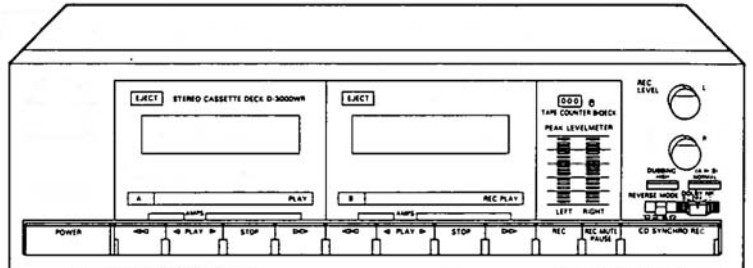




# SERVICE MANUAL

## D-3000WR

### DOUBLE AUTO REVERSE CASSETTE DECK



### CAUTION

1. Parts identified by the  $\triangle$  symbol on the schematic diagram and the parts list are critical for safety. Use only replacement parts that have critical characteristics recommended by the manufacturer.
2. Make leakage-current or resistance measurements to determine that exposed parts are acceptably insulated from the supply circuit before returning the appliance to the customer.

### •SPECIFICATIONS

**Track format** ..... 4-track/2-channel system

**Tape speed** ..... 4.8 cm/sec

**Heads**

Rec/play head ..... HIGH-Bs hard permalloy

Play head ..... HIGH-Bs hard permalloy

Erase head ..... Double-gap HIGH-Bs ferrite

**Motor** ..... Electronically controlled DC motor x 2

Reels: DC Motor x 2

**Wow/flutter** ..... 0.09% max (WRMS)

**Fast forwarding (rewinding)**

**time** ..... Approx. 90 sec.  
(for C-60 tape)

**Frequency response** (—20 VU recording/playback)

Normal tape (LH) ..... 20 to 15,000 Hz  
(30 to 14,000 Hz  $\pm$  3 dB)

Chrome tape ..... 20 to 16,000 Hz  
(30 to 15,000 Hz  $\pm$  3 dB)

Metal tape ..... 20 to 17,000 Hz  
(30 to 16,000 Hz  $\pm$  3 dB)

**Signal-to-noise ratio** (recording/playback with metal tape)

DOLBY NR OFF ..... Better than 54 dB

DOLBY-B NR ON ..... Better than 64 dB

DOLBY-C NR ON ..... Better than 72 dB

**Erase rate** (metal tape) . More than 70 dB at 1 kHz

**Recording bias frequency** 105 kHz

**Input sensitivity/Impedance**

LINE IN (REC) ..... 70 mV/47 kohms

**Power requirements** ..... 110/120/220/240V  
50/60 Hz

For U.S.A. and Canada 120V (60 Hz)

**Power consumption** ..... 25 watts

**Dimensions** ..... 430 mm (16-15/16") W  
127 mm (5") H

228 mm (8-31/32") D

**Weight** ..... 4.9 kg (10.8 lbs) net

5.5 kg (12.1 lbs) packed

\* Design and specifications subject to changes without notice for improvements.

\* Due to local laws and regulations, this unit sold in some areas is not equipped with variable voltage selector.

\* Dolby noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.

\* "Dolby" and the double D symbol are trade marks of Dolby Laboratories Licensing Corporation.

## NOTE

1. The symbols, UL, CSA, SA, BS, UK, EU, AS, SEV, SS and XX <EXPORT> on the parts list and the schematic diagram mean followings respectively.

- UL..... Manufactured for U.S.A market.  
(Underwriters Laboratories approved model.)
- CSA ..... Manufactured for Canadian market.
- SA..... Manufactured for South African market.
- BS, UK..... Manufactured for United Kingdom market.
- EU..... Manufactured for European market.
- AS..... Manufactured for Australian market.
- SEV..... Manufactured for Swiss market.
- SS..... Manufactured for Saudi Arabia market.
- XX <EXPORT> .. Standard Version.
- NON MARK..... Common Parts.

2. Some printed circuit boards are not supplied assembled. To separate these in this service manual, the stock numbers are not indicated for these boards. However, stock numbers for individual parts are indicated.

3. Since some capacitors and resistors are omitted from parts lists in this service manual, refer to the Common Parts List for capacitors and resistors, which was issued on June 1987.

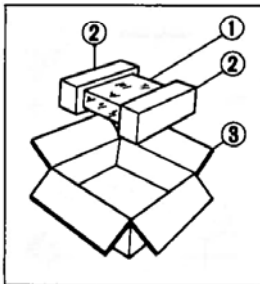
4. Abbreviations in this service manual are as follows.

### •Abbreviations List

- C.R. : Carbon Resistor
- S.R. : Solid Resistor
- Ce.R. : Cement Resistor
- M.R. : Metal Film Resistor
- F.R. : Fusing Resistor
- N.I.R. : Non-Inflammable Resistor
- A.R. : Array Resistor
- C.C. : Ceramic Capacitor
- C.T. : Ceramic Capacitor, Temperature Compensation
- E.C. : Electrolytic Capacitor
- E.L. : Low Leak Electrolytic Capacitor
- E.B. : Bi-Polar Electrolytic Capacitor
- E.B.L. : Low Leak Bi-Polar Electrolytic Capacitor
- Ta.C. : Tantalum Capacitor
- F.C. : Film Capacitor
- M.P. : Metalized Paper Capacitor
- P.C. : Polystyrene Capacitor
- G.C. : Gimmic Capacitor
- A.C. : Array Capacitor
- V.R. : Variable Resistor
- S.V.R. : Semi Variable Resistor
- SW. : Switch
- Chip R. : Chip Resistor
- Chip C. : Chip Capacitor

## 1. PACKING LIST

Parts No.	Stock No.	Description
1	27306000	Vinyl Bag
2	27411500	Styrofoam Packing
3	27473300	Carton Case



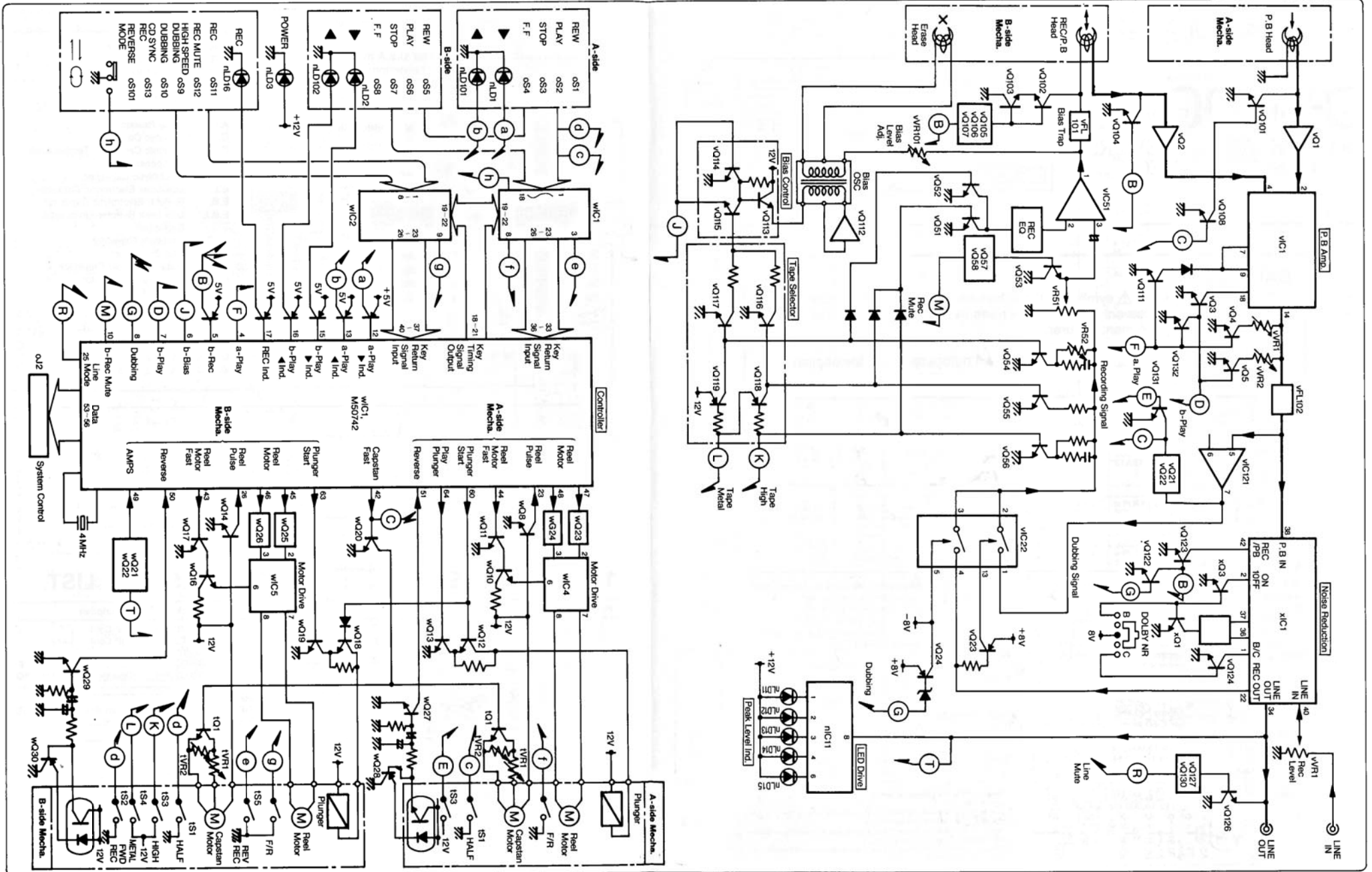
## 2. ACCESSORY LIST

Stock No.	Description
46118600	PJP Cord
or 38103200	PJP Cord
or 48802200	PJP Cord
49032600	Operating Instruction (*E•F•S•I)
49032700	Operating Instruction (*G•Sw)

\*Note:

- E•F•S•I:** English•French•Spanish and Italian Version
- G•Sw:** German and Swedish Version

### 3. BLOCK DIAGRAM



# 4. ADJUSTMENTS

## 4-1. Tape Speed Adjustment

- Adjust the tape speed of B-side as fast as A-side.
- Note:** 1. Use Sansui Test Tape, SCT-S3K. (3 kHz signals are recorded on the tape).  
2. Connections are shown in Fig. 4-1.

Fig. 4-1

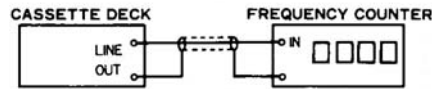
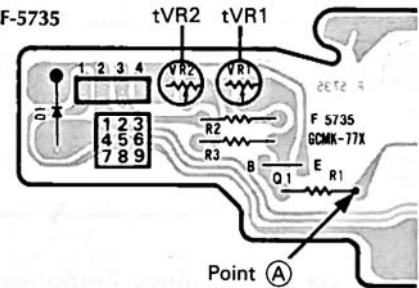


Fig. 4-2 F-5735



### 1) Normal Speed Adjustment

STEP	SUBJECT	MEASURE OUTPUT	SETTING	ADJUSTMENT	ADJUST FOR	REMARKS
1.	A-side Mecha. (NORMAL)	LINE OUT, Frequency counter	Playback the TEST TAPE SCT-S3K. A-side Mecha.	Turn semi-variable resistor tVR2 on the F-5735 board (A-side Mecha.)	3000Hz ± 30Hz	•See Fig. 4-2.
2.	B-side Mecha. (NORMAL)		Playback the TEST TAPE SCT-S3K. B-side Mecha.	Turn semi-variable resistor tVR2 th F-5735 board (B-side Mecha.)	3000Hz ± 30Hz	

### 2) High Speed Adjustment

**Note:** 1. Before this adjustment, regulate "1) Normal Speed Adjustment".

2. Short between Point A (tR1) on the F-5735 board and GND. (See Fig. 4-2)

STEP	SUBJECT	MEASURE OUTPUT	SETTING	ADJUSTMENT	ADJUST FOR	REMARKS
1.	A-side Mecha. (HIGH)	LINE OUT, Frequency counter	Playback the TEST TAPE SCT-S3K. A-side Mecha.	Turn semi-variable resistor tVR1 on the F-5735 board (A-side Mecha.)	6000Hz ± 60Hz	•See Fig. 4-2.
2.	B-side Mecha. (HIGH)		Playback the TEST TAPE SCT-S3K. B-side Mecha.	Turn semi-variable resistor tVR1 on the F-5735 board (B-side Mecha.)	6000Hz ± 60Hz	

## 4-2. Playback Adjustment

- Note:** 1. Before this adjustment, clean REC/P.B. head surface.
- 2. For this adjustment, use Sansui Test Tape, SCT-F10K, and SCT-L400.
- 3. Set the Dolby NR switch to be OFF.
- 4. Remove the Lid Ass'y.
- 5. Connections are shown in Fig. 4-3.

Fig. 4-3

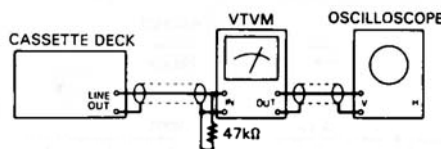
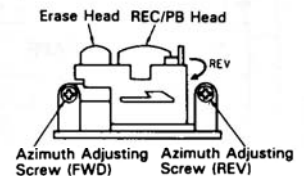


Fig. 4-4



### 1) a-Side Mecha. Adjustment

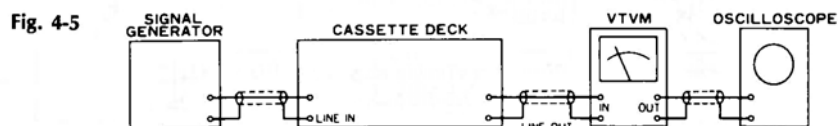
STEP	SUBJECT	MEASURE OUTPUT	SETTING	ADJUSTMENT	ADJUST FOR	REMARKS
1.	P.B. Head Adj.	LINE OUT, VTVM and Scope	Playback the TEST TAPE SCT-F10K	Adjust the azimuth adjusting screw in Fig. 4-4.	MAX. Output both channels on FWD and REV PLAY	After this adjustment, lock the screw with paint.
2.	Playback Level Adj.	LINE OUT, VTVM and Scope	Playback the TEST TAPE SCT-L400	Adjust each vVR1 (L-CH and R-CH, F-5903)	500mV ± 1dB	See Top View on Page 10.

2) B-Side Mecha. Adjustment

STEP	SUBJECT	MEASURE OUTPUT	SETTING	ADJUSTMENT	ADJUST FOR	REMARKS
1.	REC/P.B. Head Adj.	LINE OUT, VTVM and Scope	Playback the TEST TAPE SCT-F10K	Adjust the azimuth adjusting screw in Fig. 4-4.	MAX. Output both channels on FWD and REV PLAY	After this adjustment, lock the screw with paint.
2.	Playback Level Adj.	LINE OUT, VTVM and Scope	Playback the TEST TAPE SCT-L400	Adjust each vVR2 (L-CH and R-CH, F-5903)	500mV ± 2dB	See Top View on Page 10.

4-3. REC Level & Frequency Response Adjustment < B-side Mecha. only >

- Note:** 1. Connections are shown in Fig. 4-5.  
 2. Set the Dolby NR switch to be OFF.  
 3. Short between PointⓈ (TP) & GND (TP).  
 (See Parts Location F-5806 on Page 5)  
 4. REC LEVEL (L&R) Volume..... Max



STEP	SUBJECT	INPUT SIGNAL	MEASURE OUTPUT	SETTING	ADJUSTMENT	REMARKS
1.	REC Level Adj.	Feed 1kHz, 50mV from S.G. into LINE IN.	LINE OUT VTVM and Scope	Load the TEST TAPE SCT-SA. 1.Push REC button. 2.Playback the 1kHz signal.	Adjust vVR51 (L-CH and R-CH, F-5763) until playback level of the B-side Mecha. and output signal level on recording operation will be equal.	See Top View on Page 10.
2.	Frequency Response Adj.	Feed 1kHz 15mV and 10kHz 15mV from S.G. into LINE IN	LINE OUT VTVM and Scope	Load the TEST TAPE SCT-SA. 1.Record the 1kHz and 10kHz signals from S.G. 2.Playback the 1kHz and 10kHz signals, then confirm 10kHz signal level in less than 1kHz signal level ± 2dB on VTVM.	1.If not, adjust vVR51 (L-CH and R-CH, F-5763) slightly until the 10kHz signal level in less than 1kHz signal level ± 2dB on VTVM.	See Top View on Page 10.
3.	Metal REC Level Adj.	Feed 1kHz, 50mV from S.G. into LINE IN	LINE OUT VTVM and Scope	Load the TEST TAPE SCT-MA. 1.Push REC button. 2.Playback the 1kHz signal.	Adjust vVR52 (L-CH and R-CH, F-5763) until playback level of the B-side Mecha. and output signal level on recording operation will be equal.	See Top View on Page 10.

◆ List of Sansui Test Tape

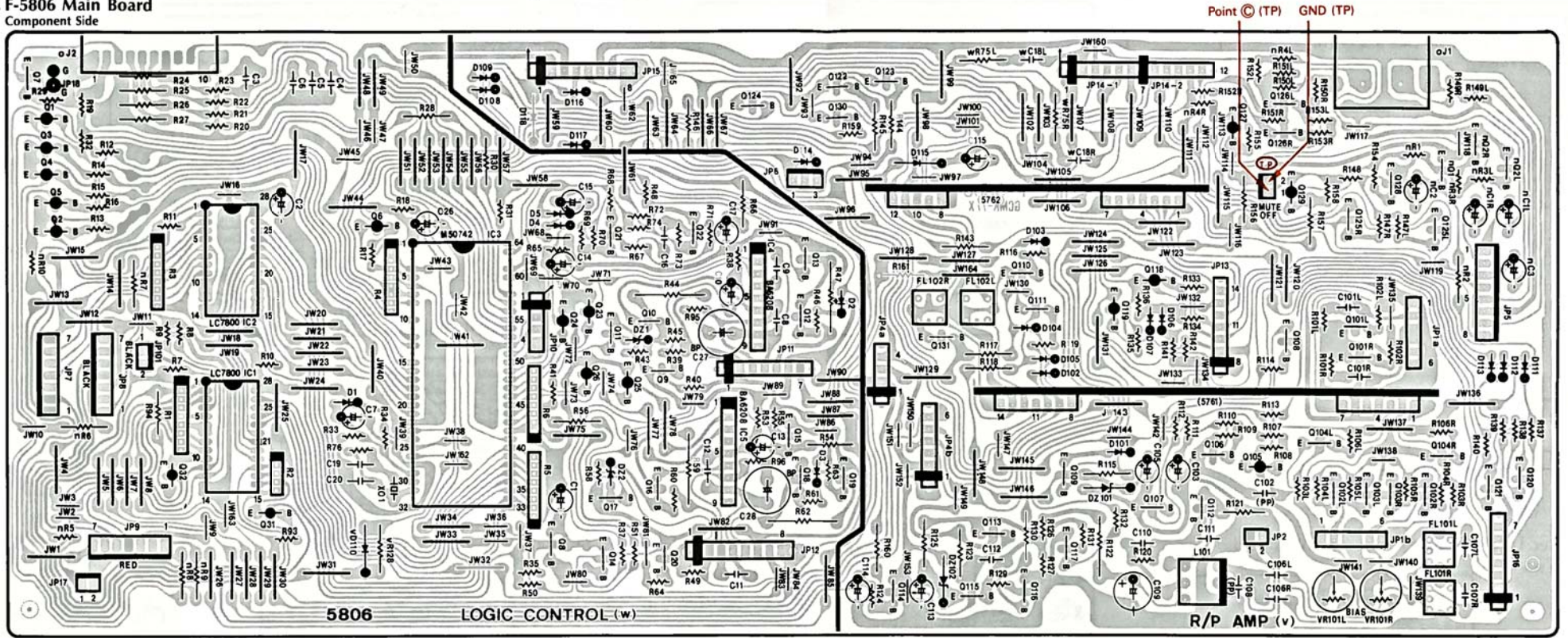
Name of TEST TAPE	Recorded Frequency	Description	Equivalent To
SCT-F40	40 Hz	Playback Frequency Response Check	—
SCT-F1K	1 kHz	High Frequency Equalization Check	—
SCT-F10K	10 kHz	REC/PB Head Adjustment	—
SCT-L400N	400 Hz	Playback Level and Indicator Level Adjustment	—
SCT-S3K	3 kHz	Speed Check and Wow & Flutter Check	—
*SCT-AD (NORMAL)	—	Recording Bias Adjustment	TDK AD
*SCT-SA (HIGH)	—	REC/PB Level Adjustment	TDK SA
*SCT-MA (METAL)	—	Frequency Response Check	TDK MA

- Note:** Some reference tapes marked \* are not supplied.  
 As these are equivalent to ones indicated above, please obtain these blank tapes on your side as possible.

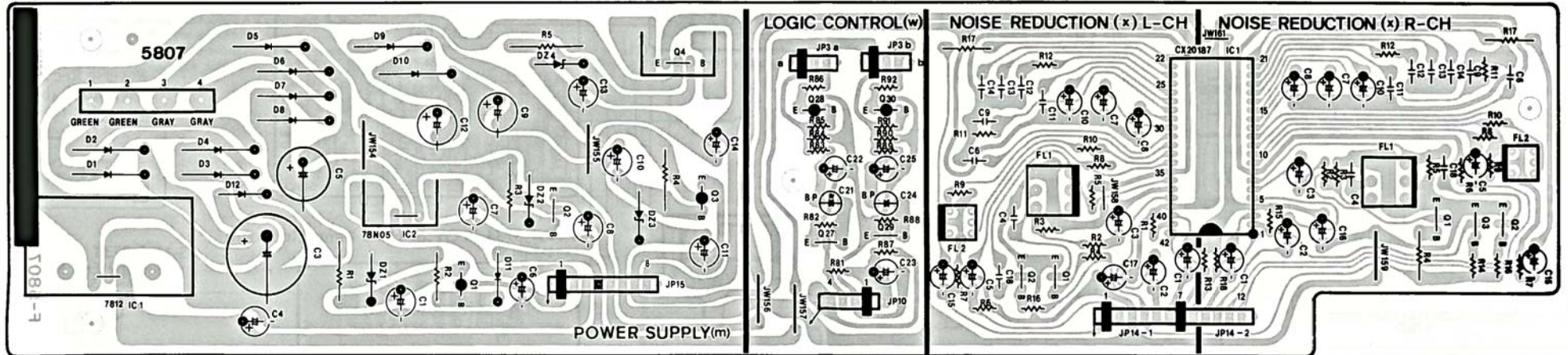


# 5. PARTS LOCATION ON BOARD

## 5-1. F-5806 Main Board Component Side



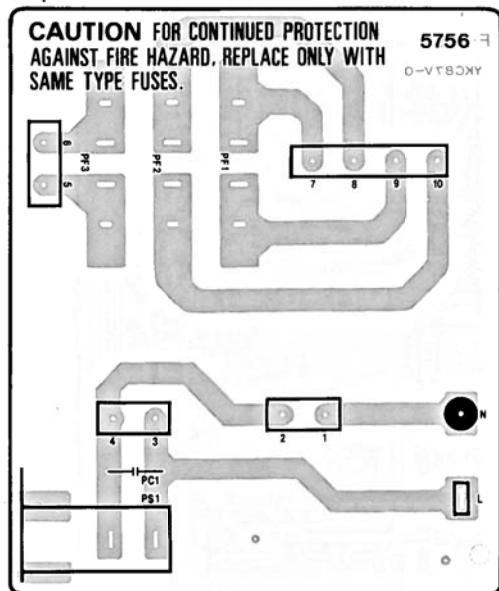
## 5-2. F-5807 Dolby Noise Reduction and Power Supply Board Component Side





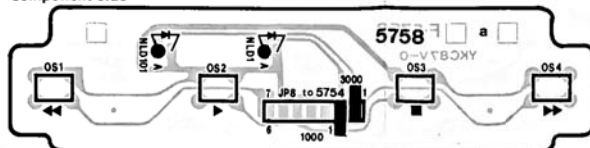
5-3. F-5756 Power SW. Board

Component Side



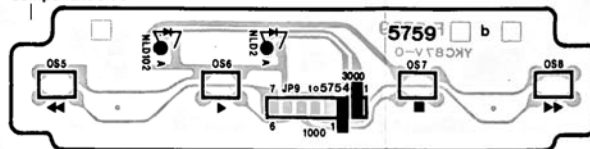
5-5. F-4758 a-Side Operation SW. Board

Component Side



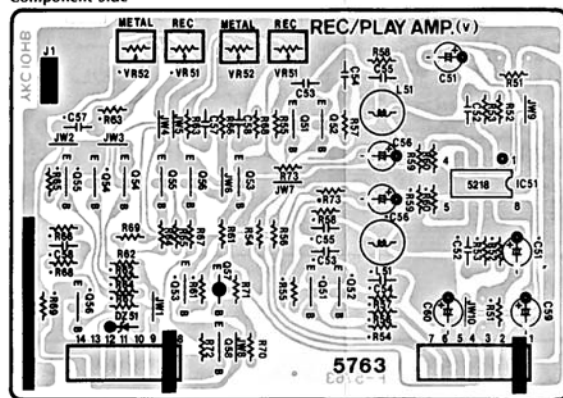
5-6. F-4759 b-Side Operation SW. Board

Component Side



5-7. F-5763 Recording Amp. Board

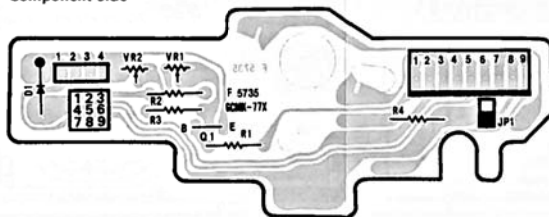
Component Side



\*Note: On this circuit board, the right channel is specified by "●" mark on top of the parts No.

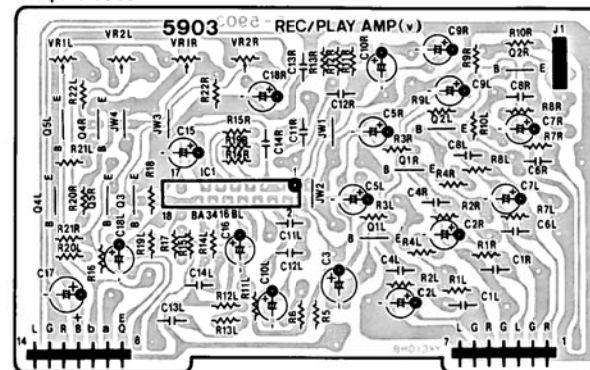
5-8. F-5735 Reel Motor Control Board

Component Side



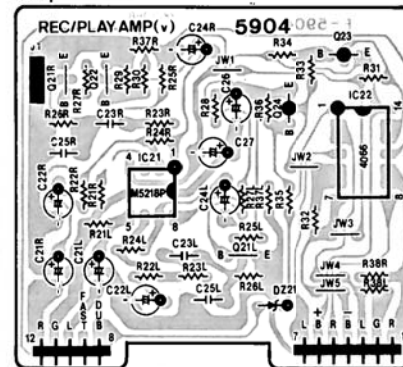
5-9. F-5903 Dubbing Amp. Board

Component Side



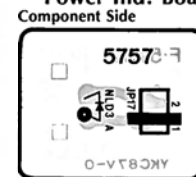
5-10. F-5904 Playback Amp. Board

Component Side



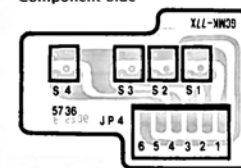
5-13. F-5757

Power Ind. Board



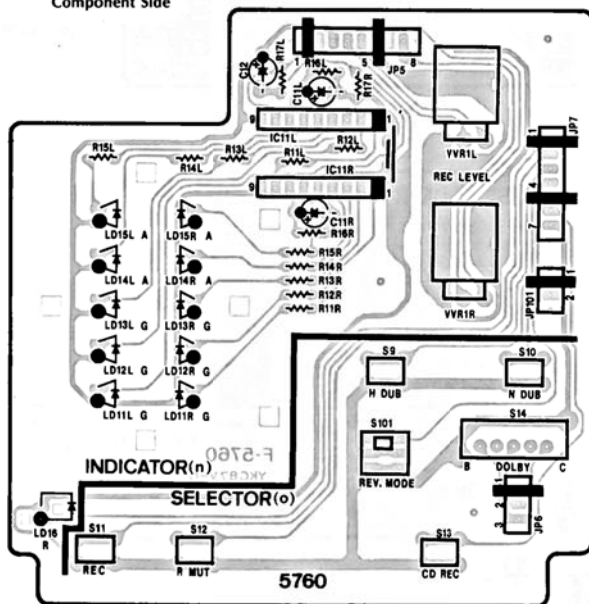
5-14. F-5736 Tape Selector SW. Board

Component Side



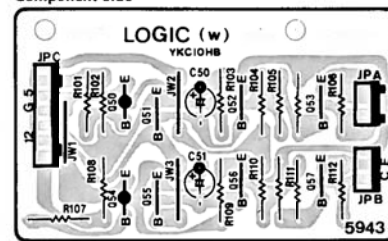
5-4. F-5760 Rec Level V.R. and Peak Level Ind. Board

Component Side



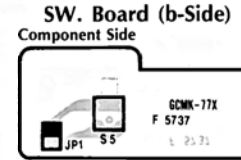
5-11. F-5943 Sub Logic Control Board

Component Side



5-15. F-5737

Reverse Rec Prevention SW. Board (b-Side)



5-12. F-5734 REC/P.B. Head Connector Board

Component Side



5-16. F-5738

Tape End Sensor Board



## 6. PARTS LIST OF BOARD

### 6-1. F-5806 Main Board <Stock No. 01071801>

Parts No.	Stock No.	Description
*Transistor		
nQ1	46367101	2SC2603
	or 48058801	2SC1740S
nQ2	46367101	2SC2603
	or 48058801	2SC1740S
oJ2	48313900	10P ST Socket, system control
oJ1	48528500	4P Terminal, LINE IN/OUT
*Transistor		
vQ101	46359801	2SC2001
	or 48055901	2SD1468S
vQ102, 103	46581701	2SC1845
vQ104	46359801	2SC2001
	or 48055901	2SD1468S
vQ105	46581601	2SA992
vQ106 ~ 111	46367101	2SC2603
	or 48058801	2SC1740S
vQ112	46614101	2SC3243
vQ113	46614101	2SC3243
	or 48000901	2SC2060
vQ114 ~ 117	46367101	2SC2603
	or 48058801	2SC1740S
vQ118, 119	46367001	2SA1115
	or 48058601	2SA933S
vQ120 ~ 126	46367101	2SC2603
	or 48058801	2SC1740S
vQ127	46367001	2SA1115
	or 48058601	2SA933S
vQ128	46367101	2SC2603
	or 48058801	2SC1740S
vQ129	46367001	2SA1115
	or 48058601	2SA933S
vQ130	46367101	2SC2603
	or 48058801	2SC1740S
vQ131	46834300	DTC144ES
vQ132	48223000	DTC114TS
vQ133	07299701	2SC2603
	or 48058701	2SC1740S
*Diode		
vD101 ~ 109	46464100	1SS133
vD110	03117600	1S2473T77
	or 46086000	1S1588TP-3
vD111 ~ 114	46464100	1SS133
vD115	03117600	1S2473T77
	or 46086000	1S1588TP-3
vD116, 117	46464100	1SS133
vD118	03117600	1S2473T77
	or 46086000	1S1588TP-3
vD119	03111600	1S2473
	or 03111800	1S1588
*Zener Diode		
vDZ101	46112800	05Z8.2-Z
vDZ102	46108800	05Z2.4-X
vR122	46681300	10Ω 1/4W F.R.
vFL101	48848300	Trap Filter (105kHz)
vFL102	48366300	Trap Filter
vL101	48583500	OSC Coil
vVR101	46634900	100kΩ S.V.R., bias adj.
	or 48199900	100kΩ (B) S.V.R., bias adj.
ΔvR122	46681300	10Ω 1/4W F.R.

Parts No.	Stock No.	Description
*Transistor		
wQ1 ~ 6	46367001	2SA1115
	or 48058601	2SA933S
wQ7 ~ 9	46367101	2SC2603
	or 48058801	2SC1740S
wQ10	46614101	2SC3243
	or 48000901	2SC2060
wQ11	46367101	2SC2603
	or 48058801	2SC1740S
wQ12, 13	46359801	2SC2001
	or 48055901	2SD1468S
wQ14, 15	46367101	2SC2603
	or 48058801	2SC1740S
wQ16	46614101	2SC3243
	or 48000901	2SC2060
wQ17	46367101	2SC2603
	or 48058801	2SC1740S
wQ18, 19	46359801	2SC2001
	or 48055901	2SD1468S
wQ20 ~ 22	46367101	2SC2603
	or 48058801	2SC1740S
wQ23 ~ 26	48229200	DTA124XS
wQ31, 32	46367001	2SA1115
	or 48058601	2SA933S
*IC		
wIC1, 2	48840900	LC7800
wIC3	48840700	M50742-405SP
wIC4, 5	46149600	BA6208
wX01	48241600	Ceramic OSC Element KBR 4.0MS
*Diode		
wD1 ~ 5	46464100	1SS133
*Zener Diode		
wDZ1, 2	48630800	RD5.1B2 ES
wR1	48773200	4.7kΩX8 A.R.
wR2	48765800	4.7kΩX4 A.R.
wR3 ~ 6	48773200	4.7kΩX8 A.R.
ΔwR44	46248500	22Ω 1W N.I.R.
ΔwR47	46624100	68Ω 2W N.I.R.
ΔwR59	46248500	22Ω 1W N.I.R.
wR62	46624100	68Ω 2W N.I.R.
wC27, 28	48104300	330μF 6.3V E.B.

### 6-2. F-5807 Dolby Noise Reduction and Power Supply Board <Stock No. 01071901>

Parts No.	Stock No.	Description
*Transistor		
mQ1	46367001	2SA1115
	or 48058601	2SA933S
ΔmQ2	46614101	2SC3243
Δ	or 48000901	2SC2060
ΔmQ3	46614001	2SA1283
Δ	or 48000801	2SA934
ΔmQ4	03083901	2SD313HP
Δ	or 48369801	2SC1826
*IC		
Δmic1	48470500	μPC7812H
Δ	or 48567100	AN7812
Δmic2	46359400	L78N05
*Diode		
ΔmD1	03117700	10E-2
ΔmD2	03117700	10E-2
ΔmD3	03117700	10E-2
ΔmD4	03117700	10E-2
ΔmD5	03117700	10E-2
ΔmD6	03117700	10E-2
ΔmD7	03117700	10E-2
ΔmD8	03117700	10E-2
ΔmD9	03117700	10E-2
ΔmD10	03117700	10E-2
ΔmD11, 12	03117600	1S2473T77
Δ	or 46086000	1S1588TP-3
*Zener Diode		
mDZ1	46113300	05Z10-Y
	or 46113400	05Z10-Z
mDZ2, 3	46112800	05Z8.2-Z
mDZ4	46114000	05Z12-Z
ΔmR1	46230200	1kΩ 1/2W N.I.R.
ΔmR3, 4	46230000	680Ω 1/2W N.I.R.
ΔmR5	46250100	470Ω 1W N.I.R.
*Transistor		
wQ27	46367101	2SC2603
	or 48058801	2SC1740S
wQ28	46367001	2SA1115
	or 48058601	2SA933S
wQ29	46367101	2SC2603
	or 48058801	2SC1740S
wQ30	46367001	2SA1115
	or 48058601	2SA933S
wC21	48102000	10μF 16V E.B.
wC24	48102000	10μF 16V E.B.
*Transistor		
xQ1 ~ 3	46367101	2SC2603
	or 48058801	2SC1740S
*IC		
xIC1	48179900	CX-20187
xFL1	48668300	DOLBY Filter
xFL2	48848400	DOLBY SQ Filter

### 6-3. F-5756 Power SW. Board

Parts No.	Stock No.	Description
ΔpC1	46425800	0.01μF 400V C.C.
Δ	or 46943200	0.01μF 400V C.C.
Δ	or 48186700	0.01μF 400V C.C.
ΔpS1	46364300	Push SW., POWER (XX·UL·EU·UK·SEV·SS)
Δ	48065000	Push SW., POWER (CSA)

### 6-4. F-5757 Power Indicator Board

Parts No.	Stock No.	Description
*LED		
nLD3	48849300	SEL3913K

### 6-5. F-5758 A-Side Operation SW. Board

Parts No.	Stock No.	Description
*LED		
nLD1	48841200	SEL3910A, FWD ▶
nLD101	48841200	SEL3910A, REV ◀
oS1	46708100	Push SW., REW
oS2	46708100	Push SW., PLAY
oS3	46708100	Push SW., STOP
oS4	46708100	Push SW., F.F

### 6-6. F-5759 B-Side Operation SW. Board

Parts No.	Stock No.	Description
*LED		
nLD2	48841200	SEL3910A, FWD ▶
nLD102	48841200	SEL3910A, REV ◀
oS5	46708100	Push SW., REW
oS6	46708100	Push SW., PLAY
oS7	46708100	Push SW., STOP
oS8	46708100	Push SW., F.F

### 6-7. F-5760 Rec Level V.R. and Rec Level Ind. Board

Parts No.	Stock No.	Description
*IC		
nIC11	46129100	BA6124
*LED		
nLD11	48841300	SEL3813A, PEAK LEVEL METER
nLD12	48841300	SEL3813A, PEAK LEVEL METER
nLD13	48841300	SEL3813A, PEAK LEVEL METER
nLD14	48841300	SEL3813A, PEAK LEVEL METER
nLD15	48841300	SEL3813A, PEAK LEVEL METER
nLD16	48841100	SEL3210S, REC
oS9	46708100	Push SW., DUBBING
oS10	46708100	Push SW., DUBBING
oS11	48240500	Tact SW., REC
oS12	48240500	Tact SW., REC MUTE PAUSE
oS13	48240500	Tact SW., CD SYNCHRO REC
oS14	48153200	Slide SW., DOLBY NR
oS101	46563500	Push SW., REVERSE MODE
vVR1	48846200	50kΩ (B) V.R., REC LEVEL



## 6-8. F-5763 Recording Amp. Board

&lt;Stock No. 01072301&gt;

Parts No.	Stock No.	Description
•Transistor vQ51 ~56	46367101 or 46367301 or 48058801	2SC2603 2SC2458 2SC1740S
vQ57	46367001 or 46392001 or 48058601	2SA1115 2SA1175 2SA933S
vQ58	46367101 or 46367301 or 48058801	2SC2603 2SC2458 2SC1740S
•IC vIC51	46580100	M5218P
•Zener Diode vDZ51	48552300 or 48552400 or 48631100 or 48631200	MTZ5.6AT-77 MTZ5.6BT-77 RD5.6B1 ES RD5.6B2 ES
vL51	46090500	Inductor 2.7mH
vVR51	48079600	47kΩ S.V.R., rec level adj.
vVR52	48079600	47kΩ S.V.R., metal rec level adj.

## 6-9. F-5735 Reel Motor Control Board

Parts No.	Stock No.	Description
•Transistor tQ1	07206901	2SC2001
•Diode tD1	03111600 or 03111800	1S2473 1S1588
•Zener Diode tDZ1	46103600 or 46805000	05Z12-X RD12E-B1
tVR1	48078800	2.2kΩ (B) S.V.R., High Speed Adj.
tVR2	48079000	4.7kΩ (B) S.V.R., Normal Speed Adj.

## 6-10. F-5736 Tape Selector SW. Board

Parts No.	Stock No.	Description
tS1	48829100	Push SW., Half Sensor
tS2	48829100	Push SW., FWD Rec Prevention (B-side)
tS3	48829100	Push SW., Tape Sel. HIGH (B-side)
tS4	48829100	Push SW., Tape Sel. METAL (B-side)

## 6-11. F-5737 Reverse Rec Prevention SW. Board (B-side)

Parts No.	Stock No.	Description
tS5	48829100	Push SW.

## 6-12. F-5738 Tape End Sensor Board

Parts No.	Stock No.	Description
tPH2	48372500	GP2L04, Photo Coupler

## 6-13. F-5903 Dubbing Amp. Board

&lt;Stock No. 01072101&gt;

Parts No.	Stock No.	Description
•Transistor vQ1, 2 vQ3~5	46581701 46367101 or 46367301 or 48058801	2SC1845 2SC2603 2SC2458 2SC1740S
•IC vIC1	48840800	BA3416BL
vVR1, 2	48079400	22kΩ S.V.R., play back level adj.

## 6-14. F-5904 Playback Amp. Board

&lt;Stock No. 01072201&gt;

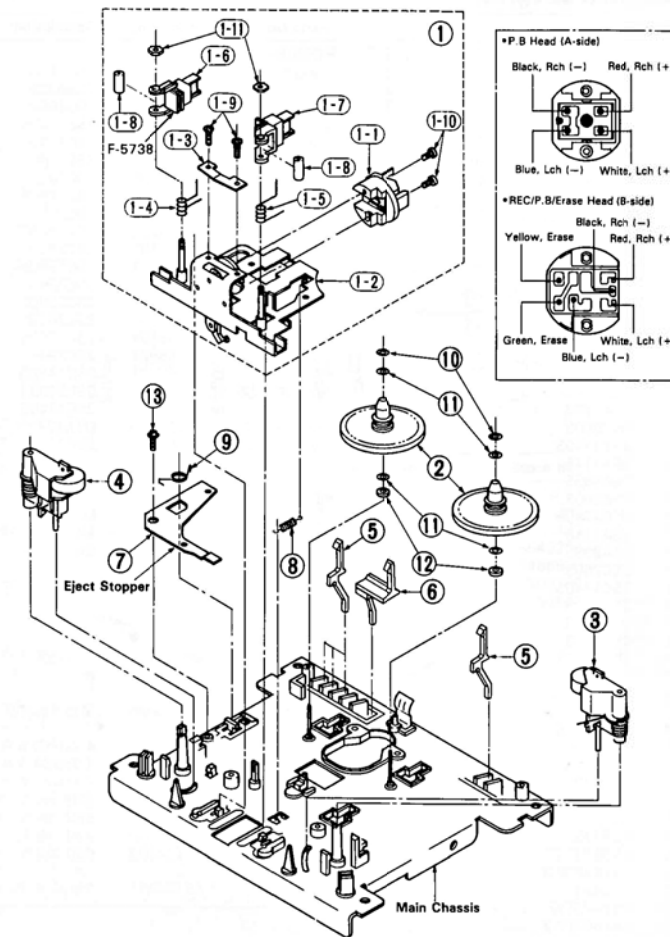
Parts No.	Stock No.	Description
•Transistor vQ21, 22 vQ23, 24	46367101 or 46367301 or 48058801 46367001 or 46392001 or 48058601	2SC2603 2SC2458 2SC1740S 2SA1115 2SA1175 2SA933S
•IC vIC21 vIC22	46580100 07224800 or 46421000 or 48054500	M5218P TC4066BP μPD4066BC MSM4066BRS
•Zener Diode vDZ21	48552300 or 48552400 or 48631100 or 48631200	MTZ5.6AT-77 MTZ5.6BT-77 RD5.6B1 ES RD5.6B2 ES

## 6-15. F-5943 Sub Logic Control Board

Parts No.	Stock No.	Description
•Transistor wQ50 wQ51 wQ52 wQ53 wQ54 wQ55 wQ56 wQ57	46719800 46719900 46719900 46359801 46719800 46719900 46719900 46359801	DTA124ES DTC124ES DTC124ES 2SC2001 DTA124ES DTC124ES DTC124ES 2SC2001

## 7. EXPLODED VIEW OF MECHANISM ASS'Y AND PARTS LIST

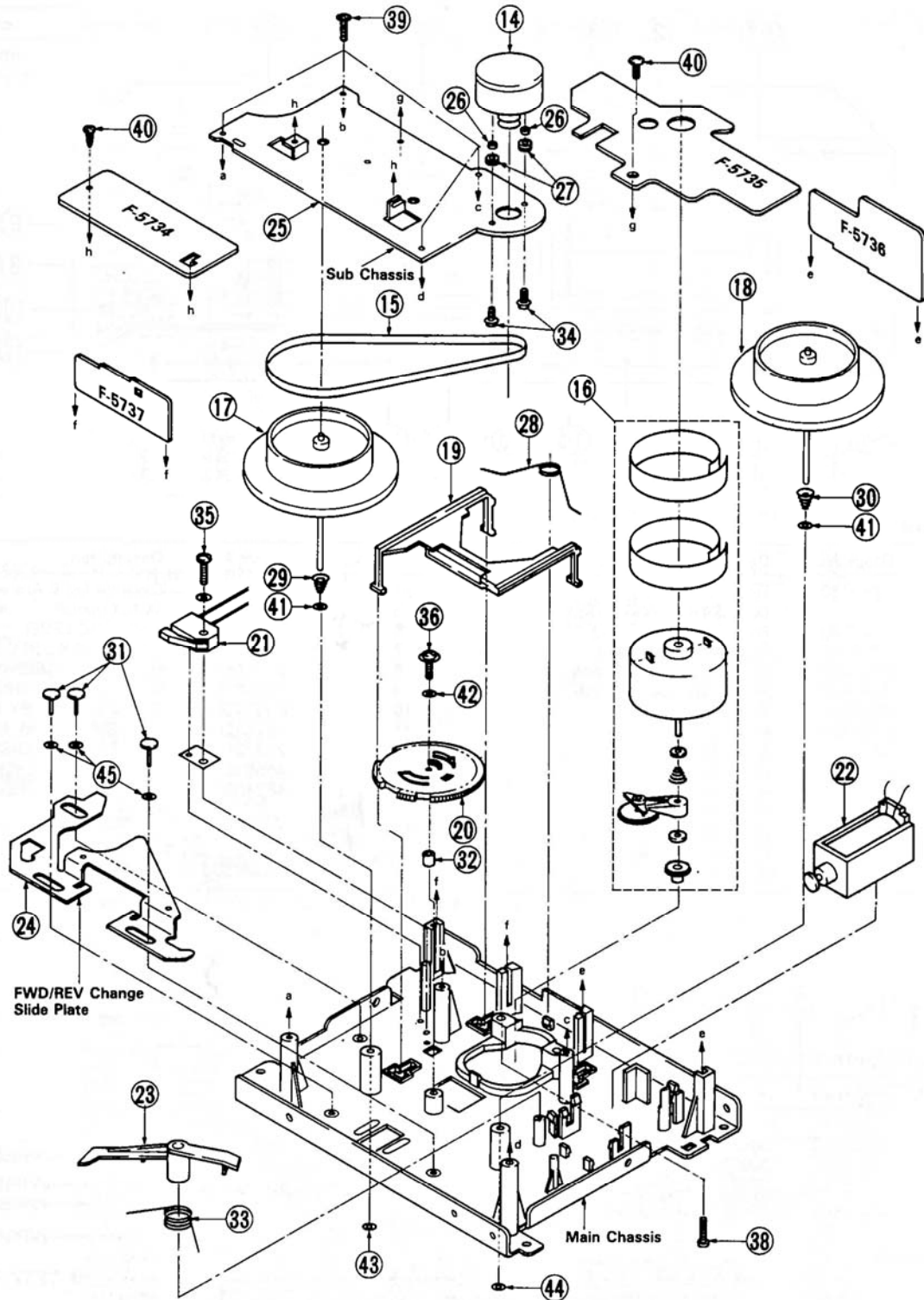
•Front View of Mechanism Chassis



## Parts List

Parts No.	Stock No.	Description	Parts No.	Stock No.	Description
1	18166701	Head Base Ass'y (A-side mecha.)	14	18177300	DC Motor with pulley, capstan
	18166801	Head Base Ass'y (B-side mecha.)	15	27472900	Belt C, capstan
1-1	48392500	P.B. Head (A-side mecha.)	16	18157301	Reel Motor Ass'y
	48589200	REC/P.B. Erase Head (B-side mecha.)	17	27377310	Flywheel F Ass'y
2	27377700	Reel Gear Ass'y	18	27377400	Flywheel R Ass'y
3	18166001	Pinch Roller F Ass'y with pinch roller spring F	19	27370500	Brake Arm
4	18166101	Pinch Roller R Ass'y with pinch roller spring R	20	27376310	Assist Gear Ass'y
5	27368800	Switch Arm A	21	48829000	Reverse SW.
6	27368900	Switch Arm B	22	48844900	Plunger Solenoid
8	27378500	Head Base Spring	23	27370600	Lock Arm
9	27412400	Eject Spring	26	27459700	Motor Color
10	27083100	Slit Washer (1.6x3.5x0.35)	27	27459800	Motor Bushing
11	27536100	Thrust Washer (2x3.6x0.25)	28	27379300	Brake Spring
12	27569200	Washer (Rubber)	29	27536400	Flywheel Spring A
13	48843500	Flanged Head Tapping Screw M2x10	30	27568800	Flywheel Spring B
			31	27369710	Plastic Tack
			32	27492800	Color B
			33	27378800	Lock Arm Spring

•Rear View of Mechanism Chassis

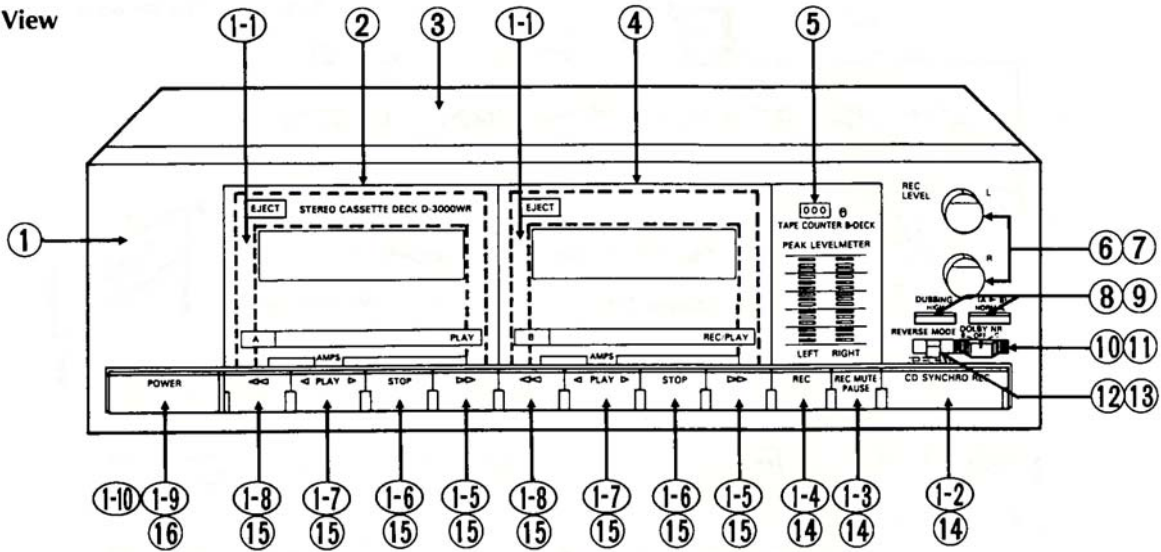


Parts No.	Stock No.	Description
34	48913100	Flanged Screw, M2.6x4
35	48940800	Binding Head Deltite Screw, M2x6
36	13127800	Binding Head Tapping Screw, M2x12
38	00421600	Binding Heas Screw, M2.6x12
39	18158700	Binding Heas Screw, M3x8

Parts No.	Stock No.	Description
40	48508900	Binding Heas Deltite Screw, M3x6
41	47404600	Thrust Washer, 2.5x4x0.25
42	48948700	Plane Washer, 2x6x0.4
43	47404700	Nylon Washer, D = 2.5
44	27135000	Nylon Washer, D = 2.2
45	27536600	Thrust Washer, 1.6x3.6x0.13

## 8. OTHER PARTS

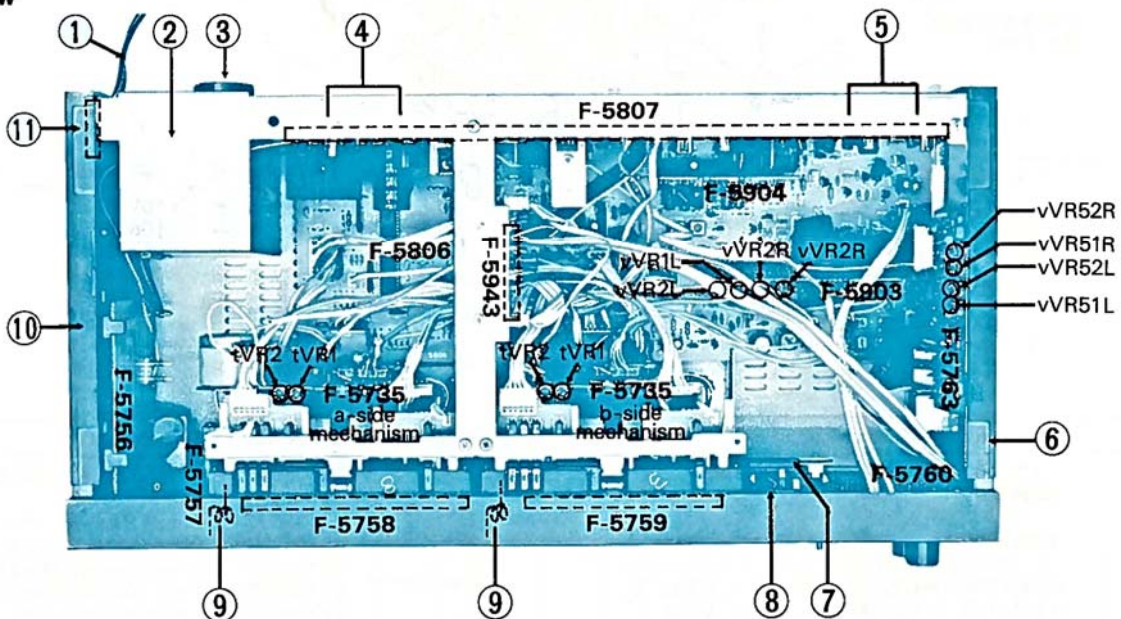
### •Front View



### Parts List <Front View>

Parts No.	Stock No.	Description	Parts No.	Stock No.	Description
1	02077801	Front Panel Ass'y (XX-CSA-EU-UK-SEV-SS)	4	02078001	Cassette Lid B Ass'y
	02077802	Front Panel Ass'y (UL)	5	48835300	Tape Counter
1-1	27411400	Cassette Holder Ass'y	6	84531300	Knob, REC LEVEL
1-2	84515800	CD SYNCHRO REC-Knob	7	48846200	50kΩ (B) V.R., REC LEVEL
1-3	84516600	REC MUTE PAUSE-Knob	8	27466800	Push Knob, DUBBING
1-4	84556700	REC-Knob	9	46708100	Push SW., DUBBING
1-5	84517000	▶▶-Knob	10	84504600	Slide Knob, DOLBY NR
1-6	84517100	STOP-Knob	11	48158200	Slide SW., DOLBY NR
1-7	84556400	PLAY-Knob	12	27470000	Push Knob, REVERSE MODE
1-8	84516900	◀◀-Knob	13	46563500	Push SW., REVERSE MODE
1-9	84517800	POWER-Knob	14	48240500	Push SW., REC, REC MUTE PAUSE
1-10	84505100	Spring-POWER Knob	15	48708100	Push SW., REW, PLAY, STOP, F-F
2	02077901	Cassette Lid A Ass'y	△ 16	46364300	Push SW., POWER
3	84558000	Bonnet			

### •Top View





Parts List <Top View>

Parts No.	Stock No.	Description
△ 1	38005400	Power Supply Cord (XX-CSA)
△	38004700	Power Supply Cord (UL)
△	38004500	Power Supply Cord (EU-SEV)
△	38004300	Power Supply Cord (UK)
△	48837700	Power Supply Cord (SS)
△ 2	15029509	Power Transformer (XX-SS)
△	15029502	Power Transformer (UL-CSA)
△	15029505	Power Transformer (EU-UK-SEV)
△ 3	48484200	Voltage Selector (XX)
△	07204700	Slide SW., Voltage Selector (EU-UK-SEV)
4	48313900	10P ST Socket, SYSTEM CONTROL

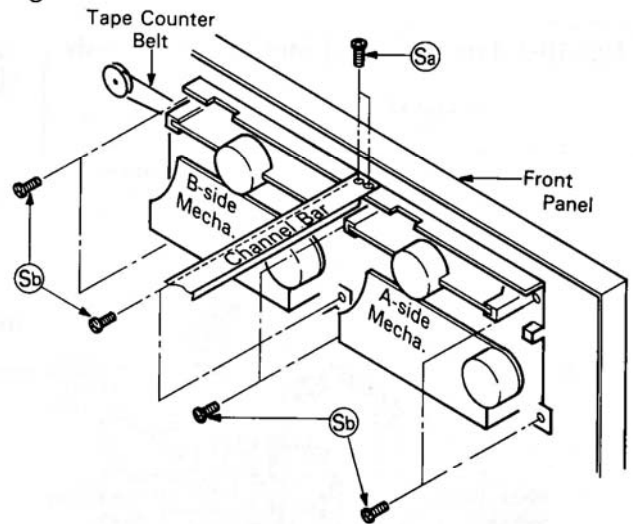
Parts No.	Stock No.	Description
5	48528500	4P Terminal, LINE IN/OUT
6	84512100	Side Panel R (XX-CSA-EU-UK-SEV-SS)
	84519900	Side Panel R (UL)
7	84504900	Tape Counter Belt
8	48835300	Tape Counter
9	84505010	Spring, Cassette Holder
10	84512000	Side Panel L (XX-CSA-EU-UK-SEV)
	84519800	Side Pnel L (UL)
11	84514000	AC Cord Cover

## 9. MAIN PARTS REPLACEMENT

### A. A-side (or B-side) Cassette Mechanism Ass'y

- 1) Remove the bonnet.
- 2) Pluck out two connectors from F-5734 board.
- 3) Pluck out connector from F-5735 board.
- 4) Pluck out connector from F-5736 board.
- 5) Loosen the tow screws (S) fixing Channel Bar and Cassette Mechanism.
- 6) Remove the Cassette Lid Ass'y.
- 7) Push the Eject Knob to open the Cassette Holder Ass'y.
- 8) Take off the counter belt (B-side Mecha.).
- 9) Remove the four screws (Sb) fixing A-side (or B-side) Mechanism and take out it.

Fig. 9-1



### B. Head Base Ass'y (1)

See Exploded View of Cassette Mechanism Ass'y on page 8, 9)

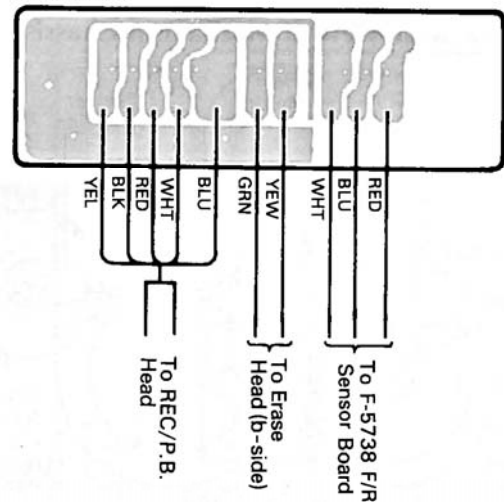
- 1) Take out the A-side (or B-side) Mechanism Ass'y from set.
- 2) Remove the Pinch Roller F(3) and R(4) Ass'y.
- 3) Loosen the screw (11) fixing the Eject Stopper (7) and take it.
- 4) Remove the Head Base Spring (8).
- 5) Unsolder the lead wires for head on the F-5734 board. (See Fig. 9-2)
- 6) Remove the Head Base Ass'y (5) from Mecha Chassis.

### C. Assist Gear (20), Capstan Belt (15), Flywheel Ass'y (17, 18)

(See Exploded View of Cassette Mechanism Ass'y on page 8, 9)

- 1) Loosen the two screws (20) fixing the Reel Motor Ass'y (16).
- 2) Loosen the screw (40) fixing the F-5735 board.
- 3) Loosen the four screws (29) fixing the Sub Chassis (15) and take it with Capstan Motor Ass'y.
- 4) Remove the Capstan Belt (15).
- 5) Remove the Flywheel R Ass'y (18) and F Ass'y (17).
- 6) Pull out three Lock Pins (11) fixing the FWD/REV Change Plate (24) and take it.
- 7) Remove the Lock Arm Ass'y (13).
- 8) Loosen the screw (36) fixing the Assist Gear (20) and take it.

Fig. 9-2 Lead wire connections for F-5734 board Pattern Side



# 10. OPERATION OF CASSETTE MECHANISM

10-1. Torque Transportation Flowchart (See Fig. 10-1 and 10-2)

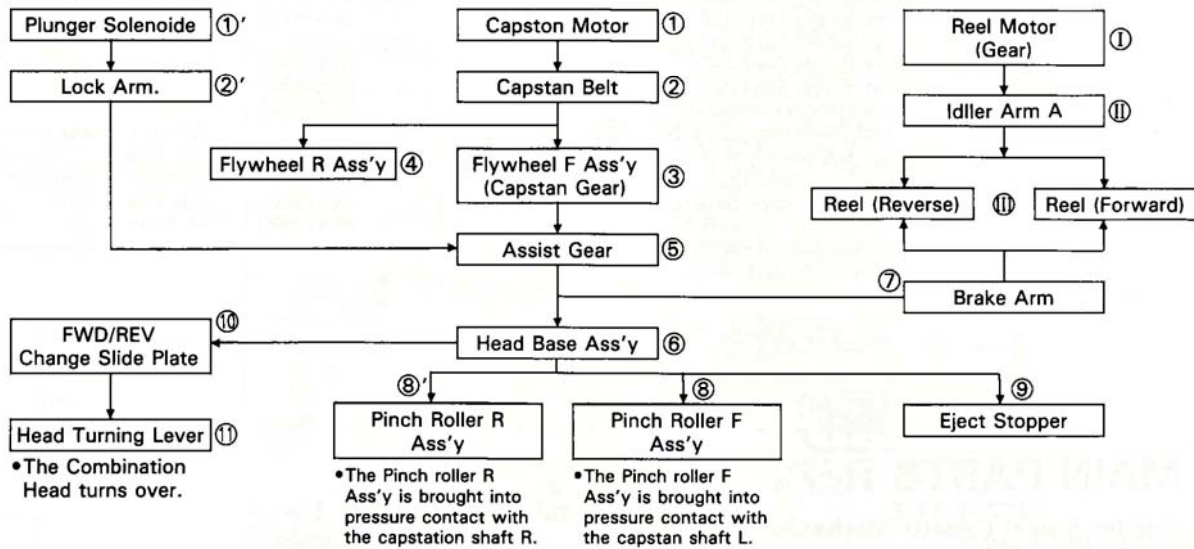


Fig. 10-1 Front View of Mechanism Chassis

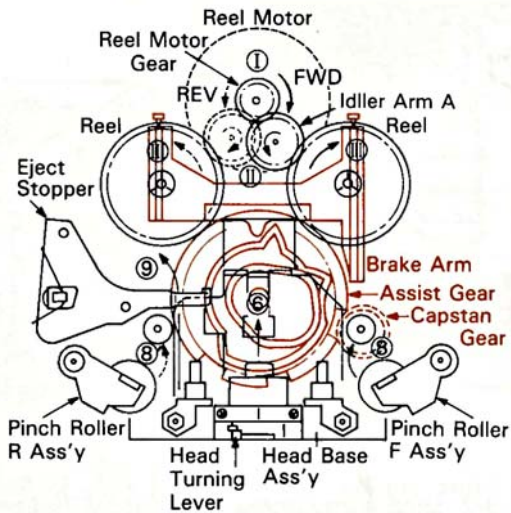
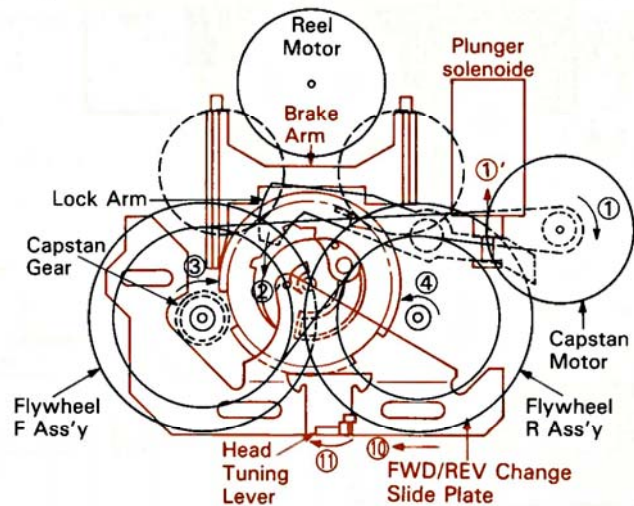


Fig. 10-2 Rear View of Mechanism Chassis



10-2. Cam (Assist Gear) Position in Play, Stop F.F, REW and AMPS Modes

Fig. 10-3 Stop, F.F, Rew mode

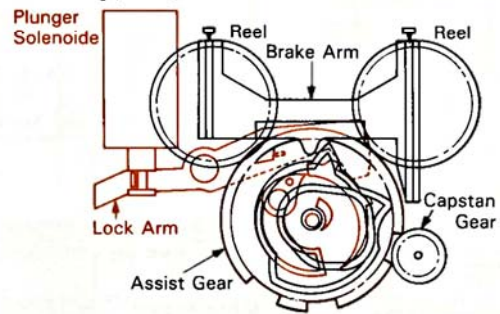


Fig. 10-4 Play mode

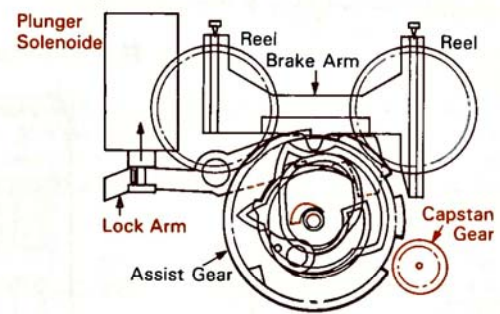
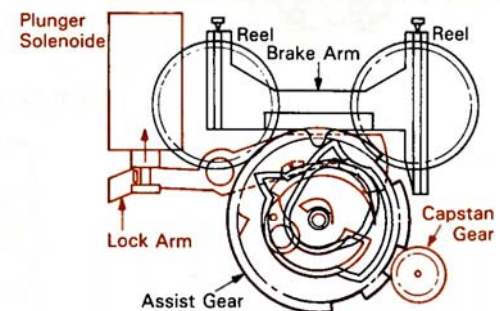


Fig. 10-5 AMPS mode



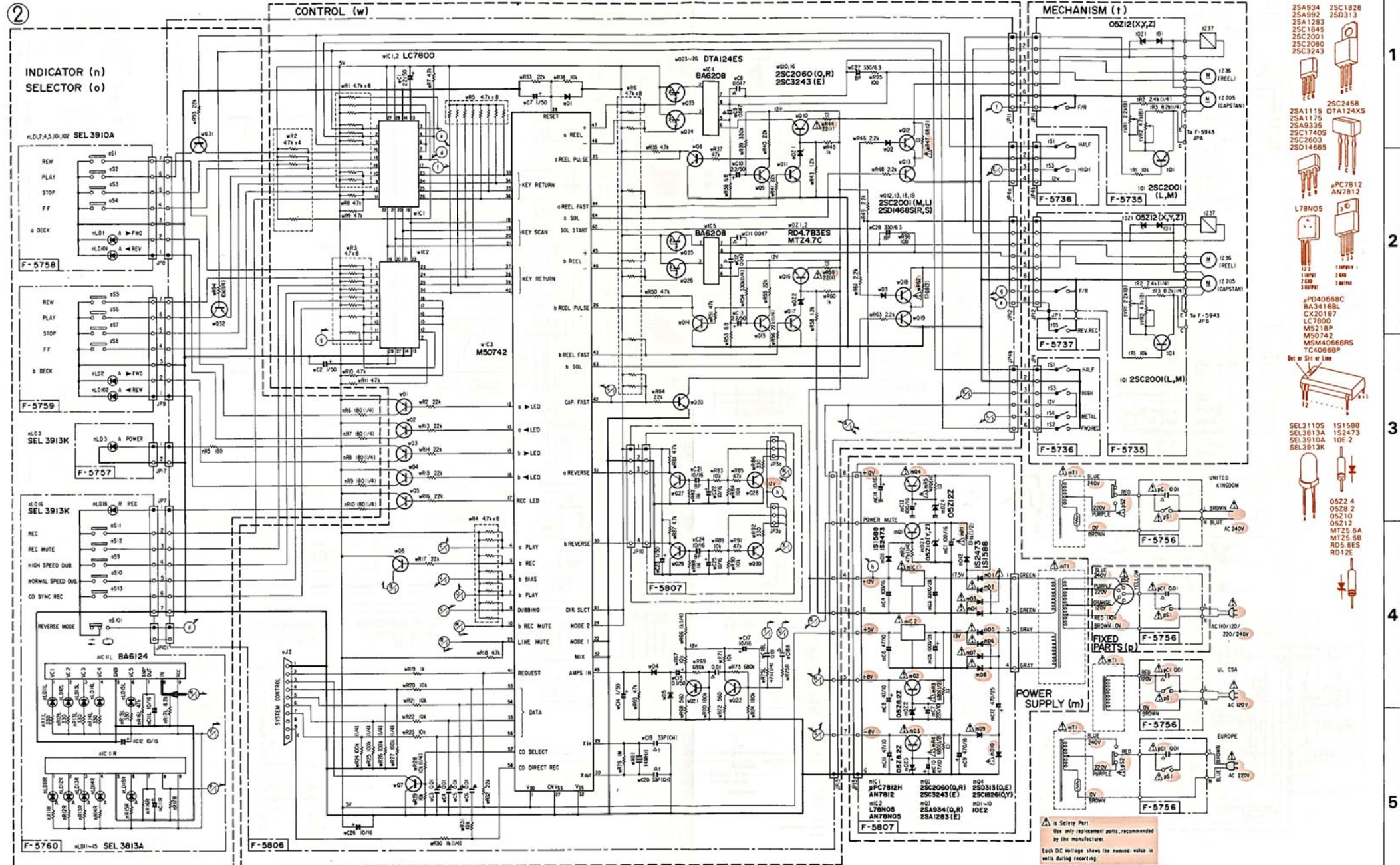






11-2. Logic Control Section

\* Design and specifications subject to change without notice for improvement.  
 \* La présentation et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.  
 \* Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.



- 25A934
- 25A992
- 25A1283
- 25C1845
- 25C2001
- 25C2060
- 25C3243
- 25C1826
- 25D313
- 25A1115
- 25A1175
- 25A3335
- 25C17405
- 25C2603
- 25D14685
- 25C2458
- DTA124XS
- PC7812
- AN7812
- L78N05
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⚠ Safety Part:  
 Use only replacement parts, recommended by the manufacturer.  
 Each DC Voltage shows the nominal value in volts during recording.



## 13. TERMINAL FUNCTION OF IC M50742-405SP

Pin No.	Pin Name	i/o	Description	ACTIVE	
				H	L
21~18	P34~P37	o	Terminals for outputting key matrix return timing signals.		
33~40	P57~P50	i	Terminals for inputting key matrix timing signals.		
4	a PLAY	o	This terminal outputs an "H" signal in PLAY or AMPS mode, but an "L" signal in REC mode.	○	
5	b REC	o	This terminal outputs an "L" signal in REC or DUBBING mode of b-side mechanism.		○
6	b BIAS	o	This terminal outputs an "L" signal in REC or DUBBING mode of b-side mechanism.		○
7	b PLAY	o	This terminal outputs an "H" signal in PLAY or AMPS mode, but an "L" signal in REC mode.	○	
8	DUBBING	o	This terminal outputs an "H" signal in DUBBING mode. And terminal for outputting a signal for DUBBING indicator LED.	○	
10	REC MUTE	o	Terminal for outputting REC MUTE signal. This terminal outputs an "H" signal until set to PAUSE mode, when REC MUTE key is depressed in REC mode.	REC Mute ON	REC Mute OFF
12	a ▷	o	Terminal for outputting a signal for driving ▷ indicator LED of a-side mechanism.		○
15	b ▷	o	Terminal for outputting a signal for driving ▷ indicator LED of b-side mechanism.		○
17	b REC	o	Terminal for outputting a signal for driving REC indicator LED of b-side mechanism.		○
23	a REEL PULSE	i	Terminal for inputting a pulse signal detected by reel motor driver circuit of a-side mechanism to perform auto-stop operation.		
25	LINE MUTE	o	Terminal for outputting LINE MUTE signal. If at "H" level, LINE OUT is muted.	Line Mute ON	Line Mute OFF
26	b REEL PULSE	i	Terminal for inputting a pulse signal detected by reel motor driver circuit of b-side mechanism to perform auto-stop operation.		
42	CAP FAST	o	Terminal for switching capstan motor speed from NORMAL speed dubbing to HIGH speed dubbing or vice versa in DUBBING mode. NORMAL speed dubbing at "L", HIGH speed at dubbing "H". Further, in HIGH speed dubbing, f-characteristics of	HIGH Speed Dubbing	NORMAL Speed Dubbing

Pin No.	Pin Name	i/o	Description	ACTIVE	
				H	L
43	b REEL FAST	o	Terminal for switching b-side mechanism reel motor speed from NORMAL play to FF/REW or vice versa. If at "L" level, FF/REW speed is obtained.	Normal Play	F.F & REW
44	a REEL FAST	o	Terminal for switching a-side mechanism reel motor speed from NORMAL play to FF/REW or vice versa. If at "L" level, FF/REW speed is obtained.	Normal Play	FF & REW
45	b REEL M+	o	If at "L" level, b-side mechanism reel motor rotates CW.		○
46	b REEL M-	o	If at "L" level, b-side mechanism reel motor rotates CCW.		○
47	a REEL M+	o	If at "L" level, a-side mechanism reel motor rotates CW.		○
48	a REEL M-	o	If at "L" level, a-side mechanism reel motor rotates CCW.		○
49	AMPS	i	Terminal for inputting music blank signals in AMPS operation.	Music play	Music blank
50	b LEADER	i	When photosensor detects a tape leader during b-side mechanism operation, tape running direction is switched.		○
51	a LEADER	i	When photosensor detects a tape leader during a-side mechanism operation, tape running direction is switched.		○
41-53-56	P17-P03-P00	i/o	Terminals for remote-control computer selector, to which data from a remote-control system controller is inputted.		
60	SOL START	o	Terminal for generating a driving current to energize PLAY plunger. The plunger is initially energized by a pulse (JL).		
63	b PLAY SOL.	o	Terminal for outputting a current to hold b-side mechanism PLAY plunger. If at "H", PLAY plunger is held.	○	
64	a PLAY SOL.	o	Terminal for outputting a current to hold b-side mechanism PLAY plunger. If at "H", PLAY plunger is held.	○	
29-30	Xin Xout	-	Terminals to connect a OSC.		
1	V <sub>DD</sub>	-	Power supply terminal.		
57	SELECT CD	i/o	When CD synchro Rec SW., (OS13) is switched "ON", set the selector of Amp. AT CD position, output ACTIVE "H".	○	
58	CD synchro REC	i/o	When CD synchro Rec SW., (OS13) is switched "ON", set the selector CD Rector player play output Active "H".	○	



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SANSUI ELECTRONICS G.M.B.H.:

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