



MOTOROLA INC.
Communications
Sector

STANDARD POWER SUPPLY

MODEL TPN1186A

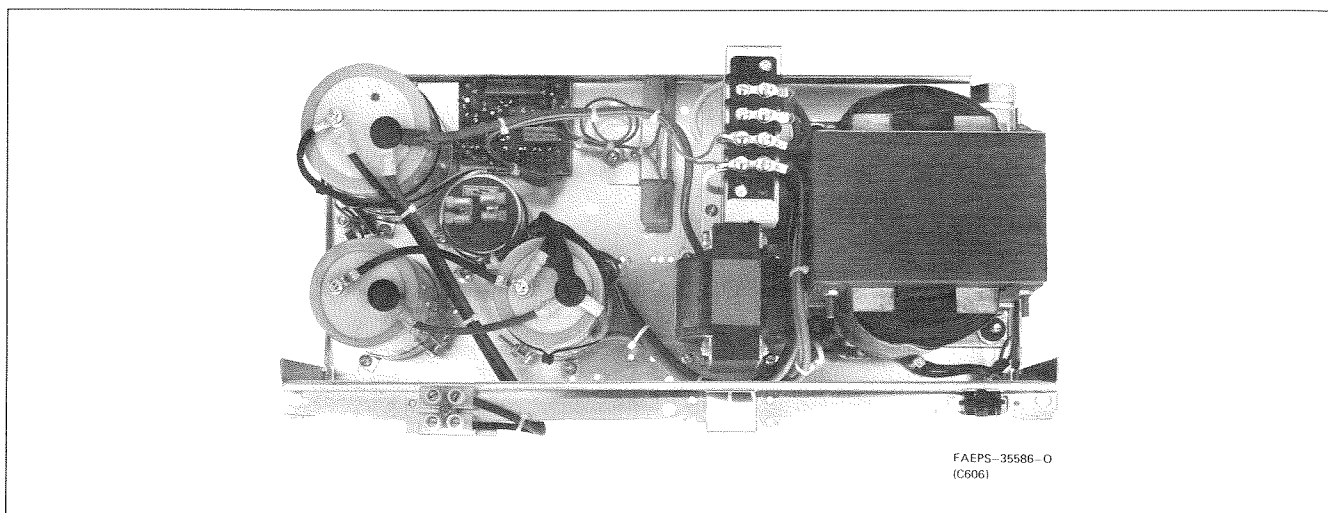
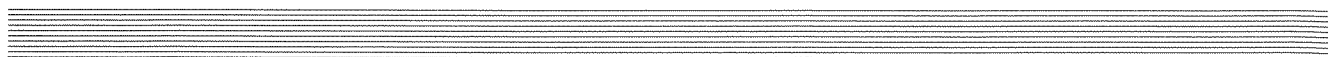


Figure 1. Model TPN1186A Standard Power Supply

PERFORMANCE SPECIFICATIONS

Weight	17.24 kg (38 lb.)
Operating Temp	-30° to +80°C (-22° to +176°F)
Input Voltage	96-132 V; 60 Hz operable to 144 V; 57-63 Hz)
Line Current*	8A max. at full rated power supply output
Steady State Output Voltage	13.1 to 16.3 V dc (36A to 2A)
Output Power (Rated)	482 Watts continuous (full load to minimum load)
Load Transient	Shall not drop below 11.5 V for a 1.5A to 32.5A transient
Output Ripple	50 mV p-p 25° to 80°C (77° to 176°F)
Efficiency	Derate to 100 mV p-p at -30°C (-22°F)
Short Circuit Current	Greater than 76% (full load) Equal to or less than 100A (measured at TB601)

* When calculating primary power requirements do not use Line Current to calculate dissipated power. Use a power meter with provisions for non-unity Power Factor.

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

technical writing services

*Table 1. Model Complement
For TPN1186A Standard Power Supply*

Kit	Description
TPN6138B	Power Supply Distribution Board
TRN5336A	Power Supply Hardware Kit (500 W)
TRN5452A	Miscellaneous Hardware Kit
TRN9752A	Power Supply Support Bracket Kit

1. DESCRIPTION

Model TPN1186A Standard Power Supply (refer to Figure 1) is a high efficiency, solid state, power source for operation of base or repeater radio stations. The power supply consists of two main sections: a ferroresonant transformer-rectifier-filter chassis, and a distribution board.

The transformer has a primary winding, a high current secondary winding, and a resonant secondary winding. Under normal operations, the current in the resonant winding causes the transformer core to saturate, limiting the transformer output voltage. Rectifying and filtering the transformer output produces a stable direct current output.

The distribution board consists of four power supply fuses and circuitry for over voltage protection. Transistorized circuitry senses a high DC voltage and adds loading for voltage reduction.

The features of this power supply include short circuit protection which is inherent in the ferroresonant power transformer, and over voltage protection.

2. DESCRIPTION OF OPERATION

2.1 TRN5336A POWER SUPPLY CHASSIS

The TRN5336A Power Supply Chassis performs the conversion of ac line voltage to the dc voltages required by the radio. The supply provides rectification, filtering, and regulation. Refer to the functional and schematic diagrams for circuit details.

2.1.1 Rectification and Filtering

The secondary voltage of transformer T601 is rectified by CR601 and CR602. Ground connection for the diodes is provided through the heat sink to chassis. Output filtering is provided by the network of C602, C603, L601, and C604.

2.1.2 Regulation

Line and load regulation is provided by the ferroresonant action in the secondary resonant winding of the power transformer T601. The high voltage winding resonates with C601, causing the secondary to saturate and restrict the secondary output voltage.

2.2 TPN6138B DISTRIBUTION BOARD

The TPN6138B Distribution Board provides overcurrent and over voltage protection for the power supply. Refer to the functional and schematic diagrams for circuit details. Secondary voltage fusing is provided by F602 thru F605. Overvoltage protection is provided by a surge protection circuit consisting of Q601 thru Q604. A surge in excess of 18 V causes VR601 to conduct. Forward bias current through R602 and base-emitter junction of Q604, turns on Q604. The other transistors turn on, and the chassis mounted R601 acts as a pull-down load for the line voltage surge.

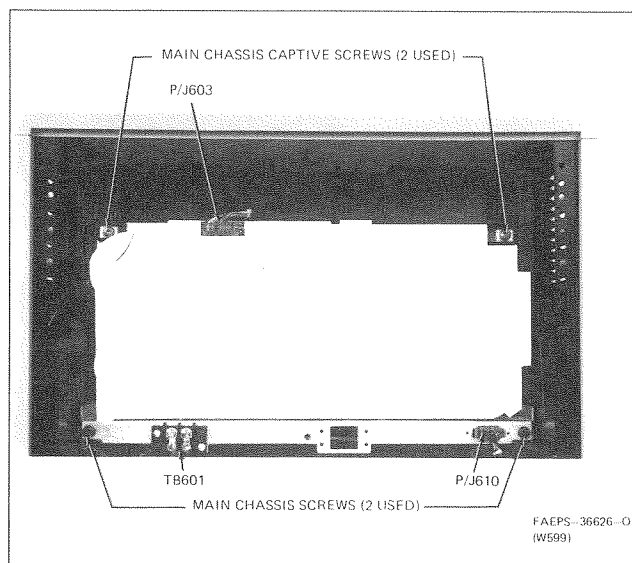


Figure 2. Power Supply Mounting Hardware and External Connections

3. MAINTENANCE

3.1 INTRODUCTION

Maintenance and repair of the power supply requires an understanding of its operation. Refer to the power supply Description of Operation paragraph for this information.

3.2 TEST EQUIPMENT REQUIRED

The following test equipment is necessary for servicing in the event that maintenance is required.

- 3 1/2 digit DVM (Motorola Model R1001 or equivalent).
- DC current meter (50 amperes)
- Load resistor (variable from 0 to 15 ohms, capable of carrying 50 amperes).
- Variable voltage ac line transformer (0-130 volts).
- Oscilloscope.
- Bench service line cord, consisting of:

Qty.	Part No.	Description
1	15-83183N01	Housing
2	39-83145N01	Contact
1	39-83145N02	Contact
1	30-865903	Cord

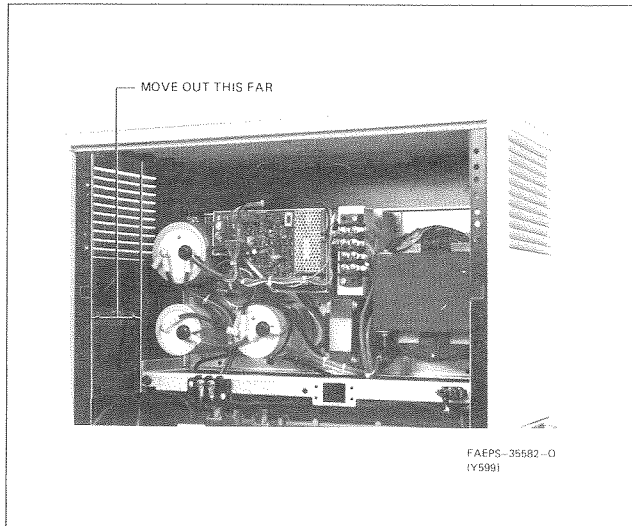


Figure 3. Power Supply Chassis Travel Distance

3.3 POWER SUPPLY REMOVAL

WARNING

The power supply can be unexpectedly heavy. It balances sharply to the right. Be sure to follow the removal instructions exactly.

Step 1. Disconnect P610 from J610 on the power supply chassis and P603 from J603 on the power supply distribution board. Disconnect all of the wires from the screw terminals on TB601. Be sure to mate wire polarity.

Step 2. Refer to Figure 2. Remove MAIN CHASSIS SCREWS and loosen MAIN CHASSIS CAPTIVE SCREWS.

Step 3. Slide power supply chassis forward until chassis is flush with cabinet, as shown in Figure 3.

WARNING

Do not allow chassis to slide freely beyond front of cabinet. Cabinet rail support ends abruptly.

Step 4. Grip the chassis with **BOTH** hands, as shown in Figure 4. Find a comfortable grip around the flat-topped parts of the metal. Adjacent parts have sharp edges.

IMPORTANT

Note wrist position in Figure 4.

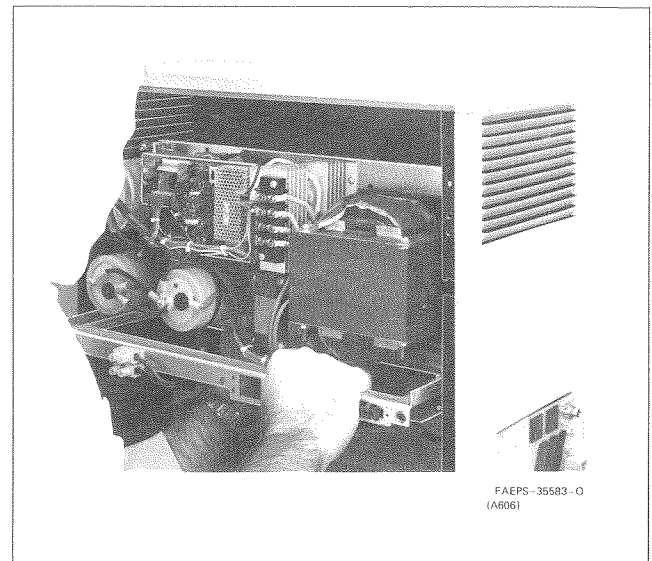


Figure 4. Properly Gripped Chassis

Step 5. Plant feet firmly, with good body balance, in order to receive and control the heavy power supply.

Step 6. Reach under the bottom of the chassis with your left hand, to balance the heavy chassis on the cabinet. Press the chassis firmly against the rails, or else it may suddenly slide out of the cabinet. See Figure 4.

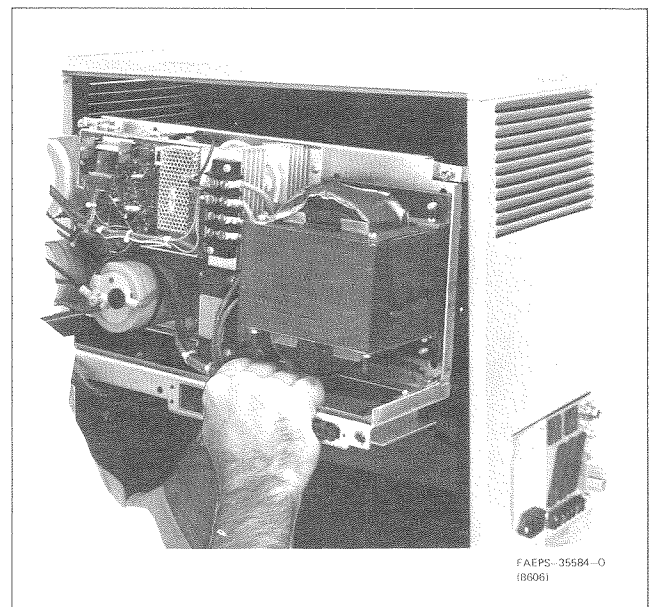


Figure 5. Power Supply Removed From Cabinet

Step 7. Reposition the left hand from balancing the chassis to a firm grip.

Step 8. Brace your body to receive a heavy weight, and lift the power supply chassis free of the cabinet. See Figure 5.

Step 9. Re-install the power supply by reversing the removal procedure.

3.4 TROUBLESHOOTING

Refer to Figure 6 for mechanical details. Refer to the functional, circuit board detail, and schematic diagrams

for electrical circuit details. Refer to Table 2 for quick troubleshooting hints.

Table 2. Quick Troubleshooting Hints

Symptom	Corrective Action
A. Low or no output voltage	1) Check primary line connection to supply. 2) Check transformer secondary voltage at TB601. 3) Check power rectifiers CR601 and CR602.
B. Output voltage slumps excessively on transmit.	1) Check C601

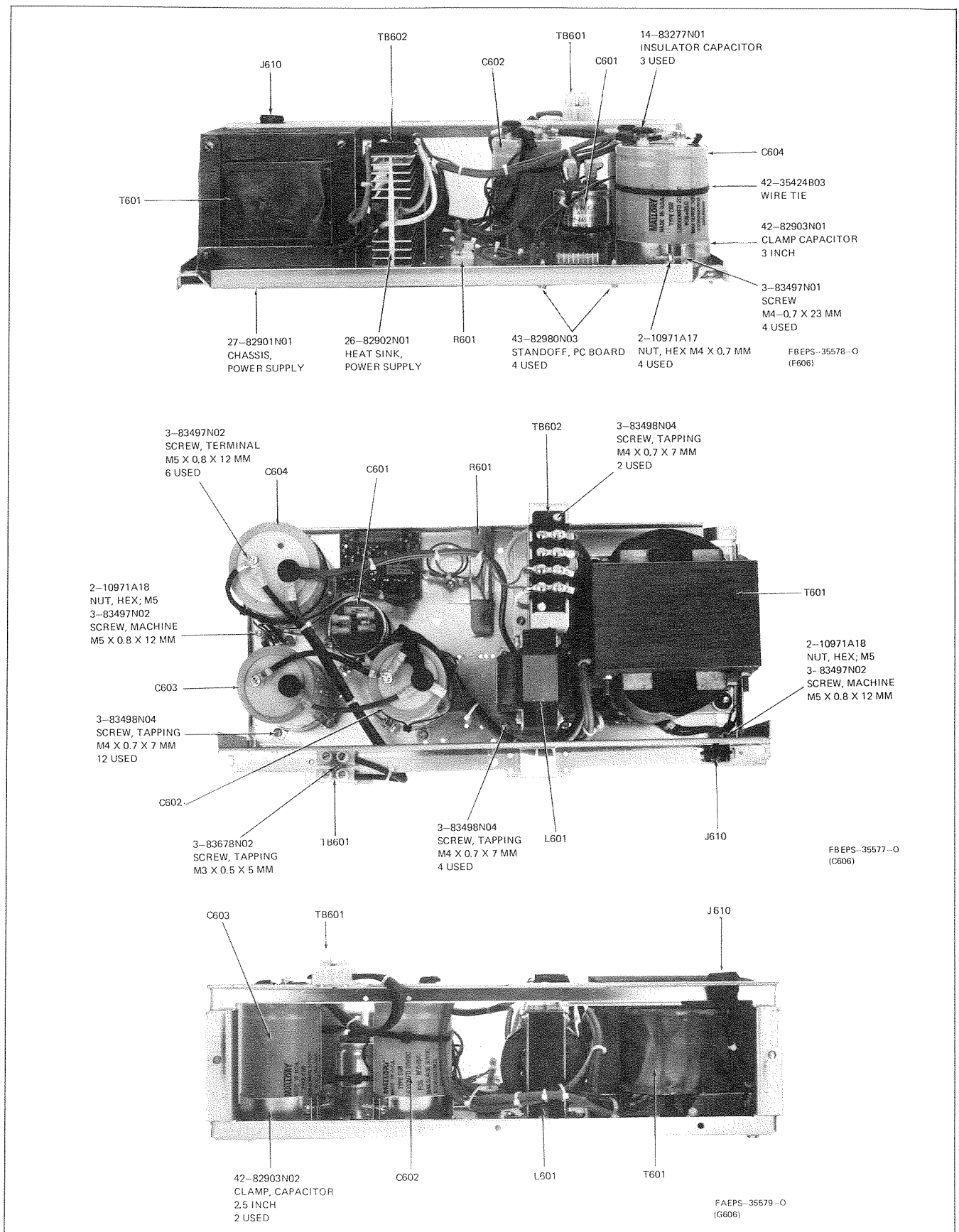
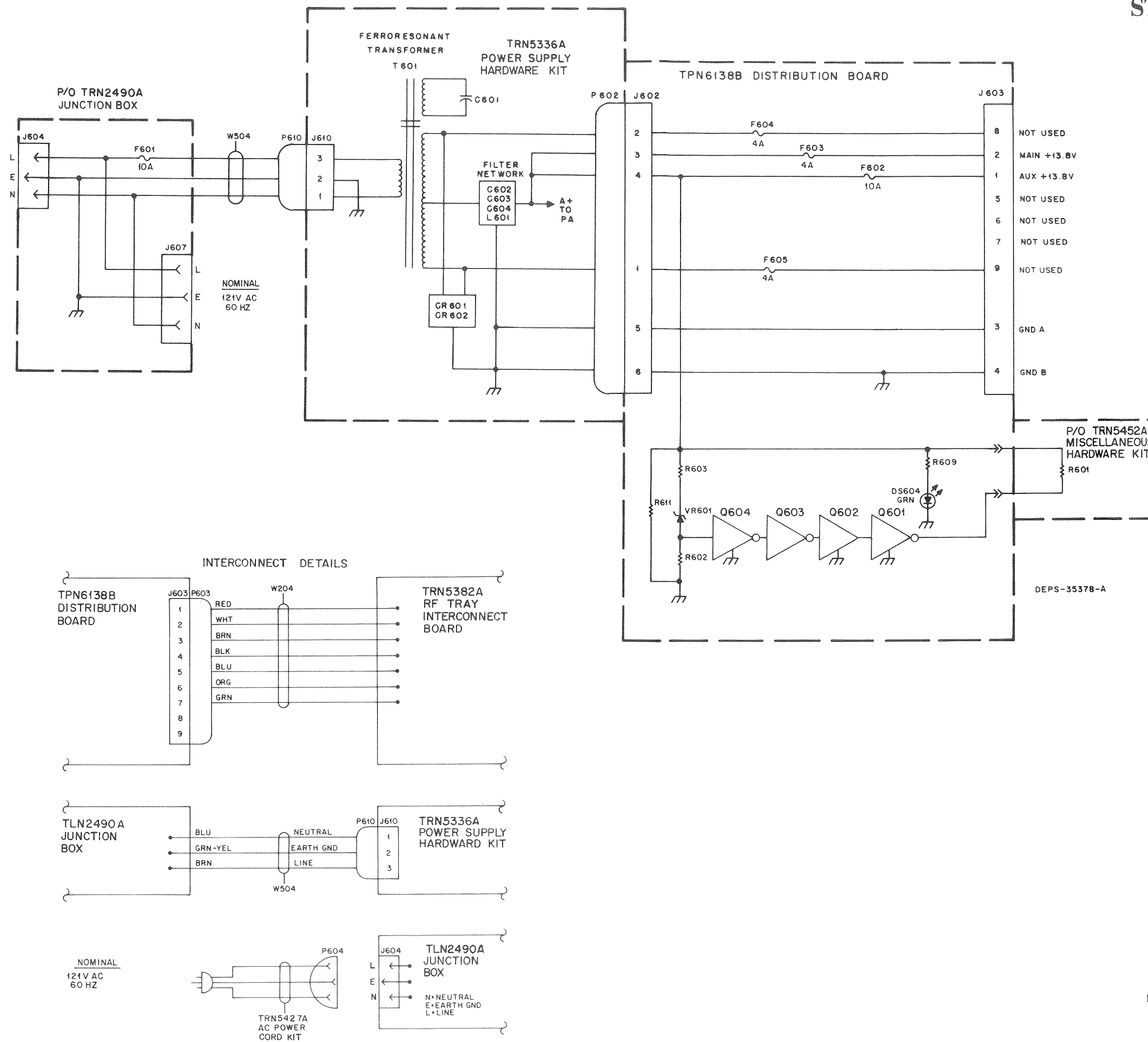


Figure 6. Mechanical Parts Location Photographs

STANDARD POWER SUPPLY

FUNCTIONAL BLOCK DIAGRAM

MODEL TPN1186A



STANDARD POWER SUPPLY
TPN6138B POWER SUPPLY DISTRIBUTION BOARD
CIRCUIT BOARD DETAIL AND PARTS LISTS

parts list

TRN5336A Power Supply Hardware Kit (500 W) PL-8020-F

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
C601	8-82682N01	capacitor, fixed: 20 uF ±6%; 330 V
C602,603	23-82681N01	
C604	23-82681N02	
		64,000 uF + 75-7%; 20 V
		120,000 uF + 75-10%; 20 V
CR601,602	48-82732C09	diode: (see note) silicon
P602	9-83360N01	connector, receptacle: female; 6 contact
L601	25-82686N01	coil: choke; 420 uH
T601	25-82253N01	transformer: power: 500 W; 60 Hz
TB601	31-83576K02	terminal, board: 2-terminals

mechanical parts		
2-10971A17	NUT, machine: M4 × 0.7 hex; 5 used	
2-10971A18	NUT, machine: M5 × 0.8 hex; 2 used	
3-10908A55	SCREW, machine: M6 × 1 × 25mm; 4 used	
3-83497N01	SCREW, machine: M4 × 0.7 × 25mm; 4 used	
3-83497N02	SCREW, terminal: M5 × 0.8 × 12mm; 8 used	
3-83498N04	SCREW, tapping: M4 × 0.7 × 7mm; 18 used	
3-83498N06	SCREW, tapping: M4 × 0.7 × 16mm; 3 used	
3-83678N02	SCREW, tapping: M3 × 0.5 × 5mm	
4-7651	LOCKWASHER, #8 internal; 12 used	
4-135873	WASHER, flat: 0.281 × 0.750 × .060; 2 used	
4-83499N01	WASHER, insulator; 3 used	
4-7658	LOCKWASHER, #10 internal; 15 used	
5-82904N01	GROMMET; 4 used	
14-83277N01	INSULATOR, lug; 3 used	
14-84088N01	INSULATOR, cap terminals; 2 used	
14-84548A01	INSULATOR, washer; 2 used	
26-82902N01	HEAT SINK	
29-82607B09	LUG, ring tongue; 2 used	
29-82607B05	LUG, ring tongue; 2 used	
29-82907N05	TERMINAL, ring (YEL); 6 used	
29-82907N07	TERMINAL, ring; (RED); 2 used	
29-83113N01	TERMINAL, right angle; 6 used	
29-83137N01	TERMINAL, splice; 2 used	
39-83146N01	CONTACT, socket	
42-10217A02	STRAP, tie; .091 × 3.62; 16 used	
42-10217A33	STRAP, tie: .094 × 14; 3 used	
42-82903N01	CLAMP, cap; 2"	
42-82903N02	CLAMP, cap: 2 1/2"; 2 used	
42-82903N03	CLAMP, cap; 3"	
29-82607B06	TERMINAL, ring (BLU)	
54-83971N01	LABEL; 2 used	
54-84046N01	LABEL	
75-83056P01	PAD, snap-on	
31-811350	TERMINAL, board; 4 terminal	

TRN9752A Power Supply Support Bracket Kit PL-10640-O

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
	0383498N04	SCREW, tapping: M4 × 0.7 × 7mm; 4 used
	0784794P01	BRACKET, chassis support; 2 used

TRN5452A Miscellaneous Power Supply Hardware Kit PL-8269-B

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
R601	17-82177B65	resistor, fixed: 10 ±10%; 50 W
non-referenced items		
	1-80766D10	ASSEMBLY, resistor cable; includes:
	29-83113N01	TERMINAL, right angle; 4 used
	2-10971A17	NUT, hex; M4 × 0.7mm
	3-83497N05	SCREW, machine; M4 × 10mm
	4-7633	WASHER, flat
	4-7651	LOCKWASHER, internal; #8
	43-82980N03	STANDOFF, support; 4 used

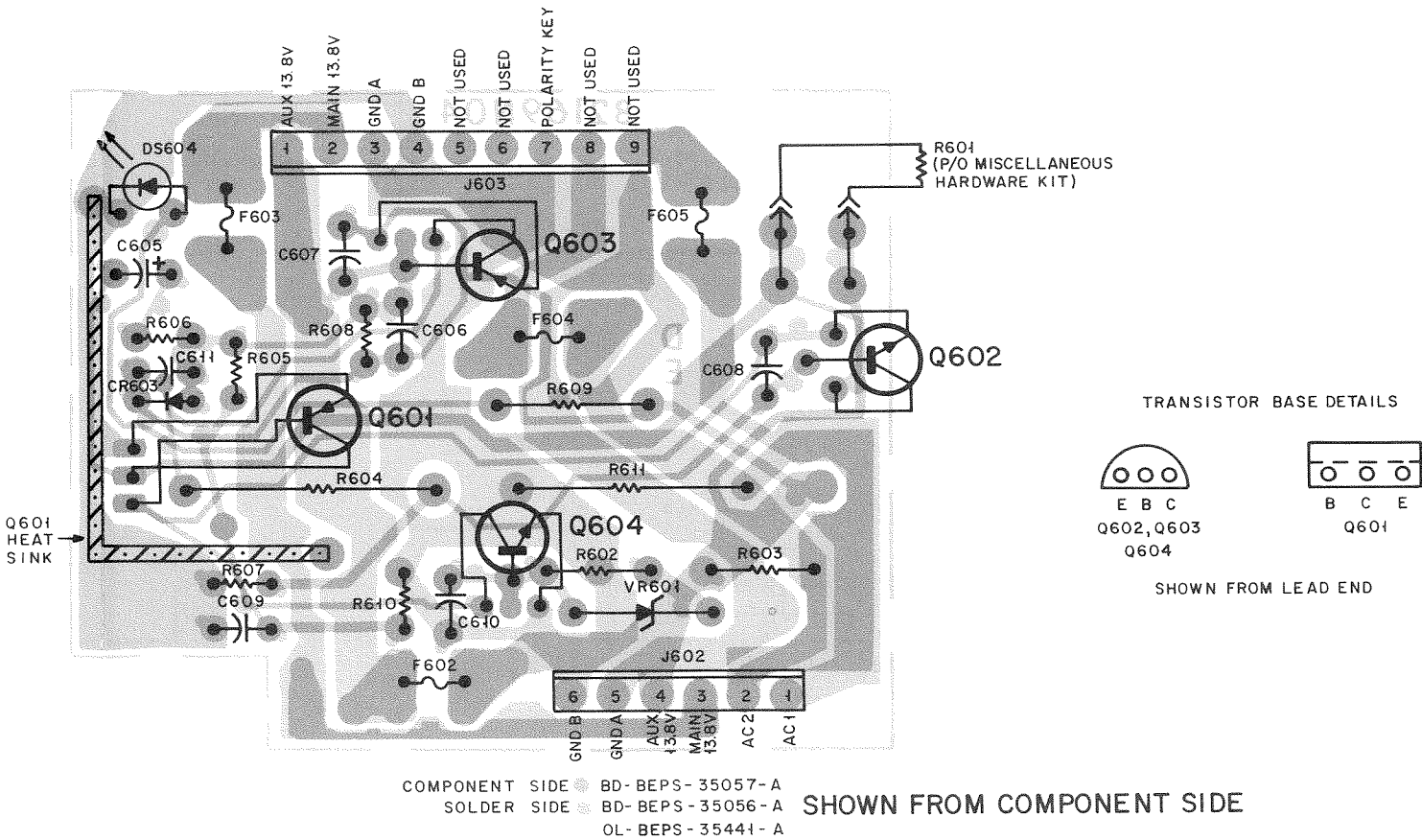
TPN6138B Power Supply Distribution Board PL-8265-C

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
C605	23-11019A27	capacitor, fixed: 22 uF ±20%; 25 V
C606	8-11017B08	.01 uF ±10%; 50 V
C607 thru 611	21-11014H32	20 pF ±5%; 100 V
CR603	48-11034D01	diode: (see note) silicon
DS604	48-84404E04	light emitting diode: green
F602	65-139767	fuse: 10 amp; 32 V
F603, 604, 605	65-82859N01	4 amp; 32 V
J602	28-82984N06	connector, plug: male; 6 contact
J603	28-82984N14	male; 9 contact
Q601	48-869806	transistor: (see note) NPN; type M9806
Q602	48-869568	NPN; type M9568
Q603	48-869643	PNP; type M9643
Q604	48-869642	NPN; type M9642
R602	6-11009E25	resistor, fixed ±5%: 1/4 W: 100
R603	6-11009E37	330
R604	6-127A37	330; 2 W
R605 thru 608	6-11009E69	6.8k
R609	6-11045A51	1.2k, ±5%; 1/2 W
R610	6-11009E35	270
R611	17-82177B08	200; ±10%; 5 W
VR601	48-83461E18	voltage regulator: Zener; 18 V
mechanical parts		
	29-82906N01	TERMINAL, fuse; 8 used
	2-10971A16	NUT, machine: M3 x 0.5mm
	3-83497N04	SCREW, machine; M3 × 0.5 × 8mm
	4-84180C01	WASHER, shoulder
	14-83820M02	INSULATOR, thermoconductive
	29-10231A10	LUG, terminal; 2 used
	26-84012N01	SHIELD, amplifier
	15-84576N01	HOUSING, fuse clip; 4 used

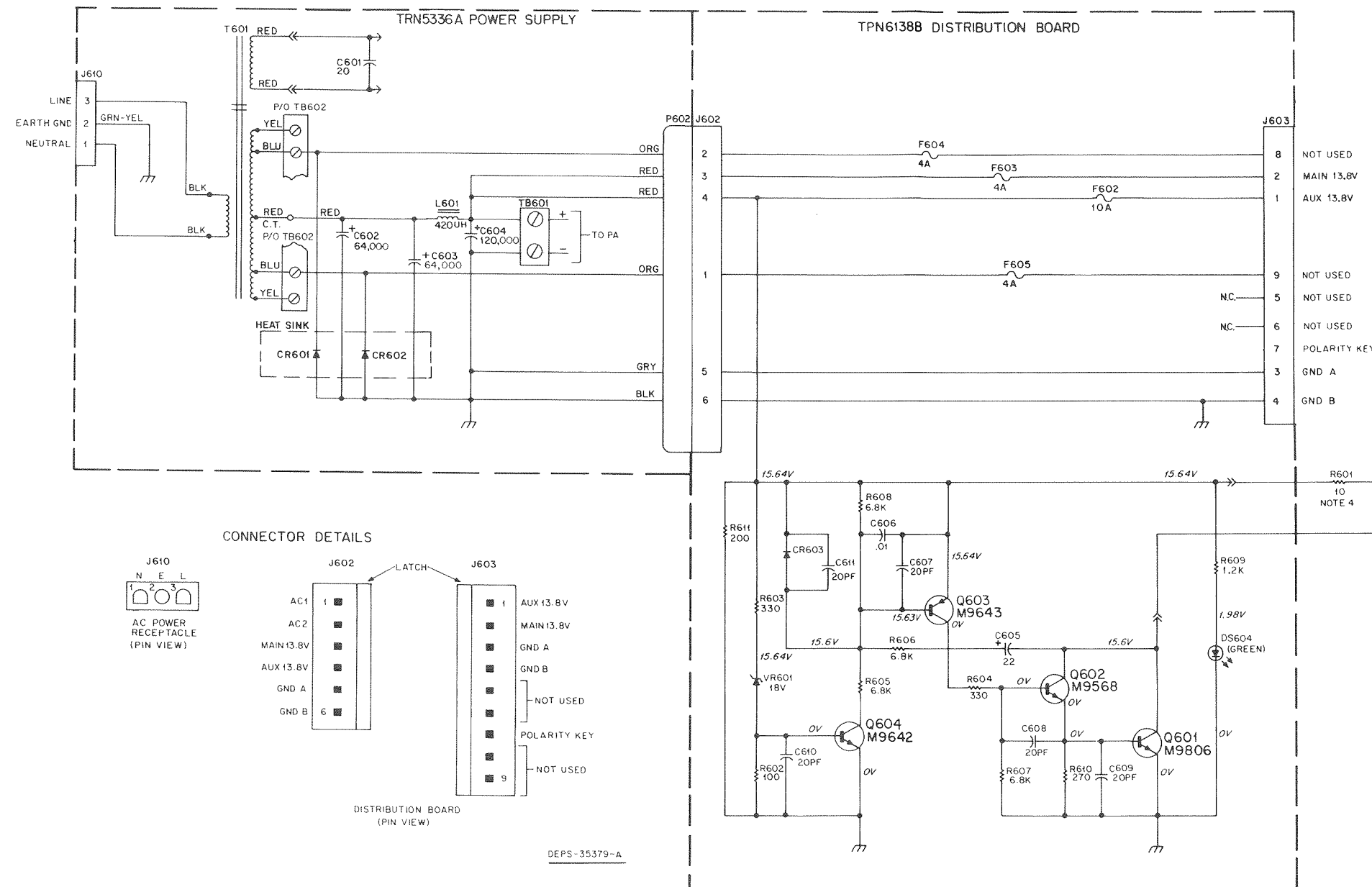
	29-82906N01	TERMINAL, fuse; 8 used
	2-10971A16	NUT, machine: M3 x 0.5mm
	3-83497N04	SCREW, machine; M3 × 0.5 × 8mm
	4-84180C01	WASHER, shoulder
	14-83820M02	INSULATOR, thermoconductive
	29-10231A10	LUG, terminal; 2 used
	26-84012N01	SHIELD, amplifier
	15-84576N01	HOUSING, fuse clip; 4 used

note: For optimum performance, diodes, transistors, and integrated circuits must be ordered by Motorola part numbers.

TPN6138B POWER SUPPLY DISTRIBUTION BOARD



STANDARD POWER SUPPLY
TRN5336A POWER SUPPLY HARDWARE KIT (500 W)
TPN6138B POWER SUPPLY DISTRIBUTION BOARD
SCHEMATIC DIAGRAM



OPTION C32 DC ONLY INPUT FILTER

Table 1. Model Complement for Option C32
DC Only Input Filter

Kit	Sub Kit	Description
TPN1198A	TRN5611A TRN5622A	DC Only Input Filter
		Hardware Kit
		Distribution Circuit Board
TKN8845A		Internal Battery Cable Kit (DC Only)
TRN5155A		External Battery Cable Kit
TRN5643A		Label and Hardware Kit

Table 2. Input Requirements

Voltage	13.8 to 16.3 V dc
Max Power, Transmit	500 Watts
Max Power, Standby	65 Watts
Normal Power, Standby	25 Watts

1. DESCRIPTION

The dc only input filter (refer to Table 1) is a factory installed option (C32), that is available for all models of MSF 5000™ Base or Repeater stations. The dc only input filter permits the station to operate from 13.8 to 16.3 volts dc power only.

The TRN5622A Distribution Board employs four fuses (F602 through F605) for overcurrent protection, two connectors (J602 and J603) for circuit interconnection, and a green LED indicator (DS604) that is lit so long as the dc input power is present. The TRN5611A Hardware Kit employs three filter capacitors and a filter choke to provide input power transient protection, and

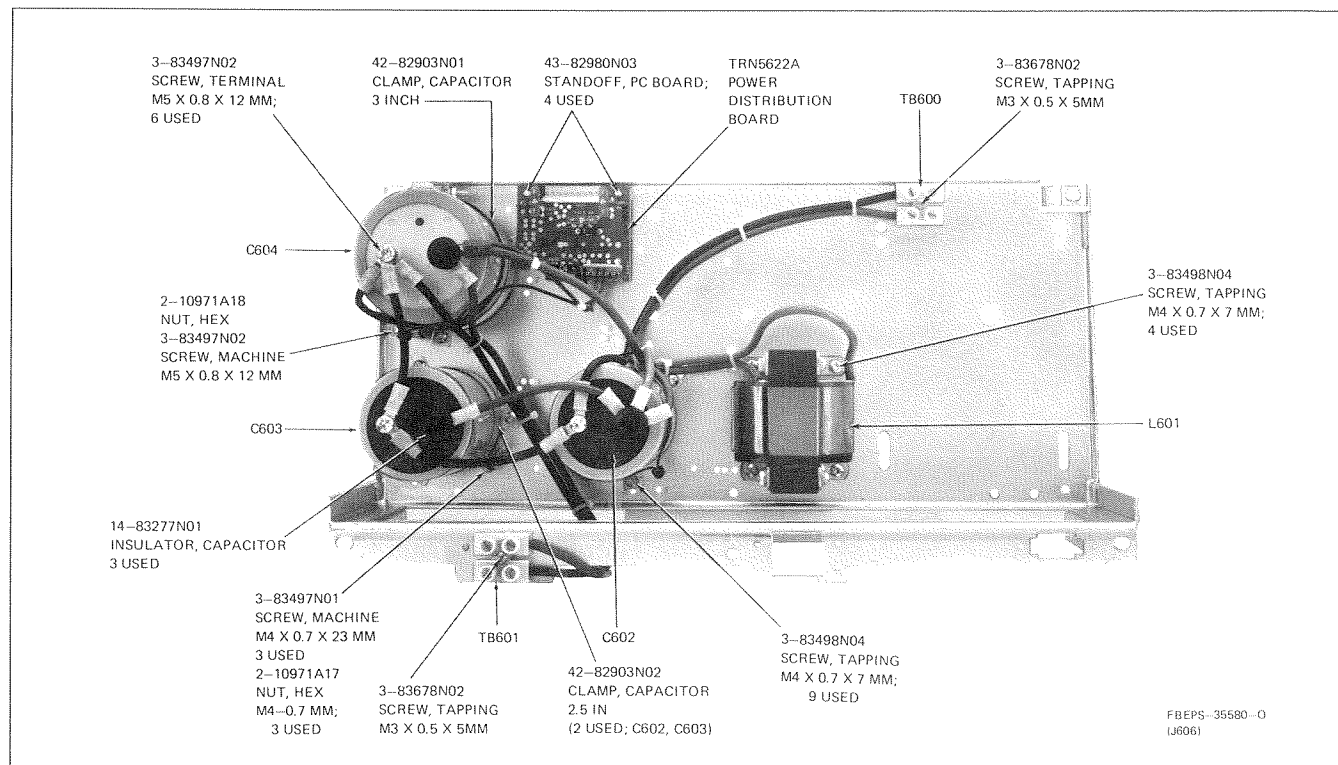


Figure 1. Model TPN1198A DC Only Input Filter

to minimize periodic and random distortion (noise) from the external dc source.

2. DC INPUT CONNECTIONS

Step 1. Make certain that the dc power source is capable of providing the specified input requirements, as shown in Table 2.

Step 2. Remove fuse F610 from the external battery cable to prevent accidental short circuiting during installation.

Step 3. Connect the external battery cable plug, P605, to connector J605 on the junction box, and route the cable to the external dc power source.

Step 4. Connect the RED external battery cable wire to the positive terminal of the external dc source.

Step 5. Connect the BLACK external battery cable wire to the negative terminal of the external dc source.

Step 6. Check to assure proper polarity of the cable leads and re-install F610, which removed in Step 1.

NOTE

CR666 provides reverse polarity protection, and will cause F610 to open should the polarity of applied dc be improper.

DC ONLY INPUT FILTER
MODEL TPN1198A

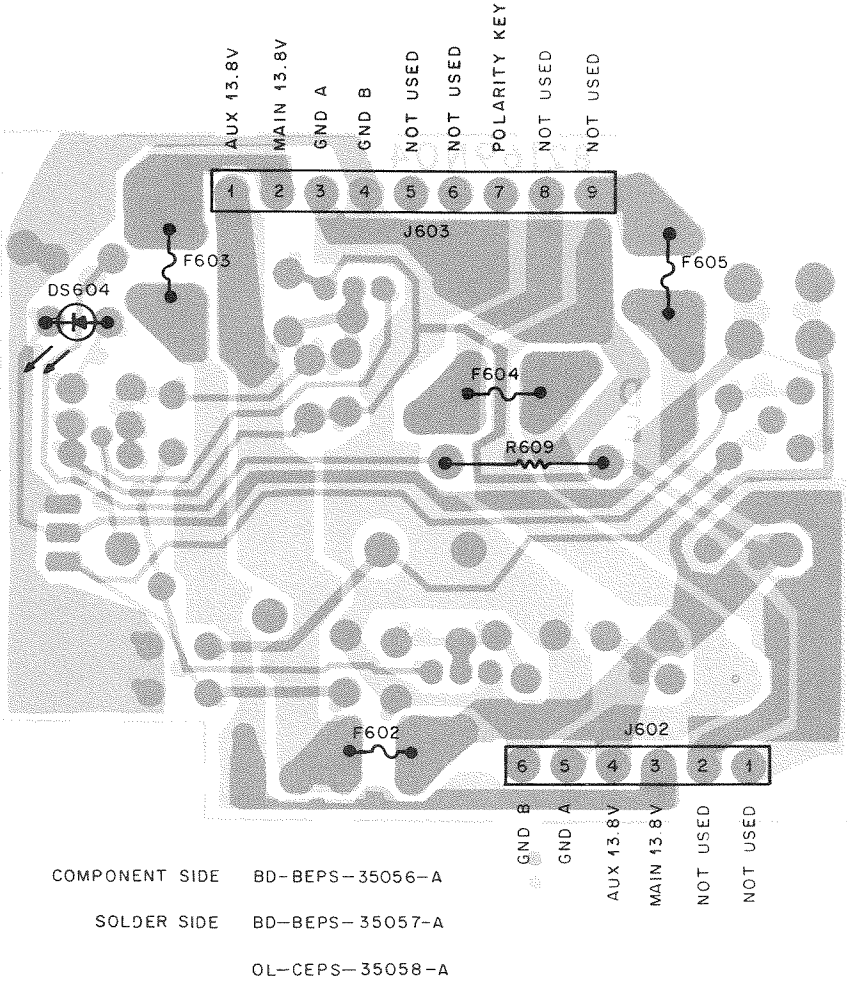
TRN5622A DC Only Input Filter Distribution Board			PL-8285-A
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION	
DS604	48-84404E04	light emitting diode: green	
F602	65-139767	fuse: 10 amp; 32 V	
F603, 604, 605	65-82859N14	4 amp; 32 V	
J602	28-82984N06	connector, plug: male, 6 contact	
J603	28-82984N14	male, 9 contact	
R609	6-125C51	resistor, fixed: 1.2k \pm 10%; 1/2 W	
mechanical parts			
	15-84576N01	HOUSING, fuse clip; 4 used	
	29-82906N01	TERMINAL, fuse; 8 used	

TRN5611A DC Only Input Filter Hardware Kit			PL-8284-B
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION	
C602, 603	23-82681N01	capacitor, fixed:	
C604	23-82681N02	64,000 uF + 75-7%; 20 V	
		120,000 uF + 75-10%; 20 V	
CR666	48-82732C13	diode:	
		silicon	
P602	9-83360N01	connector, receptacle:	
		female; 6 contact	
L601	25-82686N01	coil, filter:	
		choke; 420 uH	
TB600, 601	31-83576K02	terminal board:	
		2-terminals, screw	
mechanical parts			
	2-10971A75	NUT: M3 × 0.5; hex	
	2-10971A17	NUT: M4 × 0.7, hex; 2 used	
	2-10971A18	NUT, hex ×: M5 × 0.8 mm	
	2-115968	NUT, 1/4-28; 1 used	
	3-83497N01	SCREW, machine: M4 × 0.7 × 23mm; 3 used	
	3-83497N02	SCREW, machine: M5 × 0.8 × 12mm; 7 used	
	3-83497N04	SCREW, machine: M3 × 0.5 × 8mm	
	3-83498N04	SCREW, tapping: M4 × 0.7 × 7mm; 12 used	
	3-83678N02	SCREW, tapping: M3 × 0.5 × 5mm; 2 used	
	4-7651	LOCKWASHER, #8 internal	
	4-7658	LOCKWASHER, #10 internal; 7 used	
	4-15027A79	LOCKWASHER, #4 internal	
	4-7670	LOCKWASHER, 1/4" internal	
	4-83499N01	WASHER, lug insulator; 3 used	
	14-83277N01	INSULATOR, lug; 3 used	
	27-82901N04	CHASSIS	
	29-82607B05	LUG, ring tongue; 8 used	
	29-82907N01	TERMINAL, ring; 2 used	
	29-82907N03	TERMINAL, ring; 4 used	
	37-131756	TUBING, clear; 1" length	
	42-10217A02	STRAP, tie: 0.91 × 3.62" nylon; 9 used	
	42-10217A33	TIE, cable: 15"; 2 used	
	42-82903N02	CLAMP, cap: 2-1/2"; 2 used	
	42-82903N03	CLAMP, cap; 3"	
	43-845034	SPACER for CR666 diode	
	43-82980N03	STANDOFF, board support; 4 used	

TRN5155A External Battery Cable Kit		PL-8059-C
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
F610	65-82846N01	fuse: 60 amp; 300 V
P605		connector, plug: assembly, connector; includes:
	15-83502N01	HOUSING, single contact; 2 used
	39-83503N02	CONTACT, battery; 2 used
mechanical parts		
	3-138490	SCREW, tapping: 8-18 x 1 1/4"; 2 used
	9-82842N01	BLOCK, fuse
	29-847817	LUG, ring tongue; 2 used
	42-10217A02	STRAP, tie; 3 used

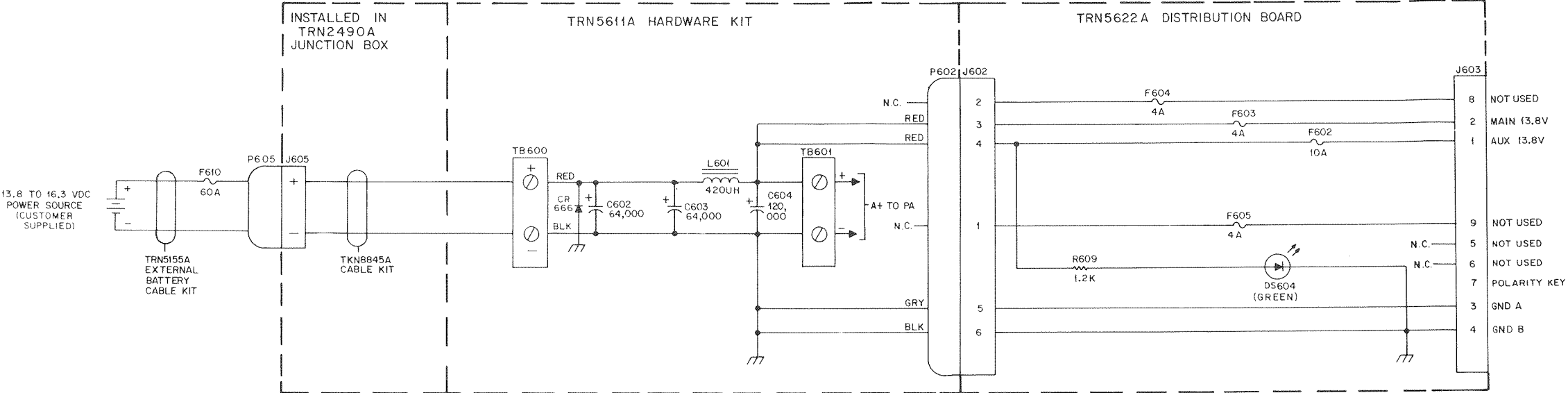
TKN8295A Internal Battery Cable Kit		PL-8017-E
TKN8845A Internal Battery Cable Kit (DC Only)		
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
J605		connector, receptacle: assembly connector, includes: HOUSING, single contact; 2 used CONTACT, battery; 2 used
	15-83502N01	
	39-83503N02	
mechanical parts		
	7-83504N01	BRACKET, male mounting
	7-83505N01	BRACKET, female mounting
	2-10971A18	NUT, machine: M5 x 0.8; 2 used
	3-83497N02	SCREW, machine: M5 x 0.8 x 12 mm; 2 used
	4-7658	WASHER, lock: #10 internal; 2 used
	42-10217A02	STRAP, tie: .091 x 3.62; 3 used

TRN5643A Label and Hardware Kit			PL-10709-O
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION	
	42-1021A02	STRAP, tie .091 \times 3.62"	
	54-84837N01	LABEL, dc only	

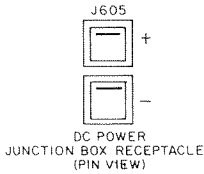
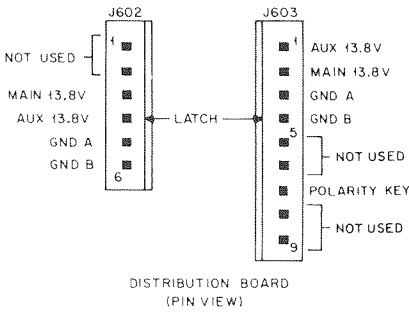


DC Only Input Filter
Schematic Diagram, Circuit Board Detail
and Parts Lists
Motorola No. PEPS-35509-B
(Sheet 1 of 2)
4/10/87- UP

DC ONLY INPUT FILTER
MODEL TPN1198A



CONNECTOR DETAILS



DEPS-35492-B

NOTE
UNLESS OTHERWISE INDICATED, RESISTOR VALUES ARE
IN OHMS AND CAPACITOR VALUES ARE IN MICROFARADS.



MOTOROLA INC.
Communications
Sector

SINGLE POWER SUPPLY STATION JUNCTION BOX

MODEL TLN2490A

MODEL TLN2640A

Table 1. Station Junction Box Model Complements

Model	Description
TLN2640A	Station Junction Box w/o convenience outlet
TRN5159A TRN5859A	Wireline Interface Board Interconnect Housing
TLN2490A	Station Junction Box w/convenience outlet
TRN5159A TRN5471A	Wireline Interface board Interconnect Housing

The Station junction box provides the required interconnections between the station and antenna(s), control wireline(s), and ac or dc power. The model complements of the station junction boxes are given in Table 1.

parts list

TRN5352A RF Connector Plastic Plug

TRN5353A Auxiliary Connector Plastic Plug

TRN5354A Outlet Connector Plastic Plug

TRN5355A Battery Connector Plastic Plug

PL-8240-A

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
	38-83666N01	CAP, rf port hole (TRN5352A)
	38-83665N01	CAP, auxiliary hole (TRN5353A)
	38-83667N01	CAP, convenience outlet hole (TRN5354A)
	38-83664N01	CAP, battery hole (TRN5355A)

TRN5461A Hardware and Label Kit

PL-8707-A

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
F601	65-138179	fuse: 10A; 250 V
mechanical parts		
	33-83748N01	NAMEPLATE
	38-82892N01	CAP, fuse housing
	54-850440	LABEL, FCC
	54-83918N01	LABEL, Max ac power available
	54-83919N01	LABEL, interconnect housing; fuse amperage
	54-83922N01	LABEL, ac power
	54-84665N01	LABEL, VCO cover
	54-84508R01	LABEL, replacement parts

TRN5969A Hardware and Label Kit

PL-8571-A

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
F601	65-82847N02 or 65-138179	fuse: 5A; 250 V 10A; 250 V
mechanical parts		
	33-83748N02	NAMEPLATE
	38-82892N01	CAP, fuse housing
	38-82892N02	CAP, fuse housing
	54-82928P01	LABEL, AC power
	54-84508R01	LABEL, replacement parts

Table 2. Junction Box Hardware and Label Kits

Model	Line Voltage	Line Frequency	Power Supply Wattage
TRN5461A	120 V	60 Hz	500 W
TRN5969A	220 V	50 Hz	500 W
TRN5970A	220 V	60 Hz	500 W
TRN5973A	220 V	50 Hz	250 W
TRN5974A	220 V	60 Hz	250 W

Table 2 provides a list of the junction box hardware and label kits employed, depending upon line voltage, frequency, and wattage.

TRN5970A Hardware and Label Kit

PL-8569-A

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
F601	65-82847N02 or 65-138179	fuse: 5A; 250 V 10A; 250 V
mechanical parts		
	33-83748N02	NAMEPLATE
	38-82892N01	CAP, fuse housing
	38-82892N02	CAP, fuse housing
	54-82928P02	LABEL, AC power
	54-84508R01	LABEL, replacement parts

TRN5973A Hardware and Label Kit

PL-8697-B

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
F601	65-82847N04	3.15A; 250 V
mechanical parts		
	33-83748N02	NAMEPLATE
	38-82892N02	CAP, fuse housing
	54-82928P05	LABEL, ac power
	54-84508R01	LABEL, replacement parts

TRN5974A Hardware and Label Kit

PL-8698-B

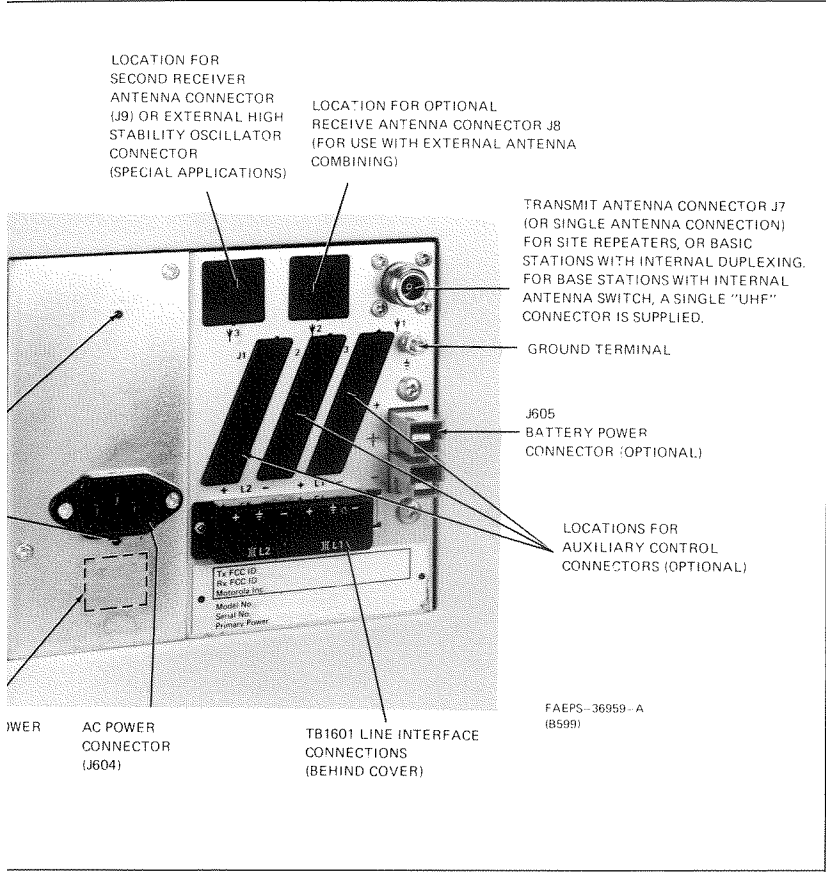
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
F601	65-1527	fuse: 6A; 250 V
mechanical parts		
	33-83748N01	NAMEPLATE
	38-82892N01	CAP, fuse housing
	54-82928P06	LABEL, ac power
	54-84508R01	LABEL, replacement parts
	54-850440	LABEL, FCC

technical writing services

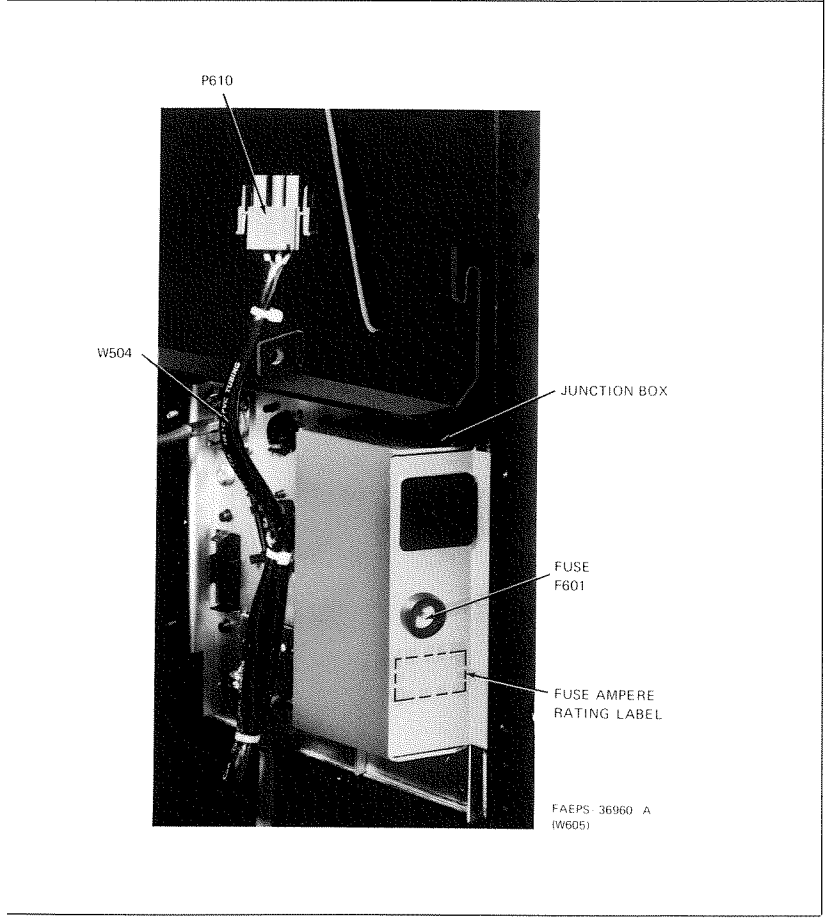
1301 E. Algonquin Road, Schaumburg, IL 60196

INTERCONNECT HOUSING

MODEL TLN5859A



TRN5859A Interconnect Housing, External View

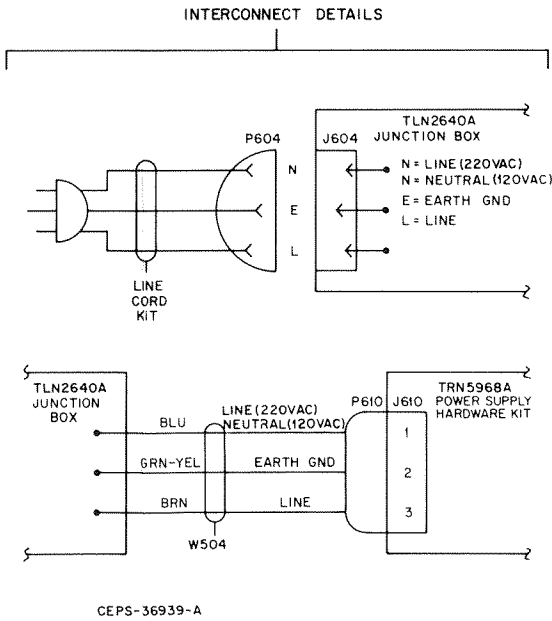
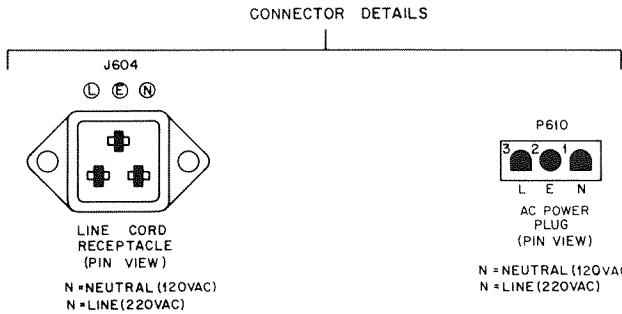
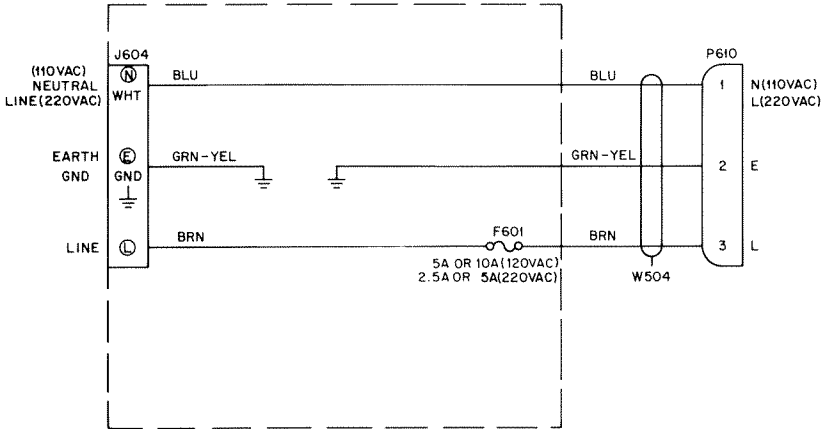


TRN5859A Interconnect Housing, Internal View

parts list

TRN5859A Interconnect Housing PL-8568-B

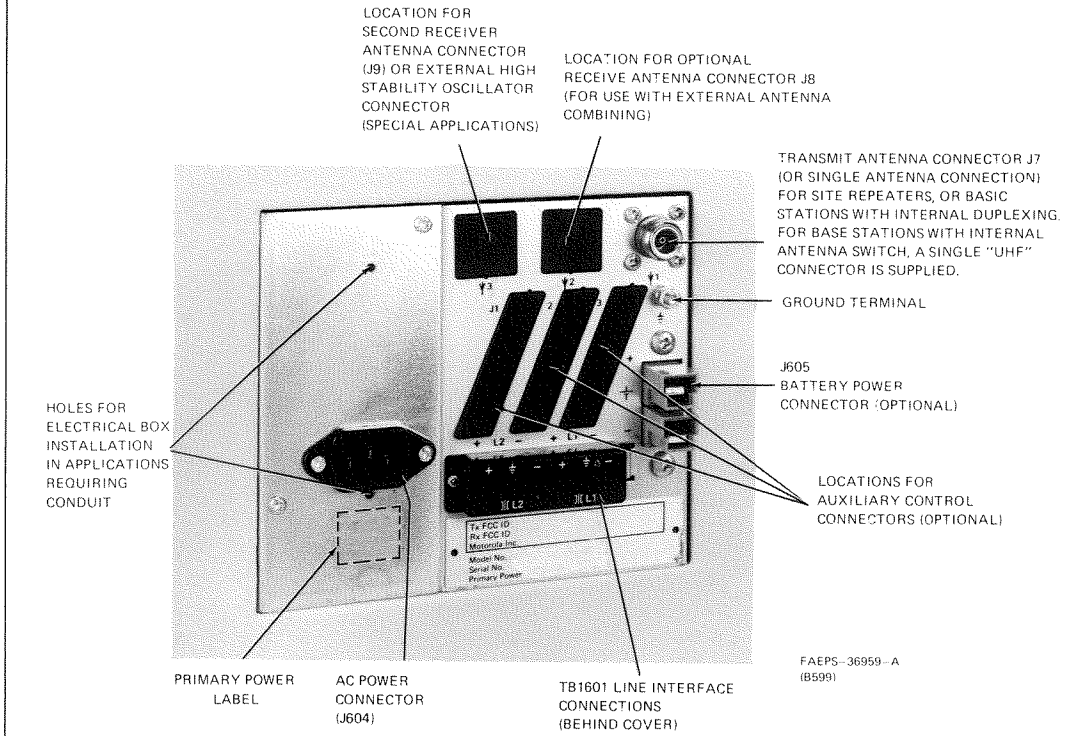
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
J604	15-82889N01	connector, receptacle: housing, line cord CONTACT, plug; 3 used CONNECTOR, splice; 1-wire
	39-83384N01	
	9-83358N01	
P610	15-83183N01	connector, plug: housing, plug (power supply) includes: CONTACT, plug; 2 used CONTACT, plug
	39-83145N01	
	39-83145N02	
mechanical parts		
	2-10971A16	NUT, machine: M3 x 0.5 hex
	2-10971A18	NUT, machine: M5 x 0.8 hex; 2 used
	3-10943M10	SCREW, tapping: TT3 x 0.6 x 8mm; 2 used
	3-83497N02	SCREW, machine: M5 x 0.8 x 12mm
	3-83497N04	SCREW, machine: M3 x 0.5 x 8mm; 2 used
	3-83498N04	SCREW, tapping; 2 used
	3-83498N10	SCREW, tapping: M3.5 x 0.8 x 8mm; 2 used
	4-7650	LOCKWASHER #6 internal
	9-83358N01	CONNECTOR, wire splice
	15-82834N03	HOUSING, interconnect
	15-82835N01	COVER, junction box
	15-82891N01	HOUSING, fuse with mounting hardware
	29-82607B04	LUG, ring; 2 used
	37-106352	GROMMET, rubber
	42-10217A02	STRAP, tie: .019 x 3.62 nylon; 4 used
	38-83667N01	CAP, AC outlet



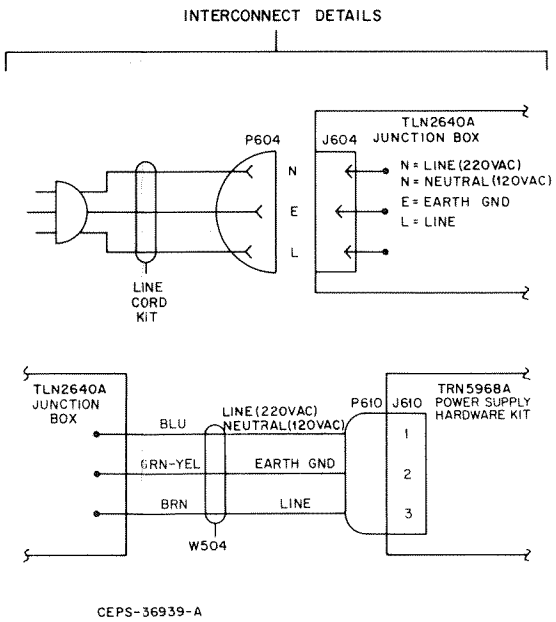
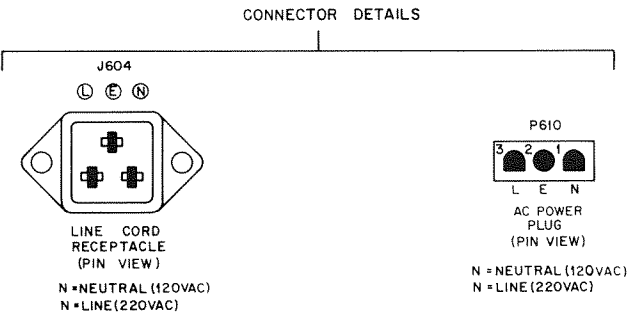
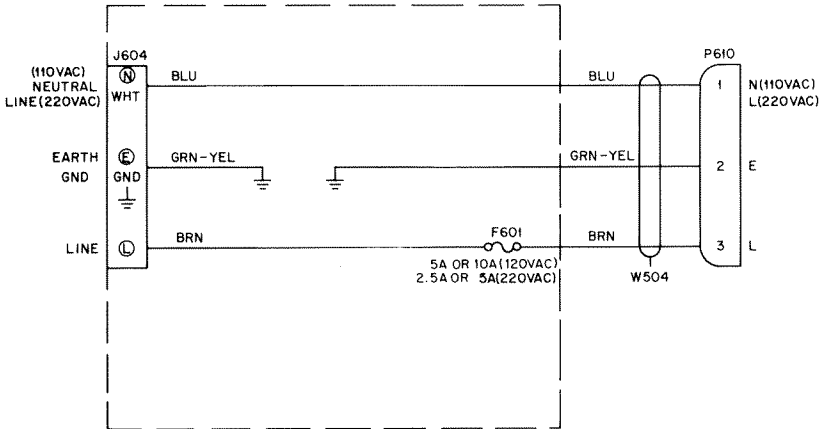
parts list

TRN5859A Interconnect Housing PL-8568-B

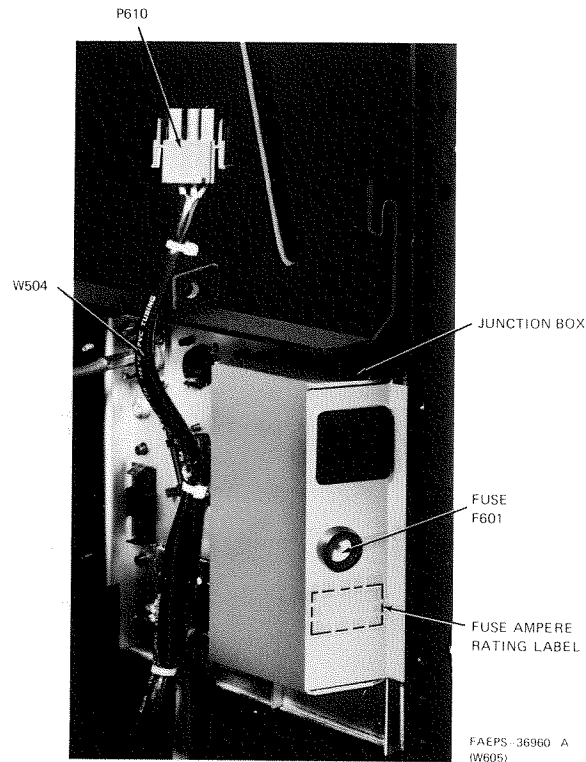
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
J604	15-82889N01 39-83384N01 9-83358N01	connector, receptacle: housing, line cord CONTACT, plug; 3 used CONNECTOR, splice; 1-wire
P610	15-83183N01 39-83145N01 39-83145N02	connector, plug: housing, plug (power supply) includes: CONTACT, plug; 2 used CONTACT, plug
mechanical parts		
	2-10971A16	NUT, machine: M3 x 0.5 hex
	2-10971A18	NUT, machine: M5 x 0.8 hex; 2 used
	3-10943M10	SCREW, tapping: TT3 x 0.6 x 8mm; 2 used
	3-83497N02	SCREW, machine: M5 x 0.8 x 12mm
	3-83497N04	SCREW, machine: M3 x 0.5 x 8mm; 2 used
	3-83498N04	SCREW, tapping; 2 used
	3-83498N10	SCREW, tapping: M3.5 x 0.8 x 8mm; 2 used
	4-7650	LOCKWASHER #6 internal
	9-83358N01	CONNECTOR, wire splice
	15-82834N03	HOUSING, interconnect
	15-82835N01	COVER, junction box
	15-82891N01	HOUSING, fuse with mounting hardware
	29-82607B04	LUG, ring; 2 used
	37-106352	GROMMET, rubber
	42-10217A02	STRAP, tie: .019 x 3.62 nylon; 4 used
	38-83667N01	CAP, AC outlet

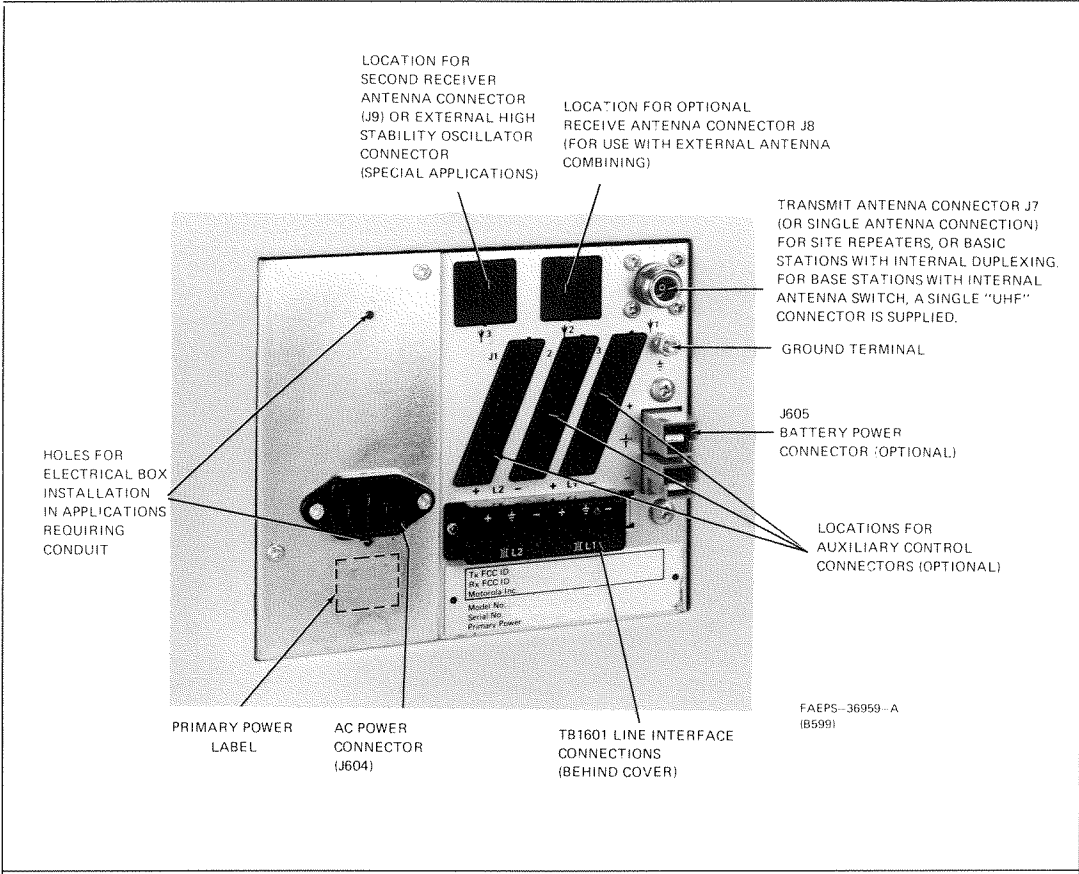


TRN5859A Interconnect Housing, External View

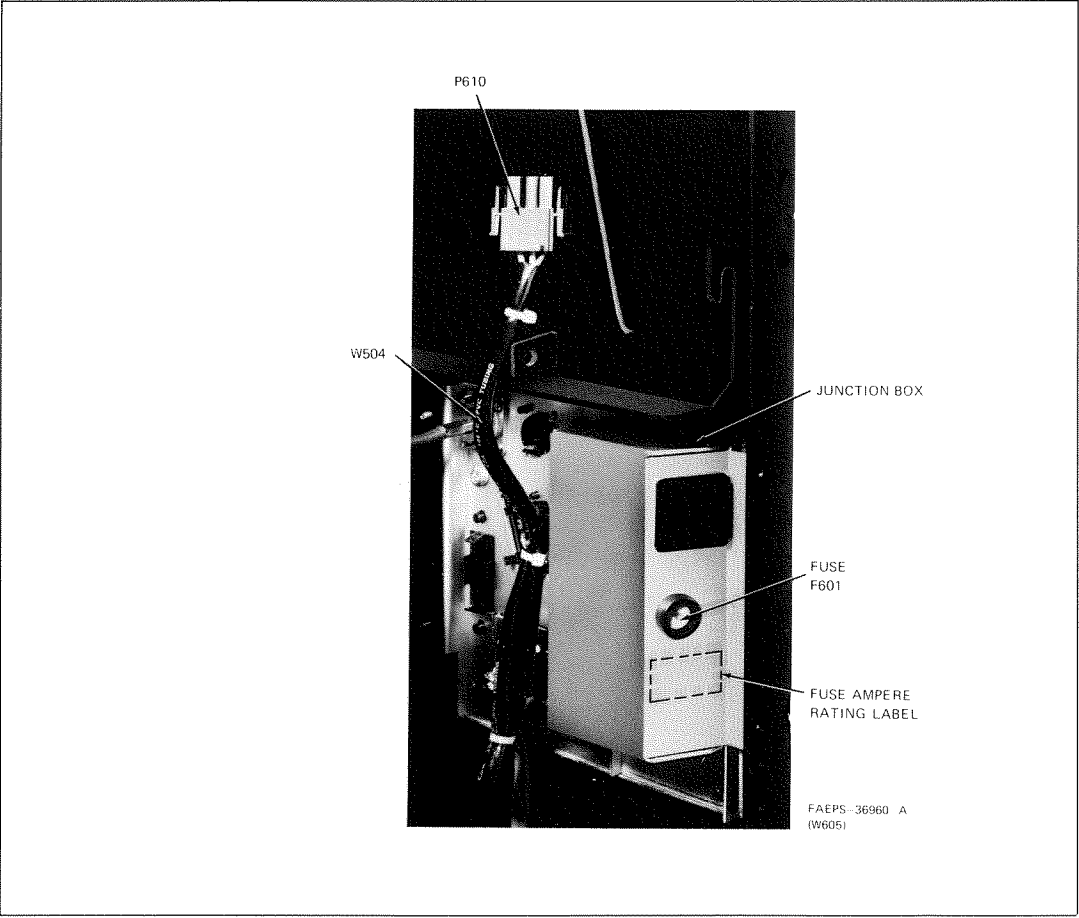


TRN5859A Interconnect Housing, Internal View





TRN5859A Interconnect Housing,
External View

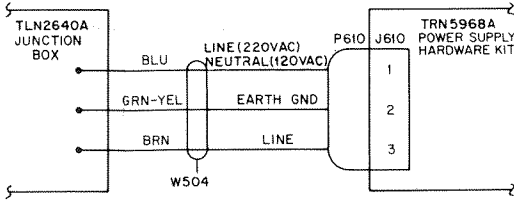
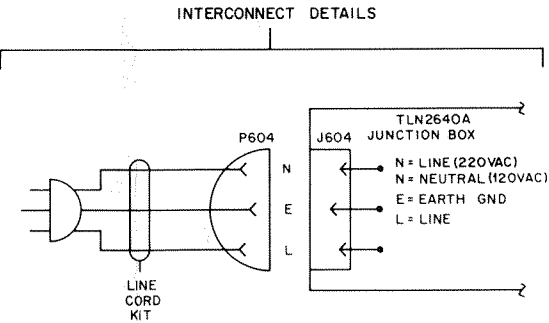
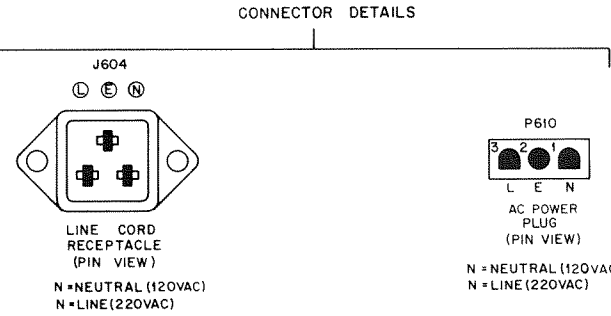
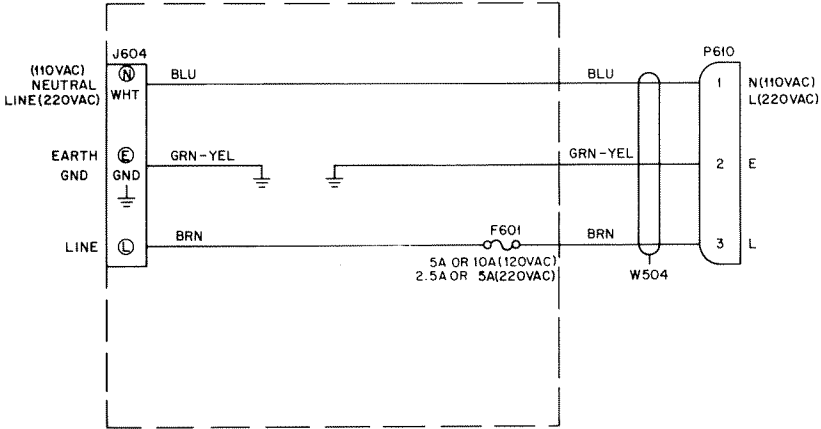


TRN5859A Interconnect Housing,
Internal View

parts list

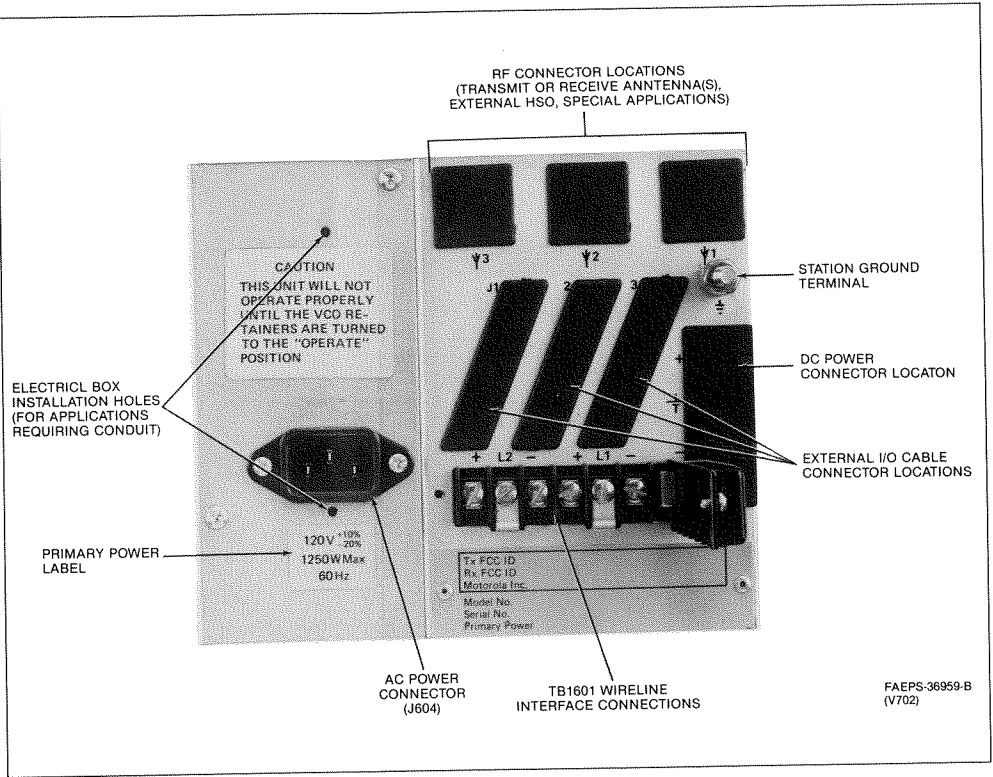
TRN5859A Interconnect Housing PL-8568-B

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
J604	15-82889N01 39-83384N01 9-83358N01	connector, receptacle: housing, line cord CONTACT, plug; 3 used CONNECTOR, splice; 1-wire
P610	15-83183N01 39-83145N01 39-83145N02	connector, plug: housing, plug (power supply) includes: CONTACT, plug; 2 used CONTACT, plug
mechanical parts		
	2-10971A16	NUT, machine: M3 x 0.5 hex
	2-10971A18	NUT, machine: M5 x 0.8 hex; 2 used
	3-10943M10	SCREW, tapping: TT3 x 0.6 x 8mm; 2 used
	3-83497N02	SCREW, machine: M5 x 0.8 x 12mm
	3-83497N04	SCREW, machine: M3 x 0.5 x 8mm; 2 used
	3-83498N04	SCREW, tapping; 2 used
	3-83498N10	SCREW, tapping: M3.5 x 0.8 x 8mm; 2 used
	4-7650	LOCKWASHER #6 internal
	9-83358N01	CONNECTOR, wire splice
	15-82834N03	HOUSING, interconnect
	15-82835N01	COVER, junction box
	15-82891N01	HOUSING, fuse with mounting hardware
	29-82607B04	LUG, ring; 2 used
	37-106352	GROMMET, rubber
	42-10217A02	STRAP, tie: .019 x 3.62 nylon; 4 used
	38-83667N01	CAP, AC outlet

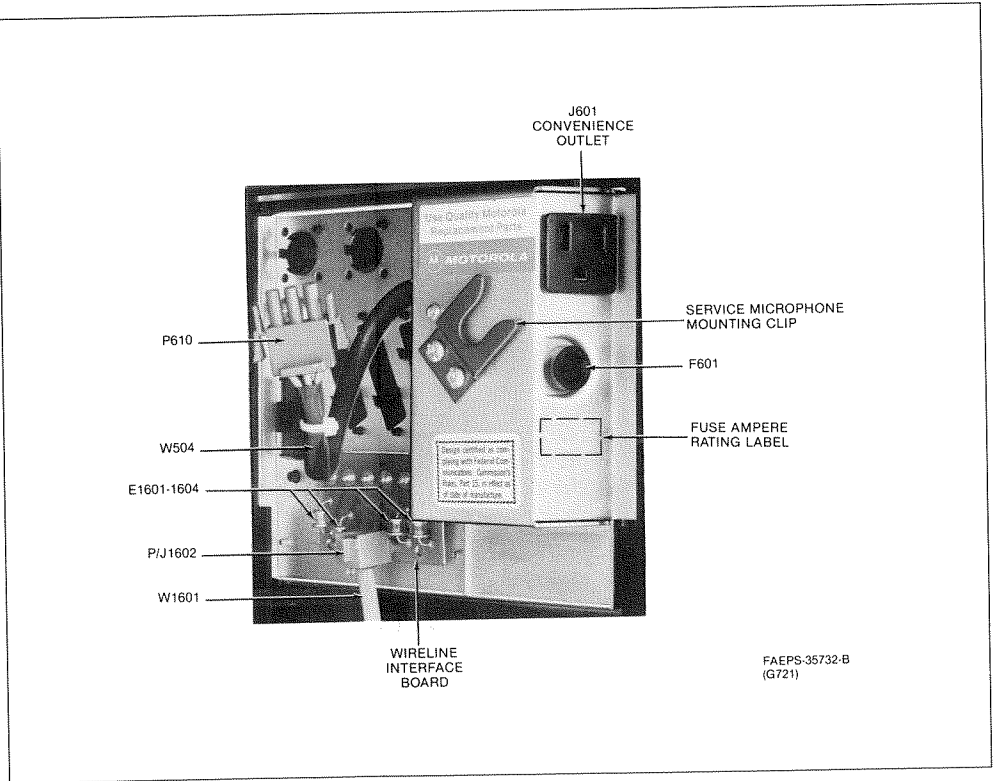


CEPS-36939-A

SINGLE POWER SUPPLY
INTERCONNECT HOUSING
MODEL TRN5471A



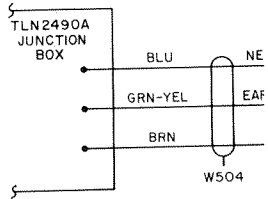
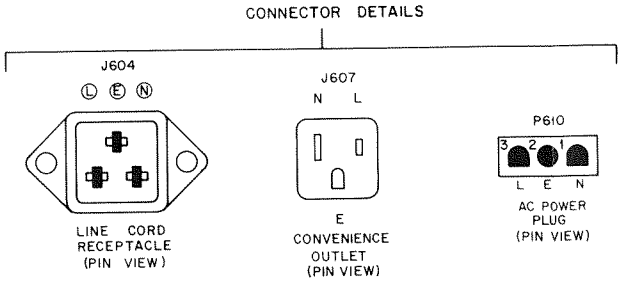
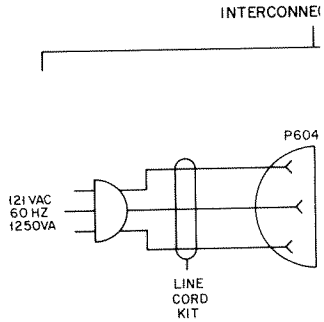
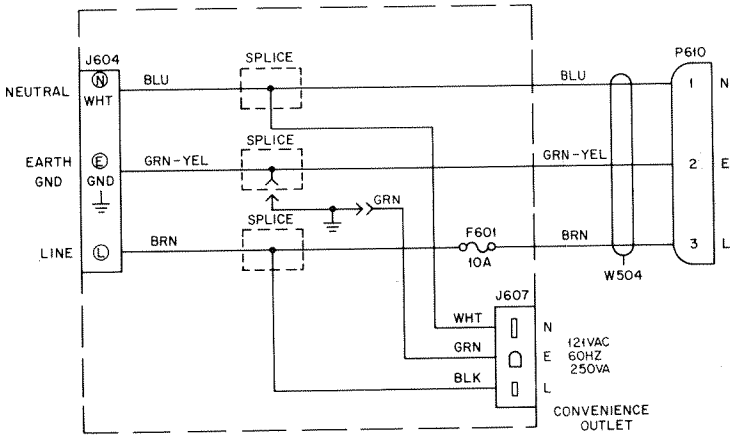
TRN5471A Interconnect Housing,
External View

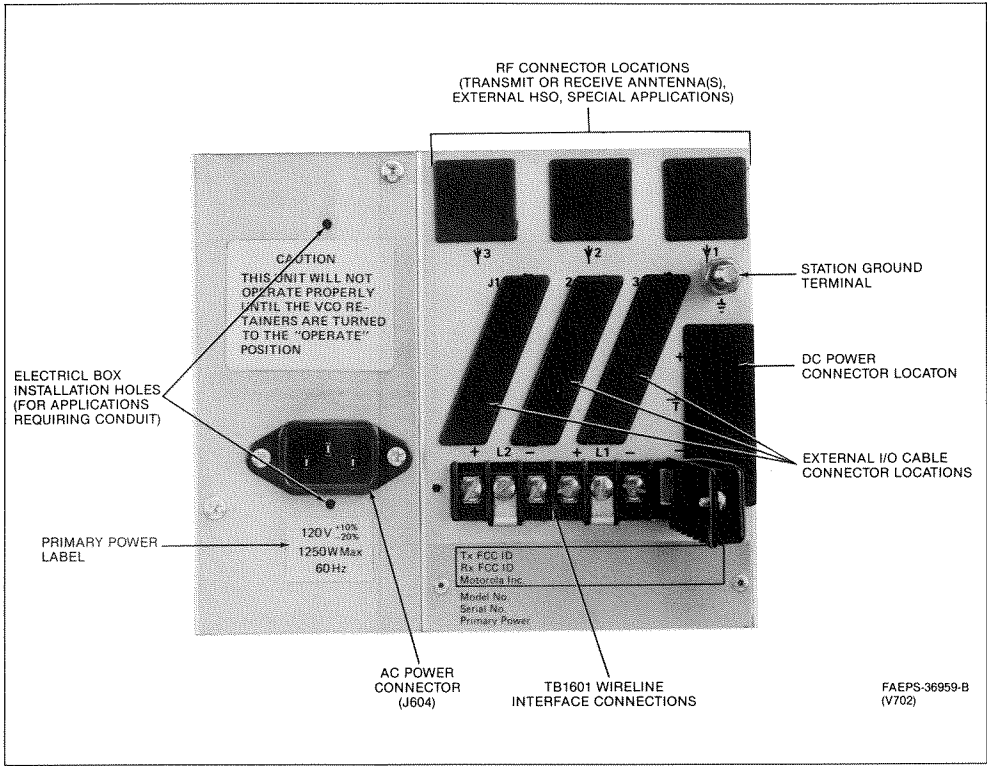


TRN5471A Interconnect Housing,
Internal View

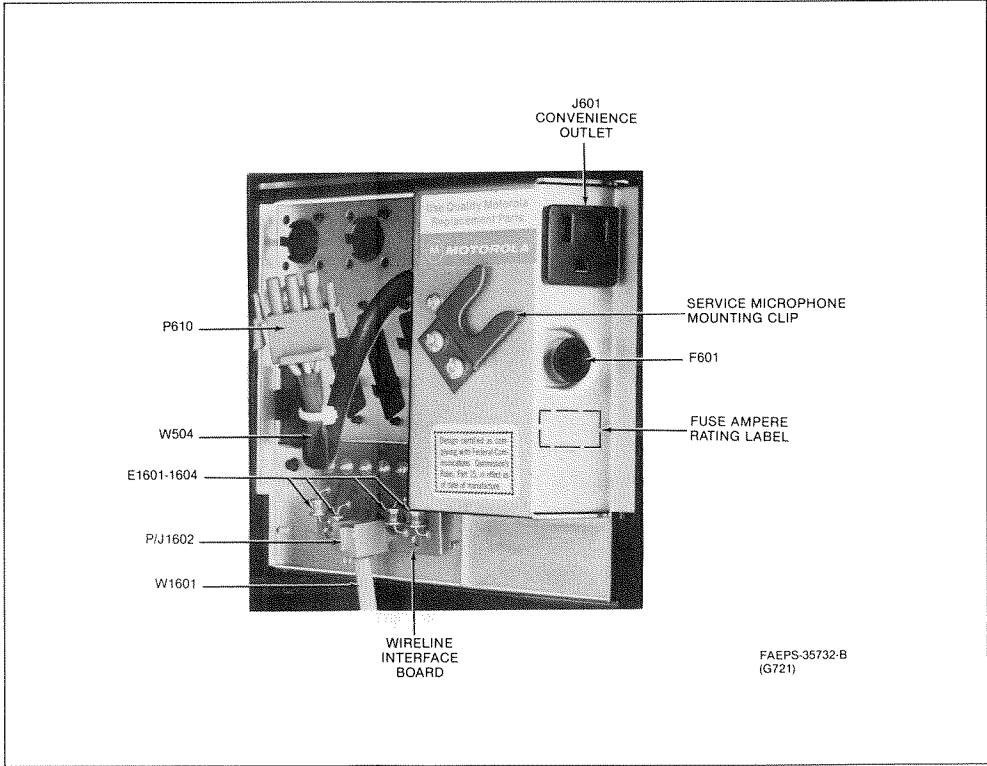
parts list

TRN5471A Interconnect Housing			PL-8250-C
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION	
F601	65-138179	fuse: 10 amp	
J604	15-82889N01 39-83384N01	connector, receptacle: housing, line cord	
J607	9-83238C01	CONTACT, plug; 3 used female, grounded duplex (convenience outlet) includes: CONNECTOR, crimp; 2-wire; 2 used CONNECTOR, splice; 1-wire	
P610	15-83183N01 39-83145N01 39-83145N02	connector, plug: housing, plug (power supply) includes: CONTACT, plug; 2 used CONTACT, plug	
W504		cable: assembly, wire: includes: J604, P610	
mechanical parts			
	1-80758D49	ASSEMBLY, AC outlet with lug; includes: J607 and	
	29-859118	LUG, faston	
	2-10971A16	NUT, machine: M3 x 0.5 hex;	
	2-10971A19	NUT, machine: M5 x 1 hex; 2 used	
	3-10943M10	SCREW, tapping: TT3 x 0.6 x 8mm; 2 used	
	3-10908A55	SCREW, machine: M5 x 1 x 12mm	
	3-83497N07	SCREW, machine: M3 x 0.5 x 8mm	
	3-83498N10	SCREW, tapping: M3.5 x 0.8 x 8mm; 2 used	
	4-7650	LOCKWASHER #4 internal	
	4-119331	LOCKWASHER, 1/4"	
	15-82834N05	HOUSING, interconnect	
	15-82835N01	COVER, junction box	
	15-82891N01	HOUSING, fuse with mounting hardware	
	38-82892N01	CAP, fuse housing gray	
	29-10228A06	TERMINAL, contact	
	37-106352	GROMMET, rubber	
	42-10217A02	STRAP, tie: .019 x 3.62 nylon; 4 used	
	54-84697B01	LABEL	
	64-85596	BRACKET, hang-up	





TRN5471A Interconnect Housing,
External View



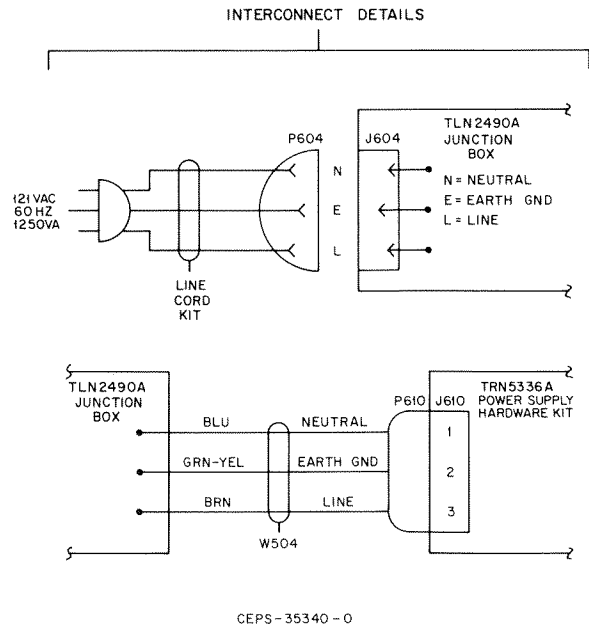
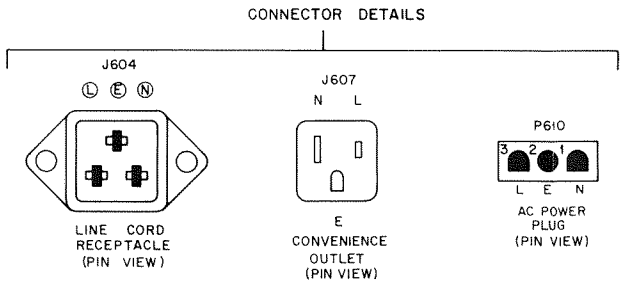
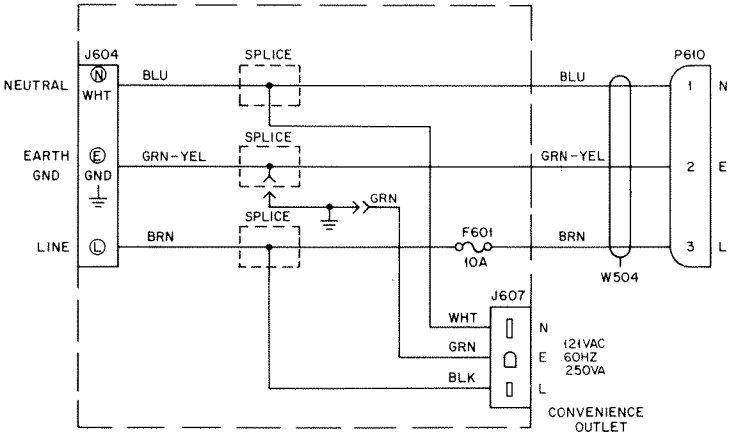
TRN5471A Interconnect Housing,
Internal View

parts list

TRN5471A Interconnect Housing

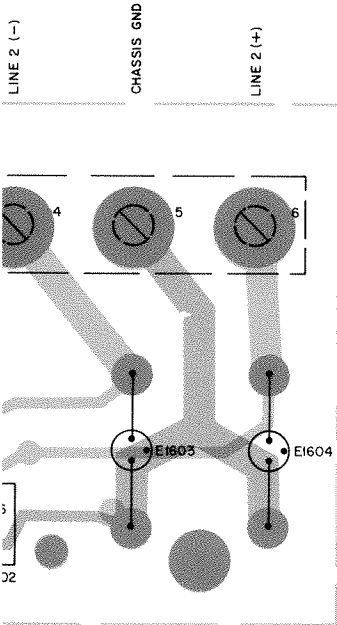
PL-8250-C

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
F601	65-138179	fuse: 10 amp
J604	15-82889N01 39-83384N01	connector, receptacle: housing, line cord CONTACT, plug; 3 used
J607	9-83238C01	female, grounded duplex (convenience outlet) includes: CONNECTOR, crimp; 2-wire; 2 used CONNECTOR, splice; 1-wire
P610	9-82845L01 9-83358N01	connector, plug: housing, plug (power supply) includes: CONTACT, plug; 2 used CONTACT, plug
W504	15-83183N01 39-83145N01 39-83145N02	cable: assembly, wire: includes: J604, P610
mechanical parts		
	1-80758D49	ASSEMBLY, AC outlet with lug; includes: J607 and
	29-859118	LUG, faston
	2-10971A16	NUT, machine: M3 x 0.5 hex;
	2-10971A19	NUT, machine: M5 x 1 hex; 2 used
	3-10943M10	SCREW, tapping: TT3 x 0.6 x 8mm; 2 used
	3-10908A55	SCREW, machine: M5 x 1 x 12mm
	3-83497N07	SCREW, machine: M3 x 0.5 x 8mm
	3-83498N10	SCREW, tapping: M3.5 x 0.8 x 8mm; 2 used
	4-7650	LOCKWASHER #4 internal
	4-119331	LOCKWASHER, 1/4"
	15-82834N05	HOUSING, interconnect
	15-82835N01	COVER, junction box
	15-82891N01	HOUSING, fuse with mounting hardware
	38-82892N01	CAP, fuse housing gray
	29-10228A06	TERMINAL, contact
	37-106352	GROMMET, rubber
	42-10217A02	STRAP, tie: .019 x 3.62 nylon; 4 used
	54-84697B01	LABEL
	64-85596	BRACKET, hang-up



WIRELINE INTERFACE BOARD
MODEL TRN5159A

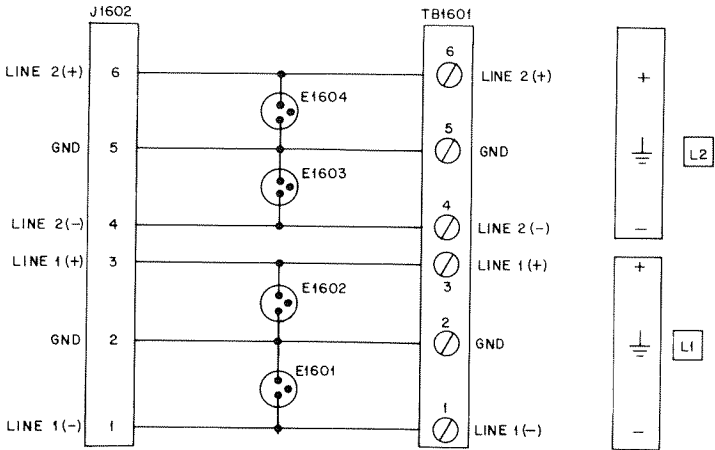
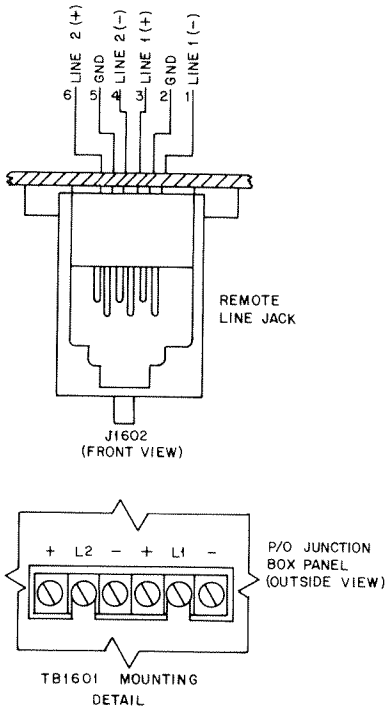
PL-8261-B
DESCRIPTION
cable: assembly; includes: P901, P1602 (TKN8305A) assembly; includes: P901, P1602 (TKN8492A)
PL-8233-B
DESCRIPTION
spark gap: 350 V
connector, receptacle: female; modular; 6-contact
terminal block: screw terminals; 6-position



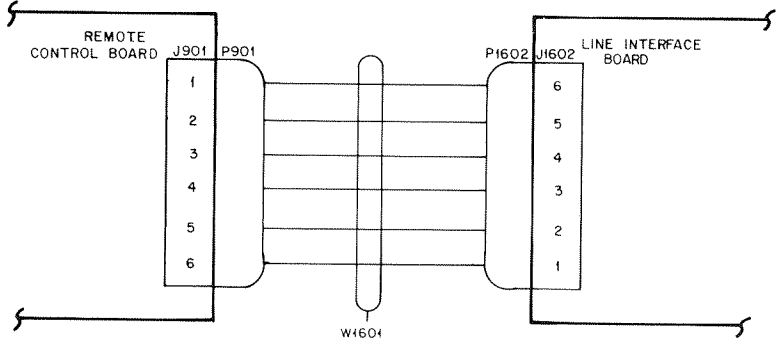
COMPONENT SIDE BD-CEPS-35391-0
SOLDER SIDE BD-CEPS-35392-0
OL-CEPS-35393-0

COMPONENT SIDE

CONNECTOR DETAILS



INTERCONNECT DETAIL



CEPS- 35192 - A

FUNCTION

The wireline interface board which is mounted in the junction box, provides screw terminal connection points for 2- or 4-wire remote control wireline. Line transient protection is provided by circuit board mounted (chassis grounded) spark gap devices.

LINE CONNECTION CHART

APPLICATION	LINE 1 TB1601-1(-),-3(+)	LINE 2 TB1601-4(-),-6(+)
2-WIRE	INBOUND TX AUDIO; DC CONTROL CURRENT, & OUTBOUND LINE AUDIO.	NOT USED
4-WIRE	INBOUND TX AUDIO. DC CONTROL CURRENT	OUTBOUND LINE AUDIO

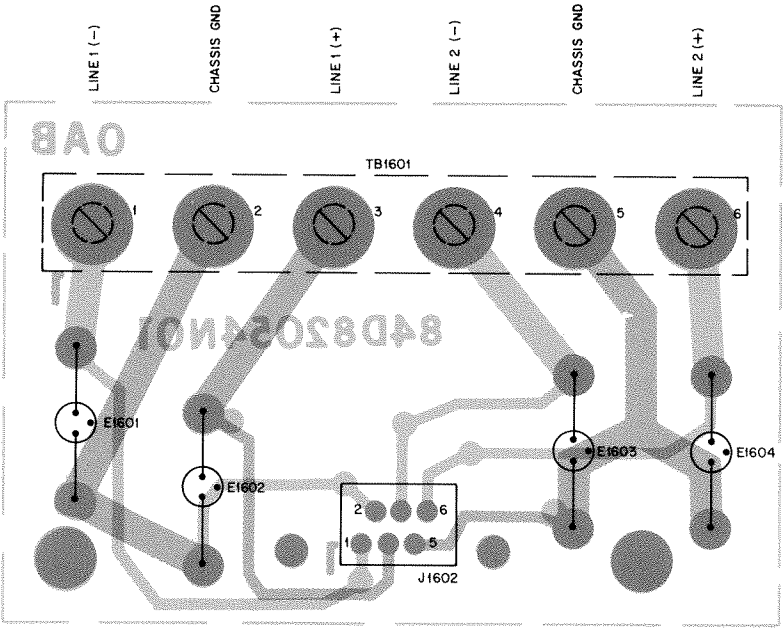
parts list

TKN8305A Wireline Interface Cable
TKN8492A Wireline Interface Cable
PL-8261-B

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
W1601	30-84225N01	cable: assembly; includes: P901, P1602 (TKN8305A)
	30-84225N04	assembly; includes: P901, P1602 (TKN8492A)

TRN5159A Wireline Interface Board
PL-8233-B

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
E1601 thru 1604	80-83029H01	spark gap: 350 V
J1602	9-84206N03	connector, receptacle: female; modular; 6-contact
TB1601	31-84145N03	terminal block: screw terminals; 6-position

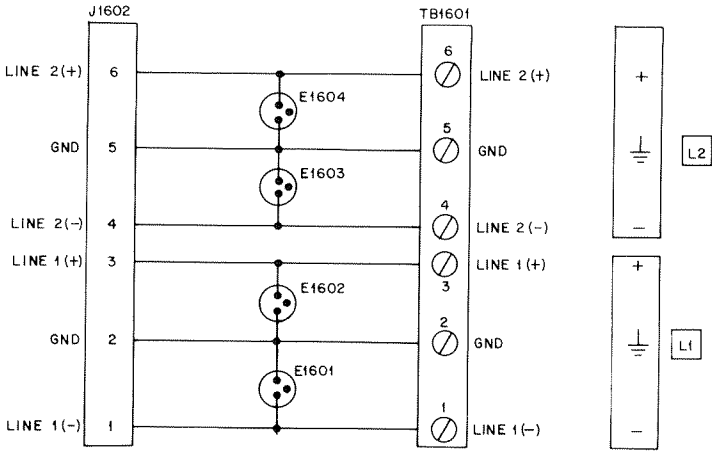
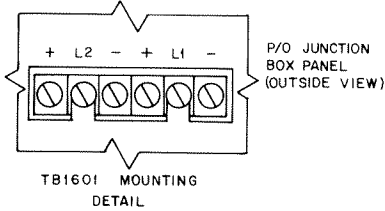
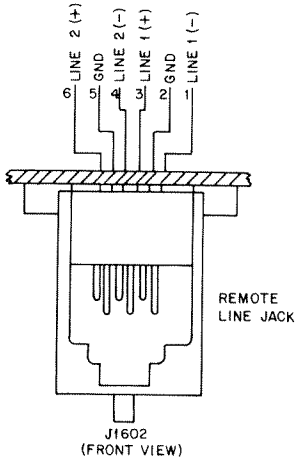


- J1602
- 1 - LINE 1 (-)
 - 2 - CHASSIS GND
 - 3 - LINE 1 (+)
 - 4 - LINE 2 (-)
 - 5 - CHASSIS GND
 - 6 - LINE 2 (+)

COMPONENT SIDE ● BD-CEPS-35391-O
SOLDER SIDE ● BD-CEPS-35392-O
OL-CEPS-35393-O

SHOWN FROM COMPONENT SIDE

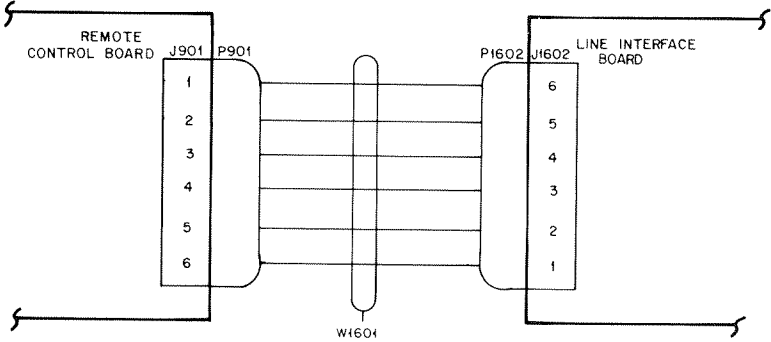
CONNECTOR DETAILS



LINE CONNECTION CHART

APPLICATION	LINE 1 TB1601-1(-),-3(+)	LINE 2 TB1601-4(-),-6(+)
2-WIRE	INBOUND TX AUDIO; DC CONTROL CURRENT, & OUTBOUND LINE AUDIO.	NOT USED
4-WIRE	INBOUND TX AUDIO, DC CONTROL CURRENT	OUTBOUND LINE AUDIO

INTERCONNECT DETAIL



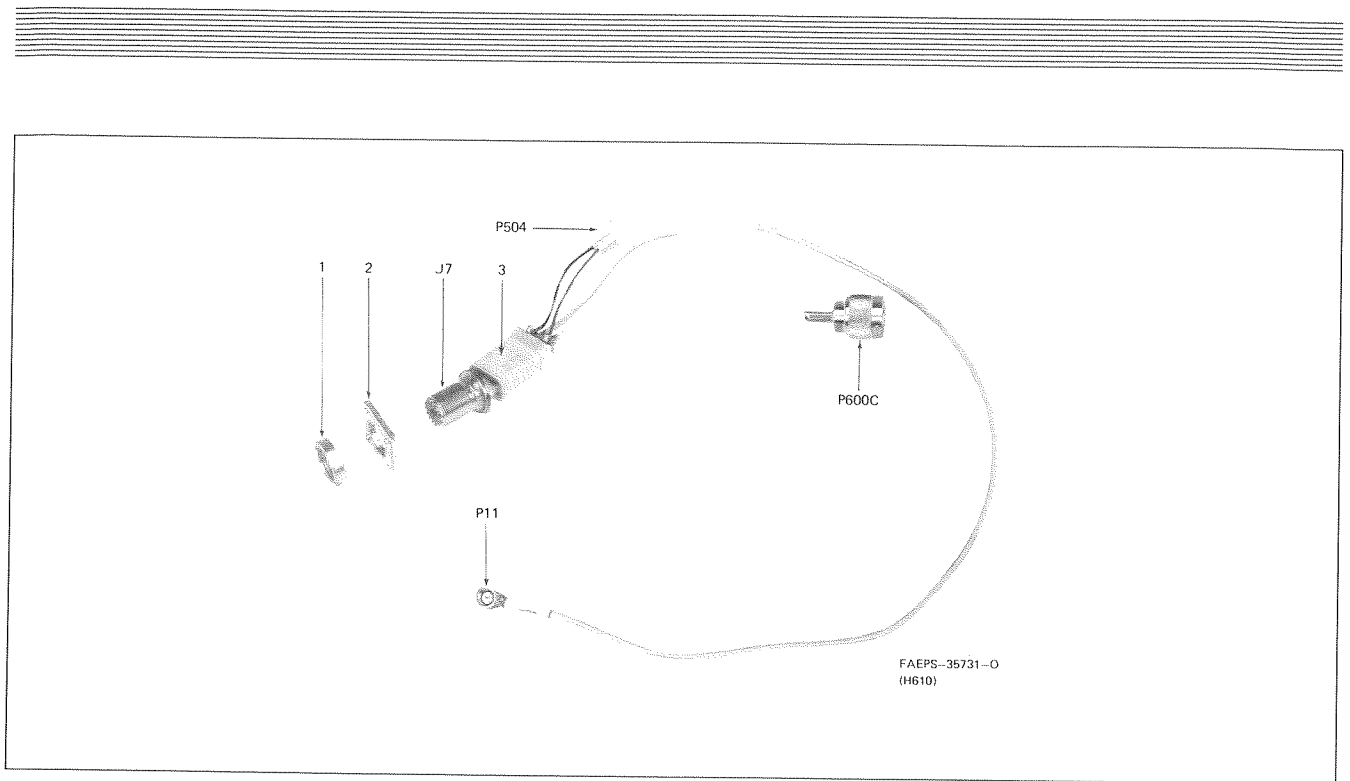
CEPS-35192-A



MOTOROLA INC.
Communications
Sector

ANTENNA SWITCH

MODEL TRN5208A



parts list

TRN5208A Antenna Switch Kit

PL-8249-A

PC-8249-

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
P504	15-84861K02	connector, plug: housing: 2 contact male, single contact; N-type receptacle, right angle; SMA-type
P600C	28-84476G01	
P11	28-87317C04	
mechanical parts		
1	2-80006A01	NUT, spanner
	29-84706E06	TERMINAL, pin; 2 used
2	43-82895N01	SPACER, antenna switch mounting
3	—	ANTENNA SWITCH, non-serviceable
—	4-114522	LOCKWASHER

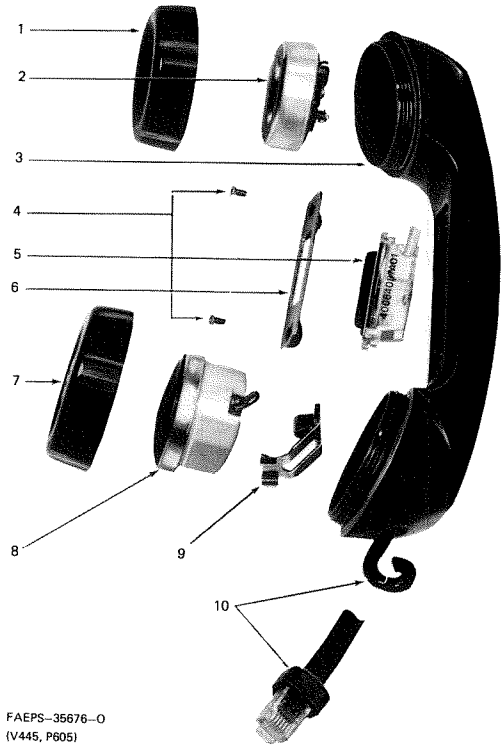
technical writing services
1301 E. Algonquin Road, Schaumburg, IL 60196

HANDSET
MODEL TMN6164A

parts list

TMN6164A Handset PL-8275-B

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
R1	6-11009C44	resistor: RESISTOR, fixed: 620 \pm 5%; 1/4 W
mechanical parts		
1	p/o ref. item 3	CAP, receiver cartridge
2	59-84058A01	CARTRIDGE, receiver
3	15-84107A18	HOUSING, handset and caps (BLK)
4	3-124432	SCREW, machine; 4-40 \times 1/4"; 2 used
5	40-84087A01	SWITCH, PTT; includes; pushbutton and dust cover
6	15-84053A01	PLATE, PTT switch cover
7	p/o ref. item 3	CAP, microphone element
8	59-82933C02	MICROPHONE ELEMENT; dynamic type alternate
	or	
9	59-83272G01	MICROPHONE ELEMENT; dynamic type
10	7-83352H01	BRACKET, cord retaining
	30-84428N01	ASSEMBLY, cord: includes modular plug
non-referenced items		
	29-847033	LUG, crimp terminal
	31-134258	TERMINAL STRIP; 1-contact
	37-134389	TUBING, shrink; 3/4" used
	75-82230B14	PAD, rubber
	54-84962K01	LABEL, safety



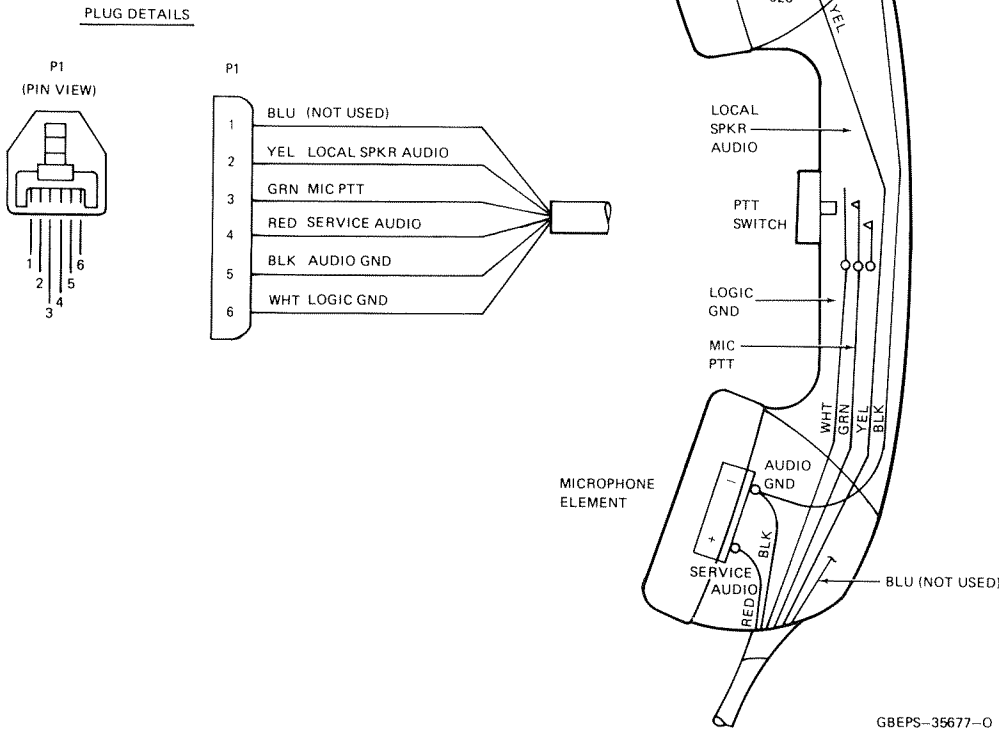
FAEPS-35676-0
(V445, P605)

1. DESCRIPTION

This telephone type dynamic handset is for use with Motorola *MSF 5000* Base and Repeater (RT) stations. It includes a conventional magnetic receiver cartridge and a dynamic microphone cartridge. The push-to-talk switch is located on the handset handle. Use of the handset provides the service technician with intercom facilities between the station and the remote control console via the wireline. Intercom operation is half-duplex in 2-wire systems and full-duplex in 4-wire systems. The push-to-talk switch on the handset handle can also be used to key the station during local operation.

2. CONNNECTION

The TMN6164A Handset is installed by inserting the handset cable modular connector into CONTROL receptacle J812 on the front panel of the station control module.



GBEPS-35677-0

HIGH SENSITIVITY MONITOR WEATHERPROOF HARDWARE
HLN4102A

RADIO MICROPHONE

MODEL CHART

CODE:

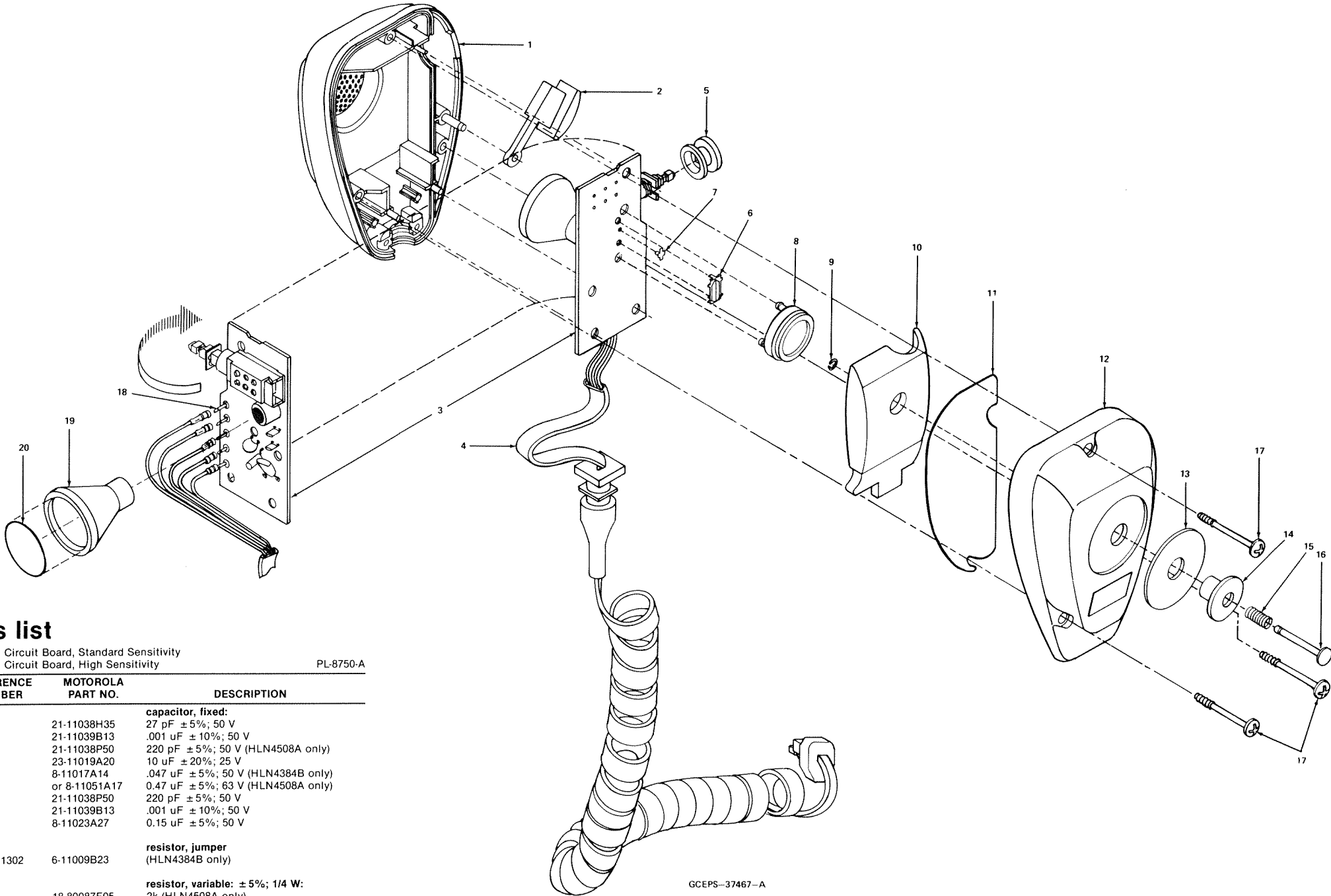
- = ONE ITEM SUPPLIED
- † = MONITOR OPTION
- ‡ = WEATHERPROOF OPITON
- § = HIGH SENSITIVITY OPTION

MODEL	DESCRIPTION
HMN1001B	STANDARD SENSITIVITY WITH CARRIER SQUELCH
HMN1002B	STANDARD SENSITIVITY WITH CARRIER SQUELCH AND WEATHERPROOF CASE •
HMN1004B	STANDARD SENSITIVITY WITH MONITOR OPTION †
HMN1003B	STANDARD SENSITIVITY WITH MONITOR OPTION AND WEATHERPROOF CASE *†
HMN1006A	HIGH SENSITIVITY WITH CARRIER SQUELCH §
HMN1008A	HIGH SENSITIVITY WITH CARRIER SQUELCH AND WEATHERPROOF CASE §*
HMN1007A	HIGH SENSITIVITY WITH MONITOR OPTION §†
• HMN1009A	HIGH SENSIVITY WITH MONITOR OPTION AND WEATHERPROOF CASE §*†

EPS-37908-O

roof
sitivity
sitivity Weatherproof
PL-8752-O

DESCRIPTION
nector, plug: e, 6 contact (part of mic. cord)
al parts
USING, microphone front
†TON, microphone
CUIT BOARD, standard sensitivity y HLN4384B parts list)
CUIT BOARD, high sensitivity (see V4508A parts list)
3LE, microphone cord
MMET, switch button (HLN4702A /)
†TON, monitor switch (part of S1302)
†VACT, monitor switch (part of S1302)
3KET, monitor switch plate
G, retainer
IGHT, microphone
3KET, microphone housing N4702A and HLN4418B only)
JSING, microphone rear
SHER, flat
ID, microphone hang-up
†ING, plunger
†NGER, actuator
REW, metric hi-lo; 3 used
†FLE, felt (HLN4702A and HLN4418B
†VACT, switch
†TON, switch



parts list

HLN4384B Circuit Board, Standard Sensitivity
HLN4508A Circuit Board, High Sensitivity
PL-8750-A

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
C1301	21-11038H35	capacitor, fixed: 27 pF ± 5%; 50 V
C1302	21-11039B13	.001 uF ± 10%; 50 V
C1303	21-11038P50	220 pF ± 5%; 50 V (HLN4508A only)
C1304	23-11019A20	10 uF ± 20%; 25 V
C1305	8-11017A14 or 8-11051A17	.047 uF ± 5%; 50 V (HLN4384B only) 0.47 uF ± 5%; 63 V (HLN4508A only)
C1306	21-11038P50	220 pF ± 5%; 50 V
C1307	21-11039B13	.001 uF ± 10%; 50 V
C1308	8-11023A27	0.15 uF ± 5%; 50 V
JU1301, 1302	6-11009B23	resistor, jumper (HLN4384B only)
R1301	18-80087E05	resistor, variable: ± 5%; 1/4 W: 2k (HLN4508A only)
R1302	6-11009A57 or 6-11009A49	resistor, fixed: ± 5%; 1/4 W: 2.2k (HLN4384B only) 1k (HLN4508A only)
R1303	6-11009A49	1k
R1304	6-11009A73	10k (HLN4508A only)
R1305	6-11009A97	100k
R1306	6-11009A19 or 6-11009A07	56 (HLN4384B only) 18 (HLN4508A only)
VR1301	48-80007E02	voltage, regulator: (see note) Zener type, 12V; 400 mw
Q1301	48-80182D08	transistor: (see note) NPN; type M82D08 (HLN4508A only)
Q1302	48-80182D08	NPN; type M82D08
MK1301	50-80258E04	microphone: cartridge
S1301	40-80065E02	switch: momentary
mechanical parts		
18	39-10184A10	CONTACT, pin; 5 used
19	5-80148D01	GROMMET, microphone cartridge
non-referenced item		
	14-84360C01	INSULATOR, PTT switch

note: For optimum performance, diodes, transistors, and integrated circuits must be ordered by Motorola part numbers.

- MIC AUDIO
(RED)
- USH-TO-TALK
(PTT)
- PTT HI
(GRN)
- PTT LOW
(WHITE)
- GND
(BLACK)
- MONITOR
(BLUE)

NOTES:

1. Unless otherwise indicated; resistor values are in ohms; capacitor values are in microfarads; and inductor values are in millihenries.

2.

Standard Sensitivity Models			
Part	Remove	Install	Value
R1301	X		
R1302		X	2.2k
R1304	X		
R1306		X	56
C1303	X		
C1305		X	.047
Q1301	X		
JU1301		X	Jumper
JU1302		X	Jumper

High Sensitivity Models			
Part	Remove	Install	Value
R1301		X	2k
R1302		X	1k
R1304		X	10k
R1306		X	18
C1303		X	220 pF
C1305		X	0.47
Q1301		X	
JU1301	X		
JU1302	X		

3. Monitor function models (high or standard sensitivity models) include hook switch S1302.

4. R1301 (2k potentiometer) is factory set.

parts list

Hardware Kits:
HLN4416B Microphone C.S. Standard
HLN4417B Microphone C.S. Weatherproof
HLN4699A Microphone C.S. High Sensitivity
HLN4700A Microphone C.S. High Sensitivity Weatherproof

PL-8751-O

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
P500	28-80085E03	connector, plug: male, 6 contact (part of mic. cord)
mechanical parts		
1	15-80137D02	HOUSING, microphone front
2	38-80144D01	BUTTON, microphone
3	HLN4384B	CIRCUIT BOARD, standard sensitivity (see HLN4384B parts list)
	or HLN4508A	CIRCUIT BOARD, high sensitivity (see HLN4508A parts list)
4	30-80146D02	CABLE, microphone cord
5	5-80151D01	GROMMET, switch button (HLN4700A, HLN4417B)
11	32-80143D01	GASKET, microphone housing (HLN4700A, HLN4417B)
16	35-80089D01	BAFFLE, felt (HLN4417B, 4700A)
17	3-80076E04	SCREW, metric: hi-lo; 3 used
	1-80707T05	ASSEMBLY, housing rear; includes:
10	46-80139D02	WEIGHT, microphone
12	15-80137D03	HOUSING, microphone rear
13	4-80093E01	WASHER, flat
14	46-80086E03	STUD, microphone hang-up (standard)
non-referenced items		
	3-139913	SCREW, tapping: 8-18 × 1/2; 3 used
	54-84962K01	TAG, safety
	33-80095E26	NAMEPLATE, HMN1001B
	33-80095E27	NAMEPLATE, HMN1002B
	33-80095E19	NAMEPLATE, HMN1006A
	33-80095E21	NAMEPLATE, HMN1008A
	1-80707T05	ASSEMBLY, speaker and bracket; includes:
	7-850811	BRACKET, mounting
	41-850813	SPRING, microphone mounting

ITEM	DESCRIPTION
HLN4384B	STANDARD SENSITIVITY MICROPHONE BOARD
HLN4508A	HIGH SENSITIVITY MICROPHONE BOARD
0180710T70	REAR HOUSING
0180729T46	REAR HOUSING WITH MONITOR OPTION
0180723T68	MICROPHONE BOARD SOLDER STOP
0180707T05	SPRING AND BRACKET FOR HANG-UP
HLN4416B	STANDARD CARRIER SQUELCH WEATHERPROOF HARDWARE
HLN4417B	STANDARD CARRIER SQUELCH WEATHERPROOF HARDWARE
HLN4419B	STANDARD MONITOR HARDWARE
HLN4418B	STANDARD MONITOR WEATHERPROOF HARDWARE
HLN4699A	HIGH SENSITIVITY CARRIER SQUELCH HARDWARE
HLN4700A	HIGH SENSITIVITY CARRIER SQUELCH WEATHERPROOF HARDWARE
HLN4701A	HIGH SENSITIVITY MONITOR HARDWARE
HLN4702A	HIGH SENSITIVITY MONITOR WEATHERPROOF HARDWARE

MODEL	DESCRIPTION
HMN1001B	STANDARD SENSITIVITY WITH CARRIER SQUELCH
HMN1002B	STANDARD SENSITIVITY WITH CARRIER SQUELCH AND WEATHERPROOF CASE
HMN1004B	STANDARD SENSITIVITY WITH MONITOR OPTION
HMN1003B	STANDARD SENSITIVITY WITH MONITOR OPTION AND WEATHERPROOF CASE
HMN1006A	HIGH SENSITIVITY WITH CARRIER SQUELCH
HMN1008A	HIGH SENSITIVITY WITH CARRIER SQUELCH AND WEATHERPROOF CASE
HMN1007A	HIGH SENSITIVITY WITH MONITOR OPTION
HMN1009A	HIGH SENSITIVITY WITH MONITOR OPTION AND WEATHERPROOF CASE

parts list

Hardware Kits:
HLN4419B Microphone, Monitor Standard
HLN4418B Microphone, Monitor Weatherproof
HLN4701A Microphone, Monitor High Sensitivity
HLN4702A Microphone, Monitor High Sensitivity Weatherproof

PL-8752-O

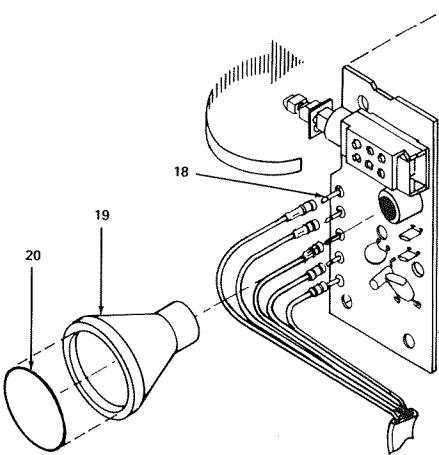
REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
P500	28-80085E03	connector, plug: male, 6 contact (part of mic. cord)
mechanical parts		
1	15-80137D02	HOUSING, microphone front
2	38-80144D01	BUTTON, microphone
3	HLN4384B	CIRCUIT BOARD, standard sensitivity (see HLN4384B parts list)
	or HLN4508A	CIRCUIT BOARD, high sensitivity (see HLN4508A parts list)
4	30-80146D02	CABLE, microphone cord
5	5-80151D01	GROMMET, switch button (HLN4702A only)
6 (S1302)	40-80252E02	BUTTON, monitor switch (part of S1302)
7 (S1302)	40-80252E01	CONTACT, monitor switch (part of S1302)
8	32-80253E01	GASKET, monitor switch plate
9	42-80166E01	RING, retainer
10	46-80139D02	WEIGHT, microphone
11	32-80143D01	GASKET, microphone housing (HLN4702A and HLN4418B only)
12	15-80137D03	HOUSING, microphone rear
13	4-80093E01	WASHER, flat
14	46-80086E04	STUD, microphone hang-up
15	41-80096E02	SPRING, plunger
16	45-80113M02	PLUNGER, actuator
17	3-80076E04	SCREW, metric hi-lo; 3 used
20	35-80089D01	BAFFLE, felt (HLN4702A and HLN4418B only)
S1302	40-8025E01 and 40-80252E02	CONTACT, switch BUTTON, switch

RADIO MICROPHONE

MODEL CHART

CODE:

- = ONE ITEM SUPPLIED
- † = MONITOR OPTION
- \$ = WEATHERPROOF OPITON
- § = HIGH SENSITIVITY OPTION

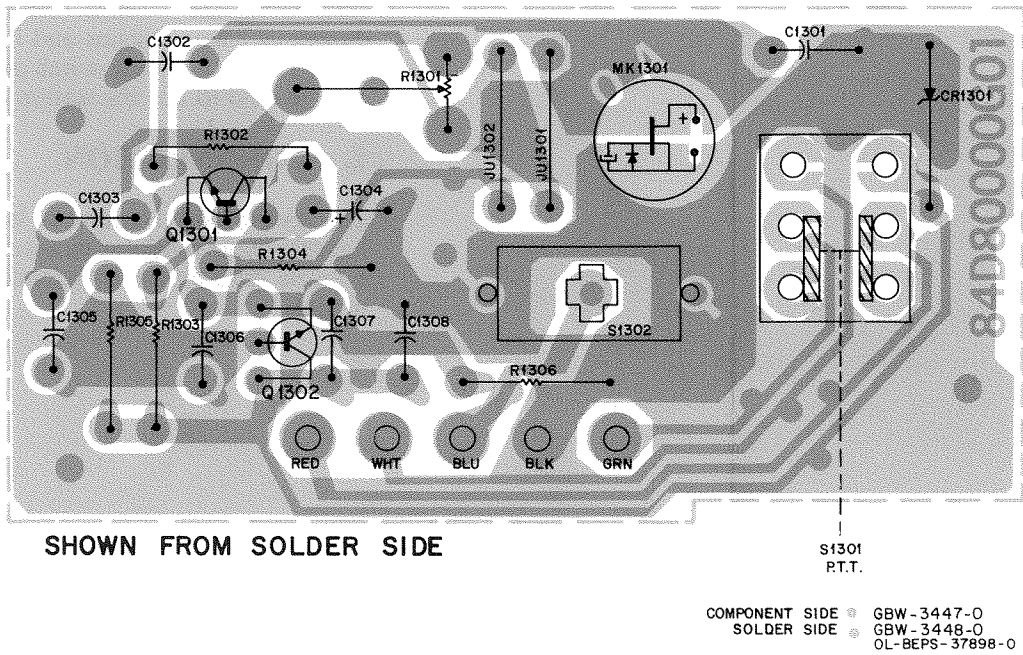
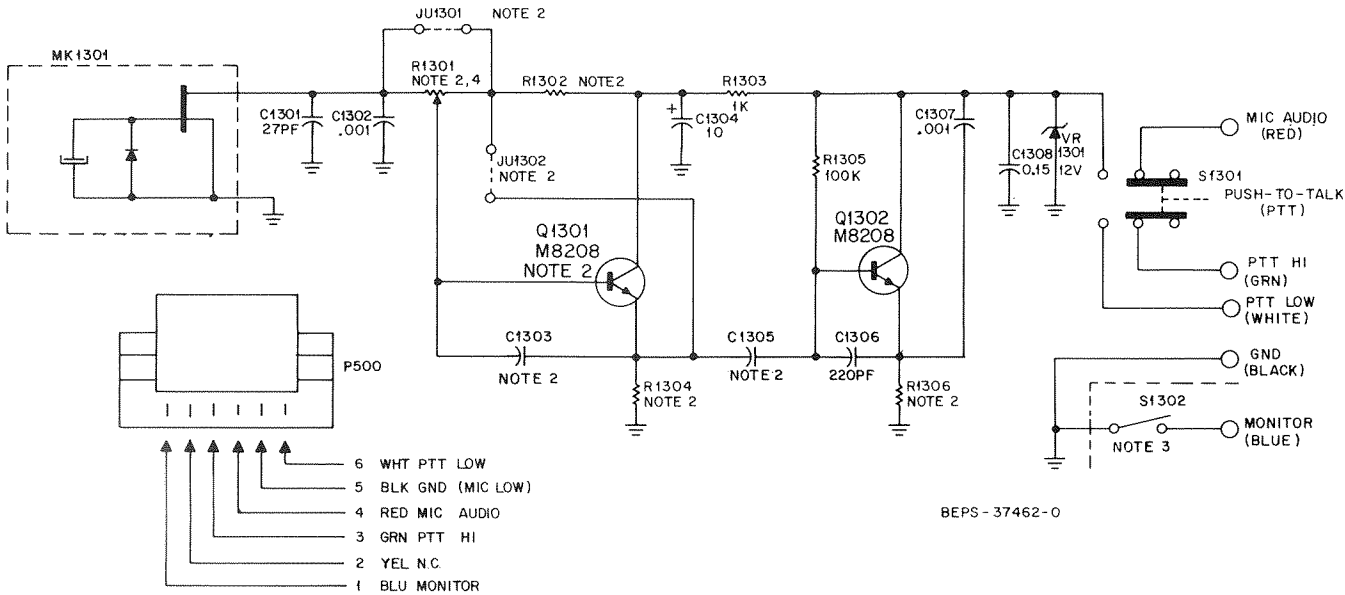


parts list

HLN4384B Circuit Board, Standard Sensitivity
HLN4508A Circuit Board, High Sensitivity

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
capacitor, fixed:		
C1301	21-11038H35	27 pF ± 5%; 50 V
C1302	21-11039B13	.001 uF ± 10%; 50 V
C1303	21-11038P50	220 pF ± 5%; 50 V (HLN4508A only)
C1304	23-11019A20	10 uF ± 20%; 25 V
C1305	8-11017A14 or 8-11051A17	.047 uF ± 5%; 50 V (HLN4384B only)
	21-11038P50	0.47 uF ± 5%; 63 V (HLN4508A only)
C1306	21-11039B13	220 pF ± 5%; 50 V
C1307	21-11039B13	.001 uF ± 10%; 50 V
C1308	8-11023A27	0.15 uF ± 5%; 50 V
JU1301, 1302	6-11009B23	resistor, jumper (HLN4384B only)
R1301	18-80087E05	resistor, variable: ± 5%; 1/4 W: 2k (HLN4508A only)
R1302	6-11009A57 or 6-11009A49	resistor, fixed: ± 5%; 1/4 W: 2.2k (HLN4384B only)
R1303	6-11009A49	1k (HLN4508A only)
R1304	6-11009A73	1k
R1305	6-11009A97	10k (HLN4508A only)
R1306	6-11009A19 or 6-11009A07	100k
		56 (HLN4384B only)
		18 (HLN4508A only)
VR1301	48-80007E02	voltage, regulator: (see note) Zener type, 12V; 400 mw
Q1301	48-80182D08	transistor: (see note) NPN; type M82D08 (HLN4508A only)
Q1302	48-80182D08	NPN; type M82D08
MK1301	50-80258E04	microphone: cartridge
S1301	40-80065E02	switch: momentary
mechanical parts		
18	39-10184A10	CONTACT, pin; 5 used
19	5-80148D01	GROMMET, microphone cartridge
non-referenced item		
	14-84360C01	INSULATOR, PTT switch

note: For optimum performance, diodes, transistors, and integrated circuits should be ordered by Motorola part numbers.



NOTES:

1. Unless otherwise indicated: resistor values are in ohms; capacitor values are in microfarads; and inductor values are in millihenries.

2.

Standard Sensitivity Models			
Part	Remove	Install	Value
R1301	X		
R1302		X	2.2k
R1304	X		
R1306		X	56
C1303	X		
C1305		X	.047
Q1301	X		
JU1301		X	Jumper
JU1302		X	Jumper

High Sensitivity Models			
Part	Remove	Install	Value
R1301		X	2k
R1302		X	1k
R1304		X	10k
R1306		X	18
C1303		X	220 pF
C1305		X	0.47
Q1301		X	
JU1301	X		
JU1302	X		

3. Monitor function models (high or standard sensitivity models) include hook switch S1302.

4. R1301 (2k potentiometer) is factory set.

parts list

Hardware Kits:
HLN4416B Microphone C.S. Standard
HLN4417B Microphone C.S. Weatherproof
HLN4699A Microphone C.S. High Sensitivity
HLN4700A Microphone C.S. High Sensitivity Weatherproof PL-8751-O

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
P500	28-80085E03	connector, plug: male, 6 contact (part of mic. cord)
mechanical parts		
1	15-80137D02	HOUSING, microphone front
2	38-80144D01	BUTTON, microphone
3	HLN4384B	CIRCUIT BOARD, standard sensitivity (see HLN4384B parts list)
	or HLN4508A	CIRCUIT BOARD, high sensitivity (see HLN4508A parts list)
4	30-80146D02	CABLE, microphone cord
5	5-80151D01	GROMMET, switch button (HLN4700A, HLN4417B)
11	32-80143D01	GASKET, microphone housing (HLN4700A, HLN4417B)
16	35-80089D01	BAFFLE, felt (HLN4417B, 4700A)
17	3-80076E04	SCREW, metric: hi-lo; 3 used
	1-80707T05	ASSEMBLY, housing rear; includes: WEIGHT, microphone
10	46-80139D02	HOUSING, microphone rear
12	15-80137D03	WASHER, flat
13	4-80093E01	STUD, microphone hang-up (standard)
14	46-80086E03	
non-referenced items		
	3-139913	SCREW, tapping: 8-18 x 1/2; 3 used
	54-84962K01	TAG, safety
	33-80095E26	NAMEPLATE, HMN1001B
	33-80095E27	NAMEPLATE, HMN1002B
	33-80095E19	NAMEPLATE, HMN1006A
	33-80095E21	NAMEPLATE, HMN1008A
	1-80707T05	ASSEMBLY, speaker and bracket; includes:
	7-850811	BRACKET, mounting
	41-850813	SPRING, microphone mounting

ITEM		DESCRIPTION	
HLN4384B		STANDARD SENSITIVITY MICROPHONE BOARD	
HLN4508A		HIGH SENSITIVITY/MICROPHONE BOARD	
0180710T70		REAR HOUSING	
0180729T46		REAR HOUSING WITH MONITOR OPTION	
0180723T68		MICROPHONE BOARD SOLDER STOP	
0180707T05		SPRING AND BRACKET FOR HANG-UP	
HLN4416B		STANDARD CARRIER SQUELCH HARDWARE	
HLN4417B		STANDARD CARRIER SQUELCH WEATHERPROOF HARDWARE	
HLN4419B		STANDARD MONITOR HARDWARE	
HLN4418B		STANDARD MONITOR WEATHERPROOF HARDWARE	
HLN4699A		HIGH SENSITIVITY CARRIER SQUELCH HARDWARE	
HLN4700A		HIGH SENSITIVITY CARRIER SQUELCH WEATHERPROOF HARDWARE	
HLN4701A		HIGH SENSITIVITY MONITOR HARDWARE	
HLN4702A		HIGH SENSITIVITY MONITOR WEATHERPROOF HARDWARE	

parts list

Hardware Kits:
HLN4419B Microphone, Monitor Standard
HLN4418B Microphone, Monitor Weatherproof
HLN4701A Microphone, Monitor High Sensitivity
HLN4702A Microphone, Monitor High Sensitivity

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
P500	28-80085E03	connector, plug: male, 6 cc
mechanical parts		
1	15-80137D02	HOUSING
2	38-80144D01	BUTTON, microphone
3	HLN4384B	CIRCUIT BOARD, standard sensitivity (see HLN4384B parts list)
	or HLN4508A	CIRCUIT BOARD, high sensitivity (see HLN4508A parts list)
4	30-80146D02	CABLE, microphone cord
5	5-80151D01	GROMMET, switch button (HLN4700A, HLN4417B)
6 (S1302)	40-80252E02	BUTTON, microphone
7 (S1302)	40-80252E01	CONTACT, microphone
8	32-80253E01	GASKET, microphone housing
9	42-80166E01	RING, microphone
10	46-80139D02	WEIGHT, microphone
11	32-80143D01	GASKET, microphone housing (HLN4700A, HLN4417B)
12	15-80137D03	WASHER, flat
13	4-80093E01	STUD, microphone
14	46-80086E04	SCREW, metric: hi-lo; 3 used
15	41-80096E02	NAMEPLATE, HMN1006A
16	45-80113M02	NAMEPLATE, HMN1008A
17	3-80076E04	SCREW, metric: hi-lo; 3 used
20	35-80089D01	BAFFLE, felt (HLN4417B, 4700A)
S1302	40-8025E01 and 40-8025E02	CONTACT, microphone and BUTTON, microphone

**MSF 5000™ BASE STATION
and REPEATER
403-470 MHz
Continuous Duty**

68P81062E75-B