

Twin throttle check valve

RE 27506/05.11
Replaces: 02.03

1/8

Type Z2FS

Size 6
 Component series 4X
 Maximum operating pressure 315 bar
 Maximum flow 80 l/min



H5556

Table of contents

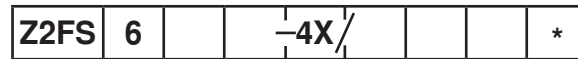
Contents	Page
Features	1
Ordering code	2
Symbols	2
Function, section	3
Technical data	4
Characteristic curves	5
Unit dimensions	6, 7

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)
- For the main or pilot flow limitation of 2 actuator ports
- 4 adjustment types:
 - Set screw with lock nut and protective cap
 - Lockable rotary knob with scale
 - Spindle with internal hexagon and scale
 - Rotary knob with scale
- For supply or discharge throttling

Information on available spare parts:
www.boschrexroth.com/spc

Ordering code



Twin throttle check valve;
sandwich plate design

Size 6 = 6

Throttle check valve side A and B = -¹⁾

Throttle check valve side A = A

Throttle check valve side B = B

Adjustment type

Setscrew with lock nut and protective cap = 2

Lockable rotary knob with scale = 3²⁾

Spindle with internal hexagon and scale = 5

Rotary knob with scale = 7

- ¹⁾ Identical adjustment types on the A and B side.
- ²⁾ H key with material no. **R900008158** is included in the delivery.
- ³⁾ Locating pin ISO 8752-3x8-St, material no. **R900005694** (separate order)

Further details in the plain text

No code = Without locating hole
/60³⁾ = With locating hole

Seal material
No code = NBR seals
V = FKM seals
(other seals upon request)

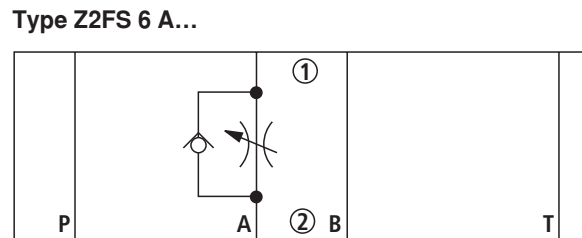
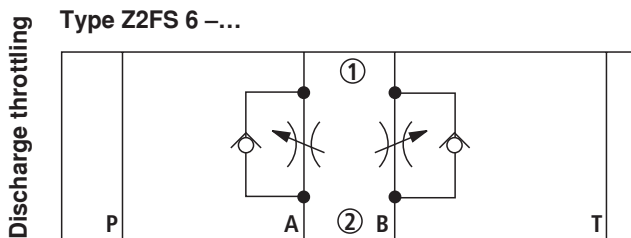
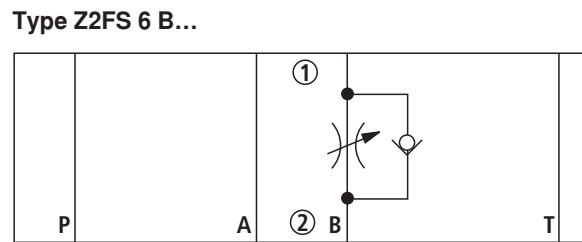
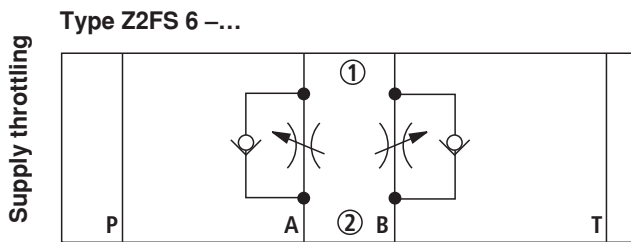
Observe compatibility of seals with hydraulic fluid used!

1Q = With fine adjustment
2Q = Standard design

4X = Component series 40 to 49
(40 to 49: unchanged installation and connection dimensions)

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

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



Function, section

The valve type Z2FS is a twin throttle check valve in sandwich plate design. It is used for the main or pilot flow limitation of one or two actuator ports.

Two throttle check valves aligned symmetrically to each other limit flows in one direction and allow free return flow in the opposite direction.

In the supply throttling, the hydraulic fluid reaches actuator A ② through channel ① via the throttling point (1) created by the valve seat (2) and the throttle spool (3). The throttle spool (3) can be axially adjusted by means of a setscrew (4) and thus allows for the setting of the throttling point (1).

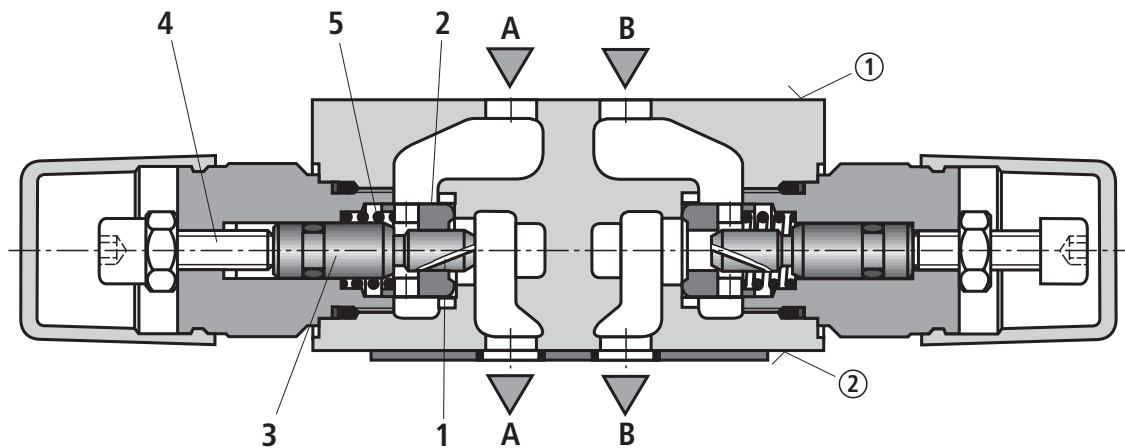
The hydraulic fluid flowing back from the actuator A ② moves the valve seat (2) against the spring (5) in the direction of the throttle spool (3) and thus allows for the unhindered flow as check valve. Depending on the installation position, the throttling effect may be directly in the supply or in the discharge.

Main flow limitation (version "2Q")

For changing the velocity of an actuator (main flow limitation), the twin throttle check valve is installed between the directional valve and the subplate.

Pilot flow limitation (version "1Q")

With pilot operated directional valves, the twin throttle check valve can be used as switching time adjustment (pilot flow limitation). Then, it is installed between pilot control and main valve.



Type Z2FS 6 -2... (supply throttling)

① = component side

② = plate side

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

Weight	kg	Approx. 0.8
Installation position		Any
Ambient temperature range	°C	-20 to +80

hydraulic

Maximum operating pressure	bar	315
Maximum flow	l/min	80
Hydraulic fluid		See table below
Hydraulic fluid temperature range	°C	-20 to +80
Viscosity range	mm ² /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	NBR, FKM	DIN 51524	
Environmentally compatible	– Insoluble in water	HETG	ISO 15380	
		HEES		FKM
Flame-resistant	– Soluble in water	HEPG	ISO 15380	
	– Water-free	HFDU, HFDR	ISO 12922	
	– Water-containing	HFC (Fuchs Hydrotherm 46M, Petrofer Ultra Safe 620)	NBR	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.)!

– Flame-resistant – water-containing:

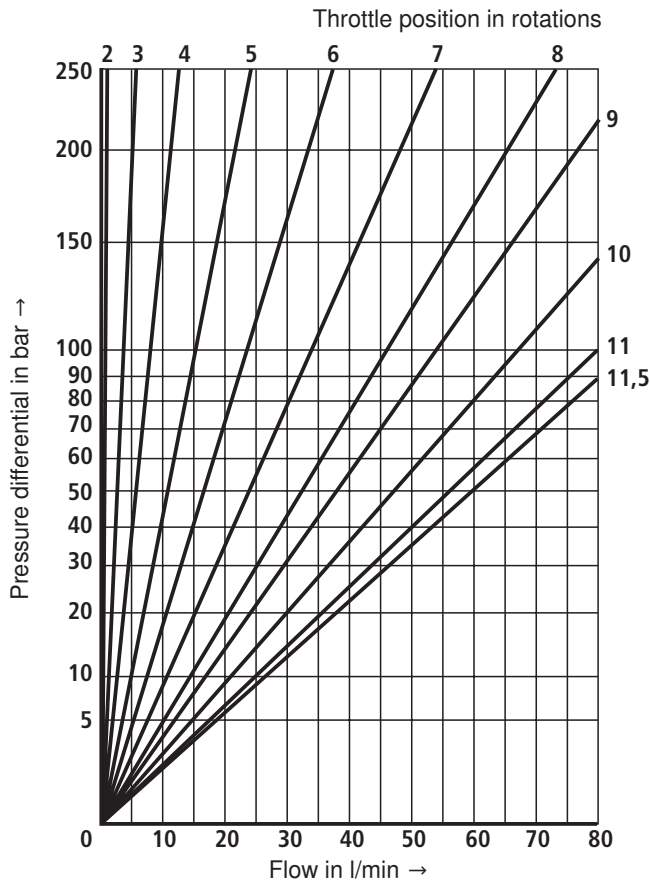
- Maximum operating pressure 210 bar
- Maximum hydraulic fluid temperature 60 °C
- Expected service life as compared to HLP hydraulic oil 30 % to 100 %

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.

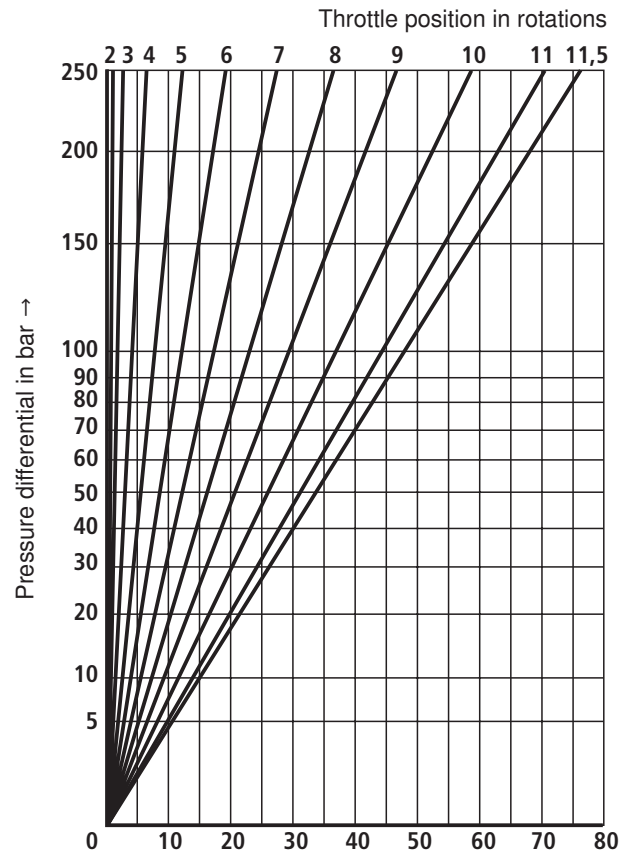
For the selection of the filters see
www.boschrexroth.com/filter.

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

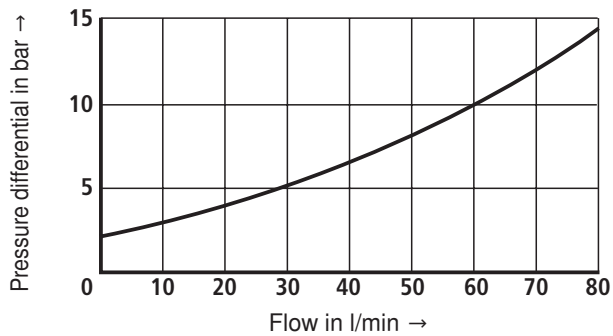
$\Delta p\text{-}q_v$ characteristic curves (version "2Q")



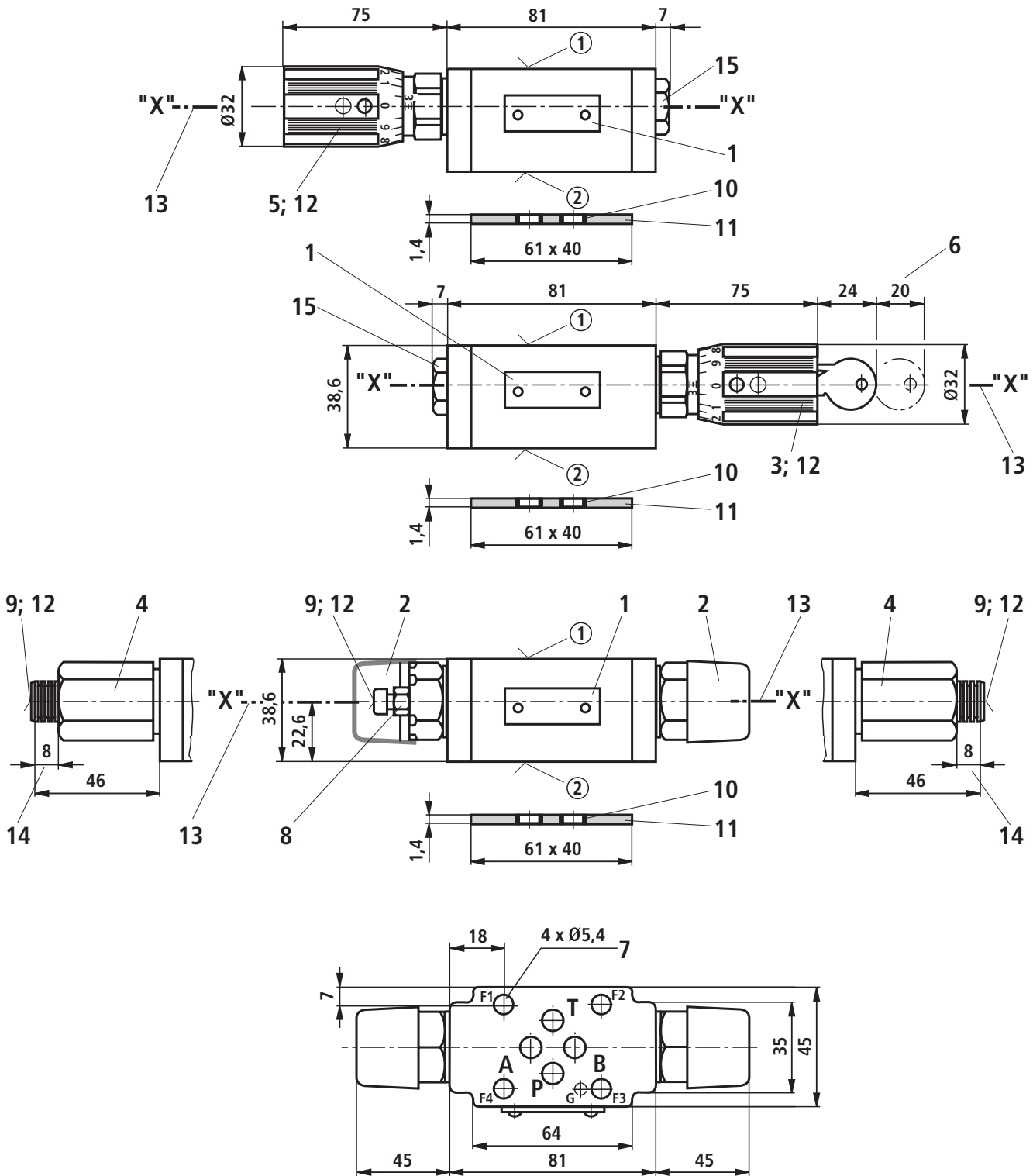
$\Delta p\text{-}q_v$ characteristic curves (version "1Q")



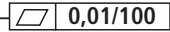

$\Delta p\text{-}q_v$ characteristic curves
(via check valve; throttle closed)



Unit dimensions (dimensions in mm)



Item explanations and valve mounting screws see page 7.

 0,01/100
 Rzmax 4
 Required surface quality of the valve mounting face

Unit dimensions

- ① Component side – porting pattern according to ISO 4401-03-02-0-05 (**with** locating hole $\varnothing 3 \times 5$ 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")

- 1 Name plate
- 2 Adjustment type "2"
- 3 Adjustment type "3"
- 4 Adjustment type "5"
- 5 Adjustment type "7"
- 6 Space required to remove the key
- 7 Valve mounting bores
- 8 Lock nut SW10
- 9 Set screw/spindle for changing the flow cross-section (internal hexagon SW5)
- 10 Identical seal rings for ports A, B, P, and T
- 11 Seal ring plate
- 12 With all adjustment types:
Counterclockwise rotation = larger flow
Clockwise rotation = smaller flow
- 13 The unit is converted from supply to discharge throttling by rotating it around the "X"-"X" axis
- 14 Stroke
- 15 Plug screw SW22

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.

Notes

Bosch Rexroth AG
Hydraulics
Zum Eisengießer 1
97816 Lohr am Main, Germany
Phone +49 (0) 93 52 / 18-0
Fax +49 (0) 93 52 / 18-23 58
documentation@boschrexroth.de
www.boschrexroth.de

© This document, as well as the data, specifications and other information set forth in it, are the exclusive property of Bosch Rexroth AG. It may not be reproduced or given to third parties without its consent. The data specified above only serve to describe the product. No statements concerning a certain condition or suitability for a certain application can be derived from our information. The information given does not release the user from the obligation of own judgment and verification. It must be remembered that our products are subject to a natural process of wear and aging.