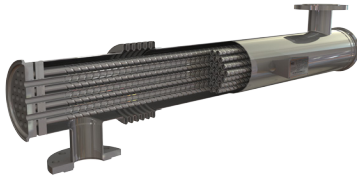


DOUBLE TUBEPLATE PHARMACEUTICAL HEAT EXCHANGERS

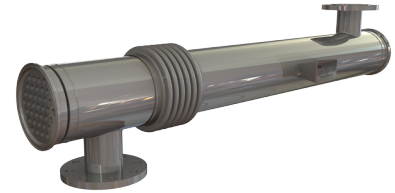
HRS SP04 SERIES



The HRS SP Series is a multitube shell and tube heat exchanger designed with the added security of a double tubeplate, providing leak detection to avoid cross contamination between the service and product fluids.

The HRS SP series is perfect for pharmaceutical applications.

Using our corrugated tube technology, heat transfer and efficiency are increased over standard smooth tube heat exchangers. In addition, potential fouling is minimized.



TECHNICAL DATA

APPLICATIONS

Water for Injection (WFI)
Purified Water

SURFACE FINISH

External: Polished
Internal: <0.4μ
Electropolished version available

STANDARD MATERIALS OF CONSTRUCTION

Service Side: AISI 304/316L Stainless Steel
Product Side: AISI 316L Stainless Steel
Other material options available

STANDARD DESIGN CONDITIONS

Service Side: 147 PSI/365°F
Product Side: 147 PSI/365°F

STANDARD CONNECTIONS

Service Side: Clamp
Product Side: Clamp
All flange & clamp types available

FEATURES

- Corrugated tubes for increased heat transfer
- Bellows are fitted to absorb differential expansion between shell and inner tubes
- Multiple units can be interconnected and mounted in a frame
- Multipass version available

RANGE

MODELS	LENGTHS (ft)	SURFACE AREA (ft ²)	SERVICE SIDE CONNECTION	PRODUCT SIDE CONNECTION	MAX FLOW SHELL (gpm)	MAX FLOW TUBE (gpm)	VOLUME SHELLSIDE (gal)	VOLUME TUBESIDE (gal)
SP04 4 64/17	2 - 20	14	1.5"	2.5"	75	26	3	1
SP04 7 76/17	2 - 20	25	1.5"	3"	75	44	4	2
SP04 13 104/17	2 - 20	46	2.5"	4"	176	88	8	3
SP04 21 129/17	2 - 20	73	3"	5"	229	141	12	5
SP04 31 154/17	2 - 20	108	3"	6"	229	220	15	8
SP04 37 168/17	2 - 20	127	3"	6"	229	264	19	9

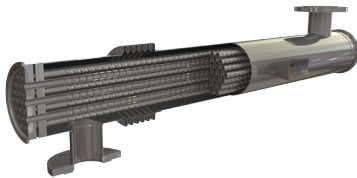
By standard the following lengths can be supplied: 2/3/5/6/10/20 ft. The surface area and volumes shown are for 20ft length models.

DESIGN CODE AND COMPLIANCE

PD 5500, PED 2014/68/EU, ASME | TR CU 032, DOSH Compliant

DOUBLE TUBEPLATE PHARMACEUTICAL HEAT EXCHANGERS

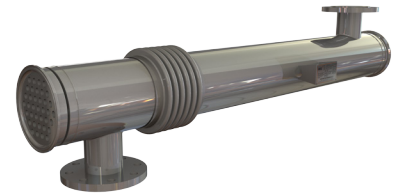
HRS SP05 SERIES



The HRS SP Series is a multitube shell and tube heat exchanger designed with the added security of a double tubeplate, providing leak detection to avoid cross contamination between the service and product fluids.

The HRS SP series is perfect for pharmaceutical applications.

Using our corrugated tube technology, heat transfer and efficiency are increased over standard smooth tube heat exchangers. In addition, potential fouling is minimized.



TECHNICAL DATA

APPLICATIONS

Water for Injection (WFI)
Purified Water

SURFACE FINISH

External: Polished
Internal: <math><0.5\mu</math>
Electropolished version available

STANDARD MATERIALS OF CONSTRUCTION

Service Side: AISI 304/316L Stainless Steel
Product Side: AISI 316L Stainless Steel
Other material options available

STANDARD DESIGN CONDITIONS

Service Side: 147 PSI/365°F
Product Side: 147 PSI/365°F

STANDARD CONNECTIONS

Service Side: Clamp
Product Side: Clamp
All flange & clamp types available

FEATURES

- Corrugated tubes for increased heat transfer
- Bellows are fitted to absorb differential expansion between shell and inner tubes
- Multiple units can be interconnected and mounted in a frame
- Multipass version available

RANGE

MODELS	LENGTHS (ft)	SURFACE AREA (ft ²)	SERVICE SIDE CONNECTION	PRODUCT SIDE CONNECTION	MAX FLOW SHELL (gpm)	MAX FLOW TUBE (gpm)	VOLUME SHELLSIDE (gal)	VOLUME TUBESIDE (gal)
SP05 4 64/19	2 - 20	15	1.5"	2.5"	66	31	2.7	1.2
SP05 7 76/19	2 - 20	27	1.5"	3"	66	53	3.5	2
SP05 12 104/19	2 - 20	46	2.5"	4"	176	88	6.9	3.6
SP05 19 129/19	2 - 20	73	3"	5"	229	145	10.8	5.8
SP05 27 154/19	2 - 20	104	3"	6"	229	220	14.6	8.3
SP05 31 168/19	2 - 20	118	3"	6"	229	273	18.8	9.4

By standard the following lengths can be supplied: 2/3/5/6/10/20 ft. The surface area and volumes shown are for 20ft length models.

DESIGN CODE AND COMPLIANCE

PD 5500, PED 2014/68/EU, ASME | TR CU 032, DOSH Compliant