Rexroth
Bosch Group

Fine throttle

RE 27761/10.05 1/10
Replaces: 11.02

Type F

H7313

Sizes 5 and 10
Component series 2X and 3X
Maximum operating pressure 210 bar
Maximum flow 80 l/min

Overview of contents

Features

- For subplate mounting
- For threaded connections
- For manifold mounting
- Lockable rotary knob

For information regarding the available spare parts see:
www.boschrexroth.com/spc

Ordering details

F			3 –	/		*

Nominal size 5 **= 5**
Nominal size 10 **= 10**

For block installation **= K**
For threaded connections **= G**
For subplate mounting **= P**

Component series 20 to 29 (version **"K"**) **= 2X**
(20 to 29: unchanged installation and connection dimensions)
Component series 30 to 39 (versions **"G" and "P"**) **= 3X**
(30 to 39: unchanged installation and connection dimensions)

Further details in clear text

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

⚠ attention!
The compatibility of the seals and pressure fluid has to be taken into account!

NS5			NS10					
Progressive			Progressive			Linear		
Orifice 0.2	=	**0,2Q**	Orifice 5	=	**5Q**	Orifice 2	=	**2L**
Orifice 0.6	=	**0,6Q**	Orifice 10	=	**10Q**	Orifice 5	=	**5L**
Orifice 1.2	=	**1,2Q**	Orifice 16	=	**16Q**	Orifice 10	=	**10L**
Orifice 3	=	**3Q**	Orifice 25	=	**25Q**	Orifice 16	=	**16L**
Orifice 6	=	**6Q**				Orifice 25	=	**25L**
Orifice 10	=	**10Q**				Orifice 50	=	**50L**

Preferred types

Nominal size 5

Type	Material number
F 5 P3-3X/0,2Q	R900452659
F 5 P3-3X/1,2Q	R900451141
F 5 P3-3X/3Q	R900445541
F 5 P3-3X/6Q	R900445542

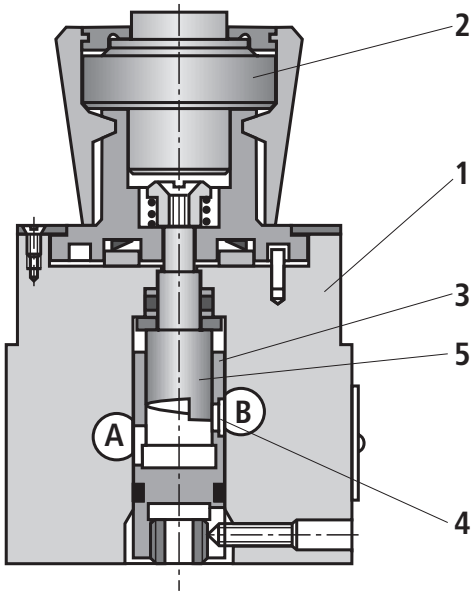
Nominal size 10

Type	Material number
F 10 P3-3X/2L	R900422786
F 10 P3-3X/5L	R900464865
F 10 P3-3X/10L	R900445543
F 10 P3-3X/16L	R900465171
F 10 P3-3X/25L	R900466374

Function, section, symbol

The type F flow control valve is a fine throttle valve with an orifice type of throttling point. It basically comprises of a housing (1), adjustment element (2) and orifice (3) and is used for throttling a flow with low dependence on temperature.

Throttling of the flow from A to B is carried out at the orifice aperture (4). The orifice cross-section is adjusted by rotating the scroll pin (5). The low dependence on temperature is due to the throttle area being designed as an orifice.



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

General

Weight	– Manifold mounting	kg	1.0
	– Threaded connection	kg	1.6
	– Subplate mounting	kg	1.4
Installation			Optional
Ambient temperature range		°C	–30 to +80 (NBR seals) –20 to +80 (FKM seals)

Hydraulic

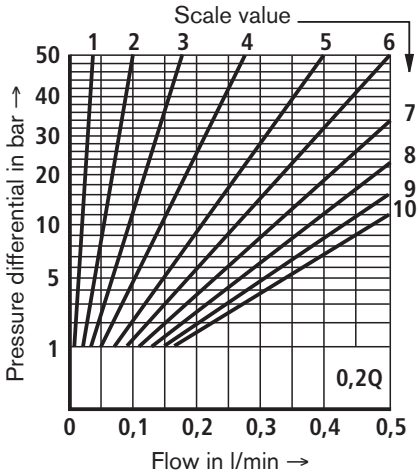
Maximum operating pressure		bar	210
Maximum flow		l/min	80
Pressure fluid			Mineral oil (HL, HLP) to DIN 51524 [1]; fast bio-degradable pressure fluids to VDMA 24568 (also see RE 90221); HETG (rape seed oil) [1]; HEPG (polyglycols) [2]; HEES (synthetic ester) [2]; other pressure fluids on request
Pressure fluid temperature range		°C	–30 to +80 (NBR seals) –20 to +80 (FKM seals)
Viscosity range		mm^2/s	2.8 to 380
Max. permissible degree of pressure fluid contamination - cleanliness class to ISO 4406 (c)			Class 20/18/15 [3]
Adjustment angle		°	300
Actuating moment	– at 100 bar	Nm	1.1
	– at 200 bar	Nm	1.8

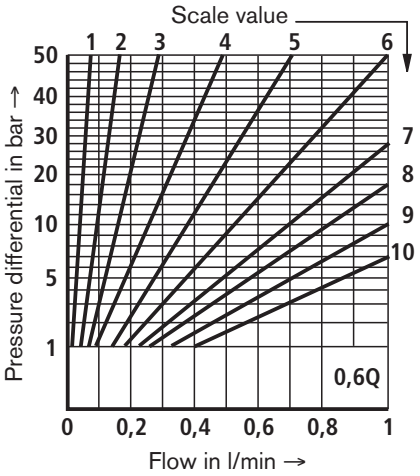
[1] Suitable for NBR and FKM seals

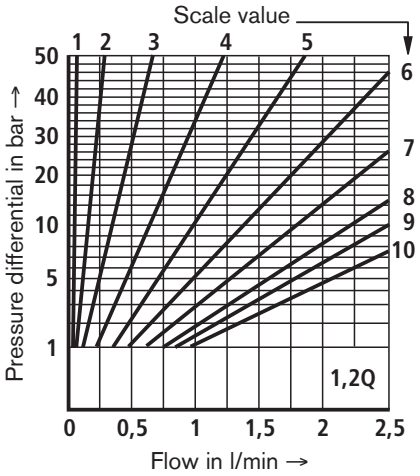
[2] Suitable for FKM seals only

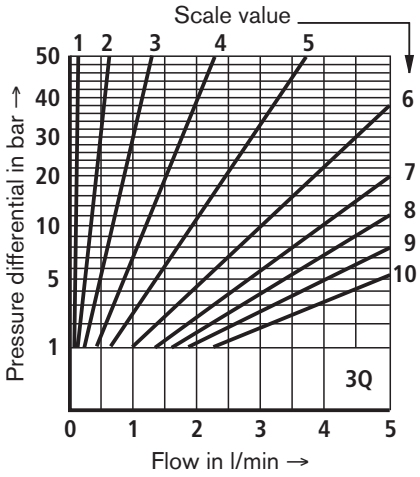
[3] The cleanliness class stated for the components must be adhered too in hydraulic systems. Effective filtration prevents faults from occurring and at the same time increases the component service life.
For the selection of filters see catalogue sheets RE 50070, RE 50076, RE 50081, RE 50086 and RE 50088.

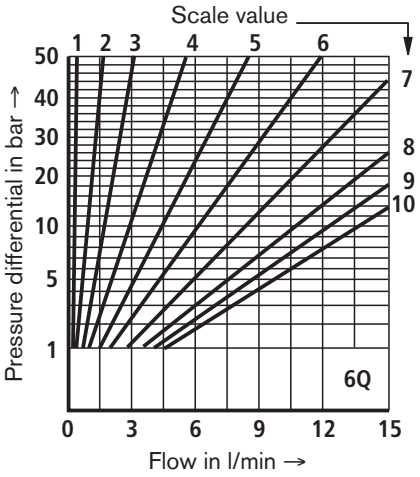
Δp-q_V characteristic curves: NS5 (measured with HLP41, $\vartheta_{oil} = 40\ °C \pm 5\ °C$)

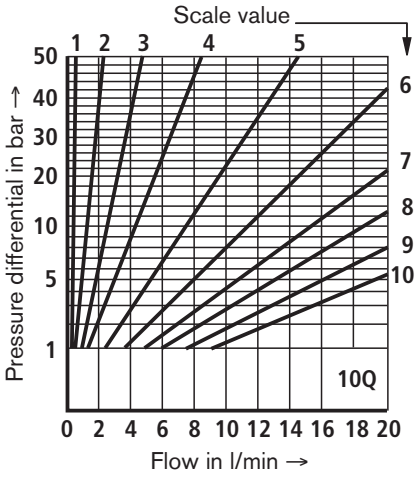




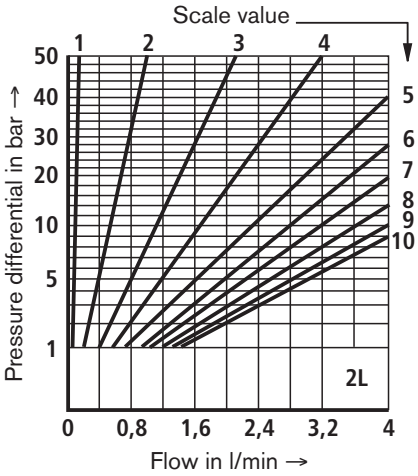


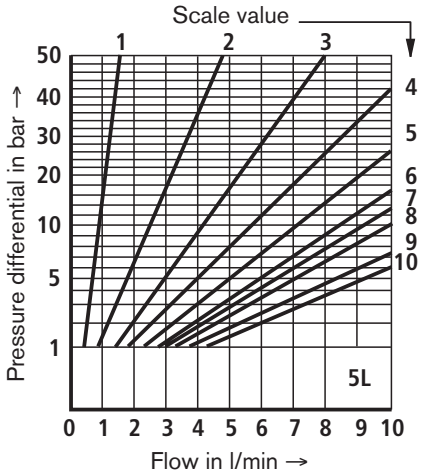


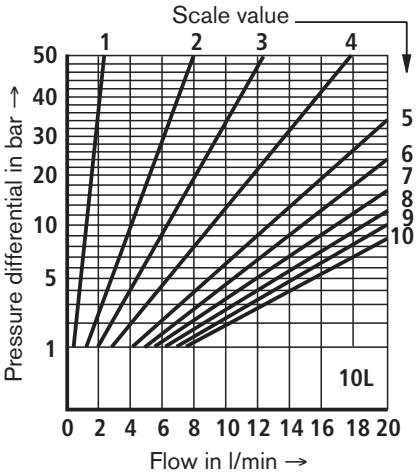


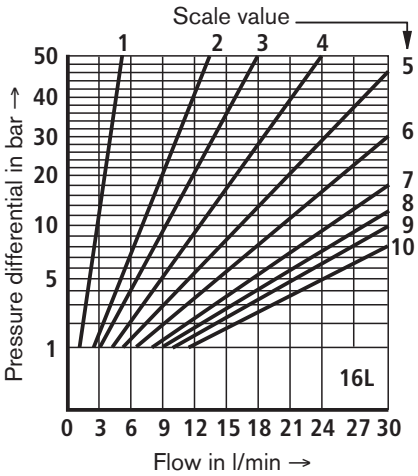


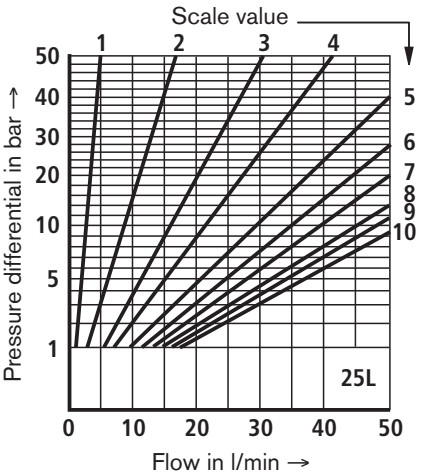
Δp-q_V characteristic curves: NS10 – linear (measured with HLP41, $\vartheta_{oil} = 40\ °C \pm 5\ °C$)

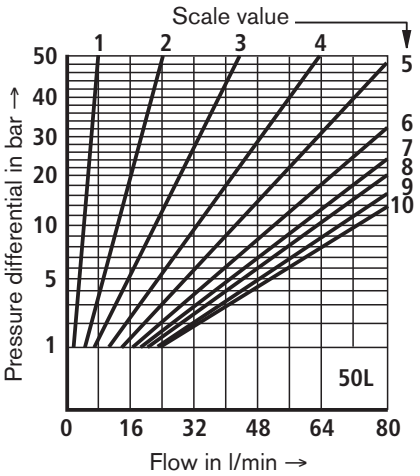




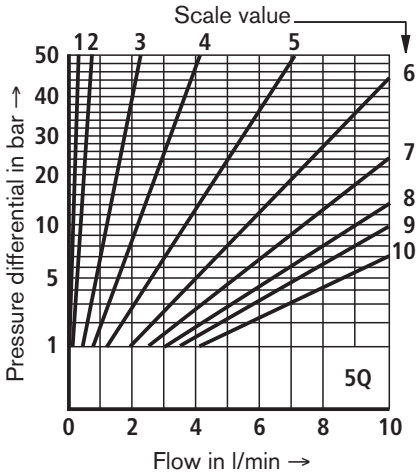


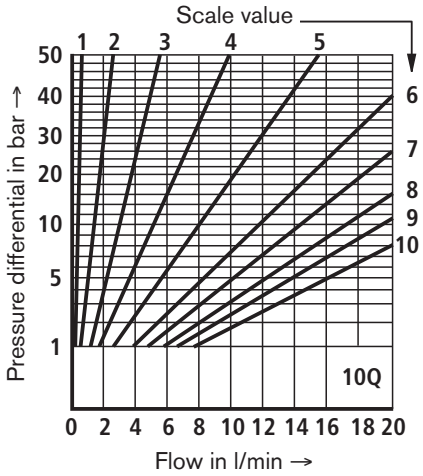


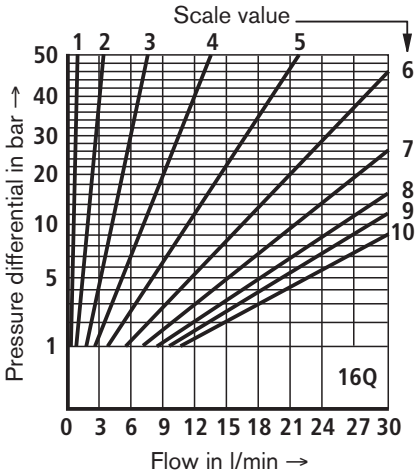


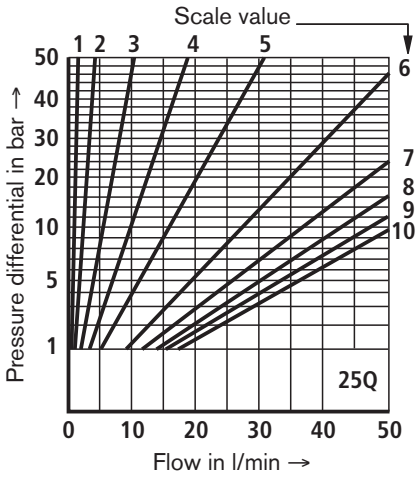


Δp-q_V characteristic curves: NS10 – progressive (measured with HLP41, $\vartheta_{oil} = 40\ °C \pm 5\ °C$)

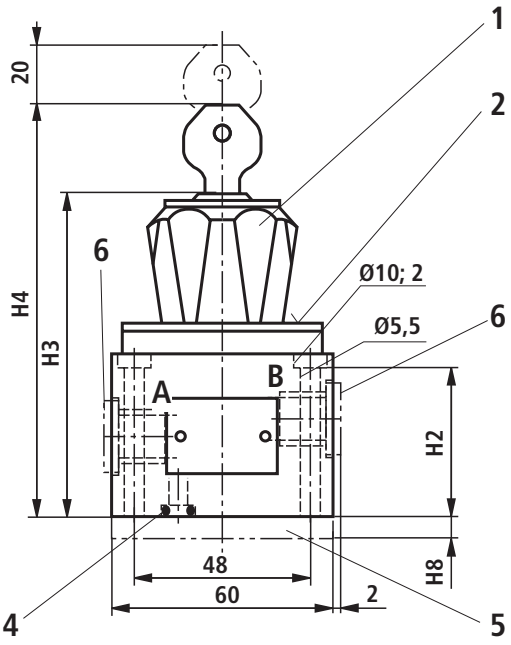


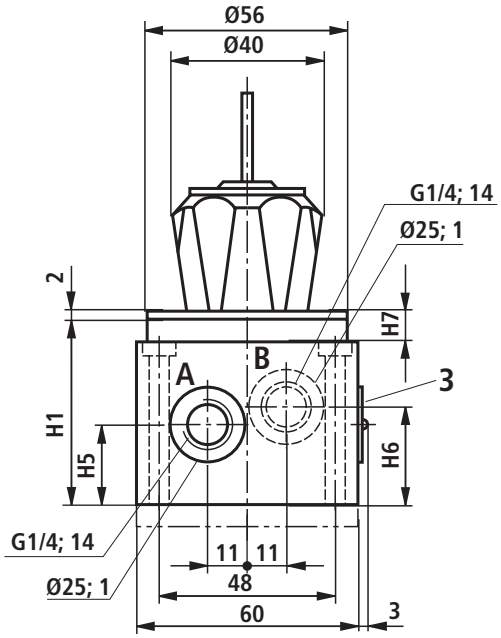






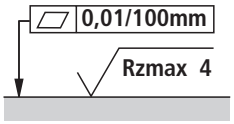
Unit dimensions: for threaded connections and subplate mounting (nominal dimensions in mm)





NS	5	10
H1	56	58
H2	42	42
H3	95	97
H4	122	124
H5	26	22
H6	30	27
H7	12	14
H8	10	10

Pipe thread "G" to ISO 228/1



Required surface quality of the valve mounting surface

1 Lockable rotary knob (lockable in any position) 300° rotation range relates to 10 scale divisions

2 Scale

3 Name plate

4 Seal ring

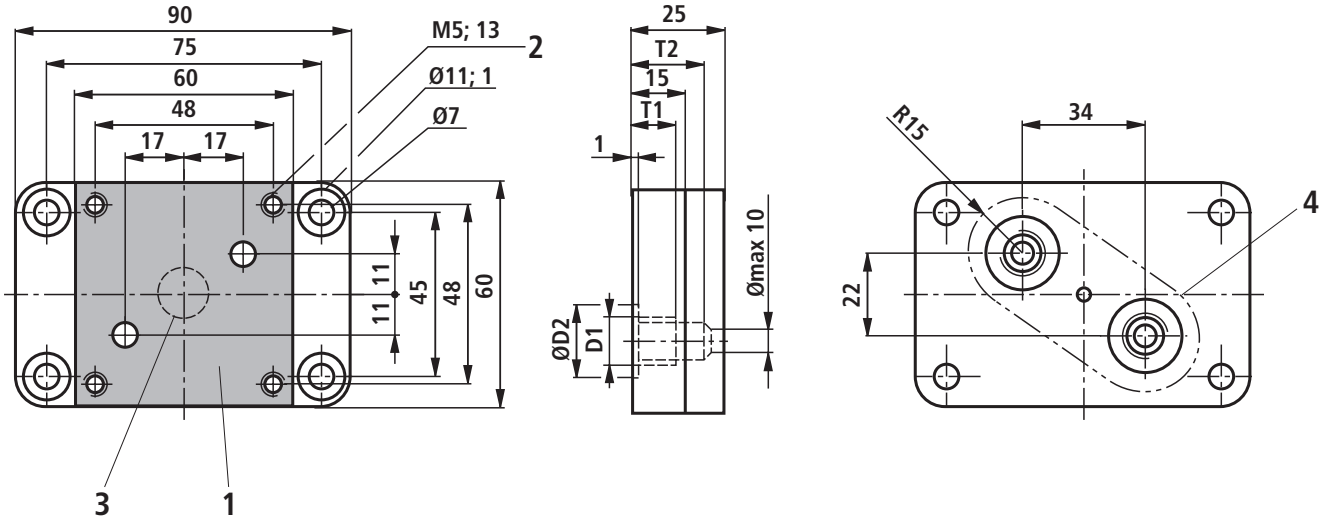
5 Blind plate (available only in conjunction with threaded connections)

6 Connection drillings for version „P“ are plugged.

Valve fixing screws (separate order)

4 S.H.C.S. ISO 4762 - M5 x 50 - 10.9-flZn-240h-L
(friction coefficient $\mu_{total} = 0.09$ to 0.14);
tightening torque $M_T = 7$ Nm ± 10%,
Material No. **R913000064**

Unit dimensions: Subplate (nominal dimensions in mm)

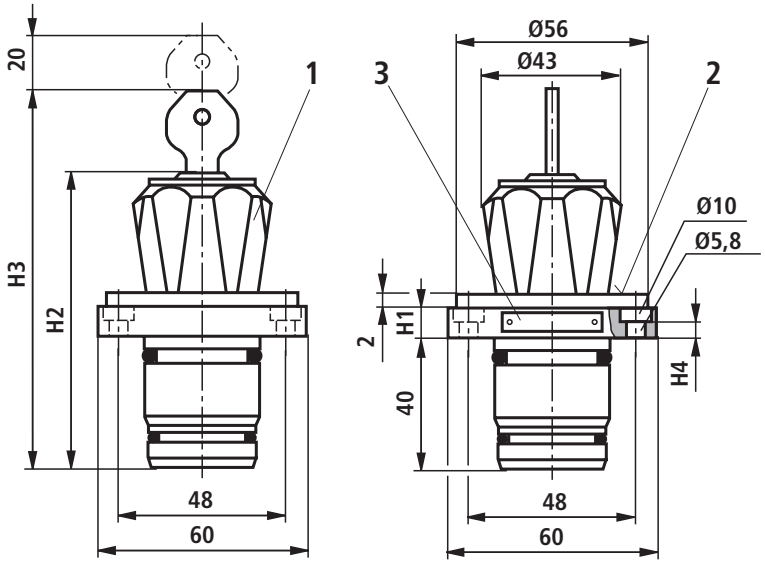


Order no.	Weight in kg	D1	ØD2	T1	T2	Material No.
G 44/01	0,9	G1/4	25	12	17	R900424453
G 45/01		G1/2	32	14	20	R900424455

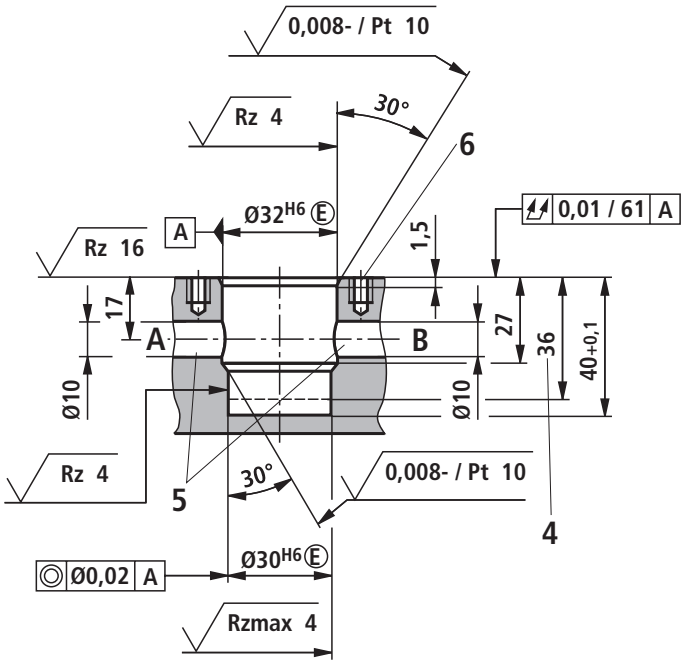
1 Valve mounting surface, MRR ground; Rzmax 4
2 Valve fixing holes
3 Ø20 keep free for valve function
4 Valve panel cut-out

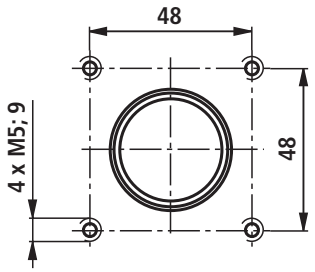
Valve fixing screws (separate order)
4 S.H.C.S. ISO 4762 - M5 x 50 - 10.9-flZn-240h-L
(friction coefficient $\mu_{total} = 0.09$ to 0.14);
tightening torque $M_T = 7$ Nm ± 10%,
Material No. **R913000064**

Unit dimensions: for manifold mounting (nominal dimensions in mm)



NS	5	10
H1	16	18
H2	93	95
H3	120	122
H4	10,3	12,4





1 Rotary knob safety lock (lockable in any position) 300° rotation range relates to 10 scale divisions

2 Scale

3 Name plate

4 Clearance depth

5 ⚠ **Attention!** Ports A and B are to be located away from the M5 fixing threads due to the danger of a breakthrough!

6 **NS5:**

4 S.H.C.S.
ISO 4762 - M5 x 16 - 10.9-flZn-240h-L
(friction coefficient μ_{total} = 0.09 to 0.14);
tightening torque M_A = 7 Nm ± 10%
Material No. **R913000468**

NS10:

4 S.H.C.S.
ISO 4762 - M5 x 20 - 10.9-flZn-240h-L
(friction coefficient μ_{total} = 0.09 to 0.14);
tightening torque M_A = 7 Nm ± 10%
Material No. **R913000488**

Notes

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Notes

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Notes

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