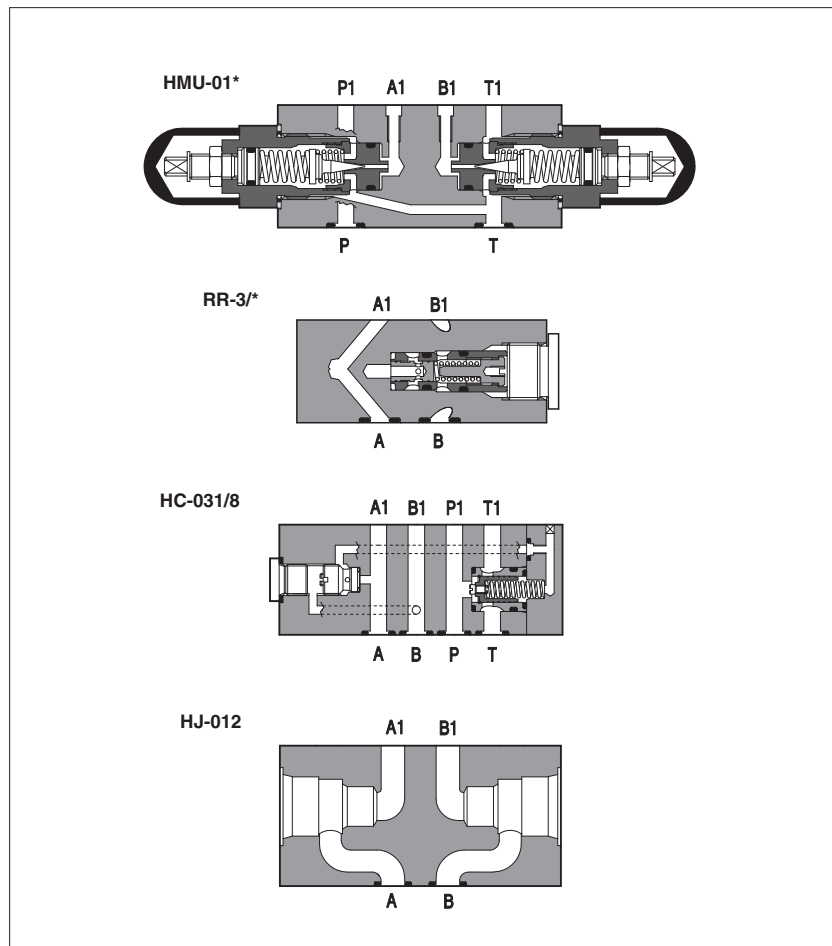


Modular valves HMU, RR-3/*, HC-031 and plates type HJ-012

pressure relief, pressure reducing, pressure compensator, modular plate for cartridge valves

Available only on request



HMU-01 are pressure relief valves in modular execution with ISO4401 size 06 mounting surface, specific for fine pressure control at low flow.

They are mainly used for piloting lines and as pilot stage for AGAM and ARAM pressure relief valves.

RR-3/* are 2 way pressure reducing valves in modular execution with ISO4401 size 06 mounting surface, specific for piloting lines.

The reduced pressure has a fixed setting correspondent to the load value of the regulation spring.

The standard setting is 30 bar, available optional settings 7, 14, 24 bar

They are mainly used on DPZO proportional valves to ensure a stable reduced pressure to the pilot valve.

HC-031/8 is a 3 way pressure compensator in modular execution with ISO4401, size 06 mounting surface.

When assembled with directional proportional valves, it provides a constant pressure drop = 8 bar (fixed setting) across the lines P-A or P-B

In this way the flow controlled by the proportional valve is independent to the load variations at the user ports.

They are mainly used in sky lift for the basket levelling control.

HJ-012 is a modular plate with ISO4401 size 06 mounting surface, predisposed for the installation on A and B lines of cartridge valves type JO-DL-4-2 (see KT, tab. E115)

In modular combination with directional valves they are used to intercept the A and B user lines and thus prevent the undesired movement of the actuator.

1 MODEL CODE of HMU pressure relief valve

| | | | | | | | | | |
|---|---|------------|---|-------------------------|--|--|--|---------------|---------------------------------------|
| HMU | - | 011 | / | 210 | | /V | | ** | /* |
| Modular pressure relief valve | | | | | | | | Series number | Seals material - = NBR PE = FKM |
| Configuration, see section 2 | | | | Pressure range | | Options: | | | |
| 011 = single; acting on port P, discharge to port T | | | | 50 = 2÷ 50 bar | | /V = setting adjustment by handwheel instead of a grub screw protected by cap | | | |
| 012 = double, acting on ports A and B, discharge to port T | | | | 210 = 10÷210 bar | | 100 = 3÷100 bar | | | |
| 013 = single, acting on port A, discharge to port T | | | | | | 350 = 15÷350 bar | | | |
| 014 = single, acting on port B, discharge to port T | | | | | | | | | |

2 HYDRAULIC CHARACTERISTICS of HMU pressure relief valve

| | HMU-011/** | HMU-012/** | HMU-013/** | HMU-014/** |
|----------------------|------------|------------|------------|------------|
| Setting [bar] | | /50 | /100 | /210 |
| Pressure range [bar] | | 2÷50 | 3÷100 | 7÷210 |
| Max flow [l/min] | | 2,5 | | |

3 MODEL CODE of RR pressure reducing valve

| | | | | |
|--|---|----------|---------------|--|
| RR - 3 | / | * | ** | /* |
| Modular pressure reducing valve | | | | Seals material - = NBR PE = FKM |
| Pressure setting: - = omit for 30 bar 14 = 14 bar 7 = 7 bar 24 = 24 bar | | | Series number | |

4 HYDRAULIC CHARACTERISTICS of RR pressure reducing valve

| | | | | |
|------------------------|-------------|---------------|----------------|----------------|
| Valve model | RR-3 | RR-3/7 | RR-3/14 | RR-3/24 |
| Reduced pressure [bar] | 30 | 7 | 14 | 24 |
| Max pressure [bar] | 350 | | | |
| Max flow [l/min] | 4 | | | |

5 MODEL CODE of HC modular pressure compensator

| | | | | | | | | |
|---|---|----------|---|-----------|---|--------------------------|---------------|--|
| HC | - | 0 | / | 31 | / | 8 | ** | /* |
| Modular pressure compensator | | | | | | | | Seals material - = NBR PE = FKM |
| 0 = Size 06 | | | | | | | Series number | |
| 3 way execution with constant Δp between P and user ports | | | | | | Fixed Δp = 8 bar | | |

6 HYDRAULIC CHARACTERISTICS of HC pressure compensator

| | | | | |
|-----------------------------|--|-----------|--|--|
| Regulating Δp [bar] | | 8 (fixed) | | |
| Max pressure [bar] | | 350 | | |
| Max flow [l/min] | | 34 | | |

7 MODEL CODE of HJ modular plate

| | | | | |
|---|---|------------|---------------|--|
| HJ | - | 012 | ** | /* |
| Modular plate | | | | Seals material - = NBR PE = FKM |
| Predisposed for JO-DL-4 assembling on A and B users lines | | | Series number | |

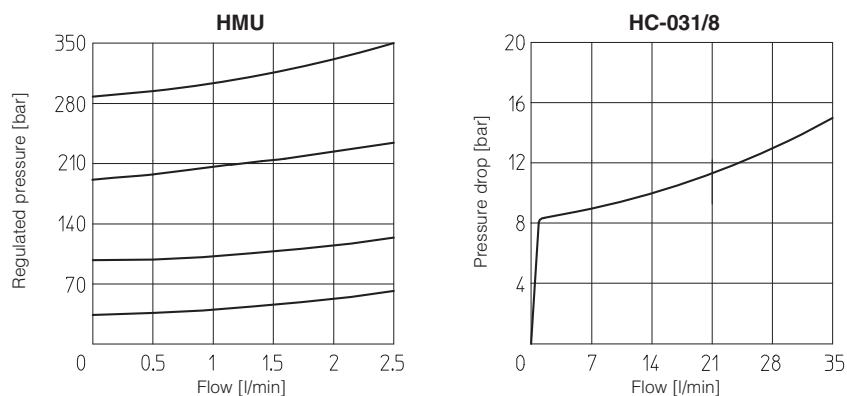
Y-207504 = model code of threaded plug

8 HYDRAULIC CHARACTERISTICS of HJ modular plate

| | | | | |
|--------------------------------------|----|-----|----|---|
| EXAMPLES OF HYDRAULIC CONFIGURATIONS | | | | |
| Check function on A line | | | | |
| | | | | |
| P1 | A1 | B1 | T1 | T |
| Check function on B line | | | | |
| | | | | |
| P1 | A1 | B1 | T1 | T |
| Check function on A and B lines | | | | |
| | | | | |
| P1 | A1 | B1 | T1 | T |
| Max pressure [bar] | | 250 | | |
| Max flow [l/min] | | 40 | | |

(1) Poppet type, screw-in cartridge valves type JO-DL-4-2* to be ordered separately, see KT table E115

9 DIAGRAMS (based on mineral oil ISO VG 46 at 50°C)



10 MAIN CHARACTERISTICS

| | |
|------------------------------|--|
| Assembly position / location | Any position |
| Subplate surface finishing | Roughness index Ra 0,4 - flatness ratio 0,01/100 (ISO 1101) |
| Ambient temperature | -20°C to +70° |
| Fluid | Hydraulic oil as per DIN 51524 ... 535; for other fluids see section 1 |
| Recommended viscosity | 15 ÷ 100 mm ² /s at 40°C (ISO VG 15 ÷ 100) |
| Fluid contamination class | ISO 4401 class 21/19/16 NAS 1638 class 10 (filters at 25 µm value with β ₂₅ 75 recommended) |
| Fluid temperature | -20°C +60°C (standard seals) -20°C +80°C (/PE seals) |

11 DIMENSIONS of HMU pressure relief valve

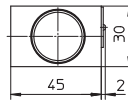
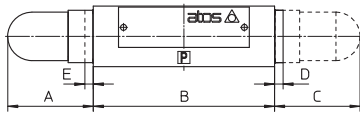
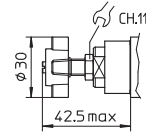
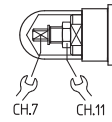
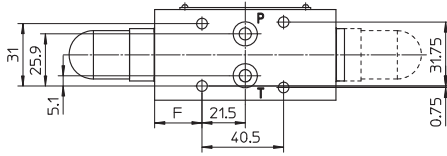
ISO 4401: 2005

Mounting surface: 4401-03-02-0-05 (see section 15)

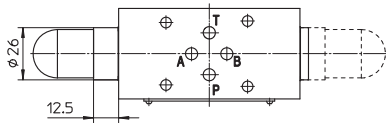
Ports P, T: $\varnothing = 7.5$ mm (max)

Seals: 2 OR 108

Option **IV**



For version HMU-014/** the regulating element is at side of port B (instead of A)



| VALVE | A | B | C | D | E |
|----------------|------|----|------|-----|-----|
| HMU-011 | 42,5 | 71 | - | - | - |
| HMU-012 | 42,5 | 90 | 42,5 | - | - |
| HMU-013 | 42,5 | 90 | - | 4,5 | - |
| HMU-014 | - | 90 | 42,5 | - | 4,5 |

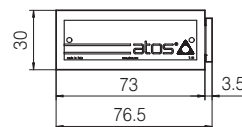
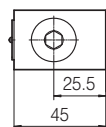
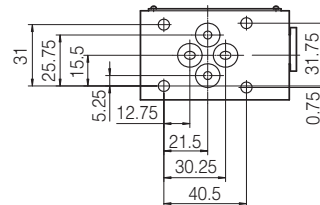
12 DIMENSIONS of RR-3 pressure reducing valve

ISO 4401: 2005

Mounting surface: 4401-03-02-0-05 (see section 15)

Ports A, B, P, T: $\varnothing = 7.5$ mm (max)

Seals: 4 OR 108



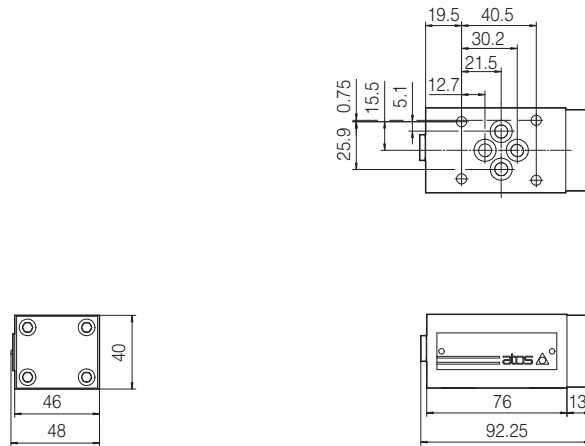
13 DIMENSIONS of HC-031/8 pressure compensator

ISO 4401: 2005

Mounting surface: 4401-03-02-0-05 (see section 15)

Ports A, B, P, T: $\varnothing = 7.5$ mm (max)

Seals: 4 OR 108



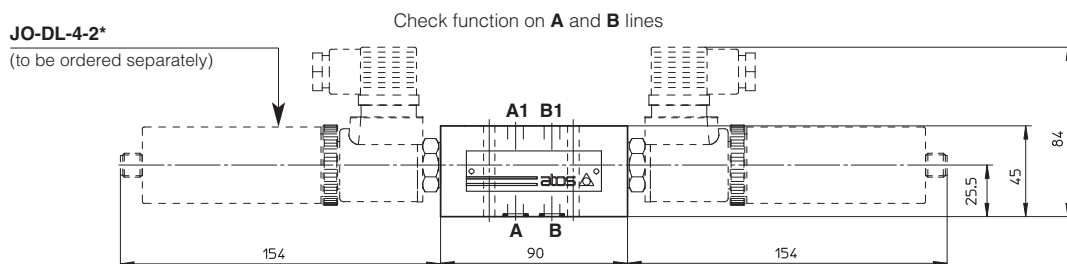
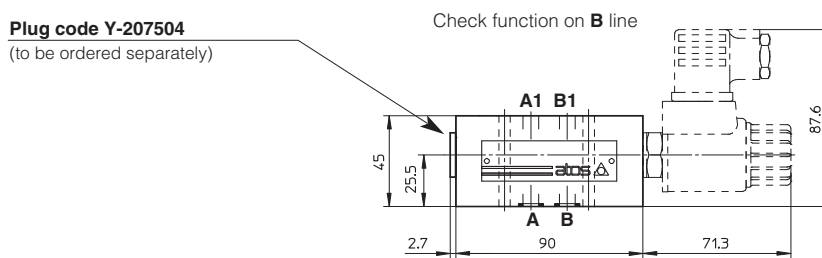
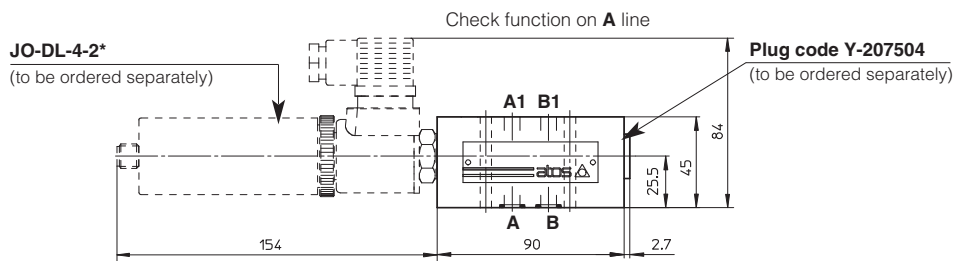
14 DIMENSIONS of HJ modular plate

ISO 4401: 2005

Mounting surface: 4401-03-02-0-05 (see section 15)

Ports A, B: $\varnothing = 7.5$ mm (max)

Seals: 4 OR 108

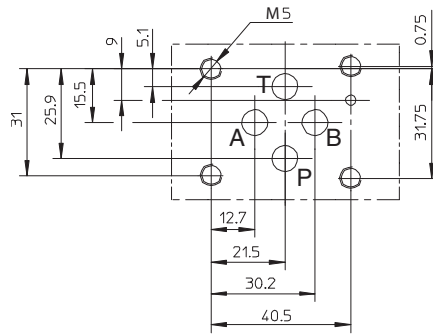


15 MOUNTING SURFACE dimensions [mm]

ISO 4401: 2005

Mounting surface: 4401-03-02-0-05

Fastening bolts:
 4 socket head screws M5 class 12.9
 Tightening torque = 8 Nm
 Seals: OR 108
 Ports P,A,B,T: $\varnothing = 7.5$ mm (max).



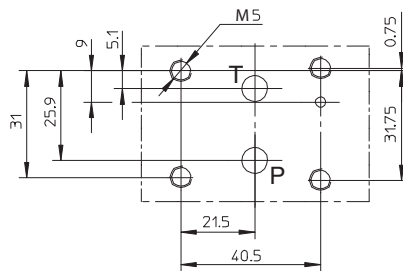
P = PRESSURE PORT
A, B = USE PORT
T = TANK PORT

ISO 4401: 2005

Mounting surface: 4401-03-02-0-05

without ports A and B

Fastening bolts:
 4 socket head screws M5 class 12.9
 Tightening torque = 8 Nm
 Seals: OR 108
 Ports P,T: $\varnothing = 7.5$ mm (max).



P = PRESSURE PORT
T = TANK PORT