

2-way flow control valve 2 FRM 5

NS 5 | p_{max} 35 MPa | Q_{max} 15 dm³/min | WK 146 937



DATA SHEET - OPERATION MANUAL

APPLICATION

2-way flow control valve 2FRM5... type is used for control of the fluid flow rate in one direction and free flow in the opposite direction, independent from pressure and temperature. The valve can be mounted in any position in hydraulic system.

DESCRIPTION OF OPERATION

In order to set a specific flow rate, a pressurised fluid is supplied to line **A**. Flow rate is adjusted by the sleeve **1** and curved bolt **4** which rotation creates a cross-section at the outlet of the fluid. Curved bolt is rotated by the hand knob with a key lock **2** within a setting range from **0** (flow closed) to **300°** (flow fully open). Pressure compensator **3**, shutter and adjustable curved bolt make the flow rate independent from pressure and temperature of the fluid. In order to avoid start-up jump, a stroke limiter can be applied (see **page 2, pos. 2**), i.e. a threaded **M4** pin with a hexagon **M4** nut. To provide a free flow from **B** to **A**, a check valve **5** was installed.

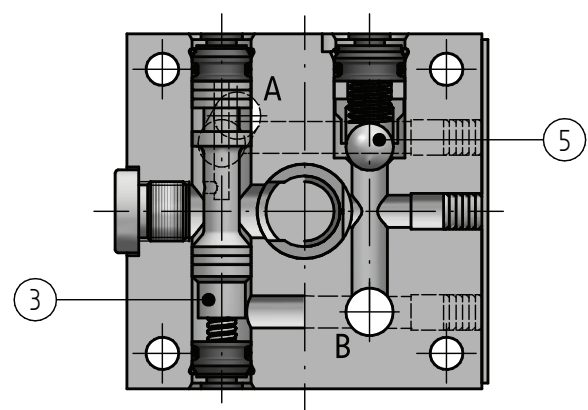
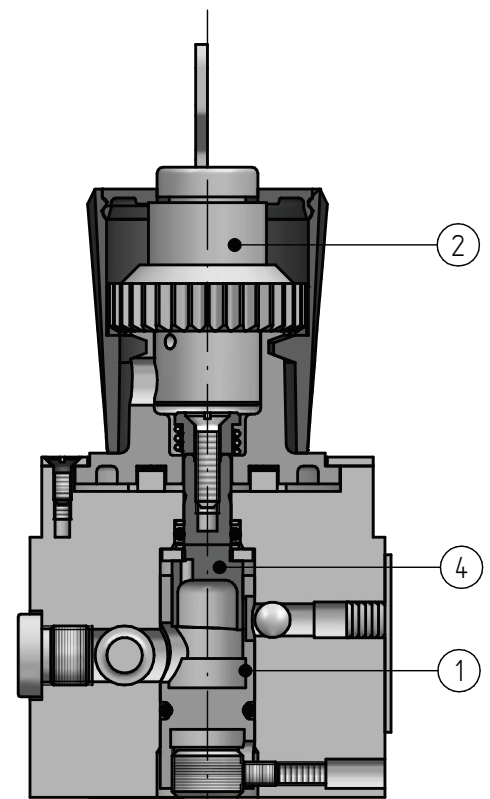
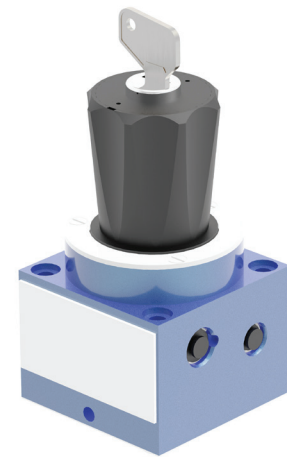
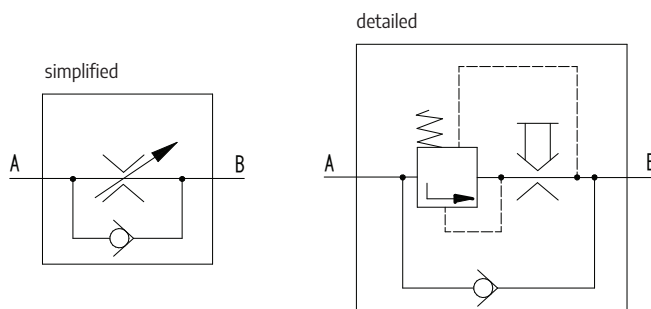
WARNING: Do not adjust under pressure (unload the valve first).

TECHNICAL PARAMETERS

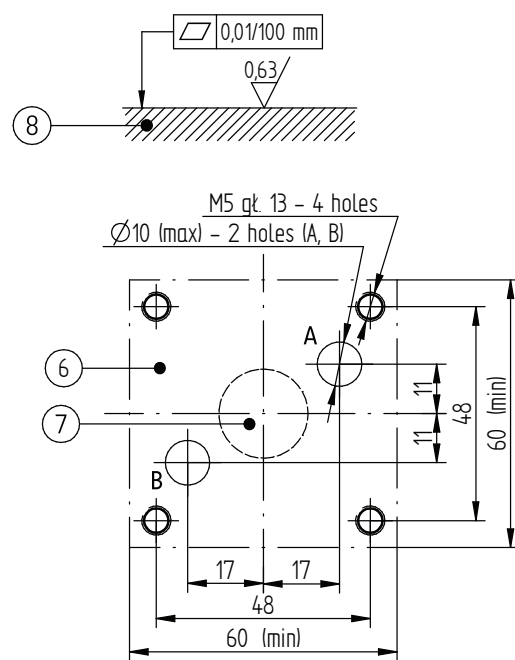
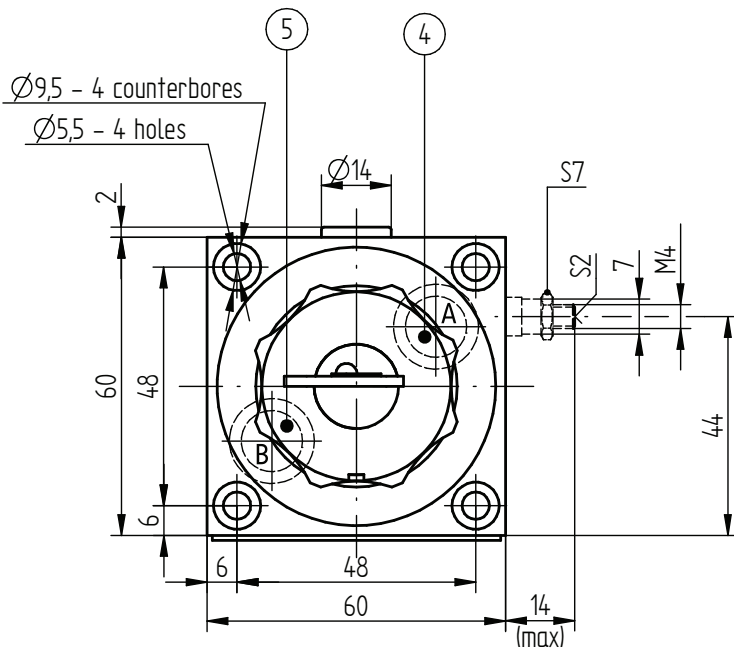
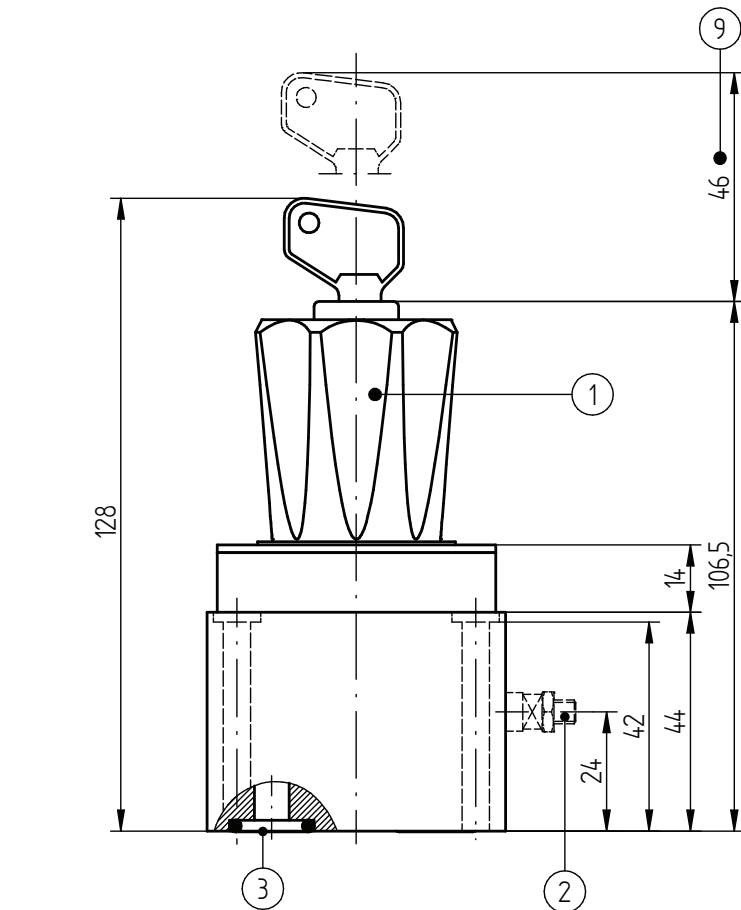
hydraulic fluid	mineral oil
required fluid cleanliness class	ISO 4406 class 20/18/15
nominal fluid viscosity	37 mm ² /s at temperature 55 °C
viscosity range	2,8 ÷ 380 mm ² /s
fluid temperature range (in tank)	max. -20 ÷ 70 °C; rec. 40 ÷ 55 °C
ambient temperature range	-20 ÷ 70 °C
max. working pressure (port A)	35 MPa
minimal pressure difference	0,3 ÷ 0,5 MPa
flow control tolerance	± 3% Q_{max} (for constant pressure and temp.)
weight	1,6 kg

assembly and operation requirements at: www.operating-conditions.ponar.pl

HYDRAULIC DIAGRAMS



OVERALL AND CONNECTION DIMENSIONS

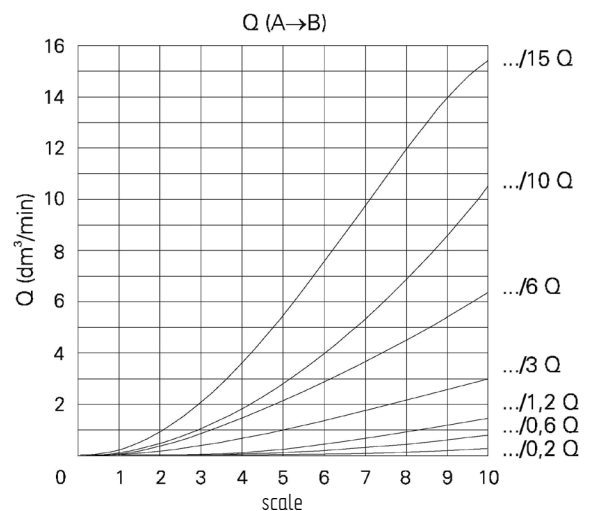


1. adjustment element (hand knob with a key lock, rotation range $300^\circ = 10$ scale sections)
2. pressure compensator stroke limiter (optional equipment - version **2FRM5...B...** setting screw **M4** type with an internal socket **S2**, lock nut **M8 - S7**)
3. o-ring **12,3 × 2,4** - 2 pcs/set
4. inlet port (A)
5. outlet port (B)
6. porting pattern of the subplate
7. distance for the sleeve ($\varnothing 20$)
8. required surface quality of the valve contact surface
9. space required to remove the key from the lock of the adjustment element

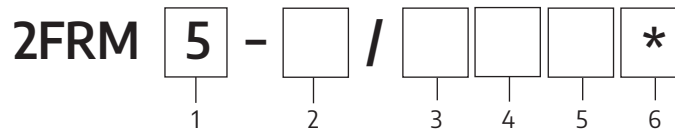
PERFORMANCE CURVES

for fluid viscosity $\nu = 41 \text{ mm}^2/\text{s}$ and temp. $t = 50^\circ \text{C}$

flow rate adjustment charts in relation to flow direction from A to B



HOW TO ORDER



1 nominal size

NS 5 = 5

2 series number

series 32 = 32
(30 ÷ 39) connection and installation dimensions unchanged

3 flow range - progressive (A → B)

up to 0,2 dm ³ /min =	0,2 Q
up to 0,6 dm ³ /min =	0,6 Q
up to 1,2 dm ³ /min =	1,2 Q
up to 3 dm ³ /min =	3 Q
up to 6 dm ³ /min =	6 Q
up to 10 dm ³ /min =	10 Q
up to 15 dm ³ /min =	15 Q

4 additional equipment

without pressure compensator =	∅
with pressure compensator =	B

5 seal type

NBR (for fluids on mineral oil base) = ∅
FKM (for fluids on phosphate ester base) = V

6 further requirements = *
(to be agreed upon with the Manufacturer)

∅ indicates that the box should be left blank.

The **symbols in bold** are the preferred versions available in short delivery time.

Coding example: **2FRM5-32/3Q**

SUBPLATES AND MOUNTING SCREWS

Subplates should be ordered according to data sheet **WK 470 012**:
G45/01 - threaded connection - G1/2

Subplate and screws for mounting the valve **M5 x 50 - 10.9** acc. to **PN - EN ISO 4762 (PN/M - 82302)** - 4 pcs/set **delivered on separate order**.
Tightening torque of screws $M_d = 6 \text{ Nm}$.

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