TO: ALL HOLDERS OF TELEPHONE ASSEMBLY OVERHAUL MANUAL 23-48-02

REVISION NO. 1 , DATED JUL5/77

HIGHLIGHTS

DESCRIPTION OF CHANGE	TOPICS AFFECTED												
	D & O	D/Assy	Cleaning	Insp/Chk	Repair	Assy	F/C	Test	T/Shooting	S/Tools	Storage	IPL	L/Overhaul
Added assembly 65V10739-11 per MC3031-75K	X							X				X	
Added component identification information								X				X	

TELEPHONE ASSEMBLY
23-48-02

BOEING P/N 65V10739-1,-2,-3,-4,-5,-6,-11

AIRLINE P/N

THE FOLLOWING DIRECTIVES APPLY TO THIS SUBJECT:

BOEING SERVICE BULLETIN	BOEING TEMPORARY REVISION	OTHER DIRECTIVES	DATE DIRECTIVE INCORPORATED INTO TEXT
		MC 3031-75K	Jul 5/77

LIST OF EFFECTIVE PAGES

* Indicates pages revised, added or deleted in latest revision

F Indicates foldout pages - print one side only

	PAGE	DATE	PAGE	DATE	PAGE	DATE
	23-48-02					
*	T-1	Jul 5/77				
	T-2	BLANK				
*	LEP-1	Jul 5/77				
	LEP-2	BLANK				
	T/C-1	May 10/76				
	T/C-2	BLANK				
*	1	Jul 5/77				
	2	BLANK				
	401	May 10/76				
	402	BLANK				
*	701	Jul 5/77				
	702	May 10/76				
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*	707	Jul 5/77				
	708	May 10/76				
	709	May 10/76				
	710	BLANK				
	711	May 10/76				
	712	BLANK				
	713	May 10/76				
	714	BLANK				
	715	May 10/76				
	716	BLANK				
	717	May 10/76				
	718	BLANK				
*	719	Jul 5/77				
	720	BLANK				
*	1101	Jul 5/77				
*	1102	Jul 5/77				
*	1103	Jul 5/77				
	1104	May 10/76				
	1105	May 10/76				
*	1106	Jul 5/77				
	1107	May 10/76				
	1108	May 10/76				

TABLE OF CONTENTS

*[1] Use applicable procedures in, 31-10-01 and standard industry practices.

*[2] Special instructions not required.

TELEPHONE ASSEMBLY - DESCRIPTION AND OPERATION

1. Description

   A. The telephone assembly consists of a molded fiberglass panel, brackets, relay mounting plate, stiffener, baseplate and various electrical components. The two brackets, mounting plate, stiffener and one terminal strip are attached to the fiberglass panel by adhesive. Electrical components such as pushbutton switches and indicating lights are mounted on a flat surface of the panel. A two-piece cradle assembly attaches to the baseplate. Components such as connector, buzzer, chime and potentiometer are attached to brackets.

2. Operation

   A. The function of the telephone assembly is to provide a mounting cradle for a telephone type handset and to provide operating personnel with the ability to initiate calls to or receive calls from other stations that are part of the system. On assemblies 65V10739-1, -2, -3, -6, and -11, the cord from the handset passes through a grommeted hole and attaches to a terminal strip that is bonded to the fiberglass panel. On assemblies 65V10739-4 and -5, the handset cable terminates at an audio plug that mates with a receptacle mounted on the fiberglass panel.

   B. On all assemblies there is a switch that is associated with the nonfixed cradle assembly. When the handset is not in use (ON HOOK), it is held in place by a fixed cradle and a spring operated moveable cradle. When the handset is removed, the spring operated cradle releases a 3-pole momentary switch that has been held in the normally open position. Two circuits are completed. One is a 28-volt circuit to a relay which causes it to energize. The other is an audio circuit from the handset. Placing the handset back in the two cradle assemblies re-establishes the ON HOOK condition with the relay de-energized and audio circuit open.

   C. On assemblies 65V10739-1, -2 and -3, a rotary switch provides dimming control for some of indicator lights. In the extreme counterclockwise position, the control provides maximum dimming. The 28-volt dc power signal that is used for indicator illumination is reduced to 13 volts by zener diodes CR1, CR2 and CR3. With each clockwise change of position, one less zener diode is in the circuit. In the BRT position the full 28 volts dc is available for indicator illumination.

REPAIR

1. Repair can be accomplished using applicable procedures in 31-10-01 and standard industry practices except as noted in par. 2, 3, and 4.

2. Bond brackets (15) (20) and stiffener (25) to panel assembly (10) with type 70 adhesive per 20-50-12.

3. Bond terminal strip (75) and relay mounting plate (35) to panel assembly (10) with type 70 adhesive per 20-50-12.

4. Bond terminal strip (140) to mounting plate (35) with type 70 adhesive per 20-50-12.

TESTING

1. Test Equipment

   A. DC Power Supply: 28 volts, 2 amps

   B. Multimeter: Simpson 260, or equivalent

   C. Test Connector: Cannon DC375 with pigtail leads

2. Functional Tests

   A. Assembly 65V10739-1

      (1) Apply 28 volts dc at pin 19 with ground at pin 21.

      (2) Rotate S10 to the BRT position.

      (3) Test indicators S1 thru S9 by following test instructions listed in Fig. 701. Observe results. See Fig. 1101 (Sheet 2) for component identification.

Test No.	Instructions	Results
1	Depress S1	S1, MUSICA, on
2	Depress S1 again to release	S1, MUSICA, off
3	Apply ground to pin 18	S2, TELEF, on
4	Apply ground to pin 10	S3, PILOTO, on
5	Apply ground to pin 12	S4, AREA INV ESP, on
6	Apply ground to pin 8	S5, AREA ADMST, on
7	Apply ground to pin 31	S6, SEGURIDAD, on
8	Apply ground to pin 37	S7, ESPARAR, on
9	Apply 28 volts to pin 26	S8, LLAMAR EDECAN GAURDIA, on
10	Depress S9	S9, NO PASE, on
11	Depress S9 again to release	S9, NO PASE, off

Indicator Test
Figure 701

(4) Test relays K1 and K2 and switches S1, S3, S4, S5, S8 and S11 as outlined by Fig. 702. Observe results. Continuity is less than 3 ohms. Open is more than 100k.

Test Step	Instructions	Continuity Between	Open Between
1	Apply 28 volts to pin 19		
2	Apply ground to pin		
3	Secure S11 in ON HOOK position	24 and 25 2 and 3	24 and 22 2 and 1
4	Release S11	24 and 22 2 and 1	24 and 5 2 and 3
5	Remove 28 volts from pin 19	2 and 3	2 and 1
6	Connect multimeter lead to TB1 terminal to which S11 white is connected	TB1 and 6	
7	Place S11 in ON HOOK position		TB1 and 6
8	Release S11		
9	Connect 28 volts to pin 29		
10	Connect ground to pin 30		
11	Rotate R1 maximum CW	20 and 27 23 and 28	
12	Remove power and ground		20 and 27 23 and 28
13	Depress S1 (MUSICA)	30 and 21	
14	Depress S1 again to release		30 and 21
15	Depress and hold S3, PILOTO	1 and 11	
16	Release S3		1 and 11
17	Depress and hold S4, AREA INV ESP	1 and 13	
18	Release S4		1 and 13
19	Depress and hold S5, AREA ADMST	1 and 9	
20	Release S5		1 and 9
21	Depress and hold S8, LLAMAR EDECAN GAURDIA	1 and 26	
22	Release S8		1 and 26
23	Depress S9, NO PASE	36 and 37	
24	Depress S9 again to release		36 and 37

Continuity Test
Figure 702

OHM

(5) Diode Test (CR1, CR2, CR3)

(a) Apply 28 volts dc to pin 19 with ground at pin 10.

(b) Observe S2, PILOTO, to be brightly illuminated.

(c) Rotate S7 one position at a time from BRT to DIM.

(d) For each position of S7 observe that S2, PILOTO, is less bright than for the previous position.

(6) R1 Test

(a) Connect multimeter to pins 20 and 27.

(b) Energize K2 by applying 28 volts dc to pin 29 with ground at pin 30.

(c) Starting with R1 at maximum cw position, rotate the control of R1 slowly counterclockwise. Observe that resistance increases with rotation of R1 control.

C. Assemblies 65V10739-2 and 65V10739-3

(1) Apply 28 volts dc to pin 19.

(2) Rotate S7 to BRT position.

(3) Test indicators S1 thru S6 by following test instructions listed in Fig. 703. Observe results. See Fig. 1101 (Sheet 2) and Fig. 1102 (Sheet 3) for component identification.

Test No.	Instructions	Results
1	Apply ground to pin 18	S1, TELEF, on
2	Apply ground to pin 10	S2, PILOTO, on
3	Apply ground to pin 14	S3, OFICINA, on
4 *[1]	Apply ground to pin 12	S4, AREA INV ESP, on
4 *[2]	Apply ground to pin 8	S4, AREA ADMST, on
5	Apply ground to pin 31	S5, SEGURIDAD, on
6	Apply ground to pin 23	S6, ESPARAR, on

*[1] 65V10739-2
*[2] 65V10739-3

(4) Test relay K1, S8, S2, S3 and S4 as outlined by Fig. 704. Observe results. Continuity is less than 3 ohms, open is more than 100k.

Test Step	Instructions	Continuity Between	Open Between
1	Apply 28 volts dc to pin 16		
2	Apply ground to pin 21		
3	Secure S8 in ON HOOK position	24 and 25 2 and 3	24 and 22 2 and 1
4	Release S8	24 and 22 2 and 1	24 and 25 2 and 3
5	Remove 28 volts dc from pin 16	2 and 3	2 and 1
6	Connect multimeter lead to TB1 terminal to which S8 white is connected	TB1 and 6	
7	Place S8 in ON HOOK position		TB1 and 6
8	Release S8		
9	Depress and hold S2	1 and 11	
10	Release S2		1 and 11
11	Depress and hold S3	1 and 15	
12	Release S3		1 and 15
13 *[1]	Depress and hold S4	1 and 13	
13 *[2]	Depress and hold S4	1 and 9	
14 *[1]	Release S4		1 and 13
14 *[2]	Release S4		1 and 13

*[1] 65V10739-2
*[2] 65V10739-3

Continuity Test
Figure 704

(5) Diode Test (CR1, CR2, CR3)

(a) Apply 28 volts dc to pin 19 with ground at pin 10.

(b) Observe S2, PILOTO, to be brightly illuminated.

(c) Rotate S7 one position at a time from BRT to DIM.

(d) For each position of S7 observe that S2, PILOTO, is less bright than for the previous position.

(6) Chime Test

(a) Apply 28 volts to pin 19 with ground on pin 21.

(b) Apply 28 volts to pin 20. The chime will produce alternating high and low tones.

(c) Remove 28 volts from pin 20. The chime tones will stop.

(d) Remove power and ground connections from pins 19 and 21.

D. Assemblies 65V10739-4 and 65V10739-5

(1) Apply 28 volts dc at pin 23.

(2) Test indicators S1 thru S3 by following test instructions listed in Fig. 705. Observe results. See Fig. 1102 (Sheet 3) for component identification.

Test No.	Instructions	Results
1	Apply ground to pin 14	S1, PILOT, on
2 *[1]	Apply ground to pin 12	S2, OFFICE, on
2 *[2]	Apply ground to pin 12	S2, CONF ROOM, on
3	Apply ground to pin 11	S3, PHONE CALL, on

*[1] 65V10739-4
*[2] 65V10739-5

Indicator Test
Figure 705

(3) Perform continuity test of relay and switches as outlined by Fig. 706. Continuity is less than 3 ohms. Open is more than 100k. Pins are for J1 unless otherwise indicated.

Test Step	Instructions	Continuity Between	Open Between
1	Depress and hold S1, PILOT	7 and 15	
2	Release S1		7 and 15
3 *[1]	Depress and hold S2, OFICE	7 and 13	
3 *[2]	Depress and hold S2, CONF ROOM	7 and 13	
4	Release S2		7 and 13
5	Secure S4 in ON HOOK position		J2-2, J1-2
6	Apply ground to pin 21		7 and 5
7	Release S4 from ON HOOK position	7 and 5 10 and 8	6 and 5 9 and 8
8	Secure S4 in ON HOOK position	6 and 5 9 and 8	7 and 5 10 and 8
9	Remove connections from pins 23 and 21		

*[1] 65V10739-4
*[2] 65V10739-5

Continuity Test
Figure 706

(4) Buzzer and Chime Test

(a) Apply 28 volts dc to pin 22 with ground at pin 20. Buzzer shall sound.

(b) Remove power from buzzer.

(c) Apply 28 volts dc to pin 16 with ground at pin 21.

(d) Apply 28 volts dc to pin 17. The chime will produce alternating high and low tones.

(e) Remove 28 volts from pin 17. The chimes will stop.

(f) Remove power and ground connections from pins 16 and 21.

(5) Potentiometer and Resistor Test

(a) Connect multimeter to pins 4 and 19. Measure between 434 and 480 ohms.

(b) Connect multimeter to pins 4 and 18.

(c) As potentiometer R1 is adjusted, observe that the resistance changes from 0 at the counterclockwise limit to approximately 457 ohms at the clockwise limit.

E. Assemblies 65V10739-6,-11

(1) S1 and K1 Tests

(a) Apply 28 volts dc to pin 10.

(b) Perform continuity tests as outlined by Fig. 707. Continuity is less than 3 ohms. Open is more than 100k.

Test Step	Instructions	Continuity Between	Open Between
1	Apply ground to pin 21	24 and 22 2 and 1	24 and 25 2 and 3
2	Secure S1 in ON HOOK position	24 and 25 2 and 3	24 and 22 2 and 1
3 4	Release S1 Remove connections from pins 10 and 21	2 and 1	2 and 3

Continuity Test
Figure 707

(c) Connect one multimeter probe to terminal on TB1 to which S1 white is connected.

(d) Connect other multimeter probe to pin 6.

(e) With S1 in ON HOOK position, multimeter shall indicate open. With S1 in released position, multimeter shall indicate continuity.

(2) Indicator and Chime Test

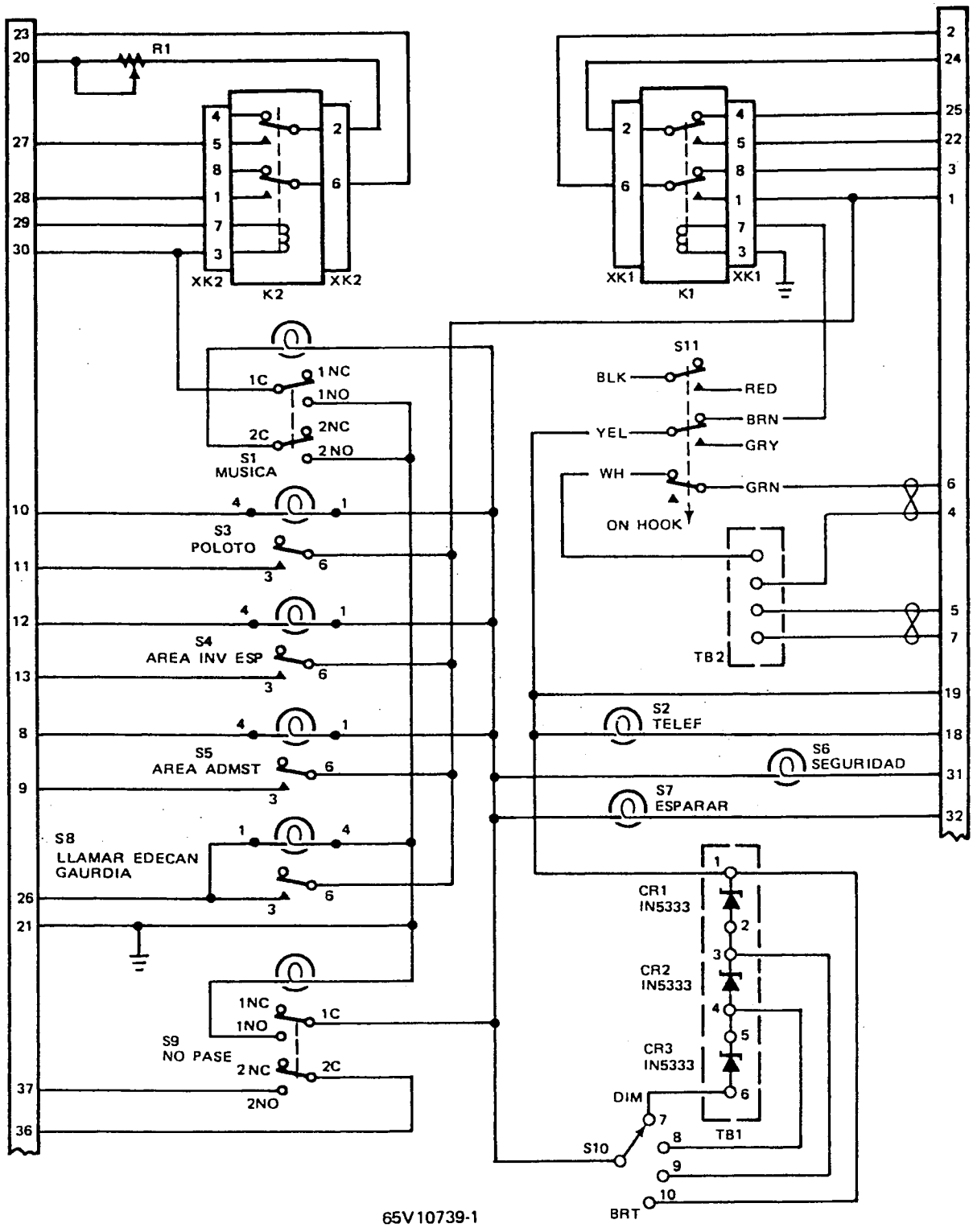
(a) Apply 28 volts dc to pin 10 with return at pin 18. Observe DS1, PHONE CALL, on.

(b) Remove 28 volts from pins 10 and 18.

(c) Apply 28 volts dc to pin 19 with return at pin 21.

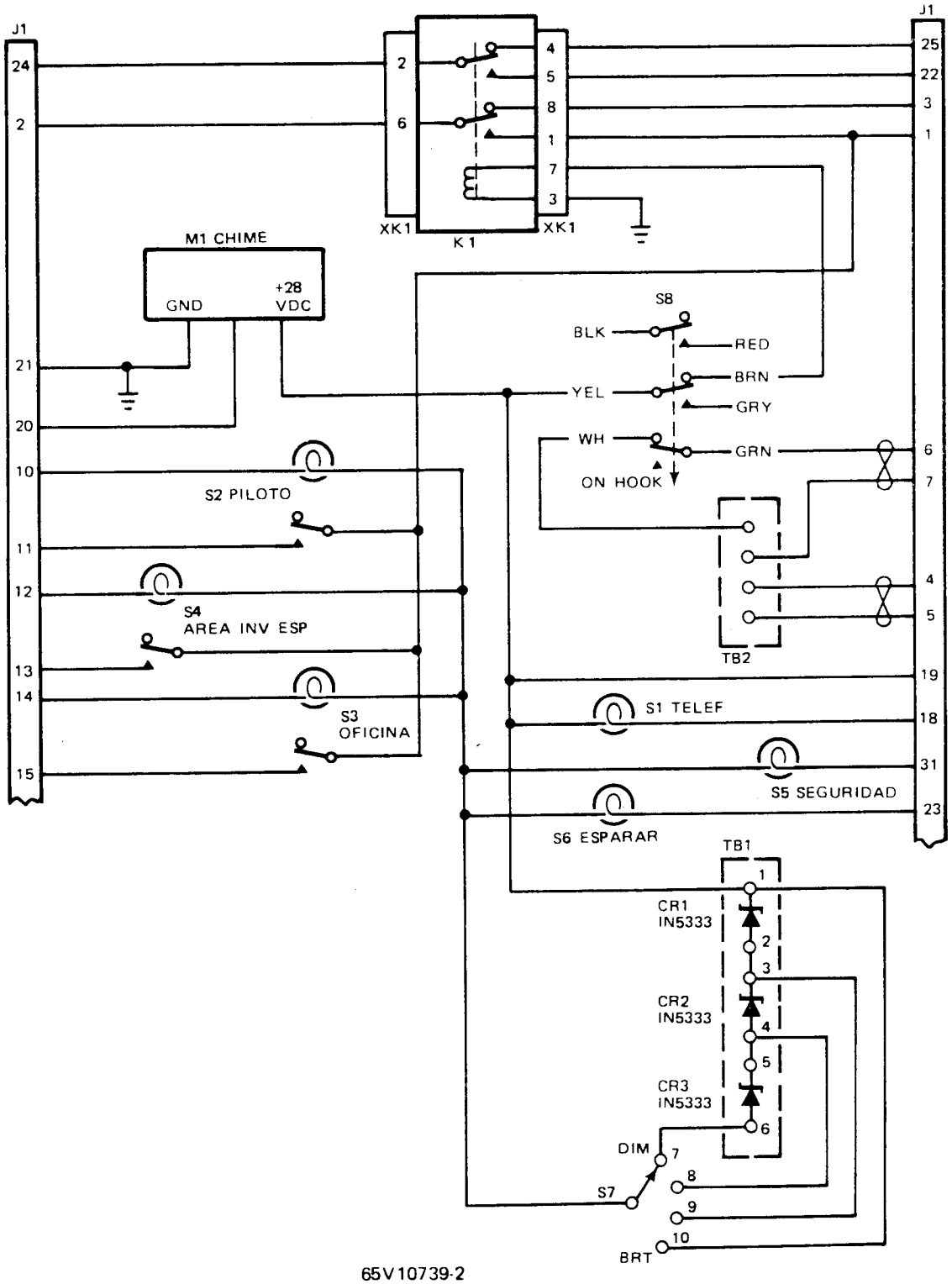
(d) Apply 28 volts dc to pin 20. The chime will produce alternating high and low tones.

(e) Remove 28 volts from pin 20. Chime will stop.



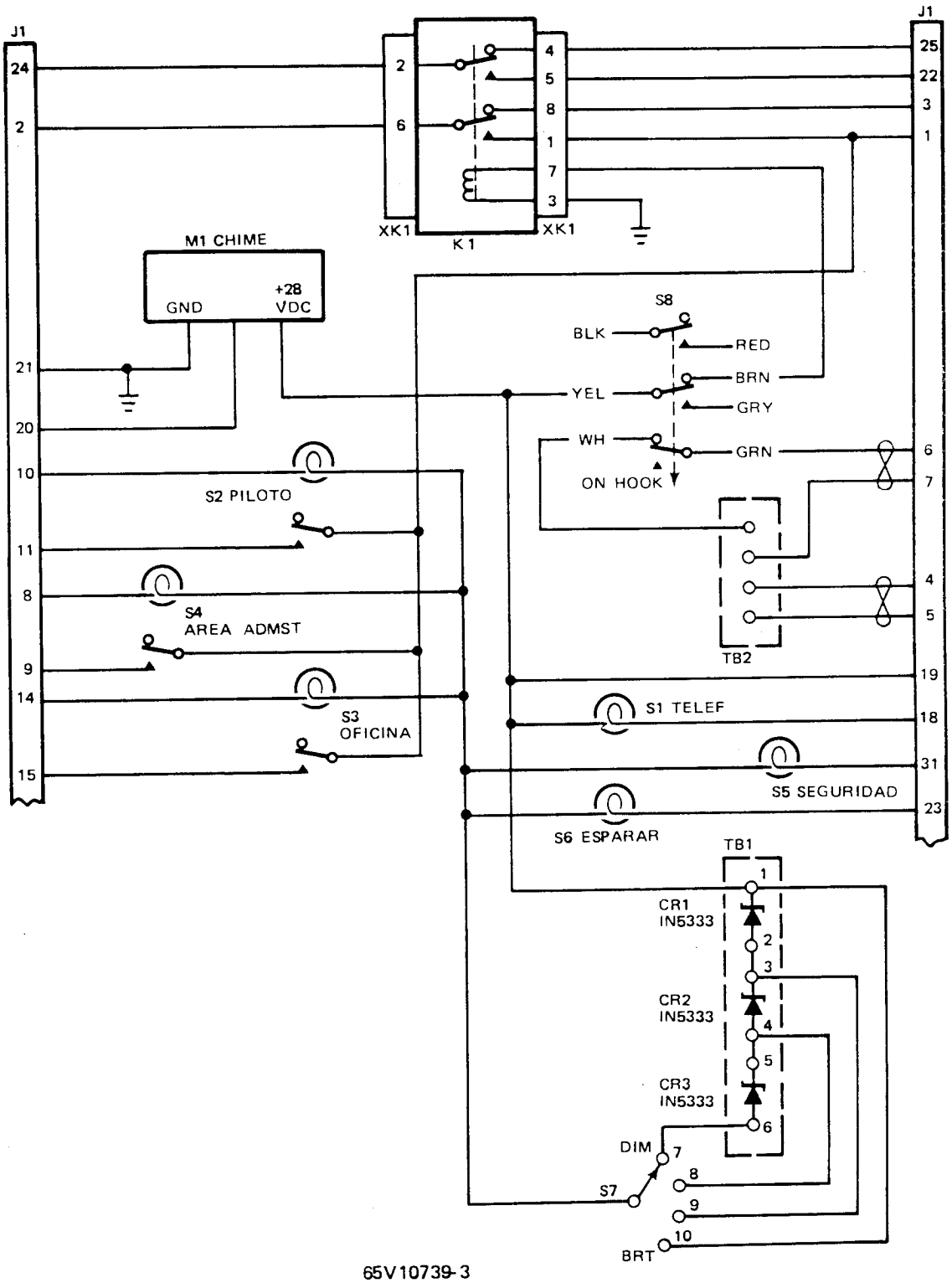
65V10739-1

Telephone Assembly
Schematic Diagram
Figure 708



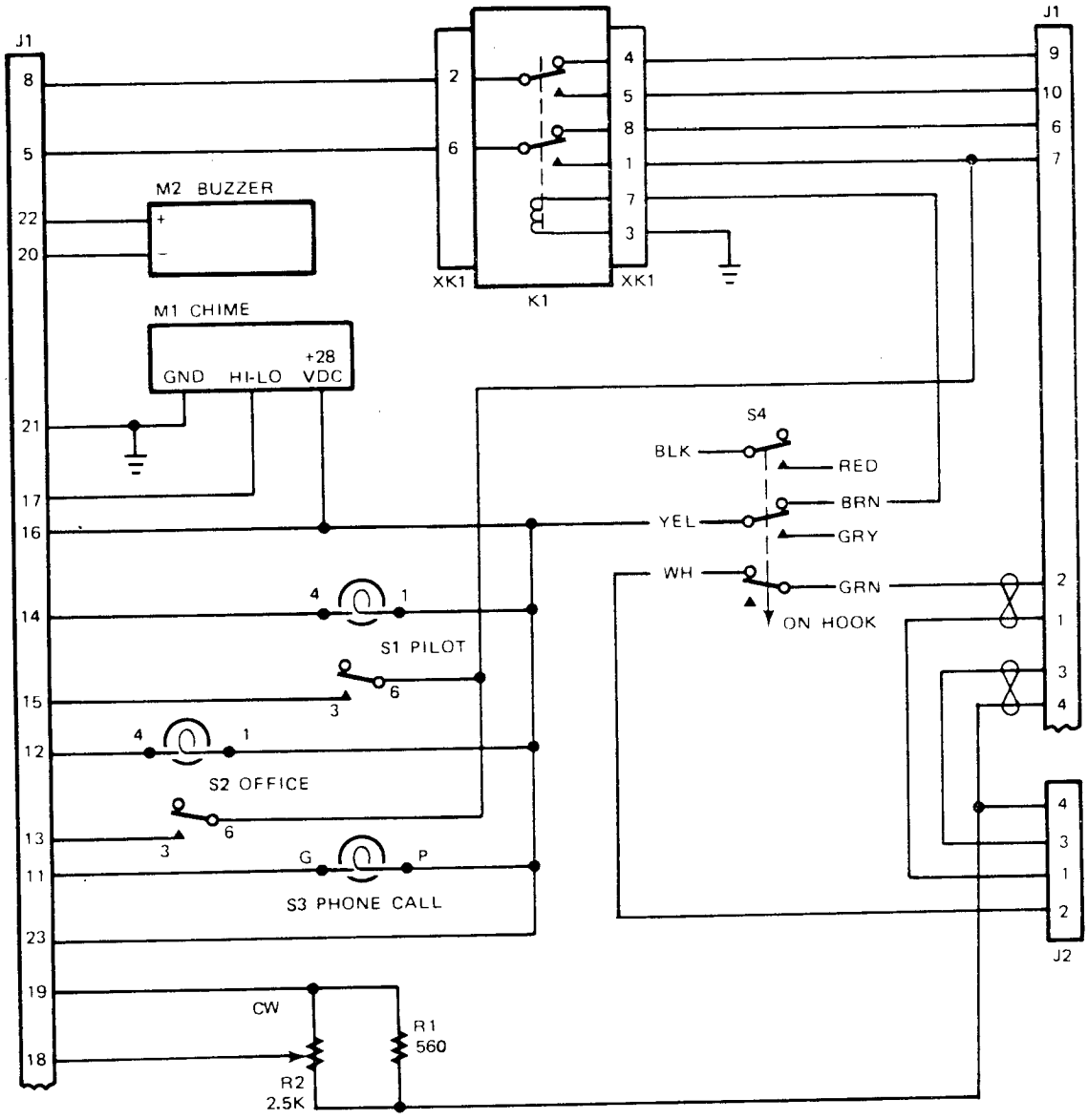
65V10739-2

Telephone Assembly
Schematic Diagram
Figure 709



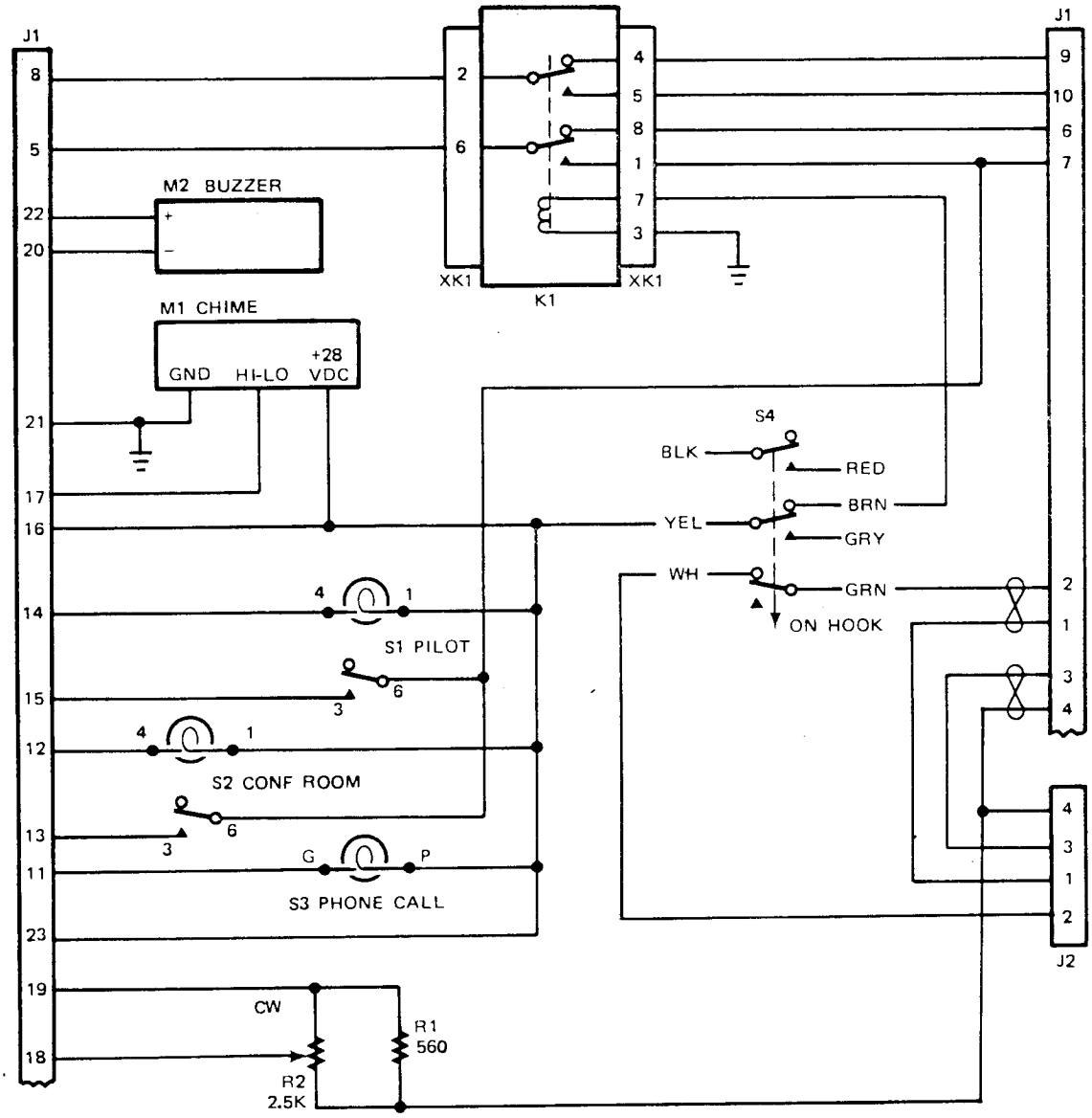
65V10739-3

Telephone Assembly
Schematic Diagram
Figure 710



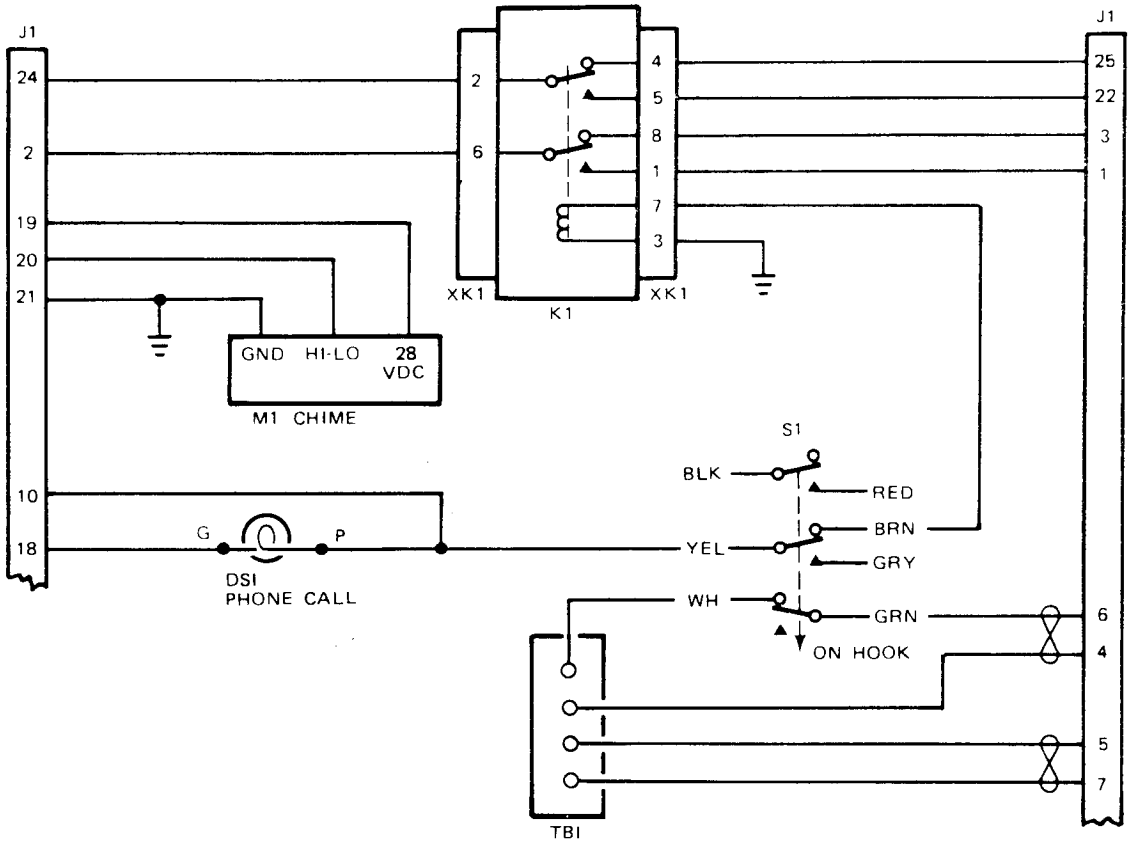
65V10739-4

Telephone Assembly
Schematic Diagram
Figure 711



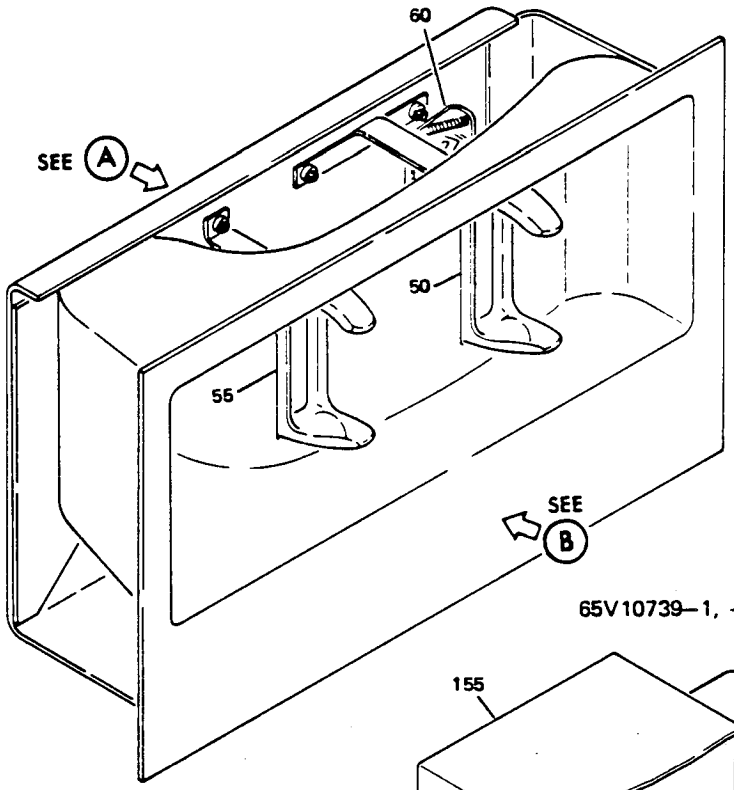
65V10739-5

Telephone Assembly
Schematic Diagram
Figure 712

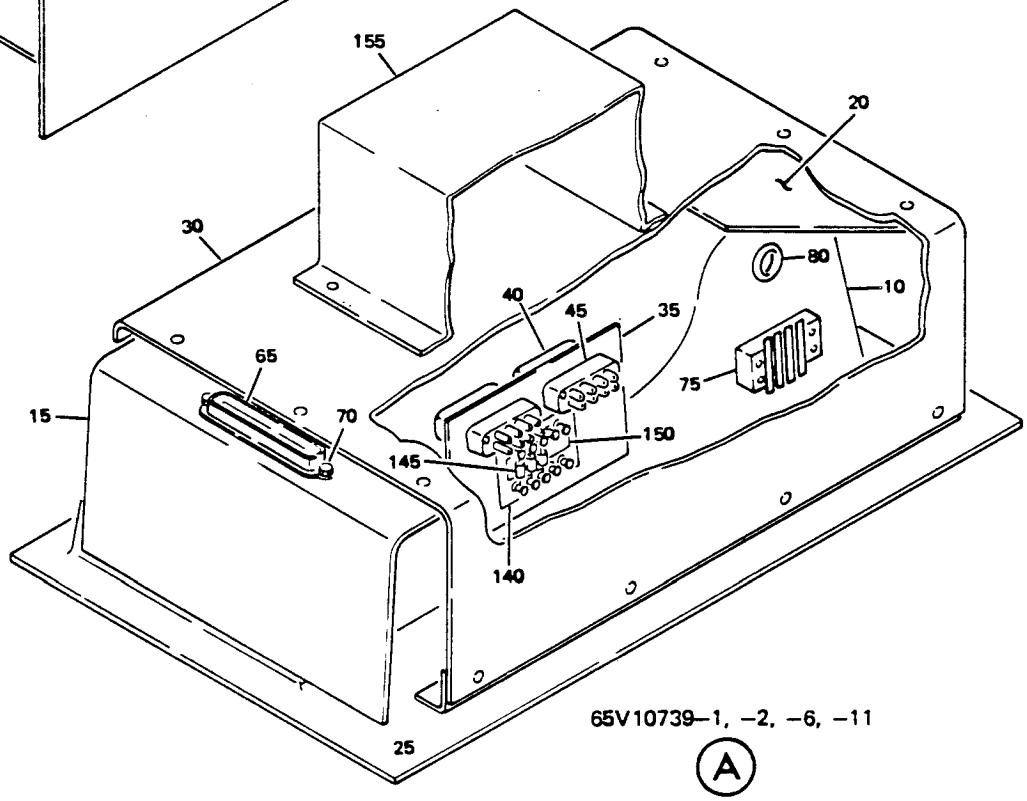


65V10739-6, -11

Telephone Assembly
Schematic Diagram
Figure 713



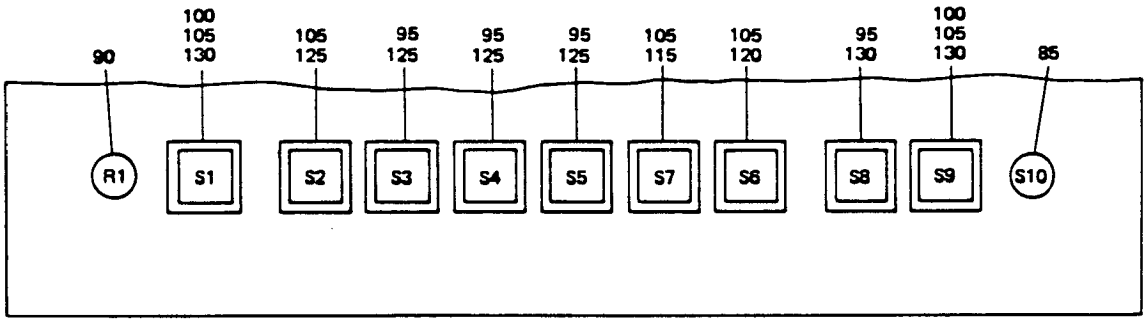
65V10739-1, -2, -6, -11



65V10739-1, -2, -6, -11

A

Telephone Assembly
Figure 1101 (Sheet 1)



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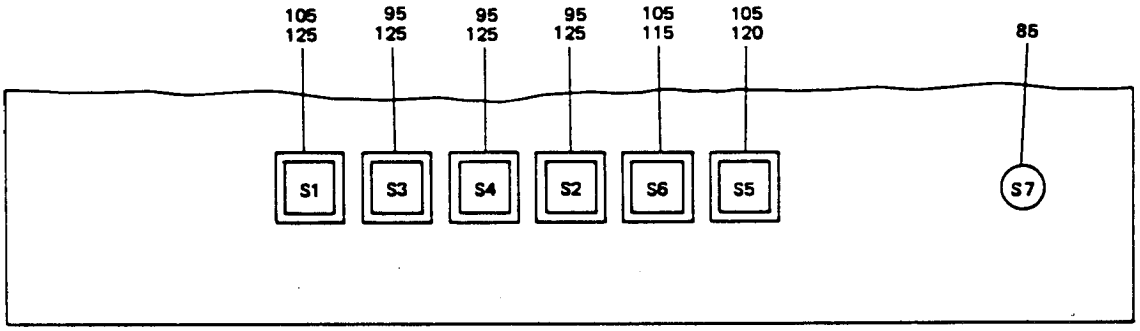

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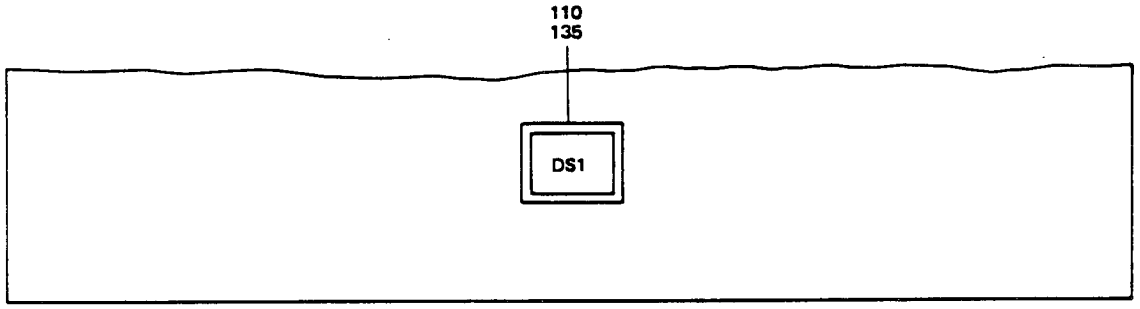
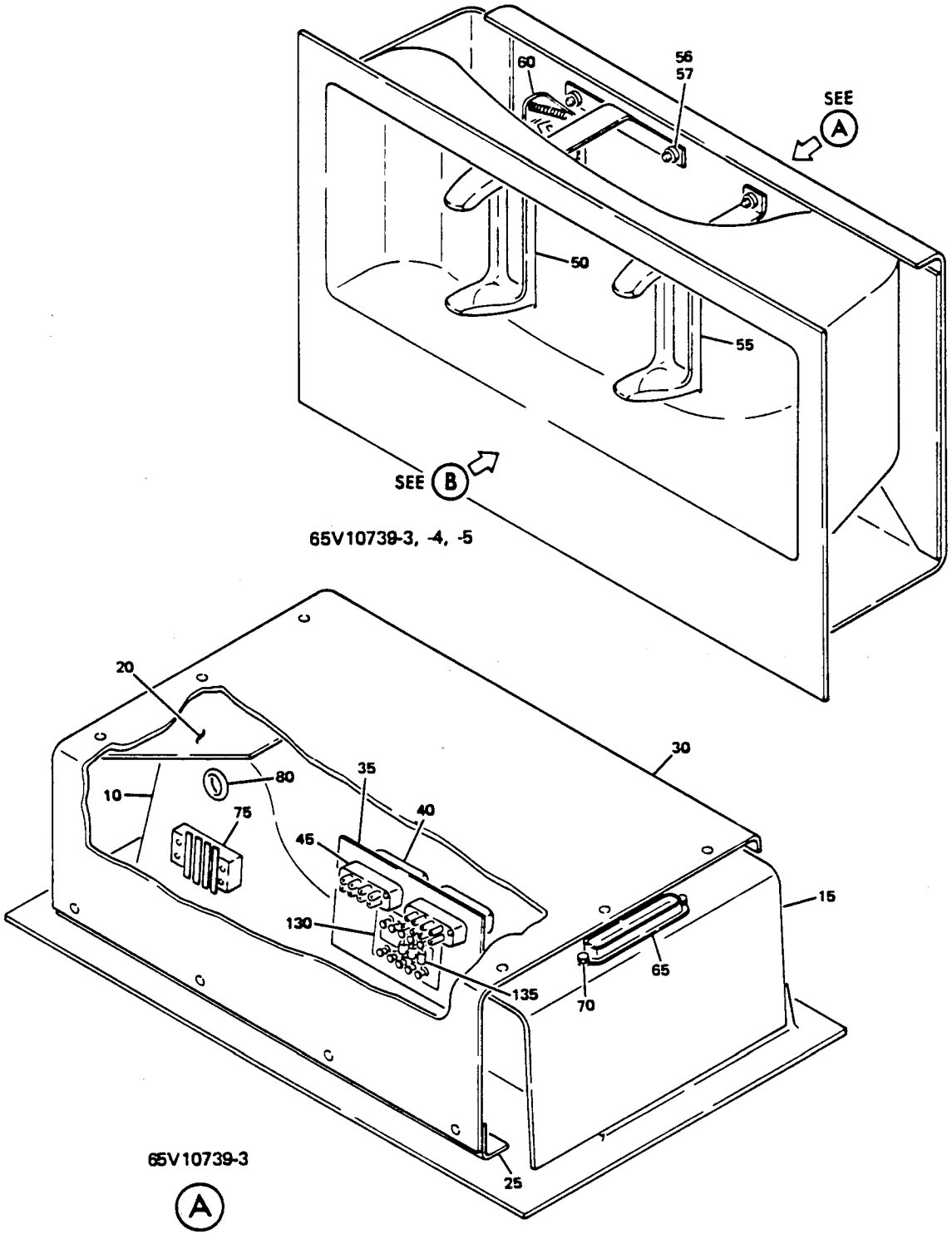


65V10739–6, –11

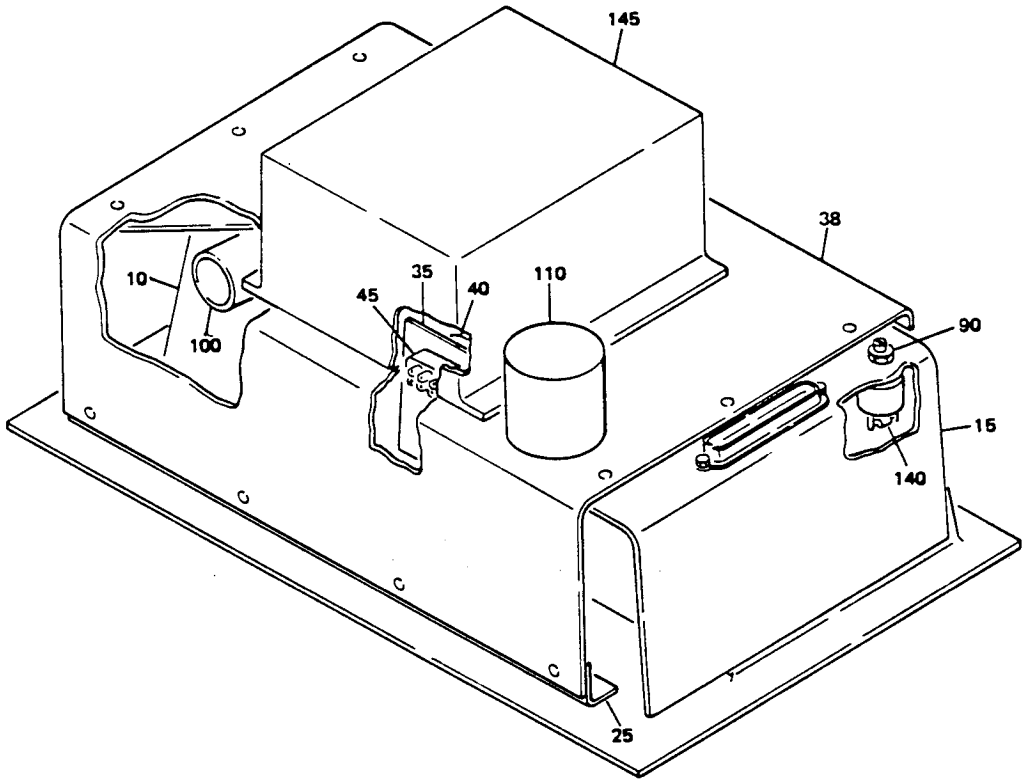
(B)

Telephone Assembly
Figure 1101 (Sheet 2)

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
1101-					
	65V10739-1		TELEPHONE ASSY	A	
	65V10739-2		TELEPHONE ASSY	B	
	65V10739-6		TELEPHONE ASSY	C	
	65V10739-11		TELEPHONE ASSY	D	
5	65V10843-1		. TELEPHONE PANEL ASSY		1
10	65V10843-3		. . PANEL		1
15	65V10843-5		. . BRACKET		1
20	65V10843-9		. . BRACKET		1
25	65V10843-13		. . STIFFENER		1
30	65V10843-15		. . BASEPLATE		1
35	65V10843-11		. PLATE, RELAY MOUNT		
40	BACR13CD2		. RELAY		2
45	HRTS17KM		. SOCKET, RELAY		2
50	CE1100-52		. CRADLE, FIXED, V10875	ABC	1
50	65V10739-9		. HANGER	D	1
55	CE1100-53		. CRADLE, SPRING, V10875	ABC	1
55	65V10739-10		. HANGER	D	1
			ATTACHING PARTS		
56	BACS12CB04-5		. SCREW		8
57	MS35338-40		. WASHER, SPRING		8
			---------*---------		
60	CE1100-54		. HOOK SWITCH, V10875		1
65	DC37P		. RECEPTACLE, V71468		1
70	D53018		. LATCH STUD, V71468		2
75	410JJST04		. TERMINAL BOARD, V75382		1
80	BACG20C10A		. GROMMET		1
85	CE1100-46		. SWITCH, V10875	AB	1
90	CE1100-47		. POTENTIOMETER, V10875	A	1
95	513-1506-001		. SWITCH, MOM, V72619	AB	4
100	513-2301-604		. SWITCH, SPOT, V72619	A	2
105	533-0601		. INDICATOR, V72619	A	5
105	533-0601		. INDICATOR, V72619	B	3
110	533-0901		. INDICATOR, V72619	CD	1
115	300-1861		. CAP, INDICATOR, V72619	AB	1
120	300-1862		. CAP, INDICATOR, V72619	AB	1
125	300-1863		. CAP, INDICATOR, V72619	AB	4
130	300-1864		. CAP, INDICATOR, V72619	A	3
135	534-0704-337		. CAP, INDICATOR, V72619	CD	1
140	MOD15511SP1		. TERMINAL BOARD, V91833	AB	1
145	IN5333		. DIODE, ZENER, 5V	AB	3
150	BAC27DEX1167		. DECAL	AB	1
155	75101-5		. CHIME, V16340	BCD	1



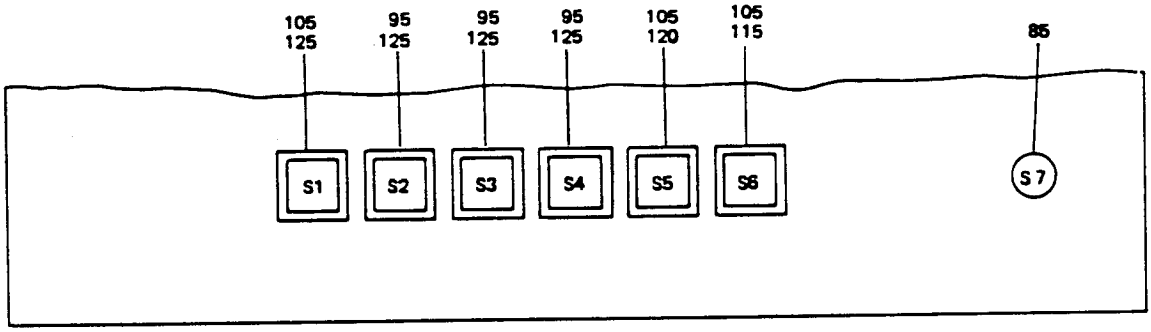
Telephone Assembly
Figure 1102 (Sheet 1)



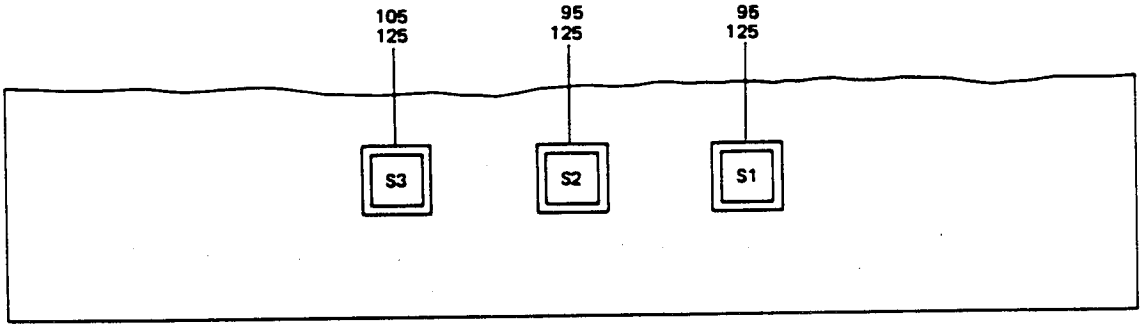
65V10739-4, -5

(A)

Telephone Assembly
Figure 1102 (Sheet 2)



65B10739-3



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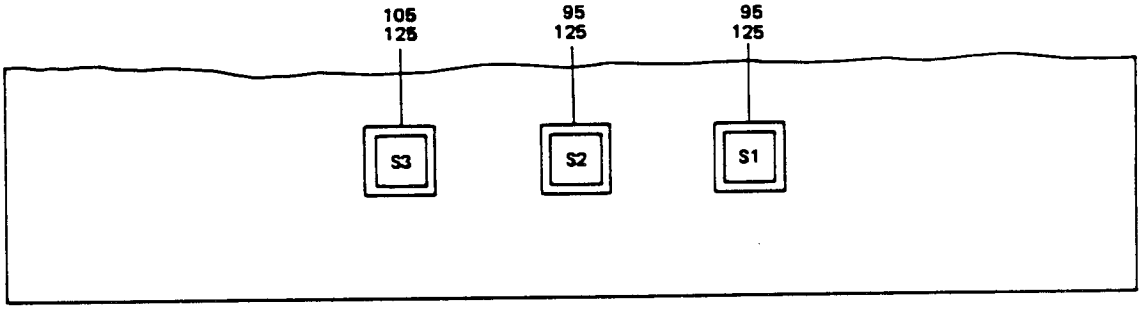

65V10739-5

(B)

Telephone Assembly
Figure 1102 (Sheet 3)

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
1102-					
	65V10739-3		TELEPHONE ASSY	A	
	65V10739-4		TELEPHONE ASSY	B	
	65V10739-5		TELEPHONE ASSY	C	
5	65V10843-2		. TELEPHONE PANEL ASSY		1
10	65V10843-4		. . PANEL		1
15	65V10843-5		. . BRACKET		1
20	65V10843-10		. . BRACKET		1
25	65V10843-13		. . STIFFENER		1
30	65V10843-14		. . BASEPLATE		1
35	65V10843-11		. PLATE, RELAY MOUNT		1
40	BACR13CD2		. RELAY		2
45	HRTS17KM		. SOCKET, RELAY		2
50	CE1100-52		. CRADLE, FIXED, V10875		1
55	CE1100-53		. CRADLE, SPRING, V10875		1
			ATTACHING PARTS		
56	BACS12CB04-5		. SCREW		8
57	MS35338-40		. WASHER, SPRING		8
			---------*---------		
60	CE1100-54		. HOOK, SWITCH, V10875		1
65	DC37P		. RECEPTACLE, V71468		1
70	D53018		. LATCH STUD, V71468		2
75	410JJST04		. TERMINAL BOARD, V75382	A	1
80	BACG20C10A		. GROMMET	A	1
85	CE1100-46		. SWITCH, V10875	A	1
90	RY6LAYSA252A		. POTENTIOMETER	BC	1
95	513-1506-001		. SWITCH, MOM	A	3
95	513-1506-001		. SWITCH, MOM	BC	2
100	XIR4-31		. RECEPTACLE, V71468	BC	1
			ATTACHING PARTS		
101	NAS514P440S		. SCREW	BC	2
102	AN960CAL		. WASHER	BC	2
103	BACN10JC04		. NUT	BC	2
			---------*---------		
105	533-0601		. INDICATOR, V72619	A	3
105	533-0601		. INDICATOR, V72619	BC	1
110	A1-330P11664		. BUZZER	BC	1
115	300-1861		. CAP, INDICATOR, V72619	A	1
120	300-1862		. CAP, INDICATOR, V72619	A	1
125	300-1863		. CAP, INDICATOR, V72619	A	4
125	300-1863		. CAP, INDICATOR, V72619	BC	3
130	MOD15511SP1		. TERMINAL BOARD, V91833		1
135	IN5333		. DIODE, ZENER	A	3
140	RCR076561JR		. RESISTOR	BC	1
145	75101-5		. CHIME, V16340	BC	1

VENDORS

V10875 CARTER ENGINEERING CO. INC., 232 S. GLASGOW AVE., INGLEWOOD, CALIFORNIA 90301

V16340 PACIFIC ELECTRO DYNAMICS, 14220 SUNSET HIGHWAY, BELLEVUE, WASHINGTON 98007

V71468 ITT CANNON ELECTRIC, 666 E. DYER RD., SANTA ANA, CALIFORNIA 92702

V72619 DIALIGHT DIV., AMPEREX ELECTRONIC CORP., 60 STEWART AVE., BROOKLYN, NEW YORK 11237

V75382 KULKA ELECTRIC CORP., 633-643 S. FULTON AVE., MT. VERNON, NEW YORK 10550

V91663 ARMEL ELECTRONICS INC., 1601 75TH STREET, NORTH BERGEN, NEW JERSEY 07047

V91833 KEYSTONE ELECTRONICS CORP., 49 BLECKER ST., NEW YORK, NEW YORK 10012