



COMPONENT MAINTENANCE MANUAL WITH ILLUSTRATED PARTS LIST

FLIGHT RECORDER AND MACH AIRSPEED TEST MODULE ASSEMBLY, P5-19

**PART NUMBER
69-37325-150, -155, -156, -157, -158, -159, -160,
-161, -162, -163**

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COMPONENT MAINTENANCE MANUAL

Revision No. 11
Jul 01/2009

To: All holders of FLIGHT RECORDER AND MACH AIRSPEED TEST MODULE ASSEMBLY, P5-19 31-24-04.

Attached is the current revision to this COMPONENT MAINTENANCE MANUAL

The COMPONENT MAINTENANCE MANUAL is furnished either as a printed manual, on microfilm, or digital products, or any combination of the three. This revision replaces all previous microfilm cartridges or digital products. All microfilm and digital products are reissued with all obsolete data deleted and all updated pages added.

For printed manuals, changes are indicated on the List of Effective Pages (LEP). The pages which are revised will be identified on the LEP by an R (Revised), A (Added), O (Overflow, i.e. changes to the document structure and/or page layout), or D (Deleted). Each page in the LEP is identified by Chapter-Section-Subject number, page number and page date.

Pages replaced or made obsolete by this revision should be removed and destroyed.

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TRANSMITTAL LETTER

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Location of Change

Description of Change

NO HIGHLIGHTS

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HIGHLIGHTS

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COMPONENT MAINTENANCE MANUAL

INTRODUCTION

1. General

- A. The instructions in this manual supply the data necessary to do the maintenance functions together with the test, fault isolation, repair, and replacement of the defective parts.
- B. This manual is divided into different parts:
 - (1) Title Page
 - (2) Transmittal Letter
 - (3) Highlights
 - (4) List of Effective Pages
 - (5) Table of Contents
 - (6) Temporary Revision & Service Bulletin Record
 - (7) Record of Revisions
 - (8) Record of Temporary Revisions
 - (9) Introduction
 - (10) Procedures & IPL Sections
- C. Refer to the Table of Contents for the page location of the applicable procedures.
- D. All dimensions, measures, quantities and weights included are in English units. When metric equivalents are given they will be in the parentheses that follow the English units.
- E. The introduction to the Illustrated Parts List (IPL) shows how the IPL data is used.
- F. Design changes, optional parts, configuration differences and Service Bulletin modifications may cause different part numbers. These part numbers are identified in the IPL with an alphabetical letter which is added to the end of the basic item number. This new item number is referred to as an alpha-variant. Throughout the manual, IPL basic item number references also apply to alpha-variants unless shown differently.
- G. Verification:

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INTRODUCTION

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FLIGHT RECORDER AND MACH AIRSPEED WARNING TEST MODULE ASSEMBLY P5-19 - DESCRIPTION AND OPERATION

1. Description

- A. The flight recorder and mach airspeed warning test module assembly has quick-release fasteners on the baseplate and a rear-mounted receptacle. The module contains switches, indicator lamp (some models) and electronic components in the flight recorder, mach airspeed warning, and master caution indicator systems.
- B. Functional Description

CAUTION: OBEY THE PROCEDURE IN SUBJECT 20-12-02, HANDLING OF ELECTROSTATIC SENSITIVE DEVICES. ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THIS COMPONENT.

- (1) Card A1 contains two circuits; transistor Q8 which is a simple transistor switch, and SCR Q2 in series with transistor Q4 which provide a ground path for the master caution indicator. The master caution triggering inputs are positive on some pins and ground on others. After triggering, SCR Q2 may be reset to extinguish the master caution indication, and retriggered to recall the indication if the original triggering input remains.
- (2) Circuit ground is connected to pin 23 (XA1-7).
- (3) Refer to CMM 33-15-13 for theory of operation of printed circuit assembly A1.
- (4) Pin 22 receives a ground input from master test. Pin 26 receives the recall input (ground) to retrigger PCA A1.
- (5) (69-37325-155) Card A2 provides two additional inputs - at pins 3 and 6 - like the one at pin 2, which is described in par. (4). Pin 31 is an input which works like the one at pins 8 and 28, which are described in par. (6).
- (6) (69-37325-156) Card A2 provides inputs at pins 9 and 10 which are like the one at pin 2. They function as described in par. (4).
- (7) (69-37325-157)
 - (a) Card A2 has its input at pin 31. Ground at this input causes A2 to turn A1Q7 on. A2 also activates A1Q1 after power has been present at pin 31 for 1 ± 0.5 seconds.
 - (b) When power is present at pin 31, A2Q1 is turned on. A2Q1 grounds the negative power supply input of A2U1 thru A2CR1. A2Q1 also grounds the base of A1Q7 thru A2CR3, turning on the transistor. The resistor circuit A2R1 and A2R4 provides 12 volts at the non-inverting input of A2U1. A2C3 is charged through A2R2. When the voltage on A2C3 reaches 12 volts (after about 1 second), A2U1 is driven low grounding the base circuit of A1Q1.
- (8) (69-37325-159, -161, -163) Card A2 provides an input at pin 31 which is like the one at pin 2. It functions as described in par. (4).

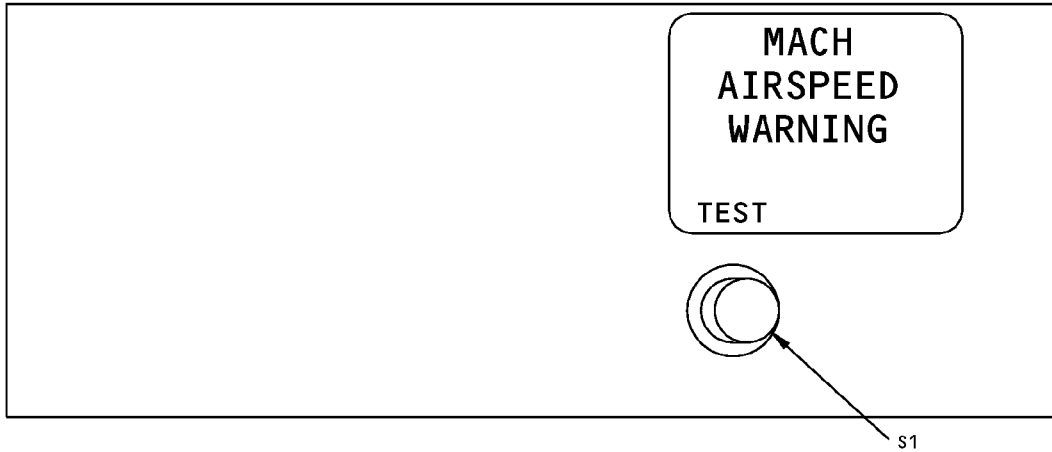
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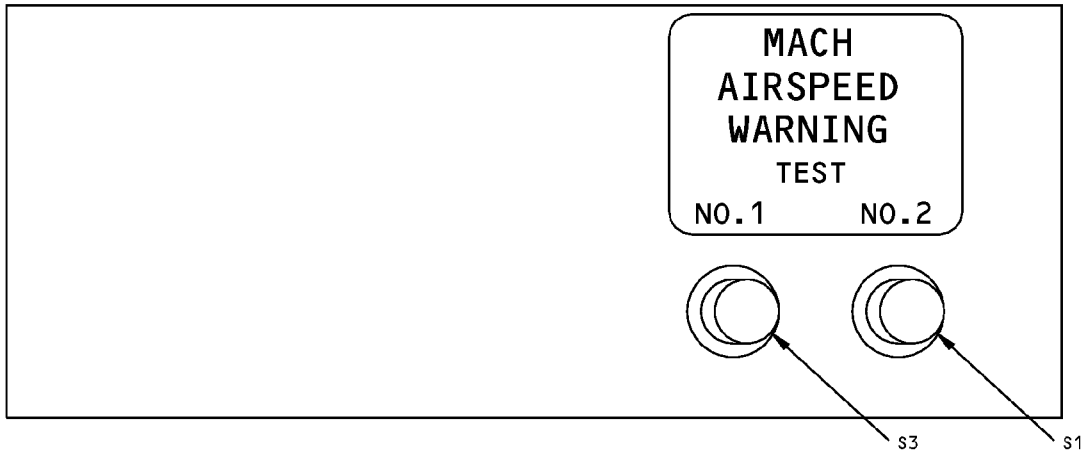
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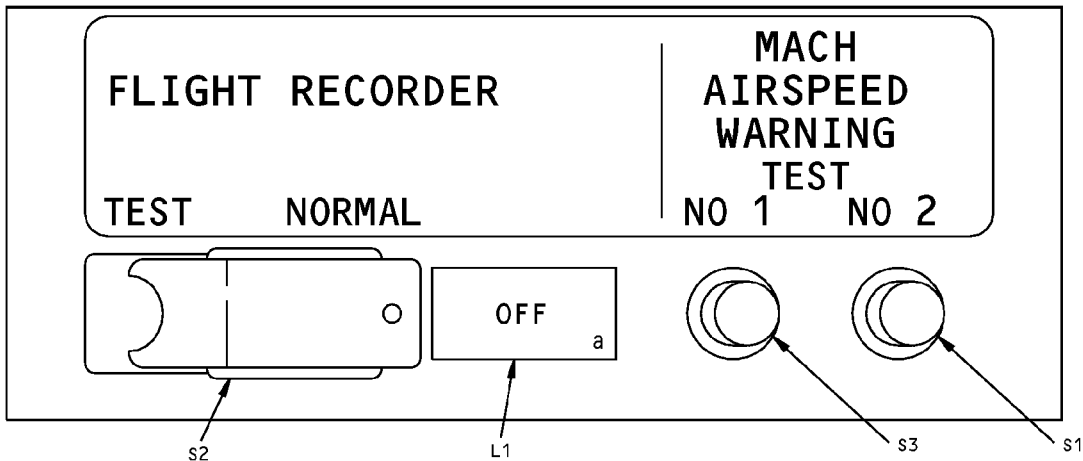
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69-37325-150,-155



69-37325-156



69-37325-157 THRU -162

Component Identification
Figure 1

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DESCRIPTION AND OPERATION

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TESTING AND FAULT ISOLATION

1. Testing

A. Test Equipment

NOTE: Equivalent substitute may be used.

- (1) Multimeter: model 260 simpson voltmeter, STD-3946
- (2) Power Supply: 28 Vdc power supply, STD-4543
- (3) Connector (with pigtail leads): BACC45FT18-31S (J1)
- (4) Switch: SPDT
- (5) Switch: SPST switch, STD-4657 (approximately 13 required)
- (6) Capacitor: 1 uf, 35 volts (C1)
- (7) Resistor: 330 ohms $\pm 5\%$, 1/2 w (R1)
- (8) Diode: 1N4385 (CR1)
- (9) Lamp Load (L3): 420 to 460 ma, 28v dc (GE1819 and two 1873 lamps in parallel, or equivalent)
- (10) Lamp Load (L1): 100 ma max, 28v dc (two GE387 lamps in parallel, or equivalent) Required only for 69-37325-150, -155, -156)

B. Prepare for test.

- (1) Connect assembly to test connector.
- (2) Identify and tag pigtail leads.

C. Functional Test

CAUTION: OBEY THE PROCEDURE IN SUBJECT 20-12-02, HANDLING OF ELECTROSTATIC SENSITIVE DEVICES. ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THIS COMPONENT.

- (1) Verify forward and reverse diode resistance as indicated in TESTING AND FAULT ISOLATION, Table 101.

Table 101: Diode Resistance Tests

COMPONENT TESTED	MEASURE BETWEEN PINS	15 OHMS MAX WITH + AT PIN	50 K MIN WITH + AT PIN
69-37325-155			
A2CR2	23 to 3	23	3
A2CR7	23 to 6	23	6
69-37325-156			
A2CR2	23 to 9	23	9
A2CR5	23 to 10	23	10
69-37325-159,-161			
A2CR2	23 to 31	23	31

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- (2) Verify continuity or no continuity with switch set as indicated in TESTING AND FAULT ISOLATION, Table 102.

NOTE: "Con" means that continuity exists and that resistance must be less than 1 ohm. "No Con" means that circuit is open (infinite resistance).

Table 102: Switch Continuity Tests

MODULE SWITCH	MEASURE BETWEEN PINS	REQUIRED RESULTS	
		Depressed	Released
69-37325-150,-155,-156			
S1	15 to 16	Con	No Con
S1	17 to 16	No Con	Con
69-37325-156			
S3	6 to 3	No Con	Con
S3	6 to 4	Con	No Con
69-37325-157 thru -163			
S1	6 to 3	No Con	Con
S1	6 to 4	Con	No Con
S3	15 to 16	Con	No Con
S3	17 to 16	No Con	Con

- (3) Verify $1.5k \pm 10\%$ across A1 R15 by measuring between pins 7 and 14 (all except for 69-37325-157 thru -163).
- (4) Connect test setup per TESTING AND FAULT ISOLATION, Figure 101 or TESTING AND FAULT ISOLATION, Figure 102. Set all switches to OFF. Turn on power supply.
- (5) Set switches and verify indications as specified in TESTING AND FAULT ISOLATION, Table 103. Test lamps shall be illuminated only when indicated. Use test setup in TESTING AND FAULT ISOLATION, Figure 101 for 69-37325-150, -156; in TESTING AND FAULT ISOLATION, Figure 102 for 69-37325-155, -157 thru -163.

Table 103: Test Procedure

TEST SWITCHES			TEST LAMP INDICATIONS		V
STEP	NUMBER	POSITION	ON	OFF	
1	21 and 24	ON			$18 \pm 3 V$ ^[1]
2	23	ON	L3		
3	23	OFF		L3	
4	4	ON	L3		
5	4	OFF		L3	
6	5	ON	L3		
7	5	OFF		L3	
8	6	ON	L3		

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Table 103: Test Procedure (Continued)

TEST SWITCHES			TEST LAMP INDICATIONS		V
STEP	NUMBER	POSITION	ON	OFF	
9	6	OFF		L3	
10	7	ON	L3		
11	7	OFF		L3	
12	8	ON	L3		
13	8	OFF		L3	
14	12	ON	L3		
15	12	OFF		L3	
16	13	ON	L3		
17	13	OFF		L3	
18	4	ON	L3		
19	22	OFF		L3	
20	22	ON		L3	
21	5	ON	L3		
22	22	OFF		L3	
23	22	ON		L3	
24	6 ^{*[2]}	ON	L3		
25	22	OFF		L3	
26	22	ON		L3	
27	7	ON	L3		
28	22	OFF		L3	
29	22	ON		L3	
30	8	ON	L3		
31	22	OFF		L3	
32	22	ON		L3	
33	12	ON	L3		
34	22	OFF		L3	
35	22	ON		L3	
36	13	ON	L3		
37	22	OFF		L3	
38	22	OFF		L3	
39	14	ON	L3		
40	24	OFF	L3		

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Table 103: Test Procedure (Continued)

TEST SWITCHES			TEST LAMP INDICATIONS		V
STEP	NUMBER	POSITION	ON	OFF	
41 ^{*[3]}	4 thru 8, 12,13,22	OFF		L3	
42	22,15,14	ON	L3		18 ± 3V ^{*[1]}
43	14,15,22	OFF		L3	18 ± 3V ^{*[1]}
69-37325-150,-156					
44	16	ON	L1		
45	17	ON		L1	
46	16,17	OFF		L1,L3	
69-37325-155					
48	22	ON			
49	18	ON	L3		
50	18	OFF		L3	
51	19	ON	L3		
52	19	OFF		L3	
53	20	ON	L3		
54	20	OFF		L3	
55	18	ON	L3		
56	22	OFF		L3	
57	22	ON		L3	
58	19	ON	L3		
59	22	OFF		L3	
60	22	ON		L3	
61	20	ON	L3		
62	22	OFF		L3	
63	22	ON		L3	
64	18,19,20 21,22	OFF		L3	
69-37325-156					
65	22	ON			18 ± 3V
66	18 ^{*[4]}	ON	L3		
67	18 ^{*[4]}	OFF		L3	
68	19	ON	L3		
69	19	OFF		L3	

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Table 103: Test Procedure (Continued)

TEST SWITCHES			TEST LAMP INDICATIONS		V
STEP	NUMBER	POSITION	ON	OFF	
70	18 ^{*[4]}	ON	L3		
71	22	OFF		L3	
72	22	ON		L3	
73	19	ON	L3		
74	22	OFF		L3	
75	22	ON		L3	

*[1] 8.6 to 18-1/2 volts for 69-37325-160, -162 only

*[2] For assembly P/N 69-37325-162, put S6 in OFF position after this step

*[3] S6 is already OFF for assembly P/N 69-37325-162

*[4] Assembly P/N 69-37325-156 only

(6) (69-37325-157 thru -163 only) perform the tests listed in TESTING AND FAULT ISOLATION, Table 104. Set all switches to OFF.

Table 104: Functional Test, 69-37325-157 thru -163

TEST STEP	COMPONENT TESTED	PROCEDURE	REQUIRED RESULT
69-37325-157,-159,-161,-162			
1		Set S21, to ON	
2	L1	Set S8, S17 to ON	L1 on
3	L1	Set S8 to OFF, set S23 to ON	L1 on
4	L1	Set S23 to OFF	L1 off
5	L1	Depress L1	L1 on while depressed
6		Set S17 to OFF	
69-37325-157 thru 162			
7	K1	Measure ohms between 10 to 11	Con
8	K1	Measure ohms between 10 to 9	No Con
9	K1	Measure ohms between 13 to 14	Con
10	K1	Measure ohms between 3 to 12	No Con
11	CR1/K1/A1Q8	Set S16 to ON. Measure ohms between 13 to 12	Con
12	A1R15/A1R16	Measure ohms between 13 to 14	No Con
13	A1CR11	Measure ohms between 10 to 9	Con
14	A1CR11	Measure ohms between 10 to 11	No Con

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Table 104: Functional Test, 69-37325-157 thru -163 (Continued)

TEST STEP	COMPONENT TESTED	PROCEDURE	REQUIRED RESULT
15	S2/A1Q8	Set S2 to TEST (left). Measure ohms between 10 to 11	Con
69-37325-157, -163			
16		Set S16 to OFF. Set S22 to ON	
17	A2	Set S18 to ON	L3 on in 0.5 to 1.5 sec
18	A2	Set S18 to OFF	L3 off
19		After waiting at least	
20	A2	3 seconds, set S18 to ON	L3 on in 0.5 to 1.5 sec
21	A2	Set S22 to OFF	L3 off
22	A2	Set S22 to ON	L3 off
69-37325-159 thru 162			
23		Set S16 to OFF. Set S22 to ON	
24	A2	Set S18 to ON	L3
25	A2	Set S18 to OFF	L3 off
26	A2	Set S18 ON	L3 on
27	A2	Set S22 to OFF	L3 off
28	A2	Set S22 to ON	L3 off
69-37325-162			
29		Set S18 to ON	
30	A2	Set S18 to OFF	L3 on
31	A2	Set S8 to ON	L3 off
32	A2	Set S6 to ON	L3 on
33	A2	Set S8 to OFF	L3 off
34	A2	Set S6 to OFF	L3 on
35		Remove all connections	L3 off

(7) Turn off power supply and disconnect assembly from test setup.

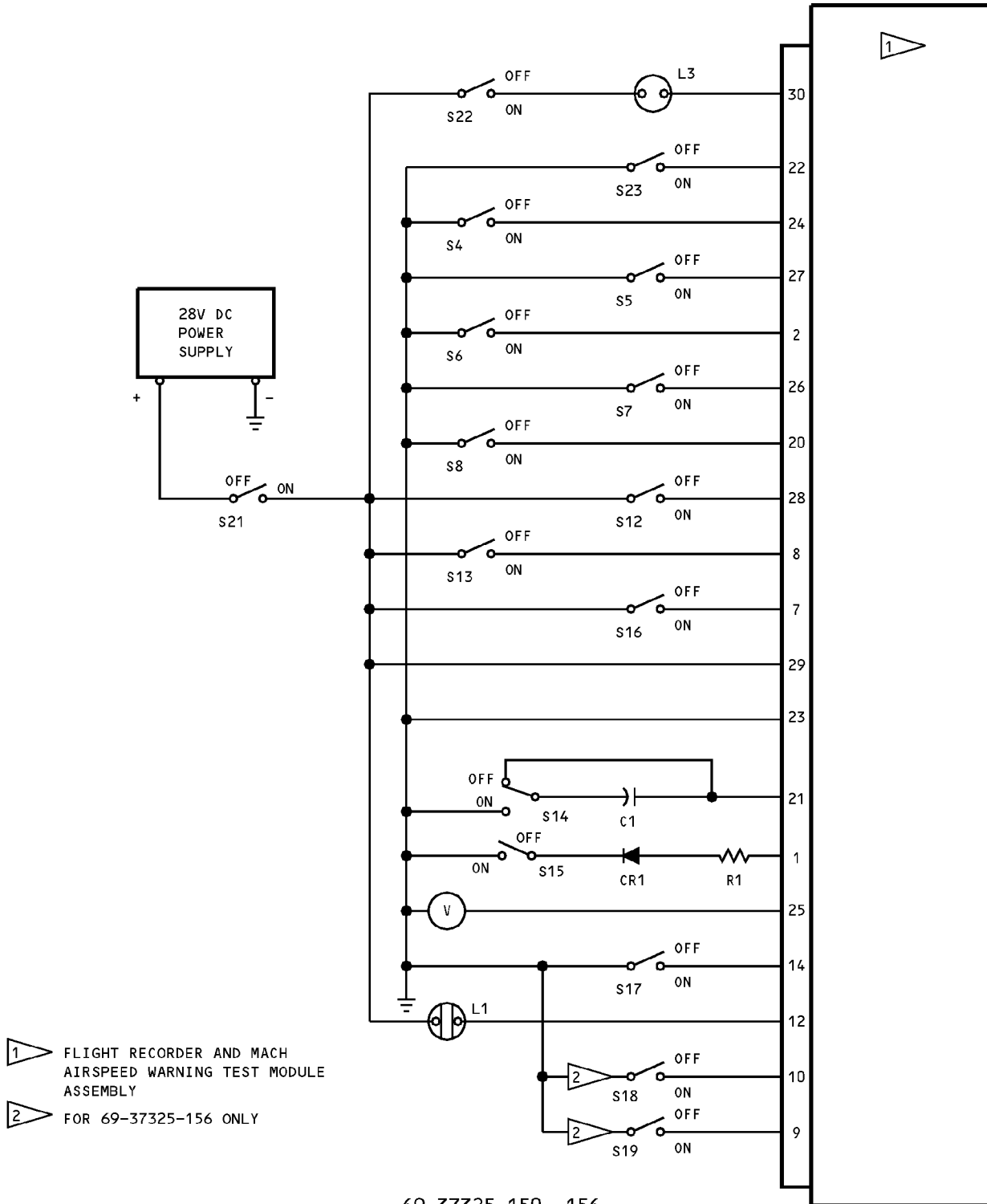
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69-37325-150, -156

Test Setup
Figure 101

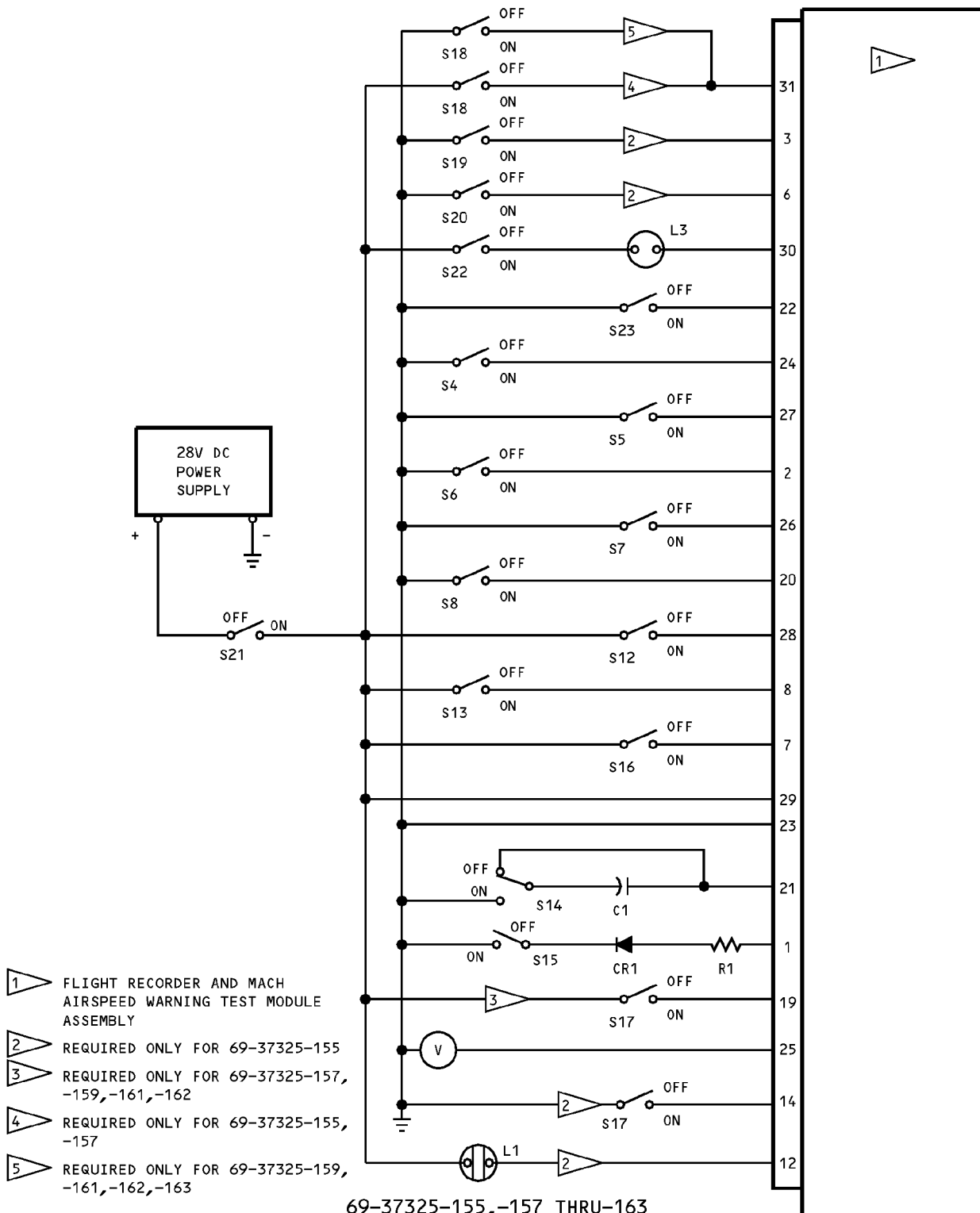
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- 1 FLIGHT RECORDER AND MACH AIRSPEED WARNING TEST MODULE ASSEMBLY
- 2 REQUIRED ONLY FOR 69-37325-155
- 3 REQUIRED ONLY FOR 69-37325-157, -159,-161,-162
- 4 REQUIRED ONLY FOR 69-37325-155, -157
- 5 REQUIRED ONLY FOR 69-37325-159, -161,-162,-163

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2. Trouble Shooting

- A. If failure of a test occurs, check for defective connections and incorrect wiring connections, prior to replacement of components.

NOTE: Trouble shooting is keyed to functional test procedures.

Table 105: Trouble Shooting

Trouble	Possible Cause and Correction
Table 101 and 102	Component noted in TESTING AND FAULT ISOLATION, Table 101 and TESTING AND FAULT ISOLATION, Table 102
TESTING AND FAULT ISOLATION, Table 103: Step 1 Steps 2 and 3 Steps 4 thru 46 Steps 48 thru 75	A1 A1 or R1 A1 A1
Table 104	Component noted in TESTING AND FAULT ISOLATION, Table 104

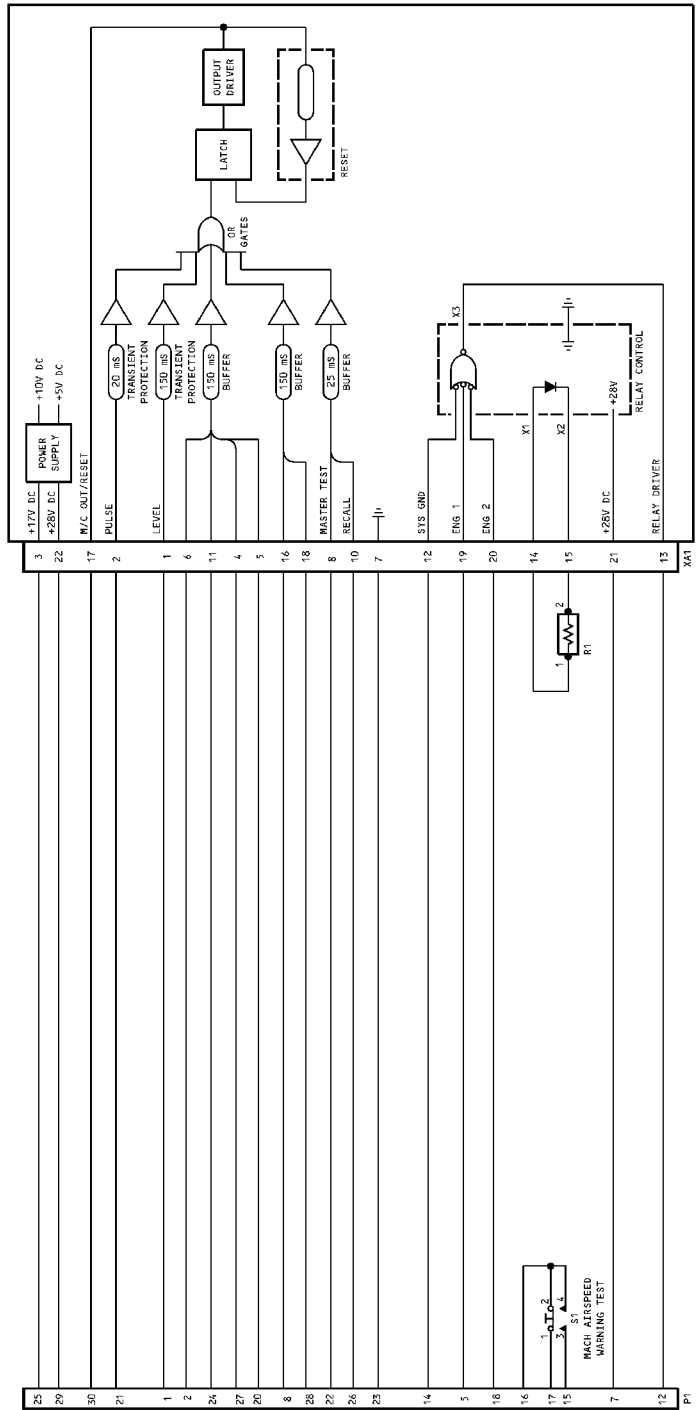
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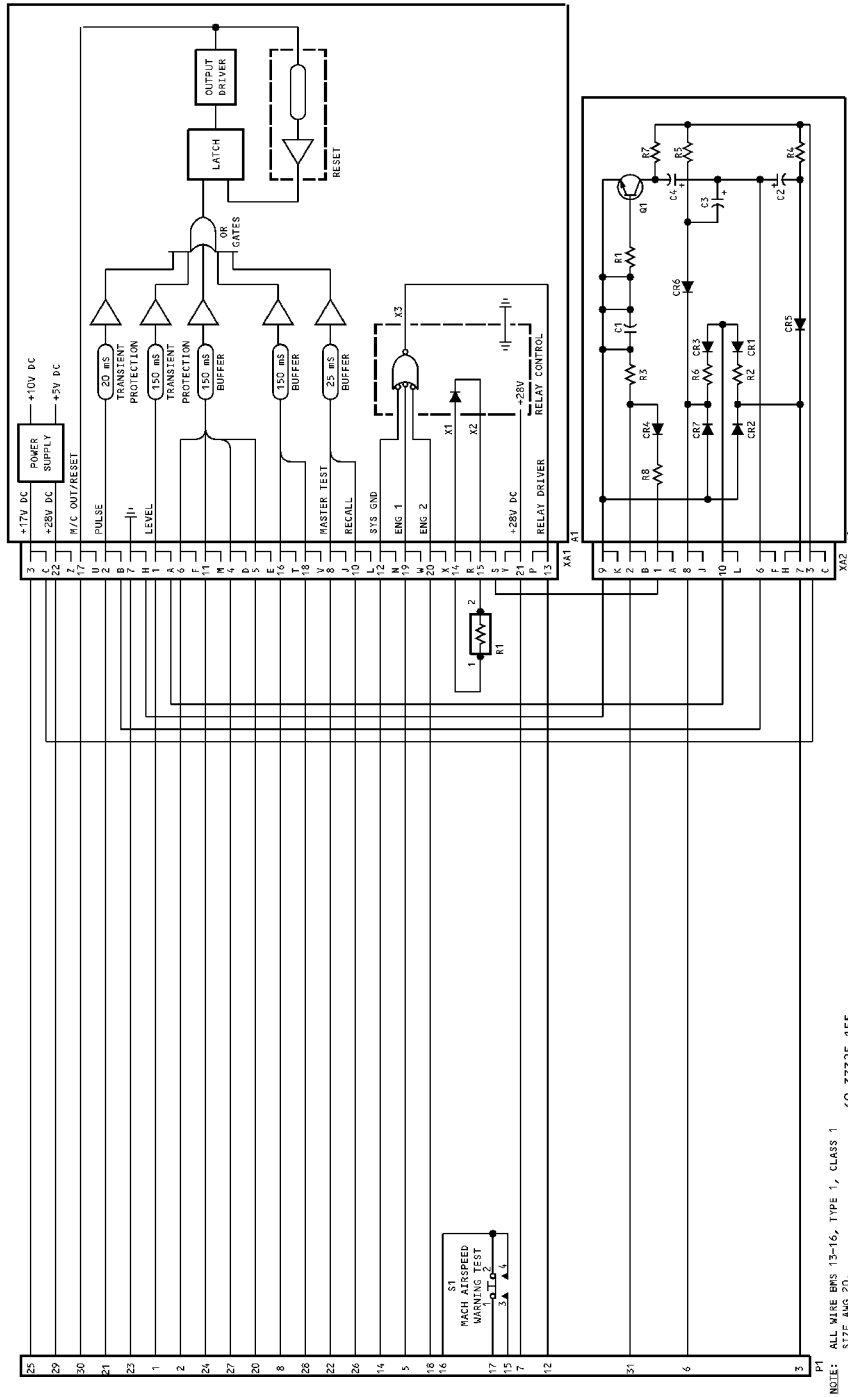
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Schematic Diagram
Figure 103

NOTE: ALL WIRE BMS 13-16, TYPE 1 CLASS 1
SIZE AWG 20.
69-37325-130

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Schematic Diagram
Figure 104

NOTE: ALL WIRE BMS 13-16, TYPE 1, CLASS 1
SIZE AWG 20. 69-37325-155

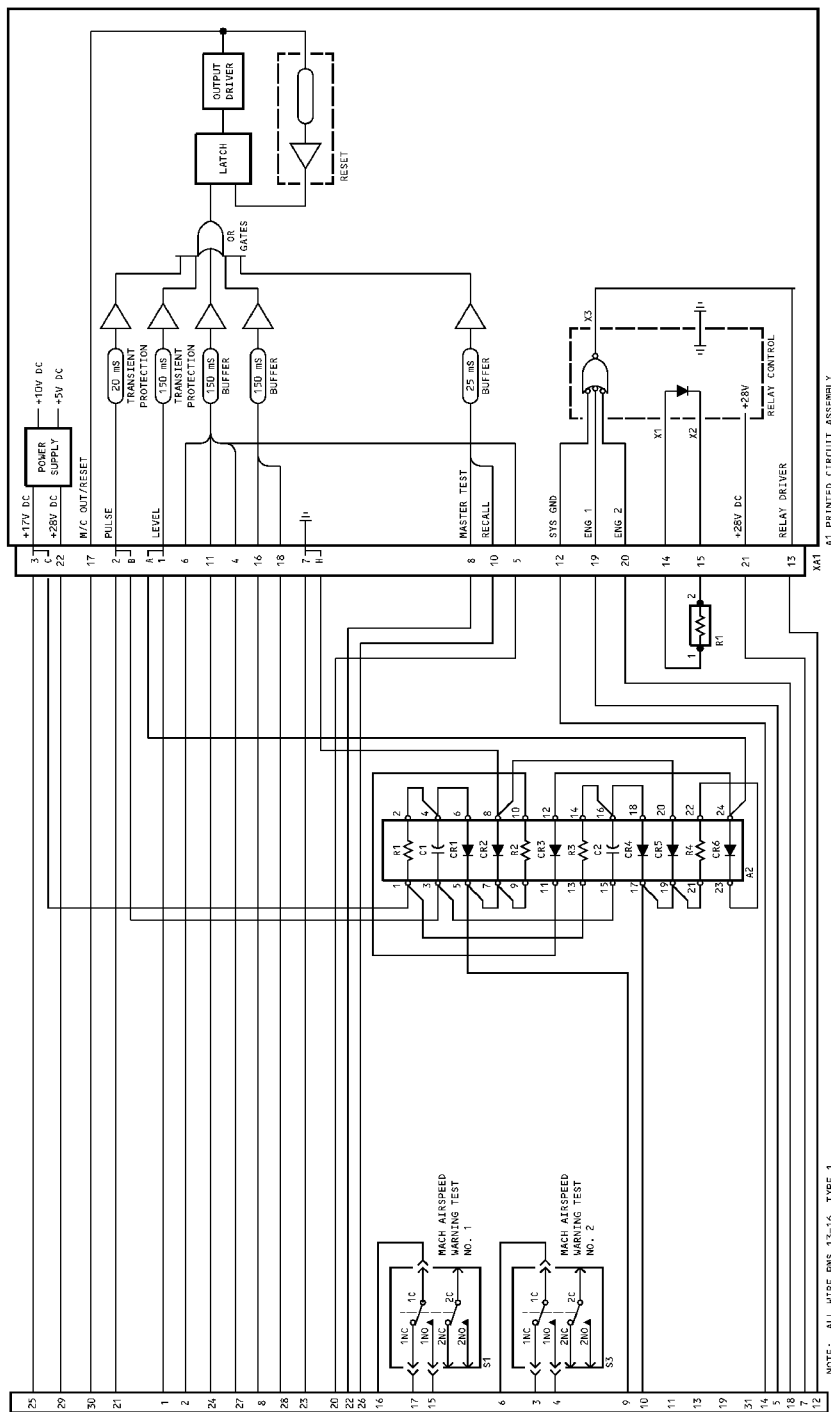
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Schematic Diagram
Figure 105

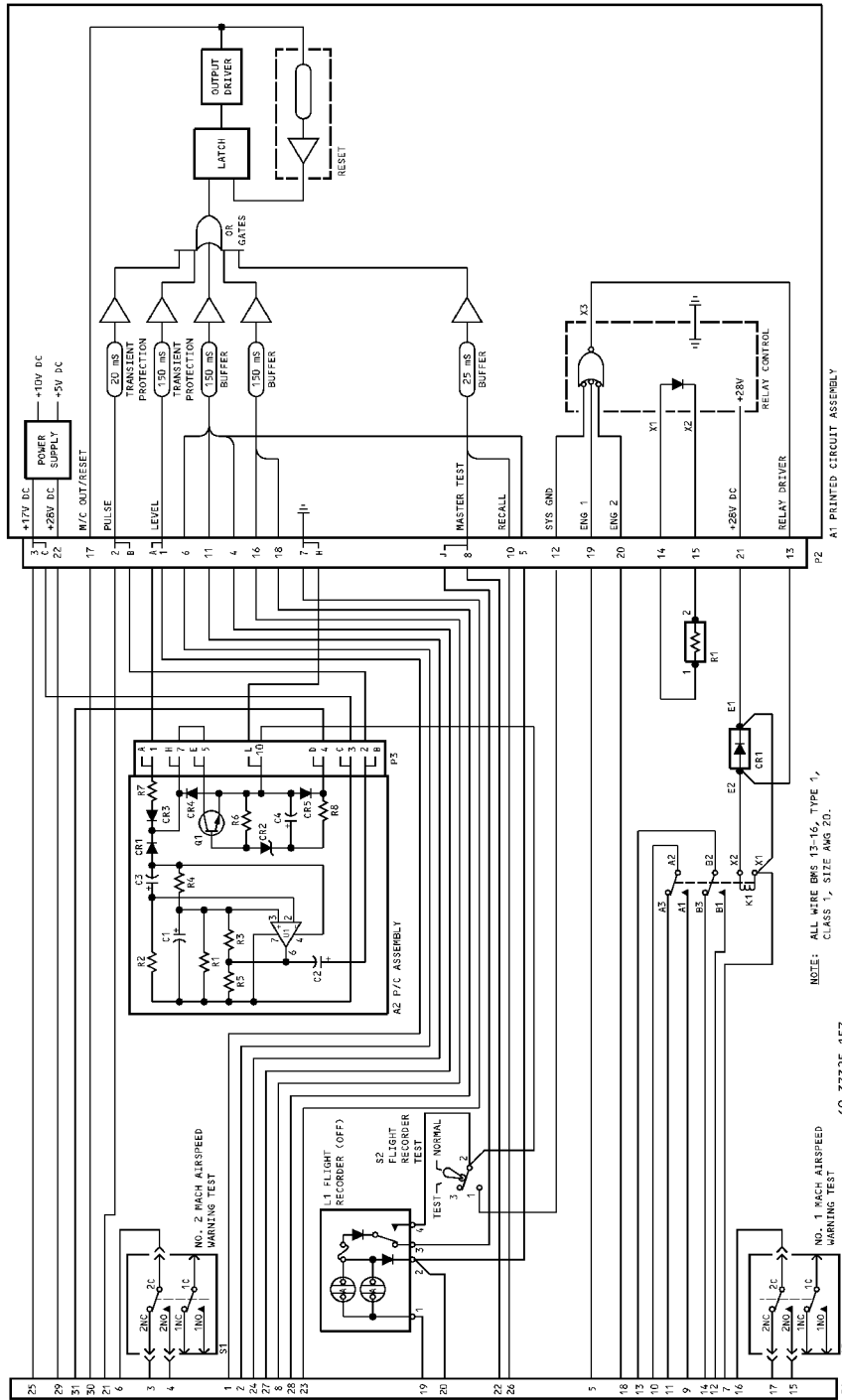
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Schematic Diagram
Figure 106

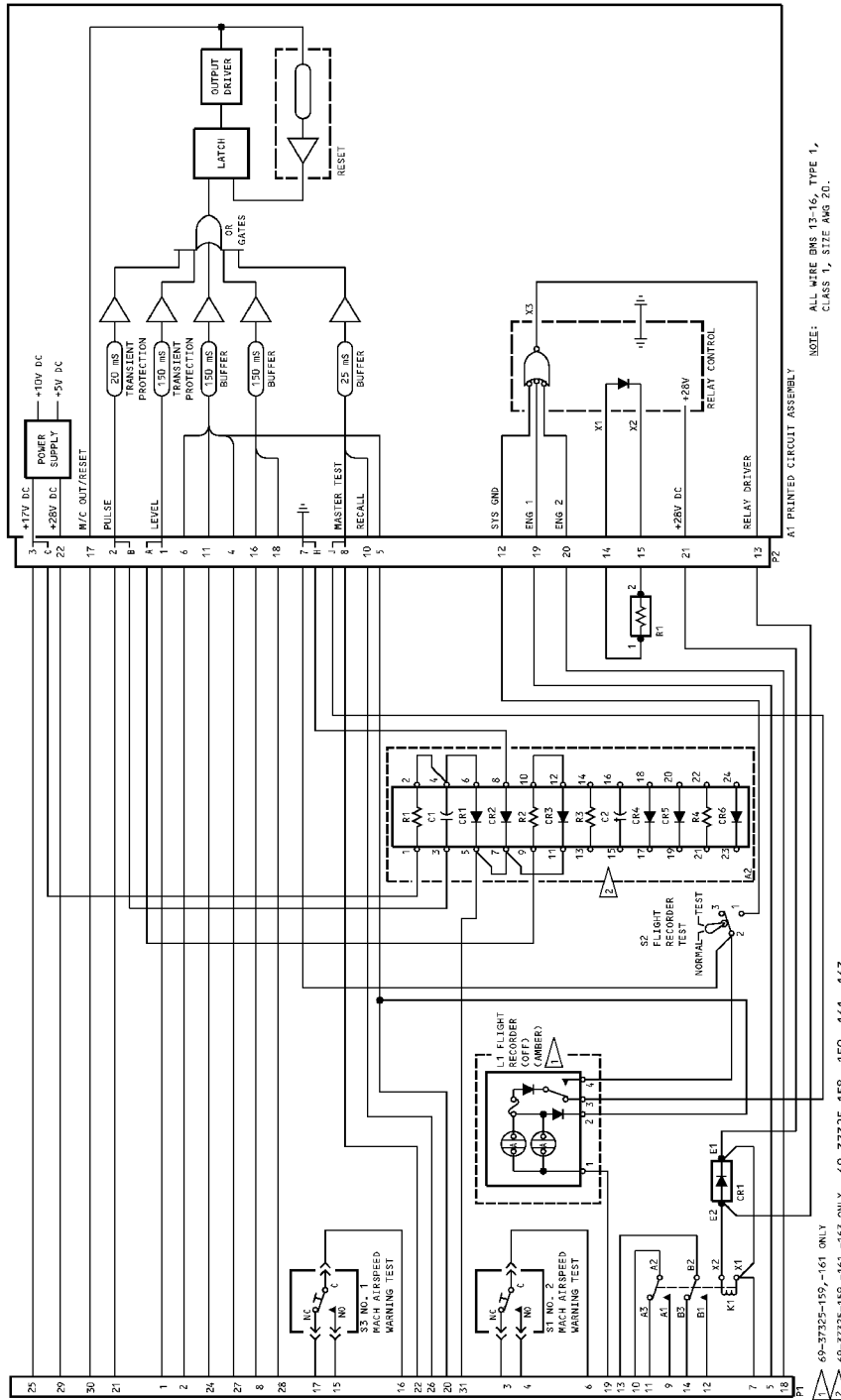
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Schematic Diagram
Figure 107

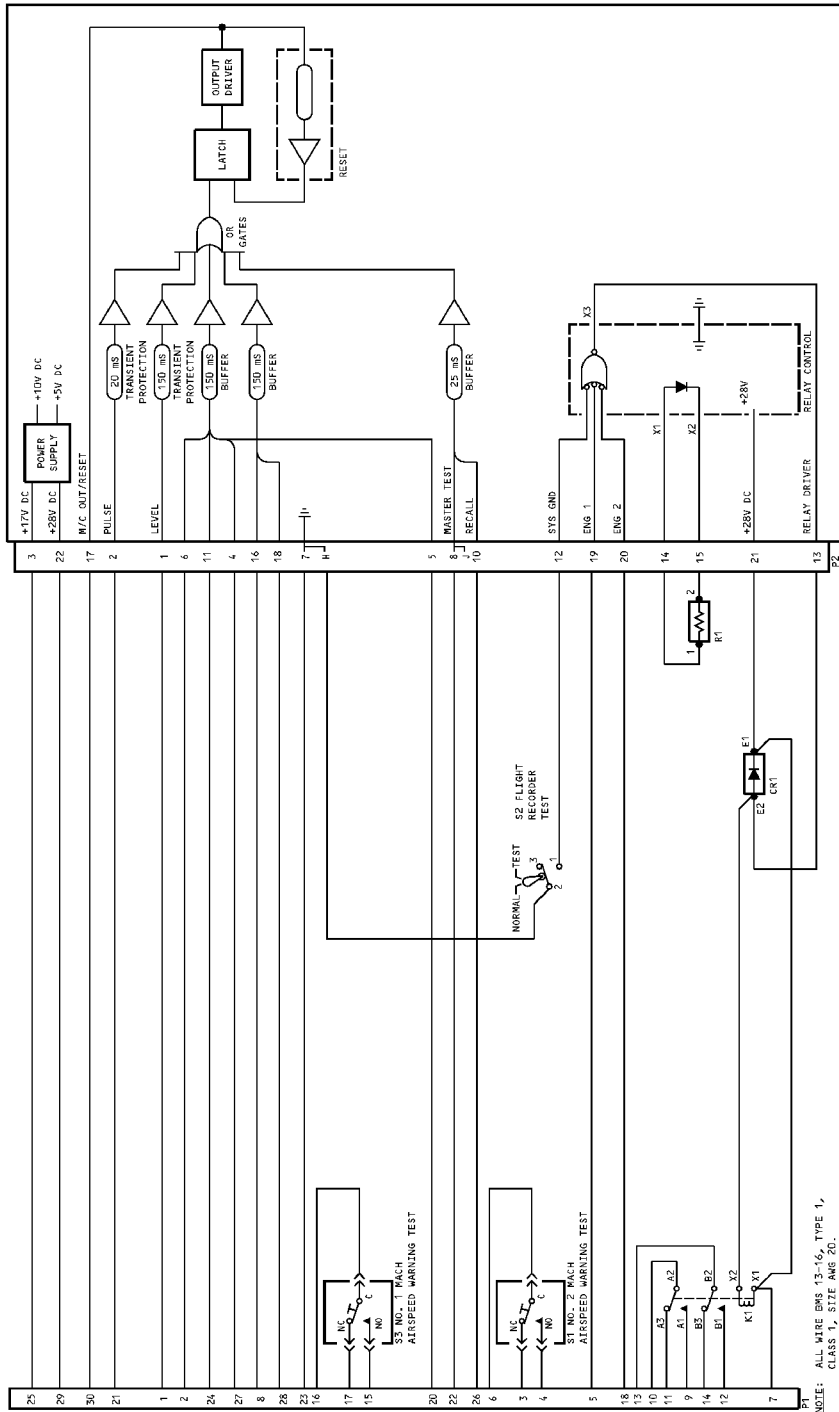
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Schematic Diagram
Figure 108

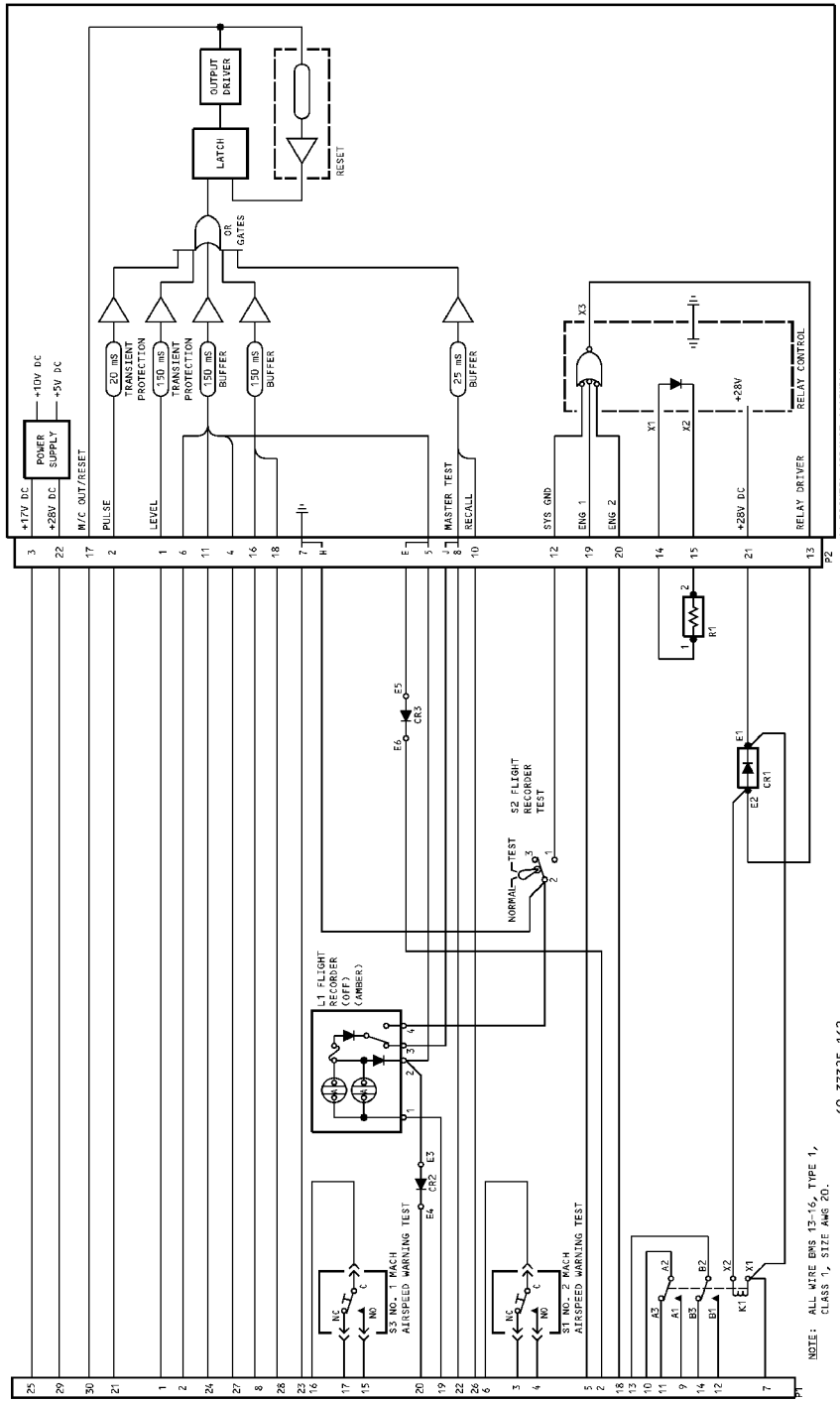
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Schematic Diagram
Figure 109

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DISASSEMBLY

(NOT APPLICABLE)

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DISASSEMBLY

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CLEANING

(NOT APPLICABLE)

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CLEANING
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CHECK

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CHECK
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COMPONENT MAINTENANCE MANUAL

REPAIR

1. General

CAUTION: OBEY THE PROCEDURES IN SOPM 20-12-02, HANDLING OF ELECTROSTATIC SENSITIVE DEVICES. ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THIS COMPONENT.

- A. All repair can be accomplished with standard industry practices and instructions contained in 20-11-04 except as noted in paragraphs below:
- B. If keying plugs (IPL Figure 1, Item 115 or IPL Figure 2, Item 80) require replacement, insert as follows:
 - (1) Install keying plug into contact position 9 (for all assemblies except 69-37325-157).
 - (2) Install keying plug into contact position 9 (for 69-37325-157).
- C. If connector (IPL Figure 1, Item 110 or IPL Figure 2, Item 70, 71) is replaced, install with contact position 1 adjacent to resistor R1.

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REPAIR - GENERAL

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ASSEMBLY

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ASSEMBLY

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FITS AND CLEARANCES

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FITS AND CLEARANCES

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SPECIAL TOOLS, FIXTURES, AND EQUIPMENT

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SPECIAL TOOLS, FIXTURES, AND EQUIPMENT

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ILLUSTRATED PARTS LIST

1. Introduction

- A. The Illustrated Parts List (IPL) contains an illustration and a list of component parts you can repair or replace. The Illustrated Parts Catalog (IPC) shows how to use the Boeing part number system.
- B. This shows how parts are related: The relation of each item to its next higher assembly (NHA) is shown in the NOMENCLATURE column. Use the indenture system that follows:

1	2	3	4	5	6	7
.	Assembly					
.	Attaching parts for assembly					
.	.	Detail parts for assembly				
.	.	Subassembly				
.	.	Attaching parts for subassembly				
.	.	.	Detail parts for subassembly			
.	.	.	Sub-subassembly			
.	.	.	Attaching parts for subassembly			
.	.	.	.	Details parts for sub-subassembly		
						Detail Installation Parts (Included only if installation parts may be sent to the shop as part of assembly)

- C. Each top assembly is given one use code letter (A, B, C, etc.) in the USAGE CODE column. All subsequent component parts in the list can have one or more of the use code letters to show effectivity to top assemblies. A component part without a use code applies to all top assemblies.
- D. An alphabetical letter is added after the item number for optional parts, parts changed by a Service Bulletin, configuration differences (except left-handed and right-handed parts), last engineering releases, and parts added between item numbers in a sequence. The alphabetical letter will not be shown on the illustration for equivalent parts of the same part number.
- E. Color-coded parts are identified with a single digit alpha following the dash number or with "SP" suffix. If the "SP" suffix is used, it represents consolidation of all color codes applicable for a given usage which are not separately listed. Orders for color-coded parts should include the registry number of the airplane for which the parts are ordered.
- F. If a part number is 15 characters long but will not fit in the part number column, the part number will be displayed with a "~" at the end of the line and will be continued on the next line. The "~" denotes that the part number continues on the next line.
- G. Parts changed by a Service Bulletin are shown by PRE SB XXXX and POST SB XXXX added to the NOMENCLATURE column.
- (1) When a new top assembly is added by a Service Bulletin, PRE SB XXXX and POST SB XXXX will be added at the top assembly level only. The configuration differences at the detail part level are shown by use code letters.
- (2) When the top assembly part number is not changed by the Service Bulletin, PRE SB XXXX and POST SB XXXX will be added at the detail level.
- H. Interchangeable Parts

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Optional (OPT)	The part is optional to and interchangeable with other parts that have the same item number.
Replaces, Replaced by and not interchangeable with (REPLACES, REPLACED BY AND NOT INTCHG/W)	The part replaces and is not interchangeable with the initial part.
Replaces, Replaced by (REPLACES, REPLACED BY)	The part replaces and is interchangeable with, or is an alternative to, the initial part.

VENDOR CODES

Code	Name
00213	MSD INC 700 ORANGE ST DARLINGTON, SOUTH CAROLINA 29532 FORMERLY V01350; FORMERLY 78290; FORMERLY NYTRONICS COMPONENTS GROUP
00779	TYCO ELECTRONICS CORP 2800 FULLING MILL ROAD PO BOX 3608 MIDDLETOWN, PENNSYLVANIA 17057 FORMERLY AMP INC; FORMERLY V04618 FORMERLY GENICOM COMP V01526
72914	HONEYWELL/GRIMES AEROSPACE 550 STATE RT 55 URBANA, OHIO 43078 FORMERLY AERO-FLOW V70128; MIDLAND-ROSS JANITROL AERO DIV; FORMERLY FL AEROSP CORP V89513; ALLIEDSIGNAL/GRIMES AEROSP FORMERLY GRIMES AEROSPACE V00672 AND HONEYWELL V60187
81590	KORRY ELECTRONIC INC SUB OF CRITON CORP 901 DEXTER AVENUE NORTH SEATTLE, WASHINGTON 98109-3515 FORMERLY KORRY, BORIS VB0021 AND KORRY MFG CO

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Code	Name
81640	EATON CORP AEROSPACE AND COMMERCIAL CONTROLS DIV 2250 WHITFIELD AVENUE EAST SARASOTA, FLORIDA 34243-9703 FORMERLY SINGER CO CONTROLS DIV AND CONTROLS CO OF AMERICA AND CONTROL SWITCH A CUTLER-HAMMER CO AND EATON CORP CUTLER-HAMMER GROUP V97198, V81641 IN FOLCROFT, PENNSYLVANIA INFO FROMVDR THRU M2880 FEB 1987 SWITCHES
88245	WINCHESTER ELECTRONICS LITTON SYSTEMS INC USECO DIV 13536 SATICOY STREET VAN NUYS, CALIFORNIA 91409 FORMERLY U.S. ENGINEERING CO V88245 AND LITTON PRECISION PRODUCTS INC USECO DIV LITTON IND AND LITTON SYSTEMS INC USECO DIV
89954	BAE SYSTEMS CONTROL 600 MAIN STREET JOHNSON CITY, NEW YORK 13790 FORMERLY MARTIN MARIETTA AIRCRAFT CONTROL SYSTEMS; FORMERLY LOCKHEED MARTIN CONTROL SYSTEMS
91637	VISHAY DALE ELECTRONICS VISHAY AMERICAS INC DBA VISHAY 1122 23RD STREET PO BOX 609 COLUMUS, NEBRASKA 68602-0609
91833	KEYSTONE ELECTRONICS CORPORATION 31-07 20TH ROAD ASTORIA, NEW YORK 11105-2017 FORMERLY IN NEW YORK, NEW YORK
91929	HONEYWELL INC MICRO SWITCH DIV 11 WEST SPRING STREET FREEPORT, ILLINOIS 61032 FORMERLY MICRO SWITCH A DIV OF HONEYWELL FORMERLY V74059 AND V40228

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NUMERICAL INDEX

PART NUMBER	AIRLINE PART NUMBER	FIGURE	ITEM	UNITS PER ASSEMBLY
10-61803-12		1	215	1
		2	170	1
11170-1		1	190	1
11170-18		2	180	1
1491A		1	235	2
		1	235A	6
		2	200	2
1625-4-12		1	235B	2
		1	235C	6
		2	200A	2
1N4384		1	225	1
		1	225A	3
		2	210	1
2PB11H58		2	165	2
2PBH11H58		1	195	1
3105M510-3PCT		1	130A	1
		2	150A	1
		2	215A	1
318-630-1001-		2	170	1
318-630-1001-008		1	215	1
582507-1		1	115	1
		2	80	2
582551-1		2	71	1
582557-1		1	110	1
		2	70	1
640024-1		1	170	3
66143-2		1	165	AR
69-37268-13		1	85	1
		2	40	2
69-37268-14		1	90	4
69-37325-106		1	145D	1
69-37325-107		1	160C	1
69-37325-110		1	160D	1
69-37325-150		1	1	1

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PART NUMBER	AIRLINE PART NUMBER	FIGURE	ITEM	UNITS PER ASSEMBLY
69-37325-155		2	1	1
69-37325-156		1	1A	1
69-37325-157		2	1A	1
69-37325-158		1	1B	1
69-37325-159		1	1C	1
69-37325-160		1	1D	1
69-37325-161		1	1E	1
69-37325-162		1	1F	1
69-37325-163		1	1G	1
69-37325-18		1	145C	1
69-37325-44		1	160	1
69-37325-45		1	145	1
69-37325-5		1	75	1
69-37325-64		1	160E	1
69-37325-66		2	90	1
69-37325-67		2	125	1
69-37325-68		2	50	1
69-37325-69		2	45	1
69-37325-70		1	85A	1
69-37325-71		1	200	1
69-37325-73		1	145A	1
69-37325-75		2	90A	1
69-37325-76		2	125A	1
69-37325-77		2	50A	1
69-37325-78		2	45A	1
69-37325-8		1	80	1
69-37325-80		1	145B	1
69-37325-82		2	5	1
69-37325-96		1	160A	1
69-37325-98		1	160B	1
69-37335-83		2	5A	1
69-42918-29		2	35A	1
69-42918-4		2	35	1
69-43848-19		1	15	1
69-43848-20		1	10A	1

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PART NUMBER	AIRLINE PART NUMBER	FIGURE	ITEM	UNITS PER ASSEMBLY
69-43848-24		2	10	1
69-43948-12		1	60	5
69-43948-14		1	140	1
69-43948-17		1	140A	1
69-43948-19		1	25	1
69-43948-21		1	20	1
69-43948-22		1	15A	1
		1	25A	1
69-43948-25		2	15	1
69-43948-26		2	20	1
69-43948-27		2	60	1
69-43948-28		2	60A	1
69-53692-9		1	205	1
69-71571-1		2	135	1
69-71571-3		2	135A	1
69-78287-1		1	30	1
		2	130	1
AN960PD6		1	240	6
		2	190	6
BAC27DCC1061		1	180C	1
BAC27DCC239		1	175	1
BAC27DCC572		1	180D	1
		2	140A	1
BAC27DEX1347		1	180	1
		2	140	1
BAC27DEX933		1	180A	1
BAC27DEX957		1	180B	1
BAC27EEX510		1	255	1
		2	230	1
BACC45FN18-31P		1	45	1
		2	115	2
BACN10DN26		1	125	2
		2	160	2
		2	225	2
BACN10DN40		1	250	4

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PART NUMBER	AIRLINE PART NUMBER	FIGURE	ITEM	UNITS PER ASSEMBLY
BACN10JC06		1	105	2
		1	105A	4
		2	55	4
		2	195	2
BACN10NW1		1	10	1
		1	40	2
		2	120	2
BACP10U0225G		1	150	1
BACP10U0262G		1	150A	1
		2	95	1
BACR13CF4		1	220	1
		1	220A	1
BACR13F4A		2	185	1
BACS12BE02-3		1	230	6
		1	230A	2
		2	205	2
BACS12BF02-5		1	120	2
		2	155	2
		2	220	2
BACS12CB04-4		1	70	4
		1	70A	7
		1	70B	3
		2	85	4
		2	85A	3
BACS12CB04-5		1	35	2
		2	110	2
BACS12CB06-14		1	95	5
		2	75	4
BACS12CB06-5		1	50	4
		1	50A	5
		2	30A	4
BACS21DD1G		1	155	4
		2	100	4
MOD15512SP2		1	210	1
MS24523-23		1	185	1

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PART NUMBER	AIRLINE PART NUMBER	FIGURE	ITEM	UNITS PER ASSEMBLY
MS35338-41		2	175	1
		1	55	4
NAS1801-04-4		1	55A	5
		1	70C	3
NAS1801-04-5		1	35A	2
NAS1801-06-14		1	95A	5
NAS1801-06-5		1	50B	4
NAS43DD1-17		1	100	2
		2	65	4
NAS514P440-4		2	25	8
NAS514P440-5		1	245	4
		1	245A	8
NAS514P632-5		1	65	4
		1	65A	5
		2	105	4
NAS515P440-4		1	5	8
RER60F2210R		1	130B	1
RH5-510-3PCT		1	130	1
		2	150	1
		2	215	1
W20161-03		1	135	1
		2	145	1

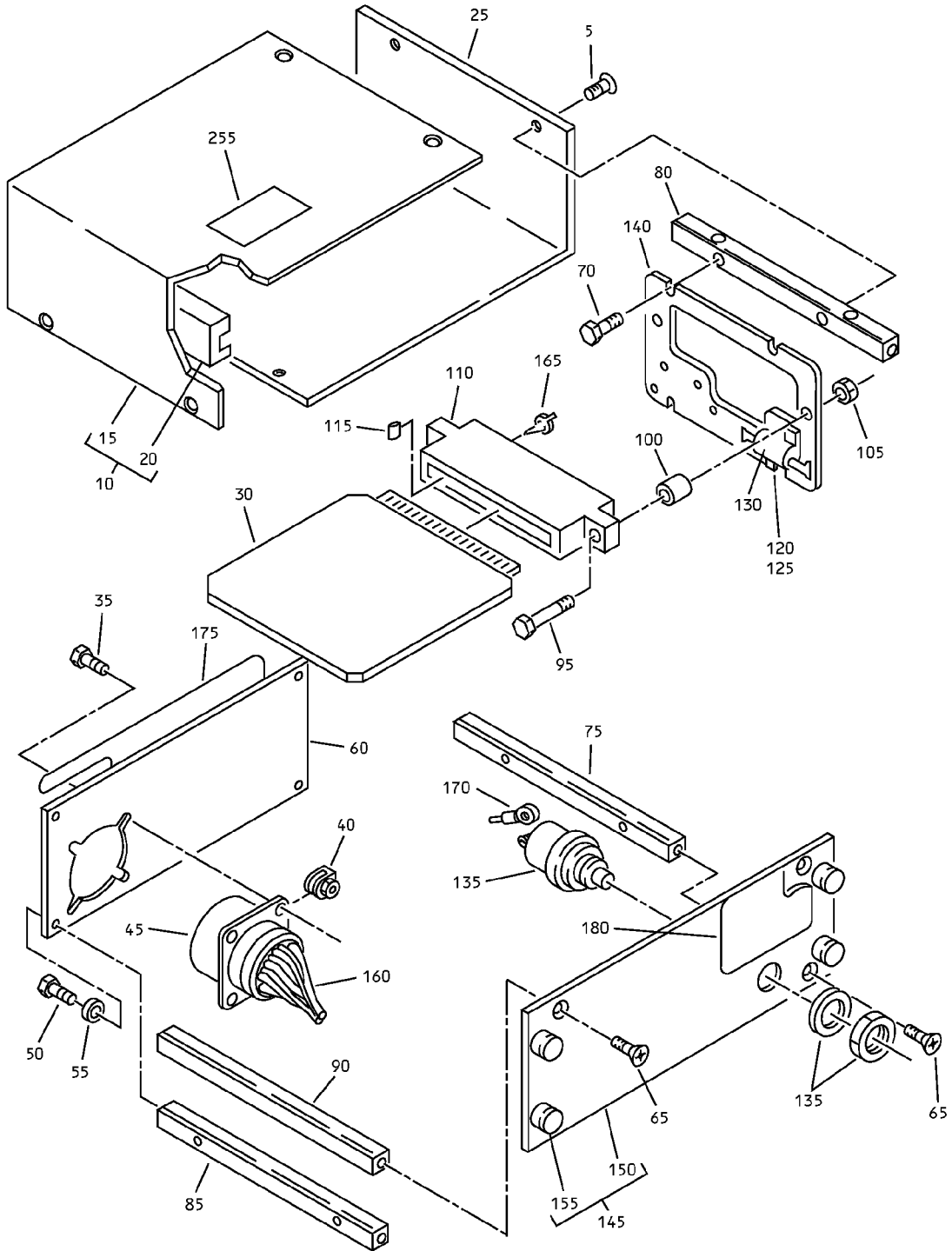
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69-37325-150

Flight Recorder and Mach Airspeed Warning Test Module Assembly P5-19
IPL Figure 1 (Sheet 1 of 2)

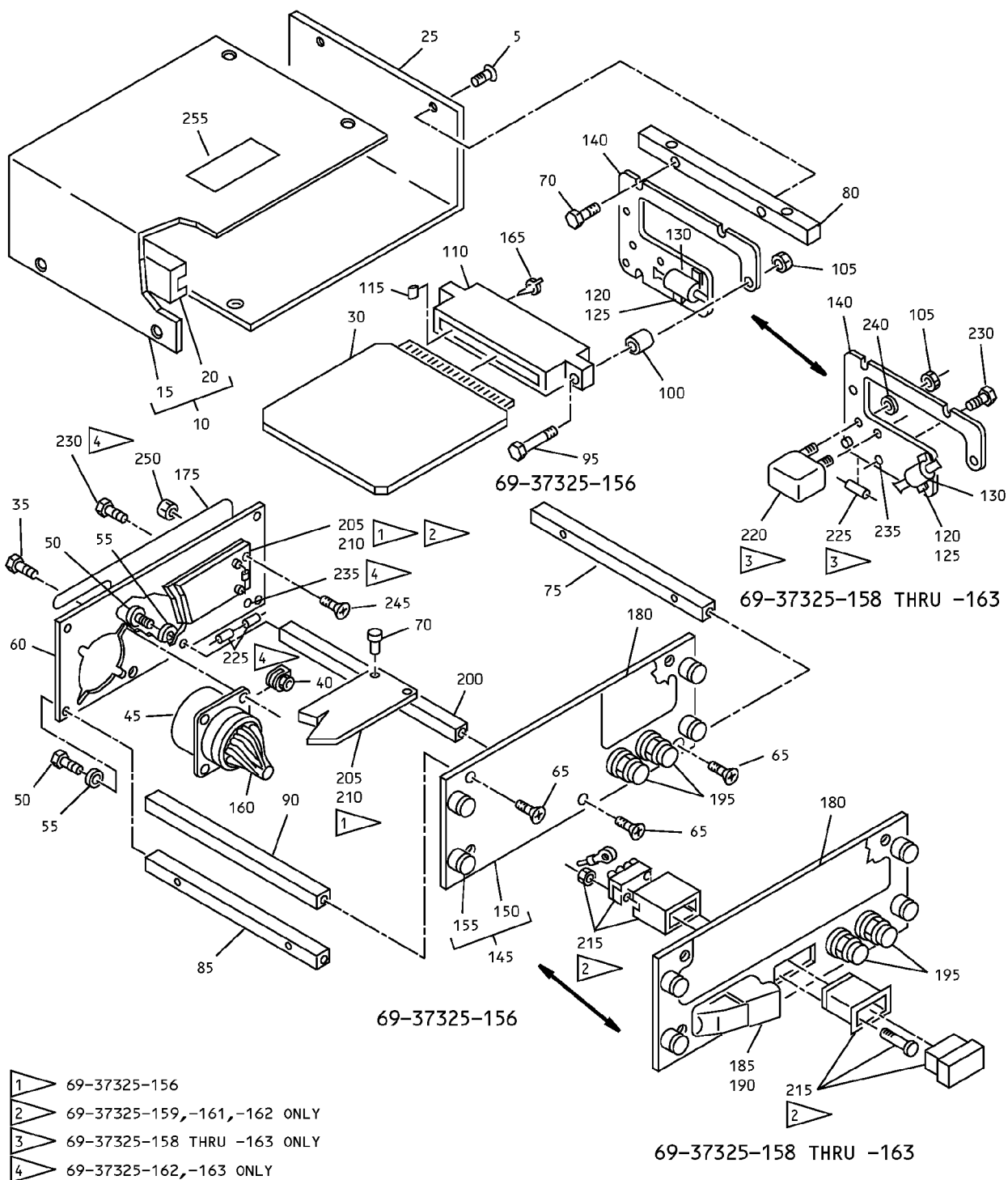
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Flight Recorder and Mach Airspeed Warning Test Module Assembly P5-19
 IPL Figure 1 (Sheet 2 of 2)

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FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE							USAGE CODE	UNITS PER ASSY	
			1	2	3	4	5	6	7			
1-												
-1	69-37325-150										A	
-1A	69-37325-156										B	
-1B	69-37325-158										C	
-1C	69-37325-159										D	
-1D	69-37325-160										E	
-1E	69-37325-161										F	
-1F	69-37325-162										G	
-1G	69-37325-163										H	
5	NAS515P440-4											8
10	BACN10NW1										A, D, F	1
10A	69-43848-20										B, C, E, H	1
15	69-43848-19										A, D, F	1
15A	69-43948-22										B, C, E	1
20	69-43948-21											1
25	69-43948-19										A, D, F, G	1
25A	69-43948-22										B, C, E, H	1
30	69-78287-1											1

-Item not Illustrated

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FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE							USAGE CODE	UNITS PER ASSY
			1	2	3	4	5	6	7		
1-											
35	BACS12CB04-5		.							A-E	2
35A	NAS1801-04-5		.							F	2
40	BACN10NW1		.								2
45	BACC45FN18-31P		.								1
50	BACS12CB06-5		.							A, C-E	4
50A	BACS12CB06-5		.							B	5
50B	NAS1801-06-5		.							F	4
55	MS35338-41		.							A, C-F	4
55A	MS35338-41		.							B	5
60	69-43948-12		.								
65	NAS514P632-5		.							A-C, G	4
65A	NAS514P632-5		.							B	5
70	BACS12CB04-4		.							A	4
70A	BACS12CB04-4		.							B	7
70B	BACS12CB04-4		.							C-E, H	3
70C	NAS1801-04-4		.							F	3
75	69-37325-5		.								1
80	69-37325-8		.								1
85	69-37268-13		.							A, C-H	1
85A	69-37325-70		.							B	
90	69-37268-14		.								4
95	BACS12CB06-14		.							A-E, H	5
95A	NAS1801-06-14		.							F, G	
100	NAS43DD1-17		.								2
105	BACN10JC06		.							A, B, G, H	2
105A	BACN10JC06		.							C-F	4
110	582557-1		.								1
115	582507-1		.								1
120	BACS12BF02-5		.								2

-Item not Illustrated

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FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE							USAGE CODE	UNITS PER ASSY
			1	2	3	4	5	6	7		
1-											
125	BACN10DN26		.	NUT							2
130	RH5-510-3PCT		.	RESISTOR, 510 OHMS +/-3% 5 W (V91637) (PREFERED)					A, D, F, G		1
130A	3105M510-3PCT		.	RESISTOR, 510 OHMS +/-3% 5 W (V00213) (OPT ITEM 130)					A, D, F, G		1
130B	RER60F2210R		.	RESISTOR, 221 OHMS +/-1% 5 W					E, G, H		1
135	W20161-03		.	SWITCH (V81640)					A		1
140	69-43948-14		.	SUPPORT PLATE					A		1
140A	69-43948-17		.	SUPPORT PLATE					B-H		1
145	69-37325-45		.	BASEPLATE ASSY					A		1
145A	69-37325-73		.	BASEPLATE ASSY					B		1
145B	69-37325-80		.	BASEPLATE ASSY					C, E, H		1
145C	69-37325-18		.	BASEPLATE ASSY					D, G		1
145D	69-37325-106		.	BASEPLATE ASSY					F		1
150	BACP10U0225G		.	BASEPLATE					A-E		1
150A	BACP10U0262G		.	BASEPLATE					F		1
155	BACS21DD1G		.	STUD ASSY							4
160	69-37325-44		.	WIRE BUNDLE					A		1
160A	69-37325-96		.	WIRE BUNDLE					C, E		1
160B	69-37325-98		.	WIRE BUNDLE					D, F		1
160C	69-37325-107		.	WIRE BUNDLE					G		1
160D	69-37325-110		.	WIRE BUNDLE					H		1
160E	69-37325-64		.	WIRE BUNDLE					B		1
165	66143-2		.	TAB TERMINAL (V00779)							AR
170	640024-1		.	TERMINAL (V00779)					A		3
175	BAC27DCC239		.	ALUMINUM FOIL MARKER					A-F, H		1
180	BAC27DEX1347		.	ALUMINUM FOIL MARKER					A		1
180A	BAC27DEX933		.	ALUMINUM FOIL MARKER					B		1
180B	BAC27DEX957		.	ALUMINUM FOIL MARKER					D		1

-Item not Illustrated

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FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE							USAGE CODE	UNITS PER ASSY
			1	2	3	4	5	6	7		
1-											
180C	BAC27DCC1061		.							C, E, H	1
180D	BAC27DCC572		.							D, F, G	1
185	MS24523-23		.							C-H	1
190	11170-1		.							C-H	1
195	2PBH11H58		.							B-H	1
200	69-37325-71		.							B	1
205	69-53692-9		.							B, D, F, H	1
210	MOD15512SP2		.							D, F, H	1
215	318-630-1001-008		.							D, F, G	1
220	BACR13CF4		.							C-H	1
220A	BACR13CF4		.							FG	1
225	1N4384		.							C-F, H	1
225A	1N4384		.							G	3
230	BACS12BE02-3		.							G	6
230A	BACS12BE02-3		.							C-F, H	2
235	1491A		.							C-F, H	2
235A	1491A		.							G	6
-235B	1625-4-12		.							C-F, H	2
-235C	1625-4-12		.							G	6
240	AN960PD6		.							C-F	6
245	NAS514P440-5		.							C-F	4
245A	NAS514P440-5		.							H	8
250	BACN10DN40		.							C-F	4
255	BAC27EEX510		.								1

-Item not Illustrated

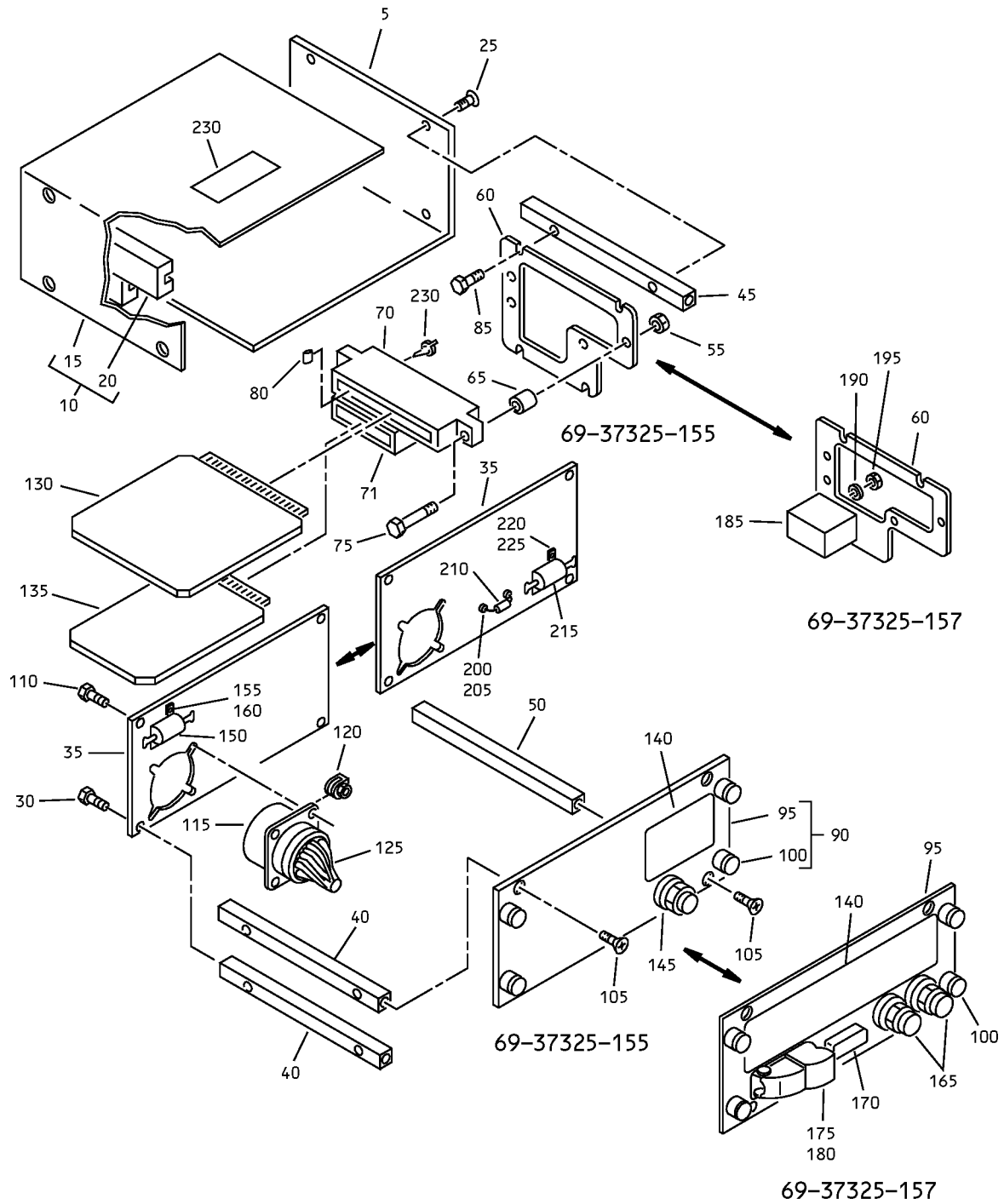
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69-37325-155,-157 Flight Recorder and Mach Airspeed Warning Test Module Assembly P5-19
IPL Figure 2

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FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE							USAGE CODE	UNITS PER ASSY
			1	2	3	4	5	6	7		
2-											
1	69-37325-155									A	
1A	69-37325-157									B	
5	69-37325-82									A	1
5A	69-37335-83									B	1
10	69-43848-24										1
15	69-43948-25										1
20	69-43948-26										1
25	NAS514P440-4										8
30	NAS514P632-5										
30A	BACS12CB06-5										4
35	69-42918-4									A	1
35A	69-42918-29									B	1
40	69-37268-13										2
45	69-37325-69									A	1
45A	69-37325-78									B	1
50	69-37325-68									A	1
50A	69-37325-77									B	1
55	BACN10JC06										4
60	69-43948-27									A	1
60A	69-43948-28									B	1
65	NAS43DD1-17										4
70	582557-1										1
71	582551-1										1
75	BACS12CB06-14										4
80	582507-1										2
85	BACS12CB04-4									A	4

-Item not Illustrated

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FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE							USAGE CODE	UNITS PER ASSY
			1	2	3	4	5	6	7		
2-											
85A	BACS12CB04-4		.							B	3
90	69-37325-66		.							A	1
90A	69-37325-75		.							B	
95	BACP10U0262G		.	.							1
100	BACS21DD1G		.	.							4
105	NAS514P632-5		.								4
110	BACS12CB04-5		.								2
115	BACC45FN18-31P		.								
120	BACN10NW1		.								2
125	69-37325-67		.							A	1
125A	69-37325-76		.							B	1
130	69-78287-1		.								1
135	69-71571-1		.							A	1
135A	69-71571-3		.							B	1
140	BAC27DEX1347		.							A	1
140A	BAC27DCC572		.							B	1
145	W20161-03		.							A	1
150	RH5-510-3PCT		.							A	1
150A	3105M510-3PCT		.							A	1
155	BACS12BF02-5		.							A	2
160	BACN10DN26		.							A	2
165	2PB11H58		.							B	2
170	318-630-1001-		.							B	1
175	MS24523-23		.							B	1

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FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE							USAGE CODE	UNITS PER ASSY
			1	2	3	4	5	6	7		
2-											
180	11170-18		.							B	1
185	BACR13F4A		.							B	1
190	AN960PD6		.							B	6
195	BACN10JC06		.							B	2
200	1491A		.							B	2
-200A	1625-4-12		.							B	2
205	BACS12BE02-3		.							B	2
210	1N4384		.							B	1
215	RH5-510-3PCT		.							B	1
215A	3105M510-3PCT		.							B	1
220	BACS12BF02-5		.							B	2
225	BACN10DN26		.							B	2
230	BAC27EEX510		.								1

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