



PowerTrap®

MODEL GP10F*

Features

Pump for a wide range of applications. Ideal for condensate removal from vented receivers and sump drainage.

1. Will handle high temperature condensate without any cavitation.
2. No electric power or additional level controls required, hence INTRINSICALLY SAFE.
3. Pump will operate with a low filling head.
4. All internal parts are suspended from the trap cover and can be removed upward in one piece.
5. High quality stainless steel internals and hardened working surfaces ensure reliability.
6. Compact design permits installation in a limited space.
7. Optional built-in steam trap available for drainage of steam supply line.
8. Mechanism retrofits some other makers' pumps.**
9. Durable INCONEL®***compression coil spring.



Patent pending

* Only available in some countries ** Contact TLV for details
*** INCONEL® is a registered trademark of the INCO family of companies

Specifications

Model	GP10F
Connection: Pumped Medium Inlet & Outlet	Screwed Rc (PT)*
Motive Medium & Pump Exhaust	Screwed Rc (PT)*
Size (mm): Pumped Medium Inlet / Outlet	80 / 50
Motive Medium Inlet	20
Pump Exhaust Outlet	25
Maximum Operating Pressure (MPaG) PMO	1.05
Maximum Operating Temperature (°C) TMO	220
Motive Medium Pressure Range (MPa)	0.03 – 1.05
Volume of Each Discharge Cycle (litre)	approximately 30
Motive Medium	Steam, compressed air, nitrogen or other non-flammable, non-toxic gas
Pumped Medium	Steam condensate, water or other non-flammable, non-toxic fluid with a specific gravity of 0.85 – 1

* Other standards available

1 MPa = 10.197 kg/cm²

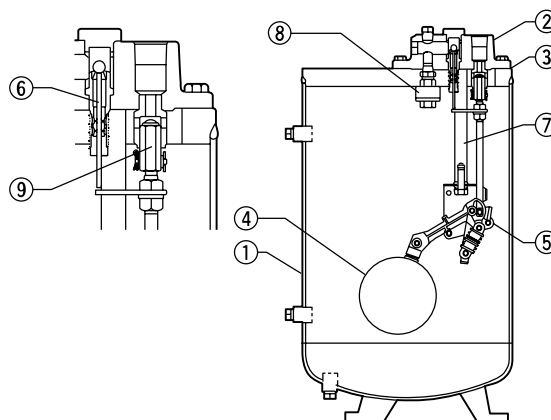
PRESSURE SHELL DESIGN CONDITIONS (NOT OPERATING CONDITIONS): Maximum Allowable Pressure (MPaG) PMA : 1.05
Maximum Allowable Temperature (°C) TMA : 220



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.

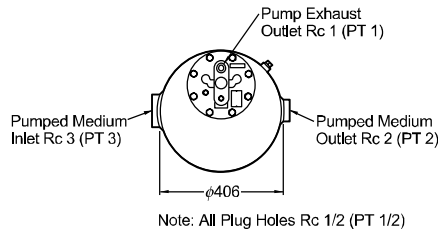
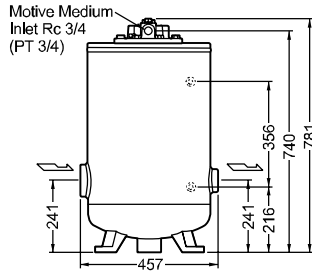
No.	Description	Material	JIS	ASTM/AISI*
①	Body	Carbon Steel	—	(SA414)
②	Cover	Cast Steel	SCPH2	A216 WCB
③	Cover Gasket	Graphite Compound	—	—
④	Float	Stainless Steel	SUS316L	AISI316L
⑤	Snap-action Unit	Stainless Steel	—	—
⑥	Motive Medium Intake Valve Unit:			
	Intake Valve	Stainless Steel	SUS440C	AISI440C
	Valve Seat	Stainless Steel	SUS440C	AISI440C
⑦	Exhaust Valve Unit:			
	Exhaust Valve	Stainless Steel	SUS440C	AISI440C
	Valve Seat	Stainless Steel	SUS420F	AISI420F
⑧	Steam Trap**	Stainless Steel	—	—
⑨	TLV CK3MG Check Valve***	Stainless Steel	—	—

* Equivalent ** Option (if steam is used as motive medium) *** Not shown



Copyright © TLV

Dimensions

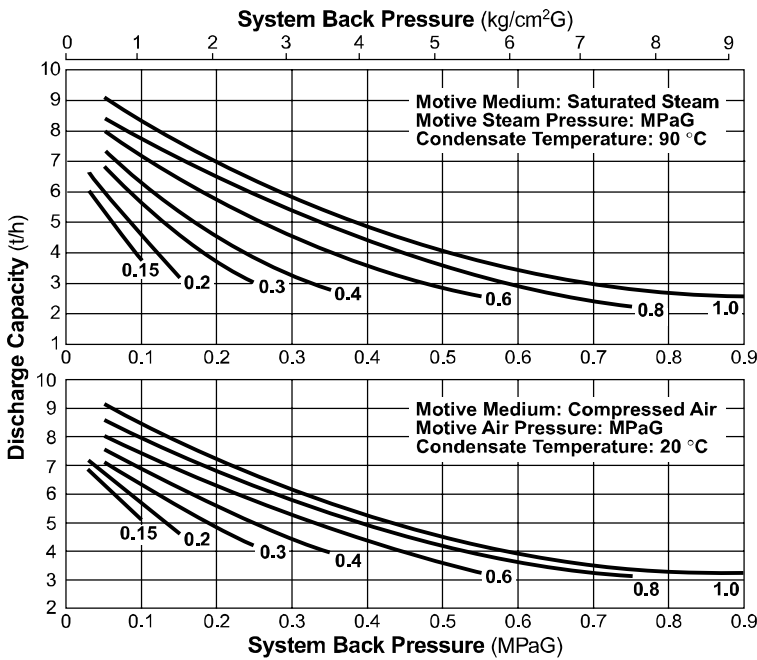


Units: mm

Weight: 70 kg

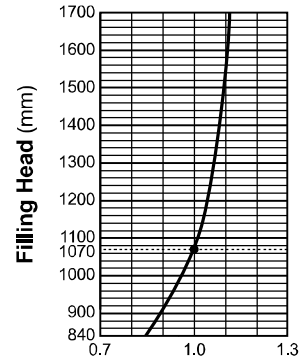
Discharge Capacity

A – 3" CK3MG check valve at inlet, 2" at outlet, 1070 mm filling head

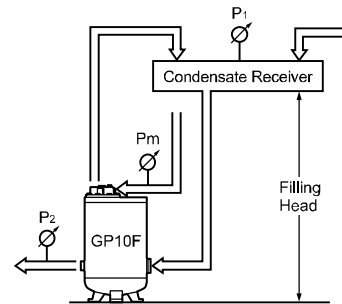


● CORRECTION FACTOR

For GP10F with 3" inlet check valve CK3MG, installed with filling head other than 1070 mm (minimum filling head: 840 mm)



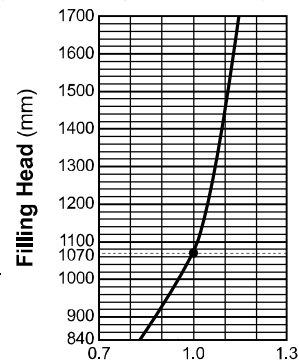
● ILLUSTRATION OF FILLING HEAD AND PRESSURES



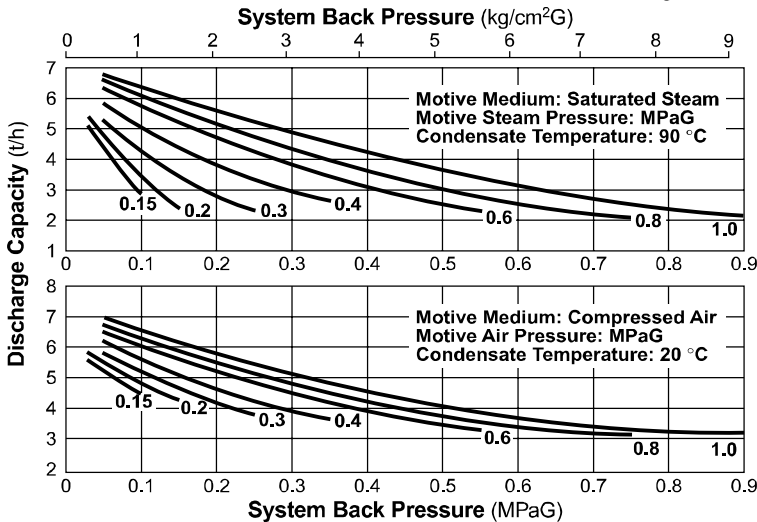
● The flow rate is determined by the motive medium, motive medium pressure (P_m) and back pressure (P_2). Make sure that: flow rate × correction factor > required flow rate.

● CORRECTION FACTOR

For GP10F with 2" inlet check valve CK3MG, installed with filling head other than 1070 mm (minimum filling head: 840 mm)



B – 2" CK3MG check valve at inlet/outlet, 1070 mm filling head



NOTE:

- To achieve the above capacities with the standard GP10F configuration, TLV CK3MG check valves must be used at the pumped medium inlet and outlet.
- When the motive medium is steam, motive steam pressure minus back pressure must be greater than 0.05 MPa.
- In closed system applications, the motive medium must be compatible with the liquid being pumped.
- If a non-condensable gas such as air or nitrogen is used as the motive medium, consult TLV for assistance.
- A strainer must be installed at the motive medium and pumped medium inlets. A check valve must be installed at both the pumped medium inlet and outlet.

Size of Receiver/Reservoir

The receiver/reservoir must have a capacity sufficient to store the condensate produced during the PowerTrap operation and discharge. A receiver will generally be larger than a reservoir because it must handle the condensate both as a liquid and as flash steam, and separate one from the other so that only condensate is sent to the PowerTrap.

① Size of receiver; flash steam is involved (Length: 1 m)

Flash steam up to kg/h	Receiver diameter mm (in)	Vent pipe diameter mm (in)
25	80 (3)	25 (1)
50	100 (4)	50 (2)
75	125 (5)	50 (2)
100	150 (6)	80 (3)
150	200 (8)	80 (3)
200	200 (8)	100 (4)
300	250 (10)	125 (5)
400	300 (12)	125 (5)
500	350 (14)	150 (6)
700	400 (16)	200 (8)
800	450 (18)	200 (8)
1000	500 (20)	200 (8)
1100	500 (20)	250 (10)
1400	550 (22)	250 (10)
1500	600 (24)	250 (10)

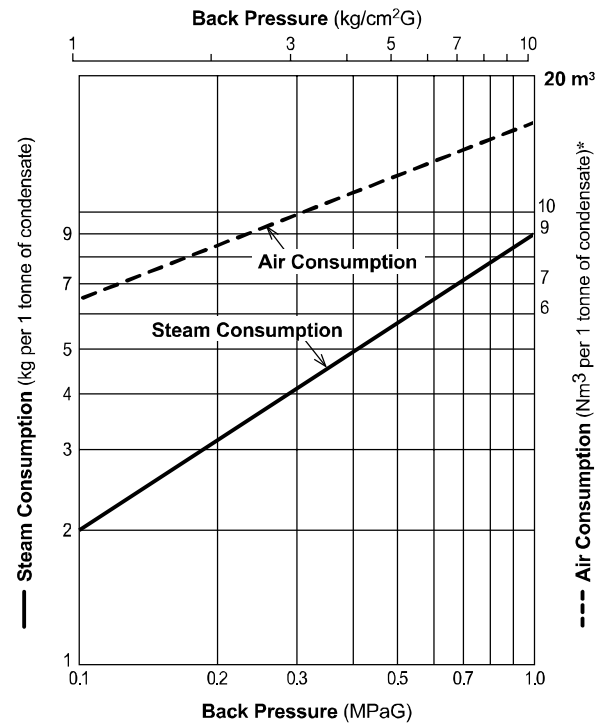
② Size of reservoir; flash steam is not involved

Amount of condensate kg/h	Reservoir diameter (mm) and length (m)						
	40	50	80	100	150	200	250
300	1.2 m	0.7					
400	1.5	1.0					
500	2.0	1.2	0.5				
600		1.5	0.6				
800		2.0	0.8	0.5			
1000			1.0	0.7			
1500			1.5	1.0			
2000			2.0	1.3	0.6		
3000				2.0	0.9	0.5	
4000					1.2	0.7	
5000					1.4	0.8	0.5
6000					1.7	1.0	0.6
7000					2.0	1.2	0.7
8000						1.3	0.8
9000						1.5	0.9
10000						1.7	1.0

Reservoir length can be reduced by 50% when the motive pressure (Pm) divided by the back pressure (P2) equals 2 or greater (when $P_m \div P_2 \geq 2$).

③ If flash steam is condensed before it enters the receiver/reservoir, compare tables ① and ② and choose the larger of the two sizes.

Steam or Air Consumption



* Equivalent consumption of standard air (air at 20 °C under atmospheric pressure)

Memo:

TLV SHANGHAI CO., LTD.

上海好施阀门有限公司

电话：021-51877967

传真：021-34670163

邮箱：haoshifamen@126.com

网址：<http://www.haoshifamen.com>

Manufacturer

TLV® CO., LTD.
Kakogawa, Japan

is approved by LRQA Ltd. to ISO 9001/14001

ISO 9001/ISO 14001

