GT14
'PowerTap' Mechanical Pump
w/ Steam Trap

Features

Pump/trap with built-in steam trap for a wide range of applications: drainage of heat exchangers, flash steam recovery systems and non-vented receivers such as low-pressure stages of turbines and absorption chillers, often operating under vacuum conditions.

1. Handles high-temperature condensate without cavitation.
2. No electric power or additional level controls required, hence INTRINSICALLY SAFE.
3. Pump will operate with a low filling head.
4. Durable nickel-based alloy compression coil spring.
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.

Pressure Equipment Directive (PED)

Classification according to PED 2014/68/EU, fluid group 2

Size	Category	CE marking
DN 50, DN 80	II	With CE marking and Declaration of Conformity

Specifications

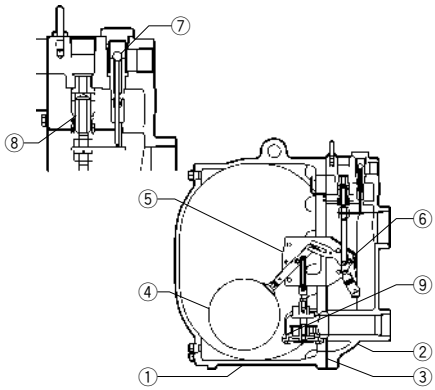
Model			GT14		
Body Material			Cast Iron	Cast Steel	
Connection	Pumped Medium Inlet & Outlet		Screwed	Screwed	Flanged
	Motive Medium & Pump Exhaust		Screwed	Screwed	Flanged
Size	Pumped Medium: Inlet × Outlet		3″ × 2″		DN 50 × 50, DN 80 × 50
	Motive Medium Inlet		1″		DN 25
	Pump Exhaust Outlet		1″		DN 25
Maximum Operating Pressure (barg)		PMO	13	14	
Maximum Operating Temperature (°C)		TMO	200		
Motive Medium Pressure Range (barg)			0.3 – 13	0.3 – 14	
Maximum Allowable Back Pressure			0.5 bar less than motive medium pressure used, but not to exceed 10.5 barg		
Volume of Each Discharge Cycle (ℓ)			approximately 30		
Motive Medium*			Saturated Steam		
Pumped Medium**			Steam Condensate		
Option Specifications for Hazardous Locations			ATEX: ⟨Ex⟩II2G Ex h IIC T3 Gb		

* Do not use with toxic, flammable or otherwise hazardous fluids. 1 bar = 0.1 MPa
** Do not use for fluids with specific gravities under 0.85 or over 1, or for toxic, flammable or otherwise hazardous fluids.
PRESSURE SHELL DESIGN CONDITIONS (**NOT** OPERATING CONDITIONS): Maximum Allowable Pressure (barg) PMA: 13 (Cast Iron), 16 (Cast Steel)
Maximum Allowable Temperature (°C) TMA: 200 (Cast Iron) 220 (Cast Steel)

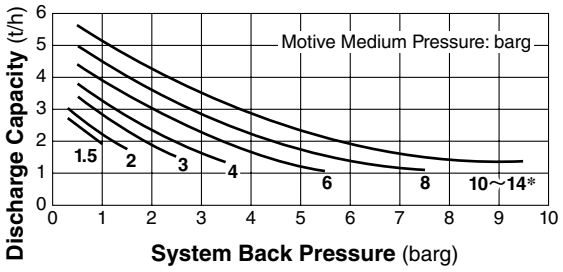
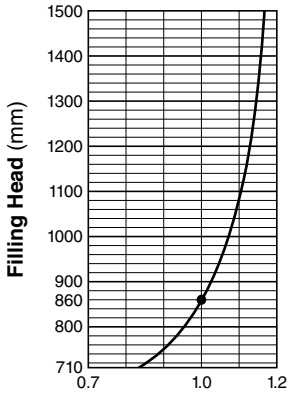
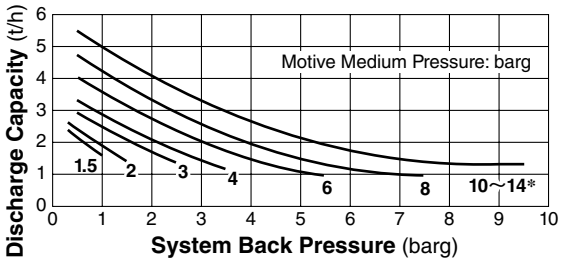
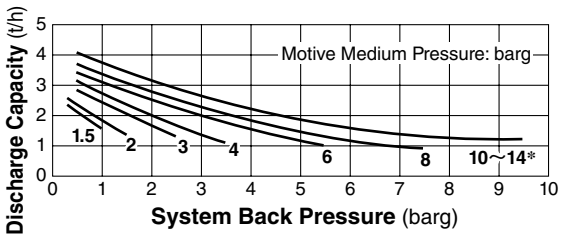
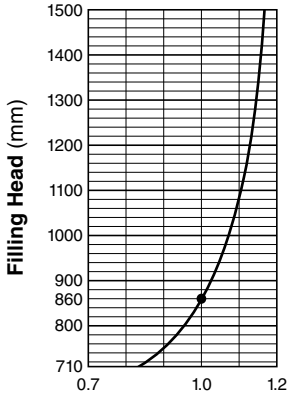
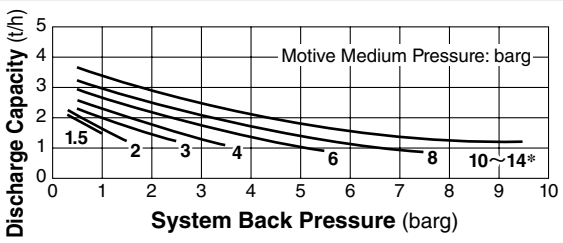
⚠ CAUTION To avoid abnormal operation, accidents or serious injury, DO NOT use this product outside of the specification range. Local regulations may restrict the use of this product to below the conditions quoted.

No.	Description		Material	DIN*	ASTM/AISI*
①	Body		Cast Iron FC250	0.6025	A126 Cl.B
			Cast Steel** A216 Gr.WCB	1.0619	—
②	Cover		Cast Iron FC250	0.6025	A126 Cl.B
			Cast Steel** A216 Gr.WCB	1.0619	—
③	Cover Gasket		Graphite/Stainless Steel SUS316L	– /1.4404	– /AISI316L
④	Float		Stainless Steel SUS316L/303	1.4404/1.4305	AISI316L/303
⑤	Lever Unit		Stainless Steel	—	—
⑥	Snap-action Unit		Stainless Steel	—	—
⑦	Motive Medium Intake Valve Unit	Intake Valve	Stainless Steel SUS303/440C	1.4305/1.4125	AISI303/440C
		Valve Seat	Cast Stainless Steel A351 Gr.CF8/ Stainless Steel SUS440C	1.4312/ 1.4125	– / AISI440C
⑧	Exhaust Valve Unit	Exhaust Valve	Stainless Steel SUS303/440C	1.4305/1.4125	AISI303/440C
		Valve Seat	Stainless Steel SUS420F	1.4028	AISI420F
⑨	Trap Unit		Stainless Steel	—	—
⑩	Check Valve***	CK3MG	Cast Stainless Steel A351 Gr.CF8	1.4312	—
		CKF3MG	Cast Stainless Steel A351 Gr.CF8	1.4312	—

* Equivalent materials ** Option: Cast Stainless Steel
*** Not shown, model depends on GT14 connection; CK3MG for screwed, CKF3MG for flanged



Discharge Capacity

Check Valve Size & Model	Motive Medium: Saturated Steam Condensate Temperature: 90 °C Filling Head: 860 mm (see correction factors for other filling heads)	Correction Factors (for filling heads other than 860 mm)
A 3″ Inlet / 2″ Outlet CK3MG		 (minimum filling head: 710 mm)
B DN 80 Inlet / DN 50 Outlet CKF3MG		
C 2″ Inlet / 2″ Outlet CK3MG		 (minimum filling head: 710 mm)
D DN 50 Inlet / DN 50 Outlet CKF3MG		

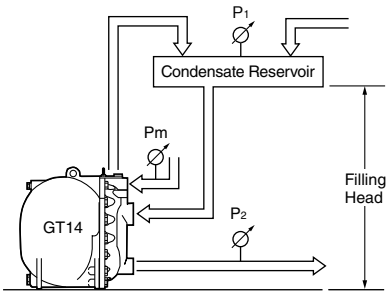
* Motive medium pressure must not exceed 13 barg for cast iron GT14

1 bar = 0.1 MPa

NOTE:

- A check valve must be installed at both the pumped medium inlet and outlet. To achieve the above capacities with the standard GT14 configuration, TLV CK3MG or CKF3MG check valves must be used.
- Motive medium pressure minus back pressure must be greater than 0.5 bar.
- A strainer must be installed at the motive medium and pumped medium inlets.

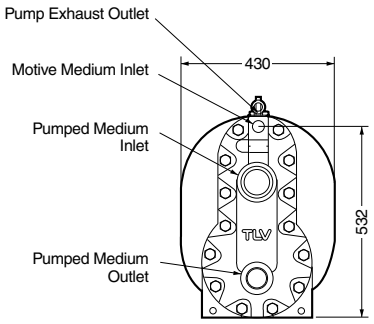
● Illustration of Filling Head and Pressures



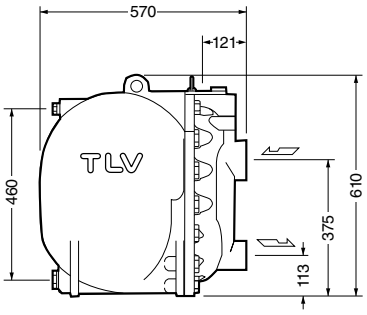
The discharge capacity is determined by the motive medium, motive medium pressure (Pm) and back pressure (P_2).

Make sure that:
Discharge Capacity × Correction Factor > Required Flow Rate

Dimensions



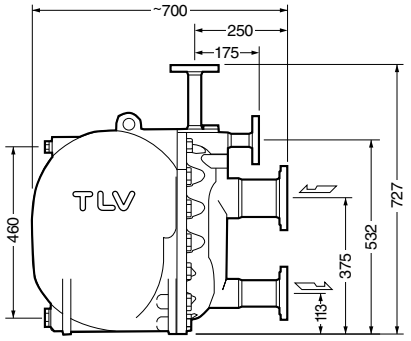
● **Screwed***



Weight (kg): 127 (Cast Iron), 139 (Cast Steel)
* BSP DIN 2999, other standards available

● **Flanged****

Units: mm



Weight (kg): 149 (Cast Steel)
** DIN 2501 PN 25/40, ASME Class 150 RF, other standards available

Note: All plug holes BSP or NPT ½ depending on connection type

Size of Reservoir

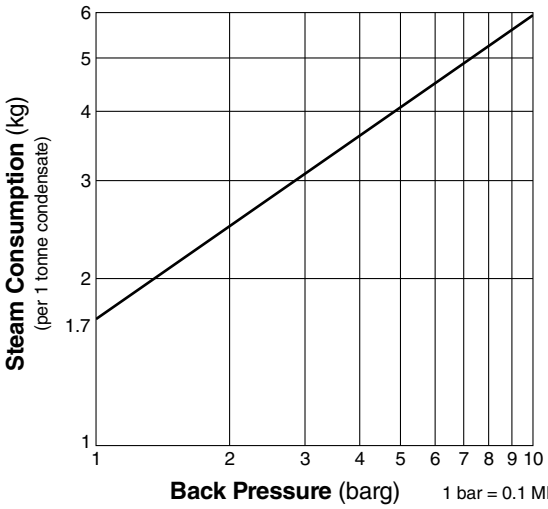
The reservoir must have a capacity sufficient to store the condensate produced during the PowerTrap operation and discharge.

Size of Reservoir (flash steam is not involved)

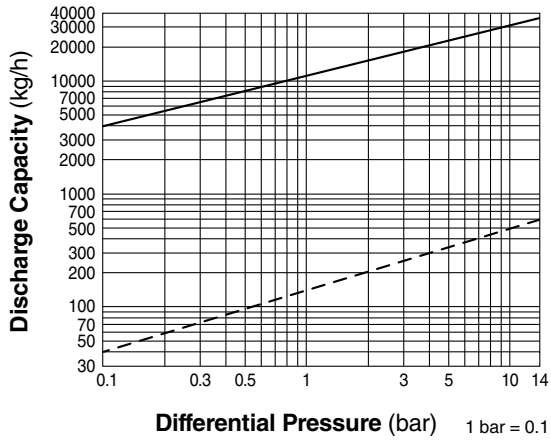
Amount of Condensate (kg/h)	Reservoir Diameter (mm) and Length (m)						
	40	50	80	100	150	200	250
300 or less	1.2 m	0.7					
400	1.5	1.0					
500	2.0	1.2	0.5				
600		1.5	0.6				
800		2.0	0.8	0.5			
1000			1.0	0.7			
1500			1.5	1.0			
2000			2.0	1.3	0.6		
3000				2.0	0.9	0.5	
4000					1.2	0.7	
5000					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 medium pressure (Pm) divided by back pressure (P_2) equals 2 or greater (when $Pm \div P_2 \geqq 2$).

Steam Consumption (Motive Medium)



GT14 Steam Trap Discharge Capacity



——— : Capacity of GT14 as a steam trap ($P_1 > P_2$). Instantaneous condensate loads above the rated trap capacity will cause the pump to cycle and therefore reduce the discharge capacity.

– – – – : Minimum amount of condensate required to prevent steam leakage.

1. Capacities are based on continuous discharge of condensate 6 °C below steam temperature.
2. Differential pressure is the difference between inlet and outlet pressure of the trap.

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