

MAINTENANCE/OVERHAUL MANUAL

VOL IV
KFC 200
KTS 151
FLIGHT CONTROL SYSTEM
TEST SET

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KING RADIO CORPORATION®

400 NORTH ROGERS ROAD

OLATHE, KANSAS, U.S.A.



KTS 151

FLIGHT CONTROL SYSTEM TEST SET

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KFC 200

FLIGHT DIRECTOR AUTOPILOT SYSTEM

This manual is one of a group of manuals which, when combined into one library, contain all the information necessary to install, operate, and maintain the components of the KFC 200 Flight Control System.

The following is a brief description of each of the manuals and should be used as an aid in determining the proper book for the type of information required.

I. Volume 1 KFC 200 Flight Line Installation and Maintenance Manual (KPN 006-5134-00)

This manual contains the following information:

- A. General installation information needed to install the KFC 200 System.
- B. Ground and inflight post installation checkout procedures.
- C. A functional description of each of the units in the KFC 200 Flight Control System. The contributions of each unit in the various control modes of the system are thoroughly discussed.
- D. A complete list of all options that are available with each unit.
- E. This manual has been written around the KTS 150 Autopilot Test Set. It includes a step-by-step procedure with the KTS 150 to isolate faults to the flight line replaceable unit; i.e., black box with the system in the aircraft.

System Troubleshooting Charts are included to aid the technician.
- F. Instructions to isolate aircraft faults, power, electric trim, pitot, static, control cable, etc. from the KFC 200 System are given.
- G. The KTS 150 Autopilot Test Set Maintenance/Overhaul Manual.

II. Volume 2 Flight Director/Autopilot Overhaul Manual (KPN 006-5145-00)

The Overhaul Manuals for the following units are contained in this volume:

KA 118 Demodulator
KS 270, KS 271, KS 272, KS 273 Servos
KM 275, KM 276 Mount
KA 285 Annunciator Panel
KC 290 Mode Controller
KC 291 Yaw Controller
KC 295 Flight Director/Autopilot Computer
KC 296 Yaw Computer

Each unit section within this volume contains Theory of Operation, Illustrated Parts Lists and Maintenance/Overhaul Procedures.

The Maintenance Procedures are written around the KTS 151 Component Bench Test Set.

Appendix "A" contains Semiconductor and Integrated Circuit data that pertains to the units included in this volume.

III. Volume 3 Instrument Overhaul Manual (KPN 006-5146-00)

The following components are included in this volume:

KI 255 Flight Director Indicator
KG 257 Yaw Rate Gyro
KI 256 Flight Command Indicator
KG 258 Horizontal Gyro Indicator

Maintenance procedures for these units are written around a test set schematic that is included in this manual.

SECTION I GENERAL INFORMATION

1.1 INTRODUCTION

This manual covers the physical, mechanical and electrical characteristics of the KTS 151 Flight Control System Test Set. Installation, Operation, and Maintenance of the test set are also included.

1.2 DESCRIPTION OF EQUIPMENT

The KTS 151 Flight Control System Test Set has been designed to troubleshoot problems in units of the KFC 200 Flight Control System. Isolation of the problems to specific board components is easily accomplished using troubleshooting charts and test procedures found in the individual unit overhaul manuals. A complete list of accessories can be found in Section 1.4.

1.3 TECHNICAL CHARACTERISTICS

The technical characteristics of the KTS 151 Flight Control System Test Set are herein presented:

SPECIFICATIONS	CHARACTERISTICS
Size:	22 x 15 1/2 x 28 1/16 inches nominal 56 x 39 x 71 centimeters
Weight:	79 pounds 35.8 kilograms
Maximum Power Requirement:	Adjustable 10-32VDC 10AMP

1.4 ACCESSORIES

The following accessories are supplied with the KTS 151 Flight Control System Test Set:

1.4.1 ACCESSORIES KIT

	<u>QTY</u>
A. KC 295 Extender Panels	1 set
B. Fuse 6AMP Fast Acting	2 each
C. Fuse 8AMP Fast Acting	2 each
D. Card Puller	1 each
E. Lamp, 14V .08AMP Type 330	2 each
F. 1EE A-816-3K-12V Lamp 30ma	5 each
G. Lab Tubing	3 feet

SECTION II INSTALLATION

2.1 GENERAL

The KTS 151 Flight Control System Test Set consists of a metal cabinet which contains the panel and cable storage compartments. The connecting cable for the desired unit is pulled from the top of the storage compartment. The cables are accessible by raising the top door of the cabinet.

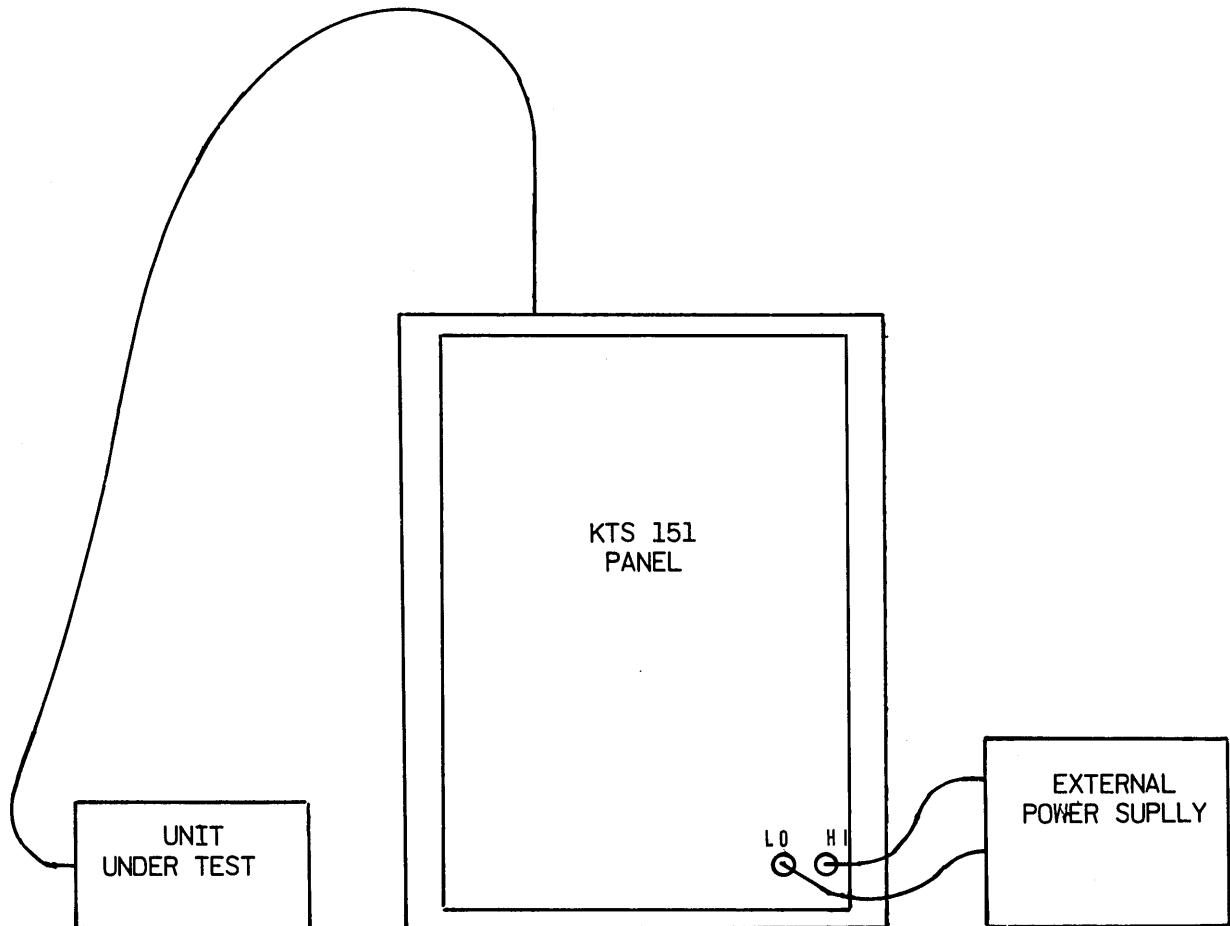


FIGURE 2-1 KTS 151 INSTALLATION

2.2 UNPACKING AND INSPECTING EQUIPMENT

Exercise extreme care when unpacking each unit. Make a visual inspection of each unit for evidence of damage incurred during shipment. If a claim for damage is to be made, save the shipping container to substantiate the claim. When all equipment is removed, place in the shipping container all packing materials for use in unit storage or reshipment. The KTS 151 Installation will conform to standards designated by the customer, installing agency, and existing conditions as to unit location and type of installation.

NOTES:

1. FOR COMPLETE ITEM DESCRIPTION, SEE BILL OF MATERIAL 000-1603-00.
2. CLUTCH ASSY 200-1578-00 (R/T) WHEN TESTING KS 271 & KS 272.
3. USE SLIP CLUTCH ASSY 200-1618-01 (R/T) WHEN TESTING KS 272 & KS 273.
4. USE AS REQUIRED TO OBTAIN AN AXIAL END PLAY OF .005 ± .004 INCHES.
5. THE AUTO TRIM SETTING ADAPTER (071-6021-02) IS PROVIDED WITH (071-6021-03).

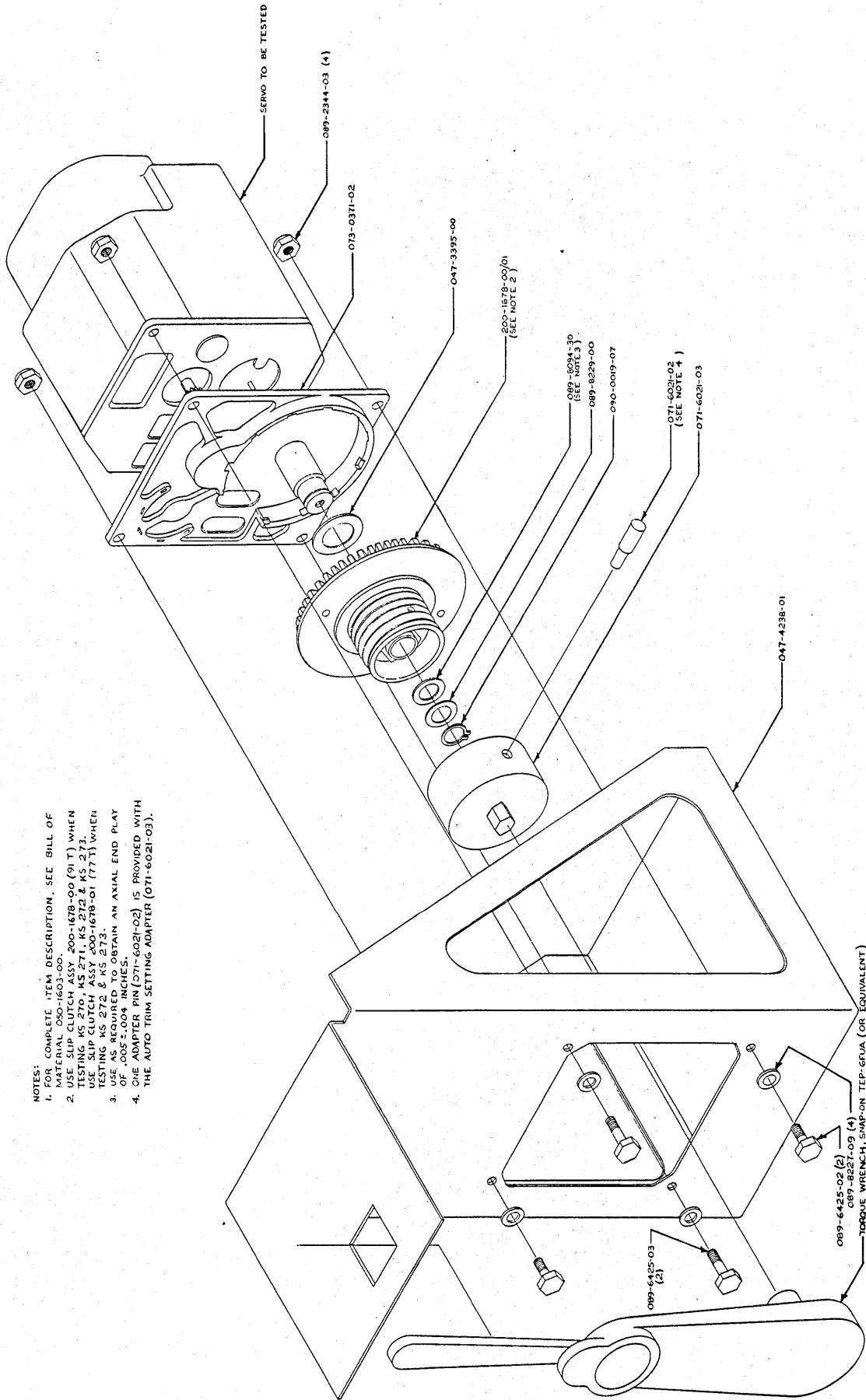


FIGURE 2-3 SERVO TEST KIT ASSEMBLY
(Dwg. No. 300-2268-00, R-0)



FLIGHT CONTROL SYSTEM TEST SET

SECTION III OPERATION

3.1 GENERAL

The KTS 151 Flight Control System Test Set has been specifically designed to provide signal sources and switching operations to check the individual components of King Radio Corporation's KFC 200 Flight Control System. It has test point to meter selection plus logic annunciators to make testing as simple and rapid as possible. A digital voltmeter, Fluke 8000A or equivalent, and an oscilloscope are required for testing.

The KTS 151 is housed in a standard rack cabinet such that it is self-contained. All required test points of the units to be tested are brought out to the bottom of the panel of the KTS 151.

The front panel of the KTS 151 has been divided into functional blocks that facilitate quick location and definitions of the many controls. The main panel switches are either of the rotary, paddle, or pushbutton type with the pushbutton switches being lit when they are activated to make locating an unwanted switch position quite easy. The pushbutton switches have their legend printed on the switch button. The clear switch button allows reading of the legend before activation of the switch. Procedures for use with specific components of the KFC 200 Flight Control System can be found in the individual maintenance/overhaul manuals.

3.2 CONTROLS

The controls for the KTS 151 Flight Control System Test Set are described in this section. Figure 3-1 should be used for referencing control operation to control location.

3.2.1 TEST SET POWER

- | | |
|---|--|
| A. Power Selector | Selects 14V or 28V input power as appropriate for the unit under test. Also determines proper load for various units. Power is interlocked such that the input voltage must agree with the appropriate switch position. |
| B. 14V Indicator | Indicates that the 14V position has been selected and the proper power has been applied. |
| C. 28V Indicator | Indicates that the 28V position has been selected and the proper power has been applied. |
| D. Current Monitor and HI/LO Test Jacks | When depressed, DC input current to the KC 295 or KA 285 can be measured at the HI to LO test jacks. Current is measured by measuring DC voltage across a 1 ohm 1% internal resistor. Resistor is shorted if KC 295 Autopilot mode is engaged. |
| E. Test Jack | Measures external 14VDC input. |
| F. +15V Test Jack | Measures internal +15VDC regulated supply. |
| G. -15V Test Jack | Measures internal -15VDC regulated supply. |
| H. 28V Test Jack | Measures external 28VDC input. |
| I. PWR REF Test Jack | POWER REFERENCE for KC 295. Connected to POWER GROUND otherwise. |
| J. PITCH REF Test Jack | PITCH REFERENCE for KC 295. Connected to POWER GROUND otherwise. |



KTS 151

FLIGHT CONTROL SYSTEM TEST SET

- 8. BC Indicates proper operation of BC button.
- 9. ALT Indicates proper operation of ALT button.
- 10. FD Indicates proper operation of FD button.
- C. KS 270/271
 - 1. CW TORQUE LIMIT Indicates Servo CW Torque Limit Switch has been activated.
 - 2. CCW TORQUE LIMIT Indicates Servo CCW Torque Limit Switch has been activated.
 - 3. KC 296 YD ENGAGE Indicates Yaw Damp mode has been engaged and latched.

3.2.3 STIMULUS (STIM) CONTROLS

- A. KC 295 When out, PWR REF, PITCH REF and PWR GND are shorted. Servo ramp rate input is selected. DC voltage is routed to KC 296 signal generators and KC 296 function to SCOPE SYNC is selected. When in, grounds are isolated with 18 ohm resistors and KC 295 ramp and sync signals are selected.
- B. INVERT Inverts Stimulus 1 signal.
- C. HOLD When ramping Stimulus 1, signal may be stopped and held at any desired point.
- D. RAMP Stimulus 1 signal begins to ramp at preset rate from any desired initial condition determined by STIMULUS 1 ADJUST control.
- E. STIM 1 ENGAGE Applies or steps STIMULUS 1 level.
- F. STIMULUS 1 ADJUST Adjusts level of all STIMULUS 1 functions.
- G. STIMULUS 2 ADJUST Adjusts level of all STIMULUS 2 functions.

3.2.4 KC 295 FLIGHT COMPUTER

- A. HDG Engages HDG mode. Indicates mode engaged.
- B. ALT Engages ALT mode. Indicates mode engaged.
- C. NAV Engages NAV mode. Indicates mode engaged.
- D. BC Engages BC function of APPROACH mode. Indicates mode engaged.
- E. APPR Engages APPR mode. Indicates mode engaged.
- F. AP ENGAGE Engages AP mode. Indicates mode engaged.
- G. ZERO ATTITUDE Applies a zero voltage stimulus to gyro simulation generator for offset adjustment.
- H. GA Engages GA mode. Indicates mode engaged.



KTS 151
FLIGHT CONTROL SYSTEM TEST SET

3.2.11 KC 296 YAW COMPUTER

- A. ROLL CROSSFEED
Selects KC 296 signal source to Roll Crossfeed input.
- B. SERVO FEEDBACK
Selects KC 296 signal source to Servo Feedback input.
- C. AP DISC
Momentary interrupt to disengage Yaw Damp Mode.
- D. YD ENGAGE
Depress to engage Yaw Damp Mode.
- E. AP ENGAGE
Depress to engage Yaw Damp Mode (from Autopilot System).
- F. D GROUND SELECT
Selects ground return pin KC 2962-D.
- G. STRAP LINE 3
Connects pin KC 2961-J to pin KC 2961-1 for gain change.
- H. STRAP LINE 4
Connects pin KC 2961-9 to pin KC 2961-1 for gain change.
- I. AP ONLY
Connects pin KC 2962-J to pin KC 2962-L and KC 2962-K to KC 2962-C for AP only units.
- J. YAW RATE 2
Selects optional Yaw Rate input.
- K. YAW RATE STIMULUS
Applies Yaw Rate Stimulus to selected Yaw Rate input.
- L. CLOSED LOOP
When depressed, connects Servo Feedback lines to servo output for closed loop operation. Otherwise, Servo Feedback switch is active.
- M. SCOPE SYNC
KC 296 square wave sync with KC 295 switch out. With KC 295 switch in, different DC voltage levels occur for scope sync functions when STIM 1, STIM 2, RAMP and Autotrim Sens are changed.
- N. WAVE FORM SELECT
Selects internal generator signals. Six preset sine waves, one square wave, and DC signals are available.
- O. FREQ SELECT
Selects one of six sine wave frequencies.
- P. OUTPUT ADJUST
Adjusts amplitude of sine, square, and DC waveforms.

3.2.12 KS 272 PITCH TRIM SERVO

- A. SELF TEST
Simulates Self Test input to Servo.
- B. MANUAL TRIM ENGAGE
Pulls in engage clutch for Manual Trim operation.
- C. AP ENGAGE
Pulls in engage clutch for Autotrim operation.
- D. KS 273
Supplies direct drive input for KS 273 operation.
- E. MANUAL TRIM
Provides CW and CCW drive voltage.
- F. AUTO TRIM
Provides CW and CCW drive voltage.

3.2.13 TEST JACK FIELD

Provides pin out test jacks for every connector pin of each unit.


KING
 KTS 151
 FLIGHT CONTROL SYSTEM TEST SET

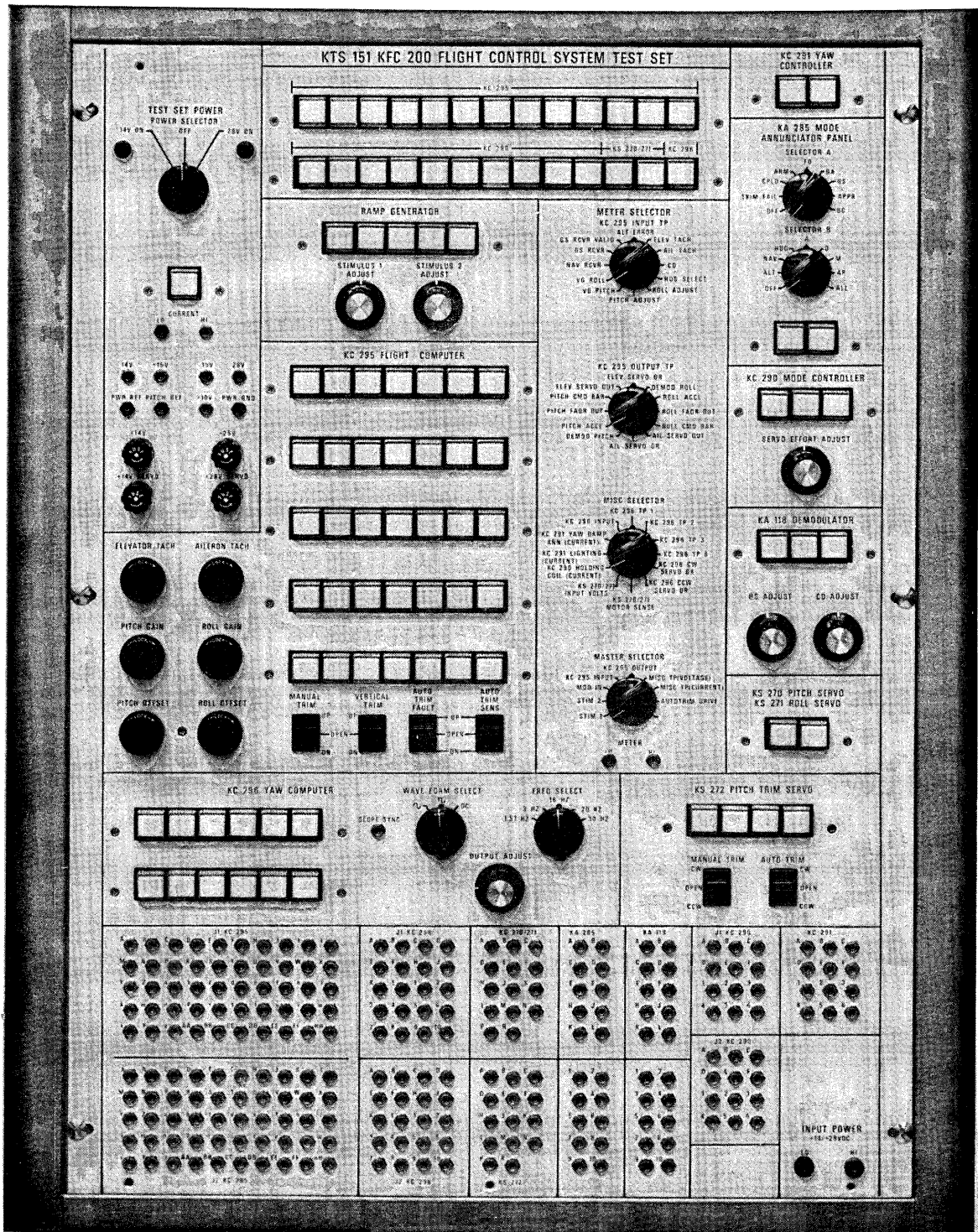


FIGURE 3-1 FLIGHT CONTROL SYSTEM TEST SET



FLIGHT CONTROL SYSTEM TEST SET

SECTION IV THEORY OF OPERATION

4.1 GENERAL

The KTS 151 Flight Control System Test Set has been designed to facilitate troubleshooting of components in the KFC 200 Flight Control System. Units can be tested with procedures found in the individual overhaul manuals. Other operations, such as duplicating problems found during flight or checking for low voltage operation, can be accomplished after a good working knowledge of the tester has been achieved. The functional flexibility of the controls and the full plug pin out section, gives the technician the capability to duplicate and troubleshoot any problem.

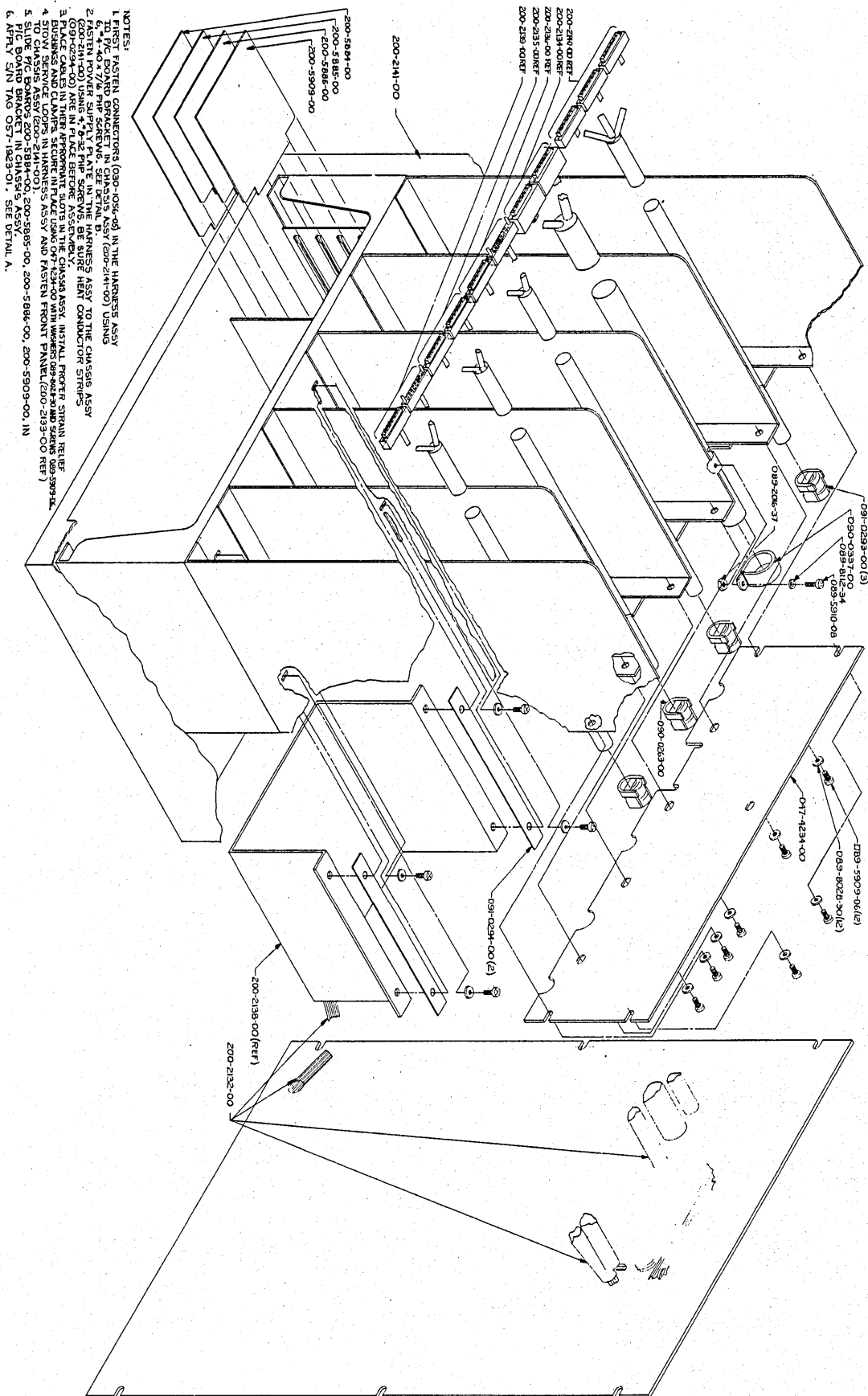
4.2 CIRCUIT DESCRIPTION

A description of circuitry included in the KTS 151 can be found in schematics located in Section VI. Basic Op Amp circuitry makes up most of the electronics in the KTS 151.

A review of Op Amp circuitry can be found in Appendix "A", Volumes 3, 4, or 5.

NAME		ASS'Y. NO.						
KTS 151 Flight Control		071-5030-00						
KING RADIO CORP. PARTS LISTING			CODE	QUANTITY				
SYMBOL	PART NUMBER	DESCRIPTION		-00	-01	-02	-03	-04
	071-5030-00	KTS 151 Flight Control		X				
	047-4234-01	Back Panel Upper Half		1				
	057-1895-01	Decal Kts 151		2				
	057-1923-01	S/N Tag		1				
	089-2016-37	Nut Hex Head #10-32		1				
	089-5909-06	Screw PHP 8-32x 3/8		12				
	089-5910-08	Screw PHP 10-32x 1/2		1				
	089-8112-34	Washer Splt Lk #10		1				
	089-8028-30	Washer Flat		12				
	089-5903-07	Screw PHP #4-40 x 7/16		6				
	090-0263-00	Strain Relief Bushing		1				
	090-0337-00	Strain Relief Clamp		1				
	091-0293-00	Strain Relief Bushing		3				
	091-0294-00	Heat Conductor Strip		2				
	200-2132-00	Harness Assy		1				
	200-5884-00	A2 P.C. Board Assy		1				
	200-5885-00	A3 P.C. Board Assy		1				
	200-5886-00	A4 P.C. Board Assy		1				
	200-5909-00	P.C. Extender Bd. Assy		1				
	200-2141-00	Chassis Assy		1				

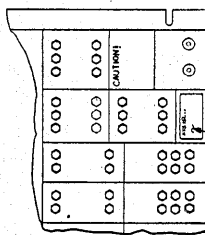
SHT ____ OF ____



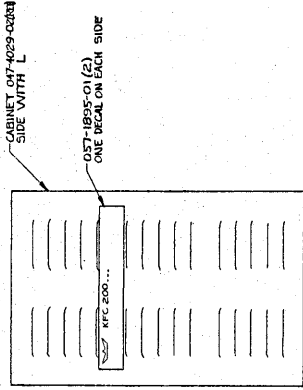
- NOTES:
1. FIRST FASTEN CONNECTORS (090-1036-08) IN THE HARNESS ASSY TO PIC BOARD BRACKET IN CHASSIS ASSY (200-2141-00) USING 200-5885-00
 2. FASTEN COVER SHIELD PLATE IN THE HARNESS ASSY TO THE CHASSIS ASSY (200-2141-00) USING 4 #2 PHW SCREWS. BE SURE HENT CONNECTOR STRIPS (091-0234-00) ARE IN PLACE BEFORE ASSEMBLY
 3. FASTEN HARNESS ASSY TO CHASSIS ASSY. INSTALL PROPER STRAIN RELIEF BUSHINGS AND CLAMPS. SECURE IN PLACE USING 047-4234-00
 4. STOW SERVICE LOOP IN HARNESS ASSY AND FASTEN FRONT PANEL (200-2133-00 REF)
 5. SLIDE PIC BOARD 200-5884-00, 200-5885-00, 200-5909-00, 200-5909-00, IN
 6. APPLY STN TAG 057-1823-01. SEE DETAIL A.

FIGURE 5-1 KTS 151 FLIGHT CONTROL SYSTEM TEST SET (SHT 1)
(Dwg. No. 300-2130-00, Rev. 1)

KING
KTS 151
FLIGHT CONTROL SYSTEM TEST SET



057-1823-01
FRONT PANEL, LOWER RIGHT HAND CORNER)



DETAIL C
SCALE: NONE

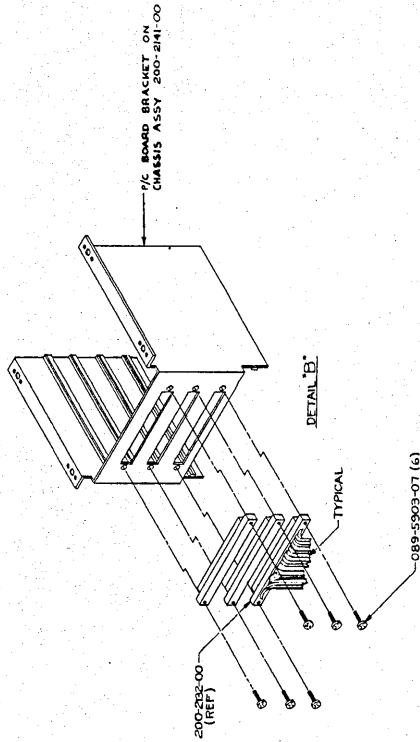


FIGURE 5-2 KTS 151 FLIGHT CONTROL TEST SET (SHT 2)
(Dwg. No. 300-2130-00, Rev. 1)

NAME		ASS'Y. NO.						
KTS 151 Accessory Kit		050-1605-00						
KING RADIO CORP. PARTS LISTING			CODE	QUANTITY				
SYMBOL	PART NUMBER	DESCRIPTION		-00	-01	-02	-03	-04
	050-1605-00	Accessory Kit		X				
	036-0017-00	Fuse 6 Amp Fast Acting		2				
	036-0022-00	Fuse 8 Amp Fast Acting		2				
	037-0007-01	Lamp 14V .08A Type 330		2				
	037-0059-00	IEE #12522 (12V, 30mA) Lamp		5				
	047-1277-00	Card Puller		1				
	090-0343-00	Lab Tubing		3	ft.			
	200-5697-00	Extender PCB (Adapter)		1				
	200-1820-00	Extender PCB (Lateral)		1				
	200-1821-00	Extender PCB (Logic)		1				
	200-1822-00	Extender PCB (Pitch)		1				
	200-5739-00	Extender PCB (Alt Hold)		1				

SHT ____ OF ____

Page 5-7

NAME		ASS'Y. NO.						
Servo Test Set		050-1603-00						
KING RADIO CORP. PARTS LISTING			CODE	QUANTITY				
SYMBOL	PART NUMBER	DESCRIPTION		-00	-01	-02	-03	-04
	050-1603-00	Servo Test Set		X				
	047-3395-00	Thrust Washer		1				
	047-4238-01	Servo Test Stand		1				
	071-6021-03	Adapter Auto Trim Setting		1				
	073-0371-02	Capstan Modified		1				
	089-2344-03	Nut Slflkg #10-32		4				
	089-6425-02	Bolt-Machine Aircraft		2				
	089-6425-03	Bolt-Machine Aircraft		2				
	089-8227-09	Washer Flat		4				
	089-8094-30	Washer Flat		2				
	089-8229-00	Washer Flat		2				
	090-0019-07	Retaining Ring		2				
	200-1678-01	Slip Clutch Assy		1				
	200-1678-02	Slip Clutch Assy		1				

SHT ____ OF ____

NAME EXTENDER PCB (LATERAL)	ASS'Y. NO. 200-1820-00
---------------------------------------	----------------------------------

KING RADIO CORP. PARTS LISTING

SYMBOL	PART NUMBER	DESCRIPTION	CODE	QUANTITY				
				-00	-01	-02	-03	-04
	009-5687-00	Extender PC Board		1				
	030-2249-01	Connector		1				
	030-1071-00	Key		1				
	089-5944-04	Screw PHPH 2-32		2				
	010-0050-01	Terminal		52				

	SHT ____ OF ____	Page 5-11
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KTS 151
FLIGHT CONTROL SYSTEM TEST SET

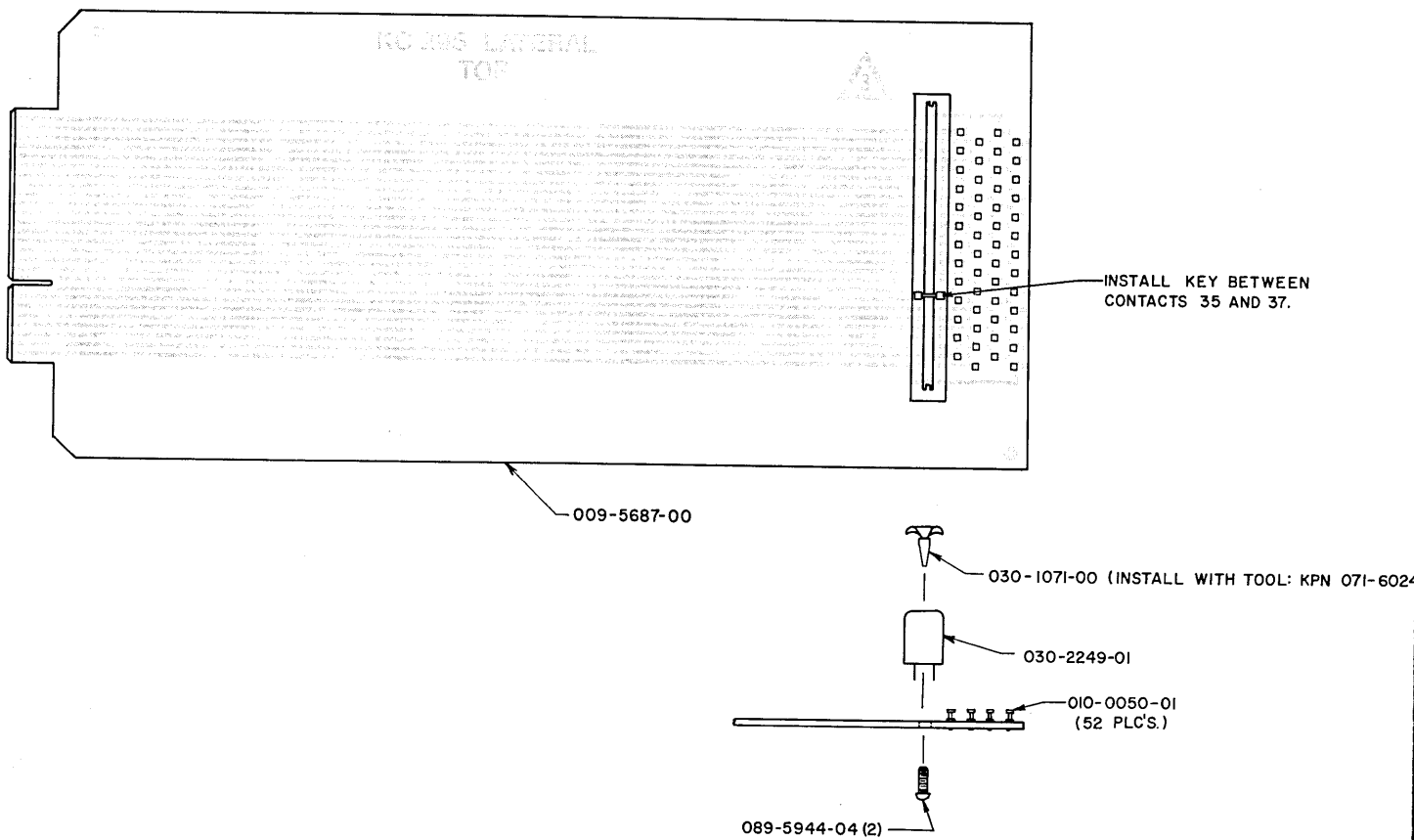
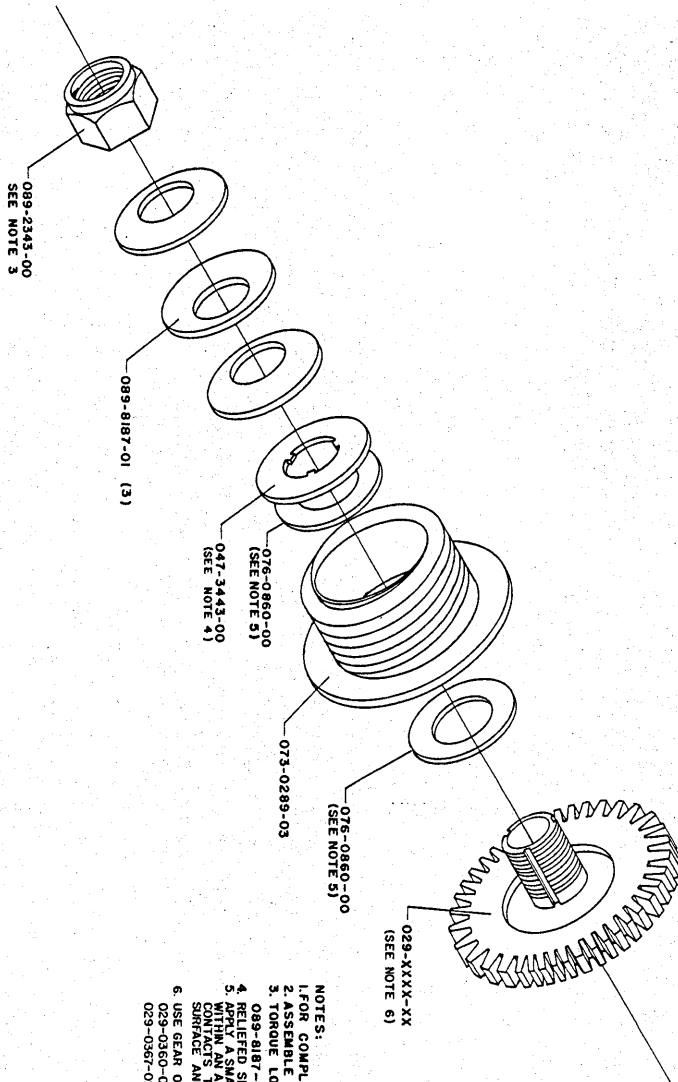


FIGURE 5-3 EXTENDER PCB (LATERAL)
(Dwg. No. 300-1820-00, Rev. 1)

NAME SLIP CLUTCH ASSEMBLY	ASS'Y. NO. 200-1678-00/ 02
------------------------------	-------------------------------

KING RADIO CORP. PARTS LISTING	CODE	QUANTITY				
--------------------------------	------	----------	--	--	--	--

SYMBOL	PART NUMBER	DESCRIPTION	CODE	-00	-01	-02	-03	-04
	029-0360-02	Gear, 91T, 32 DP		X	1	X		
	029-0367-02	Gear, 77T, 32 DP		X	X	1		
	029-0397-02	Gear, 91T, 32DP	AFM	1	X	X		
	047-3443-00	Plate, Clutch		1	1		1	
	073-0289-03	Capstan	FA	1	1		1	
	076-0860-00	Disk, Clutch		2	2		2	
	089-2343-00	Nut		1	1		1	
	089-8187-01	Washer Belleville		3	3		3	



- NOTES:
1. FOR COMPLETE ITEM DESCRIPTION SEE B/M 200-1678-00/01.
 2. ASSEMBLE IN ORDER AS VIEWED.
 3. TORQUE LOCK NUT (089-2343-00) UNTIL CONTACT PLUS 30° IS MADE WITH 089-8187-01. FINAL SETTING WILL BE MADE LATER.
 4. RELIEF SIDE OF (047-3443-00) GOES TOWARD 076-0860-00. APPLY A SMALL AMOUNT OF FORCE TO BOTH SIDES OF 073-0289-03 TO PRESS THE BUSHING SURFACE OF 076-0860-00 ON TO THE EPONIED SURFACE AND BAKE AT 165°F FOR TWO HOURS.
 5. USE GEAR 029-0397-02 FOR SLIP CLUTCH ASSEMBLY 200-1678-00. USE GEAR 029-0360-02 FOR SLIP CLUTCH ASSY 200-1678-01. USE GEAR 029-0367-02 FOR SLIP CLUTCH ASSEMBLY 200-1678-02.

FIGURE 5-4 SLIP CLUTCH ASSEMBLY
(Dwg. No. 300-1678-00/01, R-5)

NAME EXTENDER PCB (LOGIC)	ASS'Y. NO. 200-1821-00
------------------------------	------------------------

KING RADIO CORP. PARTS LISTING			CODE	QUANTITY				
SYMBOL	PART NUMBER	DESCRIPTION		-00	-01	-02	-03	-04

SYMBOL	PART NUMBER	DESCRIPTION	CODE	-00	-01	-02	-03	-04
	009-5690-00	Extender PC Board		1				
	030-2249-02	Connector		1				
	030-1071-00	KEY		1				
	089-5944-04	Screw PHPH 2-32		2				
	010-0050-01	Terminals		62				

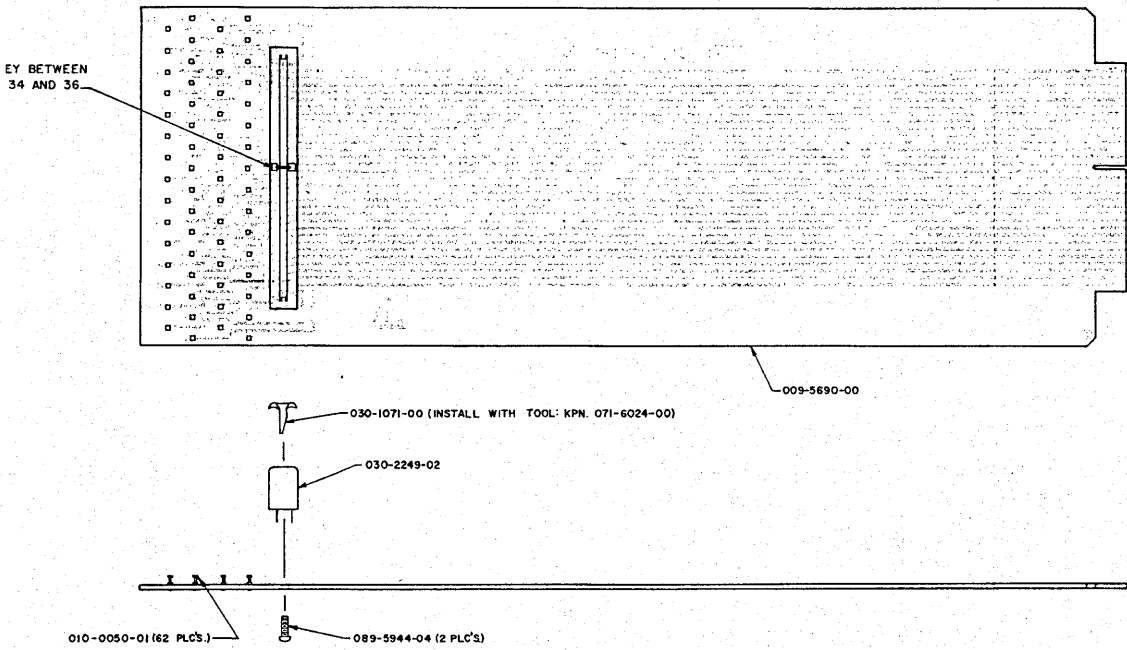


FIGURE 5-5 EXTENDER PCB (LOGIC)
(Dwg. No. 300-1821-00, Rev. 1)

NAME			ASS'Y. NO.					
EXTENDER PCB (PITCH)			200-1822-00					
KING RADIO CORP. PARTS LISTING			CODE	QUANTITY				
SYMBOL	PART NUMBER	DESCRIPTION		-00	-01	-02	-03	-04
	009-5689-00	Extender PC Board	1					
	030-2249-01	Connector	1					
	030-1071-00	Key	1					
	089-5944-04	Screw PHPH 2-32	2					
	010-0050-01	Terminal	52					

SHT ____ OF ____

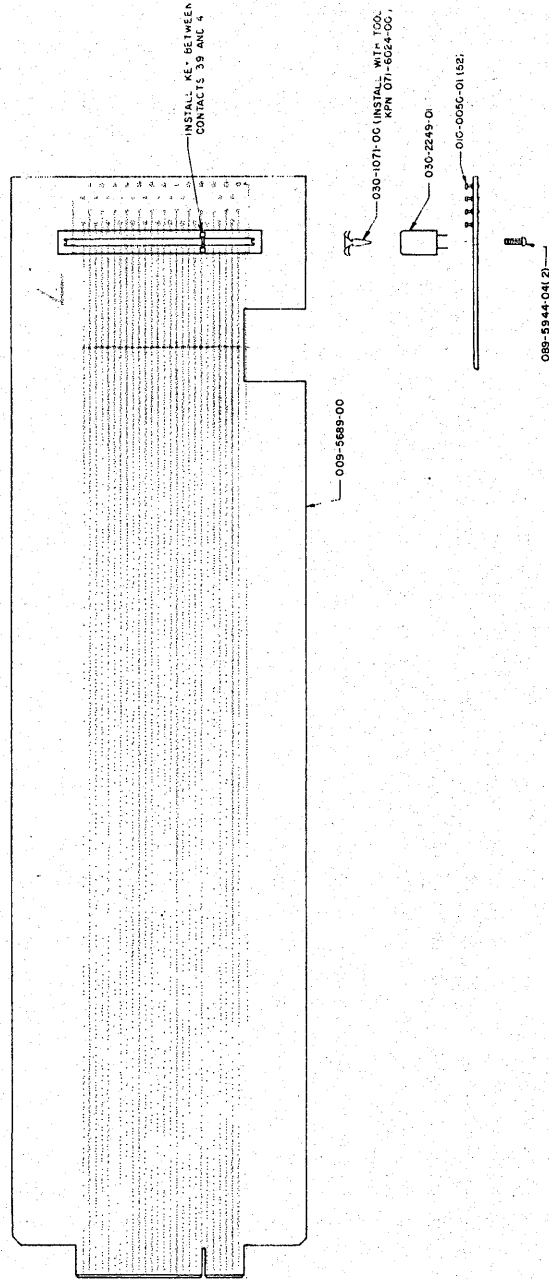


FIGURE 5-6 EXTENDER PCB (PITCH)
(Dwg. No. 300-1822-00, Rev. 1)

NAME EXTENDER PCB (ALT. HOLD) ASS'Y. NO. 200-5739-00

KING RADIO CORP. PARTS LISTING			CODE	QUANTITY				
SYMBOL	PART NUMBER	DESCRIPTION		-00	-01	-02	-03	-04
	009-5739-00	Extender PC Board		1				
	030-2249-00	Connector		1				
	030-1071-00	Key		1				
	089-5944-04	Screw PHPH 2-32		2				
	010-0050-01	Terminals		20				

SHT ____ OF ____ Page 5-27

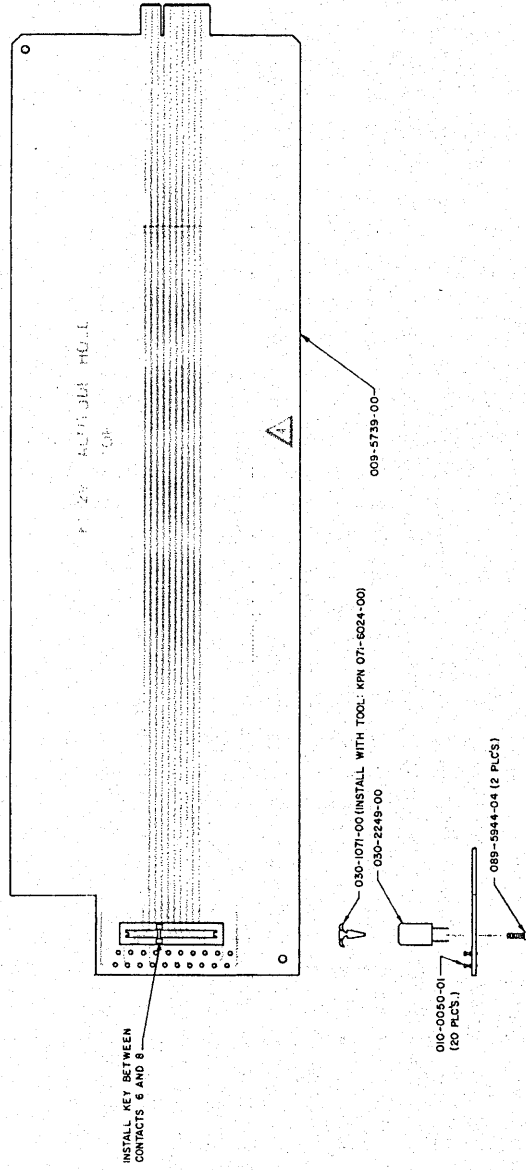


FIGURE 5-7 ALT. HOLD EXTENDER BD ASSEMBLY
(Dwg. No. 300-5739-00, Rev. 1)

NAME		ASS'Y. NO.							
Panel Harness Assembly		200-2132-00							
KING RADIO CORP. PARTS LISTING				CODE	QUANTITY				
SYMBOL	PART NUMBER	DESCRIPTION			-00	-01	-02	-03	-04
	025-0004-04	Wire 20 AWG	Yellow	6.0					
	025-0004-06	Wire 20 AWG	Blue	6.0					
	025-0004-10	Wire 20 AWG	Blk/Wht	6.0					
	025-0004-11	Wire 20 AWG	Brn/Wht	6.0					
	025-0004-13	Wire 20 AWG	Org/Wht	6.0					
	025-0004-14	Wire 20 AWG	Yel/Wht	6.0					
	025-0004-15	Wire 20 AWG	Grn/Wht	6.0					
	025-0004-16	Wire 20 AWG	Blue/Wht	6.0					
	025-0004-17	Wire 20 AWG	Purple/Wht	6.0					
	025-0005-00	Wire 18 AWG	Black	6.0					
	025-0005-01	Wire 18 AWG	Brown	6.0					
	025-0005-02	Wire 18 AWG	Red	6.0					
	025-0005-03	Wire 18 AWG	Orange	6.0					
	025-0005-04	Wire 18 AWG	Yellow	6.0					
	025-0005-05	Wire 18 AWG	Green	6.0					
	025-0005-06	Wire 18 AWG	Blue	6.0					
	025-0005-07	Wire 18 AWG	Purple	6.0					
	025-0005-08	Wire 18 AWG	Gray	6.0					
	025-0005-09	Wire 18 AWG	White	6.0					
	025-0005-10	Wire 18 AWG	Blk/Wht	6.0					
	025-0005-11	Wire 18 AWG	Brn/Wht	6.0					
	025-0005-12	Wire 18 AWG	Red/Wht	6.0					
	025-0005-13	Wire 18 AWG	Org/Wht	6.0					
	025-0005-14	Wire 18 AWG	Yel/Wht	6.0					
	025-0005-17	Wire 18 AWG	Purple/Wht	6.0					
	025-0024-00	Wire 22 AWG	Black	6.0					
	025-0024-02	Wire 22 AWG	Red	6.0					
	025-0024-03	Wire 22 AWG	Orange	6.0					
	025-0024-04	Wire 22 AWG	Yellow	6.0					
	025-0024-05	Wire 22 AWG	Green	6.0					
	025-0024-06	Wire 22 AWG	Blue	6.0					
	025-0024-07	Wire 22 AWG	Purple	6.0					
	025-0024-12	Wire 22 AWG	Red/Wht	6.0					
	025-0024-13	Wire 22 AWG	Org/Wht	6.0					
	025-0024-15	Wire 22 AWG	Grn/Wht	6.0					
	025-0024-16	Wire 22 AWG	Blue/Wht	6.0					

SHT ____ OF ____

NAME		ASS'Y. NO.							
Panel Harness Assembly		200-2132-00							
KING RADIO CORP. PARTS LISTING				CODE	QUANTITY				
SYMBOL	PART NUMBER	DESCRIPTION			-00	-01	-02	-03	-04
	025-0029-41	Wire 24 AWG Yel/Org		6.0					
	025-0029-42	Wire 24 AWG Yel/Blue		6.0					
	025-0029-43	Wire 24 AWG Yel/Brn		6.0					
	025-0029-44	Wire 24 AWG Blk/Yel		6.0					
	025-0029-45	Wire 24 AWG Blk/Org		6.0					
	025-0029-46	Wire 24 AWG Blk/Brn		6.0					
	025-0029-47	Wire 24 AWG Blk/Red		6.0					
	025-0029-48	Wire 24 AWG Blk/Grn		6.0					
	025-0029-49	Wire 24 AWG Blk/Blu		6.0					
	025-0029-50	Wire 24 AWG Blk/Gry		6.0					
	025-0029-51	Wire 24 AWG Brn/Org		6.0					
	025-0029-52	Wire 24 AWG Brn/Grn		6.0					
	025-0029-53	Wire 24 AWG Brn/Blue		6.0					
	025-0029-54	Wire 24 AWG Brn/Red		6.0					
	025-0029-55	Wire 24 AWG Org/Brn		6.0					
	025-0029-56	Wire 24 AWG Org/Grn		6.0					
	025-0029-57	Wire 24 AWG Org/Blu		6.0					
	025-0029-58	Wire 24 AWG Org/Red		6.0					
	025-0029-59	Wire 24 AWG Org/Pur		6.0					
	025-0029-60	Wire 24 AWG Org/Gray		6.0					
	025-0029-61	Wire 24 AWG Org/Yel		6.0					
	025-0029-62	Wire 24 AWG Grn/Blk		6.0					
	025-0029-63	Wire 24 AWG Grn/Org		6.0					
	025-0029-64	Wire 24 AWG Grn/Brn		6.0					
	025-0029-65	Wire 24 AWG Grn/Red		6.0					
	025-0029-66	Wire 24 AWG Grn/Blue		6.0					
	025-0029-67	Wire 24 AWG Blue/Red		6.0					
	025-0029-68	Wire 24 AWG Blue/Org		6.0					
	025-0029-69	Wire 24 AWG Blue/Blk		6.0					
	025-0029-70	Wire 24 AWG Blue/Brn		6.0					
	025-0029-71	Wire 24 AWG Blue/Grn		6.0					
	025-0029-72	Wire 24 AWG Red/Brn		6.0					
	025-0029-73	Wire 24 AWG Red/Org		6.0					
	025-0029-74	Wire 24 AWG Red/Pur		6.0					
	025-0029-75	Wire 24 AWG Red/Blue		6.0					
	026-0003-00	Wire Buss		5.0					
	030-1056-05	Connector, 28/56 Pin		3					
R605	132-0117-00	Res WW/1 Ohm 1% 5W		2					
R606	130-0202-23	Res F/C 2K		1					
R609	130-0103-23	Res F/C 10K QW 5%		20					
R610	130-0103-23	Res F/C 10K QW 5%		-					
R611	130-0103-23	Res F/C 10K QW 5%		-					
R612	130-0103-23	Res F/C 10K QW 5%		-					
R613	130-0103-23	Res F/C 10K QW 5%		-					
R614	130-0103-23	Res F/C 10K QW 5%		-					
R615	130-0103-23	Res F/C 10K QW 5%		-					
R616	130-0103-23	Res F/C 10K QW 5%		-					
R617	130-0103-23	Res F/C 10K QW 5%		-					

SHT ____ OF ____

PARTS LIST REVISION HISTORY				ENGR. APPROVAL <i>M. Beumley / ASE</i>	
NAME Panel Harness Assembly			ASS'Y. NO. 200-2132-00		
ASS'Y. DWG. 300-2132-00		UNIT KTS 151		USED ON 071-5030-00	
REV	CHANGE	SYMBOL	PART NUMBER	DESCRIPTION	
1					
				KTS 151 Maintenance Manual Rev. 0, April, 1977	
2		R625	130-0104-23	P/N changed from 130-0103-23	
		R627	130-0514-23	P/N changed from 130-0103-23	
3		R641	132-0107-34	Qty. changed from 25 to 250	
			091-0109-01	Qty. changed from 25 to 5	
			091-0128-01	Added to B/M	

SHT ____ OF ____

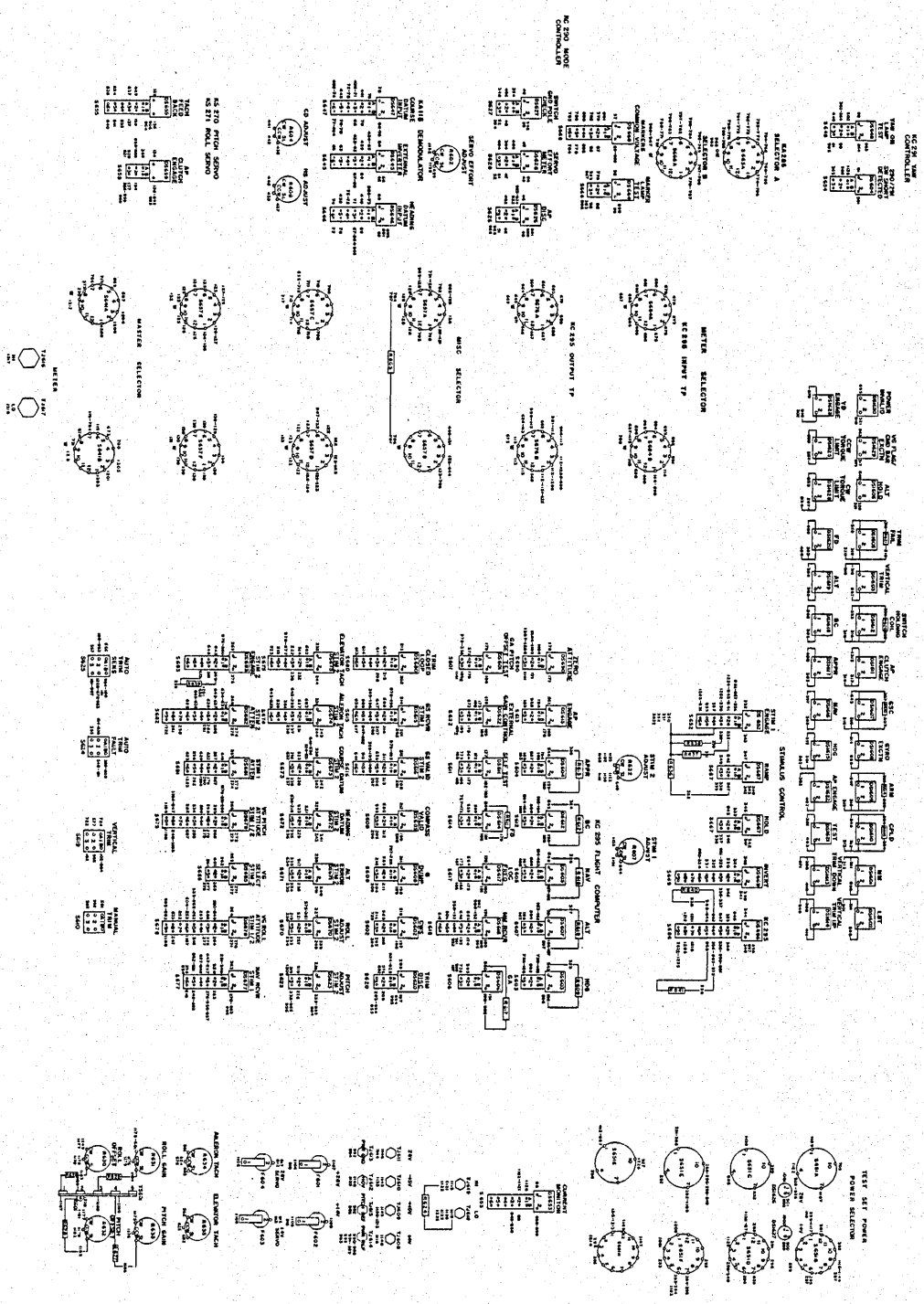


FIGURE 5-9 PANEL HARNESS ASSEMBLY (SHT 2)
(DWG. No. 300-2132-00, REV. 0)

NAME		ASS'Y. NO.						
A2 P/C Board		200-5884-00						
KING RADIO CORP. PARTS LISTING			CODE	QUANTITY				
SYMBOL	PART NUMBER	DESCRIPTION		-00	-01	-02	-03	-04
	009-5884-00	Printed Circuit Bd.		1				
Q201	007-0139-00	Tstr Dual FET 2N3955		1				
Q202	007-0246-01	Tstr Darlington SPS6830		7				
Q203	007-0246-01	Tstr Darlington SPS6830		-				
Q204	007-0246-01	Tstr Darlington SPS6830		-				
Q205	007-0246-01	Tstr Darlington SPS6830		-				
Q206	007-0246-01	Tstr Darlington SPS6830		-				
Q207	007-0246-01	Tstr Darlington SPS6830		-				
Q208	007-0246-01	Tstr Darlington SPS6830		-				
CR201	007-6029-00	Diode Si 1N457		22				
CR202	007-6029-00	Diode Si 1N457		-				
CR203	007-6029-00	Diode Si 1N457		-				
CR204	007-6029-00	Diode Si 1N457		-				
CR205	007-6029-00	Diode Si 1N457		-				
CR206	007-6029-00	Diode Si 1N457		-				
CR207	007-6029-00	Diode Si 1N457		-				
CR208	007-6029-00	Diode Si 1N457		-				
CR209	007-6029-00	Diode Si 1N457		-				
CR210	007-6029-00	Diode Si 1N457		-				
CR211	007-6029-00	Diode Si 1N457		-				
CR212	007-6029-00	Diode Si 1N457		-				
CR213	007-6029-00	Diode Si 1N457		-				
CR214	007-6029-00	Diode Si 1N457		-				
CR215	007-6029-00	Diode Si 1N457		-				
CR216	007-6029-00	Diode Si 1N457		-				
CR217	007-6029-00	Diode Si 1N457		-				
CR218	007-6029-00	Diode Si 1N457		-				
CR219	007-6029-00	Diode Si 1N457		-				
CR220	007-6029-00	Diode Si 1N457		-				
CR221	007-6029-00	Diode Si 1N457		-				
CR222	007-6029-00	Diode Si 1N457		-				
K201	032-0023-00	Relay SPDT 12V		1				

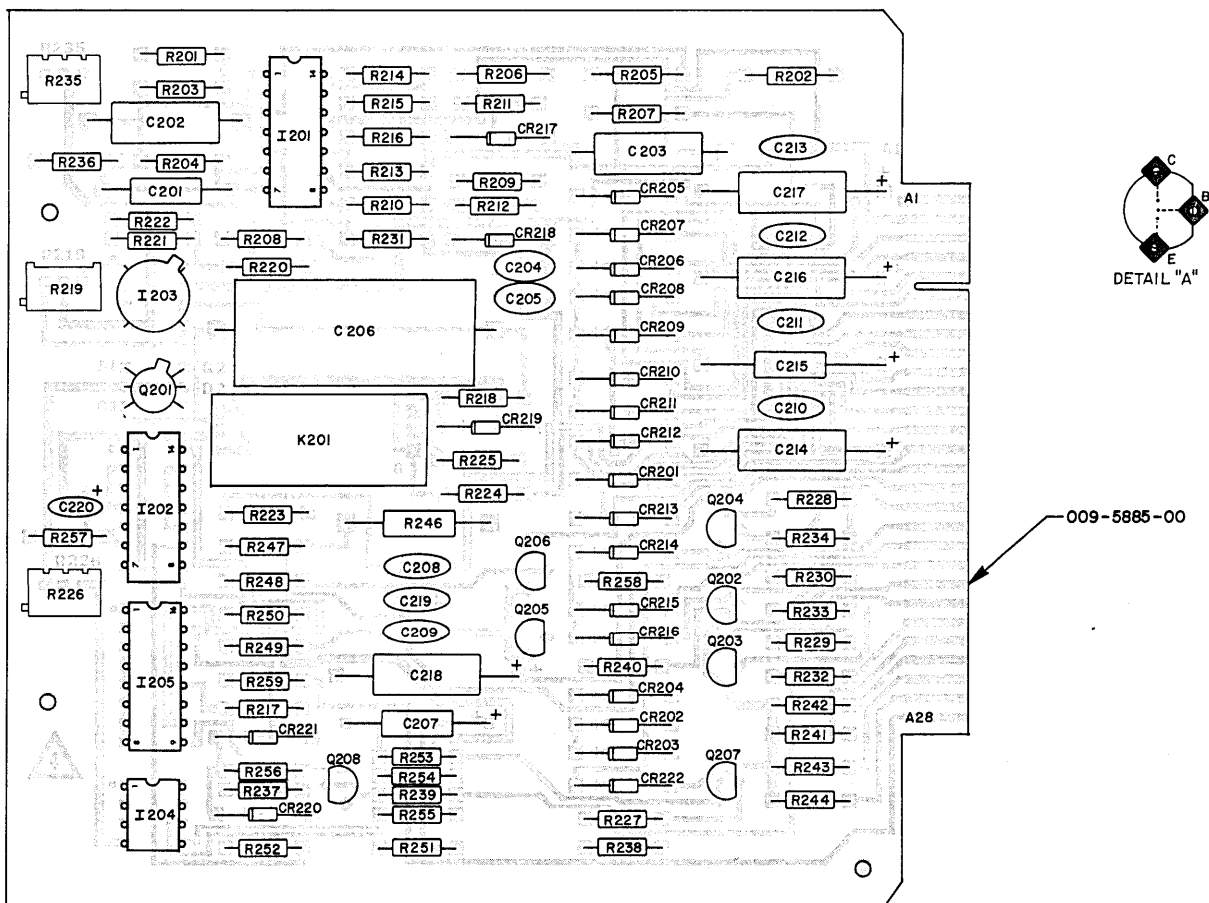
SHT ____ OF ____

NAME		ASS'Y. NO.						
A2 P/C Board		200-5884-00						
KING RADIO CORP. PARTS LISTING			CODE	QUANTITY				
SYMBOL	PART NUMBER	DESCRIPTION		-00	-01	-02	-03	-04
R219	133-0096-57	Res Vari 10K		1				
R220	136-2492-72	Res FF 24.9K QW 1%		3				
R221	136-2492-72	Res FF 24.9K QW 1%		-				
R222	136-2492-72	Res FF 24.9K QW 1%		-				
R223	136-5112-72	Res FF 51.1K QW 1%		1				
R224	136-1212-72	Res FF 12.1K QW 1%		1				
R225	136-1004-72	Res FF 1 Meg QW 1%		1				
R226	133-0096-61	Res Vari 100K		2				
R227	130-0513-23	Res F/C 51K QW 5%		6				
R228	130-0103-23	Res F/C 10K QW 5%		7				
R229	130-0103-23	Res F/C 10K QW 5%		-				
R230	130-0103-23	Res F/C 10K QW 5%		-				
R231	136-4641-72	Res FF 4.64K QW 1%		1				
R232	130-0513-23	Res F/C 51K QW 5%		-				
R233	130-0513-23	Res F/C 51K QW 5%		-				
R234	130-0513-23	Res F/C 51K QW 5%		-				
R235	133-0096-61	Res Vari 100K		-				
R236	130-0305-23	Res FC 3 Meg QW 5%		1				
R237	130-0105-23	Res F/C 1 Meg QW 5%		1				
R238	130-0106-23	Res F/C 10 Meg QW 5%		1				
R239	130-0513-23	Res F/C 51K QW 5%		-				
R240	130-0912-23	Res F/C 9.1K QW 5%		1				
R241	130-0202-23	Res F/C 2K QW 5%		4				
R242	130-0202-23	Res F/C 2K QW 5%		-				
R243	130-0202-23	Res F/C 2K QW 5%		-				
R244	130-0202-23	Res F/C 2K QW 5%		-				
R245								
R246	132-0063-00	Res WW 60 Ohm 3W		1				
R247	130-0104-23	Res F/C 100K QW 5%		-				
R248	130-0513-23	Res F/C 51K QW 5%		-				
R249	130-0512-23	Res F/C 5.1K QW 5%		1				
R250	130-0104-23	Res F/C 100K QW 5%		-				
R251	130-0103-23	Res F/C 10K QW 5%		-				
R252	130-0104-23	Res F/C 100K QW 5%		-				
R253	130-0104-23	Res F/C 100K QW 5%		-				
R254	130-0203-23	Res F/C 20K QW 5%		-				
R255	130-0103-23	Res F/C 10K QW 5%		-				
R256	130-0104-23	Res F/C 100K QW 5%		-				
R257	130-0103-23	Res F/C 10K QW 5%		-				
R258	130-0103-23	Res F/C 10K QW 5%		-				
R259	130-0102-23	Res F/C 1K QW 5%		1				

SHT ____ OF ____



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NOTES:

I. TRANSISTORS Q202, Q203, Q204, Q205, Q206, Q207, AND Q208, SEE DETAIL "A".

FIGURE 5-11 A2 P/C BOARD ASSEMBLY
(Dwg. No. 300-5884-00, Rev. 0)

NAME		ASS'Y. NO.						
A3 P/C Board		200-5885-00						
KING RADIO CORP. PARTS LISTING			CODE	QUANTITY				
SYMBOL	PART NUMBER	DESCRIPTION		-00	-01	-02	-03	-04
	009-5885-00	P/C Board		1				
Q301	007-0246-01	Tstr Darlington SPS6830		2				
Q302	007-0276-01	Tstr Si Pwr MJE170		2				
Q303	007-0276-01	Tstr Si Pwr MJE170		-				
Q305	007-0246-01	Tstr Darlington SRS6830		-				
Q306	007-0210-00	Tstr Si 2N6011		2				
Q307	007-0026-03	Tstr Si Bd		2				
Q308	007-0210-00	Tstr Si 2N6011		-				
Q309	007-0026-03	Tstr Si Bd		-				
CR301	007-6029-00	Diode Si 1N457		10				
CR302	007-6029-00	Diode Si 1N457		-				
CR303	007-6029-00	Diode Si 1N457		-				
CR304	007-6022-00	Diode Si TS-6		2				
CR305	007-6022-00	Diode Si TS-6		-				
CR306	007-6029-00	Diode Si 1N457		-				
CR307	007-6029-00	Diode Si 1N457		-				
CR308	007-6029-00	Diode Si 1N457		-				
CR309	007-6029-00	Diode Si 1N457		-				
CR310	007-5011-14	Diode Zener 6.8V 1W		2				
CR311	007-5011-14	Diode Zener 6.8V 1W		-				
CR312	007-6029-00	Diode Si 1N457		-				
CR313								
CR314	007-5011-01	Diode Zener 10V 1W		2				
CR315	007-5011-01	Diode Zener 10V 1W		-				
CR316	007-6029-00	Diode Si 1N457		-				
CR317	007-6029-00	Diode Si 1N457		-				
K301	032-0033-00	Relay DPST		1				
C301	096-1028-00	Cap Tant 10uf 35V		6				
C302	097-0066-00	Cap Electro 100uf 25V		1				
C303								
C304	105-0031-59	Cap My .056uf 80V		1				
C305	118-0026-00	Cap D/C .1uf 16V		1				
C306	118-0004-00	Cap D/C .001uf		2				
C307	118-0004-00	Cap D/C .001uf		-				
C308								
C309	096-1024-00	Cap Tant 47uf 20V		2				
C310	096-1024-00	Cap Tant 47uf 20V		-				
C311	113-3047-00	Cap D/C 4.7pf		1				
C312	113-5151-01	Cap D/C 150pf		2				

SHT ____ OF ____

NAME

A3 P/C Board

ASS'Y. NO.

200-5885-00

KING RADIO CORP. PARTS LISTING

CODE

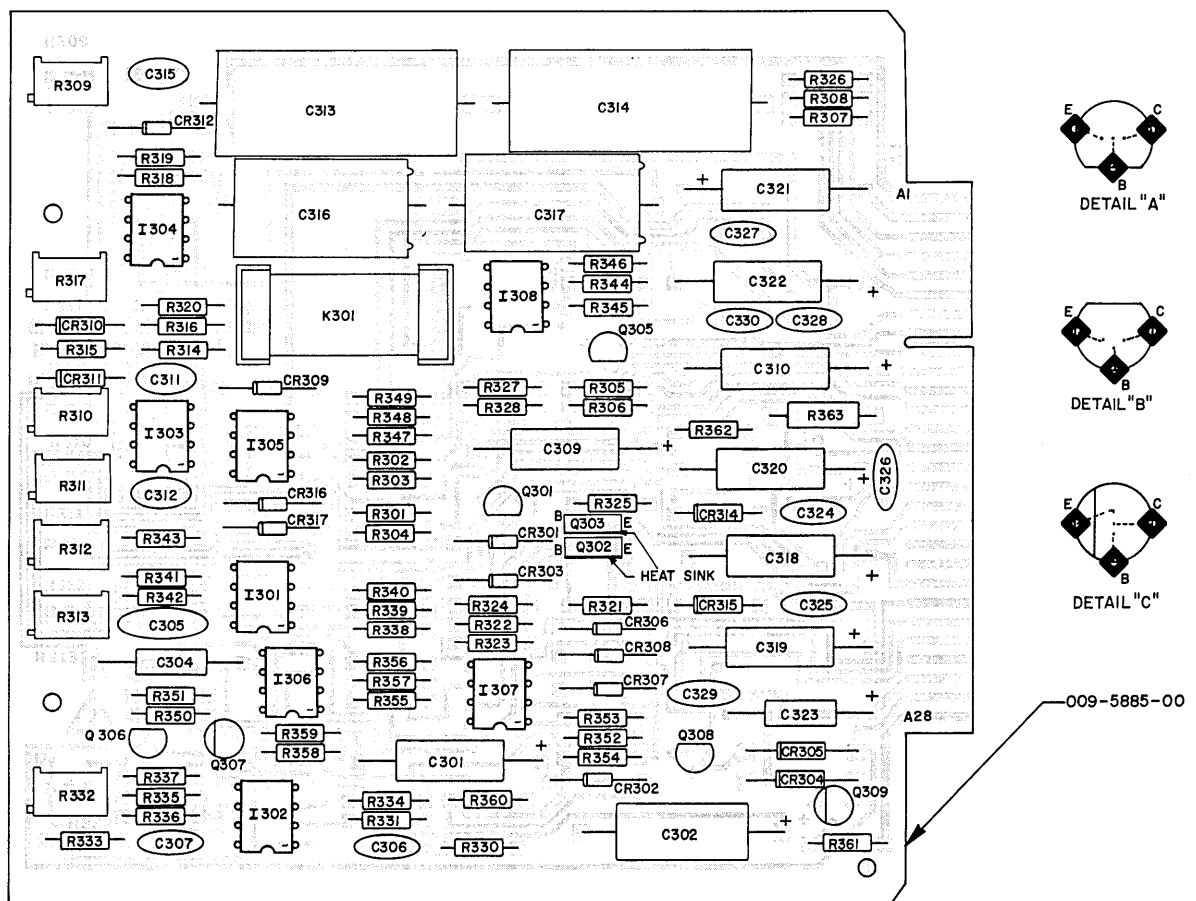
QUANTITY

SYMBOL	PART NUMBER	DESCRIPTION	CODE	QUANTITY				
				-00	-01	-02	-03	-04
R321	130-0472-23	Res 4.7K QW 5%		1				
R322	130-0203-23	Res 20K QW 5%		-				
R323	130-0272-23	Res 2.7K QW 5%		1				
R324	130-0103-23	Res 10K QW 5%		2				
R325	130-0512-23	Res 5.1K QW 5%		-				
R326	130-0153-23	Res 15K QW 5%		1				
R327	130-0302-23	Res 3K QW 5%		1				
R328	130-0113-23	Res 11K QW 5%		2				
R330	130-0434-23	Res 430K QW 5%		1				
R331	130-0104-23	Res 100K QW 5%		11				
R332	133-0096-61	Res Vari 100K		1				
R333	130-0475-23	Res 4.7 Meg QW 5%		1				
R334	130-0513-23	Res 51K QW 5%		6				
R335	130-0104-23	Res 100K QW 5%		-				
R336	130-0104-23	Res 100K QW 5%		-				
R337	130-0513-23	Res 51K QW 5%		-				
R338	130-0104-23	Res 100K QW 5%		-				
R339	130-0104-23	Res 100K QW 5%		-				
R340	130-0513-23	Res 51K QW 5%		-				
R341	130-0104-23	Res 100K QW 5%		-				
R342	130-0104-23	Res 100K QW 5%		-				
R343	130-0104-23	Res 51K QW 5%		-				
R344	130-0104-23	Res 100K QW 5%		-				
R345	130-0104-23	Res 100K QW 5%		-				
R346	130-0513-23	Res 51K QW 5%		-				
R347	130-0104-23	Res 100K QW 5%		-				
R348	130-0104-23	Res 100K QW 5%		-				
R349	130-0513-23	Res 51K QW 5%		-				
R350	130-0102-23	Res 1K QW 5%		5				
R351	130-0333-23	Res 33K QW 5%		1				
R352	130-0203-23	Res 20K QW 5%		-				
R353	130-0243-23	Res 24K QW 5%		1				
R354	130-0113-23	Res 11K QW 5%		-				
R355	130-0203-23	Res 20K QW 5%		-				
R356	130-0103-23	Res 10K QW 5%		-				
R357	130-0203-23	Res 20K QW 5%		-				
R358	130-0102-23	Res 1K QW 5%		-				
R359	130-0102-23	Res 1K QW 5%		-				
R360	130-0102-23	Res 1K QW 5%		-				
R361	130-0102-23	Res 1K QW 5%		-				
R362	130-0201-23	Res 200 Ohm QW 5%		1				
R363	130-0102-33	Res 1K HW 5%		1				

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NOTES:

1. TRANSISTORS Q301 AND Q305, SEE DETAIL "A".
2. TRANSISTORS Q306 AND Q308, SEE DETAIL "B".
3. TRANSISTORS Q307 AND Q309, SEE DETAIL "C".

FIGURE 5-12 A3 P/C BOARD ASSEMBLY
 (Dwg. No. 300-5885-00, Rev. 0)

NAME		ASSY. NO.						
A4 PC BOARD ASSY		200-5886-00						
KING RADIO CORP. PARTS LISTING			CODE	QUANTITY				
SYMBOL	PART NUMBER	DESCRIPTION		-00	-01	-02	-03	-04
	009-5886-00	PC Board		1				
C401	113-6103-00	Cap. DC .01 uf 50V		4				
C402	113-6103-00	Cap. DC .01 uf 50V		-				
C403	113-6103-00	Cap. DC .01 uf 50V		-				
C404	113-6103-00	Cap. DC .01 uf 50V		-				
C405	096-1028-00	Cap. Tant. 10 uf 35V		3				
C406	096-1028-00	Cap. Tant. 10 uf 35V		-				
C407	096-1028-00	Cap. Tant. 10 uf 35V		-				
C408	096-1010-00	Cap. Tant. 4.7 uf 50V		1				
CR401	007-6029-00	Diode, Si 1N457		3				
CR402	007-6029-00	Diode, Si 1N457		-				
CR 403	007-6029-00	Diode, Si 1N457		-				
I401	120-3067-01	IC, Multiplier MC1495		1				
I402	120-3022-00	IC, Dual Op Amp 1458		4				
I403	120-3022-00	IC, Dual Op Amp 1458		-				
I404	120-3022-00	IC, Dual Op Amp 1458		-				
I405	120-3022-00	IC, Dual Op Amp 1458		-				
Q401	007-0246-01	Transistor, Darl SPS6830		7				
Q402	007-0246-01	Transistor, Darl SPS6830		-				
Q403	007-0246-01	Transistor, Darl SPS6830		-				
Q404	007-0246-01	Transistor, Darl SPS6830		-				
Q405	007-0246-01	Transistor, Darl SPS6830		-				
Q406	007-0246-01	Transistor, Darl SPS6830		-				
Q407	007-0246-01	Transistor, Darl SPS6830		-				
R401	136-1001-72	Resistor, FF 1KQW 1%		1				
R402	136-4531-72	Resistor, FF 4.53KQW 1%		2				
R403	136-4531-72	Resistor, FF 4.53KQW 1%		-				
R404	130-0105-23	Resistor, FC 1Meg QW 5%		1				
R405	136-1002-72	Resistor, FF 10KQW 1%		7				
R406	136-4022-72	Resistor, FF 40.2QW 1%		3				
R407	136-8061-72	Resistor, FC 8.06KQW 1%		1				
R408	130-0202-23	Resistor, FC 2KQW 5%		1				
R409	130-0513-23	Resistor, FC 51KQW 5%		6				
R410	130-0104-23	Resistor, FC 100K QW 5%		4				
R411	130-0124-23	Resistor, FC 120K QW 5%		2				
R412	130-0563-23	Resistor, FC 56K QW 5%		1				
R413	130-0104-23	Resistor, FC 100K QW 5%		-				
R414	130-0513-23	Resistor, FC 51KQW 5%		-				
R415	130-0103-23	Resistor, FC 10KQW 5%		7				
R416	130-0103-23	Resistor, FC 10KQW 5%		-				
R417	133-0096-61	Resistor, Var. 100K		2				

NAME A4 PC BOARD ASSY	ASS'Y. NO. 200-5886-00
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KING RADIO CORP. PARTS LISTING	CODE	QUANTITY				
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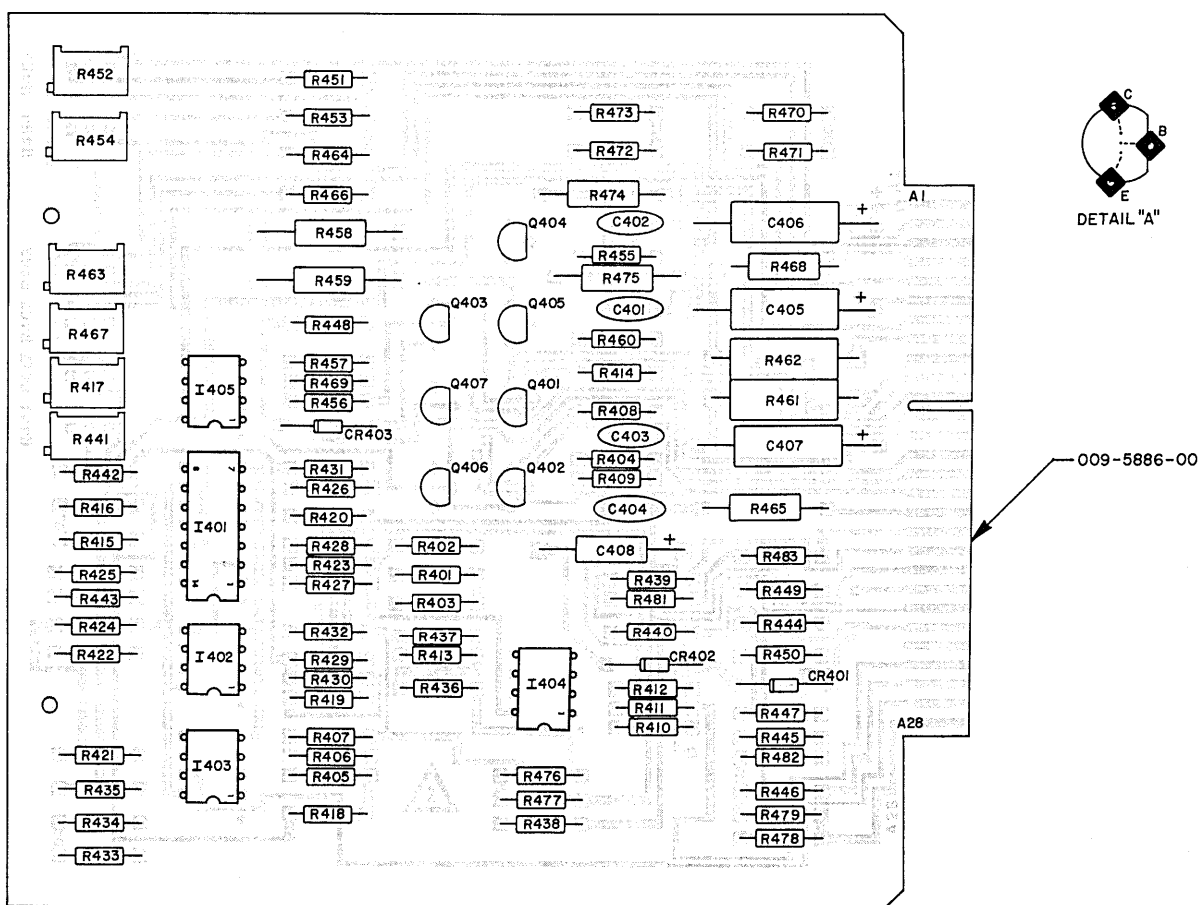
SYMBOL	PART NUMBER	DESCRIPTION	-00	-01	-02	-03	-04
R463	133-0096-57	Resistor, Var. 10K	-				
R464	136-7152-72	Resistor, FF 71.5KQW 1%	1				
R465	132-0105-87	Resistor, WW 1K 1.5W 5%	3				
R466	136-1273-72	Resistor, FF 127KQW 1%	1				
R467	133-0096-57	Resistor, Var. 10K	-				
R468	130-0821-33	Resistor, FC 820 HW 5%	1				
R469	130-0103-23	Resistor, FC 10KQW 5%	-				
R470	136-2802-72	Resistor, FF 28KQW 1%	4				
R471	136-2802-72	Resistor, FF 28KQW 1%	-				
R472	136-2802-72	Resistor, FF 28KQW 1%	-				
R473	136-2802-72	Resistor, FF 28KQW 1%	-				
R474	132-0105-87	Resistor, WW 1K 1½W 5%	-				
R475	132-0105-87	Resistor, WW 1K 1½W 5%	-				
R476	136-1582-72	Resistor, FF 15.8 KQW 1%	2				
R477	136-1021-72	Resistor, FF 1.02KQW 1%	2				
R478	136-1582-72	Resistor, FF 15.8K QW 1%	-				
R479	136-1021-72	Resistor, FF 1.02KQW 1%	-				
R481	136-1540-72	Res FF 154 Ohm QW 1%	-				
R482	136-1000-72	Resistor, FF 100 ohm QW 1%	-				
R483	136-1000-72	Resistor, FF 100 ohm QW 1%	-				

	SHT ____ OF ____	Page 5-57
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KTS 151

FLIGHT CONTROL SYSTEM TEST SET



NOTES:

I. TRANSISTORS Q401, Q402, Q403, Q404, Q405, Q406, AND Q407, SEE DETAIL "A".

FIGURE 5-13 A4 P/C BOARD ASSEMBLY
(Dwg. No. 300-5886-00, Rev. 0)

NAME PC Board Extender	ASS'Y. NO. 200-5909-00
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KING RADIO CORP. PARTS LISTING			CODE	QUANTITY				
SYMBOL	PART NUMBER	DESCRIPTION		-00	-01	-02	-03	-04

SYMBOL	PART NUMBER	DESCRIPTION	CODE	-00	-01	-02	-03	-04
	200-5909-00	PC Board Extender	X					
	009-5909-00	Extender Board	1					
	030-2301-00	Connector	1					
	089-2140-00	Nut-Hex, Miniature	2					
	089-5903-09	Screw PHP #4-40	2					

	SHT ____ OF ____	Page 5-61
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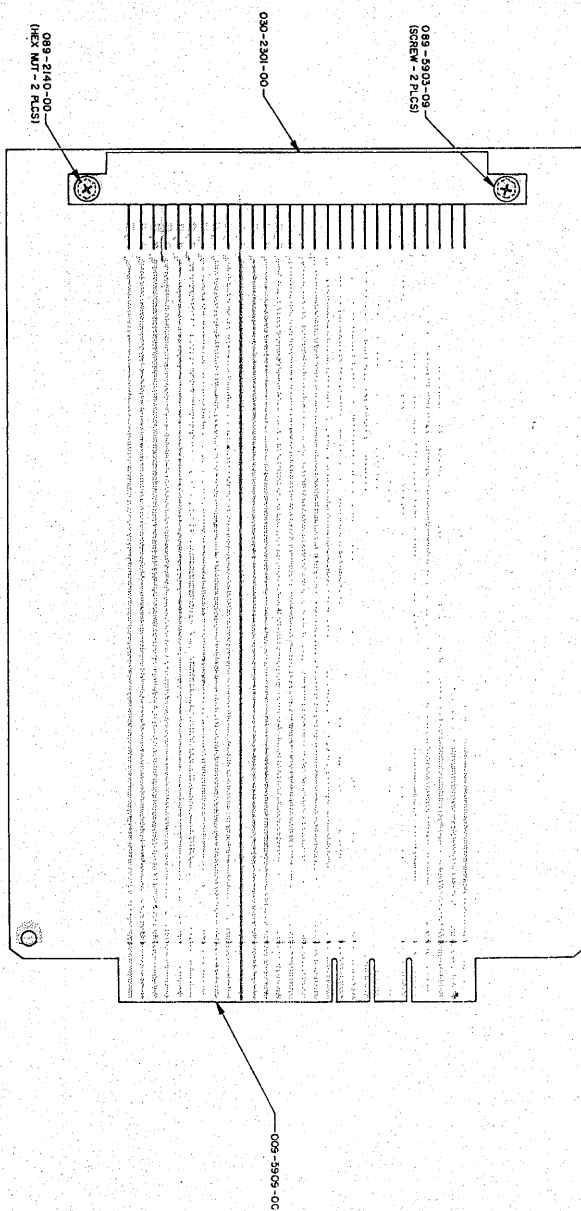


FIGURE 5-14 P/C BOARD EXTENDER
(DWG. NO. 300-5909-00, REV. 0)

NAME		ASS'Y. NO.							
Chassis Assembly		200-2141-00							
KING RADIO CORP. PARTS LISTING				CODE	QUANTITY				
SYMBOL	PART NUMBER	DESCRIPTION	-00		-01	-02	-03	-04	
	200-2141-00	Chassis Assy		X					
	047-4011-02	Support Cable Comp (Lft)	F	1					
	047-4023-02	Brkt P/C Bd. Mtg	AF	1					
	047-4029-01	Cabinet Dulexe Rack	M	1					
	047-4049-02	Support Cable Comp (Rt)	AF	1					
	047-4232-02	Divider Cable Comp	F	4					
	047-4233-01	Panel Cable Comp (Bottom)	F	1					
	047-4048-02	Base, Cable Chassis		1					
	089-5907-06	Screw PHP #6-32x3/8		4					
	089-5909-06	Screw PHP #8-32x3/8		25					
	089-8027-30	Washer Flat #6 Std.		4					
	089-8028-30	Washer Flat #8 Std.		25					

SHT ____ OF ____

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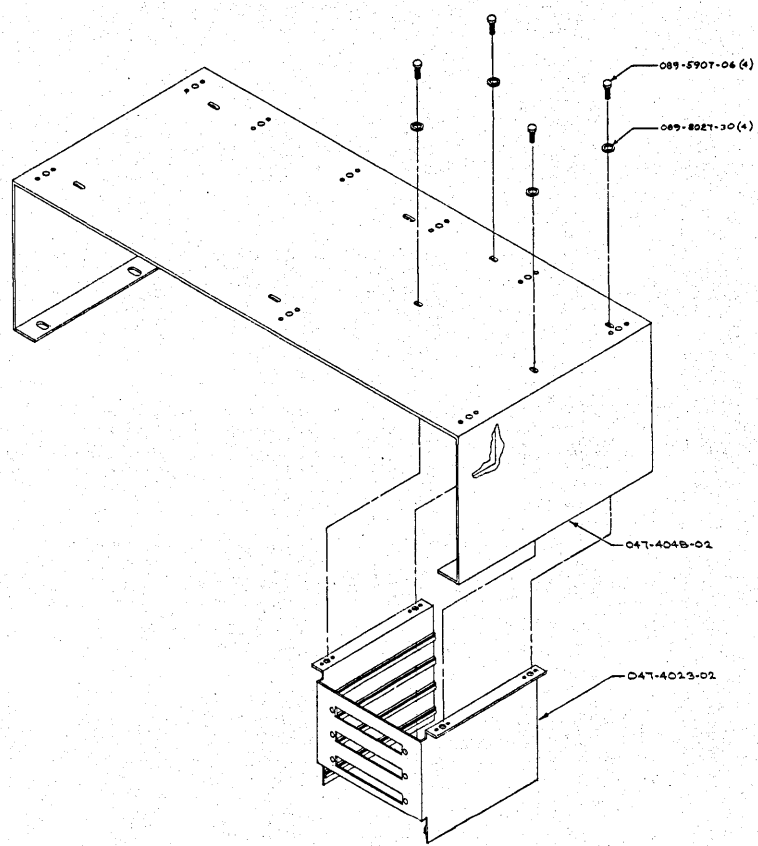


FIGURE 5-15 CHASSIS ASSEMBLY (SHT 1)
(Dwg. No. 300-2141-00, Rev. 1)

- NOTES:
1. ASSEMBLY SEQUENCE SHOULD BE AS FOLLOWS:
 - STEP NO. 1 - MOUNT P.C. BOARD MOUNTING BRACKET (047-4023-02) ON CABLE COMPARTMENT BASE (047-4048-02) USING SCREWS (089-5907-06) AND WASHERS (089-8027-30) AS SHOWN ABOVE.
 - STEP NO. 2 - MOUNT CABLE COMPARTMENT BASE (047-4048-02) IN BELLEVUE BACK CABINET (047-4023-01) USING SCREWS (089-5909-06) AND WASHERS (089-8028-30) AS SHOWN ON SHEET 2.
 - STEP NO. 3 - MOUNT LEFT CABLE COMPARTMENT SUPPORT (047-4041-02) AND RIGHT CABLE COMPARTMENT SUPPORT (047-4042-02) ON TO CABLE COMPARTMENT BASE (047-4048-02) USING SCREWS (089-5909-06) AND WASHERS (089-8028-30) AS SHOWN ON SHEET 2.
 - STEP NO. 4 - MOUNT CABLE COMPARTMENT DIVIDER (047-4232-02) 4 PLACES ON CABLE COMPARTMENT BASE (047-4048-02) USING SCREW (089-5909-06) AND WASHER (089-8028-30) AS SHOWN ON SHEET 2.
 - STEP NO. 5 - MOUNT BOTTOM CABLE COMPARTMENT PANEL (047-4233-01) ON TO CABLE COMPARTMENT SUPPORTS AND DIVIDERS USING SCREWS (089-5909-06) AND WASHERS (089-8028-30) AS SHOWN ON SHEET 2.

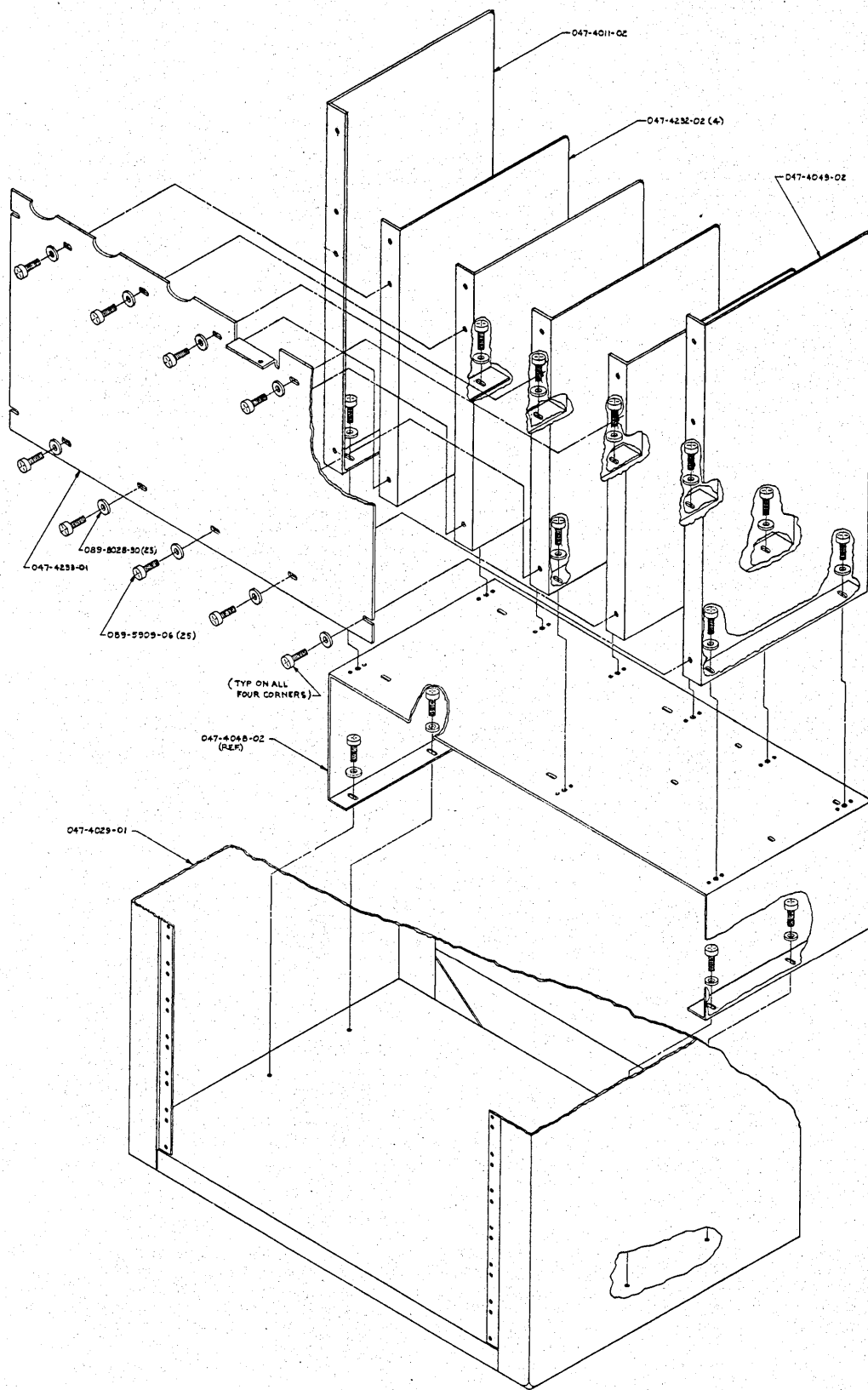


FIGURE 5-16 CHASSIS ASSEMBLY (SHEET 2)
(DWG. NO. 300-2141-00, REV. 1)

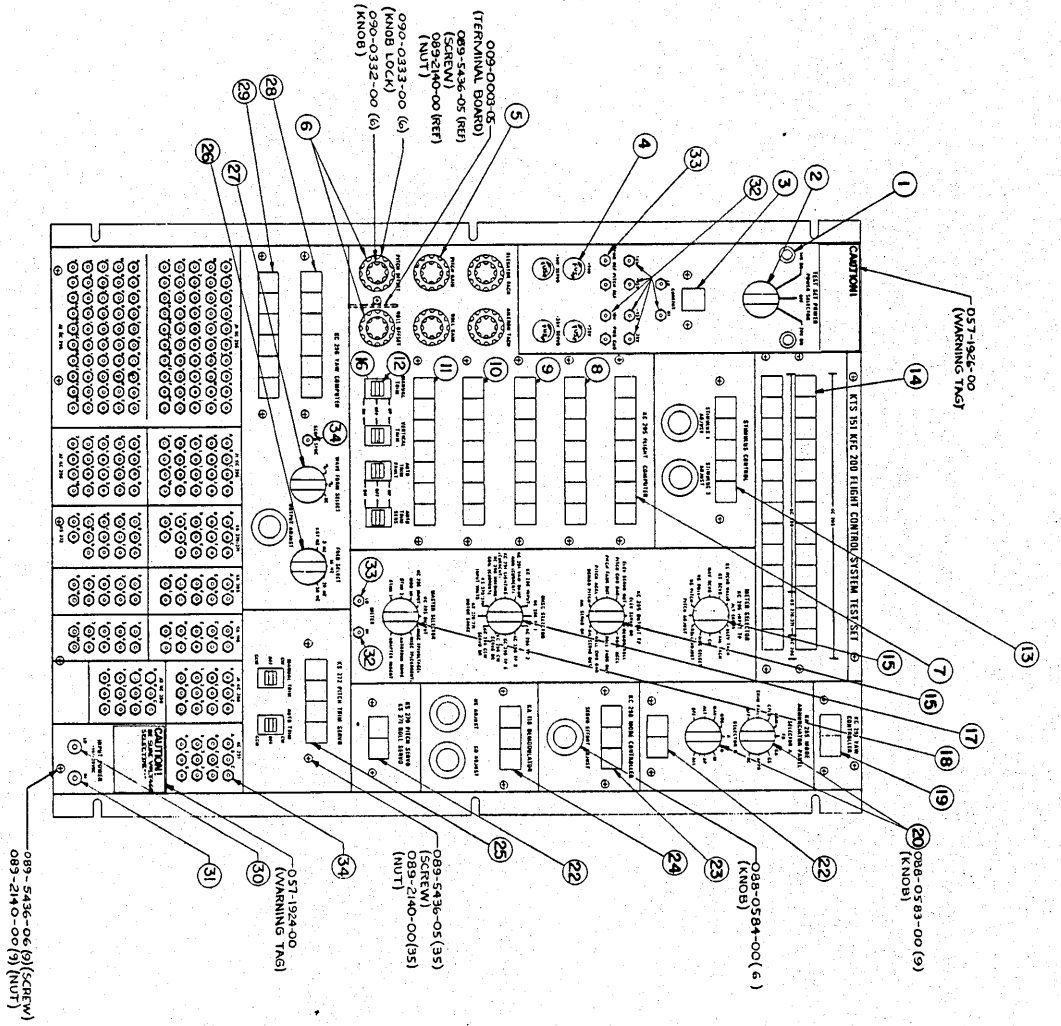
NAME		ASS'Y. NO.						
Test Panel Assy		200-2133-00						
KING RADIO CORP. PARTS LISTING			CODE	QUANTITY				
SYMBOL	PART NUMBER	DESCRIPTION		-00	-01	-02	-03	-04
	200-2133-00	Test Panel Assy		X				
	009-0003-05	Terminal Board		1				
TJ621	010-0055-00	Jack Banana Blk		1				
TJ620	010-0055-01	Jack Banana Red		1				
TJ608	010-0056-01	Jack Test Red		-				
TJ609	010-0056-01	Jack Test Red		-				
TJ610	010-0056-01	Jack Test Red		-				
TJ611	010-0056-01	Jack Test Red		-				
TJ615	010-0056-01	Jack Test Red		-				
TJ616	010-0056-01	Jack Test Red		-				
TJ618	010-0056-01	Jack Test Red		7				
TJ612	010-0056-02	Jack Test Blk		5				
TJ613	010-0056-02	Jack Test Blk		-				
TJ614	010-0056-02	Jack Test Blk		-				
TJ617	010-0056-02	Jack Test Blk		-				
TJ619	010-0056-02	Jack Test Blk		-				
	010-0056-04	Jack Test Blu		245				
S684A,B	031-0280-00	Switch Rotary 2P 12 Pos		2				
S676A,B	031-0280-00	Switch Rotary 2P 12 Pos		-				
S657A-F	031-0331-00	Switch Rotary 1P 12 Pos		1				
S614A,B	031-0332-00	Switch Rotary 1P 9 Pos		1				
S629A	031-0333-00	Switch Rotary 2P 6 Pos		1				
S691A	031-0334-00	Switch Rotary 2P 6 Pos		1				
S665A	031-0335-00	Switch Rotary 1P 9 Pos		2				
S666A	031-0335-00	Switch Rotary 1P 9 Pos		-				
S610	031-0337-00	Switch Bat Handle		6				
S619	031-0337-00	Switch Bat Handle		-				
S624	031-0337-00	Switch Bat Handle		-				
S625	031-0337-00	Switch Bat Handle		-				
	031-0337-01	Bezel Bat Handle Switch		6				
	031-0337-02	Paddle, Switch		6				
DS653	031-0338-00	Switch Pushbutton		1				
DS664	031-0338-01	Switch Pushbutton		2				
DS668	031-0338-01	Switch Pushbutton		-				
DS659	031-0338-01	Switch Pushbutton		-				
DS655	031-0338-01	Switch Pushbutton		-				

SHT ____ OF ____

NAME		ASS'Y. NO.						
Test Panel Assy		200-2133-00						
KING RADIO CORP. PARTS LISTING			CODE	QUANTITY				
SYMBOL	PART NUMBER	DESCRIPTION		-00	-01	-02	-03	-04
DS502	031-0338-11	Switch Pushbutton		1				
DS608	031-0338-11	Switch Pushbutton		-				
DS609	031-0338-11	Switch Pushbutton		-				
DS615	031-0338-11	Switch Pushbutton		-				
DS616	031-0338-11	Switch Pushbutton		-				
DS620	031-0338-11	Switch Pushbutton		-				
DS680	031-0338-11	Switch Pushbutton		-				
DS623	031-0338-12	Switch Pushbutton		1				
DS670	031-0338-12	Switch Pushbutton		-				
DS671	031-0338-12	Switch Pushbutton		-				
DS672	031-0338-12	Switch Pushbutton		-				
DS673	031-0338-12	Switch Pushbutton		-				
DS674	031-0338-12	Switch Pushbutton		-				
DS675	031-0338-12	Switch Pushbutton		-				
DS677	031-0338-13	Switch Pushbutton		1				
DS678	031-0338-13	Switch Pushbutton		-				
DS679	031-0338-13	Switch Pushbutton		-				
DS681	031-0338-13	Switch Pushbutton		-				
DS682	031-0338-13	Switch Pushbutton		-				
DS683	031-0338-13	Switch Pushbutton		-				
DS685	031-0338-13	Switch Pushbutton		-				
DS1601-	031-0338-14	Switch Pushbutton		2				
DS1603				-				
DS1605-	031-0338-14	Switch Pushbutton		-				
DS1623				-				
DS1625	031-0338-14	Switch Pushbutton		-				
DS1628-	031-0338-14	Switch Pushbutton		-				
DS1630				-				
S651A-H	031-0339-00	Switch Rotary Power		1				
	033-0028-00	Holder Fuse		4				
F601	036-0017-00	Fuse 6 Amp		2				
F502	036-0017-00	Fuse 6 Amp		-				
F603	036-0022-00	Fuse 8 Amp		2				
F604	036-0022-00	Fuse 8 Amp		-				
	037-0007-01	Lamp		2				
DS1626	037-0046-00	Light Indicator		2				
DS1627	037-0046-00	Light Indicator		-				
	047-4005-04	Panel Test		1				
	047-4013-02	Bracket Switch Mounting		34				
	047-4451-01	Panel Stiffener (Upper)		1				
	047-4452-01	Panel Stiffener (Lower)		1				

SHT ____ OF ____

PARTS LIST REVISION HISTORY				ENGR. APPROVAL	
NAME Test Panel Assy			ASS'Y. NO. 200-2133-00		
ASS'Y. DWG. 300-2133-00		UNIT KTS 151		USED ON 200-2132-00	
REV	CHANGE	SYMBOL	PART NUMBER	DESCRIPTION	
1					
				KTS 151 Maintenance Manual Rev. 0, April, 1977	
2 3			031-0337-02 089-2088-22 089-5899-03 089-8035-30	Added to B/M P/N changed from 089-2140-00 P/N changed from 089-5899-04 Added to B/M	
			SHT ____ OF ____	Page 5-75	



SYMBOL	PART NUMBER	QUANTITY
1	057-1924-00	2
2	031-0043-00	1
3	031-0338-00	1
4	033-0028-00	4
5	133-0112-09	4
6	133-0112-06	8
7	031-0338-09	1
8	031-0338-10	1
9	031-0338-11	1
10	031-0338-12	1
11	031-0338-13	6
12	031-0337-00	1
13	031-0338-06	2
14	031-0338-14	2
15	031-0280-00	2
16	031-0231-01	2
17	031-0338-00	1
18	031-0338-05	1
19	031-0338-06	1
20	031-0338-00	2
22	031-0338-01	2
23	031-0338-03	1
24	031-0338-04	1
25	031-0338-05	1
26	031-0334-00	1
27	031-0333-00	1
28	031-0338-07	1
29	031-0338-08	1
30	010-0055-00	1
31	010-0055-01	1
32	010-0056-01	5
33	010-0056-02	5
34	010-0056-04	245

- NOTES:
1. ALL ASSEMBLY DETAILS ARE SHOWN ON 300-2133-00 SHEET 2 AND 3.
 2. ALL HARDWARE NOT CALLED OUT WITH PART NUMBER IN ASSEMBLY DETAILS IS SUPPLIED WITH COMPONENT BEING MOUNTED.
 3. WHEN MOUNTING PUSH BUTTON SWITCHES 031-0338-XX, CENTER PUSH BUTTON VERTICALLY IN PANEL CUTOUT BEFORE SECURING MOUNTING SCREWS.

FIGURE 5-17 TEST PANEL ASSEMBLY (SHT 1)
(Dwg. No. 300-2133-00, Rev. 2)

KING
KTS 151
FLIGHT CONTROL SYSTEM TEST SET

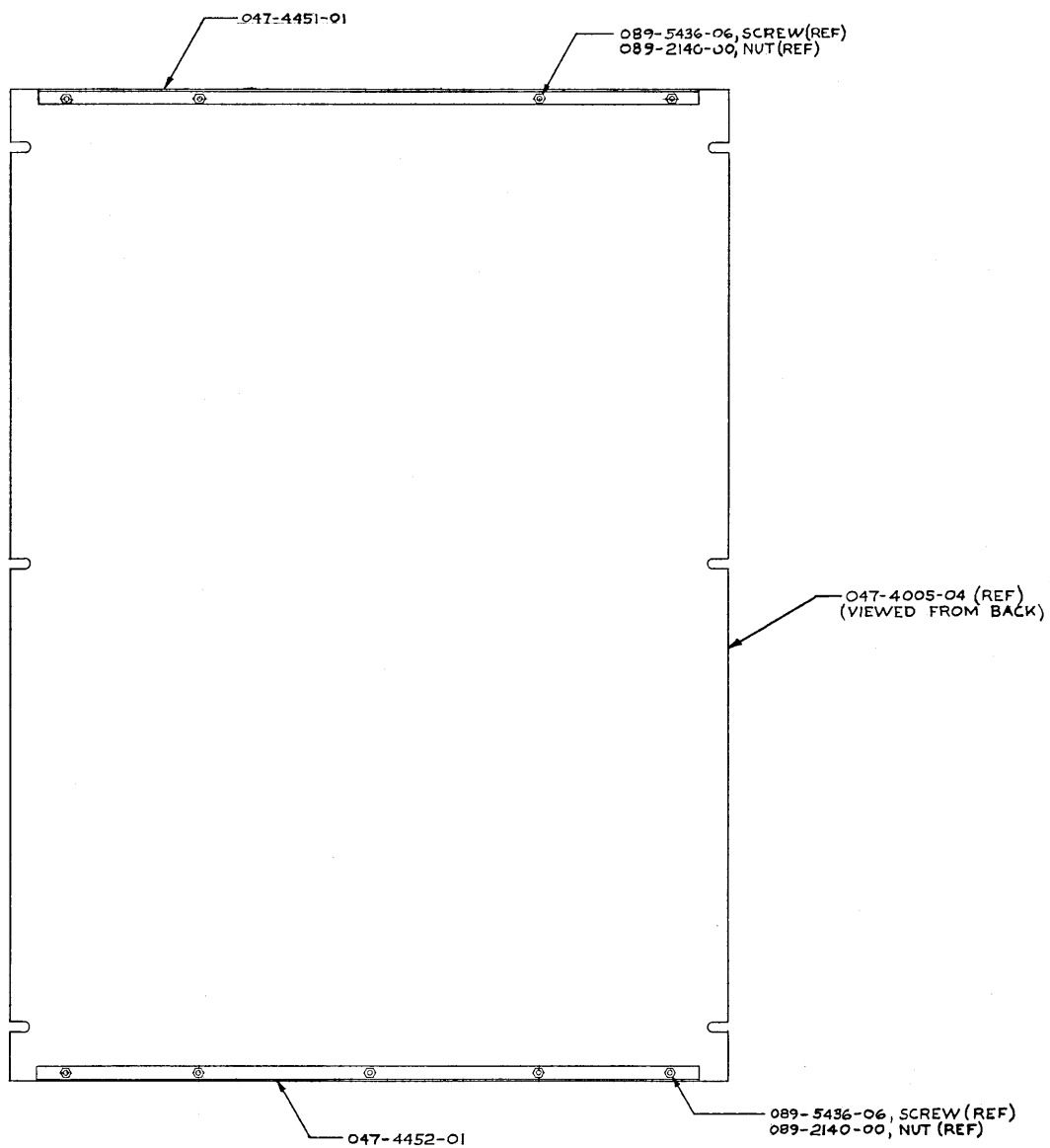


FIGURE 5-19 TEST PANEL ASSEMBLY (SHT 3)
(Dwg. No. 300-2133-00, Rev. 2)

NAME			ASS'Y. NO.						
Cable Assembly			200-2134-00						
KING RADIO CORP. PARTS LISTING				CODE	QUANTITY				
SYMBOL	PART NUMBER	DESCRIPTION			-00	-01	-02	-03	-04
	200-2134-00	Cable Assy KC 295			X				
	025-0004-01	Wire 20 AWG	Brn		8.5				
	025-0004-10	Wire 20 AWG	Blk/Wht		8.5				
	025-0004-11	Wire 20 AWG	Brn/Wht		8.5				
	025-0004-14	Wire 20 AWG	Yel/Wht		8.5				
	025-0004-15	Wire 20 AWG	Grn/Wht		8.5				
	025-0005-03	Wire 18 AWG	Orn		8.5				
	025-0005-04	Wire 18 AWG	Yel		8.5				
	025-0005-05	Wire 18 AWG	Grn		8.5				
	025-0005-06	Wire 18 AWG	Blu		8.5				
	025-0005-07	Wire 18 AWG	Pur		8.5				
	025-0005-12	Wire 18 AWG	Red/Wht		8.5				
	025-0005-13	Wire 18 AWG	Orn/Wht		8.5				
	025-0024-08	Wire 22 AWG	Gry		8.5				
	025-0024-09	Wire 22 AWG	Wht		8.5				
	025-0024-16	Wire 22 AWG	Blu/Wht		8.5				
	025-0024-38	Wire 22 AWG	Wht/Gry		8.5				
	025-0024-41	Wire 22 AWG	Yel/Orn		8.5				
	025-0024-74	Wire 22 AWG	Red/Pur		8.5				
	025-0029-01	Wire 24 AWG	Brn		8.5				
	025-0029-03	Wire 24 AWG	Orn		8.5				
	025-0029-05	Wire 24 AWG	Grn		8.5				
	025-0029-06	Wire 24 AWG	Blu		8.5				
	025-0029-07	Wire 24 AWG	Pur		8.5				
	025-0029-10	Wire 24 AWG	Blk/Wht		8.5				
	025-0029-11	Wire 24 AWG	Brn/Wht		8.5				
	025-0029-12	Wire 24 AWG	Red/Wht		8.5				
	025-0029-13	Wire 24 AWG	Orn/Wht		8.5				
	025-0029-14	Wire 24 AWG	Yel/Wht		8.5				
	025-0029-15	Wire 24 AWG	Grn/Wht		8.5				
	025-0029-17	Wire 24 AWG	Pur/Wht		8.5				
	025-0029-18	Wire 24 AWG	Gry/Wht		8.5				
	025-0029-19	Wire 24 AWG	Pink		8.5				
	025-0029-20	Wire 24 AWG	Brn/Yel		8.5				
	025-0029-21	Wire 24 AWG	Red/Yel		8.5				
	025-0029-22	Wire 24 AWG	Grn/Yel		8.5				
	025-0029-23	Wire 24 AWG	Blu/Yel		8.5				
	025-0029-24	Wire 24 AWG	Pur/Yel		8.5				

SHT ____ OF ____

NAME Cable Assembly	ASS'Y. NO. 200-2134-00
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KING RADIO CORP. PARTS LISTING			CODE	QUANTITY				
SYMBOL	PART NUMBER	DESCRIPTION		-00	-01	-02	-03	-04
	030-1074-00	Conn Body Female	1					
	030-1076-00	Conn Body Female	1					
	030-1077-00	Contact FS120N	42					
	030-1078-00	Conn Body Male	1					
	030-1079-00	Contact MS120N	50					
	030-1082-00	Contact FS116N	8					
	057-1925-07	ID Tag	1					
	057-1925-08	ID Tag	1					
	057-1765-00	Caution Tag	4					
	090-0340-00	Bead Chain	.4					
	090-0341-00	Bead Chain Coupling	2					
	150-0025-10	Shrink Tubing 8 AWG	AR					
	150-0034-10	Shrink Tubing 3/4 & 7/8	AR					
	150-0098-25	Insulating Tubing 1/2 ID	3.08					
	150-0098-29	Insul Tubing I.O. ID	4.5					

	SHT ____ OF ____	Page 5-87
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NAME		ASS'Y. NO.							
Cable Assembly		200-2135-00							
KING RADIO CORP. PARTS LISTING				CODE	QUANTITY				
SYMBOL	PART NUMBER	DESCRIPTION			-00	-01	-02	-03	-04
	200-2135-00	Cable Assy KC 296			X				
	016-1018-00	Adhesive Eastman 910			AR				
	025-0005-00	Wire 18 Ga	Blk		8.5				
	025-0005-04	Wire 18 Ga	Yel		8.5				
	025-0005-06	Wire 18 Ga	Blu		8.5				
	025-0024-24	Wire 22 Ga	Red/Vio		8.5				
	025-0024-41	Wire 22 Ga	Yel/Orn		8.5				
	025-0029-05	Wire 24 Ga	Grn		8.5				
	025-0029-08	Wire 24 Ga	Gry		8.5				
	025-0029-10	Wire 24 Ga	Blk/Wht		8.5				
	025-0029-11	Wire 24 Ga	Brn/Wht		8.5				
	025-0029-12	Wire 24 Ga	Red/Wht		8.5				
	025-0029-15	Wire 24 Ga	Grn/Wht		8.5				
	025-0029-16	Wire 24 Ga	Blu/Wht		8.5				
	025-0029-17	Wire 24 Ga	Pur/Wht		8.5				
	025-0029-19	Wire 24 Ga	Pink		8.5				
	025-0029-20	Wire 24 Ga	Brn/Yel		8.5				
	025-0029-22	Wire 24 Ga	Grn/Yel		8.5				
	025-0029-23	Wire 24 Ga	Blu/Yel		8.5				
	025-0029-26	Wire 24 Ga	Orn/Blk		8.5				
	025-0029-28	Wire 24 Ga	Red/Blk		8.5				
	025-0029-30	Wire 24 Ga	Wht/Blk		8.5				
	025-0029-31	Wire 24 Ga	Wht/Brn		8.5				
	025-0029-32	Wire 24 Ga	Wht/Red		8.5				
	025-0029-34	Wire 24 Ga	Wht/Yel		8.5				
	025-0029-36	Wire 24 Ga	Wht/Blu		8.5				
	025-0029-39	Wire 24 Ga	Yel/Red		8.5				
	025-0029-40	Wire 24 Ga	Yel/Grn		8.5				
	025-0029-42	Wire 24 Ga	Yel/Blu		8.5				
	025-0029-43	Wire 24 Ga	Yel/Brn		8.5				
	025-0029-45	Wire 24 Ga	Blk/Orn		8.5				
	025-0029-56	Wire 24 Ga	Orn/Grn		8.5				
	025-0029-60	Wire 24 Ga	Orn/Gry		8.5				
	025-0029-65	Wire 24 Ga	Grn/Red		8.5				
	025-0029-66	Wire 24 Ga	Grn/Blu		8.5				
	025-0029-68	Wire 24 Ga	Blu/Orn		8.5				
	025-0029-72	Wire 24 Ga	Red/Brn		8.5				
	025-0029-74	Wire 24 Ga	Red/Pur		8.5				

SHT ____ OF ____

PARTS LIST REVISION HISTORY				ENGR. APPROVAL	
NAME Cable Assembly KC 296			ASS'Y. NO. 200-2135-00		
ASS'Y. DWG. 300-2135-00		UNIT KTS 151		USED ON 200-2132-00	
REV	CHANGE	SYMBOL	PART NUMBER	DESCRIPTION	
1					
2					
				KTS 151 Maintenance Manual Rev. 0, April, 1977	
			SHT ____ OF ____		Page 5-93

NAME		ASS'Y. NO.						
Cable Assy KS 270/271 & KC 291		200-2136-00						
KING RADIO CORP. PARTS LISTING			CODE	QUANTITY				
SYMBOL	PART NUMBER	DESCRIPTION		-00	-01	-02	-03	-04
	200-2136-00	Cable Assy		X				
	016-1018-00	Adhesive Eastman 910		AR				
	025-0004-01	Wire 20 AWG Brn		8.0				
	025-0004-10	Wire 20 AWG Blk/Wht		8.0				
	025-0004-11	Wire 20 AWG Brn/Wht		8.0				
	025-0005-03	Wire 18 AWG Orn		8.0				
	025-0005-04	Wire 18 AWG Yel		8.0				
	025-0005-05	Wire 18 AWG Grn		8.0				
	025-0005-06	Wire 18 AWG Blu		8.0				
	025-0005-07	Wire 18 AWG Pur		8.0				
	025-0005-12	Wire 18 AWG Red/Wht		8.0				
	025-0029-13	Wire 24 AWG Orn/Wht		8.0				
	025-0029-14	Wire 24 AWG Yel/Wht		8.0				
	025-0029-15	Wire 24 AWG Grn/Wht		8.0				
	025-0029-17	Wire 24 AWG Pur/Wht		8.0				
	025-0029-18	Wire 24 AGW Gry/Wht		8.0				
	025-0029-19	Wire 24 AWG Pink		8.0				
	025-0029-20	Wire 24 AWG Brn/Yel		8.0				
	025-0029-21	Wire 24 AWG Red/Yel		8.0				
	025-0029-22	Wire 24 AWG Grn/Yel		8.0				
	025-0029-23	Wire 24 AWG Blu/Yel		8.0				
	025-0029-24	Wire 24 AWG Pur/Yel		8.0				
	025-0029-25	Wire 24 AWG Gry/Yel		8.0				
	025-0029-26	Wire 24 AWG Orn/Blk		8.0				
	025-0029-27	Wire 24 AWG Yel/Blk		8.0				
	025-0029-28	Wire 24 AWG Red/Blk		8.0				
	025-5012-00	Wire 2 Cond Shielded		8.5				
	030-0107-00	Connector 12 Pin		1				
	030-1008-00	Pivot & Lever Assy		2				
	030-1009-00	Hood Connector		1				
	030-2000-00	Conn 14 Pin		1				
	057-1925-03	ID Tag		1				
	057-1925-06	ID Tag		1				

SHT ____ OF ____

WIRE CHART

KS270/271 (J270/271)

FIN	WIRE PIN	COLOR	GA.	LENGTH
A	025-0001-00	WHT	24	8.0
B	025-0002-00	GRN/WHT	24	8.0
C	025-0003-00	GRN	18	8.0
D	025-0004-01	BRN	20	8.0
E	025-0005-01	WHT	18	8.0
F	025-0006-01	WHT	18	8.0
G	025-0007-01	GRN/WHT	24	8.0
H	025-0008-01	GRN/WHT	24	8.0
I	025-0009-01	GRN/WHT	24	8.0
J	025-0010-01	GRN/WHT	24	8.0
K	025-0011-01	GRN/WHT	24	8.0
L	025-0012-01	GRN/WHT	24	8.0
M	025-0013-01	GRN/WHT	24	8.0
N	025-0014-01	GRN/WHT	24	8.0
R	025-0028-20	BRN/WHT	24	7.0

(ALL WIRE LENGTHS ARE IN FEET)

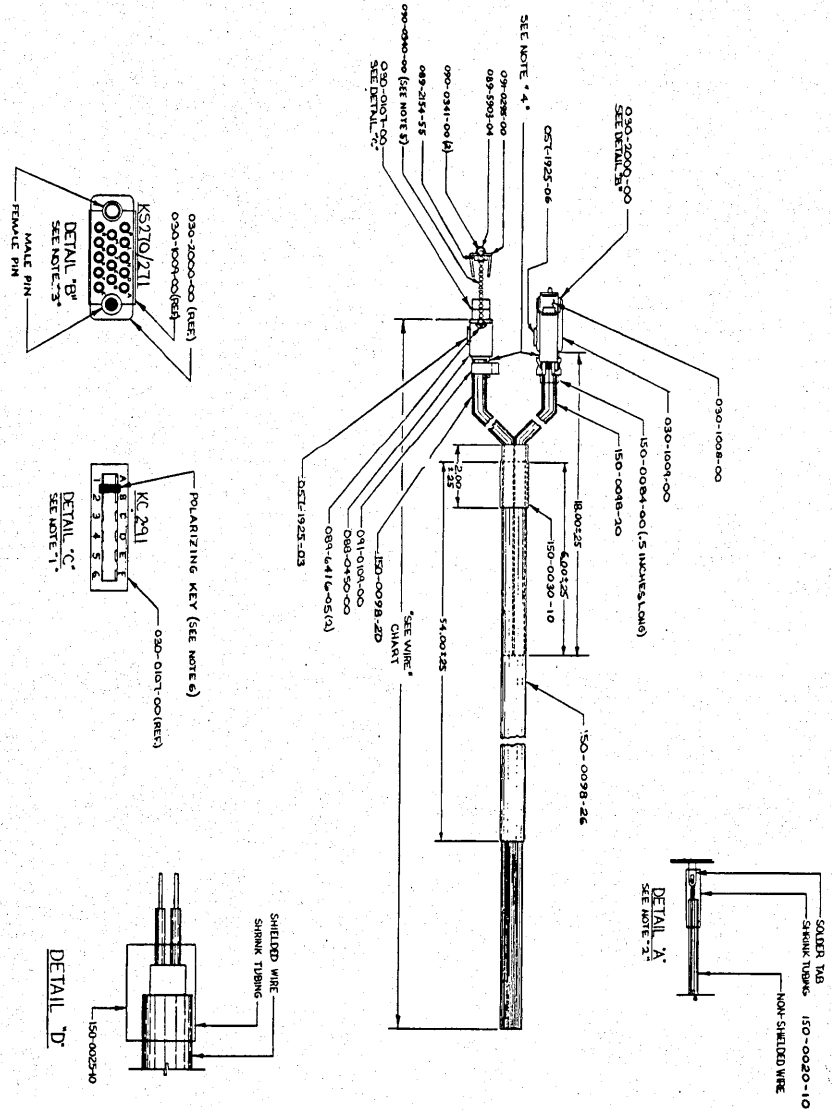
KC291 (J291)

FIN	WIRE PIN	COLOR	GA.	LENGTH
A	025-0029-21	RED/WHT	24	8.0
B	025-0030-21	RED/WHT	24	8.0
C	025-0031-21	RED/WHT	24	8.0
D	025-0032-21	RED/WHT	24	8.0
E	025-0033-21	RED/WHT	24	8.0
F	025-0034-21	RED/WHT	24	8.0
G	025-0035-21	RED/WHT	24	8.0
H	025-0036-21	RED/WHT	24	8.0
I	025-0037-21	RED/WHT	24	8.0
J	025-0038-21	RED/WHT	24	8.0
K	025-0039-21	RED/WHT	24	8.0
L	025-0040-21	RED/WHT	24	8.0
M	025-0041-21	RED/WHT	24	8.0
N	025-0042-21	RED/WHT	24	8.0
O	025-0043-21	RED/WHT	24	8.0
P	025-0044-21	RED/WHT	24	8.0
Q	025-0045-21	RED/WHT	24	8.0
R	025-0046-21	RED/WHT	24	8.0
S	025-0047-21	RED/WHT	24	8.0
T	025-0048-21	RED/WHT	24	8.0
U	025-0049-21	RED/WHT	24	8.0
V	025-0050-21	RED/WHT	24	8.0
W	025-0051-21	RED/WHT	24	8.0
X	025-0052-21	RED/WHT	24	8.0
Y	025-0053-21	RED/WHT	24	8.0
Z	025-0054-21	RED/WHT	24	8.0

(ALL WIRE LENGTHS ARE IN FEET)

- NOTES:
1. CRAMIT POLARIZING KEY ON KC291 CONNECTOR WITH 030-0107-00 (REF.) CALIBRATION; DO NOT GET ELEMENT ON CONNECTOR PINS (030-0107-00).
 2. APPLY THE PROPER SIZE SHINK TUBING TO ALL SOLDER CONNECTIONS ON KC291 CONNECTOR (030-0107-00).
 3. WITH RESPECT TO THE MALE AND FEMALE CONNECTED PROPERLY CUT CABLE SHEATHING FLUSH WITH CONNECTOR HOOD.
 4. THE LENGTH OF THE BEAD CHAIN (090-0340-00) IS 3.00 ± .25.
 5. CRAMIT POLARIZING KEY IS PROVIDED WITH THE CONNECTOR. EXTRA KEYS MAY BE ORDERED FROM ITEM 030-1086-00.

FIGURE 5-23 CABLE ASSEMBLY KS 270/271 AND KC 291
 (DWG. NO. 300-2136-00, Rev. 0)



NAME		ASS'Y. NO.						
Cable Assy KS 272/273 &KA 118		200-2139-00						
KING RADIO CORP. PARTS LISTING			CODE	QUANTITY				
SYMBOL	PART NUMBER	DESCRIPTION		-00	-01	-02	-03	-04
	200-2139-00	Cable Assy KS 272 & KA 118	X					
	016-1018-00	Adhesive Eastman 910	AR					
	025-0004-01	Wire 20 AWG Brn	8.5					
	025-0004-10	Wire 20 AWG Blk/Wht	8.5					
	025-0005-03	Wire 18 AWG Orn	8.5					
	025-0005-04	Wire 18 AWG Yel	8.5					
	025-0005-05	Wire 18 AWG Grn	8.5					
	025-0005-06	Wire 18 AWG Blu	8.5					
	025-0024-08	Wire 22 AWG Gry	8.5					
	025-0024-16	Wire 22 AWG Blu/Wht	8.5					
	025-0029-07	Wire 24 AWG Pur	8.5					
	025-0029-11	Wire 24 AWG Brn/Wht	8.5					
	025-0029-12	Wire 24 AWG Red/Wht	8.5					
	025-0029-13	Wire 24 AWG Orn/Wht	8.5					
	025-0029-14	Wire 24 AWG Yel/Wht	8.5					
	025-0029-15	Wire 24 AWG Grn/Wht	8.5					
	025-0029-17	Wire 24 AWG Pur/Wht	8.5					
	025-0029-18	Wire 24 AWG Gry/Wht	8.5					
	025-0029-19	Wire 24 AWG Pink	8.5					
	025-0029-20	Wire 24 AWG Brn/Yel	8.5					
	025-0029-21	Wire 24 AWG Red/Yel	8.5					
	025-0029-22	Wire 24 AWG Grn/Yel	8.5					
	025-0029-23	Wire 24 AWG Blu/Yel	8.5					
	025-0029-24	Wire 24 AWG Pur/Yel	8.5					
	025-0029-25	Wire 24 AWG Gry/Yel	8.5					
	025-0029-26	Wire 24 AWG Orn/Blk	8.5					
	025-0029-27	Wire 24 AWG Yel/Blk	8.5					
	025-0029-28	Wire 24 AWG Red/Blk	8.5					
	025-0029-29	Wire 24 AWG Pur/Orn	8.5					
	025-0029-30	Wire 24 AWG Wht/Blk	8.5					
	025-0029-31	Wire 24 AWG Wht/Brn	8.5					
	025-0029-32	Wire 24 AWG Wht/Red	8.5					

SHT ____ OF ____

WIRE CHART

KS 272 (J272)

WIRE NO.	WIRE PIN	CONTR.	GA.	LENGTH
A	025-0024-01	BRN/WHT	24	8.5
B	025-0024-11	BRN/WHT	24	8.5
C	025-0024-12	RED/WHT	24	8.5
D	025-0024-20B	GRN/WHT	24	8.5
E	025-0024-20	GRN/WHT	24	8.5
F	025-0024-13	ORN/WHT	24	8.5
G	025-0024-14	ORN/WHT	24	8.5
H	025-0024-04	YEL/WHT	18	8.5
I	025-0024-05	YEL/WHT	18	8.5
J	025-0024-15	GRN/WHT	24	8.5
K	025-0024-06	BLU/WHT	18	8.5
L	025-0024-16	BLU/WHT	20	8.5
M	025-0024-10	BLU/WHT	20	8.5
N	025-0024-07	BLU/WHT	20	8.5

(ALL WIRE LENGTHS ARE IN FEET)

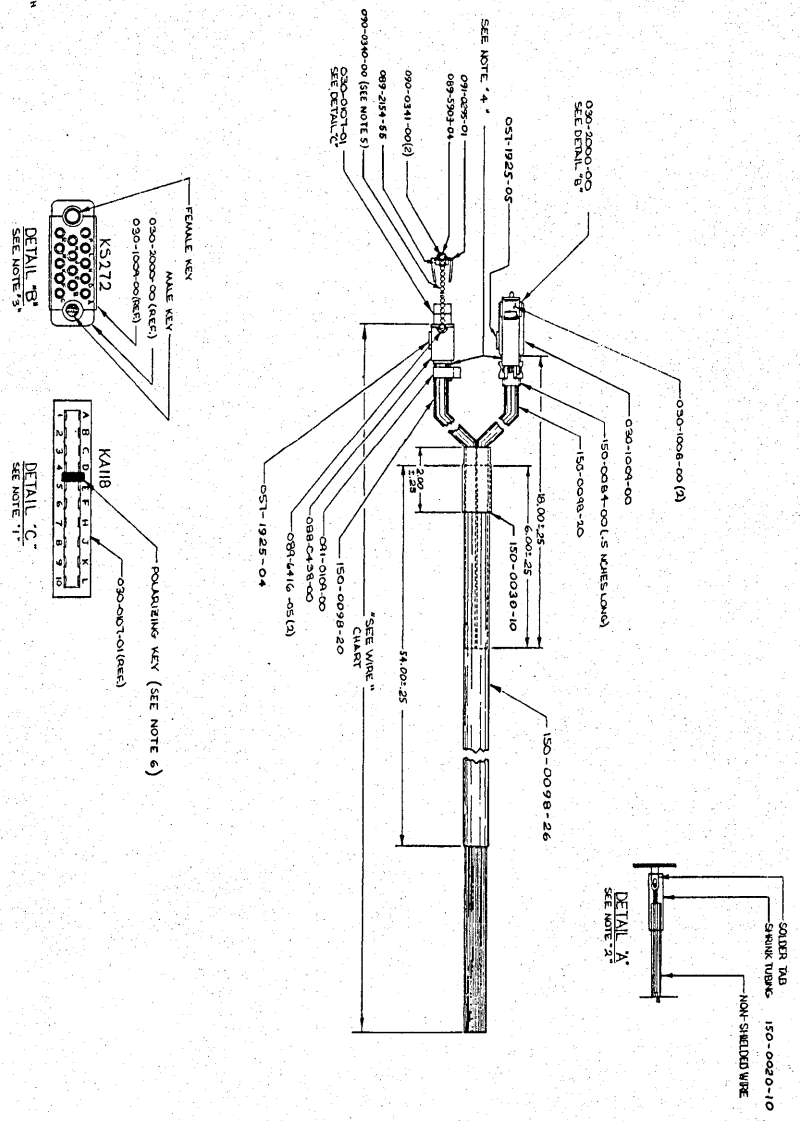
KA18 (J118)

WIRE NO.	WIRE PIN	CONTR.	GA.	LENGTH
A	025-0024-11	BRN/WHT	24	8.5
B	025-0024-12	RED/WHT	24	8.5
C	025-0024-13	ORN/WHT	24	8.5
D	025-0024-20	GRN/WHT	24	8.5
E	025-0024-21	GRN/WHT	24	8.5
F	025-0024-22	GRN/WHT	24	8.5
G	025-0024-23	GRN/WHT	24	8.5
H	025-0024-24	GRN/WHT	24	8.5
I	025-0024-25	GRN/WHT	24	8.5
J	025-0024-26	GRN/WHT	24	8.5
K	025-0024-27	GRN/WHT	24	8.5
L	025-0024-28	GRN/WHT	24	8.5
M	025-0024-29	GRN/WHT	24	8.5
N	025-0024-30	GRN/WHT	24	8.5
O	025-0024-31	GRN/WHT	24	8.5
P	025-0024-32	GRN/WHT	24	8.5
Q	025-0024-33	GRN/WHT	24	8.5
R	025-0024-34	GRN/WHT	24	8.5
S	025-0024-35	GRN/WHT	24	8.5
T	025-0024-36	GRN/WHT	24	8.5

(ALL WIRE LENGTHS ARE IN FEET)

- NOTES:
1. CEMENT POLARIZING KEY ON KA18 CONNECTOR WITH EASTWARD AND DOWNWARD CANTONIT DO NOT GET CEMENT ON CONNECTOR PIN.
 2. APPLY THE PROPER WIRE SPEAK TAPPING TO THE SOCKET OF THE CONNECTOR WITH THE CORRECT POLARIZING KEY WITH RESPECT TO ITS MALE AND FEMALE KEYS.
 3. BE SURE CONNECTOR (090-2000-00) IS ORIENTED PROPERLY WITH RESPECT TO ITS MALE AND FEMALE KEYS.
 4. CUT CABLE SHEATHING FLUSH WITH CONNECTOR WOOD.
 5. 3001-0514 OF THE BRAD CHAIN (090-0340-00) IS 3001-0514.
 6. CHIEF POLARIZING KEY IS PROVIDED WITH THE CONNECTOR. EXTRA KEYS MAY BE ORDERED FROM KPN 030-1100-00.

FIGURE 5-24 CABLE ASSEMBLY KS 272/273 AND KA 118 (Dwg. No. 300-2139-00, Rev. 0)



NAME		ASS'Y. NO.							
Cable Assy KA 285 & KC 290		200-2140-00							
KING RADIO CORP. PARTS LISTING				CODE	QUANTITY				
SYMBOL	PART NUMBER	DESCRIPTION			-00	-01	-02	-03	-04
	200-2140-00	Cable Assy KA 285 & KC 290		X					
	016-1018-00	Adhesive Eastman 910		AR					
	025-0004-10	Wire 20 AWG	Blk/Wht	8.0					
	025-0005-00	Wire 18 AWG	Blk	8.0					
	025-0005-01	Wire 18 AWG	Brn	8.0					
	025-0005-02	Wire 18 AWG	Red	8.0					
	025-0005-03	Wire 18 AWG	Orn	8.0					
	025-0005-04	Wire 18 AWG	Yel	8.0					
	025-0005-05	Wire 18 AWG	Grn	8.0					
	025-0005-06	Wire 18 AWG	Blu	8.0					
	025-0024-08	Wire 22 AWG	Gry	8.0					
	025-0024-14	Wire 22 AWG	Yel/Wht	8.0					
	025-0024-16	Wire 22 AWG	Blu/Wht	8.0					
	025-0024-37	Wire 22 AWG	Wht/Vio	8.0					
	025-0029-07	Wire 24 AWG	Pur	8.0					
	025-0029-11	Wire 24 AWG	Brn/Wht	8.0					
	025-0029-12	Wire 24 AWG	Red/Wht	8.0					
	025-0029-13	Wire 24 AWG	Orn/Wht	8.0					
	025-0029-15	Wire 24 AWG	Grn/Wht	8.0					
	025-0029-17	Wire 24 AWG	Pur/Wht	8.0					
	025-0029-18	Wire 24 AWG	Gry/Wht	8.0					
	025-0029-19	Wire 24 AWG	Pink	8.0					
	025-0029-20	Wire 24 AWG	Brn/Wht	8.0					
	025-0029-21	Wire 24 AWG	Red/Yel	8.0					
	025-0029-22	Wire 24 AWG	Grn/Yel	8.0					
	025-0029-23	Wire 24 AWG	Blu/Yel	8.0					
	025-0029-24	Wire 24 AWG	Pur/Yel	8.0					
	025-0029-25	Wire 24 AWG	Gry/Yel	8.0					
	025-0029-26	Wire 24 AWG	Orn/Blk	8.0					
	025-0029-27	Wire 24 AWG	Yel/Blk	8.0					
	025-0029-28	Wire 24 AWG	Red/Blk	8.0					
	025-0029-29	Wire 24 AWG	Pur/Orn	8.0					
	025-0029-30	Wire 24 AWG	Wht/Blk	8.0					
	025-0029-31	Wire 24 AWG	Wht/Brn	8.0					

SHT ____ OF ____

WIRE CHART

PIN NO	WIRE P/N	COLOR	GA.	LENGTH
1	025-0024-01	WHT	24	8.0
2	025-0024-02	BLK	18	8.0
3	025-0024-03	BLK	18	8.0
4	025-0024-04	BLU	18	8.0
5	025-0024-05	BRN	18	8.0
6	025-0024-06	RED	18	8.0
7	025-0024-07	GRN	18	8.0
8	025-0024-08	GRN	18	8.0
9	025-0024-09	GRN	18	8.0
10	025-0024-10	GRN	18	8.0
11	025-0024-11	GRN	18	8.0
12	025-0024-12	GRN	18	8.0
13	025-0024-13	GRN	18	8.0
14	025-0024-14	GRN	18	8.0
15	025-0024-15	GRN	18	8.0
16	025-0024-16	GRN	18	8.0
17	025-0024-17	GRN	18	8.0
18	025-0024-18	GRN	18	8.0
19	025-0024-19	GRN	18	8.0
20	025-0024-20	GRN	18	8.0
21	025-0024-21	GRN	18	8.0
22	025-0024-22	GRN	18	8.0
23	025-0024-23	GRN	18	8.0
24	025-0024-24	GRN	18	8.0
25	025-0024-25	GRN	18	8.0
26	025-0024-26	GRN	18	8.0
27	025-0024-27	GRN	18	8.0
28	025-0024-28	GRN	18	8.0
29	025-0024-29	GRN	18	8.0
30	025-0024-30	GRN	18	8.0

ALL WIRE LENGTHS ARE IN FEET

PIN NO	WIRE P/N	COLOR	GA.	LENGTH
1	025-0024-01	WHT	24	8.0
2	025-0024-02	BLK	18	8.0
3	025-0024-03	BLK	18	8.0
4	025-0024-04	BLU	18	8.0
5	025-0024-05	BRN	18	8.0
6	025-0024-06	RED	18	8.0
7	025-0024-07	GRN	18	8.0
8	025-0024-08	GRN	18	8.0
9	025-0024-09	GRN	18	8.0
10	025-0024-10	GRN	18	8.0
11	025-0024-11	GRN	18	8.0
12	025-0024-12	GRN	18	8.0
13	025-0024-13	GRN	18	8.0
14	025-0024-14	GRN	18	8.0
15	025-0024-15	GRN	18	8.0
16	025-0024-16	GRN	18	8.0
17	025-0024-17	GRN	18	8.0
18	025-0024-18	GRN	18	8.0
19	025-0024-19	GRN	18	8.0
20	025-0024-20	GRN	18	8.0
21	025-0024-21	GRN	18	8.0
22	025-0024-22	GRN	18	8.0
23	025-0024-23	GRN	18	8.0
24	025-0024-24	GRN	18	8.0
25	025-0024-25	GRN	18	8.0
26	025-0024-26	GRN	18	8.0
27	025-0024-27	GRN	18	8.0
28	025-0024-28	GRN	18	8.0
29	025-0024-29	GRN	18	8.0
30	025-0024-30	GRN	18	8.0

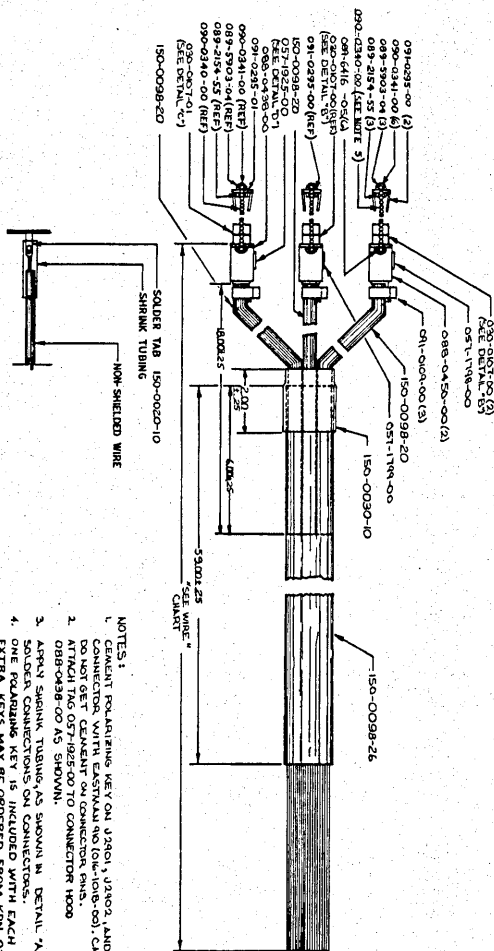
ALL WIRE LENGTHS ARE IN FEET

PIN NO	WIRE P/N	COLOR	GA.	LENGTH
1	025-0024-01	WHT	24	8.0
2	025-0024-02	BLK	18	8.0
3	025-0024-03	BLK	18	8.0
4	025-0024-04	BLU	18	8.0
5	025-0024-05	BRN	18	8.0
6	025-0024-06	RED	18	8.0
7	025-0024-07	GRN	18	8.0
8	025-0024-08	GRN	18	8.0
9	025-0024-09	GRN	18	8.0
10	025-0024-10	GRN	18	8.0
11	025-0024-11	GRN	18	8.0
12	025-0024-12	GRN	18	8.0
13	025-0024-13	GRN	18	8.0
14	025-0024-14	GRN	18	8.0
15	025-0024-15	GRN	18	8.0
16	025-0024-16	GRN	18	8.0
17	025-0024-17	GRN	18	8.0
18	025-0024-18	GRN	18	8.0
19	025-0024-19	GRN	18	8.0
20	025-0024-20	GRN	18	8.0
21	025-0024-21	GRN	18	8.0
22	025-0024-22	GRN	18	8.0
23	025-0024-23	GRN	18	8.0
24	025-0024-24	GRN	18	8.0
25	025-0024-25	GRN	18	8.0
26	025-0024-26	GRN	18	8.0
27	025-0024-27	GRN	18	8.0
28	025-0024-28	GRN	18	8.0
29	025-0024-29	GRN	18	8.0
30	025-0024-30	GRN	18	8.0

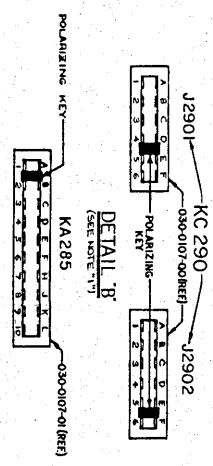
ALL WIRE LENGTHS ARE IN FEET

2285
 037-741-00
 DETAIL 'D'
 (SEE NOTE 72)

FIGURE 5-25 CABLE ASSEMBLY KA 285 AND KC 290 (Dwg. No. 300-2140-00, Rev. 0)



DETAIL 'A'
 (SEE NOTE 9)



DETAIL 'C'
 (SEE NOTE 17)

- NOTES:
1. GENTLY POLARIZING KEY ON J2901, J2902, AND KA 285 CONNECTOR WITH EXACTLY NO (0.10-0.20) CAUTION!!
 2. DO NOT GET CEMENT ON CONNECTOR PART.
 3. EXTRA SOLDER TUBING AS SHOWN IN DETAIL 'A', 'C', 'D', 'E', 'F', 'G', 'H', 'I', 'J', 'K', 'L', 'M', 'N', 'O', 'P', 'Q', 'R', 'S', 'T', 'U', 'V', 'W', 'X', 'Y', 'Z', 'AA', 'AB', 'AC', 'AD', 'AE', 'AF', 'AG', 'AH', 'AI', 'AJ', 'AK', 'AL', 'AM', 'AN', 'AO', 'AP', 'AQ', 'AR', 'AS', 'AT', 'AU', 'AV', 'AW', 'AX', 'AY', 'AZ', 'BA', 'BB', 'BC', 'BD', 'BE', 'BF', 'BG', 'BH', 'BI', 'BJ', 'BK', 'BL', 'BM', 'BN', 'BO', 'BP', 'BQ', 'BR', 'BS', 'BT', 'BU', 'BV', 'BW', 'BX', 'BY', 'BZ', 'CA', 'CB', 'CC', 'CD', 'CE', 'CF', 'CG', 'CH', 'CI', 'CJ', 'CK', 'CL', 'CM', 'CN', 'CO', 'CP', 'CQ', 'CR', 'CS', 'CT', 'CU', 'CV', 'CW', 'CX', 'CY', 'CZ', 'DA', 'DB', 'DC', 'DD', 'DE', 'DF', 'DG', 'DH', 'DI', 'DJ', 'DK', 'DL', 'DM', 'DN', 'DO', 'DP', 'DQ', 'DR', 'DS', 'DT', 'DU', 'DV', 'DW', 'DX', 'DY', 'DZ', 'EA', 'EB', 'EC', 'ED', 'EE', 'EF', 'EG', 'EH', 'EI', 'EJ', 'EK', 'EL', 'EM', 'EN', 'EO', 'EP', 'EQ', 'ER', 'ES', 'ET', 'EU', 'EV', 'EW', 'EX', 'EY', 'EZ', 'FA', 'FB', 'FC', 'FD', 'FE', 'FF', 'FG', 'FH', 'FI', 'FJ', 'FK', 'FL', 'FM', 'FN', 'FO', 'FP', 'FQ', 'FR', 'FS', 'FT', 'FU', 'FV', 'FW', 'FX', 'FY', 'FZ', 'GA', 'GB', 'GC', 'GD', 'GE', 'GF', 'GG', 'GH', 'GI', 'GJ', 'GK', 'GL', 'GM', 'GN', 'GO', 'GP', 'GQ', 'GR', 'GS', 'GT', 'GU', 'GV', 'GW', 'GX', 'GY', 'GZ', 'HA', 'HB', 'HC', 'HD', 'HE', 'HF', 'HG', 'HH', 'HI', 'HJ', 'HK', 'HL', 'HM', 'HN', 'HO', 'HP', 'HQ', 'HR', 'HS', 'HT', 'HU', 'HV', 'HW', 'HX', 'HY', 'HZ', 'IA', 'IB', 'IC', 'ID', 'IE', 'IF', 'IG', 'IH', 'II', 'IJ', 'IK', 'IL', 'IM', 'IN', 'IO', 'IP', 'IQ', 'IR', 'IS', 'IT', 'IU', 'IV', 'IW', 'IX', 'IY', 'IZ', 'JA', 'JB', 'JC', 'JD', 'JE', 'JF', 'JG', 'JH', 'JI', 'JJ', 'JK', 'JL', 'JM', 'JN', 'JO', 'JP', 'JQ', 'JR', 'JS', 'JT', 'JU', 'JV', 'JW', 'JX', 'JY', 'JZ', 'KA', 'KB', 'KC', 'KD', 'KE', 'KF', 'KG', 'KH', 'KI', 'KJ', 'KK', 'KL', 'KM', 'KN', 'KO', 'KP', 'KQ', 'KR', 'KS', 'KT', 'KU', 'KV', 'KW', 'KX', 'KY', 'KZ', 'LA', 'LB', 'LC', 'LD', 'LE', 'LF', 'LG', 'LH', 'LI', 'LJ', 'LK', 'LL', 'LM', 'LN', 'LO', 'LP', 'LQ', 'LR', 'LS', 'LT', 'LU', 'LV', 'LW', 'LX', 'LY', 'LZ', 'MA', 'MB', 'MC', 'MD', 'ME', 'MF', 'MG', 'MH', 'MI', 'MJ', 'MK', 'ML', 'MM', 'MN', 'MO', 'MP', 'MQ', 'MR', 'MS', 'MT', 'MU', 'MV', 'MW', 'MX', 'MY', 'MZ', 'NA', 'NB', 'NC', 'ND', 'NE', 'NF', 'NG', 'NH', 'NI', 'NJ', 'NK', 'NL', 'NM', 'NN', 'NO', 'NP', 'NQ', 'NR', 'NS', 'NT', 'NU', 'NV', 'NW', 'NX', 'NY', 'NZ', 'OA', 'OB', 'OC', 'OD', 'OE', 'OF', 'OG', 'OH', 'OI', 'OJ', 'OK', 'OL', 'OM', 'ON', 'OO', 'OP', 'OQ', 'OR', 'OS', 'OT', 'OU', 'OV', 'OW', 'OX', 'OY', 'OZ', 'PA', 'PB', 'PC', 'PD', 'PE', 'PF', 'PG', 'PH', 'PI', 'PJ', 'PK', 'PL', 'PM', 'PN', 'PO', 'PP', 'PQ', 'PR', 'PS', 'PT', 'PU', 'PV', 'PW', 'PX', 'PY', 'PZ', 'QA', 'QB', 'QC', 'QD', 'QE', 'QF', 'QG', 'QH', 'QI', 'QJ', 'QK', 'QL', 'QM', 'QN', 'QO', 'QP', 'QQ', 'QR', 'QS', 'QT', 'QU', 'QV', 'QW', 'QX', 'QY', 'QZ', 'RA', 'RB', 'RC', 'RD', 'RE', 'RF', 'RG', 'RH', 'RI', 'RJ', 'RK', 'RL', 'RM', 'RN', 'RO', 'RP', 'RQ', 'RR', 'RS', 'RT', 'RU', 'RV', 'RW', 'RX', 'RY', 'RZ', 'SA', 'SB', 'SC', 'SD', 'SE', 'SF', 'SG', 'SH', 'SI', 'SJ', 'SK', 'SL', 'SM', 'SN', 'SO', 'SP', 'SQ', 'SR', 'SS', 'ST', 'SU', 'SV', 'SW', 'SX', 'SY', 'SZ', 'TA', 'TB', 'TC', 'TD', 'TE', 'TF', 'TG', 'TH', 'TI', 'TJ', 'TK', 'TL', 'TM', 'TN', 'TO', 'TP', 'TQ', 'TR', 'TS', 'TT', 'TU', 'TV', 'TW', 'TX', 'TY', 'TZ', 'UA', 'UB', 'UC', 'UD', 'UE', 'UF', 'UG', 'UH', 'UI', 'UJ', 'UK', 'UL', 'UM', 'UN', 'UO', 'UP', 'UQ', 'UR', 'US', 'UT', 'UU', 'UV', 'UW', 'UX', 'UY', 'UZ', 'VA', 'VB', 'VC', 'VD', 'VE', 'VF', 'VG', 'VH', 'VI', 'VJ', 'VK', 'VL', 'VM', 'VN', 'VO', 'VP', 'VQ', 'VR', 'VS', 'VT', 'VU', 'VV', 'VW', 'VX', 'VY', 'VZ', 'WA', 'WB', 'WC', 'WD', 'WE', 'WF', 'WG', 'WH', 'WI', 'WJ', 'WK', 'WL', 'WM', 'WN', 'WO', 'WP', 'WQ', 'WR', 'WS', 'WT', 'WU', 'WV', 'WW', 'WX', 'WY', 'WZ', 'XA', 'XB', 'XC', 'XD', 'XE', 'XF', 'XG', 'XH', 'XI', 'XJ', 'XK', 'XL', 'XM', 'XN', 'XO', 'XP', 'XQ', 'XR', 'XS', 'XT', 'XU', 'XV', 'XW', 'XX', 'XY', 'XZ', 'YA', 'YB', 'YC', 'YD', 'YE', 'YF', 'YG', 'YH', 'YI', 'YJ', 'YK', 'YL', 'YM', 'YN', 'YO', 'YP', 'YQ', 'YR', 'YS', 'YT', 'YU', 'YV', 'YW', 'YX', 'YY', 'YZ', 'ZA', 'ZB', 'ZC', 'ZD', 'ZE', 'ZF', 'ZG', 'ZH', 'ZI', 'ZJ', 'ZK', 'ZL', 'ZM', 'ZN', 'ZO', 'ZP', 'ZQ', 'ZR', 'ZS', 'ZT', 'ZU', 'ZV', 'ZW', 'ZX', 'ZY', 'ZZ'.

NAME		ASS'Y. NO.						
Power Supply Assembly		200-2138-00						
KING RADIO CORP. PARTS LISTING			CODE	QUANTITY				
SYMBOL	PART NUMBER	DESCRIPTION		-00	-01	-02	-03	-04
	200-2138-00	Power Supply Assy		X				
	033-0059-00	Socket, Relay		1				
	033-0063-01	Hold-Down Spring		1				
	047-4012-02	Pwr Sup Heatsink Plate	AF	1				
	047-4438-01	Right Angle Bracket		1				
	089-2013-37	Nut Hex #6-32		3				
	089-2188-22	Nut Hex #4-40		2				
	089-5903-05	Screw PHP #4-40x5/16		1				
	089-5903-07	Screw PHP #4-40x7/16		4				
	089-5903-08	Screw PHP #4-40x $\frac{1}{2}$		4				
	089-5907-05	Screw PHP #6-32x5/16		3				
	089-5910-12	Screw PHP #10-32x3/4		4				
	089-5948-07	Screw PHP #6-20x7/16		4				
	089-8110-34	Washer-lck #6		3				
	089-5903-04	Screw PHP 4-40x1/4		1				
	091-0283-00	Insulator Trans.		2				
	091-0286-01	Insulator Trans.		4				
	200-5883-00	Power Supply P/C Board		1				
Q501	007-0222-01	Trans Power MJ1000		2				
Q502	007-0222-01	Trans Power MJ1000		-				
TS501	009-0003-05	Terminal Strip		1				
K501	032-0008-00	Relay, 12V DPDT		1				
R623	130-0202-33	Res 2K Ohm $\frac{1}{2}$ W		1				
R501	132-0113-04	Res WW 10 Ohm 55W		2				
R502	132-0113-04	Res WW 10 Ohm 55W		-				
R505	132-0118-00	Res WW 15 Ohm 20W		1				
R506	132-0118-01	Res WW 50 Ohm 20W		1				

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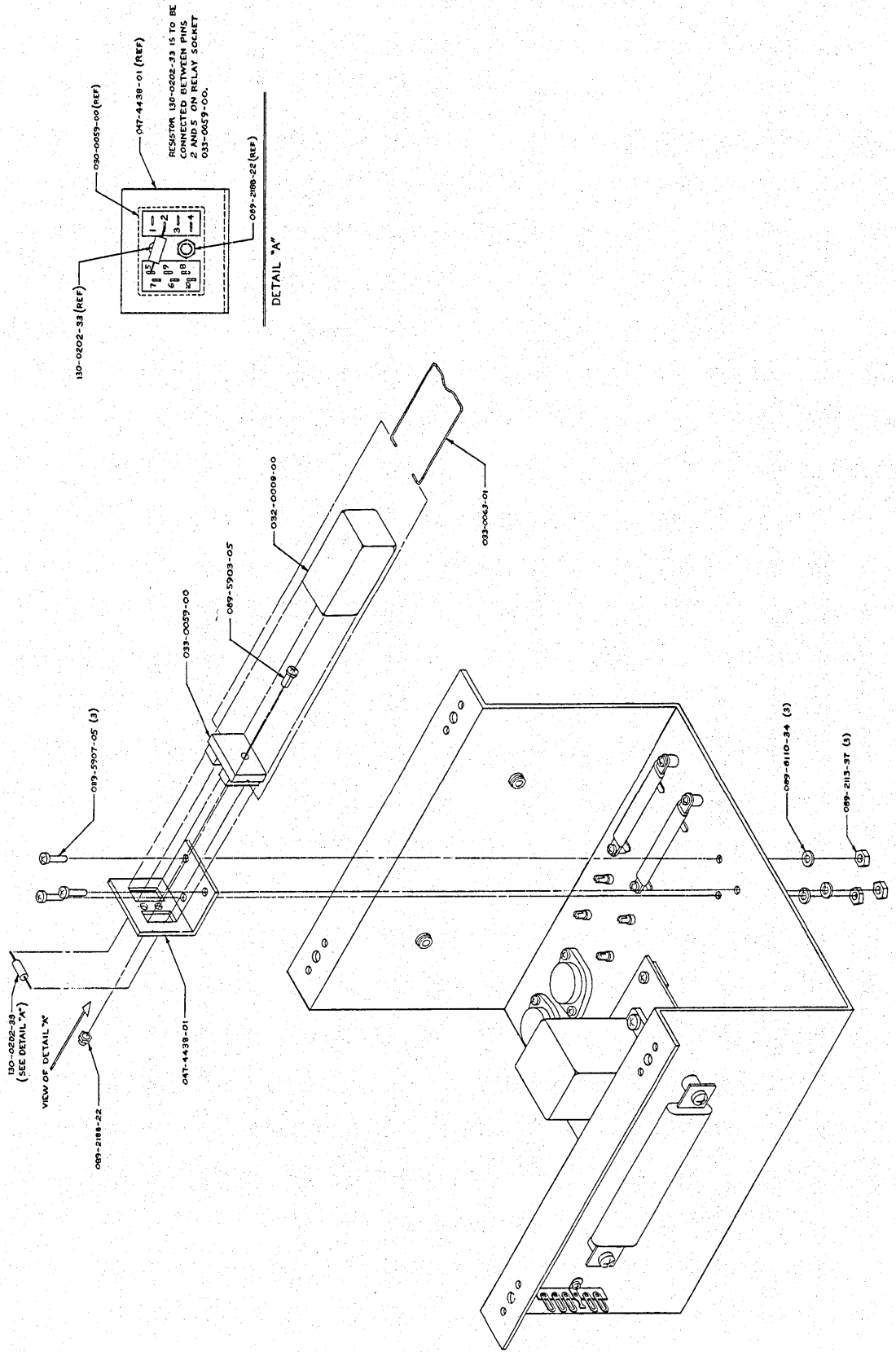


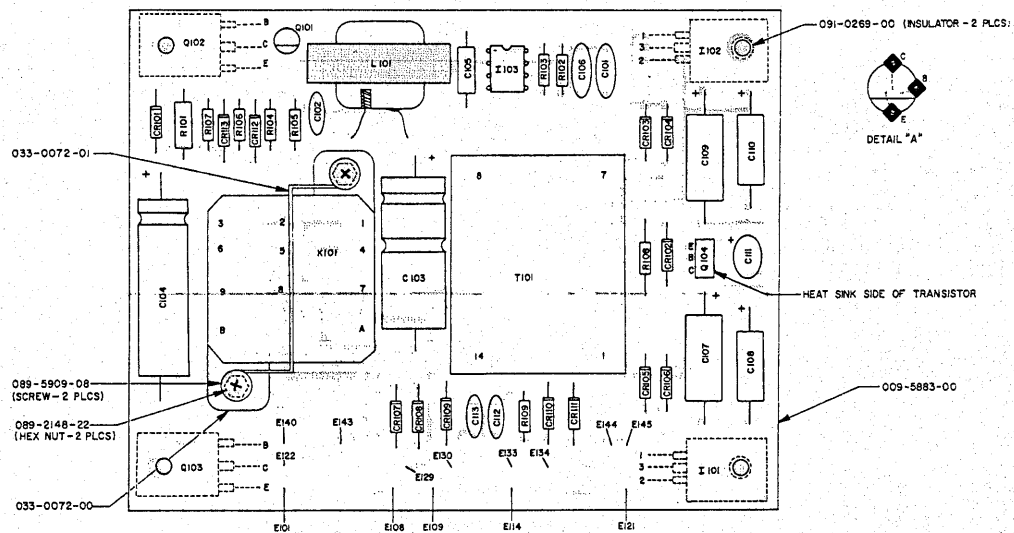
FIGURE 5-27 POWER SUPPLY ASSEMBLY (SHT 2)
(Dwg. No. 300-2138-00, Rev. 2)

NAME		ASS'Y. NO.						
A1 P/C Board (Pwr. Supply)		200-5883-00						
KING RADIO CORP. PARTS LISTING			CODE	QUANTITY				
SYMBOL	PART NUMBER	DESCRIPTION		-00	-01	-02	-03	-04
	009-5883-00	P.C. Board	1					
	033-0072-00	Socket, Relay	1					
	033-0072-01	Spring, Relay Hold Down	1					
	089-2148-22	Hex Nut 8-32	2					
	089-5909-08	Screw 8-32	2					
	091-0269-00	Insulator	2					
Q101	007-0026-03	TSTR Si BD	1					
Q102	007-0206-03	TSTR Si Pwr MJE1100	2					
Q103	007-0206-03	TSTR Si Pwr MJE1100	-					
Q104	007-0184-02	TSTR Si 2N6179	1					
CR101	007-5011-13	DIO ZEN 5.6V 1W	1					
CR102	007-5011-17	DIO ZEN 11V 1W	1					
CR103	007-6025-00	DIO Si 1N4003	4					
CR104	007-6025-00	DIO Si 1N4003	-					
CR105	007-6025-00	DIO Si 1N4003	-					
CR106	007-6025-00	DIO Si 1N4003	-					
CR107	007-5011-15	DIO ZEN 7.5V 1W	2					
CR108	007-5011-15	DIO ZEN 7.5V 1W	-					
CR109	007-6041-00	DIO Si 1N645	1					
CR110	007-5011-14	DIO ZEN 6.8V 1W	1					
CR111	007-5011-18	DIO ZEN 15V 1W	1					
CR112	007-6023-00	DIO Ge 1N277	2					
CR113	007-6023-00	DIO Ge 1N277	-					
L101	019-2152-01	Choke 1mhy	1					
T101	019-7061-01	XFMR, PWR	1					
K101	032-0038-00	Relay 3PDT 12V	1					

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- NOTES:
1. TRANSISTOR Q101, SEE DETAIL "A".
 2. MOUNT Q102, Q103, Z101, AND Z102 WITH THE HEAT SINK AWAY FROM THE P.C. BOARD.

FIGURE 5-28 A1 P/C BOARD (POWER SUPPLY)
(Dwg. No. 300-5883-00, Rev. 0)



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SECTION VI MAINTENANCE

6.1 GENERAL

The following is a procedure to determine if the performance of the KTS 151 is satisfactory. If it is not, the alignment procedures are given in order to bring the unit up to its minimum performance standards. It is important that this be done as far as possible before troubleshooting is attempted.

6.2 REQUIRED TEST EQUIPMENT

<u>DESCRIPTION</u>	<u>CHARACTERISTICS REQUIRED</u>	<u>REPRESENTATIVE TYPE</u>
Oscilloscope	Vertical Sensitivity: 10mv/div Bandwidth: DC to 10MHz Dual Trace	Tektronix Type 564
DC Power Supply	+14/28VDC 3AMP	
Digital Voltmeter		Fluke 8000A

6.3 KTS 151 ALIGNMENT PROCEDURE

The KTS 151 Alignment Procedure is presented in this section. Troubleshooting procedures will not be given in this manual as it is assumed that the schematics will be all that is necessary to repair any problem in the tester.

Connect the DC power supply to the KTS 151 Input power jacks.

Operate the DC power supply switch to the ON position.

6.3.1 KA 118 SECTION

All pushbuttons out
DC Input Power Supply 14 \pm 0.5VDC
POWER SELECTOR 14V

A. 10V PK 400Hz REF-Depress EXTERNAL INVERTER

1. Depress Course Datum Input. Measure 400 \pm 40Hz Square Wave. 50 \pm 2% Duty Cycle, \pm 10, \pm 1V at TJK118-5 to TJK118-E.
2. Release EXTERNAL INVERTER. Measure 0.0 \pm 0.5VAC. Depress EXTERNAL INVERTER
3. Release COURSE DATUM INPUT Switch. Measure 0.0 \pm 0.5VAC

B. HEADING DATUM INPUT

1. Measure 0.0 \pm 0.5VAC TJK118-6 to 7.
2. Depress HEADING DATUM INPUT. Measure 400Hz square wave continuously variable with HS ADJUST from greater than \pm 10V out of phase with ref TJK118 pin 5 with HS ADJUST CW to greater than \pm 10V in phase with HS ADJUST CCW at TJK118-6 to TJK118-E. TJK118-6 to TJK118-E shall be \pm 10V out of phase with ref TJK118-5. Release HEADING DATUM INPUT.



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7. Depress STIM 1 ENGAGE $+250 \pm 10\text{mv DC}$
8. Depress STIM 1 ATTEN $+7.5 \pm 0.5\text{mv DC}$
9. STIM 1 ADJUST FULL CCW $0.0 \pm 0.1\text{mv DC}$
10. Release STIM 1 ATTEN
11. STIM 1 ADJUST FULL CW Release NAV RCVR
12. KC 295 INPUT SELECTOR - GS RCVR Depress GS RCVR $+250 \pm 10\text{mv DC}$
13. Release GS RCVR
14. Release STIM 1 ENGAGE
15. KC 295 INPUT SELECTOR - VG PITCH
Jumper TJKC2952-w to TJKAI18-5
Depress KA 118 EXTERNAL INVERTER
Depress KA 118 COURSE DATUM INPUT
ROLL and PITCH GAIN ADJUST full CW (Lock)
ROLL and PITCH OFFSET ADJUST 5 Turns from either stop (Lock)
Depress ZERO ATTITUDE
Depress VG PITCH ATTITUDE
16. Adjust R441 for $0.0 \pm 0.2\text{VAC}$
17. Adjust R417 for $0.00 \pm 0.05\text{VDC}$
18. Verify that PITCH OFFSET ADJUST varies output from $1.0 \pm 0.1\text{ V p-p}$ out of phase CW to $1.0 \pm 0.1\text{ V p-p}$ in phase CCW. (Phased relative to TJKC2952-w).
19. Adjust PITCH OFFSET ADJUST for 0 VAC output.
Release ZERO ATTITUDE
Depress STIM 1 ENGAGE
STIM 1 ADJUST should adjust output from 0 VAC CCW to $4.0 \pm 0.5\text{ V p-p}$ out of phase CW.
20. Verify that PITCH GAIN ADJUST varies output from maximum obtained in 19. to $0.00 \pm .05\text{V p-p}$.
21. Depress ZERO ATTITUDE
Release STIM 1 ENGAGE
Release VG PITCH STIM 1/2
KC 295 INPUT SELECTOR -VG ROLL
DEPRESS VG ROLL STIM 1/2
Verify that ROLL OFFSET ADJUST varies output from $1.00 \pm 0.1\text{ V p-p}$ out of phase CW to $1.00 \pm 0.1\text{ V p-p}$ in phase CCW. (Phased relative to TJKC2952-w)
22. Adjust ROLL OFFSET ADJUST for 0 VAC output.
Release ZERO ATTITUDE
Depress STIM 1 ENGAGE
STIM 1 ADJUST should adjust output from 0.0VAC CCW to $12 \pm 1.0\text{ V p-p}$ out of phase CW.
23. Verify that ROLL GAIN ADJUST varies output from maximum obtained in 22. to $0.00 \pm .05\text{V p-p}$.

D. STIM 2

All pushbuttons out
DC Input Power Supply $28 \pm 0.5\text{VDC}$
POWER SELECTOR 28V
Connect voltmeter and scope to meter test jacks +HI, -LO
Jumper TJKC2952-w to KA 118-5 and TJKC2952-L to TJKC2952-f and TJKC2951-U
Depress KA118 EXTERNAL INVERTER
Depress KA118 COURSE DATUM INPUT

1. MASTER METER SELECTOR - STIM 2



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18. Release STIM 2 ATTEN
Release VG PITCH STIM 1/2
Depress VG ROLL STIM 1/2
KC 295 INPUT SELECT VG ROLL
Depress ZERO ATTITUDE
Adjust ROLL OFFSET ADJUST for $0.00 \pm 0.05\text{VAC}$
19. Release ZERO ATTITUDE
STIM 2 ADJUST should vary output from $12.0 \pm 1.0\text{ V p-p}$ in phase CCW to $12.0 \pm 1.0\text{ V p-p}$ out of phase CW.

E. STIM 1 RAMP RATES

All pushbuttons out
DC Input Power Supply $28 \pm 0.5\text{VDC}$
POWER SELECTOR 28V
Connect Rate Circuit per Figure 6-1

1. MASTER METER SELECTOR - STIM 1
2. Depress KC 295
Depress STIM 1 ENGAGE Jumper PWR REF- PWR GND- PITCH REF Test Jacks
3. Depress VG PITCH
4. Depress RAMP
Adjust R467 for $-1.200 \pm 0.020\text{VDC}$

NOTE

Allow reading to stabilize a couple of seconds after adjustment. Readings after about 10 seconds will not be valid due to external rate circuit saturation. To reset the ramp, release the RAMP switch, wait for the voltage to go to zero and depress RAMP again. Repeat as required.

5. Release VG PITCH
Depress VG ROLL
Depress RAMP
Adjust R463 for $-1.800 \pm 0.030\text{VDC}$
Repeat as required
6. Release VG ROLL
Depress GS RCVR STIM 1
Depress RAMP
Adjust R452 for $-0.857 \pm 0.015\text{VDC}$
Repeat as required
7. Release GS RCVR STIM 1
Depress NAV RCVR STIM 1
Depress RAMP
Adjust R454 for $-2.270 \pm 0.040\text{VDC}$
Repeat as required
8. Release NAV RCVR STIM 1
Remove jumpers PWR GND - PWR REF - PITCH REF
Release KC 295
Depress RAMP
Adjust R227 for $+2.433 \pm 0.040\text{VDC}$
9. Replace GYRO EXCTN lamp

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J. MODE SWITCHES

All pushbuttons out
Input voltage $28 \pm 0.5\text{VDC}$
Jumper +10 V Test Jack to TJKC2051-B
POWER SELECTOR 28V

- | | |
|-------------------------------|---|
| 1. Depress and hold HDG | $+10 \pm 1\text{VDC}$ TJKC2951- <u>z</u> to PWR REF |
| 2. Depress and hold ALT | $+10 \pm 1\text{VDC}$ TJKC2951- <u>x</u> to PWR REF |
| 3. Depress and hold NAV | $+10 \pm 1\text{VDC}$ TJKC2951- <u>v</u> to PWR REF |
| 4. Depress and hold BC | $+10 \pm 1\text{VDC}$ TJKC2951- <u>w</u> to PWR REF |
| 5. Depress and hold APPR | $+10 \pm 1\text{VDC}$ TJKC2951- <u>t</u> to PWR REF |
| 6. Depress and hold AP ENGAGE | $+28 \pm 1\text{VDC}$ TJKC2951-CC to PWR REF |
| 7. Measure | $+10 \pm 1\text{VDC}$ TJKC2951-R to PWR REF |
| 8. Depress and hold G DUMP | $0.0 \pm 0.1\text{VDC}$ TJKC2951-R to PWR REF |
| 9. Depress and hold FD | $+10 \pm 1\text{VDC}$ TJKC2952-AA to PWR REF |
| 10. Measure | $+10 \pm 1\text{VDC}$ TJKC2052-B to PWR REF |

6.3.6 KC 296

All pushbuttons out
DC Input Power Supply $28 \pm 0.5\text{VDC}$
POWER SELECTOR 28V
Connect voltmeter and scope to Meter Test Jacks

- A. MASTER METER SELECTOR - MISC TP (VOLTAGE)
MISC SELECTOR KC 296 INPUT
WAVE FORM SELECT SQUARE
OUTPUT ADJUST CW
Adjust R332 for symmetrical square wave $.06 \pm .02\text{Hz}$, $+3\text{V} \pm .1\text{V}$, symmetrical within $\pm .002\text{VDC}$
- B. Verify OUTPUT ADJUST control will reduce square wave to zero at the full CCW position.
- C. Measure square wave $+13.5 \pm 1.5\text{VDC}$
 $.06 \pm .02\text{Hz}$ at SCOPE SYNC Test Jack with respect to PWR REF
- D. WAVEFORM SELECT DC

Connect voltmeter and scope to Meter Test Jacks
Adjust OUTPUT ADJUST control for output greater than -6.5VDC CCW to greater than $+6.5\text{VDC}$ CW.
- E. WAVEFORM SELECT SINE
FREQ SELECT 30Hz
OUTPUT ADJUST CW
Adjust R317 until clipping of waveform occurs, then reverse adjustment until clipping just disappears completely. Adjust R313 for $30.0 \pm 1.5\text{Hz}$. Amplitude $12 \pm 2\text{V}$ p-p.
- F. Verify OUTPUT ADJUST will reduce sine wave to zero at the full CCW position.
- G. OUTPUT ADJUST -CW
FREQ SELECT 20Hz
Adjust R312 for $20.0 \pm 1.0\text{Hz}$



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6.3.8 KS 272/273

All pushbuttons out
Lever switches center input power $28 \pm 0.5\text{VDC}$
POWER SELECTOR 28VDC

- A. AUTO TRIM DRIVE CW
Measure TJKS272-R to TJKS272-J $0.0 \pm 0.1\text{VDC}$
- B. AUTO TRIM DRIVE CCW
Measure TJKS272-R to TJKS272-J $+28.0 \pm 1.0\text{VDC}$
- C. Measure TJKS272-K to TJKS272-J $0.0 \pm 0.1\text{VDC}$
- D. AUTO TRIM DRIVE CW
Measure TJKS272-K to TJKS272-J $+28.0 \pm 1.0\text{VDC}$
AUTO TRIM DRIVE OFF
- E. Measure TJKS272-E to TJKS272-J $0.0 \pm 0.1\text{VDC}$
- F. Depress AP ENGAGE
Measure TJKS272-E to TJKS272-J $+28.0 \pm 1.0\text{VDC}$
Release AP ENGAGE
- G. Depress MANUAL TRIM ENGAGE
Measure TJKS272-C to TJKS272-J $+28.0 \pm 1.0\text{VDC}$
Release MANUAL TRIM ENGAGE
- H. Measure TJKS272-B to TJKS272-J $0.0 \pm 0.1\text{VDC}$
- I. Depress SELF TEST
Measure TJKS272-B to TJKS272-J $+28.0 \pm 1.0\text{VDC}$



6.4 OVERHAUL

6.4.1 INSPECTION

This section contains instructions to assist in determining, by inspection, the condition of KTS 151 assemblies. Defects resulting from wear, physical damage, deterioration, or other causes can be found by these inspection procedures. To aid inspection, detailed procedures are arranged in alphabetical order.

A. Capacitors, Fixed

Inspect capacitors for case damage, body damage, and cracked, broken or charred insulation. Check for loose, broken, or corroded terminal studs, lugs or leads. Inspect for loose, broken, or improperly soldered connections.

B. Chassis

Inspect the chassis for deformation, dents, punctures, badly worn surfaces, damaged connectors, damaged fastener devices, component corrosion, and damage to the finish.

C. Connectors, Unit

Inspect connector for broken parts, deformed shells or clamps, and other irregularities. Inspect for cracked or broken insulation and for contacts that are broken, deformed or out of alignment. Also, check for corroded or damaged plating on contacts and for loose, improperly soldered, broken or corroded terminal connections.

D. Insulators

Inspect all insulators for evidence of damage, such as broken or chipped edges, burned areas, and presence of foreign matter.

E. Integrated Circuits (T0-5)

Check for T0-5 cases pressed to make contact with the IC leads.

F. Potentiometers

Inspect all potentiometers for evidence of damage such as dents, cracked insulation or other irregularities.

G. Resistors, Fixed

Inspect the fixed resistors for cracked, broken, blistered, or charred bodies and loose, broken, or improperly soldered or corroded terminal connections.

H. Transformers

1. Inspect for signs of excessive heating, physical damage to case, cracked or broken insulation, and other abnormal conditions.

2. Inspect for corroded, poorly soldered, or loose connecting wires.

I. Transistors

Check for broken leads, shorted leads to case, and leads shorted to one another.

J. Wiring

Inspect open and laced wiring of chassis, subassembly chassis, and parts of equipment for breaks in insulation, conductor breaks, cut or broken lacing, and improper dress in relation to adjacent wiring or chassis.

6.5 TROUBLESHOOTING THE KTS 151

The following suggestions should be helpful in troubleshooting the KTS 151 Flight Control System Test Set:

- A. Re-examine the problem using the functional description of each control set forth in Section III of this manual. Many times the problem may be that the function desired is not among the capabilities designed into the control.
- B. Check the continuity of the cables between the unit under test and the KTS 151.
- C. Check Alignment Procedures per Section 6.3 for possible misalignment rather than malfunction.
- D. In many cases, problems in the KTS 151 can be troubleshot using the schematics in Section VI.
- E. In the event of regulator problems, make sure that the cause of the failure has been removed before replacement of the regulator chip.

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KTS 151
FLIGHT CONTROL SYSTEM TEST SET

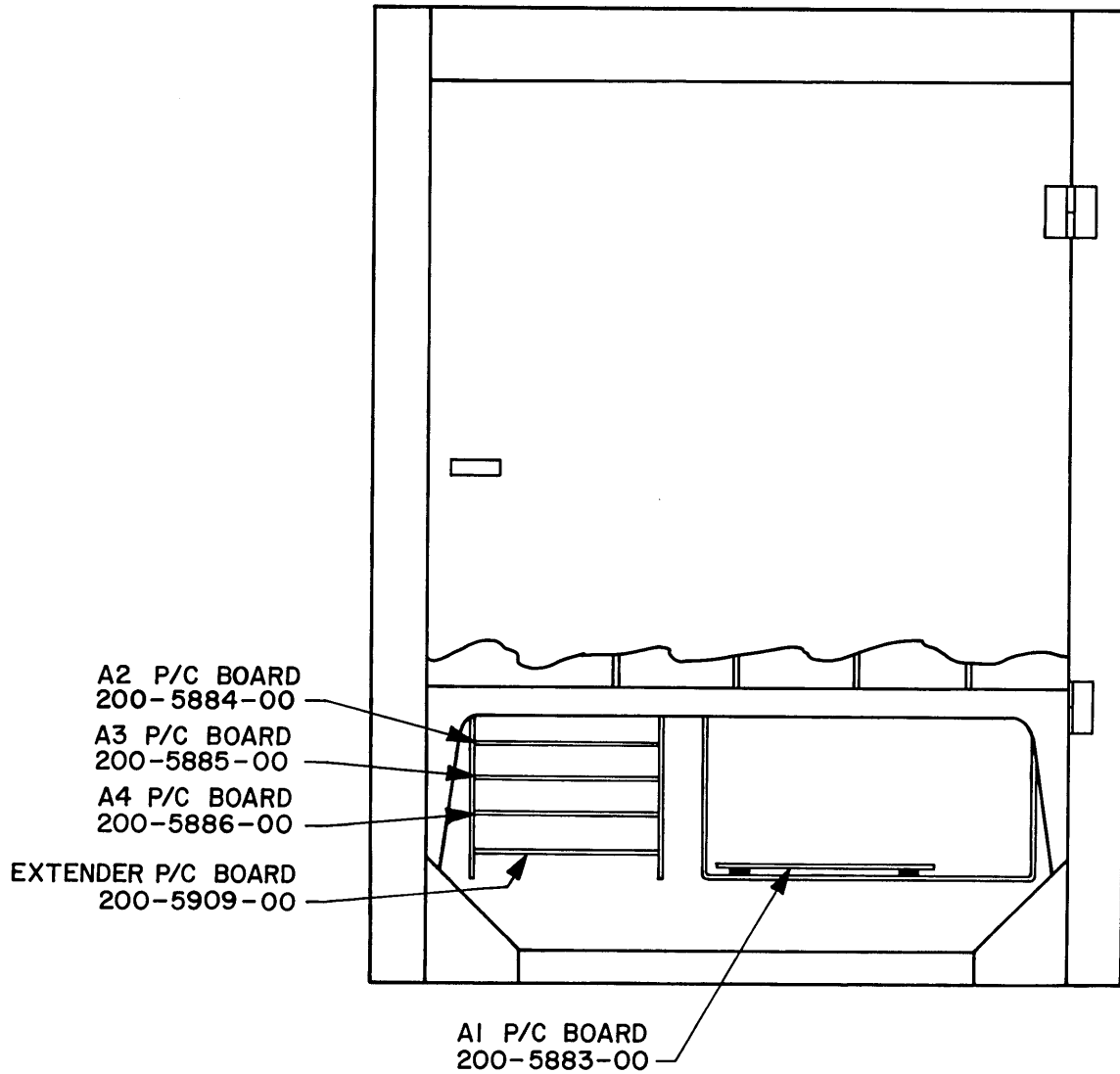


FIGURE 6-2 MASTER PANEL DISASSEMBLY


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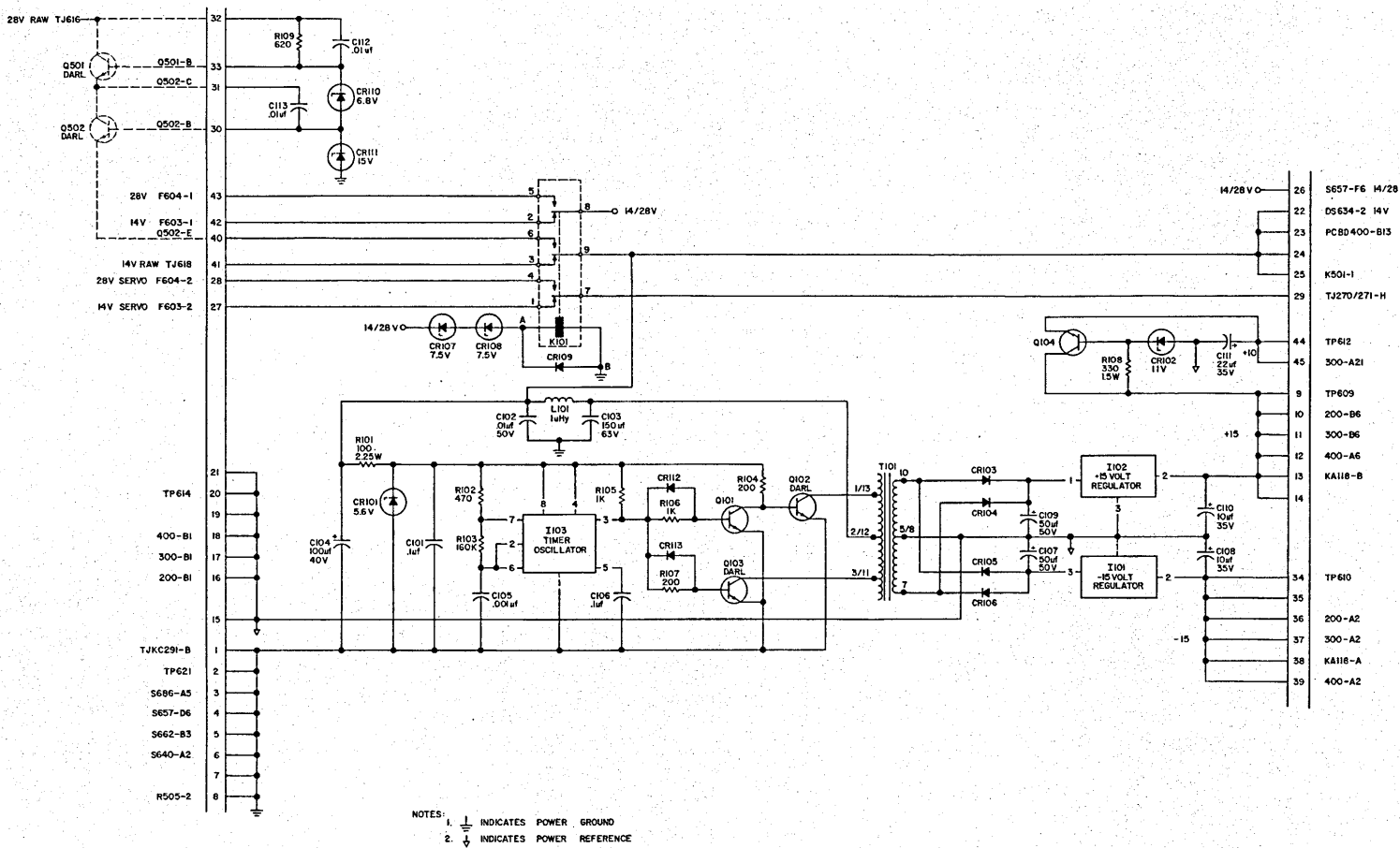
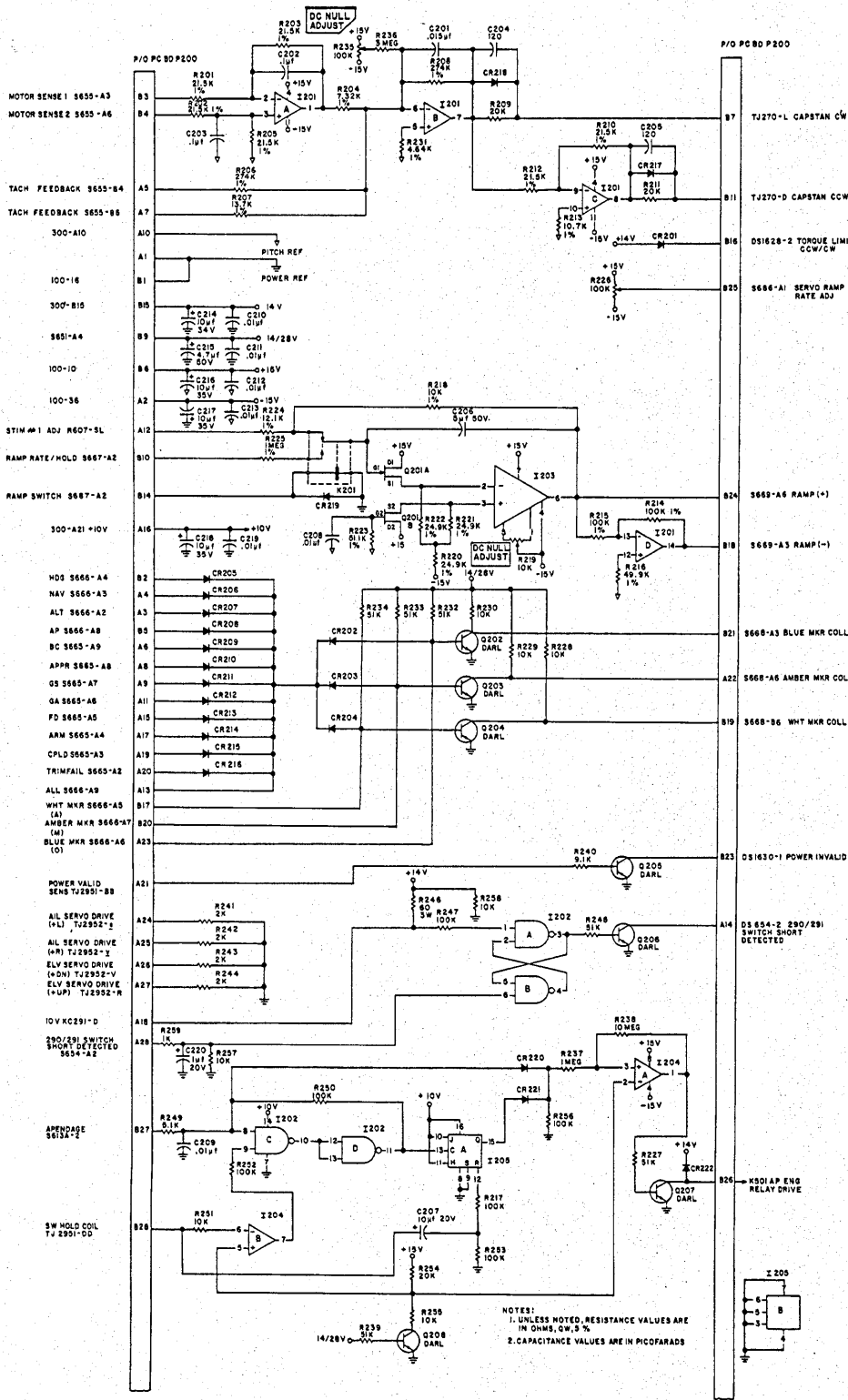


FIGURE 6-3 100 PC BOARD, POWER SUPPLY SCHEMATIC
(Dwg. No. 002-0481-01, R-1)

FIGURE 6-4 200 PC BOARD SCHEMATIC
(Dwg. No. 002-0481-02, R-2)



NOTES:
1. UNLESS NOTED, RESISTANCE VALUES ARE IN OHMS, Ω
2. CAPACITANCE VALUES ARE IN PICOFARADS

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200 PC BOARD SCH.

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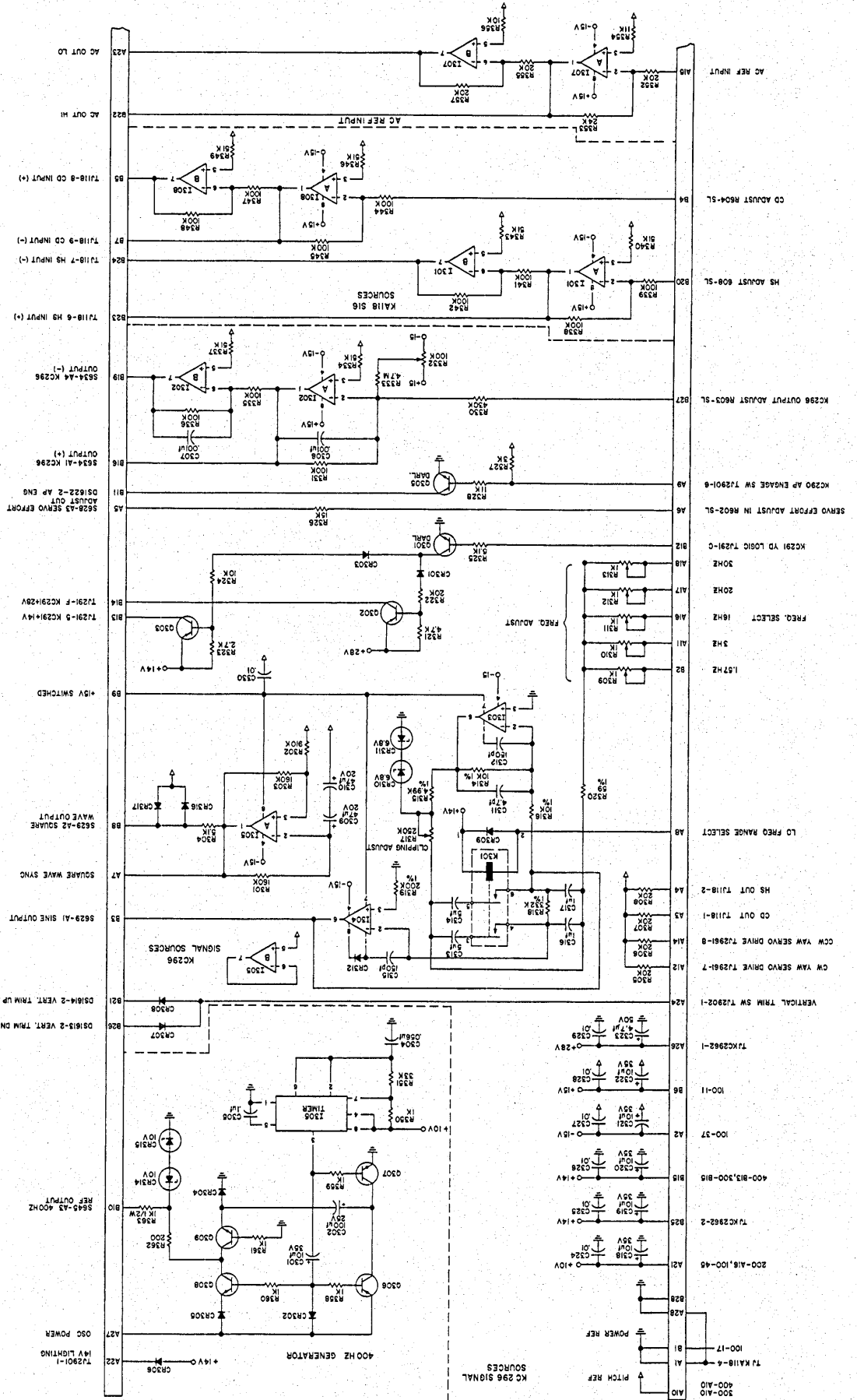


FIGURE 6-5 300 PC BOARD SCHEMATIC
(Dwg. No. 002-0481-03, R-1)

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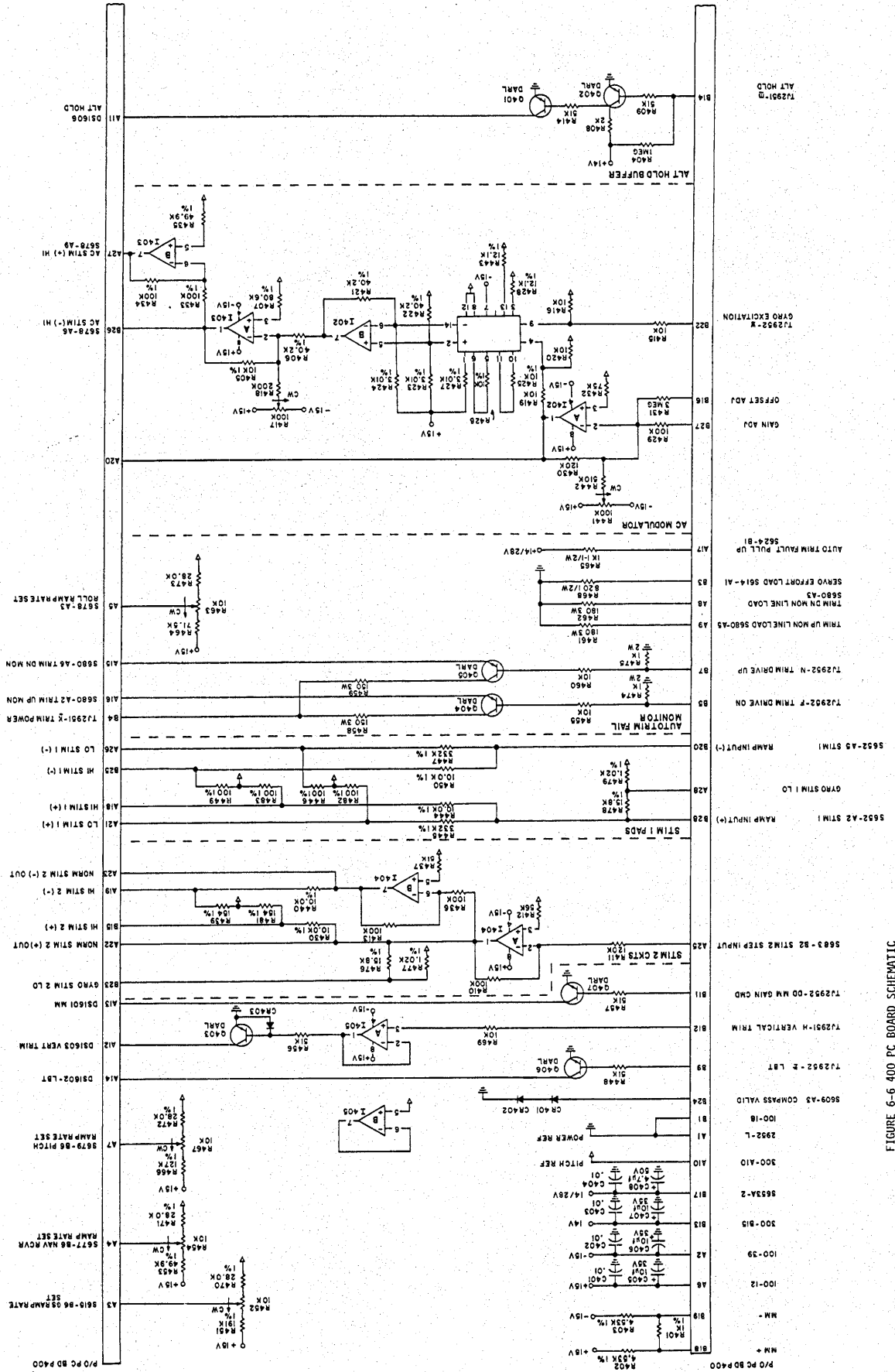


FIGURE 6-6 400 PC BOARD SCHEMATIC
(Dwg. No. 002-0481-04, R-1)

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FLIGHT CONTROL SYSTEM TEST SET

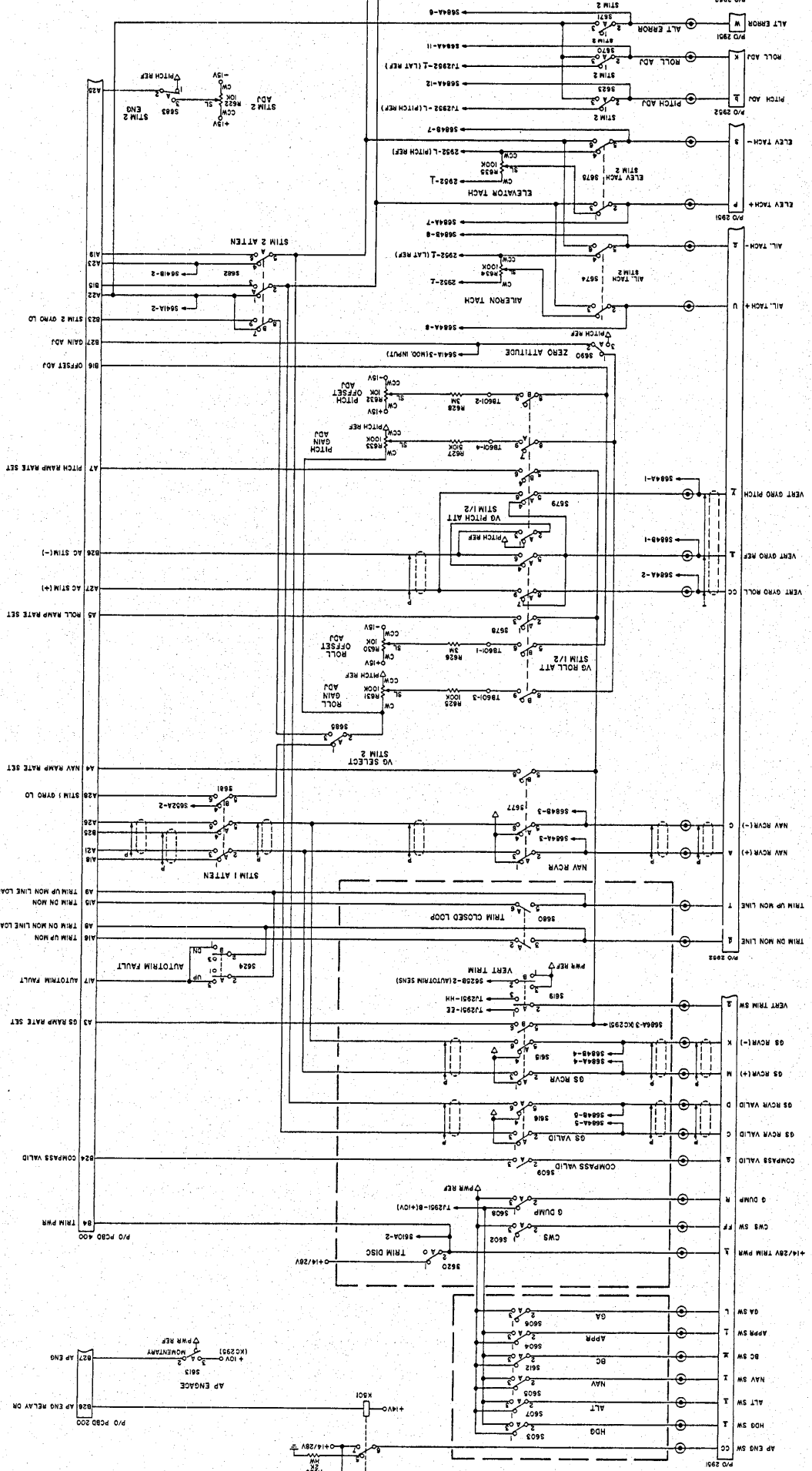


FIGURE 6-11A KC 295 PANEL WIRING SCHEMATIC
(Dwg. No. 002-0401-09, R-2)
(Sheet 2 of 2)