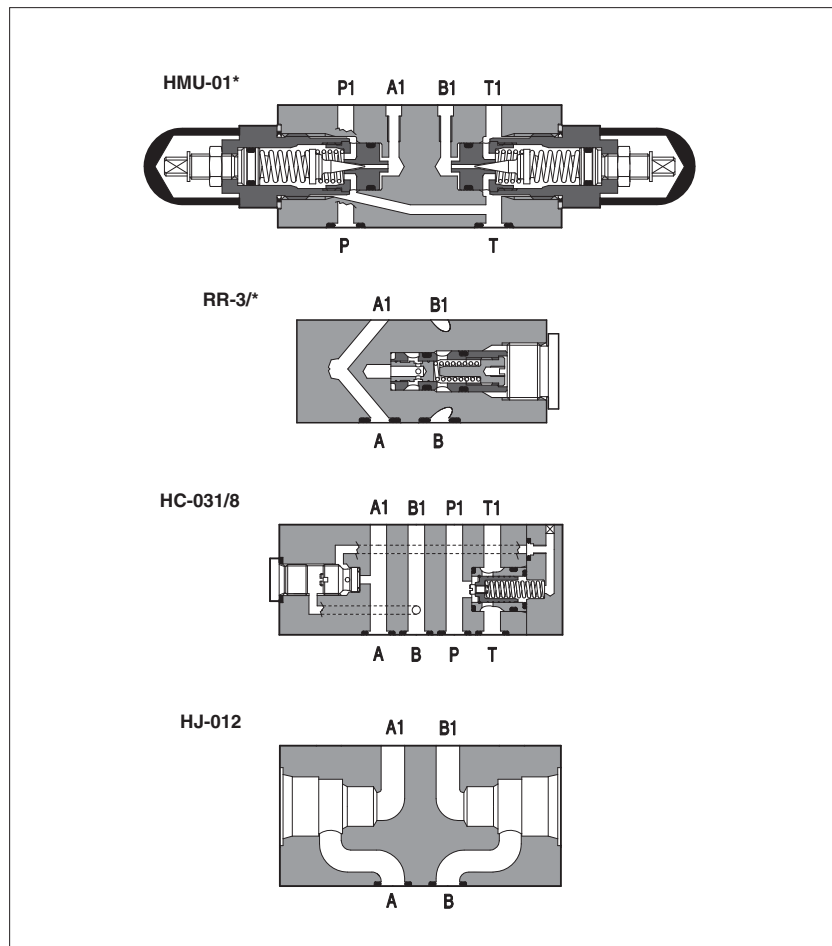


# Modular valves HMU, RR-3/\*, HC-031 and plates type HJ-012

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

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

## 2 HYDRAULIC CHARACTERISTICS of HMU pressure relief valve

	HMU-011/**	HMU-012/**	HMU-013/**	HMU-014/**
Setting [bar]	/50	/100	/210	/350
Pressure range [bar]	2÷50	3÷100	7÷210	8÷350
Max flow [l/min]	2,5			

**3 MODEL CODE of RR pressure reducing valve**

**RR - 3**

Modular pressure reducing valve

Pressure setting:

- = omit for 30 bar      **14** = 14 bar  
**7** = 7 bar                      **24** = 24 bar

/ **\***

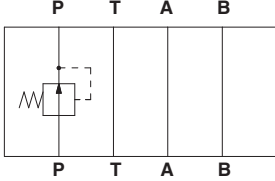
**\*\***

Series number

**/\***

Seals material  
 - = NBR  
**PE** = FKM

**4 HYDRAULIC CHARACTERISTICS of RR pressure reducing valve**



Valve model	<b>RR-3</b>	<b>RR-3/7</b>	<b>RR-3/14</b>	<b>RR-3/24</b>
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**

Modular pressure compensator

**0** = Size 06

3 way execution with constant  $\Delta p$  between P and user ports

- **0** / **31** / **8**

**\*\***

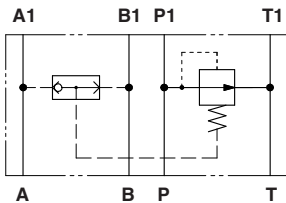
Series number

Fixed  $\Delta p$  = 8 bar

**/\***

Seals material  
 - = NBR  
**PE** = FKM

**6 HYDRAULIC CHARACTERISTICS of HC pressure compensator**



Regulating $\Delta p$ [bar]	8 (fixed)	
Max pressure [bar]	350	
Max flow [l/min]	34	

**7 MODEL CODE of HJ modular plate**

**HJ**  
Modular plate

- **012**

**\*\***

**/\***  
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

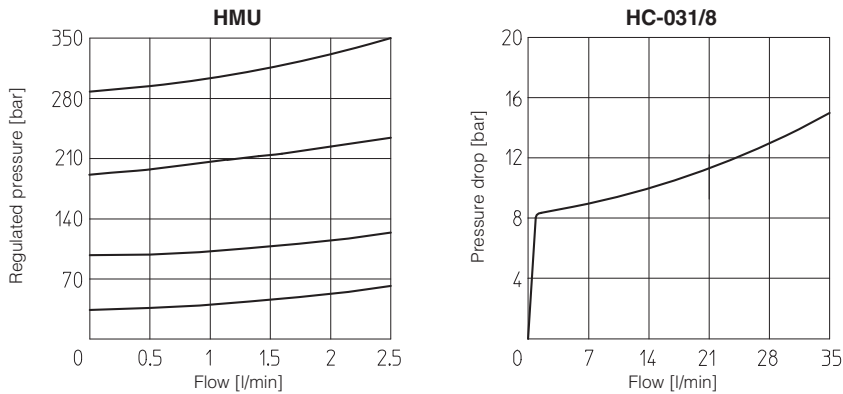
**8 HYDRAULIC CHARACTERISTICS of HJ modular plate**

EXAMPLES OF HYDRAULIC CONFIGURATIONS

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 <b>1</b>
Recommended viscosity	15 ÷ 100 mm²/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 <sub>25</sub> 75 recommended)
Fluid temperature	-20°C +60°C (standard seals)    -20°C +80°C (/PE seals)

**11** DIMENSIONS of HMU pressure relief valve

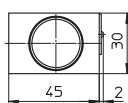
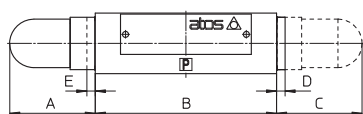
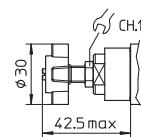
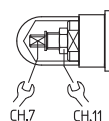
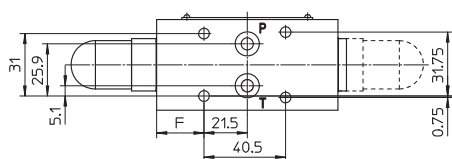
ISO 4401: 2005

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

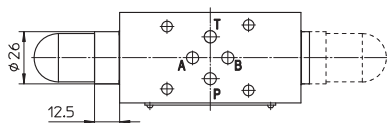
Ports P, T:  $\varnothing = 7.5$  mm (max)

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
<b>HMU-011</b>	42,5	71	-	-	-
<b>HMU-012</b>	42,5	90	42,5	-	-
<b>HMU-013</b>	42,5	90	-	4,5	-
<b>HMU-014</b>	-	90	42,5	-	4,5

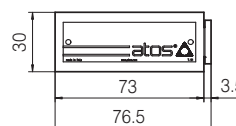
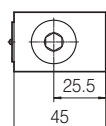
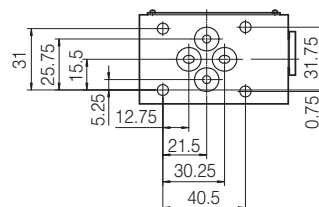
**12** DIMENSIONS of RR-3 pressure reducing valve

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



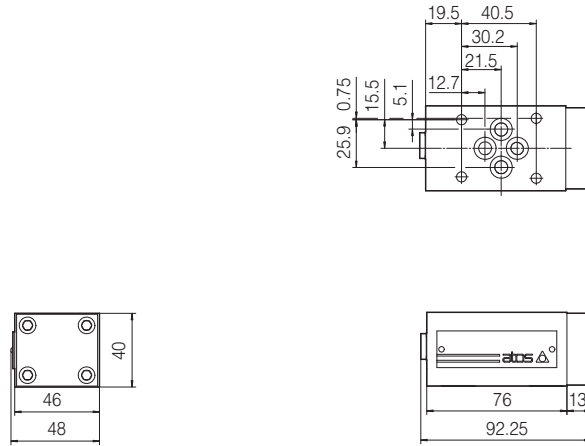
**13** DIMENSIONS of HC-031/8 pressure compensator

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



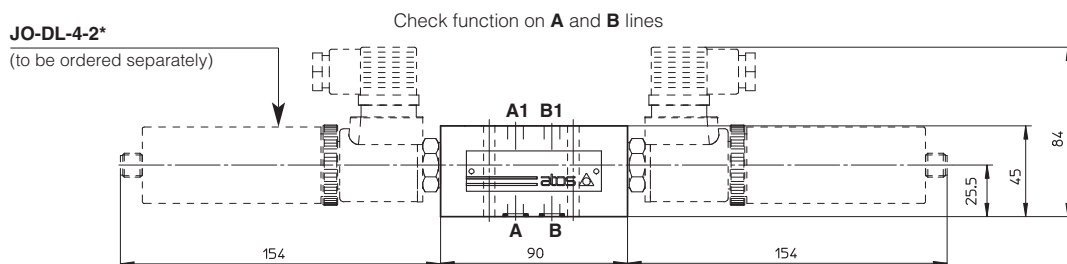
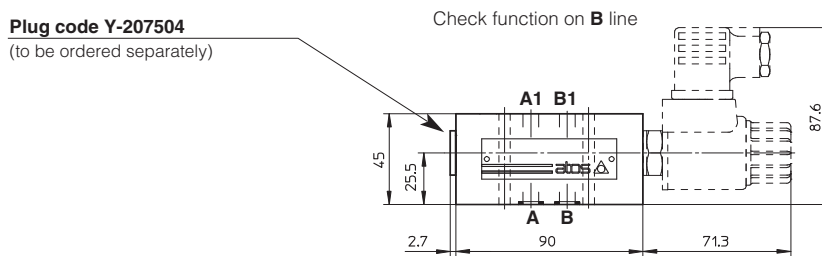
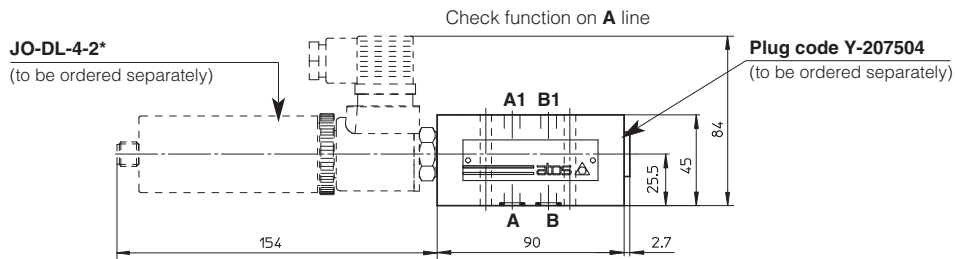
**14** DIMENSIONS of HJ modular plate

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**

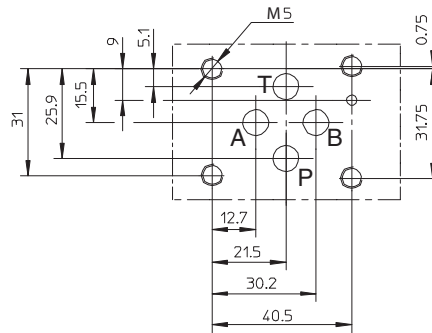
Fastening bolts:

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**

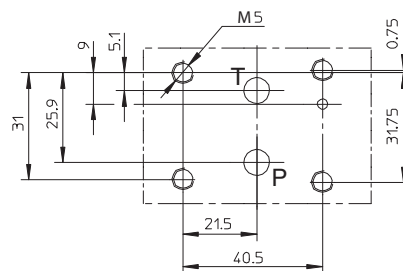
Fastening bolts:

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