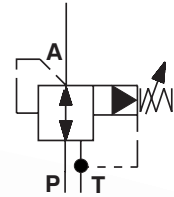


- Screw-in cartridge design
- 5 pressure ranges
- Pressure setting by
  - Hexagon set screw lock
  - Adjustable handknob

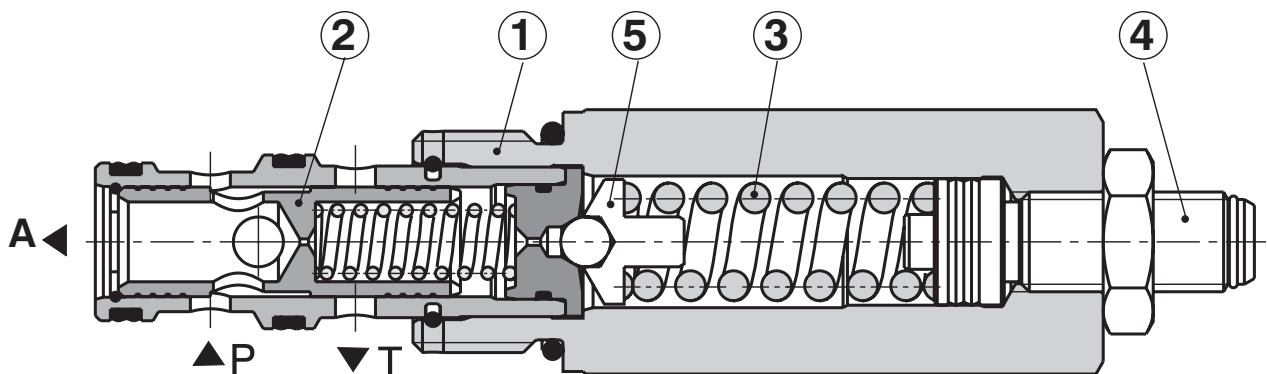


## Functional Description

The pressure valves SP4A-B3 are pilot operated screw-in cartridge pressure reducing valves designed as 3 way valves, i.e. with pressure protection of the secondary circuit. The reducing valve consists of a body (1) with thread 7/8-14 UNF, control spool (2), spring (3) and the adjustment element (4). The flow from the primary circuit flows to the first metering edge, where its pressure is reduced. The reduced pressure corresponds with the adjustment of the control spring of the ball pilot valve (5). The reduced pressure is continuously controlled and compared with the pressure preset. If any control error appears, the respective control action takes place and the reduced pressure returns to its preset value. If

pressure behind the valve increases due to the effect of external load acting on the user, the control spool shifts further against the spring, the reducing metering edge closes and the second metering edge opens. The fluid passes through the „third way“ to port T. The control flow of the pilot valve (from the spring room) is also routed to port T.

The valve body and the adjustment screw are zinc coated.



# Ordering Code

**SP4A-B3** /

**Directly Operated Pressure Relief Valve**

Standard

**S**

without designation  
**V**

**Seals**

NBR  
FPM (Viton)

**Pressure range**

|                          |            |
|--------------------------|------------|
| up to 63 bar (914 PSI)   | <b>6,3</b> |
| up to 100 bar (1450 PSI) | <b>10</b>  |
| up to 160 bar (2320 PSI) | <b>16</b>  |
| up to 250 bar (3626 PSI) | <b>25</b>  |
| up to 350 bar (5076 PSI) | <b>35</b>  |

**S**  
**R**

**Adjustment option**

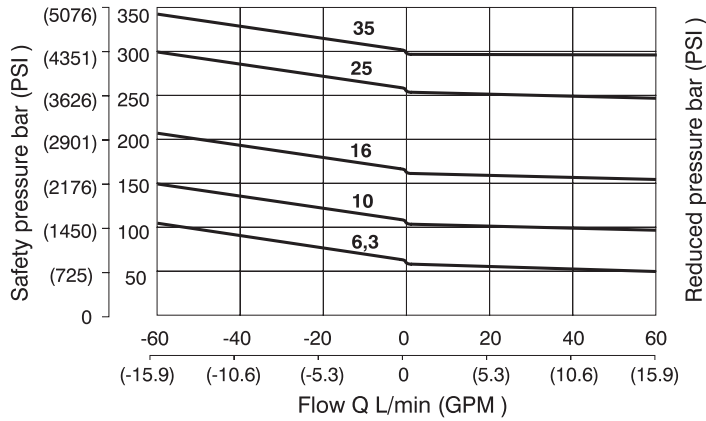
Hexagon set screw locknut 5 mm  
Adjustable handknob

## Technical Data

|  |                          |  |
|--|--------------------------|--|
| Cartridge thread                           |                          | 7/8 - 14 UNF - 2B                                      |
| Max. flow rate                             | L/min (GPM)              | 60 (15.85)   |
| Max. input pressure (port P)               | bar (PSI)                | 63 (914) 100 (1450) 160 (2320) 250 (3626) 350 (5076)   |
| Max. output pressure (port T)              | bar (PSI)                | 100 (1450)   |
| Working pressure related to flow           | bar (PSI)                | see p-Q characteristics                                |
| Hydraulic fluid                            |                          | Hydraulic oils of power classes (HL, HLP) to DIN 51524 |
| Fluid temperature range for standard (NBR) | °C (°F)                  | -30 ... +100 (-22 ... 212)                             |
| Fluid temperature range for Viton (FPM)    | °C (°F)                  | -20 ... +120 (-4 ... 248)                              |
| Viscosity range                            | mm <sup>2</sup> /s (SUS) | 10 ... 500 (49 ... 2450)                               |
| Max. degree of fluid contamination         |                          | Class 21/18/15 according to ISO 4406 (1999)            |
| Weight                                     | kg (lbs)                 | 0.24 (0.53)  |
| Maximum valve tightening torque            | Nm ( lbf.ft)             | 35+5 (25.8+3.7)  |
| Mounting position                          |                          | optional   |

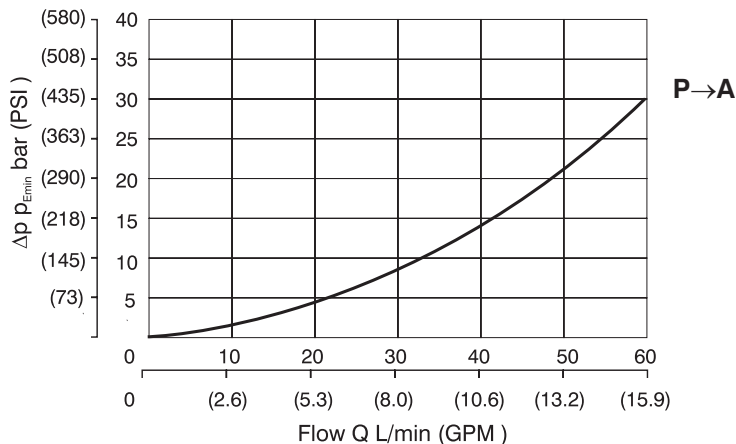
## p-Q Characteristics

Measured at  $v = 32 \text{ mm}^2/\text{s}$  (156 SUS)



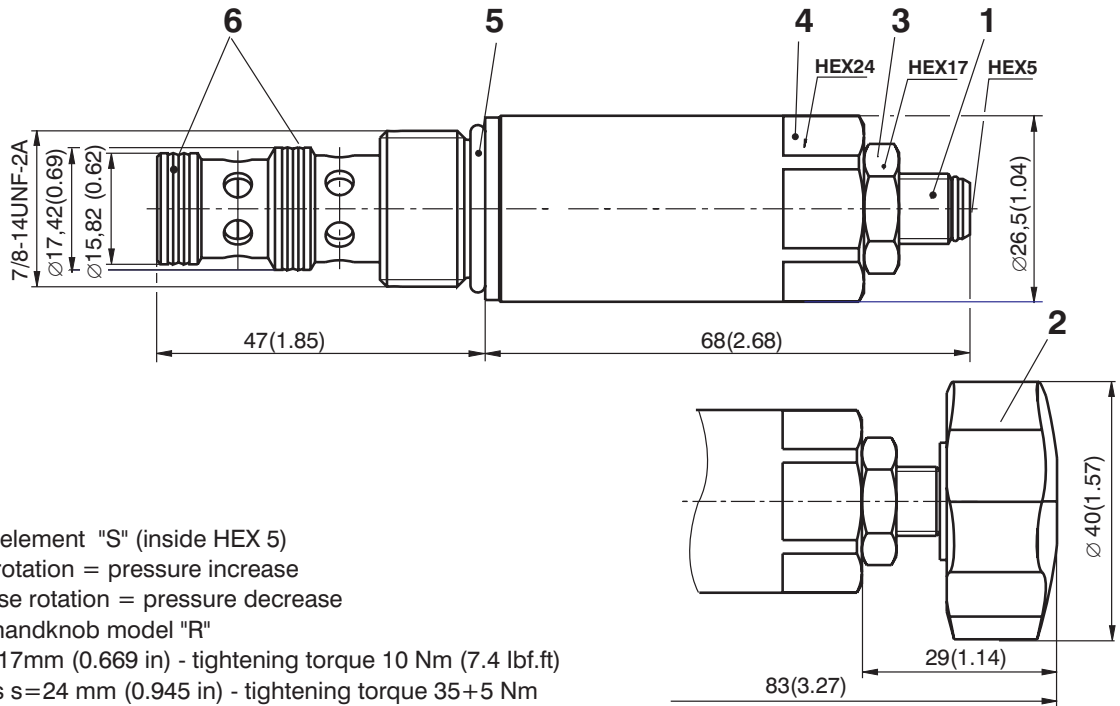
## Δp-Q Characteristic

Measured at  $v = 32 \text{ mm}^2/\text{s}$  (156 SUS)



# Valve Dimensions

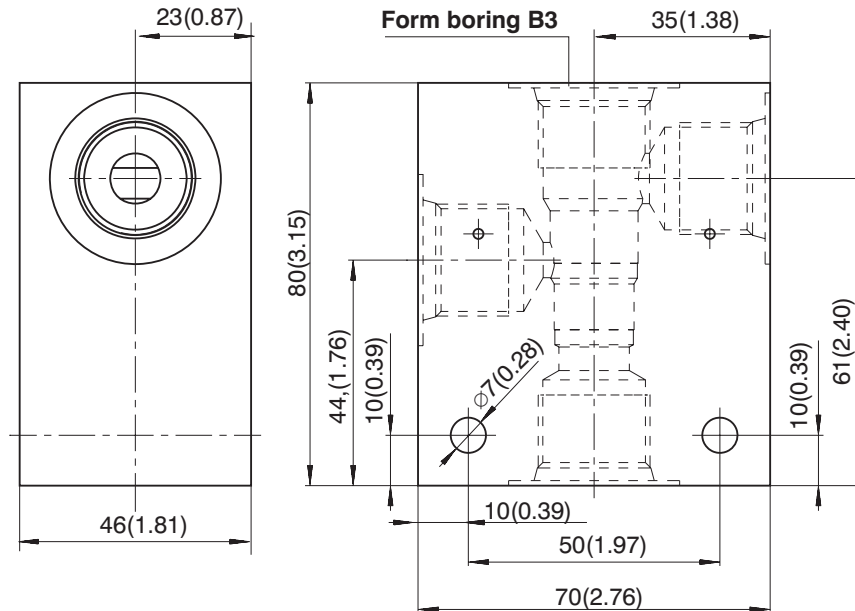
Dimensions in millimetres (inches)



- 1 Adjustment element "S" (inside HEX 5)  
 Clockwise rotation = pressure increase  
 Anticlockwise rotation = pressure decrease
- 2 Adjustable handknob model "R"
- 3 Locknut s=17mm (0.669 in) - tightening torque 10 Nm (7.4 lbf.ft)
- 4 Wrench flats s=24 mm (0.945 in) - tightening torque 35+5 Nm (25.8+3.7 lbf.ft)
- 5 O-ring 19,4 x 2,1 (supplied with valve)
- 6 Combined sealing:  
 DRYZ000002Z20 13,47 x 15,87 x 3,1  
 DUYZ000001Z20 17,47 x 15,07 x 3,1 (supplied with valve)

# Valve Body

Dimensions in millimetres (inches)



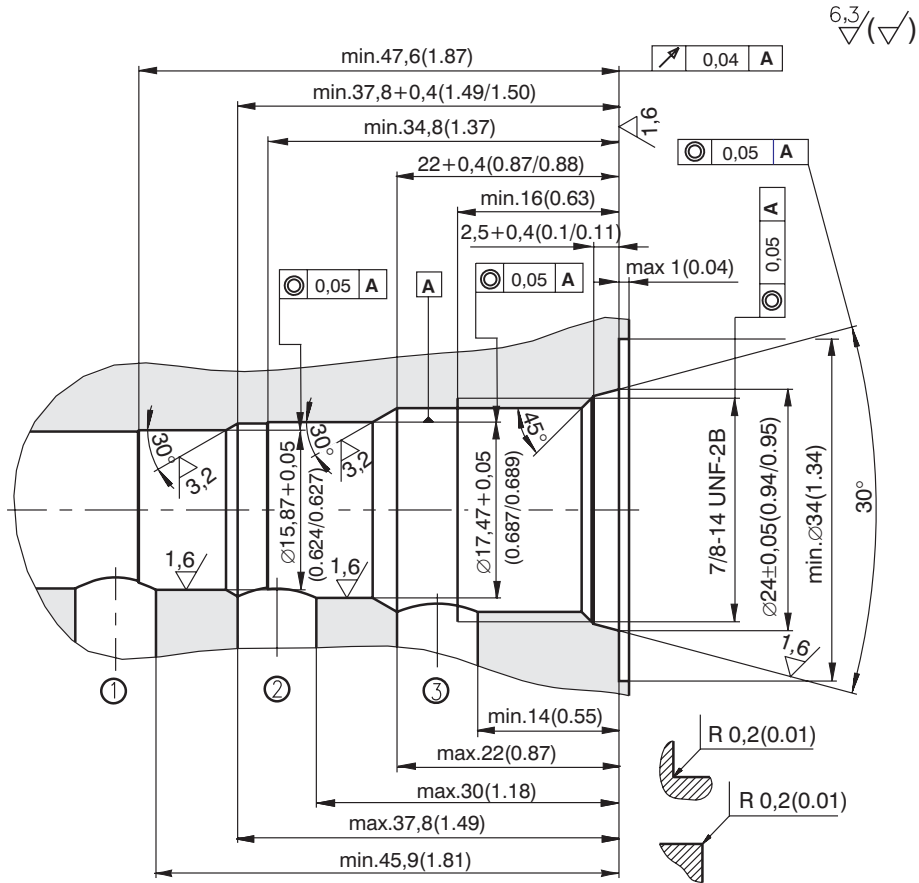
| Body material | Connecting size | Type code    | Operating pressures |
|---------------|-----------------|--------------|---------------------|
| Steel         | G3/8            | SB-B3-0103ST | 420 bar (6091 PSI)  |
| Steel         | SAE 8           | SB-B3-0104ST | 420 bar (6091 PSI)  |
| Aluminium     | G3/8            | SB-B3-0103AL | 250 bar (3626 PSI)  |
| Aluminium     | SAE 8           | SB-B3-0104AL | 250 bar (3626 PSI)  |

**Note:**

- For detailed valve body ordering code refer to data sheet HA 0018

# Cavity

Dimensions in millimetres (inches)



## Spare Parts

| Seal kit                                 | Order number - 18775600 |
|--|-------------------------|
| <b>Dualseal - PU</b>                     |                         |
| DRYZ000002Z20 13,47 x 15,87 x 3,1 (pc..) | 20159100                |
| DUYZ000001Z20 17,47 x 15,07 x 3,1 (1pc.) | 24220800                |
| <b>O-ring - NBR</b>                      |                         |
| 19,4 x 2,1 (1pc.)                        | 20143900                |

## Caution!

- The packing foil is recyclable.
- The technical information regarding the product presented in this catalogue is for descriptive purposes only. It should not be construed in any case as a guaranteed representation of the product properties in the sense of the law.

ARGO-HYTOS s.r.o. CZ - 543 15 Vrchlábí  
 Tel.: +420-499-403111, Fax: +420-499-403421  
 E-mail: sales.cz@argo-hytos.com  
 www.argo-hytos.com