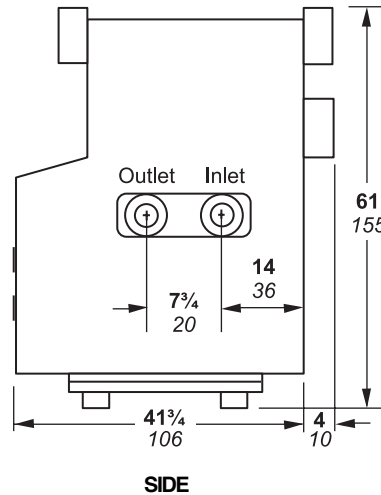
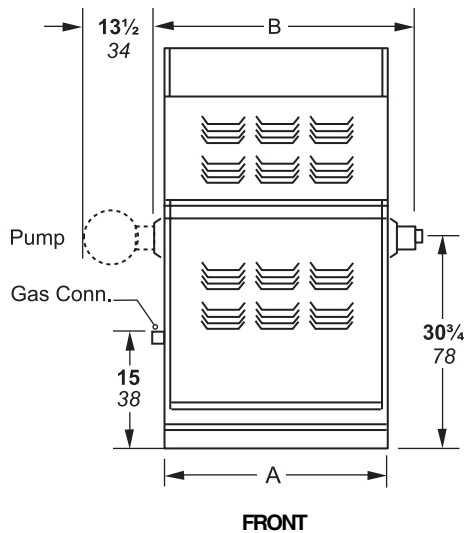


MIGHTY THERM®

Commercial Pool Heater

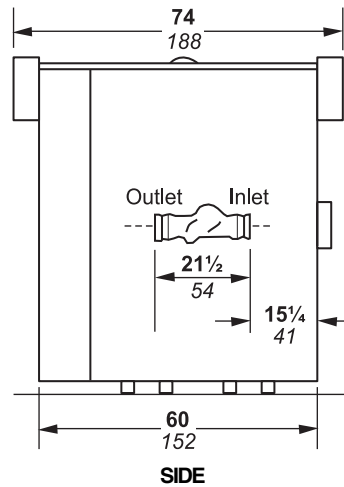
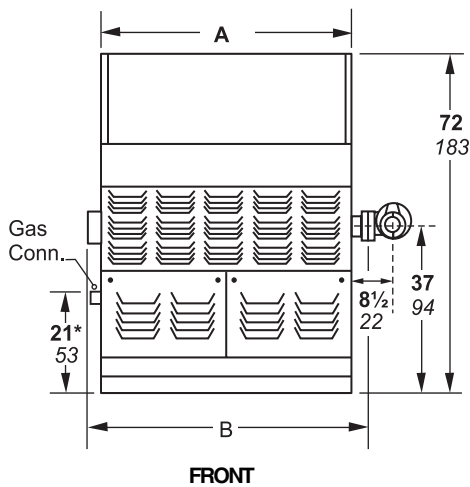


AP Commercial Pool Heating Boiler
Outdoor (E)

Outdoor Sizes 500,000 - 4,500,000 BTU/h

Submittal Data **LAARS**
Heating Systems

Outdoor
Models 500-1825



Dimensions (nominal) shown in inches cm.
*29" 74cm for models 2800-4500

Outdoor
Models 2200-4500

Standard Equipment

- ASME 160 lb. working pressure heat exchanger
- 24V control system
- Operating gas valve/pressure regulator
- Water flow sensing device
- Removable burner tray (500-1825)
- Built-in draft hood
- Glass lined cast iron headers
- Flow control valve (2200-4500)
- Pilot gas regulator
- Redundant safety gas valve
- Electronic temperature control (500-1825)
- Manual reset high limit
- Automatic reset high limit (2800-4500)
- Manual "A" gas valve
- Manual shut-off valve
- Manual pilot valve
- Stainless steel burners
- External water side gaskets
- Integral pump (500-1825)
- Flanged connections
- High gas pressure switch (2800-4500)
- Pressure relief valve (75 PSI)
- 115/24V transformer
- Temperature/pressure gauges
- On/Off/Auto toggle switch
- Power on light

Specification Data

Outdoor Size	Input ¹		Output ¹		Gas Connection Size inches		Water Conn. ² inches
	MBTU/h	kW	MBTU/h	kW	Natural	LP	
500	500	147	410	120	1	¾	2½
600	600	176	492	144	1	¾	2½
715	715	210	586	171	1	¾	2½
850	850	249	697	204	1	¾	2½
1010	1010	296	828	242	1¼	1	2½
1200	1200	352	984	288	1¼	1¼	2½
1430	1430	419	1173	343	1¼	1¼	2½
1670	1670	489	1370	401	1½	1¼	2½
1825	1825	535	1497	438	1½	1¼	2½
2200	2205	646	1786	523	1½	1¼	4
2800	2745	804	2223	651	2	1½	4
3200	3150	923	2552	747	2	1½	4
3600	3645	1068	2952	864	2	2	4
4000	4050	1186	3281	961	2½	2	4
4500	4500	1318	3645	1068	2½	2	4

- NOTES:** 1. Input and output must be derated 4% per 1000 feet above sea level when installed above 2000 feet altitude.
 2. Dimensions are nominal.
 3. Integral pump included on sizes 500-1825.

Dimensional Data

Outdoor Size	Dimensions ² - inches				Shipping Weight ³	
	A	B	cm		lbs	kgs
500	33¾	85	45	114	860	390
600	38¾	98	50	127	970	440
715	44¼	112	55½	141	1055	479
850	50¾	129	62	158	1090	494
1010	58	147	69¼	176	1240	563
1200	66¼	157	77½	197	1390	631
1430	76	193	87¼	222	1550	703
1670	85½	217	96¾	246	1660	753
1825	92¼	234	103½	263	1720	780
2200	65½	166	73	185	2320	1053
2800	78	198	85½	217	2600	1180
3200	88	224	95½	243	2750	1249
3600	100½	255	108	274	3175	1441
4000	110½	281	118	300	3380	1535
4500	123	312	130½	332	3790	1721

- NOTES:** 1. Input and output must be derated 4% per 1000 feet above sea level when installed above 2000 feet altitude.
 2. Dimensions are nominal.
 3. Integral pump included on sizes 500-1825.

Ignition Safeguard Systems

Systems #9 & #18: Intermittent electronic ignition with electronic flame supervision. Responds in less than 0.8 second upon flame failure. 24V control circuit. System #9 is standard on models 500 to 1825. System #18 is standard on models 2200 to 4500.

System #16: Standing pilot with electronic flame supervision. Responds in less than 0.8 second upon flame failure and provides 100% safety shutdown. 24V control circuit optionally available for natural and propane.

System #4: Intermittent electronic ignition with electronic flame supervision. Responds in less than 0.8 second upon flame failure. 115V control circuit. Optionally available for natural and propane.

CONTROL OPTIONS	System #9	System #18	System #16	System #4
Firing Modes ON/OFF Firing	✓	✓	✓	—
Motorized Gas Valve ON/OFF	○	○	○	✓
Gas Train Standing Pilot	—	—	✓	—
Intermittent Ignition Device	✓	✓	—	✓
Manual Pilot Valve	✓	✓	✓	✓
Pilot Gas Valve	✓	✓	—	✓
Pilot Gas Regulator	✓	✓	✓	✓
Manual Shut-Off Valve	✓	✓	✓	✓
Safety Gas Valve	✓	✓	✓	✓
Control Components				
Alarm Bell/Indicator Lights	○	○	○	○
Electronic Flame Relay	✓	✓	✓	✓
Gas Pressure Switch - High and Low	○	1	○	○
High Limit - Automatic Reset	○	1	○	1
High Limit - Manual Reset	✓	✓	✓	✓
ON/OFF Toggle Switch	✓	✓	✓	✓
Operating Control	✓	✓	✓	✓
100% Shut-Off/Lockout	2	2	✓	✓
Terminal Strip	✓	✓	✓	✓
CSD-1	○	○	○	○
CSD-1/IRI	○	○	○	○

KEY: ✓ = Provided as Standard
○ = Optional
— = Not Available

NOTES: 1. Automatic reset high limit and high gas pressure switch standard on Models 2800 to 4500 and optional on Models 500 to 2200.
2. 100% shut-off/lockout is standard with all propane spark ignition models and with CSD-1.

Motor Electrical Data

Sizes	Factory Installed Pumps		Current (Amps)
	Power (HP)	Voltage/Phase	
500—1670	1/2	115/1	5.8
1825	3/4	115/1	8.8

Minimum Clearances from Adjacent Construction

Recommended Minimum Clearance From	Models 500-1825 Outdoor		Models 2200-4500 Outdoor	
	inches	cm	inches	cm
Top	—	—	—	—
Water connection side	24	61	24	61
Pump side	24	61	24	61
Front	Open		Open	
Rear	24	61	24	61
Vent pipe	—	—	—	—

NOTE: Models 500 to 1825 outdoor units are certified for placement on combustible floors. (Never install on carpet.)

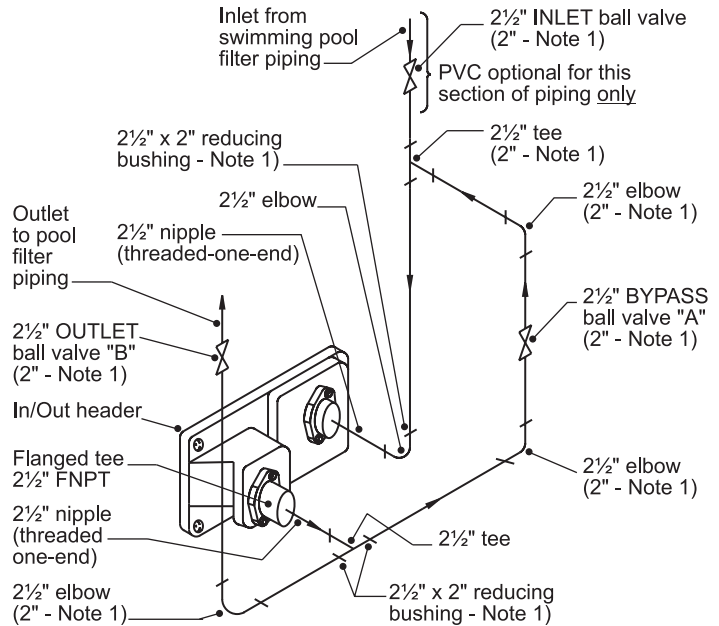
Bypass Piping

Models 500-1825 heaters **must be piped as shown** in Figure 1. Inlet and outlet piping may be routed in another direction, but valve locations must be the same and the outlet must discharge into the side of a tee as shown.

WARNING: Any deviations from the above may increase load on the pump, reduce flow and decrease heater performance.

Figure 1.

- NOTES:**
- 2" pipe, fittings and valves optional for models 500E to 1010E.
 - Material: 2½" S-80 CPVC shown. Copper optional.

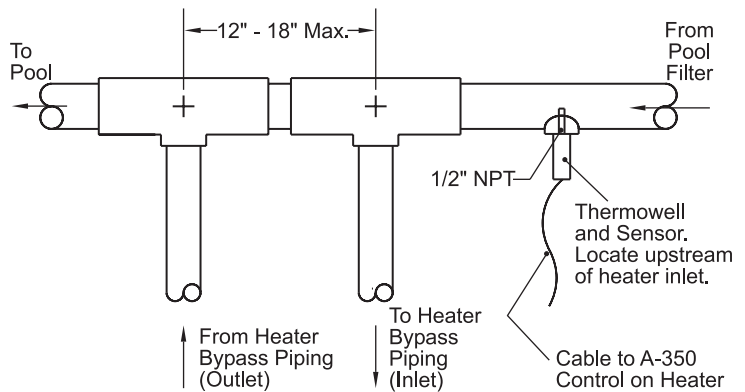


Thermowell Installation

A temperature sensor and thermowell are supplied with the heater. These must be installed in the field as shown in Figure 2.

WARNING: Do not install in the secondary piping or downstream of the heater inlet tee.

Figure 2.



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