



BF



BC



BA



BB



NORMALIZED CENTRIFUGAL PUMPS

BE

FOR OIL DIATHERMIC USE

BC

BD



SUBMERSED PUMPS

BR



BU

FIRE-FIGHTING SYSTEMS



BT



SURGE TANKS

BG

VERTICAL PUMPS



BK



GEAR PUMPS

BS



SUBMERSIBLE PUMPS



CLASS A PUMPS

BU

SCREW PUMPS



LOBE PUMPS

BZ



VACUUM PUMPS

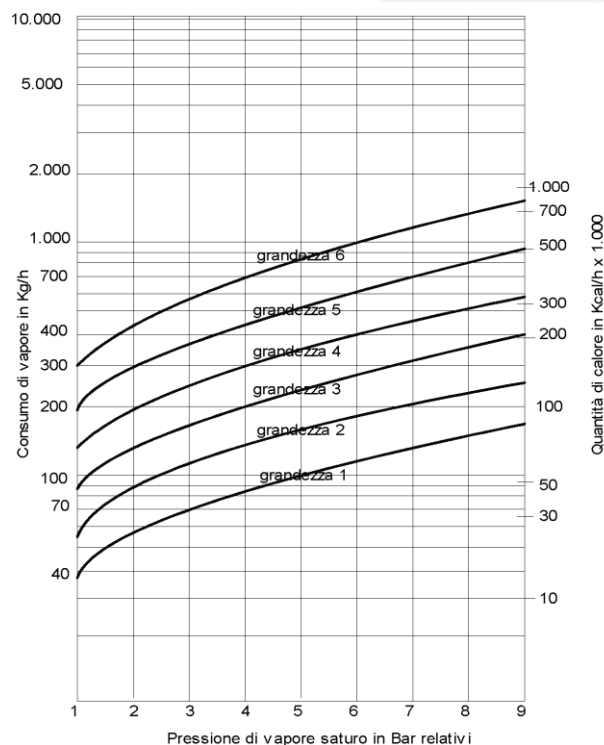
VALVOIND Srl Via Pascoli, 5 - 24060 Bagnatica (Bergamo) Tel. 035.681919-Fax. 035.684461

STEAM JET HEATER

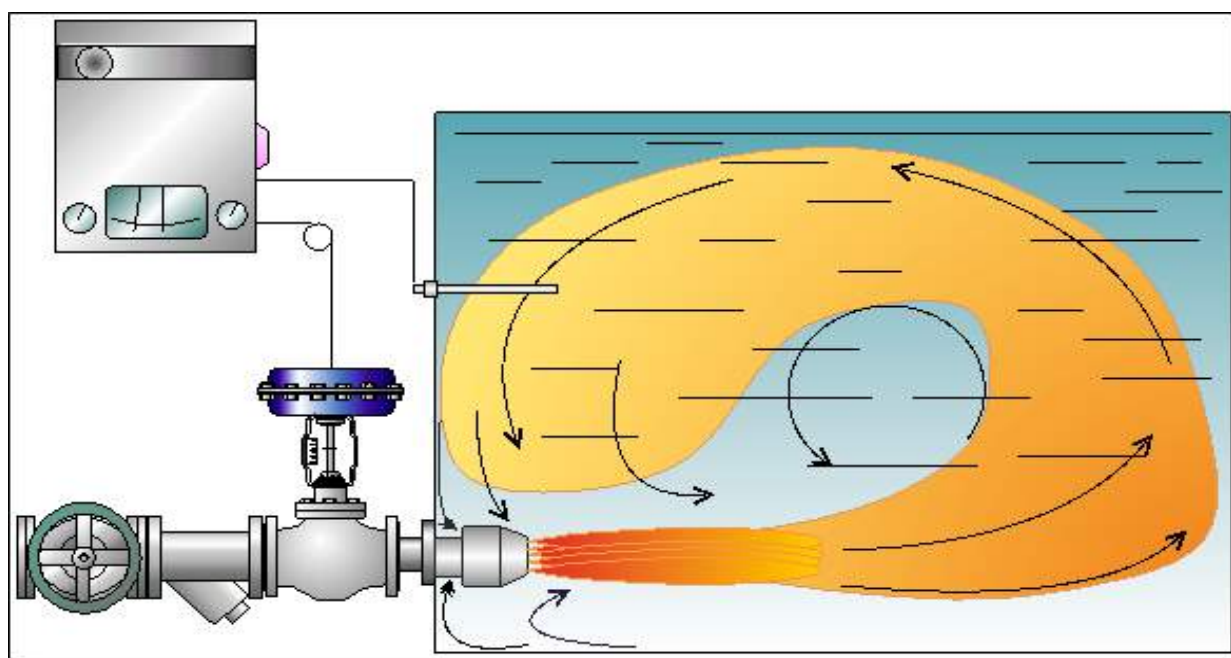
Steam jet liquid heaters use steam to raise the temperature of water or other liquids by direct steam injection. They assure a continuous and efficient heating, distributing the heat uniformly and avoiding stratification of liquid at different temperature inside the tank. Steam jet heaters prevent the typical vibrations and condensation shocks with material damage so often associated with simple perforated steam pipes. Operation is efficient because the heat in the steam is absorbed by the liquid to be heated to approximately 10% of the liquid saturation temperature.

INSTALLATION - For higher performances, they are installed horizontally on the bottom of the tank. The supply duct can flow both internally and externally to the tank. In the case of high capacity applications it is possible to install more heaters by arranging them uniformly in the tank.

OPERATION - The steam enters the heater immersed in the cold liquid, passes through the nozzle which, by converting the pressure energy into kinetic energy, considerably increases its speed. In this way, a depression is created in the surrounding area, which promotes the suction of cold liquid through the radial windows. The heated liquid passes into the diffuser; its kinetic energy is transformed back into pressure energy and is distributed inside the tank. This mini continuous cycle guarantees an efficient and high-efficiency heat exchange. To mitigate noise and vibrations caused by the condensation of steam at high temperatures, it is advisable to install a vent valve which injects air through a tube.



Models	Codes	1/2"	3/4"	1"	1 1/2"	2"	Materials
A	SG161..	.04	-	-	-	-	AISI
B	SG162..	-	.05	-	-	-	AISI
C	SG165..	-	-	.06	.08	-	AISI
D	SG171	.04	.05	.06	.07	.08	GG25



The condensate recovery pumps are used to re-launch the condensates to the recovery tank placed in a higher position. They are equipped with electric or mechanical internal organs that, using the available steam energy or compressed air, automatically manage to send the condensate to the accumulation point.

MECHANICAL CONDENSATE RECOVERY SYSTEM



MECHANIC PUMP



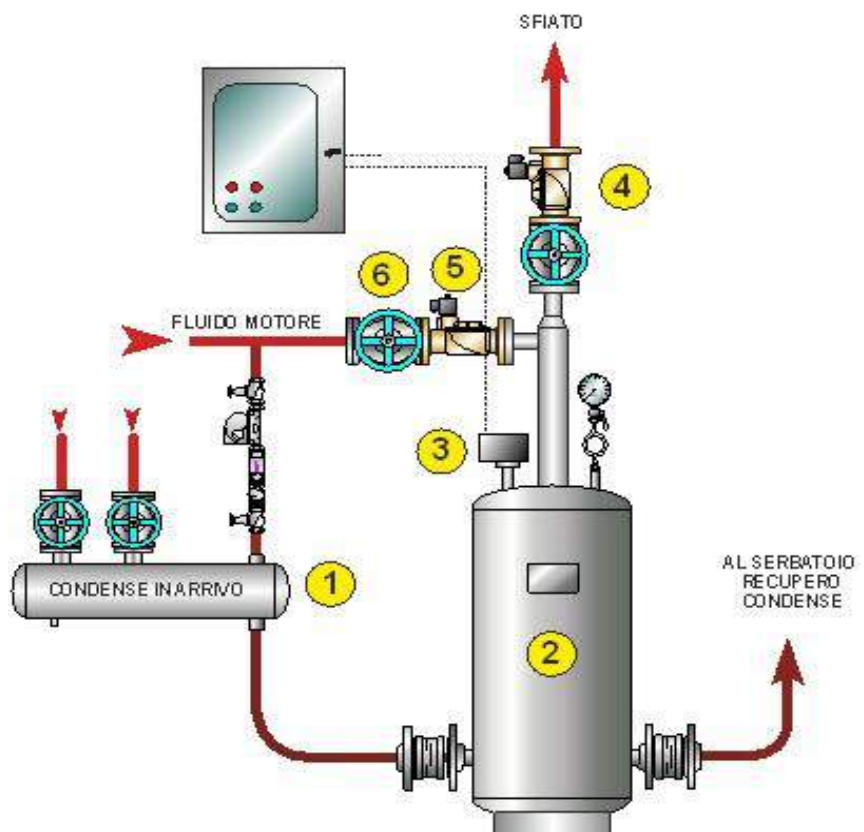
COMPLETE GROUP



MULTI GROUP

ELECTRIC CONDENSATE RECOVERY SYSTEM

In the electrical system the condensates are recovered in the tank (1), a level control (3), when reaches the maximum level, from the consent to the solenoid valve (5) of the steam supply (or compressed air) to open while simultaneously closing the vent solenoid valve (4). When the minimum value is reached on the other hand, the level control will open the vent valve, closing the one of the incoming steam, thus giving the possibility of the recovery of new condensation. Through the manual regulation valve (6) it will be possible to adjust the incoming pressure according to the counterpressure to be overcome up to the accumulation tank.



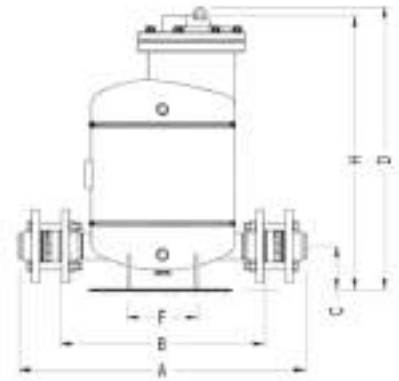
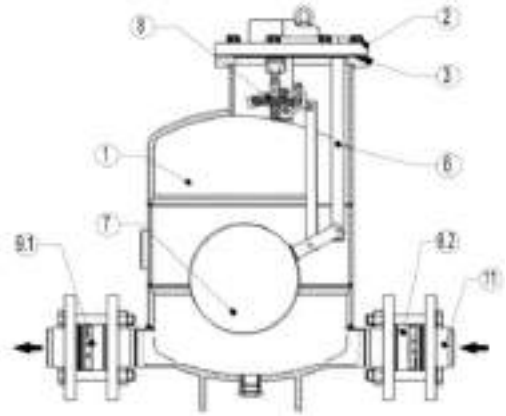
POP-S

**PRESSURE OPERATED PUMP
ADCAMAT POP-S**

DN25-DN40-DN50
DN80 X DN50

- **MAIN FEATURES**
- **Non-electric requirements**
- **OPTIONS**
Stainless steel construction.
Level gauge.
Stroke counter.
- **USE**
To lift condensate or hot and cold liquids.
- **MODELS**
ADCAMAT POP-S – carbon steel construction.
ADCAMAT POP-SS – Stainless steel construction.
(Carbon steel version is sandblasted, metalized and black painted).
- **CONNECTIONS**
Flanged EN1092-1 PN16. Special flanges upon request. Female screwed ISO 7/1 Rp (BS21).
- **INSTALLATION**
Horizontal installation.
See IMI installation and maintenance instructions.
- **MOTIVEGAS**
Steam or compressed air.

CE Marking : This product have been designed for use on water, steam, air and other gases which are in Group 2 of the European PED-Pressure Equipment Directive in use and it complies with those requirements.
The product carries the CE mark when falling in category 1 and above.
All the sizes fall within category 2.
The product carries the CE mark.



MATERIALS			
POS.	DESIGNATION	MATERIAL - POP-S	MATERIAL - POP-SS
1	PUMP BODY	P265GH / 1.0425 ; P235GH / 1.0345 S235JR / 1.0038	AISI316 / 1.4401 ; AISI304 / 1.4301
2	COVER	QJ8-400-15 / 0.7040 or ASTM A216WCB / 1.0819	AISI316 / 1.4401 ; AISI304 / 1.4301
3	*COVER GASKET	NON ASBESTOS	NON ASBESTOS
4	*INLET VALVE/SEAT ASSY.	STAINLESS STEEL	STAINLESS STEEL
5	*EXHAUST VALVE/SEAT ASSY.	STAINLESS STEEL	STAINLESS STEEL
6	INTERNAL MECHANISM	STAINLESS STEEL	STAINLESS STEEL
7	*FLOAT	STAINLESS STEEL	STAINLESS STEEL
8	*SPRING ASSY. (2PCS)	INCONEL	INCONEL
9.1	*RD40 OUTLET CHECK VALVE	CF8M / 1.4408	CF8M / 1.4408
9.2	*RD40 INLET CHECK VALVE	CF8M / 1.4408	CF8M / 1.4408
10	BOLTS	STEEL 8.8	A2 - 70
11	**PN16 EN 1092-1 FLANGES	P250GH / 1.0460	AISI316 / 1.4401

* Available spare parts

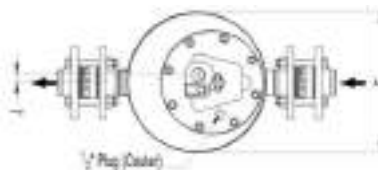
** Welding neck EN 1092-1 flanges. Threaded flanges on request.

LIMITING CONDITIONS *					
POP-S			POP-SS		
	Press. bar	Temp. °C		Press. bar	Temp. °C
PN16	16	50	PN16	16	50
	14	100		16	100
	13	150		13	195
	12	250		12	250
ANSI Cl.150	16	50	ANSI Cl.150	16	50
	13	195		13	195

Minimum operating temp.: -10°C; Design code: ASME VIII

* Rating according to EN1092-2007

APPLICATION LIMITS	
Minimum density	0,80 kg/dm ³
Maximum viscosity	5° Engler
Maximum motive pressure	10 bar
Minimum motive pressure	0,5 bar
Pump discharge per cycle DN25 to DN50	16 l
Pump discharge per cycle DN80 x DN50	25 l



DIMENSIONS (mm)														Weight Kg	VOL. dm ³
DW	A*	B	C	D	E	F	G	H	I	J	L	M			
25	578	444	100	640	323	160	250	617	588	17	18	327	71	31,7	
40	615	454	100	640	323	160	250	617	588	17	18	327	72,8	31,8	
50	644	492	100	640	323	160	250	617	588	17	18	327	74,5	31,9	
80x50	776	595	113	650	406	200	348	627	608	17	19	307	79,5	48,9	

* A - with welding neck EN 1092-1 flanges

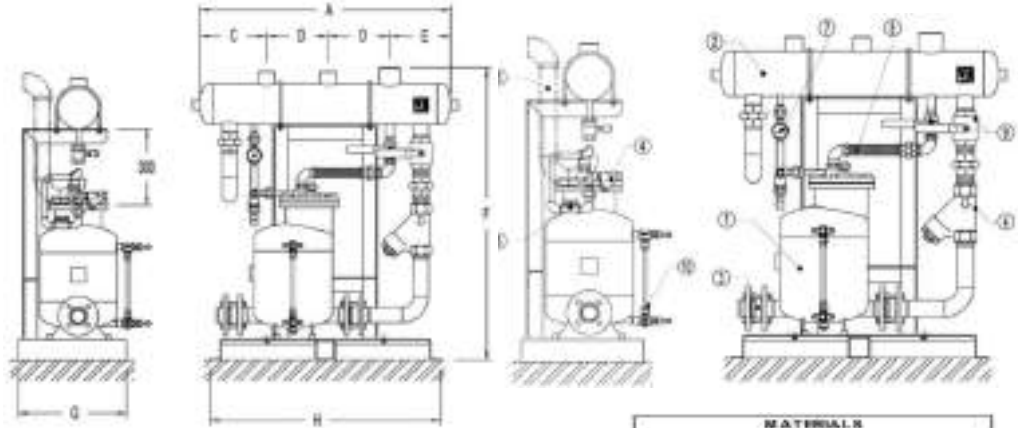
POPK-S

PACKAGED ADCAMAT AUTOMATIC PUMP (SUITABLE FOR STEAM SUPPLY)

DN25-DN40-DN50
DN80 X DN50

DESCRIPTION

The POPK-K packaged pump units can be used to lift or displace hot condensate and other liquids even in hazardous areas.
A POPK-K packaged unit comprises an ADCAMAT pump, a vented receiver and all auxiliary items, compactly mounted on a metal frame piped and ready for connection.
Packaged units save time, work and site costs. In addition they ensure that installation of the pump is correct in every detail.
Two or more units can be connected in parallel to cope with flow rates beyond the capacity of a single pump.
Units operating with compressed air are also available.
For operating conditions and pumping capacity, please refer to information sheet IS 9.101 E and IS 9.105 E.
How to order: i.e. ADCAMAT POPK-K DN 40



LIMITING CONDITIONS:
Receiver - Max. operating pressure: 0,5 bar
Pump - See IS 9.101 E
CONNECTIONS:
All connections are screwed except the pump connections which are flanged EN 1082-1 PN16. Threaded flanges available on request.

DIMENSIONS (mm)								
DN	A	C	D	E	F	G	H	Hgt. Kgs
25	96	250	250	226	1210	450	940	140
40	108	300	250	226	1210	450	940	154
50	1120	320	250	226	1200	450	940	188
DN50	1140	330	250	210	1330	535	1040	230

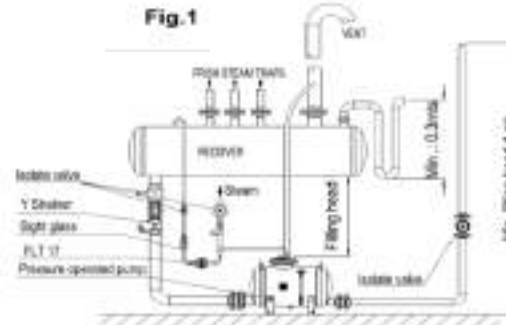
MATERIALS	
POS.	DESIGNATION
1	Pump
2	Receiver
3	Metal frame
4	St. 10 Strainer
5	Overflow
6	TH21 Steam trap
7	SW12 Sight glass
8	Flexible hose
9	Ball valves
10	LIGG 1351 Level gauges

How to select and size

SIZING OF THE SYSTEM

The discharge capacity of the pump is a function of:

1. Condensate load.....Kg/h
2. The pressure of operating medium (steam, compressed air or gas)
3. The total lift or back pressure the pump will have to exhaust against. This includes the change in fluid level elevation after the pump (0,098 l/bar/m of lift) plus pressure in the return piping, plus the pressure drop in bar caused by pipe friction, plus any other system component pressure drop the pump exhaust will have to overcome.
4. Filling head available (300 mm is recommended).



SUGGESTED RECEIVER	
PUMP SIZE	DN50x50; DN50x50
RECEIVER SIZE Diam x LENGTH	323 x 1000

Consult the factory for the correct selection

CAPACITY CORRECTION FACTOR FOR GASES OTHER THAN STEAM					
% Back press vs. Motive Press. (BP/MP)	10%	30%	50%	70%	90%
Correction factor	1,04	1,08	1,12	1,18	1,28

Chart 2

CAPACITY MULTIPLYING FACTORS FOR OTHER FILLING HEADS				
PUMP SIZE	FILLING HEAD mm			
	150	300	600	900
ALL	0,9	1	1,08	1,2

Chart 3

INSTALLATION - Open system

Fig.1 shows a typical example of installation of ADCAMAT automatic pump. For further details and instructions please contact the factory or our distributor.

RECEIVER

A receiver is recommended to temporarily hold the liquid and prevent any flooding of the equipment, while the pump is in the pumping cycle. A length of pipe of large diameter or a tank can also be used.

Example:

- Condensate load 3500 Kg/h
- Filling head 150 mm
- Motive fluid Compressed air
- Available pressure 7 bar
- Vertical lift after pump 10 m
- Return piping pressure 1,2 bar
- Piping friction pressure drop Negligible

Correction for filling Head:

With 150 mm filling head the correction factor from chart 3 is 0,9. The corrected capacity is, 4040 Kg/h x 0,9 = 3636 kg/h

FLOW RATE IN Kg/h			
Installation with 300 mm filling head above the pump cover			
Motive Pressure bar	Total L/R bar	DN 50 x 50	DN 80 x 50
1	0,35	3128	4070
1,7		4625	5950
3,5		4810	6045
5		4905	6105
7		5070	6200
8,5	5200	6320	
10	5300	6410	
1,7	1	3170	4075
3,5		4350	5000
5		4800	6000
7		4900	6080
8,5		5120	6045
10	5150	6070	
2,5	1,5	3270	3870
3,5		3700	4525
5		4585	5660
7		4830	5795
8,5		4880	5905
10	4845	5825	
3,5	2	2800	2990
4		2900	3005
5		3440	4440
7		3870	4875
8,5		4200	4955
10	4305	4955	
4,5	4	2030	2715
5		2120	2800
7		2900	3215
8,5		2865	3295
10		3000	3365

Chart 1 (Based on liquid specific gravity 0,9 - 1,0)

Filling head is required from the bottom of receiver to top of pump cover.

Calculations:

Total back pressure: 1,2bar + (10mx0,0981) = 2,181bar
Pump choice, assuming steam as motive pressure at 7bar and a back pressure of 3bar, the DN80x50 pump has a capacity of 4575 kg/h according to Chart 1.

Correction for air as a motive fluid:

The % back pressure 2,181bar/7bar = 31%
The correction factor from chart 2, is 1,08
The corrected capacity is, 3636 kg/h x 1,08 = 3926,88Kg/h, and so a DN80x50 pump is still recommended.



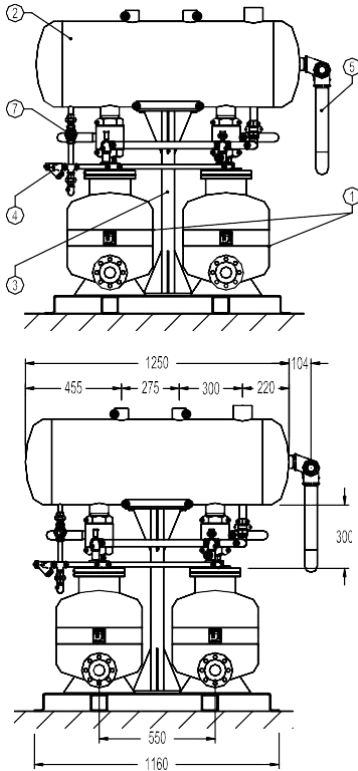
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**POPK-SD
POPK-ST**

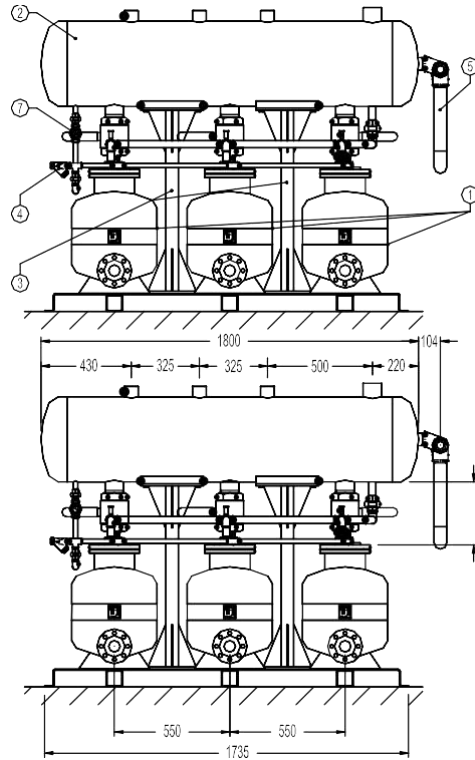
**PACKAGED ADCAMAT AUTOMATIC PUMP
SUITABLE FOR STEAM SUPPLY)
POPK-SD (Duplex) & POPK-ST (Triplex)**

DESCRIPTION

A POPK-SD (Duplex) and POPK-ST (Triplex) packaged units comprises two or three Adcamat pumps in parallel, a vented receiver and all auxiliary items, compactly mounted on a metal frame piped and ready for connection. For operating conditions and pumping capacity, please refer to information sheet IS 9.101 E and IS 9.105 E.

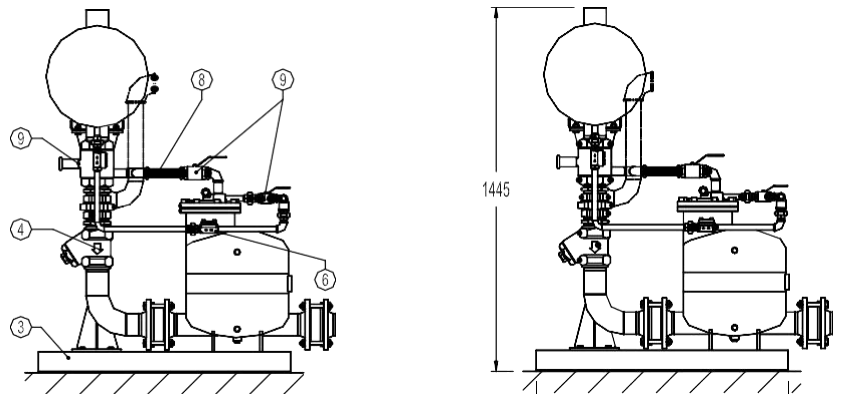


Duplex



Triplex

MATERIALS	
POS.	DESIGNATION
1	Pump
2	Receiver
3	Metal frame
4	IS 16 Strainer
5	Overflow
6	TH21 Steam trap
7	SW12 Sigh glass
8	Flexible hose
9	Ball valves



Side View

LIMITING CONDITIONS:

Receiver – Max. operating pressure: 0,5 bar

Pump: See IS 9.101 E

CONNECTIONS:

All connections are screwed except the pump connections which are flanged EN 1092-1 PN16.

Threaded flanges available on request.