Bosch Rexroth MK20G1X/V throttle check valve

Manufacturer: Bosch Rexroth

Manufacturer part number / published order designation: R900423328

Published model: MK20G1X/V

About this compilation

Prepared by Hydmaster from selected manufacturer documentation. Original technical pages follow without cropped drawings, rewritten data or altered units. This cover and index are Hydmaster editorial material, not a manufacturer-issued exact-execution datasheet.

Coverage: selected pages relevant to the identified size and configuration. Other options or neighbouring models retained on an original page apply only where explicitly identified.

Execution notes and conditions

The exact size row and MK sectional view apply. Neighbouring MG functions do not define this one-way throttle-check execution. Only blank note pages are omitted.

Source-page index

Source page numbers below are physical pages of each complete original PDF. The original printed page labels and technical content remain unchanged. Compiled page numbers count this cover/index.

Source A: Rexroth Throttle And Throttle Check Valve Re27219

Original pages	Compiled pages	Relevant content
2-6	2-6	Existing MK size, G threaded connection, 1X series and V FKM coding. Published execution: MK20G1X/V.; Actual MK one-way throttle-check principle; neighbouring MG is separate.; Pressure, flow, fluid, viscosity, cleanliness and temperature requirements.; Relevant size throttling and check-return curves at the specified fluid/temperature.; Exact size threaded port/body/adjustment dimensions and mounting data.

Ordering code

01	02	03	04		05	06	07
		G	**1X**	**/**			*****

01	Throttle valve	**MG**
	Throttle check valve	**MK**

02	Size 6	**6**
	Size 8	**8**
	Size 10	**10**
	Size 15	**15**
	Size 20	**20**
	Size 25	**25**
	Size 30	**30**

03	Threaded connection	**G**

04	Component series 10 ... 19 (10 ... 19: unchanged installation and connection dimensions)	**1X**

Corrosion resistance (outside)

05	None (valve housing primed)	**no code**
	Improved corrosion protection (240 h salt spray test according to EN ISO 9227)	**J3**
	Improved corrosion protection (720 h salt spray test according to EN ISO 9227)	**J5**

Seal material

06	NBR seals	**no code**
	FKM seals	**V**
	Observe compatibility of seals with hydraulic fluid used. (Other seals upon request)	

07	Further details in the plain text	*****

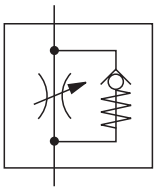
☞ **Notes:**
- For valve types for use in potentially explosive areas, refer to data sheet 07011.
- Preferred types and standard units are contained in the EPS (standard price list).

Symbols

Type MG



Type MK

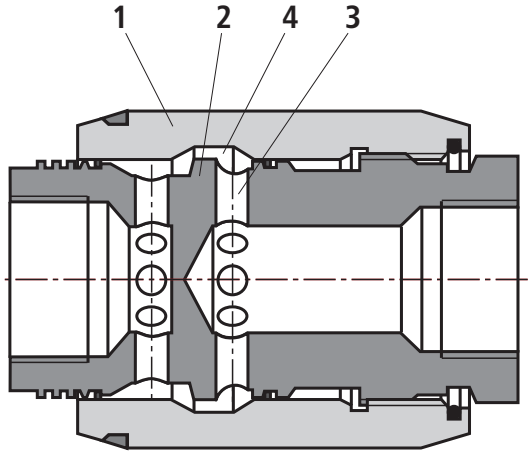


Function, section

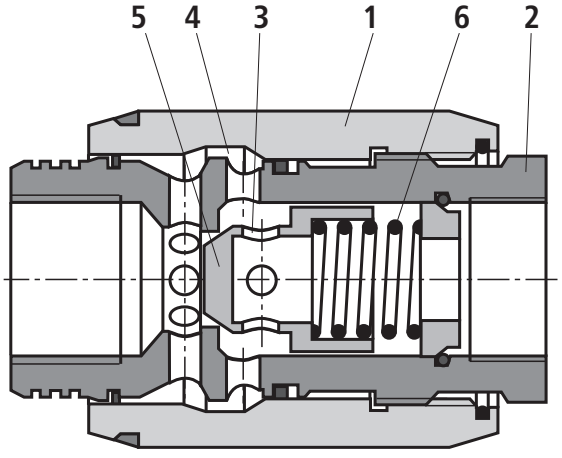
The valve types MG and MK are pressure- and viscosity-dependent throttle and throttle check valves.

Type MG (throttle valve)
Throttling is realized in both directions of flow. The hydraulic fluid is directed to the throttling point (4) via lateral bores (3). It is formed between the housing (2) and the adjustable sleeve (1). By rotating the sleeve (1), the cross-section of the throttling point (4) can be continuously adjusted.

Type MK (throttle check valve)
If the valve is passed by the flow in throttling direction, the spring (6) and the hydraulic fluid push the poppet (5) on the seat and the connection is blocked. Via lateral bores (3), the hydraulic fluid flow is directed to the throttling point (4) between the housing (2) and the adjustable sleeve (1).
In the opposite direction, the pressure acts on the front face of the poppet (5), lifts it from the seat and releases the flow. The hydraulic fluid flow is released through the valve without throttling. In this process, simultaneous passing of a part of the hydraulic fluid via the annular gap leads to the desired effect of self-cleaning.



Type MG



Type MK

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

General								
Size		6	8	10	15	20	25	30
Weight	kg	0.3	0.4	0.7	1.1	1.9	3.2	4.1
Installation position		any						
Ambient temperature range	°C	–30 ... +80 (NBR seals) –20 ... +80 (FKM seals)						

hydraulic									
Maximum operating pressure		bar	315						
Cracking pressure (type MK)		bar	0.5						
Maximum flow		l/min	see characteristic curves on page 5						
Maximum leakage [1]	▶ Standard	l/min	0.8	1.0	2.0	2.0	3.0	4.0	5.5
	▶ Version "J3" and "J5"	l/min	1.6	1.6	2.5	3.2	3.5	7.0	7.7
Hydraulic fluid			see table below						
Hydraulic fluid temperature range		°C	–30 ... +80 (NBR seals) –20 ... +80 (FKM seals)						
Viscosity range		mm^2/s	10 ... 800						
Maximum admissible degree of contamination of the hydraulic fluid; cleanliness class according to ISO 4406 (c)			Class 20/18/15 [2]						
Load cycles	▶ Size 6 ... 15		10 Mio.						
	▶ Size 20 ... 30		2 Mio.						

Hydraulic fluid		**Classification**	**Suitable Sealing materials**	**Standards**	**Data sheet**
Mineral oils		HL, HLP	NBR, FKM	DIN 51524	90220
Bio-degradable [3]	▶ Insoluble in water	HETG	FKM	ISO 15380	90221
		HEES	FKM		
	▶ Soluble in water	HEPG	FKM	ISO 15380	
Flame-resistant	▶ Water-free	HFDU (glycol base)	FKM	ISO 12922	90222
		HFDU (ester base) [3]	FKM		
		HFDR	FKM		
	▶ Containing water [3]	HFC (Fuchs Hydrotherm 46M, Fuchs Renosafe 500, Petrofer Ultra Safe 620, Houghton Houghto Safe 620, Union Carbide HP5046)	NBR	ISO 12922	90223

☞ **Important information on hydraulic fluids:**

- For further information and data on the use of other hydraulic fluids, please refer to the data sheets above or contact us.
- There may be limitations regarding the technical valve data (temperature, pressure range, life cycle, maintenance intervals, etc.).
- The ignition temperature of the hydraulic fluid used must be 50 K higher than the maximum surface temperature.
- **Flame-resistant – containing water:**
  - Maximum pressure differential 210 bar, otherwise, increased cavitation erosion
  - Life cycle as compared to operation with mineral oil HL, HLP 30 ... 100%
  - Maximum hydraulic fluid temperature 60 °C
- **Bio-degradable and flame-resistant:** If this hydraulic fluid is used, small amounts of dissolved zinc may get into the hydraulic system.

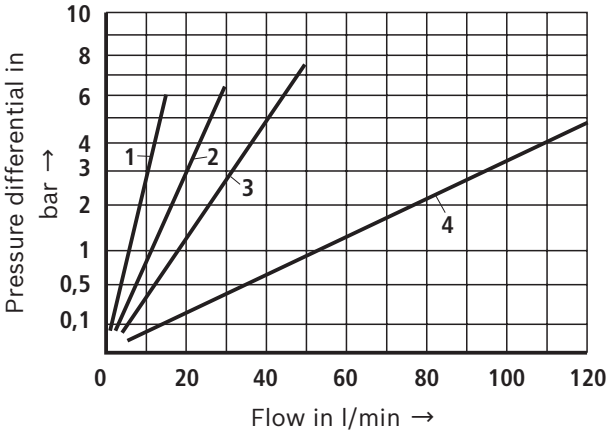
1) If valve is completely closed

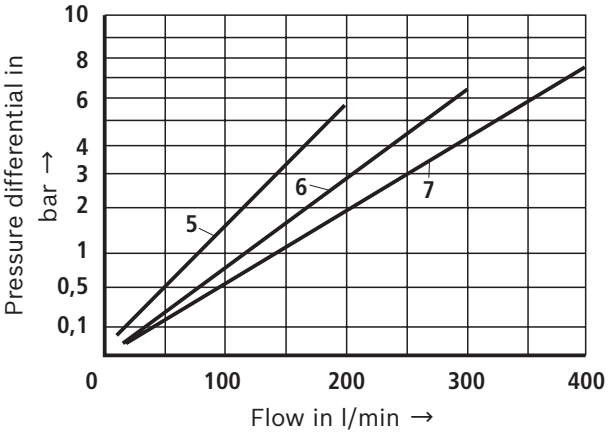
2) The cleanliness classes specified for the components must be adhered to in hydraulic systems. Effective filtration prevents faults and simultaneously increases the life cycle of the components.
Available filters can be found at www.boschrexroth.com/filter.

3) Not recommended for corrosion-protected versions "J3" and "J5"

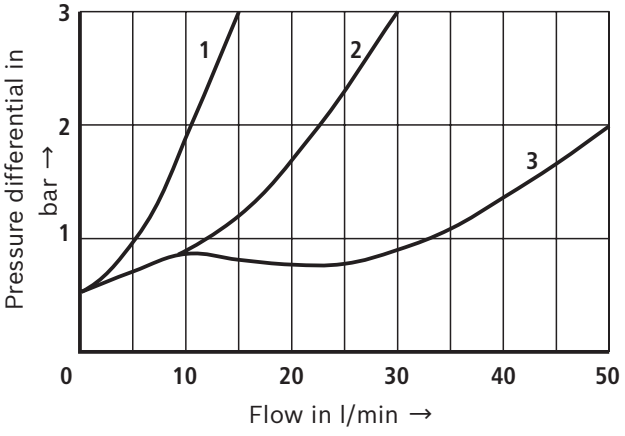
Characteristic curves
(measured with HLP46, ϑ_{oil} = 40 ±5 °C)

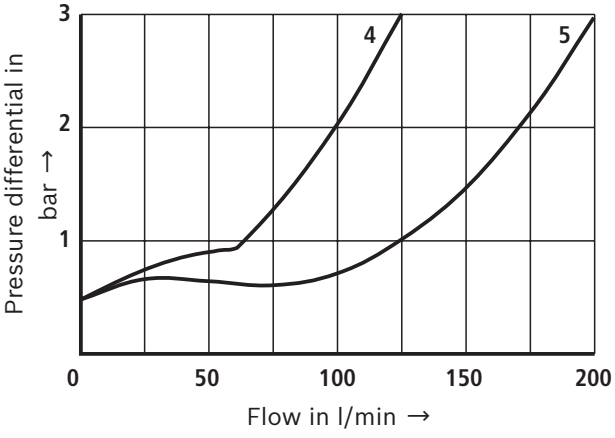
***Δp-q*$_V$ characteristic curves** via open throttle (type MG and MK)

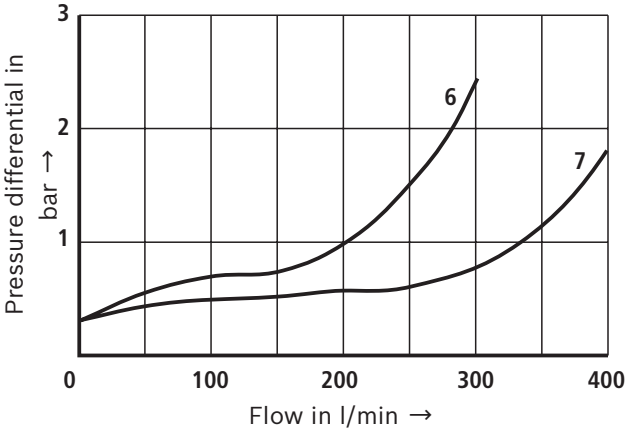




***Δp-q*$_V$ characteristic curves** vie opened check valve at closed throttle (type MK)

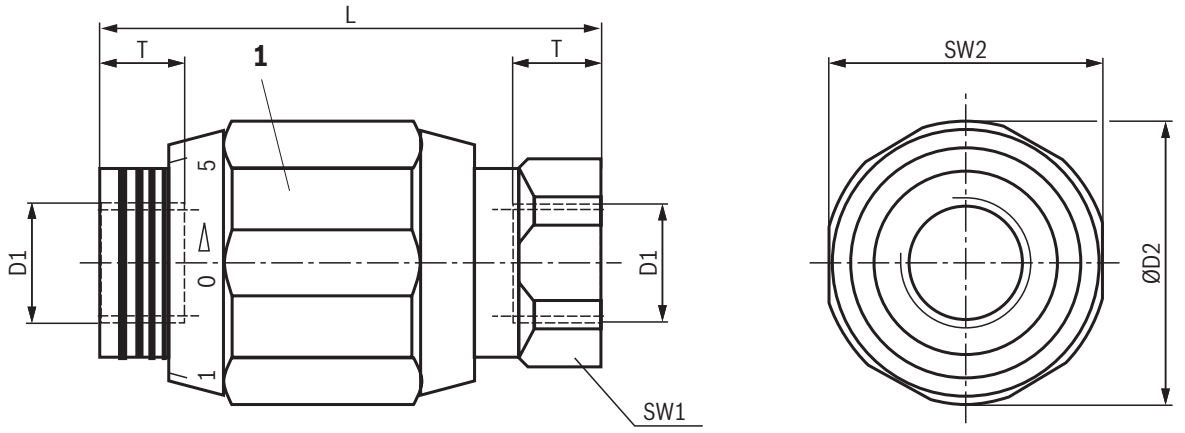






1 NG6
2 NG8
3 NG10
4 NG15
5 NG20
6 NG25
7 NG30

Dimensions
(dimensions in mm)



1 Valve marking on key face

NG	D1	ØD2	L	SW1	SW2	T
6	G1/4	34	65	22	32	12
8	G3/8	38	65	24	36	12
10	G1/2	48	80	30	46	14
15	G3/4	58	100	41	55	16
20	G1	72	110	46	70	18
25	G1 1/4	87	130	55	85	20
30	G1 1/2	93	150	60	90	22

Further information

▶ Hydraulic fluids on mineral oil basis	Data sheet 90220
▶ Environmentally compatible hydraulic fluids	Data sheet 90221
▶ Flame-resistant, water-free hydraulic fluids	Data sheet 90222
▶ Flame-resistant hydraulic fluids - containing water (HFAE, HFAS, HFB, HFC)	Data sheet 90223
▶ Hydraulic valves for industrial applications	Operating instructions 07600-B
▶ General product information on hydraulic products	Data sheet 07008
▶ Assembly, commissioning and maintenance of industrial valves	Data sheet 07300
▶ Use of non-electrical hydraulic components in explosive atmospheres (ATEX)	Data sheet 07011
▶ Selection of filters	www.boschrexroth.com/filter
▶ Information on available spare parts	www.boschrexroth.com/spc

Bosch Rexroth AG
Industrial Hydraulics
Zum Eisengießer 1
97816 Lohr am Main, Germany
Phone +49 (0) 93 52/40 30 20
my.support@boschrexroth.de
www.boschrexroth.de

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It must be remembered that our products are subject to a natural process of wear and aging.