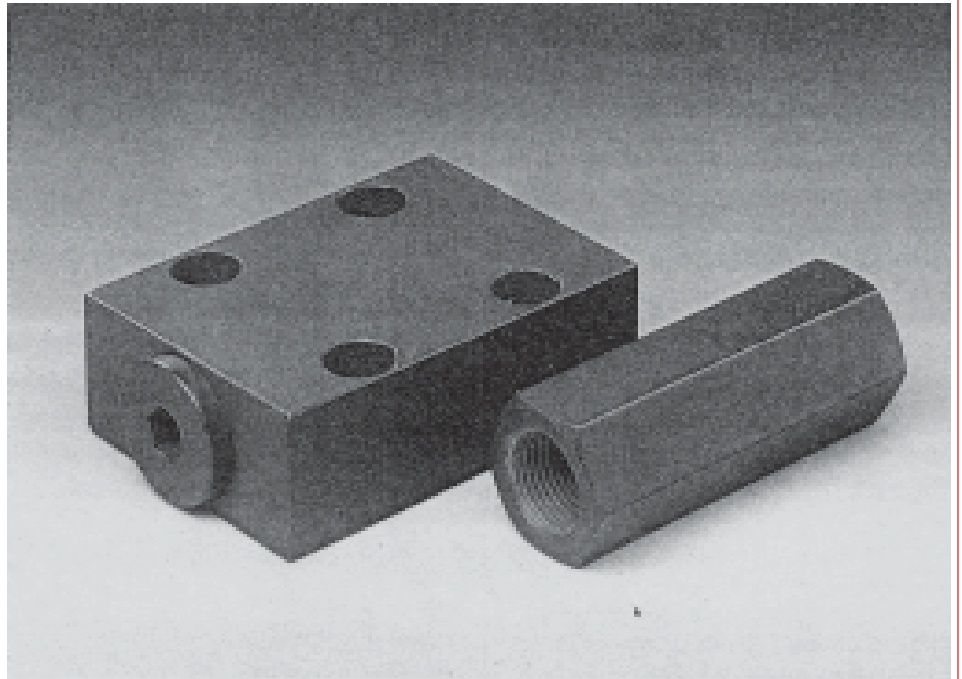


FLUTEC VALVES

Check Valves RV, RVP



up to 1000 bar
up to 600 l/min



1. DESCRIPTION

1.1. GENERAL

RV and RVP valves belong to the group of check valves. In accordance with DIN ISO 1219 they are valves for all hydraulic systems, which allow flow in one direction while the other is shut off.

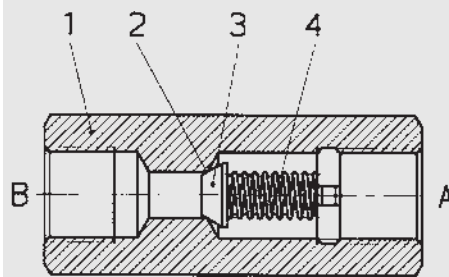
Important advantages are:

- Compact design allows space-saving and cost-effective installation of the RV valves in pipelines and of the RVP valves as manifold mounted valves
- RVP check valves can be mounted onto control blocks for easy maintenance
- Painting is unnecessary since they are Phosphate-plated with antirust free Process.
- Choice of nine sizes ensures best possible adaptability to the system
- Mounting position optional

1.2. FUNCTION

RV and RVP check valves are spring-loaded cone seat valves. Basically they consist of a housing with built-in valve seat, a hardened and polished closing cone and the spring. The closing cone is pressed by the spring onto the valve seat, thereby shutting off port A from port B. The valve opens when the pressure across port B is higher than the pressure across port A, including the cracking pressure created by the spring force.

RV



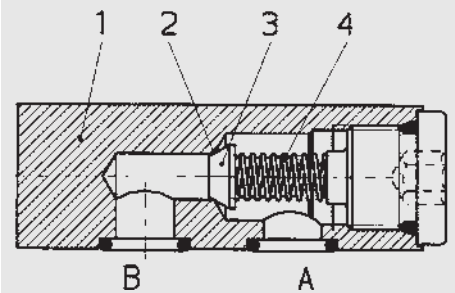
- 1 Housing
- 2 Valve seat
- 3 Closing cone
- 4 Spring

1.3. APPLICATION

RV and RVP check valves are used:

- where the flow must be prevented from flowing back and a leakage-free shut-off is required
- Areas of application are:
 - Steel works
 - Energy industry
 - Ship-building
 - Machine tools
 - Agricultural and forestry machines
 - Construction machinery
 - System engineering
 - Mobile hydraulics
 - Plastic injection moulding machines

RVP



- 1 Housing
- 2 Valve seat
- 3 Closing cone
- 4 Spring

1.4. NOTES

The cracking pressure of the valves increases by the amount of pressure across port A.

2. TECHNICAL SPECIFICATIONS

2.1. GENERAL

2.1.1 Designation and symbol RV or RVP check valve



2.1.2 Model code (also order example)

RV - 10 - 01 . X / 0

Designation

RV = check valve for inline mounting
RVP = check valve for manifold mounting

Nominal size

06
08
10
12
16
20
25
30
40

Type

01 = Carbon Steel Phosphate-Plated
30 = Housing & all parts stainless steel

Series

(determined by manufacturer)

Threaded connection (on RV only)

0 = BSPP(F) to DIN 3852, Part 2-X
5 = NPT(F) - ANSI B1.20.3 (Non-Standards Model)

Standard models

Thread Connection in BSPP(F)	Model code
1/8"	RV-06-01.X/0
1/4"	RV-08-01.X/0
3/8"	RV-10-01.X/0
1/2"	RV-12-01.X/0
3/4"	RV-16-01.X/0
1"	RV-20-01.X/0
1 1/4"	RV-25-01.X/0
1/2"	RV-30-01.X/0
2"	RV-40-01.X/0
Nominal Size	Model code
NG 06	RVP-06-01.X
NG 08	RVP-08-01.X
NG 10	RVP-10-01.X
NG 12	RVP-12-01.X
NG 16	RVP-16-01.X
NG 20	RVP-20-01.X
NG 25	RVP-25-01.X
NG 30	RVP-30-01.X
NG 40	RVP-40-01.X

Please quote model code when ordering. Delivery for non-standard models is longer and the price is higher.

2.1.3 Type of construction

Cone seat valve

2.1.4 Type of mounting

RV
inline mounting

RVP
manifold mounting

2.1.5 Mounting position

Optional

2.1.6 Weight

See point 3

2.1.7 Direction of flow

From A to B shut-off

From B to A free flow
via check valve

2.1.8 Ambient temperature range

Min. - 20 °C

Max. + 80 °C

2.1.9 Materials

Housing:
free-cutting steel

Closing cone:
hardened and polished steel

Seals:
compatible with hydraulic oil to
DIN 51524, Part 1 and 2.

2.1.10 Nominal size

NG 06

NG 08

NG 10

NG 12

NG 16

NG 20

NG 25

NG 30

NG 40

2.1.11 Type of connection

RV

For threaded connections with
male threaded connection
Form A, B and E to DIN 3852,
Part 2 and 11.

RVP

Manifold connection

(for dimensions see point 3)

The mounting screws are not
supplied with the valve.

2.2. HYDRAULIC DETAILS

2.2.1 Nominal pressure

$p_N = 500$ bar
across all ports

2.2.2 Operating fluid

Hydraulic oil to DIN 51524,
Part 1 and 2
Water, Air, Gas or any other fluid

2.2.3 Temperature range of operating fluid

Min. - 20 °C
Max. + upto +250 °C

2.2.4 Viscosity range

Min. 2.8 mm²/s
Max. 800 mm²/s

2.2.5 Filtration

Max. permissible contamination
level of the operating fluid to
ISO 4406 Class 21/19/16
(NAS 1638, Class 10).

We therefore recommend a filter
with a minimum retention rate of
 $\beta_{20} \geq 100$.

The fitting of filters and regular
replacement of elements
guarantees correct functioning,
reduces wear and tear and
increases the service life.

2.2.6 Cracking pressure

$p_o = 0.5$ bar
(others on request)

2.2.7 Flow rate

RV/RVP-06... Q = 20 l/min

RV/RVP-08... Q = 40 l/min

RV/RVP-10... Q = 70 l/min

RV/RVP-12... Q = 160 l/min

RV/RVP-16... Q = 200 l/min

RV/RVP-20... Q = 350 l/min

RV/RVP-25... Q = 550 l/min

RV/RVP-30... Q = 600 l/min

RV/RVP-40... Q = 600 l/min

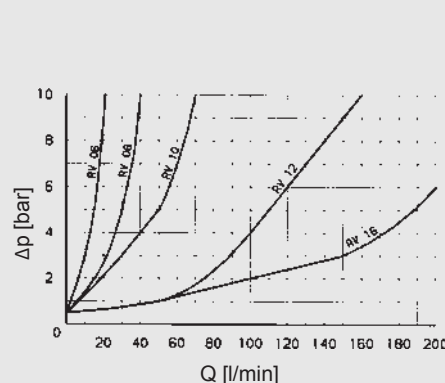
2.2.8 Pressure drops, dependent on flow rate

RV

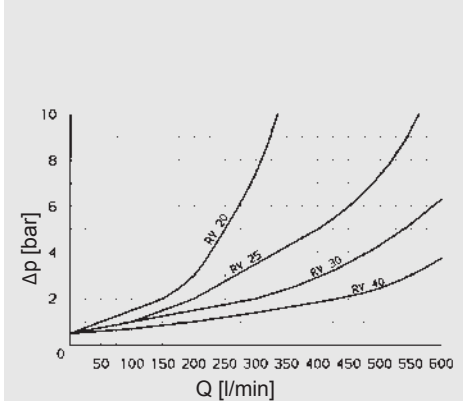
Flow direction B to A

Pressure differential Δp
depending on flow rate Q
measured at $v = 72$ mm²/s and
 $t_{oil} = 30$ °C

RV-06-01.X to RV-16-01.X



RV-20-01.X to RV-40-01.X

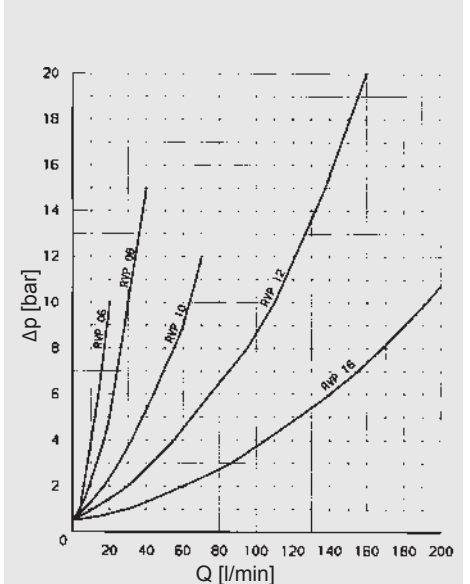


RVP

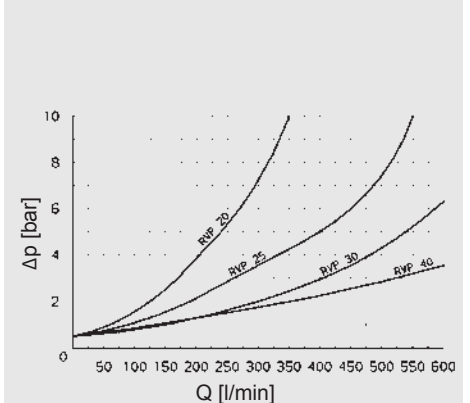
Flow direction B to A

Pressure differential Δp
depending on flow rate Q
measured at $v = 38$ mm²/s and
 $t_{oil} = 43$ °C

RVP-06-01.X to RVP-16-01.X

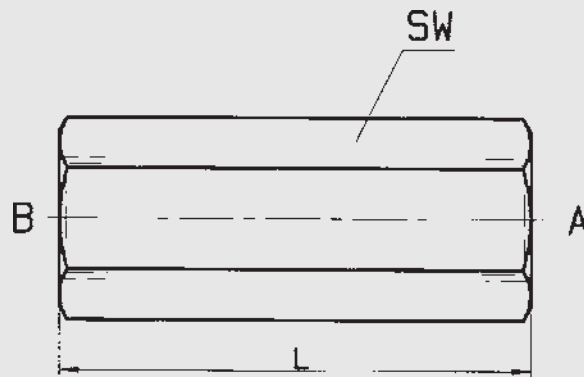


RVP-20-01.X to RVP-40-01.X



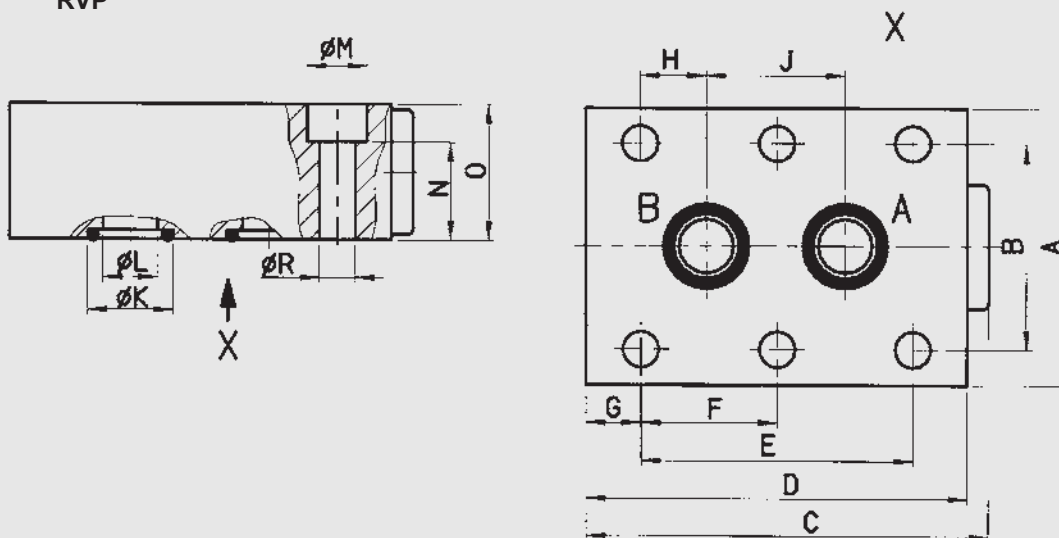
3. DIMENSIONS

RV



Nominal size	Threaded connection	SW	L	Weight [kg]
06	G1/8	19	45	0.1
08	G1/4	19	58	0.2
10	G3/8	24	58	0.2
12	G1/2	30	72	0.3
16	G3/4	36	100	0.5
20	G1	41	115	1.1
25	G1 1/4	55	130	1.8
30	G1 1/2	65	132	2.6
40	G2	75	140	4.4
50	G3	75	140	5.1

RVP



Required surface finish on interface area:



Nominal size	A	B	C	D	E	F	G	H	J	K	L	M	N	O	R	Weight [kg]
06	41.5	28.5	46	41.5	19	–	6.4	1.6	16	9.7	5	11	9	16	6.6	0.2
08	46	33.5	67	63.5	35	–	14.2	4.8	25.5	12.7	7	11	13	20	6.6	0.4
10	51	38	74	70	33.5	–	18	4	25.5	15.6	10	11	18	25	6.6	0.5
12	57.5	44.5	84.5	80	38	–	21	4	30	18.6	13	11	25	32	6.6	1.0
16	70	54	109.5	104	76	38	14	11	54	24.5	17	14	36	45	9	2.1
20	76.5	60	133	127	95	47.5	16	19	57	30.5	22	14	41	50	9	3.3
25	100	76	172	165	120.5	60	15	20.6	79.5	37.4	28.5	18	44	55	11.5	5.8
30	115	92	196	186	143	71.5	15	23.8	95	43.4	35	20	62	75	14	10.3
40	140	111	201	192	133.5	67	16	25.5	89	57.2	47	20	87	100	14	17.9

4. NOTE

All dimensions are in mm.

The information in this brochure relates to the operating conditions and applications described.

For applications or operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.