4/3 Directional valve elements with proportional control and with or without LS connections

L8_P5... (ED-IP)

RE 18301-07
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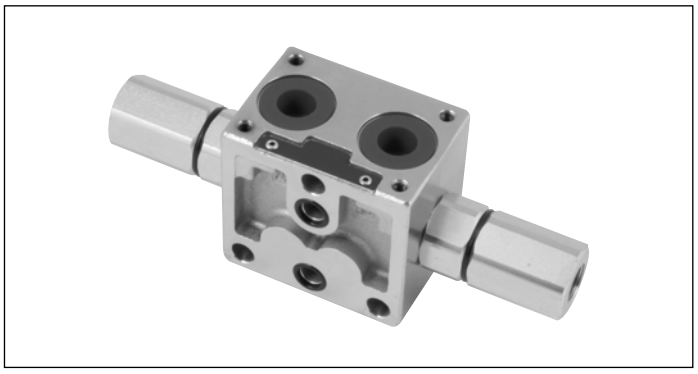
Replaces: 07.2012



Size 6
Series 00
Maximum operating pressure 310 bar (4500 psi)
Maximum flow 45 l/min (11.9v gpm)
Port connections G 3/8 - G 1/2 - SAE6 - SAE8

General specifications

Valve element 4 ways, 3 positions.
Hydraulically direct operated spool.
Hydraulic operating element bolted on.
Hydraulic operating element available with inlet port: G1/4 DIN 3852; 9/16-18 UNF 2-B.
The control spool is held in the central position by return springs.

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Ordering details

01	02	03	04	05	06	07	08		09	
L	**8**		**P5**				**00**	**00**		**0**

Family

01	Directional Valve elements ED	**L**

Type

02	Size 6 proportional	**8**

Configuration

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

Operation type

04	Direct hydraulic proportional	**P5**

Spool variants

05	4/3 operated both sides a and b; P – T closed in neutral	**B2**
	4/3 operated on both sides a and b; A and B to T in neutral	**E2**

Flow pattern

06	Both meter in and out	**S**
	Meter in	**I**

Nominal flow [1)]

07	10 l/min (2.64 gpm)	**2**
	20 l/min (5.28 gpm)	**4**
	30 l/min (7.9 gpm)	**6**

Hydraulic control pressure

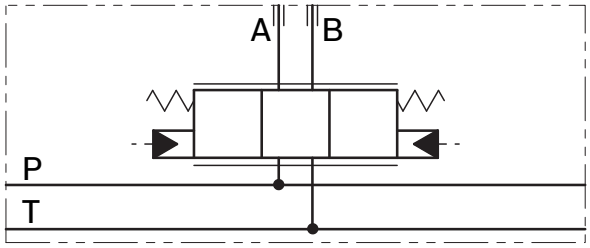
08	10-21 bar (145-305 psi)	**00**

Ports

09	G 3/8 DIN 3852	**0**
	9/16-18 UNF 2-B (SAE6)	**1**
	G 1/2 DIN 3852	**2**
	3/4-16 UNF 2-B (SAE8)	**3**

1) With Δp (P > T) 10 bar (145 psi), corresponding approx. to Δp P>A,B 5 bar (73 psi).

Symbols



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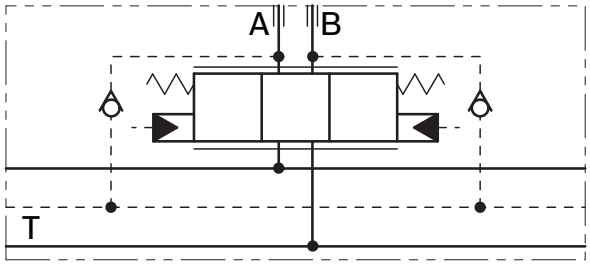
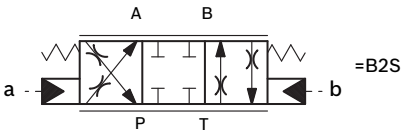
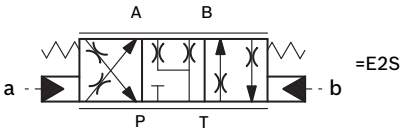


= 4

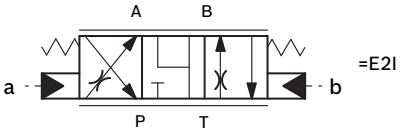
Spool variants



=B2S



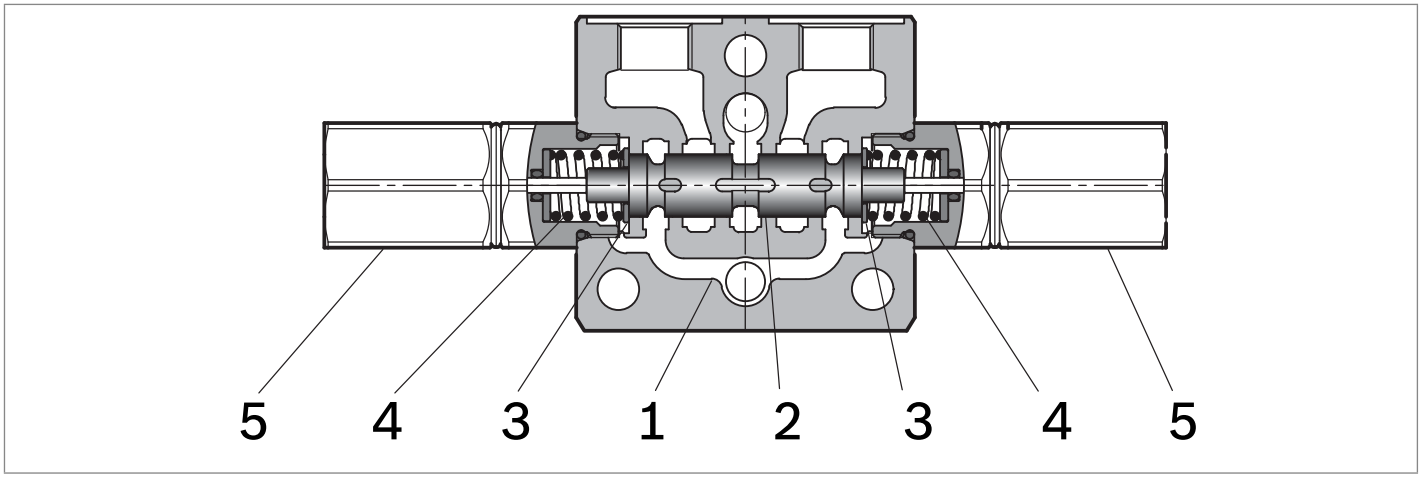
=E2S



=E2I

In neutal position, the valves cross section are as follows:
E_I ≥ 20% of nominal cross section.
E_S ≥ 2% of nominal cross section.

Functional description



The sandwich plate design directional valve elements L8_ P5... are compact direct hydraulic 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**), two hydraulic operating blocks (**5**), and two return springs (**4**).

The hydraulic pressure in one of the blocks (**5**) pushes the control spool (**2**) from its neutral-central position “0” to the required end 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. When pressure is removed from either one of blocks (**5**), the return spring (4) pushes the spool thrust washer (**3**) back against the housing and the spool returns in its neutral-central position “0”.

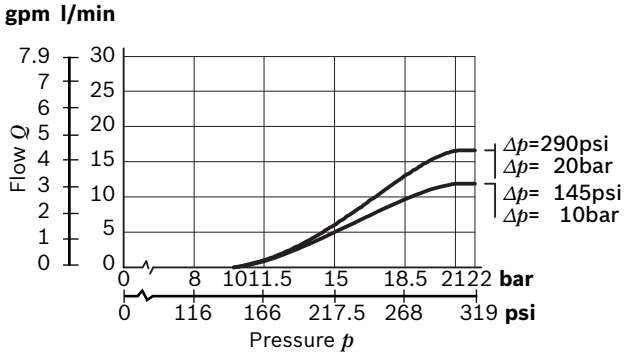
Technical data

General		
Valve element with 2 hydraulic controls	kg (lbs)	1.23 (2.71)
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 to prevent damages	bar (psi)	100 (1450)
Reccomended maximum pressure at T during operation	bar (psi)	10 (145)
Max. pilot pressure	bar (psi)	35 (508)
Min. pilot pressure	bar (psi)	refer to page 4
Maximum inlet flow	l/min (gpm)	45 (11.9)
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=10...12 ISO 4406: class 19/17/14 NAS 1638: class 8
Viscosity range	mm^2/s	20....380 (optimal 30....46)

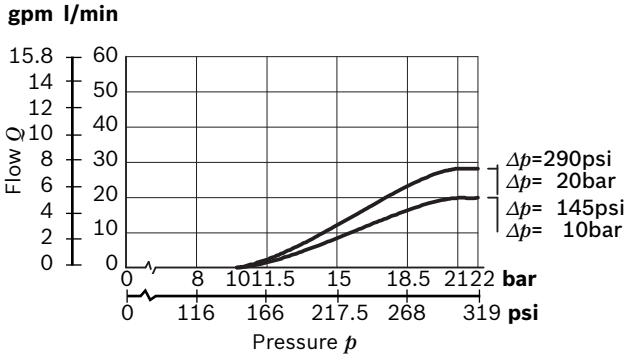
Note
For applications with different specifications consult us

Characteristic curves

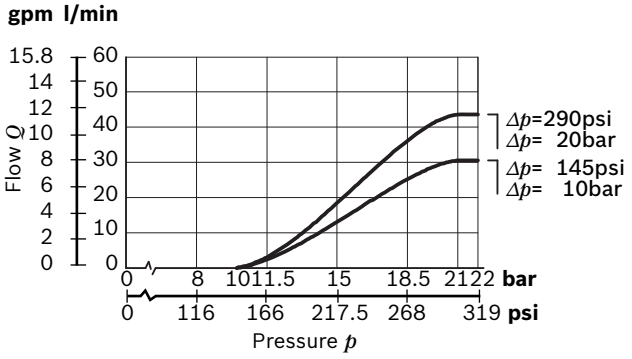
Ordering code S2: 10 l/min (2.64 gpm).

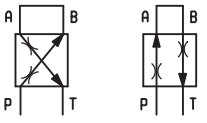


Ordering code S4: 20 l/min (5.28 gpm).



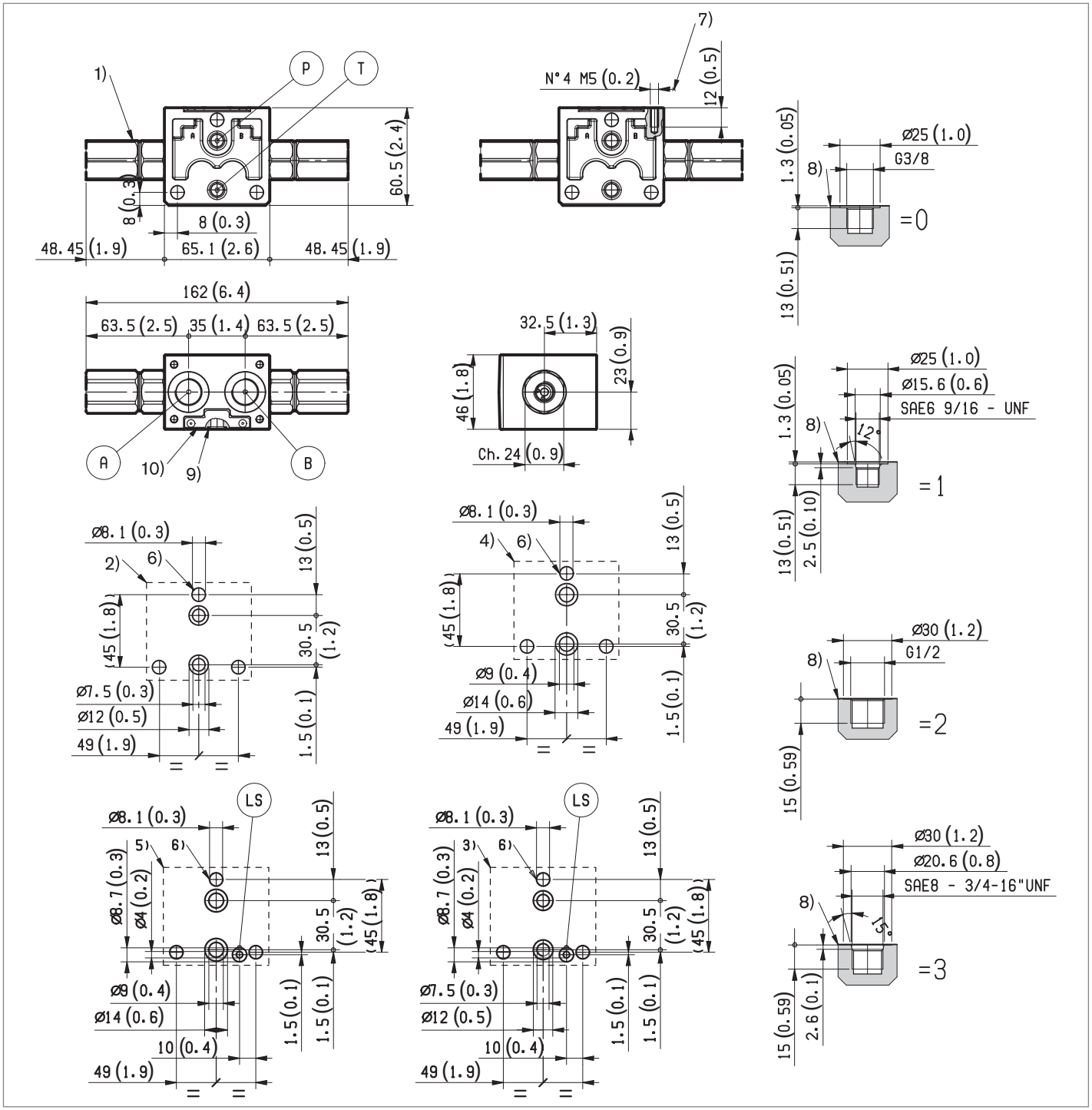
Ordering code S6: 30 l/min (7.92 gpm).





The performance curves are measured with flow going across and coming back, like P>A and B>T, with symmetrical flow areas and with back-pressure in T ≤ 10 bar (145 psi).

External dimensions and fittings



1 Hydraulic operating element available with inlet port: G1/4 DIN 3852; 9/16-18 UNF 2-B (SAE 6).
2 Flange specifications for coupling to ED intermediate elements with ports G 3/8 and SAE 6.
3 Flange specifications for coupling to ED intermediate elements with LS channels and with ports G 3/8 and SAE 6.
4 Flange specifications for coupling to ED intermediate elements with ports G 1/2 and SAE 8.
5 Flange specifications for coupling to ED intermediate elements with LS channels with and ports G 3/8 and SAE 6.
6 For tie rod and tightening torque information see data sheet RE 18301-90.
7 Four threaded holes M5 for fitting a secondary flangeable element (only for elements with ports G 3/8 and SAE 6).
For screws and tightening torques see data sheet RE 18301-90.
8 A and B ports.
9 O-Rings for P and T ports.
10 Identification label.

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