Low-Profile Pressure Powered Pump™
PPEC

Spirax Sarco Pressure Powered Pump™ 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 uses steam, compressed air or any other suitable pressurized gas as the pumping force. **The standard pressure powered pump will handle liquids from 0.9 to 1.0 specific gravity.**

Body Style	Iron	Steel	316 Stainless Steel
PMO	125 psig		
Sizes	1" & 1-1/2"		
Connections	NPT		
Construction	Cast Iron Body,	Cast Steel Body	Cast Stainless Steel Body
	Stainless Steel Internals, Bronze Check Valves Stainless Steel Ch.valves	Stainless Steel Internals, Stainless Steel Check Valves	
Options	BSP Connections,	S.W. & BSP Connections,	
	Pump modified to handle liquids down to 0.65 specific gravity	Pump modified to handle liquids down to 0.65 specific gravity	

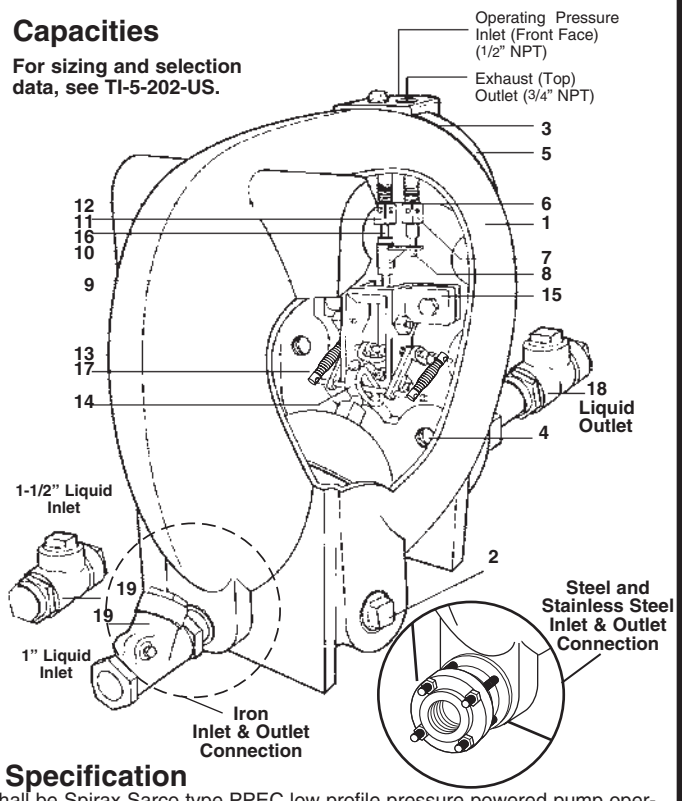
Operating Characteristics
Pump discharge per cycle – 4.0 gal *(15.14 l)*
Maximum instantaneous discharge rate
– 30 gpm *(1.9 l/s)*
Steam Consumption
– 3 lbs. of steam per 1000 lbs. of liquid pumped.
Air consumption
– 100 SCF per 1000 lbs. of liquid pumped.

Accessories
Gauge glass with brass cocks for iron pumps, steel cocks for steel pumps, and stainless steel cocks for stainless steel pumps; Pump insulation cover; Cycle counter for monitoring the amount of liquid pumped. The upper 3/8" NPT iron, 1/2" steel and stainless steel plugged gauge glass connection in the pump body can be used for connecting the cycle counter.

Construction Materials

No.	Body Style	Part	Material	
1	Iron	Body	Cast Iron	ASTM A126 CL B
	Steel		Cast Steel	ASTM A216 WCB
	316 SS		Cast 316 Stainless Steel	ASTM A351 CF8M
2	Iron	Plug 3/8"	Forged Steel	
	Steel	Plug 1/2"	Forged Steel	
	316 SS	Plug 1/2"	Forged 316 Stainless Steel	
3	All	Cover Gasket	Graphite	
4	Iron	Cover Screws	Steel	
	Steel		Steel	
	316 SS		Stainless Steel	
5	Iron	Cover	Iron	ASTM A126 CL B
	Steel		Steel	ASTM A216 WCB
	316 SS		Stainless Steel	ASTM A351 CF8M
6	All	Exhaust Valve Seat Gasket	Stainless Steel	
7	All	Exhaust Valve Seat	Stainless Steel	
8	All	Exhaust Valve Head	Stainless Steel	
9	All	Push Rod	Stainless Steel	
10	All	Valve Head Actuator	Cast Stainless Steel	
11	All	Inlet Valve Seat	Stainless Steel	
12	All	Inlet Valve Seat Gasket	Stainless Steel	
13	All	Push Rod Actuator	Stainless Steel	
14	All	Float & Arm	Stainless Steel	
15	All	Mechanism Casting	Cast Stainless Steel	
		Screws 1/2" – 13 x 1-1/4	Stainless Steel	
16	All	Inlet Valve	Stainless Steel	
17	All	Spring	Inconel	
18		Lift Check Valve (outlet)	Bronze with bronze disc	
		Wafer Check Vlv (outlet)	Austenitic stainless steel	
19		1" Swing Check Vlv (inlet)	Bronze with teflon disc	
		1-1/2" Lift Check Vlv (inlet)	Bronze with bronze disc	
		1" & 1-1/2" Wafer Check Vlv (inlet)	Austenitic stainless steel	

Capacities
For sizing and selection data, see TI-5-202-US.



Limiting Operating Conditions

Max. Operating Pressure (PMO) **125 psig *(9 barg)***
Minimum motive pressure required: **5 psig *(0.34 barg)***

Specific Gravity of pumped liquid - 0.9 to 1.0
Specific Gravity of pumped liquid options - 0.89 to 0.8 & 0.79 to 0.65
Filling head recommended above pump is 6" *(152 mm)* See TIS 5.202

Pressure Shell Design Condition

PMA Max. allowable pressure	Iron	125 psig /0-450˚F	*9 barg/0-232°C*
	Steel	285 psig /0-650˚F	*19 barg/343°C*
	316 SS	220 psig /0-400˚F	*15 barg/204°C*
TMA Max. allowable temperature	Iron	450˚F/0-125 psig	*232°/0-9 barg*
	Steel	750˚F/240 psig	*399°C/16 barg*
	316 SS	850˚F/180 psig	*454°C/12 barg*

***Note:** Consult factory for PMA and TMA when using gauge glass.*

For increased service life, operate pump with motive pressure 15-20 psig above pump back pressure.

Sample Specification
The pump shall be Spirax Sarco type PPEC low profile pressure powered pump operated by steam, compressed air or other pressurized gas to 125 psig, which does not require any electrical energy, and is safe for use in explosive atmospheres. Body construction of cast iron, cast steel, or cast 316 stainless steel, for pumping liquids of specific gravity of 0.65 and above. The pump shall contain a float operated snap-acting mechanism with no external seals or packing, stainless steel trim, and hardened stainless steel mechanism bearing components with single piece motive inlet valve. Pump to be provided complete with inlet and outlet check valves attached at the factory for ease of field installation. When required, shall be equipped with a cycle counter to monitor the volume of liquid being pumped, and/or a sight glass to monitor operation.

Installation
For generic hook-up sketch, see TI-5-202-US. Full details are given in IM-5-200-US, which accompanies the product.

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.

Low-Profile Pressure Powered Pump™ PPEC

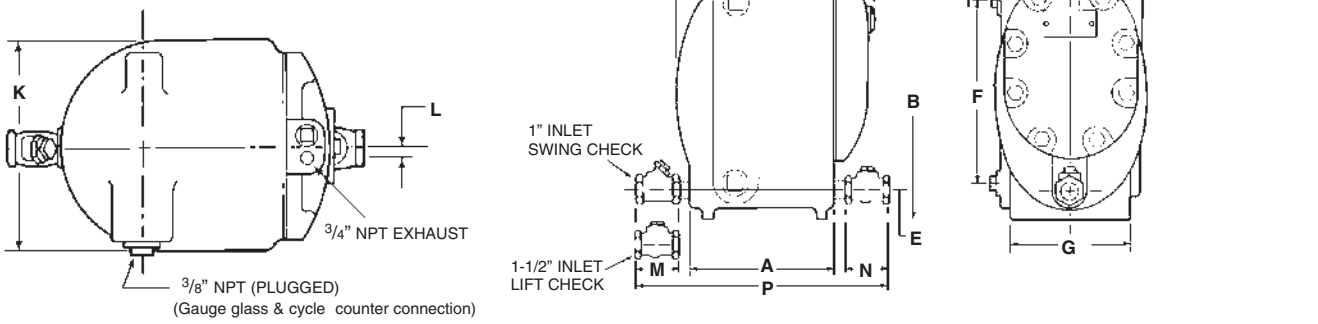
Dimensions (nominal) in inches and millimeters

Size	Style	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Pump with Check Valve Package*
1"	Iron	11.0	18.9	14.6	13.1	2.1	14.0	9.0	1.1	.6	11.5	.6	3.6	3.4	20.3	154 lb
Brz Ch.valve		*279*	*480*	*371*	*333*	*53*	*356*	*229*	*29*	*16*	*292*	*16*	*91*	*86*	*516*	*70 kg*
1-1/2"	Iron	11.0	18.9	14.6	13.1	2.1	14.0	9.0	1.1	.6	11.5	.6	4.3	4.3	23.1	155 lb
Brz Ch.valve		*279*	*480*	*371*	*333*	*53*	*356*	*229*	*29*	*16*	*292*	*16*	*108*	*108*	*587*	*70 kg*
1"	Iron	11.0	18.9	14.6	13.1	2.8	14.0	9.0	1.1	.6	11.5	.6	3.3	3.3	19.4	154 lb
SS Ch.valve		*279*	*480*	*371*	*333*	*71*	*356*	*229*	*29*	*16*	*292*	*16*	*84*	*84*	*493*	*70 kg*
1-1/2"	Iron	11.0	18.9	14.6	13.1	2.8	14.0	9.0	1.1	.6	11.5	.6	4.8	4.8	23.8	155 lb
SS Ch.valve		*279*	*480*	*371*	*333*	*71*	*356*	*229*	*29*	*16*	*292*	*16*	*121*	*121*	*605*	*70 kg*
1"	Steel	11.7	19.6	14.6	13.1	2.8	14.0	9.0	1.1	.6	11.6	.6	2.1	2.1	15.9	166 lb
		297	*498*	*371*	*333*	*70*	*356*	*229*	*29*	*16*	*294*	*16*	*54*	*54*	*405*	*75 kg*
1-1/2"	Steel	11.7	19.6	14.6	13.1	2.8	14.0	9.0	1.1	.6	11.6	.6	2.7	2.7	17.1	171 lb
		297	*498*	*371*	*333*	*70*	*356*	*229*	*29*	*16*	*294*	*16*	*69*	*69*	*434*	*78 kg*
1"	316 SS	11.7	19.6	14.6	13.1	2.8	14.0	9.0	1.1	.6	11.6	.6	2.1	2.1	15.9	166 lb
		297	*498*	*371*	*333*	*70*	*356*	*229*	*29*	*16*	*294*	*16*	*54*	*54*	*405*	*75 kg*
1-1/2"	316 SS	11.7	19.6	14.6	13.1	2.8	14.0	9.0	1.1	.6	11.6	.6	2.7	2.7	17.1	171 lb
		297	*498*	*371*	*333*	*70*	*356*	*229*	*29*	*16*	*294*	*16*	*69*	*69*	*434*	*78 kg*

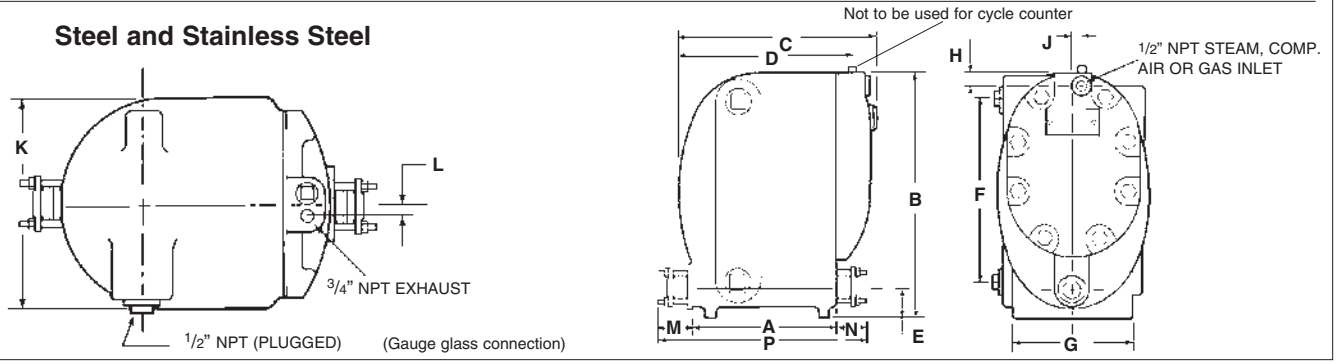
Note: Cover/Mechanism withdrawal distance – 12" - 305 mm
Iron Cover/Mechanism assembly — 35 lb (16 kg)

**For gauge glass assembly on cast iron unit, add 5 lbs (2.3 kg).*
For gauge glass assembly on steel or stainless steel unit, add 23 lbs (10.4 kg).

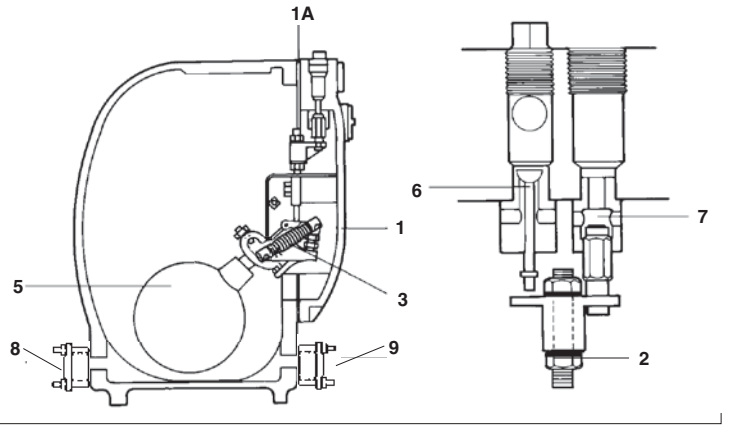
Cast Iron



Steel and Stainless Steel



Cover only for PPEC	1
Cover Gasket for PPEC	1A
Push rod repair kit for PPEC	2
Spring Assembly for PPEC	3
Float only for PPEC	5
Inlet Valve Head,	6
Seat & Gasket for PPEC	
Exhaust Valve Head, Seat & Gasket for PPEC	7
Mechanism Rebuild Kit (Not Shown) See IM-5-203/3	
Bronze Inlet Check Valve for PPEC	8
Bronze Outlet Check Valve for PPEC	9
Stainless Steel Water Check Valve	8 / 9
Cover & Complete Mechanism Assembly for PPEC	



Spirax Sarco, Inc., 1150 Northpoint Blvd, Blythewood, SC 29016 Telephone: (803) 714-2000 FAX (803) 714-2222