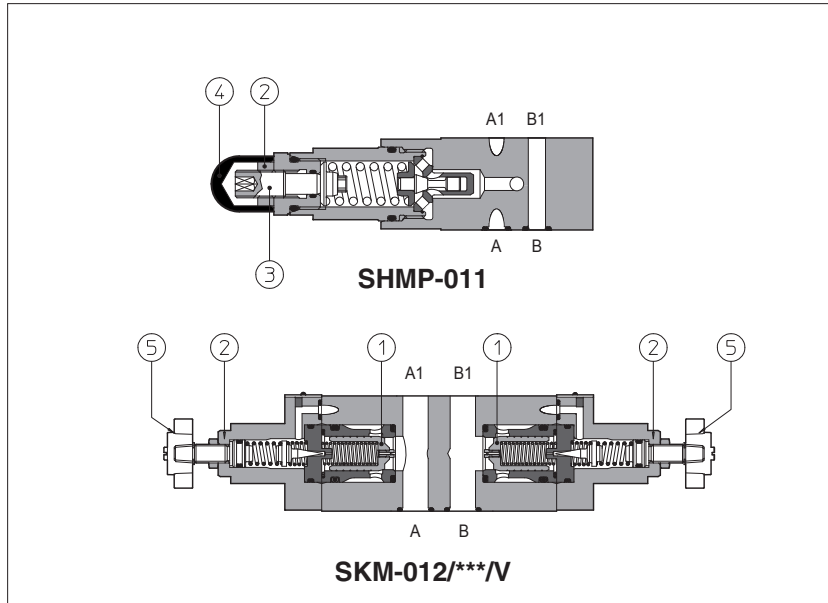


# Modular relief valves type SHMP, SKM

ISO 4401 sizes 06 and 10



**SHMP** are direct operated pressure relief valves, size 06.

**SKM** are double stage pressure relief valves size 10 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:

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

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

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

Max pressure: up to **350 bar**

## 1 MODEL CODE

|   |   |            |   |                |   |                         |   |                        |   |                                |
|---|---|------------|---|----------------|---|-------------------------|---|------------------------|---|--------------------------------|
| <b>SHMP</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 3: |
| <b>SHMP</b> = 06  |   |            |   |                |   |                         |   |                        |   | - = NBR                        |
| <b>SKM</b> = 10   |   |            |   |                |   |                         |   |                        |   | <b>PE</b> = FKM                |
|   |   |            |   |                |   |                         |   |                        |   | <b>BT</b> = 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 |   |            |   |                |   |                         |   |                        |   |                                |
|   |   |            |   | Pressure range |   | <b>SHMP:</b>            |   | <b>SKM:</b>            |   |                                |
|   |   |            |   |                |   | <b>50</b> = 2÷ 50 bar   |   | <b>50</b> = 4÷ 50 bar  |   |                                |
|   |   |            |   |                |   | <b>100</b> = 3÷100 bar  |   | <b>100</b> = 5÷100 bar |   |                                |
|   |   |            |   |                |   | <b>210</b> = 10÷210 bar |   | <b>210</b> = 5÷210 bar |   |                                |
|   |   |            |   |                |   | <b>350</b> = 15÷350 bar |   | <b>350</b> = 5÷350 bar |   |                                |

## 2 HYDRAULIC CHARACTERISTICS

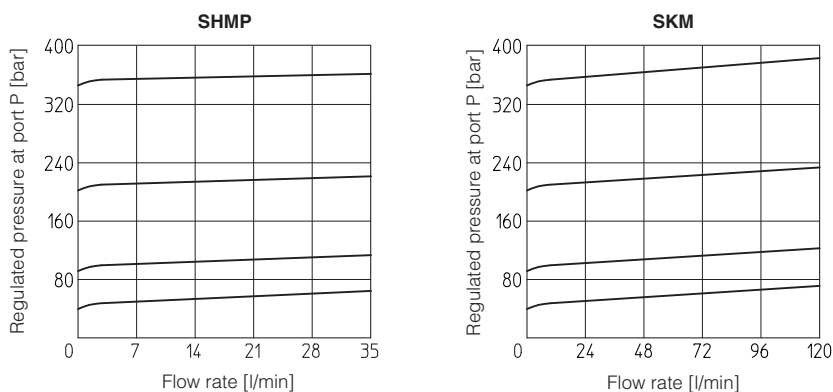
Hydraulic configuration

| Valve model          | <b>SHMP</b> |        |         |        | <b>SKM</b> |        |        |       |
|----------------------|-------------|--------|---------|--------|------------|--------|--------|-------|
| Max flow [l/min]     | 35          |        |         |        | 120        |        |        |       |
| Pressure range [bar] | 2÷50;       | 3÷100; | 10÷210; | 15÷350 | 4÷50;      | 5÷100; | 5÷210; | 5÷350 |

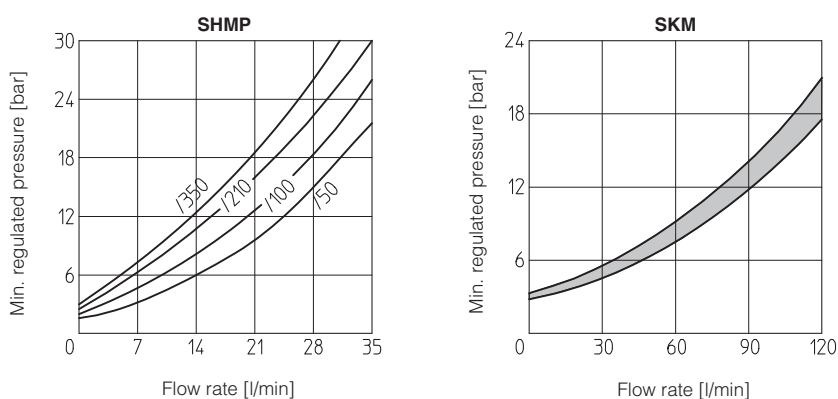
**3 MAIN CHARACTERISTICS, SEALS and HYDRAULIC FLUIDS** - for other fluids not included in below table, consult our technical office

|  |  |                            |                      |
|--|--|----------------------------|----------------------|
| 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 (SHMP), 75 years (SKM), for further details see technical table P007   |                            |                      |
| Ambient temperature                    | Standard execution = -30°C ÷ +70°C<br>/PE option = -20°C ÷ +70°C<br>/BT option = -40°C ÷ +70°C   |                            |                      |
| Seals, recommended fluid temperature   | NBR seals (standard) = -20°C ÷ +80°C, with HFC hydraulic fluids = -20°C ÷ +50°C<br>FSKM seals (/PE option) = -20°C ÷ +80°C<br>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   |                            |                      |
| <b>Hydraulic fluid</b>                 | <b>Suitable seals type</b>   | <b>Classification</b>      | <b>Ref. Standard</b> |
| Mineral oils                           | NBR, FSKM, HNBR  | HL, HLP, HLPD, HVLP, HVLPD | DIN 51524            |
| Flame resistant without water          | FSKM   | HFDR, HFDR                 | ISO 12922            |
| Flame resistant with water             | NBR, HNBR  | HFC                        |                      |

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

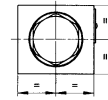
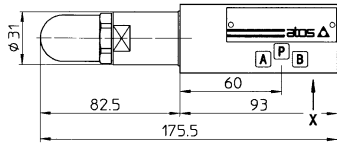
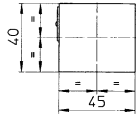


**5 MINIMUM PRESSURE VERSUS FLOW DIAGRAMS** (Based on fluid viscosity of 25 mm<sup>2</sup>/s at 40°C)



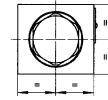
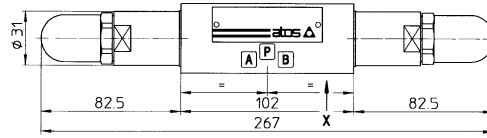
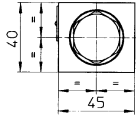
6 INSTALLATION DIMENSIONS OF SHMP VALVES [mm]

SHMP-011



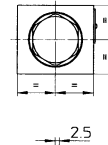
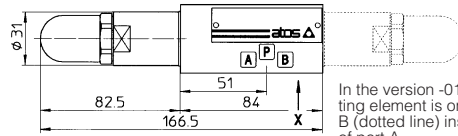
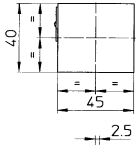
Mass: 1,4 Kg

SHMP-012



Mass: 1,7 Kg

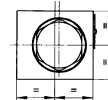
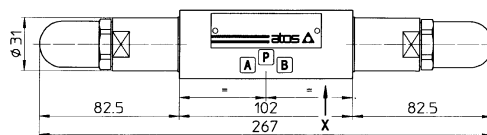
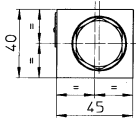
SHMP-013  
SHMP-014



Mass: 1,2 Kg

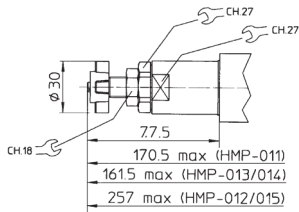
In the version -014 the regulating element is on side of port B (dotted line) instead of side of port A.

SHMP-015



Mass: 1,7 Kg

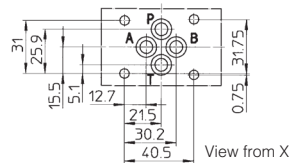
Adjustment device for option /V



ISO 4401: 2005

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

Diameter of ports A, B, P, T:  $\varnothing = 7,5$  mm  
Seals: 4 OR 108

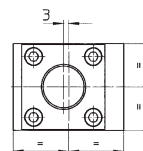
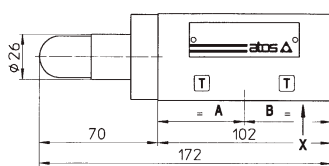
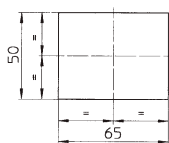


View from X

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

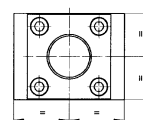
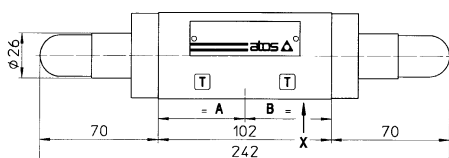
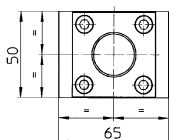
7 INSTALLATION DIMENSIONS OF SKM VALVES [mm]

SKM-011



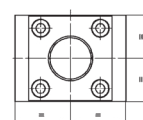
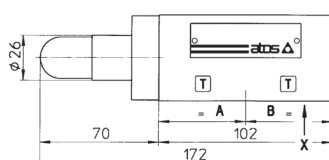
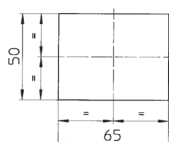
Mass: 2,5 Kg

SKM-012



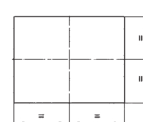
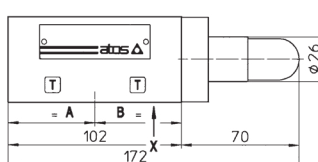
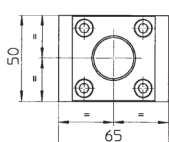
Mass: 2,8 Kg

SKM-013



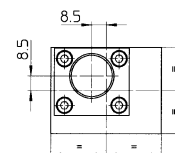
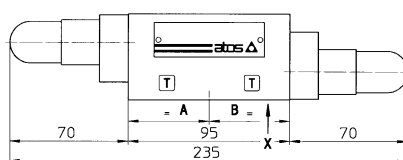
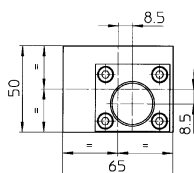
Mass: 2,5 Kg

SKM-014



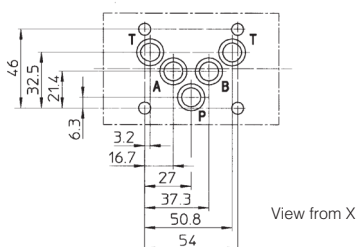
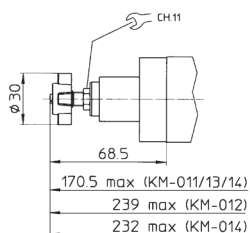
Mass: 2,5 Kg

SKM-015



Mass: 2,5 Kg

Adjustment device for option /V



ISO 4401: 2005  
 Mounting surface: 4401-05-04-0-05  
 Diameter of ports A, B, P, T:  $\varnothing = 11,2$  mm  
 Seals: 5 OR 2050

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