Working conditions

This catalogue shows technical specifications and diagrams measured with mineral oil of 46 mm^2/s - *46 cSt* viscosity at 40°C temperature.

Nominal flow rating		70 l/min	
Operating pressure (maximum)	*parallel circuit*	315 bar	*4600 psi*
	series circuit	250 bar	*3600 psi*
Max. back pressure	*on outlet **T***	25 bar	*360 psi*
Internal leakage A(B)→T	*Δp=100 bar - 1450 psi, fluid and valve at 40°C*	3 cm^3/min	*0.18 in^3/min*
Fluid		Mineral base oil	
Fluid temperature	*with NBR seals*	from -20°C to 80°C	
	with FPM (VITON) seals	from -20°C to 100°C	
Viscosity	*campo di lavoro*	from 15 to 75 mm^2/s	*from 15 to 75 cSt*
	minima	12 mm^2/s	*12 mm^2/s*
	massima	400 mm^2/s	*400 mm^2/s*
Max level of contamination		19/16 - ISO 4406	*19/16 - ISO 4406*
Ambient temperature for working conditions	*with mechanical control*	from -40°C to 60°C	
	with hydraulic, pneumatic controls	from -30°C to 60°C	
	with electric controls	from -20°C to 50°C	

NOTE - *For different conditions please contact Sales Dept.*

Standard threads

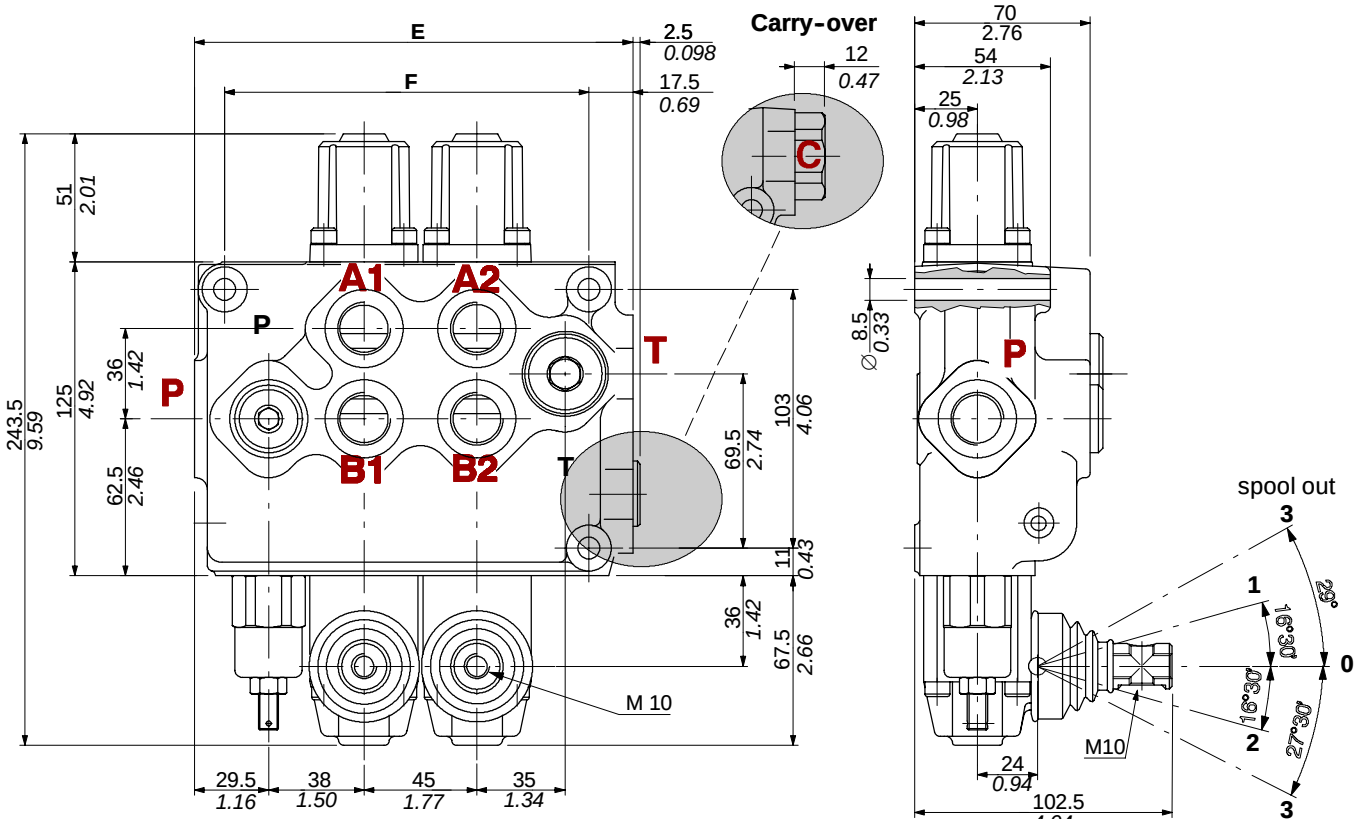
REFERENCE STANDARDS

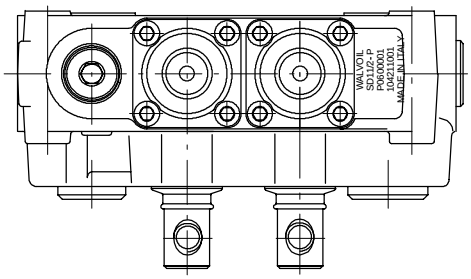
		BSP	UN-UNF	METRIC	NPTF
THREAD ACCORDING TO		ISO 228/1	ISO 263	ISO 262	ANSI B1.20.3
		BS 2779	ANSI B1.1 unified		
CAVITY ACCORDING TO	ISO	1179	11926	9974-1	
	SAE		J1926		J476a
	DIN	3852-2 shape X or Y		3852-1 shape X or Y	

PORTS THREAD

MAIN PORTS	BSP	UN-UNF	METRIC
IInlet **P** and carry-over **C**	G 1/2	7/8-14 (SAE 10)	M18x1.5
Ports **A** and **B**	G 1/2	3/4-16 (SAE 8)	M18x1.5
Outlet **T**	G 3/4	7/8-14 (SAE 10)	M22x1.5
CONTROL PILOT PORTS			
Pneumatic	NPTF 1/8-27	NPTF 1/8-27	NPTF 1/8-27
Hydraulic	G 1/4	9/16-18 (SAE 6)	G 1/4

Dimensional data (parallel circuit)





WALVOIL
SD11/2-P
P0600001
104211001
MADE IN ITALY

Valve type

Production batch :
P06 = production year (2006)
00001 = progressive number

Valve code

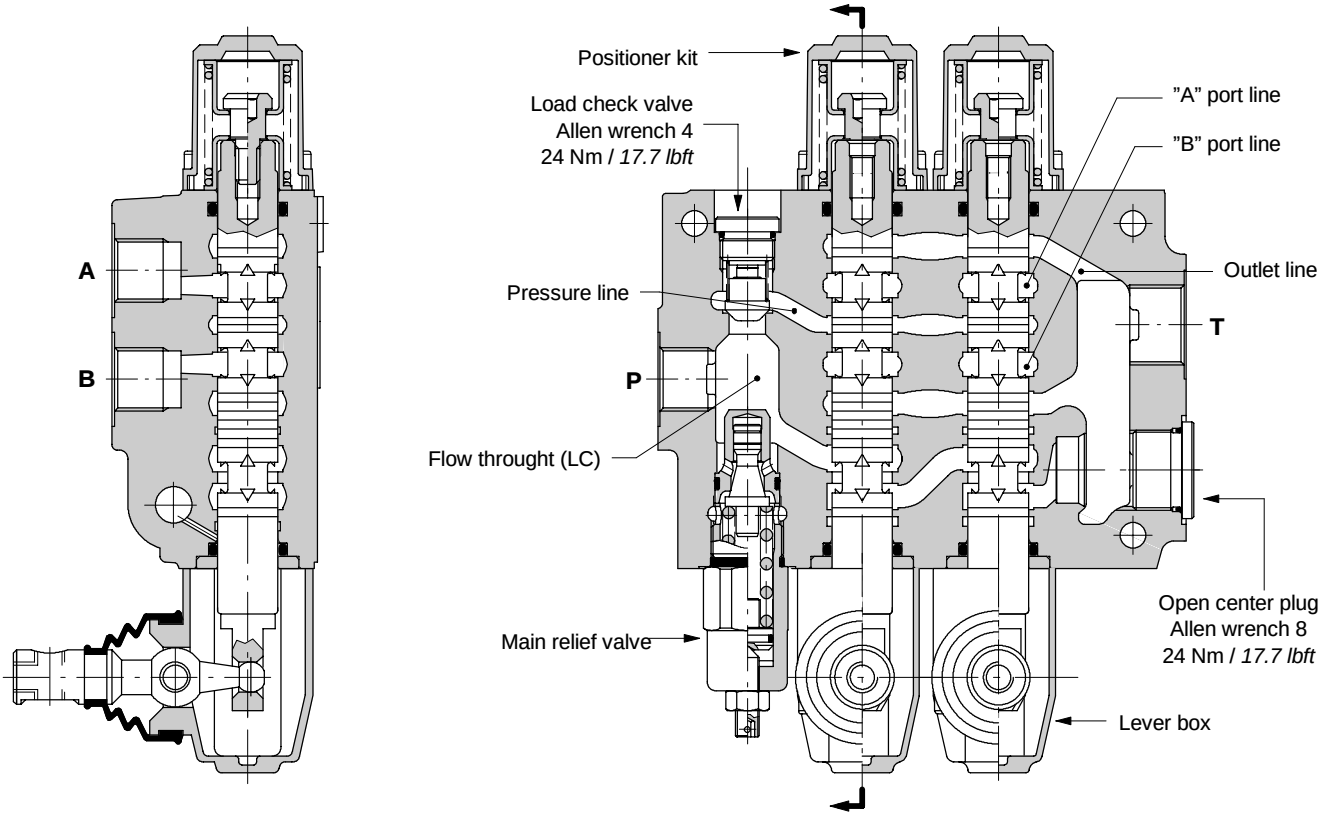
TYPE	E		F		Weight	
	mm	*in*	mm	*in*	kg	*lb*
SD11/1-P	130	*5.12*	100	*3.94*	6.1	*13.4*
SD11/2-P	174.5	*6.87*	145	*5.71*	8.8	*19.4*
SD11/3-P	219.5	*8.64*	190	*7.48*	11.4	*25.1*

TYPE	E		F		Weight	
	mm	*in*	mm	*in*	kg	*lb*
SD11/4-P	264.5	*10.41*	235	*9.25*	14.2	*31.3*
SD11/5-P	309.5	*12.19*	280	*11.02*	16.7	*36.8*
SD11/6-P	354.5	*13.96*	325	*12.80*	19.4	*42.8*

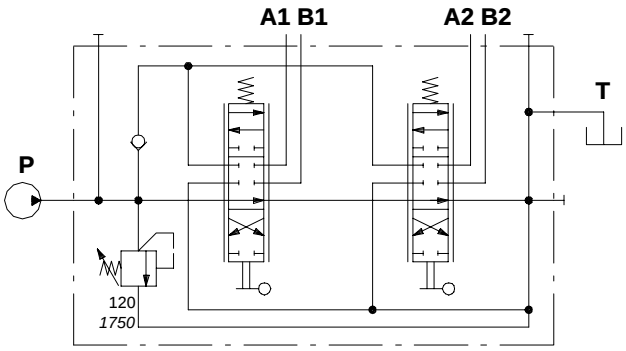
Hydraulic circuit

Parallel

Standard configuration with side inlet and open center circuit (**AET** configuration).

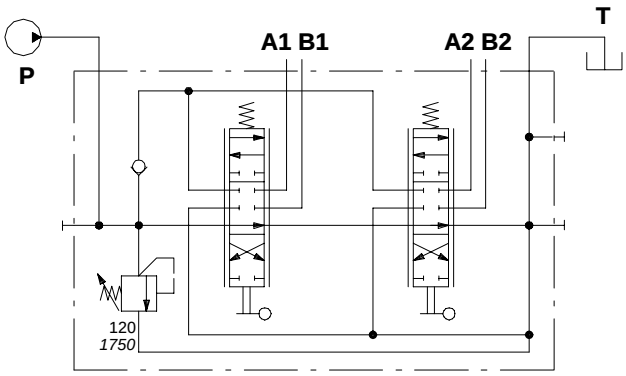


Standard configuration



Description example:
SD11/2-P(JG3-120)/18L/18L/**AET**

Top inlet and outlet configuration



Description example:
SD11/2-P(JG3-120)/18L/18L/**AET-PSA**

Ordering codes

Description example:

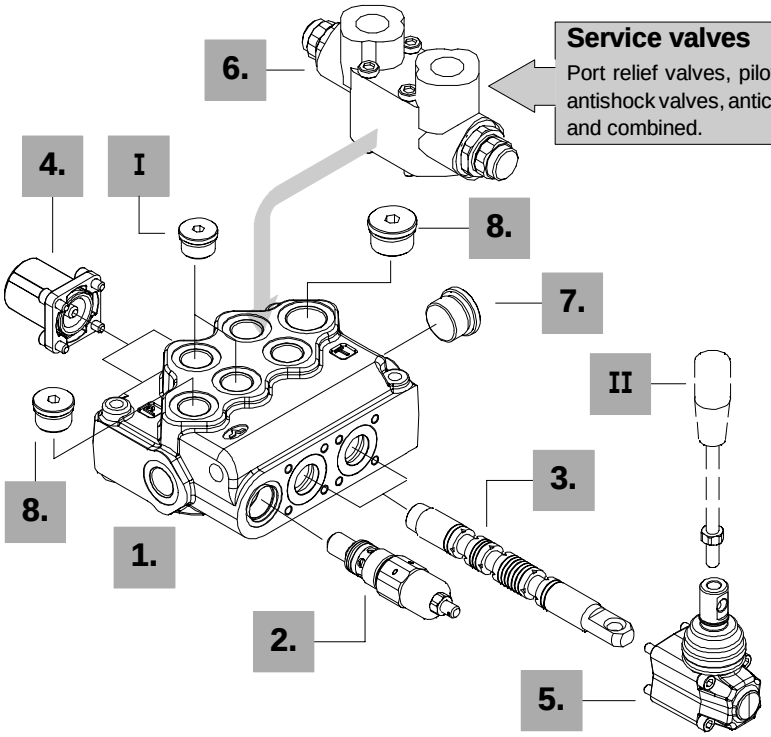
1st section — following section

SD11 / 2 - P (KG3-120) / 1 8 L / 18L . P3(G3-120) / AET - PSL *

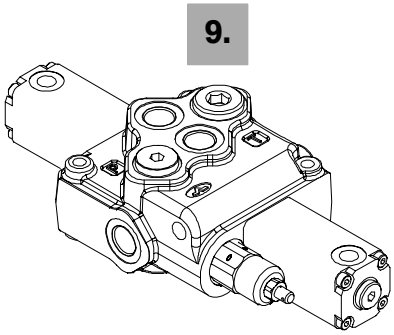
1. 2. 3. 4. 5. 6. 7. 8.

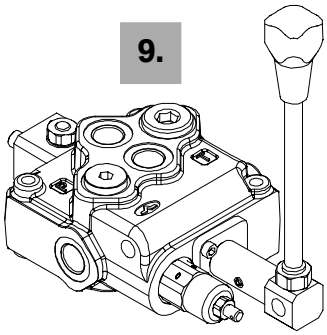
2. Main relief valve setting (bar)

6. Port valve setting (bar)



Service valves *page 48*
Port relief valves, pilot check valves, antishock valves, anticavitation valves and combined.





1. Body kit *

TYPE	CODE	DESCRIPTION
1-P	5KC1413000	Parallel, 1 section
2-P	5KC1423000	Parallel, 2 sections
3-P	5KC1443000	Parallel, 3 sections
4-P	5KC1473000	Parallel, 4 sections
5-P	5KC1513000	Parallel, 5 sections
6-P	5KC1543000	Parallel, 6 sections

Include body, seals, rings and load check valves.

2. Inlet reliaf options *page 10*

Standard setting is referred to 10 l/min flow.

TYPE	CODE	DESCRIPTION
SV	XTAP526340	Valve blanking plug
VMD10/1: direct differential pressure relief valve type K (standard)		
(KG2-80)	5KIT110112	Range 20 to 63 bar **/** *290 to 900 psi* standard setting 40 bar **/** *580 psi*
(KG3-120)	5KIT110113	Range 63 to 200 bar / *900 to 2900 psi* taratura standard 120 bar / *1750 psi*
(KG4-220)	5KIT110114	Range 180 to 315 bar / *2600 to 4600 psi* standard setting 220 bar / *3200 psi*
VMD10/1: direct pressure relief valve type Y		
(YG1-80)	3XCAR110211	Range 63 to 125 bar / *900 to 1800 psi* standard setting 80 bar **/** *1150 psi*
(YG2-125)	3XCAR110212	Range100 to 160 bar **/** *1450 to 2300 psi* tandard setting 125 bar / *1800 psi*
(YG3-175)	3XCAR110213	Range 125 to 250 / *1800 to 3600 psi* standard setting 175 bar / *2500 psi*
(YG4-220)	3XCAR110214	Range 200 to 315 / *2900 to 4600 psi* standard setting 220 bar / *3200 psi*
VMP10/1: pilot pressure relief valve type X		
(XG-125)	X006211120	Range 25 to 315 bar / *360 to 4600 psi* standard setting 120 bar / *1750 psi*

NOTE (*****) - *Items are referred to **BSP** thread.*

Ordering codes

3. Spool options *page 13*

TYPE	CODE	DESCRIPTION
1	3CU1410130	Double acting, 3 positions, with A and B closed in neutral position
1A	3CU1421130	Double acting, 3 positions, with A open to tank in neutral position
1B	3CU1422130	Double acting, 3 positions, with B open to tank in neutral position
2	3CU1425130	Double acting, 3 positions, with A and B open to tank in neutral position
3	3CU1431130	Single acting on A, 3 positions, B plugged requires G3/8 plug (see part **I**)
4	3CU1435130	Single acting on B, 3 positions, A plugged requires G3/8 plug (see part **I**)
Special spools for particular positioner kits ..... *page 16*		
5	3CU1442100	Double acting, 4 positions, floating circuit in 4th position with spool in
5VR	3CU1443610	Double acting, 4 positions, floating circuit in 4th position with spool out, with check valve
8	3CU1462110	Doppio effetto, 4 pos., rigenerativo in 4a posizione con cursore a entrare
8F	3CU1461100	Double acting, 4 positions, regenerative circuit in 4th position with spool in
Special spools for standard positioner kits ..... *page 33*		
1(9A)	3CU1410300	Double acting, 3 positions, with A and B closed in neutral pos: **for 9A positioner**
1(11A)	3CU1410320	Double acting, 3 positions, with A and B closed in neutral pos: **for 11A positioner**

5. "B" side options *page 36*

TYPE	CODE	DESCRIPTION
L	5LEV110000	Standard lever box
LF1	5LEV110101	Lever box with adjustable flow limiter
LS	5LEV110020	Waterproof lever box
LB	5LEV310000	Steel lever
LEB	5LEV610000	Safety lever box
SLP	5COP110000	Without lever box, with dust-proof plate
TQ	5TEL110110	CD flexible cable connection
LCB	5CLO211100	Joystick lever for 2 sections operation

7. Outlet port options *page 45*

TYPE	CODE	DESCRIPTION
AET	3XTAP732201	Open center plug
AEK	3XTAP532450	Closed center plug
AE	XGIU532470*	G 1/2 carry-over sleeve
AET-EL	5CAR411312	With 12VDC electric control unloader valve; normally open circuit
	5CAR411314	As previous 24VDC

8. Inlet and outlet selection * *page 6*

TYPE	CODE	DESCRIPTION
PSL	3XTAP727180	G1/2 plug for upper inlet (nr.1 request)
	3XTAP732200	G3/4 plug for upper outlet (nr.1 request)
PSA	3XTAP727180	G1/2 plug for side inlet (nr.1 request)
	3XTAP732200	G3/4 plug for side outlet (nr.1 request)

9. Complete controls *page 41*

Proportional hydraulic control type **8IM** and rotative control type **R**.

4. "A" side spool positioners *page 20*

TYPE	CODE	DESCRIPTION
7FC	5V07310000	With friction and neutral position sensor
8	5V08110000	With spring return in neutral position
8D	5V08110200	With spring return in neutral position and pin with M6 female thread for dual control
8D1	5V08110210	With spring return in neutral position and pin with ∅ 8mm (*0.32in*) radial hole
8D2	5V08110220	With spring return in neutral position and pin with M8 male thread for dual control
8TL	5V08110310	Come tipo 8, per comando a cavo flessibile
8F2	5V08110101	Come tipo 8 con limitatore di corsa regolabile
8M3	5V08110400	Come tipo 8 con perno uscente per comando microinterruttore in posizione 1 e 2
19	5V19110000	2 positions, with spring return in neutral position from position 1
20	5V19110000	2 positions, with spring return in neutral position from position 2
11	5V11110000	Detent in positions neutral, 1 and 2
12	5V12110000	Detent in positions 1 and 2
15	5V15110000	2 positions, detent in positions 1 and neutral
16	5V16110000	2 positions, detent in positions 2 and neutral
21	5V21110000	Aggancio in pos. 2 e ritorno a molla in pos. 1
9B	5V09110000	With detent in position 1 and spring return in neutral position
10B	5V09110000	With detent in position 2 and spring return in neutral position
11B	5V11210000	Detent in positions 1 and 2 and spring return in neutral position
8MG3	5V08110050	As type 8 and microswitch in positions 1 and 2
8K	5V08710112	As type 8 and 12 VDC solenoid lock device
	5V08710124	As previous, 24 VDC
8P	5V08110701	ON/OFF pneumatic kit
8PG	5V08111706	Proportional pneumatic kit
8EPG3	5V08111825	12 VDC ON/OFF electropneumatic kit
	5V08111726	24 VDC ON/OFF electropneumatic kit
8ID3	5V08111800	Proportional hydraulic kit
8EI3	5V08110350	12 VDC ON/OFF electrohydraulic kit
	5V08110351	24 VDC ON/OFF electrohydraulic kit
Special positioners for particular spools ..... *page 27*		
9A	5V09511000	With detent in position 1, automatic release in neutral position
11A	5V11511000	With detent in position 1 and 2, automatic release in neutral position
Particular positioner kits for special spools ..... *pag. 33*		
13B	5V13111000	4 pos. with spring return in neutral pos. and detent in 4th pos.**: for spool 5**
13C	5V13211000	4 pos. with spring return in neutral pos. and detent in 4th pos.**: for spool 5VR**
8MCCR	5V08210021	Spring return in neutral position, with reduced spool stroke: **for spool 8F**
13FZ1	5V13611100	4 pos. with spring return in neutral pos. and detent in 2nd pos.**: for spool 8**

I "A" and "B" ports plugs *

TYPE	CODE	DESCRIPTION
G1/2	3XTAP727180	For single acting spools type 3 and 4

II Optional handlevers

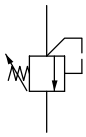
TYPE	CODE	DESCRIPTION
AL01/M10x200	170012020	For lever L: height 200 mm / *7.87 in*
AL08/M12x250	170013125	For joystick LCB: height 250 mm / *9.84 in*

Inlet relief options

Direct differential pressure relief vave

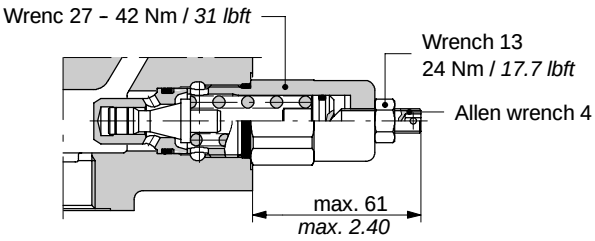
VMD10 (K G 3 - 120)

- 120 — Standard setting in bar (for value see page 8)
- 3 — Adjustable spring type **(2, 3, 4)**.
- G — Adjustment type **(G, H)**

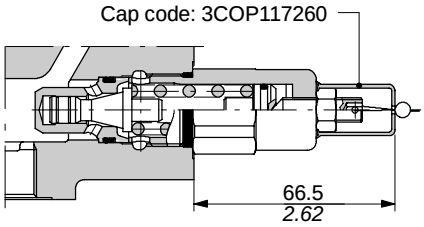


Adjustment type

G: *with screw*

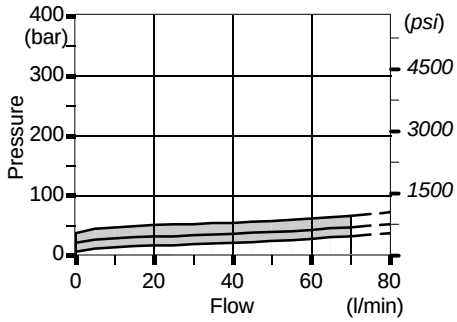


H: *valve set and locked*

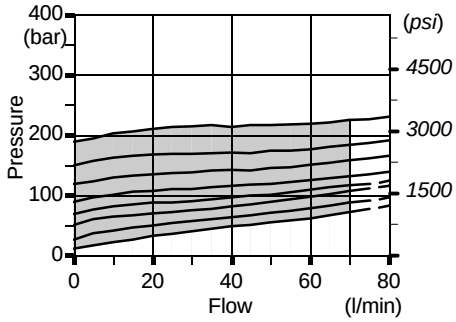


Performance data

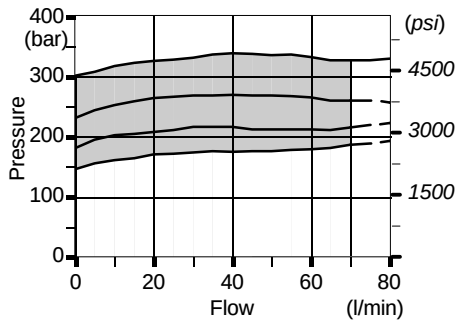
Spring nr. 2 (green band)



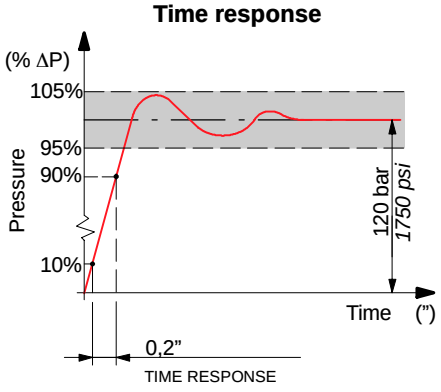
Spring nr. 3 (blue band)



Spring nr. 4 (red band)

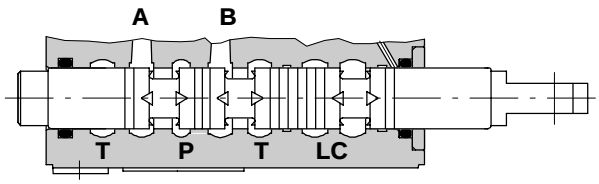


Time response



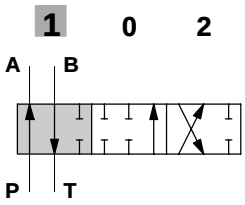
Spool options

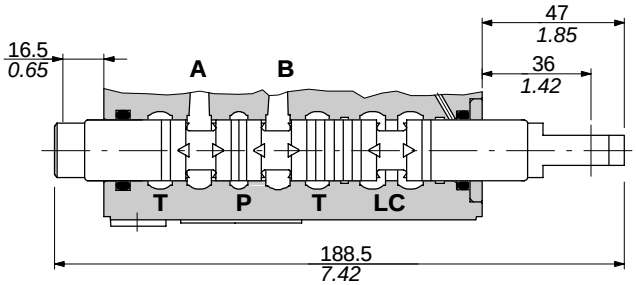
Type 1



P → A B → T

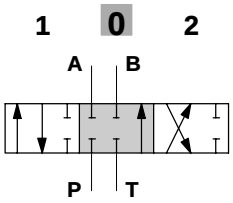
▶ stroke:
+ 7 mm / *0.28 in*

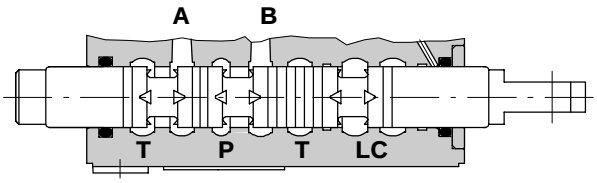




P-A-B-T closed, with flow through line (LC) open

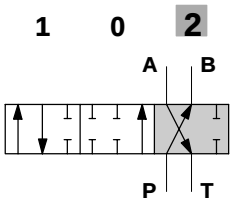
◀ ▶





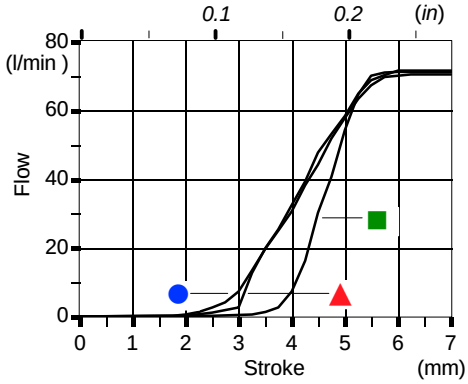
P→ B A → T

◀ stroke:
- 7 mm / *0.28 in*



Performance data

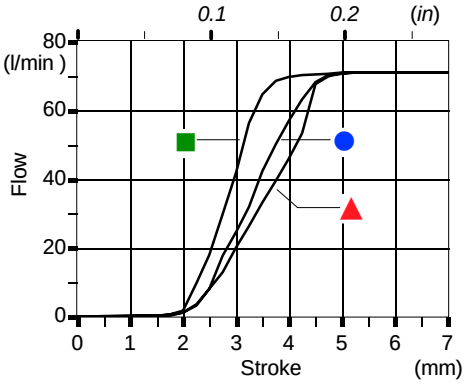
Spool metering P→A(B)



Qin = 70 l/min

- P(on ports) = 63bar/*900psi*
- P(on ports) = 100bar/*1450psi*
- P(on ports) = 250bar/*3600psi*

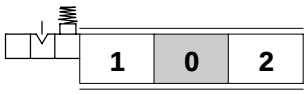
Spool metering A(B)→T

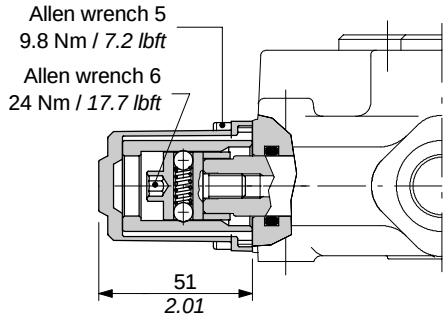


"A" side spool positioners

Tipo 7FC with friction

With sensor in neutral position

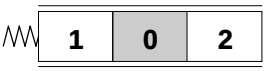


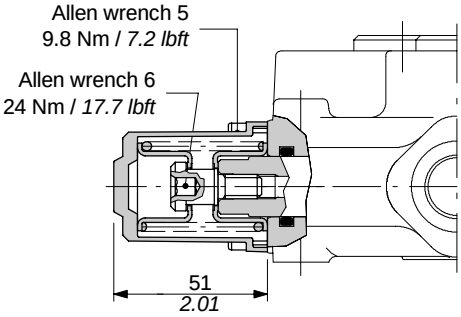


With spring return in neutral position

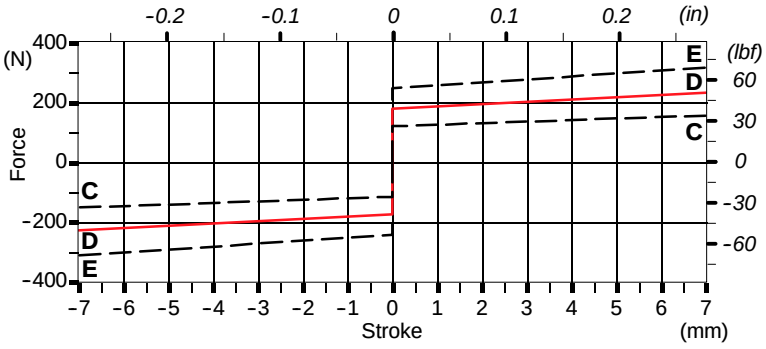
8 kit

It's supplied with standard spring type D (see force-stroke diagram) and available with lighter spring type C (**8MC** code: **5V08210000**) or heavier type E (**8ME** code: **5V08410000**).



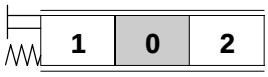


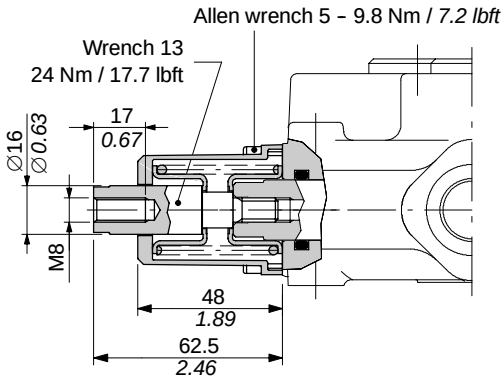
Force-stroke diagram



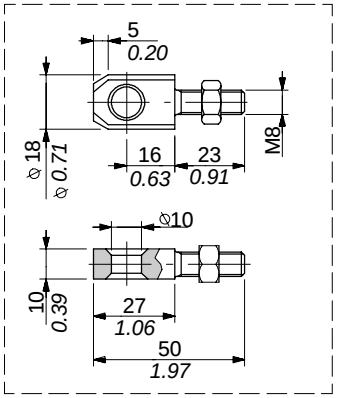
8D kit

Spool end joint code **XPER318500**, is available on request in order to screw onto pin.





Spool end joint dimensions

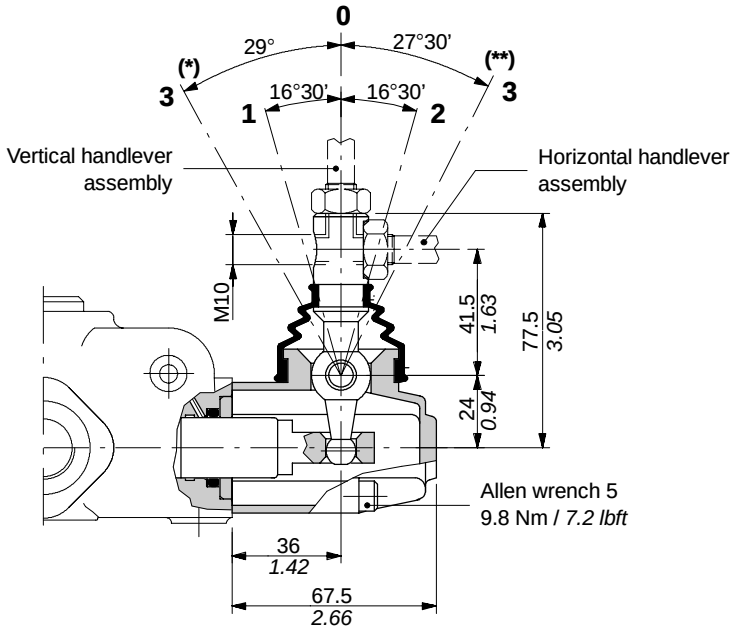


”B” side options

Lever control

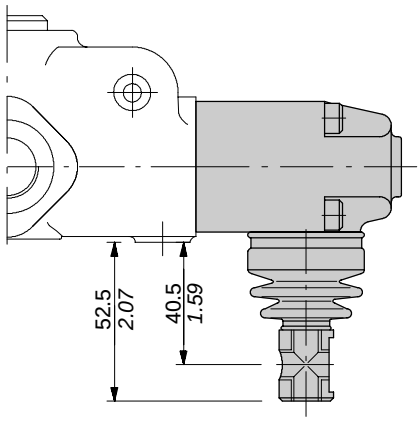
Type L

Alluminium box with protection boot lever pivot box; it can be rotated 180° (configuration **L180**).



1	0	2

Configuration **L180**

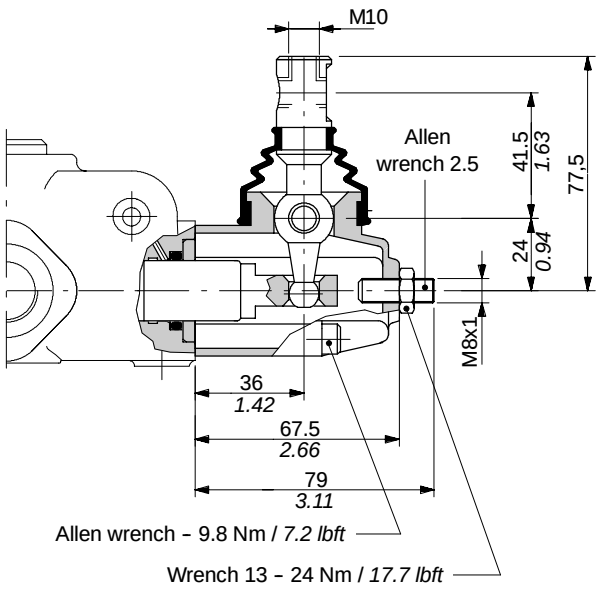


NOTE (*) - *With spool type 5VR (see page 17)*
(**) -*With spool type 5 (see page 16)*

Type LF1

With spool stroke adjusting in position 1.

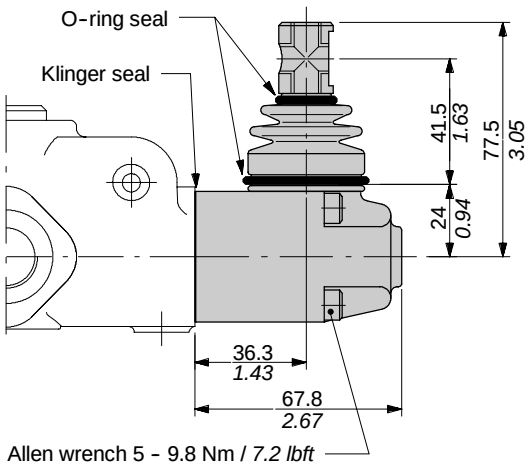
1	0	2



Type LS

Waterproof execution.

1	0	2



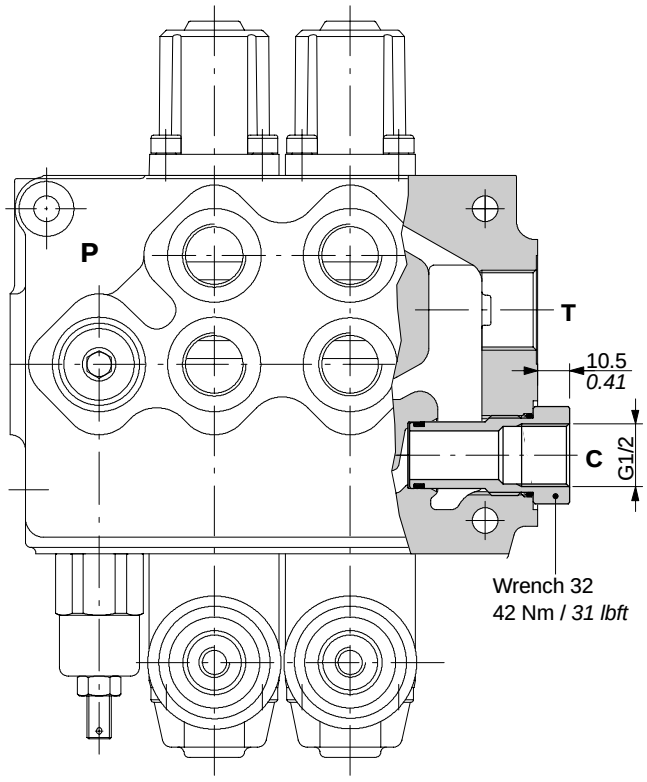
Outlet port options

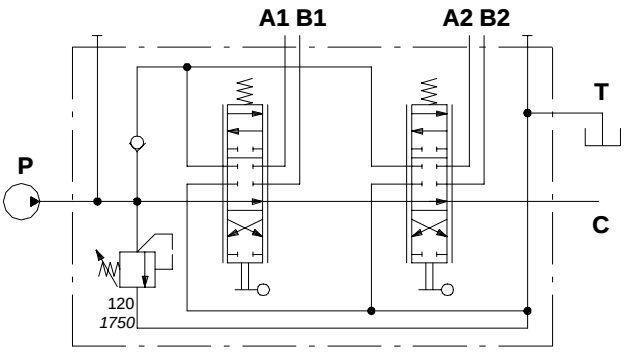
It's possible to have open center, closed center and carry-over.
Unloader valves are available: these valves need special bodies with appropriate cavity on lateral outlet port, the tank connection T must be on top.

AET: open center (standard)

See page 6

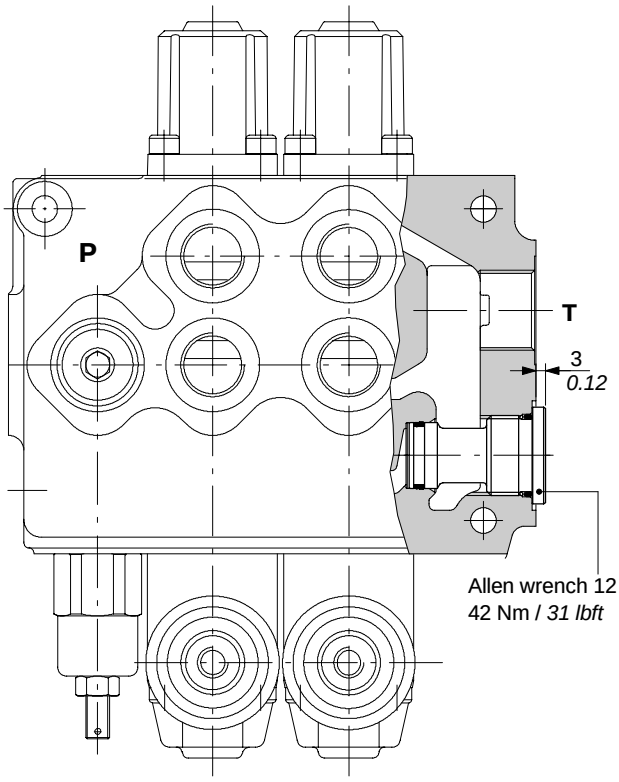
AE: with carry-over sleeve

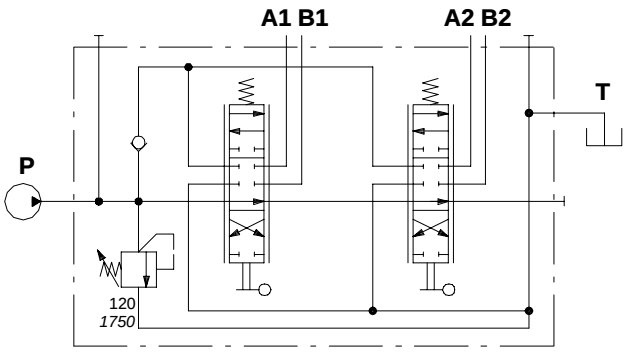




Description example:
SD11/2-P(KG3-120)/18L/18L/**AE**

AEK: closed center





Description example:
SD11/2-P(KG3-120)/18L/18L/**AEK**