

# spirax sarco

TI-P089-37  
ST Issue 4

## SPS Series Stainless Steel Condensate Recovery Units



### Description

The Spirax Sarco SPS series condensate recovery units are designed to handle hot condensate, which is commonly returned for use as boiler feedwater. The standard SPS series can handle quantities up to 20 000 kg/h, cascade control at 98°C with varying pump delivery heads. For higher duties please contact Spirax Sarco. The package comprises:- receiver, frame, pumps, valves, level controls and prewired control panel.

#### Receiver

Receivers are manufactured from 304 stainless steel. All sizes are fitted with adequately sized vent, overflow, drain and inlet connections flanged to PN16 or screwed BSP. Vessels are leak tested to 0.5 bar. A water level gauge is available as an optional extra.

#### Pumps

Pumps are constructed from fabricated 304/316 stainless steel and designed for operation under conditions of low NPSH to handle hot condensate with the minimum of flooded suction. They are directly coupled to TEFC motors having class F insulation (class B temperature rise) motor enclosure rating IP54 minimum.

#### Control

Receivers are fitted with solid state level control's which provides on/off cascade pump operation.

The control panel incorporates electrical equipment suitable for 400 volt, 3 phase, 50 Hz, 4 wire supply (230 volt single phase to special order). Control equipment is installed in a pre-wired IP54 rated metal enclosure. Connections for BMS interface are provided to monitor pump run or tripped condition.

#### Pump fitting

The motor and pumps are mounted under the receiver with over size suction inlet pipework and isolation valve. The pump discharge outlet is fitted with a non return valve.

### Standards

This product fully complies with the requirements of the European Machinery Directive 98/37/EC, European Low Voltage Directive 2006/95/EC and European Electromagnetic Compatibility Devices Directive 2004/108/EC. The receiver is not a pressurised vessel and is designed to operate at atmospheric pressure and therefore falls outside the scope of the European Pressure Equipment Directive 97/23/EC.

### Certification

A declaration of conformity to EN 10204 2.1 is available on request. **Note:** All certification / inspection requirements must be stated at the time of order placement.

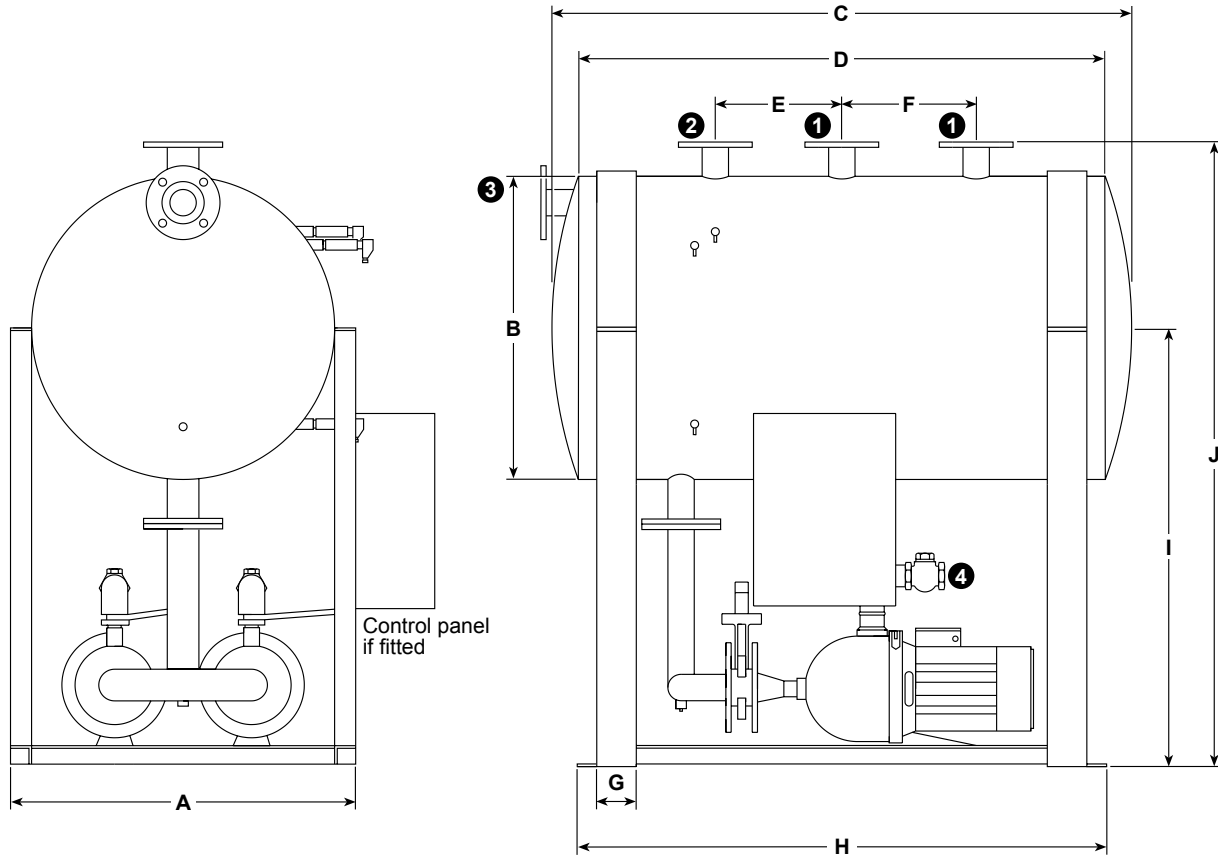
### Materials

Part	Material
Receiver	304 stainless steel
Pump casing	304/316 stainless steel
Pump impeller	304/316 stainless steel
Suction pipework	304 stainless steel
Isolation valves	Brass ball type or EPDM lined butterfly valves
Gauge glass	Brass valves, glass sight glass
Discharge pipework	304 stainless steel
Check valve	Bronze
Motor casing	304 stainless steel
Panel	Mild steel with polyester powder paint finish
Cable covering	Adaptaflex Pafs 16

**Dimensions (approximate) in mm**

Model	A	B	C	D	E	F	G	H	I	J
SPS150	563	475	800	750	175	175	80	670	925	1218
SPS300	690	600	1090	1000	250	250	80	1020	925	1305
SPS500	835	725	1400	1250	300	300	100	1250	1000	1540

Please note: For inlet and outlet connections and unit weights see the Table below.



**Inlet and outlet connections and weights (approximate) in kg**

Model	Motor kW	Full-load current A	Connections				Weight (kg)	
			1 Vessel inlet	2 Vent	3 Overflow	4 Discharge outlet	Dry	Wet
SPS150-202	0.55	1.7	DN40	DN50	DN50	1" BSP	195	325
SPS150-203	0.55	1.7	DN40	DN50	DN50	1" BSP	195	325
SPS150-204	0.55	1.7	DN40	DN50	DN50	1" BSP	197	327
SPS150-205	0.75	2.0	DN40	DN50	DN50	1" BSP	200	330
SPS150-206	1.10	2.8	DN40	DN50	DN50	1¼" BSP	205	335
SPS300-402	0.55	1.7	DN50	DN65	*DN65	1¼" BSP	230	515
SPS300-403	0.75	2.0	DN50	DN65	*DN65	1¼" BSP	230	515
SPS300-404	0.75	2.0	DN50	DN65	*DN65	1¼" BSP	235	520
SPS300-405	1.10	2.8	DN50	DN65	*DN65	1¼" BSP	237	522
SPS300-406	1.50	3.5	DN50	DN65	*DN65	1¼" BSP	240	525
SPS500-802	0.75	2.0	DN50	DN65	DN65	1½" BSP	298	768
SPS500-803	1.10	2.8	DN50	DN65	DN65	1½" BSP	301	771
SPS500-804	1.50	3.5	DN50	DN65	DN65	1½" BSP	305	775
SPS500-805	1.85	4.7	DN50	DN65	DN65	1½" BSP	311	781

\* DN50 when an extra high level probe is fitted.

## Sizing and selection - Cascade pump duties

### Information required for sizing and selection:

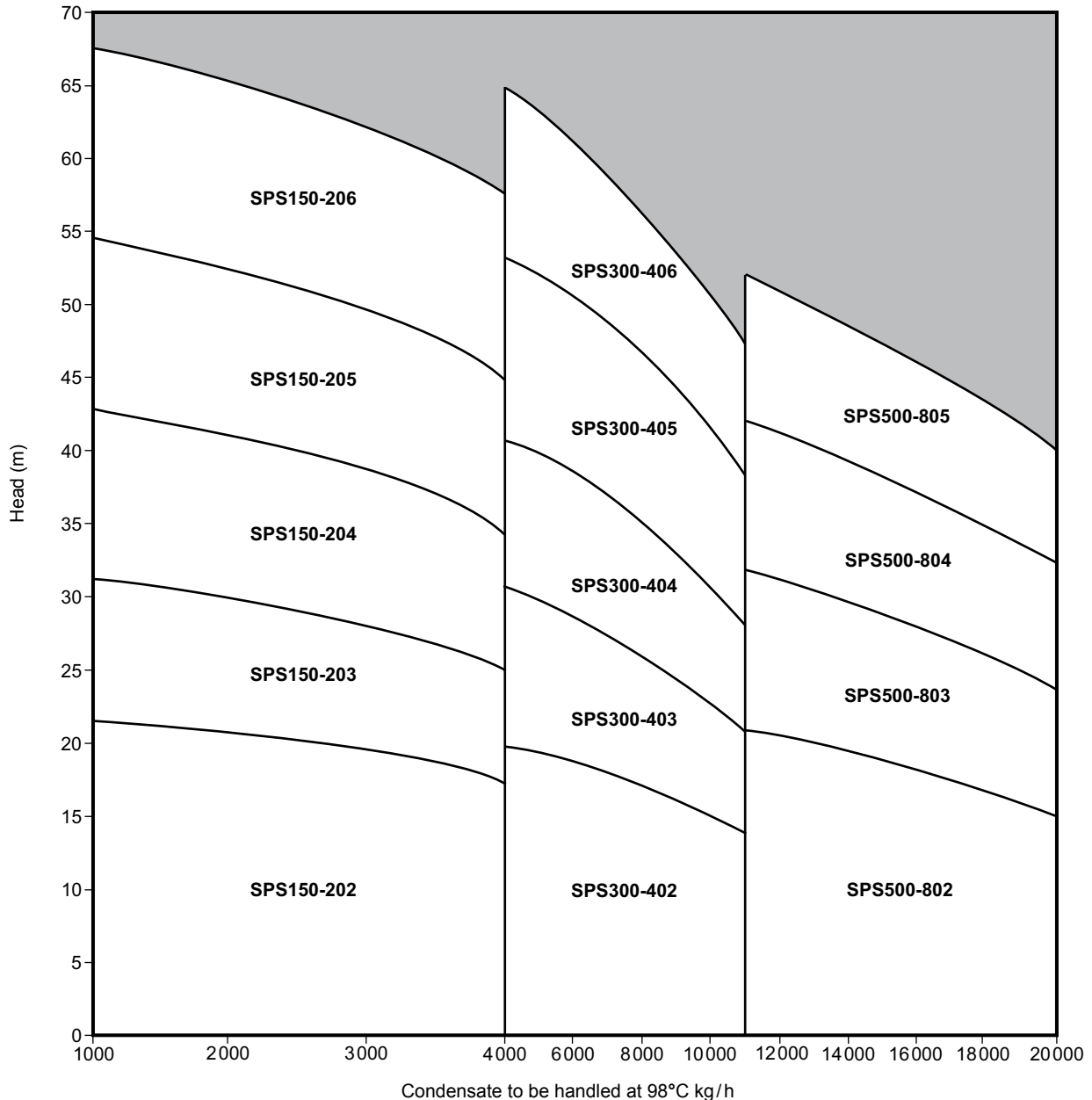
1. Average rate at which condensate returns to the receiver in kg/h.
2. Total pumping delivery head, including lift and friction loss in pipe and fittings.

### Sizing and selection

For correct selection plot the condensate return rate to be handled against the total head required (static + friction) and select the appropriate unit. If selection is borderline then select the next largest unit.

For duty/standby selections the chart capacities should be halved.

**Selection example:** The condensate return rate is known to be 7000 kg/h and the total head required is 25 m. Draw a horizontal line from the known 25 m head required until it crosses the vertical line which represents the known 7000 kg/h condensate which needs to be handled. For this example the selection would be an SPS300-403 condensate recovery unit.



### Typical specification

The condensate recovery unit shall be a Spirax Sarco compact SPS condensate recovery unit type SPS300-403 designed and built to handle 7000 kg/h of condensate against a required head of 25 m.

### How to order

**Example:** 1 off SPS300-403 condensate recovery unit.