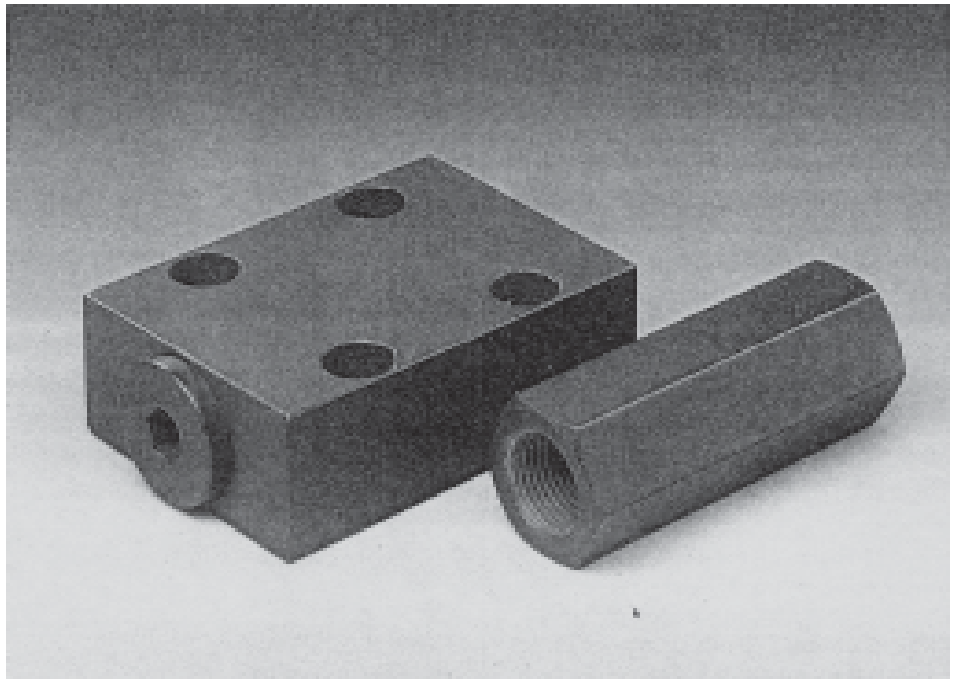


## Check Valves

RV, RVP



up to 350 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 oil hydraulic systems, which allow flow in one direction while the other is shut off.

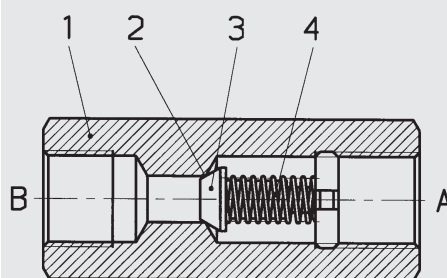
Important advantages are:

- 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 with the RV check valves since they are zinc-plated and yellow-chromed
- 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

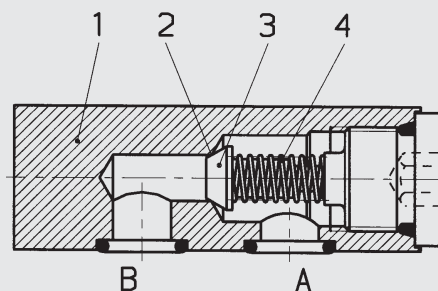
RV and RVP check valves are used:

- 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



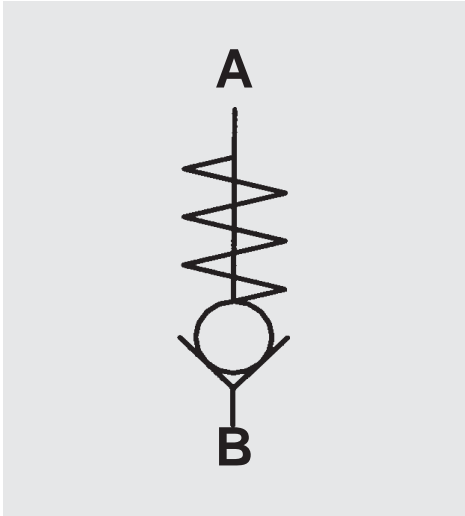
- |   |              |
|---|--------------|
| 1 | Housing      |
| 2 | Valve seat   |
| 3 | Closing cone |
| 4 | Spring       |

### 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 = housing zinc-plated and yellow-chromed (RV only)  
housing phosphate-plated (RVP only)  
30 = all parts stainless steel (RV only)

**Series** \_\_\_\_\_  
(determined by manufacturer)

**Threaded connection (on RV only)** \_\_\_\_\_  
0 = threaded bore to DIN 3852, Part 2-X

Standard models

Stock no.	Model code
705 826	RV-06-01.X/0
705 829	RV-08-01.X/0
705 832	RV-10-01.X/0
705 835	RV-12-01.X/0
705 838	RV-16-01.X/0
705 841	RV-20-01.X/0
705 844	RV-25-01.X/0
705 847	RV-30-01.X/0
705 850	RV-40-01.X/0
705 927	RVP-06-01.X
705 929	RVP-08-01.X
705 931	RVP-10-01.X
705 933	RVP-12-01.X
705 935	RVP-16-01.X
705 937	RVP-20-01.X
705 939	RVP-25-01.X
705 941	RVP-30-01.X
705 943	RVP-40-01.X

Please quote stock number 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.

### 2.1.12 Seal kit

555089 Seal kit NG06

DV/P DRV/P RVP

555090 Seal kit NG08

DV/P DRV/P DVE RVP SRVR/P

555091 Seal kit NG10

DV/P DRV/P DVE RVP SRVR/P

555092 Seal kit NG12

DV/P DRV/P DVE RVP SRVR/P

555093 Seal kit NG16

DV/P DRV/P DVE RVP SRV  
SRVR/P

555094 Seal kit NG20

DV/P DRV/P RVP SRVR

555095 Seal kit NG25

DV/P DRV/P RVP

555096 Seal kit NG30

DV/P DRV/P RVP

561456 Seal kit NG40

DV/P DRV/P RVP

## 2.2. HYDRAULIC DETAILS

### 2.2.1 Nominal pressure

$p_N = 350$  bar

across all ports

### 2.2.2 Operating fluid

Hydraulic oil to DIN 51524,  
Part 1 and 2

### 2.2.3 Temperature range of operating fluid

Min. - 20 °C

Max. + 80 °C

### 2.2.4 Viscosity range

Min. 2.8 mm<sup>2</sup>/s

Max. 800 mm<sup>2</sup>/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

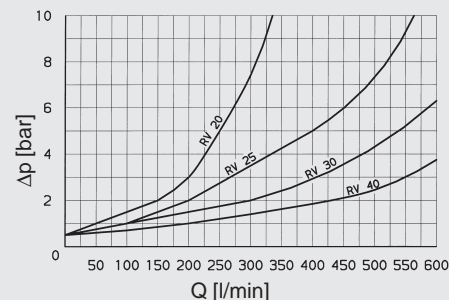
Pressure differential  $\Delta p$

depending on flow rate Q

measured at  $v = 72$  mm<sup>2</sup>/s and

$t_{oil} = 30$  °C

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



RVP

Flow direction B to A

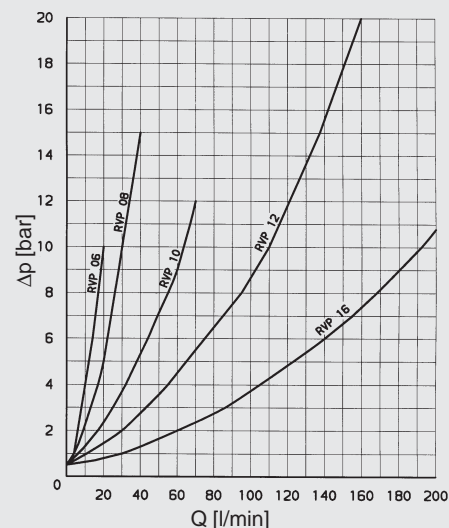
Pressure differential  $\Delta p$

depending on flow rate Q

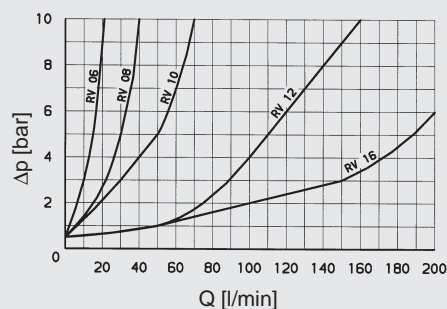
measured at  $v = 38$  mm<sup>2</sup>/s and

$t_{oil} = 43$  °C

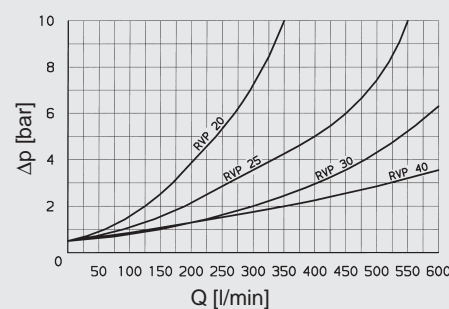
## RVP-06-01.X to RVP-16-01.X



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

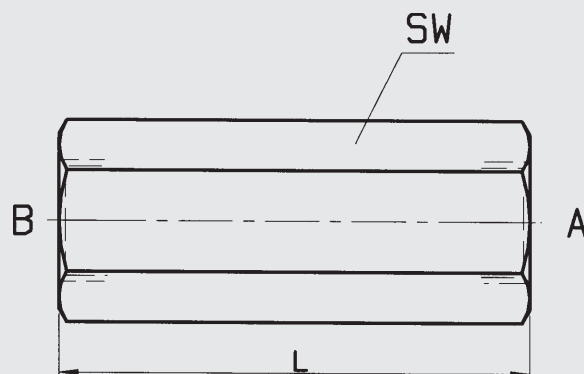


## RVP-20-01.X to RVP-40-01.X



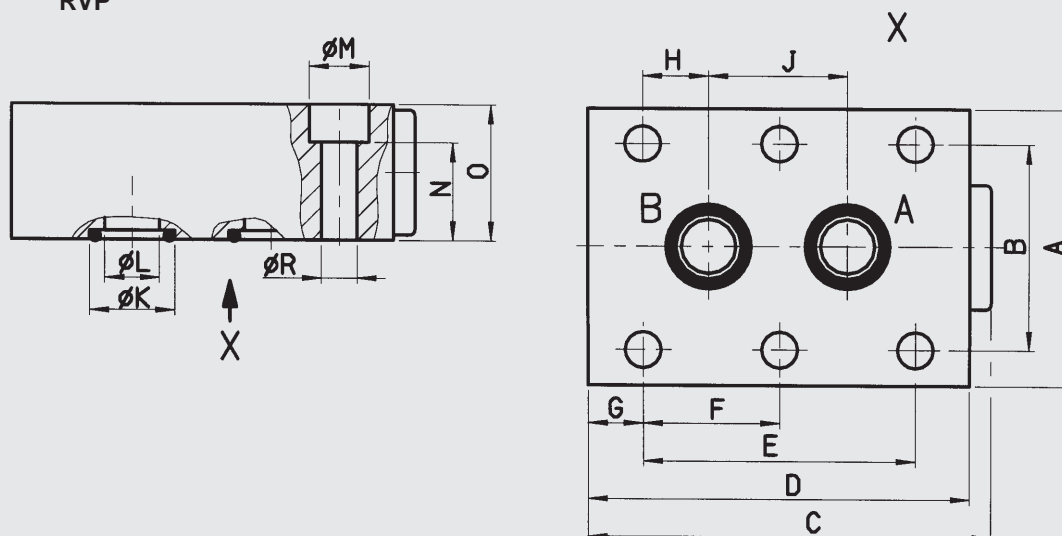
### 3. DIMENSIONS

RV

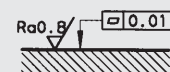


Nominal size	Threaded connection	SW	L	Weight [kg]
06	G1/8	17	45	0.1
08	G1/4	19	55	0.2
10	G3/8	24	65	0.2
12	G1/2	30	73	0.3
16	G3/4	36	88	0.5
20	G1	46	127	1.1
25	G1 1/4	60	143	1.8
30	G1 1/2	65	143	2.6
40	G2	80	165	4.4

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

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.