

RA 18301-08/10.11

1/8

4/3 4/2 Directional valve elements with manual lever operated control and with or without LS connections

L8_L1... (ED-LV)



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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.

Ordering Details



* Additional ports on request.

** With ∆p (P>T) 10bar [145 psi].

Configurations



Spool variant



Side with the control lever



Principles of operation, cross section

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_2S8__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 3)

Type L8_L1_2S8_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 3).

Special types of control are available upon request.



Technical Data (for applications with different specifications consult us)

General

| Valve element weight | kg (lbs) | 1.55 (3.42) |
|----------------------|----------|-----------------------------|
| Mounting position | | 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) |
| 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: β _x ≥75 X=1215 ISO 4406: class 20/18/15 NAS 1638: class 9 |
| Viscosity range | mm²/s | 5420 |

| Element with return spring | N (lbs) | 50 (10.3) |
|--------------------------------|---------|-----------|
| Element with mechanical detent | N (lbs) | 25 (5.2) |

Characteristic curves

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



| Sneel Verient | Curve No. | | | | |
|---------------|-----------|-------|-------|-------|-------|
| Spool variant | P > A | P > B | A > T | B > T | P > T |
| B2S8, E2S8 | 2 | 2 | 4 | 4 | |
| A2S8 | 3 | 3 | 3 | 3 | 1 |

Performances limits



| Spool Variant | Curve No. |
|------------------|-----------|
| A2S8, B2S8, E2S8 | 1 |

Minimum flow for efficiency of LS control



External Dimensions and Fittings



- 1 Fitting of block with the control lever: 2 screws M5, 35 mm long, torque 5–6 Nm (3.6–4.4 ft-lb).
- 2 Cap for hand lever: 2 screws M5, 14 mm long, torque 5–6 Nm (3.6–4.4 ft-lb).
- 3 Four screws M5, 14 mm long, torque 5-6 Nm (3.6-4.4 ft-lb).
- 4 Flange specifications for coupling to ED intermediate elements with ports G 3/8
- 5 Three through holes for coupling of the ED Directional Valve Elements. Recommended tie rods M8 with strength class DIN 8.8. Torque 20–22 Nm (14.7–16.2 ft-lb).
- 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...)
- Four threaded holes for fitting a secondary flangeable elements:
 M5 holes on versions with ports G 3/8
 - M6 holes on versions with ports G 1/2 (SAE 8)

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