Carrier International Sdn. Bhd. Malaysia

INSTALLATION, START-UP AND SERVICE INSTRUCTIONS

40LM
040 - 100
50Hz

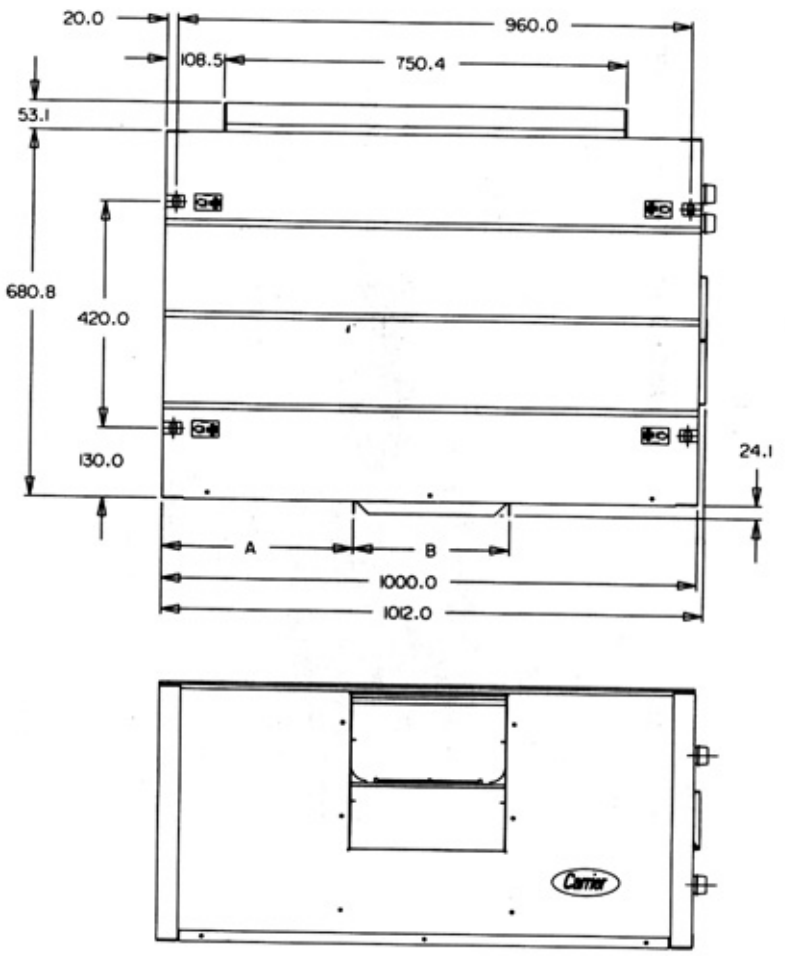
CHILLED WATER FAN COIL UNIT

CONTENTS:

TABLE 1 PHYSICAL DATA

MODEL 40LM		040	050	060	070	090	100
POWER SOURCE (V-Ph-Hz)		230 - 1 - 50					
MIN./MAX. VOLTAGE (V)		207 - 253					
OPERATING WEIGHT	KG	68	70	72	95	100	118
COIL	TYPE	COPPER TUBE, ALUMINIUM FIN					
	FACE AREA (M^2)	0.36			0.45		0.59
	NO. OF ROWS	2	3	4	3	4	3
	TYPE OF FIN	LANCED SINE WAVE PLATE FINS					
	FINS/M	589					
FAN	NO. OF WHEELS	1			2		
	DIA. OF WHEELS (mm)	225		271	225	271	
	DRIVE	DIRECT DRIVE					
	DISCHARGE AREA (M^2)	0.08		0.11	0.27	0.31	0.34
NOMINAL AIR FLOW	l/s	700	680	830	920	1280	1840
FAN MOTOR	TYPE	PERMANENT SPLIT CAPACITOR					
	NUMBER	1					
	HORSEPOWER (kW)	0.37		0.56	0.75	1.12	
	SPEED	3 SPEEDS					
CONNECTION	TYPE	BSP MPT					
	SUPPLY	1”					
	RETURN	1”					
	DRAIN	3/4” NPT					
DIMENSION	HEIGHT (mm)	480					
	WIDTH (mm)	1000			1200		1600
	DEPTH (mm)	680					

PHYSICAL DIMENSION



Model Size	A	B	C	D
40LM040/050	357.6	291.2	12.6	291.2
40LM060	335.1	336.2	17.2	336.2

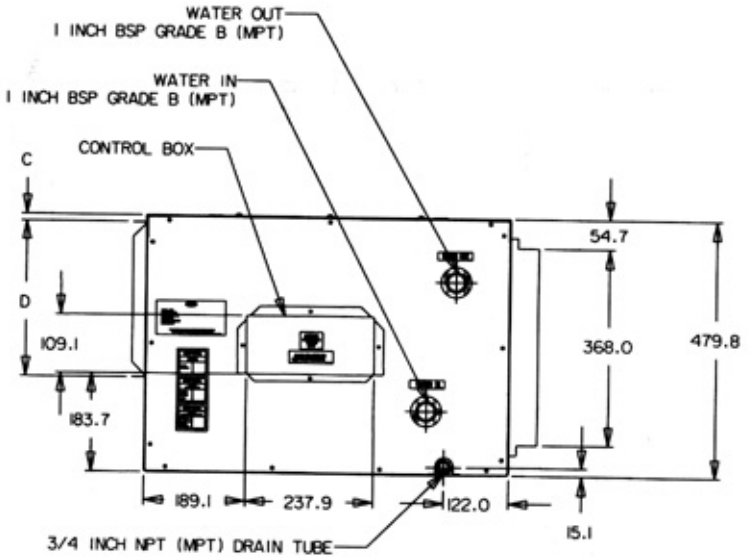
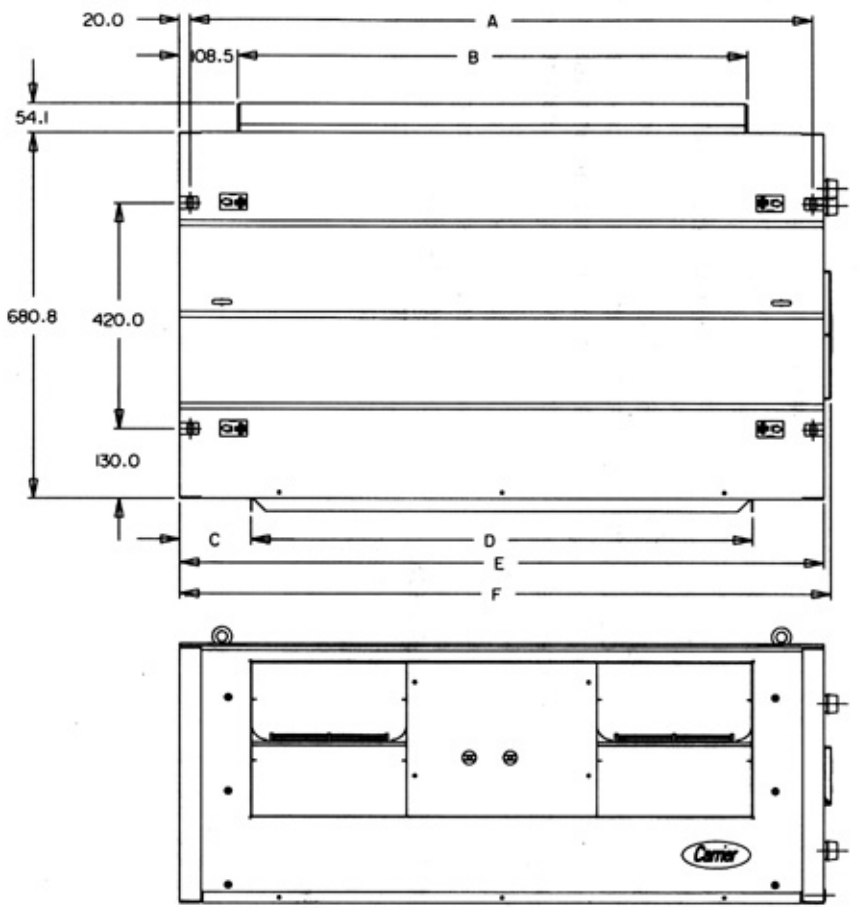


FIG. 1 40LM - 040/050/060 DIMENSIONAL DRAWING

PHYSICAL DIMENSION



Model No	A	B	C	D	E	F	G	H
40LM070	1160	949	132.4	935.2	1200	1212	28.6	291.2
40LM090	1160	949	132.4	935.2	1200	1212	28.6	335.4
40LM100	1560	1350.4	287.4	1025.2	1600	1610.8	17.6	336.2

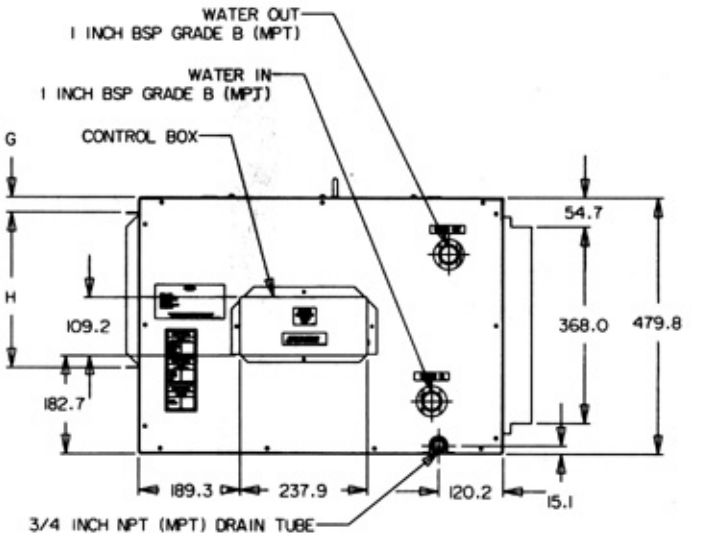


FIG. 2 40LM - 070/090/100 DIMENSIONAL DRAWING

SAFETY CONSIDERATIONS

Installation and servicing of air conditioning equipment can be hazardous due to system pressure and electrical components. Only trained and qualified service personnel should install, repair or service air conditioning equipment.

When working on air conditioning equipment observe precautions in the literature and labels attached to the unit and other safety precautions that may apply.

Follow all safety codes. Wear safety glasses and work gloves. Use quenching cloth for brazing operations. Have fire extinguisher available for all brazing operations.

WARNING !!!

Before performing service or maintenance operations on system, turn off main power switches to indoor unit and outdoor unit. Electrical shock could cause personal injury.

PRELIMINARY CHECK :

Following is a check list which should be checked before the installation is started. The installer should be familiar with each of the following requirements before the actual installation.

a) Space requirement and clearance
b) Ceiling or mounting strength
c) Piping connections
d) Condensate drain connection
e) Power supply and wiring
f) Air duct connections

RIGGING AND UNPACKING

Carton should not be removed from unit until reaching final location to avoid damage. Inspect unit for shipping damage and file claim with transportation agency if necessary, check nameplate voltage against available power supply. For special installation, consult local building and electrical codes.

LOCATION, MOUNTING AND ISOLATION

Unit should be installed for horizontal discharge only. Suspend horizontally using the factory-provided holes located at the top side flanges of unit (Refer Fig.1 - 2 for holes position).

Do not restrict service areas. Refer Fig. 3 for minimum recommended clearance space.

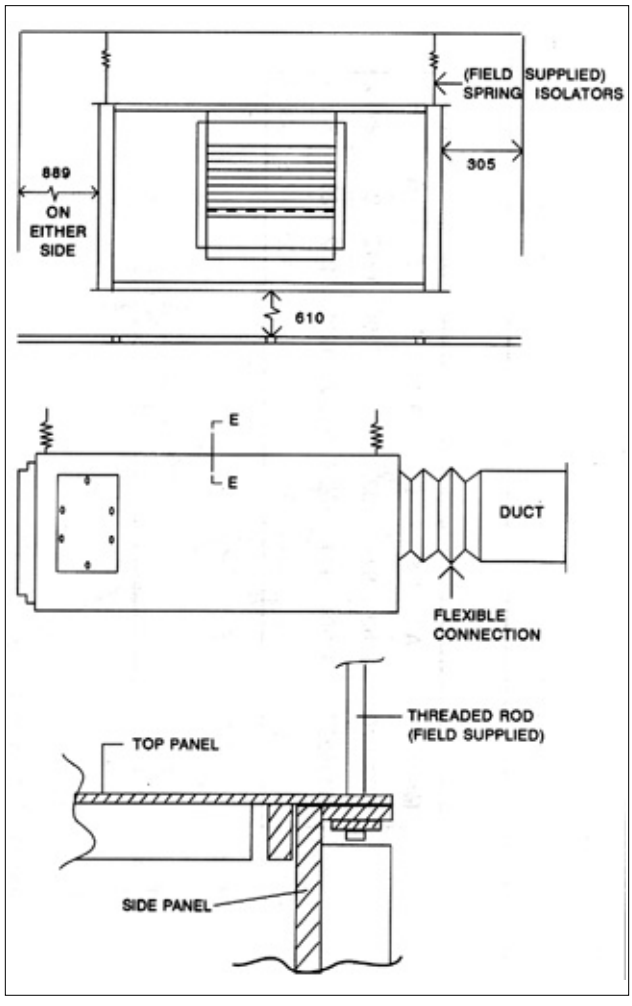


FIG. 3 UNIT CLEARING & MOUNTING

Note: Clearance space beneath the unit may be levied provided the ceiling offers sufficient access to the unit for servicing and maintenance works.

Select and adjust vibration isolators and suspension rods so that unit is uniformly suspended. See Table 1 for the approximate unit weight and ensuring that the ceiling strength is sufficient enough to support it.

Ductwork to be installed and insulated in accordance with Carrier System Design Manual and applicable codes. Use flexible connections to minimize duct to unit alignment problems plus vibration and noise transmission.

CONDENSATE DRAIN

During installation, suspend unit level. Plug the other drain pipe with the factory supplied condensate plug. Observe all local sanitary codes.

Drain must be trapped as shown in Fig. 4.

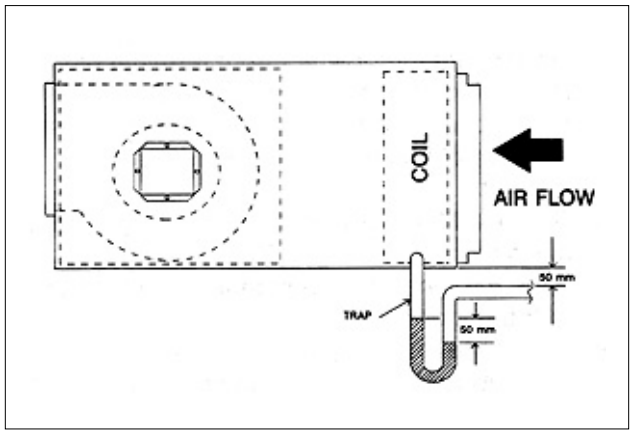


FIG. 4 CONDENSATE DRAINAGE

Note:
In most application, it is recommended that an auxiliary drain pan be used. It should be a water tight pan installed beneath the coil section to catch overflow condensate due to clogged condensate drain. The auxiliary condensate pan drain should be a minimum 12.7mm nominal pipe size, discharging at a point which can be readily observed.

Condensate drains should not be directly connected to a plumbing drainage system nor be made common to the unit condensate drain.

PIPING CONNECTION

Refer to table 1 for connection's types and sizes. Install piping in accordance with all applicable codes. When all joints are completed, perform hydrostatic test for leaks. Vent all coils at this time. Check unit piping for signs of leakage. If leaks are found, notify Carrier representative before initiating any repairs. Release trapped air from system. Following the hydrostatic test, insulate all piping to prevent sweating.

To ensure compliance with building codes, restore the structure's original fire resistance rating by sealing all holes with material carrying the same fire rating as structure.

FILTER

Filter is supplied with the standard unit. The unit is designed such that a filter in a rectangular frame (collapsible type) of dimension shown in Table 2 may be inserted or removed at the back of the unit with ease by removing the side angles (see Fig. 5). Throwaway filter of the right dimensions may be purchased from Carrier.

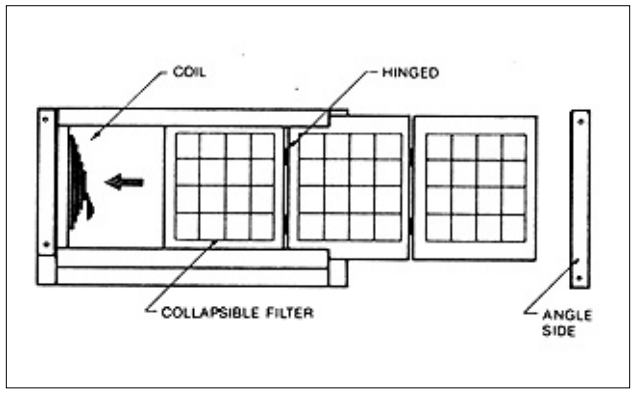


FIG. 5 FILTER ACCESS

TABLE 2: FILTER FRAME SIZE
(*ALL DIMENSION IN MM*)

MODEL	LENGTH	WIDTH	THICKNESS
40LM040/050/060	744	398	12
40LM070/090	944	398	12
40LM100	1344	398	12

UNIT ACCESS

All internal parts of the unit should be accessible by removing access panel at the base of the unit. Do not remove the base pan which is connected with the drain pipe unless necessary. To remove the access panel, follow the procedures below (Refer to Fig. 6)

1) Remove the screws from the fan deck and side panel.
2) Pull down the access panel as shown in Fig.6 (approximate 25mm)
3) Slide out the access panel.

To reinstall access panel, reverse the procedures. Finally, slot the access panel in place with screw from side thru the holes in the deck and side panel.

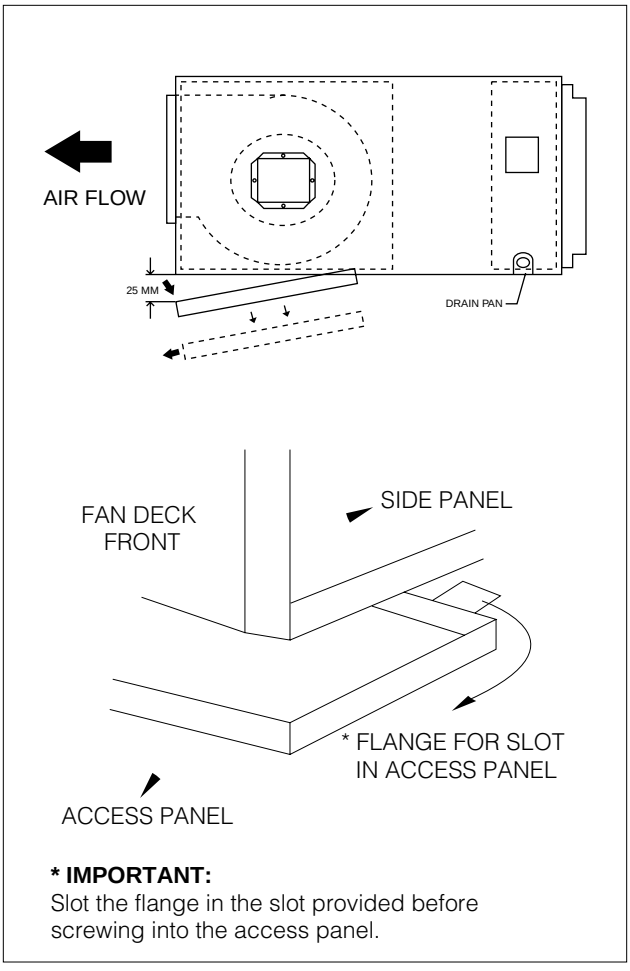


FIG. 6 MOUNTING ACCESS PANEL

WIRING

Beware! When making wiring connections or working on unit, be sure that electrical disconnect is open, locked and tagged. Follow local codes describing conduit and shielding requirements.

The unit may be operated at either one of its three fan speeds. Refer wiring diagram (Fig. 7 & 8) to relate colour and number of wire to the respective speed required.

REMEMBER that although power is supplied to only one of the speeds, the remaining wires are live and must be isolated from unit body.

CONFIGURATION

The unit is factory installed with coil connections located on the left hand side when viewed in direction of air flow.

The control box is fixed on the left hand side when viewed in direction of air flow.

START-UP

Follow start-up procedures described in condensing unit installation manual. Check 40LM unit for correct fan operation. Condensate drainage must be confirmed and unit level adjusted if neccessary for proper drainage. Check duct work or piping for any vibration and rectify the problem if exists.

SERVICE

Ensure that electrical disconnect is open, locked and tagged while working on unit.

MOTOR AND BLOWER REMOVAL :

1) Remove access panel by following the steps described previously.
2) Disconnect motor wires from terminal block in junction box at the side of the unit.
3) If capacitor is to be removed, detach if from the control box by removing the capacitor bracket.
4) Removed the bolts on the left and right hand sides of fan discharge.
5) Slide the inner fan deck, motor and blower out at the bottom.
6) Dismantle the end plate at the left by unscrewing the screw on fan deck and scroll.
7) Release the blower by unscrewing the screw on blower and motor shaft.
8) Repeat step 5 & 6.
9) Dismantle the rest of the screw on fan deck.
10) To dismantle the motor, loosen the bolts on the motor bracket.

To reinstall blower, reverse the above procedures. Ensure that the fan deck insulation is not turn and exposing the internal panel surface. If this happens, replace the insulation.

To install motor, reverse the above procedures. Ensure all screws are tightened securely and blower wheel is centered and can be turned freely by hand before switching on supply.

DRAIN CHECK

If water drips from either drain pipe, drain line or trap may be clogged. Also drain pipe plug on opposite side of unit may have fallen loose, replace them.

Check drain pan water level by removing access panel. Remove particles obstructing flow from drain pan or drain line. Drain pan may also be removed from suspended unit. To do this, first remove the access panel as illustrated previously.

FILTER CHECK

They should be checked periodically. Do not attempt to clean or reuse disposable filters, replace them.

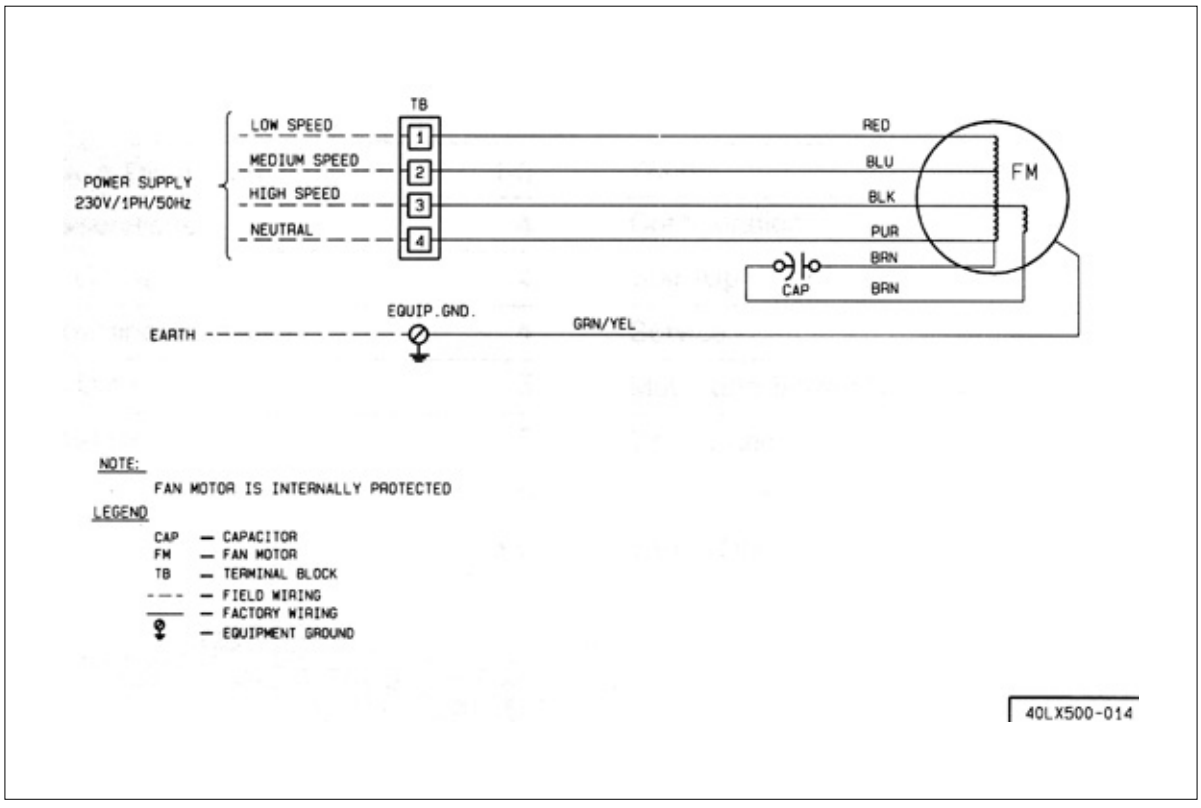


FIG. 7 40LM - 040/050/060 WIRING DIAGRAM

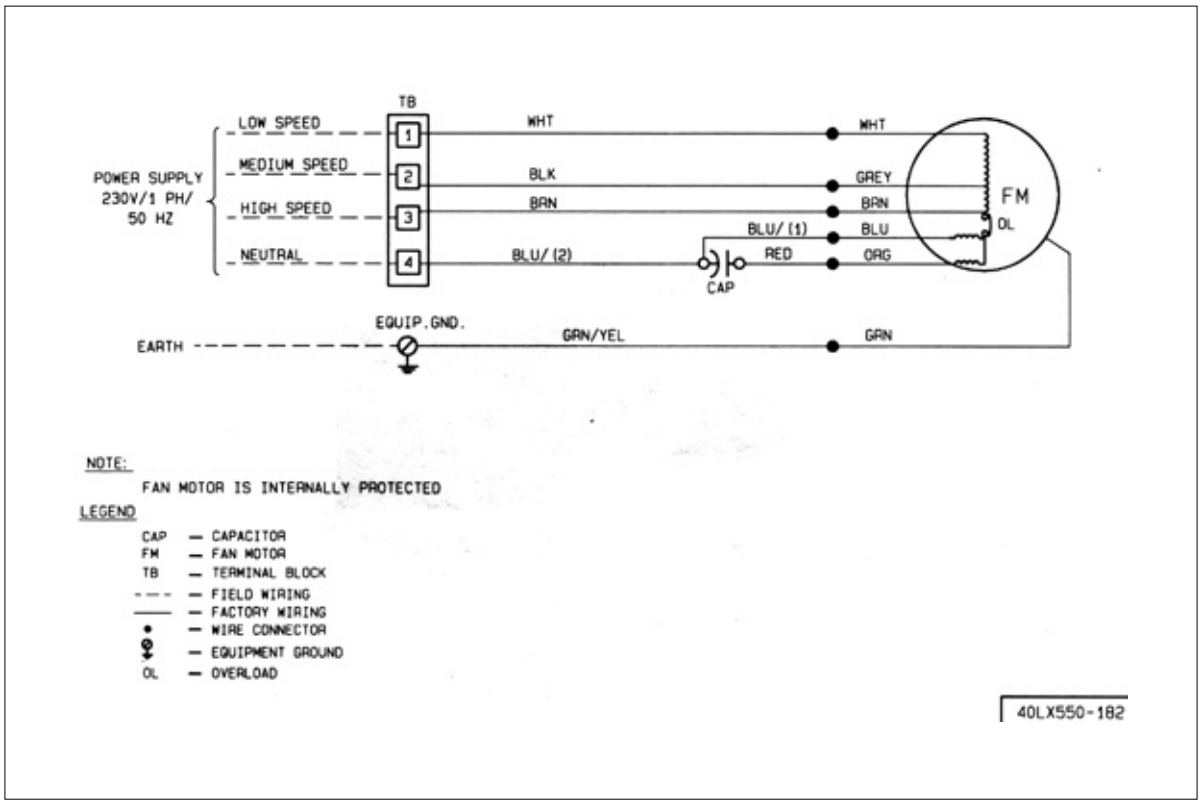


FIG. 8 40LM - 070/090/100 WIRING DIAGRAM

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