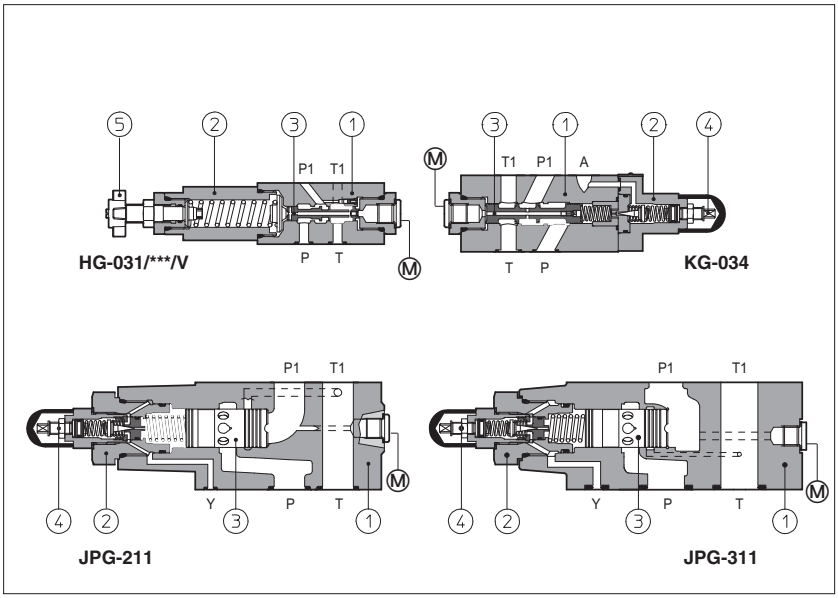
# Modular reducing valves type HG, KG, JPG-2 and JPG-3

spool type, ISO 4401 sizes 06, 10, 16 and 25




**HG, KG, JPG** are pressure reducing valves, spool type ③, designed to operate in oil hydraulic systems.
HG are direct, three way valves;
KG are double stage ① ②, three way valves;
JPG are double stage ① ②, two way valves.
Clockwise rotation increases the pressure.

Valve size and max flow:

**HG** = size 06 flow up to 50 l/min;
**KG** = size 10 flow up to 100 l/min;
**JPG-2** = size 16 flow up to 250 l/min;
**JPG-3** = size 25 flow up to 300 l/min;

Mounting surface:
**ISO 4401 size 06, 10, 16** and **25**

Max pressure: **350 bar** for HG
**315 bar** for KG and JPG

## 1 MODEL CODE

| HG-0 | 31 | / | 210 | / | V | ** | / | * |
|---|---|---|---|---|---|---|---|---|

**HG-0**
Modular pressure reducing valve, size:
**HG-0** = 06 **JPG-2** = 16
**KG-0** = 10 **JPG-3** = 25

**31**
Configuration, see section 2
two way (**only for JPG**):
**11** = reduced pressure on P port
three way (**only for HG-0 and KG-0**):
**31** = reduced pressure on P port
**33** = reduced pressure on A port
**34** = reduced pressure on B port

**210**
Pressure range

| HG | KG | JPG |
|---|---|---|
| **32** = 3 - 32 bar | **100** = 7 - 100 bar | **100** = 6 - 100 bar |
| **50** = 2 - 50 bar | **210** = 8 - 210 bar | **210** = 70 - 210 bar |
| **75** = 10 - 75 bar | | |
| **100** = 20 - 100 bar | | |
| **210** = 50 - 210 bar | | |

**V**
Options:
**V** = setting adjustment by handwheel instead of a grub screw protected by cap
Only for HG:
**VF** = regulating knob **/VS** = regulating knob with safety locking

******
Series number

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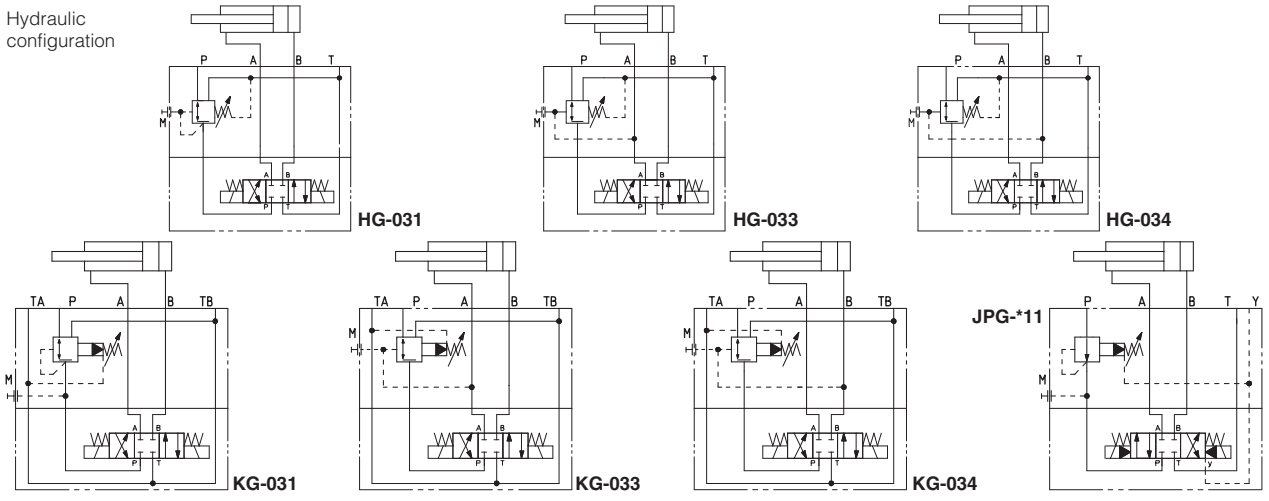
Seals material, see section 3:
**-** = NBR
**PE** = FKM
**BT** = HNBR

## 2 HYDRAULIC CHARACTERISTICS

Hydraulic configuration




| Valve model | | HG-03*/32 | HG-03*/50 | HG-03*/75 | HG-03*/100 | HG-03*/210 | KG-03*/100 | KG-03*/210 | JPG-211/100 | JPG-211/210 | JPG-311/100 | JPG-311/210 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Max flow | [l/min] | 50 | | | | | 100 | | 250 | | 300 | |
| Pressure range | [bar] | 3 ÷ 32 | 2 ÷ 50 | 10 ÷ 75 | 20 ÷ 100 | 50 ÷ 210 | 7 ÷ 100 | 8 ÷ 210 | 6 ÷ 100 | 70 ÷ 210 | 6 ÷ 100 | 70 ÷ 210 |
| Max inlet pressure | [bar] | 350 | | | | | 315 | | 315 | | 315 | |
| Max pressure on port T | [bar] | 160 | | | | | 160 | | 160 | | 160 | |

## 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 | | |
| Compliance | RoHS Directive 2011/65/EU as last update by 2015/65/EU<br>REACH Regulation (EC) n°1907/2006 | | |
| Ambient temperature | **Standard** = -30°C ÷ +80°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<br>FKM 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 mm²/s - max allowed range 2.8 ÷ 500 mm²/s | | |
| Max fluid contamination level | ISO4406 class 20/18/15 NAS1638 class 9, see also filter section at www.atos.com 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 | |

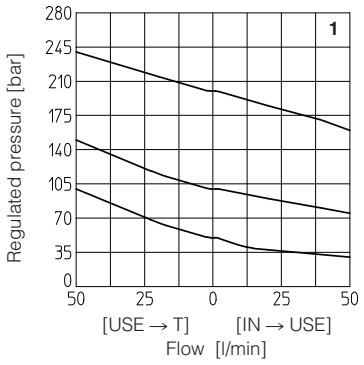
## 4 DIAGRAMS OF HG-03*

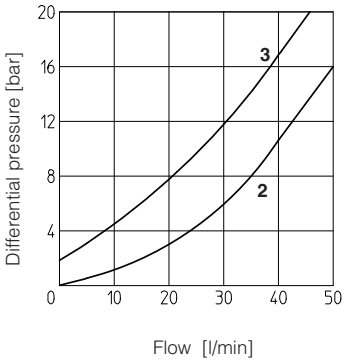
based on mineral oil ISO VG 46 at 50°C

**1 =** regulated pressure variation versus flow:
- between use port and discharge port
- between inlet port and use port

**2 =** differential pressure variation versus flow between inlet port and use port

**3 =** differential pressure variation versus flow between use port and discharge port



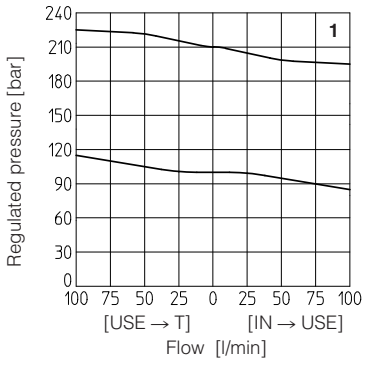

## 5 DIAGRAMS OF KG-03*

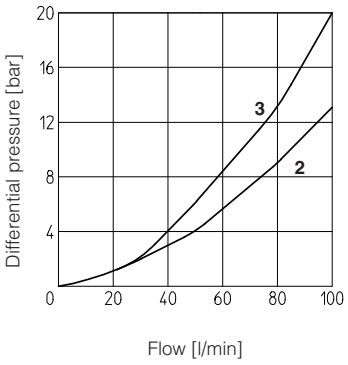
based on mineral oil ISO VG 46 at 50°C

**1 =** regulated pressure variation versus flow:
- between use port and discharge port
- between inlet port and use port

**2 =** differential pressure variation versus flow between inlet port and use port

**3 =** differential pressure variation versus flow between use port and discharge port



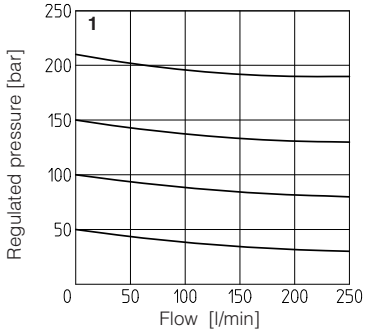



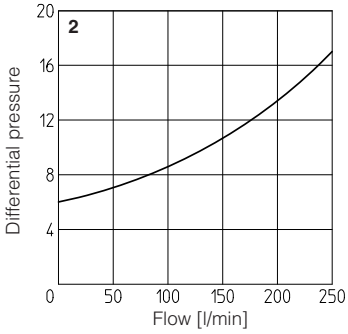

## 6 DIAGRAMS OF JPG-211

based on mineral oil ISO VG 46 at 50°C

**1 =** regulated pressure variation versus flow between inlet port and use port

**2 =** differential pressure variation versus flow between use port and discharge port



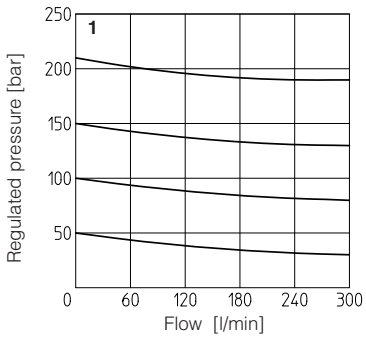



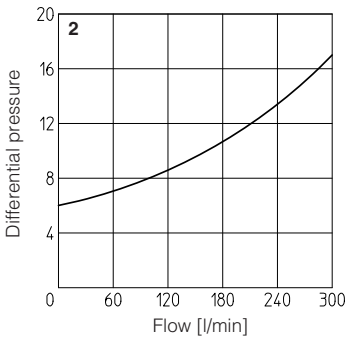

## 7 DIAGRAMS OF JPG-311

based on mineral oil ISO VG 46 at 50°C

**1 =** regulated pressure variation versus flow between inlet port and use port

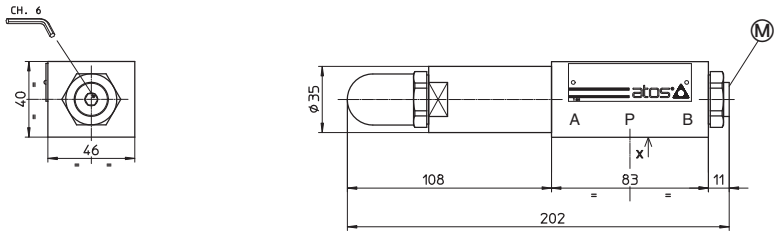
**2 =** differential pressure variation versus flow between use port and discharge port



## 8 INSTALLATION DIMENSIONS OF HG-0 VALVES [mm]

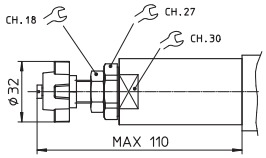
**HG-03***



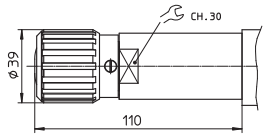

Ⓜ = Pressure gauge port = G 1/4”

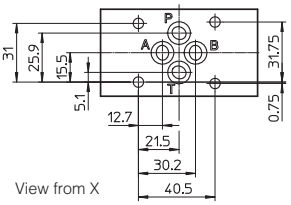
Mass: 2,3 Kg

**Adjustment device for option /V**




**Adjustment device for option /VF and /VS**



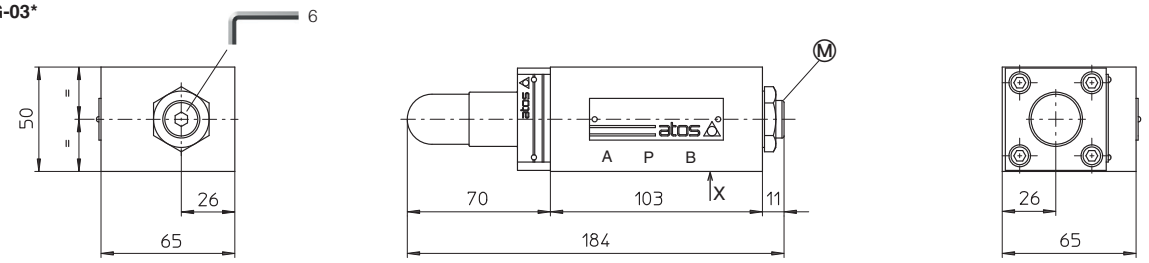




**ISO 4401: 2005**
**Mounting surface: 4401-03-02-0-05**
Diameter of ports A, B, P, T: Ø = 7,5 mm
Seals: 4 OR 108

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

## 9 INSTALLATION DIMENSIONS OF KG-0 VALVES [mm]

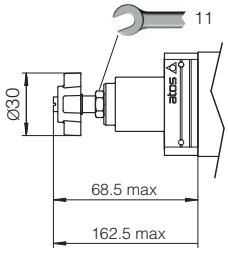
**KG-03***

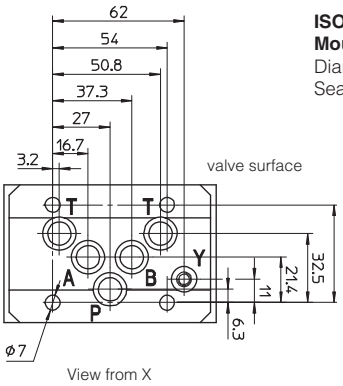



Ⓜ = Pressure gauge port = G 1/4”

Mass: 3,8 kg

**Adjustment device for option /V**



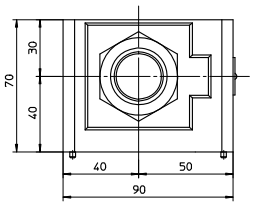



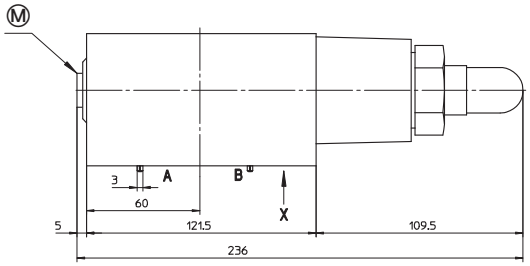

**ISO 4401: 2005**
**Mounting surface: 4401-05-04-0-05**
Diameter of ports A, B, P, T: Ø = 11,2 mm
Seals: 5 OR 2050

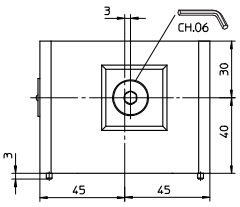
Fastening bolts: n° 4 socket head screws M6. The lenght depends on number and type of modular elements associated.

## 10 INSTALLATION DIMENSIONS OF JPG-2 VALVES [mm]

**JPG-211**



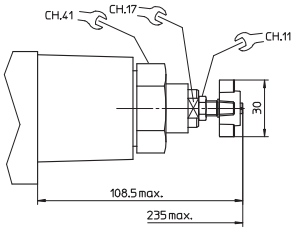



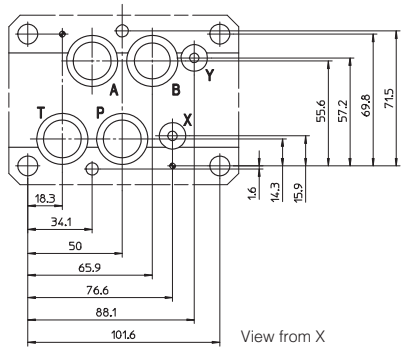




Ⓜ = Pressure gauge port = G 1/4"

Mass: 9 Kg

**Adjustment device for option /V**



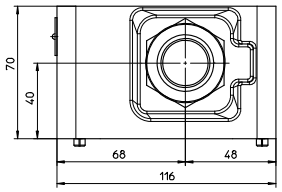



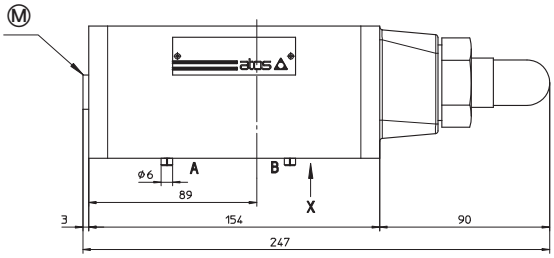

**ISO 4401: 2005**
**Mounting surface: 4401-07-07-0-05**
Diameter of ports A, B, P, T: Ø = 20 mm
Diameter of ports X, Y: Ø 7 mm
Seals: 4 OR 130: 2 OR 109

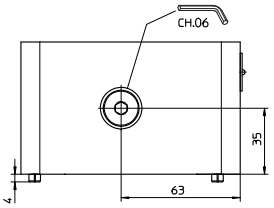
Fastening bolts: n° 4 socket head screws M10 and n° 2 M6. The lenght depends on number and type of modular elements associated.

## 11 INSTALLATION DIMENSIONS OF JPG-3 VALVES [mm]

**JPG-311**



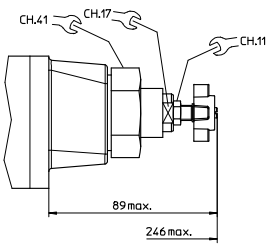



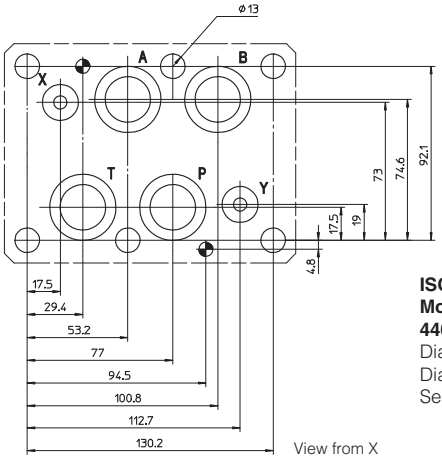




Ⓜ = Pressure gauge port = G 1/4"

Mass: 9 Kg

**Adjustment device for option /V**




**ISO 4401: 2005**
**Mounting surface:**
**4401-08-08-0-05 (without port L)**
Diameter of ports A, B, P, T: Ø = 24 mm
Diameter of ports X, Y: Ø 7 mm
Seals: 4 OR 4112: 2 OR 3056

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