

DUO-THERM[®]

INSTALLATION INSTRUCTIONS

For Models 54412-003 and 54412-004
Self-Contained Air Conditioners

CAUTION

Modification of this Appliance can be extremely Hazardous. Always consult the manufacturer before making changes.

SPECIFICATIONS

B.T.U.	11,000 PER UNIT
VOLTAGE	115V., 60 Hz., 1 PH. PER UNIT
KILOWATTS	2.0 PER UNIT
BRANCH CIRCUIT AMPACITY.	MIN. 24 AMP. PER UNIT
MIN. GENERATOR.	3500 WATT PER UNIT*
FUSE SIZE	20 AMP. MIN., 25 AMP. MAX. PER UNIT
RUN AMPS.	16.7 PER UNIT
REFRIG. CHARGE (R22)	19.5 PER UNIT

*NOTE: Use a 5000 watt generator for (2) units.

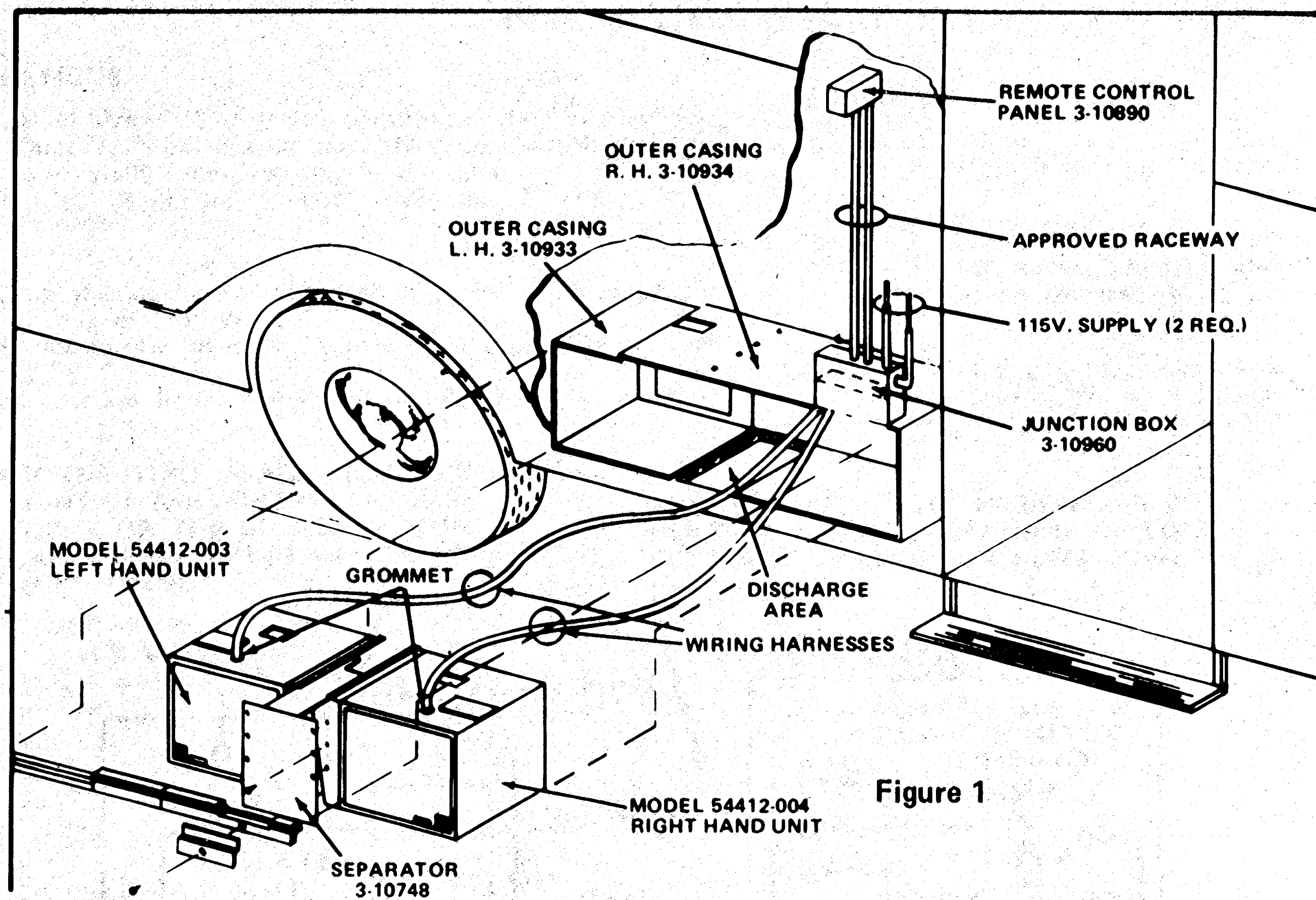


Figure 1

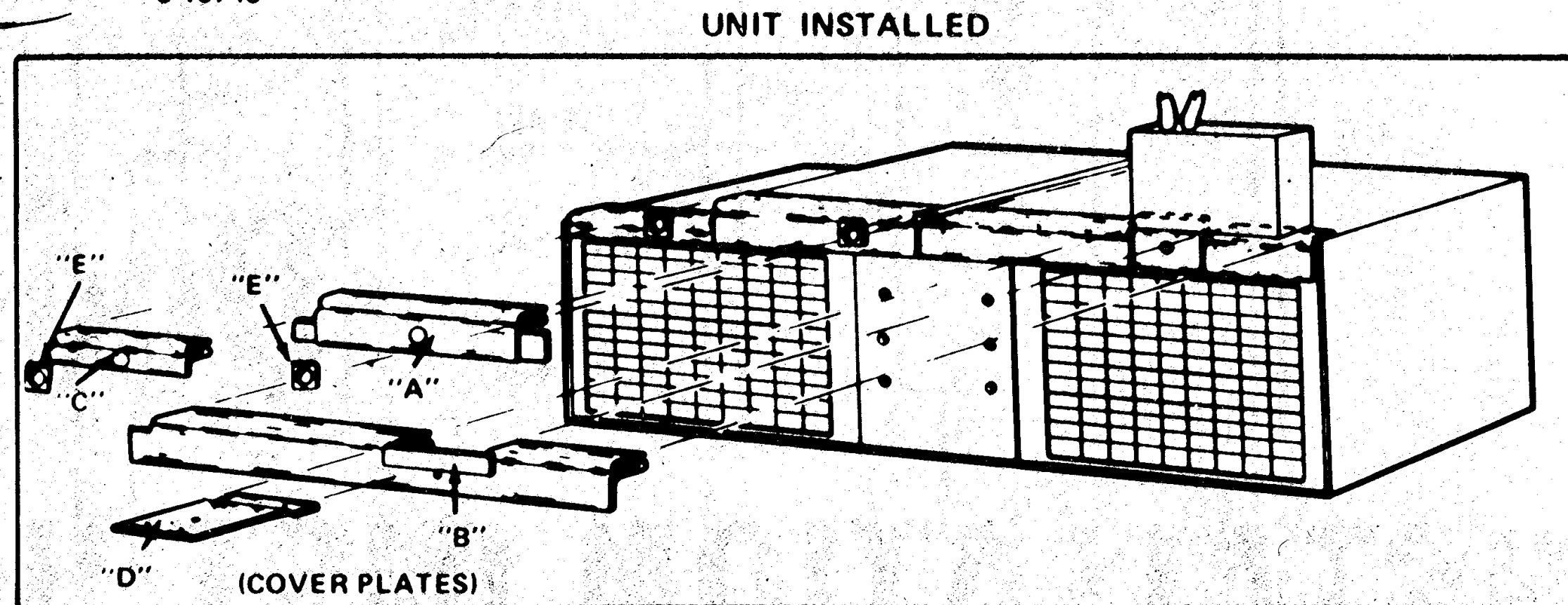


Figure 1A

THE OPENINGS IN WHICH THE AIR CONDITIONER IS TO BE INSTALLED MUST BE AT LEAST 56-1/2" WIDE BY 14-1/2" HIGH BY 24" DEEP.

PROVIDE AN ADEQUATE DISCHARGE OPENING IN THE FLOOR OF COMPARTMENT. OPENING MUST BE AT LEAST 10" x 18" AS SHOWN IN FIGURE 1.

PROVIDE AN ADEQUATE RETURN AIR OPENING IN FRONT OF UNIT. OPENING MUST BE AT LEAST 11-1/2" HIGH BY 18" WIDE (PER UNIT).

INSTALLING OUTER CASING

1. Remove seal strips A, B and C from outer casing.
2. Pop rivet outer casing no. 3-10933 to outer casing no. 3-10934.
3. Slide outer casing assembly into compartment and position discharge area over cut-out in floor. Secure outer casing to vehicle floor, partition, etc. Fasteners must be flush on inside of casing. See Figure 1.
4. Fasten junction box part no. 3-10960, to outer casing part no. 3-10934, with the screws provided.

INSTALLING AIR CONDITIONER

1. Set the model 54412-003 to the left and model 54412-004 to the right of opening outside the vehicle.
2. Route control wires (sheathed harness containing 6 wires) from unit, thru set of holes (C) in junction box, and hold in position with rubber grommet. Connect a set of wires (6) to each terminal block, as shown in Figure 2. Connect green wire from each harness, to the ground lug provided.

The field wiring, of this unit, is color coded. All wires that are connected, must be connected to a wire of the same color, blue to blue, black to black, etc. The terminal blocks in control panel have short jumper wires which indicate the color of wire to be connected to that particular terminal.

NOTE: ALL WIRING MUST COMPLY WITH THE NATIONAL ELECTRIC CODE AND ALL APPLICABLE STATE AND LOCAL CODES.

3. Install the remote control panel part no. 3-10890.
4. Run N.E.C. class 1 wiring from terminal blocks in control panel, down thru holes (A) in junction box and connect as shown in Figure 2. Holes (A) will accommodate two pieces of 1/2" conduit.

If wiring between control panel and junction box is not purchased with unit, be sure wires connect in control panel and junction box as shown in Figure 2.

5. Run approved 115V., 60 Hz., 1 Ph. power supply lines thru holes (B) in junction box and connect to the power lines from air conditioner. See Figure 2.

For complete wiring diagram, see page 4.

6. Place model 54412-004 into compartment, push back and to the right as far as possible. Slide excess wire harness into space between outer casing and top of units.
7. Place model 54412-003 into compartment, push back and to the left as far as possible. Be sure excess harness is pushed in on top of units.
8. Install separator no. 3-10748 between the units and secure in position with screws provided.
9. Connect discharge ducts to the air conditioner. The duct system must be sized so that the static pressure is no less than .40" w.c. or no more than .60" w.c.
10. Install cover plates ("A" thru "D") across opening at top of unit, as follows:

Install cover plate "A" first. Install "B" and "C" and press firmly to insure a good seal with the gasket material on "A". Install plate "D" by sliding top edge of plate under edge of junction box, then push lower edge of plate down and fasten to plate "C" with a self-tapping machine screw. Fasten "A" and "B" with pieces "E" and self-tapping machine screws, see Figure 1A.

DUCT SYSTEM LAYOUT GUIDE

SPECIFICATIONS

Minimum Duct Size - 20 sq. inches (Approx. 4" deep by 5" wide).
 Width of Duct - should not be more than 1.5 x depth (height).
 Registers - generally same free area as the duct.
 Static Pressure - minimum .4" W.C., maximum .7" W.C..

DATA:

1. A 10' run of smooth metal duct with 20 sq. in. of free area has a pressure drop of .10" W.C..
2. A 90° elbow, smooth metal, rounded, has a pressure drop of about .2" W.C..
3. A 25% decrease in duct area will double the pressure drop.

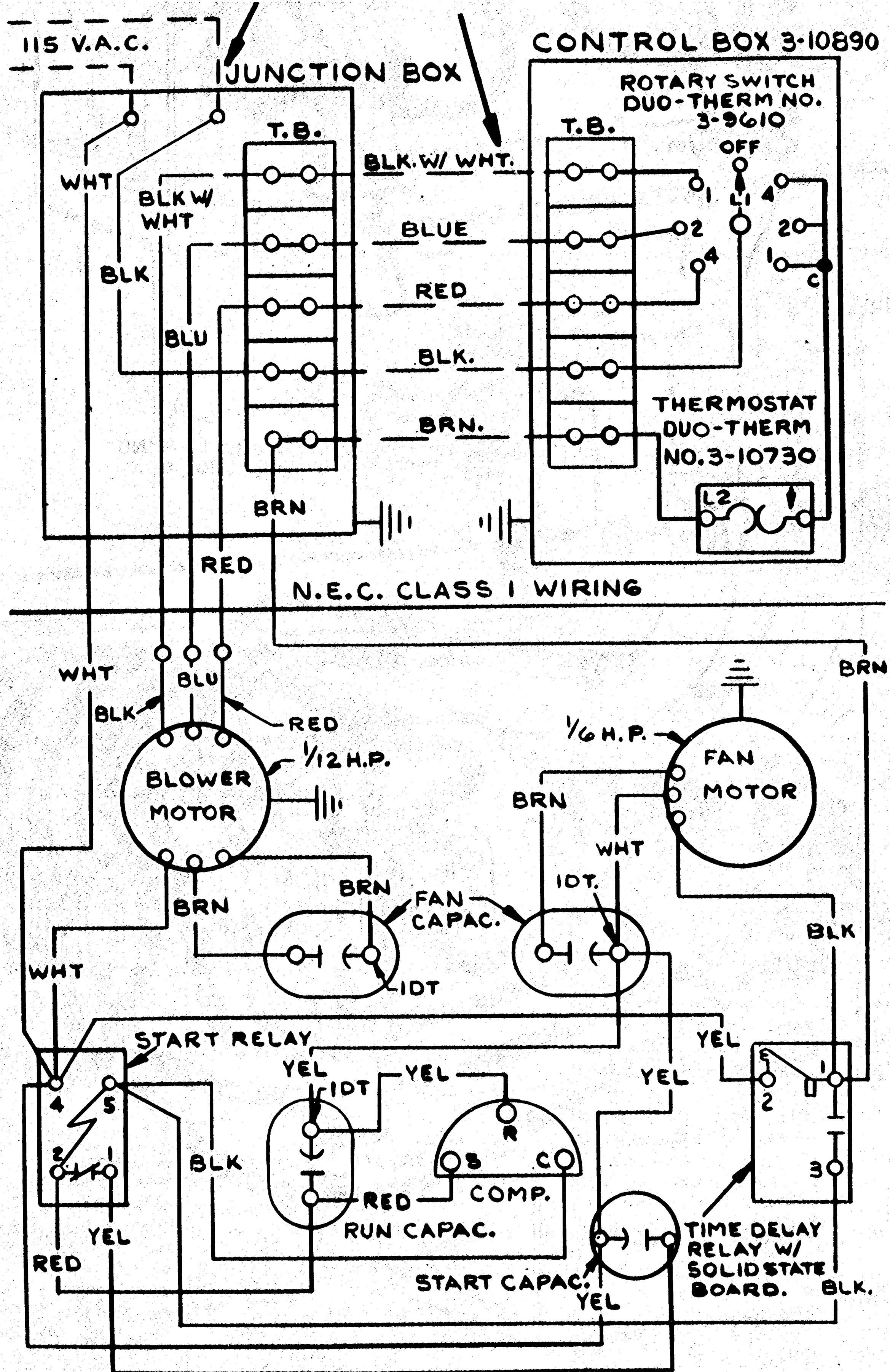
EXAMPLES:

1. A - 20' run of 4" x 5" metal duct (20 sq. in.) = .2" W.C.
 B - 1 - 90° elbow, rounded, smooth metal = .2" W.C.
 TOTAL STATIC .4" W.C.
2. A - 10' run of 4" x 5" metal duct (20 sq. in.) = .1" W.C.
 B - 1 - 90° elbow, rounded, smooth metal = .2" W.C.
 C - 1 - register restricted to 15 sq. in. free area = .1" W.C.
 TOTAL STATIC .4" W.C.

NOTICE: If at all possible, avoid the use of flexible type duct work, because of the large pressure drops they produce.

THE DISCONNECTING MEANS SHALL BE WITHIN SIGHT OF THE CONTROLLER AND WITHIN SIGHT OF THE BLOWER MOTOR OR BE CAPABLE OF BEING LOCKED IN THE OPEN POSITION.

THE CONDUCTORS TO THE CONTROL BOX MUST BE 12 AWG. FOR RUNS UP TO 25 FEET AND 10 AWG. FOR RUNS OVER 25 FEET.



NOTE: THIS DIAGRAM SHOWS THE WIRING FOR (1) UNIT. (ONE HALF OF A 54424 SYSTEM) THE SAME WIRING APPLIES TO BOTH UNITS.

NOTE: FIELD WIRING CONNECTIONS ON TERMINAL BLOCK ARE IDENTIFIED BY WIRE COLOR.

WIRING:
 FACTORY _____
 FIELD - - -