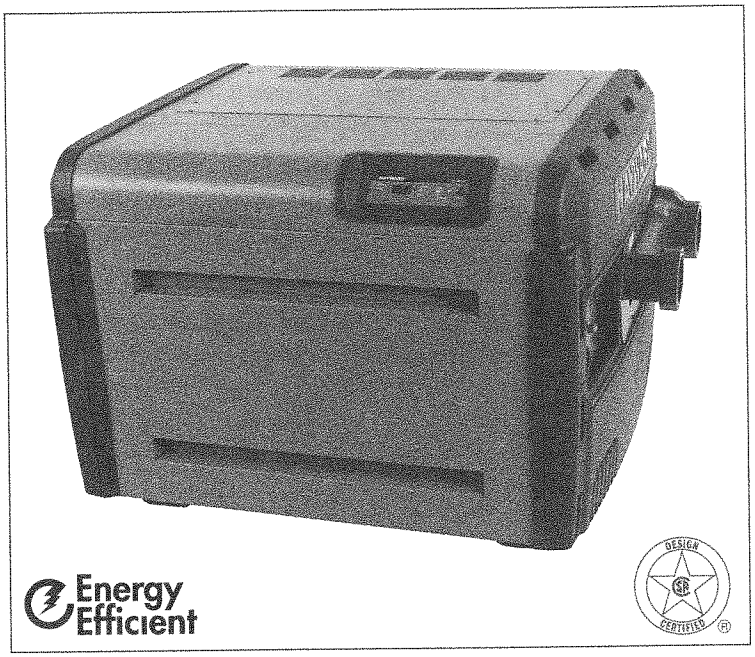


H400FDN Universal H-Series Low NOx Heater

The Hayward Universal H-Series gas heater is the "universal" energy efficient remedy for any new or existing pool or spa. An industry leading hydraulic design reduces circulation pump run time to provide up to 84% efficiency when compared to less efficient competitors. The energy efficiency of the Universal H-Series gas heater combines with environmentally friendly low NOx emissions, a standard cupro nickel heat exchanger and ultimate installation flexibility on new or existing equipment pads to responsibly heat a pool or spa today and for years to come.

The forced draft system in the Universal H-Series constantly moves air through the combustion chamber at a precise flow rate eliminating outside weather variables that can affect heating performance. Wind conditions are eliminated and there is no need to install a high-wind stack.

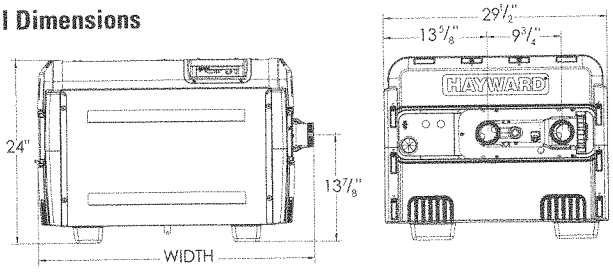
Note: Hayward Universal H-Series heaters meet the NOx emission standards set by the California South Coast Quality Air Management Commission for 2001 and the Texas Natural Resource Conservation Commission Code.

Universal H-Series Low NOx Heater Buying Guide

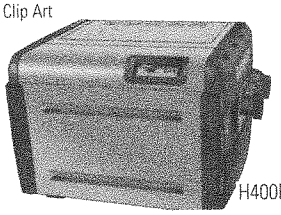
Silicon Nitride Hot Surface Electronic Ignition, Dual Thermostat

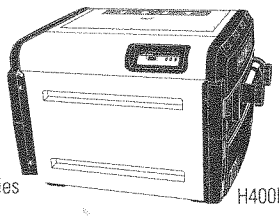
Model Number	BTU Input	Gas Type	Heater Width	Ctn. Qty.	Ctn. Weight
H150FDN	150,000	Natural	21 ½"	1	141 lbs.
H150FDP	150,000	Propane	21 ½""	1	141 lbs.
H200FDN	199,900	Natural	24 ¾"	1	154 lbs.
H200FDP	199,900	Propane	24 ¾"	1	154 lbs.
H250FDN	250,000	Natural	28"	1	165 lbs.
H250FDP	250,000	Propane	28"	1	165 lbs.
H300FDN	300,000	Natural	30"	1	180 lbs.
H300FDP	300,000	Propane	30"	1	180 lbs.
H350FDN	350,000	Natural	33 ¼"	1	195 lbs.
H350FDP	350,000	Propane	33 ¼"	1	195 lbs.
H400FDN	399,900	Natural	36 ½"	1	197 lbs.
H400FDP	399,900	Propane	36 ½"	1	197 lbs.

Overall Dimensions



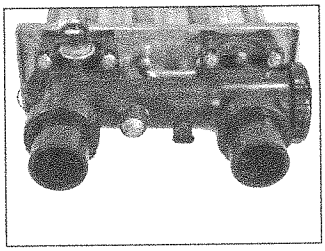
Clip Art


H400FDN Series


H400FDN Series

FOR INDOOR/OUTDOOR USE

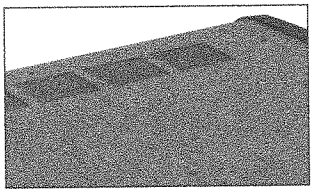
Superior Hydraulic Performance



New polymer header provides superior hydraulic performance to save energy and protect against the damaging effects of erosion from high flow conditions for improved reliability.

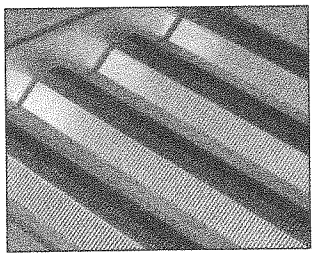
Designed for today's larger diameter plumbing systems with 2" x 2 ½" CPVC unions.

Forced Draft System



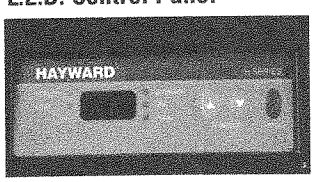
Forced draft system constantly moves air through the combustion chamber at a precise flow rate, eliminating all outside weather variables that can effect the heating performance, such as high wind conditions — without a high wind stack.

State-of-the-Art Finn Plate Heat Exchanger with *Cupro Nickel*



Our patented single header "V" baffle design heat exchangers allow for long life, fast heating and virtually no condensation. All Hayward heat exchangers are now constructed with highly resilient Cupro Nickel for greater durability and longevity even in salt-based, high flow or aggressive water chemistry set ups.

L.E.D. Control Panel



Easy-to-read L.E.D. Control Panel provides digital temperature readout and diagnostics for quick identification of components that might need service.

For replacement parts see pages 151-152

Negative vs. Positive Vent Pressure

NEGATIVE vent pressure:

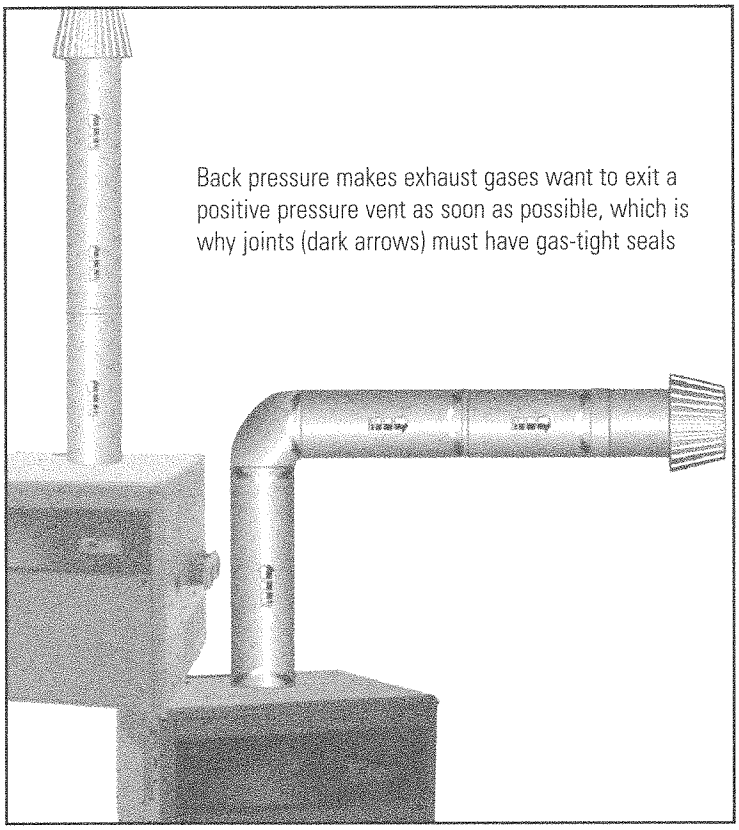
By definition, gases inside a negative pressure vent are under no pressure to escape and will simply exit upward (since hot air rises) through a properly designed, mostly vertical Negative Vent System.

Vent joints in a negative pressure do NOT need to be gas-tight, but may need to be taped if required by local codes.

POSITIVE vent pressure:

By definition, gases inside a positive pressure vent are under pressure to escape and will as soon as possible. However, allowing exhaust gases to escape through system leaks would be unacceptable and potentially fatal.

Therefore, vent joints in a positive vent system must be gas-tight, which requires installation of special vent piping.



Back pressure makes exhaust gases want to exit a positive pressure vent as soon as possible, which is why joints (dark arrows) must have gas-tight seals

As a General Rule ...

A negative pressure system must be mostly vertical and must have vertical termintaion ...

... while a positive pressure system may be mostly horizontal and may utilize horizontal or vertical termination.

Vent Sizing

Vents must be sized according to heater manufacturer specs. Below are general specifications for Negative and Positive venting of Hayward IDL, IDL2 and Universal H-Series heaters.

Negative	Positive
50 ft. max vertical height	*Positive venting solutions must be utilized any time negative vent criteria cannot be attained.*
25ft. max horizontal length	50 ft max with 1 elbow
Horizontal length cannot exceed 1/2 of vertical height	40 ft max with 2 elbows
3 elbows max.	30 ft max with 3 elbows
Single- or Double-Wall Galvanized Non-Sealed Vent Pipe.	Single- or Double-Wall Stainless Steel Sealed Vent Pipe.

Universal H-Series Indoor Vent Kit Matrix

INDOOR VENT ADAPTER KITS

Indoor Vent Adapter Kit – Horizontal

Positive Pressure – Horizontal Venting

This Kit enables indoor installations where the exhaust vent pipe termination is horizontal with stainless steel vent pipe and vent terminals available from Hayward or special ordered from Heatfab Division of Selkirk Corporation. This Kit **DOES NOT** allow the use of galvanized, non-sealed pipe.

Universal H-Series Model No.	Horizontal Venting Applications (Positive-Pressure)	Description	Vent Pipe Limitations	Vent Pipe Material	Vent Termination Requirement
H150FD	UHXPOSHZ11501	Indoor Vent Adapter Kit Positive Pressure, Horizontal or Vertical Venting Applications	a. 50 ft. maximum with (1) Elbow b. 40 ft. maximum with (2) Elbows c. 30 ft. maximum with (3) Elbows	Single or Double Wall Stainless Steel Sealed Vent Pipe	Horizontal or Vertical, Termination Immediately Outside Wall of House/Building
H200FD	UHXPOSHZ12001				
H250FD	UHXPOSHZ12501				
H300FD	UHXPOSHZ13001				
H350FD	UHXPOSHZ13501				
H400FD	UHXPOSHZ14001				

Part No.	Description
Horizontal Adaptors	
H150-250	
UHXPOSHZ1150	Horizontal Kit
UHXPOSHZ1200	Horizontal Kit
UHXPOSHZ1250	Horizontal Kit
Horizontal Kits H150-250	
IDXLELB1930	6" elbow
IDXLLEN1931	6" x 24" length
IDXLCAP1929 (150-200)	
IDXLCAP1930	6" termination cap (250 only)

Part No.	Description
H300-400	
UHXPOSHZ1300	Horizontal Kit
UHXPOSHZ1350	Horizontal Kit
UHXPOSHZ1400	Horizontal Kit
Horizontal H300-400	
FDXLELB1930	8" elbow
FDXLLEN1930	8" x 24" length
FDXLCAP1930	8" termination cap

Part No.	Description
Vertical Adaptors	
H150-250	
UHXNEGVT1150	6" vertical adaptor kit "B" vent
UHXNEGVT1200	6" vertical adaptor kit "B" vent
UHXNRGVT1250	6" vertical adaptor kit "B" vent
H300-400	
UHXNEGVT1300	8" vertical adaptor kit "B" vent
UHXNEGVT1350	8" vertical adaptor kit "B" vent
UHXNEGVT1400	8" vertical adaptor kit "B" vent

Indoor Vent Adapter Kit – Vertical

Negative Pressure – Vertical Venting

This Kit enables indoor installations where the exhaust vent pipe termination is required to be vertically terminated a minimum of 3 feet above the roof and a minimum of 2 feet above any portion of a building within 10 feet horizontally. This Kit **DOES NOT** allow horizontal vent termination.

Universal H-Series Model No.	Horizontal Venting Applications (Negative-Pressure)	Description	Vent Pipe Limitations	Vent Pipe Material	Vent Termination Requirement
H150FD	UHXNEGVT11501	Indoor Vent Adapter Kit Negative Pressure, Vertical Venting Applications	a. 50 ft. maximum vertical height b. 25 ft. maximum horizontal length (Horizontal length **CANNOT** exceed 1/2 of the vertical height) c. (3) Elbows maximum	Single or Double Wall Galvanized Steel Non-Sealed Vent Pipe	Vertical ONLY, Termination Above Roof of House/ Building
H200FD	UHXNEGVT12001				
H250FD	UHXNEGVT12501				
H300FD	UHXNEGVT13001				
H350FD	UHXNEGVT1350				
H400FD	UHXNEGVT14001				