



PLS₁₆

SECTIONAL PROPORTIONAL
LOAD-SENSING VALVE



DLS16

Features

Simple, compact and heavy duty designed sectional valves from 1 to 10 sections, for systems with fixed displacement pumps (open centre version) or variable displacement pumps with Load-Sensing compensator (closed centre version).

Load-independent flow control.

Fitted with a main pressure relief valve and a load check valve on every working section.

Diameter 20 mm - 0.79 in interchangeable spools.

A wide variety of ports service valves.

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	<i>Stand by 14 bar / 200 psi</i>	140 l/min	
Operating pressure (maximum)		315 bar	4600 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	from 15 to 75 cSt
	<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	
Tie rod tightening torque		40 Nm	29.6 lbft

NOTE - For different conditions please contact Customer Service.

Additional information

This catalog shows the product in the most usual configurations.

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

WARNING!

All specifications of this catalog refers to the standard product at this date.

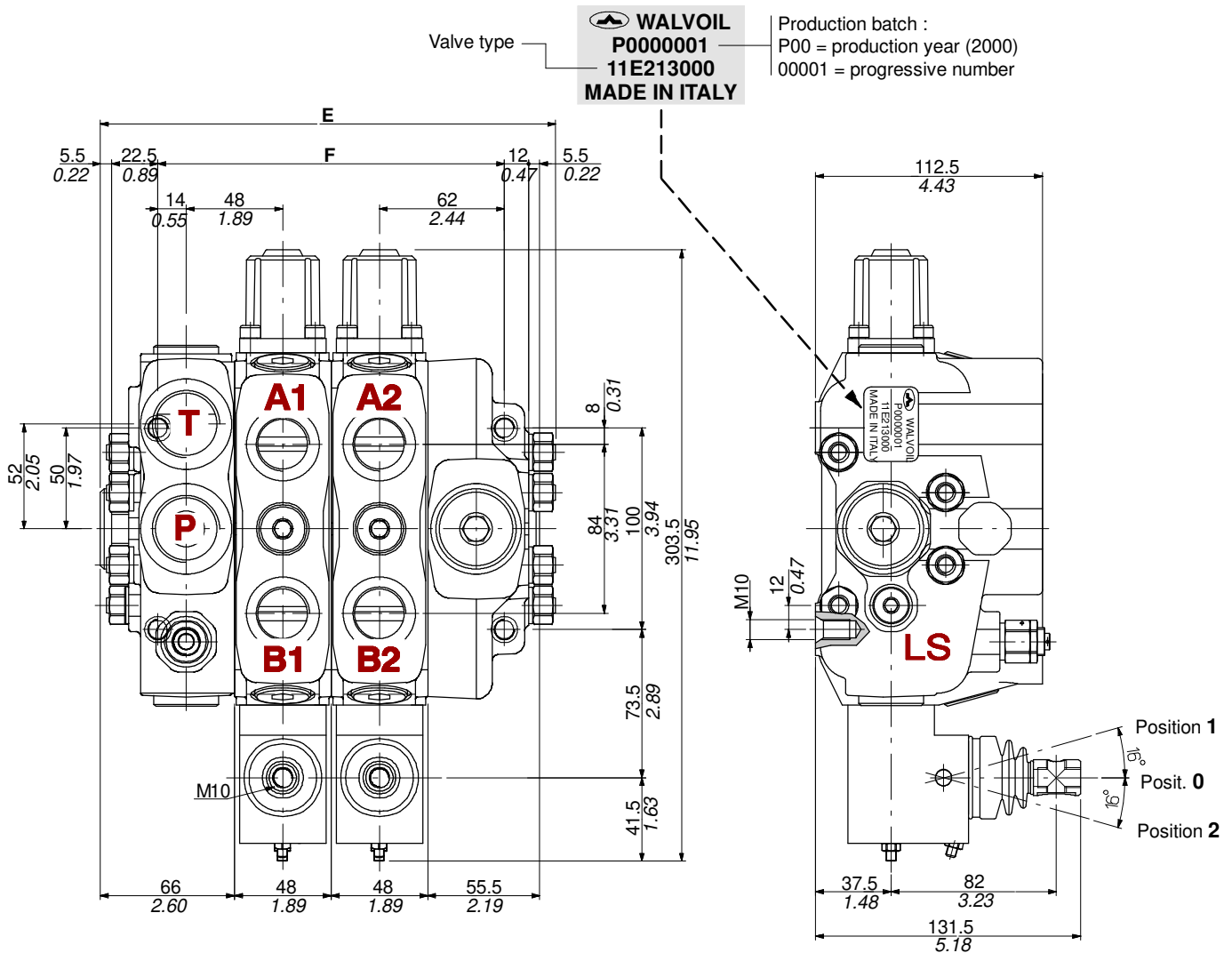
Walvoil, oriented to a continuous improvement, reserves the right to discontinue, modify or revise the specifications, without notice.

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

2nd edition November 2000:

This edition supercedes all prior documents.

Dimensional data (with inlet compensator)



TYPE	E		F		Weight	
	mm	in	mm	in	kg	lb
DLS16/1	177.5	6.99	124	4.88	14.2	31.3
DLS16/2	225.5	8.88	172	6.77	20.3	44.8
DLS16/3	273.5	10.77	220	8.66	26.4	58.2
DLS16/4	321.5	12.66	268	10.55	32.5	71.6
DLS16/5	369.5	14.55	316	12.44	38.7	85.3

TYPE	E		F		Weight	
	mm	in	mm	in	kg	lb
DLS16/6	417.5	16.44	364	14.33	44.8	98.8
DLS16/7	465.5	18.33	412	16.22	50.9	112.2
DLS16/8	513.5	20.22	460	18.11	57	125.7
DLS16/9	561.5	22.11	508	20	63.1	139.1
DLS16/10	609.5	24.00	556	21.90	69.2	152.6

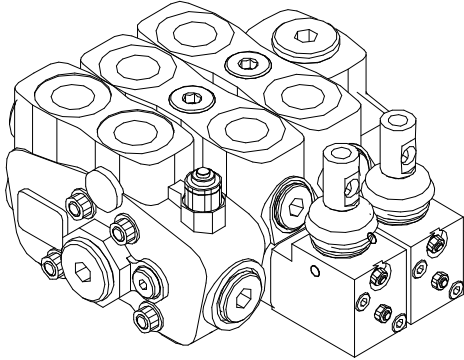
Standard threads

PORTS	BSP (ISO 228/1)	UN-UNF (ISO 11926-1)
Inlet P - Outlet T	G 1	1 5/16-12 UN-2B (SAE 16)
A and B ports	G 3/4	1 1/16-12 UN-2B (SAE 12)
Load sensing LS	G 1/4	9/16-18 UNF-2B (SAE 6)
PILOT PORTS		
Pneumatic	NPTF 1/8-27	NPTF 1/8-27
Hydraulic	G 1/4	9/16-18 UNF-2B (SAE 6)

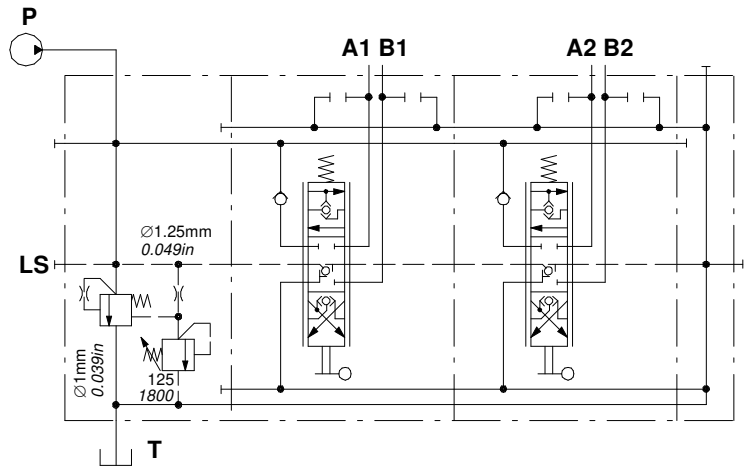
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Hydraulic circuit

Fixed displacement pump (open centre)

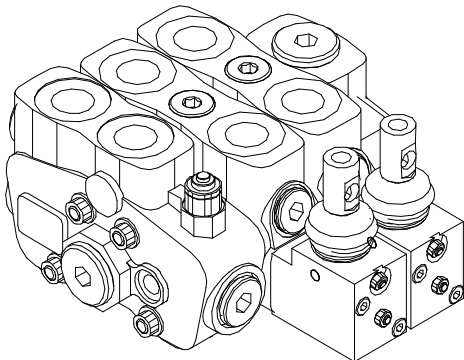


Ex.: DLS16/2/AM(G3-125)/6Z8LFG/6Z8LFG/RF

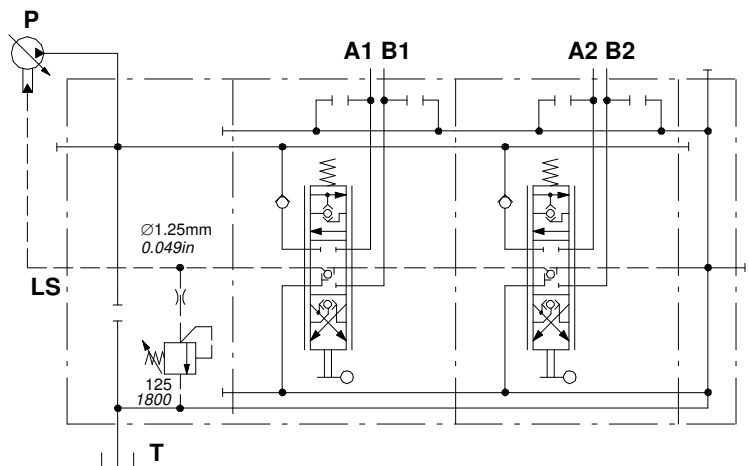


Variable displacement pump with load-sensing compensator (closed centre)

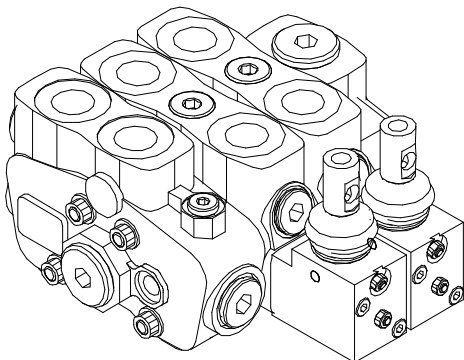
With main relief valve



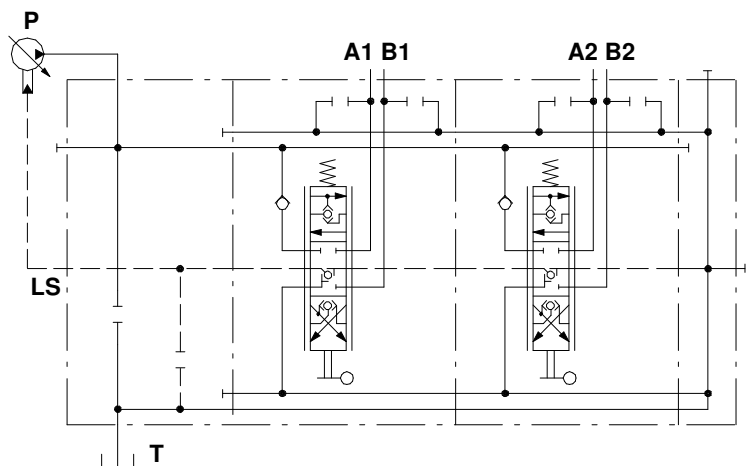
Ex.: DLS16/2/AN(G3-125)/6Z8LFG/6Z8LFG/RF



Without main relief valve



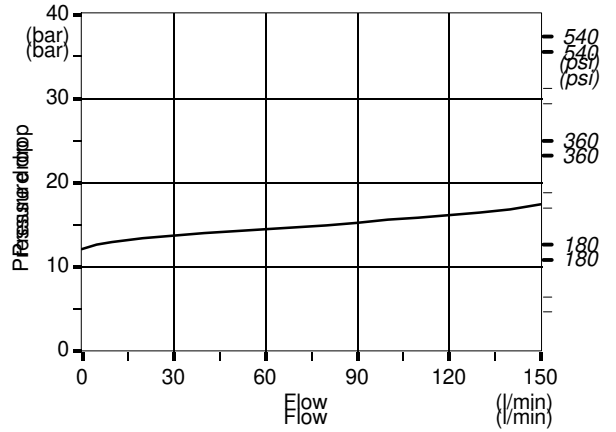
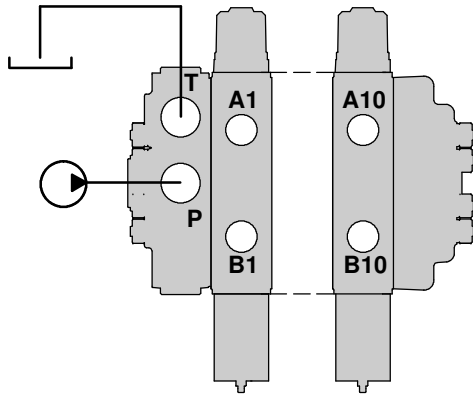
Ex.: DLS16/2/AP(SV)/6Z8LFG/6Z8LFG/RF



Performance data (pressure drop vs. flow)

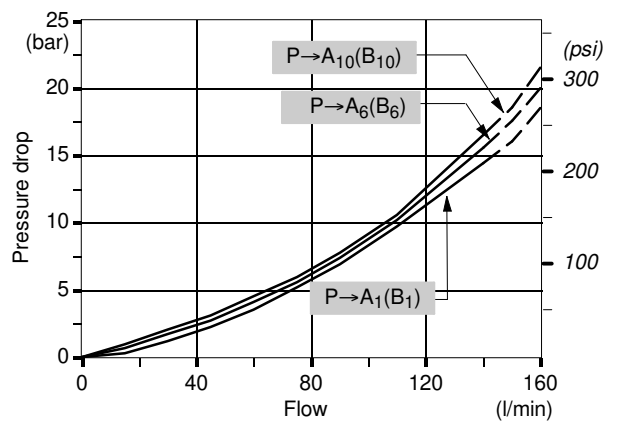
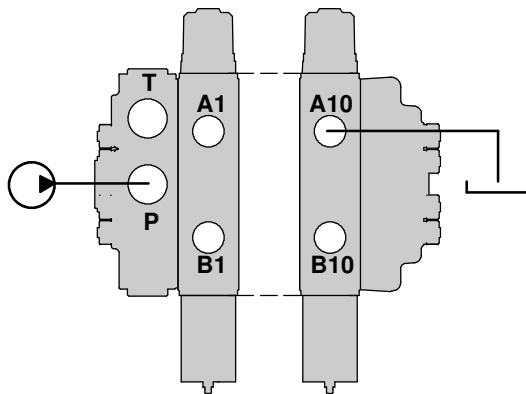
Open centre

From top inlet to top outlet.



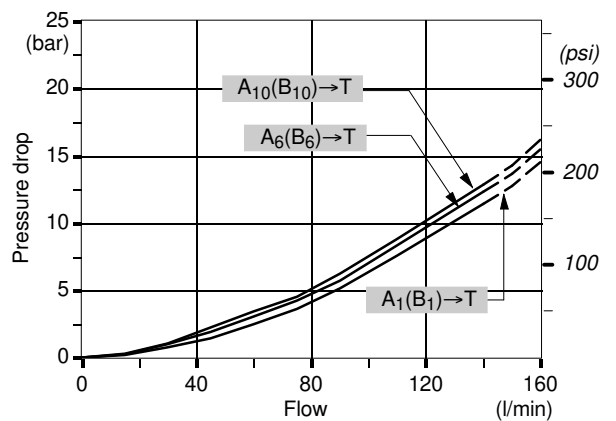
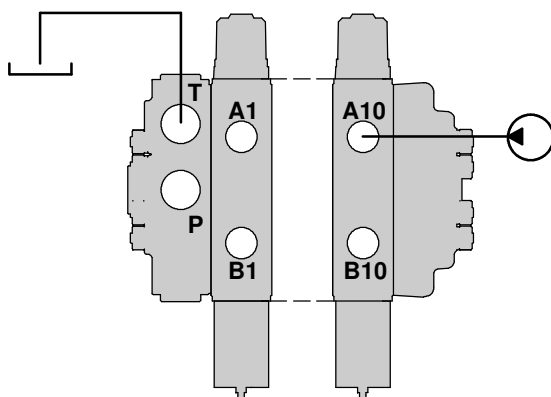
Inlet to work port

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

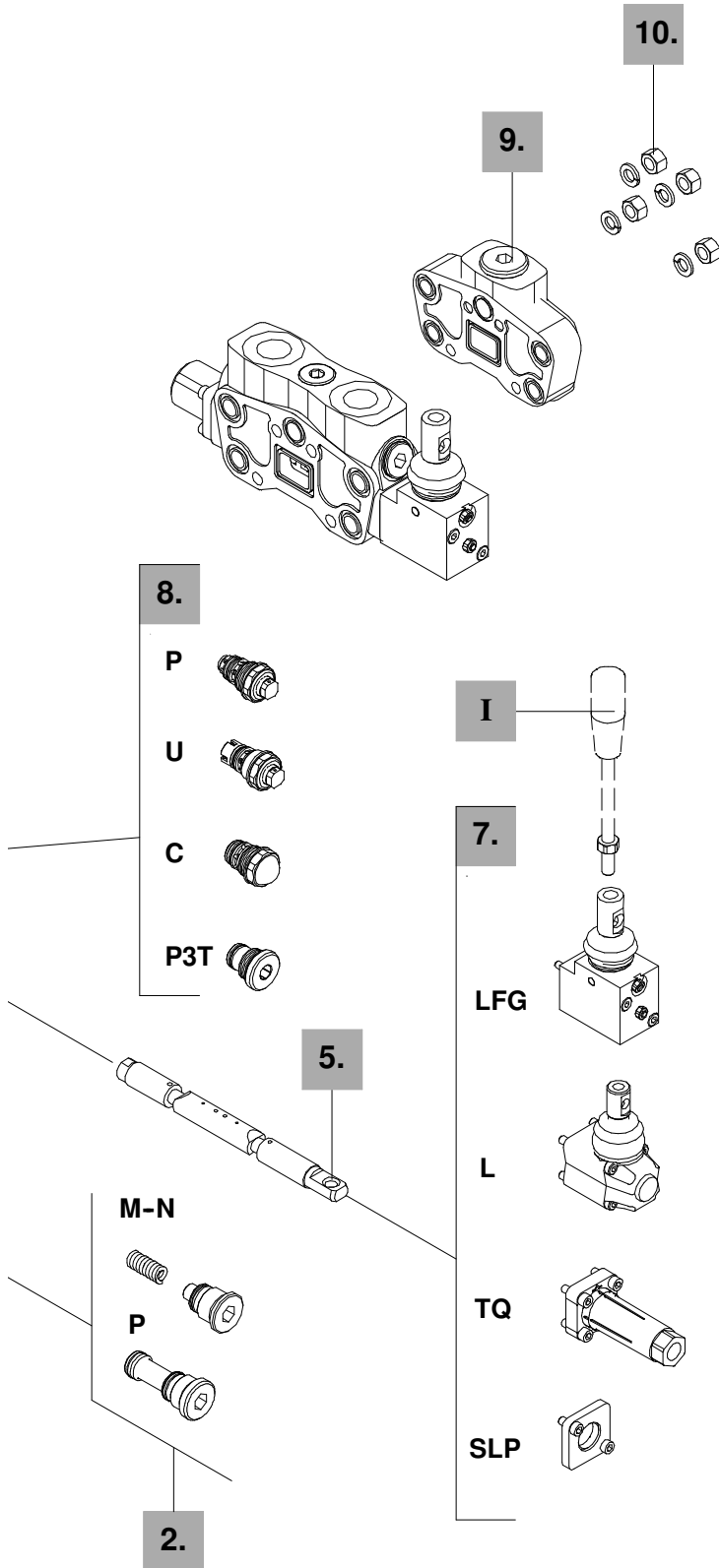


Work port to outlet

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



NOTE - Measured with spool type 6N.



6. "A" side spool positioners

TYPE	CODE	DESCRIPTION
7FT	5V07210100	With friction
8	5V08210000	With spring return in neutral position
11BMC	5V11210010	With detent in position 1 and 2, spring return in neutral position

7. "B" side options

TYPE	CODE	DESCRIPTION
LFG	5LEV110700	Lever with stroke limiters
L	5LEV110000	Lever
SLP	5COP108000	Without lever, with dust proof plate
TQ	5TEL110110	CD cable connection

8. Port relief options

TYPE	CODE	DESCRIPTION
<u>Anti-shock valve</u>		
P(G2-63)	XCAR216115	Range 63 to 125 bar / from 900 to 1800 psi standard setting 63 bar / 900 psi
P(G3-100)	XCAR216116	Range 100 to 2500 bar / from 1450 to 3600 psi standard setting 100 bar / 1450 psi
P(G4-200)	XCAR216117	Range 200 to 315 bar / from 2900 to 4600 psi standard setting 200 bar / 290 psi
<u>Anti-shock and anti-cavitation valve</u>		
U(G2-63)	XCAR316112	Range 63 to 125 bar / from 900 to 1800 psi standard setting 63 bar / 900 psi
U(G2-100)	XCAR316113	Range 100 to 2500 bar / from 1450 to 3600 psi standard setting 100 bar / 1450 psi
U(G2-200)	XCAR316114	Range 200 to 315 bar / from 2900 to 4600 psi standard setting 200 bar / 2900 psi
Standard setting is referred to 10 l/min		
C	3XCAR416100	Anti-cavitation
P3T	3XTAP528360	A and B ports valve blanking plugs

9. Return cover *

TYPE	CODE	DESCRIPTION
RF	61E431000	Standard

10. Assembling kit

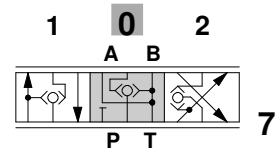
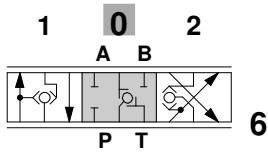
CODE	DESCRIPTION
5TIR110170	tie rods with nuts for 1 sections
5TIR110218	tie rods with nuts for 2 sections
5TIR110266	tie rods with nuts for 3 sections
5TIR110316	tie rods with nuts for 4 sections
5TIR110368	tie rods with nuts for 5 sections
5TIR110410	tie rods with nuts for 6 sections
5TIR110458	tie rods with nuts for 7 sections
5TIR110506	tie rods with nuts for 8 sections
5TIR110554	tie rods with nuts for 9 sections
5TIR110602	tie rods with nuts for 10 sections

I Optional handle lever

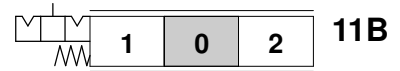
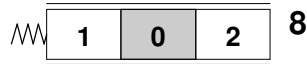
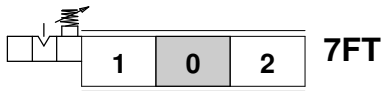
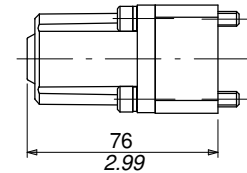
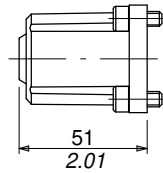
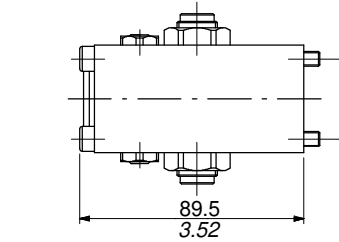
TYPE	CODE	DESCRIPTION
AL01/M10x200	170012020	For LFG and L lever boxes Length = 200mm/7.87in

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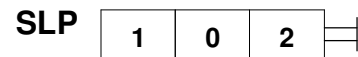
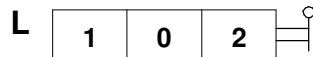
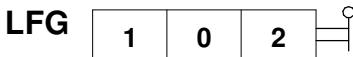
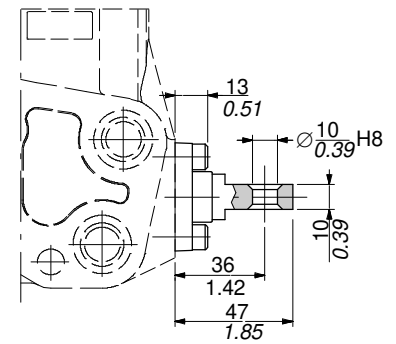
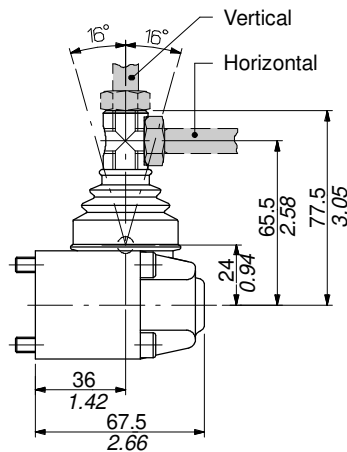
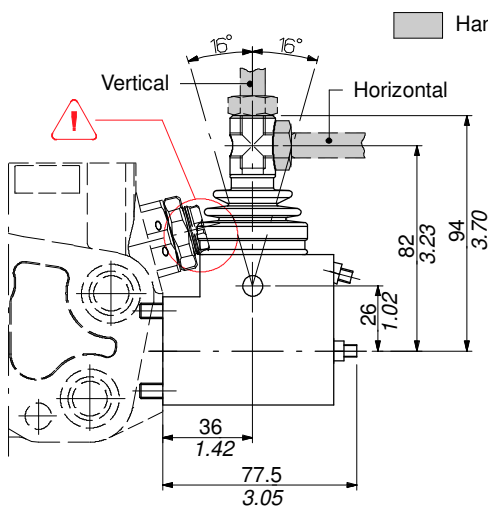
Spools options



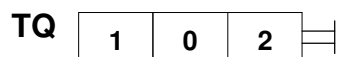
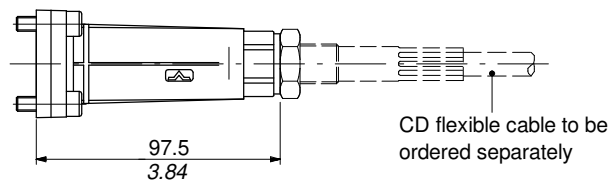
"A" side spool positioners



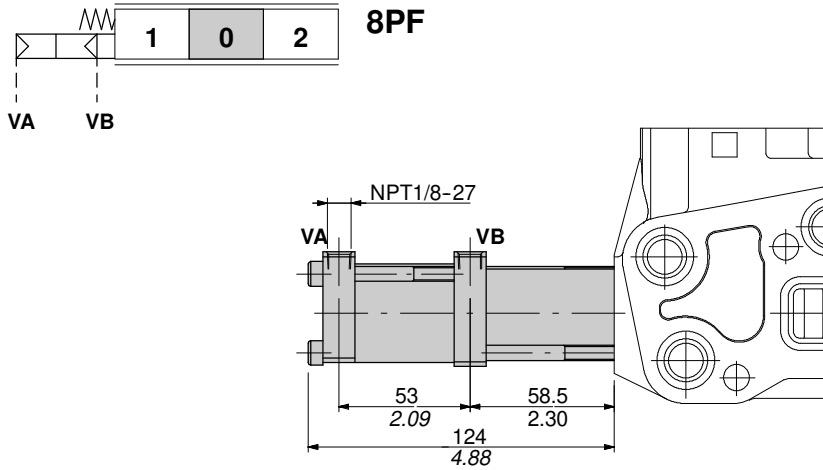
"B" side options



NOTE (⚠)- Due to space reason, in order to assemble ports service valves the lever pivot box must be turned 180° (LFG180 configuration)



Proportional pneumatic "A" side spool positioner



Ex.: EL DLS16 - 6Z 8PF....

Spool control kit: code 5V08110705

Standard spool

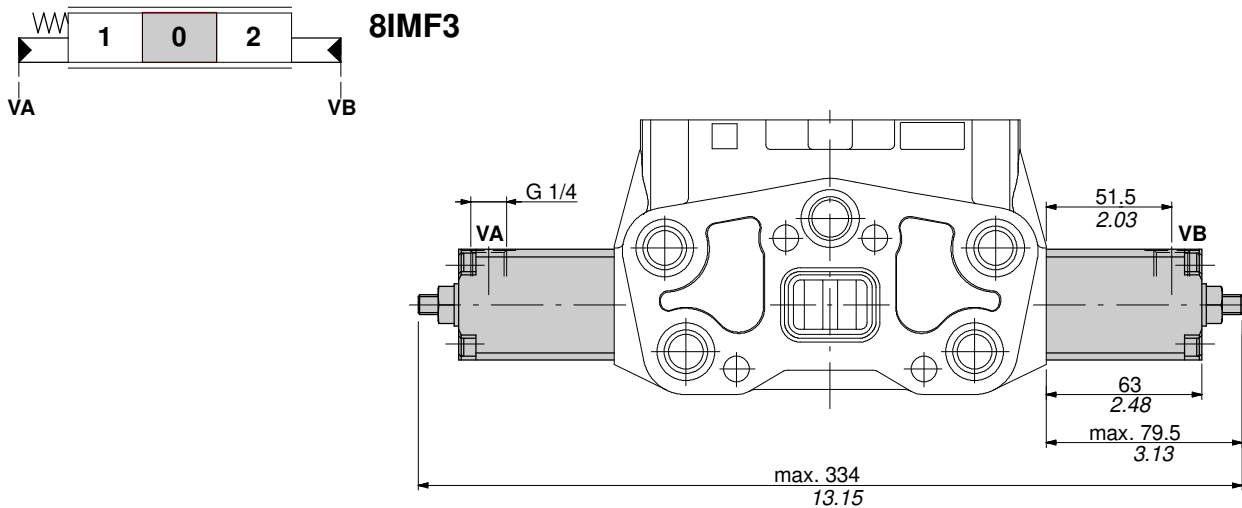
Special working section kit: code 5EL516300B
(standard body)

Operating features

Adjustment range : from 2 to 6 bar / from 29 to 87 psi

Max. pilot pressure : 10 bar / 145 psi

Proportional hydraulic spool control



Ex.: EL DLS16 - 6ZM 8IMF3

Spool control kit: code 5IDR216103

Special spools:

type 6VM code 3CU3550120

type 6ZM code 3CU3550140

Special working section kit: code 5EL516300A
(standard body)

Operating features

Adjustment range : from 6 to 16.3 bar / 87 to 236 psi
diagram 021

Max.pilot pressure : 50 bar / 725 psi

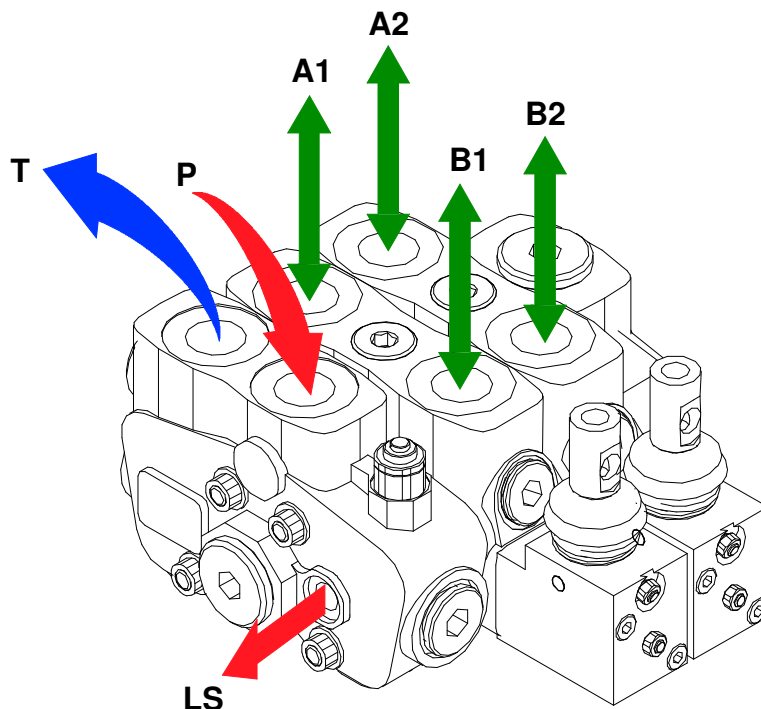
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Installation and maintenance

The DLS16 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 working section 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.



AN inlet cover configuration

Fitting tightening torque - Nm / lbft

THREAD TYPE	P and T ports	A and B ports	LS signal
BSP (ISO 228/1)	G 1	G 3/4	G 1/4
With O-Ring seal	100 / 73.7	70 / 51.6	20 / 14.7
With copper washer	90 / 66.3	70 / 51.6	25 / 18.4
With steel and rubber washer	100 / 73.7	70 / 51.6	16 / 11.8
UN-UNF (ISO 11926-1)	1 5/16-12 UN-2B (SAE 16)	1 1/16-12 UN-2B (SAE 12)	9/16-18 UNF-2B (SAE 6)
With O-Ring seal	150 / 110.6	95 / 70	30 / 22.1

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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