

GESTRA Steam Systems

Product Range C2

Condensate Recovery and Return Systems SDR-I

SDR-I

Description

Condensate tanks are designed to collect the condensate coming from steam users or flash vessels. The condensate is then pumped into the feedwater tank by a level-controlled pump, in most cases via a deaerator. The pump pressure can be adjusted to the pump characteristic with the aid of the isolating slide valve (item 3.3) and the pressure gauge (item 3.4).

Pressure/Temperature Rating

Max. service pressure	[barg]	0.1
	[psig]	1.45
Max. temperature	[°C]	100
	[°F]	212

Materials

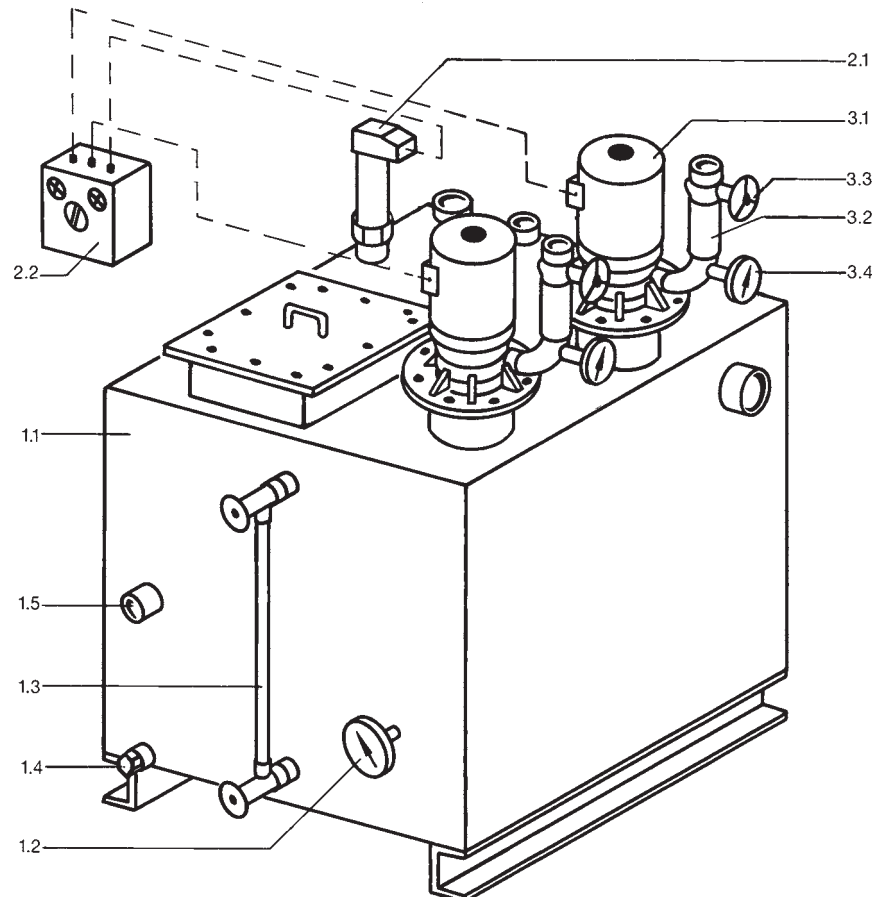
Steel - DIN reference St 37-2,
stainless steel X6CrNiTi18-10 (1.4541),
austenitic stainless steel X6CrNiMoTi17-12-2 (1.4571).

Capacity Range

The size of the condensate tank depends on the condensate flowrate. The standard tanks (see table "Dimensions and Weights") are designed for small and medium-sized installations holding up to 2500 litres and for max. condensate flowrates of 10 t/h. For larger condensate flowrates special tanks are available.

Supply Options

- 1 Tank without equipment
- 2 Tank with equipment, but supplied separately
- 3 Tank with equipment assembled and interconnected



Equipment

1 Condensate tank and associated equipment

- 1.1 GESTRA condensate tank type SDR
- 1.2 Bimetal dial thermometer
- 1.3 Valve-type water level indicator 16/14
- 1.4 Drain plug
- 1.5 Float valve for make-up water
(on request)

2 Level control equipment

- 2.1 GESTRA level electrode NRG/NRGS
- 2.2 GESTRA Pump control unit NRSP

3 Pump unit

- 3.1 Condensate pump
- 3.2 Screwed non-return valve
- 3.3 Screwed slide valve
- 3.4 Pressure gauge assembly ¼" BSP

Construction

Flash-steam tight, unpressurized tank on sectional iron supports. The tank is of all welded construction from 5 mm thick steel plate (St 37-2) and the cover is of welded 8 mm thick steel plate. The wall thickness of tanks made of steel grade 1.4541 and 1.4571 is 4 mm. Bracing elements and external stiffeners of steel channel as well as bolted handhole or manhole are provided where necessary and sized on the basis of the tank capacity. Inspection holes and all screwed connections are 100 mm long/high.

On request the tanks can also be fitted with heating or cooling coils.

Tanks made of steel, V2A or V4A also available on request.

Anti-corrosion protection for condensate tanks

Standard surface treatment

Inside: untreated, outside: anti-corrosion coating on untreated surface

Plastic coating type "A":

Inside: plastic coating, outside: untreated

Five layers of thermosetting plastic, overall thickness of coating: 250 µm.

Pre-treatment of the tank prior to plastic coating in accordance with VDI 2532 or DIN 28051. The surface treatment is effected by means of sandblasting according to DIN 55928, standard purity grade SA 3.

The coating material is applied in five individual layers, each of which has been pre-hardened at 145 °C. Then a preliminary examination takes place and the whole system is finally cured at 220 °C.

Afterwards the thickness and pores of the coating are examined as specified by VDI 2539.

The produced plastic coating features a permanent temperature resistance of 130 °C, is odourless, tasteless and chemically neutral as well as unaffected by diffusing steam.

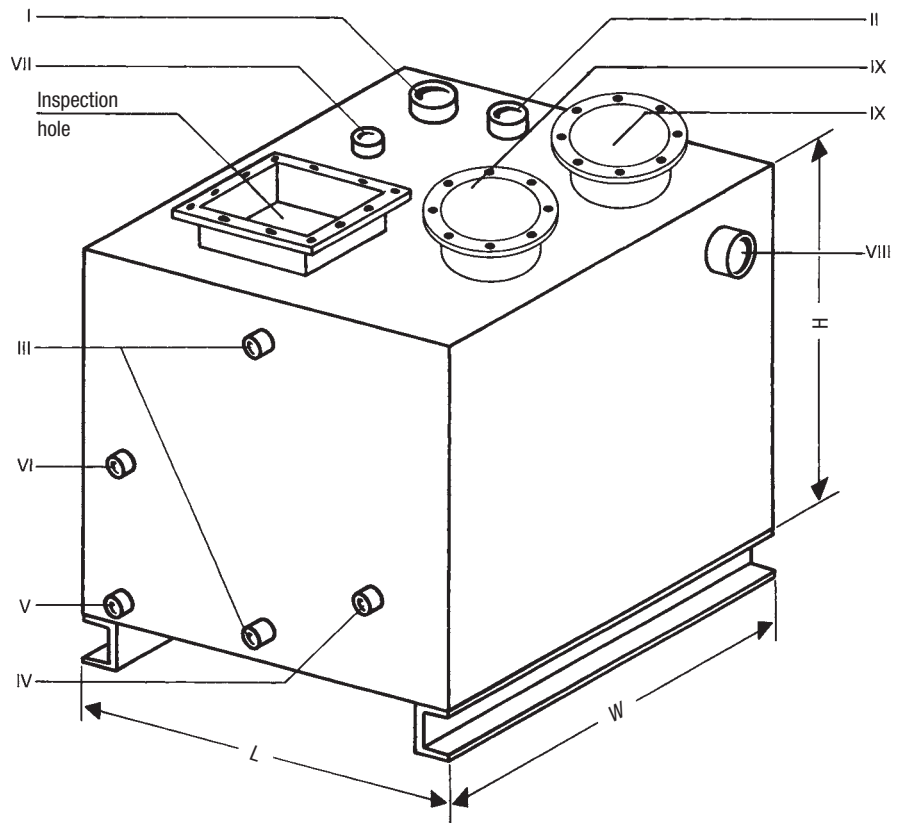
The surface finish is smooth, dull and of a reddish-brown colour.

Plastic coating type "B":

Inside: plastic coating, outside: untreated

Thermally cured thermoset on the basis of modified tar epoxy resin with a layer thickness of 500 µm. The permanent temperature resistance for liquids is 95 °C.

The pre-treatment of the tank and the surface as well as the examination of the coating are carried out as described under system "A".



Inlet/outlet connections

- I Condensate inlet
- II Flash-steam outlet (vent)
- III Water level indicator
- IV Thermometer
- V Drain
- VI Make-up feed (on request)
- VII Level electrode
- VIII Overflow
- IX Pump

Dimensions and Weights

Tank size			Size 1	Size 2	Size 3	Size 4	Size 5	Size 6	Size 7
for max. condensate flowrate	[m ³ /h]		1	2	3	4	6	8	10
Capacity	[l]		340	550	750	1000	1500	2000	2500
Admissible service pressure	[barg]		0.1	0.1	0.1	0.1	0.1	0.1	0.1
	[psig]		1.45	1.45	1.45	1.45	1.45	1.45	1.45
Dimensions [mm]	Length	L	610	760	850	1000	1200	1450	1600
	Width	W	610	760	900	1000	1250	1450	1600
	Height	H	1000	1000	1000	1000	1000	1000	1000
	Approx. overall height		1500	1500	1600	1600	1600	1600	1600
Connections [“BSP”]	I	Condensate inlet	1	1¼	1½	2	3	3	3
	II	Vent	2	3	4	4	4	4	4
	III	Water level indicator	½	½	½	½	½	½	½
	IV	Thermometer	½	½	½	½	½	½	½
	V	Drain	½	½	½	½	½	½	½
	VI	Make-up water	½	½	½	¾	¾	¾	¾
	VII	Level electrode	1	1	1	1	1	1	1
	VIII	Overflow	1	1¼	1½	2	3	3	3
	IX	Pump							
Weight	approx. [kg]		155	205	235	280	370	480	550

GESTRA Condensate Recovery and Return Systems SDR with Pumps

Vertical-type high-pressure centrifugal pumps types SDR 03 and SDR 08 installed inside the condensate tank.

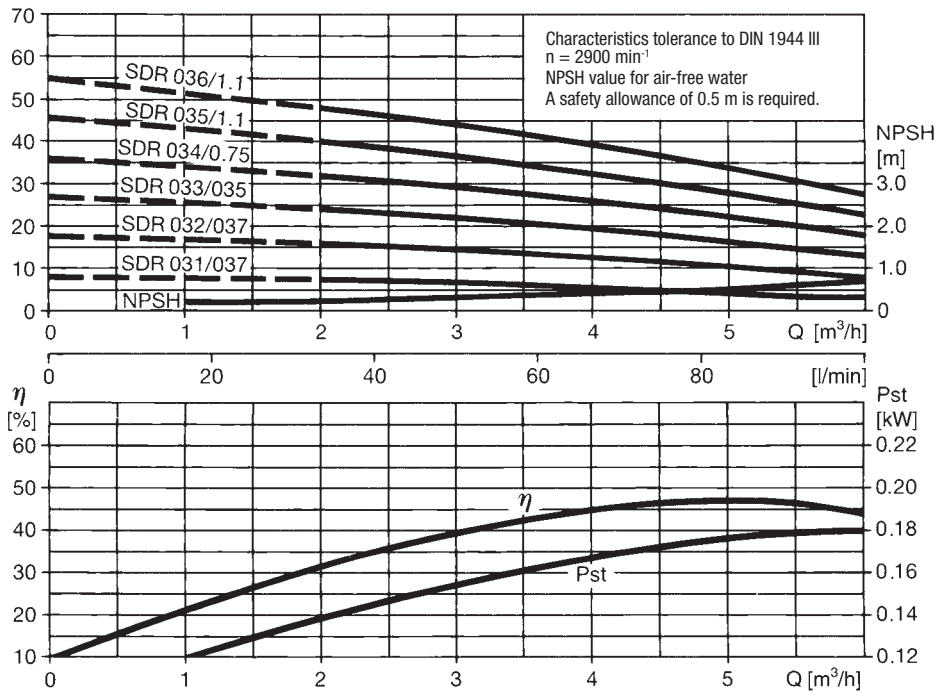
Pump body made of cast iron; shaft, internals and impellers made of CrNi steel. Mechanical seal with lapped metal carbide rings ensures superior shaft sealing.

Discharge branch: SDR 03: 1¼"
SDR 08: 2"

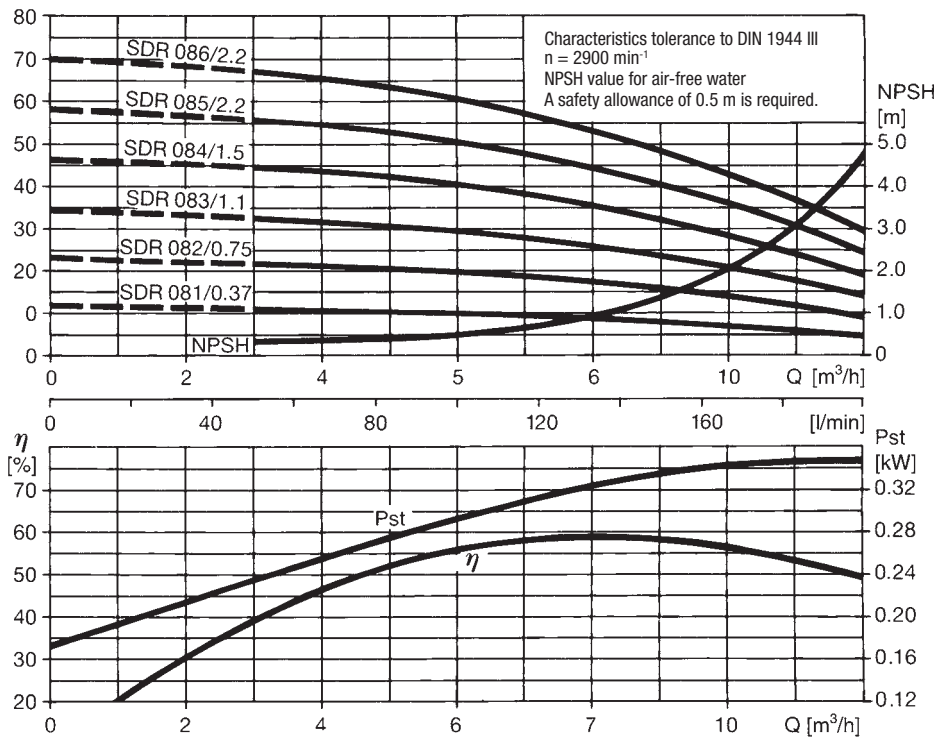
Standard motor for low-noise operation, type V 18, 380 V / Y up to 3 kW.

Direction of rotation (from the side of the motor): anticlockwise

Used for condensate applications up to 100 °C.



Series SDR 03
Speed: 2900 r.p.m.



Series SDR 08
Speed: 2900 r.p.m.

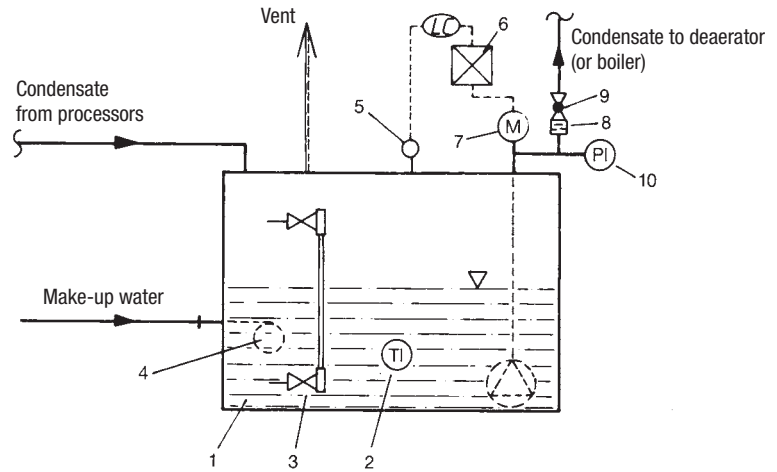
Condensate Recovery and Return Systems SDR-I

GESTRA Condensate Recovery and Return Systems

consist of:

- | | | |
|------|----|----------------------------------|
| Item | 1 | Condensate tank |
| | 2 | Thermometer |
| | 3 | Valve-type water level indicator |
| | 4 | Float valve |
| | 5 | Level electrode NRG/NRGS |
| | 6 | Pump control unit NRSP |
| | 7 | Condensate pump CP |
| | 8 | Screwed non-return valve MB |
| | 9 | Screwed slide valve |
| | 10 | Pressure gauge assembly |

GESTRA condensate recovery and return system consisting of condensate tank with standard equipment, condensate pump(s) with pump equipment and pump control. Protection against pump running dry. Pump change-over available on request.



Condensate tank with internal pump
(For condensate tanks with external pumps see data sheet SDR-A).

When ordering please state

Condensate flowrate and temperature, discharge head of condensate pump(s), type of pump control.

Supply in accordance with our general terms of business.

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