



SD 11

MONOBLOCK
DIRECTIONAL CONTROL VALVES



Features

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

H Fitted with a main pressure relief valve and a load check valve.

H Available with parallel or series circuit.

H Optional carry-over port (only for parallel circuit).

H Diameter 20 mm - 0.79 in interchangeable spools.

H A wide variety of service ports and circuit valves.

H Available manual, pneumatic, hydraulic, electro-hydraulic and remote with flexible cables spool control kits.

Working conditions

This catalogue shows technical specifications and diagrams measured with mineral oil of 46 mm²/s - 46 cSt viscosity at 40°C temperature.

Nominal flow rating		70 l/min	
Operating pressure (maximum)	<i>parallel circuit</i>	315 bar	4600 psi
	<i>series circuit</i>	250 bar	3600 psi
Back pressure (maximum)	<i>on outlet port T</i>	25 bar	360 psi
Internal leakage A(B)→T	<i>Δp=100 bar - 1450 psi fluid and valve at 40°C</i>	3 cm ³ /min	0.18 in ³ /min
Fluid		Mineral base oil	
Fluid temperature	<i>with NBR (BUNA-N) seals</i>	from -20° to 80°C	
	<i>with FPM (VITON) seals</i>	from -20° to 100°C	
Viscosity	<i>operating range</i>	from 15 to 75 mm ² /s	<i>from 15 to 75 cSt</i>
	<i>min</i>	12 mm ² /s	12 cSt
	<i>max</i>	400 mm ² /s	400 cSt
Max level of contamination		19/16 - ISO 4406	
Ambient temperature		from -40° to 60°C	

NOTE - For different conditions please contact Customer Service.

Additional information

This catalogue shows the product in the most standard configurations.

Please contact Customer Service Dpt. for more detailed information or special request.

WARNING!

All specifications of this catalogue refer to the standard product at this date.

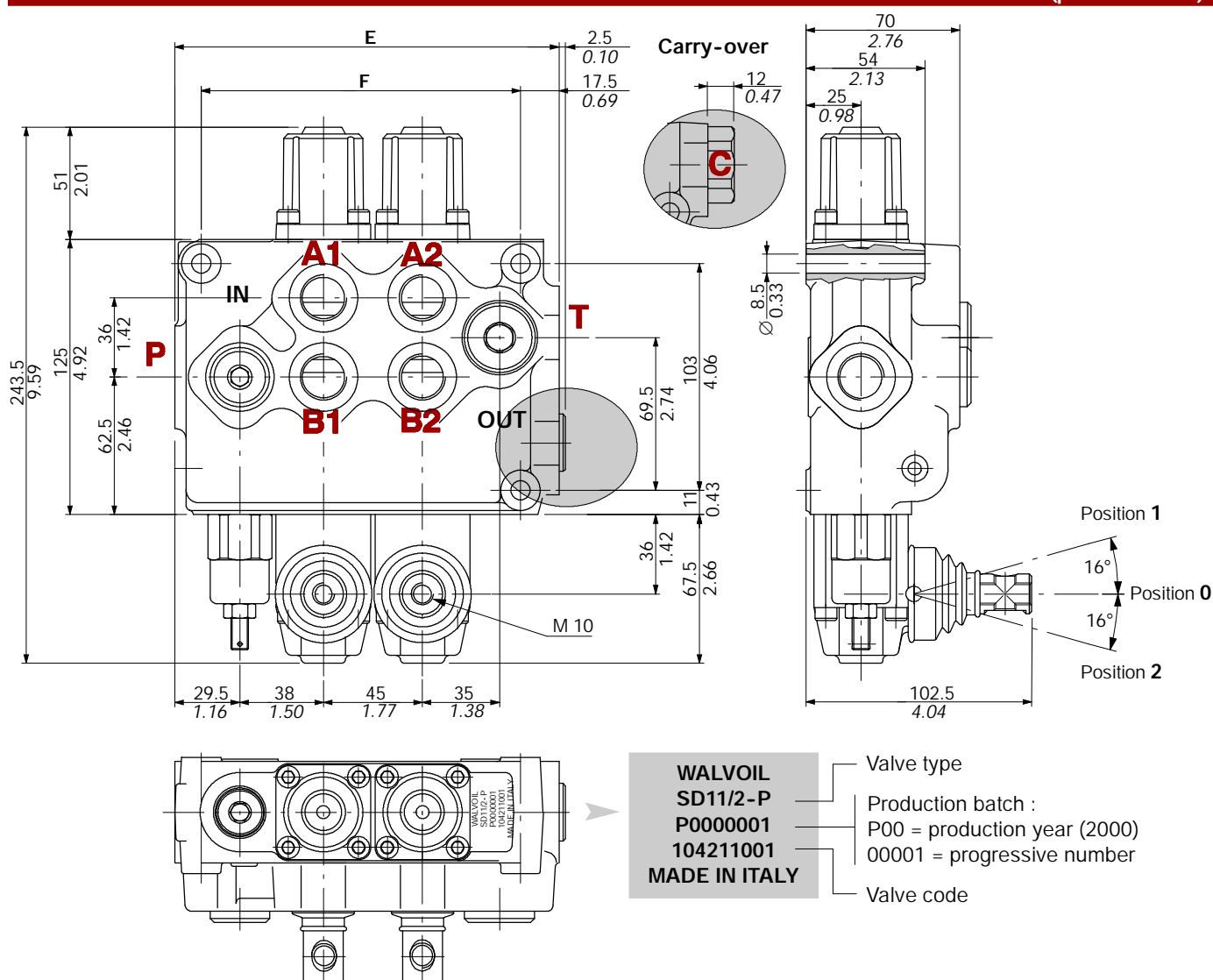
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WALVOIL IS NOT RESPONSIBLE FOR ANY DAMAGE CAUSED BY AN INCORRECT USE OF THE PRODUCT.

7th edition October 2000:

This edition supercedes all prior documents.

Dimensional data (parallel circuit)



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	12.79	19.4	42.8

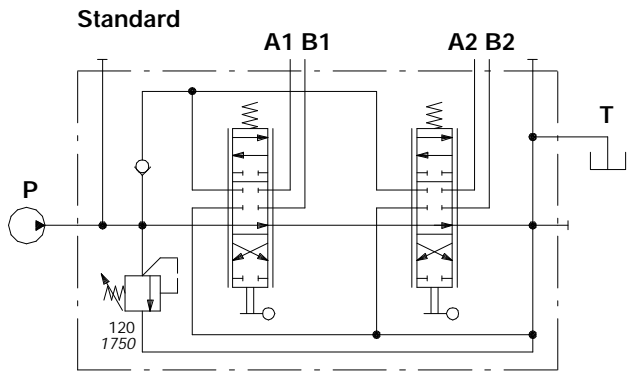
Standard threads

PORT	BSP (ISO 228/1)	UN-UNF (ISO 11926-1)	METRIC (ISO 262)
Inlet P and carry-over C	G 1/2	7/8-14 UNF-2B (SAE 10)	M18x1.5
A and B ports	G 1/2	3/4-16 UNF-2B (SAE 8)	M18x1.5
Outlet T	G 3/4	7/8-14 UNF-2B (SAE 10)	M22x1.5
PILOT PORTS			
Pneumatic	NPTF 1/8-27	NPTF 1/8-27	NPTF 1/8-27
Hydraulic	G 1/4	9/16-18 UNF-2B (SAE 6)	G 1/4

SD11

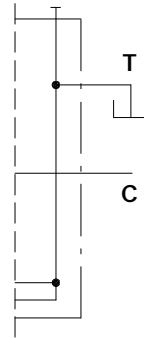
Hydraulic circuit

Parallel



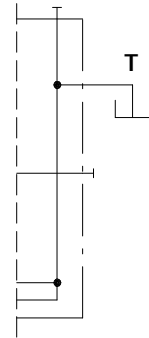
Ex.: SD11/2-P(KG3-120)/18L/18L/AET

With carry-over



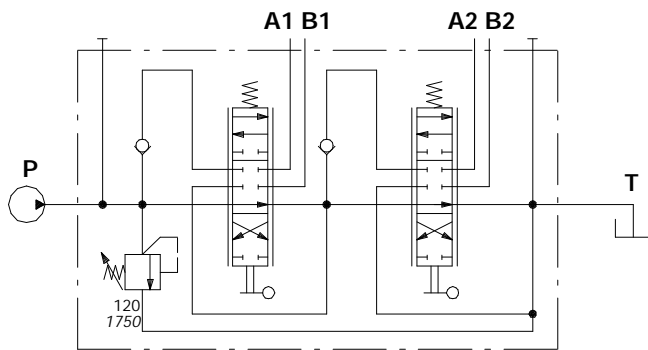
SD11/2-P(KG3-120)/18L/18L/AE

With closed centre



SD11/2-P(KG3-120)/18L/18L/AEK

Series

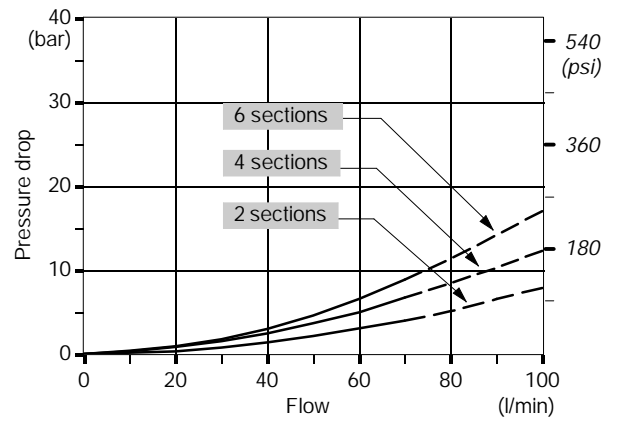
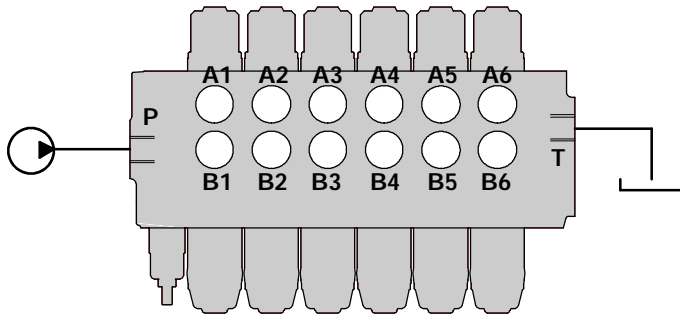


Ex.: SD11/2-S1(KG3-120)/18L/18L

Performance data (pressure drop vs. flow)

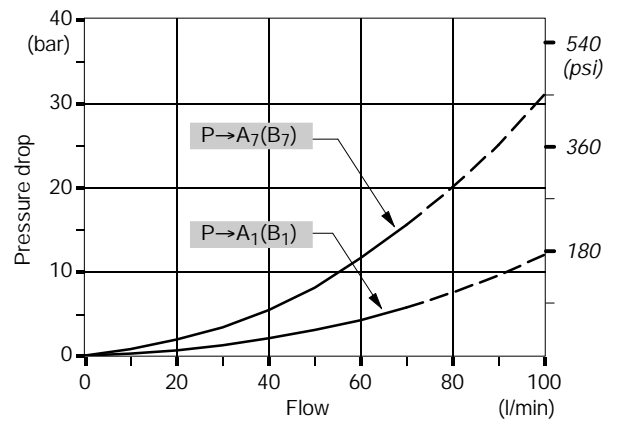
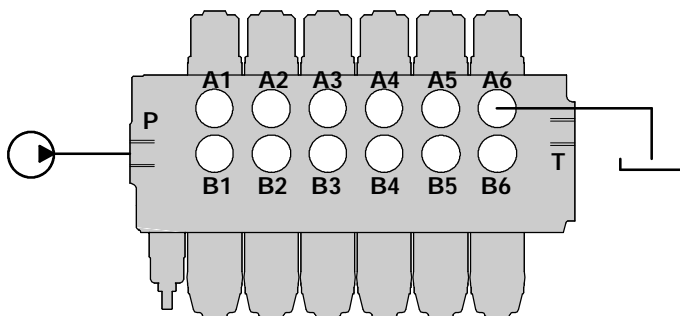
Open centre

From side inlet to side outlet.



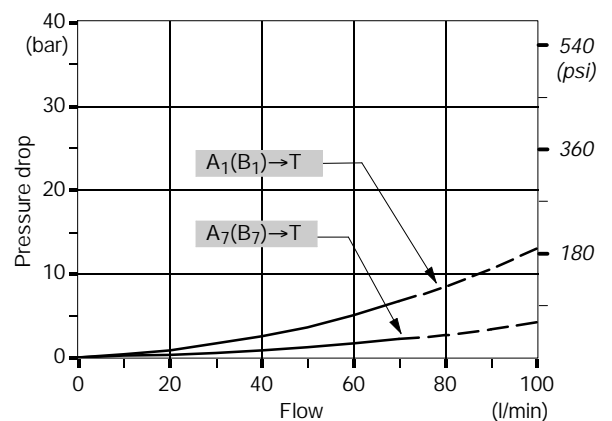
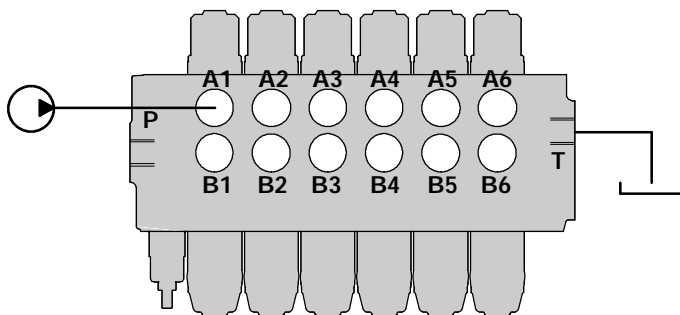
Inlet to work port

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

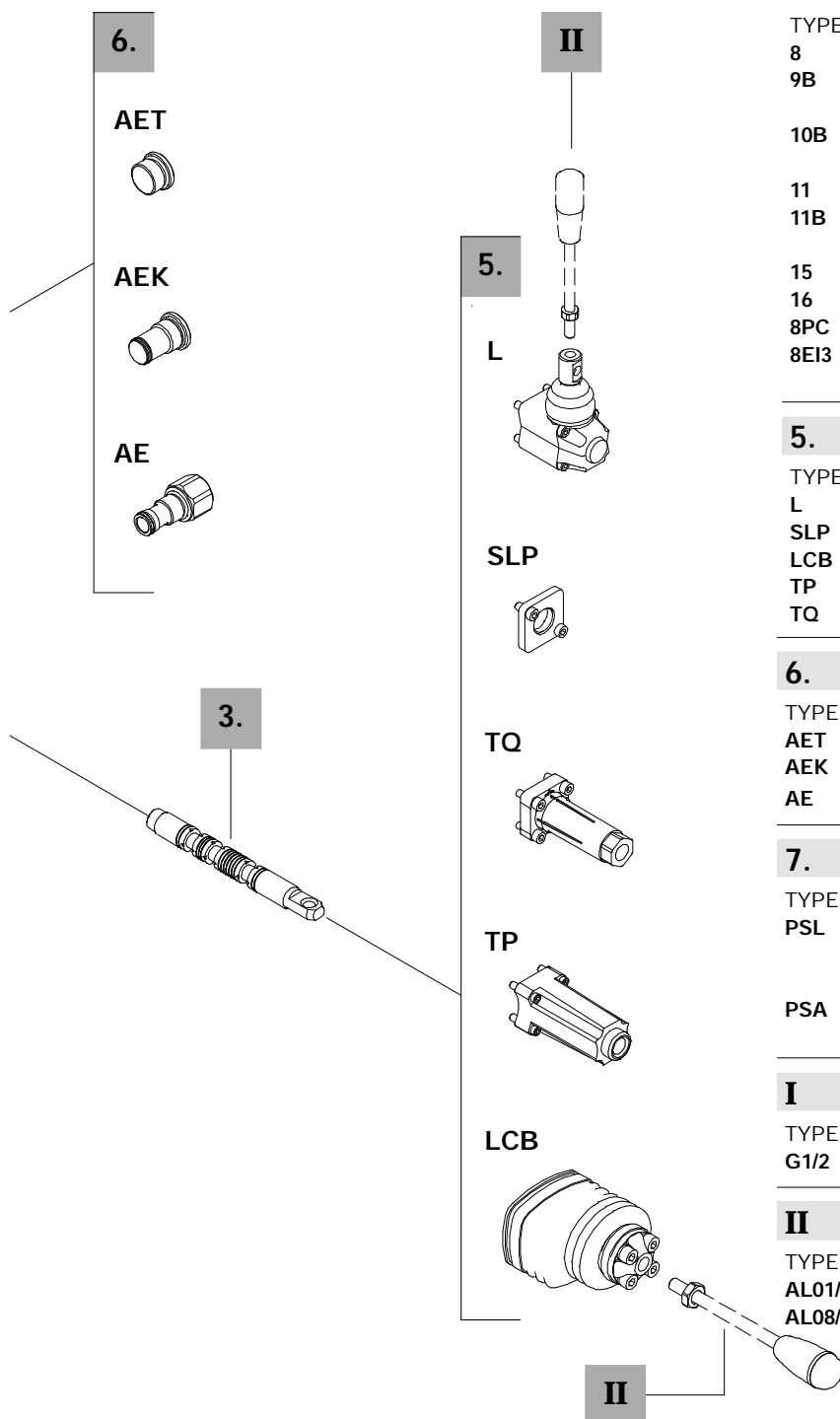


Work port to outlet

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



NOTE - Measured with spool type 1.



3. Spool options

TYPE	CODE	CIRCUIT DESCRIPTION
3	3CU1431130	Single acting on A, 3 positions, B plugged requires G1/2 plug (see part I)
4	3CU1435130	Single acting on B, 3 positions, A plugged requires G1/2 plug (see part I)

4. "A" side spool positioners

TYPE	CODE	DESCRIPTION
8	5V08110000	With spring return in neutral position
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
11	5V11110000	With detent in position 1, neutral and 2
11B	5V11210000	With detent in position 1 and 2, spring return in neutral position
15	5V15110000	With detent in position 1 and neutral
16	5V16110000	With detent in position 2 and neutral
8PC	5V08111709	Proportional pneumatic kit
8EI3	5V08110350	12 VDC ON/OFF electro-hydraulic kit
	5V08110351	24 VDC ON/OFF electro-hydraulic kit

5. "B" side options

TYPE	CODE	DESCRIPTION
L	5LEV110000	Standard lever box
SLP	5COP110000	Without lever, with dust proof plate
LCB	5CLO211100	Mechanical joystick
TP	5TEL110005	CG cable connection
TQ	5TEL110110	CD cable connection

6. Outlet conversion port options

TYPE	CODE	DESCRIPTION
AET	3XTAP732201	Open centre plug
AEK	3XTAP532450	Closed centre plug
AE	XGIU532470	G 1/2 carry-over sleeve *

7. Inlet and outlet selection *

TYPE	CODE	DESCRIPTION
PSL	3XTAP727180	G1/2 plug for side inlet (nr.1 plug required)
	3XTAP732200	G3/4 plug for side outlet (nr.1 plug required) standard configuration; must be omitted
PSA	3XTAP727180	G1/2 plug for upper inlet (nr.1 plug required)
	3XTAP732200	G3/4 plug for upper outlet (nr.1 plug required)

I Port plug *

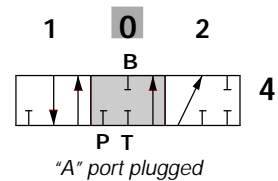
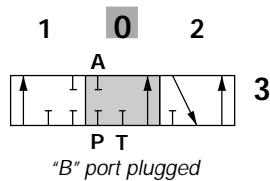
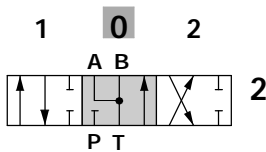
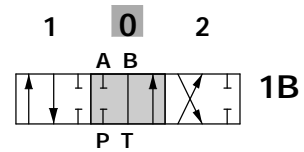
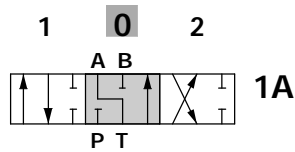
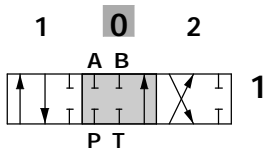
TYPE	CODE	DESCRIPTION
G1/2	3XTAP727180	Plug for single acting spool

II Optional handlevers

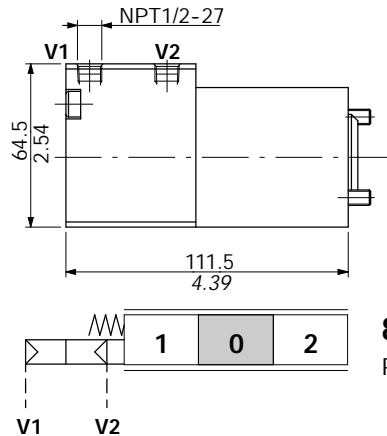
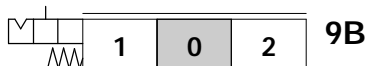
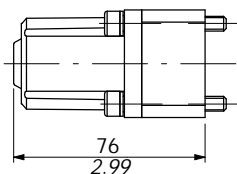
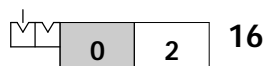
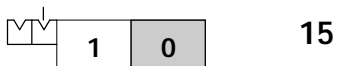
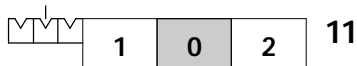
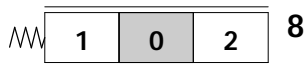
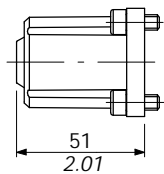
TYPE	CODE	DESCRIPTION
AL01/M10x200	170012020	Standard L = 200mm / 7.87in
AL08/M12x250	170013125	For joystick L = 250mm / 9.84in

For special configurations see pages 9 and 10

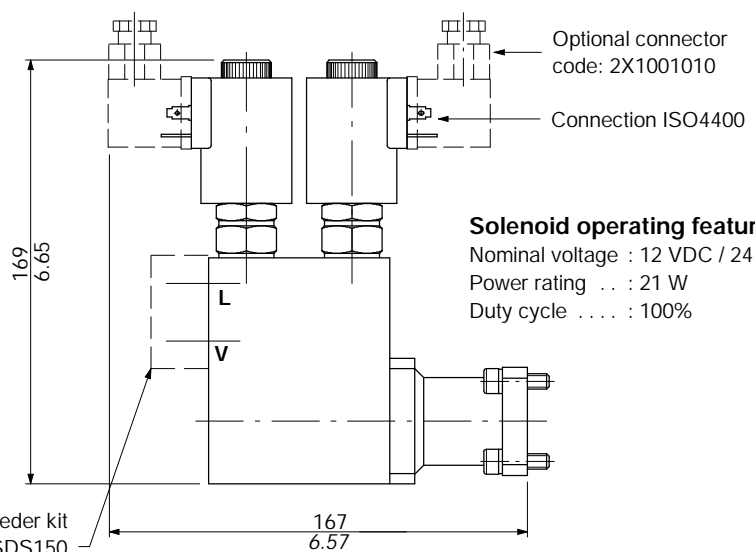
Spools options



"A" side spool positioners

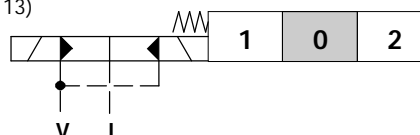


8PC
Proportional pneumatic kit



Solenoid operating features
Nominal voltage : 12 VDC / 24 VDC
Power rating . . . : 21 W
Duty cycle : 100%

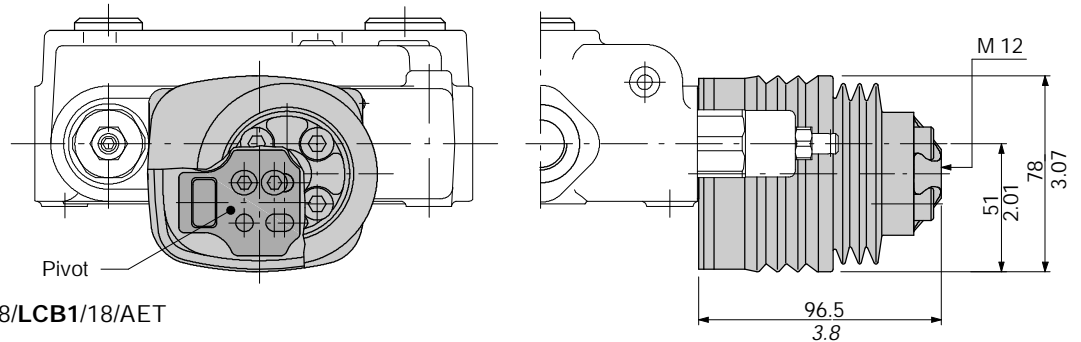
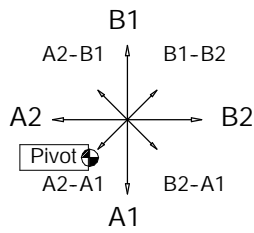
Feeder kit
(see catalogue SDS150
at page 13)



8E13
ON/OFF electro-hydraulic kit.

Mechanical joystick

LCB1
movement scheme

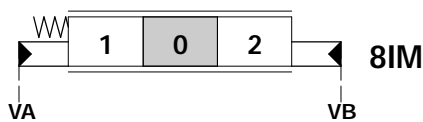


Ex.: SD11/2-P(KG3-120)/18/LCB1/18/AET

It is possible to have the fulcrum in the following other positions: **LCB2** bottom right, **LCB3** top left; **LCB4** top right.

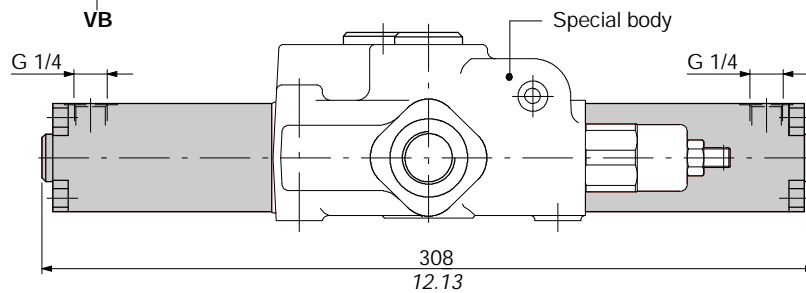
Special configurations

Hydraulic spool control



Operating features

Adjustment range from 5.8 to 22.4 bar (84 to 325 psi) - diagram 070
Max. pilot pressure : 50 bar / 720 psi



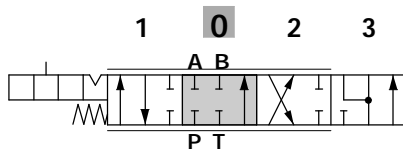
Ex.: SD11/2-P(KG3-120)/ **1C 8IM** / ...

Spool type 1C: code **3CU1410400**

Spool type 2C: code **3CU1425400**

Hydraulic control kit : code **5IDR210000**

Floating circuit

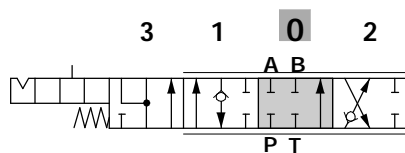
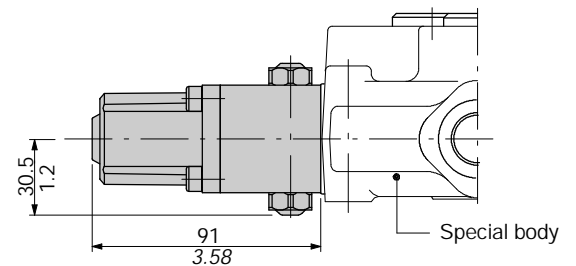


513B
4th position
spool *in* floating

Ex.: SD11/2-P(KG3-120)/ **5 13B L** / ...

Spool: code **3CU1442100**

Positioner kit: code **5V13111000**

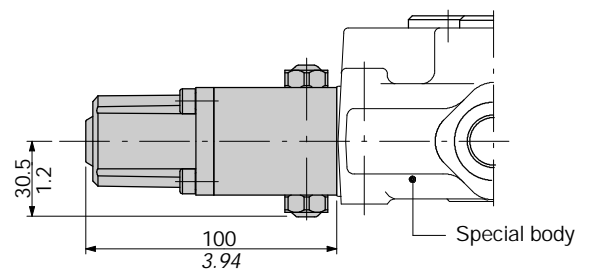


5VR13C
4th position
spool *out* floating

Ex.: SD11/2-P(KG3-120)/ **5VR 13C L** / ...

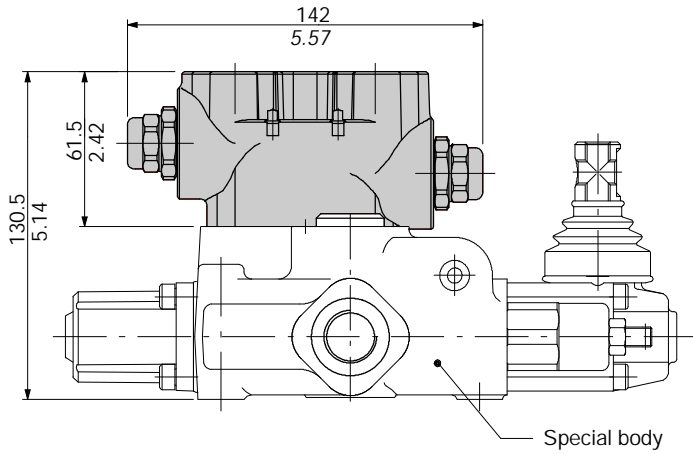
Spool: code **3CU1443600**

Positioner kit: code **5V13211000**

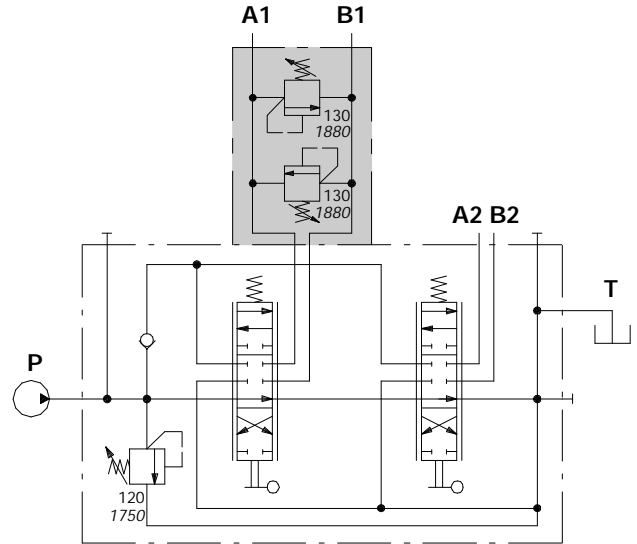


Port valves

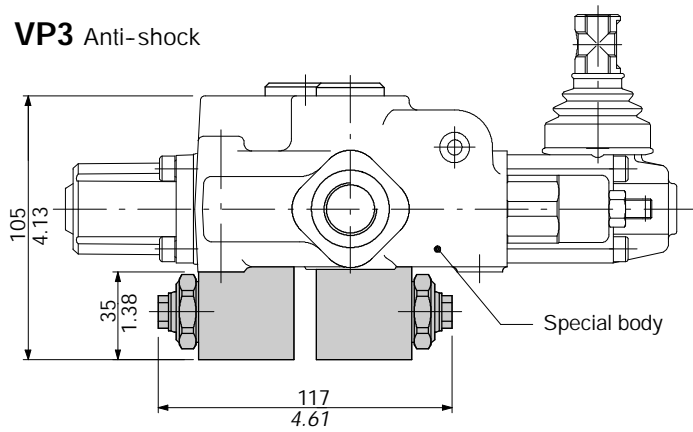
P3 Cross return



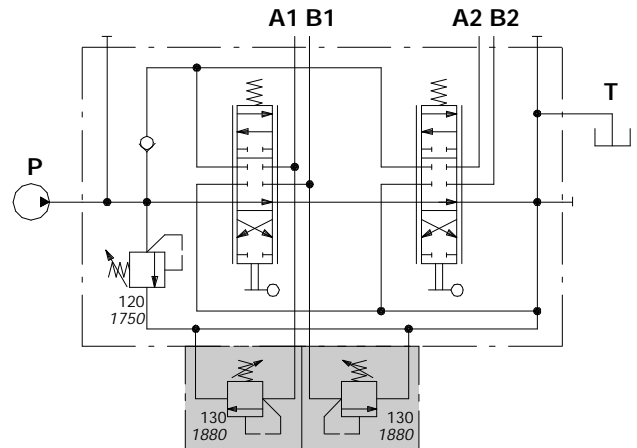
Ex.: SD11/2-P(KG3-120)/18L.P3(G3-130)/18L/AET



VP3 Anti-shock



Ex.: SD11/2-P(KG3-120)/18L.VP3(G3-130)/18L/AET

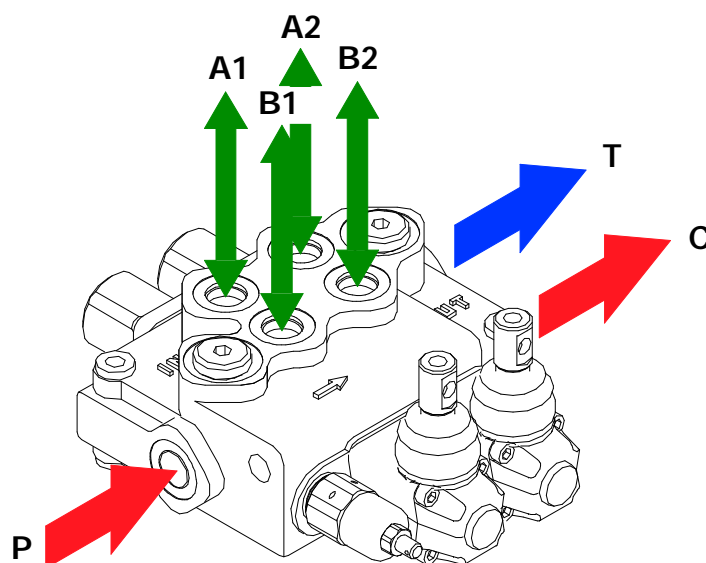


Installation and maintenance

The SD11 valve is assembled and tested as per the technical specification of this catalogue.

Before the final installation on your equipment, follow the below recommendations:

- the valve can be assembled in any position, in order to prevent body deformation and spool sticking mount the product on a flat surface;
- in order to prevent the possibility of water entering the lever box and spool control kit, do not use high pressure wash down directly on the valve;
- prior to painting, ensure plastic port plugs are tightly in place.



Carry-over configuration

Fitting tightening torque - Nm / lbft

THREADS TYPE	P and C ports	A and B ports	T port
BSP (ISO 228/1)	G 1/2	G 1/2	G 3/4
With O-Ring seal	50 / 36.9	50 / 36.9	70 / 51.6
With copper washer	60 / 44.3	60 / 44.3	70 / 51.6
With steel and rubber washer	60 / 44.3	60 / 44.3	70 / 51.6
UN-UNF (ISO 11926-1)	7/8-14 UNF-2B (SAE 10)	3/4-16 UNF-2B (SAE 8)	7/8-14 UNF-2B (SAE 10)
With O-Ring seal	60 / 44.3	50 / 36.9	60 / 44.3
METRIC (ISO 262)	M18x1.5	M18x1.5	M22x1.5
With O-Ring seal	35 / 25.8	35 / 25.8	50 / 36.9
With copper washer	40 / 29.5	40 / 29.5	60 / 44.3
With steel and rubber washer	40 / 29.5	40 / 29.5	60 / 44.3

NOTE - These torque are recommended. Assembly tightening torque depends on many factors, including lubrication, coating and surface finish. The manufacturer shall be consulted.



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