RE 18111-03/2021-05-04
Replaces: 08.2011

rexroth
A Bosch Company

2-way pressure reducing valve, direct operated
KRD


HAD7311

- Size 2
- Series B
- Maximum working pressure 400 bar
- Maximum flow 25 l/min

Features

- Cartridge valve
- Mounting cavity R/ISO 7789-27-01-1-98
- Available in 3 pressure stages (100, 210 and 315 bar)
- Versatile use for pressure reducing functions without leakage oil drain

Contents

Type code

01	02	03	04	05	06		07	08	09	10
KRD			**2**	**A**	**B**	**/**	**L**			**V**

Valve type

01	2-way pressure reducing valve, direct operated	**KRD**

Adjustment type

02	Rotary knob[1)]	**1**
	Threaded pin with hexagon and protective cap	**2**
	Rotary knob with scale, lockable[1)]	**3**

Pressure stage

03	100 bar	**F**
	210 bar	**L**
	315 bar	**P**

Size

04	Size 2	**2**

Design principle

05	Seat valve	**A**

Series

06	Series B	**B**

Mounting cavity

07	Mounting cavity R/ISO 7789-27-01-1-98 (see page 7)	**L**

Pressure presetting

08	Without pressure presetting	**No code**
	With pressure presetting[2)]	**–...**

Corrosion resistance

09	None	**No code**
	High corrosion protection (720 h salt spray test according to EN ISO 9227)	**J5**

Sealing material

10	FKM (fluorocarbon rubber)	**V**

Preferred types

Pressure stage	Type	Material no.
100 bar	KRD2F2AB/LV	R901082845
210 bar	KRD2L2AB/LV	R901082849
315 bar	KRD2P2AB/LV	R901082857

1) Only with pressure stage 100 bar ("F")
2) Example (pressure setting takes place at q_V = 1 to 2 l/min):
set to 50 bar: .../L**–50**V

Bosch Rexroth AG, RE 18111-03/2021-05-04

Functional description

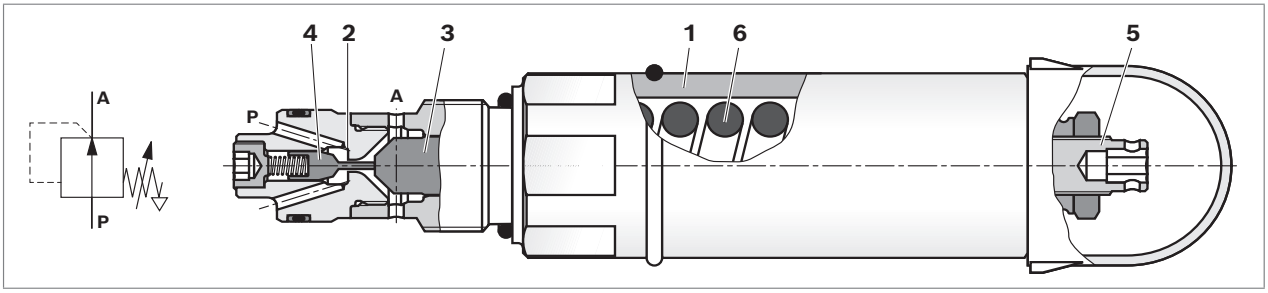
General

The direct operated 2-way pressure reducing valve type KRD is designed as tight seat valve. It is used for the leak-free pressure reduction of an operating pressure. It basically consists of the screw-in housing (**1**) with spring (**6**) and adjustment type (**5**), as well as control spool (**3**), valve seat (**2**) and closing element (**4**).

Function

In the initial position, the seat of the valve is open. Hydraulic fluid may flow from port **P** to **A**. If the pressure in port **A** increases to the pressure value set at the adjustment type (**5**), the closing element (**4**) closes the connection from **P** to **A**. The further increasing system pressure (port **P**) no longer influences the pressure in port **A** (pressure holding function). The valve regulates pressure losses in port **A** (consumer).

▼ **Section and symbol KRD**



1 Screw-in housing
2 Valve seat
3 Control spool
4 Closing element
5 Adjustment type
6 Spring

RE 18111-03/2021-05-04, Bosch Rexroth AG

Technical data

General					
Weight			kg	1	
Installation position				Any	
Ambient temperature range			°C	–20 ... +80	

Hydraulic					
Maximum working pressure	Port **P**	p	bar	400	
	Port **A**	p	bar	315	
Set pressure at port **A**[1]				**Nominal pressure**	**Minimum adjustable pressure**
	Pressure stage 100 bar		bar	100	10
	Pressure stage 210 bar		bar	210	20
	Pressure stage 315 bar		bar	315	30
Maximum nominal flow		q_V	l/min	25	
Maximum permissible leakage in the application/system			l/min	1.5	
Hydraulic fluid				See table below	
Hydraulic fluid temperature range		ϑ	°C	–20 ... +80	
Viscosity range		ν	mm²/s	5 ... 1000 (preferably 10 ... 100)	
Maximum admissible degree of contamination of the hydraulic fluid Cleanliness level per ISO 4406 (c)				Level 20/18/15[2]	

Notice
For applications outside these values, please consult us!

1) Exact pressure control at p > 20 bar.
2) Cleanliness levels specified for the components must be maintained in the hydraulic systems. Effective filtration prevents malfunctions and simultaneously extends the service life of the components.
We recommend a filter with a minimum retention rate of $\beta_{10} \geq 75$.

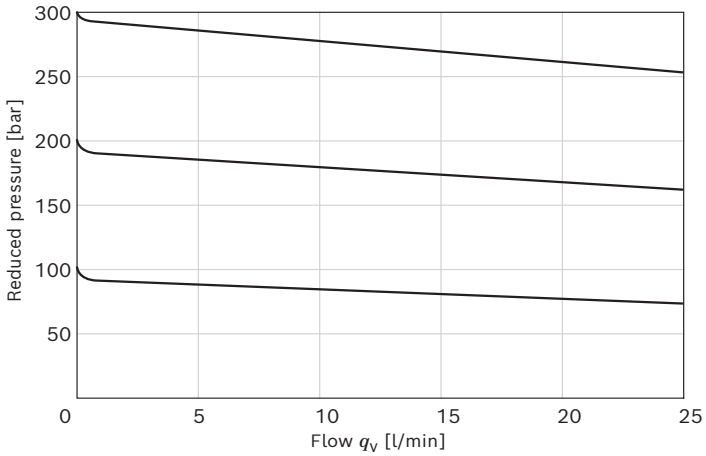
Hydraulic fluid

Hydraulic fluid		Classification	Suitable sealing materials	Standards	Data sheet
Mineral oils		HL, HLP	FKM	DIN 51524	90220
Biodegradable	Insoluble in water	HEES	FKM	ISO 15380	90221
	Soluble in water	HEPG	FKM	ISO 15380	90221

Notice
- Further information and details on using other hydraulic fluids are available in the above data sheets or on request.
- Restrictions are possible with the technical valve data (temperature, pressure range, service life, maintenance intervals, etc.)!
- **Biodegradable:** If biodegradable hydraulic fluids are used that are also zinc-solving, there may be an accumulation of zinc.

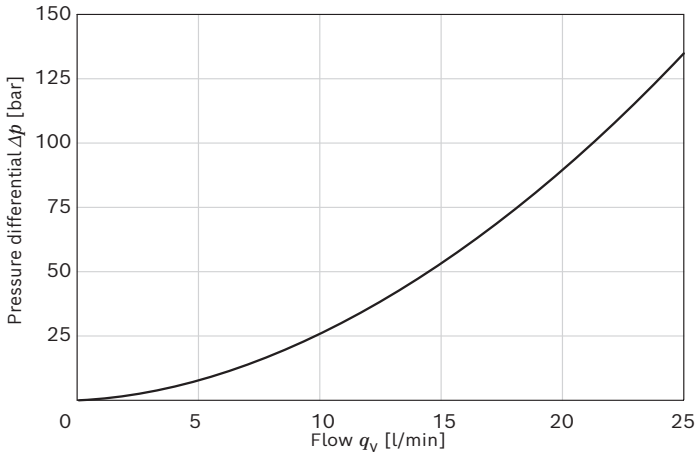
Characteristic curves

▼ **Reduced pressure dependent on the flow**



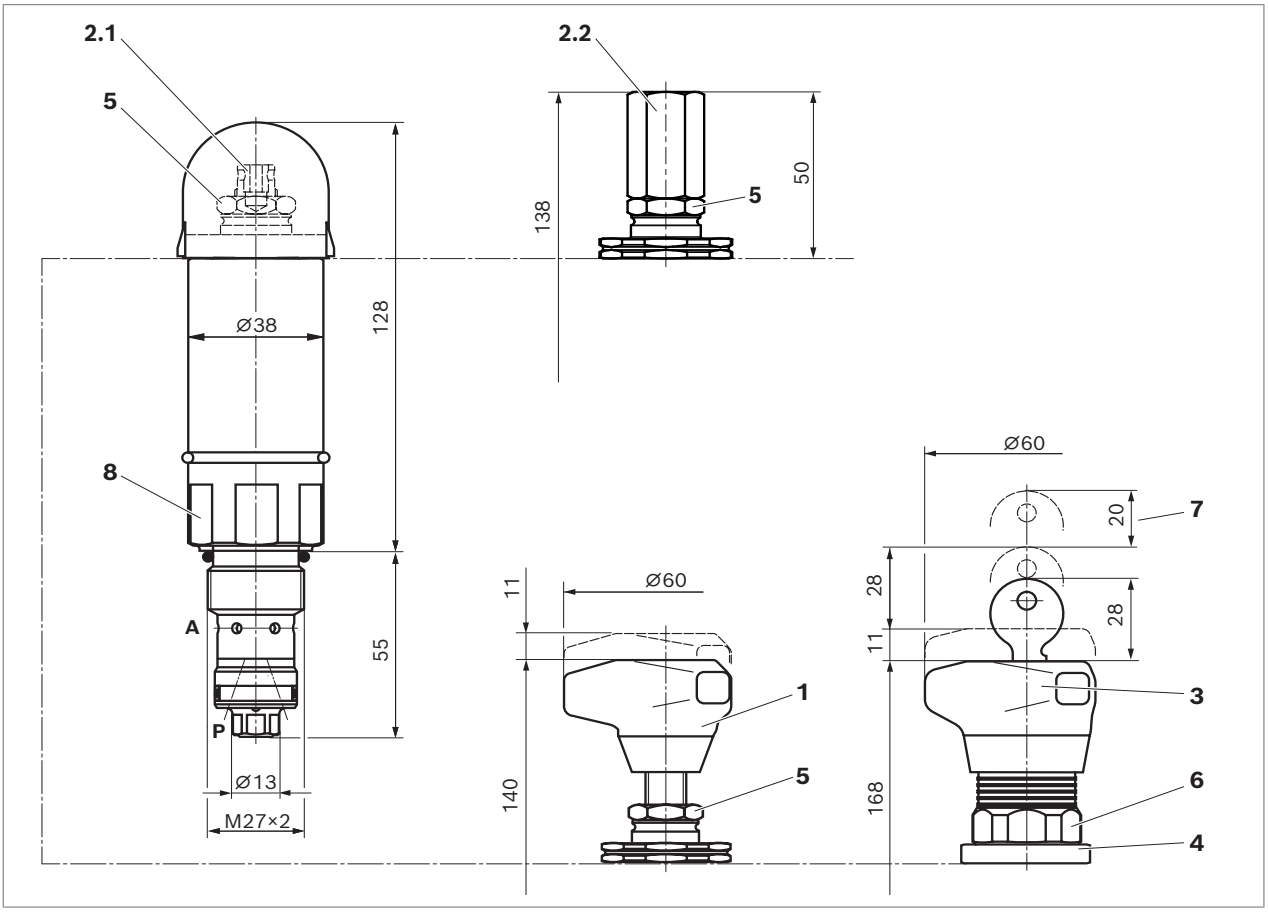
Notice
The p-q_V characteristics of the 3 pressure stages at the relevant nominal pressures are shown.
Recommendation for the pressure differential:
$\Delta p \geq 20$ bar

▼ **Flow resistance Δp-q_V characteristic curve**



Dimensions

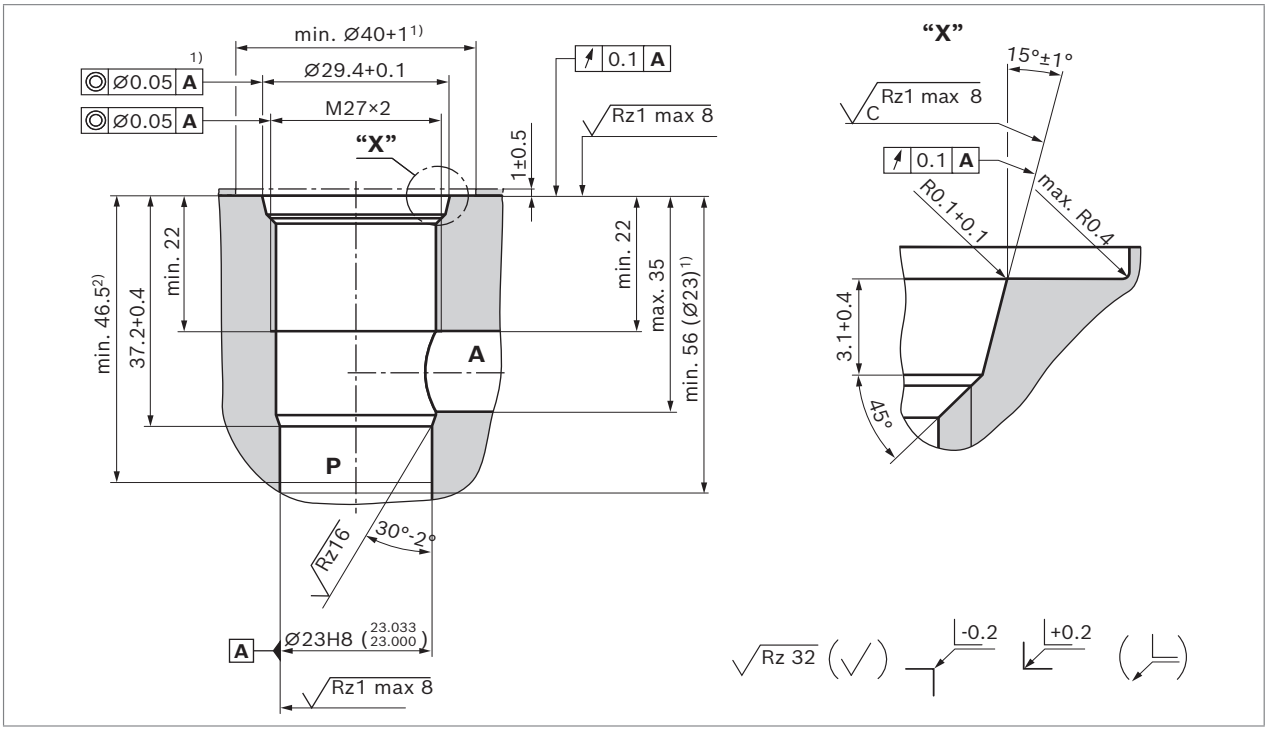
▼ **KRD with screw-in thread**



1 Adjustment type **"1"**:
Rotary knob (only with pressure stage 100 bar "F")
2.1 Adjustment type **"2"**:
Threaded pin with hexagon SW5 and protective cap
2.2 Adjustment type **"2"**, version **"J5"**:
Hexagon SW19
3 Adjustment type **"3"**:
Lockable rotary knob with scale
(only with pressure stage 100 bar "F")
4 Plastic ring with marking
(Adjust the neutral position after screwing in the valve, then fix the ring by horizontal shifting until it snaps into place on the reducing piece)
5 Lock nut SW19, tightening torque M_A = 30±5 Nm
6 Lock nut SW30, tightening torque M_A = 100 Nm
7 Space required to remove key
8 Hexagon SW36, tightening torque M_A = 170 Nm

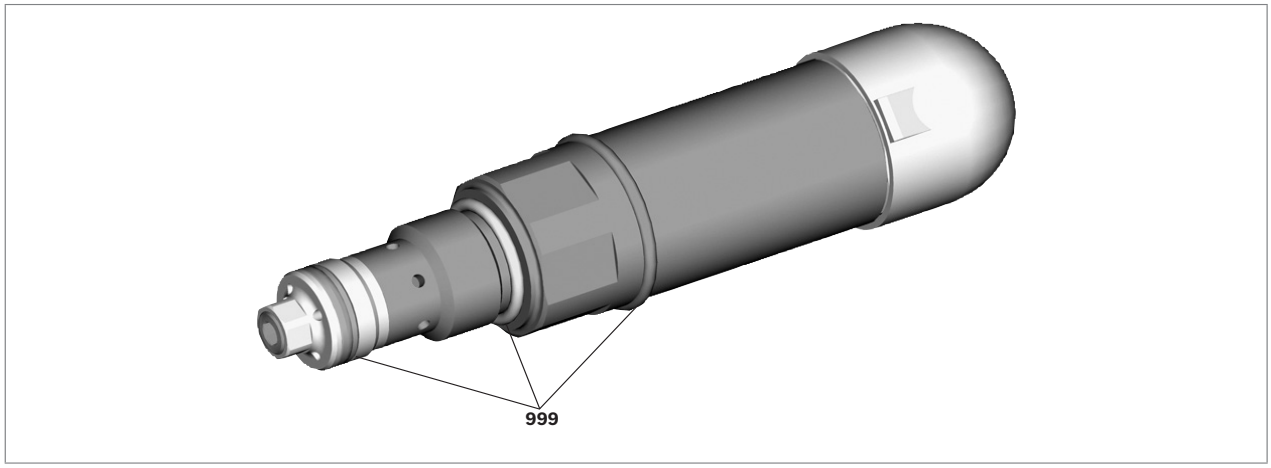
Mounting cavity

▼ **Version according to R/ISO 7789-27-01-1-98** (similar to ISO 7789-27-01-0-98): **2 main ports; thread M27×2**



1) Deviating from ISO 7789 27-01-0-98:
Valves for mounting cavity ISO 7789 27-01-0-98 can be screwed into this bore!
2) Depth of fit

Available individual components



Item	Denomination	Material no.
999	Seal kit of the valve (FKM)	R961001402

Related documentation

- Mineral oil-based hydraulic fluids — Data sheet 90220
- Environmentally acceptable hydraulic fluids — Data sheet 90221
- $MTTF_D$ values — Data sheet 90294