

System drawings shown in this bulletin are for illustration purposes only. Refrigeration systems should only be serviced by a qualified technician. Always observe proper safety procedures when servicing a refrigeration system. For more information see the latest revision of Phillips Safety Bulletin SGRV.

GENERAL INFORMATION

Valve Model	Temperature Rating	Pressure Rating
600JR, 600J, 600AJ, 600BJ, 600DJ	-20°F to 240°F (-29°C to 116°C)	300 PSIG (21 bar, gauge)
600K, 600AK	-50°F to 240°F (-46°C to 116°C)	600 PSIG (41 bar, gauge)

H.A. Phillips & Co. offers a wide variety of flanged, normally closed, in-line disc-type check valves designed to prevent reverse flow in many refrigeration applications. These valves are summarized in Table 1 and illustrated in Figures 1 through 3. Many of these are directly interchangeable with Wolfe-Linde check valves. All check valves feature PTFE-to-metal seating.

APPLICATION NOTES

All 600 Series check valves may be installed in either horizontal or vertical lines.

GRAVITY DRAIN

Note that, due to their low pressure drops, only the following valves are suitable for gravity-drain applications such as gas-driven recirculating and compressor protection systems:

600K	600AK
600AJ	600DJ
600BJ	600J

COMPRESSOR DISCHARGE

Disc-type check valves are **not recommended** for applications with highly variable flow, such as compressor discharge. For these applications, consider using the Phillips 700X Series piston-type check valves, described in Engineering Data Bulletin 700X.

Table 1: Valve Configurations

Valve Model	Approx. ΔP to Open	Flange Size Avail.	Body Material	Purge Line Conn.	Wolfe-Linde Ref.
600JR	<1 psid	1/2" 3/4" 1"	Cast Iron (Figure 1)	-	5970 5972 5974
600J	<1 psid	1-1/4" 1-1/2"		-	5975 5976
600AJ	<1 psid	1-1/2" 2"		-	5978
600K	< 0.2 psid	1"	Machined Steel (Figure 2)	1/4" FPT	-
600KS	2 psid	1-1/4"			-
600AK	< 0.2 psid	1-1/2"			-
600AKS	2 psid	2"			-
600BJ	< 0.2 psid	3"	Cast Iron (Figure 3)	1/4" FPT	5980
600BJS	2 psid				5982
600DJ	< 0.2 psid	4"			
600DJS	2 psid				

SERVICE INSTRUCTIONS

600JR / J / AJ

Refer to Figure 1 and Table 3. Remove the back plate ring and back plate (Items 9 and 10). Install the new valve piece and spring.

600K / KS / AK / AKS

Refer to Figure 2 and Table 3. Remove the guide piece (Item 2) by pulling out through the valve outlet, overcoming the friction of the O-Ring (Item 6). Apply O-Ring grease to the O-Ring before installing the new valve piece and spring. If removing the pipe plug (Item 13) and installing a new one, use pipe thread sealant and tighten to 60 ft-lbs torque.

600BJ / BJS / DJ / DJS

Refer to Figure 3 and Table 3. Remove the back plate ring and back plate (Items 9 and 10). Install the new valve piece and spring.

If removing the pipe plug (Item 13) and installing a new one, use pipe thread sealant and tighten to 60 ft-lbs torque.

Figure 1: 600JR, 600J, 600AJ

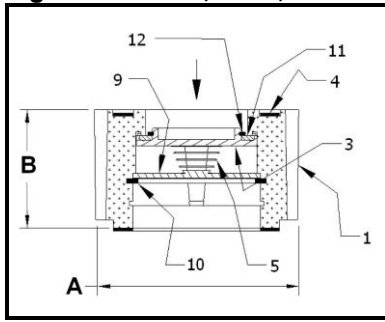


Figure 2: 600K, 600AK

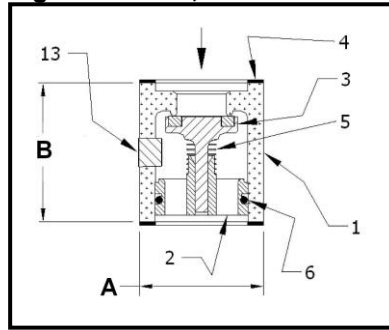


Figure 3: 600BJ, 600DJ

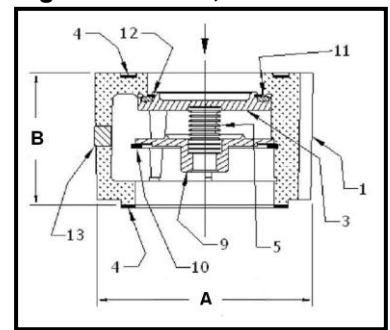


Table 2: Dimensions

Valve Number	Figure Number	Flanged Connection**	Outside Diameter A	Height Less Flanges B	Height with Flanges	Orifice Size	Flange Type	Weight (lbs)
600JR	1	1/2, 3/4, 1	2.31	1.56	3.31	1	Oval	5.0
600J	1	1-1/4, 1-1/2	3.25	2.06	4.06	1-1/2	Square	10.0
600AJ	1	1-1/2, 2	4.00	2.31	4.44	2	Square	12.0
600K*	2	1, 1-1/4	2.38	2.63	4.63	15/16	Square	7.0
600AK*	2	1-1/2, 2	3.25	3.33	5.46	1-9/16	Square	10.5
600BJ*	3	3	5.63	3.50	6.50	3	Square	30.0
600DJ*	3	4	7.13	4.19	7.82	4	Square	45.0

All dimensions in inches

*If ordered with suffix "S" the valve will be supplied with a heavy spring (not suitable for gravity-drain).

**Only these valves have the 1/4" FPT purge connection.

**Flanges may be available in socket weld, weld neck, FPT, or ODC configurations, depending on size.

Table 3: Replacement Parts

Item No.	Description	600JR (Figure 1)	600J (Figure 1)	600AJ (Figure 1)	600K† (Figure 2)	600AK† (Figure 2)	600BJ† (Figure 3)	600DJ† (Figure 3)	
1	Valve Body	600JR-VB	600J-VB	600AJ-VB	600K-VB	600AK-VB	600BJ-VB	600DJ-VB	
2	Guide Piece	-	-	-	602K	602AK	-	-	
3	Valve Piece*	604JR	604J	604AJ	604	604A	604BJ	604DJ	
4	Gasket* (2)	626	63W	73	63	73	326Y	326YA	
5	Spring*	Light	605JR	605AJ	605AJ	477K	605A4	605BJ	605DJ
		Heavy	-	-	-	477-1	605A1	605BJS	605DJS
6	O-Ring*	-	-	-	11-222	11-229	-	-	
7	Flange Bolt (4)	72C**	721A	72E	721L	726C	24B	24C	
8	Flange Nut (4)	58**	57	58	57	58	59	60	
9	Back Plate	602JR	602J	602AJ	-	-	602BJ	602DJ	
10	Back Plate Ring	608JR	608J	608AJ	-	-	608BJ	608DJ	
11	PTFE Ring	603JR	603J	603AJ	-	-	603BJ	603DJ	
12	Snap Ring	601JR	601J	601AJ	-	-	601BJ	601DJ	
13	Pipe Plug	-	-	-	12	12	12	12	
-	*Service Kit (Items 3, 4, 5, 6)	K600JR	K600J	K600AJ	K600 K600S	K600A K600AS	K600BJ K600BJS	K600DJ K600DJS	

**Only 2 bolts and nuts

†If ordered with suffix "S" the valve will be supplied with a heavy spring (not suitable for gravity-drain).

†Only these valves have the 1/4" FPT purge connection.

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