

Float Drain Regulators

Product Bulletin 63-00

Part Number(s): 186777, 186807



Purpose:

The **Float Drain Regulator** is designed to remove liquid condensate from evaporators during defrost. The oversized seat orifice is designed to remove liquid quickly. As hot gas is introduced into the evaporator, the gas condenses and drains to the lower coil row of the evaporator and into the defrost drainer. The defrost drainer meters the liquid and a minimal amount of gas back to the intercooler or low-pressure receiver. The defrost drainer offers the advantage of higher energy efficiency by not allowing unneeded hot gas to return to the suction, the unnecessary increase in compressor capacity and operation, and the corresponding increase in suction pressures.



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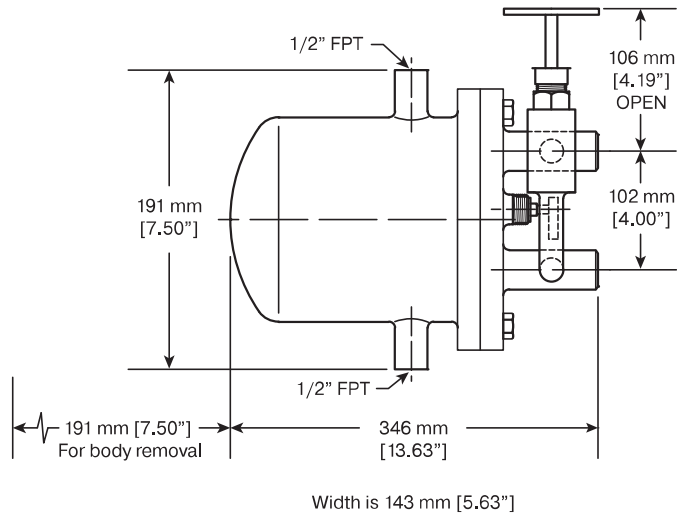
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- Suitable for ammonia and other common refrigerants
- Capacity: 147 kW (42 Ton)
- Float Ball Assembly: Stainless Steel
- Temperature Rating: -50°C to +115°C (-60°F to +240°F)
- Pressure Rating: 28 bar (406 psig)
- Complies with ASME B31.5, PED 2014/68/EU, and ANSI/IIAR-3 2017



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Installation Dimensions



the defrost drainer slide valve is closed. However, it may be necessary to “fine-tune” the bypass valve setting to match the specific conditions of a system. If the system is experiencing incomplete defrost of the lower evaporator coils, the bypass valve needs to be opened with additional turns. If the evaporator is completely defrosting, but there is an excessive gas blow-by, the bypass valve may need to be opened with fewer turns. After making any adjustments, observe.

With Bypass

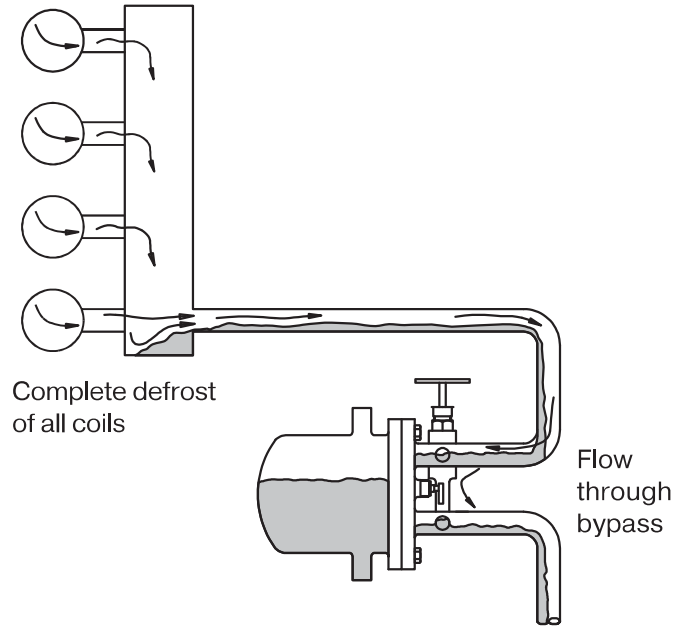


Table 1 - Maximum Capacities

Ammonia		Connections	Weight	
Part Number	Capacity		lbs.	kg.
186777	147 kW (42 Tons)	3/4" NPT	46	21
186807		1" BW ANSI		

Built-In Bypass

The key to efficient defrost is completely removing liquid from all evaporator coils. It is critical to maintain a constant flow of hot gas through the evaporator, even when the defrost drainer slide valve is closed, to prevent subcooled liquid from accumulating in the lower coils and hindering defrost. To achieve this, the Float Drain Regulator has a hand expansion valve incorporated as a built-in bypass valve. The bypass valve allows a continuous flow of hot gas through the evaporator when the defrost drainer slide valve is closed by bleeding a small amount of hot gas around the defrost drainer. This constant flow prevents subcooled liquid from accumulating in the lower coils and blocking the flow from the evaporator outlet. Free-draining coils may not require any bypass gas.

The bypass valve on the Float Drain Regulator is factory set at 1 ½ turns open. This setting should provide a nominal hot gas flow through the bypass valve when

Table 2 - Hand Valve Turn by Turn Flow

FD-FPY	Cv
Turns	gpm@psi
Fulled Closed	0.6
1	0.8
2	0.9
3	1.0
4	1.2
5	1.2
6	1.3
7 (Fully Open)	1.6

Material List

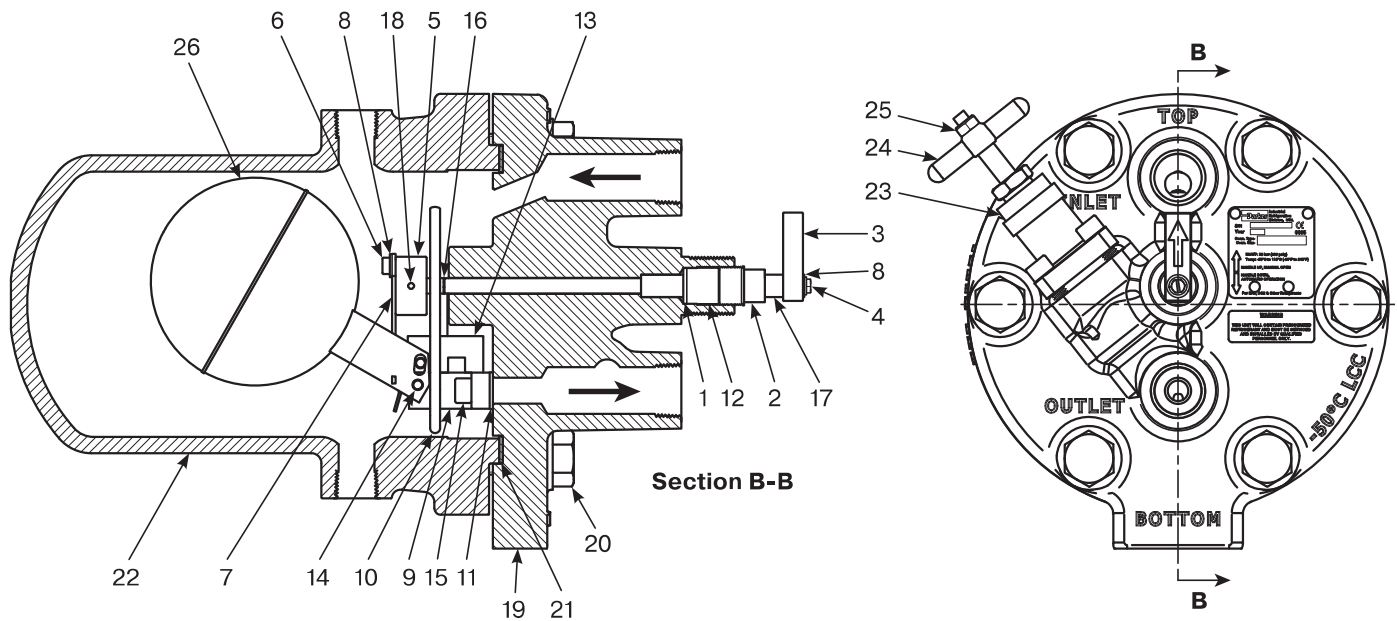


Table 3 - Material List

Item	Description	Qty.	Material
1	Washer Flat - Inline Manifold	1	Steel 1213/1215
2	Nut, Packing Inline	1	Steel 1213/1215
3	Handle, Float Drainer	1	AISI 303 SS
4	Screw, Slotted Hex Head 8-32 X 0.5" LG	1	316 SS
5	Cam, Float Drainer	1	AISI 303 SS
6	Screw, Shoulder Can Float Ball Assy	1	18-8 SS
7	Manual-Opening Lifting Tee, Float Drainer	1	AISI 304 SS
8	Washer Flat, .203 ID X .438 OD X .028 THK	10	Grade 16 SS
9	Block, Hinge Block, Float Drainer	1	AISI 304 SS
10	Tube, Vent Float Drainer	1	AISI 304 SS
11	Gasket, Seal Hinge Block Float Drainer	1	GARL OK 2930
12	Packing, Stem Inline Manifold	1	ASTM F2168 TYPE II
13	Slide Block, Hinge Assy Float Drainer	1	Graphite Filled PTFE
14	Hinge Pin, Float Ball Assy	1	316 SS
15	Screw, Socket Head, 5/16"-18 X 3/4" LG	1	Zinc Plated Alloy Steel
16	Retaining Ring, Stem Manual Opening Flt Drn	1	1060-1090 Spring Steel
17	Stem, Float Drainer	1	AISI 303 SS
18	Screw, Extended Tip #6-32 X 3/8LG	1	18-8 SS
19	Flange, Float Drainer 3/4" NPT	1	ASTM A352 Grade LCC
20	Bolt, Hex HD 5/8-11 X 1-3/4 LG GR 5	6	Steel Grade 5
21	Gasket, 5.062 ID X 6.125 OD .063 THK	1	GARL OK 2930
22	Housing, Float Drainer	1	ASTM A352 Grade LCC
23	Bonnet Assy, HV 1/2" EXP, Float Drainer	1	Steel
24	T Handle HNDVLV 1/4 TO 1 EXP	1	ASTM B86 AG40A
25	Nut, Locking HV HW	1	18-8 SS
26	Float Ball Assy	1	316 SS

Safe Operation (See Bulletin RSBCV)

People doing any work on a refrigeration system must be qualified and completely familiar with the system and the Refrigerating Specialties Division valves involved, or all other precautions will be meaningless. This includes reading and understanding pertinent Refrigerating Specialties Division Product Bulletins and Safety Bulletin RSB prior to installation or servicing work.

Where cold refrigerant liquid lines are used, it is necessary that certain precautions be taken to avoid damage which could result from liquid expansion. Temperature increase in a piping section full of solid liquid will cause high pressure due to the expanding liquid which can possibly rupture a gasket, pipe or valve. All hand valves isolating such sections should be marked, warning against accidental closing, and must not be closed until the liquid is removed. Check valves must never be installed upstream of solenoid valves, or regulators with electric shut-off, nor should hand valves upstream of solenoid valves or downstream of check valves be closed until the liquid has been removed.

It is advisable to properly install relief devices in any section where liquid expansion could take place. Avoid all piping or control arrangements which might produce thermal or pressure shock.

For the protection of people and products, all refrigerant must be removed from the section to be worked on before a valve, strainer, or other device is opened or removed. Flanges with ODS connections are not suitable for ammonia service.

Warranty

All Refrigerating Specialties products are under warranty against defects in workmanship and materials for a period of one year from date of shipment from factory. This warranty is in force only when products are properly installed, field assembled, maintained, and operated in use and service as specifically stated in Refrigerating Specialties Catalogs or Bulletins for normal refrigeration applications, unless otherwise approved in writing by the Refrigerating Specialties Division. Defective products, or parts thereof returned

to the factory with transportation charges prepaid and found to be defective by factory inspection, will be replaced or repaired at Refrigerating Specialties option, free of charge, F.O.B. factory. Warranty does not cover products which have been altered, or repaired in the field, damaged in transit, or have suffered accidents, misuse, or abuse. Products disabled by dirt or other foreign substances will not be considered defective.

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Failure or improper selection or improper use of the products described herein or related items can cause death, personal injury and property damage.

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The user, through its own analysis and testing, is solely responsible for making the final selection of the system and components and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met. The user must analyze all aspects of the application, follow applicable industry standards, and follow the information concerning the product in the current product catalog and in any other materials provided from Parker or its subsidiaries or authorized distributors.

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For safety information see the Safety Guide at www.parker.com/safety or call 1-800-CParker.

