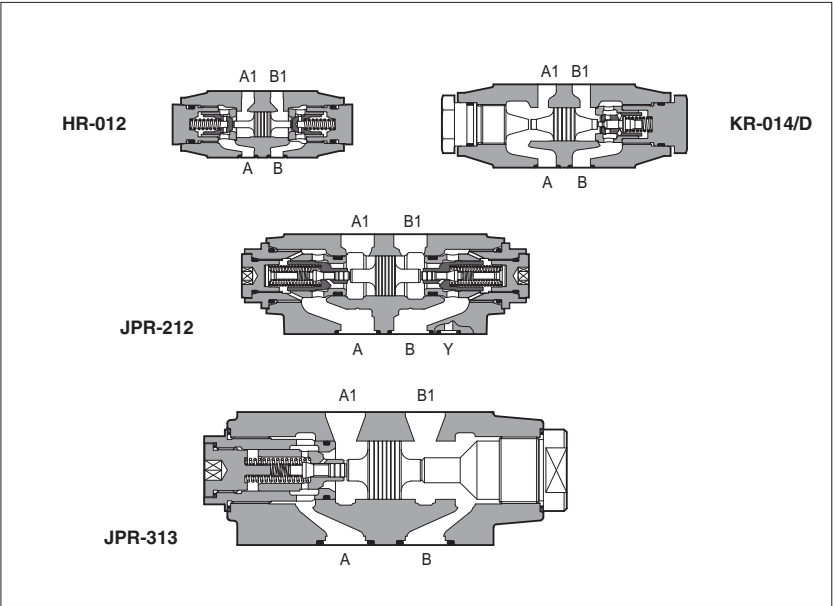


Modular check valves type HR, KR, JPR

direct or pilot operated, ISO 4401 sizes 06, 10, 16 and 25



HR, KR are check valves available as direct or pilot operated models.
JPR are pilot operated check valves.

Optional versions with decompression are available on request for some models of KR.

HR-0 = size 06: flow up to 60 l/min, pressure up to 350 bar.

KR-0 = size 10: flow up to 120 l/min, pressure up to 315 bar.

JPR-2 = size 16: flow up to 200 l/min, pressure up to 350 bar.

JPR-3 = size 25: flow up to 300 l/min, pressure up to 350 bar.

Valves are designed to operate in hydraulic systems with hydraulic mineral oil or synthetic fluid having similar lubricating characteristics.

1 MODEL CODE							
HR-0		12	/	4	/	*	** / *
Modular check valve, size: HR-0 = 06 KR-0 = 10 JPR-2 = 16 JPR-3 = 25						Series number	
Configuration, see section 2 direct operated (only for HR and KR): 02 = double, acting on port A and B 03 = single, acting on port A 04 = single, acting on port B 11 = single, acting on port P 16 = single, acting on port T		pilot operated: 12 = double, acting on port A and B 13 = single, acting on port A 14 = single, acting on port B				Seals material, see section 3: - = NBR PE = FKM BT = HNBR	
				Options (only for KR-012, -013, -014): D = with decompression (only with cracking pressure standard = 1 bar)			
				Spring cracking pressure: for HR and KR – = 0,5 bar (std.) 2 = 2 bar		for JPR – = 0,5 bar (std.) 4 = 4 bar 8 = 8 bar	

2 VALVE CONFIGURATION	
HR-002 KR-002	
HR-003 KR-003	
HR-004 KR-004	
HR-011 KR-011	
HR-016 KR-016	
HR-012 KR-012 JPR-212 JPR-312	
HR-013 KR-013 JPR-213 JPR-313	
HR-014 KR-014 JPR-214 JPR-314	
The pilot pressure applied through ports A or B opens the valve acting on ports B and A, respectively. The minimum pilot pressure is a function of the area ratio, see the following table.	
VALVE TYPE	AREA RATIO
HR	3,3:1
KR	3,3:1 (standard); 11:1 (option /D decompression system)
JPR-2	13,6:1 (standard version equipped with decompression system)
JPR-3	17:1 (standard version equipped with decompression system)

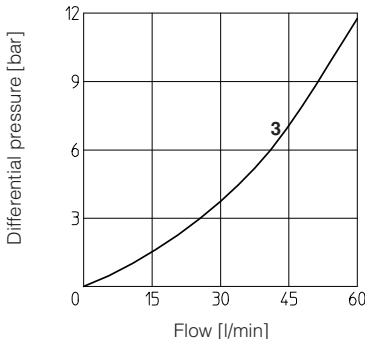
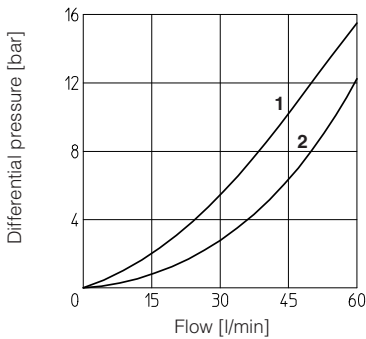
3 MAIN CHARACTERISTICS, SEALS and HYDRAULIC FLUID - for other fluids not included in below table, consult our technical office

Assembly position / location	Any position		
Subplate surface finishing	Roughness index Ra 0,4 - flatness ratio 0,01/100 (ISO 1101)		
MTTFd values according to EN ISO 13849	150 years, for further details see technical table P007		
Ambient temperature	Standard execution = -30°C ÷ +70°C /PE option = -20°C ÷ +70°C /BT option = -40°C ÷ +70°C		
Seals, recommended fluid temperature	NBR seals (standard) = -20°C ÷ +60°C, with HFC hydraulic fluids = -20°C ÷ +50°C FKM seals (/PE option)= -20°C ÷ +80°C HNBR seals (/BT option)= -40°C ÷ +60°C, with HFC hydraulic fluids = -40°C ÷ +50°C		
Recommended viscosity	15÷100 mm²/s - max allowed range 2.8 ÷ 500 mm²/s		
Fluid contamination class	ISO 4406 class 21/19/16 NAS 1638 class 10, in line filters of 25 µm (β10 ≥75 recommended)		
Hydraulic fluid	Suitable seals type	Classification	Ref. Standard
Mineral oils	NBR, FKM, HNBR	HL, HLP, HLPD, HVLP, HVLPD	DIN 51524
Flame resistant without water	FKM	HFDU, HFDR	ISO 12922
Flame resistant with water	NBR, HNBR	HFC	

4 DIAGRAMS OF HR-0 based on mineral oil ISO VG 46 at 50°C

Flow through check valve:

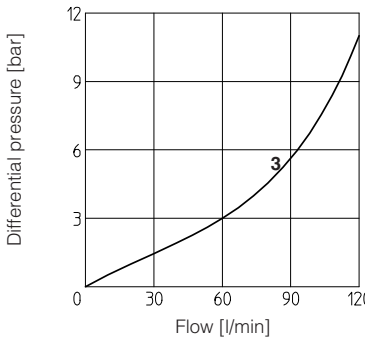
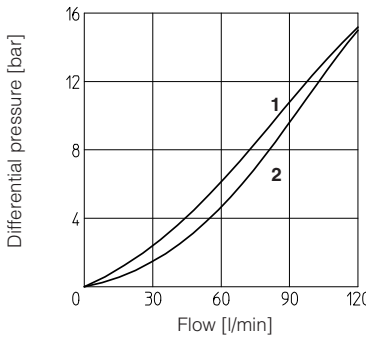
- 1** = A→A₁; B→B₁ of
HR-012, HR-013, HR-014
- 2** = A₁→A; B₁→B of
HR-012, HR-013, HR-014
- 3** = HR-011, HR-016



5 DIAGRAMS OF KR-0 based on mineral oil ISO VG 46 at 50°C

Flow through check valve:

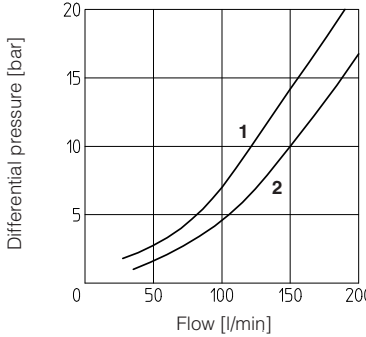
- 1** = A→A₁; B→B₁ of
KR-012, KR-013, KR-014
- 2** = A₁→A; B₁→B of
KR-012, KR-013, KR-014
- 3** = KR-011, KR-016



6 DIAGRAMS OF JPR-2 based on mineral oil ISO VG 46 at 50°C

Flow through check valve:

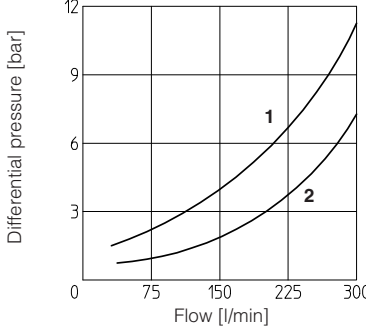
- 1** = A→A₁; B→B₁ of
JPR-212, JPR-213, JPR-214
- 2** = A₁→A; B₁→B of
JPR-212, JPR-213, JPR-214



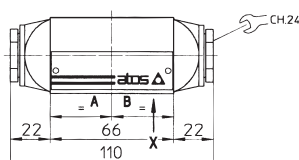
7 DIAGRAMS OF JPR-3 based on mineral oil ISO VG 46 at 50°C

Flow through check valve:

- 1** = A→A₁; B→B₁ of
JPR-312, JPR-313, JPR-314
- 2** = A₁→A; B₁→B of
JPR-312, JPR-313, JPR-314

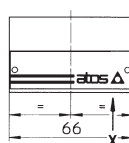


HR-002
HR-003
HR-004
HR-012
HR-013
HR-014

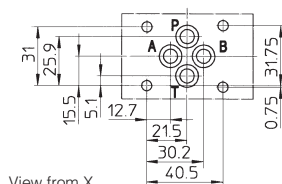


HR-011
HR-016

Technical drawing of a rectangular block. The drawing shows a top view and a side view. The top view is a rectangle with a width of 45 and a height of 07. The side view is a rectangle with a width of 45 and a height of 07. The dimensions are indicated by arrows and numbers.

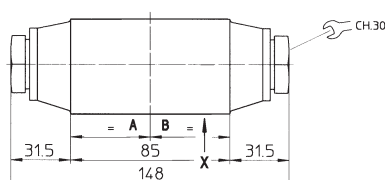


Seals: 4 OR 108

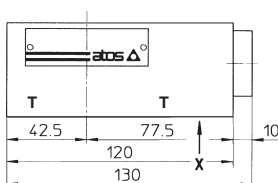


Fastening bolts: n° 4 socket head screws M5. The lenght depends on number and type of modular elements associated.

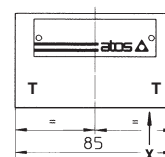
KR-012
KR-002
KR-003
KR-004
KR-013
KR-014



KR-016

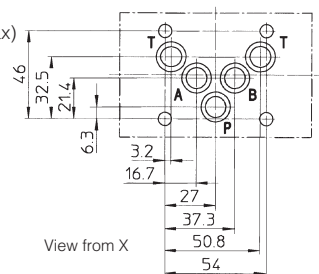


KR-011



Mass: 1,7 Kg

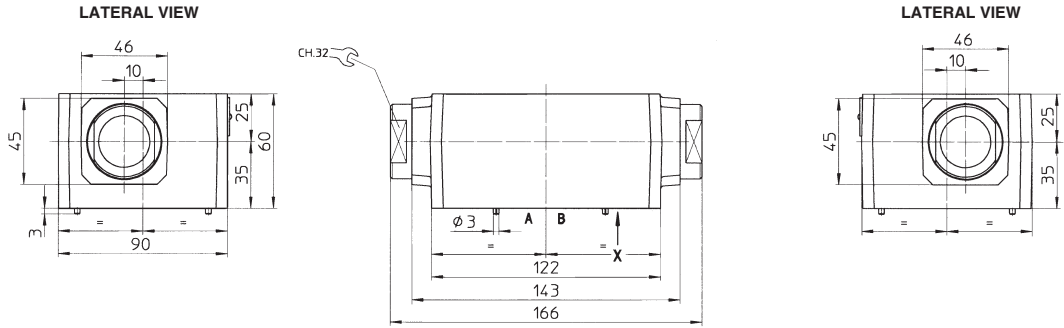
Seals: 5 OR 2050



Fastening bolts: n° 4 socket head screws M6. The lenght depends on number and type of modular elements associated.

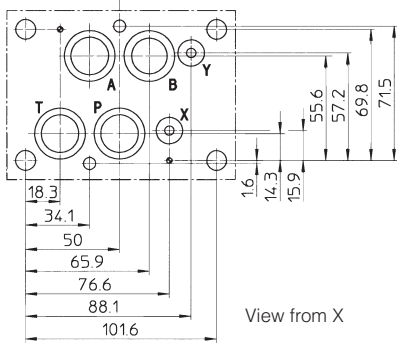
10 INSTALLATION DIMENSIONS OF JPR-2 VALVES [mm]

JPR-212
JPR-213
JPR-214



Mass: 4,4 Kg

ISO 4401: 2005
Mounting surface: 4401-07-07-0-05
Diameter of ports A, B, P, T: $\varnothing = 20$ mm
Diameter of ports X, Y: $\varnothing = 7$ mm
Seals: 4 OR 130; 2 OR 109

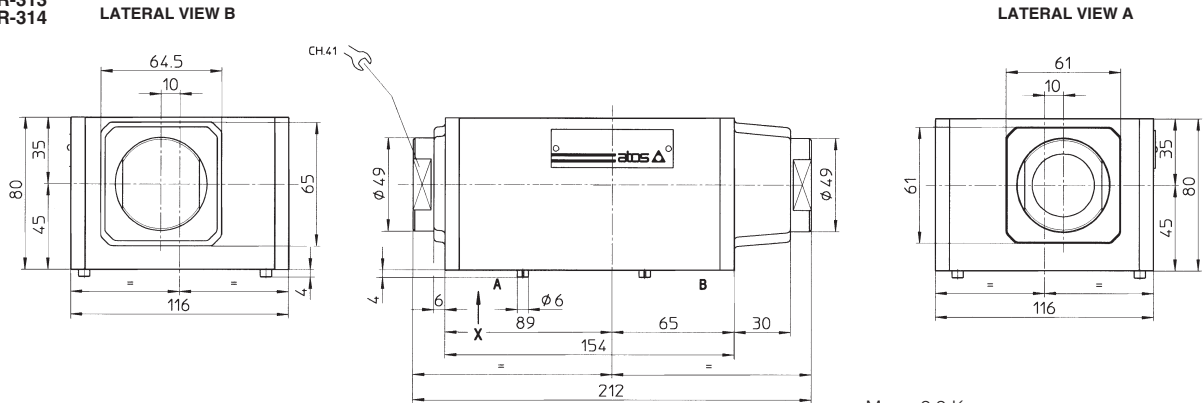


View from X

Fastening bolts: n° 4 socket head screws M10 and n° 2 M6. The lenght depends on number and type of modular elements associated.

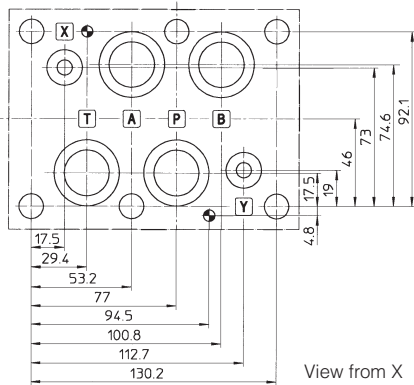
11 INSTALLATION DIMENSIONS OF JPR-3 VALVES [mm]

JPR-312
JPR-313
JPR-314



Mass: 9,9 Kg

ISO 4401: 2005
Mounting surface: 4401-08-08-0-05
Diameter of ports A, B, P, T: $\varnothing = 24$ mm
Diameter of ports X, Y: $\varnothing = 7$ mm
Seals: 4 OR 4112; 2 OR 3056



View from X

Fastening bolts: n° 6 socket head screws M12. The lenght depends on number and type of modular elements associated.