

MAXI-FLO®

Stainless Steel Heat Exchanger

for Swimming Pools & Spas

The Triangle Tube Maxi-Flo heat exchanger, when combined with any boiler, makes for an ideal heating system for swimming pool, spa and hot tub applications.

Available in 5 sizes, ranging from 95,000 to 400,000 Btu/hr thermal output, they can accommodate any size pool or spa.



- Now Available in Titanium -

Thermal Output Maxi-Flo Heat Exchangers

Model No.	Thermal Output Btu/hr	Hot Water Flow		Cold Water Flow		Heat Transfer Surface Sq. Ft.
		GPM	Pressure Drop Ft	GPM	Pressure Drop Ft	
MF-80	95,000	7	6	77	4	2
MF-135	135,000	7	2	52	3	3
MF-200	200,000	8	2	65	5	5
MF-260	260,000	9	2	77	6	6
MF-400	400,000	13	3	93	8	12

Standard Features

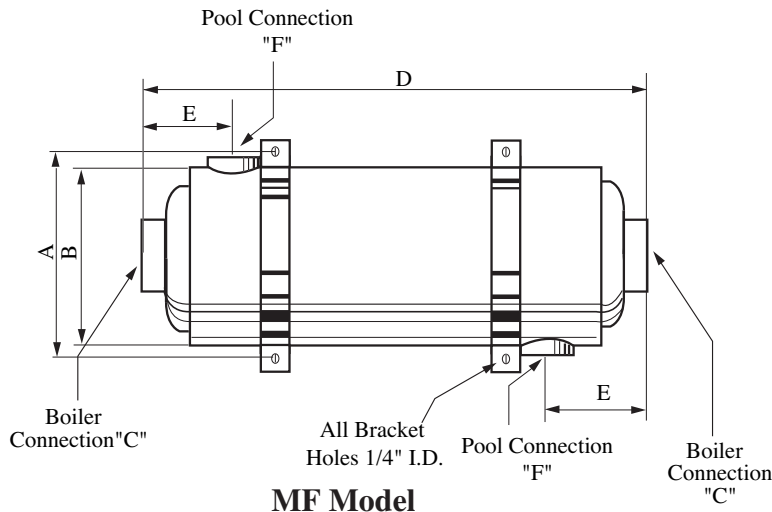
- Constructed of high quality corrosion resistant stainless steel (AISI316)
- Rolled formed to shape and then precision welded
- Specially designed built in flow restrictor to assure maximum heat exchange
- Designed to minimize pressure loss in the heating system
- Leak tested to assure that they are totally functionable
- Compact in size and require a minimum installation space - light weight
- Significant energy savings
- Available for all types of swimming pools, spas and hot tubs
- Equipped with stainless steel holding brackets

Dimensions

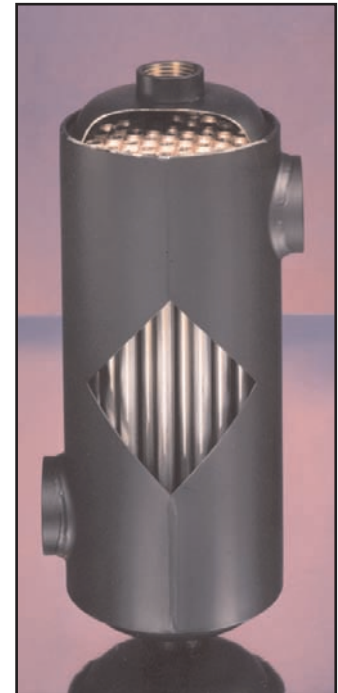
Model No.	A	B	C	D	E	F	Weight lb
MF-135	5 1/2"	5 1/8"	1"	13 1/2"	3"	1 1/2"	8
MF-200	5 1/2"	5 1/8"	1"	18 3/4"	3"	1 1/2"	11
MF-260	5 1/2"	5 1/8"	1"	23 3/4"	3"	2"	14
MF-400	5 1/2"	5 1/8"	1 1/2"	41 3/4"	3 1/2"	2"	24
MF-80	(See below)						6

Maximum working temperature 230°F

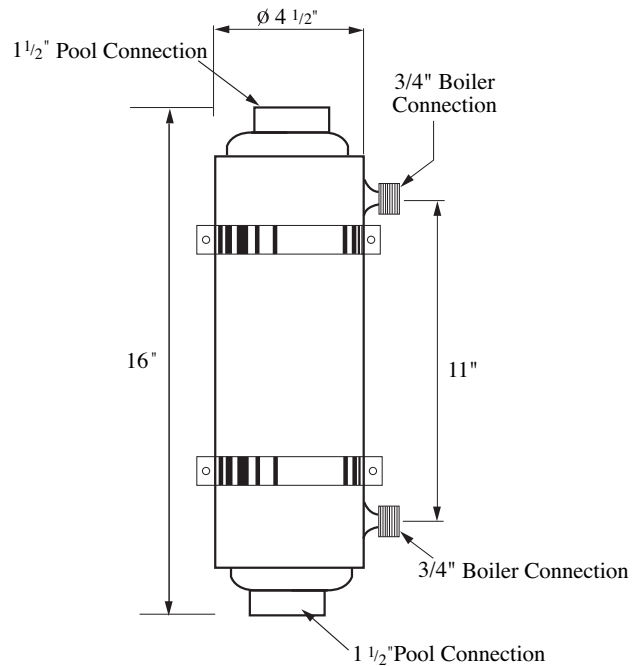
Maximum working pressure: 140 psi (primary and secondary)



MF Model



Maxi-Flo 135
Cut-Away



MF 80 Model

Thermal Output Maxi-Flo Titanium Heat Exchangers

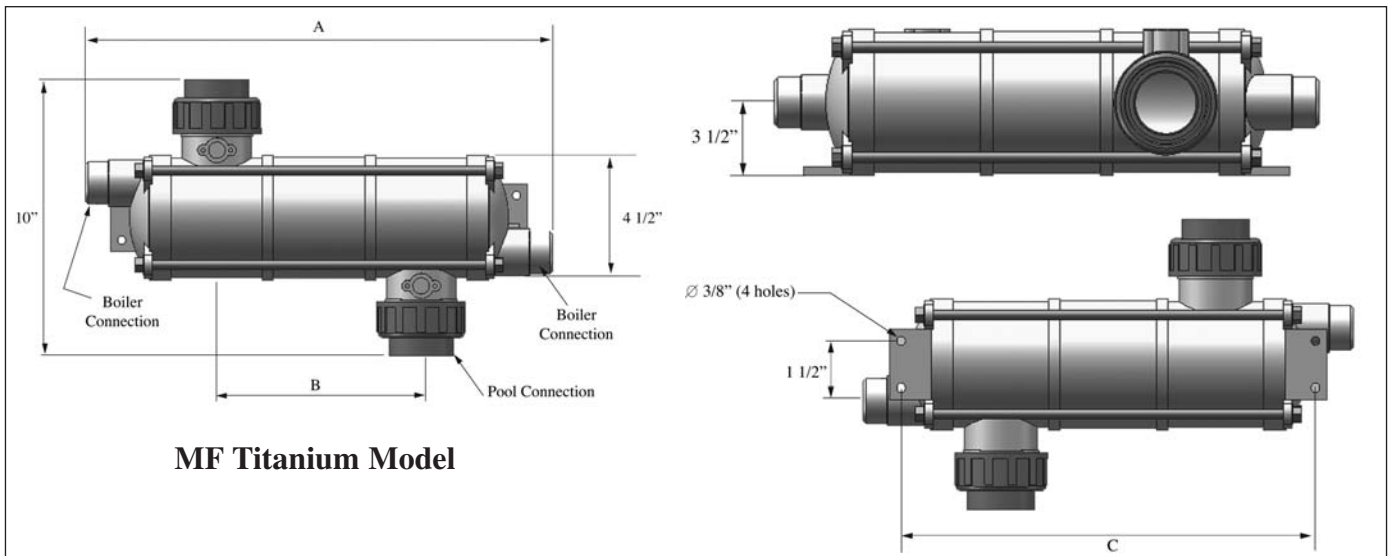
Model No.	Thermal Output Btu/hr	Hot Water Flow		Cold Water Flow		Heat Transfer Surface Sq. Ft.
		GPM	Pressure Drop Ft	GPM	Pressure Drop Ft	
MF-135PT	135,000	10	17	103	8.0	2
MF-260PT	260,000	13	27	116	10.0	3

Maximum working temperature 212°F
 Maximum working pressure: 70 psi (primary and secondary)

Titanium Construction

Titanium is chosen for the high resistance to corrosion and is suitable for pools and spas with aggressive water, salt water and when a salt chlorinator is used.

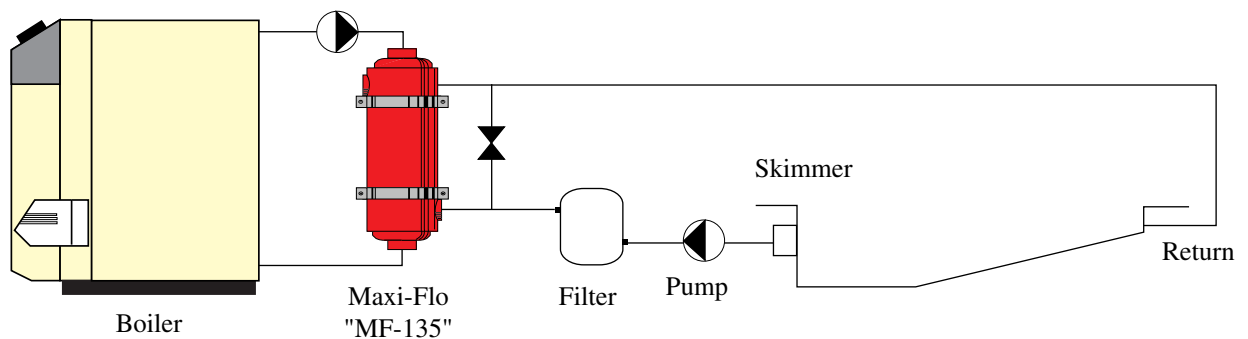
Model No.	A	B	C	Weight lb
MF-135PT	16 1/2"	7 3/4"	13"	8
MF-260PT	26"	17 1/2"	23"	14



MF Titanium Model

Installation Principle

(Refer to Installation Manual for more information)



WARNING: Automatic chlorinators and chemical feeders

Chlorinators must feed downstream of the heat exchanger and have an anti-siphoning device to prevent chemical back-up in the heat exchanger when the pump is shut off.

Sizing Guide

Boiler Output and Heat Exchanger Selection Table

Pool Capacity (gal.)	1 F/hr Heat-Up Rate		2 F/hr Heat-Up Rate	
	Boiler Output Required (Btu/hr)	Heat Exchanger Model	Boiler Output Required (Btu/hr)	Heat Exchanger Model
2,000	16,683	MF-80	33,366	MF-80
4,000	33,366	MF-80	66,732	MF-80
6,000	50,049	MF-80	100,098	MF-135
8,000	66,732	MF-80	133,464	MF-135
10,000	83,415	MF-80	166,830	MF-200
12,000	100,098	MF-135	200,196	MF-260
14,000	116,781	MF-135	233,562	MF-260
16,000	133,464	MF-135	266,928	MF-400
18,000	150,147	MF-200	300,294	MF-400
20,000	166,830	MF-200	333,660	MF-400
22,000	183,513	MF-200	367,026	MF-400
24,000	200,196	MF-260	400,392	MF-260 (2)**
26,000	216,879	MF-260	433,758	MF-260 (2)**
28,000	233,562	MF-260	467,124	MF-260 (2)**
30,000	250,245	MF-260	500,490	MF-260 (2)**
32,000	266,928	MF-400	533,856	MF-400 (2)**
34,000	283,611	MF-400	567,222	MF-400 (2)**
36,000	300,294	MF-400	600,588	MF-400 (2)**
38,000	316,977	MF-400	633,954	MF-400 (2)**
40,000	333,660	MF-400	667,320	MF-400 (2)**
42,000	350,343	MF-400	700,686	MF-400 (2)**
44,000	367,026	MF-400	734,052	MF-400 (2)**
46,000	383,709	MF-400	767,418	MF-400 (2)**

Note: ** Two heat exchangers piped reverse return

Step 1: Determine heat-up rate based on type of pool use

The desired heat-up rate is usually the most important factor affecting boiler/heat exchanger selection.

The desired heat-up rate for extended use (summer season) is 1°F/hour, for periodic use (weekends, holidays) 2°F/hour.

Step 2: Determine pool capacity

Rectangular Pools

$$\text{Capacity (gals.)} = 7.5 \times \text{Length (feet)} \times \text{Width (feet)} \times \text{Average depth (feet)}$$

Circular Pools

$$\text{Capacity (gals.)} = 5.9 \times \text{Diameter}^2 \text{ (feet)} \times \text{Average depth (feet)}$$

Step 3: Select Maxi-flo Heat Exchanger required

Enter selection table with pool capacity and select Maxi-Flo heat exchanger and its recommended boiler output capacity, based on heat-up rate.

Step 4: Check heat loss to surroundings

$$\text{Heat loss (btu/hr)} = 12 \times \left[\begin{array}{c} \text{Pool surface area (sq. ft.)} \end{array} \right] \times \left[\begin{array}{c} \text{Desired pool temp. (°F)} \\ \text{Coldest avg. air temp. during use (°F)} \end{array} \right]$$

Boiler output selected in Step 3 must be larger than the heat loss to the surroundings.

Note: The typical desired pool temperature is 80°F.

Note: The heat-up rate will decrease as outdoor temperature drops.

EXAMPLE

Determine the boiler output and heat exchanger required for a 30-foot long by 16-foot wide by 5.5 foot average depth pool. The pool is for extended use during the summer season and the coldest air temperature anticipated is 65°F.

Step 1:

For extended use, the desired heat-up rate is 1°F/hour.

Step 2:

Pool capacity = 7.5 gal/Ft³ x 30' x 16' x 5.5' = 19,800 gallons

Step 3:

From selection table, for 20,000 gallons and 1°F heat-up rate:

Required Boiler Output = 166,830 Btu/hr.

Required Heat Exchanger = Model MF-200

Step 4:

Surface Area = 30ft. x 16ft. = 480 sq. ft.

Heat Loss = 12 x 480 x (80°F - 65°F) = 86,400 Btu/hr.

Heat loss is well within required boiler output capacity.

 CERTIFIED ISO 9001 2000 STANDARD	 Triangle Tube <i>Hot Water Specialists</i>	Freeway Center - 1 Triangle Lane - Blackwood, NJ 08012 (856) 228 8881 Fax (856) 228 3584 E-mail: Info@triangletube.com	MEMBER  NATIONAL SPA & POOL INSTITUTE	Member of  ACV Group
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Manufacturer - Pahlén AB - Sweden