



The Pivotrol Pump® Patented PTC & PTF Pressure Powered Pump

Description

The Spirax Sarco **Pivotrol Pump®** (patented) 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 (patented) uses steam, compressed air or any other suitable pressurized gas as the pumping force.

The standard Pivotrol Pump® (patented) 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 –

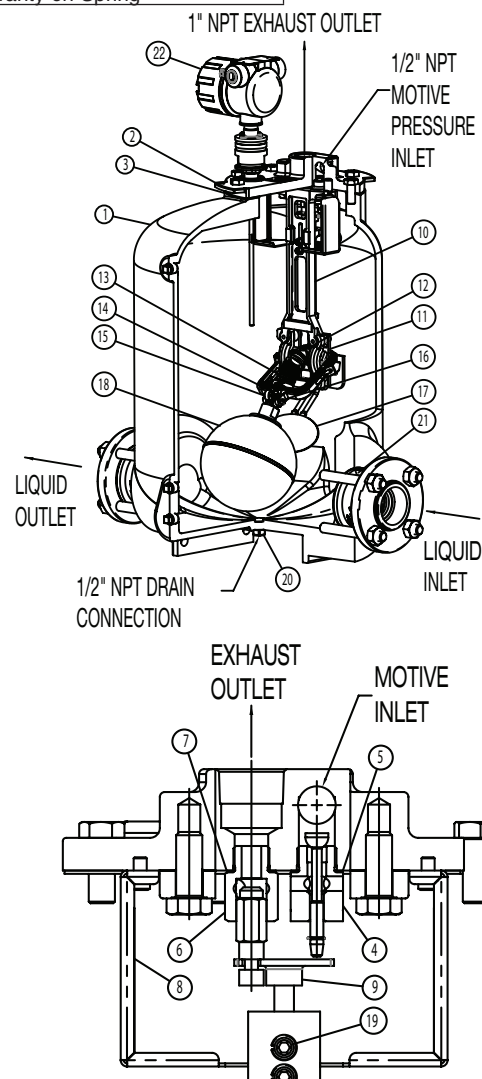
60 SCF per 1000 lbs. of liquid pumped

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	PTC - Ductile Iron	ASTM A395
		PTF - Cast Steel	ASTM SA216WCB
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	Stainless Steel	
9	Push Rod Assembly	Stainless Steel	
10	Mechanism Support	Stainless Steel	
11	Bushing Mounting Plate (Bushings)	Stainless Steel Carbide	
12	Spring Anchor	Carbide	
13	Spring	Inconel	
14	Float Arm Assembly (Pivots)	Stainless Steel 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 (SDCV44)	Stainless Steel (see TI-7-224-US)	
22	Cycle Counter	Various (see TI-5-020-US)	



Local regulation may restrict the use of this product below the conditions quoted. Limiting conditions refer to standard connections only. **TI-5-010-US** 01.11
In the interests of development and improvement of the product, we reserve the right to change the specification.

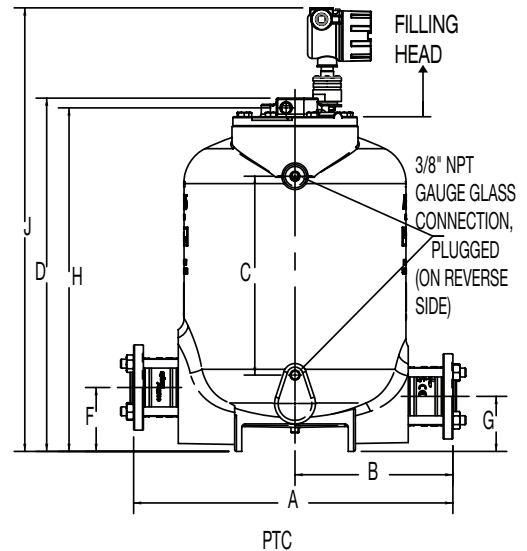
The Pivotrol Pump® Patented

PTC & PTF Pressure Powered Pump

Dimensions (nominal) in inches and millimeters

PTC											
Size	A	B	C	D	E	F	G	H*	I	J (Ref Only)	Weight Pump
2" PTC w/Stn. Stl.	23.3	11.3	14	24.9	5.1	4.5	3.9	24.2	6.1	31.6	260 lb
Check Valves	592	286	354	630	129	114	99	612	155	803	118 kg
3" x 2" PTC w/Stn. Stl.											
2" PTC w/Stn. Stl.	23.9	11.3	14	24.9	5.1	4.5	3.9	24.2	6.1	31.6	270 lb
Check Valves	607	286	354	630	129	114	99	612	155	803	122 kg
PTF											
Size	A	B	C	D	E	F	G	H*	I	J (Ref Only)	Weight Pump
2" PTF w/Stn. Stl.	29.2	14.4	14	32.1	5.1	11	10.4	31.5	6.3	38	210 lb
Check Valves	742	364	354	815	129	278	263	800	160	965	95 kg
3" x 2" PTF w/Stn. Stl.											
2" PTF w/Stn. Stl.	30.2	14.4	14	32.1	5.1	11	10.4	31.5	6.3	38	230 lb
Check Valves	767	364	354	815	129	278	263	800	160	965	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		Filling Height	
	Above Pump Cover		From Base of Pump	
Standard recommended PTC	12" (305mm)		36.9" (951mm)	
PTF	12" (305mm)		44.1" (1120mm)	
Max filling head	PTC 48" (1219mm)		PTC 72.9" (1852mm)	
	PTF 48" (1219mm)		PTF 80.1" (2035mm)	
Min filling head	PTC 2x2 -3" (-76mm)		PTC 21.9" (556mm)	
	PTC 3x2 -1" (-25mm)		PTC 23.9" (607mm)	
	PTF 2x2 -3" (-76mm)		PTF 29.1" (739mm)	
	PTF 3x2 -1" (-25mm)		PTF 31.1" (790mm)	

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	PTC:	200 psig/400°F	(13.8 barg/204°C)
Max. allowable pressure	PTF:	200 psig/400°F	(13.8 barg/204°C)
TMA	PTC:	400°F/200 psig	(204°C/13.8 barg)
Max. allowable temperature	PTF:	400°F/200 psig	(204°C/13.8 barg)

Sample Specification

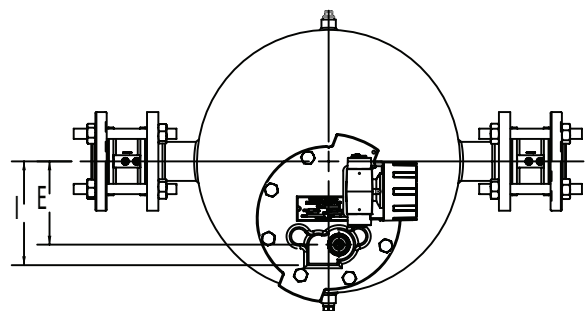
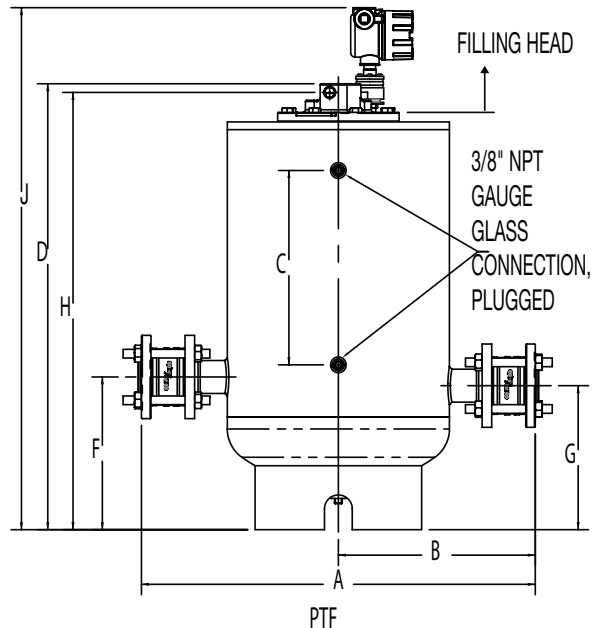
The pump shall be Spirax Sarco Pivotrol Pump® (patented) operated by steam, compressed air or other pressurized gas to 200 psig, which does not require any electrical energy. The pump shall have stainless steel, split disc check valves on the inlet and outlet connections. The pump shall contain Spirax Sarco PowerPivot® (patented) inside to ensure longevity and reliability of the pump. The Pivotrol Pump® (patented) 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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Condensate Recovery

Non-Electric Pumps