HUGHES SERVICE INFORMATION NOTICE

NOTICE NO. N-45
DATE March 29, 1968

SUBJECT: REWORK, ELECTRICAL COMPONENTS - RADIO NOISE LEVEL CONTROL

MODELS AFFECTED: 269A(TH-55A) Helicopter Serial Nos. 0714 thru 0782

TIME OF COMPLIANCE: At owners and operators discretion

PREFACE:

The information given in this Service Information Notice lists a procedure for field retrofit of EMI components on above referenced aircraft to meet requirements of the TH-55A detail specification. Modification of specified electrical components in designed to minimize electromagnetic radiation interference and maintain control of radio noise level within limits prescribed by the JY-80-5 Detail Specification for U.S. Army Primary Helicopter Trainer.

Reference

269A/A-1/TH-55A Handbook of Maintenance Instruction, Reissued 15 Dec. 1967

PARTS LIST

Nomenclature	Part No.	Qty.	Mfgr.
Kit, modification - radio noise level control	M10035	1	HTC-AD

TOOLS AND EQUIPMENT

Soldering iron - electric - 30-50 watts	Commercial
Drill motor - portable	Commercial
Drill bit - 0.256/0.261 in. dia.	Commercial
Drill bit - 0.250/0.254	Commercial
Heat gun - thermogun 500A or equivalent	Raychem Corp. Redwood City, Calif.

MATERIALS

Solder-Rosin core- SN60 or SN63	A/R	Type R, RMA, or RA
Rosin flux, liquid	A/R	Federal P-D-680
Solvent - dry cleaning	A/R	MIL-F-14256, Type A
Cleaner - Ketone, toluene, or equiv.	A/R	Commercial
Locking compound - liquid	A/R	Loctite-American Sealants Co.

STEP I REWORK - 269A7109-3 LONGITUDINAL TRIM MOTOR ASSEMBLY

a. Position all electrical switches and BATTERY switch to OFF condition.

b. Disconnect cyclic bungee spring from stick assembly by removing cotter pin, washer, and retaining pin. (Refer to Figure 6-8, HMI)

c. Remove screws and nuts securing longitudinal cyclic trim assembly and remove assembly from aircraft.

d. Cut motor wiring at cover of motor; remove cover.

e. Install 7113 spacer to new -3 cover. (See Figure 1, View A)

f. Install protective thermofit tubing; solder motor wiring to solder capacitor terminals; position thermofit tubing over soldered connections and apply heat to shrink tubing in place

NOTE

Clean wire ends and terminals thoroughly before soldering. Avoid excessive heat when soldering.

g. Insert capacitors through cover on each side of spacer; secure capacitors to cover; install cover to motor assembly.

NOTE

Check that capacitor with red wire is installed in hole with red dot.

h. Install thermofit protective tubing over external lead wires; solder lead wires to capacitor terminals. Check that red lead wire is soldered to capacitor terminal with red dot. Position thermofit tubing over soldered connections and apply heat to shrink tubing in place.

NOTE

Use remaining wires for external leads.

i. Crimp splice knife at end of white lead wire; crimp terminal at end of red lead wire.

j. Position longitudinal cyclic trim assembly with bungee spring protruding through access hole in seat assembly; align mounting holes and secure trim assembly with existing screws, washers, and nuts.

k. Connect spring to cyclic stick, using retaining pin, washer and cotter pin.

l. Install red lead wire terminal to limit switch; knife splice white lead wire to cyclic trim motor reversing circuit unit wiring. (See wiring diagram, Section VIII, HMI)

m. Paint yellow dot on motor housing to signify that motor assembly has been reworked.

n. Check rework of longitudinal trim motor assembly for discrepancies.

o. Perform operational check of aircraft electrical system and flight control system.

STEP II REWORK - 269A8304-7 AUXILIARY FUEL PUMP

a. Position electrical switches and BATTERY switch to OFF condition.

b. Remove lower forward fairing; disconnect air intake assembly.

c. Remove cover of pump housing; cut wire leads 1.50 ± 0.25 inches from phenolic plate. (See Figure 1, View B).

d. Install thermofit protective tubing on wire leads; solder wire leads to capacitor terminals.

NOTE

Clean wire ends and terminals thoroughly before soldering. Bend terminals 90° to provide clearance inside cover. Avoid excessive heating when soldering.

e. Position thermofit tubing over soldered connections and apply heat to shrink tubing in place.

f. Remove and discard grommet from cover; plug one hole with plastic plug as shown; seal plug with PR221 sealer.

g. Drill 0.256/0.261 in. dia. hole in cover, per dimensions shown.

h. Clean both upper and lower surfaces of cover, using dry cleaning solvent.

i. Install and secure feed-through capacitors on cover, using flat washers and lockwashers.

j. Clean capacitor terminals and ends of existing lead wires; solder leadwires to terminals; install protective thermofit tubing over soldered connections and apply heat to shrink tubing in place.

NOTE

Length of each lead wire is 12 inches. Route wires in manner shown in Figure 1, View B, before soldering connections and shrinking tubing in place.

k. Reinstall cover of pump housing; seal installation screws with locking compound.

l. Secure lead wires to pump housing, using cable strap.

m. Reconnect pump wiring.

n. Paint yellow dot on pump housing to signify that fuel pump assembly as been reworked.

o. Check rework of auxiliary fuel pump for discrepancies.

p. Perform operational check of aircraft engine and electrical system.

q. Reinstall lower forward fairing; reconnect air intake assembly.

STEP III REWORK - 269A4564 LINEAR ACTUATOR ASSEMBLY

a. Position all electrical switches and BATTERY switch to OFF condition.

b. Disconnect and remove belt drive clutch control linear actuator from aircraft, per HMI.

c. Remove actuator cover. (See Figure 2)

d. Remove solder; remove R1 and wires from terminals A1 and A3. (See Figure 2)

e. Connect new R3 wire (red -4 in. long) to terminal A1; install new W2 wire (white -3.75 in. long) to terminal A1.

f. Connect new R2 wire(red -3.75 in. long) to terminal A3.

g. Splice W2 wire from terminal A1 to existing W1 wire; position protective thermofit tubing over splice and apply heat to shrink tubing in place.

h. Splice R2 wire from terminal A3 to existing R1 wire; position protective thermofit tubing over splice and apply heat to shrink tubing in place.

i. Shorten existing R4 wire on motor to 2.75 inches length; solder end to capacitor.

NOTE

Clean wire ends and terminals thoroughly before soldering.
Avoid excessive heat when soldering.

j. Connect and solder new B2(black) wire between motor and remaining capacitor.

k. Install capacitors in new -3 motor cover.

NOTE

Install capacitor with R4 wire in red dot hole.

l. Rotate -3 cover one revolution; align and press fit cover on motor.

m. Cut back No. S2 sleeve to 2.50 inches length.

n. Solder R3 wire to capacitor with red dot; solder existing B3 wire to remaining capacitor.

o. Check wiring rework for discrepancies.

p. Reinstall actuator cover; secure with No. 600 cellophane tape.

q. Tape all wires to cover, using No. 33 electrical tape.

r. Reinstall and reconnect linear actuator on aircraft, per HMI.

s. Paint yellow dot on actuator cover to signify that actuator assembly as been reworked.

t. Perform operational check of clutch control linear actuator and belt drive transmission assembly, per HMI.

STEP IV REWORK - 269A4213-3 CABIN HEATER BLOWER

a. Position all electrical switches and BATTERY switch to OFF condition.

b. Disconnect blower wiring; remove cover from aft end of blower motor. (See Figure 3, View A)

c. Remove existing P/N 5GA-T47 capacitor and ground wire. (See Figure 3, View B)

d. Remove grommet from cover; plug slot with si lastic sealant.

e. Cut motor wiring as required and install thermofit tubing; solder wire ends to terminals of capacitors and position thermofit tubing over soldered connections and apply heat to shrink tubing in place.

NOTE

Bend capacitor terminals to 90° to provide clearance inside motor. Clean all wires and terminals thoroughly before soldering. Avoid excessive heat when soldering. Route wires in manner shown in Figure 3, View B, before soldering connections and shrinking tubing in place.

f. Clean both surfaces of cover with dry cleaning solvent.

g. Install capacitors through 0.250/0.254 in. dia. holes in cover; position terminals to face away from field coil.

h. Reinstall cover; solder lead wires to capacitor terminals and position thermofit tubing over soldered connections and apply heat to shrink tubing in place. (See Figure 3, View B)

i. Crimp terminal to wire end and install ground wire.

j. Crimp knife splice to remaining wire and connect to existing heater wiring with knife splice.

k. Secure blower motor wiring, two places, with Sta-straps.

l. Paint yellow dot on blower motor housing to signify that assembly has been reworked.

m. Check rework of cabin heater blower assembly for discrepancies.

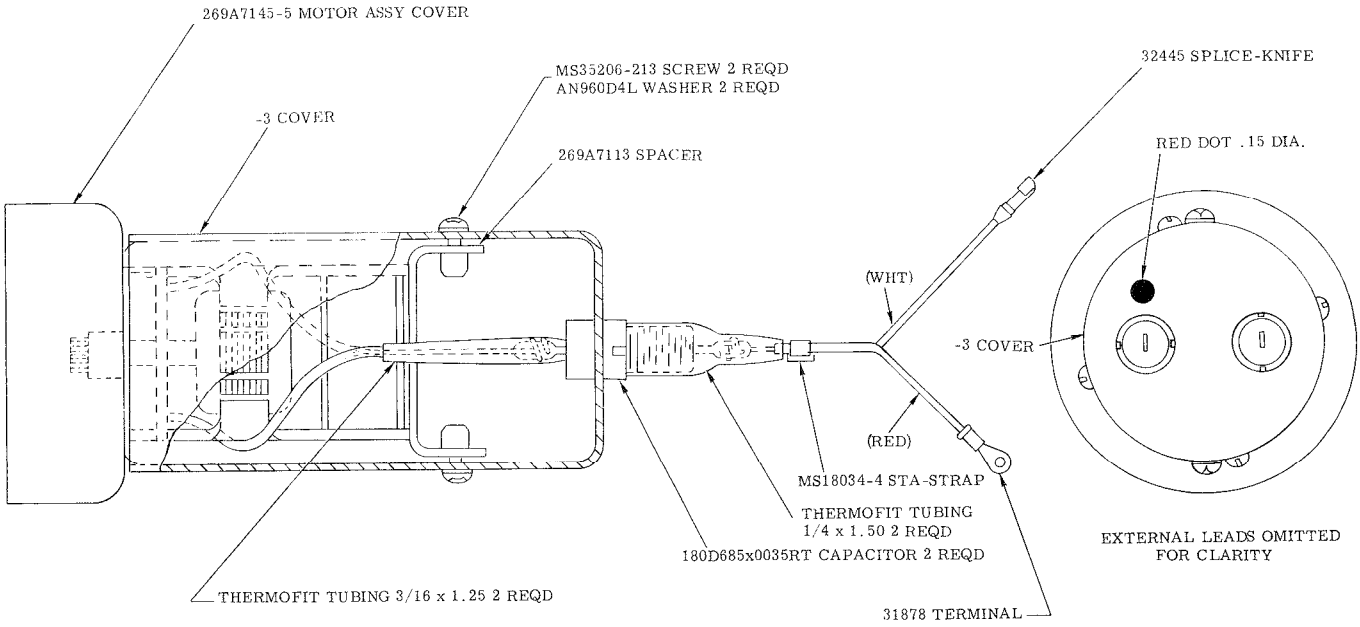
n. Perform operational check of cabin heating system.

STEP V REWORK - ARC RT-524M RADIO WIRING

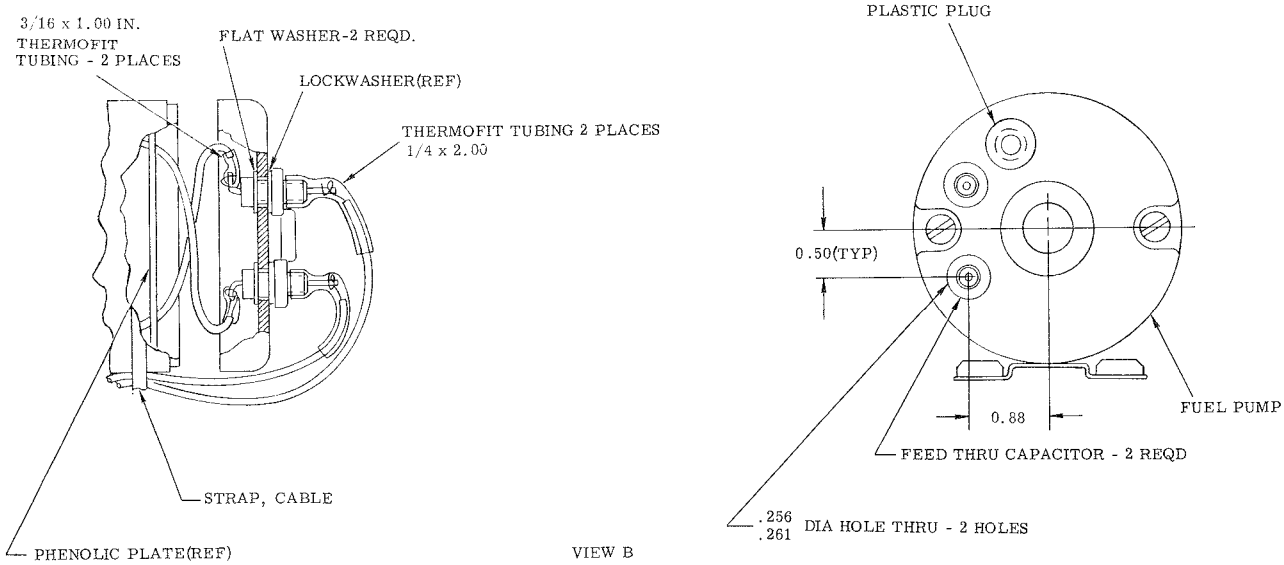
NOTE

The following rework of radio wiring is applicable only to TH-55A S/N 0714 thru 0723.

a. Rework radio wiring at terminal board TB 103, as shown. (See Figure 4, View A)

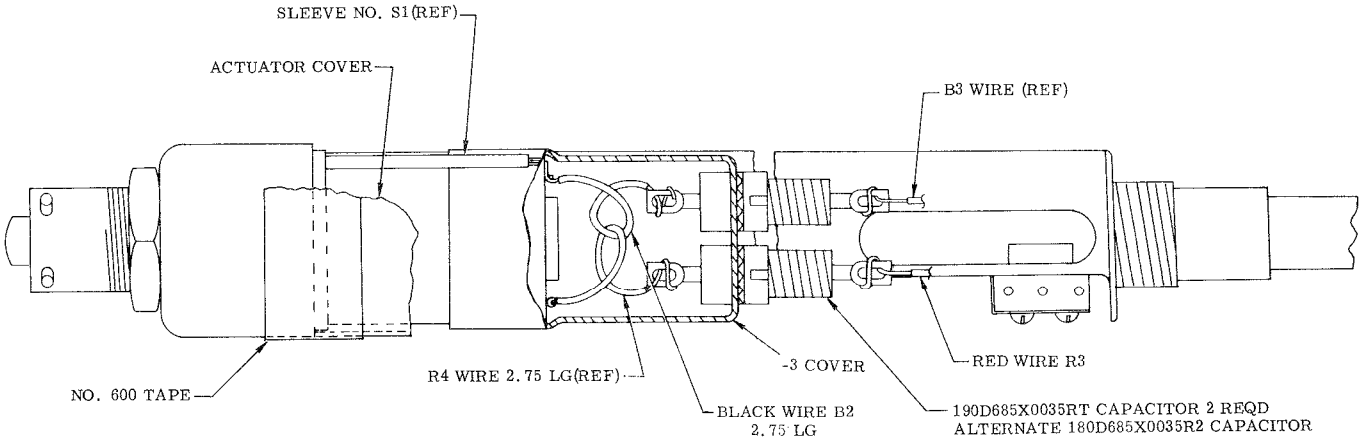


VIEW A
MOTOR ASSY LONGITUDINAL TRIM

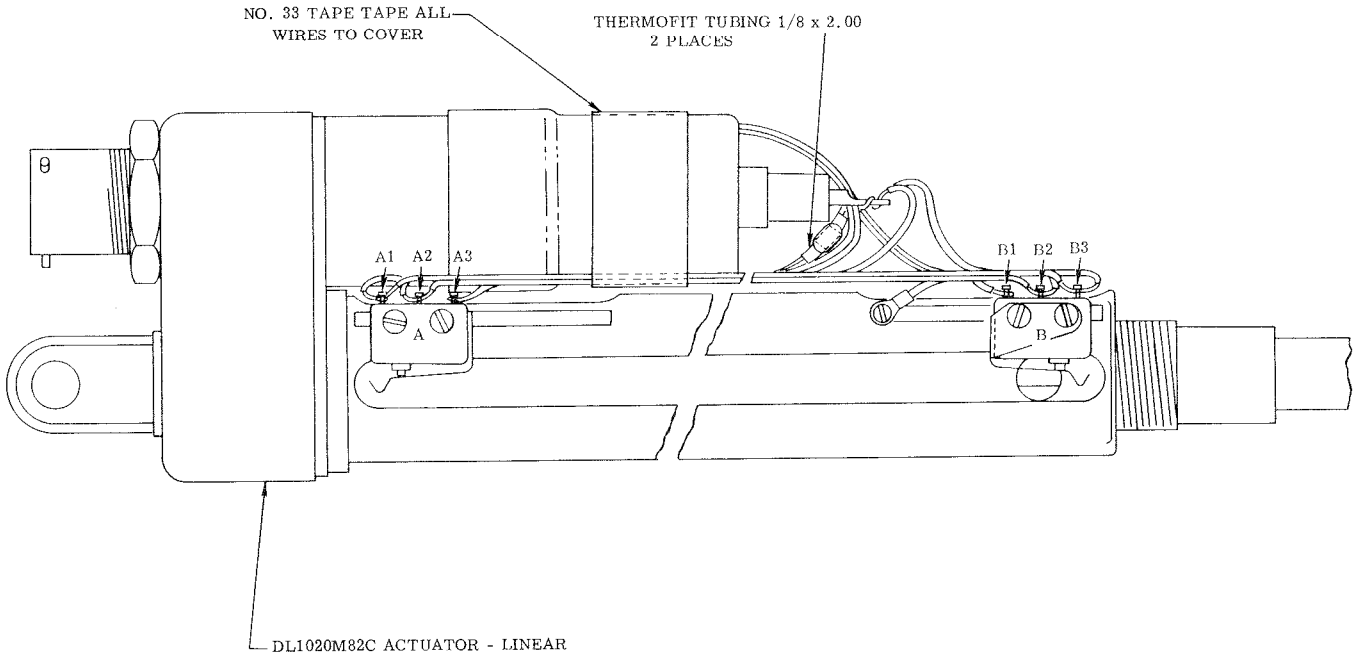


VIEW B
FUEL PUMP - AUXILIARY, MODIFIED

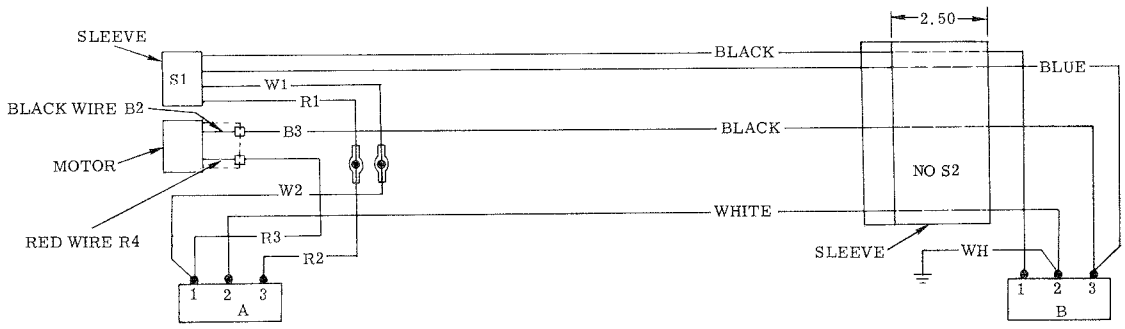
FIGURE 1. REWORK-EMI COMPONENTS



COVER & WIRES OMITTED FOR CLARITY



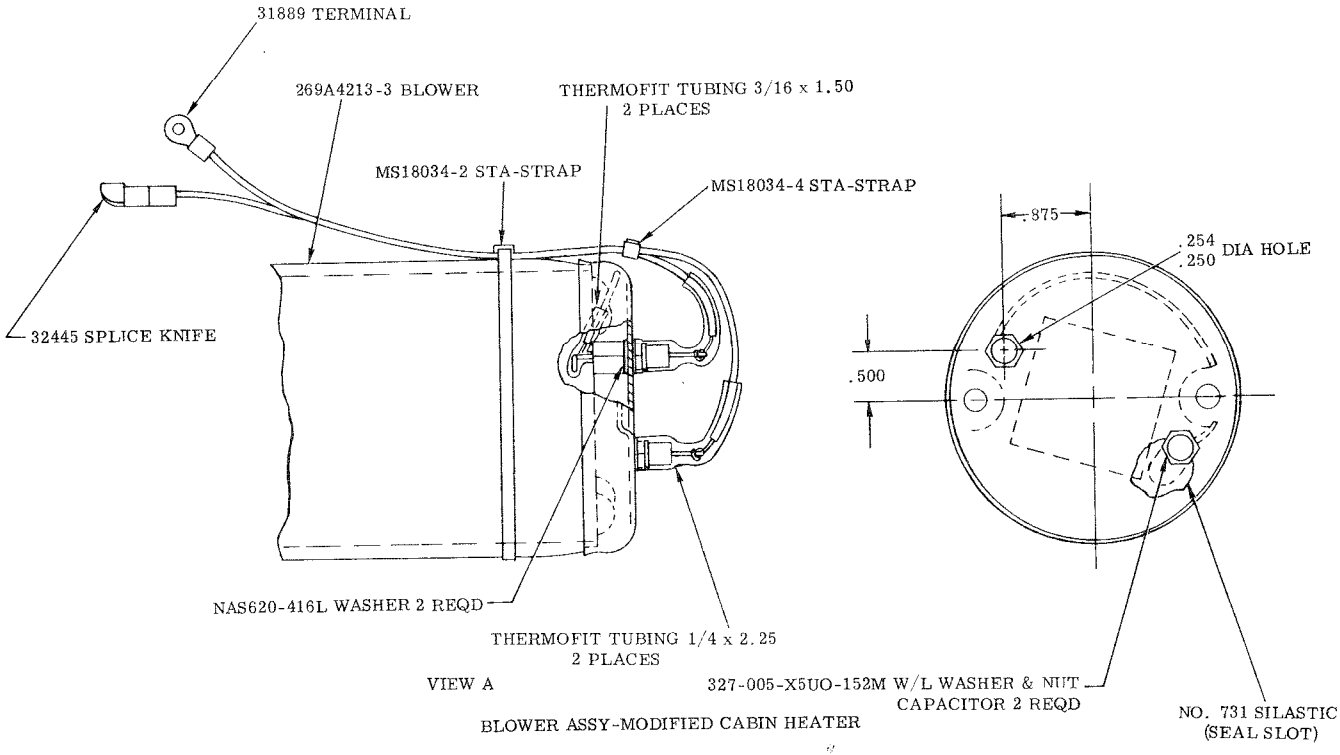
ACTUATOR ASSEMBLY MODIFIED



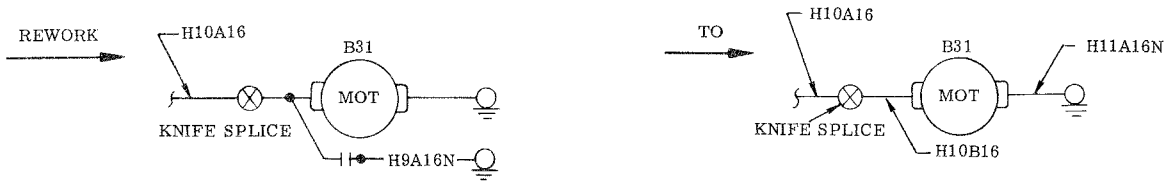
← DIRECTION OF TRAVEL →

WIRE DIAGRAM

FIGURE 2. REWORK-EMI COMPONEMTS



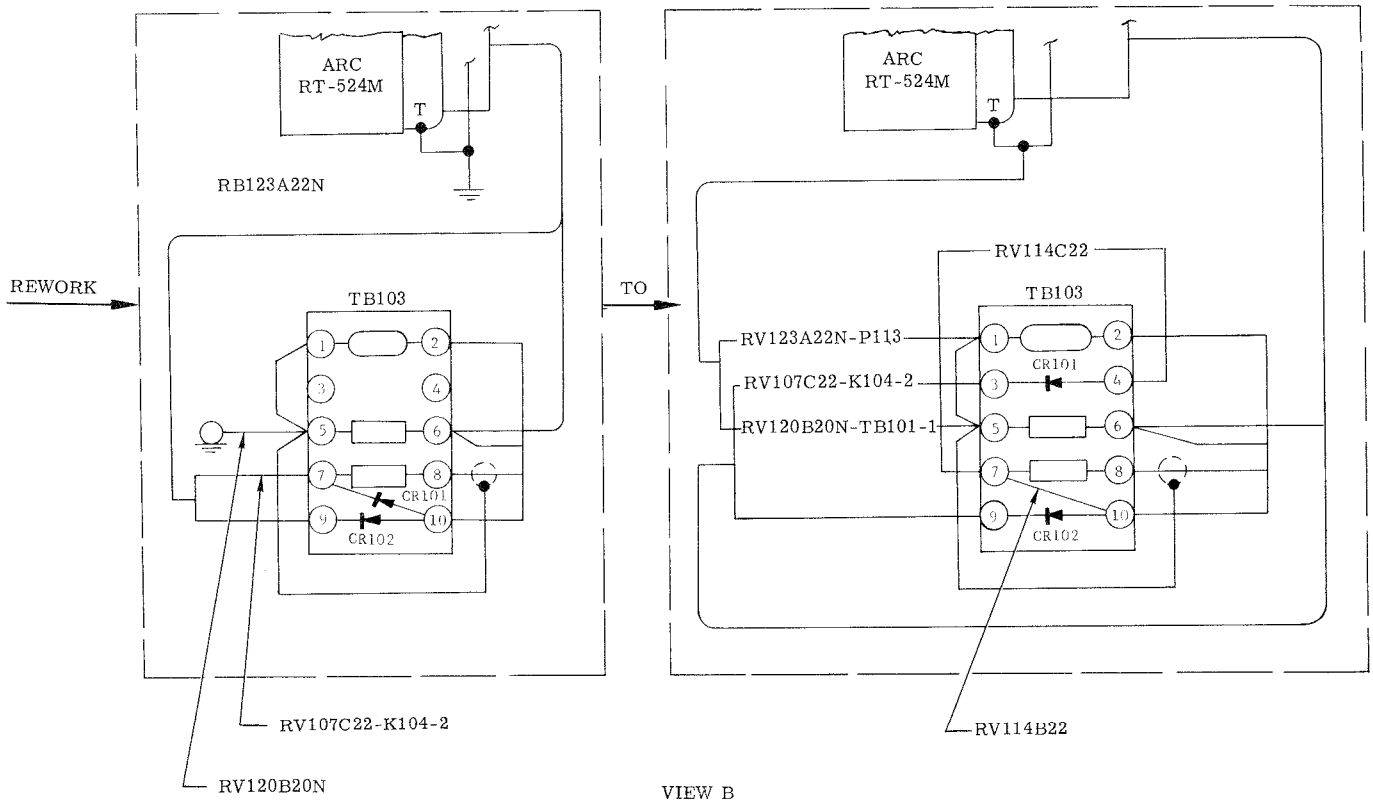
BLOWER ASSY-MODIFIED CABIN HEATER



WIRE DIAGRAM

VIEW B

FIGURE 3. REWORK- EMI COMPONENTS



VIEW B

APPLICABLE ONLY TO TH-55A SERIAL NOS. 0714 THROUGH 0723

FIGURE 4. REWORK - ARC RT-524M RADIO WIRING