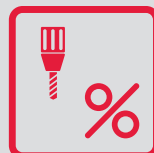
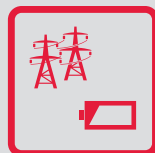


Check valves and flow control valves.



Solutions for a World under Pressure

HAWE
HYDRAULIK

Check valves type RK/RB

Check valves type RK/RB are used to block the flow in one direction and enable free flow in the opposite direction. RK/RB check valves are spring-loaded, sturdily designed and dirt-resistant ball seated valves.

The mounting hole for all screw-in check valves can be easily machined with a standard twist drill (point angle 118°).

Features and benefits:

- Zero Leak
- Operating pressures up to 700 bar
- Easily machined mounting holes
- Sturdy

Intended applications:

- General hydraulic system
- Hydraulic pre-loading

HAWE check valves type RK and RB are unmatched in quality and dependability. Once properly installed, HAWE's check valves offer 100% zero leak operation no matter the application. No drips, no drops 100% zero leak.



Nomenclature:	Check valve
Design:	Screw-in valve Valve insert With housing for in-line installation
P_{max}:	10,153 psi
Q_{max}:	105.7 g/min

Design and order coding example

RK 08-4 UNF
RB 08-4 UNF

Basic type, size

Additional versions:

- Type RK with increased open-up pressure
- Type RK, RB with metric thread

Available versions, main data

Circuit symbol:

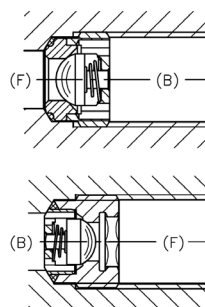
RK
screwed in locking direction



RB
screwed in free flow direction



Section view:



Assembly tool for type RK

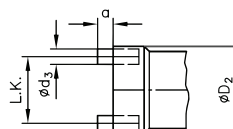


Table 1a Basic type and size type RK and RB

Basic type and size	Volumetric flow Q_{max} (gpm)	Pressure P_{max} (psi)	Thread	Opening pressure (psi)	Installation Tool
RK 08 UNF	1.3	10155	5/16-24 UNF	2.900	3200 3430-00
RK 0 UNF	2.6	10155	7/16-20 UNF	0.725	3200 2000-00
RK 1 UNF	5.3	10155	9/16-18 UNF	2.620	3200 2001-00
RK 2 UNF	13.2	10155	3/4-16 UNF	2.900	3200 2002-00
RK 3 UNF	21.1	7250	7/8-14 UNF	3.625	3200 2003-00
RK 4 UNF	31.7	7250	1 1/16-12 UNF	1.450	3200 2004-00
RB 08 UNF	1.3	10155	5/16-24 UNF	2.900	Not Required
RB 0 UNF	2.6	10155	7/16-20 UNF	0.725	Not Required
RB 1 UNF	5.3	10155	9/16-18 UNF	2.175	Not Required
RB 2 UNF	13.2	10155	3/4-16 UNF	1.015	Not Required
RB 3 UNF	21.1	7250	7/8-14 UNF	2.465	Not Required
RB 4 UNF	31.7	7250	1 1/16-12 UNF	1.450	Not Required

*Other thread types are available.

Note

HAWE check valves require no special tooling to use in manifolds. i.e., standard drills and taps are all that are required. Standard drill that opens a bottom at 118° - standard UN tap completes the process.

Pre-drill the hole, use a **sharp drill for the finishing** last 0,2mm (normal drill, can be the same as the other) and keep the tool on the ground of the hole for **approx. 0,2s (dwell time)** to get a clean surface, it is necessary to use a higher speed.

See D 7445 cavity dimensions and additional information.

Flow control valve (lowering brake valve) type SB, SQ, SJ and DSJ

Flow control valves are a type of flow valve. They generate a set constant volumetric flow, largely independently of the load.

The flow control valve type SB and SQ is available as a screw-in cartridge, a housing version with pipe connection or as a banjo screw version. Type SB has a slightly inclined characteristic curve for oscillation damping. Type SQ is largely independent of the load. The freely movable sliding metering orifice enables greater flow in the opposite flow direction. No bypass check valve is therefore required. The flow control valve type SB and SQ is used to control the lowering speed of single-acting consumers.



Nomenclature:	2-way flow control valve (drop rate braking valve)
Design:	Screw-in type with housing for in-line installation
Adjustment:	Fixed (pre-set) Tool adjustable from outside
Pmax:	4570 psi
Qmax:	0.1 - 105.7 g/min

Design and order coding example

SB 2 1 C - 1.18"

Response flow [l/min] Desired factory set response flow within the respective range

- Design** Adjustable or non adjustable version
- Screw-in version (C)
 - Version with housing for pipe mounting (E, F, G)

Additional versions

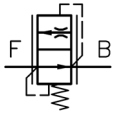
- With metric or UNF-thread
- With thread adaptor
- As banjo bolt and/or with swiveling screw fitting

Adjustment range Adjustable response flow

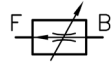
Basic type, size Type SB, SQ and SJ, size
Type DSJ, flow control function in both directions for double-acting consumers

Function

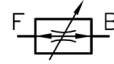
SB, SQ



SJ

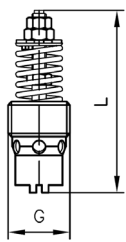


DSJ

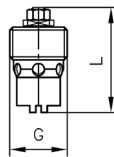


General parameters and dimension

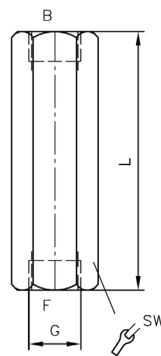
Screw-in valve ...C
SB, SQ



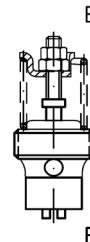
SJ



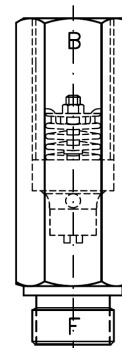
With housing...G



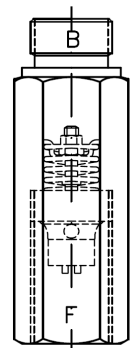
C



E



F



Coding for adjustment range of the set response flow from - to - (gpm) below

	Coding for adjustment range of the set response flow from - to - (gpm) below						Ports (BSPP)	Dimensions (Inches)			m (Oz)
	1	3	5	7	9	90		L	L1 _{max}	SW = a/f	
SB 0	0.3 - 0.4	0.4 - 0.7	0.7 - 1.1	1.1 - 1.7	1.7 - 2.6	2.6 - 4.0	G 1/4 (A)	1.54	78	19	00.5
SJ 0¹⁾								0.94	-	-	01.2
SB 1	0.7 - 1.1	1.1 - 1.7	1.7 - 2.6	2.6 - 4.2	4.2 - 6.6	6.6 - 9.3	G 3/8 (A)	1.69	82	22	00.8
SQ 1											
SB 2	4.2 - 5.6	5.6 - 7.4	7.4 - 9.87	9.8 - 13.2	13.2 - 17.7 ²⁾	-	G 1/2 (A)	1.93	96	27	01.4
SQ 2											
SB 2 UNF							7/8 14 UNF				
SB 3	7.4 - 9.8	9.8 - 13.2	13.2 - 23.8	23.8 - 31.7	31.7 - 39.6 ²⁾	-	G 3/4 (A)	2.40	106	32	02.8
SQ 3											
SB 4	21.1 - 26.4	26.4 - 33.0	33.0 - 42.3	42.3 - 52.8	52.8 - 66.0	-	G 1 (A)	3.07	145	41	05.3
SB 5	44.9 - 52.8	52.8 - 62.3	62.3 - 74.0	74.0 - 88.5	88.5 - 105.7	-		G 1 1/4 (A)	3.70	160	50
DSJ 1	2.6 - 5.6						G 3/8 (A)	1.54	78	19	01.1

- 1) Type SJ 0 without coding: adjust. range 0.1 - 0.3 g/min
- 2) Not for type SQ..

Line rupture protection valve type LB

Line rupture protection valves, also called pipe rupture protection valves are a type of check valve. The valves are normally mounted directly on the cylinder. They prevent uncontrolled cylinder movement in the event of a pipe rupture or hose break. The line rupture protection valve type LB offers a high level of safety in the event of pressure peaks. It features reproducibly accurate, secure closing at the pre-set trigger volumetric flow. Higher volumetric flows causes a plate raised from the valve seat by a spring to be pressed onto the housing seat. The valve closes. A variant with restrictor bore in the valve plate permits a low volumetric flow in the check direction. Type LB is available as a screw-in valve and in a housing design for line installation.

The pipe rupture protection valve type LB is used in industrial trucks, lifting platforms and lifting equipment.

Features and benefits:

- Pressures up to 500 bar

Intended applications:

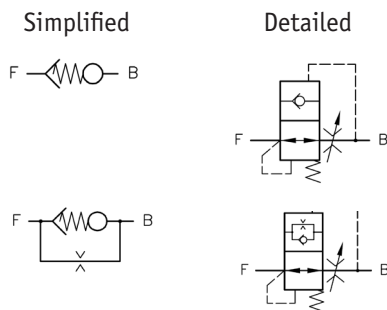
- Industrial trucks
- Lifting devices



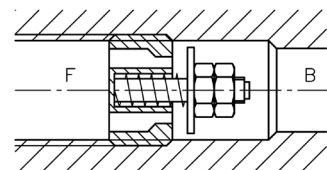
Nomenclature:	Line rupture safety valve
Design:	Valve insert with housing for in-line installation
Adjustment:	Tool adjustable
P_{max}:	7250 psi
Q_{max}:	66 g/min

Screw-in cartridge and housing version

Circuit symbol:



Section view:



Order coding example:

LB 2	C		- 10.57"
LB 3	F	0.03	- 16.64"
LB 3 UNF	C	0.04	- 13.21"

		Response flow	Table 4 Response flow
	Orifices	Table 3 Orifices	
	Version	Table 2 Version	
Basic type, size	Table 1 Basic type and size		

Table 1 Basic type and size

Basic type and size	Port size	Description	Housing type (Table 2)	
			C	F
LB 1 UNF	9/16-18 UNF	Version with UNF thread according to SAE J 514	•	
LB 2 UNF	3/4-16 UNF		•	
LB 3 UNF	7/8-14 UNF		•	•
LB 4 UNF	1 1/16-12 UNF		•	

Table 2 Versions



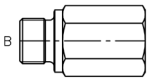
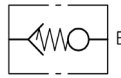
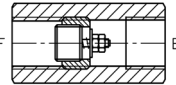
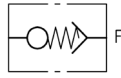
Model	Description	View	Circuit symbol
C	Screw-in cartridge		
F	Tapped journal on one side Also LB 1 F - JIS ... with thread according JIS B2351		
	With threaded reducing ring Screw-in cartridge sizes 1 to 3 with threaded reducing ring (Table 1) screwed into the next largest housing (G or F) sizes 2 to 4. Example of use: Adjustment to the port size of the hydraulic devices used, e.g. LB 3/2 G-..		

Table 3 Orifices

Type	Marking for orifice bore (\varnothing) only for valves (inches)					
	0.02"	0.03"	0.04"	0.05"	0.06"	0.08"
LB1	•	•	•	•		
LB2	•	•	•	•	•	
LB3	•	•	•	•	•	•
LB4		•	•	•	•	•
LB5		•	•	•	•	•

Table 4 Response flow

Basic type and size	Response flow Q_A (gpm)												
	-1.1	-1.7	-2.6	-4.2	-6.6	-10.6	-13.2	-16.6	-21.1	-26.4	-33.0	-44.3	-66.0
LB 1...	•	•	•	•	•								
LB 2...		•	•	•	•	•	•						
LB 3...				•	•	•	•	•	•				
LB 4...					•	•	•	•	•	•			
LB 5...									•	•	•	•	•

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