



SUPERFREEZE



CHECK VALVE
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Type : PSCK-1
Port Size: 32 150 mm (1-1/4"-6")
Refrigerant: R-717 (Ammonia)R-12, R-22, R-502 and other common refrigerants

FEATURES

- Manual Opening Stem
- Low Pressure Drop
- Piston Type Gravity Closing
- Flanged
- Working Pressure : 25 bar (365 psig)
- Rugged Heavy Duty

INTRODUCTION:

These piston type, gravity closing, heavy duty check valves are suitable for ammonia R-12, R-22, R-502, and other refrigerants. All PSCK check valves are flanged and have a provision for manual operation with the help of manual opening stem. The PSCK valves have metal to metal seats. A minimum pressure difference of .07 bar (1 psig) is required to open the valve completely. The valve closes tight when flow reversal occurs. When inlet pressure and outlet pressure are equalized, the weight of the piston/seat assembly causes the valve to close. When outlet pressure exceeds inlet pressure, the outlet pressure acting on top of the piston help seat to close.

APPLICATIONS

The PSCK piston-type check valve prevents backward flow of refrigerant in liquid, discharge, and suction and hot gas lines. They are recommended for compressor discharge line also for liquid line & suction lines with the temperature as low as -30°C(-25°F).

PRINCIPLES OF OPERATION

This piston type check valve opens by the pressure difference between valve inlet and outlet. The pressure difference must be a minimum of .07 bar (1 psig). When upstream pressure exceeds downstream pressure, the pressure on the bottom side of the piston-main valve will lift the assembly and allow flow through the valve. On opening, pressure above the piston-main valve assembly will be relieved through the piston bleed hole, permitting the piston to travel its full vertical distance and open the valve to its full open position. When upstream and downstream pressures are equalized, the weight of the piston-main valve will cause it to drop tight against its seat bead and stop flow. When down stream pressure rise, the additional pressure action on the top of the valve seat will further assist in seating the valve closed.



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MANUAL OPENING

If it is desired to hold open the PSCK check valve manually, the following procedure should be adopted. The seal cap on the bottom of the valve is to be removed. This must be done with caution as refrigerant may be trapped inside the seal cap. Manual opening is accomplished by turning the stem clock wise. To reset for automatic operation, turn the stem anti clock wise as far as it goes.

MATERIAL SPECIFICATIONS

Body	:	C.I. FG260
Piston/Seat	:	C.I. FG260
Gasket	:	Non Asbestos
Cover	:	Nodular Iron
Stem	:	AISI 304 / ASTM A106
Companion Flanges	:	Forged Steel ASTM A105
Safe Working Pressure	:	25 bar (365 psig)
Operating Temperature	:	-25 F to 250F (-32 to +121c)

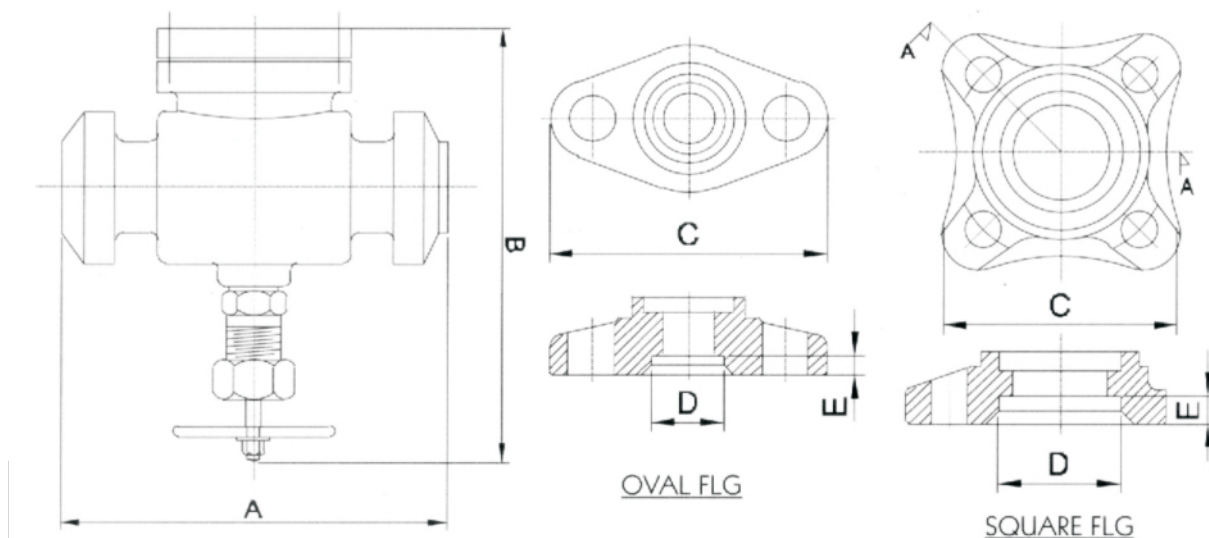
INSTALLATION

Protect inside of valve from dirt, chips and moisture during installation. Be sure to remove protective plugs from valve before installation. Install the valve in an accessible location for servicing. **DO NOT INSTALL THE CHECK VALVE AT THE INLET OF A SOLENOID VALVE, OR A REGULATOR WITH AN ELECTRIC SHUT-OFF FEATURE. DO NOT INSTALL AT THE INLET OF AN OUTLET PRESSURE REGULATOR IN A SYSTEM WHERE LIQUID MAY BE TRAPPED BETWEEN TWO VALVES.** Check Valves when used with such valves should always be installed at the outlet of the valves. The valve must be installed with the flow arrow on the valve pointing in the direction of permissible fluid flow through the valve. The type PSCK are for installation on horizontal pipelines only. The valve must be installed with the cover on top. Tighten the flange bolts evenly. Before putting the valve into operation check the manual opening stem. For automatic operation, turn the stem wheel anti clockwise as far as it goes, turn clockwise for manual open position.



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SIZE	A	B	C	D	E	FLANGE TYPE
32mm	235	281	102	44	11	SQUARE
40mm	238	290	109	50	14	SQUARE
50mm	259	301	121	61.5	16	SQUARE
65mm	308	336	155	77.5	18	SQUARE
80mm	342	358	163	90	18	SQUARE
100mm	383	417	178	116	18	SQUARE

ORDERING INFORMATION

Port Size (Mm)	FLANGE STYLE AND SIZES	
	STD	
PSCK-1 - 20	3/4"	oval
PSCK-1 - 25	1"	oval
PSCK-1 - 32	1-1/4"	square
PSCK-1 - 40	1-1/2"	square
PSCK-1 - 50	2"	square
PSCK-1 - 65	2-1/2"	square
PSCK-1 - 75	3"	square
PSCK-1 - 100	4"	square
PSCK-1 - 125	5"	round
PSCK-1 - 150	6"	round



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CAPACITIES (Tons)

Applications												
Description		ΔP	¾"	1"	1¼"	1½"	2"	2½"	3"	4"	5"	6"
Discharge Line	2 psi	21	28	44	128	150	242	343	750	952	1224	
	5 psi	34	45	69	200	234	378	535	1173	1487	1912	
Compressor Sideport	2 psi	12	16	25	72	84	136	193	—	—	—	
	5 psi	19	25	38	110	129	209	296	—	—	—	
Liquid Line	TONS	2 psi	209	274	425	1227	1435	2322	3289	7209	—	—
	GPM	2 psi	14	18	29	83	97	157	222	486	—	—
Discharge Line	2 psi	7.5	10	16	44	52	83	118	259	328	422	
	5 psi	12	16	25	70	82	133	189	414	525	675	
Compressor sideport	2 psi	4.7	6	10	27	32	52	74	—	—	—	
	5 psi	7.2	9.5	15	42	50	80	114	—	—	—	
Liquid Line	TONS	2 psi	48	63	97	282	330	534	756	1656	—	—
	GPM	5 psi	9.9	13	20	58	68	110	156	342	—	—
CV (KV)			8 (7)	10.5 (9)	16.3 (14)	47 (40)	55 (47)	89 (76)	126 (108)	276 (236)	350 (300)	450 (385)

2 psi = 0.14 bar 5 psi = 0.35 bar 1 U.S. GPM = 0.227124 m³ / hr.

Discharge line capacities based on +86 F (+30°C) condenser, +140 F (+60°C) discharge and +15F (-9.4°C) evaporator.

Compressor side port capacities based on +20F (-6.7 c) economizer and +86F (+30 c) condensing

Liquid line capacities based on +20F (-6.7 c) Liquid and + 5F (-15 C) evaporator, with no flashing through valve.

To convert to +86F (+30°C) liquid, multiply values in table by 0.9. To convert R 22 capacities to R 134 a, multiply tons in table by 0.92 (accuracy within 8%). GPM correction factors for temperature between 40F (-40°C) and +40 (4.4°C) are negligible.

TROUBLE SHOOTINGS:

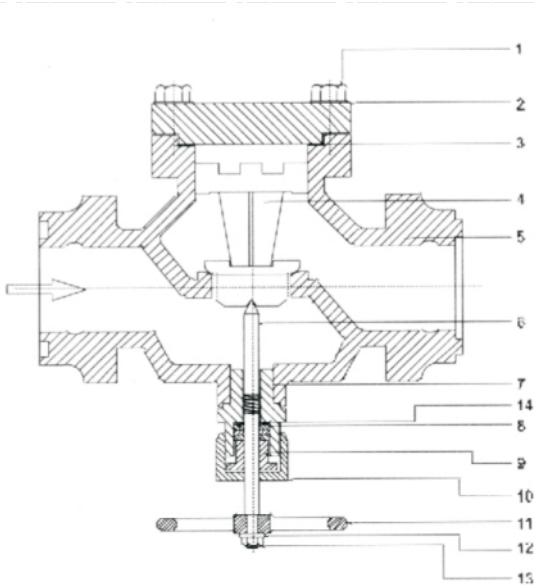
SYMPTOM	PROBABLE REASON	CORRECTION
Valve does not close, or there is a leakage in valve.	<ul style="list-style-type: none"> Stuck due to dirt or chips Burs on Piston Manual stem is in open position Eroded or worn seat on piston main valve 	<ul style="list-style-type: none"> Disassemble valve and clean thoroughly Polish or replace piston Unscrew manual stem anti clock wise. Replace entire main valve assembly
Valve does not open	<ul style="list-style-type: none"> Stuck Piston due to dirt or chips 	<ul style="list-style-type: none"> Disassemble valve and clean thoroughly
Valve chatters	<ul style="list-style-type: none"> Valve is over sized Slow speed piston compressor 	<ul style="list-style-type: none"> Replace with smaller port size



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PART LIST



- 1 BOLT
- 2 SQ. FLANGE
- 3 GASLET
- 4 PISTON
- 5 BODY
- 6 STEM
- 7 GUIDE NUT
- 8 GLAND PACKING
- 9 GLAND BUSH
- 10 GLAND NUT
- 11 HAND WHEEL
- 12 WASHER
- 13 NUT
- 14 WASHER

S. No.	ITEM	QTY.	PART NO.
1	Bolt	4	50061000
2	Flange	1	50061600
3	Gasket	1	50061100
4	Piston	1	50061700
5	Body	1	50060100
6	Stem	1	50060300
7	Guide Nut	1	50062900
8	Gland Packing	4	50061300
9	Gland Bush	1	50061200
10	Gland Nut	1	50062300
11	Hand Wheel	1	50062800
12	Washer	1	50061501
13	Nut	1	50062301
14	Washer	1	50061502

(Above part no. pertain to PSCK-1-50)
Refer annexure A for details of part No

SUPERFREEZE INDIA LIMITED

An ISO 9001 : 2015 Certified Company

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