

Compact Condensate Pump Pressure Powered

Description:

Compact Condensate Pump is a positive displacement pump unit operated by steam, compressed air or pressurised gas. The compact pump has in built receiver. This eliminates need of separate storage tank. The size enables this pump to be used with individual equipments also. The pump is specifically designed to pump hot condensate and liquids of specific gravity 1.0 down to 0.9.

Sizes & Pipe Connections:

20 & 25 NB Compact Condensate Pump

Pump Size (NB)	Inlet Connection (NB) Flange BS – 10 Tab E	Outlet Connection (NB) Flange BS 10 Tab 'H'
20	20	20 Tab H
25	25	25 Tab E

Limiting Conditions:

Body design: 8.7 kg/cm² g at 220° C.

Operating inlet motive pressure:

Steam, compressed air or pressurised gas 3 to 8.7 bar(g)

Steam consumption: 3 kg of steam per 1000 kg liquid pumped.

Air consumption: 220 SCF per 1000 kg liquid pumped.

How to Specify:

Example: 20 NB SPIRAX MARSHALL
Compact Condensate Pump

Accessory: Condensate Flow Meter (CFM 1)
Insulation Jacket

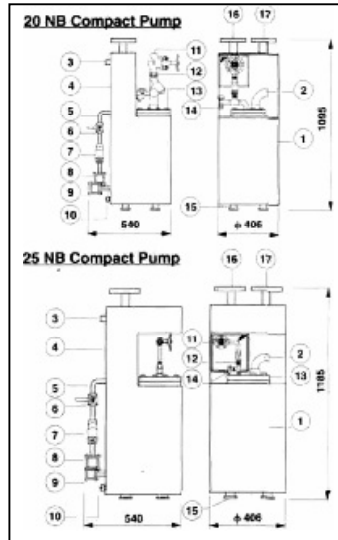
Available Spares:

- Set of Internals
- Gasket Kit (pkt. of 5)
- Valve Kit
- Exhaust Valve Kit
- Float Assembly
- Spring Assembly (pkt. of 2)

How to order Spares:

Always order spares giving description & PC. No. given in 'User Manual' under the heading 'Available Spares'.

Authorised Dealer;
PUSHKARNA SALES PVT LTD.
4772, Hauz Qazi, Delhi-110006.
Telefax : 011-23217239/23216378.
Emails : psp1@airtelmail.in,
sales@pushkarnasales.com
Site : www.pushkarnasales.com



S. No.	Description	Material
1	Compact Condensate Pump Shell	MS ERW Pipe
2	Exhaust Elbow	MS
3	Overflow Socket	MS
4	Receiver Shell	MS ERW Pipe
5	Condensate Inlet Line	MS
6	Ball Valve for Condensate Inlet	Carbon Steel
7	20NB/25 NBFIG 12 Strainer	C.I.
8	25/40 NB DCV2 for Condensate Inlet	SS
9	25 NB DCV2 for Condensate Outlet	S.S
10	15 NB Drain	MS
11	15 NB Piston Valve for Steam Inlet Connection	FCS
12	20NB/25 NB FIG 12 Strainer Steam Inlet	C.I.
13	Cover Plate Assembly	See Overleaf
14	15NBTD21 Trap	SS
15	LEG Support	MS
16	Condensate Inlet Conn. 20 NB/25NB Flanged to BS 10 TAB 'F'	MS
17	Vent Connection 50 NB/80NB Flanged to BS 10 Tab 'F' 'E'	MS

How to select and size:

From the inlet pressure (motive pressure) and back pressure conditions given below, select the pump size, which meets the capacity requirement of the application. Select optional extras as required. Back pressure is the lift height (H) in mtr x 0.1 plus bar(g) in return line plus downstream piping friction pressure drop in bar(g) at the lesser of six times the actual flow rate or 340 litre / minute.

Capacity kg/hr

For liquid specific gravity (0.9 to 1).

No	INLET Pr. (M.P.) (bar)	TOTAL Lift Or Back Pr (bar)	Condensate Flow Rate (Kg/hr)	
			20 NB Compact Pump kg/hr	25NB Compact Pump kg/hr
1	8.7	1	600	1020
2	8.7	2	514	900
3	8.7	3	482	800
4	8.7	4	470	780
5	7	1	590	900
6	7	2	550	900
7	7	3	475	800
8	7	4	390	780
9	6	1	580	900
10	6	2	520	900
11	6	3	425	800
12	6	4	300	690
13	5	1	550	900
14	5	2	430	840
15	5	3	320	720
16	4	1	440	840
17	4	2	340	720
18	3	1	325	660

Example:

Condensate Load _____ 450 kg/hr
 Steam/Air Pressure available for Operating Pump _____ 7 kg/cm²
 Vertical Lift from Pump to the Return piping _____ 9 m
 Pressure in return piping (piping friction negligible) _____ 1.72 kg/cm²

Solution:

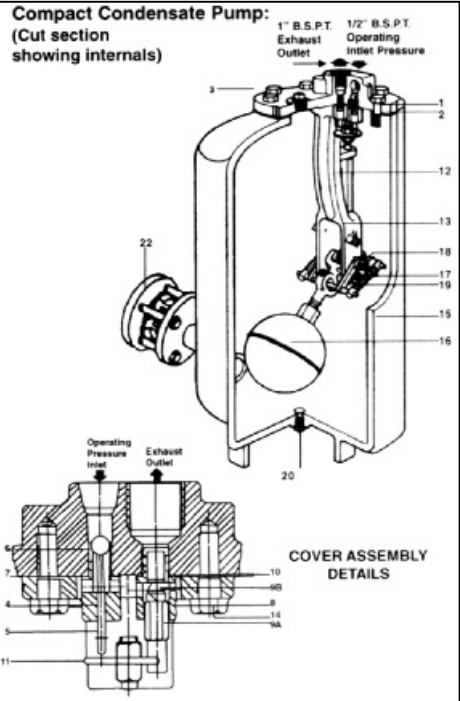
- Calculate "H", the total lift or back pressure against which the condensate must be pumped = $(9 \times 0.1) + 1.72$
 = 2.62 kg/cm
- From capacity table: 7 bar operating inlet pressure and 3 bar backpressure Pump has a capacity of 475 kg/hr

Note from capacity factor charts:

Pump capacity using compressed air, (% BP/ MP = 3/7)
 = 42% = $1.1 \times 475 = 522$ kg/hr.

Capacity multiplying Factors for motive gas supplies (other than steam)

% BACK PRESS VS. MOTIVE PRESSURE (BP/MP)
 10% 20% 30% 40% 50% 60% 70% 80% 90%
 1.04 1.06 1.08 1.10 1.12 1.15 1.18 1.23 1.28



Material

Sr.	Description	Material	Standard
1	COVER	C I	IS210 FG220
2	COVER GASKET	Asbestos free synthetic fibre	IS 2712
3	STUD&NUTM-12	MS	IS 1367
4	INLET VALVE SEAT	S.S. TYPE 304	ASTM A 276
5	INLET VALVE STEM	S.S. TYPE 304	ASTM A 276
6	INLET VALVE HEAD	S.S.	
7	INLET SEAT GASKET	COPPER	
8	EXHAUST SEAT	SS TYPE 304	ASTM A-276
9A	EXHAUST VALVE	S.S. TYPE 410	ASTM A-276
9B	EXHAUST VALVE HEAD	S.S.	
10	EXHAUST SEAT GASKET	S.S. TYPE 304	ASTM A-240
11	VALVE ACTUATOR DISC	SS TYPE 304	ASTM A-276
12	PUSH ROD	SS TYPE 304	ASTMA-276
13	MECHANISM YOKE	C.I	IS210 FG260
14	MECHANISM SCREWS. M-12	SS TYPE 304	ASTM A 193
15	BODY	MS	IS 2062
16	FLOAT	SS TYPE 304	ASTM A-240
17	LINKAGE MECHANISM	SS TYPE 304	ASTMA-351 FC8
18	PUSH ROD ACTUATOR	SS TYPE 304	ASTM A-351 CF8
19	SPRING	SS TYPE 316	
20	PLUG 1/2-BSPT	MS	ASTM A 105
21	HANDLE (not shown)	MS	IS 2062
22	DISC CHECK VALVE	SS316	