



## The Pivotrol® Pump Patented PTF Pressure Powered Pump Series

### 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.** Suitable for use in hazardous environments and volatile fluid pumping applications. See IM-5-201-US for full details.

Model	PTF	PTF - Stainless Steel	PTF - Top Inlet	PTF - T-Bone
<b>PMO</b>	200 psig (13.8 barg)			
<b>Sizes</b>	2" x 2" (DN50 x DN50) 3" x 2" (DN80 x DN50)		3" x 3"	
<b>Connections</b>	Cover: NPT Liquid: ANSI 150/NPT			
<b>Construction</b>	Fabricated Steel Body ASME Code Stamped			
<b>Warranty</b>	3 Million Cycles or 5 Year Warranty, whichever number is achieved first. Lifetime Warranty on Spring			
<b>Options</b>	Pump modified to handle liquids down to 0.65 specific gravity, gauge glass reflex			

### Accessories

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

### Capacities

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

### Compliance

The product fully complies with the requirements of the European Pressure Equipment Directive 2014/68/EU and carries the **CE** mark when so required (must be specified at the time of order). **CE** marked products are not ATEX approved, therefore are not suitable in hazardous environments or volatile fluid pumping applications in the EU.

### Operating Characteristics

Pump discharge per cycle –	8.4 gal (31.8 l) Nominal
Average instantaneous discharge rate –	90 gpm (5.7 l/s)
Average Steam Consumption –	3 lbs (1.4 kg) per 1000 lbs (453.5 kg) of liquid pumped
Average Air Consumption –	60 SCF per 1000 lbs (453.5 kg) of liquid pumped
Filling head recommended above centerline of inlet check valve is	12" (305mm).

### For increased service life –

Operate pump with motive pressure 15-20 psig (1.0-1.4 barg) above pump back pressure.

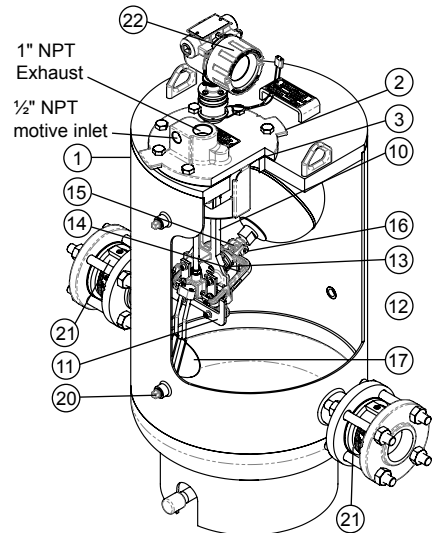
### Construction Materials

No.	Part	Material	Spec
1	Body	PTF - Fabricated Steel	ASME Coded
		PTF Top: Fabricated Steel	ASME Coded
		PTF SS: Fabricated St. Steel	ASME Coded
2	Cover	PTF - Cast Steel	ASTM SA216WCB
		PTF Top: Cast Steel	ASTM 216WCB
		PTF SS: Cast Stainless Steel	ASTM A351 CF8M
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)	

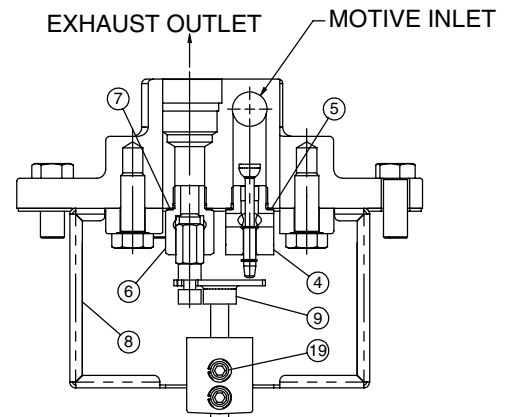
Local regulation may restrict the use of this product below the conditions quoted. Limiting conditions refer to standard connections only.

In the interests of development and improvement of the product, we reserve the right to change the specification.

### PTF & PTF SS



See reverse for Top Inlet and T-Bone views



# The Pivotrol® Pump Patented

## PTF Pressure Powered Pump Series

### Dimensions (nominal) in inches and millimeters

PTF- Stainless Steel Size	A	B	C	D	E	F	G	H*	I	J	K	L	M	N	O	Weight Pump
2" (DN50) PTF-SS	29.2	14.4	14	32.1	5.1	11	10.4	31.5	6.3	37.3	0.6	N/A	N/A	N/A	N/A	210 lb
Check Valves	742	364	354	815	129	278	263	800	160	947	15	N/A	N/A	N/A	N/A	95 kg
3" x 2" (DN80xDN50) PTF-SS	30.2	14.4	14	32.1	5.1	11	10.4	31.5	6.3	37.3	0.6	N/A	N/A	N/A	N/A	230 lb
Check Valves	767	364	354	815	129	278	263	800	160	947	15	N/A	N/A	N/A	N/A	104 kg
3" x 3" PTF-Top	19.2	9.6	N/A	32.1	N/A	40.9	N/A	31.5	N/A	44.7	0.6	12	16	5.8	3	230 lb
Check Valves	488	244	N/A	815	N/A	305	N/A	800	N/A	1135	15	305	406	147	76	104 kg
3" x 3" PTF-T Bone	19.2	9.6	N/A	N/A	N/A	N/A	11.0	N/A	N/A	N/A	N/A	N/A	N/A	17.1	3	230 lb
Check Valves	488	244	N/A	N/A	N/A	N/A	279	N/A	N/A	N/A	N/A	N/A	N/A	434	76	104 kg

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

### Limiting Operating Conditions

**PMO**  
Max. Operating Pressure 200 psig (13.8 barg)

Minimum motive differential required: 5 psig (0.34 barg)

Filling Head Requirements	Filling Head Above Pump Cover	Filling Height From Base of Pump
Standard Recommended	12" (305mm)	42.8" (1087mm)
Max filling head	PTF 48" (1219mm)	78.8" (2002mm)
Min filling head	PTF 2x2 (DN50xDN50) -3" (-76mm)	27.8" (706mm)
	PTF 3x2 (DN80xDN50) -1" (-25mm)	29.8" (757mm)
Max filling head	PTF-Top 39" (199mm)	78.8" (2002mm)
	PTF-Top 12" (305mm)	52.9" (1344mm)

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 200 psig@400°F (13.8 barg@204°C)  
125 psig@650°F (8.6 barg@343°C)

**TMA**  
400°F@200 psig (204°C@13.8 barg)  
650°F@125 psig (343°C@8.6 barg)

Consult the factory for pressure/temperature rating with reflex gauge glass

### Sample Specification

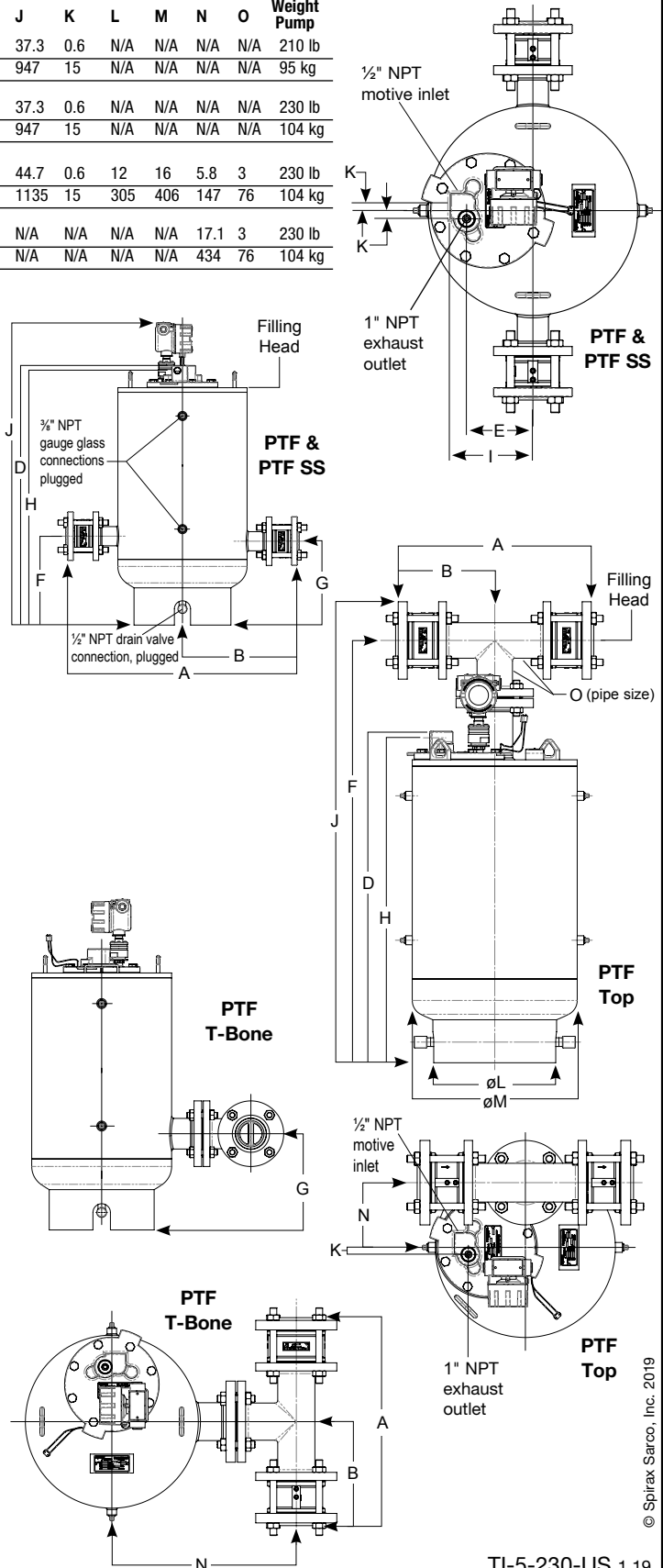
The pump shall be Spirax Sarco Pivotrol® Pump (patented) operated by steam, compressed air or other pressurized gas to 200 psig (13.8 barg), which does not require any electrical energy. The pump shall have stainless steel, split disc check valves on the inlet and outlet connections. The pump shall contain 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 or 5 year warranty, which ever number is achieved first. When required the pump shall be supplied with a gauge glass and custom designed insulation jacket.

### Installation

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 which accompanies the product.



Condensate Recovery  
Non-Electric Pumps

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