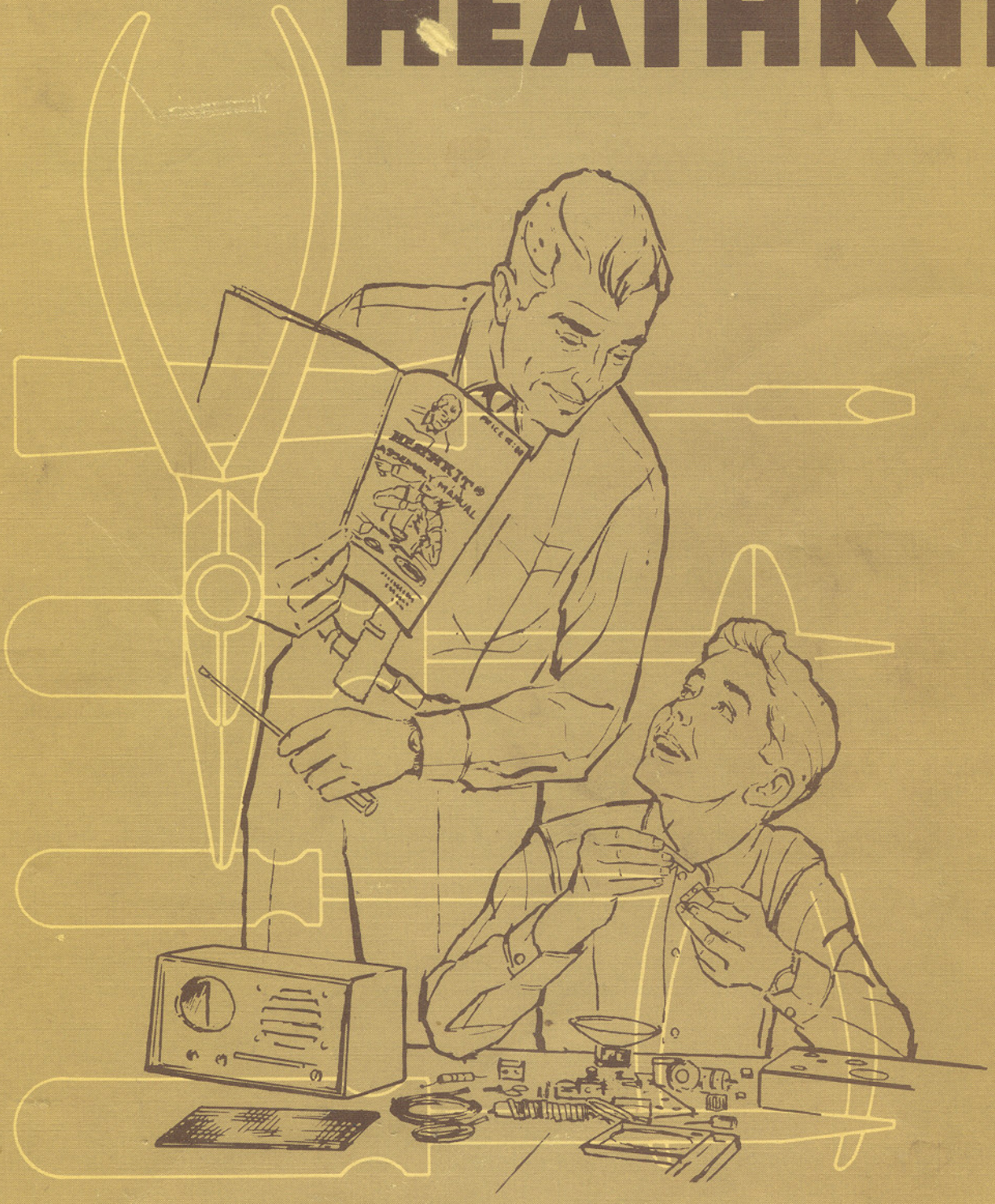
MODEL SB-230 Linear Amplifier

HEATHKIT®

HEATH COMPANY • BENTON HARBOR, MICHIGAN



HEATHKIT®

PRICE $2.00

I-595-1596-01

HEATH COMPANY PHONE DIRECTORY

The following telephone numbers are direct lines to the departments listed:

Kit orders and delivery information ..... (616) 982-3411
Credit ..... (616) 982-3561
Replacement Parts ..... (616) 982-3571
Technical Assistance:
R/C, Audio, and Electronic Organs ..... (616) 982-3310
Amateur Radio ..... (616) 982-3296
Test Equipment, Strobe Lights, Calculators,
Clocks, Weather Instruments ..... (616) 982-3315
Television ..... (616) 982-3307
Automotive, Marine, Appliances,
Security, General Products ..... (616) 982-3496

YOUR HEATHKIT 90-DAY FULL WARRANTY

During your first ninety (90) days of ownership, Heath Company will replace or repair free of charge — as soon as practical — any parts which are defective, either in materials or workmanship. You can obtain parts directly from Heath Company by writing us or telephoning us at (616) 982-3571. And we'll pay shipping charges to get those parts to you — anywhere in the world.

We warrant that, during the first ninety (90) days of ownership, our products, when correctly assembled, calibrated, adjusted, and used in accordance with our printed instructions, will meet published specifications.

If a defective part or error in design has caused your Heathkit product to malfunction during the warranty period, through no fault of yours, we will service it free upon delivery at your expense to the Heath factory, Benton Harbor, Michigan, or to any Heathkit Electronic Center (units of Schlumberger Products Corporation), or through any of our authorized overseas distributors.

You will receive free consultation on any problem you might encounter in the assembly or use of your Heathkit product. Just drop us a line or give us a call. Sorry, we cannot accept collect calls.

Our warranty, both expressed and implied, does not cover damage caused by use of corrosive solder, defective tools, incorrect assembly, misuse, fire, customer-made modifications, flood or acts of God, nor does it include reimbursement for customer assembly or setup time. The warranty covers only Heath products and is not extended to non-Heath allied equipment or components used in conjunction with our products or uses of our products for purposes other than as advertised.

And if you are dissatisfied with our service — warranty or otherwise — or our products, write directly to our Director of Customer Services, Heath Company, Benton Harbor, Michigan, 49022. He'll make certain your problems receive immediate, personal attention.

HEATH COMPANY
BENTON HARBOR, MI. 49022

Prices and specifications subject to change without notice.

Assembly and Operation of the

HEATHKIT

LINEAR AMPLIFIER

MODEL SB-230

HEATH COMPANY
BENTON HARBOR, MICHIGAN 49022

TABLE OF CONTENTS

INTRODUCTION

The Heathkit Model SB-230 Linear Amplifier is a completely self-contained, grounded-grid, table top amplifier for use on the 80, 40, 20, 15 and 10 meter amateur bands. Because it uses a type 8873 tube, which is conduction cooled by a large heat sink, fan noise is eliminated and it is completely quiet in operation. The Amplifier is rated at a power input of 1200 watts peak envelope power for voice operation on SSB, at 1000 watts for CW, or at 400 watts for RTTY or SSTV.

The power transformer has a dual primary winding and can be operated from either 120 or 240 VAC, 50/60 Hertz electric supply lines. Operation from a 240 volt line is recommended, but not required. The Amplifier is designed for use with exciters which deliver 100 watts output. It can be used with lower driving power, but its output will be less.

If it is overdriven, the Amplifier develops ALC voltage to reduce the gain of the exciter. An "exciter only" switch is provided so the Amplifier, after warm-up, can be instantaneously switched into or out of use.

Protective devices are: a circuit breaker in the power transformer primary, a time delay to insure adequate warm-up time for the tube, a thermal circuit breaker to cut off the tube should the Amplifier be overheated, and a fuse to protect against excessive plate drive. Convenient visual indicators are included on the panel to show when the Amplifier is ready to operate after turn-on, to show when the Amplifier is switched to "exciter only," and to indicate when the thermal circuit breaker has operated.

Read the "Kit Builders Guide" for complete information on unpacking, parts identification, tools, wiring, soldering, and step-by-step assembly procedures.

VERY IMPORTANT:

BERYLLIUM OXIDE (BeO) CERAMIC BLOCK

The ceramic block fitted between the power tube and heat sink is made of high-fired beryllium oxide (BeO). We chose this particular material because of its superior thermal conductivity and high electrical resistivity -- it is by far the best substance we know of to efficiently transmit the intense heat of the power tube to the heat sink where it is dissipated into the air. While the normal installation and use of this ceramic block is totally safe and will not expose you to any danger, nevertheless, we should caution you that beryllium oxide in its vapor and dust forms is a deadly poison and should never be swallowed, breathed, or brought into contact with the skin or eyes. Under no circumstances should the beryllium oxide ceramic block be drilled, chipped, crushed, sawed, sanded, ground, filed, or subjected to any other dust producing operation. Nor should the block be brought into contact with any acid or other chemical solution except as described below. The block should never be heated to over 1,000°C (the unit has been designed so that the block will not be subjected to temperatures in excess of 400°C).

Should the block become cracked, chipped, or even pulverized or should dust be produced in any other way, remove the small pieces (and dust) with a wet paper towel. Then discard the towel in a sealed plastic bag. Beryllium oxide dust or particles should never be swept or vacuumed. Should you desire for any reason to remove the filler material used to connect the power tube to the block and the block to the heat sink, do so with a rag dipped in a solvent such as lacquer thinner or Varsol. Then discard the rag in a sealed plastic bag. Never attempt to scrape the filler material from the beryllium oxide block.

Wash your hands thoroughly after any contact with the beryllium oxide block.

ASSEMBLY NOTES

Each circuit part in this kit has its own component number (R2, C4, etc.). Use these numbers when you want to positively identify the same part in the various sections of the Manual. These numbers, which are especially useful if a part has to be replaced, appear:

- In the Parts Lists,
- At the beginning of each step where a component is installed,
- In some illustrations,
- In the Schematic,
- In the sections at the rear of the Manual.

CIRCUIT BOARDS

PARTS LIST

The parts for your Amplifier are in two packs. Remove the pack marked "PK 1" (pack 1) from the box; remaining parts are pack 2.

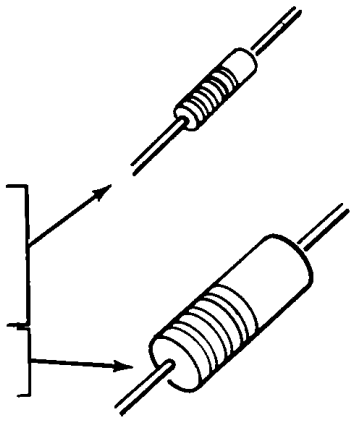
Check the parts from pack 1 against the following list. You will also need several parts from pack 2, as listed. The illustrations will show you what the parts look like. Only the hardware is drawn to actual size.

Some parts are packaged in envelopes with the part number of the contents printed on the outside. Except for the initial parts check, keep these parts in their envelopes so they can be easily identified when they are called for in the assembly steps.

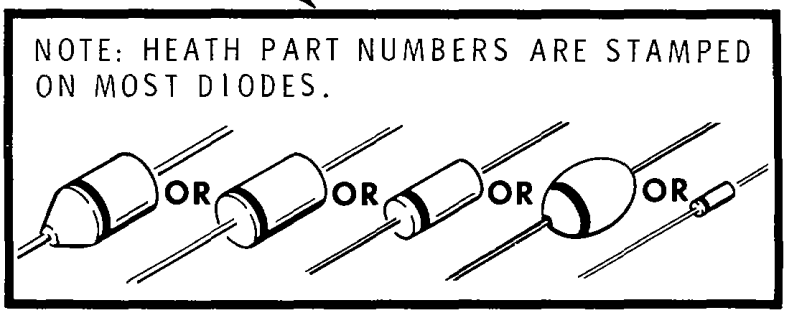
To order a replacement part, use the Parts Order Form furnished with this kit. If one is not available, refer to "Replacement Parts" inside the rear cover of the Manual.

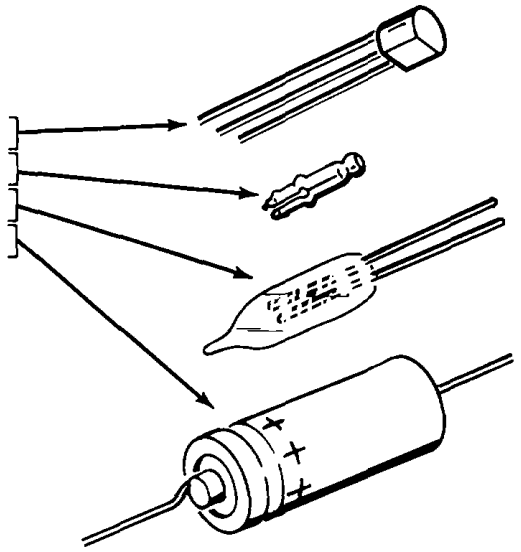
PACK #1

	QTY.	DESCRIPTION	PART No.	CIRCUIT Component No.
RESISTORS				
NOTE: The following resistors are 1/2-watt unless otherwise noted.				
( )	3	10 kΩ (brown-black-orange)	1-20	R24, 28, 32
( )	4	22 kΩ (red-red-orange)	1-22	R26, 27, 29, 31
( )	1	100 kΩ, 2-watt (brown-black-yellow)	1-24-2	R22



	QTY.	DESCRIPTION	PART No.	CIRCUIT Component No.
OTHER				
( )	15	1N2071 diode	57-27	D1-16





( )	2	MPSA42 transistor	417-294	Q1, 2
( )	10	Connector pin	432-121	
( )	3	H2-A neon lamp	412-99	PL2, 3, 4
( )	1	40 μF capacitor	25-20	C16

PARTS FROM PACK #2

( )	1	Small black sleeving	346-1
( )	1	Power supply circuit board	85-1440-1
( )	1	Lamp indicator circuit board	85-1589-1
		Solder (Additional 3' rolls of solder, #331-6, can be ordered for 25 cents each.)	

NOTE: The prices shown on the separate "Heath Parts Price List" apply only on purchases from the Heath Company where shipment is to a U.S.A. destination. Add 10% (minimum 25 cents) to the price when ordering (Michigan residents add 4% sales tax) to cover insurance, postage, and handling. Outside the U.S.A., parts and service are available from your local Heathkit source and will reflect additional transportation, taxes, duties, and rates of exchange.

STEP-BY-STEP ASSEMBLY

START

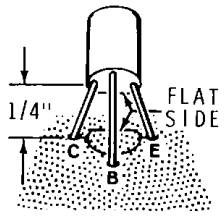
Position the lamp indicator circuit board (#85-1589-1) with the lettered side up as shown. Then perform the steps on this page.

FOR GOOD SOLDER CONNECTIONS, YOU MUST **KEEP THE SOLDERING IRON TIP CLEAN.** WIPE IT OFTEN WITH A DAMP SPONGE OR CLOTH.

( ) R29: 22 kΩ (red-red-orange).

( ) R28: 10 kΩ (brown-black-orange).

NOTE: When you install a transistor, line up the flat on the transistor with the outline of the flat on the circuit board. Then insert the leads into their correct E, B, and C holes. Solder the leads to the foil and cut off the excess lead lengths.



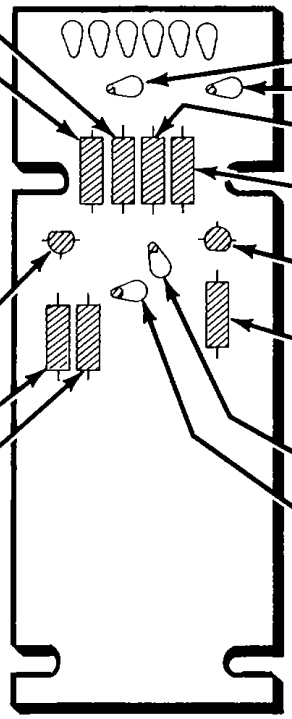
( ) Q1: MPSA42 (#417-294).

( ) R27: 22 kΩ (red-red-orange).

( ) R26: 22 kΩ (red-red-orange).

SAFETY WARNING: Avoid eye injury when you clip off excess leads. We suggest that you wear glasses, or at least clip the leads so the ends will not fly toward your eyes.

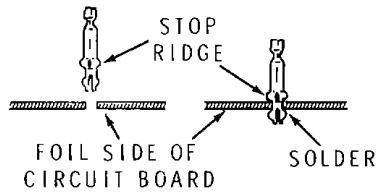
( ) Solder the resistor leads to the foil and cut off the excess lead lengths.



PICTORIAL 1

CONTINUE

NOTE: Install connector pins (#432-121) in the following locations. Solder each pin to the foil as it is installed.



( ) Connector pin at 3.

( ) Connector pin at 2.

( ) R24. 10 kΩ (brown-black-orange).

( ) R32: 10 kΩ (brown-black-orange).

( ) Q2: MPSA42 (#417-294). The position of the flat is opposite that of Q1.

( ) R31: 22 kΩ (red-red-orange).

( ) Solder the leads to the foil and cut off the excess lead lengths.

( ) Connector pin at 1. Solder the pin to the foil.

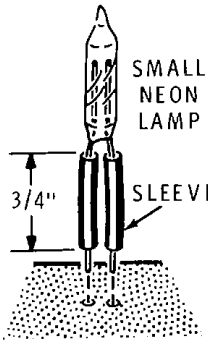
( ) Connector pin at 4. Solder the pin to the foil.

START

( ) Cut six lengths of black sleeving 3/4" long.

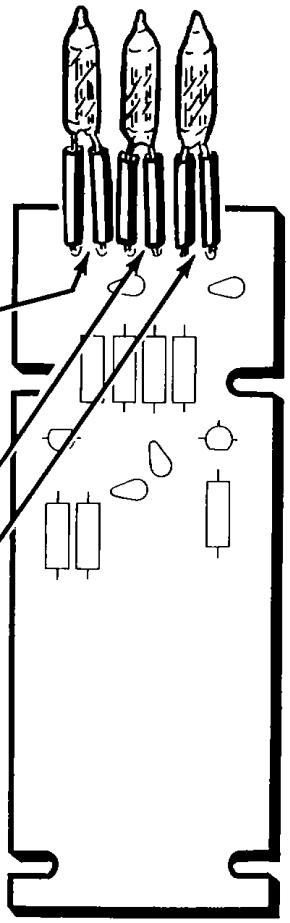
( ) Slide 3/4" lengths of black sleeving onto the six leads of three neon lamps.

( ) Push the leads of a neon lamp into holes E and F until the sleeving touches the circuit board. Solder the leads to the foil and cut off the excess lead lengths.



( ) In a similar manner, install the second neon lamp in holes C and D.

( ) In a similar manner, install the third neon lamp in holes A and B.



PICTORIAL 2

CIRCUIT BOARD CHECKOUT

Carefully inspect the circuit board for the following conditions.

( ) Unsoldered connections.

( ) "Cold" solder connections.

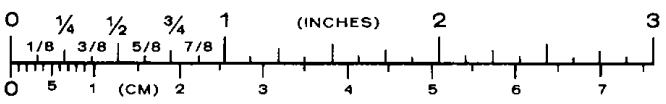
( ) Solder bridges between foil patterns.

( ) Protruding leads. No leads or lugs should be longer than 1/8".

( ) Transistors for the proper type and installation.

( ) Lay the circuit board aside. It will be installed later.

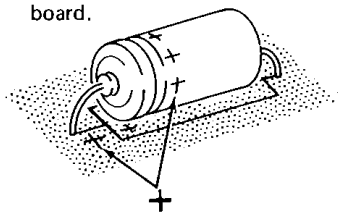
FINISH



START

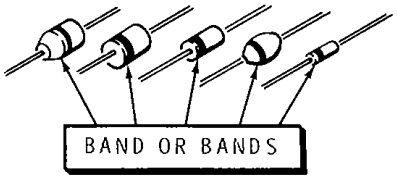
( ) Position the rectifier circuit board (#85-1440-1) as shown.

( ) C16: 40 μF electrolytic. Match the plus "+" mark on the capacitor to the plus "+" mark on the circuit board.



( ) R22: 100 kΩ, 2-watt (brown-black-yellow).

NOTE: DIODES MAY BE SUPPLIED IN ANY OF THE FOLLOWING SHAPES. ALWAYS POSITION THE BANDED END AS SHOWN ON THE CIRCUIT BOARD.



( ) D16: 1N2071 diode (#57-27).

( ) Solder each lead to the foil and cut off the excess lead lengths.

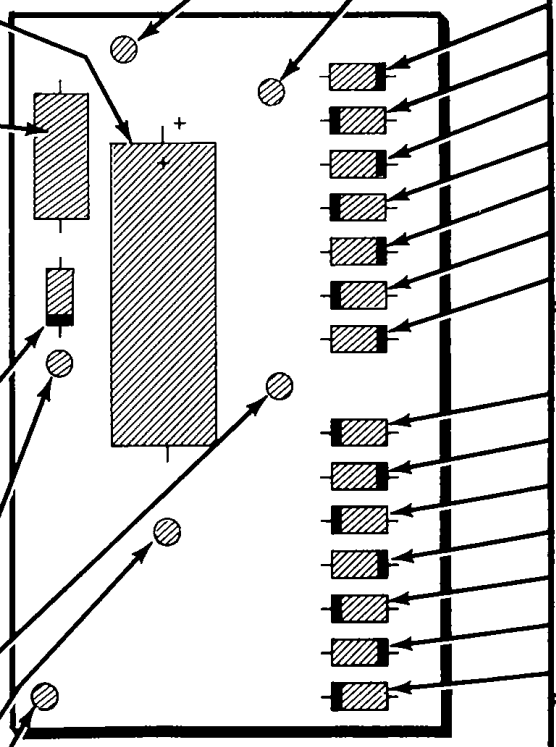
NOTE: In the following steps, as you install each connector pin, solder it in its hole.

( ) Connector pin in hole Blue.

( ) Connector pin in hole Red.

( ) Connector pin in hole C.

( ) Connector pin in hole B.



PICTORIAL 3

CONTINUE

( ) Connector pin in hole A.

( ) Connector pin in hole D.

NOTE: In the following steps, be sure to match each diode band to the band on the circuit board.

Install seven 1N2071 diodes (#57-27) as follows:

( ) D15.

( ) D14.

( ) D13.

( ) D12.

( ) D11.

( ) D9.

( ) D8.

Install seven 1N2071 diodes (#57-27) as follows:

( ) D1.

( ) D2.

( ) D3.

( ) D4.

( ) D5.

( ) D6.

( ) D7.

( ) Solder the leads to the foil and cut off the excess lead lengths.

CIRCUIT BOARD CHECKOUT

Carefully inspect the circuit board for the following conditions.

( ) Unsoldered connections.

( ) "Cold" solder connections.

( ) Solder bridges between foil patterns.

( ) Protruding leads. No leads or lugs should be longer than 1/8".

( ) Electrolytic capacitors for the correct position of the positive (+) end.

( ) Diodes for the correct position of the banded end.

( ) Lay the circuit board aside. It will be installed later.

FINISH

CHASSIS

PARTS LIST

Unpack the remaining parts and check each part against the following list.

Some parts are packaged in envelopes with the part number of the contents printed on the outside. Except for the initial parts check, keep these parts in their envelopes so they can be easily identified when they are called for in the assembly steps.

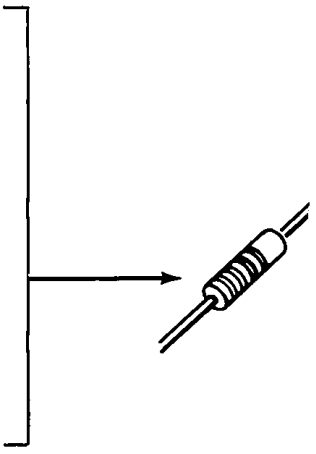
To order a replacement part; use the Parts Order Form furnished with this kit. If one is not available, refer to "Replacement Parts" inside the rear cover of the Manual.

QTY.	DESCRIPTION	PART No.	CIRCUIT Component No.

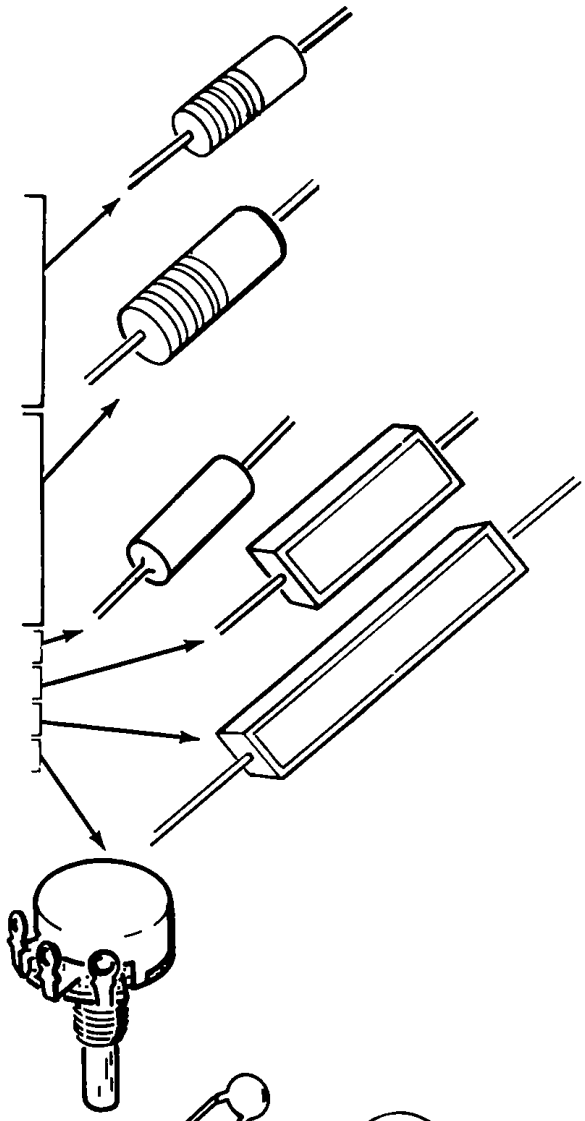
RESISTORS

NOTE: The following resistors are 1/2-watt, 10% tolerance, unless otherwise noted. 10% is indicated by a fourth color band of silver; 5% tolerance is indicated by a fourth color band of gold.

( )	1	1.5 Ω (brown-green-gold)	1-140	R25
( )	1	47 Ω (yellow-violet-black)	1-1	R33
( )	1	680 Ω (blue-gray-brown-gold)	1-52	R11
( )	1	1000 Ω (brown-black-red)	1-9	R35
( )	2	22 kΩ (red-red orange)	1-22	R18, 19
( )	1	100 kΩ (brown-black-yellow)	1-26	R15

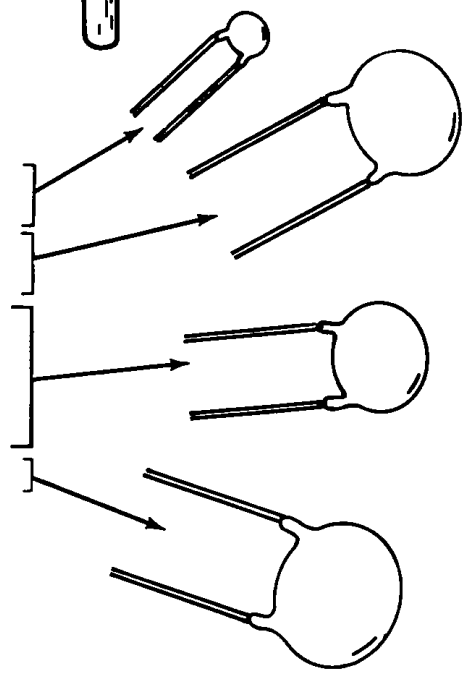


	QTY.	DESCRIPTION	PART No.	CIRCUIT Component No.
		Other		
( )	1	33 Ω, 1-watt (orange-orange-black)	1-14-1	R17
( )	1	470 Ω, 1-watt (yellow-violet-brown)	1-1-1	R16
( )	1	27 kΩ, 1-watt (red-violet-orange)	1-46-1	R36
( )	15	1500 Ω, 2-watt (brown-green-red)	1-14-2	R21
( )	6	100 kΩ, 2-watt (brown-black-yellow)	1-24-2	R3, 4, 5, 6, 7, 8
( )	3	1 MΩ, 2-watt (brown-black-green-gold)	1-31-2	R12, 13, 14
( )	1	1 Ω, 1%, 5-watt	3-25-5	R9
( )	2	500 Ω, 5-watt	3-31-5	R1, 2
( )	1	1500 Ω, 10-watt	3-11-10	R23
( )	1	100 kΩ control	10-12	R34

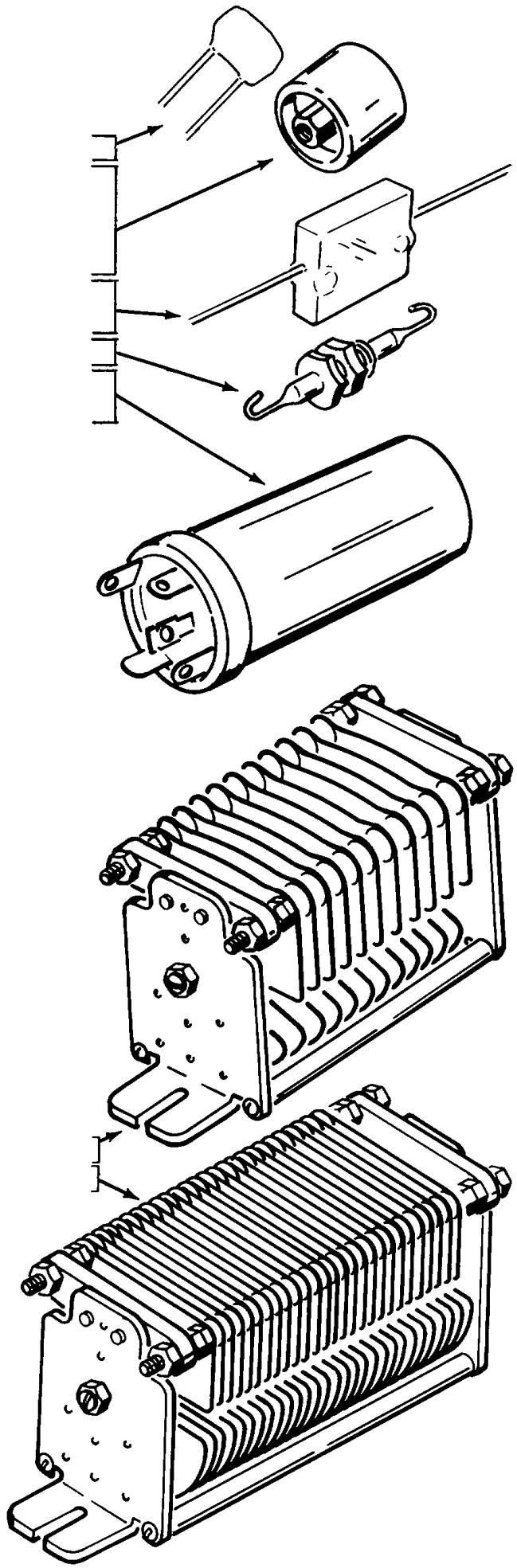


CAPACITORS

		Disc		
( )	1	18 pF	21-60	C24
( )	2	.001 μF, 500 volt	21-140	C18, 26
( )	1	.001 μF, 6000 volt, 20%	21-79	C9
( )	5	.01 μF	21-16	C17, 19, 25, 28, 29
( )	2	.01 μF, 1400 volt	21-70	C1, 2
( )	3	.02 μF	21-31	C21, 27, 33
( )	1	.02 μF, 1600 volt	21-38	C32



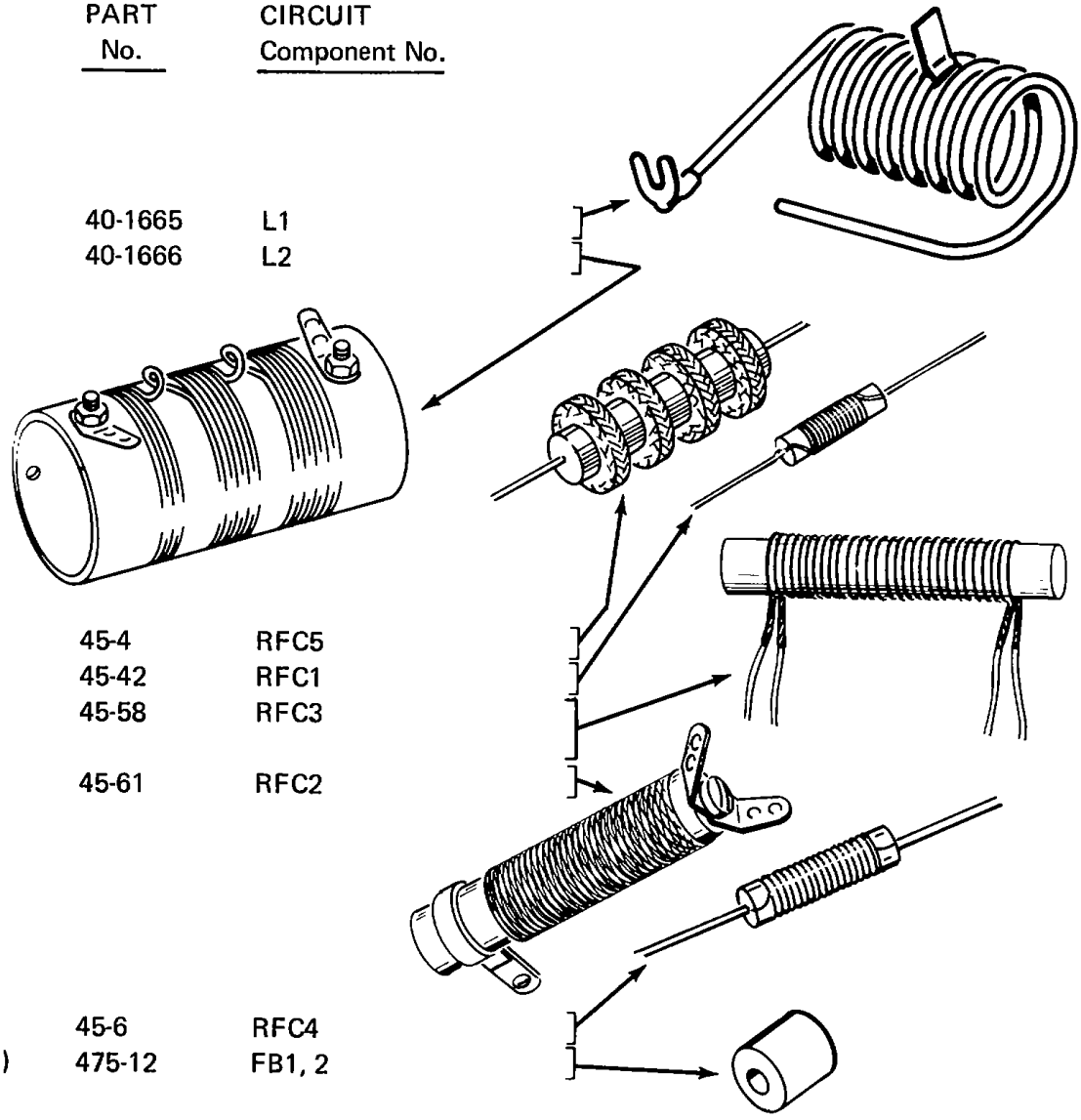
	QTY.	DESCRIPTION	PART No.	CIRCUIT Component No.
Other				
( )	1	12 pF mica	20-130	C22
( )	1	100 pF (100 MMF), 5000 volt	21-109	C13
( )	1	.001 μF, 6000 volt (1000 MMF)	21-165	C11
( )	1	500 pF mica, 2000 volt	20-123	C14
( )	2	.001 μF feedthrough	21-53	C23, 31
( )	6	125 μF electrolytic	25-34	C3, 4, 5, 6, 7, 8
( )	1	140 pF variable	26-144	C12
( )	1	840 pF variable	26-145	C15



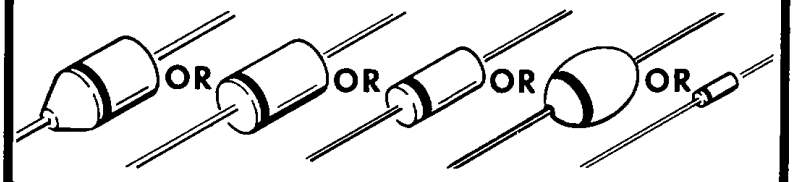
QTY.	DESCRIPTION	PART No.	CIRCUIT Component No.

INDUCTORS

( )	1	10-15 meters	40-1665	L1
( )	1	80-40-20 meters	40-1666	L2
( )	1	1.1 mH RF choke	45-4	RFC5
( )	1	8.75 μH RF choke	45-42	RFC1
( )	1	13.5 μH Bifilar RF choke	45-58	RFC3
( )	1	50 μH RF choke	45-61	RFC2
( )	1	8.5 μH RF Choke	45-6	RFC4
( )	2	Ferrite bead (1.7 μH)	475-12	FB1, 2

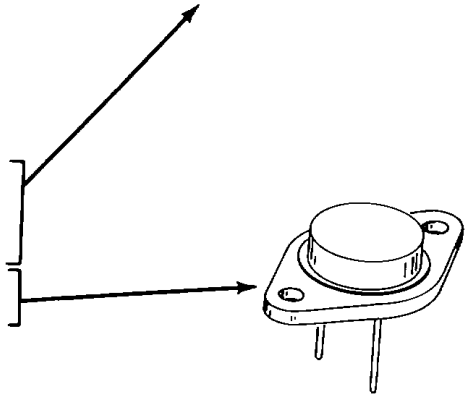


NOTE: HEATH PART NUMBERS ARE STAMPED ON MOST DIODES.

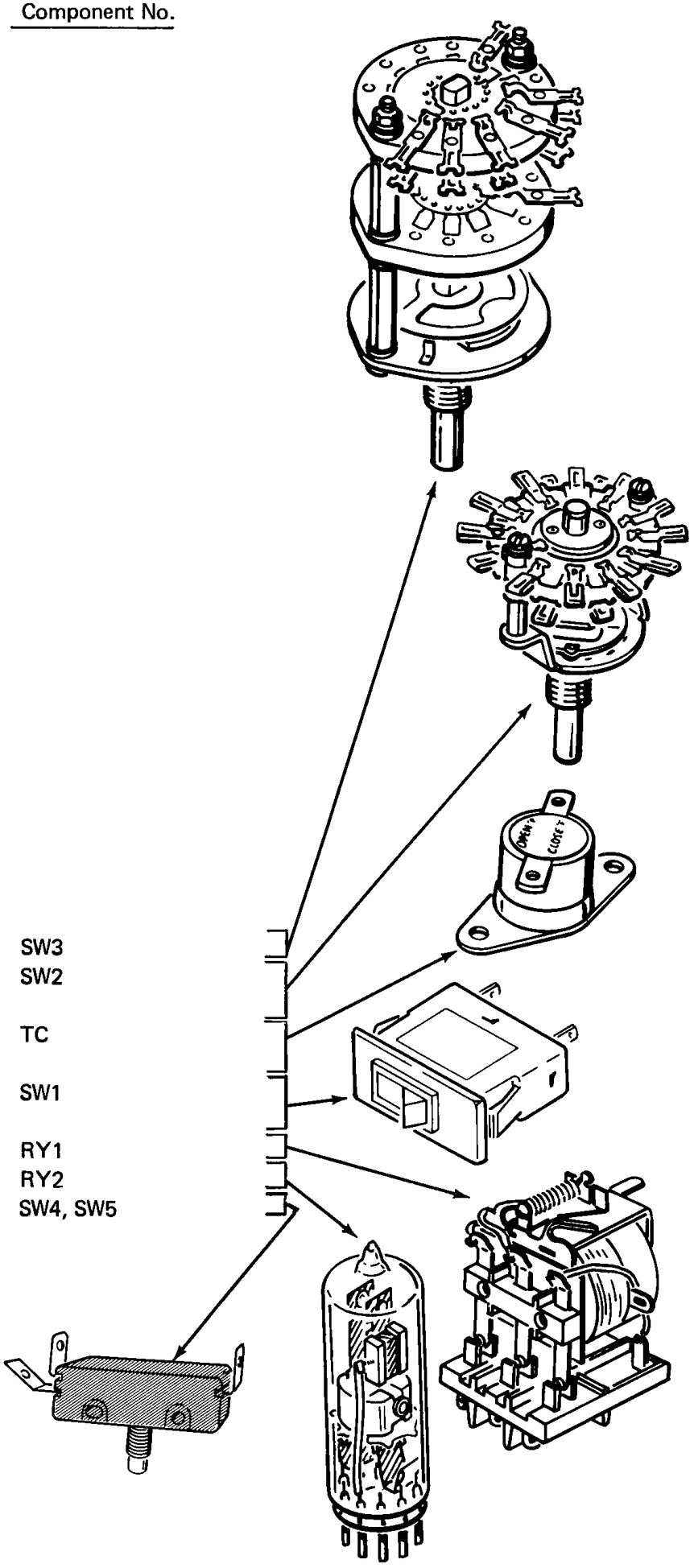


DIODES

( )	1	1N458 diode	56-24	D19
( )	1	1N191 diode	56-26	D18
( )	1	1N2071 diode	57-27	D17
( )	1	1N2806A zener diode (8.2 volt)	56-609	ZD1

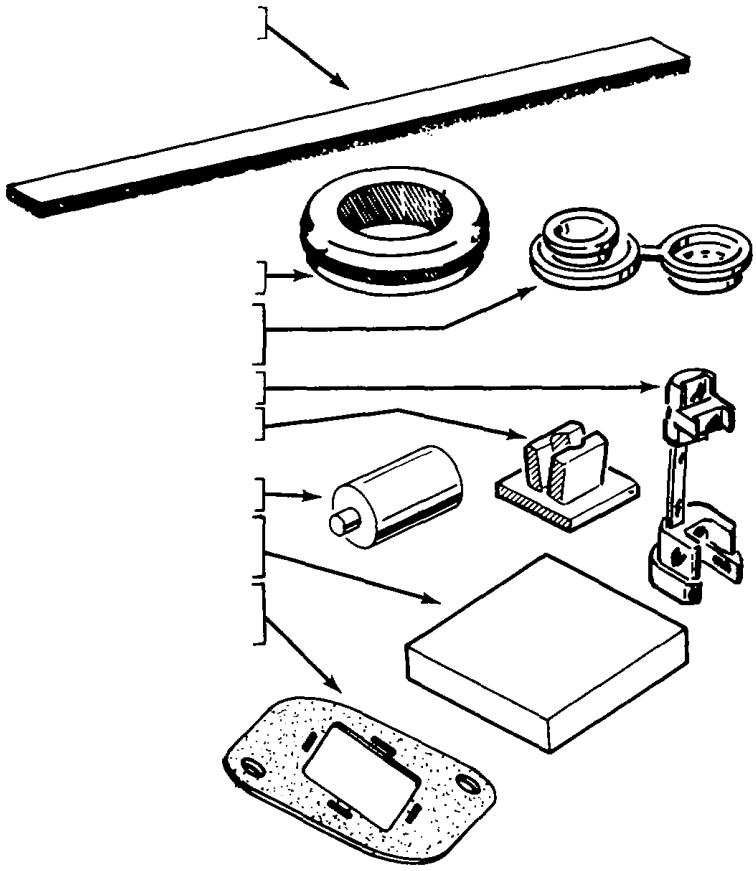


	QTY.	DESCRIPTION	PART No.	CIRCUIT Component No.
WIRE AND SLEEVING				
Wire				
( )	1	Bare	340-1	
( )	1	RG-58A/U	343-2	
( )	1	Blue	344-13	
( )	1	Large brown (stranded)	344-31	
( )	1	Black	344-50	
( )	1	Small brown (tinned)	344-34	
( )	1	Red	344-52	
( )	1	Yellow	344-54	
( )	1	Violet	344-57	
( )	1	White	344-59	
( )	1	White-black	344-70	
( )	1	White-brown	344-71	
( )	1	White-red	344-72	
( )	1	White-yellow	344-74	
( )	1	White-blue	344-76	
( )	1	Wire braid	345-1	
( )	1	Line cord	89-50	
Sleeving				
( )	1	Small clear sleeving	346-2	
( )	1	Large black sleeving	346-20	
( )	1	Large clear sleeving	346-26	
SWITCHES AND RELAYS				
( )	1	2-wafer switch	63-700	SW3
( )	1	1-wafer switch (appearance may differ)	63-701	SW2
( )	1	Thermal circuit breaker	65-59	TC
( )	1	Rocker switch w/breaker	65-53	SW1
( )	1	Relay	69-55	RY1
( )	1	Time delay relay	69-74	RY2
( )	2	Interlock switch	64-24	SW4, SW5



	QTY.	DESCRIPTION	PART No.	CIRCUIT Component No.

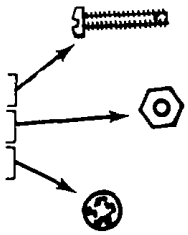
INSULATORS



( )	1	Foam strip	73-39	
( )	2	Rubber grommet	73-2	
( )	4	Large plastic grommet	73-45	
( )	2	Small plastic grommet	73-52	
( )	1	Strain relief	75-29	
( )	8	Nylon insulator	75-53	
( )	1	Fish paper	75-68	
( )	1	White insulator	75-701	
( )	1	Beryllium oxide block – (see WARNING on page 4).	75-702	
( )	12	Capacitor mounting wafer	481-3	

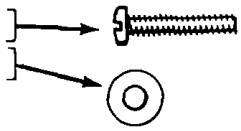
HARDWARE

NOTE: Hardware is illustrated actual size.



#2 Hardware

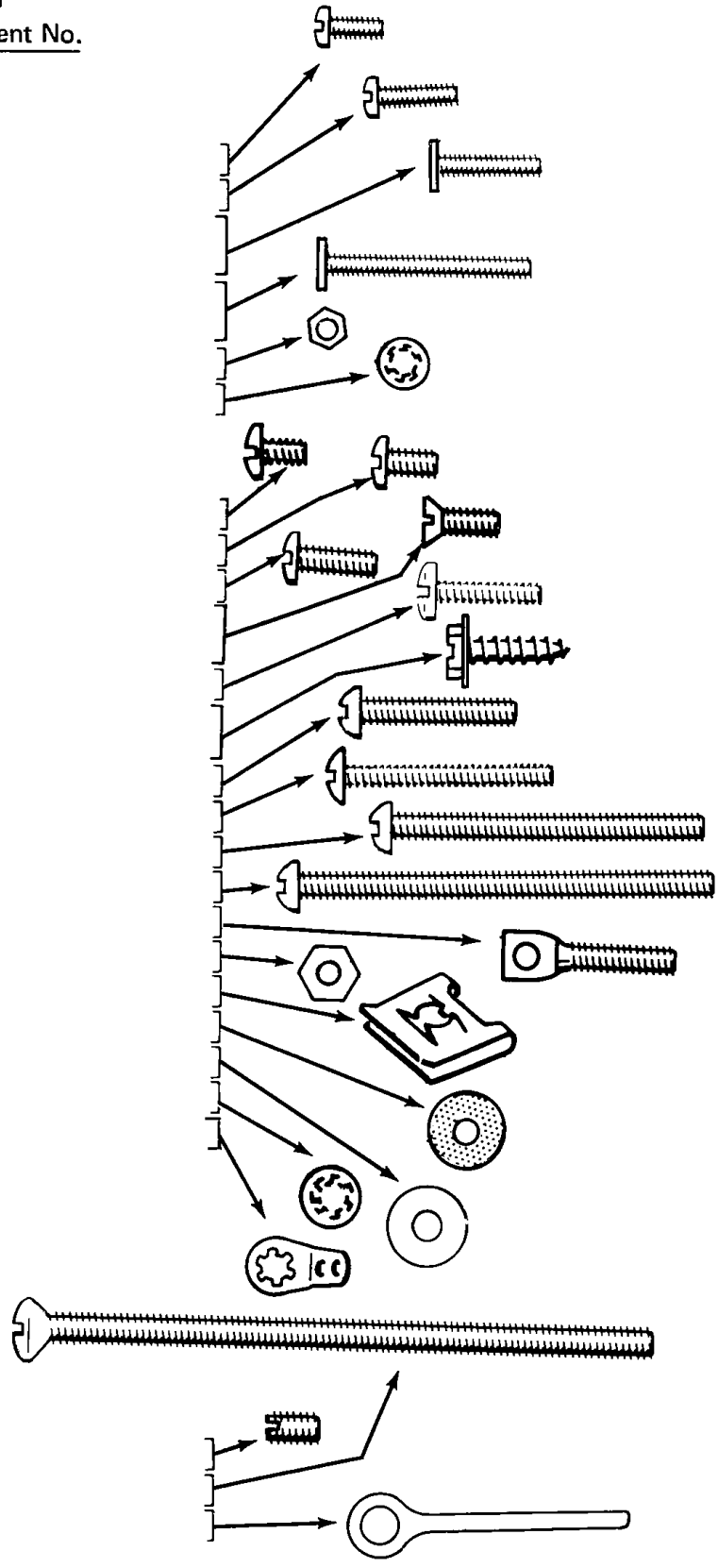
( )	2	2-56 x 3/8" screw	250-175	
( )	2	2-56 nut	252-51	
( )	2	#2 lockwasher	254-26	



#3 Hardware

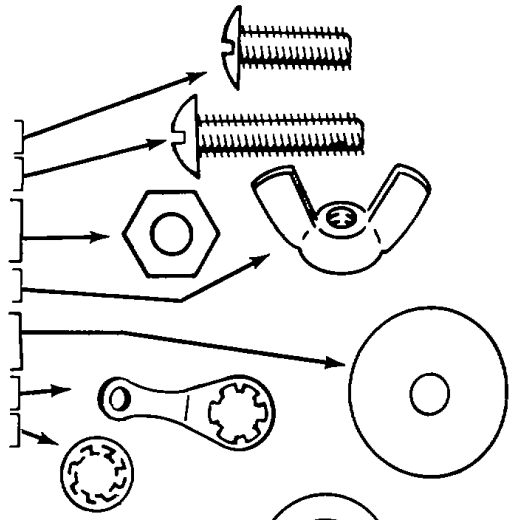
( )	1	3-48 x 7/16" brass screw	250-133	
( )	4	#3 flat washer	253-94	

	QTY.	DESCRIPTION	PART No.	CIRCUIT Component No.
#4 Hardware				
( )	2	4-40 x 1/4" screw	250-52	
( )	6	4-40 x 5/16" screw	250-213	
( )	11	4-40 x 1/2" square head screw	250-1194	
( )	4	4-40 x 1" square head screw	250-1188	
( )	21	4-40 nut	252-2	
( )	30	#4 lockwasher	254-9	
#6 Hardware				
( )	1	6-32 x 3/16" screw	250-138	
( )	22	6-32 x 1/4" screw	250-56	
( )	42	6-32 x 3/8" screw	250-89	
( )	2	6-32 x 3/8" flat head screw	250-434	
( )	4	6-32 x 1/2" screw	250-162	
( )	19	#6 x 1/2" sheet metal screw	250-1195	
( )	6	6-32 x 3/4" screw	250-29	
( )	4	6-32 x 1" screw	250-13	
( )	2	6-32 x 1-1/2" screw	250-40	
( )	1	6-32 x 2" screw	250-27	
( )	2	6-32 spade lug	251-7	
( )	53	6-32 nut	252-3	
( )	2	6-32 Speed Nut*	252-22	
( )	2	#6 fiber washer	253-1	
( )	2	#6 flat washer	253-60	
( )	64	#6 lockwasher	254-1	
( )	15	#6 solder lug	259-1	
#8 Hardware				
( )	6	8-32 x 1/4" setscrew	250-43	
( )	2	8-32 x 3" screw	250-393	
( )	3	#8 solder lug	259-24	

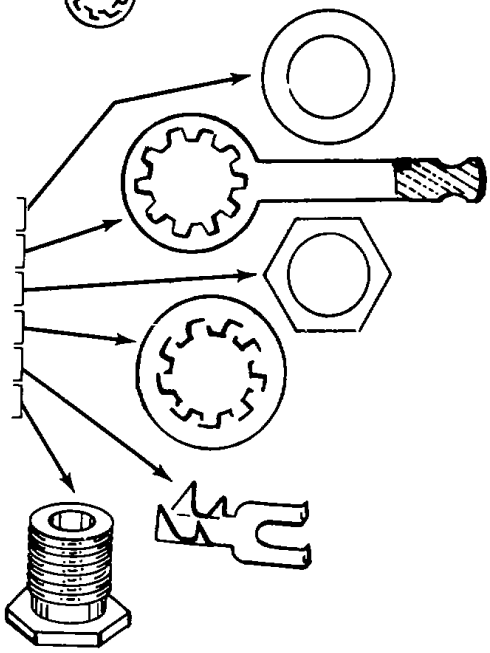


*Tinnerman Registered Trademark

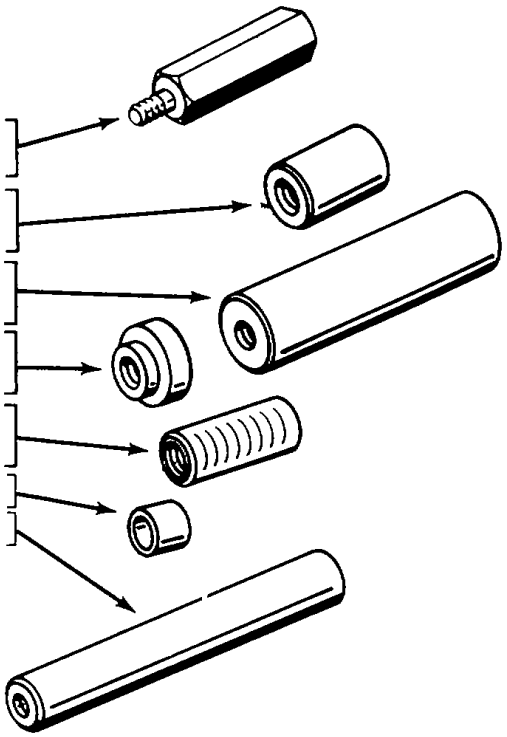
	QTY.	DESCRIPTION	PART No.	CIRCUIT Component No.
#10 Hardware				
( )	8	10-32 x 1/2" screw	250-456	
( )	1	10-24 x 3/4" screw	250-152	
( )	6	10-32 nut	252-5	
( )	1	10-24 nut	252-30	
( )	1	10-24 wing nut	252-31	
( )	14	3/4" O.D. flat washer	253-19	
( )	2	#10 solder lug	259-5	
( )	5	#10 lockwasher	254-3	



Other Hardware				
( )	6	Control flat washer	253-10	
( )	1	Control solder lug	259-10	
( )	6	Control nut	252-7	
( )	2	Control lockwasher	254-4	
( )	2	Spade solder lug	259-22	
( )	3	Shaft bushing	455-9	



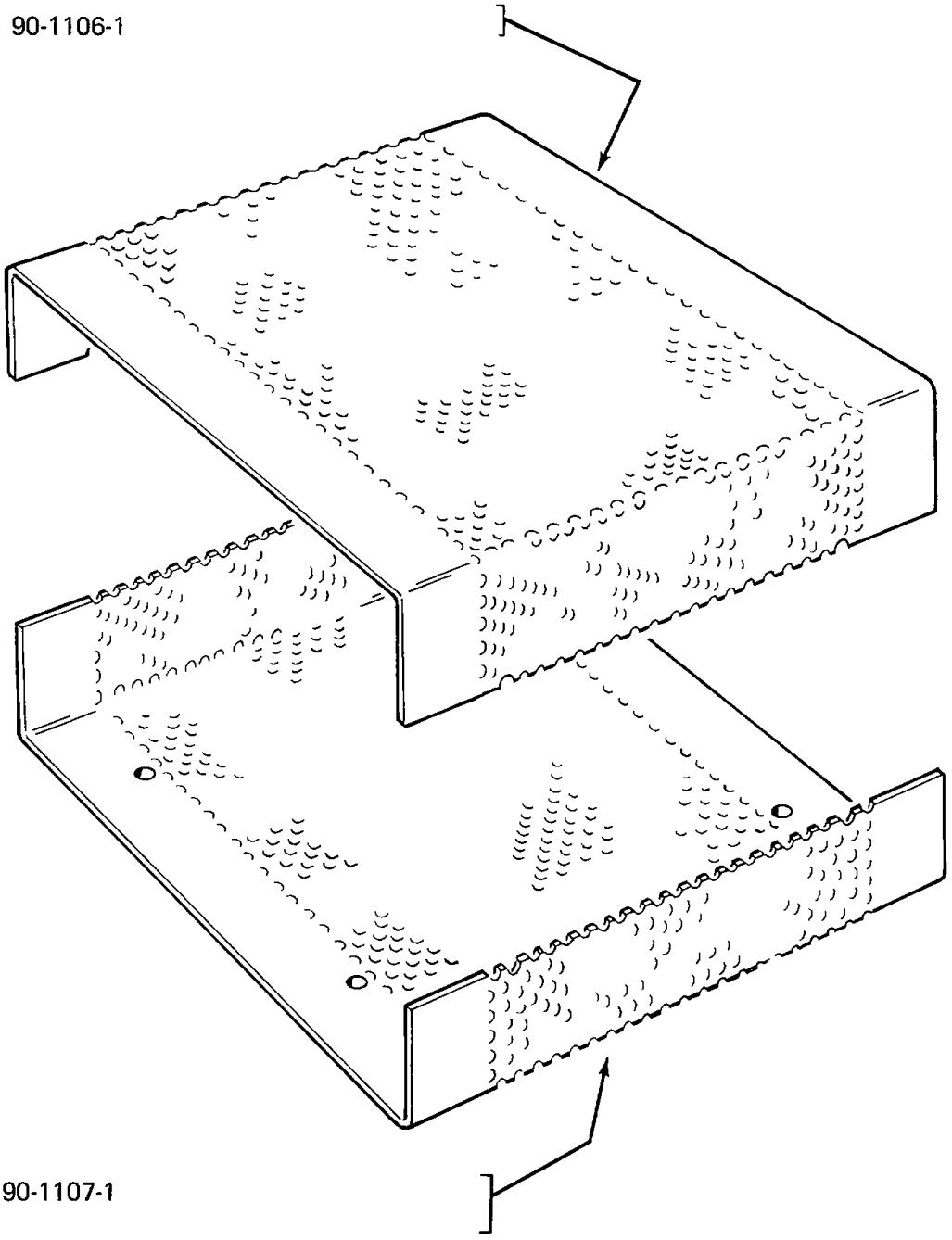
SPACERS				
( )	1	4-40 x 5/8" tapped spacer	255-164	
( )	2	15/32" spacer, tapped 6-32	255-23	
( )	2	1-1/4" phenolic spacer, tapped 6-32	255-39	
( )	2	3/16" shoulder spacer, tapped 6-32	255-79	
( )	2	17/32" plastic spacer, tapped 6-32	255-152	
( )	4	3/16" spacer	255-2	
( )	1	1-1/2" spacer	255-10	



QTY.	DESCRIPTION	PART No.	CIRCUIT Component No.

METAL PARTS

( ) 1 Top cabinet shell 90-1106-1

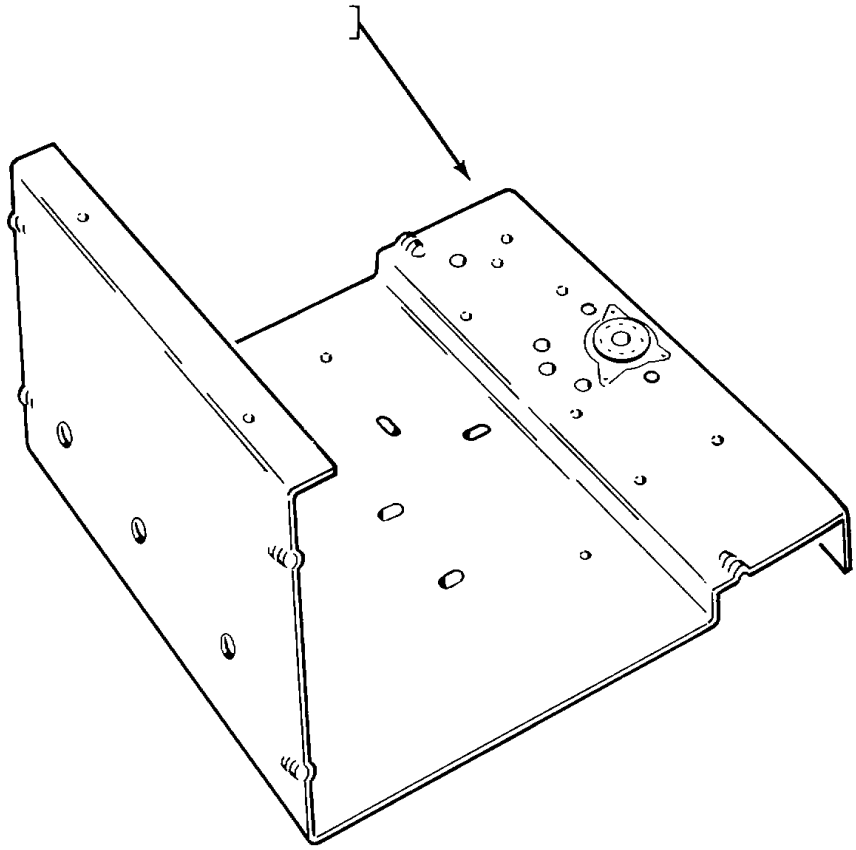


( ) 1 Bottom cabinet shell 90-1107-1

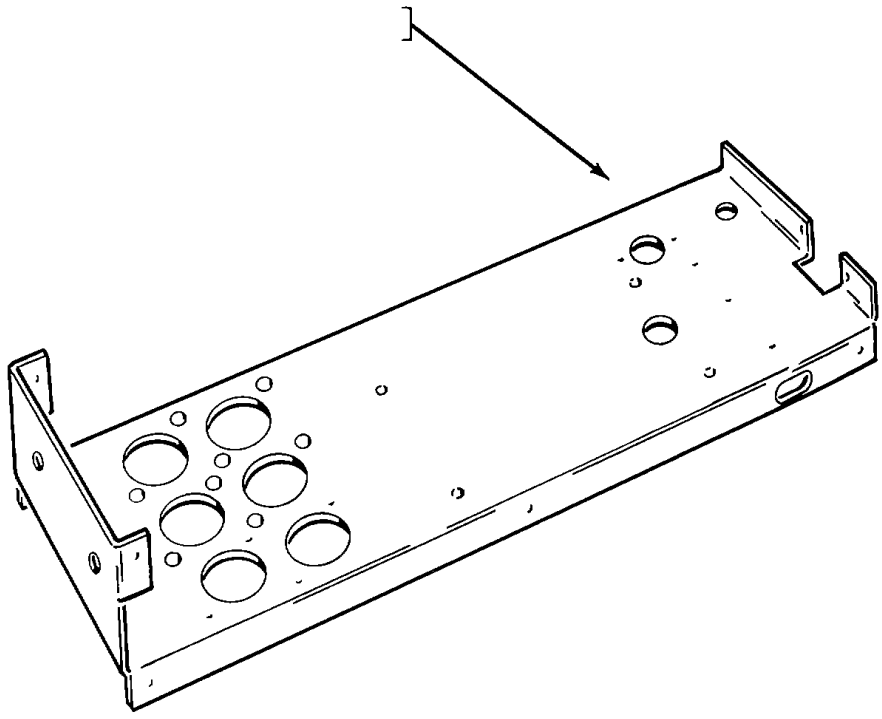
QTY.	DESCRIPTION	PART No.	CIRCUIT Component No.

Metal Parts (cont'd.)

( )	1	RF chassis	100-1633	



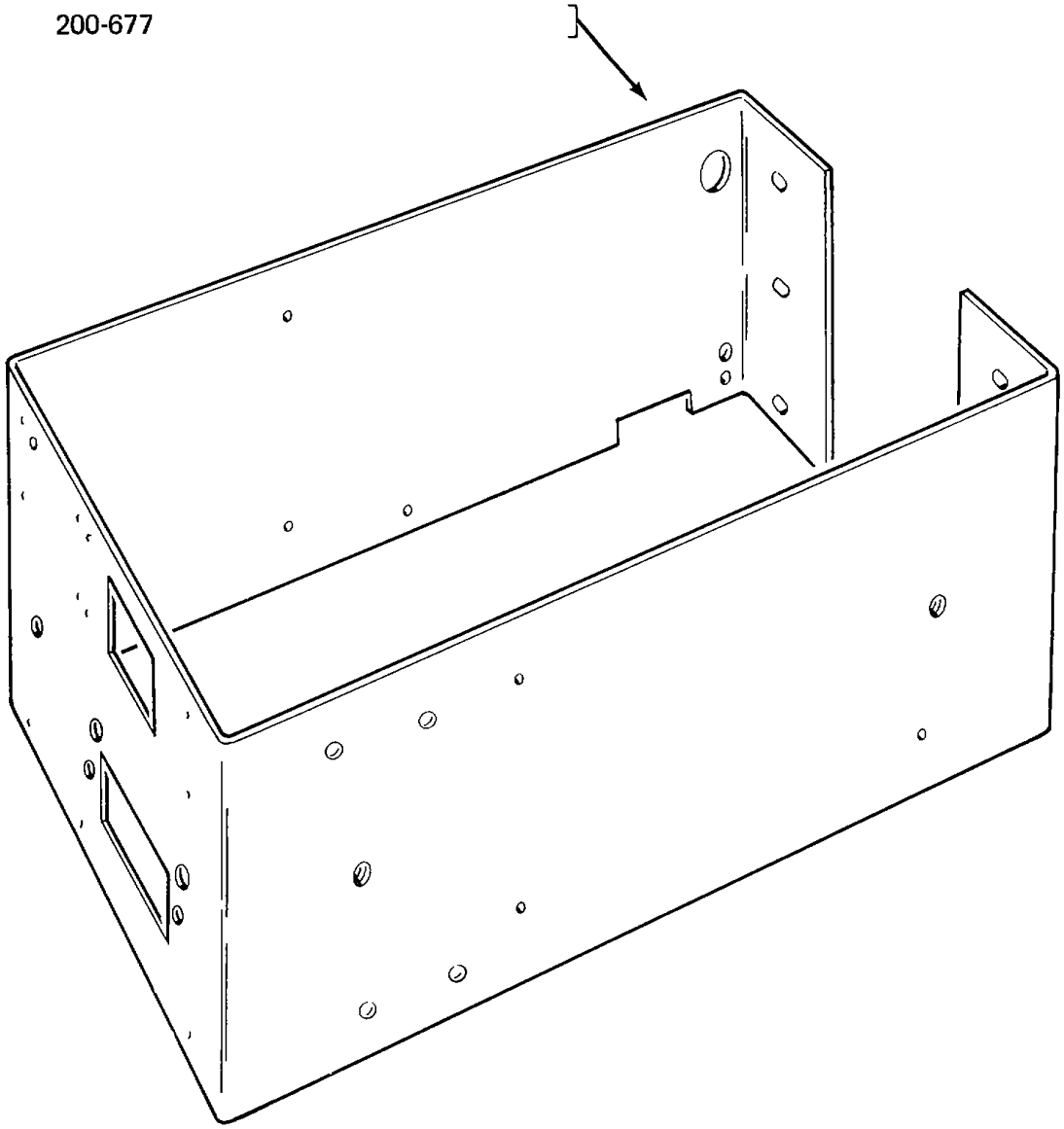
( )	1	Power supply chassis	200-676	



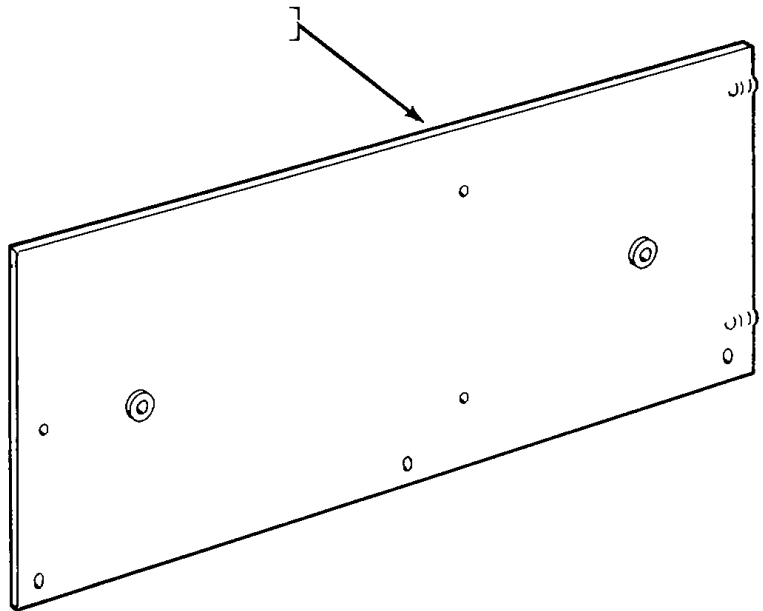
QTY.	DESCRIPTION	PART No.	CIRCUIT Component No.

Metal Parts (cont'd.)

( )	1	RF enclosure	200-677



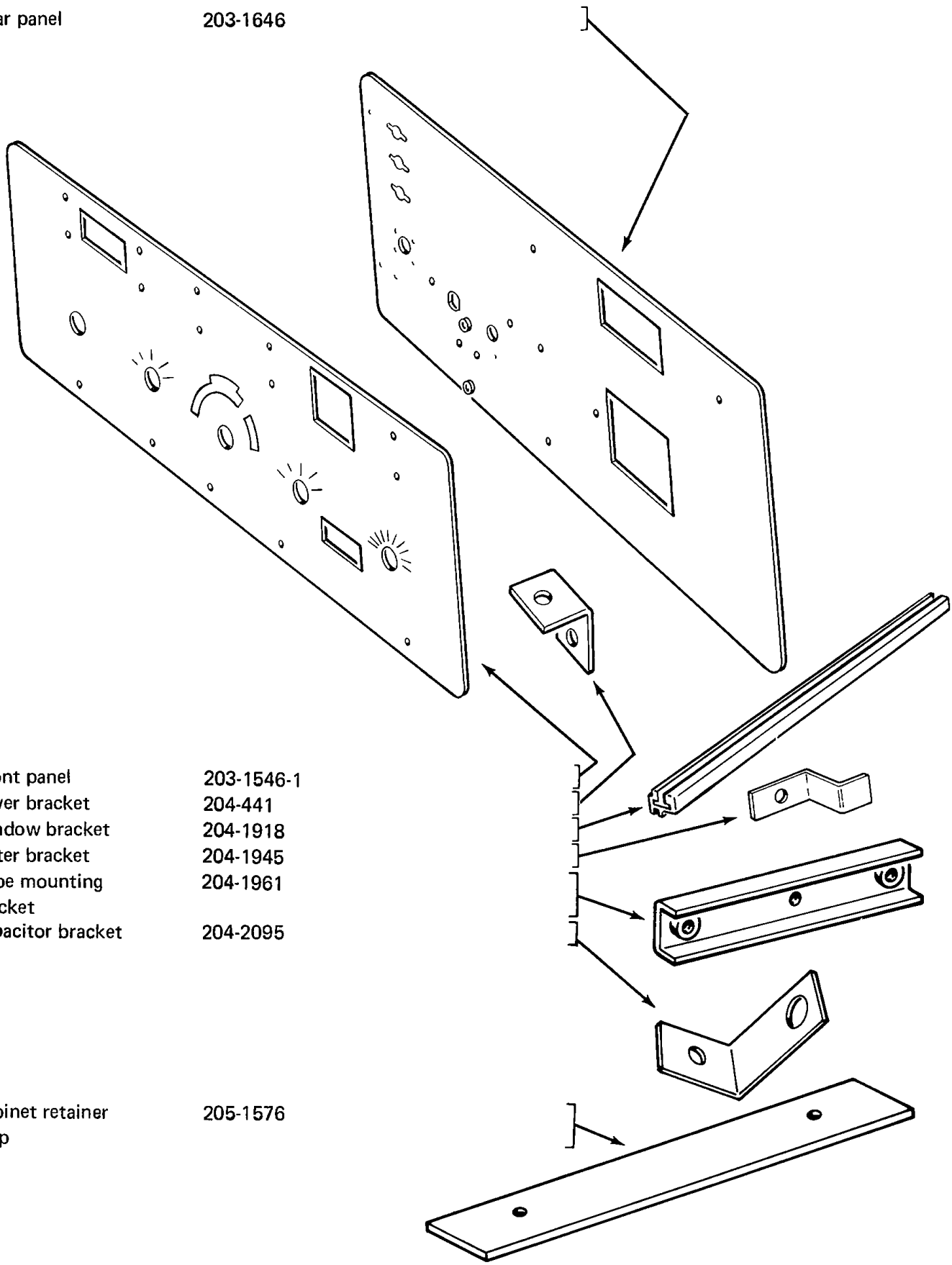
( )	1	Left side panel	203-1544



QTY.	DESCRIPTION	PART No.	CIRCUIT Component No.

Metal Parts (cont'd.)

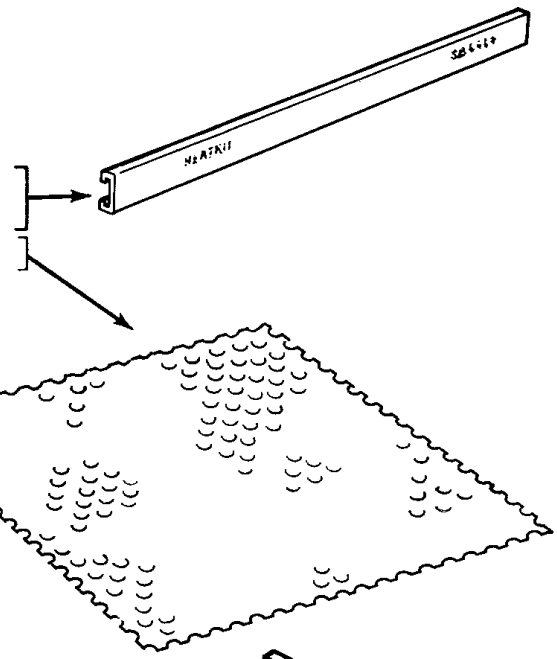
( )	1	Rear panel	203-1646
( )	1	Front panel	203-1546-1
( )	2	Cover bracket	204-441
( )	2	Window bracket	204-1918
( )	2	Meter bracket	204-1945
( )	1	Tube mounting bracket	204-1961
( )	1	Capacitor bracket	204-2095
( )	2	Cabinet retainer strip	205-1576

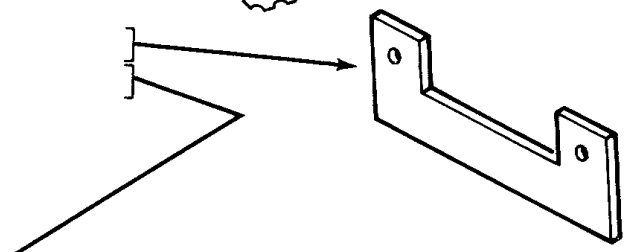


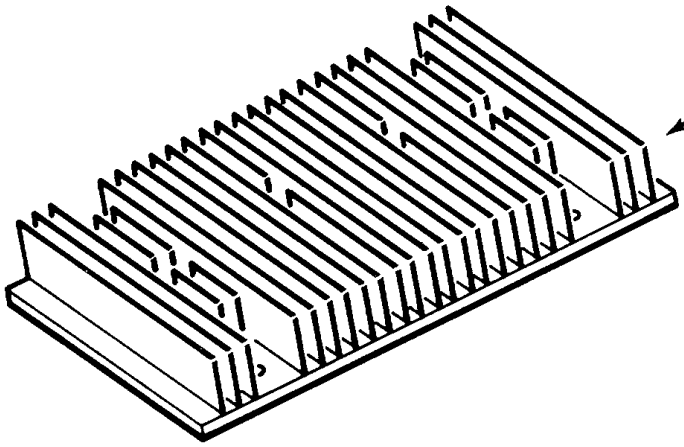
QTY.	DESCRIPTION	PART No.	CIRCUIT Component No.

Metal Parts (cont'd.)

( )	1	Lower panel trim strip	205-1432-2
( )	1	Perforated cover	205-1536
( )	1	Switch plate	205-1553
( )	1	Heat sink	215-74

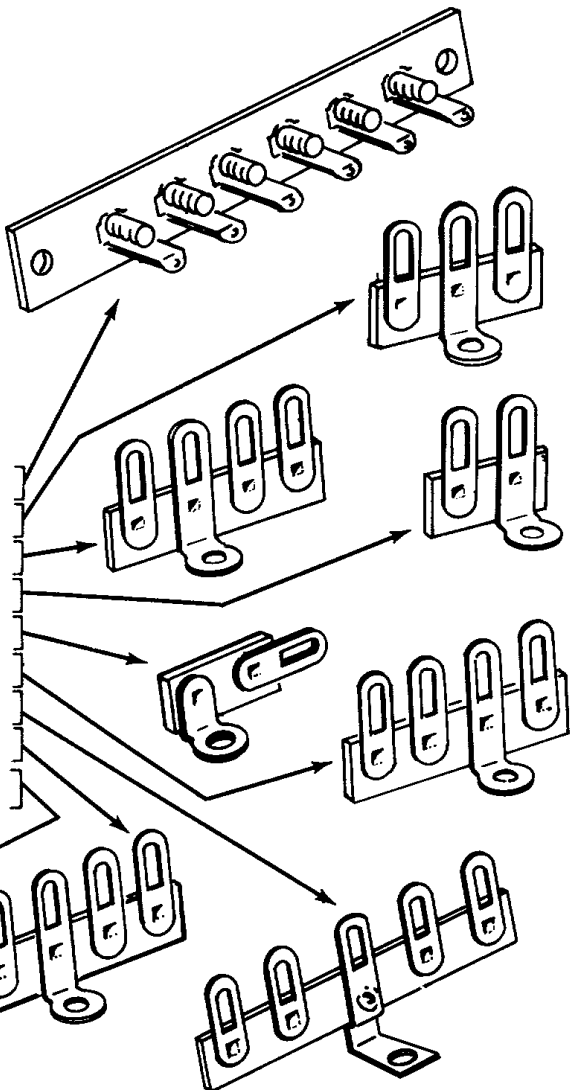




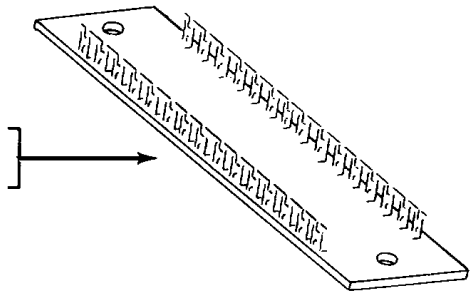


TERMINAL STRIPS

( )	1	6-screw	431-7
( )	1	3-lug	431-10
( )	1	4-lug	431-12
( )	1	2-lug	431-14
( )	1	1-lug	431-26
( )	1	4-lug	431-40
( )	1	5-lug	431-42
( )	1	6-lug	431-45
( )	1	6-lug	431-55

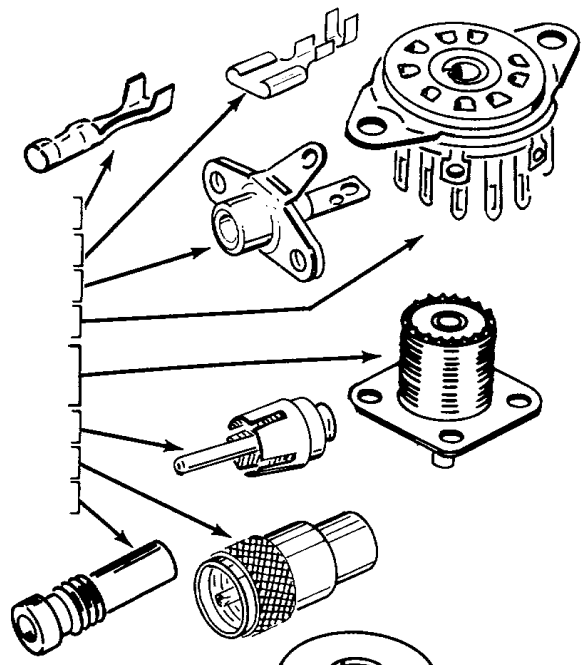


	QTY.	DESCRIPTION	PART No.	CIRCUIT Component No.
Terminal Strips (cont'd.)				
( )	2	30-lug terminal board	431-69	



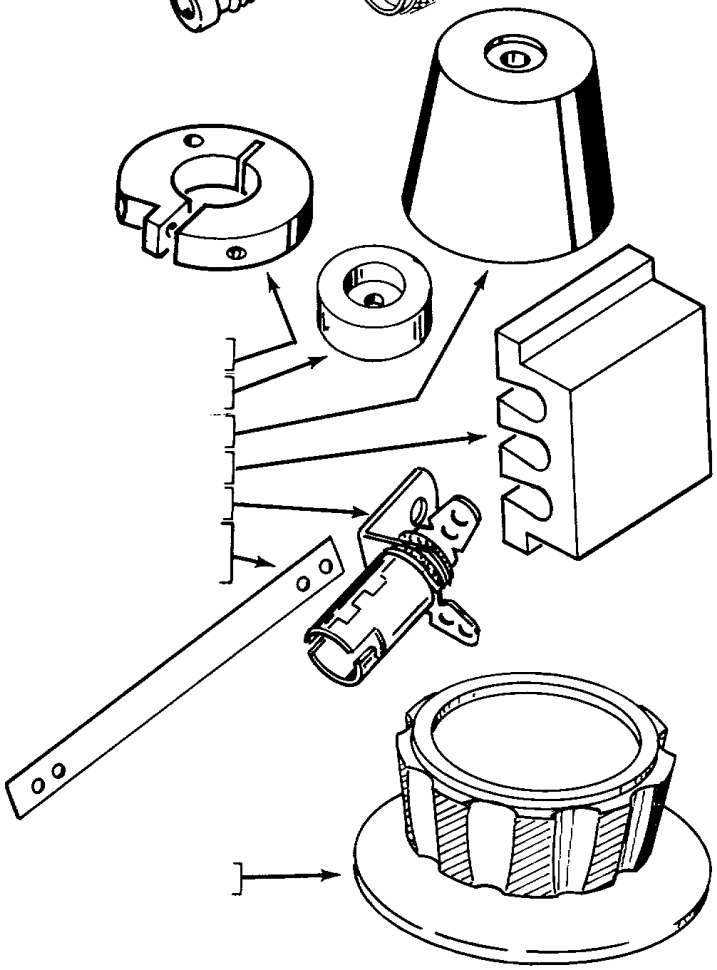
CONNECTORS

( )	10	Female connector	432-120	
( )	4	Push-on connector	432-137	
( )	3	Phono socket	434-42	
( )	1	9-pin socket	434-56	
( )	1	Female coaxial connector	436-5	
( )	3	Phono plug	438-4	
( )	1	Coaxial plug	438-9	
( )	1	Coaxial insert	438-12	



MISCELLANEOUS

( )	1	Power transformer	54-847	T1
( )	1	Tube plate clamp	260-82	
( )	4	Rubber foot	261-9	
( )	2	Black tapered foot	255-59	
( )	1	Lamp housing	266-824	
( )	1	Lamp socket	434-88	
( )	2	Silver plated grid strap	212-45	

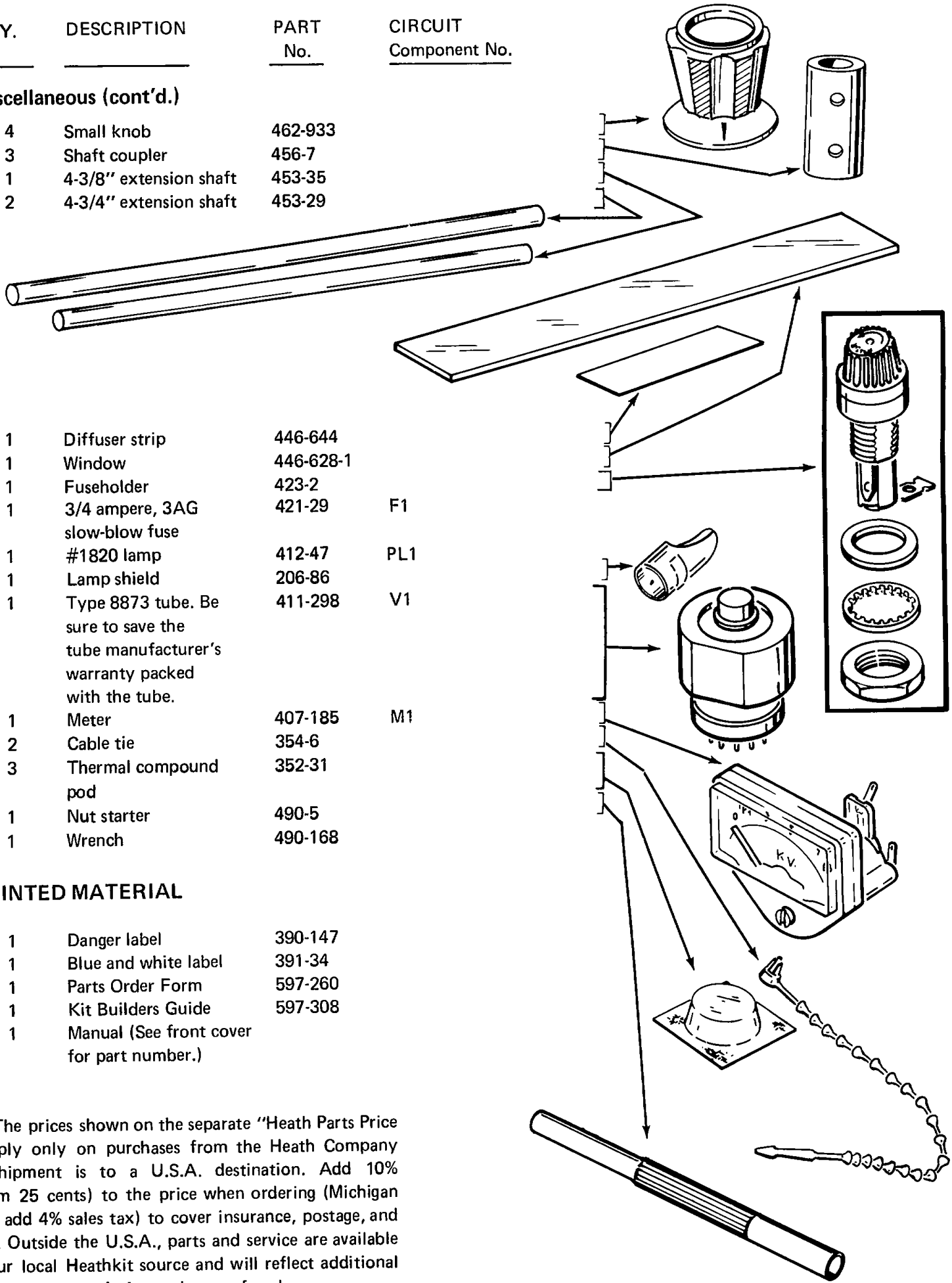


( )	1	Large knob	462-934	

QTY.	DESCRIPTION	PART No.	CIRCUIT Component No.
Miscellaneous (cont'd.)			
( ) 4	Small knob	462-933	
( ) 3	Shaft coupler	456-7	
( ) 1	4-3/8" extension shaft	453-35	
( ) 2	4-3/4" extension shaft	453-29	
( ) 1	Diffuser strip	446-644	
( ) 1	Window	446-628-1	
( ) 1	Fuseholder	423-2	
( ) 1	3/4 ampere, 3AG slow-blow fuse	421-29	F1
( ) 1	#1820 lamp	412-47	PL1
( ) 1	Lamp shield	206-86	
( ) 1	Type 8873 tube. Be sure to save the tube manufacturer's warranty packed with the tube.	411-298	V1
( ) 1	Meter	407-185	M1
( ) 2	Cable tie	354-6	
( ) 3	Thermal compound pod	352-31	
( ) 1	Nut starter	490-5	
( ) 1	Wrench	490-168	

PRINTED MATERIAL

( ) 1	Danger label	390-147	
( ) 1	Blue and white label	391-34	
( ) 1	Parts Order Form	597-260	
( ) 1	Kit Builders Guide	597-308	
( ) 1	Manual (See front cover for part number.)		



NOTE: The prices shown on the separate "Heath Parts Price List" apply only on purchases from the Heath Company where shipment is to a U.S.A. destination. Add 10% (minimum 25 cents) to the price when ordering (Michigan residents add 4% sales tax) to cover insurance, postage, and handling. Outside the U.S.A., parts and service are available from your local Heathkit source and will reflect additional transportation, taxes, duties, and rates of exchange.