



# Low-Profile Pressure Powered Pump™ PPEC

## Description

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.

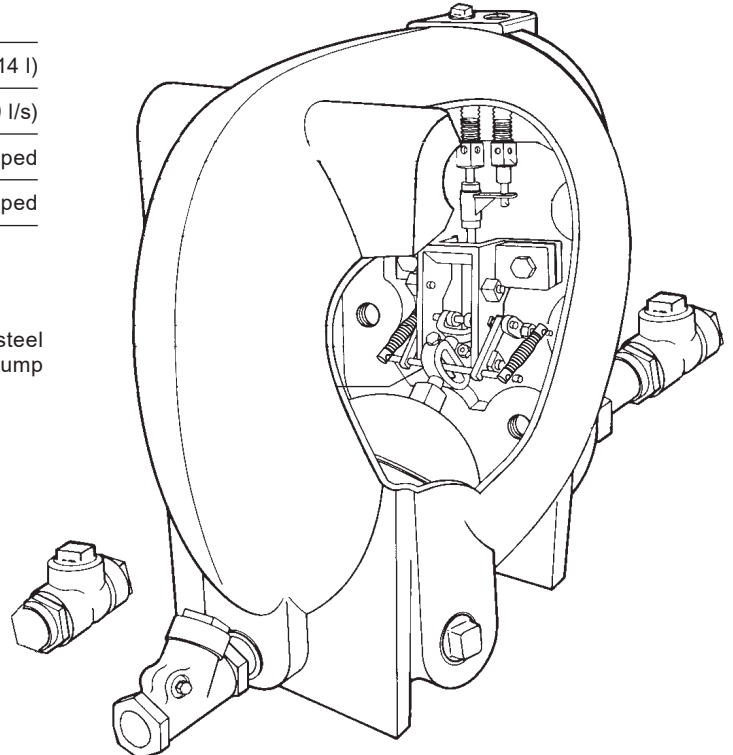
Body Style	Iron	Steel	316 Stainless Steel
PMO		125 psi g	
Sizes		1" and 1½"	
Connections	NPT		NPT/ANSI150
Construction	Cast Iron Body, Stainless Steel Internals, Bronze Check Valves Stainless Steel Check valves	Cast Steel Body	Cast Stainless Steel Body
		Stainless Steel Internals, Stainless Steel Check Valves	
Options	BSP Connections	S.W. and 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.



## Limiting operating conditions

Maximum Operating Pressure (PMO)	125 psi g (9 bar g)
Minimum motive pressure required:	5 psi g (0.34 bar g)
Specific Gravity of pumped liquid	0.9 to 1.0
Specific Gravity of pumped liquid options -	0.89 to 0.8 and 0.79 to 0.65
Filling head recommended above pump is	6" (152 mm) See TIS 5.202

## Pressure shell design condition

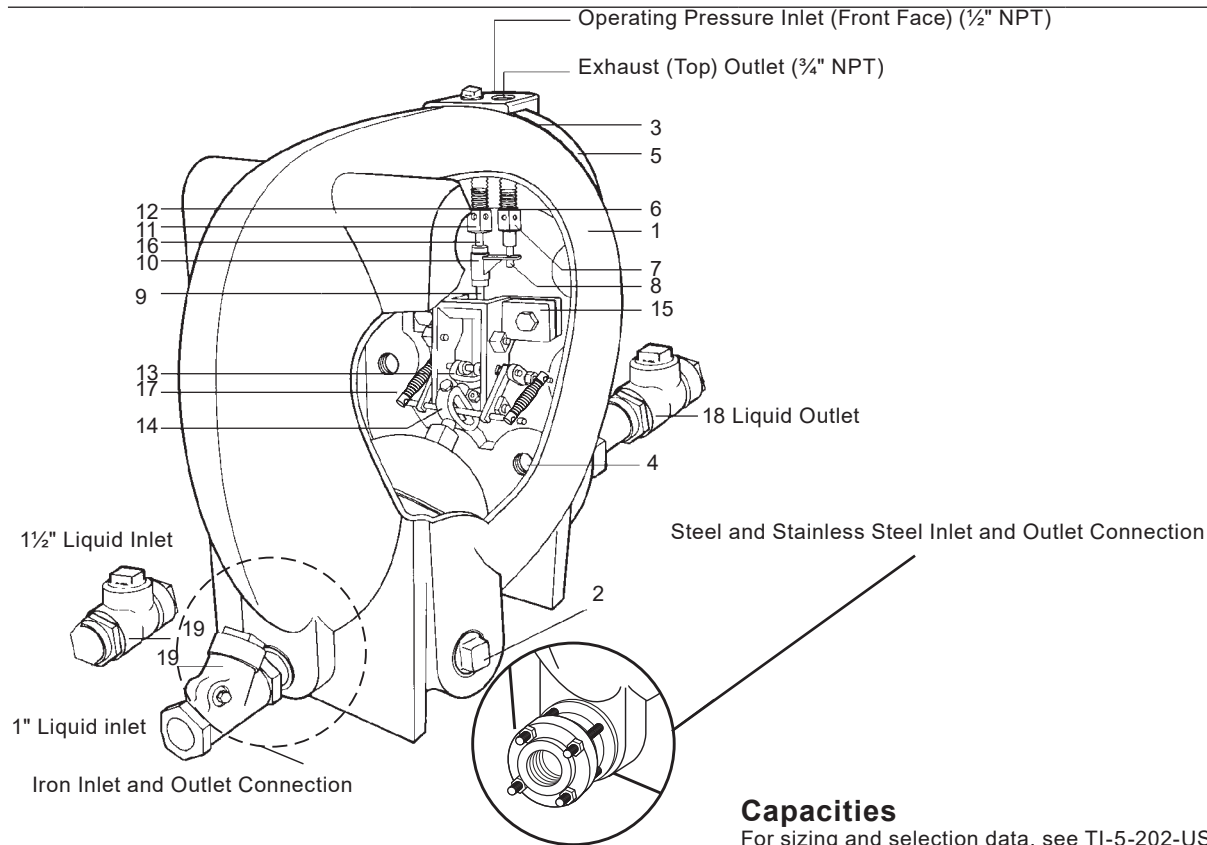
PMA	Maximum allowable pressure	Iron	125 psi g /0-450 °F	9 bar g/0-232 °C	<b>For increased service life, operate pump with motive pressure 15-20 psi g above pump back pressure.</b>
		Steel	285 psi g /0-650 °F	19 bar g/343 °C	
		316 SS	220 psi g /0-400 °F	15 bar g/204 °C	
TMA	Maximum allowable temperature	Iron	450 °F/0-125 psi g	232 °/0-9 bar g	
		Steel	750 °F/240 psi g	399 °C/16 bar g	
		316 SS	850 °F/180 psi g	454 °C/12 bar g	

## Materials

No.	Body Style	Part	Material	
1	Iron Steel 316 SS	Body	Cast Iron	ASTM A126 CL B
			Cast Steel	ASTM A216 WCB
			Cast 316 Stainless Steel	ASTM A351 CF8M
2	Iron Steel 316 SS	Plug ¾"	Forged Steel	
		Plug ½"	Forged Steel	
		Plug ½"	Forged 316 Stainless Steel	
3	All	Cover Gasket	Graphite	
4	Iron Steel 316 SS	Cover Screws	Steel	
			Steel	
			Stainless Steel	
5	Iron Steel 316 SS	Cover	Iron	ASTM A126 CL B
			Steel	ASTM A216 WCB
			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	

## Materials (continued)

No.	Body Style	Part	Material
14	All	Float and 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" and 1 1/2" Wafer Check Vlv (inlet)	Austenitic stainless steel



## 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 psi g, 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 sight glass to monitor operation.

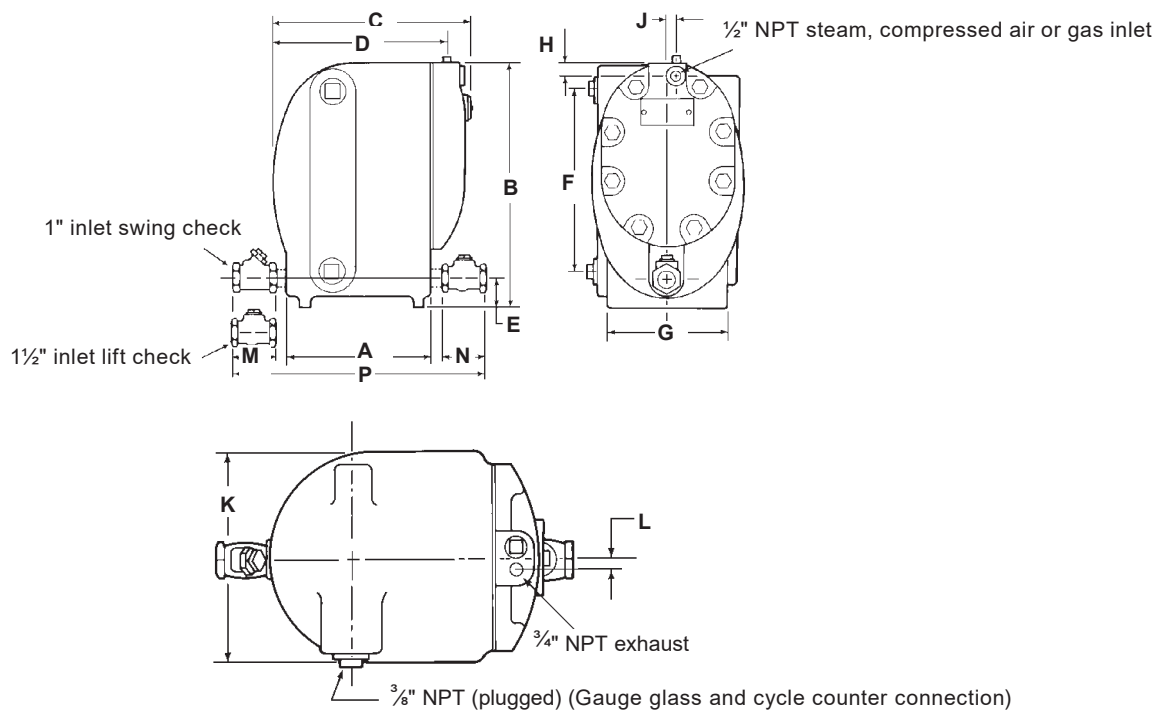
## Installation

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

**Dimensions/weights (nominal) in inches (mm) and lbs (kg)**

Size	Style	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Pump with Check Valve Package*
1" Brz Ch.valve	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
		279	480	371	333	53	356	229	29	16	292	16	91	86	516	70 kg
1½" Brz Ch.valve	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
		279	480	371	333	53	356	229	29	16	292	16	108	108	587	70 kg
1" SS Ch.valve	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
		279	480	371	333	71	356	229	29	16	292	16	84	84	493	70 kg
1½" SS Ch.valve	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
		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
1½"	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

**Cast Iron**

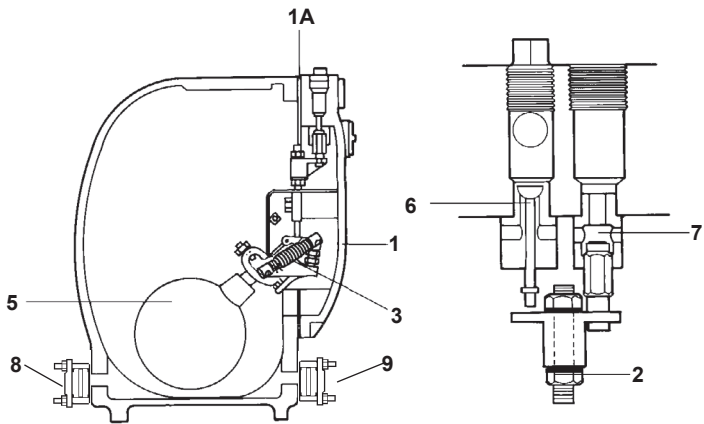
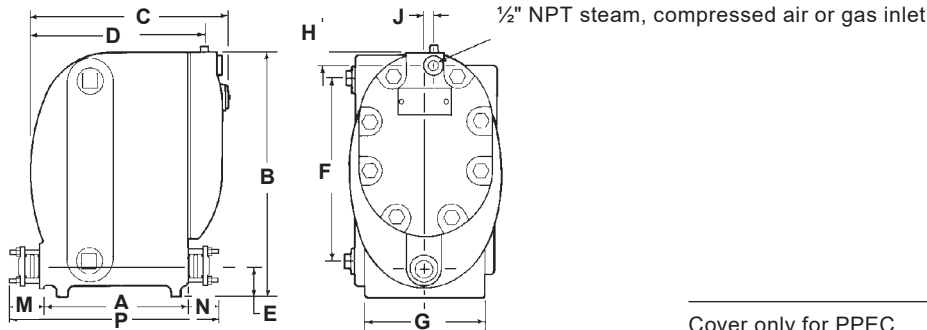
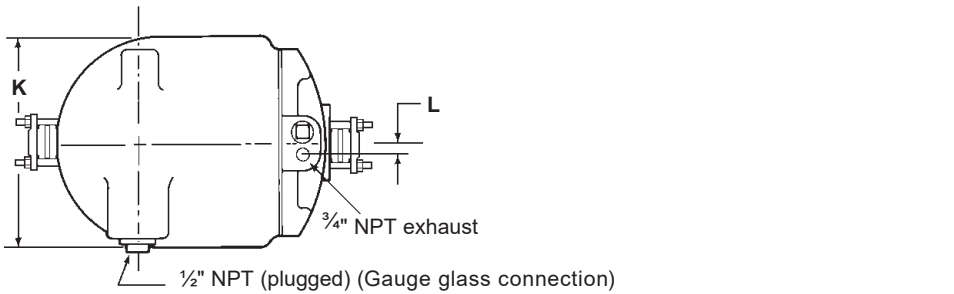


**Note:** Cover/Mechanism withdrawal distance – 12" - 305 mm Iron Cover/Mechanism assembly — 35 lb (16 kg)

\* 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).

Size	Style	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Pump with Check Valve Package*
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
1½"	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

**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 and Gasket for PPEC	7
Exhaust Valve Head, Seat and Gasket for PPEC	
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 and Complete Mechanism Assembly for PPEC	