

**DATATAPE<sup>®</sup>**

***13-587***

***REMOTE CONTROL  
ASSEMBLY***

**OPERATION AND MAINTENANCE MANUAL**

**INSTRUMENTS DIVISION**

360 Sierra Madre Villa, Pasadena, California 91109



**BELL & HOWELL**

This manual describes the operation and maintenance procedures for the Type 13-587 Remote Control Assembly with serial numbers 1001 through 1999, and the Type 13-587-1 Remote Control Assembly with serial numbers 2001 through 2999.

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## SECTION I

## GENERAL DESCRIPTION

## 1-1. FUNCTION AND USE.

1-2. The Bell & Howell Type 13-587 Remote Control Assembly operates in conjunction with the Type 13-501 Tape Transport as part of the VR-3700B Magnetic Tape System. The unit provides for remote operation of the system by duplicating the mode and speed selecting functions of the tape transport. The basic model, the 13-587, also includes a tape footage counter. If no footage counter is desired, the 13-587-1 may be ordered.

1-3. The remote control is operational when the speed selector on the tape transport is switched to REMOTE. In this condition, local control of speed and mode selection is disabled.

## 1-4. EQUIPMENT DESCRIPTION.

1-5. The remote control has six backlighted, pushbutton, mode control switches; a rotary speed selector switch; POWER and READY indicator lights; and the footage indicator, all mounted on a standard 5 1/4 inch by 19 inch RETMA panel. The controls and indicators are identical with their counterparts on the tape transport. The panel is attached to a metal chassis which encloses the components. All components not mounted directly on the control panel are contained on two component boards. One board contains the relay, diodes, and resistors that make up the remote control switching circuits; this board is mounted inside the chassis. The other board is the footage counter driver, which is mounted on the back of the control panel directly beneath the footage counter.

1-6. A control cable up to 50 feet long is supplied with the unit. Other lengths up to 100 feet maximum are available on special order. It is also possible to order only the connecting hardware which will permit the user to fabricate his own cable.

1-7. Figure 1-1 shows the 13-587 Remote Control Assembly with the footage counter.

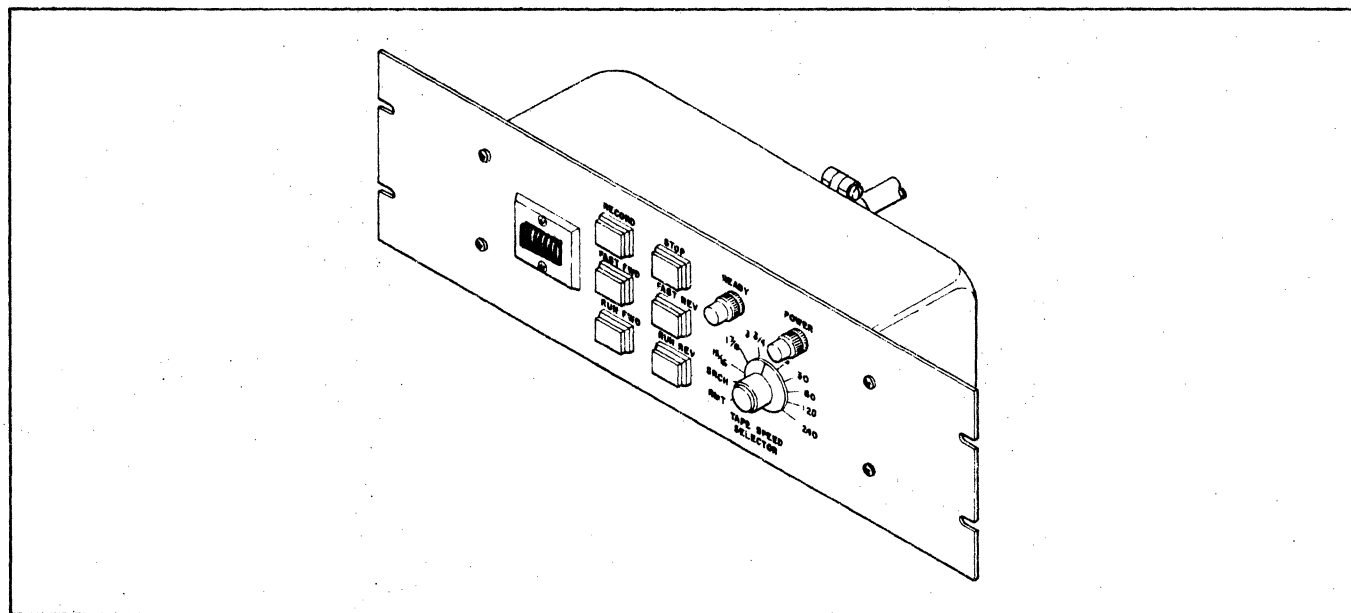


Figure 1-1. 13-587 Remote Control Assembly



## SECTION II INSTALLATION

### 2-1. GENERAL.

2-2. The 13-587 Remote Control Assembly has been thoroughly inspected and tested at the factory and should arrive in operational condition. However, the unit should be checked upon arrival to ensure that no damage occurred during shipment.

### 2-3. MECHANICAL INSTALLATION.

2-4. The remote control assembly is designed for installation in a standard 19-inch RETMA cabinet or console. Mounting dimensions are shown in figure 2-1.

### 2-5. ELECTRICAL CONNECTION.

2-6. All connections between the remote control and the tape transport are made via cable number 472175. This cable is usually supplied with the equipment and is made to a length specified by the user. If the user desires to fabricate his own cable, the cable diagram is included in figure 7-3.

2-7. One end of the cable is connected to the remote control, the other to J402 at the back of the tape transport.

### NOTE

When the remote control assembly is disconnected from the transport, shorting plug number 472164 must be installed in its place to complete the remote control interlocks. The plug is usually supplied with the transport. It is illustrated in figure 7-4.

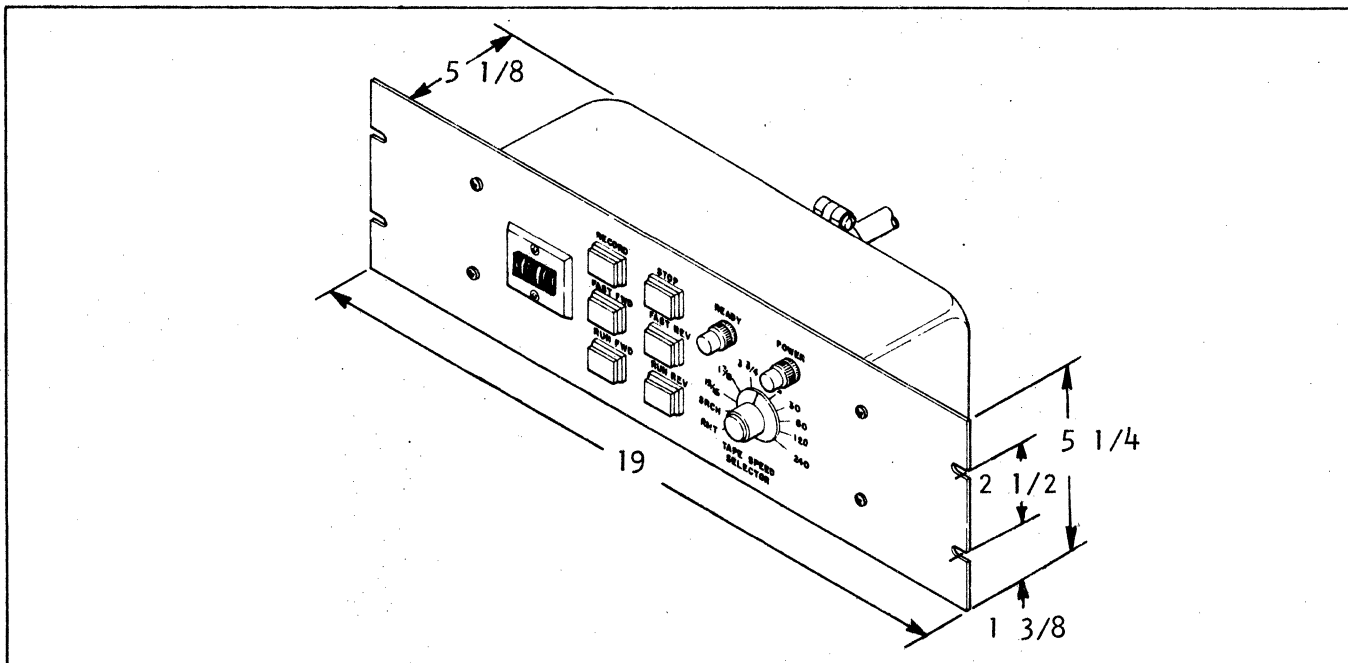


Figure 2-1. Mounting Dimensions, 13-587 Remote Control Assembly 2-1/2-2





SECTION III  
OPERATION

3-1. GENERAL.

3-2. In general, operation of the VR-3700B system by remote control duplicates local operation of the system. All mode control switches and the speed selector switch are included with the remote control assembly. The exceptions are: turning on main system power and energizing the tape footage counter electronics, if the counter is included in the system. Both of these functions must be carried out at the transport.

3-3. Control of the system is passed to the remote control when the speed selector on the transport is switched to remote (RMT). In this condition the mode control switches on the transport are disabled. It is possible to maintain both local and remote control of the mode functions by installing a diode across the transport speed selector switch. If this condition is desired, refer to the control panel schematic in the transport manual.

3-4. REMOTE TRANSPORT OPERATION.

3-5. The controls and indicators for the remote control assembly are described in table 3-1 and shown in figure 3-1. Note that the POWER indicator shows only that main system power is on. The READY indicator denotes that control has been passed to the remote control, that tape is properly threaded on the transport, and that the RECORD-TEST SELECTOR on the transport is set to NORM.

3-6. Once the READY indicator is on, remote operation of the system is identical with local: tape speed is selected by rotating the remote tape speed selector to the desired speed; modes are selected by pressing the appropriate mode switch. (To select the record mode, press the RECORD switch simultaneously with either the RUN FWD or RUN REV switch.)

NOTE

If the speed selector switch on the remote control assembly is set to remote (RMT), control of the mode and speed select functions would be transferred to a second remote control if such were connected into the system.

3-7. REMOTE FOOTAGE COUNTER OPERATION.

3-8. Remote operation of the tape footage counter is identical with that of the counter on the transport. The counter electronics must be turned on at the counter circuit board in the transport. The counter can then be reset to zero by pressing the reset button at the counter. The counter will count up or down, depending on the direction of tape movement.

NOTE

Both the local and remote counters will count simultaneously; however, they must be reset individually. For both counters to register the same footage reading, they both must be reset at the same time.

CONTROL/INDICATOR	FUNCTION
RECORD	Momentary-action, pushbutton, backlighted switch; must be pressed simultaneously with RUN FWD or RUN REV to select run mode. Indicator lights when mode is established.
STOP	Momentary-action, pushbutton, backlighted switch; when pressed, tape motion in any mode stops and indicator lights. Indicator lights any time transport power is on and tape is not moving.
FAST FWD	Momentary-action, pushbutton, backlighted switch; press to wind tape at high speed from upper reel to lower reel. Indicator lights when mode is established.
FAST REV	Momentary-action, pushbutton, backlighted switch; press to wind tape at high speed from lower reel to upper reel. Indicator lights when mode is established.
RUN FWD	Momentary-action, pushbutton, backlighted switch; when pressed, tape is moved at selected speed from upper reel to lower reel. Indicator lights when mode is established.
RUN REV	Momentary-action, pushbutton, backlighted switch; when pressed, tape is moved at selected speed from lower reel to upper reel. Indicator lights when mode is established.
POWER	Indicator lights when main system power is on.
READY	Indicator lights when control of mode and speed selection rests with remote control assembly and that system can be put into operation.
TAPE SPEED SELECTOR	11-position, rotary switch; selects 240 to 15/16 ips tape speed; search, or remote mode of operation of system. In remote (RMT) position, control of system is transferred to another remote control.
Footage Counter	Indicates tape footage passing capstan, forward or backward, from any arbitrarily set starting point.

Table 3-1. Controls and Indicators

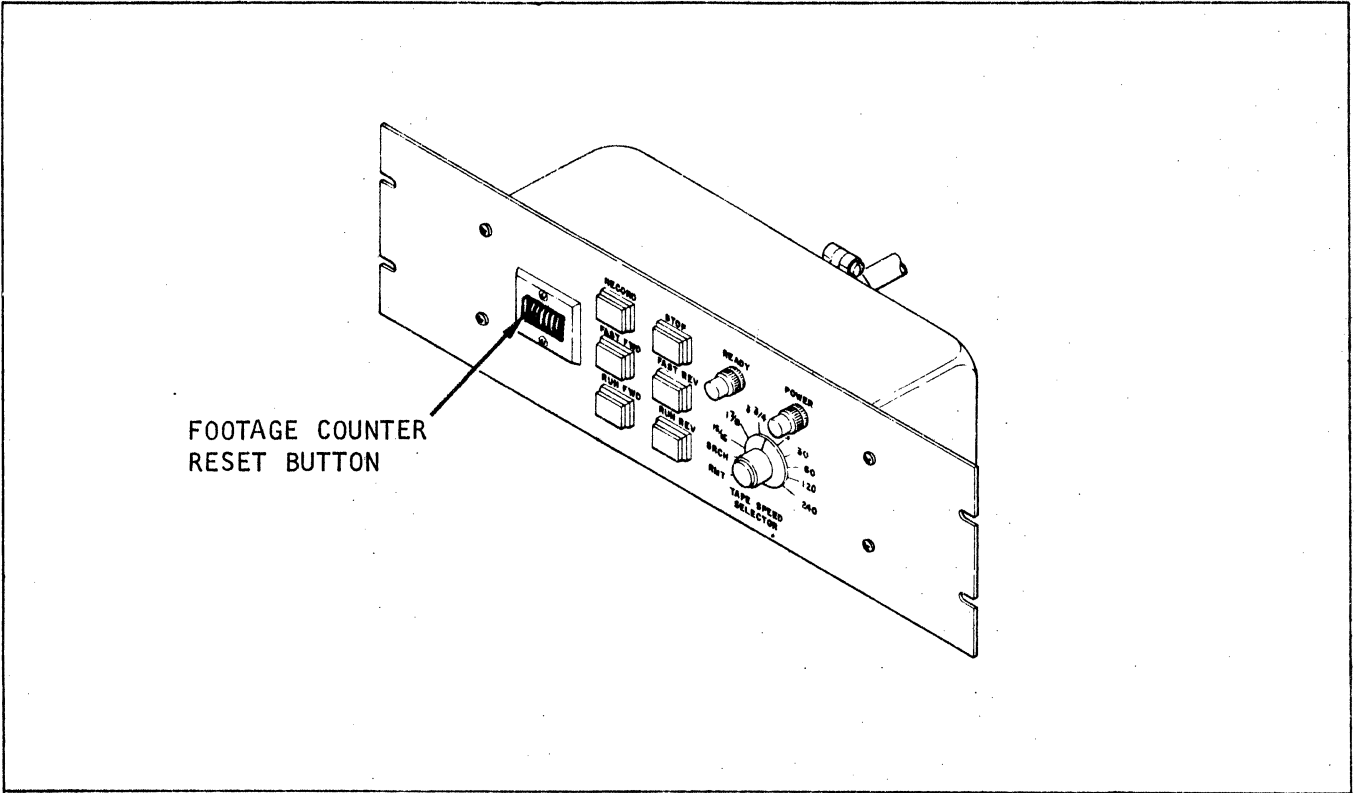


Figure 3-1. Controls and Indicators for 13-587 Remote Control Assembly



## SECTION IV

### THEORY OF OPERATION

#### 4-1. GENERAL.

4-2. The mode and speed selection controls on the 13-587 and 13-587-1 Remote Control Assemblies duplicate their counterparts on the 13-501 Tape Transport. The tape footage counter on the 13-587 unit parallels the counter on the transport. To aid in understanding the function of the remote control, refer to the remote control schematic, figure 7-2, and the schematic for the footage counter driver, figure 7-1.

#### 4-3. MODE AND SPEED SELECTION CONTROLS.

4-4. The speed and mode control switches in the remote control assembly are operational when -28 vdc (remote power) is present at terminal J1-d. This condition exists when tape is correctly threaded in the transport, the RECORD-TEST SELECTOR switch on the transport is set to NORM, and the transport TAPE SPEED SELECTOR is set to RMT. When the remote power is present, the READY indicator lights and relay K1A is energized. Power is also fed through both sections of the remote TAPE SPEED SELECTOR, switch S1.

4-5. When switch S1 is in any position except RMT, -28 vdc is fed via section S1A to energize relay K1A. (In the remote position, S1A feeds -28 vdc to terminal J1-h which could be connected to a second remote control assembly.) Section S1B of the speed selector switch routes power back to the transport via a line determined by the switch setting to activate the appropriate speed switching circuitry. (Note that in the remote position, S1B feeds -28 vdc to terminal J1-g which, like J1-h, could also be connected to a second remote control assembly.)

4-6. The normally closed contacts of K1A1 and K1A2 complete the record interlock and stop bus lines for local control of the transport. (These lines are also completed if shorting plug number 472164 is inserted in J402 on the transport when the remote control is disconnected.) When the relay is energized, the remote mode control switches are activated. Their functions are described in table 4-1.

#### 4-7. FOOTAGE COUNTER OPERATION.

4-8. The tape footage counters on the transport and the remote control are identical bidirectional electromechanical units which are actuated by the output from the transport tachometer. The tachometer output is a pulse train of 10,000 pulses per foot of tape which is put through a divider network to reduce it to one pulse per foot. This reduced pulse train is then fed to identical driver circuits in the transport and the remote control which pulses the counters. For a more detailed description of the divider circuit, refer to the manual for the tape transport.

4-9. When main system power is turned on, +28 vdc is present at terminal J1-f of the remote control. This voltage energizes the footage counter driver. Note that the remote footage counter is independent of the remote power used to activate the mode and speed selection controls and thus will operate whenever the transport footage counter circuit is turned on, even when the transport is under local control.

SWITCH	FUNCTION
STOP SWITCH, S2	<p>N. C.: Carries -28 vdc remote power from terminal J1-d through speed select switch, S1, to stop bus, J1-X, and all other mode switches except record, S3.</p> <p>N. O.: Not used.</p>
STOP LAMP, DS3	<p>Energized by -28 vdc from transport via terminal J1-V whenever power is on and transport is not moving tape.</p>
RECORD SWITCH, S3	<p>N. C.: Not used.</p> <p>N. O.: Applies -28 vdc from run forward or run reverse switch to terminal J1-S to energize record relay in transport; also energizes record indicator, DS4, via R1 (lamp remains energized by -28 vdc fed back from transport via J1-S).</p>
FAST REVERSE SWITCH, S4	<p>N. C.: Not used.</p> <p>N. O.: Applies -28 vdc from stop bus to terminal J1-P to energize fast forward relay in transport; also energizes fast forward indicator, DS5, via R2 (lamp remains energized by -28 vdc fed back from transport via J1-P).</p>
RUN REVERSE SWITCH, S5	<p>N. C.: In series with S6NC; completes record interlock line via K1A1.</p> <p>N. O.: Applies -28 vdc from stop bus to J1-R to energize run reverse relay in transport; also energizes run reverse indicator, DS6, via R3 (lamp remains energized by -28 vdc fed back from transport via J1-R); puts -28 vdc on terminal 3 of record switch, S3, via CR2.</p>
RUN FORWARD SWITCH, S6	<p>N. C.: In series with S5NC; completes record interlock line via K1A1.</p> <p>N. O.: Applies -28 vdc from stop bus to J1-U to energize run forward relay in transport; also energizes run forward indicator, DS7, via R4 (lamp remains energized by -28 vdc fed back from transport via J1-U); puts -28 vdc on terminal 3 of record switch, S3, via CR3.</p>

Table 4-1. Mode Switch Functions (Sheet 1 of 2)

SWITCH	FUNCTION
FAST FORWARD SWITCH, S7	<p>N.C.: Not used.</p> <p>N.O.: Applies -28 vdc from stop bus to terminal J1-W to energize fast forward relay in transport; also energizes fast forward indicator, DS8, via R5 (lamp remains energized by -28 vdc fed back from transport via J1-W).</p>

Table 4-1. Mode Switch Functions (Sheet 2 of 2)

4-10. FOOTAGE COUNTER DRIVER CIRCUIT. The wheels of the counter are activated by two electromagnetic coils, one to add, the other to subtract. Each coil is energized by one of the two identical driver circuits on the driver circuit board. Transistor Q5 drives the add coil and transistor Q3 drives the subtract coil. The driver transistors are protected from back EMF from the counter coils by diodes CR3 and CR4 and zener diode VR1. Transistor Q4, zener diode VR2, and resistor R4 make up a regulator circuit that maintains a regulated +24 vdc. The +24 vdc is applied to both counter coils through the coil common circuit.

4-11. The counter triggering input pulse is a logical "1" +5 vdc. If this pulse is applied at E2, the counter ADD input, transistor Q5 will conduct. This will create a low impedance through Q5, and, in effect, ground the add coil causing it to energize. A similar action takes place when the +5 vdc is applied to the counter SUBTRACT input.





## SECTION V

### MAINTENANCE

#### 5-1. GENERAL.

5-2. Maintenance should be performed by qualified electronics technicians or personnel thoroughly familiar with this type of equipment. Maintenance includes both preventive maintenance, which consists of measures taken to ensure the continuous operation of the unit, and corrective maintenance which includes troubleshooting, component replacement, repair, or adjustment of components found to be faulty or inoperative during preventive maintenance checks, performance checks, or troubleshooting.

5-3. The remote control assembly was set up and carefully checked before being shipped from the factory. If there appears to be a malfunction, the setting of the operating controls and the operation of associated equipment should be checked before concluding that the remote control assembly is in need of repair.

#### 5-4. PARTS IDENTIFICATION.

5-5. The parts list contained in Section VI of this manual illustrates and describes each part used in the 13-587 Remote Control Assembly. Included are the Bell & Howell Instruments Division part number and where applicable, the schematic symbol and manufacturer's or MIL part number for each component. Schematics and cable diagrams are in Section VII.

#### 5-6. PREVENTIVE MAINTENANCE.

5-7. Preventive maintenance consists of periodic cleaning and inspecting of component parts within the unit. A period of every three months is suggested, although experience with the usage of the equipment in a particular environment may dictate another schedule.

#### 5-8. TROUBLESHOOTING.

5-9. The following instructions are merely suggestive and should not be considered restrictive or all inclusive. Familiarization with the equipment may well provide maintenance personnel with additional and more exacting methods of locating the source of the trouble. A complete schematic diagram of the remote control assembly is supplied in Section VII of this manual.

5-10. Avoid indiscriminate unsoldering, resoldering, and replacement of parts. Parts of the highest quality have been used in the manufacture of this unit; replacement parts should be of comparable quality if the inherent reliability built into the instrument is to be maintained.

5-11. If the remote control assembly fails to operate, first determine if the tape transport will operate locally. Check all modes of operation, and the footage counter, if present. If the transport functions normally when operated locally but fails to respond to commands from the remote control, check the connections and continuity of the interconnecting cable. If the remote control assembly still malfunctions after check and necessary repair to the cable, check individual components within the remote control.



SECTION VI  
PARTS LISTS

6-1. GENERAL.

6-2. Appropriate parts lists and illustrations for the 13-587 Remote Control Assembly follow the instructions given below. The parts lists include the Bell & Howell Instruments Division part number, description, figure and index and/or schematic reference symbol, and where applicable, the manufacturer's or military part number for each component. Manufacturers are identified in the parts lists by code number in accordance with the Federal Supply Code for Manufacturers, Cataloging Handbook H4-2, and as listed in table 6-1. The components are illustrated in figures 6-1 through 6-3.

6-3. ORDERING REPLACEMENT PARTS.

6-4. Parts should be ordered through the nearest Bell & Howell Instruments Division Sales and Service Office. Price and delivery information on parts or complete instruments may be obtained there also. To assist in making this contact, a list of Sales and Service Offices is included in the front of this manual. Bell & Howell recommends that whenever possible, and particularly when an instrument is used in a critical application, the user maintain a minimum stock of spare parts. Instruments Division has specialized personnel ready to assist the user in making a selection of spares at any time. The same personnel are also ready and able to prepare or quote on the preparation of illustrated parts breakdowns (IPB's), provisioning parts breakdowns (PPB's), and other parts documentation that might be required.

6-5. When ordering parts, the following information should always be supplied to the field office engineers:

- a. A description of the part or assembly, obtained from the parts list.
- b. The Bell & Howell part or assembly number, also on the parts list, or on the component itself.
- c. The figure and index, and/or reference symbol, given on the applicable diagram and on the parts list.
- d. The part or type number of the major assembly, shown on the instrument nameplate.
- e. The production serial number, also on the nameplate.
- f. The Bell & Howell register number applying to the complete system or order.

6-6. FIELD SERVICE.

6-7. Regular scheduled maintenance service is available from the Bell & Howell Instruments Division Sales and Service Office on a contract basis. If immediate service is required, it may be obtained on an emergency basis. Every effort is made to furnish the needed repair as soon as possible. For a complete description of Bell & Howell's maintenance service plans and their costs, contact the Instruments Division Sales and Service Office.

6-8. FACTORY REPAIR SERVICE.

6-9. If desired, instruments (or major assemblies) may be returned to the factory for repair. When an instrument or assembly is returned:

a. Indicate the symptom of defect. State as completely as possible, both on an instrument tag and on the order form, the nature of the problem encountered. Too much information is far better than too little. If the trouble is intermittent, please be specific in describing the instrument's performance history.

b. Give special instructions. If any changes in the instrument or assembly have been made, and it is desired to retain the modified form, please indicate this specifically.

c. State the desired invoicing procedure. In the first correspondence, indicate whether repair work may begin immediately with billing in accordance with the standard pricing system or whether Bell & Howell should secure prior approval of the price before proceeding with the repair. The price will be the same in both cases, but any delay will be minimized by permission to start work immediately. The order acknowledgment copy will, of course, always show the price.

d. Pack securely and label. Proper packaging saves money. The small amount of extra care and time it takes to cushion a part or instrument properly may prevent costly damage while in transit. Make certain that the address is both legible and complete; failure to do so often results in needless delay. Address all shipments and correspondence to:

Bell & Howell  
Instruments Division  
360 Sierra Madre Villa  
Pasadena, California 91109  
Attention: Repair Department

e. Show return address on repair correspondence. Please indicate clearly the exact address to which the equipment should be returned after repair is completed. All shipping costs will be borne by the owner of the equipment, not by Bell & Howell.

CODE	MANUFACTURER
01295	Texas Instruments, Incorporated Semiconductor Components Division Dallas, Texas
02288	Allied Control Company, Incorporated Plantsville, Connecticut
03797	Eldema Division Genisco Technology Corporation Compton, California
04009	Arrow-Hart, Incorporated Hartford, Connecticut
04713	Motorola Semiconductor Products, Incorporated Phoenix, Arizona
09922	Burndy Corporation Norwalk, Connecticut
21604	Buckeye Stamping Company Columbus, Ohio
24546	Corning Glass Works Bradford, Pennsylvania
28222	Kessler-Ellis Products Company Atlantic Highlands, New Jersey
56289	Sprague Electric Company North Adams, Massachusetts
71450	CTS Corporation Elkhart, Indiana
71744	Chicago Miniature Lamp Works Chicago, Illinois
81312	Winchester Electronics Division Litton Industries, Incorporated Oakville, Connecticut
81349	Military Specifications
86928	Seastrom Manufacturing Company, Incorporated Glendale, California

Table 6-1. List of Manufacturers

Table 6-2. Parts List for the 13-587 and 13-587-1 Remote Control Assemblies (Sheet 1 of 2)

ITEM NO.	B&H PART NO.	DESCRIPTION	QTY		FIG./INDEX OR REF SYM	MFR CODE	MFR OR MIL PART NO.
			0 1 2 3 4 5	Basic -1			
1	472065	13-587 Remote Control Assembly	1	-	6-1		
2	472065-1	13-587-1 Remote Control Assembly	-	1			
3	475189	Panel, front	1	-	6-1/1		
4	472177	Panel, front	-	1			
5	370752-6	Switch, rotary, 2-pole, 11-position	1	1	S1	71450	X500693
6	372532-2	Knob, skirted	1	1		21604	PS70STL2BLK
7	472146-0001	Switch, push	6	6	S2 thru S7	04009	83501-30-70-334ASSY
8	19785-0032	Lamp, incandescent, 28 volts	1	1	DS3 thru DS8	71744	334
9	201345-1000	Holder, panel light	2	2		03797	DM030B
10	201345-5000	Lens Cap, green	1	1	6-1/2 (DS2)	03797	D06BGC
11	201345-5001	Lens Cap, cloudy	1	1	6-1/3 (DS1)	03797	D06BCC
12	201345-0006	Lamp, incandescent, 28 volts	2	2	DS1, 2	03797	CK03CCS4632
13	375056-1	Counter, electrical	1	-	M1	28222	ED15-11
14	472178	Chassis, remote control	1	1	6-1/4		
15	205908	Plate, ident, Instruments Division	1	1			
16	474633	Electronic Components Assembly	1	1	6-2		
17	472198	Plate, mounting	1	1			
18	14477-4	Insulator, standoff, term	17	17		81312	753
19	197593	Socket, relay	1	1		02288	30055-2
20	372295-1	Diode, silicon	8	8	CR1 thru CR8	01295	1N4002
21	199951	Relay, armature	1	1	K1A	02288	T154X36R
22	7138-2015	Resistor, 200Ω ±5%, 1/2 w	5	5	R1 thru R5	81349	RC20GF201J

Table 6-2. Parts List for the 13-587 and 13-587-1 Remote Control Assemblies (Sheet 2 of 2)

ITEM NO.	B&H PART NO.	DESCRIPTION	QTY		FIG./INDEX OR REF SYM	MFR CODE	MFR OR MIL PART NO.
			0	1 2 3 4 5			
1	372918-6	Washer, finishing	4	4			
2	127171-47	Washer, nylon	4	4		86928	5610-71-32
3	472176	Conn, rcpt, elec, 36 contact	1	1	J1	09922	BT02B2236PE
4	476669	Driver, footage counter	1	-	6-3		
5	472170	Printed Wiring Board	1	-			
6	7138-3915	Resistor, 390Ω ±5%, 1/2 w	1	-	R4	81349	RC20GF391J
7	471922-5602	Resistor, 56Ω ±2%, 1/4 w	2	-	R6, 7	235	C4-560G
8	215095-262	Cap, 0.01 μf ±10%, 200 v	1	-	C1	56289	192P10392
9	372295-1	Diode, silicon	2	-	CR3, 4	01295	1N4002
10	212158-9	Diode, zener, 15 vdc ±20%	1	-	VR1	04713	1N3024
11	212158-86	Diode, zener, 24 vdc ±5%	1	-	VR2	04713	1N3029B
12	373762-3	Transistor, NPN	3	-	Q3, 4, 5	04713	2N4923
13	471584	Bracket, counter pc board	1	-			
14	70155	Screw, pan head, #4-40 x 3/8	2	-			
15	472175	Cable Assy	1	1	6-1/5		
16	204877-2	Connector, 42 contacts	1	1	P402	81312	XAC42PC1406
17	472174	Connector, 36 contacts	1	1	P1	09922	BTO6AC2236SE
18	204902-3	Contact, pin, 20 AWG	26	26	(P402)	81312	100-1020P
19	204902-2	Contact, pin, 16 AWG	1	1	(P402)	81312	100-1016P
20	200710-A/R	Band, marker, blank	2	2			
21	19362-A/R	Insul, slv, elec	A/R	A/R			
22	471876-2299	Wire, elec, strd, 22 AWG	A/R	A/R			
23	471876-1899	Wire, elec, strd, 18 AWG	A/R	A/R			

Table 6-3. Parts List for the 472164 Shorting Plug

ITEM NO.	B&H PART NO.	DESCRIPTION						QTY	FIG./INDEX OR REF SYM	MFR CODE	MFR OR MIL PART NO.
		0	1	2	3	4	5				
1	472164	Shorting Plug						1	7-4		
2	204877-5	Connector, 42 contacts						1		81312	XAC42PC1306
3	204902-3	Contact, pin, 20 AWG						4		81312	100-1020P
4	471876-2299	Wire, elec, stranded, 22 AWG						A/R			



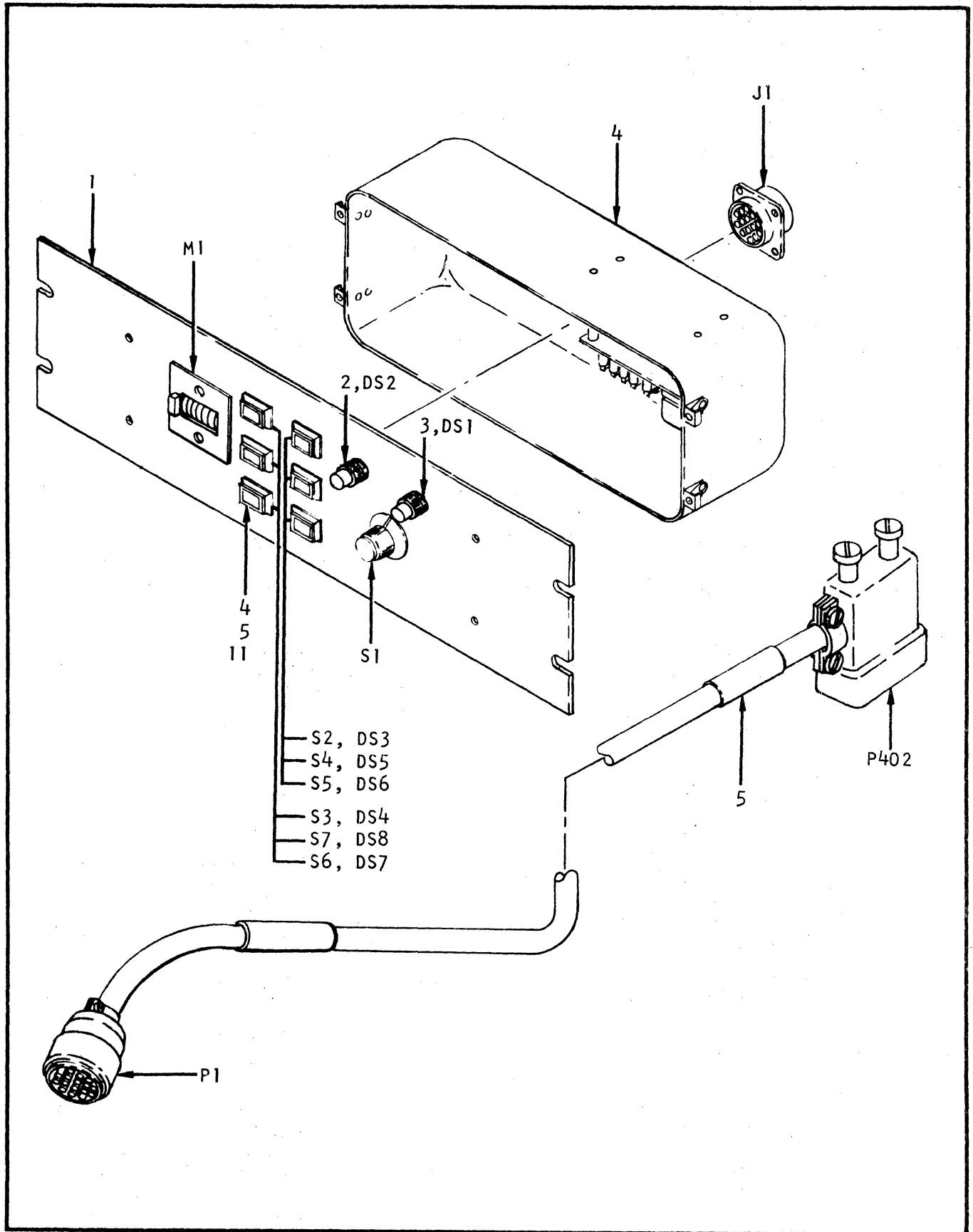
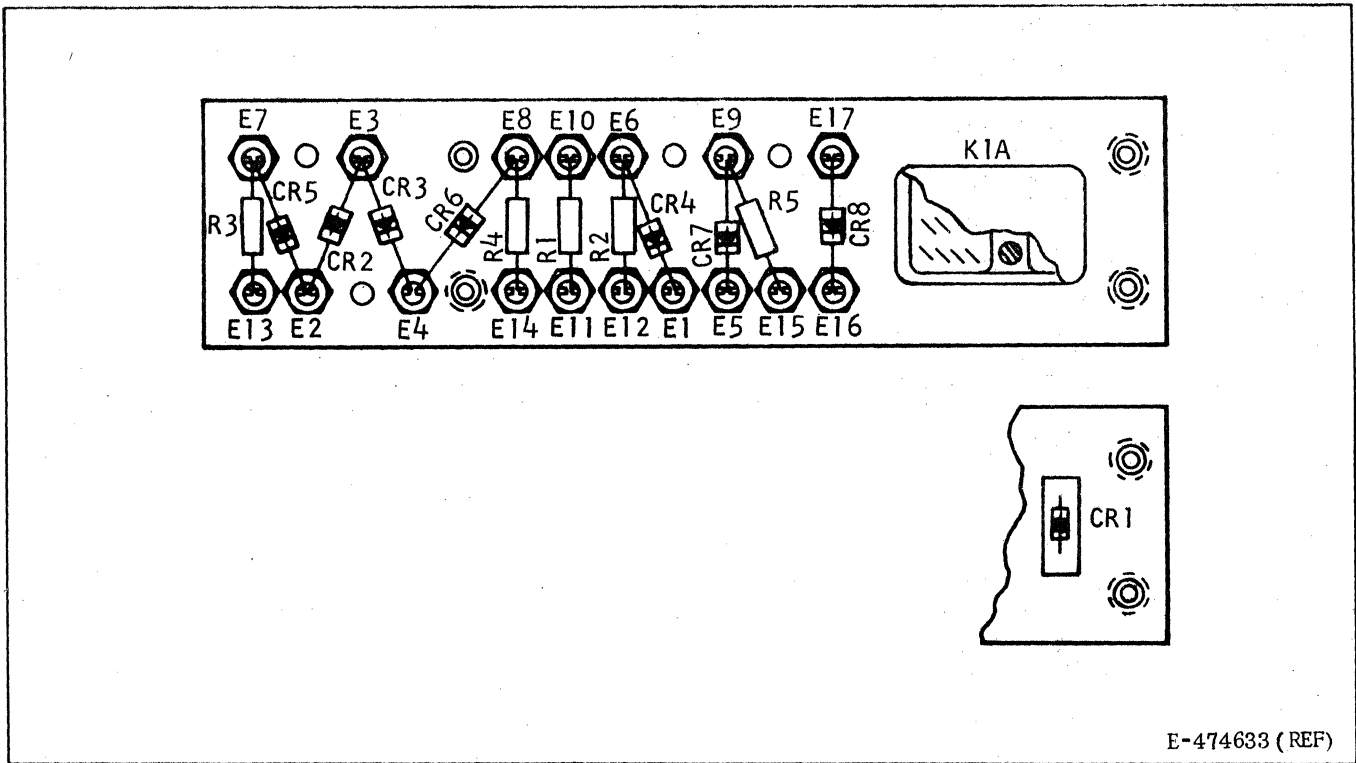
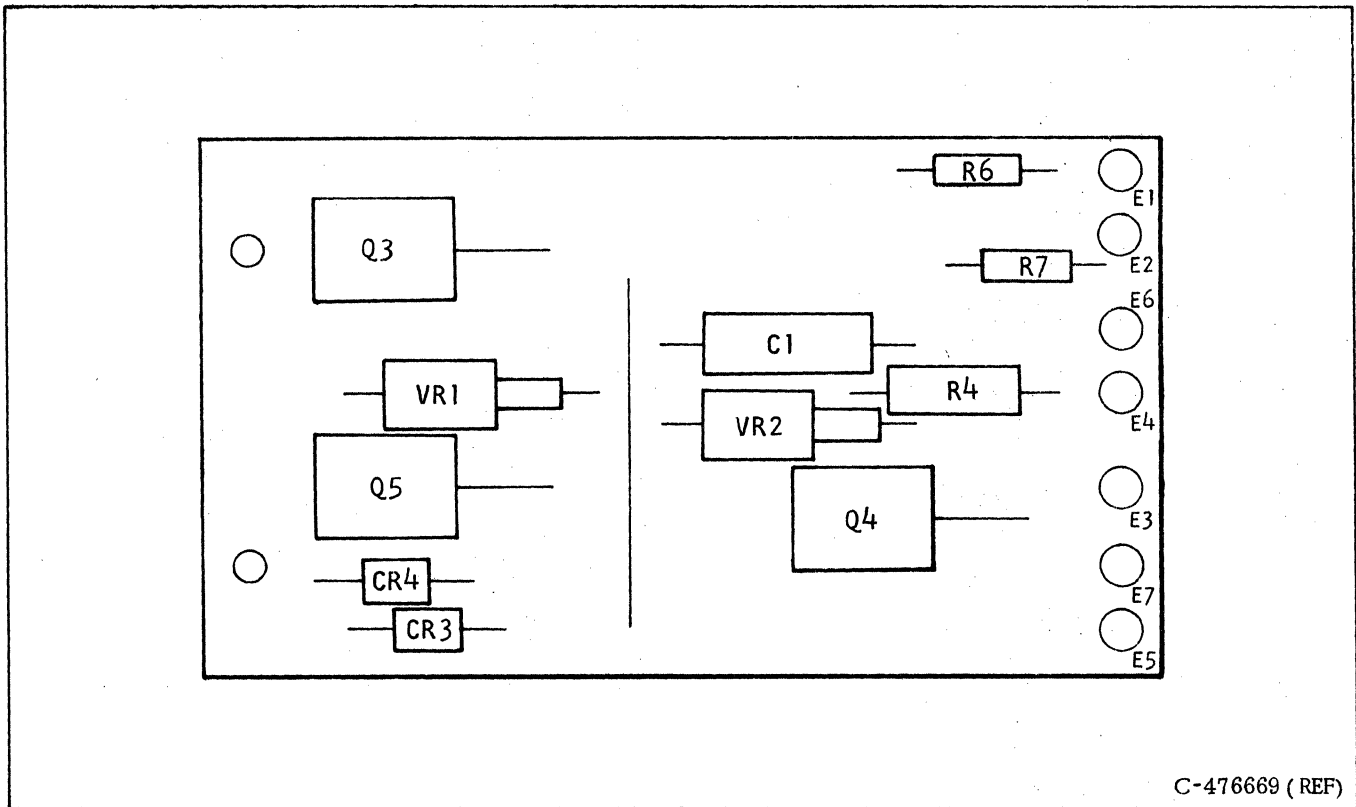


Figure 6-1. Remote Control Assembly



E-474633 (REF)

Figure 6-2. Electronic Component Assembly



C-476669 (REF)

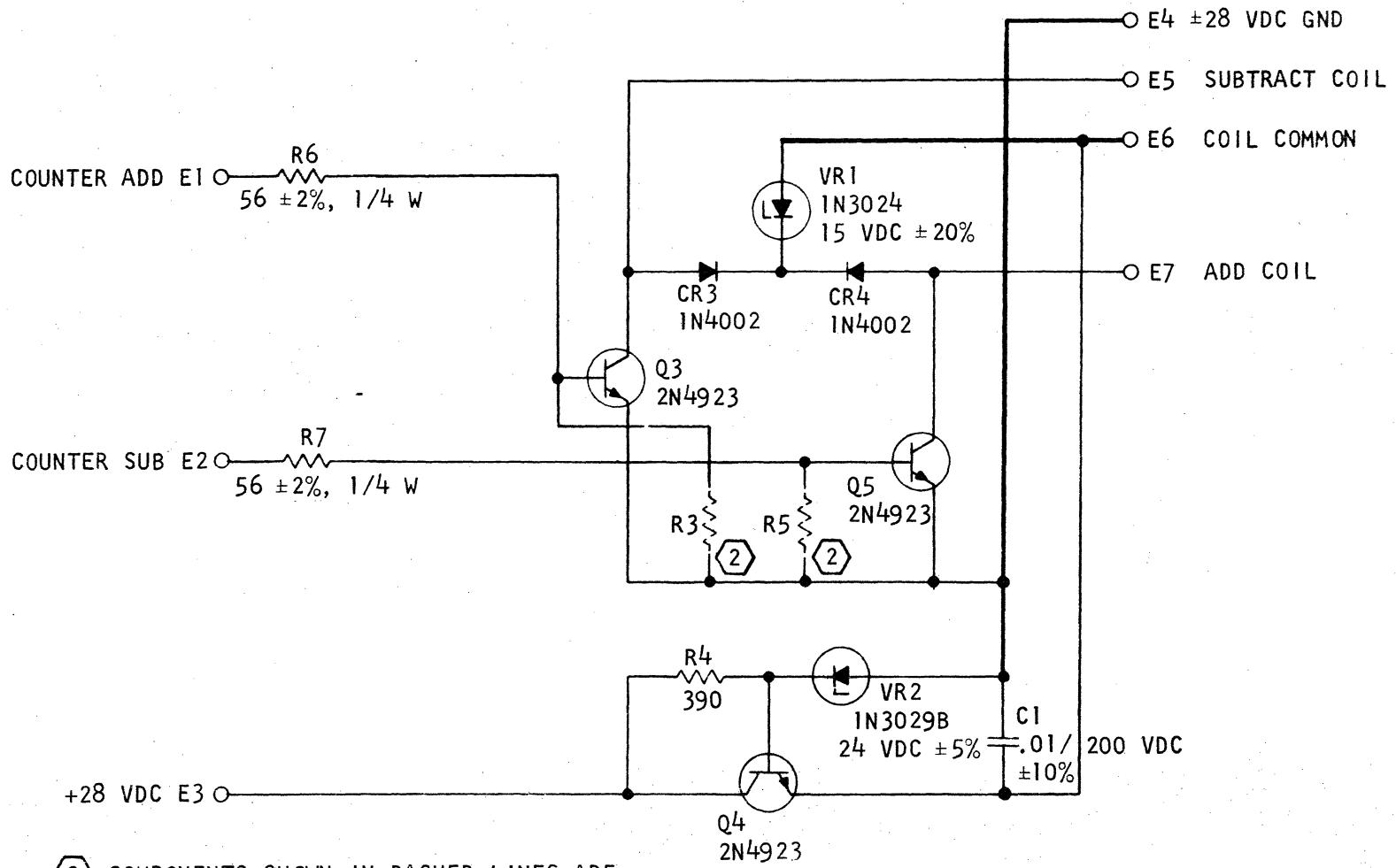
Figure 6-3. Circuit Board, Footage Counter Driver

SECTION VII  
DRAWINGS AND SCHEMATICS

7-1. GENERAL.

7-2. This section contains the schematic diagrams and other pertinent drawings for the 13-587 Remote Control Assembly.

7-3. Figure 7-1 is the schematic of the driver circuit for the footage counter. Figure 7-2 is the schematic of the complete remote control. Figure 7-3 is a diagram of the cable that connects the remote control assembly to the tape transport. Figure 7-4 is a diagram of the shorting plug that must be installed in receptacle J402 on the tape transport when the remote control is disconnected.



② COMPONENTS SHOWN IN DASHED LINES ARE NOT PART OF STD UNIT, REF ONLY.  
1. ALL RESISTORS ARE IN OHMS  $\pm 5\%$ , 1/2 W.

NOTES: UNLESS OTHERWISE SPECIFIED.

C-472173-C (REF)

Figure 7-1. Schematic, Footage Counter Driver

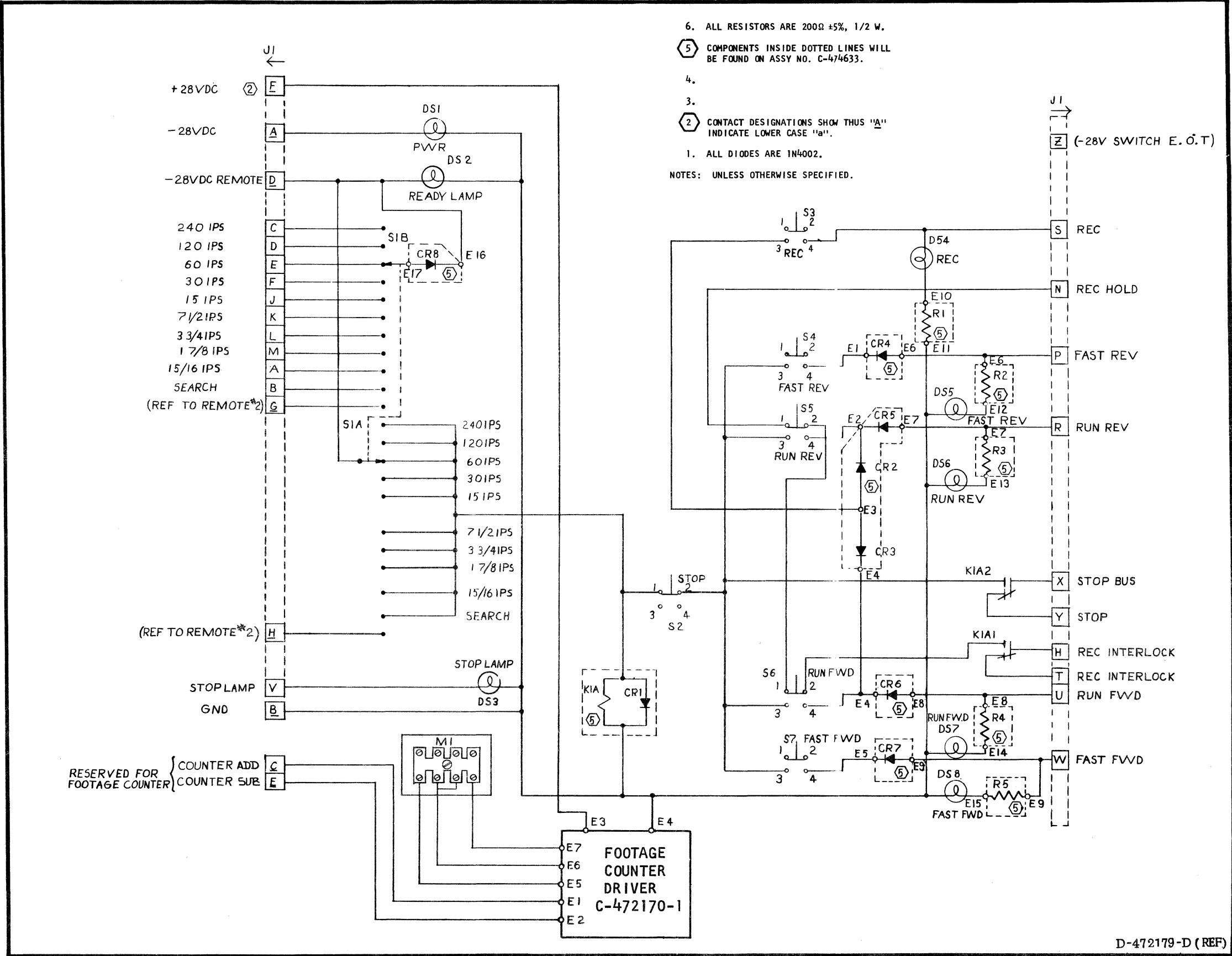
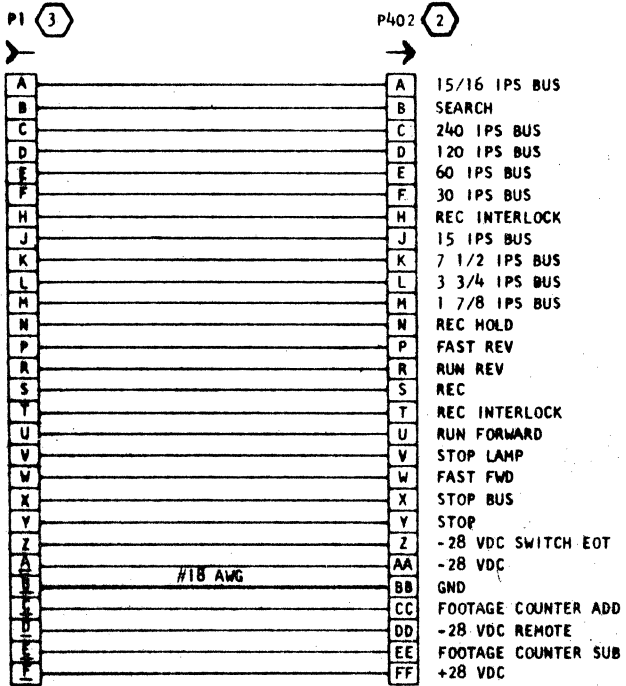
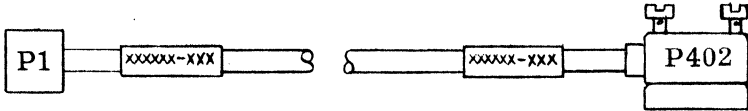


Figure 7-2. Schematic, 13-587 Remote Control Assembly



- ③ CONTACT DESIGNATIONS INDICATED THUS 'A' DENOTE LOWER CASE 'a'.
- ② SEE FIGURE 7-4 FOR SHORTING CONNECTOR, USED IF THIS CABLE IS REMOVED FROM TRANSPORT.

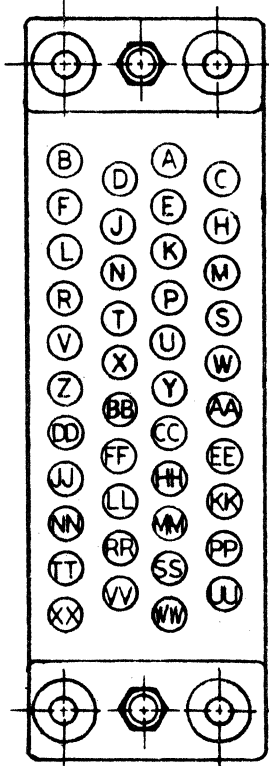
1. DASH NO. INDICATES LENGTH OF CABLE IN INCHES.  
EXAMPLE: B&H P/N 472175-150 = CABLE 150 INCHES LONG.

NOTES: UNLESS OTHERWISE SPECIFIED.

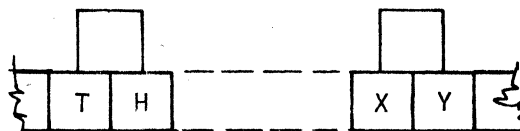
D-472175-B (REF)

Figure 7-3. Schematic, Cable Number 472175

P402



MATING END PART  
OF ITEM 1  
(WIRING END FAR SIDE)



WIRING DIAGRAM