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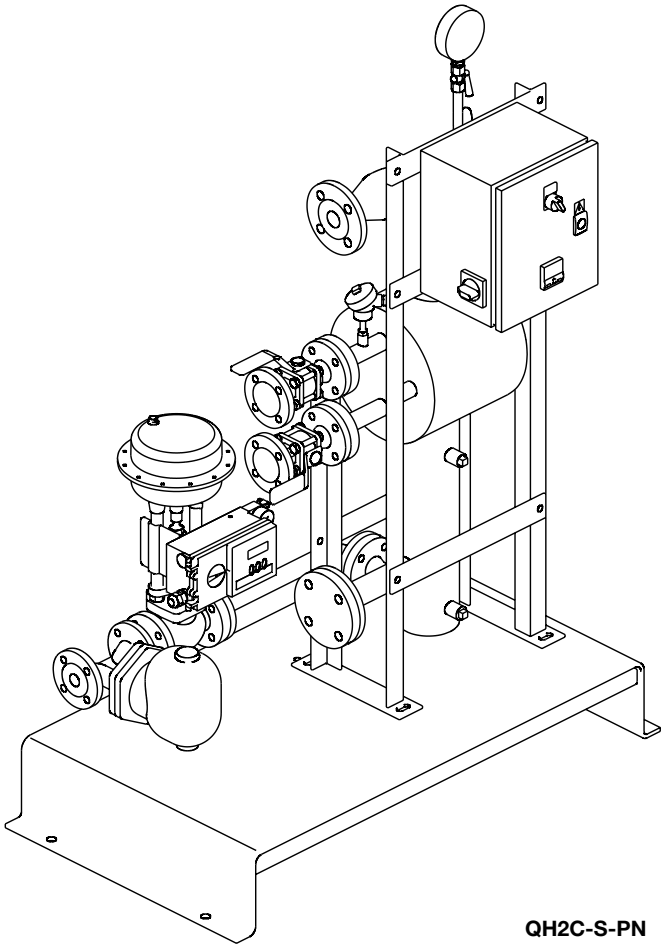
QuickHeat™ Condensate Control Packaged Heat Exchanger Systems



QH2C-S-PN

QuickHeat™ system

The packaged Plate & Shell® heat exchanger system uses steam to provide accurate heating of low temperature hot water, domestic hot water or hot water for process. Systems can be customized for any heating duty from 50 kW to approximately 5 MW. Systems are supplied fully assembled and pressure tested ready for installation.

Principal features:

- Hot water for heating or for process.
- Stable temperature control for stable and relatively large secondary load.
- Can be designed for sub-cooling condensate to provide greater efficiency.
- Spirax Sarco condensate control and condensate products.
- Fully welded Vahterus Plate & Shell® heat exchanger.
- Fully assembled skid-mounted system.
- Designs tailored to suit the application.

Condensate control

The control valve, which is installed on the exit of the primary side of the heat exchanger, controls the level of condensate within the heat exchanger. Condensate flow rate at exit of the primary side is modulated to exactly match the required heat demand. The control valve can be either electrically or pneumatically actuated. The system incorporates an electronic positioner and Pt100 temperature sensor to provide precise control.

Heat exchanger

A fully welded Plate & Shell® heat exchanger with stainless steel plates, and steel shell for efficient heat transfer within a very compact size. The heat exchanger is designed to extract heat from the condensate for maximum efficiency and to avoid flash steam wastage.

Local regulations may restrict the use of this product to below the conditions quoted.
In the interests of development and improvement of the product, we reserve the right to change the specification without notice.

Pressure / temperature limits

Pipework design condition	PN16
Maximum saturated steam supply pressure	16 bar g
Maximum secondary pressure	16 bar g
Maximum secondary temperature	110°C

Materials

Steam and condensate pipework	Carbon steel
Control valve	Cast iron
Trap	SG iron
Secondary pipework	Carbon steel

Pipework and frame

All pipework is sized correctly for the application and is fabricated using modern welding techniques with approved welders and weld procedures. Flanged products are used where possible for reliability and easy maintenance. The complete system is delivered pre-assembled on a compact frame and base plate suitable for moving into position with a forklift truck.

Electrics and pneumatics

All control equipment is pre-wired and piped ready for connection to the air supply and power source.

Electrical supply	Power supply: 230 Vac / 50 Hz
	Supply fuse: 5A (T)
Actuators	24 Vac / 50 Hz
Air supply	4 to 6 bar g

Scale formation

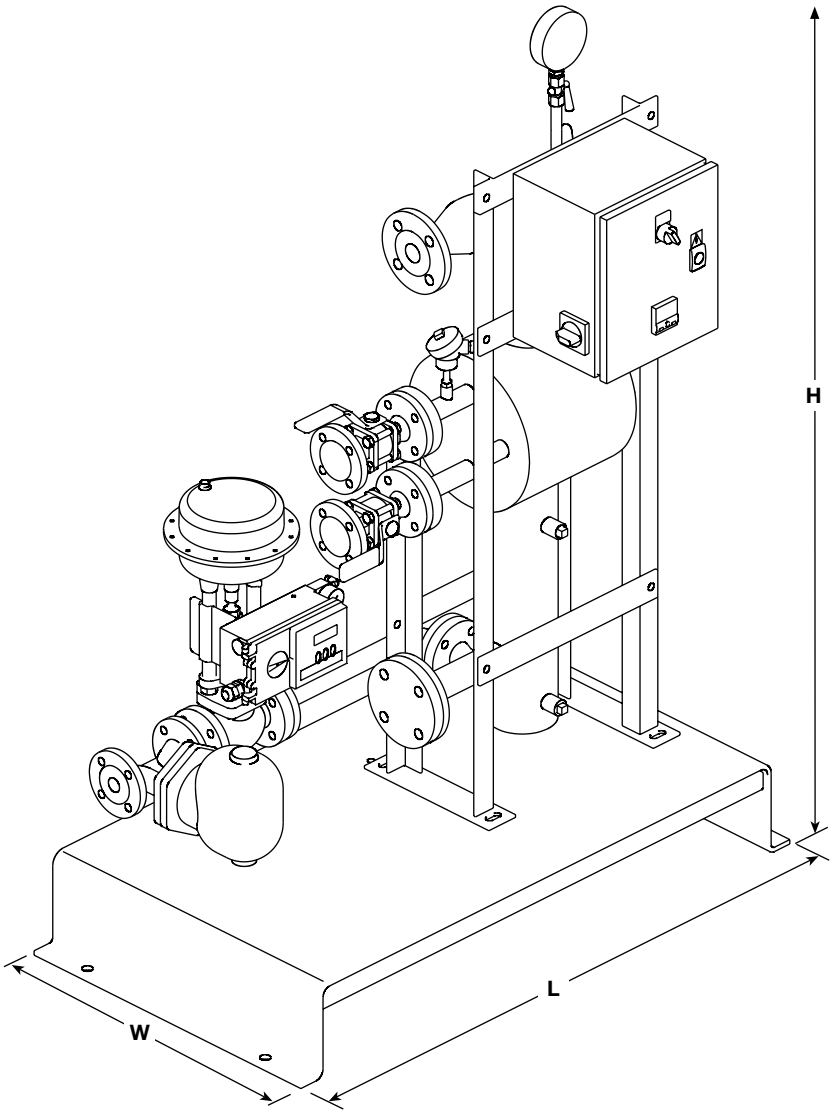
For open systems where the water is being used for washing etc. there is continuous make-up and there may be a danger of scale formation in the heat exchanger. This depends mainly on the water quality and expert advice from a water treatment specialist should be sought. By reducing the steam pressure and by careful design of the system the heat exchange surface temperature can be kept low to minimise scale formation. If the water is scale forming, regular chemical cleaning may be considered.

Dimensions / weights (approximate) in mm and kg

The information is given here as a guide only. Every packaged heat exchanger system is designed to suit the application. Therefore dimensions, weights and pipe connections are subject to change.

Heat Load (kW)		Type	Standard piping configuration (S)	Valve actuation	Maximum dimensions			Piping connections (DN)			Weight (kg)	
Min.	Max.				H	L	W	Steam	Condensate	Water	Min.	Max.
50	300	QH2C	S	EL	1565	1220	695	32	25	25	220	246
				PN	1565	1220	695					
300	1300	QH3C		EL	1515	1190	610	40	40	50	230	545
				PN	1515	1190	685					
1300	3300	QH4C		EL	1625	1460	725	80	50	80	327	865
				PN	1625	1460	800					
3300	5000	QH5C		EL	1815	1790	1075	100	80	100	720	1980
				PN	1815	1790	1075					

The table above has been based upon a steam pressure upstream of the control valve of 5 bar g.



Designation with selection example:

QuickHeat™	QH = Packaged heat exchanger system	**QH**
Heat load	2C = 50 to 300 kW 3C = 300 to 1300 kW 4C = 1300 to 3300 kW 5C = 3300 to 5000 kW	**2C**
Piping configuration	S = Standard	**S**
Valve actuation	PN = Pneumatic EL = Electric	**PN**

QuickHeat™ selection example using the following known data:
- Heat load of 200 kW.
- Piping configuration to be standard.
- Pneumatic control valve.

The nomenclature for the above selection **QH** **2C** - **S** - **PN** would be displayed as follows:

QH2C - S - PN

Typical specification

The heating system shall be a Spirax Sarco QuickHeat™ packaged heat exchanger system with fully welded Plate & Shell® heat exchanger. The system shall come complete with pneumatic or electric controls, heat exchanger and steam trap. All items shall be pre-assembled and mounted on a compact frame.

How to order

All systems are designed for the required heat load with control systems to suit the application. The best way of ensuring that we have all the necessary information for quotation and manufacture is to complete our enquiry data sheet. Copies can be supplied on request. Any special requirements or access limitations should be detailed.