



SD5

MONOBLOCK
DIRECTIONAL CONTROL VALVES



Features

Simple, compact and heavy duty designed, these valves are used for open center and closed center hydraulic systems.

- Fitted with a main pressure relief valve and a load check valve.
- Available with parallel, tandem or series circuit.
- Optional power beyond port (only for parallel or tandem circuit).
- A wide variety of service ports and circuit valves.
- Available manual, pneumatic, hydraulic, electro-hydraulic, solenoid and remote with flexible cables spool control kits.

Specifications

This catalogue shows technical specifications and diagrams measured with mineral oil of 46 mm²/s – 46 cSt viscosity at 40°C – 104 °F temperature.

Nominal flow rating		45 l/min	
Operating pressure (maximum)	<i>parallel or tandem 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	P=100 bar / 1450 psi	3 cm ³ /min	0.18 in ³ /min
Fluid		Mineral oil	
Fluid temperature	<i>with NBR (BUNA-N) seals</i>	from -20° to 80°C	from -4 ° to 176 °F
	<i>with FPM (VITON) seals</i>	from -20° to 100°C	from -4 ° to 212 °F
Viscosity	<i>operation range</i>	from 15 to 75 mm ² /s	from 15 to 75 cSt
	<i>min. value</i>	12 mm ² /s	12 cSt
	<i>max. value</i>	400 mm ² /s	400 cSt
Max level of contamination		19/16 – ISO 4406	
Ambient temperature		from -40° to 60°C	from -40 ° to 140 °F
Number of working sections		from 1 to 7	
Spools diameter		16 mm	0.63 in

NOTE – Please contact Customer Service for application with a different type of fluid.

WARNING!

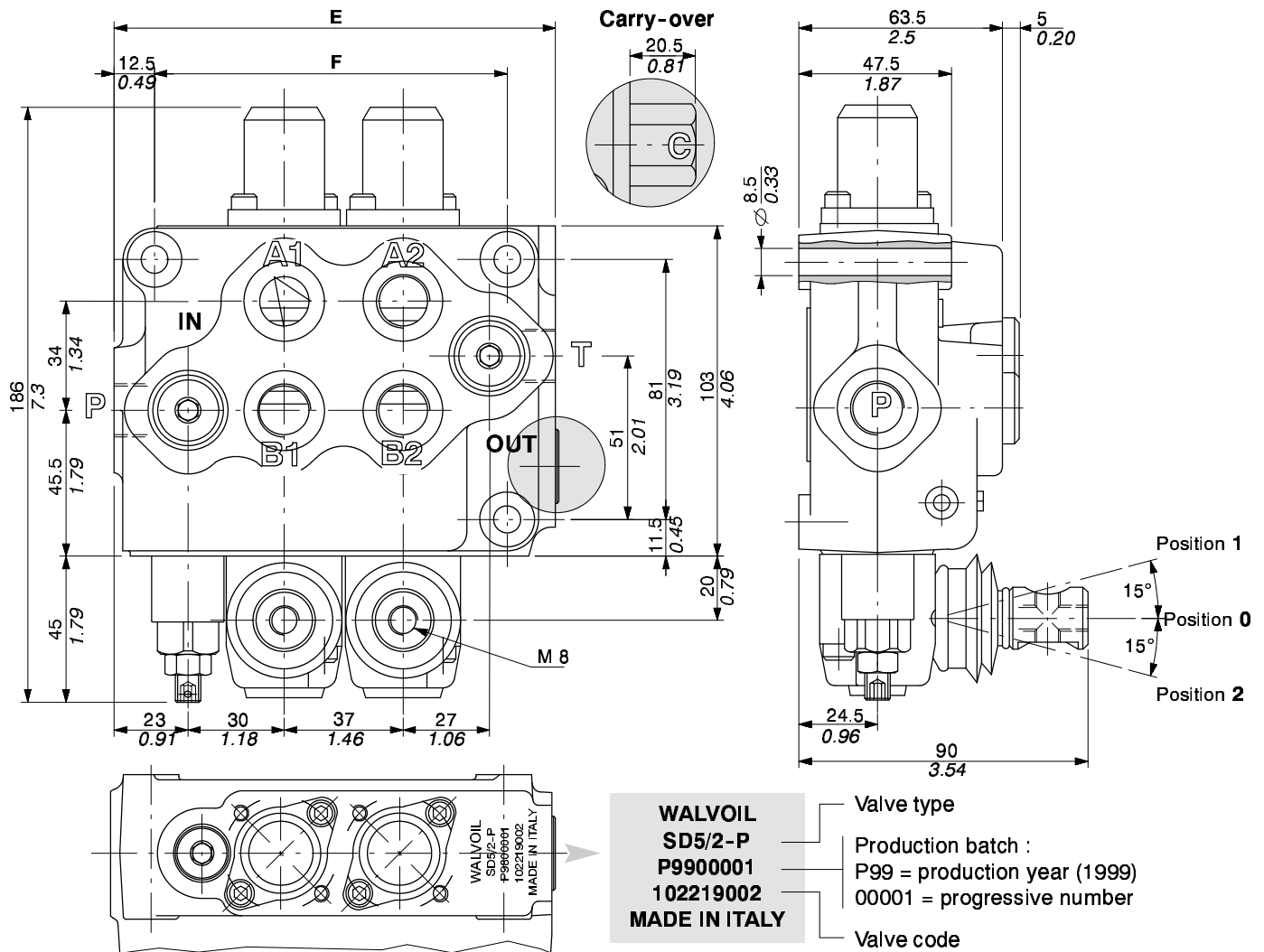
All specifications of this catalogue refers to the standard product at this date. Walvoil, oriented to a continuous improvement, reserves the right to discontinue, modify or revise the specifications, without notice.

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

2nd edition April 1999:

This edition supercedes all prior documents.

Dimensional data (parallel and tandem circuit)



TYPE	E		F		Weight	
	mm	in	mm	in	kg	lb
SD5/1-P	100.5	3.96	73	2.87	3.5	7.7
SD5/2-P	137.5	5.41	110	4.33	5.2	11.5
SD5/3-P	174.5	6.87	147	5.79	6.9	15.2
SD5/4-P	211.5	8.33	184	7.24	8.1	17.9

TYPE	E		F		Weight	
	mm	in	mm	in	kg	lb
SD5/5-P	248.5	9.78	221	8.70	10.1	22.3
SD5/6-P	285.5	11.24	258	10.16	11.7	25.8
SD5/7-P	322.5	12.70	295	11.61	13.2	29.1

Standard threads

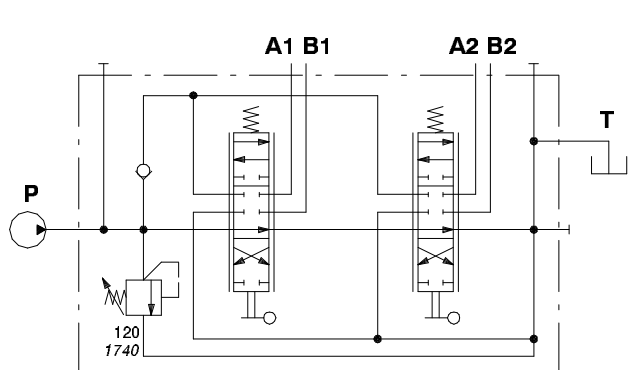
PORT	BSP (ISO228/1)	SAE UN-UNF	METRIC (ISO 262)
Inlet P and carry-over C	G 3/8	SAE 8 (3/4-16 UNF)	M18x1.5
A and B ports	G 3/8	SAE 6 (9/16-18 UNF)	M18x1.5
Outlet T	G 3/8 (G 1/2*)	SAE 8 (3/4-16 UNF)	M18x1.5 (M22x1.5*)
PILOT PORTS			
Pneumatic	NPTF 1/8-27	NPTF 1/8-27	NPTF 1/8-27

NOTE (*) - Only for series circuit.

SD5

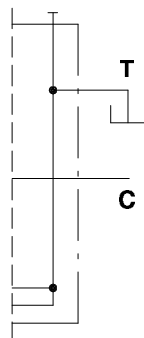
Hydraulic circuit

Parallel



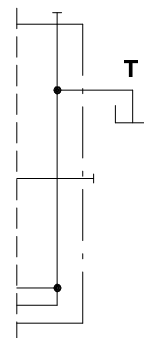
Ex.: SD5/2-P(KG3-120)/18L/18L/AET

With power beyond



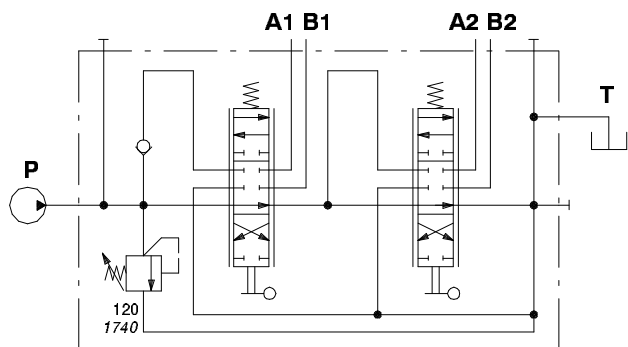
SD5/2-P(KG3-120)/18L/18L/AE

With closed center



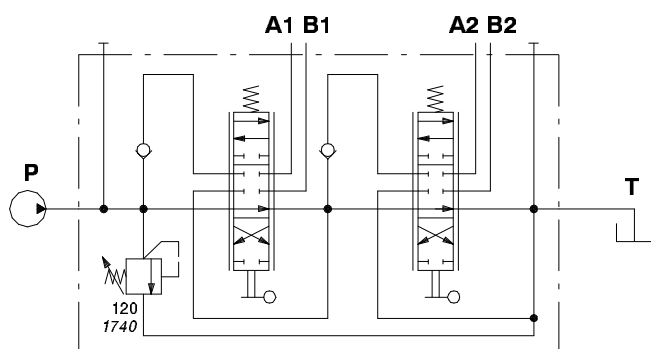
SD5/2-P(KG3-120)/18L/18L/AEK

Tandem



Ex.: SD5/2-SP1(KG3-120)/18L/18L/AET

Series

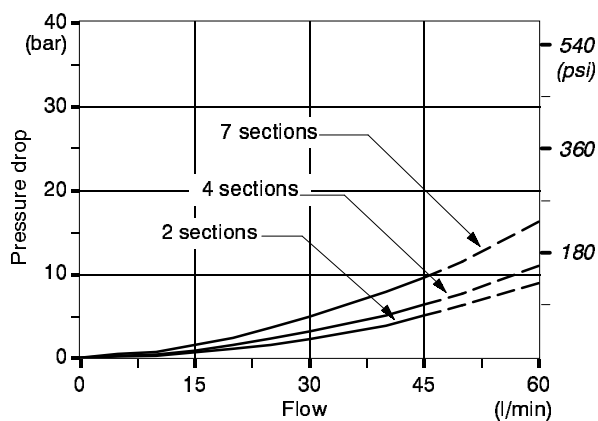
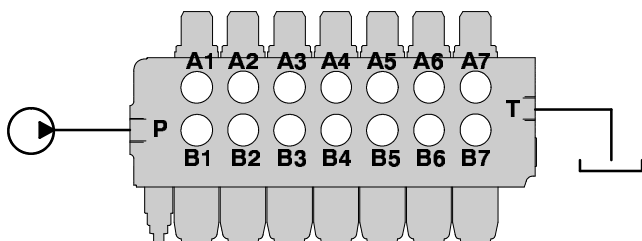


Ex.: SD5/2-S1(KG3-120)/18L/18L

Performance data (pressure drop vs. flow)

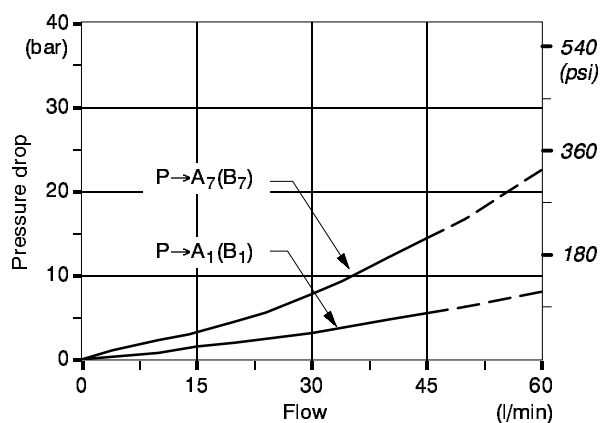
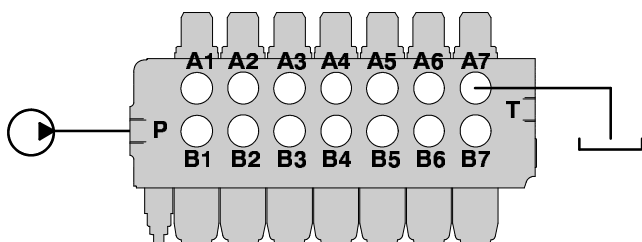
Open centre

From side inlet to side outlet.



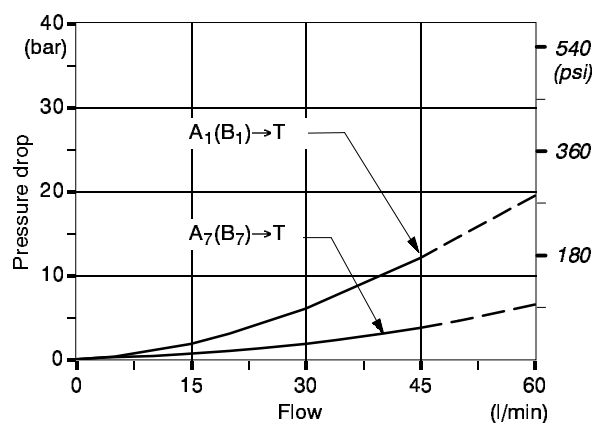
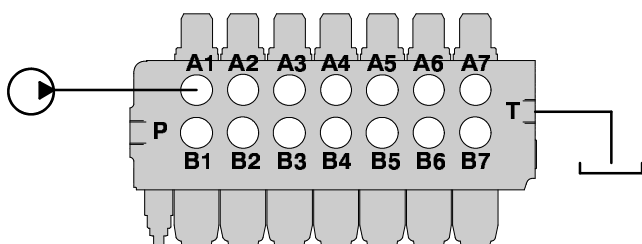
Inlet to work port

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



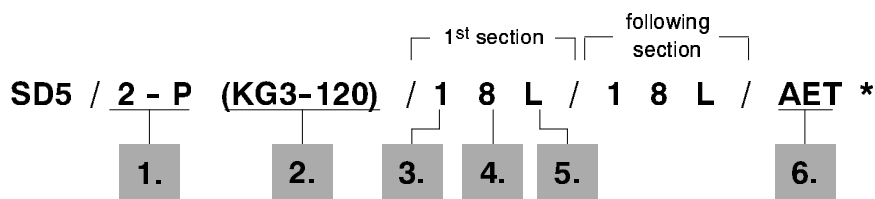
Work port to outlet

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



NOTE - Measured with spool type 1.

Ordering codes



1. Body kits *

TYPE	CODE	DESCRIPTION
1-P	5KC1193000	Parallel, 1 section
2-P	5KC1223000	Parallel, 2 sections
3-P	5KC1243000	Parallel, 3 sections
4-P	5KC1273000	Parallel, 4 sections
5-P	5KC1313000	Parallel, 5 sections
6-P	5KC1353000	Parallel, 6 sections
7-P	5KC13E3000	Parallel, 7 sections

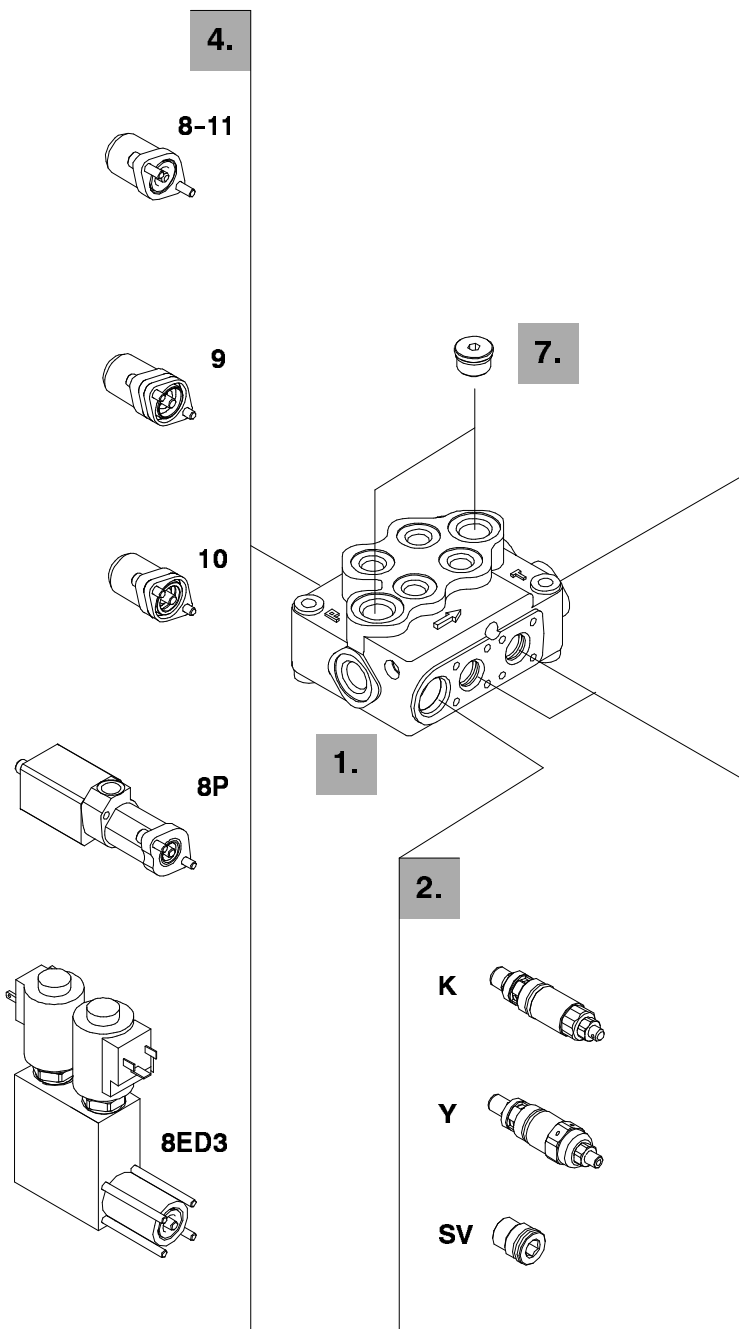
Include body, seals and load check valve.

2. Inlet relief options

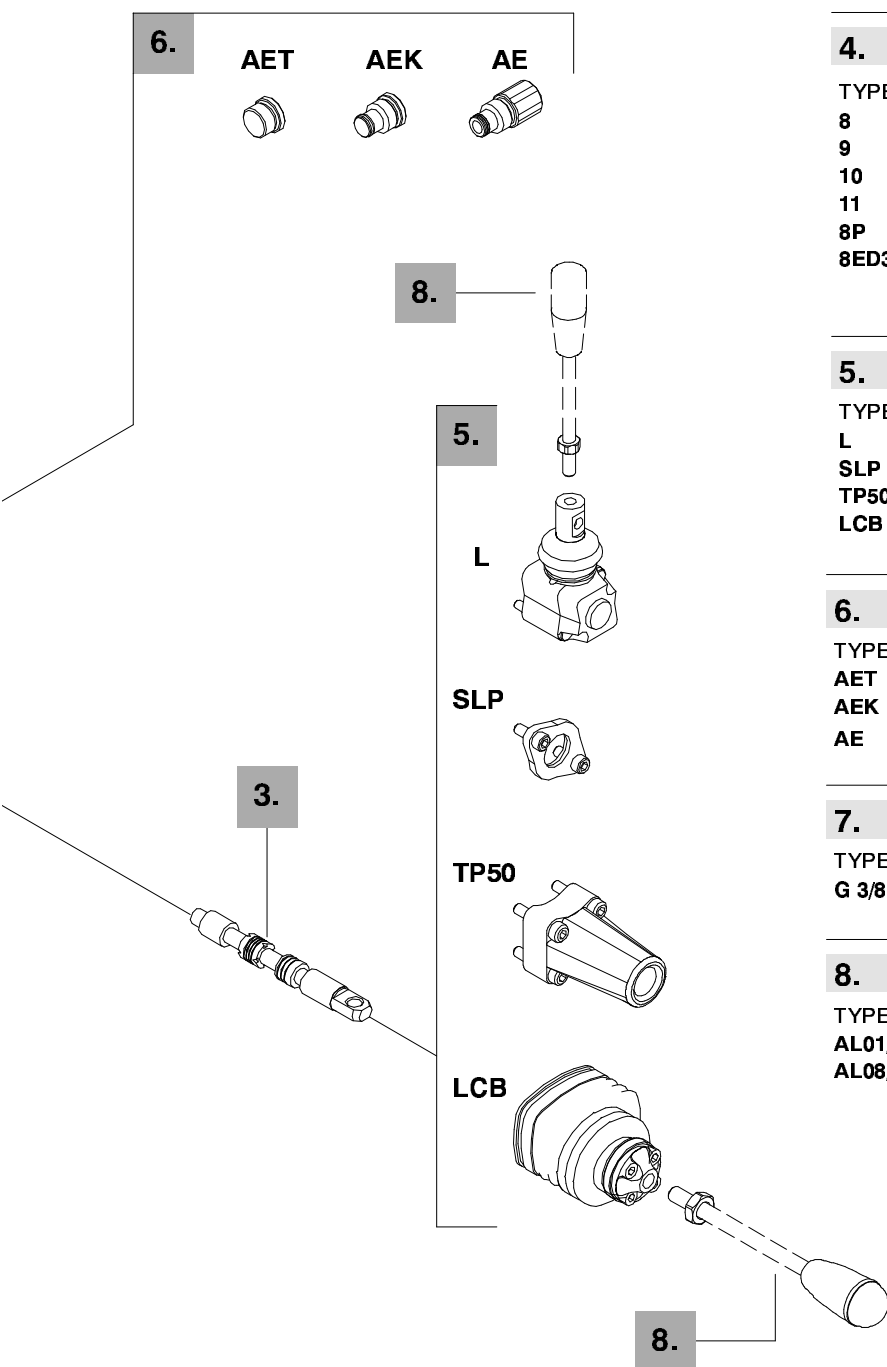
TYPE	CODE	DESCRIPTION
VMD5/1(KG3)	5KIT105123	Direct pressure relief valve
VMD5/1(YG3)	5KIT105213	Direct pressure relief valve with grinded poppet
SV	XTAP623282	Relief valve blanking plug

3. Spool options

TYPE	CODE	CIRCUIT DESCRIPTION
1	3CU1210130	Double acting, 3 positions, with A and B closed in neutral position
1CS	3CU1210200	Double acting, 3 positions, with A and B closed in neutral position: metering type
1A	3CU1221130	Double acting, 3 positions, with A open to tank in neutral position
1B	3CU1222130	Double acting, 3 positions, with B open to tank in neutral position
2	3CU1225130	Double acting, 3 positions, with A and B open to tank in neutral position
2H	3CU1225225	Double acting, 3 positions, with A e B partially open to tank
3	3CU1231130	Single acting on A, 3 positions



NOTE - Please contact Customer Service for other options.



4. "A" side spool positioners

TYPE	CODE	DESCRIPTION
8	5V08105000	With spring return in neutral position
9	5V09105010	With detent in position 1
10	5V10105010	With detent in position 2
11	5V11105000	With detent in positions 1, neutral and 2
8P	5V08105700	ON/OFF pneumatic kit
8ED3	5V08105350	12 VDC ON/OFF electro-hydraulic kit
	5V08105351	24 VDC ON/OFF electro-hydraulic kit

5. "B" side options

TYPE	CODE	DESCRIPTION
L	5LEV105000	Standard lever box
SLP	5COP105000	Without lever, with dust proof plate
TP50	5TEL105005	Cable connection
LCB	5CLO205100	Mechanical joystick

6. Outlet conversion port options

TYPE	CODE	DESCRIPTION
AET	XTAP623170	Open centre plug
AEK	3XTAP522282	Closed centre plug
AE	3XGIU522460	G 3/8 carry-over sleeve *

7. Top inlet and outlet plugs *

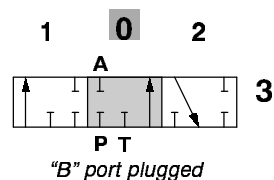
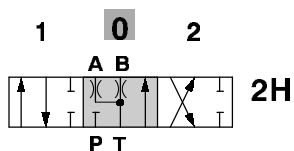
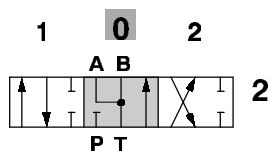
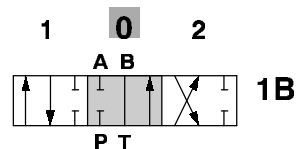
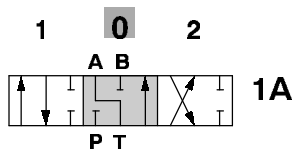
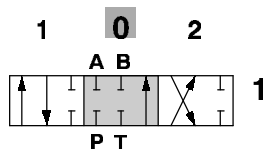
TYPE	CODE	DESCRIPTION
G 3/8	3XTAP722160	G 3/8 plug (n.2 plugs required)

8. Optional handlevers

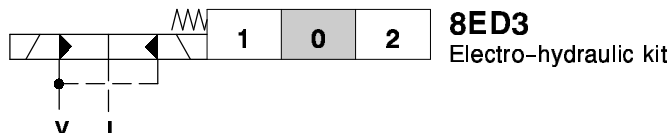
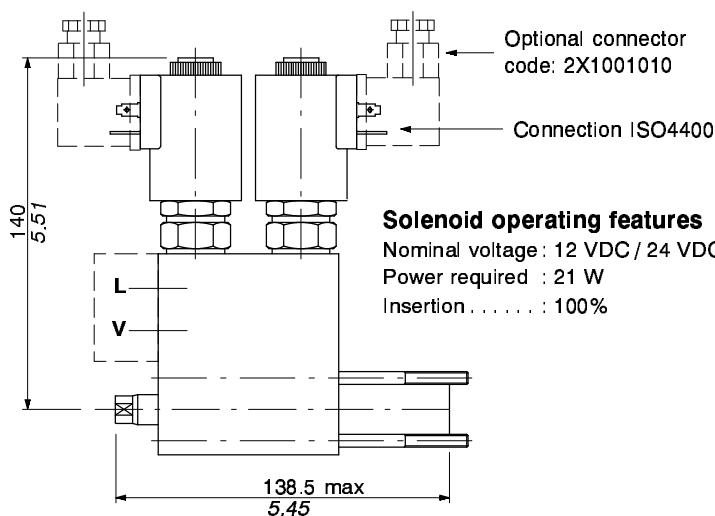
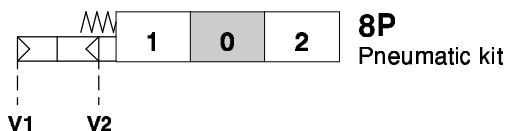
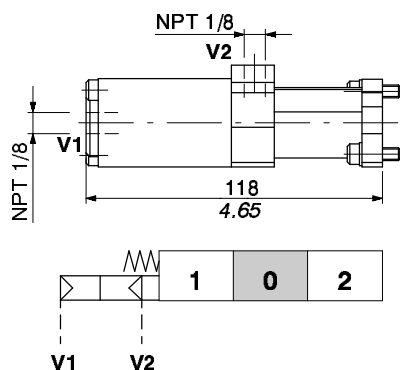
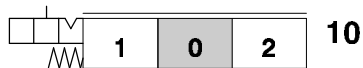
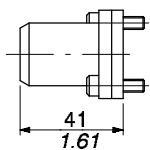
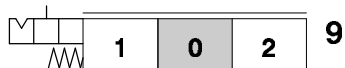
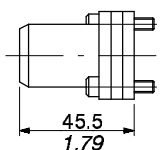
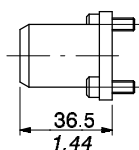
TYPE	CODE	DESCRIPTION
AL01/M8x120	170011012	Standard handlever L= 120mm/4.72in
AL08/M12x150	170013115	Handlever for joystick L=150mm/5.91in

NOTE (*) - Items are referred to G 3/8 thread.

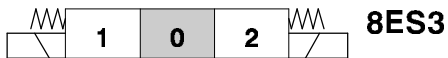
Spools options



"A" side spool positioners

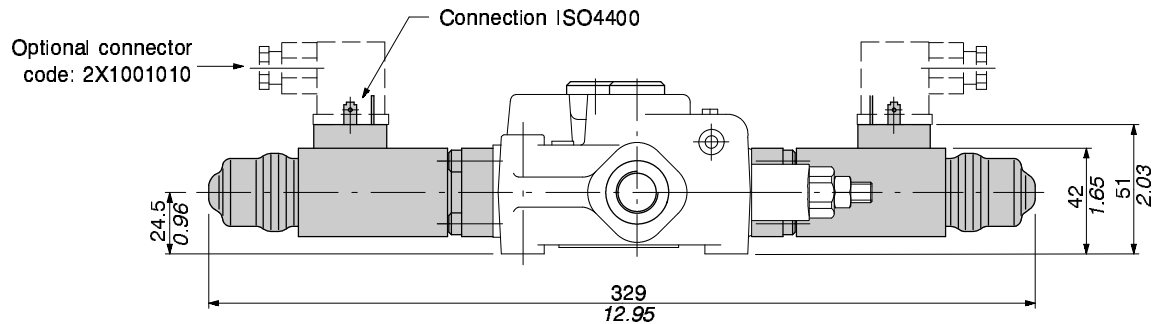


Electrical spool control

**8ES3**

Solenoid operating features

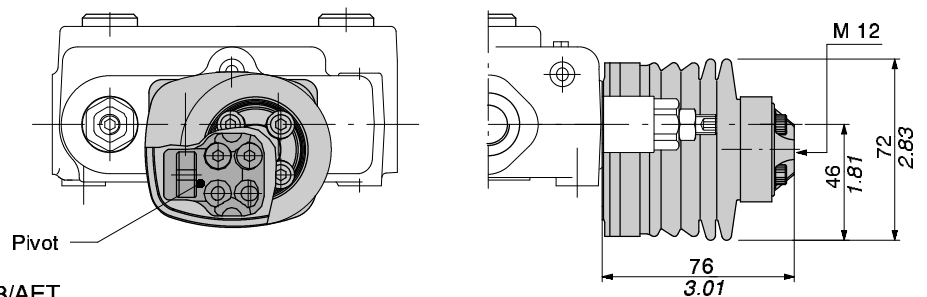
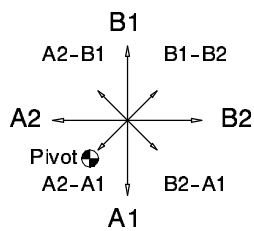
Nominal voltage 12 VDC / 24 VDC
 Power required 28 W
 Insertion 100%



Ex.: SD5/2-P(KG3-120)/1**8ES3**/18L/AET-12VDC

Mechanical joystick

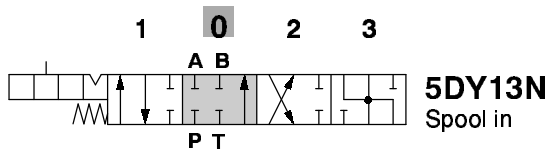
LCB1 movement scheme



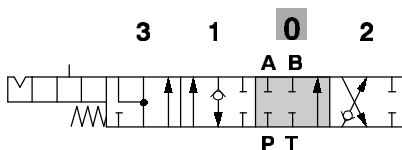
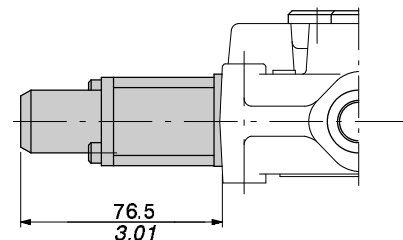
Ex.: SD5/2-P(KG3-120)/18/**LCB1**/18/AET

NOTA - Please contact Customer Service for other options.

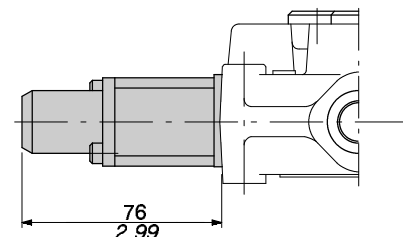
Floating circuit

**5DY13N**
Spool in

Ex.: SD5/2-P(KG3-120)/**5DY13N**/18L/AET

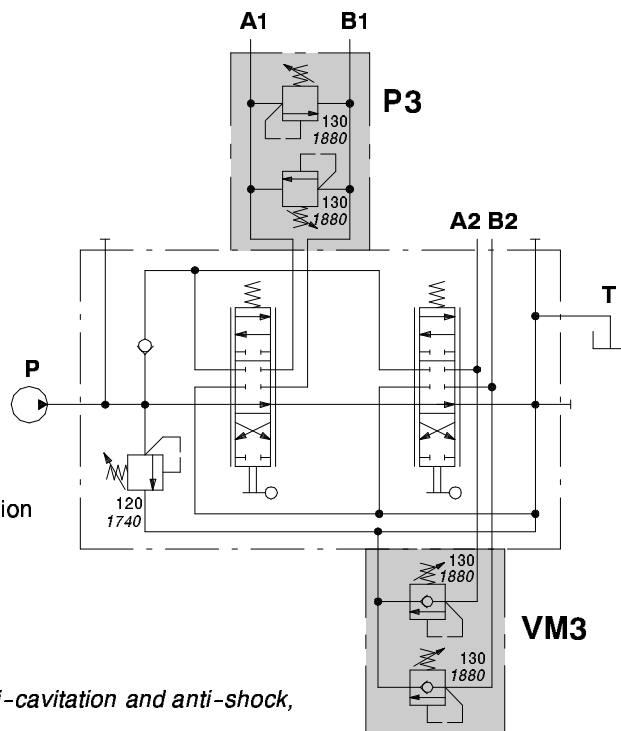
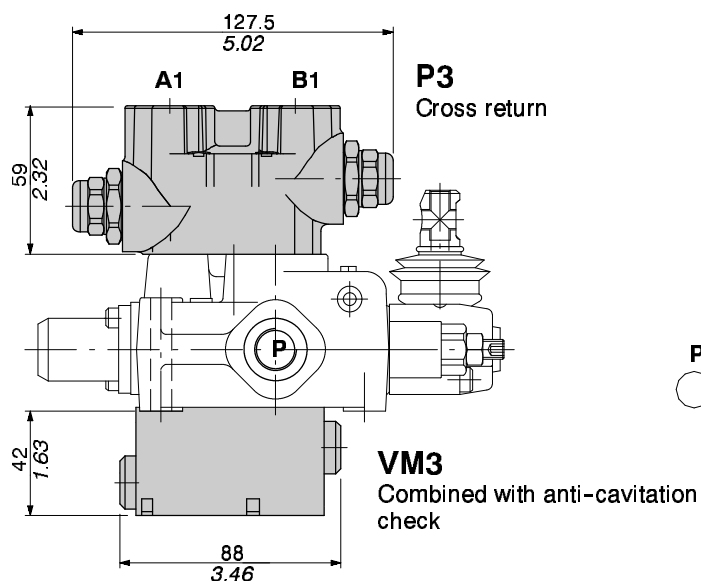
**5P13Q**
Spool out

Ex.: SD5/2-P(KG3-120)/**5P13Q**/18L/AET



SD5

Port valves

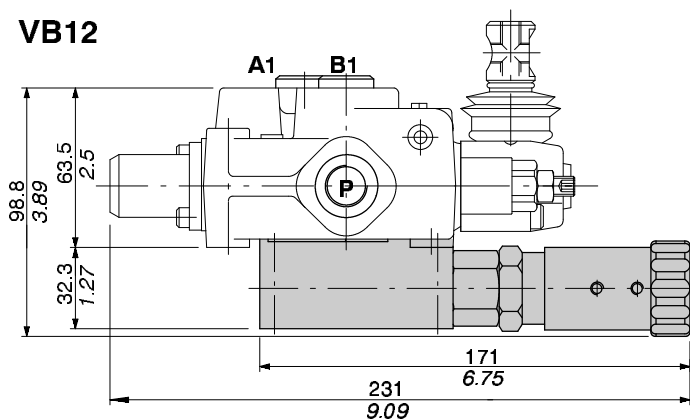


Ex.: SD5/2-P(KG3-120)/18L1.**P3(G3-100)**/18L.**VM3(100)**/AET

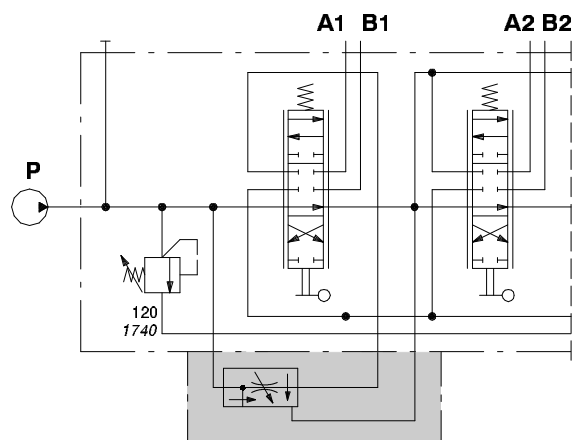
NOTE - For further informations of port valves (anti-cavitation, anti-cavitation and anti-shock, pilot anti-cavitation) contact Customer Service.

Flow control valves

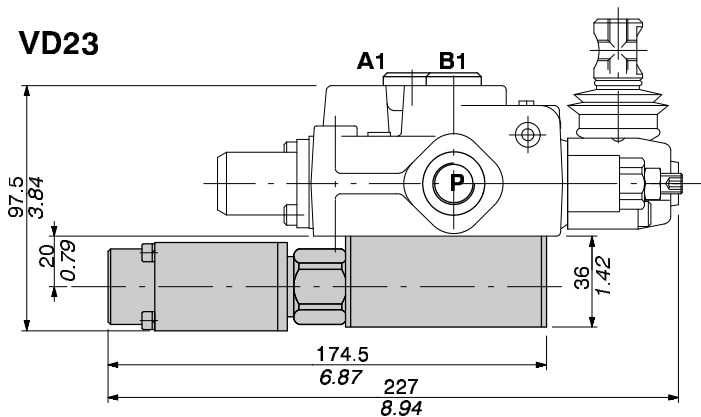
VB12



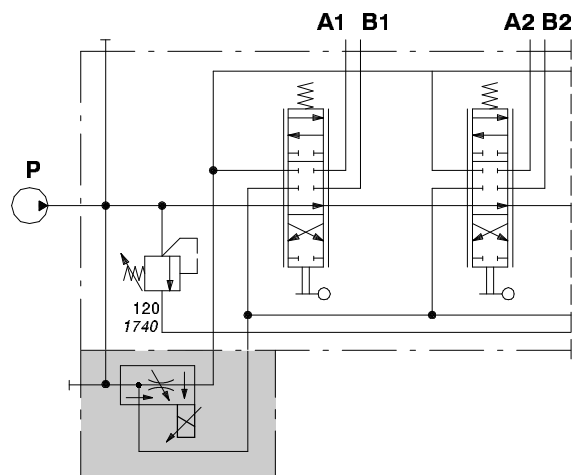
Ex.: SD5/3-SP2(KG3-120)/18L/**VB12**/18L/18L/AET



VD23



Ex.: SD5/2-P(KG3-120)**VD23**/18L/18L/AET

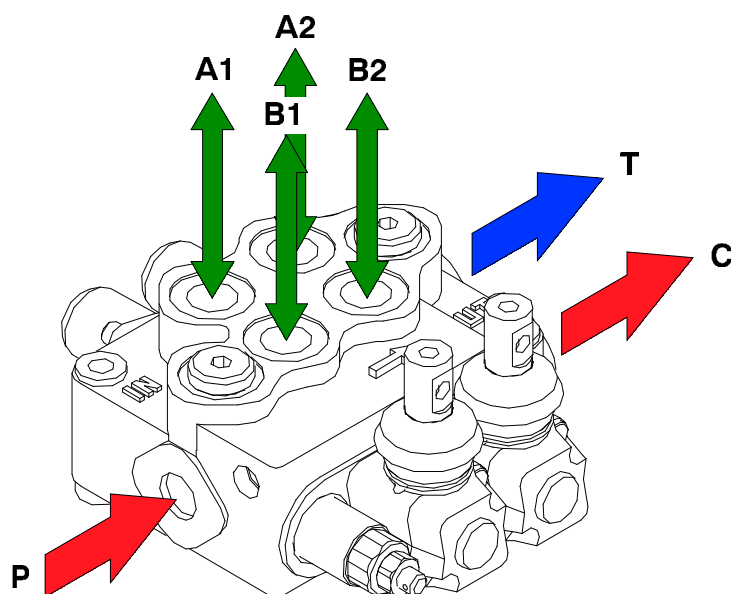


Installation and maintenance

The SD5 valve is assembled and tested as per the technical specification of this catalogue.

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

- 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

Standard tightening torques - Nm / lbft

FITTING TYPE	P and C ports	A and B ports	T ports
BSP (ISO 228/1)	G 3/8	G 3/8	G 3/8 (G 1/2*)
with o-ring seal	35 / 25.8	35 / 25.8	35 / 25.8 (50 / 36.9*)
with copper washer	40 / 29.5	40 / 29.5	40 / 29.5 (50 / 36.9*)
with steel washer	30 / 22.1	30 / 22.1	30 / 22.1 (50 / 36.9*)
SAE	SAE 8 (3/4-16 UNF)	SAE 6 (9/16-18 UNF)	SAE 8 (3/4-16 UNF)
with o-ring seal	50 / 36.9	30 / 22.1	50 / 36.9
METRIC (ISO 262)	M18 x 1.5	M18 x 1.5	M18 x 1.5 (M22x1.5*)
with o-ring seal	35 / 25.8	35 / 25.8	35 / 25.8 (50 / 36.9*)
with copper washer	40 / 29.5	40 / 29.5	40 / 29.5 (50 / 36.9*)
with steel washer	40 / 29.5	40 / 29.5	40 / 29.5 (50 / 36.9*)

NOTE (*) - Only for series circuit.



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