

SHELL AND TUBE HEAT EXCHANGERS

Shell-and-Tube Heat Exchangers 30-Series Mid-Size (4 inch shell)

- High thermal efficiency
- Unmatched corrosion resistance
- Unique seal system
- FEP, PFA or Q series tubing

Niche 30-Series Shell-and-Tube Heat Exchangers are single pass, typically counter current flow designs incorporating flexible fluoropolymer tube bundles joined together to form integral honeycomb tube sheets. Units are available with FEP, PFA or Q-Series tubing, all with fluoropolymer-lined heads.

Specifications

Model Number	105	220	440
Tube Outside Diameter	.250" (6.35mm)	.175" (4.45mm)	.125" (3.18mm)
Tube Wall Thickness	.025" (.635mm)	.017" (.44mm)	.012" (.318mm)
Typical Heat Transfer Coefficient (U) FEP & PFA	25-60 BTU/Hr.-ft. ² -°F (141-341 watts/m ² -°K)		
Typical Heat Transfer Coefficient (U) Q	35-100 BTU/Hr.-ft. ² -°F (199-567 watts/m ² -°K)		
Shell Diameter	4" (101.6 mm)		
Shell Construction †	Carbon Steel, unlined or lined with Fluoropolymer		
Nominal Lengths	3-11 ft. (.9-3.35 m)		
Area for Heat Transfer	19.4-158.3 ft. ² (1.8-14.7 m ²)		
Bundle Configuration	SS Basket or Cross Flow Baffle*		

Model Number

EXAMPLE: Q 105 CT 30 8 V E	
Q	TUBING P = PFA Q = PFA/Graphite (blank) = FEP
105	MODEL NUMBER
CT	SHELL CT = Carbon steel shell ST = Stainless steel shell† LT = Fluoropolymer lined†
M	END CONNECTIONS M = Metric (blank) = ANSI
30	GENERATION
8	NOMINAL LENGTH (ft.)
V	O-RING SEAL MATERIAL V = VITON® E = Ethylene propylene T = Fluoropolymer encapsulated VITON® K = KALREZ®
E	ENVELOPE GASKET MATERIAL V = VITON® E = Ethylene propylene

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* Special order bundle configuration.

† Typical shell construction. Special material such as PP, CPVC, stainless steel or other metal alloys, and fiberglass available by special order. Custom configurations also available.

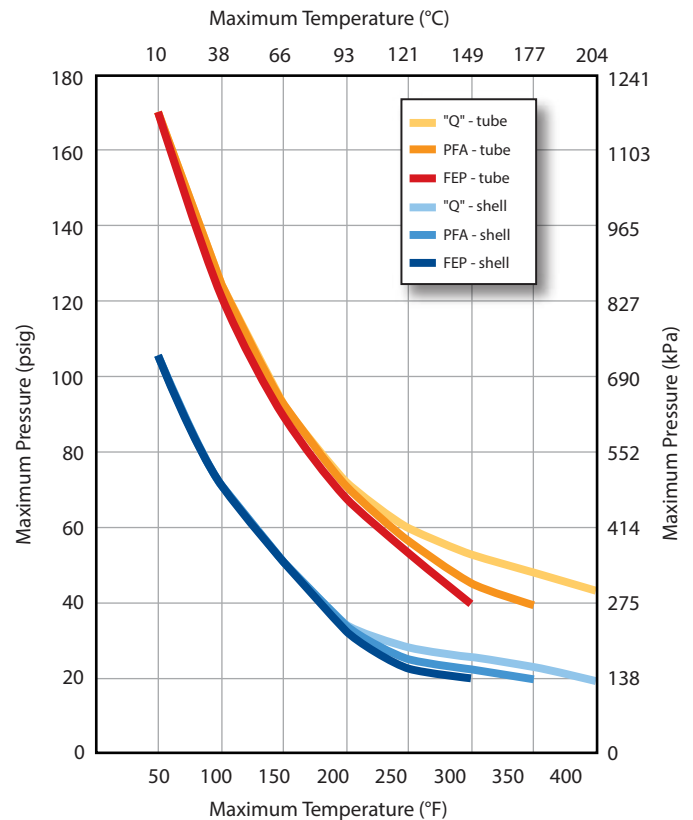


30-Series Mid-Size
4 Inch Shell-and-Tube
Heat Exchangers

The tube bundle is easily removable for maintenance. Carbon steel shells are most commonly used; a wide variety of other materials are available on request. Metal heat exchanger shells are ASME coded and equipped with TEMA/ANSI end nozzle connections.

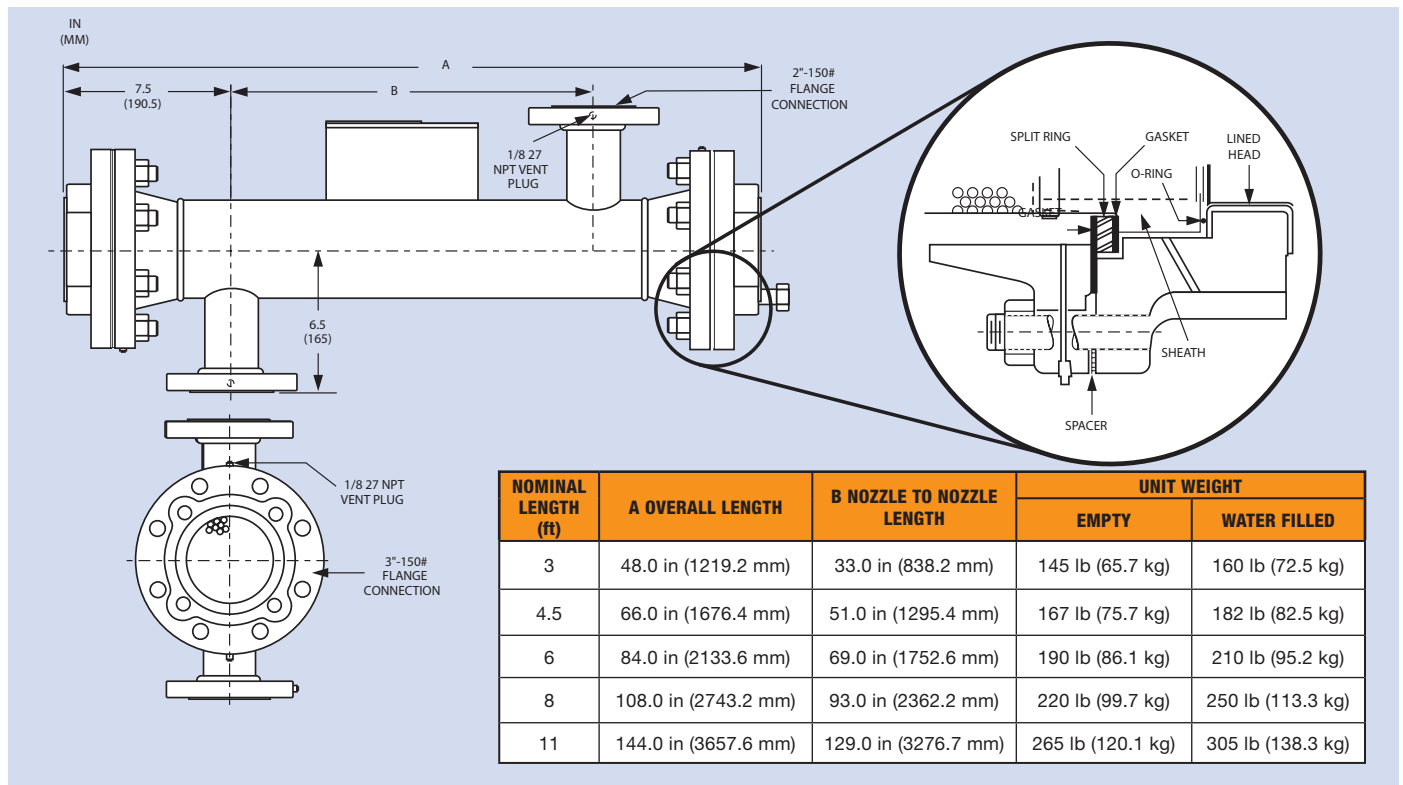
Contact Niche to discuss your specific needs.

Operation Limits



NOTE: The curves on the chart are for the fluoropolymer bundles only.

Dimensions - 30 Series - 4" Shell



Heat Transfer Area

NOMINAL LENGTH (t)	MODEL 105		MODEL 220		MODEL 440	
	FT ²	M ²	FT ²	M ²	FT ²	M ²
3	19.4	1.8	30.2	2.8	43.0	4.0
4.5	29	2.7	45.3	4.2	64.8	6.0
6	38.7	3.6	60.5	5.6	86.4	8.0
8	51.6	4.8	80.6	7.5	115.2	10.7
11	71	6.6	110.8	10.3	158.3	14.7

FEP and PFA Series coils are considered inert to corrosive chemicals. Contact an Niche representative for chemical resistance data on your specific application. Q-Series heat exchangers are inert to most corrosive chemicals except for certain concentrated hot, oxidizing acids.

Niche FLUOROPOLYMER PRODUCTS

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Fluoropolymer resins are generally considered inert to most chemicals. Under certain conditions of pressure and temperature, or combinations of chemicals, fluoropolymer tubing should not be used. Please contact Niche for discussion of your specific process to be certain that our products are appropriate for your intended use.

Adequate ventilation should be used where fluoropolymers are heated during tube repairs. Flu-like symptoms occur from exposure to vapors evolved from fluoropolymers at very high temperatures, up to 800F or from smoking materials that contain particles of fluoropolymers. Symptoms pass within 48 hours and are only adverse effects observed in humans to date. Unheated fluoropolymers are essentially inert and are nonirritating to the skin.

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