rexroth
A Bosch Company

4/3 Directional valve elements with manual lever operated control and with or without LS connections

L8_L1... (ED-LV)

RE 18301-08
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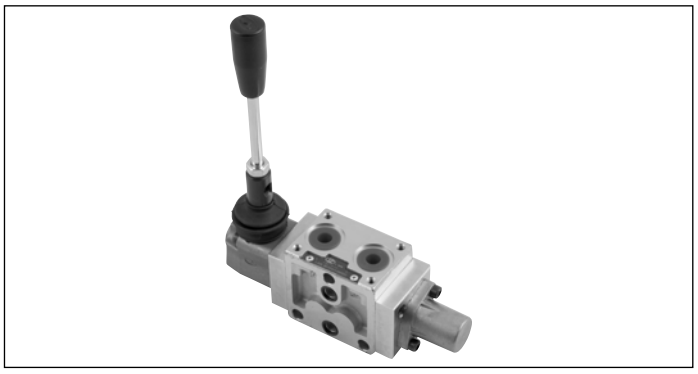
Replaces: 07.2012



Size 6
Series 00
Maximum operating pressure 310 bar (4500 psi)
Maximum flow 60 l/min (15.8 gpm)
Port connections G 3/8 - G 1/2 - SAE8

General specifications

Valve elements 4 ways 3 positions.
Control spools manual operated by hand lever.
Control spool with return spring or mechanical detent for all three positions.

Contents

Ordering details

01	02	03	04	05	06	07	08	09	10	
L	**8**		**L1**							**0**

Family

01	Directional Valve elements ED	**L**

Type

02	Size 6	**8**

Configuration

03	Standard	**0**
	With Load Sensing control	**4**

Operation type

04	Manual lever	**L1**

Spool variants

05	4/3 4 ways and 3 positions	**_2**

Flow pattern

06	Both meter in and out [1]	**S**

Nominal flow [2]

07	18 l/min (5.75 gpm)	**4** [3]
	40 l/min (10.6 gpm)	**8**

Side with the control lever

08	a side with handle aiming high (A and B direction)	**A0**
	a side with handle aiming low (opposite to A and B)	**A2**
	b side with handle aiming high (A and B direction)	**B0**
	b side with handle aiming low (opposite to A and B)	**B2**

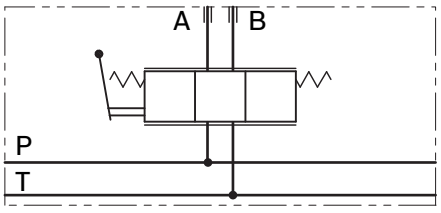
Manual lever control

09	With return spring	**M1**
	With mechanical detent for all three positions	**F1**

Ports

10	G 3/8 DIN 3852	**0**
	G 1/2 DIN 3852	**2**
	3/4-16 UNF 2-B (SAE8)	**3**

Symbols



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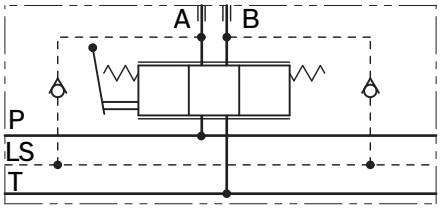

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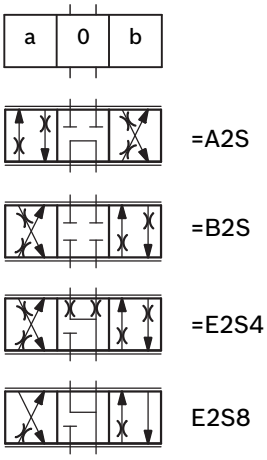
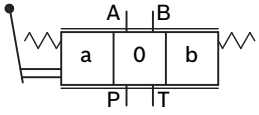
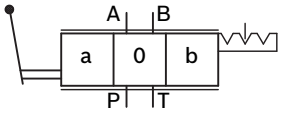
Spool variants



Side with the control lever



= _2S_A_M1_



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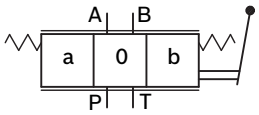

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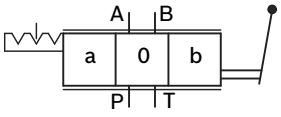
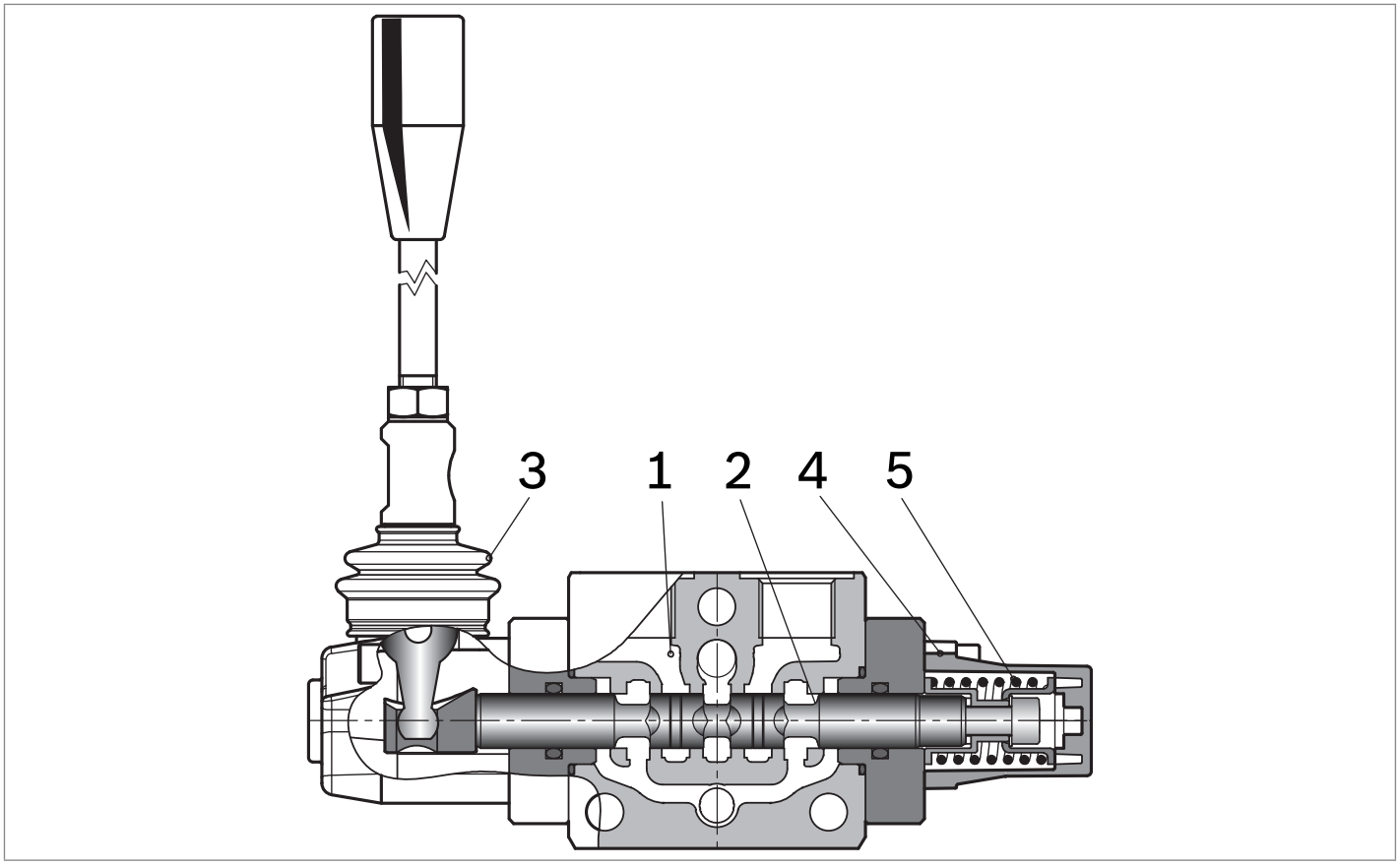


= _2S_B_F1_

1) Only meter in for E2S8 spool variant
2) With Δp (P > T) 10 bar (145 psi), corresponding approx. to Δp P>A,B 5 bar (73 psi).
3) Available only for B_, E_ spool variants.

Functional description



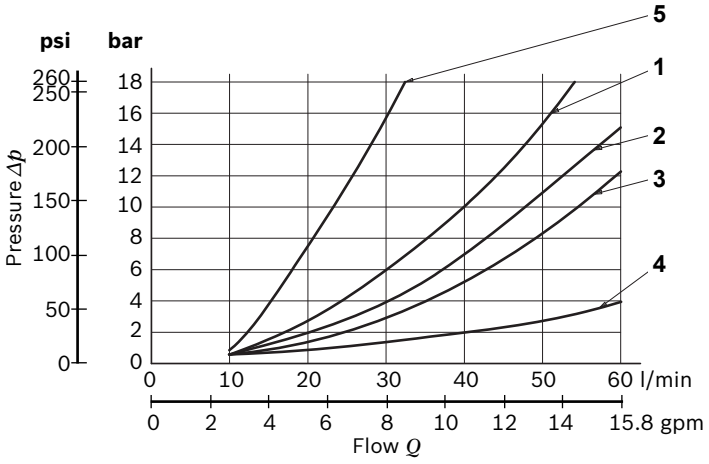
The sandwich plate design directional valve elements L8_1... are compact manual operated valves which control the start, the stop and the direction of the oil flow.
These elements basically consist of a stackable housing (**1**) with a control spool (**2**), a block with the control lever (**3**), and a spring housing (**4**) with a return spring (**5**).
The hand operated lever moves the control spool (**2**) from its neutral-central position “0” to the required position “a” or “b”, and the required flow from P to A (with B to T), or P to B (with A to T) is achieved.
Type L8_L1_2S_ __M100 is the valve version in which the return spring (**5**) brings the spool back to neutral-central position “0” when the manual lever is not operated.
The valve is available with a choice of spool variants (refer to page 2).
Type L8_L1_2S_ __F100 is the valve version with mechanical detent in which the control spool (**2**) stays in anyone of the 3 achieved positions “0”, “a” or “b” when the lever is left free. With this valve, the oil delivery can continue without any action on the lever.
Also this version is available with a choice of spool variants (refer to page 2).
Special types of control are available upon request.

Technical data

General		
Valve element weight	kg (lbs)	1.55 (3.42)
Mounting position	kg (lbs)	Unrestricted
Ambient Temperature	°C (°F)	–20....+50 (-4....+122) (NBR seals)
Hydraulic		
Maximum pressure at P, A and B ports	bar (psi)	310 (4500)
Maximum pressure at T	bar (psi)	160 (2320)
Maximum inlet flow	l/min (gpm)	60 (15.9)
Nominal flow with DP P>T = 10 bar (145 psi)	l/min (gpm)	10, 20, 30 (2.64, 5.28, 7.9)
Hydraulic fluid General properties: it must have physical lubricating and chemical properties suitable for use in hydraulic systems such as, for example:		Mineral oil based hydraulic fluids HL (DIN 51524 part 1). Mineral oil based hydraulic fluids HLP (DIN 51524 part 2). For use of environmentally acceptable fluids (vegetable or polyglycol base) please consult us.
Fluid Temperature	°C (°F)	–20....+80 (-4....+176) (NBR seals)
Permissible degree of fluid contamination		ISO 4572: $\beta_x \geq 75$ X=12...15 ISO 4406: class 20/15/15 NAS 1638: class 9
Viscosity range	mm^2/s	5....420

Note
For applications with different specifications consult us

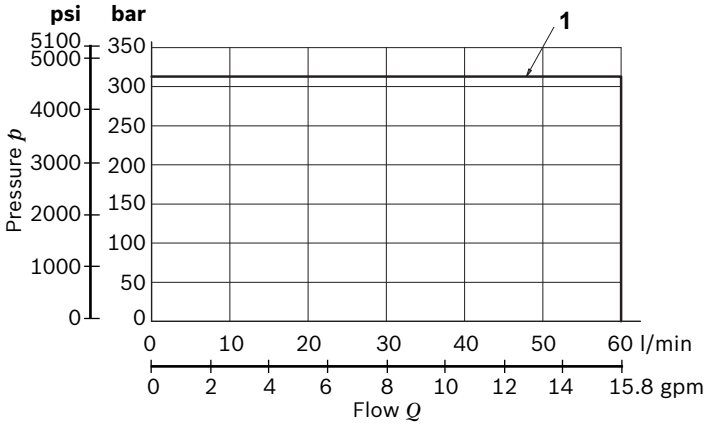
Characteristic curves



Spool Variant	Curve no.				
	P>A	P>B	A>T	B>T	P>T
B2S8, E2S8	2	2	4	4	-
A2S8	3	3	3	3	1
B2S4, E2S4	1	1	5	5	-

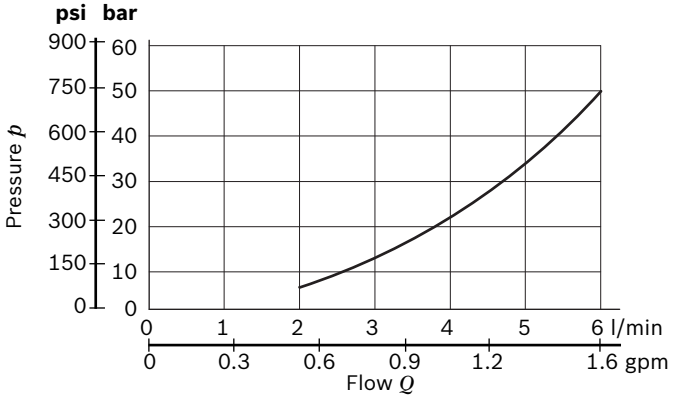
Measured with hydraulic fluid ISO-VG32 at 45° ±5 °C (113° ±9 °F); ambient temperature 20 °C (68 °F).

Performance limits

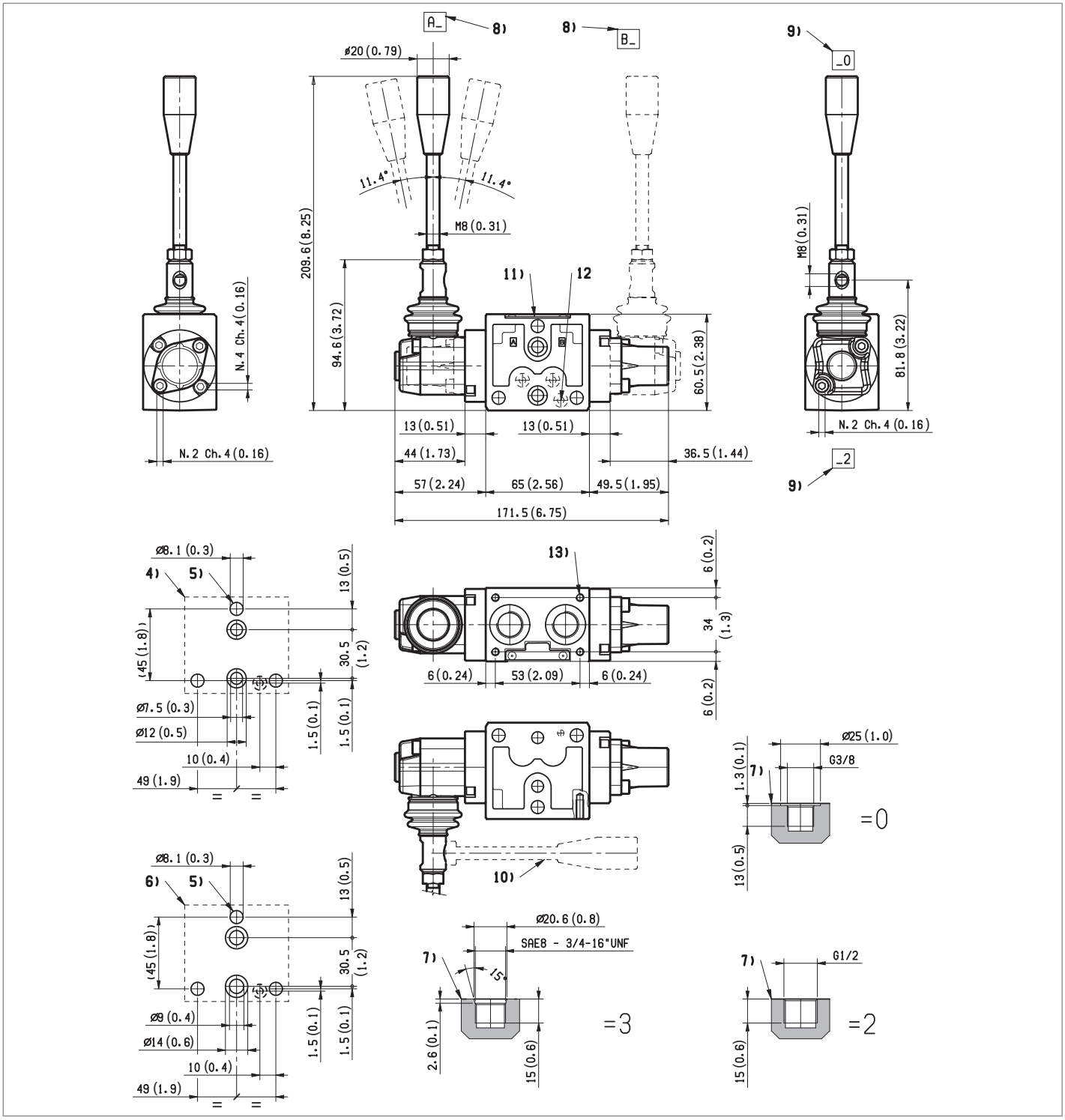


Spool Variant	Curve no.
A2S8, B2S8, E2S8, B2S4, E2S4	1

Minimum flow for efficiency of LS control



External dimensions and fittings



4 Flange specifications for coupling to ED intermediate elements with ports G 3/8.
5 For tie rod and tightening torque information see data sheet RE 18301-90.
6 Flange specifications for coupling to ED intermediate elements with ports G 1/2 (SAE 8).
7 A and B ports.
8 Side with the control lever (Standard is side A).
9 Hand lever orientation.
10 Hand lever orientation for packing and shipment.
11 Identification label.
12 LS channel (only for versions L84...).
13 Four threaded holes for fitting a secondary flangeable elements:
- M5 holes on versions with ports G 3/8.
- M6 holes on versions with ports SAE 8.
- Without when the ports is G 1/2.

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