INSTALLER: PLEASE FAMILIARIZE YOURSELF WITH THIS MANUAL BEFORE PROCEEDING WITH THE INSTALLATION. LEAVE THIS MANUAL WITH THE APPLIANCE FOR FUTURE REFERENCE.
CONSUMER: RETAIN THIS MANUAL FOR FUTURE REFERENCE.

IOM

CONDO PACK

INSTALLATION AND OPERATING INSTRUCTIONS

THRU-THE-WALL PACKAGED UNIT

PSH - SERIES

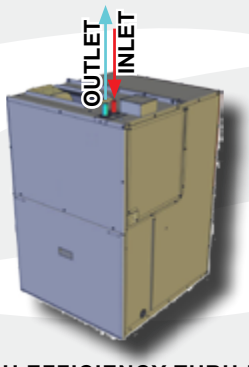
HYDRONIC HEATING & ELECTRICAL COOLING

CONFORMS TO ANSI/UL STD. 1995,
CERTIFIED TO CAN/CSA STD. C22.2 NO. 236 AND
ANSI/AHRI STD. 390

AHRI CERTIFIED

ETL LISTED C US Intertek 9700539

Quality System Certified To ISO 9001-2008



ENERGUIDE

THE HIGH EFFICIENCY THRU-THE-WALL SELF CONTAINED HEATING & COOLING UNIT

- Up to 10.8 EER
- Up to 24400 Btuh Cooling
- Up to 63000 Btuh Heating
- R-410A Refrigerant System
- Micro-Channel Condenser and Evaporator Coils
- Removable heating and cooling module
- Pre-wired and pre-charged
- Plug-and-play installation and service
- High efficiency Copeland scroll compressor
- Individual metering and control for each unit

⚠ WARNING ⚠

ELECTRICAL SHOCK, FIRE OR EXPLOSION HAZARD

FAILURE TO FOLLOW SAFETY WARNINGS AND INSTRUCTIONS EXACTLY COULD RESULT IN SERIOUS INJURY, DEATH OR PROPERTY DAMAGE.

IMPROPER INSTALLATION, ADJUSTMENT, ALTERATION, SERVICE, OR MAINTENANCE CAN CAUSE INJURY OR PROPERTY DAMAGE. REFER TO THIS MANUAL. FOR ASSISTANCE OR ADDITIONAL INFORMATION, CONSULT A QUALIFIED INSTALLER OR SERVICE AGENCY.

**UNIT CONTAINS R-410A REFRIGERANT AND POE COMPRESSOR OIL.
USE ONLY R-410A REFRIGERANT AND APPROVED POE COMPRESSOR OIL. PROPER SERVICE EQUIPMENT IS REQUIRED. USE ONLY R-410A APPROVED SERVICE EQUIPMENT.**

FOR YOUR SAFETY, DO NOT STORE OR USE GASOLINE OR OTHER FLAMMABLE VAPORS AND LIQUIDS IN THE VICINITY OF THIS OR ANY OTHER APPLIANCE. SUCH ACTIONS COULD RESULT IN PROPERTY DAMAGE, PERSONAL INJURY, OR DEATH.

⚠ CAUTION ⚠

INSTALLATION SHALL BE MADE IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL UTILITY AND OTHER AUTHORITIES HAVING JURISDICTION, THE NATIONAL ELECTRICAL CODE IN THE UNITED STATES OR CAN/CSA-B214 AND THE CANADIAN ELECTRICAL CODE CSA C22.1 PART 1 (LATEST EDITION) IN CANADA. ANY ALTERATION OF INTERNAL WIRING WILL VOID CERTIFICATION AND WARRANTIES.

⚠ IMPORTANT ⚠

- Installation and service must be performed by a qualified installer, or service agency.
- Before servicing, disconnect all electrical power to the unit.
- When servicing controls, label all wires prior to disconnecting. Reconnect wires correctly.
- Verify proper operation after servicing.
- Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.
- After installing the unit, show user locations of main electrical disconnect switch to Condopack and how the unit can be de-energized using the switch.

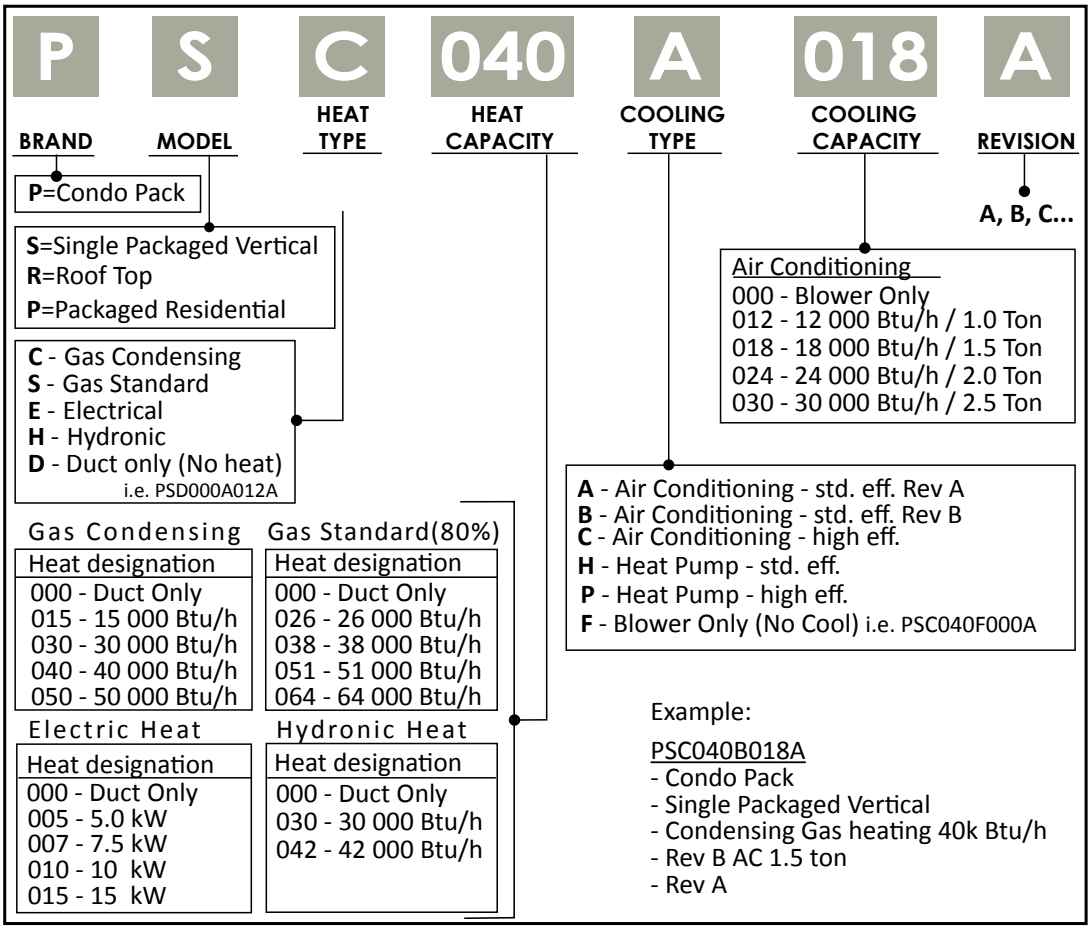
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• hvac@napoleonproducts.com

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1. MODEL NOMENCLATURE



2. OVERVIEW

These instructions cover the installation of the Condo Pack, which consists of four separate sections: the wall sleeve, the cabinet, the air conditioning (AC) and hydronic heating modules. Instead of replacing the complete system, the AC and heating modules can be partially or fully removed for servicing. All control harnesses are separated with modular quick disconnects, so module replacements do not require rewiring. Both modules have been factory run-tested and ready for easy installation as a complete package.

For space heating, hydronic module can be connected to central boiler (an externally powered zone valve must be field installed), to a properly sized individual natural gas and oil fired water heater, or to tank-less water heater. For water heater application, circulating pump and water flow control valve must be field installed. Hydronic module comes with either 3-row or 4-row hot water coil with inlet and outlet connection pipes extended out of the cabinet for easy installation. Note that this unit is designed to be used with non-potable water systems only.

These instructions are intended as an aid to the licensed service technician. Improper installation may damage equipment, void the warranty, and can create a hazard, resulting in injury or death. Our HVAC systems and components are designed to be installed by qualified HVAC technicians ONLY. The installation of HVAC systems includes electrical, plumbing and refrigerant connections and is regulated by a multiple set of laws, codes and guidelines, at the federal, state and local levels. It is the installer's responsibility to install the product in accordance with all applicable codes and regulations. NO WARRANTY is offered for the products that were installed by unlicensed/unauthorized persons. Failure to comply with this policy could lead to violations of applicable laws that are punishable. Documentation and specifications are continuously updated and subject to change. Please download the latest version of specifications and manuals at http://www.napoleonheatingandcooling.com.

3. SAFETY

Only trained service technicians familiar with standard service instructions and training materials should attempt installation, service, and repair of these units. Improper installation, adjustment, alteration, service, maintenance, or use can cause explosion, fire, electrical shock, or other conditions which may cause death, personal injury, or property damage. For information and assistance, consult a qualified installer, service agency, your distributor or branch.

Follow all safety codes. Wear safety glasses, protective clothing, and work gloves. Have fire extinguisher available. Read instructions thoroughly and follow all warnings or cautions included in literature and attached to the unit. Consult federal, provincial, state, and local codes for special requirements.

3.1 SAFETY SYMBOLS AND WARNINGS

Understand and pay particular attention to the words DANGER, WARNING, and CAUTION and the following defined symbols are used throughout this manual to notify the reader of potential hazards of varying risk levels.

⚠ DANGER ⚠

INDICATES AN IMMINENTLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, WILL RESULT IN DEATH OR SERIOUS INJURY.

⚠ WARNING ⚠

INDICATES A POTENTIALLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, COULD RESULT IN DEATH OR SERIOUS INJURY.

⚠ CAUTION ⚠

INDICATES A POTENTIAL HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, MAY RESULT IN MINOR OR MODERATE INJURY. IT MAY ALSO BE USED TO ALERT AGAINST UNSAFE PRACTICES.

⚠ IMPORTANT⚠

SUGGESTS IMPORTANT PROCEDURE STEPS TO INSURE PROPER INSTALLATION, RELIABILITY, OR OPERATION.

NOTE

HIGHLIGHTS SUGGESTIONS WHICH WILL RESULT IN ENHANCED INSTALLATION, RELIABILITY, OR OPERATION.

H3.3.2. Safety Symbols

⚠ WARNING ⚠

THIS INFORMATION IS INTENDED FOR USE BY QUALIFIED HVAC TECHNICIANS. ANY ATTEMPT TO REPAIR A CENTRAL AIR CONDITIONING PRODUCT MAY RESULT IN PERSONAL INJURY AND/OR PROPERTY DAMAGE. THE MANUFACTURER OR SELLER CANNOT BE RESPONSIBLE FOR THE INTERPRETATION OF THIS INFORMATION, NOR CAN IT ASSUME ANY LIABILITY IN CONNECTION WITH ITS USE.

⚠ CAUTION ⚠

UNIT CONTAINS R-410A REFRIGERANT AND POE COMPRESSOR OIL. USE ONLY R-410A REFRIGERANT AND APPROVED POE COMPRESSOR OIL. REFRIGERANT LINES MUST BE BRAZED AND RATED FOR R410 PRESSURES! PROPER SERVICE EQUIPMENT IS REQUIRED. USE ONLY R-410A APPROVED SERVICE EQUIPMENT. FAILURE TO USE PROPER SERVICE TOOLS MAY RESULT IN EQUIPMENT DAMAGE OR PERSONAL INJURY.

ALL R-410A SYSTEMS USE POE OIL. POE OIL EASILY ABSORBS MOISTURE FROM THE AIR. A SYSTEM WHICH HAS BEEN EXPOSED TO THE ATMOSPHERE FOR MORE THAN 4 HOURS REQUIRES THAT THE COMPRESSOR OIL BE REPLACED. NEVER BREAK A VACUUM WITH AIR AND ALWAYS CHANGE THE FILTER DRIER WHEN OPENING THE SYSTEM FOR COMPONENT REPLACEMENT.

⚠ WARNING ⚠

HOT SURFACE! DO NOT TOUCH TOP OF COMPRESSOR. COMPRESSOR AND DISCHARGE PIPES MAY BE EXTREMELY HOT. THIS MAY CAUSE MINOR TO SEVERE BURNS.

⚠ CAUTION ⚠

DURING THE INSTALLATION, TESTING, SERVICING, AND TROUBLESHOOTING OF THIS PRODUCT, IT MAY BE NECESSARY TO WORK WITH ELECTRICAL COMPONENTS. THERE IS A RISK OF ELECTRIC SHOCK WHICH CAN CAUSE INJURY OR DEATH: DISCONNECT ALL REMOTE ELECTRIC POWER SUPPLIES BEFORE SERVICING!

⚠ CAUTION ⚠

UNIT IS DESIGNED TO BE USED WITH NON-POTABLE WATER SYSTEMS ONLY.

⚠ CAUTION ⚠

BE AWARE OF METAL EDGES AND SHARP CORNERS WHILE SERVICING EQUIPMENT. PHYSICAL CONTACT WITH THESE AREAS WHILE APPLYING EXCESSIVE FORCE OR RAPID MOTION CAN RESULT IN PERSONAL INJURY.

NOTE

USE COPPER PIPE AND FITTING FOR CONNECTING HYDRONIC SECTION OF THIS UNIT.

NOTE

THIS UNIT DOES NOT COME WITH A WATER FLOW CONTROL VALVE OR A CIRCULATING PUMP. A FLOW CONTROL VALVE AND/OR A CIRCULATING PUMP MUST BE FIELD INSTALLED AND CAN BE ACTIVATED BY A LOW VOLTAGE SIGNAL FROM THE CONDOPACK UNIT.

⚠ WARNING ⚠

INLET WATER TEMPERATURE MUST NEVER EXCEED 160°F.
THE WATER FLOW MUST NEVER EXCEED 5 GPM.

3.2 SAFETY RULES

1. For starting up and shutting down the unit refer to *"6. STARTUP AND SHUTDOWN PROCEDURES"* section of this manual.
2. **Store this unit only in dry indoor locations (protected from weather).**
3. DO NOT install this unit outdoors or in a mobile home, trailer or recreational vehicle. This appliance is not designed/certified for these installations.
4. DO NOT install unit in a corrosive or contaminated atmosphere.
5. **DO NOT USE FOR HEATING AND COOLING BUILDINGS OR STRUCTURES UNDER CONSTRUCTION!** Units that are damaged or entrained with construction debris will not be covered under warranty.
6. Both Supply and Return Air must be ducted to the appliance from rooms separate to the enclosure housing the appliance. Be sure that duct system has external static pressure within allowable operating range (as listed on unit's Rating Plate). Completely seal supply and return air ducts to unit casing. See Section *"4.7 Ductwork"* for more detail.
7. **RETURN air must be ducted to the appliance from a separate room(s) within the conditioned space. Fresh make up air must never be added directly to RETURN air duct; fresh make up air must always be brought in via an external HRV system before adding it to the RETURN air duct.**
8. Always install unit to operate within the temperature-rise range and an external static pressure range (ducting), as listed on the unit rating plate.
9. Return air temperature range that must be maintained is:
   - between 55°F (13°C) and 80°F (27°C) for heating and
   - between 65°F (18°C) and 90°F (32°C) for air conditioning.
10. The unit must be kept free and clear of insulating material. Carefully examine the unit area when the unit is installed or/when insulation is added. Insulating material may be combustible.
11. Before installing unit, make sure you know all applicable codes. National, state and local codes may take precedence over any instructions in this manual. Be sure to consult:
    - Authorities having jurisdiction over HVAC system installations;
    - Local code authorities for information on electrical wiring.

3.3 CODES

1. **This unit must be installed:**
   a. In accordance with all local codes, by-laws and regulations by those authorities having jurisdiction.
   b. Hydronic heating section of this unit must be installed in accordance with the latest version of CAN/CSA - B214, Installation codes for Hydronic installation systems in Canada and all relevant codes in United States.
2. **Electrical connections must be made in accordance with:**
   a. Any applicable local codes, by-laws and regulations.
   b. Canada: current edition of CAN/CSA C22.1 and C22.2, Canadian Electrical Code (Part 1 and 2).
   c. United States: current edition of ANSI/NFPA 70, National Electrical Code.
3. **Codes and additional information may be obtained from:**

Canadian Standards Association
5060 Spectrum Way
Mississauga, Ontario, L4W 5N6
Phone: (416) 747-4000
website: www.csa.ca

National Fire Protection Association
1 Batterymarch Park
Quincy, MA, 02169-7471
Phone: (617) 770-3000
website: www.nfpa.org

⚠ WARNING ⚠

DO NOT INSTALL THIS UNIT IN A MOBILE HOME! THIS UNIT IS NOT APPROVED FOR INSTALLATION IN A MOBILE HOME. DOING SO COULD CAUSE FIRE, PROPERTY DAMAGE, PERSONAL INJURY OR LOSS OF LIFE.

THE HEATING MODULE CONTAINS FOIL COVERED FIBERGLASS INSULATION. INHALATION OF FIBERGLASS PARTICLES IS ASSOCIATED WITH RESPIRATORY DISEASE INCLUDING CANCER.

4. INSTALLATION

The unit is shipped in one package, completely assembled and wired. The air conditioning condensate drain is shipped separately with the unit for field install.

If any damage is found, proper notation should be made on the carrier's freight bill. Damage claims should be filed with the carrier as quickly as possible.

Check the rating plate (at the front of the access panel) to confirm heating and cooling capacities. The unit should be operated only with the electrical supply noted on the rating plate.

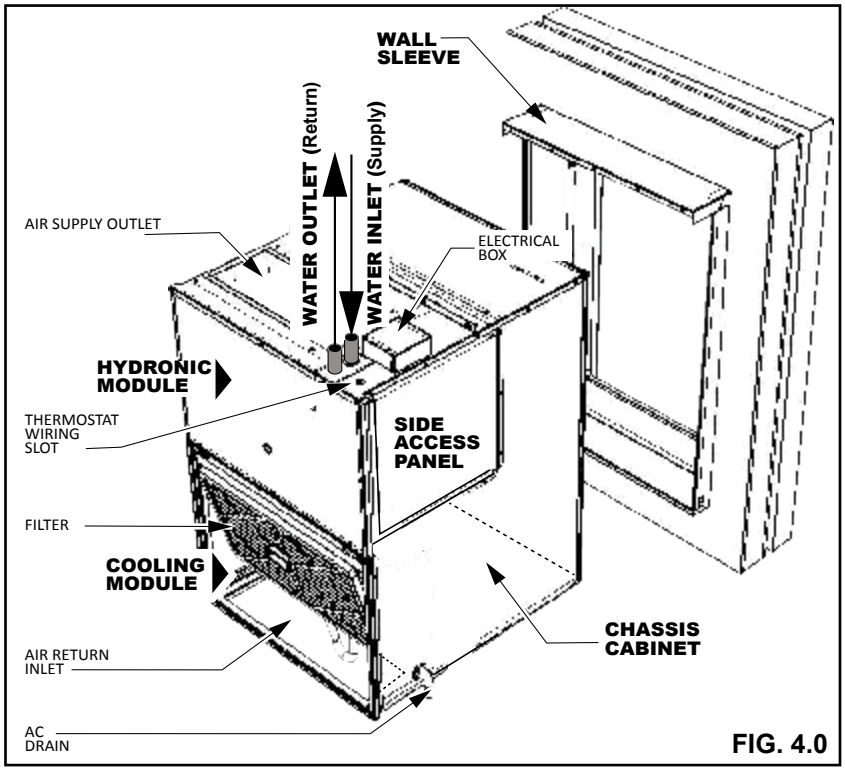


FIG. 4.0

⚠ IMPORTANT ⚠

BEFORE INSTALLATION, REMOVE THE CHASSIS SHIPPING BRACKETS AND REPLACE THE SCREWS BACK TO THE UNIT.

⚠ WARNING ⚠

DO NOT INSTALL CONDOPACK UNIT IN UNCONDITIONED SPACE. THE AMBIENT OF THE MECHANICAL ROOM IN WHICH CONDOPACK UNIT IS TO BE INSTALLED MUST BE KEPT AT LEAST 55°F DURING HEATING SEASON. THERE MUST NOT BE ANY AIR INFILTRATION FROM OUTDOORS INTO THE MECHANICAL ROOM. ANY OPENINGS IN EXPOSED EXTERIOR WALL FOR DUCTING AND PIPING MUST BE COMPLETELY SEALED.

H3.91

The unit must not be located in an area where the return air may contain chemical compounds such as bromine, chlorine or fluorine, as may be found in swimming pool chemicals, laundry detergents, etc. These compounds when exposed to flame, form acids which attack the heat exchanger and other components.

Exposure to the following substances in the return air supply (but not limited to the following) are not allowed, and will affect warranty claims:

- Aerosols, particularly CFC based or propelled aerosols
- Air fresheners
- "Airplane Glue" and similar adhesives and cements
- Ammonia, as commonly found in permanent wave solutions used in hair dressing salons
- Anti-static fabric softeners used in clothes dryers
- Carbon tetrachloride
- Chlorinated cleaners and waxes
- Chlorine and bromine based swimming pool chemicals
- De-icing salts or chemicals (rock salt, etc.)
- Dry cleaning fluids such as perchloroethylene
- Fumes from curing polyurethane and similar substances
- Halogen based refrigerants including R-12 and R-22
- Hydrochloric acid, muriatic acid and other acid based masonry washing and curing materials
- Printer's inks, paint removers, varnishes, varsol, toluene, etc.
- Water softener salt and chemicals

4.1 UNIT DIMENSIONS

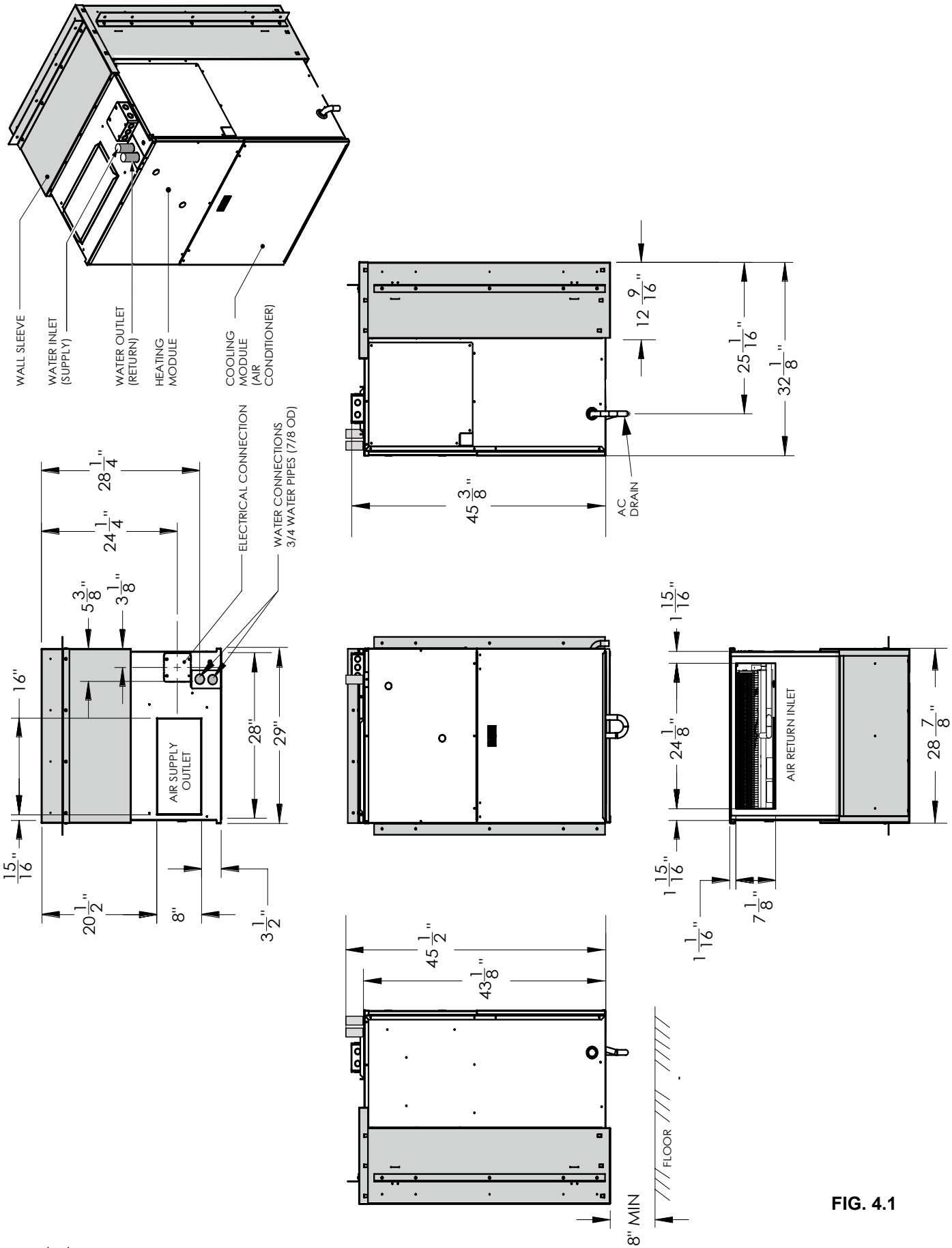


FIG. 4.1

4.2 UNIT LOCATION AND CLEARANCES

NOTE

ALTHOUGH IT IS NOT POSSIBLE TO DETAIL ALL OF CONSTRUCTION PARAMETERS THAT COULD BE ENCOUNTERED, THE FOLLOWING GUIDELINES AND PRECAUTIONS ARE RECOMMENDED:

- MASONRY WALLS MUST HAVE A LINTEL TO SUPPORT THE WALL.
- DURING THE WALL SLEEVE ASSEMBLY PAY ATTENTION THAT THE SIDE PANEL FLANGES AND THE BASE PANEL DRAIN HOLES ARE ON THE SAME SIDE OF WALL SLEEVE, SEE FIG 4.2.1.

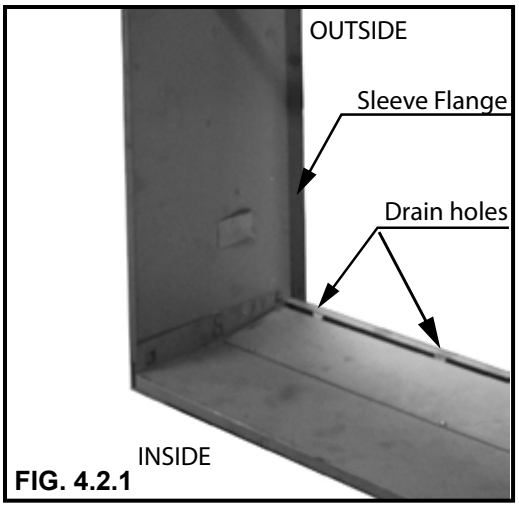


FIG. 4.2.1

To minimize the effect of interaction between multiple units in a building there are some general location considerations that need to be taken into account.

The installer must verify that these conditions have been met before installing the unit. Installation of units in locations that do not follow these rules may lead to abnormal operation and premature failure. The use of these general rules may differ depending on each individual application. Please contact the manufacturer or your dealer for alternatives and application assistance.

The general location considerations are:

- Each wall with Condo Pack unit installed should be at least 2ft away (for every floor) from the opposite building wall facing the unit. If facing wall also has a Condo Pack unit installed, those two walls should be at least 4ft apart. See Table 1.
- A six story building with six Condo Pack units installed in a vertical array, should be at least 12ft away from the opposite building wall and at least 24ft away if the opposite building wall also contains Condo Pack units.
- Buildings taller than six stories will have the same distance parameters as six-story buildings.
- If three or more adjacent walls form an air shaft with Condo Pack units facing each other in each wall, the distance between opposite walls should be increased by 20%.

TABLE 1.

NUMBER OF FLOORS WITH THE UNITS	MINIMUM DISTANCE TO THE OPPOSITE BUILDING WALL	
	WITHOUT an unit installed in the opposite building wall	WITH an unit installed in the opposite building wall
1	2 feet	4 feet
2	4 feet	8 feet
3	6 feet	12 feet
4	8 feet	16 feet
5	10 feet	20 feet
6 or more	12 feet	24 feet

- At least 32” of unobstructed space should be provided in front of the indoor side, whether enclosed or not, in order to change filters, for unit inspection and to permit removal of the cooling module should repair be required.
- Do not install directly on carpeting, tile, or other combustible material other than wood flooring. The grille side of the unit should protrude minimum 1/2” but no more than 1” (maximum) from the face of the building and should not be obstructed by foreign objects. Refer to FIG. 4.2.2.
- If the unit is installed in an outside wall of a storage garage, it must be located or protected to avoid physical damage by vehicles. This unit must be installed so that no electrical components are exposed to water.

⚠WARNING⚠

THIS UNIT IS CERTIFIED FOR INSTALLATION ON COMBUSTIBLE FLOORS. THIS SHALL BE INTERPRETED AS A WOOD FLOOR ONLY.

THE UNIT MUST NOT BE INSTALLED DIRECTLY ON CARPETING, OR OTHER COMBUSTIBLE MATERIAL EXCEPT WOOD.

INSTALLATION ON COMBUSTIBLE MATERIAL OTHER THAN WOOD CAN RESULT IN FIRE, CAUSING PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.

THE AREA AROUND THE UNIT MUST BE KEPT CLEAR AND FREE OF ALL COMBUSTIBLE MATERIALS INCLUDING GASOLINE AND OTHER FLAMMABLE VAPORS AND LIQUIDS.

THE HOMEOWNER SHOULD BE CAUTIONED THAT THE CONDO PACK AREA MUST NOT BE USED AS A CLOSET OR FOR ANY OTHER STORAGE PURPOSE.

H3.7. 1

This design is certified for thru-the-wall installation only. The interior portions of the unit may be surrounded by a closet with clearances to combustible material as listed on the nameplate. Adequate clearance must be provided to install the union and manual shut-off valve as well as accessibility to field wiring junction box.

Minimum clearances to combustibles derived from factory testing are shown below and also on the nameplate of the unit:

TABLE 2.

MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS.
DÉGAGEMENTS MINIMAUX PAR RAPPORT AUX MATÉRIAUX COMBUSTIBLES.

TOP / DESSUS	2 “ (50.8 mm)
PLENUM / PLÉNUM	1 “ (25 mm)
FRONT / AVANT	0**
BACK / ARRIÈRE	0
RIGHT SIDE / CÔTÉ DROIT	0*
LEFT SIDE / CÔTÉ GAUCHE	0
BOTTOM / FOND	0***
FLUE PIPE / TUYAU	0

* RECOMMENDED 2 “ (50.8 mm) CLEARANCE FOR SERVICING
* 2 po MIN. RECOMMANDÉ DE DÉGAGEMENT POUR ENTRETIEN
** 10” (254 mm) RECOMMENDED CLEARANCE FOR SERVICING
** 10 po MIN. RECOMMANDÉ DE DÉGAGEMENT POUR ENTRETIEN
*** CERTIFIED FOR CLOSET INSTALATION ON COMBUSTIBLE FLOORING.
*** CERTIFIÉ POUR L’INSTALLATION DANS UN PLACARD SUR UN PLANCHER COMBUSTIBLE.

The minimum clearances required for installation and accessibility are shown below. These clearances should be followed unless otherwise approved by the manufacturer.

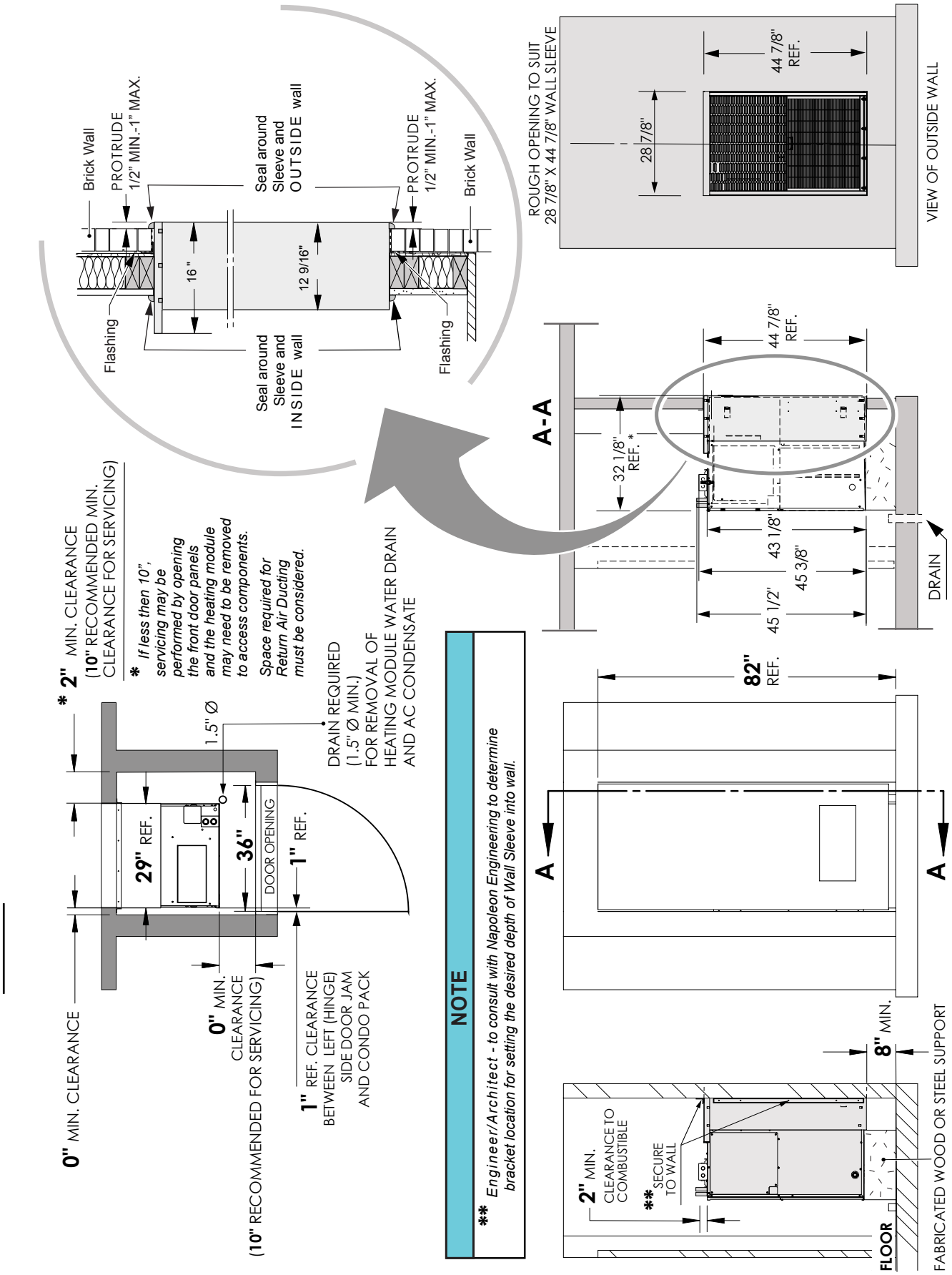


FIG. 4.2.2.

4.3 PACKAGED UNIT PREPARATION

NOTE

- THIS UNIT MUST BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE CODES.
- THIS UNIT IS APPROVED FOR THRU-THE-WALL INSTALLATION ONLY.
- THESE INSTALLATION AND MAINTENANCE INSTRUCTIONS SHOULD BE LEFT WITH THE UNIT FOR FUTURE REFERENCE.

Prior to installing the unit in the wall opening:

1. Remove the brackets connecting the unit to the skid.
2. Remove the cooling module.

⚠ IMPORTANT ⚠

1. **The unit must be installed a minimum of 8" above finished floor.**
   a. **If unit is installed in a storage garage, all ignition sources (electric contactors and motors included) must be positioned at a minimum of 18" (457mm) above the floor, and it must be protected from physical damage by vehicles.**
2. **The entire unit must not be installed outside. This unit is designed for indoor installation on an exterior wall having an opening for condenser airflow.**
3. **The grille side of the unit should extend 1/2" Min. - 1" Max. beyond the exterior wall to allow moisture that may enter the outdoor section to drain.**
4. **DO NOT install this unit at an exterior wall location that will position the bottom of the wall grille below the exterior grade level. Below grade installation will allow the accumulation of rain or snow into the wall sleeve and unit base, and could result in water penetration into the building interior.**
5. **The grille side must be:**
   a. **Kept free of any obstructions that could reduce or alter the air flow pattern.**
   b. **The unit must be installed at least 3' (0.92m) from electric meters, gas meters, regulators, and relief equipment.**
6. **Masonry walls must have a lintel to support the wall, as per National and local building codes.**
7. **The interior of the unit may be installed with clearances noted on the nameplate to adjacent combustible surfaces.**
8. **The unit shall not be installed directly on carpeting, tile or other combustible material, except wood flooring.**
9. **In order to be able to remove the chassis, at least 32" of open area must be left unobstructed in front of the front doors. The drain pan and condensate trap line should be connected to the floor drain.**
10. **Caulk and seal all spaces around the top, sides and bottom of the exterior grille area, making sure that <u>THE OPENINGS FOR DRAINAGE IN THE BOTTOM EDGE ARE NOT BLOCKED</u>.** Refer to *4.2 Unit Location and Clearances.*
11. **Unit is designed to be used with non-potable water systems only.**

4.4 WALL SLEEVE ASSEMBLY

⚠ WARNING ⚠

THESE INSTRUCTIONS ARE INTENDED AS AN AID TO QUALIFIED SERVICE PERSONNEL FOR PROPER INSTALLATION, ADJUSTMENT AND OPERATION OF THE UNIT. READ THESE INSTRUCTIONS THOROUGHLY BEFORE ATTEMPTING INSTALLATION OR OPERATION. IMPROPER INSTALLATION, ADJUSTMENT, SERVICE, OR MAINTENANCE CAN CAUSE PROPERTY DAMAGE, PERSONAL INJURY, OR DEATH. CONSULT A QUALIFIED INSTALLER OR SERVICE AGENCY FOR INFORMATION AND ASSISTANCE.

INCLUDED IN THE CWSMUA KIT:

TABLE 3.

ITEM	QTY	PART NAME	MANUFACTURING DESCRIPTION	PART NO			
				CWSMUA	CWSMUA15	CWSMUA17	CWSMUA19
1	1	TOP PANEL	PANEL, SLEEVE TOP PWDER	W475-0978-(color code)		W475-1313-(color code)	W475-1317-(color code)
2	1	BASE PANEL	PANEL, SLEEVE BASE PWDER	W475-0975-(color code)	W475-1307-(color code)	W475-1310-(color code)	W475-1314-(color code)
3	1	RIGHT SIDE PANEL	PANEL, SLEEVE RS PWDER	W475-0977-(color code)	W475-1309-(color code)	W475-1312-(color code)	W475-1316-(color code)
4	1	LEFT SIDE PANEL	PANEL, SLEEVE LS PWDER	W475-0976-(color code)	W475-1308-(color code)	W475-1311-(color code)	W475-1315-(color code)
5	2	SIDE SUPPORT BRACKET	BRACKET, SIDE SUPPORT	W080-1444			
6	1	TOP SUPPORT BRACKET	BRACKET, TOP SUPPORT	W080-1445			
7	25	SCREW #8-32X.315 STEEL TRILOBULAR	SCREW, #8-32 x .315 QUAD HEX WASHER	W570-0162			
10	2	SQUARING BRACE	BRACE, SQUARING	W080-1433			
11	1	SQUARING BRACE MIDDLE	BRACE, SQUARING	W075-0019			
12*	1	*TOP PANEL BRACKET	*BRACKET, TOP PANEL (CP)	N/A	*W080-1721		

SHOWN BUT NOT INCLUDED IN THE CWSMUA KIT:

ITEM	QTY	PART NAME	MANUFACTURING DESCRIPTION	PART NO
8	12.5 feet	Gasket D-Channel 28.9” long	GASKET, D-CHANEL EPDM [included in baggies provided with CondoPack unit]	W290-0256
9		Gasket D-Channel 44” long		

⚠ IMPORTANT ⚠

***DO NOT DISCARD ITEM #12 (TOP PANEL BRACKET, W080-1721). THIS BRACKET IS USED TO SECURE THE CONDOPACK CABINET TO THE WALL WHEN FOLLOWING WALL SLEEVES ARE USED: CWSMUA15, CWSMUA17 OR CWSMUA19.**

The wall sleeve is designed to be installed into the wall during the construction of the building, in order to provide an accurate opening and easier installation of thru-the-wall packaged unit later on, after building is completed.

LEGEND

1. Top Panel
2. Base Panel
3. Right Side Panel
4. Left Side Panel
5. Side Support Bracket
6. Top Support Bracket
7. Screw #8-32x.315 Steel Trilobular
8. Gasket D-Channel 28.9” long
9. Gasket D-Channel 44” long
10. Squaring Brace
11. Squaring Brace Middle
12. *Top Panel Bracket

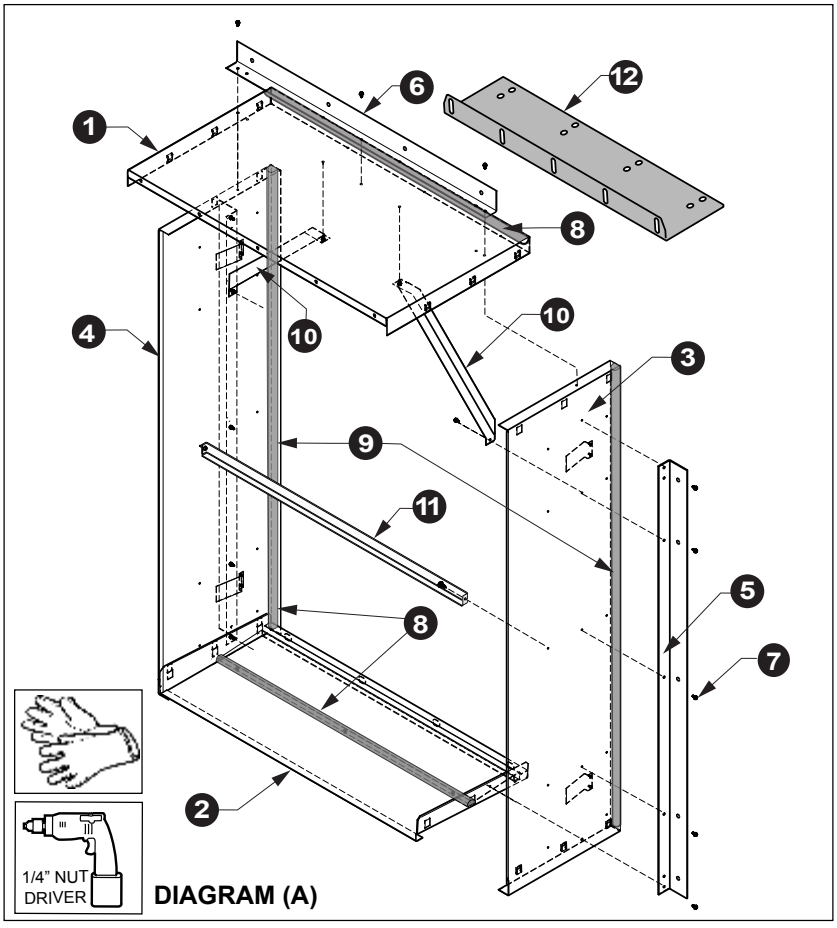
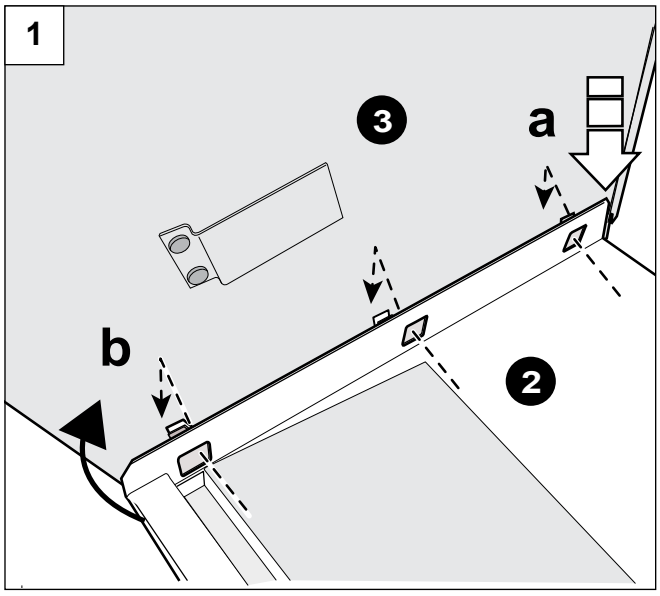


DIAGRAM (A)

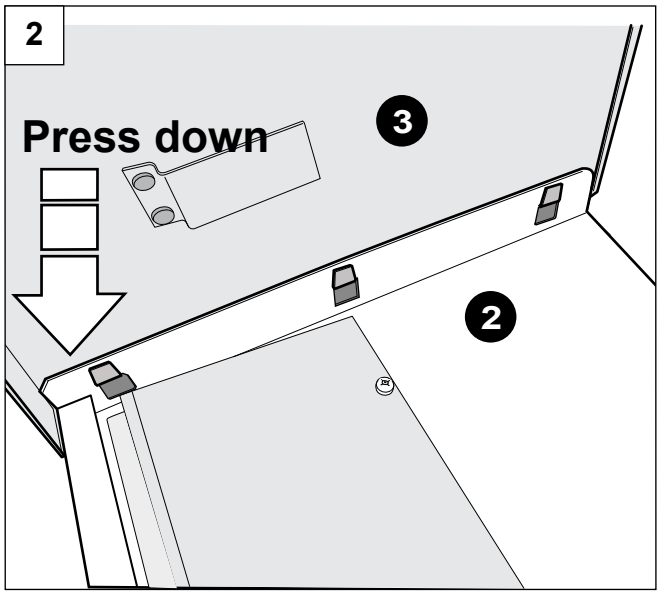
1. Place Base part (2) on the floor and attach Right Side Panel (3):

a. Position Base Panel (2) to seat behind flanges on the Side Panel (3).

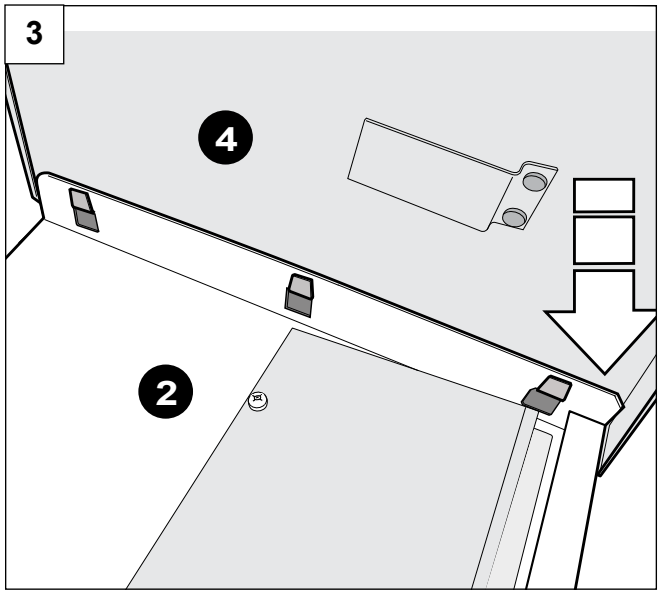
b. Bring together panel clips and openings (FIG. 1).



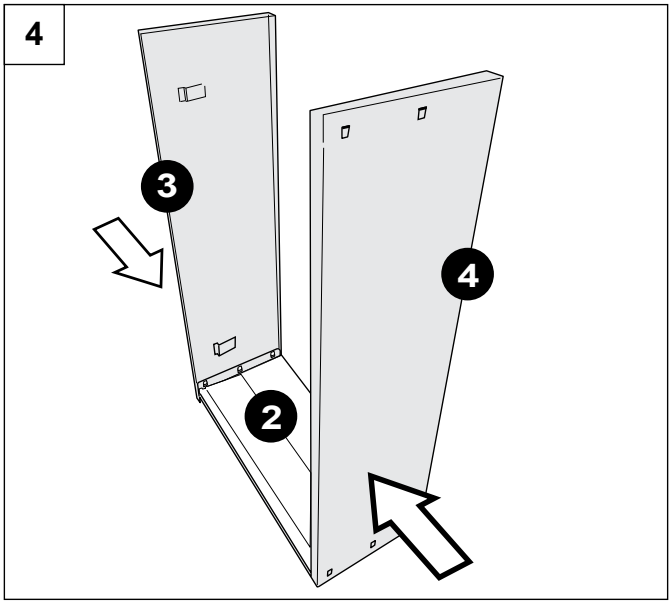
2. Press down firmly to lock base panel into place (FIG. 2).



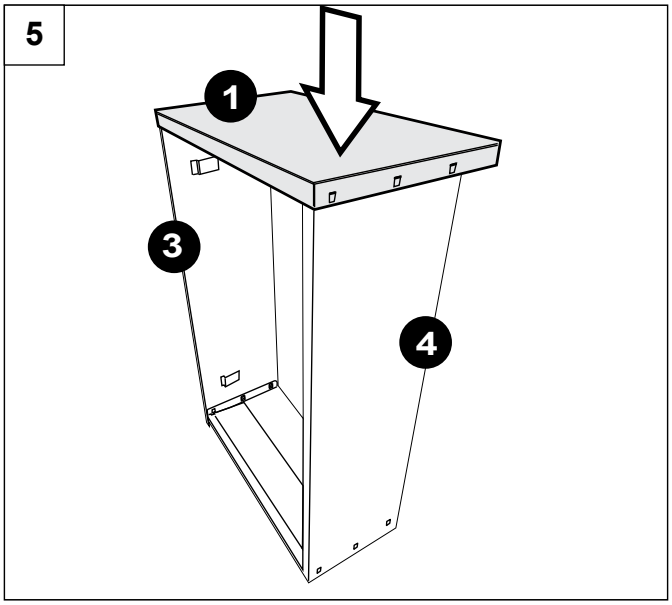
3. Attach Left Side Panel (4) to Base (2). Repeat procedure from step 2 (FIG. 2).



4. Check for parallel position of Left and Right Side Panels (3) and (4). Secure connection with Base Panel (2), see (FIG. 4).

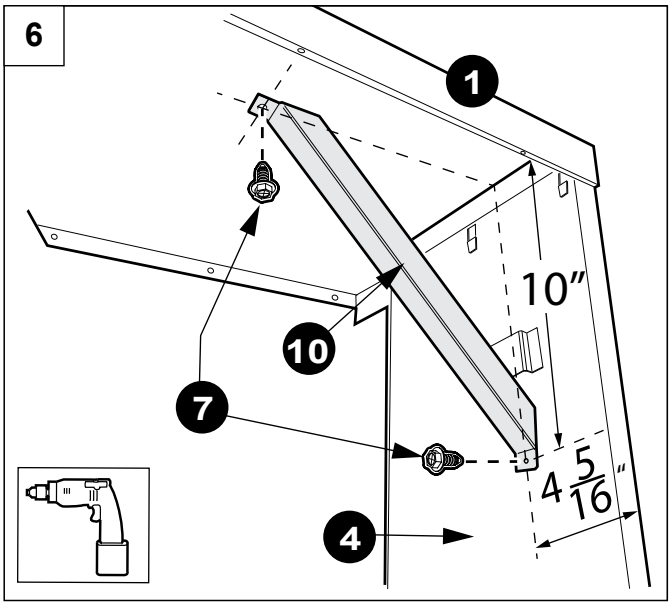


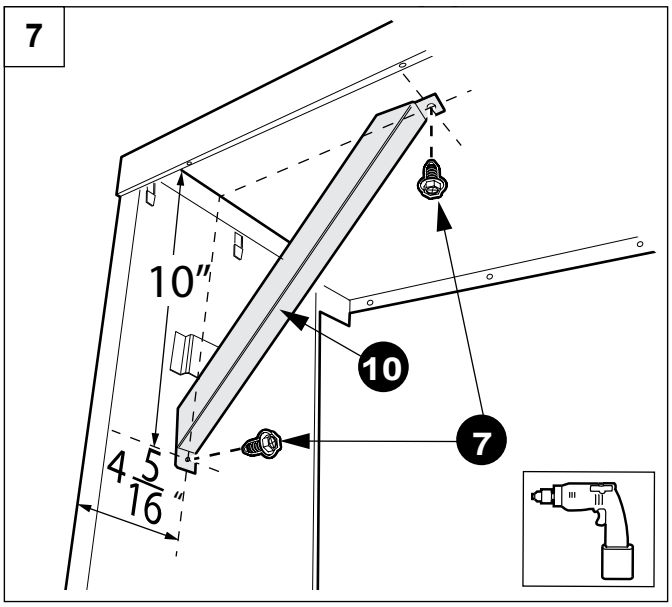
5. Attach Top Panel (1) to Left and Right Side Panels (3) and (4). Align connection openings and secure the assembly by pushing the clips in place (FIG. 5).



6. Attach Squaring Braces (10) to the inner sides of both, Top Panel and the Side Panels, by inserting the screws (7) from inside.

7. To attach the Squaring Brace (10) to the Side Panels (3) and (4) use the 1/8" holes located 10" down from the top and 4 -5/16" from the outside flange (FIG. 6. and FIG. 7).





NOTE: The following support bracket locations are for installations where the wall sleeve is installed from the OUTSIDE of the building. For installations where the wall sleeve is installed from the INSIDE of the building, the Side Support Brackets (5) need to be mounted on INTERIOR wall, so they will need to be relocated on the wall sleeve (new screw positions may need to be created).

8. Attach the Side Support Brackets (5) to the Side Panels (3) & (4) and to Base Panel with five screws (7) through the shorter flange (FIG. 8).

9. Select the set of mounting holes based on type of construction wall face application (brick, stucco, siding, etc.):

a. For Side Support Brackets (5), use pre-drilled mounting Position A or Position B shown in FIG. 9, depending on the type of wall construction.

b. Attach Top Support Bracket (6) to the Top Panel (1) using minimum three screws (7) provided, (FIG. 9). For this bracket (6), use mounting Position A or Position B shown in FIG. 11, depending on the type of wall construction.

c. Using two mounting screws (7), install Middle Squaring Brace (11) across the wall sleeve, as shown in the DIAGRAM (A) on previous page and FIG. 10.

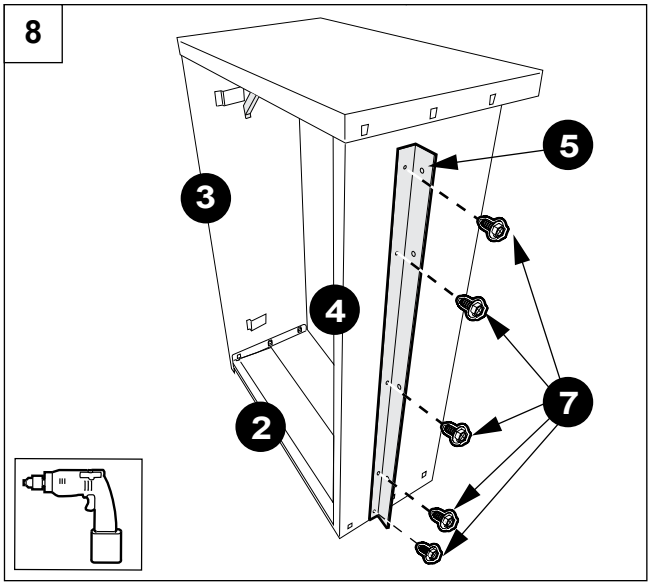
d. Refer to section *"Wall Sleeve Installation"*, FIG 12.

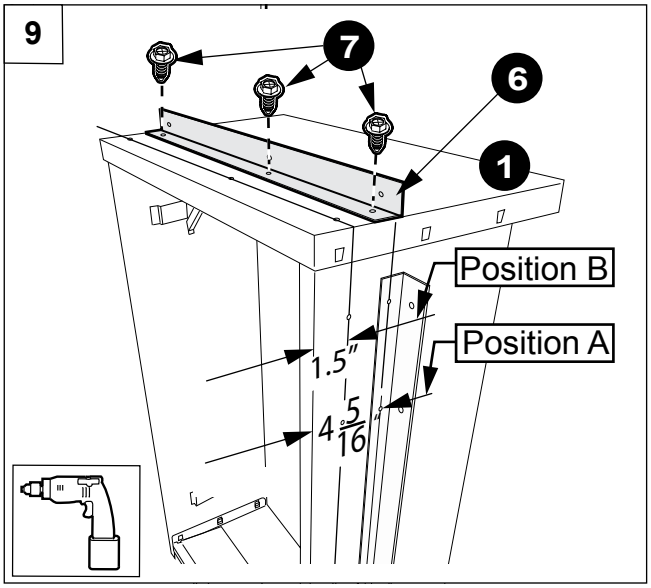
e. Do not remove Squaring Braces (10) and (11) from the wall sleeve **if you do not plan to install the CondoPack unit immediately**.

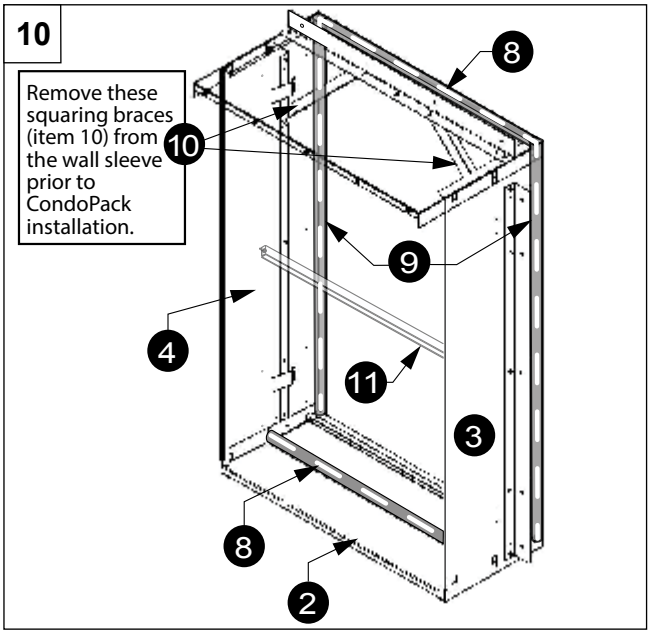
f. Fill the clearance space between the sleeve and a wall framing with low expanding insulation foam (this is for additional protection against air infiltration during the periods of very strong winds).

10. **<u>Prior to installing CondoPack into the wall sleeve:</u>**

- Remove squaring braces (10) and (11) from wall sleeve.
- Apply self-adhesive D-Channel Gasket strips (8) & (9) to inside surface of sleeve front flanges and on to the base panel (2), as shown in FIG. 10.





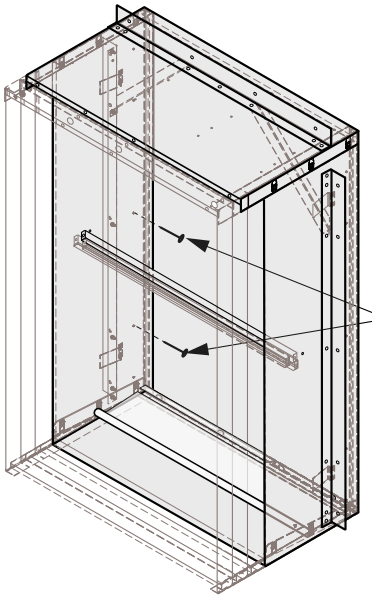


Wall Sleeve Dimensions

11 **FOUR DIFFERENT WALL SLEEVE MODELS ARE DEPICTED BELOW:**

- **CWSMUA**
- **CWSMUA15**
- **CWSMUA17**
- **CWSMUA19**

NOTE:
TO IMPROVE RIGIDITY AND REDUCTION IN VIBRATION WALL MOUNTING BRACKETS CAN BE USED TO AFFIX WALL SLEEVE TO BUILDING SUB STRUCTURE FROM INSIDE OR OUTSIDE OF THE BUILDING. ENGINEER/ARCHITECT TO CONSULT WITH NAPOLEON ENGINEERING TO DETERMINE BRACKET LOCATION FOR SETTING THE DESIRED DEPTH OF WALL SLEEVE INTO WALL.



4.4.1 Wall Sleeve Installation

⚠ WARNING ⚠

INSTALLATION CREW MUST ADHERE TO ALL LOCAL/NATIONAL SAFE WORK PRACTICES INCLUDING EMPLOYING APPROPRIATE FALL ARREST EQUIPMENT

To install Wall Sleeve into wall opening:

Wall sleeve can be installed from inside or outside the building (FIG. 12). The side and top brackets' position need to be adjusted to suit the method and building material.

1. With drain holes facing outside, position the sleeve towards the wall until the support brackets are set on wall edge. Leave ¼ " space in between the wall and sleeve for caulking.
2. Ensure parallel position between Wall Sleeve and wall opening. Wall Sleeve must be square for the CondoPack to slide into it.
3. Attach Wall Sleeve to the building:
   a. Secure the support brackets to the wall using five screw holes on each side.
   b. Secure side panels into the structural wall using fasteners.

⚠ IMPORTANT ⚠

SLEEVE MUST BE FASTENED TO THE STRUCTURAL WALL AND NOT TO THE FINISHED WALL.

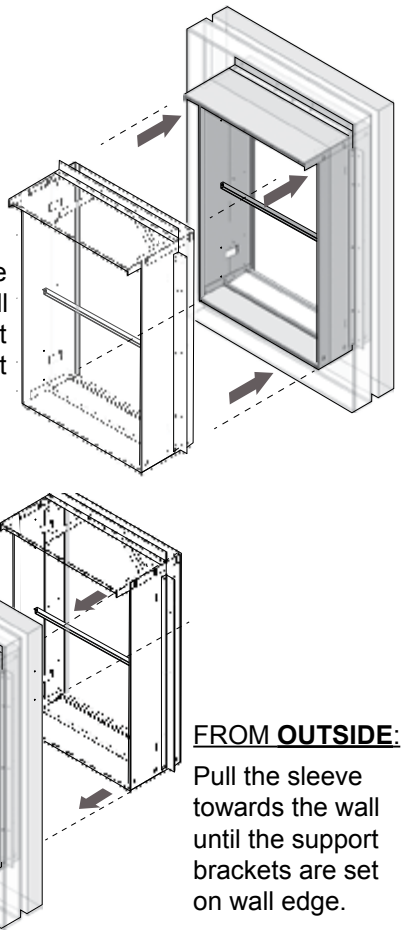
4. Completely fill the spaces between the wall sleeve and the wall with Low Expanding Insulation Foam.
5. Wait 8 hours minimum for foam to cure.
6. Prepare the CondoPack unit for installation. For unit support guides refer to *"Unit Support"* on the next page.
7. Remove wall sleeve squaring braces (10) and (11), FIG 10.
8. Install the unit. When using wall sleeve size such as CWSMUA15, CWSMUA17, or CWSMUA19 (other than the standard CWSMUA size), make sure to replace the standard Top Panel bracket (W080-1384) with the specially designed top panel bracket (W080-1721) in order to properly secure the cabinet to the wall sleeve (FIG. 13).
9. Caulk all seams between the wall sleeve and the finished exterior and interior walls. Caulk all seams between the wall sleeve and the cabinet. Seal the spaces using non-hardening caulking compound. All seals must be weather tight to prevent entrance of moisture and water into the building.

⚠ IMPORTANT ⚠

CARE MUST BE TAKEN NOT TO PLUG THE DRAIN OPENINGS IN THE BASE PANEL.

10. When installed, the Wall Sleeve should protrude 1/2" MIN. to 1" MAX. beyond the exterior finished wall to allow proper water evacuation through the drain holes in the bottom panel.
11. All openings around the top, sides and bottom of wall sleeve must be caulked and sealed. The wall opening across the top and bottom of the Wall Sleeve could be flashed if required.
12. All unused holes need to be sealed.

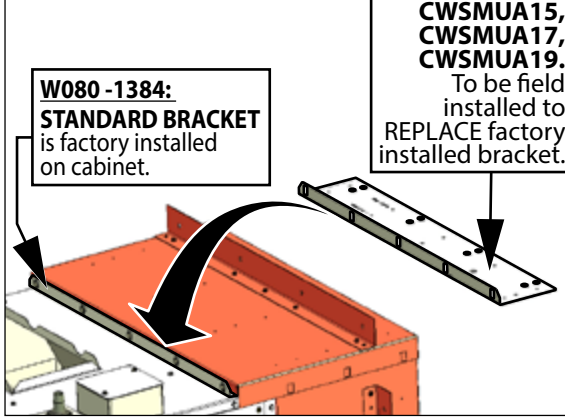
12



FROM **INSIDE**:
Push the sleeve towards the wall until the support brackets are set on wall edge.

FROM **OUTSIDE**:
Pull the sleeve towards the wall until the support brackets are set on wall edge.

13



4.5 UNIT SUPPORT

The wall sleeve is not intended as the sole support for the unit. Therefore, additional support must be provided by a rigid structure that bears the weight of the unit and provides an interface for “return air” ducting.

- First, the supporting platform must be built, see (FIG. 14). It can be constructed of plywood and framing lumber. FIG. 15 is showing alignment of the platform top with the base panel of the wall sleeve.

- **Minimum height of platform = 8”**
- **Recommended platform width = 29”**
- ****Recommended platform depth = to allow installation of return air duct with minimum inside cross section of 8” x 16”. Refer to FIG. 14 and 15.**

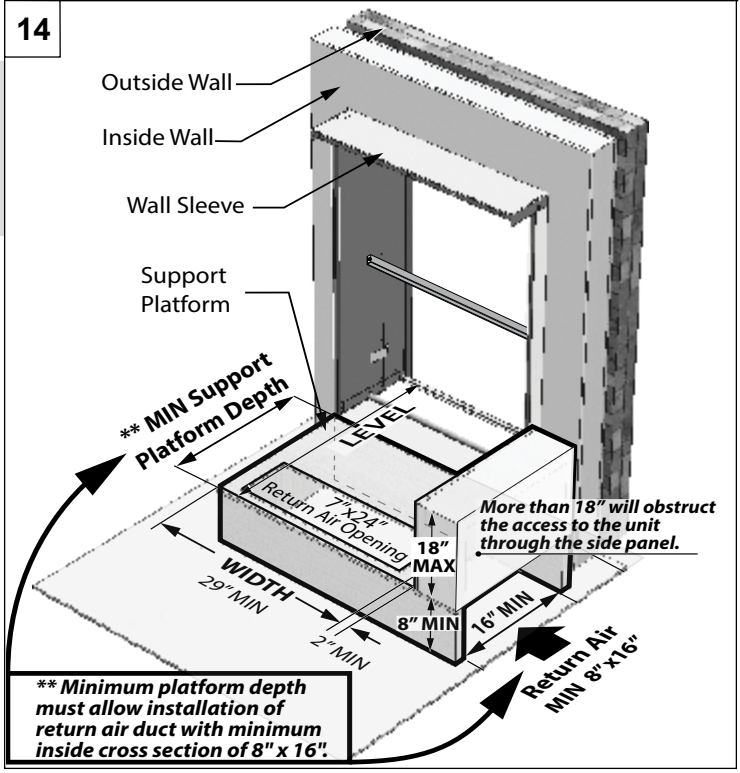
Before building support structure, consider the following:

1. Carefully measure the unit and choose a strong building material for the support structure.
2. The unit should be additionally supported for leveling purposes.
3. An additional vibration isolation material (must be non-combustible) may be used if required.
4. Ensure that the platform connection to CondoPack Return Air Opening is at least 7” X 24”. It must be aligned with return air opening on the base of the installed CondoPack appliance.
5. The support structure and the Wall Sleeve have to provide secure and leveled position for the unit and a method of bringing return air via ducting to the space under the appliance.
6. Flashing the unit to return air duct (below the support structure) is to be done later by field installation of Steel Sheet Extensions (custom cut to length). See (FIG. 16).

⚠ CAUTION ⚠

WEAR SAFETY GLASSES WHEN WORKING WITH TOOLS! OVER-TIGHTENING THE SCREWS MAY STRIP THE RETAINING HOLES. READ ALL OF THE ASSEMBLY INSTRUCTIONS STEPS BEFORE PROCEEDING.

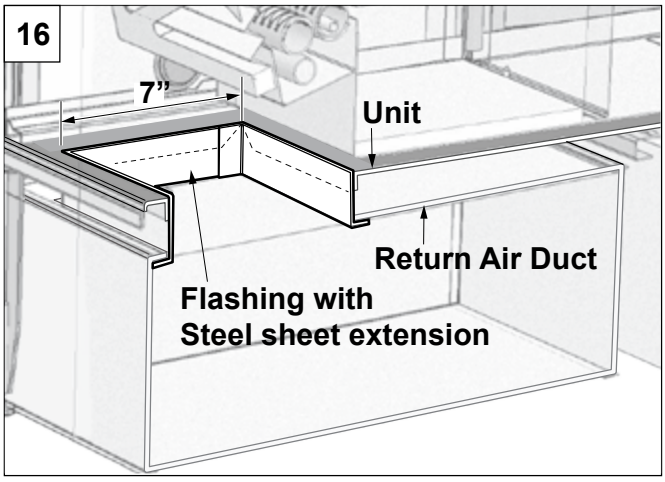
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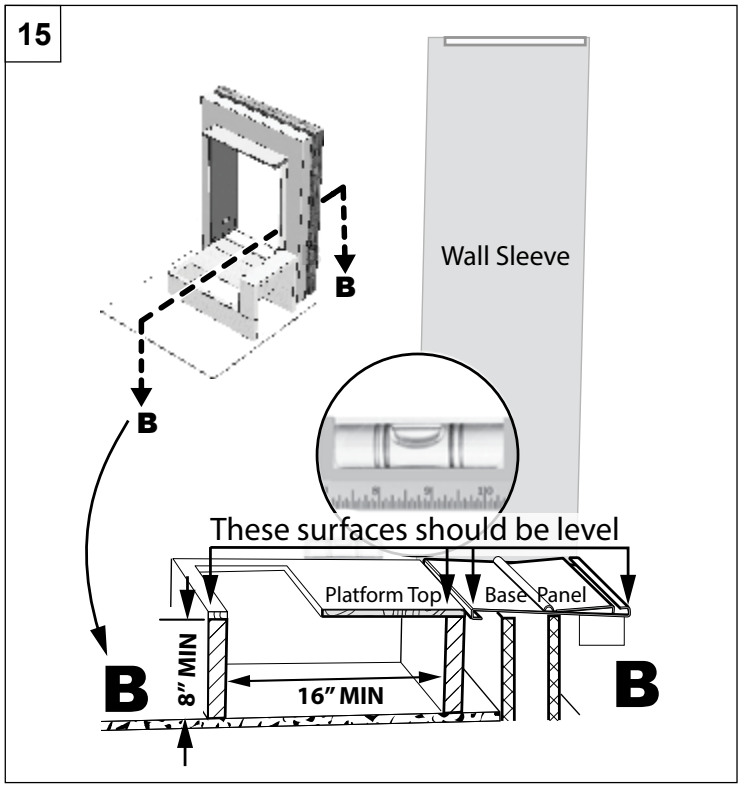
⚠ IMPORTANT ⚠

FLASHING MUST SEAL SPACE BETWEEN THE RETURN AIR INLET OF CABINET BASE AND THE RETURN AIR PLENUM TO AVOID DRAWING RETURN AIR FROM THE CLOSET SPACE CONTAINING THE APPLIANCE. REFER TO SECTION 4.7.

16



15



4.6 PACKAGED UNIT INSTALLATION

Procedure

1. Verify that isolation grommets are installed in the five holes on the top mounting bracket.
2. Bring the Condo Pack as close as possible to wall opening (FIG. 4.6.A). Carefully slide the unit into the Wall Sleeve (refer to Wall Sleeve Assembly and Installation Instructions) so the front of the unit is in contact with the front flanges of the Wall Sleeve.

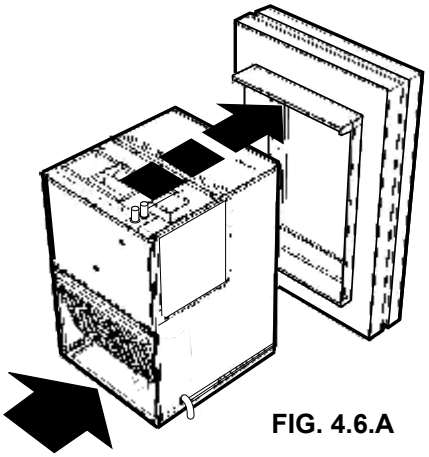
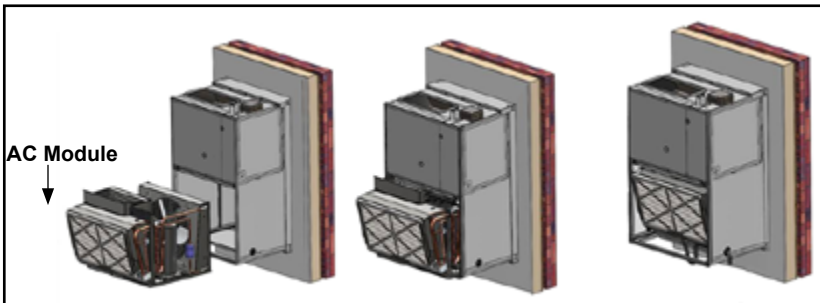


FIG. 4.6.A

For ease of installation (OPTIONAL):

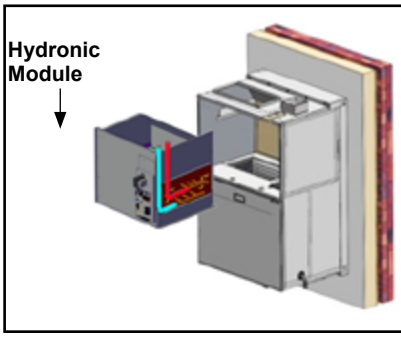
a. Install cabinet into the Wall Sleeve without cooling unit.
b. Slide cooling unit in, after cabinet is in place (FIG. 4.6.B)
c. Hydronic heating module also can be removed separately (FIG. 4.6.c). Refer to section *"5.2.2 Hydronic Heating Module Removal".*



Air Conditioning module removal.

Air Conditioning module can be removed for easier cabinet installation. Refer to section *"5.2.1 Air Conditioner Module Removal"*.

FIG. 4.6.B



Hydronic Heating module removal

Hydronic module also can be removed from cabinet separately. Refer to section *"5.2 Removal of Air Conditioner and Hydronic Modules".* Both, Air Conditioner and the Hydronic modules can be installed separately and either one of these can be replaced as a service part (as the complete modules).

FIG. 4.6.C

d. Use a flat washer with each 1/4"-20 x 1 1/4" screw. Secure Condo Pack unit to the Wall Sleeve using five 1 1/4" screws through the isolation grommets in the five holes on the Wall Sleeve top mounting bracket (see FIG. 4.6.D).

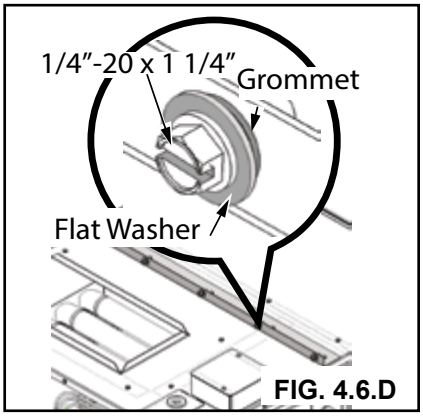


FIG. 4.6.D

NOTE

OVER-TIGHTENING THE SCREWS WILL DEFORM THE ISOLATION GROMMETS AND REDUCE THEIR EFFECTIVENESS.

3. Caulk and seal all spaces around the top, sides and bottom of the exterior grille area, making sure that the openings for drainage in the bottom edge are not blocked.

4. Shim (FIG. 4.6.E) between unit support (Diagram B) and the bottom rear corners of cabinet to prevent twisting loads onto structural walls.

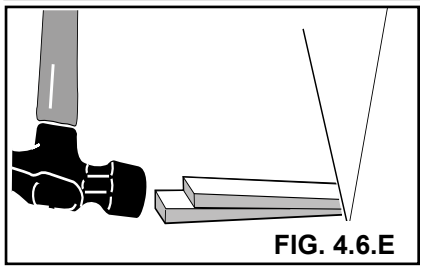


FIG. 4.6.E

4.7 DUCTWORK

4.7.1 Supply Air Ducting

⚠ IMPORTANT ⚠
BOTH SUPPLY AND RETURN AIR MUST BE DUCTED TO THE APPLIANCE FROM ROOMS SEPARATE TO THE CLOSET ENCLOSURE HOUSING THE APPLIANCE.
SUPPLY AIR DUCT (PLENUM) CONNECTION MUST BE AT LEAST THE SAME SIZE AS THE UNIT SUPPLY AIR OPENING. SEAL SUPPLY AIR DUCTWORK TO UNIT CASING, WALLS, CEILINGS OR FLOORS.

The ductwork should be sized and constructed in accordance with accepted industry standards:
The supply duct may be provided with a removable access panel to view the heat elements during unit servicing. Note that a full inspection of the heat elements is made possible by the heating module being a "pullout" module. It shall also specify that the cover attachment prevents leaks.

a. Proper airflow is required for the correct operation of this unit. Insufficient airflow may cause erratic operation, could cause the unit to cycle on the high temperature limit, and may damage the heat element. Excessive airflow may result in an excessively noisy duct system and may result in undesirable consequences such as creating uncomfortable drafts. The total static pressure drop of the air distribution system (including filters) should not exceed 0.5" wc. It is important to provide duct(s) that are sized sufficiently to handle the larger air volumes for heating or cooling provided by this model.

b. A FLEXIBLE DUCT CONNECTOR is an effective device to prevent the telegraphing of mechanical noise from the furnace to other parts of the home via the ductwork. If using flexible connectors, ensure that the adjoining duct is independently supported.

Duct sizing and construction information may be obtained from:

- **A.C.C.A.** (Air Conditioning Contractors of America)
- **A.S.H.R.A.E.** (American Society of Heating, Refrigeration and Air Conditioning Engineers)
- **H.R.A.I.** (Heating, Refrigerating and Air Conditioning Institute (Canada)
- **S.M.A.C.N.A.** (Sheet Metal and Air Conditioning Contractors' National Association (United States)

All of the above professional organizations have duct sizing manuals available.

⚠ IMPORTANT ⚠
ALL RETURN AIR DUCTWORK MUST BE ADEQUATELY SEALED AND SECURED TO THE UNIT WITH SHEET METAL SCREWS. TAPE THE SHEET METAL SEAMS IN THE VICINITY OF THE UNIT WITH FOIL TAPE OR SIMILAR MATERIAL. WHEN THE UNIT IS MOUNTED ON A PLATFORM WITH RETURN AIR THROUGH THE BOTTOM, IT MUST BE SEALED PROPERLY BETWEEN THE UNIT AND THE RETURN AIR PLENUM.
THE FLOOR OR PLATFORM MUST PROVIDE SOUND PHYSICAL SUPPORT OF THE UNIT WITHOUT SAGGING OR GAPS AROUND THE BASE. IT MUST ALSO BE SEALED BETWEEN THE SUPPORT AND THE BASE.

4.7.2 Return Air Ducting

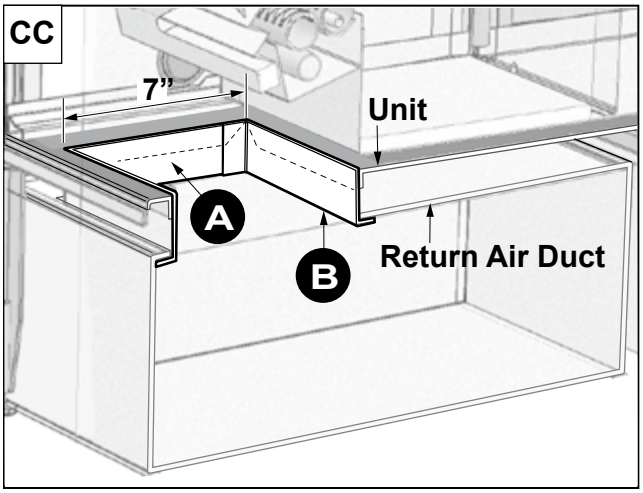
Provide the support inside the building in the area of the return air opening. The support should be high enough to allow for return air to the unit as per requirements.

If required, install a resilient material between the support and the base of the unit to reduce the possible transmission of sound and vibration.

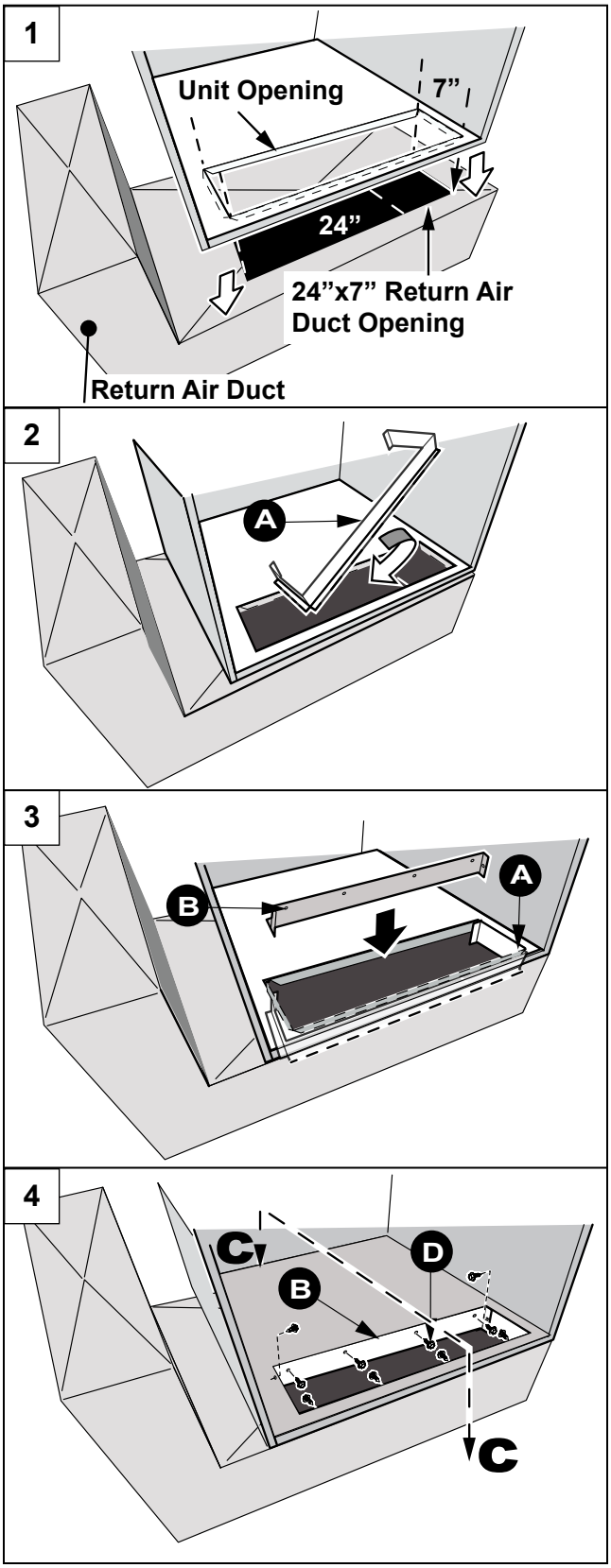
Unit Flashing

To seal the unit to return air duct (below the support structure), perform following procedure steps:

1. Cut a hole in the return air duct (24”x7”).
2. Align the unit opening with a return air duct cut out.
3. Insert steel sheet extension part **A** through the opening.
4. Align the upper edges, adjusting the height.
5. Mount to the condo pack using four self-tapping screws provided.
6. Insert second part **B** and mount to extension part **A** using two screws from inside. See cross section **CC** below.



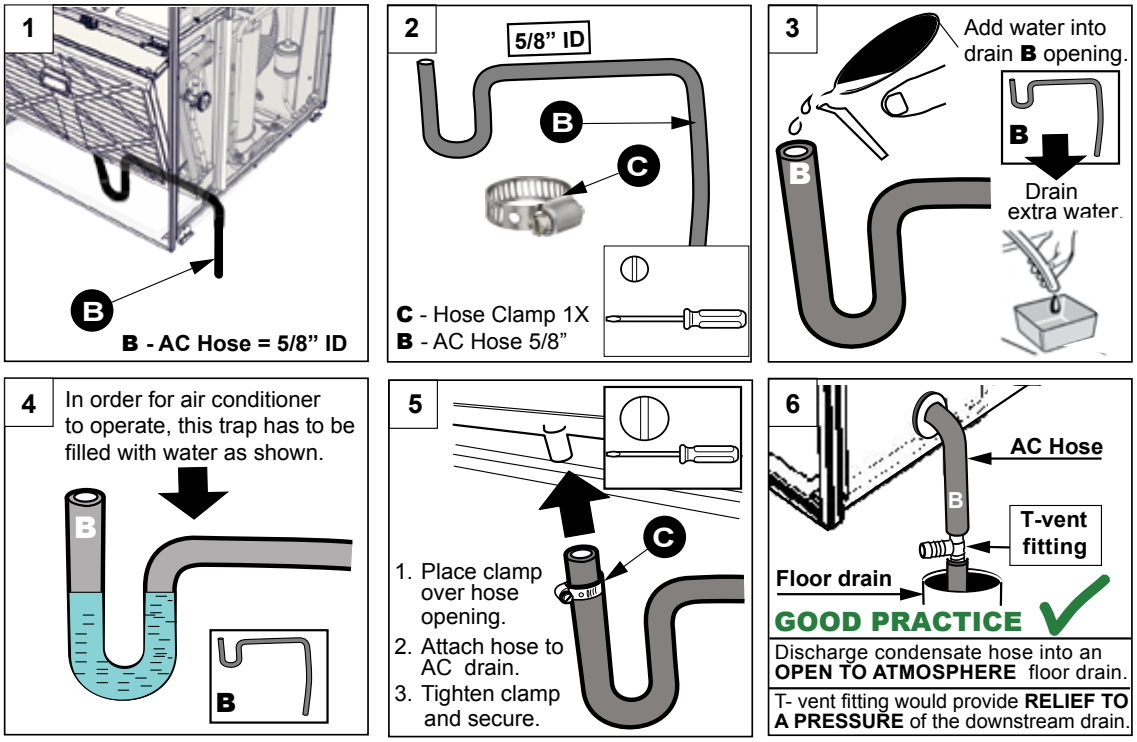
7. Adjust sheet metal extension assembly to the unit opening if necessary and cut off extra sheet length.
8. Secure assembly using four screws **D**.
9. Use Aluminum foil tape to seal all spaces between flashing of return air duct and the unit.



4.8 CONDENSATE DRAIN CONNECTION

A properly functioning condensate trap provides for discharge of water from the cooling coil drain pan, while the water seal (the water level maintained in the trap) prevents the flow of ambient air in or out of the air handler.

The pre-fabricated condensate drain connection hose (with integral P trap) for air conditioning module is included but not installed. Refer to steps 1-6 below to connect the drain hose to the existing drainage system and to prepare a water seal into the trap:



⚠CAUTION⚠

DO NOT DRAIN THE CONDENSATE OUTDOORS.
DO NOT RUN THE CONDENSATE LINE THROUGH AREAS WHERE FREEZING MIGHT OCCUR.
FREEZING OF CONDENSATE CAN RESULT IN ERRATIC OPERATION AND IN PROPERTY DAMAGE.

NOTE

THE CONDENSATE HOSE LEAVING THE SIDE OF THE APPLIANCE SHALL FOLLOW A DOWNWARD SLOPE TO THE BUILDING DRAIN AT ALL TIMES. CONDENSATE FROM THE OUTLET OF THE DRAIN TRAP ASSEMBLY MUST BE CONVEYED TO A FLOOR DRAIN, OR TO A CONDENSATE PUMP.

H68.4.1

4.9 HOT WATER PIPING

1. The Hydronic models are supplied with either 3-row or 4-row hot water heating coil depending on rated heating capacity.
2. The water connection pipes on the heating coil are labeled as supply (INLET) and return (OUTLET). To make the installation easy these water connections are extended and protruded through the top of the unit cabinet.
3. The water coil is also equipped with drain and vent valves which are used during initial start up and servicing, to drain the water and to purge air out of the true coil.
4. It is recommended that one ball valve to be installed on both supply and return pipe in order to perform air purging during the start-up and to allow unit isolation during servicing.

⚠CAUTION⚠

UNIT IS DESIGNED TO BE USED WITH NON-POTABLE WATER SYSTEMS ONLY.

5. All the piping between the hot water coil and water heater/boiler should be made of copper, 3/4" nominal (7/8" O.D.). Piping materials other than copper may be used if approved by local code authorities.

⚠ CAUTION ⚠
BE AWARE OF METAL EDGES AND SHARP CORNERS WHILE SERVICING EQUIPMENT. PHYSICAL CONTACT WITH THESE AREAS WHILE APPLYING EXCESSIVE FORCE OR RAPID MOTION CAN RESULT IN PERSONAL INJURY.
NOTE
USE COPPER PIPE AND FITTING FOR CONNECTING HYDRONIC SECTION OF THIS UNIT.
NOTE
THIS UNIT DOES NOT COME WITH A WATER FLOW CONTROL VALVE OR A CIRCULATING PUMP. A FLOW CONTROL VALVE AND/OR A CIRCULATING PUMP MUST BE FIELD INSTALLED AND CAN BE ACTIVATED BY A LOW VOLTAGE SIGNAL FROM THE CONDOPACK UNIT.
⚠ WARNING ⚠
INLET WATER TEMPERATURE MUST NEVER EXCEED 160°F. THE WATER FLOW MUST NEVER EXCEED 5 GPM.

4.9.1 Hydronic Module Flushing

Flushing of the Hydronic Module is required (once the plumbing between the Module and Hot water source is completed) in order to remove any contaminants from the installation or manufacturing processes.
A drain valve is located on the return header of the hot water coil which can be utilized to drain the system.

To **flush the complete HYDRONIC system, follow the steps shown below:**	
Step 1:	**Flush the Return line.** a) Make sure the INLET valve (supply) is shut off. b) Open the OUTLET (return) valve. To drain the water out, carefully open the drain valve (located on RETURN header of the coil) without exerting excessive force. It is recommended to attach a hose to drain valve to direct the drain water out of the CondoPack unit in order to prevent the wetting of the internal cabinet components. c) Drain for 3-6mins. d) Once flushing is complete, shut OFF the OUTLET valve and reinstall the drain valve.
Step 2:	**Flush the supply line and coil.** a) Shut OFF the OUTLET (RETURN) valve and open the INLET (supply) valve. b) Drain the water by opening the drain valve (located on RETURN header of the coil). c) Drain for 3-6mins. **d)** Once flushing is complete shut OFF the INLET valve and reinstall the drain valve.
Step 3:	**Apply power and purge trapped air.** a) Open INLET and OUTLET valve. Make sure the hot water flow control device (field installed circulation pump or isolation valve) is wired to the 24V control signal coming out of the 24V terminal block from the Hydronic Module. b) Apply power to Condo Pack and set the thermostat to HEATING mode and set the temperature higher to turn on the water flow to the system. Make sure the water flow direction is correct; SUPPLY header (water Inlet) should become hot before RETURN header. c) Open the VENT valve (located on the SUPPLY header of the coil) once the water is flowing through the system and bleed water until air bubbles stop coming out of the system. If an external vent valve is installed, it can also be used for this purpose.

5. ELECTRICAL

⚠ WARNING ⚠

ALL ELECTRICAL WORK MUST BE DONE BY A TRAINED, QUALIFIED TECHNICIAN. IMPROPER MODIFICATIONS OR ADJUSTMENTS CAN RESULT IN FIRE OR EXPLOSION, CAUSING PROPERTY DAMAGE, SEVERE PERSONAL INJURY OR LOSS OF LIFE.

- In Canada, all electrical work and grounding must be in accordance with the latest edition of CSA-C22.1, Canadian Electrical Code Part 1, and any applicable local code. In the United States, all electrical work must be in accordance with the latest edition of the National Electrical Code, ANSI / NFPA 70.
- The operating voltage of the unit is from 197 to 253 volts. Operating the equipment outside of these limits will void the warranty.
- **The wiring diagram Is located behind the Hydronic access panel.**
- Ensure that electrical components in the indoor section are protected from water.

The rating plate indicates the operating voltage, phase, ampacity, maximum fuse size, and minimum voltage Refer to the rating plate located on the unit for proper fuse or breaker size.

5.1 ELECTRICAL WIRING AND CONNECTIONS

5.1.1 Main Disconnect Switch

Before proceeding with the electrical connections, ensure that the available electrical supply is compatible with the voltage, frequency and phase listed on the appliance rating plate.

It is NOT permissible to connect unit to accessories such as humidifier transformers, condensate pumps and electronic air cleaners.

⚠ WARNING ⚠

PROVIDE EACH CONDOPACK UNIT WITH ITS OWN SEPARATE ELECTRICAL CIRCUIT, MEANS OF CIRCUIT PROTECTION, AND ELECTRICAL DISCONNECT SWITCH. FOLLOW CURRENT NATIONAL ELECTRICAL CODE ANSI/NFPA 70, CSA C22.1 C.E.C. PART 1, AND STATE AND LOCAL CODES. FAILURE TO PROVIDE THESE SHUT-OFF MEANS COULD CAUSE ELECTRICAL SHOCK OR FIRE, RESULTING IN DAMAGE, INJURY OR DEATH.

⚠ WARNING ⚠

SHUT OFF ELECTRICAL POWER AT THE FUSE BOX OR SERVICE PANEL BEFORE MAKING ANY ELECTRICAL CONNECTIONS. FAILURE TO DO SO CAN CAUSE ELECTRICAL SHOCK RESULTING IN PERSONAL INJURY OR LOSS OF LIFE.

- **THE CONDOPACK UNIT CABINET MUST HAVE AN UNINTERRUPTED GROUND. FAILING TO GROUND THE UNIT PROPERLY CAN RESULT IN ELECTRIC SHOCK RESULTING IN PERSONAL INJURY OR DEATH.**
- **A GROUND LUG IS LOCATED ON THE FRONT OF HEATING MODULE. Refer to section *"5.2 Removal of Air Conditioner and Hydronic Modules"***

5.1.2 Service Disconnect Switch

It is mandatory to supply an unit with a SERVICE disconnect switch located **BEFORE** the unit, making sure that one does not have to pass the unit perimeter in order to disconnect power to the unit.
Although is not necessary, but is recommended that rooms with more than one entrance are equipped with a separate unit SERVICE disconnect switch, located close the room entrance.

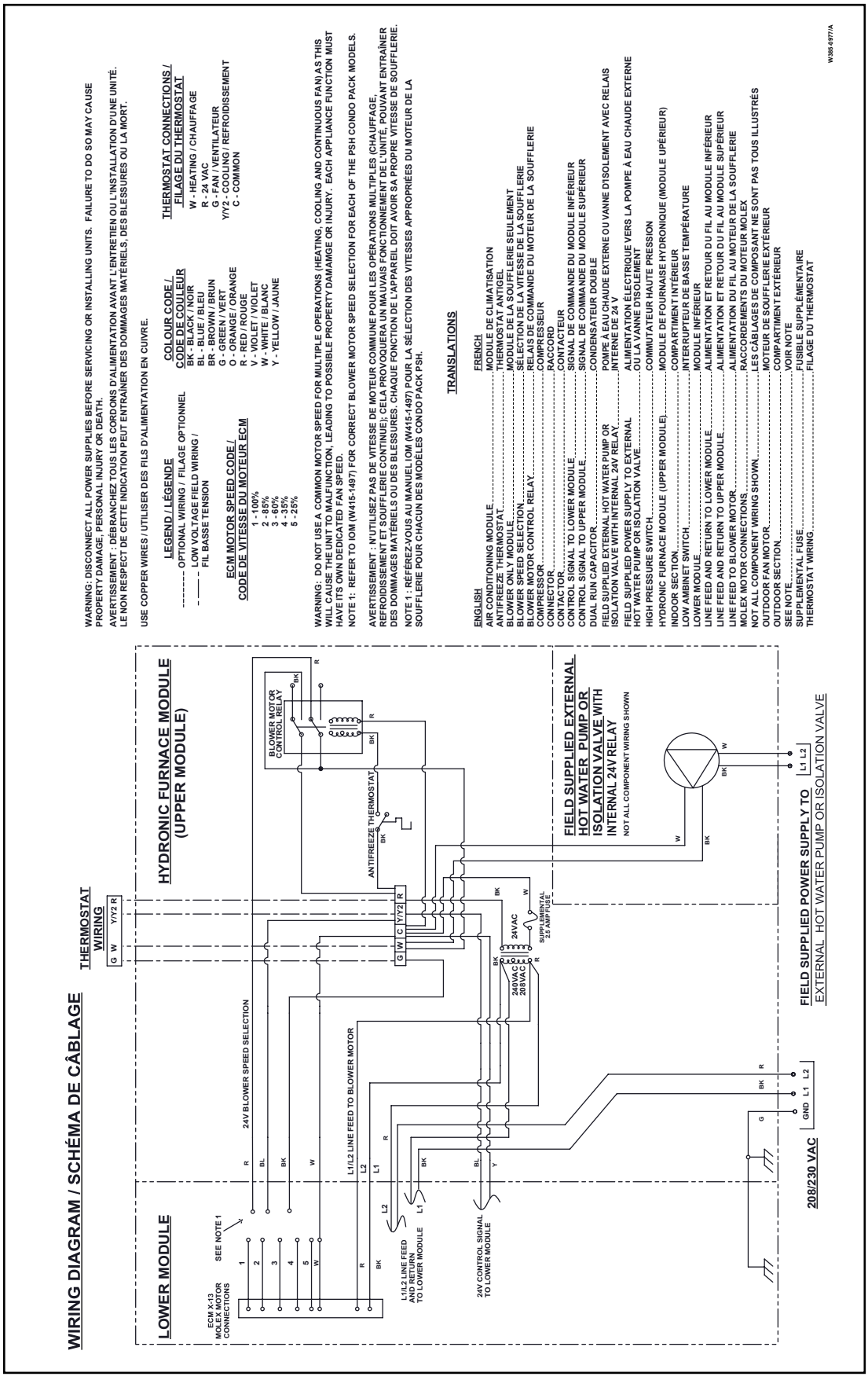
⚠ IMPORTANT ⚠

THE SERVICE SWITCH SHOULD BE CLEARLY LABELED AND INSTALLED IN A LOCATION WHERE IT IS NOT LIKELY TO BE MISTAKEN AS BEING A LIGHT SWITCH OR SIMILAR CONTROL.

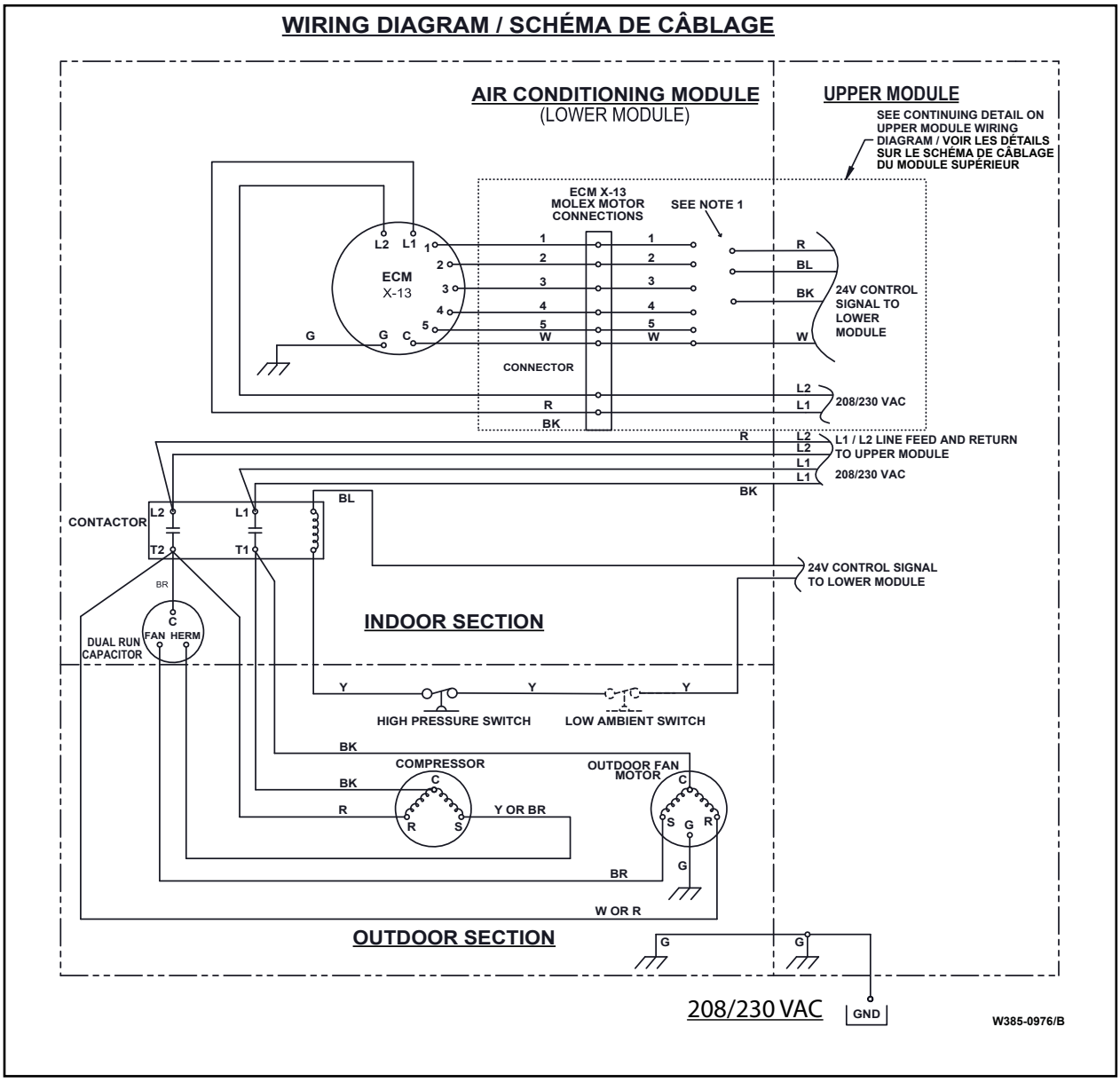
IOM

5.1.3 Wiring Diagrams

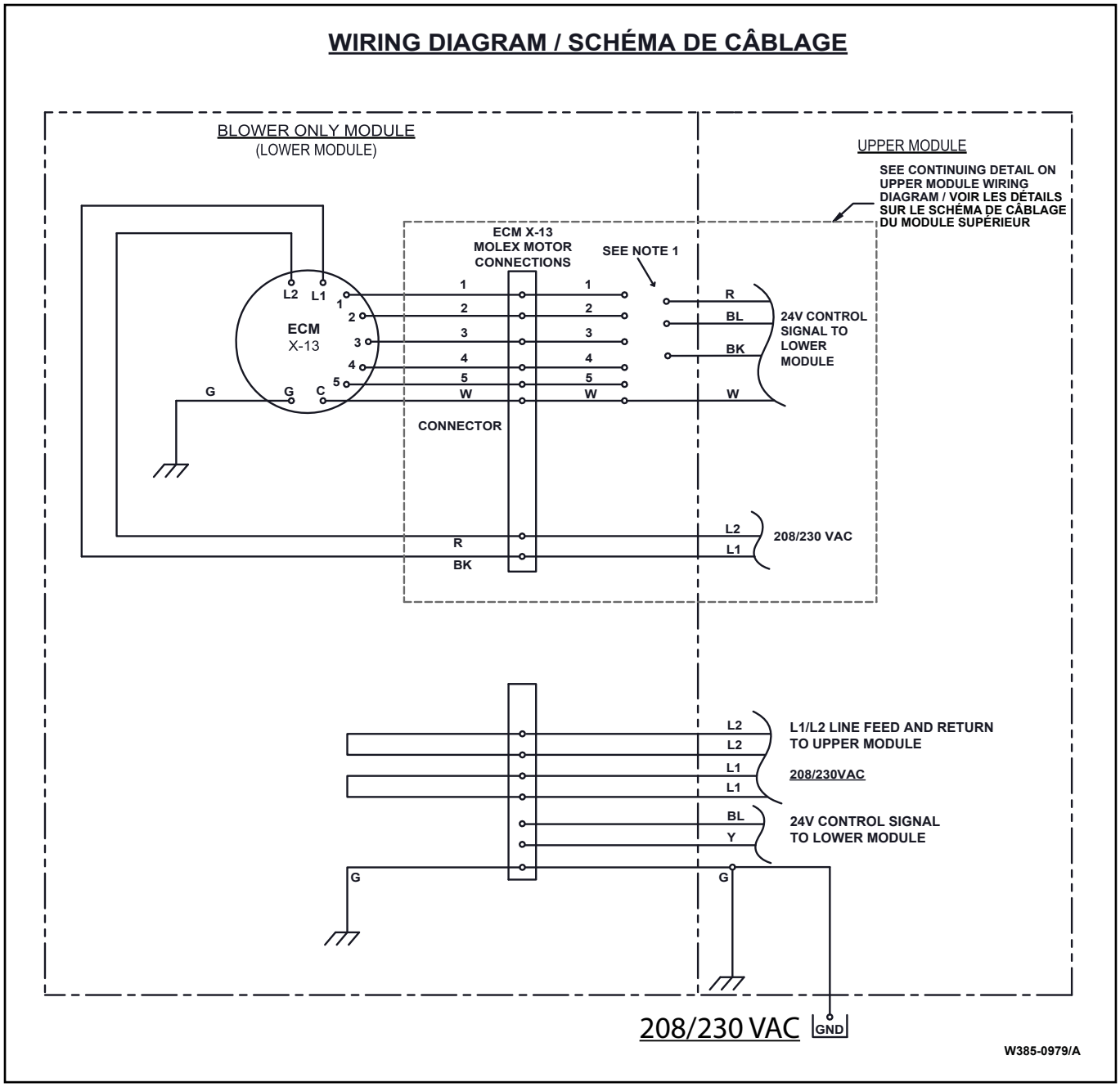
5.1.3.1 Hydronic (Upper module) Wiring Diagram



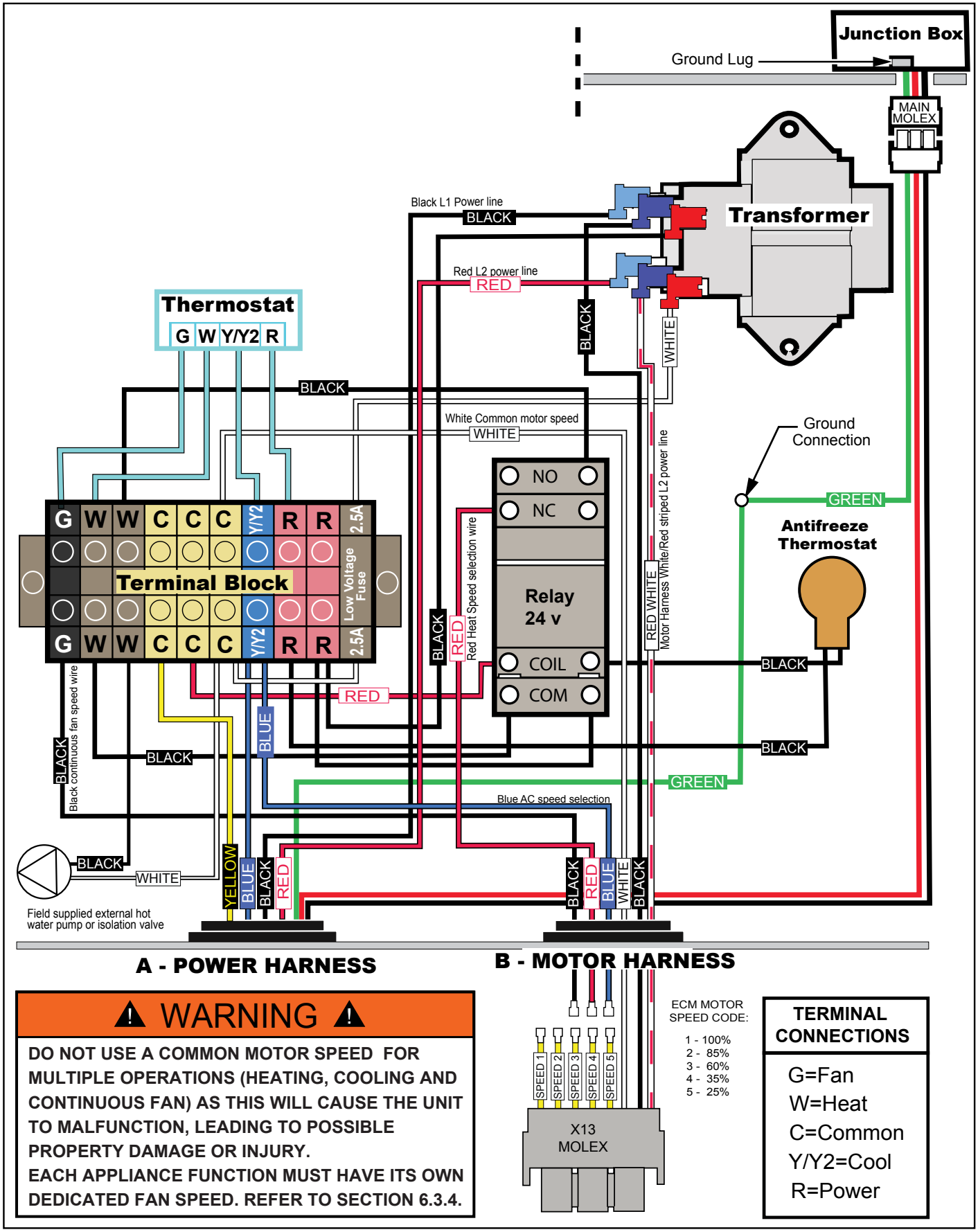
5.1.3.2 Air Conditioner (Lower Module) Wiring Diagram



5.1.3.3 Blower Only (Lower Module) Wiring Diagram



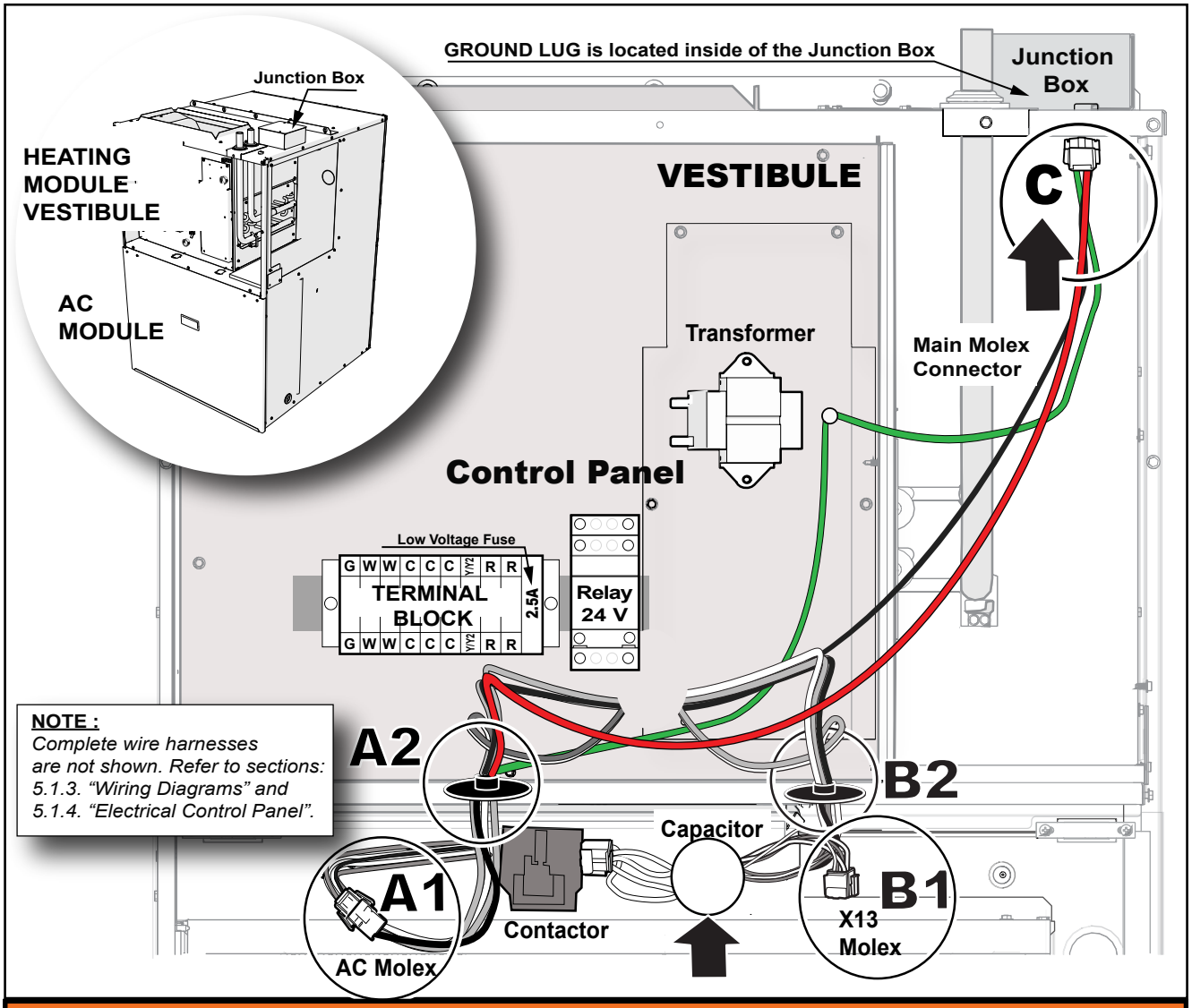
5.1.4 Electrical Control Panel



⚠ WARNING ⚠

DO NOT USE A COMMON MOTOR SPEED FOR MULTIPLE OPERATIONS (HEATING, COOLING AND CONTINUOUS FAN) AS THIS WILL CAUSE THE UNIT TO MALFUNCTION, LEADING TO POSSIBLE PROPERTY DAMAGE OR INJURY.
EACH APPLIANCE FUNCTION MUST HAVE ITS OWN DEDICATED FAN SPEED. REFER TO SECTION 6.3.4.

5.2 REMOVAL OF AIR CONDITIONER AND HYDRONIC MODULES



⚠ WARNING ⚠

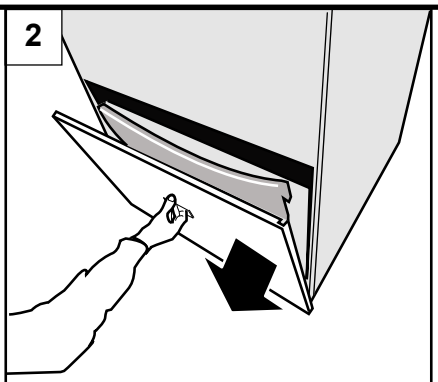
ALL ELECTRICAL WORK MUST BE DONE BY A TRAINED, QUALIFIED TECHNICIAN. IMPROPER MODIFICATIONS OR ADJUSTMENTS CAN RESULT IN FIRE OR EXPLOSION CAUSING PROPERTY DAMAGE, SEVERE PERSONAL INJURY OR LOSS OF LIFE.

1



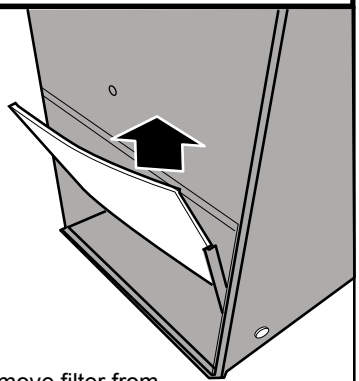
Turn Main Power disconnect **OFF**.

2



Pull AC lower door off.

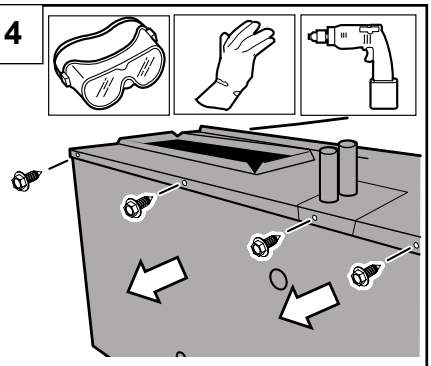
3



Remove filter from the filter rack.

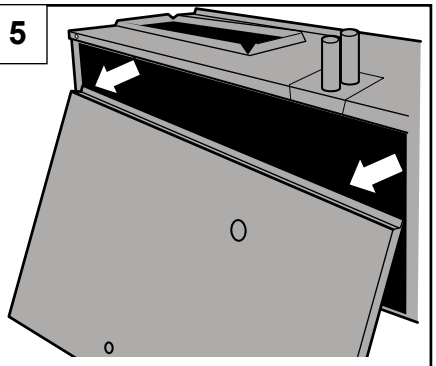
5.2.1 Air Conditioner Module Removal

4



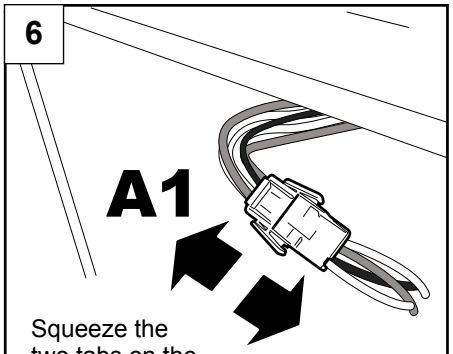
Remove 9 screws from the unit front panel.

5



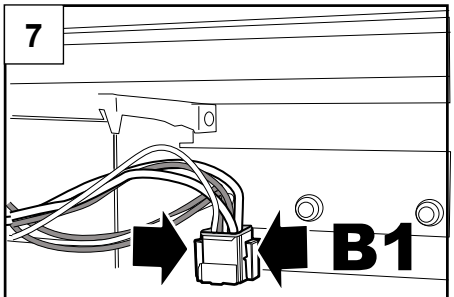
Pull down and remove the front panel.

6



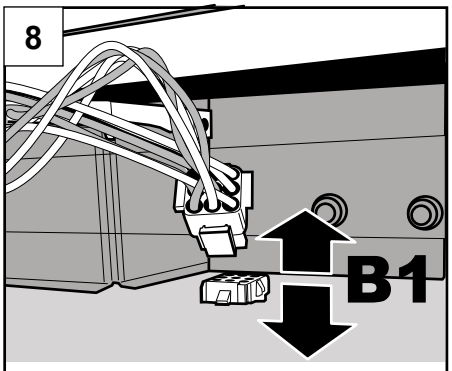
Squeeze the two tabs on the Molex connector **A1** and take apart AC wiring harness.

7



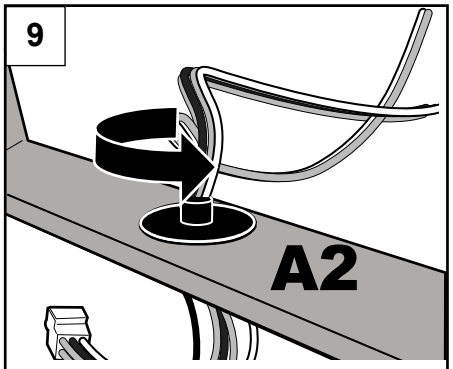
Squeeze the two tabs on the X13 Blower Motor Molex Connector **B1** to separate the wiring.

8



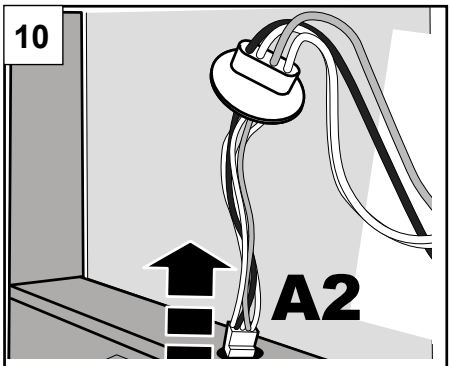
Take apart blower wiring harness by disconnecting Molex Connector **B1** .

9



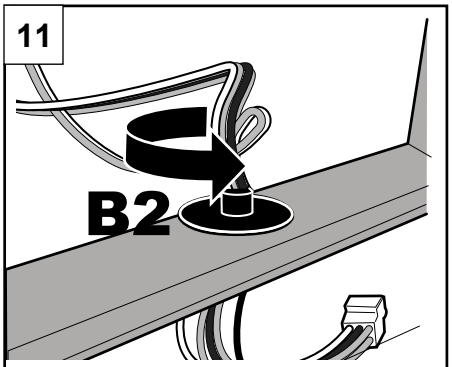
Once Molex is separated, rotate **A2** plastic block 1/4 turn.

10



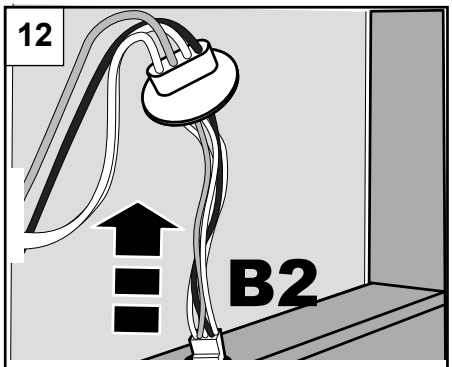
Pull out the first set of wiring harness **A2**.

11



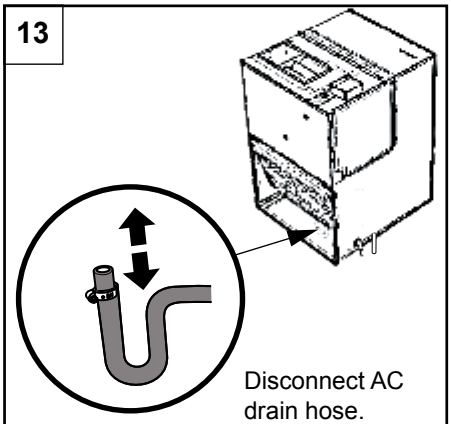
Rotate **B2** plastic block 1/4 turn.

12



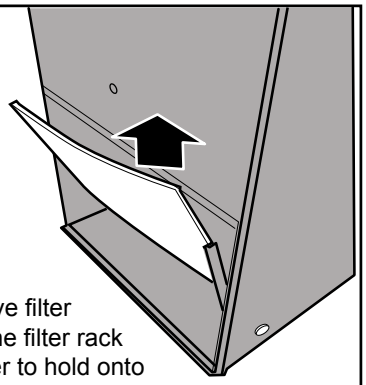
Pull up the second wiring harness out from the opening.

13



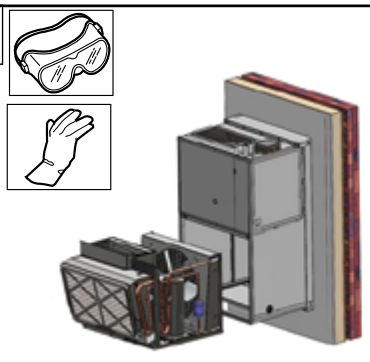
Disconnect AC drain hose.

14



Remove filter from the filter rack in order to hold onto the filter support for sliding the AC module out.

15



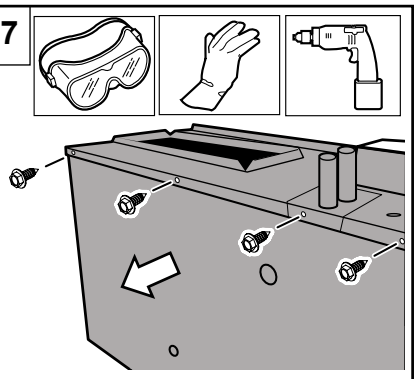
Slide the AC unit out.

5.2.2 Hydronic Heating Module Removal

16

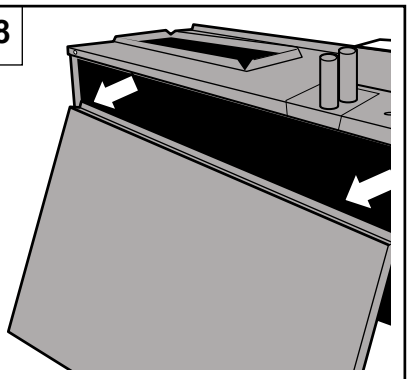
Disconnect power to the external water circulation pump or isolation valve.

17



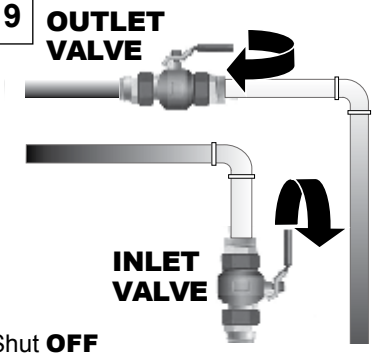
Remove 9 screws from the furnace front panel.

18



Pull down and remove the front panel.

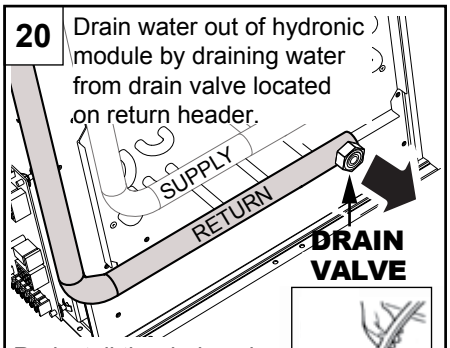
19



Shut **OFF** the inlet and outlet water valve.

20

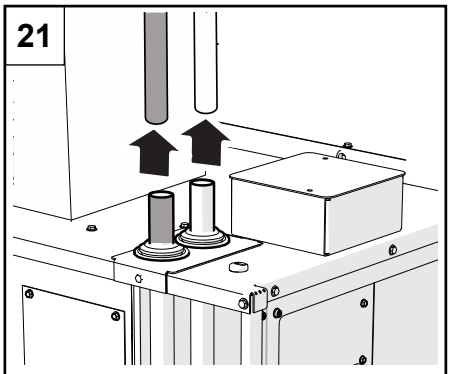
Drain water out of hydronic module by draining water from drain valve located on return header.



Re-install the drain valve once the draining is completed.

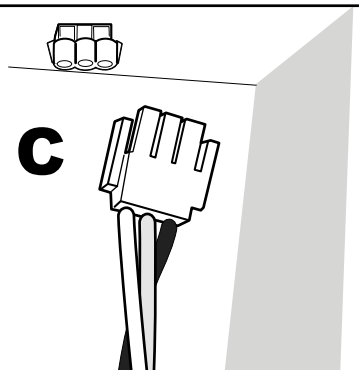


21



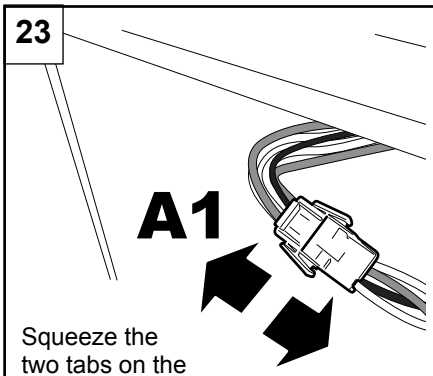
Unsolder/detach the Inlet and outlet header from the water lines.

22



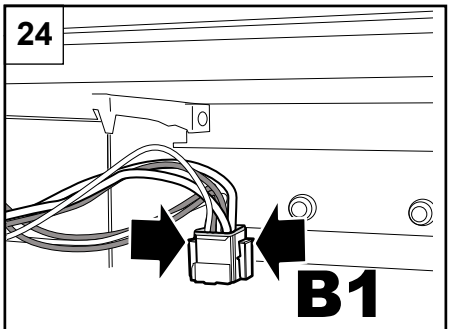
Disconnect the main Molex connector **C**.

23



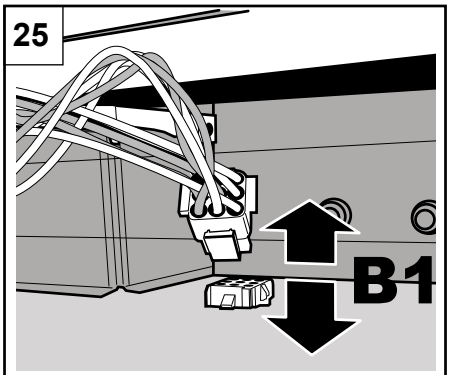
Squeeze the two tabs on the Molex connector **A1** and take apart AC wiring harness.

24



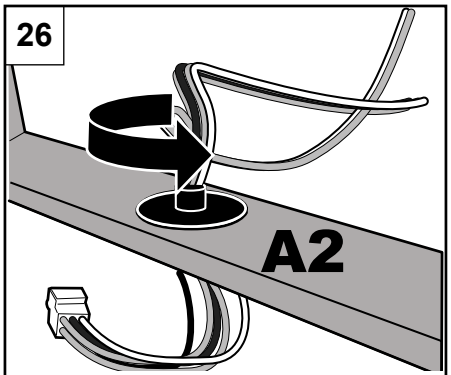
Squeeze the two tabs on the X13 Blower Motor Molex Connector **B1** to separate the wiring harness.

25



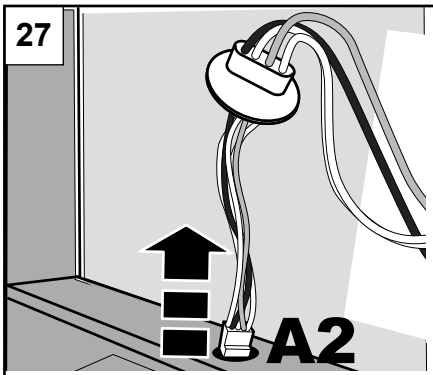
Take apart blower wiring harness by disconnecting Molex Connector **B1** .

26



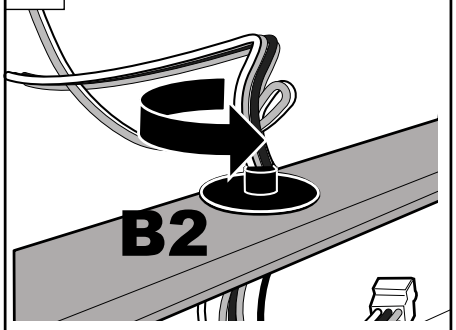
Once Molex is separated, rotate **A2** plastic block 1/4 turn.

27



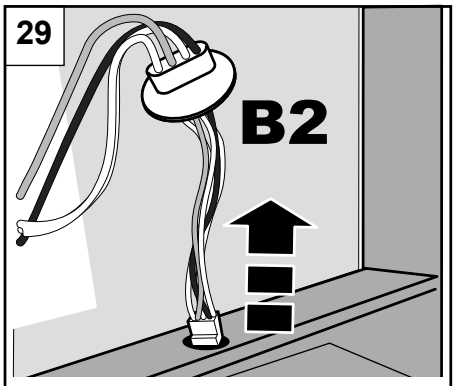
Pull out the first wiring harness **A2**.

28



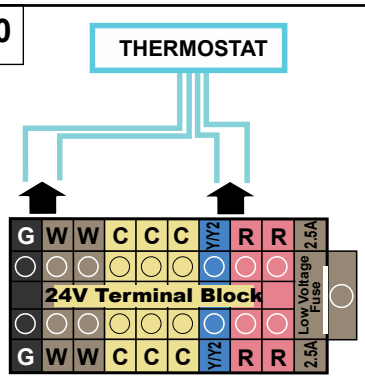
Rotate **B2** plastic block 1/4 turn.

29



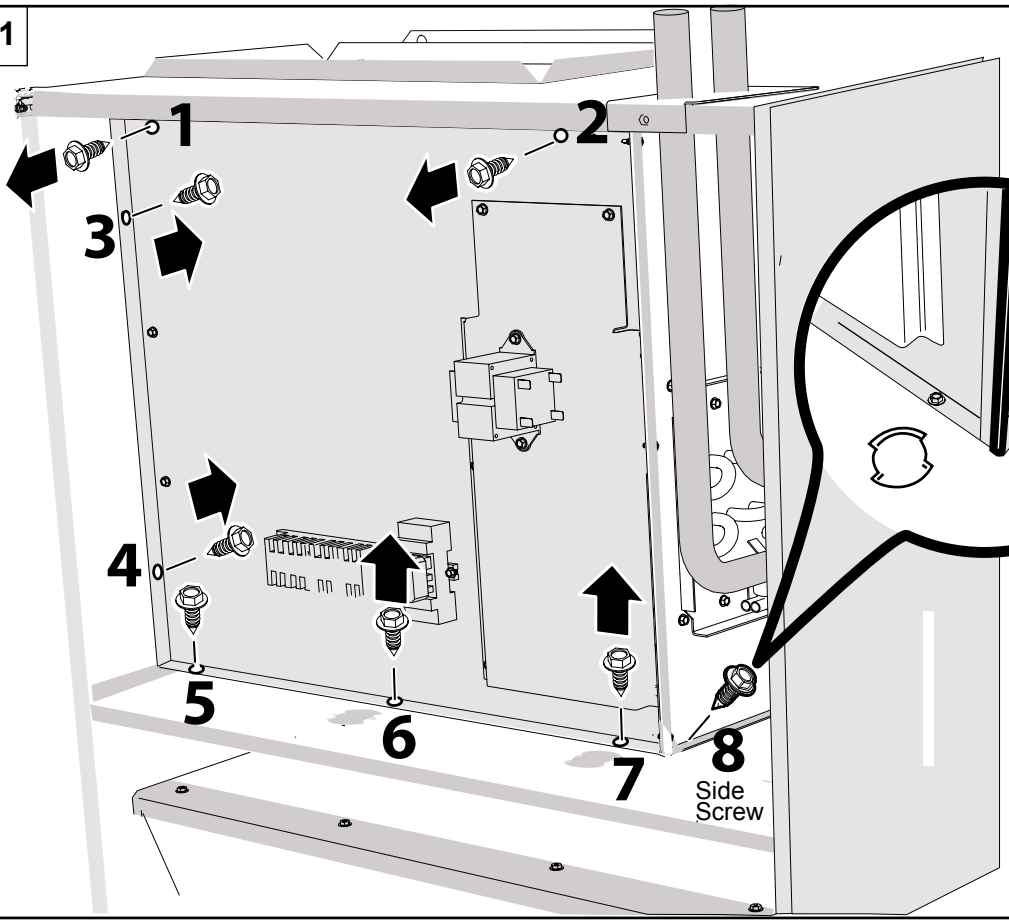
Pull up the second set of wiring harness out from the opening.

30



Remove the thermostat wires from the 24V terminal block.

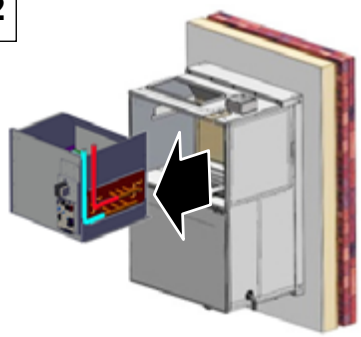
31



Remove ALL 8 SCREWS holding the heating module in.

Do not forget to remove the side screw #8.

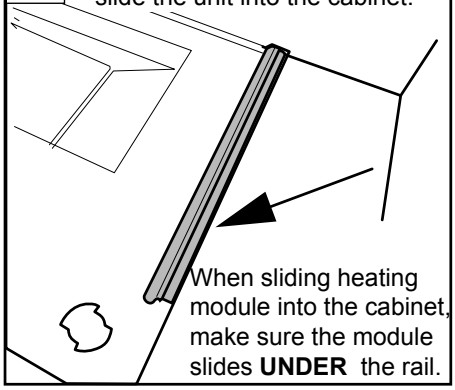
32



Once everything is disconnected, slide the heating module out.

33

To install heating module back, slide the unit into the cabinet:



When sliding heating module into the cabinet, make sure the module slides **UNDER** the rail.

34

1. Secure heating module by replacing **ALL 8 SCREWS** on the front. (Make sure not to forget **side screw #8)**.
2. Reconnect wiring harnesses.
3. Turn the Main Power Disconnect ON.
4. Reconnect the power to the external water circulation pump or isolation valve.

5.2.3 Low Voltage Wiring

The thermostat and control wiring should be a minimum of 18 AWG copper. Excessive lengths of wire may result in enough voltage drop to impair the proper functioning of the furnace. For thermostat wires in excess of 25 feet (7.6m), use 16 AWG; 50 feet (15.2m), use 14 AWG.

H53.1

5.2.4 Electrical and Physical Data

TABLE 4.

Electric and Physical Data													
			COMPRESSOR		OUTSIDE FAN AND MOTOR				INDOOR BLOWER				
Model No.	Minimum Circuit Ampacity (A)	Max. Overcurrent protection, (A)	Comp. Rated Load Amps (RLA)	Comp Locked Rotor Amps (LRA)	Diameter (in)	Nomial RPM	Rated Load Amps	Cond. Motor HP	Wheel Dia x Width (in x in)	Rated Load Amps	HP	Voltage/Hz/Phase	Voltage Range
PSH030A012A	10.7	15	5.5	26	18	1075	1	1/6	10 x 6	2.8	1/3	208-230/60/1	197-253
PSH030A018A	15.1	20	9	48			1	1/6					
PSH030A024A	20.7	30	13.5	58.3			1	1/6					
PSH030A030A	20.3	30	12.8	64	19		1.5	1/4					
PSH030F000A	3.5	15	NA	NA	NA		NA	NA					
PSH042A012A	10.7	15	5.5	26	18		1	1/6					
PSH042A018A	15.1	20	9	48			1	1/6					
PSH042A024A	20.7	30	13.5	58.3			1	1/6					
PSH042A030A	20.3	30	12.8	64	19		1.5	1/4					
PSH042F000A	3.5	15	NA	NA	NA		NA	NA					

5.2.5 Thermostat

The thermostat should be located approximately 5 feet (1524mm) above the floor, on an inside wall where there is good natural air circulation, and where the thermostat will be exposed to average room temperatures. Avoid locations where the thermostat will be exposed to cold drafts, heat from nearby lamps or appliances, exposure to sunlight, heat from inside wall stacks, etc.

H53.2

5.2.6 Blower

The unit contains a direct-drive, multi-speed blower. The proper speeds have been preset at the factory for heating and cooling. For recommended heating/cooling speeds for specific models refer to table shown in *5.4.1. Temperature Rise Check* section. Direct-drive blower motors are permanently lubricated and do not require oiling.

6. STARTUP AND SHUTDOWN PROCEDURES

The Condo Pack is designed to be used with residential single-stage cooling and single-stage heating wall thermostats with automatic or manual mode changeover. Automatic changeover thermostats must include a dead-band to prevent cycling between cooling and heating modes. Single-pole, single-throw thermostats are not suitable for use with Condo Pack. Indoor blower motor speed for cooling and heating modes can be altered by changing the motor speed taps on the X13/Endura Pro Motor harness.

6.1 HYDRONIC MODULE START-UP CHECKLIST

Before starting heating module for the first time, be sure you can answer "YES" to each of these questions:

a. Is the unit level?
b. Have you cleared away all loose construction and insulation materials?
c. Is unit installed within proper clearances to combustible materials? _____Section *"4.2 Unit Location and Clearances".*
d. Does electrical wiring follow current National Electrical Code ANSI 70 or CSA C22.1 as well as local codes? _____See Section *"5. Electrical".*
e. Is unit electrically grounded?_____See Section *"5. Electrical".*
f. Is room thermostat properly installed?_____See Section *"5. Electrical".*
g. Is ductwork correctly sized and sealed?_____See Section *"4.7.1 Supply Air Ducting".*
h. Is air filter in place and correctly sized?_____See Section *"4.7.1 Supply Air Ducting".*

6.1.2 Heating Module Startup

1. Turn the Thermostat to **HEAT** mode.
2. Set the room Thermostat to a point above room temperature to start the heating operation.

6.1.1 Heating Module Shutdown

1. Set the room Thermostat to below desired room temperature or to the "**OFF**" position.
2. Turn the Disconnect Switch to the "**OFF**" position.

6.1.3 Air Conditioning Startup

NOTE

While operating, the AC Module will remove humidity from the air. This humidity will condense on the evaporator coil and eventually fall in the drain-pan below the coil. There is a rubber hose ("P -Trap") that takes the water collected to the building service drain. Before initial operation and/or at the beginning of each cooling season, it is important that this P-trap is primed. If the P-trap dries out, air can be drawn back up the hose pulling condensate off the coil, getting the air filter and other components wet. On how to prime the condensate trap, refer to the instructions *"4.8 Condensate Drain Connection"*.

1. Turn the Thermostat to **COOL** mode.
2. Set the room Thermostat to below the current temperature to turn on AC.
3. Wait for the fan and compressor to turn on and run the unit for at least 10 minutes.

⚠ WARNING ⚠

AIR CONDITIONER MUST NOT BE OPERATED WHEN OUTDOOR TEMPERATURE IS BELOW 55°F.

6.1.4 Air Conditioning Shutdown

1. Turn the Thermostat **OFF**.
2. Wait for the fan and compressor to turn off.
3. Turn the Disconnect Switch to the "**OFF**" position.

6.2 SEQUENCES OF OPERATION

6.2.1 Heating Cycle

1. Room thermostat calls for heat, connecting R to W terminals.
2. Hydronic Heat Circulating Pump/valve relay is energized (field supplied). Heating fan is energized simultaneously with hot water flow interlock.

NOTE
AN ELECTRIC HEAT / HOT WATER HEAT THERMOSTAT, WHICH ENERGIZES THE INDOOR FAN DURING THE HEATING CYCLE, MUST BE USED.)

3. When the room thermostat is satisfied, terminals R and W on the thermostat open, de-energizing the hot water pump/valve interlock relay.

6.2.2 Cooling Cycle

1. Room thermostat calls for cooling connecting R to Y terminals.
2. The compressor and condenser fan start immediately on a call for cooling. Air circulating fan also starts immediately with cooling operation.
3. When the room thermostat is satisfied, terminal Y on the module is de-energized.
4. The compressor and condenser fan stop immediately when the thermostat is satisfied.
5. The air circulating fan continues to run for an OFF delay period of 100 seconds. The OFF delay on the cooling cycle is factory set for maximum efficiency. Adjustment of this delay is not recommended.

6.2.3 Heating Module Performance Matrix

TABLE 5. Complete performance matrix from hydronic heating module

Coil (FH x FL: 12" X 19")	Air FLOW (CFM)	GPM	Fluid Pressure Drop (Ft. Water)@ 130°F	Coil Capacity (Btu/hr)				
				Inlet Water Temperature (°F)				
				120 °F	130 °F	140 °F	150 °F	160 °F
CHHM030A (3 ROW)	388	1	0.65	11800	14000	16400	18900	21500
		2	2.28	14100	16800	19600	22400	25200
		3	4.77	14900	17800	20700	23700	26500
	529	1	0.65	13600	16100	18700	21700	24600
		2	2.28	16900	20100	23500	27000	30400
		3	4.77	18200	21700	25300	29000	32600
	744	1	0.65	15600	18500	21400	24700	28100
		2	2.28	20500	24300	28400	32700	36900
		3	4.77	22600	26800	31400	36000	40500
	908	1	0.65	16600	19700	22800	26200	29800
		2	2.28	22600	26700	31200	35900	40600
		3	4.77	25200	29800	34900	40100	45200
	971	1	0.65	16900	20100	23300	26700	30400
		2	2.28	23300	27600	32100	37000	41900
		3	4.77	26000	30900	36200	41500	46800
CHHM042A (4 ROW)	388	1	0.88	14000	16600	19300	22200	25100
		2	3.02	16700	19800	23200	26500	29800
		3	6.26	17600	21000	24400	27900	31400
	529	1	0.88	16100	19100	22100	25400	28800
		2	3.02	20400	24200	28200	32300	36400
		3	6.26	21900	26100	30400	34800	39100
	744	1	0.88	18300	21700	25200	28600	32600
		2	3.02	24800	29400	34200	39300	44400
		3	6.26	27500	32600	38000	43600	49000
	908	2	3.02	27300	32400	37500	43100	48800
		3	6.26	30800	36500	42600	48800	55100
		4	10.52	32700	38800	45300	51900	58400
		5	15.71	33900	40300	47100	53900	60500
	971	3	6.26	31900	37800	44100	50600	57100
		4	10.52	34000	40300	47200	54000	60800
		5	15.71	35400	42100	49100	56200	63100

6.3 AIR FLOW

For proper heating operation, air flow over the heating elements is of utmost importance. Insufficient airflow accelerates metal fatigue and possible failure in the heat elements, as well as decrease efficiency.

IMPORTANT:
DO NOT BYPASS THIS STEP OF THE START UP PROCEDURES.

H22.1

6.3.1 Temperature Rise Check

When the duct system is complete and the air filter or filters are in place, determine if the airflow is correct.

1. Insert a duct thermometer in the supply air duct. The thermometer should be placed as close as practical to the hydronic heating module, but out of the “line of sight” of the heat element (this prevents false readings owing to radiant heat). Ensure that the thermometer location is within the duct air stream. Avoid locations such as the inside radius of an elbow, etc.
2. Insert a duct thermometer in the return air duct as close to the unit inlet opening as practical. Ensure that the thermometer location will be unaffected by humidifier bypass ducts, etc. Choose a location well within the main air stream.
3. Operate the heating module long enough to obtain steady state conditions at the input listed on the unit rating plate.
4. When the two thermometers have stabilized, usually within 5-8 minutes, compare the two readings. Subtract the return air temperature from the supply air temperature. The difference is the temperature rise, also called ΔT.
5. Compare the measured ΔT to the temperature rise range shown on the rating plate.
6. Unless stated differently on the rating plate, the temperature rise should normally range between 30°F to 65°F (17°C to 36°C). When adjusting the temperature rise, the ideal temperature rise is approximately 50°F (28°C).
7. If the measured ΔT is above the approved temperature range, there is too little air flow. It must be increased by removing restrictions in the ductwork, adding supply or return ductwork, or by selecting a higher motor speed.

*** If the measured ΔT is too low, there is too much air flow.

6.3.2 Calculating air flow / Capacity Check

There are circumstances where it may be desirable to know the air flow delivery through the duct system, such as when estimating the amount of air flow available for air conditioning. This can be done by direct measurement with electronic or sloped manometers and velometers, or use the formula in the next column.

$$CFM = \frac{Output}{1.085 \times \Delta T}$$

where:
- CFM is airflow in cubic feet per minute;
- ΔT is the temperature rise; and
- Output is the furnace output capacity from the rating plate.

6.3.3 Adjustments – Cooling

No adjustments are required or should be attempted regarding any of the components of the cooling chassis. The chassis should be checked to see that none of the wiring is loose or missing. Cooling chassis is charged with R410A refrigerant.

6.3.4 Factory Set Motor Speeds and available CFM

TABLE 6. CFM at External Static Pressure (Inches of Water Column) for CHHM030A-3ROW COIL

Speed Tap#	Motor Speed	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
1	**100%**	999	967	939	909	875	833	780	682	595	544
2	**85%**	933	915	890	866	823	781	719	662	588	544
3	**60%**	779	755	734	707	673	643	609	578	537	484
4	**35%**	577	556	511	512	466	389	348	313	289	254
5	**25%**	472	421	388	340	292	251	229	199		

TABLE 7. CFM at External Static Pressure (Inches of Water Column) for CHHM042A-4ROW COIL

Speed Tap#	Motor Speed	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
1	**100%**	980	943	918	883	852	800	750	633	578	495
2	**85%**	918	894	866	837	792	745	684	622	565	462
3	**60%**	768	737	716	684	656	622	582	555	515	461
4	**35%**	563	539	492	443	413	375	332	296	276	245
5	**25%**	458	404	371	322	276	234	218	198		

TABLE 8. Available Motor Speed Taps

Model No.	Heating/Cooling Module	Setting	Speed Tap#	Model No.	Heating/Cooling Module	Setting	Speed Tap#
PSH030A012A	CHHM030A	FACTORY	2	**PSH042A012A**	CHHM042A	FACTORY	2
		HI	1			HI	1
	CACM012A	FACTORY	5		CACM012A	FACTORY	5
		HI	4			HI	4
	G - continuous fan		**3**		G - continuous fan		**3**
PSH030A018A	CHHM030A	FACTORY	2	**PSH042A018A**	CHHM042A	FACTORY	2
		HI	1			HI	1
	CACM018A	FACTORY	3		CACM018A	FACTORY	3
		HI	2*			HI	2*
	G - continuous fan		**5**		G - continuous fan		**5**
PSH030A024A	CHHM030A	FACTORY	2	**PSH042A024A**	CHHM042A	FACTORY	2
		HI	1			HI	1
	CACM024A	FACTORY	3		CACM024A	FACTORY	3
		HI	2*			HI	2*
	G - continuous fan		**5**		G - continuous fan		**5**
PSH030A030A	CHHM030A	FACTORY	2	**PSH042A030A**	CHHM042A	FACTORY	2
		HI	1*			HI	1*
	CACM030A	FACTORY	1		CACM030A	FACTORY	1
		HI	NA			HI	NA
	G - continuous fan		**5**		G - continuous fan		**5**

***IMPORTANT**: Do not use common motor speed tap for multiple functions; Connecting (any combination of) air conditioning blower speed, heating blower speed, and continuous fan speed to the same motor speed tap will cause the unit to malfunction. Each of the three blower functions must be connected to separate motor speed taps.

7. MAINTENANCE

7.1 GENERAL SAFETY RULES

⚠WARNING ⚠

DISCONNECT THE ELECTRICAL POWER SUPPLY TO THE FURNACE BEFORE ATTEMPTING ANY MAINTENANCE. FAILURE TO DO SO CAN CAUSE ELECTRICAL SHOCK RESULTING IN PERSONAL INJURY OR LOSS OF LIFE.

⚠ CAUTION ⚠

LABEL ALL WIRES PRIOR TO DISCONNECTION WHEN SERVICING CONTROLS. WIRING ERRORS CAN CAUSE IMPROPER AND DANGEROUS OPERATION.

ALWAYS VERIFY PROPER OPERATION AFTER SERVICING.

H3.25

⚠ CAUTION ⚠

UNIT CONTAINS R-410A REFRIGERANT AND POE COMPRESSOR OIL. USE ONLY R-410A REFRIGERANT AND APPROVED POE COMPRESSOR OIL. PROPER SERVICE EQUIPMENT IS REQUIRED. USE ONLY R-410A APPROVED SERVICE EQUIPMENT. FAILURE TO USE PROPER SERVICE TOOLS MAY RESULT IN EQUIPMENT DAMAGE OR PERSONAL INJURY.

1. Combustible materials should not be stored against or around the unit. Keep the unit area clear and free from all combustible materials such as newspapers, rags, cardboard, foam, plastic, paper backed fiberglass insulation, clothing, etc. This applies especially to gasoline and other flammable vapors and liquids.
2. All doors and panels must be in place during normal unit operation. Attempting to operate the unit with missing doors or panels could lead to electrical shock resulting in personal injury or death.
3. If the unit is installed in a confined space or if you intend to build a unit room where insulation is present, be aware that some insulating materials are combustible. Do not allow building insulating materials to come into contact with the unit.
4. Any additions, alterations or conversions required in order for the unit to properly match the application requirements must be done by a qualified installation contractor or service agency, using factory specified or approved parts.
5. Familiarize yourself with the location of the manual disconnect switch and any electrical switch, fuse or circuit breaker associated with the unit.
6. Familiarize yourself with the location of your unit filter. A blocked air filter will reduce efficiency, increase fuel consumption, raise the unit operating temperature, and shorten the life of unit components.
7. Do not cover return air grills and supply air registers with drapes, curtains, throw rugs, etc.
8. Avoid shutting off supply air registers in the interests of saving heat. While there is some validity to this practice with space heating, there is little to be gained in central heating systems. The unit requires a quantity of air passing over the heat exchanger to operate within design temperatures. Reducing the number of supply air registers available for air delivery may have the unforeseen consequence of raising the unit operating temperature, reducing unit efficiency, and shortening the life of the unit components.

7.2 HYDRONIC MODULE

Follow these procedures before inspecting the unit:

- Turn room thermostat to its lowest or off setting.
- Wait at least five minutes for Hydronic module to cool if it was recently operating.
- Turn off unit electrical power; failure to do so could result in injury or death.

⚠ IMPORTANT ⚠

USE ONLY RECOMMENDED REPLACEMENT PARTS. FAILURE TO DO SO COULD CAUSE IMPROPER UNIT OPERATION AND VOID THE WARRANTY.

Perform periodic preventive maintenance once before heating season begins and once before cooling season. Inspect, clean and repair, as needed the following items:

- Check all electrical wiring and connections, including electrical ground.
- All supply air and return air ducts for obstructions, air leaks and loose insulation
- Inspect electric heating element limit switches for signs of excessive heat (scorched surfaces, cracking of phenolic insulator)
- Blower housing/wheel and blower motor. Blower motors are equipped with permanently lubricated bearings, and do not require oiling.

7.3 COOLING CHASSIS

The cooling chassis contains all items related to the cooling functions of the unit, and also contains the indoor blower motor for the heating function. For extensive servicing, qualified personnel may choose to remove the cooling chassis from the unit and take it to a work area. Spare chassis are recommended so that extensive servicing can be performed outside the living space. This will prevent introducing dirt or doing damage in the living area, and could help to eliminate significant disruption of the air conditioning and heating functions in the living areas.

The indoor blower motor and the outdoor fan motor have permanently lubricated bearings and do not require routine service. The refrigeration system is sealed and factory charged with Refrigerant R-410A so that routine maintenance is not required. Cleaning of the outdoor coil, indoor coil, drain pan, and inside the bottom of the chassis are recommended at least once a year, and more often if the equipment is operated in a dusty or hostile environment. The electrical controls do not require routine service.

Power to the unit should always be turned OFF before performing service or removing the cooling or Hydronic heating module from the unit. One power harness and one control circuit harness are provided for easy disconnecting and re-connecting of the wires between the cooling chassis and cabinet. The top front Hydronic panel door must be removed to allow access to the wiring harnesses. After reinstalling the cooling chassis, both panel doors must be reinstalled. Refer to 5.2 Removal of Air Conditioner and Hydronic Modules.

7.4 AIR FILTER

All indoor return air must be filtered. A permanent-type filter is pre-installed with the unit. It is located on the air conditioning module. The provided air filter is natural fiber washable filter and should be inspected frequently and cleaned or replaced as necessary.

⚠ CAUTION ⚠

DO NOT OPERATE YOUR HEATING MODULE OR AIR CONDITIONER FOR EXTENDED PERIODS OF TIME WITHOUT AN AIR FILTER.

A portion of the dust entrained in the air may temporarily lodge in the air duct runs and the supply registers. Any recirculated dust particles will be heated and charred by coming into contact with the heat exchanger. This residue will soil ceilings, walls, drapes, carpets, furniture, and other household articles.

⚠ WARNING ⚠

DISCONNECT THE ELECTRICAL POWER SUPPLY TO THE UNIT BEFORE ATTEMPTING ANY MAINTENANCE. FAILURE TO DO SO CAN CAUSE ELECTRICAL SHOCK RESULTING IN PERSONAL INJURY OR LOSS OF LIFE.

⚠ CAUTION ⚠

BE SURE THAT THE FILTER IS RE-INSTALLED WITH THE AIRFLOW DIRECTION IDENTICAL TO ITS PREVIOUS USE. REVERSING THE FILTER WILL CAUSE DUST TRAPPED WITHIN THE FILTER TO BREAK FREE AND RECIRCULATE WITHIN THE DUCT SYSTEM. CONSULT YOUR INSTALLATION CONTRACTOR OR SERVICE TECHNICIAN IF YOU HAVE ANY QUESTIONS ON INSTRUCTIONS FOR REMOVING/REINSTALLING THE AIR FILTER.

H27.1_AC

7.5 LUBRICATION

Both the exhauster motor and circulating fan motor are sealed bearing type motors. No lubrication required.

⚠ IMPORTANT ⚠

THE MOTOR BEARINGS WERE PRE-LUBRICATED BY THE MOTOR MANUFACTURER. DO NOT ATTEMPT TO LUBRICATE THEM. EXCESS LUBRICATION WILL VOID THE WARRANTY, SHORTEN THE SERVICE LIFE OF THE MOTORS, AND WILL ATTRACT THE BUILDUP OF DUST AND DIRT.

7.6 ROUTINE MAINTENANCE

QUARTERLY:

- We recommend a monthly filter inspection at first, then every three months afterwards.

YEARLY:

- Priming Trap needs to be inspected at every starting season. Add more water if necessary.
- Check that condensate line remains clean and secured by hose clamp.

⚠ IMPORTANT ⚠

WE RECOMMEND THAT YOUR UNIT BE CHECKED BY A QUALIFIED SERVICE TECHNICIAN ONCE A YEAR.

It is good practice to give a quick inspection of your unit each time you inspect or clean the air filter.
Things to check:

- Check the unit for obvious signs of deterioration.
- There should be no water marks on the floor under the venting. Water marks may indicate a leaking pipe joint.
- All ductwork should be secured to the unit, and all ductwork should be solidly supported throughout.
- Water should flow easily through the condensate drain line. You may be able to observe this while the unit is operating if your condensate drain line from the drain trap assembly terminates at a floor drain. If the drain lines are opaque, your service technician will check them during the annual servicing.
- Inspect evaporator and condenser coils for accumulations of dirt and debris – clean as required. (If the coils appear dirty, clean them using mild detergent or a commercial coilcleaning agent).

8. TROUBLESHOOTING

8.1 AIR CONDITIONING TROUBLESHOOTING

TABLE 9.

WARNING!	THIS TROUBLESHOOTING GUIDE IS INTENDED FOR USE BY QUALIFIED SERVICE PERSONNEL ONLY!	
FAULT CONDITION	**POSSIBLE CAUSE**	**CORRECTION**
Unit will not operate	Power disconnected or loose connection	Check voltage at contactor in condensing unit
	Blown fuse / breaker tripped	Replace fuses / reset breaker
	Thermostat out of calibration is set too high	Reset
	Contactor defective	Check for 24VAC at contactor coil, replace if open
	Transformer defective	Check wiring – replace transformer
	High pressure control open (if provided)	Reset – see high pressure correction (high pressure control opens at 600 psig)
Outdoor fan on; Compressor off	Run or start capacitor defective	Replace
	Start relay defective	Replace
	Loose wire	Check for correct voltage at compressor – check and tighten all connections
	Compressor stuck, grounded or open motor winding, open internal overload	Wait at least 2 hours for overload to reset; if still open, replace the compressor
Too little cooling	Low voltage condition	Add start kit components
	Improperly sized unit	Recalculate load
	Improper indoor airflow	Check-should be approximately 400 CFM per ton
	Incorrect refrigerant charge	Charge per procedure in installation manual
	Air, non-condensables or moisture in system	Recover refrigerant
Compressor operates in short cycles	Incorrect voltage	At compressor terminals, voltage must be +/10% of nameplate marking when unit is operating
	Defective overload protector	Replace – check for correct voltage
	Refrigerant undercharge	Add refrigerant
High head pressure; Low suction pressure	Restriction in liquid line, expansion device or filter drier	Remove or replace defective component
	Lack of sufficient indoor airflow	Clean/check filters, registers, or evaporator coil that may cause a restriction.
High head pressure; Normal suction pressure	Dirty outdoor coil	Clean coil
	Refrigerant overcharge	Correct system charge
	Outdoor fan not running	Repair or replace
	Air or non-condensables in system	Recover refrigerant, evacuate and recharge

TABLE 9. CONT.

Low head pressure; **High suction pressure**	Expansion device stuck in open position	Replace expansion device
	Defective compressor valves	Replace compressor
Low suction pressure; Compressor cool; **Ice on indoor coil**	Low indoor airflow	Increase speed of blower or reduce restriction – replace air filter
	Operating below 65degF outdoors	Add low ambient kit
	Moisture in system	Recover refrigerant – evacuate and recharge – replace filter drier
High suction pressure; **or fluctuating head and suction pressures**	Excessive load	Recheck load calculation
	Defective compressor	Replace
	TXV hunting	Check TXV bulb clamp – check air distribution on coil – replace TXV
	Air or non-condensibles in system	Recover refrigerant, evacuate and recharge
Pulsing noise at expansion device or liquid line	Air or non-condensibles in system	Recover refrigerant, evacuate and recharge
Registers sweat	Low indoor airflow	Increase speed of blower or reduce restriction –

8.2 ADJUSTING SYSTEM CHARGE

Units come from the factory charged with the correct amount of refrigerant. There are times, however, when the charge may need to be adjusted. Refrigerant leaks and addition of system components for servicing or monitoring, for example, will require that the refrigerant charge be adjusted for the unit to function as intended. Note that only qualified HVAC technicians shall adjust the charge.

Procedure:

1. Operate the unit at standard AHRI conditions as close as possible (80°F DB / 67°F WB Indoor, 95°F DB Outdoor).
2. Connect charging hose from liquid port on the refrigerant bottle to charging service port.
3. Open refrigerant bottle and purge hose at bottle fitting.
4. Temporarily install a temperature measuring device on the liquid line near the TXV and one at the suction line near the compressor. Ensure that the temperature measuring device makes adequate contact and insulated for accurate readings.
5. Operate the system for at least 10 minutes.
6. Check sub-cooling and superheat. Systems using thermostatic expansion valves should have a sub-cooling as per its nameplate, if explicitly stated, or 7.5°F +/- 1°F otherwise. Superheat should be 7°F to 9°F.
   i. If sub-cooling and superheat are low, adjust the TXV to 7°F to 9°F superheat.
   ii. If sub-cooling is low and superheat is high or normal, add charge to obtain the required sub-cooling.
   iii. If sub-cooling and superheat are high, adjust the TXV to 7°F to 9°F superheat.
   iv. If sub-cooling is high or normal and superheat is low, remove charge to lower the required sub-cooling.

8.3 HYDRONIC MODULE TROUBLESHOOTING

TABLE 10.

HYDRONIC MODULE TROUBLESHOOTING GUIDE		
WARNING!	**THIS TROUBLESHOOTING GUIDE IS INTENDED FOR USE BY QUALIFIED SERVICE PERSONNEL ONLY!**	
FAULT CONDITION	**POSSIBLE CAUSE**	**CORRECTION**
Unit will not operate.	Power disconnected or Loose wiring connections	Connect power and/or turn the power disconnect switch ON. Make sure all the wiring connections are secure and tight.
	Blown Fuse/Breaker tripper	Check all fuses & breakers. Replace fuses/reset breaker.
Blower is running, but unit is not producing heat.	Loose wiring connections	Make sure all the connections are properly secured at the 24V terminal blocks, as well as on the field installed hot water circulation pump or isolation valve.
	Water is not flowing through the coil.	Check if field installed hot water circulation pump or isolation valve is operating. Check if the 24V signal from CondoPack is reaching and check if the power is reaching to this device. Replace the device if defective.
		Check if the water is frozen in Hot water coil or water pipe lines. If water is frozen, then check if the antifreeze protector switch is functional, replace if defective. Check the loose wiring connections. Check if the relay (RMI A210) is functional, replace if defective.
Unit is operating, but air temperature rise is MORE than no-rmal range (30F-65F).	Blower speed tap is connected to lower speed than factory setting for provided hot water coil, GPM, enter water temperature combination.	Connect to the factory recommended speed taps for given combination of parameters, refer to the manual.
	Dirty air filter	Replace air filter or wash if it is washable.
	Replace air filter or wash if it is washable.	Check if supply and/or return duct opening is restricted, take necessary action to keep them fully open and/or revise the duct work design.
Unit is operating, but air temperature rise is LESS than the normal range (30F-65F).	Blower speed tap is connected to higher speed than factory setting for provided hot water coil, GPM, Enter water temperature.	Connect to the factory recommended speed taps for given combination of parameters, refer to the manual.
Blower is not operating.	Loose wiring connections.	Check all the wiring connections and make sure they are tight.

9. PSH REPLACEMENT PARTS LIST

Contact your dealer or the factory for questions concerning prices and policies on replacement parts. Normally all parts can be ordered through your Authorized dealer / distributor.

FOR WARRANTY REPLACEMENT PARTS, A PHOTOCOPY OF THE ORIGINAL INVOICE WILL BE REQUIRED TO HONOUR THE CLAIM.

When ordering replacement parts always give the following information:

- Model & Serial Number of appliance
- Installation date of appliance
- Part number
- Description of part
- Finish

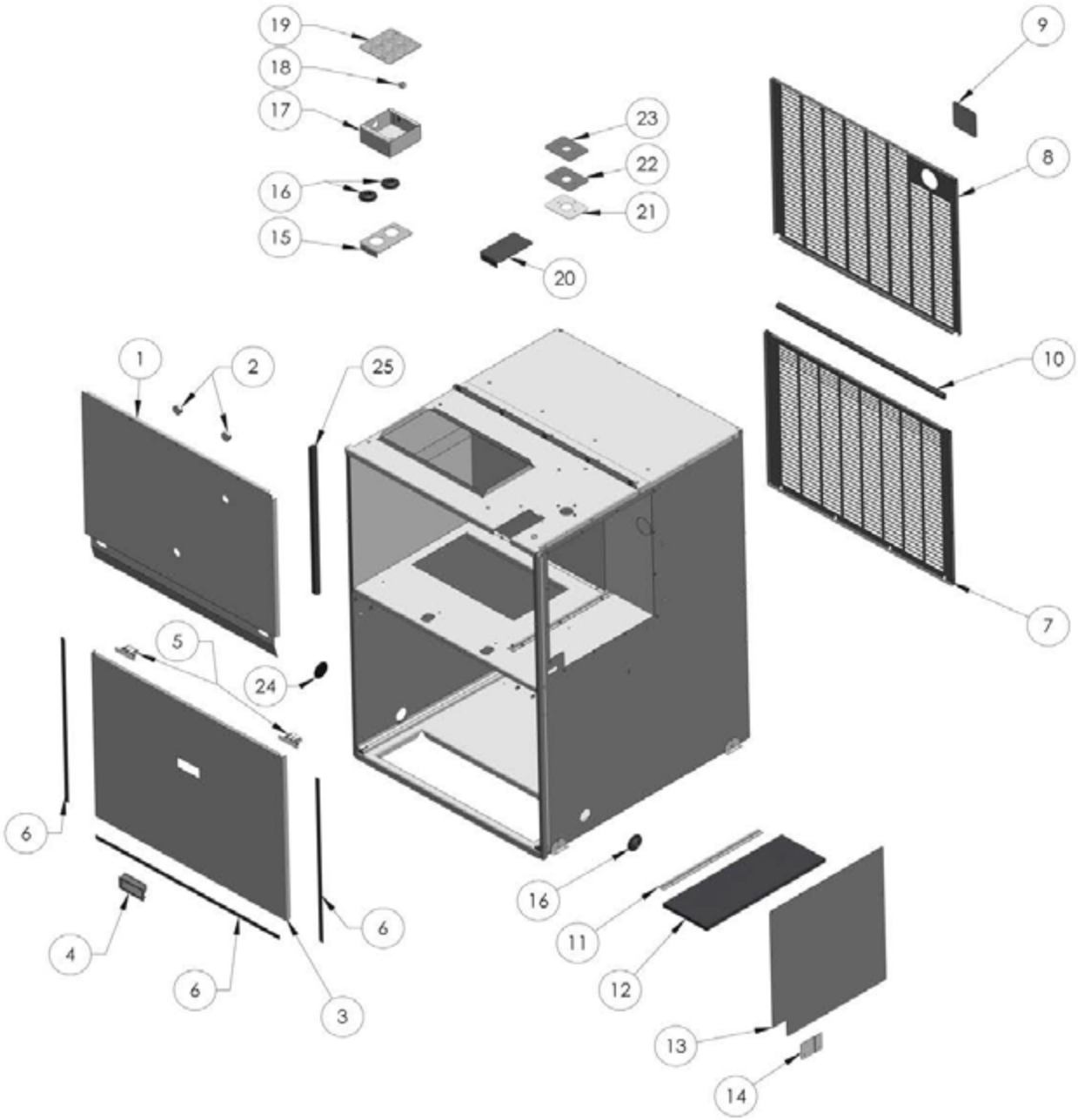
FOR FURTHER INFORMATION, CONTACT YOUR AUTHORIZED DEALER.

⚠ WARNING

FAILURE TO POSITION THE PARTS IN ACCORDANCE WITH THIS MANUAL OR FAILURE TO USE ONLY PARTS SPECIFICALLY APPROVED WITH THIS APPLIANCE MAY RESULT IN PROPERTY DAMAGE OR PERSONAL INJURY.

H41.1

9.1 PSH CONDO PACK CABINET



PSH CABINET PARTS LIST:

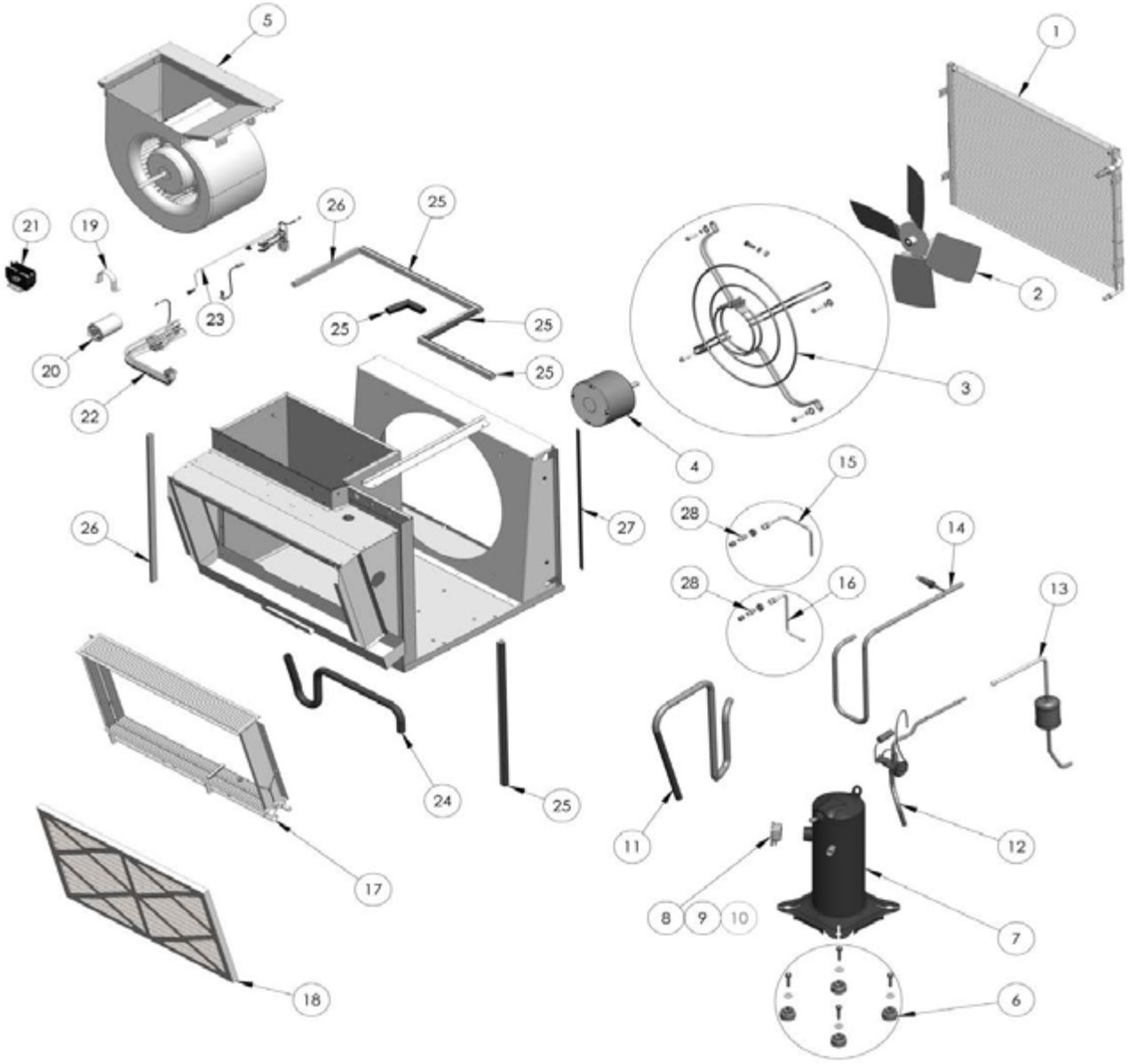
TABLE 11.

ITEM NO.	W010-3678		PART NUMBER	DESCRIPTION
	PSE	PSH		
	QTY	QTY		
1	1	1	W475-0945*	PANEL, TOP FRONT
2	2	2	W397-0002	1" CLEAR WINDOW LENSE
3	1	1	W225-0333*	DOOR, LOWER
4	1	1	N325-0080	HANDLE, DRIP
5	2	2	W390-0025	LATCH, PUSH/PULL SNAP
6	1	1	W290-0176	1/2" WIDE STRIP GASKET (7FT LONG)
7	1	1	W305-0010**	GRILLE, LOWER
8	1	1	W305-0009**	GRILLE, UPPER
9	1	1	W200-0538**	COVER, BACK
10	1	1	W290-0256	GASKET, 'D' CHANNEL (4FT LONG)
11	1	1	W525-0054	GUIDE, FURNACE LOWER
12	1	1	W361-0214	INSULATION, 1/2" DUCT LINE FURNACE
13	1	1	W475-0947*	PANEL, FURNACE SIDE ACCESS
14	1	1	W200-0537*	COVER, RH SIDE
15	-	1	W080-1577*	BRACKET, PIPING FOR HYDRONIC (PSH)
16	1	3	W315-0006	GROMMET 825
17	-	1	W350-0732	ELECTRICAL BOX HOUSING
18	-	1	W670-0525	GROUND LUG
19	-	1	W350-0738	ELECTRICAL BOX LID
20	1	-	W080-1578*	BRACKET, SOLID FOR ELECTRIC (PSE)
21	1	-	W500-0830*	PLATE, 1-3/8" POWER SUPPLY FOR ELECTRIC (PSE)
22	1	-	W500-0831*	PLATE, 1-1/8" POWER SUPPLY FOR ELECTRIC (PSE)
23	1	-	W500-0832*	PLATE, 1" POWER SUPPLY FOR ELECTRIC (PSE)
24	1	1	W120-0067	CAP, 1-5/8" GAS INLET
25	1	1	W290-0276	GASKET, D-CHANNEL 3/4"X3/4"X 2 FT

NOTE: * PART NUMBERS MUST INCLUDE COLOR CODE TP1SP (EG.W475-0945-TP1SP)

NOTE: ** PART NUMBERS MUST INCLUDE COLOR CODE TP1SP (TAUPE) OR SG1SP (SILK GREY) (EG. W305-0010-TP1SP OR W305-0010-SG1SP

9.2 CACM - AIR CONDITIONING MODULE



CACM - PARTS LIST: **TABLE 12.**

ITEM NO.	CACM030A	CACM024A	CACM018A	CACM012A	PART NUMBER	DESCRIPTION
	QTY	QTY	QTY	QTY		
1	1	1	1	1	W770-0006	CONDO PACK CONDENSOR COIL
2	-	1	1	1	W062-0056	FAN, AXIAL 18" - 1/1.5/2.0 TON
2	1	-	-	-	W062-0058	FAN, AXIAL 19" - 2.5 TON
3	1	1	1	1	W010-3785	CONDENSER MOTOR-FAN MOUNTING KIT
4	-	1	1	1	W435-0064	MOTOR, CONDENSER 1/6 HP 208-230V
4	1	-	-	-	W435-0072	MOTOR, CONDENSER 1/4 HP 208-230V
5	1	1	1	1	W010-3786	BLOWER HOUSING ASSY WITH 1/3HP X 13 MOTOR
6	1	1	1	-	W020-0962	COMPRESSOR MOUNTING HARDWARE 1.5-3TON
6	-	-	-	1	W020-0970	COMPRESSOR MOUNTING HARDWARE 1 TON
7	1	-	-	-	W172-0003	COMPRESSOR, 2.5 TON
7	-	1	-	-	W172-0002	COMPRESSOR, 2.0 TON
7	-	-	1	-	W172-0001	COMPRESSOR, 1.5 TON
7	-	-	-	1	W172-0008	COMPRESSOR, 1.0 TON
8	1	1	1	-	W750-0320	WIRE, HARNESS COPELAND PLUG
9	2	2	2	-	W750-0321	WIRE, HARNESS 12 GA 1/4" RECEPTICLE
10	-	-	-	1	W750-0328	WIRE, HARNESS, LG COMPRESSOR
11	1	1	1	-	W490-0753	PIPE 3/4", SUCTION LINE COPELAND
11	-	-	-	1	W490-0754^	PIPE 3/4" SUCTION LINE PART A LG
11A	-	-	-	1	W010-3335	PIPE 3/4" SUCTION LINE PART B LG
12	1	-	-	-	W010-3330	LIQUID / EVAP TO TXV PIPE ASSY
12	-	1	-	-	W010-3329	LIQUID / EVAP TO TXV PIPE ASSY
12	-	-	1	-	W010-3328	LIQUID / EVAP TO TXV PIPE ASSY
12	-	-	-	1	W010-3327	LIQUID / EVAP TO TXV PIPE ASSY
13	1	1	1	1	W010-3332	LIQUID LINE FILTER ASSY
14	1	1	1	-	W010-3333	DISCHARGE LINE PRESS. SWITCH ASSY 1.5/2/2.5 TON
14	-	-	-	1	W010-3334	DISCHARGE LINE PRESS. SWITCH ASSY 1.0 TON
15	1	1	1	1	W010-3787	LIQUID LINE PORT SERVICE KIT
16	1	1	1	1	W010-3788	SUCTION LINE PORT SERVICE KIT
17	1	1	1	1	W770-0005	CONDO PACK EVAPORATOR COIL
18	1	1	1	1	W250-0012	FILTER, FURNACE 16" x 25" X 1"

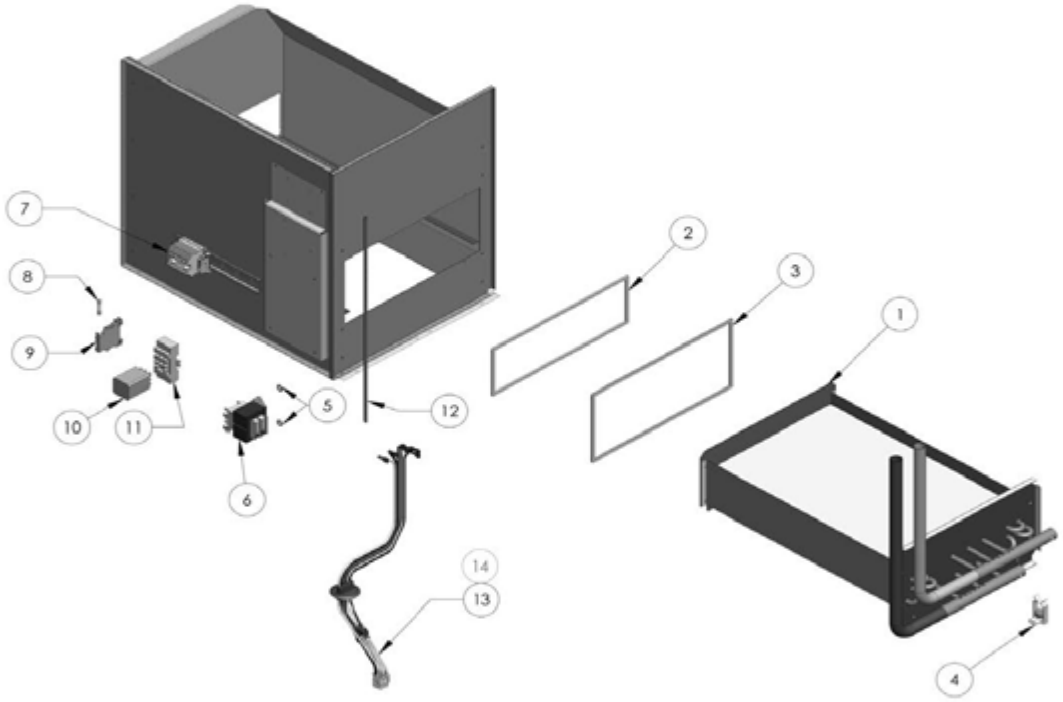
NOTE:^ MUST ORDER WITH 11A

CACM - PARTS LIST:

TABLE 12. CONT.

ITEM NO.	CACM030A	CACM024A	CACM018A	CACM012A	PART NUMBER	DESCRIPTION
	QTY	QTY	QTY	QTY		
19	1	1	1	1	W640-0014	CAPACITOR STRAP
20	-	-	1	-	W435-0063	CAPACITOR, DUAL 30+5MFD 370V 50/60Hz
20	-	1	-	-	W435-0066	CAPACITOR, DUAL 35+5MFD 370V 50/60 Hz
20	1	-	-	1	W435-0067	CAPACITOR, DUAL 40+5MFD 370V 50/60 Hz
21	1	1	1	1	W670-0531	TERMINAL, A/C CONTACTOR 2 POLE
22	1	1	1	1	W750-0326	HARNESS - CONDO PACK X13 LOWER
23	1	1	1	1	W750-0348	HARNESS - CONDO PACK A/C AND POWER LOWER
24	1	1	1	1	W345-0018	HOSE, 5/8" ID AC CONDENSATE TRAP
25	1	1	1	1	W290-0276	GASKET, D-CHANNEL 3/4"X3/4" X (6 FT)
26	1	1	1	1	W290-0256	GASKET, D-CHANNEL 3/4"X1/2"X (3 FT)
27	1	1	1	1	W290-0170	GASKET, STRIP 3/8"X (4 FT)
28	2	2	2	2	W450-0236	NUT, COREMAX CORE (1/2-20 X 7/16-20)

9.3 CHHM - HYDRONIC HEATING MODULE



CHHM - PARTS LIST: **TABLE 13.**

ITEM NO.	CHHM042A QTY	CHHM030A QTY	PART NUMBER	DESCRIPTION
1	1	-	W770-0008	4 ROW HOT WATER COIL
1	-	1	W770-0007	3 ROW HOT WATER COIL
2	1	1	W290-0305	GASKET, 1/8" MANNIGLAS 4.25" X 13.125"
3	1	1	W290-0306	GASKET, 1/8" MANNIGLAS 6.125" X 13.625"
4	1	1	W690-0020	ANTIFREEZE THERMOSTAT, CHHM (OPEN 60F,CLOSE 40F)
5	2	2	W735-0032	WASHER, 1/4" VULCANIZED FIBRE (GREY)
6	1	1	W707-0018	TRANSFORMER, 240/24V 40VA
7	1	1	W370-0058^	KIT, 24V HYDRONIC CONTROL DIN RAIL
8	1	1	W285-0014	FUSE 2.5A
9	1	1	W285-0015	FUSE HOLDER
10	1	1	W660-0191	RELAY FOR HYDRONIC CONTROL
11	1	1	W660-0192	RELAY SOCKET
12	1	1	W715-0887	TRIM, 402 9/32" PRESS STYLE (2FT LG)
13	1	1	W750-0325	HARNESS - CONDO PACK UPPER X13
14	1	1	W750-0364	HARNESS, AC/GAS/ELECTRIC UPPER

10. OWNER'S SERVICE INFORMATION

TABLE 14.

HOMEOWNER'S REFERENCE TABLE
Model No. *(Model number ocated in the right corner of the upper front door)*
Serial No. *(Serial number ocated in the right corner of the upper front door)*
Date Installed
Contractor
Contact
Address
Postal Code/Zip Code
Telephone No.
After Hours No.
If different from Installation Contractor:
Service Tech.
Telephone No.
After Hours No.
NOTE:

H28.3

11. WARRANTY

Wolf Steel Ltd. products are manufactured under the strict Standard of the world recognized ISO 9001 : 2008 Quality Assurance Certificate. **Wolf Steel Ltd.** products are designed with superior components and materials assembled by trained craftsmen who take great pride in their work. The complete appliance is thoroughly inspected by a qualified technician before packaging to ensure that the product you receive is the quality you expect from **Wolf Steel Ltd.**

Condo Pack LIMITED WARRANTY

LIMITED WARRANTY

This heating/cooling appliance is warranted by Wolf Steel Ltd. (Condo Pack) to be free from defects in materials and workmanship under normal use and maintenance.

The Stainless Steel Heat Exchanger (Gas Furnace version) is warranted for a period of **20 years** (Parts only, shipping and warranty labor cost are not covered. Such cost are to covered by the owner of appliance).

For the first **10 years** of the warranty period Wolf Steel Ltd. will replace the entire furnace module if the Heat Exchanger fails (the Heat Exchanger shall be defined as the stainless steel components making up the primary and secondary exchange surfaces only; the plastic front manifold cover and gasket are NOT included as part of the Heat Exchanger) and all conditions and limitations of the warranty are met.

For the **11th through 20th year** of the warranty, replacement cost of the furnace module will be prorated.

All other covered components will be warranted for a period of **5 years** during which Wolf Steel Ltd. will cover the replacement of the component (Parts only, shipping and warranty labor cost are not covered. Such cost are to covered by the owner of appliance).

Components not covered by the warranty include consumables such as filters, fuses, driers, refrigerant and oils. Cabinetry components, grills and wiring components are also excluded from the warranty.

The warranty period begins at the date of the original installation and if this date cannot be verified, the warranty period begins 6 months after the manufacture date of the appliance (indicated by the first 4 numbers of the serial number).

The warranty is only valid when:

- the appliance has not been moved from its location of original install,
- has been installed by a licensed or qualified HVAC technician,
- was installed in accordance with the manufacturer's directions in the Installation and Operation Manual, and
- was installed in compliance with all industry standards, national and local codes.

Warranty claims must be authorized by Wolf Steel Ltd. recognized representative or agent; parts/components being claimed may need to be analyzed at a Wolf Steel Ltd. facility. Records of installation date and periodic maintenance are required to process claim. All warranty service must be done by Wolf Steel Ltd. authorized service technicians using approved components.

Limitations:

Wolf Steel Ltd. is not responsible for:

1. Damages/Repairs/Costs incurred due to faulty installation or application.
2. Damages/Repairs/Costs caused by an installation that is not performed in compliance with all federal, provincial/state laws or regulations, and the Installation and Operation Manual.
3. Damage as a result of vandalism, freight damage, floods, fires, winds, lightening, and accidents, or any act of nature. Atmospheres contaminated by compounds of chlorine, halogenated hydrocarbons, or other damaging chemicals causing deterioration of components, or other conditions beyond the control of Wolf Steel.
4. Use of components or accessories not compatible with this appliance.
5. Products installed outside of Canada and the United States and its territories.
6. Routine maintenance, but not limited to, cleaning of the coils, filter cleaning and/or replacement and lubrication.
7. Damages/Repairs/Costs incurred because of the use of Parts not supplied or previously authorized by Wolf Steel.
8. Damages or repairs required as a result of improper use, maintenance, operation, servicing, cleaning or replacing filters.
9. Failure to operate due to interruption and/or inadequate electrical service.
10. Damages, defects or failures caused by accidents or negligent or unreasonable use or operation of the unit and its' components, including without limitation, operation beyond rated capacity and operation of electrical components at voltage other than that specified on the rating plate.
11. Wolf Steel will not in any event extend warranty coverage to any incidental, consequential or indirect damages.
12. Changes in the appearance of the unit that does not affect its performance.
13. Damages, defects or failures caused by operation of the unit in abnormal environmental conditions (i.e. salt air).
14. Damages, defects or failures caused by conditioned air(return air) supplied to the furnace being greater than 20% from out of doors (13°C/55°F min. return air temperature).
15. Damages, defects or failures caused by operating air conditioning modules during periods when outdoor ambient temperatures fall below 13°C/55°F.

ALL SPECIFICATIONS AND DESIGNS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE DUE TO ON-GOING PRODUCT IMPROVEMENTS.
Napoleon® IS A REGISTERED TRADEMARK OF WOLF STEEL LTD.

FOR HOMEOWNERS FUTURE REFERENCE

Dealer Name _____

Dealer's City/Province-State/Postal-Zip Code _____

Model and Serial Number _____

(Serial number located on inside bottom door)

Telephone/Fax _____

Installation Date _____

E-mail Address _____

For further information about this warranty, contact Wolf Steel Ltd. *Technical Service Department* by • phone (888) 721-8324 • by email: hvacsupport@napoleonproducts.com • or mail to **WOLF STEEL**LTD, 24 Napoleon Road, Barrie, Ontario L4M 0G8 Canada

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W415-1497 / B / 05.17.2017