

TI-P105-08-US Issue 1

# Stainless Steel Liquid Drain Trap F-150V, F-300V

### Description

The float-operated liquid drain trap discharges continuously in direct response to variations in liquid flow rate, assuring thorough drainage of the system.

Model	F-150V	F-300V				
РМО	150 psi g 300 psi g (10.3 bar g) (20.7 bar g					
Sizes	1/2"					
Connections	NPT					
Construction	Stainless Steel Body, Cover and Internals					
Options	SW to ANSIB16.11					

#### **Typical applications**

Receiver and air line drainage, draining a liquid from its vapor phase.



# Limiting operating conditions

#### Maximum operating pressure (PMO)

	F-1	50V	F-3	00V
Specific Gravity	psi g	bar g	psi g	bar g
1.0	150	10.3	300	20.7
.95	150	10.3	300	20.7
.90	150	10.3	300	20.7
.85	150	10.3	300	20.7
.80	138	9.5	282	19.4
.75	119	8.2	243	16.8
.70	100	6.8	203	14.0
.65	80	5.5	164	11.3
.60	61	4.2	125	8.6
.55	42	2.9	86	5.9
.50	23	1.6	46	3.2

Maximum operating temperature 750 °F (399 °C)

Pressure shell design conditions							
PMA	Maximum allowable pressure	450 psi g @ 0-750 °F (31 bar g @ 0-399 °C)					
ТМА	Maximum allowable temperature	750 °F @ 0-450 psi g (399 °C @ 0-31 bar d					

# **Materials**



No.	Part	Material	
1	Body	Stainless Steel	AISI 304
2	Cover Screws	Steel	ASTM A449 Type 1
3	Cover Gasket	Graphite	
4	Cover	Stainless Steel	AISI 304
5	Valve Seat	Stainless Steel	AISI 420F
6	Valve Seat Gasket	Stainless Steel	AISI 303
7	Float Screw & washer	Stainless Steel	AISI 304
8	Ball Float	Stainless Steel	AISI 304
11	Valve Seat Bracket	Stainless Steel	AISI 301
12	Pivot Pin	Stainless Steel	AISI 303
13	Body Retaining Ring	Forged Steel	ASTM A105
			AISI 301/304 Lever
14	Lever & Ball Head	Stainless Steel	AISI 440 Ball Head



А	В	С	Weight
5.4	6.1	5.3	6 lb
(137)	(155)	(135)	(2.7)

# Cold water capacity lb/(kg/h)

Differential pressure

psi	1	2	5	10	20	30	50	65	75	100	125	150	250	300
bar	.07	.14	.34	.69	1.4	2.1	3.5	4.5	5.2	6.9	8.6	10.3	17.2	20.7
F-150V	150 (68)	200 (91)	295 (134)	395 (179)	530 (240)	625 (283)	785 (356)	880 (399)	940 (426)	1060 (841)	1160 (526)	1250 (597)		
F-300V	80 (36)	105 (48)	145 (66)	210 (95)	280 (127)	335 (152)	420 (204)	470 (213)	500 (227)	570 (259)	620 (281)	680 (308)	850 (386)	920 (417)

For kg/h, multiply lb/hr by .454

#### **Conversion factors**

for equivalent cold water capacity of light liquids

Specific gravity	.9599	.9094	.8589	.8084	.7579	.7074	.6569	.6064	.5559	.5054
Conversion Factor	1.03	1.06	1.09	1.12	1.16	1.20	1.24	1.29	1.35	1.42

# Draining cold water and liquids of specific gravity 1.0

Obtain the required cold water capacity by multiplying the peak load by a safety factor of 1.5. Select the drain trap from the capacity table which satisfies the required cold water capacity and operates at the minimum pressure differential of the application.

#### Sample specification

The liquid drain trap shall be of the float type with screwed NPT connections. Valve mechanism shall be stainless steel with hardened working surfaces designed to retain a water seal at all times. A 1/4" NPT tapping shall be provided for a balance pipe. All internals are to be renewable and field serviceable.

# Draining liquids of specific gravity 0.5 to 0.95

Determine the "Equivalent Cold Water Capacity" of the light liquid by multiplying its peak load (include a safety factor of 1.5) by the conversion factor given in the table above. If the maximum load is accurately known, the safety factor can be reduced or eliminated. Refer next to Limiting Conditions table which gives the maximum operating pressure with various gravity liquids. For liquids between those listed, use the next lower specific gravity. Determine the maximum operating pressure equal to, or greater than, the inlet pressure of the application.

# Installation

The trap must be fitted in a vertical pipe line with direction of flow as indicated and so that the float mechanism is free to rise and fall in a vertical plane.

The cover is provided with a ¼" tapping for a balance pipe, which is essential for satisfactory operation of this unit. The balance pipe must be connected with a continuous rise between the tapping provided on the trap and the vessel being drained. The trap discharge should be piped to a safe place.

# Maintenance

This product can be maintained without disturbing the piping connections. Complete isolation of the trap from both supply and return line is required before any servicing is performed. The trap should be disassembled periodically for inspection and cleaning of the valve head and seat. Worn or damaged parts should be replaced using a complete repair kit.

Complete installation and maintenance instructions are given in the IM 7.306 which accompanies the product.

Liquid drain traps can be used to drain most gases. However, some applications, particularly those involving hazardous or unusual fluids, may be subject to regulation or may otherwise require special consideration. Spirax Sarco will endeavor to provide whatever data is necessary to assist in product selection.

# Spare parts

Cover gasket (Set of 3 Cover and Seat Gaskets)		
Valve mechanism Kit	4	
Float kit	5	

