

2 way flow control valves are used to provide pressure compensated flow. The valve design compensates temperature variations to a certain extent.

The GFG is optionally equipped with a built-in check valve for the return flow.

### Design

The 2 way flow control valves are used with a triangular flow restrictor and a subsequent pressure compensator. The setting of the flow rate can be locked by a cylinder lock in the adjusting knob against unauthorized adjustment (option S).

### Function

The fluid enters through port A through the flow restrictor. Downstream of the flow restrictor the pressure compensator is located. The control edges are provided by four radial bores in the poppet, which are fully open to port B in the neutral position.

Optionally the flow from A to B can be blocked by external pilot pressure applied to port P (option X). This can be used to avoid unintended initial movements of actuators.

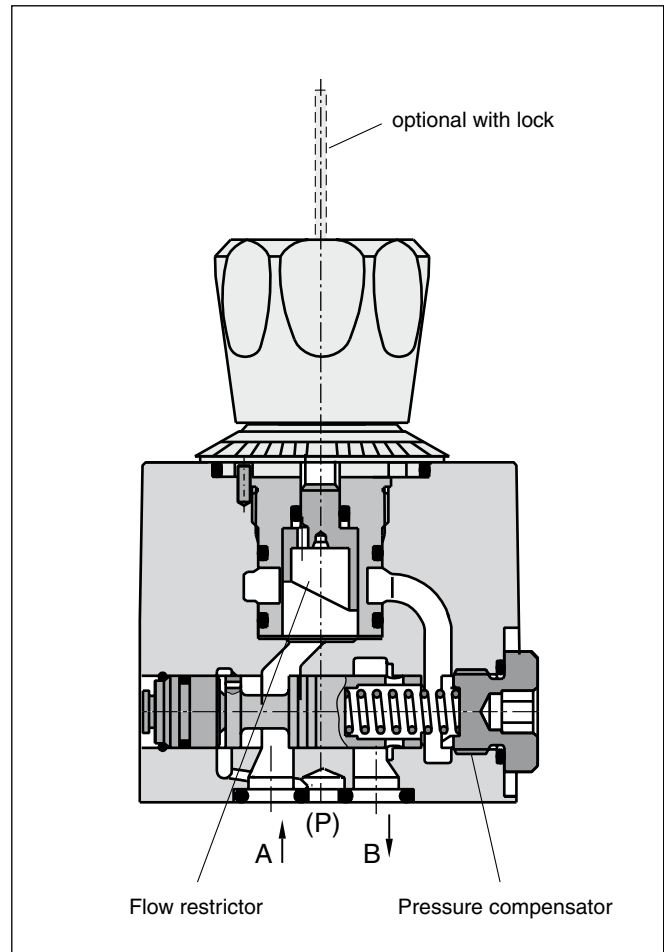
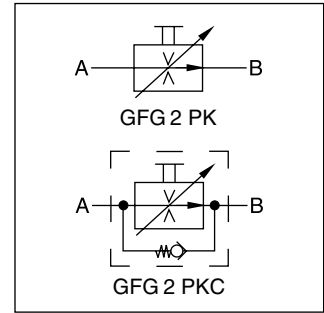
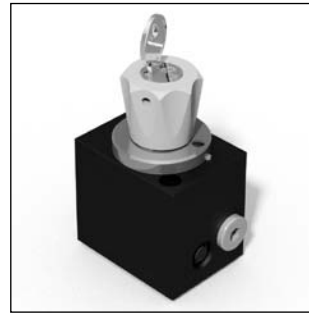
The flow adjustment is done via the hand knob with an adjusting angle knob of 270°.

### Features

- Flow rate independent of pressure and temperature
- Available for 7 different flow rates
- Good fine adjustment
- External port (P) to block flow from A to B
- Optional reverse flow check valve
- Turn knob with cylinder lock (option S)

### Note

Rectifier plate and subplates see 'Accessories' at the end of this chapter.



## Ordering code

<b>GFG</b>	<b>2</b>	<b>PK</b>					<b>10</b>	
2 way flow control valve	Nominal Size NG6	Pressure compensated	Check valve	Locking option	Flow	Seal	Design series	Pilot port

Code	Check valve
omit	Without check valve
C	With check valve

Code	Locking option
omit	Standard without lock
S	With cylinder lock

Code	Flow [l/min]
0.6	0.015 to 0.6
1.0	0.015 to 1.0
1.6	0.015 to 1.6
3.2	0.025 to 3.2
6.3	0.025 to 6.3
12.0	0.080 to 12.0
18.0	0.080 to 18.0

Code	Control of the pressure compensator
omit	Standard internal
X <sup>1)</sup>	External

Code	Seal
omit	NBR
V	FPM

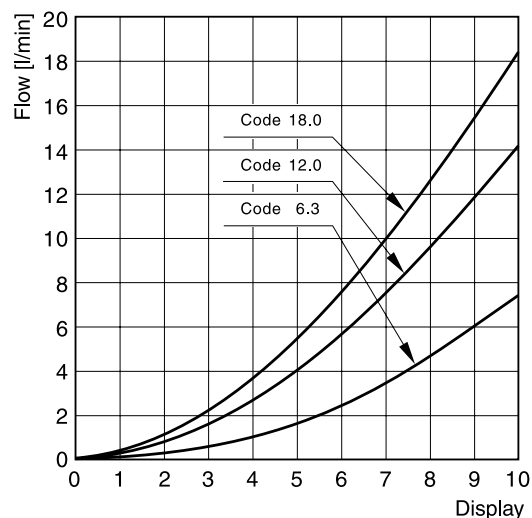
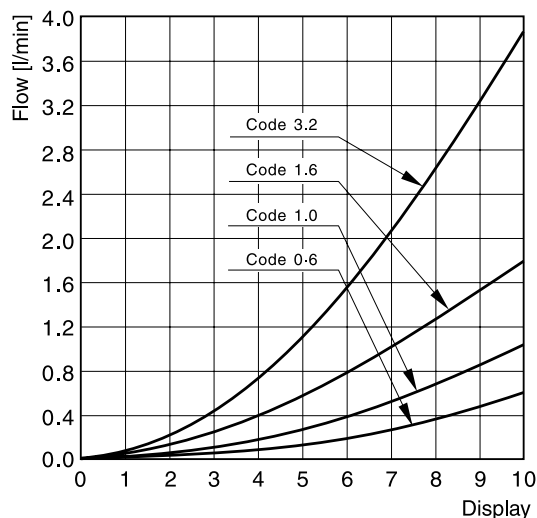
**Bold letters =**  
Short-term availability

## Technical data

General	
Design	Orifice, infinitely variable, pressure-compensated
Actuator	Manual flow rate adjustment
Mounting type	ISO 6263 code: ISO 6263-AB-03-4-B
Mounting position	unrestricted
MTTF <sub>D</sub> value [years]	150
Weight [kg]	1.1 (without subplate)
Ambient temperature [°C]	-25...+60
Fluid	Hydraulic oil according to DIN 51524
Fluid temperature [°C]	-20...+70 (NBR: -25...+70)
Viscosity, permitted [cSt] / [mm²/s]	20 ... 400
Viscosity, recommended [cSt] / [mm²/s]	30 ... 80
Filtering	ISO 4406 (1999); 18/16/13
Min. pressure difference [bar]	5 (GFG*1.6/3.2), 8.5 (GFG*6.3/12/18)
Operating pressure [bar]	A; B = 315 , P = 5 (GFG*, GFG*C), A, B, P = 160 (GFG*X)
Effect of pressure on Q <sub>max</sub> at p = 160 bar [%]	± 2 (GFG*1.6/3.2/6.3/12), ± 2.5 (GFG*18)
Flow direction	
A → B	Flow control function
B → A	Throttle function or free flow through check valve

<sup>1)</sup> Only in combination with integrated check valve.

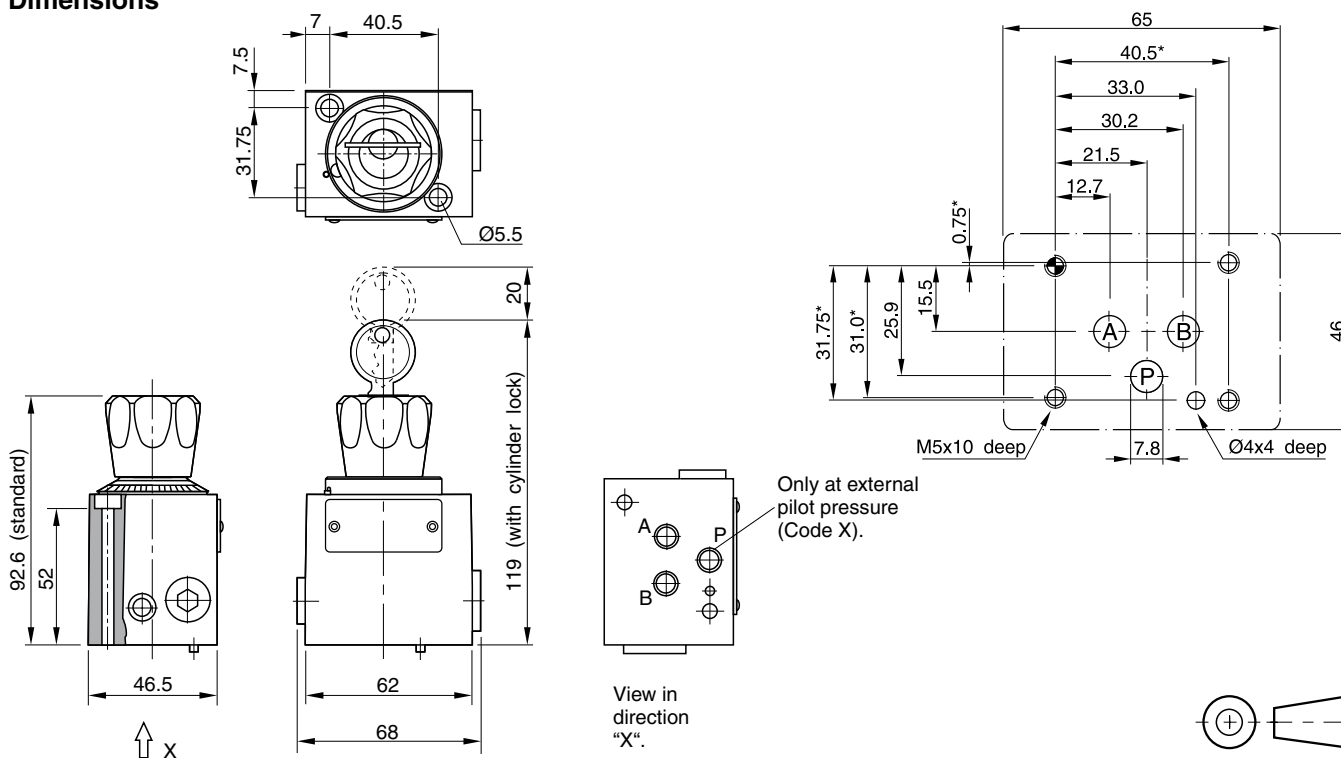
## Performance curves



All characteristic curves measured with HLP46 at 50 °C.

Changes in pressure cause a change of pre-set flow rate. Flow rate deviations a  $Q_{max}$ :  $\pm 2\%$

## Dimensions



## Bolt kits (Cylinder head ISO 4762-12.9 not included)

Nominal size Valve	Valve model	Quantity	Tightening torque [Nm]	Valve without rectifier plate Dimensions	Valve with rectifier plate Order No.	Valve with rectifier plate Dimensions	Valve with rectifier plate Order No.
NG6	GFG2	2	7.6 Nm	2xM5x60	BK380	2xM5x100	BK466

## O-rings for sealing the connecting surface

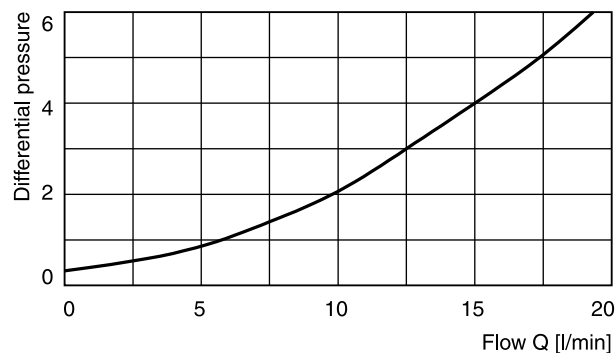
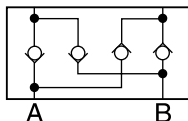
Nominal size Valve	Valve model	Ports	Dimensions Ø-inner x cord thickness	Quantity	Seal kits	
					NBR	FPM
NG6	GFG2	A and B	9.25 x 1.78	3	SK-GFG2	SK-GFG2 FPM

**Sandwich rectifier plate**

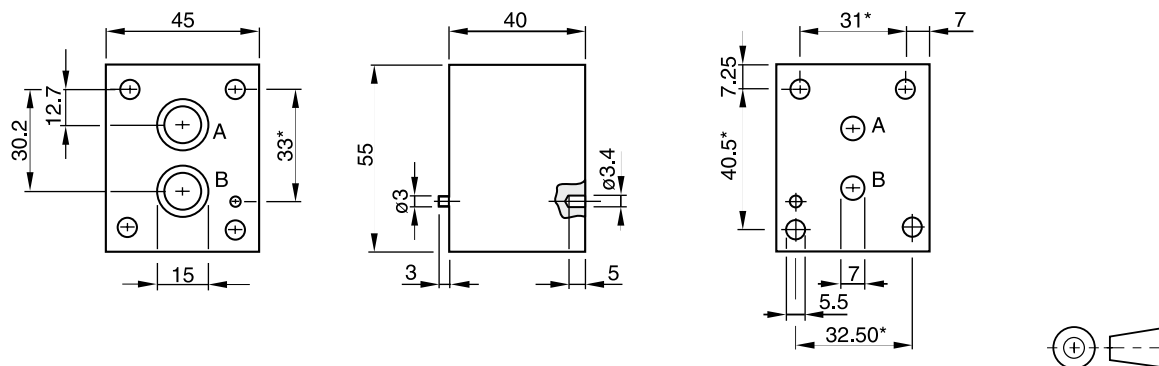
If a 2 way flow control valve is used in combination with a rectifier plate the valve can be used for meter-in and meter-out flow control of an actuator.

**Design**

The intermediate rectifier plate is designed with 4 identical, symmetrically arranged check valves. Thus the differential pressure is the same in both flow directions.



Measured with HLP46 at 50 °C.

**Dimensions**

Dimension tolerances  
 \* : ± 0.1 mm  
 others : ± 0.2 mm  
 holes and silhouette of  
 valve body : untoleranced dimension

**Ordering code:** HR OA 06 C

**O-ring for sealing the connecting surface**

Connections	Dimensions	required units
A, B	12 x 1.5	2

**Subplates <sup>1)</sup>**

Ordering code	
SPD 22 B 910	P, A, B and T = G1/4
SPD 23 B 910	P, A, B and T = G1/8

<sup>1)</sup> Details see chapter 12, series SPD.