Rexroth
Bosch Group

2-way flow control valve

RE 28164/05.11 1/8
Replaces: 02.03

Type Z2FRM

Size 6
Component series 2X
Maximum operating pressure 315 bar
Maximum flow 32 l/min

H5379

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Features

- Sandwich plate valve
- Porting pattern according to DIN 24340 form A
- Porting pattern according to ISO 4401-03-02-0-05 (**with** locating hole)
- With 1 or 2 flow control cartridges
- Adjustment type with internal hexagon

Ordering code

Z	2FRM	6		B	2	–2X/		R	V		*

Sandwich plate design

2-way flow control valve

Size 6 **= 6**

Flow control function (discharge control) in

Channel A **= A**

Channel B **= B**

Channel A and B **= C**

Channel T [1] **= T**

Without closing of the pressure compensator **= B**

Adjustment type

With internal hexagon **= 2**

2X = Component series 20 to 29
(20 to 29: Unchanged installation and connection dimensions)

6Q = up to 6.0 l/min

32Q = up to 32.0 l/min

Flow

R = with check valve

V = FKM seals
(other seals upon request)
Attention!
Observe compatibility of seals with hydraulic fluid used!

Seal material

No code = Without locating hole

/60 [2] **=** With locating hole

Further details in the plain text

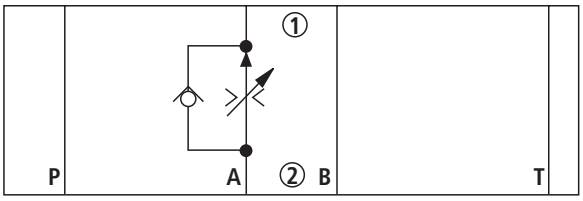
[1] The flow control function in channel P (supply control) results from the rotation around the longitudinal axis, see also page 8.

[2] Locating pin ISO 8752-3x8-St,
Material no. **R900005694** (separate order)

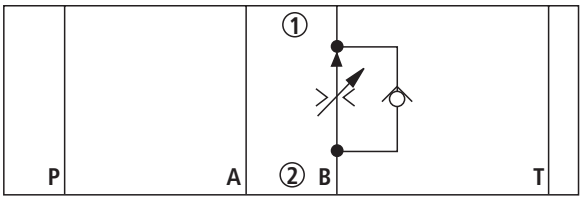
Standard types and standard units are contained in the EPS (standard price list).

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

Type Z2FRM 6 A…



Type Z2FRM 6 B…



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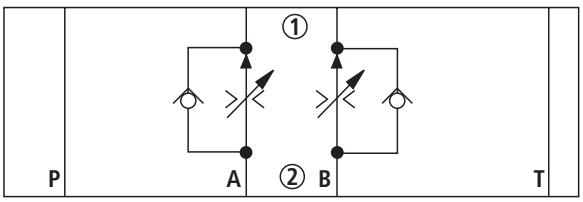
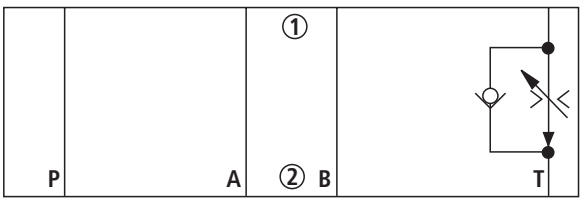


Type Z2FRM 6 T…



Function, section

The valve type Z2FRM is a 2-way flow control valve in sandwich plate design. It is used for keeping a flow constant, independent of pressure and temperature.

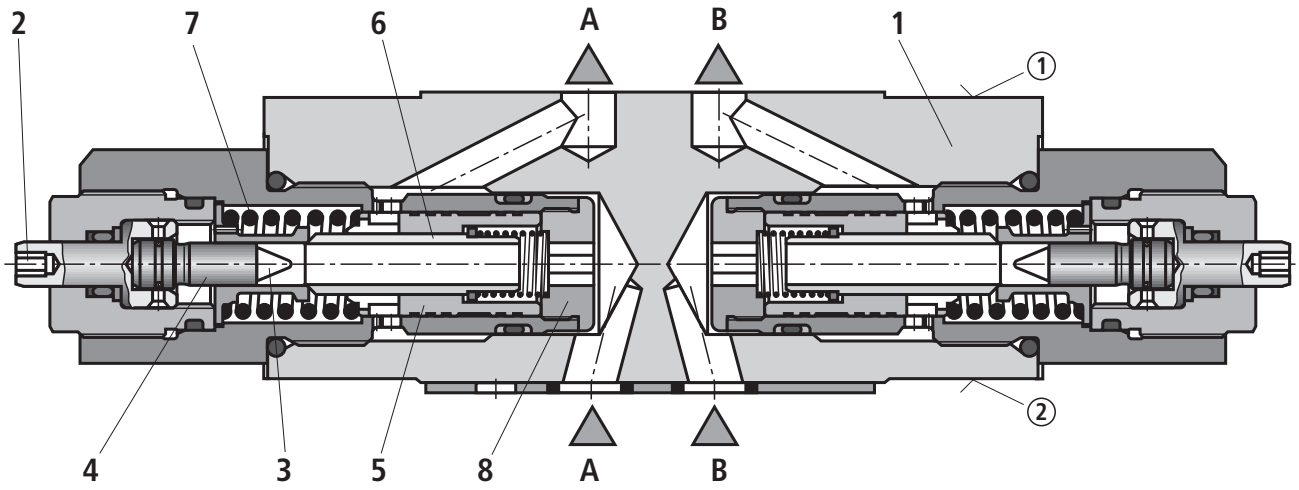
The valve basically comprises of a housing (1) and one or two flow control cartridges.

The flow from channel A②/B② to channel A①/B① is controlled at the throttling point (3). The throttle cross-section is set by turning the adjustment type (2) between the throttling point (3) and the throttling pin (4).

In order to keep the flow in channel A①/B① constant, independent of the pressure, a pressure compensator (5) is fitted downstream of the throttling point (3).

The compression spring (7) presses the pressure compensator (5) against the plug screw (8) and keeps the pressure compensator in the open position when there is no flow through the valve. When fluid flows through the valve, the pressure acting in channel A②/B② applies a force to the pressure compensator (5). The pressure compensator moves into the control position until the forces balance. If the pressure in channel A②/B② rises, the pressure compensator (5) moves in the closing direction until a balance of forces is once again attained. Due to this continuous compensation of the pressure compensator, a constant flow is obtained.

The free flow from channel A①/B① to channel A②/B② is via the check valve (6).



Type Z2FRM 6 C…

① = component side

② = plate side

Technical Data (For applications outside these parameters, please consult us!)

general

Weight	– Flow control function in channel A, B, T	kg	1.3
	– Flow control function in channel A, B	kg	1.4
Installation position			Any
Ambient temperature range		°C	–20 to +50

hydraulic

Maximum operating pressure		bar	315
Minimum pressure differential	– with $q_{V\,max}$	bar	18
	– with $q_{V\,min}$	bar	7
Pressure stability up to Δp = 315 bar		%	±3 ($q_{V\,max}$)
Maximum flow	– $q_{V\,max}$	l/min	6; 32
	– $q_{V\,min}$	cm³/min	50; 250
Hydraulic fluid			See table below
Hydraulic fluid temperature range		°C	–20 to +80
Viscosity range		mm²/s	10 to 800
Maximum permitted degree of contamination of the hydraulic fluid - cleanliness class according to ISO 4406 (c)			Class 20/18/15 [1]

Hydraulic fluid		Classification	Suitable sealing materials	Standards
Mineral oils and related hydrocarbons		HL, HLP, HLPD	FKM	DIN 51524
Environmentally compatible	– Insoluble in water	HETG	FKM	ISO 15380
		HEES	FKM	
	– Soluble in water	HEPG	FKM	ISO 15380
Flame-resistant	– Water-free	HFDU, HFDR	FKM	ISO 12922

☞ **Important information on hydraulic fluids!**

– For more information and data on the use of other hydraulic fluids refer to data sheet 90220 or contact us!

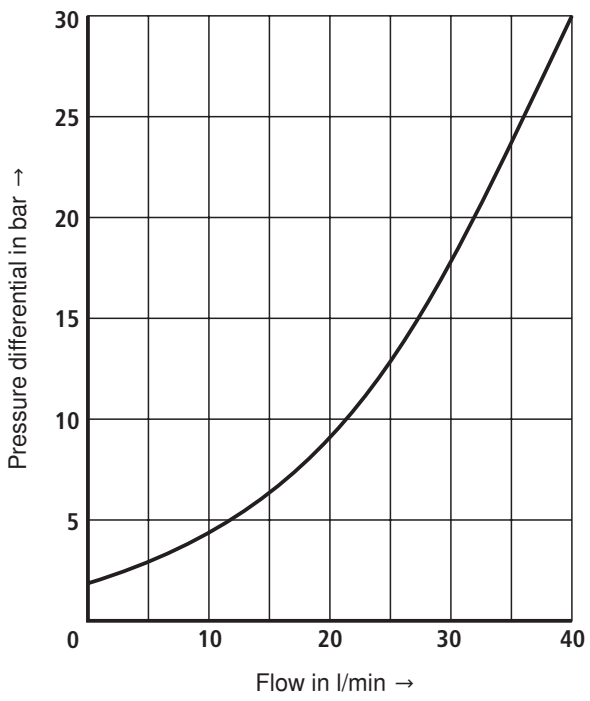
– There may be limitations regarding the technical valve data (temperature, pressure range, service life, maintenance intervals, etc.)!

[1] The cleanliness classes specified for the components must be adhered to in hydraulic systems. Effective filtration prevents faults and at the same time increases the service life of the components.

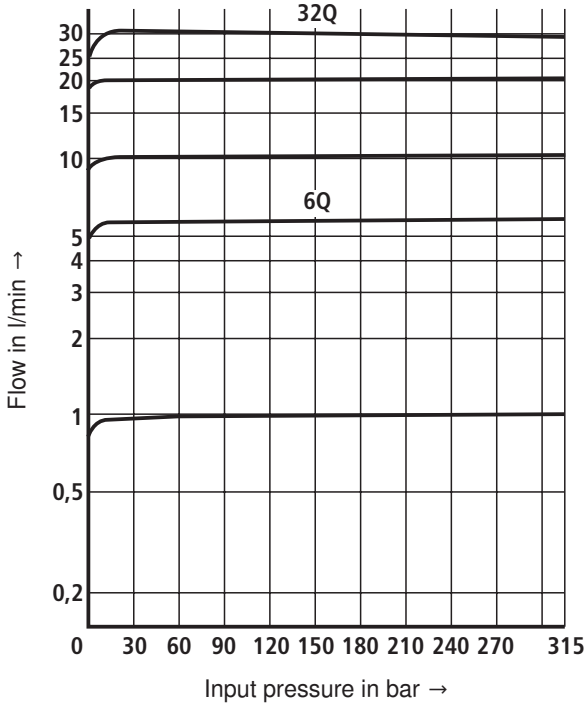
For the selection of the filters see www.boschrexroth.com/filter.

Characteristic curves (measured with HLP46, ϑ_{oil} = 40 ± 5 °C)

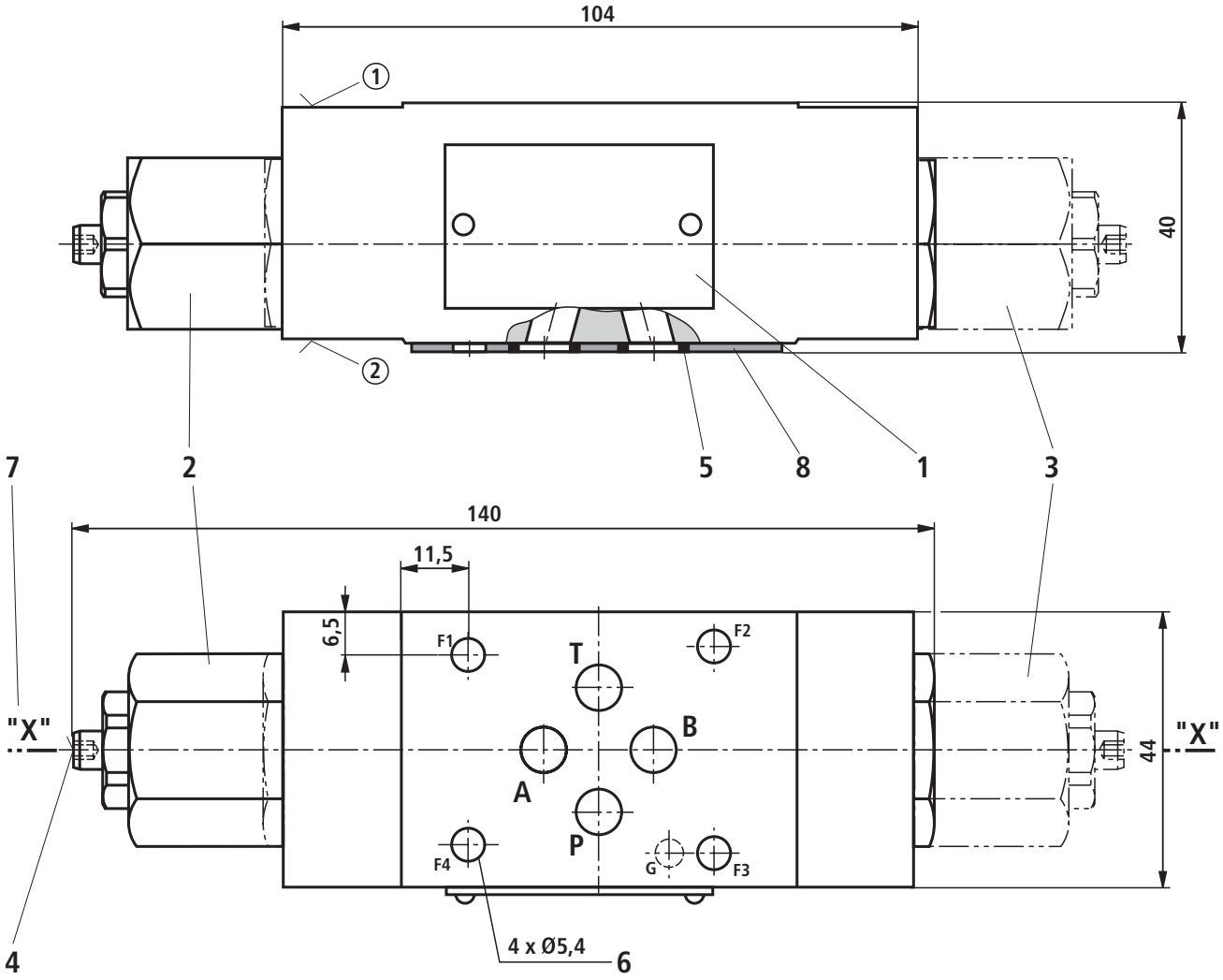
Δp-q_V characteristic curves
(via check valve; orifice closed)



Flow q_V against the input pressure p_E

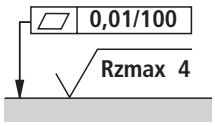


Unit dimensions: Version "A" and "B" (dimensions in mm)



① Component side – porting pattern according to ISO 4401-03-02-0-05 (**with** locating hole Ø3 x 5 mm deep)

② Plate side – porting pattern according to DIN 24340 form A (**without** locating hole), or ISO 4401-03-02-0-05 (**with** locating hole for locating pin ISO 8752-3x8-St; version "/60")



Required surface quality of the valve mounting face

1 Name plate

2 Flow control cartridge with flow control in channel A, hexagon SW27, M_A = 50 Nm

3 Flow control cartridge with flow control in channel B, hexagon SW27, M_A = 50 Nm

4 Adjustment type with internal hexagon SW3

5 Identical seal rings for ports A②, B②, P②, T②

6 Valve mounting bores

7 Conversion from discharge into supply control is effected by rotating the device around the "X"-"X" axis

8 Seal ring plate

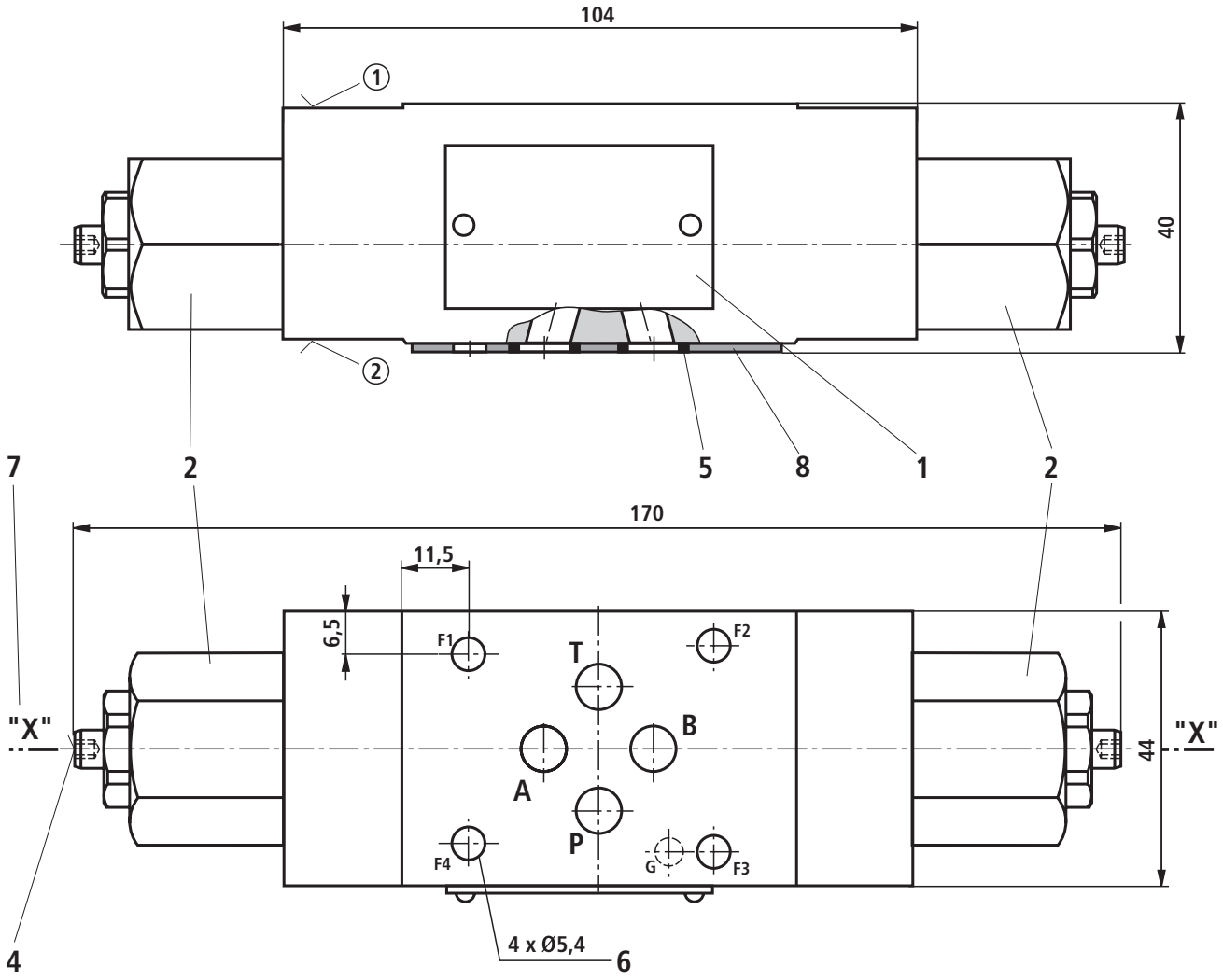
Valve mounting screws (separate order)

4 hexagon socket head cap screws ISO 4762 - M5 - 10.9

☞ **Note!**

Length and tightening torque of the valve mounting screws must be calculated according to the components mounted under and over the sandwich plate valve.

Unit dimensions: Version "C" (dimensions in mm)



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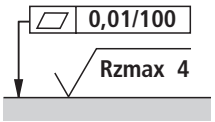


Required surface quality of the valve mounting face

1 Name plate

2 Flow control cartridge, hexagon SW27, M_A = 50 Nm

4 Adjustment type with internal hexagon SW3

5 Identical seal rings for ports A②, B②, P②, T②

6 Valve mounting bores

7 Conversion from discharge into supply control is effected by rotating the device around the "X"-"X" axis

8 Seal ring plate

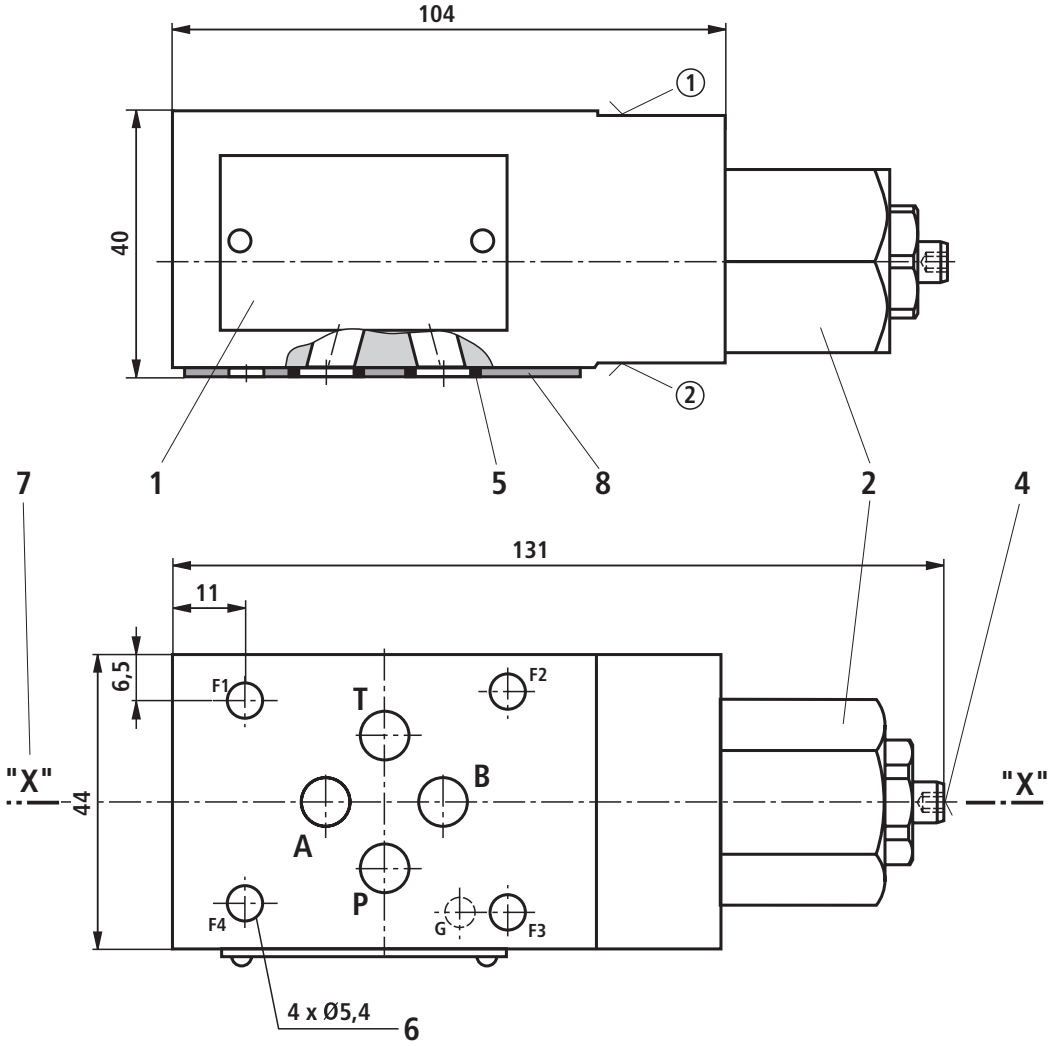
Valve mounting screws (separate order)

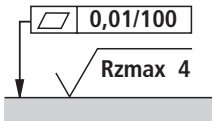
4 hexagon socket head cap screws ISO 4762 - M5 - 10.9

☞ **Note!**

Length and tightening torque of the valve mounting screws must be calculated according to the components mounted under and over the sandwich plate valve.

Unit dimensions: Version "T" (dimensions in mm)





Required surface quality of the valve mounting face

Item explanations and **valve mounting screws** see page 7.