



instruction book

Collins Radio Company

490T - 4
Antenna Coupler

Guarantee

The equipment described herein is sold under the following guarantee:

Collins agrees to repair or replace, without charge, any equipment, parts, or accessories which are defective as to design, workmanship or material, and which are returned to Collins at its factory, transportation prepaid, provided:

- (a) Notice of the claimed defect is given Collins within one (1) year from date of delivery and goods are returned in accordance with Collins instructions.
- (b) Equipment, accessories, tubes, and batteries not manufactured by Collins or from Collins designs are subject to only such adjustments as Collins may obtain from the supplier thereof.
- (c) Failure of the equipment to operate in a normal and proper manner due to exposure to any environmental condition in excess of those published in the equipment specification shall not be deemed a defect within the meaning of this clause.

Collins further guarantees that any radio transmitter described herein will deliver full radio frequency power output at the antenna lead when connected to a suitable load, but such guarantee shall not be construed as a guarantee of any definite coverage or range of said apparatus.

The guarantee of these paragraphs is void if equipment is altered or repaired by others than Collins or its authorized service center.

No other warranties, expressed or implied, shall be applicable to any equipment sold hereunder, and the foregoing shall constitute the Buyer's sole right and remedy under the agreements in this paragraph contained. In no event shall Collins have any liability for consequential damages, or for loss, damage or expense directly or indirectly arising from the use of the products, or any inability to use them either separately or in combination with other equipment or materials, or from any other cause.

How to Return Material or Equipment

If, for any reason, you should wish to return material or equipment, whether under the guarantee or otherwise, you should notify us, giving full particulars including the details listed below, insofar as applicable. If the item is thought to be defective, such notice must give full information as to nature of defect and identification (including part number if possible) of part considered defective. (With respect to tubes we suggest that your adjustments can be speeded up if you give notice of defect directly to the tube manufacturer.) Upon receipt of such notice, Collins will promptly advise you respecting the return. Failure to secure our advice prior to the forwarding of the goods or failure to provide full particulars may cause unnecessary delay in the handling of your returned merchandise.

ADDRESS:

Collins Radio Company
Product Support Division
Cedar Rapids, Iowa

INFORMATION NEEDED:

- (A) Type number, name and serial number of equipment
- (B) Date of delivery of equipment
- (C) Date placed in service
- (D) Number of hours of service
- (E) Nature of trouble
- (F) Cause of trouble if known
- (G) Part number (9 or 10 digit number) and name of part thought to be causing trouble
- (H) Item or symbol number of same obtained from parts list or schematic
- (I) Collins number (and name) of unit sub-assemblies involved in trouble
- (J) Remarks

How to Order Replacement Parts

When ordering replacement parts, you should direct your order as indicated below and furnish the following information insofar as applicable. To enable us to give you better replacement service, please be sure to give us complete information.

ADDRESS:

Collins Radio Company
Product Support Division
Cedar Rapids, Iowa

INFORMATION NEEDED:

- (A) Quantity required
- (B) Collins part number (9 or 10 digit number) and description
- (C) Item or symbol number obtained from parts list or schematic
- (D) Collins type number, name and serial number of principal equipment
- (E) Unit subassembly number (where applicable)

523-0759240-102111
2nd Edition, 15 July 1968
1st Revision, 15 July 1969



instruction book

490T - 4
Antenna Coupler

©Collins Radio Company 1967
©Second Edition 1968
Second Printing July 1969
Printed in the United States of America

490T-4 Antenna Coupler

List of Effective Pages

*The asterisk indicates pages changed, added, or deleted by the current change.

Page No	Issue	Page No	Issue	Page No	Issue
Cover.....	15 July 68	6-5.....	15 July 68	7-13 thru 7-15.....	15 July 68
*Title.....	15 July 69	*6-6 thru 6-18.....	15 July 69	7-16 Blank.....	15 July 68
*A thru C.....	15 July 69	*6-18A Added.....	15 July 69	7-17.....	15 July 68
i.....	15 July 68	*6-18B Blank Added.....	15 July 69	7-18 Blank.....	15 July 68
*ii thru v.....	15 July 69	*6-19 thru 6-30.....	15 July 69	7-19 thru 7-21.....	15 July 68
vi Blank.....	15 July 68	6-31 thru 6-32.....	15 July 68	7-22 Blank.....	15 July 68
*vii.....	15 July 69	*6-33.....	15 July 69	7-23.....	15 July 68
*1-0.....	15 July 69	6-34 thru 6-41.....	15 July 68	7-24 Blank.....	15 July 68
1-1.....	15 July 68	*6-42.....	15 July 69	7-25.....	15 July 68
*1-2 thru 1-4.....	15 July 69	6-43.....	15 July 68	7-26 Blank.....	15 July 68
1-5.....	15 July 68	*6-44 thru 6-47.....	15 July 69	7-27.....	15 July 68
1-6 Blank.....	15 July 68	6-48.....	15 July 68	7-28 Blank.....	15 July 68
2-1.....	15 July 68	*6-49 thru 6-50.....	15 July 69	7-29.....	15 July 68
2-2 Blank.....	15 July 68	*6-50A Added.....	15 July 69	7-30 Blank.....	15 July 68
3-1.....	15 July 68	*6-50B Blank Added.....	15 July 69	7-31.....	15 July 68
3-2 Blank.....	15 July 68	6-51.....	15 July 68	7-32 Blank.....	15 July 68
4-1.....	15 July 68	*6-52.....	15 July 69	7-33 thru 7-34.....	15 July 68
*4-2 thru 4-7.....	15 July 69	*6-52A Added.....	15 July 69	*7-35.....	15 July 69
4-8 thru 4-11.....	15 July 68	*6-52B Blank Added.....	15 July 69	7-36 Blank.....	15 July 68
*4-12 thru 4-13.....	15 July 69	*6-53 thru 6-56.....	15 July 69	*7-37.....	15 July 69
4-14 thru 4-16.....	15 July 68	6-57 thru 6-59.....	15 July 68	7-38 Blank.....	15 July 68
*4-17.....	15 July 69	*6-60 thru 6-61.....	15 July 69	*7-39.....	15 July 69
4-18 thru 4-20.....	15 July 68	6-62 thru 6-64.....	15 July 68	7-40 Blank.....	15 July 68
*4-21.....	15 July 69	*6-65 thru 6-66.....	15 July 69	*7-41.....	15 July 69
4-22 thru 4-24.....	15 July 68	6-67.....	15 July 68	7-42 Blank.....	15 July 68
*4-25.....	15 July 69	*6-68.....	15 July 69	*7-43.....	15 July 69
4-26 thru 4-27.....	15 July 68	6-69 thru 6-71.....	15 July 68	7-44 Blank.....	15 July 68
*4-28.....	15 July 69	*6-72 thru 6-73.....	15 July 69	*7-45.....	15 July 69
4-29.....	15 July 68	6-74 thru 6-87.....	15 July 68	7-46 Blank.....	15 July 68
4-30 Blank.....	15 July 68	*6-88.....	15 July 69	*7-46A Added.....	15 July 69
5-1 thru 5-5.....	15 July 68	6-89 thru 6-94.....	15 July 68	*7-46B Blank Added.....	15 July 69
5-6 Blank.....	15 July 68	*6-95 thru 6-98.....	15 July 69	*7-46C Added.....	15 July 69
5-7 thru 5-14.....	15 July 68	*6-99 thru 6-105 Added.....	15 July 69	*7-46D Blank Added.....	15 July 69
*5-15.....	15 July 69	*6-106 Blank Added.....	15 July 69	*7-46E Added.....	15 July 69
5-16 Blank.....	15 July 68	7-1.....	15 July 68	*7-46F Blank Added.....	15 July 69
5-17 thru 5-29.....	15 July 68	7-2 Blank.....	15 July 68	*7-46G Added.....	15 July 69
*5-30.....	15 July 69	7-3.....	15 July 68	*7-46H Blank Added.....	15 July 69
5-31 thru 5-34.....	15 July 68	7-4 Blank.....	15 July 68	*7-47.....	15 July 69
*5-35.....	15 July 69	7-5.....	15 July 68	7-48 Blank.....	15 July 68
5-36.....	15 July 68	7-6 Blank.....	15 July 68	*7-49.....	15 July 69
*5-37.....	15 July 69	7-7.....	15 July 68	7-50 Blank.....	15 July 68
5-38.....	15 July 68	7-8 Blank.....	15 July 68	*7-51.....	15 July 69
*5-39 thru 5-60.....	15 July 69	7-9.....	15 July 68	7-52 Blank.....	15 July 68
*5-61 Added.....	15 July 69	7-10 Blank.....	15 July 68	*7-53.....	15 July 69
*5-62 Blank Added.....	15 July 69	7-11.....	15 July 68	7-54 Blank.....	15 July 68
*6-1 thru 6-4.....	15 July 69	7-12 Blank.....	15 July 68	*7-54A Added.....	15 July 69

Collins Radio Company welcomes your comments concerning this instruction book. Although every effort has been made to keep it free of errors, some do occur. When reporting a specific problem, please describe it briefly and include the instruction book part number, the paragraph or figure number, and the page number.

Send your comments to: Collins Radio Company
Publications Engineering Department
Mail Station 172-002
Cedar Rapids, Iowa 52406

490T-4 Antenna Coupler

List of Effective Pages

*The asterisk indicates pages changed, added, or deleted by the current change.

Page No	Issue
*7-54B Blank Added.....	15 July 69
*7-54C Added.....	15 July 69
*7-54D Blank Added.....	15 July 69
7-55.....	15 July 68
7-56 Blank.....	15 July 68
7-57.....	15 July 68
7-58 Blank.....	15 July 68
7-59.....	15 July 68
7-60 Blank.....	15 July 68
7-61.....	15 July 68
7-62 Blank.....	15 July 68

Collins Radio Company welcomes your comments concerning this instruction book. Although every effort has been made to keep it free of errors, some do occur. When reporting a specific problem, please describe it briefly and include the instruction book part number, the paragraph or figure number, and the page number.

Send your comments to: Collins Radio Company
Publications Engineering Department
Mail Station 172-002
Cedar Rapids, Iowa 52406

Revised 15 July 1969

B

490T-4 Antenna Coupler

Record of Revisions

RETAIN THIS RECORD IN THE FRONT OF MANUAL.
ON RECEIPT OF REVISIONS, INSERT REVISED PAGES IN THE MANUAL,
AND ENTER DATE INSERTED AND INITIALS.

ASSIGNED TO (JOB TITLE)

LOCATION

[illegible]

table of contents

	<i>Page</i>
Section 1 General Description.....	1-1
1.1 General.....	1-1
1.2 Purpose of Instruction Book.....	1-1
1.3 Purpose of Equipment.....	1-1
1.4 Equipment Specifications.....	1-1
1.5 Description.....	1-2
1.5.1 Mechanical Description.....	1-2
1.5.2 Electrical Description.....	1-4
Section 2 Installation.....	2-1
2.1 General.....	2-1
2.2 Preinstallation Tests.....	2-1
Section 3 Operation.....	3-1
3.1 General.....	3-1
Section 4 Principles of Operation.....	4-1
4.1 General.....	4-1
4.2 HF System General Theory of Operation.....	4-1
4.3 490T-4 Antenna Coupler Theory of Operation.....	4-1
4.3.1 General.....	4-1
4.3.2 Functional Theory of Operation.....	4-2
4.3.3 Homing.....	4-3
4.3.4 RF On.....	4-9
4.3.4.1 General.....	4-9
4.3.4.2 Antenna.....	4-9
4.3.4.3 Frequency Band Information Circuit.....	4-9
4.3.4.4 Discriminator A8.....	4-12
4.3.4.5 Electronic Control Amplifier A3.....	4-17
4.3.4.6 Coupler Control A2.....	4-19
4.3.5 Tune A (Initial Tuning).....	4-23
4.3.5.1 Antenna Circuit Made Capacitive and More Than 50 Ohms...	4-23
4.3.5.2 Antenna Resonated With Resistance Less Than 50 Ohms....	4-24
4.3.6 Tune B (Final Tuning).....	4-27
4.3.6.1 General.....	4-27
4.3.6.2 Detailed Theory.....	4-27
4.3.7 Operate and Demand Surveillance.....	4-27
4.3.7.1 General.....	4-27
4.3.7.2 Detailed Theory.....	4-29
4.3.8 Fault.....	4-29

table of contents (cont)

	<i>Page</i>
4.3.8.1 General.....	4-29
4.3.8.2 Detailed Theory.....	4-29
Section 5 Maintenance.....	5-1
5.1 General.....	5-1
5.2 Testing.....	5-1
5.2.1 General.....	5-1
5.2.2 Test Equipment Required.....	5-1
5.2.3 Power Sources Required.....	5-3
5.2.4 Special Tools Required.....	5-3
5.2.5 Bench Test Setup.....	5-4
5.2.6 Functional Test Procedures.....	5-4
5.2.7 Overall Test Procedure.....	5-4
5.3 Troubleshooting.....	5-14
5.3.1 General.....	5-14
5.3.2 Troubleshooting and Repair of Transistorized Circuits.....	5-14
5.3.3 Performance Tests and Troubleshooting Charts.....	5-17
5.3.3.1 Coupler Control A2.....	5-17
5.3.3.2 Electronic Control Amplifier A3.....	5-17
5.3.3.3 Discriminator A8.....	5-17
5.3.3.4 Step Coil A4, Series Varicoil A5, Shunt Varicoil A6, Shunt Capacitor A7, and Series Capacitor A9.....	5-17
5.4 Disassembly.....	5-38
5.4.1 General.....	5-38
5.4.2 490T-4 Antenna Coupler Disassembly Procedures.....	5-38
5.4.2.1 Dust Cover Removal Procedures.....	5-38
5.4.2.2 Coupler Control and Electronic Control Amplifier Modules Removal Procedures.....	5-38
5.4.2.3 Discriminator Removal Procedures.....	5-39
5.4.2.4 Step Coil Removal Procedures.....	5-39
5.4.2.5 Shunt Varicoil Removal Procedures.....	5-39
5.4.2.6 Series Varicoil Removal Procedures.....	5-39
5.4.2.7 Shunt Capacitor Removal Procedure.....	5-39
5.4.2.8 Capacitor Assembly Removal Procedure.....	5-40
5.4.2.9 Series Capacitor Removal Procedures.....	5-40
5.4.2.10 Chassis Disassembly Procedure.....	5-40
5.4.2.11 Discriminator Disassembly Procedures.....	5-41
5.4.2.12 Electronic Control Amplifier Disassembly Procedures.....	5-41
5.4.2.13 Coupler Control Disassembly Procedures.....	5-42
5.4.2.14 Shunt Varicoil Disassembly Procedures.....	5-43
5.4.2.15 Series Varicoil Disassembly Procedures.....	5-43
5.4.2.16 Step Coil Disassembly Procedures.....	5-43
5.4.2.17 Shunt Capacitor Disassembly Procedures.....	5-45

table of contents (cont)

	<i>Page</i>
5.4.2.18 Capacitor Assembly Disassembly Procedures.....	5-46
5.4.2.19 Series Capacitor Disassembly Procedures.....	5-46
5.5 Reassembly.....	5-46
5.5.1 General.....	5-46
5.5.2 490T-4 Antenna Coupler Reassembly Procedures.....	5-47
5.5.2.1 Series Capacitor Reassembly Procedures.....	5-47
5.5.2.2 Capacitor Assembly Reassembly Procedures.....	5-48
5.5.2.3 Shunt Capacitor Reassembly Procedures.....	5-48
5.5.2.4 Series Varicoil Reassembly Procedures.....	5-49
5.5.2.5 Shunt Varicoil Reassembly Procedures.....	5-51
5.5.2.6 Step Coil Reassembly Procedures.....	5-52
5.5.2.7 Coupler Control Reassembly Procedures.....	5-54
5.5.2.8 Electronic Control Amplifier Reassembly Procedures.....	5-55
5.5.2.9 Discriminator Reassembly Procedures.....	5-56
5.5.2.10 Chassis Reassembly Procedures.....	5-57
5.5.2.11 Series Capacitor Replacement Procedures.....	5-58
5.5.2.12 Capacitor Assembly Replacement Procedures.....	5-58
5.5.2.13 Series Varicoil Replacement Procedures.....	5-58
5.5.2.14 Shunt Varicoil Replacement Procedures.....	5-59
5.5.2.15 Step Coil Replacement Procedures.....	5-59
5.5.2.16 Shunt Capacitor Replacement Procedures.....	5-59
5.5.2.17 Coupler Control and Electronic Control Amplifier Modules Replacement Procedures.....	5-60
5.5.2.18 Discriminator Replacement Procedures.....	5-60
5.5.2.19 Cover Replacement Procedures.....	5-60
5.6 Adjustments.....	5-60
5.6.1 Shunt Capacitor Adjustments.....	5-60
5.6.1.1 Extending the Range of Boonton 260A Q-Meter.....	5-60
5.6.1.2 Adjustment and Check of Shunt Capacitor (Collins Part Number 528-0466-00) Limit Switches.....	5-60
5.6.1.3 Adjustment and Check of Shunt Capacitor (Collins Part Number 777-4500-001).....	5-61
 <i>Section 6 Parts List</i>	 6-1
6.1 Introduction.....	6-1
6.1.1 General.....	6-1
6.1.2 Manufacturer's Code and Name Index.....	6-1
6.1.3 Table I.....	6-4
6.2 Numerical Index.....	6-6
6.3 Symbol Index.....	6-20
6.4 Parts List.....	6-28
 <i>Section 7 Illustrations</i>	 7-1

list of illustrations

<i>Figure</i>	<i>Page</i>
1-1 490T-4 Antenna Coupler.....	1-0
1-2 490T-4 Antenna Coupler, Right Side View (Cover Removed).....	1-3
1-3 490T-4 Antenna Coupler, Left Side View (Cover Removed).....	1-4
2-1 490T-4 Antenna Coupler Outline and Mounting Dimensions.....	2-1
4-1 Typical HF Communications System, Block Diagram.....	4-1
4-2 Antenna Coupler, Block Diagram.....	4-2
4-3 Homing Control Circuits, Simplified Schematic Diagram.....	4-4
4-4 Step Coil Motor Circuit, Simplified Schematic Diagram.....	4-6
4-5 Shunt Capacitor Motor Circuit, Simplified Schematic Diagram.....	4-7
4-6 Series Capacitor Motor Circuit, Simplified Schematic Diagram.....	4-8
4-7 Sense Circuits and Varicoil Reference Voltage, Simplified Schematic Diagram.....	4-10
4-8 Frequency Band Information, Circuit Diagram.....	4-11
4-9 Phasing Discriminator, Simplified Schematic Diagram.....	4-13
4-10 Loading Discriminator, Simplified Schematic Diagram.....	4-14
4-11 Forward Power Discriminator, Simplified Schematic Diagram.....	4-15
4-12 Reflected Power Discriminator, Simplified Schematic Diagram.....	4-16
4-13 Band Sense Circuit, Simplified Schematic Diagram.....	4-18
4-14 Power and Key Circuits, Simplified Schematic Diagram.....	4-21
4-15 Phasing/Loading Sense Circuits, Simplified Schematic Diagram.....	4-22
4-16 Series Varicoil Motor Circuit, Simplified Schematic Diagram.....	4-26
4-17 Tune B Circuit, Simplified Schematic Diagram.....	4-28
5-1 Special Cable Assemblies.....	5-2
5-2 12.5/200 Ohm Load, Schematic Diagram.....	5-3
5-3 RF Coil Drive Shaft Wrench Fabrication Diagram.....	5-3
5-4 Bench Test Setup Diagram.....	5-5
5-5 SWR Nomograph.....	5-9
5-6 Simplified Intermodule Wiring Diagram.....	5-15
5-7 Varicoil Wiper Assembly.....	5-51
5-8 Discriminator Connector Positioning Diagram.....	5-58
6-1 490T-4 Antenna Coupler System.....	6-28
6-2 490T-4 Antenna Coupler System.....	6-29
6-3 Electronic Control Amplifier.....	6-31
6-4 Electronic Control Terminal Board.....	6-37
6-5 Amplifier, Electronic Control.....	6-42
6-6 Electronic Components Assembly.....	6-48

list of illustrations (cont)

<i>Figure</i>	<i>Page</i>
6-7 Antenna Coupler Control.....	6-52
6-8 Front Terminal Board.....	6-57
6-9 Rear Terminal Board.....	6-66
6-10 Loading-Phasing Discriminator.....	6-71
6-11 Series and Shunt Radio Frequency Coils.....	6-75
6-12 Variable Stepping Radio Frequency Coils.....	6-79
6-13 Capacitor Assembly.....	6-82
6-14 Rotary Switch.....	6-85
6-15 Tuning Drive.....	6-87
6-16 Electrical Equipment Chassis.....	6-89
6-17 790Y-1 Shockmount Clamping Plate.....	6-97
6-18 RF Coil Assembly.....	6-98
6-19 Vacuum Shunt Variable Capacitor.....	6-104
7-1 490T-4 Antenna Coupler Chassis (A1), Interconnection Diagram.....	7-1
7-2 Coupler Control A2 MCN 101 Through 179, Schematic Diagram.....	7-7
7-3 Coupler Control A2 MCN 180 Through 671, Schematic Diagram.....	7-13
7-4 Coupler Control A2 MCN 672 Through 3614, Schematic Diagram.....	7-19
7-5 Coupler Control A2 MCN 3615, Schematic Diagram.....	7-27
7-6 Electronic Control Amplifier A3, Collins Part Number 528-0467-00, Schematic Diagram.....	7-33
7-7 Electronic Control Amplifier A3, Collins Part Number 775-4276-00, Schematic Diagram.....	7-39
7-8 Step Coil A4, Collins Part Number 528-0524-00, Schematic Diagram.....	7-43
7-8A Step Coil A4, Collins Part Number 777-3508-001, Schematic Diagram.....	7-46A
7-8B Series Varicoil A5, Schematic Diagram.....	7-46E
7-9 Shunt Varicoil A6, Schematic Diagram.....	7-47
7-10 Shunt Capacitor A7, Collins Part Number 528-0466-00, Schematic Diagram.....	7-51
7-10A Shunt Capacitor A7, Collins Part Number 777-4500-001, Schematic Diagram.....	7-54A
7-11 Discriminator A8, Schematic Diagram.....	7-55
7-12 Series Capacitor A9, Schematic Diagram.....	7-59

list of tables

<i>Table</i>	<i>Page</i>
1-1 Specifications for the 490T-4 Antenna Coupler.....	1-1
1-2 Identification of 490T-4 Antenna Coupler Modules.....	1-2
3-1 Functions of 490T-4 Indicators.....	3-1
4-1 Home Positions of Tuning Elements.....	4-3
4-2 State of Relays for Band Selection.....	4-11
5-1 Test Equipment Required.....	5-1
5-2 Parts List for 12.5/200 Ohm Load.....	5-3
5-3 Functional Test Procedures.....	5-7
5-4 Overall Test Procedures.....	5-10
5-5 Coupler Control A2, Troubleshooting Chart.....	5-18
5-6 Coupler Control A2, Relay Energizing Chart.....	5-32
5-7 Electronic Control Amplifier A3, Troubleshooting Chart.....	5-33
5-8 878L-16 Torque Meter Normal Indicator Limits.....	5-36
5-9 Discriminator A8, Troubleshooting Chart.....	5-37
5-10 Lubricants and Sealants.....	5-56



TPO-3129-017

Figure 1-1. 490T-4 Antenna Coupler.

section 1

general description

1.1 GENERAL

This section presents the scope of this instruction book and provides a functional description of the 490T-4 Antenna Coupler. Information on the 490T-4 includes the purpose, specifications, and mechanical and electrical descriptions. An overall view of the 490T-4 is shown in figure 1-1.

1.2 PURPOSE OF INSTRUCTION BOOK

This instruction book provides instructions for the installation, operation, and maintenance of the 490T-4 Antenna Coupler. It includes a

theory of operation that will provide maintenance personnel with an understanding of the 490T-4 operation.

1.3 PURPOSE OF EQUIPMENT

The 490T-4 is an automatically tuned hf impedance matching device. It operates as a line flattener at 1.25-kilowatt average and 1.5-kilowatt pep. output with a 3:1 vswr.

1.4 EQUIPMENT SPECIFICATIONS

Table 1-1 lists the specifications for the 490T-4 Antenna Coupler.

Table 1-1. Specifications for the 490T-4 Antenna Coupler.

CHARACTERISTIC	SPECIFICATION
Frequency range	2.0 to 30.0 MHz.
Power requirement	107.5 to 119.5 volts, 360 to 500 Hz, single-phase, 95 watts (average), maximum; 50 watts keyed during operate, 35 watts unkeyed, 20 watts standby.
Rf duty cycle	Continuous (at maximum rated power).
Rated input rf power	1250 watts average and 1500 watts pep.
Tuning time	3.0 seconds typical. 6.0 seconds maximum.
Tuning accuracy	1.3 to 1 vswr, maximum when tune power is between 70 and 200 watts.
Antenna system load impedance	50 ohms nominal, not to exceed 3:1 vswr.
Rf power efficiency	80 percent, minimum.
Dimensions	
Height	7-11/16 inches.
Width	10-5/32 inches.
Length	12-11/16 inches.
Weight	19.3 pounds.

Table 1-1. Specifications for the 490T-4 Antenna Coupler (Cont).

CHARACTERISTIC	SPECIFICATION
Ambient temperature	
Operating	-55 to +55 °C (-67 to +131 °F). -55 to +70 °C (-67 to +158 °F), 30 minutes.
Nonoperating	-62 to +85 °C (-79.6 to +185 °F).
Altitude	0 to 30,000 feet (operating).
Shock	15 g, 11-millisecond duration.
Vibration	5 to 500 Hz; 10 g (isolator mounted), 50 to 500 Hz; 2 g, rigid mount, nonoperating; 1 g, rigid mount, operating.

1.5 DESCRIPTION

1.5.1 Mechanical Description

The 490T-4 Antenna Coupler is contained within a full ATR short case. It is nonpressurized, semiportable, and dustproof, with a provision for forced air cooling. The 490T-4 is modularized for ease of maintenance. The modules are mounted on a sheet-metal chassis that provides rigidity as well as rf isolation. Refer to table 1-2 for module identification and figures

1-2 and 1-3 for module location. The shunt and series capacitors, the step coil, and the varicoils are arranged in an L-configuration and are mounted across the upper front and left side of the chassis.

The electronic control amplifier module and coupler control module are located on the rear right side of the chassis. The shunt capacitor is mounted on the front right side. The discriminator module is mounted on a sheet-metal shield located on the lower left side.

Table 1-2. Identification of 490T-4 Antenna Coupler Modules.

MODULE	QTY	COLLINS PART NUMBER	MODULE DESIGNATION
Electrical equipment chassis 490T-4	1	767-6913-001	A1
Antenna coupler control (coupler control)	1	528-0465-00	A2
Electronic control amplifier	1	528-0467-00 (old) 775-4276-00 (new)	A3
Variable rf stepping coil (step coil)	1	528-0524-00 (old) 777-3508-001 (new)	A4 A4
Rf series coil (series varicoil)	1	528-0525-00	A5
Rf shunt coil (shunt varicoil)	1	528-0526-00	A6
Capacitor tuning drive (shunt capacitor)	1	528-0466-00 (old) 777-4500-001 (new)	A7 A7

Table 1-2. Identification of 490T-4 Antenna Coupler Modules (Cont).

MODULE	QTY	COLLINS PART NUMBER	MODULE DESIGNATION
Loading-phasing discriminator (discriminator)	1	528-0468-00	A8
Rotary switch (series capacitor)	1	761-6205-00	A9
Capacitor assembly	1	761-6204-00	A10

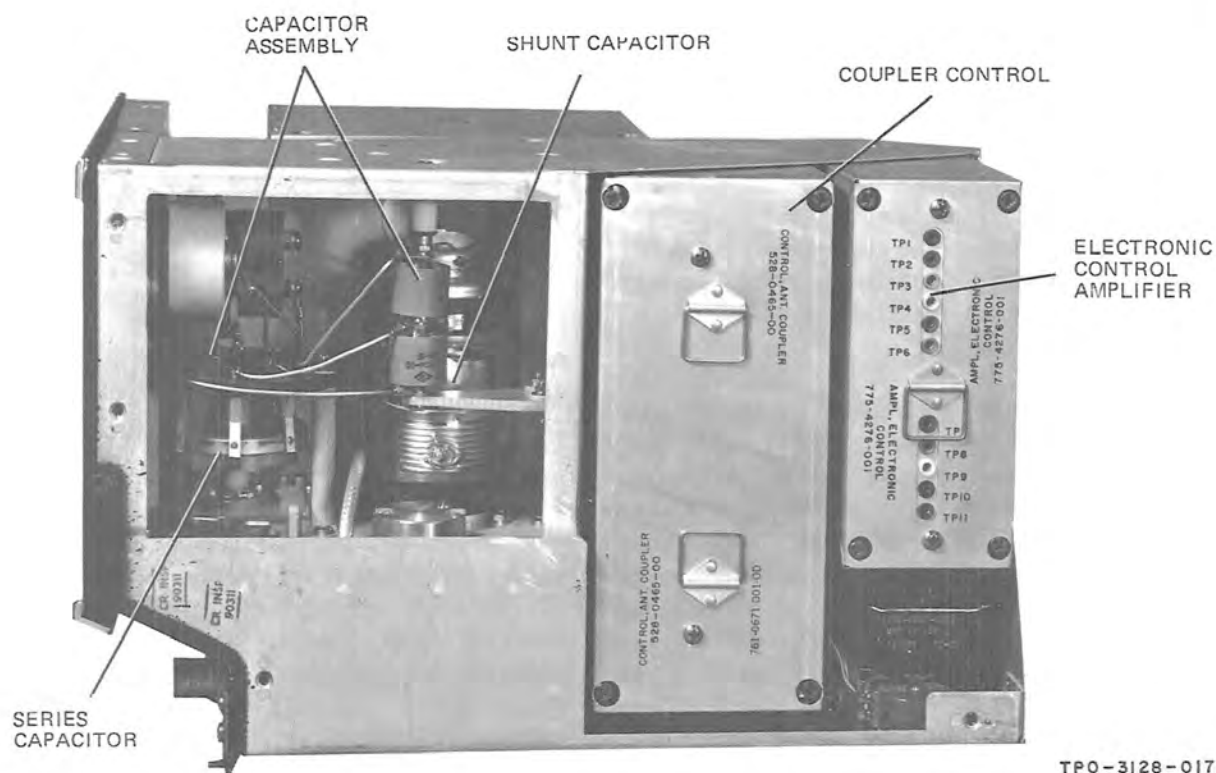


Figure 1-2. 490T-4 Antenna Coupler, Right Side View (Cover Removed).

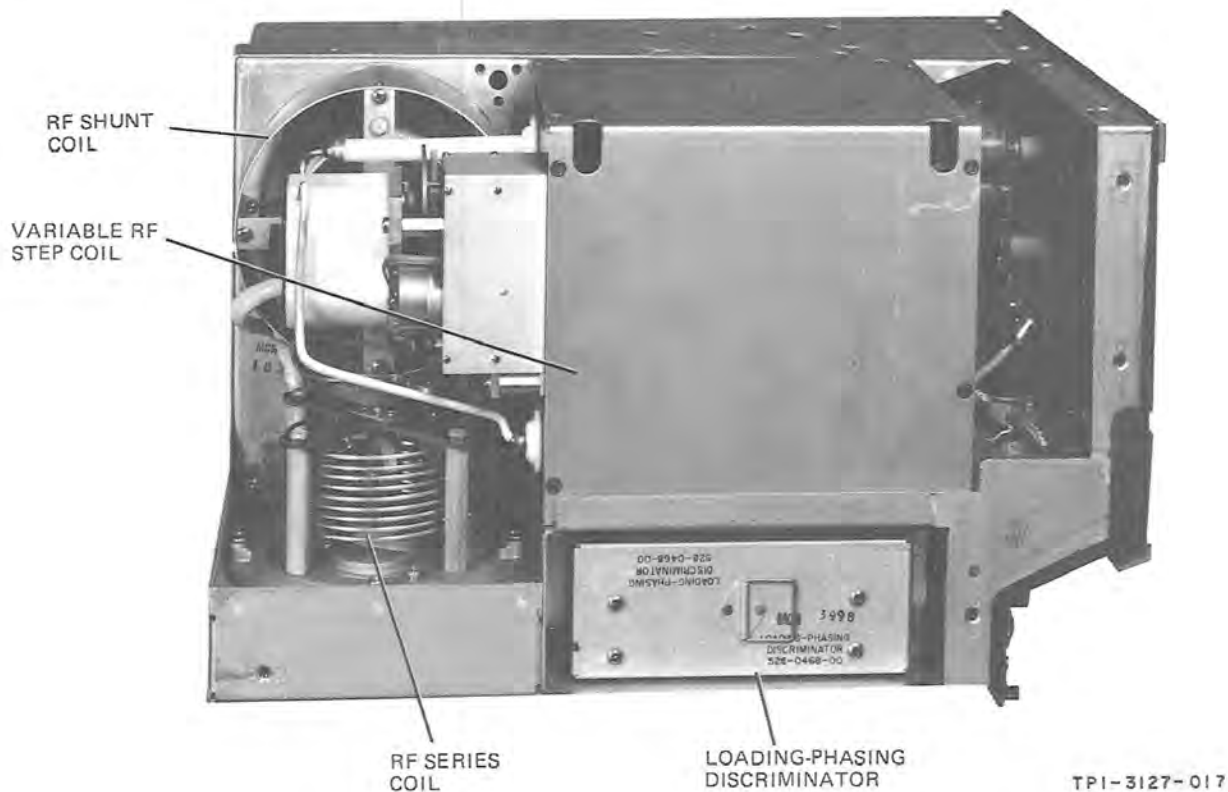


Figure 1-3. 490T-4 Antenna Coupler, Left Side View (Cover Removed).

1.5.2 Electrical Description

The 490T-4 Antenna Coupler includes nine modules and a main chassis. The following paragraphs contain an electrical description of each module of the 490T-4.

The coupler control module controls the 490T-4 and transceiver during the tuning operation. It automatically sequences the operation of the other modules of the coupler while maintaining compatible operation with the transceiver. All switching of this module is accomplished by silicon controlled switches, silicon transistor logic circuits, and hermetically sealed miniature relays.

The discriminator module samples the forward and reflected rf power to produce dc output voltages that are proportional to phasing and loading errors. The circuits also provide dc voltage outputs proportional to forward and reflected power that control the initial tuning

operation and the demand surveillance retuning function.

The step coil module provides incremental values of the inductive reactance required to tune capacitive antennas. The reactance of each coil step is slightly less than the reactance of the entire series varicoil.

Two identical varicoil modules include a continuously variable coil and a servo motor. The series varicoil is connected in series with the step coil to provide continuously variable values of inductive reactance. The shunt varicoil is used during final tuning to phase the antenna circuit. During initial tuning the series varicoil is positioned according to phasing requirements. During final tuning, the series varicoil is positioned according to loading requirements and the shunt varicoil according to phasing requirements.

The series capacitor has five fixed capacitor positions and a motor-driven switch. The

fixed capacitors are switched in various parallel configurations to vary the series capacitance. The series capacitor is used to tune slightly capacitive and inductive antennas.

The shunt capacitor is a motor-driven vacuum capacitor. If the capacitive reactance of the series capacitor is not large enough to cancel the inductive reactance of an inductive antenna, shunt capacitance is added until the antenna becomes capacitive. If the resistive

component of the antenna is greater than 50 ohms, shunt capacitance is added until the resistive component is less than 50 ohms.

The electronic control amplifier module consists of a series varicoil servo amplifier, a shunt varicoil servo amplifier, a chopper circuit, and a band information detection circuit. The band information circuit determines in which frequency band the transmitter is operating.

section 2

installation

2.1 GENERAL

Installation data for the 490T-4 Antenna Coupler is not provided in this instruction book. The 490T-4 is normally mounted in a 499L-11 Shelf to form the 156T-4 Line Flattener. Refer to the instruction book of the 156T-4 Line Flattener for installation data. Refer to figure 2-1 for the

outline and mounting dimension diagram for the 490T-4.

2.2 PREINSTALLATION TESTS

Refer to paragraph 5.2.6 in the maintenance section for preinstallation bench tests of the 490T-4.

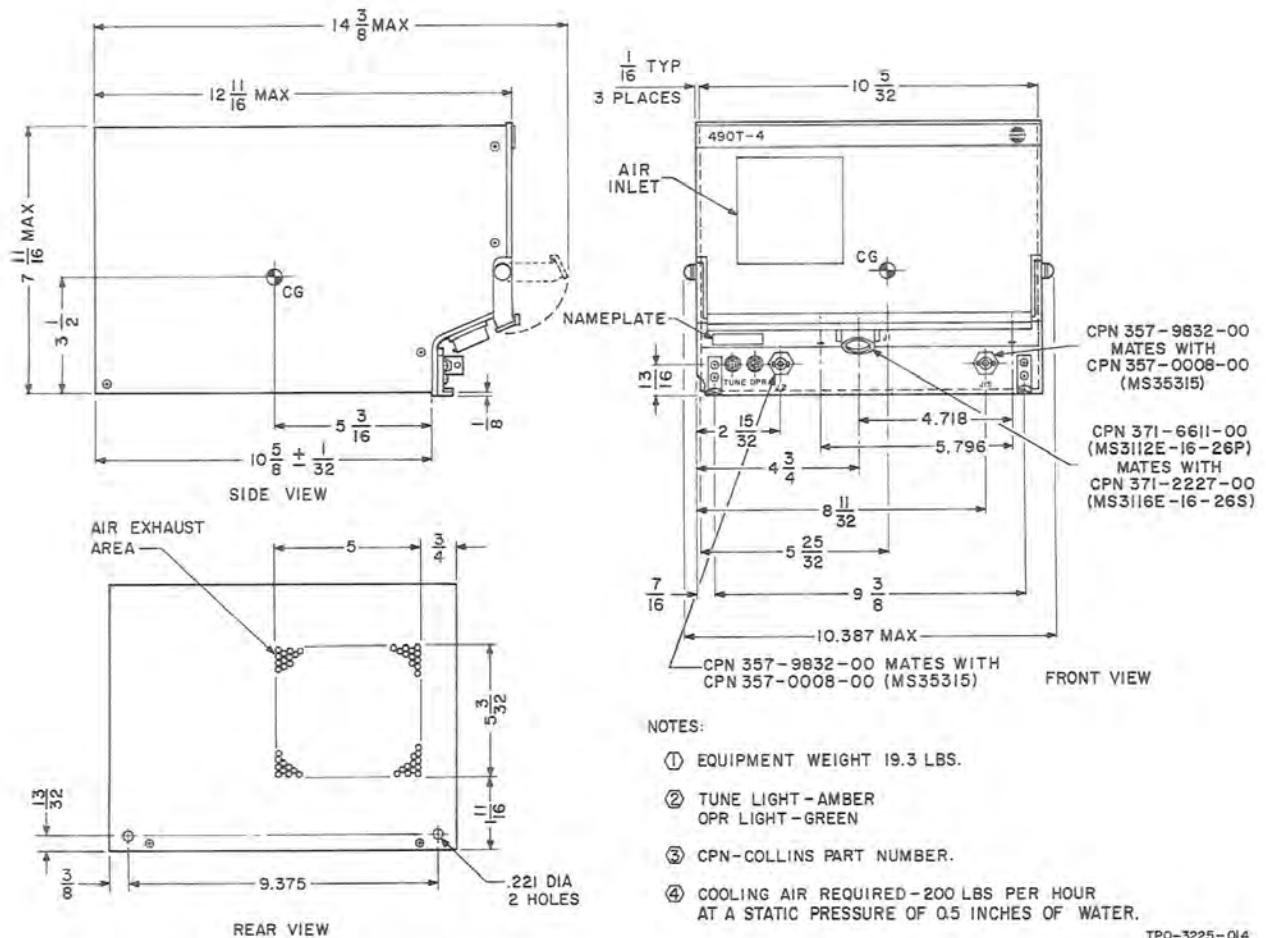


Figure 2-1. 490T-4 Antenna Coupler Outline and Mounting Dimensions.

section 3

operation

3.1 GENERAL

There are no manual operating controls or switches on the 490T-4 Antenna Coupler. The

functions of all indicators are given in table 3-1. Refer to figure 2-1 for the location of these indicators.

Table 3-1. Functions of 490T-4 Indicators.

INDICATOR	FUNCTION
TUNE (amber lamp)	Indicates that the 490T-4 is in tune operation and that sufficient forward power is present.
OPR (green lamp)	Indicates that the 490T-4 is in the operate mode.
Note When both control indicators are illuminated simultaneously the 490T-4 is in a fault mode.	

section 4

principles of operation

4.1 GENERAL

This section presents the principles of operation for the 490T-4 which will aid in the maintenance and repair of the equipment. An overall description is given for a typical hf communications system showing how an antenna coupler is used. The detailed theory of operation is then presented and it is supplemented by partial schematics which show only those circuits used for each phase of operation.

4.2 HF SYSTEM GENERAL THEORY OF OPERATION

A typical hf communication system consists of a receiver-transmitter, a radio set control, an antenna coupler, and an antenna. This system provides voice communications between aircraft and ground-communication stations. Figure 4-1 is a simplified block diagram of a typical hf system.

The receiver-transmitter can receive and transmit in the high-frequency band (between 2.000 and 29.999 MHz). The receiver-transmitter also controls the antenna coupler tune cycle.

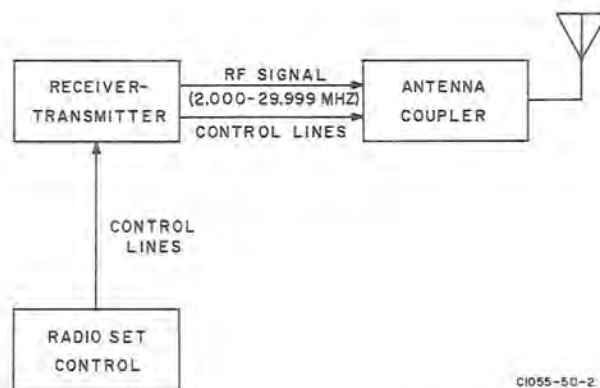
The radio set control furnishes frequency and mode information to the receiver-transmitter. This information is in the form of binary ground-or-open signals applied to the control wires of the radio set control.

The antenna coupler derives band information from the transmitted rf signal. This band information is used to automatically tune the 490T-4 Antenna Coupler and match the antenna impedance with the receiver-transmitter impedance.

4.3 490T-4 ANTENNA COUPLER THEORY OF OPERATION

4.3.1 General

The 490T-4 Antenna Coupler contains all the components required to automatically match an antenna to a 50-ohm transmitter output impedance, over the frequency range of 2.0 to 29.999 MHz. The 490T-4 tuning operation is a five-step sequence: Home, rf on, tune A, tune B, and operate and demand surveillance. If tuning is not accomplished in these five steps, a sixth position, fault, is enabled.



C1055-50-2

Figure 4-1. Typical HF Communications System, Block Diagram.

4.3.2 Functional Theory of Operation (Refer to figure 4-2.)

The tuning elements include a series variable coil, shunt variable coil, step coil, series capacitor assembly, and shunt variable capacitor. The dc and servo motors position the elements as commanded by the control circuits during the tuning sequence.

The tuning sequence is initiated by selecting a new frequency on the radio set control. At

this time, the tuning elements move to their home position and remain there until the transmitter is keyed.

Immediately after rf power is applied, the discriminator samples the input to the antenna coupler and the reflected power from the band information circuit. It develops four dc voltages that are in proportion to the reactive component (phasing error), the 50-ohm impedance component (loading error), the forward power level, and the reflected power

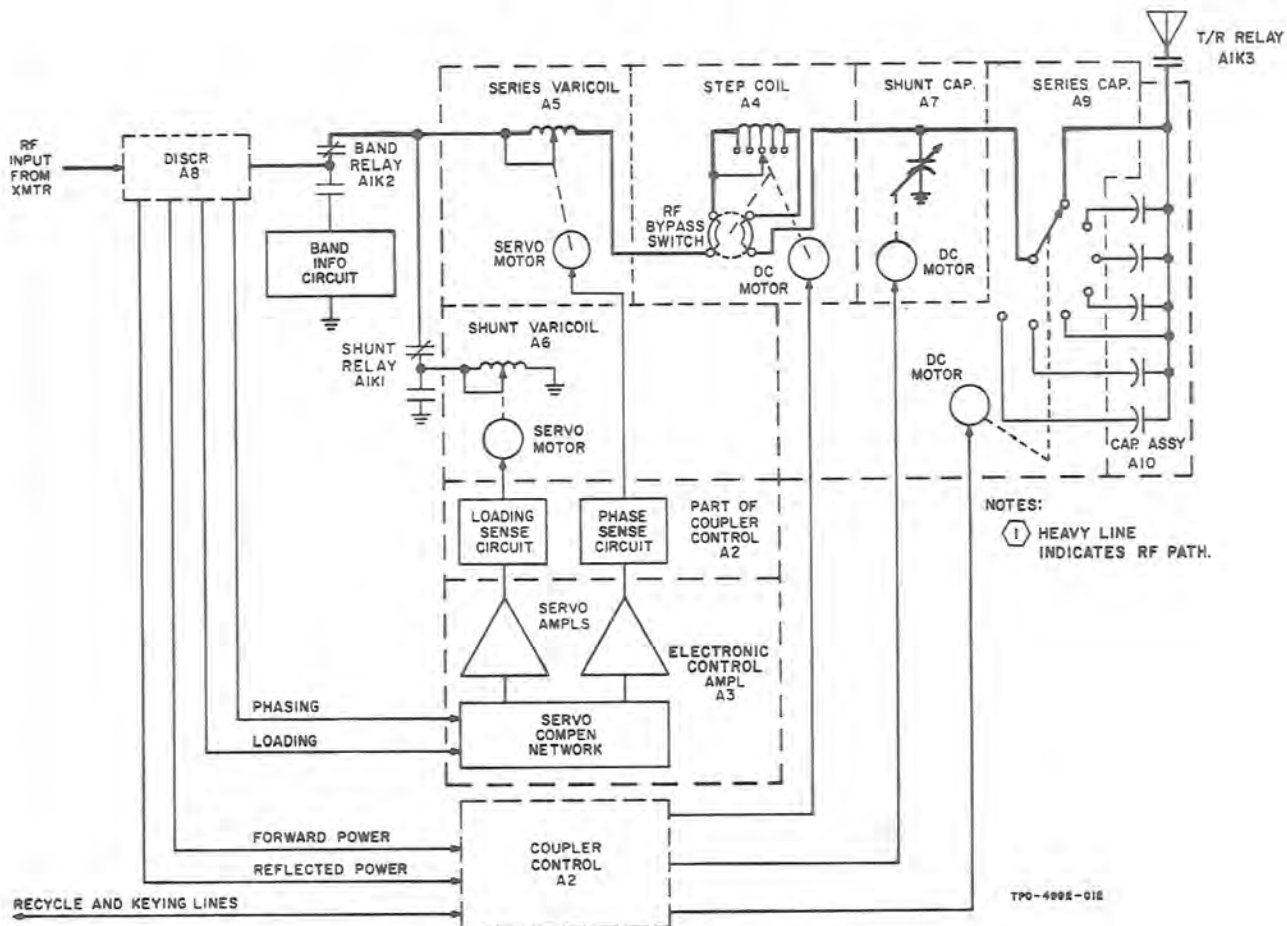


Figure 4-2. Antenna Coupler, Block Diagram.

level. The two error signals are dependent upon the frequency selected and are used to select, limit, and/or pre-position the tuning elements. Forward and reflected power are used by the antenna coupler to determine the start and completion of the tuning sequence.

Immediately after the elements are properly positioned for the selected frequency, band relay K2 deenergizes, removes the band information circuit, and connects the antenna circuit. The discriminator now develops error signals in proportion to the reactive component of the antenna circuit. The control circuits continually decode the sensed error signals and all other external control inputs to initiate and govern the corrective action.

If the antenna appears capacitive, the series varicoil automatically runs to the position required for phasing. If the series varicoil runs to maximum before a phasing point is reached, the step coil adds inductance until the phasing error is within the range of the series varicoil. If both the series varicoil and the step coil reach maximum before phasing is accomplished, the shunt capacitor runs toward maximum until the resultant antenna impedance can be phased by the series varicoil and step coil. If, after phasing, the antenna resistance is greater than 50 ohms, the shunt capacitor runs toward maximum until the resistance is less than 50 ohms while the series varicoil maintains a phased antenna. The shunt varicoil is then connected to the rf line and the antenna is phased and loaded until the vswr is 1.3:1 or below.

If the antenna appears inductive, series capacitance is switched into the circuit until a capacitive reactance greater than 50 ohms is realized. If the capacitive reactance of the series capacitors is not great enough to make the antenna capacitive with an impedance greater than 50 ohms, the series capacitors are bypassed. At this point, the shunt capacitor runs toward maximum until the discriminator senses a capacitive load with an impedance greater than 50 ohms. Tuning now proceeds as previously explained for a capacitive antenna.

4.3.3 Homing

Home is the first position in the tuning cycle. All variable tuning elements move to the home position (table 4-1) when the tuning cycle is initiated. Selecting a frequency on the radio set control causes the transceiver to apply a momentary ground to the recycle line.

Table 4-1. Home Positions of Tuning Elements.

TUNING ELEMENTS	HOME POSITION
Shunt varicoil A6	Maximum inductance and removed from the rf circuit
Series varicoil A5	Minimum inductance
Step coil A4	Minimum inductance and bypassed
Shunt capacitor A7	Minimum capacitance
Series capacitor A9	Bypassed

The ground on the recycle line appears on the cathode of A2Q13 (figure 4-3). Silicon controlled rectifier A2Q13 is enabled by +28 vdc (unfiltered) on the anode and gate and will conduct, energizing A2K22 and A2K23. A holding ground is applied to the cathode of A2Q13 through A2K23-8 and -3, and enabling voltage is supplied to the gate until the variable elements are in the home position. When all elements are home, the enabling voltage is removed from the gate; and as the anode voltage passes through zero reference level, A2Q13 will cut off, deenergizing A2K22 and A2K23. Gate enabling voltage is furnished to the gate of A2Q13 when step coil A4 and/or shunt capacitor A7 are not in the home position.

When A4 is not home, A2K9 is energized by applying a ground to pin 5, through A2K23-8 and -3, A2P1-2, A4P1-23, A4S2(R)-5 and -6, A4P1-22, A2P1-1, and A2CR18. Gate enabling voltage is developed across A2R53 when the circuit is completed by A2K22-4 and -7 and A2K9-4 and -7. When A4 reaches home, the gate voltage is removed by deenergizing A2K9.

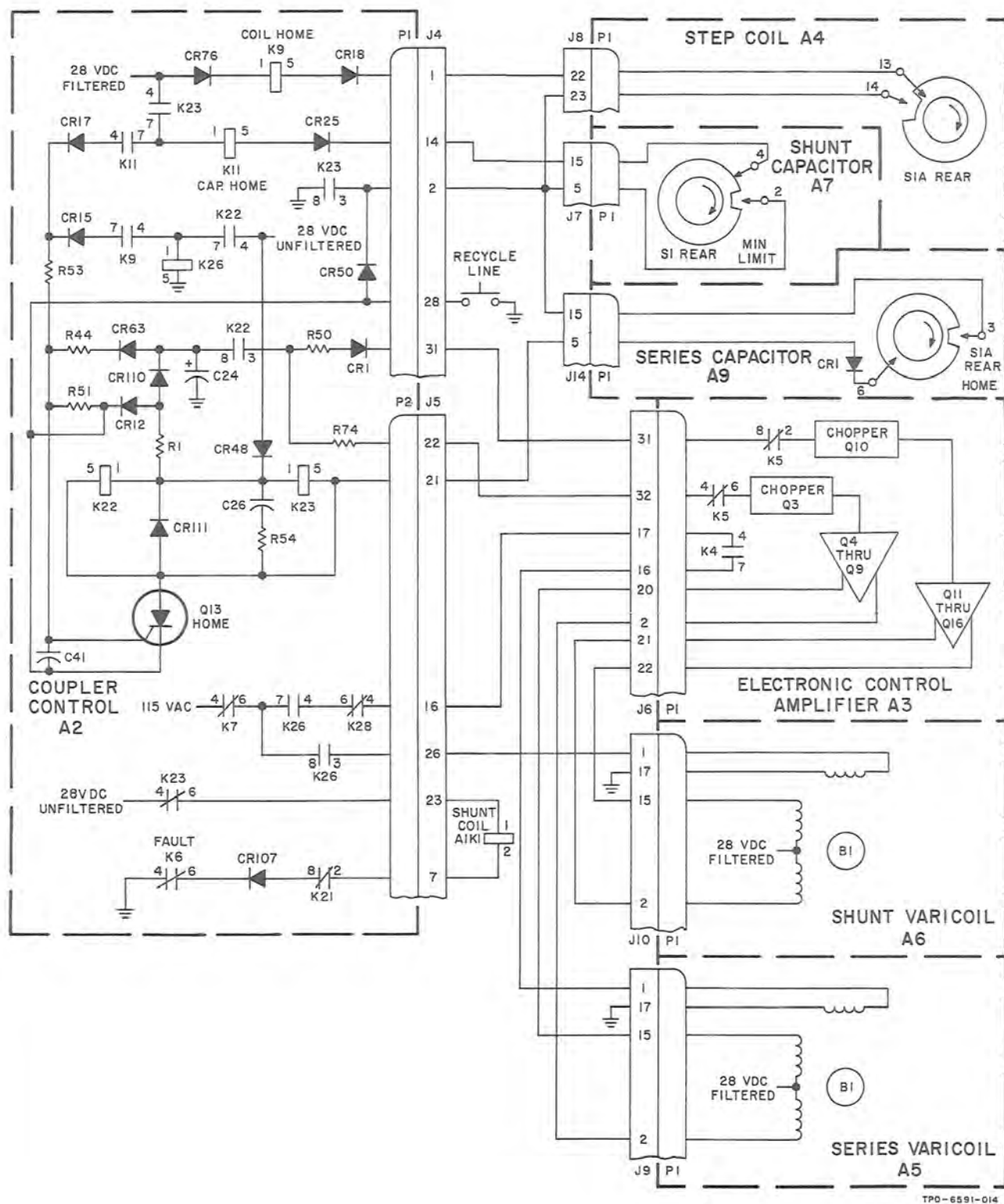


Figure 4-3. Homing Control Circuits, Simplified Schematic Diagram.

When A7 is not home, A2K11 is energized by applying a ground to pin 5 through A2K23-8 and -3, A3P1-2, A7P1-5, A7S1R, A7P4-15, A2P1-14, and A2CR25. Gate voltage is developed across A2R53 when the circuit is completed by A2K23-4 and -7 and A2K11-7 and -4. When A7 reaches home, gate voltage is removed by removing the ground and deenergizing A2K11.

If A9 is not home, a ground is applied to A2K23-5 through A2K23-8 and -3, A2P1-2, A9P1-15, A9S1A(R)-3 and -6, A9CR1, A9P1-5, and A2P2-21 holding A2K23 energized until A9 reaches home.

If A4, A7, and A9 are in the home position, the discharge of C24 through CR63 and R44 provides enabling gate voltage until A5 and A6 reach home.

The homing of shunt varicoil A6 is initiated when A2K22 is energized. This action completes a discharge circuit for A2C24 through A2R50, A2CR1, and normally closed A3K5-8 and -2. The voltage developed by the discharge of A2C24 is applied as a homing error voltage to chopper A3Q10. The homing error voltage is chopped, amplified, and applied to the control windings of the shunt varicoil drive motor, A6B1. The 115 volts, 400 Hz is supplied to the reference winding of A6B1 through normally closed A2K7-4 and -6, and A2K26-8 and -3. The phase relationship between the control winding voltage and the reference winding voltage determines the direction of rotation of A6B1. With a positive input to chopper A3Q10, the shunt varicoil will advance to the home position (maximum). When all elements are home, A2K23 will be deenergized, energizing A1K1 and removing shunt varicoil A6 from the circuit until final tuning.

The homing of A5 series varicoil is initiated when A2K22 is energized. This action completes a discharge circuit for A2C24 through A2R74 and normally closed A3K5-4 and -6. The voltage developed by the discharge of A2C24 is applied as a homing error voltage to chopper A3Q3. The homing error voltage is chopped, amplified, and applied to the control windings of series varicoil servo motor A5B1.

The 115 volts 400 Hz is supplied to the reference winding of A5B1 through normally closed A2K7-4 and -6, A2K26-7 and -4, normally closed A2K28-6 and -4, and A3K4-4 and -7. The phase relationship between the control winding voltage and the reference winding voltage determines the direction of rotation of A5B1. With a positive input to chopper A3Q3, the series varicoil will move to the home position (minimum).

If step coil A4 (figure 4-4) is not in the home position, the ground supplied by A2K23-8 and -3 through A2P1-2, A4P1-23, A4S2(F)-5 and -6, A4CR3, A4P1-22, and A2CR16 grounds the base bias circuit of A2Q6. When A2Q6 is disabled, A2K10 is deenergized removing the short across step coil drive motor A4B1. A4B1 cannot run home until series varicoil A5 is in the home position. When A5 reaches home, +28 volts dc is supplied to A4B1 through A5P1-16, A5S1B(R)-4 and -3, A5P1-18, A2P2-25, normally closed A2K10-6 and -4, A2P2-6, A4P1-1, and A4S1(F). Ground is supplied to A4B1 through A5P1-6, A5S1B(F)-10 and -9, A5P1-5, A2P2-24, normally closed A2K10-2 and -8, A2P2-19, A4P1-14, and A4S2(R). When A4 reaches home, A4S2(R)-5 opens and removes the ground from A2Q6 base bias circuit, and A2Q6 conducts energizing A2Q10. A2K10-4 and -7 and A2K10-3 and -8 complete a short circuit across A4B1 providing dynamic braking.

If shunt capacitor A7 (figure 4-5) is not in the home position, the ground supplied by A2K23-3 and -8 through A2P1-2, A7P1-5, A7S1(F), A7P1-15, and A2P1-14 grounds the base bias circuit of A2Q7. When A2Q7 is disabled, A2K12 is deenergized removing the short across shunt capacitor drive motor A7B1. The +28-volt dc homing voltage is supplied to A7B1 through A2K23-4 and -7, A2K11-7 and -4, normally closed A2K12-6 and -4, A2P2-14, and A7P1-9. Ground is supplied to A7B1 through A2K11-8 and -3, A2P2-12, and A7P1-1. When A7 reaches the home position, A7S1(R) opens and removes the ground from A2Q7 base bias circuit. A2Q7 conducts energizing A2K12. A2K12-7 and -4 complete a short circuit across A7B1 providing dynamic braking.

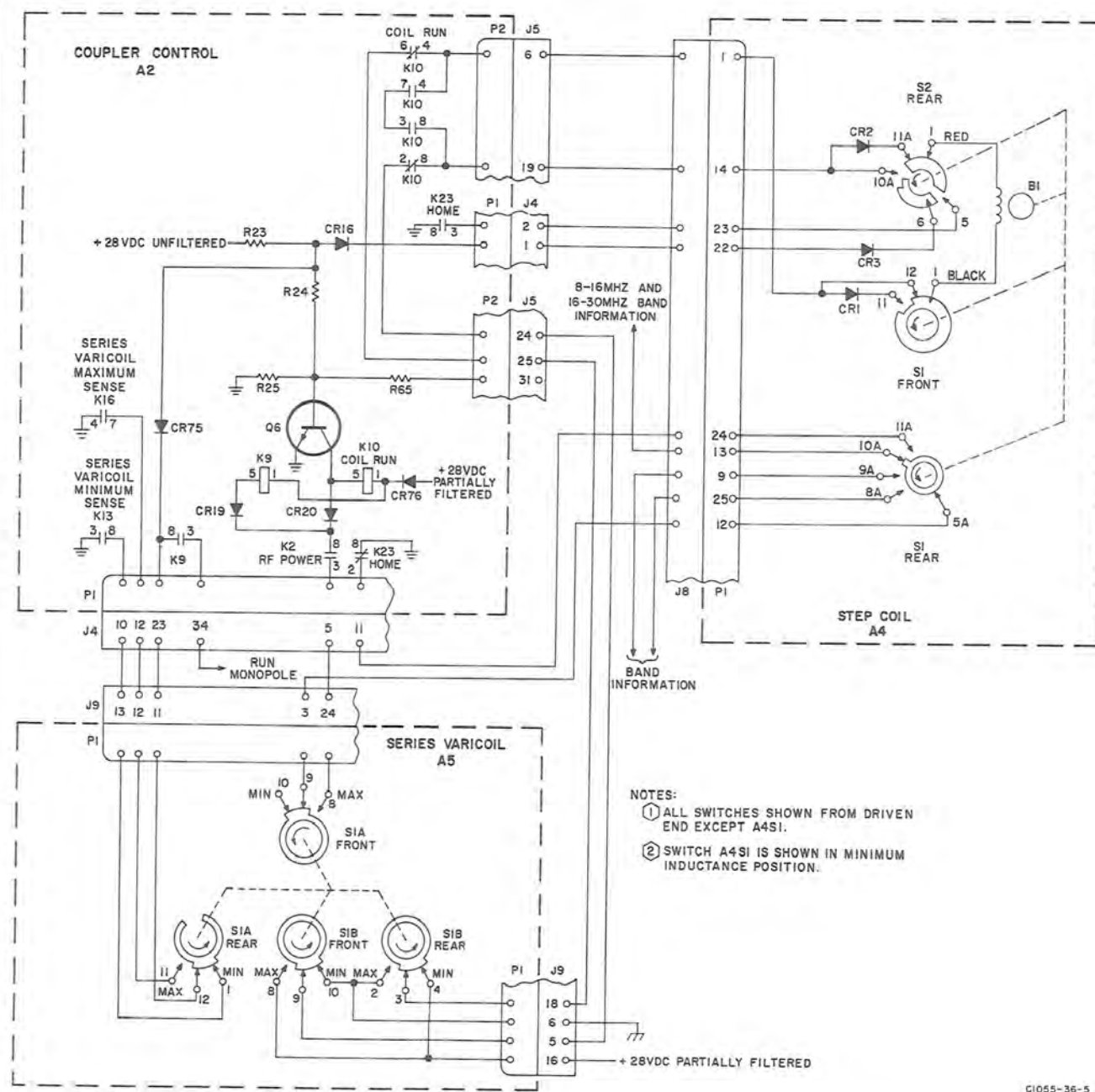


Figure 4-4. Step Coil Motor Circuit, Simplified Schematic Diagram.

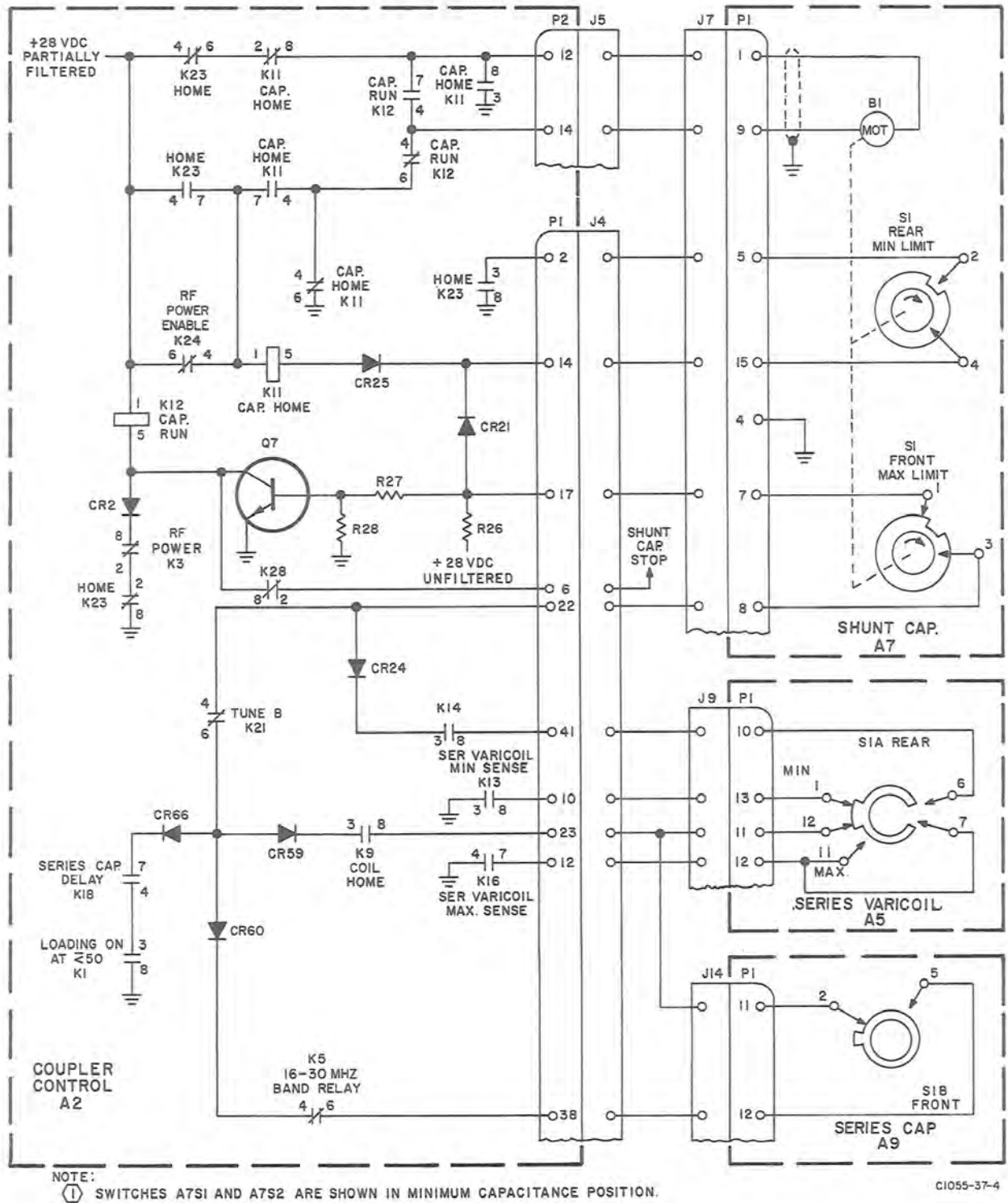
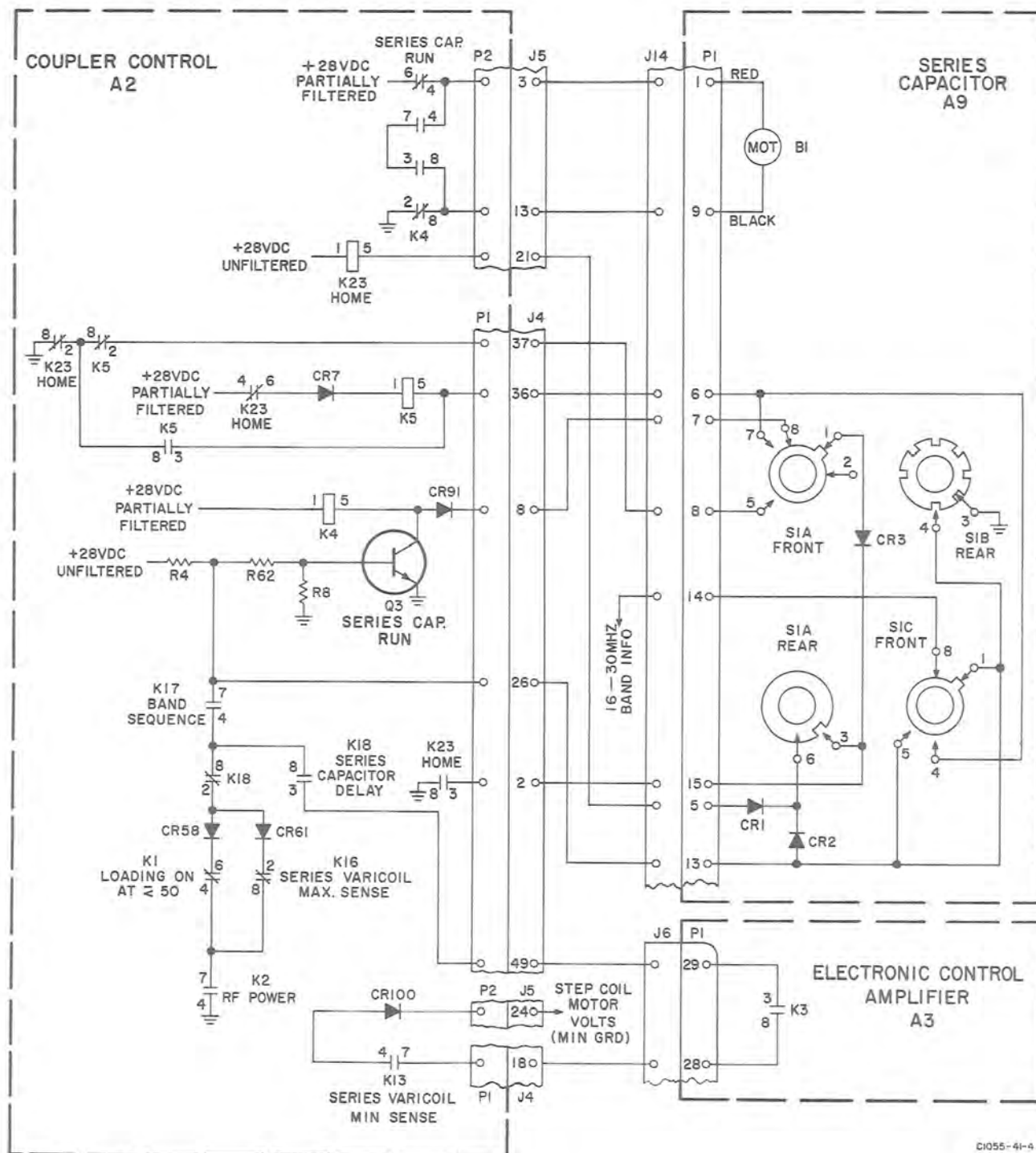


Figure 4-5. Shunt Capacitor Motor Circuit, Simplified Schematic Diagram.



C1055-41-4

Figure 4-6. Series Capacitor Motor Circuit, Simplified Schematic Diagram.

If series capacitor A9 (figure 4-6) is not in the home position, a holding ground is supplied to A2K23-5 through A2P1-2, A9P1-15, A9S1A(R)-3 and -6, A9CR1, A9P1-5, and A2P2-21. A2Q3 base bias circuit is grounded through A2K23-8 and -3, A2P1-2, A9P1-15, A9S1A(R)-3 and -6, A9CR2, and A2P1-26. When A2Q3 is disabled, A2K4 is deenergized removing the short circuit across series capacitor drive motor A9B1. The +28 volts dc is supplied to A9B1 through normally closed A2K4-6 and -4, A2P2-3, and A9P1-1. Ground is supplied to A9B1 through normally closed A2K4-2 and -8, A2P2-13, and A9P1-9. When A9 reaches home position, A9S1A(R)-3 opens and removes ground from A2K23 and from A2Q3 base bias circuit. A2Q3 conducts energizing A2K4. A2K4-8 and -3 and A2K4-7 and -4 complete a short circuit across A9B1 providing dynamic braking.

When all tuning elements have been homed, the gate voltage for A2Q13 is removed, and relays A2K22 and A2K23 deenergize. The antenna coupler is now ready for the tuning operation.

4.3.4 RF On.

4.3.4.1 General

The second step in the tuning sequence is rf on. Pressing the push-to-talk button on the microphone applies a momentary ground to the coupler control key circuits and simultaneously applies an rf signal to the discriminator. The discriminator uses forward and reflected power to initiate the tuning sequence. Forward power error voltages and key circuits are discussed in paragraphs 4.3.4.6.2 and 4.3.4.6.3.

Reflected power through band relay A1K2 (figure 4-7) from either the antenna system or frequency band information circuit develops discriminator error outputs when the vswr is greater than 1.3:1. Error signals are fed to the coupler control for sequencing and to electronic control amplifier for amplification by servo amplifiers.

Error signals to the electronic control amplifier are received either from the coupler

control (homing error volts) or from the discriminator (phasing and loading error volts). In the electronic control amplifier, the dc error signals are converted, amplified, and sent to the band sense circuits for band prepositioning of tuning elements and to sense circuits in the coupler control for series and shunt varicoil positioning. The series or shunt varicoils add or reduce inductance only when reference voltage is applied to windings of A5B1 or A6B1. Reference winding voltage is applied to series varicoil motor during homing and tuning operations, while the shunt varicoil motor reference voltage is applied during homing and final tuning.

4.3.4.2 Antenna

For efficient operation, the antenna must appear resistive and match the transmitter output impedance. This is accomplished in the 490T-4 by adding lumped inductance to cancel the capacitive component or by adding lumped capacitance to cancel the inductive component.

4.3.4.3 Frequency Band Information Circuit (Refer to figure 4-8.)

Frequency band information circuit consists of a parallel-tuned network that resonates at approximately 8.5 MHz and is used as a transmitter dummy load for a short time after rf power is applied. Reflected power from the dummy load displays complex impedance above or below its resonant frequency. When the frequency of the transceiver is above or below 8.5 MHz, the discriminator uses the reflected power from the band information circuit to develop dc error voltages to limit and/or preset the variable tuning elements.

The phasing discriminator senses capacitive or inductive conditions and produces polarized error voltage that activate control circuits to compensate for the capacitive or inductive component. The loading discriminator determines whether the load is more or less than 50 ohms. The outputs of the loading discriminator activate control circuits to correctly position the variable elements for a 50-ohm load. The frequencies from 2 through 30 MHz are divided into four bands with the difference characteristics noted.

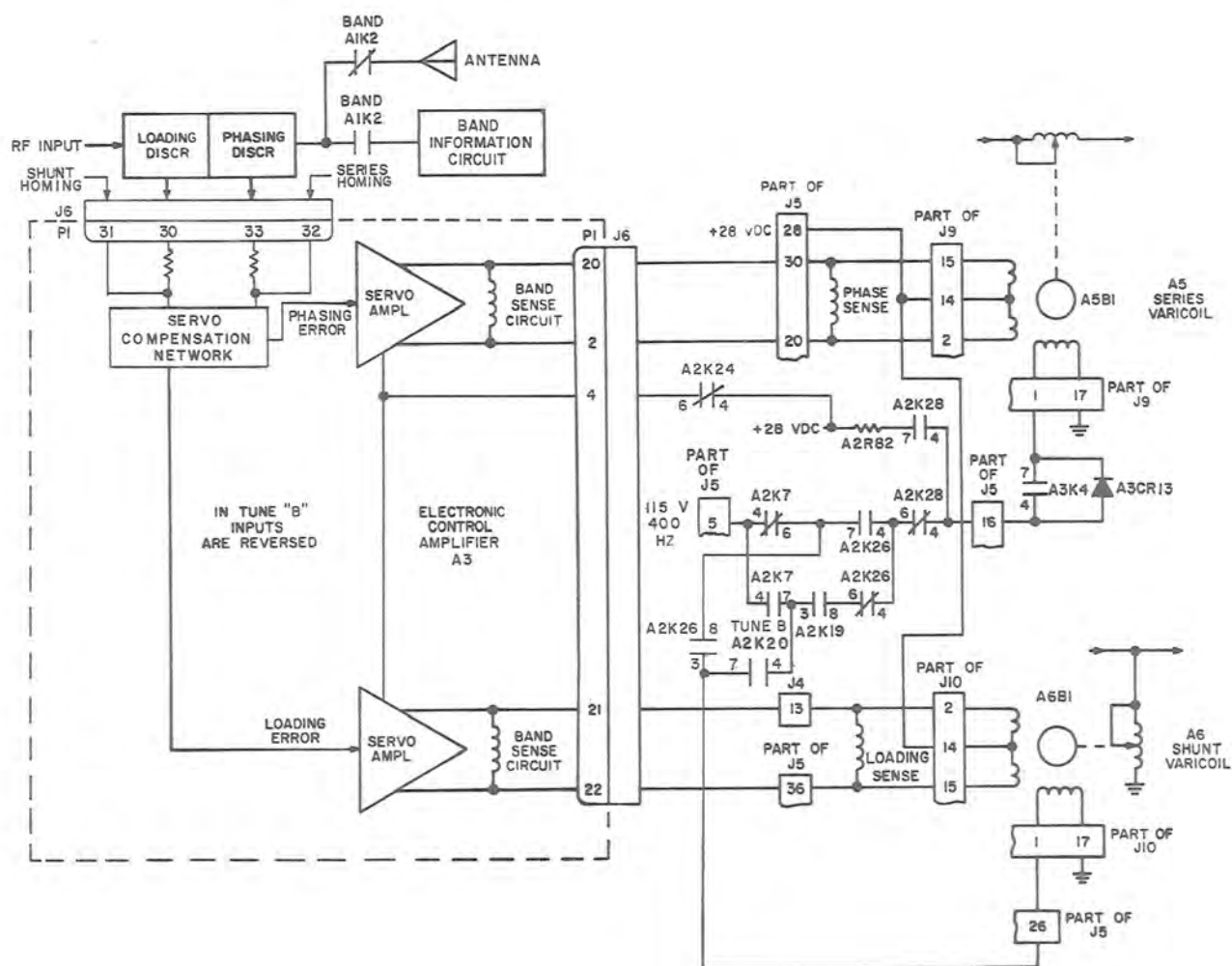


Figure 4-7. Sense Circuits and Varicoil Reference Voltage, Simplified Schematic Diagram.

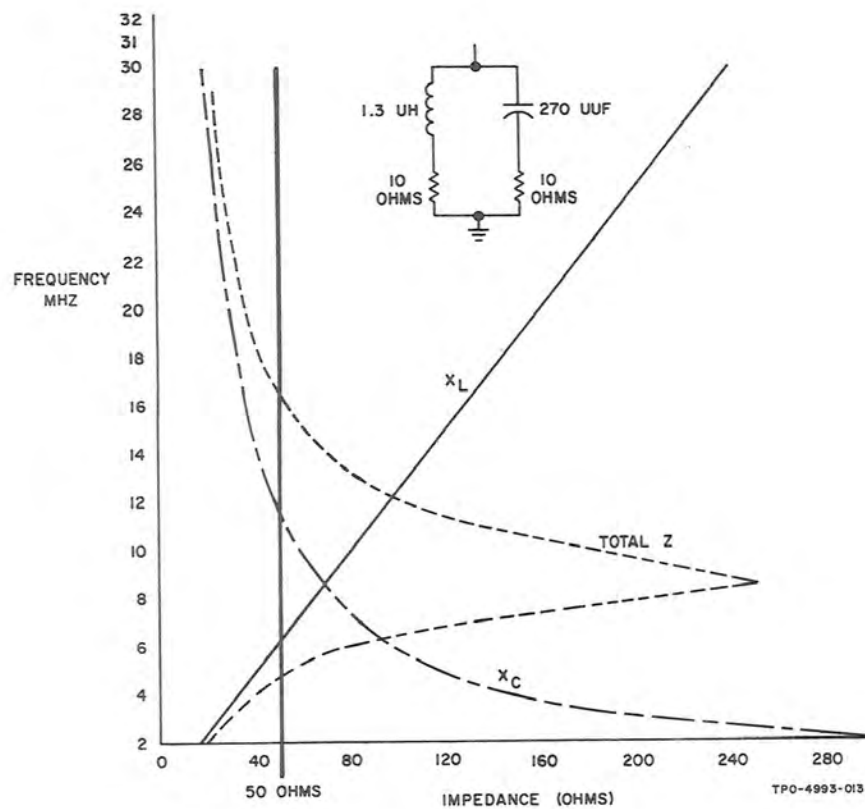


Figure 4-8. Frequency Band Information, Circuit Diagram.

- a. 2 through 4 MHz, $X_C > X_L$ and < 50 ohms
- b. 4 through 8 MHz, $X_C > X_L$ and > 50 ohms
- c. 8 through 16 MHz, $X_L > X_C$ and > 50 ohms
- d. 16 through 30 MHz, $X_L > X_C$ and < 50 ohms

4.3.4.4 Discriminator A8

4.3.4.4.1 General

The continual sampling of the rf signal input to the antenna coupler by the discriminator provides phasing, loading, forward power, and reflected power sensing information. Sensing information is derived by comparing transmission line voltage with transmission line current and producing proportional polarized dc error voltages. Phasing, loading, forward power, and reflected error output voltages control the shunt and bypass relays and servo and dc motors for positioning tuning elements.

4.3.4.4.2 Phasing Discriminator (Refer to figure 4-9.)

The phasing discriminator senses if the load (antenna circuit or band information circuit) is capacitive or inductive by comparing the transmission line voltage and current phase relationship and then developing dc error signals. When the antenna is resistive, the rf line voltage and rf line current are in phase and the error signal is zero. When the load is capacitive, the line current leads the line voltage and the error signal is negative. When the load is inductive, the line current lags the line voltage and the error signal is positive.

The phasing discriminator is divided into two circuits: number 1 (B, C, E, and F) and circuit number 2 (A, D, E, and F). R9 is factory adjusted to balance the impedance of the circuits. The rf line voltage, e_L , is sampled with no phase shift by voltage divider C12 and C13. The induced voltage in the secondary of the transformer is 90 degrees out of phase with current i_L . The vector addition of induced voltage e_2 and sampled voltage e_6 in circuit number 1 is resultant voltage e_4 . The vector addition of induced voltage e_3 and sampled voltage e_6 in circuit number 2 is resultant voltage e_5 . Phase voltages e_4 and e_5 are

separately rectified by CR5 and CR6 and filtered by C15 and C16 with the resulting dc voltages being algebraically subtracted (V_{ec} minus V_{ed}) for the error signal output.

When the antenna is capacitive, the vector addition of induced voltage e_2 and sampled voltage e_6 causes resultant voltage e_4 to decrease in magnitude (vector diagram (2) of figure 4-9). The vector addition of induced voltage e_3 and sampled voltage e_6 causes resultant voltage e_5 to increase in magnitude. The algebraic difference between resultant voltages e_4 and e_5 is a negative error signal output.

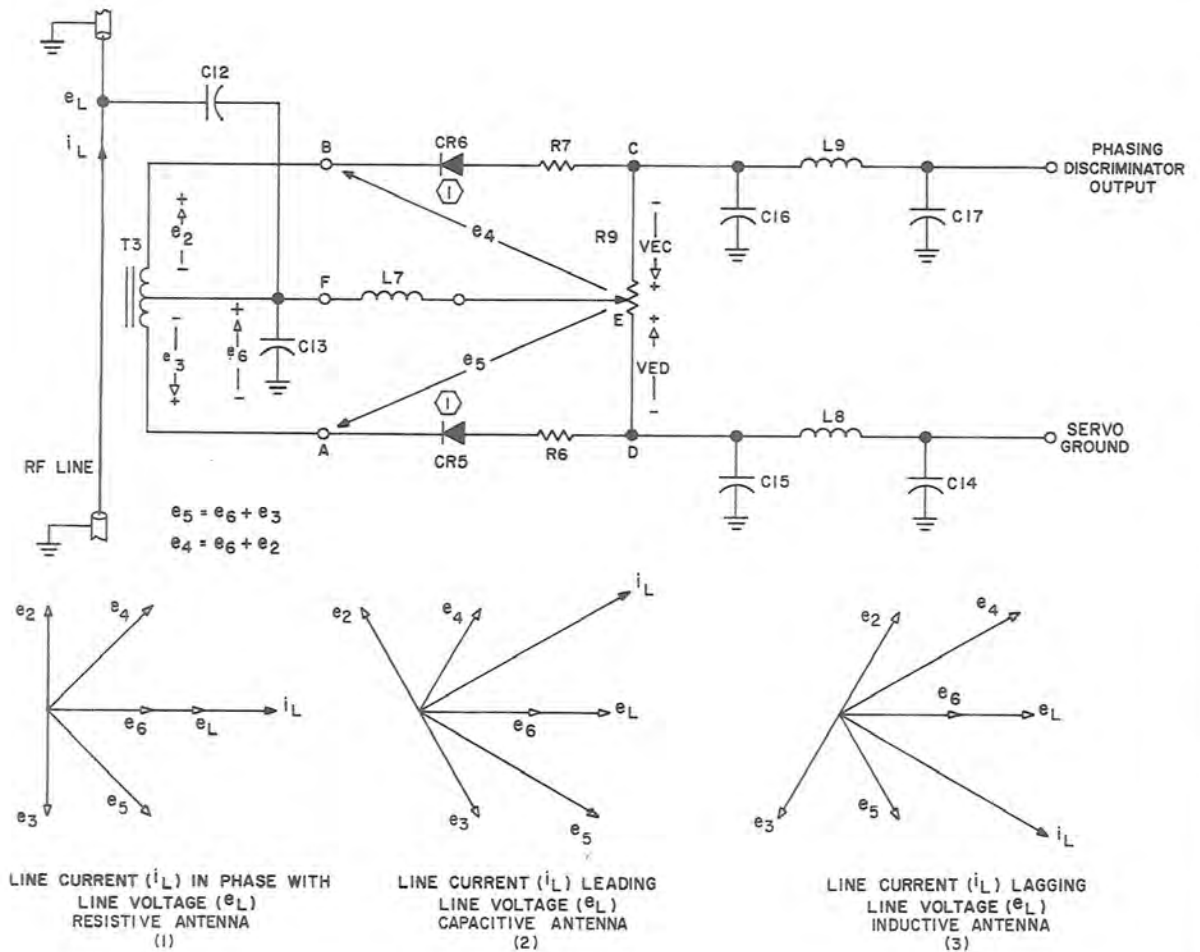
When the antenna is inductive, the vector addition of induced voltage e_2 and sampled voltage e_6 causes resultant voltage e_4 to increase in magnitude (vector diagram (3) of figure 4-9). The vector addition of induced voltage e_3 and sampled voltage e_6 causes resultant voltage e_5 to decrease in magnitude. The algebraic difference between resultant voltages e_4 and e_5 is a positive error signal output.

Resultant voltage e_4 is rectified by diode CR6 and filtered by C16, L9, and C17. Resultant voltage e_5 is rectified by diode CR5 and filtered by C15, L8, and CR14. The dc error signal output is proportional to the phase differences between the rf line voltage and the rf line current.

4.3.4.4.3 Loading Discriminator (Refer to figure 4-10.)

The loading discriminator compares the magnitude of the rf current with the rf voltage. This comparison develops an error signal output that is proportional to the difference between the impedance of the rf circuit and 50 ohms. When the impedance of the rf circuit is 50 ohms, there is no error signal developed. When the rf circuit impedance is greater than 50 ohms, the error signal is positive.

Line current i_L induces voltage e_2 across transformer T2 secondary. When diode CR3A is forward biased, the current through resistor R4, diode CR3A, and the secondary of transformer T2 develops a voltage across R4 (E_g) that is proportional to the line current.

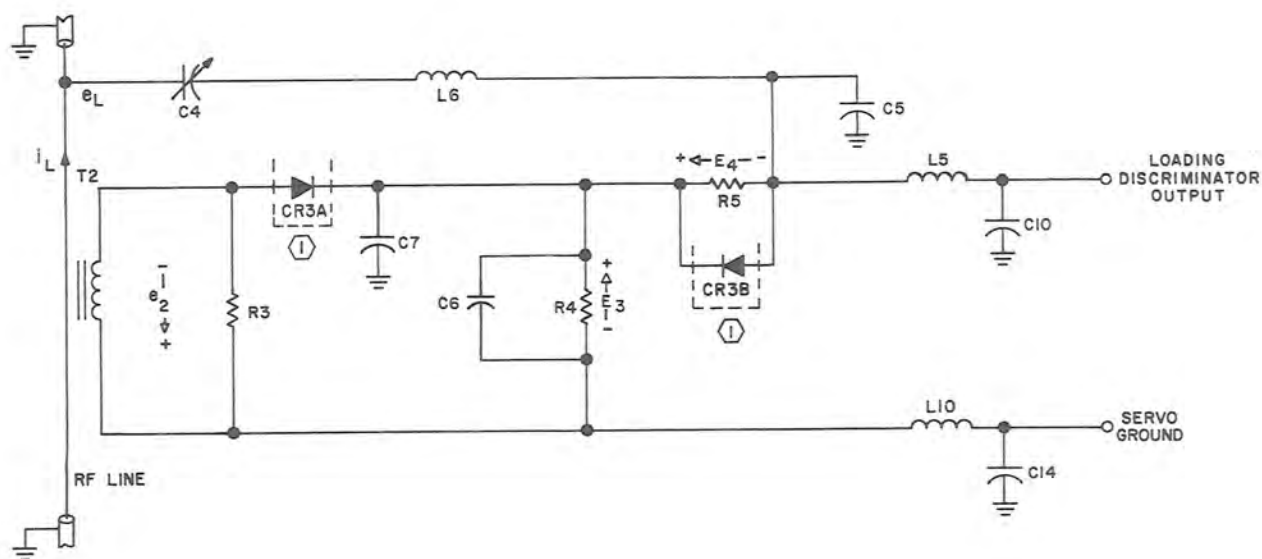


NOTE:
 (1) CR5 AND CR6 ARE A MATCHED PAIR.

C1055-68-4

Figure 4-9. Phasing Discriminator, Simplified Schematic Diagram.

section 4
principles of operation



$E_4 + E_3 = 0 \text{ VDC}$
 $Z_{\text{ANTENNA}} = 50 \text{ OHMS}$
 (1)

$E_4 + E_3 = \text{NEGATIVE VDC}$
 $Z_{\text{ANTENNA}} > 50 \text{ OHMS}$
 (2)

$E_4 + E_3 = \text{POSITIVE VDC}$
 $Z_{\text{ANTENNA}} < 50 \text{ OHMS}$
 (3)

NOTE:

① CR3A AND CR3B ARE A MATCHED PAIR, TYPE AD1259 PACKAGED AS A SINGLE COMPONENT.

CI055-69-4

Figure 4-10. Loading Discriminator, Simplified Schematic Diagram.

the junction of CR2 and L3. The sampled portion of the line voltage is 180 degrees out of phase with the secondary voltage across T2. On half the rf cycle, the induced voltage is greater in magnitude than the sampled voltage; therefore, diode CR2 is forward biased to produce a positive error signal output when forward power is present.

4.3.4.4.5 Reflected Power Discriminator (Refer to figure 4-12.)

The reflected power discriminator develops a dc error signal proportional to the deviation of the vswr from 1.0:1. The vswr deviates from 1.0:1 when the antenna impedance is not 50 ohms and resistive.

The secondary of transformer T1 is loaded with low value resistor R1 to result in secondary voltage e_2 in phase with line current i_L . The line voltage is sampled, with no phase shift, by voltage divider C1 and C2. C1 is

factory adjusted to ensure that the sampled voltage e_3 is equal to the induced voltage e_2 when the vswr is 1.0:1. With this condition, CR1 cannot conduct and there is no error output.

When the antenna circuit is resonant with a resistance less than 50 ohms, the rf current increases and the rf voltage tends to decrease. Induced voltage e_2 is greater in magnitude than sampled voltage e_3 , and CR1 is forward biased on the positive half-cycle. The conduction of CR1 develops a positive error output proportional to the reflected power.

When the antenna circuit is resonant with a resistance more than 50 ohms, the rf current decreases and the rf voltage tends to increase. Induced voltage e_2 is less than sampled voltage e_3 , and CR1 is forward biased on the negative half-cycle. The conduction of CR1 develops a positive error output proportional to the reflected power.

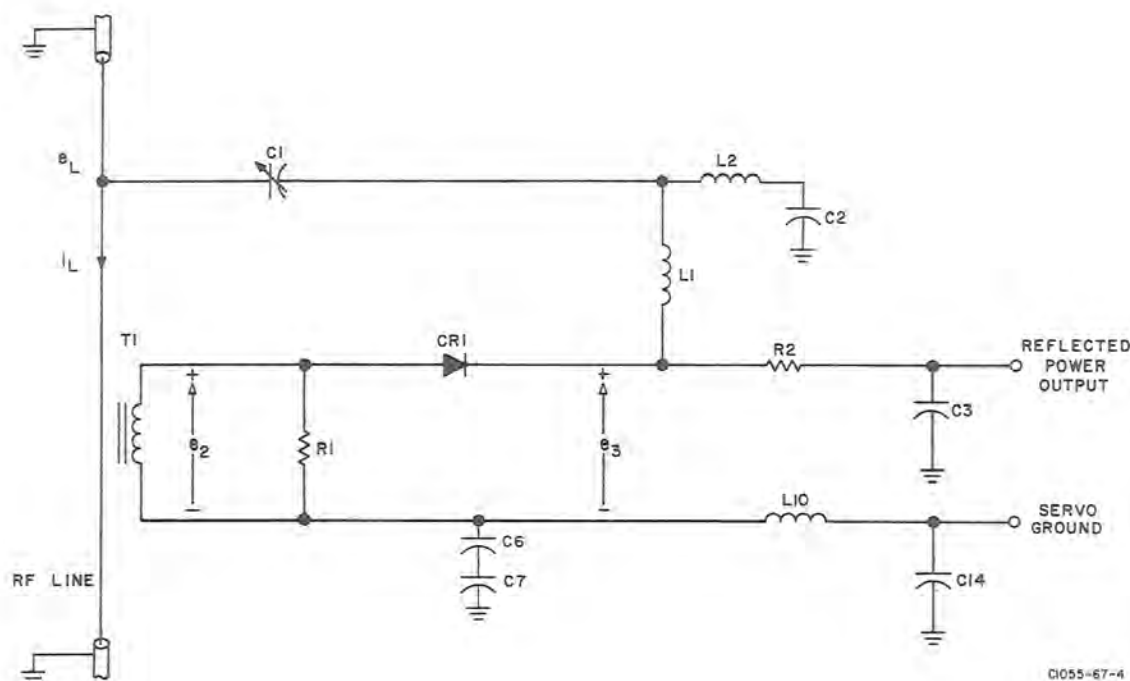


Figure 4-12. Reflected Power Discriminator, Simplified Schematic Diagram.

When the antenna is reactive (nonresonant), the rf line voltage is out of phase with the rf line current. During a portion of each cycle, induced voltage e_2 is more positive than sampled voltage e_3 , and diode CR1 is forward biased. The conduction of CR1 develops a positive error output proportional to the reflected power.

4.3.4.5 Electronic Control Amplifier A3 (Refer to figure 7-6.)

4.3.4.5.1 General

The phasing and loading error signals are chopped at a 400-Hz rate and amplified by electronic control amplifier A3. The outputs of the A3 module are applied to band sense circuits, phasing and loading sense circuits, and to the series and shunt servo motors. The series and shunt servo motors position the series and shunt varicoils during homing and during antenna tuning.

4.3.4.5.2 Servo-Compensation Network

For proper positioning of the series and shunt varicoils, the input to the choppers will have a 0- or 180-degree phase relationship to the reference voltage, depending on the polarity of the input signal. The in-line servo-compensation network between the output of the discriminator and the chopper ensures that this phase relationship does not exceed acceptable limits.

The choppers convert the dc error signals to 400-Hz square waves. The square-wave outputs of the chopper are held to a 1-volt maximum amplitude by diodes CR17, CR18, CR20, and CR21.

4.3.4.5.3 Servo Amplifier

The servo-amplifier module has two separate amplifier channels (series and shunt), plus

band sense circuits. During tune A (initial tuning), the chopped phasing error signals are amplified by the series channel and control the series varicoil. The chopped loading error signals are amplified by the shunt channel and control the shunt varicoil. At the end of tune A and at the start of tune B (final loading), relays A3K4 and A3K5 are energized and switch the phasing and loading errors to the opposite chopper. The phasing error signals then control the shunt varicoil, and the loading error signals control the series varicoil.

4.3.4.5.4 Band Information Sense Circuits

Selection of 2- to 4-, or 8- to 16-, or 16- to 30-MHz frequency band is initiated when band relay energizes to allow the rf signal to be fed to the band information circuit. The final state of electronic control amplifier band-switching relays after rf power is applied determines the initial position of the tuning elements in the antenna coupler.

Relay contacts A2K24-4 and -6 and A2K17-2 and -8 (figure 4-13) complete the circuit to energize band relay A1K2. The frequency band information circuit is switched into the rf line to replace the antenna circuit. The band information circuit presents the same load to the transmitter each time it is tuned to a given frequency. When rf power is supplied, normally energized rf power enable relay A2K24 deenergizes and relay A2K17 remains deenergized for rf sampling of the band information circuit. When relay contacts A2K3-4 and -7 complete the gate circuit for A2Q2, and after capacitor A2C11 has charged to sufficient voltage to fire zener diode A2CR88 (sufficient time to determine band information), A2K17 then energizes, and band relay A1K2 deenergizes removing the band information circuit from the rf input signal. Relay terminals A3K1-4 and A3K2-4 are grounded by the conduction of A2Q2. During the homing operation,



Figure 4-13. Band Sense Circuit, Simplified Schematic Diagram.

the anode circuit of A2Q2 is opened by relay contacts A2K23-6 and -4.

The phasing error signal from the discriminator is amplified by the servo amplifier for the series varicoil drive motor and, after going through a phase shift, is applied to the gate circuit of A3Q1. The cathode of A3Q1 is grounded through A3CR2, A2CR99, and A2K17-2 and -8. When the output of the servo amplifier is in phase with the unfiltered voltage on the anode, A3Q1 will conduct. Relay A3K1 is energized when A3Q1 conducts and completes the relay circuit. Relay A3K1 is maintained at ground by relay contacts A3K1-4 and -7.

The loading error signal output of the discriminator is amplified by the servo amplifier for the shunt varicoil drive motor and, after going through a phase shift circuit, is applied to the gate circuit of A3Q2. The cathode of A3Q2 is grounded through A2CR3, A2CR99, and A2K17-2 and -8. When the load error signal is in phase with the unfiltered voltages on the anode, A3Q2 conducts. Relay A3K2 is energized when A3Q2 conducts to complete the relay circuit. Relay A3K2-5 is maintained at ground by relay contacts A3K2-4 and -7. The disposition of relays A3K1 and A3K2 determines the band information for the tuning elements (table 4-2).

Table 4-2. State of Relays for Band Selection.

FREQUENCY BAND (MHz)	STATE OF RELAYS	
	A3K1	A3K2
2 to 4	Energized	Energized
4 to 8	Energized	Deenergized
8 to 16	Deenergized	Deenergized
16 to 30	Deenergized	Energized

4.3.4.6 Coupler Control A2 (Refer to figure 7-5.)

4.3.4.6.1 General

Antenna coupler tune cycle begins when rf power is applied to the discriminator and ground is applied momentarily to the key circuits in the coupler control. The complete

tuning operation is regulated by the coupler control. Automatic sequencing is done by switching devices composed of silicon controlled rectifiers, silicon transistor logic circuits, and hermetically sealed miniature relays. Prior to positioning of tuning elements, the following initial conditions exist in the coupler control:

- a. The rf power relays are energized by forward power error signals, and rf power enable relays are deenergized. The TUNE indicator lamp is lit.
- b. The transmitter ground enables the key circuits keeping the transmitter keyed during antenna coupler tuning.
- c. Energized key relay K7 allows external 115 volts ac to be applied to the series varicoil reference motor windings.
- d. Electronic control amplifier phasing and loading amplified error output signals are detected by sense circuits in the coupler control.

4.3.4.6.2 RF Power Circuits (Refer to figure 4-14.)

Either forward power error signals derived from the rf input or reflected power error signals that occur when vswr of the antenna coupler is greater than 1.3:1 will gate A2Q14. Conduction of A2Q14 grounds the gate circuit of A2Q16 power relays A2K2 and A2K3 and shunt capacitor motor A7B1 if A2K12 is deenergized. Conduction of A2Q16 ceases when the unfiltered anode voltage passes through zero reference.

Normally energized relays A2K24 and A2K25 deenergize when A2Q16 stops conducting. Relay contacts A2K24-6 and -4 apply +28 volts dc to the electronic control amplifier enabling the servo amplifiers; in addition, relay contacts A2K25-4 and -6 complete the +28-volt path for rf power relays A2K2 and A2K3.

Relay contacts A2K3-4 and -7 apply +28 volts dc to the gate circuit of A2Q2, A2Q10, and A2Q11 (part of the logic circuits for sequencing the antenna coupler during tuning). Energized relay contacts A2K2-4 and -7 apply ground through relay contacts A2K24-8 and -2 and A1CR14 lighting the TUNE indicator lamp and,

after tuning is complete, through energized relay contacts A2K21-8 and -3 and A2K24-8 and -3, A2CR65, and A1CR13 lighting the OPR indicator lamp. Relay contacts A2K2-8 and -3 and A2K3-8 and -3 regulate the frequency band information circuit and operation of the tuning drive motors.

Conduction of A2Q14 ceases when forward power or reflected power error signals are removed from the gate of A2Q4 and the anode voltage passes through the zero reference. With A2Q14 cut off, a triggering voltage breaks down zener diode A2CR87 and is applied to gate A2Q16. Conduction of A2Q16 applies ground to the rf power enable relays A2K24 and A2K25. Relay contacts A2K24-6 and -4 remove +28 volts to the servo amplifiers, A2K25-6 and -4 remove +28 volts from A2K2 and A2K3, and A2K24-8 and -3 apply ground to OPR indicator lamp which lights when tuning is completed. Deenergized relays A2K2 and A2K3 remove power voltages for logic circuits that disable the dc motors in the tuning modules.

4.3.4.6.3 Key Circuits (Refer to figure 4-14.)

After homing is completed, depressing the transceiver key applies a momentary ground to energize key relay A2K7. In voice modes, keying is accomplished by depressing the push-to-talk switch of the microphone. The +28 volts is applied through contacts of home relays A2K23-4 and -6, A2CR112, and tune B relays A2K15-4 and -6 to tune relay A2K8-1. Relay A2K8 energizes when ground is received through contacts A2K7-8 and -3, A2CR108, and fault relays A2K6-6 and -4. A lockup circuit is provided for A2K7 through A2CR10 and relay contacts A2K8-8 and -3, and at the same time, a ground to the transmitter tune circuits keeps the transmitter keyed while the antenna coupler is tuning. Series varicoil motor begins to tune when 115 volts, 400 Hz is applied through A2K7-4 and -7, A2K19-3 and -8, normally deenergized A2K26-6 and -4, normally deenergized A2K28-6 and -4, and A3K4-4 and -7 to the reference winding of A5B1.

4.3.4.6.4 Series Varicoil Phasing Sense Circuit (Refer to figure 4-15.)

The series varicoil phasing sense circuit compares the output of the series servo amplifier

with a 400-Hz reference voltage to determine whether the antenna circuit is capacitive or inductive. If the antenna circuit is capacitive, the series varicoil maximum sense circuit is activated adding additional inductance; and if inductive, the series varicoil minimum sense circuit is activated reducing the amount of inductance as necessary for matching the antenna system. During the tuning operation, the series varicoil sense circuits, in conjunction with the loading sense circuit, control the positioning of the tuning elements.

The series servo-amplifier output is applied to the primary of transformer A2T1. The secondary of transformer A2T1 is biased by a 90-degree phase-shifted, 400-Hz voltage. If the reactive component of the antenna circuit is inductive, the 400-Hz biasing voltage is in phase with the induced voltage across the red and brown leads of the secondary. The resultant voltage from the addition of the biasing and induced voltages breaks down zener diode A2CR36 and activates A2Q8. Relay A2K13 is energized when A2Q8 conducts and completes the relay circuit. Energized relay A2K13 adds inductance by moving the step coil toward maximum.

If the reactive component of the antenna circuit is capacitive, the 400-Hz biasing voltage is in phase with the induced voltage across the red and blue leads of the secondary. The resultant voltage from the addition of the biasing and induced voltages breaks down zener diode A2CR39 and activates A2Q9. When A2Q9 conducts, A2K16 energizes.

4.3.4.6.5 Shunt Varicoil Loading Sense Circuit (Refer to figure 4-15.)

The shunt varicoil loading on at ≈ 50 sense circuit compares the output of shunt servo amplifier with a 90-degree, phase-shifted, 400-Hz reference voltage. This determines if the resistive component of the antenna system is above, equal to, or below 50 ohms. The sense circuit is activated when the antenna system is greater than 50 ohms.

The shunt servo output is fed to the primary of transformer A2T2, and the secondary is biased with a 90-degree, phase-shifted, 400-Hz reference voltage. When the biasing voltages are in

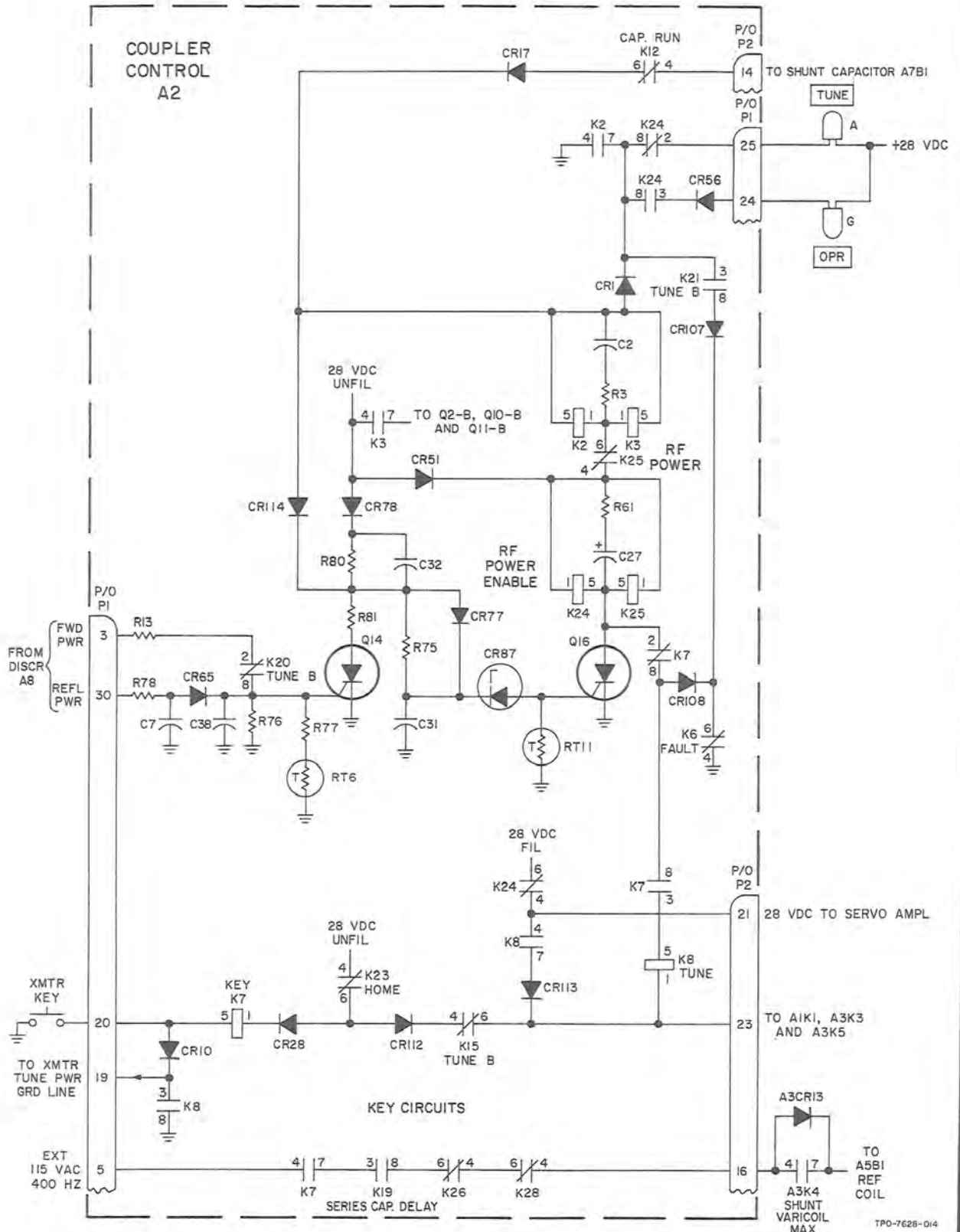


Figure 4-14. Power and Key Circuits, Simplified Schematic Diagram.

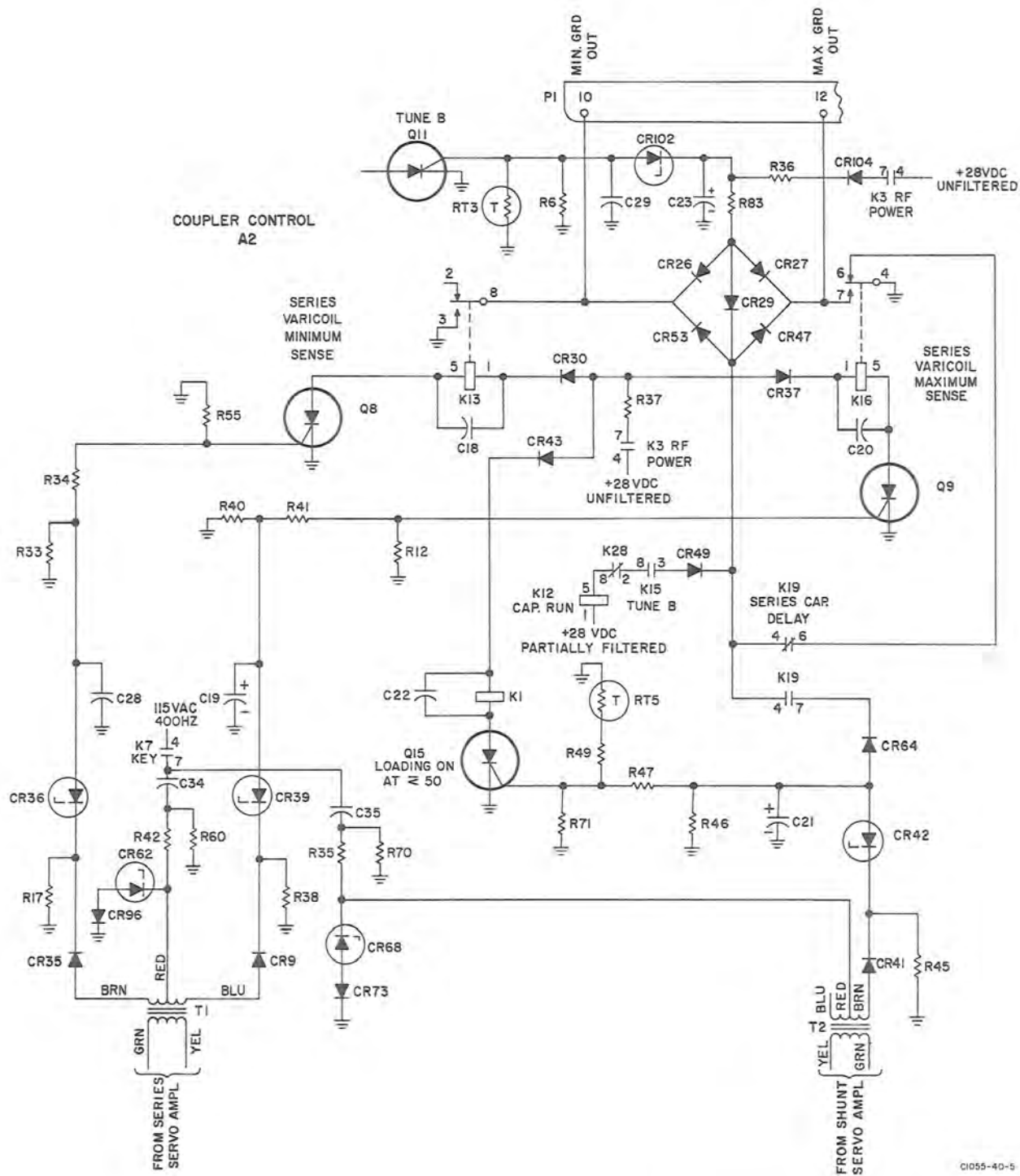


Figure 4-15. Phasing/Loading Sense Circuits, Simplified Schematic Diagram.

phase, zener diode A2CR42 conducts. Conduction of zener diode triggers A2Q15 completing the relay circuit, and relay A2K1 energizes. If the resistive component of the antenna circuit is less than or equal to 50 ohms, the induced secondary voltage and the biasing voltage are out of phase. The resultant voltage is less than the breakdown voltage of zener diode A2CR42, and A2Q15 is cut off when the unfiltered anode voltage passes through zero reference.

If the resistive component of the antenna circuit is greater than 50 ohms, the induced secondary voltage and the biasing voltage are in phase. The resultant voltage maintains the breakdown state of zener diode A2CR42 which activates A2Q15. Relay A2K1 is energized if the resistive component of the antenna circuit is greater than 50 ohms and deenergized if the resistive component is less than or equal to 50 ohms.

4.3.5 Tune A (Initial Tuning)

4.3.5.1 Antenna Circuit Made Capacitive and More Than 50 Ohms (Refer to figure 4-6.)

In the initial step of tuning, the antenna coupler makes the antenna circuit capacitive and more than 50 ohms. If the antenna circuit is inductive or less than 50 ohms, the antenna coupler adds series capacitance until the series capacitor reaches its maximum limit. If the antenna circuit is still not capacitive, the shunt capacitor adds capacitance until the antenna circuit is capacitive. A2K1 and A2K16 energize causing A2K4 to energize. A2K4 in turn energizes A2K18 and A2K19 causing the antenna coupler to go to the next step in tuning.

Series capacitance is added in steps to the rf circuit if the antenna circuit is inductive or less than 50 ohms. When the antenna circuit is inductive, the transistor A2Q3 base bias circuit is grounded through A2R62, A2K17-7 and -4, A2K18-8 and -2, A2CR61, A2CR16-2 and -8, and A2K2-7 and -4. When the antenna circuit is less than 50 ohms, the transistor A2Q3 base bias circuit is grounded through A2R62, A2K17-7 and -4, A2K18-8 and -2, A2CR58, A2K1-6 and -4, and A2K2-7 and -4. When

transistor A2Q3 base bias circuit is grounded, relay A2K4 is deenergized, and series capacitor drive motor A9B1 is actuated.

Series capacitor drive motor A9B1 continues to operate until the antenna circuit becomes capacitive and more than 50 ohms or until a predetermined electrical limit is reached. Relays A2K1 and A2K16 are energized when the antenna circuit becomes capacitive and greater than 50 ohms. Transistor A2Q3 conducts when relay contacts A2K1-4 and -6 and A2K16-2 and -8 open and remove the ground from the base of A2Q3. When transistor A2Q3 conducts, relay A2K4 is energized placing a short circuit across A9B1 providing dynamic braking.

The electrical limit for the series capacitor drive motor is dependent upon the band of operation. If operating in the 2- to 4-, 4- to 8-, or 8- to 16-MHz band, the series capacitor is limited to three steps of capacitance. Relay A2K4-5 is grounded through A2CR91, A9S1A(F)-8 and -5, A2K5-2 and -8, and A2K23-2 and -8. Relay A2K4 is energized when the rotor of switch A9S1A(F) makes contact with terminal 5. If operating in the 16- to 30-MHz band, the series capacitor is limited to five steps of capacitance. The 16- to 30-MHz band information circuit grounds switch A9S1C(F)-8. Relay A2K5 is energized when the rotor of switch A9S1C(F) makes contact with terminal 4.

Relay A2K5-5 is maintained at ground through A2K5-3 and -8 and A2K23-2 and -8. When relay A2K5 is energized, the ground line to switch A9S1A(F)-5 is opened, and A9S1A(F)-7 is grounded. Relay A2K4 is energized when the rotor of switch A9S1A(F) makes contact with terminal 7. A2K4-7 and -4 and A2K4-3 and -8 complete a short circuit across A9B1 providing dynamic braking.

Shunt capacitance is added to the circuit if the series capacitor reaches the limit and the antenna circuit is not capacitive (2- to 16-MHz range). Transistor A2Q7 (figure 4-5) base bias circuit is grounded through A2K21-4 and -6, A2CR60, A2K5-4 and -6, and A9S1B(F)-5 and -2. When A2Q7 base bias circuit is grounded, relay A2K12 is deenergized, and shunt capacitor drive motor A7B1 is energized.

When the antenna circuit is capacitive, relay A2K13 is deenergized removing the ground from base of transistor A2Q7. When A2Q7 conducts, relay A2K12 is energized completing a short circuit across A7B1 providing dynamic braking.

4.3.5.2 Antenna Resonated With Resistance Less Than 50 Ohms

4.3.5.2.1 General

4.3.5.2.1.1 2- to 4- or 4- to 8-MHz Band

Discriminator phasing error voltage drives the series varicoil from minimum toward maximum. If the series varicoil reaches maximum limit, the step coil inserts increments of inductance until the antenna becomes resonant. If the antenna is not resonated when the step coil reaches the maximum limit (2- to 4-MHz limit, all steps of coil or 4- to 8-MHz limit, limited steps of coil), shunt capacitance is added.

Adding step coil inductance or shunt capacitance will cause loading errors, and the series varicoil will run to maintain a phased antenna.

Fault condition will occur after approximately 10 seconds if the shunt capacitor reaches its maximum limit.

4.3.5.2.1.2 8- to 16- or 16- to 30-MHz Band

In the 8- to 16-MHz or 16- to 30-MHz band, the series varicoil runs from minimum toward maximum. If the series varicoil reaches its maximum limit before the antenna is resonant, shunt capacitance is added.

The antenna coupler will fault after a time delay of approximately 10 seconds if the shunt capacitor reaches maximum capacitance.

4.3.5.2.1.3 Resistance Greater Than 50 Ohms After Resonance

If shunt capacitance is added during this loading operation, the series varicoil is decreased in inductance to maintain the antenna circuit at resonance. If the series varicoil reaches

minimum inductance before resistance is decreased to 50 ohms, the following occurs:

- a. In the 2- to 8-MHz band, step coil decreases inductance.
- b. In the 8- to 16-MHz band, series capacitance is added. The antenna coupler will fault if the series or shunt capacitors reach their maximum limits and the resistance is not equal to or less than 50 ohms.

4.3.5.2.2 Detailed Theory

4.3.5.2.2.1 Operation in 2- to 4- or 4- to 8-MHz Band

During the operation of the series capacitor drive motor (figure 7-5), the gate circuit for A2Q10 is grounded through A2CR38, A2R48, and A2K4-2 and -8. After the series capacitor is positioned and relay A2K4 energized, there is a short time delay, then A2Q10 is activated. Relays A2K18 and A2K19 are energized when A2Q10 conducts. Relay A3K4 is energized when terminal 5 is grounded through switch A6S1A(R)-11 and -12 (figure 7-9). The circuit for series varicoil drive motor A5B1 reference winding is completed through A2K7-4 and -7, A2K19-3 and -8, A2K26-4 and -6, A2K28-4 and -6, and A3K4-4 and -7. The output of the servo amplifier for the series varicoil drive motor is applied to the control windings of series varicoil drive motor A5B1. Due to the phase relationship between the reference winding and the control windings, A5B1 advances the series varicoil toward maximum inductance.

If the antenna circuit is not resonant when the series varicoil reaches maximum inductance, incremental amounts of step coil inductance are added. Shunt capacitance is added if the step coil reaches maximum limit.

Step coil drive motor A4B1 operates when the base bias circuit of transistor A2Q6 is grounded through A2K16-4 and -7, A5S1A(R)-11 and -12, A2CR75, and A2R24 (figure 4-4). Shunt capacitor drive motor A7B1 operates when the base bias circuit of transistor A2Q7 is grounded through A2K16-4 and -7, A5S1A(R)-11 and -12, A2K9-3 and -8, A2CR59, and A2K21-6 and -4 (figure 4-5). Shunt capacitor drive motor A7B1 continues to operate until the antenna circuit becomes inductive or maximum capacitance is reached. Step coil

drive motor A4B1 continues to operate until the antenna circuit becomes inductive or a predetermined number of steps is reached. The predetermined number of steps is dependent upon the frequency band of operation. When operating the antenna coupler in the 2- to 4-MHz band, switch A4S1(R)-11A is grounded by A2K23-2 and -8 (figure 4-4). When operating the antenna coupler in the 4- to 8-MHz band, switch A4S1(R)-8A is grounded by the band information circuit.

Shunt capacitor operation begins when relay A2K9-5 (figure 4-4) is energized by grounding through A2CR19, A2K2-8 and -3, A5S1A(F)-8 and -9, and A4S1(R)-5A and when the step coil reaches the predetermined limit. If the antenna circuit is not resonant, the base bias circuit for A2Q7 (figure 4-5) is grounded through A2K16-4 and -7, A5S1A(R)-11 and -12, A2K9-3 and -8, A2CR59, A2K21-4 and -6, and A2R27. Shunt capacitor drive motor A7B1 operates when A2Q7 is cut off. A7B1 continues to operate until the antenna circuit is resonant (A2K16 deenergized) or it reaches maximum capacitance (A7S2 opened). The antenna coupler faults after approximately 10 seconds if the shunt capacitor reaches maximum capacitance and the vswr is more than 1.3:1.

4.3.5.2.2 Operation in 8- to 16- or 16- to 30-MHz Bands

When the antenna coupler is operating in the 8- to 16-MHz band, step coil inductance is not added. If the series varicoil reaches maximum inductance, relay A2K10 is energized to brake step coil drive motor A4B1 dynamically. Relay A2K10 energizes when grounded by the band information circuit through A4S1(R)-5A and -10A, A5S1A(F)-8 and -9, A2K2-3 and -8, and A2CR20 (figure 4-4). The shunt capacitor operates when the base bias circuit for transistor A2Q7 is grounded through A2K16-4 and -7, A5S1A(R)-11 and -12, A2K9-3 and -8, A2CR59, and A2K21-4 and -6 (figure 4-5). The shunt capacitor continues to operate until the antenna circuit is resonant (A2K16 is deenergized) or until maximum capacitance is reached. The antenna coupler faults approximately 10 seconds after A7 reaches maximum capacitance.

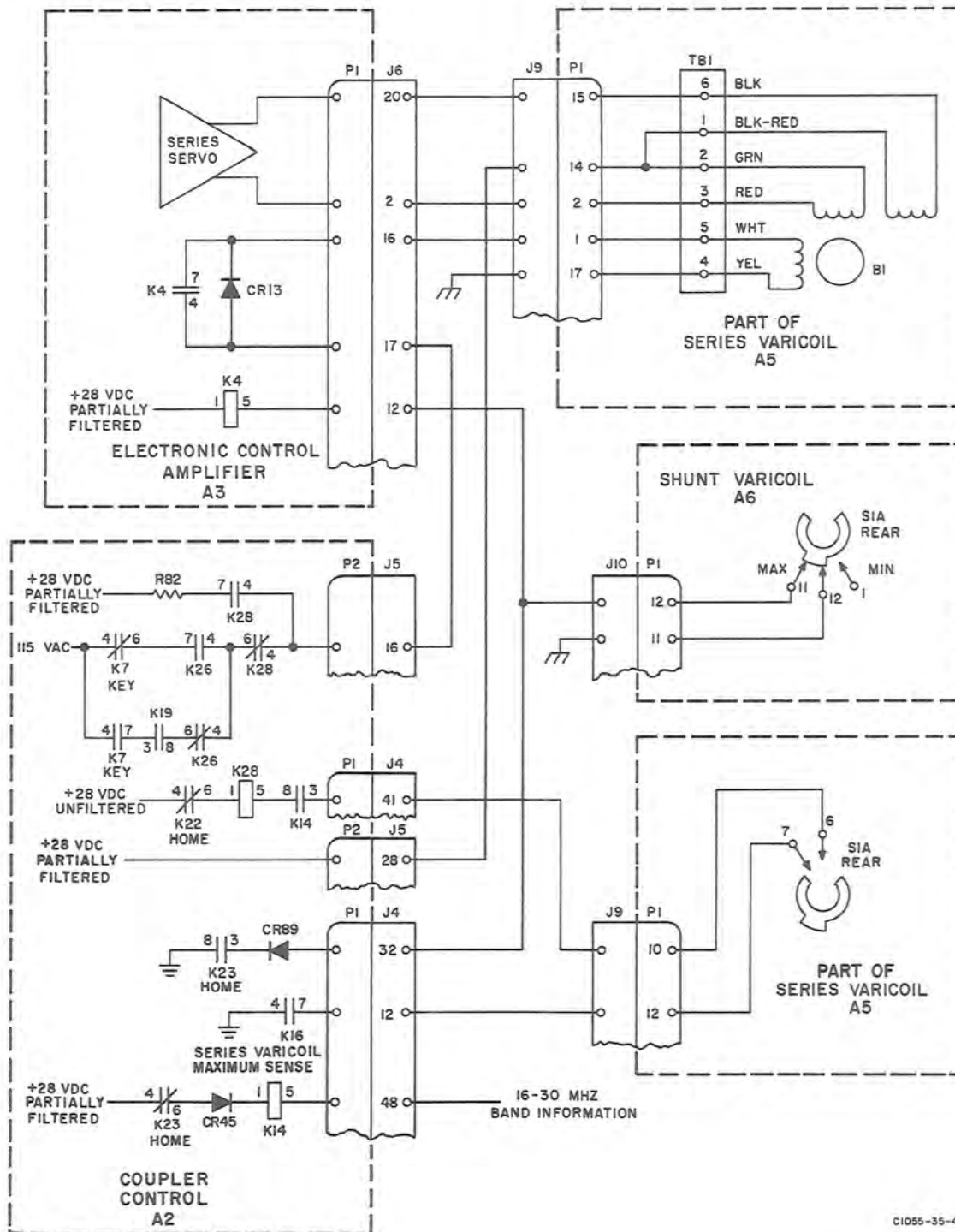
To prevent self-resonance, the series varicoil is limited to approximately half its total inductance when operating within the 16- to 30-MHz band. Relay A2K14 is energized by the 16- to 30-MHz band information circuit (figure 4-16). Relay A2K28-5 is energized when grounded through A2K16-4 and -7, A5S1A(R)-6 and -7, and A2K14-3 and -8. The 115-volt ac line to the reference windings of series varicoil drive motor A5B1 is opened by relay contacts A2K28-4 and -6. Motor A5B1 is braked dynamically when the +28-volt dc circuit is completed (through the reference windings) by relay contacts A2K28-4 and -7. Shunt capacitance is added if the series varicoil reaches the limit and the antenna circuit is not resonant. Shunt capacitor drive motor A7B1 operates when the base bias circuit of A2Q7 is grounded through A2K16-4 and -7, A5S1A(R)-6 and -7, A2K14-3 and -8, and A2CR24. The shunt capacitor continues to operate until the antenna circuit is resonant (A2K16 deenergized) or until maximum capacitance is obtained. The antenna coupler will fault in approximately 10 seconds after maximum capacitance is reached.

When the antenna circuit has been resonated, the ground (through A2CR64, A2K19-4 and -7, and the series varicoil sense circuit, figure 4-15) is removed from the gate of A2Q11 (figure 4-16), and the loading circuits or the tune B circuits are energized.

4.3.5.2.3 Loading If Resistance Is Greater Than 50 Ohms

Shunt capacitance is added if the resistance of the antenna circuit is more than 50 ohms after the circuit is resonant. The shunt capacitor drive motor operates when the base bias circuit of transistor A2Q7 is grounded through A2K1-3 and -8, A2K18-4 and -7, A2CR66, and A2K21-4 and -6 (figure 4-5). The shunt capacitor continues to operate until the antenna circuit is less than 50 ohms (A2K1 deenergized) or maximum capacitance is reached.

During this loading operation, the series varicoil inductance is decreased to maintain the antenna circuit at resonance. Series capacitance is added if the series varicoil reaches minimum inductance before the resistance is



C1055-35-4

Figure 4-16. Series Varicoil Motor Circuit, Simplified Schematic Diagram.

decreased to 50 ohms (16- to 30-MHz band) (figure 4-6). Series capacitor drive motor A9B1 operates when the base bias circuit of transistor A2Q3 is grounded through A2CR100, A2K13-4 and -7, A3K3-3 and -8, A2K18-3 and -8, and A2K17-4 and -7. The series capacitor continues to operate until the antenna circuit is resonated or until the predetermined limit is reached.

The antenna coupler faults in approximately 10 seconds if the series capacitor reaches the limit or the shunt capacitor reaches maximum capacitance and the resistance is not 50 ohms or less.

When the resistance is decreased to 50 ohms, relay contacts A2K1-3 and -8 open to remove the ground from the gate circuit of A2Q11 (figure 4-17). The antenna coupler circuits advance to the tune B mode of operation.

4.3.6 Tune B (Final Tuning) (Refer to figure 4-17.)

4.3.6.1 General

In tune B operation, shunt relay A1K1 deenergizes connecting the shunt varicoil into the antenna circuit; in addition, the discriminator phasing and loading error voltages are reversed to the servo amplifiers. If the shunt varicoil reaches maximum, then shunt capacitance is added to the antenna circuit. The antenna coupler stays in this mode until the reflected power error voltage drops low enough to cut off A2Q14. This steps the antenna coupler to the operate and demand surveillance position.

4.3.6.2 Detailed Theory

When the antenna circuit is resonant with a resistance less than 50 ohms, relays A2K1, A2K13, and A2K16 are deenergized. A2Q11 is activated when relay contacts A2K1-3 and -8, A2K13-3 and -8, and A2K16-4 and -7 are opened to remove the ground from the gate circuit. Relays A2K15, A2K20, A2K21, and A3K5 are energized when A2Q11 conducts. Relay A1K1 is deenergized when relay contacts A2K21-2 and -8 are opened to remove the ground from A1K1-2. When relay A1K1 is de-

energized, the shunt varicoil is connected into the antenna circuit. The series and shunt varicoils are tuned to adjust for the phasing and loading impedance mismatch introduced by the inductance of the shunt varicoil. When relay A3K5 is energized, the loading error signal is applied to the servo amplifier for the series varicoil drive motor, and the phasing error signal is applied to the servo amplifier for the shunt varicoil drive motor.

The initial tuning control lines to the base of the shunt capacitor control transistor A2Q7 are disconnected by relay contacts A2K21-4 and -6 (figure 4-5). The operation of the shunt capacitor is controlled by the series varicoil sense circuit and the shunt varicoil. Shunt capacitor drive motor A7B1 is braked dynamically by relay A2K12 when the antenna circuit is loading. Relay A2K12 is energized when grounded through A2K28-8 and -2, A2K15-8 and -3, A2CR49, A2CR47, and A2K16-7 and -4 (series varicoil maximum sense circuit) or A2K28-8 and -2, A2K15-8 and -3, A2CR49, A2CR53, and A2K13-8 and -3 (series varicoil minimum sense circuit). Shunt capacitance is added when the shunt varicoil reaches maximum inductance. The shunt capacitor drive motor operates when the base bias circuit for transistor A2Q7 is grounded through A2R27, A2CR57, A6S1A(F)-8 and -9, A2CR79, and A2K21-3 and -8. The shunt capacitor continues to operate until the shunt varicoil is moved from the maximum inductance position opening A6S1A(F)-8 and -9.

The forward power error signal circuit to the gate of rf power switch A2Q14 is opened by A2K20-8 and -2. The tuning of the antenna coupler is now controlled by the reflected power error signal. When the reflected power is decreased below 2 watts, the antenna coupler tuning is complete.

4.3.7 Operate and Demand Surveillance

4.3.7.1 General

After tune B, the servo system is turned off but the antenna coupler continues to monitor forward and reflected power. If the reflected



Figure 4-17. Tune B Circuit, Simplified Schematic Diagram.

power rises above a specific level, the demand surveillance system takes over. Demand surveillance system activates the antenna coupler tuning circuits causing retuning. Rechanneling of the transmitter takes the antenna coupler out of operate and into the homing mode.

4.3.7.2 Detailed Theory

A2Q14 is triggered causing A2Q16 to fire, thus deenergizing A2K24 and A2K25. This places the antenna coupler back into tune B for retuning. If the transmitter is rechanneled, the antenna goes to home.

4.3.8 Fault

4.3.8.1 General

If the antenna coupler does not tune in 8 to 10 seconds, the fault circuits disable the tuning circuits and both the OPR and TUNE indicators light.

4.3.8.2 Detailed Theory

When reflected power from the discriminator charges A2C5 to a level sufficient to fire A2CR84 (8 to 10 seconds), A2Q4 is gated on energizing A2K6. A2K6-2 and -8 disable the key interlock circuits. A2K6-4 and -6 disable the key circuits. A2K6-4 and -7 light the OPR and TUNE indicators.

5.1 GENERAL

This section contains the procedures for testing, troubleshooting, disassembling, and reassembling the 490T-4 Antenna Coupler.

5.2 TESTING

5.2.1 General

Two types of test procedures, functional and overall, are presented for bench testing the 490T-4 Antenna Coupler. A series of steps are given first for go/no-go functional check of the equipment. Results obtained enable the technician to determine if repair or alignment is necessary. Overall test procedures are more detailed and are especially useful in final analysis or in final checkout of equipment. If the equipment fails to meet the specifications of a particular test, refer to the troubleshooting portion in this section; or if calibration or alignment is needed, refer to the adjustment procedure in this section.

5.2.2 Test Equipment Required

Table 5-1 lists the test equipment required to test and adjust the 490T-4. Equivalent test equipment may be used. In addition, five special cable assemblies and a load must be fabricated.

Cable W1 is required to interconnect the antenna coupler with the transceiver and control unit. Construct the cable according to figure 5-1 using connectors shown in the figure. Use wire sizes as follows: for 28-volt dc and dc ground wires, use no. 8 wire; for 115-volt, 400-Hz and ac ground wires, use no. 20 wire; and for all other wires, use no. 22. Choose convenient lengths to allow good layout of test equipment. When all wires are soldered to connectors, wrap the resulting cable with metal shielding and ground metal shielding to W1P1 and W1P2.

Coaxial cables W2 through W5 interconnect the rf signal between the antenna coupler, wattmeter, transceiver, and load. Construct the cables according to figure 5-1. Fabricate the 12.5/200-ohm load using the parts listed in table 5-2 according to schematic shown in figure 5-2.

Table 5-1. Test Equipment Required.

INSTRUMENT	MODEL NUMBER OR EQUIVALENT
Stopwatch	Meylan 202A
Multimeter	Triplett 630
Rf wattmeter	M. C. Jones Micromatch Model 263.11
Transceiver	Collins 618T-2
Dummy antenna	Collins 172H-8
Q-meter	Boonton 260A
Loading-phasing discriminator module tester	Collins 878L-17
Electronic control amplifier module tester	Collins 878L-16
Antenna coupler control module tester	Collins 878L-15
Gram gauge	Carpo gauge by George Scherr Co.
12.5/200-ohm load	
Radio set control	Collins 714E-2
Dc power supply	
Ac power supply	

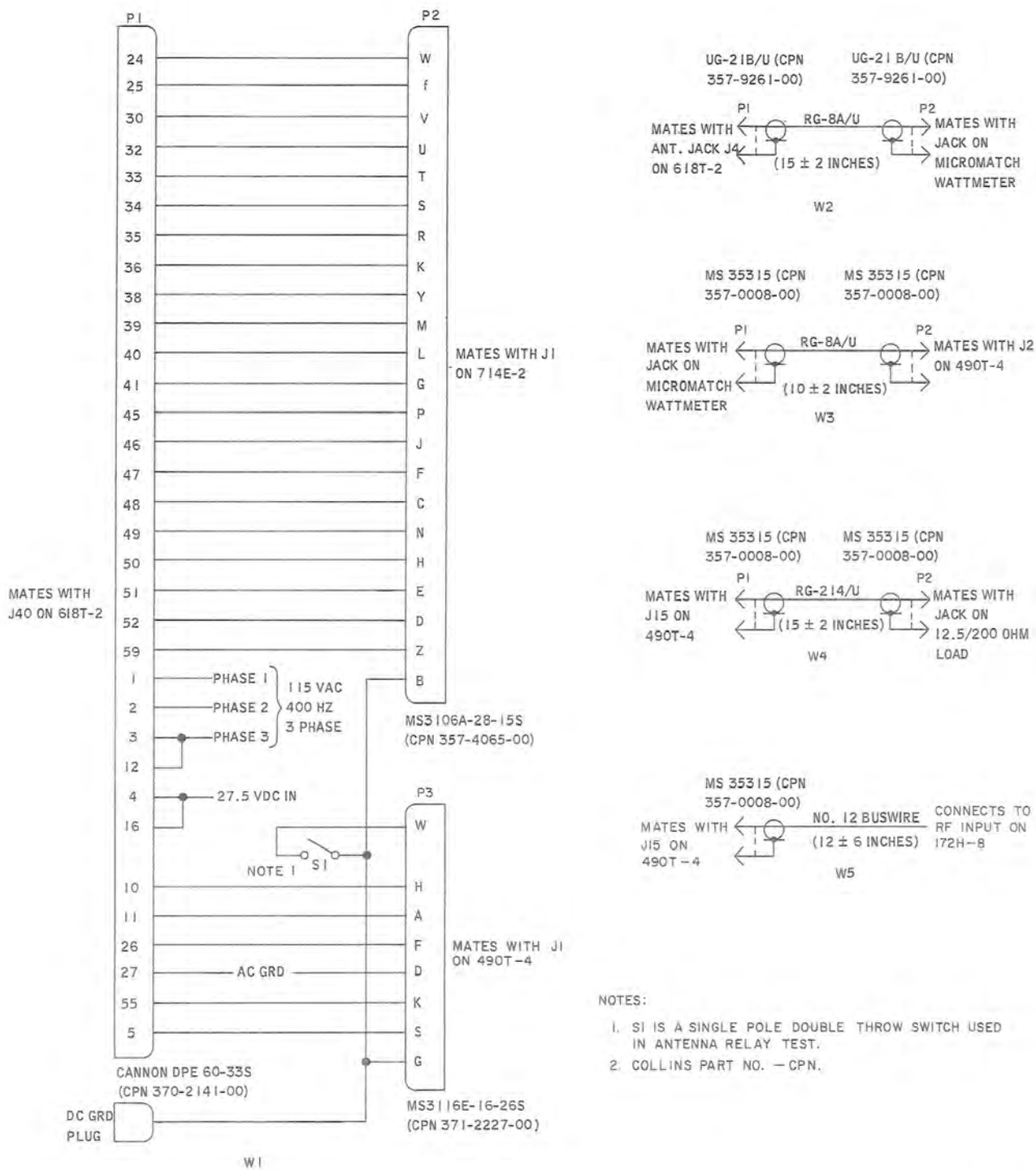
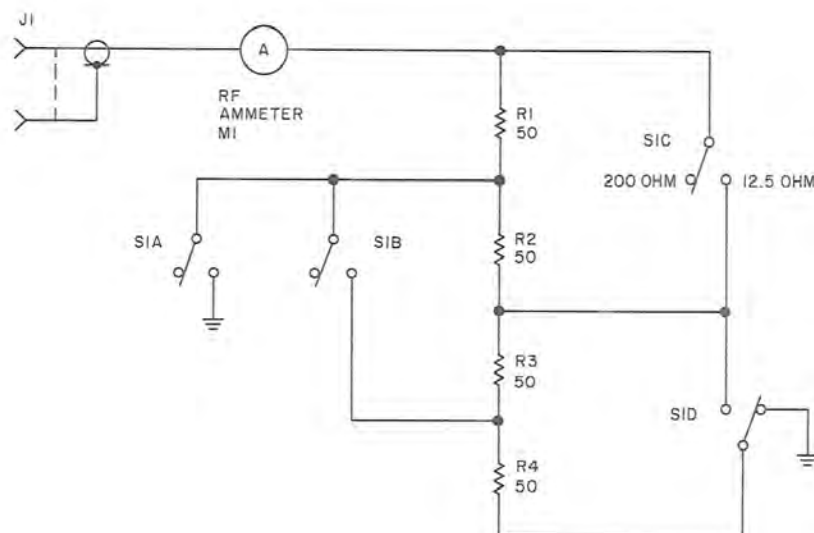


Figure 5-1. Special Cable Assemblies.



TPI-4026-013

Figure 5-2. 12.5/200 Ohm Load, Schematic Diagram.

Table 5-2. Parts List for 12.5/200 Ohm Load.

PART	COLLINS PART NO.	DESCRIPTION
J1	357-9655-000	Type C connector (UG-706/U)
M1		0-10 Amp RF Ammeter, Simpson 137
R1-R4	712-0069-000	50-ohm, 60-watt fixed resistor
S1	266-0072-000	Toggle switch, 4P2T

5.2.3 Power Sources Required

The antenna coupler uses 107.5 to 119.5 volts, 380 to 420 Hz, single-phase, 100 watts maximum; 50 watts keyed during operate, 35 watts unkeyed, and 20 watts in standby.

The transceiver uses 115 volts, ± 10 percent, single-phase (160 watts), three-phase (1000 watts); and 27.5 volts dc, 120 watts.

5.2.4 Special Tools Required

Figure 5-3 is a diagram of an rf coil drive shaft wrench that must be fabricated.

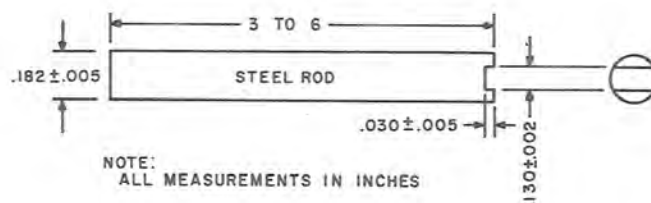


Figure 5-3. RF Coil Drive Shaft Wrench Fabrication Diagram.

5.2.5 Bench Test Setup

Maintenance personnel should exercise caution when setting up the bench test. The success or failure of antenna coupler performance is dependent upon several critical factors: antenna impedance characteristics, proper rf grounding, sufficient rf input power, shielding from unwanted rf, and using the equipment within its voltage and current capabilities.

Connect power and test equipment as shown in figure 5-4, 490T-4 bench test setup with common ground and properly shielded wires. The top of the test bench should be covered with an aluminum sheet with all input grounds made to it. When a screen room is used, it should be grounded to the aluminum sheet. A method of grounding is illustrated in figure 5-4. Metal bars are used under the transceiver to allow for cooling and grounding while the antenna coupler and dummy antenna are mounted directly on an unpainted surface. If desired, metal ground strips 1 inch wide for every 6 inches in length may be used to ground the bench test equipment properly. Make sure that the metal ground strips are fastened securely to the unpainted surface.

The control wires to the antenna coupler may be affected by rf interference. Such interference is often undetected and causes equipment malfunctions which, in turn, result in time lost for troubleshooting and replacement of supposedly defective parts. Be sure that the control wires are shielded properly to guard against impulse and random type of broadband interference, such as rf waves, interference from electrical equipment, and atmospheric static.

5.2.6 Functional Test Procedures

Go/no-go functional tests should be performed by maintenance personnel who understand antenna coupler operation thoroughly or have previous experience with antenna coupler systems. The go/no-go tests determine whether or not the antenna coupler is operating properly by simulating a basic hf communications system in the form of a bench test setup. No complex procedures need be performed.

Indications derived from the antenna coupler and associated test equipment during check procedures, as outlined in table 5-3, determine the operational status of the antenna coupler. If the checks do not meet performance standards, proceed to the overall test procedures or to troubleshooting.

5.2.7 Overall Test Procedure

Test procedures outlined in table 5-4 are useful before troubleshooting to reduce time spent on location of troubles in specific modules or subassemblies. Due to the complex nature of failures that occur in the antenna coupler where a defective component causes many confusing and varied results, it is advisable to use the 980H-1 Test Set (refer to troubleshooting, paragraph 5.3) when the antenna coupler cannot be repaired using the test procedures. Use bench test setup according to figure 5-4.

Test procedures should be used after completion of troubleshooting for final checkout. Test procedures are divided into the following categories: home, coupler bypass relay, fault, demand surveillance, and functional final unit tests.

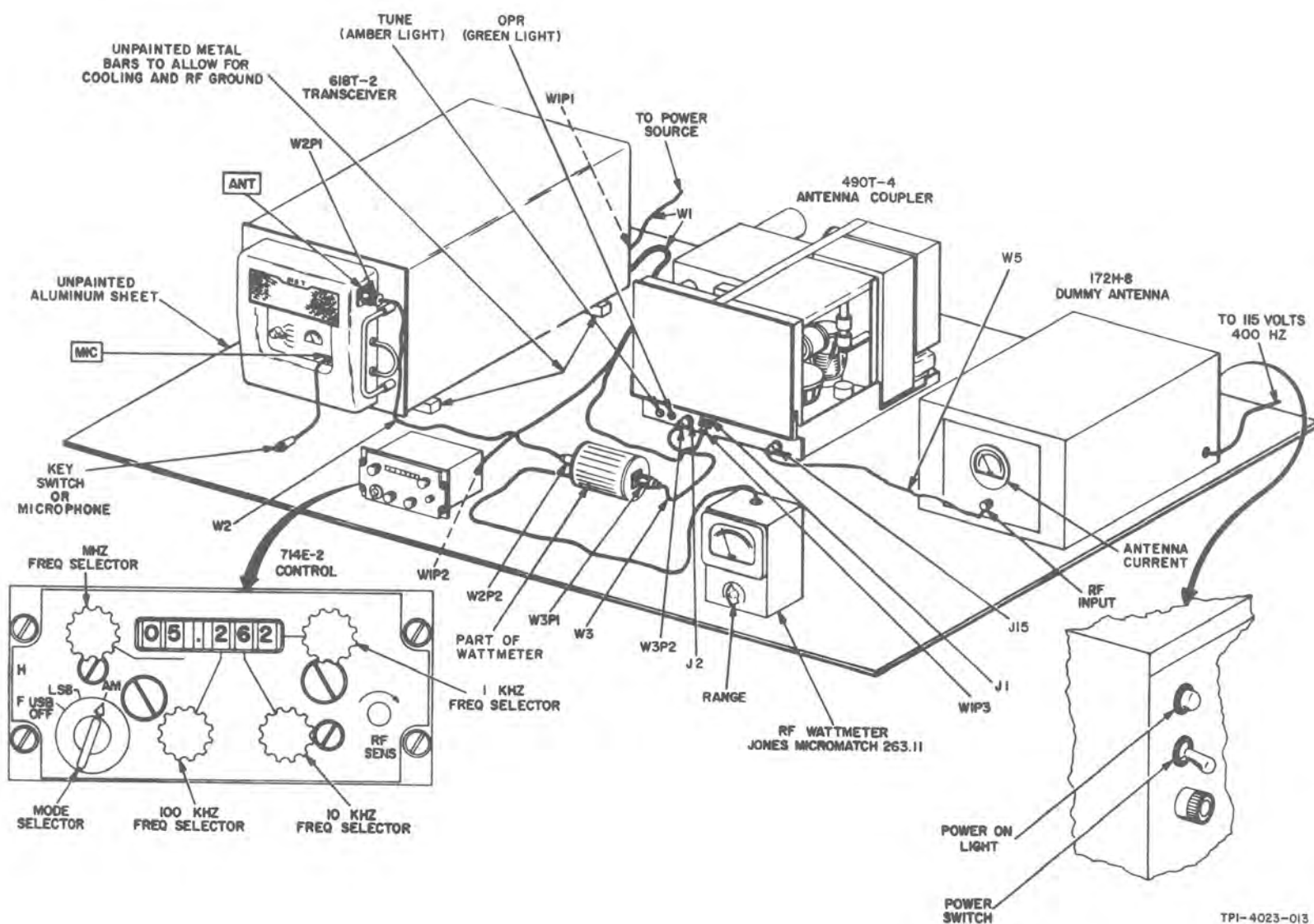


Figure 5-4. Bench Test Setup Diagram.

Table 5-3. Functional Test Procedures.

TEST NUMBER AND NAME	TEST EQUIPMENT CONTROL SETTINGS	TEST PROCEDURE	PERFORMANCE STANDARD	COMMENTS
1. Inspection test	Not applicable.	a. Remove the antenna coupler from its case. b. Inspect all mechanical assemblies for loose or missing screws, bolts, or nuts. c. Inspect all modules and subassemblies for loose and damaged parts. d. Inspect front panel and dust cover for damage and for condition of finish and panel lettering.	a. Not applicable. b. Screws, bolts, and nuts are in place and tightly secured. c. No loose or damaged parts. d. No damage. External painted surfaces do not show bare metal. The bottom of dust cover and front panel must be bare showing no signs of paint or applied varnish. Panel lettering is legible.	None.
2. Varicoil operation test	Not applicable.	Move each varicoil wiper one or more turns to ensure that wipers operate freely.	Varicoil wipers move freely. Note If the wiper is run off the end of the coil, the wiper must be resynchronized with the varicoil limit switches.	Refer to overall test procedures or troubleshooting section.
3. Bench test	Bench test setup according to figure 5-4. Mode selector: AM. Frequency selector: 2.000 MHz. Transceiver power: on. Dummy antenna POWER switch: on. Wattmeter range: 1000 watts.	a. Allow 1 minute for transceiver warmup. b. Momentarily press the push-to-talk switch on microphone to initiate antenna coupler tuning. Measure the time from when TUNE lamp indicator comes on until the OPR (green) lamp indicator comes on and the TUNE lamp goes off. c. Momentarily press the push-to-talk switch on microphone. Read and record wattmeter readings for forward power.	a. None. b. Not more than 6 seconds. Note If neither TUNE or OPR lamp indicator lights during tuning, check for insufficient rf power from transceiver. c. Not more than 500 watts.	a. None. b. Equipment malfunction is indicated when both TUNE and OPR lamps light after keying of transceiver. Proceed to overall test procedures or troubleshooting section. c. None.

Table 5-8. Functional Test Procedures (Cont).

TEST NUMBER AND NAME	TEST EQUIPMENT CONTROL SETTINGS	TEST PROCEDURE	PERFORMANCE STANDARD	COMMENTS
3. (Cont)		d. When the OPR lamp comes on, read and record reflected power wattmeter readings. Release push-to-talk switch. e. Repeat steps b through d for frequency settings of 3,000, 5,000, 8,000, 15,000, 21,000, and 25,000 MHz. Record all wattmeter readings. f. Disconnect 172H-8 Dummy Antenna from J15 on the 490T-4 and connect 12.5/200 ohm load. g. Set 12.5/200 ohm load for 12.5 ohms. h. Repeat steps b through d for frequency settings of 29,000 and 29,999 MHz. Record all wattmeter readings. i. Set 12.5/200 ohm load for 200 ohms and repeat step h. j. Set mode selector to OFF and turn power off.	d. Not more than 1.7 percent of reading in step c. e. Same as steps b through d. f. None g. None h. Same as steps b through d. i. Same as step h.	d. Set wattmeter range to 100 for more accurate reading.
4. Vswr test		Use the wattmeter readings obtained in step 3 to determine the vswr for each frequency checked. Refer to figure 5-5. For each frequency checked, lay straightedge on figure as shown in example. Read vswr off center line.	Vswr not more than 1.3:1.	If checks do not meet requirements, proceed to overall test procedures or troubleshooting section.

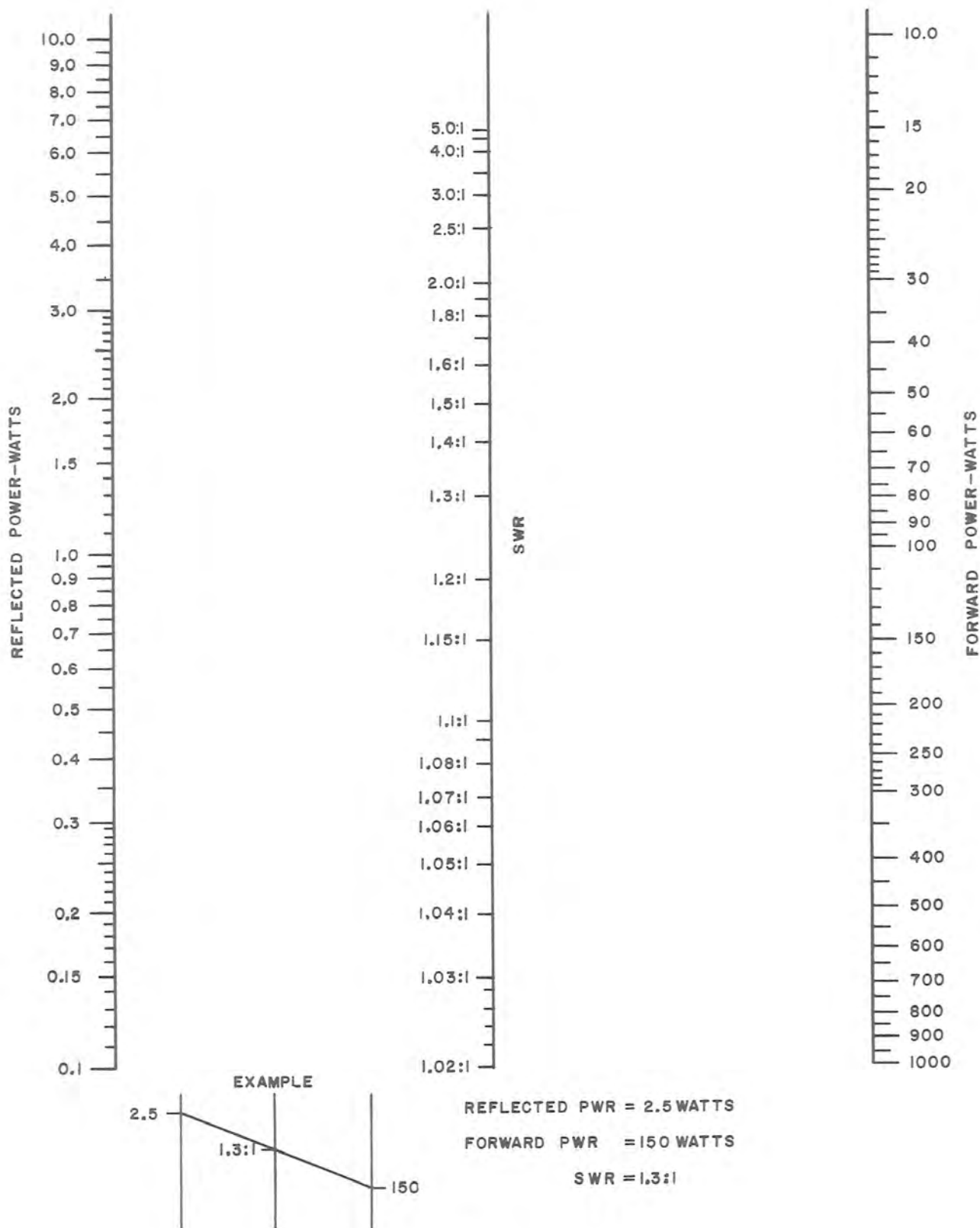


Figure 5-5. SWR Nomograph.

Table 5-4. Overall Test Procedures.

TEST NUMBER AND NAME	TEST EQUIPMENT CONTROL SETTINGS	TEST PROCEDURE	PERFORMANCE STANDARD	COMMENTS
1. Home test	Mode selector: AM. Primary power applied to equipment.	a. Allow 1 minute for transceiver warmup. b. Set frequency control to any new position. Warning Severe burns may result from contact from antenna terminal J15 or associated subassemblies when rf power is being applied to the antenna coupler. Before touching any part of the antenna system, check to see that rf power is off. c. Check TUNE (amber) and OPR (green) lamp indicators.	a. None. b. All rf subassemblies of antenna coupler should go to home position as follows: (1) Shunt varicoil, maximum inductance (wiper will be at the coil end opposite the motor). (2) Series varicoil, minimum inductance (wiper will be located at the same coil end as the motor). (3) Shunt capacitor, minimum capacitance (large or maximum air gap is visible through the glass, above the movable capacitor plate). (4) Series capacitor, bypassed (series switch when viewed from right side of antenna coupler has three visible contacts in front; the rotor contact should be just in contact with right contact only). (5) Step coil, minimum inductance (shorted by an rf strap from the shunt capacitor). c. Both lamp indicators should be off.	a. None. b. None. c. If indications are normal, proceed to next step.
2. Coupler bypass relay test	Triplett 630 Multimeter: resistance scale.	a. Remove 490T-4 cables from J2 and J15. b. Close the switch connected to W1P3-W. c. Measure the resistance from J2 to J15.	a. None. b. None. c. Not more than 1 ohm.	a. None. b. None. c. None.

Table 5-4. Overall Test Procedures (Cont).

TEST NUMBER AND NAME	TEST EQUIPMENT CONTROL SETTINGS	TEST PROCEDURE	PERFORMANCE STANDARD	COMMENTS
		d. Open switch connected to W1P3-W.	d. None.	d. None.
		e. Connect 490T-4 cables to J2 and J15.	e. None.	e. None.
3. Fault test	Mode selector: OFF. Wattmeter: 1000 watts.	a. Curve the bus wire attached to antenna terminal J15, and place the free end of the bus wire under the coupler. Let the weight of the coupler hold the bus wire to the ground plane. b. Set mode selector to AM and frequency selector to 29.000 MHz. c. Allow 1 minute for warmup. d. Momentarily press the push-to-talk switch to the microphone. Measure the time from when the TUNE (amber) light comes on until the OPR (green) light comes on. Note wattmeter reading during and after this time. e. Reset the frequency selector controls to new setting. f. Set the mode selector to OFF.	a. None. b. None. c. None. d. While TUNE light only is on, wattmeter should read not less than 70 watts. The OPR light should come on in not more than 15 seconds. Both lights should remain on, indicating a fault. Wattmeter should read zero. e. Both lights should go off. f. None.	None.
4. Demand surveillance	Mode selector: OFF. Wattmeter: 1000 watts.	a. Connect 12.5/200 ohm load to J15 and set it for 200 ohms. b. Set mode selector to AM, and allow 1 minute for warmup. c. Momentarily press the push-to-talk switch on the microphone, tuning the antenna coupler. d. Set mode selector to OFF. Set 12.5/200 ohm load to 12.5 ohms.	a. None. b. None. c. The coupler tunes to the load. d. None.	None.

Table 5-4. Overall Test Procedures (Cont).

TEST NUMBER AND NAME	TEST EQUIPMENT CONTROL SETTINGS	TEST PROCEDURE	PERFORMANCE STANDARD	COMMENTS
4. (Cont)		e. Set mode selector to AM. f. Press the push-to-talk switch on the microphone. Observe TUNE and OPR lights on antenna coupler. g. Read forward power on wattmeter scale. h. On wattmeter, set range to 10 watts. Read reflected power on wattmeter scale. i. Release push-to-talk switch on microphone. Set mode selector to OFF. j. Disconnect 12.5/200 ohm load from J15 and connect 172H-8 Dummy Antenna.	e. None. f. The TUNE light will come on during tuning; then TUNE light will go off, and OPR light will come on. g. Not less than 70 watts. h. Not more than 1.7 percent of reading in step g. i. None.	
5. Functional final unit tests	Mode selector: AM. Frequency selector: 2.000 MHz. 172H-8 power switch: ON.	TUNING TIME TEST		
		a. Allow 1 minute for warmup. b. Press the push-to-talk switch on microphone. Measure the time from when TUNE light comes on until TUNE light goes off and OPR light comes on. c. Release microphone push-to-talk switch. d. Set frequency controls to 3.000 MHz. e. Repeat steps b and c. f. Repeat steps b and c for frequency control settings of 5.000, 8.000, 15.000, 21.000, and 25.000 MHz. g. Disconnect 172H-8 Dummy Antenna from J15 on the 490T-4 and connect 12.5/200 ohm load. h. Set 12.5/200 ohm load for 12.5 ohms.	a. None. b. Not more than 6 seconds. c. None. d. None. e. Same as step b. f. Same as step b. g. None. h. None.	None.

Table 5-4. Overall Test Procedures (Cont).

TEST NUMBER AND NAME	TEST EQUIPMENT CONTROL SETTINGS	TEST PROCEDURE	PERFORMANCE STANDARD	COMMENTS	
5. (Cont)		i. Repeat steps b and c for frequency settings of 29.999 MHz.	i. Same as step b.		
		j. Set 12.5/200 ohm load for 200 ohms.	j. None.		
		k. Repeat steps b and c.	k. Same as step b.		
		l. Set mode selector to OFF.	l. None.		
		m. Disconnect 12.5/200 ohm load from J15 and connect 172H-8 Dummy Antenna.	m. None.		
		VOICE EMISSION TEST			
	Mode selector: AM.	a. Allow 1 minute for warmup.	a. None.	None.	
	172H-8 power switch: ON.	b. Press the push-to-talk switch on the microphone.	b. None.		
		c. Speak loudly into the microphone to modulate the carrier wave strongly. Observe the antenna coupler coils and TUNE light (if possible, dim the lights in the area to aid in observation).	c. No corona or arcing on coils. TUNE indicator should not flicker on, but should remain off.		
		d. Release push-to-talk switch. Set mode selector to OFF.	d. None.		
		VSWR TESTS			
	Wattmeter range: 1000 watts.	a. Allow 1 minute for warmup.	a. None.	None.	
	Mode selector: AM.	b. Press the push-to-talk switch on microphone.	b. None.		
	Frequency selector: 2.000 MHz.	c. Read and record the forward power wattmeter readings.	c. Not more than 500 watts.		
	172H-8 power switch: ON.	d. On wattmeter, set the range control to 10 watts. Read and record the reflected power wattmeter reading.	d. Not more than 1.7 percent of reading in step c.		
		e. Release push-to-talk switch.	e. None.		

Table 5-4. Overall Test Procedures (Cont).

TEST NUMBER AND NAME	TEST EQUIPMENT CONTROL SETTINGS	TEST PROCEDURE	PERFORMANCE STANDARD	
5. (Cont)		f. Repeat steps b through e for frequency selector settings of 3.000, 5.000, 8.000, 15.000, 21.000, and 25.000 MHz. Record all wattmeter readings. g. Disconnect 172H-8 Dummy Antenna from J15 on the 490T-4 and connect 12.5/200 ohm load. h. Set 12.5/200 ohm load for 12.5 ohms. i. Repeat steps b through e for frequency settings of 29.000 and 29.999 MHz. Record all wattmeter readings. j. Set 12.5/200 ohm load for 200 ohms. k. Repeat step i. l. Set mode selector to OFF. m. Use the wattmeter readings obtained in steps c and d to determine the vswr for each frequency checked (refer to figure 5-5).	f. Same as steps c and d. g. None. h. None. i. Same as steps c and d. j. None. k. Same as steps c and d. l. None. m. Vswr not more than 1.3:1.	

5.3 TROUBLESHOOTING

5.3.1 General

In case of equipment failure, first localize the trouble to a particular circuit or unit. Because the 490T-4 assemblies are of the plug-in type, quick confirmation of suspected faulty assemblies is possible by the substitution of assemblies known to be operating correctly. Figure 5-6 is a simplified intermodule wiring diagram used in isolation of trouble.

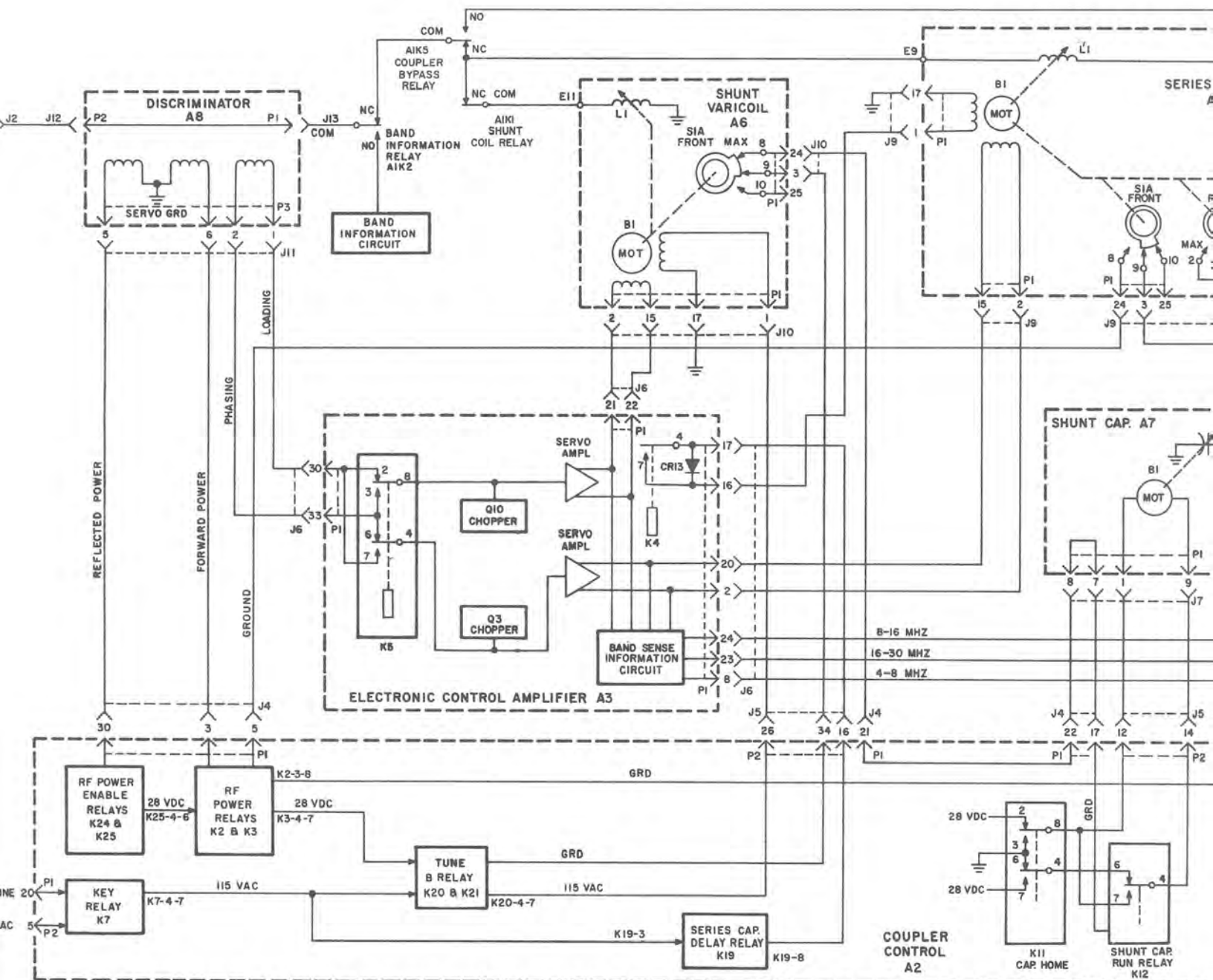
5.3.2 Troubleshooting and Repair of Transistorized Circuits

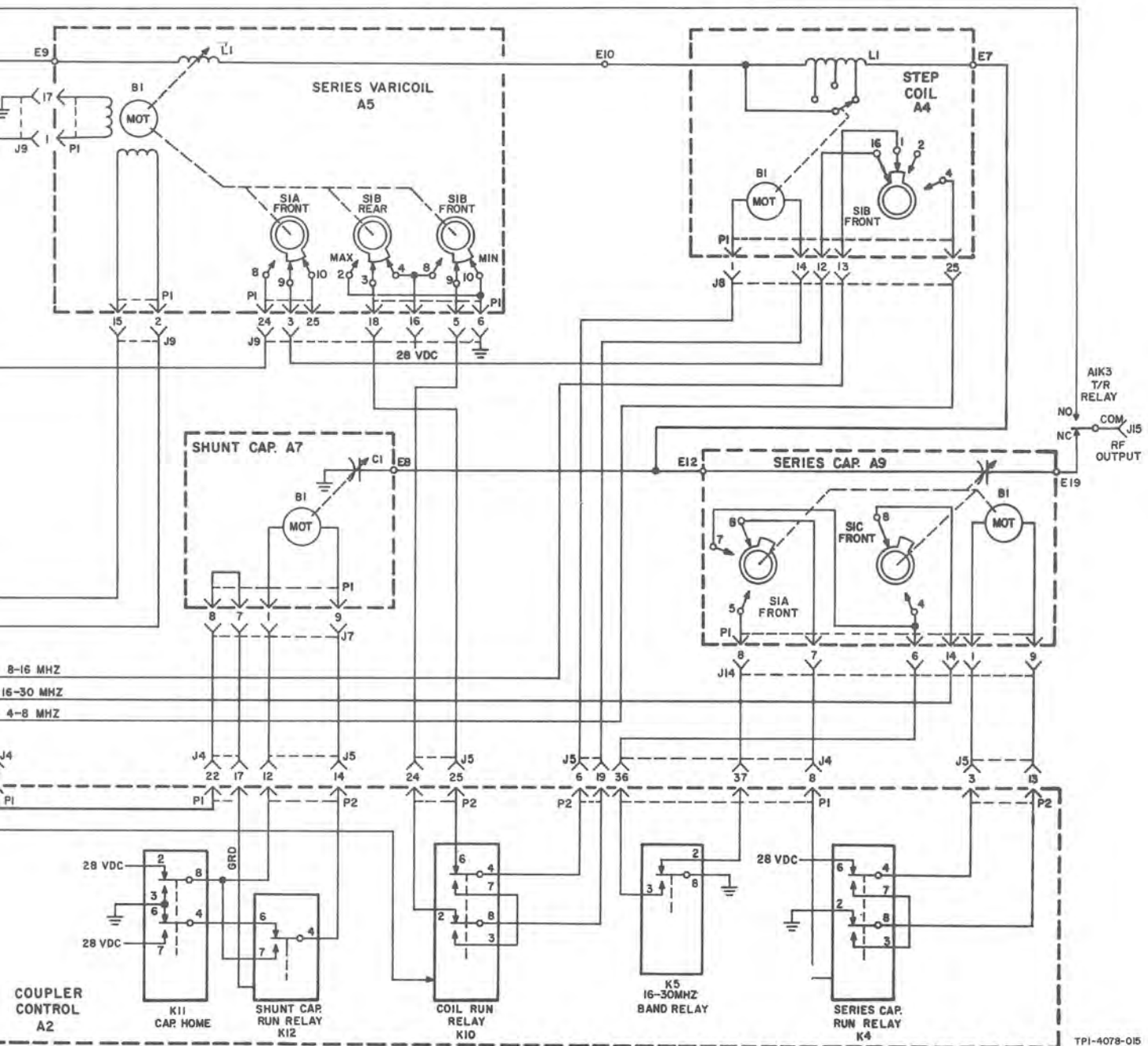
When troubleshooting and repairing transistor circuits, observe the following factors:

a. In a transistor amplifier, any change in the output circuit of one stage can affect all pre-

ceding stages. Therefore, any deviation in the operating characteristics of a certain stage can be reflected back to affect the operation of the preceding stages.

- b. Common-emitter transistor amplifiers have a 180-degree phase shift between the input and output voltages, but there will be no phase shift between the input and output signals if the base is shorted to the collector of the transistor.
- c. The dc base voltage should be slightly higher than the emitter voltage during normal operation of a common-emitter transistor amplifier, but an open circuit between the base and the emitter of the transistor will result in the emitter voltage approximating ground potential and a base voltage considerably greater than normal.





- d. An unusually high dc collector voltage can be used by an open emitter circuit, an open collector circuit, or a short between the base and the emitter of the transistor, but an open circuit between the base and the emitter or in the load impedance of the stage under consideration will also cause an unusually high dc collector voltage.
- e. An unusually low dc collector voltage indicates a short circuit between the collector and ground, the collector and the emitter, the collector and the base, or across the output impedance.
- f. An unusually low collector voltage results when a transistor switch is activated. Therefore, when +28 volts dc is applied to the base circuit of Q3, Q5, Q6, or Q7 in coupler control A2, the collector voltage should be nearly zero.
- g. When checking the base-to-emitter resistance of the npn type of transistor, the ground of the multimeter must be connected to the emitter lead. The resistance indicated on the RX1 scale then should be greater than 10 ohms but less than 50 ohms, but when the meter leads are reversed, the indicated emitter-to-base resistance will be several thousand times greater.
- h. When soldering transistor leads to terminal points, use the same precautions normally followed when working with crystal diodes.

Caution

When soldering transistor leads, use pliers as a heat sink by holding between the transistor and the point of heat application to divert the heat from the transistor.

- i. Use a 35-watt iron to solder or unsolder all connections except ground connections made directly to the chassis. For ground connections to a chassis, use a 100-watt iron.

5.3.3 Performance Tests and Troubleshooting Charts

5.3.3.1 Coupler Control A2

If, during the test checkout of the antenna coupler, the trouble is localized to coupler control A2, perform the procedures outlined in table 5-5. The first column is used for numbering the steps in sequence and the next column explains the procedures to use in testing the module. Normal and abnormal columns

indicate whether the module is functioning properly or not. If the normal indications are obtained, proceed to the next step. If abnormal indications are obtained, refer to the remaining columns for troubleshooting instructions. The probable cause and remedy columns are not infallible nor are they to be taken as a total list of causes or remedies of a particular failure. These columns are made as a basis for starting analysis of the failure; it should be understood that other interrelated components could be the actual cause of failure. If unusual or recurring problems are encountered through actual testing and repair of these systems, the user is encouraged to fill out and submit the customer comment cards found in the back of this manual so that the problems and solutions, if available, can be included in future revisions of this manual.

A chart (table 5-6) shows energized or de-energized positions of coupler control relays when under test with the 878L-15 tester. It is used to determine quickly the area of trouble in the module.

5.3.3.2 Electronic Control Amplifier A3

If during the test procedures the trouble is localized to the electronic control amplifier or if the trouble was not in the coupler control, perform the procedures as outlined in table 5-7. Refer to table 5-8 for 878L-16 TORQUE METER limits.

5.3.3.3 Discriminator A8

Perform procedures outlined in table 5-9.

5.3.3.4 Step Coil A4, Series Varicoil A5, Shunt Varicoil A6, Shunt Capacitor A7, and Series Capacitor A9

Performance tests are limited in their application when used with rf subassemblies due to their basic mechanical design. Normally a visual inspection for mechanical damage or excessive wear either in the tuning elements or in the unit itself will determine if the unit or units are performing satisfactorily during operation. If after performing the test procedures for the coupler control, electronic control amplifier, and discriminator modules, the defect is found to be in one of the subassemblies, remove the module. Apply proper voltages to servo and dc motors and check pin continuity with ohmmeter. Refer to figure 5-6.

Table 5-5. Coupler Control A2, Troubleshooting Chart.

STEP	PROCEDURE	NORMAL INDICATION	ABNORMAL INDICATION	PROBABLE CAUSE	REMEDY
1	Connect the 878L-15 to 115-vac, 400-Hz, single-phase power source.				
2	Set POWER switch to ON and FUNCTION selector to 17. Caution Coupler control A2 must not be connected to 878L-15 tester. Press KEY button.	All lamps lit.	All lamps not lit.	878L-15 tester.	Refer to 980H-1 Coupler Test Set Instruction Book.
3	Set POWER switch to OFF. Connect and securely fasten to ensure proper grounding a coupler control module to the 878L-15. Caution Functions cannot be checked out of sequence. If sequence is disturbed, advance function switch to off and start checking procedures over. Do not skip steps. Note a. Coupler control modules with MCN effectiveness below 179 cannot be checked with 878L-15 tester unless modified by a wire from P1-29 to CR84 cathode. b. When replacing or interchanging indicator lamps, be sure to use the identical type or the type recommended by the 980H-1 Coupler Test Set Instruction Book. c. The SERIES and SHUNT SERVO controls must be set to MAX (full cw) before proceeding with step 4.				
4	Set POWER switch to ON. Set FUNCTION selector to 1. Note When proper indicators are matched (amber and green indicators lit), proceed to step 5.	Lamps P1-6 are matched. Lamps P1-11 are matched.	P1-6 green indicator not lit. P1-45 green indicator lit. P1-11 and P2-23 green indicators not lit. P1-2, P1-32, and P2-27 green indicators lit.	Damaged K28 contacts, Q7 not conducting and CR2 open, or damaged K3 contacts. K3 energized. Damaged K23 contacts or K23 energized.	Repair or replace defective parts.

Table 5-5. Coupler Control A2, Troubleshooting Chart (Cont).

STEP	PROCEDURE	NORMAL INDICATION	ABNORMAL INDICATION	PROBABLE CAUSE	REMEDY
4 (Cont)	Note Green and amber lights (P1-22) will not match in modules above MCN 572 unless module has been modified to include wire K5-7 to P1-39.	Lamps P1-15 are matched. Lamps P1-22 are matched. Lamps P1-50 are matched. Lamps P2-3 are matched. Lamps P2-7 are matched. Lamps P2-12 are matched. Lamps P2-13 are matched. Lamps P2-14 are matched. Lamps P2-19 are matched.	P1-15 green indicator not lit. P1-4 green indicator lit. P1-15 green indicator not lit. P2-17 green indicator lit. P1-22 green indicator not lit. P1-22 green indicator not lit. P1-37 green indicator lit. P1-22 and P2-7 green indicators not lit. P1-25, P2-34, and P2-35 green indicators lit. P1-50 green indicator not lit. P2-3 green indicator not lit. P2-3 and P2-13 green indicators are brighter than the other lit indicators. P2-7 and P1-22 green indicators not lit. P1-25, P2-34, and P2-35 green indicators lit. P2-12 green indicator not lit. P2-13 green indicator not lit. P2-13 and P2-3 green indicators are brighter than the other lit indicators. P2-14 green indicator not lit. P2-12 and P2-14 green indicators not lit. P2-25 green indicator lit and P2-19 not lit.	K6 energized or damaged contacts. K27 remains in energized position or damaged contacts. CR60 open. K5 deenergized, damaged K5 contacts, or CR60 open. K21 energized or damaged contacts. CR99 open, K17 remains in the energized position, or damaged K17 contacts. Damaged K4 contacts. K4 remains in deenergized position. K21 energized, K21 remains in energized position, CR105 open, or K6 energized. K11 energized or K23 energized. Damaged K4 contacts. K4 remains in deenergized position. Damaged K12 contacts or deenergized. K11 energized. K23 energized. K10 deenergized or damaged K10 contacts.	

Table 5-5. Coupler Control A2, Troubleshooting Chart (Cont).

STEP	PROCEDURE	NORMAL INDICATION	ABNORMAL INDICATION	PROBABLE CAUSE	REMEDY
4 (Cont)		Lamps P2-23 are matched.	P2-23 and P1-11 green indicators not lit. P1-2, P1-32, and P2-27 green indicators lit.	K23 remains in energized position.	
		Lamps P2-28 are matched.	P2-28 green indicator not lit.	CR33 and CR34 both open. Note When the voltage at TP5 (878L-15) is lower than 20 vdc, one of the diodes may be open.	
5	Set FUNCTION selector to 2. When proper indicators are matched (amber and green indicators lit), proceed to step 6. Note Green and amber lights (P1-22) will not match in modules above MCN 572 unless module has been modified to include wire from K5-7 to P1-39.	Lamps P1-6 are matched.	Refer to step 4.		Repair or replace defective parts.
		Lamps P1-11 are matched.	Refer to step 4.		
		Lamps P1-15 are matched.	Refer to step 4.		
		Lamps P1-22 are matched.	Refer to step 4.		
		Lamps P1-50 are matched.	Refer to step 4.		
		Lamps P2-3 are matched.	P2-3 green indicator not lit.	Damaged K4 contacts.	
			P2-3 and P2-13 green indicators are very dim.	K4 remains energized.	
		Lamps P2-7 are matched.	Refer to step 4.		
		Lamps P2-12 are matched.	Refer to step 4.		
		Lamps P2-13 are matched.	P2-13 green indicator not lit.	Damaged K4 contacts.	
			P2-13 and P2-3 green indicators are very dim.	K4 remains energized.	
		Lamps P2-14 are matched.	Refer to step 4.		
		Lamps P2-19 are matched.	P2-19 green indicator not lit.	Damaged K10 contacts.	
		Lamps P2-23 are matched.	Refer to step 4.		
		Lamps P2-25 are matched.	P2-25 green indicator not lit.	K10 energized, damaged contacts, or CR16 open.	
		Lamps P2-28 are matched.	Refer to step 4.		

Table 5-5. Coupler Control A2, Troubleshooting Chart (Cont).

STEP	PROCEDURE	NORMAL INDICATION	ABNORMAL INDICATION	PROBABLE CAUSE	REMEDY
6	Set FUNCTION selector to 3 and momentarily press KEY button. When proper indicators are matched (amber and green indicators lit), proceed to step 7.	Lamps P1-2 are matched. Lamps P1-22 are matched. Lamps P1-31 are matched. Lamps P1-32 are matched. Lamps P1-34 are matched. Lamps P1-50 are matched. Lamps P2-3 are matched. Lamps P2-7 are matched. Lamps P2-12 are matched. Lamps P2-13 are matched. Lamps P2-14 are matched. Lamps P2-16 are matched. Lamps P2-17 are matched. Lamps P2-19 are matched. Lamps P2-21 are matched. Lamps P2-22 are matched.	P1-2, P1-32, P2-21, and P2-27 green indicators not lit. P1-6, P1-11, and P2-23 green indicators lit. P1-22 and P2-7 green indicators not lit. P1-31 green indicator not lit. P1-32 green indicator not lit. P1-2, P1-32, P2-21, and P2-27 green indicators not lit. P1-6, P1-11, and P2-23 green indicators lit. P1-34 green indicator not lit. Refer to step 4. Refer to step 4. Refer to step 4. P2-12 green indicator not lit. Refer to step 4. P2-14 green indicator not lit. P2-16 green indicator not lit. P2-16 and P2-26 green indicators not lit. P2-17 green indicator not lit. Refer to step 5. P2-21 green indicator not lit. P2-22 green indicator not lit.	K23 deenergized or damaged K23 contacts. K21 energized, CR59 open, or K9 deenergized. CR81 open, R50 open, K22 deenergized, or C24 defective. CR89 open or K23 deenergized. K9 deenergized or damaged K9 contacts. K11 deenergized or damaged contacts. K11 deenergized. K28 remains in energized position or damaged K28 contacts. K26 deenergized or damaged contacts. Damaged K7 contacts. K27 deenergized or damaged K27 contacts. CR86 open or K23 energizing circuit. K22, R74, or C24 is an open component.	Repair or replace defective parts.

Table 5-5. Coupler Control A2, Troubleshooting Chart (Cont).

STEP	PROCEDURE	NORMAL INDICATION	ABNORMAL INDICATION	PROBABLE CAUSE	REMEDY
6 (Cont)		Lamps P2-25 are matched.	Refer to step 5.		
		Lamps P2-26 are matched.	P2-26 and P2-16 green indicators not lit.	K26 deenergized or damaged K26 contacts.	
		Lamps P2-27 are matched.	P2-27, P1-2, P1-32, and P2-21 green indicators not lit. P1-6, P1-11, and P2-23 green indicators lit.	Damaged K23 contacts or K23 deenergized.	
		Lamps P2-28 are matched.	Refer to step 4.		
7	Set FUNCTION selector to 4 and momentarily press KEY button. When proper indicators are matched (amber and green indicators lit), proceed to step 8.	Lamps P1-6 are matched.	Refer to step 4.		Repair or replace defective parts.
		Lamps P1-11 are matched.	Refer to step 4.		
		Lamps P1-15 are matched.	Refer to step 4.		
		Lamps P1-19 are matched.	P1-19 green indicator not lit.	CR6 open or K8 deenergized.	
		Lamps P1-22 are matched.	P1-22 green indicator not lit.	CR60 open.	
			P1-22 and P2-7 green indicators not lit. P2-34 and P2-35 green indicators lit.	K21 energized.	
		Lamps P1-37 are matched.	P1-37 green indicator not lit.	K5 remains in energized position or damaged K5 contacts.	
			P1-11, P1-6, and P2-23 green indicators not lit. P1-2, P1-32, and P2-27 green indicators lit.	K23 remains in energized position or damaged K23 contacts.	
		Lamps P1-50 are matched.	Refer to step 4.		
		Lamps P2-3 are matched.	Refer to step 4.		
		Lamps P2-7 are matched.	Refer to step 4.		
		Lamps P2-12 are matched.	Refer to step 4.		
		Lamps P2-13 are matched.	Refer to step 4.		

Table 5-5. Coupler Control A2, Troubleshooting Chart (Cont).

STEP	PROCEDURE	NORMAL INDICATION	ABNORMAL INDICATION	PROBABLE CAUSE	REMEDY
7 (Cont)		Lamps P2-14 are matched.	Refer to step 4.		
		Lamps P2-19 are matched.	Refer to step 4.		
		Lamps P2-23 are matched.	Refer to step 4.		
		Lamps P2-28 are matched.	Refer to step 4.		
8	Set FUNCTION selector to 5. Note P1-33 green indicator lights after slight delay. When proper indicators are matched (amber and green indicators lit), proceed to step 9.	Lamps P1-6 are matched. Lamps P1-11 are matched. Lamps P1-15 are matched. Lamps P1-19 are matched. Lamps P1-22 are matched. Lamps P1-25 are matched. Lamps P1-33 are matched. Lamps P1-37 are matched. Lamps P1-45 are matched. Lamps P1-50 are matched. Lamps P2-7 are matched. Lamps P2-12 are matched. Lamps P2-14 are matched. Lamps P2-17 are matched. Lamps P2-19 are matched. Lamps P2-23 are matched.	Refer to step 4. Refer to step 4. Refer to step 4. Refer to step 7. Refer to step 7. P1-25 green indicator not lit. P1-25 and P2-27 green indicators not lit. P1-24 green indicator lit. P1-33 green indicator not lit. Refer to step 7. P1-45 green indicator not lit. Refer to step 4. Refer to step 4. Refer to step 4. P2-17 green indicator not lit. Refer to step 4. Refer to step 4.	K2 deenergized or damaged K2 contacts. K24 energized. Q2 not conducting. K3 deenergized. K25 energized or damaged contacts.	Repair or replace defective parts.

Table 5-5. Coupler Control A2, Troubleshooting Chart (Cont).

STEP	PROCEDURE	NORMAL INDICATION	ABNORMAL INDICATION	PROBABLE CAUSE	REMEDY
8 (Cont)		Lamps P2-27 are matched.	P2-27 and P1-25 green indicators not lit. P1-24 green indicator lit.	K24 energized.	
		Lamps P2-28 are matched.	Refer to step 4.		
9	Set FUNCTION selector to 6. When proper indicators are matched (amber and green indicators lit), proceed to step 10.	Lamps P1-6 are matched.	P1-6 green indicator not lit.	K28 remains in the energized position or damaged K28 contacts.	Repair or replace defective parts.
			P1-6 and P2-14 green indicators not lit.	K12 energizing circuit.	
		Lamps P1-11 are matched.	Refer to step 4.		
		Lamps P1-15 are matched.	Refer to step 4.		
		Lamps P1-19 are matched.	Refer to step 7.		
		Lamps P1-21 are matched.	P1-21 and P1-22 green indicators not lit.	CR57 open.	
		Lamps P1-22 are matched.	P1-22 and P1-21 green indicators not lit.	CR57 open.	
		Lamps P1-25 are matched.	Refer to step 8.		
		Lamps P1-33 are matched.	Refer to step 8.		
		Lamps P1-37 are matched.	Refer to step 7.		
		Lamps P1-45 are matched.	Refer to step 8.		
		Lamps P2-7 are matched.	Refer to step 4.		
		Lamps P2-12 are matched.	Refer to step 4.		
		Lamps P2-13 are matched.	Refer to step 4.		
		Lamps P2-14 are matched.	Refer to step 4.		
		Lamps P2-17 are matched.	Refer to step 8.		
		Lamps P2-19 are matched.	Refer to step 4.		
		Lamps P2-23 are matched.	Refer to step 4.		

Table 5-5. Coupler Control A2, Troubleshooting Chart (Cont).

STEP	PROCEDURE	NORMAL INDICATION	ABNORMAL INDICATION	PROBABLE CAUSE	REMEDY
9 (Cont)		Lamps P2-27 are matched.	Refer to step 8.		
		Lamps P2-28 are matched.	Refer to step 4.		
10	Set FUNCTION selector to 7. When proper indicators are matched (amber and green indicators lit), proceed to step 11. Rotate the SERIES SERVO control toward minimum until P1-12 flickers, record voltage, then return control to MAX (full cw).	Lamps P1-6 are matched. Lamps P1-11 are matched. 10 to 13 vac across jacks P2-20 and P2-30. Lamps P1-12 are matched. Lamps P1-15 are matched. Lamps P1-19 are matched. Lamps P1-21 are matched. Lamps P1-22 are matched. Lamps P1-25 are matched. Lamps P1-33 are matched. Lamps P1-37 are matched. Lamps P1-45 are matched. Lamps P2-3 are matched. Lamps P2-7 are matched. Lamps P2-12 are matched. Lamps P2-13 are matched. Lamps P2-14 are matched. Lamps P2-17 are matched.	Refer to step 9. Refer to step 4. Voltage across P2-20 and P2-30 out of tolerance. P1-12 green indicator not lit. Refer to step 4. Refer to step 7. Refer to step 9. Refer to step 9. Refer to step 8. Refer to step 8. Refer to step 7. Refer to step 8. Refer to step 5. Refer to step 4. Refer to step 4. Refer to step 5. Refer to step 4. Refer to step 8.	Series varicoil maximum sense circuit. K16 deenergized.	Repair or replace defective parts.

Table 5-5. Coupler Control A2, Troubleshooting Chart (Cont).

STEP	PROCEDURE	NORMAL INDICATION	ABNORMAL INDICATION	PROBABLE CAUSE	REMEDY
10 (Cont)		Lamps P2-19 are matched. Lamps P2-23 are matched. Lamps P2-27 are matched. Lamps P2-28 are matched.	Refer to step 4. Refer to step 4. Refer to step 8. Refer to step 4.		
11	Set FUNCTION selector to 8. When proper indicators are matched (amber and green indicators lit), proceed to step 12. Rotate the SERIES SERVO control toward minimum until P1-10 and P1-18 green indicators flicker, record voltage, then return control to MAX (full cw). Rotate SHUNT SERVO control toward minimum until relay K1 is de-energized, record voltage, then return control to MAX (full cw). (Listen for click of relay contacts.)	Lamps P1-6 are matched. 10 to 13 vac across jacks P2-20 and P2-30. Lamps P1-10 are matched. 8.45 to 9.45 vac across jacks P1-13 and P2-36. Lamps P1-11 are matched. Lamps P1-15 are matched. Lamps P1-18 are matched. Lamps P1-19 are matched. Lamps P1-21 are matched. Lamps P1-22 are matched. Lamps P1-25 are matched. Lamps P1-33 are matched. Lamps P1-37 are matched. Lamps P1-45 are matched. Lamps P2-3 are matched.	Refer to step 9. Voltage across P2-20 and P2-30 out of tolerance. P1-10 and P1-18 green indicators not lit. Relay K1 does not energize. Refer to step 4. Refer to step 4. P1-18 green indicator not lit. P1-18 and P1-10 green indicators not lit. Refer to step 7. Refer to step 9. Refer to step 9. Refer to step 8. Refer to step 8. Refer to step 7. Refer to step 8. Refer to step 5.	Series varicoil minimum sense. K13 deenergized. Loading on at ≥ 50. CR100 open. K13 deenergized.	Repair or replace defective parts.

Table 5-5. Coupler Control A2, Troubleshooting Chart (Cont).

STEP	PROCEDURE	NORMAL INDICATION	ABNORMAL INDICATION	PROBABLE CAUSE	REMEDY
11 (Cont)		Lamps P2-7 are matched. Lamps P2-12 are matched. Lamps P2-13 are matched. Lamps P2-14 are matched. Lamps P2-17 are matched. Lamps P2-19 are matched. Lamps P2-23 are matched. Lamps P2-27 are matched. Lamps P2-28 are matched.	Refer to step 4. Refer to step 4. Refer to step 5. Refer to step 4. Refer to step 8. Refer to step 4. Refer to step 4. Refer to step 8. Refer to step 4.		
12	Set FUNCTION selector to 9. Note P1-22 and P2-16 are lit after slight delay. When proper indicators are matched (amber and green indicators lit), proceed to step 13.	Lamps P1-6 are matched. Lamps P1-11 are matched. Lamps P1-15 are matched. Lamps P1-19 are matched. Lamps P1-22 are matched. Lamps P1-25 are matched. Lamps P1-33 are matched. Lamps P1-37 are matched. Lamps P1-45 are matched. Lamps P2-3 are matched. Lamps P2-7 are matched.	Refer to step 9. Refer to step 4. Refer to step 4. Refer to step 7. P1-22 green indicator not lit. P1-34 and P1-35 green indicators lit. Refer to step 8. Refer to step 8. Refer to step 7. Refer to step 8. Refer to step 4. Refer to step 4.	K21 energized.	Repair or replace defective parts.

Table 5-5. Coupler Control A2, Troubleshooting Chart (Cont).

STEP	PROCEDURE	NORMAL INDICATION	ABNORMAL INDICATION	PROBABLE CAUSE	REMEDY
12 (Cont)		Lamps P2-12 are matched. Lamps P2-13 are matched. Lamps P2-14 are matched. Lamps P2-16 are matched. Lamps P2-17 are matched. Lamps P2-19 are matched. Lamps P2-23 are matched. Lamps P2-25 are matched. Lamps P2-27 are matched. Lamps P2-28 are matched.	Refer to step 4. Refer to step 4. Refer to step 4. P2-16 green indicator not lit. P2-16 and P1-6 green indicators not lit. Refer to step 8. Refer to step 5. Refer to step 4. Refer to step 5. Refer to step 8. Refer to step 4.	K26 remains in energized position or K19 deenergized. Damaged K28 contacts.	
13	Set FUNCTION selector to 10. Note P2-7 green indicator goes off and P1-9 and P2-26 green indicators light after slight delay. When proper indicators are matched (amber and green indicators lit), proceed to step 14.	Lamps P1-9 are matched. Lamps P1-11 are matched. Lamps P1-15 are matched. Lamps P1-19 are matched. Lamps P1-22 are matched. Lamps P1-25 are matched. Lamps P1-33 are matched. Lamps P1-37 are matched. Lamps P1-45 are matched.	P1-9, P2-26, P2-34, and P2-35 green indicators not lit. P2-7 green indicator lit. Refer to step 4. Refer to step 4. Refer to step 7. P1-22 green indicator not lit. Refer to step 8. Refer to step 8. Refer to step 7. Refer to step 8.	Q11, RT3, R6, C29, CR102, C23, or R36 defective. K14 deenergized.	Repair or replace defective parts.

Table 5-5. Coupler Control A2, Troubleshooting Chart (Cont).

STEP	PROCEDURE	NORMAL INDICATION	ABNORMAL INDICATION	PROBABLE CAUSE	REMEDY
13 (Cont)		Lamps P1-49 are matched. Lamps P2-3 are matched. Lamps P2-12 are matched. Lamps P2-13 are matched. Lamps P2-14 are matched. Lamps P2-17 are matched. Lamps P2-19 are matched. Lamps P2-23 are matched. Lamps P2-26 are matched. Lamps P2-27 are matched. Lamps P2-28 are matched. Lamps P2-34 are matched. Lamps P2-35 are matched.	P1-49 green indicator not lit. Refer to step 4. Refer to step 4. Refer to step 4. P2-14 green indicator not lit. Refer to step 8. Refer to step 4. Refer to step 4. P2-26 green indicator not lit. P2-26 and P1-19 green indicators not lit. Refer to step 8. Refer to step 4. P2-34 and P2-35 green indicators not lit. P2-7 green indicator lit. P2-34 and P2-35 green indicators not lit. P2-35 and P2-34 green indicators not lit. P2-7 green indicator lit. P2-35 and P2-34 green indicator not lit. P2-35 green indicator not lit.	K18 energized or damaged contacts. K12 remains energized or contacts frozen. K20 deenergized. K7 deenergized. K21 deenergized. CR79 open. K21 deenergized or contacts damaged. CR79 open. CR93 open.	

Table 5-5. Coupler Control A2, Troubleshooting Chart (Cont).

STEP	PROCEDURE	NORMAL INDICATION	ABNORMAL INDICATION	PROBABLE CAUSE	REMEDY
14	Set FUNCTION selector to 11. Note P2-17 goes off and P1-24 lights after slight delay. P1-6 will light (MCN 179 and below). When proper indicators are matched (amber and green indicators lit), proceed to step 15.	Lamps P1-9 are matched. Lamps P1-11 are matched. Lamps P1-15 are matched. Lamps P1-22 are matched. Lamps P1-24 are matched. Lamps P1-33 are matched. Lamps P1-37 are matched. Lamps P2-3 are matched. Lamps P2-12 are matched. Lamps P2-13 are matched. Lamps P2-14 are matched. Lamps P2-16 are matched. Lamps P2-19 are matched. Lamps P2-23 are matched. Lamps P2-28 are matched. Lamps P2-34 are matched. Lamps P2-35 are matched.	Refer to step 13. Refer to step 4. Refer to step 4. Refer to step 13. P1-24 green indicator not lit. Refer to step 8. Refer to step 7. Refer to step 4. Refer to step 4. Refer to step 4. Refer to step 4. Refer to step 4. Refer to step 4. Refer to step 13. Refer to step 13.	CR67 open, CR56 open, K21 deenergized, or K24 deenergized. K28 deenergized or R82 open.	Repair or replace defective parts.
15	Set FUNCTION selector to 12. When proper indicators are matched (amber and green indicators lit), the test is complete.	P1-4 amber indicator lit. Lamps P1-6 are matched. Lamps P1-11 are matched.	P1-4 matched. Refer to step 4. Refer to step 4.	Fault circuit: K6, Q4, C6, R18, RT10, CR84, R15, C5, R14, CR103, R32, C37, or CR85 defective.	Repair or replace defective parts.

Table 5-5. Coupler Control A2, Troubleshooting Chart (Cont).

STEP	PROCEDURE	NORMAL INDICATION	ABNORMAL INDICATION	PROBABLE CAUSE	REMEDY
15 (Cont)	Press the KEY button for duration of procedure (disregard all lights except P1-4).	Lamps P1-15 are matched. Lamps P1-24 are matched. Lamps P1-33 are matched. Lamps P1-37 are matched. Lamps P1-50 are matched. Lamps P2-12 are matched. Lamps P2-14 are matched. Lamps P2-19 are matched. Lamps P2-23 are matched. Lamps P2-28 are matched. Lamps P2-34 are matched. Lamps P2-35 are matched. P1-4 green indicator should light within 8 to 10 seconds.	Refer to step 4. Refer to step 14. Refer to step 8. Refer to step 7. Refer to step 4. Refer to step 4. Refer to step 4. Refer to step 5. Refer to step 4. Refer to step 4. Refer to step 13. Refer to step 13. P1-4 green indicator does not light in 8 to 10 seconds.	Fault circuit.	

Table 5-6. Coupler Control A2, Relay Energizing Chart.

878L-15 TESTER SELECTOR POSITION	RELAY																											
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
1				X	X				X		X													X	X			
2					X						X													X	X			
3				X	X				X		X													X	X			
3 (Key)				X					X		X											X	X	X	X	X	X	
4				X						X		X												X	X			
4 (Key)				X			X	X		X		X												X	X			
5	X	X	X	X			X	X		X		X																
6	X	X	X	X			X	X		X		X					X											
7 (Series svo pot. min)		X	X				X	X		X		X					X											
7 (Both svo pot. max)		X	X				X	X		X		X			X		X											
8 (Both svo pot. max)		X	X				X	X		X		X	X				X											
8 (Series svo pot. min)		X	X							X		X					X											
8 (Shunt svo pot. min)	X	X	X				X	X		X		X					X											
9	X	X	X	X			X	X				X					X	X										
10		X	X	X			X	X		X			X		X		X	X		X	X						X	
11				X						X		X		X		X	X	X		X	X			X	X			X
12				X						X		X			X		X	X		X	X			X	X			
12 (Key)	X	X	X	X		X ₈ thru 10's	X	X		X		X			X		X	X		X	X							

X - Relay energized.
Blank indicates relay deenergized.

Table 5-7. Electronic Control Amplifier A3, Troubleshooting Chart.

STEP	PROCEDURE	NORMAL INDICATION	ABNORMAL INDICATION	PROBABLE CAUSE	REMEDY
Note The TORQUE METER indications listed in the NORMAL INDICATION column apply only when the input power to the 878L-16 is 115 volts, 400 Hz. Allow the tester to warm up for at least 5 minutes, and measure the input voltage and frequency. If the input voltage or frequency is not 115 volts, 400 Hz, refer to table 5-8 for the correct TORQUE METER indication.					
1	Connect an 878L-16 tester to 115 $\pm$ 1-vac, 400 $\pm$ 5-Hz, single-phase power source.				
2	Connect electronic control amplifier A3 to 878L-16 tester. Fasten module securely to ensure proper grounding.				
3	Set power switch to SELF TEST.	TORQUE METER should indicate 0.35 to 0.45 inch-ounce and all lamps should be lit.	All lamps are not lit.	878L-16 tester.	Refer to 980H-1 Coupler Test Set Instruction Book.
4	Set power switch to ON and FUNCTION selector to 1. When normal indications appear, proceed to step 5. Note Disregard lamps 27 for this step.	0.30 to 0.44 TORQUE METER indication. Lamps 24 are matched.	TORQUE METER indication is out of tolerance. Green 24 lamp is not lit. Green 8 lamp is lit. Green 24 lamp is not lit. Green 23 lamp is lit. No green lamps are lit.	Amplifier stages Q4 through Q9. K1 remains in energized position. Q1 anode to cathode short. K2 remains in energized position. K1 and K2 remain in energized position.	Refer to transistor troubleshooting, paragraph 5.3.2. Replace K1. Replace Q1. Replace K2. Replace K1 and K2.
5	Set power switch to ON and FUNCTION selector to 2. When normal indications appear, proceed to step 6. Note Disregard lamps 27 for this step.	0.09 to 0.16 TORQUE METER indication. Lamps 24 are matched.	TORQUE METER indication is out of tolerance. No TORQUE METER indication. Green 24 lamp is not lit. Green 8 lamp is lit. Green 24 lamp is not lit. Green 23 lamp is lit.	Amplifier stages Q4 through Q9. Tune B relay remains in deenergized position. K1 remains in energized position. K2 remains in energized position.	Refer to transistor troubleshooting, paragraph 5.3.2. Replace tune B relay K5. Replace K1. Replace K2.

Table 5-7. Electronic Control Amplifier A3, Troubleshooting Chart (Cont).

STEP	PROCEDURE	NORMAL INDICATION	ABNORMAL INDICATION	PROBABLE CAUSE	REMEDY
5 (Cont)			No green lamps are lit.	K1 and K2 remain in energized position.	Replace K1 and K2.
6	Set power switch to ON and FUNCTION selector to 3. When normal indication appears, proceed to step 7.	0.40 to 0.52 TORQUE METER indication. Lamps 8 are matched. Lamps 16 are matched.	TORQUE METER indication is out of tolerance. No TORQUE METER indication. Green 8 lamp is not lit. Green 24 lamp is lit. Green 16 lamp is not lit.	Amplifier stages Q4 through Q9. Tune B relay remains in deenergized position. CR2 open. Q1 open. Q1 gate circuit. CR23 open. CR7 open. K2 remains energized. Tune B damping relay remains in deenergized position.	Refer to transistor troubleshooting, paragraph 5.3.2. Replace tune B relay K5. Replace CR2. Replace Q1. Check T1, R1, R2, R3, C1, R4, C2, CR1, and RT1. Replace faulty components. Replace CR23. Replace CR7. Replace K2. Replace tune B damping relay K2.
7	Set power switch to ON and FUNCTION selector to 4. When normal indications appear, proceed to step 8.	0.23 to 0.35 TORQUE METER indication. Lamps 8 are matched. Lamps 28 are matched.	TORQUE METER indication is out of tolerance. No TORQUE METER indication. Green 8 lamp is not lit. Green 24 lamp is lit. Green lamp 28 is not lit.	Amplifier stages Q4 through Q9. Tune B relay remains in deenergized position. Servo-gain relay remains in deenergized position.	Refer to the transistor troubleshooting, paragraph 5.3.2. Replace tune B relay K5. Replace servo-gain relay K3.
8	Set power switch to ON and FUNCTION selector to 5. When normal indications appear, proceed to step 9.	0 $\pm$ 0.03 TORQUE METER indication. Lamps 8 are matched. Lamps 16 are matched.	Green 8 lamp is not lit. Green 24 lamp is lit. Green 16 lamp is not lit.	K1. CR13 open.	Replace K1. Replace CR13.

Table 5-7. Electronic Control Amplifier A3, Troubleshooting Chart (Cont).

STEP	PROCEDURE	NORMAL INDICATION	ABNORMAL INDICATION	PROBABLE CAUSE	REMEDY
9	Set power switch to ON and FUNCTION selector to 7. When normal indications appear, proceed to step 10.	0.45 to 0.65 TORQUE METER indication. Lamps 24 are matched.	TORQUE METER indication is out of tolerance. Green 24 lamp is not lit. Green 23 lamp is lit.	Amplifier stages Q11 through Q16. K2 remains energized. Q2 anode to cathode short.	Refer to transistor troubleshooting, paragraph 5.3.2. Replace K2. Replace Q2.
10	Set power switch to ON and FUNCTION selector to 8. When normal indications appear, proceed to step 11.	0 $\pm$ 0.03 TORQUE METER indication. Lamps 24 are matched. Lamps 27 are matched.	Refer to step 9. Green 27 lamp is not lit.	Refer to step 9. CR10 open.	Refer to step 9. Replace CR10.
11	Set power switch to ON and FUNCTION selector to 9. When normal indications appear, proceed to step 12.	0.11 to 0.17 TORQUE METER indication. Lamps 23 are matched. Lamps 27 are matched.	TORQUE METER indication is out of tolerance. No TORQUE METER indication. Green 23 lamp is not lit. Green 24 lamp is lit. Green 23 lamp is not lit. Green 8 lamp is lit. Green 27 lamp is not matched.	Amplifier stages Q11 through Q16. K5 remains in deenergized position. K2 coil open. Q2 open. Q2 gate circuit. CR8 open. CR9 open. K1. Q1 anode to cathode short. CR10 open.	Refer to transistor troubleshooting, paragraph 5.3.2. Replace K5. Replace K2. Replace Q2. Check T2, R8, R7, R6, C4, R5, C3, CR4, and RT2. Replace faulty components. Replace CR8. Replace CR9. Replace K1. Replace Q1. Replace CR10.
12	Set power switch to ON, FUNCTION selector to 10, and VAR INPUT from 0 to SAT. When normal indications appear, proceed to step 13.	0 $\pm$ 0.3(0) to not less than 0.60 for part number 775-4276-000; for part number 528-0467-000 0 $\pm$ 0.3(0) to not less than 0.50 (SAT) TORQUE METER indication. Lamps 23 are matched.	TORQUE METER indication is out of tolerance. Green 23 lamp is not lit.	Amplifier stages Q4 through Q9. K2.	Refer to transistor troubleshooting, paragraph 5.3.2. Replace K2.
13	Set the power switch to ON, FUNCTION selector to 11, and VAR INPUT from 0 to SAT. When normal indications appear, test is complete.	0 $\pm$ 0.3(0) to not less than 0.65 for part number 775-4276-000; for part number 528-0467-000 0 $\pm$ 0.3(0) to not less than 0.50 (SAT) TORQUE METER indication.	TORQUE METER indication is out of tolerance.	Amplifier stages Q11 through Q16.	Refer to transistor troubleshooting, paragraph 5.3.2.

Table 5-8. 878L-16 TORQUE METER Normal Indicator Limits.

LINE VOLTAGE		SELF-TEST	FUNCTION SELECTOR SWITCH POSITIONS								
			1	2	3	4	5	7	8	9	SATURATION 10 or 11
Line frequency = 390 Hz											
105	.29 - .39	.26 - .49	.10 - .17	.35 - .52	.26 - .39	*	.34 - .54	*	.12 - .21	**NLT .39	
110	.33 - .43	.29 - .51	.11 - .18	.38 - .55	.28 - .40	*	.38 - .58	*	.13 - .22	**NLT .44	
115	.37 - .47	.31 - .53	.12 - .18	.41 - .58	.30 - .42	*	.42 - .62	*	.13 - .22	**NLT .48	
120	.41 - .51	.34 - .56	.12 - .19	.44 - .61	.32 - .44	*	.46 - .67	*	.14 - .23	**NLT .52	
125	.45 - .55	.36 - .58	.13 - .20	.47 - .64	.34 - .46	*	.51 - .71	*	.14 - .24	**NLT .56	
Line frequency = 400 Hz											
105	.27 - .37	.23 - .46	.09 - .16	.32 - .49	.23 - .36	*	.32 - .52	*	.12 - .20	**NLT .36	
110	.31 - .41	.26 - .48	.10 - .17	.35 - .52	.25 - .37	*	.36 - .56	*	.13 - .21	**NLT .41	
115	.35 - .45	.28 - .50	.11 - .17	.38 - .55	.27 - .39	*	.40 - .60	*	.13 - .21	**NLT .45	
120	.39 - .49	.31 - .53	.11 - .18	.41 - .58	.29 - .41	*	.44 - .65	*	.14 - .22	**NLT .49	
125	.43 - .53	.33 - .55	.12 - .19	.44 - .61	.31 - .43	*	.49 - .69	*	.14 - .22	**NLT .53	
Line frequency = 410 Hz											
105	.25 - .35	.20 - .43	.08 - .15	.29 - .46	.20 - .33	*	.30 - .50	*	.11 - .20	**NLT .33	
110	.29 - .39	.23 - .45	.09 - .16	.32 - .49	.22 - .34	*	.34 - .54	*	.12 - .21	**NLT .38	
115	.33 - .43	.25 - .47	.10 - .16	.35 - .52	.24 - .36	*	.38 - .58	*	.12 - .21	**NLT .42	
120	.37 - .47	.28 - .50	.10 - .17	.38 - .55	.26 - .38	*	.42 - .63	*	.13 - .22	**NLT .46	
125	.41 - .51	.30 - .52	.11 - .18	.41 - .58	.28 - .40	*	.47 - .67	*	.13 - .22	**NLT .50	
*Since the TORQUE METER cannot be read accurately between line units, positions 5 and 8 should read 0 ±0.05 maximum without regard to input voltage and frequency. **Indicates not less than.											

Table 5-9. Discriminator A8, Troubleshooting Chart.

STEP	PROCEDURE	NORMAL METER INDICATION	ABNORMAL METER INDICATION	PROBABLE CAUSE	REMEDY
1	Connect a variable 2- through 30-MHz, minimum of 100 watts, rf input to J3 (third jack from the left) on the 878L-17.				
2	Set CIRCUIT SELECTOR to INPUT POWER and transmitter frequency to 2 MHz. Key transmitter.	878L-17 meter pointer deflects.	No deflection of pointer on 878L-17 meter.	878L-17 tester.	Refer to 980H-1 Coupler Test Set Instruction Book.
3	Remove transmitter output cable from J3 and connect to J1. Connect a discriminator module to 878L-17 tester. Be sure the module is securely fastened to ensure proper grounding.				
4	Set the CIRCUIT SELECTOR to PHASE and the transmitter frequency to 29.999 MHz. Key the transmitter.	0 $\pm$ 2.	METER indication out of tolerance.	R9 out of adjustment.	Adjust R9 in the discriminator for a zero METER indication.
5	Set transmitter frequency to 2 MHz. Key transmitter; read and record PHASE reading. Set the CIRCUIT SELECTOR to 2 MC position and key transmitter.	Two meter units or more algebraic difference from PHASE reading.	METER indication out of tolerance.	Phasing discriminator.	Check components and replace if faulty.
6	Set transmitter frequency to 8 MHz. Set CIRCUIT SELECTOR to PHASE position. Key transmitter; read and record PHASE reading. Set the CIRCUIT SELECTOR to 8 MC position and key transmitter.	Two meter units or more algebraic difference from PHASE reading.	METER indication out of tolerance.	Phasing discriminator.	Check components and replace if faulty.
7	Set transmitter frequency to 14 MHz. Set CIRCUIT SELECTOR to PHASE position. Key transmitter; read and record PHASE reading. Reset CIRCUIT SELECTOR to 14 MC position and key transmitter.	Two meter units or more algebraic difference from PHASE reading.	METER indication out of tolerance.	Phasing discriminator.	Check components and replace if faulty.
8	Set transmitter frequency to 29.999 MHz. Set CIRCUIT SELECTOR to PHASE position. Key transmitter; read and record PHASE reading. Reset CIRCUIT SELECTOR to 29.999 MC position and key transmitter.	Two meter units or more algebraic difference from PHASE reading.	METER indication out of tolerance.	Phasing discriminator.	Check components and replace if faulty.

Table 5-9. Discriminator A8, Troubleshooting Chart (Cont).

STEP	PROCEDURE	NORMAL METER INDICATION	ABNORMAL METER INDICATION	PROBABLE CAUSE	REMEDY
9	Set the CIRCUIT SELECTOR to LOAD and the transmitter frequency to 14 MHz. Key the transmitter.	0 ± 3.5 .	METER indication out of tolerance.	C4 out of adjustment.	Adjust C4 in the discriminator for zero METER indication.
10	Set the CIRCUIT SELECTOR to FWD POWER and the transmitter frequency to 14 MHz. Key the transmitter.	4.5 ± 1.5 .	METER indication out of tolerance.	Forward power discriminator.	Check components and replace if faulty.
11	Set the CIRCUIT SELECTOR to REFL POWER and the transmitter frequency to 14 MHz. Key the transmitter.	$+0.1$ to $+2$.	METER indication out of tolerance.	C1 out of adjustment.	Adjust C1 in the discriminator for 0.2 ± 0.1 METER indication.
12	Set the CIRCUIT SELECTOR to REFL SENS and the transmitter frequency to 14 MHz. Key the transmitter.	One meter unit or more algebraic difference from REFL POWER reading obtained in step 11.	METER indication out of tolerance.	Reflected power discriminator.	Check components and replace if faulty.
13	Set the CIRCUIT SELECTOR to REFL POWER and the transmitter frequency to 14 MHz. Key the transmitter. Adjust C1 in the discriminator for zero METER indication.				
14	Set the CIRCUIT SELECTOR to LOAD SENS and the transmitter frequency to 14 MHz. Key the transmitter.	Three meter units or more algebraic difference from LOAD reading obtained in step 9.	METER indication out of tolerance.	Loading discriminator.	Check components and replace if faulty.

5.4 DISASSEMBLY

5.4.1 General

This portion of the maintenance section provides instructions for the disassembly of the 490T-4 Antenna Coupler. Disassembly procedures should be accomplished only when repair is required. Do not perform the disassembly procedures as a part of routine maintenance.

Note

All item numbers preceded with a dash identify attaching parts and are not shown on the referenced figure.

5.4.2 490T-4 Antenna Coupler Disassembly Procedures

5.4.2.1 Dust Cover Removal Procedures (Refer to figure 6-2.)

- Remove cover (1) from the 490T-4 by removing 17 screws (-2), lift off cover.

5.4.2.2 Coupler Control and Electronic Control Amplifier Modules Removal Procedures (Refer to figure 6-2.)

- Remove electronic control amplifier (6) and coupler control (7) by loosening four red-headed screws each (part of 6, 7) and pulling out the modules with their handles.
- For disassembly instructions of the electronic control amplifier (6), refer to paragraph 5.4.2.12 of this section.

For disassembly instructions of the coupler control (7) refer to paragraph 5.4.2.13 of this section.

5.4.2.3 Discriminator Removal Procedures (Refer to figure 6-2.)

- a. Remove discriminator (8) by removing four screws (-9). Unplug discriminator (8) from the 490T-4 Antenna Coupler.
- b. For disassembly instructions of the discriminator (8) refer to paragraph 5.4.2.11 of this section.

5.4.2.4 Step Coil Removal Procedures

5.4.2.4.1 Step Coil (Collins Part Number 528-0524-00) (Refer to figure 6-2.)

- a. Remove tuning capacitor tinned wire (15) from shunt capacitor (1) by loosening two setscrews (-16) with a number four Bristol wrench. Lift capacitor tinned wire (15) off capacitor C1 (11, figure 6-15).
- b. Loosen screw in terminal E10 that attaches the step coil (12) to the series varicoil (10).
- c. Loosen the connector lock on step coil connector P1 (9A, figure 6-2) by pushing it sideways with a screwdriver. Unplug connector P1 from 490T-4 chassis connector J8 (84, figure 6-6).
- d. Insert a long Phillips screwdriver through each of the four holes in the corners of the step coil wraparound (1, 6 figure 6-2), and loosen the four captive screws (2, figure 6-2) that hold the step coil (12) to the 490T-4 chassis. Carefully lift the step coil (12) from the 490T-4 chassis.
- e. For disassembly instructions of the step coil refer to paragraph 5.4.2.16 of this section.

5.4.2.4.2 Step Coil (Collins Part Number 777-3508-001) (Refer to figure 6-18.)

- a. Remove lead (24) from capacitor assembly A7 by removing screw (-3).
- b. Remove bus wire from top of series varicoil A5 by removing screw and attaching hardware.
- c. Loosen connector (16) lock by pushing it sideways with a screwdriver. Unplug connector (16) from 490T-4 chassis.
- d. Loosen four captive screws (-5) in the corners of the step coil wraparound. Carefully lift the step coil from the 490T-4 chassis.

- e. For disassembly instructions of the step coil, refer to paragraph 5.4.2.16 of this section.

5.4.2.5 Shunt Varicoil Removal Procedures (Refer to figure 6-2.)

- a. Remove step coil (12) as described in paragraph 5.4.2.4 of this section.
- b. Loosen setscrew in terminal E11 that secures it to the shunt varicoil lead (11) with a number four Bristol wrench.
- c. Loosen four mounting screws (75, figure 6-11) that secure shunt varicoil (11) to 490T-4 chassis. Lift shunt varicoil (11) from chassis.
- d. Loosen the connector lock on shunt varicoil connector P1 (27, figure 6-11) by pushing it sideways with a screwdriver. Unplug connector P1 from 490T-4 chassis connector J10 (145, figure 6-16).
- e. For disassembly instructions of the shunt varicoil (11), refer to paragraph 5.4.2.14 of this section.

5.4.2.6 Series Varicoil Removal Procedures (Refer to figure 6-2.)

- a. Remove step coil (12) as described in paragraph 5.4.2.4 of this section.
- b. Loosen setscrew in terminal E9 that holds it to the series varicoil (10) with a number four Bristol wrench.
- c. Loosen screw in terminal E10 that attaches step coil (12) to the series varicoil (10).
- d. Loosen the four mounting screws (75, figure 6-11) that hold the series varicoil (10) to the 490T-4 chassis. Lift series varicoil (10) from chassis.
- e. Loosen the connector lock on connector P1 (27, figure 6-11) by pushing it sideways with a screwdriver. Unplug connector P1 from 490T-4 chassis connector J9 (82, figure 6-16).
- f. For disassembly instructions of the series varicoil (10) refer to paragraph 5.4.2.15 of this section.

5.4.2.7 Shunt Capacitor Removal Procedure (Refer to figure 6-2.)

- a. Remove capacitor tinned wire (15) by loosening two setscrews (-16) and lifting tinned wire (15) from capacitor C1 (11, figure 6-15).
- b. Loosen the connector lock on connector P1 (43, figure 6-15) by pushing it sideways with a screwdriver. Unplug connector P1 from

490T-4 chassis connector J7 (75, figure 6-16).

- c. Remove four screws (-22) that attach the shunt capacitor (21) to the 490T-4 chassis with a very long Phillips screwdriver inserted through holes in top of chassis. Lift the shunt capacitor (21) and slide it out the bottom of the 490T-4 chassis.
- d. For disassembly instructions of the shunt capacitor refer to paragraph 5.4.2.17 of this section.

5.4.2.8 Capacitor Assembly Removal Procedure (Refer to figure 6-2.)

- a. Tag and unsolder wires from capacitor assembly (17) to rotary switch (19).
- b. On front panel remove two flathead screws (-18) from ceramic posts (28, 32, figure 6-13).
- c. For disassembly instructions of the capacitor assembly refer to paragraph 5.4.2.18 of this section.

5.4.2.9 Series Capacitor Removal Procedures (Refer to figure 6-2.)

- a. Tag and unsolder wires from capacitors C31 and C32 (33, 34, figure 6-16) to series capacitor (19).
- b. Loosen connector lock on P1 (43, figure 6-14) by pushing it sideways with a screwdriver. Unplug connector P1 from 490T-4 chassis connector J14 (73, figure 6-6).
- c. Remove four mounting screws (-20) with a long-handled Phillips screwdriver inserted through holes in top of chassis. Lift series capacitor (19) up and slide it out of the chassis.
- d. For disassembly instructions of series capacitor (19) refer to paragraph 5.4.2.19 of this section.

5.4.2.10 Chassis Disassembly Procedure (Refer to figure 6-16.)

- a. Remove cover (1, figure 6-2) and modules (6, 7, 8, 10, 11, 12, 17, 19, 21, figure 6-2). See paragraphs 5.4.2.1 through 5.4.2.9 of this section for proper procedures.
- b. Remove two angle brackets (1) from front of chassis by removing from each, two nuts (-2), lockwashers (-3), and screws (-4).

- c. Remove two incandescent lamps (6, 9) from lampholders (7, 10) by unscrewing the light lamp indicators (5, 8) counterclockwise and removing the incandescent lamps (6, 9).
- d. Remove two lampholders (7, 10) from front of chassis. Remove nuts, terminal lugs, nonmetallic washers, and shoulder washers (all part of lampholders 7, 10).
- e. Remove transmitter rf input connector J2 (11) from chassis by removing nut and lockwasher (both part of 11).
- f. Remove power connector J1 (12) by removing four screws (-13).
- g. Remove handle (15) by holding two hinge pins (-18) with a no-mar (nonmetallic) jawed pliers and removing two elastic nuts (-16) and four plastic washers (-17).
- h. Remove high-voltage ceramic capacitors C31 and C32 (33, 34) from chassis as follows:
 - 1. Remove screw (-35), flat washer (-37), and lockwasher (-38) from insulator plate (43) and screw (-36) from top of chassis.
 - 2. Remove angle bracket and insulator assembly (44, 43 and attaching hardware) from chassis by removing two screws (-48), flat washers (-46), and lockwashers (-47) from chassis.
 - 3. Position terminal lug (-41) to the side and while holding capacitor C31 (33), unscrew capacitor C32 (34) from stud (-42).
 - 4. Remove capacitor C31 (33) from stud (-42) and terminal lug (-40).
- i. Remove chassis mounting plate (69) from chassis by removing eight screws (-70).
- j. Remove connectors J4, J5, and J6 (50, 54, 58) from chassis mounting plate (69) by removing two each: nuts (-51, -55, -59) spacing sleeves (-52, -56, -60), and screws (-53, -57, -61).
- k. Remove series varicoil connector J9 (82) and coil connector J8 (84) by removing two connector lock screws, nuts, and lockwashers each (all part of connector locks -83, -85).
- l. Remove series capacitor connector J14 (73) and shunt capacitor connector J7 (75) by removing two connector lock screws, nuts, and lockwashers each (all part of connector locks -74, -76).
- m. Remove rf coil L1 (62) from chassis by removing screw (-63).

- n. Remove power transformer T1 (64) from chassis by removing four screws (-65).
- o. Remove coil L2 (89) from chassis by removing screw (-90).
- p. Remove band relay K2 (92) which connects to the rf series and rf shunt coils (10, 11, figure 6-2) by removing two 3/8 hexnuts (part of 92).
- q. Remove discriminator power connector J11 (97) by removing two nuts (-98) and screws (-99).
- r. Remove discriminator rf input connector J12 (100) by removing nut (part of 100) and washer (-101).
- s. Remove discriminator rf output connector J13 (102) by removing four screws (-103) and lockwashers (-104).
- t. Remove filter mounting plate (134) from chassis by removing 11 screws (135B). Remove parts (114 to 133) as necessary.
- u. Remove shunt varicoil connector J10 (145) by removing two connector locks, nuts, and lockwashers (all part of -146).

5.4.2.11 Discriminator Disassembly Procedures (Refer to figure 6-10.)

- a. Remove housing (1) by removing seven screws (-2) and lockwashers (-3).
- b. Remove connector bracket (4) by removing two screws (-5).
- c. Remove connector P3 (6) from connector bracket (4) by removing two screws (-8) and nuts (-7).
- d. Remove terminal board assembly (9) by removing three screws (-13) and spacing sleeves (-14) from the rf shields (81, 86) and one screw (-13) and spacing sleeve (-11) from discriminator transformer (63).
- e. Remove resistor R9 (15) from terminal board (9, 50, 56) by removing nut (-16), lockwasher (-17), flat washer (-18), and screw (-19).
- f. Unsolder parts (20 to 49) from terminal board (50) as necessary for test and replacement.
- g. Remove Teflon feedthrough terminals (51) and Teflon stud terminals (53) as necessary by pulling the terminal pin away from the Teflon base. Then push the terminal out of terminal board (50, 56).

- h. Remove resistor holder (67) from rf shields (81, 86) by removing two screws (-68).
- i. Remove resistors R1 (66) and R3 (65) from resistor holder (67).
- j. Remove connector receptacle P2 (73) from rf shield number 1 (81) by removing two screws (-74) and lockwashers (-75).
- k. Remove connector receptacle P1 (76) from rf shield number 2 (86) by removing two screws (-77) and lockwashers (-78).
- l. Remove capacitor C4 (59) from capacitor mounting plate (79) by removing nut and lockwasher (both part of 59) and terminal lug (60).
- m. Remove capacitor C1 (61) from capacitor mounting plate (79) by removing nut and lockwasher (both part of 61) and terminal lug (62).
- n. Remove capacitor mounting place (79) from rf shield number 1 (81) by removing two screws (-80).
- o. Remove discriminator transformer (63) from rf shields (81, 86) by removing four screws and lockwashers (part of 63) nearest the ends of discriminator transformer (63). Then remove two nuts (-64) and rf shields (81, 86) from discriminator transformer (63). Do not disassemble discriminator transformer (63). Temporarily replace four screws that were removed from the ends of discriminator transformer (63).

5.4.2.12 Electronic Control Amplifier Disassembly Procedures

5.4.2.12.1 Electronic Control Amplifier (Collins Part Number 528-0467) (Refer to figure 6-3.)

- a. Remove cover (1) by removing two screws (-2).
- b. Remove the four mounting screws (7) that are on the terminal board (95) side of the chassis by snapping them out of their screw retainers (8).
- c. Remove at least one of the screw retainers (8) on the terminal board (95) side of the chassis by removing screw (-9).
- d. Remove control terminal board (95) by removing four screws (-96).
- e. Remove relays K1 through K5 (18 through 22) from relay bracket (79) by removing 10 nuts (-23) and 10 washers (-24).

- f. Remove relay bracket (79) from chassis by removing four screws (-80).
- g. Remove connector P1 (76) from chassis by removing two screws (-78), two nuts (-77), and two lugs (74).
- h. Remove chopper G1 (26) by removing four screws (-28), four elastic nuts (-27), and one ground lug (75).
- i. Remove transistor holders (79, figure 6-4) from terminal board (95) as necessary by removing screws and nylon washers (supplied with 79, figure 6-4).
- j. Remove transformers T3 and T4 by pushing them out of their holders (67, 63). Press holders (68, 64) from holes in chassis.

**5.4.2.12.2 Electronic Control Amplifier (Collins
Part Number 775-4276) (Refer to
figure 6-5.)**

- a. Remove cover (1) by removing 2 screws (-2).
- b. Remove the 4 mounting screws (7) that are on the terminal board side of the chassis by snapping them out of their screw retainers (8).
- c. Remove at least 1 of the screw retainers (8) on the terminal board side of the chassis by removing screw (-9).
- d. Remove control terminal board (104, figure 6-6) by removing 4 screws (-11).
- e. Remove relays K1 through K5 (56 through 60) from chassis by removing 10 nuts (-61) and 10 washers (-62).
- f. Remove connector P1 (13) from chassis by removing 2 screws (-16), 2 nuts (-14), and lug (15).
- g. Remove four transistors (28, 29, 30, 31) by removing eight nuts (-33), washers (-34), insulators (-35), screws (-37), sixteen spacers (-36), and four lugs.
- h. Remove transistor holders (41, figure 6-6) from terminal board (104, figure 6-6) as necessary by removing screws and nylon washers (supplied with 41, figure 6-6).
- i. Remove transformers T1 (46), T2 (45), T3 (89, figure 6-6), and T4 (83, figure 6-6).
- b. Remove four captive screws (89) by snapping them out of their screw retainers (90). Remove four screw retainers (90) by removing four screws (-91).
- c. Remove front terminal board (92) from four posts (94) and long post (106) by removing four screws (-95), lockwashers (-96), and screw (-95A).
- d. Remove rear terminal board (93) by removing four posts (94) and screw (-95A) from short post (105).

Note

Four studs (-97) will each remain in one of the eight posts (94). Do not remove the studs (-97) from the posts (94) unless necessary for replacement (paragraph 5.5.2.7, steps j. and k.).

- e. Remove relays K1 through K28 (31 to 58) as necessary by removing two nuts (-59) and lockwashers (-60) each.
- f. Remove connector P1 (98) from chassis by removing two nuts (-99) and screws (-100).
- g. Remove connector P2 (101) from chassis by removing two screws (-103), nuts (-102), and a lug (part of cable).
- h. Remove capacitor holder (66) from posts (67) by removing two screws (-69) and lockwashers (-70).
- i. Remove two posts (67) from chassis by removing two screws (-68).
- j. Remove diodes CR33 and CR34 (79, 80) from chassis by removing a nut, lockwasher, flat washer, and mica washer from each diode. Remove the diode from the chassis, and then remove a mica washer and a flat washer from the diode.

Note

All the hardware listed in step j. is usually supplied with the new diode (79 or 80).

5.4.2.13 Coupler Control Disassembly Procedures (Refer to figure 6-7.)

- a. Remove control cover (1) from chassis by removing two screws (-2).
- k. Remove 12 stud terminals E1 through E12 (85) as necessary by removing 12 screws (-86). Stud terminal E7 (85) has a terminal lug (87) and washer (-88) mounted beneath it.

5.4.2.14 Shunt Varicoil Disassembly Procedures (Refer to figure 6-11.)

- a. Remove top plate (40) from support posts (51 through 54) by gently prying with a knife blade under the four retaining rings (-43) and working them off the posts. Then remove four screws (-41) and lockwashers (-42). Lift top plate (40) from support posts (51 through 54).
- b. Remove bearing retainer (29) from top plate (40) by removing two screws (-30). Remove bearing (48) from top plate (40).
- c. Remove shield (49) from bottom plate (83) by removing four screws (-50).
- d. If necessary to replace contacts (44, 45) carefully drill out two rivets (-46) from top plate (40).
- e. The remaining disassembly procedures of the shunt varicoil are identical to that of the series varicoil. Proceed to paragraph 5.4.2.15, step c. of this section.

5.4.2.15 Series Varicoil Disassembly Procedures (Refer to figure 6-11.)

- a. Remove top plate (31) from support posts (51 through 54) by gently prying a knife blade under the four retaining rings (32) and working them off the four support posts (51 through 54). Then lift top plate (31) off support posts (51 through 54).
- b. Remove bearing retainer (29) from top plate (31) by removing two screws (30). Remove bearing (38) from top plate (31).
- c. Turn drive shaft (57) counterclockwise to its stop. Disengage and remove electrical contact (60), contact insulator (61), and helical spring (62) from drive shaft (57).
- d. Remove coil L1 assembly (51 through 54, 56) from bottom plate (83) by removing four flathead screws (-55).
- e. Remove standoff terminal (69) from bottom plate (83) by removing flathead screw (-70).
- f. Remove motor and gear assembly (1) from bottom plate (83) by removing three screws (-3), lockwashers (-4), and rim clenching clamps (-2).
- g. Remove gear (5) from motor pinion (part of 7) by driving out pin (-6) with a punch of less than 1/32 inch diameter.
- h. Loosen protective cover (62A) from bottom plate (83) by removing two screws (-63) and lockwashers (-64).

- i. Loosen drive shaft (57) by removing special screw (58) with drive shaft wrench (figure 5-3). Remove drive shaft (57), protective cover (62A), and number 4 spur gear cluster (65).
- j. Remove number 2 spur gear cluster (66) from bottom plate post (part of 83) by removing retaining ring (-67).
- k. Remove bearing retainer (71) from bottom plate (83) by removing two screws (-72). Remove bearing (74).
- l. Remove pin (-16) from nut (-15) by driving it out with a punch of less than 1/32 inch diameter.
- m. Hold brazed gearshaft (68) by its gear and remove nut (-15). Remove brazed gearshaft (68) from bottom plate (83). Remove bearing (20) from cover (14).
- n. Remove cover (14) from bottom plate (83) by removing two screws (-18), lockwashers (-19), and rim clenching clamps (-17).
- o. Remove wafer switches S1A and S1B (22, 21) by removing two screws (-25) sleeve spacers (-23), and nonmetallic washers (-26).
- p. Remove terminal bracket (8) by removing screw (-9), terminal lug (-10), and lockwasher (-11).
- q. Remove six terminals (12) from bracket (13) by pressing them out.
- r. Remove pin retainer (77) from bottom plate (83) by removing two screws (-78) and two lockwashers (-79). Remove shouldered pin (80) and rubber grommet (81).
- s. Remove four screws (75) from bottom plate (83) by pressing them out of their four spring sleeves (-76).

5.4.2.16 Step Coil Disassembly Procedures

5.4.2.16.1 Step Coil (Collins Part Number 528-0524-00) (Refer to figure 6-2.)

- a. Remove tuning drive assembly (7) by removing four screws (-8). Pull tuning drive assembly (7) away from gear box mounting plate (31).
- b. Remove gear box mounting plate (31) by removing three flathead screws (-32). Gently work gear box mounting plate (31) off three locating pins.
- c. Remove switch cover (10) from bearing plate (19) by removing three screws (-11) and lockwashers (-12).

- d. Remove rotary switches S1B and S1A (14, 15) by removing two screws (-18), short spacers (-16), and long spacers (-17). Record switch wiring arrangement, and then unsolder wires to switches.

Note

If replacement of rotary switches is not necessary, loosen two screws (-18), but do not remove screws (-18), rotary switches S1B and S1A (14, 15), and spacers (-16, -17).

- e. Mark position and remove bearing plate (19) from switch mounting base (30) by removing two screws (-20), terminal lug (-21), and lockwasher (-22). Gently work bearing plate (19) and mounting base (30) off two locating pins.
- f. Remove switch spur gearshaft (25) from bearing plate (19) by removing retaining ring (-26).
- g. Remove idler spur gear (33) from its post by removing retaining ring (-34).
- h. Remove drum spur gear (35) from drum drive (56) by removing two retaining rings (-36).
- i. Loosen gear box mounting spacer (37) by removing screw (-38). Gently work gear box mounting spacer (37) off its locating pins.
- j. Place the step coil on its side, and carefully remove the drum assembly (49).
- k. Place masking tape over the ends (54, 59) of drum assembly (49) so shim washers (-50, -51, -52) do not fall off the ends. This step will facilitate reassembly.
- l. Remove rear drum end assembly (54 and attached parts) from rotor coil drum (61, part of 49) by removing three screws (-55).
- m. Remove drum drive (56) from rear drum end (54) by removing four screws (-57) and lockwashers (-58).
- n. Remove front drum end (59) from rotor coil drum (61, part of 49) by removing three screws (-60).
- o. Remove switch number 1 actuator (64) from rear coil plate (67) by removing two screws (-65) and lockwashers (-66).
- p. Remove wraparound (1) from rear coil plate (67) and gear plate (43) by removing 5 screws (-3).

- q. Remove four screws (2) from wraparound (1) by pressing them out of their spring sleeves (-4).
- r. Remove actuator switch number 2 (40) from gearplate (43) by removing two screws (-41) and lockwashers (-42).
- s. Loosen rear coil plate (67) from jiggling bars (71, 72, 73) by removing three screws (68). Remove by gently working rear coil plate (67) off three locating pins (-69).

Note

Jiggling bars should be laced together at the ends before removing.

- t. Loosen gearplate (43) from jiggling bars (71, 72, 73) by removing three screws (44). Remove by gently working gearplate (43) off three locating pins (45).
- u. Remove contacts (76) as necessary by heating with a soldering iron and pulling the contacts toward the center axis of rf coil (74).

5.4.2.16.2 Step Coil (Collins Part Number 777-3508-001) (Refer to figure 6-18.)

- a. Remove lead (24) from insulator (10).
- b. Remove cover (7) by removing 15 screws (-8).
- c. Remove spacer (2).
- d. Rotate gear (109) far enough to clear setscrew (-21).
- e. Loosen three setscrews (-21) and remove leads (18, 19, 20).
- f. Remove switch (25) by removing four screws (-26).
- g. Remove plate (66) by removing three screws (-67), one screw (-68), and lockwasher (-69).
- h. Remove bearing (70).
- i. Remove gearshaft (75).
- j. Remove bearings (76, 77).
- k. Remove three posts (71).
- l. Remove plate (84) by removing screw (-85) and washer (-86).
- m. Remove bearing (83) from plate (84).
- n. Remove three posts (87).
- o. Remove plate (102) by removing screw (-103), washer (-104), and retaining ring (-60).
- p. Remove gear assembly (107).

- q. Remove gear (111) by removing retaining ring (-112).
- r. Remove star wheel (113) and gearshaft (115).
- s. Remove front mounting plate (33) by removing three screws (-34) and retaining ring (-31).
- t. Remove carriage contact assembly (48) by rotating lead screws (58, 65) clockwise.
- u. Remove lead screws (58, 65) by removing retaining rings (-54, -60).

5.4.2.17 Shunt Capacitor Disassembly Procedures.

5.4.2.17.1 Shunt Capacitor (Collins Part Number 528-0466-00) (Refer to figure 6-5.)

- a. Remove lead screw (part of 11) and spur gear number 2 (9) from capacitor C1 (11) as follows:
 - 1. Remove retaining plate (39) and four spacers (-42) by removing four screws (-41).
 - 2. Turn spur gear number 2 (9) counterclockwise until the lead screw (part of 11) disengages from capacitor C1 (11).
 - 3. Carefully pull the lead screw (part of 11) from bearing (17).
 - 4. Remove shim (16), which may remain on bearing (17) or on lead screw (part of 11).
- b. Remove spur gear number 2 (9) from lead screw (part of 11) by removing roll pin (-10).
- c. Remove spur gear number 2 (9) and cluster (18) from gearplate (49) by removing retaining ring (19).
- d. Remove motor B1 (22) from gearplate (49) by removing two screws (-23).
- e. Remove gearplate (49) from four shoulder posts (40) by removing four screws (-41) and electric switch bracket (29) by removing a screw (-33) and lockwasher (-31).
- f. Remove connector bracket (45) and terminal lug (-47) from gearplate (49) by removing two screws (-46) and two lockwashers (-48).
- g. Remove connector P1 (43) from connector bracket (45) by removing two nuts, two lockwashers, four flatwashers (all part of 43), and connector locks (44, set of two).
- h. Remove electric switch bracket (29) from capacitor plate (34) by removing two screws (-32) and nuts (-30).

- i. Remove switch actuator adapter (24) and switch (25) from electric switch bracket (29) by removing two screws (-28) and nuts (-27).

Note

Proper readjustment of S1 and S2 switch actuators requires the use of a capacitance bridge. Do not disassemble either the S2 actuator assembly (26 and attached parts) or S1 actuator assembly (25 and attached parts) unless a capacitance bridge is available.

- j. Remove switch actuator adapter (24) and switch (26) from electric switch bracket (29) by removing two screws (-28) and nuts (-27).
- k. Remove capacitor retainer (1) and switch actuator adapter (2) from capacitor C1 (11) by removing three screws (-3) and lockwashers (-4).
- l. Remove capacitor C1 (11) from capacitor plate (34) by removing three screws (-8), lockwashers (-7), and nuts (-6).
- m. Remove the four shoulder posts (40) from capacitor plate (34) by removing four screws (-35).

5.4.2.17.2 Shunt Capacitor (Collins Part Number 777-4500-001) (Refer to figure 6-19.)

- a. Remove cable bracket (1) by removing two screws (-2) and washers (-3).
- b. Remove gear (9) by removing retaining ring (-10).
- c. Remove switch (11) by removing two screws (-12) and fiber washers (-13).
- d. Remove gearshaft assembly (25) by removing two retaining rings (-27).
- e. Remove capacitors (37) by removing screws (-40), nuts (-38), washers (-39), and retaining ring (-36).
- f. Remove gear assembly (14) by removing retaining ring (-17).
- g. Remove motor (23) by removing two screws (-24).

5.4.2.18 Capacitor Assembly Disassembly Procedures (Refer to figure 6-13.)

- a. Remove link number 2 (1) from four capacitors C34, C22, C35, and C24 (3, 4, 5, 6) by removing four screws (-10), lockwashers (-11), and terminal lug (2) on capacitor C24 (6).
- b. Remove three capacitors, C34, C35, and C24 (3, 5, 6) from capacitor retainer (39) by removing three screws (-9) and lockwashers (-11).
- c. Remove capacitor C22 (4) from capacitor retainer (39) by removing ceramic post (7), nonmetallic washer (-12), and lockwasher (-11). Remove continuous stud (-8), only if necessary, from ceramic post (7).
- d. Remove link number 1 (13) from capacitors C27 and C28 (15, 16) by removing two screws (-19), lockwashers (-20), and one terminal lug (14).
- e. Remove capacitors C27 and C28 (15, 16) from capacitors C25 and C26 (17, 18) by turning them counterclockwise. Remove two lockwashers (-20) and link number 1 (13). Remove continuous studs (21) from capacitors C25 and C26 (17, 18).
- f. Remove capacitors C25 and C26 (17, 18) from capacitor retainer (39) by removing two screws (-22) and lockwashers (-20).
- g. Remove terminal lug (24) from capacitor C29 (23) by removing screw (-25) and lockwasher (-27).
- h. Remove capacitor C29 (23) from capacitor retainer (39) by removing screw (-26) and lockwasher (-27).
- i. Remove two ceramic posts (28) from capacitor retainer (39) by removing two screws (-30) and nonmetallic washers (-31). Remove terminal lug (29).
- j. Remove ceramic post (32) from capacitor retainer (39) by removing screws (-33) and nonmetallic washer (-34).
- k. Remove terminal lug (35) from capacitor retainer (39) by removing nut (-36), lockwasher (-37), and screw (-38).

5.4.2.19 Series Capacitor Disassembly Procedures (Refer to figure 6-14.)

- a. Remove contact assembly (2) by removing four nylon screws (-3) from four posts (5). Carefully lift off contact assembly (2).

- b. Remove four posts (5) from gearplate (45) by removing four screws (-6).
- c. Remove gearshaft assembly (7) and shaft (17) from gearplate (45).
- d. Remove protective cover (6A) by removing four screws (-6B).
- e. Remove spur gear cluster (19) from gearplate (45) by removing retaining ring (-20).
- f. Remove Geneva star wheel (14) from gearshaft assembly (7) by removing four screws (-14A), four washers (-14B), and four washers (-14C).
- g. Remove shaft (17) from gearshaft assembly (7) by driving out pin (-17A) with a 0.060/0.065-inch (1/16-inch nominal) punch.
- h. Remove control cam (13) and rotor switch (9) from gearshaft assembly (7) by removing pin (-8).
- i. Separate control cam (13) and rotor switch (9) by removing five screws (-10).
- j. Remove motor B1 (22) from gearplate (45) by removing two screws (-23).
- k. Remove switch wafers S1A (29, nearest gearplate 45), S1B (28), and S1C (27, farthest from gearplate 45) from switch mounting plate (33) by removing two screws (-32), four ceramic spacers (-30), and two spacers (-31).
- l. Remove switch mounting plate (33) from gearplate (45) by removing four screws (-34), four lockwashers (-35), and four flat washers (-36).
- m. Remove connector lock (44) from connector P1 (43) by removing two screws, two lockwashers, and two nuts (all part of 44).

5.5 REASSEMBLY

5.5.1 General

This portion of the maintenance section contains reassembly instructions and mechanical alignment procedures for the 490T-4 Antenna Coupler.

Note

All item numbers preceded with a dash identify attaching parts and are not shown on the referenced figure.

5.5.2 490T-4 Antenna Coupler Reassembly Procedures

5.5.2.1 Series Capacitor Reassembly Procedures (Refer to figure 6-14.)

- a. Position gearplate (45) bottom side up, with curved side to left. Position switch mounting plate (33) so that the two captive nuts (-37) are touching gearplate (45) and are on the upper left to lower right diagonal of gearplate (45). When positioned as above, mount switch mounting plate (33) to gearplate (45) with four screws (-34), lockwashers (-35), and flat washers (-36). Turn switch mounting plate (33) as far clockwise as possible before tightening screws (-34).
- b. Assemble wafer switches S1C, S1B, and S1A (27, 28, 29) to switch mounting plate (33) as follows:
 1. Attach two screws (-32) to wafer S1C (27) so red dot on S1C (27) is on side opposite screwheads.
 2. Attach two ceramic spacers (-30) to screws (-32).
 3. Position S1B (28) so red dot is directly under red dot on S1C (27).
 4. Attach two more ceramic spacers (-30) to screws (-32).
 5. Position S1A (29) so red dot is directly under red dots on S1B (28) and S1C (27).
 6. Attach two ceramic spacers (-31) to screws (-32).

Note

The red dots on all three wafer switches must be on the side opposite the screwheads (part of -32).

7. Mount the wafer switch assembly (parts assembled in step b) to switch mounting plate (33) so red dots on switch wafer (27, 28, 29) are nearest lower right corner of gearplate (45). Apply blue Glyptal to threads of screws (-32) before mounting.
- c. Mount motor B1 (22) to gear plate (45) with two screws (-23).
- d. Mesh spur gear cluster (19) with motor pinion (part of 23) and place on gearplate (45). Secure with retaining ring (-20).
- e. Position protective cover (6A) over cluster gear and secure with four screws (-6B).

- f. Mount control cam (13) to rotor switch (9) and secure with five screws (-10).
- g. Replace control cam (13) and rotor switch (9) on gearshaft assembly (7) and secure with pin (-8).

Note

If the rotor switch (9) or the gearshaft assembly (7) is replaced, a 0.156 ± 0.001 -inch-diameter hole 1 inch deep must be drilled to accommodate pin (-8). A pilot hole is provided in the flat side of rotor switch (9) to facilitate drilling the hole for pin (-8). The flat side of rotor switch (9) must be parallel with the flat side of shaft (17). Rotor switch (9) must be located 0.547 inch from contact assembly (2).

- h. Replace shaft (17) on gearshaft assembly (7) and secure with pin (-17A).

Note

If shaft (17) on gearshaft assembly (7) is replaced, a $0.062^{+0.003}_{-0.000}$ -inch-diameter hole must be drilled through shaft (17) and gearshaft assembly (7). A pilot hole is provided in shaft (17) to facilitate drilling the 0.062-inch hole. The flat side of shaft (17) must be parallel with the flat side of rotor switch (9).

- i. Replace Geneva star wheel (14) on gearshaft assembly (7) and secure with four washers (-14C), four washers (-14B), and four screws (-14A).
- j. Position rotors on wafers S1C, S1B, and S1A (27, 28, 29) so the dimples adjacent to switch shaft holes are all directly under each other. Insert gearshaft assembly (7) through gearplate (45) and wafers (27, 28, 29) so the flat on shaft (17) that is nearest the flat on switch rotor (9) is touching the dimples on wafer (27, 28, 29).
- k. Mount four posts (5) to gearplate (45) and secure with four screws (-6).

- l. Carefully position contact assembly (2) over four posts (5). Guide contacts on contact assembly (2) so they all engage gearshaft assembly (7).

Caution

Do not use force, or contacts (part of 2) will be bent by gearshaft assembly (7).

Secure contact assembly (2) to four posts (5) with four screws (-3). Contact pressure must be 20 grams minimum when the contact is resting against the rotor.

- m. Mount connector lock (44) to connector P1 (43) with two screws, two lockwashers, and two nuts (all part of 44).

5.5.2.2 Capacitor Assembly Reassembly Procedures (Refer to figure 6-13.)

- a. Mount terminal lug (35) to capacitor retainer (39) with screw (-38), lockwasher (-37), and nut (-36). Position terminal lug (35) as shown in figure 6-13.
- b. Mount ceramic post (32) to capacitor retainer (39) with flathead screw (-33) and nonmetallic washer (-34). Liquid-stake screw threads.
- c. Mount ceramic post (28) to capacitor retainer (39) with screw (-30), terminal lug (29), and nonmetallic washer (-31). Position terminal lug (29) as shown in figure 6-13.
- d. Mount other ceramic post (28) to capacitor retainer (39) with screw (-30) and nonmetallic washer (-31). Liquid-stake screw threads.
- e. Mount capacitor C29 (23) to capacitor retainer (39) with screw (-26) and lockwasher (-27).
- f. Mount terminal lug (24) to capacitor C29 (23) with screw (25) and lockwasher (-27). Position terminal lug (24) as shown in figure 6-13.
- g. Mount capacitors C25 and C26 (17, 18) to capacitor retainer (39) with two screws (-22) and lockwashers (-20).
- h. Mount capacitors C27 and C28 (15, 16) to capacitors C25 and C26 (17, 18) with two continuous studs (21), a link number 1 (13), and two lockwashers (-20).

- i. Mount a link number 1 (13) to capacitors C27 and C28 (15, 16) with two screws (-19), lockwashers (-20), and a terminal lug (14). Position terminal lug (14) as shown in figure 6-13.
- j. Mount capacitor C22 (4) to capacitor retainer (39) with continuous stud (-8), lockwasher (-11), nonmetallic washer (-12), and ceramic post (7).
- k. Mount three capacitors C34, C35, and C24 (3, 5, 6) to capacitor retainer (39) with three screws (-9) and lockwashers (-11).
- l. Mount link number 2 (1) to four capacitors C34, C22, C35, and C24 (3, 4, 5, 6) with four screws (-10) and lockwashers (-11) and a terminal lug (2) on capacitor C24 (6) only. Position terminal lug (2) as shown in figure 6-13.

5.5.2.3 Shunt Capacitor Reassembly Procedures

5.5.2.3.1 Shunt Capacitor (Collins Part Number 528-0466-00) (Refer to figure 6-15.)

- a. Connect the four shoulder posts (40) to capacitor plate (34) with four screws (-35).
- b. Mount capacitor C1 (11) to capacitor plate (34) with three screws (-8), lockwashers (-7), and nuts (-6).
- c. Connect capacitor retainer (1) and switch actuator adapter (2) to capacitor C1 (11) with three screws (-3) and lockwashers (-4).
- d. Connect switch actuator adapter (24) and switch (26) to electric switch bracket (29) with two screws (-28) and nuts (-27).
- e. Connect switch (25) and switch actuator adapter (24) to electric switch bracket (29) with two screws (-28) and nuts (-27).
- f. Connect electric switch bracket (29) to capacitor plate (34) with two screws (-32) and nuts (-30).
- g. Connect connector P1 (43) to capacitor bracket (45) with two nuts, two lockwashers four flatwashers (all part of 43), and connector locks (44, set of two.)
- h. Connect connector bracket (45) and terminal lug (-47) to gearplate (49) with two screws (-46) and lockwashers (-48).
- i. Connect gearplate (49) to four shoulder posts (40) with four screws (-41) and to electric switch bracket (29) with a screw (-33) and lockwasher (-31).

- j. Mount motor B1 (22) to gearplate (49) with two screws (-23).
- k. Dress and tie wires from connector P1 (43) to motor B1 (22) and to switches S1 and S2 (25, 26). Also tie wires to shoulder post (40).
- l. Mount spur gear cluster (18) to gearplate (49) and mesh with motor shaft (part of 22). Secure with retaining ring (19).
- m. If necessary, replace spur gear number 2 (9) on capacitor lead screw (part of 11) as follows:
 - 1. Secure the hub of spur gear number 2 (9) to a V-block.
 - 2. Insert lead screw (part of 11) through hub until it is flush ± 0.01 inch to the outer gear flange surface (part of 9). Secure in position.
 - 3. Measure, and center-pinch hub (part of 9) 0.125 ± 0.005 inch from the outer flange of the hub. Drill a $0.061/0.065$ inch hole through spur gear hub number 2 (9) and lead screw (part of 11).
 - 4. Pin spur gear (9) to lead screw (part of 11) with a new roll pin (10).
- n. Assemble shim washer (16) to lead screw-gear assembly (9, part of 11), and lubricate lead screw (part of 11) as follows:

1. Frequency of Relubrication

As a rule, this capacitor will not require lubricating as it is only recommended every 500 hours of turning time. Under adverse conditions, however, relubrication may become necessary.

2. Recommended Lubricant

Lead screw, shaft and bearing must be lubricated with Beacon 325 (MIL-G-3278) grease or equivalent.

3. Methods of Application

Lead screw: Clean old lubricant and dirt from threads. Apply new lubricant to threads.

Shaft and bearing: After unit is assembled relubricate by operating the unit mounted to minimum capacity; lubricate the shaft area of the bearing. Operate the capacitor from maximum capacity to minimum capacity and return several times to ensure uniform distribution of the lubricant on all shaft and bearing surfaces. Wipe off excess oil from around bearings.

- o. Insert lead screw-gear assembly (9, part of 11) through gearplate (34) and carefully turn into capacitor retainer (1), switch actuator adapter (2) until gear teeth of spur gear number 2 (9) fully mesh with teeth of spur gear cluster (18).
- p. Mount retaining plate (39) and four spacers (-42) to gearplate (49) with four screws (-41).
- q. Refer to paragraph 5.6.1 for proper adjustment of unit.

5.5.2.3.2 *Shunt Capacitor (Collins Part Number 777-4500-001) (Refer to figure 6-19.)*

- a. Replace motor (23) and secure with two screws (-24).
- b. Replace bearings (21, 22).
- c. Replace washer (21) on wormshaft (20).
- d. Replace capacitor (37) and secure with screw (-40), nuts (-38), washers (-39), and retaining ring (-36).
- e. Replace gear assembly (14) and secure with retaining ring (-17).
- f. Replace bushing (31).
- g. Replace gearshaft (25) and secure with retaining ring (-27).
- h. Replace bushing (30) and secure with retaining ring (-27).
- i. Replace switch (11) and secure with screws (-12) and washers (-13).
- j. Replace gear (9) and secure with retaining ring (-10).
- k. Replace cable bracket (1) and secure with two screws (-2) and washers (-3).
- l. Ensure that all old lubricant and dirt has been removed from wormshaft (20).
- m. Apply a light coat of Beacon 32 lubricant (MIL-G-3278) to wormshaft (20).
- n. Manually operate capacitor (37) from maximum capacity to minimum capacity and return several times to ensure uniform distribution of the lubricant. Wipe off excess lubricant.
- o. Refer to paragraph 5.6.1.3 for adjustment of the unit.

5.5.2.4 *Series Varicoil Reassembly Procedures (Refer to figure 6-11.)*

- a. Assemble shouldered pin (80) to rubber grommet (81), and place assembly (80, 81) into bottom plate (83). Apply Dow DC-4 (MIL-L-8660) liberally to counterbored hole

in bottom plate (83) before assembling. Connect four screws (75) to bottom plate by pressing them in four spring sleeves (-76).

- b. Mount pin retainer (77) to bottom plate (83) with two screws (-78) and lockwashers (-79).

- c. Assemble brazed gearshaft (68) to bottom plate (83). Turn the gear (part of 68) clockwise to its stop where it engages shoulder pin (80). Maintain gear position, and turn bottom plate (83) over.

- d. Place wafer switches S1A (22) and S1B (21) on shaft (part of 68) so that the following conditions exist:

1. Contacts (S1A-8, -9, -10; S1B-8, -9, -10) are nearest the center of the bottom plate (83) and are facing away from bottom plate (83).

2. The small dimples adjacent to the shaft holes of both switch rotors (part of 22, 21) are on the flat of the switch shaft (part of 68) that faces toward the center of the bottom plate (83).

- e. With switch shaft (part of 68) positioned as in step c. and wafer switches (22, 21) positioned as in step d., mount wafer switch with the following hardware: two screws (-25) wafer switch S1B (21), two nonmetallic washers (-26), wafer switch S1A (22), two nonmetallic washers (-26), two shorter sleeve spacers (-23), and the bottom plate (83).

- f. Check switch action by manually turning brazed gear (part of 68) from stop to stop.

1. At the clockwise stop (viewed from gear (68) side of bottom plate), the wafer rotor (part of 21) should be connecting S1B-9 (gray wire) to S1B-10 (sleeved bus), and the wafer rotor (part of 22) should be connecting S1A-9 (white-red wire) to S1A-10 (violet wire).

2. At the counterclockwise stop (viewed from gear (68) side of bottom plate), the wafer rotor (part of 21) should be connecting S1B-9 (gray wire) with S1B-8 (sleeved bus), and the wafer rotor (part of 22) should be connecting S1A-9 (white-red wire) with S1A-8 (white-blue wire).

3. If necessary, loosen screws (-25), reposition switch wafers (21, 22) slightly, and retighten screws (-25).

Note

Switch wafers must not bind when rotated.

- g. Place bearing (74) into bottom plate (83). Mount bearing retainer (71) to bottom plate (83) with two screws (-72).
- h. Mount number 2 spur gear cluster (66) to bottom plate post (part of 83), and secure with retaining ring (-67).
- i. Mount standoff terminal (69) to bottom plate (83) with screw (-70).
- j. Place coil L1 extended wire (part of 56) into standoff terminal (69), and mount coil L1 assembly (51 through 54 and 56) to bottom plate (83) with four flathead screws (-55). Solder coil L1 extended wire (part of 56) to standoff terminal (69).
- k. Turn gear (part of 68) to its clockwise stop. Slide protective cover (62A) on drive shaft (57), and assemble number 4 spur gear cluster (65) to drive shaft (57). Now position drive shaft (57) to its bearing (74), and mesh number 4 spur gear cluster (65) with number 2 spur gear cluster (66) so that the contact holder (part of 57) points directly at the standoff terminal (69). Finally, secure drive shaft (57) to bottom plate (83) with special screw (58) using drive shaft wrench (figure 5-3).

Note

The relationship of gear (part of 68), contact holder (part of 57), and standoff terminal (69) stated in step k. is essential to proper functioning of the equipment. Also recheck wafer rotor positioning explained in f.1., and re-adjust as necessary.

1. Mount gear (5) to motor B1 (7) with pin (-6).

Note

If gear (5) has been replaced, drill 0.0315 ± 0.0010 -inch hole through -0.0005 both gear (5) and motor pinion (part of 7) 0.125 inch from motor housing (part of 7).

- m. Mount motor and gear assembly (1) to bottom plate (83) with three rim-clenching clamps (2), screws (-3), and lockwashers (-4). Assure proper mesh of gear (5) with number 4 spur gear cluster (65).
- n. Mount protective cover (62A) to bottom plate (83) with two screws (-63) and lockwashers (-64).
- o. Mount terminal bracket (8) to bottom plate (83) with screw (-9), terminal lug (-10), and lockwasher (-11).
- p. Rewire rf series coil (rf shunt coil) as necessary.
- q. Place bearing (82) in cover (14). Mount cover (14) to bottom plate (83) with two rim-clenching clamps (-17), screws (-18), and lockwashers (-19).
- r. Run nut (-15) onto switch shaft (part of 68) until there is 0.003/0.006-inch end play of switch shaft (part of 68). Drill 0.0310/0.0325-inch hole through both nut (-15) and flats of switch shaft (part of 68), and secure with pin (-16).
- s. Mount top plate (31) to support posts (51 through 54) with four retaining rings (-32).
- t. Place bearing (38) into top plate (31) and secure with bearing retainer (29) and two screws (-30).
- u. Manually turn drive shaft (57) to its counterclockwise stop. Assemble helical spring (62), contact insulator (61), and electrical contact (60) to contact holder (part of 57) (refer to figure 5-7) and re-engage contact (60) to top turn of coil L1 (56).
- v. Manually rotate drive shaft (57) to clockwise stop. By stretching or compressing spring (62), adjust for contact pressure of 22 ± 2 grams on rf coil (56).
- w. Adjust finger contacts (refer to figure 5-7) for 6 ± 2 grams pressure on electrical contact (60).

5.5.2.5 Shunt Varicoil Reassembly Procedures (Refer to figure 6-11.)

- a. Perform steps a. to r. of paragraph 5.5.2.4.
- b. Mount shield (49) to bottom plate (83) with four screws (-50).
- c. Mount top plate (40) to support posts (51 through 54) with four retaining rings (-43). One arm of the top plate (40) has a slot in the bottom. This arm must be mounted to the post nearest the end of the coil.

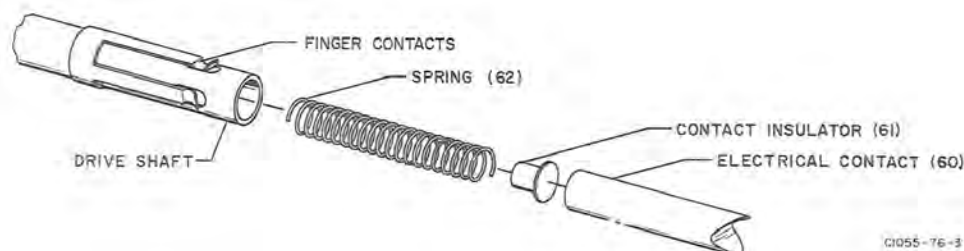
Note

Apply a small amount of Dow Silastic 140 to the hole in each support post (51 through 54).

Note

Apply a small amount of Dow Silastic 140 to the hole in each support post (51 through 54).

- d. Mount top plate (40) to shield (49) with four screws (-41) and lockwashers (-42).



CI055-76-3

Figure 5-7. Varicoil Wiper Assembly.

- e. Place bearing (48) into top plate (40) and secure with bearing retainer (29) and two screws (-30).
- f. Manually turn drive shaft (57) to its counterclockwise stop. Assemble helical spring (62), contact insulator (61), and electrical contact (60) to contact holder (part of 57), and reengage contact (60) to top turn of coil L1 (56).
- g. Manually rotate drive shaft (57) to clockwise stop. By stretching or compressing spring (62), adjust for contact pressure of 22 ± 2 grams on rf coil (56).
- h. Adjust finger contacts (refer to figure 5-7) for 6 ± 2 grams pressure on electrical contact (60).

5.5.2.6 Step Coil Reassembly Procedures

5.5.2.6.1 Step Coil (Collins Part Number 528-0524-00) (Refer to figure 6-12.)

- a. Mount contacts (76) to rf coil (74) by assembling two pins (-77) to contact (76). Assemble contact and pins to holes in rf coil (74), and secure by soldering with SN 10 solder (QQ-S-671b).

Note

If jiggling bars (71, 72, 73) were replaced, Dow Silastic 140 must be inserted between coil windings and slots in jiggling bars.

- b. Seat rear coil plate (67) to jiggling bar locating pins (-69), and secure with three screws (-68). Apply blue Glyptal to the threads of each screw.
- c. Mount actuator switch number 2 (40) to gearplate (43) with two screws (-41) and lockwashers (-42). Apply blue Glyptal to the threads of each screw. Remove lacing from jiggling bars (71, 72, 73).
- d. Seat gearplate (43) to jiggling bar locating pins (45), and secure with three screws (-44).
- e. Mount four screws (2) to wraparound (1) by pressing them into their spring sleeves (-4).
- f. Slide rf coil assembly (74 and attached parts) into wraparound (1) so that the large notch in one side of the wraparound (1) is nearest the two threaded mounting holes for

actuator switch number 1 (64) on rear coil plate (67).

- g. Mount wraparound (1) to rear coil plate (67) and gearplate (43) with 15 screws (-3). Apply blue Glyptal to the threads of each screw.
- h. Mount actuator switch number 1 (64) to rear coil plate (67) with two screws (-65) and lockwashers (-66).
- i. Mount front drum end (59) to rotor coil drum (61) with three screws (-60).
- j. Mount drum drive (56) to rear drum end (54) with four screws (-57) and lockwashers (-58).
- k. Mount rear drum end assembly (54, and attached parts) to rotor coil drum (61) with three screws (-55).
- l. If masking tape was placed over ends of drum assembly (49) during disassembly, remove the tape from the front drum end (59).

Note

Check tension on contacts of rotor coil drum (61). It should take 20 ± 5 grams pressure to push the contacts off their stops with a force at right angle to the axis of the rotor coil drum. Decrease contact tension by pressing the contacts beyond their point of elasticity. Increase tension by inserting a small screwdriver between the contacts and the drum proper (part of 61) and turning slightly.

- m. Carefully place drum assembly (49, the same as 61 and attached parts) through the hole in gearplate (43) and into small hole in rear coil plate (67). While holding drum assembly (49) against rear coil plate (67), observe whether contacts of rotor coil drum (61) can be centered on contacts (76) of the rf coil (74). If not, adjust by varying number of shim washers (-50, -51, -52) on front drum end (59).
- n. Remove masking tape from rear drum end (54).
- o. Temporarily seat gearbox mounting spacer (37) to its locating pins on gearplate (43), and check end play of drum assembly (49). End play of drum assembly (49) should be

0.008 $\pm$ 0.005 inch. Adjust by varying number of shim washers (-50, -51, 52) on rear drum end (54).

- p. Recheck steps m. and o. Then mount gearbox mounting spacer (37) to rear coil plate (67) with screw (-38).
- q. Mount drum spur gear (35) to drum drive (56) with two retaining rings (36).
- r. Mount idler spur gear (33) to its post with retaining ring (-34).
- s. Mount gearbox mounting plate (31) to rear coil plate (67) with three screws (-32). Apply blue Glyptal to the threads of each screw.
- t. Mount switch spur gearshaft (25) to bearing plate (19) with retaining ring (-26).
- u. Press switch mounting base (30) on the two locating pins.
- v. Seat bearing plate (19) to switch mounting base (30), and mount with two screws (-20), terminal lug (-21), and lockwasher (-22).
- w. Position rotary switches (14, 15) to switch spur gearshaft (25) so that the following conditions exist:

- 1. The small dimples adjacent to the switch rotor shaft holes (part of 14, 15) are on the same flat of the switch shaft (part of 25).
- 2. Rotor switch S1A (15) is nearest rear coil plate (67).
- 3. The contacts on both rotor switches (14, 15) are pointing away from rear coil plate (67) and are nearest to the top edge of the wraparound (1).

- x. Mount rotary switches (14, 15) to the rear coil plate (67) with hardware in the following order: two long spacers (-17), rotary switch S1A (15), two short spacers (-16), rotary switch S1B (14), and two screws (-18). Rewire as necessary.
- y. Manually turn drum spur gear (35) until the alignment pointer (53) on the rear drum end (54) is in line with the red mark on gearbox mounting spacer (37).
- z. Unmesh drum spur gear (35) with idler spur gear (33) by moving drum spur gear (35) away. Then turn switch shaft (part of 27) until rotor contacts of S1A and S1B (part of 15, 14) are centered on S1A-1 and S1B-1 (first contact to right of X on 14, 15).

Note

The hole in the rear coil plate (67) is large enough so unmeshing of gears 33, 35) can be accomplished. These gears are held in mesh by the tuning drive assembly (7).

- aa. When alignments in steps y. and z. are both obtained, remesh drum spur gear (35) with idler spur gear (33).
- ab. Turn the small screw adjustment that is adjacent to the control motor of the tuning drive (7) so the slot is tangential to the control motor cover.

Note

The spline gear on the tuning drive assembly (7) should now be locked. Check by attempting to turn it manually.

- ac. Position spline gear on tuning drive shaft (part of 7) to drum drive (56). Rotate tuning drive assembly (7) $\pm 1/9$ turn to align it to holes in gearbox mounting plate (31). Then mount tuning drive assembly (7) to gearbox mounting plate (31) with four screws (-8).
- ad. Loosen setscrew just enough to unlock worm shaft on the tuning drive assembly (7) with a number 4 Bristol wrench.

Caution

Do not loosen setscrew more than 1/8 turn. The point of the setscrew must remain engaged in the V-groove of worm shaft.

- ae. Turn worm shaft with a screwdriver until the alignment pointer (53) is in line with red mark as in step y. and rotor contacts of S1A and S1B are centered on S1A-1 and S1B-1 as in step z. Then retighten setscrew on the tuning drive assembly (7).
- af. Mount switch cover (10) to bearing plate (19) with three screws (-11) and lockwashers (-12). Assure that the rubber grommet (13) around the switch wires engages the slot of the switch cover (10).

5.5.2.6.2 Step Coil (Collins Part Number 777-3508-001) (Refer to figure 6-18.)

- a. Replace lead screws (58, 65) and secure with retaining rings.
- b. Replace carriage contact assembly (48) by rotating lead screws counterclockwise. Set the contact on the fifth full turn of the coil. Ensure that carriage contact assembly does not bind on lead screws.
- c. Replace bearings (119, 120) in plate (128).
- d. Replace star wheel (113) and secure with retaining ring (-114).
- e. Place star wheel (113) and shaft (115) into bearing (120).
- f. Replace gear (111) and secure with retaining ring (-112).
- g. Replace gear assembly (107) into bearing (119). Pinion on gear (107) must be clear of star wheel.
- h. Replace bearings (105, 106) into plate (102).
- i. Replace plate (102) and secure with screw (-103) and washer (-104).
- j. Replace three posts (87).
- k. Replace retaining ring (-60) on lead screw drive (59).
- l. Replace bearing (83) on lead screw drive (59).
- m. Replace plate (84) and secure with three posts (71), screw (-85), and washer (-86).
- n. Replace bearings (76, 77) in plate (84).
- o. Replace gear assembly (75). Rotate gear assembly (75) until the rotor of switch (92) is in contact 10A (violet wire).
- p. Replace bearing (70) in plate (66).
- q. Replace plate (66) and secure with three screws (-67), one screw (-68), and washer (-69).
- r. Replace switch (25) and secure with four screws (-26). Switch (25) must be in the bypass position. Rotate gear assembly (107) counterclockwise (as viewed from the switch end of module). Switch (25) must operate 90 degrees as the coil contact is advanced from the fifth turn to the sixth full turn, and return when the coil contact moves from the sixth to the fifth turn. Switch (25) must not move when the coil contact is in any position other than 5 or 6. If switch (25) does not operate properly, remove switch (25). Disengage gear assembly (75) and rotate it one gear tooth clockwise (as viewed from the switch end of

module). Replace gear assembly (75). Replace switch (25) and check for proper operation. If switch (25) does not operate properly, repeat alignment procedure.

- s. Replace leads (18, 19, 20) and tighten set-screws (-21).
- t. Replace clip (32) on front mounting plate (33).
- u. Replace cover (7) and secure with 15 screws (-8).
- v. Align lead (24) and replace in insulator (10).
- w. Replace spacer (2).

5.5.2.7 Coupler Control Reassembly Procedures (Refer to figure 6-7.)

- a. Mount 12 stud terminals E1 through E12 (85) with 12 screws (-86). Also, mount a terminal lug (-87) and washer (-88) under E7 (85).
- b. Mount diodes CR33 and CR34 (79, 80) as follows:
 1. Place a lug, mica washer, and flat washer on the studs of the diodes.

Note

Ensure that Teflon insulator sleeve is in position on diode stud.

2. Insert each diode through its respective hole in the chassis.
3. Place another mica washer, flat washer, lockwasher, and nut on the stud and tighten nut.

Note

All the hardware listed in step b. usually is supplied with the new diode (79 or 80).

- c. Mount two posts (67) to chassis with two screws (-68).
- d. Mount capacitor holder (66) to posts (67) with two screws (-69) and lockwashers (-70).
- e. Mount connector P2 (101) to chassis with two screws (-103), nuts (-102), and a lug (part of cable).
- f. Rewire as necessary.

Caution

Use a heat sink when soldering to diodes.

- g. Mount connector P1 (98) to chassis with two nuts (-99) and screws (-100).
- h. Mount relays K1 through K28 (31 through 58) with two nuts (-59) and lockwashers (-60) each. Rewire as necessary.
- i. Dress wires to relays by taping wires from each individual relay together.
- j. Mount four posts (94) and terminal lug (part of cable) to chassis with four screws (-95) and lockwashers (-96).

Note

If the four studs (-97) have been removed from posts (94), apply blue Glyptal (table 5-9) to one-half the threads of each stud (-97). Then screw the studs halfway into four posts (94). Set the blue Glyptal by heating the post-stud assemblies (94, -97) with a soldering iron.

- k. Mount rear terminal board (93) to four posts (94) with four post-stud assemblies (see note in step j.) and to short post (105) with screw (-95A).

Caution

Dress and route cable wires so they are not pinched between posts (94) and the terminal boards (92, 93).

- l. Mount front terminal board (92) to post-stud assemblies (step j. and k.) with four screws (-95) and lockwashers (-96), and to long post (106) with screw (-95A).
- m. Mount four screw retainers (90) with four screws (-91). Insert four captive screws (89) into holes in chassis, and then snap them into the four screw retainers (90).
- n. Mount control cover (1) to chassis with two screws (-2).

5.5.2.8 Electronic Control Amplifier Reassembly Procedures

5.5.2.8.1 Electronic Control Amplifier (Collins Part Number 528-0467) (Refer to figure 6-3.)

- a. Mount chopper G1 (26) with four screws (-28) and nuts (-27). Mount lug (74) under

the nut (-27) that is farthest from the corner of the chassis.

- b. Mount relay bracket (79) to chassis with four screws (-80).
- c. Mount relays K1 through K5 (18 through 22) to relay bracket (79) with 10 washers (-24) and 10 nuts (-23).
- d. Insert holders (64, 68) into chassis, and insert transformers T3 and T4 (67, 63) into holders.
- e. Mount 12 transistor holders (79, figure 6-4) to terminal board (95) with 12 screws and nylon shoulder washers (supplied with 79, figure 6-4). Liquid-stake screws.
- f. Mount connector P1 (76) to chassis with two screws (-78) and nuts (-77). Place two lugs (74) under nuts (-77).
- g. Mount terminal board (95) to chassis with four screws (-96).
- h. Mount four screw retainers (8) to chassis with four screws (-9). Liquid-stake screws.
- i. Place four mounting screws (7) through holes in chassis, and snap them into screw retainers (8).
- j. Replace cover (1) and secure with two screws (-2).

5.5.2.8.2 Electronic Control Amplifier (Collins Part Number 775-4276) (Refer to figure 6-5).

- a. Mount transformers T1 (46) and T2 (45) to chassis using Silastic 140.
- b. Mount transformers T3 and T4 (89, 83, figure 6-6) to chassis using Silastic 140.
- c. Mount transistor holders (41, figure 6-6) to terminal board (104, figure 6-6) with screws and washers (supplied with 41, figure 6-6). Liquid-stake screws.
- d. Mount four transistors (28, 29, 30, and 31) with eight nuts (-33), washers (-34), insulators (-35), screws (-37), sixteen spacers (-36), and four lugs.
- e. Mount connector P1 (13) to chassis with two screws (-16), nuts (-14), and lug (15).
- f. Mount relays K1 through K5 (56 through 60) to chassis with ten nuts (-61) and washers (-62).
- g. Mount terminal board (104, figure 6-6) with four screws (-11).
- h. Mount screw retainer (8) on the terminal board side of chassis with screw (-9).

- i. Mount four mounting screws (7) on terminal board side of chassis by inserting into screw retainers (8).
- j. Mount cover (1) with two screws (-2).

5.5.2.9 Discriminator Reassembly Procedures (Refer to figure 6-10).

- a. Remove four screws and lockwashers from ends of discriminator transformer (63), and position rf shields (81, 86) to discriminator transformer (63).
- b. Mount discriminator transformer (63) to rf shields (81, 86) with two nuts (-64). Replace four screws and lockwashers (part of 63) to discriminator transformer (63). Tighten nuts (-64); apply EC-847 (table 5-10) to exposed threads of discriminator transformer (63) and to the junction of nuts (-64) and rf shields (81, 86).

Note

Observe relative positioning of rf shields (81, 86) and discriminator transformer (63) as shown in figure 6-10).

- c. Mount capacitor mounting plate (79) to rf shield number 1 (81) with two screws (-80).
- d. Mount capacitor C1 (61) to capacitor mounting plate (79) with terminal lug (62) and lockwasher and nut (both part of 61).

- e. Mount capacitor C4 (59) to capacitor mounting plate (79) with terminal lug (60) and nut and lockwasher (both part of 59).
- f. Mount connector receptacle P1 (76) to rf shield number 2 (86) with two screws (-77) and lockwashers (-78). Do not fully tighten screws (-77) at this time.
- g. Mount connector receptacle P2 (78) to rf shield 1 (81) with two screws (-74) and lockwashers (-75). Do not fully tighten screws (-74) at this time.
- h. Place resistors R1 (66) and R3 (65) into clips (69) of resistor holder (67).
- i. Mount resistor holder (67) to rf shields (81, 86) with two screws (-68).
- j. Install new Teflon terminals (51, 53) to terminal board (56) as necessary by inserting the terminal through terminal board (56). Then flare the Teflon base by pressing the terminal pin into the Teflon base.

Note

A longnose pliers with serrated jaws can be used for flaring the Teflon stud terminals (53). The same longnose pliers can be used for flaring Teflon feedthrough terminals (51) if a 0.060 $\pm$ 0.0010-inch hole is drilled near the tip of one of the pier jaws. Use the modified longnose pliers as follows:

Table 5-10. Lubricants and Sealants.

COLLINS PART NUMBER	MANUFACTURER'S DESIGNATION	MANUFACTURER	WHERE USED
005-0201-00	DC-4 MIL-I-8660	Dow Corning, Midland, Michigan	Series and shunt varicoil shouldered pin and rubber grommet assembly.
005-0662-00	Molykote Leox 65	Alpha-Molykote Company, Stamford, Connecticut	Shunt capacitor leadscrew.
005-0133-00	Blue Glyptal	General Electric Company Schenectady, New York	On all hardware where no other locking means is provided (lockwasher, elastic stopnut, etc.).
005-9042-00	EC-847	Minnesota Mining and Manufacturing Company, St. Paul, Minnesota	Discriminator transformer mounting nuts, locking device.
005-0701-00	Silastic 140	Dow Corning Midland, Michigan	Step coil jiggling bars and screw threads on all rf subassemblies.

1. Insert a Teflon feedthrough terminal (51) into terminal board (56).
2. Position the jaw with the hole to the feedthrough terminal (51) on the same side that the feedthrough terminal (51) was inserted into the terminal board (56).
3. Flare the feedthrough terminal by pressing the terminal pin into the Teflon base. The hole in the longnose pliers allows one jaw to rest on the Teflon base, and the jaw without the hole can press the terminal pin into the Teflon base of the terminal.
- k. Rewire terminal board (50 with terminals, 56 without terminals, or 9 with all components soldered in place) as necessary. Also, rewire resistors R1 (66) and R3 (65) in resistor holder (67) as necessary.
- l. Mount resistor R9 (15) to terminal board (50) with screw (-19), flat washer (-18), lockwasher (-17), and nut (-16).
- m. Mount terminal board assembly (9) to rf shields (81, 86) with three screws (-12) and spacing sleeves (-10). Mount terminal board assembly (9) to discriminator transformer (63) with screw (-13), washer (-14) and spacing sleeve (-11).
- n. Mount connector P3 (6) to connector bracket (4) with two screws (-8) and nuts (-7).
- o. Mount connector bracket (4) to rf shield number 1 (81) with two screws (-5). Do not fully tighten screws (-5) at this time.
- p. Mount housing (1) to the fully assembled discriminator with seven screws (-2) and lockwashers (-3).
- q. Refer to the discriminator connector positioning diagram (figure 5-8). Position connectors P1 (76) and P2 (73) as shown, and then fully tighten their mounting screws (-77, -74). Position connector P3 (6) as shown, and then tighten connector bracket mounting screws (-5).
- d. Mount discriminator rf output connector J13(102) to chassis with four screws (-103) and lockwashers (-104).
- e. Mount discriminator rf input connector J12 (100) with lockwasher (-101) and nut (part of 100).
- f. Mount discriminator power connector J11 (97) with two nuts (-98) and screws (-99).
- g. Mount band relay K2 (92) which connects to the rf series and shunt coils (10, 11, figure 6-2) with a 3/8-inch hexnut (part of 92).
- h. Mount coil L2 (89) to chassis with screw (-90).
- i. Mount series varicoil connector J9 (82) and step coil connector J8 (84) with two connector locks (83, 85), screws, flat washers, and lockwashers (all part of 83, 85).
- j. Mount series capacitor connector J14 (73) and shunt capacitor connector J7 (75) with two connector locks (74, 76), screws, flat washers, and lockwashers (all part of 74, 76).
- k. Mount coupler control connectors J4 and J5 (50, 54) and electronic control amplifier connector J6 (58) to chassis mounting plate (69) with two each screws (-53, -57, -61), spacing sleeves (-52, -56, -60), and nuts (-51, -55, -59).
- l. Mount chassis mounting plate (69) to chassis with eight screws (-70).
- m. Mount transformer T1 (64) to chassis with four screws (-65).
- n. Mount rf coil L1 (62) to chassis with screw (-63).
- o. Mount ceramic post (-34A) to chassis with insulation washer (-39) and screw (-36).
- p. Mount terminal lug (-40) and capacitor C31 (33) to ceramic post (-34A) with stud (-42).
- q. Mount capacitor C32 (34) and terminal lug (-41) to capacitor C31 (33) with stud (-42) and lockwasher (-38).
- r. Mount angle bracket (44) to insulator plate (43) with two screws (-49), flat washers (-46), and lockwashers (-47).
- s. Mount angle bracket-insulator plate assembly (step r) to chassis with two screws (-48), flat washers (-46), and lockwashers (-47). Do not tighten screws (-48).
- t. Mount insulator plate (43) to capacitor C32 (34) with screw (-35), flat washer (-37), lockwasher (-38), and terminal lug (-41).
- u. Mount the handle (15) to chassis with four plastic washers (-17), two holding hinge

5.5.2.10 Chassis Reassembly Procedures (Refer to figure 6-16.)

- a. Mount shunt varicoil connector J10 (145) to chassis with two connector locks (146), nuts, and lockwashers (all part of 146).
- b. Mount parts (114 through 133) to filter mounting plate (134) as necessary.
- c. Mount filter mounting plate (134) to chassis with 11 screws (-135).

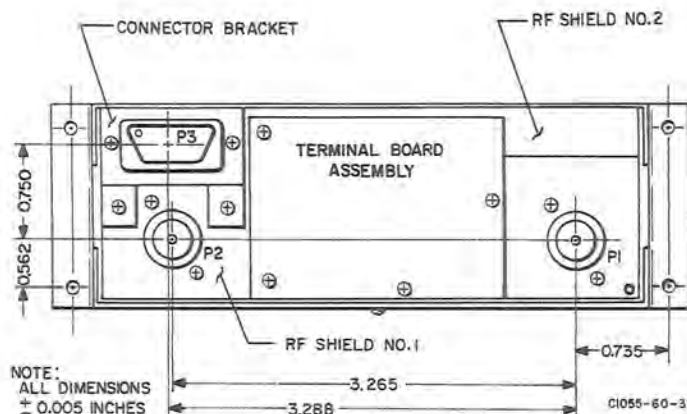


Figure 5-8. Discriminator Connector Positioning Diagram.

pins (-18), and two nuts (-16). Plastic washers (-17) go between handle (15) and chassis and between two pins (-18) and handle (15).

- v. Mount power connector J1 (12) to chassis with four screws (-13).
- w. Mount transmitter rf input connector J2 (11) with lockwashers and nut (both part of 11).
- x. Mount two lampholders (7, 10) to front of chassis as follows:
 1. Assemble shoulder washer to lampholder.
 2. Insert lampholder through its hole in chassis.
 3. Assemble nonmetallic washer, nut, terminal lug, lockwasher, and nut to lampholder.

Note

Parts not otherwise keyed in this step are part of lampholders (7, 10).

- y. Insert incandescent lamps DS1 and DS2 (6, 9) into lampholders, and secure with lamp indicators (5 and 8).
- z. Mount two angle brackets (1) to chassis with two screws (-4), lockwashers (-3), and nuts (-2) each.
- aa. Mount modules (6, 7, 8, 10, 11, 12, 17, 19, 21, figure 6-2). See paragraphs 5.5.2.11 through 5.5.2.18 of this section for procedures.
- ab. Mount cover (1, figure 6-2) per paragraph 5.5.2.19 of this section.

5.5.2.11 Series Capacitor Replacement Procedures (Refer to figure 6-2.)

- a. Slide series capacitor (19) into the 490T-4 chassis, and lower it into position. Mount series capacitor (19) with four screws (-20).
- b. Plug connector P1 (43, figure 6-14) into 490T-4 chassis connector J14 (73, figure 6-16). Lock the connector by pushing the connector lock sideways with a screwdriver. Check locking action by attempting to unplug connector P1 (43, figure 6-14).
- c. Connect and solder wires from capacitors C31 and C32 (33, 34, figure 6-16).

5.5.2.12 Capacitor Assembly Replacement Procedures (Refer to figure 6-2.)

- a. Mount capacitor assembly (17) to the 490T-4 chassis front panel with two flat-head screws (-18) and two nonmetallic washers (-31, figure 6-13). Apply a small amount of Dow Silastic 140 to the threads of each screw.
- b. Connect and solder tagged wire from capacitor assembly (17) to series capacitor (19) and transmit-receive relay (30, figure 6-16).

5.5.2.13 Series Varicoil Replacement Procedures (Refer to figure 6-2.)

- a. Plug series varicoil connector P1 (27, figure 6-11) into 490T-4 chassis connector J9, (82, figure 6-16) and slide the connector lock on P1 sideways. Check locking

action by attempting to unplug connector P1.

- b. Mount series varicoil (10) to 490T-4 chassis by inserting the end of the coil into terminal E9 and tightening four mounting screws (75, figure 6-11).
- c. Fasten terminal E9 from relay K1 on the 490T-4 chassis to the bottom of the series varicoil (10) by tightening the setscrew in E9 with a number four Bristol wrench.

5.5.2.14 Shunt Varicoil Replacement Procedures (Refer to figure 6-2.)

- a. Plug shunt varicoil connector P1 (27, figure 6-11) into 490T-4 chassis connector J10 (145, figure 6-16), and slide the connector lock on P1 sideways. Check locking action by attempting to unplug connector P1.
- b. Mount shunt varicoil (11) to 490T-4 chassis by inserting coil end into terminal E11 and tightening four mounting screws (75, figure 6-11).
- c. Fasten terminal E11 from relay K1 on the 490T-4 chassis to the bottom of the shunt varicoil (11) by tightening the setscrew in E11 with a number four Bristol wrench. E11 must not touch the shield of the shunt varicoil.

5.5.2.15 Step Coil Replacement Procedures

5.5.2.15.1 Step Coil (Collins Part Number 528-0524-00) (Refer to figure 6-2.)

Note

Do not mount step coil (12) until after the shunt varicoil (11) and series varicoil (10) have been replaced into the 490T-4 chassis.

- a. Position the step coil (12) to the 490T-4 chassis, and plug step coil connector connector P1 (9A, figure 6-12) into 490T-4 chassis connector J8 (84, figure 6-16). Slide the connector lock on P1 sideways, and check locking action by attempting to unplug connector P1.
- b. If the shunt capacitor (21) is mounted on the 490T-4 chassis, secure the step coil lead (63, figure 6-12) to the tuning capacitor C1 (11, figure 6-15) with the ca-

- pacitor tinned wire (15). Tighten the two setscrews (-16) to capacitor C1 (11, figure 6-15) with a number four Bristol wrench.
- c. Fasten step coil (12) extended lead (39, figure 6-12) terminal E10 on top plate (31, figure 6-11) of the series varicoil (10) with attaching parts for electrical contact (45, figure 6-11).
- d. Mount step coil (12) to 490T-4 chassis by inserting a long Phillips screwdriver through the four holes in the corners of the step coil wraparound (16, figure 6-12) and tightening the four mounting screws (2, figure 6-12).

5.5.2.15.2 Step Coil (Collins Part Number 777-3508-001) (Refer to figure 6-18.)

Note

Do not mount step coil until after the shunt varicoil and series varicoil have been replaced in the 490T-4 chassis.

- a. Position the step coil in the 490T-4 chassis, and plug connector lead (16) into chassis. Slide connector lock sideways, and check locking action by attempting to unplug connector.
- b. If shunt capacitor is mounted on the chassis, secure lead (24) to capacitor wire terminal with screw (-3).
- c. Attach bus wire to the top of series varicoil with attaching hardware.
- d. Tighten four captive screws (-5) in corners of wraparound.

5.5.2.16 Shunt Capacitor Replacement Procedures (Refer to figure 6-12.)

- a. Slide the shunt capacitor (21) into position on the 490T-4 chassis. Secure with four screws (-22) using a short Phillips screwdriver.
- b. If the step coil (12) is mounted on the chassis, secure the lead (63, figure 6-12) to the tuning capacitor C1 (11, figure 6-15) with the capacitor tinned wire (15). Tighten the two setscrews (-16) to capacitor C1 (11, figure 6-15) with a number four Bristol wrench.

Note

Do not perform step b. unless the step coil (12) is already mounted. Refer to paragraph 5.5.2.15.

- c. Plug connector P1 (43, figure 6-15) into 490T-4 chassis connector J7 (75, figure 6-16), and slide the connector lock on P1 sideways. Check locking action by attempting to unplug connector P1.

5.5.2.17 Coupler Control and Electronic Control Amplifier Modules Replacement Procedures (Refer to figure 6-2.)

Plug the electronic control amplifier (6) and the coupler control (7) into the 490T-4 chassis. Secure these modules in place by tightening their eight (four each) redheaded mounting screws.

5.5.2.18 Discriminator Replacement Procedures (Refer to figure 6-2.)

Plug the discriminator (8) into the 490T-4 chassis, and secure in place with four screws (-9).

5.5.2.19 Cover Replacement Procedures (Refer to figure 6-2.)

Position cover (1) to the assembled 490T-4 antenna coupler. Secure with 17 screws (-2).

5.6 ADJUSTMENTS

5.6.1 Shunt Capacitor Adjustments

5.6.1.1 Extending the Range of Boonton 260A Q-Meter

The shunt capacitor drive limit switches should be activated when vacuum variable capacitor C1 (11, figure 6-15) is at 7 ± 0.2 pf and NLT 500 pf. However, the 260A range is from 30 to 460 pf. The range of the 260A may be extended as follows:

- a. Measure the exact capacitance of a nominal 100-pf capacitor on the 260A.

- b. Connect the nominal 100-pf capacitor in series with the vacuum variable capacitor C1, and connect the combination to the 260A.
c. Calculate a proper setting on the 260A that is equivalent to 500 pf of the vacuum variable with the following formula:

$$\frac{\left(\begin{array}{l} \text{Exact value of 100-pf} \\ \text{capacitor, step a.} \end{array} \times 500 \text{ pf} \right)}{\left(\begin{array}{l} \text{Exact value of 100-pf} \\ \text{capacitor, step a.} \end{array} + 500 \text{ pf} \right)} =$$

- d. Set the 260A to the capacitance value derived in step c.
e. Set the maximum capacitance limit switch S2 as described in paragraph 5.6.1.2.c.
f. Connect the nominal 100-pf capacitor in parallel with the vacuum variable capacitor C1, and connect the 260A to the combination.
g. Set the minimum capacitance limit switch S1 as described in paragraph 5.6.1.2.f. The 260A should read the value of the 100-pf capacitor (step a.) plus 6 pf.

5.6.1.2 Adjustment and Check of Shunt Capacitor (Collins Part Number 528-0466-00) Limit Switches (Refer to figure 6-15.)

- a. Connect ohmmeter or continuity checker between CR1 (cathode) and CR2 (cathode).
b. Turn spur gear number 2 (g) counterclockwise until CR1 (cathode) connects to CR2 (cathode) through S2 (zero meter indications), but no farther.
c. Capacitor C1 limit switch should be set for NLT 500 pf as measured on capacitance bridge. If necessary, readjust the position of S2 on bracket.
d. Connect ohmmeter or continuity checker between P1-15 (orange wire) and P1-5 (green wire).
e. Turn spur gear number 2 (9) clockwise until the P1-5 and P1-15 circuit through S1 (25) opens, but no farther.
f. Capacitor C1 limit switch should be set for 7 ± 0.2 pf as measured on the 260A. If necessary, readjust the position of S1 on bracket.

5.6.1.3 Adjustment and Check of Shunt Capacitor (Collins Part Number 777-4500-001) (Refer to figure 6-19.)

- a. Run spur gear (9) counterclockwise to maximum (capacitor open).
- b. Mark an aligning point on the spur gear (9).
- c. Turn spur gear (9) clockwise one full turn.

- d. Disengage spur gear (9) from small mating gear (14) by sliding gear (9) off of wormshaft. Do not turn wormshaft.
- e. Rotate gear (14) until pin 1 of switch (11) is centered in rotor cutout.
- f. Engage spur gear (9) with mating gear (14) at marked location. Do not turn wormshaft.
- g. Secure spur gear (9) with retaining ring (10).

section 6

parts list

6.1 INTRODUCTION

6.1.1 General

This parts list is a complete list of parts for the equipment manufactured by Collins Radio Company (figure 1).

The purpose of this parts list is for identification, requisitioning, and issuance of parts.

Collins Radio Company part numbering system is comprised of a 3-digit family number, a 4-digit serial number, and a 2- or 3-digit dash number:

FAMILY NO	SERIAL NO	DASH NO
XXX	XXXX	XX or XXX

This parts list consists of four sections: Introduction, Numerical Index, Symbol Index, and Group Assembly Parts List.

If a part is purchased by Collins Radio Company from a vendor, a Federal Manufacturer's Code number is listed in the nomenclature column. If this column does not include a Federal Manufacturer's Code Number, the item is either a MIL approved item, commercial item, or manufactured by Collins. Where COML appears in this column, the part may be obtained commercially from various vendors. Part numbers appearing in this column are Collins assigned part numbers for that item. Serial numbers or MCN (manufacturing control number) or CI (configuration identifier) effectivities, where applicable, are listed in this column. Serial number effectivities are designated on the nameplate. The MCN or CI is stamped on each module and/or chassis. Changes made from service bulletins are so indicated by SB1, SB2, etc.

6.1.2 Manufacturer's Code and Name Index

CODE	MANUFACTURER'S NAME AND ADDRESS
00159	Acme Electric Corp. 40 Water St. Cuba, N.Y.
00287	CEM Co., Inc. 24 School Danielson, Conn.
00779	Amp, Inc. P.O. Box 3608 Harrisburg, Pa.
01121	Allen-Bradley Co. 1201 S. 2nd St. Milwaukee, Wis.
01295	Texas Instruments, Inc. Semiconductor-Components Div. 13500 N. Central Expressway Dallas, Texas
01526	General Electric Co. Specialty Control Dept. P.O. Box 812 Waynesboro, Va.
01939	Sprague Electric Co. of Wisconsin Grafton, Wis.
02697	Parker Seal Co. Cleveland, Ohio
03877	Transitron Electronic Corp. 168-186 Albion St. Wakefield, Mass.
04222	HI-Q Div. of Aerovox Corp. Air Base Myrtle Beach, S.C.
08289	Blinn, Delbert, Co., Inc., The 1678 E. 5th Ave. Pomona, Calif.
08717	Sloan Co. P.O. Box 367 Sun Valley, Calif.

CODE	MANUFACTURER'S NAME AND ADDRESS	CODE	MANUFACTURER'S NAME AND ADDRESS
08732	Solid State Products Co. 1 Pingree Salem, Mass.	27545	Hartford Steel Ball Co. 1022 Elm St. Rocky Hill, Conn.
09922	Burndy Corp. Richards Ave. Norwalk, Conn.	40920	Miniature Precision Bearings, Inc. Precision Park Keene, N.H.
10646	Carborundum Co. Buffalo Ave. Niagara Falls, N.Y.	43334	New Departure Div. of General Motors Corp. Hayes and Perkins Ave. Sandusky, Ohio
12014	Chicago Rivet and Machine Co. 950 S. 25th Ave. Bellwood, Ill.	46384	Penn Engineering and Mfg. Corp. Old Easton Highway Doylestown, Pa.
12615	U.S. Terminals, Inc. 7504 Camargo Cincinnati, Ohio	56289	Sprague Electric Co. North Adams, Mass.
12639	Northfield Precision Instrument Corp. 4400 Austin Blvd. Island Park, N.Y.	57771	Stimpson, Edwin B., Co., Inc. 70 Franklin Ave. Brooklyn, N.Y.
12969	Unitrode Corp. 580 Pleasant St. Watertown, Mass.	61957	USM Corp. 140 Federal St. Boston, Mass.
14101	Sprague Electric Co. 300 W. National Vandalia, Ohio	70371	American Lava Corp. 219 Kruesi Bldg. Chattanooga, Tenn.
15409	Thermotech Industries Booker and Wallestad Div. Hopkins, Minn.	70674	ADC Products, Inc. 6405 Cambridge St. Minneapolis, Minn.
16037	Spruce Pine Mica Co. Spruce Pine, N.C.	71468	ITT Cannon Electric, Inc. 3208 Humbolt St. Los Angeles, Calif.
16636	Indiana General Corp. Electro Mechanical Div. 517 W. Walnut St. Oglesby, Ill.	71590	Centralab Div. of Globe-Union, Inc. 932 E. Keefe Ave. Milwaukee, Wis.
19710	McMaster Products Corp. 4200 W. Victoria Chicago, Ill.	72962	Elastic Stop Nut Corp. of America 2330 Vauxhall Rd. Union, N.J.
25140	Globe Industries, Inc. Dayton, Ohio	72982	Erie Technological Products, Inc. 644 W. 12th St. Erie, Pa.

CODE	MANUFACTURER'S NAME AND ADDRESS	CODE	MANUFACTURER'S NAME AND ADDRESS
73899	J. F. D. Electronics Corp. 15th at 62nd St. Brooklyn, N.Y.	80223	United Transformer Co. 150 Varick St. New York, N.Y.
73905	Jennings Radio Mfg. Corp. 970 McLaughlin Ave. San Jose, Calif.	80294	Bourne, Inc. 6135 Magnolia Ave. Riverside, Calif.
73949	Guardian Electric Mfg. Co. 1550 W. Carroll Ave. Chicago, Ill.	81095	Triad Transformer Corp. 4055 Redwood Ave. Venice, Calif.
73957	Groove-Pin Corp. 1125 Hendricks Causeway Ridgefield, N.J.	81541	Airpax Electronics, Inc. Cambridge, Md.
74545	Hubbell, Harvey, Inc. 100 State St. Bridgeport, Conn.	81817	Hoover Electric Co. 2102 S. Stoner Ave. Los Angeles, Calif.
75042	IRC, Inc. 401 N. Broad St. Philadelphia, Pa.	82142	Jeffers Electronics Div. of Speer Carbon Co. Du Bois, Pa.
76854	Oak Mfg. Co. S. Main Crystal Lake, Ill.	83086	New Hampshire Ball Bearings, Inc. Peterborough, N.H.
77147	Patton MacGuyer Co. Edgewood Station Providence, R.I.	86577	Precision Metal Products of Malden, Inc. 41 Elm St. Stoneham, Mass.
77250	Pheoll Mfg. Co. Chicago, Ill.	90526	Clippard Instrument Laboratory, Inc. 7382 Colerain Rd. Cincinnati, Ohio
78189	Shakeproof Div. of Illinois Tool Works, Inc. St. Charles Rd. Elgin, Ill.	91314	Lewis Spring and Mfg. Co. 2652 W. N. Ave. Chicago, Ill.
79136	Waldes Kohinoor, Inc. 47-16 Austel Place Long Island City, N.Y.	91506	Augat, Inc. 33 Perry Ave. Attleboro, Mass.
79807	Wrought Washer Mfg. Co. Milwaukee, Wis.	91637	Dale Electronics, Inc. P.O. Box 609 Columbus, Nebr.
79963	Zierick Mfg. Corp. 83 Rockdale Ave. New Rochelle, N.Y.	91929	Honeywell, Inc. Micro Switch Div. Chicago and Spring Sts. Freeport, Ill.

CODE	MANUFACTURER'S NAME AND ADDRESS	CODE	MANUFACTURER'S NAME AND ADDRESS
92825	Whitso, Inc. 9332 Byron St. Schiller Park, Ill.	96881	Thomson Industries, Inc. 1029 Plandome Rd. Manhasset, N.Y.
93332	Sylvania Electric Products, Inc. Semiconductor Products Div. 100 Sylvan Rd. Woburn, Mass.	98291	Sealectro Corp. 225 Hoyt Mamaroneck, N.Y.
94375	Automatic Metal Products Co. 315 Berry Brooklyn, N.Y.	98978	International Electronic Research Corp. 151 W. Magnolia Ave. Burbank, Calif.
95105	Collins Radio Co. Information Science Center 19400 Jamboree Rd. Newport Beach, Calif.	99378	Atlee Corp. 2 Lowell Ave. Winchester, Mass.
95275	Vitramon, Inc. Box 544 Bridgeport, Conn.	99800	Delevan Electronics Corp. 270 Quaker Rd. East Aurora, N.Y.

6.1.3 Table I

a. Usage Code

The following codes have been assigned in this manual:

USAGE CODE	UNIT	FIGURE
A	Series RF Coil	6-11
B	Shunt RF Coil	6-11

b. Reference Designation Prefixes

The following prefixes have been assigned in this manual:

PREFIX	UNIT	FIGURE
A1	Electrical Equipment Chassis	6-16
A2	Antenna Coupler Control	6-7
A3	Electronic Control Amplifier	6-3
A4	Variable Stepping RF Coil	6-12
A4	RF Coil Assembly	6-18
A5	Series RF Coil	6-11
A6	Shunt RF Coil	6-11
A7	Tuning Drive	6-15
A7	Vacuum Shunt Variable Capacitor	6-19
A8	Loading-Phasing Discriminator	6-10
A9	Rotary Switch	6-14
A10	Capacitor Assembly	6-13

6.2 NUMERICAL INDEX

PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.	PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.
AB396-1A	6-16 - 95	1		CK14AX103M	6-6 - 75	1	
AN6227-3	6-11 - 82C	1		CK14AX103M	6-6 - 84	1	
AN6227-3	6-11 - 82C	1		CK60AW152M	6-4 - 9	1	
A14876	6-16 - 64	1		CL25BQ04OSP3	6-4 - 1	1	
A240	6-5 - 104	1		CL25BQ04OSP3	6-4 - 2	1	
A51043	6-3 - 51	1		CL25BQ04OSP3	6-4 - 43	1	
A51043	6-3 - 57	1		CL25BQ04OSP3	6-4 - 44	1	
A51043	6-3 - 64	1		CR39	6-18 - 46	2	
A51043	6-3 - 68	1		CS13BJ823K	6-6 - 10	1	
BH855	6-3 - 50	1		CS13BJ823K	6-6 - 51	1	
BH855	6-3 - 56	1		DAM15P	6-14 - 43	1	
BSF18B122	6-16 - 108C	1		DAM15P	6-15 - 43	1	
BSF18B122	6-16 - 116	1		DAM15P	6-19 - 4	1	
BSF18B122	6-16 - 116A	1		DAM15S	6-16 - 73	1	
BSF18B122	6-16 - 117	1		DAM15S	6-16 - 75	1	
BSF18B122	6-16 - 117A	1		DA51220-1	6-14 - 44	1	
BSF18B122	6-16 - 118	1		DA51220-1	6-16 - 76	1	
BSF18B122	6-16 - 119	1		DA868-60N	6-13 - 23	1	
BSF18B122	6-16 - 120	1		DBM25P	6-11 - 27	1	
BSF18B122	6-16 - 120A	1		DBM25P	6-12 - 9A	1	
BSF18B122	6-16 - 121	1		DBM25P	6-18 - 16	1	
BSF18B122	6-16 - 122	1		DBM25S	6-16 - 82	1	
BSF18B122	6-16 - 123	1		DBM25S	6-16 - 84	1	
BSF18B122	6-16 - 123A	1		DBM25S	6-16 - 145	1	
BSF18B122	6-16 - 124	1		DB51221-1	6-11 - 28	1	
BSF18B122	6-16 - 124A	1		DB51221-1	6-12 - 9C	1	
BSF18B122	6-16 - 125	1		DB51221-1	6-18 - 17	1	
BSF18B122	6-16 - 125A	1		DCH2HV805-20	6-14 - 1	1	
BSF18B122	6-16 - 126	1		DCMF37S	6-16 - 54	1	
BSF18B122	6-16 - 126A	1		DCMF37S	6-16 - 58	1	
BSF18B122	6-16 - 127	1		DCM37P	6-3 - 76	1	
BSF18B122	6-16 - 128	1		DCM37P	6-5 - 13	1	
BSF18B122	6-16 - 129	1		RJ1A26N323 R2 RELAY	6-16 - 140A	1	
BSF18B122	6-16 - 130	1		DCM37P	6-7 - 119	1	
BSF18B122	6-16 - 130A	1		DDM50P	6-7 - 116	1	
BSF18B122	6-16 - 130B	1		DDMF-50S	6-16 - 50	1	
BSF18B122	6-16 - 32C	1		DEM9P	6-16 - 97	1	
B1547	6-11 - 61	1		DEM9P	6-10 - 6	1	
CB1028	6-3 - 34	1		DH226	6-3 - 63	1	
CB1028	6-3 - 35	1		DH226	6-3 - 67	1	
CB1028	6-6 - 11	1		DH226	6-8 - 102	1	
CB1028	6-6 - 20	1		DH226	6-8 - 104	1	
CB1028	6-8 - 17	1		D53018	6-15 - 44	2	
CB1028	6-8 - 37	1		D53018	6-16 - 74	2	
CB1028	6-8 - 38	1		D53018	6-16 - 83	2	
CB1028	6-8 - 59	1		D53018	6-16 - 85	2	
CB1028	6-8 - 60	1		D53018	6-16 - 146	2	
CB1028	6-8 - 67	1		D53018	6-19 - 5	2	
CB1028	6-8 - 77	1		E1704	6-13 - 7	1	
CB1028	6-8 - 89	1		E1704	6-13 - 28	2	
CB1028	6-8 - 104A	1		E1704	6-13 - 32	1	
CB1028	6-8 - 106	1		E1704	6-16 - 37A	1	
CB1028	6-9 - 19	1		FHS440-13	6-3 - 80A	4	
CB1028	6-9 - 33	1		F12NCFMA2-62	6-7 - 129	2	
CB1028	6-9 - 46	1		F12NCFMA2-62	6-15 - 37	4	
CK05CW102M	6-4 - 9	1		F12NCFMA2-82	6-16 - 71	6	
CK05CW102M	6-4 - 16	1		F12NCFMA2-62	6-19 - 45	4	
CK14AX103M	6-6 - 19	1		F22NM107-62	6-16 - 16	2	
CK14AX103M	6-6 - 29	1		F256-1	6-14 - 37	2	
CK14AX103M	6-6 - 36	1		F256-2	6-14 - 48	4	
CK14AX103M	6-6 - 63	1					

PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.	PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.
GP1-062X187-50	6-16 - 21	2		MS35338-136	6-15 - 36	4	
G4-2112	6-3 - 58A	1		MS35338-136	6-19 - 39	3	
G4-2112	6-3 - 94	2		MS35338-97	6-3 - 24	10	
G4-2112	6-8 - 112	8		MS35338-97	6-18 - 4	1	
G4-2112	6-9 - 86	2		MS35338-97	6-18 - 69	1	
HP3N	6-16 - 146B	1		MS35338-97	6-18 - 73	1	
HP5N	6-12 - 6A	1		MS35338-97	6-18 - 86	1	
HP5N	6-16 - 28B	1		MS35338-97	6-18 - 89	3	
HP5N	6-16 - 77	1		MS35338-97	6-18 - 104	1	
HP5N	6-18 - 12	1		MS35338-97	6-18 - 118A	1	
HP6N	6-16 - 146A	1		MS35338-98	6-16 - 35	3	
JAN1N914	6-10 - 32	1		MS35338-98	6-16 - 104	4	
JCSF60-10N386	6-13 - 23	1		MS35489-1	6-3 - 66	1	
JH485	6-3 - 63	1		MS35489-1	6-16 - 28A	1	
JH485	6-3 - 67	1		MS35489-4	6-12 - 13	1	
JH485	6-5 - 45	1		MS35649-24	6-16 - 111	1	
JH485	6-5 - 46	1		MS35649-64	6-16 - 2	4	
JH485	6-8 - 102	1		MS51053-101	6-16 - 32	2	
JH485	6-8 - 104	1		MS51053-112	6-2 - 16	4	
JX40	6-15 - 24	2		MS51957-1	6-2 - 5	2	
L1215-1K74S7	6-6 - 59	1		MS51957-1	6-11 - 78	2	
L1215-1K74S7	6-6 - 78	1		MS51957-13	6-2 - 9	4	
MP206-168	6-16 - 62	1		MS51957-13	6-3 - 28	4	
MS16535-75	6-10 - 70	2		MS51957-13	6-3 - 96	4	
MS16562-194	6-14 - 17A	1		MS51957-13	6-5 - 11	4	
MS16562-194	6-19 - 19	1		MS51957-13	6-7 - 111	8	
MS16624-1025	6-19 - 10	1		MS51957-13	6-10 - 68	2	
MS16624-1025	6-19 - 17	1		MS51957-13	6-15 - 46	2	
MS16624-1025	6-19 - 27	2		MS51957-13	6-16 - 144	1	
MS16624-1025	6-19 - 36	2		MS51957-14	6-10 - 12	3	
MS16624-12	6-11 - 68A	1		MS51957-14	6-11 - 82E	1	
MS16624-12	6-12 - 34	1		MS51957-14	6-16 - 13	4	
MS16624-12	6-18 - 44	1		MS51957-14	6-16 - 81	1	
MS16624-18	6-18 - 50	1		MS51957-14	6-19 - 33	2	
MS16625-1031	6-11 - 82B	1		MS51957-15	6-16 - 28F	1	
MS16633-1018	6-15 - 19	1		MS51957-2	6-5 - 62	10	
MS16997-1	6-14 - 14A	4		MS51957-2	6-5 - 102	1	
MS18130-10	6-10 - 45	1		MS51957-2	6-7 - 82	2	
MS18130-3	6-10 - 34	1		MS51957-2	6-7 - 112	2	
MS18130-3	6-10 - 45	1		MS51957-2	6-10 - 5	2	
MS20426AD4-7	6-17 - 3	4		MS51957-2	6-14 - 34	4	
MS231-19-6-1PCT	6-10 - 65	1		MS51957-2	6-15 - 33	1	
MS231-34-8-1PCT	6-10 - 66	1		MS51957-2	6-16 - 94	2	
MS24547-1	6-15 - 25	1		MS51957-2	6-16 - 96	1	
MS24547-1	6-15 - 26	1		MS51957-2	6-16 - 113	5	
MS25237-327	6-16 - 6	1		MS51957-24	6-17 - 5	1	
MS25237-327	6-16 - 9	1		MS51957-26	6-7 - 2	2	
MS3112E16-26P	6-16 - 12	1		MS51957-27	6-3 - 2	2	
MS35198-24	6-2 - 18	2		MS51957-27	6-5 - 2	2	
MS35337-77	6-16 - 112	4		MS51957-27	6-16 - 65	4	
MS35337-77	6-16 - 133	1		MS51957-28	6-15 - 8	3	
MS35337-78	6-16 - 47	4		MS51957-28	6-16 - 4	4	
MS35337-78	6-16 - 68	1		MS51957-3	6-3 - 93A	3	
MS35337-78	6-16 - 143	1		MS51957-3	6-8 - 109A	7	
MS35337-79	6-16 - 3	4		MS51957-3	6-9 - 80A	6	
MS35338-134	6-7 - 104	12		MS51957-3	6-15 - 3	3	
MS35338-134	6-11 - 4	3		MS51957-3	6-16 - 132	1	
MS35338-134	6-11 - 19	2		MS51957-3	6-16 - 135B	11	
MS35338-134	6-11 - 79	2		MS51957-3	6-18 - 97	2	
MS35338-135	6-11 - 82F	1		MS51957-4	6-11 - 3	3	
MS35338-136	6-15 - 7	3					

section 6
parts list

PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.	PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.
MS51957-4	6-11 - 18	2		P313-0132-000	6-16 -142	1	
MS51957-5	6-15 - 28			P313-0140-000	6-16 - 34A	1	
MS51957-5	6-18 - 81	2		P313-0156-000	6-3 - 23	10	
MS51957-5	6-18 - 93	2		P321-0294-000	6-10 - 19	1	
MS51957-5	6-19 - 12	2		P330-2284-000	6-7 - 97	1	
MS51957-6	6-11 - 25	2		P330-2284-000	6-7 - 81	2	
MS51957-8	6-11 - 25	2		P330-2284-000	6-7 -101	11	
MS51957-8	6-11 - 25	2		P330-2286-000	6-16 - 99	2	
MS51959-1	6-3 - 9	4		P334-0256-00	6-16 -135	23	
MS51959-1	6-5 - 9	4		P342-0151-000	6-12 - 3	15	
MS51959-1	6-7 -107	4		P342-0152-000	6-16 - 90	1	
MS51959-13	6-16 - 48	2		P342-0152-000	6-18 - 8	15	
MS51959-14	6-2 - 2	17		P342-0152-000	6-18 - 67	3	
MS51959-14	6-11 - 50	4		P342-0153-000	6-12 - 38	1	
MS51959-14	6-16 - 70	8		P342-0156-000	6-18 -118	1	
MS51959-14	6-19 - 24	2		P342-0166-000	6-16 - 42B	1	
MS51959-15	6-15 - 23	2		P342-0167-000	6-13 - 9	3	
MS51959-15	6-16 - 49	2		P342-0167-000	6-13 - 22	2	
MS51959-15	6-16 -146E	2		P342-0167-000	6-13 - 33	1	
MS51959-2	6-11 - 70	1		P342-0167-000	6-13 - 38	2	
MS51959-2	6-12 - 55	3		P342-0167-000	6-14 - 6	4	
MS51959-2	6-12 - 60	3		P342-0168-000	6-16 - 63	1	
MS51959-2	6-14 - 6D	3		P342-0183-000	6-13 - 26	1	
MS51959-2	6-16 -138	1		P342-0202-000	6-13 - 26	1	
MS51959-26	6-11 - 55	4		P342-0288-000	6-12 - 44	3	
MS51959-28	6-15 - 35	4		P342-0288-000	6-12 - 68	3	
MS51959-3	6-3 - 78	2		P342-0566-000	6-12 - 32	3	
MS51959-3	6-5 - 16	2		P343-0142-000	6-16 - 67	1	
MS51959-3	6-7 -100	1		P343-0172-000	6-11 - 75	4	
MS51959-3	6-7 -118	2		P343-0284-000	6-10 - 2	7	
MS51959-3	6-7 -121	2		P343-0285-000	6-11 - 9	1	
MS51959-3	6-14 - 23	2		P343-0285-000	6-18 - 13	1	
MS51959-3	6-14 - 41	3		P343-0285-000	6-18 - 26	4	
MS51959-3	6-15 - 15	4		P343-0285-000	6-18 - 29	4	
MS51959-33	6-15 - 41	4		P343-0285-000	6-18 - 68	1	
MS51959-4	6-15 - 32	2		P343-0285-000	6-18 - 72	1	
MS51959-6	6-16 - 53	2		P343-0285-000	6-18 - 85	1	
MS51959-6	6-16 - 57	2		P343-0285-000	6-18 - 88	2	
MS51959-6	6-16 - 61	2		P343-0285-000	6-18 -103	1	
MS51963-1	6-18 - 21	4		P343-0285-000	6-18 -117A	2	
MW265-90	6-6 - 42	4		P343-0285-000	6-19 - 2	2	
M9762	6-10 - 37	1		P343-0285-000	6-19 - 7	2	
NM06122M3J	6-11 - 74	1		P343-0287-000	6-11 - 41	4	
N418FCHHP25L02	6-11 - 38	1		P343-0289-000	6-18 - 34	3	
N418FCHHP25L02	6-11 - 48	1		P343-0289-000	6-18 - 41	3	
N814FCHHP25L02	6-18 -122	1		P343-0289-000	6-18 -117	1	
N814FCHHP25L02	6-18 -123	1		P343-0291-000	6-10 - 13	1	
P312-0007-000	6-7 -115	4		P343-0291-000	6-12 - 20	2	
P312-0009-000	6-18 - 74	2		P343-0291-000	6-18 - 3	1	
P312-0009-000	6-18 - 90	2		P343-0292-000	6-12 - 6B	1	
P312-3010-000	6-13 - 21	2		P343-0294-000	6-12 - 8	4	
P312-3010-000	6-16 - 42	1		P343-0297-000	6-11 - 30	2	
P312-3050-000	6-13 - 8	1		P343-0297-000	6-11 - 63	2	
P313-0045-000	6-15 - 6	3		P343-0297-000	6-18 -100	1	
P313-0045-000	6-19 - 38	3		P343-0298-000	6-12 - 11	3	
P313-0050-000	6-3 - 92	3		P343-0298-000	6-12 - 57	4	
P313-0050-000	6-5 -100	1		P343-0298-000	6-19 - 42	1	
P313-0050-000	6-8 -108	7		P343-0299-000	6-10 - 8	2	
P313-0050-000	6-9 - 79	8		P343-0299-000	6-10 - 74	2	
P313-0053-000	6-5 - 33	8		P343-0299-000	6-10 - 77	2	
P313-0132-000	6-16 - 45	4		P343-0299-000	6-10 - 80	2	

PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.	PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.
P343-0299-000	6-12 - 41	2		RC07GF164J	6-9 - 53	1	
P343-0299-000	6-12 - 65	2		RC07GF182J	6-8 - 15	AR	
P343-0307-000	6-13 - 25	1		RC07GF182J	6-8 - 80	AR	
P343-0327-000	6-16 - 103	4		RC07GF182J	6-8 - 95	AR	
P343-0328-000	6-13 - 10	4		RC07GF182K	6-4 - 27	1	
P343-0328-000	6-13 - 19	2		RC07GF182K	6-4 - 62	1	
P343-0330-000	6-2 - 20	4		RC07GF182K	6-6 - 21	1	
P343-0330-000	6-2 - 22	4		RC07GF182K	6-6 - 38	1	
P343-0330-000	6-13 - 30	2		RC07GF182K	6-8 - 12	1	
P343-0331-000	6-5 - 37	8		RC07GF183K	6-3 - 41	1	
P343-0343-000	6-13 - 25	1		RC07GF183K	6-8 - 12	1	
P343-0708-000	6-12 - 2	4		RC07GF183K	6-8 - 40	1	
P343-0708-000	6-18 - 5	4		RC07GF183K	6-8 - 71	1	
P347-0020-000	6-11 - 72	2		RC07GF183K	6-8 - 78	1	
P347-0028-000	6-14 - 32	2		RC07GF183K	6-8 - 91	1	
P347-0035-000	6-19 - 40	3		RC07GF183K	6-9 - 32	1	
RB1J26N428	6-16 - 30	1		RC07GF202J	6-8 - 15	AR	
RC07GF100K	6-3 - 38	1		RC07GF202J	6-8 - 80	AR	
RC07GF100K	6-5 - 23	1		RC07GF202J	6-8 - 95	AR	
RC07GF100K	6-8 - 41	1		RC07GF220K	6-3 - 37A	1	
RC07GF100K	6-8 - 61	1		RC07GF220K	6-8 - 20A	1	
RC07GF100K	6-8 - 99	1		RC07GF220K	6-8 - 32	1	
RC07GF100K	6-8 - 103	1		RC07GF220K	6-9 - 23	1	
RC07GF100K	6-9 - 22A	1		RC07GF220K	6-9 - 34	1	
RC07GF100K	6-9 - 48	1		RC07GF222J	6-8 - 15	AR	
RC07GF100K	6-9 - 59	1		RC07GF222J	6-8 - 80	AR	
RC07GF101K	6-4 - 33	1		RC07GF222J	6-8 - 95	AR	
RC07GF101K	6-4 - 34	1		RC07GF222K	6-3 - 52A	1	
RC07GF101K	6-4 - 53	1		RC07GF222K	6-3 - 52B	1	
RC07GF101K	6-4 - 55	1		RC07GF222K	6-4 - 70	1	
RC07GF101K	6-6 - 26	1		RC07GF222K	6-4 - 75	1	
RC07GF101K	6-6 - 27	1		RC07GF222K	6-5 - 67	1	
RC07GF101K	6-6 - 31	1		RC07GF222K	6-5 - 73	1	
RC07GF101K	6-6 - 32	1		RC07GF222K	6-6 - 62	1	
RC07GF101K	6-8 - 93A	1		RC07GF222K	6-6 - 76	1	
RC07GF101K	6-8 - 99	1		RC07GF223K	6-8 - 45	1	
RC07GF101K	6-9 - 13	1		RC07GF223K	6-8 - 45A	1	
RC07GF102K	6-9 - 44	1		RC07GF223K	6-8 - 47A	1	
RC07GF103K	6-8 - 63	1		RC07GF242J	6-8 - 15	AR	
RC07GF103K	6-8 - 71	1		RC07GF242J	6-8 - 80	AR	
RC07GF103K	6-5 - 85A	1		RC07GF242J	6-8 - 95	AR	
RC07GF103K	6-9 - 36	1		RC07GF270K	6-6 - 3	1	
RC07GF103K	6-9 - 60	1		RC07GF270K	6-6 - 57	1	
RC07GF104K	6-6 - 52	1		RC07GF272J	6-8 - 15	AR	
RC07GF104K	6-6 - 53	1		RC07GF272J	6-8 - 80	AR	
RC07GF104K	6-9 - 50B	1		RC07GF272J	6-8 - 95	AR	
RC07GF104K	6-9 - 53	1		RC07GF272K	6-8 - 101A	1	
RC07GF105K	6-4 - 7	1		RC07GF272K	6-9 - 9	1	
RC07GF105K	6-4 - 18	1		RC07GF272K	6-9 - 14A	1	
RC07GF122K	6-9 - 52	1		RC07GF272K	6-9 - 26	1	
RC07GF123K	6-3 - 39	1		RC07GF272K	6-9 - 60	1	
RC07GF123K	6-8 - 28A	1		RC07GF272K	6-9 - 61	1	
RC07GF123K	6-8 - 102A	1		RC07GF272K	6-9 - 73	1	
RC07GF124K	6-9 - 53	1		RC07GF273K	6-3 - 39	1	
RC07GF151K	6-4 - 39	1		RC07GF273K	6-6 - 98	1	
RC07GF151K	6-4 - 48	1		RC07GF273K	6-6 - 94	1	
RC07GF153K	6-8 - 29	1		RC07GF273K	6-8 - 20	1	
RC07GF153K	6-8 - 68	1		RC07GF273K	6-8 - 28	1	
RC07GF154K	6-6 - 8	1		RC07GF273K	6-8 - 46	1	
RC07GF154K	6-6 - 54	1		RC07GF273K	6-8 - 51	1	
RC07GF154K	6-9 - 53	1		RC07GF273K	6-8 - 65	1	

section 6
parts list

PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.	PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.
RC07GF302K	6-8 - 15	AR		RC07GF562K	6-5 - 40	1	
RC07GF302K	6-8 - 80	AR		RC07GF562K	6-5 - 47	1	
RC07GF302K	6-8 - 95	AR		RC07GF562K	6-5 - 50	1	
RC07GF330K	6-8 - 86	1		RC07GF562K	6-6 -101	1	
RC07GF332J	6-8 - 15	AR		RC07GF562K	6-6 - 95	1	
RC07GF332J	6-8 - 80	AR		RC07GF562K	6-8 - 14	1	
RC07GF332J	6-8 - 95	AR		RC07GF562K	6-8 - 58	1	
RC07GF334K	6-9 - 24	1		RC07GF562K	6-8 - 79	1	
RC07GF334K	6-9 - 50B	1		RC07GF562K	6-8 - 93	1	
RC07GF362J	6-8 - 15	AR		RC07GF562K	6-9 - 10	1	
RC07GF362J	6-8 - 80	AR		RC07GF563K	6-4 - 29	1	
RC07GF362J	6-8 - 95	AR		RC07GF563K	6-4 - 58	1	
RC07GF392J	6-8 - 15	AR		RC07GF622J	6-8 - 80	AR	
RC07GF392J	6-8 - 80	AR		RC07GF622J	6-8 - 95	AR	
RC07GF392J	6-8 - 95	AR		RC07GF681K	6-9 - 8	1	
RC07GF392K	6-3 - 71	1		RC07GF681K	6-9 - 13	1	
RC07GF392K	6-3 - 73	1		RC07GF681K	6-9 - 28	1	
RC07GF392K	6-5 - 39	1		RC07GF681K	6-9 - 74	1	
RC07GF392K	6-5 - 49	1		RC07GF682J	6-8 - 80	AR	
RC07GF392K	6-8 - 29	1		RC07GF682J	6-8 - 95	AR	
RC07GF392K	6-8 - 48	1		RC07GF682K	6-3 - 46	1	
RC07GF392K	6-9 - 58	1		RC07GF682K	6-4 - 26	1	
RC07GF393K	6-6 - 4	1		RC07GF682K	6-4 - 63	1	
RC07GF393K	6-6 - 56	1		RC07GF682K	6-5 - 69	1	
RC07GF393K	6-8 - 2	1		RC07GF682K	6-6 - 66	1	
RC07GF394K	6-8 - 52	1		RC07GF682K	6-6 - 71	1	
RC07GF394K	6-8 - 55	1		RC07GF683K	6-8 - 53	1	
RC07GF432J	6-8 - 15	AR		RC07GF683K	6-8 - 72	1	
RC07GF432J	6-8 - 80	AR		RC07GF752J	6-8 - 80	AR	
RC07GF432J	6-8 - 95	AR		RC07GF752J	6-8 - 95	AR	
RC07GF472J	6-8 - 15	AR		RC07GF821K	6-4 - 37	1	
RC07GF472J	6-8 - 80	AR		RC07GF821K	6-4 - 50	1	
RC07GF472J	6-8 - 95	AR		RC07GF821K	6-8 - 78	1	
RC07GF472K	6-3 - 32	1		RC07GF821K	6-8 - 91	1	
RC07GF472K	6-3 - 36	1		RC07GF822J	6-8 - 80	AR	
RC07GF472K	6-5 - 38	1		RC07GF822J	6-8 - 95	AR	
RC07GF472K	6-5 - 48	1		RC07GF822K	6-3 - 89	1	
RC07GF472K	6-8 - 8	1		RC20GF101K	6-16 -136	1	
RC07GF472K	6-8 - 9	1		RC20GF102K	6-9 - 28	1	
RC07GF472K	6-8 - 64	1		RC20GF182K	6-9 - 14A	1	
RC07GF472K	6-8 - 83	1		RC20GF182K	6-9 - 25	1	
RC07GF472K	6-8 - 84	1		RC20GF182K	6-9 - 71	1	
RC07GF472K	6-8 - 96	1		RC20GF182K	6-9 - 72	1	
RC07GF472K	6-8 - 98	1		RC20GF272K	6-9 - 25	1	
RC07GF472K	6-9 - 21	1		RC20GF3R9K	6-4 - 4	1	
RC07GF472K	6-9 - 41A	1		RC20GF3R9K	6-4 - 21	1	
RC07GF473K	6-8 - 2	1		RC20GF3R9K	6-4 - 40	1	
RC07GF512J	6-8 - 15	AR		RC20GF3R9K	6-4 - 47	1	
RC07GF512J	6-8 - 80	AR		RC20GF560K	6-16 -113A	1	
RC07GF512J	6-8 - 95	AR		RC20GF562K	6-8 - 57	1	
RC07GF561K	6-7 - 87	1		RC32GF561K	6-6 - 25	1	
RC07GF561K	6-8 - 14	1		RC32GF561K	6-6 - 28	1	
RC07GF562J	6-8 - 15	AR		RC32GF561K	6-6 - 30	1	
RC07GF562J	6-8 - 80	AR		RC32GF561K	6-6 - 33	1	
RC07GF562J	6-8 - 95	AR		RC42BF822J	6-4 - 46	1	
RC07GF562K	6-3 - 65	1		RJ1A26N323	6-16 - 92	1	
RC07GF562K	6-3 - 72	1		RJ1A26N323	6-16 -140	1	
RC07GF562K	6-3 - 90	1		RJ1A26N323	6-16 -140A	1	
RC07GF562K	6-4 - 11	1		RL07S161G	6-4 - 23	1	
RC07GF562K	6-4 - 14	1		RL07S161G	6-4 - 66	1	
RC07GF562K	6-5 - 27	1		RL07S392G	6-4 - 42	1	

PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.	PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.
RL07S392G	6-4 - 45	1		RW69V391	6-4 - 22	1	
RL07S393G	6-4 - 67	1		RW69V391	6-4 - 41	1	
RL07S393G	6-4 - 78	1		RW69V561	6-4 - 72	1	
RL07S473G	6-4 - 31	1		RW69V561	6-6 - 2	1	
RL07S473G	6-4 - 56	1		RW69V561	6-9 - 14A	1	
RL07S913G	6-4 - 8	1		RW69V821	6-7 - 88	1	
RL07S913G	6-4 - 17	1		RW69V821	6-7 - 89	1	
RN55D1000F	6-6 - 82	1		R12NCFMA1-62	6-3 - 105	2	
RN55D1000F	6-6 - 85	1		R12NCFMA1-62	6-5 - 106	2	
RN55D1002F	6-5 - 70	1		R22NCFMA1-26	6-5 - 61A	9	
RN55D1002F	6-5 - 84	1		R22NCFMA1-26	6-10 - 84	4	
RN55D1003F	6-6 - 12	1		R22NCFMA1-40	6-3 - 106	4	
RN55D1003F	6-6 - 47	1		R22NCFMA1-40	6-5 - 105	4	
RN55D1620F	6-6 - 14	1		R22NCFMA1-40	6-10 - 71	1	
RN55D1620F	6-6 - 44	1		R22NCFMA1-40	6-10 - 83	2	
RN55D1623F	6-6 - 50	1		R22NCFMA1-40	6-10 - 88	2	
RN55D1691F	6-6 - 48	1		R3484X3-32CADPL	6-7 - 4	4	
RN55D1691F	6-6 - 49	1		R4008X3-32CHROMATEDP	6-3 - 4	2	
RN55D2370F	6-6 - 24	1		R4008X3-32CHROMATEDP	6-5 - 4	2	
RN55D2370F	6-6 - 34	1		SAB5342	6-6 - 6	1	
RN55D2372F	6-5 - 65	1		SAB5342	6-6 - 60	1	
RN55D3482F	6-5 - 76	1		SAB5342	6-6 - 64	1	
RN55D3832F	6-6 - 67	1		SAB5342	6-6 - 73	1	
RN55D3832F	6-6 - 69	1		SC630	6-10 - 48	1	
RN55D4222F	6-5 - 83	1		SC630	6-10 - 49	1	
RN55D4222F	6-5 - 86	1		SE76	6-18 - 95	1	
RN55D4642F	6-5 - 68	1		SE77	6-19 - 46	1	
RN55D4642F	6-6 - 23	1		SFR144PPK25-26	6-11 - 20	1	
RN55D4642F	6-6 - 35	1		SFR144PPK25-26	6-11 - 20	1	
RN55D5112F	6-5 - 20	1		SFR144PPK25-26	6-11 - 38	1	
RN55D6812F	6-5 - 74	1		SFR144PPK25-26	6-11 - 48	1	
RN55D9091F	6-6 - 45	1		SFR144PPK25-26	6-11 - 82	1	
RN55D9092F	6-6 - 39	1		SFR144PPK25-26	6-11 - 82	1	
RN60C1212F	6-10 - 36	1		SKT41BLK	6-3 - 103	1	
RN60C1212F	6-10 - 39	1		SKT41BLK	6-5 - 97	1	
RN60C1471F	6-10 - 44	1		SKT41BLU	6-4 - 84	1	
RN60D1002F	6-3 - 48	1		SKT41BLU	6-5 - 93	1	
RN60D1002F	6-3 - 54	1		SKT41BRN	6-3 - 98	1	
RN60D2372F	6-3 - 16	1		SKT41BRN	6-3 - 104	1	
RN60D3482F	6-3 - 47	1		SKT41BRN	6-5 - 88	1	
RN60D4222F	6-3 - 44	1		SKT41BRN	6-5 - 98	1	
RN60D4222F	6-3 - 53	1		SKT41GRN	6-4 - 83	1	
RN60D4642F	6-3 - 45	1		SKT41GRN	6-5 - 92	1	
RN60D5112F	6-3 - 17	1		SKT41GY	6-4 - 86	1	
RN60D6812F	6-3 - 42	1		SKT41GY	6-5 - 95	1	
RN60D7502F	6-3 - 17	1		SKT41ORN	6-3 - 100	1	
RN60D9091F	6-10 - 22	1		SKT41ORN	6-5 - 90	1	
RN60D9091F	6-10 - 24	1		SKT41RED	6-3 - 99	1	
RS2CR7100K	6-5 - 24	1		SKT41RED	6-5 - 89	1	
RS2CR7100K	6-5 - 42	1		SKT41VIO	6-4 - 85	1	
RS2CR7100K	6-5 - 44	1		SKT41VIO	6-5 - 94	1	
RS2CR7100K	6-5 - 80	1		SKT41WHT	6-3 - 102	1	
RW69V180	6-9 - 51A	1		SKT41WHT	6-5 - 96	1	
RW69V180	6-9 - 61	1		SKT41YEL	6-3 - 101	1	
RW69V181	6-9 - 61	1		SKT41YEL	6-5 - 91	1	
RW69V271	6-6 - 2	1		SL179-230	6-10 - 54	2	
RW69V3R9	6-4 - 4	1		SL180-231	6-10 - 51	6	
RW69V3R9	6-4 - 21	1		SL180-231	6-10 - 82	1	
RW69V3R9	6-4 - 40	1		SL283-230	6-10 - 53	17	
RW69V3R9	6-4 - 47	1		SL283-230	6-11 - 12	6	
RW69V391	6-4 - 3	1		SL347-322DWH	6-3 - 111	39	

section 6
parts list

PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.	PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.
SL347-322DWHT	6-4 - 82	29		VK37BW103M	6-10 - 29	1	
SL347-322DWHT	6-5 -103	15		VK37BW103M	6-10 - 35	1	
SL347-322DWIT	6-6 -102	15		VK37BW103M	6-10 - 38	1	
SL388-351DWHT	6-3 -112	27		VK37BW103M	6-10 - 40	1	
SL388-351DWHT	6-4 - 81	74		VK37BW103M	6-10 - 43	1	
SL388-351DWHT	6-5 -109	47		VY17C271J	6-16 - 88	1	
SL388-351DWHT	6-6 -103	101		O31-0187MDP	6-11 - 6	1	
SL388-351DWHT	6-8 -113	143		O31-0187MDP	6-11 - 16	1	
SL388-351DWHT	6-9 - 88	86		O31-0187MDP	6-12 - 77	14	
SPL4040-2HOTTINNED	6-3 - 74	4		O62-0500MDP	6-15 - 10	1	
SPL4040-2HOTTINNED	6-3 - 91	3		O905-71	6-18 - 96	1	
SPL4040-2HOTTINNED	6-5 - 15	1		1-8SSBALLTYPE440GR100	6-17 - 7	4	
SPL4040-4HOTTINNED	6-3 - 75	2		1N1202	6-7 - 93	1	
SPL4040-4HOTTINNED	6-11 - 10	1		1N1202	6-7 - 94	1	
SP21	6-4 - 60	1		1N3024B	6-4 - 73	1	
SP21	6-4 - 61	1		1N3024B	6-6 - 7	1	
SP21	6-6 - 83	1		1N4003	6-9 - 56	1	
SP21	6-6 - 89	1		1N4003	6-9 - 56A	1	
S125-250FHHP15LY5	6-11 - 20	1		1N4003	6-15 - 12	1	
S125-250FHHP15LY5	6-11 - 20	1		1N4003	6-15 - 13	1	
S125-250FHHP15LY5	6-11 - 82	1		1N4004	6-18 - 78	1	
S125-250FHHP15LY5	6-11 - 82	1		1N4004	6-18 - 79	1	
S4FCHH3P15U02	6-18 -105	1		1N645	6-3 - 10	1	
S418FCHH3P15U02	6-18 -106	1		1N645	6-3 - 11	1	
S418FCHH3P15U02	6-18 -119	1		1N645	6-3 - 12	1	
S814FCHH3P15L02	6-15 - 17			1N645	6-3 - 13	1	
S814FCHH3P15U02	6-18 - 70	1		1N645	6-3 - 14	1	
S814FCHH3P15U02	6-18 - 76	1		1N645	6-3 - 15	1	
S814FCHH3P15U02	6-18 - 77	1		1N645	6-3 - 40A	1	
S814FCHH3P15U02	6-18 - 83	1		1N645	6-3 - 40B	1	
S814FCHH3P15U02	6-18 -120	1		1N645	6-3 - 69	1	
S814FCHH3P15U02	6-19 - 21	1		1N645	6-3 - 70	1	
S814FCHH3P15U02	6-19 - 22	1		1N645	6-3 - 81	1	
S814FCHH3P15U02	6-19 - 35	1		1N645	6-3 - 82	1	
TA2402A	6-5 - 35A	2		1N645	6-3 - 83	1	
TF300	6-7 - 99	12		1N645	6-3 - 86	1	
TF300	6-14 - 39	3		1N645	6-4 - 9A	1	
TF300	6-15 - 14	4		1N645	6-4 - 15A	1	
TF300	6-16 - 93	2		1N645	6-5 - 21	1	
TF300	6-16 -109	4		1N645	6-5 - 22	1	
TF300	6-16 -137	1		1N645	6-5 - 51	1	
TXB2P019-028B	6-6 - 41	4		1N645	6-5 - 52	1	
TXB2P032-037-3B	6-4 - 79	12		1N645	6-5 - 53	1	
T1533	6-6 - 74	8		1N645	6-5 - 54	1	
T1571	6-8 -111	2		1N645	6-5 - 63	1	
T1571	6-9 - 87	3		1N645	6-5 - 64	1	
UG568U	6-16 -102	1		1N645	6-5 - 87	1	
USL5-500	6-15 - 11	1		1N645	6-6 - 15	1	
USN1N3064	6-10 - 47	1		1N645	6-6 - 16	1	
UY02820G	6-10 - 42	1		1N645	6-6 - 65	1	
UY03100K	6-10 - 58	1		1N645	6-6 - 72	1	
UY03301J	6-10 - 33	1		1N645	6-6 - 88	1	
UY03391J	6-10 - 57	1		1N645	6-6 - 90	1	
UZ715	6-6 - 7	1		1N645	6-6 - 91	1	
VC20GY	6-10 - 59	1		1N645	6-6 - 92	1	
VC20GY	6-10 - 61	1		1N645	6-6 - 97	1	
VK37BW103M	6-10 - 21	1		1N645	6-6 - 99	1	
VK37BW103M	6-10 - 23	1		1N645	6-7 - 7	1	
VK37BW103M	6-10 - 26	1		1N645	6-7 - 7A	1	
VK37BW103M	6-10 - 27	1		1N645	6-7 - 7B	1	
VK37BW103M	6-10 - 28	1		1N645	6-7 - 8	1	

PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.	PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.
1N645	6-7 - 9	1		1N645	6-8 - 54A	1	
1N645	6-7 - 10	1		1N645	6-8 - 56	1	
1N645	6-7 - 11	1		1N645	6-8 - 61A	1	
1N645	6-7 - 12	1		1N645	6-8 - 62	1	
1N645	6-7 - 13	1		1N645	6-8 - 64A	1	
1N645	6-7 - 14	1		1N645	6-8 - 68	1	
1N645	6-7 - 15	1		1N645	6-8 - 69	1	
1N645	6-7 - 16	1		1N645	6-8 - 70	1	
1N645	6-7 - 17	1		1N645	6-8 - 87	1	
1N645	6-7 - 18	1		1N645	6-8 - 90	1	
1N645	6-7 - 19	1		1N645	6-8 - 92A	1	
1N645	6-7 - 20	1		1N645	6-8 - 100	1	
1N645	6-7 - 21	1		1N645	6-8 - 101	1	
1N645	6-7 - 22	1		1N645	6-9 - 1	1	
RC07GF271K	6-7 - 23	1		1N645	6-9 - 2	1	
1N645	6-7 - 24	1		1N645	6-9 - 3	1	
1N645	6-7 - 25	1		1N645	6-9 - 4	1	
1N645	6-7 - 26	1		1N645	6-9 - 5	1	
1N645	6-7 - 27	1		1N645	6-9 - 6	1	
1N645	6-7 - 28	1		1N645	6-9 - 12	1	
1N645	6-7 - 29	1		1N645	6-9 - 15	1	
1N645	6-7 - 30	1		1N645	6-9 - 16	1	
1N645	6-7 - 30A	1		1N645	6-9 - 18	1	
1N645	6-7 - 31	1		1N645	6-9 - 27	1	
1N645	6-7 - 32	1		1N645	6-9 - 30	1	
1N645	6-7 - 33	1		1N645	6-9 - 35	1	
1N645	6-7 - 34	1		1N645	6-9 - 37	1	
1N645	6-7 - 35	1		1N645	6-9 - 38	1	
1N645	6-7 - 36	1		1N645	6-9 - 39	1	
1N645	6-7 - 37	1		1N645	6-9 - 41A	1	
1N645	6-7 - 38	1		1N645	6-9 - 49	1	
1N645	6-7 - 39	1		1N645	6-9 - 50	1	
1N645	6-7 - 40	1		1N645	6-9 - 52	1	
1N645	6-7 - 41	1		1N645	6-9 - 52A	1	
1N645	6-7 - 42	1		1N645	6-9 - 54	1	
1N645	6-7 - 43	1		1N645	6-9 - 57	1	
1N645	6-7 - 74	1		1N645	6-9 - 62A	1	
1N645	6-7 - 75	1		1N645	6-9 - 65	1	
1N645	6-8 - 50A	1		1N645	6-9 - 66	1	
1N645	6-8 - 54	1		1N645	6-9 - 67	1	
1N645	6-8 - 45B	1		1N645	6-9 - 68	1	
1N645	6-8 - 42	1		1N645	6-9 - 69	1	
1N645	6-8 - 45A	1		1N645	6-9 - 70	1	
1N645	6-8 - 1	1		1N645	6-9 - 76	1	
1N645	6-8 - 5	1		1N645	6-9 - 77	1	
1N645	6-8 - 16	1		1N645	6-14 - 24	1	
1N645	6-8 - 19	1		1N645	6-14 - 25	1	
1N645	6-8 - 21	1		1N645	6-14 - 26	1	
1N645	6-8 - 22	1		1N645	6-14 - 26A	1	
1N645	6-8 - 23	1		1N645	6-16 - 24	1	
1N645	6-8 - 24	1		1N645	6-16 - 28	1	
1N645	6-8 - 25	1		1N645	6-16 - 91	1	
1N645	6-8 - 25A	1		1N645	6-16 - 92A	1	
1N645	6-8 - 26	1		1N645	6-16 - 105	1	
1N645	6-8 - 27	1		1N645	6-16 - 106	1	
1N645	6-8 - 30	1		1N645	6-16 - 107	1	
1N645	6-8 - 31	1		1N645	6-16 - 107A	1	
1N645	6-8 - 33	1		1N645	6-16 - 107B	1	
1N645	6-8 - 35A	1		1N645	6-16 - 107C	1	
1N645	6-8 - 35B	1		1N645	6-16 - 108	1	
1N645	6-8 - 36	1		1N645	6-16 - 123B	1	
				1N645	6-16 - 136A	1	

section 6
parts list

PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.	PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.
1N645	6-16 -139	1		150D105X0035A2	6-8 - 10	1	
1N645	6-16 -139A	1		150D105X0035A2	6-8 - 11	1	
1N754A	6-4 - 28	1		150D105X0035A2	6-8 - 81	1	
1N754A	6-4 - 59	1		150D105X9060B2	6-8 - 10	1	
1N756A	6-3 - 61	1		150D105X9060B2	6-8 - 11	1	
1N756A	6-3 - 62	1		150D105X9060B2	6-8 - 50	1	
1N756A	6-5 - 18	1		150D105X9060B2	6-8 - 81	1	
1N756A	6-5 - 19	1		150D106X0020B2	6-6 - 61	1	
1N758A	6-3 - 40	1		150D106X0020B2	6-6 - 77	1	
1N758A	6-8 - 4	1		150D106X0020B2	6-8 - 44	1	
1N758A	6-8 - 34	1		150D106X9060R2	6-8 - 76	1	
1N758A	6-8 - 70A	1		150D107X0010R2	6-3 - 31	1	
1N758A	6-8 - 70B	1		150D107X0010R2	6-8 - 35	1	
1N758A	6-8 - 70B	1		150D107X0010R2	6-9 - 31	1	
1N758A	6-9 - 22	1		150D107X0010R2	6-9 - 51	1	
1N758A	6-9 - 41	1		150D154X0035A2	6-3 - 33	1	
1N965B	6-6 - 46	1		150D154X0035A2	6-3 - 37	1	
1N965B	6-8 - 6	1		150D154X0035A2	6-3 - 49	1	
1N970B	6-8 - 85	1		150D154X0035A2	6-3 - 55	1	
1N970B	6-8 - 97	1		150D154X0035A2	6-4 - 12	1	
1N970B	6-9 - 50A	1		150D154X0035A2	6-4 - 13	1	
1N971B	6-8 - 72A	1		150D154X0035A2	6-6 - 5	1	
1N971B	6-8 - 92	1		150D154X0035A2	6-6 - 9	1	
1N973B	6-8 - 6	1		150D156X0020B2	6-4 - 6A	1	
1N973B	6-8 - 85	2		150D156X0020B2	6-4 - 6A	1	
1N973B	6-8 - 97	1		150D156X0020B2	6-6 - 93	1	
1P4-26A	6-10 - 52	5		150D156X0035R2	6-3 - 29	1	
1P4-26A	6-10 - 87	2		150D156X0035R2	6-3 - 29A	1	
100-200-14-7	6-10 - 69	2		150D156X0035R2	6-3 - 30	1	
101C3100A80	6-16 - 11	1		150D156X0035R2	6-3 - 30A	1	
101C3100A80	6-16 - 14	1		150D156X0035R2	6-5 - 71	1	
101C3100A80	6-16 -100	1		150D156X0035R2	6-5 - 85	1	
1011HOTTINNED	6-13 - 24	1		150D156X9050R2	6-8 - 76	1	
10178-19	6-10 - 20	1		150D157X0006R2	6-9 - 31	1	
10178-19	6-10 - 25	1		150D226X0015B2	6-4 - 71	1	
10178-19	6-10 - 30	1		150D226X0015B2	6-4 - 74	1	
10178-19	6-10 - 31	1		150D274X9035A2	6-4 - 69	1	
10178-19	6-10 - 41	1		150D274X9035A2	6-4 - 76	1	
10178-19	6-10 - 46	1		150D334X0035A2	6-8 - 44	1	
1024-6HOTTINNED	6-13 - 2	1		150D335X9100R0	6-4 - 1	1	
1024-6HOTTINNED	6-13 - 14	1		150D335X9100R0	6-4 - 2	1	
1024-6HOTTINNED	6-13 - 35	2		150D335X9100R0	6-4 - 43	1	
1024-6HOTTINNED	6-16 - 39	2		150D335X9100R0	6-4 - 44	1	
1024-6HOTTINNED	6-18 - 22	1		150D335X9100R0	6-5 - 25	1	
107-6	6-16 - 28C	1		150D335X9100R0	6-5 - 26	1	
107-6	6-16 - 78	1		150D335X9100R0	6-5 - 78	1	
107H187	6-16 - 38	1		150D335X9100R0	6-5 - 79	1	
118P15402S4	6-7 - 90	1		150D335X9100R2	6-5 - 25	1	
118P15402S4	6-7 - 91	1		150D335X9100R2	6-5 - 26	1	
127-110	6-12 - 23	1		150D336X0010B2	6-4 - 10	1	
127-110	6-19 - 30	1		150D336X0010B2	6-4 - 15	1	
127-110	6-19 - 31	1		150D336X0010B2	6-4 - 71	1	
127-90	6-15 - 21	1		150D336X0010B2	6-4 - 74	1	
1305-24	6-15 - 22	1		150D336X0010B2	6-6 - 96	1	
1305-52	6-19 - 23	1		150D336X0010B2	6-6 -100	1	
150D104X0035A2	6-3 - 43	1		150D395X9060B2	6-8 - 16A	1	
150D104X0035A2	6-3 - 52	1		150D395X9060B2	6-8 - 49	1	
150D104X0035A2	6-5 - 66	1		150D395X9060B2	6-8 - 74	1	
150D104X0035A2	6-6 - 68	1		150D395X9060B2	6-8 - 88	1	
150D104X0035A2	6-6 - 70	1		150D395X9060B2	6-8 -105	1	
				150D395X9060B2	6-9 - 45	1	

PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.	PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.
150D395X9075B2	6-8 - 16A	1		2N657A	6-4 - 36	1	
150D395X9075B2	6-8 - 49	1		2N657A	6-4 - 51	1	
150D395X9075B2	6-8 - 74	1		2N657A	6-4 - 52	1	
150D395X9075B2	6-8 - 88	1		2N697	6-9 - 7	1	
150D395X9075B2	6-8 - 105	1		2N697	6-9 - 11	1	
150D395X9075B2	6-9 - 45A	1		2N697	6-9 - 29	1	
150D396X9010B2	6-8 - 7	1		2N697	6-9 - 75	1	
150D396X9010B2	6-8 - 73	1		2N956	6-6 - 17	1	
150D472X9035A2	6-4 - 5	1		2N956	6-6 - 17	1	
150D472X9035A2	6-4 - 20	1		2N956	6-6 - 22	1	
150D474X0035A2	6-3 - 49	1		2N956	6-6 - 22	1	
150D474X0035A2	6-3 - 55	1		2N956	6-6 - 37	1	
150D474X0035A2	6-5 - 72	1		2N956	6-6 - 37	1	
150D474X0035A2	6-5 - 75	1		2N956	6-6 - 40	1	
150D474X0035A2	6-5 - 82	1		2N956	6-6 - 40	1	
150D475X0010A2	6-4 - 6	1		2N956	6-18 - 91	1	
150D475X0010A2	6-4 - 19	1		2104-04-01-2520N	6-12 - 21	1	
150D475X0035B2	6-8 - 94	1		2178	6-16 - 32A	1	
150D475X0035B2	6-9 - 24	1		2392-115-004	6-11 - 7	1	
150D475X9010A2	6-6 - 80	1		244670EK	6-12 - 14	1	
150D475X9010A2	6-6 - 87	1		245578EK	6-12 - 15	1	
150D476X0035S2	6-7 - 86	1		246003AA	6-14 - 29	1	
150D537	6-9 - 51	1		246004AA	6-14 - 28	1	
150D566X9006B2	6-8 - 73	1		246005AA	6-14 - 27	1	
151D284X9035W2	6-4 - 69	1		246023A	6-11 - 22	1	
151D284X9035W2	6-4 - 76	1		247868A	6-11 - 21	1	
15517	6-11 - 26	4		247868A	6-11 - 21	1	
15517	6-11 - 26	4		262332A	6-18 - 92	1	
15517	6-11 - 26	2		262333A	6-18 - 80	1	
15517	6-18 - 82	4		262333A	6-19 - 11	1	
15517	6-18 - 94	2		3D1098	6-3 - 34	1	
15517	6-19 - 13	2		3D1098	6-3 - 35	1	
15523 3-16	6-14 - 30	4		3D1098	6-3 - 58	1	
1720-02CADPL	6-16 - 7A	1		3D1098	6-8 - 17	1	
1720-02CADPL	6-16 - 10A	1		3D1098	6-8 - 37	1	
192P1035R8	6-6 - 43	1		3D1098	6-8 - 38	1	
192P1035R8	6-6 - 79	1		3D1098	6-8 - 59	1	
192P47292	6-6 - 81	1		3D1098	6-8 - 60	1	
192P47292	6-6 - 86	1		3D1098	6-8 - 67	1	
196P15452S4	6-7 - 90	1		3D1098	6-8 - 77	1	
196P15452S4	6-7 - 91	1		3D1098	6-8 - 89	1	
2-327192-1	6-16 - 98A	4		3D1098	6-8 - 104A	1	
2A36A12	6-11 - 69	1		3D1098	6-8 - 106	1	
2JX83A6	6-16 - 114	1		3D1098	6-9 - 19	1	
2JX83A6	6-16 - 115	1		3D1098	6-9 - 33	1	
2N1481	6-9 - 11	1		3D1098	6-9 - 46	1	
2N1711	6-4 - 24	1		3PP4-66A	6-10 - 55	1	
2N1711	6-4 - 25	1		3SAF1131	6-3 - 18	1	
2N1711	6-4 - 30	1		3SAF1131	6-3 - 19	1	
2N1711	6-4 - 32	1		3SAF1131	6-3 - 20	1	
2N1711	6-4 - 54	1		3SAF1131	6-3 - 21	1	
2N1711	6-4 - 57	1		3SAF1131	6-3 - 22	1	
2N1711	6-4 - 64	1		3SAF1131	6-7 - 44	1	
2N1711	6-4 - 65	1		3SAF1131	6-7 - 45	1	
2N3879	6-5 - 28	1		3SAF1131	6-7 - 46	1	
2N3879	6-5 - 29	1		3SAF1131	6-7 - 47	1	
2N3879	6-5 - 30	1		3SAF1131	6-7 - 48	1	
2N3879	6-5 - 31	1		3SAF1131	6-7 - 49	1	
2N4220	6-6 - 55	1		3SAF1131	6-7 - 50	1	
2N4220	6-6 - 58	1		3SAF1131	6-7 - 51	1	
2N657A	6-4 - 35	1		3SAF1131	6-7 - 52	1	

section 6
parts list

PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.	PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.
3SAF1131	6-7 - 53	1		310-0074-000	6-18 -101	1	
3SAF1131	6-7 - 54	1		310-0075-000	6-3 - 93	3	
3SAF1131	6-7 - 55	1		310-0075-000	6-8 -109	7	
3SAF1131	6-7 - 56	1		310-0075-000	6-9 - 80	8	
3SAF1131	6-7 - 57	1		310-0075-000	6-10 - 75	2	
3SAF1131	6-7 - 58	1		310-0075-000	6-10 - 78	2	
3SAF1131	6-7 - 59	1		310-0075-000	6-11 - 64	2	
3SAF1131	6-7 - 60	1		310-0075-000	6-19 - 43	1	
3SAF1131	6-7 - 61	1		310-0076-000	6-11 - 11	1	
3SAF1131	6-7 - 62	1		310-0076-000	6-11 - 42	4	
3SAF1131	6-7 - 63	1		310-0076-000	6-12 - 22	1	
3SAF1131	6-7 - 64	1		310-0076-000	6-19 - 3	2	
3SAF1131	6-7 - 65	1		310-0076-000	6-19 - 8	2	
3SAF1131	6-7 - 66	1		310-0078-000	6-5 - 73	8	
3SAF1131	6-7 - 67	1		310-0094-000	6-5 -101	1	
3SAF1131	6-7 - 68	1		310-0097-000	6-13 - 11	8	
3SAF1131	6-7 - 69	1		310-0097-000	6-13 - 20	6	
3SAF1131	6-7 - 70	1		310-0097-000	6-13 - 37	2	
3SAF1131	6-7 - 71	1		310-0099-000	6-13 - 27	2	
3SAF1242	6-16 - 92B	1		310-0101-000	6-13 - 27	2	
3SAV1034A2	6-5 - 56	1		310-0128-000	6-11 - 37	2	
3SAV1034A2	6-5 - 57	1		310-0278-000	6-7 - 60	56	
3SAV1034A2	6-5 - 58	1		310-0278-000	6-7 -113	8	
3SAV1034A2	6-5 - 59	1		310-0278-000	6-15 - 48	2	
3SAV1034A2	6-5 - 60	1		310-0278-000	6-19 - 34	2	
302-0026-000	6-16 - 49	2		310-0396-000	6-10 - 3	7	
302-0638-020	6-16 - 17	4		310-0396-000	6-10 - 14	1	
302-22	6-3 - 26	1		310-0398-000	6-16 -135A	23	
302-2300-000	6-4 - 79A	12		310-0447-000	6-12 - 6D	1	
302-2300-000	6-13 - 12	1		310-0550-000	6-10 - 18	1	
302-2300-000	6-13 - 31	2		310-6320-000	6-14 - 36	4	
302-2300-000	6-13 - 34	1		310-6340-000	6-16 - 46	4	
305-0043-000	6-3 -109	4		310-6340-000	6-16 -146D	2	
305-0044-000	6-11 - 46	2		313-0140-000	6-13 - 36	2	
305-0048-000	6-11 - 36	1		313-0166-000	6-10 - 16	1	
305-0391-000	6-17 - 12	1		323-0254-000	6-11 - 58	1	
305-2043-000	6-5 -108	4		328-0367-000	6-16 - 31	2	
305-2043-000	6-7 -127	4		328IL1-203	6-10 - 15	1	
310-0045-000	6-16 - 28E	1		330-2113-000	6-14 - 3	4	
310-0045-000	6-16 - 80	1		330-2113-000	6-14 - 10	5	
310-0053-000	6-10 - 75A	2		330-2246-000	6-14 - 68	3	
310-0053-000	6-10 - 78A	2		334-0043-000	6-7 - 72	56	
310-0054-000	6-18 - 14	1		340-0641-000	6-11 - 76	4	
310-0055-000	6-5 - 34	8		340-0641-000	6-12 - 4	4	
310-0055-000	6-12 - 6C	1		340-0642-000	6-18 - 6	4	
310-0055-000	6-13 - 10A	4		3457 1-4	6-12 - 16	2	
310-0055-000	6-16 - 40	1		3457 7-16	6-12 - 17	2	
310-0070-000	6-7 - 83	2		4L2FF	6-18 - 37	2	
310-0070-000	6-7 - 98	1		40C73A1	6-4 - 9	1	
310-0070-000	6-7 -103	1		40C73A1	6-4 - 16	1	
310-0070-000	6-7 -114	2		4007-4	6-19 - 41	1	
310-0070-000	6-14 - 14B	4		4007-4HOTTINNED	6-5 - 32	4	
310-0070-000	6-14 - 35	4		4007-4HOTTINNED	6-7 - 95	1	
310-0070-000	6-14 - 42	1		4007-4HOTTINNED	6-15 - 47	1	
310-0070-000	6-15 - 4	3		4040-2	6-18 - 99	1	
310-0070-000	6-15 - 31	1		4040-2HOTTINNED	6-5 - 55	1	
310-0074-000	6-12 - 12	3		4040-2HOTTINNED	6-5 - 99	1	
310-0074-000	6-12 - 42	2		4040-2HOTTINNED	6-7 - 96	1	
310-0074-000	6-12 - 58	4		4040-2HOTTINNED	6-7 -102	3	
310-0074-000	6-12 - 66	2		4040-2HOTTINNED	6-8 -107	8	
310-0074-000	6-18 - 98	2		4040-2HOTTINNED	6-9 - 78	8	

PART NUMBER	FIG.- ITEM	TTL REQ	AIRLINE PART NO.	PART NUMBER	FIG.- ITEM	TTL REQ	AIRLINE PART NO.
4040-2HOTTINNED	6-14 - 40	1		546-6126-002	6-3 - 3	1	
4040-2HOTTINNED	6-16 -110	2		546-6126-002	6-5 - 3	1	
4041 7-32HOTTINNED	6-10 - 60	1		546-6126-002	6-7 - 3	2	
4041 7-32HOTTINNED	6-10 - 62	1		546-6127-002	6-3 - 5	1	
41A205	6-14 - 22	1		546-6127-002	6-5 - 5	1	
5-401 1-2	6-12 - 18	2		546-6127-002	6-7 - 5	2	
500-1053-003	6-14 - 14C	4		546-6128-002	6-3 -107	2	
503-4970-001	6-16 - 1	2		546-6128-002	6-5 -107	2	
506-5902-003	6-12 - 52	AR		546-6128-002	6-7 -126	2	
506-5950-003	6-12 - 51	AR		546-6809-002	6-14 - 47	1	
506-6619-002	6-19 - 15	1		547-5305-002	6-16 -141	1	
5100-25C	6-12 - 26	1		547-8177-008	6-5 - 36	16	
5100-25C	6-18 - 31	2		549-0932-003	6-3 - 7	4	
5100-25C	6-18 - 54	1		549-0932-003	6-5 - 7	4	
5100-25C	6-18 - 60	2		549-0932-003	6-7 -105	4	
5100-25C	6-18 -112	1		549-0945-003	6-3 - 8	4	
5100-25C	6-18 -114	1		549-0945-003	6-5 - 8	4	
5100-37C	6-12 - 36	2		549-0945-003	6-7 -106	4	
5105-25C	6-11 - 32	4		549-3913-003	6-16 - 19	1	
5105-25C	6-11 - 43	4		55C23	6-3 - 87	1	
5133-6C	6-11 - 67	1		55C23	6-3 - 88	1	
5133-9C	6-14 - 20	1		55C23	6-5 - 77	1	
522-3447-002	6-1 - 1	1		55C23	6-5 - 81	1	
522-3447-002	6-2 -	REF		55C23	6-9 - 51B	1	
528-0465-000	6-2 - 7	1		55C30	6-9 - 34A	1	
528-0465-000	6-7 -	REF		553-5119-003	6-10 - 10	3	
528-0466-000	6-2 - 21	1		600D127G060DL4	6-7 - 84	1	
528-0466-000	6-15 -	REF		600D127G060DL4	6-7 - 85	1	
528-0467-000	6-2 - 6	1		600D475F150KD4	6-4 - 1	1	
528-0467-000	6-3 -	REF		600D475F150KD4	6-4 - 2	1	
528-0468-000	6-2 - 8	1		600D475F150KD4	6-4 - 43	1	
528-0468-000	6-10 -	REF		600D475F150KD4	6-4 - 44	1	
528-0524-000	6-2 - 12	1		647SP7	6-16 - 86	1	
528-0524-000	6-12 -	REF		647SP7	6-16 - 87	1	
528-0525-000	6-2 - 10	1		68-1660-26	6-3 - 77	2	
528-0525-000	6-11 -	REF		68-1660-26	6-5 - 14	2	
528-0526-000	6-2 - 11	1		68-1660-26	6-5 - 61	10	
528-0526-000	6-11 -	REF		68-1660-26	6-7 -117	2	
540-9003-003	6-14 - 6C	3		68-1660-26	6-7 -120	2	
540-9004-003	6-7 - 80	2		68-1660-26	6-10 - 7	2	
540-9022-003	6-16 -131	1		68-1660-26	6-15 - 27	4	
540-9041-003	6-7 -110	8		68-1660-26	6-15 - 30	2	
540-9049-003	6-11 - 82D	1		68-1660-26	6-16 - 51	2	
541-5949-002	6-11 - 23	4		68-1660-26	6-16 - 55	2	
541-5949-002	6-11 - 23	2		68-1660-26	6-16 - 59	2	
541-5949-002	6-16 - 52	2		68-1660-26	6-16 - 98	2	
541-5949-002	6-16 - 56	2		68-1660-40	6-3 - 27	4	
541-5949-002	6-16 - 60	2		68-1660-40	6-3 - 80	4	
541-5953-002	6-14 - 31	2		68-1660-40	6-16 - 28D	1	
541-5972-002	6-10 - 11	1		68-1660-40	6-16 - 79	1	
541-6017-002	6-16 - 36A	1		68-1660-40	6-16 -146C	2	
541-6029-002	6-15 - 42	4		68NM40	6-11 - 15	1	
541-6503-002	6-17 - 11	1		756-8259-002	6-10 - 73	1	
541-6506-002	6-17 - 14	1		756-8259-002	6-10 - 76	1	
541-6557-002	6-3 -110	2		756-8268-002	6-10 - 64	2	
541-6557-002	6-5 -110	2		756-8294-003	6-10 - 63	1	
541-6557-002	6-7 -128	2		756-8301-003	6-10 - 56	1	
542-7494-003	6-12 - 50	AR		756-8302-003	6-10 - 50	1	
543-4762-002	6-12 - 5	4		757-3416-001	6-3 - 1	1	
543-4762-002	6-18 - 9	4		757-3418-001	6-3 - 97	1	
544-0090-002	6-16 - 29	2		757-3419-001	6-4 - 80	1	

section 6
parts list

PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.	PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.
757-3420-001	6-3 - 95	1		757-4566-001	6-14 - 19	1	
757-3420-001	6-4 -	REF		757-4568-001	6-14 - 38	1	
757-3422-001	6-16 - 15	1		757-4569-001	6-14 - 14	1	
757-3424-001	6-16 - 69	1		757-4571-001	6-14 - 16	1	
757-3428-001	6-15 - 34	1		757-4573-001	6-14 - 48	1	
757-3430-001	6-15 - 49	1		757-5696-001	6-12 - 63	1	
757-3431-001	6-15 - 5	1		757-5697-001	6-12 - 39	1	
757-3432-001	6-15 - 18			757-5698-001	6-11 - 47	1	
757-3435-001	6-10 - 4	1		761-0481-001	6-11 - 23	1	
757-3436-001	6-10 - 67	1		761-0481-001	6-11 - 44	1	
757-3437-001	6-10 - 81	1		761-0482-001	6-11 - 5	1	
757-3438-001	6-10 - 86	1		761-0485-001	6-11 - 2	3	
757-3440-001	6-12 - 19	1		761-0485-001	6-11 - 17	2	
757-3441-001	6-12 - 25	1		761-0486-001	6-11 - 62	1	
757-3442-001	6-12 - 67	1		761-0486-001	6-11 - 62	1	
757-3443-001	6-12 - 40	1		761-0488-001	6-11 - 67A	1	
757-3444-001	6-12 - 64	1		761-0493-001	6-11 - 81	1	
757-3445-001	6-12 - 74	1		761-0494-001	6-11 - 71	1	
757-3446-001	6-12 - 43	1		761-0499-001	6-11 - 67B	1	
757-3447-001	6-12 - 1	1		761-0500-001	6-11 - 65	1	
757-3448-001	6-12 - 61	1		761-0503-001	6-11 - 51	1	
757-3450-001	6-11 - 66	1		761-0503-002	6-11 - 52	1	
757-3451-001	6-11 - 1	1		761-0503-003	6-11 - 53	1	
757-3452-001	6-11 - 83	1		761-0503-004	6-11 - 54	1	
757-3452-002	6-11 - 83	1		761-0504-001	6-11 - 59	1	
757-3453-001	6-11 - 31	1		761-0505-001	6-11 - 35	1	
757-3454-001	6-11 - 8	1		761-0506-001	6-11 - 60	1	
757-3455-001	6-11 - 49	1		761-0507-001	6-11 - 13	1	
757-3457-001	6-11 - 57	1		761-0510-001	6-11 - 68	1	
757-3459-001	6-7 - 123	1		761-0510-001	6-11 - 68	1	
757-3460-001	6-7 - 1	1		761-0517-001	6-15 - 40	4	
757-3461-000	6-8 - 110	1		761-0518-001	6-15 - 45	1	
757-3462-001	6-7 - 108	1		761-0518-001	6-19 - 6	1	
757-3462-001	6-8 -	REF		761-0519-001	6-15 - 20		
757-3463-001	6-9 - 85	1		761-0520-001	6-15 - 9	1	
757-3464-001	6-7 - 109	1		761-0527-001	6-15 - 16	1	
757-3464-001	6-9 -	REF		761-0534-001	6-15 - 38	1	
757-3465-001	6-10 - 9	1		761-0547-001	6-11 - 77	1	
757-3933-001	6-17 - 6	1		761-0547-001	6-11 - 77	1	
757-3934-001	6-17 - 9	1		761-0548-001	6-11 - 80	1	
757-3935-001	6-17 - 10	1		761-0548-001	6-11 - 80	1	
757-3936-001	6-17 - 13	1		761-0549-001	6-11 - 34	1	
757-3937-001	6-17 - 8	4		761-0549-001	6-11 - 45	1	
757-4190-001	6-17 - 2	2		761-0550-001	6-11 - 14	1	
757-4513-001	6-11 - 29	1		761-0550-001	6-11 - 14	1	
757-4513-002	6-11 - 29	1		761-0551-005	6-11 - 56	1	
757-4515-001	6-11 - 62A	1		761-0554-001	6-11 - 39	1	
757-4533-001	6-19 - 1	1		761-0561-001	6-3 - 79	1	
757-4543-001	6-16 - 43	1		761-0563-001	6-3 - 6	1	
757-4544-001	6-16 - 44	1		761-0564-001	6-4 - 87	1	
757-4548-001	6-13 - 1	1		761-0565-001	6-3 - 113	1	
757-4549-001	6-13 - 13	2		761-0587-001	6-10 - 79	1	
757-4551-001	6-13 - 39	1		761-0593-001	6-10 - 72	1	
757-4557-001	6-14 - 17	1		761-0598-001	6-10 - 89	1	
757-4558-001	6-14 - 11	1		761-0599-001	6-10 - 85	1	
757-4559-001	6-14 - 13	1		761-0604-001	6-17 - 4	2	
757-4560-001	6-14 - 8	1		761-0605-001	6-17 - 15	2	
757-4561-001	6-14 - 5	4		761-0607-001	6-17 - 16	1	
757-4562-001	6-14 - 12	1		761-0611-001	6-2 - 13	1	
757-4563-001	6-14 - 4	1		761-0612-001	6-2 - 14	1	
757-4564-001	6-14 - 2	1		761-0613-001	6-2 - 15	1	

PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.	PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.
761-0614-001	6-12 - 98	1		767-0848-001	6-2 - 4	1	
761-0618-001	6-12 - 7	1		767-6912-001	6-16 -147	1	
761-0635-001	6-1 - 2	1		767-6913-001	6-2 - 24	1	
761-0635-001	6-17 -	REF		767-6913-001	6-16 - 0	REF	
761-0638-001	6-12 - 71	1		768-3633-001	6-2 - 23	1	
761-0639-001	6-12 - 72	1		768-3636-001	6-2 - 3	1	
761-0640-001	6-12 - 73	1		768-3702-001	6-2 - 1	1	
761-0641-001	6-12 - 78	1		768-5745-001	6-11 - 82A	1	
761-0642-001	6-12 - 76	12		768-5745-001	6-11 - 82A	1	
761-0644-001	6-12 - 59	1		768-5756-001	6-18 -111	1	
761-0645-001	6-12 - 54	1		768-5757-001	6-18 - 45	1	
761-0646-001	6-12 - 56	1		768-5758-001	6-18 - 56	1	
761-0647-001	6-12 - 31	1		768-5758-001	6-18 - 63	1	
761-0649-001	6-12 - 35	1		768-5760-001	6-18 -108	1	
761-0650-001	6-12 - 27	1		768-5762-001	6-18 - 49	1	
761-0651-001	6-12 - 33	1		768-5764-001	6-18 - 51	1	
761-0652-001	6-12 - 30	1		768-5768-001	6-18 - 55	AR	
761-0653-001	6-12 - 24	1		768-5768-001	6-18 - 61	AR	
761-0654-001	6-12 - 29	1		768-5768-001	6-19 - 16	AR	
761-0655-001	6-12 - 10	1		768-5768-002	6-18 - 55A	AR	
761-0664-001	6-7 -124	1		768-5768-001	6-19 - 26	AR	
761-0664-002	6-7 -125	1		768-5768-003	6-18 - 55B	AK	
761-0667-001	6-7 - 79	1		768-5768-002	6-18 - 61A	AR	
761-0670-001	6-9 - 89	1		768-5768-003	6-18 - 61B	AR	
761-0671-001	6-7 - 6	1		768-5770-001	6-18 -110	1	
761-0673-001	6-7 -130	1		768-5772-001	6-18 -109	1	
761-0674-001	6-8 -114	1		768-5773-001	6-18 -113	1	
761-0680-001	6-16 -101	1		768-5774-002	6-18 - 42	1	
761-0682-001	6-16 -134	1		768-5775-002	6-18 - 58	1	
761-0687-001	6-16 - 66	1		768-5775-002	6-18 - 65	1	
761-0702-001	6-12 - 75	2		768-5778-001	6-18 - 47	1	
761-0705-001	6-12 - 37	1		768-5787-001	6-18 -107	1	
761-0706-001	6-12 - 48	1		768-5789-001	6-18 -115	1	
761-0707-001	6-12 - 70	1		768-5795-001	6-18 - 43	1	
761-0708-001	6-12 - 6	1		768-5816-001	6-19 - 20	1	
761-0711-001	6-16 - 72	1		768-5817-001	6-19 - 18	1	
761-5188-005	6-16 - 20	1		768-5818-001	6-19 - 14	1	
761-5190-001	6-16 - 18	2		768-5821-001	6-19 - 28	1	
761-6204-001	6-2 - 17	1		768-5822-001	6-19 - 29	1	
761-6204-001	6-13 -	REF		768-5823-001	6-19 - 32	1	
761-6205-001	6-2 - 19	1		768-5824-001	6-19 - 9	1	
761-6205-001	6-14 -	REF		772-5721-001	6-11 - 68	1	
761-7085-001	6-14 - 33	1		772-5721-001	6-11 - 68	1	
761-7086-001	6-11 - 40	1		772-5722-001	6-11 - 80	1	
761-7150-001	6-10 - 1	2		772-5722-001	6-11 - 80	1	
761-7226-001	6-14 - 9	1		772-5727-001	6-10 - 45A	1	
761-7227-001	6-14 - 7	1		772-5752-001	6-18 -124	1	
761-7228-001	6-14 - 45	1		772-5753-001	6-18 -125	1	
761-7245-001	6-16 - 89	1		775-4276-001	6-2 - 6	1	
761-7591-001	6-17 - 1A	1		775-4276-001	6-5 -	REF	
763-3290-001	6-12 - 47	1		775-4278-001	6-5 - 17	1	
763-3363-001	6-15 - 1	1		775-4279-001	6-5 - 12	1	
763-3364-001	6-15 - 29	1		775-4280-001	6-5 - 1	1	
763-3365-001	6-15 - 2	1		775-4281-001	6-5 -111	1	
763-4066-001	6-14 - 46	1		775-4285-001	6-5 - 10	1	
763-4067-001	6-14 - 6A	1		775-4285-001	6-6 -	REF	
763F89	6-5 - 41	1		775-4287-001	6-6 - 1	1	
763F89	6-5 - 43	1		775-4288-001	6-6 -104	1	
763H6	6-4 - 68	1		775-4291-001	6-5 - 6	1	
763H6	6-4 - 77	1		775-4355-001	6-15 - 39	1	
767-0528-000	6-17 -	1		777-3508-001	6-2 - 12	1	

PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.	PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.
777-3508-001	6-18 -	REF		850S63Z	6-13 - 6	1	
777-3977-001	6-18 - 27	1		850S80N	6-13 - 15	1	
777-3977-002	6-18 - 28	1		850S80N	6-13 - 16	1	
777-4492-001	6-11 - 59B	1		850S80N	6-13 - 17	1	
777-4492-001	6-11 - 59B	1		850S80N	6-13 - 18	1	
777-4493-001	6-11 - 59A	1		855-502X5V0203Z	6-8 - 40A	1	
777-4493-001	6-11 - 59A	1		855-502X5V0203Z	6-8 - 43	1	
777-4496-001	6-19 - 47	1		855-502X5V0203Z	6-8 - 46A	1	
777-4497-001	6-19 - 44	1		855-502X5V0203Z	6-8 - 61B	1	
777-4498-001	6-19 - 25	1		855-502X5V0203Z	6-8 - 66	1	
777-4500-001	6-2 - 21	1		855-502X5V0203Z	6-8 - 69A	1	
777-4500-001	6-19 -	REF		855-502X5V0203Z	6-8 - 101B	1	
779-2181-001	6-18 - 10	1		855-502X5V0203Z	6-8 - 103A	1	
779-2182-001	6-18 - 30	1		855-502X5V0203Z	6-9 - 17	1	
779-2183-001	6-18 - 39	1		855-502X5V0203Z	6-9 - 17A	1	
779-2184-001	6-18 - 38	1		855-502X5V0203Z	6-9 - 40	1	
779-2185-001	6-18 - 40	1		855-502X5V0203Z	6-9 - 40A	1	
779-2187-001	6-18 - 62	1		855-502X5V0203Z	6-16 - 32B	1	
779-2188-001	6-18 - 36	1		855020A	6-16 - 5	1	
779-2191-001	6-18 - 102	1		855020G	6-16 - 8	1	
779-2195-001	6-18 - 66	1		855029-9	6-16 - 7	1	
779-2196-001	6-18 - 48	1		855029-9	6-16 - 10	1	
779-2200-001	6-18 - 84	1		919-0242-020	6-19 - 37	1	
779-2201-001	6-18 - 1	1		99-012-062-0250	6-11 - 59C	1	
779-2202-001	6-18 - 2	1		99-012-062-0375	6-12 - 28	1	
779-2206-001	6-18 - 71	4		99-012-062-0375	6-18 - 57	1	
779-2206-001	6-18 - 87	4		99-012-062-0375	6-18 - 64	1	
779-2206-001	6-18 - 116	1		99-022-094-0375	6-18 - 35	3	
779-2207-001	6-18 - 23	2		99-022-094-0375	6-18 - 127	3	
779-2207-001	6-18 - 126	1		99-022-094-0375	6-12 - 45	3	
779-2208-001	6-18 - 52	1		99-022-094-0375	6-12 - 69	3	
779-2227-001	6-18 - 15	1		99-022-094-0750	6-12 - 46	4	
779-2228-001	6-18 - 24	1		997F14	6-3 - 59	1	
779-2229-001	6-18 - 11	1		997F14	6-3 - 84	1	
779-2230-001	6-18 - 75	1		997F14	6-3 - 85	1	
779-2231-001	6-18 - 128	1		997F14	6-6 - 13	1	
779-2232-001	6-18 - 53	1		997F14	6-6 - 18	1	
779-2233-001	6-18 - 121	1		997F14	6-8 - 3	1	
779-2234-001	6-18 - 7	1		997F14	6-8 - 13	1	
779-2235-001	6-18 - 33	1		997F14	6-8 - 39	1	
779-2236-001	6-18 - 25	1		997F14	6-8 - 47	1	
779-2237-001	6-18 - 59	1		997F14	6-8 - 65A	1	
779-2238-001	6-18 - 20	1		997F14	6-8 - 82	1	
779-2239-001	6-18 - 19	1		997F14	6-8 - 92	1	
779-2240-001	6-18 - 18	1		997F14	6-9 - 42	1	
790-0346-001	6-18 - 32	1		997F14	6-9 - 47	1	
805-014X5V0103Z	6-3 - 60	1		997F17	6-8 - 13	1	
805-014X5V0103Z	6-7 - 76	1		997F20	6-4 - 38	1	
805-014X5V0103Z	6-7 - 77	1		997F20	6-4 - 49	1	
805-014X5V0103Z	6-7 - 78	1		997H2	6-9 - 20	1	
805-014X5V0103Z	6-7 - 92	1					
805-014X5V0103Z	6-8 - 43	1					
805-014X5V0103Z	6-8 - 46A	1					
805-014X5V0103Z	6-8 - 66	1					
805-014X5V0103Z	6-9 - 17	1					
805-014X5V0103Z	6-9 - 40	1					
850S28Z	6-16 - 33	1					
850S28Z	6-16 - 34	1					
850S63Z	6-13 - 3	1					
850S63Z	6-13 - 4	1					
850S63Z	6-13 - 5	1					

6.3 SYMBOL INDEX

SYMBOL	FIG. - ITEM	PART NUMBER	SYMBOL	FIG. - ITEM	PART NUMBER
A1CR1	6-16 -139	1N645	A1J15	6-16 - 14	101C3100A80
A1CR2	6-16 - 91	1N645	A1K1	6-16 -140	RJ1A26N323
A1CR3	6-16 -105	1N645	A1K2	6-16 - 92	RJ1A26N323
A1CR4	6-16 -106	1N645	A1K3	6-16 - 30	RB1J26N428
A1CR7	6-16 -107	1N645	A1K4	6-16 -140A	RJ1A26N323
A1CR8	6-16 -107A	1N645	A1K5	6-16 - 92B	3SAF1242
A1CR10	6-16 - 24	1N645	A1L1	6-16 - 62	MP206-16B
A1CR11	6-16 -136A	1N645	A1L2	6-16 - 89	761-7245-001
A1CR12	6-16 -107B	1N645	A1L3	6-16 - 32A	2178
A1CR13	6-16 -107C	1N645	A1R1	6-16 -136	RC20GF101K
A1CR14	6-16 -108	1N645	A1R2	6-16 - 87	647SP7
A1CR15	6-16 - 28	1N645	A1R3	6-16 - 86	647SP7
A1CR16	6-16 -139A	1N645	A1R5	6-16 -113A	RC20GF560K
A1CR17	6-16 -123B	1N645	A1T1	6-16 - 64	A14876
A1CR18	6-16 - 92A	1N645	A1XDS1	6-16 - 7	855029-9
A1C1	6-16 -116	BSF18B122	A1XDS2	6-16 - 10	855029-9
A1C2	6-16 -116A	BSF18B122	A2CR1	6-7 - 25	1N645
A1C3	6-16 -117	BSF18B122	A2CR1	6-9 - 50	1N645
A1C4	6-16 -117A	BSF18B122	A2CR2	6-9 - 18	1N645
A1C5	6-16 -118	BSF18B122	A2CR3	6-9 - 54	1N645
A1C6	6-16 -119	BSF18B122	A2CR4	6-7 - 10	1N645
A1C7	6-16 -120	BSF18B122	A2CR5	6-9 - 57	1N645
A1C8	6-16 -120A	BSF18B122	A2CR6	6-9 - 56	1N4003
A1C9	6-16 -121	BSF18B122	A2CR7	6-7 - 24	1N645
A1C10	6-16 -108C	BSF18B122	A2CR7	6-9 - 15	1N645
A1C11	6-16 -123A	BSF18B122	A2CR8	6-7 - 11	1N645
A1C12	6-16 -122	BSF18B122	A2CR9	6-8 -101	1N645
A1C13	6-16 -123	BSF18B122	A2CR10	6-9 - 56A	1N4003
A1C14	6-16 -124	BSF18B122	A2CR11	6-7 - 12	1N645
A1C15	6-16 -124A	BSF18B122	A2CR12	6-8 - 61A	1N645
A1C16	6-16 -125	BSF18B122	A2CR13	6-7 - 19	1N645
A1C17	6-16 -126	BSF18B122	A2CR14	6-7 - 20	1N645
A1C18	6-16 -127	BSF18B122	A2CR15	6-9 - 66	1N645
A1C19	6-16 -126A	BSF18B122	A2CR16	6-9 - 70	1N645
A1C20	6-16 -128	BSF18B122	A2CR17	6-9 - 65	1N645
A1C21	6-16 -129	BSF18B122	A2CR18	6-9 - 67	1N645
A1C22	6-16 -130	BSF18B122	A2CR19	6-9 - 5	1N645
A1C23	6-16 -125A	BSF18B122	A2CR20	6-9 - 6	1N645
A1C24	6-16 -130B	BSF18B122	A2CR21	6-9 - 77	1N645
A1C25	6-16 -130A	BSF18B122	A2CR22	6-7 - 22	1N645
A1C30	6-16 - 88	VY17C271J	A2CR23	6-7 - 21	1N645
A1C31	6-16 - 33	850S28Z	A2CR24	6-9 - 68	1N645
A1C32	6-16 - 34	850S28Z	A2CR25	6-9 - 4	1N645
A1C39	6-16 - 32C	BSF18B122	A2CR26	6-8 - 26	1N645
A1C40	6-16 - 32B	855-502 X5V0203Z	A2CR27	6-8 - 24	1N645
A1DS1	6-16 - 6	MS25237-327	A2CR28	6-7 - 17	1N645
A1DS2	6-16 - 9	MS25237-327	A2CR29	6-8 - 22	1N645
A1FL1	6-16 -114	2JX83A6	A2CR30	6-8 - 90	1N645
A1FL2	6-16 -115	2JX83A6	A2CR31	6-7 - 74	1N645
A1J1	6-16 - 12	MS3112E16-26P	A2CR32	6-7 - 75	1N645
A1J2	6-16 - 11	101C3100A80	A2CR33	6-7 - 93	1N1202
A1J4	6-16 - 50	DDMF-50S	A2CR34	6-7 - 94	1N1202
A1J5	6-16 - 54	DCMF37S	A2CR35	6-8 -100	1N645
A1J6	6-16 - 58	DCMF37S	A2CR36	6-8 - 97	1N973B
A1J7	6-16 - 75	DAM15S	A2CR36	6-8 - 97	1N970B
A1J8	6-16 - 84	DBM25S	A2CR37	6-8 - 87	1N645
A1J9	6-16 - 82	DBM25S	A2CR38	6-9 - 35	1N645
A1J10	6-16 -145	DBM25S	A2CR39	6-8 - 85	1N973B
A1J11	6-16 - 97	DEMF9S	A2CR39	6-8 - 85	1N970B
A1J12	6-16 -100	101C3100A80	A2CR40	6-7 - 42	1N645
A1J13	6-16 -102	UG568U	A2CR41	6-8 - 5	1N645
A1J14	6-16 - 73	DAM15S			

SYMBOL	FIG. - ITEM	PART NUMBER	SYMBOL	FIG. - ITEM	PART NUMBER
A2CR42	6-8 - 6	1N973B	A2CR95	6-9 - 30	1N645
A2CR42	6-8 - 6	1N965B	A2CR96	6-7 - 7A	1N645
A2CR43	6-8 - 21	1N645	A2CR96	6-8 - 70A	1N758A
A2CR44	6-8 - 19	1N645	A2CR97	6-7 - 16	1N645
A2CR45	6-7 - 30	1N645	A2CR97	6-8 - 70B	1N758A
A2CR45	6-8 - 62	1N645	A2CR98	6-8 - 35A	1N645
A2CR46	6-7 - 37	1N645	A2CR99	6-8 - 35B	1N645
A2CR47	6-8 - 23	1N645	A2CR100	6-7 - 32	1N645
A2CR48	6-7 - 36	1N645	A2CR101	6-7 - 7R	1N645
A2CR49	6-7 - 41	1N645	A2CR101	6-7 - 8	1N645
A2CR50	6-8 - 31	1N645	A2CR102	6-8 - 70B	1N758A
A2CR51	6-7 - 34	1N645	A2CR103	6-9 - 50A	1N970B
A2CR52	6-7 - 33	1N645	A2CR104	6-8 - 25A	1N645
A2CR53	6-8 - 25	1N645	A2CR105	6-7 - 13	1N645
A2CR54	6-7 - 9	1N645	A2CR106	6-7 - 18	1N645
A2CR55	6-7 - 39	1N645	A2CR107	6-7 - 38	1N645
A2CR56	6-9 - 16	1N645	A2CR108	6-7 - 14	1N645
A2CR57	6-9 - 69	1N645	A2CR109	6-8 - 50A	1N645
A2CR58	6-9 - 39	1N645	A2CR110	6-8 - 64A	1N645
A2CR59	6-9 - 2	1N645	A2CR111	6-7 - 26	1N645
A2CR60	6-9 - 3	1N645	A2CR112	6-7 - 29	1N645
A2CR61	6-9 - 38	1N645	A2CR113	6-7 - 27	1N645
A2CR62	6-7 - 7	1N645	A2CR114	6-9 - 41A	1N645
A2CR62	6-8 - 72A	1N971B	A2C1	6-8 - 40A	855-502X5V0203Z
A2CR63	6-8 - 54	1N645	A2C2	6-9 - 45	150D395X9060B2
A2CR63	6-8 - 54A	1N645	A2C2	6-9 - 45A	150D395X9075B2
A2CR64	6-8 - 16	1N645	A2C3	6-8 - 69A	855-502X5V0203Z
A2CR65	6-8 - 45A	1N645	A2C4	6-8 - 94	150D475X0035B2
A2CR65	6-8 - 45B	1N645	A2C4	6-9 - 24	150D475X0035B2
A2CR66	6-9 - 76	1N645	A2C5	6-9 - 51	150D537
A2CR67	6-8 - 36	1N645	A2C5	6-9 - 51	150D107X0010R2
A2CR68	6-8 - 92	1N971B	A2C6	6-9 - 17	805-014X5V0103Z
A2CR69	6-8 - 70	1N645	A2C6	6-9 - 17	855-502X5V0203Z
A2CR70	6-7 - 43	1N645	A2C7	6-8 - 44	150D334X0035A2
A2CR71	6-8 - 27	1N645	A2C7	6-8 - 44	150D106X0020B2
A2CR72	6-9 - 12	1N645	A2C8	6-9 - 40	805-014X5V0103Z
A2CR73	6-7 - 30A	1N645	A2C8	6-9 - 40	855-502X5V0203Z
A2CR73	6-8 - 92A	1N645	A2C9	6-9 - 17A	855-502X5V0203Z
A2CR74	6-7 - 15	1N645	A2C10	6-7 - 86	150D476X0035S2
A2CR75	6-9 - 1	1N645	A2C11	6-9 - 31	150D157X0006R2
A2CR76	6-7 - 28	1N645	A2C11	6-9 - 31	150D107X0010R2
A2CR76	6-8 - 68	1N645	A2C12	6-7 - 76	805-014X5V0103Z
A2CR77	6-8 - 1	1N645	A2C13	6-7 - 77	805-014X5V0103Z
A2CR78	6-8 - 56	1N645	A2C14	6-7 - 78	805-014X5V0103Z
A2CR79	6-8 - 69	1N645	A2C15	6-7 - 92	805-014X5V0103Z
A2CR80	6-7 - 31	1N645	A2C16	6-7 - 85	600D127G060DL4
A2CR81	6-8 - 42	1N645	A2C17	6-7 - 84	600D127G060DL4
A2CR82	6-8 - 34	1N758A	A2C18	6-8 - 88	150D395X9060B2
A2CR83	6-8 - 30	1N645	A2C18	6-8 - 88	150D395X9075B2
A2CR84	6-9 - 22	1N758A	A2C19	6-8 - 81	150D105X9060B2
A2CR85	6-9 - 52	1N645	A2C19	6-8 - 81	150D105X0035A2
A2CR85	6-9 - 52A	1N645	A2C20	6-8 - 74	150D395X9060B2
A2CR86	6-7 - 35	1N645	A2C20	6-8 - 74	150D395X9075B2
A2CR87	6-8 - 4	1N758A	A2C21	6-8 - 10	150D105X9060B2
A2CR88	6-9 - 41	1N758A	A2C21	6-8 - 10	150D105X0035A2
A2CR89	6-8 - 33	1N645	A2C22	6-8 - 16A	150D395X9060B2
A2CR90	6-9 - 62A	1N645	A2C22	6-8 - 16A	150D395X9075B2
A2CR91	6-9 - 49	1N645	A2C23	6-8 - 73	150D566X9006B2
A2CR92	6-9 - 27	1N645	A2C23	6-8 - 73	150D396X9010B2
A2CR93	6-7 - 40A	1N645	A2C24	6-8 - 76	150D106X9060R2
A2CR94	6-9 - 37	1N645	A2C24	6-8 - 76	150D156X9050R2

section 6
parts list

SYMBOL	FIG. - ITEM	PART NUMBER	SYMBOL	FIG. - ITEM	PART NUMBER
A2C25	6-8 - 35	150D107X0010R2	A2Q4	6-9 - 19	CB1028
A2C26	6-8 - 49	150D395X9060B2	A2Q5	6-9 - 11	2N1481
A2C26	6-8 - 49	150D395X9075B2	A2Q5	6-9 - 11	2N697
A2C27	6-8 -105	150D395X9060B2	A2Q6	6-9 - 7	2N697
A2C27	6-8 -105	150D395X9075B2	A2Q7	6-9 - 75	2N697
A2C28	6-8 - 11	150D105X9060B2	A2Q8	6-8 - 89	3D1098
A2C28	6-8 - 11	150D105X0035A2	A2Q8	6-8 - 89	CB1028
A2C29	6-8 - 66	805-014X5V0103Z	A2Q9	6-8 - 77	3D1098
A2C29	6-8 - 66	855-502X5V0203Z	A2Q9	6-8 - 77	CB1028
A2C30	6-8 -103A	855-502X5V0203Z	A2Q10	6-8 - 37	3D1098
A2C31	6-8 - 7	150D396X9010B2	A2Q10	6-8 - 37	CB1028
A2C32	6-8 - 50	150D105X9060B2	A2Q11	6-8 - 67	3D1098
A2C33	6-9 - 40A	855-502X5V0203Z	A2Q11	6-8 - 67	CB1028
A2C34	6-7 - 90	196P15452S4	A2Q12	6-8 - 59	3D1098
A2C34	6-7 - 90	118P15402S4	A2Q12	6-8 - 59	CB1028
A2C35	6-7 - 91	196P15452S4	A2Q13	6-8 - 60	3D1098
A2C35	6-7 - 91	118P15402S4	A2Q13	6-8 - 60	CB1028
A2C36	6-8 - 43	805-014X5V0103Z	A2Q14	6-8 - 38	3D1098
A2C36	6-8 - 43	855-502X5V0203Z	A2Q14	6-8 - 38	CB1028
A2C37	6-9 - 51B	55C23	A2Q15	6-8 - 17	CB1028
A2C38	6-8 - 46A	805-014X5V0103Z	A2Q15	6-8 - 17	3D1098
A2C38	6-8 - 46A	855-502X5V0203Z	A2Q16	6-8 -106	3D1098
A2C39	6-9 - 34A	55C30	A2Q16	6-8 -106	CB1028
A2C40	6-8 -101B	855-502X5V0203Z	A2Q17	6-8 -104A	3D1098
A2C41	6-8 - 61B	855-502X5V0203Z	A2Q17	6-8 -104A	CB1028
A2K1	6-7 - 44	3SAF1131	A2RT1	6-9 - 47	997F14
A2K2	6-7 - 45	3SAF1131	A2RT3	6-8 - 65A	997F14
A2K3	6-7 - 46	3SAF1131	A2RT3	6-8 - 92	997F14
A2K4	6-7 - 47	3SAF1131	A2RT4	6-8 - 82	997F14
A2K5	6-7 - 48	3SAF1131	A2RT5	6-8 - 13	997F14
A2K6	6-7 - 49	3SAF1131	A2RT5	6-8 - 13	997F17
A2K7	6-7 - 50	3SAF1131	A2RT6	6-8 - 47	997F14
A2K8	6-7 - 51	3SAF1131	A2RT7	6-9 - 42	997F14
A2K9	6-7 - 52	3SAF1131	A2RT9	6-8 - 39	997F14
A2K10	6-7 - 53	3SAF1131	A2RT10	6-9 - 20	997H2
A2K11	6-7 - 54	3SAF1131	A2RT11	6-8 - 3	997F14
A2K12	6-7 - 55	3SAF1131	A2R1	6-8 - 68	RC07GF153K
A2K13	6-7 - 56	3SAF1131	A2R1	6-9 - 41A	RC07GF472K
A2K14	6-7 - 57	3SAF1131	A2R2	6-9 - 44	RC07GF102K
A2K15	6-7 - 70	3SAF1131	A2R3	6-9 - 48	RC07GF100K
A2K16	6-7 - 70	3SAF1131	A2R4	6-9 - 25	RC20GF272K
A2K17	6-7 - 69	3SAF1131	A2R4	6-9 - 25	RC20GF182K
A2K18	6-7 - 68	3SAF1131	A2R6	6-8 - 71	RC07GF103K
A2K19	6-7 - 67	3SAF1131	A2R6	6-8 - 71	RC07GF183K
A2K20	6-7 - 66	3SAF1131	A2R7	6-9 - 59	RC07GF100K
A2K21	6-7 - 65	3SAF1131	A2R8	6-9 - 28	RC20GF102K
A2K22	6-7 - 64	3SAF1131	A2R8	6-9 - 28	RC07GF681K
A2K23	6-7 - 63	3SAF1131	A2R10	6-9 - 60	RC07GF272K
A2K24	6-7 - 62	3SAF1131	A2R10	6-9 - 60	RC07GF103K
A2K25	6-7 - 61	3SAF1131	A2R11	6-9 - 32	RC07GF183K
A2K26	6-7 - 60	3SAF1131	A2R12	6-8 - 78	RC07GF183K
A2K27	6-7 - 59	3SAF1131	A2R12	6-8 - 78	RC07GF821K
A2K28	6-7 - 58	3SAF1131	A2R13	6-9 - 58	RC07GF392K
A2P1	6-7 -116	DDM50P	A2R14	6-9 - 53	RC07GF124K
A2P2	6-7 -119	DCM37P	A2R14	6-9 - 53	RC07GF154K
A2Q1	6-9 - 46	3D1098	A2R14	6-9 - 53	RC07GF104K
A2Q1	6-9 - 46	CB1028	A2R14	6-9 - 53	RC07GF164J
A2Q2	6-9 - 33	3D1098	A2R15	6-9 - 24	RC07GF334K
A2Q2	6-9 - 33	CB1028	A2R15	6-9 - 50B	RC07GF334K
A2Q3	6-9 - 29	2N697	A2R15	6-9 - 50B	RC07GF104K
A2Q4	6-9 - 19	3D1098	A2R16	6-8 - 32	RC07GF220K

SYMBOL	FIG. - ITEM	PART NUMBER	SYMBOL	FIG. - ITEM	PART NUMBER
A2R17	6-8 - 96	RC07GF472K	A2R41	6-8 - 80	RC07GF622J
A2R18	6-9 - 21	RC07GF472K	A2R41	6-8 - 80	RC07GF682J
A2R19	6-8 - 101A	RC07GF272K	A2R41	6-8 - 80	RC07GF752J
A2R20	6-9 - 14A	RC07GF272K	A2R42	6-8 - 99	RC07GF101K
A2R20	6-9 - 14A	RW69V561	A2R42	6-8 - 79	RC07GF562K
A2R20	6-9 - 14A	RC20GF182K	A2R44	6-8 - 51	RC07GF273K
A2R21	6-9 - 61	RW69V180	A2R45	6-8 - 9	RC07GF472K
A2R21	6-9 - 61	RW69V181	A2R46	6-8 - 8	RC07GF472K
A2R21	6-9 - 61	RC07GF272K	A2R47	6-8 - 15	RC07GF182J
A2R22	6-9 - 13	RC07GF101K	A2R47	6-8 - 15	RC07GF202J
A2R22	6-9 - 13	RC07GF681K	A2R47	6-8 - 15	RC07GF222J
A2R23	6-9 - 71	RC20GF182K	A2R47	6-8 - 15	RC07GF242J
A2R24	6-9 - 9	RC07GF272K	A2R47	6-8 - 15	RC07GF272J
A2R25	6-9 - 8	RC07GF681K	A2R47	6-8 - 15	RC07GF302K
A2R26	6-9 - 72	RC20GF182K	A2R47	6-8 - 15	RC07GF332J
A2R27	6-9 - 73	RC07GF272K	A2R47	6-8 - 15	RC07GF362J
A2R28	6-9 - 74	RC07GF681K	A2R47	6-8 - 15	RC07GF392J
A2R30	6-9 - 36	RC07GF103K	A2R47	6-8 - 15	RC07GF432J
A2R31	6-8 - 40	RC07GF183K	A2R47	6-8 - 15	RC07GF472J
A2R32	6-9 - 52	RC07GF122K	A2R47	6-8 - 15	RC07GF512J
A2R32	6-8 - 20	RC07GF273K	A2R47	6-8 - 15	RC07GF562J
A2R33	6-8 - 98	RC07GF472K	A2R48	6-9 - 34	RC07GF220K
A2R34	6-8 - 95	RC07GF182J	A2R49	6-8 - 14	RC07GF562K
A2R34	6-8 - 95	RC07GF202J	A2R49	6-8 - 14	RC07GF561K
A2R34	6-8 - 95	RC07GF222J	A2R50	6-8 - 52	RC07GF394K
A2R34	6-8 - 95	RC07GF242J	A2R51	6-8 - 58	RC07GF562K
A2R34	6-8 - 95	RC07GF272J	A2R52	6-8 - 102A	RC07GF123K
A2R34	6-8 - 95	RC07GF302K	A2R53	6-8 - 53	RC07GF683K
A2R34	6-8 - 95	RC07GF332J	A2R54	6-8 - 61	RC07GF100K
A2R34	6-8 - 95	RC07GF362J	A2R55	6-8 - 91	RC07GF183K
A2R34	6-8 - 95	RC07GF392J	A2R55	6-8 - 91	RC07GF821K
A2R34	6-8 - 95	RC07GF432J	A2R56	6-7 - 87	RC07GF561K
A2R34	6-8 - 95	RC07GF472J	A2R57	6-8 - 65	RC07GF273K
A2R34	6-8 - 95	RC07GF512J	A2R58	6-8 - 63	RC07GF103K
A2R34	6-8 - 95	RC07GF562J	A2R59	6-8 - 64	RC07GF472K
A2R34	6-8 - 95	RC07GF622J	A2R60	6-7 - 89	RW69V821
A2R34	6-8 - 95	RC07GF682J	A2R61	6-8 - 103	RC07GF100K
A2R34	6-8 - 95	RC07GF752J	A2R62	6-9 - 26	RC07GF272K
A2R34	6-8 - 95	RC07GF822J	A2R63	6-9 - 23	RC07GF220K
A2R35	6-8 - 93	RC07GF562K	A2R65	6-9 - 10	RC07GF562K
A2R35	6-8 - 93A	RC07GF101K	A2R66	6-8 - 29	RC07GF153K
A2R36	6-8 - 28	RC07GF273K	A2R66	6-8 - 29	RC07GF392K
A2R36	6-8 - 28A	RC07GF123K	A2R69	6-8 - 99	RC07GF100K
A2R37	6-8 - 86	RC07GF330K	A2R69	6-9 - 22A	RC07GF100K
A2R38	6-8 - 84	RC07GF472K	A2R70	6-7 - 88	RW69V821
A2R39	6-8 - 72	RC07GF683K	A2R71	6-8 - 12	RC07GF183K
A2R40	6-8 - 83	RC07GF472K	A2R71	6-8 - 12	RC07GF182K
A2R41	6-8 - 80	RC07GF182J	A2R74	6-8 - 55	RC07GF394K
A2R41	6-8 - 80	RC07GF202J	A2R75	6-8 - 2	RC07GF393K
A2R41	6-8 - 80	RC07GF222J	A2R75	6-8 - 2	RC07GF473K
A2R41	6-8 - 80	RC07GF242J	A2R76	6-8 - 45	RC07GF223K
A2R41	6-8 - 80	RC07GF272J	A2R77	6-8 - 48	RC07GF392K
A2R41	6-8 - 80	RC07GF822J	A2R78	6-8 - 45A	RC07GF223K
A2R41	6-8 - 80	RC07GF302K	A2R78	6-8 - 46	RC07GF273K
A2R41	6-8 - 80	RC07GF332J	A2R80	6-8 - 57	RC20GF562K
A2R41	6-8 - 80	RC07GF362J	A2R81	6-8 - 41	RC07GF100K
A2R41	6-8 - 80	RC07GF392J	A2R82	6-7 - 23	RC07GF271K
A2R41	6-8 - 80	RC07GF432J	A2R83	6-9 - 51A	RW69V180
A2R41	6-8 - 80	RC07GF472J	A2R83	6-8 - 20A	RC07GF220K
A2R41	6-8 - 80	RC07GF512J	A2R84	6-8 - 47A	RC07GF223K
A2R41	6-8 - 80	RC07GF562J	A2T1	6-8 - 102	DH226

section 6
parts list

SYMBOL	FIG. - ITEM	PART NUMBER	SYMBOL	FIG. - ITEM	PART NUMBER
A2T1	6-8 -102	JH485	A3C5	6-5 - 85	150D156X0035R2
A2T2	6-8 -104	DH226	A3C6	6-4 - 9	CK05CW102M
A2T2	6-8 -104	JH485	A3C6	6-4 - 9	CK60AW152M
A3CR1	6-3 - 10	1N645	A3C6	6-4 - 9	40C73A1
A3CR1	6-6 - 90	1N645	A3C6	6-5 - 71	150D156X0035R2
A3CR2	6-3 - 11	1N645	A3C7	6-4 - 10	150D336X0010B2
A3CR2	6-6 - 15	1N645	A3C7	6-6 - 93	150D156X0020B2
A3CR3	6-3 - 12	1N645	A3C8	6-4 - 74	150D336X0010B2
A3CR3	6-6 - 16	1N645	A3C8	6-4 - 74	150D226X0015B2
A3CR4	6-3 - 13	1N645	A3C8	6-5 - 75	150D474X0035A2
A3CR4	6-6 - 88	1N645	A3C9	6-4 - 12	150D154X0035A2
A3CR5	6-4 - 28	1N754A	A3C9	6-5 - 82	150D474X0035A2
A3CR5	6-5 - 63	1N645	A3C10	6-4 - 6	150D475X0010A2
A3CR6	6-4 - 59	1N754A	A3C10	6-5 - 72	150D474X0035A2
A3CR6	6-5 - 64	1N645	A3C11	6-4 - 5	150D472X9035A2
A3CR7	6-4 - 73	1N3024B	A3C11	6-5 - 66	150D104X0035A2
A3CR7	6-5 - 19	1N756A	A3C12	6-4 - 69	151D284X9035W2
A3CR8	6-3 - 86	1N645	A3C12	6-4 - 69	150D274X9035A2
A3CR8	6-5 - 18	1N756A	A3C12	6-6 - 43	192P1035R8
A3CR9	6-3 - 83	1N645	A3C13	6-4 - 43	600D475F150KD4
A3CR9	6-5 - 21	1N645	A3C13	6-4 - 43	150D335X9100R0
A3CR10	6-3 - 61	1N756A	A3C13	6-4 - 43	CL25BQ04OSP3
A3CR10	6-5 - 87	1N645	A3C13	6-6 - 79	192P1035R8
A3CR11	6-3 - 62	1N756A	A3C14	6-4 - 2	150D335X9100R0
A3CR11	6-5 - 51	1N645	A3C14	6-4 - 2	600D475F150KD4
A3CR12	6-3 - 40	1N758A	A3C14	6-4 - 2	CL25BQ04OSP3
A3CR12	6-5 - 52	1N645	A3C14	6-6 - 70	150D104X0035A2
A3CR13	6-3 - 69	1N645	A3C15	6-4 - 16	CK05CW102M
A3CR13	6-5 - 53	1N645	A3C15	6-4 - 16	40C73A1
A3CR14	6-3 - 70	1N645	A3C15	6-6 - 75	CK14AX103M
A3CR14	6-5 - 54	1N645	A3C16	6-4 - 15	150D336X0010B2
A3CR15	6-3 - 81	1N645	A3C16	6-6 - 96	150D336X0010B2
A3CR15	6-6 - 46	1N955B	A3C17	6-4 - 71	150D336X0010B2
A3CR16	6-3 - 82	1N645	A3C17	6-4 - 71	150D226X0015B2
A3CR16	6-6 - 7	1N3024B	A3C17	6-6 - 77	150D106X0020B2
A3CR16	6-6 - 7	UZ715	A3C18	6-4 - 13	150D154X0035A2
A3CR17	6-3 - 14	1N645	A3C18	6-6 - 87	150D475X9010A2
A3CR17	6-6 - 97	1N645	A3C19	6-4 - 19	150D475X0010A2
A3CR18	6-3 - 15	1N645	A3C19	6-6 - 10	CS138J823K
A3CR18	6-6 - 72	1N645	A3C20	6-4 - 20	150D472X9035A2
A3CR19	6-3 - 40A	1N645	A3C20	6-6 - 84	CK14AX103M
A3CR19	6-3 - 40B	1N645	A3C21	6-4 - 1	600D475F150KD4
A3CR19	6-6 - 92	1N645	A3C21	6-4 - 1	150D335X9100R0
A3CR20	6-4 - 9A	1N645	A3C21	6-4 - 1	CL25BQ04OSP3
A3CR20	6-6 - 99	1N645	A3C21	6-6 - 19	CK14AX103M
A3CR21	6-4 - 15A	1N645	A3C22	6-4 - 44	600D475F150KD4
A3CR21	6-6 - 65	1N645	A3C22	6-4 - 44	150D335X9100R0
A3CR22	6-6 - 91	1N645	A3C22	6-4 - 44	CL25BQ04OSP3
A3CR23	6-5 - 22	1N645	A3C22	6-5 - 79	150D335X9100R0
A3C1	6-3 - 52	150D104X0035A2	A3C23	6-3 - 33	150D154X0035A2
A3C1	6-5 - 81	55C23	A3C23	6-4 - 6A	150D156X0020B2
A3C2	6-3 - 55	150D154X0035A2	A3C23	6-5 - 25	150D335X9100R0
A3C2	6-3 - 55	150D474X0035A2	A3C24	6-3 - 37	150D154X0035A2
A3C2	6-6 - 5	150D154X0035A2	A3C23	6-5 - 25	150D335X9100R2
A3C3	6-3 - 49	150D154X0035A2	A3C24	6-6 - 86	192P47292
A3C3	6-3 - 49	150D474X0035A2	A3C25	6-3 - 87	55C23
A3C3	6-6 - 9	150D154X0035A2	A3C25	6-6 - 68	150D104X0035A2
A3C4	6-3 - 43	150D104X0035A2	A3C26	6-3 - 88	55C23
A3C4	6-5 - 77	55C23	A3C26	6-6 - 63	CK14AX102M
A3C5	6-4 - 76	151D284X9035W2	A3C27	6-3 - 29	150D156X0035R2
A3C5	6-4 - 76	150D274X9035A2	A3C27	6-3 - 29A	150D156X0035R2

SYMBOL	FIG. - ITEM	PART NUMBER	SYMBOL	FIG. - ITEM	PART NUMBER
A3C27	6-6 - 100	150D336X001082	A3Q14	6-3 - 35	CB1028
A3C28	6-3 - 30	150D156X0035R2	A3Q14	6-6 - 37	2N956
A3C28	6-3 - 30A	150D156X0035R2	A3Q14	6-6 - 37	2N956
A3C28	6-6 - 61	150D106X0020B2	A3Q15	6-3 - 58	3D1098
A3C29	6-3 - 60	805-014X5V0103Z	A3Q15	6-5 - 31	2N3879
A3C29	6-4 - 6A	150D156X0020B2	A3Q16	6-5 - 30	2N3879
A3C29	6-6 - 80	150D475X9010A2	A3R10	6-3 - 47	RN60D3482F
A3C30	6-3 - 31	150D107X0010R2	A3RT1	6-6 - 13	997F14
A3C30	6-6 - 51	CS13BJ823K	A3RT1	6-4 - 38	997F20
A3C31	6-6 - 29	CK14AX103M	A3RT2	6-6 - 18	997F14
A3C32	6-6 - 36	CK14AX103M	A3RT2	6-4 - 49	997F20
A3C33	6-5 - 78	150D335X9100RO	A3RT3	6-6 - 78	L1215-1K74S7
A3C34	6-5 - 26	150D335X9100RO	A3RT3	6-4 - 77	763H6
A3C34	6-5 - 26	150D335X9100R2	A3RT4	6-5 - 41	763F89
A3C35	6-6 - 81	192P47292	A3RT4	6-4 - 68	763H6
A3G1	6-3 - 26	302-22	A3RT5	6-6 - 59	L1215-1K74S7
A3K1	6-3 - 18	3SAF1131	A3RT5	6-3 - 85	997F14
A3K1	6-5 - 56	3SAV1034A2	A3RT6	6-5 - 43	763F89
A3K2	6-3 - 19	3SAF1131	A3RT6	6-3 - 84	997F14
A3K2	6-5 - 57	3SAV1034A2	A3RT7	6-3 - 59	997F14
A3K3	6-3 - 20	3SAF1131	A3R1	6-5 - 50	RC07GF562K
A3K3	6-5 - 58	3SAV1034A2	A3R1	6-3 - 54	RN60D1002F
A3K4	6-3 - 21	3SAF1131	A3R2	6-5 - 47	RC07GF562K
A3K4	6-5 - 59	3SAV1034A2	A3R2	6-3 - 48	RN60D1002F
A3K5	6-3 - 22	3SAF1131	A3R3	6-5 - 49	RC07GF392K
A3K5	6-5 - 60	3SAV1034A2	A3R3	6-3 - 42	RN60D6812F
A3L1	6-3 - 56	BH855	A3R4	6-3 - 53	RN60D4222F
A3L2	6-3 - 50	BH855	A3R4	6-5 - 48	RC07GF472K
A3P1	6-3 - 76	DCM37P	A3R5	6-3 - 46	RC07GF682K
A3P1	6-5 - 13	DCM37P	A3R5	6-5 - 38	RC07GF472K
A3Q1	6-4 - 25	2N1711	A3R6	6-3 - 45	RN60D4642F
A3Q1	6-6 - 11	CB1028	A3R6	6-5 - 39	RC07GF392K
A3Q2	6-4 - 24	2N1711	A3R7	6-3 - 44	RN60D4222F
A3Q2	6-6 - 20	CB1028	A3R7	6-5 - 27	RC07GF562K
A3Q3	6-4 - 30	2N1711	A3R8	6-3 - 16	RN60D2372F
A3Q3	6-6 - 55	2N4220	A3R8	6-5 - 40	RC07GF562K
A3Q4	6-4 - 32	2N1711	A3R9	6-5 - 23	RC07GF100K
A3Q4	6-6 - 73	SAB5342	A3R10	6-6 - 2	RW69V561
A3Q5	6-4 - 35	2N657A	A3R10	6-6 - 2	RW69V271
A3Q5	6-6 - 6	SAB5342	A3R11	6-3 - 17	RN60D7502F
A3Q6	6-4 - 36	2N657A	A3R11	6-3 - 17	RN60D5112F
A3Q6	6-6 - 17	2N956	A3R11	6-5 - 73	RC07GF222K
A3Q6	6-6 - 17	2N956	A3R12	6-4 - 7	RC07GF105K
A3Q7	6-4 - 64	2N1711	A3R12	6-5 - 84	RN55D1002F
A3Q7	6-6 - 22	2N956	A3R13	6-4 - 75	RC07GF222K
A3Q7	6-6 - 22	2N956	A3R13	6-5 - 83	RN55D4222F
A3Q8	6-4 - 65	2N1711	A3R14	6-4 - 26	RC07GF682K
A3Q8	6-5 - 29	2N3879	A3R14	6-5 - 74	RN55D6812F
A3Q9	6-4 - 57	2N1711	A3R15	6-4 - 29	RC07GF563K
A3Q9	6-5 - 28	2N3879	A3R15	6-5 - 67	RC07GF222K
A3Q10	6-4 - 54	2N1711	A3R16	6-4 - 11	RC07GF562K
A3Q10	6-6 - 58	2N4220	A3R16	6-5 - 70	RN55D1002F
A3Q11	6-4 - 51	2N657A	A3R17	6-4 - 8	RL07S913G
A3Q11	6-6 - 64	SAB5342	A3R17	6-5 - 69	RC07GF682K
A3Q12	6-4 - 52	2N657A	A3R18	6-4 - 23	RL07S161G
A3Q12	6-6 - 60	SAB5342	A3R18	6-5 - 68	RN55D4642F
A3Q13	6-3 - 34	3D1098	A3R19	6-4 - 42	RL07S392G
A3Q13	6-3 - 34	CB1028	A3R19	6-5 - 86	RN55D4222F
A3Q13	6-6 - 40	2N956	A3R20	6-4 - 31	RL07S473G
A3Q13	6-6 - 40	2N956	A3R20	6-5 - 65	RN55D2372F
A3Q14	6-3 - 35	3D1098	A3R21	6-4 - 72	RW69V561

section 6
parts list

SYMBOL	FIG. - ITEM	PART NUMBER	SYMBOL	FIG. - ITEM	PART NUMBER
A3R21	6-5 - 20	RN55D5112F	A3R50	6-4 - 78	RL07S393G
A3R22	6-4 - 41	RW69V391	A3R50	6-6 - 62	RC07GF222K
A3R22	6-6 - 39	RN55D9092F	A3R51	6-3 - 41	RC07GF183K
A3R23	6-4 - 37	RC07GF821K	A3R51	6-6 - 66	RC07GF682K
A3R23	6-6 - 45	RN55D9091F	A3R52	6-3 - 39	RC07GF273K
A3R24	6-4 - 39	RC07GF151K	A3R52	6-3 - 39	RC07GF123K
A3R24	6-6 - 50	RN55D1623F	A3R52	6-6 - 56	RC07GF393K
A3R25	6-4 - 3	RW69V391	A3R53	6-3 - 32	RC07GF472K
A3R25	6-6 - 52	RC07GF104K	A3R53	6-6 - 57	RC07GF270K
A3R26	6-4 - 4	RW69V391	A3R54	6-3 - 36	RC07GF472K
A3R26	6-4 - 4	RC20GF3R9K	A3R54	6-6 - 101	RC07GF562K
A3R26	6-6 - 53	RC07GF104K	A3R55	6-3 - 73	RC07GF392K
A3R27	6-4 - 40	RW69V391	A3R55	6-6 - 54	RC07GF154K
A3R27	6-4 - 40	RC20GF3R9K	A3R56	6-3 - 71	RC07GF392K
A3R27	6-5 - 76	RN55D3482F	A3R56	6-6 - 98	RC07GF273K
A3R28	6-4 - 27	RC07GF182K	A3R57	6-3 - 72	RC07GF562K
A3R28	6-6 - 69	RN55D3832F	A3R57	6-6 - 47	RN55D1003F
A3R29	6-4 - 33	RC07GF101K	A3R58	6-3 - 89	RC07GF822K
A3R29	6-6 - 76	RC07GF222K	A3R58	6-6 - 38	RC07GF182K
A3R30	6-4 - 34	RC07GF101K	A3R59	6-3 - 38	RC07GF100K
A3R30	6-6 - 71	RC07GF682K	A3R59	6-6 - 44	RN55D1620F
A3R31	6-4 - 67	RL07S393G	A3R60	6-3 - 90	RC07GF562K
A3R31	6-6 - 4	RC07GF393K	A3R60	6-6 - 49	RN55D1691F
A3R32	6-4 - 18	RC07GF105K	A3R61	6-3 - 65	RC07GF562K
A3R32	6-6 - 3	RC07GF270K	A3R61	6-6 - 34	RN55D2370F
A3R33	6-4 - 70	RC07GF222K	A3R62	6-3 - 37A	RC07GF220K
A3R33	6-6 - 95	RC07GF562K	A3R62	6-3 - 52B	RC07GF222K
A3R34	6-4 - 63	RC07GF682K	A3R62	6-6 - 82	RN55D1000F
A3R34	6-6 - 8	RC07GF154K	A3R63	6-3 - 52A	RC07GF222K
A3R35	6-4 - 58	RC07GF563K	A3R63	6-6 - 31	RC07GF101K
A3R35	6-6 - 94	RC07GF273K	A3R64	6-6 - 32	RC07GF101K
A3R36	6-4 - 14	RC07GF562K	A3R65	6-6 - 30	RC32GF561K
A3R36	6-6 - 12	RN55D1003F	A3R66	6-6 - 33	RC32GF561K
A3R37	6-4 - 17	RL07S913G	A3R67	6-5 - 42	RS2CR7100K
A3R37	6-6 - 21	RC07GF182K	A3R68	6-5 - 44	RS2CR7100K
A3R38	6-4 - 66	RL07S161G	A3R69	6-6 - 35	RN55D4642F
A3R38	6-6 - 14	RN55D1620F	A3R70	6-5 - 85A	RC07GF103K
A3R39	6-4 - 45	RL07S392G	A3TB1	6-6 - 104	775-4288-001
A3R39	6-6 - 48	RN55D1691F	A3TP1	6-3 - 98	SKT41BRN
A3R40	6-4 - 56	RL07S473G	A3TP1	6-5 - 88	SKT41BRN
A3R40	6-6 - 24	RN55D2370F	A3TP2	6-3 - 99	SKT41RED
A3R41	6-4 - 46	RC42BF822J	A3TP2	6-5 - 89	SKT41RED
A3R41	6-6 - 85	RN55D1000F	A3TP3	6-3 - 100	SKT41ORN
A3R42	6-4 - 50	RC07GF821K	A3TP3	6-5 - 90	SKT41ORN
A3R42	6-6 - 27	RC07GF101K	A3TP4	6-3 - 101	SKT41YEL
A3R43	6-4 - 48	RC07GF151K	A3TP4	6-5 - 91	SKT41YEL
A3R43	6-6 - 26	RC07GF101K	A3TP5	6-4 - 83	SKT41GRN
A3R44	6-4 - 22	RW69V391	A3TP5	6-5 - 92	SKT41GRN
A3R44	6-6 - 28	RC32GF561K	A3TP6	6-4 - 84	SKT41BLU
A3R45	6-4 - 21	RW69V391	A3TP6	6-5 - 93	SKT41BLU
A3R45	6-4 - 21	RC20GF3R9K	A3TP7	6-4 - 85	SKT41VIO
A3R45	6-6 - 25	RC32GF561K	A3TP7	6-5 - 94	SKT41VIO
A3R46	6-4 - 47	RW69V391	A3TP8	6-4 - 86	SKT41GY
A3R46	6-4 - 47	RC20GF3R9K	A3TP8	6-5 - 95	SKT41GY
A3R46	6-5 - 80	RS2CR7100K	A3TP9	6-3 - 102	SKT41WHT
A3R47	6-4 - 62	RC07GF182K	A3TP9	6-5 - 96	SKT41WHT
A3R47	6-5 - 24	RS2CR7100K	A3TP10	6-3 - 103	SKT41BLK
A3R48	6-4 - 55	RC07GF101K	A3TP10	6-5 - 97	SKT41BLK
A3R48	6-6 - 23	RN55D4642F	A3TP11	6-3 - 104	SKT41BRN
A3R49	6-4 - 53	RC07GF101K	A3TP11	6-5 - 98	SKT41BRN
A3R49	6-6 - 67	RN55D3832F	A3T1	6-4 - 61	SP21

SYMBOL	FIG. - ITEM	PART NUMBER	SYMBOL	FIG. - ITEM	PART NUMBER
A3T1	6-5 - 46	JH485	A8L1	6-10 - 45	MS18130-10
A3T2	6-4 - 60	SP21	A8L2	6-10 - 45A	772-5727-001
A3T2	6-5 - 45	JH485	A8L3	6-10 - 30	10178-19
A3T3	6-3 - 67	DH226	A8L5	6-10 - 31	10178-19
A3T3	6-3 - 67	JH485	A8L6	6-10 - 34	MS18130-3
A3T3	6-6 - 89	SP21	A8L7	6-10 - 46	10178-19
A3T4	6-3 - 63	DH226	A8L8	6-10 - 20	10178-19
A3T4	6-3 - 63	JH485	A8L9	6-10 - 25	10178-19
A3T4	6-6 - 83	SP21	A8L10	6-10 - 41	10178-19
A4B1	6-18 - 96	0905-71	A8P1	6-10 - 76	756-8259-002
A4CR1	6-18 - 91	1N4004	A8P2	6-10 - 73	756-8259-002
A4CR2	6-18 - 78	1N4004	A8P3	6-10 - 6	DEM9P
A4CR3	6-18 - 79	1N4004	A8R1	6-10 - 66	MS231-34-8-1PCT
A4L1	6-12 - 74	757-3445-001	A8R2	6-10 - 44	RN60C1471F
A4P1	6-12 - 9A	DBM25P	A8R3	6-10 - 65	MS231-19-6-1PCT
A4P1	6-18 - 16	DBM25P	A8R4	6-10 - 39	RN60C1212F
A4S1	6-18 - 92	262332A	A8R5	6-10 - 36	RN60C1212F
A4S1A	6-12 - 15	245578EK	A8R6	6-10 - 22	RN60D9091F
A4S1B	6-12 - 14	244670EK	A8R7	6-10 - 24	RN60D9091F
A5B1	6-11 - 7	2392-115-004	A8R9	6-10 - 15	328IL1-203
A5L1	6-11 - 56	761-0551-005	A8T1 THRU	6-10 - 63	756-8294-003
A5P1	6-11 - 27	DBM25P	A8T3		
A5S1A	6-11 - 22	246023A	A9B1	6-14 - 22	41A205
A5S1B	6-11 - 21	247868A	A9CR1	6-14 - 24	1N645
A6B1	6-11 - 8	757-3454-001	A9CR2	6-14 - 25	1N645
A6S1B	6-11 - 21	247868A	A9CR3	6-14 - 26	1N645
A7	6-15 -	528-0466-000	A9CR4	6-14 - 26A	1N645
A7B1	6-15 - 22	1305-24	A9P1	6-14 - 43	DAM15P
A7B1	6-19 - 23	1305-52	A9R1	6-14 - 1	DCH2HV805-20
A7CR1	6-15 - 12	1N4003	A9S1A	6-14 - 29	246003AA
A7CR2	6-15 - 13	1N4003	A9S1B	6-14 - 28	246004AA
A7C1	6-15 - 11	USL5-500	A9S1C	6-14 - 27	246005AA
A7C1	6-19 - 37	919-0242-020	A9S2	6-14 - 2	757-4564-001
A7P1	6-15 - 43	DAM15P	A10C22	6-13 - 4	850S63Z
A7P1	6-19 - 4	DAM15P	A10C24	6-13 - 6	850S63Z
A7S1	6-15 - 25	MS24547-1	A10C25	6-13 - 17	850S80N
A7S1	6-19 - 11	262333A	A10C26	6-13 - 18	850S80N
A7S2	6-15 - 26	MS24547-1	A10C27	6-13 - 15	850S80N
A4S2	6-18 - 80	262333A	A10C28	6-13 - 16	850S80N
A8CR1	6-10 - 47	USN1N3064	A10C29	6-13 - 23	DA868-60N
A8CR2	6-10 - 32	JAN1N914	A10C29	6-13 - 23	JCSF60-10N386
A8CR3A	6-10 - 37	M9762	A10C34	6-13 - 3	850S63Z
A8CR5	6-10 - 48	SC630	A10C35	6-13 - 5	850S63Z
A8CR6	6-10 - 49	SC630			
A8C1	6-10 - 61	VC20GY			
A8C2	6-10 - 42	UY02820G			
A8C3	6-10 - 43	VK37BW103M			
A8C4	6-10 - 59	VC20GY			
A8C5	6-10 - 33	UY03301J			
A8C6	6-10 - 40	VK37BW103M			
A8C7	6-10 - 38	VK37BW103M			
A8C8	6-10 - 35	VK37BW103M			
A8C9	6-10 - 28	VK37BW103M			
A8C10	6-10 - 29	VK37BW103M			
A8C12	6-10 - 58	UY03100K			
A8C13	6-10 - 57	UY03391J			
A8C14	6-10 - 21	VK37BW103M			
A8C15	6-10 - 23	VK37BW103M			
A8C16	6-10 - 26	VK37BW103M			
A8C17	6-10 - 27	VK37BW103M			
A8L1	6-10 - 45	MS18130-3			

6.4 PARTS LIST

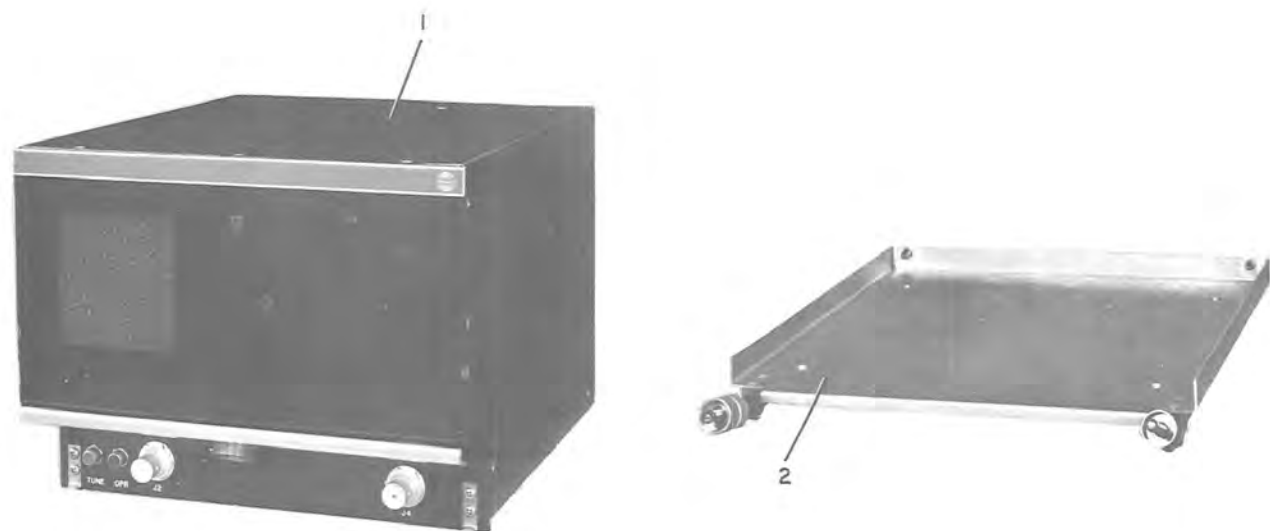


Figure 6-1. 490T-4 Antenna Coupler System.

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-1 -	NO NUMBER	1	490T-4 ANTENNA COUPLER SYSTEM	1	
	1 522-3447-002	2	490T-4 ANTENNA COUPLER SYSTEM SEE FIG. 6-2	1	
	2 761-0635-001	2	790Y-1 SHOCKMOUNT CLAMPING PLATE SEE FIG. 6-17	1	
6-2 -	522-3447-002	1	490T-4 ANTENNA COUPLER SYSTEM SEE FIG. 6-1 FOR NHA	REF	
R	1 768-3702-001	2	COVER, COUPLER P	1	
	- 2 MS51959-14	2	SCREW, MACH., SST, FH, 4-40 X 5/16 342-0045-000 AP	17	
	3 768-3636-001	2	STRIP, IDENT	1	
	4 767-0848-001	2	PLATE, IDENT	1	
	- 5 MS51957-1	2	SCREW, MACH., SST, PAN HD, 2-56 X 1/8 343-0122-000 AP	2	
R	6 528-0467-000	2	AMPLIFIER, ELECTRONIC CONTROL SEE FIG. 6-3 EFF THRU MCN 117	1	

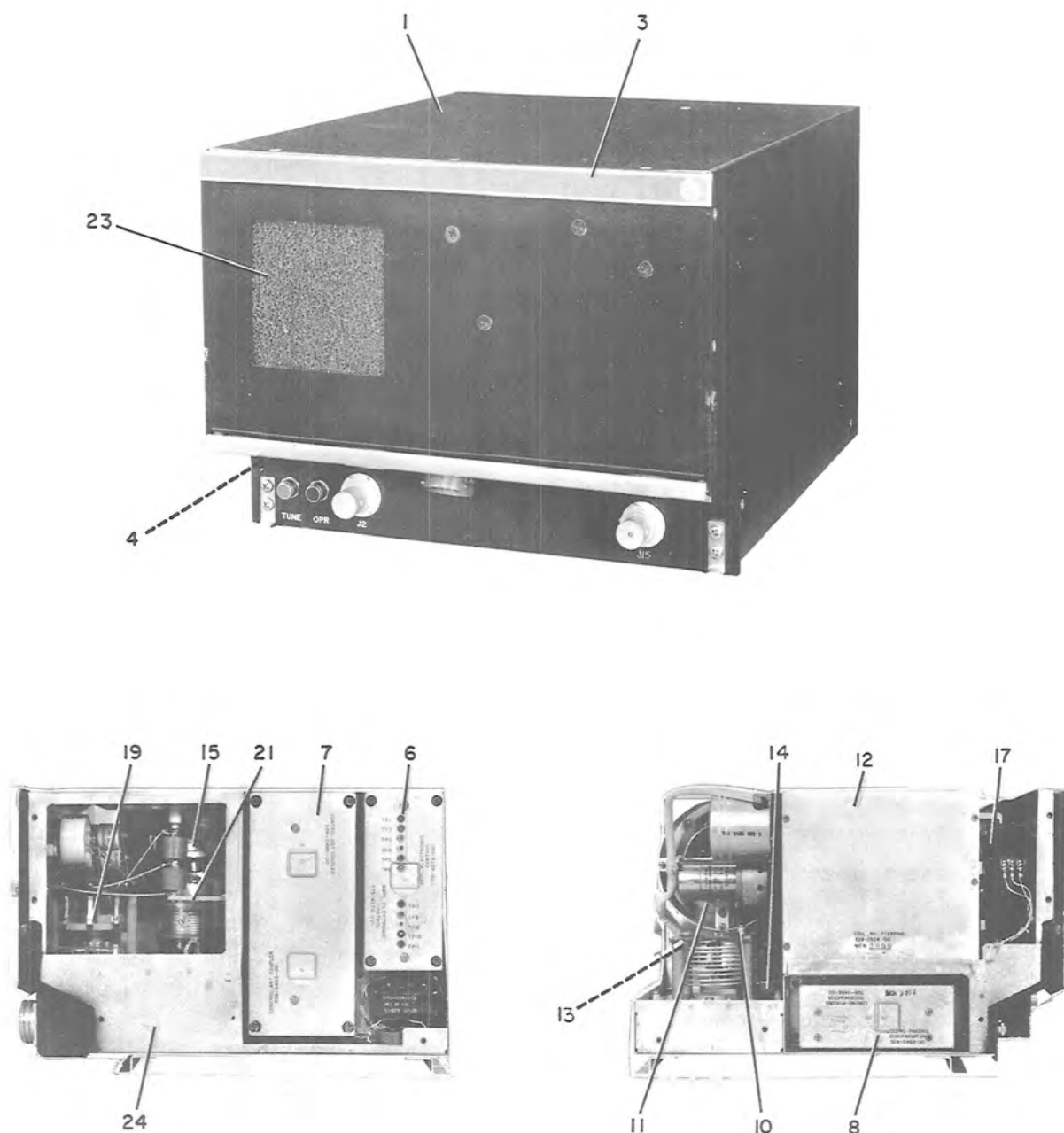
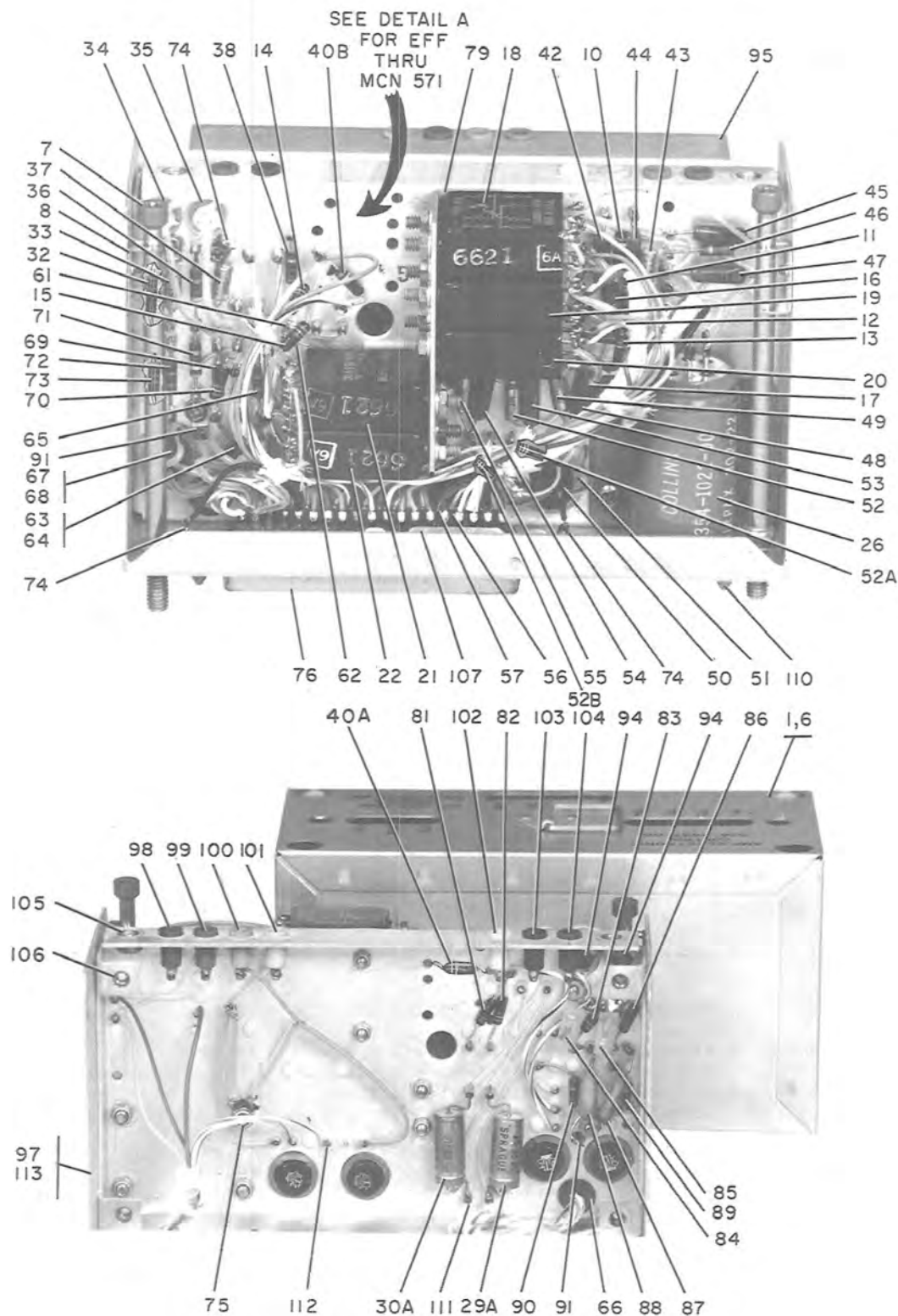


Figure 6-2. 490T-4 Antenna Coupler System.

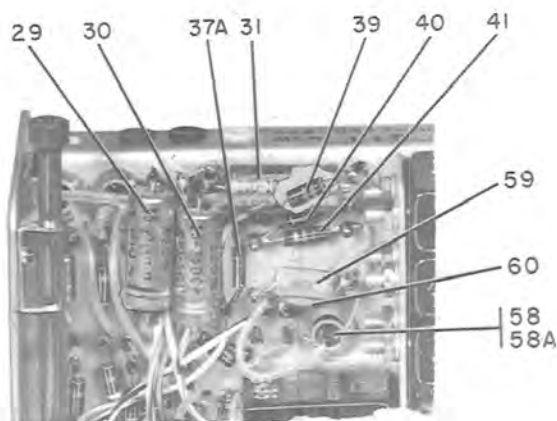
section 6
parts list

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
R 6-2	6 775-4276-001	2	AMPLIFIER, ELECTRONICS CONTROL SEE FIG. 6-5 EFF MCN 118	1	
	7 528-0465-000	2	CONTROL, ANTENNA COUPLER SEE FIG. 6-7	1	
	8 528-0468-000	2	DISCRIMINATOR, LOADING-PHASING SEE FIG. 6-10	1	
-	9 MS51957-13	2	SCREW, MACH., SST, PAN HD, 4-40 X 1/4 343-0133-000 AP	4	
	10 528-0525-000	2	COIL, RF, SERIES SEE FIG. 6-11	1	
	11 528-0526-000	2	COIL, RF, SHUNT SEE FIG. 6-11	1	
R	12 528-0524-000	2	COIL, RF, VARIABLE STEPPING SEE FIG. 6-12 EFF THRU MCN 117	1	
R	12 777-3508-001	2	COIL, RF, VAR STEPPING SEE FIG. 6-18 EFF MCN 118	1	
	13 761-0611-001	2	TERMINAL, WIRE	1	
	14 761-0612-001	2	TERMINAL, WIRE	1	
	15 761-0613-001	2	TERMINAL, WIRE P	1	
-	16 MS51053-112	2	SETSCREW, CAD. PL STL 4-40 X 1/8 328-0371-000 AP FOR 13 THRU 15	4	
	17 761-6204-001	2	CAPACITOR ASSY SEE FIG. 6-13	1	
-	18 MS35198-24	2	SCREW, MACH., BRS, FH, 6-32 X 5/16 342-0922-000 AP	2	
	19 761-6205-001	2	SWITCH, ROTARY SEE FIG. 6-14	1	
-	20 P343-0330-00 O	2	SCREW, MACH., NI PL BRS, PAN HD, 6-32 X 3/8 V77250 343-0330-000 AP	4	
R	21 528-0466-000	2	TUNING DRIVE, CAPACITOR SEE FIG. 6-15 EFF THRU MCN 117	1	
R	21 777-4500-001	2	CAPACITOR, VAR, VACUUM SHUNT SEE FIG. 6-19 EFF MCN 118	1	
-	22 P343-0330-00 O	2	SCREW, MACH., NI PL BRS, PAN HD, 6-32 X 3/8 V77250 343-0330-000 AP	4	
	23 768-3633-001	2	FILTER, AIR P	1	
	24 767-6913-001	2	CHASSIS, ELECTRICAL EQUIP. SEE FIG. 6-16	1	
6-3	- 528-0467-000	1	ELECTRIC CONTROL AMPLIFIER SEE FIG. 6-2-6 FOR NHA	REF	
-	1 757-3416-001	2	COVER, AMPL	1	
-	2 MS51957-27	2	SCREW, MACH., SST, 6-32 X 5/16 343-0168-000 AP	2	
-	3 546-6126-002	3	RETAINER, HANDLE	1	
-	4 R4008X3-32CH ROMATEDP	3	RIVET, TUBULAR, AL, 0.089 DIA X 3/32 12014 305-0169-000 AP	2	
-	5 546-6127-002	3	HANDLE, BAIL	1	
	6 761-0563-001	3	COVER, AMPL P	1	
	7 549-0932-003	2	SCREW, ASSEMBLED WASH.	4	
	8 549-0945-003	2	RETAINER, MTG SCR	4	
-	9 MS51959-1	2	SCREW, MACH., SST, 2-56 X 1/8 342-0131-000 AP	4	
	10 1N645	2	SEMICONV DEVICE 353-2607-000	1	A3CR1
	11 1N645	2	SEMICONV DEVICE 353-2607-000	1	A3CR2
	12 1N645	2	SEMICONV DEVICE 353-2607-000	1	A3CR3
	13 1N645	2	SEMICONV DEVICE 353-2607-000	1	A3CR4
	14 1N645	2	SEMICONV DEVICE 353-2607-000 EFF THRU MCN 179 ONLY	1	A3CR17
	15 1N645	2	SEMICONV DEVICE 353-2607-000 EFF THRU MCN 179 ONLY	1	A3CR18



TPI-3661-017

Figure 6-3. Electronic Control Amplifier (Sheet 1 of 2).



DETAIL A

TPI-3662-017

Figure 6-3. Electronic Control Amplifier (Sheet 2 of 2).

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-3	16	RN60D2372F	2 RESISTOR, FXD, FILM, 23.7K, 1%, 1/4W 705-6662-000	A3R8	1
	17	RN60D7502F	2 RESISTOR, FXD, FILM, 75K, 1%, 1/4W 705-6686-000 EFF THRU MCN 319	A3R11	1
	17	RN60D5112F	2 RESISTOR, FXD, FILM, 51.1K, 1%, 1/4W 705-6678-000 EFF MCN 320	A3R11	1
	18	3SAF1131	2 RELAY 01526 974-0722-000	A3K1	1
	19	3SAF1131	2 RELAY 01526 974-0722-000	A3K2	1
	20	3SAF1131	2 RELAY 01526 974-0722-000	A3K3	1
	21	3SAF1131	2 RELAY 01526 974-0722-000	A3K4	1
	22	3SAF1131	2 RELAY 01526 974-0722-000	A3K5	1
-	23	P313-0156-00 O	2 NUT, PLAIN, HEX., NI PL BRS, 4-40 77250 313-0156-000 AP FOR 18 THRU 22	10	
-	24	MS35338-97	2 WASHER, LOCK, CAD PL BRZ, 0.115 ID, 0.212 OD 310-0095-000 AP FOR 18 THRU 22	10	

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-3 - 25		1	DELETED		
26	302-22	2	CHOPPER 81541 354-1022-000	A3G1	1
- 27	68-1660-40	2	NUT, SELF-LKG, HEX., AL, 4-40 72962 333-0605-000 AP		4
- 28	MS51957-13	2	SCREW, MACH., SST, 4-40 X 1/4 343-0133-000 AP		4
29	150D156X0035 R2	2	CAPACITOR, FXD, ELECTROLYTIC, 15UF, 20%, 35V 56289 184-7414-000 EFF THRU MCN 244	A3C27	1
29A	150D156X0035 R2	2	CAPACITOR, FXD, ELECTROLYTIC, 15UF, 20%, 35V 56289 184-7414-000 EFF MCN 245	A3C27	1
30	150D156X0035 R2	2	CAPACITOR, FXD, ELECTROLYTIC, 15UF, 20%, 35V 56289 184-7414-000 EFF THRU MCN 244	A3C28	1
30A	150D156X0035 R2	2	CAPACITOR, FXD, ELECTROLYTIC, 15UF, 20%, 35V 56289 184-7414-000 EFF MCN 245	A3C28	1
31	150D107X0010 R2	2	CAPACITOR, FXD, ELECTROLYTIC, 100UF, 20%, 10V 56289 184-7651-000 EFF THRU MCN 571 ONLY	A3C30	1
32	RC07GF472K	2	RESISTOR, FXD, COMP, 4.7K, 10%, 1/4W 745-0773-000	A3R53	1
R 33	150D154X0035 A2	2	CAPACITOR, FXD, ELECTROLYTIC, 0.15UF, 20%, 35V 56289 184-7418-000	A3C23	1
34	3D1098	2	SEMICONV DEVICE 08732 353-3537-000 SEE OVERHAUL HISTORY DATA FOR EFF	A3Q13	1
34	CB1028	2	SEMICONV DEVICE 08732 353-3653-010 SEE OVERHAUL HISTORY DATA FOR EFF	A3Q13	1
35	3D1098	2	SEMICONV DEVICE 08732 353-3537-000 SEE OVERHAUL HISTORY DATA FOR EFF	A3Q14	1
35	CB1028	2	SEMICONV DEVICE 08732 353-3653-010 SEE OVERHAUL HISTORY DATA FOR EFF	A3Q14	1
36	RC07GF472K	2	RESISTOR, FXD, COMP, 4.7K, 10%, 1/4W 745-0773-000	A3R54	1
37	150D154X0035 A2	2	CAPACITOR, FXD, ELECTROLYTIC, 0.15UF, 20%, 35V 56289 184-7418-000	A3C24	1
37A	RC07GF220K	2	RESISTOR, FXD, COMP, 22 OHMS, 10%, 1/4W 745-0689-000 SEE OVERHAUL HISTORY DATA FOR EFF	A3R62	1
38	RC07GF100K	2	RESISTOR, FXD, COMP, 10 OHMS, 10%, 1/4W 745-0677-000	A3R59	1

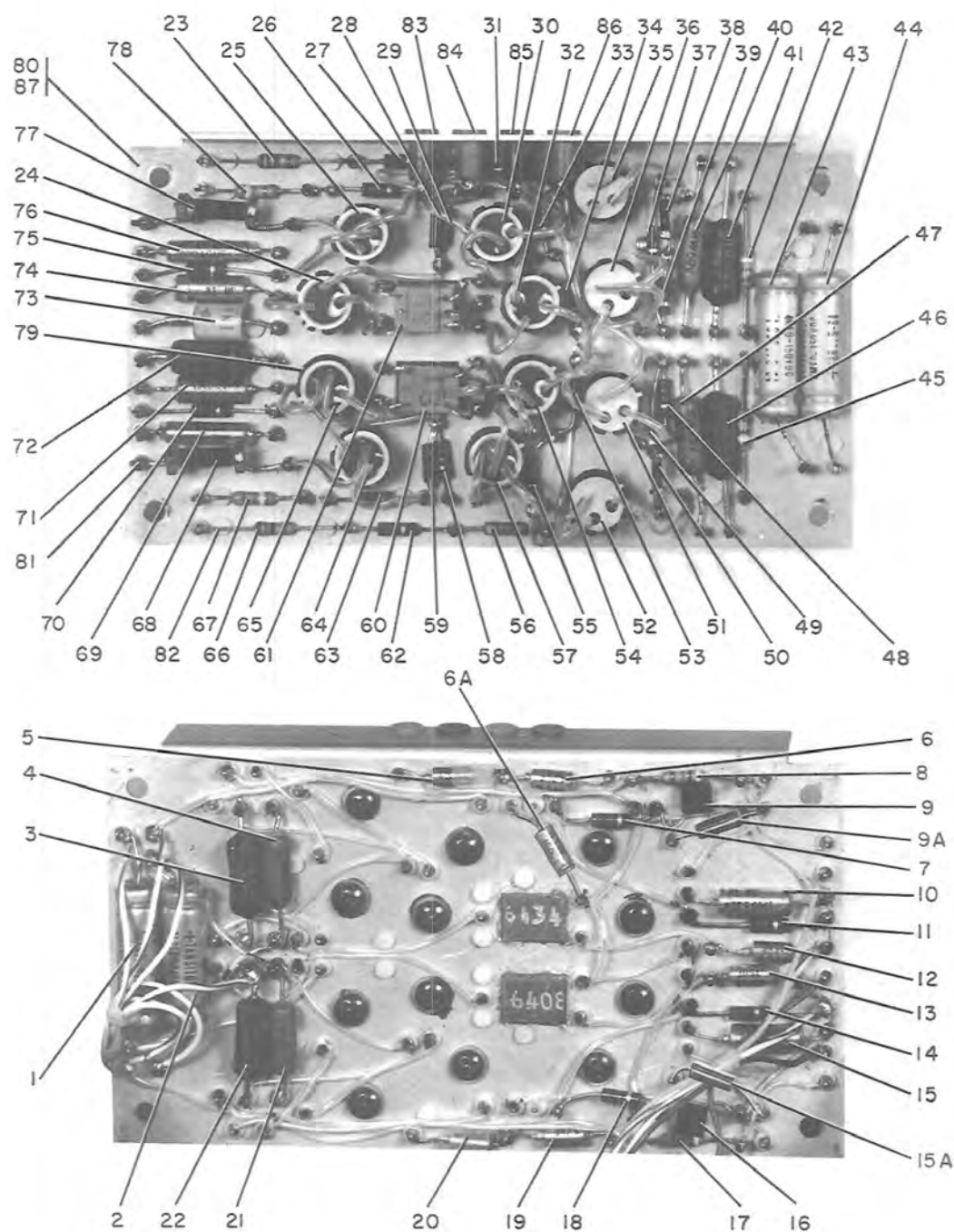
section 6
parts list

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-3	39	RC07GF273K	2 RESISTOR, FXD, COMP, 27K, 10%, 1/4W 745-0800-000 EFF THRU MCN 179	A3R52	1
	39	RC07GF123K	2 RESISTOR, FXD, COMP, 12K, 10%, 1/4W 745-0788-000 EFF MCN 180 THRU 571 ONLY	A3R52	1
	40	1N758A	2 SEMICOND DEVICE 353-2724-000 EFF THRU MCN 571	A3CR12	1
	40A	1N645	2 SEMICOND DEVICE 353-2607-000 EFF MCN 180 THRU 571	A3CR19	1
	40B	1N645	2 SEMICOND DEVICE 353-2607-000 EFF MCN 572	A3CR19	1
	41	RC07GF183K	2 RESISTOR, FXD, COMP, 18K, 10%, 1/4W 745-0794-000 EFF THRU MCN 571 ONLY	A3R51	1
	42	RN60D6812F	2 RESISTOR, FXD, FILM, 68.1K, 1%, 1/4W 705-6684-000	A3R3	1
	43	150D104X0035 A2	2 CAPACITOR, FXD, ELECTROLYTIC, 0.10UF, 20%, 35V 56289 184-7408-000	A3C4	1
	44	RN60D4222F	2 RESISTOR, FXD, FILM, 42.2K, 1%, 1/4W 705-6674-000	A3R7	1
	45	RN60D4642F	2 RESISTOR, FXD, FILM, 46.4K, 1%, 1/4W 705-6676-000	A3R6	1
	46	RC07GF682K	2 RESISTOR, FXD, COMP, 6.8K, 10%, 1/4W 745-0779-000	A3R5	1
	47	RN60D3482F	2 RESISTOR, FXD, FILM, 34.8K, 1%, 1/4W 705-6670-000	A3R10	1
	48	RN60D1002F	2 RESISTOR, FXD, FILM, 10K, 1%, 1/4W 705-6644-000	A3R2	1
	49	150D154X0035 A2	2 CAPACITOR, FXD, ELECTROLYTIC, 0.15UF, 20%, 35V 56289 184-7418-000 EFF THRU MCN 1991	A3C3	1
	49	150D474X0035 A2	2 CAPACITOR, FXD, ELECTROLYTIC, 0.47UF, 20%, 35V 56289 184-7399-000 EFF MCN 1992	A3C3	1
	50	BH855	2 REACTOR, 12HENRIES 80223 678-0060-000 EFF THRU MCN 1991 ONLY	A3L2	1
	51	A51043	2 HOLDER 08289 139-2423-000 EFF THRU MCN 1991 ONLY		1
	52	150D104X0035 A2	2 CAPACITOR, FXD, ELECTROLYTIC, 0.10UF, 20%, 35V 56289 184-7408-000	A3C1	1
	52A	RC07GF222K	2 RESISTOR, FXD, COMP, 2.2K, 10%, 10%, 1/4W 745-0761-000 EFF MCN 1992	A3R63	1
	52B	RC07GF222K	2 RESISTOR, FXD, COMP, 2.2K, 10%, 10%, 1/4W 745-0761-000 EFF MCN 1992	A3R62	1
	53	RN60D4222F	2 RESISTOR, FXD, FILM, 42.2K, 1%, 1/4W 705-6674-000	A3R4	1
	54	RN60D1002F	2 RESISTOR, FXD, FILM, 10K, 1%, 1/4W 705-6644-000	A3R1	1
	55	150D154X0035 A2	2 CAPACITOR, FXD, ELECTROLYTIC, 0.15UF, 20%, 35V 56289 184-7418-000 EFF THRU MCN 1991	A3C2	1
	55	150D474X0035 A2	2 CAPACITOR, FXD, ELECTROLYTIC, 0.47UF, 20%, 35V 56289 184-7399-000 EFF MCN 1992	A3C2	1

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-3	56	BH855	2 REACTOR, 12HENRIES 80223 A3L1	1	
	57	A51043	678-0060-000 EFF THRU MCN 1991	1	
	58	3D1098	2 HOLDER 08289 139-2423-000 EFF THRU MCN 1826 ONLY	1	
	58A	G4-2112	2 SEMICOND DEVICE 08732 A3Q15	1	
	59	997F14	353-3537-000 EFF THRU MCN 571 ONLY	1	
	60	805-014X5V01 03Z	2 HOLDER 15409 352-9939-000 EFF THRU MCN 571 ONLY	1	
	61	1N756A	2 RESISTOR, THRM, 10K, 10%, 1/2W A3RT7	1	
	62	1N756A	10646 714-1738-000 EFF THRU MCN 571 ONLY	1	
	63	DH226	2 CAPACITOR, FXD, CERAMIC A3C29	1	
	63	JH485	DIELECTRIC, 0.01UF, M20%P80%, 100V 72982 913-3680-000 EFF THRU MCN 571	1	
	64	A51043	2 SEMICOND DEVICE 353-2720-000 A3CR10	1	
	65	RC07GF562K	2 SEMICOND DEVICE 353-2720-000 A3CR11	1	
	66	MS35489-1	2 TRANSFORMER 80223 677-1485-000 A3T4	1	
	67	DH226	EFF THRU MCN 1446	1	
	67	JH485	2 TRANSFORMER 80223 677-0300-320 A3T4	1	
	68	A51043	EFF MCN 1447	1	
	69	1N645	2 HOLDER 08289 139-2423-000 EFF EFF THRU MCN 1446 ONLY	1	
	70	1N645	2 RESISTOR, FXD, COMP, 5.6K, 10%, 1/4W 745-0776-000 A3R61	1	
	71	RC07GF392K	2 GROMMET 201-1040-000	1	
	72	RC07GF562K	2 TRANSFORMER 80223 677-1485-000 A3T3	1	
	73	RC07GF392K	EFF THRU MCN 1446	1	
	74	SPL4040-2HOT TINNED	2 TRANSFORMER 80223 677-0300-320 A3T3	1	
	75	SPL4040-4HOT TINNED	EFF MCN 1447	1	
	76	DCM37P	2 HOLDER 08289 139-2423-000	1	
	77	68-1660-26	2 SEMICOND DEVICE 353-2607-000 A3CR13	1	
	78	MS51959-3	2 SEMICOND DEVICE 353-2607-000 A3CR14	1	
	79	761-0561-001	2 RESISTOR, FXD, COMP, 3.9K, 10%, 1/4W 745-0770-000 A3R56	1	
	80	68-1660-40	2 RESISTOR, FXD, COMP, 5.6K, 10%, 1/4W 745-0776-000 A3R57	1	
	80A	FHS440-13	2 RESISTOR, FXD, COMP, 3.9K, 10%, 1/4W 745-0770-000 A3R55	1	
	81	1N645	2 TERMINAL 77147 304-0331-000	4	
	82	1N645	2 TERMINAL 77147 304-0332-000	2	
	83	1N645	2 CONNECTOR 71468 371-0970-000 A3P1	1	
			2 NUT, SELF-LKG, HEX., AL, 2-56 72962 333-0604-000 AP	2	
			2 SCREW, MACH., SST, 2-56 X 1/4 342-0133-000 AP	2	
			2 BRACKET, RELAY	1	
			2 NUT, SELF-LKG, HEX., AL, 4-40 72962 333-0605-000 AP	4	
			2 STUD, CAPTIVE, SST, 4-40 X 3/16 46384 330-2831-000 AP	4	
			2 SEMICOND DEVICE 353-2607-000 A3CR15	1	
			2 SEMICOND DEVICE 353-2607-000 A3CR16	1	
			2 SEMICOND DEVICE 353-2607-000 A3CR9	1	

section 6
parts list

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-3	84	997F14	2 RESISTOR, THRM, 10K, 10%, 1/2W 10646 714-1738-000	A3RT6	1
	85	997F14	2 RESISTOR, THRM, 10K, 10%, 1/2W 10646 714-1738-000	A3RT5	1
	86	1N645	2 SEMICOND DEVICE 353-2607-000	A3CR8	1
	87	55C23	2 CAPACITOR, FXD, CERAMIC DIELECTRIC, 0.05UF, M20%P80%, 50V 56289 913-3885-000	A3C25	1
	88	55C23	2 CAPACITOR, FXD, CERAMIC DIELECTRIC, 0.05UF, M20%P80%, 50V 56289 913-3885-000	A3C26	1
	89	RC07GF822K	2 RESISTOR, FXD, COMP, 8.2K, 10%, 1/4W 745-0782-000	A3R58	1
	90	RC07GF562K	2 RESISTOR, FXD, COMP, 5.6K, 10%, 1/4W 745-0776-000	A3R60	1
R	91	SPL4040-2HOT TINNED	2 TERMINAL 77147 304-0331-000		3
R	- 92	P313-0050-00 O	2 NUT, PLAIN, HEX., NI PL BRS, 2-56 313-0050-000 AP		3
R	- 93	310-0075-000	2 WASHER, LOCK, BRZ, 0.088 ID, 0.165 OD COML AP		3
R	- 93A	MS51957-3	2 SCREW, MACH., SST, 2-56 X 1/4 343-0124-000 AP		3
	94	G4-2112	2 HOLDER 15409 352-9939-000		2
	95	757-3420-001	2 TERMINAL BOARD, ELECTRONIC CONTROL SEE FIG. 1104		1
	- 96	MS51957-13	2 SCREW, MACH., SST, 4-40 X 1/4 343-0133-000 AP		4
	97	757-3418-001	2 CHASSIS, ELECTRICAL EQUIP.		1
	98	SKT41BRN	3 JACK, TIP, BRN 98291 360-0258-000	A3TP1	1
	99	SKT41RED	3 JACK, TIP, RED 98291 360-0259-000	A3TP2	1
	100	SKT41ORN	3 JACK, TIP, ORN 98291 360-0260-000	A3TP3	1
	101	SKT41YEL	3 JACK, TIP, YEL 98291 360-0261-000	A3TP4	1
	102	SKT41WHT	3 JACK, TIP, WHT 98291 360-0266-000	A3TP9	1
	103	SKT41BLK	3 JACK, TIP, BLK 98291 360-0257-000	A3TP10	1
	104	SKT41BRN	3 JACK, TIP, BRN 98291 360-0258-000	A3TP11	1
	105	R12NCFMA1-62	3 NUT, SELF-LKG, CLINCH, CAD PL STL, 6-32 72962 333-0841-000		2
	106	R22NCFMA1-40	3 NUT, PLAIN, CLINCH, CAD PL STL, 4-40 72962 333-0839-000		4
	107	546-6128-002	3 CLIP, SPG TENS		2
-108			1 DELETED		
-109	305-0043-000		3 RIVET, TUBULAR, SIL PL BRS, FH, 0.060 DIA X 3/32 COML AP		4
	110	541-6557-002	3 PIN, LOCATING		2
	111	SL347-322DWH T	3 TERMINAL 12615 306-1532-000		39
	112	SL388-351DWH T	3 TERMINAL 12615 306-1342-000		27
	113	761-0565-001	3 CHASSIS, ELECTRICAL EQUIP. P		1



TP1-3663-017

Figure 6-4. Electronic Control Terminal Board.

section 6
parts list

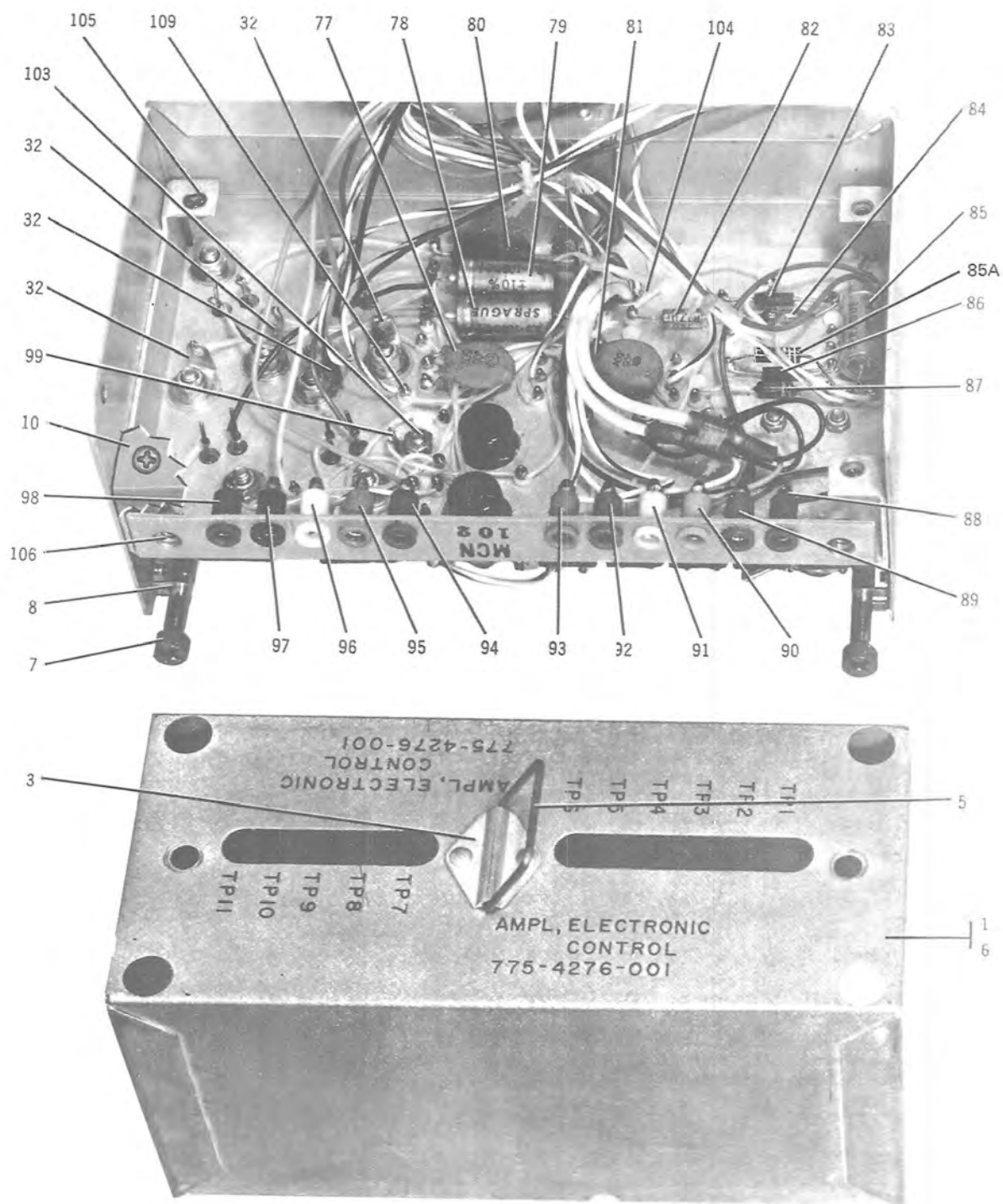
FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-4 -	757-3420-001	1	TERMINAL BOARD, ELECTRONIC CONTROL SEE FIG. 6-3-95 FOR NHA	REF	
	1 CL25BQ040SP3	2	CAPACITOR, FXD, ELECTROLYTIC, 4UF, A3C21 M15%P30%, 150V 184-7247-000 EFF THRU MCN 1691	1	
R	1 600D475F150K D4	2	CAPACITOR, FXD, ELECTROLYTIC, A3C21 4.7UF, M10%P50%, 150V 56289 183-1277-820 EFF MCN 1692 THRU 2953	1	
R	1 150D335X9100 R0	2	CAPACITOR, FXD, ELECTROLYTIC, A3C21 3.3UF, 10%, 100V 56289 184-8999-050 EFF MCN 2954	1	
	2 CL25BQ040SP3	2	CAPACITOR, FXD, ELECTROLYTIC, 4UF, A3C14 M15%P30%, 150V 184-7247-000 EFF THRU MCN 1691	1	
R	2 600D475F150K D4	2	CAPACITOR, FXD, ELECTROLYTIC, A3C14 4.7UF, M10%P50%, 150V 56289 183-1277-820 EFF MCN 1692 THRU 2953	1	
	2 150D335X9100 R0	2	CAPACITOR, FXD, ELECTROLYTIC, A3C14 3.3UF, 10%, 100V 56289 184-8999-050 EFF MCN 2954	1	
	3 RW69V391	2	RESISTOR, FXD, WW, 390 OHMS 5%, 3W A3R25 747-5390-000	1	
	4 RW69V3R9	2	RESISTOR, FXD, WW, 3.9 OHMS, 5%, A3R26 3W 747-5367-000 EFF THRU MCN 1691	1	
	4 RC20GF3R9K	2	RESISTOR, FXD, COMP, 3.9 OHMS, A3R26 10%, 1/2W 745-1540-000	1	
	5 150D472X9035 A2	2	CAPACITOR, FXD, ELECTROLYTIC, A3C11 0.0047UF, 10%, 35V 56289 184-7706-000	1	
	6 150D475X0010 A2	2	CAPACITOR, FXD, ELECTROLYTIC, A3C10 4.7UF, 20%, 10V 56289 184-7379-000	1	
	6A 150D156X0020 B2	2	CAPACITOR, FXD, ELECTROLYTIC, A3C23 15UF, 20%, 20V 56289 184-7371-000 EFF THRU MCN 571	1	
	6A 150D156X0020 B2	2	CAPACITOR, FXD, ELECTROLYTIC, A3C29 15UF, 20%, 20V 56289 184-7371-000 EFF MCN 572	1	
	7 RC07GF105K	2	RESISTOR, FXD, COMP, 1MEGO, 10%, A3R12 1/4W 745-0857-000	1	
	8 RL07S913G	2	RESISTOR, FXD, FILM, 91K, 2%, 1/4W A3R17 745-4358-000	1	
	9 CK05CW102M	2	CAPACITOR, FXD, CERAMIC A3C6 DIELECTRIC, 1000PF, 20%, 200V 913-3989-000 SEE OVERHAUL HISTORY DATA FOR EFF	1	
	9 CK60AW152M	2	CAPACITOR, FXD, CERAMIC A3C6 DIELECTRIC, 1500PF, 20%, 500V 913-1191-000 EFF MCN 1692 OR	1	
	9 40C73A1	2	CAPACITOR, FXD, CERAMIC A3C6 DIELECTRIC, 1000 PF, 20%, 500V 01939 913-3009-000 EFF MCN 1692	1	
	9A 1N645	2	SEMICONV DEVICE 353-2607-000 A3CR20 EFF MCN 180	1	
	10 150D336X0010 B2	2	CAPACITOR, FXD, ELECTROLYTIC, A3C7 33UF, 20%, 10V 56289 184-7382-000	1	
	11 RC07GF562K	2	RESISTOR, FXD, COMP, 5.6K, 10%, A3R16 1/4W 745-0776-000	1	

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-4	12	150D154X0035 A2	2 CAPACITOR, FXD, ELECTROLYTIC, 0.15UF, 20%, 35V 56289 184-7418-000	A3C9	1
	13	150D154X0035 A2	2 CAPACITOR, FXD, ELECTROLYTIC, 0.15UF, 20%, 35V 56289 184-7418-000	A3C18	1
	14	RC07GF562K	2 RESISTOR, FXD, COMP, 5.6K, 10%, 1/4W 745-0776-000	A3R36	1
	15	150D336X0010 B2	2 CAPACITOR, FXD, ELECTROLYTIC, 33UF, 20%, 10V 56289 184-7382-000	A3C16	1
	15A	1N645	2 SEMICOND DEVICE 353-2607-000 EFF MCN 180	A3CR21	1
	16	CK05CW102M	2 CAPACITOR, FXD, CERAMIC DIELECTRIC, 1000PF, 20%, 200V 913-3989-000 SEE OVERHAUL HISTORY DATA FOR EFF	A3C15	1
	16	40C73A1	2 CAPACITOR, FXD, CERAMIC DIELECTRIC, 1000 PF, 20%, 500V 01939 913-3009-000 EFF MCN 1692	A3C15	1
	17	RL07S913G	2 RESISTOR, FXD, FILM, 91K, 2%, 1/4W 745-4358-000	A3R37	1
	18	RC07GF105K	2 RESISTOR, FXD, COMP, 1MEGO, 10%, 1/4W 745-0857-000	A3R32	1
	19	150D475X0010 A2	2 CAPACITOR, FXD, ELECTROLYTIC, 4.7UF, 20%, 10V 56289 184-7379-000	A3C19	1
	20	150D472X9035 A2	2 CAPACITOR, FXD, ELECTROLYTIC, 0.0047UF, 10%, 35V 56289 184-7706-000	A3C20	1
	21	RW69V3R9	2 RESISTOR, FXD, WW, 3.9 OHMS, 5%, 3W 747-5367-000 EFF THRU MCN 1691	A3R45	1
	21	RC20GF3R9K	2 RESISTOR, FXD, COMP, 3.9 OHMS, 10%, 1/2W 745-1540-000 EFF MCN 1692	A3R45	1
	22	RW69V391	2 RESISTOR, FXD, WW, 390 OHMS 5%, 3W 747-5390-000	A3R44	1
	23	RL07S161G	2 RESISTOR, FXD, FILM, 160 OHMS, 2%, 1/4W 745-4193-000	A3R18	1
	24	2N1711	2 TRANSISTOR 352-0400-000	A3Q2	1
	25	2N1711	2 TRANSISTOR 352-0400-000	A3Q1	1
	26	RC07GF682K	2 RESISTOR, FXD, COMP, 6.8K, 10%, 1/4W 745-0779-000	A3R14	1
	27	RC07GF182K	2 RESISTOR, FXD, COMP, 1.8K, 10%, 1/4W 745-0758-000	A3R28	1
	28	1N754A	2 SEMICOND DEVICE 353-2716-000	A3CR5	1
	29	RC07GF563K	2 RESISTOR, FXD, COMP, 56K, 10%, 1/4W 745-0812-000	A3R15	1
	30	2N1711	2 TRANSISTOR 352-0400-000	A3Q3	1
	31	RL07S473G	2 RESISTOR, FXD, FILM, 47K, 2%, 1/4W 745-4340-000	A3R20	1
	32	2N1711	2 TRANSISTOR 352-0400-000	A3Q4	1
	33	RC07GF101K	2 RESISTOR, FXD, COMP, 100 OHMS, 10%, 1/4W 745-0713-000	A3R29	1
	34	RC07GF101K	2 RESISTOR, FXD, COMP, 100 OHMS, 10%, 1/4W 745-0713-000	A3R30	1
	35	2N657A	2 TRANSISTOR 352-0354-000	A3Q5	1
	36	2N657A	2 TRANSISTOR 352-0354-000	A3Q6	1
	37	RC07GF821K	2 RESISTOR, FXD, COMP, 820 OHMS, 10%, 1/4W 745-0746-000	A3R23	1
	38	997F20	2 RESISTOR, THRM, 500 OHMS, 10%, 1/2W 10646 714-1735-000	A3RT1	1

section 6
parts list

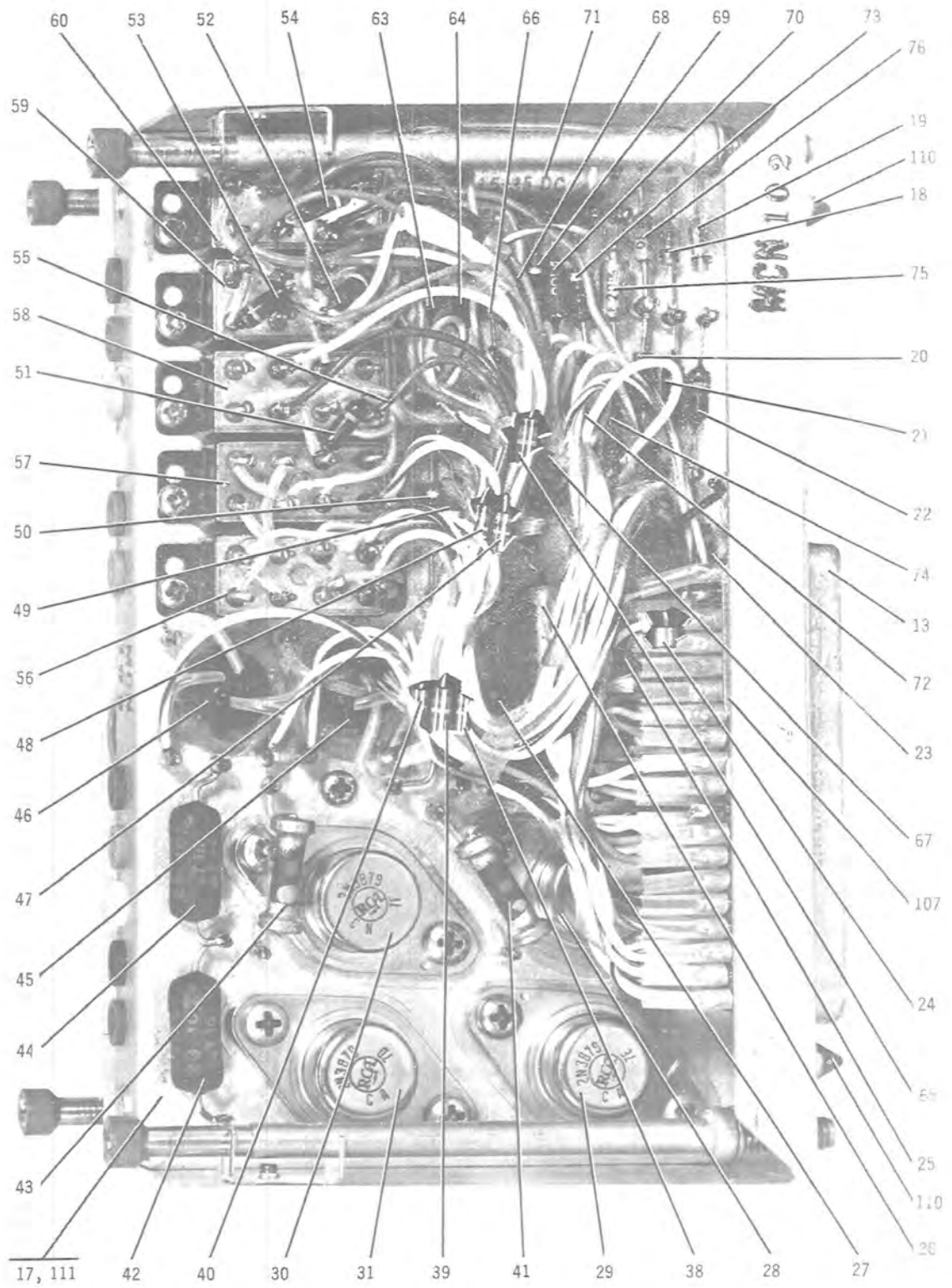
FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-4	39	RC07GF151K	2 RESISTOR, FXD, COMP, 150 OHMS, 10%, 1/4W 745-0719-000	A3R24	1
	40	RW69V3R9	2 RESISTOR, FXD, WW, 3.9 OHMS, 5%, 3W 747-5367-000 EFF THRU MCN 1691	A3R27	1
	40	RC20GF3R9K	2 RESISTOR, FXD, COMP, 3.9 OHMS, 10%, 1/2W 745-1540-000 EFF MCN 1692	A3R27	1
	41	RW69V391	2 RESISTOR, FXD, WW, 390 OHMS 5%, 3W 747-5390-000	A3R22	1
	42	RL07S392G	2 RESISTOR, FXD, FILM, 3.9K, 2%, 1/4W 745-4275-000	A3R19	1
	43	CL25BQ040SP3	2 CAPACITOR, FXD, ELECTROLYTIC, 4UF, M15%P30%, 150V 184-7247-000 EFF THRU MCN 1961	A3C13	1
R	43	600D475F150K D4	2 CAPACITOR, FXD, ELECTROLYTIC, 4.7UF, M10%P50%, 150V 56289 183-1277-820 EFF MCN 1692 THRU 2953	A3C13	1
R	43	150D335X9100 RO	2 CAPACITOR, FXD, ELECTROLYTIC, 3.3UF, 10%, 100V 56289 184-8999-050 EFF MCN 2954	A3C13	1
	44	CL25BQ040SP3	2 CAPACITOR, FXD, ELECTROLYTIC, 4UF, M15%P30%, 150V 184-7247-000 EFF THRU MCN 1961	A3C22	1
R	44	600D475F150K D4	2 CAPACITOR, FXD, ELECTROLYTIC, 4.7UF, M10%P50%, 150V 56289 183-1277-820 EFF MCN 1692 THRU 2953	A3C22	1
R	44	150D335X9100 RO	2 CAPACITOR, FXD, ELECTROLYTIC, 3.3UF, 10%, 100V 56289 184-8999-050 EFF MCN 2954	A3C22	1
	45	RL07S392G	2 RESISTOR, FXD, FILM, 3.9K, 2%, 1/4W 745-4275-000	A3R39	1
	46	RC42BF822J	2 RESISTOR, FXD, COMP, 8.2K, 5%, 2W 745-5390-000	A3R41	1
	47	RW69V3R9	2 RESISTOR, FXD, WW, 3.9 OHMS, 5%, 3W 747-5367-000 EFF THRU MCN 1691	A3R46	1
	47	RC20GF3R9K	2 RESISTOR, FXD, COMP, 3.9 OHMS, 10%, 1/2W 745-1540-000 EFF MCN 1692	A3R46	1
	48	RC07GF151K	2 RESISTOR, FXD, COMP, 150 OHMS, 10%, 1/4W 745-0719-000	A3R43	1
	49	997F20	2 RESISTOR, THRM, 500 OHMS, 10%, 1/2W 10646 714-1735-000	A3RT2	1
	50	RC07GF821K	2 RESISTOR, FXD, COMP, 820 OHMS, 10%, 1/4W 745-0746-000	A3R42	1
	51	2N657A	2 TRANSISTOR 352-0354-000	A3Q11	1
	52	2N657A	2 TRANSISTOR 352-0354-000	A3Q12	1
	53	RC07GF101K	2 RESISTOR, FXD, COMP, 100 OHMS, 10%, 1/4W 745-0713-000	A3R49	1
	54	2N1711	2 TRANSISTOR 352-0400-000	A3Q10	1
	55	RC07GF101K	2 RESISTOR, FXD, COMP, 100 OHMS, 10%, 1/4W 745-0713-000	A3R48	1
	56	RL07S473G	2 RESISTOR, FXD, FILM, 47K, 2%, 1/4W 745-4340-000	A3R40	1
	57	2N1711	2 TRANSISTOR 352-0400-000	A3Q9	1
	58	RC07GF563K	2 RESISTOR, FXD, COMP, 56K, 10%, 1/4W 745-0812-000	A3R35	1
	59	1N754A	2 SEMICOND DEVICE 353-2716-000	A3CR6	1
	60	SP21	2 TRANSFORMER 81095 677-1683-000	A3T2	1
	61	SP21	2 TRANSFORMER 81095 677-1683-000	A3T1	1

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-4	62	RC07GF182K	2 RESISTOR, FXD, COMP, 1.8K, 10%, 1/4W 745-0758-000	A3R47	1
	63	RC07GF682K	2 RESISTOR, FXD, COMP, 6.8K, 10%, 1/4W 745-0779-000	A3R34	1
	64	2N1711	2 TRANSISTOR 352-0400-000	A3Q7	1
	65	2N1711	2 TRANSISTOR 352-0400-000	A3Q8	1
	66	RL07S161G	2 RESISTOR, FXD, FILM, 160 OHMS, 2%, 1/4W 745-4193-000	A3R38	1
	67	RL07S393G	2 RESISTOR, FXD, FILM, 39K, 2%, 1/4W 745-4335-000	A3R31	1
	68	763H6	2 RESISTOR, THRM, 1K, 10%, 1W 10646 714-1732-000	A3RT4	1
	69	151D284X9035 W2	2 CAPACITOR, FXD, ELECTROLYTIC, 0.28UF, 10%, 35V 56289 184-8379-000 EFF THRU MCN 1691	A3C12	1
	69	150D274X9035 A2	2 CAPACITOR, FXD, ELECTROLYTIC, 0.27UF, 10%, 35V 56289 184-7681-000 EFF MCN 1692	A3C12	1
	70	RC07GF222K	2 RESISTOR, FXD, COMP, 2.2K, 10%, 10%, 1/4W 745-0761-000	A3R33	1
	71	150D336X0010 B2	2 CAPACITOR, FXD, ELECTROLYTIC, 33UF, 20%, 10V 56289 184-7382-000 EFF THRU MCN 179	A3C17	1
	71	150D226X0015 B2	2 CAPACITOR, FXD, ELECTROLYTIC, 22UF, 20%, 15V 56289 184-7373-000 EFF MCN 180	A3C17	1
	72	RW69V561	2 RESISTOR, FXD, WW, 560 OHMS, 5%, 3W 747-5355-000	A3R21	1
	73	1N3024B	2 SEMICOND DEVICE 353-3129-000	A3CR7	1
-	74	150D336X0010 B2	2 CAPACITOR, FXD, ELECTROLYTIC, 33UF, 20%, 10V 56289 184-7382-000 EFF THRU MCN 179	A3C8	1
	74	150D226X0015 B2	2 CAPACITOR, FXD, ELECTROLYTIC, 22UF, 20%, 15V 56289 184-7373-000 EFF MCN 180	A3C8	1
	75	RC07GF222K	2 RESISTOR, FXD, COMP, 2.2K, 10%, 10%, 1/4W 745-0761-000	A3R13	1
	76	151D284X9035 W2	2 CAPACITOR, FXD, ELECTROLYTIC, 0.28UF, 10%, 35V 56289 184-8379-000 EFF THRU MCN 1691	A3C5	1
	76	150D274X9035 A2	2 CAPACITOR, FXD, ELECTROLYTIC, 0.27UF, 10%, 35V 56289 184-7681-000 EFF MCN 1692	A3C5	1
	77	763H6	2 RESISTOR, THRM, 1K, 10%, 1W 10646 714-1732-000	A3RT3	1
	78	RL07S393G	2 RESISTOR, FXD, FILM, 39K, 2%, 1/4W 745-4335-000	A3R50	1
	79	TXB2P032-037 3B	2 HOLDER 98978 352-9884-000		12
-	79A	302-2300-000	2 INSULATOR, WASH. 16037		12
	80	757-3419-001	2 TERMINAL BOARD		1
	81	SL388-351DWH T	3 TERMINAL 12615 306-1342-000		74
	82	SL347-322DWH T	3 TERMINAL 12615 306-1532-000		29
	83	SKT41GRN	3 JACK, TIP, GRN 98291 360-0262-000	A3TP5	1
	84	SKT41BLU	3 JACK, TIP, BLU 98291 360-0263-000	A3TP6	1
	85	SKT41VIO	3 JACK, TIP, VIO 98291 360-0264-000	A3TP7	1
	86	SKT41GY	3 JACK, TIP, GY 98291 360-0265-000	A3TP8	1
-	87	761-0564-001	3 TERMINAL BOARD P		1



TPI - 3664 - 017

Figure 6-5. Amplifier, Electronic Control (Sheet 1 of 2).



TPI - 3665 - 017

Figure 6-5. Amplifier, Electronic Control (Sheet 2 of 2).

section 6
parts list

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-5 -	775-4276-001	1	AMPLIFIER SEE FIG. 6-2-6 FOR NHA	REF	
1	775-4280-001	2	COVER, AMPL P	1	
- 2	MS51957-27	2	SCREW, MACH., SST, 6-32 X 5/16 343-0168-000 AP	2	
3	546-6126-002	3	RETAINER, HANDLE	1	
- 4	R4008X3-32CH ROMATEDP	3	RIVET, TUBULAR, AL, 0.089 DIA X 3/32 12014 305-0169-000 AP	2	
5	546-6127-002	3	HANDLE, BAIL	1	
- 6	775-4291-001	3	COVER, AMPL	1	
7	549-0932-003	2	SCREW, ASSEMBLED WASH.	4	
8	549-0945-003	2	RETAINER, MTG SCR	4	
- 9	MS51959-1	2	SCREW, MACH., SST, 2-56 X 1/8 342-0131-000 AP	4	
10	775-4285-001	2	ELECTRONIC COMPONENTS ASSY P SEE FIG. 6-6	1	
- 11	MS51957-13	2	SCREW, MACH., SST, 4-40 X 1/4 343-0133-000 AP	4	
- 12	775-4279-001	2	WIRING HARNESS P	1	
13	DCM37P	3	CONNECTOR 71468 371-0970-000	1	A3P1
- 14	68-1660-26	3	NUT, SELF-LKG, HEX., AL, 2-56 72962 333-0604-000 AP	2	
- 15	SPL4040-2HOT TINNED	3	TERMINAL 77147 304-0331-000 AP	1	
- 16	MS51959-3	3	SCREW, MACH., SST, 2-56 X 1/4 342-0133-000 AP	2	
17	775-4278-001	2	AMPLIFIER, ELECTRONIC CONTROL P	1	
18	1N756A	3	SEMICONV DEVICE 353-2720-000	1	A3CR8
19	1N756A	3	SEMICONV DEVICE 353-2720-000	1	A3CR7
20	RN55D5112F	3	RESISTOR, FXD, FILM, 51.1K, 1%, 1/8W 705-1078-000	1	A3R21
21	1N645	3	SEMICONV DEVICE 353-2607-000	1	A3CR9
22	1N645	3	SEMICONV DEVICE 353-2607-000	1	A3CR23
23	RC07GF100K	3	RESISTOR, FXD, COMP, 10 OHMS, 10%, 1/4W 745-0776-000	1	A3R9
24	RS2CR7100K	3	RESISTOR, FXD, WW, 0.71 OHMS 10%, 3W 91637 747-5132-000	1	A3R47
R	25	150D335X9100 R0	3 CAPACITOR, FXD, ELECTROLYTIC, 3.3UF, 10%, 100V 56289 184-8999-050 EFF TO CI 69503	1	A3C23
R	25	150D335X9100 R2	3 CAPACITOR, FXD, ELECTROLYTIC, 3.3 UF 10%, 100 VDCW 56289 184-9065-550 EFF CI 69503	1	A3C23
R	26	150D335X9100 R0	3 CAPACITOR, FXD, ELECTROLYTIC, 3.3UF, 10%, 100V 56289 184-8999-050 EFF TO CI 69503	1	A3C34
R	26	150D335X9100 R2	3 CAPACITOR, FXD, ELECTROLYTIC, 3.3 UF 10%, 100 VDCW 56289 184-9065-550 EFF CI 69503	1	A3C34
	27	RC07GF562K	3 RESISTOR, FXD, COMP, 5.6K, 10%, 1/4W 745-0776-000	1	A3R7
	28	2N3879	3 TRANSISTOR 352-0704-020	1	A3Q9
	29	2N3879	3 TRANSISTOR 352-0704-020	1	A3Q8
	30	2N3879	3 TRANSISTOR 352-0704-020	1	A3Q16
	31	2N3879	3 TRANSISTOR 352-0704-020	1	A3Q15
R	32	4007-4HOTTIN NED	3 TERMINAL 77147 304-0016-000	4	
R	- 33	P313-0053-00 O	3 NUT, PLAIN, HEX., NI PL BRS, 6-32 77250 313-0053-000	8	
R	- 34	310-0055-000	3 WASHER, FLAT, NI PL BRS, 0.147 ID, 0.312 OD COML AP FOR 27 THRU 32	8	

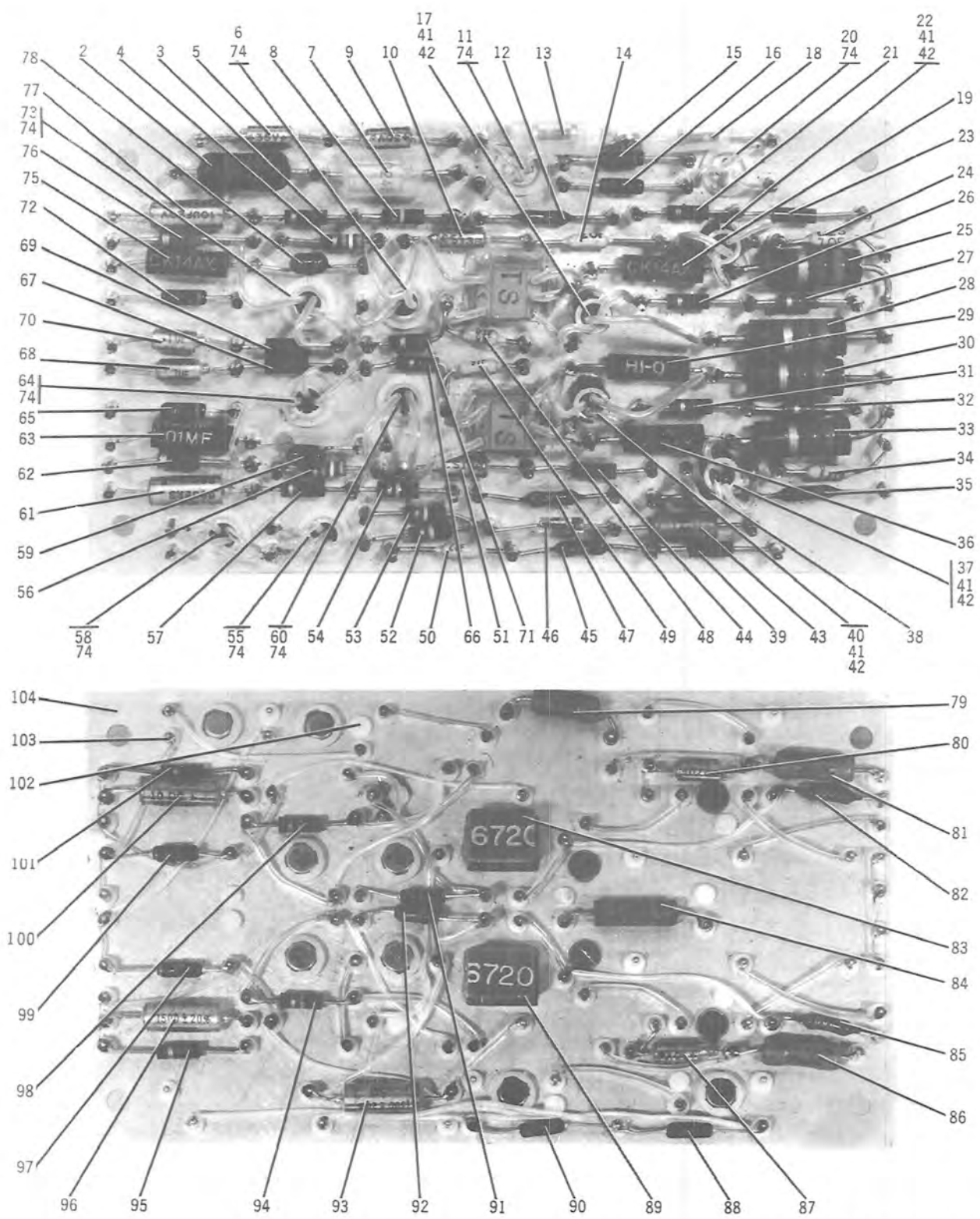
FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
R 6-5 - 35	310-0078-000	3	WASHER, LOCK, BRZ, 0.141 ID, 0.239 OD COML AP FOR 27 THRU 32	8	
R - 35A	TA2402A	3	INSULATOR 08289 352-9570-020 AP FOR 27 THRU 32	4	
R - 36	547-8177-008	3	BUSHING, INSULATED AP FOR 27 THRU 32	16	
R - 37	P343-0331-00 O	3	SCREW, MACH., NI PL BRS, 6-32 X 7/16 77250 343-0331-000 AP FOR 27 THRU 32	8	
	38 RC07GF472K	3	RESISTOR, FXD, COMP, 4.7K, 10%, 1/4W 745-0773-000	A3R5 1	
	39 RC07GF392K	3	RESISTOR, FXD, COMP, 3.9K, 10%, 1/4W 745-0770-000	A3R6 1	
	40 RC07GF562K	3	RESISTOR, FXD, COMP, 5.6K, 10%, 1/4W 745-0776-000	A3R8 1	
	41 763F89	3	RESISTOR, THRM, 330 OHMS, 10%, 1W 10646 714-1714-000	A3RT4 1	
	42 RS2CR7100K	3	RESISTOR, FXD, WW, 0.71 OHMS 10%, 3W 91637 747-5132-000	A3R67 1	
	43 763F89	3	RESISTOR, THRM, 330 OHMS, 10%, 1W 10646 714-1714-000	A3RT6 1	
	44 RS2CR7100K	3	RESISTOR, FXD, WW, 0.71 OHMS 10%, 3W 91637 747-5132-000	A3R68 1	
	45 JH485	3	TRANSFORMER 80223 677-0300-320	A3T2 1	
	46 JH485	3	TRANSFORMER 80223 677-0300-320	A3T1 1	
	47 RC07GF562K	3	RESISTOR, FXD, COMP, 5.6K, 10%, 1/4W 745-0776-000	A3R2 1	
	48 RC07GF472K	3	RESISTOR, FXD, COMP, 4.7K, 10%, 1/4W 745-0773-000	A3R4 1	
	49 RC07GF392K	3	RESISTOR, FXD, COMP, 3.9K, 10%, 1/4W 745-0770-000	A3R3 1	
	50 RC07GF562K	3	RESISTOR, FXD, COMP, 5.6K, 10%, 1/4W 745-0776-000	A3R1 1	
	51 1N645	3	SEMICONV DEVICE 353-2607-000	A3CR11 1	
	52 1N645	3	SEMICONV DEVICE 353-2607-000	A3CR12 1	
	53 1N645	3	SEMICONV DEVICE 353-2607-000	A3CR13 1	
	54 1N645	3	SEMICONV DEVICE 353-2607-000	A3CR14 1	
	55 4040-2HOTTIN NED	3	TERMINAL 77147 304-0014-000	1	
	56 3SAV1034A2	3	RELAY 01526 974-1065-010	A3K1 1	
	57 3SAV1034A2	3	RELAY 01526 974-1065-010	A3K2 1	
	58 3SAV1034A2	3	RELAY 01526 974-1065-010	A3K3 1	
	59 3SAV1034A2	3	RELAY 01526 974-1065-010	A3K4 1	
	60 3SAV1034A2	3	RELAY 01526 974-1065-010	A3K5 1	
R - 61	68-1660-26	3	NUT, SELF-LKG, HEX, AL, 2-56 72962 333-0604-000 AP FOR 55 THRU 60	9	
R - 61A	R22NCFMA1-26	3	NUT, SELF-LKG, CLINCH, COD, PL STL, 2-56 72962 333-0837-000 AP FOR 55 THRU 60	10	
R - 62	MS51957-2	3	SCREW, MACH., SST, 2-56 X 3/16 343-0123-000 AP FOR 55 THRU 60	1	
	63 1N645	3	SEMICONV DEVICE 353-2607-000	A3CR5 1	
	64 1N645	3	SEMICONV DEVICE 353-2607-000	A3CR6 1	
	65 RN55D2372F	3	RESISTOR, FXD, FILM, 23.7K, 1%, 1/8W 705-1062-000	A3R20 1	
	66 150D104X0035 A2	3	CAPACITOR, FXD, ELECTROLYTIC, 0.10UF, 20%, 35V 56289 184-7408-000	A3C11 1	

section 6
parts list

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-5	67	RC07GF222K	3 RESISTOR, FXD, COMP, 2.2K, 10%, 10%, 1/4W 745-0761-000	A3R15	1
	68	RN55D4642F	3 RESISTOR, FXD, FILM, 46.4K, 1%, 1/8W 705-1076-000	A3R18	1
	69	RC07GF682K	3 RESISTOR, FXD, COMP, 6.8K, 10%, 1/4W 745-0779-000	A3R17	1
	70	RN55D1002F	3 RESISTOR, FXD, FILM, 10K, 1%, 1/8W 705-1044-000	A3R16	1
	71	150D156X0035 R2	3 CAPACITOR, FXD, ELECTROLYTIC, 15UF, 20%, 35V 56289 184-7414-000	A3C6	1
	72	150D474X0035 A2	3 CAPACITOR, FXD, ELECTROLYTIC, 0.47UF, 20%, 35V 56289 184-7399-000	A3C10	1
	73	RC07GF222K	3 RESISTOR, FXD, COMP, 2.2K, 10%, 10%, 1/4W 745-0761-000	A3R11	1
	74	RN55D6812F	3 RESISTOR, FXD, FILM, 68.1K, 1%, 1/8W 705-1084-000	A3R14	1
	75	150D474X0035 A2	3 CAPACITOR, FXD, ELECTROLYTIC, 0.47UF, 20%, 35V 56289 184-7399-000	A3C8	1
	76	RN55D3482F	3 RESISTOR, FXD, FILM, 34.8K, 1%, 1/8W 705-1070-000	A3R27	1
	77	55C23	3 CAPACITOR, FXD, CERAMIC DIELECTRIC, 0.05UF, M20%P80%, 50V 56289 913-3885-000	A3C4	1
	78	150D335X9100 R0	3 CAPACITOR, FXD, ELECTROLYTIC, 3.3UF, 10%, 100V 56289 184-8999-050	A3C33	1
	79	150D335X9100 R0	3 CAPACITOR, FXD, ELECTROLYTIC, 3.3UF, 10%, 100V 56289 184-8999-050	A3C22	1
	80	RS2CR7100K	3 RESISTOR, FXD, WW, 0.71 OHMS 10%, 3W 91637 747-5132-000	A3R46	1
	81	55C23	3 CAPACITOR, FXD, CERAMIC DIELECTRIC, 0.05UF, M20%P80%, 50V 56289 913-3885-000	A3C1	1
	82	150D474X0035 A2	3 CAPACITOR, FXD, ELECTROLYTIC, 0.47UF, 20%, 35V 56289 184-7399-000	A3C9	1
	83	RN55D4222F	3 RESISTOR, FXD, FILM, 42.2K 1%, 1/8W 705-1074-000	A3R13	1
	84	RN55D1002F	3 RESISTOR, FXD, FILM, 10K, 1%, 1/8W 705-1044-000	A3R12	1
	85	150D156X0035 R2	3 CAPACITOR, FXD, ELECTROLYTIC, 15UF, 20%, 35V 56289 184-7414-000	A3C5	1
R	85A	RC07GF103K	3 RESISTOR, FXD, COMP, 10,000 OHMS 10%, 1/4 W 745-0785-000 EFF MCN 2500	A3R70	1
	86	RN55D4222F	3 RESISTOR, FXD, FILM, 42.2K 1%, 1/8W 705-1074-000	A3R19	1
	87	1N645	3 SEMICOND DEVICE 353-2607-000	A3CR10	1
	88	SKT41BRN	3 JACK, TIP, BRN 98291 360-0258-000	A3TP1	1
	89	SKT41RED	3 JACK, TIP, RED 98291 360-0259-000	A3TP2	1
	90	SKT41ORN	3 JACK, TIP, ORN 98291 360-0260-000	A3TP3	1
	91	SKT41YEL	3 JACK, TIP, YEL 98291 360-0261-000	A3TP4	1

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-5	92	SKT41GRN	3 JACK, TIP, GRN 98291 360-0262-000 A3TP5	1	
	93	SKT41BLU	3 JACK, TIP, BLU 98291 360-0263-000 A3TP6	1	
	94	SKT41VIO	3 JACK, TIP, VIO 98291 360-0264-000 A3TP7	1	
	95	SKT41GY	3 JACK, TIP, GY 98291 360-0265-000 A3TP8	1	
	96	SKT41WHT	3 JACK, TIP, WHT 98291 360-0266-000 A3TP9	1	
	97	SKT41BLK	3 JACK, TIP, BLK 98291 360-0257-000 A3TP10	1	
	98	SKT41BRN	3 JACK, TIP, BRN 98291 360-0258-000 A3TP11	1	
	99	4040-2HOTTIN NED	3 TERMINAL 77147 304-0014-000	1	
-100	P313-0050-00 O	3 NUT, PLAIN, HEX., NI PL BRS, 2-56 313-0050-000 AP		1	
-101	310-0094-000	3 WASHER, LOCK, CAD PL BRZ, 0.088 ID, 0.165 OD COML AP		1	
-102	MS51957-2	3 SCREW, MACH., SST, 2-56 X 3/16 343-0123-000 AP		1	
R	103	SL347-322DWH T	3 TERMINAL 12615 306-1532-000	16	
	104	A240	3 EYELET, METALLIC, BRS, 0.246 DIA X 0.360 57771 307-1093-000	1	
	105	R22NCFMA1-40	3 NUT, PLAIN, CLINCH, CAD PL STL, 4-40 72962 333-0839-000	4	
	106	R12NCFMA1-62	3 NUT, SELF-LKG, CLINCH, CAD PL STL, 6-32 72962 333-0841-000	2	
	107	546-6128-002	3 CLIP, SPG TENS	2	
-108	305-2043-000	3 RIVET, TUBULAR, SIL PL BRS, 1/8 DIA X 0.084 COML AP		4	
	109	SL388-351DWH T	3 TERMINAL 12615 306-1342-000	47	
	110	541-6557-002	3 PIN, LOCATING	2	
	111	775-4281-001	3 CHASSIS, ELECTRICAL EQUIP.	1	
6-6	-	775-4285-001	1 ELECTRONIC COMPONENTS ASSY P SEE FIG. 6-5-10 FOR NHA	REF	
*	1	775-4287-001	2 COMPONENT ASSY P	1	
	2	RW69V561	3 RESISTOR, FXD, WW, 560 OHMS, 5%, 3W 747-5355-000 EFF THRU MCN 568	A3R10	1
	2	RW69V271	3 RESISTOR, FXD, WW, 270 OHMS, 5%, 3W 747-5349-000 EFF MCN 569	A3R10	1
	3	RC07GF270K	3 RESISTOR, FXD, COMP, 27 OHMS, 10%, 1/4W 745-0692-000	A3R32	1
	4	RC07GF393K	3 RESISTOR, FXD, COMP, 39K, 10%, 1/4 745-0806-000	A3R31	1
	5	150D154X0035 A2	3 CAPACITOR, FXD, ELECTROLYTIC, 0.15UF, 20%, 35V 56289 184-7418-000	A3C2	1
	6	SAB5342	3 SEMICOND DEVICE 01295 352-0517-030	A3Q5	1
	7	1N3024B	3 SEMICOND DEVICE 353-3129-000 EFF THRU MCN 568	A3CR16	1
	7	UZ715	3 SEMICOND DEVICE 12969 353-6456-010 EFF MCN 569	A3CR16	1
	8	RC07GF154K	3 RESISTOR, FXD, COMP, 150K, 10%, 1/4W 745-0827-000	A3R34	1

*NONPROCURABLE ITEM



TPI-3666-017

Figure 6-6. Electronic Components Assembly.

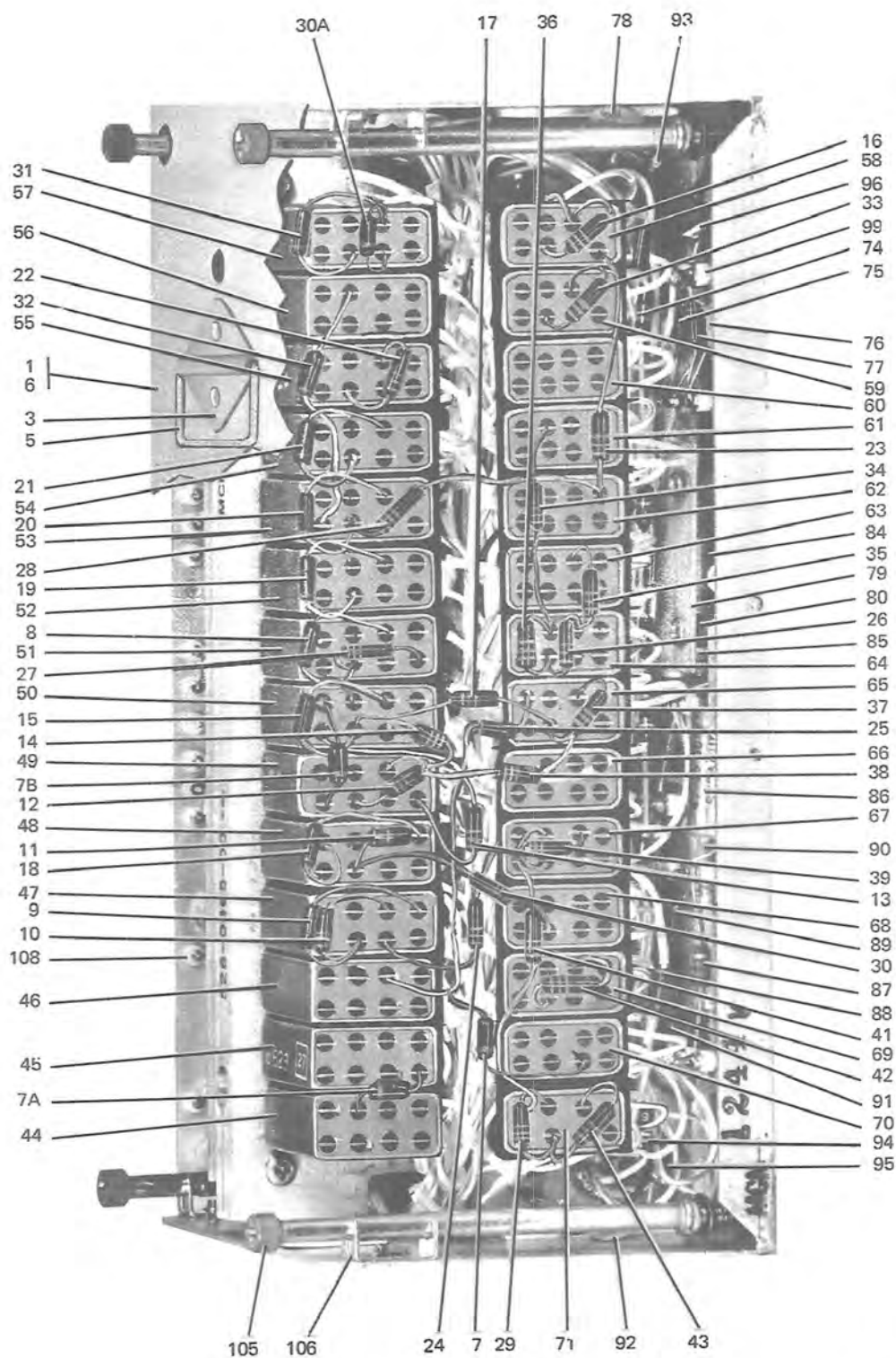
FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-6	9	150D154X0035 A2	3 CAPACITOR, FXD, ELECTROLYTIC, 0.15UF, 20%, 35V 56289 184-7418-000	A3C3	1
	10	CS13BJ823K	3 CAPACITOR, FXD, ELECTROLYTIC, 0.082UF, 10%, 100V 184-6326-650	A3C19	1
	11	CB1028	3 SEMICOND DEVICE 08732 353-3653-010	A3Q1	1
	12	RN55D1003F	3 RESISTOR, FXD, FILM, 100K, 1%, 1/8W 705-1092-000	A3R36	1
	13	997F14	3 RESISTOR, THRM, 10K, 10%, 1/2W 10646 714-1738-000	A3RT1	1
	14	RN55D1620F	3 RESISTOR, FXD, FILM, 162 OHMS, 1%, 1/8W 705-0958-000	A3R38	1
	15	1N645	3 SEMICOND DEVICE 353-2607-000	A3CR2	1
	16	1N645	3 SEMICOND DEVICE 353-2607-000	A3CR3	1
R	17	2N956	3 TRANSISTOR 352-0400-010 EFF TO CI 69341	A3Q6	1
R	17	2N956	3 TRANSISTOR 352-0400-030 EFF CI 69341	A3Q6	1
	18	997F14	3 RESISTOR, THRM, 10K, 10%, 1/2W 10646 714-1738-000	A3RT2	1
	19	CK14AX103M	3 CAPACITOR, FXD, CERAMIC DIELECTRIC, 10,000PF, 20%, 100V 913-3021-000	A3C21	1
	20	CB1028	3 SEMICOND DEVICE 08732 353-3653-010	A3Q2	1
	21	RC07GF182K	3 RESISTOR, FXD, COMP, 1.8K, 10%, 1/4W 745-0758-000	A3R37	1
R	22	2N956	3 TRANSISTOR 352-0400-010 EFF TO CI 69341	A3Q7	1
R	22	2N956	3 TRANSISTOR 352-0400-030 EFF CI 69341	A3Q7	1
	23	RN55D4642F	3 RESISTOR, FXD, FILM, 46.4K, 1%, 1/8W 705-1076-000	A3R48	1
	24	RN55D2370F	3 RESISTOR, FXD, FILM, 237 OHMS, 1%, 1/8W 705-0966-000	A3R40	1
	25	RC32GF561K	3 RESISTOR, FXD, COMP, 560 OHMS, 10%, 1W 745-3342-000	A3R45	1
	26	RC07GF101K	3 RESISTOR, FXD, COMP, 100 OHMS, 10%, 1/4W 745-0713-000	A3R43	1
	27	RC07GF101K	3 RESISTOR, FXD, COMP, 100 OHMS, 10%, 1/4W 745-0713-000	A3R42	1
	28	RC32GF561K	3 RESISTOR, FXD, COMP, 560 OHMS, 10%, 1W 745-3342-000	A3R44	1
	29	CK14AX103M	3 CAPACITOR, FXD, CERAMIC DIELECTRIC, 10,000PF, 20%, 100V 913-3021-000	A3C31	1
	30	RC32GF561K	3 RESISTOR, FXD, COMP, 560 OHMS, 10%, 1W 745-3342-000	A3R65	1
	31	RC07GF101K	3 RESISTOR, FXD, COMP, 100 OHMS, 10%, 1/4W 745-0713-000	A3R63	1
	32	RC07GF101K	3 RESISTOR, FXD, COMP, 100 OHMS, 10%, 1/4W 745-0713-000	A3R64	1
	33	RC32GF561K	3 RESISTOR, FXD, COMP, 560 OHMS, 10%, 1W 745-3342-000	A3R66	1
	34	RN55D2370F	3 RESISTOR, FXD, FILM, 237 OHMS, 1%, 1/8W 705-0966-000	A3R61	1
	35	RN55D4642F	3 RESISTOR, FXD, FILM, 46.4K, 1%, 1/8W 705-1076-000	A3R69	1

section 6
parts list

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-6	36	CK14AX103M	3 CAPACITOR, FXD, CERAMIC DIELECTRIC, 10,000PF, 20%, 100V 913-3021-000	A3C32	1
R	37	2N956	3 TRANSISTOR 352-0400-010 EFF TO CI 69341	A3Q14	1
R	37	2N956	3 TRANSISTOR 352-0400-030 EFF CI 69341	A3Q14	1
	38	RC07GF182K	3 RESISTOR, FXD, COMP, 1.8K, 10%, 1/4W 745-0758-000	A3R58	1
	39	RN55D9092F	3 RESISTOR, FXD, FILM, 90.9K, 1%, 1/8W 705-1090-000	A3R22	1
R	40	2N956	3 TRANSISTOR 352-0400-010 EFF TO CI 69341	A3Q13	1
R	40	2N956	3 TRANSISTOR 352-0400-030 EFF CI 69341	A3Q13	1
	41	TXB2P019-028 B	3 HOLDER 98978 352-9984-000		4
	42	MW265-90	3 INSULATOR 08289 302-0640-050		4
	43	192P1035R8	3 CAPACITOR, FXD, FILM DIELECTRIC, 0.01UF, 5%, 80V 56289 933-1039-430	A3C12	1
	44	RN55D1620F	3 RESISTOR, FXD, FILM, 162 OHMS, 1%, 1/8W 705-0958-000	A3R59	1
	45	RN55D9091F	3 RESISTOR, FXD, FILM, 9.09K, 1%, 1/8W 705-1042-000	A3R23	1
	46	1N965B	3 SEMICOND DEVICE 353-3176-000	A3CR15	1
	47	RN55D1003F	3 RESISTOR, FXD, FILM, 100K, 1%, 1/8W 705-1092-000	A3R57	1

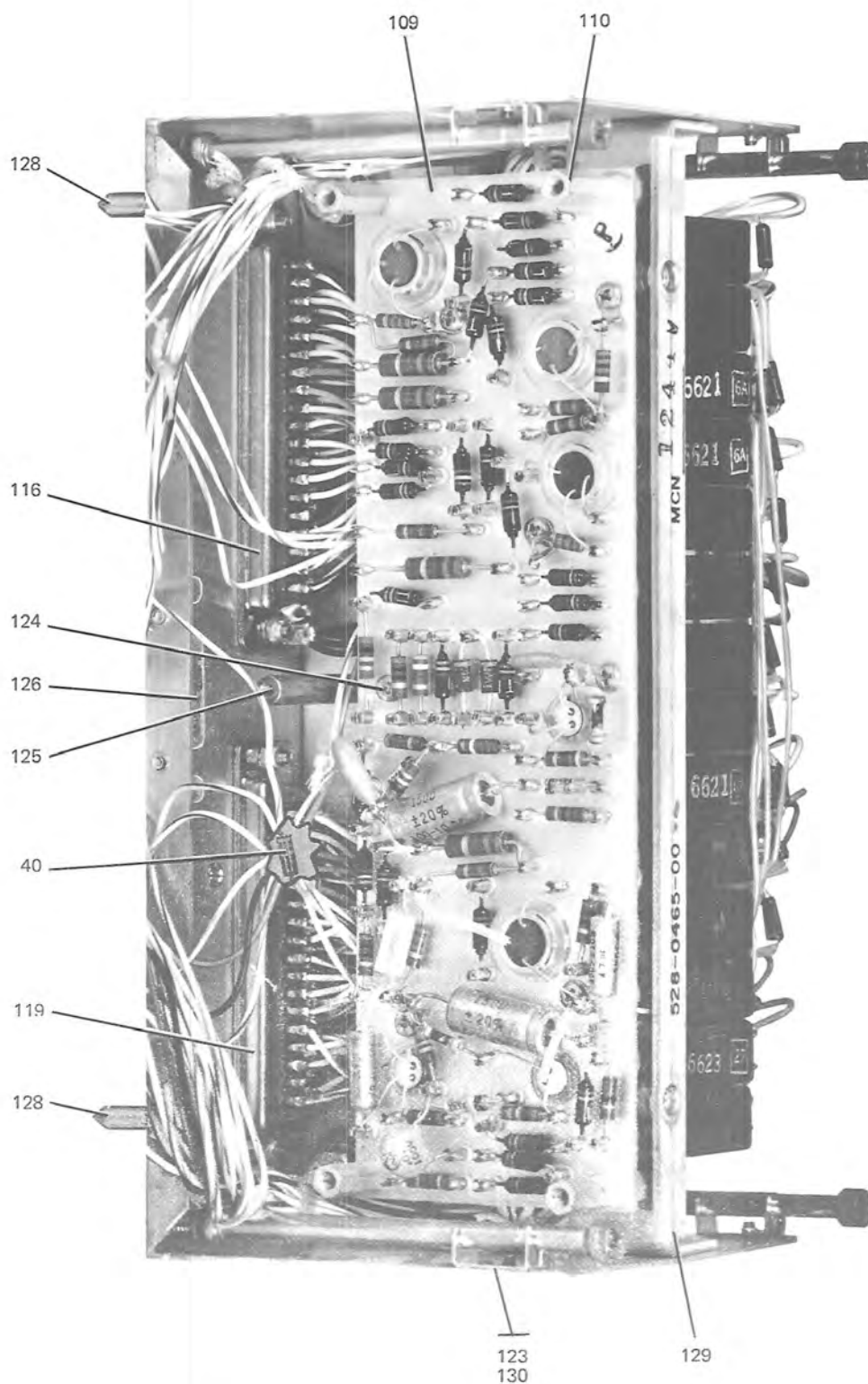
FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-6	48	RN55D1691F	3 RESISTOR, FXD, FILM, 1.69K, 1%, 1/8W 705-1007-000	A3R39	1
	49	RN55D1691F	3 RESISTOR, FXD, FILM, 1.69K, 1%, 1/8W 705-1007-000	A3R60	1
	50	RN55D1623F	3 RESISTOR, FXD, FILM, 162K, 1%, 1/8W 705-1102-000	A3R24	1
	51	CS13BJ823K	3 CAPACITOR, FXD, ELECTROLYTIC, 0.082UF, 10%, 100V 184-6326-650	A3C30	1
	52	RC07GF104K	3 RESISTOR, FXD, COMP, 100K, 10%, 1/4W 745-0821-000	A3R25	1
	53	RC07GF104K	3 RESISTOR, FXD, COMP, 100K, 10%, 1/4W 745-0821-000	A3R26	1
	54	RC07GF154K	3 RESISTOR, FXD, COMP, 150K, 10%, 1/4W 745-0827-000	A3R55	1
	55	2N4220	3 TRANSISTOR 352-0740-010	A3Q3	1
	56	RC07GF393K	3 RESISTOR, FXD, COMP, 39K, 10%, 1/4 745-0806-000	A3R52	1
	57	RC07GF270K	3 RESISTOR, FXD, COMP, 27 OHMS, 10%, 1/4W 745-0692-000	A3R53	1
	58	2N4220	3 TRANSISTOR 352-0740-010	A3Q10	1
	59	L1215-1K74S7	3 RESISTOR, THRM, 13.24K, 10%, 3/4W 714-1354-000	A3RT5	1
	60	SAB5342	3 SEMICOND DEVICE 01295 352-0517-030	A3Q12	1
	61	150D106X0020 B2	3 CAPACITOR, FXD, ELECTROLYTIC, 10UF, 20%, 20V 56289 184-7375-000	A3C28	1
	62	RC07GF222K	3 RESISTOR, FXD, COMP, 2.2K, 10%, 10%, 1/4W 745-0761-000	A3R50	1
	63	CK14AX103M	3 CAPACITOR, FXD, CERAMIC DIELECTRIC, 10,000PF, 20%, 100V 913-3021-000	A3C26	1
	64	SAB5342	3 SEMICOND DEVICE 01295 352-0517-030	A3Q11	1
	65	1N645	3 SEMICOND DEVICE 353-2607-000	A3CR21	1
	66	RC07GF682K	3 RESISTOR, FXD, COMP, 6.8K, 10%, 1/4W 745-0779-000	A3R51	1
	67	RN55D3832F	3 RESISTOR, FXD, FILM, 38.3K, 1%, 1/8W 705-1072-000	A3R49	1
	68	150D104X0035 A2	3 CAPACITOR, FXD, ELECTROLYTIC, 0.10UF, 20%, 35V 56289 184-7408-000	A3C25	1
	69	RN55D3832F	3 RESISTOR, FXD, FILM, 38.3K, 1%, 1/8W 705-1072-000	A3R28	1
	70	150D104X0035 A2	3 CAPACITOR, FXD, ELECTROLYTIC, 0.10UF, 20%, 35V 56289 184-7408-000	A3C14	1
	71	RC07GF682K	3 RESISTOR, FXD, COMP, 6.8K, 10%, 1/4W 745-0779-000	A3R30	1
	72	1N645	3 SEMICOND DEVICE 353-2607-000	A3CR18	1
	73	SAB5342	3 SEMICOND DEVICE 01295 352-0517-030	A3Q4	1
	74	T1533	3 HOLDER 98291 352-9509-000		8
	75	CK14AX103M	3 CAPACITOR, FXD, CERAMIC DIELECTRIC, 10,000PF, 20%, 100V 913-3021-000	A3C15	1
	76	RC07GF222K	3 RESISTOR, FXD, COMP, 2.2K, 10%, 10%, 1/4W 745-0761-000	A3R29	1
	77	150D106X0020 B2	3 CAPACITOR, FXD, ELECTROLYTIC, 10UF, 20%, 20V 56289 184-7375-000	A3C17	1

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
R 6-6	78	L1215-1K74S7	3 RESISTOR, THRM, 13.24K, 10%, 3/4W 714-1354-000	A3RT3	1
R	79	192P1035R8	3 CAPACITOR, FXD, FILM DIELECTRIC, 0.01UF, 5%, 80V 56289 933-1039-430	A3C13	1
R	80	150D475X9010 A2	3 CAPACITOR, FXD, ELECTROLYTIC, 4.7UF, 10%, 10V 56289 184-9063-070	A3C29	1
R	81	192P47292	3 CAPACITOR, FXD, FILM DIELECTRIC, 0.0047UF, 10%, 200V 56289 933-1039-100	A3C35	1
R	82	RN55D1000F	3 RESISTOR, FXD, FILM, 100 OHMS, 1%, 1/8W 705-0948-000	A3R62	1
R	83	SP21	3 TRANSFORMER 81095 677-1683-000	A3T4	1
R	84	CK14AX103M	3 CAPACITOR, FXD, CERAMIC DIELECTRIC, 10,000PF, 20%, 100V 913-3021-000	A3C20	1
R	85	RN55D1000F	3 RESISTOR, FXD, FILM, 100 OHMS, 1%, 1/8W 705-0948-000	A3R41	1
R	86	192P47292	3 CAPACITOR, FXD, FILM DIELECTRIC, 0.0047UF, 10%, 200V 56289 933-1039-100	A3C24	1
R	87	150D475X9010 A2	3 CAPACITOR, FXD, ELECTROLYTIC, 4.7UF, 10%, 10V 56289 184-9063-070	A3C18	1
R	88	1N645	3 SEMICOND DEVICE 353-2607-000	A3CR4	1
R	89	SP21	3 TRANSFORMER 81095 677-1683-000	A3T3	1
R	90	1N645	3 SEMICOND DEVICE 353-2607-000	A3CR1	1
R	91	1N645	3 SEMICOND DEVICE 353-2607-000	A3CR22	1
R	92	1N645	3 SEMICOND DEVICE 353-2607-000	A3CR19	1
R	93	150D156X0020 B2	3 CAPACITOR, FXD, ELECTROLYTIC, 15UF, 20%, 20V 56289 184-7371-000	A3C7	1
R	94	RC07GF273K	3 RESISTOR, FXD, COMP, 27K, 10%, 1/4W 745-0800-000	A3R35	1
R	95	RC07GF562K	3 RESISTOR, FXD, COMP, 5.6K, 10%, 1/4W 745-0776-000	A3R33	1
R	96	150D336X0010 B2	3 CAPACITOR, FXD, ELECTROLYTIC, 33UF, 20%, 10V 56289 184-7382-000	A3C16	1
R	97	1N645	3 SEMICOND DEVICE 353-2607-000	A3CR17	1
R	98	RC07GF273K	3 RESISTOR, FXD, COMP, 27K, 10%, 1/4W 745-0800-000	A3R56	1
R	99	1N645	3 SEMICOND DEVICE 353-2607-000	A3CR20	1
R	100	150D336X0010 B2	3 CAPACITOR, FXD, ELECTROLYTIC, 33UF, 20%, 10V 56289 184-7382-000	A3C27	1
R	101	RC07GF562K	3 RESISTOR, FXD, COMP, 5.6K, 10%, 1/4W 745-0776-000	A3R54	1
R	102	SL347-322DWH T	3 TERMINAL 12615 306-1532-000		15
R	103	SL388-351DWH T	3 TERMINAL 12615 306-1342-000		101
R	104	775-4288-001	3 TERMINAL BOARD	A3TB1	1



TP2-0481-027

Figure 6-7. Antenna Coupler Control (Sheet 1 of 2).



TP2-0481-027

Figure 6-7. Antenna Coupler Control (Sheet 2 of 2).

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-7 -	528-0465-000	1	CONTROL, ANTENNA COUPLER SEE FIG. 6-2-7 FOR NHA	REF	
R	1 757-3460-001	2	COVER, CONTROL	1	
R	- 2 MS51957-26	2	SCREW, MACH., SST, 6-32 X 1/4 343-0167-000 AP	2	
R	3 546-6126-002	3	RETAINER, HANDLE	2	
R	- 4 R3484X3-32CA DPL	3	RIVET, TUBULAR, CAD. PL BRS, 0.089 DIA X 3/32 LG SHK 12014 305-0165-000	4	
R	5 546-6127-002	3	HANDLE, BAIL	2	
R	6 761-0671-001	3	COVER, CONTROL, COUPLER	1	
R	7 1N645	2	SEMICOND DEVICE 353-2607-000 EFF THRU MCN 179 ONLY	1	A2CR62
R	7A 1N645	2	SEMICOND DEVICE 353-2607-000 EFF THRU MCN 179 ONLY	1	A2CR96
R	7B 1N645	2	SEMICOND DEVICE 353-2607-000 EFF MCN 275 THRU 671 DELETED BY SB1	1	A2CR101
R	8 1N645	2	SEMICOND DEVICE 353-2607-000 EFF MCN 672 ADDED BY SB1	1	A2CR101
R	9 1N645	2	SEMICOND DEVICE 353-2607-000	1	A2CR54
R	10 1N645	2	SEMICOND DEVICE 353-2607-000	1	A2CR4
R	11 1N645	2	SEMICOND DEVICE 353-2607-000	1	A2CR8
R	12 1N645	2	SEMICOND DEVICE 353-2607-000	1	A2CR11
R	13 1N645	2	SEMICOND DEVICE 353-2607-000 EFF MCN 672 ADDED BY SB1	1	A2CR105
R	14 1N645	2	SEMICOND DEVICE 353-2607-000 EFF MCN 672	1	A2CR108
R	15 1N645	2	SEMICOND DEVICE 353-2607-000	1	A2CR74
R	16 1N645	2	SEMICOND DEVICE 353-2607-000	1	A2CR97
R	17 1N645	2	SEMICOND DEVICE 353-2607-000	1	A2CR28
R	18 1N645	2	SEMICOND DEVICE 353-2607-000 EFF MCN 672 ADDED BY SB1	1	A2CR106
R	19 1N645	2	SEMICOND DEVICE 353-2607-000	1	A2CR13
R	20 1N645	2	SEMICOND DEVICE 353-2607-000	1	A2CR14
R	21 1N645	2	SEMICOND DEVICE 353-2607-000	1	A2CR23
R	22 1N645	2	SEMICOND DEVICE 353-2607-000	1	A2CR22
R	23 RC07GF271K	2	RESISTOR, FXD, COMP, 270 OHMS, 10%, 1/4W 745-0728-000	1	A2R82
R	24 1N645	2	SEMICOND DEVICE 353-2607-000 EFF MCN 3615	1	A2CR7
R	25 1N645	2	SEMICOND DEVICE 353-2607-000 EFF MCN 3615	1	A2CR1
R	26 1N645	2	SEMICOND DEVICE 353-2607-000 EFF MCN 3615	1	A2CR111
R	27 1N645	2	SEMICOND DEVICE 353-2607-000 EFF MCN 3615	1	A2CR113
R	28 1N645	2	SEMICOND DEVICE 353-2607-000 EFF MCN 3615	1	A2CR76
R	29 1N645	2	SEMICOND DEVICE 353-2607-000 EFF MCN 3615	1	A2CR112
R	30 1N645	2	SEMICOND DEVICE 353-2607-000 EFF MCN 3615	1	A2CR45
R	30A 1N645	2	SEMICOND DEVICE 353-2607-000 EFF THRU MCN 179	1	A2CR73
R	31 1N645	2	SEMICOND DEVICE 353-2607-000	1	A2CR80
R	32 1N645	2	SEMICOND DEVICE 353-2607-000	1	A2CR100
R	33 1N645	2	SEMICOND DEVICE 353-2607-000	1	A2CR52
R	34 1N645	2	SEMICOND DEVICE 353-2607-000	1	A2CR51
R	35 1N645	2	SEMICOND DEVICE 353-2607-000	1	A2CR86
R	36 1N645	2	SEMICOND DEVICE 353-2607-000	1	A2CR48

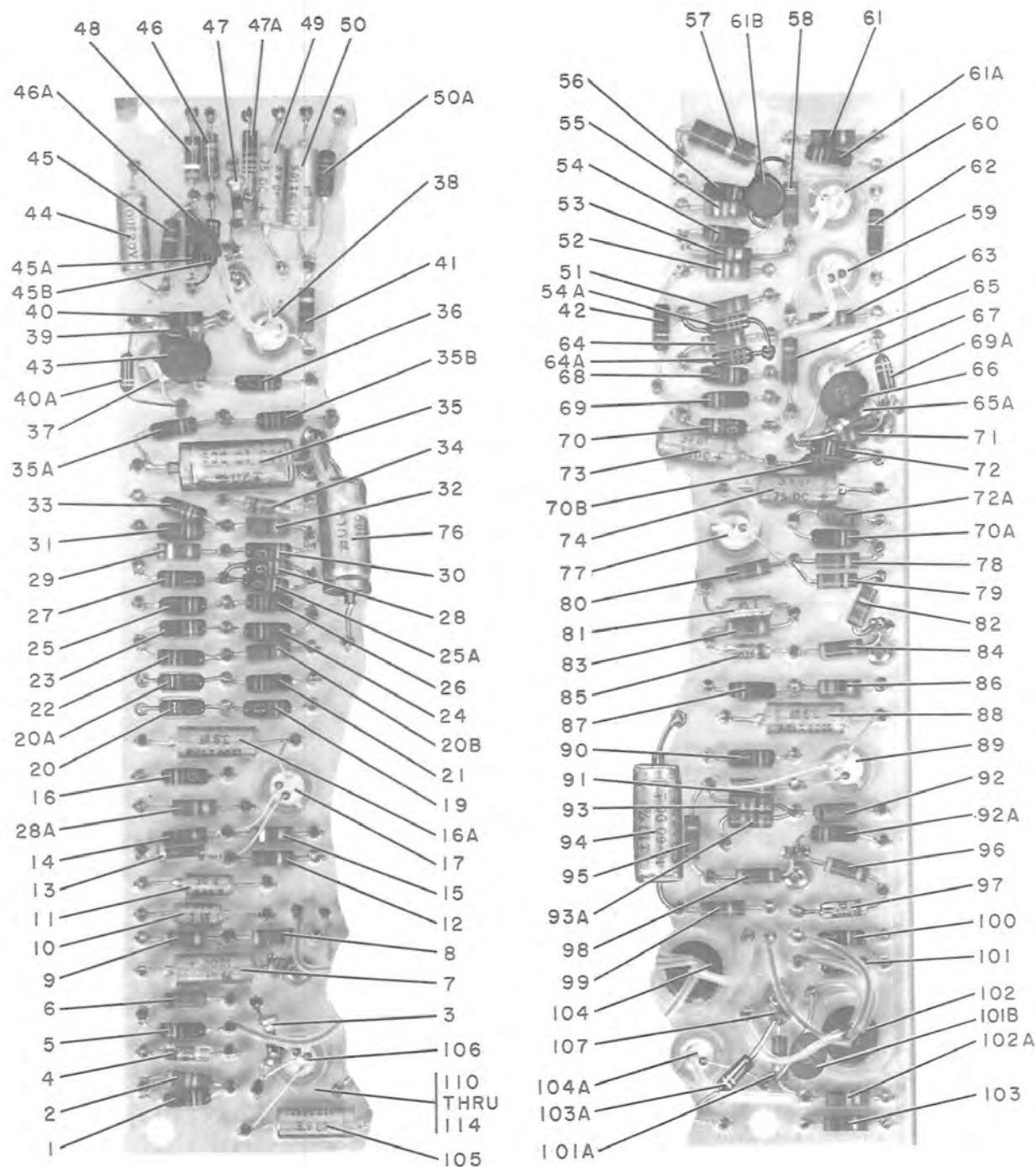
section 6
parts list

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
R 6-7	37	1N645	2 SEMICOND DEVICE 353-2607-000	A2CR46	1
R	38	1N645	2 SEMICOND DEVICE 353-2607-000 EFF MCN 672	A2CR107	1
R	39	1N645	2 SEMICOND DEVICE 353-2607-000	A2CR55	1
R	40	1N645	2 SEMICOND DEVICE 353-2607-000 EFF THRU MCN 3614	A2CR93	1
R	41	1N645	2 SEMICOND DEVICE 353-2607-000	A2CR49	1
R	42	1N645	2 SEMICOND DEVICE 353-2607-000	A2CR40	1
R	43	1N645	2 SEMICOND DEVICE 353-2607-000	A2CR70	1
R	44	3SAF1131	2 RELAY 01526 974-0722-000	A2K1	1
R	45	3SAF1131	2 RELAY 01526 974-0722-000	A2K2	1
R	46	3SAF1131	2 RELAY 01526 974-0722-000	A2K3	1
R	47	3SAF1131	2 RELAY 01526 974-0722-000	A2K4	1
R	48	3SAF1131	2 RELAY 01526 974-0722-000	A2K5	1
R	49	3SAF1131	2 RELAY 01526 974-0722-000	A2K6	1
R	50	3SAF1131	2 RELAY 01526 974-0722-000	A2K7	1
R	51	3SAF1131	2 RELAY 01526 974-0722-000	A2K8	1
R	52	3SAF1131	2 RELAY 01526 974-0722-000	A2K9	1
R	53	3SAF1131	2 RELAY 01526 974-0722-000	A2K10	1
R	54	3SAF1131	2 RELAY 01526 974-0722-000	A2K11	1
R	55	3SAF1131	2 RELAY 01526 974-0722-000	A2K12	1
R	56	3SAF1131	2 RELAY 01526 974-0722-000	A2K13	1
R	57	3SAF1131	2 RELAY 01526 974-0722-000	A2K14	1
R	58	3SAF1131	2 RELAY 01526 974-0722-000	A2K28	1
R	59	3SAF1131	2 RELAY 01526 974-0722-000	A2K27	1
R	60	3SAF1131	2 RELAY 01526 974-0722-000	A2K26	1
R	61	3SAF1131	2 RELAY 01526 974-0722-000	A2K25	1
R	62	3SAF1131	2 RELAY 01526 974-0722-000	A2K24	1
R	63	3SAF1131	2 RELAY 01526 974-0722-000	A2K23	1
R	64	3SAF1131	2 RELAY 01526 974-0722-000	A2K22	1
R	65	3SAF1131	2 RELAY 01526 974-0722-000	A2K21	1
R	66	3SAF1131	2 RELAY 01526 974-0722-000	A2K20	1
R	67	3SAF1131	2 RELAY 01526 974-0722-000	A2K19	1
R	68	3SAF1131	2 RELAY 01526 974-0722-000	A2K18	1
R	69	3SAF1131	2 RELAY 01526 974-0722-000	A2K17	1
R	70	3SAF1131	2 RELAY 01526 974-0722-000	A2K16	1
R	71	3SAF1131	2 RELAY 01526 974-0722-000	A2K15	1
R	- 72	334-0043-000	2 NUT, PLAIN, CAP, NI PL BRS, 4-40 COML AP FOR 44 THRU 71		56
R	- 73	310-0278-000	2 WASHER, LOCK, SST, 0.115 ID, 0.202 OD COML AP FOR 44 THRU 71		56
R	74	1N645	2 SEMICOND DEVICE 353-2607-000	A2CR31	1
R	75	1N645	2 SEMICOND DEVICE 353-2607-000	A2CR32	1
R	76	150D476X0035 S2	2 CAPACITOR, FXD, CERAMIC DIELECTRIC, 0.01UF, M20%P80%, 100V 72982 913-3680-000	A2C12	1
R	77	150D476X0035 S2	2 CAPACITOR, FXD, CERAMIC DIELECTRIC, 0.01UF, M20%P80%, 100V 72982 913-3680-000	A2C13	1
R	78	150D476X0035 S2	2 CAPACITOR, FXD, CERAMIC DIELECTRIC, 0.01UF, M20%P80%, 100V 72982 913-3680-000	A2C14	1
R	79	761-0667-001	2 HOLDER, CAPACITOR		1
R	80	540-9004-003	2 POST, ELECTRICAL-MECH EQUIP.		2
R	- 81	P330-2284-00 Q	2 SCREW, MACH., SST, FH, 2-56 X 3/16 77250 330-2284-000 AP FOR 79 AND 80		2
R	- 82	MS51957-2	2 SCREW, MACH., SST, 2-56 X 3/16 343-0123-000 AP FOR 79 AND 80		2

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
R 6-7	83	310-0070-000	2 WASHER, LOCK, SST, 0.097 ID, 0.165 OD COML AP FOR 79 AND 80	2	
R	84	600D127G060D L4	2 CAPACITOR, FXD, 120UF, P50%M10%, 60V 56289 183-1277-410	1	A2C17
R	85	600D127G060D L4	2 CAPACITOR, FXD, 120UF, P50%M10%, 60V 56289 183-1277-410	1	A2C16
R	86	150D476X0035 S2	2 CAPACITOR, FXD, 47UF, 20%, 35V 56289 184-7411-000	1	A2C10
R	87	RC07GF561K	2 RESISTOR, FXD, COMP, 560 OHMS, 10%, 1/4W 745-0740-000	1	A2R56
R	88	RW69V821	2 RESISTOR, FXD, WW, 820 OHMS, 5%, 3W 747-5358-000	1	A2R70
R	89	RW69V821	2 RESISTOR, FXD, WW, 820 OHMS, 5%, 3W 747-5358-000	1	A2R60
R	90	196P15452S4	2 CAPACITOR, FXD, PAPER DIELECTRIC, 0.15UF, 5%, 200V 56289 931-4998-000 EFF THRU MCN 274	1	A2C34
R	90	118P15402S4	2 CAPACITOR, FXD, PAPER DIELECTRIC, 0.15UF, 20%, 200V 56289 951-1037-000 EFF MCN 275	1	A2C34
R	91	196P15452S4	2 CAPACITOR, FXD, PAPER DIELECTRIC, 0.15UF, 5%, 200V 56289 931-4998-000 EFF THRU MCN 274	1	A2C35
R	91	118P15402S4	2 CAPACITOR, FXD, PAPER DIELECTRIC, 0.15UF, 20%, 200V 56289 951-1037-000 EFF MCN 275	1	A2C35
R	92	150D476X0035 S2	2 CAPACITOR, FXD, CERAMIC DIELECTRIC, 0.01UF, M20%P80%, 100V 72982 913-3680-000	1	A2C15
R	93	1N1202	2 SEMICOND DEVICE 353-1889-000	1	A2CR33
R	94	1N1202	2 SEMICOND DEVICE 353-1889-000	1	A2CR34
R	95	4007-4HOTTIN NED	2 TERMINAL 77147 304-0015-000	1	
R	96	4040-2HOTTIN NED	2 TERMINAL 77147 304-0014-000	1	
R	- 97	P330-2284-00 O	2 SCREW, MACH., SST, FH, 2-56 X 3/16 77250 330-2284-000 AP	1	
R	- 98	310-0070-000	2 WASHER, LOCK, SST, 0.097 ID, 0.165 OD COML AP	1	
R	99	TF300	2 TERMINAL 98291 306-1018-000	12	
R	-100	MS51959-3	2 SCREW, MACH., SST, 2-56 X 1/4 342-0133-000 AP	1	
R	-101	P330-2284-00 O	2 SCREW, MACH., SST, FH, 2-56 X 3/16 77250 330-2284-000 AP	11	
R	-102	4040-2HOTTIN NED	2 TERMINAL 77147 304-0014-000	3	
R	-103	310-0070-000	2 WASHER, LOCK, SST, 0.097 ID, 0.165 OD COML AP	1	
R	-104	MS35338-134	2 WASHER, LOCK, SST, 0.088 ID, 0.175 OD 310-0275-000 AP	12	
R	105	549-0932-003	2 SCREW, ASSEMBLED WASH,	4	
R	106	549-0945-003	2 RETAINER, MTG SCR	4	
R	-107	MS51959-1	2 SCREW, MACH., SST, 2-56 X 1/8 342-0131-000 AP FOR 105 AND 106	4	
R	108	757-3462-001	2 TERMINAL BOARD, FRONT SEE FIG. 6-8	1	
R	109	757-3464-001	2 TERMINAL BOARD, REAR SEE FIG. 6-9	1	
R	110	540-9041-003	2 POST, ELECTRICAL-MECH EQUIP,	8	
R	-111	MS51957-13	2 SCREW, MACH., SST, 4-40 X 1/4 343-0133-000 AP FOR 108 THRU 110	8	

section 6
parts list

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
R 6-7	-112	MS51957-2	2 SCREW, MACH., SST, 2-56 X 3/16 343-0123-000 AP FOR 108 THRU 110	2	
R	-113	310-0278-000	2 WASHER, LOCK, SST, 0.115 ID, 0.202 OD COML AP FOR 108 THRU 110	8	
R	-114	310-0070-000	2 WASHER, LOCK, SST, 0.097 ID, 0.165 OD COML AP FOR 108 THRU 110	2	
R	-115	P312-0007-00 0	2 STUD, CONTINUOUS THD, SST, 4-40 X 3/8 77250 312-0007-000 AP FOR 108 THRU 110	4	
R	116	DDM50P	2 CONNECTOR 71468 371-0971-000	1	A2P1
R	-117	68-1660-26	2 NUT, SELF-LKG, HEX., AL, 2-56 72962 333-0604-000 AP	2	
R	-118	MS51959-3	2 SCREW, MACH., SST, 2-56 X 1/4 342-0133-000 AP	2	
R	119	DCM37P	2 CONNECTOR 71468 371-0970-000	1	A2P2
R	-120	68-1660-26	2 NUT, SELF-LKG, HEX., AL, 2-56 72962 333-0604-000 AP	2	
R	-121	MS51959-3	2 SCREW, MACH., SST, 2-56 X 1/4 342-0133-000 AP	2	
R	123	757-3459-001	2 CHASSIS, ELECTRICAL EQUIP.	1	
R	124	761-0664-001	3 POST	1	
R	125	761-0664-002	3 POST	1	
R	126	546-6128-002	3 CLIP, SPG TENS	2	
R	-127	305-2043-000	3 RIVET, TUBULAR, SIL PL BRS, 0.060 DIA X 0.084 LG SHK COML AP	4	
R	128	541-6557-002	3 PIN, LOCATING	2	
R	129	F12NCFMA2-62	3 NUT, SELF-LKG, CLINCH, CAD. PL STL, 6-32 72962 333-0842-000	2	
R	130	761-0673-001	3 CHASSIS, ELECTRICAL EQUIP.	1	
6-8	-	757-3462-001	1 TERMINAL BOARD, FRONT SEE FIG. 6-7-108 FOR NHA	REF	
	1	1N645	2 SEMICOND DEVICE 353-2607-000	1	A2CR77
	2	RC07GF393K	2 RESISTOR, FXD, COMP, 39K, 10%, 1/4W 745-0806-000 EFF THRU MCN 274	1	A2R75
	2	RC07GF473K	2 RESISTOR, FXD, COMP, 47K, 10%, 1/4W 745-0809-000 EFF MCN 275	1	A2R75
	3	997F14	2 RESISTOR, THRM, 10K, 10%, 1/2W 10646 714-1738-000	1	A2RT11
	4	1N758A	2 SEMICOND DEVICE 353-2724-000	1	A2CR87
	5	1N645	2 SEMICOND DEVICE 353-2607-000	1	A2CR41
	6	1N973B	2 SEMICOND DEVICE 353-3184-000 EFF THRU MCN 179	1	A2CR42
	6	1N965B	2 SEMICOND DEVICE 353-3176-000 EFF MCN 180	1	A2CR42
	7	150D396X9010 B2	2 CAPACITOR, FXD, ELECTROLYTIC 39UF, 10%, 10V 56289 184-7650-000	1	A2C31
	8	RC07GF472K	2 RESISTOR, FXD, COMP, 4.7K, 10%, 1/4W 745-0773-000	1	A2R46
	9	RC07GF472K	2 RESISTOR, FXD, COMP, 4.7K, 10%, 1/4W 745-0773-000	1	A2R45
	10	150D105X9060 B2	2 CAPACITOR, FXD, ELECTROLYTIC, 1UF, 10%, 60V 56289 184-9064-520 EFF THRU MCN 179	1	A2C21
	10	150D105X0035 A2	2 CAPACITOR, FXD, ELECTROLYTIC, 1UF, 20%, 35V 56289 184-7298-000 EFF MCN 180	1	A2C21



TPI-3668-017

Figure 6-8. Front Terminal Board.

section 6
parts list

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-8	11 150D105X906C B2	2	CAPACITOR, FXD, ELECTROLYTIC, 1UF, 10%, 60V 56289 184-9064-520 EFF THRU MCN 179	A2C28	1
	11 150D105X0035 A2	2	CAPACITOR, FXD, ELECTROLYTIC, 1UF, 20%, 35V 56289 184-7398-000 EFF MCN 180	A2C28	1
	12 RC07GF183K	2	RESISTOR, FXD, COMP, 18K, 10%, 1/4W 745-0794-000 EFF THRU MCN 179	A2R71	1
	12 RC07GF182K	2	RESISTOR, FXD, COMP, 1.8K, 10%, 1/4W 745-0758-000 EFF MCN 180	A2R71	1
	13 997F14	2	RESISTOR, THRM, 10K, 10%, 1/2W 10646 714-1738-000 EFF THRU MCN 179	A2RT5	1
	13 997F17	2	RESISTOR, THRM, 1K, 10%, 1/2W 10646 714-1724-000 EFF MCN 180	A2RT5	1
	14 RC07GF562K	2	RESISTOR, FXD, COMP, 5.6K, 10%, 1/4W 745-0776-000 EFF THRU MCN 179	A2R49	1
	14 RC07GF561K	2	RESISTOR, FXD, COMP, 560 OHMS, 10%, 1/4W 745-0740-000 EFF MCN 180	A2R49	1
	15 RC07GF182J	2	RESISTOR, FXD, COMP, 1.8K, 5%, 1/4W 745-0757-000	A2R47	AR
	15 RC07GF202J	2	RESISTOR, FXD, COMP, 2K, 5%, 1/4W 745-0759-000	A2R47	AR
	15 RC07GF222J	2	RESISTOR, FXD, COMP, 2.2K, 5%, 1/4W 745-0760-000	A2R47	AR
	15 RC07GF242J	2	RESISTOR, FXD, COMP, 2.4 K, 5%, 1/4W 745-0762-000	A2R47	AR
	15 RC07GF272J	2	RESISTOR, FXD, COMP, 2.7K, 5%, 1/4W 745-0763-000	A2R47	AR
	15 RC07GF302K	2	RESISTOR, FXD, COMP, 3K, 10%, 1/4W 745-0765-000	A2R47	AR
	15 RC07GF332J	2	RESISTOR, FXD, COMP, 3.3K, 5%, 1/4W 745-0766-000	A2R47	AR
	15 RC07GF362J	2	RESISTOR, FXD, COMP, 3.6K, 5%, 1/4W 745-0768-000	A2R47	AR
	15 RC07GF392J	2	RESISTOR, FXD, COMP, 3.9K, 5%, 1/4W 745-0769-000	A2R47	AR
	15 RC07GF432J	2	RESISTOR, FXD, COMP, 4.3K, 5%, 1/4W 745-0771-000	A2R47	AR
	15 RC07GF472J	2	RESISTOR, FXD, COMP, 4.7K, 5%, 1/4W 745-0772-000	A2R47	AR
	15 RC07GF512J	2	RESISTOR, FXD, COMP, 5.1K, 5%, 1/4W 745-0774-000	A2R47	AR
	15 RC07GF562J	2	RESISTOR, FXD, COMP, 5.6K, 5%, 1/4W 745-0775-000	A2R47	AR
	16 1N645	2	SEMICONV DEVICE 353-2607-000	A2CR64	1
	16A 150D395X906C B2	2	CAPACITOR, FXD, ELECTROLYTIC, 3.9UF, 10%, 60V 56289 184-9064-590 EFF THRU MCN 885	A2C22	1
	16A 150D395X9075 B2	2	CAPACITOR, FXD, ELECTROLYTIC, 3.9UF, 10%, 75V 56289 184-9500-000 EFF MCN 886	A2C22	1
	17 3D1098	2	SEMICONV DEVICE 08732 353-3537-000 EFF THRU MCN 1566	A2Q15	1
	17 CB1028	2	SEMICONV DEVICE 08732 353-3653-010 EFF MCN 1567		1
	18	1	DELETED		
	19 1N645	2	SEMICONV DEVICE 353-2607-000	A2CR44	1

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-8	20	RC07GF273K	2 RESISTOR, FXD, COMP, 27K, 10%, 1/4W 745-0800-000 EFF THRU MCN 180	A2R32	1
	20A	RC07GF220K	2 RESISTOR, FXD, COMP, 22 OHMS, 10%, 1/4W 745-0689-000 EFF MCN 181	A2R83	1
	21	1N645	2 SEMICOND DEVICE 353-2607-000	A2CR43	1
	22	1N645	2 SEMICOND DEVICE 353-2607-000	A2CR29	1
	23	1N645	2 SEMICOND DEVICE 353-2607-000	A2CR47	1
	24	1N645	2 SEMICOND DEVICE 353-2607-000	A2CR27	1
	25	1N645	2 SEMICOND DEVICE 353-2607-000	A2CR53	1
	25A	1N645	2 SEMICOND DEVICE 353-2607-000 EFF MCN 181	A2CR104	1
	26	1N645	2 SEMICOND DEVICE 353-2607-000	A2CR26	1
	27	1N645	2 SEMICOND DEVICE 353-2607-000	A2CR71	1
	28	RC07GF273K	2 RESISTOR, FXD, COMP, 27K, 10%, 1/4W 745-0800-000 EFF THRU MCN 180	A2R36	1
	28A	RC07GF123K	2 RESISTOR, FXD, COMP, 12K, 10%, 1/4W 745-0788-000 EFF MCN 181	A2R36	1
	29	RC07GF153K	2 RESISTOR, FXD, COMP, 15K, 10%, 1/4W 745-0791-000 EFF THRU MCN 179	A2R66	1
	29	RCC07GF392K	2 RESISTOR, FXD, COMP, 3.9K, 10%, 1/4W 745-0770-000 EFF MCN 180	A2R66	1
	30	1N645	2 SEMICOND DEVICE 353-2607-000	A2CR83	1
	31	1N645	2 SEMICOND DEVICE 353-2607-000	A2CR50	1
	32	RC07GF220K	2 RESISTOR, FXD, COMP, 22 OHMS, 10%, 1/4W 745-0689-000	A2R16	1
	33	1N645	2 SEMICOND DEVICE 353-2607-000	A2CR89	1
	34	1N758A	2 SEMICOND DEVICE 353-2724-000	A2CR82	1
-	35	150D107X0010 R2	2 CAPACITOR, FXD, ELECTROLYTIC, 100UF, 20%, 10V 56289 184-7651-000	A2C25	1
	35A	1N645	2 SEMICOND DEVICE 353-2607-000	A2CR98	1
	35B	1N645	2 SEMICOND DEVICE 353-2607-000	A2CR99	1
	36	1N645	2 SEMICOND DEVICE 353-2607-000	A2CR67	1
	37	3D1098	2 SEMICOND DEVICE 08732 353-3537-000 EFF THRU MCN 1566	A2Q10	1
	37	CB1028	2 SEMICOND DEVICE 08732 353-3653-010 EFF MCN 1567	A2Q10	1
	38	3D1098	2 SEMICOND DEVICE 08732 353-3537-000 EFF THRU MCN 1566	A2Q14	1
	38	CB1028	2 SEMICOND DEVICE 08732 353-3653-010 EFF MCN 1567	A2Q14	1
	39	997F14	2 RESISTOR, THRM, 10K, 10%, 1/2W 10646 714-1738-000	A2RT9	1
	40	RCC07GF183K	2 RESISTOR, FXD, COMP, 18K, 10%, 1/4W 745-0794-000	A2R31	1
	40A	855-502X5V02 03Z	2 CAPACITOR, FXD, CERAMIC DIELECTRIC, 0.02UF, M20%P80%, 100V 72982 913-3678-000 EFF MCN 1567	A2C1	1
	41	RC07GF100K	2 RESISTOR, FXD, COMP, 10 OHMS, 10%, 1/4W 745-0677-000	A2R81	1
	42	1N645	2 SEMICOND DEVICE 353-2607-000	A2CR81	1
	43	805-014X5V01 03Z	2 CAPACITOR, FXD, CERAMIC DIELECTRIC, 0.01UF, M20%P80%, 100V 72982 913-3680-000 EFF THRU MCN 1566	A2C36	1
	43	855-502X5V02 03Z	2 CAPACITOR, FXD, CERAMIC DIELECTRIC, 0.02UF, M20%P80%, 100V 72982 913-3678-000 EFF MCN 1567	A2C36	1

section 6
parts list

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-8	44	150D334X0035 A2	2 CAPACITOR, FXD, ELECTROLYTIC, 0.33UF, 20%, 35V 56289 184-7406-000 EFF THRU MCN 179	A2C7	1
	44	150D106X0020 B2	2 CAPACITOR, FXD, ELECTROLYTIC, 10UF, 20%, 20V 56289 184-7375-000 EFF MCN 180	A2C7	1
	45	RC07GF223K	2 RESISTOR, FXD, COMP, 22K, 10%, 1/4W 745-0797-000	A2R76	1
	45A	RC07GF223K	2 RESISTOR, FXD, COMP, 22K, 10%, 1/4W 745-0797-000 EFF THRU MCN 179	A2R78	1
	45A	1N645	2 SEMICOND DEVICE 353-2607-000 EFF MCN 180 THRU 3614	A2CR65	1
	45B	1N645	2 SEMICOND DEVICE 353-2607-000 EFF MCN 3615	A2CR65	1
R	46	RC07GF273K	2 RESISTOR, FXD, COMP, 27K, 10%, 1/4W 745-0800-000 EFF MCN 180	A2R78	1
	46A	805-014X5V01 03Z	2 CAPACITOR, FXD, CERAMIC DIELECTRIC, 0.01UF, M20%P80%, 100V 72982 913-3680-000 EFF MCN 400 THRU 1566	A2C38	1
	46A	855-502X5V02 03Z	2 CAPACITOR, FXD, CERAMIC DIELECTRIC, 0.02UF, M20%P80%, 100V 72982 913-3678-000 EFF MCN 1567	A2C38	1
	47	997F14	2 RESISTOR, THRM, 10K, 10%, 1/2W 10646 714-1738-000	A2RT6	1
R	47A	RC07GF223K	2 RESISTOR, FXD, COMP, 22K, 10%, 1/4W 745-0797-000 EFF MCN 2326 THRU 2332, 2336, 2337, 2338, 2342 AND UP	A2R84	1
	48	RC07GF392K	2 RESISTOR, FXD, COMP, 3.9K, 10%, 1/4W 745-0770-000	A2R77	1
	49	150D395X9060 B2	2 CAPACITOR, FXD, ELECTROLYTIC, 3.9UF, 10%, 60V 56289 184-9064-590 EFF THRU MCN 885	A2C26	1
	49	150D395X9075 B2	2 CAPACITOR, FXD, ELECTROLYTIC, 3.9UF, 10%, 75V 56289 184-9500-000 EFF MCN 886	A2C26	1
	50	150D105X9060 B2	2 CAPACITOR, FXD, ELECTROLYTIC, 1UF, 10%, 60V 56289 184-9064-520	A2C32	1
R	50A	1N645	2 SEMICOND DEVICE 353-2607-000 EFF MCN 1168	A2CR109	1
	51	RC07GF273K	2 RESISTOR, FXD, COMP, 27K, 10%, 1/4W 745-0800-000	A2R44	1
	52	RC07GF394K	2 RESISTOR, FXD, COMP, 390K, 10%, 1/4W 745-0842-000	A2R50	1
	53	RC07GF683K	2 RESISTOR, FXD, COMP, 68K, 10%, 1/4W 745-0815-000	A2R53	1
	54	1N645	2 SEMICOND DEVICE 353-2607-000 EFF THRU MCN 3614	A2CR63	1
	54A	1N645	2 SEMICOND DEVICE 353-2607-000 EFF MCN 3615	A2CR63	1
	55	RC07GF394K	2 RESISTOR, FXD, COMP, 390K, 10%, 1/4W 745-0842-000	A2R74	1
	56	1N645	2 SEMICOND DEVICE 353-2607-000	A2CR78	1
	57	RC20GF562K	2 RESISTOR, FXD, COMP, 5.6K, 10%, 1/2W 745-1384-000	A2R80	1
	58	RC07GF562K	2 RESISTOR, FXD, COMP, 5.6K, 10%, 1/4W 745-0776-000	A2R51	1
	59	3D1098	2 SEMICOND DEVICE 08732 353-3537-000 EFF THRU MCN 1566	A2Q12	1
	59	CB1028	2 SEMICOND DEVICE 08732 353-3653-010 EFF MCN 1567 THRU 3614 ONLY	A2Q12	1

FIG. - ITEM	PART NO.	IN- DENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-8	60 3D1098	2	SEMICONV DEVICE 08732 353-3537-000 EFF THRU MCN 1566	A2Q13	1
	60 CB1028	2	SEMICONV DEVICE 08732 353-3653-010 EFF MCN 1567	A2Q13	1
	61 RC07GF100K	2	RESISTOR, FXD, COMP, 10 OHMS, 10%, 1/4W 745-0677-000	A2R54	1
	61A 1N645	2	SEMICONV DEVICE 353-2607-000	A2CR12	1
	61B 855-502X5V02 03Z	2	CAPACITOR, FXD, CERAMIC DIELECTRIC, 0.02UF, M20%P80%, 100V 72982 913-3678-000 EFF MCN 3615	A2C41	1
	62 1N645	2	SEMICONV DEVICE 353-2607-000 EFF THRU MCN 3614	A2CR45	1
	63 RC07GF103K	2	RESISTOR, FXD, COMP, 10K, 10%, 1/4W 745-0785-000 EFF THRU MCN 3614 ONLY	A2R58	1
	64 RC07GF472K	2	RESISTOR, FXD, COMP, 4.7K, 10%, 1/4W 745-0773-000 EFF THRU MCN 3614 ONLY	A2R59	1
	64A 1N645	2	SEMICONV DEVICE 353-2607-000 EFF MCN 3615	A2CR110	1
	65 RC07GF273K	2	RESISTOR, FXD, COMP, 27K, 10%, 1/4W 745-0800-000 EFF THRU MCN 3614 ONLY	A2R57	1
	65A 997F14	2	RESISTOR, THRM, 10K, 10%, 1/2W 10646 714-1738-000 EFF MCN 181	A2RT3	1
	66 805-014X5V01 03Z	2	CAPACITOR, FXD, CERAMIC DIELECTRIC, 0.01UF, M20%P80%, 100V 72982 913-3680-000 EFF THRU MCN 1566	A2C29	1
	66 855-502X5V02 03Z	2	CAPACITOR, FXD, CERAMIC DIELECTRIC, 0.02UF, M20%P80%, 100V 72982 913-3678-000 EFF MCN 1567	A2C29	1
	67 3D1098	2	SEMICONV DEVICE 08732 353-3537-000 EFF THRU MCN 1566	A2Q11	1
	67 CB1028	2	SEMICONV DEVICE 08732 353-3653-010 EFF MCN 1567	A2Q11	1
	68 1N645	2	SEMICONV DEVICE 353-2607-000 EFF THRU MCN 3614 ONLY	A2CR76	1
	68 RC07GF153K	2	RESISTOR, FXD, COMP, 15K, 10%, 1/4W 745-0791-000 EFF MCN 3615	A2R1	1
	69 1N645	2	SEMICONV DEVICE 353-2607-000	A2CR79	1
	69A 855-502X5V02 03Z	2	CAPACITOR, FXD, CERAMIC DIELECTRIC, 0.02UF, M20%P80%, 100V 72982 913-3678-000 EFF MCN 1567	A2C3	1
	70 1N645	2	SEMICONV DEVICE 353-2607-000	A2CR69	1
	70A 1N758A	2	SEMICONV DEVICE 353-2724-000 EFF MCN 180	A2CR96	1
R	70B 1N758A	2	SEMICONV DEVICE 353-2724-000 EFF THRU MCN 399	A2CR97	1
	70B 1N758A	2	SEMICONV DEVICE 353-2724-000 EFF MCN 400	A2CR102	1
	71 RC07GF103K	2	RESISTOR, FXD, COMP, 10K, 10%, 1/4W 745-0785-000 EFF THRU MCN 180	A2R6	1
	71 RC07GF183K	2	RESISTOR, FXD, COMP, 18K, 10%, 1/4W 745-0794-000 EFF MCN 181	A2R6	1
	72 RC07GF683K	2	RESISTOR, FXD, COMP, 68K, 10%, 1/4W 745-0815-000 EFF THRU MCN 180	A2R39	1
R	72A	2	DELETED		

section 6
parts list

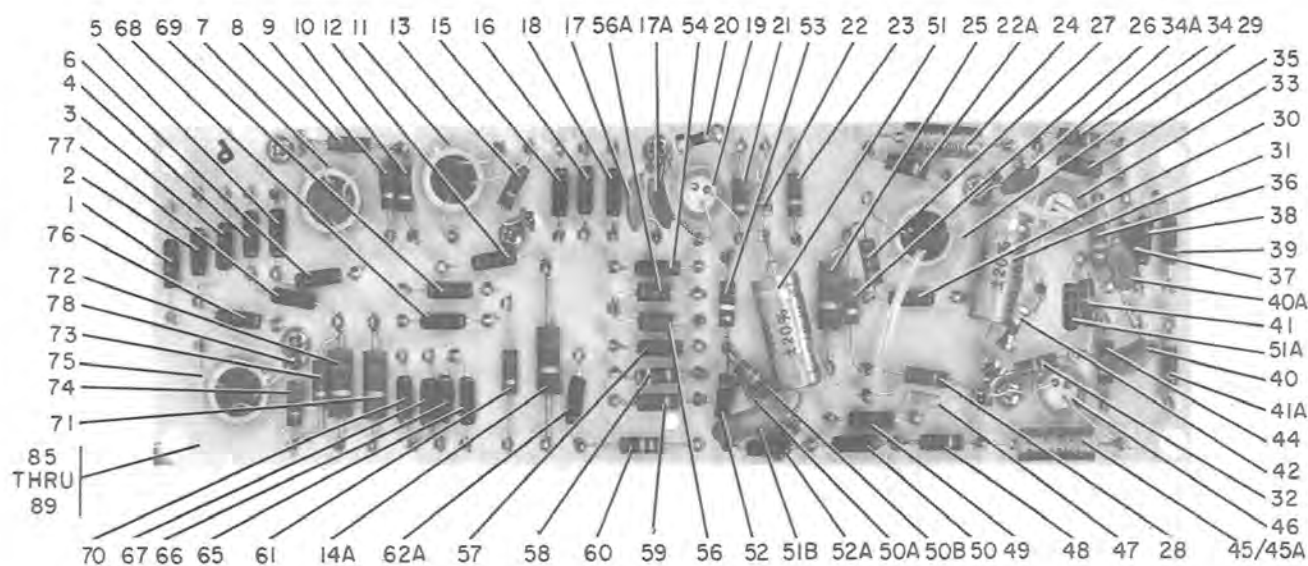
FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-8	72A 1N971B	2	SEMICONV DEVICE 353-3182-000 EFF MCN 180	A2CR62	1
	73 150D566X9006 B2	2	CAPACITOR, FXD, ELECTROLYTIC, 56UF, 10%, 6V 56289 184-7644-000 EFF THRU MCN 180	A2C23	1
	73 150D396X9010 B2	2	CAPACITOR, FXD, ELECTROLYTIC 39UF, 10%, 10V 56289 184-7650-000 EFF MCN 181	A2C23	1
	74 150D395X9060 B2	2	CAPACITOR, FXD, ELECTROLYTIC, 3.9UF, 10%, 60V 56289 184-9064-590 EFF THRU MCN 885	A2C20	1
	74 150D395X9075 B2	2	CAPACITOR, FXD, ELECTROLYTIC, 3.9UF, 10%, 75V 56289 184-9500-000 EFF MCN 886	A2C20	1
	- 75	1	DELETED		
R	76 150D106X9060 R2	2	CAPACITOR, FXD, ELECTROLYTIC, 10UF, 10%, 60V 56289 184-9064-640 EFF THRU MCN 3614	A2C24	1
R	76 150D156X9050 R2	2	CAPACITOR, FXD, ELECTROLYTIC, 15UF, 10%, 50V 56289 184-9063-310 EFF MCN 3615	A2C24	1
	77 3D1098	2	SEMICONV DEVICE 08732 353-3537-000 EFF THRU MCN 1566	A209	1
	77 CB1028	2	SEMICONV DEVICE 08732 353-3653-010 EFF MCN 1567	A209	1
	78 RC07GF183K	2	RESISTOR, FXD, COMP, 18K, 10%, 1/4W 745-0794-000 EFF THRU MCN 179	A2R12	1
	78 RC07GF821K	2	RESISTOR, FXD, COMP, 820 OHMS, 10%, 1/4W 745-0746-000 EFF MCN 180	A2R12	1
	79 RC07GF562K	2	RESISTOR, FXD, COMP, 5.6K, 10%, 1/4W 745-0776-000 EFF THRU MCN 179	A2R42	1
	80 RC07GF182J	2	RESISTOR, FXD, COMP, 1.8K, 5%, 1/4W 745-0757-000	A2R41	AR
	80 RC07GF202J	2	RESISTOR, FXD, COMP, 2K, 5%, 1/4W 745-0759-000	A2R41	AR
	80 RC07GF222J	2	RESISTOR, FXD, COMP, 2.2K, 5%, 1/4W 745-0760-000	A2R41	AR
	80 RC07GF242J	2	RESISTOR, FXD, COMP, 2.4 K, 5%, 1/4W 745-0762-000	A2R41	AR
	80 RC07GF272J	2	RESISTOR, FXD, COMP, 2.7K, 5%, 1/4W 745-0763-000	A2R41	AR
	80 RC07GF302K	2	RESISTOR, FXD, COMP, 3K, 10%, 1/4W 745-0765-000	A2R41	AR
	80 RC07GF332J	2	RESISTOR, FXD, COMP, 3.3K, 5%, 1/4W 745-0766-000	A2R41	AR
	80 RC07GF362J	2	RESISTOR, FXD, COMP, 3.6K, 5%, 1/4W 745-0768-000	A2R41	AR
	80 RC07GF392J	2	RESISTOR, FXD, COMP, 3.9K, 5%, 1/4W 745-0769-000	A2R41	AR
	80 RC07GF432J	2	RESISTOR, FXD, COMP, 4.3K, 5%, 1/4W 745-0771-000	A2R41	AR
	80 RC07GF472J	2	RESISTOR, FXD, COMP, 4.7K, 5%, 1/4W 745-0772-000	A2R41	AR
	80 RC07GF512J	2	RESISTOR, FXD, COMP, 5.1K, 5%, 1/4W 745-0774-000	A2R41	AR
	80 RC07GF562J	2	RESISTOR, FXD, COMP, 5.6K, 5%, 1/4W 745-0775-000	A2R41	AR
	80 RC07GF622J	2	RESISTOR, FXD, COMP, 6.2K, 5%, 1/4W 745-0777-000	A2R41	AR

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-8	80	RC07GF682J	2 RESISTOR, FXD, COMP, 6.8K, 5%, 1/4W 745-0778-000	A2R41	AR
	80	RC07GF752J	2 RESISTOR, FXD, COMP, 7.5K, 5%, 1/4W 745-0780-000	A2R41	AR
	80	RC07GF822J	2 RESISTOR, FXD, COMP, 8.2K, 5%, 1/4W 745-0781-000	A2R41	AR
	81	150D105X9060 B2	2 CAPACITOR, FXD, ELECTROLYTIC, 1UF, 10%, 60V 56289 184-9064-520 EFF THRU MCN 179	A2C19	1
	81	150D105X0035 A2	2 CAPACITOR, FXD, ELECTROLYTIC, 1UF, 20%, 35V 56289 184-7398-000 EFF MCN 180	A2C19	1
	82	997F14	2 RESISTOR, THRM, 10K, 10%, 1/2W 10646 714-1738-000 EFF THRU MCN 179	A2RT4	1
	83	RC07GF472K	2 RESISTOR, FXD, COMP, 4.7K, 10%, 1/4W 745-0773-000	A2R40	1
	84	RCU7GF472K	2 RESISTOR, FXD, COMP, 4.7K, 10%, 1/4W 745-0773-000	A2R38	1
	85	1N973B	2 SEMICOND DEVICE 353-3184-000 EFF THRU MCN 179	A2CR39	2
	85	1N970B	2 SEMICOND DEVICE 353-3181-000 EFF MCN 180	A2CR39	1
	86	RC07GF330K	2 RESISTOR, FXD, COMP, 33 OHMS, 10%, 1/4W 745-0695-000	A2R37	1
	87	1N645	2 SEMICOND DEVICE 353-2607-000	A2CR37	1
	88	150D395X9060 B2	2 CAPACITOR, FXD, ELECTROLYTIC, 3.9UF, 10%, 60V 56289 184-9064-590 EFF THRU MCN 885	A2C18	1
	88	150D395X9075 B2	2 CAPACITOR, FXD, ELECTROLYTIC, 3.9UF, 10%, 75V 56289 184-9500-000 EFF MCN 886	A2C18	1
	89	3D1098	2 SEMICOND DEVICE 08732 353-3537-000 EFF THRU MCN 1566	A2Q8	1
	89	CB1028	2 SEMICOND DEVICE 08732 353-3653-010 EFF MCN 1567	A2Q8	1
	90	1N645	2 SEMICOND DEVICE 353-2607-000	A2CR30	1
	91	RC07GF183K	2 RESISTOR, FXD, COMP, 18K, 10%, 1/4W 745-0794-000 EFF THRU MCN 179	A2R55	1
	91	RC07GF821K	2 RESISTOR, FXD, COMP, 820 OHMS, 10%, 1/4W 745-0746-000 EFF MCN 180	A2R55	1
	92	997F14	2 RESISTOR, THRM, 10K, 10%, 1/2W 10646 714-1738-000 EFF THRU MCN 179	A2RT3	1
	92	1N971B	2 SEMICOND DEVICE 353-3182-000 EFF MCN 180	A2CR68	1
	92A	1N645	2 SEMICOND DEVICE 353-2607-000 EFF MCN 180	A2CR73	1
	93	RC07GF562K	2 RESISTOR, FXD, COMP, 5.6K, 10%, 1/4W 745-0776-000 EFF THRU MCN 179	A2R35	1
	93A	RC07GF101K	2 RESISTOR, FXD, COMP, 100 OHMS, 10%, 1/4W 745-0713-000 EFF MCN 180	A2R35	1
	94	150D475X0035 B2	2 CAPACITOR, FXD, ELECTROLYTIC, 4.7UF, 20%, 35V 56289 184-7396-000 EFF THRU MCN 179	A2C4	1
	95	RC07GF182J	2 RESISTOR, FXD, COMP, 1.8K, 5%, 1/4W 745-0757-000	A2R34	AR

section 6
parts list

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-8	95 RC07GF202J	2	RESISTOR, FXD, COMP, 2K, 5%, 1/4W 745-0759-000	A2R34	AR
	95 RC07GF222J	2	RESISTOR, FXD, COMP, 2.2K, 5%, 1/4W 745-0760-000	A2R34	AR
	95 RC07GF242J	2	RESISTOR, FXD, COMP, 2.4 K, 5%, 1/4W 745-0762-000	A2R34	AR
	95 RC07GF272J	2	RESISTOR, FXD, COMP, 2.7K, 5%, 1/4W 745-0763-000	A2R34	AR
	95 RC07GF302K	2	RESISTOR, FXD, COMP, 3K, 10%, 1/4W 745-0765-000	A2R34	AR
	95 RC07GF332J	2	RESISTOR, FXD, COMP, 3.3K, 5%, 1/4W 745-0766-000	A2R34	AR
	95 RC07GF362J	2	RESISTOR, FXD, COMP, 3.6K, 5%, 1/4W 745-0768-000	A2R34	AR
	95 RC07GF392J	2	RESISTOR, FXD, COMP, 3.9K, 5%, 1/4W 745-0769-000	A2R34	AR
	95 RC07GF432J	2	RESISTOR, FXD, COMP, 4.3K, 5%, 1/4W 745-0771-000	A2R34	AR
	95 RC07GF472J	2	RESISTOR, FXD, COMP, 4.7K, 5%, 1/4W 745-0772-000	A2R34	AR
	95 RC07GF512J	2	RESISTOR, FXD, COMP, 5.1K, 5%, 1/4W 745-0774-000	A2R34	AR
	95 RC07GF562J	2	RESISTOR, FXD, COMP, 5.6K, 5%, 1/4W 745-0775-000	A2R34	AR
	95 RC07GF622J	2	RESISTOR, FXD, COMP, 6.2K, 5%, 1/4W 745-0777-000	A2R34	AR
	95 RC07GF682J	2	RESISTOR, FXD, COMP, 6.8K, 5%, 1/4W 745-0778-000	A2R34	AR
	95 RC07GF752J	2	RESISTOR, FXD, COMP, 7.5K, 5%, 1/4W 745-0780-000	A2R34	AR
	95 RC07GF822J	2	RESISTOR, FXD, COMP, 8.2K, 5%, 1/4W 745-0781-000	A2R34	AR
	96 RC07GF472K	2	RESISTOR, FXD, COMP, 4.7K, 10%, 1/4W 745-0773-000	A2R17	1
	97 1N973B	2	SEMICOND DEVICE 353-3184-000 EFF THRU MCN 179	A2CR36	1
	97 1N970B	2	SEMICOND DEVICE 353-3181-000 EFF MCN 180	A2CR36	1
	98 RC07GF472K	2	RESISTOR, FXD, COMP, 4.7K, 10%, 1/4W 745-0773-000	A2R33	1
	99 RC07GF100K	2	RESISTOR, FXD, COMP, 10 OHMS, 10%, 1/4W 745-0677-000 EFF THRU MCN 179	A2R69	1
	99 RC07GF101K	2	RESISTOR, FXD, COMP, 100 OHMS, 10%, 1/4W 745-0713-000 EFF MCN 180	A2R42	1
	100 1N645	2	SEMICOND DEVICE 353-2607-000	A2CR35	1
	101 1N645	2	SEMICOND DEVICE 353-2607-000	A2CR9	1
R	101A RC07GF272K	2	RESISTOR, FXD, COMP, 2.7K, 10%, 1/4W 745-0764-000 EFF THRU MCN 3614 ONLY	A2R19	1
R	101B 855-502X5V02 03Z	2	CAPACITOR, FXD, CERAMIC DIELECTRIC, 0.02UF, M20%P80%, 100V 72982 913-3678-000 EFF MCN 1557 THRU 3614 ONLY	A2C40	1
	102 DH226	2	TRANSFORMER 80223 677-1485-000 EFF THRU MCN 1585	A2T1	1
	102 JH485	2	TRANSFORMER 80223 677-0300-320 EFF MCN 1586	A2T1	1
R	102A RC07GF123K	2	RESISTOR, FXD, COMP, 12K, 10%, 1/4W 745-0788-000 EFF THRU MCN 3614 ONLY	A2R52	1

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-8	103	RC07GF100K	2 RESISTOR, FXD, COMP, 10 OHMS, 10%, 1/4W 745-0677-000	A2R61	1
	103A	855-502X5V02 03Z	2 CAPACITOR, FXD, CERAMIC DIELECTRIC, 0.02UF, M20%P80%, 100V 72982 913-3678-000 EFF MCN 1567 THRU 3614 ONLY	A2C30	1
	104	DH226	2 TRANSFORMER 80223 677-1485-000 EFF THRU MCN 1585	A2T2	1
	104	JH485	2 TRANSFORMER 80223 677-0300-320 EFF MCN 1586	A2T2	1
	104A	3D1098	2 SEMICOND DEVICE 08732 353-3537-000 EFF THRU MCN 1566	A2Q17	1
	104A	CB1028	2 SEMICOND DEVICE 08732 353-3653-010 EFF MCN 1567 THRU 3614 ONLY	A2Q17	1
	105	150D395X9060 B2	2 CAPACITOR, FXD, ELECTROLYTIC, 3.9UF, 10%, 60V 56289 184-9064-590 EFF THRU MCN 885	A2C27	1
	105	150D395X9075 B2	2 CAPACITOR, FXD, ELECTROLYTIC, 3.9UF, 10%, 75V 56289 184-9500-000 EFF MCN 886	A2C27	1
	106	3D1098	2 SEMICOND DEVICE 08732 353-3537-000 EFF THRU MCN 1566	A2Q16	1
	106	CB1028	2 SEMICOND DEVICE 08732 353-3653-010 EFF MCN 1567	A2Q16	1
	107	4040-2HOTTIN NED	2 TERMINAL 77147 304-0014-000		8
-108	P313-0050-00 O	2 NUT, PLAIN, HEX., NI PL BR5, 2-56 313-0050-000 AP			7
-109	310-0075-000	2 WASHER, LOCK, BRZ, 0.088 ID, 0.165 OD COML AP			7
-109A	MS51957-3	2 SCREW, MACH., SST, 2-56 X 1/4 343-0124-000 AP			7
	110	757-3461-000	2 TERMINAL BOARD		1
	111	T1571	3 HOLDER 98291 352-9970-000 EFF THRU MCN 1585		2
	112	G4-2112	3 HOLDER 15409 352-9939-000		8
	113	SL388-351DWH T	3 TERMINAL 12615 306-1342-000		143
	114	761-0674-001	3 TERMINAL BOARD P		1
R 6-9	-	757-3464-001	1 TERMINAL BOARD, REAR SEE FIG. 6-7-109 FOR NHA		REF
	1	1N645	2 SEMICOND DEVICE 353-2607-000	A2CR75	1
	2	1N645	2 SEMICOND DEVICE 353-2607-000	A2CR59	1
	3	1N645	2 SEMICOND DEVICE 353-2607-000	A2CR60	1
	4	1N645	2 SEMICOND DEVICE 353-2607-000	A2CR25	1
	5	1N645	2 SEMICOND DEVICE 353-2607-000	A2CR19	1
	6	1N645	2 SEMICOND DEVICE 353-2607-000	A2CR20	1
	7	2N697	2 TRANSISTOR 352-0197-000	A2Q6	1
	8	RC07GF681K	2 RESISTOR, FXD, COMP, 680 OHMS, 10%, 1/4W 745-0743-000	A2R25	1
	9	RC07GF272K	2 RESISTOR, FXD, COMP, 2.7K, 10%, 1/4W 745-0764-000	A2R24	1
	10	RC07GF562K	2 RESISTOR, FXD, COMP, 5.6K, 10%, 1/4W 745-0776-000	A2R65	1
	11	2N1481	2 TRANSISTOR 352-0223-000 EFF THRU MCN 671 DELETED BY SB1	A2Q5	1



TPI-3656-017

Figure 6-9. Rear Terminal Board.

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
R	6-9 11	2N697	2 TRANSISTOR 352-0197-000 EFF MCN 672 THRU 3614 ADDED BY SB1	1	
	12	1N645	2 SEMICOND DEVICE 353-2607-000 EFF THRU MCN 3614	1	
	13	RC07GF101K	2 RESISTOR, FXD, COMP, 100 OHMS, 10%, 1/4W 745-0713-000 EFF THRU MCN 671 DELETED BY SB1	1	
	13	RC07GF681K	2 RESISTOR, FXD, COMP, 680 OHMS, 10%, 1/4W 745-0743-000 EFF MCN 672 THRU 3614 ADDED BY SB1	1	
	- 14		1 DELETED		
	14A	RC07GF272K	2 RESISTOR, FXD, COMP, 2.7K, 10%, 1/4W 745-0764-000 EFF THRU MCN 179 DELETED BY SB1	1	
	14A	RW69V561	2 RESISTOR, FXD, WW, 560 OHMS, 5%, 3W 747-5355-000 EFF MCN 180 THRU 671 DELETED BY SB1	1	
	14A	RC20GF182K	2 RESISTOR, FXD, COMP, 1.8K, 10%, 1/2W 745-1363-000 EFF MCN 672 THRU 3614 ADDED BY SB1	1	
	15	1N645	2 SEMICOND DEVICE 353-2607-000 EFF MCN 180 THRU 3614	1	
	16	1N645	2 SEMICOND DEVICE 353-2607-000	1	

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-9 17	805-014X5V01 03Z	2	CAPACITOR, FXD, CERAMIC DIELECTRIC, 0.01UF, M20%P80%, 100V 72982 913-3680-000 EFF THRU MCN 1566	A2C6	1
17	855-502X5V02 03Z	2	CAPACITOR, FXD, CERAMIC DIELECTRIC, 0.02UF, M20%P80%, 100V 72982 913-3678-000 EFF MCN 1567	A2C6	1
17A	855-502X5V02 03Z	2	CAPACITOR, FXD, CERAMIC DIELECTRIC, 0.02UF, M20%P80%, 100V 72982 913-3678-000 EFF MCN 1567	A2C9	1
18	1N645	2	SEMICONV DEVICE 353-2607-000	A2CR2	1
19	3D1098	2	SEMICONV DEVICE 08732 353-3537-000 EFF THRU MCN 1566	A2Q4	1
19	CB1028	2	SEMICONV DEVICE 08732 353-3653-010 EFF MCN 1567	A2Q4	1
20	997H2	2	RESISTOR, THRM, 5K, 10%, 1/2W 10646 714-1726-000	A2RT10	1
21	RC07GF472K	2	RESISTOR, FXD, COMP, 4.7K, 10%, 1/4W 745-0773-000	A2R18	1
22	1N758A	2	SEMICONV DEVICE 353-2724-000	A2CR84	1
22A	RC07GF100K	2	RESISTOR, FXD, COMP, 10 OHMS, 10%, 1/4W 745-0677-000 EFF MCN 180	A2R69	1
23	RC07GF220K	2	RESISTOR, FXD, COMP, 22 OHMS, 10%, 1/4W 745-0689-000	A2R63	1
24	RC07GF334K	2	RESISTOR, FXD, COMP, 330K, 10%, 1/4W 745-0839-000 EFF THRU MCN 179	A2R15	1
24	150D475X0035 R2	2	CAPACITOR, FXD, ELECTROLYTIC, 4.7UF, 20%, 35V 56289 184-7396-000 EFF MCN 180	A2C4	1
25	RC20GF272K	2	RESISTOR, FXD, COMP, 2.7K, 10%, 1/2W 745-1370-000 EFF THRU MCN 350	A2R4	1
25	RC20GF182K	2	RESISTOR, FXD, COMP, 1.8K, 10%, 1/2W 745-1363-000 EFF MCN 351	A2R4	1
26	RC07GF272K	2	RESISTOR, FXD, COMP, 2.7K, 10%, 1/4W 745-0764-000	A2R62	1
27	1N645	2	SEMICONV DEVICE 353-2607-000 EFF THRU MCN 350 ONLY	A2CR92	1
28	RC20GF102K	2	RESISTOR, FXD, COMP, 1K, 10%, 1/2W 745-1352-000 EFF THRU MCN 350	A2R8	1
28	RCC7GF681K	2	RESISTOR, FXD, COMP, 680 OHMS, 10%, 1/4W 745-0743-000 EFF MCN 351	A2R8	1
29	2N697	2	TRANSISTOR 352-0197-000	A2Q3	1
30	1N645	2	SEMICONV DEVICE 353-2607-000	A2CR95	1
31	150D157X0006 R2	2	CAPACITOR, FXD, FLECTROLYTIC, 150UF, 20%, 6V 56289 184-7645-000 EFF THRU MCN 179	A2C11	1
31	150D107X0010 R2	2	CAPACITOR, FXD, ELECTROLYTIC, 10UF, 20%, 10V 56289 184-7651-000 EFF MCN 180	A2C11	1
32	RC07GF183K	2	RESISTOR, FXD, COMP, 18K, 10%, 1/4W 745-0794-000	A2R11	1
33	3D1098	2	SEMICONV DEVICE 08732 353-3537-000 EFF THRU MCN 1566	A2Q2	1
33	CB1028	2	SEMICONV DEVICE 08732 353-3653-010 EFF MCN 1567	A2Q2	1
34	RC07GF220K	2	RESISTOR, FXD, COMP, 22 OHMS, 10%, 1/4W 745-0689-000	A2R48	1

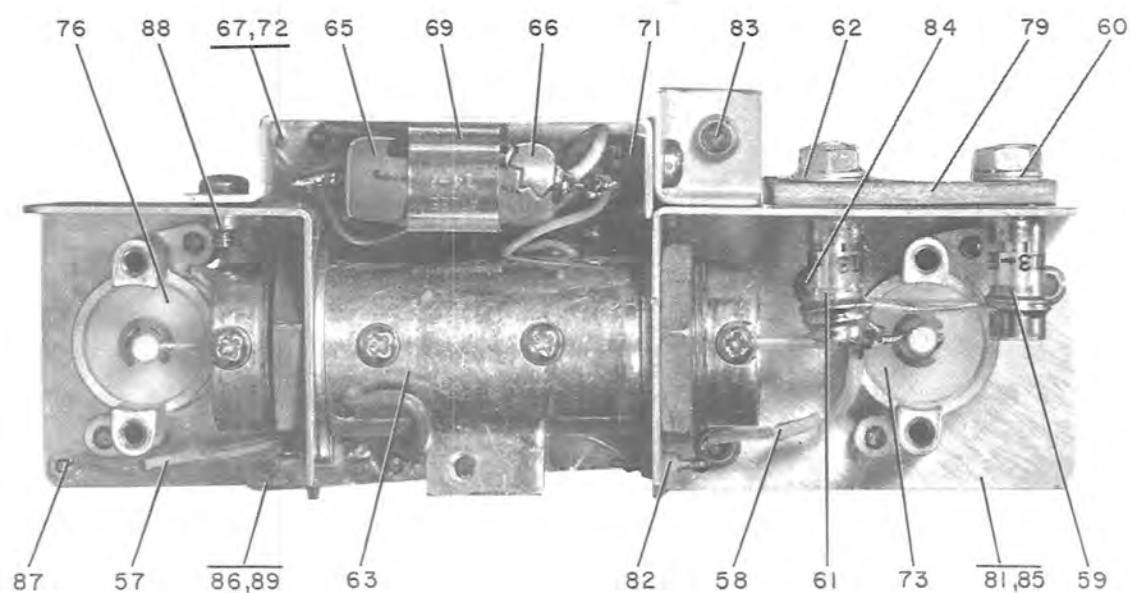
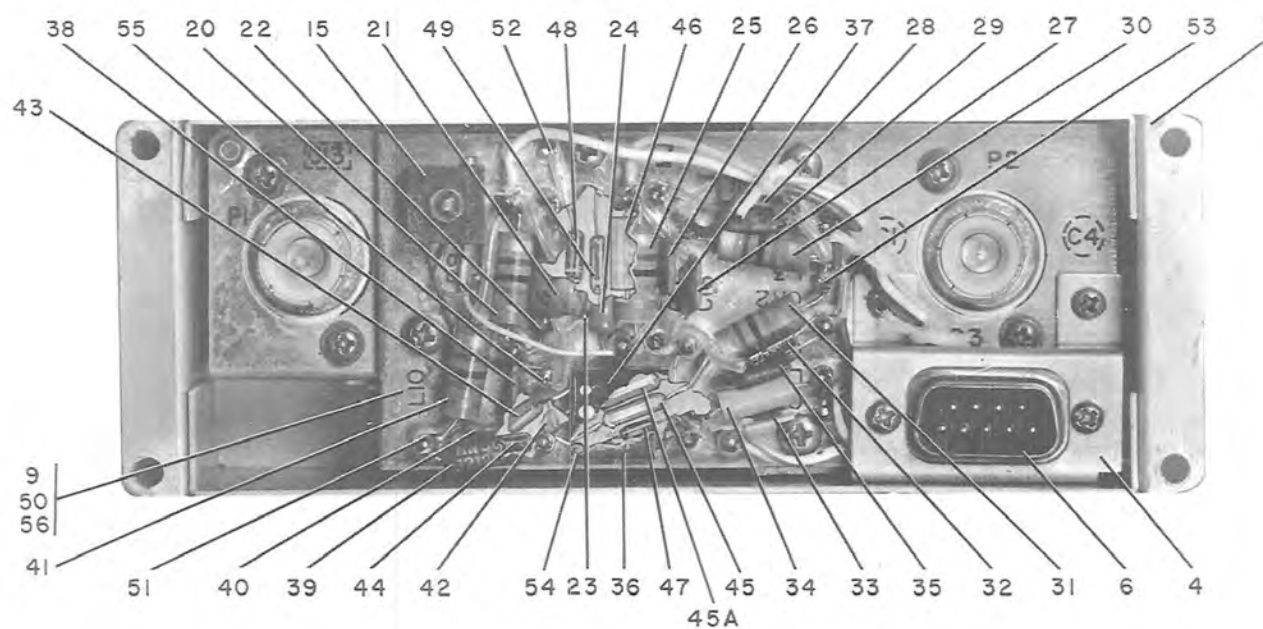
section 6
parts list

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
R 6-9	34A 55C30	2	CAPACITOR, FXD, CERAMIC DIELECTRIC, 0.025UF, M20%P80%, 500V 01939 913-3154-000 EFF MCN 2401 THRU 2403, 2412, 241, 2422, 2428 AND UP	A2C39	1
	35 1N645	2	SEMICONV DEVICE 353-2607-000	A2CR38	1
	36 RC07GF103K	2	RESISTOR, FXD, COMP, 10K, 10%, 1/4W 745-0785-000	A2R30	1
	37 1N645	2	SEMICONV DEVICE 353-2607-000	A2CR94	1
	38 1N645	2	SEMICONV DEVICE 353-2607-000	A2CR61	1
	39 1N645	2	SEMICONV DEVICE 353-2607-000	A2CR58	1
	40 805-014X5V01 03Z	2	CAPACITOR, FXD, CERAMIC DIELECTRIC, 0.01UF, M20%P80%, 100V 72982 913-3680-000 EFF THRU MCN 1566	A2C8	1
	40 855-502X5V02 03Z	2	CAPACITOR, FXD, CERAMIC DIELECTRIC, 0.02UF, M20%P80%, 100V 72982 913-3678-000 EFF MCN 1567	A2C8	1
	40A 855-502X5V02 03Z	2	CAPACITOR, FXD, CERAMIC DIELECTRIC, 0.02UF, M20%P80%, 100V 72982 913-3678-000 EFF MCN 1567	A2C33	1
	41 1N758A	2	SEMICONV DEVICE 353-2724-000	A2CR88	1
R	41A RC07GF472K	2	RESISTOR, FXD, COMP, 4.7K, 10%, 1/4W 745-0773-000 EFF THRU MCN 3614 ONLY	A2R1	1
	41A 1N645	2	SEMICONV DEVICE 353-2607-000 EFF MCN 3615	A2CR114	1
	42 997F14	2	RESISTOR, THRM, 10K, 10%, 1/2W 10646 714-1738-000	A2RT7	1
	43	2	DELETED		
R	44 RC07GF102K	2	RESISTOR, FXD, COMP, 1K, 10%, 1/4W 745-0749-000 EFF THRU MCN 3614 ONLY	A2R2	1
	45 150D395X9060 B2	2	CAPACITOR, FXD, ELECTROLYTIC, 3.9UF, 10%, 60V 56289 184-9064-590 EFF THRU MCN 885	A2C2	1
	45A 150D395X9075 B2	2	CAPACITOR, FXD, ELECT., 3.9 MF, 10%, 75V 56289 184-9500-000 EFF MCN 3615	A2C2	1
	46 3D1098	2	SEMICONV DEVICE 08732 353-3537-000 EFF THRU MCN 1566	A2Q1	1
	46 CB1028	2	SEMICONV DEVICE 08732 353-3653-010 EFF MCN 1567 THRU 3614	A2Q1	1
	47 997F14	2	RESISTOR, THRM, 10K, 10%, 1/2W 10646 714-1738-000 EFF THRU MCN 3614	A2RT1	1
	48 RC07GF100K	2	RESISTOR, FXD, COMP, 10 OHMS, 10%, 1/4W 745-0677-000	A2R3	1
	49 1N645	2	SEMICONV DEVICE 353-2607-000	A2CR91	1
	50 1N645	2	SEMICONV DEVICE 353-2607-000 EFF THRU MCN 3614	A2CR1	1
	50A 1N970B	2	SEMICONV DEVICE 353-3181-000 EFF MCN 400	A2CR103	1
	50B RC07GF334K	2	RESISTOR, FXD, COMP, 330K, 10%, 1/4W 745-0839-000 EFF MCN 180 THRU 433	A2R15	1
	50B RC07GF104K	2	RESISTOR, FXD, COMP, 100K, 10%, 1/4W 745-0821-000 EFF MCN 434	A2R15	1
	51 150D537	2	CAPACITOR, FXD, ELECTROLYTIC, 100UF, 10%, 10V 56289 184-9063-340 EFF MCN 1154, 1169, 1472	A2C5	1

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-9	51	15GD107X001C R2	2 CAPACITOR, FXD, FLECTROLYTIC, 100UF, 20%, 10V 56289 184-7651-000 SEE OVERHAUL HISTORY DATA FOR FFF	A2C5	1
	51A	RW69V180	2 RESISTOR, FXD, WW, 18 OHMS 5%, 3W 747-5325-000 EFF THRU MCN 179	A2R83	1
	51B	55C23	2 CAPACITOR, FXD, CERAMIC DIELECTRIC, 0.05UF, M20%P80%, 50V 56289 913-3885-000 EFF MCN 400	A2C37	1
	52	1N645	2 SEMICOND DEVICE 353-2607-000 EFF THRU MCN 399	A2CR85	1
	52	RC07GF122K	2 RESISTOR, FXD, COMP, 1.2K, 10%, 1/4W 745-0752-000 EFF MCN 400	A2P32	1
	52A	1N645	2 SEMICOND DEVICE 353-2607-000 EFF MCN 400	A2CR85	1
	53	RC07GF124K	2 RESISTOR, FXD, COMP, 120K, 10%, 1/4W 745-0824-000 EFF THRU MCN 274	A2R14	1
	53	RC07GF154K	2 RESISTOR, FXD, COMP, 150K, 10%, 1/4W 745-0827-000 EFF MCN 275 THRU 399	A2R14	1
	53	RC07GF104K	2 RESISTOR, FXD, COMP, 100K, 10%, 1/4W 745-0821-000 EFF MCN 400 THRU 433	A2R14	1
	53	RC07GF164J	2 RESISTOR, FXD, COMP, 160K, 5%, 1/4W 745-0828-000 EFF MCN 434	A2R14	1
	54	1N645	2 SEMICOND DEVICE 353-2607-000	A2CR3	1
-	55		1 DELETED		
	56	1N4003	2 SEMICOND DEVICE 353-6442-030	A2CR6	1
	56A	1N4003	2 SEMICOND DEVICE 353-6442-030	A2CR10	1
	57	1N645	2 SEMICOND DEVICE 353-2607-000	A2CR5	1
	58	RC07GF392K	2 RESISTOR, FXD, COMP, 3.9K, 10%, 1/4W 745-0770-000	A2R13	1
	59	RC07GF100K	2 RESISTOR, FXD, COMP, 10 OHMS, 10%, 1/4W 745-0677-000	A2R7	1
	60	RC07GF272K	2 RESISTOR, FXD, COMP, 2.7K, 10%, 1/4W 745-0764-000 EFF THRU MCN 179	A2R10	1
	60	RC07GF103K	2 RESISTOR, FXD, COMP, 10K, 10%, 1/4W 745-0785-000 EFF MCN 180	A2R10	1
	61	RW69V180	2 RESISTOR, FXD, WW, 18 OHMS 5%, 3W 747-5325-000 EFF THRU MCN 179	A2R21	1
	61	RW69V181	2 RESISTOR, FXD, WW, 180 OHMS, 5%, 3W 747-5345-000 EFF MCN 180 THRU 671 DELETED BY SB1	A2R21	1
	61	RC07GF272K	2 RESISTOR, FXD, COMP, 2.7K, 10%, 1/4W 745-0764-000 EFF MCN 672 ADDED BY SB1	A2R21	1
-	62		1 DELETED		
	62A	1N645	2 SEMICOND DEVICE 353-2607-000	A2CR90	1
-	63		1 DELETED		
-	64		1 DELETED		
	65	1N645	2 SEMICOND DEVICE 353-2607-000	A2CR17	1
	66	1N645	2 SEMICOND DEVICE 353-2607-000	A2CR15	1
	67	1N645	2 SEMICOND DEVICE 353-2607-000	A2CR18	1
	68	1N645	2 SEMICOND DEVICE 353-2607-000	A2CR24	1
	69	1N645	2 SEMICOND DEVICE 353-2607-000	A2CR57	1
	70	1N645	2 SEMICOND DEVICE 353-2607-000	A2CR16	1
	71	RC20GF182K	2 RESISTOR, FXD, COMP, 1.8K, 10%, 1/2W 745-1363-000	A2R23	1
	72	RC20GF182K	2 RESISTOR, FXD, COMP, 1.8K, 10%, 1/2W 745-1363-000	A2R26	1

section 6
parts list

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-9	73	RC07GF272K	2 RESISTOR, FxD, COMP, 2.7K, 10%, 1/4W 745-0764-000	A2R27	1
R	74	RC07GF681K	2 RESISTOR, FxD, COMP, 680 OHMS, 10%, 1/4W 745-0743-000 EFF THRU MCN 3614	A2R28	1
	75	2N697	2 TRANSISTOR 352-0197-000	A2Q7	1
	76	1N645	2 SEMICOND DEVICE 353-2607-000	A2CR66	1
	77	1N645	2 SEMICOND DEVICE 353-2607-000	A2CR21	1
	78	4040-2HOTTIN NED	2 TERMINAL 77147 304-0014-000		8
-	79	P313-0050-00 O	2 NUT, PLAIN, HEX., NI PL BRS, 2-56 313-0050-000 AP		8
-	80	310-0075-000	2 WASHER, LOCK, BRZ, 0.088 ID, 0.165 OD COML AP		8
R	-	80A MS51957-3	2 SCREW, MACH., SST, 2-56 X 1/4 343-0124-000 AP		6
R	85	757-3463-001	2 TERMINAL BOARD		1
R	86	G4-2112	3 HOLDER 15409 352-9939-000		2
R	87	T1571	3 HOLDER 98291 352-9970-000		3
R	88	SL388-351DWH T	3 TERMINAL 12615 306-1342-000		86
	89	761-0670-001	3 TERMINAL BOARD P		1
6-10 -	528-0468-000	1	DISCRIMINATOR, LOADING-PHASING SEE FIG. 6-2-8 FOR NHA		REF
1	761-7150-001	2	HOUSING, DISCR		2
-	2	P343-0284-00 O	2 SCREW, MACH., NI PL BRS, 4-40 X 3/16 77250 343-0284-000 AP		7
-	3	310-0396-000	2 WASHER, LOCK, BRZ, 0.115 ID, 0.202 OD 310-0396-000 AP		7
4	757-3435-001	2	BRACKET, ELECTRICAL CONN		1
-	5	MS51957-2	2 SCREW, MACH., SST, 2-56 X 3/16 343-0123-000 AP		2
6	DEM9P	2	CONNECTOR 71468 371-0967-000	A8P3	1
-	7	68-1660-26	2 NUT, SELF-LKG, HEX., AL, 2-56 72962 333-0604-000 AP		2
-	8	P343-0299-00 O	2 SCREW, MACH., NI PL BRS, 2-56 X 1/4 77250 343-0299-000 AP		2
9	757-3465-001	2	TERMINAL BOARD ASSY		1
-	10	553-5119-003	2 WASHER AP		3
-	11	541-5972-002	2 SPACER, SLV AP		1
-	12	MS51957-14	2 SCREW, MACH., SST, 4-40 X 5/16 343-0134-000 AP		3
-	13	P343-0291-00 O	2 SCREW, MACH., NI PL BRS, 4-40 X 3/4 77250 343-0291-000 AP		1
-	14	310-0396-000	2 WASHER, LOCK, BRZ, 0.115 ID, 0.202 OD 310-0396-000 AP		1
15	328IL1-203	3	RESISTOR, VAR, 20K, 20%, 1/2W 80294 380-4041-000	A8R9	1
-	16	313-0166-000	3 NUT, PLAIN, HEX., NI PL BRS, 0-80 COML AP		1
-	17		1 DELETED		
-	18	310-0550-000	3 WASHER, FLAT, SST, 0.062 ID, 5/32 OD COML AP		1
-	19	P321-0294-00 O	3 SCREW, MACH., NI PL BRS, 0-80 X 3/8 77250 321-0294-000 AP		1
20	10178-19	3	COIL, RF, 1000UH 82142 240-2182-000	A8L8	1



TPI - 3669 - 017

Figure 6-10. Loading-Phasing Discriminator.

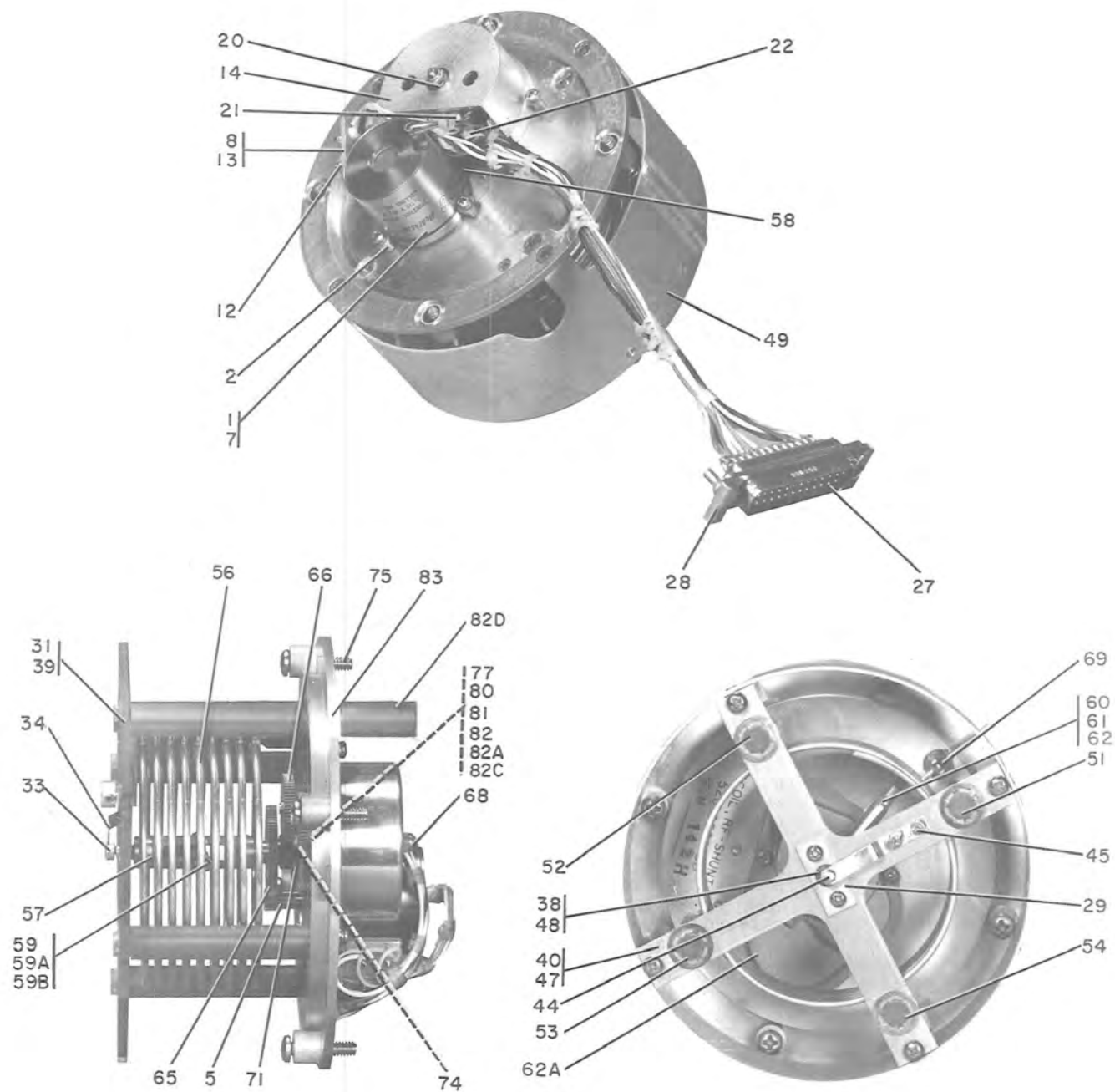
section 6
parts list

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-10	21	VK37BW103M	3 CAPACITOR, FXD, CERAMIC DIELECTRIC, 10,000PF, 20%, 200V 95275 913-5010-010	A8C14	1
	22	RN60D9091F	3 RESISTOR, FXD, FILM, 9.09K, 1%, 1/4W 705-6642-000	A8R6	1
	23	VK37BW103M	3 CAPACITOR, FXD, CERAMIC DIELECTRIC, 10,000PF, 20%, 200V 95275 913-5010-010	A8C15	1
	24	RN60D9091F	3 RESISTOR, FXD, FILM, 9.09K, 1%, 1/4W 705-6642-000	A8R7	1
	25	10178-19	3 COIL, RF, 1000UH 82142 240-2182-000	A8L9	1
	26	VK37BW103M	3 CAPACITOR, FXD, CERAMIC DIELECTRIC, 10,000PF, 20%, 200V 95275 913-5010-010	A8C16	1
	27	VK37BW103M	3 CAPACITOR, FXD, CERAMIC DIELECTRIC, 10,000PF, 20%, 200V 95275 913-5010-010	A8C17	1
	28	VK37BW103M	3 CAPACITOR, FXD, CERAMIC DIELECTRIC, 10,000PF, 20%, 200V 95275 913-5010-010	A8C9	1
	29	VK37BW103M	3 CAPACITOR, FXD, CERAMIC DIELECTRIC, 10,000PF, 20%, 200V 95275 913-5010-010	A8C10	1
	30	10178-19	3 COIL, RF, 1000UH 82142 240-2182-000	A8L3	1
	31	10178-19	3 COIL, RF, 1000UH 82142 240-2182-000	A8L5	1
	32	JAN1N914	3 SEMICOND DEVICE 353-3338-000	A8CR2	1
	33	UY03301J	3 CAPACITOR, FXD, CERAMIC DIELECTRIC, 300PF, 5%, 300V 73899 914-3079-000	A8C5	1
	34	MS18130-3	3 COIL, RF, 0.33UH 240-1564-000	A8L6	1
	35	VK37BW103M	3 CAPACITOR, FXD, CERAMIC DIELECTRIC, 10,000PF, 20%, 200V 95275 913-5010-010	A8C8	1
	36	RN60C1212F	3 RESISTOR, FXD, FILM, 12.1K, 1%, 1/8W 705-6299-000	A8R5	1
R	37	M9762	3 SEMICOND DEVICE SET 93332 353-3534-000	A8CR3A A8CR3B	1
	38	VK37BW103M	3 CAPACITOR, FXD, CERAMIC DIELECTRIC, 10,000PF, 20%, 200V 95275 913-5010-010	A8C7	1
	39	RN60C1212F	3 RESISTOR, FXD, FILM, 12.1K, 1%, 1/8W 705-6299-000	A8R4	1
	40	VK37BW103M	3 CAPACITOR, FXD, CERAMIC DIELECTRIC, 10,000PF, 20%, 200V 95275 913-5010-010	A8C6	1
	41	10178-19	3 COIL, RF, 1000UH 82142 240-2182-000	A8L10	1
	42	UY02820G	3 CAPACITOR, FXD, CERAMIC DIELECTRIC, 82PF, 2%, 300V 73899 914-3078-000	A8C2	1
	43	VK37BW103M	3 CAPACITOR, FXD, CERAMIC DIELECTRIC, 10,000PF, 20%, 200V 95275 913-5010-010	A8C3	1
	44	RN60C1471F	3 RESISTOR, FXD, FILM, 1.47K, 1%, 1/8W 705-6277-000	A8R2	1
	45	MS18130-3	3 COIL, RF, 0.33UH 240-1564-000 EFF THRU MCN 2729	A8L1	1
	45	MS18130-10	3 COIL, RF, 1.50UH 240-1570-000 EFF MCN 2730	A8L1	1

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-10	45A 772-5727-001	3	INDUCTANCE, RF EFF MCN 2730	A8L2	1
	46 10178-19	3	COIL, RF, 1000UH 82142	A8L7	1
			240-2182-000		
	47 USN1N3064	3	SEMICONV DEVICE 353-3289-000	A8CR1	1
R	48 SC630	3	SEMICONV DEVICE SET 03877	A8CR5	1
			353-3589-010		
R	49 SC630	3	SEMICONV DEVICE SET 03877	A8CR6	1
			353-3589-010		
	50 756-8302-003	3	TERMINAL BOARD P		1
	51 SL180-231	4	TERMINAL 12615 306-1272-000		6
	52 1P4-26A	4	TERMINAL 86577 306-0972-000		5
	53 SL283-230	4	TERMINAL 12615 306-1265-000		17
	54 SL179-230	4	TERMINAL 12615 306-1262-000		2
	55 3PP4-66A	4	TERMINAL 86577 306-0953-000		1
	56 756-8301-003	4	TERMINAL BOARD P		1
	57 UY03391J	2	CAPACITOR, FXD, CERAMIC	A8C13	1
			DIELECTRIC, .390PF, 5%, 300V 73899		
			914-3081-000		
	58 UY03100K	2	CAPACITOR, FXD, CERAMIC	A8C12	1
			DIELECTRIC, 10PF, 10%, 1000V		
			73899 914-3098-170		
	59 VC20GY	2	CAPACITOR, VAR, GLASS DIELECTRIC,	A8C4	1
			0.8 TO 8.5PF, 1000V 73899		
			922-0414-000		
	60 4041 7-32HOT	2	TERMINAL 77147 304-0196-000		1
	TINNED				
	61 VC20GY	2	CAPACITOR, VAR, GLASS DIELECTRIC,	A8C1	1
			0.8 TO 8.5PF, 1000V 73899		
			922-0414-000		
	62 4041 7-32HOT	2	TERMINAL 77147 304-0196-000		1
	TINNED				
	63 756-8294-003	2	TRANSFORMER, DISCR P	A8T1 THRU A8T3	1
- 64	756-8268-002	2	NUT, PLAIN, HEX. P AP		2
65	MS231-19-6-1	2	RESISTOR, FXD, FILM, 19.6 OHMS,	A8R3	1
	PCT		1%, 8W 714-3186-000		
66	MS231-34-8-1	2	RESISTOR, FXD, FILM, 34.8 OHMS,	A8R1	1
	PCT		1%, 8W 714-3187-000		
67	757-3436-001	2	HOLDER, RESISTOR		1
- 68	MS51957-13	2	SCREW, MACH., SST, 4-40 X 1/4		2
			343-0133-000 AP		
69	100-200-14-7	3	CLIP 99378 139-2231-000		2
- 70	MS16535-75	3	RIVET, TUBULAR, AL, 0.089 DIA X		2
			0.094 305-1754-000 AP		
71	R22NCFMA1-40	3	NUT, PLAIN, CLINCH, CAD PL STL,		1
			4-40 72962 333-0829-000		
72	761-0593-001	3	HOLDER, RESISTOR P		1
73	756-8259-002	2	CONNECTOR, RECP P	A8P2	1
- 74	P343-0299-00	2	SCREW, MACH., NI PL BRS, 2-56 X		2
	0		1/4 77250 343-0299-000 AP		
- 75	310-0075-000	2	WASHER, LOCK, BRZ, 0.088 ID, 0.165		2
			OD COML AP		
- 75A	310-0053-000	2	WASHER, FLAT, NI PL BRS, 0.093 ID		2
			X 0.250 OD COML AP		
76	756-8259-002	2	CONNECTOR, RECP P	A8P1	1
- 77	P343-0299-00	2	SCREW, MACH., NI PL BRS, 2-56 X		2
	0		1/4 77250 343-0299-000 AP		
- 78	310-0075-000	2	WASHER, LOCK, BRZ, 0.088 ID, 0.165		2
			OD COML AP		
- 78A	310-0053-000	2	WASHER, FLAT, NI PL BRS, 0.093 ID		2
			X 0.250 OD COML AP		
79	761-0587-001	2	PLATE, MTG P		1
- 80	P343-0299-00	2	SCREW, MACH., NI PL BRS, 2-56 X		2
	0		1/4 77250 343-0299-000 AP		

section 6
parts list

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-10	81	757-3437-001	2 SHIELD, RF	1	
	82	SL180-231	3 TERMINAL 12615 306-1272-000	1	
	83	R22NCFMA1-40	3 NUT, PLAIN, CLINCH, CAD PL STL, 4-40 72962 333-0839-000	2	
	84	R22NCFMA1-26	3 NUT, PLAIN, CLINCH, CAD PL STL, 2-56 72962 333-0837-000	4	
	85	761-0599-001	3 SHIELD, RF P	1	
	86	757-3438-001	2 SHIELD, RF	1	
	87	1P4-26A	3 TERMINAL 86577 306-0972-000	2	
	88	R22NCFMA1-40	3 NUT, PLAIN, CLINCH, CAD PL STL, 4-40 72962 333-0839-000	2	
	89	761-0598-001	3 SHIELD, RF P	1	
6-11 -	528-0525-000	1	COIL, RF, SERIES SEE FIG. 6-2-10 FOR NHA	REF	A
6-11 -	528-0526-000	1	COIL, RF, SHUNT SEE FIG. 6-2-11 FOR NHA	REF	B
	1	757-3451-001	2 MOTOR-GEAR ASSY	1	
	2	761-0485-001	2 CLAMP, RIM CLENCHING P	3	
-	3	MS51957-4	2 SCREW, MACH., SST, 2-56 X 5/16 343-0125-000 AP FOR 1 AND 2	3	
-	4	MS35338-134	2 WASHER, LOCK, SST, 0.088 ID, 0.175 OD 310-0275-000 AP FOR 1 AND 2	3	
	5	761-0482-001	3 GEAR, SPUR, 16 TEETH P	1	
-	6	031-0187MDP	3 PIN, SPG, SST, 0.031 DIA X 0.187 00287 311-0431-000 AP	1	
	7	2392-115-004	3 MOTOR 19710 229-1030-010	1	A5B1
	8	757-3454-001	2 BRACKET, TERMINAL	1	A6R1
-	9	P343-0265-00	2 SCREW, MACH., NI PL BRS, 4-40 X 1/4 77250 343-0285-000 AP	1	
-	10	SPL4040-4HOT TINNED	2 TERMINAL 77147 304-0332-000 AP	1	
-	11	310-0076-000	2 WASHER, LOCK, BRZ, 0.115 ID, 0.212 OD COML AP	1	
	12	SL283-230	3 TERMINAL 12615 306-1265-000	6	
	13	761-0507-001	3 BRACKET, TERMINAL P	1	
	14	761-0550-001	2 COVER, SWITCH P EFF THRU MCN 1729 ONLY	1	A
	14	761-0550-001	2 COVER, SWITCH P EFF THRU MCN 1705 ONLY	1	B
-	15	68NM40	2 NUT, SELF-LKG, HEX., AL, 4-40 72962 333-0347-000 AP	1	
-	16	031-0187MDP	2 PIN, SPG, SST, 0.031 DIA X 0.187 00287 311-0431-000 AP	1	
-	17	761-0485-001	2 CLAMP, RIM CLENCHING P AP	2	
-	18	MS51957-4	2 SCREW, MACH., SST, 2-56 X 5/16 343-0125-000 AP	2	
-	19	MS35338-134	2 WASHER, LOCK, SST, 0.088 ID, 0.175 OD 310-0275-000 AP	2	
R	20	SFR144PPK25- 26	2 BEARING 83086 309-0784-000 EFF THRU MCN 359	1	A
R	20	S125-250FHHP 15LY5	2 BEARING 40920 309-1977-050 EFF MCN 360	1	A
R	20	SFR144PPK25- 26	2 BEARING 83086 309-0784-000 EFF THRU MCN 710	1	B
R	20	S125-250FHHP 15LY5	2 BEARING 40920 309-1977-050 EFF MCN 711	1	B



TPI-3657-017

Figure 6-11. Series and Shunt Radio Frequency Coils.

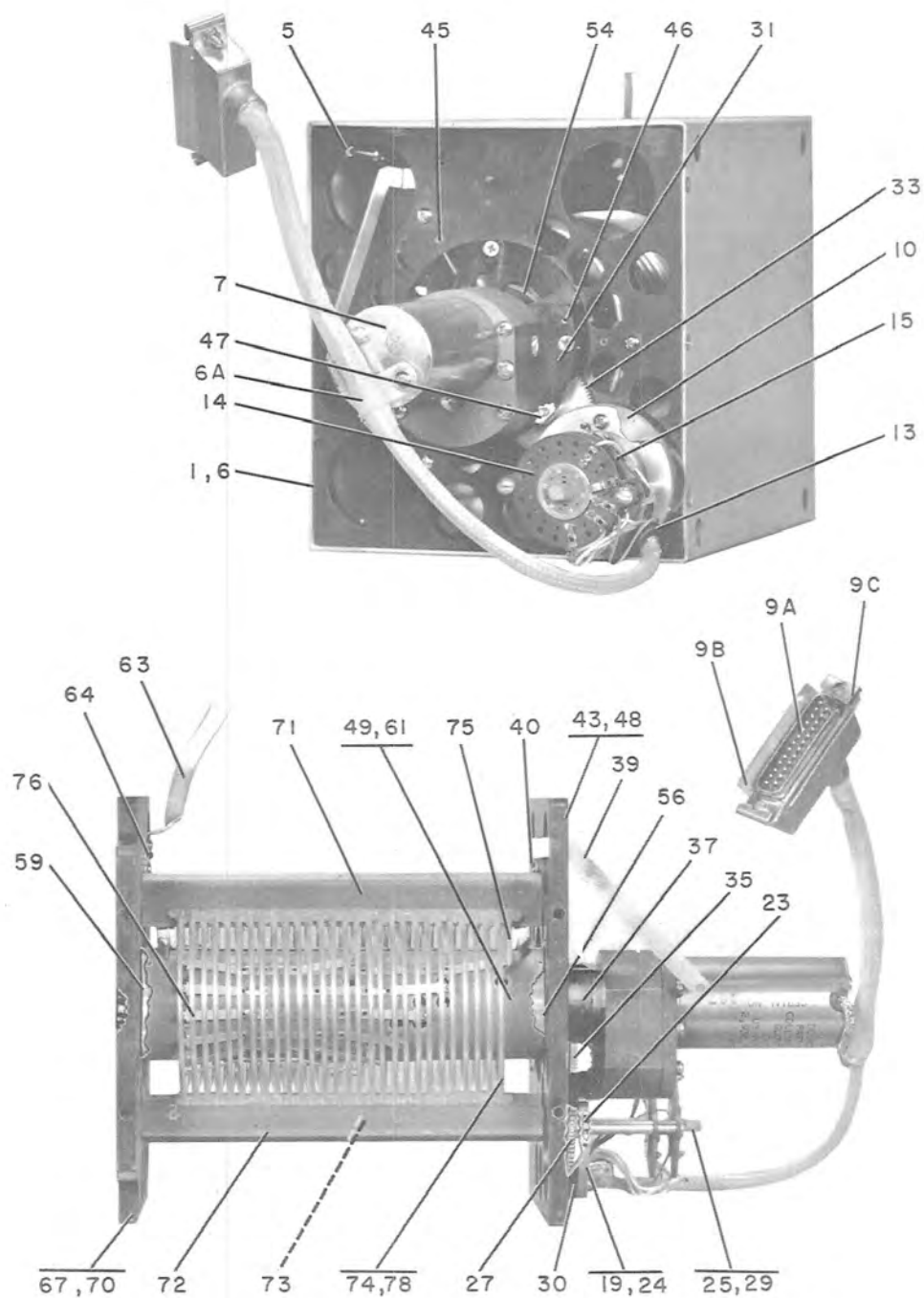
section 6
parts list

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
R 6-11 21	247868A	2	SWITCH SECTION 76854 269-2602-010	A5S1B 1	A
R 21	247868A	2	SWITCH SECTION 76854 269-2602-010 EFF THRU MCN 835 ONLY	A6S1B 1	B
	22 246023A	2	SWITCH SECTION 76854 269-2602-020	A5S1A A6S1A 1	
R 23	541-5949-002	2	SPACER, SLV AP FOR 21 AND 22	4	A
R 23	541-5949-002	2	SPACER, SLV AP FOR 21 AND 22	2	B
- 24		1	DELETED		
R 25	MS51957-8	2	SCREW, MACH., SST, 2-56 X 5/8 343-0005-000 AP FOR 21 AND 22	2	A
	25 MS51957-8	2	SCREW, MACH., SST, 2-56 X 5/8 343-0005-000 EFF THRU MCN 138 AP FOR 21 AND 22	2	B
R 25	MS51957-6	2	SCREW, MACH., SST, 2-56 X 7/16 343-0127-000 EFF MCN 139 AP FOR 21 AND 22	2	B
R 26	15517	2	WASHER, NM, GLASS CLOTH, 0.088 ID X 0.150 OD 76854 302-0440-000 AP FOR 21 AND 22	4	A
R 26	15517	2	WASHER, NM, GLASS CLOTH, 0.088 ID X 0.150 OD 76854 302-0440-000 AP FOR 21 AND 22	4	B
R 26	15517	2	WASHER, NM, GLASS CLOTH, 0.088 ID X 0.150 OD 76854 302-0440-000 AP FOR 21 AND 22	2	B
	27 DBM25P	2	CONNECTOR 71468 371-0969-000	A5P1 A6P1 1	
	28 DB51221-1	2	RETAINER LOCK 71468 370-2295-000 AP	1	
R 29	757-4513-001	2	RETAINER, BRG	1	A
R 29	757-4513-002	2	RETAINER, BRG	1	B
- 30	P343-0297-00 0	2	SCREW, MACH., NI PL BRS, 2-56 X 1/8 77250 343-0297-000 AP	2	
R 31	757-3453-001	2	PLATE, TOP	1	A
- 32	5105-25C	2	RING 79136 340-1046-010 AP	4	
33	761-0481-001	3	CONTACT, ELECTRICAL P	1	
34	761-0549-001	3	CONTACT, ELECTRICAL P	1	
- 35	761-0505-001	3	RIVET, SOLID P AP FOR 33 AND 34	1	
- 36	305-0048-000	3	RIVET, TUBULAR, SIL PL BRS, FH, 0.060 DIA X 11/64 COML AP FOR 33 AND 34	1	
- 37	310-0128-000	3	WASHER, FLAT, SIL PL BRS, 0.067 ID, 0.125 OD COML AP FOR 33 AND 34	2	
	38 SFR144PPK25- 26	3	BEARING 83086 309-0784-000 EFF THRU MCN 395	1	
	38 N418FCHHP25L 02	3	BEARING 40920 309-1976-020 EFF MCN 396	1	
R 39	761-0554-001	3	PLATE, TOP P	1	
40	761-7086-001	2	PLATE, TOP	1	B
- 41	P343-0287-00 0	2	SCREW, MACH., NI PL BRS, 4-40 X 3/8 77250 343-0287-000 AP	4	
- 42	310-0076-000	2	WASHER, LOCK, BRZ, 0.115 ID, 0.212 OD COML AP	4	
- 43	5105-25C	2	RING 79136 340-1046-010 AP	4	
44	761-0481-001	3	CONTACT, ELECTRICAL P	1	
45	761-0549-001	3	CONTACT, ELECTRICAL P	1	
- 46	305-0044-000	3	RIVET, TUBULAR, SIL PL BRS, FH, 0.060 DIA X 7/64 COML AP FOR 44 AND 45	2	

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-11 47	757-5698-001	3	PLATE, TOP P	1	
48	SFR144PPK25-26	2	BEARING 83086 309-0784-000 EFF	1	B
48	N418FCHHP25L02	2	BEARING 40920 309-1976-020 EFF	1	B
49	757-3455-001	2	SHIELD, COIL	1	B
- 50	MS51959-14	2	SCREW, MACH., SST, 4-40 X 5/16 342-0045-000 AP	4	
51	761-0503-001	2	POST, SUPPORT, NO. 1 P	1	
52	761-0503-002	2	POST, SUPPORT, NO. 2 P	1	
53	761-0503-003	2	POST, SUPPORT, NO. 3 P	1	
54	761-0503-004	2	POST, SUPPORT, NO. 4 P	1	
- 55	MS51959-26	2	SCREW, MACH., SST, 6-32 X 1/4 342-0060-000 AP FOR 51 THRU 54	4	
56	761-0551-005	2	COIL, RF P	1	A5L1 A6L1
57	757-3457-001	2	SHAFT, DRIVE	1	
58	323-0254-000	2	SCREW, MACH., SST, 0-80 X 1/8 COML	1	
59	761-0504-001	2	HOLDER, ELECTRICAL CONT P	1	
59A	777-4493-001	2	SPRING HELICAL EFF MCN 3281	1	A
59A	777-4493-001	2	SPRING, HELICAL EFF MCN 3274	1	B
	777-4492-001	2	PLUNGER, ELECTRICAL CONTACT EFF MCN 3281	1	A
59B	777-4492-001	2	PLUNGER, ELECTRICAL CONTACT EFF MCN 3274	1	B
59C	99-012-062-0250	2	PIN, SPG, BE. COP, 0.062 DIA X 0.250 LG 72962 311-0591-000 AP FOR 59A AND 59B	1	
60	761-0506-001	2	CONTACT, ELECTRICAL P	1	
61	B1547	2	BUSHING 98291 306-2522-010	1	
62	761-0486-001	2	SPRING, HELICAL, COMPRESSION P EFF THRU MCN 3280	1	A
62	761-0486-001	2	SPRING, HELICAL	1	B
62A	757-4515-001	2	COVER, PROTECTIVE	1	
- 63	P343-0297-000	2	SCREW, MACH., NI PL BRS, 2-56 X 1/8 77250 343-0297-000 AP	2	
- 64	310-0075-000	2	WASHER, LOCK, BRZ, 0.088 ID, 0.165 OD COML AP	2	
65	761-0500-001	2	GEAR CLUSTER, SPUR, 30 AND 88 TEETH P	1	
66	757-3450-001	2	GEAR CLUSTER, SPUR, 20 AND 64 TEETH	1	
- 67	5133-6C	2	RING 79136 340-0256-000 AP	1	
- 67A	761-0488-001	3	BEARING, SLV	1	
- 67B	761-0499-001	3	GEAR CLUSTER, SPUR, 64 TEETH	1	
68	761-0510-001	2	SHAFT, GEAR P EFF THRU MCN 2027	1	A
68	772-5721-001	2	SHAFT, GEAR P EFF MCN 2028	1	A
68	761-0510-001	2	SHAFT, GEAR P EFF THRU MCN 1985	1	B
68	772-5721-001	2	SHAFT, GEAR P EFF MCN 1986	1	B
- 68A	MS16624-12	2	RING 340-0021-000 AP	1	
69	2A36A12	2	TERMINAL 92825 306-0643-000	1	
- 70	MS51959-2	2	SCREW, MACH., SST, 2-56 X 3/16 342-0132-000 AP	1	
71	761-0494-001	2	RETAINER, BRG P	1	
- 72	P347-0020-000	2	SCREW, MACH., SST, FIL H, 2-56 X 1/8 77250 347-0020-000 AP	2	
- 73		1	DELETED		
74	NMC612ZM3J	2	BEARING 43334 309-1527-000	1	
75	P343-0172-000	2	SCREW, MACH., SST, 6-32 X 9/16 343-0172-000	4	
- 76	340-0641-000	2	SLEEVE, SPG 91314 AP	4	

section 6
parts list

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-11	77	761-0547-001	2 RETAINER, PIN P EFF THRU MCN 1729 ONLY	1	A
	77	761-0547-001	2 RETAINER, PIN P EFF THRU MCN 1705 ONLY	1	B
-	78	MS51957-1	2 SCREW, MACH., SST, 2-56 X 1/8 343-0122-000 AP	2	
-	79	MS35338-134	2 WASHER, LOCK, SST, 0.088 ID, 0.175 OD 310-0275-000 AP	2	
R	80	761-0548-001	2 PIN, SHOULDERED P EFF THRU MCN 2027	1	A
R	80	772-5722-001	2 PIN, SHOULDERED P EFF MCN 2028	1	A
R	80	761-0548-001	2 PIN, SHOULDERED P EFF THRU MCN 1985	1	B
R	80	772-5722-001	2 PIN, SHOULDERED P EFF MCN 1986	1	B
	81	761-0493-001	2 GROMMET, RUB. P EFF THRU MCN 1729 ONLY	1	A
	82	SFR144PPK25- 26	2 BEARING 83086 309-0784-000 EFF THRU MCN 359	1	A
	82	S125-250FHHP 15LY5	2 BEARING 40920 309-1977-050 EFF MCN 360	1	A
	82	SFR144PPK25- 26	2 BEARING 83086 309-0784-000 EFF THRU MCN 710	1	B
	82	S125-250FHHP 15LY5	2 BEARING 40920 309-1977-050 EFF MCN 711	1	B
	82A	768-5745-001	2 DISK P EFF MCN 1730	1	A
	82A	768-5745-001	2 DISK P EFF MCN 1706	1	B
-	82B	MS16625-1031	2 RING 340-0197-000 AP	1	
	82C	AN6227-3	2 GASKET 013-0255-000 EFF MCN 1730	1	A
	82C	AN6227-3	2 GASKET 013-0255-000 EFF MCN 1706	1	B
R	82D	540-9049-003	2 POST, ELECTRICAL-MECHANICAL EQUIP.	1	A
R	-	82E MS51957-14	2 SCREW, MACH., SST, 4-40 X 5/16 343-0134-000 AP	1	
-	82F	MS35338-135	2 WASHER, LOCK, SST, 0.115 ID, 0.212 OD 310-0279-000 AP	1	
	83	757-3452-001	2 PLATE, BOTTOM	1	A
	83	757-3452-002	2 PLATE, BOTTOM	1	B
6-12	-	528-0524-000	1 COIL, RF, VARIABLE STEPPING SEE 6-2-12 FOR NHA	REF	
	1	757-3447-001	2 WRAPAROUND, STEPPING	1	
-	2	P343-0708-00 O	2 SCREW, MACH., NI PL BRS, 6-32 X 9/16 77250 343-0708-000 AP	4	
-	3	P342-0151-00 O	2 SCREW, MACH., NI PL BRS, 4-40 X 3/16 77250 342-0151-000 AP	15	
-	4	340-0641-000	2 SLEEVE, SPG 91314 AP	4	
	5	543-4762-002	3 BUSHING, CAPTIVE SCR	4	
	6	761-0708-001	3 WRAPAROUND, STEPPING COIL P	1	
R	6A	HP5N	2 CLAMP 09922 150-1542-000 EFF MCN 2865	1	
R	-	6B P343-0292-00 O	2 SCREW, MACH., NI PL BRS, 4-40 X 7/8 77250 343-0292-000 AP	1	
R	-	6C 310-0055-000	2 WASHER, FLAT, NI PL BRS, 0.147 ID X 0.312 OD COML AP	1	
R	-	6D 310-0447-000	2 WASHER, FLAT, SST, 0.147 ID, 0.437 OD COML AP	1	



TPI-3670-017

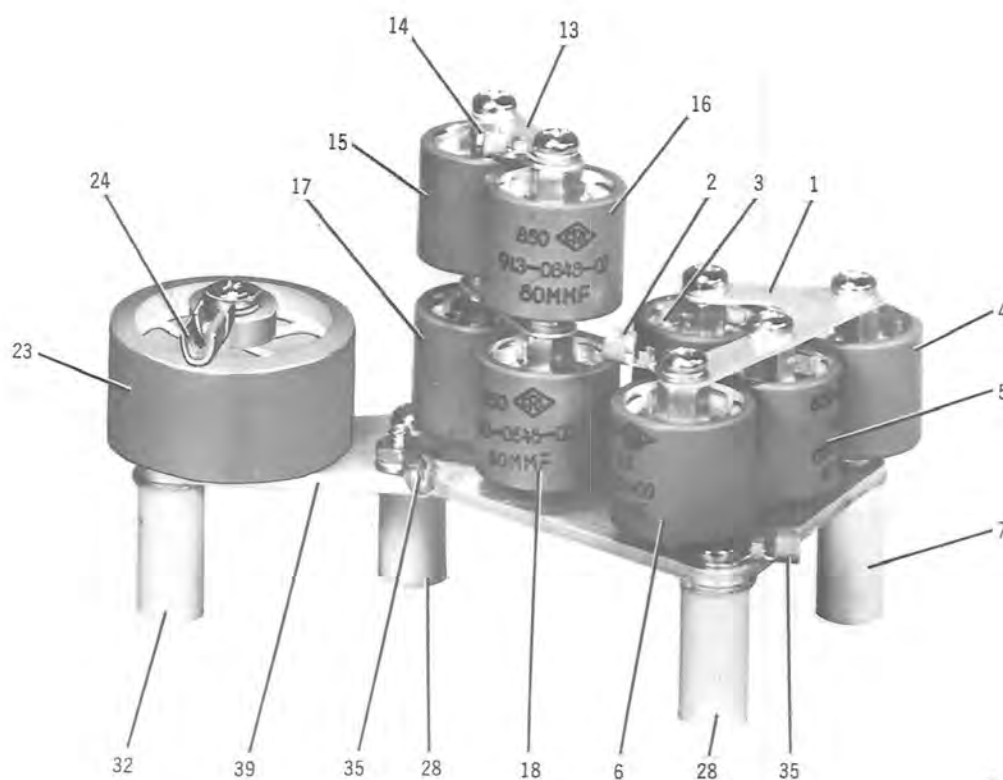
Figure 6-12. Variable Stepping Radio Frequency Coils.

section 6
parts list

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-12 *	7 761-0618-001	2	TUNING DRIVE ASSY	1	
-	8 P343-0294-000	2	SCREW, MACH., NI PL BRS, 4-40 X 1-1/8 77250 343-0294-000 AP	4	
R	- 9	1	DELETED		
R	9A DBM25P	2	CONNECTOR 71468 371-0969-000 A4P1 EFF MCN 2865	1	
R	9B 761-0614-001	2	SHIELD EFF MCN 2865	1	
R	9C DB51221-1	2	RETAINER S LOCK 71468 370-2295-000 EFF MCN 2865 AP FOR 9A AND 9B	1	
	10 761-0655-001	2	COVER, SWITCH P	1	
-	11 P343-0298-000	2	SCREW, MACH., NI PL BRS, 2-56 X 3/16 77250 343-0298-000 AP	3	
-	12 310-0074-000	2	WASHER, LOCK, BRZ, 0.088 ID, 0.175 OD COML AP	3	
	13 MS35489-4	2	GROMMET 201-0001-000	1	
	14 244670EK	2	SWITCH SECTION 76854 A4S1B 269-2601-010	1	
	15 245578EK	2	SWITCH SECTION 76854 A4S1A 269-2601-020	1	
-	16 3457 1-4	2	SPACER 76854 269-1214-000 AP FOR 14 AND 15	2	
-	17 3457 7-16	2	SPACER 76854 269-1215-000 AP FOR 14 AND 15	2	
-	18 5-401 1-2	2	SCREW, MACH., CAD PL STL, 5-40 X 3/8 81817 330-0548-000 AP FOR 14 AND 15	2	
	19 757-3440-001	2	PLATE, BRG	1	
-	20 P343-0291-000	2	SCREW, MACH., NI PL BRS, 4-40 X 3/4 77250 343-0291-000 AP	2	
-	21 2104-04-01-2	2	TERMINAL 78189 304-0317-000 AP 520N	1	
-	22 310-0076-000	2	WASHER, LOCK, BRZ, 0.115 ID, 0.212 OD COML AP	1	
	23 127-110	3	BEARING 12639 309-1497-000	1	
	24 761-0653-001	3	PLATE, BRG P	1	
	25 757-3441-001	2	GEARSHAFT, SPUR, 76 TEETH	1	
-	26 5100-25C	2	RING 79136 340-0038-000 AP	1	
	27 761-0650-001	3	GEAR, SPUR, 76 TEETH P	1	
-	28 99-012-062-0	3	PIN, SPG, BE COP, 0.062 DIA X 0.375 LG 72962 311-0593-000 AP	1	
	29 761-0654-001	3	SHAFT, SHOULDERED P	1	
	30 761-0652-001	2	BOSS, MTG P	1	
	31 761-0647-001	2	PLATE, MTG P	1	
-	32 P342-0566-000	2	SCREW, MACH., NI PL BRS, 4-40 X 13/16 77250 342-0566-000 AP	3	
	33 761-0651-001	2	GEAR, SPUR, 76 TEETH P	1	
-	34 MS16624-12	2	RING 340-0021-000 AP	1	
	35 761-0649-001	2	GEAR, SPUR, 76 TEETH P	1	
-	36 5100-37C	2	RING 79136 340-0043-000 AP	2	
	37 761-0705-001	2	SPACER, MTG P	1	
-	38 P342-0153-000	2	SCREW, MACH., NI PL BRS, 4-40 X 5/16 77250 342-0153-000 AP	1	
	39 757-5697-001	2	STRIP, ELECTRICAL P	1	
	40 757-3443-001	2	ACTUATOR, SWITCH	1	
-	41 P343-0299-000	2	SCREW, MACH., NI PL BRS, 2-56 X 1/4 77250 343-0299-000 AP FOR 39 AND 40	2	
-	42 310-0074-000	2	WASHER, LOCK, BRZ, 0.088 ID, 0.175 OD COML AP FOR 39 AND 40	2	

*RETURN TO COLLINS RADIO COMPANY FOR REPAIR AND ALIGNMENT.

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-12	43	757-3446-001	2 PLATE, GEAR	1	
R	- 44	P342-0288-00	2 SCREW, MACH., CAD PL, STL, 4-40 X 3/4 77250 342-0288-000 AP	3	
	45	99-022-094-0	3 PIN, SPG, BE COP, 0.094 DIA X 0.375 72962 311-0620-000	3	
	46	99-022-094-0	3 PIN, SPG, BE COP, 0.094 DIA X 0.750 LG 72962 311-0626-000	4	
	47	763-3290-001	2 SHAFT, SHOULDERED	1	
	48	761-0706-001	3 PLATE, GEAR P	1	
	49	NO NUMBER	2 DRUM ASSY	1	
	- 50	542-7494-003	2 WASHER AP	AR	
	- 51	506-5950-003	2 WASHER AP	AR	
	- 52	506-5902-003	2 WASHER AP	AR	
	- 53		1 DELETED		
	54	761-0645-001	3 END, DRUM P	1	
	- 55	MS51959-2	3 SCREW, MACH., SST, 2-56 X 3/16 342-0132-000 AP	3	
	56	761-0646-001	3 DRIVE, DRUM P	1	
	- 57	P343-0298-00	3 SCREW, MACH., NI PL BRS, 2-56 X 3/16 77250 343-0298-000 AP	4	
	- 58	310-0074-000	3 WASHER, LOCK, BRZ, 0.088 ID, 0.175 OD COML AP	4	
	59	761-0644-001	3 END, DRUM P	1	
	- 60	MS51959-2	3 SCREW, MACH., SST, 2-56 X 3/16 342-0132-000 AP	3	
	61	757-3448-001	3 DRUM, COIL	1	
	- 62		1 DELETED		
	63	757-5696-001	2 STRAP, ELECTRICAL P	1	
	64	757-3444-001	2 ACTUATOR, SWITCH	1	
	- 65	P343-0299-00	2 SCREW, MACH., NI PL BRS, 2-56 X 1/4 77250 343-0299-000 AP FOR 63 AND 64	2	
	- 66	310-0074-000	2 WASHER, LOCK, BRZ, 0.088 ID, 0.175 OD COML AP FOR 63 AND 64	2	
	67	757-3442-001	2 PLATE, COIL	1	
R	- 68	P342-0288-00	2 SCREW, MACH., CAD PL, STL, 4-40 X 3/4 77250 342-0288-000 AP	3	
	69	99-022-094-0	3 PIN, SPG, BE COP, 0.094 DIA X 0.375 72962 311-0620-000	3	
	70	761-0707-001	3 PLATE, COIL P	1	
	71	761-0638-001	2 BAR, JIGGING P	1	
	72	761-0639-001	2 BAR, JIGGING P	1	
	73	761-0640-001	2 BAR, JIGGING P	1	
	74	757-3445-001	2 COIL, RF	1	A4L1
	75	761-0702-001	3 CONTACT, ELECTRICAL P	2	
	76	761-0642-001	3 CONTACT, ELECTRICAL P	12	
R	- 77	031-0187MDP	3 PIN, SPG, SST, 0.031 DIA X 0.187 00287 311-0431-000 AP FOR 75 AND 76	14	
	78	761-0641-001	3 COIL, RF P	1	
6-13	-	761-6204-001	1 CAPACITOR ASSY SEE FIG. 6-2-17 FOR NHA	REF	
	1	757-4548-001	2 LINK, TERMINAL CONNECTING P	1	
	2	1024-6HOTTIN NED	2 TERMINAL 77147 304-0140-000	1	
	3	850S63Z	2 CAPACITOR, FXD, CERAMIC DIELECTRIC, 63PF, 5%, 4500V 71590 913-0835-000	1	A10C34



TPI-3671-017

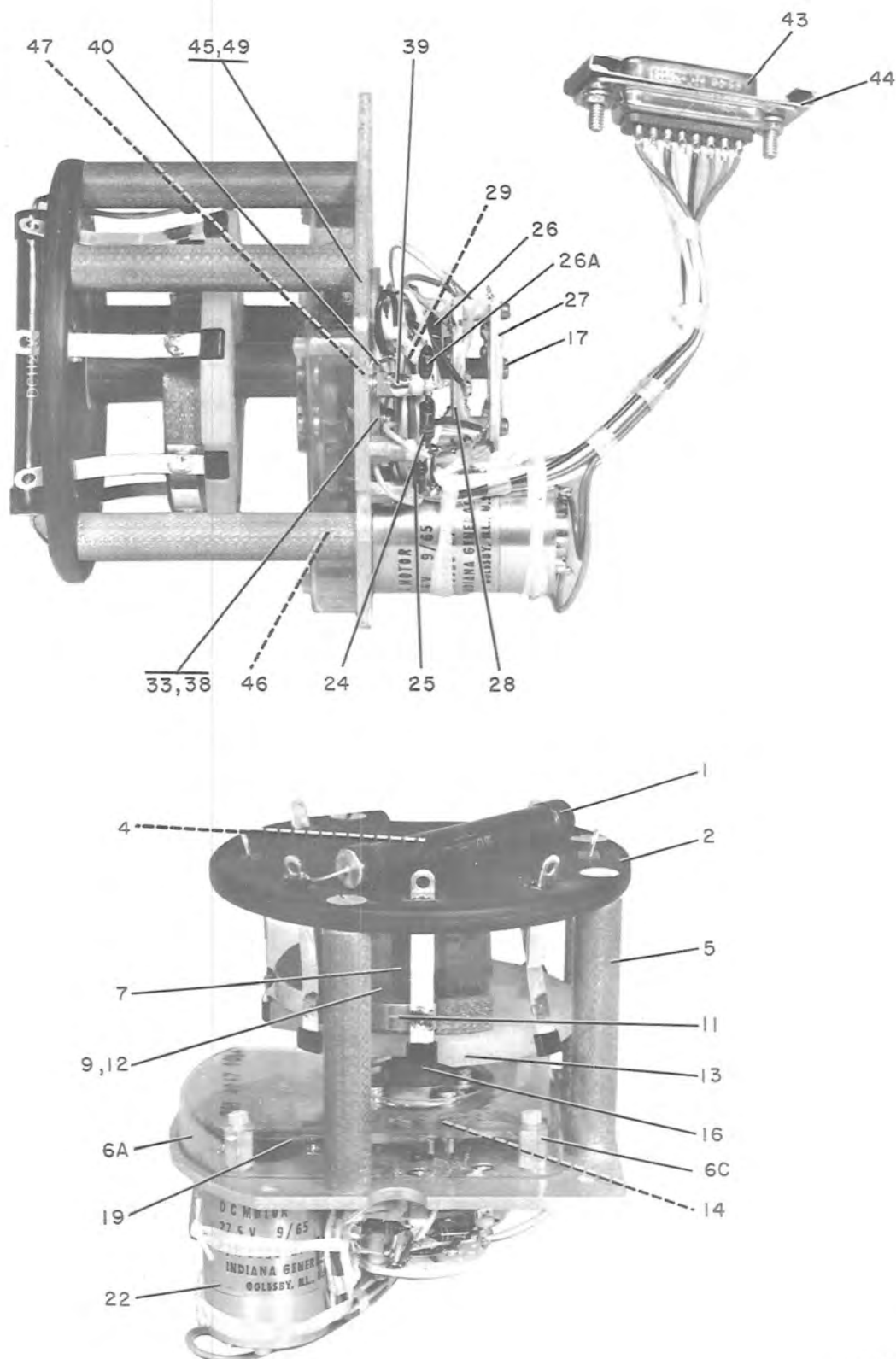
Figure 6-13. Capacitor Assembly.

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-13	4	850S63Z	2 CAPACITOR, FXD, CERAMIC DIELECTRIC, 63PF, 5%, 4500V 71590 913-0835-000	A10C22	1
	5	850S63Z	2 CAPACITOR, FXD, CERAMIC DIELECTRIC, 63PF, 5%, 4500V 71590 913-0835-000	A10C35	1
	6	850S63Z	2 CAPACITOR, FXD, CERAMIC DIELECTRIC, 63PF, 5%, 4500V 71590 913-0835-000	A10C24	1
	7	E1704	2 INSULATOR 70371 190-1143-000		1
- 8	P312-3050-00 0		2 STUD, CONTINUOUS THD, CAD PL BRS, 6-32 X 1/2 77250 312-3050-000 AP FOR 1 THRU 7		1
- 9	P342-0167-00 0		2 SCREW, MACH., NI PL BRS, 6-32 X 5/16 77250 342-0167-000 AP FOR 1 THRU 7		3
- 10	P343-0328-00 0		2 SCREW, MACH., NI PL BRS, 6-32 X 1/4 77250 343-0328-000 AP FOR 1 THRU 7		4
- 10A	310-0055-000		2 WASHER, FLAT, NI PL BRS, 0.147 ID X 0.312 OD COML AP FOR 1 THRU 7		4

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-13 - 11	310-0097-000	2	WASHER, LOCK, CAD.PL BRZ, 0.141 ID, 0.239 OD COML AP FOR 1 THRU 7	8	
- 12	302-2300-000	2	INSULATOR, WASH. 16037 AP FOR 1 THRU 7	1	
13	757-4549-001	2	LINK, TERMINAL CONNECTING P	2	
14	1024-6HOTTIN NED	2	TERMINAL 77147 304-0140-000	1	
15	850S80N	2	CAPACITOR, FXD, CERAMIC DIELECTRIC, 80PF, 5%, 5000V 71590 913-0848-000 A10C27	1	
16	850S80N	2	CAPACITOR, FXD, CERAMIC DIELECTRIC, 80PF, 5%, 5000V 71590 913-0848-000 A10C28	1	
17	850S80N	2	CAPACITOR, FXD, CERAMIC DIELECTRIC, 80PF, 5%, 5000V 71590 913-0848-000 A10C25	1	
18	850S80N	2	CAPACITOR, FXD, CERAMIC DIELECTRIC, 80PF, 5%, 5000V 71590 913-0848-000 A10C26	1	
- 19	P343-0328-00 O	2	SCREW, MACH., NI PL BRS, 6-32 X 1/4 77250 343-0328-000 AP FOR 13 THRU 18	2	
- 20	310-0097-000	2	WASHER, LOCK, CAD.PL BRZ, 0.141 ID, 0.239 OD COML AP FOR 13 THRU 18	6	
- 21	P312-3010-00 O	2	STUD, CONTINUOUS THD, CAD PL BRS, 6-32 X 3/8 77250 312-3010-000 AP FOR 13 THRU 18	2	
- 22	P342-0167-00 O	2	SCREW, MACH., NI PL BRS, 6-32 X 5/16 77250 342-0167-000 AP FOR 13 THRU 18	2	
23	JCSF60-10N38 6	2	CAPACITOR, FXD, VACUUM DIELECTRIC, 60PF, 10%, 10,000V 73905 919-0243-030 EFF THRU MCN 514 A10C29	1	
23	DA868-60N	2	CAPACITOR, FXD, CERAMIC DIELECTRIC, 60PF, 10%, 13,000V 71590 913-1099-010 EFF MCN 515 A10C29	1	
24	1011HOTTINNE D	2	TERMINAL 77147 304-0114-000	1	
- 25	P343-0307-00 O	2	SCREW, MACH., NI PL BRS, 8-32 X 1/4 77250 343-0307-000 EFF THRU MCN 514 AP	1	
- 25	P343-0343-00 O	2	SCREW, MACH., NI PL BRS, 10-32 X 1/4 77250 343-0343-000 EFF MCN 515 AP	1	
- 26	P342-0183-00 O	2	SCREW, MACH., NI PL BRS, 8-32 X 5/16 77250 342-0183-000 EFF THRU MCN 514 AP	1	
- 26	P342-0202-00 O	2	SCREW, MACH., NI PL BRS, 10-32 X 5/16 77250 342-0202-000 EFF MCN 515 AP	1	
- 27	310-0099-000	2	WASHER, LOCK, CAD PL BRZ, 0.168 ID, 0.280 OD COML EFF THRU MCN 514 AP	2	
- 27	310-0101-000	2	WASHER, LOCK, CAD PL BRZ, 0.194 ID, 0.323 OD COML EFF MCN 515 AP	2	
28	E1704	2	INSULATOR 70371 190-1143-000	2	
- 29		1	DELETED		
- 30	P343-0330-00 O	2	SCREW, MACH., NI PL BRS, 6-32 X 3/8 77250 343-0330-000 AP	2	

section 6
parts list

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-13 - 31	302-2300-000	2	INSULATOR, WASH. 16037 AP	2	
32	E1704	2	INSULATOR 70371 190-1143-000	1	
- 33	P342-0167-00	2	SCREW, MACH., NI PL BRS, 6-32 X 5/16 77250 342-0167-000 AP	1	
- 34	302-2300-000	2	INSULATOR, WASH. 16037 AP	1	
35	1024-6HOTTIN NED	2	TERMINAL 77147 304-0140-000	2	
- 36	313-0140-000	2	NUT, PLAIN, HEX., NI PL BRS, 6-32 COML AP	2	
- 37	310-0097-000	2	WASHER, LOCK, CAD. PL BRZ, 0.141 ID, 0.239 OD COML AP	2	
- 38	P342-0167-00	2	SCREW, MACH., NI PL BRS, 6-32 X 5/16 77250 342-0167-000 AP	2	
39	757-4551-001	2	RETAINER, CAPACITOR P	1	
6-14 -	761-6205-001	1	SWITCH, ROT. SEE FIG. 6-2-19 FOR NHA	REF	
1	DCH2HV805-20	2	RESISTOR, FXD, FILM, 8MEGO, 20%, 2W 705-4950-000	1	A9R1
2	757-4564-001	2	CONTACT ASSY, ELECTRICAL P	1	A9S2
- 3	330-2113-000	2	SCREW, MACH., NYLON, 6-32 X 7/16 COML AP	4	
4	757-4563-001	2	BEARING, SLV P	1	
5	757-4561-001	2	POST, ELECTRICAL-MECHANICAL EQUIP. P	4	
- 6	P342-0167-00	2	SCREW, MACH., NI PL BRS, 6-32 X 5/16 77250 342-0167-000 AP	4	
6A	763-4067-001	2	COVER, PROTECTIVE P	1	
- 6B	330-2246-000	2	SCREW, MACH., NYLON, 2-56 X 3/16 COML AP	3	
6C	540-9003-003	2	POST, ELECTRICAL-MECHANICAL EQUIP.	3	
- 6D	MS51959-2	2	SCREW, MACH., SST, 2-56 X 3/16 342-0132-000 AP	3	
- 6E		1	DELETED		
7	761-7227-001	2	GEARSHAFT	1	
- 8	757-4560-001	2	PIN, STR, HDLS P AP	1	
9	761-7226-001	3	ROTOR, SWITCH	1	
- 10	330-2113-000	3	SCREW, MACH., NYLON, 6-32 X 7/16 COML AP	5	
11	757-4558-001	4	CONTACT, ELECTRICAL P	1	
12	757-4562-001	4	ROTOR, ELECTRICAL SWITCH P	1	
13	757-4559-001	3	CAM, CONTROL P	1	
14	757-4569-001	3	GENEVA STAR WHEEL P	1	
- 14A	MS16997-1	3	SCREW, CAP, SCH, CAD PL STL, 2-56 X 3/16 324-2599-000 AP	4	
- 14B	310-0070-000	3	WASHER, LOCK, SST, 0.097 ID, 0.165 OD COML AP	4	
- 14C	500-1053-003	3	WASHER AP	4	
- 15		1	DELETED		
16	757-4571-001	3	SHAFT, STR P	1	
17	757-4557-001	3	SHAFT, GENEVA P	1	
- 17A	MS16562-194	3	PIN, SPG, SST, 0.062 DIA X 1/2 311-0421-000 AP	1	
- 18		1	DELETED		
19	757-4566-001	2	GEAR, GENEVA, 141 TEETH P	1	
- 20	5133-9C	2	RING 79136 340-0249-000 AP	1	

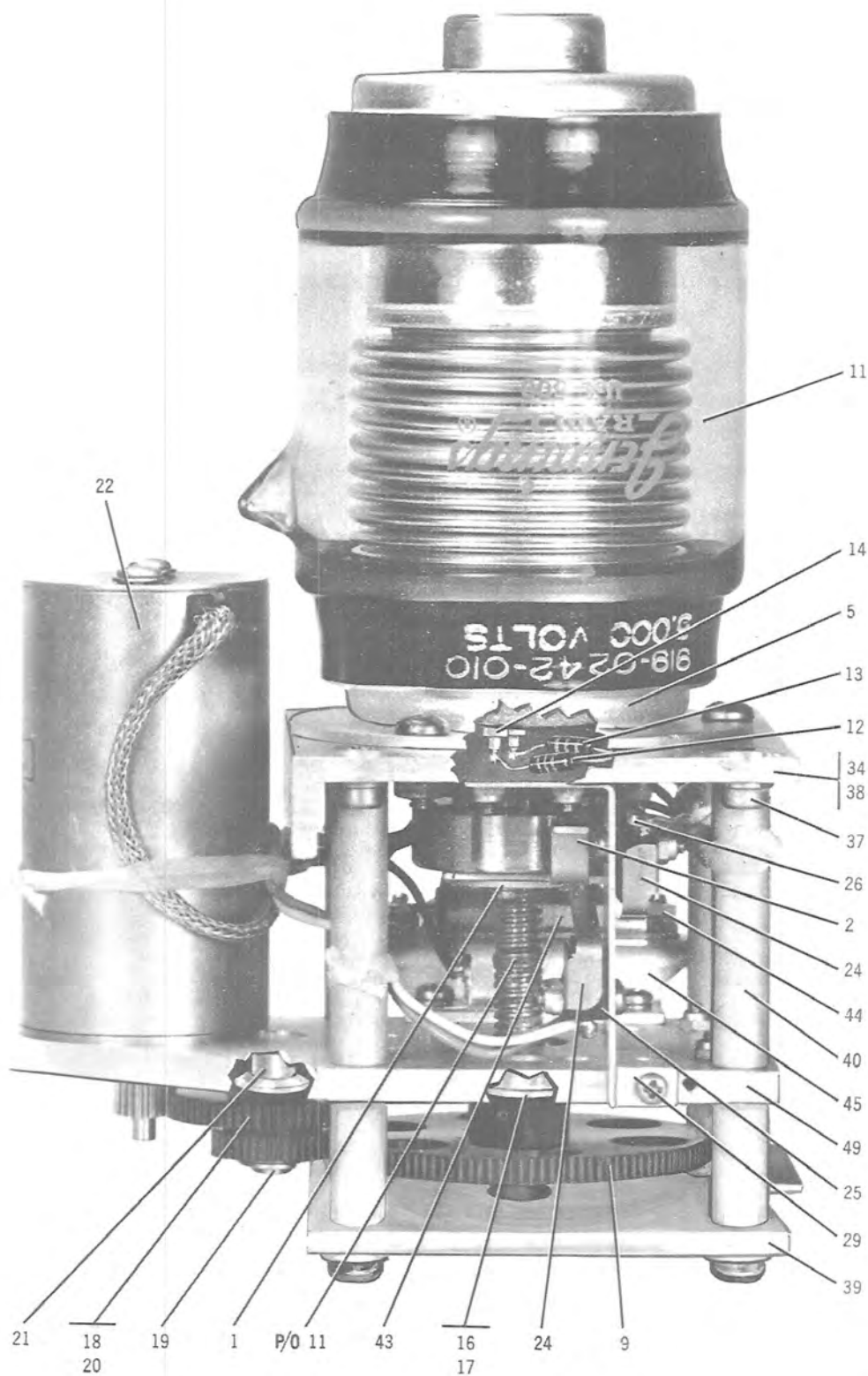


TPI-3672-017

Figure 6-14. Rotary Switch.

section 6
parts list

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-14 - 21		1	DELETED		
22	41A205	2	MOTOR 25140 230-0303-000	A9B1	1
- 23	MS51959-3	2	SCREW, MACH., SST, 2-56 X 1/4 342-0133-000 AP		2
24	1N645	2	SEMICONV DEVICE 353-2607-000	A9CR1	1
25	1N645	2	SEMICONV DEVICE 353-2607-000	A9CR2	1
26	1N645	2	SEMICONV DEVICE 353-2607-000	A9CR3	1
26A	1N645	2	SEMICONV DEVICE 353-2607-000 EFF MCN 115	A9CR4	1
27	246005AA	2	SWITCH SECTION 76854 269-2620-030	A9S1C	1
28	246004AA	2	SWITCH SECTION 76854 269-2620-020	A9S1B	1
29	246003AA	2	SWITCH SECTION 76854 269-2620-010	A9S1A	1
- 30	15523 3-16	2	SPACER 76854 269-8022-000 AP FOR 27 THRU 29		4
- 31	541-5953-002	2	SPACER, SLV AP FOR 27 THRU 29		2
- 32	P347-0028-00 0	2	SCREW, MACH., SST, FIL H, 2-56 X 7/8 77250 347-0028-000 AP FOR 27 THRU 29		2
33	761-7085-001	2	PLATE, SWITCH MTG		1
- 34	MS51957-2	2	SCREW, MACH., SST, 2-56 X 3/16 343-0123-000 AP		4
- 35	310-0070-000	2	WASHER, LOCK, SST, 0.097 ID, 0.165 OD COML AP		4
- 36	310-6320-000	2	WASHER, FLAT, SST, 0.092 ID, 0.218 OD COML AP		4
- 37	F256-1	3	NUT, PLAIN, CLINCH, SST, 2-56 46384 334-1559-000		2
38	757-4568-001	3	PLATE, SWITCH MTG P		1
39	TF300	2	TERMINAL 98291 306-1018-000		3
40	4040-2HOTTIN NED	2	TERMINAL 77147 304-0014-000		1
- 41	MS51959-3	2	SCREW, MACH., SST, 2-56 X 1/4 342-0133-000 AP		3
- 42	310-0070-000	2	WASHER, LOCK, SST, 0.097 ID, 0.165 OD COML AP		1
43	DAM15P	2	CONNECTOR 71468 371-0968-000	A9P1	1
44	DA51220-1	2	RETAINER LOCK 71468 370-2294-000 AP		1
45	761-7228-001	2	PLATE, GEAR		1
46	763-4066-001	3	POST, IDLER		1
47	546-6809-002	3	BEARING, SLV		1
- 48	F256-2	3	NUT, PLAIN, CLINCH, SST, 2-56 46384 334-1560-000		4
49	757-4573-001	3	PLATE, GEAR P		1
6-15	528-0466-000	1	DRIVE, TUN P SEE FIG. 6-2-21 FOR NHA	A7	REF
1	763-3363-001	2	RETAINER, CAPACITOR P		1
2	763-3365-001	2	ADAPTER, SWITCH ACTUATOR P		1
- 3	MS51957-3	2	SCREW, MACH., SST, PAN HD, 2-56 X 1/4 343-0124-000 AP		3
- 4	310-0070-000	2	WASHER, LOCK, SST, 0.097 ID, 0.165 OD COML AP		3
5	757-3431-001	2	GEAR, SPUR P		1



TPI-3673-017

Figure 6-15. Tuning Drive.

section 6
parts list

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-15 - 6	P313-0045-00	2	NUT, PLAIN, HEX., SST, 6-32 77250	3	
	O		313-0045-000 AP		
- 7	MS35338-136	2	WASHER, LOCK, SST, 0.141 ID, 0.253	3	
			OD 310-0282-000 AP		
- 8	MS51957-28	2	SCREW, MACH., SST, PAN HD, 6-32 X	3	
			3/8 343-0169-000 AP		
9	761-0520-001	3	GEAR, SPUR, 120 TEETH P	1	
- 10	062-0500MDP	3	PIN, SPG, SST, 0.062 DIA X 1/2 LG	1	
			00287 311-0456-000 AP		
11	USL5-500	3	CAPACITOR, VAR, 5 TO 500 PF 73905	1	A7C1
			919-0242-010		
R 12	1N4003		SEMICONV DEVICE 353-6442-030	1	A7CR1
			EFF MCN 284		
13	1N4003	2	SEMICONV DEVICE 353-6442-030	1	A7CR2
			EFF MCN 284		
14	TF300	2	TERMINAL 98291 306-1018-000	4	
- 15	MS51959-3	2	SCREW, MACH., SST, FH, 2-56 X 1/4	4	
			342-0133-000 AP		
16	761-0527-001	2	SHIM, BRS, 0.010 THK P	1	
17	S814FCHH3P15	2	BEARING 40920 309-1523-000		
	L02				
18	757-3432-001	2	GEAR CLUSTER, SPUR P		
		1			
- 19	MS16633-1018	2	RING 340-0090-000 AP	1	
20	761-0519-001	3	GEAR CLUSTER, SPUR, 38 AND 67		
			TEETH P		
21	127-90	3	BEARING 12639 309-1493-000	1	
22	1305-24	2	MOTOR 16636 230-0534-020	1	A7B1
- 23	MS51959-15	3	SCREW, MACH., SST, FH, 4-40 X 3/8	2	
			342-0046-000 AP		
24	JX40	2	ADAPTOR 91929 266-7001-000	2	
25	MS24547-1	2	SWITCH 266-7002-000	1	A7S1
26	MS24547-1	2	SWITCH 266-7002-000	1	A7S2
- 27	68-1660-26	2	NUT, SELF-LKG, HEX., AL, 2-56	4	
			72962 333-0604-000 AP FOR 24		
			THRU 26		
- 28	MS51957-5	2	SCREW, MACH., SST, PAN HD, 2-56 X		
			3/8 343-0126-000 AP FOR 24 THRU		
			26		
29	763-3364-001	2	BRACKET, ELECTRICAL SWITCH P	1	
- 30	68-1660-26	2	NUT, SELF-LKG, HEX., AL, 2-56	2	
			72962 333-0604-000 AP		
- 31	310-0070-000	2	WASHER, LOCK, SST, 0.097 ID, 0.165	1	
			OD COML AP		
- 32	MS51959-4	2	SCREW, MACH., SST, FH, 2-56 X 5/16	2	
			342-0134-000 AP		
- 33	MS51957-2	2	SCREW, MACH., SST, PAN HD, 2-56 X	1	
			3/16 343-0123-000 AP		
34	757-3428-001	2	PLATE, CAPACITOR	1	
- 35	MS51959-28	2	SCREW, MACH., SST, FH, 6-32 X 3/8	4	
			342-0062-000 AP		
- 36	MS35338-136	2	WASHER, LOCK, SST, 0.141 ID, 0.253	4	
			OD 310-0282-000 AP		
37	F12NCFMA2-62	3	NUT, SELF-LKG, CLINCH, CAD. PL	4	
			STL, 6-32 72962 333-0842-000		
38	761-0534-001	3	PLATE, CAPACITOR P	1	
39	775-4355-001	2	PLATE, RETAINING EFF MCN 2390	1	
40	761-0517-001	2	POST, SHOULDERED P	4	
- 41	MS51959-33	2	SCREW, MACH., SST, FH, 6-32 X 7/8	4	
			342-0068-000 AP FOR 39 AND 40		
- 42	541-6029-002	2	SPACER, SLV AP FOR 39 AND 40	4	
43	DAM15P	2	CONNECTOR 71468 371-0968-000	1	A7P1

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-15 - 44	D53018	2	SLIDING LOCK ASSY 71468 370-2298-000 AP	2	
45	761-0518-001	2	BRACKET, ELECTRICAL CONN P	1	
- 46	MS51957-13	2	SCREW, MACH., SST, PAN HD, 4-40 X 1/4 343-0133-000 AP	2	
- 47	4007-4HOTTIN NED	2	TERMINAL 77147 304-0015-000 AP	1	
- 48	310-0278-000	2	WASHER, LOCK, SST, 0.115 ID, 0.202 OD COML AP	2	
49	757-3430-001	2	PLATE, GEAR	1	
6-16 - 0	767-6913-001	1	CHASSIS, ELECTRICAL EQUIP. SEE FIG. 6-2-24 FOR NHA	REF	
1	503-4970-001	2	BRACKET, ANGLE	2	
- 2	MS35649-64	2	NUT, PLAIN, HEX., SST, 6-32 313-0002-000 AP	4	
- 3	MS35337-79	2	WASHER, LOCK, SST, 0.151 ID, 0.239 OD 310-0071-000 AP	4	

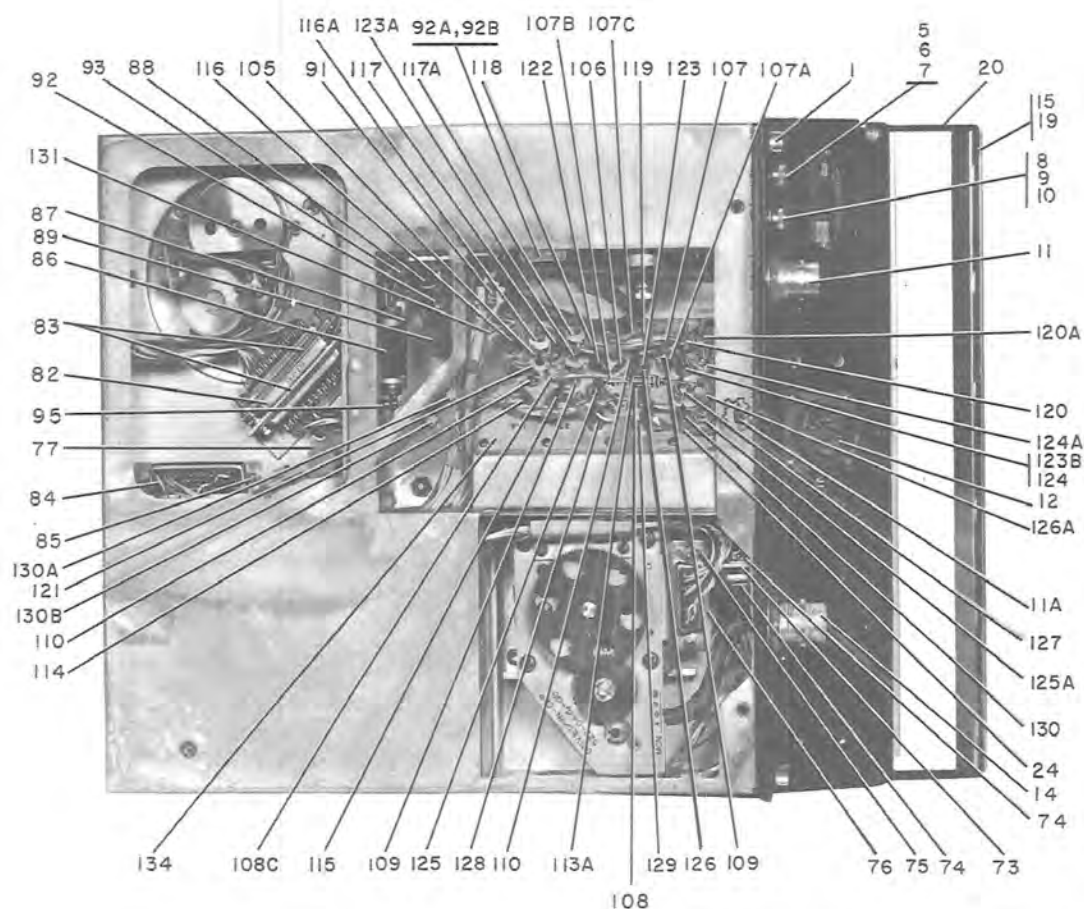


Figure 6-16. Electrical Equipment Chassis (Sheet 1 of 2).

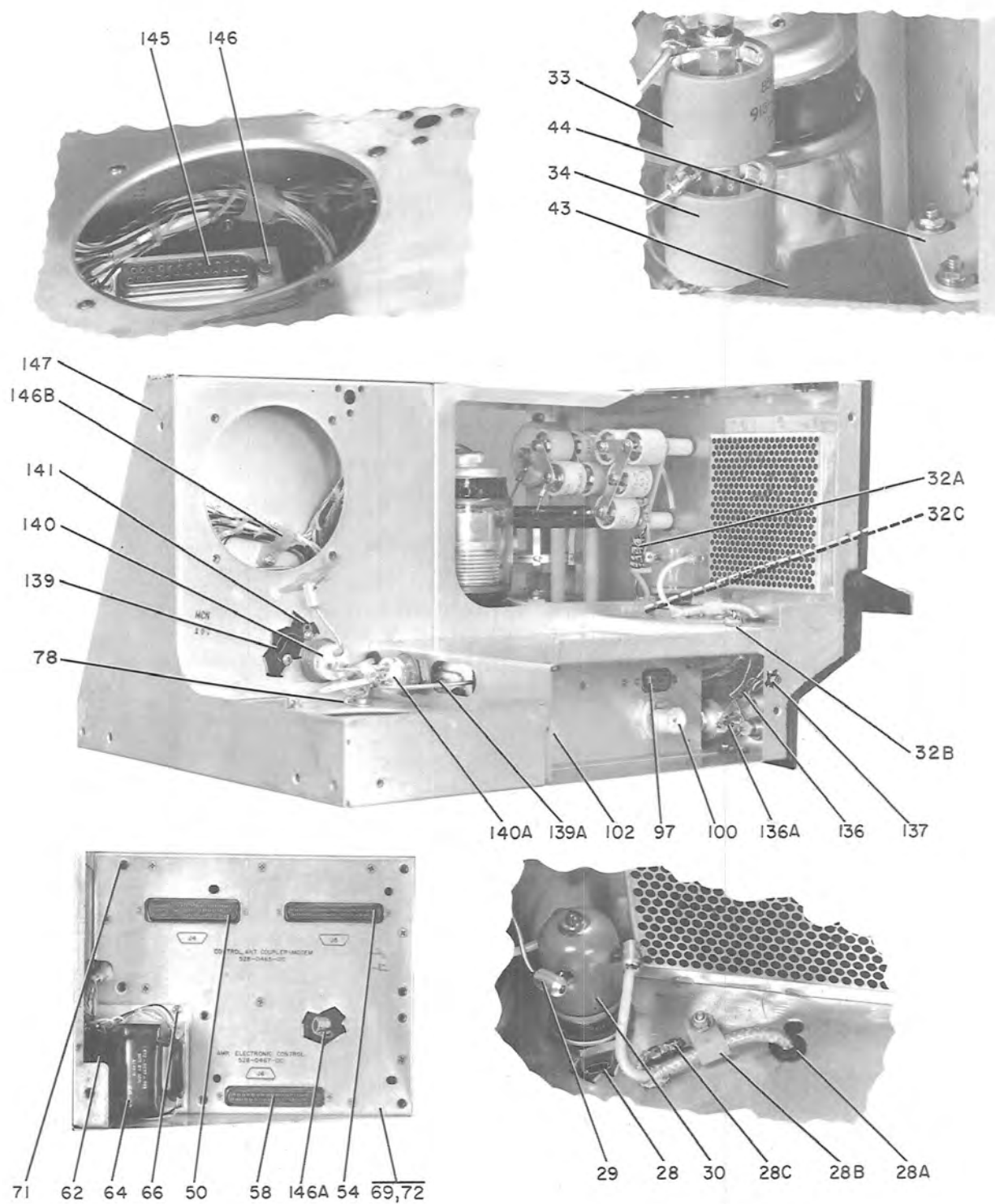


Figure 6-16. Electrical Equipment Chassis (Sheet 2 of 2).

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-16 - 4	MS51957-28	2	SCREW, MACH., SST, PAN HD, 6-32 X 3/8 343-0169-000 AP	4	
5	855020A	2	LENS V08717 262-0584-000	1	
6	MS25237-327	2	LAMP 262-0179-000	1	
7	855029-9	2	LIGHT V08717 262-0579-000	1	A1DS1
- 7A	1720-02CADPL	2	WASHER, LOCK, CAD. PL STL, 0.391 ID, 0.507 OD, V78189 373-0085-000	1	A1XDS1
8	855020G	2	LENS V08717 262-0580-000	1	
9	MS25237-327	2	LAMP 262-0179-000	1	A1DS2
10	855029-9	2	LIGHT V08717 262-0579-000	1	A1XDS2
- 10A	1720-02CADPL	2	WASHER, LOCK, CAD. PL STL, 0.391 ID, 0.507 OD, V78189 373-0085-000	1	
11	101C3100A80	2	CONNECTOR V94375 357-9832-000	1	A1J2
12	MS3112E16-26 P	2	CONNECTOR 371-6611-000	1	A1J1
- 13	MS51957-14	2	SCREW, MACH., SST, PAN HD, 4-40 X 5/16 343-0134-000 AP	4	
R 14	101C3100A80	2	CONNECTOR 94375 357-9832-000	1	A1J15
15	757-3422-001	1	DELETED		
- 16	F22NM107-62	2	HANDLE	1	
- 17	302-0638-020	2	NUT, SELF-LKG, HEX., CAD. PL STL, 6-32 V72962 333-1069-000 AP	2	
- 18	761-5190-001	2	WASHER, NM, RUB., 0.195 ID, 0.375 OD /COML/ AP	4	
19	549-3913-003	2	PIN, HINGE AP	2	
20	761-5188-005	3	GRIP BAR	1	
- 21	GP1-062X187- 50	3	STRAP, HANDLE	1	
- 22		3	PIN, GROOVED, HDLS, SST 0.062 DIA X 0.187 V73957 311-1120-300 AP FOR 19 AND 20	2	
- 23		1	DELETED		
24	1N645	1	DELETED		
- 25		2	SEMICONV DEVICE 353-2607-000	1	A1CR10
- 26		1	DELETED		
- 27		1	DELETED		
28	1N645	2	SEMICONV DEVICE 353-2607-000	1	A1CR15
28A	MS35489-1	2	GROMMET 201-1040-000	1	
28B	HP5N	2	CLAMP V09922 150-1542-000	1	
28C	107-6	2	SOLDERING LUG V79963 304-6100-000	1	
- 28D	68-1660-40	2	NUT, SELF-LKG, HEX., AL, 4-40 V72962 333-0605-000 AP FOR 28B AND 28C	1	
- 28E	310-0045-000	2	WASHER, FLAT, SST, 0.125 ID, 0.312 OD COML AP FOR 28B AND 28C	1	
- 28F	MS51957-15	2	SCREW, MACH., SST, PAN HD, 4-40 X 3/8 343-0135-000 AP FOR 28B AND 28C	1	
29	544-0090-002	2	CONNECTOR	2	
30	RB1J26N428	2	RELAY V73905 410-0287-010	1	A1K3
R 31	328-0367-000	2	SETSCREW, STL, 1/4-28 X 3/8 COML AP FOR 29 AND 30	2	
R 32	MS51053-101	2	SETSCREW, STL, 2-56 X 1/16 328-0370-000 AP FOR 29 AND 30	2	
32A	2178	2	COIL, RF, 2 MH V90526 240-0134-000	1	A1L3
32B	855-502X5V0 203Z	2	CAPACITOR, FXD, 0.02 UF P80M20%, 100 VDCW V72982 913-3678-000	1	A1C40
32C	BSF1BB122	2	CAPACITOR, FXD, 1200 PF 500 VDCW V04222 913-4219-000	1	A1C39

section 6
parts list

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-16	33 850S28Z	2	CAPACITOR, FXD, 28 PF 5%, 5000 VDCW V71590 913-0824-000	1	
	34 850S28Z	2	CAPACITOR, FXD, 28 PF 5%, 5000 VDCW V71590 913-0824-000	1	
R	- 34A P313-0140-00 O	2	NUT, PLAIN, HEX., NI PL BRS, 6-32 V77250 313-0140-000 AP FOR 33 AND 34	1	
	- 35 MS35338-98	2	WASHER, LOCK, CAD. PL BRZ, 0.141 ID, 0.253 OD 310-0096-000 AP FOR 33 AND 34	3	
	- 36 541-6017-002	2	SPACER, SLV AP FOR 33 AND 34	1	
	- 37 E1704	2	INSULATOR V70371 190-1143-000 AP FOR 33 AND 34	1	
	- 38 107H187	2	TERMINAL V79963 304-6000-000 AP FOR 33 AND 34	1	
	- 39 1024-6HOTTIN NED	2	TERMINAL V77147 304-0140-000 AP FOR 33 AND 34	2	
	- 40 310-0055-000	2	WASHER, FLAT, NI PL BRS, 0.147 ID, 0.312 OD /COML/ AP FOR 33 AND 34	1	
	- 41 302-0026-000	2	WASHER, NM, CORPRENE, 0.147 ID, 0.375 OD /COML/ AP FOR 33 AND 34	2	
R	42 P312-3010-00 O	2	STUD, CONTINUOUS THD, CAD. PL BRS, 6-32 X 3/8 V77250 312-3010-000 AP FOR 33 AND 34	1	
	- 42A P343-0330-00 O	2	SCREW, MACH., NI PL BRS, PAN HD, 6-32 X 3/8 V77250 343-0330-000 AP FOR 33 AND 34	1	
	- 42B P342-0166-00 O	2	SCREW, MACH., NI PL BRS, FH, 6-32 X 1/4 V77250 342-0166-000 AP FOR 33 AND 34	1	
	43 757-4543-001	2	INSULATOR, PLATE	1	
	44 757-4544-001	2	BRACKET, ANGLE	1	
	- 45 P313-0132-00 O	2	NUT, PLAIN, HEX., SST, 4-40 V77250 313-0132-000 AP FOR 43 AN 44	4	D
	- 46 310-6340-000	2	WASHER, FLAT, SST, 0.125 ID, 0.281 OD COML AP FOR 43 AND 44	4	
	- 47 MS35337-78	2	WASHER, LOCK, SST, 0.115 ID, 0.202 OD 310-0278-000 AP FOR 43 AND 44	4	
	- 48 MS51959-13	2	SCREW, MACH., SST, FH, 4-40 X 1/4 342-0044-000 AP FOR 43 AND 44	2	
	- 49 MS51959-15	2	SCREW, MACH., SST, FH, 4-40 X 3/8 342-0046-000 AP FOR 43 AND 44	2	
	50 DDMF-50S	2	CONNECTOR V71468 371-0961-000	1	A1J4
	- 51 68-1660-26	2	NUT, SELF-LKG, HEX., AL, 2-56 V72962 333-0604-000 AP	2	
	- 52 541-5949-002	2	SPACER, SLV AP	2	
	- 53 MS51959-6	2	SCREW, MACH., SST, FH, 2-56 X 7/16 342-0136-000 AP	2	
	54 DCMF37S	2	CONNECTOR V71468 371-0960-000	1	A1J5
	- 55 68-1660-26	2	NUT, SELF-LKG, HFX., AL, 2-56 V72962 333-0604-000 AP	2	
	- 56 541-5949-002	2	SPACER, SLV AP	2	
	- 57 MS51959-6	2	SCREW, MACH., SST, FH, 2-56 X 7/16 342-0136-000 AP	2	
	58 DCMF37S	2	CONNECTOR V71468 371-0960-000	1	A1J6
	- 59 68-1660-26	2	NUT, SELF-LKG, HEX., AL, 2-56 V72962 333-0604-000 AP	2	
	- 60 541-5949-002	2	SPACER, SLV AP	2	
	- 61 MS51959-6	2	SCREW, MACH., SST, FH, 2-56 X 7/16 342-0136-000 AP	2	

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-16 62	MP206-16B	2	COIL, RF, 72 MH V95105 A1L1	1	
- 63	P342-0168-00	2	240-0272-000 SCREW, MACH., NI PL BRS, FH, 6-32 X 5/16 V77250 342-0168-000 AP	1	
64	A14876	2	TRANSFORMER V70674 672-0237-010 A1T1	1	
- 65	MS51957-27	2	SCREW, MACH., SST, PAN HD, 6-32 X 5/16 343-0168-000 AP	4	
66	761-0687-001	2	SLEEVE, SPACING P	1	
- 67	P343-0142-00	2	SCREW, MACH., SST, PAN HD, 4-40 X 1-1/4 V77250 343-0142-000 AP	1	
- 68	MS35337-78	2	WASHER, LOCK, SST, 0.115 ID, 0.202 OD 310-0278-000 AP	1	
69	757-3424-001	2	PLATE, MTG	1	
- 70	MS51959-14	2	SCREW, MACH., SST, FH, 4-40 X 5/16 342-0045-000 AP	8	
71	F12NCFMA2-82	3	NUT, SELF-LKG, CLINCH, CAD. PL STL, 8-32 V72962 333-0844-000	6	
72	761-0711-001	3	PLATE, MTG P	1	
73	DAM15S	2	CONNECTOR V71468 371-0963-000 A1J14	1	
74	D53018	2	SLIDING LOCK ASSY V71468 370-2298-000 AP	2	
75	DAM15S	2	CONNECTOR V71468 371-0963-000 A1J7	1	
76	DA51220-1	2	RETAINER V71468 370-2294-000 AP	1	
77	HP5N	2	CLAMP V09922 150-1542-000	1	
78	107-6	2	SOLDERING LUG V79963 304-6100-000	1	
- 79	68-1660-40	2	NUT, SELF-LKG, HEX., AL, 4-40 V72962 333-0605-000 AP FOR 77 AND 78 D	1	
- 80	310-0045-000	2	WASHER, FLAT, SST, 0.125 ID, 0.312 OD COML AP FOR 77 AND 78	1	
- 81	MS51957-14	2	SCREW, MACH., SST, PAN HD, 4-40 X 5/16 343-0134-000 AP FOR 77 AND 78	1	
82	DBM25S	2	CONNECTOR V71468 371-0964-000 A1J9	1	
83	D53018	2	SLIDING LOCK ASSY V71468 370-2298-000 AP	2	
84	DBM25S	2	CONNECTOR V71468 371-0964-000 A1J8	1	
85	D53018	2	SLIDING LOCK ASSY V71468 370-2298-000 AP	2	
86	647SP7	2	RESISTOR, FXD, 10 OHMS 5%, 4 W V10646 712-0153-010 A1R3	1	
87	647SP7	2	RESISTOR, FXD, 10 OHMS 5%, 4 W V10646 712-0153-010 A1R2	1	
88	VY17C271J	2	CAPACITOR, FXD, 270 PF 5%, 500 VDCW V95275 914-1089-010 A1C30	1	
89	761-7245-001	2	COIL, RF A1L2	1	
- 90	P342-0152-00	2	SCREW, MACH., NI PL BRS, FH, 4-40 X 1/4 V77250 342-0152-000 AP	1	
91	1N645	2	SEMICONV DEVICE 353-2607-000 A1CR2	1	
92	RJ1A26N323	2	RELAY V73905 410-0346-000 A1K2	1	
92A	1N645	2	SEMICONV DEVICE 353-2607-000 A1CR18	1	
92B	3SAF1242	2	RELAY V01526 974-0718-000 A1K5	1	
93	TF300	2	TERMINAL V98291 306-1018-000	2	
- 94	MS51957-2	2	SCREW, MACH., SST, PAN HD, 2-56 X 3/16 343-0123-000 AP	2	
95	AB396-1A	2	TERMINAL V12615 306-1281-000	1	
- 96	MS51957-2	2	SCREW, MACH., SST, PAN HD, 2-56 X 3/16 343-0123-000 AP	1	
97	DEMF9S	2	CONNECTOR V71468 371-0957-000 A1J11	1	
- 98	68-1660-26	2	NUT, SELF-LKG, HEX., AL, 2-56 V72962 333-0604-000 AP	2	

R

section 6
parts list

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-16 - 98A	2-327192-1	2	FERRULE V00779 304-0601-000 AP	4	
- 99	P330-2286-000	2	SCREW, MACH., SST, FH, 2-56 X 5/16	2	
	0		V77250 330-2286-000 AP		
100	101C3100A80	2	CONNECTOR V94375 357-9832-000	1	A1J12
-101	761-0680-001	2	WASHER, FLAT P AP	1	
102	UG568U	2	CONNECTOR 357-9141-000	1	A1J15
-103	P343-0327-000	2	SCREW, MACH., NI PL BRS, PAN HD, 6-32 X 3/16 V77250 343-0327-000 AP	4	
-104	MS35338-98	2	WASHER, LOCK, CAD, PL BRZ, 0.141 ID, 0.253 OD 310-0096-000 AP	4	
105	1N645	2	SEMICONV DEVICE 353-2607-000	1	A1CR3
106	1N645	2	SEMICONV DEVICE 353-2607-000	1	A1CR4
107	1N645	2	SEMICONV DEVICE 353-2607-000	1	A1CR7
107A	1N645	2	SEMICONV DEVICE 353-2607-000	1	A1CR8
107B	1N645	2	SEMICONV DEVICE 353-2607-000	1	A1CR12
107C	1N645	2	SEMICONV DEVICE 353-2607-000	1	A1CR13
108	1N645	2	SEMICONV DEVICE 353-2607-000	1	A1CR14
-108A		1	DELETED		
-108B		1	DELETED		
108C	BSF1BB122	2	CAPACITOR, FXD, 1200 PF, 500 VDCW V04222 913-4219-000	1	A1C10
109	TF300	2	TERMINAL V98291 306-1018-000	4	
110	4040-2H0TTIN NED	2	TERMINAL V77147 304-0014-000	2	
-111	MS35649-24	2	NUT, PLAIN, HEX., SST, 2-56 313-0037-000 AP FOR 109 AND 110	1	
-112	MS35337-77	2	WASHER, LOCK, SST, 0.097 ID, 0.165 OD 310-0070-000 AP FOR 109 AND 110	4	
-113	MS51957-2	2	SCREW, MACH., SST, PAN HD, 2-56 X 3/16 343-0123-000 AP FOR 109 AND 110	5	
R	113A RC20GF560K	2	RESISTOR, FXD, COMP, 56 OHMS, 10%, 1/2W 745-1300-000	1	A1R5
114	2JX83A6	2	FILTER V14101 241-7009-000	1	A1FL1
115	2JX83A6	2	FILTER V14101 241-7009-000	1	A1FL2
116	BSF1BB122	2	CAPACITOR, FXD, 1200 PF, 500 VDCW V04222 913-4219-000	1	A1C1
116A	BSF1BB122	2	CAPACITOR, FXD, 1200 PF, 500 VDCW V04222 913-4219-000	1	A1C2
117	BSF1BB122	2	CAPACITOR, FXD, 1200 PF, 500 VDCW V04222 913-4219-000	1	A1C3
117A	BSF1BB122	2	CAPACITOR, FXD, 1200 PF, 500 VDCW V04222 913-4219-000	1	A1C4
118	BSF1BB122	2	CAPACITOR, FXD, 1200 PF, 500 VDCW V04222 913-4219-000	1	A1C5
119	BSF1BB122	2	CAPACITOR, FXD, 1200 PF, 500 VDCW V04222 913-4219-000	1	A1C6
120	BSF1BB122	2	CAPACITOR, FXD, 1200 PF, 500 VDCW V04222 913-4219-000	1	A1C7
120A	BSF1BB122	2	CAPACITOR, FXD, 1200 PF, 500 VDCW V04222 913-4219-000	1	A1C8
121	BSF1BB122	2	CAPACITOR, FXD, 1200 PF, 500 VDCW V04222 913-4219-000	1	A1C9
122	BSF1BB122	2	CAPACITOR, FXD, 1200 PF, 500 VDCW V04222 913-4219-000	1	A1C12
123	BSF1BB122	2	CAPACITOR, FXD, 1200 PF, 500 VDCW V04222 913-4219-000	1	A1C13
123A	BSF1BB122	2	CAPACITOR, FXD, 1200 PF, 500 VDCW V04222 913-4219-000	1	A1C11
123B	1N645	2	SEMICONV DEVICE 353-2607-000	1	A1CR17

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-16 124	BSF1BB122	2	CAPACITOR, FXD, 1200 PF, 500 VDCW V04222 913-4219-000	A1C14	1
124A	BSF1BB122	2	CAPACITOR, FXD, 1200 PF, 500 VDCW V04222 913-4219-000	A1C15	1
125	BSF1BB122	2	CAPACITOR, FXD, 1200 PF, 500 VDCW V04222 913-4219-000	A1C16	1
125A	BSF1BB122	2	CAPACITOR, FXD, 1200 PF, 500 VDCW V04222 913-4219-000	A1C23	1
126	BSF1BB122	2	CAPACITOR, FXD, 1200 PF, 500 VDCW V04222 913-4219-000	A1C17	1
126A	BSF1BB122	2	CAPACITOR, FXD, 1200 PF, 500 VDCW V04222 913-4219-000	A1C19	1
127	BSF1BB122	2	CAPACITOR, FXD, 1200 PF, 500 VDCW V04222 913-4219-000	A1C18	1
128	BSF1BB122	2	CAPACITOR, FXD, 1200 PF, 500 VDCW V04222 913-4219-000	A1C20	1
129	BSF1BB122	2	CAPACITOR, FXD, 1200 PF, 500 VDCW V04222 913-4219-000	A1C21	1
130	BSF1BB122	2	CAPACITOR, FXD, 1200 PF, 500 VDCW V04222 913-4219-000	A1C22	1
130A	BSF1BB122	2	CAPACITOR, FXD, 1200 PF, 500 VDCW V04222 913-4219-000	A1C25	1
130B	BSF1BB122	2	CAPACITOR, FXD, 1200 PF, 500 VDCW V04222 913-4219-000	A1C24	1
131	540-9022-003	2	POST, ELECTRICAL-MECHANICAL EQUIP.		1
-132	MS51957-3	2	SCREW, MACH., SST, PAN HD, 2-56 X 1/4 343-0124-000 AP		1
-133	MS35337-77	2	WASHER, LOCK, SST, 0.097 ID, 0.165 OD 310-0070-000 AP		1
134	761-0682-001	2	PLATE, MTG P		1
-135	P334-0256-00 O	2	NUT, PLAIN, HEX., NI PL BRS, 12-28 V77250 334-0256-000 AP		23
-135A	310-0398-000	2	WASHER, LOCK, BRZ, 0.221 ID, 0.364 OD COML AP		23
-135B	MS51957-3	2	SCREW, MACH., SST, PAN HD, 2-56 X 1/4 343-0124-000 AP		11
136	RC20GF101K	2	RESISTOR, FXD, 100 OHMS 10%, 1/2 W 745-1310-000	A1R1	1
136A	1N645	2	SEMICONV DEVICE 353-2607-000	A1CR11	1
137	TF300	2	TERMINAL V98291 306-1018-000		1
-138	MS51959-2	2	SCREW, MACH., SST, FH, 2-56 X 3/16 342-0132-000 AP		1
139	1N645	2	SEMICONV DEVICE 353-2607-000	A1CR1	1
139A	1N645	2	SEMICONV DEVICE 353-2607-000	A1CR16	1
140	RJ1A26N323	2	RELAY V73905 410-0346-000	A1K1	1
140A	RJ1A26N323	2	RELAY V73905 410-0346-000	A1K4	1
141	547-5305-002	2	TERMINAL, LUG		1
-142	P313-0132-00 O	2	NUT, PLAIN, HEX., SST, 4-40 V77250 313-0132-000 AP		1
-143	MS35337-78	2	WASHER, LOCK, SST, 0.115 ID, 0.202 OD 310-0278-000 AP		1
-144	MS51957-13	2	SCREW, MACH., SST, PAN HD, 4-40 X 1/4 343-0133-000 AP		1
145	DBM25S	2	CONNECTOR V71468 371-0964-000	A1J10	1
146	D53018	2	SLIDING LOCK ASSY V71468 370-2298-000 AP		2
146A	HP6N	2	CLAMP V09922 150-1543-000		1
146B	HP3N	2	CLAMP V09922 150-1540-000		1
-146C	68-1660-40	2	NUT, SELF-LKG, HEX., AL, 4-40 V72962 333-0605-000 AP FOR 146A AND 146B		2

section 6
parts list

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-16 -146D	310-6340-000	2	WASHER, FLAT, SST, 0.125 ID, 0.281 OD COML AP FOR 146A AND 146B	2	
-146E	MS51959-15	2	SCREW, MACH., SST, FH, 4-40 X 3/8 342-0046-000 AP FOR 146A AND 146B	2	
147	767-6912-001	2	CHASSIS	1	
6-17 -	761-0635-001	1	790Y-1 SHOCKMOUNT CLAMPING PLATE SEE FIG. 6-1-2 FOR NHA	REF	
R - 1	767-0528-000	2	PLATE, IDENT	1	
R 1A	761-7591-001	2	PLATE, SHOCKMOUNT	1	
2	757-4190-001	3	BOLT ASSY, CLAMP	2	
- 3	MS20426AD4-7	3	RIVET, SOLID, AL, 1/8 DIA X 0.437 LG SHK 305-1376-000 AP	4	
- 4	761-0604-001	3	SPACER, MOUNT P AP	2	
5	MS51957-24	4	SCREW, MACH., SST, PAN HD, 6-32 X 1/8 343-0165-000	1	
6	757-3933-001	4	INSERT, RETAINER	1	
7	1-8SSBALLTYP E440GR100	4	BALL BEARING V27545 309-0019-000	4	
8	757-3937-001	4	SPRING, HELICAL, COMPRESSION	4	
9	757-3934-001	4	THUMBNUT	1	
10	757-3935-001	4	PLATE, DETENT	1	
11	541-6503-002	4	COLLAR, BOLT ASSY	1	
12	305-0391-000	4	RIVET, SOLID, SST, 1/8 DIA X 9/16 LG SHK /COML/	1	
13	757-3936-001	4	SHAFT, SHOULDERED	1	
14	541-6506-002	4	BRACKET, BOLT ASSY	1	
15	761-0605-001	3	PIN, LOCATING P	2	
16	761-0607-001	3	SHOCKMOUNT CLAMPING PLATE P FOR 1 AND 2	1	

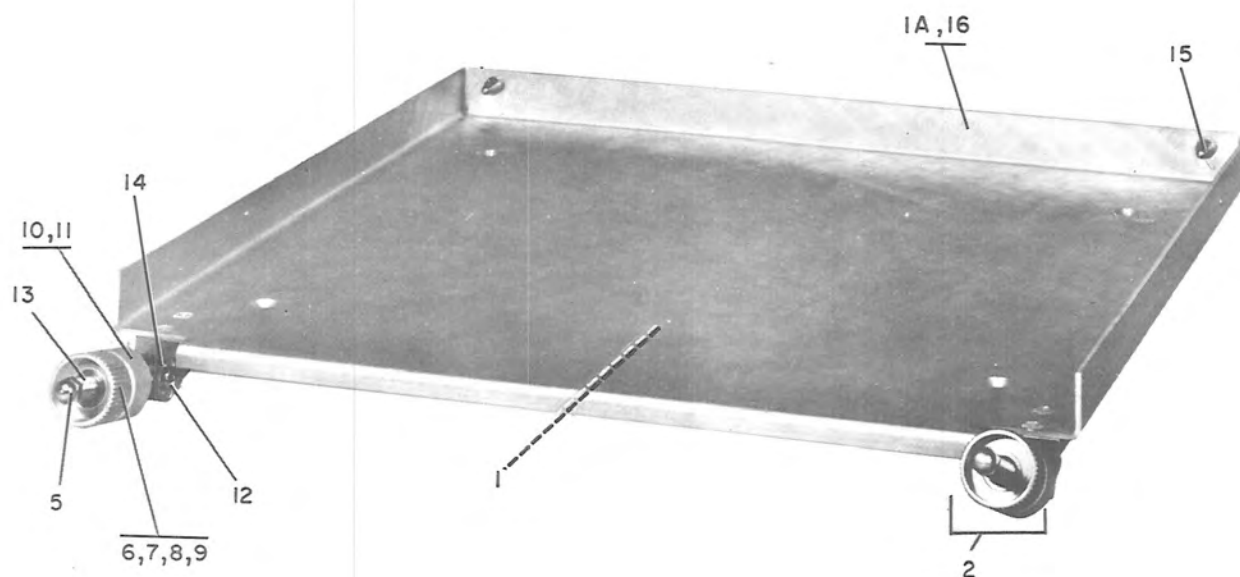
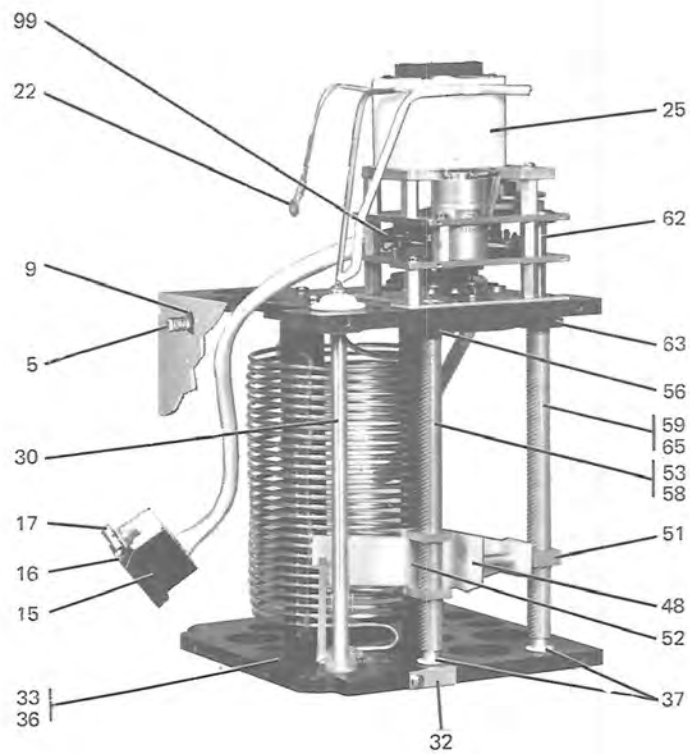
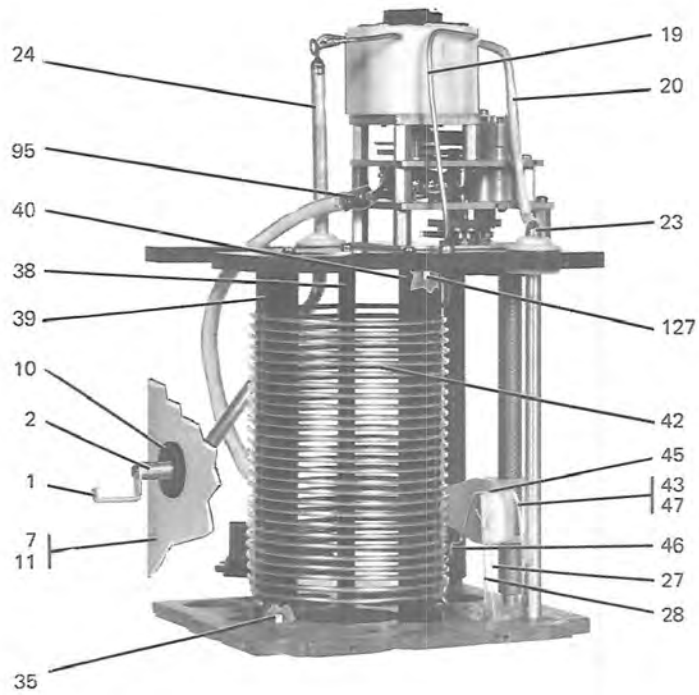
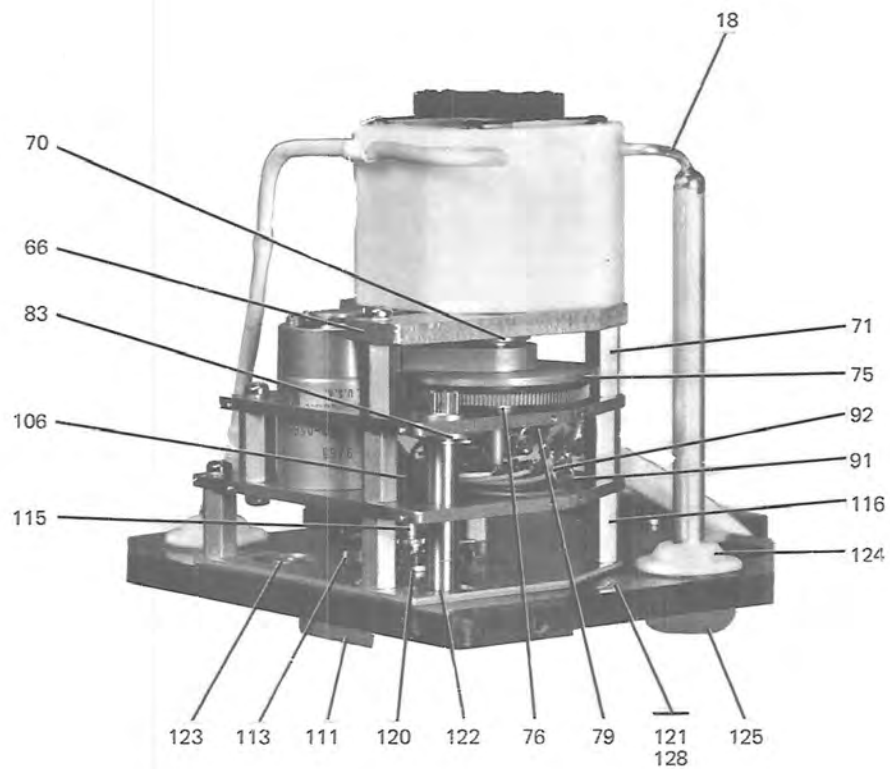
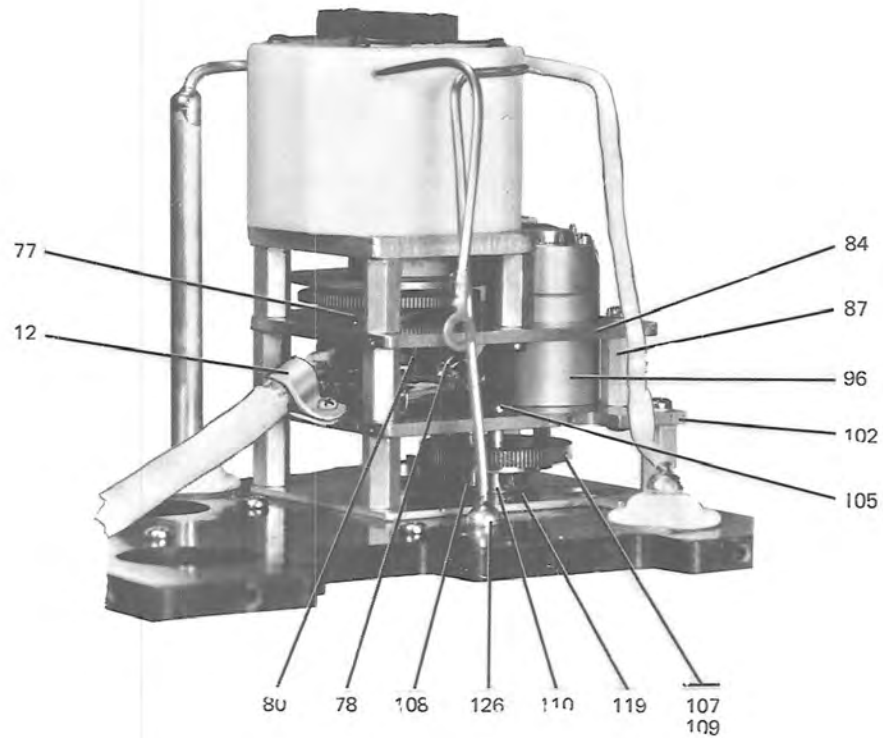


Figure 6-17. 790Y-1 Shockmount Clamping Plate.



TP2-0136-027

Figure 6-18. RF Coil Assembly (Sheet 1 of 2).



TP2-0136-027

Figure 6-18. RF Coil Assembly (Sheet 2 of 2).

section 6
parts list

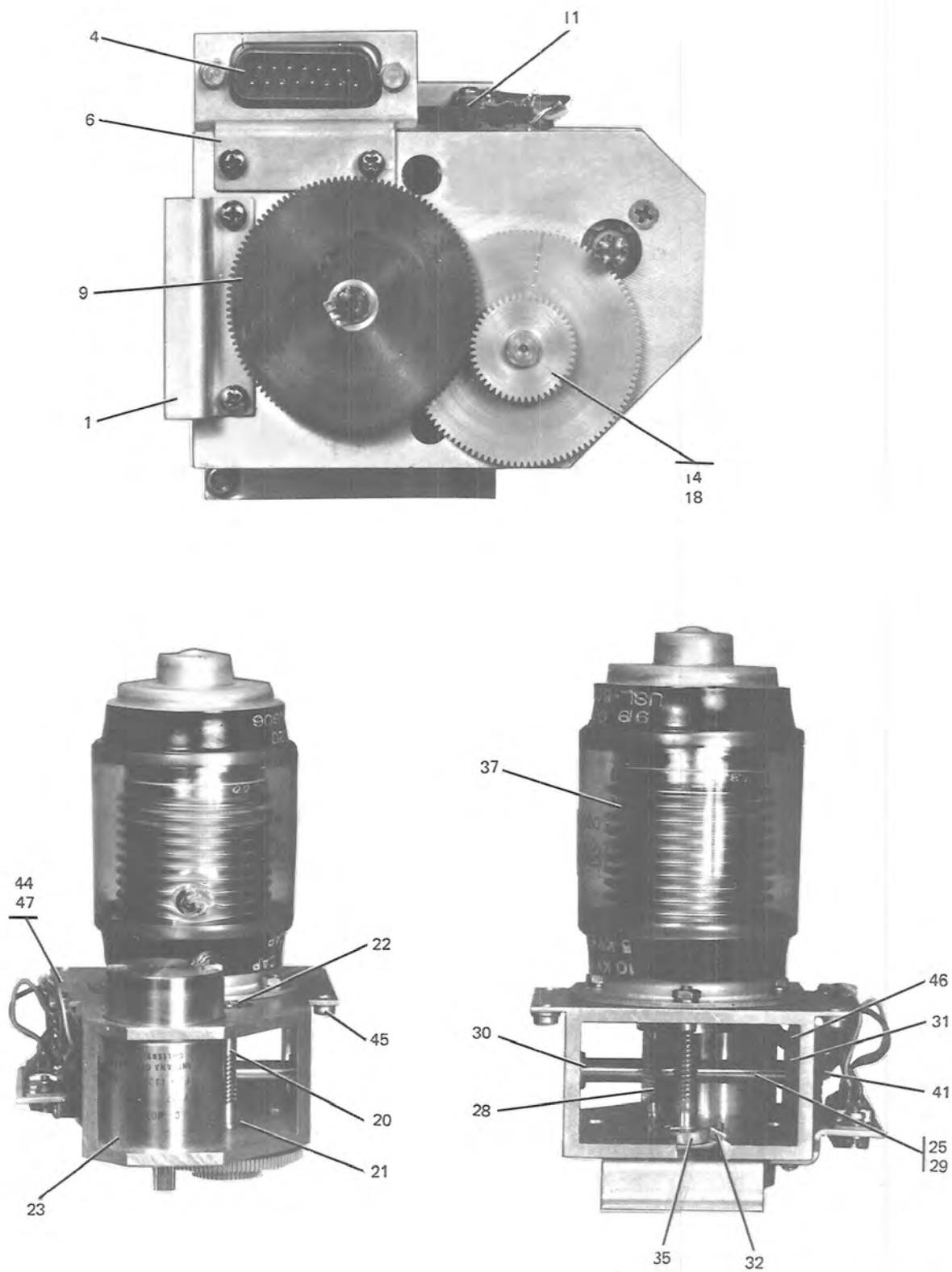
FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
6-18	777-3508-001	1	COIL ASSY, RF SEE FIG. 6-2-12 FOR NHA	REF	
	1 779-2201-001	2	LEAD, ELECTRICAL	1	
	2 779-2202-002	2	SPACER, SLV	1	
	- 3 P343-0291-00	2	SCREW, MACH., NI PL BRS, 4-40 X 3/4 77250 343-0291-000 O AP FOR 1 AND 2	1	
R	- 4 MS35338-97	2	WASHER, SPG TENS, CAD. PL BRZ, 0.012 ID, 0.209 OD 310-0095-000 AP FOR 1 AND 2	1	
R	5 P343-0708-00	2	SCREW, MACH., NI PL BRS, 6-32 X 9/16 77250 343-0708-000 O	4	
R	- 6 340-0642-000	2	SLEEVE, SPG 91314 AP	4	
R	7 779-2234-001	2	COVER, STEP COIL	1	
R	- 8 P342-0152-00	2	SCREW, MACH., NI PL BRS, 4-40 X O 1/4 77250 342-0152-000 AP	15	
R	9 543-4762-002	3	BUSHING, CAPTIVE SCR	4	
R	10 779-2181-001	3	INSULATOR, BUSH.	1	
R	11 779-2229-001	3	COVER, RF	1	
R	12 HP5N	2	CLAMP 09922 150-1542-000	1	
R	- 13 P343-0285-00	2	SCREW, MACH., NI PL BRS, 4-40 X O 1/4 77250 343-0285-000 AP	1	
R	- 14 310-0054-000	2	WASHER, FLAT, NI PL BRS, 0.125 ID, 0.312 OD COML AP	1	
R	15 779-2227-001	2	SHIELD, CONN	1	
R	16 DBM25P	2	CONNECTOR 71468 371-0969-000	1	A4P1
R	17 DB51221-1	2	RETAINER 71468 370-2295-000	1	
R	18 779-2240-001	2	LEAD, ELECTRICAL	1	
R	19 779-2239-001	2	LEAD, ELECTRICAL	1	
R	20 779-2238-001	2	LEAD, ELECTRICAL	1	
R	- 21 MS51963-1	2	SETSCREW, HEX., COD. PL STL, 2-56 X 1/8 328-5025-000 AP FOR 18 THRU 20	4	
R	22 1024-6HOTTIN NED	2	TERMINAL 77147 304-0140-000	1	
R	23 779-2207-001	2	TERMINAL, STUD	2	
R	24 779-2228-001	2	LEAD, ELECTRICAL	1	
R	25 779-2236-001	2	SWITCH, HV	1	
R	- 26 P343-0285-00	2	SCREW, MACH., NI PL BRS, 4-40 X O 1/4 77250 343-0285-000 AP	4	
R	27 777-3977-001	2	CONTACT, ELECTRICAL	1	
R	28 777-3977-002	2	CONTACT, ELECTRICAL	1	
R	- 29 P343-0285-00	2	SCREW, MACH., NI PL BRS, 4-40 X O 1/4 77250 343-0285-000 AP 27 AND 28	4	
R	30 779-2182-001	2	CONTACT, ELECTRICAL	1	
R	- 31 5100-25C	2	RING 79136 340-0038-000 AP	2	
R	32 790-0346-001	2	CONTACT, GROUNDING	1	
R	33 779-2235-001	2	PLATE, MTG	1	
R	- 34 P343-0289-00	2	SCREW, MACH., NI PL BRS, 4-40 X O 1/2 77250 343-0289-000 AP	3	
R	- 35 99-022-094-0 375	3	PIN, SPG BE CAP, 0.094 DIA X 0.375 72962 311-0620-000 AP	3	
R	36 779-2188-001	3	PLATE, MTG	1	
R	37 4L2FF	2	BEARING 96881 309-0797-000	2	
R	38 779-2184-001	2	BAR, COIL, NO. 1	1	
R	39 779-2183-001	2	BAR, COIL, NO. 2	1	
R	40 779-2185-001	2	BAR, COIL, NO. 3	1	
R	- 41 P343-0289-00	2	SCREW, MACH., NI PL BRS, 4-40 X O 1/2 77250 343-0289-000 AP FOR 38 THRU 40	3	

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
R 6-18	42	768-5774-002	2 COIL, RF	1	
R	43	768-5795-001	2 SPRING, CONT	1	
R	- 44	MS16624-12	2 RING 340-0021-000 AP	1	
R	45	768-5757-001	3 PIN, CONTACT P	1	
R	46	CR39	3 CONTACT 73949 305-0007-000	2	
R	47	768-5778-001	3 SPRING, CONT P	1	
R	48	779-2196-001	2 CARRIAGE, CONT	1	
R	- 49	768-5762-001	2 PIN, GROOVED P AP	1	
R	- 50	MS16624-18	2 RING 340-0004-000 AP	1	
R	51	768-5764-001	2 NUT, SPL P	1	
R	52	779-2208-001	2 CHANNEL, CARRIAGE	1	
R	53	779-2232-001	2 LEADSCREW, CARRIAGE	1	
R	- 54	5100-25C	2 RING 79136 340-0038-000 AP	1	
R	- 55	768-5768-001	2 SHIM, BRS, 0.002 THK P AP	AR	
R	- 55A	768-5768-002	2 SHIM, BRS, 0.005 THK P AP	AR	
R	- 55B	768-5768-003	2 SHIM, BRS, 0.010 THK P AP	AR	
R	56	768-5758-001	3 GEAR, SPUR, 48 TEETH P	1	
R	- 57	99-012-062-0 375	3 PIN, SPG, BE CAP, 0.062 DIA X 0.375 72962 311-0593-000 AP	1	
R	58	768-5775-002	3 LEADSCREW, COIL P	1	
R	59	779-2237-001	2 LEADSCREW, DRIVE, SWITCH	1	
R	- 60	5100-25C	2 RING 79136 340-0038-000 AP	2	
R	- 61	768-5768-001	2 SHIM, BRS, 0.002 THK P AP	AR	
R	- 61A	768-5768-002	2 SHIM, BRS, 0.005 THK P AP	AR	
R	- 61B	768-5768-003	2 SHIM, BRS, 0.010 THK P AP	AR	
R	62	779-2187-001	3 GEAR, SPUR, 18 TEETH	1	
R	63	768-5758-001	3 GEAR, SPUR, 48 TEETH P	1	
R	- 64	99-012-062-0 375	3 PIN, SPG, BE CAP, 0.062 DIA X 0.375 72962 311-0593-000 AP	1	
R	65	768-5775-002	3 LEADSCREW, COIL P	1	
R	66	779-2195-001	2 PLATE, GEAR, RF, SWITCH	1	
R	- 67	P342-0152-00 O	2 SCREW, MACH., NI PL BRS, 4-40 X 1/4 77250 342-0152-000 AP	3	
R	- 68	P343-0285-00 O	2 SCREW, MACH., NI PL BRS, 4-40 X 1/4 77250 343-0285-000 AP	1	
R	- 69	MS35338-97	2 WASHER, SPG TENS, CAD. PL BRZ, 0.012 ID, 0.209 OD 310-0095-000 AP	1	
R	70	S814FCHH3P15 U02	2 BEARING 40920 309-1523-000	1	
R	71	779-2206-001	2 POST, ELECTRICAL-MECH EQUIP.	4	
R	- 72	P343-0285-00 O	2 SCREW, MACH., NI PL BRS, 4-40 X 1/4 77250 343-0285-000 AP	1	
R	- 73	MS35338-97	2 WASHER, SPG TENS, CAD. PL BRZ, 0.012 ID, 0.209 OD 310-0095-000 AP	1	
R	- 74	P312-0009-00 O	2 STUD, CONTINUOUS THD, SST, 4-40 X 1/2 77250 312-0009-000 AP	2	
R	75	779-2230-001	2 GEARSHAFT, SPUR, BRAZED	1	
R	76	S814FCHH3P15 U02	2 BEARING 40920 309-1523-000	1	
R	77	S814FCHH3P15 U02	2 BEARING 40920 309-1523-000	1	
R	78	1N4004	2 SEMICOND DEVICE 353-6442-040 A4CR2	1	
R	79	1N4004	2 SEMICOND DEVICE 353-6442-040 A4CR3	1	
R	80	262333A	2 SWITCH 76854 269-2635-120 A4S2	1	
R	- 81	MS51957-5	2 SCREW, MACH., SST, 2-56 X 3/8 343-0126-000 AP	2	

section 6
parts list

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
R 6-18 - 82	15517	2	WASHER, NM, GLASS CLOTH, 0.088 ID, 0.150 OD 76854 302-0440-000 AP	4	
R 83	S814FCHH3P15 U02	2	BEARING 40920 309-1523-000	1	
R 84	779-2200-001	2	PLATE, GEAR, NO. 3	1	
R - 85	P343-0285-00 O	2	SCREW, MACH., NI PL BRS, 4-40 X 1/4 77250 343-0285-000 AP	1	
R - 86	MS35338-97	2	WASHER, SPG TENS, CAD. PL BRZ, 0.012 ID, 0.209 OD 310-0095-000 AP	1	
R 87	779-2206-001	2	POST, ELECTRICAL-MECH EQUIP.	4	
R - 88	P343-0285-00 O	2	SCREW, MACH., NI PL BRS, 4-40 X 1/4 77250 343-0285-000 AP	2	
R - 89	MS35338-97	2	WASHER, SPG TENS, CAD. PL BRZ, 0.012 ID, 0.209 OD 310-0095-000 AP	3	
R - 90	P312-0009-00 O	2	STUD, CONTINUOUS THD, SST, 4-40 X 1/2 77250 312-0009-000 AP	2	
R 91	1N4004	2	SEMICONV DEVICE 353-6442-040	1	A4CR1
R 92	262332A	2	SWITCH 76854 269-2635-110	1	A4S1
R - 93	MS51957-5	2	SCREW, MACH., SST, 2-56 X 3/8 343-0126-000 AP	2	
R - 94	15517	2	WASHER, NM, GLASS CLOTH, 0.088 ID, 0.150 OD 76854 302-0440-000 AP	2	
R 95	SE76	2	EYELET, METALLIC, 0.217 DIA X 0.191 61957 307-1040-000	1	
R 96	0905-71	2	MOTOR 16636 230-0565-010	1	A4B1
R - 97	MS51957-3	2	SCREW, MACH., SST, 2-56 X 1/4 343-0124-000 AP	2	
R - 98	310-0074-000	2	WASHER, SPG TENS, BRZ, 0.088 ID, 0.175 OD COML AP	2	
R 99	4040-2	2	TERMINAL 77147 304-0014-000	1	
R -100	P343-0297-00 O	2	SCREW, MACH., NI PL BRS, 2-56 X 1/8 77250 343-0297-000 AP	1	
R -101	310-0074-000	2	WASHER, SPG TENS, BRZ, 0.088 ID, 0.175 OD COML AP	1	
R 102	779-2191-001	2	PLATE, GEAR	1	
R -103	P343-0285-00 O	2	SCREW, MACH., NI PL BRS, 4-40 X 1/4 77250 343-0285-000 AP	1	
R -104	MS35338-97	2	WASHER, SPG TENS, CAD. PL BRZ, 0.012 ID, 0.209 OD 310-0095-000 AP	1	
R 105	S4FCHH3P15U0 2	2	BEARING 40920 309-1515-000	1	
R 106	S418FCHH3P15 U02	2	BEARING 40920 309-1518-000	1	
R 107	768-5787-001	2	GEARSHAFT	1	
R 108	768-5760-001	3	PIN P	1	
R 109	768-5772-001	3	GEAR, SPUR, 110 TEETH P	1	
R 110	768-5770-001	3	SHAFT, SHOULDERED P	1	
R 111	768-5756-001	2	GEAR, SPUR, 90 TEETH P	1	
R -112	5100-25C	2	RING 79136 340-0038-000 AP	1	
R 113	768-5773-001	2	WHEEL, STAR	1	
R -114	5100-25C	2	RING 79136 340-0038-000 AP	1	
R 115	768-5789-001	2	SHAFT, SPLINE	1	
R 116	779-2206-001	2	POST, ELECTRICAL-MECH EQUIP.	4	
R -117	P343-0289-00 O	2	SCREW, MACH., NI PL BRS, 4-40 X 1/2 77250 343-0289-000 AP	1	
R -117A	P343-0285-00 O	2	SCREW, MACH., NI PL BRS, 4-40 X 1/4 77250 343-0285-000 AP	2	

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
R 6-18 -118	P342-0156-00 0	2	SCREW, MACH., NI PL BRS, 4-40 X 1/2 77250 342-0156-000 AP	1	
R -118A	MS35338-97	2	WASHER, SPG TENS, CAD. PL BRZ, 0.012 ID, 0.209 OD 310-0095-000 AP	1	
R 119	S418FCHH3P15 U02	2	BEARING 40920 309-1518-000	1	
R 120	S814FCHH3P15 U02	2	BEARING 40920 309-1523-000	1	
R 121	779-2233-001	2	PLATE, COIL	1	
R 122	N814FCHHP25L 02	3	BEARING 40920 309-1976-030	1	
R 123	N814FCHHP25L 02	3	BEARING 40920 309-1976-030	1	
R 124	772-5752-001	3	WASHER, NM	1	
R 125	772-5753-001	3	BEARING, SLV	1	
R 126	779-2207-001	3	TERMINAL, STUD	1	
R -127	99-022-094-0 375	3	PIN, SPG, BE CAP, 0.094 DIA 4 0.375 72962 311-0620-000 AP	3	
R 128	779-2231-001	3	PLATE, REAR	1	
R 6-19 -	777-4500-001	1	CAPACITOR, VAR, VACUUM SHUNT SEE FIG. 6-2-21 FOR NHA	REF	
R 1	757-4533-001	2	BRACKET, CABLE P	1	
R - 2	P343-0285-00 0	2	SCREW, MACH., NI PL BRS, 4-40 X 1/4 77250 343-0285-000 AP	2	
R - 3	310-0076-000	2	WASHER, SPG TENS, BRZ, 0.115 ID, 0.212 OD COML AP	2	
R 4	DAM15P	2	CONNECTOR 71468 371-0968-000	1	A7P1
R - 5	D53018	2	SLIDING LOCK ASSY 71468 370-2298-000 AP	2	
R 6	761-0518-001	2	BRACKET, ELECTRICAL CONN	1	
R - 7	P343-0285-00 0	2	SCREW, MACH., NI PL BRS, 4-40 X 1/4 77250 343-0285-000 AP	2	
R - 8	310-0076-000	2	WASHER, SPG TENS, BRZ, 0.115 ID, 0.212 OD COML AP	2	
R 9	768-5824-001	2	GEAR, SPUR, 115 TEETH	1	
R - 10	MS16624-1025	2	RING 340-0025-000 AP	1	
R 11	262333A	2	SWITCH 76854 269-2625-120	1	A7S1
R - 12	MS51957-5	2	SCREW, MACH., SST, 2-56 X 3/8 343-0005-000 AP FOR 108 AND 11	2	
R - 13	15517	2	WASHER, NM, GLASS CLOTH, 0.088 ID, 0.150 OD 76854 302-0440-000 AP FOR 108 AND 11	2	
R 14	768-5818-001	2	GEAR, CLUSTER	1	
R - 15	506-6619-002	2	WASHER, FLAT AP	1	
R - 16	768-5768-001	2	SHIM, BRS, 0.002 THK P AP	AR	
R - 17	MS16624-1025	2	RING 340-0025-000 AP	1	
R 18	768-5817-001	3	GEAR, CLUSTER, 47 AND 108 TEETH P	1	
R - 19	MS16562-194	3	PIN, SPG, SST, 0.062 DIA X 1/2 311-0421-000 AP	1	
R 20	768-5816-001	3	WORM SHAFT, SHUNT	1	
R 21	S814FCHH3P15 U02	2	BEARING 40920 309-1523-000	1	



TP2-0469-017

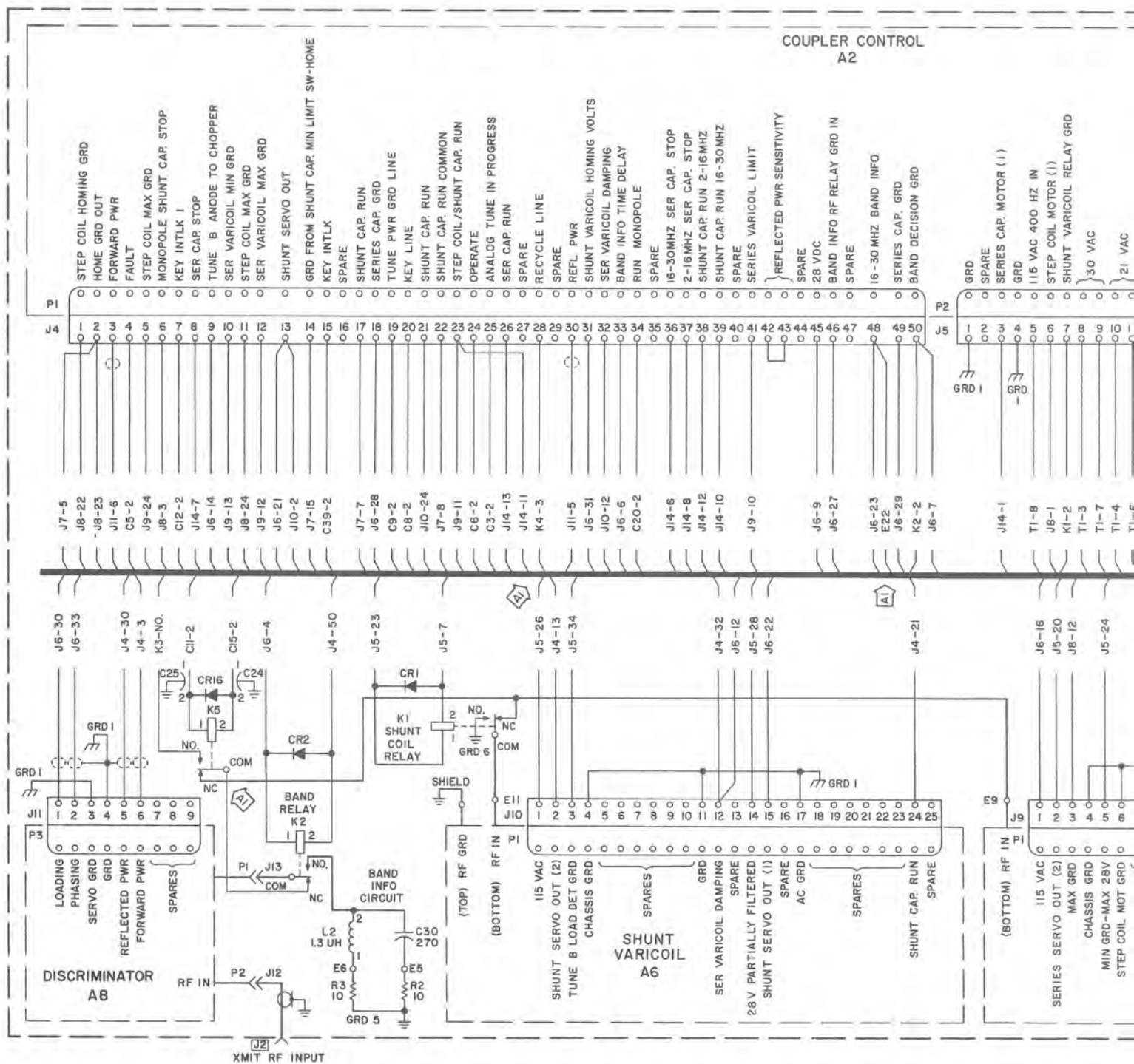
Figure 6-19. Vacuum Shunt Variable Capacitor.

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
R 6-19	22	S814FCHH3P15 U02	2 BEARING 40920 309-1523-000	1	
R	23	1305-52	2 MOTOR 16636 230-0534-070	1	A7B1
R	- 24	MS51959-14	2 SCREW, MACH., SST, 4-40 X 5/16 342-0045-000 AP	2	
R	25	777-4498-001	2 SHAFT, SHOULDERED	1	
R	- 26	768-5768-001	2 SHIM, BRS, 0.002 THK P AP	AR	
R	- 27	MS16624-1025	2 RING 340-0025-000 AP	2	
R	28	768-5821-001	3 GEAR, HELICAL, 40 TEETH	1	
R	29	768-5822-001	3 SHAFT, SHOULDERED	1	
R	30	127-110	2 BEARING 12639 309-1497-000	1	
R	31	127-110	2 BEARING 12639 309-1497-000	1	
R	32	768-5823-001	2 PLATE, RETAINING	1	
R	- 33	MS51957-14	2 SCREW, MACH., SST, 4-40 X 5/16 343-0134-000 AP	2	
R	- 34	310-0278-000	2 WASHER, LOCK, SST, 0.115 ID, 0.202 OD COML AP	2	
R	35	S814FCHH3P15 U02	2 BEARING 40920 309-1523-000	1	
R	- 36	MS16624-1025	2 RING 340-0025-000 AP	2	
R	37	919-0242-020	2 CAPACITOR, VAR, VACUUM DIELECTRIC, 5 TO 500 PF 10%, 5 TO 10 VDCW 73905	1	A7C1
R	- 38	P313-0045-00 O	2 NUT, PLAIN, HEX., SST, 6-32 X 3/32 77250 313-0045-000 AP	3	
R	- 39	MS35338-136	2 WASHER, LOCK, SST, 0.141 ID, 0.250 OD 310-0282-000 AP	3	
R	- 40	P347-0035-00 C	2 SCREW, MACH., SST, 6-32 X 3/8 77250 347-0035-000 AP	2	
R	41	4007-4	2 TERMINAL 77147 304-0015-000	1	
R	- 42	P343-0298-00 O	2 SCREW, MACH., NI PL BRS, 2-56 X 3/16 77250 343-0298-000 AP	1	
R	- 43	310-0075-000	2 WASHER, SPG TENS, BRZ, 0.088 ID, 0.165 OD, COML AP	1	
R	44	777-4497-001	2 GEAR HOUSING, ROLLED	1	
R	45	F12NCFMA2-62	3 NUT, SELF-LKG, CLINCH, COD, PL STL, 6-32 X 0.281 72962 333-0842-000	4	
	46	SE77	3 EYELET, METALLIC, 0.217 DIA X 0.223 61957 307-1041-000	1	
	47	777-4496-001	3 HOUSING, GEAR	1	

SCHEMATIC CHANGES

PAGE	REVISION IDENT.	DESCRIPTION OF REVISION AND REASON FOR CHANGE	SERVICE BULLETIN	EFFECTIVITY
7-3/7-4, 7-5/7-6	A1	Interchanged K4 and K5 symbols and associated wires. Wire from K2-NC to K5-COM was to K5-NC. Wire from K1-NC to K5-NC was to K5-COM. Deleted wire between J4-28 and J6-25. Wire from J4-28 to K4-3 was to C14-2. Wire from J4-48 to E22 was to E21. Wire from J7-5 to J14-3 was to J14-15. Wire from J6-24 to C1-2 was to C4-2. Renumbered contacts of K4. Wire from DS2-2 to E1 was to C6-2. Wire from J6-24 to C1-2 was from J4-48. CR3 (anode) to C4-2 was to E3. Wire from J4-48 to E22 added. CR12 (anode) to C4-2 and CR12 (cathode) to E22 was CR12 (anode) to C1-2 and CR12 (cathode) to J1-K. CR15 was CR9.		102
	None	Various pin function name changes to standardize the chassis and the modules.		None

Figure 7-1. 490T-4 Antenna Coupler Chassis (A1), Interconnection Diagram (Sheet A).



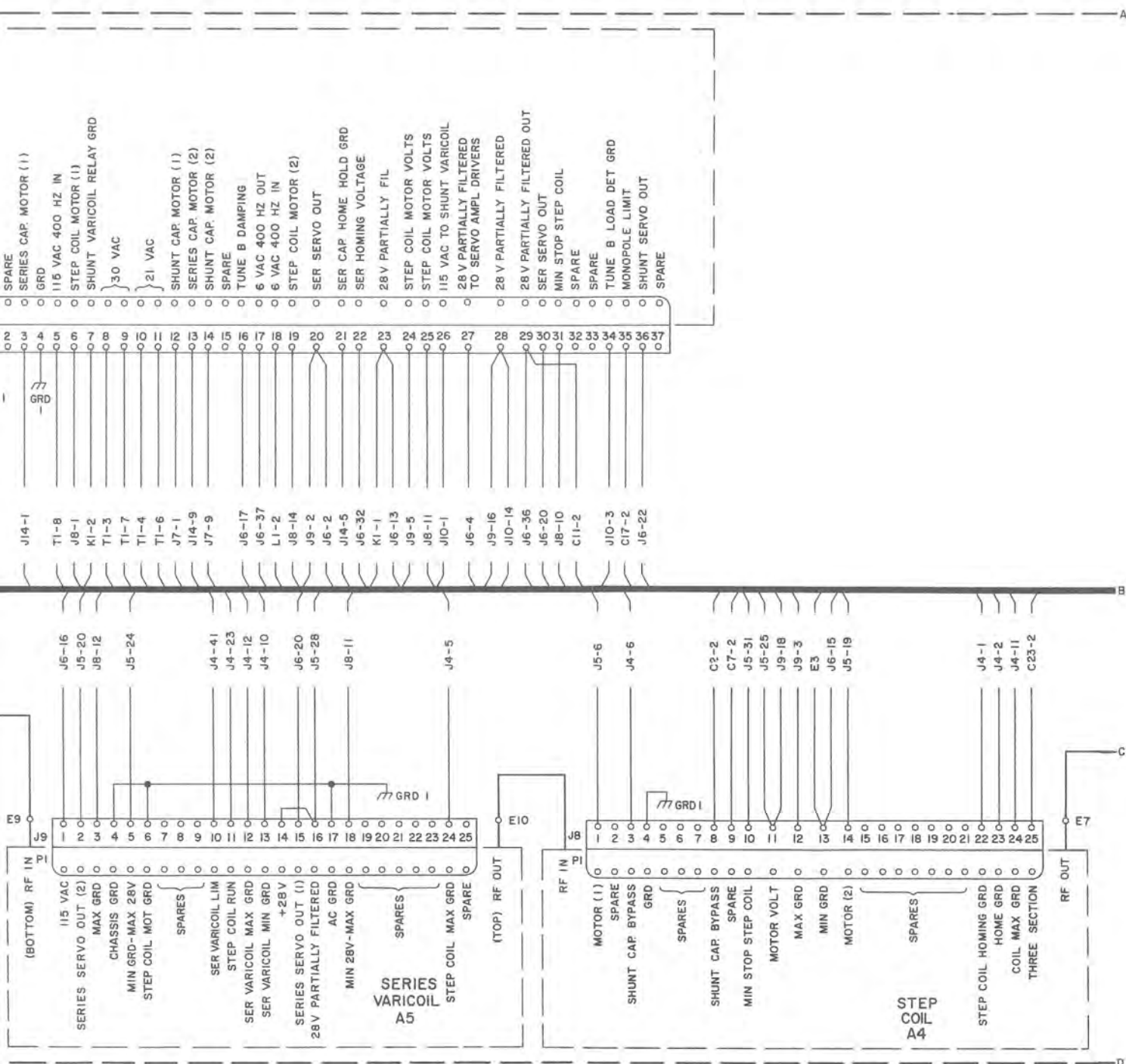
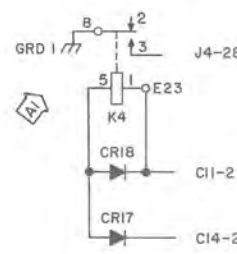
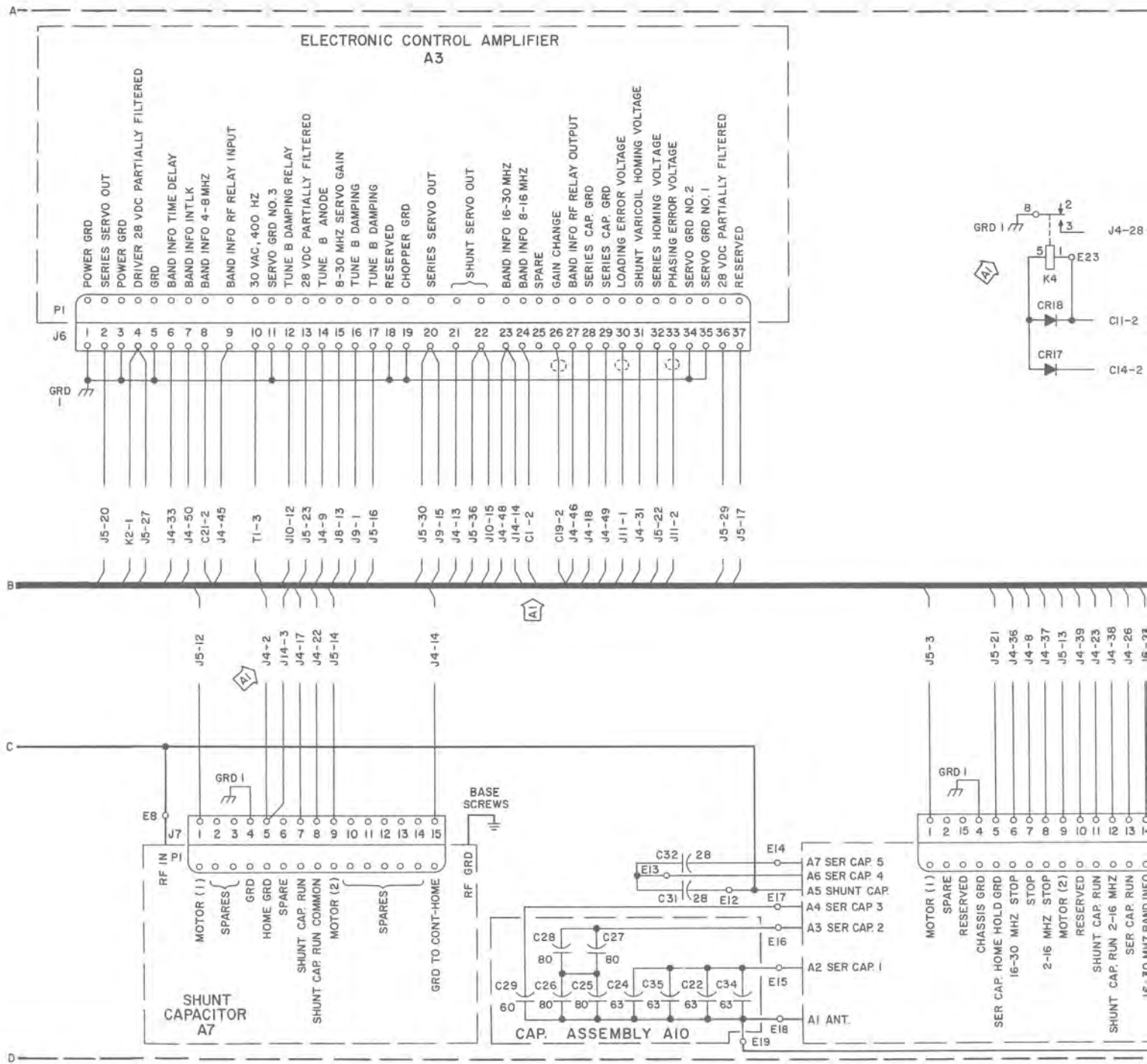


Figure 7-1. 490T-4 Antenna Coupler Chassis (A1), Interconnection Diagram (Sheet 1 of 2).



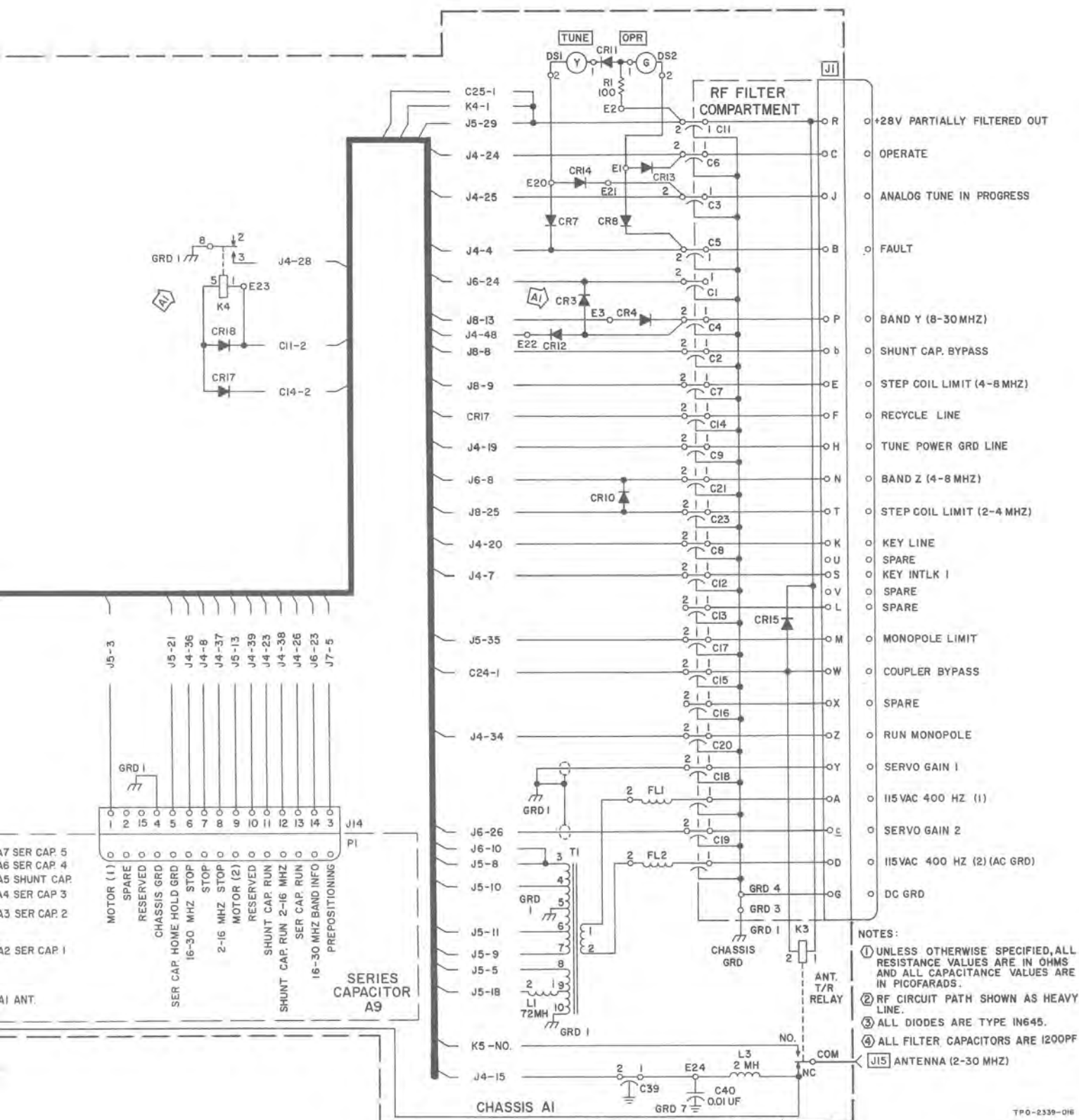
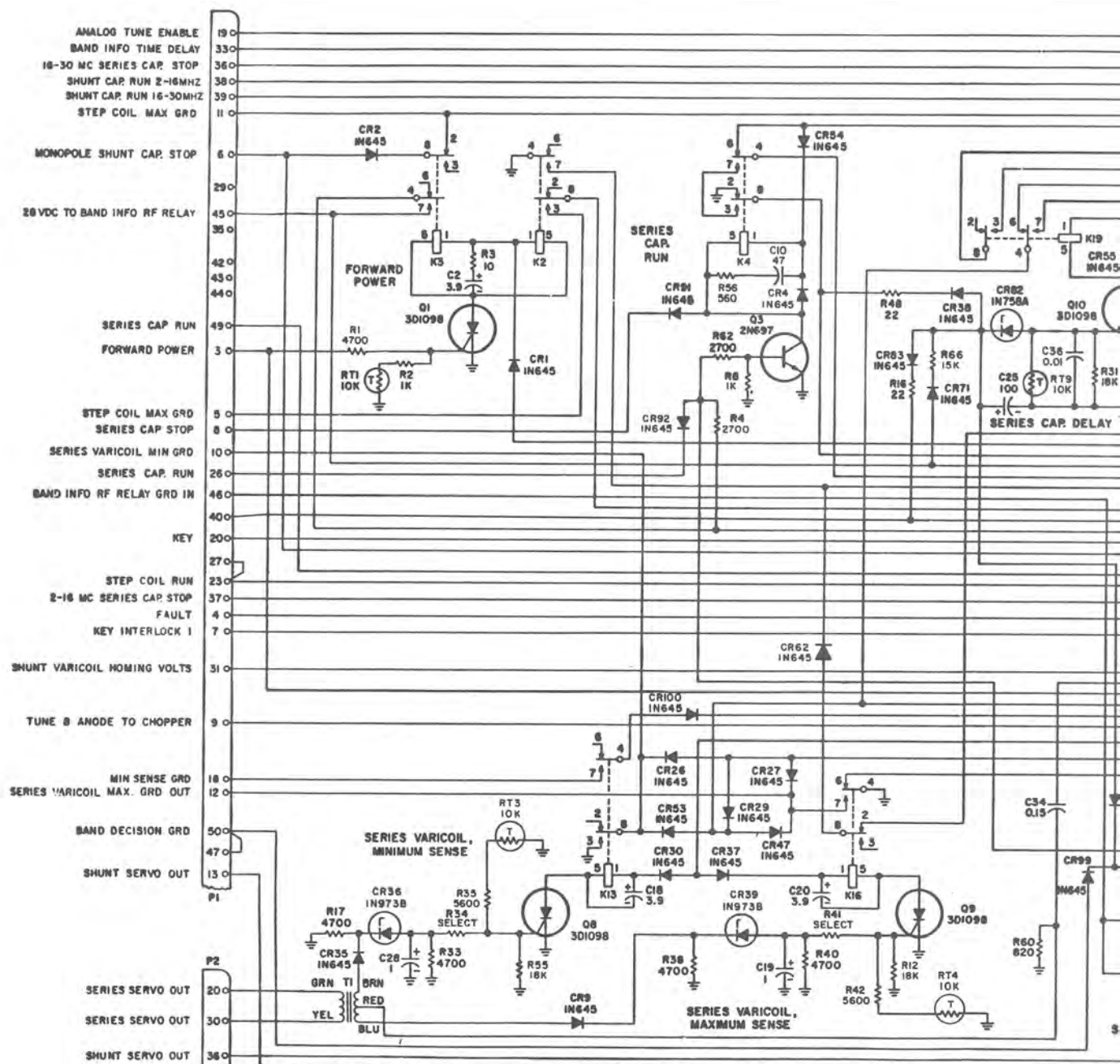


Figure 7-1. 490T-4 Antenna Coupler Chassis (A1), Inter-connection Diagram (Sheet 2 of 2).

SCHEMATIC CHANGES

PAGE	REVISION IDENT.	DESCRIPTION OF REVISION AND REASON FOR CHANGE	SERVICE BULLETIN	EFFECTIVITY

Figure 7-2. Coupler Control A2 MCN 101 Through 179, Schematic Diagram (Sheet A).



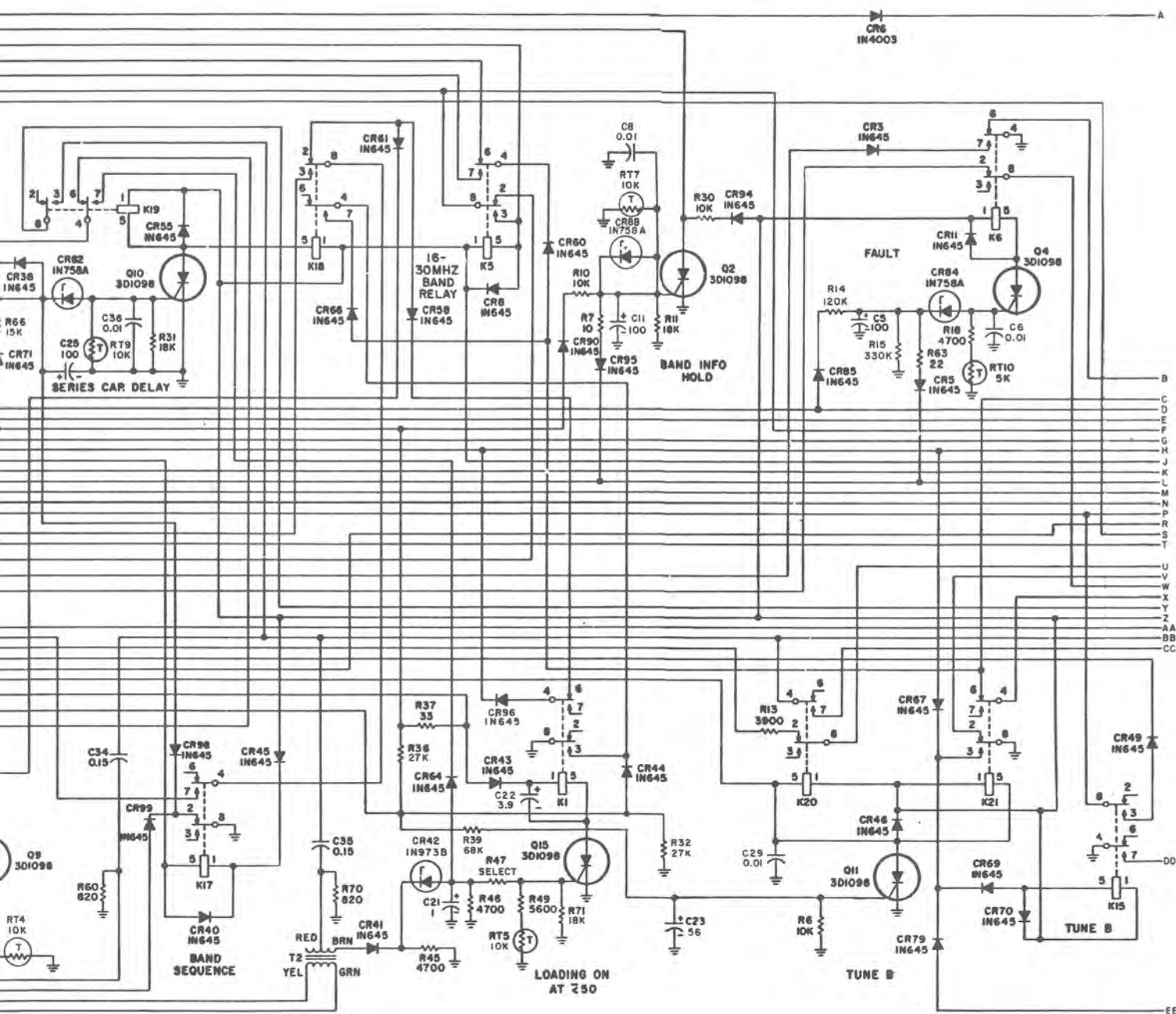
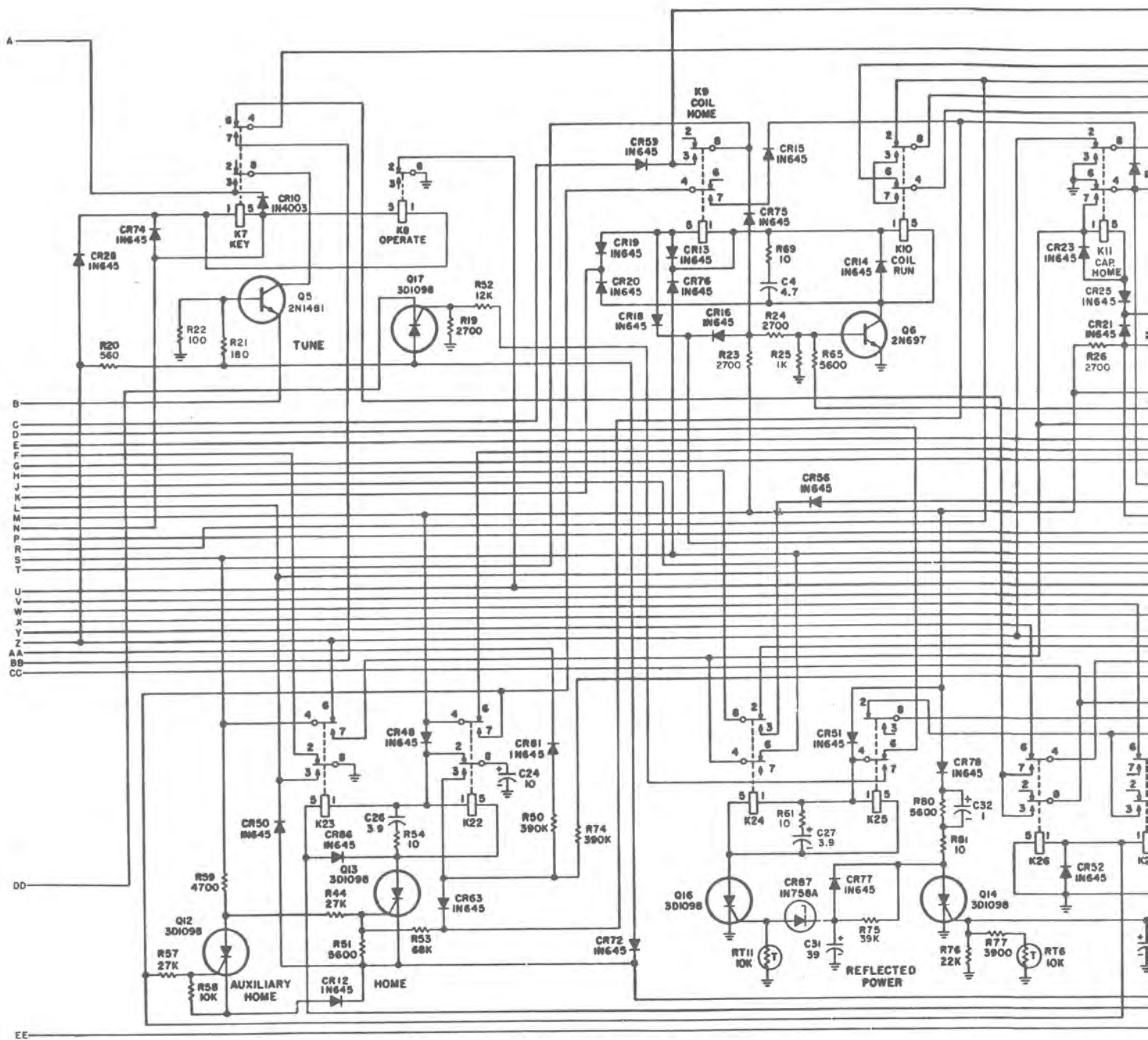


Figure 7-2. Coupler Control A2 MCN 101 Through 179, Schematic Diagram (Sheet 1 of 2).



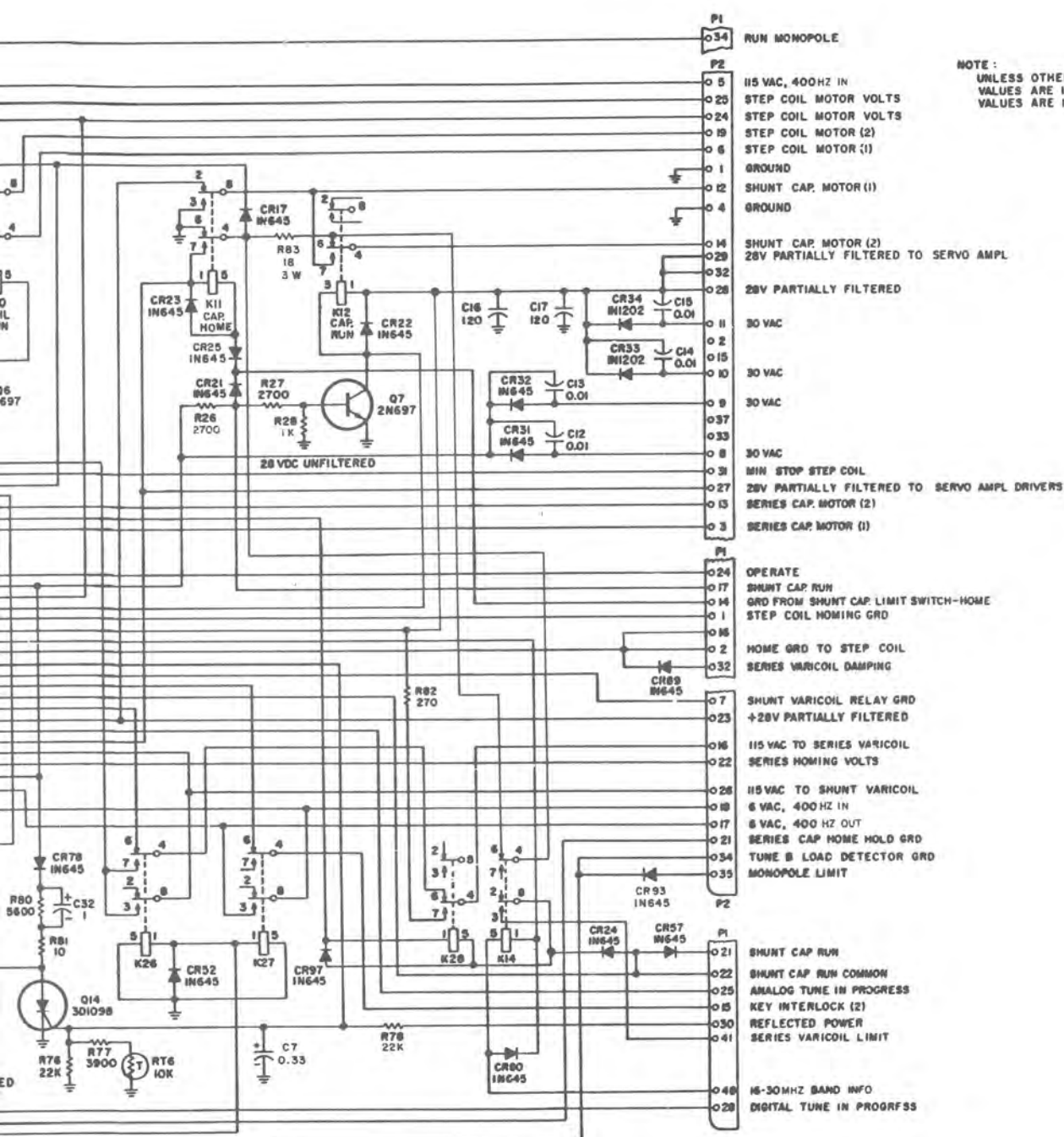


Figure 7-2. Coupler Control A2 MCN 101 Through 179,
Schematic Diagram (Sheet 2 of 2).

SCHEMATIC CHANGES

PAGE	REVISION IDENT.	DESCRIPTION OF REVISION AND REASON FOR CHANGE	SERVICE BULLETIN	EFFECTIVITY
7-15/7-16	None	Added schematic to include the various changes.		180
	A1	Added CR104 between R37 (anode) and R36 (cathode). R36 from CR104 (cathode) to C23 (R83, CR102) was from R37 to R39 (CR44, CR26, CR27, CR29). R36 value was changed from 27K to 12K. Deleted R39, and replaced with a wire from R36 (CR44) to C23 (R6). Deleted R32 from CR44 (R36) to ground. Added R83 between CR44 (anode) and C23 (R36). C23 from R83 (CR102) to ground was from R6 (Q11-b) to ground. C23 value was changed from 56 uf to 39 uf. Added CR102 between C23 (R83) and R6 (Q11-b). C29 from CR102 (R6) to ground was from Q11-e (K20-5) to ground. Changed R6 value from 10K to 18K. RT3 was added from R6 (Q11-b) to ground. These changes were made to meet MIL-T-5422E environmental tests.		181
7-15/7-16, 7-17/7-18	A2	R14 value was changed from 120K to 150K, and R75 value was changed from 39K to 47K to maintain interchangeability between 490T-1 and 490T-1A.		275
		Added CR101 between K6-2 (cathode) and K7-3 (anode) to eliminate transient suppressions on key line.		275
7-15/7-16	A3	Deleted CR92 from P1-26 (cathode) to R4 (R62), and replaced with a wire. R4 and R8 values were changed from 2700 to 1800 and 1000 to 680 ohms respectively.		
(Cont)				

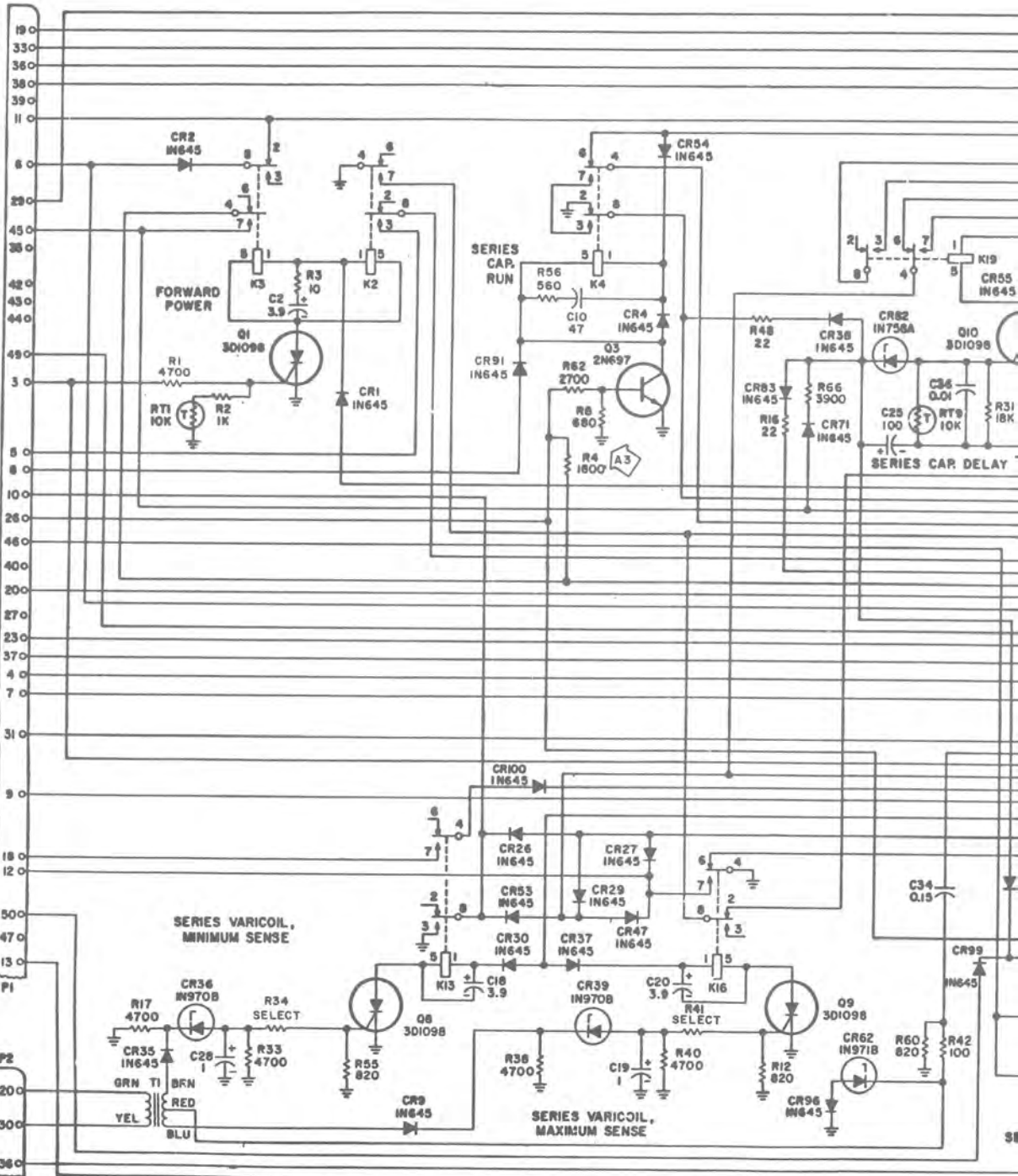
Figure 7-3. Coupler Control A2 MCN 180 Through 671, Schematic Diagram (Sheet A).

SCHEMATIC CHANGES

PAGE	REVISION IDENT.	DESCRIPTION OF REVISION AND REASON FOR CHANGE	SERVICE BULLETIN	EFFECTIVITY
(Cont)		The changes were made to improve performance on marginal operation.		
7-15/7-16, 7-17/7-18	A4	Added CR103 between R14 (R15) to ground. Added R32 between CR85 (cathode) and R14 (R15). R14 value was changed from 150K to 100K. Added C37 from R32 (CR85) to ground to stabilize fault time delay with line voltage. Added C38 from CR65 (Q14-b) to ground to improve performance.		400
7-15/7-16	A5	Changed values of R14 and R15 respectively from 100K to 160K and 330K to 100K to stabilize time delay circuit.		434
7-15/7-16	A6	Added CR107 between K21-8 (anode) to K6-6 (cathode) and CR108 between K7-8 (anode) to K6-6 (cathode). Deleted wire from K21-8 to ground. Added wire from K23-8 to ground. CR101 from K6-2 (cathode) to K7-3, changed type from 1N977B to 1N645. Refer to figure 7-4, schematic diagram of coupler control A2 (MCN 672 through 3614) for implementation of above changes and complete MCN effectivity list.		533, 561, 562, 565, 566, 567, 571, 573, 580, 586, 588, 590, 596, 599, 602, 604, 606, 618, 625, 627, 633
7-15/7-16	A7	Deleted unused wire from P1-39 to K5-7 to reduce assembly item and cost savings.		572

Figure 7-3. Coupler Control A2 MCN 180 Through 671, Schematic Diagram (Sheet B).

ANALOG TUNE ENABLE 190
 BAND INFO TIME DELAY 330
 16-30 MHZ SERIES CAP. STOP 360
 SHUNT CAP. RUN 2-16 MHZ 380
 390
 STEP COIL MAX GRD 110
 MONOPOLE SHUNT CAP. STOP 60
 SPARE 290
 28 VDC TO BAND INFO RF RELAY 450
 380
 420
 430
 440
 SERIES CAP RUN 490
 FORWARD POWER 30
 STEP COIL MAX GRD 50
 SERIES CAP STOP 80
 SERIES VARICOIL MIN GRD 100
 SERIES CAP. RUN 260
 BAND INFO RF RELAY GRD IN 460
 400
 KEY 200
 270
 STEP COIL RUN 230
 2-16 MHZ SERIES CAP. STOP 370
 FAULT 40
 KEY INTERLOCK 1 70
 SHUNT VARICOIL HOMING VOLTS 310
 TUNE B ANODE TO CHOPPER 90
 MIN SENSE GRD 180
 SERIES VARICOIL MAX. GRD OUT 120
 BAND DECISION GRD 500
 470
 SHUNT SERVO OUT 130
 P1
 SERIES SERVO OUT 200
 300
 SERIES SERVO OUT 300
 SHUNT SERVO OUT 360
 P2



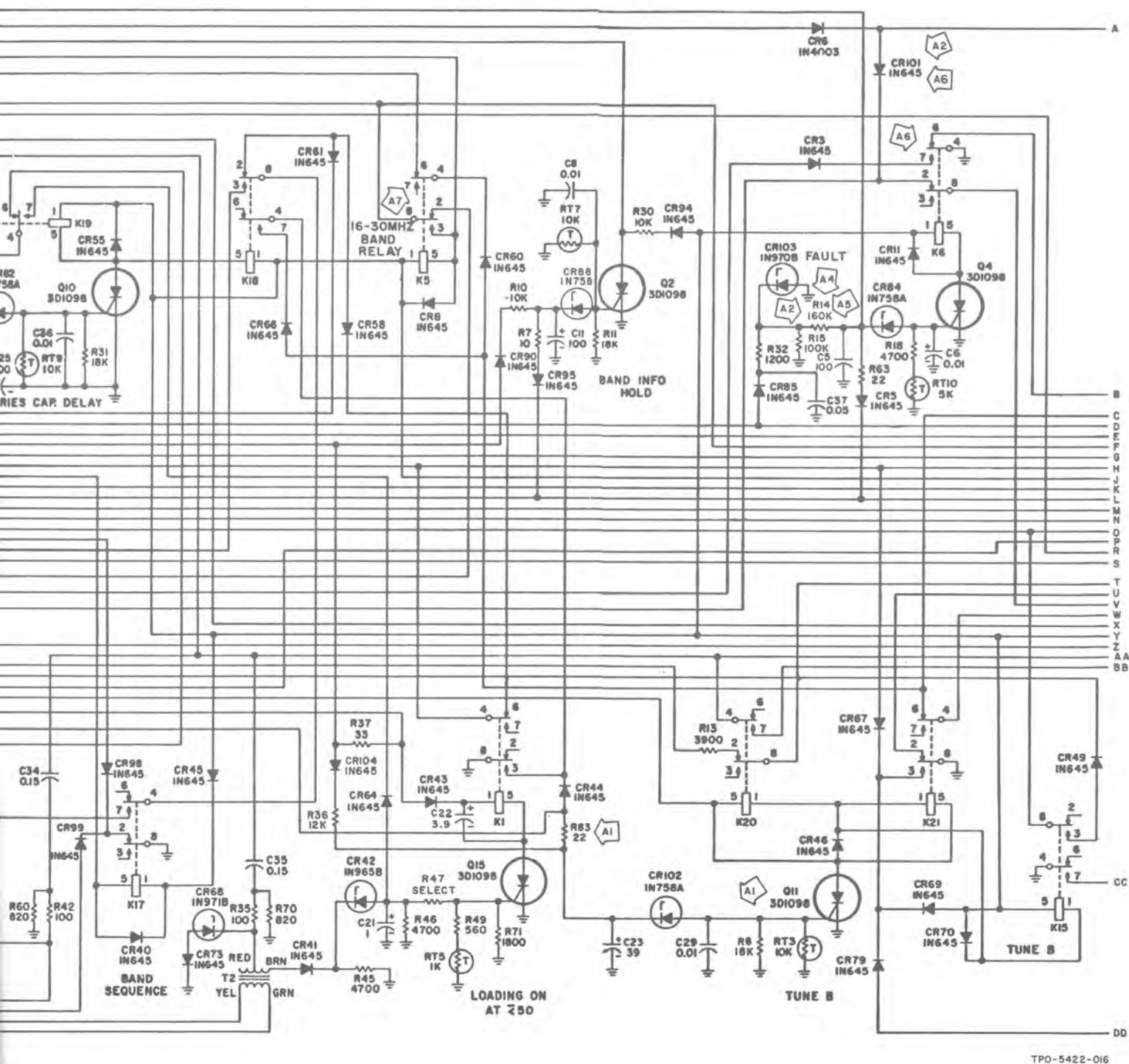
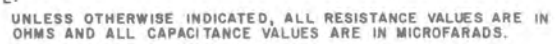


Figure 7-3. Coupler Control A2 MCN 180 Through 671, Schematic Diagram (Sheet 1 of 2).



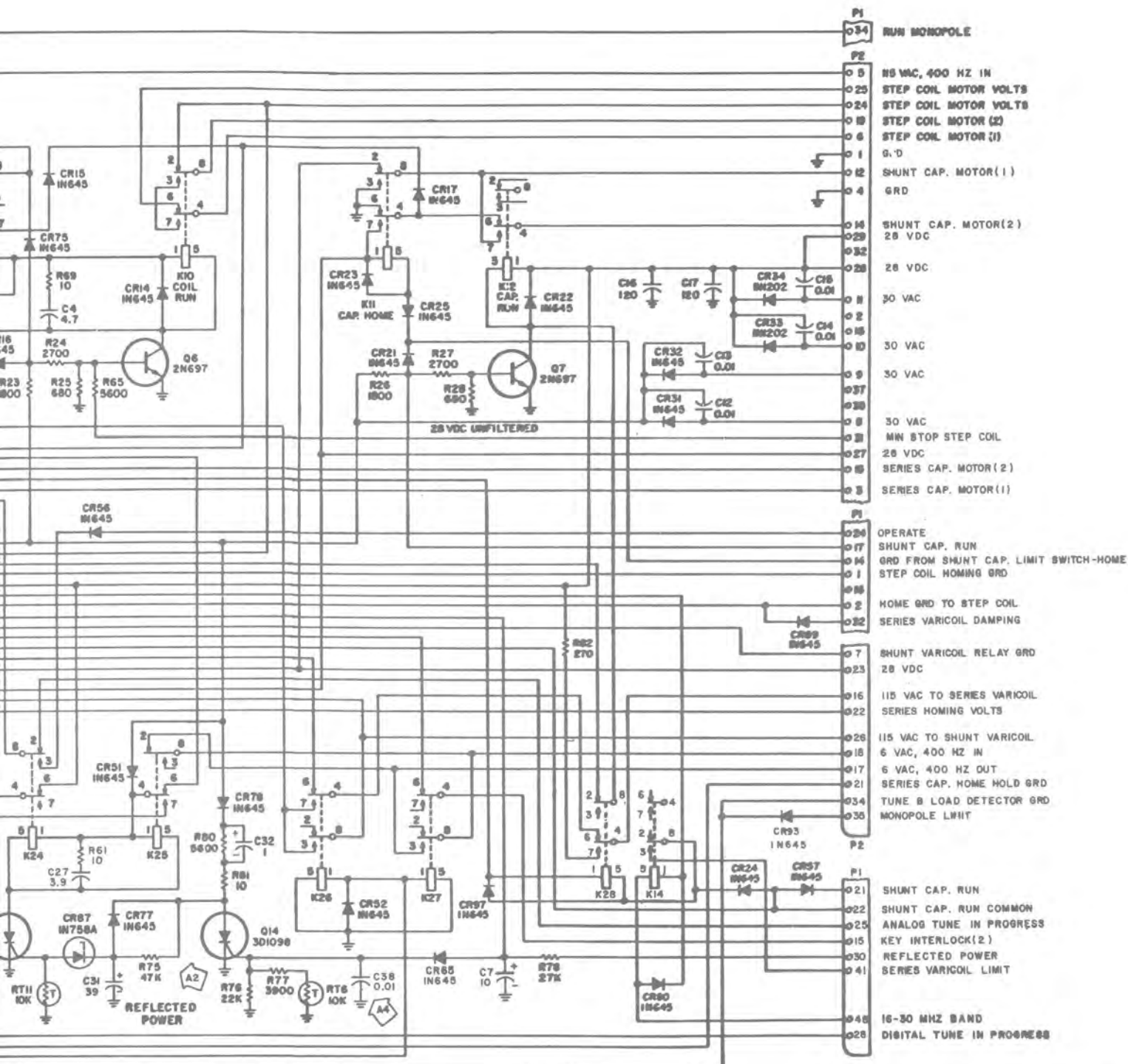


Figure 7-3. Coupler Control A2 MCN 180 Through 671, Schematic Diagram (Sheet 2 of 2).

SCHEMATIC CHANGES

PAGE	REVISION IDENT.	DESCRIPTION OF REVISION AND REASON FOR CHANGE	SERVICE BULLETIN	EFFECTIVITY
	None	New schematic was added to include Service Bulletin No. 1 ARO 917.	1	672
7-23/7-24, 7-25/7-26	A1	Added CR107 between K21-8 (anode) to K6-6 (cathode) and CR108 between K7-8 (anode) to K6-6 (cathode). Deleted wire from K21-8 to ground. CR101 from K6-2 (cathode) to K7-3 changed type from 1N977B to 1N645.		533, 561, 562, 565, 566, 567, 571, 573, 580, 586, 588, 590, 596, 599, 602, 604, 606, 618, 625, 627, 633, 673, 674, 679, 701, 703, 705, 707, 712, 715, 716, 717, 719, 721, 728, 729, 732, 733, 735, 742, 743, 746, 747, 752, 753, 754, 755, 758, 761, 764, 765, 766, 767, 773, 777, 779, 781, 783, 785, 795, 797, 799, 801, 803, 807, 809, 810, 811, 813, 814, 815, 820, 821, 822, 824, 829, 831, 832, 834, and up
7-23/7-24, 7-25/7-26	A2	Added CR109 between K12-8 (cathode) and CR32 (R80, R81). Added wire from K12-2 to K19-4 wire from K7-2 to K25-5 was from K7-2 to R78 (C7) to make 490T-1/1A compatible with the 490T-4.		1168
7-23/7-24, 7-25/7-26 (Cont)	A3	Q1, Q2, Q4, and Q8 through Q17 type changed from 3D1098 to CB1028. Added the following capacitors: C33 from Q2-c to	2 and 3	1567

Figure 7-4. Coupler Control A2 MCN 672 Through 3614, Schematic Diagram (Sheet A).

SCHEMATIC CHANGES

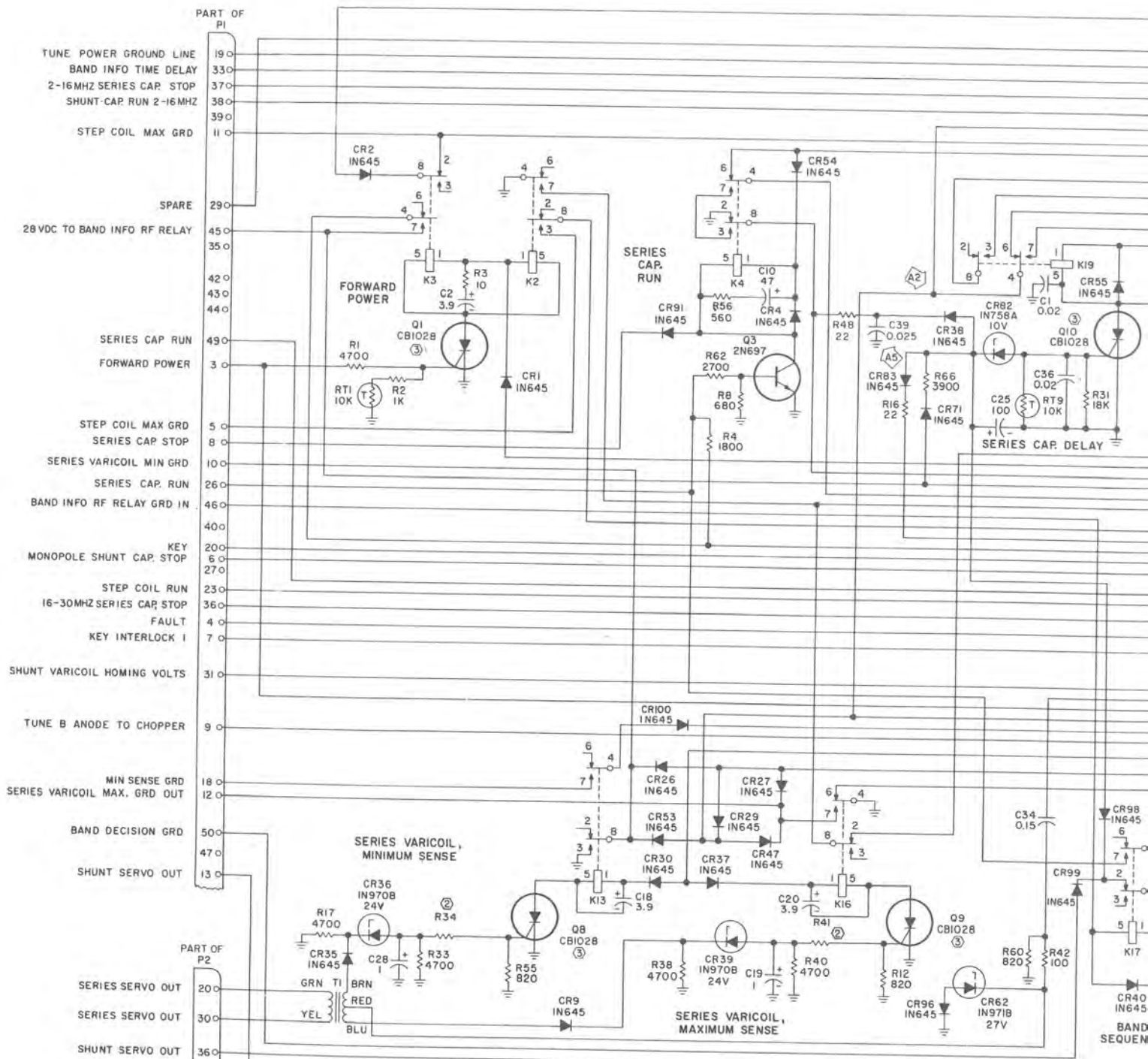
PAGE	REVISION IDENT.	DESCRIPTION OF REVISION AND REASON FOR CHANGE	SERVICE BULLETIN	EFFECTIVITY
(Cont)		ground, C9 from Q4-c to ground, C1 from Q10-c to ground, C3 from Q11-c to ground, and C30 from Q17-c to ground. Changed the following capacitors from 0.01 uf to 0.02 uf: C8 (Q2), C6 (Q4), C36 (Q10), C29 (Q11) and C38 (Q14) Service Bulletin No. 2 ARO 920 and No. 3 ARO 993.		
7-25/7-26	A4	Added C40 between Q17-e and ground to provide transient suppression to operate SCR.		760, 778, 818, 827, 855, 890, 907, 996, 1076, 1113, 1129, 1134, 1159, 1168, 1169, 1171, 1177, 1180, 1181, 1193, 1195, 1196, 1200, 1233, 1267, 1279, 1289, 1290, 1291, 1295, 1296, 1298, 1306 thru 1310, 1314, 1315, 1326, 1327, 1328, 1332, 1333, 1340, 1341, 1344, 1347, 1349, 1352, 1355, 1358, 1360, 1361, 1364, 1369, 1376, 1385, 1386, 1391, 1396, 1426, 1433, 1435, 1437, 1438, 1442, 1446, 1448, 1455, 1457, 1461, 1464, 1475,
(Cont)				

Figure 7-4. Coupler Control A2 MCN 672 Through 3614, Schematic Diagram (Sheet B).

SCHEMATIC CHANGES

PAGE	REVISION IDENT.	DESCRIPTION OF REVISION AND REASON FOR CHANGE	SERVICE BULLETIN	EFFECTIVITY
(Cont)				1481, 1484, 1487, 1490, 1505, 1509, 1515, 1517, 1518, 1519, 1521, 1523, 1524, 1528 thru 1533, 1536 thru 1540, 1542, 1543, 1545, 1547 thru 1553, 1555, 1559, 1565, and up
7-23/7-24	A5	Added C39 between CR38 (R48) to ground.	6	2402, 2403, 2404, 2405, 2412, 2418, 2422, 2428, and up
7-25/7-26	A6	Added R84 between R78 (C7) and P1-42. Added wire from K8-2 to P1-43.		2326 thru 2332, 2336, 2337, 2338, 2342, and up
7-23/7-24, 7-25/7-26	A7	The following changes were made to improve performance. Changed Q5 from 2N1481 to 2N697, added CR101, added CR105, added CR106, changed R22 from 100 ohms to 680 ohms, changed R21 from 180 ohms to 2700 ohms, and changed R20 from 560 ohms to 1800 ohms.	1	672 and up

Figure 7-4. Coupler Control A2 MCN 672 Through 3614, Schematic Diagram (Sheet C).



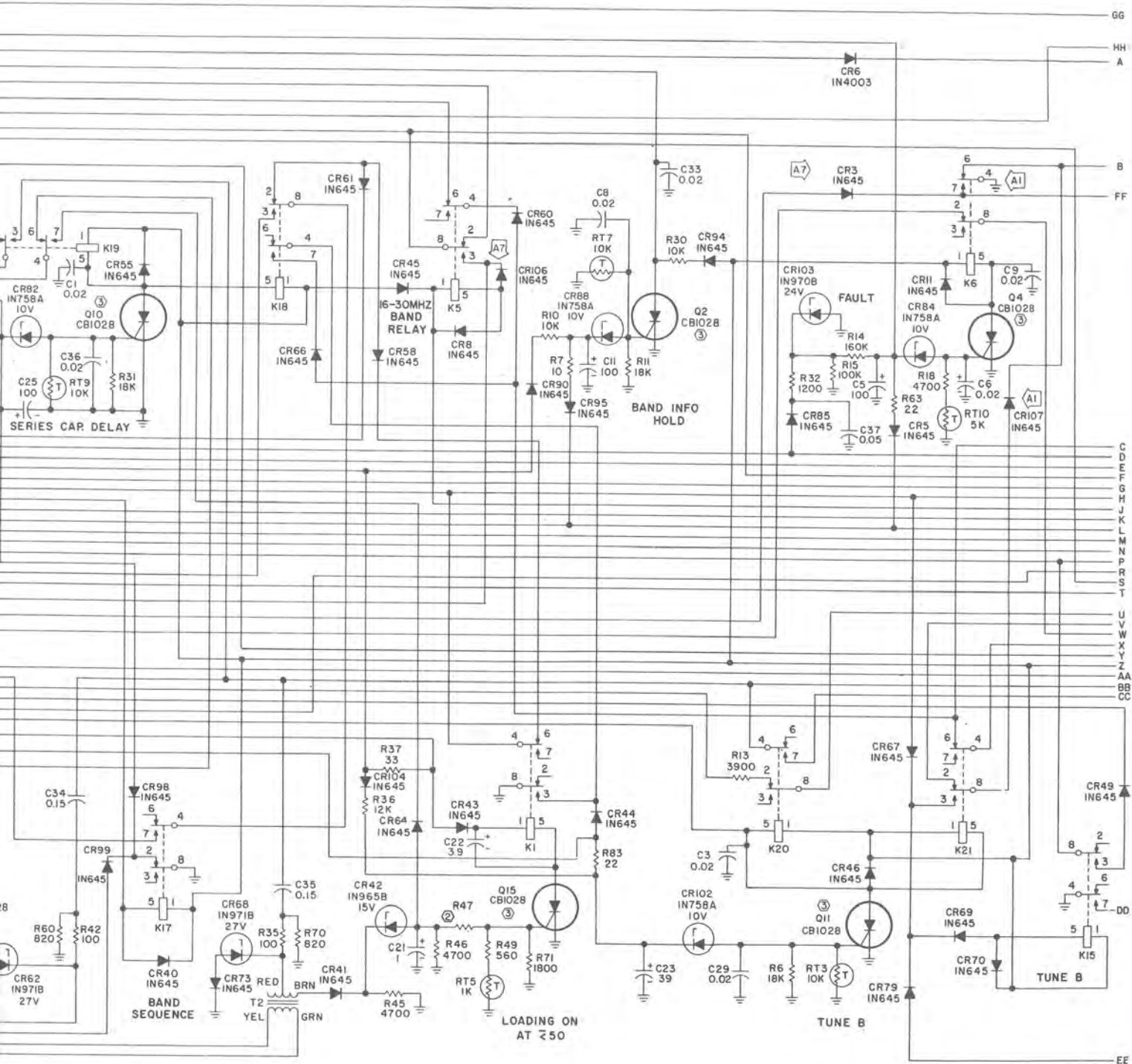
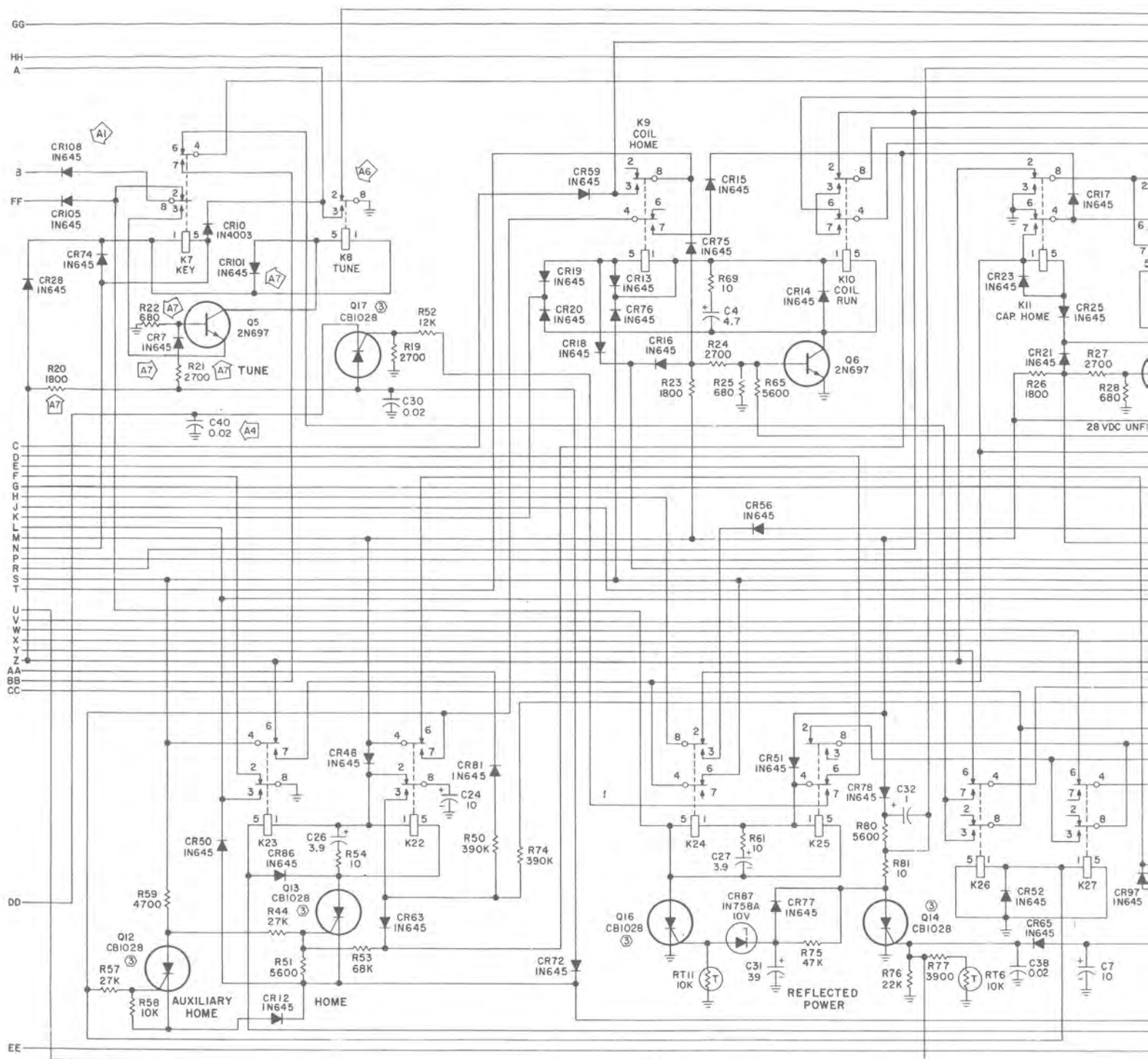


Figure 7-4. Coupler Control A2 MCN 672 Through 3614, Schematic Diagram (Sheet 1 of 2).



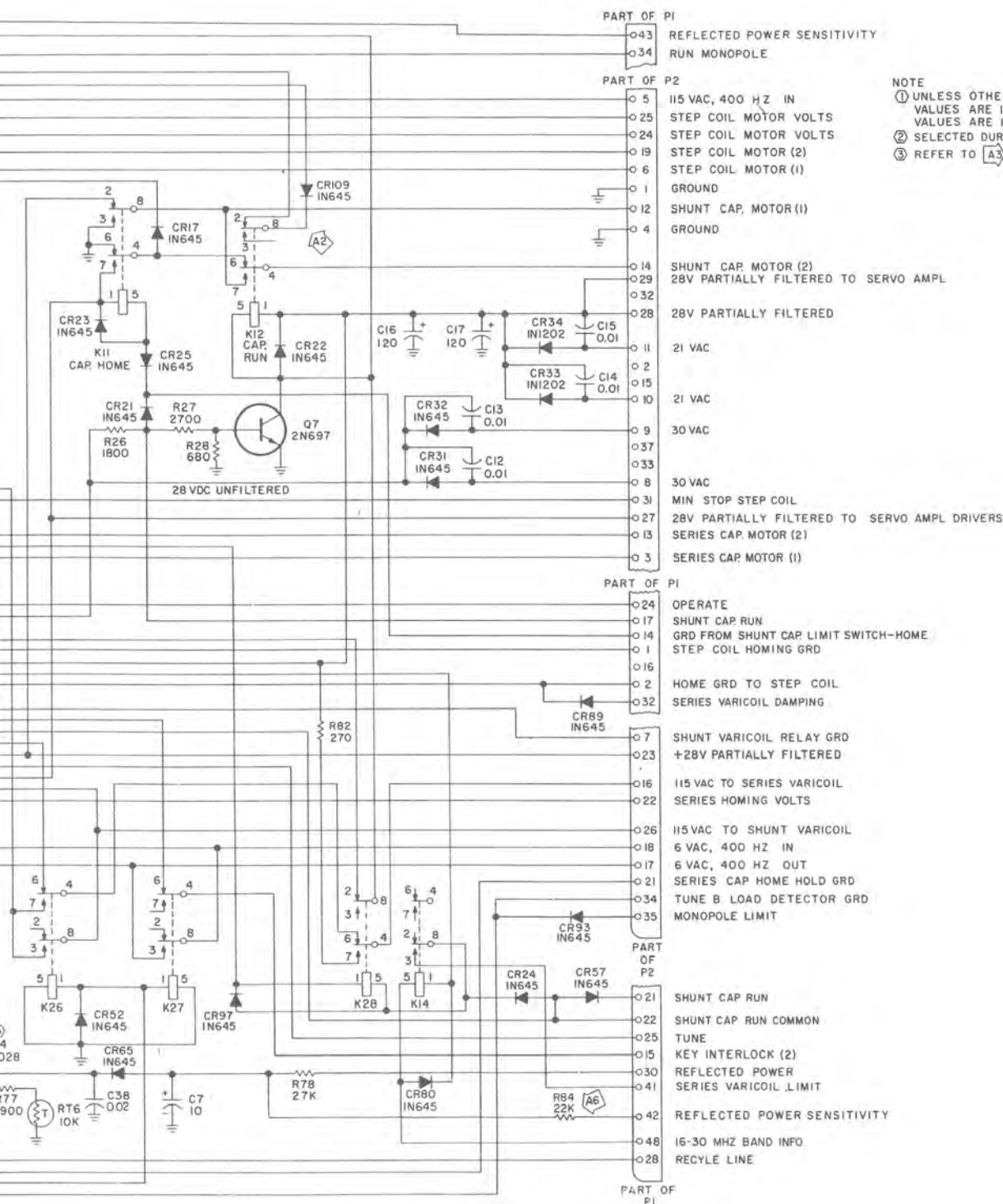
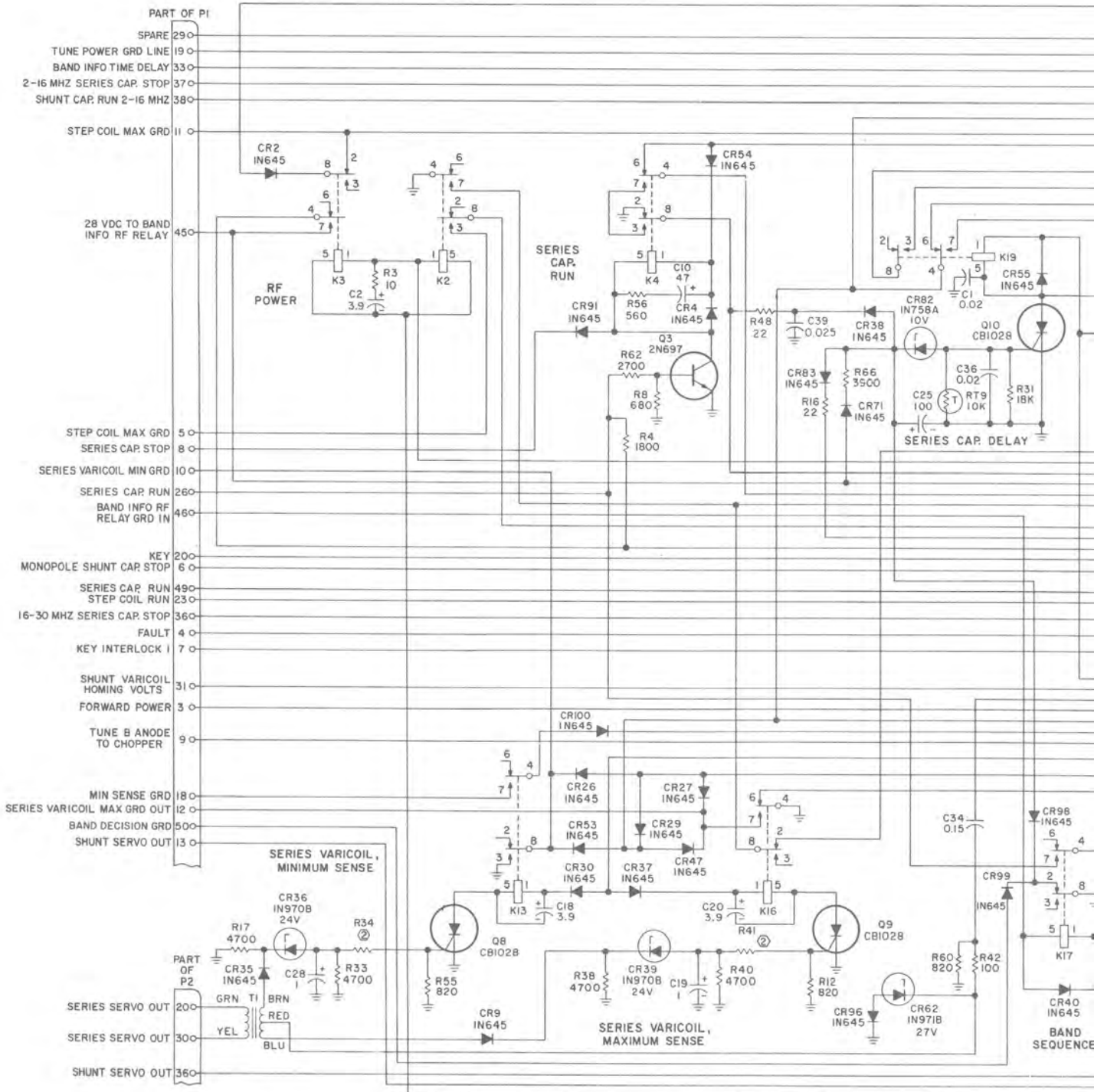


Figure 7-4. Coupler Control A2 MCN 672 Through 3614,
Schematic Diagram (Sheet 2 of 2).

SCHEMATIC CHANGES

PAGE	REVISION IDENT.	DESCRIPTION OF REVISION AND REASON FOR CHANGE	SERVICE BULLETIN	EFFECTIVITY
7-29/7-30, 7-31/7-32	None	New schematic was added to include various changes to the coupler control		3615

Figure 7-5. Coupler Control A2 MCN 3615, Schematic Diagram (Sheet A).



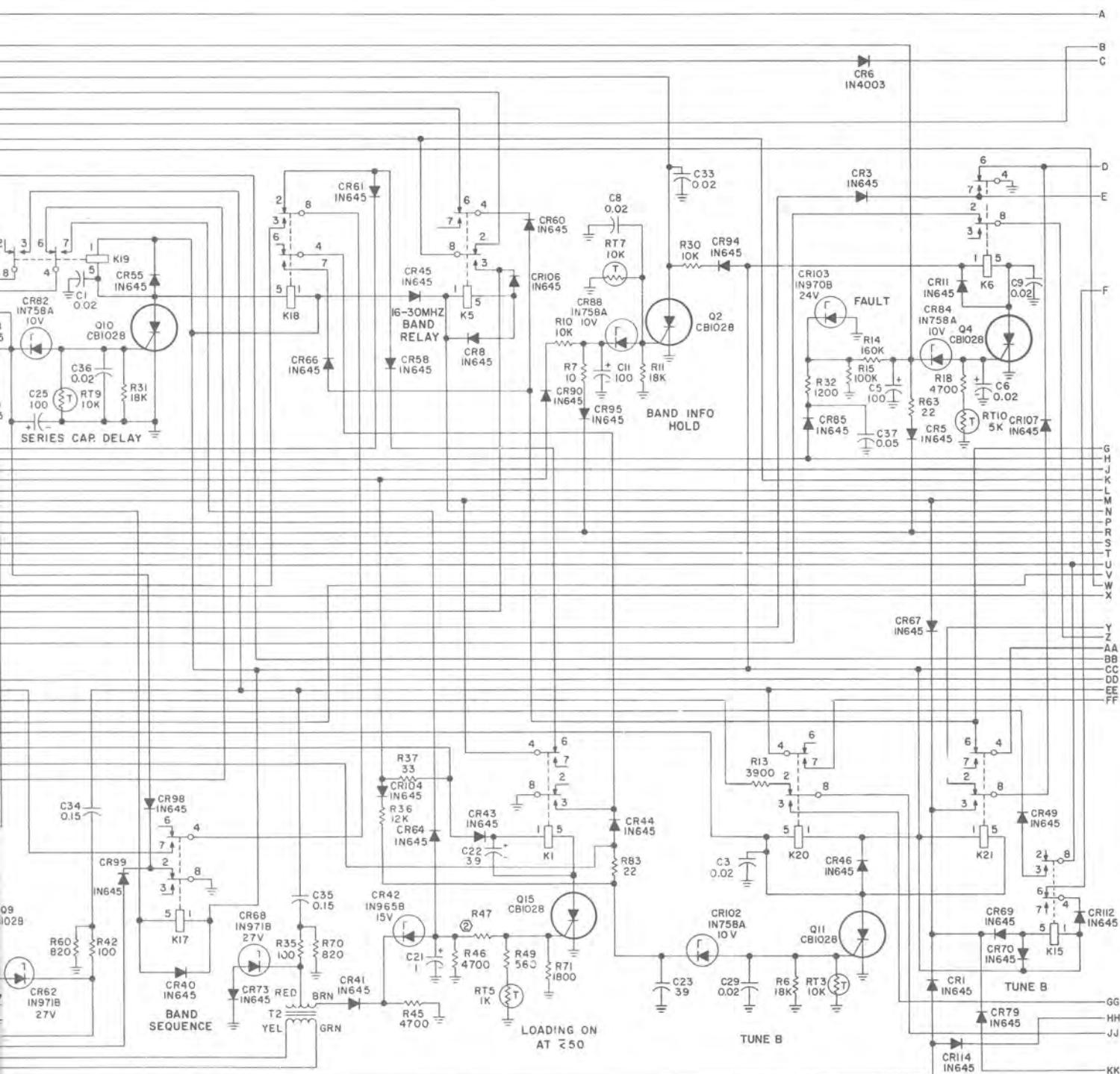
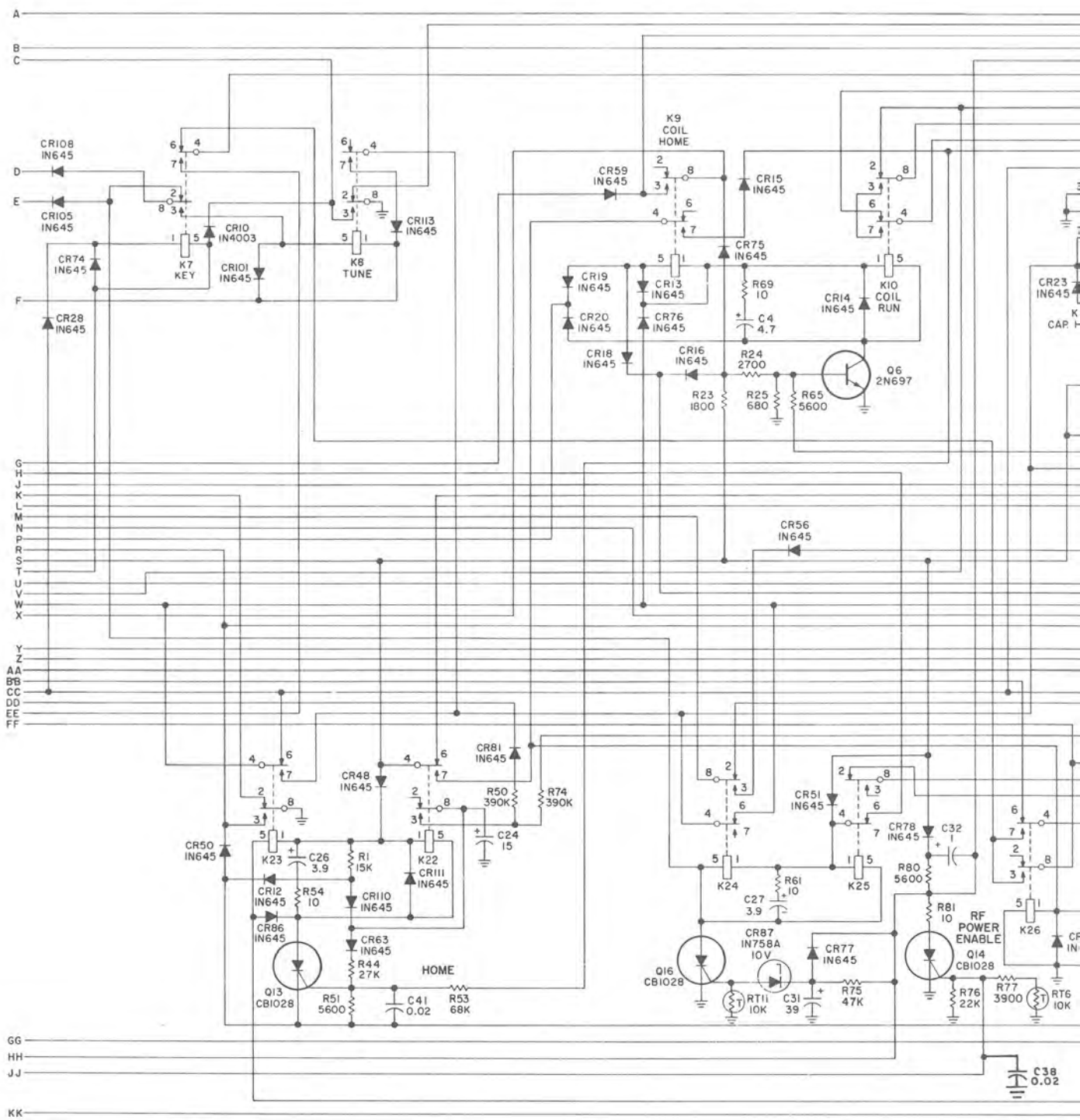
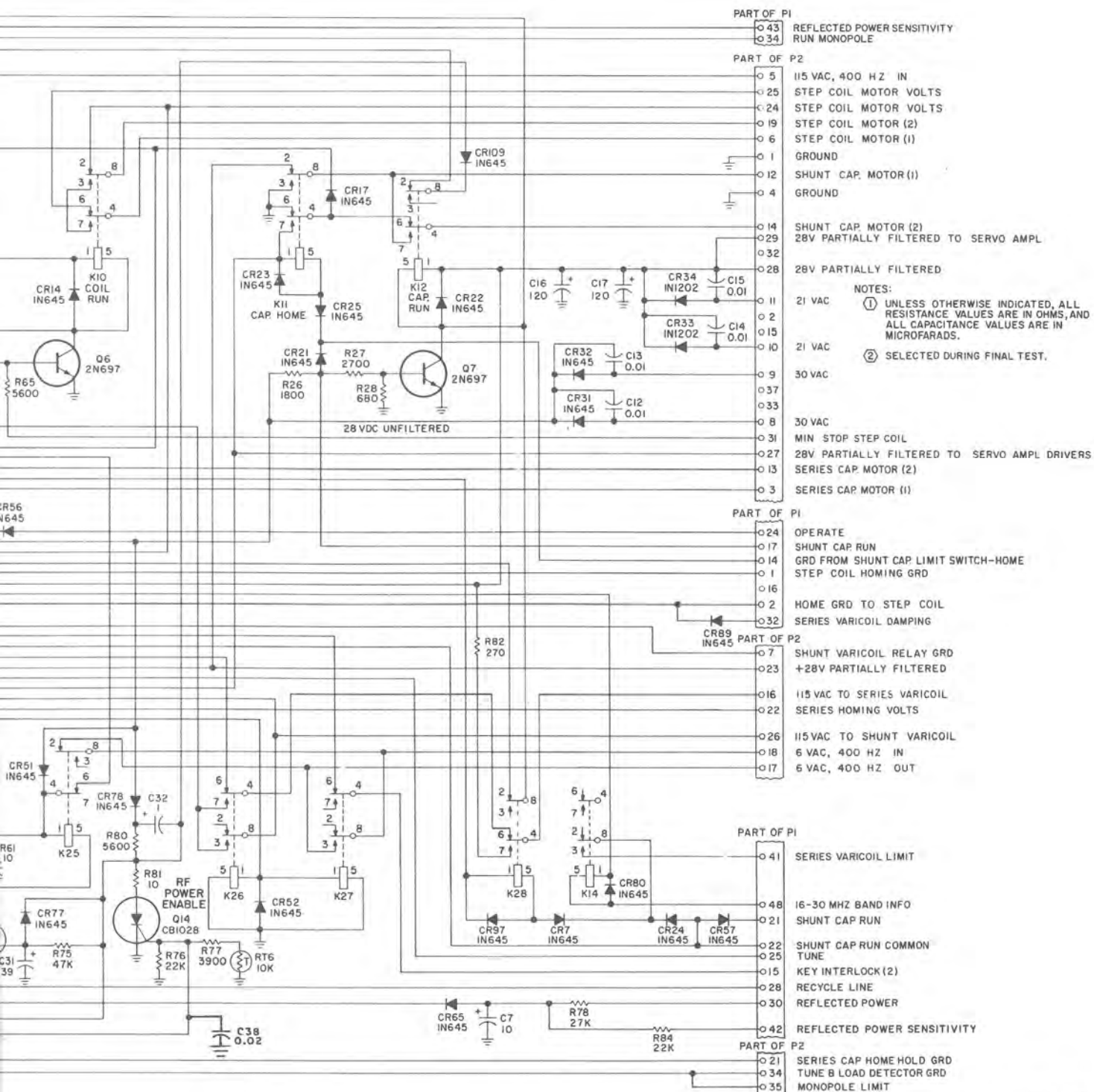


Figure 7-5. Coupler Control A2 MCN 3615,
Schematic Diagram (Sheet 1 of 2).





TPO-7844-Q16

Figure 7-5. Coupler Control A2 MCN 3615, Schematic Diagram (Sheet 2 of 2).

SCHEMATIC CHANGES

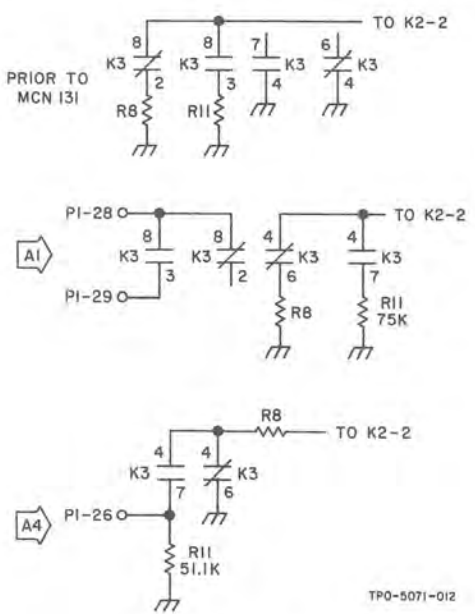
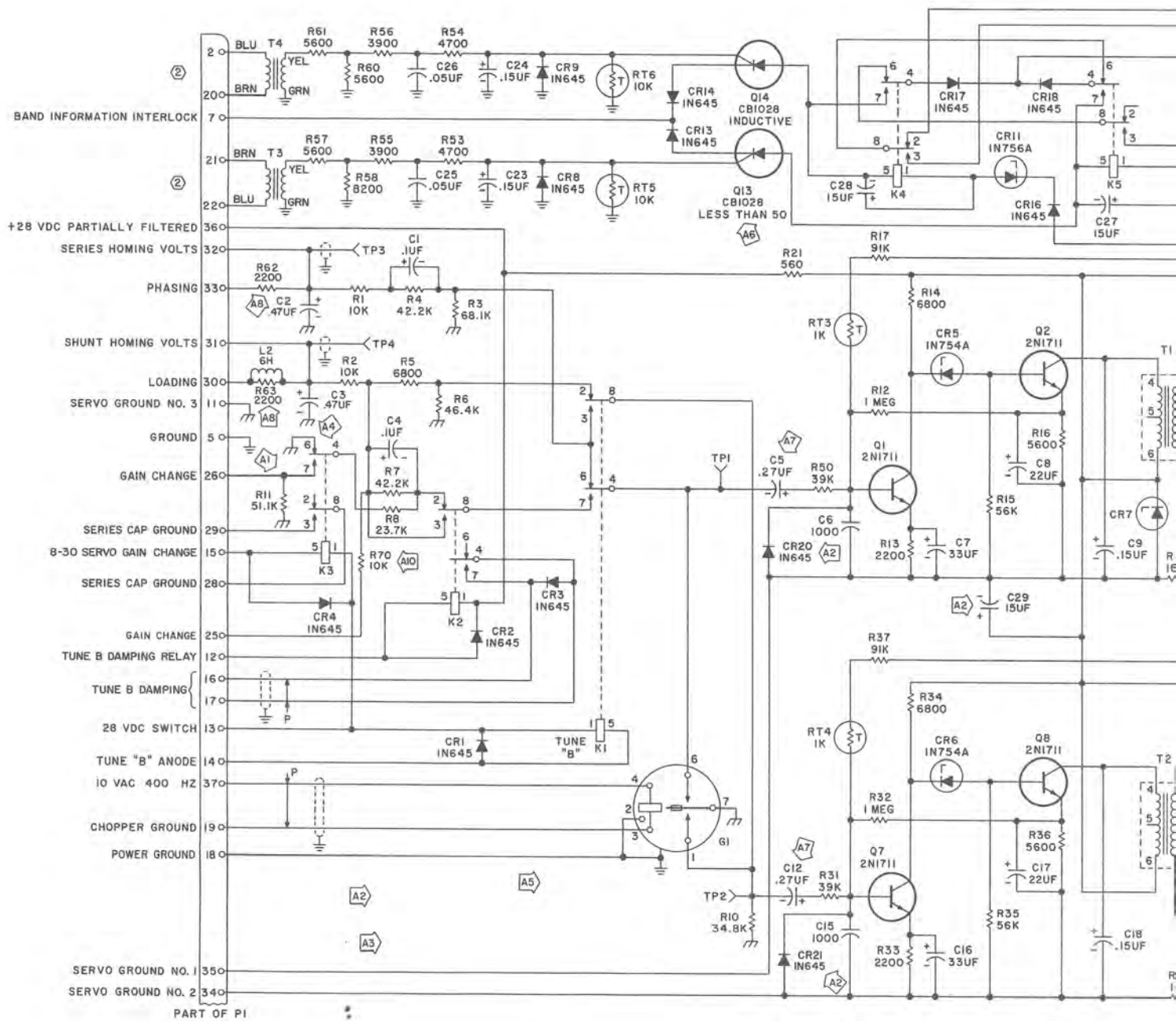
PAGE	REVISION IDENT.	DESCRIPTION OF REVISION AND REASON FOR CHANGE	SERVICE BULLETIN	EFFECTIVITY
7-37/7-38	A1	Refer to diagram A1. R8 from K3-6 to ground was from K3-2 to ground. R11 from K3-7 to ground was from K3-3 to ground. Added wire from K3-8 to P1-28. Added wire from K3-3 to P1-29. Deleted wire from K3-4 to ground. Wire from K3-4 to K2-2 was from K3-8 to K2-2. Redesigned to eliminate tuning holes.  Diagram A1		131
7-37/7-38	A2	CR19 was added from P1-27 (cathode) to R52 (anode). R52 value was changed from 27K to 12K. C8 and C17 values were changed from 33 uf to 22 uf. CR20 was added from P1-35 (anode) to Q1-b (cathode). CR21 was added from P1-34 (anode) to Q7-b (cathode) to meet TSO requirements.		180

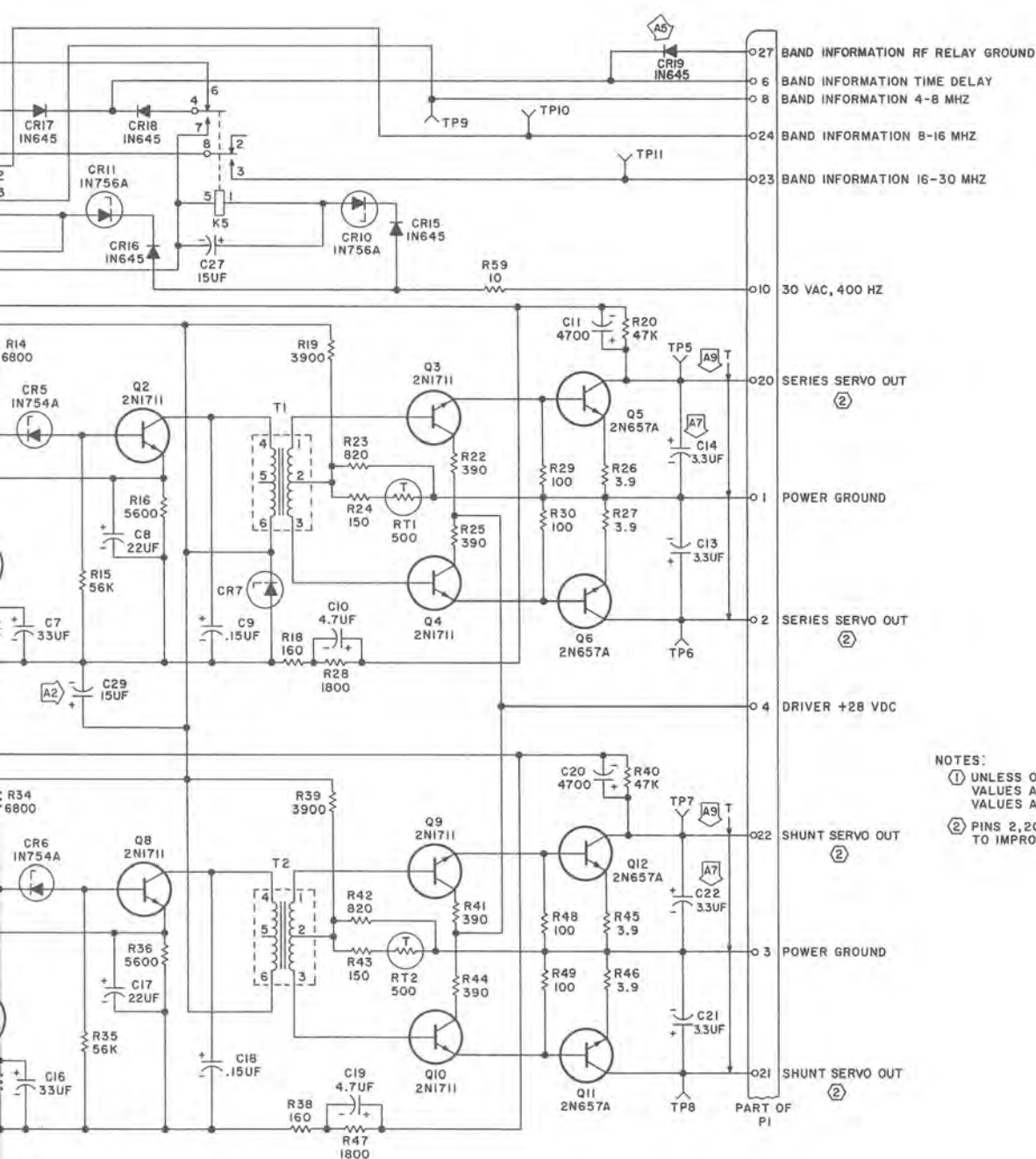
Figure 7-6. Electronic Control Amplifier A3, Collins Part Number 528-0467-00, Schematic Diagram (Sheet A).

SCHEMATIC CHANGES

PAGE	REVISION IDENT.	DESCRIPTION OF REVISION AND REASON FOR CHANGE	SERVICE BULLETIN	EFFECTIVITY
(Cont)		made to simplify and eliminate band information time delay circuits.		
7-37/7-38	A6	Q13 and Q14 type changed from 3D1098 to CB1028 to improve performance. Service Bulletin No. 4 ARO 919.	4	783, 842, 891, 924, 975, 1055, 1071, 1095, 1111, 1136, 1139, 1142, 1145, 1149, 1150, 1153, 1154, 1158, 1165, 1170, 1171, 1173, 1174, 1177, 1180, 1202, 1219, 1242, 1521, 1526, 1527, 1530, 1531, 1535, and up
7-37/7-38	A7	C5 and C12 values were changed from 0.28 μ F to 0.27 μ F. C13, C14, C21, and C22 values were changed from 4 μ F to 4.7 μ F to reduce equipment costs.		1658, 1660, 1662 thru 1664, 1668, 1669, 1672 thru 1678, 1681, 1682, 1687, and up
7-37/7-38	A8	Deleted L1 from P1-33 to P1-32. Deleted L2 from P1-30 to P1-31. Added R62 from P1-33 to P1-32. Added R63 from P1-30 to P1-31. C2 and C3 values changed from 0.15 μ F to 0.47 μ F. The change was made to use more reliable parts.		1992
7-37/7-38	A9	C13, C14, C21, and C22 values were changed from 4.7 μ F to 3.3 μ F to improve performance.		2954
7-37/7-38	A10	Added R70 to stabilize gain. Change not included in production models. Refer to 490T-1/1A Service Bulletin No A7.	A7	

Figure 7-6. Electronic Control Amplifier A3, Collins Part Number 528-0467-00, Schematic Diagram (Sheet C).





- NOTES:
- ① UNLESS OTHERWISE INDICATED ALL RESISTANCE VALUES ARE IN OHMS AND ALL CAPACITANCE VALUES ARE IN PICO FARADS.
 - ② PINS 2, 20, 21, AND 22 HAVE BEEN SHOWN TWICE TO IMPROVE SCHEMATIC READABILITY.

Figure 7-6. Electronic Control Amplifier A3, Collins Part Number 528-0467-00, Schematic Diagram.

SCHEMATIC CHANGES

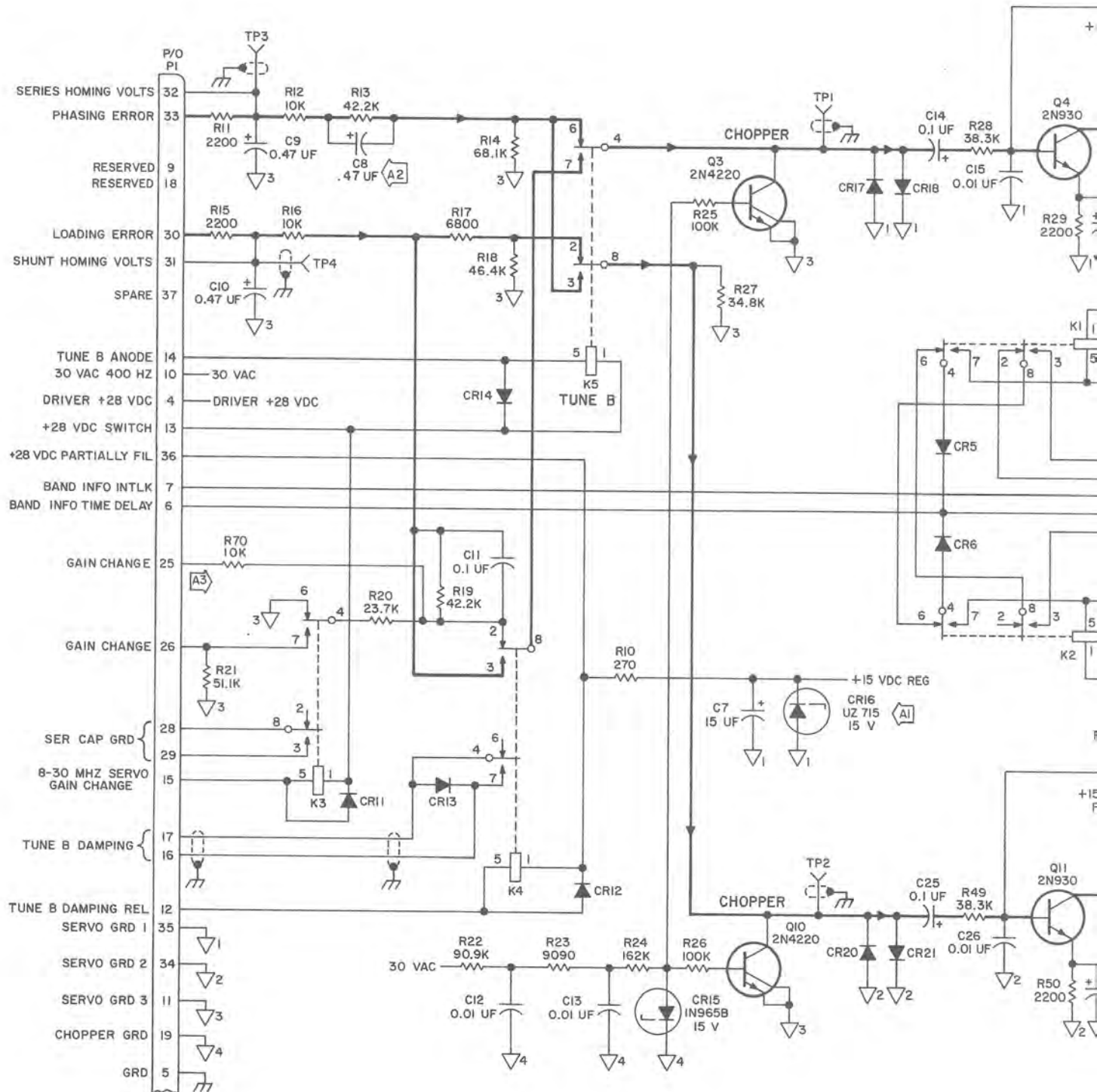
PAGE	REVISION IDENT.	DESCRIPTION OF REVISION AND REASON FOR CHANGE	SERVICE BULLETIN	EFFECTIVITY
7-41/7-42	A1	CR16 (UZ 715) was CR16 (1N3024B). Value of R10 was changed from 560 to 270 for improved performance.		569
7-41/7-42	A2	C8 was changed from 0.1 uf to 0.47 uf to prevent oscillation of series varicoil.		830
7-41/7-42	A3	Added R70 (10 kΩ) to stabilize gain. Refer to 490T-1/1A Service Bulletin No A7.	A7	

Figure 7-7. Electronic Control Amplifier A3, Collins Part Number 775-4276-00, Schematic Diagram (Sheet A).

NOTES:

1. UNLESS OTHERWISE SPECIFIED, RESISTANCE VALUES ARE IN OHMS AND CAPACITANCE VALUES ARE IN PICOFARADS.

2. UNLESS OTHERWISE SPECIFIED, DIODES ARE IN645.



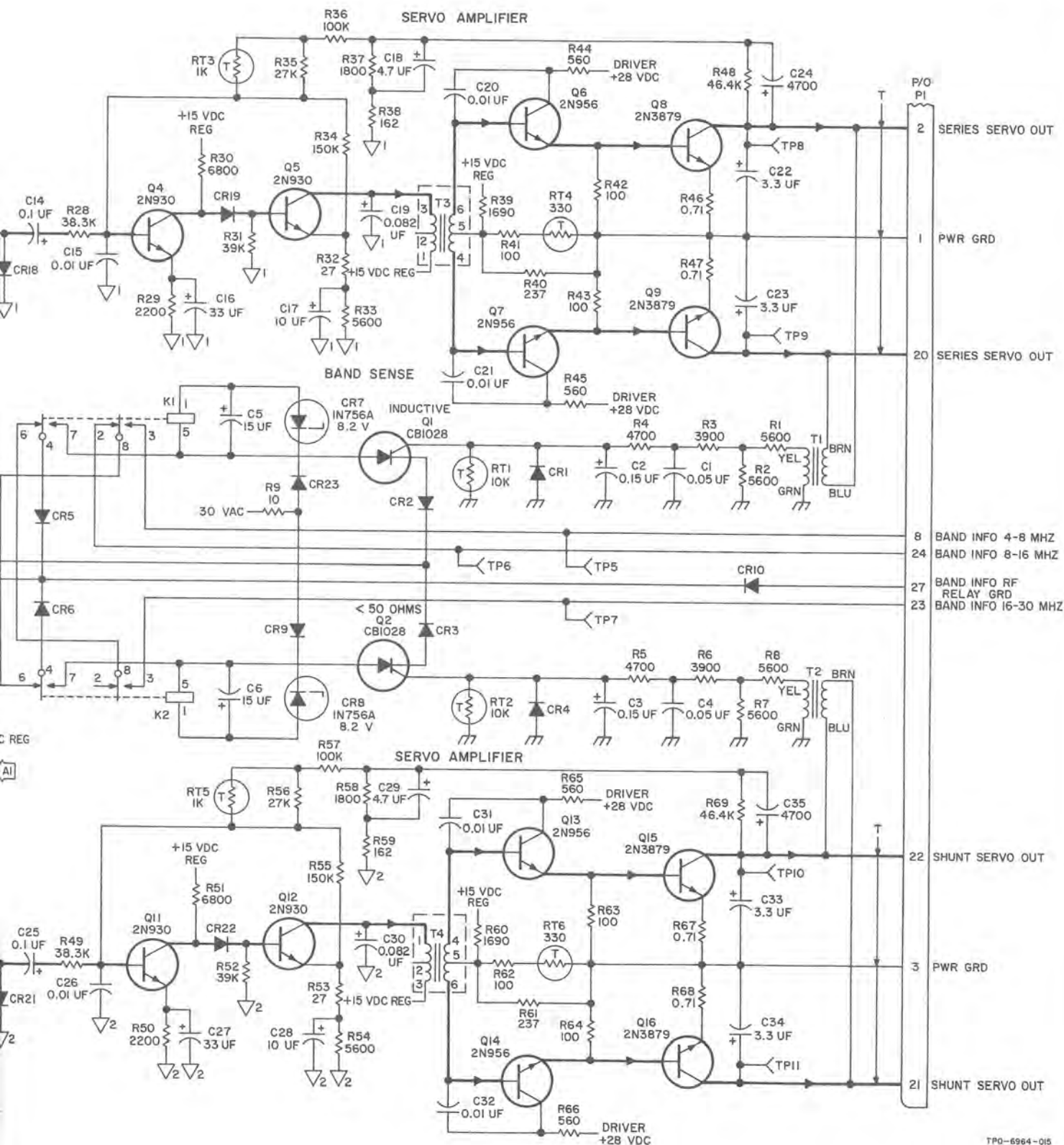


Figure 7-7. Electronic Control Amplifier A3, Collins Part Number 775-4276-00, Schematic Diagram.

SCHEMATIC CHANGES

PAGE	REVISION IDENT.	DESCRIPTION OF REVISION AND REASON FOR CHANGE	SERVICE BULLETIN	EFFECTIVITY
7-45/7-46	A1	Added S1B rear switch section to correct drawing error.		All
7-45/7-46	A2	Added wire identification as follows: TV3 (P1-25 to S1B(F)-4), TV3 (P1-3 to S1B(R)-11), TV2 (P1-8 to S1B(R)-9). TV8 was TV7. Reversed color coding of motor windings; black was red and red was black.		All

Figure 7-8. Step Coil A4, Collins Part Number 528-0524-00, Schematic Diagram (Sheet A).

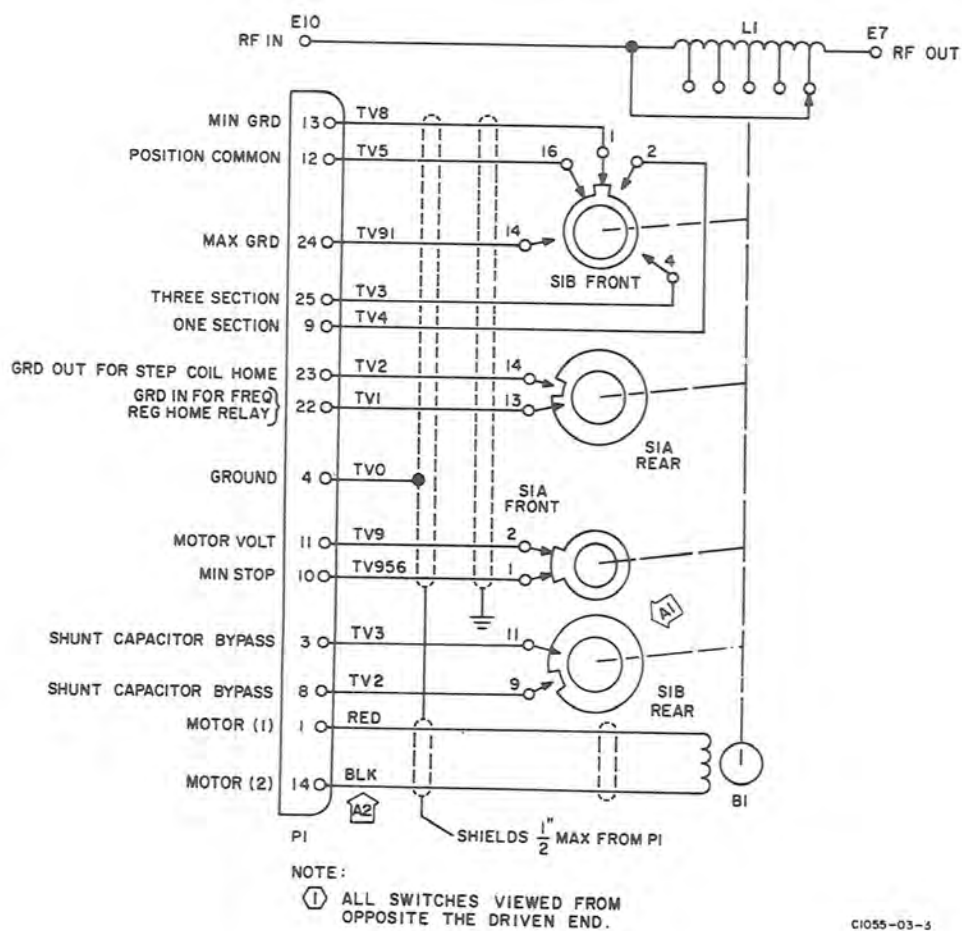


Figure 7-8. Step Coil A4, Collins Part Number 528-0524-00, Schematic Diagram.

SCHEMATIC CHANGES

REVISION IDENTIFICATION	DESCRIPTION OF REVISION AND REASON FOR CHANGE	SERVICE BULLETIN	EFFECTIVITY

Figure 7-8A. Step Coil A4, Collins Part Number 777-3508-001, Schematic Diagram (Sheet A).

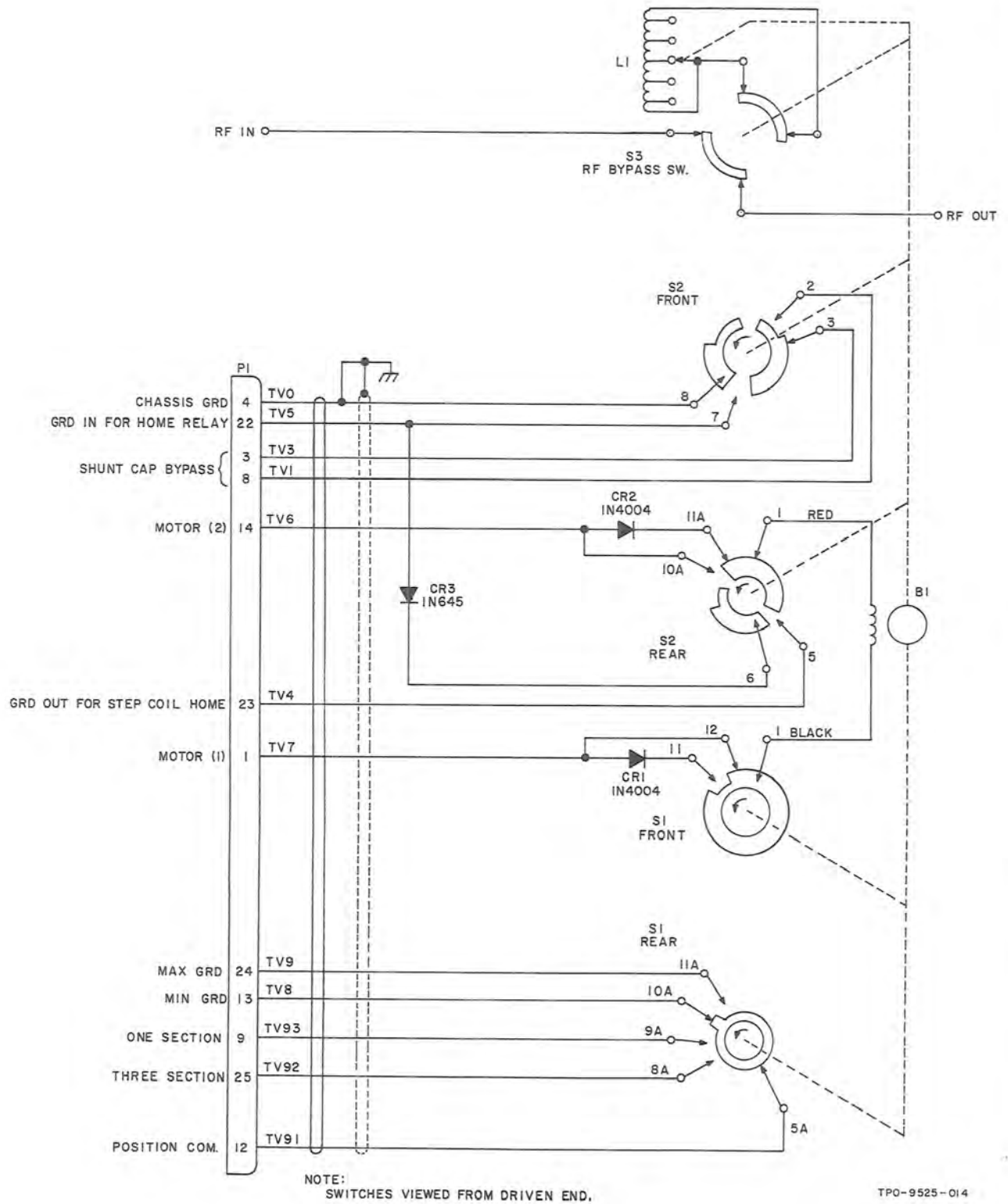


Figure 7-8A. Step Coil A4, Collins Part Number 777-3508-001, Schematic Diagram.

SCHEMATIC CHANGES

REVISION IDENTIFICATION	DESCRIPTION OF REVISION AND REASON FOR CHANGE	SERVICE BULLETIN	EFFECTIVITY
A1	Deleted S1B and the following wires: P1-5 to S1B-9, P1-6 to S1B-2, P1-13 to S1A-1, P1-16 to S1B-4, P1-18 to S1B-3, P1-25 to S1A-10, P1-10 to S1A-6, S1B-2 to S1B-10, and S1B-4 to S1B-8. Wafer switch was not used.		835

Figure 7-8B. Series Varicoil A5, Schematic Diagram (Sheet A).

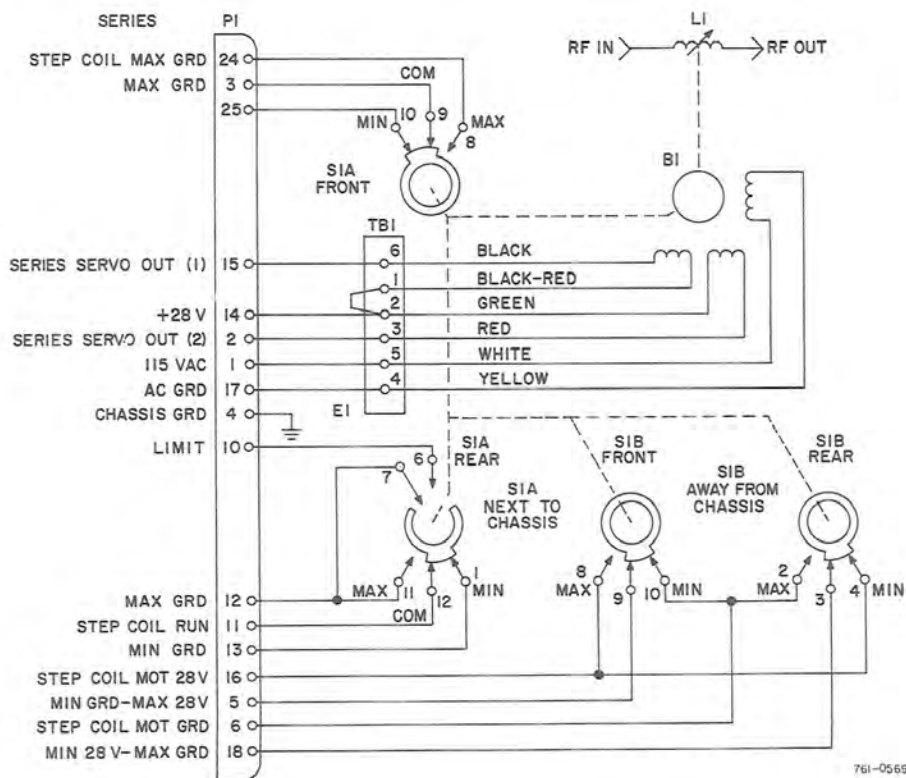
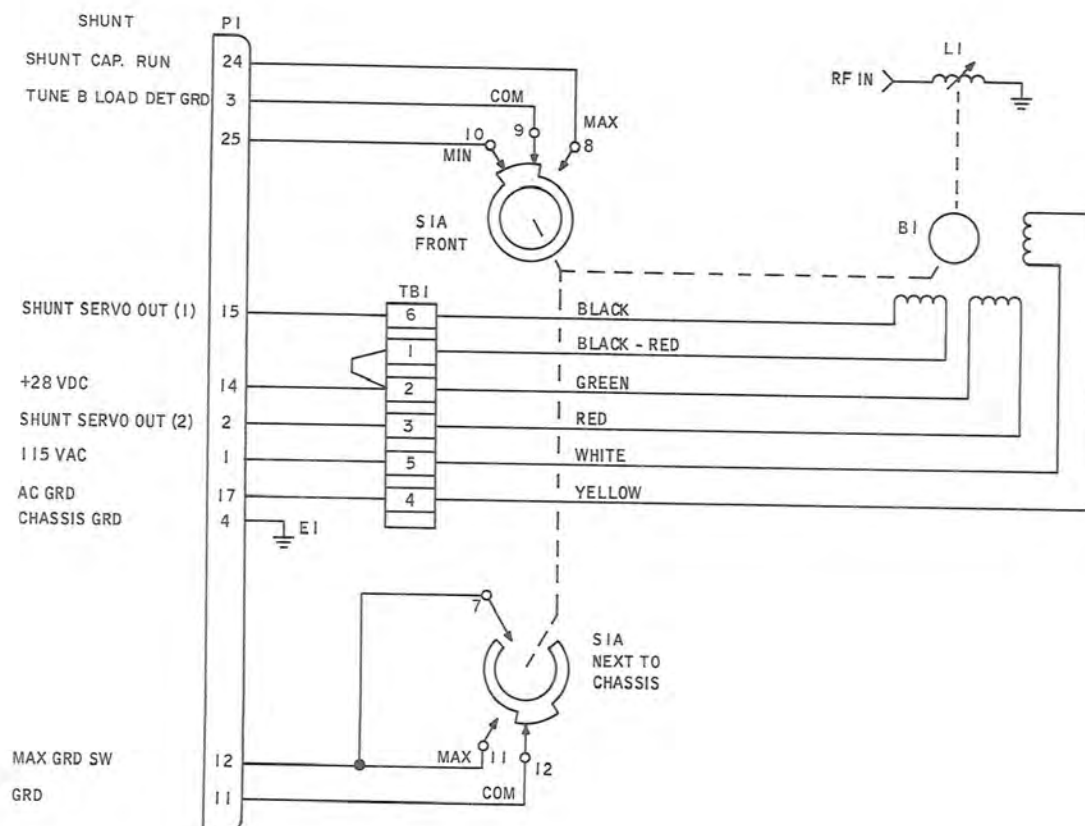


Figure 7-8B. Series Varicoil A5, Schematic Diagram.

SCHEMATIC CHANGES

PAGE	REVISION IDENT.	DESCRIPTION OF REVISION AND REASON FOR CHANGE	SERVICE BULLETIN	EFFECTIVITY
7-49/7-50	A1	Deleted S1B and the following wires: P1-5 to S1B-9, P1-6 to S1B-2, P1-13 to S1A-1, P1-16 to S1B-4, P1-18 to S1B-3, P1-25 to S1A-10, P1-10 to S1A-6, S1B-2 to S1B-10, and S1B-4 to S1B-8. Wafer switch was not used.		835

Figure 7-9. Shunt Varicoil A6, Schematic Diagram (Sheet A).



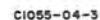
TPI-4990-013

Figure 7-9. Shunt Varicoil A6, Schematic Diagram.

SCHEMATIC CHANGES

PAGE	REVISION IDENT.	DESCRIPTION OF REVISION AND REASON FOR CHANGE	SERVICE BULLETIN	EFFECTIVITY
7-53/7-54	A1	Added CR1 from E1 (cathode) to E2 (anode), and CR2 from E4 (cathode) to E3 (anode). Deleted wires from B1 (red) to P1-9, B1 (black) to P1-1, S2 (NO.) to P1-6, S2 (NC) to P1-7, E1 to P1-8 and S1 (NO.) to S1 (NC). Added wires from E3 to P1-1, P1-9 to E2, and P1-7 to P1-8 to improve performance.		284

Figure 7-10. Shunt Capacitor A7, Collins Part Number 528-0466-00, Schematic Diagram (Sheet A).



1

SCHEMATIC CHANGES

REVISION IDENTIFICATION	DESCRIPTION OF REVISION AND REASON FOR CHANGE	SERVICE BULLETIN	EFFECTIVITY

Figure 7-10A. Shunt Capacitor A7, Collins Part Number 777-4500-001, Schematic Diagram (Sheet A).

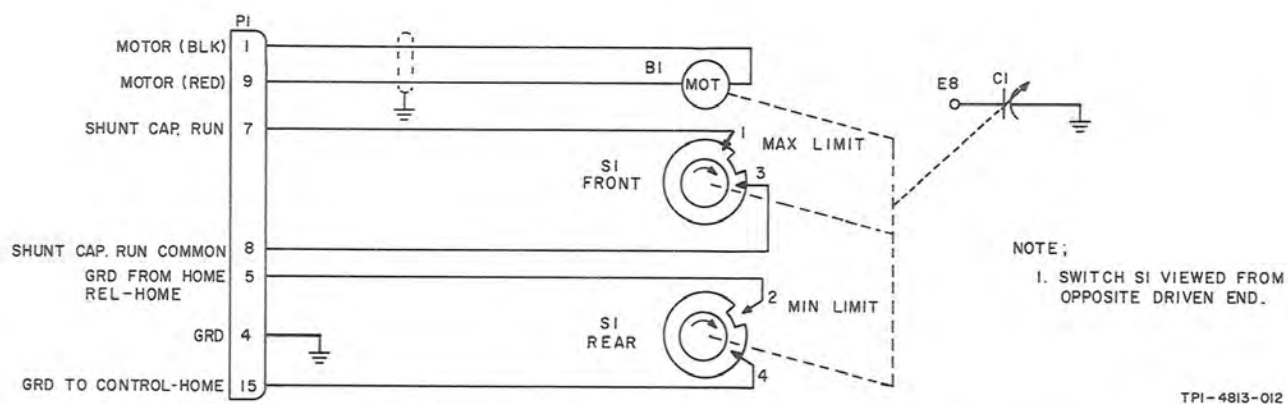
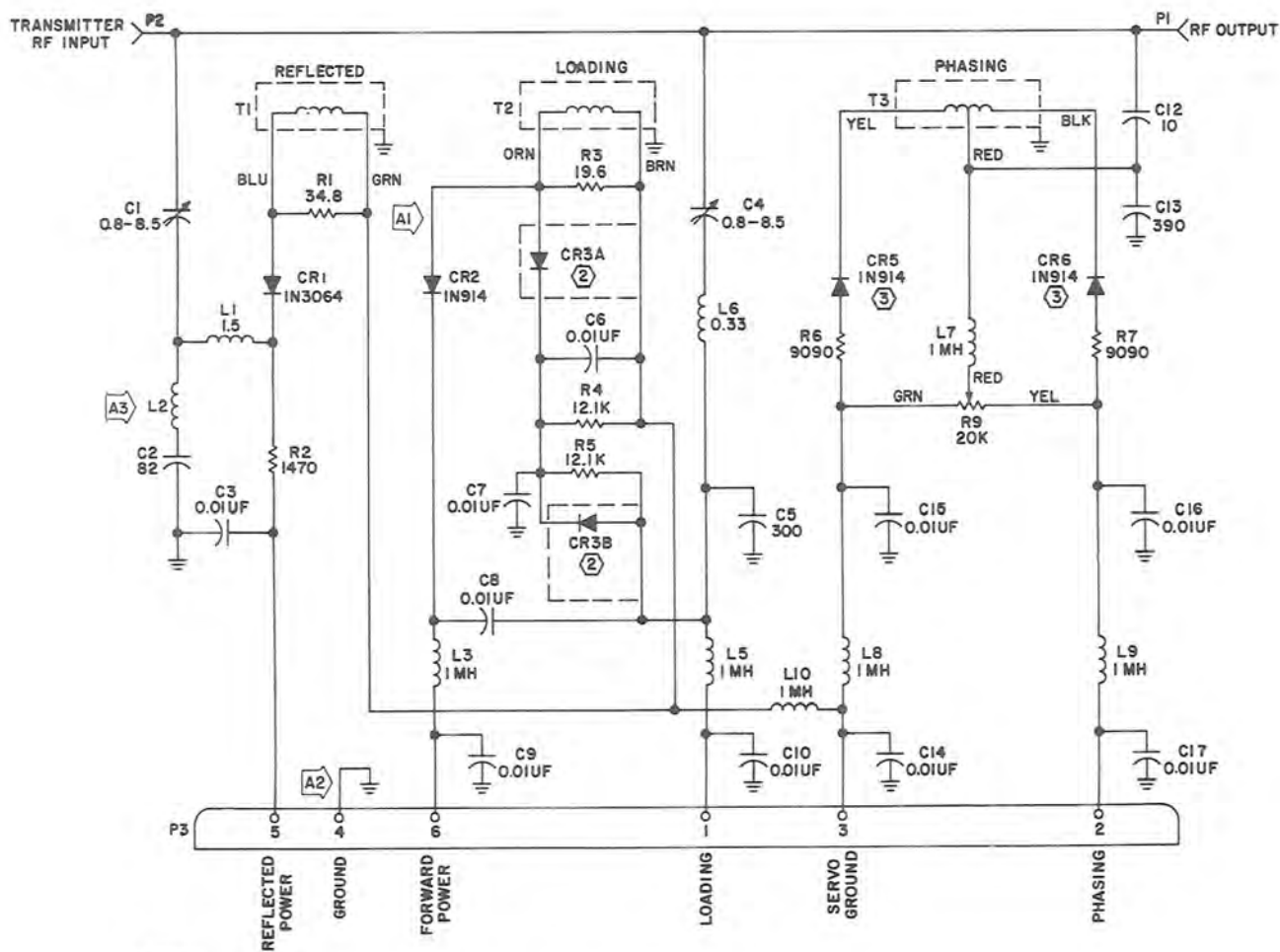


Figure 7-10A. Shunt Capacitor A7, Collins Part Number 777-4500-001, Schematic Diagram.

SCHEMATIC CHANGES

PAGE	REVISION IDENT.	DESCRIPTION OF REVISION AND REASON FOR CHANGE	SERVICE BULLETIN	EFFECTIVITY
7-57/7-58	A1	L3 from P3-6 to CR2 (cathode) was from CR2 (cathode) to ground. CR2 from CR3A (anode) to L3 was from CR3A (anode) to P3-1. Added wire from the junction of CR2 and CR3A to R3. Added wire from CR1 (anode) to R1. Added wire from C2 to CR1 (cathode). Reversed polarity of CR3A and CR3B to make equipment operate.		103
7-57/7-58	A2	Wire from P3-4 to ground was from P3-4 to the junction of L1, L2, and C1. Added wire from L7 to T3 (C13) to improve performance.		351
7-57/7-58	A3	L1 value was changed from 0.33 to 1.5 uh. L2 was added from the junction of L1 and C1 to C2. Deleted wire from the junction of L2 and C2 to the junction of L1, R2, and CR1 (cathode) to reduce tracking error.		2730

Figure 7-11. Discriminator A8, Schematic Diagram (Sheet A).



NOTES:

- ① UNLESS OTHERWISE INDICATED, ALL RESISTANCE VALUES ARE IN OHMS, ALL CAPACITANCE VALUES ARE IN PICO FARADS, AND ALL INDUCTANCE VALUES ARE IN MICROHENRYS.
- ② CR3A AND CR3B ARE A MATCHED PAIR, TYPE ADI259 PACKAGED AS A SINGLE COMPONENT.
- ③ CR5 AND CR6 ARE A MATCHED PAIR.

0055-44-2

Figure 7-11. Discriminator A8, Schematic Diagram.

SCHEMATIC CHANGES

PAGE	REVISION IDENT.	DESCRIPTION OF REVISION AND REASON FOR CHANGE	SERVICE BULLETIN	EFFECTIVITY
7-61/7-62	A1	CR3 was added from S1A(F)-1 (anode) to S1A(R)-3 (cathode). CR4 was added to E3 (anode) to S1C(F)-5 (cathode). Deleted wire from S1A(F)-1 to S1C(F)-4. Deleted wire from S1A(R)-4 to E2 to improve performance.		115
7-61/7-62	A2	Wire from P1-13 to E3 was from P1-13 to S1B(R)-4. Wire from P1-14 to S1C(F)-8 was from P1-14 to S1C(F)-3 to change to Geneva drive.		150
7-61/7-62	A3	Wire from S1A(R)-6 to E2 was from S1A(R)-4 to E2. Added wire from P1-3 to S1A(R)-4 to add pre-position capability for the 490T-4 Antenna Coupler.		966

Figure 7-12. Series Capacitor A9, Schematic Diagram (Sheet A).

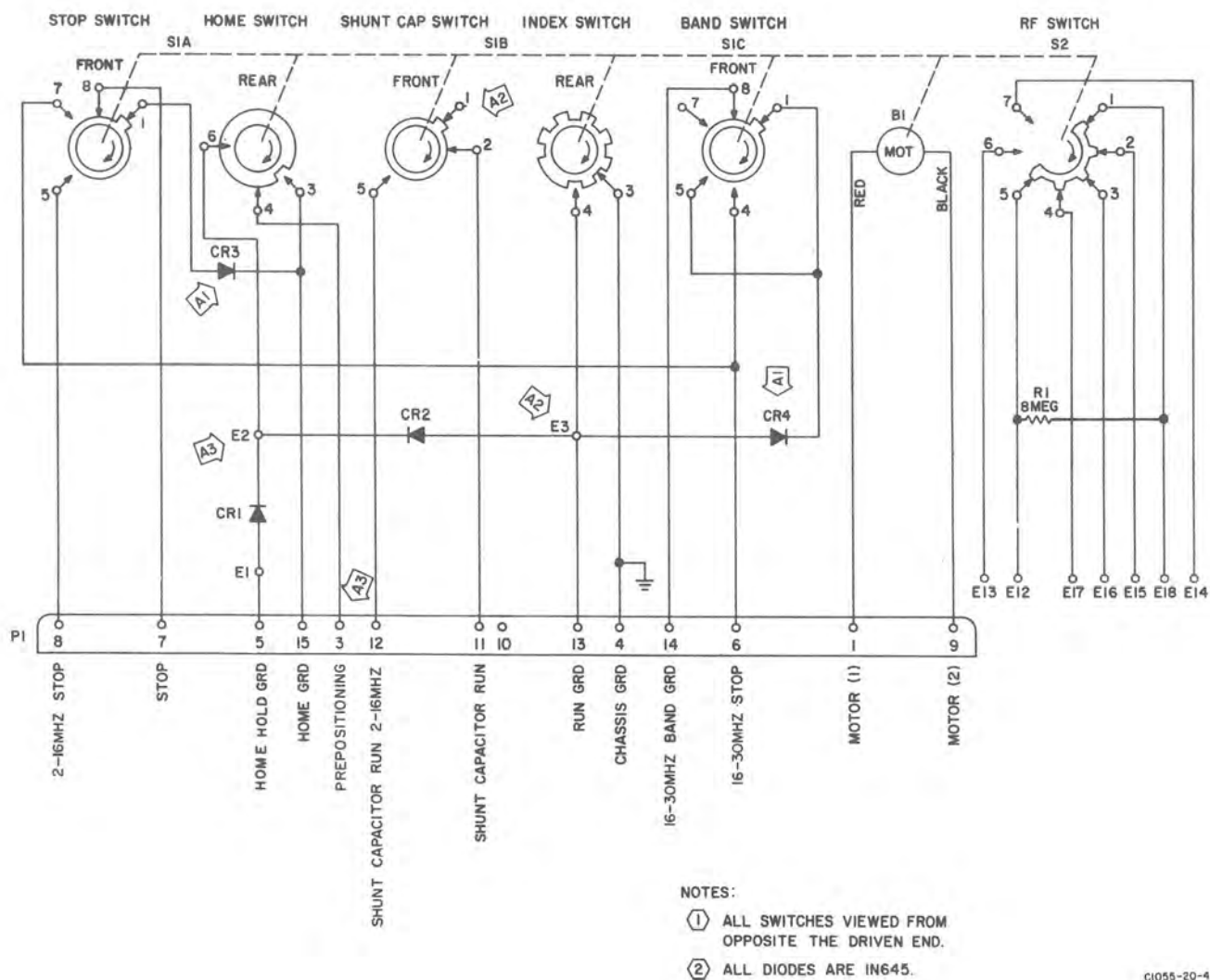


Figure 7-12. Series Capacitor A9, Schematic Diagram.

