



Advanced Heating
& Hot Water Systems

HIGH EFFICIENCY **Crossover** Commercial Water Heater



Many Commercial Applications



Advanced hi-fin heat exchanger
design for superior performance
up to **.92** UEF



Outdoor Units Available:
CGH-199WO & CGH-199WOLP



www.htproducts.com



HIGH EFFICIENCY **Crossover**



Commercial Water Heater

Fantastic Features



Advanced modulating
10 to 1 turndown ratio

Cascade up to 16 units
providing system redundancy
plus large turndown: up to 160 to 1

The water heating system
fits into small spaces

Endless hot
water - advanced
temperature control

Available in
liquid propane or
natural gas







Eco-friendly and low
NOx combustion system

Very low pressure drop, requires
only a small pump to provide
maximum output (standard tankless
require expensive large pumps)

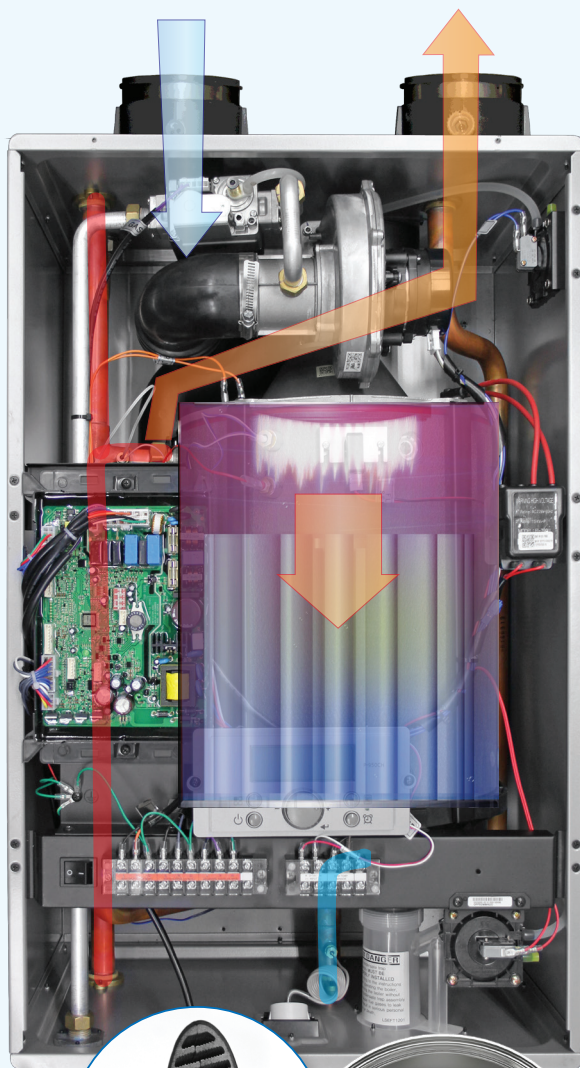
Durable 316L stainless steel hi-fin
heat exchanger design for
superior efficiency & up to .92 UEF

MANY COMMERCIAL APPLICATIONS

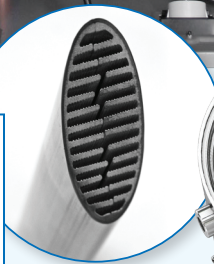


All Calculations are Based on 100 ° F Temperature Rise			First Hour Rating with Storage Tank			
Number of Crossover Heaters & Storage Tanks	Input Rate (BTU/Hr)	Pressure Drop at 20 GPM	Continuous Draw (GPH)	80 Gallons	119 Gallons	175 Gallons
	199,000	15 Feet of Head	227	287	317	359
	398,000		455	515	544	586
	597,000		682	742	772	814
	796,000		910	970	999	1,041
	199,000		227	347	406	490
	398,000		455	635	723	849

HOW THE CROSSOVER WORKS



316L Stainless Steel Hi-fin heat exchanger



The HTP Crossover CGH works on counter flow design to provide maximum energy efficiency in very small design. Crossover CGH Model works in conjunction with a large storage tank to provide a large volume of hot water without the need of expensive direct fired tanks. There is no stand by loss as the CGH unit holds only 3.5 gallons of water. Multiple units can be installed to provide backup. This will eliminate the potential for expensive downtime that can happen with large traditional systems. Multiple units provide system redundancy

Benefits of the CGH:

Very low pressure drop versus tankless systems that require expensive pumps to assure adequate flow through the heater to match the output rate.

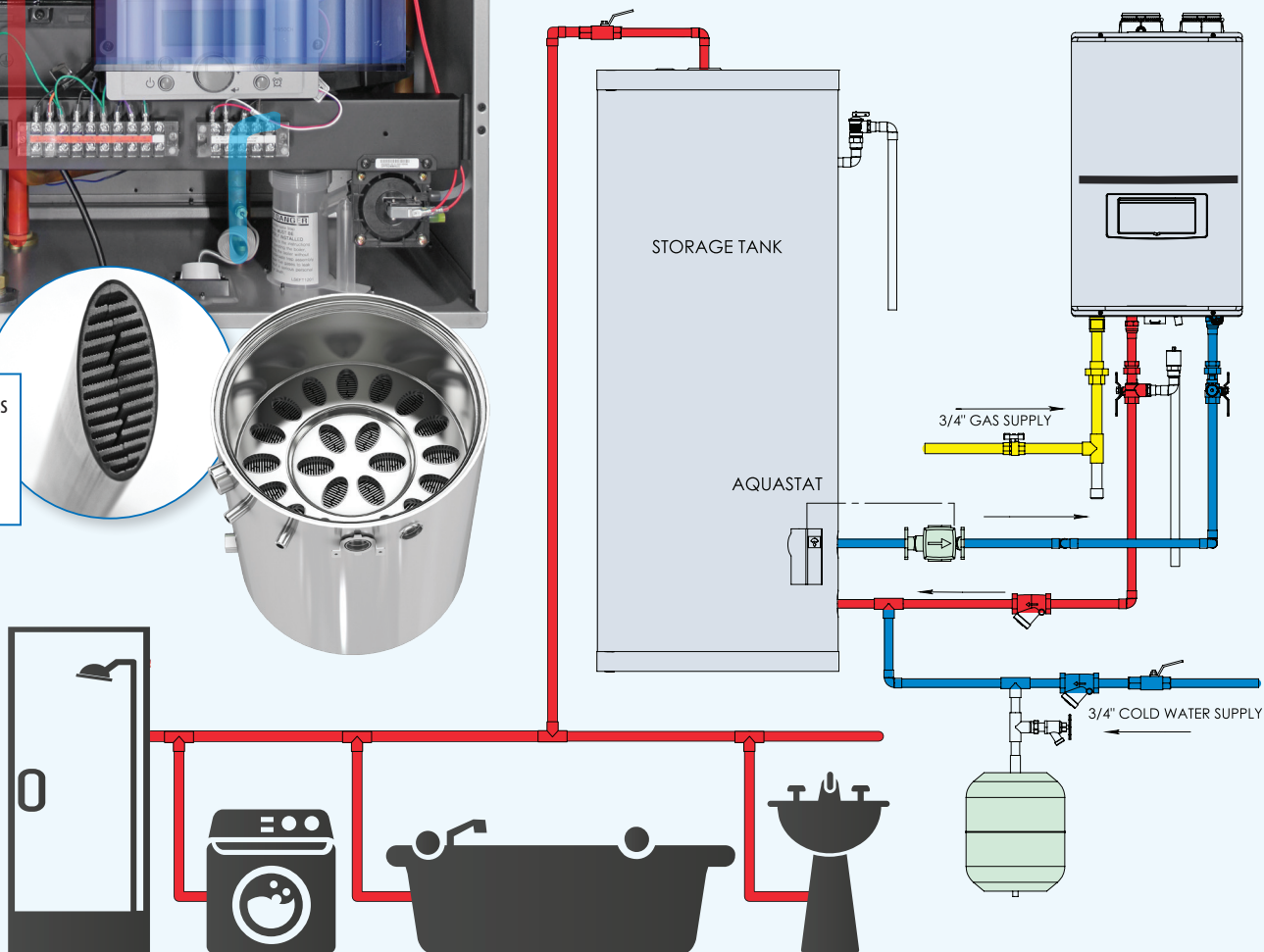
Fast recovery with 3.5 gallon volume and .92 UEF

Cascade up to 16 units with a 160 to 1 turndown ratio

The storage tank can be downsized to fit a tight installation

Crossover Commercial Water Heater is key :

HTP Crossover can be used in both commercial and residential applications to provide the highest efficiency without compromising the amount of hot water needed.



A CLOSER LOOK

HIGH EFFICIENCY Crossover



Modulating Gas Valve

10 to 1 Mixer

Intake Pipe

316L Stainless Steel Heat Exchanger

- Higher efficiency
- Lower pressure drop
- Compact storage:
- Hi-fin heat exchanger



Condensate Trap

Turbo Fan

Modulating fan provides significant power for long vent runs

Flue Air Pressure Sensor

Ceramic Fiber Burner

The Eco Pre-Mixed burner offers high combustion efficiency and low CO and NOx emissions

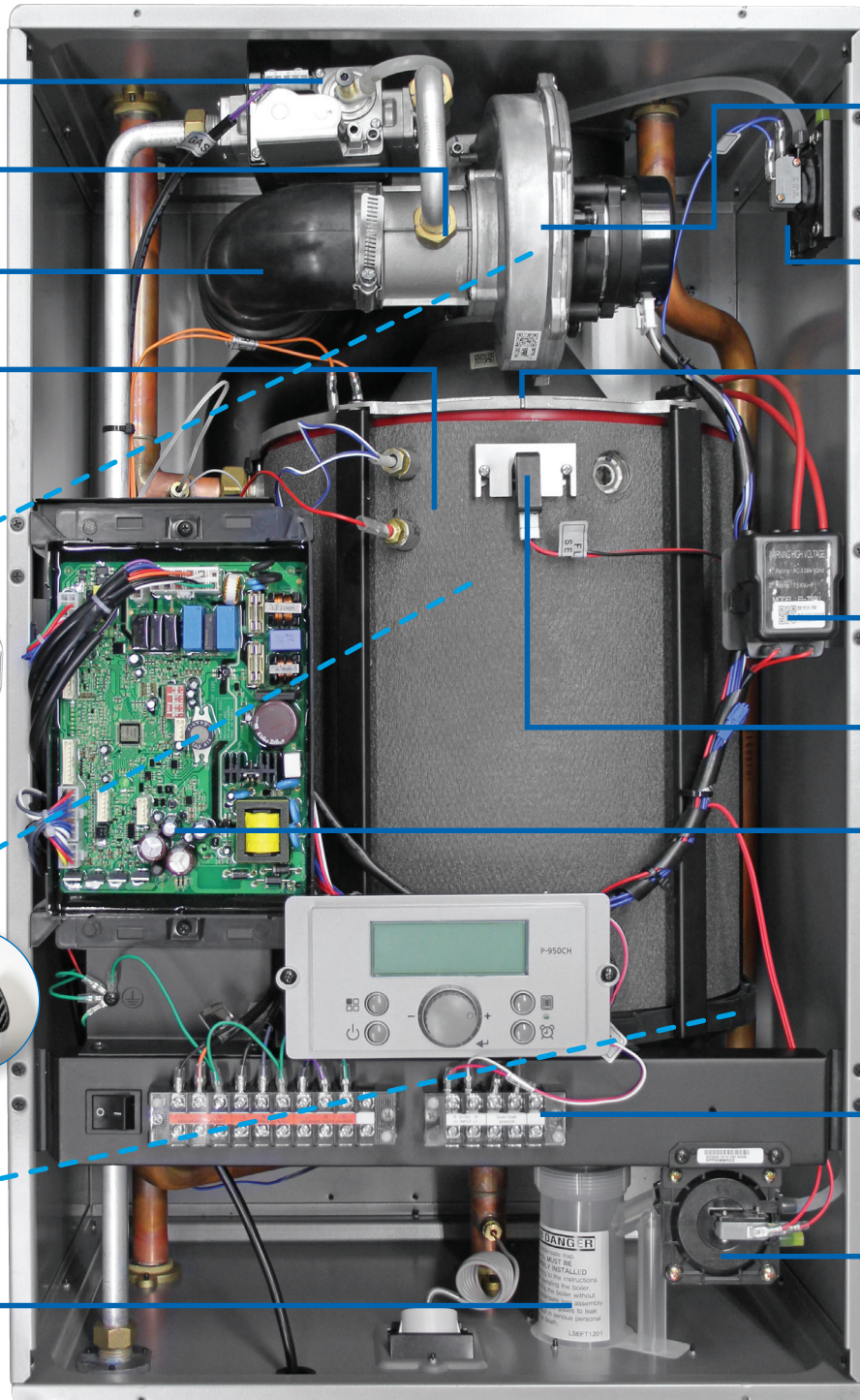
Ignition Transformer

Optical Flame Sensor

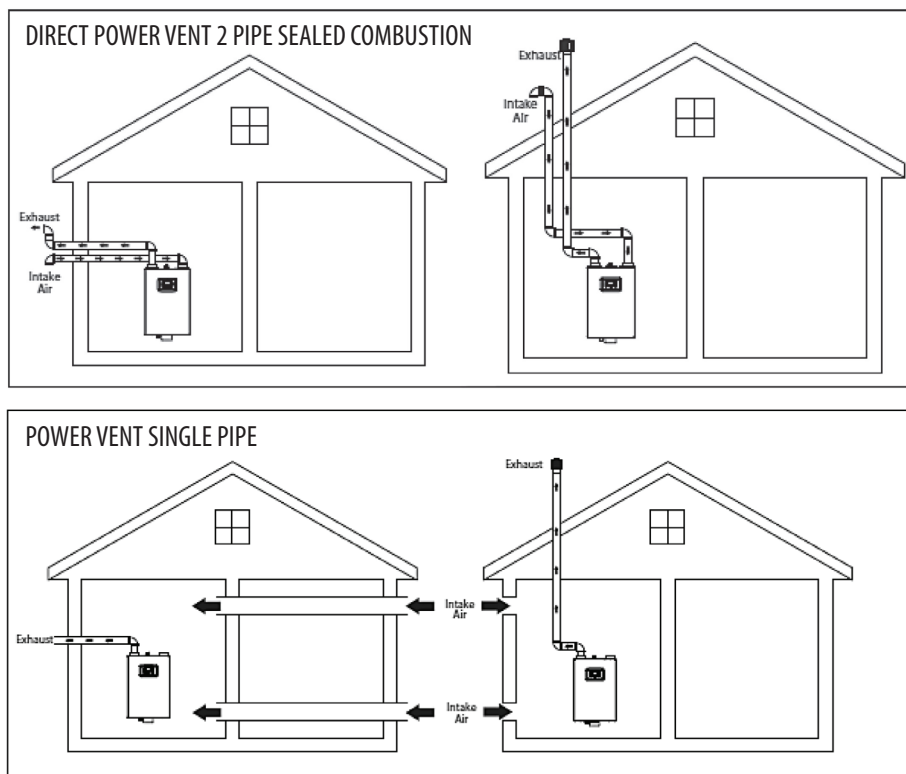
Control Board

Terminal Strip

Condensate Air Pressure Switch (APS)



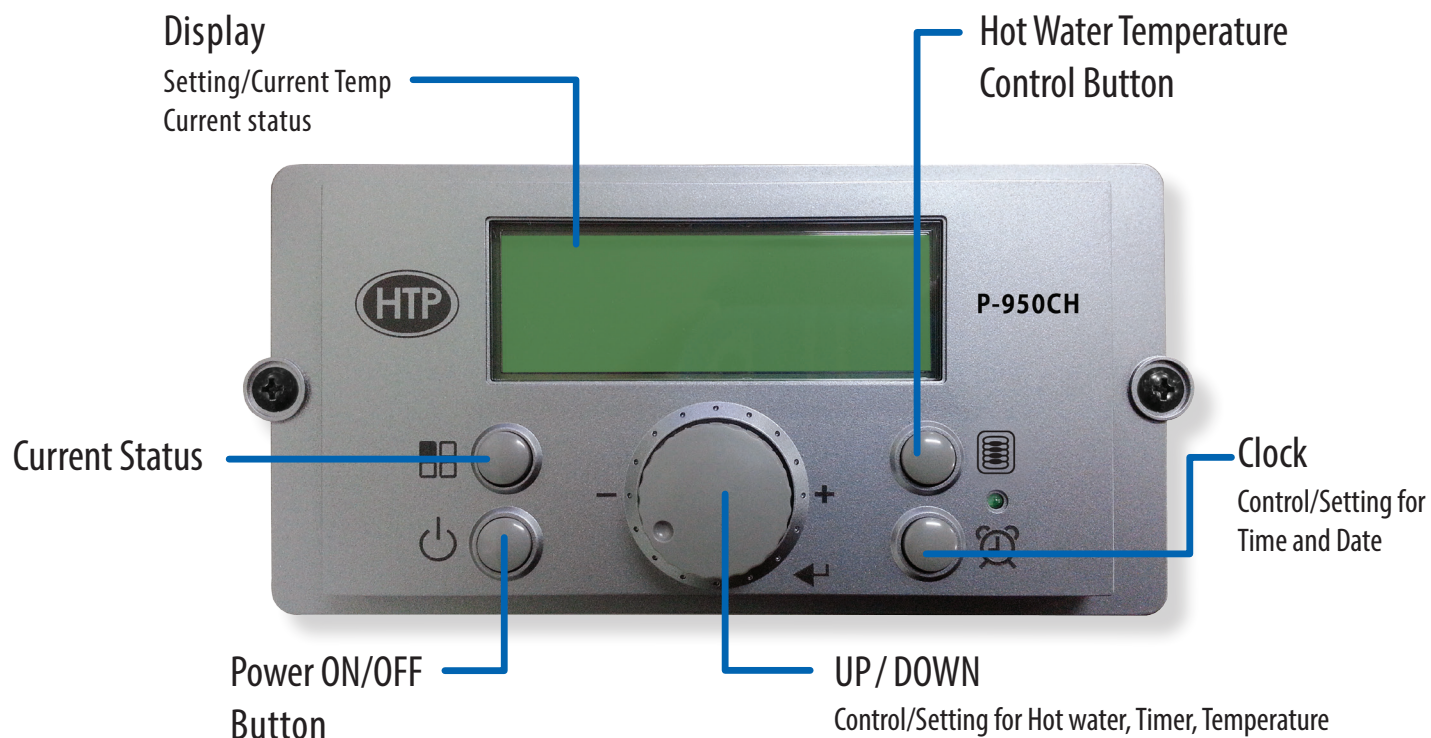
MULTIPLE VENTING CONFIGURATIONS



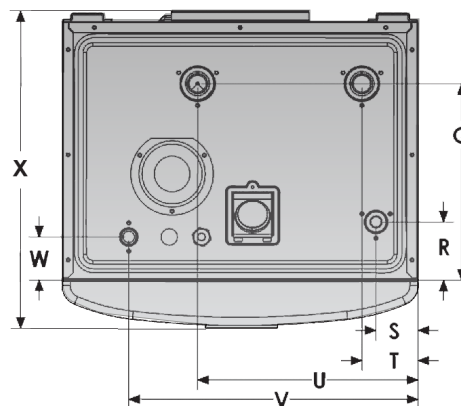
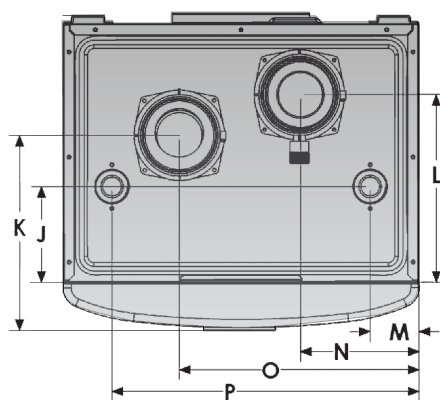
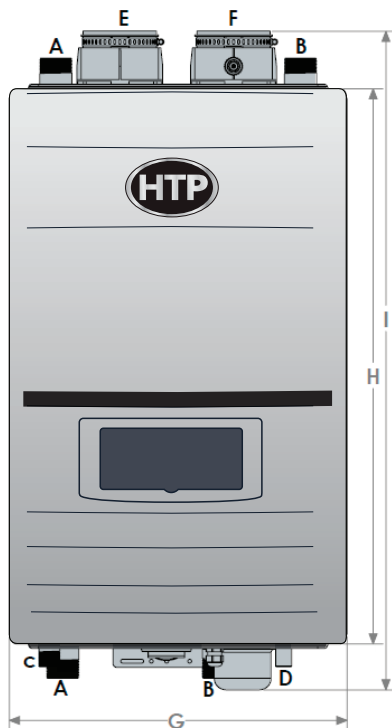
MULTIFUNCTION CONTROL PANEL

Customized Temperature Control

The advanced user friendly technology of heat capacity control makes domestic hot water even more comfortable by maintaining constant temperature during usage



12 Year Residential & 5 Year Commercial Limited Warranty



	DESCRIPTION	DIAMETER
A	CH SUPPLY ADAPTERS	1-1/4" NPT
B	CH RETURN ADAPTERS	1-1/4" NPT
C	GAS CONNECTION ADAPTER	3/4" NPT
D	CONDENSATE DRAIN ADAPTER	1/2" NPT
E	AIR INTAKE PIPE CONNECTION	3"
F	EXHAUST PIPE CONNECTION	3"

MODEL	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
CGH-199	19.7	31.9	37	67	88	10.8	2.75	5.8	12.5	17.5	9.9	2.8	2.1	2.2	11.7	15.8	2.2	16.8

**LP* Denotes Liquid Propane Units • An "O" after the "W" Denotes OUTDOOR Unit

MODEL		CGH-199W / CGH-199WO / CGH-199WLP / CGH-199WOLP*	
Installation		(Indoor or Outdoor Units) Wall Hung, Fully Condensing	
Minimum / Maximum Input (Btuh)		19,900 / 199,000	
UEF (Uniform Energy Factor) / Thermal Efficiency		.92 / 95%	
Recovery Efficiency		96%	
Hot Water Capacity	35°F Rise	11 GPM	
	45°F Rise	8.5 GPM	
	77°F Rise	5 GPM	
Domestic Temperature Setting Range		100° F to 160° F	
Weight (lbs)		100	
Flue System		Sealed Combustion Direct Vent; Power Vent	
Vent		2" (50 ft), 3" (100ft) Schedule 40 PVC, CPVC, PP	
Orifice Size	NG (Orifice/Needle)	.374" (8.3 mm)	
	LP (Orifice/Needle)	.240" (6.2 mm)	
Gas Supply Pressure	NG	3.5" to 14" WC	
	LP	3.5" to 14" WC	
Manifold Pressure	Min (3")	NG: 0.003" / LP: 0.004" WC	
	Max (3")	NG: -0.19" / LP: -0.20" WC	
Power Supply	Main Supply	120V 60Hz, 6A	
	Max Power Consumption	160W	
General Operating Conditions		Temperature Ambient Temperature Range: 33 – 104°F (0.6 – 40°C) Operating Relative Humidity: Up to 90% at 104°F (40°C) Shipping and Storage Temperature Range: -4 – 176°F (-20 – 80°C) Input Ratings Power Supply and Communication (CN4): 14V DC Product Approvals and Requirements EMC: 89/336/EEC - LVD: 73/23/EEC	
Ignition System		Direct Electric Ignition / Automatic Flame Sensing	
Burner System		Single Orifice Premixed Fuel Modulation / Ceramic Fiber Burner	
Gas Valve System		Air Ratio Valve	
Max GPM Rating Bin / Max GPM		High / 5.9	
Internal Pipe Material		Copper	
Dimensions (W x H x D)		W 19.7" – H 32" – D 17"	
Heat Exchanger Water Capacity		Under 3.5 Gallons	
Control Panel/Main Controller		P-950CH / NGTH-10CH	
Water Pressure		Min 12 – Max 150 PSI	
Connection Sizes	Water inlet & Outlet Recirculation Inlet	1 1/4" NPT	
	Gas Inlet	3/4" NPT	
Materials	Cabinet	Cold Rolled Carbon Steel	
	Heat Exchange	316L Stainless Steel	
Safety Devices		Optical Flame Sensor, Burner Plate High Limit (392oF), Water Temperature High Limit Sensor (203oF), Freeze Protection (Three Stage Operation - Activates at 46oF – See Freeze Protection in Installer Menu for Details), Exhaust Temperature High Limit Sensor (190oF), Flue Air Pressure Switch, Condensate Switch, Built-In Low Water Cut-Off Probe	