

LENNOX Complete Heat SPACE HEATING/WATER HEATING SYSTEM

HM30/AM30

CAE - 90.0%

Space Heating Input - 40,000 to 120,000 Btuh (11.7 to 35.2 kW)

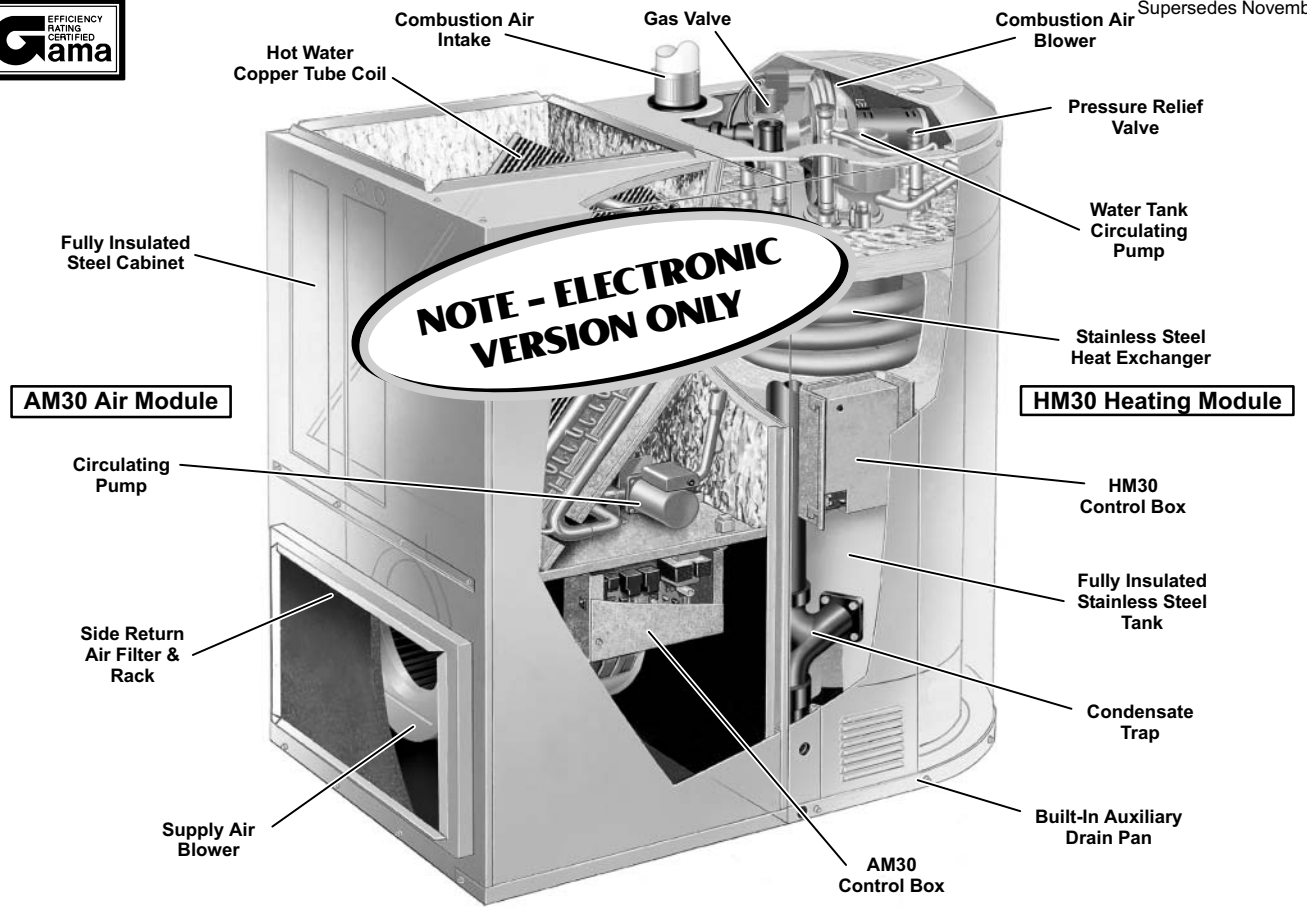
Water Heating Input - 85,000 to 150,000 Btuh (24.9 to 44.0 kW)

Nominal Add-On Cooling - 1-1/2 to 5 Tons (5.3 to 17.6 kW)

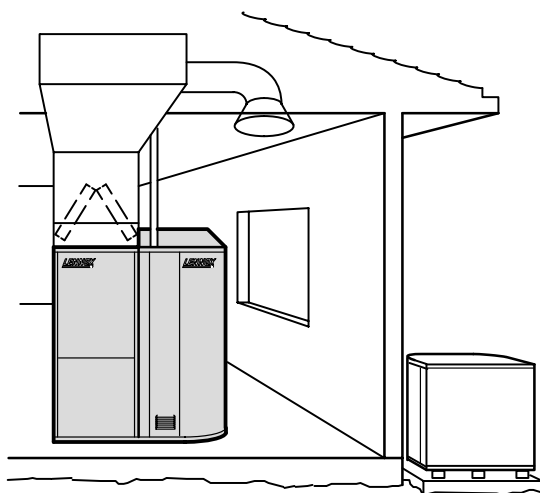
Bulletin No. 210057E

September 2002

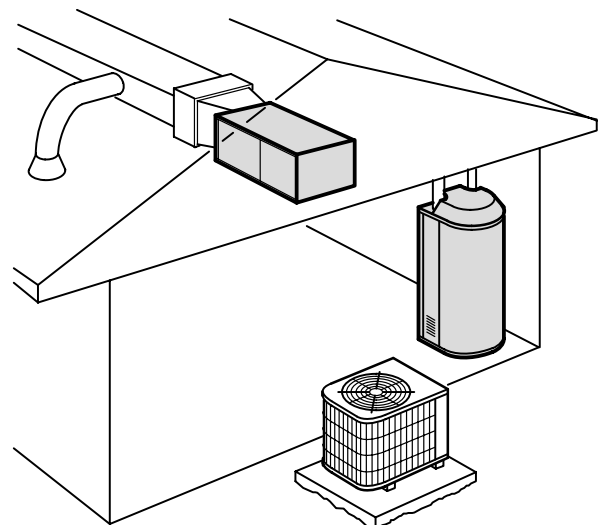
Supersedes November 2001



Typical Applications



Up-Flow Close-Coupled Installation with Cooling Coil



Horizontal Remotely Located Installation with Cooling Coil

NOTE - Due to Lennox' ongoing commitment to quality, Specifications, Ratings and Dimensions subject to change without notice and without incurring liability. Improper installation, adjustment, alteration, service or maintenance can cause property damage or personal injury. Installation and service must be performed by a qualified installer and servicing agency.

FEATURES

Application

- Lennox CompleteHeat combination forced air and water heating system combines high efficiency space heating with high efficiency water heating.
- CompleteHeat system consists of HM30 Water Heating Module and AM30 Air Module.
- HM30 available for use with natural or LPG/Propane gas.
- HM30 tank stores 30 US gallons (114 L) of hot water at adjustable temperatures ranging from 110°F to 160°F (43° to 71.1°C).
- HM30 is capable of operating as a stand-alone water heater module as well as part of the CompleteHeat system. HM30 may also be used with radiant heating systems.
- AM30 may be used with other makes of water heaters.
- AM30 circulates hot water through a hot water coil, supply air blower extracts the heat from the coil and distributes heated air throughout the conditioned space.
- AM30 is a multi-position (up-flow, down-flow or horizontal) blower/hot water coil unit.
- Lennox add-on evaporator coil with remote condensing unit, electronic air cleaner and automatic humidifier can easily be added for a complete all season system.

Equipment Warranty

- HM30 stainless steel heat exchanger/hot water tank - limited ten year warranty in residential applications.
- All other covered components - limited five year warranty in residential applications.
- Refer to Lennox Equipment Limited Warranty certificate included with equipment for details.

Approvals

- Units certified by A.G.A./C.G.A. Laboratories and ratings are certified by GAMA.
- Approved by California Energy Commission and meet California Seasonal Efficiency requirements and California Nitrogen oxides (NO_x) Standards.
- Blower data from unit tests conducted in Lennox Laboratory air test chamber.
- HM30 units approved for vertical or horizontal (sidewall) venting.
- manufactured in accordance with ISO 9002 quality standards.

Sequence of Operation

- HM30 Heating Module uses potable tap water and heats it to a predetermined temperature with a gas power burner and helical heat exchanger.
- Thermistor controls burner operation, keeping water at preselected temperature.
- Stainless steel tank stores water until there is demand for domestic hot water or space heating.
- AM30 Air Module includes supply air blower, water circulating pump, hot water coil, and blower/pump control.
- When demand for space heat is received from the thermostat, the blower/pump control simultaneously activates the circulating pump and sends a heating demand signal to the HM30 control which automatically operates at high or low gas input depending on water tank temperature.
- After timed-on delay (adjustable) the blower energizes at heating speed.
- When heating demand is satisfied, the circulating pump shuts off.
- After a timed-off delay (fixed) the supply air blower shuts off.
- AM30 unit will shut off if HM30 tank temperature falls below 20° of HM30 tank temperature setting, giving priority to domestic water heating system.

FEATURES - HM30 HEATING MODULE

Cabinet

- Heavy gauge steel construction.
- HM30 controls accessible from front of cabinet.
- Controls easily relocated from front of cabinet to the back for easy access. See dimension drawing.
- All plumbing connections located at top of cabinet.
- Auxiliary base drain pan integral part of cabinet. Meets local code requirements in certain areas.

Tank Assembly

- Stainless steel construction.
- Tank sides and top fully insulated (foam on sides, fiberglass on top).
- Water connections located on top of tank.
- Built-in pump circulates water to prevent stratification and sediment build-up.

Tank Drain Valve

- Furnished for servicing tank.
- Located behind access panel.
- Accessible from either side of cabinet.
- Standard garden hose connection.

Lennox Designed Flue Pipe/Condensate Trap Assembly

- Vents combustion products and collects condensate.
- Pipe connects to flue with one-piece no hub connector.
- Contains a built-in internal trap and removable boot on bottom for easy cleaning and servicing.

Heat Exchanger

- Stainless steel construction.
- Helical design.

Burner Assembly

- Stainless steel construction.
- Short flame design.
- Uses 100% outside air for combustion.

Automatic Gas Control

- Combines automatic electric valve (dual) and gas pressure regulation into a compact combination control.
- Dual valve design provides double assurance of close off of gas to main burners at each off cycle.
- Gas valve is automatically regulated to maintain even gas flow regardless of venting installation type.
- Design compensates for variations in gas supply pressure.

FEATURES - Continued on Next Page ►

FEATURES - HM30 HEATING MODULE - CONTINUED

Integrated Water Temperature/Direct Spark Ignition Module

- Module factory installed in HM30 control box.

Ignition Control

- Provides positive ignition of burner on each operating cycle.
- Main burner is extinguished during off cycle.
- Burner operation is automatic on demand for heat.
- Unit shuts down if loss of flame occurs and will initiate 4 attempts at relighting before going into Watchguard mode.
- Watchguard circuit automatically resets ignition controls after one hour of unit lockout. Eliminates nuisance calls for service.
- Diagnostic LED's are furnished as aid in troubleshooting.

Water Temperature Control

- Integral part of control module.
- Easy to read dial type.
- Adjustable 110°F to 160°F (43° to 71.1°C).

Dual Limit Controls

- Primary (manual reset) switch and secondary (auto-reset) switch.
- Both located on top of water tank.

Combustion Air Blower

- Two stage operation dependent on tank temperature.
- Aluminum housing, completely sealed.
- Pressure switch prevents unit operation in case of combustion air, flue outlet or condensate drain blockage.
- Located on top of water tank for easy access.

Water Pressure Reducing Valve

- 3/4 in. valve reduces inlet water pressure.
- Factory set at 55 psig (379 kPa).
- Supplied with unit for field installation.

Expansion Tank

- 3/4 in. male NPT, installed on the supply side of the HM30.
- Prevents excessive build up of system pressure due to thermal expansion.
- Protects system components from premature failure caused by pressure cycling.
- Supplied with unit for field installation.

Temperature/Pressure Relief Valve

- Provides temperature/pressure relief in case of abnormal operating conditions.
- Located on top of water tank.
- Opens at 210°F or 150 psig (99°C or 1034 kPa).
- Approved by A.S.M.E.

HM30 OPTIONAL ACCESSORIES

Thermostat

- See Thermostats bulletin in Thermostats and Controls section and Lennox Price Book.

Stand-Alone Transformer Kit (78J43)

- 120/24 volt 40VA transformer and junction box allows HM30 to operate as a stand-alone high efficiency water heater.

Water Mixing Valve Kit

- Field adjustable to ensure a steady, safe temperature for domestic hot water.
- Recommended in applications using over 120°F (32°C) water tank temperature.
- Required in applications using over 140°F (60°C) water tank temperature or maximum temperature allowed by local codes.
- See Specifications table for kits available and ordering information.

HM30 Control Interface Kit (90J03)

- Allows HM30 to be used with radiant heating and other hot water coils.
- Contains control board in junction box to operate pump and system (similar to controls found in AM30).

HM30 Heating Zone Control Board (90J02)

- Solid-state control board with junction box operates up to four AM30 units in heating mode with one HM30 unit for zoning applications.

Water Pressure Test Gauge (56L50)

- Testing of water pressure supplied within a building.
- 3/4 in. bib hose connection.
- Second gauge needle indicates maximum water pressure reached.

Air Vent/Bleed Valve

- Available in 3/4 in. or 1 in. female NPT.
- Reduces air entrapped in system.
- See Specifications table for ordering information.

Intake/Exhaust Vent Adaptor Kit

- 3 in. to 2 in. (76 mm to 51 mm) reducer adaptors allows connection of exhaust and intake pipe to HM30.
- See Specifications table for ordering information.

OPTIONAL ACCESSORIES - Continued on Next Page ►

HM30 OPTIONAL ACCESSORIES

Intake Air Filter Kit (28L82)

- Helps keep debris out of the intake air stream.
- Recommended installation above the no hub connector in the vertical position.
- Includes one each 2 in. and 3 in. (51 mm and 76 mm) reducers.

Concentric Termination Kit

- Facilitates installation of combustion air intake pipe and flue exhaust pipe.
- 1-1/2 inch (38 mm) kit LB-49107CE (**60G77**) or 2 inch (51 mm) kit (**33K97**) contains concentric termination assembly, mounting clamp, roof flashing, reducer bushing and 45 degree elbow.
- Kit requires single hole penetration of roof or wall for installation.
- AGA/CGA certified.
- See Specifications table and dimension drawings.

Roof Termination Kit

- Facilitates installation of combustion air intake pipe and flue exhaust pipe.
- 2 inch (51 mm) kit, LB-49107CC (**15F75**), or 3 inch (76 mm) kit, LB-65678A (**44J41**), contains two neoprene rubber roof flashings.
- See Specifications table and dimension drawings.
- Refer to venting tables in this bulletin to determine pipe size needed and proper termination kit required.

Wall Assembly Termination Kits

- Facilitates installation of combustion air intake pipe and flue exhaust pipe.
- Refer to venting tables in this bulletin to determine pipe size needed and proper termination kit required.
- See Specifications table and dimension drawings.

Close Couple Kits

- (**22G44**) 2 inch (51 mm) or (**44J40**) 3 inch (76 mm) consists of close-couple side-by-side PVC piping with galvanized steel wall cover plate for sealing and isolating piping penetration of the wall.
- Piping spacing and length is sized for proper wall installations.
- AGA/CGA certified.

WTK Close Couple Kits

- 2 in. (51 mm) (**30G28**) or 3 in. (76 mm) (**81J20**) contains one insulated faceplate, one insulated exhaust pipe, elbow and fittings.

Wall Ring Kit (15F74)

- 2 inch (51 mm) contains 2 stainless steel outside seal caps, 2 galvanized steel inside seal caps, 4 seal rings for the caps and 18 inch (457 mm) insulation sleeve for sealing and isolating intake and exhaust piping penetration of wall.
- Maintain a maximum of 6 inches (152 mm) between the inlet and outlet openings in the installation of the pipes.

WTKX Close Couple Kit With Extension Riser (30G79)

- 2 inch (51 mm) is used where extended grade line clearance is required, not for 3 in. (76 mm) venting.
- Includes 3 ft. (1.0 m) extension riser containing both vent lines (exhaust vent insulated) and wall securing bracket.

Condensate Drain Heat Cable Kits

- Self-limiting wattage heat cable prevents condensate drain from freezing in unconditioned areas.
- Heat cable kits are available in the following lengths: 50 ft. (15.2 m) - LB-88643C (**26K70**), 24 ft. (7.3 m) - LB-88643B (**26K69**) or 6 ft. (1.8 m) - LB-88643A (**26K68**)
- Also available Heat Cable Tape: 66 ft. (20 m) length, 1/2 in. (13 mm) wide fiberglass (**39G04**) or 60 ft. (18 m) length, 2 in. (51 mm) wide aluminum foil (**39G03**).

FEATURES - AM30 AIR MODULE

Cabinet

- Heavy gauge steel construction with five station metal wash process and baked-on enamel paint finish.
- Foil faced fiberglass insulation on hot water coil access door panel, side panels and on back panel reduces cabinet temperatures.
- Black mat faced fiberglass in blower compartment assures quiet operation.
- Complete service access by removing hot water coil section and blower compartment access panels.
- Blower assembly and filter completely removable for servicing.
- Blower deck rails angle down for easy blower removal.
- Electrical inlets in both sides of the cabinet.
- Return air entry on either side or bottom of cabinet. Optional on rear. Perforated knockout allows bottom return air.
- AM30 air module is applicable to up-flow, horizontal or down-flow installations.

24 Volt Transformer

- Furnished in AM30 control box.
- Operates both AM30 and HM30 controls.

Field Make-up Box

- Furnished for line voltage wiring.
- Box may be installed on either side of AM30 cabinet.
- Contains plug-in connection for power supply wiring, wire for 120 volt (less than 4 amps) accessory connection and all necessary hardware for installation.

Water Heating Coil

- Corrugated/lanced aluminum fins.
- Seamless corrosion resistant copper tubes.
- Fin collars grip tubing for maximum contact area.
- Flared shoulder tubing connections and silver soldering provides tight, leakproof joints.
- Factory tested under high pressure.
- Entire coil accessible for cleaning.

Blower

- Multi-speed direct drive blower.
- Statically and dynamically balanced.
- Blower motor resiliently mounted.
- Blower speed selection accomplished by simple wiring change. See Blower Performance tables.

FEATURES - Continued on Next Page ►

FEATURES - AM30 AIR MODULE (CONTINUED)

Cleanable Air Filter

- Washable or vacuum cleanable polyurethane frame type filter.

Up-Flow, Horizontal or Down-Flow Bottom Return Air Applications

- Filter secured in cabinet by fixed rear filter clip and two field installed side filter clips.

Up-Flow Rear Return Air Applications

- Filter must be field provided.
- See AM30 dimension drawing for field fabricated opening in rear of unit cabinet.

Up-Flow Side Return Air Applications

- External filter rack furnished with AM30 for side return air applications.
- Filter access door.
- Uses filter furnished with AM30.
- Flanges furnished for duct connection.
- See dimension drawing for details.

AM30 Blower/Pump Control Board

- Furnished in AM30 control box.
- Blower "timed-on" delay jumper (15 to 60 seconds adjustable) factory setting 15 seconds, blower "timed-off" delay setting 30 seconds (fixed).
- Built-in continuous low speed blower function.
- Automatically circulates water for 30 seconds every 6 hours (delays pump operation during cooling demand).
- Control voltage "plug-in" type terminal strip for thermostat connections.
- 120 volt (less than 4 amps) accessory terminals furnished for humidifiers and electronic air cleaners.
- Blower cooling relay for air-conditioning operation.
- Metal oxide varistor, mounted on board, protects against voltage spikes.
- Diagnostic LED furnished as an aid in troubleshooting.

Freezestat

- Protects system from freezing temperatures when unit is installed in unconditioned areas.
- Thermostat automatically energizes circulating pump when water line temperature falls below 45°F (7°C).

Circulating Pump

- Bronze construction.
- Carbon bearings.
- Self lubricating.
- Non-metallic impeller.
- Impedance protected.
- Motor and impeller removable as single unit for servicing.

AM30 OPTIONAL ACCESSORIES

Auxiliary Pump

- For remote applications over 30 ft. (9.1 m).
- Field installed anywhere in-between AM30 and HM30 (see piping schematic).
- See Specifications table for ordering information.

Anti-Thermal Siphon Kit (73J84)

- In-line check valve prevents thermal siphoning when AM30 is located above HM30.

Down-flow/Horizontal Kit (74J25)

- Converts AM30 unit from up-flow to down-flow or horizontal applications. Kit includes all required water piping elbows for AM30 connections. Straight piping not included.

Furnace Twinning Kit

- Field installed kit (15L38) is required to operate two units simultaneously.
- Kit consists of twinning control and two fan sensors.
- Twinning kit requires Heating Zone Control Board (90J02) if HM30 serves two AM30's.

Horizontal Support Frame Kit (56J18)

- Provides support of AM30 unit in horizontal applications.
- (2) 1 x 1-1/2 x 32-5/8 in. (25 x 38 x 829 mm) and (2) 1 x 3 x 53-7/8 in. (25 x 76 x 1368 mm) painted, heavy gauge cold rolled steel support channels with assembly and suspending holes furnished.
- Bolts and nuts for assembly furnished.

INSTALLATION CLEARANCES

	HM30 Heating Module	AM30 Up-flow / Down-flow	AM30 Horizontal
Vent Type	Plastic (PVC or ABS)	----	
Sides		0 inches (0 mm)	
Rear		0 inches (0 mm)	
Top	1 inch (25 mm)	0 inches (0 mm)	**0 inches (0 mm)
Top and Front (service)	30 inches (762 mm)	----	
*Front		*0 inches (0 mm)	
Floor		Combustible	0 inches (0 mm)
Exhaust Pipe	0 inches (0 mm)	----	
Exhaust Pipe (service)	6 inches (152 mm)	----	
Service Clearance (condensate drain)	3 inches (76 mm)	----	

NOTE-Termination location must conform to the methods outlined in American National Standard (ANSI-Z223.1) National Fuel Gas Code or National Standard of Canada CAN/CGA-149.1, and CAN/CGA-149.2 "Installation Code for Gas Burning Appliances".

*Front clearance for alcove installations is 24 inches (610 mm).

**Line contact installation permissible between jacket top or sides and building joists.

SPECIFICATIONS - HM30 HEATING MODULE

Heat Module Model No.	HM30-100	HM30-150	
Input - Btuh (kW) high	100,000 (29.3)	150,000 (44.0)	
Input - Btuh (kW) low	85,000 (24.9)	130,000 (38.1)	
Output - Btuh (kW) high - space heating	90,000 (26.4)	135,000 (39.6)	
Output - Btuh (kW) low - space heating	76,500 (22.4)	117,000 (34.3)	
Output - Btuh (kW) high - water heating	94,000 (27.5)	141,000 (41.3)	
Output - Btuh (kW) low - water heating	79,900 (23.4)	122,200 (35.8)	
First Hour Rating - U.S. gals (L)	163 (617)	217 (821)	
*CA _{ef} (Effective Water Heating Efficiency)	.86	.86	
Recovery Efficiency	94%	94%	
Rated storage volume - U.S. Gallons (L)	32 (121)	30 (114)	
Recovery rate at 90°F (32°C) temperature rise- U.S. gals/hr. (L/hr.)	125 (473)	188 (712)	
Intake pipe size connection (PVC) - in. (mm)	2 (51)	2 (51)	
Exhaust pipe size connection (PVC) - in. (mm)	2 (51)	2 (51)	
Water connections - inlet/outlet I.D. - in. (mm)	Connections to water supply (fpt)	3/4 (19.1)	3/4 (19.1)
	Connections to AM30 Air Module (sweat)	1 (25.4)	1 (25.4)
Condensate trap drain connection (mpt) - in. (mm)	1/2 (12.7)	1/2 (12.7)	
Tank drain connection (standard garden hose connection) (12 tpi) - in. (mm)	1-1/16 (27)	1-1/16 (27)	
Gas Piping Size I.P.S in. (mm)	Natural Gas	1/2 (12.7)	3/4 (19.1)
	LPG/propane	1/2 (12.7)	1/2 (12.7)
Temperature/Pressure Relief Valve (furnished)	Opening specifications	210°F or 150 psig (99°C or 1034 kPa)	
	Connection size - in. (mm)	3/4 (19.1)	3/4 (19.1)
Water Pressure Regulator	3/4 in. NPT - factory setting 55 psig (379 kPa)		
Expansion Tank	3/4 in. inlet	3/4 in. inlet	
☐ Shipping weight - lbs. (kg) 2 packages	191 (87)	215 (98)	
Electrical characteristics	120 volts - 60 hertz - 1 phase		

OPTIONAL ACCESSORIES (MUST BE ORDERED EXTRA)

Concentric Termination Kits	1-1/2 inch (38 mm)	60G77	60G77
	2 inch (51 mm)	33K97	33K97
†Roof Termination Kits	2 inch (51 mm)	15F75	15F75
	3 inch (76 mm)	44J41	44J41
†Wall Assembly Termination Kits	2 inch (51 mm)	15F74 (wall ring kit), 22G44 (close couple) 30G28 (WTK close couple) 30G79 (WTKX close couple with extension riser)	
	3 inch (76 mm)	44J40 (close couple) - 81J20 (WTK close couple)	
Air Intake Filter Kit		28L82	28L82
Intake/Exhaust Vent Adaptor Kit - 3 inch (76 mm) to 2 inch (51mm)		78J39	78J39
Water Pressure Test Gauge		56L50	56L50
Stand-alone Transformer Kit		78J43	78J43
Water Mixing Valve Kits	3/4 inch (19 mm), adjustable 85°F to 150°F (29°C to 66°C)	99L99	99L99
	1 inch (25 mm), adjustable 85°F to 150°F (29°C to 66°C)	10M00	10M00
Air Vent/ Bleed Valve	3/4 inch (19 mm)	29K49	29K49
	1 inch (25.4 mm)	29K50	29K50
HM30 Heating Zone Control Board		90J02	90J02
HM30 Control Interface Kit		90J03	90J03
Condensate Drain Heat Cable		26K68 6 ft. (1.8 m) - 26K69 24 ft. (7.3 m) - 26K70 50 ft. 15.2 m	
Heat Cable Tape - 1 roll		39G04 1/2 in. (38 mm) fiberglass - 39G03 2 in. (25 mm) aluminum foil	

*CA_{ef} (Effective Water Heating Capacity) = The effective efficiency of the combined appliance in performing the function of providing potable hot water.

NOTE - CA_{ef} is the same rating as the Energy Factor (EF) for water heaters as determined by U.S. Department of Energy test procedures.

†Determine from venting tables proper intake and exhaust pipe size and termination kit required.

☐ Package one is unit, package two is expansion tank.

SPECIFICATIONS - AM30 AIR MODULE

Air Module Model No.		AM30Q2-40	AM30Q2/3-70	AM30Q3/4-70	
*Nominal heating capacity - Btuh (kW)		40,000 (11.7)	70,000 (20.5)	70,000 (20.5)	
**Temperature rise range - °F (°C)		32 - 73 (18 - 41)	35 - 78 (19 - 43)	39 - 71 (22 - 39)	
Blower wheel nominal diameter x width	in.	10 x 7	10 x 8	10 x 10	
	mm	254 x 178	254 x 203	254 x 254	
Blower motor output - hp (W)		1/5 (149)	1/3 (224)	1/2 (373)	
Circulating pump	Motor output - hp (W)	1/40 (19)	1/40 (19)	1/40 (19)	
	†Capacity - U.S. Gals per minute (L per minute)	6 (23)	6 (23)	6 (23)	
Heating Coil	Heating capacity range	Btuh	21,600 - 55,300	27,500 - 90,000	43,800 - 109,400
		kW	6.3 - 16.2	8.1 - 26.4	12.8 - 32.1
	Net face area - sq. ft. (m ²)	3.83 (.36)	3.83 (.36)	4.33 (.40)	
	Tube diameter - in. (mm) no. of rows	3/8 (9.5) - 1	3/8 (9.5) - 2	3/8 (9.5) - 2	
	Fins per inch (m)	16 (630)	16 (630)	16 (630)	
	Water line connections (sweat) - in. (mm) I.D.	inlet	3/4 (19)	3/4 (19)	1 (25.4)
outlet		3/4 (19)	3/4 (19)	1 (25.4)	
★Number and size of filters	in.	(1) 14 x 25 x 1	(1) 14 x 25 x 1	(1) 20 x 25 x 1	
	mm	(1) 356 x 635 x 25	(1) 356 x 635 x 25	(1) 508 x 635 x 25	
Nominal cooling that can be added	Tons	1 thru 2	1 thru 3	2 thru 4	
	kW	3.5 thru 7.0	3.5 thru 10.6	7.0 thru 14.1	
Shipping weight - lbs. (kg) 1 package		127 (58)	144 (65)	157 (71)	
Electrical characteristics		120 volts - 60 hertz - 1 phase			

OPTIONAL ACCESSORIES (MUST BE ORDERED EXTRA)

Auxiliary Pump	99K69	99K69	99K69
Anti-Thermal Siphon Kit	73J84	73J84	73J84
Downflow/Horizontal Kit	74J25	74J25	74J25
Horizontal Support Frame Kit	56J18	56J18	56J18
Twinning Kit (Requires Heating Zone Control Board, see HM30 Optional Accessories)	15L38	15L38	15L38

*At 140°F (60°C) entering water temperature, 65°F (18°C) entering air temperature.

**120°F (49°C) High Speed or 170°F (77°C) Low Speed.

★Polyurethane frame type filter.

†140°F (60°C) water temperature.

SPECIFICATIONS - AM30 AIR MODULE

Air Module Model No.		AM30Q3/4-90	AM30Q4/5-90	AM30Q3/4-105	AM30Q4/5-120	
*Nominal heating capacity - Btuh (kW)		†90,000 (26.4)	†90,000 (26.4)	†105,000 (30.8)	120,000 (35.2)	
Temperature rise range - °F (°C)		35 - 76 (19 - 42)	31 - 68 (17 - 38)	41 - 88 (23 - 49)	38 - 80 (21 - 44)	
Blower wheel nominal diameter x width	in.	10 x 10	12 x 9	10 x 10	12 x 9	
	mm	254 x 254	305 x 229	254 x 254	305 x 229	
Blower motor output - hp (W)		1/2 (373)	3/4 (560)	1/2 (373)	3/4 (560)	
Circulating pump	Motor output - hp (W)	1/25 (30)	1/25 (30)	1/25 (30)	1/25 (30)	
	†Capacity - U.S. Gals per minute (L per minute)	9.5 (36)	9.5 (36)	9.5 (36)	9.5 (36)	
Heating Coil	Heating capacity range	Btuh	46,600 - 120,000	58,000 - 136,000	53,500 - 142,600	68,000 - 163,700
		kW	13.7 - 35.2	17.0 - 39.8	15.7 - 41.8	19.9 - 48.0
	Net face area - sq. ft. (m ²)	4.33 (.40)	4.33 (.40)	4.33 (.40)	4.33 (.40)	
	Tube diameter - in. (mm) no. of rows	3/8 (9.5) - 2	3/8 (9.5) - 2	3/8 (9.5) - 3	3/8 (9.5) - 3	
	Fins per inch (m)	16 (630)	16 (630)	16 (630)	16 (630)	
	Water line connections (sweat) - in. (mm) I.D.	inlet	1 (25.4)	1 (25.4)	1 (25.4)	1 (25.4)
outlet		1 (25.4)	1 (25.4)	1 (25.4)	1 (25.4)	
★Number and size of filters	in.	(1) 20 x 25 x 1	(1) 20 x 25 x 1	(1) 20 x 25 x 1	(1) 20 x 25 x 1	
	mm	(1) 508 x 635 x 25	(1) 508 x 635 x 25	(1) 508 x 635 x 25	(1) 508 x 635 x 25	
Nominal cooling that can be added	Tons	2 thru 4	3.5 thru 5	2 thru 4	3.5 thru 5	
	kW	7.0 thru 14.1	12.3 thru 17.6	7.0 thru 14.1	12.3 thru 17.6	
Shipping weight - lbs. (kg) 1 package		157 (71)	165 (75)	170 (77)	175 (79)	
Electrical characteristics		120 volts - 60 hertz - 1 phase				

OPTIONAL ACCESSORIES (MUST BE ORDERED EXTRA)

Auxiliary Pump	53J76 - 1 in. NPT	53J76 - 1 in. NPT	53J76 - 1 in. NPT	53J76 - 1 in. NPT
Anti-Thermal Siphon Kit	73J84	73J84	73J84	73J84
Downflow/Horizontal Kit	74J25	74J25	74J25	74J25
Horizontal Support Frame Kit	56J18	56J18	56J18	56J18
Twinning Kit (Requires Heating Zone Control Board, see HM30 Optional Accessories)	15L38	15L38	15L38	15L38

†NOTE - If AM30Q3/4-90, AM30Q4/5-90 or AM30Q3/4-105 Air Module is matched with HM30-100 Heat Module, maximum output is only 90% of rated HM30 heating capacity.

*At 140°F (60°C) entering water temperature, 65°F (18°C) entering air temperature.

★Polyurethane frame type filter.

†140°F (60°C) water temperature.

ELECTRICAL DATA

Unit	Minimum Circuit Ampacity
AM30Q2-40	5.6
AM30Q2/3-70	8.6
AM30Q3/4-70	12.2
AM30Q3/4-90	12.4
AM30Q3/4-105	12.4
AM30Q4/5-90	13.8
AM30Q4/5-120	13.8
HM30-100	5.0
HM30-150	5.0

Unit	Minimum Circuit Ampacity
AM30Q2-40 with HM30	6.9
AM30Q2/3-70 with HM30	9.9
AM30Q3/4-70 with HM30	13.5
AM30Q3/4-90 with HM30	13.7
AM30Q3/4-105 with HM30	13.7
AM30Q4/5-90 with HM30	15.0
AM30Q4/5-120 with HM30	15.0

Unit	Maximum Fuse or Circuit Breaker Size
AM30 only	15.0
HM30 only	15.0
AM30 with HM30	15.0

* Where current does not exceed 100 amps, HACR type circuit breaker may be used in place of fuse (U.S. only)

HEATING EFFICIENCY AND SYSTEM MATCH-UPS

Heat Module Model No.	Air Module Model No.	●CAE Combined Annual Efficiency	*CA _{afue} Effective Space Heating Efficiency
HM30-100	AM30Q2-40	.90	.90
	AM30Q2/3-70 / AM30Q3/4-70		
	AM30Q3/4-90 / AM30Q4/5-90		
	AM30Q3/4-105		
HM30-150	AM30Q2-40	.90	.90
	AM30Q2/3-70 / AM30Q3/4-70		
	AM30Q3/4-90 / AM30Q4/5-90		
	AM30Q3/4-105		
	AM30Q4/5-120		

NOTE - Tested in accordance with ANSI/ASHRAE Standard 124 "Methods of Testing for Rating Combination Space-Heating and Water Heating Appliances".

●CAE (Combined Annual Efficiency) = The overall efficiency of the appliance in providing both space heating and water heating.

*CA_{afue} (Effective Space Heating Efficiency) = The effective efficiency of the combined appliance in performing the function of space heating.

NOTE - CA_{afue} is the same rating as the Annual Fuel Utilization Efficiency (A.F.U.E.) as determined by U.S. Department of Energy test procedures.

INTAKE AND EXHAUST PIPE VENTING TABLES

Vent Pipe Maximum Equivalent Length		Minimum Pipe Diameter HM30-100		Minimum Pipe Diameter HM30-150	
Feet	Meters	in.	mm	in.	mm
20	6.1	2	51	2	51
30	9.1	2 or †**3	51 or †**76	2 or †**3	51 or †**76
40	12.2	2 or †**3	51 or †**76	2 or †**3	51 or †**76
50	15.2	2 or †**3	51 or †**76	**3	**76
60	18.3	**3	**76	**3	**76
70	21.3	3	76	3	76
80	24.4	3	76	3	76
90	27.4	3	76	3	76
100	30.5	3	76	3	76
110	33.5	3	76	3	76
120	36.6	3	76	3	76
130	36.6	3	76	3	76

†NOTE - Use of larger diameter pipe will ensure maximum heat input.

**NOTE - Exhaust pipe requires the use of the 2 inch (51 mm) termination kit instead of 3 inch (76 mm) kit.

VENTING NOTES -

One 90° elbow is equivalent to 5 feet (1.5 m) of straight vent pipe.

Two 45° elbows are equal to one 90° elbow.

One 45° elbow is equivalent to 2.5 feet (.75 m) of straight vent pipe.

Intake and Exhaust pipes must be the same diameter.

Exhaust pipe must terminate at 1-1/2 inch (38 mm) diameter pipe for HM30 using 2 inch (51 mm) diameter pipe runs and 2 inch (51 mm) termination kits.

Exhaust pipe must terminate at 2 inch (51 mm) diameter pipe for HM30 using 3 inch (76 mm) diameter pipe runs and 3 inch (76 mm) termination kits.

See pages 22 thru 24 for Optional Termination Kits available.

MINIMUM PIPE LENGTH FOR HM30 - 1 foot (305 mm) with one 90° elbow and 2 inch (51 mm) diameter pipe. 6 equivalent feet (1.8 m) total.

HIGH ALTITUDE INFORMATION

No derate is required for HM30 units at altitudes up to 7500 feet (2286 m).

BLOWER DATA

NOTE - All air data is measured external to unit and includes hot water coil air resistance with air filter in place.

AM30Q2-40 BLOWER PERFORMANCE

External Static Pressure		Air Volume at Specific Blower Taps					
		High		Medium		Low	
in. w.g.	Pa	cfm	L/s	cfm	L/s	cfm	L/s
0	0	1100	520	850	400	680	320
.10	25	1085	510	830	390	670	315
.20	50	1045	495	800	380	640	300
.30	75	1005	475	770	365	610	290
.40	100	950	450	730	345	580	275
.50	125	890	420	690	325	530	250
.60	150	810	380	630	295	480	225
.70	175	730	345	570	270	410	195
.80	200	640	300	490	230	330	155
.90	225	520	245	380	180	----	----

AM30Q2/3-70 BLOWER PERFORMANCE

External Static Pressure		Air Volume at Specific Blower Taps							
		High		Medium-High		Medium-Low		Low	
in. w.g.	Pa	cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s
0	0	1500	710	1310	620	1070	505	840	395
.10	25	1440	680	1270	600	1050	495	820	385
.20	50	1370	645	1220	575	1020	480	800	380
.30	75	1300	615	1180	555	980	460	770	365
.40	100	1240	585	1120	530	930	440	740	350
.50	125	1170	550	1050	495	870	410	700	330
.60	150	1090	515	960	455	800	380	650	305
.70	175	990	465	870	410	720	340	590	380
.80	200	880	415	770	365	630	295	500	235
.90	225	750	355	650	305	520	245	----	----

AM30Q3/4-70 & AM30Q3/4-90 BLOWER PERFORMANCE

External Static Pressure		Air Volume at Specific Blower Taps							
		High		Medium-High		Medium-Low		Low	
in. w.g.	Pa	cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s
0	0	2060	970	1640	775	1420	670	1110	525
.10	25	2000	945	1640	775	1430	675	1110	525
.20	50	1930	910	1630	770	1420	670	1120	530
.30	75	1850	875	1600	755	1410	665	1110	525
.40	100	1770	835	1550	730	1370	645	1090	515
.50	125	1670	790	1480	700	1300	615	1060	500
.60	150	1560	735	1390	655	1230	580	1010	475
.70	175	1420	670	1280	605	1130	535	930	440
.80	200	1280	605	1140	540	1020	480	830	390
.90	225	1100	520	980	460	880	415	700	330

AM30Q4/5-90 BLOWER PERFORMANCE

External Static Pressure		Air Volume at Specific Blower Taps									
		High		Medium-High		Medium		Medium-Low		Low	
in. w.g.	Pa	cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s
0	0	2350	1110	2020	955	1830	865	1630	770	1430	675
.10	25	2330	1100	2020	955	1820	860	1620	765	1430	675
.20	50	2300	1085	2010	950	1810	855	1610	760	1420	670
.30	75	2260	1065	1990	940	1780	840	1590	750	1410	665
.40	100	2200	1040	1950	920	1750	825	1560	735	1400	660
.50	125	2140	1010	1900	895	1720	810	1530	720	1370	645
.60	150	2060	970	1860	875	1680	795	1500	710	1340	630
.70	175	1970	930	1780	840	1610	760	1460	690	1300	615
.80	200	1890	890	1700	800	1550	730	1400	660	1240	585
.90	225	1780	840	1610	760	1480	700	1330	630	1180	555

AM30Q3/4-105 BLOWER PERFORMANCE

External Static Pressure		Air Volume at Specific Blower Taps							
		High		Medium-High		Medium-Low		Low	
in. w.g.	Pa	cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s
0	0	2000	945	1640	775	1430	675	1110	525
.10	25	1930	910	1630	770	1430	675	1110	525
.20	50	1870	880	1610	760	1410	665	1110	525
.30	75	1790	845	1570	740	1380	650	1100	520
.40	100	1700	800	1500	710	1340	630	1080	510
.50	125	1600	755	1430	675	1260	595	1050	495
.60	150	1480	700	1340	630	1180	555	980	460
.70	175	1350	635	1200	565	1090	515	890	420
.80	200	1200	565	1060	500	970	460	780	370
.90	225	1050	495	900	425	810	380	650	305

AM30Q4/5-120 BLOWER PERFORMANCE

External Static Pressure		Air Volume at Specific Blower Taps									
		High		Medium-High		Medium		Medium-Low		Low	
in. w.g.	Pa	cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s
0	0	2400	1135	2100	990	1890	890	1700	800	1500	710
.10	25	2350	1110	2080	980	1880	885	1690	800	1500	710
.20	50	2300	1085	2050	965	1860	880	1680	795	1490	705
.30	75	2230	1050	2010	950	1830	865	1650	780	1470	695
.40	100	2160	1020	1970	930	1800	850	1620	765	1440	680
.50	125	2090	985	1920	905	1750	825	1590	750	1410	665
.60	150	2010	950	1860	880	1700	800	1540	725	1380	650
.70	175	1930	910	1800	850	1640	775	1500	710	1330	630
.80	200	1840	870	1710	805	1580	745	1430	675	1290	610
.90	225	1750	825	1650	780	1500	710	1350	635	1230	580

HEATING PERFORMANCE

AM30Q2-40 HEATING OUTPUTS

Air Volume		Heating Outputs At Various Water Temperatures											
		120°F (49°C)		130°F (54°C)		140°F (60°C)		150°F (66°C)		160°F (71°C)		170°F (77°C)	
cfm	L/s	Btuh	kW	Btuh	kW	Btuh	kW	Btuh	kW	Btuh	kW	Btuh	kW
300	140	13,800	4.0	16,300	4.8	18,800	5.5	21,300	6.2	23,800	7.0	26,300	7.7
400	190	16,800	4.9	19,900	5.8	23,000	6.7	26,000	7.6	29,100	8.5	32,100	9.4
500	235	19,500	5.7	23,100	6.8	26,600	7.8	30,200	8.8	33,700	9.9	37,300	10.9
600	285	21,900	6.4	25,900	7.6	29,800	8.7	33,800	9.9	37,800	11.7	41,800	12.2
700	330	24,000	7.0	28,400	8.3	32,700	9.6	37,100	10.9	41,400	12.1	45,800	13.4
800	380	25,900	7.6	30,600	9.0	35,300	10.3	40,000	11.7	44,700	13.1	49,400	14.5
900	425	27,600	8.1	32,700	9.6	37,700	11.0	42,700	12.5	47,800	14.0	52,800	15.5
1000	470	29,300	8.6	34,600	10.1	39,900	11.7	45,200	13.2	50,500	14.8	55,800	16.3
1100	520	30,700	9.0	36,300	10.6	41,900	12.3	47,500	13.9	53,100	15.6	58,700	17.2
1200	565	32,100	9.4	37,900	11.1	43,800	12.8	49,600	14.5	55,500	16.3	61,300	18.0

AM30Q2/3-70 HEATING OUTPUTS

Air Volume		Heating Outputs At Various Water Temperatures											
		120°F (49°C)		130°F (54°C)		140°F (60°C)		150°F (66°C)		160°F (71°C)		170°F (77°C)	
cfm	L/s	Btuh	kW	Btuh	kW	Btuh	kW	Btuh	kW	Btuh	kW	Btuh	kW
500	236	26,300	7.7	31,000	9.1	35,800	10.5	40,600	11.9	45,400	13.3	50,200	14.7
600	283	30,200	8.8	35,700	10.5	41,100	12.0	46,600	13.7	52,100	15.3	57,600	16.9
700	330	33,700	9.9	39,800	11.7	46,000	13.5	52,100	15.3	58,200	17.1	64,400	18.9
800	378	37,000	10.8	43,700	12.8	50,400	14.8	57,100	16.7	63,800	18.7	70,600	20.7
900	425	39,900	11.7	47,200	13.8	54,400	15.9	61,700	18.1	69,000	20.2	76,200	22.3
1000	472	42,700	12.5	50,400	14.8	58,200	17.1	66,000	19.3	73,700	21.6	81,500	23.9
1100	519	45,200	13.2	53,000	15.5	61,700	18.1	66,900	19.6	78,100	22.9	86,300	25.3
1200	566	47,600	13.9	56,200	16.5	64,900	19.0	73,500	21.5	82,200	24.1	90,800	26.6
1300	614	49,800	14.6	58,800	17.2	67,900	19.9	76,900	22.5	86,000	25.2	95,000	27.8
1400	661	51,800	15.2	61,300	18.0	70,700	20.7	80,100	23.5	89,500	26.2	99,000	29.0

AM30Q3/4-70 HEATING OUTPUTS

Air Volume		Heating Outputs At Various Water Temperatures											
		120°F (49°C)		130°F (54°C)		140°F (60°C)		150°F (66°C)		160°F (71°C)		170°F (77°C)	
cfm	L/s	Btuh	kW	Btuh	kW	Btuh	kW	Btuh	kW	Btuh	kW	Btuh	kW
650	305	32,700	9.6	38,600	11.3	44,600	13.1	50,500	14.8	56,500	16.6	62,400	18.3
800	380	37,900	11.1	44,800	13.1	51,600	15.1	58,500	17.1	65,400	19.2	72,300	21.2
950	450	42,400	12.4	50,200	14.7	57,900	17.0	65,600	19.2	73,300	21.5	81,000	23.7
1100	520	46,500	13.6	55,000	16.1	63,400	18.6	71,900	21.1	80,300	23.5	88,800	26.0
1250	590	50,100	14.7	59,200	17.3	68,400	20.0	77,500	22.7	86,600	24.4	95,700	28.0
1400	660	53,400	15.6	63,100	18.5	72,800	21.3	82,500	24.2	92,300	27.0	102,000	29.9
1550	730	56,400	16.5	66,600	19.5	76,900	22.5	87,100	25.5	97,400	28.5	107,600	31.5
1700	800	59,100	17.3	69,800	20.5	80,600	23.6	91,300	26.8	102,100	29.9	112,800	33.1
1850	875	60,600	17.8	72,800	21.3	84,000	24.6	95,200	27.9	106,400	31.2	117,600	34.5
2000	945	63,900	18.7	75,500	22.1	87,100	25.5	98,700	28.9	110,300	32.3	122,000	35.7

AM30Q3/4-90 HEATING OUTPUTS

Air Volume		Heating Outputs At Various Water Temperatures											
		120°F (49°C)		130°F (54°C)		140°F (60°C)		150°F (66°C)		160°F (71°C)		170°F (77°C)	
cfm	L/s	Btuh	kW	Btuh	kW	Btuh	kW	Btuh	kW	Btuh	kW	Btuh	kW
650	305	34,000	10.0	40,100	11.7	46,300	13.7	52,400	15.4	58,600	17.2	64,800	19.0
800	380	39,900	11.7	46,900	13.7	54,200	15.9	61,400	18.0	68,600	20.1	75,800	22.2
950	450	45,200	13.2	53,100	15.6	61,300	18.0	69,500	20.4	77,600	22.7	85,800	25.1
1100	520	50,000	14.7	58,700	17.2	67,800	19.9	76,800	22.5	85,800	25.1	94,900	27.8
1250	590	54,400	15.9	63,900	18.7	73,700	21.6	83,500	24.5	93,300	27.3	103,200	30.2
1400	660	58,400	17.1	68,600	20.1	79,100	23.2	89,700	26.3	100,200	29.4	110,800	32.5
1550	730	62,200	18.2	72,900	21.4	84,100	24.6	95,400	28.0	106,600	31.2	117,800	34.5
1700	800	65,700	19.3	77,000	22.6	88,800	26.0	100,600	29.5	112,500	33.0	124,300	36.4
1850	875	68,900	20.2	80,700	23.6	93,100	27.3	105,600	30.9	118,000	34.6	130,400	38.2
2000	945	72,000	21.1	84,200	24.7	97,200	28.5	110,100	32.3	123,100	36.1	136,100	39.9

AM30Q4/5-90 HEATING OUTPUTS

Air Volume		Heating Outputs At Various Water Temperatures											
		120°F (49°C)		130°F (54°C)		140°F (60°C)		150°F (66°C)		160°F (71°C)		170°F (77°C)	
cfm	L/s	Btuh	kW	Btuh	kW	Btuh	kW	Btuh	kW	Btuh	kW	Btuh	kW
1100	520	50,000	14.7	58,700	17.2	67,800	19.9	76,800	22.5	85,800	25.1	94,900	27.8
1250	590	54,400	15.9	63,900	18.7	73,700	21.6	83,500	24.5	93,300	27.3	103,200	30.2
1400	660	58,400	17.1	68,600	20.1	79,100	23.2	89,700	26.3	100,200	29.4	110,800	32.5
1550	730	62,200	18.2	72,900	21.4	84,100	24.6	95,400	28.0	106,600	31.2	117,800	34.5
1700	800	65,700	19.3	77,000	22.6	88,800	26.0	100,600	29.5	112,500	33.0	124,300	36.4
1850	875	68,900	20.2	80,700	23.6	93,100	27.3	105,600	30.9	118,000	34.6	130,400	38.2
2000	945	71,200	20.9	84,200	24.7	97,200	28.5	110,100	32.3	123,100	36.1	136,100	40.0
2150	1015	74,100	21.7	87,500	25.6	101,100	29.6	114,400	33.5	127,900	37.5	141,400	41.4
2300	1085	76,700	22.5	90,600	26.5	104,500	30.6	118,500	34.7	132,400	38.8	146,400	42.9
2450	1155	79,100	23.2	93,500	27.4	107,900	31.6	122,300	35.8	136,700	40.1	151,100	44.3

HEATING PERFORMANCE

AM30Q3/4-105 HEATING OUTPUTS

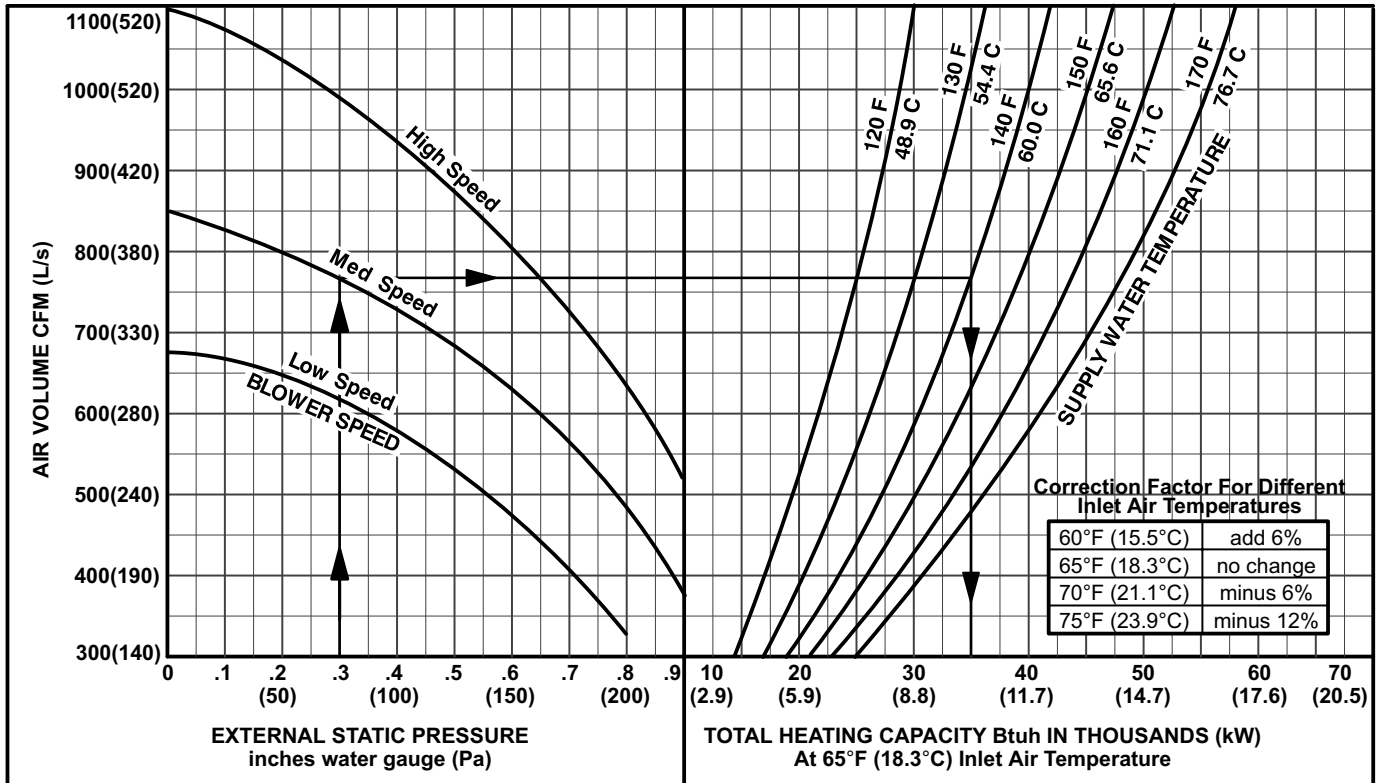
Air Volume		Heating Outputs At Various Water Temperatures											
		120°F (49°C)		130°F (54°C)		140°F (60°C)		150°F (66°C)		160°F (71°C)		170°F (77°C)	
cfm	L/s	Btuh	kW	Btuh	kW	Btuh	kW	Btuh	kW	Btuh	kW	Btuh	kW
650	305	37,500	11.0	44,400	13.0	51,200	15.0	58,000	17.0	64,900	19.0	71,700	21.0
800	380	44,700	13.1	52,900	15.5	61,000	17.9	66,200	19.4	77,300	22.6	85,400	25.0
950	450	51,400	15.1	60,700	17.8	70,000	20.5	79,400	23.3	88,700	26.0	98,100	28.7
1100	520	57,300	16.8	67,700	19.8	78,100	22.9	88,500	25.9	99,000	29.0	109,400	32.1
1250	590	62,900	18.4	74,300	21.8	85,700	25.1	97,200	28.5	108,600	31.8	120,000	35.2
1400	660	68,000	19.9	80,400	23.6	92,700	27.2	105,100	30.8	117,500	34.4	129,900	38.1
1550	730	72,800	21.3	86,000	25.2	99,300	29.1	112,500	33.0	125,700	36.8	139,000	40.7
1700	800	77,200	22.6	91,200	26.7	105,300	30.9	119,300	35.0	133,400	39.1	147,400	43.2
1850	875	81,300	23.8	96,100	28.2	110,900	32.5	125,700	36.8	140,500	41.1	155,300	45.5
2000	945	85,200	25.0	100,700	29.5	116,100	34.0	131,600	38.6	147,100	43.1	162,600	47.6

AM30Q4/5-120 HEATING OUTPUTS

Air Volume		Heating Outputs At Various Water Temperatures											
		120°F (49°C)		130°F (54°C)		140°F (60°C)		150°F (66°C)		160°F (71°C)		170°F (77°C)	
cfm	L/s	Btuh	kW	Btuh	kW	Btuh	kW	Btuh	kW	Btuh	kW	Btuh	kW
1100	520	57,300	16.8	67,700	19.8	78,100	22.9	88,500	25.9	99,000	29.0	109,400	32.1
1250	590	62,900	18.4	74,300	21.8	85,700	25.1	97,200	28.4	108,600	31.8	120,000	35.2
1400	660	68,000	19.9	80,400	23.6	92,700	27.2	105,100	30.8	117,500	34.4	129,900	38.1
1550	730	72,800	21.3	86,000	25.2	99,300	29.1	112,500	33.0	125,700	36.8	139,000	40.7
1700	800	77,200	22.6	91,200	26.7	105,300	30.9	119,300	35.0	133,400	39.1	147,400	43.2
1850	875	81,300	23.8	96,100	28.2	110,900	32.5	125,700	36.8	140,500	41.2	155,300	45.5
2000	945	85,200	25.0	100,700	29.5	116,100	34.0	131,600	38.6	147,100	43.1	162,600	47.6
2150	1015	88,700	26.0	104,900	30.7	121,000	35.5	137,200	40.2	153,300	44.9	169,400	49.6
2300	1085	92,100	27.0	108,900	31.9	125,600	36.8	142,400	41.7	159,100	46.6	175,900	51.5
2450	1155	95,300	27.9	112,600	33.0	129,900	38.1	147,200	43.1	164,600	48.2	181,900	53.3

HEATING PERFORMANCE CURVES

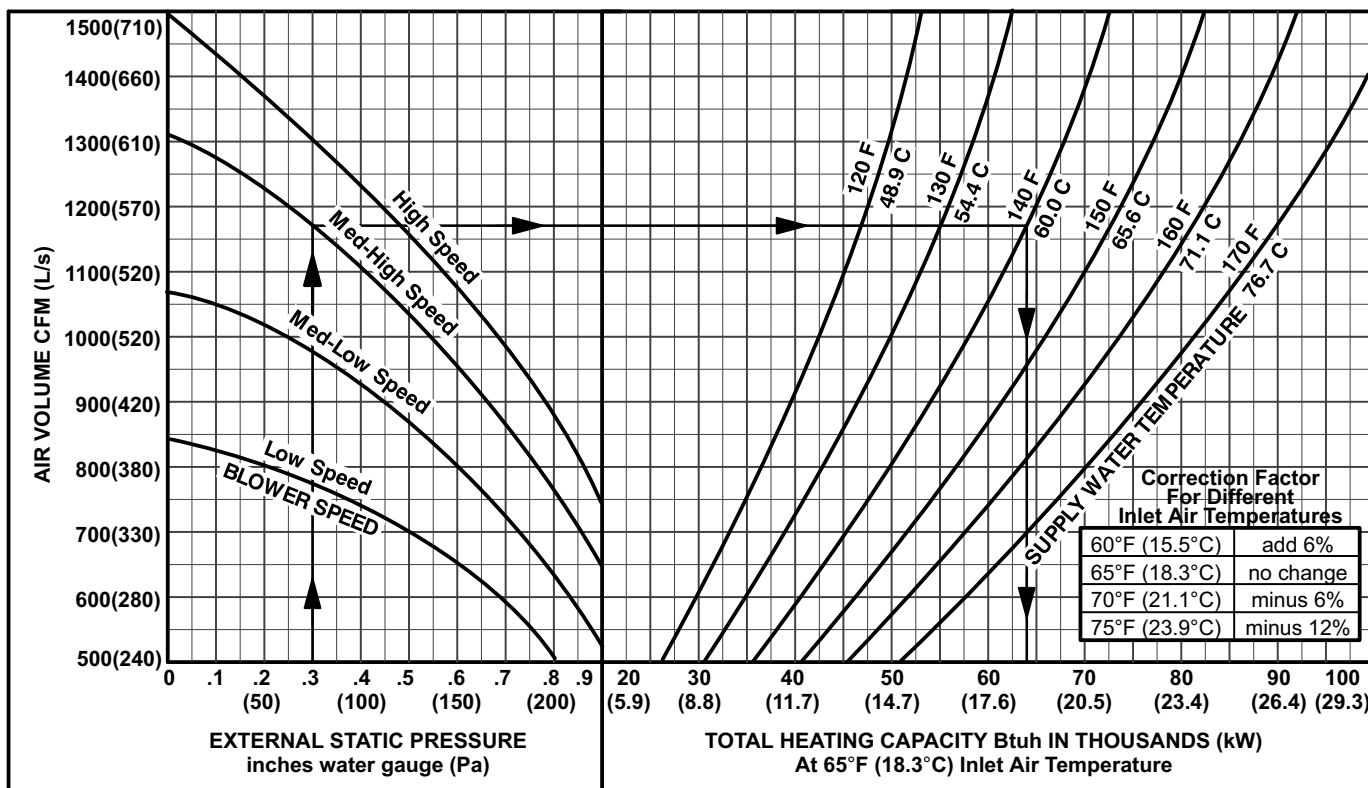
AM30Q2-40 HEATING PERFORMANCE CURVE



NOTE - AM30 water temperature is actually 15°F (9.4°C) higher than HM30 tank temperature setting (domestic hot water temperature setting).

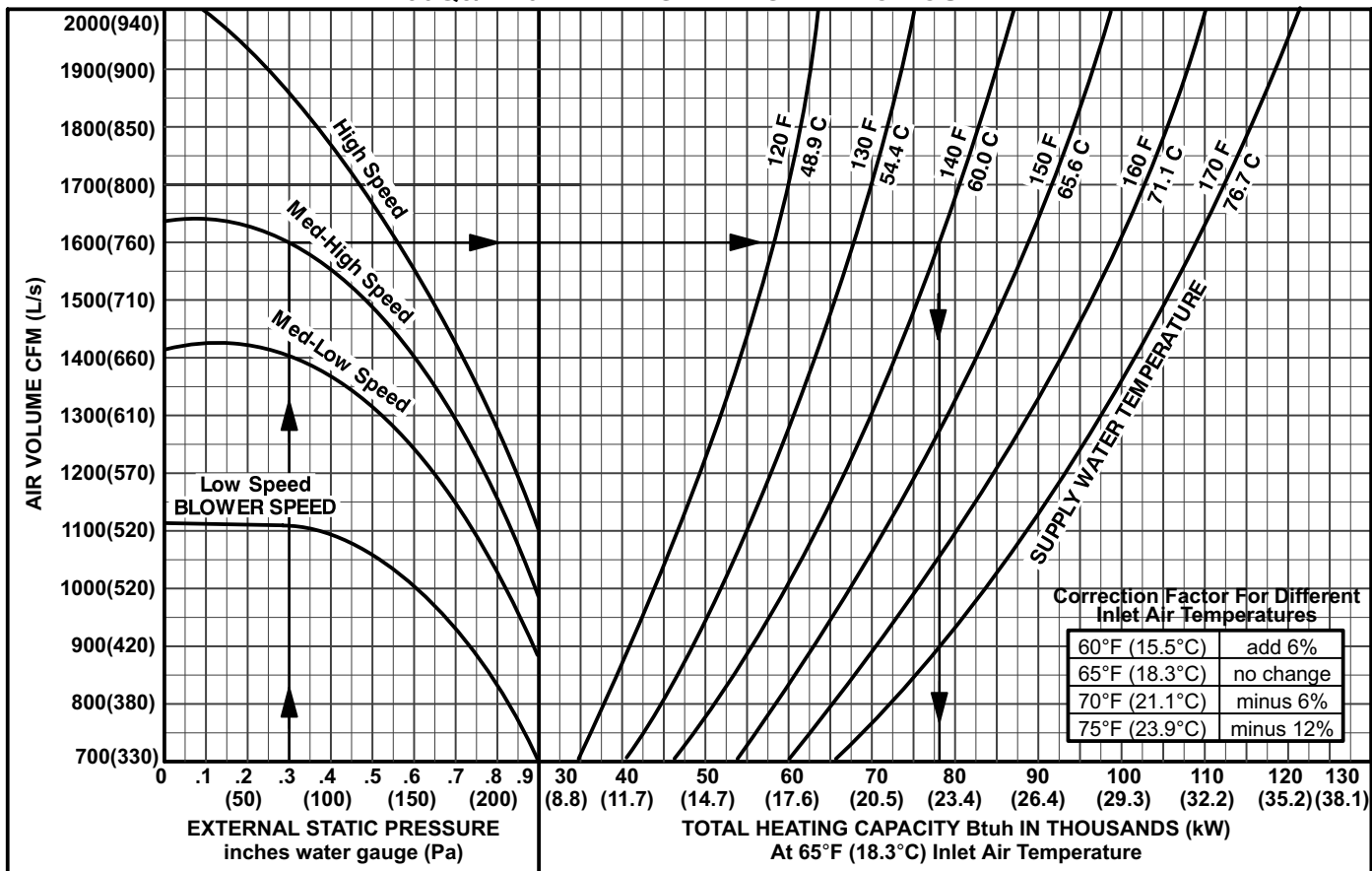
HEATING PERFORMANCE CURVES

AM30Q2/3-70 HEATING PERFORMANCE CURVE



NOTE - AM30 water temperature is actually 15°F (9.4°C) higher than HM30 tank temperature setting (domestic hot water temperature setting).

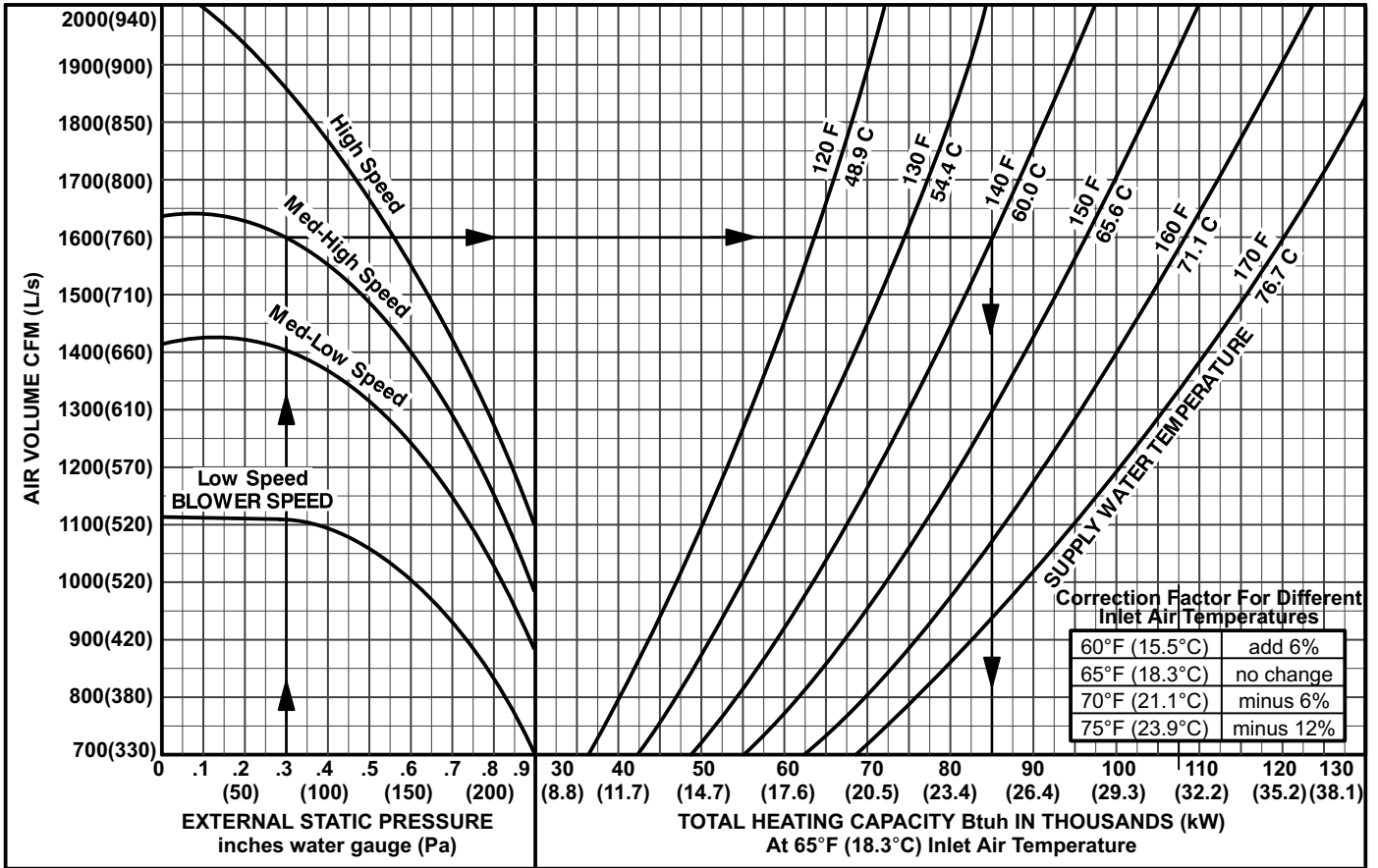
AM30Q3/4-70 HEATING PERFORMANCE CURVE



NOTE - AM30 water temperature is actually 15°F (9.4°C) higher than HM30 tank temperature setting (domestic hot water temperature setting).

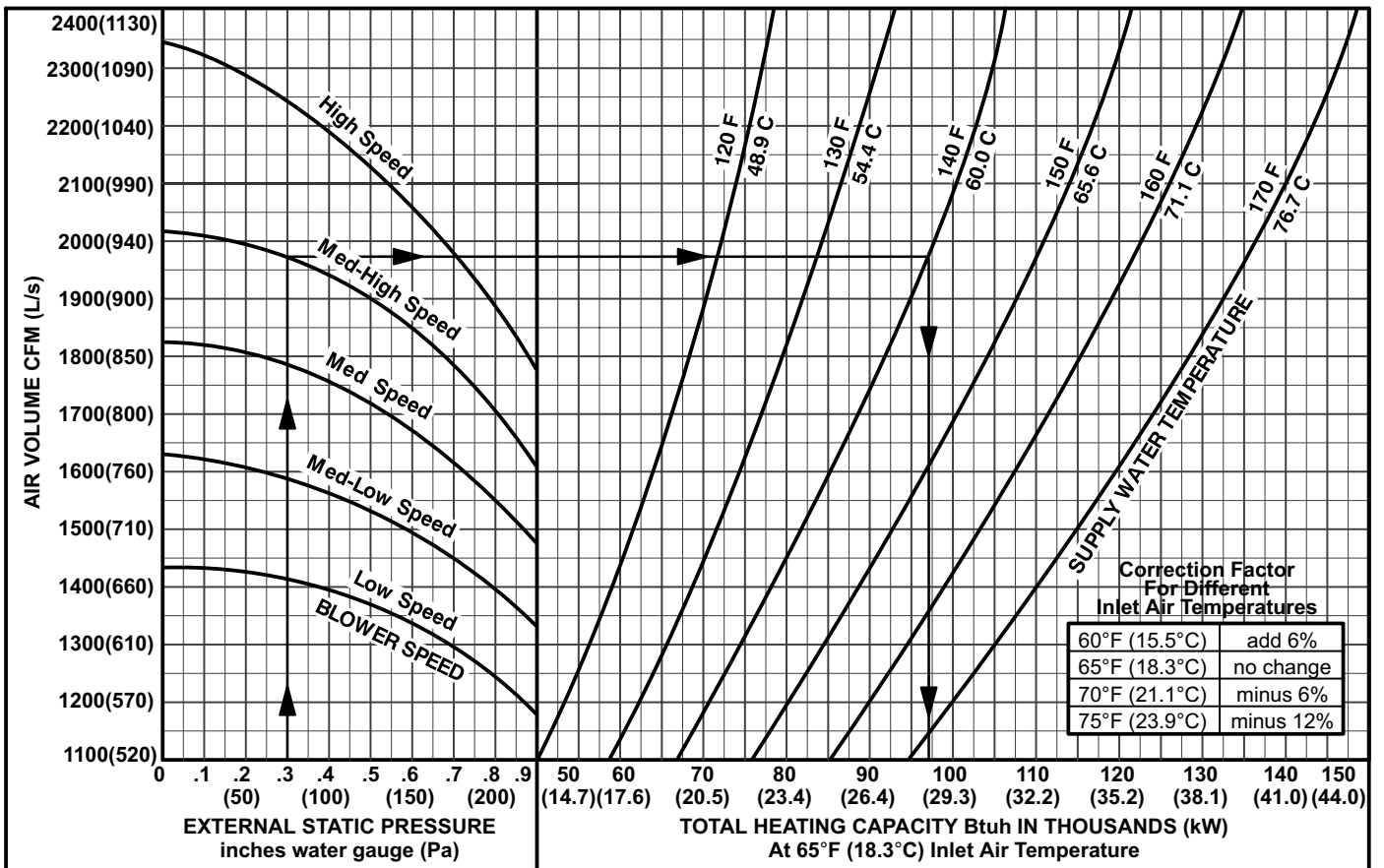
HEATING PERFORMANCE CURVES

AM30Q3/4-90 HEATING PERFORMANCE CURVE



NOTE - AM30 water temperature is actually 15°F (9.4°C) higher than HM30 tank temperature setting (domestic hot water temperature setting).

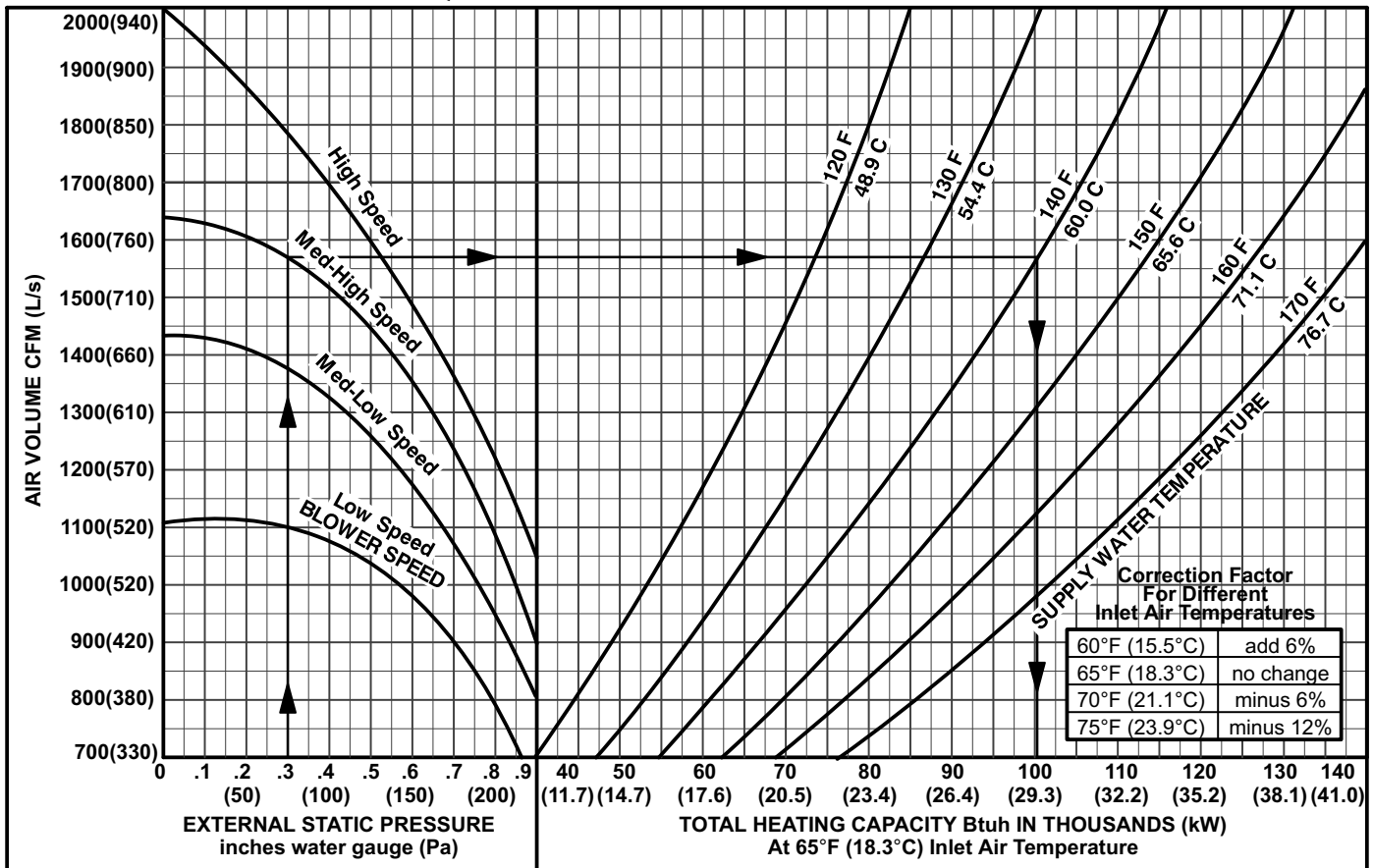
AM30Q4/5-90 HEATING PERFORMANCE CURVE



NOTE - AM30 water temperature is actually 15°F (9.4°C) higher than HM30 tank temperature setting (domestic hot water temperature setting).

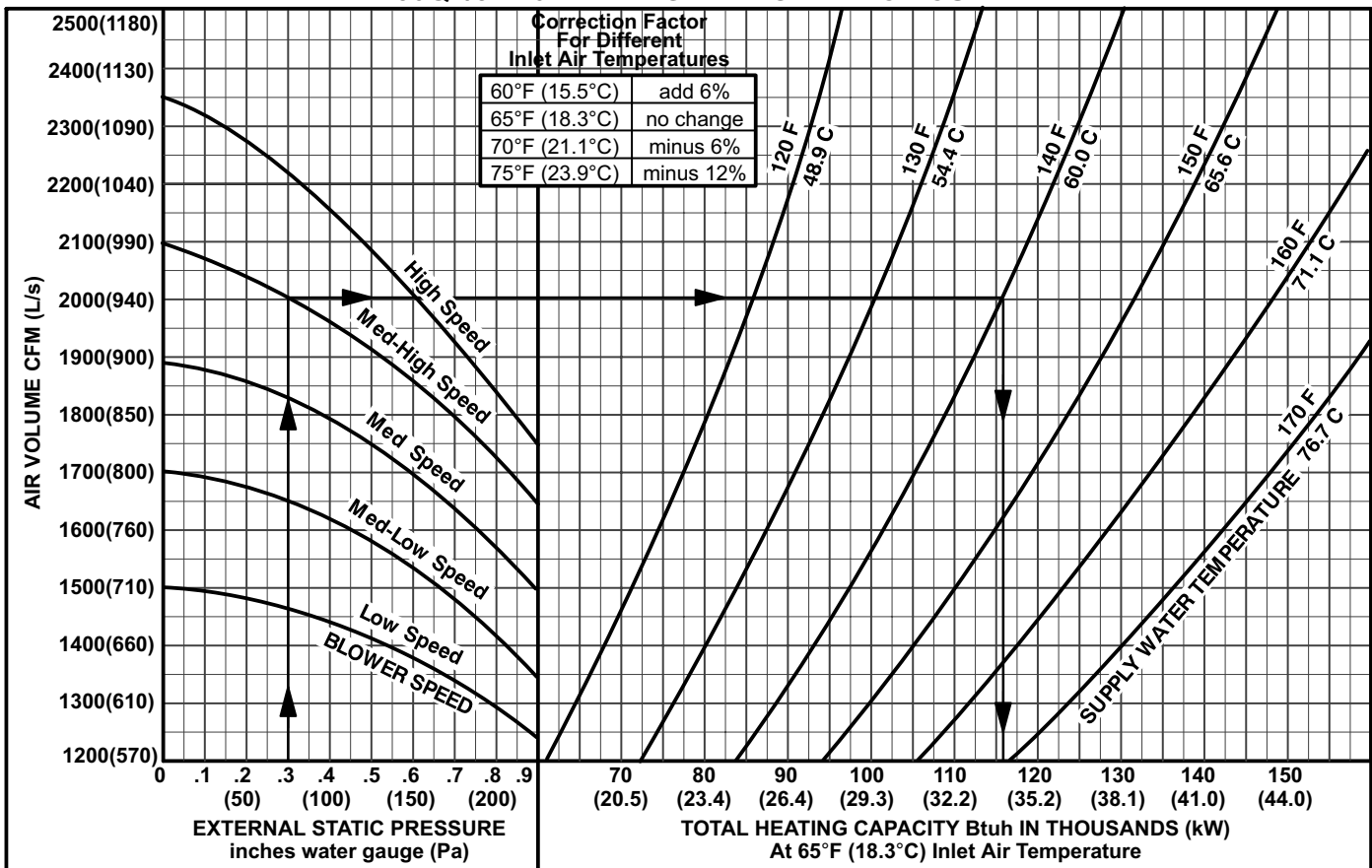
HEATING PERFORMANCE CURVES

AM30Q3/4-105 HEATING PERFORMANCE CURVE



NOTE - AM30 water temperature is actually 15°F (9.4°C) higher than HM30 tank temperature setting (domestic hot water temperature setting).

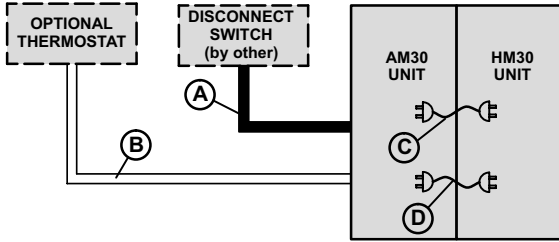
AM30Q4/5-120 HEATING PERFORMANCE CURVE



NOTE - AM30 water temperature is actually 15°F (9.4°C) higher than HM30 tank temperature setting (domestic hot water temperature setting).

FIELD WIRING

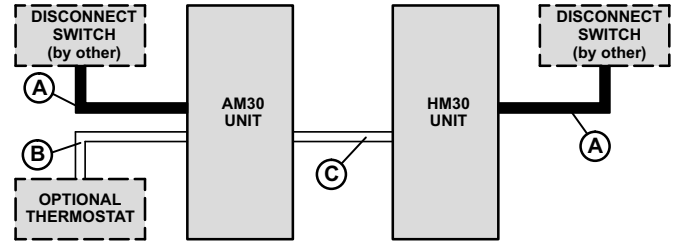
CLOSE-COUPLED APPLICATION



- A - Two wire power with ground
- B - Three wire control voltage (Heating Only)
Four wire control voltage (Cooling)
- C - Four wire control voltage (Harness furnished with AM30)
- D - Two wire power (Harness furnished with AM30)
- Field wiring not furnished -

All wiring must conform to NEC or CEC and local electrical codes.

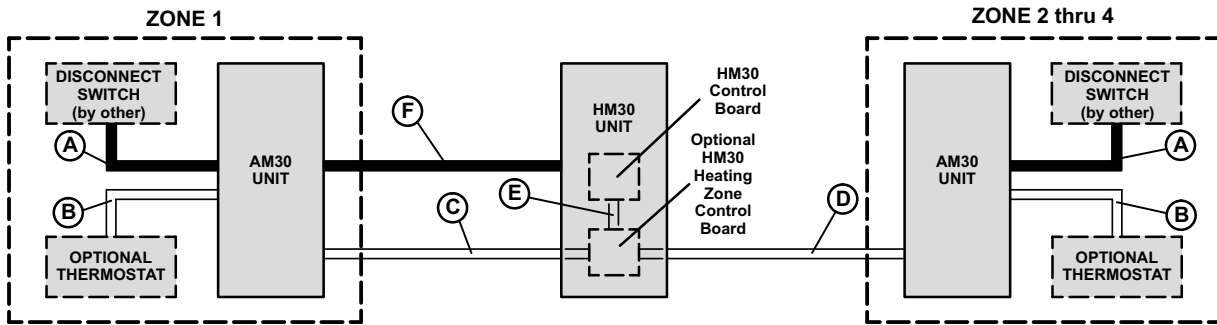
REMOTE APPLICATION



- A - Two wire power with ground
- B - Three wire control voltage (Heating Only)
Four wire control voltage (Cooling)
- C - Four wire control voltage
- Field wiring not furnished -

All wiring must conform to NEC or CEC and local electrical codes.

ZONING APPLICATION (Up To Four Zones)

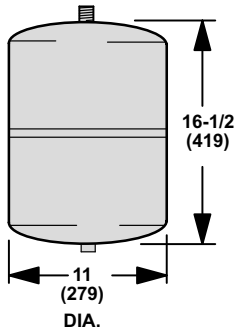


- A - Two wire power with ground
 - B - Three wire control voltage (Heating Only)
Four wire control voltage (Cooling)
 - C - Four wire control voltage (From Zone 1)
 - D - Three wire control voltage (For Each Zone) (Up to Four Zones)
 - E - Four wire control voltage
 - F - Two wire power with ground (From Zone 1 if close-coupled)
- Or** Separate Disconnect For HM30 If remotely located.

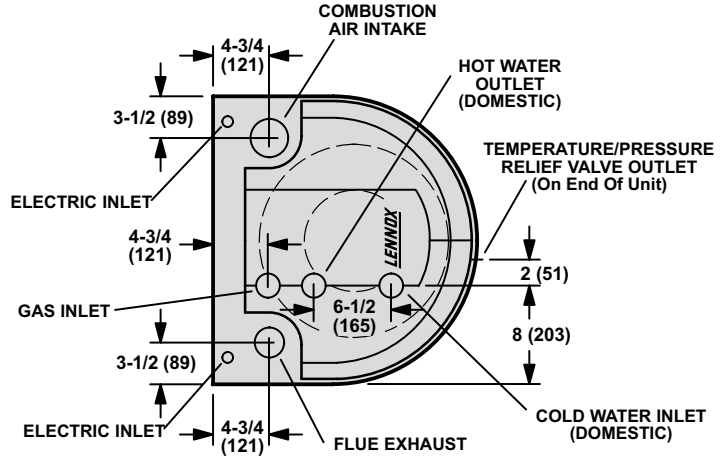
- Field wiring not furnished -

All wiring must conform to NEC or CEC and local electrical codes.

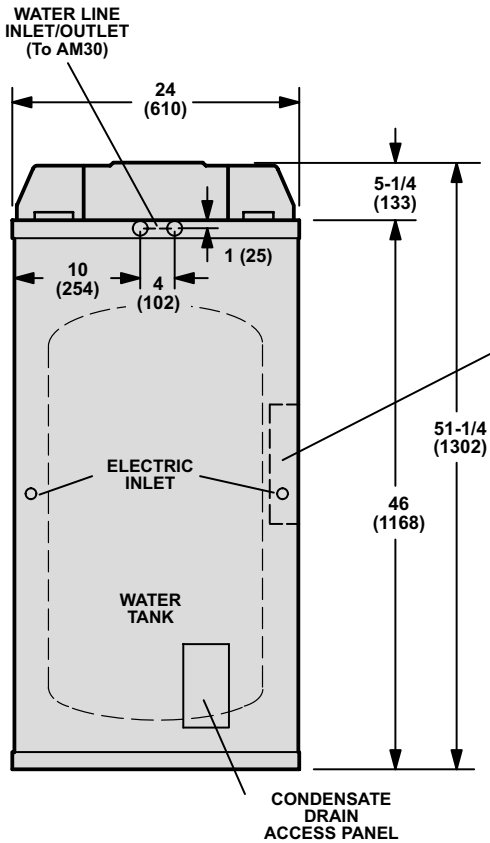
HM30 DIMENSIONS - INCHES (MM)



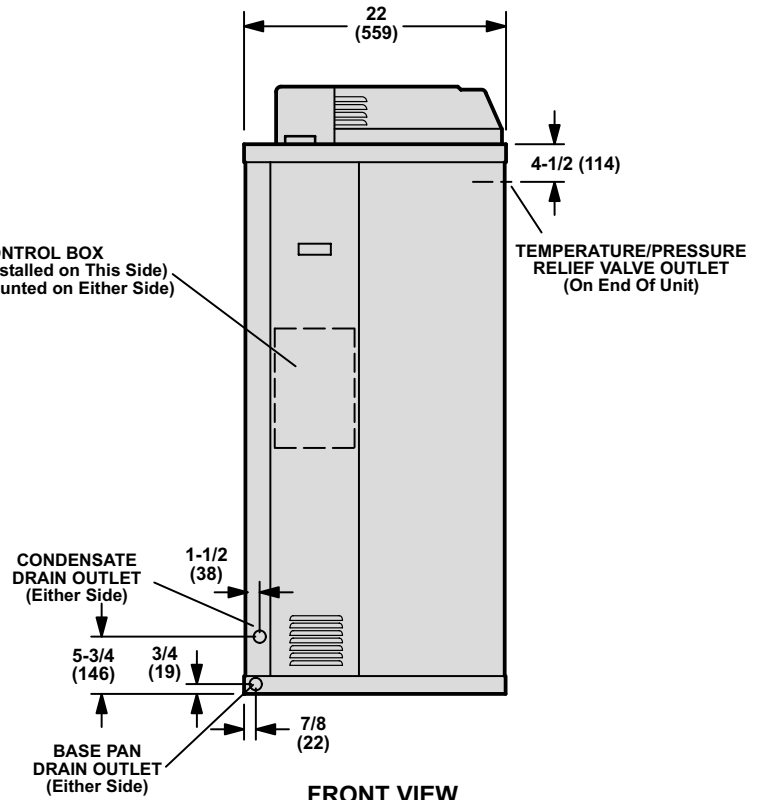
EXPANSION TANK



TOP VIEW

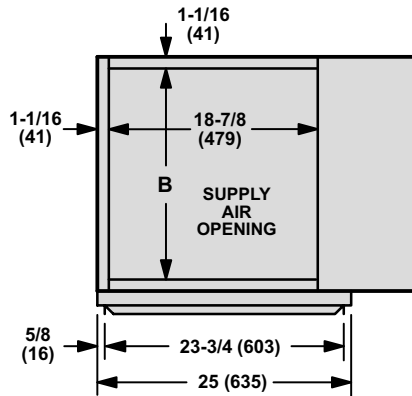


SIDE VIEW



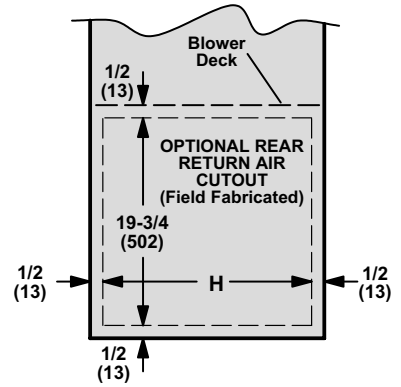
FRONT VIEW

AM30 DIMENSIONS - INCHES (MM)

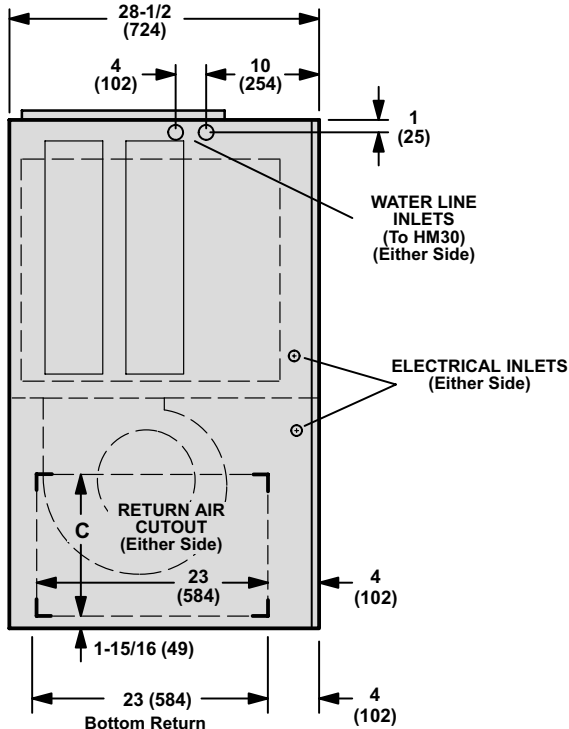


TOP VIEW

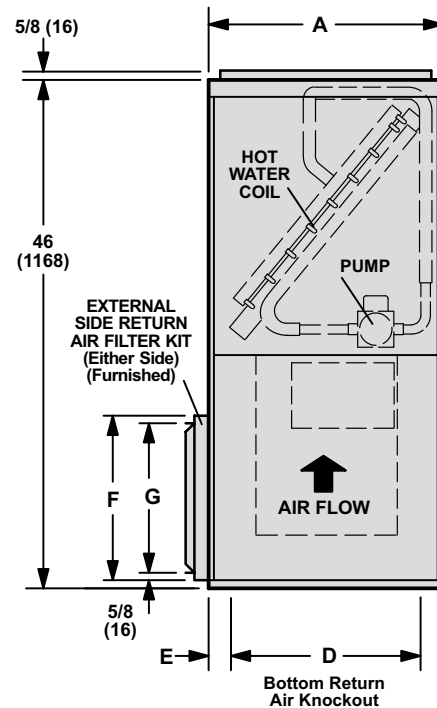
Shown In
Up-Flow
Position



REAR VIEW
(With Optional Rear Return Air)



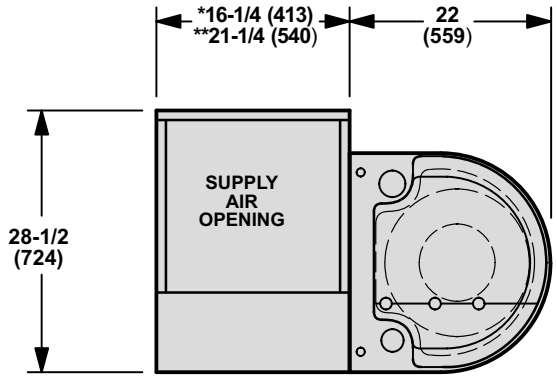
SIDE VIEW



FRONT VIEW

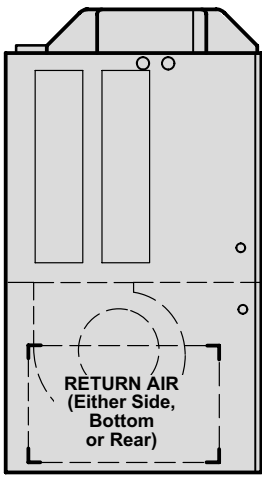
Model No.	A		B		C		D		E		F		G		H	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
AM30Q2-40 AM30Q2/3-70	16-1/4	413	14-1/8	359	12	305	12	305	1-1/8	29	14	356	12-3/4	324	15-1/4	387
AM30Q3/4-70 AM30Q3/4-90 AM30Q4/5-90 AM30Q3/4-105 AM30Q4/5-120	21-1/4	540	19-1/8	486	18	457	18	457	1-5/8	41	20	508	18-3/4	476	20-1/4	513

CLOSE-COUPLED SYSTEM DIMENSIONS (UP-FLOW) - INCHES (MM)

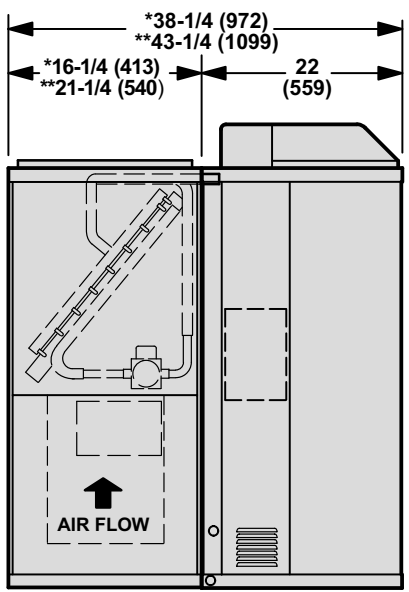


TOP VIEW

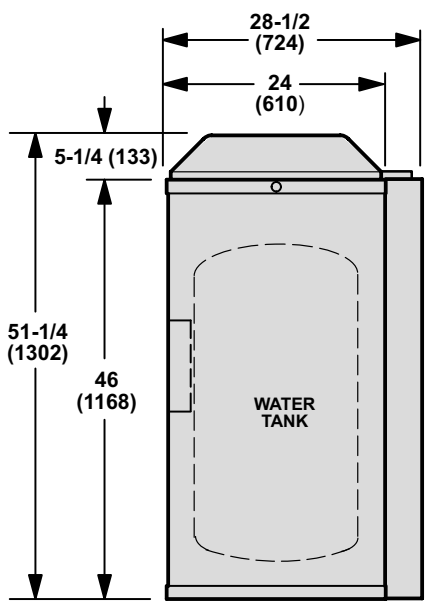
*With AM30Q2-40 Thru AM30Q2/3-70
 **With AM30Q3/4-70 Thru AM30Q4/5-120



SIDE VIEW



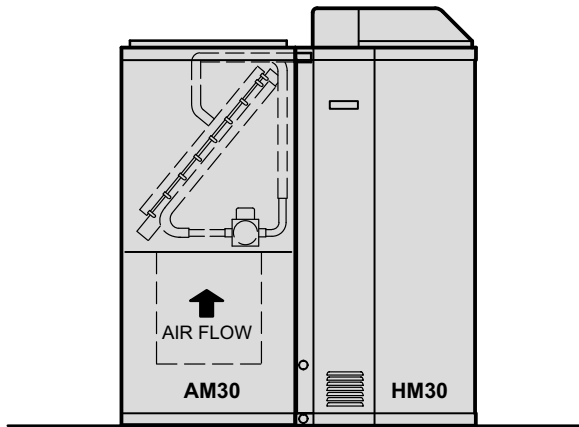
FRONT VIEW



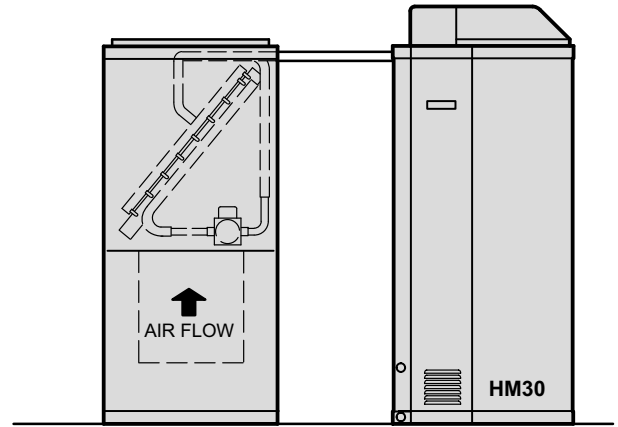
SIDE VIEW

TYPICAL APPLICATIONS

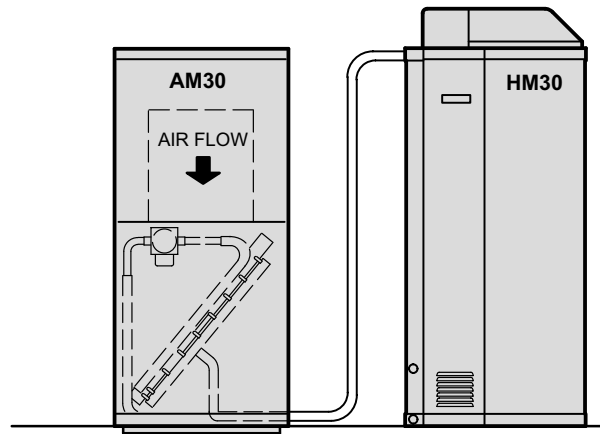
CompleteHeat Series High Efficiency Gas Heating System Only



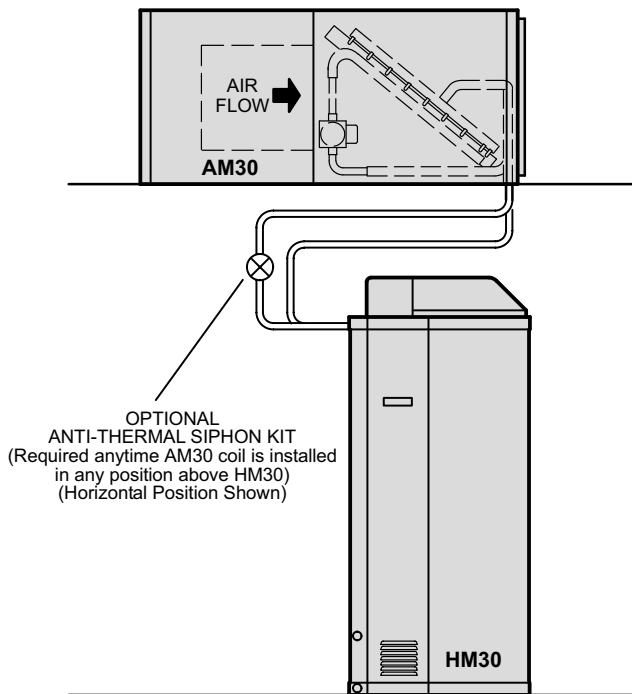
Up Flow Close-Coupled Installation



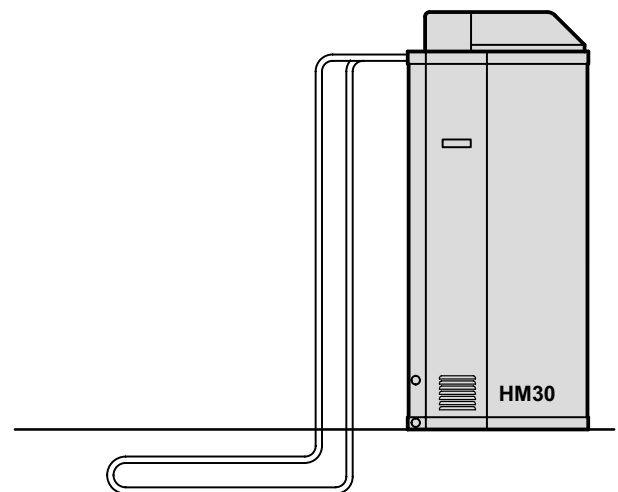
Up Flow Remote Installation



Down Flow Remote Installation



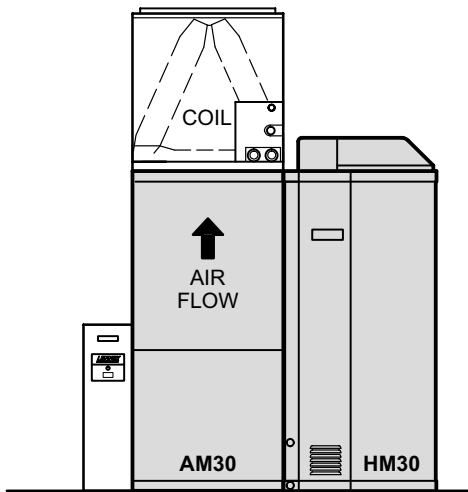
Horizontal Remote Installation



Radiant Floor Heat Installation

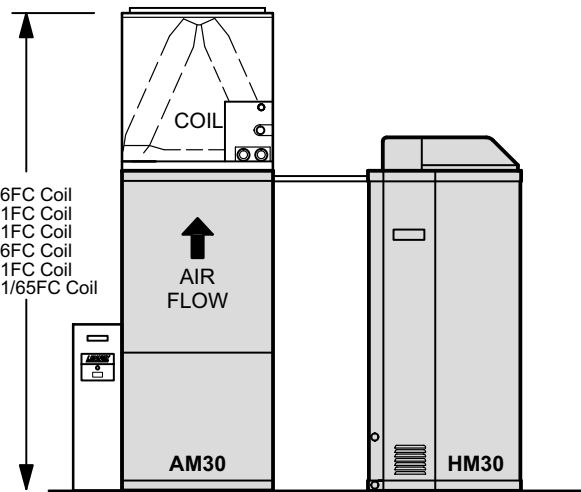
TYPICAL APPLICATIONS

CompleteHeat Series High Efficiency Gas Heating System With Various Evaporator Coils and Electronic Air Cleaner



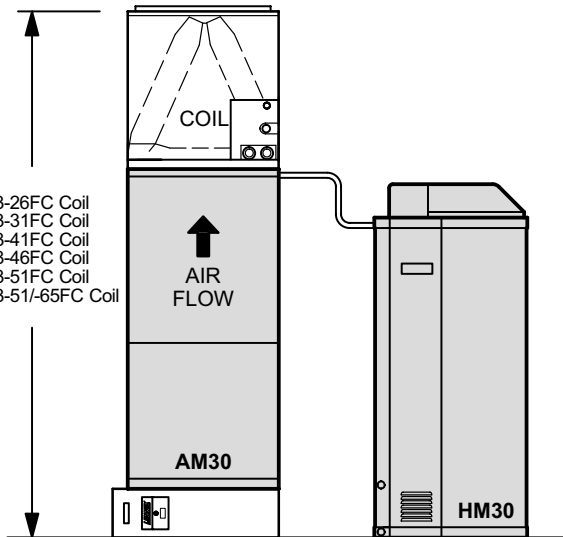
Up Flow Close-Coupled Installation

- 62-1/2 (1588) C23-26FC Coil
- 64-1/2 (1638) C23-31FC Coil
- 66-1/2 (1690) C23-41FC Coil
- 70-1/2 (1791) C23-46FC Coil
- 70-1/2 (1791) C23-51FC Coil
- 70-1/2 (1791) C23-51/65FC Coil

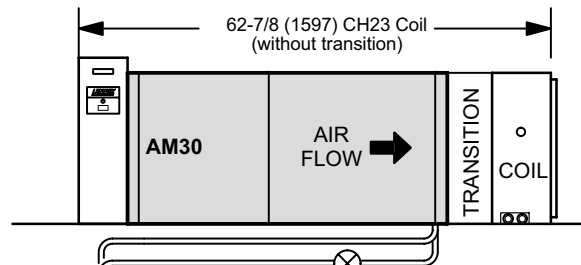


Up Flow Remote Installation

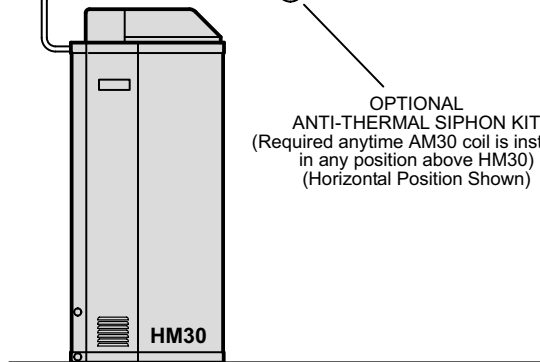
- 69-1/8 (1756) C23-26FC Coil
- 71-3/8 (1813) C23-31FC Coil
- 73-3/8 (1864) C23-41FC Coil
- 77-3/8 (1965) C23-46FC Coil
- 77-3/8 (1965) C23-51FC Coil
- 77-3/8 (1965) C23-51/65FC Coil



Up Flow Remote Installation

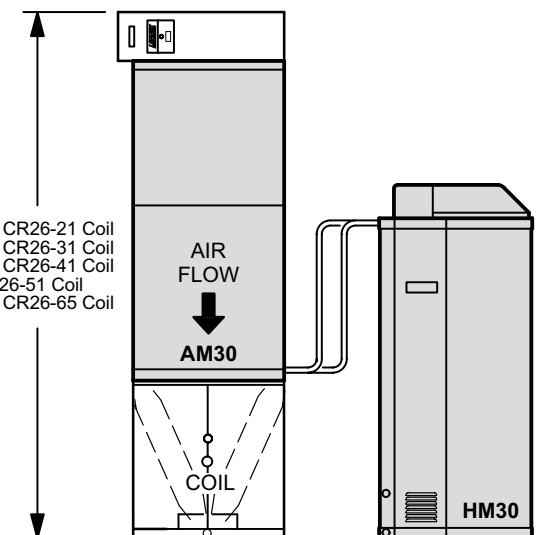


OPTIONAL ANTI-THERMAL SIPHON KIT (Required anytime AM30 coil is installed in any position above HM30) (Horizontal Position Shown)



Horizontal Remote Installation

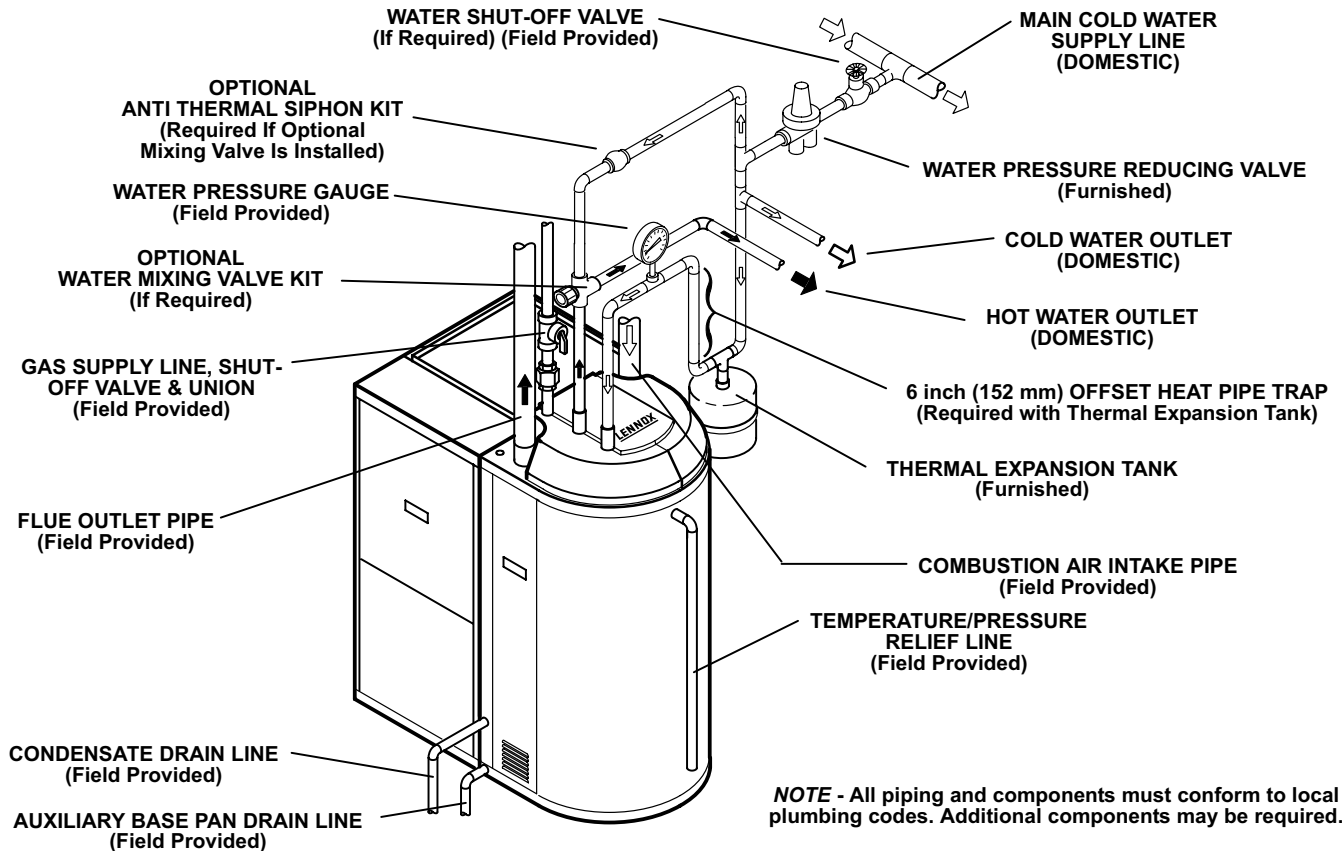
- 65-5/8 (1667) CR26-21 Coil
- 65-5/8 (1667) CR26-31 Coil
- 68-1/4 (1734) CR26-41 Coil
- 72-(1829) CR26-51 Coil
- 75-3/4 (1924) CR26-65 Coil



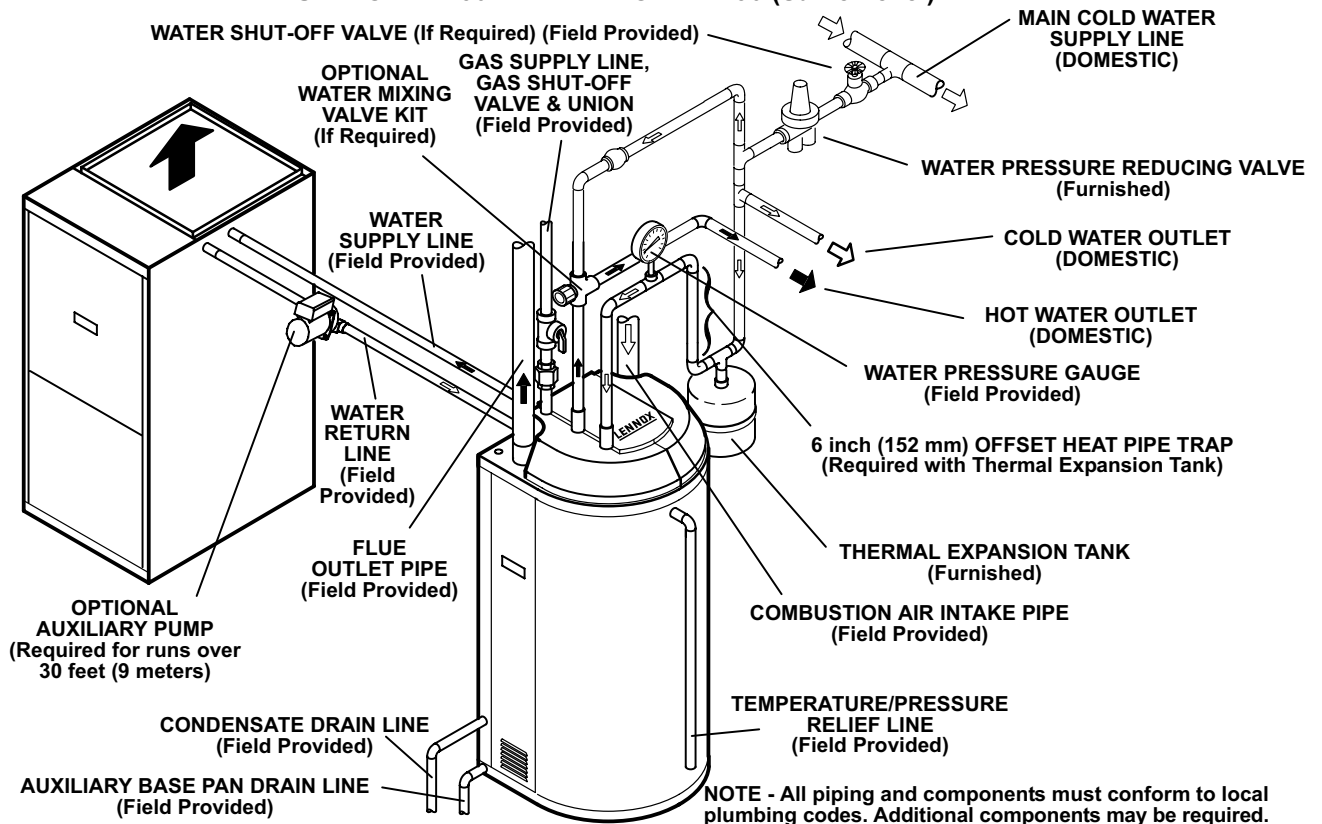
Down Flow Remote Installation

APPLICATION SCHEMATICS

UPFLOW AM30 WITH CLOSE-COUPLED HM30

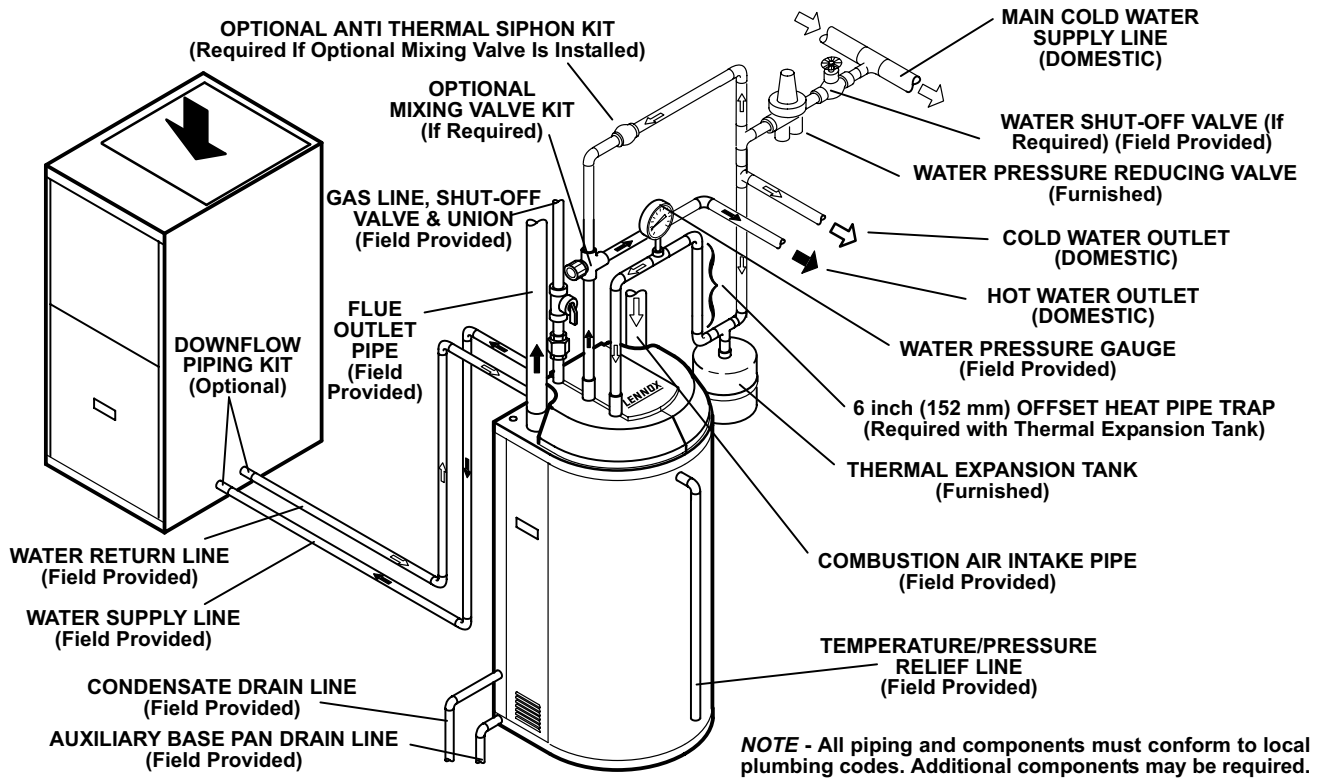


UPFLOW AM30 WITH REMOTE HM30 (Same Level)

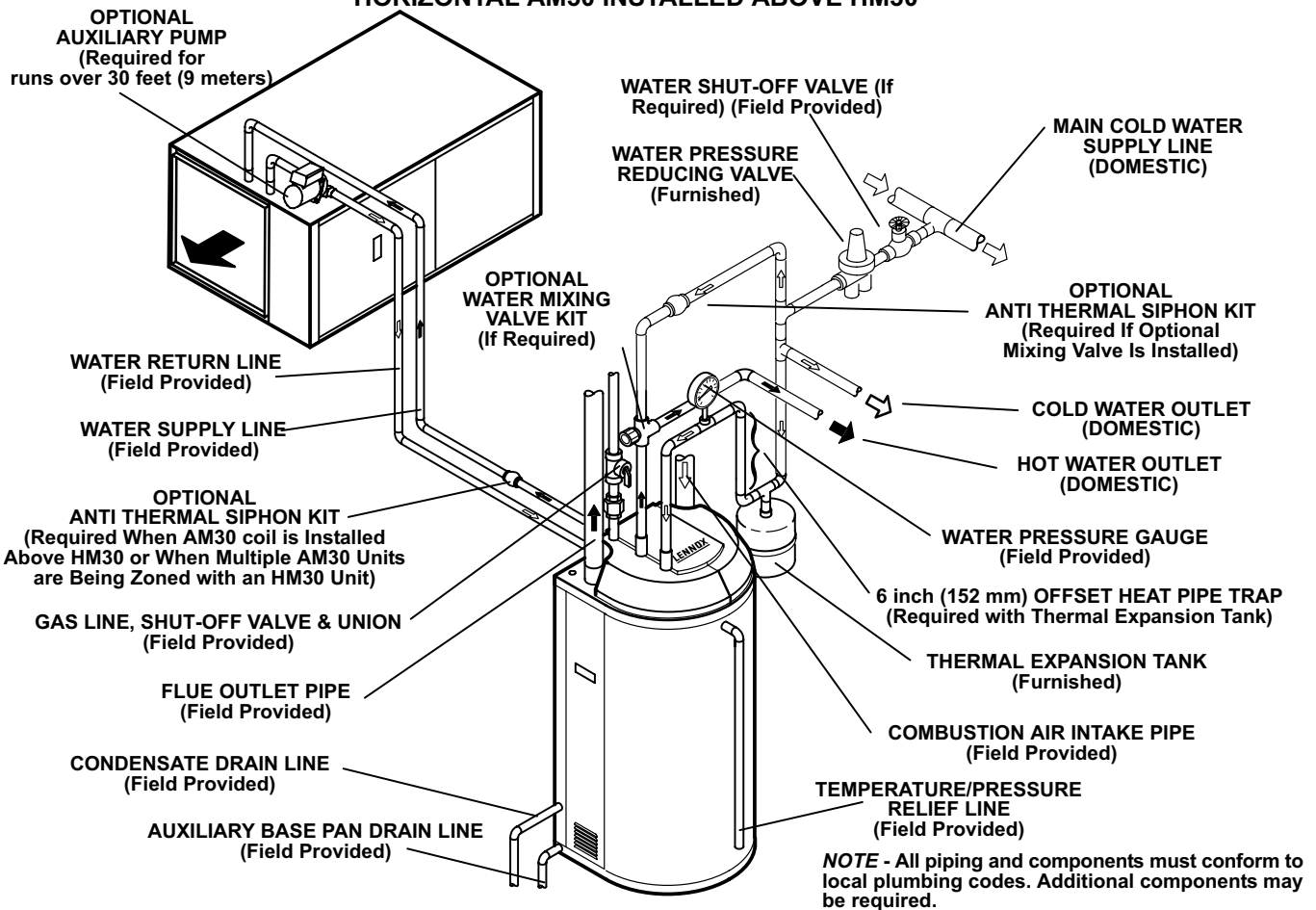


APPLICATION SCHEMATICS

DOWNFLOW AM30 WITH REMOTE HM30

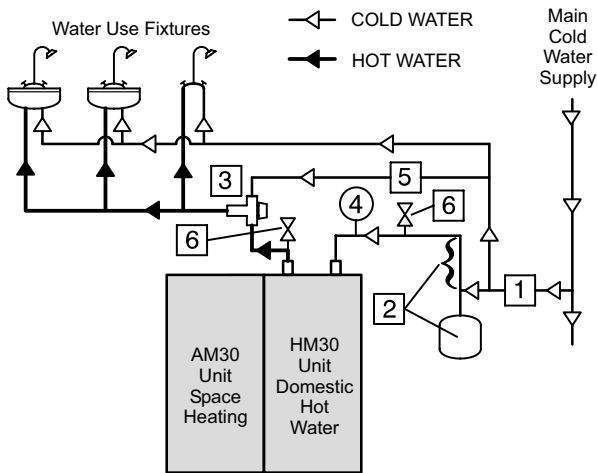


HORIZONTAL AM30 INSTALLED ABOVE HM30



PLUMBING SCHEMATICS (ALL CLOSED-LOOP SYSTEMS)

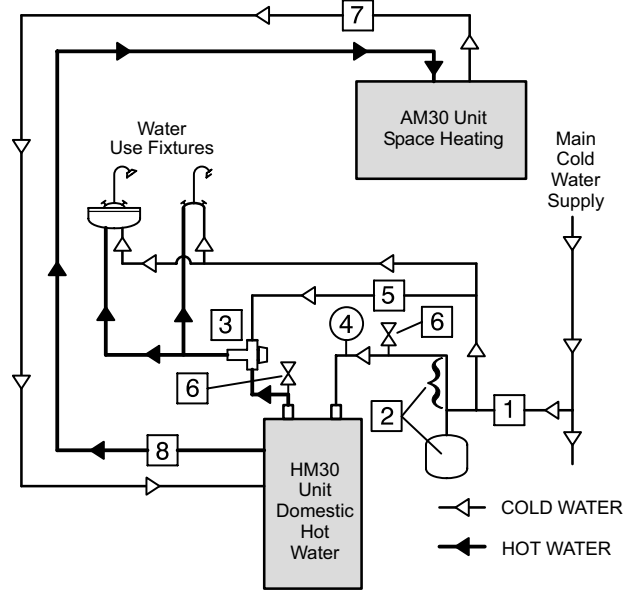
DOMESTIC HOT WATER and SPACE HEATING (Close-Coupled)



- 1 - Water Pressure-reducing valve (Required/Furnished)
- 2 - Thermal expansion tank (Required/Furnished) and 6 inch (152 mm) offset heat pipe trap (Required).
- 3 - Mixing water valve (if required by local code).
- 4 - Water pressure gauge - 0 - 150 psi (0 - 1035 kPa).
- 5 - Anti-thermal siphon kit (check valve). (Required if optional mixing water valve is installed.)
- 6 - Optional air vent/bleed valve(s). One in cold water line and one in hot water line if line turns down after leaving top of HM30. Installed at high point in line. Valve(s) may be required to bleed air from system.

NOTE - All plumbing must conform to local codes.

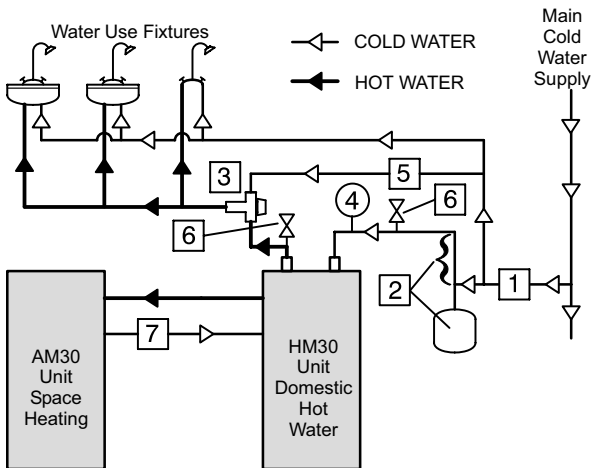
DOMESTIC HOT WATER and SPACE HEATING (Horizontal)



- 1 - Water Pressure-reducing valve (Required/Furnished)
- 2 - Thermal expansion tank (Required/Furnished) and 6 inch (152 mm) offset heat pipe trap (Required)
- 3 - Mixing water valve (if required by local code).
- 4 - Water pressure gauge - 0 - 150 psi (0 - 1035 kPa).
- 5 - Anti-thermal siphon kit (check valve). (Required if optional mixing water valve is installed.)
- 6 - Optional air vent/bleed valve(s). One in cold water line and one in hot water line if line turns down after leaving top of HM30. Installed at high point in line. Valve(s) may be required to bleed air from system.
- 7 - Auxiliary pump. [Required for runs over 30 ft. (9 m).]
- 8 - Anti-thermal siphon kit (check valve). (Required when AM30 coil is located above HM30.)

NOTE - All plumbing must conform to local codes.

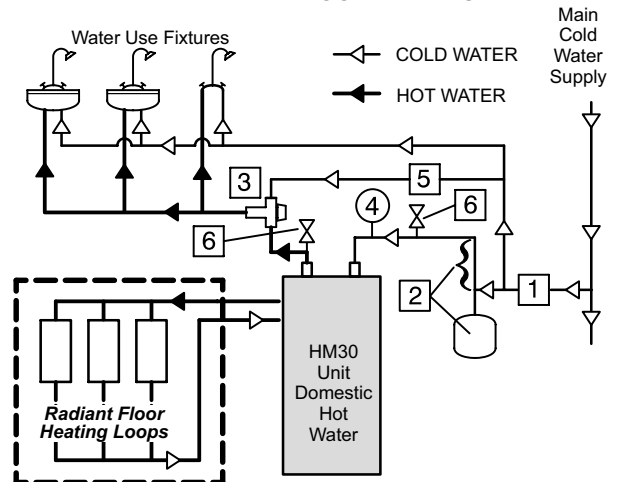
DOMESTIC HOT WATER and SPACE HEATING (Remote)



- 1 - Water Pressure-reducing valve (Required/Furnished)
- 2 - Thermal expansion tank (Required/Furnished) and 6 inch (152 mm) offset heat pipe trap (Required).
- 3 - Mixing water valve (if required by local code).
- 4 - Water pressure gauge - 0 - 150 psi (0 - 1035 kPa).
- 5 - Anti-thermal siphon kit (check valve). (Required if optional mixing water valve is installed.)
- 6 - Optional air vent/bleed valve(s). One in cold water line and one in hot water line if line turns down after leaving top of HM30. Installed at high point in line. Valve(s) may be required to bleed air from system.
- 7 - Auxiliary pump. [Required for runs over 30 ft. (9 m).]

NOTE - All plumbing must conform to local codes.

DOMESTIC HOT WATER and RADIANT FLOOR HEATING



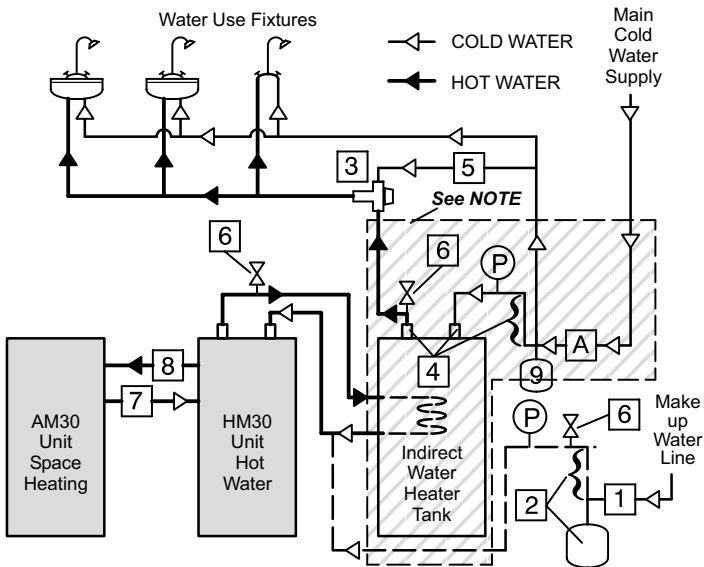
NOTE - Refer to manufacturer of Radiant Floor Heating Systems for specifications and sizing of components. All piping and components must conform to local plumbing codes. Additional components may be required.

- 1 - Water Pressure-reducing valve (Required/Furnished)
- 2 - Thermal expansion tank (Required/Furnished) and 6 inch (152 mm) offset heat pipe trap (Required).
- 3 - Mixing water valve (if required by local code).
- 4 - Water pressure gauge - 0 - 150 psi (0 - 1035 kPa).
- 5 - Anti-thermal siphon kit (check valve). (Required if optional mixing water valve is installed.)
- 6 - Optional air vent/bleed valve(s). One in cold water line and one in hot water line if line turns down after leaving top of HM30. Installed at high point in line. Valve(s) may be required to bleed air from system.

NOTE - All plumbing must conform to local codes.

PLUMBING SCHEMATICS (ALL CLOSED-LOOP SYSTEMS)

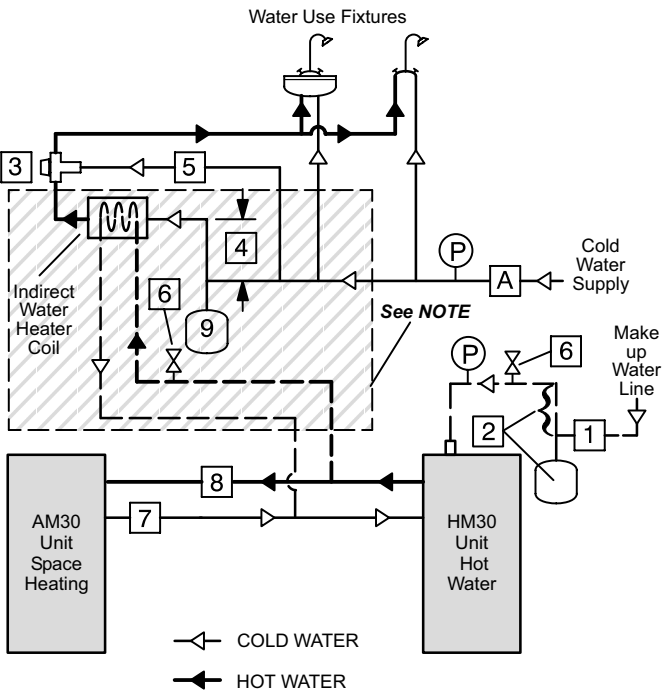
INDIRECT HEAT TRANSFER DOMESTIC HOT WATER and SPACE HEATING



- 1 = Water Pressure-reducing valve (Required/Furnished)
- 2 = Thermal expansion tank (Required/Furnished) and 6 inch (152 mm) offset heat pipe trap. (Required)
- 3 = Mixing water valve (if required by local code).
- 4 = Optional in-line heat trap OR 6 inch (152 mm) offset pipe trap may be used to help reduce heat loss due to thermal siphoning. Pipe trap is required when optional Water Mixing Valve is installed.
- 5 = Anti-thermal siphon kit (check valve). (Required if optional mixing water valve is installed.)
- 6 = Optional air vent/bleed valve(s). One in cold water line and one in hot water line if line turns down after leaving top of HM30. Installed at high point in line. Valve(s) may be required to bleed air from system.
- 7 = Auxiliary pump. [Required for runs over 30 ft. (9 m).]
- 8 = Anti-thermal siphon kit (check valve). (Required when AM30 coil is located above HM30.)
- 9 = Thermal Expansion Tank (required in closed system)
- A= Check Valve, Backflow Preventer, Pressure Reducing Valve or any device which turns the domestic water system into a Closed System. (May be required by local codes. May already be installed in existing water system)
- P = Water pressure gauge - 0 - 150 psi (0 - 1035 kPa).

NOTE - Refer to manufacturer of Indirect Water Heater for specifications and sizing of components. All piping and components must conform to local plumbing codes. Additional components may be required.

INDIRECT HEAT TRANSFER (Closed System) DOMESTIC HOT WATER and SPACE HEATING

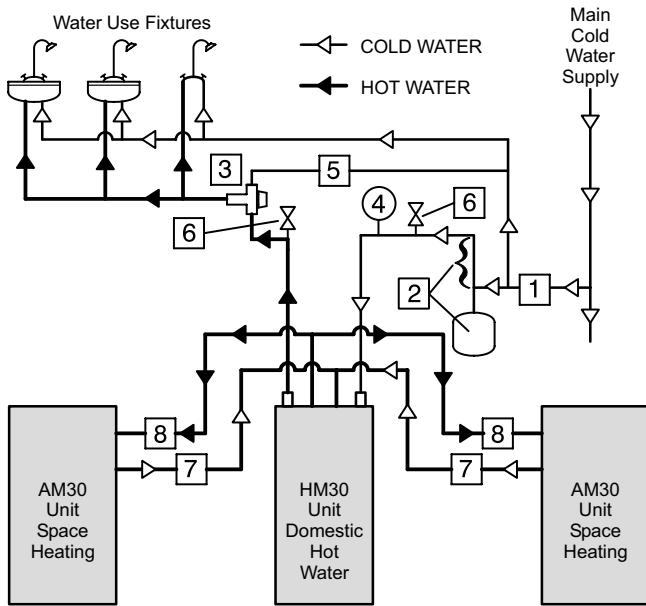


- 1 = Water Pressure-reducing valve (Required/Furnished)
- 2 = Thermal expansion tank (Required/Furnished) and 6 inch (152 mm) offset heat pipe trap. (Required)
- 3 = Mixing water valve (if required by local code).
- 4 = Optional in-line heat trap OR 6 inch (152 mm) offset pipe trap may be used to help reduce heat loss due to thermal siphoning. Pipe trap is required when optional Water Mixing Valve is installed.
- 5 = Anti-thermal siphon kit (check valve). (Required if optional mixing water valve is installed.)
- 6 = Optional air vent/bleed valve(s). One in cold water line and one in hot water line if line turns down after leaving top of HM30. Installed at high point in line. Valve(s) may be required to bleed air from system.
- 7 = Auxiliary pump. [Required for runs over 30 ft. (9 m).]
- 8 = Anti-thermal siphon kit (check valve). (Required when AM30 coil is located above HM30.)
- 9 = Thermal Expansion Tank (required in closed system)
- A= Check Valve, Backflow Preventer, Pressure Reducing Valve or any device which turns the domestic water system into a Closed System. (May be required by local codes. May already be installed in existing water system)
- P = Water pressure gauge - 0 - 150 psi (0 - 1035 kPa).

NOTE - Refer to manufacturer of Indirect Water Heater for specifications and sizing of components. All piping and components must conform to local plumbing codes. Additional components may be required.

PLUMBING SCHEMATICS (ALL CLOSED-LOOP SYSTEMS)

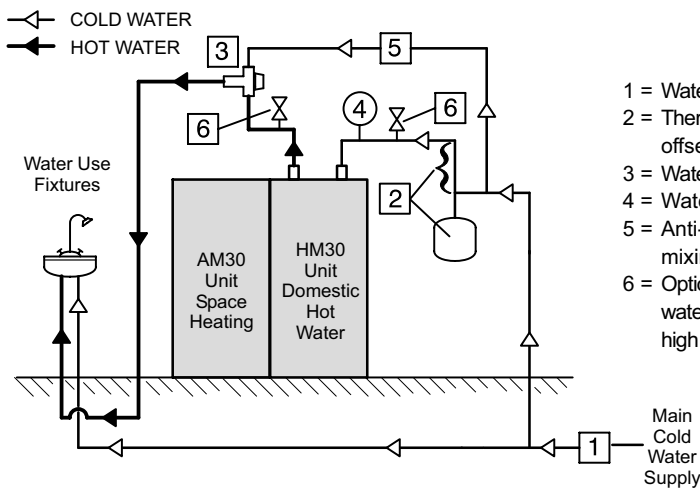
DOMESTIC HOT WATER and SPACE HEATING ONE HM30 HEATING MODULE WITH TWO AM30 AIR MODULES



- 1 = Water Pressure Reducing Valve (Required/Furnished)
- 2 = Thermal Expansion Tank (Required/Furnished) and 6 inch (152 mm) offset heat pipe trap (Required)
- 3 = Water Mixing Valve Kit (if required by local code)
- 4 = Water pressure gauge - 0 - 150 psi (0 - 1035 kPa).
- 5 = Anti-thermal siphon kit (check valve). (Required if optional mixing water valve is installed.)
- 6 = Optional Air Vent/Bleed Valve(s). One in cold water line and one in hot water line if line turns down after leaving top of HM30. Installed at high point in line. Valve(s) may be required to bleed air from system.
- 7 = Auxiliary Pump (required for runs over 30 ft. (9 m))
- 8 = Anti-Thermal Siphon Kit (required when AM30 coil is located above HM30).

NOTE - All piping and components must conform to local plumbing codes. Additional components may be required.

DOMESTIC HOT WATER and SPACE HEATING (Close Coupled) HOT WATER LINE TURNS DOWN AFTER LEAVING TOP OF HM30

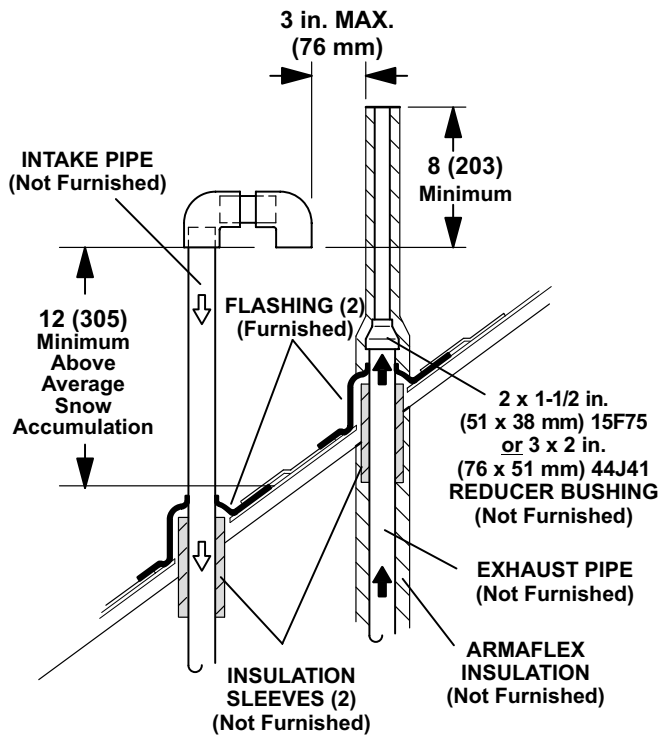


- 1 = Water Pressure Reducing Valve (Required/Furnished)
- 2 = Thermal Expansion Tank (Required/Furnished) and 6 inch (152 mm) offset heat pipe trap (Required)
- 3 = Water Mixing Valve Kit (if required by local code)
- 4 = Water pressure gauge - 0 - 150 psi (0 - 1035 kPa).
- 5 = Anti-thermal siphon kit (check valve). (Required if optional mixing water valve is installed.)
- 6 = Optional Air Vent/Bleed Valve(s). One in cold water line and one in hot water line if line turns down after leaving top of HM30. Installed at high point in line. Valve(s) may be required to bleed air from system.

All plumbing must conform to local codes.

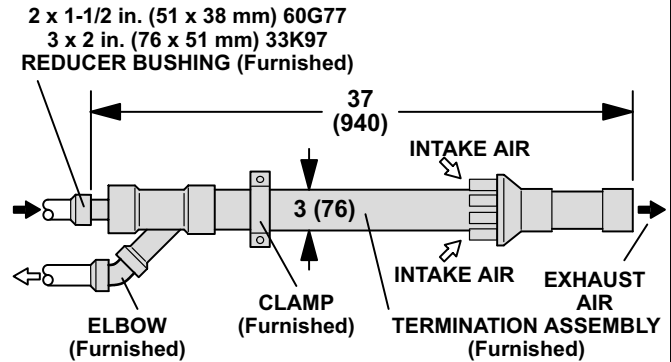
OPTIONAL ACCESSORY DIMENSIONS - INCHES (MM)

ROOF TERMINATION KITS 15F75 for 2 inch (51 mm) Venting 44J41 for 3 inch (76 mm) Venting

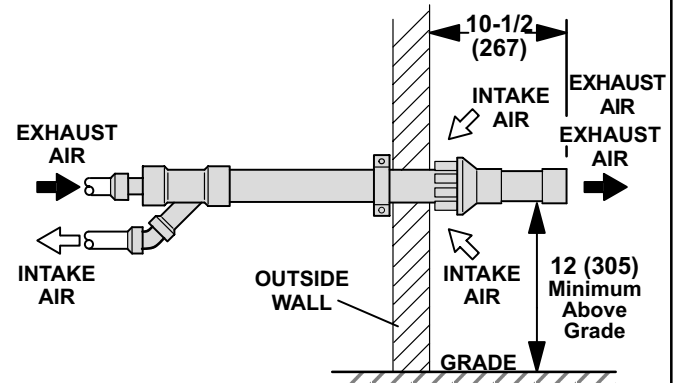


CONCENTRIC TERMINATION KITS

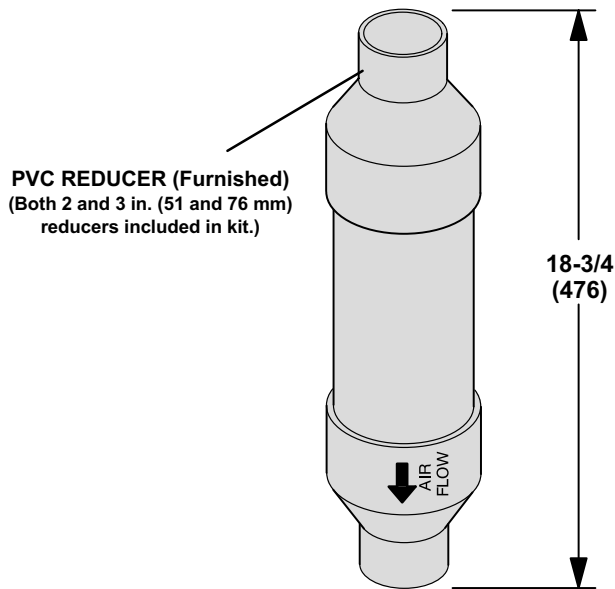
60G77 for 1-1/2 inch (38 mm) Venting
33K97 for 2 inch (51 mm) Venting



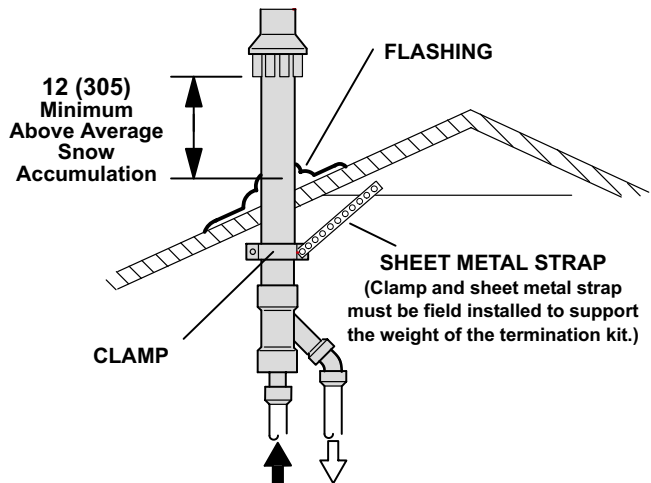
CONCENTRIC WALL TERMINATION APPLICATIONS



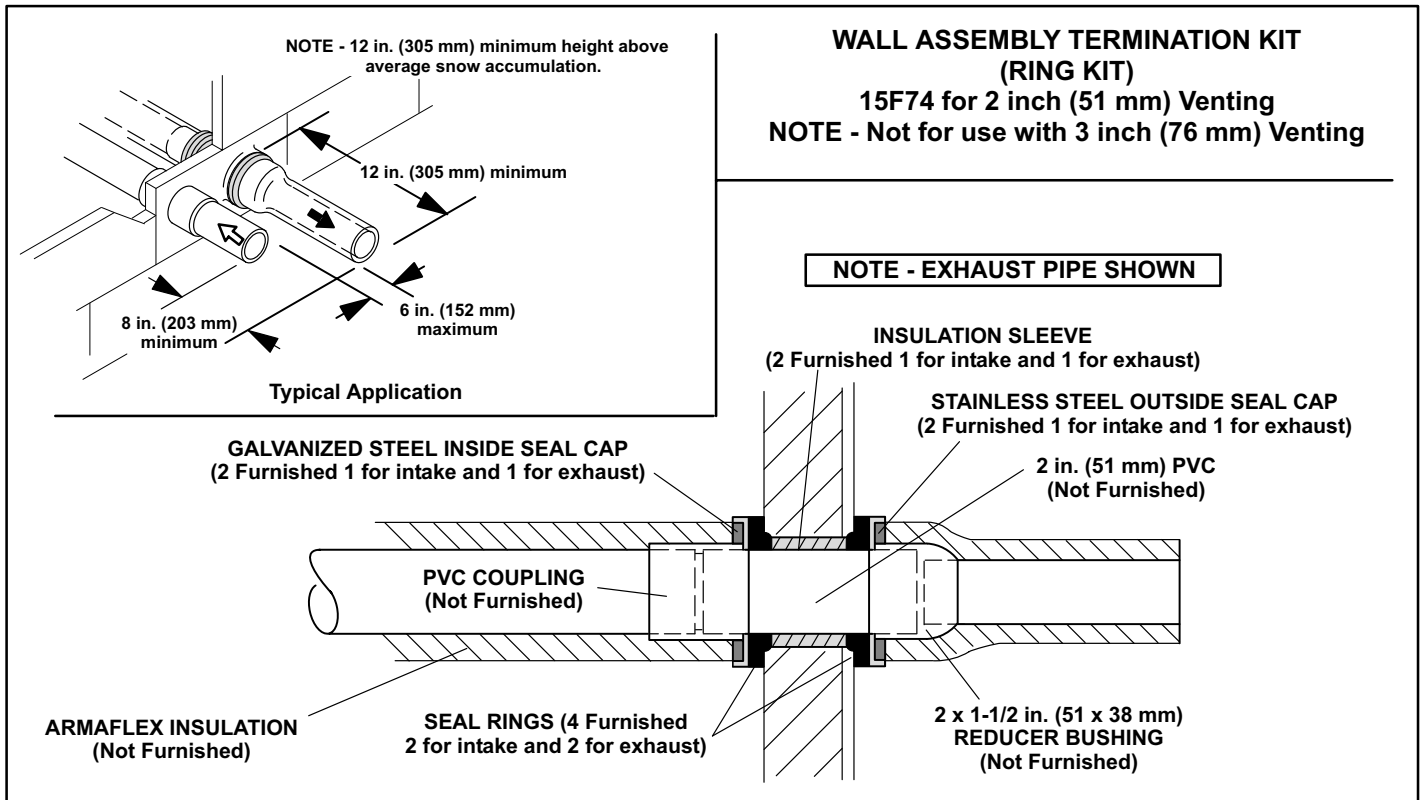
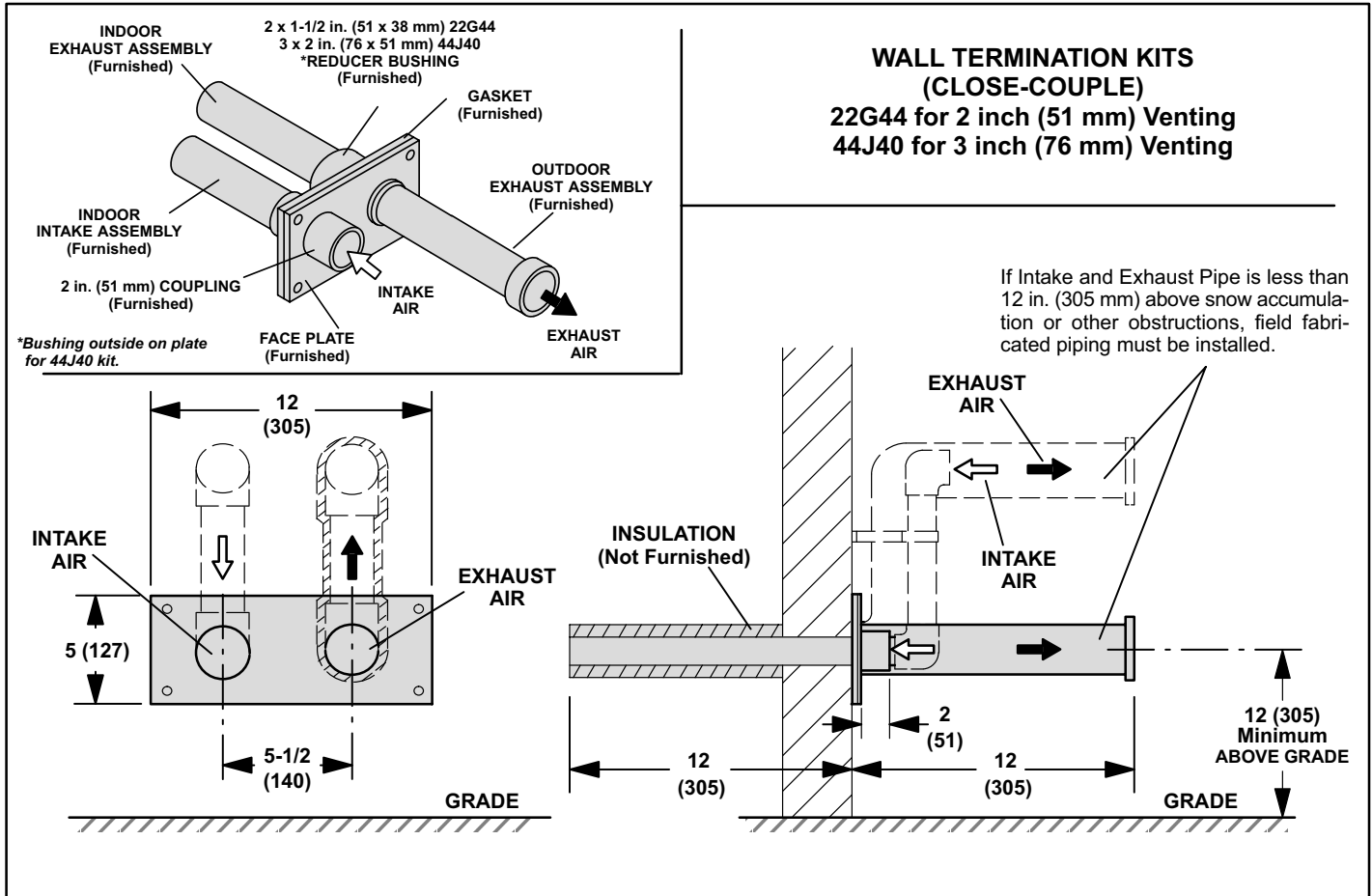
AIR INTAKE FILTER



CONCENTRIC ROOF TERMINATION APPLICATIONS



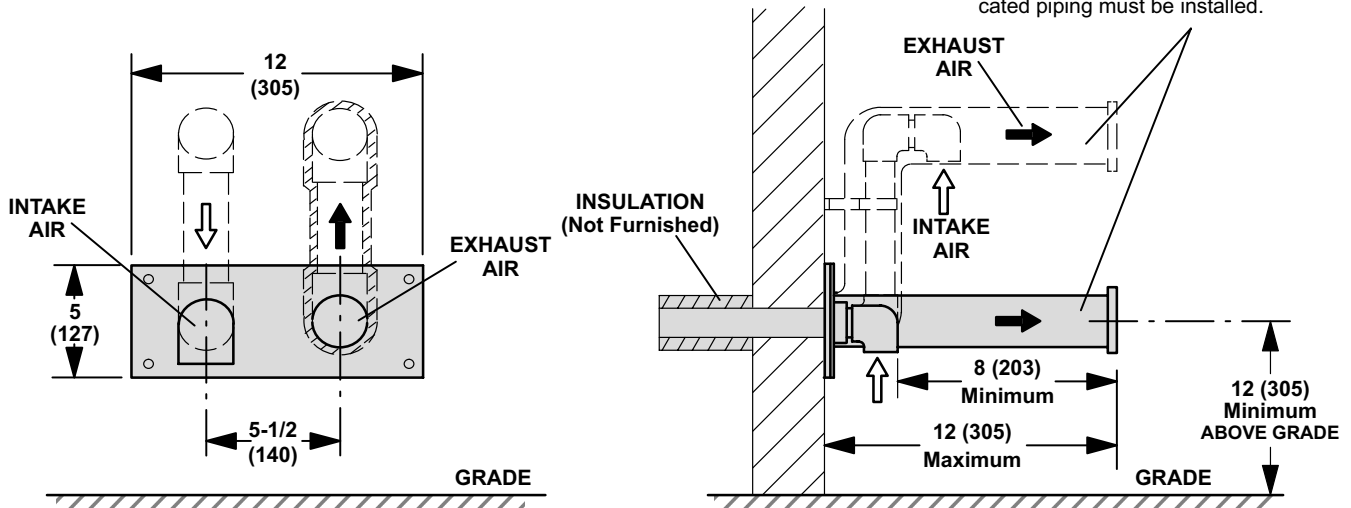
OPTIONAL ACCESSORY DIMENSIONS - INCHES (MM)



OPTIONAL ACCESSORY DIMENSIONS - INCHES (MM)

**WTK WALL ASSEMBLY TERMINATION KIT
WITH FIELD FABRICATION ABOVE
GRADE EXTENDED CLEARANCE
30G28 for 2 inch (51 mm) Venting
81J20 for 3 inch (76 mm) Venting**

If Intake and Exhaust Pipe is less than 12 in. (305 mm) above snow accumulation or other obstructions, field fabricated piping must be installed.



**WTKX WALL ASSEMBLY EXTENSION RISER TERMINATION KIT
30G79 for 2 inch (51 mm) Venting
NOTE - Not for 3 inch (76 mm) Venting**

