

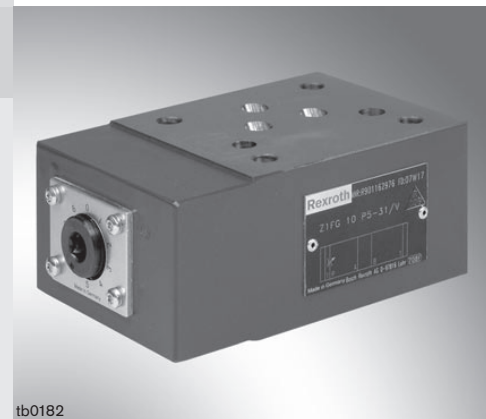
# Throttle valve

RE 27488/05.07

1/8

## Type Z.FG

Size 10  
 Component series 3X  
 Maximum operating pressure 315 bar  
 Maximum flow 160 l/min



tb0182

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## Features

- Sandwich plate valve
- Porting pattern to ISO 4401-05-04-0-05
- For limiting the flow of 2 actuator ports
- Adjustment element:  
Spindle with hexagon socket and scale

Information on available spare parts:  
[www.boschrexroth.com/spc](http://www.boschrexroth.com/spc)

### Ordering code



Sandwich plate valve	= Z
<b>Number of functions</b>	
1 – Throttling in channel A, B or P	= 1
2 – Throttling in channels A and B	= 2
Throttle valve	= FG
Size 10	= 10
Throttling in channels A and B	= -
Throttling in channel A	= A
Throttling in channel B	= B
Throttling in channel P	= P
<b>Adjustment element</b>	
Spindle with hexagon socket and scale	= 5

Further details in clear text

**V =**

**Seal material**  
FKM seals  
(other seals on request)

**⚠ Attention!**  
Observe compatibility of seals with hydraulic fluid used!

**3X =** Component series 30 to 39  
(30 to 39: unchanged installation and connection dimensions)

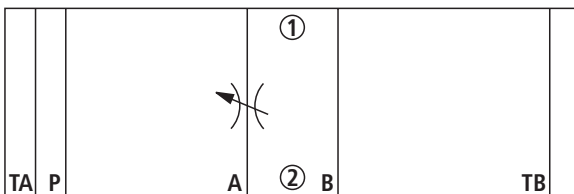
### Standard types

Type	Material number
Z1FG 10 A5-3X/V	R900566445
Z1FG 10 B5-3X/V	R900538832
Z1FG 10 P5-3X/V	R901162976

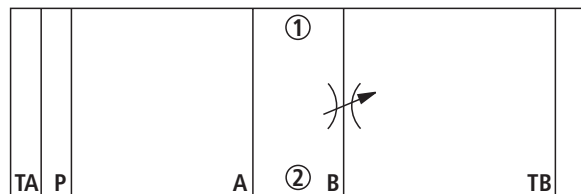
Type	Material number
Z2FG 10 -5-3X/V	R900987000

### Symbols ( ① = component side, ② = plate side)

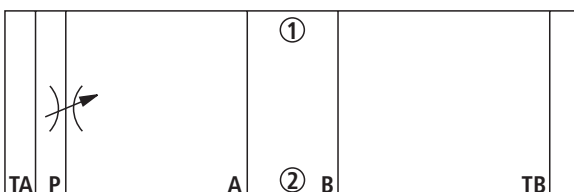
Type Z1FG 10 A5-3X/V



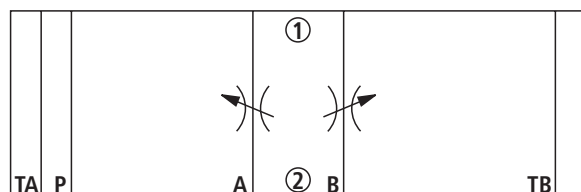
Type Z1FG 10 B5-3X/V



Type Z1FG 10 P5-3X/V



Type Z2FG 10 -5-3X/V



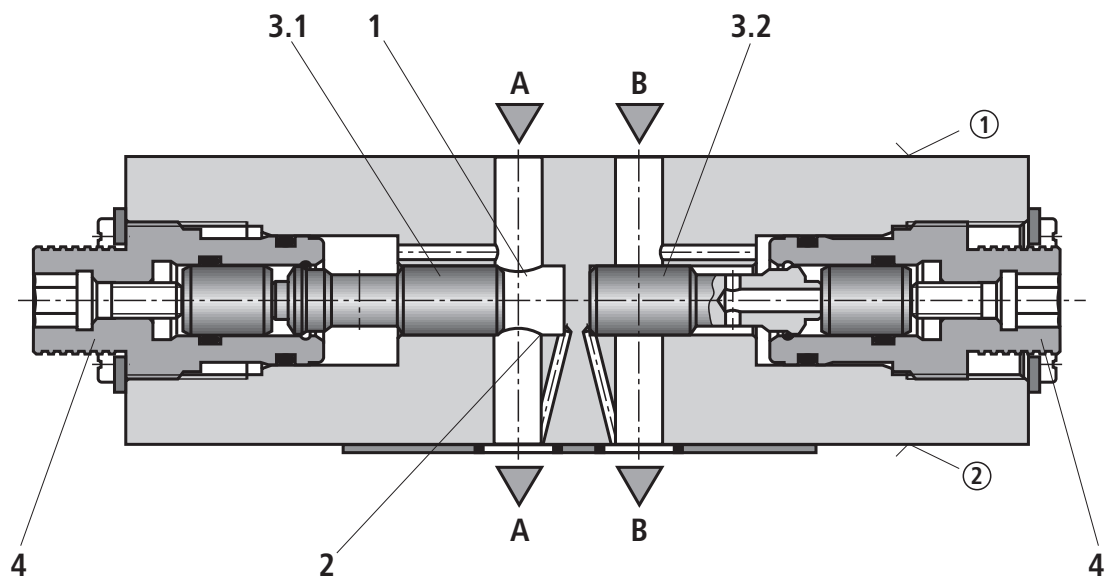
## Function, section

Valves of type Z.FG are throttle valves of sandwich plate design. They are used to limit the flow in one or two actuator ports.

Two throttle valves arranged symmetrically to each other limit the flow in both directions.

When throttled, the hydraulic fluid flows through channel A1 or B1 via throttling point (1), which is formed by control land (2) and throttling piston (3.1), to actuator A2 or B2, respectively. Throttling piston (3.1) can be axially adjusted by means of spindle (4) and thus allows the flow across throttling point (1) to be adjusted. The flow depends on the pressure differential and viscosity.

With variant "P" throttling takes place in channel P. Channels A and B allow a free flow. With variants "A" or "B" the channel in which no throttling takes place allows a free flow of the fluid.



Type Z2FG 10-5-3X/V

**Technical data** (for applications outside these parameters, please consult us!)**General**

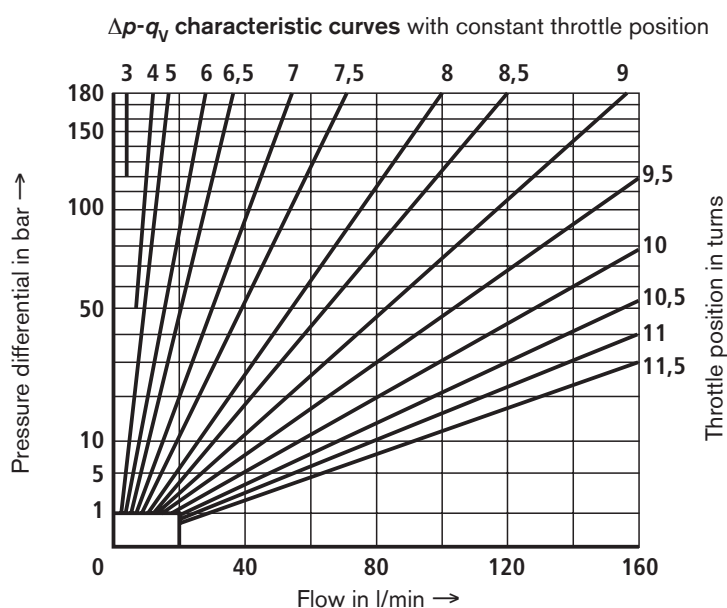
Weight	– Variants „A“ and „B“	kg	approx. 3
	– Variant „P“	kg	approx. 2.5
	– Variant „–“	kg	approx. 3
Installation position			Optional
Ambient temperature range		°C	–20 to +80

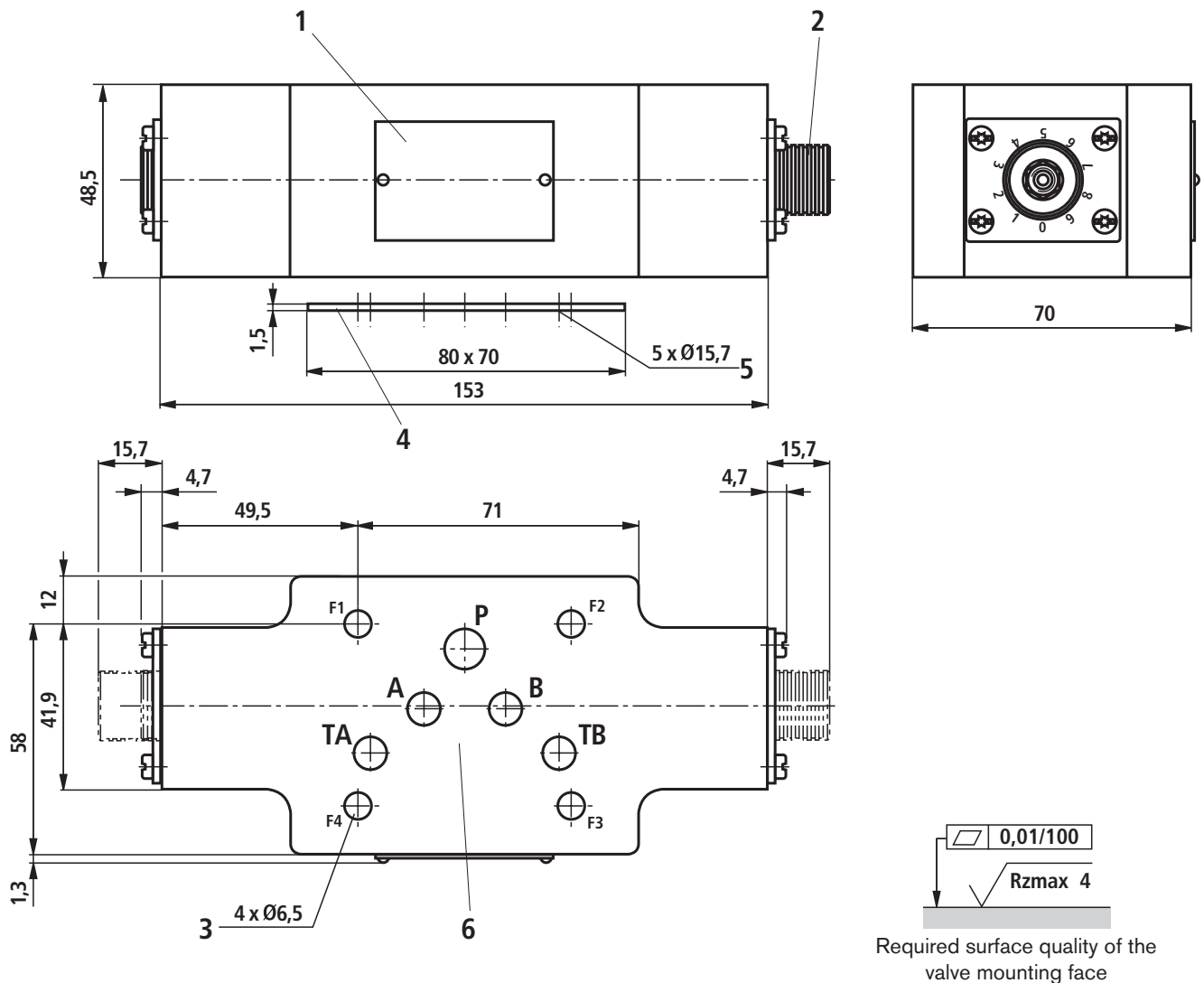
**Hydraulic**

Maximum operating pressure	bar	315
Maximum flow	l/min	160
Hydraulic fluid		Mineral oil (HL, HLP) to DIN 51524; other hydraulic fluids on request
Hydraulic fluid temperature range	°C	–20 to +80
Viscosity range	mm <sup>2</sup> /s	10 to 800
Permissible max. degree of contamination of the hydraulic fluid - cleanliness class to ISO 4406 (c)		Class 20/18/15 <sup>1)</sup>

<sup>1)</sup> The cleanliness classes specified for components must be adhered to in hydraulic systems. Effective filtration prevents malfunction and, at the same time, prolongs the service life of components.

For the selection of filters, see data sheets RE 50070, RE 50076, RE 50081, RE 50086, RE 50087 and RE 50088.

**Characteristic curves** (measured with HLP46,  $\vartheta_{oil} = 40 \text{ °C} \pm 5 \text{ °C}$ )

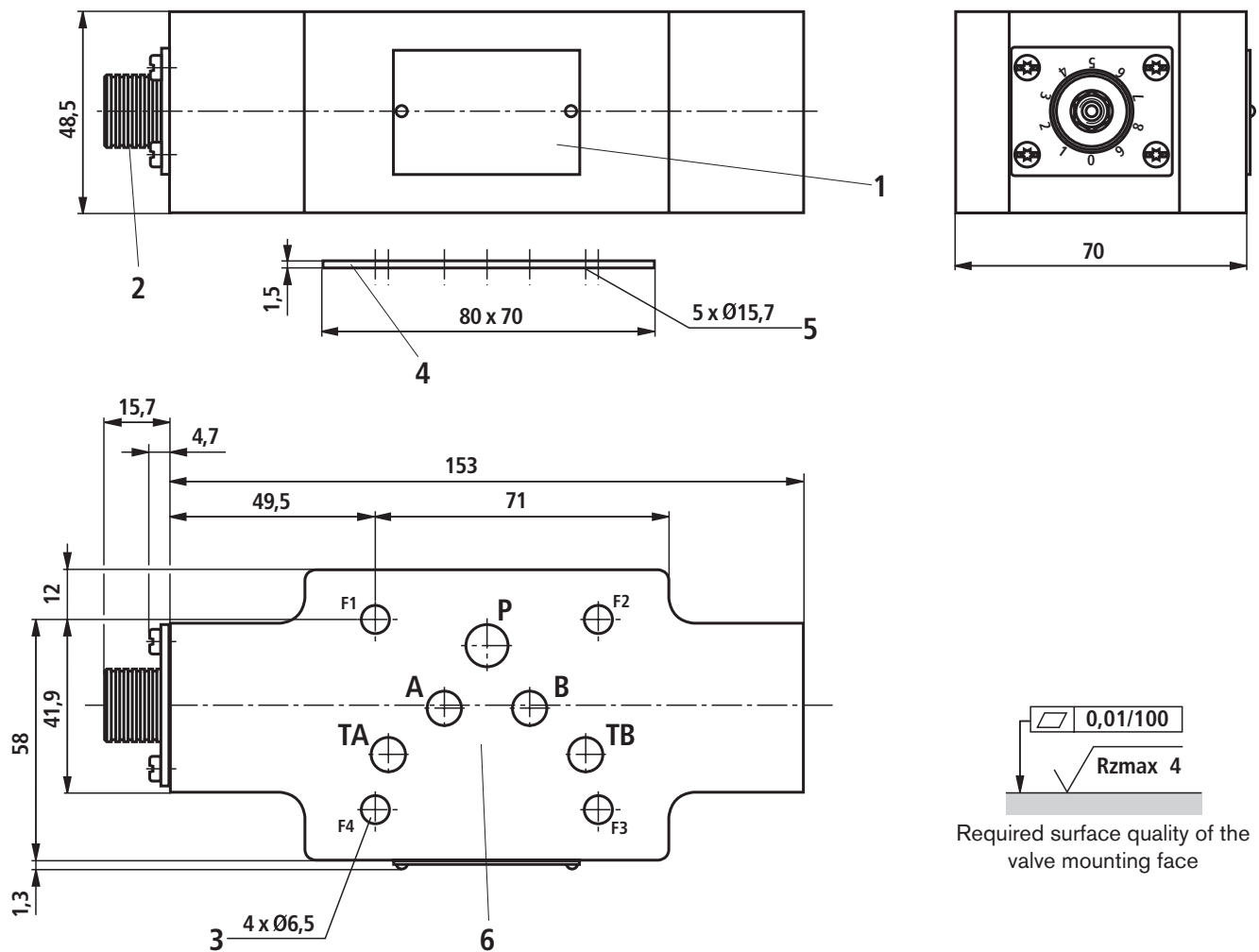
**Unit dimensions: Variant “-“ (dimensions in mm)**


Required surface quality of the valve mounting face

- 1 Nameplate
- 2 Adjustment element “5”  
Spindle with hexagon socket and scale for adjusting the flow cross-section (hexagon socket 8 A/F)
  - Anti-clockwise turning = larger flow
  - Clockwise turning = smaller flow
- 3 4 valve mounting bores
- 4 R-ring plate
- 5 Identical seal rings for ports A, B, P, TA, TB
- 6 Porting pattern to ISO 4401-05-04-0-05

**Valve fixing screws (separate order)**
**4 hexagon socket head cap screws**
**ISO 4762 - M6 - 10.9-flZn-240h-L**

 Friction coefficient  $\mu_{\text{total}} = 0.09$  to  $0.14$ ,  
 tightening torque  $M_T = 12 \text{ Nm} \pm 10\%$

**Unit dimensions: Variant "A" (dimensions in mm)**


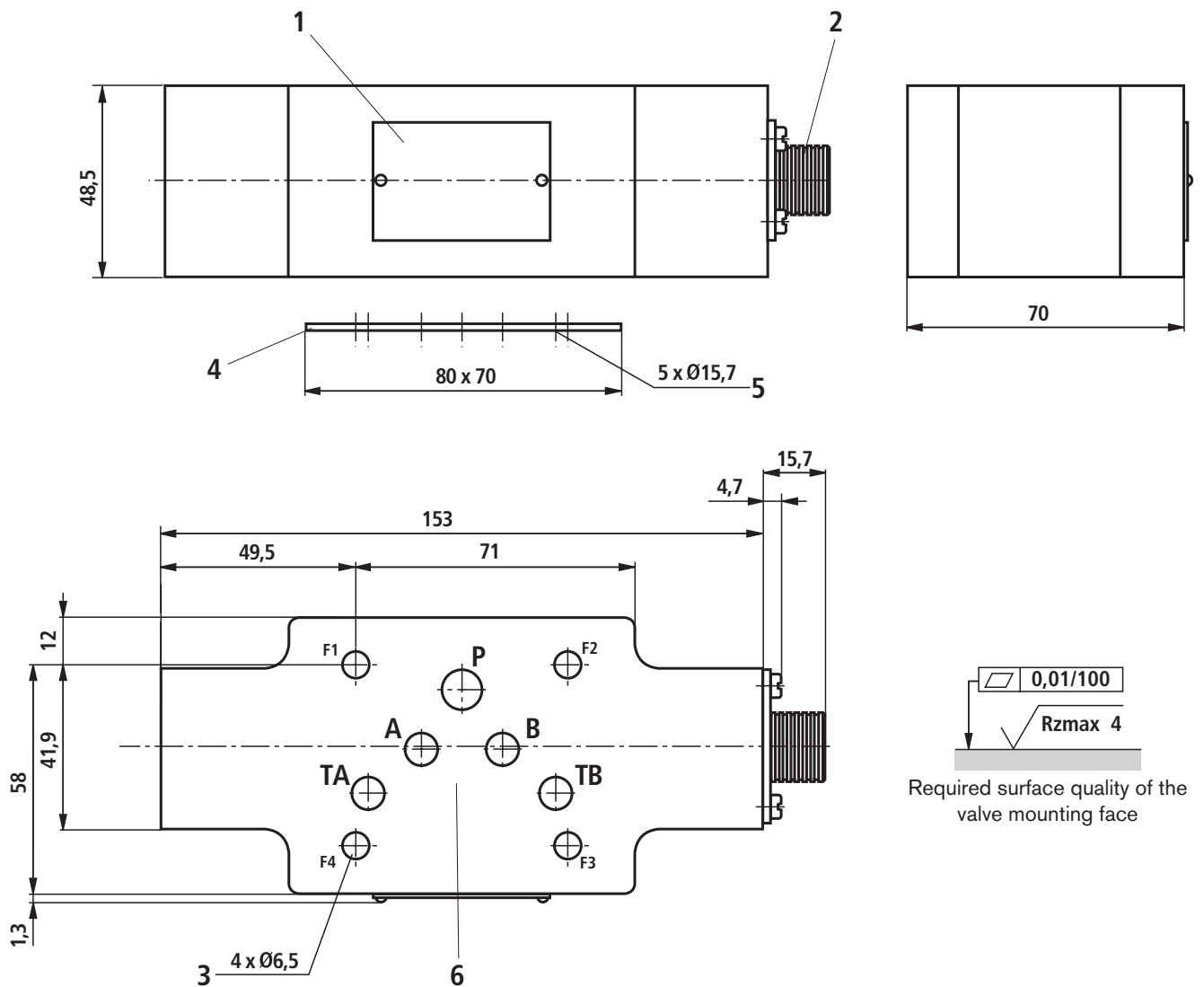
- 1 Nameplate
- 2 Adjustment element "5"  
Spindle with hexagon socket and scale for adjusting the flow cross-section (hexagon socket 8 A/F)
  - Anti-clockwise turning = larger flow
  - Clockwise turning = smaller flow
- 3 4 valve mounting bores
- 4 R-ring plate
- 5 Identical seal rings for ports A, B, P, TA, TB
- 6 Porting pattern to ISO 4401-05-04-0-05

**Valve fixing screws** (separate order)

**4 hexagon socket head cap screws**  
**ISO 4762 - M6 - 10.9-flZn-240h-L**

Friction coefficient  $\mu_{\text{total}} = 0.09$  to  $0.14$ ,  
tightening torque  $M_T = 12 \text{ Nm} \pm 10\%$

## Unit dimensions: Variant "B" (dimensions in mm)



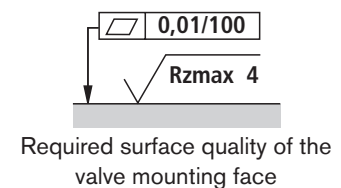
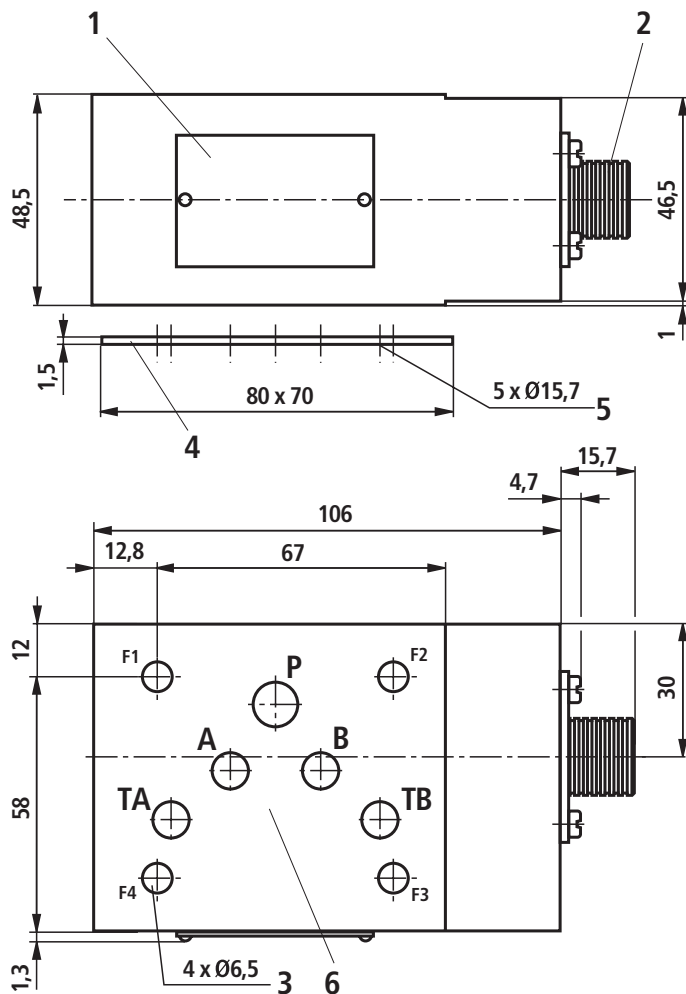
- 1 Nameplate
- 2 Adjustment element "5"  
Spindle with hexagon socket and scale for adjusting the flow cross-section (hexagon socket 8 A/F)
  - Anti-clockwise turning = larger flow
  - Clockwise turning = smaller flow
- 3 4 Valve mounting bores
- 4 R-ring plate
- 5 Identical seal rings for ports A, B, P, TA, TB
- 6 Porting pattern to ISO 4401-05-04-0-05

Valve fixing screws (separate order)

**4 hexagon socket head cap screws  
ISO 4762 - M6 - 10.9-fZn-240h-L**

Friction coefficient  $\mu_{\text{total}} = 0.09$  to  $0.14$ ,  
tightening torque  $M_T = 12 \text{ Nm} \pm 10\%$

## Unit dimensions: Variant "P" (dimensions in mm)



- 1 Nameplate
- 2 Adjustment element "5"  
Spindle with hexagon socket and scale for adjusting the flow cross-section (hexagon socket 8 A/F)
  - Anti-clockwise turning = larger flow
  - Clockwise turning = smaller flow
- 3 4 valve mounting bores
- 4 R-ring plate
- 5 Identical seal rings for ports A, B, P, TA, TB
- 6 Porting pattern to ISO 4401-05-04-0-05

### Valve fixing screws (separate order)

#### 4 hexagon socket head cap screws

#### ISO 4762 - M6 - 10.9-flZn-240h-L

Friction coefficient  $\mu_{\text{total}} = 0.09$  to 0.14,  
tightening torque  $M_T = 12 \text{ Nm} \pm 10\%$