



TI-P135-04

ST Issue 2

PPEC Low Profile Pressure Powered Pump

'The Eliminator'

Available types

PPEC cast iron body and cover.
PPEC is supplied with bronze check valves.

Limiting Conditions

Body design conditions 8.6 bar g (up to 232°C)
Maximum cold hydraulic test 13 bar g
Operating inlet pressure
Steam, air or gas 0.34 to 8.6 bar g.
Total lift or back pressure which must be below operating pressure to allow capacity to be achieved, = height (H) in metres x 0.0981 plus pressure (bar g) in return line, plus downstream piping friction pressure drop in bar calculated at a flow rate of the lesser of six times the actual condensate rate or 6815 L/h.
Filling head recommended above the pump is 0.15 m.
Minimum filling head 0.m (at top of pump) gives a reduced capacity.
Standard pump operates with liquids of specific gravity 1.0 down to 0.9, specify when ordering for liquid specific gravity from 0.9 to 0.65.
Pump discharge per cycle:- 15 L. Each cycle at a maximum flow rate of 6815 L/h.
Steam consumption — 3 kg. of steam per 1000 kg liquid pumped.
Air consumption — 6230 L_n per 1000 kg liquid pumped.

Sizes and pipe connections

1" Screwed BSP (BS21 - parallel)

Materials

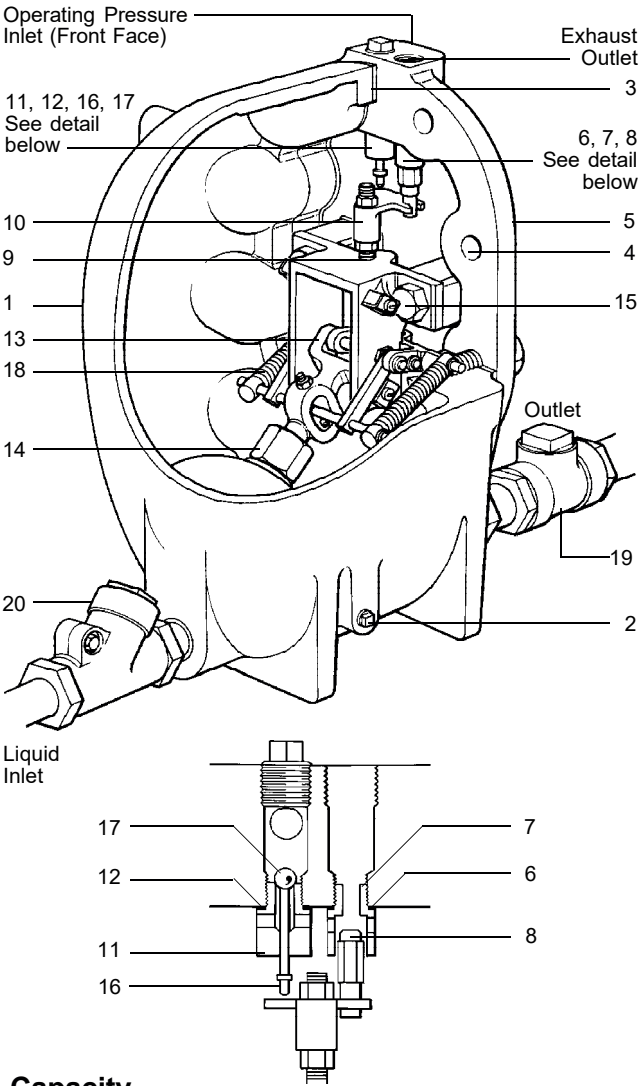
| No. Part | Material | |
|------------------------------|-------------------------|-----------------------|
| 1 Body | Cast Iron | ASTM A126 Class B |
| 2 Plug 1½" | Forged Steel | ASTM A105 |
| 3 Cover Gasket | Graphite | Union Carbide GHP |
| 4 Cover Screws ¾" - 10 x 1¼" | Steel | ASTM A449 |
| 5 Cover | Cast Iron | ASTM A126 Class B |
| 6 Exhaust Valve Seat Gasket | Stainless Steel | AISI 301 |
| 7 Exhaust Valve Seat | Stainless Steel | AISI 303 |
| 8 Exhaust Valve Head | Stainless Steel | AISI 303 |
| 9 Push Rod | Stainless Steel | AISI 303 |
| 10 Valve Head Actuator | Cast Stainless Steel | ASTM A743 Gr. CF-16F |
| 11 Inlet Valve Seat | Stainless Steel | AISI 303 |
| 12 Inlet Valve Seat Gasket | Stainless Steel | AISI 302 |
| 13 Push Rod Actuator | Stainless Steel | AISI 304 |
| 14 Float & Arm | Stainless Steel | AISI 304 |
| 15 Mechanism Casting | Cast Stainless Steel | ASTM A 743 Gr. CF-16F |
| Screws ½" - 13 x 1¼" | Stainless Steel | AISI 304 |
| 16 Inlet Valve Stem | Stainless Steel | AISI 303 |
| 17 Inlet Valve Head | Stainless Steel | AISI 440 |
| 18 Spring | Stainless Steel | AISI 316 |
| 19 Check Valve (outlet) | Bronze with bronze disc | |
| 20 Check Valve (inlet) | Bronze with teflon disc | |

Capacity Multiplying Factors for other Filling Heads

| Capacity | Filling Head (m) | | | | |
|---------------------|------------------|------|-----|-----|-----|
| | 0 | 0.15 | 0.3 | 0.6 | 0.9 |
| Multiplying Factors | .7 | 1.0 | 1.1 | 1.3 | 1.5 |

Capacity Multiplying Factors for Motive Gas Supplies (other than steam)

| | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | % Backpressure vs. Motive Pressure (BP/MP) |
|--|------|------|------|------|------|------|------|------|------|--|
| | 1.10 | 1.13 | 1.16 | 1.20 | 1.25 | 1.30 | 1.35 | 1.40 | 1.45 | Capacity Multiplying Factors |



Capacity

Capacities in kg/h when installed with recommended 0.15m filling head above top of pump. (Liquids specific gravity 0.9 to 1.0.)

Note: To achieve rated capacity, pump must be installed with check valves as supplied by Spirax Sarco. Use of a substitute check valve may affect the performance of the pump.

| Operating Inlet Pressure | | | Total Lift or Back Pressure | | Capacity (kg/h) |
|--------------------------|-----|-----|-----------------------------|-------|-----------------|
| bar g | | | bar g | bar g | |
| 8.6 | 1.0 | 952 | 3.4 | 0.69 | 907 |
| 8.6 | 2.8 | 862 | 3.4 | 1.7 | 771 |
| 8.6 | 4.1 | 771 | 3.4 | 2.8 | 635 |
| 6.9 | 1.0 | 952 | 1.7 | 0.34 | 907 |
| 6.9 | 2.8 | 816 | 1.7 | 0.69 | 771 |
| 6.9 | 4.1 | 726 | 1.7 | 1.0 | 635 |
| 5.2 | 1.0 | 952 | 0.69 | 0.14 | 862 |
| 5.2 | 2.8 | 771 | 0.69 | 0.34 | 726 |
| 5.2 | 4.1 | 590 | 0.34 | 0.14 | 680 |

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Condensate pumps

Mechanical pumps and pumps traps

Dimensions (approximate) in millimetres

| A | B | C | D | E | F | G | H |
|-----|-----|-----|-----|----|-----|-----|----|
| 279 | 480 | 371 | 333 | 53 | 356 | 229 | 28 |

| J | K | L | M | N | P | Weight Pump | C.V. |
|----|-----|----|----|----|-----|-------------|--------|
| 16 | 292 | 16 | 91 | 86 | 305 | 68 kg | 3.2 kg |

Note: Cover/Mechanism withdrawal distance - 0.3m.

Optional extras

Flow counter for measuring liquid pumped.

The upper 1½" API plugged connection in the pump body can be used for connecting the flow counter. If desired, a ½" connection can be provided on the top of the body for connecting the flow counter. Specify when ordering. The flow counter must be mounted vertically and can only be used when pump exhaust is vented. **Gauge glass** with brass cocks.

Installation

For best operation any flash steam must be vented or condensed ahead of pump inlet.

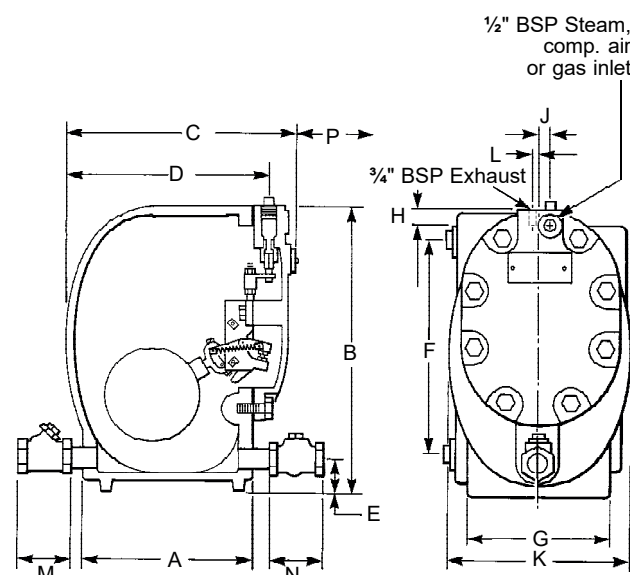
Full details are given in the Installation Instructions supplied with each pump.

How to specify

1 - SPIRAX SARCO Low Profile Pressure Powered Pump type PPEC with cast iron body complete with bronze check valves screwed BSP.

Note: If you are in any doubt about the size of pump required or if the conditions are unusual we will be glad to advise you if you will give us the answers to the following questions:-

- 1) Nature of liquid to be pumped.
- 2) Temperature of liquid to be pumped.
- 3) Quantity to be pumped (L/h).
- 4) Initial lift, horizontal distance and net effective lift (i.e. initial lift less subsequent fall in discharge line).



5) Operating medium (steam, compressed air or gas).

6) Operating pressure available.

7) The pump is generally used to drain water from a vented receiver but under certain circumstances can drain a unit from under steam pressure or vacuum. State which.

Spare Parts

AVAILABLE SPARE

| | |
|-------------------------------------|---|
| Cover Gasket | B |
| Float | F |
| Brass Inlet Check Valve | M |
| Brass Outlet Check Valve | M |
| Cover & Complete Mechanism Assembly | A |

