SONY

TROUBLE SHOOTING GUIDE

US Model
Canadian Model
AEP Model
UK Model
E Model

TC-FX66

STEREO CASSETTE DECK

Sony Corporation/Audio Video Group

TABLE OF CONTENTS

This book is for quick and easy repairing.
File with the service manual.

How to use TC-FX66 Troubleshooting Guide

- Check Procedure

  Perform checks in numerical order (or alphabetical). If voltage or waveform is different from that specified, check the specified defect locations. If normal, proceed to the next number.

- How to read the chart

  Example:

Voltage	Defect location	Notes
6.2 Vp-p	R220, R246, R247, R248, R250, C210, C219, C223, C224, IC402	This pin is easily overloaded, so be careful not to short it.

Precautions and other notes

Possible defective parts

Correct voltage or waveform

- Checks and defect locations are not included for B circuit. Check B circuit voltage before replacing parts, etc.
- Some voltages, etc. may not match those in the Service Manual. Also, the signal levels have no relation to the standard input level and Service Manual adjustment input level.
- When ○○ Vp-p is written, and no waveform, it means a sine wave.
- Voltage on pages with only ○○ V written is DC voltage measured by test equipment.
- 0 dB = 0.775 V

No Sound
Small Sound
Large Sound
Unbalanced Playback Sound

Conditions:

- WS-48 at PLAY, or apply 3 kHz sine wave to IC001 pin ④ or pin ⑥, and adjust audio oscillator output so that 2 Vp-p voltage appears on LINE OUT in FWD mode. Measure with oscilloscope.
- TAPE Switch . . . . . NORMAL
- DOLBY Switch . . . . . OFF
- REC/PLAY head must be clean.

⑦

Voltage	Defect location	
	L-CH	R-CH
2 Vp-p	Q310	Q410
	R351, Q505 IC501 pin ㉑ output	

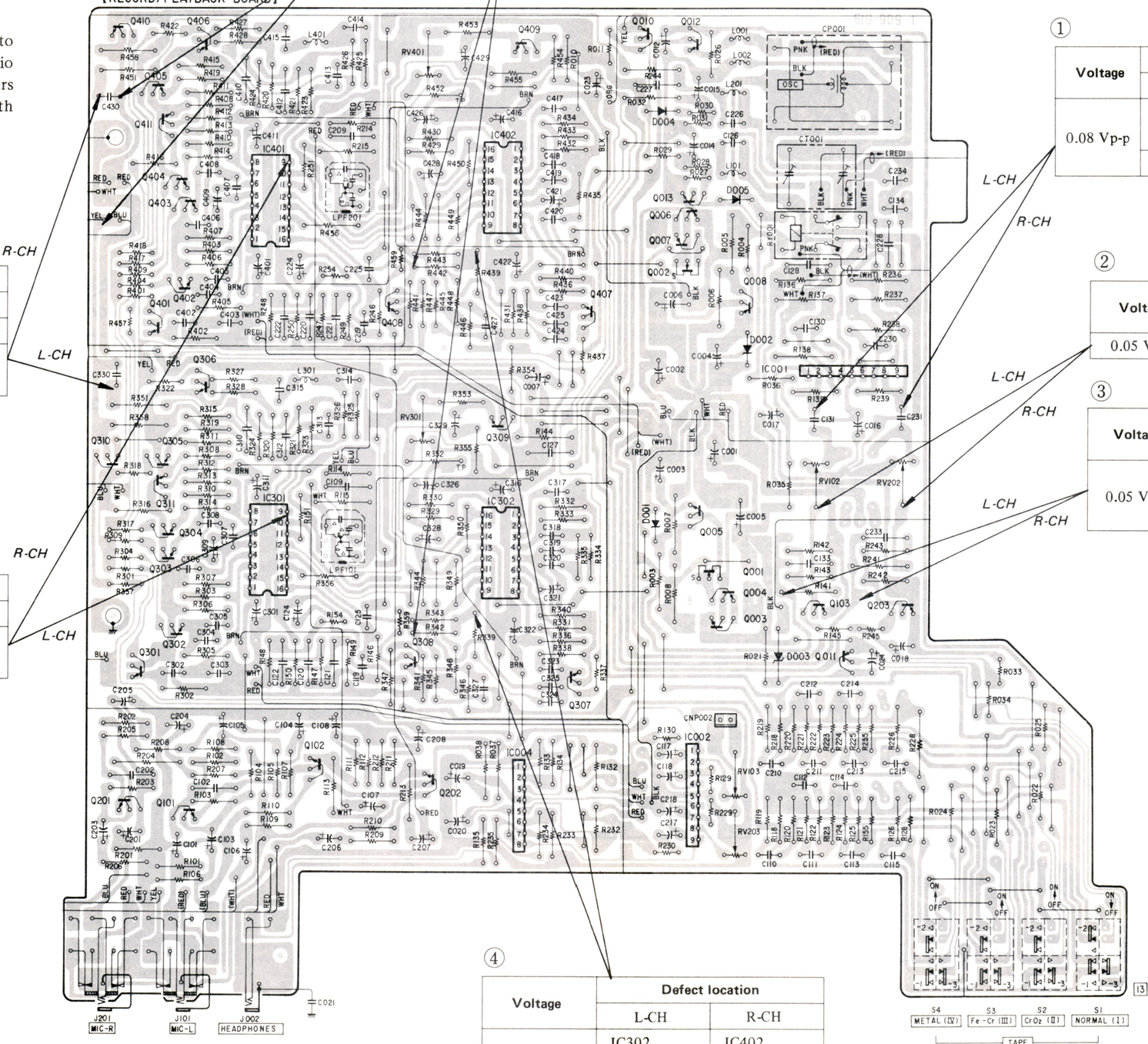
⑧

Voltage	Defect location	
	L-CH	R-CH
2 Vp-p	C330	C430

⑤

Voltage	Defect location	
	L-CH	R-CH
0.06 Vp-p	R341 R342	R441 R442

[RECORD/PLAYBACK BOARD]



⑥

Voltage	Defect location	
	L-CH	R-CH
2 Vp-p	IC301 IC301's B circuit	IC401 IC401's B circuit

①

Voltage	Defect location	
	L-CH	R-CH
0.08 Vp-p	R136, R137, R138, R139, C128, C129, C130	R236, R237, R238, R239, C228, C229, C230
	HRP101 to IC001's B circuit	

②

Voltage	Defect location	
	L-CH	R-CH
0.05 Vp-p	RV102	RV202

③

Voltage	Defect location	
	L-CH	R-CH
0.05 Vp-p	R141 C132 Q103	R241 C232 Q203

④

Voltage	Defect location	
	L-CH	R-CH
2 Vp-p	IC302 IC302's B circuit	IC402 IC402's B circuit

No Recording
Defective Recording Level
Recording Distortion

Conditions:

- Input 1 Vp-p (−7 dB), 1 kHz sine wave from LINE IN and measure with oscilloscope.
- Function button . . . . . REC
- REC LEVEL . . . . . MAX
- DOLBY . . . . . OFF
- REC/PLAY head must be clean.
  ① ~ ⑭ . . . . . L-CH
  ❶ ~ ❹ . . . . . R-CH

[RECORD/PLAYBACK BOARD]

⑫

Voltage	Defect location
0.3 Vp-p	R456, C429

⑥

Voltage	Defect location
0.25 Vp-p	R251, IC401

⑦

Voltage	Defect location
9 Vp-p	IC401

❺

Voltage	Defect location
0.25 Vp-p	R213, R215, C207, LPF201

❿

Voltage	Defect location
0.3 Vp-p	R443, R444 R452, C428 RV401

⓫

Voltage	Defect location
0.3 Vp-p	Q409, IC501 pin ⑲ output

Ⓐ

Voltage	Defect location
10.5 VDC	power supply circuit

Ⓒ

Voltage	Defect location
10 V DC	R025, R026, C012

Ⓓ

Voltage	Defect location
10 V DC	L001

Ⓔ

Voltage	Defect location
−10.5 V DC	L002, power supply circuit

Ⓕ

Voltage and waveform	Defect location
240Vp-p	CP001

⑬

Voltage	Defect location	Notes
6.2 Vp-p	R220, R246, R247, R248, R250, C210, C219, C223, C224, IC402	This pin is easily overloaded, so be careful not to short it.

⑩

Voltage	Defect location
0.3 Vp-p	R343, R344, R352, C328, RV301

⑪

Voltage	Defect location
0.3 Vp-p	Q309, IC501 pin ⑲ output

⑤

Voltage	Defect location
0.25 Vp-p	R113, R115, C107, LPF101

⑦

Voltage	Defect location
9 Vp-p	IC301

⑥

Voltage	Defect location
0.25 Vp-p	R151, IC301

⑫

Voltage	Defect location
0.3 Vp-p	R356, C329

⑬

Voltage	Defect location	Notes
6.2 Vp-p	R120, R146, R147, R148, R150, C110, C119, C123, C124, IC302	This pin is easily overloaded, so be careful not to short it.

④, ❹

Voltage	Defect location	
	L-CH	R-CH
0.35 Vp-p	R111, R112, C108, Q102	R211, R212, C208, Q202

②, ❷

Voltage	Defect location	
	L-CH	R-CH
1 Vp-p	R116 J101	R216 J201

③, ❸

Voltage	Defect location	
	L-CH	R-CH
0.35 Vp-p	R109, C106, RV101	R209, C206 RV201

⑨, ❾

Voltage	Defect location	
	L-CH	R-CH
9 Vp-p	IC302	IC402

L-CH
R-CH

①, ❶

Voltage and waveform	Defect location		Notes
	L-CH	R-CH	
40 ~ 60Vp-p	C134	C234	proceed to Ⓐ if 1 kHz sine wave appears
	CT001		

⑭, ⓮

Voltage and waveform	Defect location	
	L-CH	R-CH
1.2Vp-p	R114, C125, C127 L101, Q103	R244, C225, C227 L201, Q203
	R028, R029, HRP101	

Ⓑ

Voltage	Defect location
10.3 V DC	R525, R526, R531, Q011, D003, IC504

⑧, ❽

Voltage	Defect location	
	L-CH	R-CH
0.25 Vp-p	R321, R326, C314	R421, R426, C414

J201 MIC-R
J101 MIC-L
J102 HEADPHONES
S4 METAL (Ⅳ)
S3 Fe-Cr (Ⅲ)
S2 CrO2 (Ⅱ)
S1 NORMAL (Ⅰ)
TAPE

[No Treble Recording / No Bass Recording]

Conditions:

- Audio oscillator output: −30 dB (0.07 Vp-p)
- Function button . . . . . REC
- Measure with oscilloscope.
- REC/PLAY head must be clean.

AF OSC

L-CH

R-CH

【RECORD/PLAYBACK BOARD】

R-CH

L-CH

R-CH

L-CH

J201 MIC-R

J101 MIC-L

J002 HEADPHONES

S4 METAL (IV) | S3 Fe-Cr (III) | S2 CrO2 (II) | S1 NORMAL (I)

TAPE

③

AF OSC frequency / TAPE switch	Voltage			Defect location	
	2 kHz	13 kHz	19 kHz	L-CH	R-CH
OFF (If switch is pressed lightly, everything will go off.)	0.2 Vp-p	0.33 Vp-p	0.85 Vp-p	R118, R146, R147, R148, R150, C119, C120, C121, C122, C123 C125	R218, R246, R247, R248, R250, C219, C220, C221, C222, C223, C225
NORMAL	0.23 Vp-p	1 Vp-p	2 Vp-p	R118, R120, C110, S1-1	R218, R220, C210, S1-2
CrO_2	3.3 Vp-p	1.5 Vp-p	2.4 Vp-p	R121, R122, R123, C111, C112, S2-1	R221, R222, R223, C211, C212, S2-2
Fe-Cr	0.35 Vp-p	1.3 Vp-p	2.3 Vp-p	R118, R124, R125, C113, C114, S3-1	R218, R224, R225, C213, C214, S3-2
METAL	0.4 Vp-p	1 Vp-p	2.1 Vp-p	R118, R126, R127, C115, C116, S4-1	R218, R226, R227, C215, C216, C4-2

①

TAPE switch	Voltage	Defect location
NORMAL	−1.2 V DC	R022, R024, R025, L001, Q011, D003, S2-3, S3-3, S4-3
CrO_2	1.9 V DC	
Fe-Cr	−1.2 V DC	
METAL	17 V DC	

②

TAPE switch	Voltage	Defect location
NORMAL	45 Vp-p	C134, C234, L002, CP001, CT001, HRP101, HE001
CrO_2	60 Vp-p	
Fe-Cr	45 Vp-p	
METAL	84 Vp-p	

[Defective L-CH Dolby]

Conditions:

- Function button . . . . . REC
- 1 kHz input to LINE IN unless frequency is otherwise specified.
- Measure with oscilloscope.
- Sine wave where waveform is not specified.
- REC LEVEL . . . . . .

  Where 333 Hz – 10 dB (0.7 Vp-p) is input to LINE IN and –5 dB (1.2 Vp-p) appears on LINE OUT.

Ⓐ

Input level / DOLBY	Voltage 0 dB	Voltage –30 dB	Defect location	Notes
B	0.06 Vp-p	0.018 Vp-p	R325, C312, C313, C314, C315	When level does not appear normally adjust input level, obtain the level on the chart and proceed to Ⓑ. If the signal does not appear after adjustment
C	0.08 Vp-p	0.024 Vp-p		
OFF	0.01 Vp-p	–		

Ⓑ

Voltage	Defect location
0 V DC	C309, IC301

Ⓒ

Input level / DOLBY	Voltage 0 dB	Voltage –30 dB	Defect location	Notes
B	0.7 Vp-p	0.2 Vp-p	R014, R308, R309, R310, R311, R312, R316, C009, C306, C307, C308, Q303, Q311	Pin ③ voltage rises if a large capacity capacitor is connected between pin ⑤ and GND. If it doesn't rise, the IC is probably defective.
C	0.95 Vp-p	0.26 Vp-p		
OFF	0.15 Vp-p	0.06 Vp-p		

Ⓓ

Input level / DOLBY	Voltage and waveform 0 dB	Voltage and waveform –30 dB	Defect location
B	0.035Vp-p 0.95V DC	0.012Vp-p –2.5V DC	R303, R306, R357, C304, C305, Q302, IC301
C	0.32Vp-p –0.85V DC	0.1Vp-p –0.3V DC	
OFF	0.06Vp-p –0.25V DC	–0.22V DC	

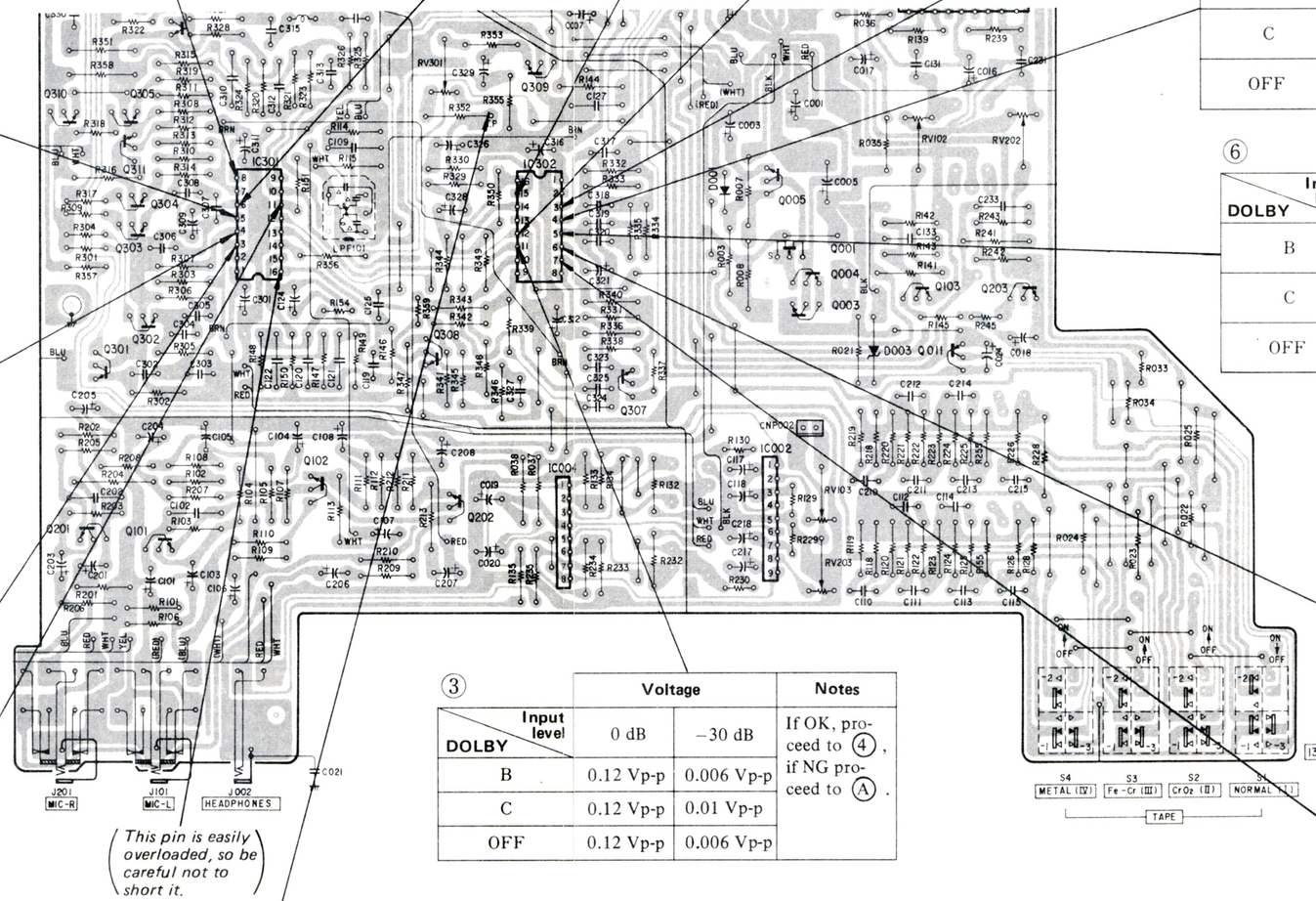
Ⓔ

Input level / DOLBY	Voltage 0 dB	Voltage –30 dB	Defect location	Notes
B	–0.8 V DC	–0.2 V DC	R304, C302, C303, Q301, IC301	Ripple element appears if C302, 303 lose capacity.
C	–0.6 V DC	–0.27 V DC		
OFF	–0.18 V DC	–0.13 V DC		

Ⓕ

R318, R319, R320, R321, R324, R325, R327, C310, C312, C313, C314, C315, Q305	CHECK

[RECORD/PLAYBACK BOARD]



⑨

Input level / DOLBY	Voltage 0 dB	Voltage –30 dB	Defect location	Notes
B	0.006 Vp-p	–	R329 R330 R331 C325 C326 IC302	This pin is easily overloaded, so be careful not to short it.
C	0.22 Vp-p	0.08 Vp-p		
OFF	0.006 Vp-p	–		

Voltage	Defect location
–2 V DC	R030, R032, C015, C023, D004

⑧

Input level / DOLBY	Voltage 0 dB	Voltage –30 dB	Defect location	Notes
B	–0.16 V DC	–0.16 V DC	R333 C317 IC302	Ripple element appears if C317 lose capacity.
C	–1 V DC	–0.5 V DC		
OFF	–0.16 V DC	–0.16 V DC		

⑦

Input level / DOLBY	Voltage and Waveform 0 dB	Voltage and Waveform –30 dB	Defect location
B	0.006Vp-p –0.18V DC	–0.2 V DC	R332 R333 C317 C318 IC302
C	0.6Vp-p –1.2V DC	0.04Vp-p –0.55V DC	
OFF	0.006Vp-p –0.2V DC	–0.2 V DC	

⑥

Input level / DOLBY	Voltage 0 dB	Voltage –30 dB	Defect location	Notes
B	0.06 Vp-p	–	R334 R335 R336 C319 C320 IC301	Pin ③ voltage rises if a large capacity capacitor is connected between pin ⑤ and GND. If it doesn't rise, the IC is probably defective.
C	0.5 Vp-p	0.15 Vp-p		
OFF	0.06 Vp-p	–		

⑤

Voltage	Defect location
0 V DC	C321 IC302

③

Input level / DOLBY	Voltage 0 dB	Voltage –30 dB	Notes
B	0.12 Vp-p	0.006 Vp-p	If OK, proceed to ④, if NG proceed to Ⓐ.
C	0.12 Vp-p	0.01 Vp-p	
OFF	0.12 Vp-p	0.006 Vp-p	

①

Input / DOLBY	Voltage 1 kHz (0 dB)	Voltage 20 kHz (0 dB)	Defect location
B	0.12 Vp-p	–	R345, C109, LPF101, S005-3, S006-1
C	0.12 Vp-p	–	
OFF	0.12 Vp-p	0.04 Vp-p	

⑩

Input / DOLBY	Voltage 1 kHz 0 dB	Voltage 1 kHz –30 dB	Voltage 20 kHz 0 dB	Defect location	Notes
B	0.5 Vp-p	0.03 Vp-p	0.006 Vp-p	R344 R350 C328	If level is normal, the Dolby is also probably OK. However, the attack time does not appear on this chart. The attack time is determined by IC pins ③, ④ circuit CR time constant. If 20 kHz level is high, try checking R327, C315, L301, LPF101, Q306, etc. Also, when input level is 0 dB for Dolby C, or near 10 kHz level (relative to 1 kHz) does not drop, try checking R345, R347, C327, Q308.
C	0.5 Vp-p	0.04 Vp-p	0.006 Vp-p		
OFF	0.5 Vp-p	0.018 Vp-p	0.018 Vp-p		

④

Input level / DOLBY	Voltage 0 dB	Voltage –30 dB	Defect location	Notes
B	—	—	R340 C323, C324 Q307 S006-4	When level does not appear normally adjust input level, obtain the level on the chart and proceed to ⑤. If the signal does not appear after adjustment
C	0.05 Vp-p	0.02 Vp-p		
OFF	—	—		

[Defective R-CH Dolby]

Conditions:

- Function button . . . . . REC
- 1 kHz input to LINE IN unless frequency is otherwise specified.
- Measure with oscilloscope.
- Sine wave where waveform is not specified.
- REC LEVEL . . . . . .

  Where 333 Hz −10 dB (0.7 Vp-p) is input to LINE IN and −5 dB (1.2 Vp-p) appears on LINE OUT.

❶

DOLBY \ Input level	Voltage: 1 kHz (0 dB)	Voltage: 20 kHz (0 dB)	Defect location
B	0.12 Vp-p	—	R445,C209 LPF201, S005-1, S006-3
C	0.12 Vp-p	—	
OFF	0.12 Vp-p	0.04 Vp-p	

❷

Voltage	Defect location
2 V DC	R030,R032 C015,C023 D004

❸

DOLBY \ Input level	Voltage: 0 dB	Voltage: −30 dB	Notes
B	0.12 Vp-p	0.006 Vp-p	If OK, proceed to ④, if NG proceed to Ⓐ.
C	0.12 Vp-p	0.01 Vp-p	
OFF	0.12 Vp-p	0.006 Vp-p	

❹

DOLBY \ Input level	Voltage: 0 dB	Voltage: −30 dB	Defect location	Notes
B	—	—	R440 C423,C424 Q407 S006-4	When level does not appear normally adjust input level, obtain the level on the chart and proceed to ⑤. If the signal does not appear after adjustment
C	0.05 Vp-p	0.02 Vp-p		
OFF	—	—		

❺

Voltage	Defect location
0 V DC	C421, IC402

❻

DOLBY \ Input level	Voltage: 0 dB	Voltage: −30 dB	Defect location	Notes
B	0.06 Vp-p	—	R434 R435 R436 C419 C420 IC401 IC401	Pin ③ voltage rises if a large capacity capacitor is connected between pin ⑤ and GND. If it doesn't rise, the IC is probably defective.
C	0.5 Vp-p	0.15 Vp-p		
OFF	0.06 Vp-p	—		

❼

DOLBY \ Input level	Voltage and waveform: 0 dB	Voltage and waveform: −30 dB	Defect location
B	0.006Vp-p, −0.18V DC	−0.2 V DC	R432 R433 C417 C418 IC402
C	0.6Vp-p, −1.2V DC	0.04Vp-p, −0.55V DC	
OFF	0.006Vp-p, −0.2V DC	−0.2 V DC	

❽

DOLBY \ Input level	Voltage: 0 dB	Voltage: −30 dB	Defect location	Notes
B	−0.16 V DC	−0.16 V DC	R433 C417 IC402	Ripple element appears if C417 lose capacity.
C	−1 V DC	−0.5 V DC		
OFF	−0.16 V DC	−0.16 V DC		

❾

DOLBY \ Input level	Voltage: 0 dB	Voltage: −30 dB	Defect location	Notes
B	0.006 Vp-p	—	R429 R430 R431 C425 C426 IC402	This pin is easily overloaded, so be careful not to short it.
C	0.22 Vp-p	0.08 Vp-p		
OFF	0.006 Vp-p	—		

❿

DOLBY \ Input	Voltage: 1 kHz 0 dB	Voltage: 1 kHz −30 dB	Voltage: 20 kHz 0 dB	Defect location	Notes
B	0.5 Vp-p	0.03 Vp-p	0.006 Vp-p	R344 R450 C428	If level is normal, the Dolby is also probably OK. However, the attack time does not appear on this chart. The attack time is determined by IC pins ③, ④ circuit CR time constant. If 20 kHz level is high, try checking R427, C415, L401, LPF201, Q406, etc. Also, when input level is 0 dB for Dolby C, or near 10 kHz level (relative to 1 kHz) does not drop, try checking R445, R447, C427, Q408.
C	0.5 Vp-p	0.04 Vp-p	0.006 Vp-p		
OFF	0.5 Vp-p	0.018 Vp-p	0.018 Vp-p		

Ⓐ

DOLBY \ Input level	Voltage: 0 dB	Voltage: −30 dB	Defect location	Notes
B	0.06 Vp-p	0.018 Vp-p	R425,C412 C413,C414 C415	When level does not appear normally adjust input level, obtain the level on the chart and proceed to Ⓑ. If the signal does not appear after adjustment
C	0.08 Vp-p	0.024 Vp-p		
OFF	0.01 Vp-p	—		

Ⓑ

—	Location
0 V DC	C409, IC401

Ⓒ

DOLBY \ Input level	Voltage: 0 dB	Voltage: −30 dB	Defect location	Notes
B	0.7 Vp-p	0.2 Vp-p	R014,R408 R409,R410 R411,R412 R416,C009 C406,C407 C408,Q403 Q411	Pin ③ voltage rises if a large capacity capacitor is connected between pin ⑤ and GND. If it doesn't rise, the IC is probably defective.
C	0.95 Vp-p	0.26 Vp-p		
OFF	0.15 Vp-p	0.06 Vp-p		

Ⓓ

DOLBY \ Input level	Voltage and Waveform: 0 dB	Voltage and Waveform: −30 dB	Notes
B	0.035Vp-p, 0.95V DC	0.012Vp-p, −2.5V DC	R403,R406 R457,C404 C405,Q402 IC401
C	0.32Vp-p, −0.85V DC	0.1Vp-p, 0.3V DC	
OFF	0.06Vp-p, −0.25V DC	−0.22V DC	

Ⓔ

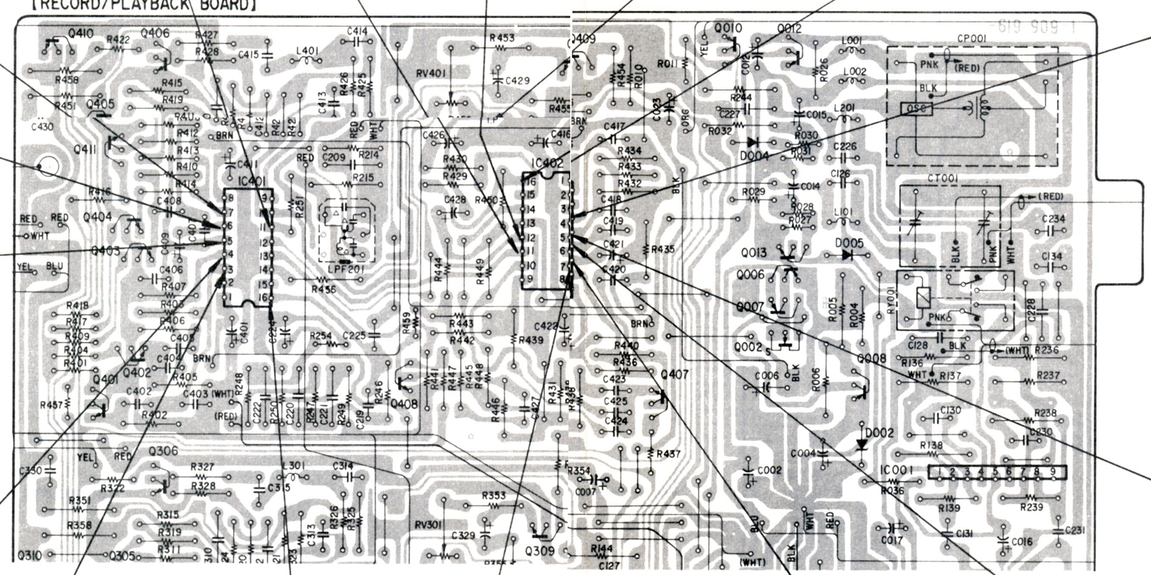
DOLBY \ Input level	Voltage: 0 dB	Voltage: −30 dB	Defect location	Notes
B	−0.8 V DC	−0.2 V DC	R404,C402 C403,Q401 IC401	Ripple element appears if C402, C403 lose capacity.
C	−0.6 V DC	−0.27 V DC		
OFF	−0.18 V DC	−0.13 V DC		

Ⓕ

R418, R419, R420, R421, R424
R425, R427, C410, C412, C413
C414, C415, Q405
} CHECK

This pin is easily overloaded, so be careful not to short it.

[RECORD/PLAYBACK BOARD]

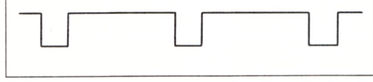


[Defective Meter]

Conditions:

- WS-48 in PLAY, or input 3 kHz sine wave from LINE IN, and adjust audio oscillator level and REC LEVEL so that 2 Vp-p output appears on LINE OUT in REC mode.

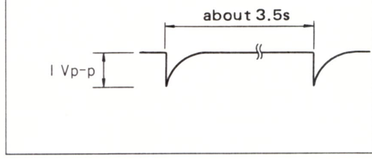
⑧

Voltage and waveform	Defect location
	IC901

⑦

Voltage and waveform	Defect location
	R908,C904

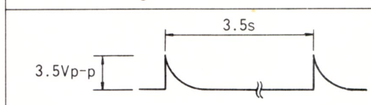
⑥

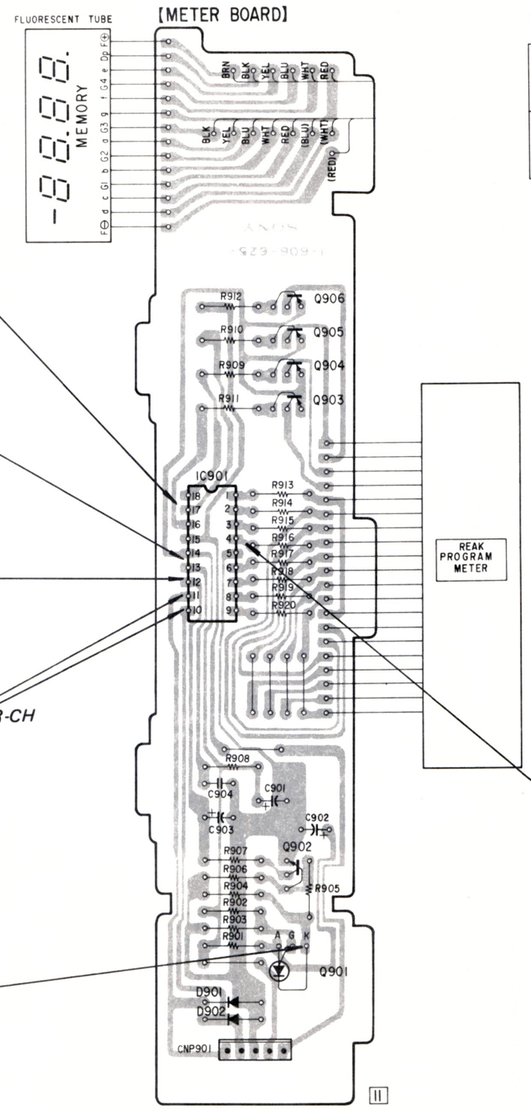
Voltage and waveform	Defect location
	R905,R907 C903,Q902

④

Voltage and waveform	Defect location	
	L-CH	R-CH
1.4 V DC	RV103 D901	RV203 D902

⑤

Voltage and waveform	Defect location
	R901,R902 R903,R904 C902,Q901

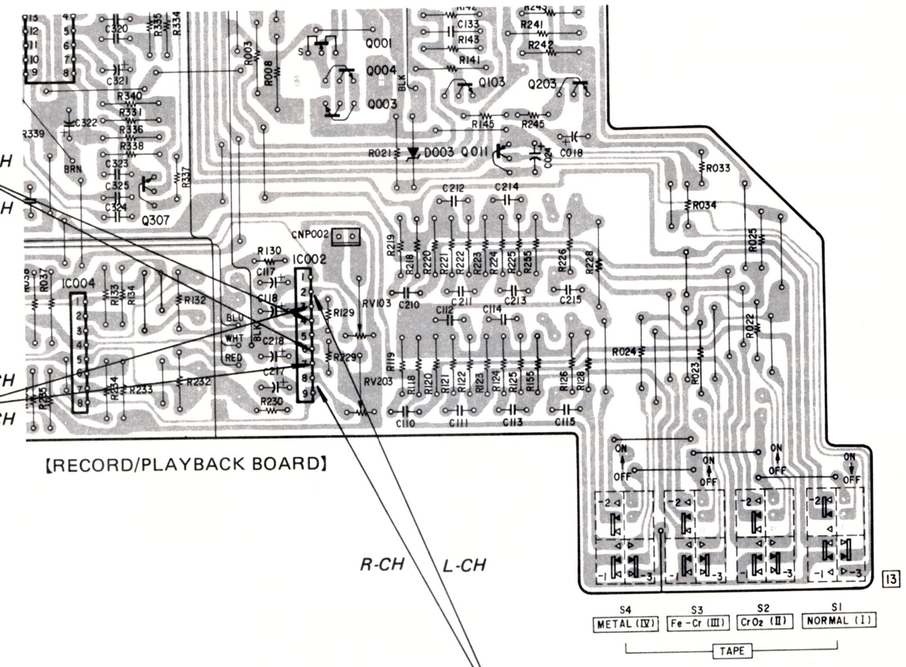


①

Voltage and waveform	Defect location	
	L-CH	R-CH
2.4 Vp-p	R130 C117	R230 C217

②

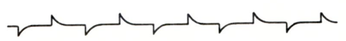
Voltage and waveform	Defect location	
	L-CH	R-CH
3.4 V DC	R129 C118	R229 C218



③

Voltage	Defect location
2.6 V DC	IC002

⑨

Voltage and waveform		Defect location
	When all 4 LEDs connected to pin are not lit up.	R907–912, R913–920, Q904–906, LED
	When all 4 LEDs connected to pin are lit up.	
	3 of the LEDs are lit up.	
	2 of the LEDs are lit up.	

No REW
No FF
No FWD
No PAUSE
No REC mode
No STOP
All Function Buttons do not operate.

[No PAUSE]

① Voltage	① Defect location	② Voltage	② Defect location
5 V (0 V when PAUSE button is pressed.)	C507,C517 S505	4.5 V . . FWD 0 V . . . PAUSE	IC501

[No REW]

① Voltage	① Defect location	② Voltage	② Defect location
4.5 V (0 V when REW button is pressed.)	R516,S501 IC502	4.5 V . . STOP (0 V when STOP button is pressed.)	C502,S802 IC502

⑥ Voltage	⑥ Defect location
0 V . . . REW	IC501

③ Voltage	③ Defect location
4.5 V . . REW 0 V . . . STOP	IC501

⑤ Voltage	⑤ Defect location
6 V . . . REW	R537,Q506 Q507,IC501

④ Voltage	④ Defect location
0.8 V . . REW 0 V . . . STOP	R545,R546 Q510

⑦ Voltage	⑦ Defect location
0 V . . . REW 5.5 V . . STOP	R544,Q508 Q510

[All Function Buttons do not operate.]

② Voltage	② Defect location
5.2 V	R702, R707, C501, C705, C806, Q701, Q703, Q705, D705, D706

① Voltage	① Defect location
2.1 V	R529, C510, IC501

④ Voltage	④ Defect location
5 V	C507, C517, S505

③ Voltage	③ Defect location
5 V	R501–506, C502, C519, IC502, S502

[No REC mode]

Voltage	Defect location
5.2 V (0 V when REC button is pressed.	R519, S506, S802

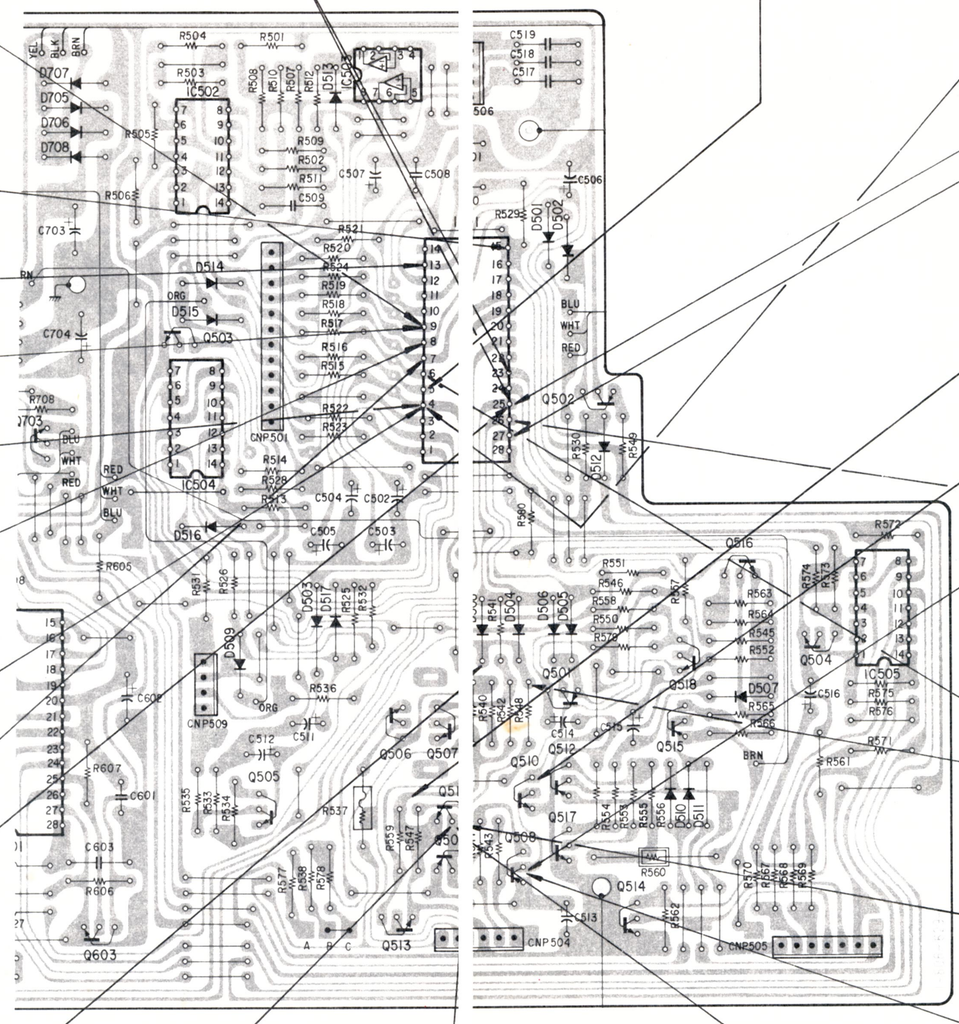
[No STOP]

Voltage	Defect location	Notes
4.5 V (0 V when STOP button is pressed.)	R515, S502, IC501	IC501 if voltage is normal.

[No FWD]

① Voltage	① Defect location
5 V (0 V when FWD button is pressed.)	R518, C505, S503, IC503

② Voltage	② Defect location
0 V . . . STOP 4.5 V . . FWD	IC501



[No FF]

② Voltage	② Defect location
0 V 4.5 V . . FF	IC501

① Voltage	① Defect location
(5 V 0 V when FF button is pressed.)	R555,C504 S504 IC502

③ Voltage	③ Defect location
0 V 4 V . . . FF	D504,D508

④ Voltage	④ Defect location
0 V 0.8 V . . FF	R548 Q511

③ Voltage	③ Defect location
3.8 V . . FWD 0 V . . . STOP	D504

⑤ Voltage	⑤ Defect location
5.5 V . . STOP 0 V . . . FWD	Q508,Q509 Q511

④ Vo…	…ge	Defect location
0.8 V 0 V .	FWD STOP	R548, Q511

If ① – ⑤ are all OK, the pinch ro… r, capstan belt, capstan motor, or flywheel, etc. are defect…

⑥ Voltage	⑥ Defect location
0 V . . . FF 5.5 V . . STOP	R543 Q509,Q511

⑤ Voltage	⑤ Defect location
5.5 V . . FF STOP	R537,Q506 Q507 IC501

If ① – ⑥ are all OK, the reel motor, limiter gear, limiter felt, FR gear, or reel fables, etc. are defective.

Tape Winds Around Capstan
Tape is scratched.
Unwanted Shut-off
Tape Counter does not count up or down.
REW not released when MEMORY counter reaches 000.
Wrong Tape Counter Indication

[REW not released when memory reaches 000.]

②

Voltage	Defect location
0 V (In REW, tester needle drops once when counter reaches 000.)	R527 Q503

Voltage	Defect location
5 V (In REW, tester needle drops once when counter reaches 000.)	Q503

③

①

Voltage	Defect location
0 V (In REW, tester needle drops once when counter reaches 000.)	IC601

If ① – ③ are normal, IC501 is defective.

[Tape is scratched.]

If ① – ④ are normal, pinch roller, flywheel, head mounting, etc. are defective.

③

Voltage	Defect location
3.1 V . . FWD	R538,R539 R540,R577 R578,Q506

④

Voltage	Defect location
2.4 V . . FWD	Q506

①

Voltage	Defect location
0.8 V . . FWD	R541 Q507

②

Voltage	Defect location
0 V . . . FWD	Q507

[Unwanted Shut-off]

④

Voltage	Defect location
Tester needle vibrates up and down in FWD	R530,D512 IC501

③

Voltage	Defect location
Tester needle vibrates up and down in FWD	IC505

②

Voltage	Defect location
Tester needle vibrates up and down in FWD	R567 IC505

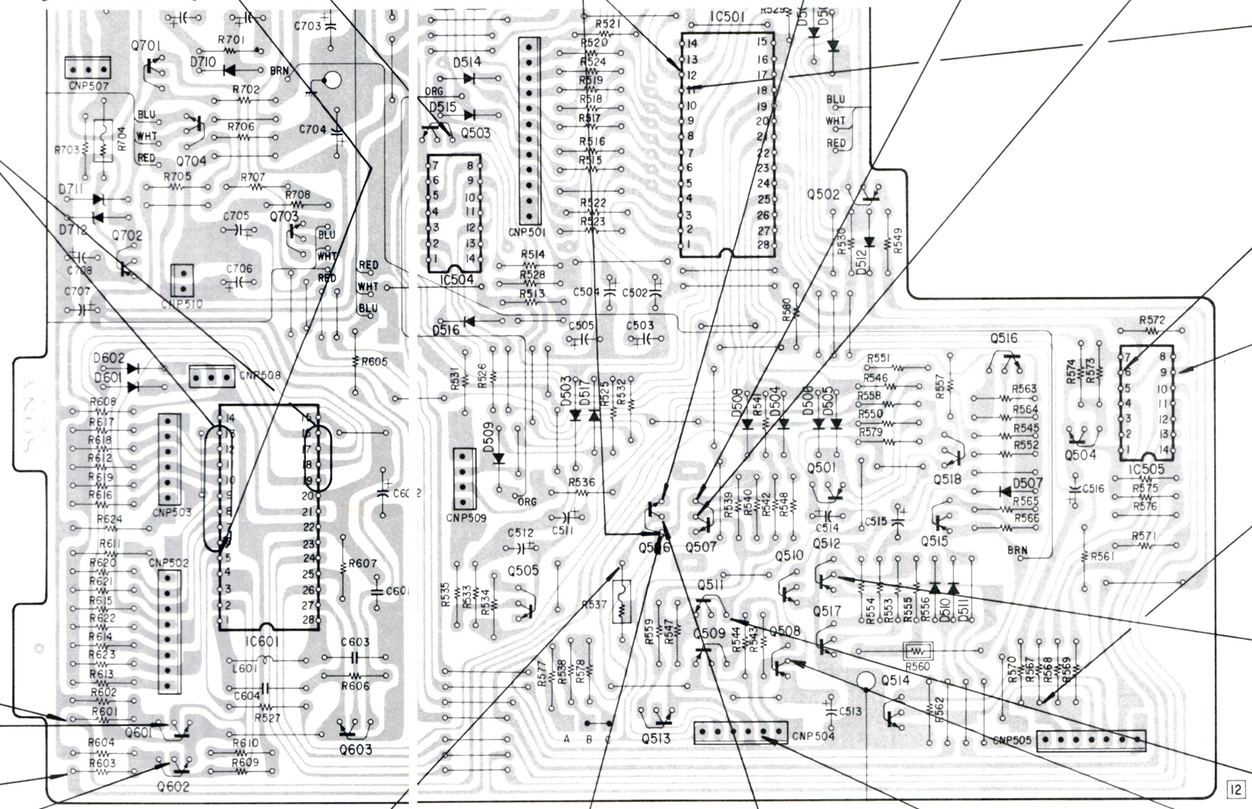
①

Voltage	Defect location
Tester needle vibrates up and down in FWD	R570,C804 Q802 PL801

[Wrong Tape Counter Indication]

Sympton	Defect location	Notes
wrong a on all digits	IC601 pin ⑫ output, R616	If this is pin ⑫ output, it is the waveform for all digits' "a" being lit up. The waveform below is for only the first and second "a" being lit up.
wrong b on all digits	IC601 pin ⑦ output, R622	
wrong c on all digits	IC601 pin ⑧ output, R621	
wrong d on all digits	IC601 pin ⑨ output, R620	
wrong e on all digits	IC601 pin ⑩ output, R619	
wrong f on all digits	IC601 pin ⑪ output, R618	
wrong g on all digits	IC601 pin ⑫ output, R617	
defective MEMORY, decimal point	IC601 pin ⑬ output, R616	MEMORY not lit up.
all first digits wrong	IC601 pin ⑯ output, R615	This waveform on pins ⑯ – ⑲ is normal.
all second digits wrong	IC601 pin ⑰ output, R614	
all third digits wrong	IC601 pin ⑱ output, R613	
all fourth digits wrong	IC601 pin ⑲ output, R612	
counter doesn't light up	tube, R611, R624, IC601	

[SYSCON BOARD]



①

Voltage	Defect location
0 V 4.4 V . . REW	Pattern cut between this point and IC501.

②

Voltage	Defect location
9.7 V 0 V . . . REW	R601,R610 Q601

③

Voltage	Defect location
0 V 3.8 V . . FWD . . FF	Pattern cut between this point and D508.

④

Voltage	Defect location
0 V 9.8 V . . FWD . . FF	R603,R609 Q602

If ① – ④ are normal, IC601 is defective.

[Tape Counter does not count up or down.]

①

Voltage	Defect location
11 V	R537

②

Voltage	Defect location
3.1 V . . FWD	R538,R577 R578

③

Voltage	Defect location
2.4 V . . FWD	C513

⑦

Voltage	Defect location
0 V . . . FWD	Q511

⑥

Voltage	Defect location
2.3 V . . FWD	R544,R548 C801,C802 D508,Q508 Q510,Q511

④

Voltage	Defect location
0 V . . . FWD	D505,IC501

⑤

Voltage	Defect location
0.8 V . . FWD	R548,D508 Q511

If ① – ⑦ are normal, reel motor, limiter gear, limiter felt, FR gear, reel table, etc. are defective.

[Tape winds around capstan.]

MEMO

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