



Hand Operated Directional Control Valves

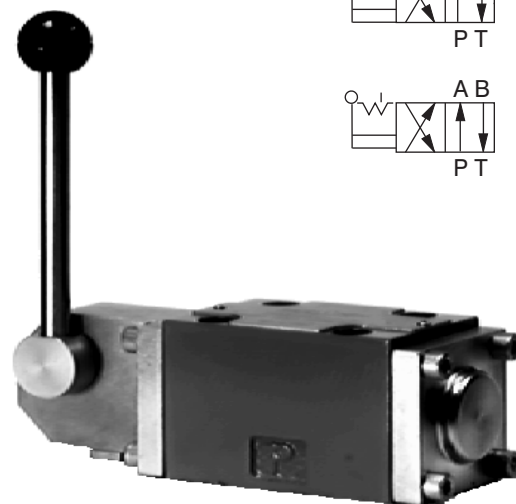
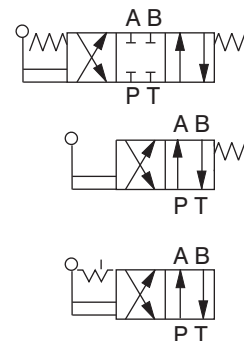
RPR3-06

**HA 4004
1/2008**

Size 06 • p_{max} up to 320 bar • Q_{max} up to 80 L/min

Replaces
HA 4004 11/2006

- 4/3 and 4/2 way spool type directional control valves
- Hand-lever operated
- Actuating section can be rotated in four positions 90° apart
- Installation dimensions to DIN 24 340 / ISO 4401 / CETOP RP121-H

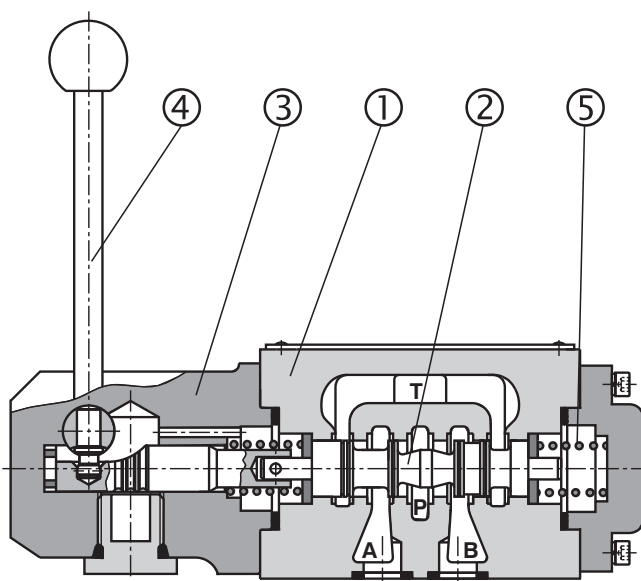


Functional Description

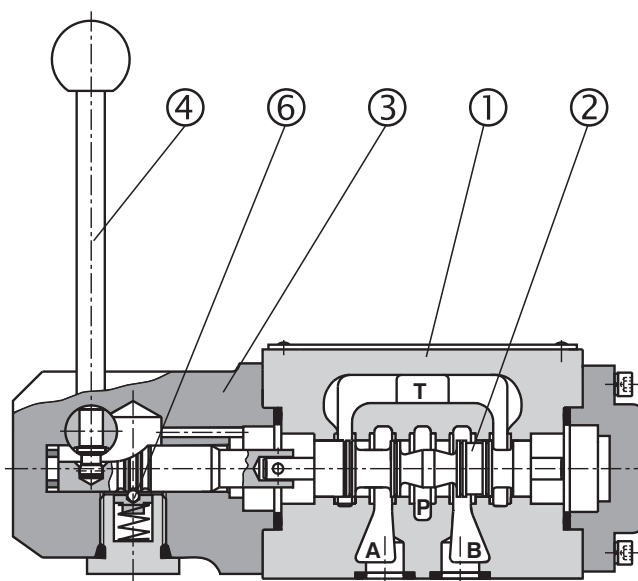
The hand operated directional control valves are used mainly to control start, stop and direction of fluid. The valves consist of housing (1) with control spool (2) and the actuating section (3). The actuating section consists either of the hand lever (4) and of one or two return spring (5), or of the hand lever (4) and the detent assembly (6). The detent assembly holds the spool in its last shifted position.

The directional control valves are being manufactured as two-position and three-position valves (see table with functional symbols).

The valve housing (1) is phosphate coated, the components of the actuating section (3) are zinc coated.



Type with return springs



Type with detent assembly

Ordering Code

RPR3-06 -

Hand Operated Directional Control Valve

Valve size

Number of valve positions

two positions

three positions

2

3

no designation

V

Seals

NBR

FPM (Viton)

Spool symbols

see the table Spool symbols

Technical Data

| | | |
|---|--|-----------------------------------|
| Valve size | mm | 06 |
| Maximum flow | L/min | 80 |
| Maximum operating pressure at ports P, A, B | bar | 320 |
| Maximum operating pressure at port T | bar | 100 |
| Pressure drop | bar | see Δp -Q characteristics |
| Hydraulic fluid | Hydraulic oils of power classes (HL, HLP) to DIN 51524 | |
| Fluid temperature range - NBR | °C | -30 ... +100 |
| Fluid temperature range - Viton | °C | -20 ... +120 |
| Viscosity range | mm ² /s | 20 ... 400 |
| Maximum degree of fluid contamination | Class 21/18/15 to ISO 4406 (1999) | |
| Operating force on lever | N | < 50 |
| Service life | cycles | 10 ⁶ |
| Weight | kg | 1.6 |
| Mounting position | optional | |

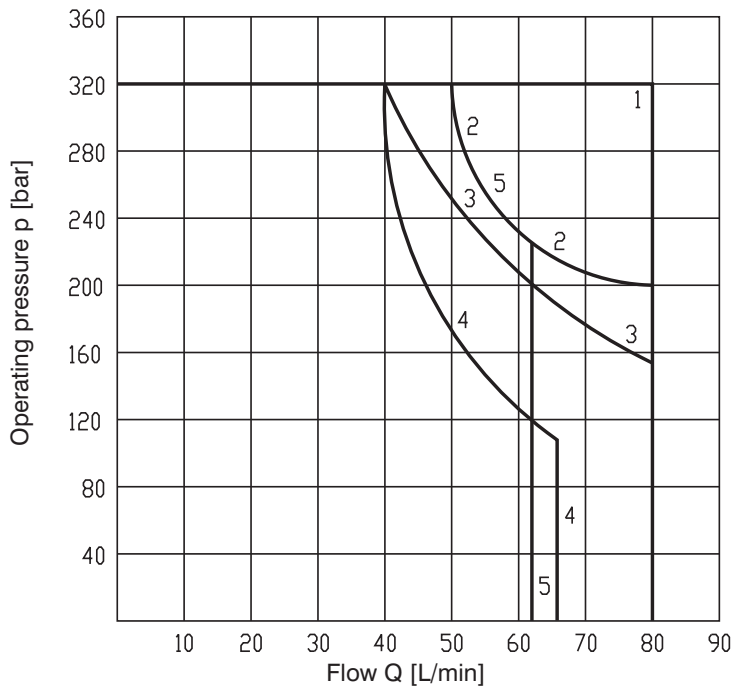
Spool Symbols

| Type | Symbol | Crossover | Type | Symbol | Crossover |
|------|--------|-----------|------|--------|-----------|
| Z11 | | | Y11 | | |
| Z15 | | | Y15 | | |
| C11 | | | B11 | | |
| C15 | | | B15 | | |
| H11 | | | R11 | | |
| H15 | | | J15 | | |
| P11 | | | A51 | | |
| P15 | | | J75 | | |

p-Q Characteristics

Measured at $v = 32 \text{ mm}^2/\text{s}$

Operating limits for maximum hydraulic power transferred by the directional valve.

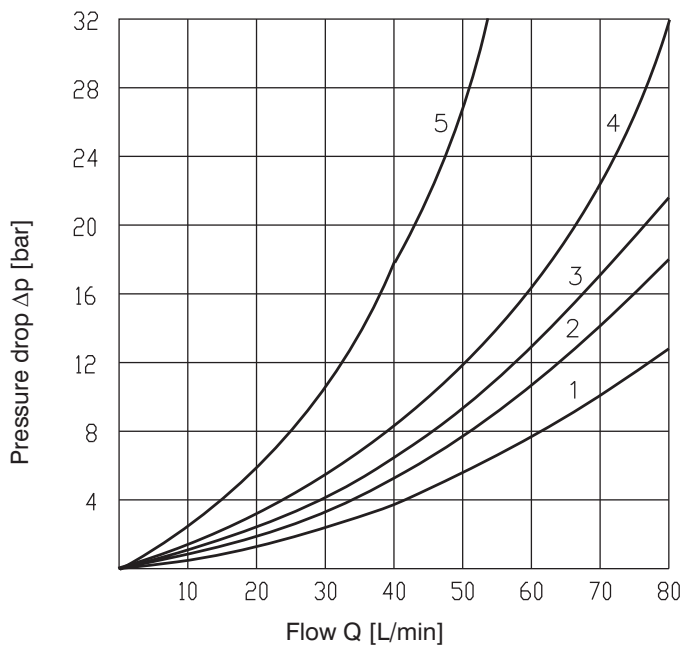


| | | | |
|-----|---|-----|---|
| Z11 | 1 | Z15 | 1 |
| C11 | 4 | C15 | 1 |
| H11 | 3 | H15 | 1 |
| P11 | 1 | P15 | 1 |
| Y11 | 2 | Y15 | 1 |
| B11 | 5 | B15 | 1 |
| R11 | 1 | J15 | 1 |
| A51 | 3 | J75 | 1 |

Δp -Q Characteristics

Measured at $v = 32 \text{ mm}^2/\text{s}$

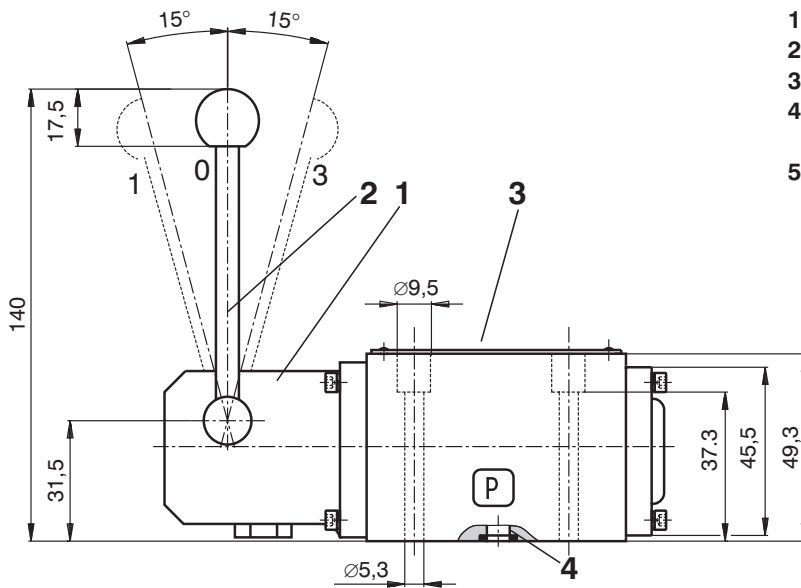
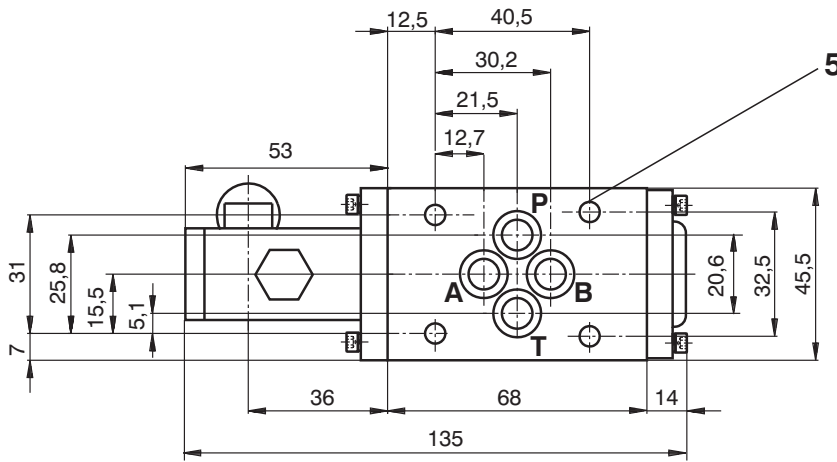
Pressure drop Δp related to flow rate.



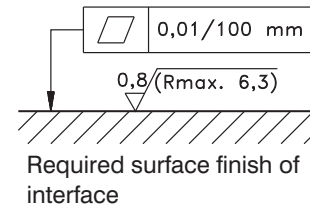
| | P-A | P-B | A-T | B-T | P-T |
|----------|-----|-----|-----|-----|-----|
| Z11, Z15 | 2 | 2 | 3 | 3 | |
| C11, C15 | 3 | 3 | 4 | 3 | 5 |
| H11, H15 | 2 | 2 | 2 | 2 | 3 |
| P11, P15 | 1 | 1 | 3 | 3 | |
| Y11, Y15 | 2 | 2 | 2 | 2 | |
| B11, B15 | 2 | 2 | 3 | 3 | |
| R11, J15 | 2 | 2 | 3 | 3 | |
| A51, J75 | 2 | 2 | | | |

Valve Dimensions

Dimensions in millimeters



- 1 Actuating section
- 2 Hand lever
- 3 Name plate
- 4 Square Ring (4 pcs.) 9.25 x 1.68 supplied with valve
- 5 4 mounting holes



Spare Parts

Seal kit

| Type | Dimensions, quantity | Ordering number |
|---------------------|----------------------|-----------------|
| O-ring - NBR90 | 22 x 2 (2 pcs.) | 483-9000 |
| Square ring - NBR70 | 9.25 x 1.68 (4 pcs.) | |
| O-ring - NBR70 | 11 x 1.5 (2 pcs.) | |
| O-ring - NBR70 | 11.3 x 2.4 (1 pc.) | |

Bolt kit (for Studs see HA 0030)

| Dimensions, quantity | Bolt torque | Ordering number |
|-------------------------------|-------------|-----------------|
| M5 x 45 DIN 912-10.9 (4 pcs.) | 8.9 Nm | 484-9958 |

Caution!

- Directional valves with other functional symbols as those shown in the table above can be delivered on request.
- The packing foil is recyclable.
- The protective plate can be returned to manufacturer.
- Mounting bolts M5x45 DIN 912-10.9 or studs must be ordered separately. Tightening torque is 8.9 Nm.
- The technical information regarding the product presented in this catalogue is for descriptive purposes only. It should not be construed in any case as a guaranteed representation of the product properties in the sense of the law.

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