

CONDENSING COMMERCIAL GAS WATER HEATERS



SMART SYSTEM™

OPERATING CONTROL FEATURING
A BUILT-IN CASCADING SEQUENCER

2 WALL MOUNT SPACE SAVING MODELS—
125,000 BTU/HR AND 199,999 BTU/HR

FIRING RATE MODULATION TO 5:1

LESS THAN 20 ppm NO_x

DIRECT-VENT FLEXIBILITY TO 100 FEET



**UP TO 96%
THERMAL EFFICIENCY**



Lochinvar.com



A WALL MOUNTED WATER HEATER

Lochinvar has added to its successful stainless steel, condensing Armor water heater series with special wall mounted models. The Armor Wall Mount is available in two sizes, 125,000 and 199,999 Btu/hr input. The light weight but powerful water heaters hang on any wall to give you more free space in your mechanical room.

THE “BETTER IDEA” SYSTEM VERSUS INSTANTANEOUS WATER HEATERS

The water heater and tank combination is the heart of Lochinvar’s “BETTER IDEA” water heating philosophy. The ARMOR water heater is always installed with a separate storage tank to provide an effective water heating package for commercial domestic water systems. The industry has made a few unsuccessful attempts at applying residential instantaneous water heating to commercial applications. Instantaneous products are outmatched by the faster, larger and variable hot water demands of a commercial application. A body of water is essential to supply the water to a system at a variety of speeds and volumes. What’s more, the ARMOR “BETTER IDEA” system delivers lower equipment costs and lower installation costs than a comparable instantaneous package.



FULLY MODULATING WITH 5:1 TURNDOWN

ARMOR features advanced Negative Regulation (Neg/Reg) sealed combustion technology, permitting fan speed to constantly adjust the volume of fuel and air entering the burner. This ensures that ARMOR can safely and reliably operate with supply gas pressure as low as 4 inches water column.

ARMOR is equipped with fully modulating combustion with 5:1 turndown. This means ARMOR can fire as low as 20% of maximum input when water heating demand is lowest, and increase the firing rate up to 100% as demand increases. The result is better overall efficiency and less cycling, compared to all other tank-type units which are “on-off,” which means they can only fire at 100% of maximum input.

STAINLESS STEEL CONDENSING HEAT EXCHANGER

The stainless steel design provides superior resistance to corrosion caused by condensation from low entering water temperatures. Traditional commercial water heaters will fail early with low entering water temperatures; however, with the ARMOR the lower the supply water temperature the more efficiently it performs throughout the life of the heater.

A STAINLESS STEEL STORAGE TANK

Available in 60, 80 and 119 gallon capacities, Lochinvar’s Lock-Temp Stainless Steel storage tank makes a perfect companion to the Armor Floor Mount and Wall Mount water heaters. 14 gauge 316L stainless is formed, cut and fully welded into a light weight tank.

The stainless steel is “passivated” with a nitric acid treatment to re-establish the oxide level of the metal after welding and to ensure corrosion resistance. The tank is finished with a dent resistant polypropylene jacket and high density expanded foam insulation rated to exceed ASHRAE Energy Efficiency Standards with standby losses. Lochinvar backs its Stainless Steel Storage Tank with a 10 year limited warranty.



SMART SYSTEM

THE ULTIMATE WATER HEATER OPERATING CONTROL WITH GRAPHIC LCD DISPLAY

WATER HEATERS WITH DIFFERENT INPUTS CAN BE CASCADED TOGETHER TO MAXIMIZE TURNDOWN CAPABILITY

COMPATIBILITY WITH COPPER-FIN II® CONDENSING WATER HEATER TO CREATE A FRONT END LOADING SYSTEM

NIGHT SETBACK CAPABILITIES

› SETBACK OF STORAGE TANK TEMPERATURE

WATER HEATER PUMP CONTROL:

- › PUMP DELAY WITH FREEZE PROTECTION
- › BUILDING RECIRCULATION PUMP CONTROL*
- › PUMP EXERCISE

HIGH-VOLTAGE TERMINAL STRIP:

- › 110 VAC INPUT TO WATER HEATER
- › DRY CONTACTS FOR WATER HEATER PUMP CONTROL
- › DRY CONTACTS FOR BUILDING RECIRC. PUMP CONTROL *

LOW-VOLTAGE TERMINAL STRIP

WITH 28 POINTS OF CONNECTION

- › 0-10V WATER HEATER RATE OUTPUT
- › 0-10V HEAT DEMAND INPUT
- › MODBUS CONTACTS

USB CONNECTION POINT FOR OPTIONAL SMART SYSTEM PC SOFTWARE WITH ADVANCED SETUP AND DIAGNOSTICS

MODBUS COMPATIBILITY (OPTIONAL)

* EXCLUSIVE TO LOCHINVAR SMART SYSTEM



LONG-LASTING “LIFE CYCLE” EFFICIENCY

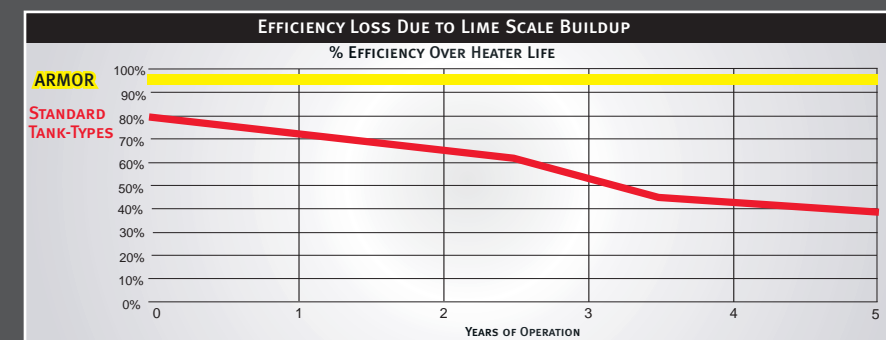
In a standard tank-type water heater, lime scale builds up over time on important heat transfer surfaces, insulating the water from the heat source. This buildup in the bottom of the tank and around the flue tubes can cause tank-type heaters to fail in as little as 2-3 years. This decreases thermal efficiency and increases operating cost. Just 1/4" of lime scale in the tank can increase operating costs as much as 25%!

ARMOR’s “dual component” concept eliminates the impact of lime scale, maintaining a high-rated thermal efficiency and low operating cost throughout its long life cycle.

The chart below illustrates how ARMOR is a better way, delivering true “life cycle efficiency” compared to standard tank-type units.



Traditional tank-type water heater flue tubes with nearly 6" of lime scale buildup



5 FLEXIBLE VENTING OPTIONS - Up to 100 feet of air intake and 100 feet of exhaust vent with PVC, CPVC, Polypropylene or SS.



up to 100 equivalent feet using either PVC, CPVC, Polypropylene or AL29-4C stainless steel vent pipe. Intake and exhaust runs can terminate horizontally through a sidewall or vertically through the roof.

Direct Vent Sidewall



Direct Vent Vertical



Vertical w/Sidewall Air

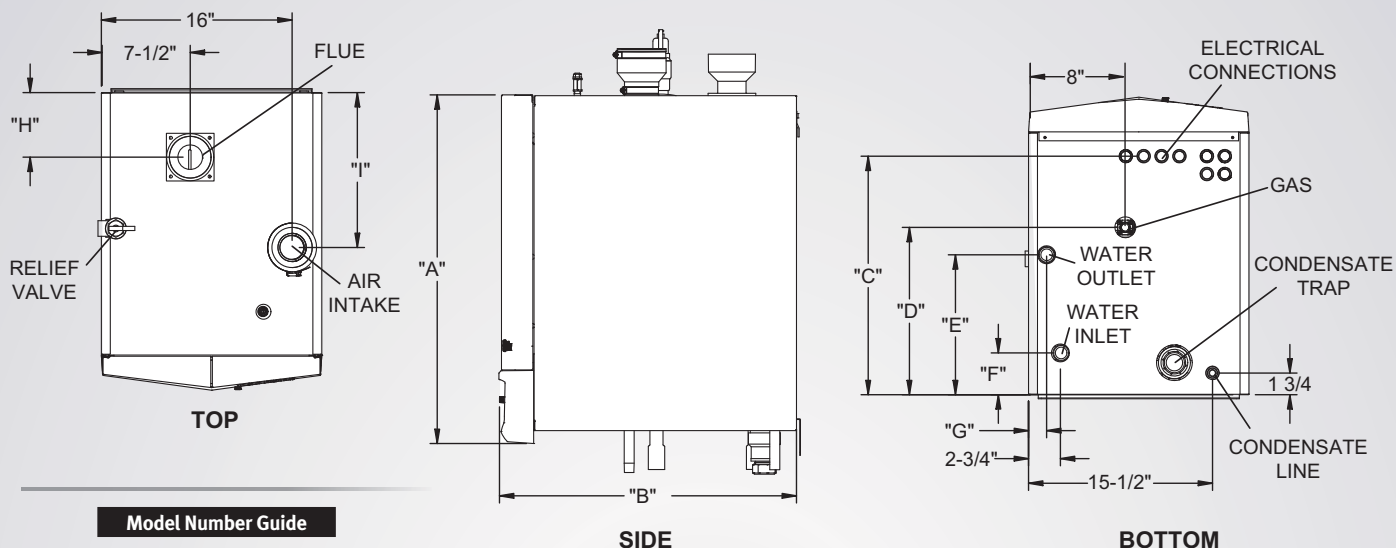
Concentric Direct Vent Vertical*



Concentric Direct Vent Sidewall*



ARMOR™ WALL MOUNT WATER HEATER DIMENSIONS AND SPECIFICATIONS



Model Number	Btu/hr Input	GPH @ 100° Rise	A	B	C	D	E	F	G	H	I	Gas Conn.	Water Conn.	Air Inlet	Vent Size	Shipping Wt. (lbs.)
WAN125PM	125,000	144	29-1/4"	18"	13"	7"	13"	3-1/2"	2-3/4"	5-1/2"	6"	1/2"	1"	3"	3"	145
WAN200PM	199,999	235	29-1/4"	25"	20"	14"	11-3/4"	3-1/2"	1-1/2"	5-1/2"	13"	1/2"	1-1/4"	3"	3"	177

STANDARD FEATURES

- › Up to 96% Thermal Efficiency
- › Wall Mounted Models
- › Modulating Burner with 5:1 Turndown
 - › Direct-Spark Ignition
 - › Low NOx Operation
 - › Sealed Combustion
 - › Low Gas Pressure Operation
- › Vertical & Horizontal Direct-Vent
 - › PVC, CPVC, Polypropylene or SS up to 100 Feet
 - › PVC/CPVC Sidewall Vent Termination
- › Stainless Steel Heat Exchanger
 - › All Welded Construction, Gasketless Design
 - › 160 psi Working Pressure
- › Natural to L.P. Conversion Kit
- › All Bronze Circulating Pump
- › Flow Switch
- › Temperature & Pressure Relief Valve
- › Tank Sensor
- › Adjustable High Limit w/ Manual Reset
- › Automatic Reset High Limit
- › Condensate Trap
- › Zero Clearances to Combustible Material
- › 5 Year Limited Warranty (See Warranty for Details)
- › 1 Year Parts Warranty (See Warranty for Details)

SMART SYSTEM™ FEATURES

- › SMART SYSTEM™ Digital Operating Control
 - › Multi Color Graphic LCD Display
- › Built in Cascading Sequencer for up to 8 Water Heaters
 - › Multiple Size Water Heater Cascade
 - › Lead Lag
 - › Efficiency Optimization
- › Building Management System Integration
 - › Modbus Communication (Optional)
 - › 0-10VDC Input to Control Modulation or Set point
 - › 0-10VDC Modulation Rate Output
 - › 0-10VDC Input to Enable/Disable call for heat
- › Access to BMS Settings Through Graphic LCD Display
- › Low Water Flow Safety Control & Indication
- › Inlet & Outlet Temperature Sensors & Readout
- › Flue Temperature Sensor
- › Water Heater Pump Control
- › Pump Delay with Freeze Protection
- › Pump Exercise
- › Night Setback
- › Building Recirculation Loop Pump Control*
- › Time Clock
- › Maintenance Reminder
 - › Ability to program installer name and number into the product as service contact

- › High Voltage Terminal Strip
 - › 120 VAC / 60 Hertz / 1 Phase Power Supply
 - › Pump Control Contacts
 - › Water Heater Pump Control Contacts
 - › Building Recirculation Pump Control Contacts
- › Low Voltage Terminal Strip
 - › 24 VAC Louver Relay
 - › Louver Proving Switch Contacts
 - › Flow Switch Contacts
 - › Alarm on Any Failure Contacts
 - › Runtime Contacts
 - › Tank Sensor Contacts
 - › Cascade Contacts
 - › 0-10 VDC BMS External Control Contact
 - › 0-10VDC Boiler Rate Output Contacts

FIRING CONTROL SYSTEMS

- › M9 Standard Construction

OPTIONAL EQUIPMENT

- › Alarm Bell
- › Condensate Neutralization Kit
- › Concentric Vent Kit (3" PVC/CPVC only)
- › ModBus Communications
- › BMS Gateway to LON or BacNet
- › SMART SYSTEM PC Software

*Exclusive to Lochinvar



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