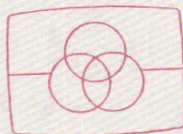


TC-15F / 15FB



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*AEP Model
UK Model
E Model*

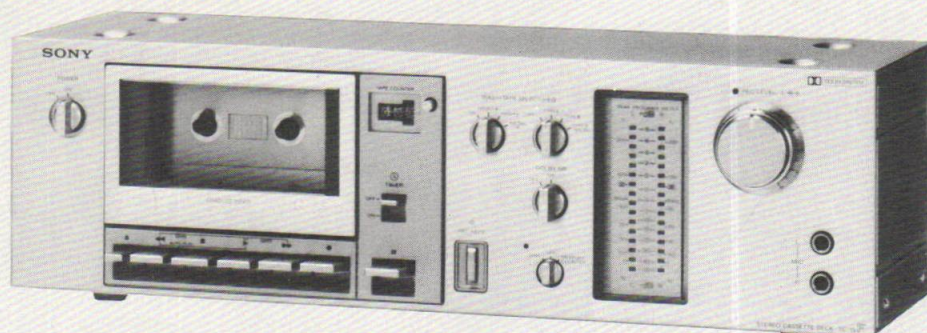


Photo: TC-15F

'Dolby' and the double-D symbol are the trade marks of Dolby Laboratories. Noise reduction system manufactured under license from Dolby Laboratories.

STEREO CASSETTE DECK

SPECIFICATIONS

GENERAL

Power Requirements: AEP model: 220 V ac ~, 50/60 Hz (or 240 V ac ~ adjustable by authorized Sony personnel)
UK model: 240 V ac ~, 50/60 Hz (or 220 V ac ~ adjustable by authorized Sony personnel)
E model: 110, 120, 220, or 240 V ac ~ adjustable, 50/60 Hz

Power Consumption: 12 W

Dimensions: Approx. 430(w) x 130(h) x 165(d) mm (17 x 5¹/₈ x 6³/₈ inches) including projecting parts and controls

Weight: AEP, UK model: approx. 4.8 kg (10 lbs 10 oz)
E model: approx. 4.9 kg (10 lbs 13 oz)

Tape Transport Mechanism Type	TCM-91V5 (TC-15F) TCM-91V6 (TC-15FB)	
	Specification	Test Equipment
Forward Torque	28 – 55 g·cm (0.39 – 0.76 oz·inch)	Sony torque meter CQ-102C
Fast Forward Torque, Rewind Torque	60 – 120 g·cm (0.84 – 1.66 oz·inch)	Sony torque meter CQ-201B
Back Tension Torque	2.0 – 4.5 g·cm (0.02 – 0.06 oz·inch)	Sony torque meter CQ-102C
Pinch Roller Pressure	310 – 390 g (11 – 14 oz)	Spring scale or tension gauge

– Continued on page 2 –

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SONY®

SERVICE MANUAL

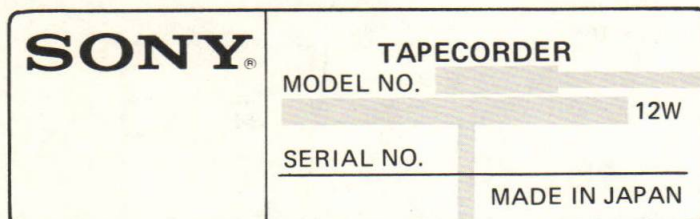
TAPE RECORDER SECTION

Fast-forward and Rewind Time:	Approx. 90 sec. (with C-60)	
Recording System:	4-track 2-channel stereo	
Bias Frequency:	105 kHz	
S/N Ratio:	DOLBY NR OFF • With TYPE IV cassette (Sony METALLIC) 59 dB at peak level (NAB) 57 dB (DIN, 1975 rev.) • With TYPE III cassette (Sony Fe-Cr) 59 dB at peak level (NAB) 57 dB (DIN, 1975 rev.) • With TYPE II cassette (Sony CD-α) 57 dB at peak level (NAB) DOLBY NR ON Improved by 5 dB at 1 kHz, 10 dB above 5 kHz	• With TYPE III cassette (Sony Fe-Cr) 20 – 17,000 Hz 30 – 15,000 Hz (±3 dB) 30 – 15,000 Hz (DIN) • With TYPE II cassette (Sony CD-α) 20 – 16,000 Hz 30 – 14,000 Hz (±3 dB) 30 – 14,000 Hz (DIN) • With TYPE I cassette (Sony BHF) 20 – 15,000 Hz 30 – 13,000 Hz (DIN)
Total Harmonic Distortion:	1.0 % (with Sony Fe-Cr cassette and Sony METALLIC cassette)	Wow and Flutter: 0.045 % WRMS (NAB) ±0.14 % (DIN)
Frequency Response:	DOLBY NR OFF • With TYPE IV cassette (Sony METALLIC) 20 – 17,000 Hz 30 – 15,000 Hz (±3 dB) 30 – 13,000 Hz (±3 dB, 0 VU recording) 30 – 15,000 Hz (DIN)	Inputs: Microphone inputs (phone plugs) . . . 2 sensitivity 0.25 mV (–70 dB) for a low-impedance microphone Line inputs (phono jacks) 2 sensitivity 77.5 mV (–20 dB) input impedance 50 kΩ
		Outputs: Line outputs (phono plugs) 2 output level 0.435 V (–5 dB) at load impedance 50 kΩ suitable load impedance more than 10 kΩ

0 dB = 0.775 V

● MODEL IDENTIFICATION

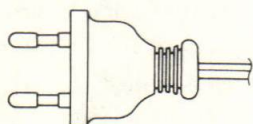
— Label Specification —



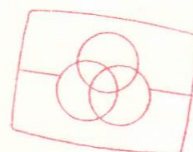
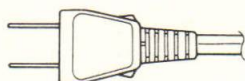
AEP model:	AC 220 V ~ 50/60 Hz	TC-15F or TC-15FB
UK model:	AC 240 V ~ 50/60 Hz	
E model:	AC 110, 120, 220, 240 V ~ 50/60 Hz	

— Power Cord —

E model: euro-plug 1-551-530-00



E model: parallel-blade plug 1-534-487-XX

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SECTION 1

OUTLINE

1-1. CIRCUIT DESCRIPTION

— Muting Circuit when the Power Switch is turned on —

Figure 1 shows the circuit to mute the line output and solenoid when the power switch is turned on, until the power supply voltage (+10 V) gets sufficiently stabilized.

1. CHARGING/DISCHARGING CIRCUIT (See Fig. 1)

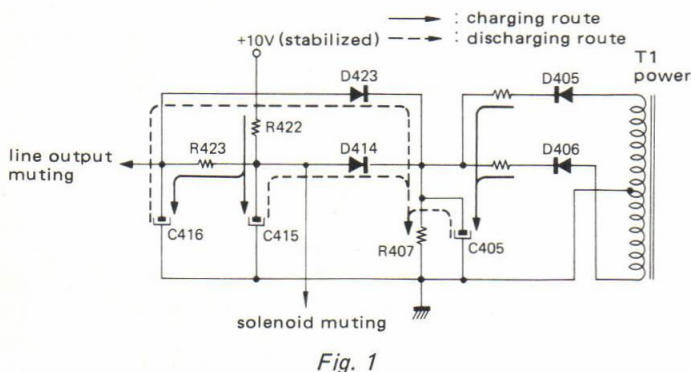


Fig. 1

- Time constant to mute the solenoid
 $(R422) \times (C415)$
- Time constant to mute the line output
 $(R422 + R423) \times (C415 + C416)$
- D423, D414

When the power switch is turned off, these diodes quickly discharge C415 and C416 through R407, mute the line output and solenoid immediately after the power switch is turned off, and make ready to charge when the power switch is turned on.

- D405, D406, C405

D405 and D406 are employed to assure that D423 and D414 operate only in discharging, and that D423 and D414 will get cut off when the power switch is turned on. To quickly cut off D423 and D414 when the power switch is turned on, the power voltage that was just rectified by the power transformer is used as power supply. C405 is provided to rectify the power supply which has been full-wave rectified by D405 and D406.

2. SOLENOID MUTING CIRCUIT (See Fig. 2)

This equipment is provided with a QMS (quick music sensor) function. If noise is fed to the QMS

detection amplifier when the power switch is on, the solenoid will operate, and the automatic timer-recording or playback is likely to fail. To prevent this, the solenoid must be muted for a predetermined time when the power switch is turned on.

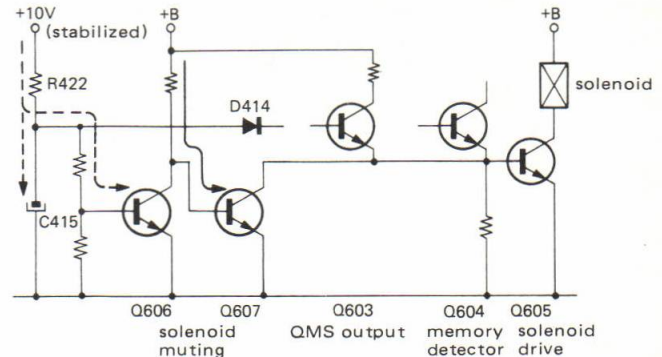


Fig. 2

- When the power switch is on;

Immediately after the power switch is turned on, the supplying of power (shown in broken line) is delayed due to the charging operation of C415 through R422, so Q606 is turned off. The power voltage applied to the base of Q607 (shown in bold line) is supplied before the stabilizer circuit. So the supplied power immediately reaches the specified voltage. It turns on Q607 immediately after the power switch is turned on, and the solenoid is muted.

- After the power switch is turned on;

The charging voltage of C415 increases after the power switch is turned on. When Q606 is turned on, Q607 is turned off and the solenoid muting is released.

3. LINE OUTPUT MUTING CIRCUIT (See Fig. 3)

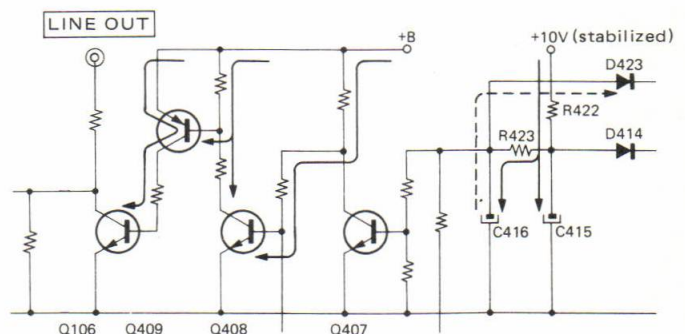


Fig. 3

- When the power switch is turned on;

Immediately after the power switch is turned on, Q407 is turned off by the charging operation of C415 and C416 through R422 and R423. When Q407 is turned off, the line output is muted after the Q408, Q409 and Q106 are turned on in order. Because Q409 is a PNP-transistor, it is turned on when the base potential is reduced below the emitter potential.

- After the power switch is turned on;

When the power switch is turned on, the voltage of C415 and C416 increases, and Q407 is turned on. Q106 is turned off to release the muting.

- When the power switch is turned off;

R423 and C416 are separated to assure the quick muting of the line output when the power switch is turned off.

– Bias Oscillator Drive Circuit (See Fig. 4) –

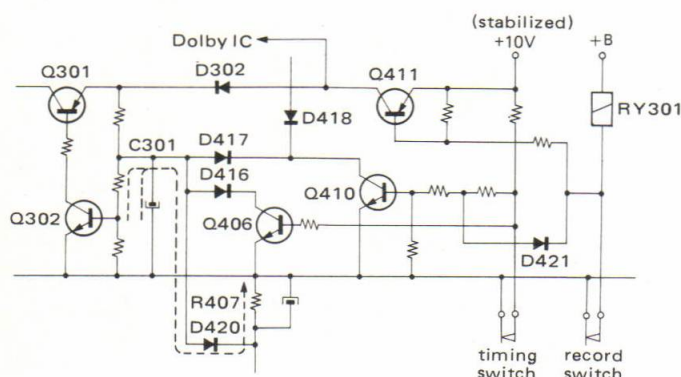


Fig. 4

The bias oscillator circuit operates when B+ voltage (9.4 V) is supplied to the emitter of Q301 and also Q302 is turned on.

- Press the REC button. → The REC switch turns on → Q411: ON. The B+ voltage is supplied to the emitter of Q301, to prepare the bias oscillator operation. Q410 is turned off due to the conduction of D421. (To release the muting in record-monitoring, refer to the later description.)

- Press the FWD/REC button. → The timing switch turns on. → Q410 and Q406 are turned off. → Q302 turns on. → The bias oscillator operates.

- D420

When the power switch is turned off in FWD mode, the base voltage of Q411 reduces, and Q411

is forward-biased. This may erase the recording on the tape. To prevent this, the charged voltage in C301 is instantly discharged, as shown in the broken line, when the power switch is turned off. Then, the base of Q302 is reduced and Q302 turns off. Thus, the bias oscillation is stopped.

– Line Output Muting and Recording (See Fig. 5) –

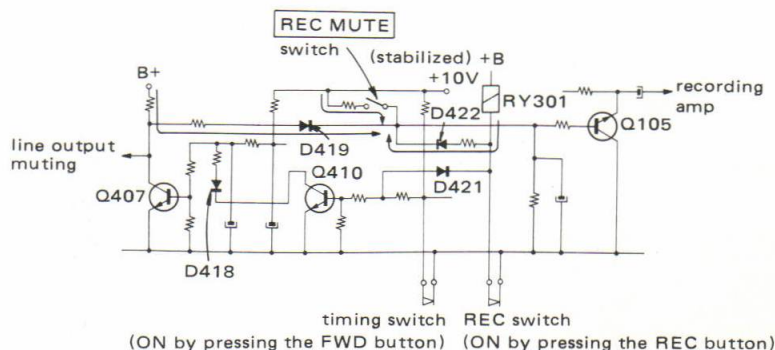


Fig. 5

- The line output muting is released when Q407 is turned on;

Q407 is turned on when Q410 is off (by pressing FWD and REC buttons). D421 is used to release the muting and to set the recording-monitor mode only when the REC button is pressed.

- Q105 serves to release the muting. It is turned on three routes as follows;

- 1) Route from D419
Q407 is turned off when the FWD or REC button is not pressed. That is, recording is muted when the line output is muted.
- 2) Route from RY301, D422
When RY301 is off (in playback mode), recording is muted.
- 3) Route from REC MUTE Switch
Q105 is turned on when the REC MUTE switch is pressed in the recording-monitor mode or in the record mode.

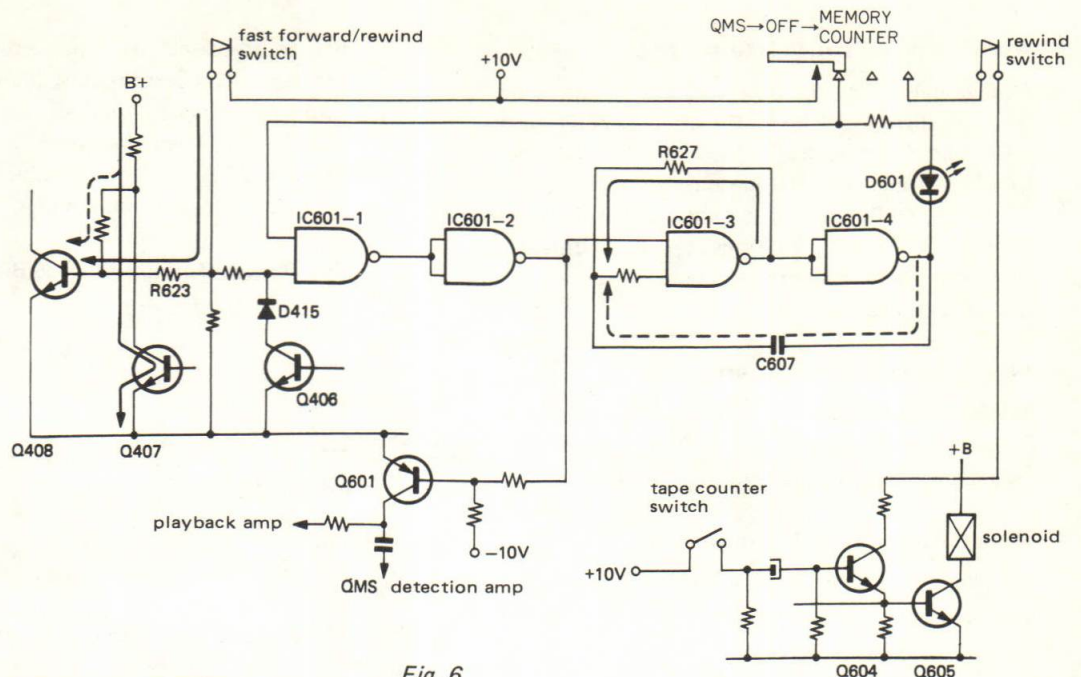


Fig. 6

Truth Table for NAND Gate



A	B	C
L	L	H
H	L	H
L	H	H
H	H	L

— QMS Display Circuit (See Fig. 6) —

- D601 lights when the output of IC601-2 is low at the QMS position. Normally, it will light when the output of IC601-3 is high and that of IC601-4 is low.
- On-off State Repetition of D601
 - 1) When the output of IC601-2 has changed from low to high, the output of IC601-3 changes from high to low, that of IC601-4 from low to high, and D601 goes off, because the high output of IC601-3 in the preceding status (output of IC601-2: low) is fed back to the input through R627 (shown in bold line).
 - 2) When the output of IC601-4 changing from low to high is made into differential pulses by C607, and is fed back to the input of IC601-3 (shown in broken line), the output of IC601-1 is held low for a certain time.
 - 3) When no positive differential pulses shown in broken lines appear, the low signal is fed back through the route shown in bold line. The output of IC601-3 is changed from low to high, and the output of IC601-4 is changed from high to low. The negative-differential pulses are fed back through C607.

D601 repeats the on-off state by above steps (2) and (3). At the QMS position, the output of IC601-2 is changed to high, if the other input is high, because the input of IC601-1 on one side is high. IC601-2 and IC601-4 serve only to reverse the polarity, and is employed as an inverter.

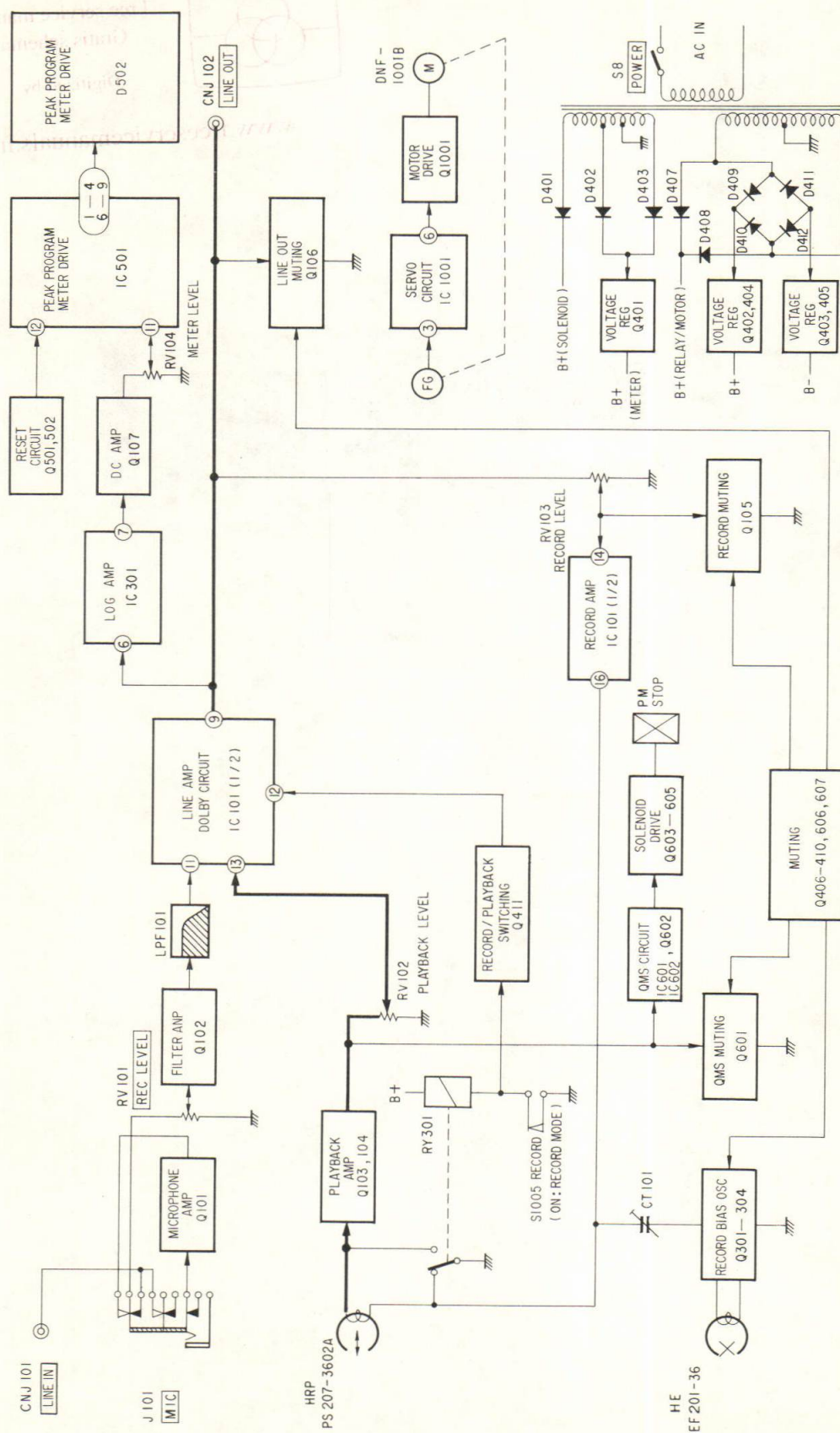
- The one side input of IC601 becomes high in the following;

When the FF or REW button is pressed, the FF/REW switch turns on and +10 V is supplied. If the FWD button is not pressed, the QMS operation is not performed since Q406 is not turned on.
- Line Output Muting in QMS mode

When the FWD button is pressed in the QMS mode, the line output should be muted. When the FWD button is pressed, the muting is released in the normal route. So the voltage is applied to the base of Q408 from the FF/REW switch through R623, and Q408 is turned on.
- Releasing the muting of QMS detection amplifier input;

The output of IC601-2 (+10 volts) is applied to the base of Q601, to turn off Q601 in the QMS mode.

1-2. BLOCK DIAGRAM



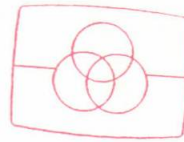
SECTION 2 DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

Cassette Lid : ①, ②

Top Cover : ③, ④

Front Panel Ass'y : ⑤ ~ ⑨



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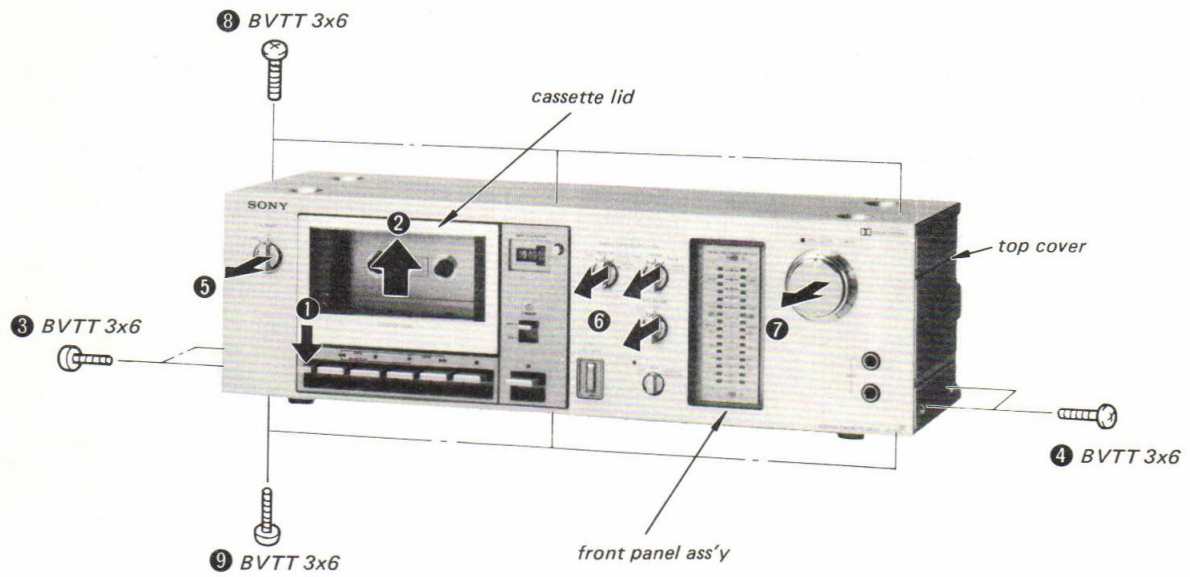


photo: TC-15F

SECTION 3 ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab:

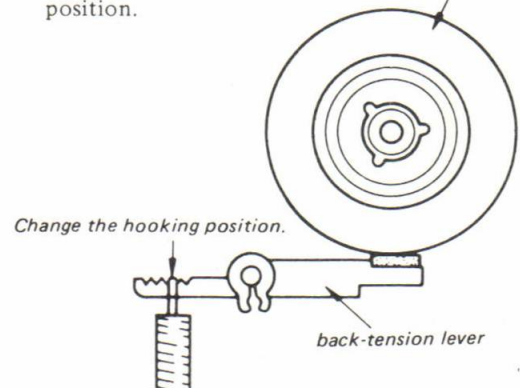
record/playback head	pinch roller
erase head	rubber belts
capstan	idlers
2. Demagnetize the record/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

Back Tension Torque Adjustment

— playback mode —

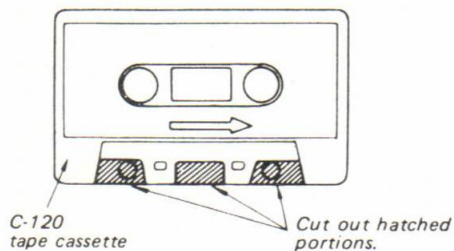
Torque meter	Meter reading
CQ-102C	2.0 – 4.5 g·cm (0.02 – 0.06 oz·inch)

If necessary, change the spring *supply reel spindle* position.

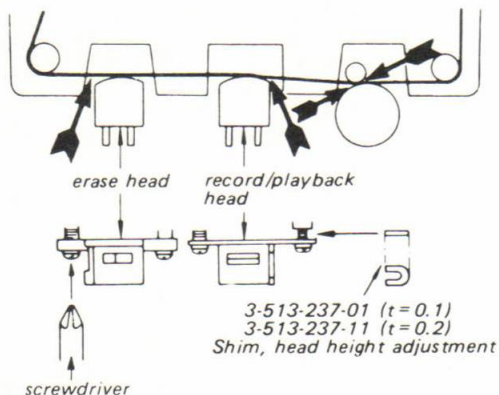


Head Height Adjustment

1. Prepare an adjustment cassette as shown below.



2. In playback mode and viewing from the front, adjust the head heights to eliminate tape curl and tape twist at portions shown by arrows.



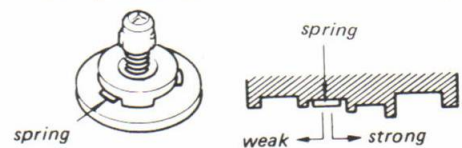
Forward Torque Adjustment

— playback mode —

Torque meter	Meter reading
CQ-102C	28 ~ 55 g·cm (0.39 – 0.76 oz·inch)

If necessary, change the spring position.

take-up reel spindle

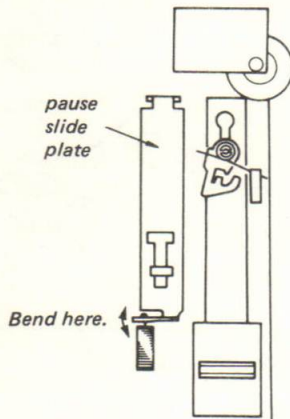


(Approx. 8g·cm per one slide.)

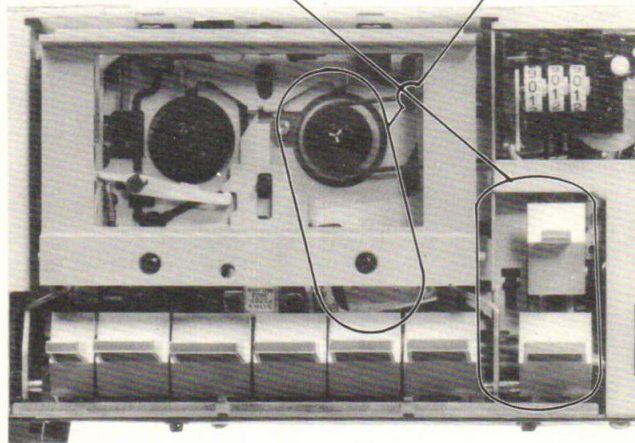
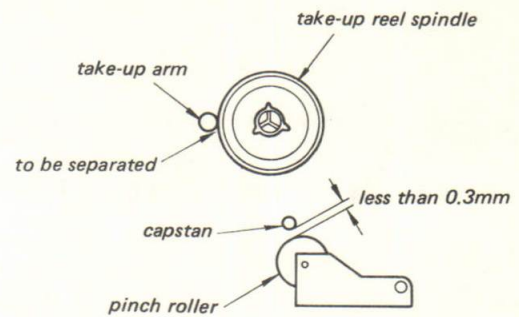
Pause Timing Adjustment

— playback mode —

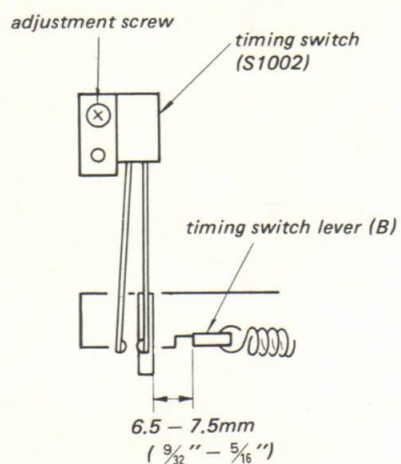
1. Press the pause button slowly.
2. Bend the pause slide plate so that the take-up reel spindle and the take-up arm separate just when or just after the capstan and the pinch roller separate.



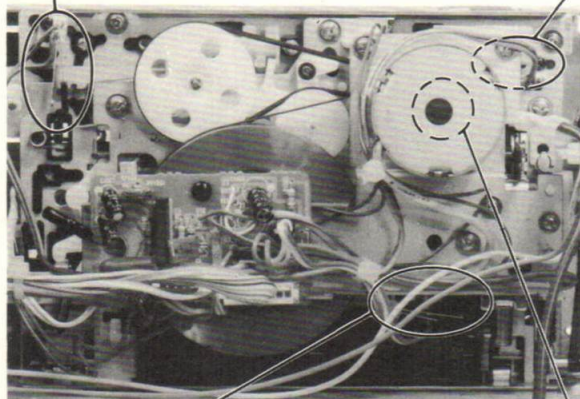
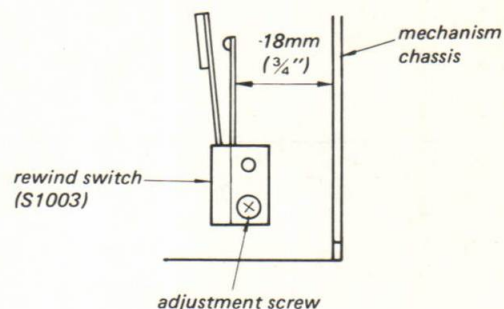
Note: When the take-up reel spindle is away from the take-up arm, the clearance should be less than 0.3mm.



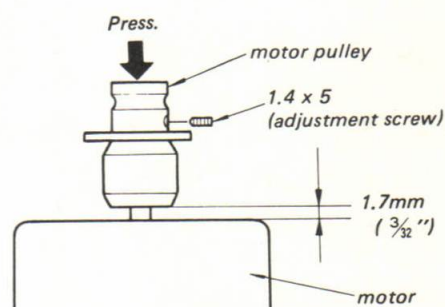
Timing Switch (S1002) Position Adjustment — stop mode —



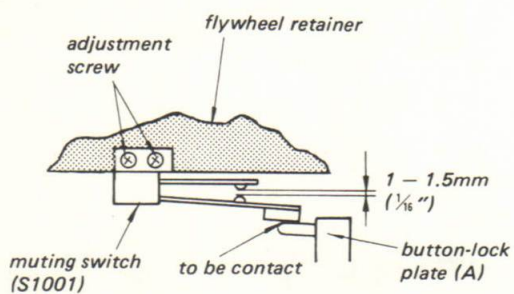
Rewind Switch (S1003) Position Adjustment — stop mode —



Pulley Height Adjustment — stop mode —



Muting Switch (S1001) Position Adjustment — stop mode —



3-2. ELECTRICAL ADJUSTMENTS

Note: The adjustment should be performed in the order given in this service manual. The adjustments should be performed for both L-CH and R-CH.

- Set the BIAS and EQ switches according to the tape as follows.

Tape	BIAS switch	EQ switch
CS-10	MED	TYPE I
CS-20	HIGH	TYPE II
CS-30	MED	TYPE III
CS-40	METAL	TYPE IV

- Switches and controls should be set as follows unless otherwise specified.

DOLBY NR switch: OFF
 EQ switch: TYPE I
 BIAS switch: MED
 TIMER STANDBY switch: OFF

- Standard Record:

Deliver the standard input signal level to the input jack and set the REC LEVEL control to obtain the standard output signal level.

Standard Input Level

	MIC	LINE IN
source impedance	300 Ω	10 k Ω
input level	0.77 mV (-60 dB)	0.25 V (-10 dB)

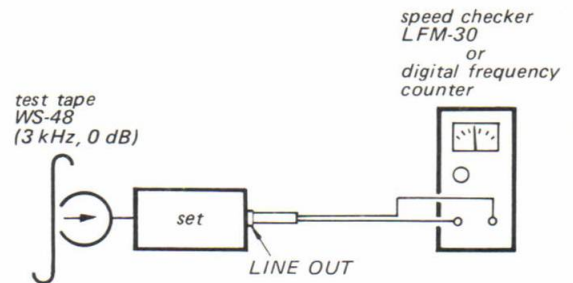
Standard Output Level

	LINE OUT
load impedance	50 k Ω
output level	0.44 V (-5 dB)

Tape Speed Adjustment

Procedure:

Mode: playback



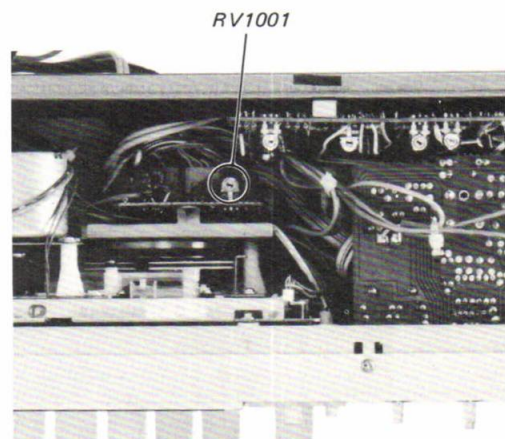
Specification:

Speed checker	Digital frequency counter
-0.5 to +0.5 %	2985 - 3015 Hz

Frequency difference between the beginning and the end of the tape should be within 0.33 % (10 Hz).

Adjustment Location:

— servo amp board —

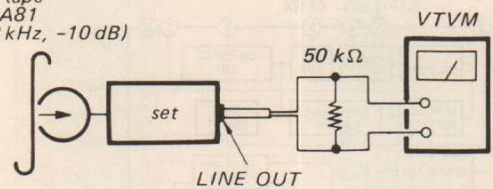


Record/playback Head Azimuth Adjustment

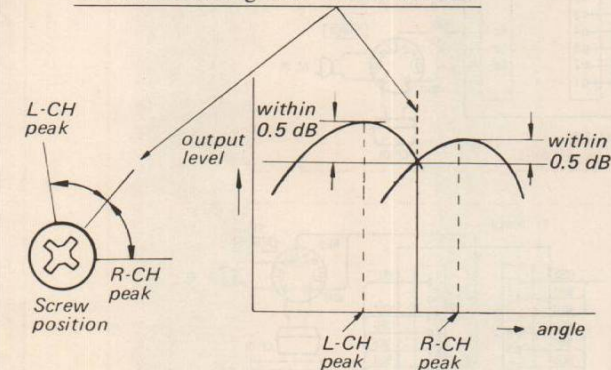
Procedure:

1. Mode: playback

test tape
P-4-A81
(6.3 kHz, -10 dB)

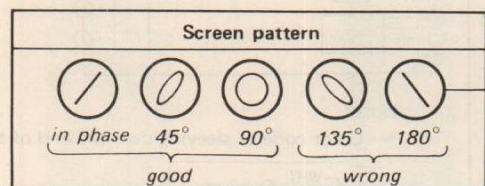
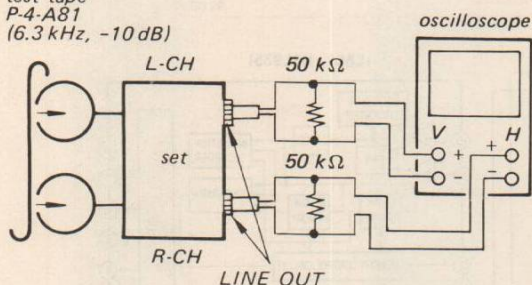


2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 0.5 dB.

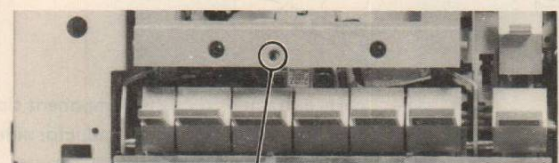


3. Phase Check
Mode: playback

test tape
P-4-A81
(6.3 kHz, -10 dB)



Adjustment Location:



azimuth adjustment screw

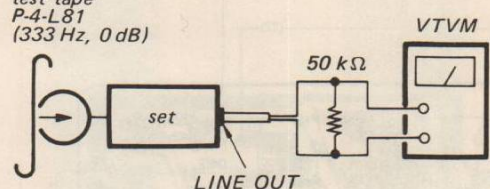
Playback Level Adjustment

Setting:

EQ switch: TYPE I

Procedure:

test tape
P-4-L81
(333 Hz, 0 dB)



Specification:

LINE OUT level: 0.52 to 0.59 V
(-3.5 to -2.5 dB)

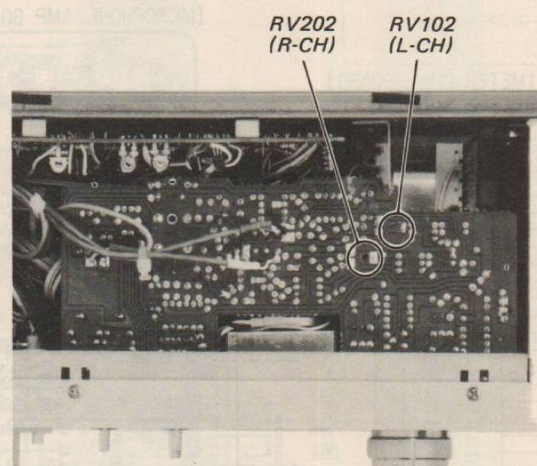
Level difference between channels:
less than 0.5 dB

Level difference from NORMAL:
between -0.5 dB and
+0.5 dB
(EQ switch: TYPE III)

Check that the LINE OUT level does not
change in playback mode while changing the
mode from playback to stop several times.

Adjustment Location:

— record/playback board —

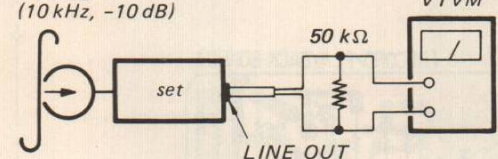


Playback Equalizer Adjustment

Procedure:

Mode: playback

test tape
P-4-A82
(10 kHz, -10 dB)



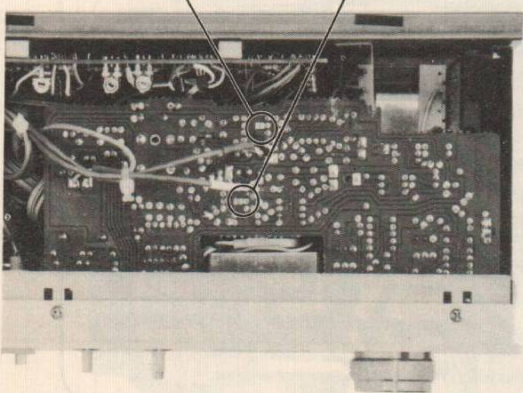
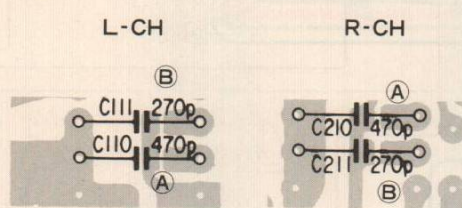
Specification:

EQ switch	LINE OUT level
TYPE I	140 - 270 mV (-15 to -9 dB)
TYPE II or TYPE III	85 - 170 mV (-19 to -13 dB)

Adjustment Location:

— record/playback board —

Bridge patterns	High frequency level
(B)	low
(A)	high
(A), (B)	high



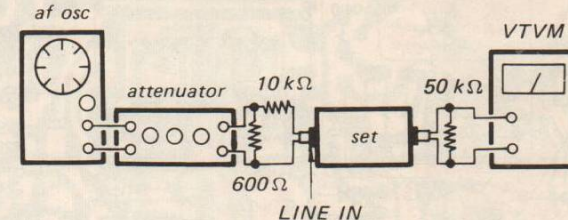
Level Meter Calibration

Setting:

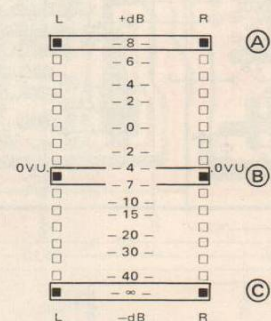
REC LEVEL control: standard record
(See page 12.)

Procedure:

1. Mode: record

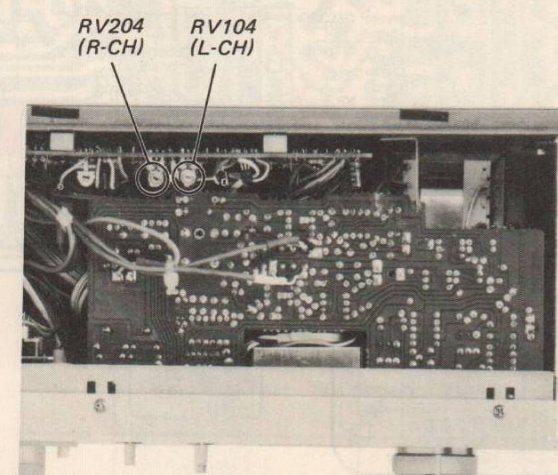


2. Input level: 0.775 V (0 dB)
Slowly turn RV104 (L-CH) and RV204 (R-CH)
and stop them when LED marked (A) lights up.
3. Decrease the input level to 195 mV (-12 dB)
and make sure that LED marked (B) lights up.
4. Decrease the input level to 0.62 mV (-62 dB)
and make sure that LED marked (C) lights up.



Adjustment Location:

— record/playback board —



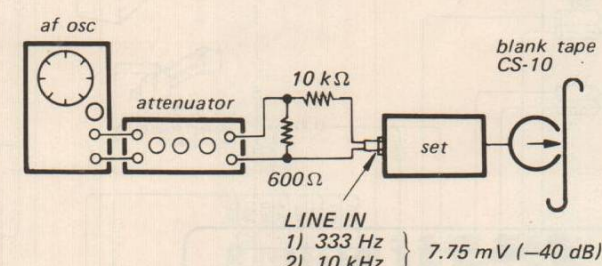
Record Bias Adjustment

Setting:

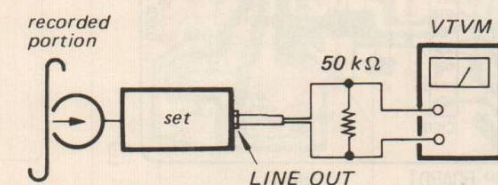
REC LEVEL control: standard record
(See page 12.)

Procedure:

1. Mode: record



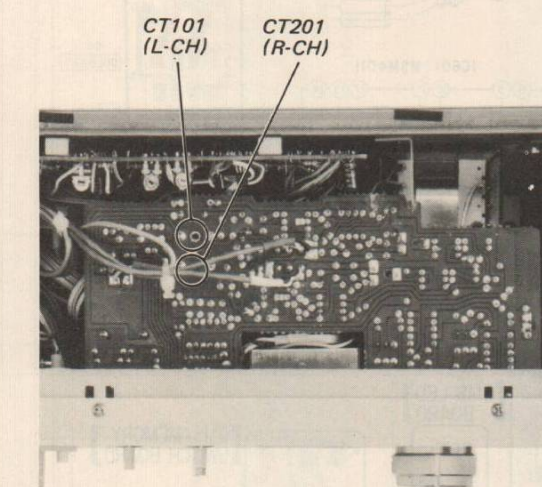
2. Mode: playback



3. Adjust CT101 and CT201 so that output levels
of 333 Hz and 10 kHz signal become equal.

Adjustment Location:

— record playback board —



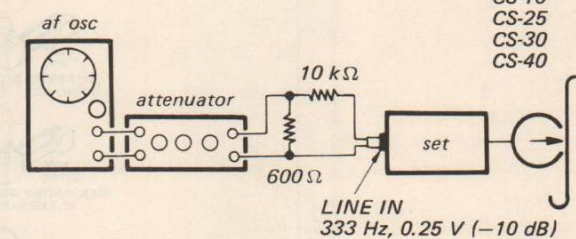
Record Level Adjustment

Setting:

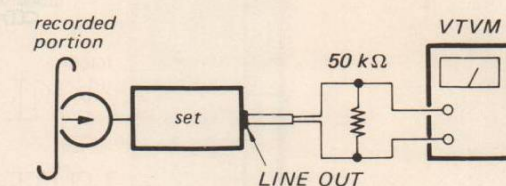
REC LEVEL control: standard record
(See page 12.)

Procedure:

1. Mode: record



2. Mode: playback



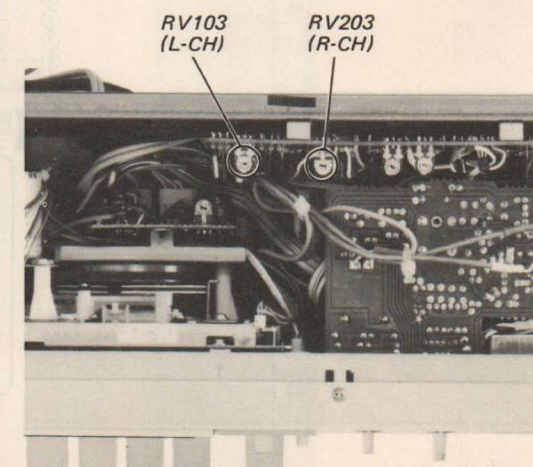
3. Adjust RV103 and RV203 so that LINE OUT
level meets specification.

Specification:

Tape	LINE OUT level
CS-10	0.42 - 0.47 V (-5.5 to -4.5 dB)
CS-25 CS-30 CS-40	0.37 - 0.52 V (-6.5 to -3.5 dB)

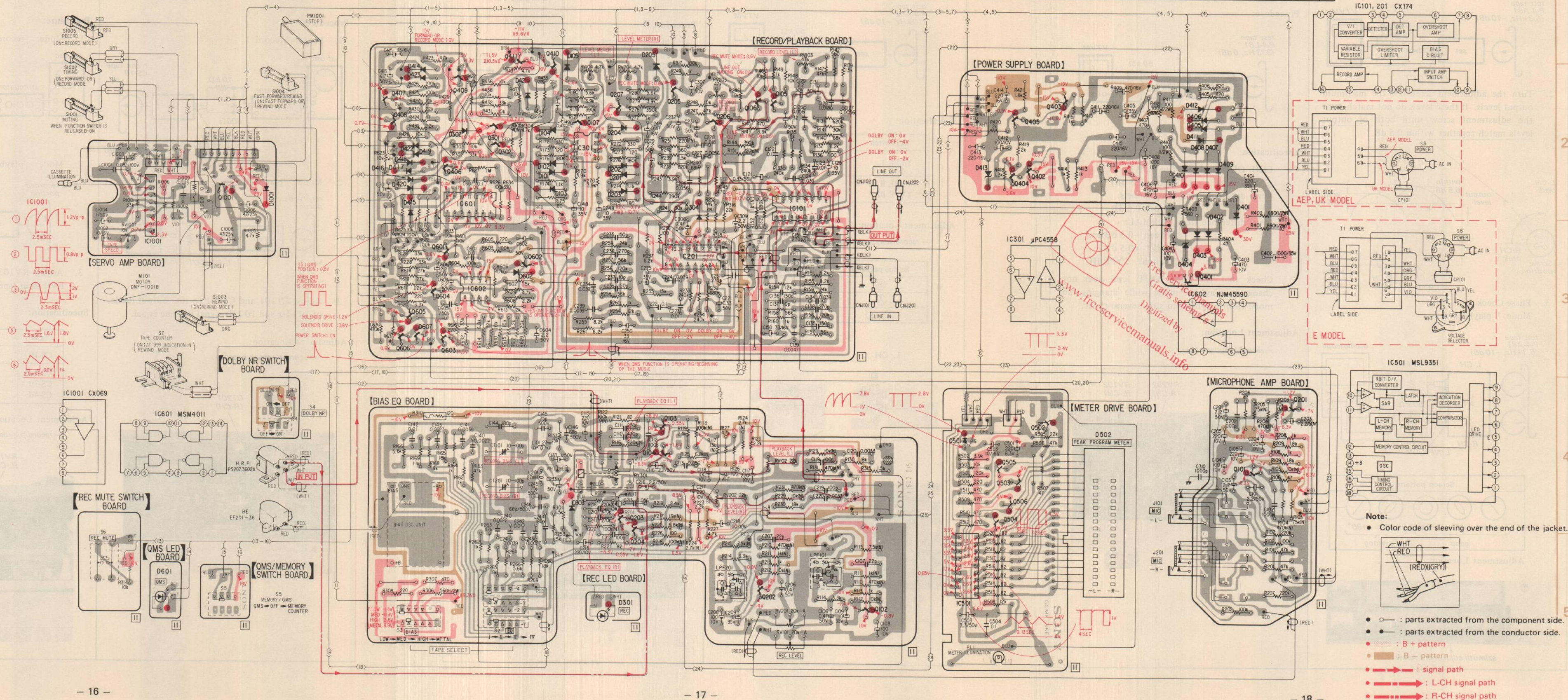
Adjustment Location:

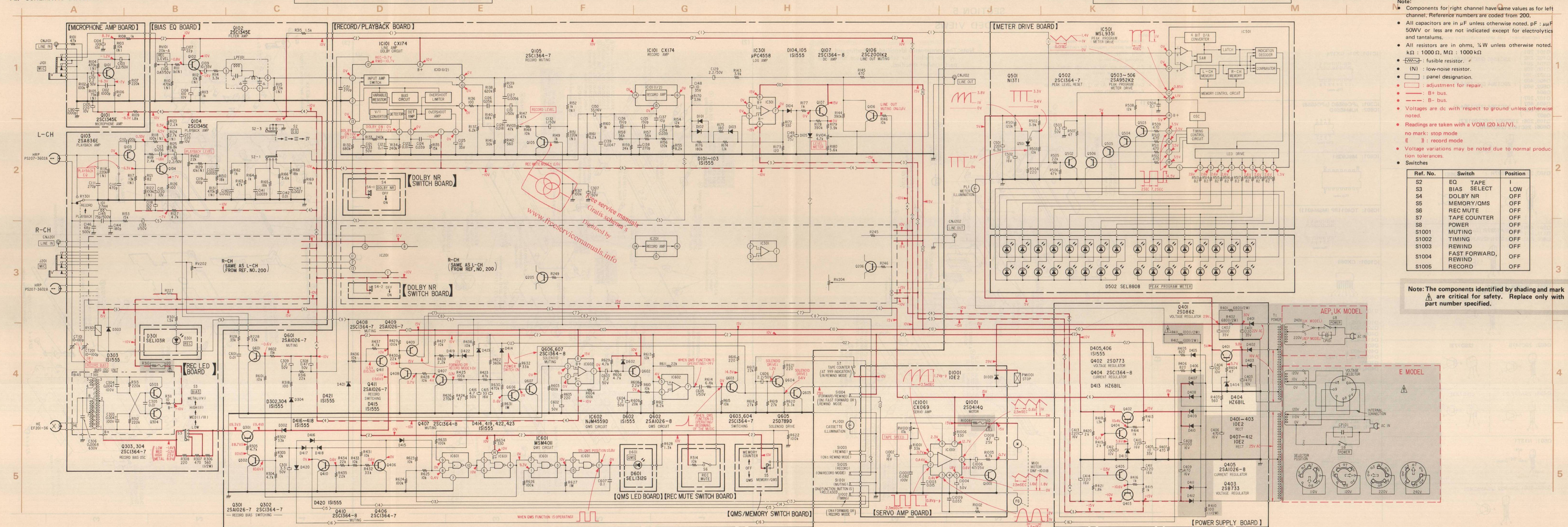
— record/playback board —



SECTION 4

DIAGRAMS

[illegible]



Note:

Components for right channel have same values as for left channel. Reference numbers are coded from 200.

- All capacitors are in μF unless otherwise noted. pF : μF 50WV or less are not indicated except for electrolytics and tantalums.

- All resistors are in ohms, $\frac{1}{4}\text{W}$ unless otherwise noted. $\text{k}\Omega$: 1000 Ω , $\text{M}\Omega$: 1000 $\text{k}\Omega$

- --- : fusible resistor.

- (N) : low-noise resistor.

- $\square$: panel designation.

- $\square$: adjustment for repair.

- --- : B+ bus.

- --- : B- bus.

- Voltages are dc with respect to ground unless otherwise noted.

- Readings are taken with a VOM (20 $\text{k}\Omega/\text{V}$).

- no mark: stop mode

- () : record mode

- Voltage variations may be noted due to normal production tolerances.

- Switches

Ref. No.	Switch	Position
S2	EQ TAPE	I
S3	BIAS SELECT	LOW
S4	DOLBY NR	OFF
S5	MEMORY/QMS	OFF
S6	REC MUTE	OFF
S7	TAPE COUNTER	OFF
S8	POWER	OFF
S1001	MUTING	OFF
S1002	TIMING	OFF
S1003	REWIND	OFF
S1004	FAST FORWARD, REWIND	OFF
S1005	RECORD	OFF

Note: The components identified by shading and $\triangle$ are critical for safety. Replace only with part number specified.

TC-15F/15FB

TC-15F/15FB

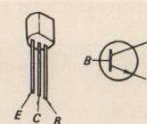
TC-15F/15FB

TC-15F/15FB

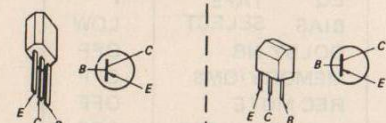
Replacement Semiconductors

For replacement, use semiconductors except in ().

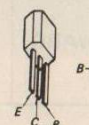
Q101, 201 } : 2SC1345 (2SC1345E)
Q102, 202
Q104, 204
Q105, 205
Q302-304
Q406, 408
Q502, 603 } : 2SC1364 (2SC1364-7)
Q604
Q107, 207
Q404, 407
Q410, 606 } : 2SC1364 (2SC1364-8)
Q607
Q106, 206: 2SC2001 (2SC2001K2)
Q605: 2SC1475 (2SD789D)



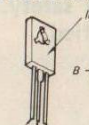
Q103, 203: 2SA1027R (2SA836E)



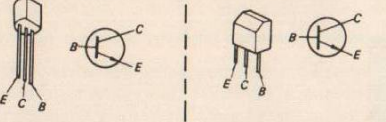
Q301, 409 } : 2SA1027R (2SA1026-7)
Q411, 601
Q405, 602: 2SA1027R (2SA1026-8)



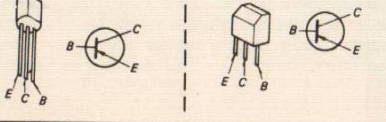
Q401: 2SD809 (2SD862)
Q1001: 2SD414 (2SD414Q)



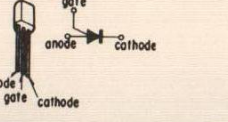
Q402: 2SC1475 (2SD773)



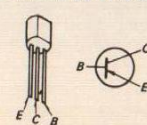
Q403: 2SA772-23 (2SB733)



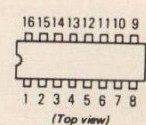
Q501: N13T1



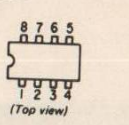
Q503-506: 2SA952 (2SA952K2)



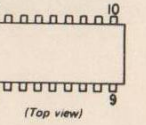
IC101, 201: CX174



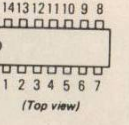
IC301: μ PC4558C (μ PC4558)
IC602: NJM4559D



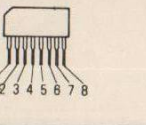
IC501: MSL9351



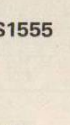
IC601: TC4011BP (MSM4011)



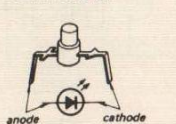
IC1001: CX069



D101, 201
D105, 205
D302-304
D405, 406
D414-423
D602
D401-403
D407-412 } : 1S1555
D1001
D404, 413: HZ6B2L (HZ6B1L)



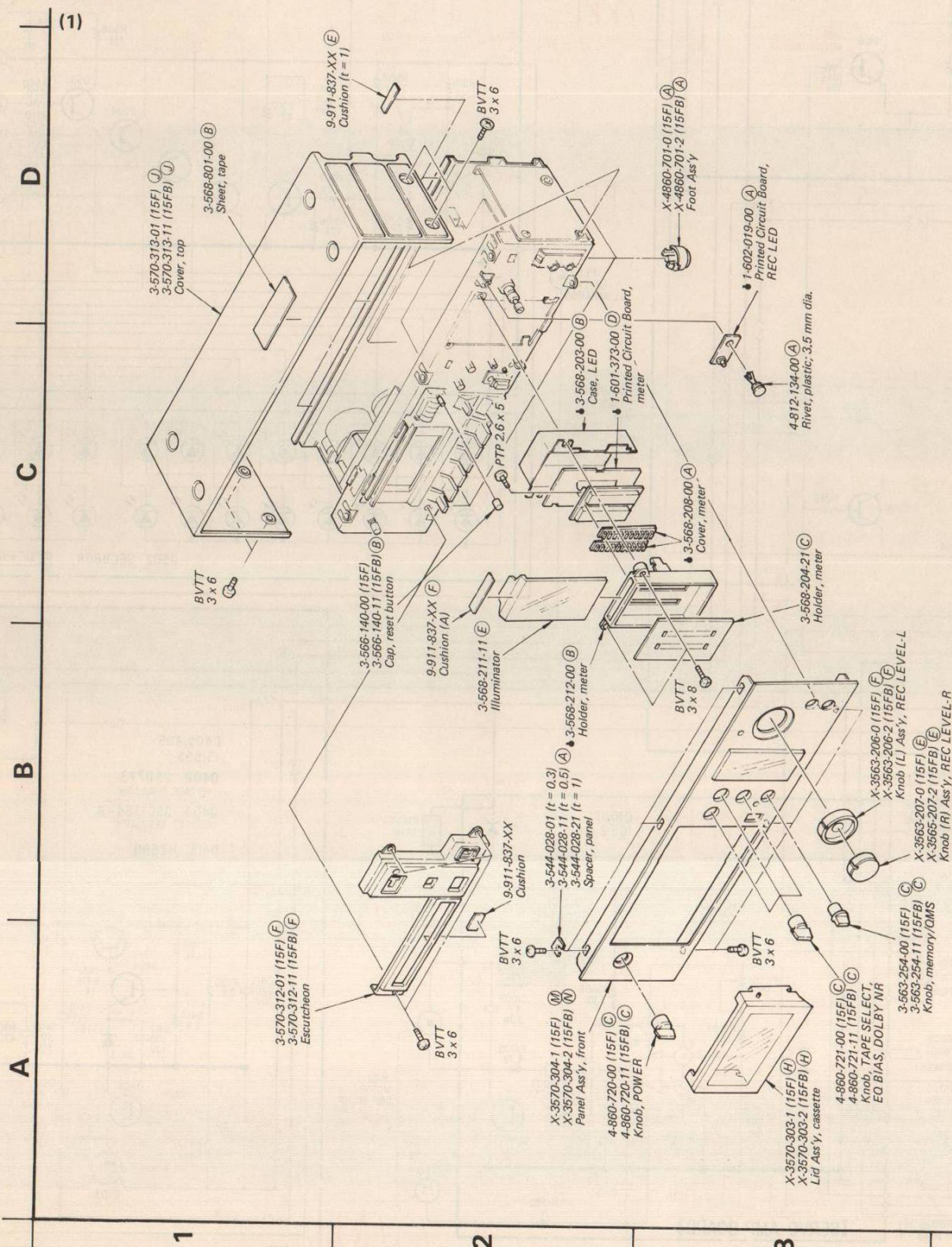
D301: SEL103R
D601: SEL1312G

SECTION 5
EXPLODED VIEWS

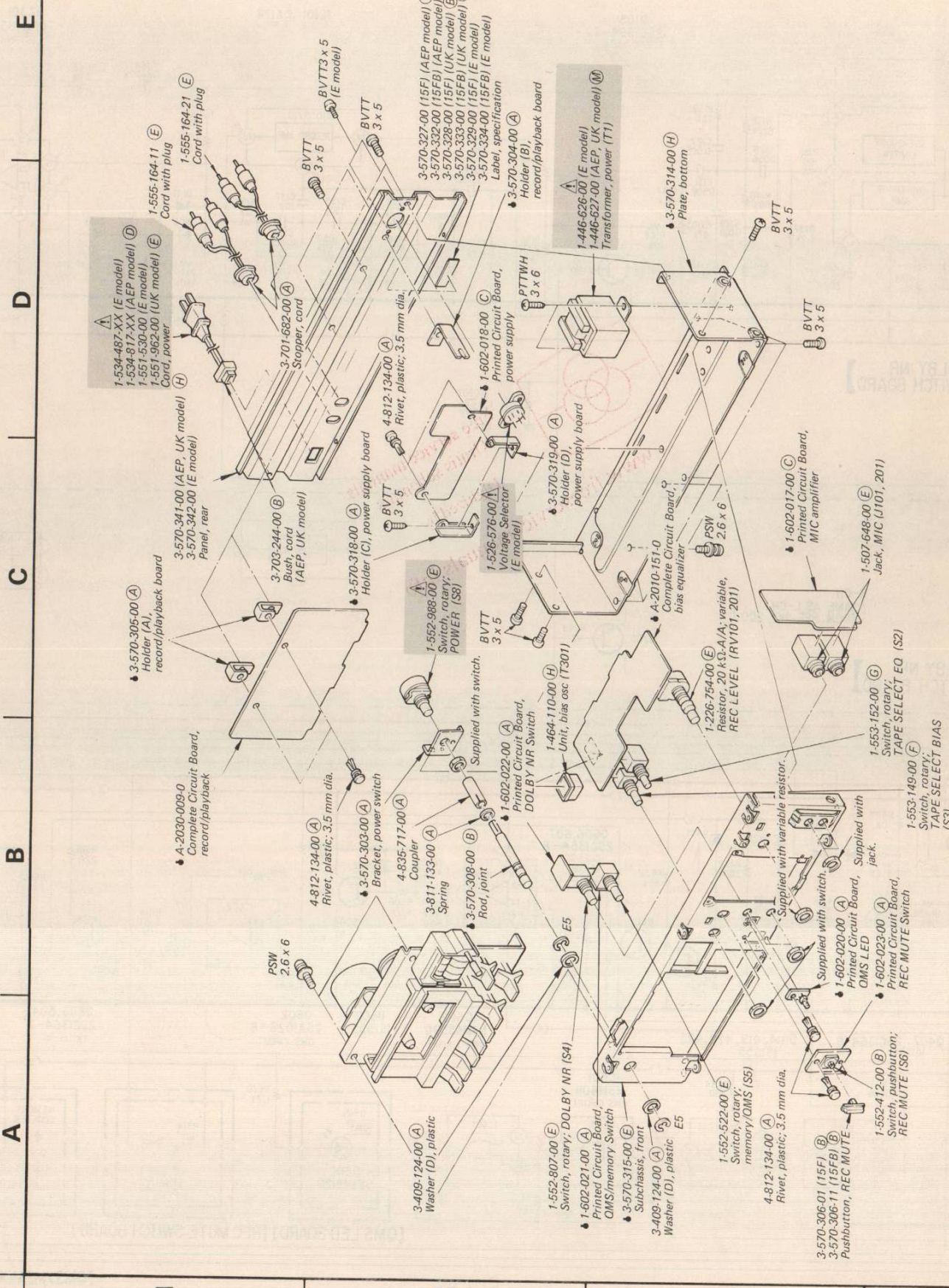
Note:

- Items marked "A" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All screws are Phillips (cross recess) type unless otherwise noted.
- (-) = slotted head
- Circled letters (A to Z) are applicable to European models only.

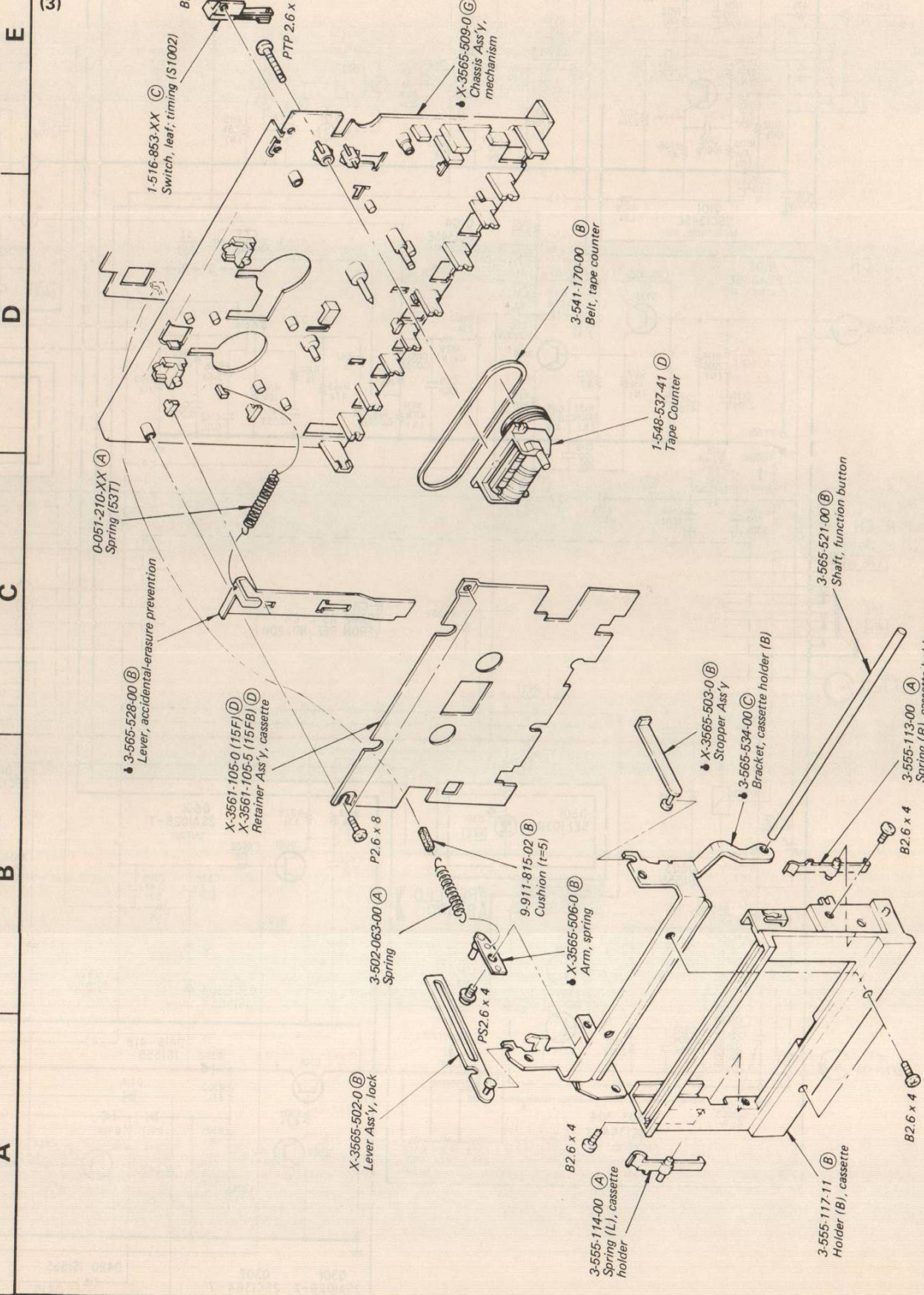
Note: The components identified by shading and mark A are critical for safety. Replace only with part number specified.

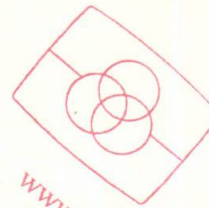
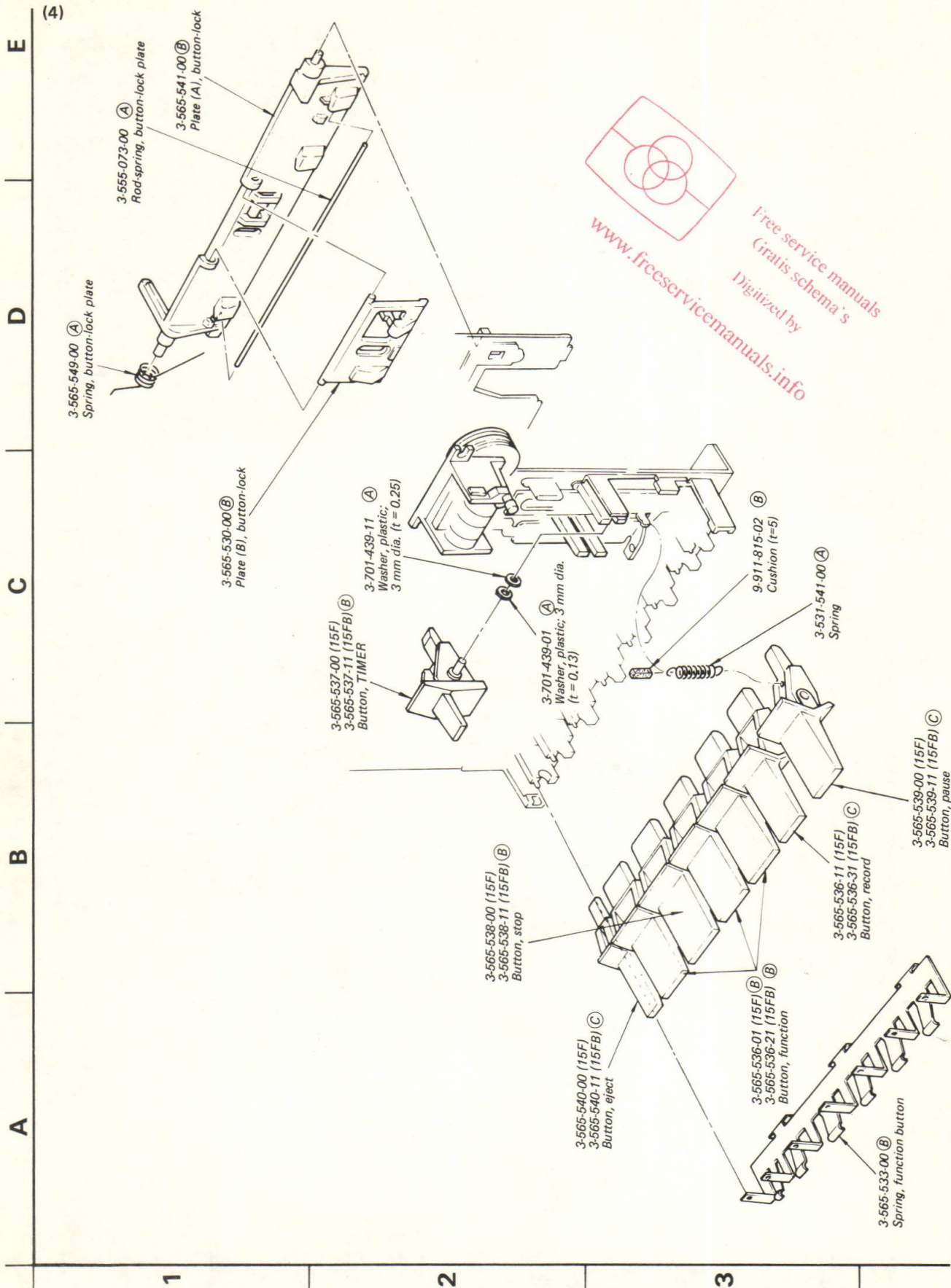


(2)

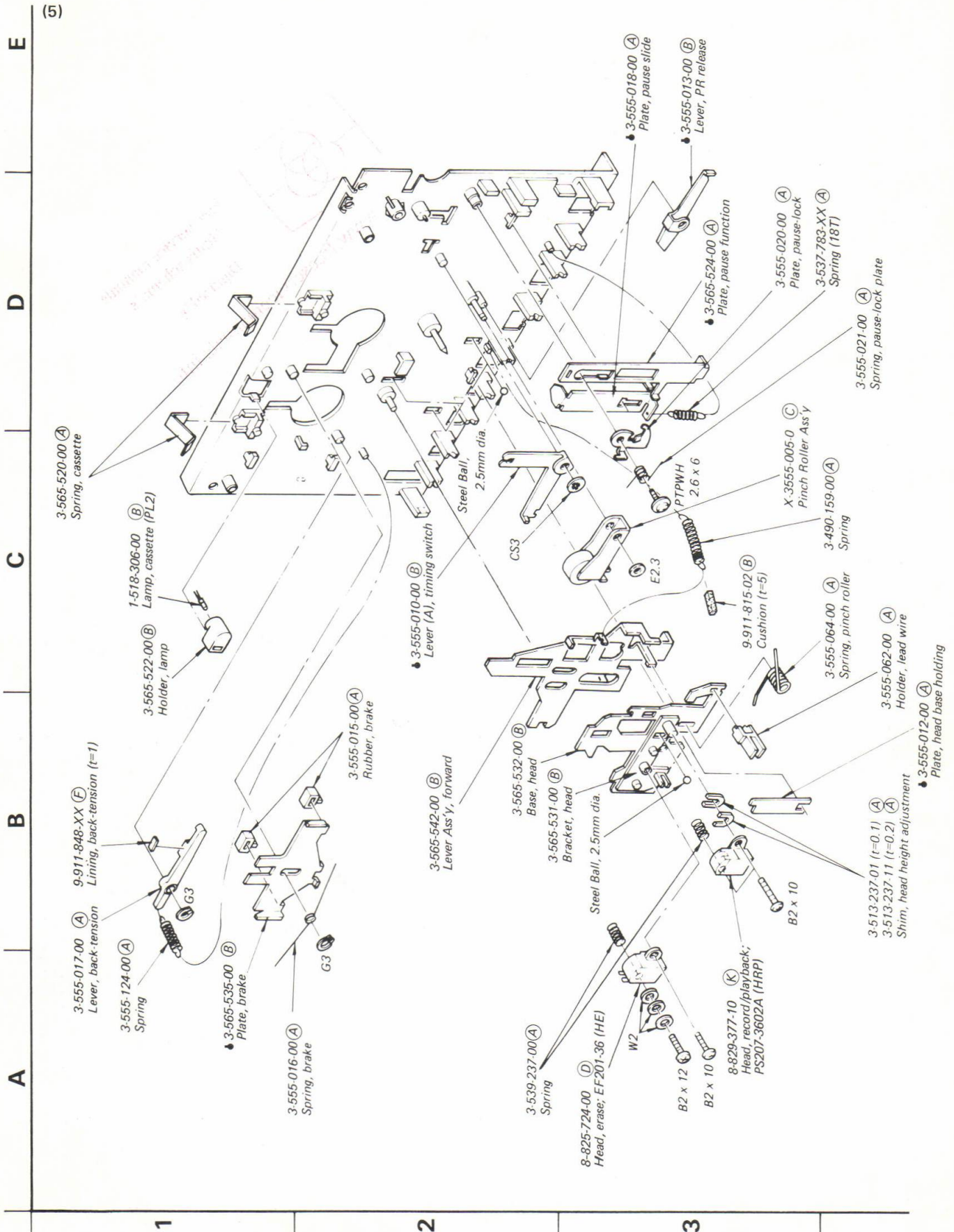


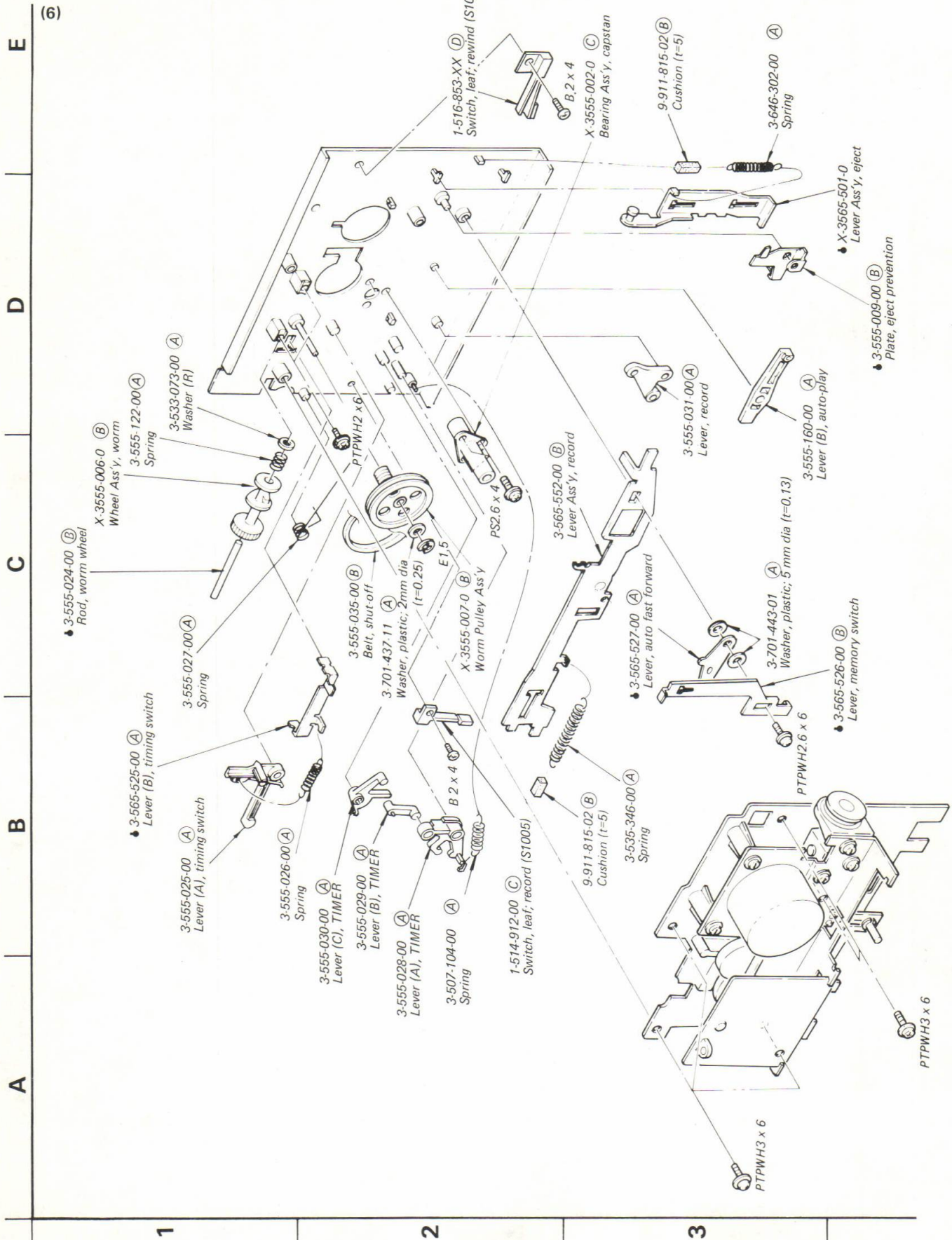
(3)

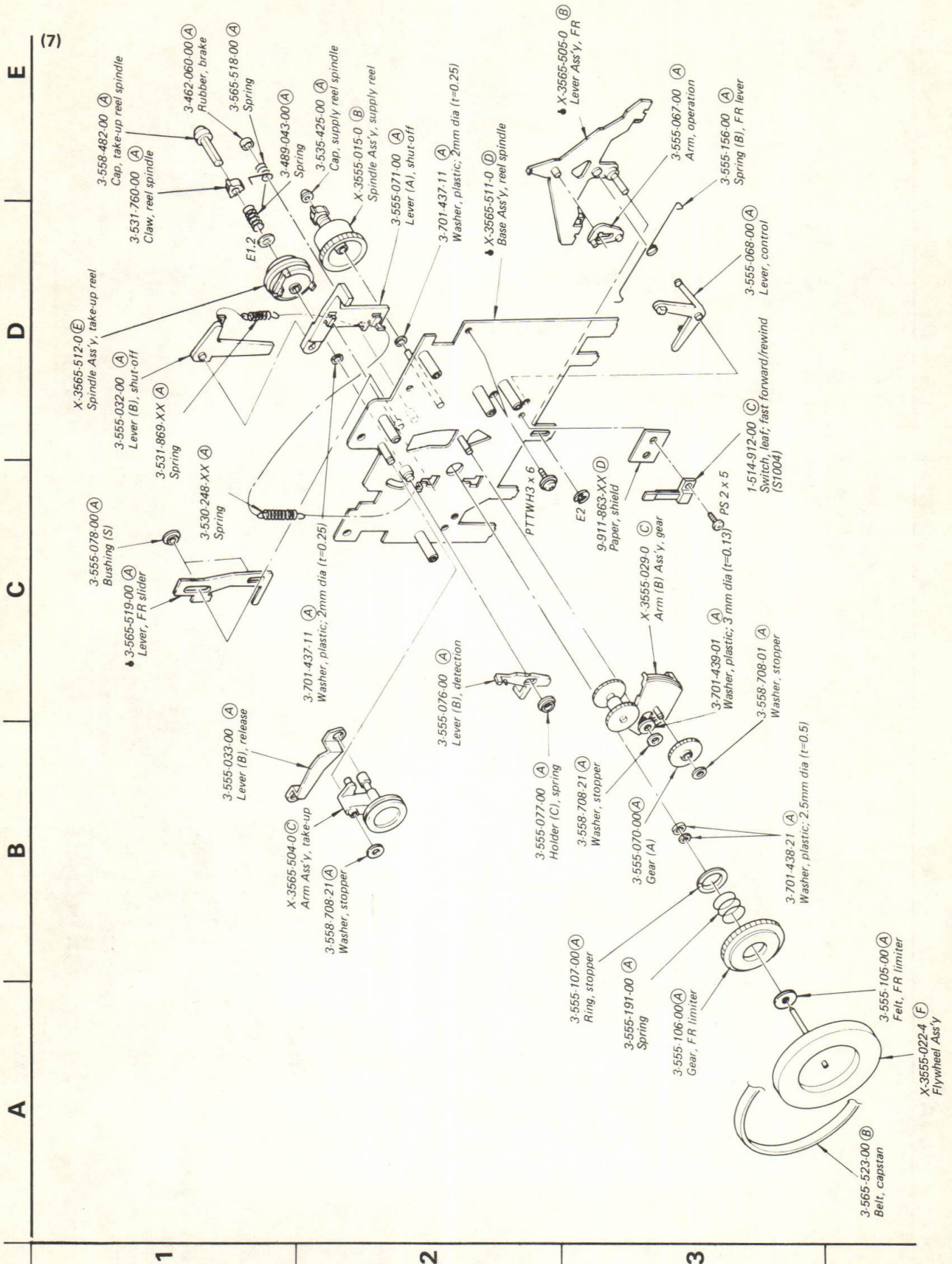




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E

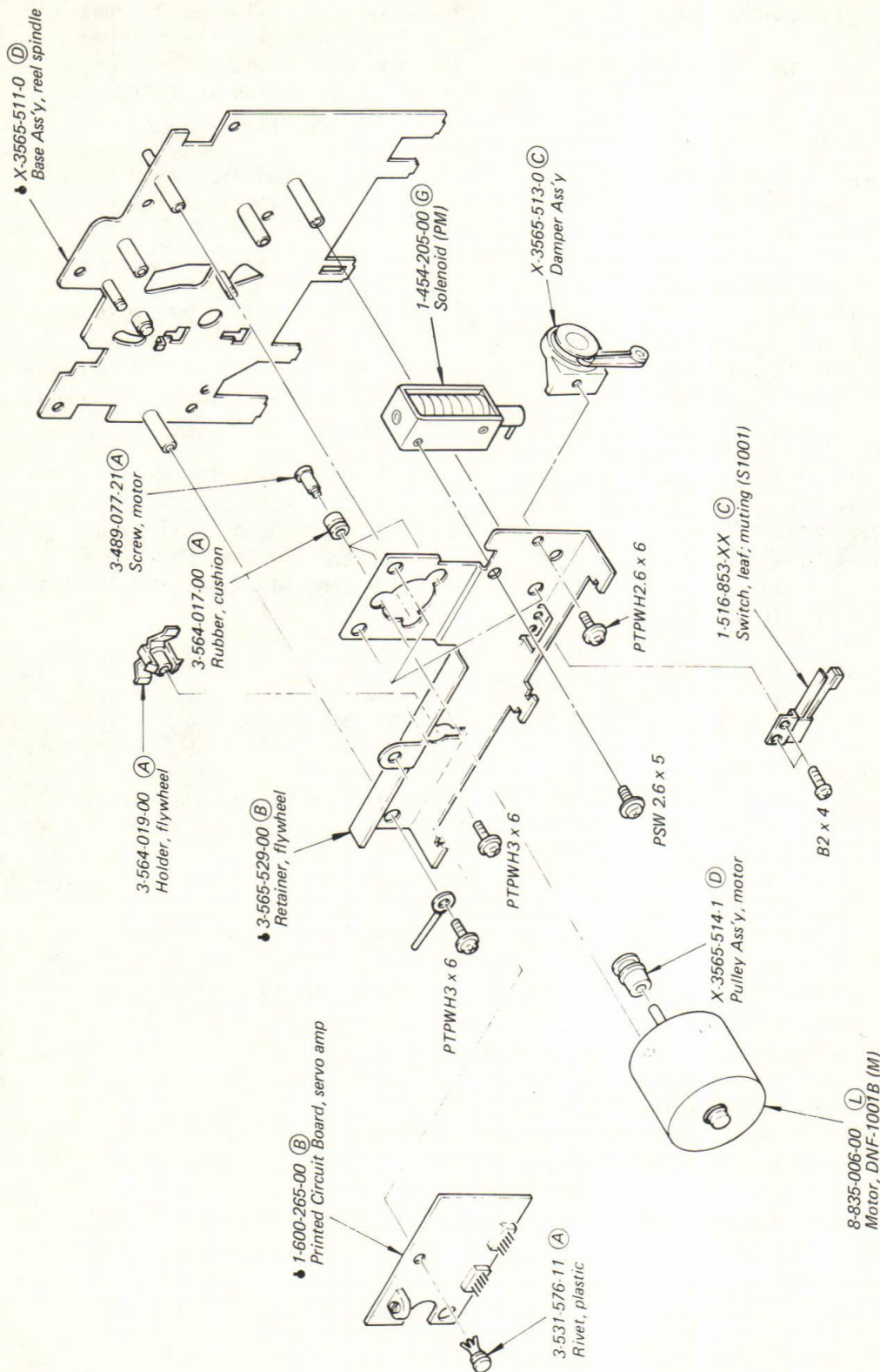
D

C

B

A

(8)



SECTION 6

ELECTRICAL PARTS LIST

Note: Circled letters (A) to (Z) are applicable to European models only.

Ref. No. Part No. Description

SEMICONDUCTORS

Transistors

⇒Q101, 201	8-729-334-58	(B)	2SC1345
⇒Q102, 202			
⇒Q103, 203	8-729-612-77	(B)	2SA1027R
⇒Q104, 204	8-729-334-58	(B)	2SC1345
⇒Q105, 205	8-729-663-47	(C)	2SC1364
⇒Q106, 206	8-729-100-13	(B)	2SC2001
⇒Q107, 207	8-729-663-47	(C)	2SC1364
⇒Q301	8-729-612-77	(B)	2SA1027R
⇒Q302-304	8-729-663-47	(C)	2SC1364
⇒Q401	8-729-180-93	(B)	2SD809
⇒Q402	8-760-413-10	(B)	2SC1475
⇒Q403	8-760-523-10	(C)	2SA772-23
⇒Q404	8-729-663-47	(C)	2SC1364
⇒Q405	8-729-612-77	(B)	2SA1027R
⇒Q406-408	8-729-663-47	(C)	2SC1364
⇒Q409	8-729-612-77	(B)	2SA1027R
⇒Q410	8-729-663-47	(C)	2SC1364
⇒Q411	8-729-612-77	(B)	2SA1027R
⇒Q501	8-729-101-31	(B)	N13T1
⇒Q502	8-729-663-47	(C)	2SC1364
⇒Q503-506	8-729-195-23	(B)	2SA952
⇒Q601, 602	8-729-612-77	(B)	2SA1027R
⇒Q603, 604	8-729-663-47	(C)	2SC1364
⇒Q605	8-760-413-10	(B)	2SC1475
⇒Q606, 607	8-729-663-47	(C)	2SC1364
⇒Q1001	8-729-141-43	(B)	2SD414

ICs

IC101, 201	8-759-101-74	(K)	CX174
⇒IC301	8-759-145-58	(D)	μPC4558C
IC501	8-759-993-51	(H)	MSL9351
⇒IC601	8-759-240-11	(B)	TC4011BP
IC602	8-759-745-59	(D)	NJM4559D
IC1001	8-750-690-00	(F)	CX069

Diodes

D101-105	8-719-815-55	(B)	1S1555
D201-205			
D301	8-719-301-03	(B)	SEL103R
D302-304	8-719-815-55	(B)	1S1555
D401-403	8-719-200-02	(B)	10E2

⇒: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

Ref. No. Part No. Description

⇒D404	8-719-910-65	(B)	HZ6B2L
D405, 406	8-719-815-55	(B)	1S1555
D407-412	8-719-200-02	(B)	10E2
⇒D413	8-719-910-65	(B)	HZ6B2L
D414-423	8-719-815-55	(B)	1S1555
D502	1-800-956-11	(K)	SEL8808
D601	8-719-313-12	(B)	SEL1312G
D602	8-719-815-55	(B)	1S1555
D1001	8-719-200-02	(B)	10E2

CAPACITORS

All capacitors are in μF. Common capacitors are omitted.
Refer to the lists on pages 34 and 35 for their part numbers.
p: μμF.

C102, 202	1-161-323-00	(A)	0.001	ceramic
C110, 210	1-161-319-00	(A)	470 p	ceramic
C111, 211	1-161-316-00	(A)	270 p	ceramic
C120, 220	1-161-382-00	(A)	0.0033	ceramic
C121, 221	1-123-286-00	(B)	0.33	50 V electrolytic
C135, 235	1-161-313-00	(A)	150 p	ceramic
C136, 236				
C138, 238	1-161-316-00	(A)	270 p	ceramic
C144, 244	1-161-314-00	(A)	180 p	ceramic
C146, 246	1-107-036-00	(A)	68 p	500 V mica
C251	1-161-316-00	(A)	270 p	ceramic
C401	1-123-505-00	(B)	220	35 V electrolytic (nonpolarized)
C403	1-123-477-00	(B)	470	10 V electrolytic (nonpolarized)
C406	1-123-487-00	(B)	470	16 V electrolytic (nonpolarized)
C408	1-123-488-00	(B)	1000	16 V electrolytic (nonpolarized)
C409	1-123-487-00	(B)	470	16 V electrolytic (nonpolarized)
C502	1-121-651-00	(A)	10	16 V electrolytic
C605	1-123-228-00	(B)	1	50 V electrolytic (nonpolarized)
CT101, 201	1-141-225-00	(C)	Trimmer	

Note: The components identified by shading and mark **A** are critical for safety. Replace only with part number specified.

Note: Circled letters (**A** to **Z**) are applicable to European models only.

Ref. No. Part No. Description

RESISTORS

All resistors are in ohms. Common ¼ W carbon resistors are omitted. Refer to the list on the last page for their part numbers.

R306	1-244-867-00	A 560	½ W	carbon
R310	A 1-217-536-00	B 120	¼ W	fusible
R401, 402	A 1-244-869-00	A 680	½ W	carbon
R410-412	A 1-244-849-00	A 100	½ W	carbon
R1008	A 1-217-523-00	B 10	¼ W	fusible
RV101, 201	1-226-754-00	E 20 k-A/A, variable		REC LEVEL
RV102, 202	1-226-237-00	B 20 k-B, adjustable		playback
RV103, 203	1-226-433-00	D 50 k-B, adjustable		record
RV104, 204	1-226-430-00	B 4.7 k-B, adjustable		level meter
RV1001	1-226-431-00	B 10 k-B, adjustable		tape speed

MISCELLANEOUS

CP101	(A 1-130-455-00	C 0.01/250 V (AEP, UK model)
	A 1-231-341-00	Encapsulated Component (E model)
HE	8-825-724-00	F Head, erase; EF201-36
HRP	8-829-377-10	M Head, record/playback; PS207-3602A
J101, 201	1-507-648-00	C Jack, MIC
L101, 201	1-408-262-00	B Coil, 27 mH; microinductor
LPF101)		
LPF201)	1-231-388-00	D Filter, low-pass
M	8-835-006-00	L Motor, DNF-1001B
PL1	1-518-351-00	B Lamp, meter
PL2	1-518-306-00	B Lamp, cassette
PM	1-454-205-00	F Solenoid
RY301	1-515-323-00	G Relay
S2	1-553-152-00	E Switch, rotary; TAPE SELECT EQ
S3	1-553-149-00	D Switch, rotary; TAPE SELECT BIAS
S4	1-552-807-00	D Switch, rotary; DOLBY NR
S5	1-552-522-00	C Switch, rotary; memory/QMS
S6	1-552-412-00	B Switch, pushbutton; REC MUTE
S7		Included in tape counter

- Items marked "♣" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

Note: The components identified by shading and mark **A** are critical for safety. Replace only with part number specified.

Ref. No. Part No. Description

S8	A 1-552-988-00	E Switch, rotary; POWER
S1001	1-516-853-XX	C Switch, leaf; muting
S1002	1-516-853-XX	C Switch, leaf; timing
S1003	1-516-853-XX	C Switch, leaf; rewind
S1004	1-514-912-00	B Switch, leaf; fast forward/rewind
S1005	1-514-912-00	B Switch, leaf; record

T1	{ A 1-446-627-00	M Transformer, power (AEP, UK model)
	A 1-446-626-00	Transformer, power (E model)
T301	1-464-110-00	G Unit, bias OSC

A 1-526-576-00	Voltage Selector (E model)
A 1-534-487-XX	Cord, power (E model)
A 1-534-817-XX	D Cord, power (AEP model)
1-548-537-41	F Tape Counter
A 1-551-530-00	Cord, power (E model)
A 1-551-963-00	E Cord, power (UK model)
A 1-551-967-00	E Cord, power (UK model)
1-555-164-11	D Cord with plug
1-555-164-21	D Cord with plug

COMPLETE CIRCUIT BOARDS

♣ A-2010-151-0	Bias Equalizer
♣ A-2030-009-0	Record/Playback

PRINTED CIRCUIT BOARDS

♣ 1-600-265-00	B Servo Amp
♣ 1-601-373-00	C Meter
♣ 1-602-017-00	B MIC amplifier
♣ 1-602-018-00	B Power Supply
♣ 1-602-019-00	A REC LED
♣ 1-602-020-00	A QMS LED
♣ 1-602-021-00	B QMS/memory Switch
♣ 1-602-022-00	B DOLBY NR Switch
♣ 1-602-023-00	B REC MUTE Switch

ACCESSORIES & PACKING MATERIALS

<u>Part No.</u>	<u>Description</u>
3-570-337-00	D Carton (15F)
3-570-339-00	Carton (15FB)
3-703-079-21	A Label, sub-caution
3-783-104-11	Manual, instruction
3-793-828-11	A Card, caution; cassette

ELECTROLYTIC CAPACITORS

Note: Circled letter (A to Z) are applicable to European models only.

RATING → : Use the high voltage rated one.						
CAP. (μF)	6.3 VOLT.	10 VOLT.	16 VOLT.	25 VOLT.	35 VOLT.	50 VOLT.
	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.
0.47					→	1-121-726-00 (A)
1.0					→	1-121-391-00 (A)
2.2					→	1-121-450-00 (A)
3.3	→	→	→	1-121-392-00 (A)	→	1-121-393-00 (A)
4.7	→	→	→	1-121-395-00 (A)	→	1-121-396-00 (A)
10	→	→	1-121-651-00 (A)	1-121-398-00 (A)	→	1-121-738-00 (A)
22	→	→	1-121-479-00 (A)	1-121-480-00 (A)	1-121-662-00 (A)	1-121-152-00 (A)
33	→	→	1-121-403-00 (A)	1-121-404-00 (A)	1-121-652-00 (B)	1-121-405-00 (A)
47	→	1-121-352-00 (A)	1-121-409-00 (A)	1-121-410-00 (A)	1-121-653-00 (B)	1-121-411-00 (A)
100	→	1-121-414-00 (A)	1-121-415-00 (A)	1-121-416-00 (A)	1-121-357-00 (B)	1-121-417-00 (B)
220	1-121-419-00 (B)	1-121-420-00 (B)	1-121-421-00 (A)	1-121-422-00 (B)	1-121-261-00 (C)	1-121-423-00 (B)
330	1-121-751-00 (B)	1-121-805-00 (B)	1-121-521-00 (C)	1-121-654-00 (B)	1-121-655-00 (D)	1-121-656-00 (C)
470	1-121-424-00 (B)	1-121-425-00 (C)	1-121-426-00 (C)	1-121-733-00 (B)	1-121-361-00 (E)	1-121-810-00 (D)
1000	—	1-121-736-00 (C)	1-121-245-00 (D)	1-121-657-00 (D)	1-121-388-00 (E)	1-123-061-00 (F)
2200	1-121-658-00 (B)	1-121-659-00 (C)	1-121-660-00 (D)	1-123-067-00 (F)	1-121-984-00 (F)	—
3300	1-121-661-00 (D)	1-123-075-00 (E)	1-123-071-00 (F)	—	—	—

CAP. (μF)	100 VOLT.	160 VOLT.	250 VOLT.	350 VOLT.
	PART No.	PART No.	PART No.	PART No.
0.47	—	—	—	—
1.0	1-123-249-00 (A)	1-123-252-00 (A)	1-123-003-00 (B)	1-121-168-00 (B)
2.2	1-123-250-00 (A)	1-123-026-00 (B)	—	1-123-028-00 (B)
3.3	1-121-995-00 (A)	—	1-123-004-00 (B)	1-123-006-00 (C)
4.7	1-123-255-00 (A)	1-121-246-00 (B)	1-121-759-00 (B)	1-123-007-00 (D)
10	1-121-126-00 (B)	1-121-999-00 (B)	1-123-254-00 (C)	1-123-008-00 (D)
22	1-121-996-00 (C)	1-123-253-00 (C)	1-123-005-00 (D)	1-123-022-00 (D)
33	1-121-997-00 (C)	1-121-757-00 (C)	—	—
47	1-123-251-00 (C)	1-121-919-00 (C)	—	—
100	1-123-084-00 (E)	—	—	—

CERAMIC CAPACITORS (A)

RATING							
CAP. (pF)	50 VOLT.	CAP. (pF)	50 VOLT.	CAP. (pF)	50 VOLT.	CAP. (μF)	50 VOLT.
	PART No.		PART No.		PART No.		PART No.
0.5	1-101-837-00	22	1-102-959-00	150	1-101-361-00	0.001	1-102-074-00
0.75	1-101-586-00	24	1-102-960-00	160	1-101-367-00	0.0012	1-102-118-00
1.0	1-102-934-00	27	1-102-961-00	180	1-102-976-00	0.0015	1-102-119-00
1.5	1-101-576-00	30	1-102-962-00	200	1-102-977-00	0.0018	1-102-120-00
2.0	1-102-935-00	33	1-102-963-00	220	1-102-978-00	0.0022	1-102-121-00
3	1-102-936-00	36	1-102-964-00	240	1-102-979-00	0.0027	1-102-122-00
4	1-102-937-00	39	1-102-965-00	270	1-102-980-00	0.0033	1-102-123-00
5	1-102-942-00	43	1-102-966-00	300	1-102-981-00	0.0039	1-102-124-00
6	1-102-943-00	47	1-101-880-00	330	1-102-820-00	0.0047	1-102-125-00
7	1-102-944-00	51	1-101-882-00	360	1-102-821-00	0.0056	1-102-126-00
8	1-102-945-00	56	1-101-884-00	390	1-102-822-00	0.0068	1-102-127-00
9	1-102-946-00	62	1-101-886-00	430	1-102-823-00	0.0082	1-102-128-00
10	1-102-947-00	68	1-101-888-00	470	1-102-824-00	0.01	1-102-129-00
11	1-102-948-00	75	1-101-890-00	510	1-101-059-00	0.022	1-101-005-00
12	1-102-949-00	82	1-102-971-00	560	1-102-115-00	0.047	1-101-006-00
13	1-102-950-00	91	1-102-972-00	680	1-102-116-00		
15	1-102-951-00	100	1-102-973-00	820	1-102-117-00		
16	1-102-952-00	110	1-102-815-00				
18	1-102-953-00	120	1-102-816-00				
20	1-102-958-00	130	1-101-081-00				

0.001μF = 1,000pF

CERAMIC (SEMICONDUCTOR) CAPACITORS (A)

RATING → : Use the high voltage rated one.					
CAP. (μF)	25 VOLT.	50 VOLT.	CAP. (μF)	25 VOLT.	50 VOLT.
	PART No.	PART No.		PART No.	PART No.
0.001	→	1-161-039-00	0.018	1-161-016-00	1-161-054-00
0.0012	→	1-161-040-00	0.022	1-161-017-00	1-161-055-00
0.0015		1-161-041-00	0.027	1-161-018-00	1-161-056-00
0.0018		1-161-042-00	0.033	1-161-019-00	1-161-057-00
0.0022		1-161-043-00	0.039	1-161-010-00	1-161-058-00
0.0027	→	1-161-044-00	0.047	1-161-021-00	1-161-059-00
0.0033	→	1-161-045-00	0.056	→	1-161-060-00
0.0039	→	1-161-046-00	0.068	→	1-161-061-00
0.0047	→	1-161-047-00	0.082	1-161-024-00	1-161-062-00
0.0056	→	1-161-048-00	0.1	1-161-025-00	1-161-063-00
0.0068	→	1-161-049-00			
0.0082	1-161-012-00	1-161-050-00			
0.01	1-161-013-00	1-161-051-00			
0.012	→	1-161-052-00			
0.015	1-161-015-00	1-161-053-00			

MYLAR CAPACITORS (A)

Note: Circled letters (A) to (Z) are applicable to European models only.

RATING											
CAP. (μF)	50 VOLT. PART No.	100 VOLT. PART No.	200 VOLT. PART No.	CAP. (μF)	50 VOLT. PART No.	100 VOLT. PART No.	200 VOLT. PART No.	CAP. (μF)	50 VOLT. PART No.	100 VOLT. PART No.	200 VOLT. PART No.
0.001	1-108-227-00	1-108-365-00	1-108-409-00	0.01	1-108-239-00	1-108-377-00	1-108-421-00	0.1	1-108-251-00	1-108-389-00	1-108-433-00
0.0012	1-108-351-00	1-108-366-00	1-108-410-00	0.012	1-108-357-00	1-108-378-00	1-108-422-00	0.12	1-108-363-00	1-108-390-00	1-108-434-00
0.0015	1-108-228-00	1-108-367-00	1-108-411-00	0.015	1-108-240-00	1-108-379-00	1-108-423-00	0.15	1-108-252-00	1-108-391-00	1-108-435-00
0.0018	1-108-352-00	1-108-368-00	1-108-412-00	0.018	1-108-358-00	1-108-380-00	1-108-424-00	0.18	1-108-364-00	1-108-392-00	1-108-436-00
0.0022	1-108-230-00	1-108-369-00	1-108-413-00	0.022	1-108-242-00	1-108-381-00	1-108-425-00	0.22	1-108-254-00	1-108-393-00	1-108-437-00
0.0027	1-108-353-00	1-108-370-00	1-108-414-00	0.027	1-108-359-00	1-108-382-00	1-108-426-00	0.27	1-108-854-00	—	—
0.0033	1-108-232-00	1-108-371-00	1-108-415-00	0.033	1-108-244-00	1-108-383-00	1-108-427-00	0.33	1-108-855-00	—	—
0.0039	1-108-354-00	1-108-372-00	1-108-416-00	0.039	1-108-360-00	1-108-384-00	1-108-428-00	0.39	1-108-856-00	—	—
0.0047	1-108-234-00	1-108-373-00	1-108-417-00	0.047	1-108-246-00	1-108-385-00	1-108-429-00	0.47	1-108-857-00	—	—
0.0056	1-108-355-00	1-108-374-00	1-108-418-00	0.056	1-108-361-00	1-108-386-00	1-108-430-00				
0.0068	1-108-237-00	1-108-375-00	1-108-419-00	0.068	1-108-249-00	1-108-387-00	1-108-431-00				
0.0082	1-108-356-00	1-108-376-00	1-108-420-00	0.082	1-108-362-00	1-108-388-00	1-108-432-00				

**TANTALUM CAPACITORS**

RATING							
→: Use the high voltage rated one.							
CAP. (μF)	3.15 VOLT. PART No.	6.3 VOLT. PART No.	10 VOLT. PART No.	16 VOLT. PART No.	20 VOLT. PART No.	25 VOLT. PART No.	35 VOLT. PART No.
0.01					→	→	1-131-396-00 (B)
0.015					→	→	1-131-397-00 (B)
0.022					→	→	1-131-398-00 (B)
0.033					→	→	1-131-399-00 (B)
0.047					→	→	1-131-400-00 (B)
0.068					→	→	1-131-401-00 (B)
0.1					→	→	1-131-402-00 (B)
0.15					→	→	1-131-403-00 (B)
0.22					→	→	1-131-404-00 (B)
0.33					→	1-131-409-00 (B)	1-131-405-00 (B)
0.47	—	—	—	—	1-131-412-00 (B)	→	1-131-406-00 (B)
0.68	—	—	—	1-131-415-00 (B)	→	1-131-410-00 (B)	1-131-407-00 (B)
1.0	—	—	1-131-418-00 (B)	—	1-131-413-00 (B)	→	1-131-408-00 (B)
1.5	—	1-131-421-00 (B)	—	1-131-416-00 (B)	→	1-131-411-00 (B)	1-131-348-00 (B)
2.2	1-131-424-00 (B)	—	1-131-419-00 (B)	—	1-131-414-00 (B)	1-131-355-00 (B)	1-131-349-00 (B)
3.3	—	1-131-422-00 (B)	—	1-131-417-00 (B)	1-131-362-00 (B)	1-131-356-00 (B)	1-131-350-00 (B)
4.7	1-131-425-00 (B)	—	1-131-420-00 (B)	1-131-369-00 (B)	1-131-363-00 (B)	1-131-357-00 (B)	1-131-351-00 (C)
6.8	—	1-131-423-00 (B)	1-131-376-00 (B)	1-131-370-00 (B)	1-131-364-00 (B)	1-131-358-00 (C)	1-131-352-00 (C)
10	1-131-426-00 (B)	1-131-383-00 (B)	1-131-377-00 (B)	1-131-371-00 (B)	1-131-365-00 (C)	1-131-359-00 (C)	1-131-353-00 (D)
15	1-131-390-00 (B)	1-131-384-00 (B)	1-131-378-00 (B)	1-131-372-00 (B)	1-131-366-00 (C)	1-131-360-00 (D)	—
22	1-131-391-00 (B)	1-131-385-00 (B)	1-131-379-00 (C)	1-131-373-00 (C)	1-131-367-00 (D)		
33	1-131-392-00 (B)	1-131-386-00 (C)	1-131-380-00 (C)	1-131-374-00 (D)			
47	1-131-393-00 (C)	1-131-387-00 (C)	1-131-381-00 (D)				
68	1-131-394-00 (B)	1-131-388-00 (C)	—	—			
100	1-131-395-00 (D)	—	—	—			

**TANTALUM CAPACITORS**

RATING						
CAP. (μF)	3 VOLT. PART No.	6.3 VOLT. PART No.	10 VOLT. PART No.	16 VOLT. PART No.	20 VOLT. PART No.	35 VOLT. PART No.
0.033						1-131-273-00 (E)
0.047						1-131-274-00 (E)
0.068						1-131-275-00 (E)
0.1						1-131-276-00 (D)
0.15						1-131-277-00 (D)
0.22			—	—	1-131-262-00 (D)	1-131-278-00 (D)
0.33			—	—	1-131-263-00 (D)	1-131-279-00 (D)
0.47			1-131-169-00 (D)	—	1-131-264-00 (D)	1-131-280-00 (D)
0.68			—	1-131-258-00 (D)	1-131-265-00 (D)	1-131-281-00 (D)
1.0			1-131-254-00 (D)	—	1-131-266-00 (D)	1-131-282-00 (D)
1.5		1-131-250-00 (D)	—	—	1-131-267-00 (D)	1-131-283-00 (E)
2.2		—	—	1-131-259-00 (D)	1-131-268-00 (D)	1-131-284-00 (E)
3.3		—	1-131-255-00 (D)	—	1-131-269-00 (D)	—
4.7		1-131-251-00 (E)	1-131-171-00 (D)	—	1-131-270-00 (D)	—
6.8		—	—	1-131-260-00 (D)	1-131-271-00 (E)	—
10	—	—	1-131-256-00 (D)	—	1-131-272-00 (E)	—
15	—	1-131-252-00 (D)	—	1-131-261-00 (E)		
22	—	—	1-131-257-00 (E)	—		
33	1-131-176-00 (D)	1-131-253-00 (E)	1-131-173-00 (C)	—		
47	1-131-288-00 (F)	1-131-174-00 (D)	—	—		
100	1-131-177-00 (D)	—	—	—		

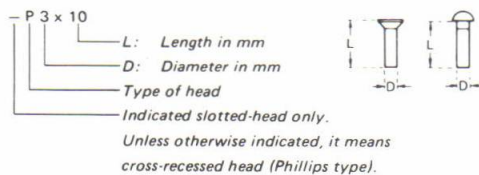
1/4 WATT CARBON RESISTORS Ⓐ

Note: Circled letter Ⓐ is applicable to European models only.

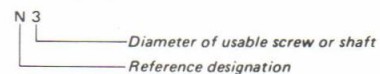
Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.
1.0	1-246-401-00	10	1-246-425-00	100	1-246-449-00	1.0k	1-246-473-00	10k	1-246-497-00	100k	1-246-521-00	1.0M	1-246-545-00
1.1	1-246-402-00	11	1-246-426-00	110	1-246-450-00	1.1k	1-246-474-00	11k	1-246-498-00	110k	1-246-522-00	1.1M	1-210-814-00
1.2	1-246-403-00	12	1-246-427-00	120	1-246-451-00	1.2k	1-246-475-00	12k	1-246-499-00	120k	1-246-523-00	1.2M	1-210-815-00
1.3	1-246-404-00	13	1-246-428-00	130	1-246-452-00	1.3k	1-246-476-00	13k	1-246-500-00	130k	1-246-524-00	1.3M	1-210-816-00
1.5	1-246-405-00	15	1-246-429-00	150	1-246-453-00	1.5k	1-246-477-00	15k	1-246-501-00	150k	1-246-525-00	1.5M	1-210-817-00
1.6	1-246-406-00	16	1-246-430-00	160	1-246-454-00	1.6k	1-246-478-00	16k	1-246-502-00	160k	1-246-526-00	1.6M	1-210-818-00
1.8	1-246-407-00	18	1-246-431-00	180	1-246-455-00	1.8k	1-246-479-00	18k	1-246-503-00	180k	1-246-527-00	1.8M	1-210-819-00
2.0	1-246-408-00	20	1-246-432-00	200	1-246-456-00	2.0k	1-246-480-00	20k	1-246-504-00	200k	1-246-528-00	2.0M	1-210-820-00
2.2	1-246-409-00	22	1-246-433-00	220	1-246-457-00	2.2k	1-246-481-00	22k	1-246-505-00	220k	1-246-529-00	2.2M	1-210-821-00
2.4	1-246-410-00	24	1-246-434-00	240	1-246-458-00	2.4k	1-246-482-00	24k	1-246-506-00	240k	1-246-530-00	2.4M	1-244-754-00
2.7	1-246-411-00	27	1-246-435-00	270	1-246-459-00	2.7k	1-246-483-00	27k	1-246-507-00	270k	1-246-531-00	2.7M	1-244-755-00
3.0	1-246-412-00	30	1-246-436-00	300	1-246-460-00	3.0k	1-246-484-00	30k	1-246-508-00	300k	1-246-532-00	3.0M	1-244-756-00
3.3	1-246-413-00	33	1-246-437-00	330	1-246-461-00	3.3k	1-246-485-00	33k	1-246-509-00	330k	1-246-533-00	3.3M	1-244-757-00
3.6	1-246-414-00	36	1-246-438-00	360	1-246-462-00	3.6k	1-246-486-00	36k	1-246-510-00	360k	1-246-534-00	3.6M	1-244-758-00
3.9	1-246-415-00	39	1-246-439-00	390	1-246-463-00	3.9k	1-246-487-00	39k	1-246-511-00	390k	1-246-535-00	3.9M	1-244-759-00
4.3	1-246-416-00	43	1-246-440-00	430	1-246-464-00	4.3k	1-246-488-00	43k	1-246-512-00	430k	1-246-536-00	4.3M	1-244-760-00
4.7	1-246-417-00	47	1-246-441-00	470	1-246-465-00	4.7k	1-246-489-00	47k	1-246-513-00	470k	1-246-537-00	4.7M	1-244-761-00
5.1	1-246-418-00	51	1-246-442-00	510	1-246-466-00	5.1k	1-246-490-00	51k	1-246-514-00	510k	1-246-538-00	5.1M	1-244-762-00
5.6	1-246-419-00	56	1-246-443-00	560	1-246-467-00	5.6k	1-246-491-00	56k	1-246-515-00	560k	1-246-539-00		
6.2	1-246-420-00	62	1-246-444-00	620	1-246-468-00	6.2k	1-246-492-00	62k	1-246-516-00	620k	1-246-540-00		
6.8	1-246-421-00	68	1-246-445-00	680	1-246-469-00	6.8k	1-246-493-00	68k	1-246-517-00	680k	1-246-541-00		
7.5	1-246-422-00	75	1-246-446-00	750	1-246-470-00	7.5k	1-246-494-00	75k	1-246-518-00	750k	1-246-542-00		
8.2	1-246-423-00	82	1-246-447-00	820	1-246-471-00	8.2k	1-246-495-00	82k	1-246-519-00	820k	1-246-543-00		
9.1	1-246-424-00	91	1-246-448-00	910	1-246-472-00	9.1k	1-246-496-00	91k	1-246-520-00	910k	1-246-544-00		

HARDWARE NOMENCLATURE

Screw:



Nut, Washer, Retaining ring:



Reference Designation	Shape	Description	Remarks
SCREWS			
P		pan-head screw	binding-head (B) screw for replacement
PWH		pan-head screw with washer face	binding-head (B) screw and flat washer for replacement
PS PSP		pan-head screw with spring washer	binding-head (B) screw and spring washer for replacement
PSW PSPW		pan-head screw with spring and flat washers	binding-head (B) screw and spring and flat washers for replacement
R		round-head screw	binding-head (B) screw for replacement
K		flat-countersunk-head screw	
RK		oval-countersunk-head screw	
B		binding-head screw	
T		truss-head screw	binding-head (B) screw for replacement
F		flat-fillister-head screw	
RF		fillister-head screw	
BV		brazer-head screw	

Reference Designation	Shape	Description	Remarks
SELF-TAPPING SCREWS			
TA		self-tapping screw	ex: TA, P 3 x 10
PTP		pan-head self-tapping screw	binding-head self-tapping (TA, B) screw for replacement
PTPWH		pan-head self-tapping screw with washer face	binding-head self-tapping (TA, B) screw and flat washer for replacement
PTTWH		pan-head thread-rolling screw with washer face	binding-head (B) screw and flat washer for replacement
SET SCREWS			
SC		set screw	
SC		hexagon-socket set screw	ex: SC 2.6 x 4, hexagon socket
NUT			
N		nut	
WASHERS			
W		flat washer	
SW		spring washer	
LW		internal-tooth lock washer	ex: LW3, internal
LW		external-tooth lock washer	ex: LW3, external
RETAINING RINGS			
E		retaining ring	
G		grip-type retaining ring	

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