

# **INSTALLATION INSTRUCTIONS**

## **WALL MOUNTED PACKAGE AIR CONDITIONERS**

### **MODELS**

**WL421**

**WL482**

**WL602**

**MANUAL: 2100-277A  
SUPERSEDES: 2200-277  
FILE: Vol. III, Tab 16  
DATE: 09-24-96**

## SECTION 1 --GETTING OTHER INFORMATION AND PUBLICATIONS

These publications can help you install the air conditioner or heat pump. You can usually find these at your local library or purchase them directly from the publisher. Be sure to consult current edition of each standard.

National Electrical Code	-ANSI/NFPA 70
Standard For The Installation Of Air Conditioning and Ventilating Systems	-ANSI/NFPA 90A
Standard For Warm Air Heating and Air Conditioning Systems	-ANSI/NFPA 90B
Load Calculation For Residential Winter and Summer Air Conditioning	-ACCA Manual J
Duct Design For Residential Winter and Summer Air Conditioning and Equipment Selection	-ACCA Manual D

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### FOR MORE INFORMATION, CONTACT THESE PUBLISHERS

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ANSI:	AMERICAN NATIONAL STANDARDS INSTITUTE 11 West Street, 13th Floor New York, NY 10036 Telephone: (212) 642-4900	Fax: (212) 302-1286
ASHRAE:	AMERICAN SOCIETY OF HEATING REFRIGERATING AND AIR CONDITIONING ENGINEERS, INCORPORATED 1791 Tullie Circle, N.E. Atlanta, GA 30329-2305 Telephone: (404) 636-8400	Fax: (404) 321-5478
NFPA:	NATIONAL FIRE PROTECTION ASSOCIATION Batterymarch Park P. O. Box 9101 Quincy, MA 02269-9901 Telephone: (800) 344-3555	Fax: (617) 984-7057

Manufactured under the following U.S. patent numbers:  
5,301,744; 5,002,116; 4,924,934; 4,875,520; 4,825,936; 4,432,409.  
Other patents pending.

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BRYAN, OH 43506 USA

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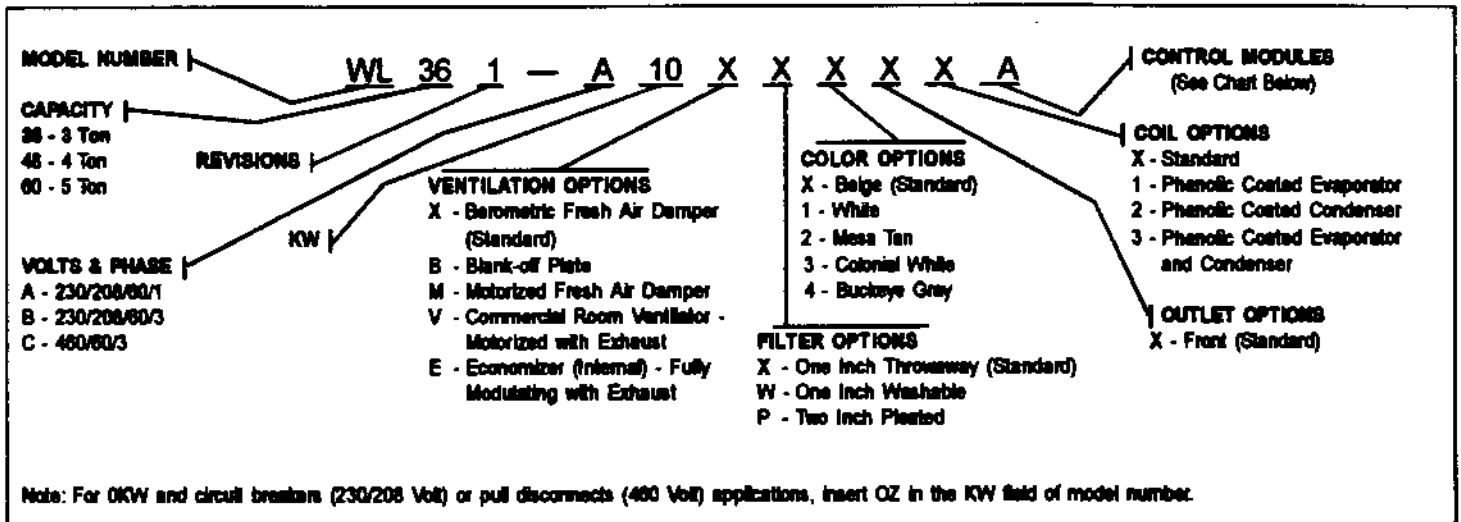
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**PART 1 -- WALL MOUNT GENERAL INFORMATION**

**AIR CONDITIONER WALL MOUNT MODEL NOMENCLATURE**



**TABLE 1 ELECTRIC HEAT TABLE**

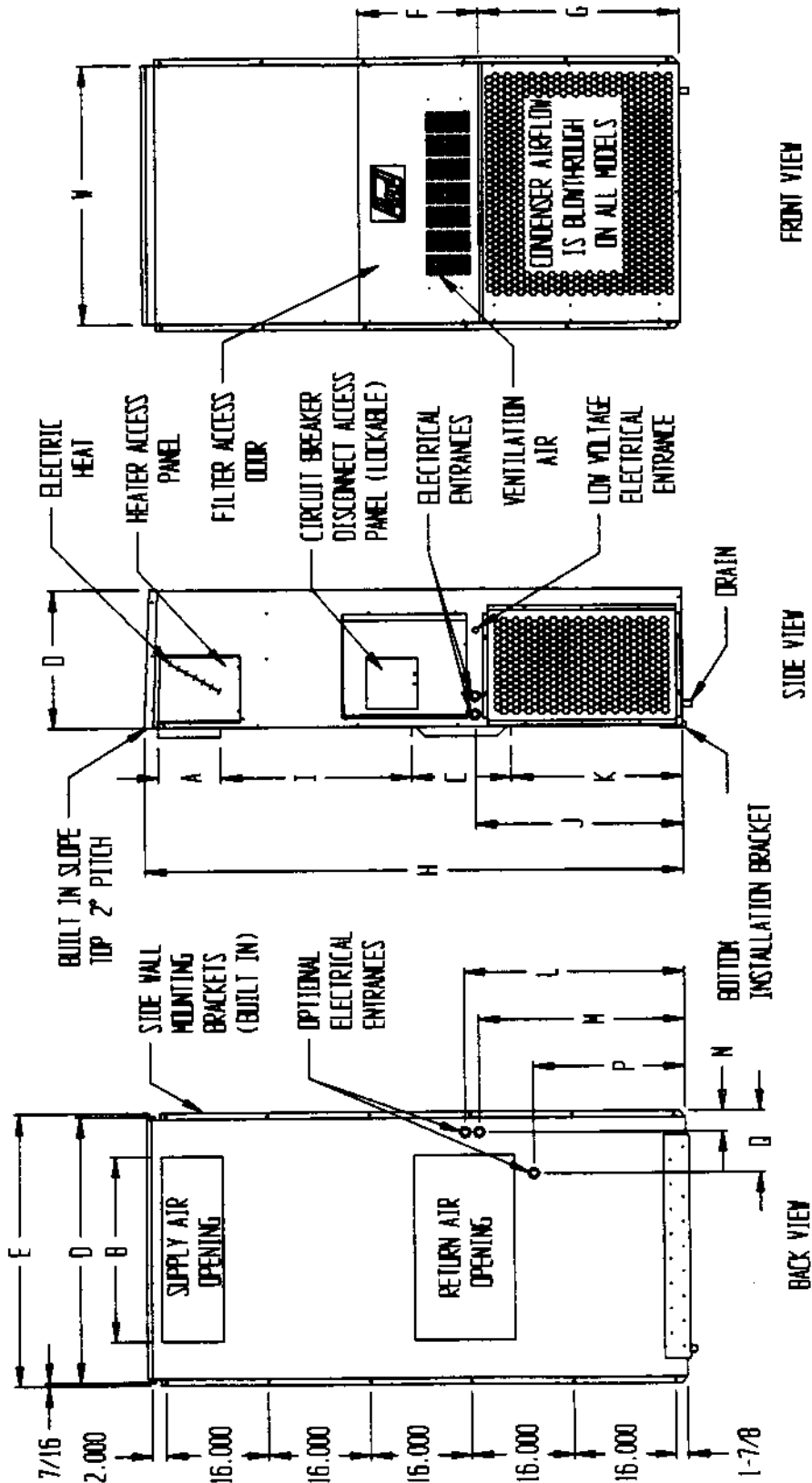
Models	WL421-A		WL482-A		WL602-A		WL421-B		WL482-B		WL602-B		WL421-C		WL482-C		WL602-C		
	240-1		208-1		240-3		208-3		460-3										
	KW	A	BTU	A	BTU	A	BTU	A	BTU	A	BTU	A	BTU	A	BTU	A	BTU	A	BTU
5	20.8	17050	18.1	12800															
9					21.7	30600	18.7	23030	10.8	30700									
10	41.6	34130	36.2	25600															
15	62.5	51200	54.1	38400	36.2	51200	31.2	38400	17.3	47000									

**SHIPPING DAMAGE**

Upon receipt of equipment, the carton should be checked for external signs of shipping damage. If damage is found, the receiving party must contact the last carrier immediately, preferably in writing, requesting inspection by the carrier's agent.

FIGURE 1  
UNIT DIMENSIONS

UNIT	WIDTH (W)	DEPTH (D)	HEIGHT (H)	SUPPLY			RETURN		E	F	G	I	J	K	L	M	N	O	P	D
				A	B	C	B													
42 & 60	42	22-1/4	84-7/8	9-7/8	29-7/8	15-7/8	29-7/8	43-7/8	19	31-5/8	30	32-11/16	27	34-3/4	32-1/2	3-1/4	43	23-7/8	10	



ELECTRICAL SPECIFICATIONS

TABLE 2

SINGLE CIRCUIT							DUAL CIRCUIT							
Model	Rated Volts and Phase	No. Field Power Ckts.	(3) Minimum Circuit Ampacity	(1) Maximum External Fuse Or Circuit Breaker	(2) Field Power Wire Size	(2) Ground Wire Size	(3) Minimum Circuit Ampacity		(1) Maximum External Fuse Or Ckt. Breaker		(2) Field Power Wire Size		(2) Ground Wire Size	
							Ckt A	Ckt B	Ckt A	Ckt B	Ckt A	Ckt B	Ckt A	Ckt B
WL421-A0Z	230/208-1	1	33	50	8	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A05		1	33	50	8	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A10		1	59	60	6	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A15		1 or 2	85	90	4	8	56	26	60	30	6	10	10	10
WL421-B0Z	230/208-3	1	24	35	8	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B09		1	34	35	8	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B15		1	52	50	6	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
WL421-C0Z	460-3	1	12	15	14	14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C09		1	17	20	12	12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C15		1	26	30	10	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
WL482-A0Z	230/208-1	1	38	50	8	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A05		1	38	50	8	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A10		1	59	60	6	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A15		1 or 2	85	90	4	8	59	26	60	30	6	10	10	10
WL482-B0Z	230/208-3	1	26	35	8	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B09		1	34	35	8	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B15		1	52	60	6	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
WL482-C0Z	460-3	1	13	15	14	14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C09		1	17	20	12	12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C15		1	26	30	10	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
WL602-A0Z	230/208-1	1	44	60	8	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A05		1	44	60	8	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A10		1	55	60	6	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A15		1 or 2	85	90	4	8	59	26	60	30	6	10	10	10
WL602-B0Z	230/208-3	1	32	45	8	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B09		1	34	45	8	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B15		1	52	60	6	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
WL602-C0Z	460-3	1	16	20	12	12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C09		1	17	20	12	12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C15		1	26	30	10	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

- (1) Maximum size of the time delay fuse or HACR type circuit breaker for protection of field wiring conductors.
- (2) Based on 75°C copper wire. All wiring must conform to NEC and all local codes.
- (3) These "Minimum Circuit Ampacity" values are to be used for sizing the field power conductors. Refer to the National Electric Code (latest revision), article 310 for power conductor sizing. Caution: When more than one field power conductor circuit is run thru one conduit, the conductors must be derated. Pay special attention to note 8 of Table 310 regarding Ampacity Adjustment Factors when more than 3 conductors are in a raceway.

## GENERAL

The equipment covered in this manual is to be installed by trained, experienced service and installation technicians.

The refrigerant system is completely assembled and charged. All internal wiring is complete.

The unit is designed for use with or without duct work. Flanges are provided for attaching the supply and return ducts.

These instructions explain the recommended method to install the air cooled self-contained unit and the electrical wiring connections to the unit.

These instructions and any instructions packaged with any separate equipment required to make up the entire air conditioning system should be carefully read before beginning the installation. Note particularly "Starting Procedure" and any tags and/or labels attached to the equipment.

While these instructions are intended as a general recommended guide, they do not supersede any national and/or local codes in any way. Authorities having jurisdiction should be consulted before the installation is made. See Page 1 for information on codes and standards.

Size of unit for a proposed installation should be based on heat loss calculation made according to methods of Air Conditioning Contractors of America (ACCA). The air duct should be installed in accordance with the Standards of the National Fire Protection Association for the Installation of Air Conditioning and Ventilating Systems of Other Than Residence Type, NFPA No. 90A, and Residence Type Warm Air Heating and Air Conditioning Systems, NFPA No. 90B. Where local regulations are at a variance with instructions, installer should adhere to local codes.

## DUCT WORK

Any heat pump is more critical of proper operating charge and an adequate duct system than a straight air conditioning unit. All duct work, supply and return, must be properly sized for the design air flow requirement of the equipment. Air Conditioning Contractors of America (ACCA) is an excellent guide to proper sizing. All duct work or portions thereof not in the conditioned space should be properly insulated in order to both conserve energy and prevent condensation or moisture damage.

Refer to Table 10 for maximum static pressure available for duct design.

Design the duct work according to methods given by the Air Conditioning Contractors of America (ACCA). When duct runs through unheated spaces, it should be insulated with a minimum of one inch of insulation. Use insulation with a vapor barrier on the outside of the insulation. Flexible joints should be used to connect the duct work to the equipment in order to keep the noise transmission to a minimum.

A 1/4-inch clearance to combustible material for the first three feet of duct attached to the outlet air frame is required. See Pages 6, 7, and 8 Wall Mounting Instructions and Figures 3 and 3A for further details.

Ducts through the walls must be insulated and all joints taped or sealed to prevent air or moisture entering the wall cavity.

**CAUTION:** Some installations may not require any return air duct. A metallic return air grille is required with installations not requiring a return air duct. The spacing between louvers on the grille shall not be larger than 5/8 inches.

Any grille that meets the 5/8 inch louver criteria, may be used. It is recommended that Bard Return Air Grille Kit RG2 thru RG5 or REG2 thru REG5 be installed when no return duct is used. Contact distributor or factory for ordering information. If using a return air filter grille, filters must be of sufficient size to allow a maximum velocity of 400 fpm.

**NOTE:** If no return air duct is used, applicable installation codes may limit this cabinet to installation only in a single story structure.



## FILTERS

A 1-inch throwaway filter is supplied with each unit. The filter slides into position making it easy to service. This filter can be serviced from the outside by removing the service door. A 1-inch washable filter and 2-inch pleated filter are also available as optional accessories. The internal filter brackets are adjustable to accommodate the 2-inch filter by loosening 2 screws in each bracket assembly and sliding the brackets apart to the required width and retightening the 4 screws.

## FRESH AIR INTAKE

All units are built with fresh air inlet slots punched in the service panel.

If equipped with the fresh air damper assembly, the assembly is shipped already attached to the unit. The damper blade is locked in the closed position. To allow the damper to operate, the maximum and minimum blade position stops must be installed. See Figure 2.

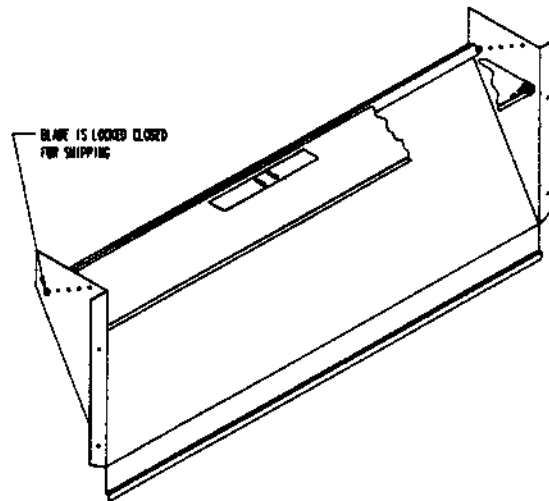
All capacity, efficiency and cost of operation information as required for Department of Energy "Energyguide" Fact Sheets is based upon the fresh air blank-off plate in place and is recommended for maximum energy efficiency.

The blank-off plate is available upon request from the factory and is installed in place of the fresh air damper shipped with each unit.

## CONDENSATE DRAIN

A plastic drain hose extends from the drain pan at the top of the unit down to the unit base. There are openings in the unit base for the drain hose to pass through. In the event the drain hose is connected to a drain system of some type, it must be an open or vented type system to assure proper drainage.

Figure 2



## PART 2 -- INSTALLATION INSTRUCTIONS

### **WALL MOUNTING INFORMATION**

1. Two holes, for the supply and return air openings, must be cut through the wall as shown in Figure 3.
2. On wood-frame walls, the wall construction must be strong and rigid enough to carry the weight of the unit without transmitting any unit vibration. **WARNING:** Fire hazard can result if 1/4-inch clearance to combustible materials for supply air duct is not maintained. See Figure 3.
3. Concrete block walls must be thoroughly inspected to insure that they are capable of carrying the weight of the installing unit.

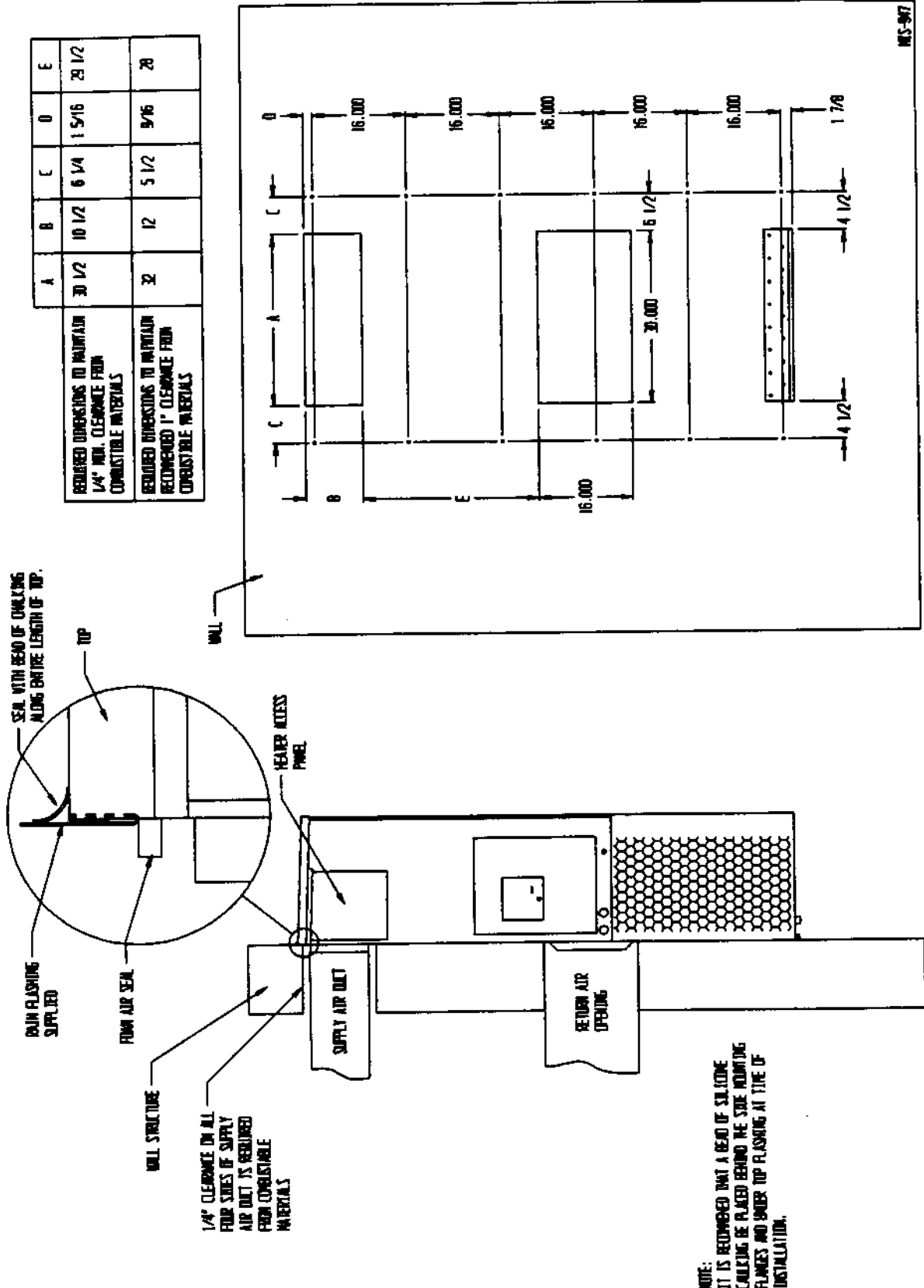
### **MOUNTING THE UNIT**

1. These units are secured by wall mounting brackets which secure the unit to the outside wall surface at both sides. A bottom mounting bracket is provided for ease of installation.
2. The unit itself is suitable for "0" inch clearance, but the supply air duct flange and the first 3 feet of supply air duct require a minimum of 1/4-inch clearance to combustible material. If a combustible wall, use a minimum of 30-1/2" x 10-1/2" dimensions for sizing. However, it is generally recommended that a 1-inch clearance is used for ease of installation and maintaining the required clearance to combustible material. The supply air opening would then be 32" x 12". See Figures 3 and 3A for details.

\*\*\*\*\*  
**WARNING:** Failure to provide the 1/4-inch clearance between the supply duct and a combustible surface for the first 3 feet of duct can result in fire.  
\*\*\*\*\*

3. Locate and mark lag bolt locations and bottom mounting bracket location. See Figure 3.
4. Mount bottom mounting bracket.
5. Hook top rain flashing under back bend of top. Top rain flashing is shipped secured to the right side of the back.
6. Position unit in opening and secure with 5/16 lag bolts; use 7/8-inch diameter flat washers on the lag bolts.
7. Secure rain flashing to wall and caulk across entire length of top. See Figure 3.
8. For additional mounting rigidity, the return air and supply air frames or collars can be drilled and screwed or welded to the structural wall itself (depending upon wall construction). Be sure to observe required clearance if combustible wall.
9. On side by side installations, maintain a minimum of 20-inches clearance on right side to allow access to heat strips and control panel and to allow proper airflow to the outdoor coil. Additional clearance may be required to meet local or national codes.

FIGURE 3  
MOUNTING INSTRUCTIONS

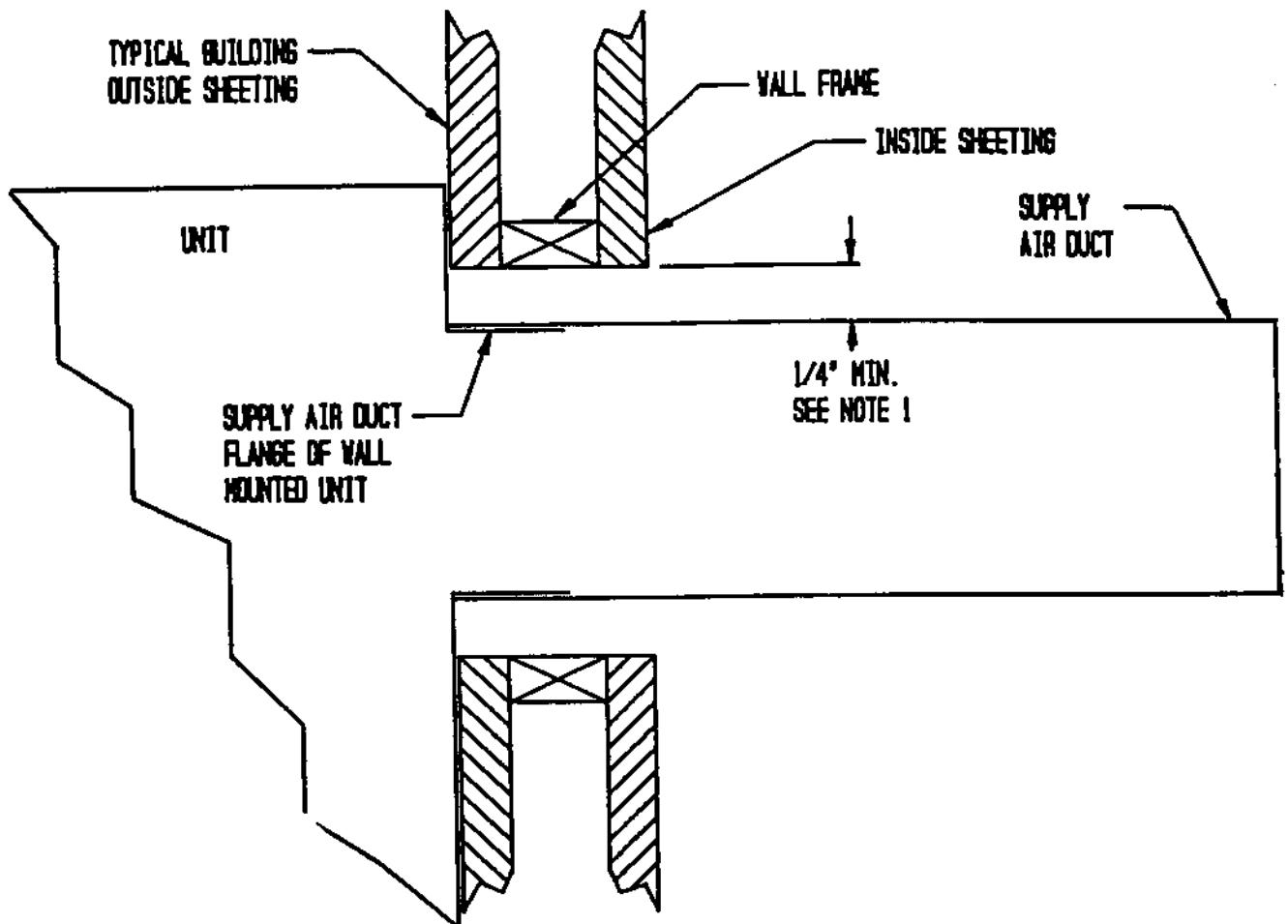


	A	B	C	D	E
REQUIRED DIMENSIONS TO MAINTAIN 1/4" MIN. CLEARANCE FROM COMBUSTIBLE MATERIALS	30 1/2	10 1/2	6 1/4	15 1/8	28 1/2
REQUIRED DIMENSIONS TO MAINTAIN RECOMMENDED 1" CLEARANCE FROM COMBUSTIBLE MATERIALS	32	12	5 1/2	9 1/8	28

NOTE:  
IT IS RECOMMENDED THAT A BEAD OF SILICONE CAULKING BE PLACED BEHIND THE SIDE MOUNTING FLANGES AND UNDER TOP FLASHING AT TIME OF INSTALLATION.

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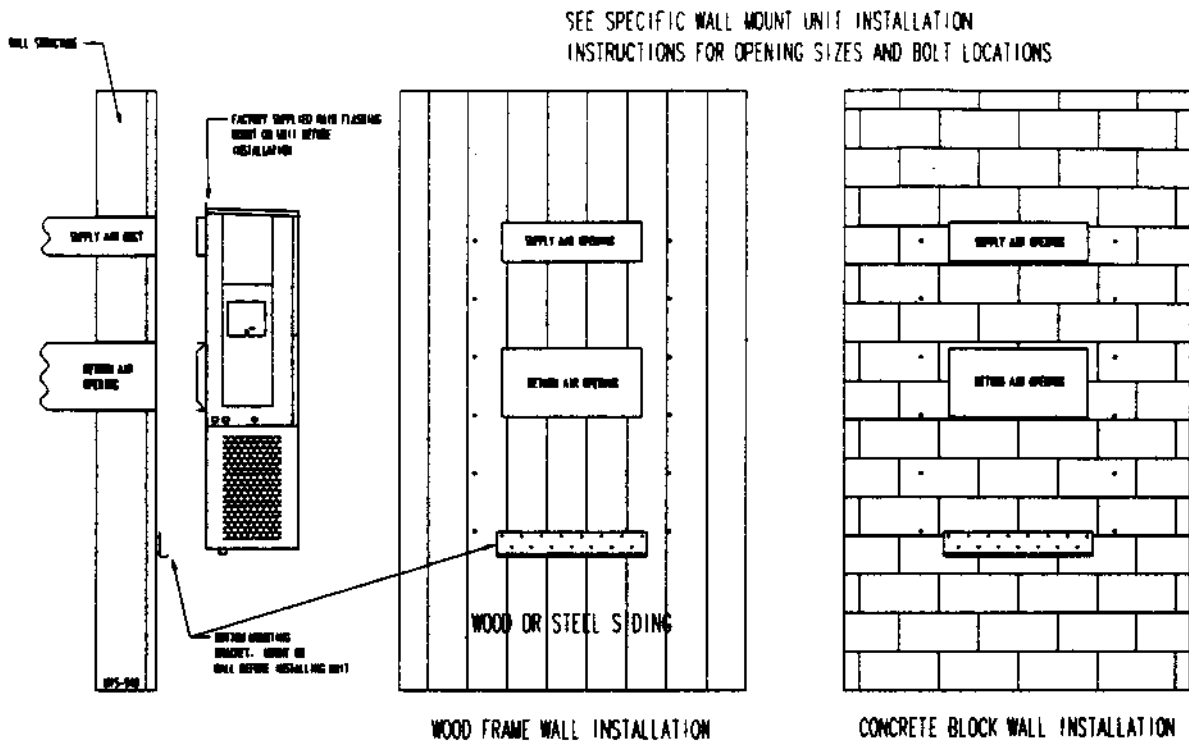
FIGURE 3A  
ELECTRIC HEAT CLEARANCE



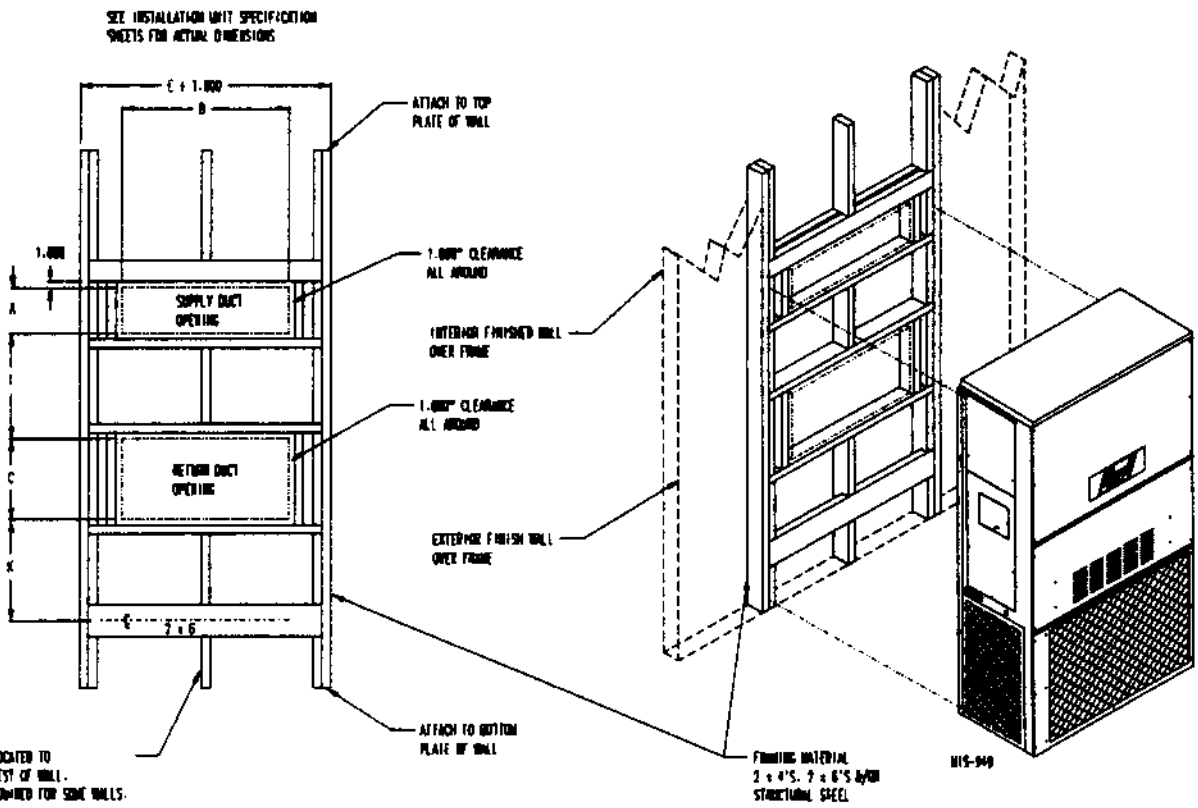
Side section view of supply air duct for wall mounted unit showing 1/4" clearance to combustible surfaces.

NOTE 1:

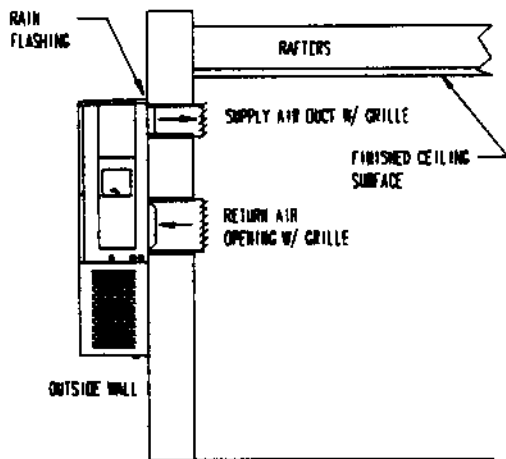
WARNING
A <u>minimum</u> of 1/4" clearance must be maintained between the supply air duct and combustible materials. This is required for the first 3 feet of ducting.
It is important to insure that the 1/4-inch minimum spacing is maintained at all points.
Failure to do this could result in overheating the combustible material and may result in a fire.



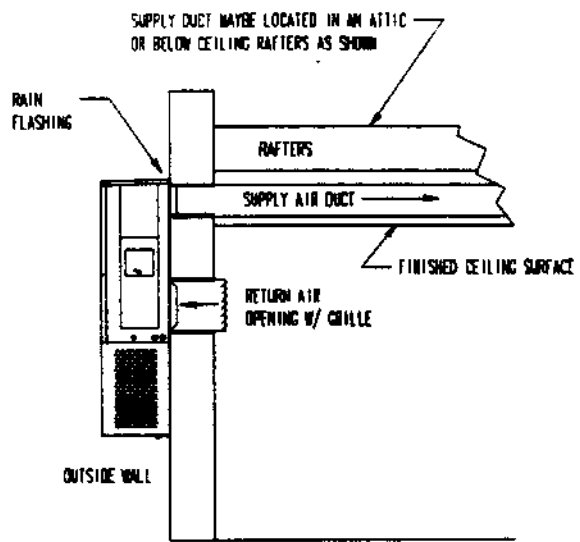
**Figure 4 - Wall-Mounting Instructions**



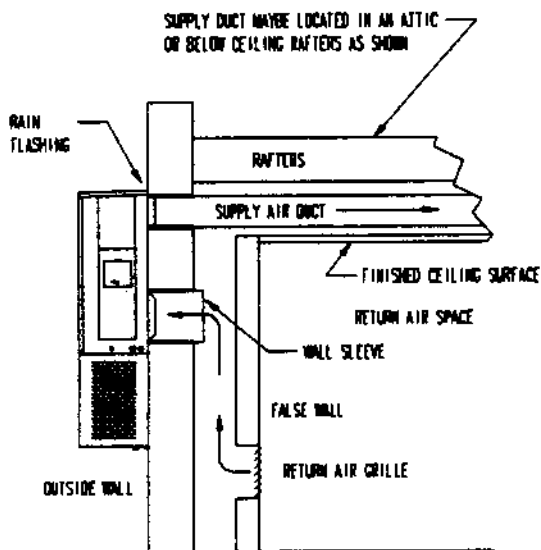
**Figure 6 - Wall-Mounting Instructions**



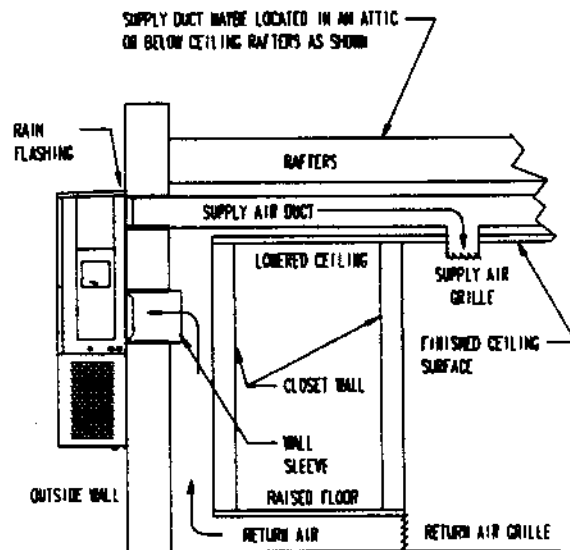
FREE AIR FLOW  
NO DUCT



DUCTED SUPPLY  
RETURN AT UNIT



FALSE WALL INSTALLATION



CLOSET INSTALLATION

**WIRING--MAIN POWER**

Refer to the unit rating plate for wire sizing information and maximum fuse or "HACR Type" circuit breaker size. Each outdoor unit is marked with a "Minimum Circuit Ampacity". This means that the field wiring used must be sized to carry that amount of current. Depending on the installed KW of electric heat, there may be two field power circuits required. If this is the case, the unit serial plate will so indicate. All models are suitable only for connection with copper wire. Each unit and/or wiring diagram will be marked "Use Copper Conductors Only". These instructions MUST BE adhered to. Refer to the National Electrical Code (NEC) for complete current carrying capacity data on the various insulation grades of wiring material. All wiring must conform to NEC and all local codes.

The electrical data lists fuse and wire sizes (75°C copper) for all models, including the most commonly used heater sizes. Also shown are the number of field power circuits required for the various models with heaters.

The unit rating plate lists a "Maximum Time Delay Relay Fuse" or "HACR Type" circuit breaker that is to be used with the equipment. The correct size must be used for proper circuit protection and also to assure that there will be no nuisance tripping due to the momentary high starting current of the compressor motor.

The disconnect access door on this unit may be locked to prevent unauthorized access to the disconnect. To convert for the locking capability, bend the tab located in the bottom left hand corner of the disconnect opening under the disconnect access panel straight out. This tab will now line up with the slot in the door. When shut, a padlock may be placed through the hole in the tab preventing entry.

See startup section for information on three phase scroll compressor startups.

**WIRING: LOW VOLTAGE WIRING**

230/208V, 1 phase and 3 phase equipment dual primary voltage transformers. All equipment leaves the factory wired on 240V tap. For 208V operation, reconnect from 240V to 208V tap. The acceptable operating voltage range for the 240 and 208V taps are:

TAP	RANGE
240	253 - 216
208	220 - 187

**NOTE:** The voltage should be measured at the field power connection point in the unit and while the unit is operating at full load (maximum amperage operating condition).

Five (5) wires should be run from thermostat subbase to the 24V terminal board in the unit. A five conductor, 18 gauge copper, color-coded thermostat cable is recommended. The connection points are shown in Figure 7.

**TABLE 3 THERMOSTAT WIRE SIZE**

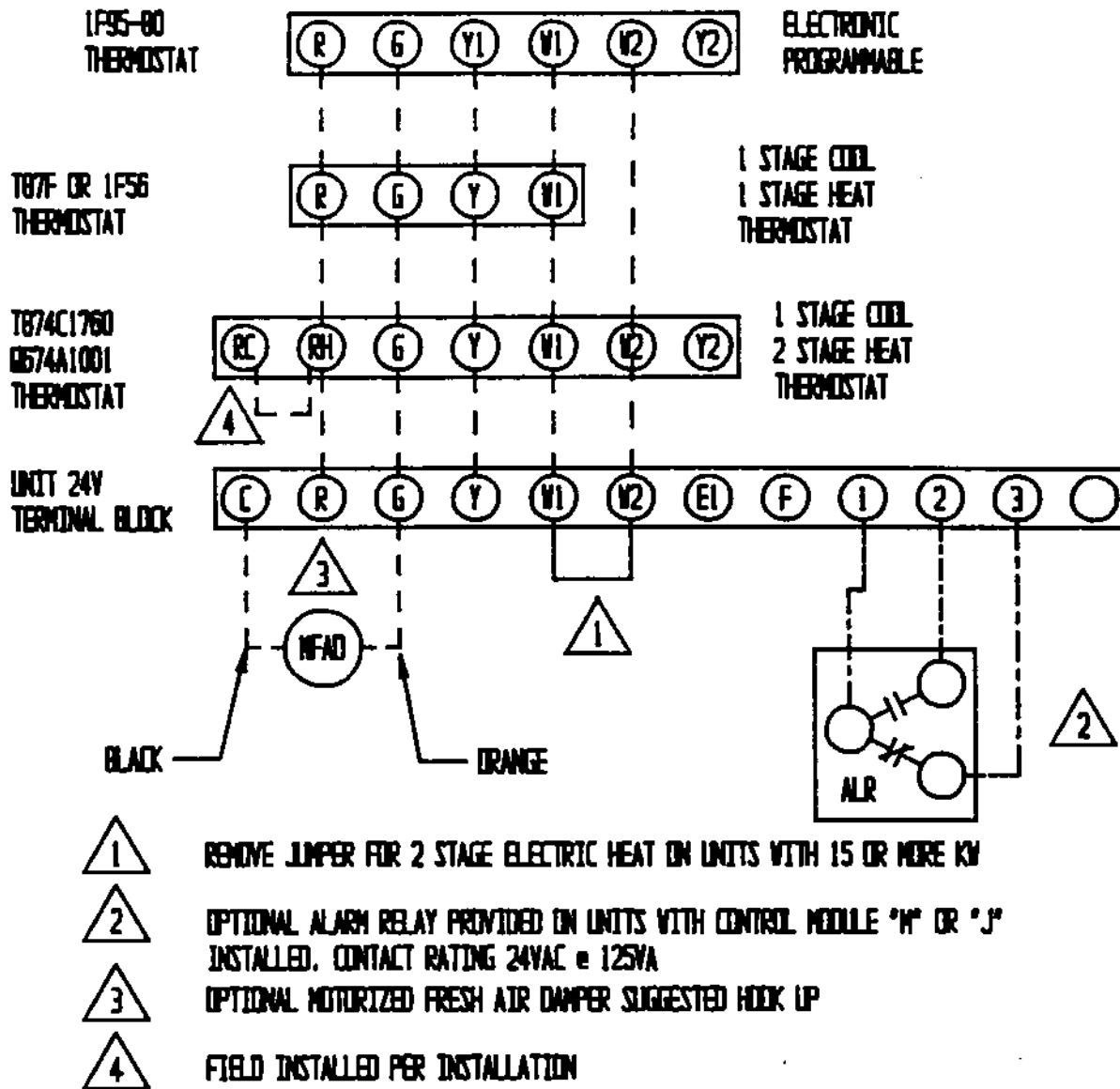
Transformer VA	FLA	Wire Gauge	Maximum Distance In Feet
55	2.3	20 Gauge	45
		18 "	60
		16 "	100
		14 "	160
		12 "	250

**TABLE 3A WALL THERMOSTAT AND SUBBASE COMBINATIONS**

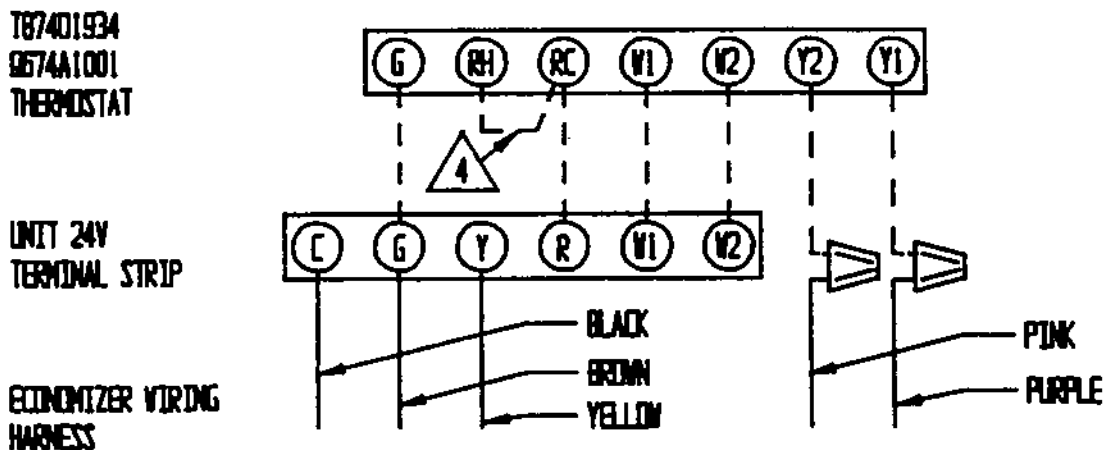
Thermostat	Subbase	Predominate Features
8403-019	8404-012	1 stage cool, 2 stage heat
T874C1760	Q674A1001	System: heat-auto-cool Fan: on-auto
8403-002	8404-003	1 stage heat, 1 stage cool
T87F3111	Q539A1220	System: heat-off-cool Fan: on-auto
8403-009	----	1 stage heat, 1 stage cool
1F56-318		
8403-035	----	Programmable
1F95-80		Electronic

Figure 7

LOW VOLTAGE WIRING



OPTIONAL ECONOMIZER LOW VOLTAGE WIRING





## PART 3 -- START-UP

FIGURE 8

### IMPORTANT INSTALLER NOTE

For improved start-up performance, wash the indoor coil with a dishwasher detergent.

### CRANKCASE HEATERS

WL421 units are provided with compressor crankcase heat. WL602 and WL482 units are not provided with crankcase heat. These units utilize scroll compressors which do not require crankcase in this application.

The WL421 models have an insertion well-type heater located in the lower section of the compressor housing. This is a self-regulating type heater that draws only enough power to maintain the compressor at a safe temperature on these units.

Some form of crankcase heat is essential to prevent liquid refrigerant from migrating to the compressor, causing oil pump out on compressor start-up and possible valve failure due to compressing a liquid.

The decal in Figure 8 is affixed to all WL421 units detailing start-up procedure. This is very important. Please read carefully.

### HIGH PRESSURE SWITCH

The WL482 and WL602 models are supplied with a remote reset high pressure switch. If tripped, this pressure switch may be reset by turning the thermostat off then back on again.

### THREE PHASE SCROLL COMPRESSOR START UP INFORMATION

Scroll compressors, like several other types of compressors, will only compress in one rotational direction. Direction of rotation is not an issue with single phase compressors since they will always start and run in the proper direction.

However, three phase compressors will rotate in either direction depending upon phasing of the power. Since there is a 50-50 chance of connecting power in such a way as to cause rotation in the reverse direction, verification of proper rotation must be made. Verification of proper rotation direction is made by observing that suction pressure drops and discharge pressure rises when the compressor is energized. Reverse rotation also results in an elevated sound level over that with correct rotation, as well as, substantially reduced current draw compared to tabulated values.

Verification of proper rotation must be made at the time the equipment is put into service. If improper rotation is corrected at this time there will be no negative impact on the durability of the compressor. However, reverse operation for over one hour may have a negative impact on the bearing due to oil pump out.

**NOTE:** If compressor is allowed to run in reverse rotation for several minutes the compressor's internal protector will trip.

All three phase ZR3 compressors are wired identical internally. As a result, once the correct phasing is determined for a specific system or installation, connecting properly phased power leads to the same fuse terminal should maintain proper rotation direction.

THE DIRECTION OF ROTATION OF THE MOTOR MAY BE CHANGED BY REVERSING ANY TWO LINE CONNECTIONS TO THE UNIT.

## IMPORTANT

THESE PROCEDURES MUST BE FOLLOWED AT INITIAL START-UP AND AT ANY TIME POWER HAS BEEN REMOVED FOR 12 HOURS OR LONGER.

To prevent compressor damage which may result from the presence of liquid refrigerant in the compressor crankcase.

1. Make certain the room thermostat is in the "off" position (the compressor is not to operate).
2. Apply power by closing the system disconnect switch. This energizes the compressor heater which evaporates the liquid refrigerant in the crankcase.
3. Allow 4 hours or 60 minutes per pound of refrigerant in the system as noted on the unit rating plate, whichever is greater.
4. After properly elapsed time, the thermostat may be set to operate the compressor.
5. Except as required for safety while servicing—Do not open system disconnect switch.

7961-061

## SERVICE HINTS

1. Caution homeowner to maintain clean air filters at all times. Also, not to needlessly close off supply and return air registers. This reduces air flow through the system, which shortens equipment service life as well as increasing operating costs.
2. Switching to heating cycle at 75°F or higher outside temperature may cause a nuisance trip of the remote reset high pressure switch. Turn thermostat off, then on to reset the high pressure switch.
3. Check all power fuses or circuit breakers to be sure they are the correct rating.
4. Periodic cleaning of the outdoor coil to permit full and unrestricted airflow circulation is essential.

## SEQUENCE OF OPERATION

**COOLING**--Circuit R-Y makes at thermostat pulling in compressor contactor, starting the compressor and outdoor motor. The G (indoor motor) circuit is automatically completed on any call for cooling operation or can be energized by manual fan switch on subbase for constant air circulation. On a call for heating, circuit R-W1 make at the thermostat pulling in heat contact for the strip heat and blower operation. On a call for second stage heat, R-W2 makes bringing on second heat contactor, if so equipped.

## PRESSURE SERVICE PORTS

High and low pressure service ports are installed on all units so that the system operating pressures can be observed. Pressure curves can be found later in the manual covering all models. It is imperative to match the correct pressure curve to the unit by model number.

## PART 4 -- TROUBLESHOOTING

### FAN BLADE SETTING DIMENSIONS

Shown in the drawing below are the correct fan blade setting dimensions for proper air delivery across the outdoor coil.

Any service work requiring removal or adjustment in the fan and/or motor area will require that the dimensions below be checked and blade adjusted in or out on the motor shaft accordingly.

FIGURE 9

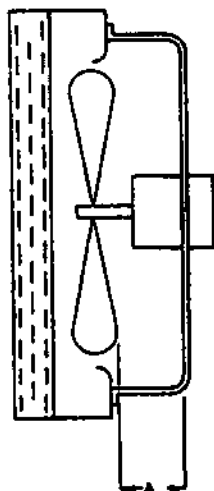


TABLE 4

Model	Dimension A
WA421 WA482 WA602	1.75

## REMOVAL OF THE FAN SHROUD

1. Disconnect all power to unit.
2. Remove the screws holding both grills--one on each side of unit--and remove grills.
3. Remove screws holding fan shroud to condenser and bottom. (9) screws.
4. Unwire condenser fan motor.
5. Slide complete motor, fan blade, and shroud assembly out the left side of the unit.
6. Service motor/fan as needed.
7. Reverse steps to reinstall.

## REFRIGERANT CHARGE

The correct system R-22 charge is shown on the unit rating plate. Optimum unit performance will occur with a refrigerant charge resulting in a suction line temperature (6" from compressor) as shown in the following table:

TABLE 5

Model	Rated Airflow	95° F OD Temperature	82° F OD Temperature
WL421	1400	52 - 54	64 - 66
WL482	1550	54 - 56	65 - 67
WL602	1700	53 - 55	60 - 62

The above suction line temperatures are based upon 80°F dry/bulb/67°F wet bulb (50 percent R.H.) temperature and rated airflow across the evaporator during cooling cycle.

TABLE 6 INDOOR BLOWER PERFORMANCE--CFM @ 230V

B.S.P. In H <sub>2</sub> O	WL421, WL482		WL602	
	Lo 230V	Hi 230V	Lo 230V	Hi 230V
	Dry/Wet Coil	Dry/Wet Coil	Dry/Wet Coil	Dry/Wet Coil
.0	1650 / 1600	1885 / 1800	1600 / 1450	2200 / 2000
.1	1550 / 1500	1770 / 1665	1525 / 1375	2100 / 1900
.2	1450 / 1400	1635 / 1540		2000 / 1800
.3	1350 / 1300	1500 / 1400		1875 / 1700
.4	1300 / 1175	1370 / 1285		1775 / 1600
.5	---	1250 / 1150		1650 / 1475

TABLE 7

Model	Rated CFM*	Rated BSP*	Recommended Airflow Range
WL421	1400	.30	1600 - 1150
WL482	1550	.20	1750 - 1285
WL602	1700	.30	1950 - 1375
*Rated CFM and BSP on high speed tap.			

## MAXIMUM ESP OF OPERATION

TABLE 8

## ELECTRIC HEAT ONLY

Model Speed KW	WL421		WL482		WL602	
	High Speed	Low Speed	High Speed	Low Speed	High Speed	Low Speed
-A05	.50	.50	.50	.50	.50	.50
-A10	.50	.50	.50	.50	.50	.50
-A15	.50	.50	.50	.50	.50	.50
-A20	.50	.45	.50	.45	.50	.40
-B00	.50	.50	.50	.50	.50	.50
-B09	.50	.50	.50	.50	.50	.50
-B15	.50	.50	.50	.50	.50	.50
-B18	.50	.50	.50	.50	.50	.50
-C09	.50	.50	.50	.50	.50	.50
-C15	.50	.50	.50	.50	.50	.50

Values shown are for units equipped with STD 1-inch throw-away filter or 1-inch washable filter. Derate BSP by .15 for 2-inch pleated filters.

## COOLING

TABLE 9

## Air Temperature Entering Outdoor Coil \*F

Model	Return Air Temperature	Pressure	°	°	°	°	°	°	°	°	°
			75	80	85	90	95	100	105	110	115
WL421	75 deg. DB	Low Side	68	71	74	76	78	80	81	83	84
	62 deg. WB	High Side	213	228	243	259	274	290	305	321	337
	80 deg. DB	Low Side	72	76	79	82	84	86	88	89	90
	67 deg. WB	High Side	218	234	249	265	281	297	313	330	346
WL482	85 deg. DB	Low Side	78	82	85	88	90	92	94	96	97
	72 deg. WB	High Side	226	242	258	274	290	307	323	341	358
	75 deg. DB	Low Side	73	74	76	78	79	80	82	83	84
	62 deg. WB	High Side	204	217	232	248	265	284	304	325	348
WL602	80 deg. DB	Low Side	78	79	81	82	84	86	87	89	90
	67 deg. WB	High Side	210	223	238	254	272	291	312	334	357
	85 deg. DB	Low Side	84	85	87	88	90	92	93	95	97
	72 deg. WB	High Side	217	231	247	264	282	302	323	345	369
WL602	75 deg. DB	Low Side	71	72	74	75	76	77	78	78	79
	62 deg. WB	High Side	233	247	262	278	295	313	331	351	371
	80 deg. DB	Low Side	76	78	79	80	81	82	83	84	85
	67 deg. WB	High Side	237	253	269	285	303	321	340	360	381
WL602	85 deg. DB	Low Side	84	85	85	86	87	88	89	90	91
	72 deg. WB	High Side	245	261	278	296	314	333	353	373	394

Low side pressure + 2 PSIG

High side pressure + 5 PSIG

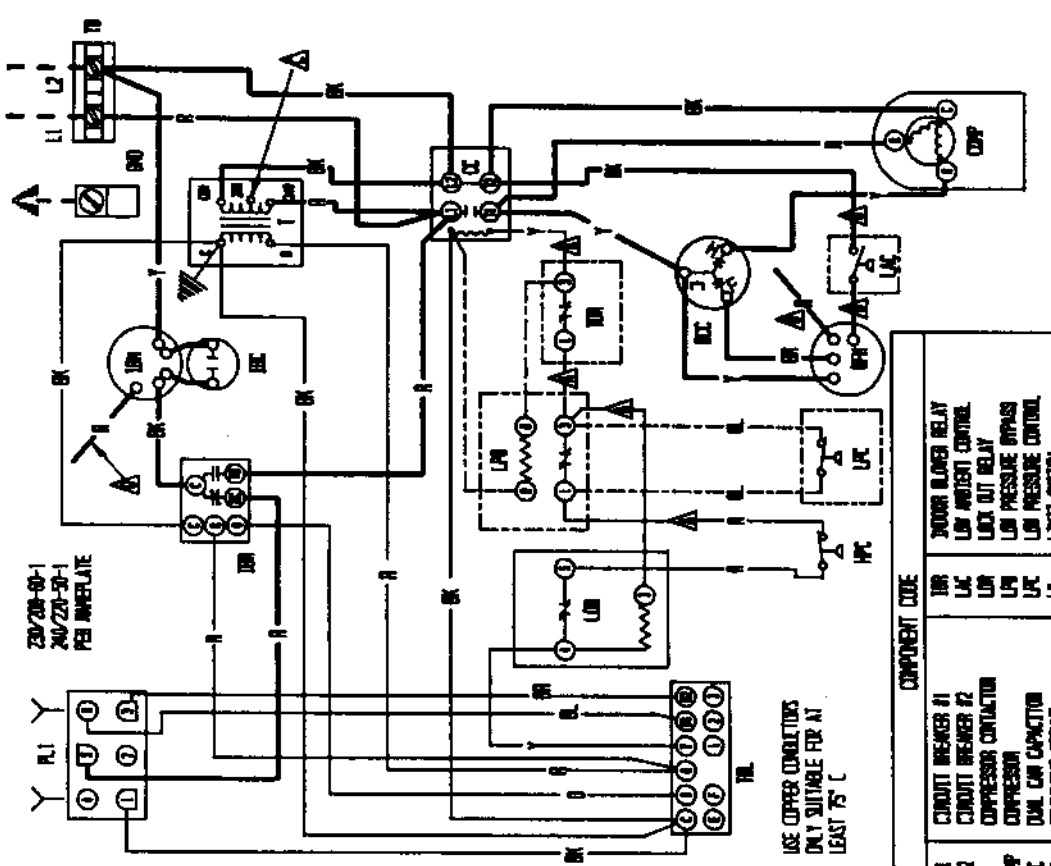
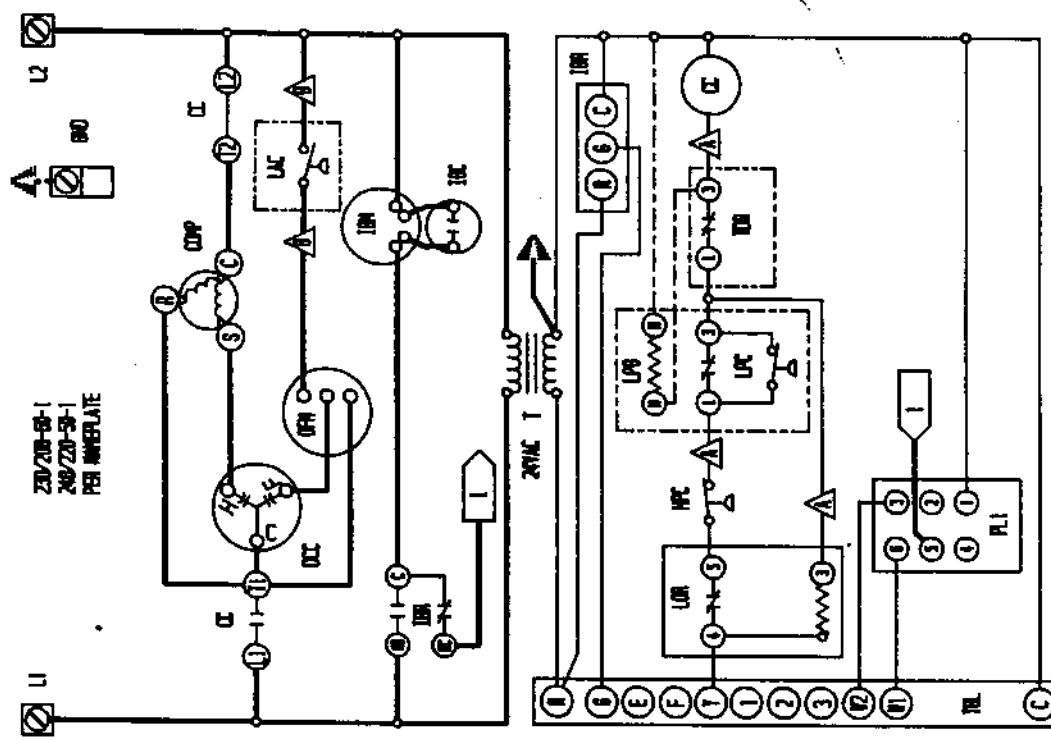
Tables are based upon rated CFM (airflow) across the evaporator coil and should be found under section titled "Refrigerant Charge" elsewhere in manual. If there is any doubt as to correct operating charge being in the system, the charge should be removed, system evacuated, and recharged to serial plate instructions.

TABLE 10

## OPTIONAL ACCESSORIES

Model	Description	W	W	W	W	W	W	W	W
		L	L	L	L	L	L	L	L
		4	4	4	4	4	4	6	6
		2	2	2	8	8	8	0	0
		1	1	1	2	2	2	2	2
		-	-	-	-	-	-	-	-
		A	B	C	A	B	C	A	B
		C							
BOP-5	Blank Off Plate	X	X	X	X	X	X	X	X
BPAD-5	Barometric Fresh Air Damper	X	X	X	X	X	X	X	X
MFAD-5	Motorized Fresh Air Damper	X	X	X	X	X	X	X	X
CRV-5	Classroom Ventilator With Exhaust	X	X	X	X	X	X	X	X
BIEM-5	Economizer With Exhaust	X	X	X	X	X	X	X	X
CMA-1	High Pressure Control (HPC)	X	X	X					
CMA-2	Low Pressure Control (LPC)	X	X	X					
CMA-4	Low and High Pressure Control	X	X	X					
CMA-5	Time Delay Relay (TDR)	X	X	X	X	X	X	X	X
CMA-6	Low Ambient Control (LAC)	X	X		X	X		X	X
CMA-8	TDR + HPC	X	X	X					
CMA-10	LPC + HPC + TDR	X	X	X					
CMA-11	LPC + HPC + LAC	X	X						
CMA-12	LAC + TDR	X	X						
CMA-13	LPC + HPC + TDR + LAC + Alarm Relay	X	X						
CMA-15	Start Kit	X							
CMA-16	Low Pressure Control				X	X	X	X	X
CMA-17	LPC & TDR				X	X	X	X	X
CMA-18	LPC & LAC				X	X		X	X
CMA-19	LAC & TDR				X	X		X	X
CMA-20	LAC & TDR & LPC				X	X		X	X
WMCB-05B	Circuit Breaker Kit		X			X			
WMPD-01C	Pull Disconnect Kit			X			X		X
WMCB-08A	Circuit Breaker Kit	X			X				
WMCB-09A	Circuit Breaker Kit							X	
WMCB-07B	Circuit Breaker Kit							X	





USE COPPER CONDUITS  
ONLY SUITABLE FOR AT  
LEAST 75 °C

COMPONENT CODE	
CB	CIRCUIT BREAKER #1
CD	CIRCUIT BREAKER #2
CC	COMPRESSOR CONTACTOR
CCP	COMPRESSOR
CCF	DUAL LINE CAPACITOR
CCO	EQUIPMENT GROUND
CF	HEAT STRIP #1
CF2	HEAT STRIP #2
CF1	HEATER CONTACTOR #1
CF2	HEATER CONTACTOR #2
CF3	HIGH PRESSURE CONTROL
CF4	INDOOR BLOWER CAPACITOR
CF5	INDOOR BLOWER MOTOR
IR	INDOOR BLOWER RELAY
LAC	LOW AMBIENT CONTROL
LOR	LOCK OUT RELAY
LPR	LOW PRESSURE OFFPASS
LPC	LOW PRESSURE CONTROL
LS	LIMIT SWITCH
GR	GROUND FAN MOTOR
PL1	PLUM #1
SK	START KIT
T	TRANSFORMER
TR	TERMINAL BLOCK
TRV	LOW VOLTAGE TERMINAL BLOCK
TRC	TERMINAL CUTOFF
TRD	TIME DELAY RELAY

▲ Labeled wires connect if no options used. ▲ Move red wire to 208V tap for 208V operation. ▲ Red (LOW) Black (HIGH)

FACTORY WIRE	FIELD	OPTIONAL
FROM VOLUME	---	---
LOW VOLUME	---	---
ACCESSORY	---	---

BLACK	YELLOW	VIOLET	GREEN	RED	WHITE
Y	Y	Y	Y	Y	Y
6	6	6	6	6	6
BL	BL	BL	BL	BL	BL
RD	RD	RD	RD	RD	RD
DN	DN	DN	DN	DN	DN
GR	GR	GR	GR	GR	GR

TERMINAL	WIRE COLOR	WIRE SIZE
1	BLACK	14 AWG
2	YELLOW	14 AWG
3	VIOLET	14 AWG
4	GREEN	14 AWG
5	RED	14 AWG
6	WHITE	14 AWG
7	BLACK	14 AWG
8	YELLOW	14 AWG
9	VIOLET	14 AWG
10	GREEN	14 AWG
11	RED	14 AWG
12	WHITE	14 AWG
13	BLACK	14 AWG
14	YELLOW	14 AWG
15	VIOLET	14 AWG
16	GREEN	14 AWG
17	RED	14 AWG
18	WHITE	14 AWG
19	BLACK	14 AWG
20	YELLOW	14 AWG
21	VIOLET	14 AWG
22	GREEN	14 AWG
23	RED	14 AWG
24	WHITE	14 AWG
25	BLACK	14 AWG
26	YELLOW	14 AWG
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93	VIOLET	14 AWG
94	GREEN	14 AWG
95	RED	14 AWG
96	WHITE	14 AWG
97	BLACK	14 AWG
98	YELLOW	14 AWG
99	VIOLET	14 AWG
100	GREEN	14 AWG

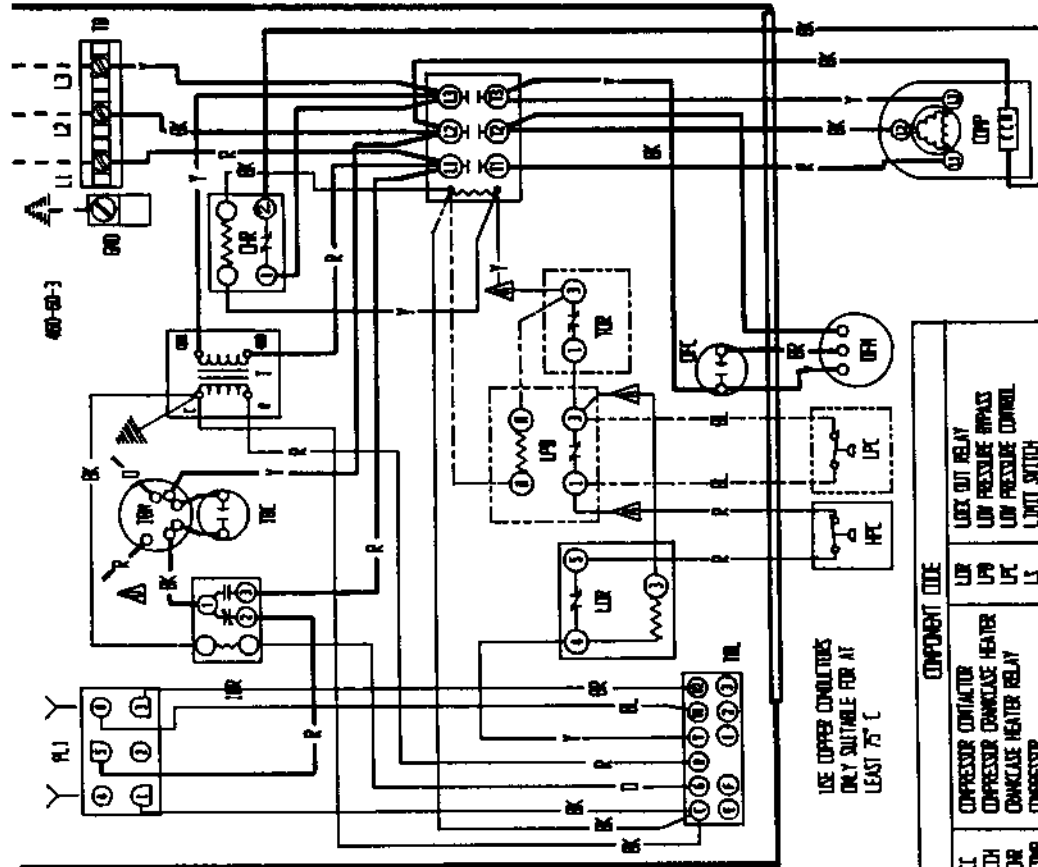
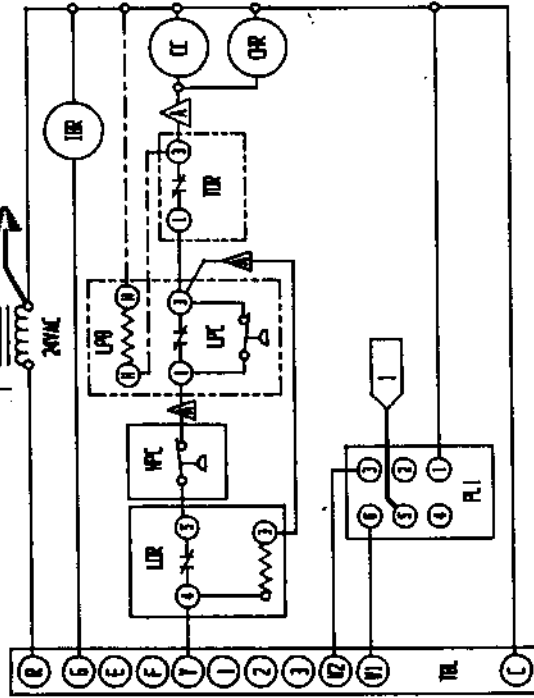
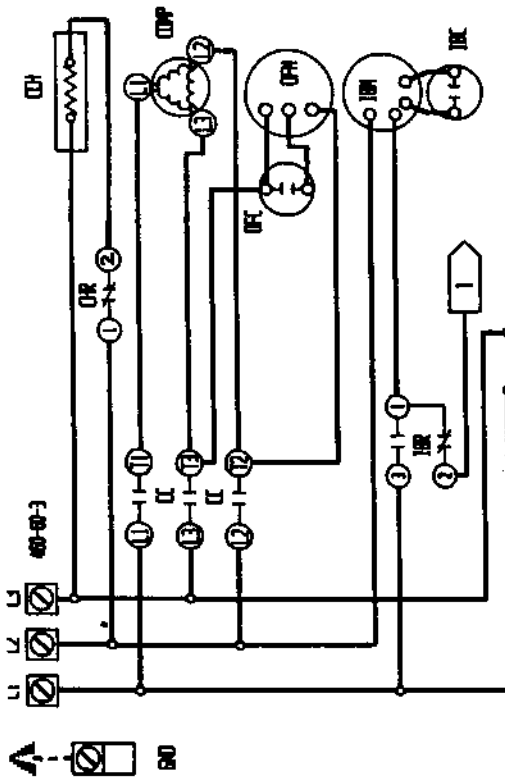
BAIRD MPC. CO.  
MFG. 4055-112 A  
DGN. CDB  
CHK./APPR.











USE UPPER COMPLETES ONLY SUITABLE FOR AT LEAST 75 °C

COMPONENT CODE	COMPONENT CODE
CC	COMPRESSOR CONTACTOR
CH	COMPRESSOR CONTACTOR HEATER
OR	CONTACTOR HEATER RELAY
40-20-3	COMPRESSOR
HI	ENDPOINT GROUND
RZ	HEAT STRIP #1
HC1	HEATER CONTACTOR #1
HC2	HEATER CONTACTOR #2
HPC	HIGH PRESSURE CONTROL
IR	INDOOR BLOWER CAPACITOR
IRK	INDOOR BLOWER RELAY
IR	LOCK OUT RELAY
UP	LOW PRESSURE SWAPPS
UP	LOW PRESSURE CONTROL
LS	LIMIT SWITCH
DFC	OUTDOOR FAN CAPACITOR
DFM	OUTDOOR FAN MOTOR
FO	PULL DISCONNECT
PL1	PLUS #1
T	TRANSFORMER
TR	TERMINAL BLOCK
TR	LOW VOLTAGE TERMINAL BLOCK
TR	THERMAL CUTOFF
TR	TIME DELAY RELAY

▲ Labeled wires connect if no options used.  
 ▲ For low speed connect black and orange wires together and insulate. Connect red wire to terminal 1 of IR.

COLOR CODE			
BLACK	YELLOW	VIOLET	1
BROWN	GREEN	PURPLE	PK
RED	BLUE	GRAY	L
ORANGE	WHITE	SLATE	(S)

FACTORY STD.		OPTIONAL	
RHS VOLTAGE	---	FELD	---
LOW VOLTAGE	---	---	---
ACCESSORY	---	---	---

BARD EPC. CO.			
DRG.	405-313 C	TRM	PINK
DRN.	CSB	LABOUR	---
CHK./APP.	---	---	---

