



MiniMate Solid State Controls

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Section I

DESCRIPTION

The Mini-MATE is a spot-cooler. It is a modular, self-contained hermetic system available water or air cooled. With the air cooled system, a choice of two (2) fans permits usage of indoor (dropped ceiling plenum) or outdoor condenser air. The Mini-MATE is sized to fit the opening of a standard 2' x 4' ceiling tile and offers a reheat humidification option that is available factory or field installed.

Additional outstanding features include:

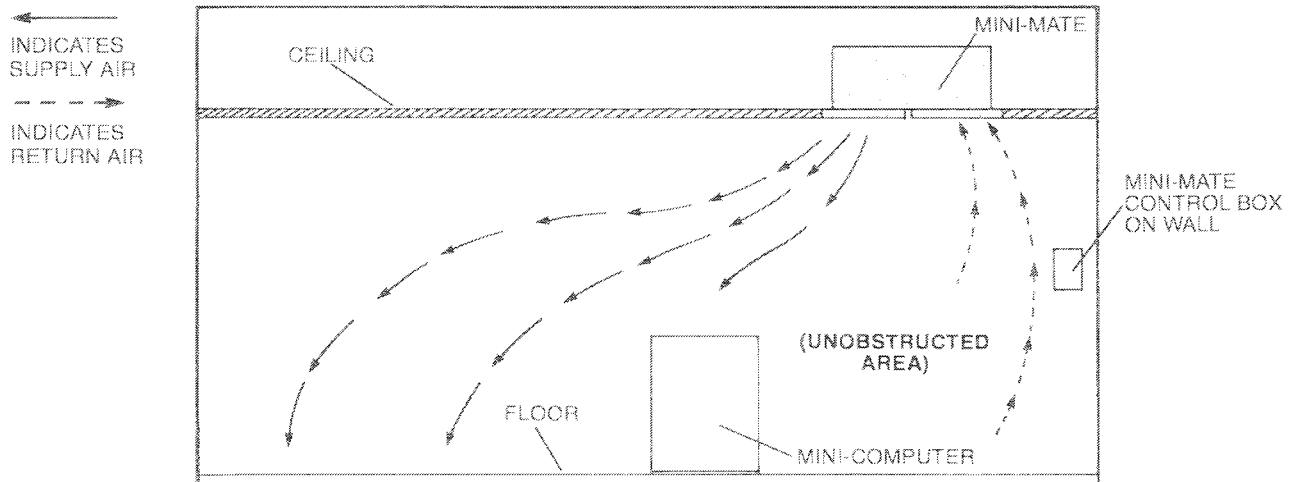
- 1) Solid state components.
- 2) An optional rigging device that permits one man service.
- 3) A safety device that protects against drain pan overflow.
- 4) Vibration isolators.
- 5) Adjustable water regulating valve.
- 6) Ductless installation (except air cooled with outside air).

APPLICATION

The Mini-MATE offers growth to an air conditioning system to offset the load created by high equipment density or problem areas. This includes alcoves not adequately served by the central system, and the conditioning of space during periods when the central system is shutdown.

It should be mentioned that the Mini-MATE is generally not capable of maintaining the level of precise temperature and humidity control possible with LIEBERT Deluxe Systems. This is more the result of room design than equipment design. The intended Mini-MATE application is supplemental rather than primary environmental control.

ROOM—TYPICAL APPLICATION



LOCATION—GENERAL

- 1) Try to locate over an unobstructed floor space to facilitate service.
- 2) If possible, locate the unit with the return air end near the wall. This will allow the discharge air to be thrown the length of the room.
- 3) Avoid locations in confined areas that affect the air pattern. Results are short cycles, down drafts, and air noise.
- 4) Concerning the cabinet location, there are three (3) possibilities:
 - a. completely concealed within the plenum above the dropped ceiling.
 - b. partially exposed below the ceiling, and
 - c. fully exposed

For (a) above (20) inches minimum of free height is required. This is measured from lower face of ceiling grid to bottom of structural members over cabinet. On sides of unit, a minimum of (24) inches is recommended. Provide at least (48) inches of free space for condenser air (when applicable).

Structurally, the mounting arrangement must be capable of supporting as much as 330 lbs. Four (1/2") diameter mounting holes are on a 20 1/2" x 44 1/2" hole pattern.

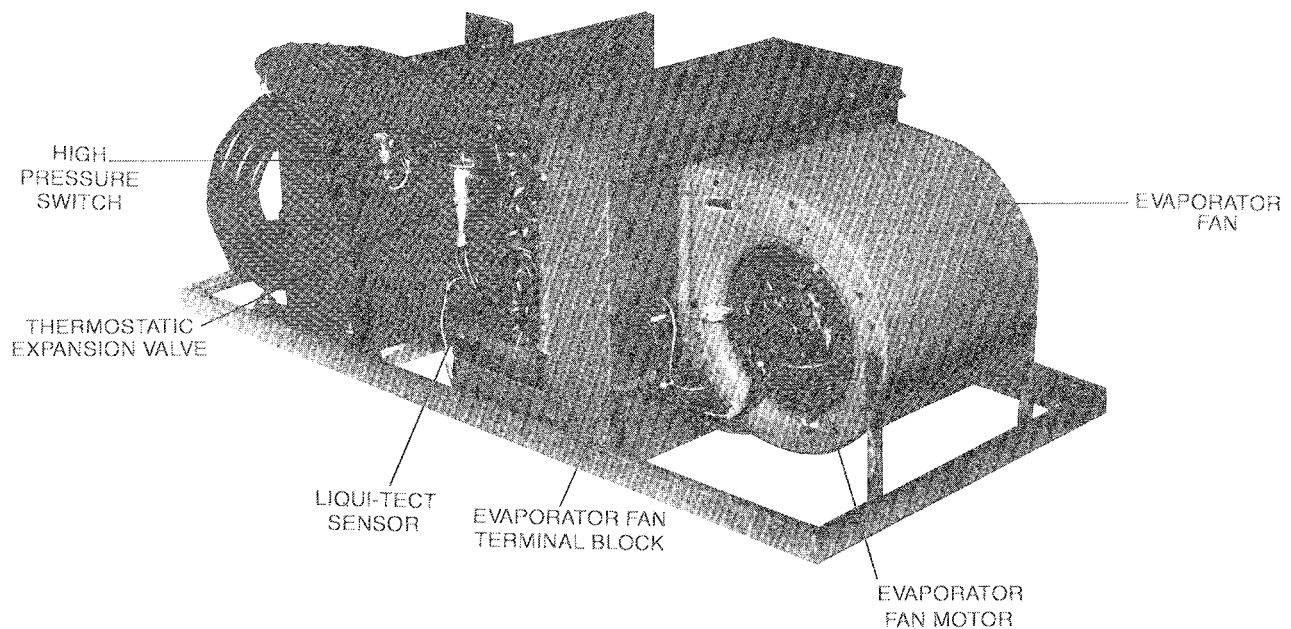
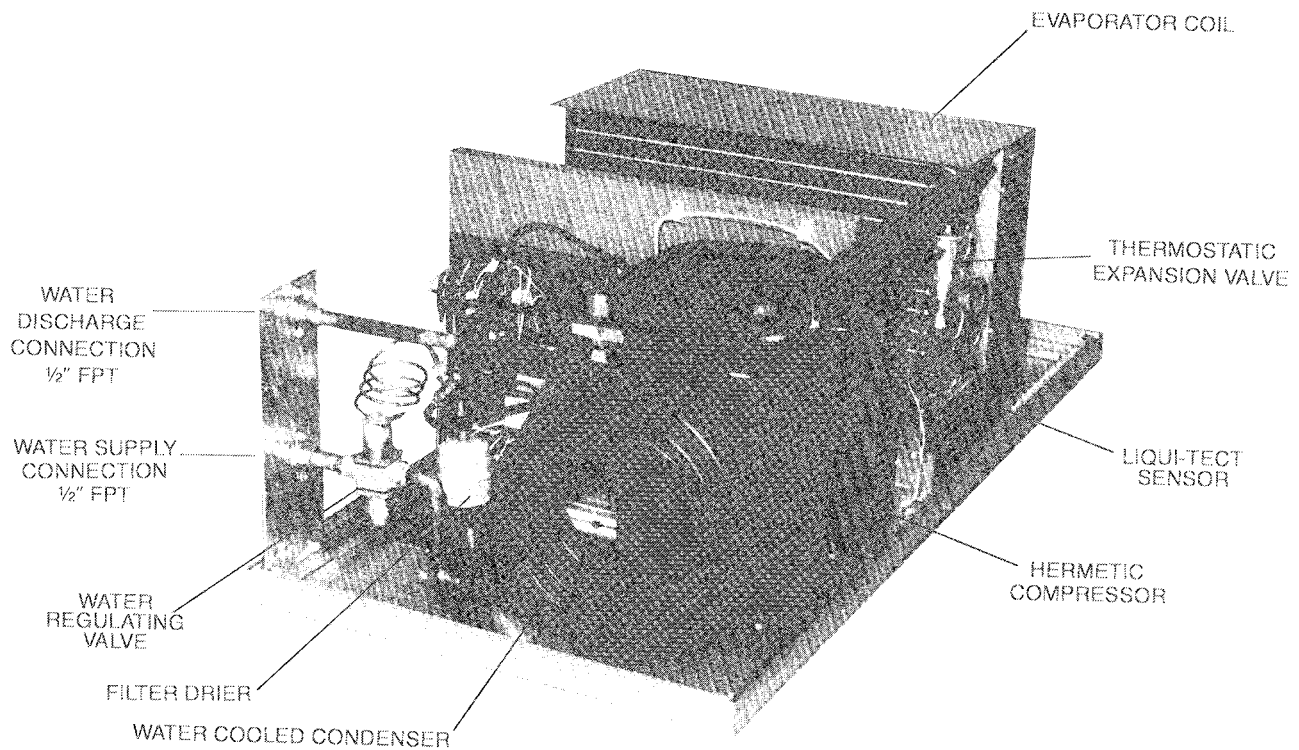
Note:

1. Do not attach additional devices (such as smoke detectors, etc.) to the cabinet that will interfere with the lowering of the chassis for routine maintenance or service.
2. Avoid multiple Mini-MATES in close proximity. The result can be crossing air patterns, uneven loads and operating modes competing with one another.

Water Cooled Chassis

MAJOR COMPONENTS

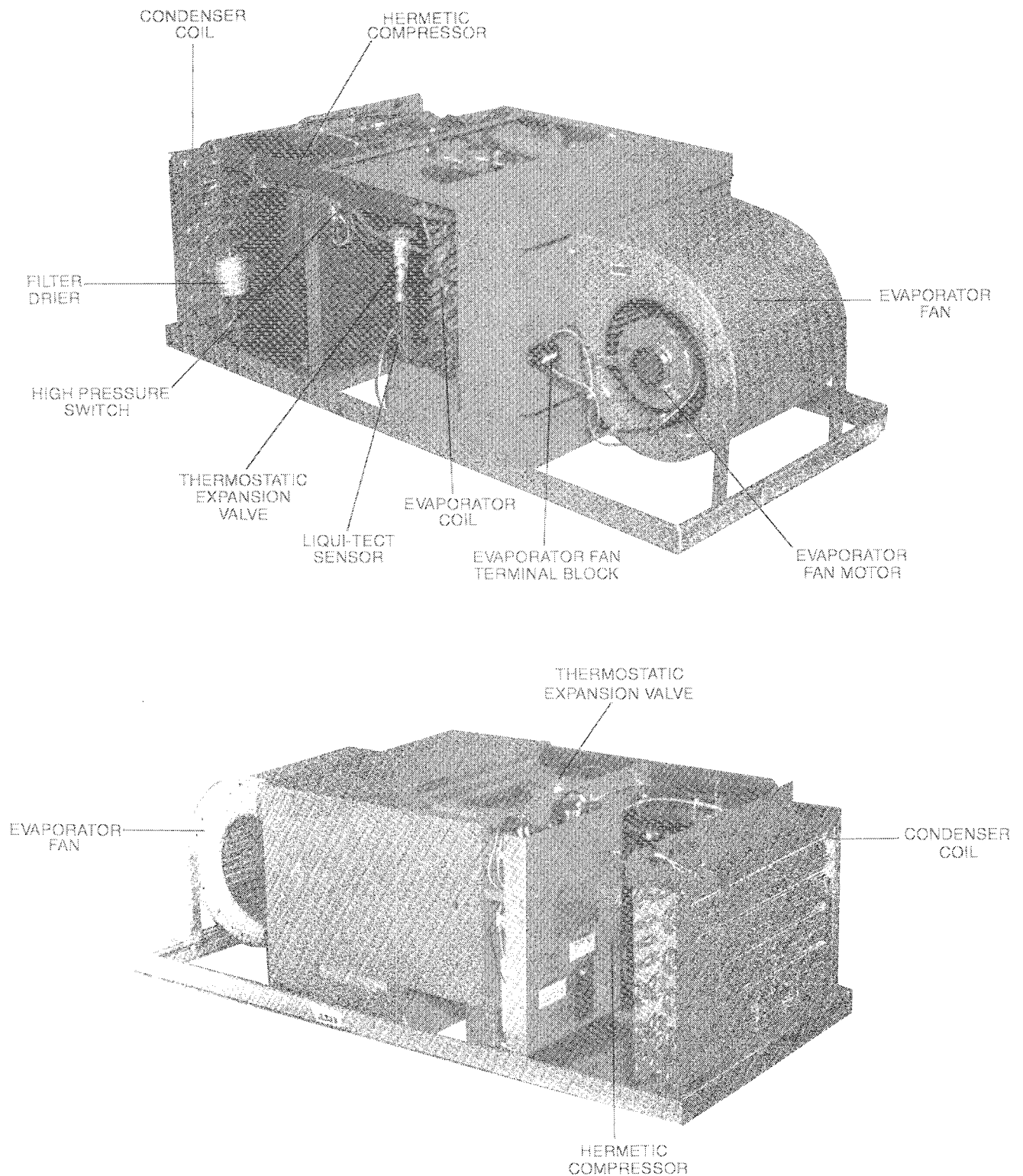
(Shown Without Optional Reheat-Humidifier Pkg.)



Air Cooled Chassis

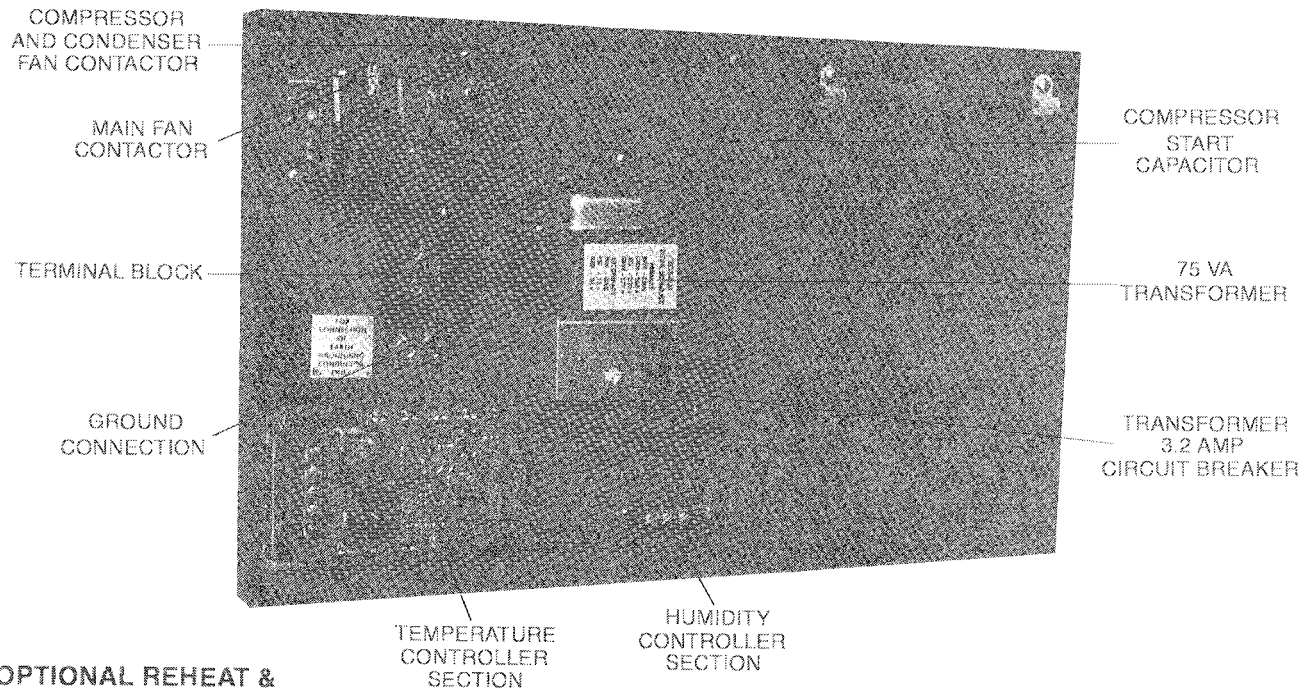
MAJOR COMPONENTS

(Complete with Optional Reheat and Humidifier Package)

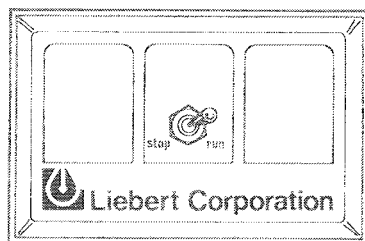
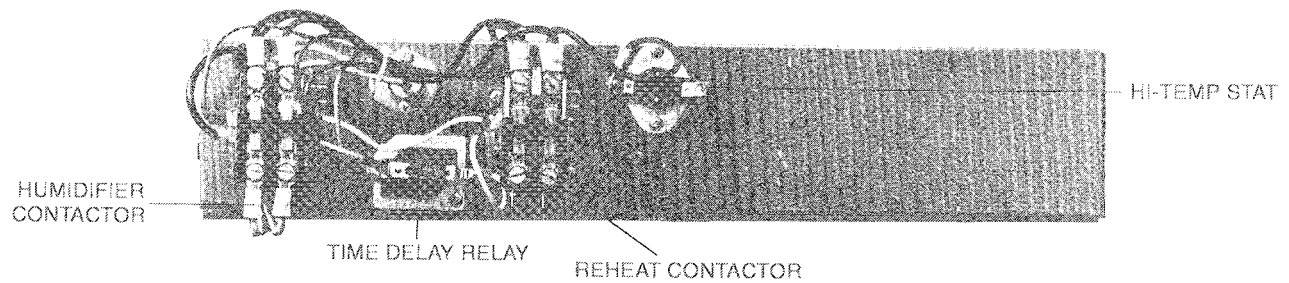


Electrical

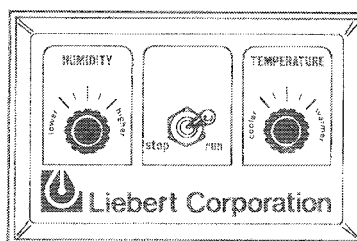
STANDARD COMPONENTS



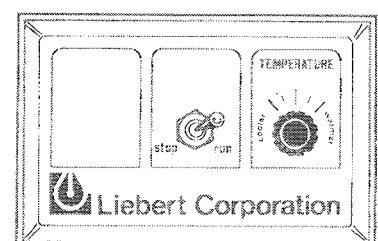
OPTIONAL REHEAT & HUMIDIFIER BULKHEAD



STOP—RUN CONTROL

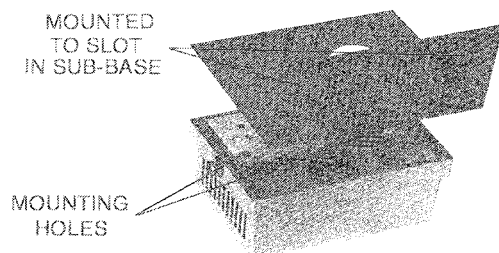


COMPLETE CONTROL

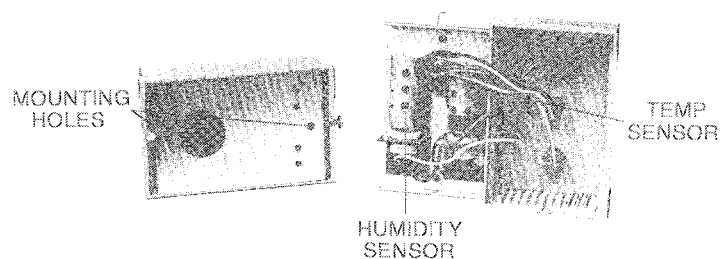


COOLING ONLY CONTROL

INTERNAL SENSOR MOUNTING



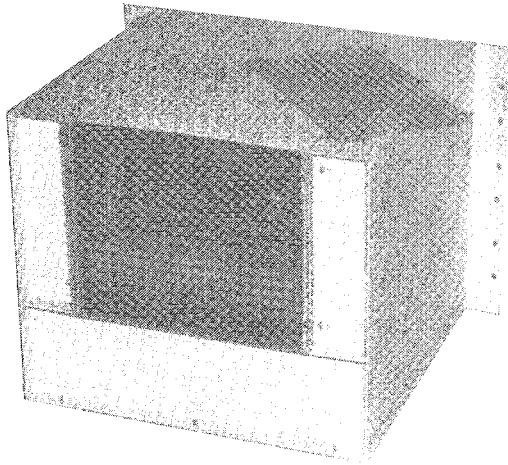
WALL-MOUNTED CONTROL BOX



Condenser Fans Air Cooled Systems

INDOOR (PLENUM) AIR

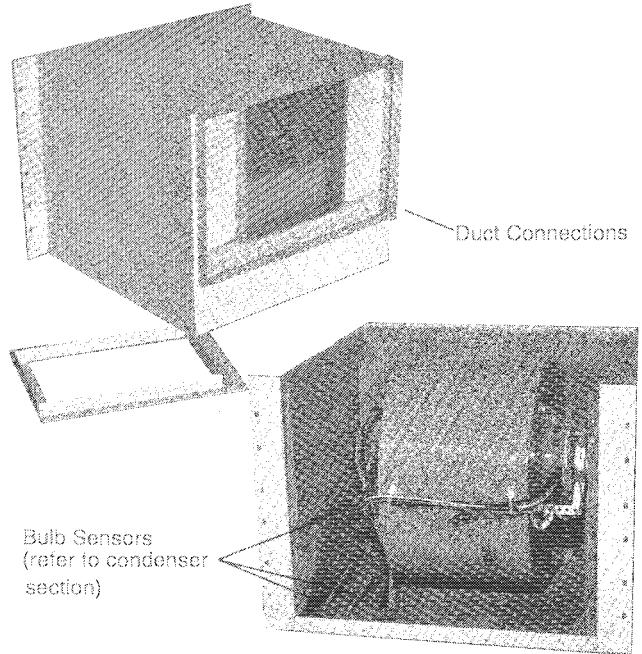
¼ hp. Single Speed Motor



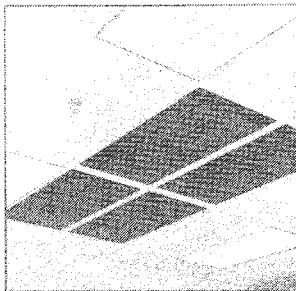
OUTSIDE AIR

208/230v. ½ hp. Three Speed Motor

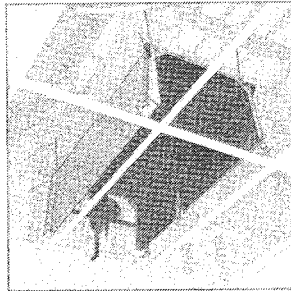
277v. ¾ hp. Three Speed Motor



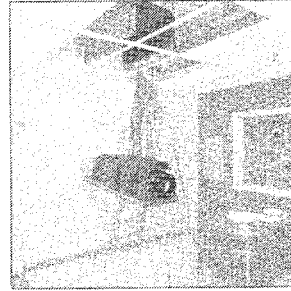
Assembly Sequence



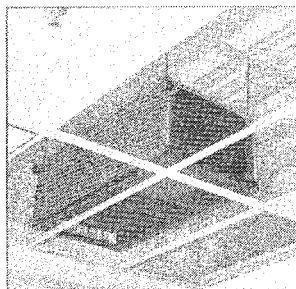
1. Remove tile.



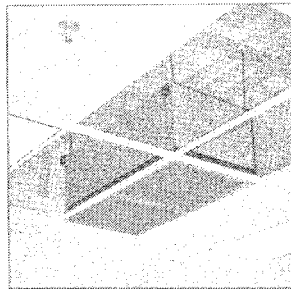
2. Cabinet/Winch.



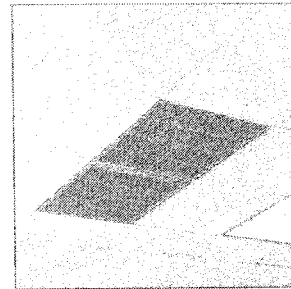
3. Raise Chassis.



4. Chassis in.



5. Grille/Filter rack.



6. Complete.

INSPECTION

Upon arrival of the unit, inspect the items for either visible or concealed damage. Damage should be reported immediately to the carrier and a damage claim filed.

UNCRATING

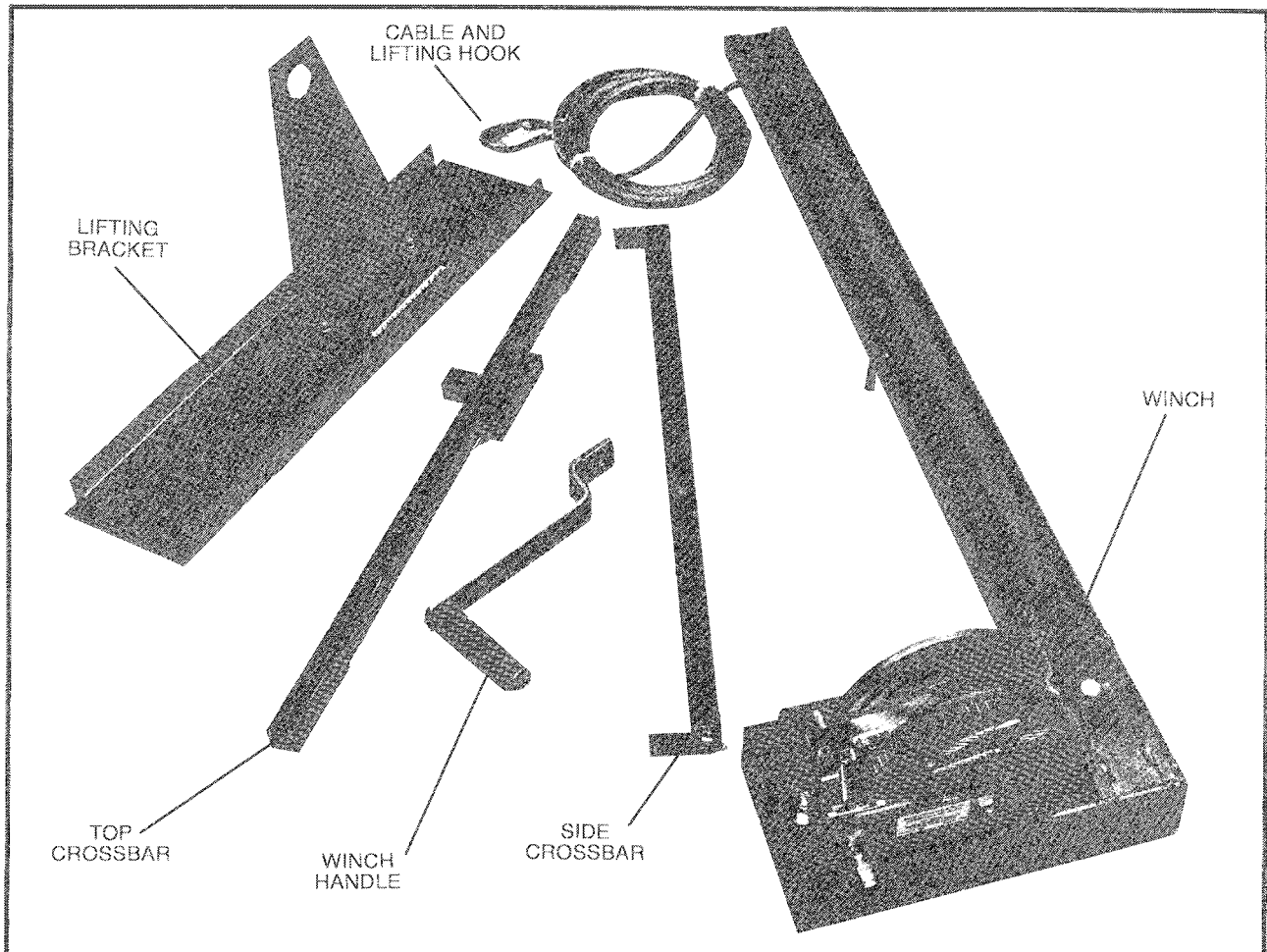
If possible, do not uncrate the unit until it is in its final location. All required assemblies are shipped in corrugated containers and banded.

- a) The chassis carton contains the following: insulated cabinet; parts bag containing four rubber isolators, eight washers; air inlets and dis-

charge grille, and air filter, hermetic system; and wall mounted control.

- b) The air cooled condenser carton (when furnished) contains the condenser fan enclosure, including the fan, fan motor (and low ambient thermostats for the outdoor package.)
- c) The outdoor condenser air grille carton (when furnished) contains the grille assembly.
- d) The optional condensate pump carton (when furnished) contains the complete enclosure and component assembly.
- e) The optional winch assembly carton (when furnished) contains the winch, unit lifting bracket, and necessary nuts and bolts.

WINCH COMPONENTS



*SEE PHOTO ON PAGE 8

Section II Installation

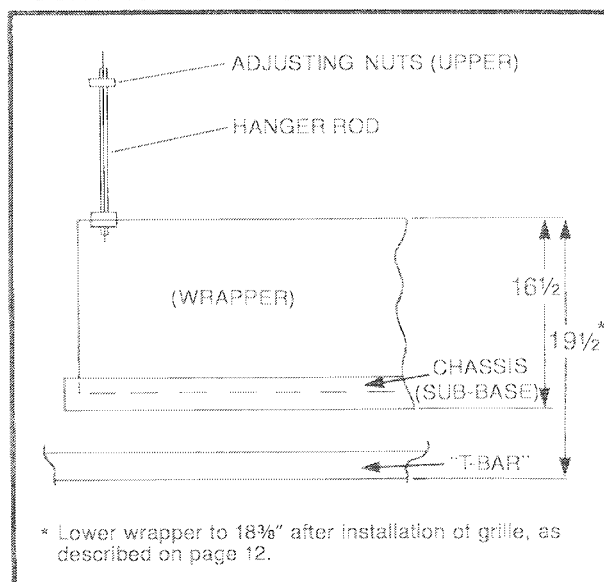
MOUNTING THE CABINET

For flush mounting the unit, structural supports must be installed a minimum of twenty (20) inches above the lower face of the ceiling grid. These must be adequate for the weight of the entire Mini-MATE, four (4) $\frac{1}{2}$ " diameter holes, centered over the 2' x 4' grid opening, must be drilled in the supports on 20 $\frac{1}{2}$ " x 44 $\frac{1}{2}$ " centers. Using $\frac{3}{8}$ " diameter all thread, and parts provided in the cabinet assembly. Install the cabinet as follows:

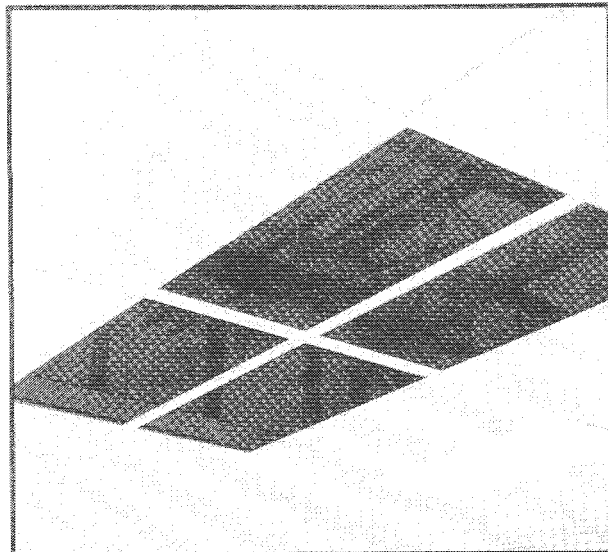
- 1) Position the unit under its final location in the ceiling.
- 2) Remove 4 screws from corners of cabinet.
- 3) Pull mounting straps back and hold in this "Sprung" position with black pads provided at each corner for this purpose.
- 4) Lift cabinet from chassis. (CAUTION: Do not allow the (4) 16 $\frac{1}{2}$ " mounting straps to pull from the grommets. Do not lift cabinet by these straps or set unit on them.)
- 5) Mount cabinet with hanger rods as shown. Cabinet is not symmetrical. Position cabinet to make sure winch is located at the end of rack in the proper relationship to the chassis.
- 6) Be sure to allow at least three (3) inches of all thread above the structural support.
- 7) Bottom of cabinet should be at least four (4) inches above bottom of ceiling grid.

Note: (a) On air cooled units, the cabinet end panel, on the condenser end, **MUST** be removed and discarded. (b) Make sure **ALL** connections are tight. **REMEMBER, THESE MOUNTS MAY BE SUPPORTING 330 LBS.**

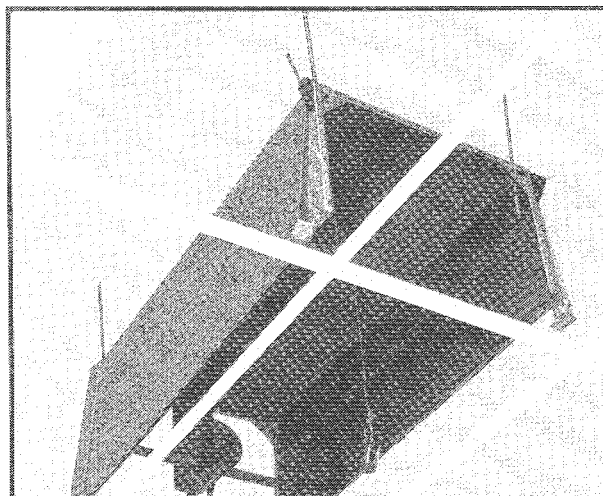
MOUNTING DIMENSIONS



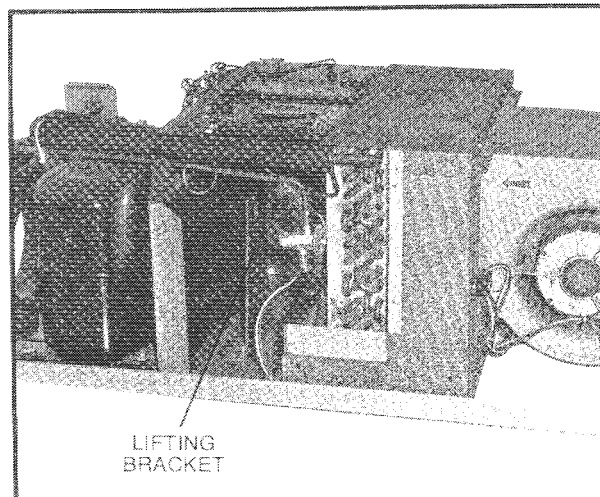
REMOVE CEILING TILE



CABINET INSTALLED

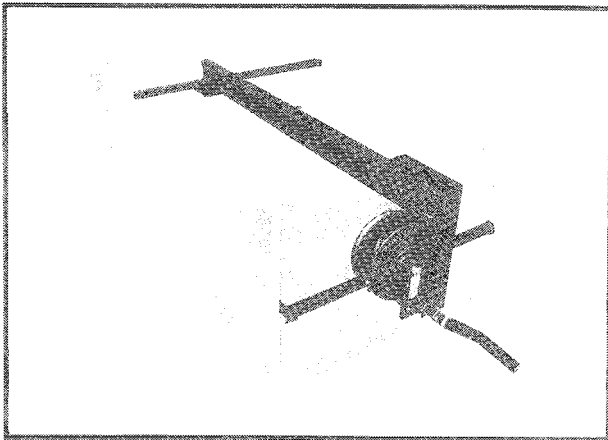


LIFTING BRACKET



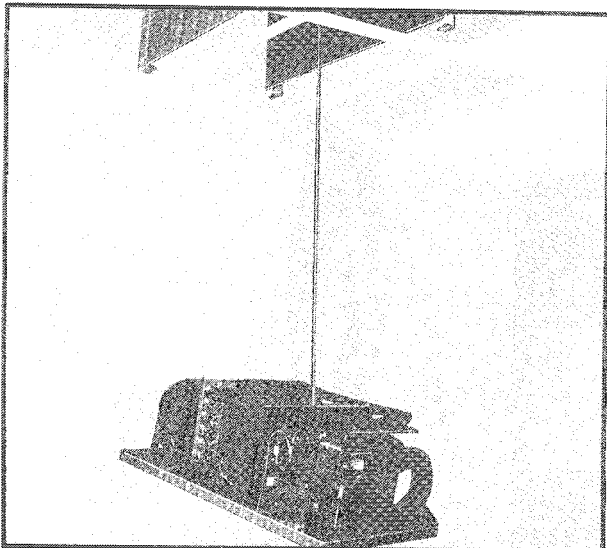
INSTALL WINCH

- 1) Attach the winch to the cabinet as shown in the photo. This is put on the cabinet in 2 pieces — (1) the 24" bar across the cabinet top. (2) The balance, containing the crank mechanism which is located on the fan end of unit.
- 2) Near the crank mechanism is a lever that controls up, down and locked positions of the winch; lower the cable to floor level.
- 3) Position the lifting bracket of the winch assembly directly under chassis frame with its lifting lug extending upward in front of the coil drain pan.
- 4) Place hook in lifting lug, flip control lever to the proper position and crank chassis to the desired level.

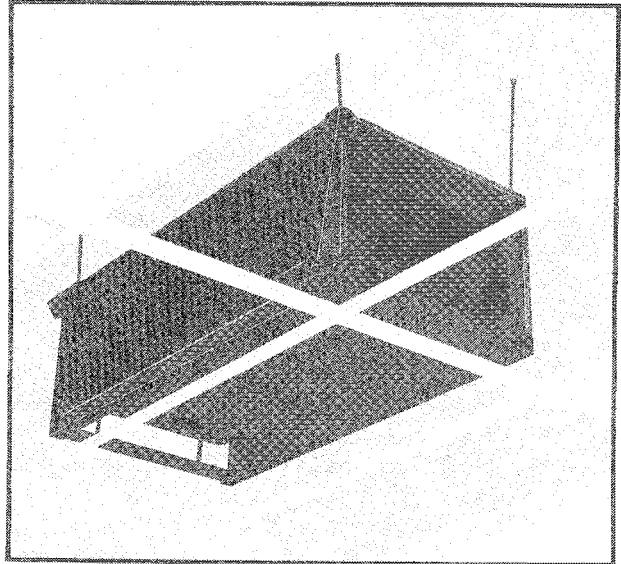


RAISING CHASSIS

Crank up chassis to position sub-base within 1" of the cabinet, raise this final distance by hand, 1 corner at a time and secure each corner with the mounting strap (remove the black pad) — secure with the screw.



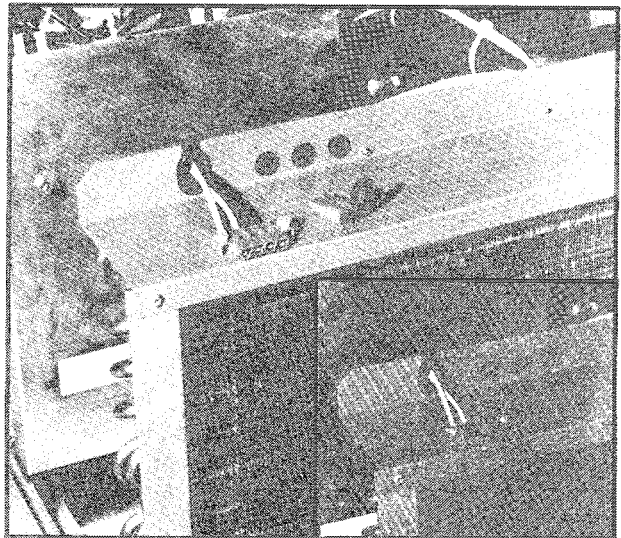
CHASSIS IN PLACE



REMOVE WINCH

Using the winch, lower the lifting bracket assembly; then remove the winch from the unit. Attach the cover plate provided over the winch hole. The base of the chassis should now be 3" from the lower face of the ceiling grid.

INSTALLING CONDENSER FAN (Air Cooled Only)

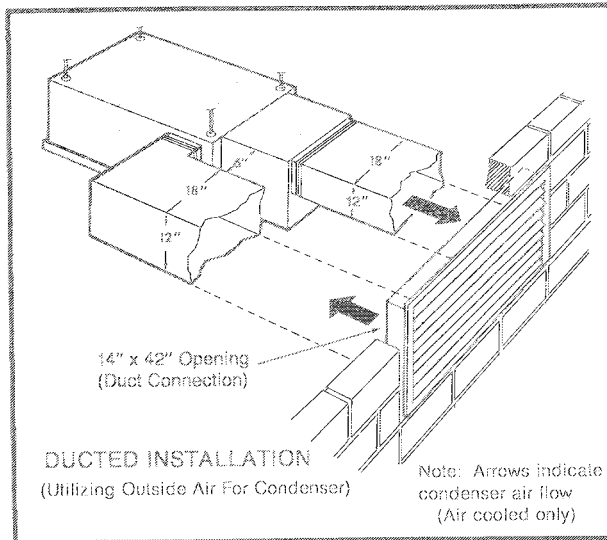


Attach the condenser hanger angle and inlet air screen. Lift the condenser fan assembly over the hanger angle and position it on the cabinet. Connect the condenser fan plug and receptacle prior to securing fan. Using the screws provided, attach the fan assembly to the cabinet. Insert thermostat bulbs through the holes provided and mount in return air compartment.

The low limit stat plug replaces the jumper plug on outdoor condenser fan selections only.

DUCTWORK AND GRILLE OUTDOOR CONDENSER AIR

Total external static pressure for inlet and outlet duct, including grille, must not exceed 0.5 inches of H₂O.



ELECTRICAL — HIGH VOLTAGE

An electrical knockout on the side of the cabinet is provided for power entrance to the unit. Terminal connections are provided in the unit for power wiring, and a ground screw is provided for grounding. Unit FLA (Full Load Amps) and WSA (Wire Size Amps) are shown on the unit rating plate. All electrical service wiring must comply with Local and the National Electric Code.

WATER COOLED

MAXIMUM ELECTRICAL LOAD AMPERAGE

NOM		BASIC UNIT		WITH RH & HUM.	
TONS	AMPS	208/230	277	208/230	277
	FLA	15.6	12.8	33.3	29.7
1.5	WSA	18.3	15.0	40.4	35.0
	MFS	25	20	45	40

ALL UNITS ARE 1 PHASE, 60 HERTZ

FLA = Full Load Amps, WSA = Wire Sizing Amps.

MFS = Maximum Fuse Size

AIR COOLED

MAXIMUM ELECTRICAL LOAD AMPERAGE

NOM		BASIC UNIT		WITH RH & HUM.	
TONS	AMPS	208/230	277	208/230	277
	FLA	19.2	17.0	36.9	33.0
1.5	WSA	21.9	19.2	44.0	39.2
	MFS	30	25	50	40

ALL UNITS ARE 1 PHASE, 60 HERTZ

FLA = Full Load Amps, WSA = Wire Sizing Amps.

MFS = Maximum Fuse Size

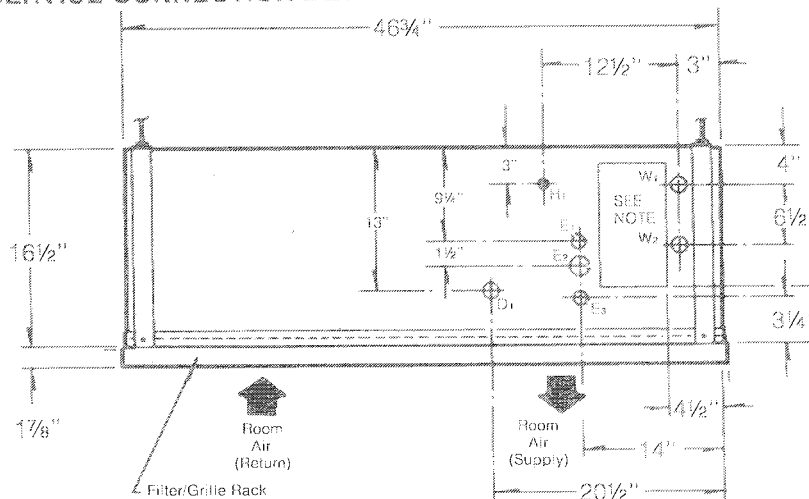
ELECTRICAL — LOW VOLTAGE

Screw terminal connections are provided on the control circuit board. Refer to the unit wiring diagram for specific connection points. The wall mounted control (containing a stop/run switch set point and sensors) must be wired in accordance with Local and National Electrical Code, using wire suitable for an N.E.C. Class 2 circuit. The temperature and humidity set point adjuster and sensors may be mounted in the return air section of the hermetic chassis. This requires additional enclosures.

Install the control box on the wall in a horizontal position where the supply air is not directed over it. Location on wall near return air flow is generally satisfactory. See page 4 photo and mounting details.

Note: DO NOT connect additional electrical devices to the control circuit. The transformer is sized for the factory supplied control system.

SERVICE CONNECTION DETAIL

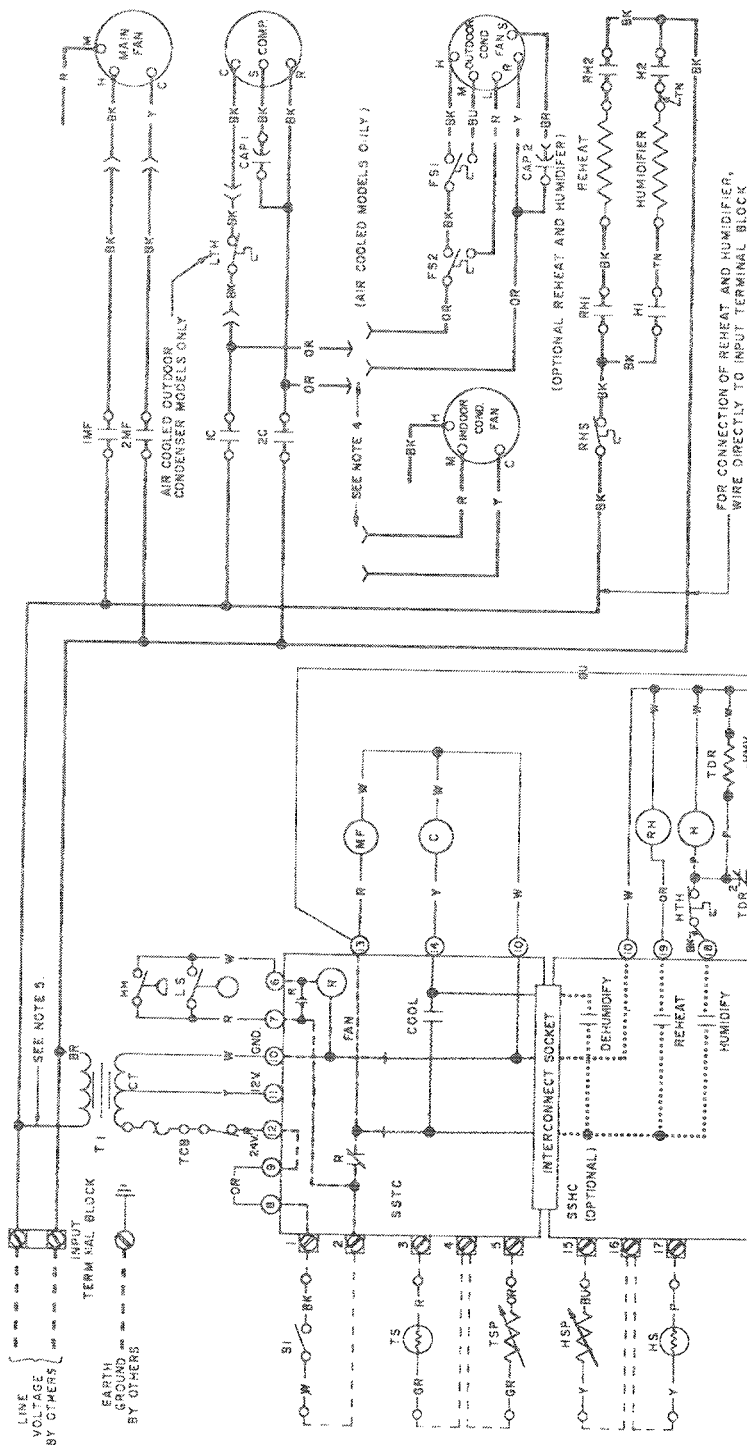


CONNECTION SIZES

- W₁ - 1/2" FPT, Water Outlet
- W₂ - 1/2" FPT, Water Inlet
- E₁ - 7/8" KO, Low Voltage
- E₂ - 1 1/8" KO, High Voltage
- E₃ - 7/8" KO, Condensate Pump Wiring
- D₁ - 1/2" FPT, Drain Connection
- H₁ - 1/8" FPT, Humidifier Makeup Connection

Note: 7 x 12 opening for condenser air intake (Air Cooled only).

WIRING DIAGRAM



MAX ELECTRICAL LOAD AMP			
AIR COOLED		WATER COOLED	
BASIC UNIT	W/ RHEAT	BASIC UNIT	W/ RHEAT
AMPS 208/230	277 1208/230 277	AMPS 208/230	277 1208/230 277
FLA 19.2	17.0 35.9 33.0	FLA 19.2	17.0 35.9 33.0
WVA 2.9	19.2 44.0 39.2	WVA 2.9	19.2 44.0 39.2
MFS 30	25 30 40	MFS 30	25 30 40

- NOTES:
- 1) FOR MAIN SUPPLY WIRING SEE UNIT NAMEPLATE AND INSTALLATION MANUAL. ALL UNITS 1 PHASE, 60 HZ.
 - 2) CONTROL VOLTAGE WIRING TO BE MINIMUM OF 20 GA. FOR UP TO 15 LINEAR FEET OF WIRE LENGTH, 18 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 16 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 14 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 12 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 10 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 8 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 6 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 4 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 2 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 1 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 0.5 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 0.25 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 0.125 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 0.0625 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 0.03125 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 0.015625 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 0.0078125 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 0.00390625 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 0.001953125 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 0.0009765625 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 0.00048828125 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 0.000244140625 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 0.0001220703125 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 0.00006103515625 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 0.000030517578125 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 0.0000152587890625 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 0.00000762939453125 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 0.000003814697265625 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 0.0000019073486328125 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 0.00000095367431640625 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 0.000000476837158203125 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 0.0000002384185791015625 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 0.00000011920928955078125 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 0.000000059604644775390625 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 0.0000000298023223876953125 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 0.00000001490116119384765625 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 0.000000007450580596923828125 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 0.0000000037252902984619140625 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 0.00000000186264514923095703125 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 0.000000000931322574615478515625 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 0.0000000004656612873077392578125 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 0.00000000023283064365386962890625 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 0.000000000116415321826934814453125 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 0.0000000000582076609134674072265625 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 0.00000000002910383045673370361328125 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 0.000000000014551915228366851806640625 GA. FOR UP TO 15 FEET OF WIRE LENGTH, 0.0000000000072759576141834259033203125 GA. FOR UP TO 15 FEET OF WIRE LENGTH,

PIPING — GENERAL

Connections are provided on the side of the cabinet and chassis assembly, and are 1/2" F.P.T. size. Water supply must have adequate flow and pressure capability. Installation of shut off valves, drain valve, and union connections, as shown is mandatory for easy service or removal of unit.

CONDENSER WATER REQUIREMENTS

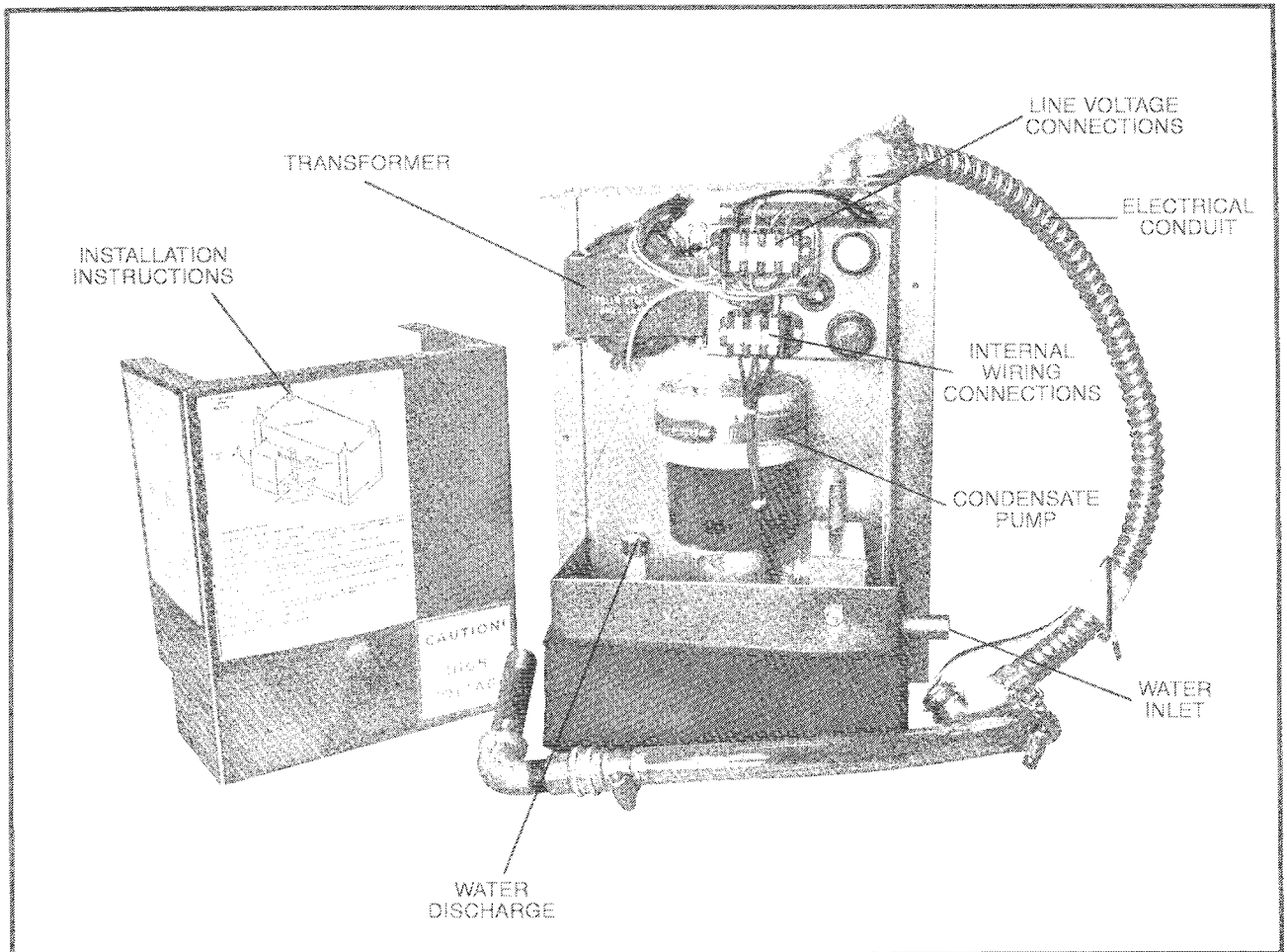
18.3°C (65°F) Entering Water Temp.		
Flow l/h (GPM)	188	(.83)
Water Pressure kPa (PSI)	14.5	(2.1)
23.9°C (75°F) Entering Water Temp.		
Flow l/h (GPM)	415	(1.83)
Water Pressure kPa (PSI)	22.1	(3.2)
29.4°C (85°F) Entering Water Temp.		
Flow l/h (GPM)	704	(3.1)
Water Pressure kPa (PSI)	40.0	(5.8)

Humidifier Water Requirements are 1.5 G.P.H. For water pressure exceeding 150 psi, consult factory.

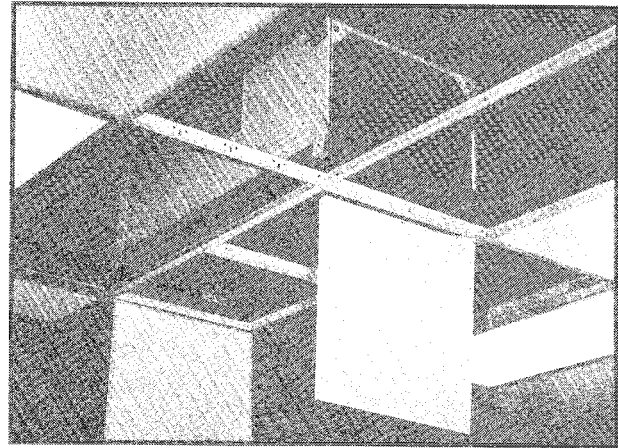
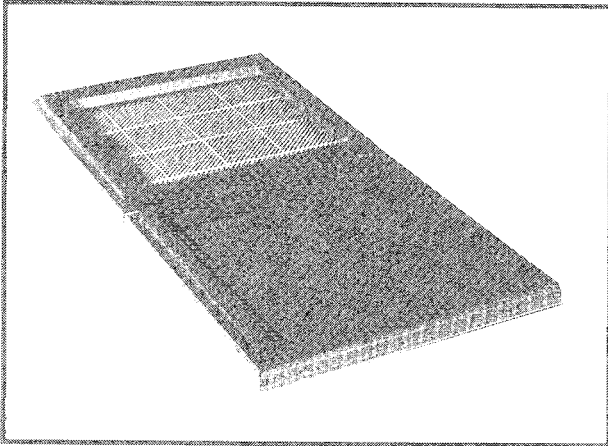
CONDENSATE PUMP (Optional)

- 1) Disconnect all power to Mini-MATE unit.
- 2) Mount condensate pump package to wrapper and chassis, with screws provided.
- 3) Remove pump package cover & check voltage connection on terminal strip. Move wire to match voltage supplied to Mini-MATE unit (208/230/277 volt)
- 4) Attach electrical conduit to knockout provided in wrapper, & attach wires to main line voltage terminal strip in unit. (Pump is energized by float switch, in package.)
- 5) Attach galvanized nipple to condensate drain connection in unit, and make plastic hose connection water tight.
- 6) Connect 3/8" O.D. copper drain to compression fitting at check valve in pump package and run to an open drain. Total lift may not exceed 9 feet.
- 7) Attach condensate pump package cover.
- 8) Reconnect all power to Mini-MATE unit.

CONDENSATE PUMP AND PIPING

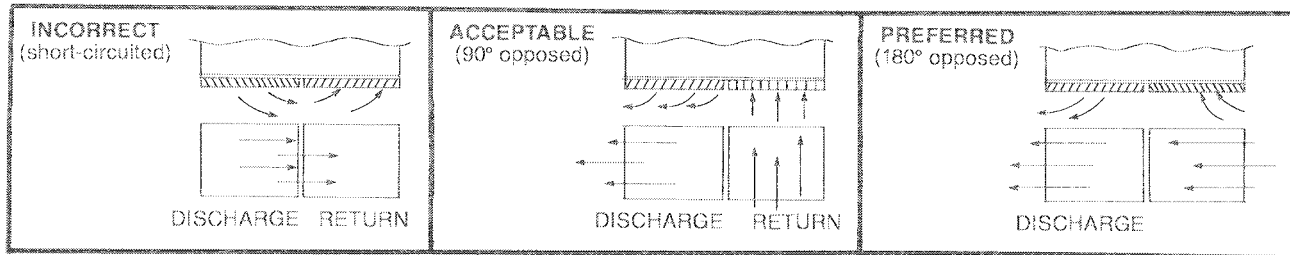


Indoor Grille and Filter



Install the hinged supply and return **grilles** properly. They are directional devices and when installed incorrectly, will short-circuit the air flow. (see sketches below).

GRILLE DIRECTION

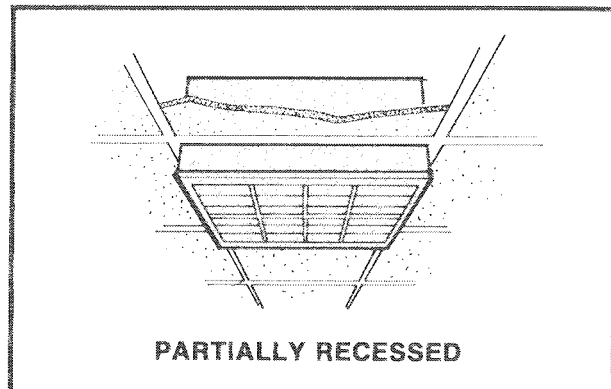


GRILLE INSTALLATION

Slide the filter grilles into place so that louvers direct air away from unit. Install filter in return air grille. There is gasketing material around each of the filter grilles. When both grilles are installed, add additional gasketing (provided) between the filter grilles

so that the entire perimeter of the unit is sealed (see photo upper left). Lower the cabinet/chassis assembly 1" or until gasketing material is compressed 1/4". Do not allow weight of unit to rest on filter grilles.

If there is insufficient clearance (less than 20 inches) between ceiling grids and structural members, construct a 4' x 4' soffit with two adjacent ceiling tiles. This will house the Mini-Mate and the electrical and piping connections. If no soffit is provided, filter grilles may be screwed directly to subbase.



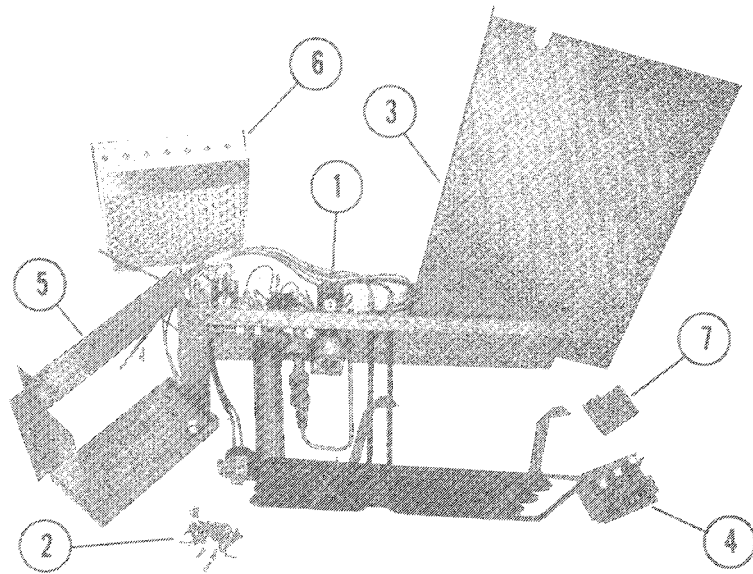
Optional Reheat and Humidifier Instructions

This reheat/humidifier kit permits field add-on to all units shipped as "**COOLING ONLY.**" Two basic kits (208V and 277V) will fit air or water cooled units.

It is assumed to install this kit that water and ductwork (when used) and power have been disconnected and unit has been dropped from cabinet to an accessible level.

MAJOR COMPONENTS

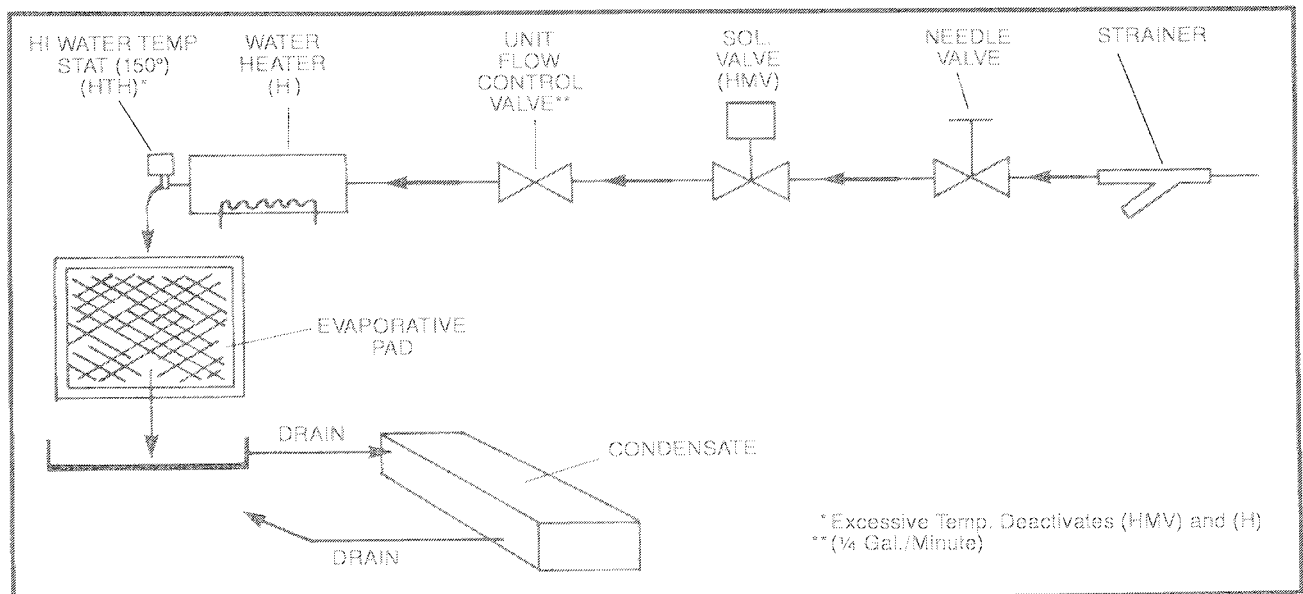
1. Bulkhead Assembly
2. Screws
3. Side Panel
4. Circuit Board
5. Humidifier Frame
6. Humidifier Pad
7. Humidifier Support Clip



OPERATION

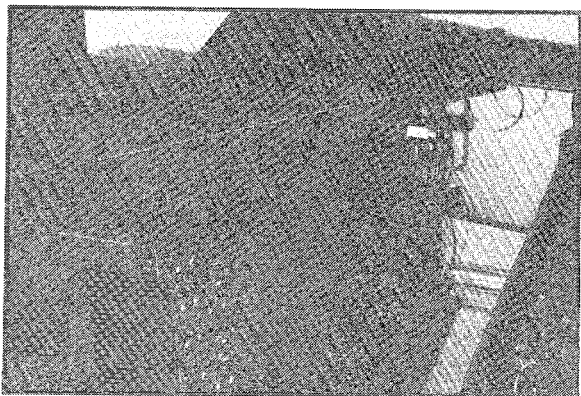
- 1) Call for humidity:
Control activates (H) Solenoid & Water Heater Contactor (H).
- 2) Humidity Satisfied:
Control deactivates heater contactor, 2½ min. delay, solenoid deactivated.

FLOW CYCLE

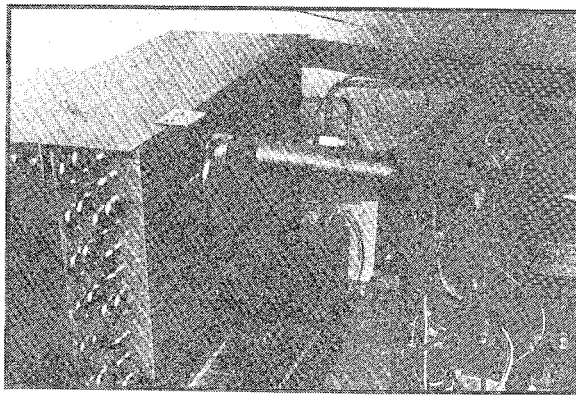


Reheat and Humidifier — Cont'd.

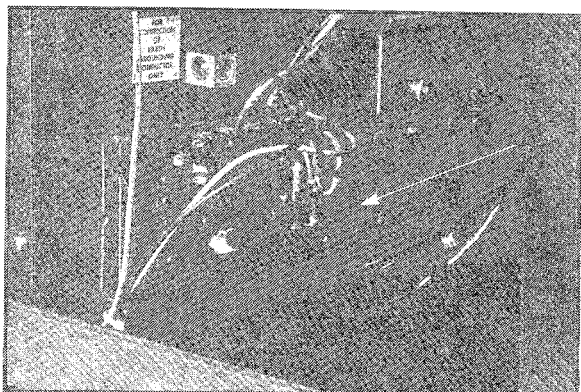
Installation



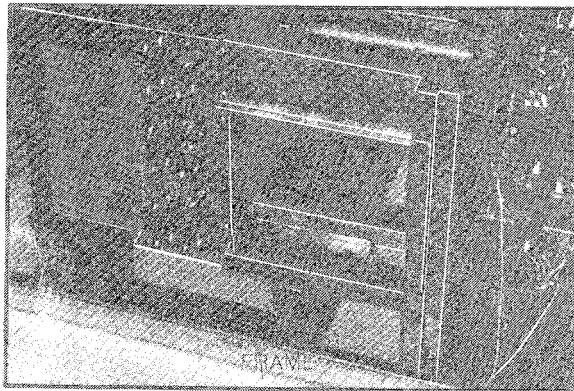
REMOVE AND DISCARD **BULKHEAD** ASSEMBLY, COMPLETE WITH (5) INTERCONNECTING WIRES & REHEAT ELEMENT. TOTAL OF (6) SCREWS.



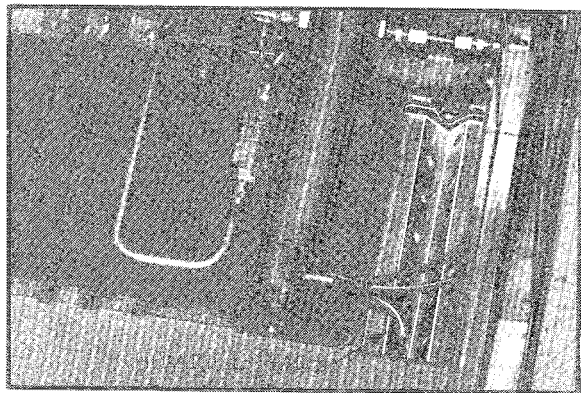
ADD NEW **BULKHEAD** AND REHEAT ASSEMBLY — 6 SCREWS ADD SUPPORT CLIP.



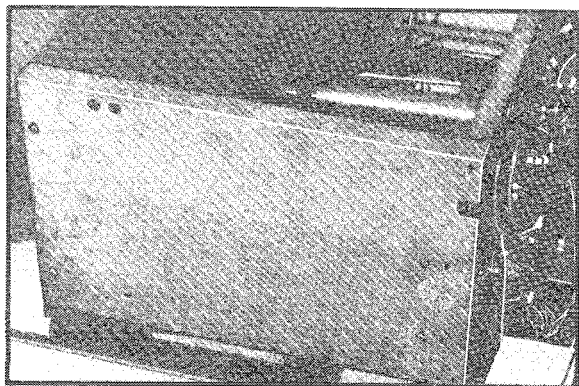
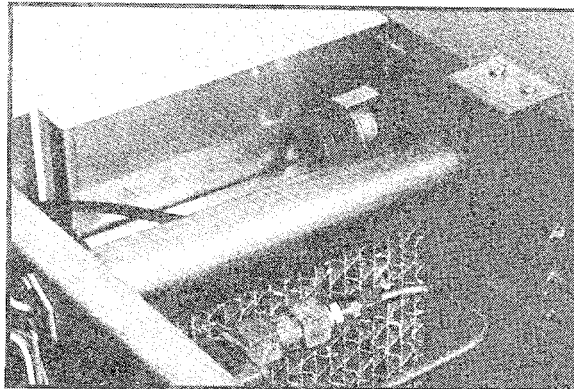
RECONNECT (6) INTERCONNECTING **WIRES** TO CIRCUIT BOARD AS SHOWN IN PHOTO AND WIRE PER DIAGRAM ATTACHED.



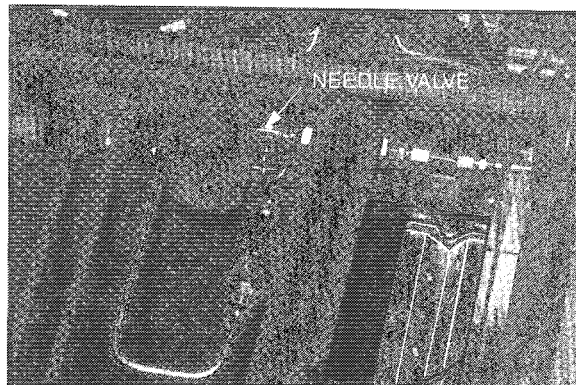
POSITION **HUMIDIFIER FRAME** AS SHOWN AND SECURE WITH SCREWS PROVIDED.



ADD HUMIDIFIER PAD, 'V' GROOVE UP, AS SHOWN.



ATTACH SIDE PANEL, 4 SCREWS AS SHOWN IN PHOTO.



RE-INSTALL AND CONNECT UNIT. ADJUST WATER FLOW WITH NEEDLE VALVE FOR 150°F WATER TEMPERATURE.

Section III — Service

INSTALLATION CHECK LIST

FAN SECTION

- ☐ Rotation
- ☐ Motor Mount Tight

COMPRESSOR SECTION

- ☐ Signs of Oil Leaks
- ☐ Vibration Isolation Free
- ☐ Electric Wiring Intact
- ☐ Refrigerant Lines Not Rubbing

ELECTRICAL PANEL

- ☐ Check For Loose Connections
- ☐ Check Amperage—All Components
- ☐ Start and Stop—Relay Contacts

FILTERS

- ☐ Filters In Place
- ☐ Wipe Entire Section Clean

PANELS

- ☐ Insulation Intact
- ☐ Gaskets Intact
- ☐ Air Leaks

REHEAT SECTION

- ☐ Check Heater Elements
- ☐ Check Wiring

REFRIGERATION CYCLE

- ☐ Suction Pressure
- ☐ Head Pressure
- ☐ Refrigerant Charge
- ☐ Signs of Oil Leaks
- ☐ Leak Test (Refrigerant)
- ☐ Any Piping Rubbing
- ☐ Excessive Piping Vibration
- ☐ Entering Air ____°F
- ☐ Leaving Air ____°F
- ☐ Coil Clean

REMOTE ELECTRONICS PANEL

- ☐ Clean Internal Panel
- ☐ Run Panel Through Control Sequence
- ☐ Transformer Connections

HUMIDIFIER SECTION

- ☐ Check for Burnt-Out Elements

AIR COOLED CONDENSER

- ☐ Clean Coil of Debris
- ☐ Motor Mount Tight
- ☐ Bearings Free
- ☐ Fan Mounting

DESCRIPTION OF OPERATION

With voltage supplied, the unit can be started by placing the stop-run toggle switch (located on the wall mounted control box) in the run position. This will energize the evaporator fan motor. If an increase in room temperature is sensed by the temperature sensor in the control box, the temperature controller will start the compressor (and condenser fan if air cooled). As room temperature drops, the controller will shut the compressor down.

UNITS WITH REHEAT AND HUMIDIFIER

If room temperature drops below set point, the reheat will energize.

Room humidity is controlled by the humidity sensor. If room humidity drops below set point, the humidifier solenoid and water heater are activated and water will begin to flow. When the room is satisfied, the water heater will de-energize but water will continue to flow through the heater and pad until the heater is cooled. If room humidity rises beyond the set point, the controller will activate the compressor and condenser.

MAINTENANCE PROCEDURES

Filters

The air filter should be checked monthly and changed as required. This can be done by sliding the inlet grille as indicated on the grille assembly and pulling down.

NOTE: The unit must be turned off when servicing the filter.

Humidifier

If a humidifier is provided in the unit, the humidifier drain pan must be periodically cleaned to remove mineral deposits. This can be as frequent as weekly in areas of high water impurity and continuous humidifier usage.

The humidifier is located above the discharge air grille. Remove the humidifier pad by lifting the retaining bracket on the inside top left of the pad and pulling in and down. The pan should be cleaned with a stiff brush and flushed with water.

CAUTION: Do not attempt to clean the humidifier pad. It should be discarded and replaced if mineral accumulation impairs operation.

Before servicing humidifier, make certain unit power supply is turned off and water in pan is no hotter than lukewarm.

Trouble Shooting

TROUBLESHOOTING GUIDE

PROBLEM	PROBABLE CAUSE	CHECK OR REMEDY
Unit will not start	No power to unit	Check voltage at input terminal block
	Control voltage circuit breaker open	Locate short and reset circuit breaker
	Liquitect sensor relay has opened due to high water or high head pressure	Reset unit by switching "Stop-Run" switch to "Stop", then to "Run" — See section below —
Unit ceases operation Liquitect sensor relay open	High water in drain pan	Drain water — Reset unit
	Compressor high head pressure	1. Call for cooling 2. Momentarily jumper high head pressure stat. If compressor runs, high head stat is open. — See compressor section —
No cooling- Compressor will not operate	Low refrigerant charge	Check pressure with gauges
	Compressor contactor not Pulling in	Check terminals 10 & 14 for 24 VAC \pm 2V. If no voltage, defective solid state board. Check voltage at contactor
	Poor jumper connection*	Check continuity with ohm meter
	(Outside air condenser only) Temperature below 30°F— low ambient stat in condenser fan section open	Check outside temperature Make sure low ambient stat is turned completely clockwise
Compressor High head pressure	— Water Cooled — No water flow thru condenser	Check water supply See page 11
	— Air Cooled — Condenser fan not operating	Check electrical connection at junction plug
	Insufficient air flow across condenser coil	Remove debris from coil and air inlets
Humidifier does not operate	No water flow	Check water supply
	Defective solid state board	Check voltage at 10 & 18 on solid state board 24 VAC \pm 2V
	High water temp	Check for adequate water flow
Reheat will not operate	Defective solid state board	Check voltage at 10 & 19 on solid state board 24 VAC \pm 2V.
	Reheat safety open	Jumper high temp stat — if reheat functions — stat is open.
	Element is burned out	Turn off power — check element continuity with ohm meter.
Continuous Heating	Open sensor circuit	Find open circuit and repair at 70°F — 100 Ω in sensor circuit at 77°F — 1030 Ω
Continuous Cooling	Shorted sensor circuit	**Find short and repair
Continuous Humidification	Open sensor circuit	**Find open circuit and repair
Continuous Dehumidification	Shorted sensor circuit	Find short and repair

* See Photo — Page 8 (Bottom Right)

** Do not measure the resistance of the sensor with an ohm meter since a DC potential will polarize the element.

REFER TO MINI-MATE PARTS LIST FOR REPLACEMENT PROCEDURE



1050 Dearborn Drive
P.O. Box 29186
Columbus, Ohio 43229
614-888-0246 Telex 246-655
Liebert WGN