

LAARS[®] **COMBI HEAT[™]**

Combination
Water Heaters
with Heating Coils



LAARS[®] 
Heating Systems Company
A subsidiary of **BRADFORD WHITE** Corporation

Dual-Purpose Performance Water Heaters ***from Laars® Heating Systems Company***

Get the Laars® Combi Heat™ water heaters for combined space and water heating. These models heat the potable water in the tank. Heat from the hot water is efficiently transferred through the heat exchanger to the fluid within the coil for use in radiant heating or other heating applications.

Laars combination water heaters provide space heating and plenty of potable hot water. These energy efficient water heaters save both money and valuable interior space.

COMBINATION SPACE AND WATER HEATING SYSTEMS

Combination space and water heating systems consist of a storage water heater, a heat delivery system (for example, radiant panels, a fan coil or hydronic baseboards) and associated pumps and controls. The water heater is installed and operated as a conventional water heater. When there is a demand for domestic hot water, water enters the bottom of the tank and hot water from the top of the tank is delivered to the load. When there is a demand for space heating, a pump circulates water through the coil inside the tank, and out to the heat emitters. The storage tank is maintained at the desired temperature for domestic hot water. Because this temperature is cooler than conventional hydronic systems, the space heating delivery system needs to be slightly larger than typical. Alternatively, the storage tank can be operated at a higher water temperature; this requires tempering valves to prevent scalding at the taps.

HYDRONIC HEATING SYSTEMS

Hydronic heating systems use circulating water to distribute heat energy to the space. They typically use baseboard convectors, fan coils or radiant panels (such as ceilings, floors or walls) to transfer heat throughout the room.



Combination vs Conventional HEATING SYSTEMS

Combination	Conventional
ENERGY USE & EMISSIONS: Reduced energy use and emissions by 15% or more	ENERGY USE & EMISSIONS: Typically meets code for energy use and emissions
SPACE: Reduced space requirements due to elimination of separate boiler and vent or chimney stack chase	SPACE: Requires 2 to 4 square feet per unit for separate boiler and vent stack chase
INSTALLED COST: Units cost more, but installation costs are reduced due to elimination of separate boiler	INSTALLED COST: Cheaper units, but higher installation costs
O&M COST: Replacement costs are reduced due to elimination of separate boiler to maintain or replace	O&M COST: Maintenance costs are higher
UTILITY COSTS: Reduced by 15% or more	

INSTALLATION

Water heaters with space heating capacity require sophisticated controls, so installation requires specialized skills with each particular system. These systems are appropriate for both new construction or retrofit applications.

BENEFITS/COSTS

Some state and local jurisdictions offer rebates and tax credit programs that could help lower costs. Also, fewer moving parts allow easier maintenance and less service. Since only one source of heat is required, multiple utility hook-ups are not required.

LAARS® COMBI HEAT™ WATER HEATERS

Laars Heating Systems Combi Heat™ water heaters featuring a glass-coated, double-wall heat exchanger coil are the next generation of combination water and space heating products. The Laars® Combi Heat™ is the perfect system to provide home space heating and potable hot water from a single energy-saving source. Laars® Combi Heat™ conventional water and space heaters are available in capacities of 50 and 75-gallons. The 50-gallon model comes equipped with an extremely safe, reliable and maintenance-free Flammable Vapor Ignition Resistance (FVIR) system.

The Laars® Combi Heat™ FVIR Flammable Ignition Resistant Models Feature

(50 gallon model only):

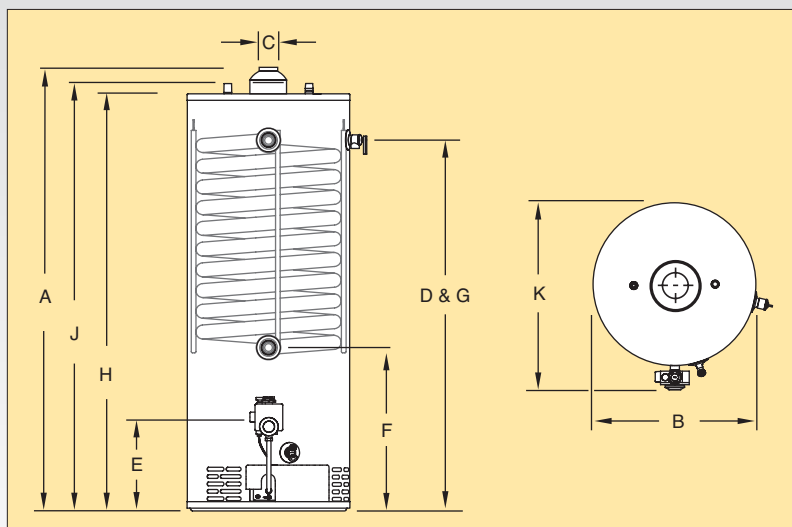
- **Advanced Flame Arrestor**—Flame arrestor is designed to prevent ignition of flammable vapor outside of the water heater.
- **Resettable Thermal Switch**—Proven and reliable bimetallic switch prevents burner and pilot operation in case of ongoing flammable vapor burn inside of the combustion chamber or restricted air flow.
- **Pedestal Base**—Rugged and durable base allows easy transport and positioning, and provides corrosion resistant contact with floor.
- **Maintenance Free**—Regular cleaning of air inlet openings or flame arrestor is not required under normal conditions.
- **Sight Window**—Offers a view into the combustion chamber to observe the operation of the pilot and burner.
- **Piezo Igniter**—Easy and quick lighting of the pilot burner by push button.

All Laars® Combi Heat™ Models Feature:

- **Heat Exchanger**—Double wall 1½" O.D. glass-coated steel coil ensures separation of potable water and heating fluid.
- **Low Heat Exchanger Head Loss**—Up to 10 GPM flow, with less than 5 ft. of head loss. Greatly reduces the required pump size for heat exchange.
- **Glass Lined Tank**—Laars Heating Systems water heater tanks are protected from the corrosive effects of hot water by an exclusive ceramic porcelain-like coating.
- **Fully Automatic Controls**—Built-in energy cut-off switch prevents abnormally high water temperature for extra safety. Built-in gas pressure regulation.
- **Steel Tank**—Heavy gauge steel automatically formed, rolled and welded to assure a continuous seam for glass lining.
- **Thermostatic Mixing Valve**—Supplied with unit to help prevent injury due to scalding.
- **Protective Aluminum Anode Rod**—Provides added protection against corrosion for long trouble-free service.
- **Flue Baffle**—Designed to maximize the amount of heat absorbed in the lower portion of tank. Reduces air movement in the heater during standby periods to retard heat loss up the flue.
- **Factory Installed Sediment Reduction System**—Cold water inlet sediment reducing device. Helps prevent sediment build up in tank. Increases first hour delivery of hot water while minimizing temperature build-up at top of tank.
- **Water Connections**—¾" NPT factory installed true dielectric fittings. Extends water heater life and eases installation.
- **2" Non-CFC Foam Insulation**—Surrounds the tank surface, saving energy by retarding loss of heat.
- **T&P Relief Valve**—Installed.
- **Brass Drain Valve.**
- **Design Certified by CSA International (formerly AGA/CGA).**



LAARS® COMBI HEAT™ WATER HEATERS



Note: LCH-75T will not have a pedestal base

Model Number	LCH-504T10		LCH-75T10		Heat Exchanger Head Loss	
	FBN	FCX	BN	CX	GPM	Ft. of Hd. Loss
Water Heating⊕						
FHD	105 U.S. Gal.	100 U.S. Gal.	135 U.S. Gal.	135 U.S. Gal.	2	trace
CA _{EF}	.55	.55	.52	.52	5	0.4
Space Heating					8	2.3
CA _{AFUE} %	80.0	80.0	82.0	82.0	10	4.6
Max. Heating Capacity⬆	55,000 BTU/Hr. (16.1 kW)		55,000 BTU/Hr. (16.1 kW)		12	6.9

⊕ Based on ANSI Z-21.10.1 and 10.3 and DOE Test Methods.

⬆ Based on ANSI/ASHRAE 124 Standard.

Actual values may vary based on circulator flow rate, number of zones, water and space heating demands. Numbers subject to change.

Residential Laars® Combi Heat™

DELUXE ENERGY SAVER MODELS

Model Number	Capacity			Input				Recovery 90°F Rise				Recovery 50°C Rise	
	Imp. Gal.	U.S. Gal.	Liters	Nat. BTU/Hr.	LP BTU/Hr.	Nat. kW	LP kW	Nat. U.S. GPH	Nat. Imp. GPH	LP U.S. GPH	LP Imp. GPH	Nat. Liters/Hour	LP Liters/Hour
LCH-504T10FBN	38	45	170	65,000	61,000	19.1	17.9	70	59	66	55	265	250
LCH-75T10BN	61	72	272	76,000	76,000	22.3	22.3	81	70	81	70	317	317

Model Number	A	B	C	D	E	F	G	H	J	K	Approx. Shipping Weight
	Floor to Flue Conn. in. cm.	Jacket Diameter in. cm.	Vent Dia. in. cm.	Floor to T&P Conn. in. cm.	Floor to Gas Conn. in. cm.	Floor to Exchanger Inlet in. cm.	Floor to Exchanger Outlet in. cm.	Floor to Top of Heater in. cm.	Top Water Conn. in. cm.	Depth in. cm.	Lbs. Kg.
LCH-504T10FBN	59 1/4 140	22 56	4 10	50 127	13 33	27 7/8 150	50 150	56 3/8 143	57 145	24 1/2 62	238 108
LCH-75T10BN	63 1/4 153	26 66	4 10	53 135	16 41	30 7/8 162	53 162	60 1/4 162	61 1/4 156	28 1/2 72	328 149

All propane heaters are equipped with a cast iron burner. To order a propane heater change suffix "BN" to "CX". *Based on manufacturers rated recovery efficiency.

Meets or exceeds the insulating standards established under ASHRAE Standard 90.1b (current edition).

All natural gas models meet SCAQMD Requirements.

Meets NAECA Requirements

General: All gas water heaters are certified at 300 PSI test pressure (2068 kPa) and 150 PSI working pressure (1034 kPa). All potable water and heat exchanger connections are 3/4" NPT (19mm) on 11" (203mm) centers. All gas connections 1/2" (13mm).

All models design certified by CSA International (formerly AGA/CGA), ANSI Z-21.10.1 and or 10.3 and peak performance rated.

Dimensions and specifications subject to change without notice in accordance with our policy of continuous product improvement.

Suitable for Water (Potable) Heating and Space Heating

Toxic chemicals, such as those used for boiler treatment, shall NEVER be introduced into the potable water side. The potable side of this unit may NEVER be connected to any existing heating system or component(s) previously used with a non-potable water heating appliance. The heat exchanger side of the unit may be used in space heating applications.

LAARS® COMBI HEAT™ PV WATER HEATERS

Laars Heating Systems Combi Heat™ PV (power-vented) water heaters also feature a glass-coated, double-wall heat exchanger coil. These combination water and space heating products provide home space heating and potable hot water from a single energy-saving source. The Laars® Combi Heat™ PV models are available in capacities of 50 and 75-gallons. The 50-gallon model comes equipped with an extremely safe, reliable and maintenance-free Flammable Vapor Ignition System.

The Laars® Combi Heat™ PV FVIR Flammable Ignition Resistant Models Feature

(50 gallon model, only):

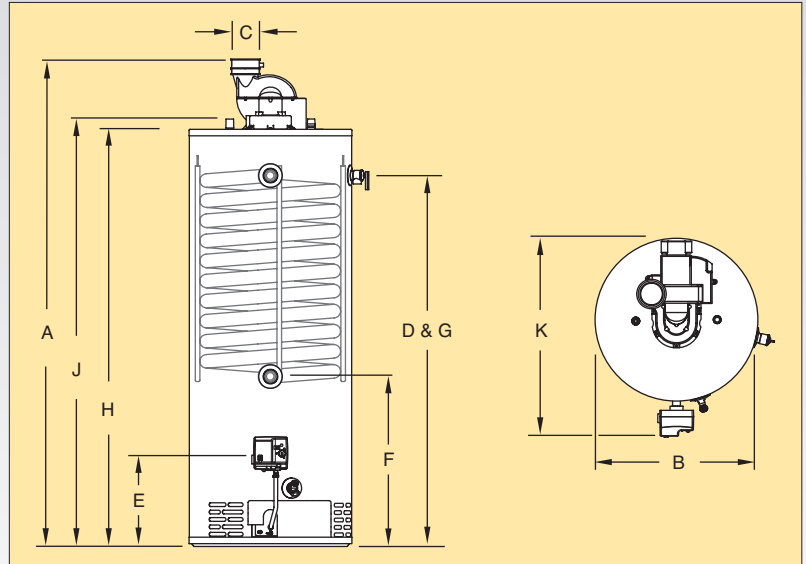
- **Advanced Flame Arrestor**—Flame arrestor is designed to prevent ignition of flammable vapor outside of the water heater.
- **Flammable Vapor Sensor**—Electronic sensor prevents burner operation if flammable vapors are detected. The sensor will also prevent operation if there is ongoing flammable vapor burn inside the combustion chamber.
- **Maintenance Free**—Regular cleaning of air inlet openings or flame arrestor is not required under normal conditions.
- **Sight Window**—Offers a view of the pilot and burner operation.
- **Pedestal Base**—Rugged and durable base allows easy transport and positioning, and provides corrosion resistant contact with floor.
- **Stainless Steel Flue Baffle**—Designed to maximize the amount of heat absorbed in the lower portion of tank.

All Laars® Combi Heat™ PV Models Feature

- **Horizontal and Vertical Venting**—With 3" or 4" PVC, ABS OR CPVC (maximum equivalent vent length on reverse side).
- **Powerful Blower Motor**—Our design has higher torque for greater resistance to outside winds and the power to eliminate problems with difficult venting situations. This significantly quieter motor runs cooler for a considerably longer operational life.
- **Heat Exchanger**—Double wall 1½" O.D. glass-coated steel coil ensures separation of potable water and heating fluid.
- **Low Heat Exchanger Head Loss**—Up to 10 GPM flow, with less than 5 ft. of head loss. Greatly reduces the required pump size for heat exchange.
- **Spark to Pilot Ignition System**—Eliminates the constant burning pilot used on other water heaters.
- **Electronic Gas Control Valve**—The integrated, immersion gas control valve offers more precise temperature control for higher first hour delivery and also allows water temperature adjustment without removing the cover. The control is equipped with an LED display to aid in start-up and diagnostics.
- **Glass Lined Tank**—Laars Heating Systems water heater tanks are protected from the corrosive effects of hot water by an exclusive ceramic porcelain-like coating.
- **Steel Tank**—Heavy gauge steel automatically formed, rolled and welded to assure a continuous seam for glass lining.
- **Thermostatic Mixing Valve**—Supplied to help prevent injury due to scalding.
- **Protective Aluminum Anode Rod**—Provides added protection against corrosion for long trouble-free service.
- **Factory Installed Sediment Reduction System**—Cold water inlet sediment reducing device. Helps prevent sediment build up in tank. Increases first hour delivery of hot water while minimizing temperature build up at top of tank.
- **Water Connections**—¾" NPT factory installed true dielectric fittings.
- **2" Non-CFC Foam Insulation**—Covers the sides and top of tank to save energy by retarding loss of heat. Also increases jacket rigidity.
- **T&P Relief Valve**—Installed.
- **Brass Drain Valve.**
- **Design Certified by CSA International (formerly AGA/CGA).**



LAARS® COMBI HEAT™ PV WATER HEATERS



Note: LCH-TW75 will not have a pedestal base

Model Number	LCH-TW50T10		LCH-TW75T10		Heat Exchanger Head Loss	
	FBN	FCX	BN	CX	GPM	Ft. of Hd. Loss
Water Heating						
FHD	105 U.S. Gal.	98 U.S. Gal.	135 U.S. Gal.	133 U.S. Gal.	2	trace
CAEF	.65	.65	.64	.64	5	0.4
Space Heating					8	2.3
CAAFUE%	82.0	82.0	82.0	82.0	10	4.6
Max. Heating Capacity		55,000 BTU/Hr. (16.1 kW)		55,000 BTU/Hr. (16.1 kW)	12	6.9

⊛ Based on ANSI Z-21.10.1 and 10.3 and DOE Test Methods.

♦ Based on ANSI/ASHRAE 124 Standard. Actual values may vary based on circulator flow rate, number of zones, water and space heating demands. Numbers subject to change.

LCH-TW50 LCH-TW75	3" Vent Pipe	4" Vent Pipe
Max. Equivalent Length	†60 ft.	†180 ft.
Min. Equivalent Length	7 ft.	15 ft.
Number of 90° Elbows	1 55 ft. 2 50 ft. 3 45 ft.	175 ft. 170 ft. 165 ft.

†For high altitude installations, consult the installation instructions.

Residential Laars® Combi Heat™ PV

DELUXE ENERGY SAVER MODELS

Model Number	Capacity			Input				Recovery 90° F Rise				Recovery 50° C Rise	
	Imp. Gal.	U.S. Gal.	Liters	Nat. BTU/Hr.	LP BTU/Hr.	Nat. kW	LP kW	Nat. U.S. GPH	Nat. Imp. GPH	LP U.S. GPH	LP Imp. GPH	Nat. Liters/Hour	LP Liters/Hour
LCH-TW50T10FBN	38	45	170	67,000	60,000	19.6	17.5	72	60	65	54	272	246
LCH-TW75T10BN	61	72	272	76,000	75,500	22.3	22.1	82	69	81	67	310	306

Model Number	A	B	C	D	E	F	G	H	J	K	Approx. Shipping Weight Lbs. Kg.
	Floor to Vent Conn. in. cm.	Jacket Diameter in. cm.	Vent Dia. in. cm.	Floor to T&P Conn. in. cm.	Floor to Gas Conn. in. cm.	Floor to Exchanger Inlet in. cm.	Floor to Exchanger Outlet in. cm.	Floor to Top of Heater in. cm.	Floor to Top of Water Conn. in. cm.	Depth in. cm.	
LCH-TW50T10FBN	65 7/8 167	22 56	3 8	50 1/8 127	11 3/4 30	28 71	50 1/8 127	56 3/8 143	57 3/4 147	26 3/4 68	245 111
LCH-TW75T10BN	69 3/4 177	26 66	3 8	53 135	15 39	30 7/8 78	53 155	60 1/4 153	61 1/2 156	31 79	335 152

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View our entire product line at www.Laars.com



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