



PowerTrap®

MODEL GT5C

COMPACT MECHANICAL PUMP WITH STEAM TRAP FOR ELIMINATING STALL

Benefits

Pump/trap with built-in steam trap, a linear inlet/outlet, low filling head, and simple piping installation for small heat exchangers, tank coils and steam/air heaters often operating under stall conditions.

1. No cavitation or seal leakage.
2. Non-electric design with durable compression spring for reliable performance.
3. Extremely low 6" filling head.
4. Simplified piping (no exhaust pipe required), compact design and linear inlet/outlet reduce installation space, time and cost.
5. Easy, inline access to internal parts simplifies cleaning and reduces maintenance costs.
6. High-quality stainless steel internals and hardened working surfaces ensure reliability.
7. Float resists shock to 1600 psig.



U.S. Pat. 7,540,170

Specifications

Model		GT5C	
Body Material		Cast Iron	Cast Stainless Steel
Connection	Pumped Medium Inlet & Outlet	Screwed	
	Motive Medium & Pump Exhaust	Screwed	
Size (in)	Pumped Medium: Inlet × Outlet	1 × 1	
	Motive Medium Inlet	1/2	
	Pump Exhaust Outlet	3/8	
Maximum Operating Pressure (psig)	PMO	75	
Maximum Operating Temperature (°F)	TMO	365	
Maximum Allowable Pressure (psig)	PMA	150	
Maximum Allowable Temperature (°F)	TMA	428	
Motive Medium Pressure Range (psig)		5 – 75	
Maximum Allowable Back Pressure		7 psi less than motive medium pressure used	
Volume of Each Discharge Cycle (gal)		Approximately 3/8	
Motive Medium		Saturated steam	
Pumped Medium		Steam condensate	

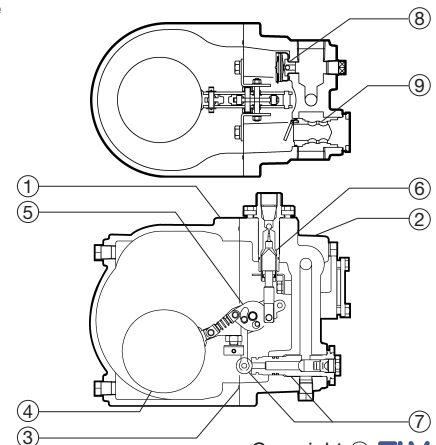


CAUTION

To avoid abnormal operation, accidents or serious injury, DO NOT use this product outside of the specification range. Local regulations may restrict the use of this product to below the conditions quoted.

No.	Description	Material	ASTM/AISI*	JIS
①	Body	Cast Iron	A126 Cl.B	FC250
		Cast Stainless Steel**	A351 Gr.CF8M	—
②	Cover	Cast Iron	A126 Cl.B	FC250
		Cast Stainless Steel**	A351 Gr.CF8M	—
③	Cover Gasket	Fluorine Resin	PTFE	PTFE
④	Float	Stainless Steel	AISI316L	SUS316L
⑤	Snap-action Unit	Stainless Steel	—	—
⑥	Intake-Exhaust Valve Unit	Valve	AISI440C	SUS440C
		Valve Seat	AISI440C	SUS440C
⑦	Trap Unit (with Outlet Check Valve)***	Stainless Steel	AISI420F	SUS420F
⑧	Air Vent Unit	Stainless Steel	—	—
⑨	Inlet Check Valve	Stainless Steel	AISI304	SUS304

Connections in bold are standard



Copyright © TLV

* Equivalent ** Cast Stainless Steel model uses stainless steel bolts and plugs

*** Trap Unit material differs depending on body material

Pump Discharge Capacity

Filling Head: 6" from Grade

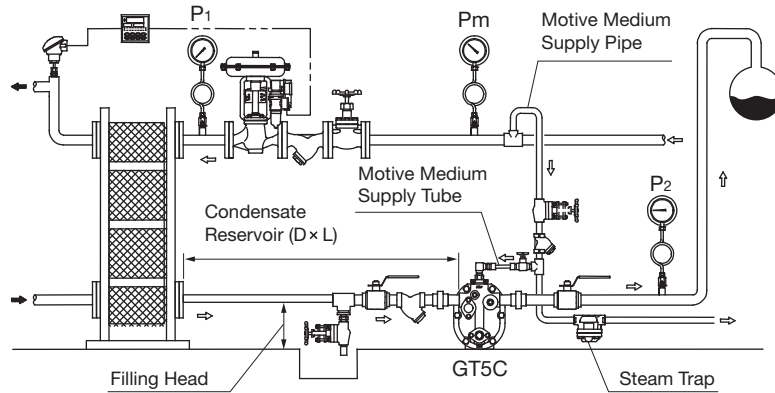
Motive Medium Inlet Pressure (P _m) (psig)	Total Lift or Back Pressure (P ₂) (psig)	(lb/h)
75	5	300
	15	260
	25	235
	35	180
	50	125
	65	70
65	68	65
	5	290
	15	250
	25	210
	35	170
	50	110
50	58	75
	5	280
	15	230
	25	190
	35	120
	43	90
35	5	250
	15	190
	25	130
	28	110
25	5	220
	10	200
	18	140
15	5	180
	8	150

• Correction Factors

An exhaust pipe/tube must be connected in order to make use of the increased pump capacity. If no exhaust pipe/tube is connected, use the standard pumping capacity without applying a correction factor.

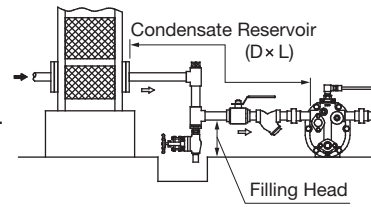
Filling Head from Grade	Correction Factor
40"	2.82
30"	2.60
20"	2.33
16"	2.13
12"	1.94
8"	1.50
6"	1.00

• Standard Pump Capacity (6" Filling Head, without Exhaust Pipe/Tube)

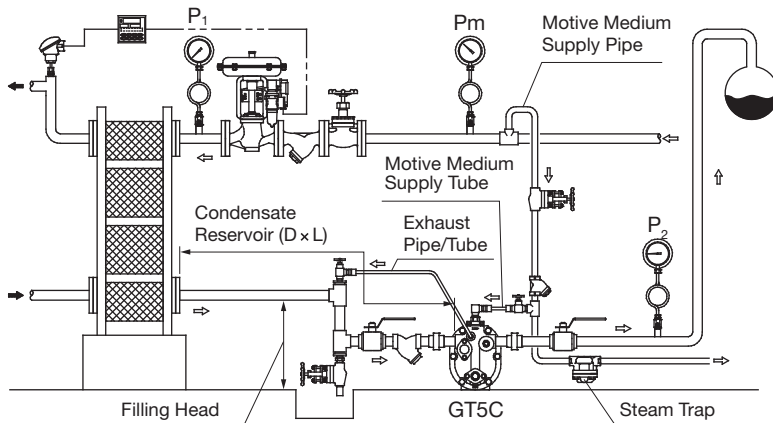


Vertical Piping Diagram

It is possible to eliminate the exhaust pipe/tube when there is vertical piping on the pumped medium inlet due to elevated position of equipment condensate outlet (as shown to the right). However the pump capacity is the standard pump capacity with 6" filling head.



• Increased Pump Capacity (For Filling Heads other than 6")

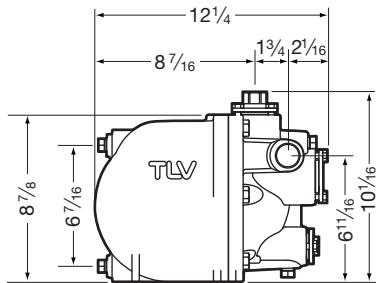


NOTE:

- Use the tables above and to the left to determine pump capacity based on the motive medium pressure (P_m) and the back pressure (P₂).
- Motive medium pressure (P_m) minus back pressure (P₂) must be greater than 7 psi.
- The motive medium supply pipe diameter should be at least 1/2", and the motive medium tube and its fittings/valves should have an inner diameter of at least 5/16".
- A 40 mesh or finer strainer must be installed at the motive medium and pumped medium inlets, and a steam trap installed on the motive medium supply pipe.
- For determining the length (L) and the size (D) of the pumped medium inlet pipe (condensate reservoir), refer to "Reservoir Sizing Table".
- When installing the exhaust pipe/tube, the fitting tube delivered with the product must be installed.

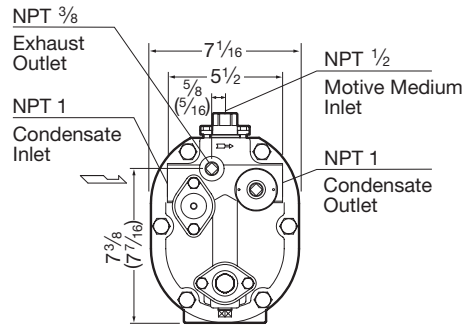
Dimensions

Units: in



Note: All plug holes are NPT 3/8

● **Screwed***



Weight (lb): 44 (40)

* NPT, other standards available () is for Stainless Steel

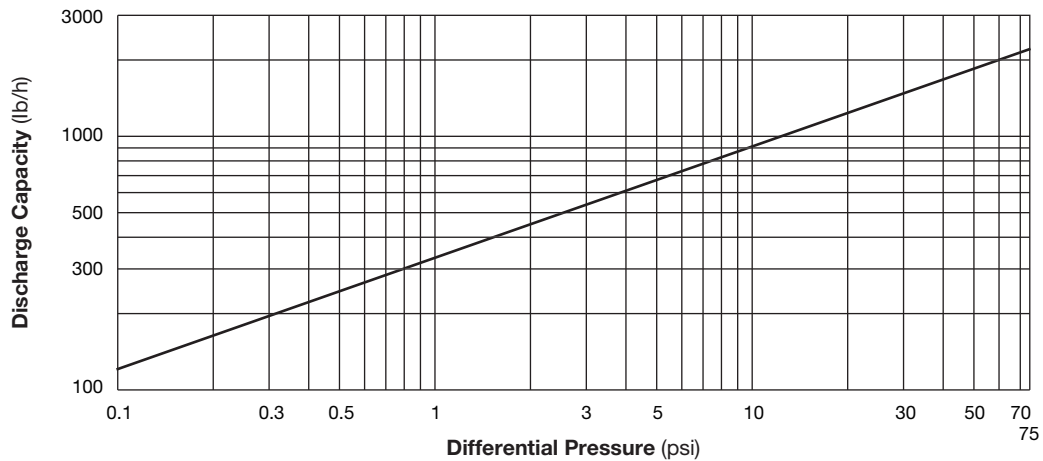
Reservoir Sizing Table

The reservoir must have capacity sufficient to store the condensate produced during the **PowerTrap** operation and discharge.

Amount of Condensate (lb/h)	Reservoir Diameter (in) and Length (ft)				
	1"	1 1/4"	1 1/2"	2"	3"
100 or less	2.0 (ft)				
150	3.0	1.5			
200	3.9	2.0	1.3		
300	5.6	3.0	2.0	1.3	
500		4.9	3.0	2.0	
700		6.9	4.0	2.5	1.0
1000			5.5	3.5	1.5

Reservoir length can be reduced by 50% when the motive medium pressure (P_m) divided by back pressure (P₂) equals 2 or greater (when P_m ÷ P₂ ≥ 2).

Steam Trap Discharge Capacity



1. Capacity of GT5C as a steam trap (Inlet Pressure > Outlet Pressure). Instantaneous condensate loads above the rated trap capacity will cause the pump to cycle and therefore reduce the discharge capacity.
2. Capacities are based on continuous discharge of condensate 11 °F below saturated steam temperature.
3. Differential pressure is the difference between inlet and outlet pressure of the trap.
4. Recommended safety factor: at least 1.5



DO NOT use this product under conditions that exceed maximum differential pressure, as condensate backup will occur!

Memo:

**DO NOT DISASSEMBLE OR REMOVE THIS PRODUCT WHILE IT IS UNDER PRESSURE.**

Allow internal pressure of this product to equal atmospheric pressure and its surface to cool to room temperature before disassembling or removing. Failure to do so could cause burns or other injury. READ INSTRUCTION MANUAL CAREFULLY.

TLV CORPORATION

13901 South Lakes Drive, Charlotte, NC 28273-6790

Tel: 704-597-9070 Fax: 704-583-1610

E-mail: tlv@tlvengineering.com <https://www.tlv.com>

For Technical Service 1-800 "TLV TRAP"



Manufacturer
TLV CO., LTD.
Kakogawa, Japan
is approved by LRQA Ltd. to ISO 9001/14001

