

547401-0-1-TM

DATATAPE[®]

***REMOTE CONTROL
ASSEMBLY***

TECHNICAL MANUAL

 **BELL & HOWELL**

DATATAPE DIVISION

300 SIERRA MADRE VILLA, PASADENA, CA 91109

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SECTION I
GENERAL DESCRIPTION

1-1. GENERAL.

1-2. The Bell & Howell Remote Control Assembly, part number 547401, operates in conjunction with the 4020A Magnetic Tape Record/Reproduce System. The assembly enables remote operation of the system through a duplicate set of mode and speed selection switches and indicators. The 547401 Remote Control Assembly is a portable unit. A rackmounted version of the assembly is available under part number 476562-0003.

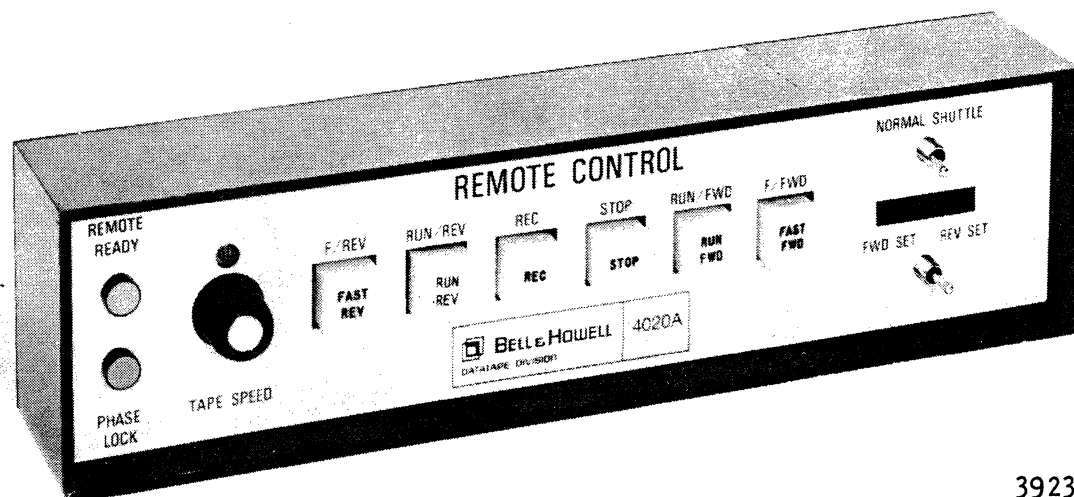
1-3. The remote control is operational when the REMOTE/LOCAL switch on the tape transport is switched to the REMOTE position. In this condition, local control of speed and mode selection is disabled thereby permitting speed and mode selection by the remote control assembly.

1-4. EQUIPMENT DESCRIPTION.

1-5. The remote control assembly has six backlighted, pushbutton, mode control switches; a rotary speed selector switch; PHASE LOCK and REMOTE READY indicator lights; and a footage counter with a manual reset button. The controls and indicators are similar to their counterparts on the tape transport. The panel is attached to a metal chassis which encloses the components. Electrical components not mounted directly on the control panel are contained on one component board. The counter drive motor is vibration mounted on an angle bracket.

1-6. A control cable up to 50 feet in length 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 547401 Remote Control Assembly.



3923-7

Figure 1-1. 547401 Remote Control Assembly

1-1/(1-2 blank)

SECTION II
INSTALLATION

2-1. GENERAL.

2-2. The 547401 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 547401 Remote Control Assembly is a self-contained table-top unit and requires no installation. The 476562-0003 assembly is designed for installation in a standard 19-inch EIA cabinet or console. Outline dimensions of these remote control assemblies are shown in figures 2-1 and 2-2.

2-5. ELECTRICAL CONNECTION.

2-6. All connections between the remote control assembly and the tape transport are made via cable number 476515. 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 7-1.

2-7. One end of the cable is connected to the remote control, the other to the remote connector A1J7 at the left side of the tape transport.

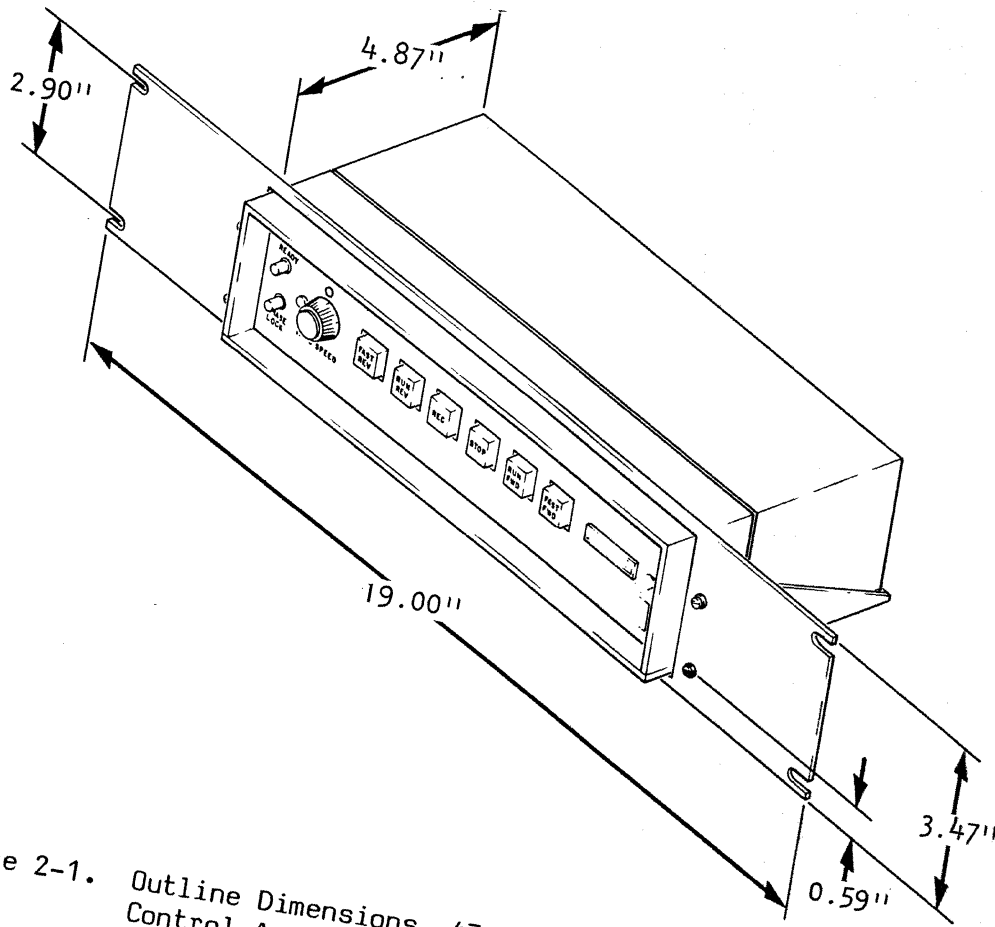


Figure 2-1. Outline Dimensions, 476562-0003 Rackmounted Remote Control Assembly

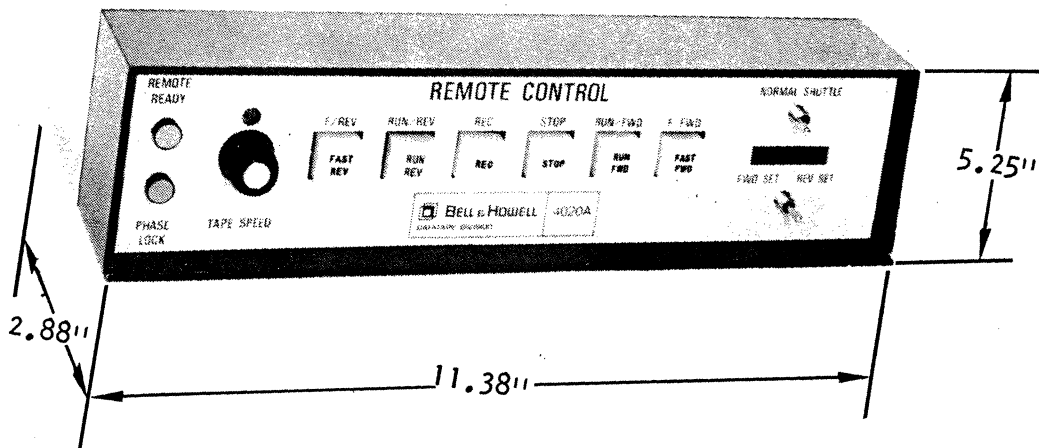


Figure 2-2. Outline Dimensions, 547401 Remote Control Assembly

SECTION III

OPERATION

3-1. GENERAL.

3-2. The operation of the record/reproduce 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 exception is main system power, which is turned on at the tape transport.

3-3. Control of the system is passed to the remote control assembly when the REMOTE/LOCAL switch on the transport is switched to the REMOTE position. In this condition, the mode control switches on the transport are disabled.

3-4. Refer to Section III of the System manual for the remote transport operational procedures.

SECTION IV

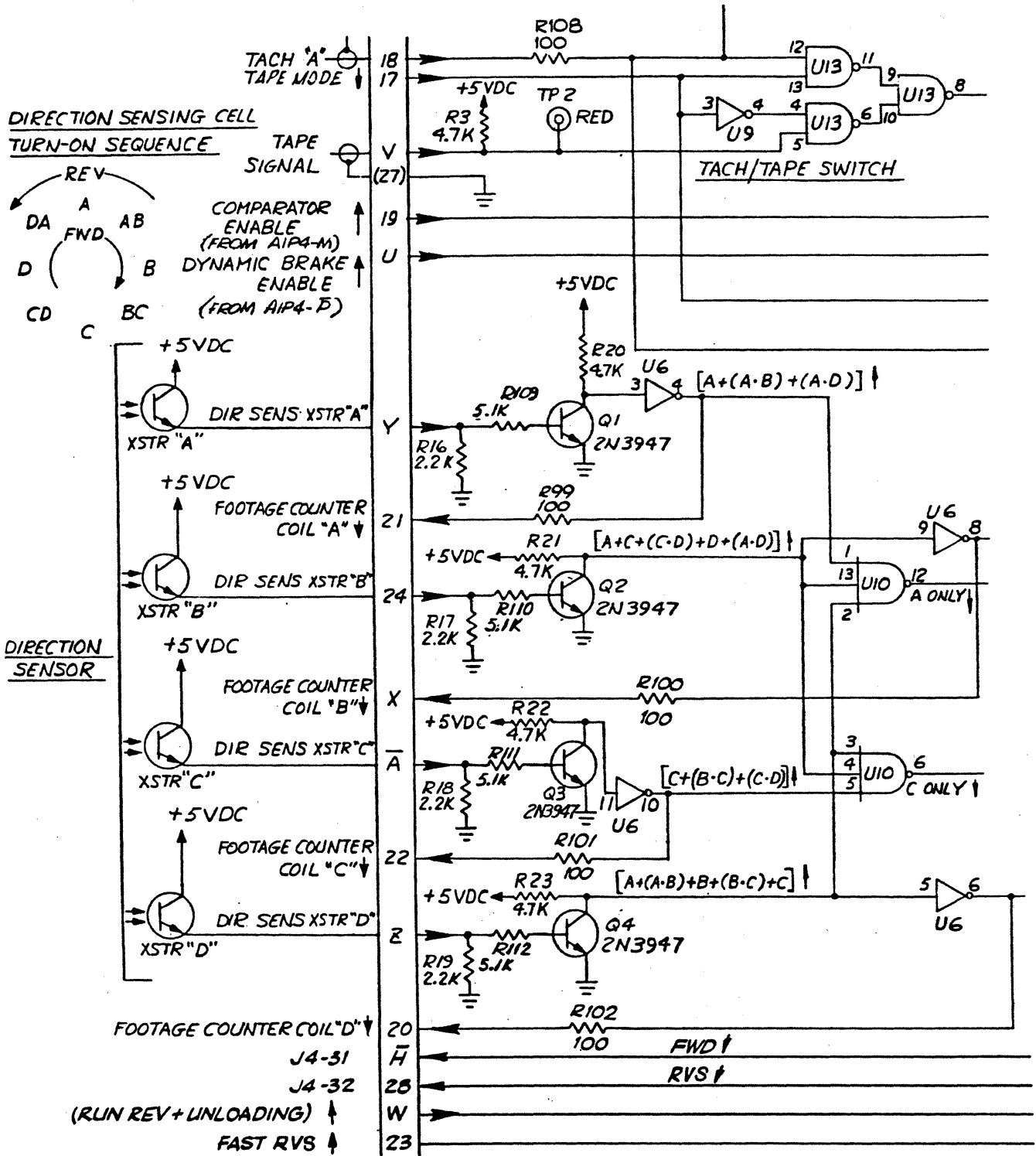
THEORY OF OPERATION

4-1. GENERAL.

4-2. The 547401 Remote Control Assembly is designed for use with the 4020A Record/Reproduce System. When the REMOTE/LOCAL switch mounted on the 12-401D Tape Transport is placed in the REMOTE position, all mode and speed selection controls are transferred to the remote control assembly. The remote LED footage counter receives electrical impulses from the 4020A system to drive the remote LED footage counter and if both footage counters are manually reset at the same time, they will indicate the same amount of tape used.

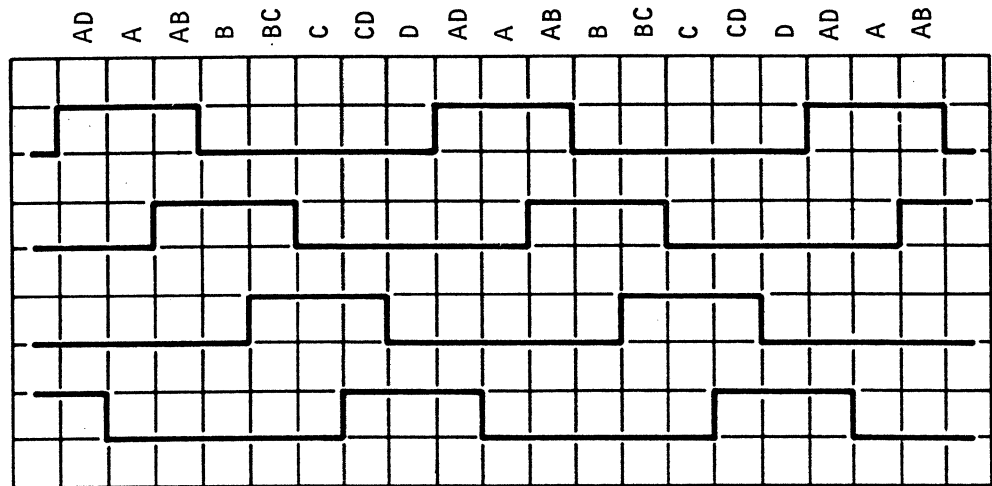
4-3. LED FOOTAGE COUNTER. Reference figures 4-1, 4-2 and 7-3. The seven-bit code, selecting the combination of segments needed to form the desired numeral (0-9) and the five-bit code (which selects the place on the five digit readout where the numeral will be displayed), plus 4 null bits form a block of 16 bits. Similar blocks are sent to the Remote Control Assembly serially on the DATA line. The FS (frame or block sync) and CLOCK (the shift clock) are also provided. These three signals go first to the line receiver U1 input (1R, Data, 2R-CLOCK, and 3R-FS). The regenerated signals from 1Y and 2Y go to the serial input/parallel output Shift registers U2 and U3 which present (at their combined 16 outputs) a combination of bits connected to the 16 inputs of the two latches U4 and U7. The regenerated FS pulses from U1-3Y reach the latch Enable input of U4 and U7 at such times when the 16-bit code word is in the right position to reconstitute the original parallel code input. The latches U4 and U7 hold this 16-bit word until the next FS pulse latches the next 16-bit word. In this manner one display digit at a time is activated to show the desired numeral in its right place. The speed at which the digits are scanned in sequence causes a flicker-free display of the footage information.

4-4. The next three pins in J7: RESET (SET FWD), SET TARGET (SET REV) and SHUTTLE/NORMAL, convey the selections made on the corresponding switches above and below the display in Normal or during Shuttle operation. The pin R/C GND is a permanent return for the pushbutton lamps, but not the contact closures (RUN REVERSE through STOP). These contact closures and the speed lines must be activated (pulled to ground) only when the transport selects REMOTE CONTROL. For this reason the REMOTE FEED provides ground return only at that time. To prevent an accidental ground return when the transport speed selector is not in REMOTE and the REMOTE SPEED selector happens to select the locally grounded speed line, transistor pair Q1 and Q2 prevents this ground from reaching the pushbutton common return contacts. Another sneak ground connection to REMOTE FEED is prevented by diode D1, which blocks ground from locally selected NORMAL (J7-b) through remotely selected NORMAL (J2-14 and S8). Remotely selected NORMAL is provided a ground from Q1 collector only when Remote operation is locally selected (REMOTE FEED low). In this way REMOTE speed selection does not override LOCAL, slower speed selection.



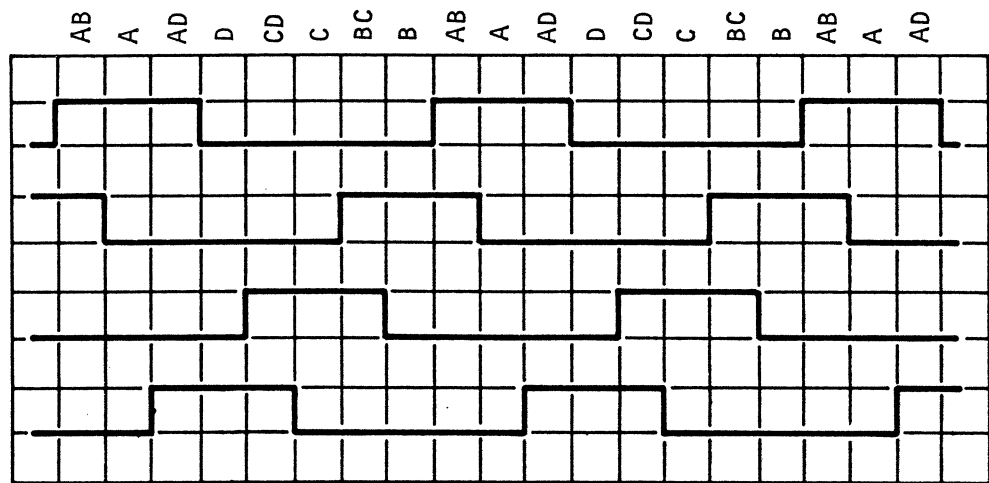
4-2 Figure 4-1. Direction Sensor and Direction Sensing Logic

SEQUENCE



FORWARD DIRECTION

SEQUENCE



REVERSE DIRECTION

Figure 4-2. Timing Diagrams

4-5. MODE AND SPEED SELECTION CONTROLS.

4-6. SPEED SELECTION. Refer to figure 7-3 and Section IV of the transport manual for a detailed description of the speed control logic circuits.

4-7. All other tape speeds are activated in a similar manner to the 15/16 ips operation, according to the position of TAPE SPEED switch, S1. Refer to the schematic diagram of the transport assembly for routing information from the remote connector J7 to the transport logic circuits.

4-8. MODE SELECTION. The low level (ground) at J7-3 (Remote Feed) is also routed to the switches S2 through S7 which are momentary action backlighted switches for STOP, REC, RUN FWD, FAST REV, FAST FWD, and RUN REV, respectively. Note that when any one of these switches is activated, say the RUN FWD switch S4, a low level is applied to J7-18 which is the remote control RUN FWD command. This remote RUN FWD command activates the RUN FWD control logic circuit as described in Section IV of the transport manual.

4-9. All other mode selection switches operate in a manner similar to the RUN FWD switch and these modes too, are further described in Section IV of the transport manual.

NOTE

To initiate the record mode of operation,
it is necessary to simultaneously press
the RUN FWD or RUN REV and REC pushbuttons
and release the REC pushbutton last.

4-10. OPERATING VOLTAGES. The remote control assembly operates on the +18 Vdc derived from the transport power supply via J7-1. This applies voltage to the stepper motor windings of B1 and to indicator lamps DS1 through DS8. The logic levels to illuminate these lamps come from the transport control logic circuits and are described in Section IV of the transport manual.

SECTION V

CALIBRATION AND 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 assembly, 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 547401 Remote Control Assembly. Included are the Bell & Howell DATATAPE Division part number and, where applicable, the schematic symbol and manufacturer's or MIL part number for each part. 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 assembly. 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 assembly; 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 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 assembly.

5-12. CALIBRATION.

5-13. No calibration procedures are necessary for this assembly.

5-14. FIELD REPAIR SERVICE.

5-15. Refer to Section V of the System manual for field repair service information.

5-16. FACTORY REPAIR SERVICE.

5-17. Refer to Section V of the System manual for factory repair service information.

SECTION VI

PARTS LIST

6-1. GENERAL.

6-2. An appropriate parts list and illustrations for the Remote Control Assembly, Bell & Howell part number 547401, covered by this manual follow the instructions given below. The parts list (table 6-1) includes Bell & Howell DATATAPE 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.

6-3. MANUFACTURER'S CODES.

6-4. Manufacturer's code symbols used in the parts list are tabulated in the System manual with the manufacturer's name and address. All code symbols are in accordance with the Federal Supply Code for Manufacturers Cataloging Handbooks H 4-1 and H 4-2.

6-5. ORDERING REPLACEMENT PARTS.

6-6. When ordering replacement parts refer to Section VI of the System manual for ordering instructions.

6-7. PARTS LOCATION ILLUSTRATIONS.

6-8. Figures 6-1, 6-2, and 6-3 illustrate the location of components on the Remote Control Assembly, the Remote LED Footage Counter Control Board, and the Counter/Display and Shuttle Control Assembly, respectively.

Table 6-1. Parts List for the 547401 Remote Control Assembly (Sheet 1 of 5)

ITEM NO.	B&H PART NO.	DESCRIPTION 0 1 2 3 4 5 6	QTY	FIG./INDEX OR REF SYM	MFR CODE	MFR OR MIL PART NO.
1	547401	Remote Control Assembly	1	6-1	14028	
2	547412	Panel, front, remote control	1	6-1/2	14028	
3	547413	Chassis, remote control	1	6-1/3	14028	
4	547406	Remote LED Footage Counter Control Board	1	6-1/4,6-2	14028	
5	547403	Printed Wiring Board	1	6-2/1	14028	
6	479699-0049	Cap, fixed, ceramic 0.1 uF $\pm 10\%$, 50 Vdc	2	6-2,C1,2	81349	CK05BX104K
7	477674-0010	Adapter, plug	1	6-2/8	19112	102-16-CC-B-LL
8	525529-0001	Insulator, transistor	1	6-2/9	18565	60-11-4305-1661
9	478095	Heat Sink	1	6-2/10	98978	LAT03B3CB
10	365834-0002	Transistor, NPN	1	6-2,Q1	01295	2N3904
11	252501-0004	Transistor, PNP	1	6-2,Q2	04713	2N3906-5
12	526839-0070	Res, fixed, wirewound 50 ohm $\pm 1\%$, 1 W	3	6-2,R1,2,3	91637	TYPE RS1A500HM1PCT 1W
13	471922-2412	Res, fixed, metal oxide 240 ohm $\pm 2\%$, 1/4 W	1	6-2,R4	24546	C4-240 OHM-2PCT
14	471922-6812	Res, fixed, metal oxide 680 ohm $\pm 2\%$, 1/4 W	1	6-2,R5	24546	C4-680 OHM-2PCT
15	471922-2212	Res, fixed, metal oxide 220 ohm $\pm 2\%$, 1/4 W	1	6-2,R6	24546	C4-220 OHM-2PCT
16	471922-1322	Res, fixed, metal oxide 1.3K ohm $\pm 2\%$, 1/4 W	1	6-2,R7	24546	C4-1300 OHM- 2PCT

Table 6-1. Parts List for the 547401 Remote Control Assembly (Sheet 2 of 5)

ITEM NO.	B&H PART NO.	DESCRIPTION 0 1 2 3 4 5 6	QTY	FIG./INDEX OR REF SYM	MFR CODE	MFR OR MIL PART NO.
2	471922-1332	Res, fixed, metal oxide 13K ohm <u>+2%</u> , 1/4 W	1	6-2,R9	24546	C4-13K OHM-2PCT
3	538545-0002	Integrated Circuit	1	6-2,U1	01295	SN75122N
4	550506	Integrated Circuit	2	6-2,U2,3	04713	CD4015B
5	550507	Integrated Circuit	2	6-2,U4,7	01295	SN74100
6	480637-4722	Component Network, dual- in-line, 4.7K ohm	1	6-2,U5	73138	899-1-R-4.7K
7	538526	Integrated Circuit	1	6-2,U6	27014	LM317K
8	471941	Integrated Circuit	1	6-2,U8	01295	SN7404N
9	363247-1030	Screw, machine, pan head 6-32 x 1/2	2	6-2/21	96906	MS51957-30
10	7074-0267	Nut, plain, hex no. 6-32	2	6-2/22	14028	
11	70077-0674	Washer, flat no. 6, steel, cad pl	2	6-2/23	96906	MS27183-6
12	166497-1032	Washer, split lock no. 6, light-cres	2	6-2/24	14028	
13	70058-0229	Wire, electrical, teflon insul, AWG 22 stranded white	A/R	6-2/25	14028	
14	547408	Counter/Display and Shuttle Control Assy	1	6-1/5,6-3	14028	
15	547409	Printed Wiring Board	1	6-3/1	14028	
16	477674-0010	Adapter, plug	1	6-3,J2	19112	102-16-CC-B-LL

Table 6-1. Parts List for the 547401 Remote Control Assembly (Sheet 3 of 5)

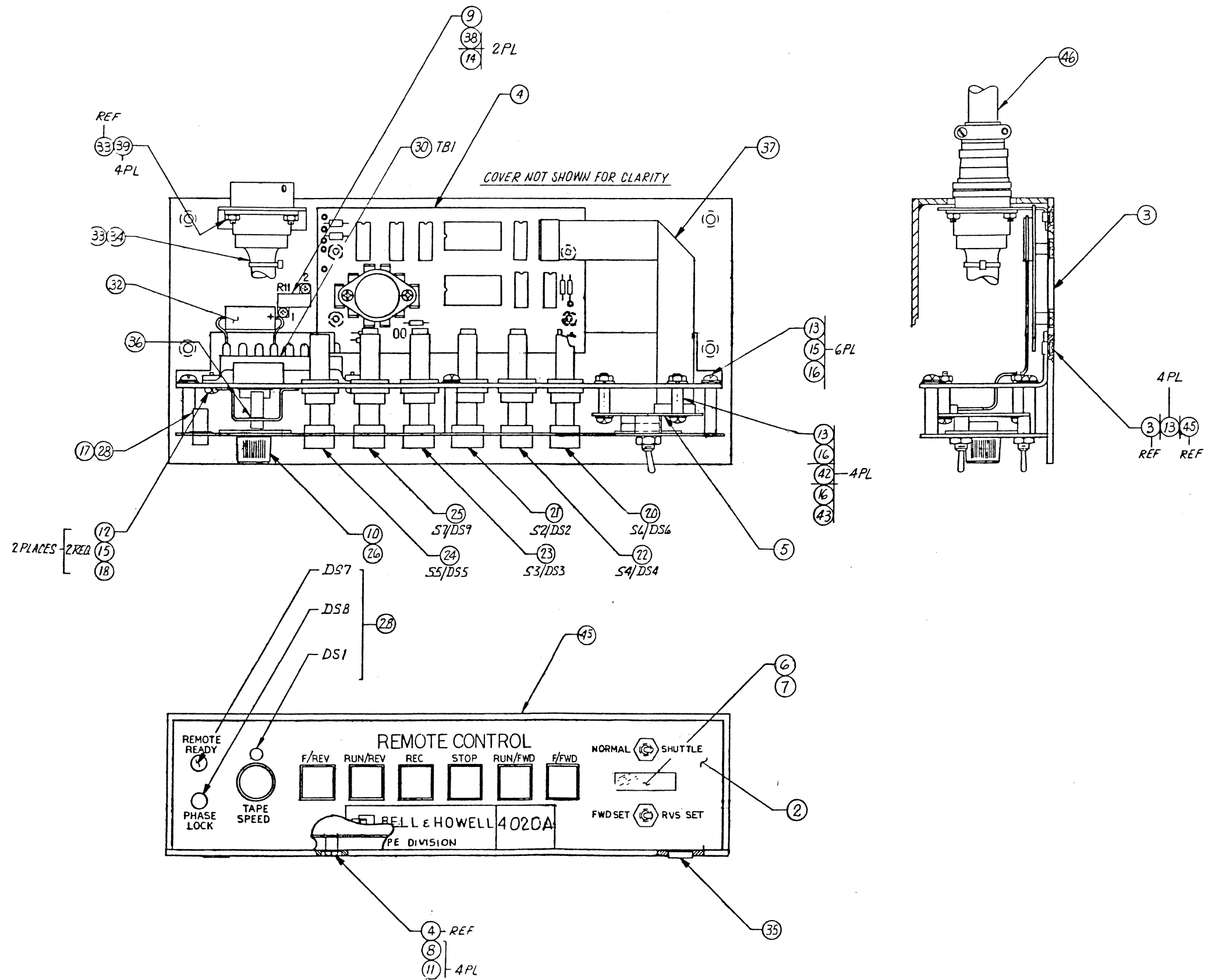
ITEM NO.	B&H PART NO.	DESCRIPTION 0 1 2 3 4 5 6	QTY	FIG./INDEX OR REF SYM	MFR CODE	MFR OR MIL PART NO.
1	547549-0004	Indicator, digital, LED	1	6-3,U10	28480	5082-7415
2	526155-0001	Switch, toggle	1	6-3,S9	09353	7101-C
3	526155-0004	Switch, toggle	1	6-3,S8	09353	7105-C
4	379670	Window, plastic	1	6-1/6	14028	
5	17484-0114	Resiweld Adhesive	A/R	6-1/7	92528	7111
6	84071-0002	Sealing Compound, anaerobic	A/R	6-1/8	05972	242-21
7	172291-0006	Res, fixed, wirewound 30 ohm <u>+3%</u> , 5 W	1	6-1/9,R11	91637	RH5-30-3PCT
8	472467-0006	Knob, indicator	1	6-1/10	86797	RB-700-TSK-R- 472467-0006
9	175431-0327	Screw, machine, pan head 6-32 x 9/16, steel, cad pl	4	6-1/11	96906	MS35206-327
10	175431-0214	Screw, machine, pan head 4-40 x 5/16, steel, cad pl	2	6-1/12	96906	MS35206-214
11	175431-0213	Screw, machine, pan head 4-40 x 1/4, steel, cad pl	10	6-1/13	96906	MS35206-213
12	154101-1023	Screw, machine, 100° flat hd 2-56 x 5/16, psvt	2	6-1/14	80205	NAS662C2R5
13	70077-0172	Washer, flat no. 4, steel, cad pl	10	6-1/15	96906	MS27183-3
14	166497-2020	Washer, split lock no. 4, med steel, cad pl	14	6-1/16	96906	MS35338-40
15	249108-0001	Nut, speed	2	6-1/17	78553	C185-014-1
16	475250-0001	Nut, self locking no. 4-40	2	6-1/18	78189	511-041800-00

Table 6-1. Parts List for the 547401 Remote Control Assembly (Sheet 4 of 5)

ITEM NO.	B&H PART NO.	DESCRIPTION 0 1 2 3 4 5 6	QTY	FIG./INDEX OR REF SYM	MFR CODE	MFR OR MIL PART NO.
2	475240-1104	Switch, push SPDT, momentary	1	6-1/21, S2/DS2	87034	53-54580-135+ 51650-706327
3	475240-1103	Switch, push SPDT, momentary	1	6-1/22, S4/DS4	87034	53-54580-135+ 51650-705327
4	475240-1102	Switch, push SPDT, momentary	1	6-1/23, S3/DS3	87034	53-54580-135+ 51650-704327
5	475240-1101	Switch, push SPDT, momentary	1	6-1/24, S5/DS5	87034	53-54580-135+ 51650-703327
6	475240-1107	Switch, push SPDT, momentary	1	6-1/25, S7/DS7	87034	53-54580-135+ 51650-841327
7	475227-0005	Switch, rotary 1P10POS	1	6-1/26,S8	71590	PA 115 SERIES (MOD)
8	376402-0003	Panel Lamp Assy	3	6-1/28, DS1,7,8	32539	L-28/40
9	17252-0008	Terminal Board	1	6-1/30, TB1	71785	326-20-08-001
10	471930-0006	Cap, fixed, electrolytic 100 uF +75 -10%, 25 V	1	6-1/32,C5	14655	NLW100-25E
11	547422	Harness, remote control	1	6-1/33	14028	
12	246448-0001	Strap, tiedown	4	6-1/34	06383	PLY1M
13	476431	Bumper, self adhesive	4	6-1/35	14028	
14	17484-0150	Adhesive, contact cement	A/R	6-1/36	77902	TYPE 550
15	547411-0007	Cable assy, remote control	1	6-1/37	14028	

Table 6-1. Parts List for the 547401 Remote Control Assembly (Sheet 5 of 5)

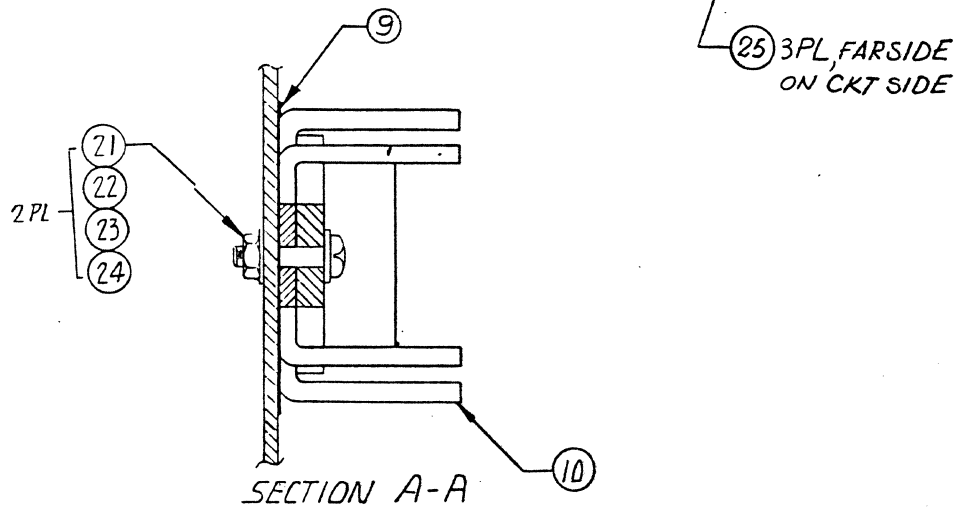
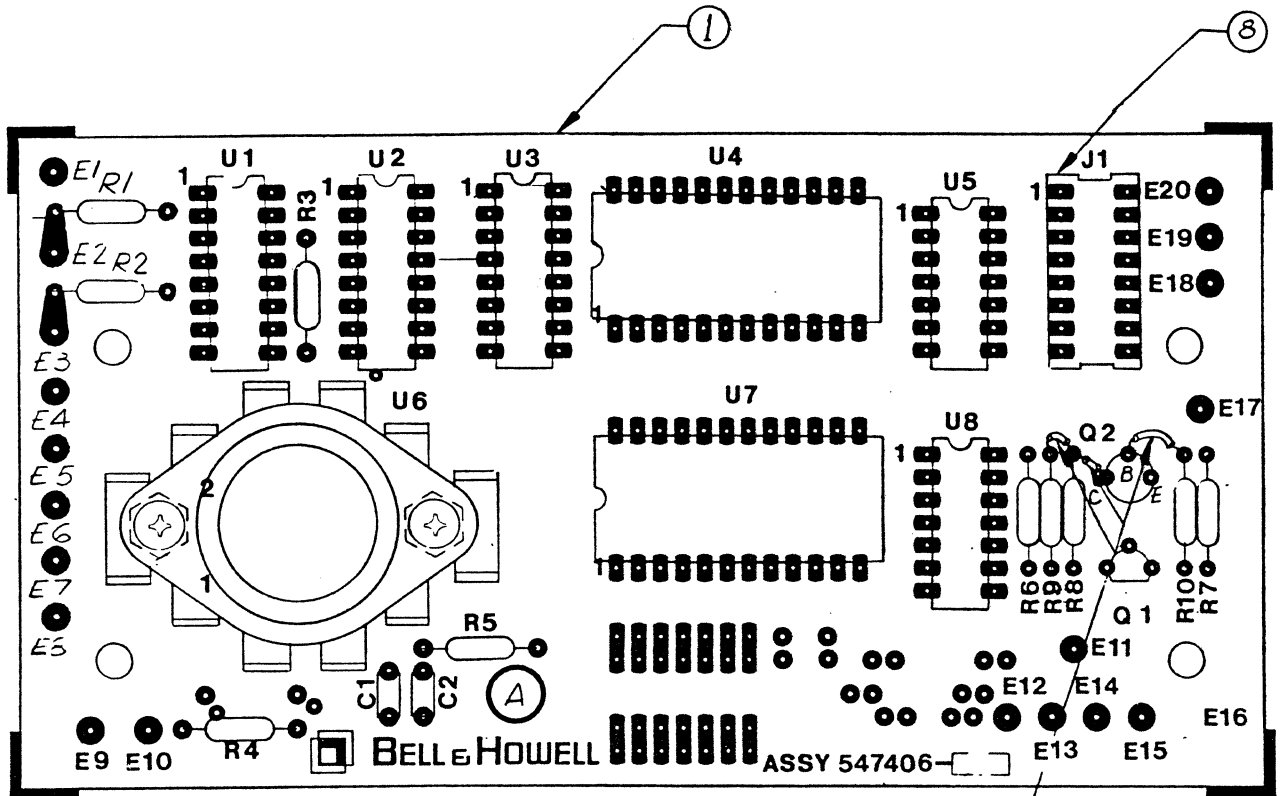
ITEM NO.	B&H PART NO.	DESCRIPTION 0 1 2 3 4 5 6	QTY	FIG./INDEX OR REF SYM	MFR CODE	MFR OR MIL PART NO.
1	7158-0004	Nut, self locking, hex no. 2-56, steel, cad pl	2	6-1/38	72962	22NM-26
2	7158-0008	Nut, self locking, hex no. 4-40, steel, cad pl	4	6-1/39	96906	MS21044N04
3	801415-0003	Spacer, post, 1/4 hex	4	6-1/42	06540	9739-A-0440-/17
4	7074-0244	Nut, plain, hex no. 4-40, steel, cad pl	4	6-1/43	96906	MS35649-242
5	547416	Cover, remote control chassis	1	6-1/45	14028	
6	534990-0300	Cable Assy, special purpose electrical	1	6-1/46	14028	



E-547401-C (REF)

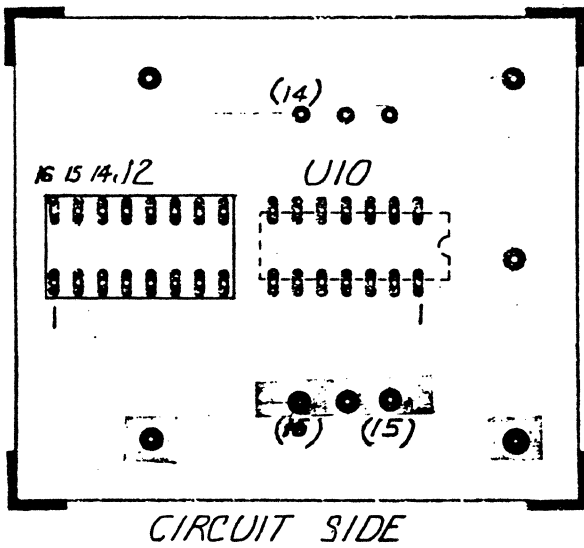
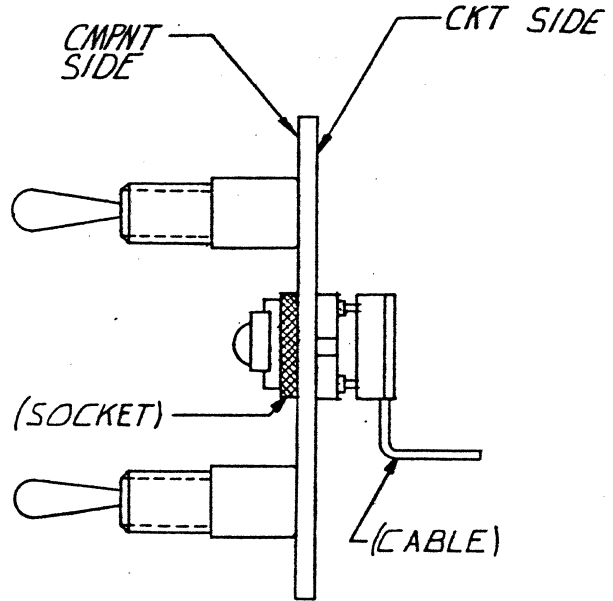
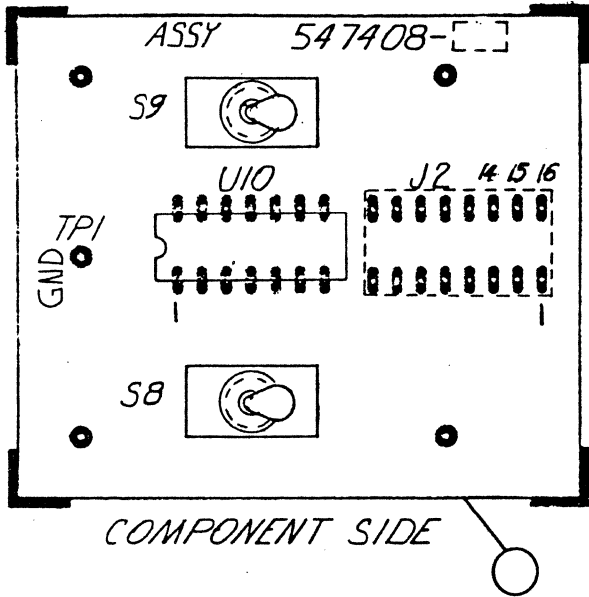
Figure 6-1. Remote Control Assembly

6-7/(6-8 blank)



D-547406-B (REF)

Figure 6-2. Remote LED Footage Counter Control Board



D-547408-B (REF)

SECTION VII
DRAWINGS AND SCHEMATICS

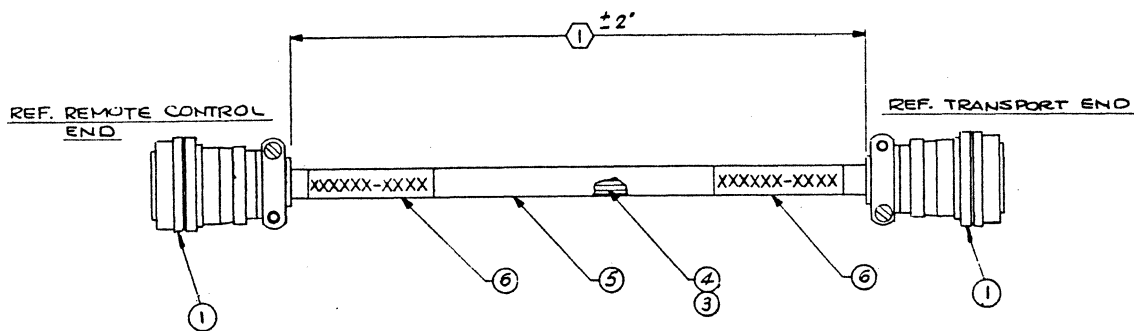
7-1. GENERAL.

7-2. This section contains the schematic diagrams for the Remote Control Assembly.

7-3. Figure 7-1 is the schematic for the remote cable assembly. Figure 7-2 is the wiring diagram for the transport connector. Figure 7-3 is the schematic for the Remote Control Assembly, including the LED footage counter.

① DASH NO. INDICATES LENGTH OF CABLE IN INCHES, 100 FT MAXIMUM LENGTH. (FOR LENGTH OF CABLE SEE CUSTOMER'S ORDER.) EXAMPLE: B&H PART NUMBER 534990-0150 = CABLE 150 INCHES LONG.

NOTES: UNLESS OTHERWISE SPECIFIED



P7		P7
A	BLK	A
B	BRN	B
C	RED	C
D	ORN	D
E	YEL	E
F	GRN	F
G	BLU	G
H	VIO	H
J	GRY	J
K	WHT	K
L	WHT/BLK	L
M	WHT/BRN	M
N	WHT/RED	N
P	WHT/ORN	P
R	WHT/YEL	R
S	WHT/GRN	S
T	WHT/BLU	T
U	WHT/VIO	U
V	WHT/GRY	V
W	WHT/BLK/BRN	W
X	WHT/BLK/RED	X
Y	WHT/BLK/ORN	Y
Z	WHT/BLK/YEL	Z
A	WHT/BLK/GRN	A
B	YEL	B
C	BLU	C
D	GREY	D
E	WHT/BLK/BLU	E
F	WHT/BLK/VIO	F
G	WHT/BLK/GRY	G
H	WHT/BRN/RED	H
I	WHT/BRN/ORN	I
K	WHT/BRN/YEL	K

D-534990-A (REF)

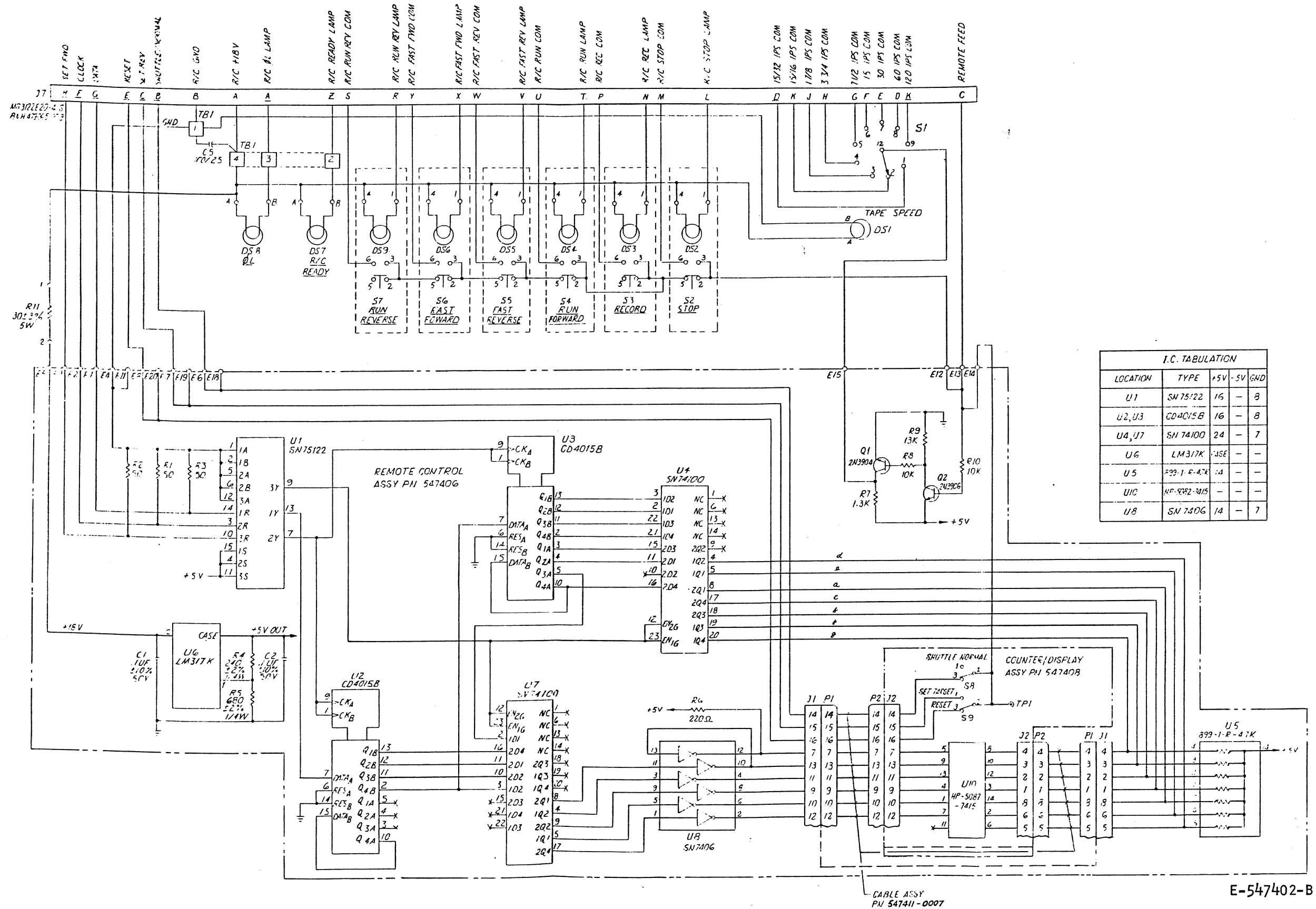
Figure 7-1. Remote Cable Assembly

REMOTE CONTROL
&
OVERLAP
CONNECTOR

		AIJ 7
	OVERLAP TO OTHER TRANSPORT (948)	J
AIJ4-35	OVERLAP TO OTHER TRANSPORT (956)	S
AIJ4-36	OVERLAP FROM OTHER TRANSPORT (978)	R
AIJ4-U	GROUND (OVERLAP FROM OTHER TRANSPORT)	Q
AIJ4-W	18 AWG (901)	
AIJ4-24	120 IPS COM † (3)	K
AIJ4-C	BOT (LEVEL) (906)	M
AIJ4-29	NEOT (LEVEL) (908)	N
AIJ4-30	EOT (LEVEL) (905)	P
AIJ4-H	DYNAMIC BRAKE ENABLE (LEVEL) (907)	T
AIJ5 AI TB1-7	R/C +18V 18AWG (7)	A
AIJ5 AI TB1-11	R/C GROUND 18AWG (91)	B
AIJ4-L	REMOTE FEED † (97)	C
AIJ4-5	60 IPS COM † (918)	D
AIJ4-D	30 IPS COM † (917)	E
AIJ4-4	15 IPS COM † (916)	F
AIJ4-C	7 1/2 IPS COM † (915)	G
AIJ4-3	3 3/4 IPS COM † (914)	H
AIJ4-B	1 7/8 IPS COM † (913)	J
AIJ4-7	5/16 IPS COM † (2)	K
AIJ4-Z	R/C STOP LAMP † (92)	L
AIJ4-Y	R/C STOP COM † (98)	M
AIJ4-B	R/C REC LAMP † (93)	N
AIJ4-J	R/C REC COM † (94)	P
AIJ4-13	R/C RUN REV LAMP † (936)	R
AIJ4-L	R/C RUN REV COM † (957)	S
AIJ4-15	R/C RUN I LAMP † (937)	T
AIJ4-T	R/C RUN COM † (968)	U
AIJ4-10	R/C FAST REV LAMP † (928)	V
AIJ4-P	R/C FAST REV COM † (967)	W
AIJ4-9	R/C FAST FWD LAMP † (935)	X
AIJ4-M	R/C FAST FWD COM † (958)	Y
AIJ4-D	R/C READY LAMP † (95)	Z
AIJ4-8	R/C OL LAMP † (925)	A
AIJ4-16	SHUTTLE/NORMAL (6)	B
AIJ4-17	SET REV (4)	C
AIJ4-6	15/32 IPS COM † (1)	D
AIJ5-21	RESET (901)	E
AIJ5-X	CLOCK (902)	F
AIJ5-22	DATA (903)	G
AIJ5-20	SET END (904)	H
		I

E-541216-B (REF)

Figure 7-2. Wiring Diagram, Transport Connector 7-3/(7-4 blank)



I.C. TABULATION				
LOCATION	TYPE	+5V	-5V	GND
U1	SN 75122	16	-	8
U2, U3	CD4015B	16	-	8
U4, U7	SN 74100	24	-	7
U6	LM317K	USE	-	-
U5	89-1-R-4.7K	14	-	-
U10	HP-5087-7415	-	-	-
U8	SN 7406	14	-	7

E-547402-B (REF)

Figure 7-3. Schematic, 547401 Remote Control Assembly
7-5/(7-6 blank)