

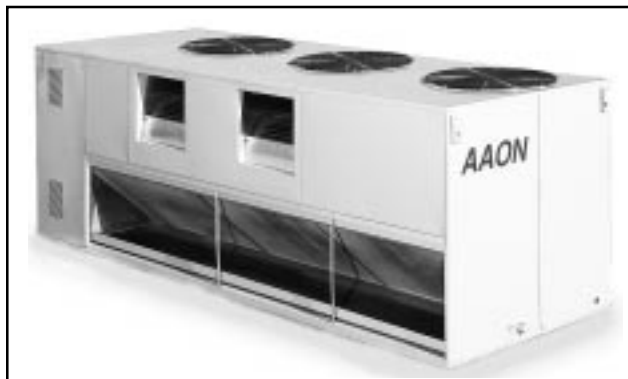
**AAON<sup>®</sup>**

**HA SERIES  
HORIZONTAL DISCHARGE  
COOLING UNITS**

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**USERS  
INFORMATION  
MANUAL**



**MANUFACTURED IN THE U.S.A**




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WARNING

Improper installation, adjustment, alteration, service or maintenance can cause property damage, personal injury or loss of life. Installation and service must be performed by a qualified installer or service agency.


IMPORTANT

The Clean Air Act of 1990 bans the intentional venting of refrigerant (CFC's and HCFC's) as of July 1, 1992. Approved methods of recovery, recycling or reclaiming must be followed. Fines and/or incarceration may be levied for non-compliance.

Owner should pay particular attention to the words: NOTE, CAUTION AND WARNING. NOTES are intended to clarify or make the installation easier. CAUTIONS are given to prevent equipment damage. WARNINGS are given to alert owner that personal injury and/or equipment damage may result if installation procedure is not handled properly.

It is the intent of AAON, Inc. to provide accurate and current specification information. However, in the interest of product improvement, AAON, Inc. reserves the right to change pricing, specifications and/or design of its products without notice, obligation or liability.

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# OWNER'S INFORMATION

The HA Series units are designed for fast, easy installation as a self-contained cooling unit for outdoor installation only.

## UNPACKING

When received, the unit should be inspected and checked for damage that might have occurred in transit. If damage is found, it should be noted on the carrier's Freight Bill. A request for inspection by the carrier's agent should be made in writing at once.

Before lifting the unit, be sure that all shipping material has been removed from the unit.

Once shipping material has been removed, check inside the unit control compartment for the field installed "P-Trap" condensate connector. Also check the inlet air opening for the filter rails and filters that are shipped loose with the unit for field installation.

## SETTING THE UNIT

If cable or chains are used to hoist the unit, care should be taken to prevent damage to the cabinet.

Secure hooks and cables at all lifting points / lugs provided on the unit. Hoist the unit to a point directly above the pad, and lower unit into place. Make sure unit is properly seated on the pad.

## ELECTRICAL

A complete set of unit specific wiring diagrams in both ladder and point-to-point form are provided with the unit.

Check the unit data plate to make sure it agrees with the power supply. The power and control wiring may be brought to the unit through a hole in the side of the unit. Protect the branch circuit in accordance with code requirements and connect power to the unit according to the wiring diagram provided with the unit. If the control wires are to run inside the same conduit, use 600 volt wire or as required by applicable code. The unit must be electrically grounded in accordance with the National Electric Code.

Power wiring is to the unit terminal block or compressor contactor. All wiring beyond this point is done by the manufacturer.

After connecting the control wiring to the unit, power may now be applied to the unit. Be sure that the evaporator blower and condenser fan(s) rotate in the proper direction (this applies only to units having three phase blower motor).



## WARNING

Electric shock hazard. Can cause injury or death. Before attempting to perform any service or maintenance, turn the electrical power to unit to OFF at disconnect switch(es). Unit may have multiple power supplies.

Failure to observe the following instructions will result in premature failure of your system, and possible voiding of the warranty.

## COOLING SECTION • DIRECT EXPANSION (DX)

All direct expansion refrigeration systems are factory assembled, charged with refrigerant, tested and operated. On 13 - 25 ton units the refrigerant system includes dual circuit evaporator and condenser coils providing two stages of cooling. On 30 - 40 ton units the refrigeration system includes a four circuit evaporator coil and two dual circuited condenser coils providing two or four stages (optional) of cooling. These systems are provided with liquid line filter driers, expansion valves and fully hermetic compressors. Compressors are equipped with a positive pressure forced lubrication system and crankcase heater. The air cooled condenser coil(s) is constructed of copper tubes with aluminum fins, the air is pulled through with propeller fans. The evaporator coil is draw through, made of copper tubes with aluminum fins.

### NOTE: Crankcase Heater Operation

Some units are equipped with a compressor crankcase heater, which should be energized at least 24 hours prior to setting the thermostat for cooling operation.

Never cut off the main power supply to the unit, except for complete shutdown. When power is cut off from the unit, any compressors using crankcase heaters cannot prevent refrigerant migration. This means the compressor will cool down, and liquid refrigerant will accumulate in the compressor. Since the compressor is designed to pump refrigerant gas, damage may occur when power is restored.

If power must be cut off for more than an hour, turn the thermostat system switch to "OFF", and leave it off until the main power switch has been turned on again for at least twenty four hours for units with compressor crankcase heaters. This will give the crankcase heater time to clear any liquid accumulation out of the compressor before it is required to run.

Always control the system from the thermostat, or control panel, never at the main power supply (except for emergency or for complete shutdown of the system).

The refrigeration section of these appliances has been found acceptable with applicable provisions of "ANSI / UL 1995" and current "C.S.A. Standard C22.2" by E.T.L.



## CAUTION

On three phase units the rotation must be checked on ALL MOTORS AND COMPRESSORS. SCROLL COMPRESSORS ARE DIRECTIONAL.

Rotation must be checked on start-up by a qualified service technician using suction and discharge gauges.

Scroll compressors will FAIL if run in the wrong direction. Blower and condenser rotation should be checked and only be altered if necessary at the power connection.

## OWNER'S INFORMATION

During the cooling season, if the air flow is reduced due to dirty air filters or any other reason, the cooling coils will get too cold and will cause excessive liquid to return to the compressor. As the liquid concentration builds up, oil is washed out of the compressor, leaving it starved for lubrication.

**THE COMPRESSOR LIFE WILL BE SERIOUSLY SHORTENED BY THIS REDUCED LUBRICATION, AND THE PUMPING OF EXCESSIVE AMOUNTS OF LIQUID OIL AND REFRIGERANT.**

**CAUTION:** While the following incorrect operations may not cause damage to the system, they will impair the performance, and may cause the built-in safety devices to cut the system off completely.

1. **LOW AMBIENT OPERATION**  
The cooling section of a direct expansion (DX) unit will not operate properly when the outdoor temperature is below 55° degrees. Outside air intake options are recommended if operation below 55° degrees is expected.
2. **MULTIPLE UNIT OPERATION**  
When several units are used in conditioning the space, and part or all of them are combination heating-cooling units, all systems thermostat switches must be set at either heating or cooling (or set at "off"). Do not leave part of the systems switched to the opposite mode. All cooling only units should be switched to "off" at the thermostat during the heating season.

### CONDENSATE PIPING

The unit requires a drain trap to be connected to the drain pan at the unit. If codes require a condensate drain line, the line should be the same pipe size as the drain nipple and should pitch downward toward drain.

The condensate drain pipe ("P" trap) is factory supplied and is shipped loose in the control access compartment for field installation. An air break should be used with long runs of condensate lines.

Drain pans in any air conditioning equipment, even when they have a built-in slope to the drain, will have moisture present and will require periodic cleaning to prevent any build up of algae or bacteria.

**Cleaning of the drain pans will also prevent any possible plugging of the drain lines and an overflow of the pan itself. All cleaning of the drain pans and inside of the equipment should be done by qualified personnel.**

### ELECTRIC HEATING (Optional)

The electric heat is available as an option.

Heating is accomplished by passing electrical current through a specified amount of resistance heaters which will produce the required heat. The indoor blower motor will energize at the same time as the heaters.

When heat is called for, the cooling section is inoperable except for the indoor blower motor.

The system is designed to heat or cool a given amount of air each minute it operates. If this amount of air is greatly reduced (approximately 1/3 during the heating season), the heater coil will overheat, and may cut the heater off entirely by action of the safety high temperature limit device.

### BLOWER INFORMATION

**DUE TO JOB SPECIFICATION REVISIONS, IT MAY BE NECESSARY TO ADJUST OR CHANGE THE SHEAVE OR PULLEY TO OBTAIN THE DESIRED AIRFLOW AT THE TIME OF INSTALLATION.**

**START-UP TECHNICIAN MUST CHECK BLOWER MOTOR AMPERAGE TO ENSURE THAT THE AMPERAGE LISTED ON THE MOTOR NAMEPLATE IS NOT EXCEEDED.**

Clean blower wheels are necessary to reduce electrical use, maintain capacity and reduce stress on the unit.

### FILTER INSTALLATION / REPLACEMENT

Filter rails and filters are shipped inside the unit for field installation. Install filter rails and slide filters into place before operation of the unit.

To replace filters, slide each filter out of filter rack and inspect. Replace old filters with the size indicated on each filter. Be sure arrow points towards the blower.

Filters should be checked every 30 days and replaced or cleaned as necessary.

Do not permit the unit to be operated unless filters are in place. Operation of the unit without filters will result in a clogged evaporator coil.

**IT IS IMPORTANT TO KEEP COILS, BLOWER AND FILTERS CLEAN !**



### CAUTION

**Before leaving installation, a complete operating cycle should be observed to verify that all components are functioning properly.**

# SEQUENCE OF OPERATIONS

## NORMAL OPERATION

### COOLING

Set the thermostat system switch to "COOL".  
Set the thermostat fan switch to "AUTO" or "ON".  
Set the thermostat temperature at the desired point.

### HEATING

Set the thermostat system switch to "HEAT".  
Set the thermostat fan switch to "AUTO" or "ON".  
Set the thermostat temperature at the desired point.

### AIR CIRCULATION

Set the thermostat system switch to "OFF".  
Set the thermostat fan switch to "ON".  
Do not change temperature setting.  
With these settings, the air circulating blower will run continuously but the air will not be heated or cooled.

### SYSTEM OFF

Set the thermostat system switch to "OFF".  
Set the thermostat fan switch to "AUTO".  
Do not change temperature setting.  
With these settings, the system is shut down, with the exception of the control system power (24 volts), and the crankcase heater of the compressor (about 60 watts).

DO NOT TURN OFF THE MAIN POWER SWITCH.

### NIGHT AND VACANT WEEKEND OPERATION

If it is desired to reduce the operating time during the night, and during periods when the space is unused, it is recommended that the temperature setting be raised about five degrees during these periods of the cooling season, and lowered about ten degrees during the heating season.

## I. GENERAL INFORMATION

### A. COOLING

#### 1. Packaged Units

When the thermostat calls for cooling from the space, 'Y1' makes 'R' to 'CC1' through the LPS (low pressure switch), HPS (high pressure switch) and optional GOT (guarantee off timer).

On larger units 'CC3' is also made. If additional cooling is required 'CC2' and 'CC4' are made through their respective pressure switches and timers.

### B. HEATING (Optional)

#### 1. Electric

When the thermostat calls for heat 'W1' makes 'R' to the heat relay. All N.O. contacts close, and all N.C. contacts open. The heat relay makes 'R' to the first stage of electric heat.

On a fault condition the main limit located in the supply air or the auxiliary limit located in the supply air fan housing will remove power from all contactors.

If additional heating is required a second set of elements can be turned on by 'W2'.



# SERVICING, TROUBLE SHOOTING, INSPECTIONS & MAINTENANCE



## WARNING

Electric shock hazard. Can cause injury or death. Before attempting to perform any service or maintenance, turn the electrical power to unit to OFF at disconnect switch(es). Unit may have multiple power supplies.

### COOLING

1. Main Power Switches are on and power is to the unit.
2. Set thermostat in cooling mode and place the "fan" switch to on. Check blower for correct operating direction, amperage and voltage. Check compressor(s) operation. Check the amperage and compare to the nameplate data (check amperage load side of the compressor contactor).

### BLOWER

Inspect blower and blower section to keep free of dust or debris. To clean the blower, turn the thermostat and the power to the "OFF" position. Clean the assembly, check the bearings for looseness, inspect the belt condition and tightness, check screws for tightness, rotate blower wheel and inspect for noise or roughness in the bearings.

### HEATING • ELECTRIC (IF APPLICABLE)

1. Set thermostat in the heat mode.
2. Set thermostat to call for heat to engage all electric heat strips. Check blower for proper rotation and voltage.
3. Measure the amperage and voltage. Compare them to the nameplate data.

### LUBRICATION

All original blower motors and bearings are furnished with an original factory charge of lubrication. Some applications will require that bearings be re-lubricated periodically. The schedule will depend on the operating duty, temperature variations or other severe atmospheric conditions.

Bearings should be re-lubricated when at normal operating temperatures, but not running. Rotate the fan shaft by hand and add only enough grease to purge the seals. **DO NOT OVERLUBRICATE.**

Recommended greases are:

SHELL OIL - DOLIUM R  
CHEVRON OIL - SRI No. 2  
TEXACO INC. - PREMIUM RB

### SERVICE

In the event the unit is not functioning correctly and a service company is required, a company with service technicians qualified and experienced in electric heating and air conditioning be permitted to service the systems in order to keep warranties in effect. The service tech may call the factory if assistance is required.

BEFORE CALLING, HE SHOULD HAVE THE MODEL AND SERIAL NUMBER OF THE UNIT AVAILABLE FOR THE CUSTOMER SERVICE DEPARTMENT TO HELP ANSWER QUESTIONS REGARDING THE UNIT.

### **AAON, Inc.**

Phone: 918-583-2266

Fax: 918-382-6364

Customer Service Department

### UNIT REPLACEMENT PARTS

Replacement parts for AAON equipment may be obtained from AAON. When ordering parts, always reference the unit model number, serial number and part number.

ALWAYS USE AAON SPECIFIED PARTS

### COMMON CAUSES OF REDUCED AIR FLOW

A. **DIRTY FILTERS** - Filters must be inspected and replaced on a regular basis. It is strongly recommended that the media be replaced monthly. Clean filters are your best insurance against premature system breakdown. Do not permit the unit to be operated unless the filters are in place. Operation of the unit without filters will result in a clogged evaporator coil - a very expensive service job to correct.

B. **OBSTRUCTION TO AIR FLOW** - Supply and return air grilles must be kept clear so air can be freely discharged and drawn from the system.

### CLEANING

Inspect unit interior at the beginning of each heating and cooling season and as operating conditions require.

### COILS

Evaporator coil(s) should be inspected and cleaned annually to ensure there is no obstruction to air flow. Condenser coil(s) should be inspected monthly. Clean condenser coils annually and as required by location or outdoor air conditions.



## WARNING

All of the items listed under the service, trouble shooting, inspections and maintenance section of this manual should be performed once a year.

# SERVICING, TROUBLE SHOOTING, INSPECTIONS & MAINTENANCE

## TROUBLE

## POSSIBLE CAUSE

### COOLING PACKAGE

SYSTEM OFF

1. Check power at lineside of contactor(s).
2. Thermostat not set for cooling.
3. High pressure control tripped.
4. Low pressure switch open (loss of charge).

CONDENSER FAN WILL NOT RUN

1. Overload thermal protector open in motor.
2. Motor run capacitor open or shorted.
3. Motor failed.
4. Fan or shaft stuck.

EVAPORATOR BLOWER WILL NOT RUN

1. Overload thermal protector open in motor.
2. Relay not closing.
3. Motor failed.
4. Capacitor shorted or open (PSC motors only).
5. Stuck shaft or blower wheel.

COMPRESSOR SHORT CYCLES

1. Check for low refrigeration charge.
2. Compressor overload setting.
3. Ambient temperature too low.
4. Filters dirty or air flow restricted.
5. Evaporator blower not running.

FAN MOTOR RUNS HOT AND CUTS OUT

1. Line voltage too high.

COMPRESSOR WILL NOT START

1. Line voltage too low.
2. Limit switches are open.
3. Overload or pressure control tripped.

BLOWER DOES NOT DELIVER AIR

1. Blower running backwards.
2. Dirty filters.
3. Duct obstruction.
4. Belts loose.

### ELECTRIC HEATING

SYSTEM OFF

1. Check power at line side of contactor(s).
2. Thermostat not set for heating.

EVAPORATOR MOTOR WILL NOT RUN

1. Overload relay tripped.
2. Heater Relay not energized.
3. Blower Contactor not energized.
4. Capacitor shorted or open (PSC motors only).

BLOWER DOESN'T DELIVER AIR

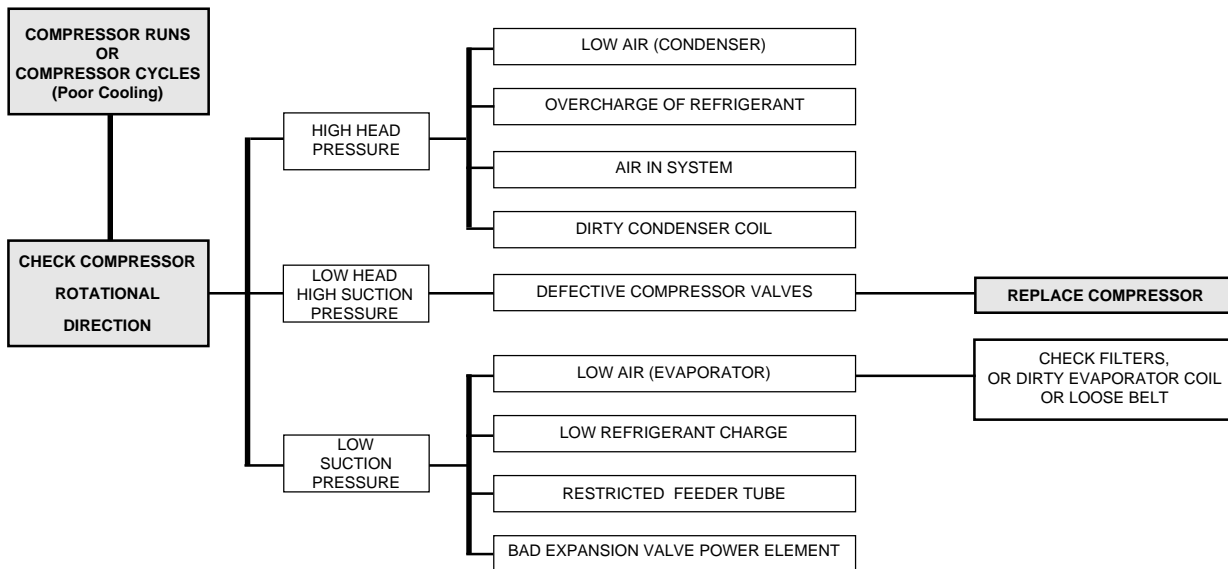
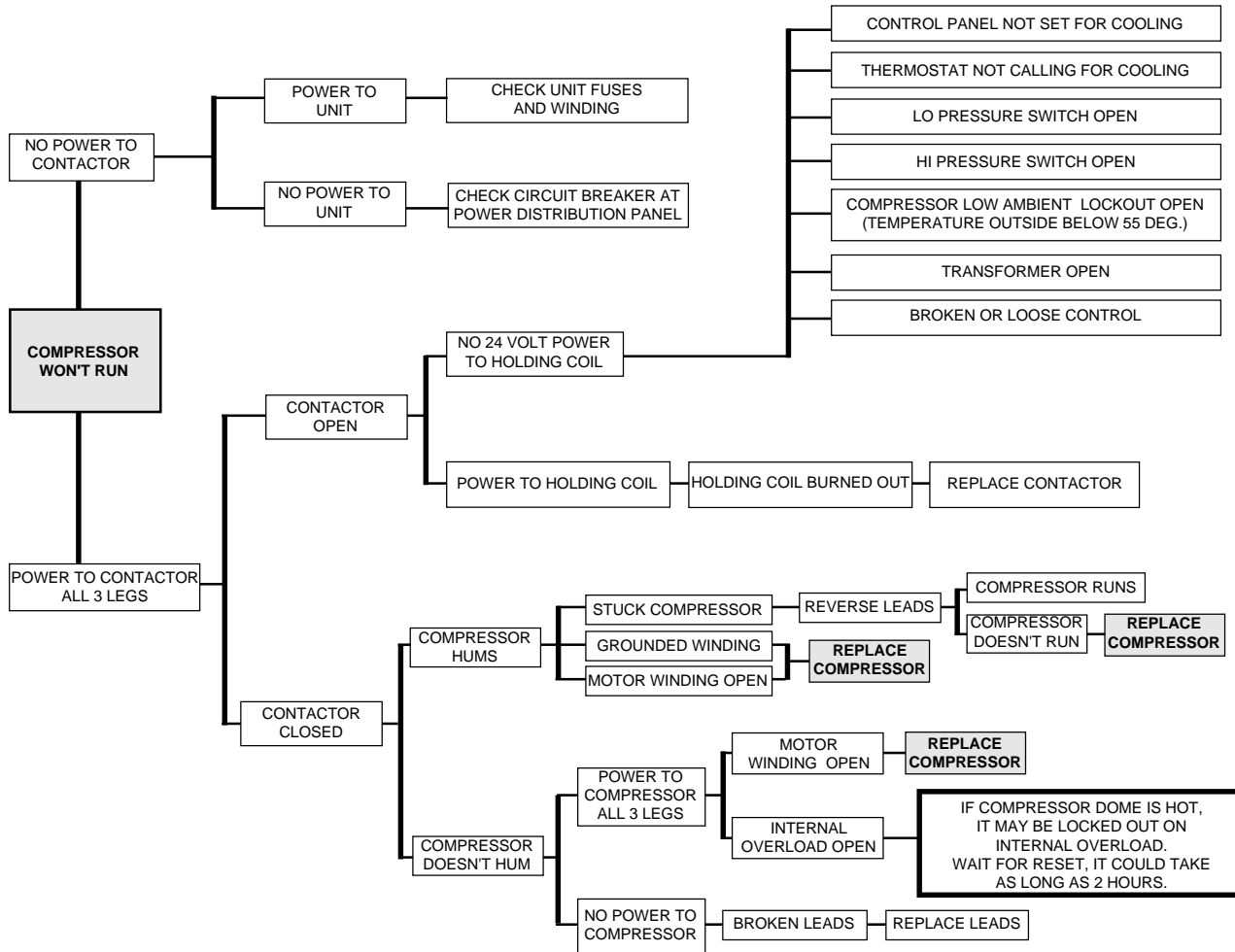
1. Blower running backwards.
2. Dirty air filters.
3. Dirty coils.
4. Duct obstruction.
5. Belts loose.

BLOWER COMES ON, BUT LITTLE OR NO HEAT

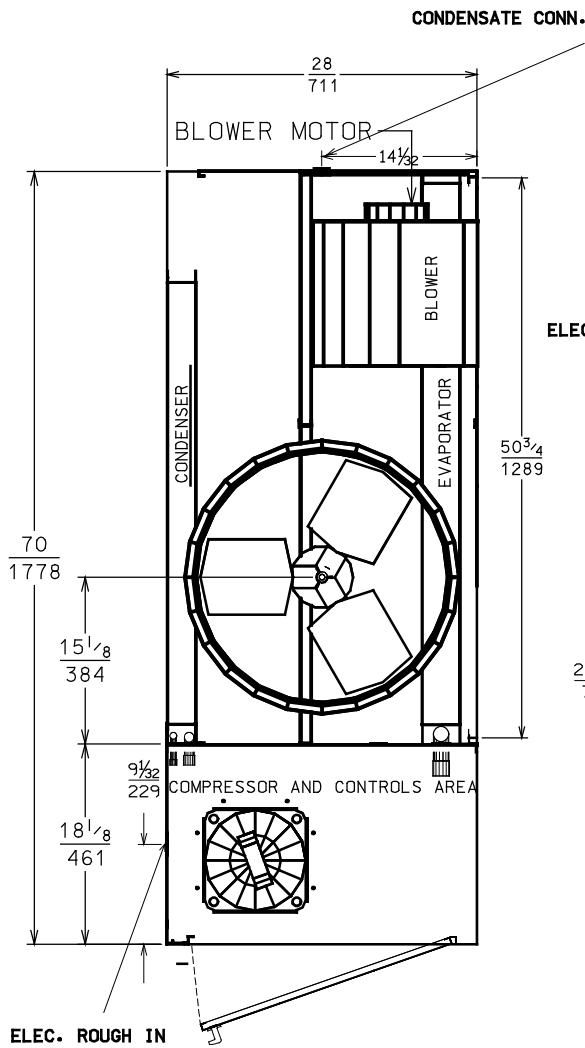
1. One or more heater contactors are open.
2. Limit switches are open.
3. Heater relay open.
4. Heat strips burned out.



# COMPRESSOR CHECKOUT PROCEDURE

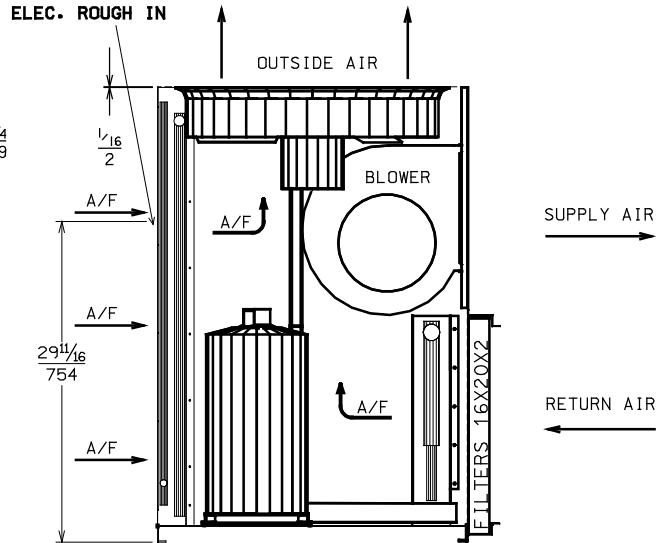




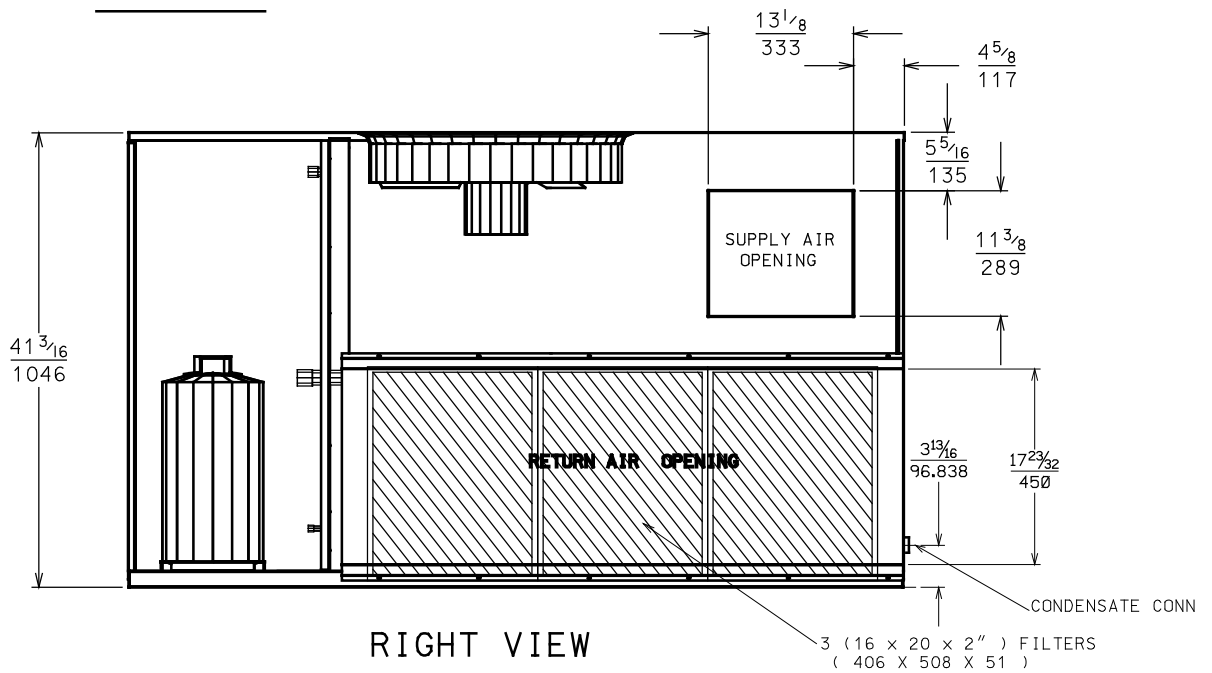


TOP VIEW

4-5 TON CLEARANCES	IN (mm)
FRONT (COMPRESSOR SIDE)	60 (1524)
BACK	48 (1219)
RIGHT SIDE (DUCT OPENING)	AS REQUIRED
LEFT (CONDENSER SIDE)	60 (1524)
TOP	UNOBSTRUCTED



FRONT VIEW



RIGHT VIEW

NOTES:

1. ALL DIMENSIONS ARE IN INCHES.  
MM
2. ALL DIMENSIONS ARE APPROXIMATE.

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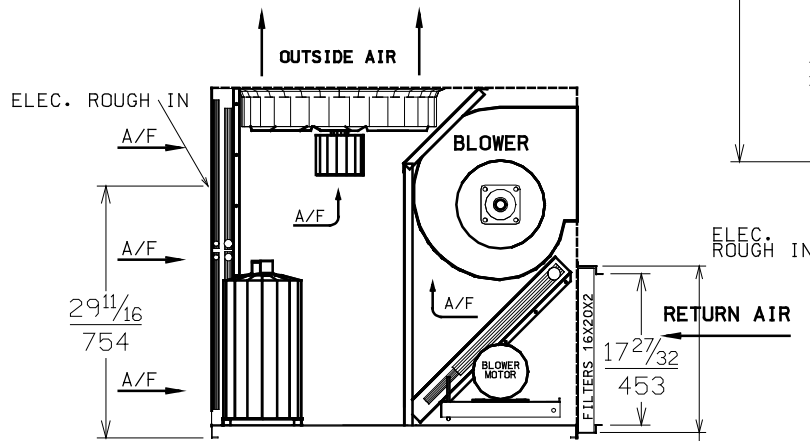
2425 S. YUKON

TULSA, OKLA.

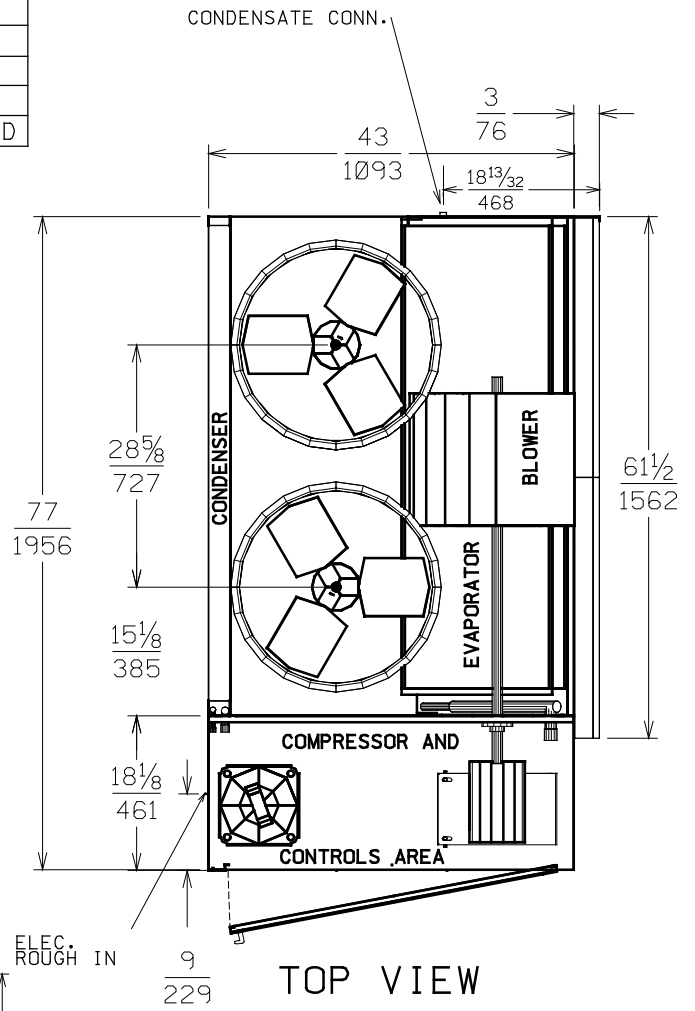
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7/27/98 CATALOG DRAWING HA 4 AND 5 TON

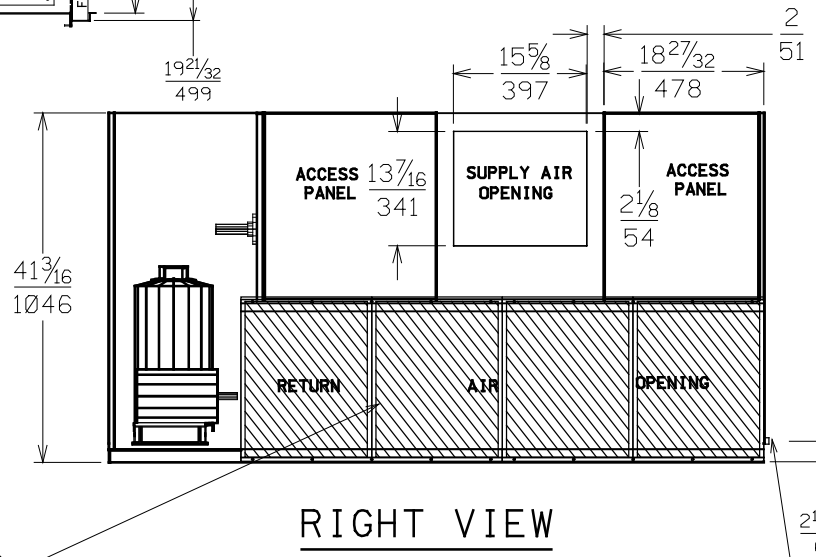
7-10 TON CLEARANCES	IN (mm)
FRONT (COMPRESSOR SIDE)	60 (1524)
BACK	48 (1219)
RIGHT SIDE (DUCT OPENING)	36 (914)
LEFT (CONDENSER SIDE)	60 (1524)
TOP	UNOBSTRUCTED



FRONT VIEW



TOP VIEW



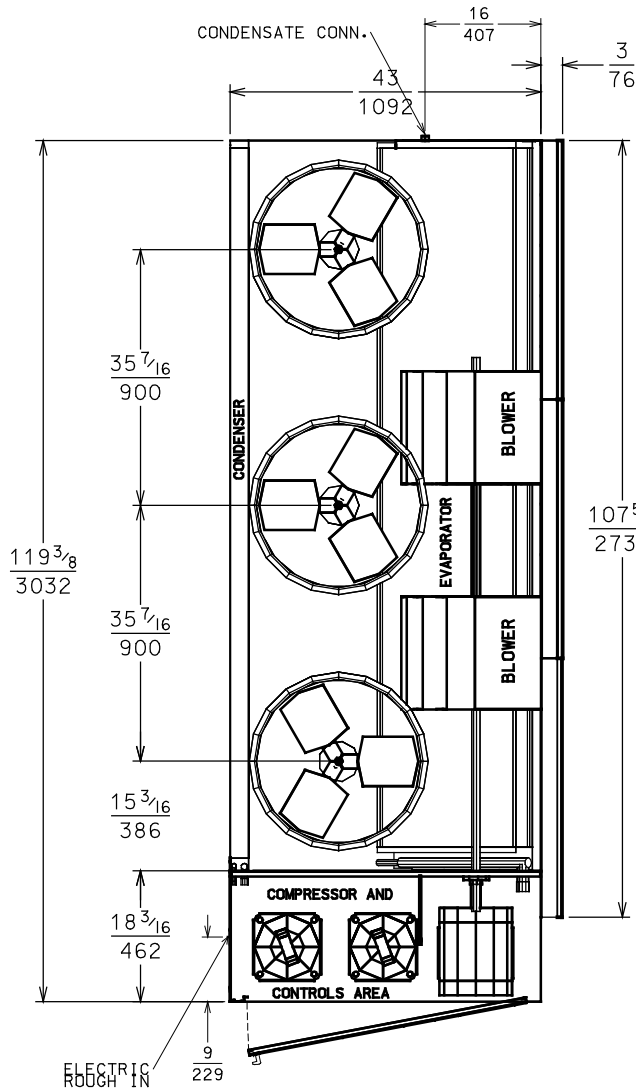
RIGHT VIEW

4 ( 16 x 20 x 2" ) FILTERS  
( 406 x 508 x 51 )

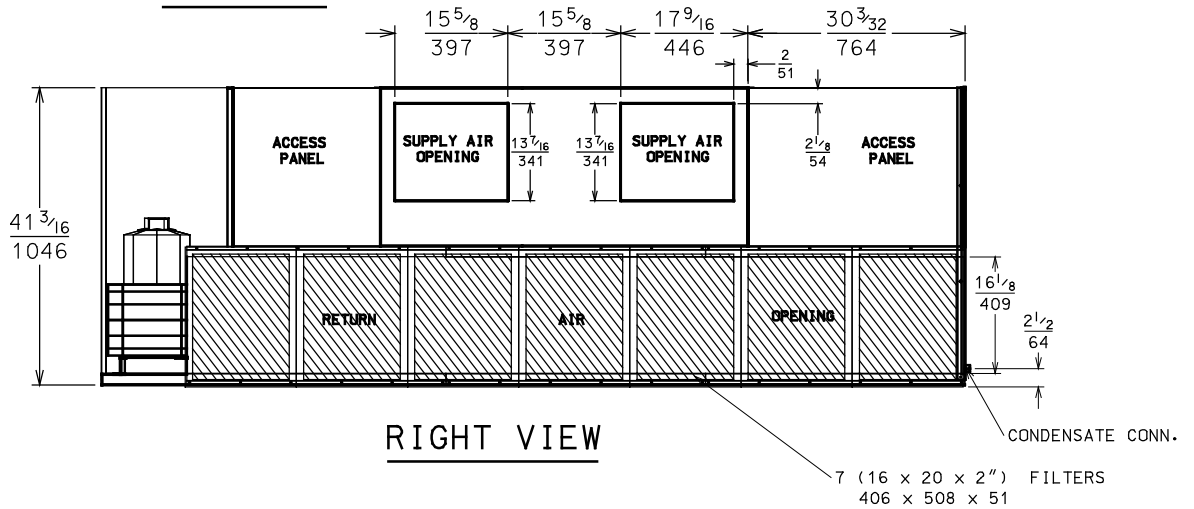
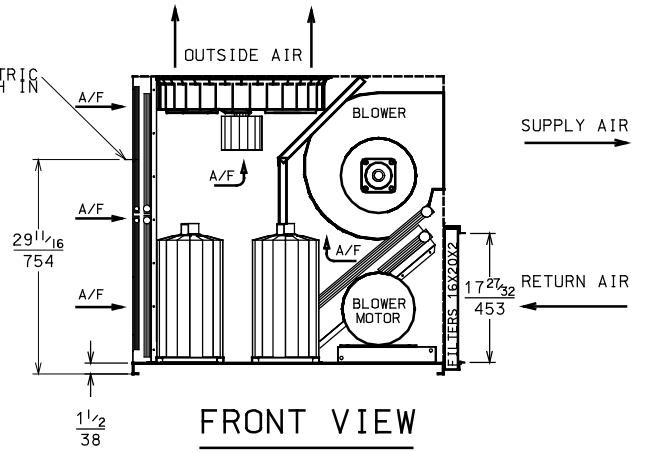
NOTES:

1. ALL DIMENSIONS ARE IN INCHES.  
MM
2. ALL DIMENSIONS ARE APPROXIMATE.

13-16 TON CLEARANCES	IN (mm)
FRONT (COMPRESSOR SIDE)	60 (1524)
BACK	48 (1219)
RIGHT SIDE (DUCT OPENING)	36 (914)
LEFT (CONDENSER SIDE)	60 (1524)
TOP	UNOBSTRUCTED



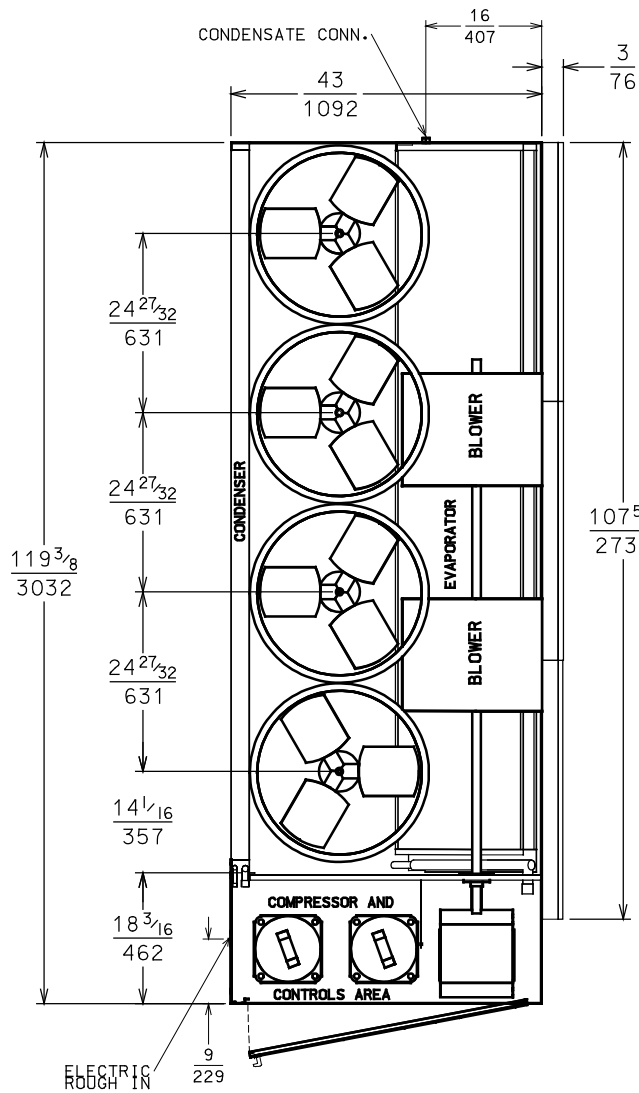
TOP VIEW



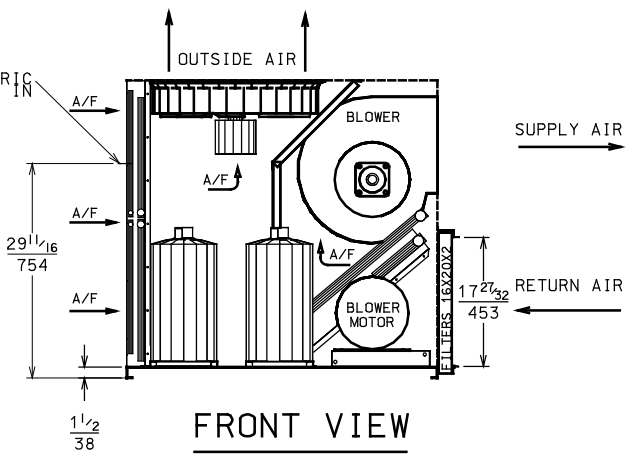
NOTES:

1. ALL DIMENSIONS ARE IN INCHES.  
MM
2. ALL DIMENSIONS ARE APPROXIMATE.

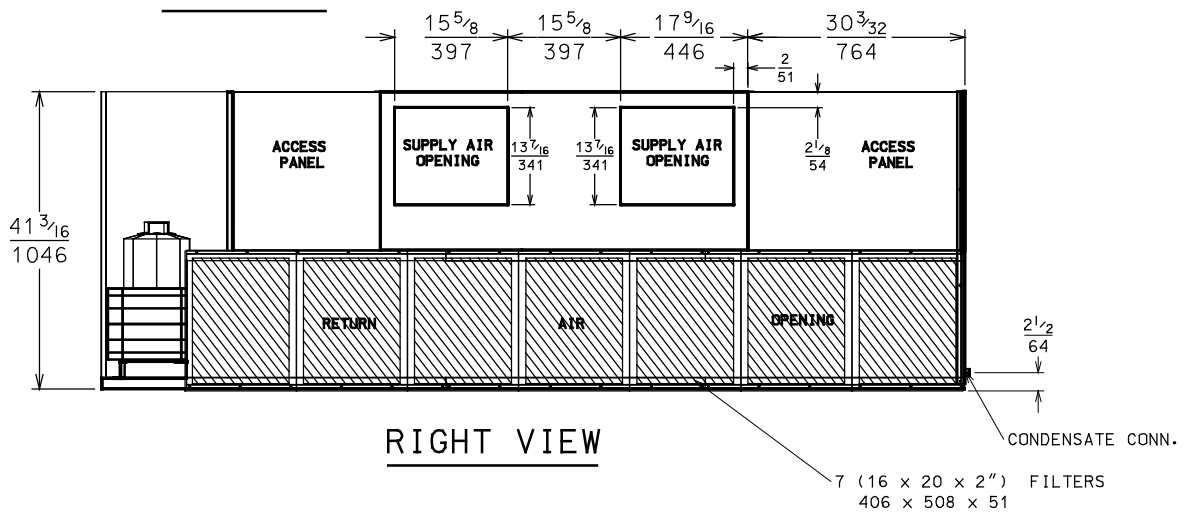
20/25 TON CLEARANCES	IN (mm)
FRONT (COMPRESSOR SIDE)	60 (1524)
BACK	48 (1219)
RIGHT SIDE (DUCT OPENING)	36 (914)
LEFT (CONDENSER SIDE)	60 (1524)
TOP	UNOBSTRUCTED



TOP VIEW



FRONT VIEW

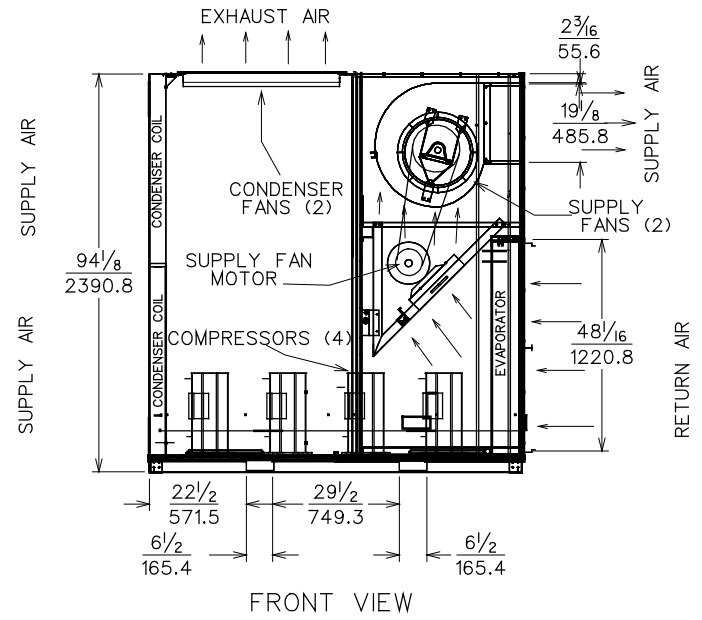
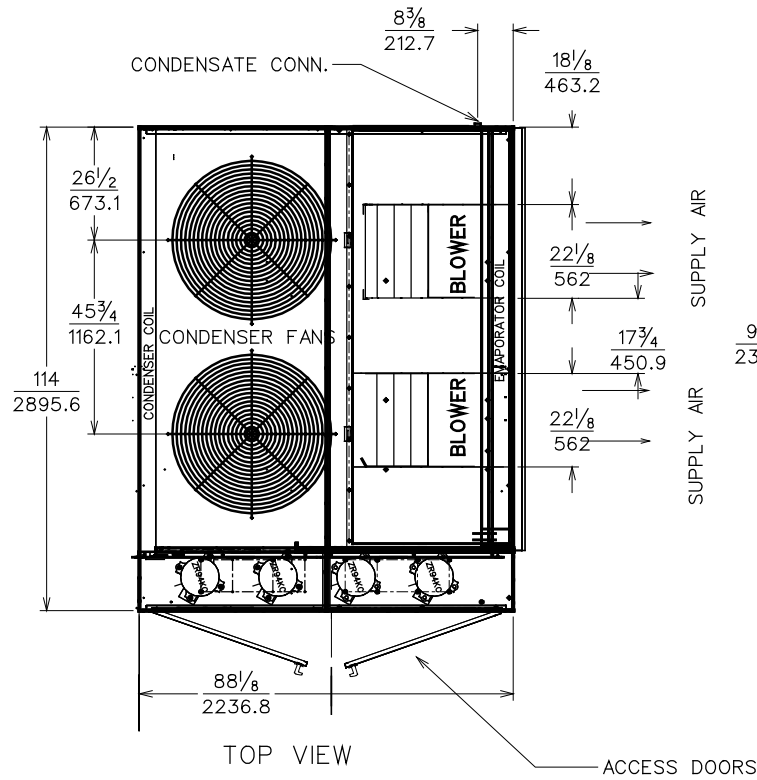


RIGHT VIEW

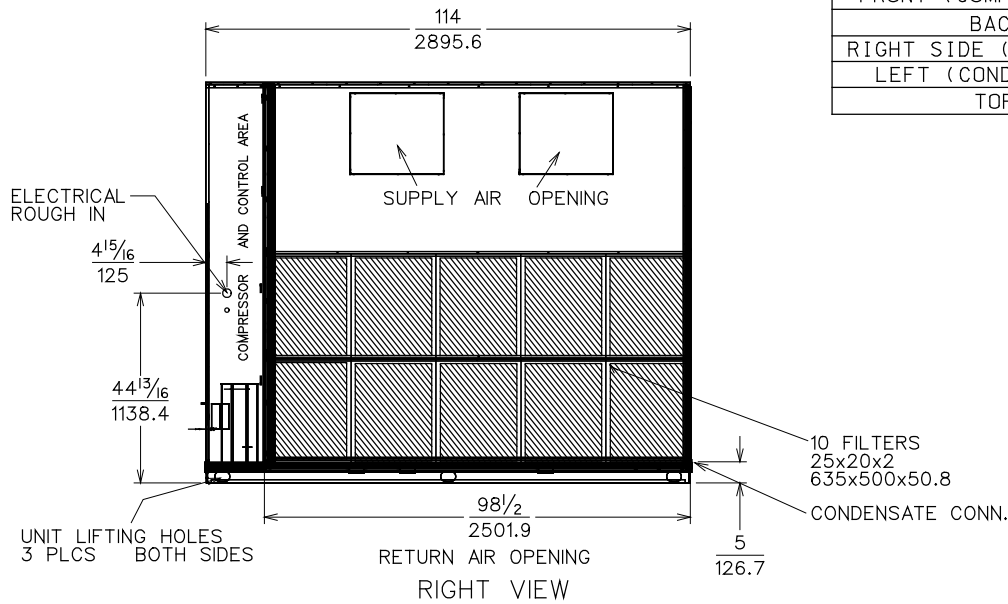
- NOTES:
1. ALL DIMENSIONS ARE IN INCHES.  
MM
  2. ALL DIMENSIONS ARE APPROXIMATE.
  3. FILTER DIMENSIONS (IN MM) ARE 406X508X51.  
20X16XX2"

date 2425 S. YUKON TULSA, OKLA.  
7/28/98 CATALOG DRAWING HA 20 & 25 TON

AAON, INC.



ELECTRICAL  
ROUGH IN



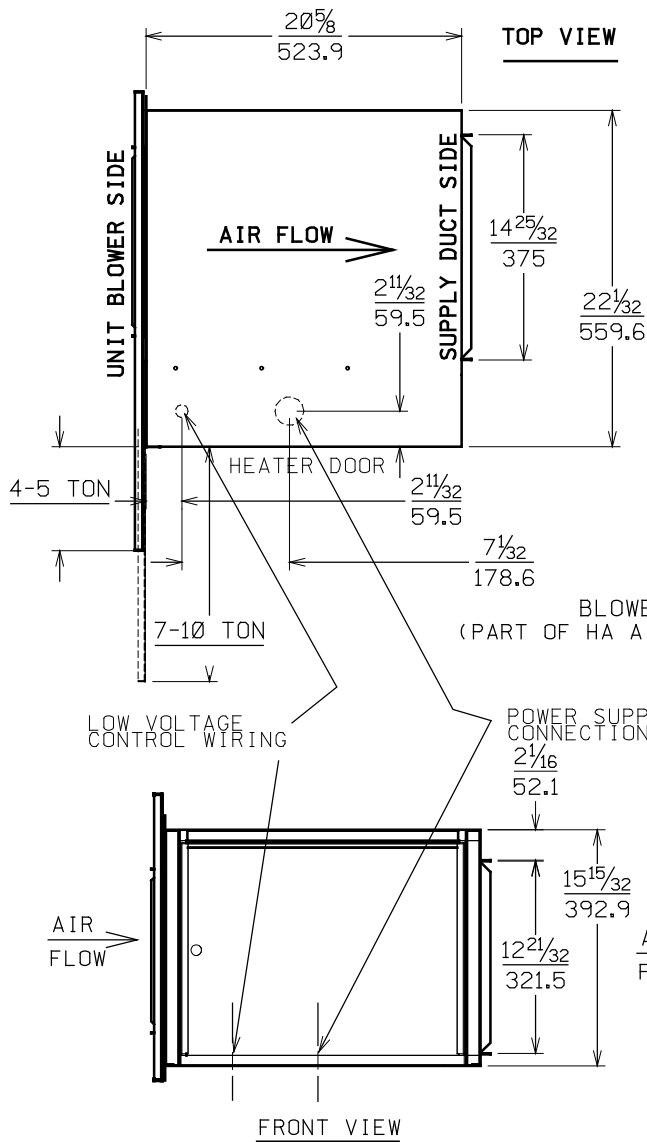
30/50 TON CLEARANCES	IN (mm)
FRONT (COMPRESSOR SIDE)	60 (1524)
BACK	60 (1524)
RIGHT SIDE (DUCT OPENING)	36 (914)
LEFT (CONDENSER SIDE)	60 (1524)
TOP	UNOBSTRUCTED

NOTES:

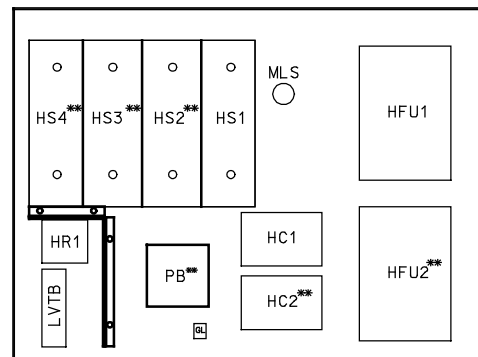
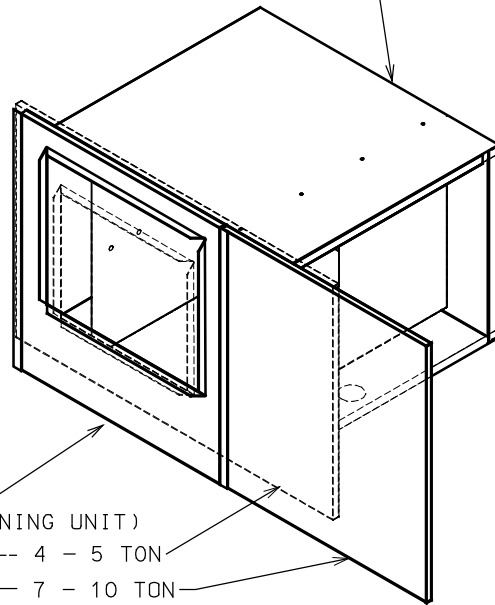
1. ALL DIMENSIONS ARE IN INCHES.  
MM
2. ALL DIMENSIONS ARE APPROXIMATE.

AAON, INC.

date 2425 S. YUKON TULSA, OKLA.  
7/28/98 CATALOG DRAWING HA 30 - 50 TON



ELECTRIC HEATER  
(DOOR NOT SHOWN FOR CLARITY)



**NOTES:**

1. WHEN ATTACHING HEATER TO THE A/C UNIT, ENSURE PROPER SEAL (USE SILICONE) BETWEEN BLOWER PANEL AND HEATER. USE SELF TAPPING SHEETMETAL SCREWS.
2. POSITION HEATER WITH THE DOOR FACING FRONT OF THE A/C UNIT.
3. ALL DIMENSIONS SHOWN ARE IN INCHES/MM.
4. ELECTRICAL POWER TO THE HEATER SHOULD BE BROUGHT IN THROUGH THE HOLES PROVIDED IN THE BOTTOM.
5. USE THE LARGER HOLE ON THE BOTTOM FOR MAIN (HIGH VOLTAGE) POWER, AND THE SMALLER HOLE FOR LOW VOLTAGE POWER.
6. FOR ABBREVIATIONS OF CONTROLS REFER TO THE CONTROL LEGEND.
7. RUN WIRE FROM 'G' OF CONTROLLER (THERMOSTAT) TO 'GI' OF HEATER.
8. RUN WIRE FROM 'GO' OF HEATER TO 'G' OF A/C UNIT.
9. RUN WIRE FROM 'W1' OF CONTROLLER TO 'W1' OF HEATER.
10. RUN WIRES FROM 'R & 'E' FROM A/C UNIT TO 'R' & 'E' ON THE HEATER.

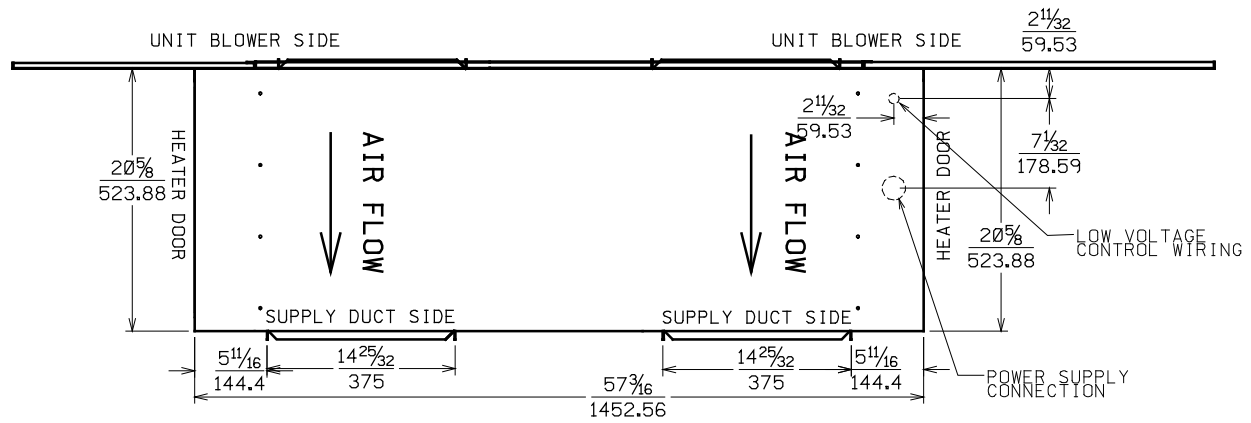
**CONTROLS LAYOUT**

**LEGEND**

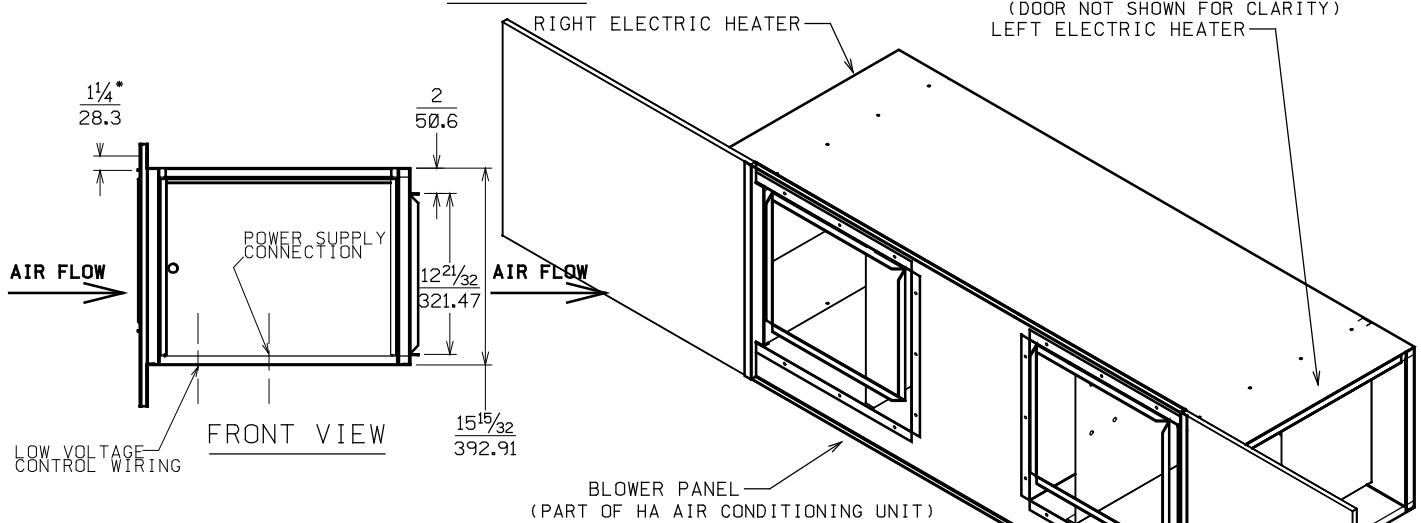
- LVTB - LOW VOLTAGE TERMINAL BLOCK
- PB - POWER BLOCK
- HR1 - HEAT RELAY
- HS\* - HEAT STRIP
- HC\* - HEATER CONTACTOR
- HFU\* - HEAT FUSE
- GL - GROUNDING LUG
- MLS - MAIN LIMIT SWITCH
- \*\* - OPTIONAL

drawn by: ECR	<b>AAON, INC.</b>		
	2425 S. YUKON	TULSA, OKLA.	
checked by:	TYPICAL		
	HEATER ASSEMBLY INSTRUCTIONS		
	HA 4-10 TON SINGLE BLOWER UNITS		
approved by:	date	DWG. No.	REV.
	08/11/98	D190318-001	NEW





TOP VIEW



$\frac{1}{4}^*$   
28.3

$\frac{2}{50.6}$

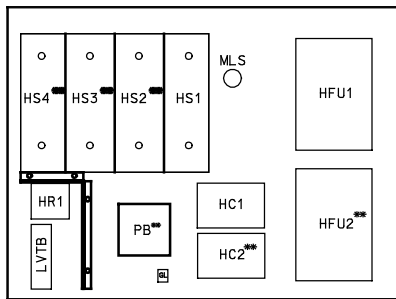
AIR FLOW

AIR FLOW

FRONT VIEW

LOW VOLTAGE CONTROL WIRING

BLOWER PANEL  
(PART OF HA AIR CONDITIONING UNIT)



CONTROLS LAYOUT

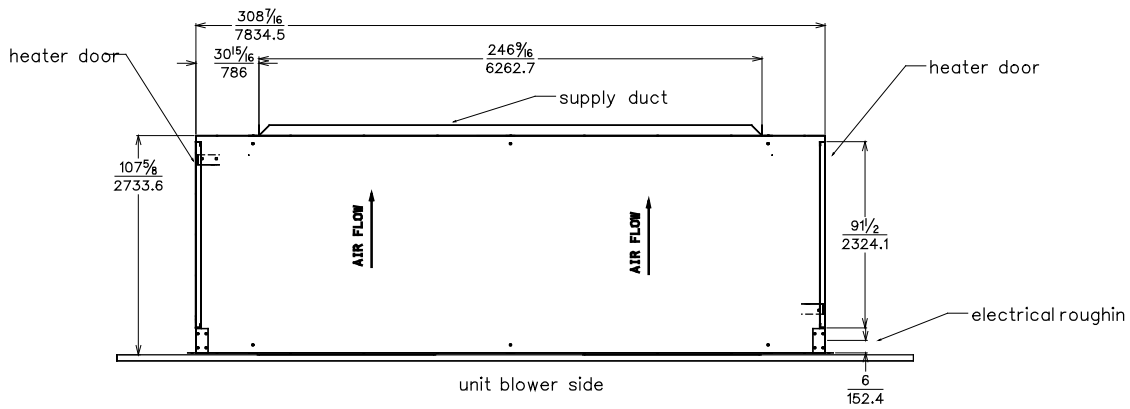
LEGEND

- LVTB - LOW VOLTAGE TERMINAL BLOCK
- PB - POWER BLOCK
- HR1 - HEAT RELAY
- HS\* - HEAT STRIP
- HC\* - HEATER CONTACTOR
- HFU\* - HEAT FUZE
- MLS - MAIN LIMIT SWITCH
- GL - GROUNDING LUG
- \*\* - OPTIONAL

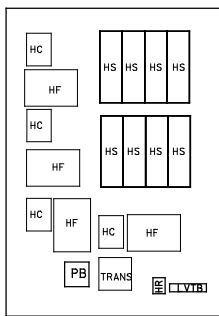
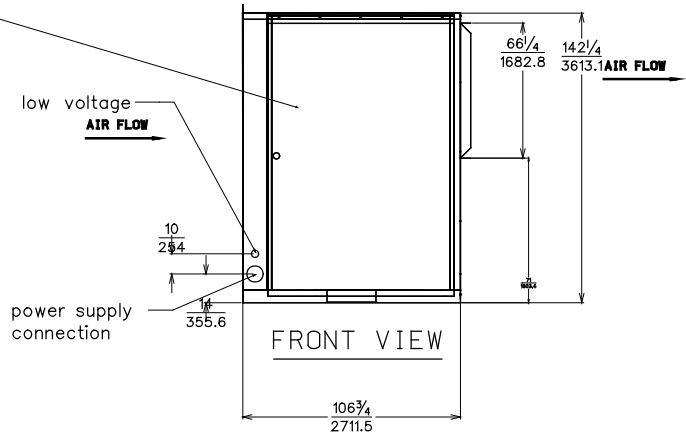
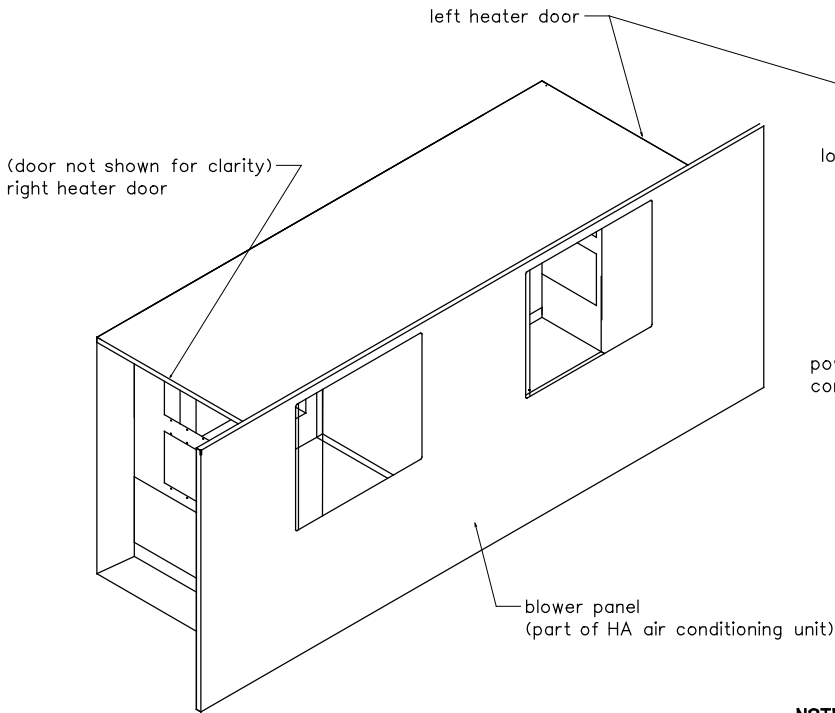
NOTES:

1. WHEN ATTACHING HEATER TO THE A/C UNIT, ENSURE PROPER SEAL (USE SILICONE) BETWEEN BLOWER PANEL AND HEATER. USE SELF TAPPING SHEETMETAL SCREWS.
2. POSITION THE LEFT HEATER WITH THE DOOR FACING FRONT OF THE A/C UNIT, AND THE RIGHT HEATER DOOR FACING REAR OF THE A/C UNIT.
3. ALL DIMENSIONS SHOWN ARE IN INCHES.
4. ELECTRICAL POWER TO THE HEATER SHOULD BE BROUGHT IN THROUGH THE HOLES PROVIDED IN THE BOTTOM.
5. USE THE LARGER HOLE ON THE BOTTOM FOR MAIN (HIGH VOLTAGE) POWER, AND THE SMALLER HOLE FOR LOW VOLTAGE POWER.
6. FOR ABBREVIATIONS OF CONTROLS REFER TO THE CONTROL LEGEND.
7. RUN WIRE FROM 'G' OF CONTROLLER (THERMOSTAT) TO 'GI' OF HEATER.
8. RUN WIRE FROM 'GO' OF HEATER TO 'G' OF A/C UNIT.
9. RUN WIRE FROM 'W1' OF CONTROLLER TO 'W1' OF HEATER.
10. RUN WIRES FROM 'R' & 'E' FROM A/C UNIT TO 'R' & 'E' ON THE HEATER.

drawn by: ECR	<b>AAON, INC.</b>		
checked by:	2425 S. YUKON	TULSA, OKLA.	
	TYPICAL		
	HEATER ASSEMBLY INSTRUCTIONS		
	HA 13-25 TON DOUBLE BLOWER UNITS		
approved by:	date	DWG. No.	REV.
	8/98	D190319-001	NEW



TOP VIEW



CONTROLS LAYOUT

LEGEND

- LVTB - LOW VOLTAGE TERMINAL BLOCK
- PB - POWER BLOCK
- HR - HEAT RELAY
- HS - HEAT STRIP
- HC - HEATER CONTACTOR
- HF - HEAT FUSE
- TRANS - TRANSFORMER

**NOTES:**

1. WHEN ATTACHING HEATER TO THE A/C UNIT, ENSURE PROPER SEAL (USE SILICONE) BETWEEN BLOWER PANEL AND HEATER. USE SELF TAPPING SHEETMETAL SCREWS.
2. POSITION THE LEFT HEATER WITH THE DOOR FACING FRONT OF THE A/C UNIT, AND THE RIGHT HEATER DOOR FACING REAR OF THE A/C UNIT.
3. ALL DIMENSIONS SHOWN ARE IN INCHES/MM.
4. ELECTRICAL POWER TO THE HEATER SHOULD BE BROUGHT IN THROUGH THE HOLES PROVIDED IN THE SIDE.
5. USE THE LOWER, LARGER HOLE FOR MAIN (HIGH VOLTAGE) POWER, AND THE SMALLER HOLE FOR LOW VOLTAGE POWER.
6. FOR ABBREVIATIONS OF CONTROLS REFER TO THE CONTROL LEGEND.
7. RUN WIRE FROM 'G' OF CONTROLLER (THERMOSTAT) TO 'GI' OF HEATER.
8. RUN WIRE FROM 'GO' OF HEATER TO 'G' OF A/C UNIT.
9. RUN WIRE FROM 'W1' OF CONTROLLER TO 'W1' OF HEATER.
10. RUN WIRES FROM 'R' & 'E' FROM A/C UNIT TO 'R' & 'E' ON THE HEATER.

drawn by: ECR	<b>AAON, INC.</b>		
checked by:	TYPICAL		
approved by:	HEATER ASSEMBLY INSTRUCTIONS HA 30-50 TON DOUBLE BLOWER UNITS		
date 8/98	DWG. No. D190320-001	REV. NEW	

**AAON<sup>®</sup>**  
**HA COOLING UNITS**



**USERS  
INFORMATION  
MANUAL**

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