The Pivotrol Pump® Patent Pending
PTC & PTF Pressure Powered Pump®

Description

The Spirax Sarco **Pivotrol Pump**® (patent pending) is a non electric pump which transfers high temperature condensate, or other liquids from a low point, low pressure or vacuum space to an area of higher pressure or elevation. This self-contained unit including **PowerPivot**® technology (patent pending) uses steam, compressed air or any other suitable pressurized gas as the pumping force.
The standard Pivotrol Pump® (patent pending) will handle liquids from 0.9 to 1.0 specific gravity.

Model ➪	PTC	PTF
PMO	200 psig (13.8 barg)	
Sizes	2" x 2", 3" x 2"	
Connections	NPT	NPT
Construction	Ductile Iron	ASME Coded Steel
Options	Pump modified to handle liquids down to 0.65 specific gravity	
Warranty	3 Million Cycles x 3 Year Warranty Lifetime Warranty on Spring	

Accessories

- Gauge glass with brass cocks.
- Reflex type gauge glass -Insulation cover.

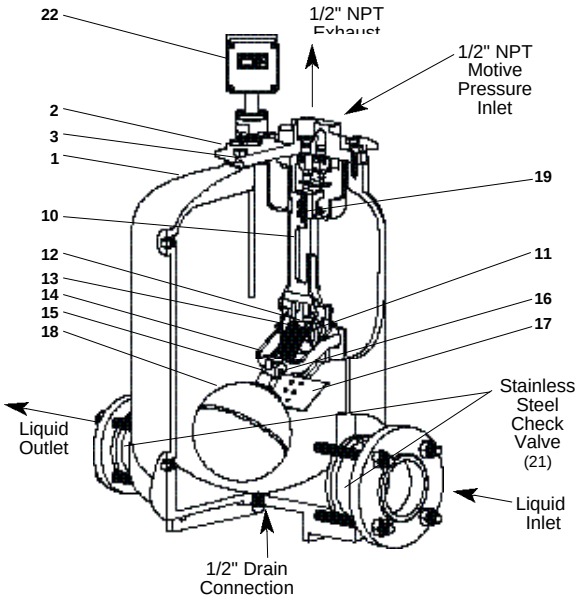
Capacities

For sizing and selection data, see TI-5-030-US

Operating Characteristics

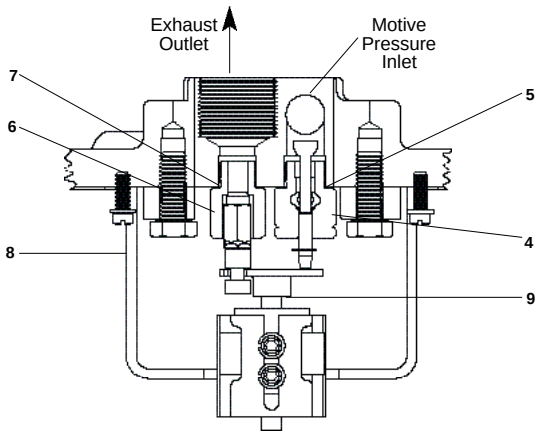
Pump discharge per cycle – PTC: 7.1 gal *(26.9 l) Nominal*
PTF: 8.4 gal *(31.8 l) Nominal*
Average instantaneous discharge rate – 90 gpm *(5.7 l/s)*
Average Steam Consumption – 3 lbs. per 1000 lbs. of liquid pumped
Average Air Consumption – 60 SCFM per 1000 lbs. of liquid pumped

For increased service life —
Operate pump with motive pressure 15-20 psig above pump back pressure.



Construction Materials

No.	Part	Material	Spec
1	Body	PTC - Ductile Iron	ASTM A395
		PTF - Fabricated Steel	ASME coded
2	Cover	Ductile Iron	ASTM A395
3	Cover Gasket	Grafoil	
4	Steam Inlet Valve Assembly	Stainless Steel	
5	Steam Inlet Valve Gasket	Stainless Steel	
6	Exhaust Valve Assembly	Stainless Steel	
7	Exhaust Valve Gasket	Stainless Steel	
8	Baffle	Cast Iron	
9	Push Rod Assembly	Stainless Steel	
10	Mechanism Support	Stainless Steel	
11	Bushing Mounting Plate	Stainless Steel	
	(Bushings)	Carbide	
12	Spring Anchor	Carbide	
13	Spring	Inconel	
14	Float Arm Assembly	Stainless Steel	
	(Pivots)	Carbide	
15	Float Pivot	Stainless Steel	
16	Pin	Stainless Steel	
17	Paddle	Stainless Steel	
18	Float	Stainless Steel	
19	Screws (typical)	Stainless Steel	
20	Plugs (typical)	Forged Steel	
21	Check Valves	Stainless Steel	
22	Cycle Counter	Various (see TIS 5.020)	



Local regulation may restrict the use of this product below the conditions quoted. Limiting conditions refer to standard connections only.
In the interests of development and improvement of the product, we reserve the right to change the specification.

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Dimensions (nominal) in inches and *millimeters*

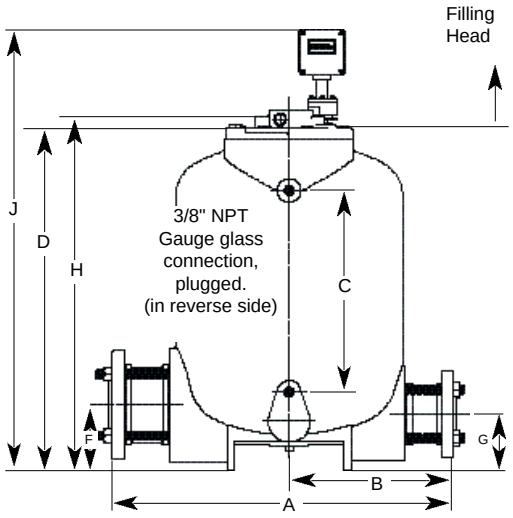
PTC

Size	A	B	C	D	E	F	G	H*	I	J	Weight Pump
2" PTC w/Stn. Stl.	23.3	11.3	14	24.9	5.1	4.5	3.9	24.2	6.1	30.8	260 lb
Check Valves	*592*	*286*	*354*	*630*	*129*	*114*	*99*	*612*	*155*	*782*	*118 kg*
3" x 2" PTC w/Stn. Stl.	23.9	11.3	14	24.9	5.1	4.5	3.9	24.2	6.1	30.8	270 lb
Check Valves	*607*	*286*	*354*	*630*	*129*	*114*	*99*	*612*	*155*	*782*	*122 kg*

PTF

2" PTF w/Stn. Stl.	29.2	14.4	14	32.1	5.1	11	10.4	31.5	6.3	37.3	210 lb
Check Valves	*742*	*364*	*354*	*815*	*129*	*278*	*263*	*800*	*160*	*947*	*95 kg*
3" x 2" PTF w/Stn. Stl.	30.2	14.4	14	32.1	5.1	11	10.4	31.5	6.3	37.3	230 lb
Check Valves	*767*	*364*	*354*	*815*	*129*	*278*	*263*	*800*	*160*	*947*	*104 kg*

*** H Dimension is to the centerline of the motive supply inlet**.



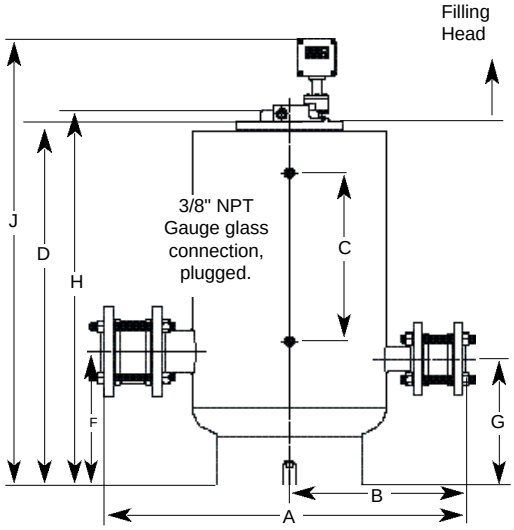
Limiting Operating Conditions

PMO	**PTC**	200 psig (*13.8 barg)*
Max. Operating Pressure	**PTF**	200 psig (*13.8 barg)*
Minimum motive differential required:		5 psig

Filling Head Requirements		**Filling Head Above Pump Cover**	**Filling Height From Base of Pump**
Standard recommended	PTC	12" *(305mm)*	35.6" *(904mm)*
	PTF	12" *(305mm)*	42.8" *(1087mm)*
Max filling head	PTC	48" *(1219mm)*	71.6" *(1819mm)*
	PTF	48" *(1219mm)*	78.8" *(2002mm)*
Min filling head	PTC 2x2	-3" *(-76mm)*	20.6" *(523mm)*
	PTC 3x2	-1" *(-25mm)*	22.6" *(574mm)*
	PTF 2x2	-3" *(-76mm)*	27.8" *(706mm)*
	PTF 3x2	-1" *(-25mm)*	29.8" *(757mm)*

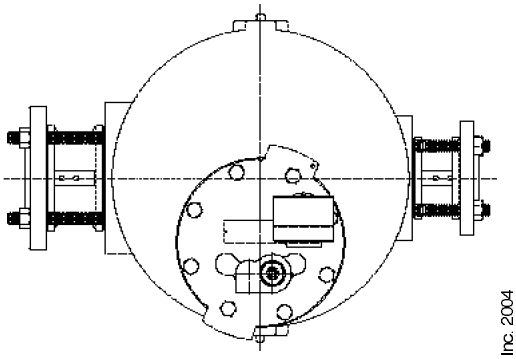
Max Number of Cycles per minute = 6

Specific gravity of pumped liquid options = **0.9 to 1.0; 0.8 to 0.89; 0.65 to 0.79**



Pressure Shell Design Conditions

PMA Max. allowable pressure	PTC:	200 psig/400˚F	(*13.8 barg/343˚C)*
	PTF:	200 psig/400˚F	(*13.8 barg/343˚C)*
TMA Max. allowable temperature	PTC:	400˚F/200 psig	(*343˚C/13.8 barg)*
	PTF:	400˚F/200 psig	(*343˚C/13.8 barg)*



Sample Specification

The pump shall be Spirax Sarco Pivotrol Pump® (patent pending) operated by steam, compressed air or other pressurized gas to 200 psig, which does not require any electrical energy. The pump shall have stainless steel, split disc check valves on the inlet and outlet connections. The pump shall contain Spirax Sarco PowerPivot® (patent pending) inside to ensure longevity and reliability of the pump. The Pivotrol Pump® (patent pending) shall include an Inconel spring with a lifetime warranty and be supplied with an integral cycle counter to monitor a 3 million cycle x 3 year warranty. When required the pump shall be supplied with a gauge glass and custom designed insulation jacket.

Installation

For generic hook-up sketch, see TI-5-202-US. Full details are given in IM-5-201-US, which accompanies the product.

Maintenance

Complete installation and maintenance instructions are given in IMI-5-201-US, a copy of which is supplied with each pump.

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