

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

**Pressure Rating:** 300 psig (21 bar, gauge)

**Temperature Rating:** -20°F to 240°F  
(-29°C to 116°C)

The 700XT Series 3-way check valves are flanged in-line piston-type check valves with a replaceable seat disc made from Teflon. They have a spring beneath the piston that holds the valve in an open position during normal operation so that no bleed to the downstream side is necessary to maintain a fully open port.

A line from a high pressure gas source enters the 3-way check valve through the top bonnet, and is normally

closed utilizing a solenoid valve. When the solenoid valve is opened high pressure gas enters above the piston and closes the main port. Gas then flows through the center of the piston to the upstream side of the valve in the direction opposite to the arrow on the valve body. This will raise the upstream pressure to the level determined by a regulator installed in the system. While the main port is closed there is a small bleed to the downstream side. When the solenoid valve is closed, the 3-way check valve immediately opens and restores full flow in the direction of the arrow.

Valves in this series include the 700XT, 700AXT and 700BXT. If the valve is applied to a halocarbon system, the suffix "F" is applied to the valve designation (example: 700XTF).

## TROUBLESHOOTING

Problem: Check valve does not close

- A) Hot gas solenoid valve not opening.

Solution: Check the coil to determine if it has shorted or burned out. Replace if necessary.

- B) Check the voltage of the coil.

Solution: If the voltage is correct and the solenoid does not open, replace the coil and/or solenoid.

- C) The piston may have excessive wear. The pressure bleeding around the piston may be so great that the pressure is insufficient to close the valve.

Solution: Install a new piston and bonnet gasket.

- D) Piston may be jammed in the bore of the valve body, causing the valve be in an open position.

Solution: If the piston has considerable wear or is rusted, change the piston and bonnet gasket.

- E) Spring may be broken and pieces are holding the piston in an open position.

Solution: Install a new piston and bonnet gasket.

Solution: Secure a new spring for the pressure drop required and install a new bonnet gasket.

- F) The Teflon seat disc may be heavily impressed with the seat configuration allowing the piston to bear against the valve body, or the Teflon seat disc is broken or missing.

Solution: Install a new seat disc and bonnet gasket.

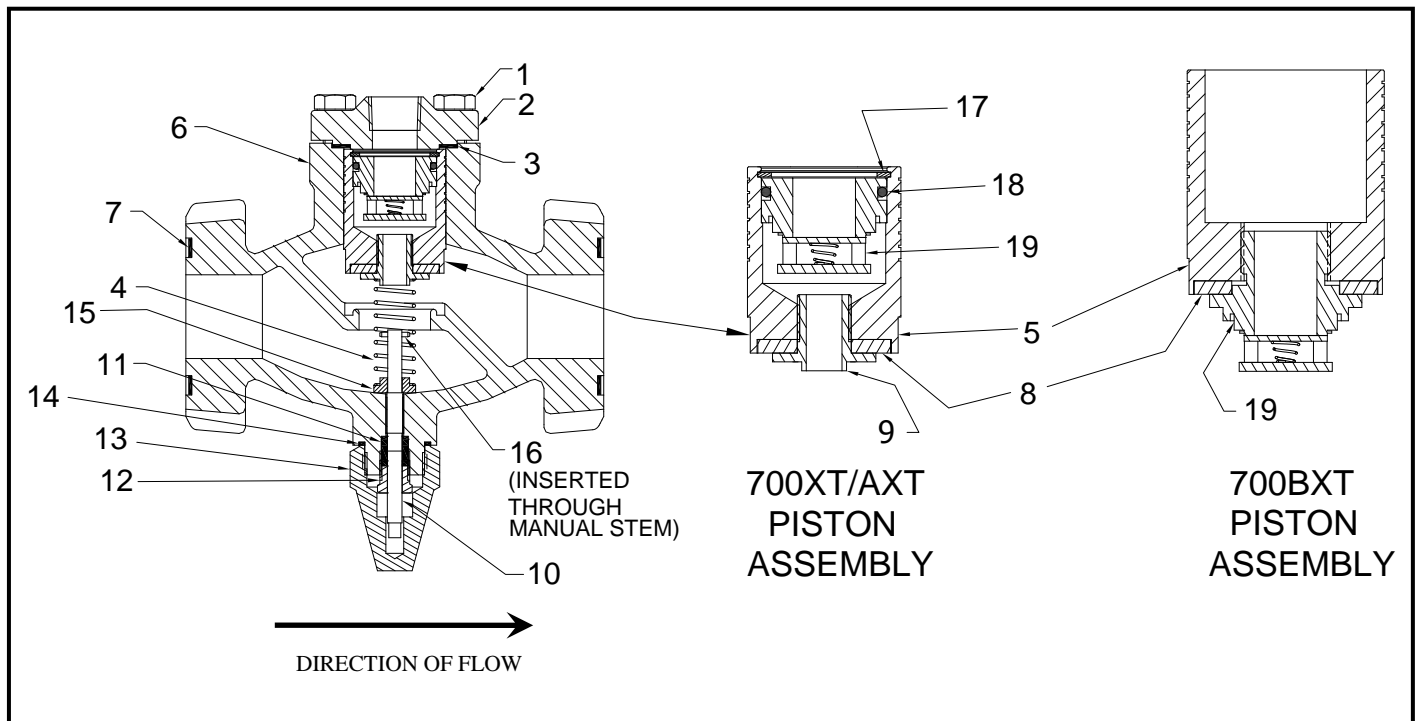
- G) Debris may be on top of the seat or driven into the Teflon seat disc, holding the valve in an open position.

Solution: Clean the seat disc and seat thoroughly. Replace if necessary.

## REPLACEMENT PARTS

When contacting Phillips for replacement parts, have the complete valve model and serial number (shown on the valve nameplate) available to ensure you receive the correct components. For example: "700AXT-ZM" is a complete valve model, and "990123" or "E-12345" are complete serial numbers.

Item #	Description	700XT	700AXT	700BXT
1	Bonnet Screw	577 (4)	718 (4)	1459 (4)
2	Bonnet	702T	700-2AT	702-BT
3	Bonnet Gasket*	710	710A	710B
4	Spring*	705-10L	705A-10L	705B-15X
5	Piston	700-4XT	700-4AXT	700-4BXT
6	Valve Body	700F-VB	700AF-VB	700BXF-VB
7	Flange Gasket*	725N (2)	73 (2)	326Y (2)
8	Seat Disc*	700-3X	700-3AX	700-3BX
9	Flush Plug	700-7T	700-7AXT	-
10	Manual Stem	711XT	711AXT	711BT
11	Packing Ring	775	775	777BN
12	Gland	8	8	8B
13	Seal Cap	714	714	714B
14	Seal Cap Gasket	720	720	720B
15	Spring Cone	6T	708AT	708BXT
16	Pin	211-3/8	211-5/8	211-1/2
17	Retaining Ring*	5000-131	5000-175	-
18	O-Ring*	11-215	11-222	-
19	Check Valve*	600D2-2	600D3-2	600D3XT
20	Flange Bolt (not shown)	726 (2)	23 (8)	24A (8)
21	Flange Nut (not shown)	58 (2)	58 (8)	59 (8)
-	* Spare Parts Kit (Includes Items 3, 4, 7, 8, 17, 18, 19)	K700XT	K700AXT	K700BXT



**H. A. Phillips & Co.**  
 770 Enterprise Avenue  
 DeKalb, IL 60115 U.S.A.  
 Phone: (630) 377-0050  
 Fax: (630) 377-2706

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