

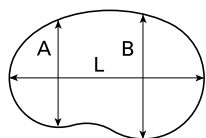
Heater Selection Guide

SELECTING THE CORRECT SIZE HEATER FOR POOLS & SPAS

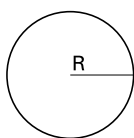


Pool Sizing

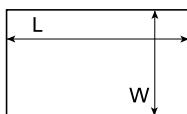
Determine your pool's surface area in square feet:



$$\text{Area} = (A+B) \times L \times .45$$



$$\text{Area} = R \times R \times 3.14$$



$$\text{Area} = L \times W$$

Locate in the desired table below, the surface area equal to or just greater than the pool's surface area, read to the left and select the appropriate heater.

For indoor pool installations divide the pool's surface area by 3.

Tables are based on a 30°F temperature rise, 3½ MPH average wind velocity and elevation of up to 2,000 feet above sea level.

Recommended H-Series for Spas/Hot Tubs

Model	Spa/Tub Size in Gallons									
	200	300	400	500	600	700	800	900	1000	
	Time in minutes to Raise Spa/Tub Temperature 30°F									
H400	9	14	19	23	28	33	37	42	47	
H350	11	16	21	27	32	37	43	48	54	
H300	12	19	25	31	37	44	50	56	62	
H250	15	22	30	37	45	52	60	67	75	
H200	19	28	37	47	56	66	75	84	94	
H150	25	37	50	62	75	87	100	112	125	

Recommended H-Series for Swimming Pools

Model	Surface Area
H400	1200
H350	1050
H300	900
H250	750
H200	600
H150	450

Example:

Rectangular pool: 20 feet x 30 feet:

$$\begin{array}{r} 20 \\ \text{multiply} \rightarrow \quad 30 \\ \hline 600 \text{ ft.}^2 \text{ Surface Area} \end{array}$$

Recommended H-Series Model Heater – H200

Saving Money by Saving Energy

Selecting a high efficiency heater for your new installation, or replacing an older inefficient model can have a significant impact on your fuel bill. Here are some additional energy saving tips.



- Check your pool chemistry regularly to maintain top operating condition.
- Set your pool water's temperature between 78° to 82° for most applications
- Use a pool cover or thermal blanket on your pool when it's not in use. Evaporation accounts for 70% of heat loss from your pool.
- Add wind breaks to your pool. A 7-mph wind at the surface of a pool can increase energy consumption 300%!

Spa Sizing

Determine your spa capacity in gallons (Surface area x average depth x 7 ½).

The reference tables list the time required in minutes to raise the temperature of the spa/hot tub by 30°F. Locate in the desired table below the spa/hot tub size in gallons equal to or just greater than the spa/hot tub size in gallons.

Select the desired time to raise the spa/hot tub temperature 30°F, read to the left and select the appropriate heater.

This guide can be adjusted for other temperature rises. For example, if you desire a 15°F increase in temperature, simply divide the time for 30°F rise by the ratio of 30/15 = 2.

Note: Heat losses and/or heat absorbed by spa walls or other objects will add to heat-up time.

Spa sizing is based on an insulated and covered spa. Always cover your spa or hot tub when not in use to minimize heat loss and evaporation.

Recommended H100 Induced Draft Model for Spas

Model	Spa/Tub Size in Gallons									
	200	300	400	500	600	700	800	900	1000	
	Time in minutes to Raise Spa/Tub Temperature 30°F									
H100	38	56	74	94	112	132	150	168	188	

Recommended H100 Induced Draft Model for Above Ground Pools

H100 Induced Draft Heater will raise temperature of Above Ground Pool in 8 Hour period as follows:

Temperature Rise in 8 Hours		
Pool Size	Gallons	Avg. Temp Rise (f)
15' Round	5,300	15.2°
18' Round	7,600	10.4°
12' x 24' Rectangle	8,600	9.6°
21' Round	10,000	8.0°
24' Round	13,500	5.6°
27' Round	17,000	4.8°

We highly recommend that your Hayward Above Ground Pool heater be used in conjunction with a solar blanket to maximize your heating efficiency.

Recommended CSpaXI Models

Model	Spa/Tub Size in Gallons									
	200	300	400	500	600	700	800	900	1000	
	Time in minutes to Raise Spa/Tub Temperature 30°F									
CSPAXI55	160	240	320	400	480	560	640	720	800	
CSPAXI11	80	120	160	200	240	280	320	360	400	

Example:

Want a 300 gallon spa to go from 70°F to 100°F in 120 minutes.

$$\begin{array}{r} 100^\circ\text{F} \\ \text{subtract} \rightarrow \quad 70^\circ\text{F} \\ \hline 30^\circ\text{F Requested Temperature Rise} \end{array}$$

Recommended CSPA Model Heater — CPAXI11



Heater Technical Information

GAS PIPE SIZING

Hayward heaters use a full gas fire design. To ensure adequate gas firing and proper performance, the following guidelines should be used to size gas piping.

1. Make sure the 1st and 2nd stage regulators are large enough to handle the BTU listed for each model.
2. Reduction of the gas supply pipe or tubing to the inlet of the valve must be made at the valve only – Natural or Propane.
3. Do not use flexible connectors on any gas connections.
4. If more than one appliance is installed on the gas line, contact your local gas company or Hayward for proper pipe size.
5. If you have any question concerning the installation of the proper gas line size, call Hayward before you install the line.

Low Pressure Natural Gas Pipe Sizing: (Based upon an inlet gas pressure of 0.5 psig or less at a pressure drop of 0.5 in-wc)

Distance from gas meter to heater gas valve inlet	Model	H150	H200	H250	H300	H350	H400
	BTU/hr input	150,000	200,000	250,000	300,000	350,000	400,000
	Line Material	Iron or Plastic Pipe		Iron or Plastic Pipe		Iron or Plastic Pipe	
0 to 50 feet		3/4"	1"	1"	1 1/4"	1 1/4"	1 1/4"
50 to 100 feet		1"	1"	1 1/4"	1 1/4"	1 1/4"	1 1/4"
100 to 200 feet		1 1/4"	1 1/4"	1 1/4"	1 1/2"	1 1/2"	1 1/2"
200 to 300 feet		1 1/4"	1 1/4"	1 1/2"	2"	2"	2"

Low Pressure Propane Gas Pipe Sizing: (Based upon an inlet gas pressure of 11 in-wc at a pressure drop of 0.5 inch w.c.)

Distance from tank regulator outlet to heater gas valve inlet	Model	H150		H200		H250		H300		H350		H400	
	BTU/hr input	150,000		200,000		250,000		300,000		350,000		400,000	
	Line Material	Iron Pipe	Tubing	Iron Pipe	Tubing	Iron Pipe	Tubing	Iron Pipe	Tubing	Iron Pipe	Tubing	Iron Pipe	Tubing
0 to 50 feet		3/4"	7/8"	3/4"	7/8"	1"	1 1/8"	1"	1 1/8"	1"	1 1/8"	1"	—
50 to 100 feet		3/4"	1 1/8"	1"	1 1/8"	1"	1 1/8"	1"	—	1 1/4"	—	1 1/4"	—
100 to 200 feet		1"	1 1/8"	1"	—	1 1/4"	—	1 1/4"	—	1 1/4"	—	1 1/4"	—
200 to 300 feet		1"	—	1 1/4"	—	1 1/4"	—	1 1/4"	—	1 1/4"	—	1 1/2"	—

High Pressure "2-Stage" Systems

High Pressure Natural Gas Pipe Sizing "First Stage": (Based upon an inlet gas pressure of 2 psig at a pressure drop of 1 psi)

Distance from outlet of 1st stage regulator to inlet of 2nd stage regulator	Model	H150	H200	H250	H300	H350	H400
	BTU/hr input	150,000	200,000	250,000	300,000	350,000	400,000
	Line Material	Iron or Plastic Pipe		Iron or Plastic Pipe		Iron or Plastic Pipe	
0 to 50 feet		1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
50 to 100 feet		1/2"	1/2"	1/2"	1/2"	3/4"	3/4"
100 to 150 feet		1/2"	1/2"	1/2"	3/4"	3/4"	3/4"

Low Pressure Natural Gas Pipe Sizing "Second Stage": (Based upon an inlet gas pressure of 10 in-wc at a pressure drop of 0.5 in-wc)

Distance from outlet of 2nd stage regulator to heater gas valve inlet	Model	H150	H200	H250	H300	H350	H400
	BTU/hr input	150,000	200,000	250,000	300,000	350,000	400,000
	Line Material	Iron or Plastic Pipe		Iron or Plastic Pipe		Iron or Plastic Pipe	
0 to 10 feet		3/4"	3/4"	3/4"	3/4"	3/4"	3/4"

It is **VERY IMPORTANT** when installing a propane heater on a 2-stage regulation system to follow the gas line sizing chart below without exception.

High Pressure Propane Gas Pipe "First Stage": (Based upon an inlet gas pressure of 10 psig at a pressure drop of 1 psi)

Distance from tank regulator outlet to heater gas valve inlet	Model	H150		H200		H250		H300		H350		H400	
	BTU/hr input	150,000		200,000		250,000		300,000		350,000		400,000	
	Line Material	Iron Pipe	Tubing	Iron Pipe	Tubing	Iron Pipe	Tubing	Iron Pipe	Tubing	Iron Pipe	Tubing	Iron Pipe	Tubing
0 to 50 feet		1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
50 to 100 feet		1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	5/8"	1/2"	5/8"
100 to 150 feet		1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	5/8"	1/2"	5/8"	1/2"	5/8"

Low Pressure Natural Gas Pipe Sizing "Second Stage": (Based upon an inlet gas pressure of 11 in-wc at a pressure drop of 0.5 in-wc)

Distance from outlet of 2nd stage regulator to heater gas valve inlet	Model	H150	H200	H250	H300	H350	H400						
	BTU/hr input	150,000	200,000	250,000	300,000	350,000	400,000						
	Line Material	Iron Pipe	Tubing	Iron Pipe	Tubing	Iron Pipe	Tubing	Iron Pipe	Tubing	Iron Pipe	Tubing	Iron Pipe	Tubing
0 to 10 feet		1/2"	5/8"	1/2"	5/8"	1/2"	3/4"	3/4"	3/4"	3/4"	7/8"	3/4"	7/8"