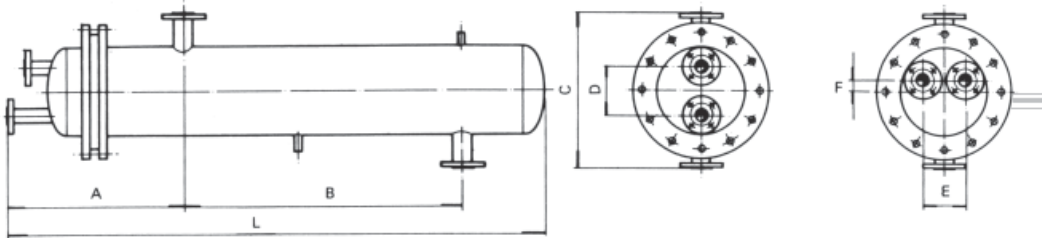


Shell & Tube Heat Exchangers - Series FS18-21

Serialized Units designed according to TEMA Code and in conformity with applicable Pressure Vessel Rules. These series are of U-Bundle floating type and bolted headers which allow for an easy plant maintenance. These series are ideal for heating or hot water generation with two phase fluids in a number of applications such as condensate recovery, hot water generation, steam flash recovery, tank heating, process heating, cooling of main and auxiliary lube circuits.



Dimensions

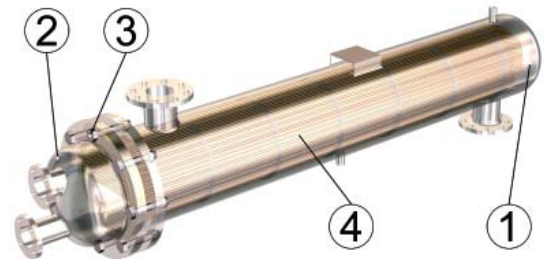


Model	L (mm)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	Connections		Weight
								Primary	Secondary	
FS-18	2.250	435	1.630	620	160	-	-	DN-80	DN-100	260
FS-19	2.250	405	1.630	620	160	-	-	DN-80	DN-100	276
FS-20	2.580	445	1.950	620	170	-	-	DN-100	DN-125	297
FS-21	2.850	520	2.300	620	170	-	-	DN-100	DN-150	342

Standard Design Pressure is PN 16 on the shell side and PN 6 on the tube side * Pressure Testing to 1.5 times Design Pressure. Standard Flanges according to DIN 2502 PN 16 – welded to the shell. Other flange standards can be provided on request. Wall thickness refer to Design Pressure.

Parts and Materials

Part	Name	Material
1	Shell	Steel UNE / ISO 36011 – Galvanised finishing
2	Header	Steel UNE / ISO 36011 – Galvanised finishing
3	Fasteners	Steel B7
4	Tube Bundle	Seamless Steel tubes, mechanically expanded Stainless Steel 304, 316, 316L / Copper



Performance Graphs

The suitable Heat Exchanger is determined by the following factors: Power (Kcal/h), Inlet and outlet temperatures and Pressure Drop. The following table provides average performances of the standardised FS Series in typical application of heating and Hot Water Generation. It provides the performance in Kcal/h or Volume in L/hrs given the indicated parameters of the primary and secondary circuits.

HEATING (70°C / 90°C and 80°C / 90°C) in kcal/h.

Fluids	Water - Water								Steam - Water				
	Secondary Circuit 70° / 90°				Secondary Circuit 80° / 90°				70° / 90°		80° / 90°		
	180°	170°	150°	130°	120°	180°	150°	130°	120°	1,5 (kg/cm2)	5 (kg/cm2)	1,5 (kg/cm2)	5 (kg/cm2)
Models	120°	110°	120°	110°	100°	120°	120°	110°	100°				
FS-18	1.160.000	870.000	810.000	510.000	420.000	1.215.000	840.000	526.000	340.000	830.000	1.380.000	685.000	920.000
FS-19	1.320.000	1.030.000	970.000	590.000	480.000	1.370.000	1.030.000	630.000	387.000	925.000	1.600.000	780.000	1.040.000
FS-20	1.500.000	1.220.000	1.150.000	680.000	540.000	1.560.000	1.200.000	720.000	430.000	1.120.000	1.700.000	930.000	1.230.000
FS-21	1.750.000	1.460.000	1.320.000	805.000	630.000	1.810.000	1.340.000	840.000	520.000	1.260.000	2.085.000	1.200.000	1.340.000

HOT WATER GENERATION in lts/h

Models	10° - 60°			10° - 55°			10° - 50°			10° - 45°		
	90° / 80°	90° / 70°	85° / 70°	90° / 80°	90° / 70°	85° / 70°	90° / 80°	90° / 70°	85° / 70°	90° / 80°	90° / 70°	85° / 70°
FS-18	7.300	6.200	5.700	9.600	8.000	6.200	13.460	11.800	8.750	18.700	15.800	13.850
FS-19	8.500	7.200	6.560	11.430	9.100	7.100	15.350	13.870	9.400	21.400	17.300	15.700
FS-20	9.700	8.700	7.900	12.700	10.800	8.800	17.400	16.500	10.380	23.600	20.900	18.100
FS-21	11.500	10.200	9.180	14.600	12.900	10.700	20.700	19.400	11.700	28.900	25.700	22.120

Pressure Drop Graphs for primary and secondary circuits are available at our Technical Dept. Please consult your nearest PILAN distributor.

Other units to comply with different performances on request.