

## MODEL 187995 HOLD CIRCUIT PCB

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### 1. INTRODUCTION

**1.01** This section covers the Model 187995 hold circuit PCB (Printed Circuit Board). (See Figure 1.) A general description as well as information on removal, disassembly, replacement parts, and installation is included.

**1.02** Whenever this section is reissued, reason for reissue will be listed in this paragraph.

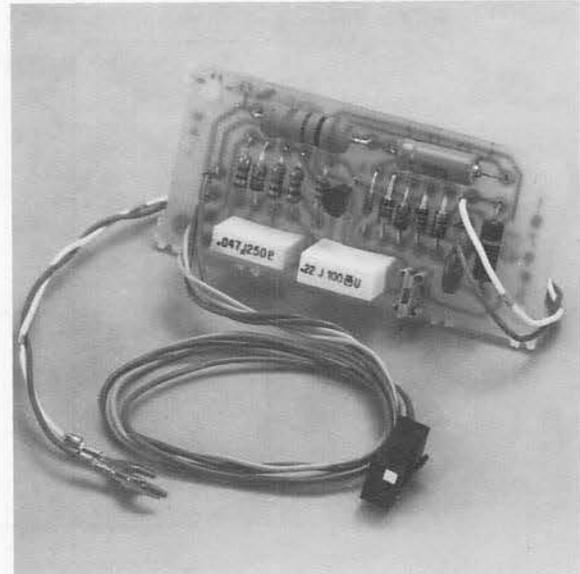
**1.03** For information concerning telephones that the hold circuit PCB is used in, refer to the appropriate section in Volume 1 of the ITT Telephone Apparatus Practices Manual.

### 2. GENERAL DESCRIPTION

**2.01** The Model 187995 PCB is a hold circuit designed for use in ITT single-line telephones. The circuit allows the station user to place a CO/PBX (Central Office/Private Branch Exchange) line on hold. (See Figure 2.)

**2.02** The circuit provides all the components necessary to maintain the CO/PBX line connection when the station user goes on-hook. The circuit also provides a clock pulse output to the hold indicator. The call remains on hold until the station user goes off-hook at the held station or any connected extension.

**2.03** The hold circuit is a printed circuit assembly. (See Figure 3.) It is designed for field replacement; it is mounted to the telephone base inside the



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Figure 1: Model 187995 Hold Circuit PCB

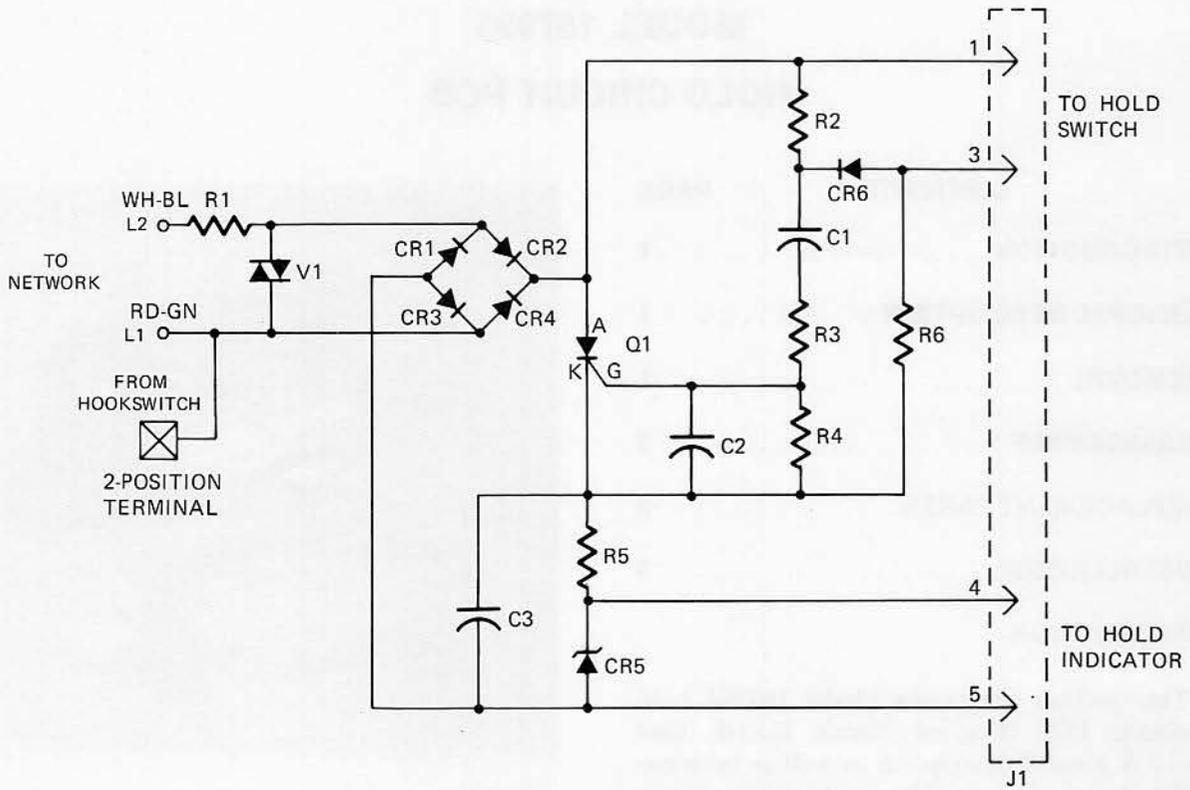
telephone. The PCB is connected to the telephone components with spade-tip leads and a double-row slip-on connector block.

**2.04** The hold circuit PCB is identified by a code number etched on the PCB. Refer to ordering information in Table A for an explanation of the code number.

### 3. REMOVAL

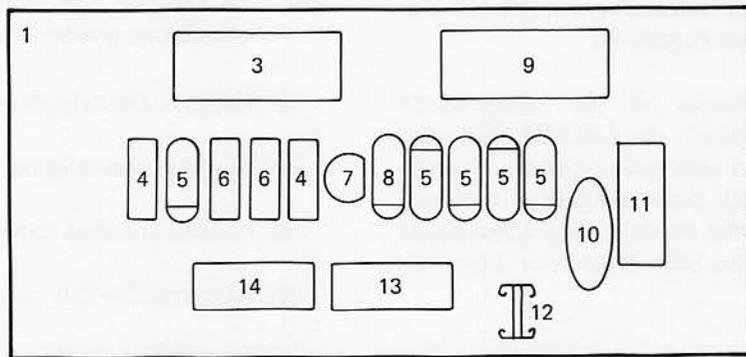
**3.01** To remove the hold circuit PCB from the telephone, proceed as follows:

- (a) Remove the telephone faceplate.
- (b) Remove the telephone housing.
- (c) Loosen the dial mounting screws.
- (d) Remove the dial and move it to one side.
- (e) Locate the double-row connector behind the HOLD button on the pushbutton dial. Remove the connector from the mating pins.



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Figure 2: Model 187995 Hold Circuit PCB, Schematic



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Figure 3: Model 187995 Hold Circuit PCB, Component Locations

TABLE A  
ORDERING INFORMATION

CODE NUMBERS			
PCB CODE NUMBERS ARE FORMED IN TWO STEPS AS FOLLOWS:			
(1) PCB Model Number (See Part 1)			187995
(2) PCB Style (See Part 2)			101
PART 1 PCB MODEL NUMBER		PART 2 PCB STYLE	
CODE	DESCRIPTION	CODE	DESCRIPTION
187995	Model 187995 Hold Circuit PCB	101	Standard

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(f) Disconnect the PCB spade-tip leads from the network, and disconnect the hookswitch lead from the two-position terminal on the PCB.

(g) Lift the PCB from the foam tape on the base assembly of the telephone.

#### 4. DISASSEMBLY

4.01 Disassembly of the hold circuit PCB is not recommended since it would require removal of components and terminals. For maintenance purposes, it is suggested that a questionable unit be substituted with a known good unit.

#### 5. REPLACEMENT PARTS

5.01 Replacement parts for the hold circuit PCB are listed in Table B.

#### 6. INSTALLATION

6.01 To install the hold circuit PCB inside the telephone, proceed as follows:

(a) Remove the telephone faceplate.

(b) Remove the telephone housing.

(c) Remove the dial and move it to one side.

(d) Connect the PCB spade-tip leads to the network, and connect the hookswitch lead to the two-position terminal on the PCB. Refer to the circuit label of the telephone.

(e) Place the PCB on the foam tape on the base assembly, and press down to secure it in place.

(f) Attach the PCB double-row connector to the mating pins located behind the HOLD button on the rear of the dial.

(g) Place the dial in the mounting brackets and secure it with the dial mounting screws.

(h) Replace the telephone housing.

(j) Replace the telephone faceplate.

TABLE B  
REPLACEMENT PARTS LIST

INDEX NO	PART NUMBER	DESCRIPTION	QUANTITY USED
		<b>Model 187995 Hold Circuit PCB</b>	<b>101</b>
1	187994-101	PC Board, Drilled	1
2	188417-101	Connector, Double-Row, J1	1
3	186280-301	Resistor, 300 Ohm, 2 W, $\pm 5\%$ , R5	1
4	181789-169	Resistor, 1 M, 1/4 W, $\pm 5\%$ , R2, R6	2
5	180658-101	Diode, 1N4004, CR1-4, CR6	5
6	181789-134	Resistor, 1 K, 1/4 W, $\pm 5\%$ , R3, R4	2
7	186256-101	SCR, Q1	1
8	182311-101	Diode, Zener, 1N5231B, 5.1 V, CR5	1
9	181819-163	Capacitor, 10 MFD, 25 V, C3	1
10	184672-104	Varistor, MOV, V1	1
11	062948-756	Resistor, 100 Ohm, 1/2 W, $\pm 5\%$ , R1	1
12	181666-102	Terminal, Two-Position	1
13	182075-110	Capacitor, 0.22 MFD, 100 V, $\pm 20\%$ , C2	1
14	182075-107	Capacitor, 0.047 MFD, 100 V, $\pm 10\%$ , C1	1
	190106-341	Wire Assembly, WH-BL (Not Shown)	1
	190106-109	Wire Assembly, RD-GN (Not Shown)	1

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