

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.

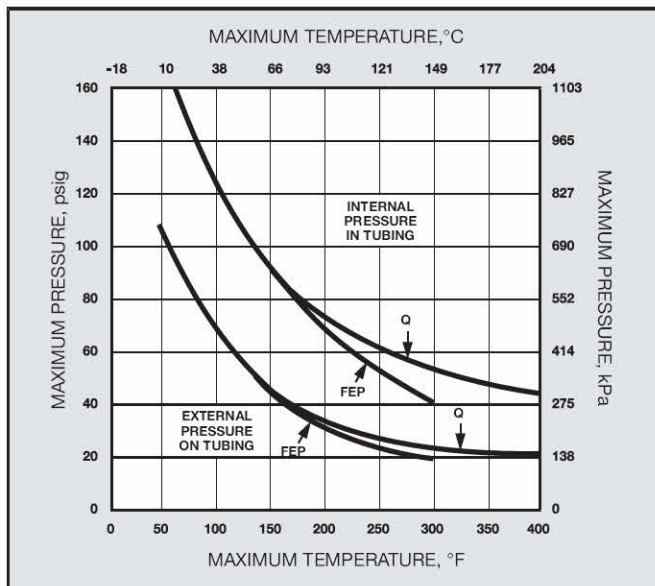


30-SERIES SHELL-AND-TUBE

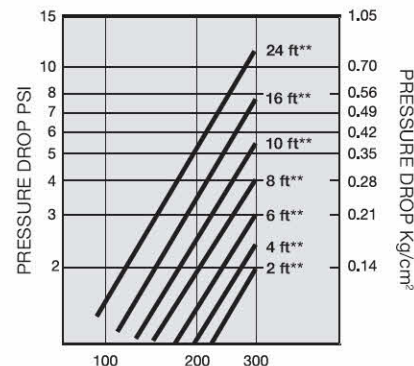
PRODUCT DESCRIPTION

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. ² -°F (171-341 watts/m ² -°K)		
Typical Heat Transfer Coefficient (U) Q	42-90 BTU/Hr.-ft. ² -°F (238-511 watts/m ² -°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 ²	M ²	FT ²	M ²	FT ²	M ²
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

IN (MM)

4 IN.-150# LINED ANSI FLANGE

4 IN.-150# ANSI FLANGE

A

B

19.0 (482.0)

9.50 (241.3)

CT-30 UNLINED SHELL

ENVELOPE LINER

TUBES

O-RING

LINER

END CAP

SPACER

SPLIT RING

LT-30 LINED SHELL

ENVELOPE LINER

TUBES

O-RING

LINER

FLANGE LINER

SHELL LINER

END CAP

SPACER

SPLIT RING

NOMINAL LENGTH	"A" OVERALL LENGTH		"B" NOZZLE TO NOZZLE LENGTH		APPROXIMATE WEIGHT					
	FT.	IN	MM	MM	LB	KG	EMPTY	WATER FILLED		
2	57.1	1450	57.5	1460	31.4	797	495	225	637	289
4	73.1	1857	73.5	1866	47.4	1203	554	251	741	336
5	89.1	2263	89.5	2272	63.4	1610	612	278	846	384
6	105.1	2669	105.5	2679	79.4	2016	670	304	951	431
8	121.1	3076	121.5	3085	95.4	2423	728	330	1056	479
9	137.1	3482	137.5	3492	111.4	2829	786	357	1161	527
10	153.1	3889	153.5	3898	127.4	3235	845	383	1266	574
12	169.1	4295	169.5	4304	143.4	3642	903	409	1371	622
13	185.1	4701	185.5	4711	159.4	4048	961	436	1475	669
14	201.1	5108	201.5	5117	175.4	4455	1019	462	1580	717
16	217.1	5514	217.5	5524	191.4	4861	1077	489	1685	764
17	233.1	5921	233.5	5930	207.4	5267	1135	515	1790	812
18	249.1	6327	249.5	6336	223.4	5674	1194	541	1895	859
21	281.1	7140	281.5	7149	255.4	6487	1310	594	2105	955
24	313.1	7953	313.5	7962	287.5	7299	1426	647	2314	1050

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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