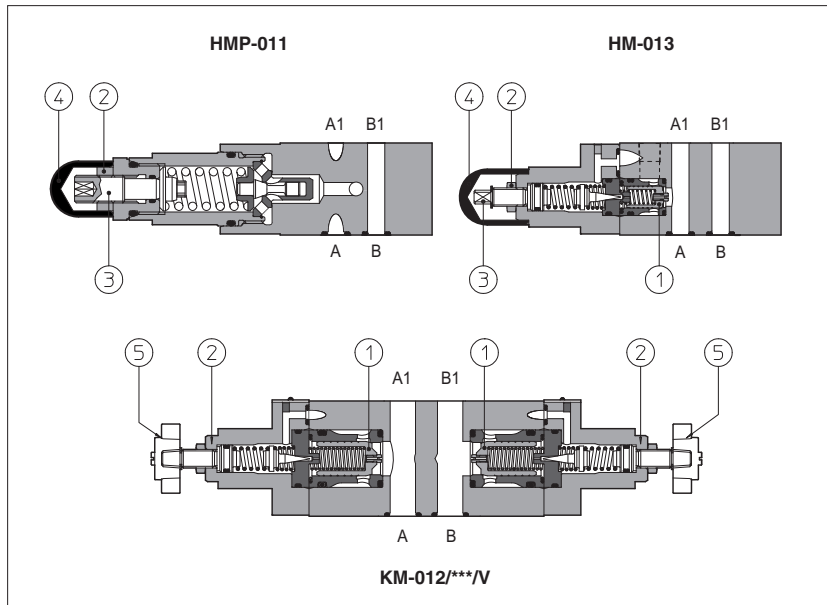


# Modular relief valves type HMP, HM, KM

ISO 4401 sizes 06 and 10



**HMP** are direct operated pressure relief valves.

**HM** and **KM** are double stage pressure relief valves with balanced poppet ①.

The pressure adjustment is operated by loosening the locking nut ② and turning the screw ③ protected by cap ④. Optional versions with setting adjustment by handwheel ⑤ instead of the screw are available on request. Clockwise rotation increases the pressure.

Valve size and max flow:

**HMP** = size 06, max flow: 35 l/min

**HM** = size 06, max flow: 60 l/min

**KM** = size 10, max flow: 120 l/min

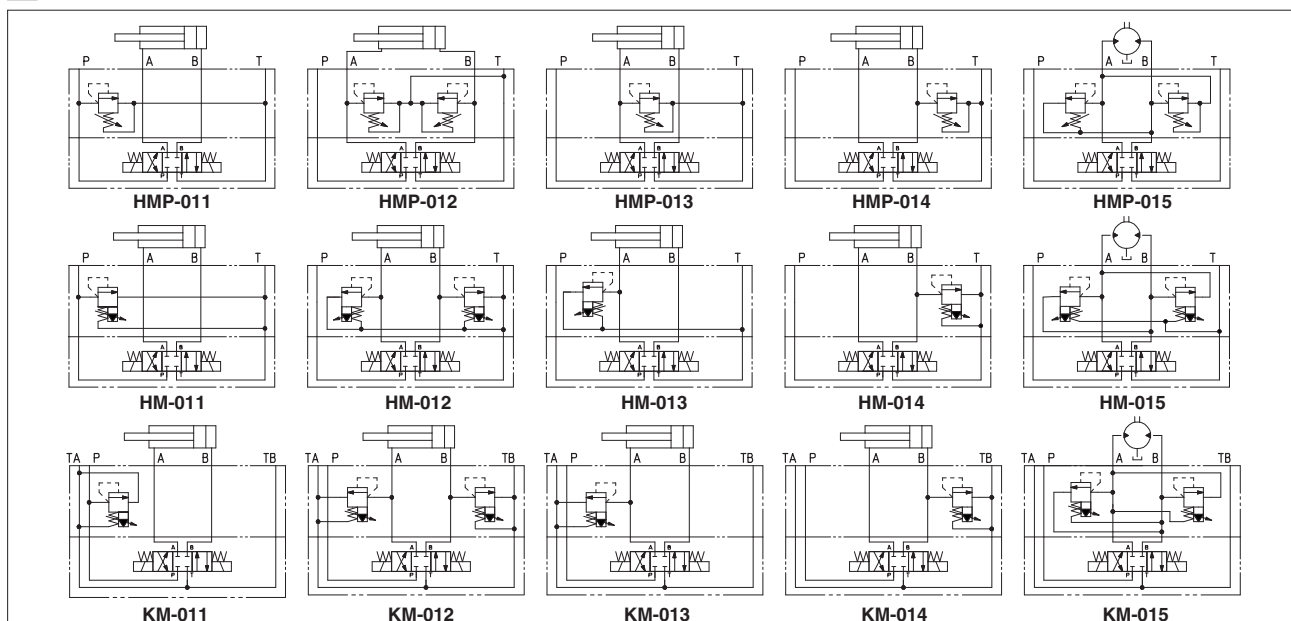
Mounting surface: **ISO 4401 size 06, 10**

Max pressure: up to **350 bar**

## 1 MODEL CODE

<b>HM</b>	-	<b>011</b>	/	<b>210</b>	/	<b>V</b>	/	<b>**</b>	/	<b>*</b>
Modular pressure relief valve size:								Series number		Seals material, see section 5:
<b>HMP</b> = 06										- = NBR
<b>HM</b> = 06										PE = FKM
<b>KM</b> = 10										BT = HNBR
Configuration, see section 2										
<b>011</b> = single on port P, discharge to port T										
<b>012</b> = double on ports A and B, discharge to port T										
<b>013</b> = single on port A, discharge to port T										
<b>014</b> = single on port B, discharge to port T										
<b>015</b> = double on ports A and B, with the relieved pressure cross-discharged										
Options:										
<b>V</b> = setting adjustment by handwheel instead of a grub screw protected by cap										
Only for HMP:										
<b>R</b> = reduced leakage for special applications										
<b>VF</b> = regulating knob										
<b>VS</b> = regulating knob with safety locking										
Pressure range										
	<b>HMP:</b>									
	<b>50</b> = 2÷ 50 bar									
	<b>100</b> = 3÷ 100 bar									
	<b>210</b> = 10÷ 210 bar									
	<b>350</b> = 15÷ 350 bar									
	<b>HM and KM:</b>									
	<b>50</b> = 4÷ 50 bar									
	<b>100</b> = 5÷ 100 bar									
	<b>210</b> = 5÷ 210 bar									
	<b>350</b> = 5÷ 350 bar									

## 2 HYDRAULIC CONFIGURATION



### 3 GENERAL CHARACTERISTICS

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
Compliance	RoHS Directive 2011/65/EU as last update by 2015/863/EU REACH Regulation (EC) n°1907/2006

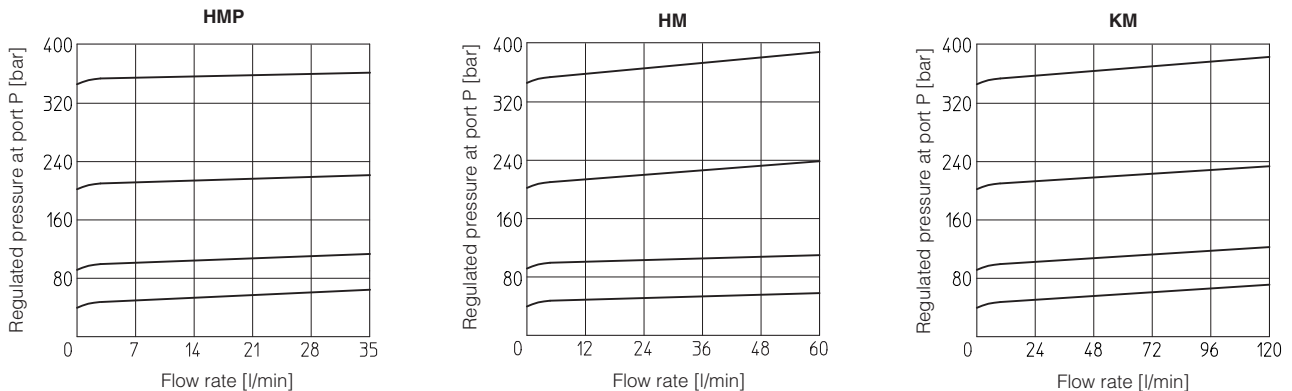
### 4 HYDRAULIC CHARACTERISTICS

Valve model	HMP	HM	KM
Max flow [l/min]	35	60	120
Pressure range [bar]	2÷50; 3÷100; 10÷210; 15÷350	4÷50; 5÷100; 5÷210; 5÷350	

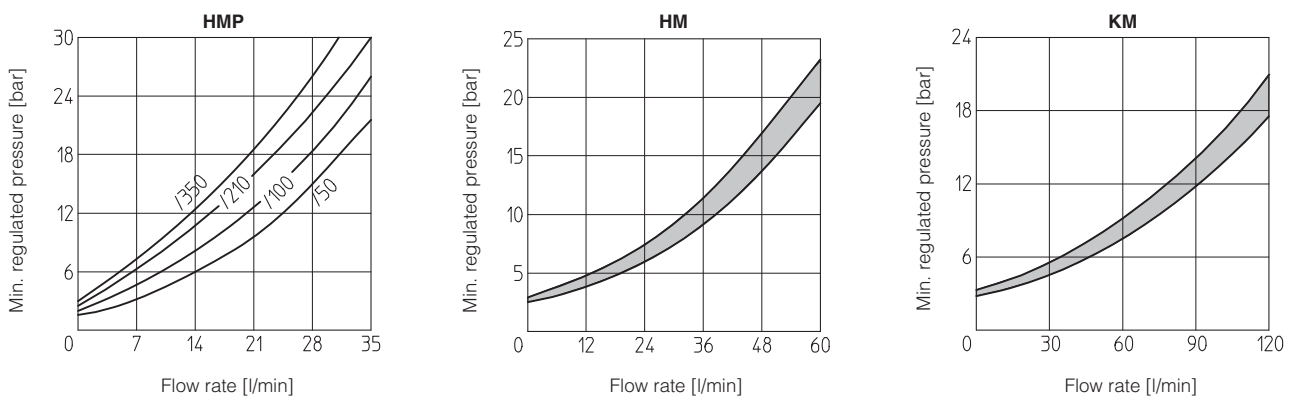
### 5 SEALS and HYDRAULIC FLUIDS - for other fluids not included in below table, consult our technical office

Seals, recommended fluid temperature	NBR seals (standard) = -20°C ÷ +80°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 mm <sup>2</sup> /s - max allowed range 2.8 ÷ 500 mm <sup>2</sup> /s		
Max fluid contamination level	ISO4406 class 20/18/15 NAS1638 class 9, see also filter section at <a href="http://www.atos.com">www.atos.com</a> or KTF catalog		
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	

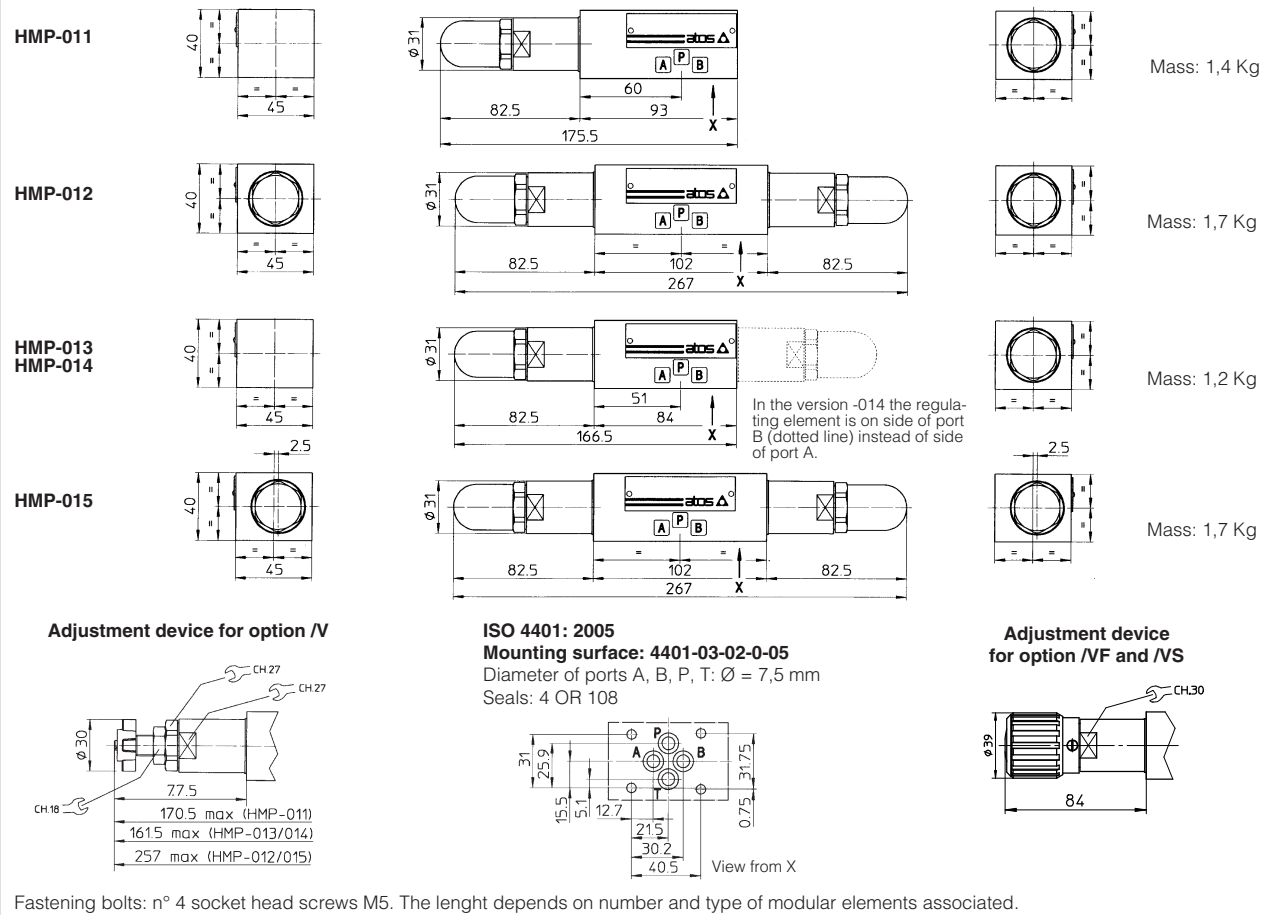
### 6 REGULATED PRESSURE VERSUS FLOW DIAGRAMS (Based on mineral oil ISO VG 46 at 50°C)



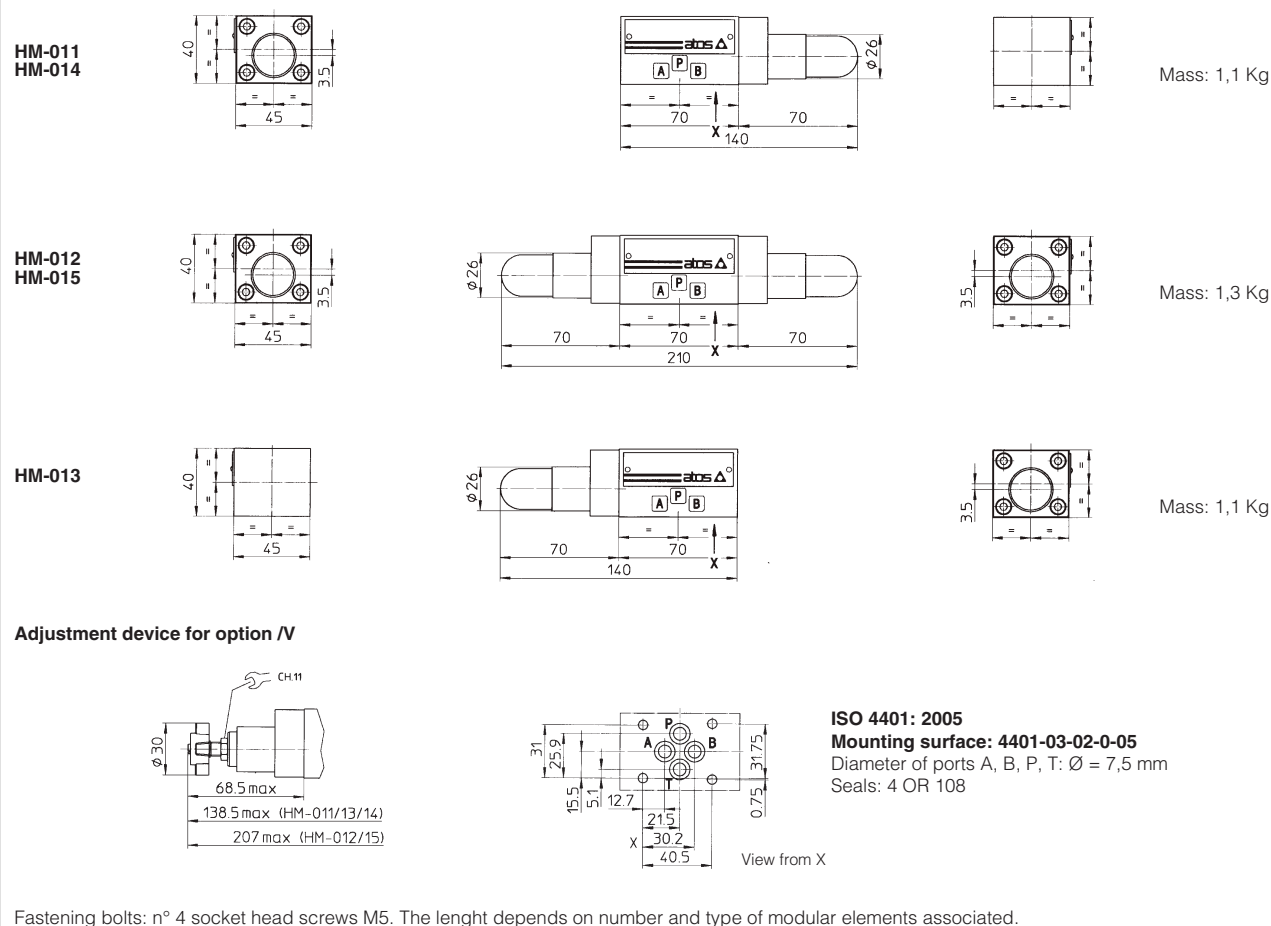
### 7 MINIMUM PRESSURE VERSUS FLOW DIAGRAMS (Based on fluid viscosity of 25 mm<sup>2</sup>/s at 40°C)



**8 INSTALLATION DIMENSIONS OF HMP VALVES [mm]**

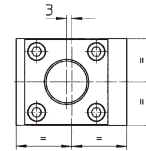
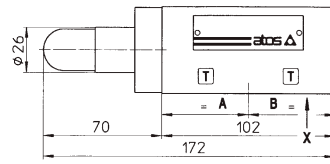
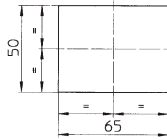


**9 INSTALLATION DIMENSIONS OF HM VALVES [mm]**



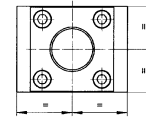
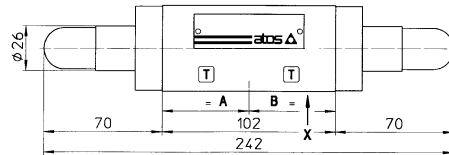
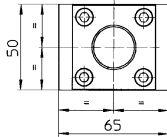
10 INSTALLATION DIMENSIONS OF KM VALVES [mm]

KM-011



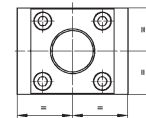
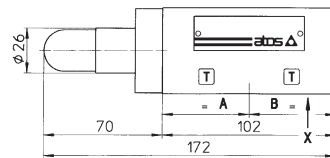
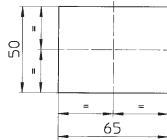
Mass: 2,5 Kg

KM-012



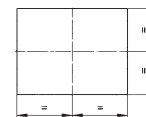
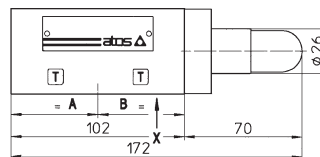
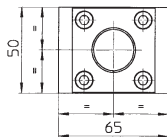
Mass: 2,8 Kg

KM-013



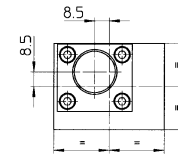
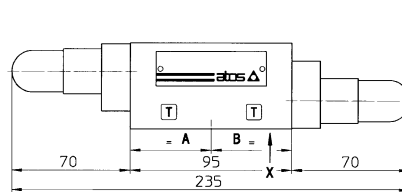
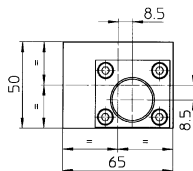
Mass: 2,5 Kg

KM-014



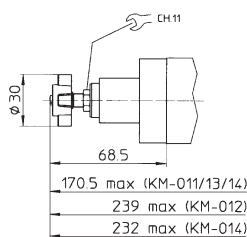
Mass: 2,5 Kg

KM-015

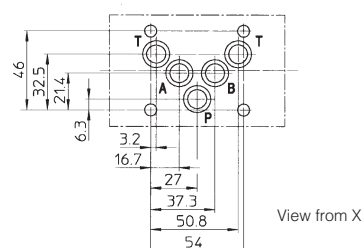


Mass: 2,5 Kg

Adjustment device for option /V



170.5 max (KM-011/13/14)  
239 max (KM-012)  
232 max (KM-014)



View from X

ISO 4401: 2005

Mounting surface: 4401-05-04-0-05

Diameter of ports A, B, P, T:  $\phi = 11,2$  mm

Seals: 5 OR 2050

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