as)

2Z80/1/(2xA1)(ju+3)-G

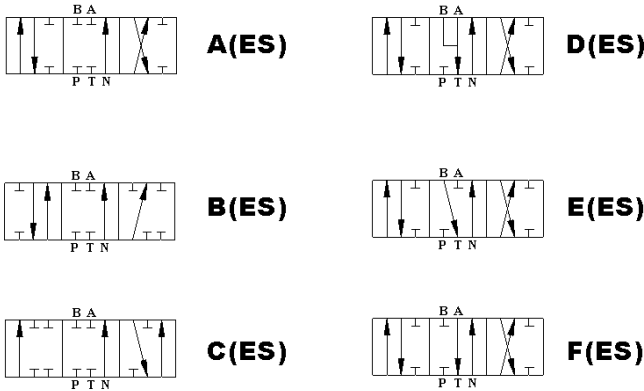
## Complete control – single acting ON/OFF solenoid control

### Complete control – ES3 / ES2 / ES1

Direct control by two single acting solenoid with spring return to neutral position (ES3) or one single acting solenoid (ES1 or 2); available for 1 to 6 spools, including valve bodies with individual check valves (both parallel and tandem version).

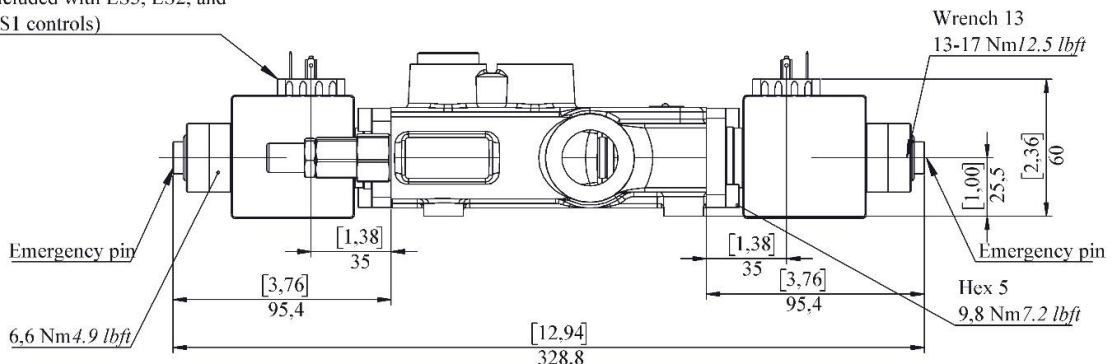


### Available spool options

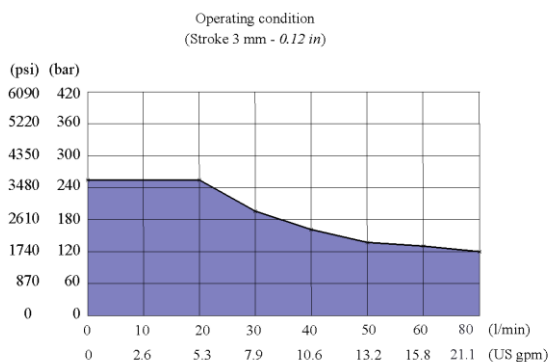


Example order code: Z80/AES3-12V-G

Connector 2P+T according to ISO4400/EN175301-803 (not included with ES3, ES2, and ES1 controls)



## Complete control – single acting ON/OFF solenoid control



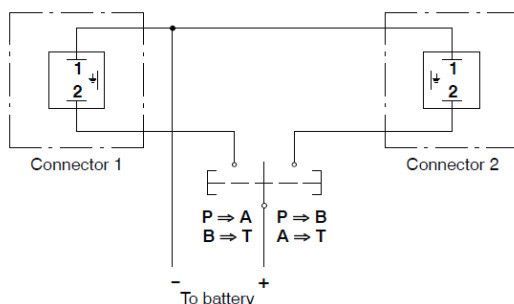
### Operating features

Internal leakage (min.) A(B) to T  
 $\Delta p = 100 \text{ bar (1450 psi)}$  fluid and valve at 40 °C (104 °F)  
 min. 15 cm<sup>3</sup>/min  
 0.91 in<sup>3</sup>/min

### COIL specifications

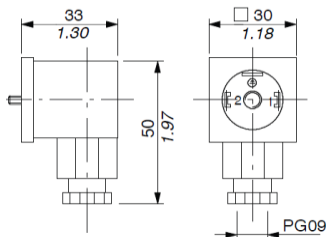
Nominal voltage tolerance	±10 %
Power rating	60 W
Current	5 A - 12 VDC 2.5 A - 24 VDC
Weather protection	IP65
Coil insulation	Class H
Duty cycle	100%

### Electric wiring example

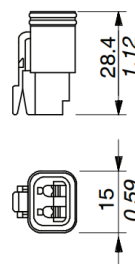


### Connector specifications per type of coils available

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



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



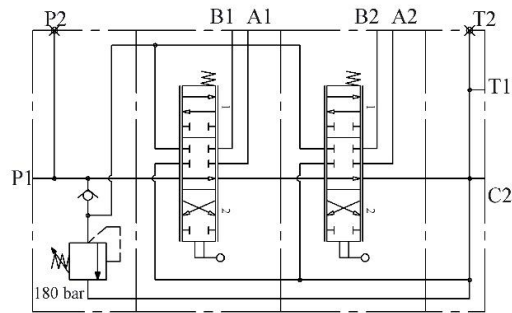
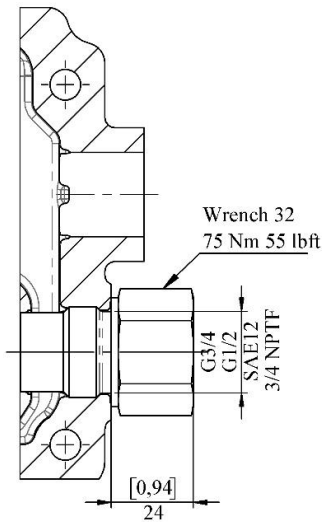


**Outlet port options**

*It is possible to have open centre, closed centre and high-pressure carry-over (power beyond)*

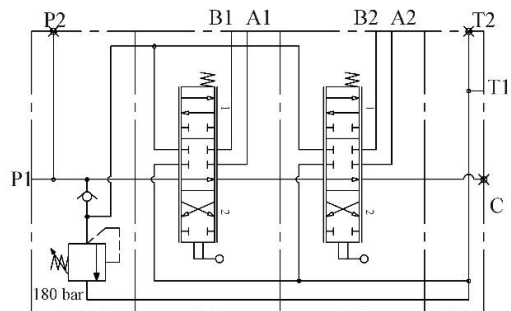
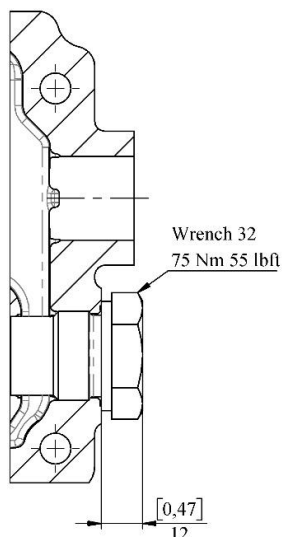
*If in the order code before the thread specification port N is plugged with standard G3/4 plug*

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



Example order code 02Z80/2x(A1KZ1)-C2-G

**C – closed center**



Example order code: 02Z80/2x(A1KZ1)-C-G

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**Notes**

