

**FLUOROPOLYMER HEAT EXCHANGERS AND TUBING**

# Shell-and-Tube Heat Exchangers 30-Series Models 218, 525, and 1000

## FEATURES

- High thermal efficiency
- Corrosion-resistant construction
- Unique seal system
- FEP or Q-Series tubing

## DESCRIPTION

AMETEK Shell-and-Tube Heat Exchangers are single pass, typically countercurrent flow units designed for heating, cooling and condensing applications. AMETEK heat exchangers are constructed of nonstick fluorocarbon resins that are inert to virtually all industrial chemicals. Units incorporate flexible fluoropolymer tube bundles joined together to form integral honeycomb tube sheets, and are available with FEP or Q-Series tubing with PTFE-lined heads. Standard shell construction is carbon steel (CT), with other shell materials available on request. AMETEK heat exchangers are ASME coded and equipped with TEMA/ANSI end nozzle connections.

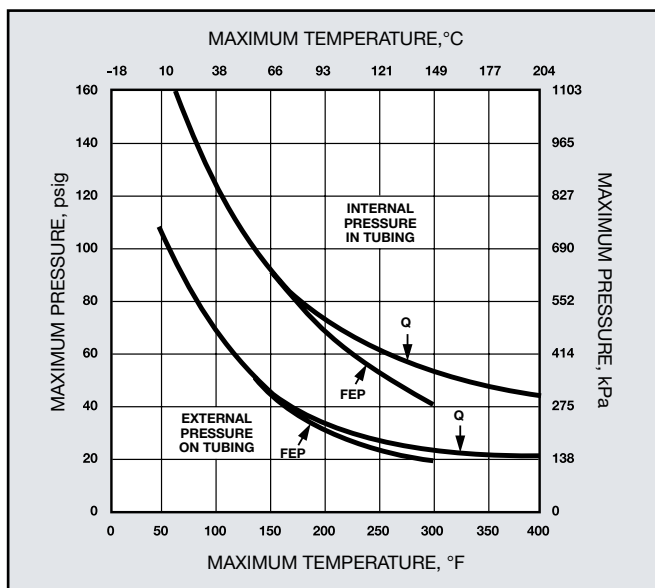


**30-SERIES SHELL-AND-TUBE**

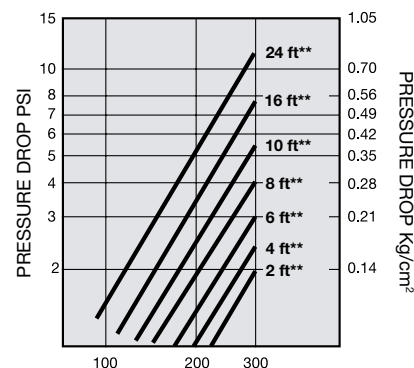
## PRODUCT DESCRIPTION

Model Number	218	525	1000
Tube Outside Diameter	0.375 in. (9.52 mm)	0.25 in. (6.35 mm)	0.175 in. (4.45 mm)
Tube Wall Thickness	0.037 in. (0.953 mm)	0.025 in. (0.635 mm)	0.0175 in. (0.445 mm)
Shell Diameter	10 in. (254 mm)		
Shell Construction	Carbon steel, unlined or lined with TEFLON®		
Typical Heat Transfer Coefficient (U) FEP	30-60 BTU/Hr.-ft. <sup>2</sup> -°F (171-341 watts/m <sup>2</sup> -°K)		
Typical Heat Transfer Coefficient (U) Q	42-90 BTU/Hr.-ft. <sup>2</sup> -°F (238-511 watts/m <sup>2</sup> -°K)		

## OPERATING LIMITS



## PRESSURE DROP VS. FLOW RATE



\* Actual numbers will vary depending on the temperature and viscosity of fluids used  
\*\* Nominal exchanger length

FEP Series coils are considered inert to corrosive chemicals. Contact an AMETEK 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.

(Example)

### MODEL NUMBER Q 1000 CTM 30-8-VE

**TUBING**  
Q = PFA/Graphite  
(Blank) = FEP

**MODEL NUMBER**

**SHELL**  
CT = Carbon steel shell  
LT = Carbon steel shell lined with PTFE

**END CONNECTIONS**  
B = none (bundle only)  
M = Metric  
(Blank) = ANSI

**ENVELOPE GASKET MATERIAL**  
V = VITON®  
E = Ethylene propylene

**O-RING SEAL MATERIAL**  
V = VITON®  
E = Ethylene propylene  
T = Fluoropolymer encapsulated VITON®  
K = KALREZ®

**NOMINAL LENGTH (ft.)**

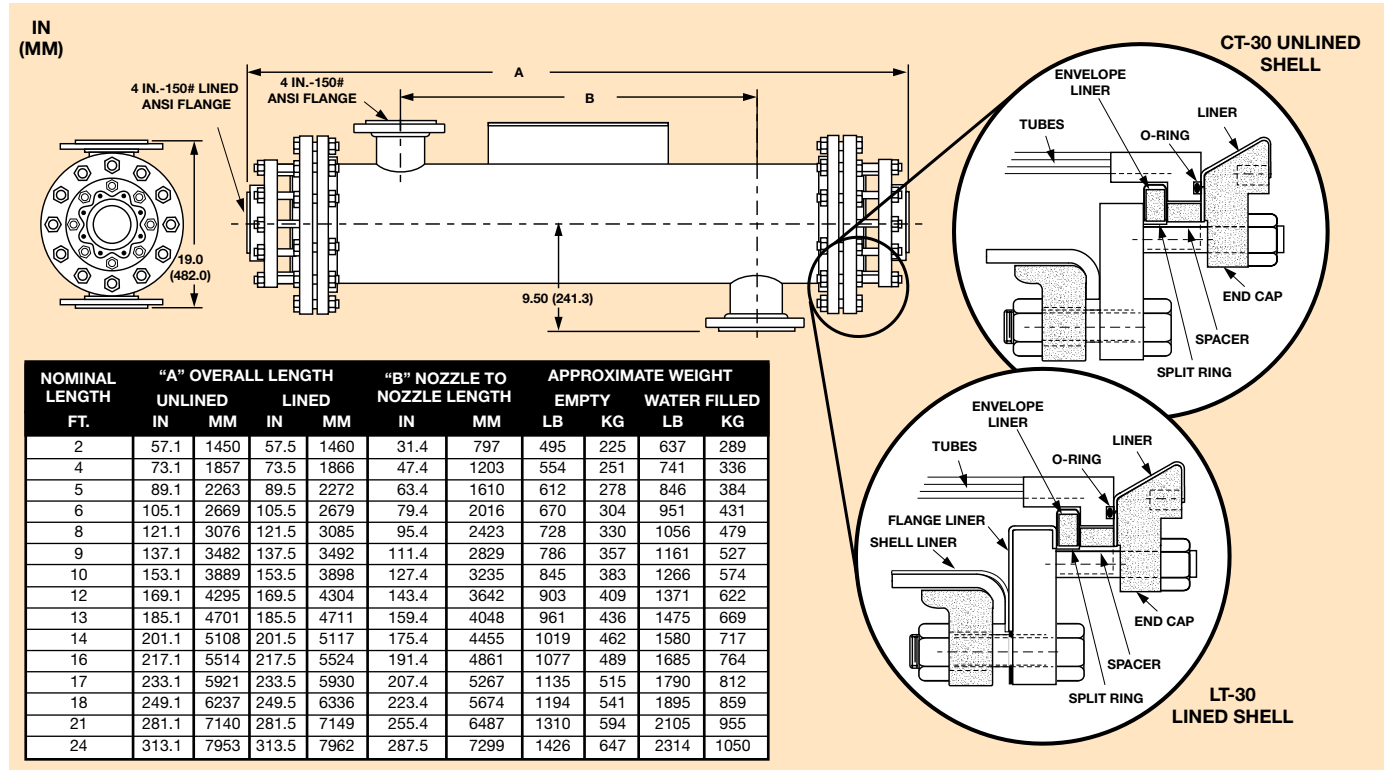
**GENERATION**

VITON® and KALREZ® are registered trademarks of the DuPont Company

## HEAT TRANSFER AREA

NOMINAL LENGTH (ft.)	218		525		1000	
	FT <sup>2</sup>	M <sup>2</sup>	FT <sup>2</sup>	M <sup>2</sup>	FT <sup>2</sup>	M <sup>2</sup>
2	36	3.3	57	5.2	80	7.4
4	64	5.9	102	9.4	144	13.4
5	93	8.6	147	13.6	208	19.3
6	121	11.2	192	17.8	272	25.3
8	150	13.9	237	22.0	336	31.2
9	178	16.5	283	26.2	400	37.2
10	207	19.2	328	30.4	464	43.1
12	235	21.8	373	34.6	528	49.1
13	264	24.5	418	38.8	592	55.0
14	293	27.1	463	43.0	656	60.9
16	321	29.8	509	47.2	720	66.9
17	350	32.4	554	51.4	784	72.9
18	378	35.1	599	55.6	848	78.8
21	435	40.4	689	64.0	976	90.7
24	492	45.7	780	72.4	1104	102.6

## DIMENSIONS



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 AMETEK 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 may occur from exposure to vapors evolved from fluoropolymers at very high temperatures, up to 800°F or from smoking materials that contain particles of fluoropolymers. Symptoms pass within 48 hours and are the only adverse effects observed in humans to date. Unheated fluoropolymers are essentially inert and are nonirritating to the skin.

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# AMETEK®

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