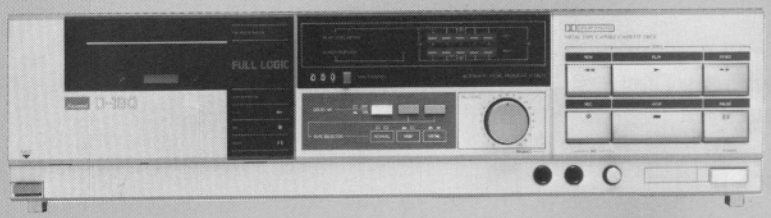
SERVICE MANUAL

METAL TAPE CAPABLE CASSETTE DECK

SANSUI D-190

(Silver & Black Model)



CAUTION

1. Parts identified by the ⚠ 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.

Sansui

SANSUI ELECTRIC CO., LTD.

•SPECIFICATIONS

Track format ..... 4-track/2-channel system
Tape speed ..... 4.8 cm/sec.
Heads (2-head configuration)
Rec/pb head ..... HIGH-Bs hard permalloy
Erase head ..... Double-gap HIGH-Bs ferrite
Motor ..... Capstan: Electronically Controlled DC Motor
Reels: DC Motor
Wow/flutter ..... 0.05% max (WRMS)
Fast forwarding (rewinding) time
..... Approx. 85 sec. (for C-60 tape)
Frequency response (—20 VU recording/playback)
Normal tape (LH) ..... 20 to 15,000 Hz
(30 to 14,000 Hz ±3 dB)
Chrome tape ..... 20 to 16,000 Hz
(30 to 15,000 Hz ±3 dB)
Metal tape ..... 20 to 17,000 Hz
(30 to 16,000 Hz ±3 dB)
Signal to noise ratio (Record/Playback)
Metal Tape (without Dolby Noise Reduction)
..... better than 57 dB
(With Dolby Noise Reduction Effect)
..... better than 10 dB
(above 5 kHz)
Erasure factor (Metal Tape)
..... more than 70 dB at (1 kHz)
Recording bias frequency
..... 85 kHz
Input sensitivity/Impedance
LINE IN (REC) ..... 70 mV/47 kohms
MIC ..... 0.5 mV/200 ~ 5,000 ohms
Power requiremets 120/220/240V
50/60 Hz
For U.S.A. and Canada
..... 120V (60 Hz)
Power consumption 14W
Dimensions ..... 430 mm (16-15/16″) W
111 mm (4-3/8″) H
226 mm (8-15/16″) D
Weight ..... 3.6 kg (7.9 lbs) net
4.6 kg (10.1 lbs) packed

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

CAUTION

1. The symbols, UL, CSA, SA, BS, UK, EU, AS and XX 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.
   XX..... Standard Version.
   NON MARK ..... Common Parts.

2. Some printed circuit boards are not supplied as the assembled. To separate these in this service manual, the stock No's are not indicated at the ends of the board names. However, the individual parts on the circuit boards are provided by orders.

3. Since some of capacitors and resistors are omitted from parts lists in this service manual, refer to the Common Parts List for capacitors & resistors, which was issued on February 1983.

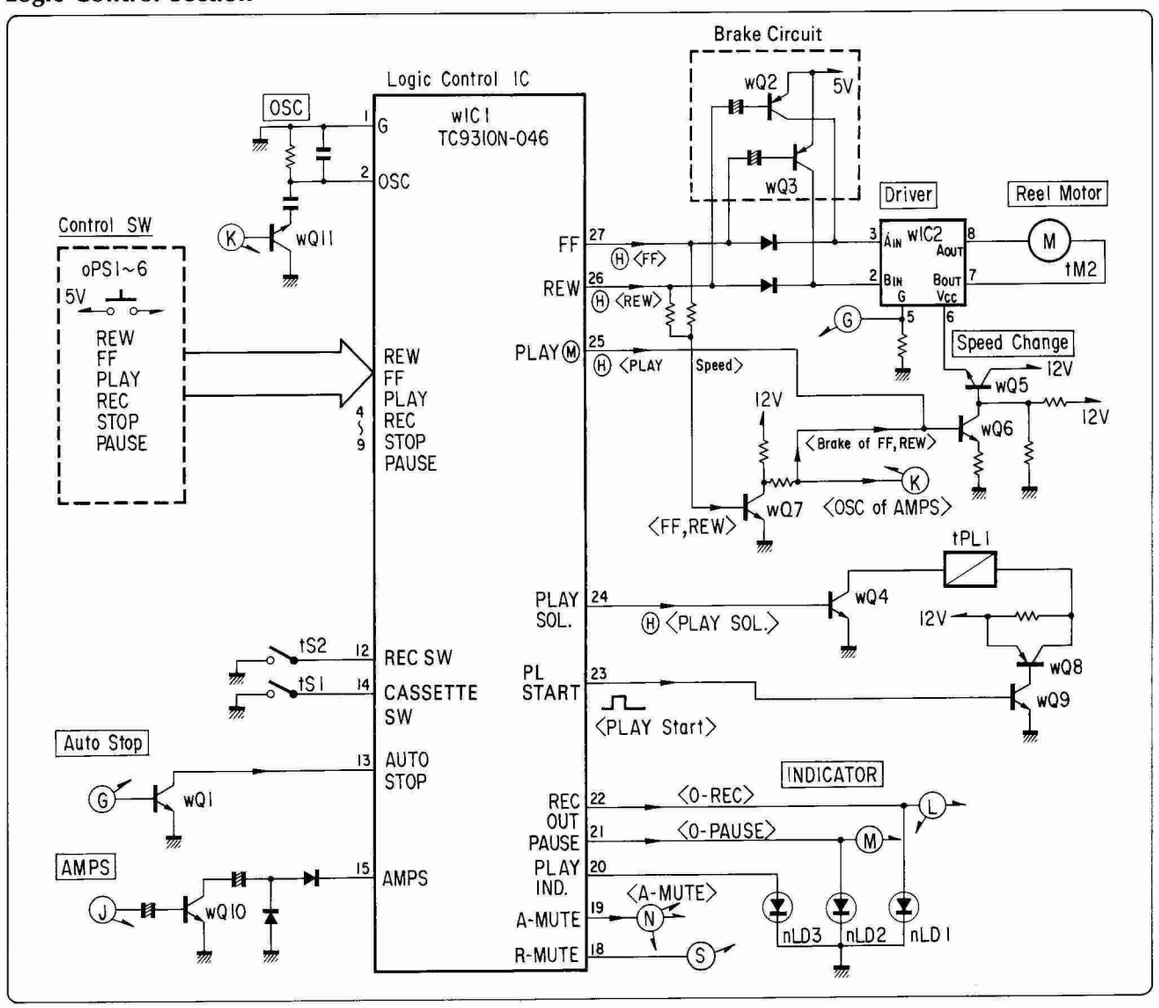
4. Abbreviations in this service manual are as follows.

•Abbreviations List

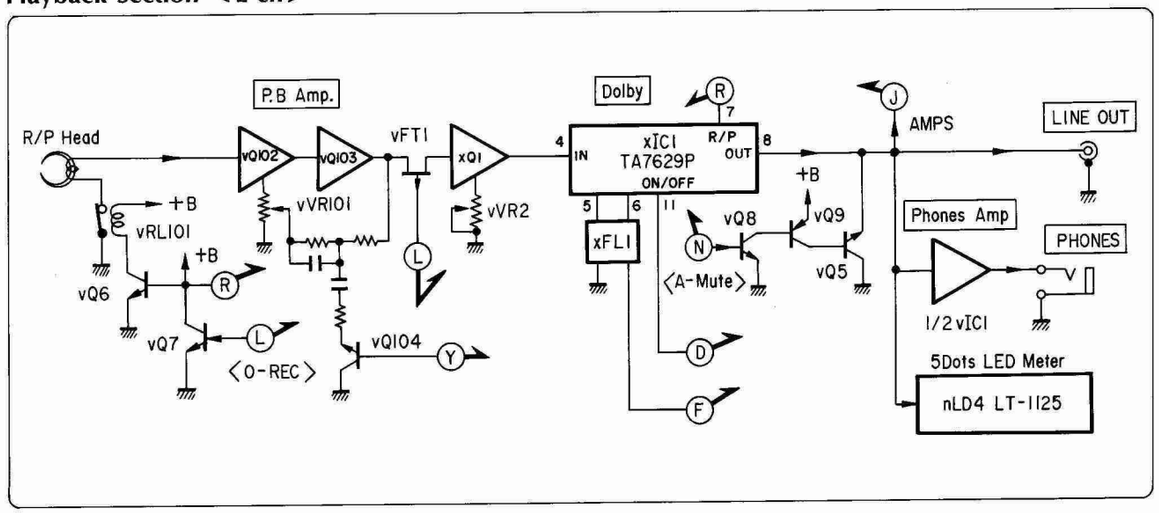
C.R.	: Carbon Resistor	E.B.L.	: Low Leak Bi-Polar Electrolytic Capacitor
S.R.	: Solid Resistor		
Ce.R.	: Cement Resistor	Ta.C.	: Tantalum Capacitor
M.R.	: Metal Film Resistor	F.C.	: Film Capacitor
F.R.	: Fusing Resistor	M.P.	: Metalized Paper Capacitor
N.I.R.	: Non-Inflammable Resistor	P.C.	: Polystyrene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

1. BLOCK DIAGRAM

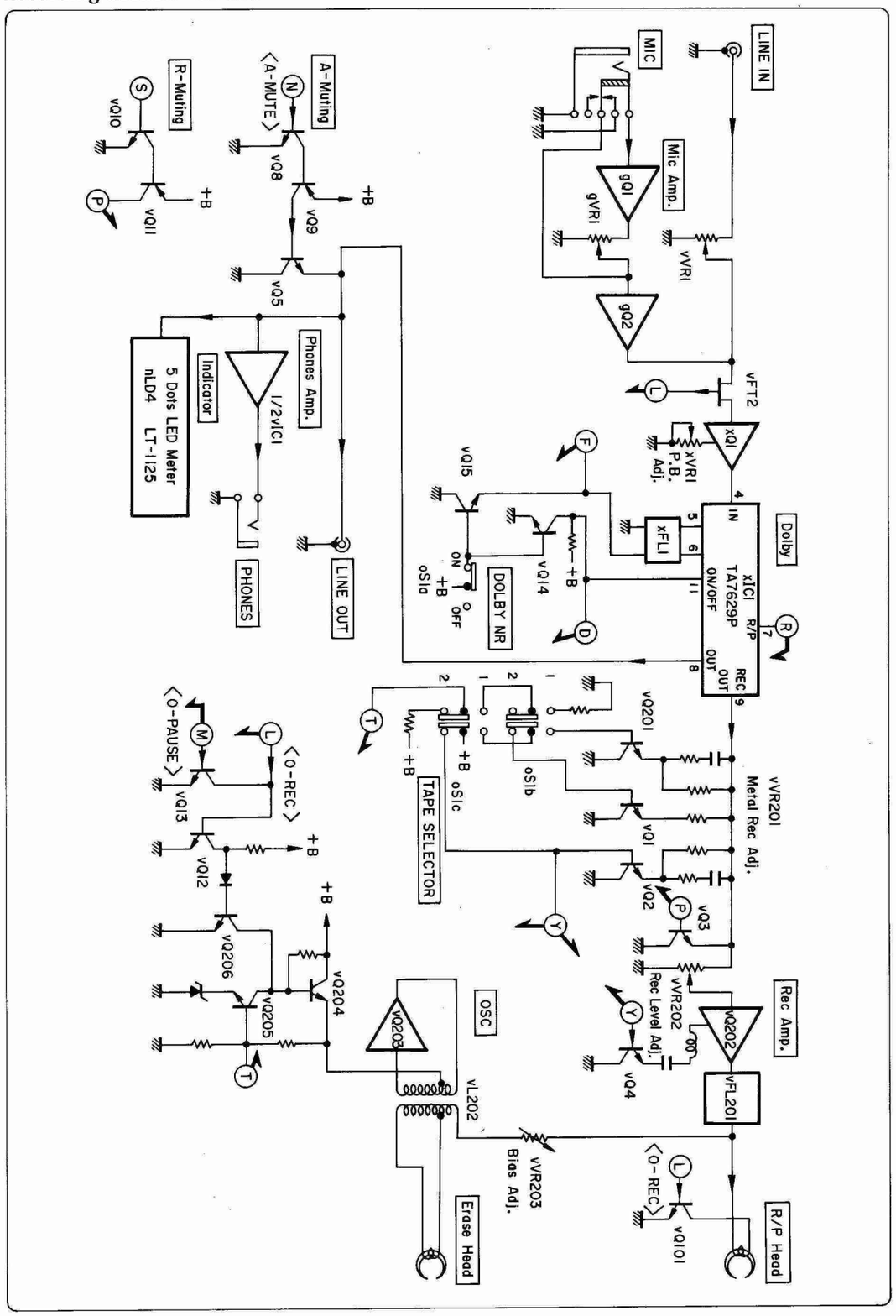
1-1. Logic Control Section



1-2. Playback Section <L-ch>



1-3. Recording Section <L-ch>



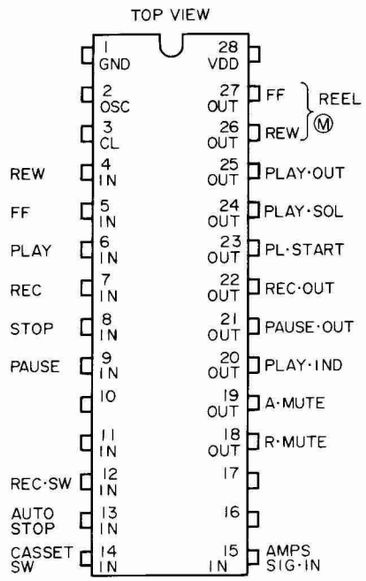
2. MODE CHANGE TABLE & TIMING CHART OF IC TC9310N-046

•Mode Change Table of IC TC9310N-046 (wIC1)

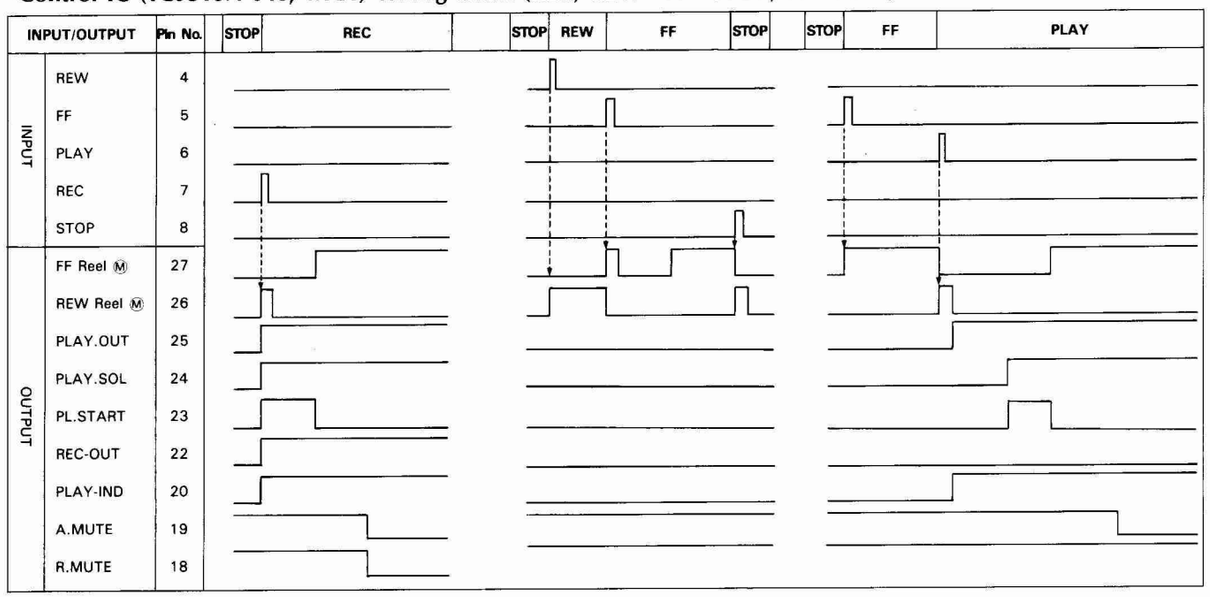
INPUT KEY / PRESENT MODE	STOP	PLAY	F.F	REW	REC	PAUSE	AUTO STOP	AMPS SIG.OFF
STOP	–	PLAY	F.F	REW	REC (–)	PAUSE		
PLAY	STOP	–	CUE	REVIEW	–	PLAY.PAUSE	STOP	
F.F	STOP	PLAY	–	REW	–	–	STOP	
REW	STOP	PLAY	F.F	–	–	–	STOP	
CUE	STOP	PLAY	–	REW	–	–	STOP	PLAY
REVIEW	STOP	PLAY	F.F	–	–	–	STOP	PLAY
REC	STOP	–	F.F	REW	–	REC.PAUSE	STOP	
PAUSE	STOP	PLAY.PAUSE	F.F	REW	REC.PAUSE (–)	STOP		
PLAY.PAUSE	STOP	–	F.F	REW	REC.PAUSE (–)	PLAY		
REC.PAUSE	STOP	–	F.F	REW	–	REC		

•**Note:** 1. This table shows operation when one input key is depressed on present mode.
2. Que is in the state of PLAY mode under FF operation.
Review is in the state of PLAY mode under REW operation.
mark means continuing present mode.
mark means non relation with other input ports.

•Pin-connection

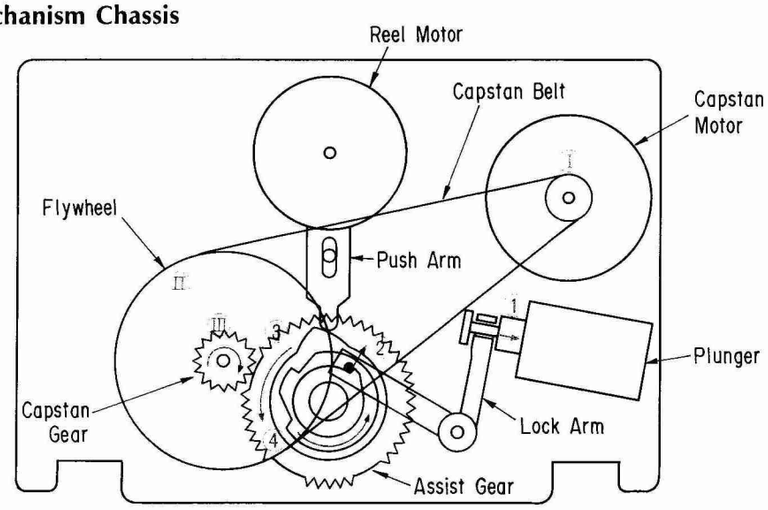


•Control IC (TC9310N-046, wIC1) Timing Chart (REC, REW→FF→STOP, FF→PLAY)

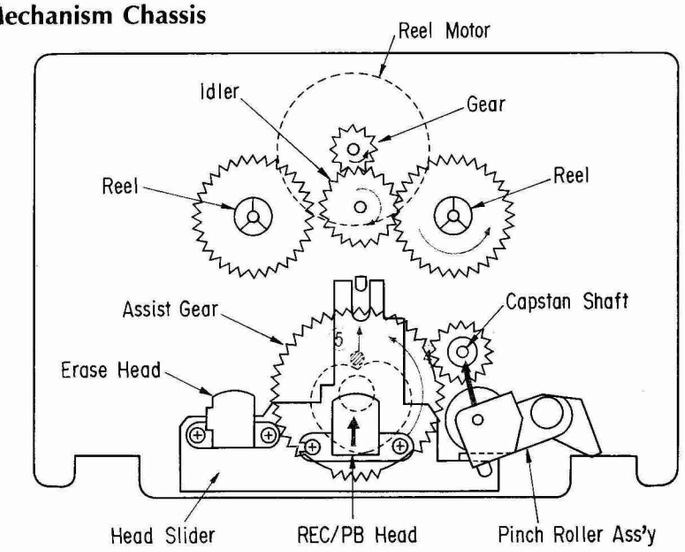


3. OPERATIONS OF PINCH ROLLER

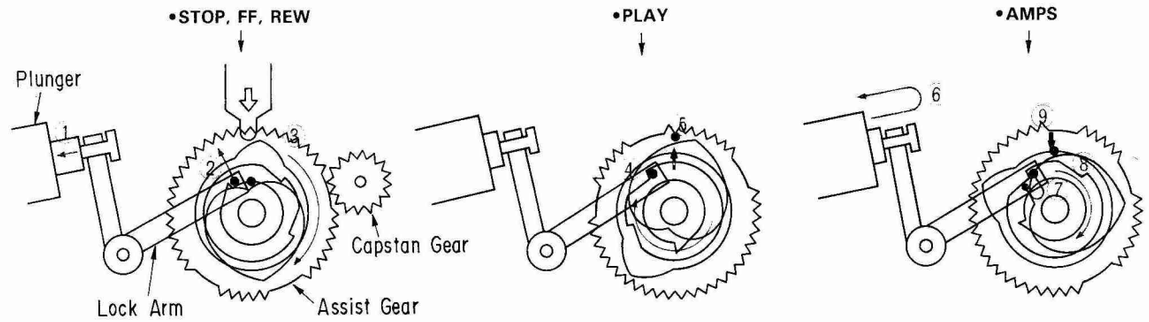
3-1. Rear View of Mechanism Chassis



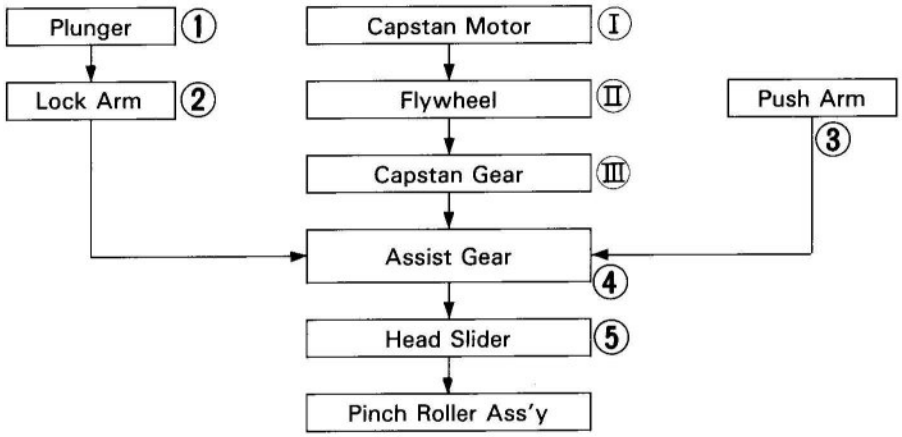
3-2. Front View of Mechanism Chassis



3-3. Cam Positions in the Modes of PLAY, FF, REW & STOP



3-4. Torque Transportation Flowchart



• The pinch roller is brought into pressure contact with the capstan shaft.

4. ADJUSTMENTS

4-1. Tape Speed

Note: 1. Use Sansui Test Tape, SCT-S3K (3 kHz signal is recorded on the tape).
2. Connections are shown in Fig. 4-1.
3. Remove lid ass'y. (Refer to "J. Lid Ass'y" on page 13.)

Fig. 4-1

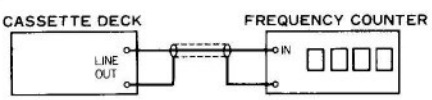
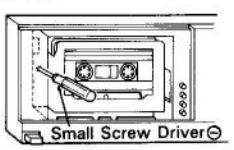


Fig. 4-2



STEP	SUBJECT	MEASURE OUTPUT	SETTING	ADJUSTMENT	ADJUST FOR	REMARKS
1.	Tape Speed Adj.	LINE OUT Frequency counter	Playback the Test Tape SCT-S3K.	Turn semi-variable resistor as Fig. 4-2.	3000Hz ± 45Hz	Use small screw driver

4-2. Playback

Note: 1. Before this adjustment, clean REC/P.B. head surface.
2. For this adjustment, use Sansui Test Tape, SCT-L400N.
3. Set the Dolby NR switch to be OFF.
4. Connections are shown in Fig. 4-3.

Fig. 4-3

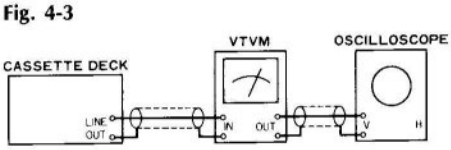
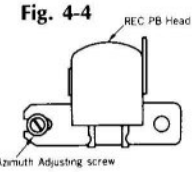


Fig. 4-4

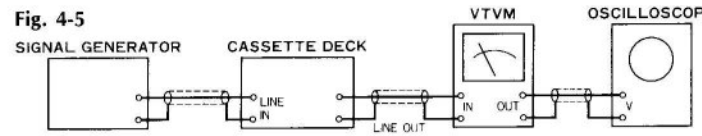


STEP	SUBJECT	MEASURE OUTPUT	SETTING	ADJUSTMENT	ADJUST FOR	REMARKS
1.	REC/P.B. Head Adj.	LINE OUT VTVM and Scope	Playback the TEST TAPE SCT-F10K	Turn the azimuth adjusting screw in Fig. 4-4.	Maximum output from L and R-ch	Refer to "J. Lid Ass'y" on page 13. After this adjustment, lock the screw with paint.
2.	Playback Level Adj.	Same as above	Playback the TEST TAPE SCT-L400N	Turn each vVR101 of L-CH and R-CH	420mV ± 1dB	vVR101 are shown in Top View on page 12.

4-3. REC Level & Frequency Response

Note: 1. Connections are shown in Fig. 4-5.
2. DOLBY NR Switch.....C

Fig. 4-5



STEP	SUBJECT	INPUT SIGNAL	MEASURE OUTPUT	SETTING	ADJUSTMENT	REMARKS
1.	REC Level Adj.	Feed 1kHz, 80mV from S.G. into LINE IN.	LINE OUT, VTVM and Scope	1. Set TAPE SELECTOR to HIGH position. 2. Load the Test Tape SCT-SA. 3. Push the PAUSE and REC knob. 4. Adjust the Rec Level Volume for obtaining 20mV on VTVM. 5. Push the PAUSE knob, then record the 1kHz signal. 6. Play back the 1kHz signal. 7. Confirm that the output levels on both channels are 20mV ±2dB on VTVM.	1. If not, turn vVR202 (L-CH, F-4431) and vVR202 (R-CH, F-4431) until output level 20mV ±2dB on both channels are obtained.	vVR202 are shown in Top View on page 12.
2.	Frequency Response Adj.	Feed 1kHz 7mV (—20dB) and 10kHz 7mV (—20dB) from S.G. into LINE IN.	Same as above	1. Set TAPE SELECTOR to HIGH position. 2. Load the Test Tape SCT-SA. 3. Record the 1kHz and 10kHz signals from S.G. 4. Play back the 1kHz and 10kHz signals, then confirm that both output levels equal.	1. If not, turn vVR203 (L-CH, F-4431) and vVR203 (R-CH, F-4431) slightly, until the output levels will be equal.	vVR203 are shown in Top View on page 12.
3.	Metal REC Level Adj.	Feed 1kHz, 80mV from S.G. into LINE IN.	LINE OUT, VTVM and Scope	1. Set TAPE SELECTOR to METAL position. 2. Load the Test Tape SCT-MA. 3. Push the PAUSE and REC knob. 4. Adjust the Rec Level Volume for obtaining 20mV on VTVM. 5. Push the PAUSE knob, then record the 1kHz signal. 6. Play back the 1kHz signal. 7. Confirm that the output levels on both channels are 20mV ±2dB on VTVM.	1. If not, turn vVR201 (L-CH, F-4431) and vVR201 (R-CH, F4431) until output level 20mV ±2dB on both channels are obtained.	vVR201 are shown in Top View on page 12.

◆ 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)	—	—	TDK AD
*SCT-SA (HIGH)	—	—	TDK SA
*SCT-MA (METAL)	—	—	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.

◆ TAPE SELECTOR Position

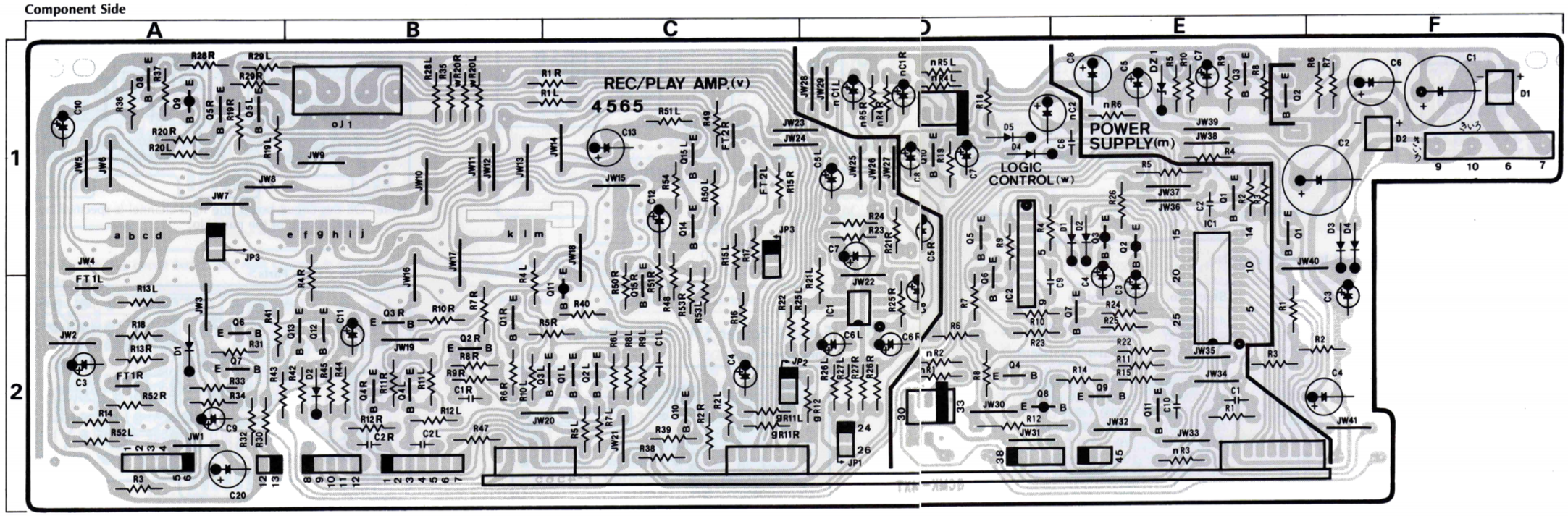
NORMAL	
FUJI	FL, FXI
MAXELL	UL, UD, XL I, XL I-S
TDK	D, AD, OD
SCOTCH	TARTAN CRISTAL MASTER 120
SONY	AHF, BHF, CHF Low-Noise
AGFA	SUPER SUPER COLOR SUPER FERRO DYNAMIC
BASF	LN Super LH I

HIGH	
FUJI	FX II
MAXELL	XL II, XL II-S
TDK	SA, SA-X
SCOTCH	MASTER 70
SONY	JHF
AGFA	STEREO CHROM
BASF	SCR
METAL	
MAXELL	MX
TDK	MA-R, MA
SCOTCH	Metafine
SONY	METALLIC

5. PARTS LOCATION & PARTS LIST

5-1. F-4565 Main Circuit Board (Stock No. 00809401)

Component Side



Parts List

Parts No.	Stock No.	Description
•Transistor		
⚠mQ1	03085201	2SD438
⚠	or 46614101	2SC3243
⚠mQ2	03083901	2SD313AL
mQ3	46367101	2SC2603
	or 46391901	2SC2785
	or 48058801	2SC1740S
•Diode		
⚠mD1	46273600	DBB10-B
⚠mD2	46273600	DBB10-B
⚠mD3	03117600	1S2473T77
	or 46086000	1S1588TP-3
⚠mD4	03117600	1S2473T77
	or 46086000	1S1588TP-3
•Zener Diode		
mDZ1	46111500	05Z5.6-Y
⚠mR4	08922500	47Ω 1/2W N.I.R.
oJ1	46371500	4P Terminal Board, INPUT/OUTPUT
•Transistor		
vQ1	46367101	2SC2603
	or 46391901	2SC2785
	or 48058801	2SC1740S
vQ2	46367101	2SC2603
	or 46391901	2SC2785
	or 48058801	2SC1740S
vQ3	46367101	2SC2603
	or 46391901	2SC2785
	or 48058801	2SC1740S

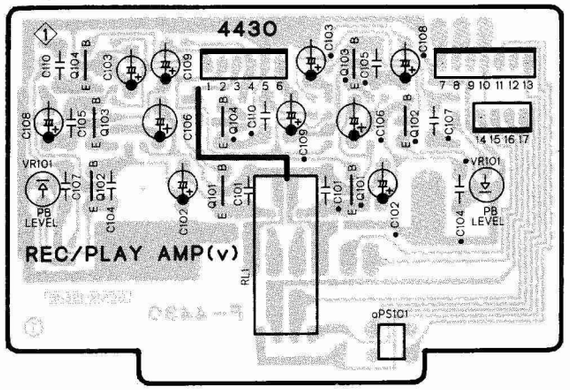
Parts No.	Stock No.	Description
vQ4	46367101	2SC2603
	or 46391901	2SC2785
	or 48058801	2SC1740S
vQ5	46367101	2SC2603
	or 46391901	2SC2785
	or 48058801	2SC1740S
vQ6	46367101	2SC2603
	or 46391901	2SC2785
	or 48058801	2SC1740S
vQ7	46367101	2SC2603
	or 46391901	2SC2785
	or 48058801	2SC1740S
vQ8	46367101	2SC2603
	or 46391901	2SC2785
	or 48058801	2SC1740S
vQ9	46367001	2SA1115
	or 46392001	2SA1175
	or 48058601	2SA933S
vQ10	46367101	2SC2603
	or 46391901	2SC2785
	or 48058801	2SC1740S
vQ11	46367001	2SA1115
	or 46392001	2SA1175
	or 48058601	2SA933S
vQ12	46367101	2SC2603
	or 46391901	2SC2785
	or 48058801	2SC1740S
vQ13	46367101	2SC2603
	or 46391901	2SC2785
	or 48058801	2SC1740S
vQ14	46367101	2SC2603
	or 46391901	2SC2785
	or 48058801	2SC1740S

Parts No.	Stock No.	Description
vQ15	46367101	2SC2603
	or 46391901	2SC2785
	or 48058801	2SC1740S
•FET		
vFT1	46643800	2SJ103-Y
	or 46643801	2SJ103-GR
	or 46643802	2SJ103-BL
vFT2	46643800	2SJ103-Y
	or 46643801	2SJ103-GR
	or 46643802	2SJ103-BL
•IC		
vIC1	46580100	M5218P
•Diode		
vD1	03117600	1S2473T77
	or 46086000	1S1588TP-3
vD2	03117600	1S2473T77
	or 46086000	1S1588TP-3
vR30	46681300	10Ω 1/4W F.R.
•Transistor		
wQ1	46367101	2SC2603
	or 46391901	2SC2785
	or 48058801	2SC1740S
wQ2	46719800	DTA124
wQ3	46719800	DTA124
wQ4	46359801	2SC2001
wQ5	03085201	2SD438
	or 46614101	2SC3243

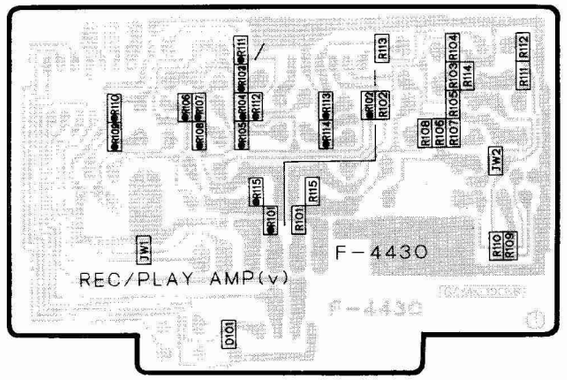
Parts No.	Stock No.	Description
wQ6	46367101	2SC2603
	or 46391901	2SC2785
	or 48058801	2SC1740S
wQ7	46367101	2SC2603
	or 46391901	2SC2785
	or 48058801	2SC1740S
wQ8	46359701	2SA952
wQ9	46367101	2SC2603
	or 46391901	2SC2785
	or 48058801	2SC1740S
wQ10	46367101	2SC2603
	or 46391901	2SC2785
	or 48058801	2SC1740S
wQ11	46367101	2SC2603
	or 46391901	2SC2785
	or 48058801	2SC1740S
•IC		
wIC1	46916800	TC9310N-046
wIC2	46149600	BA6208
•Diode		
wD1	03117600	1S2473T77
	or 46086000	1S1588TP-3
wD2	03117600	1S2473T77
	or 46086000	1S1588TP-3
wD4	03117600	1S2473T77
	or 46086000	1S1588TP-3
wD5	03117600	1S2473T77
	or 46086000	1S1588TP-3k
⚠wR5	00183100	47Ω 1W N.I.R.
⚠wR12	00191900	82Ω 2W N.I.R.

5-2. F-4430 Playback Amp Circuit Board (Stock No. 00811401)

Component Side



Pattern Side <Chip Parts>



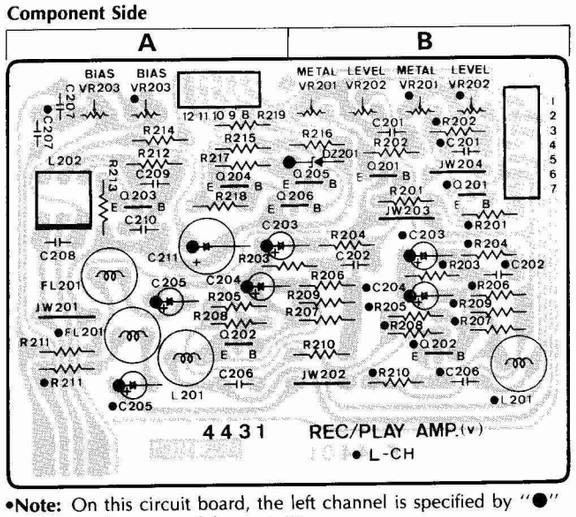
•Note: On this circuit board, the right channel is specified by "●" mark on top of the parts No.

Parts List

Parts No.	Stock No.	Description
•Transistor		
vQ101	46359801	2SC2001
vQ102	46577801	2SC2320L
	or 46581701	2SC1845
vQ103	46577801	2SC2320L
	or 46581701	2SC1845
vQ104	46367101	2SC2603
	or 46391901	2SC2785
•Diode		
vD101	46852000	RLS-73 (Chip)
vJW1	46741100	Cross Conductor
vJW2	46741100	Cross Conductor
vR101	46742800	10Ω 1/8W Chip R.
vR102	46749200	4.7kΩ 1/8W Chip R.
vR103	46752800	150kΩ 1/8W Chip R.
vR104	46751600	47kΩ 1/8W Chip R.
vR105	46750400	15kΩ 1/8W Chip R.
vR106	46752800	150kΩ 1/8W Chip R.
vR107	46744000	33Ω 1/8W Chip R.
vR108	46747800	1.2kΩ 1/8W Chip R.
vR109	46746800	470Ω 1/8W Chip R.
vR110	46752800	150kΩ 1/8W Chip R.
vR111	46748600	2.7kΩ 1/8W Chip R.
vR112	46747600	1kΩ 1/8W Chip R.
vR113	46750000	10kΩ 1/8W Chip R.
vR114	46753200	220kΩ 1/8W Chip R.
vR115	46751800	56kΩ 1/8W Chip R.
vVR101	46839300	1kΩ S.V.R., PB Level adj.
vRL101	11504700	Relay
	or 11504701	Relay LR2A-12B

5-3. F-4431 Rec Amp Circuit Board (Stock No. 00811501)

Component Side



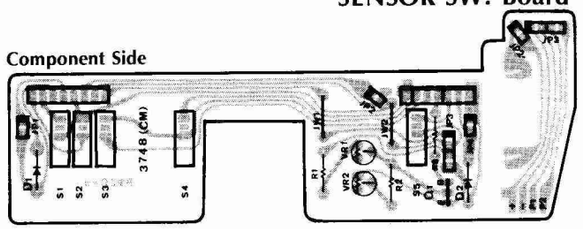
•Note: On this circuit board, the left channel is specified by "●" mark on top of the parts No.

Parts List

Parts No.	Stock No.	Description
•Transistor		
vQ201	46367101	2SC2603
	or 46391901	2SC2785
vQ202	46367101	2SC2603
	or 46391901	2SC2785
vQ203	46725801	2SC1627A
vQ204	03086101	2SD357
vQ205	46367101	2SC2603
	or 46391901	2SC2785
vQ206	46367101	2SC2603
	or 46391901	2SC2785
•Zener Diode		
vDZ201	46109400	05Z3.0-Y
vC208	46657000	3900pF 100V F.C.
vFL201	42904400	Peaking Coil
vL201	46313900	Inductor 2.7mH
vL202	46362200	Bias OSC Coil
vVR201	07262200	100kΩ(B) S.V.R., Metal Rec Level Adj.
vVR202	07262100	50kΩ(B) S.V.R., Rec Level Adj.
vVR203	07262200	100kΩ(B) S.V.R., Bias Adj.

5-4. F-3748 HALF & REVENTION TAB SENSOR SW. Board

Component Side

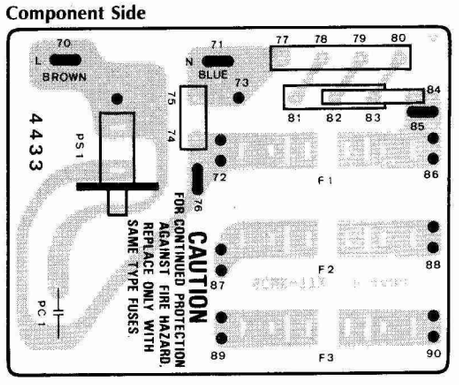


Parts List

Parts No.	Stock No.	Description
•Diode		
td1	03111600	1S2473D
td2	03111600	1S2473D
tS1	47292700	Leaf SW., half senser
tS2	47292700	Leaf SW., prevention tab senser

5-5. F-4433 Power SW. Circuit Board

Component Side

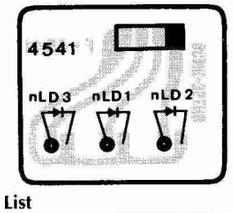


Parts List

Parts No.	Stock No.	Description
⚠pC1	46425800	0.01μF 400V C.C.
⚠	or 46943200	0.01μF 400V C.C.
⚠pS1	46360300	Push SW., POWER

5-6. F-4541 Rec, Play & Pause Indi. Board

Component Side

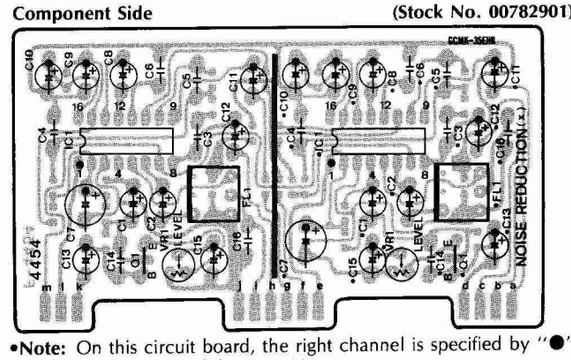


Parts List

Parts No.	Stock No.	Description
•LED		
nLD1	46176900	TLS-123, REC
nLD2	07251000	TLY-123, PAUSE
nLD3	07250900	TLG-123A, PLAY

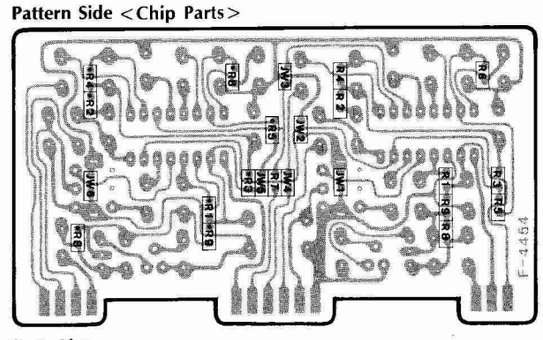
5-7. F-4454 Noise Reduction Circuit Board

Component Side (Stock No. 00782901)



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

Pattern Side <Chip Parts>

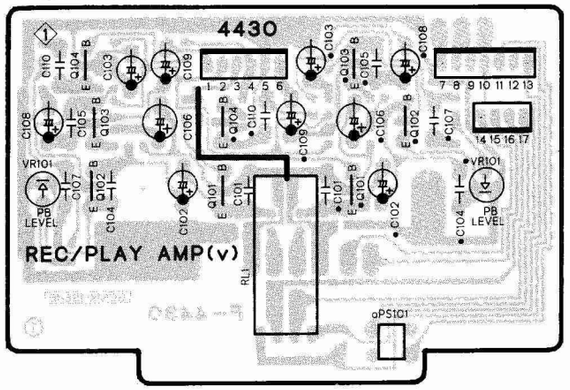


Parts List

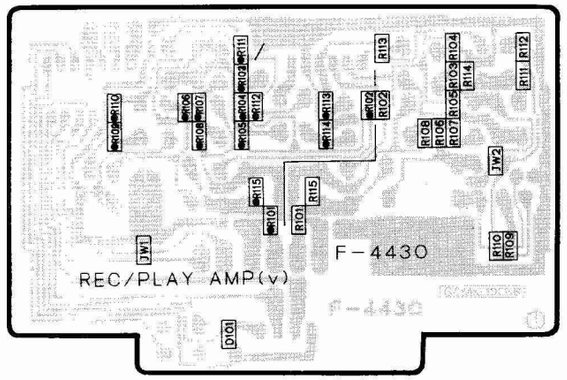
Parts No.	Stock No.	Description
•Transistor		
xQ1	46367101	2SC2603
	or 46391901	2SC2785
•IC		
xIC1	46128200	TA7629P
xJW1	46741100	Cross Conductor (Chip)
xJW2	46741100	Cross Conductor (Chip)
xJW3	46741100	Cross Conductor (Chip)
xJW4	46741100	Cross Conductor (Chip)
xJW5	46741100	Cross Conductor (Chip)
xJW6	46741100	Cross Conductor (Chip)
xR1	46752400	100kΩ 1/8W Chip R.
xR2	46745800	180Ω 1/8W Chip R.
xR3	46748800	3.3kΩ 1/8W Chip R.
xR4	46751600	47kΩ 1/8W Chip R.
xR5	46752800	150kΩ 1/8W Chip R.
xR6	46753400	270kΩ 1/8W Chip R.
xR7	46750800	22kΩ 1/8W Chip R.
xR8	46754800	1MΩ 1/8W Chip R.
xR9	46750000	10kΩ 1/8W Chip R.
xFL1	46948100	Dolby Filter
xVR1	46839500	4.7kΩ S.V.R., gain adj.

5-2. F-4430 Playback Amp Circuit Board (Stock No. 00811401)

Component Side



Pattern Side <Chip Parts>



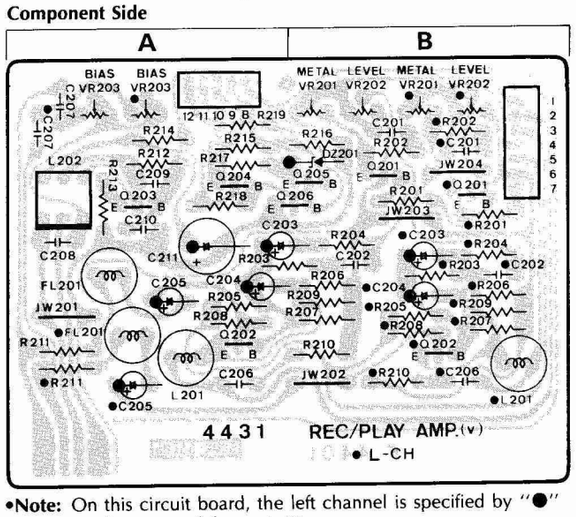
•Note: On this circuit board, the right channel is specified by "●" mark on top of the parts No.

Parts List

Parts No.	Stock No.	Description
•Transistor		
vQ101	46359801	2SC2001
vQ102	46577801	2SC2320L
	or 46581701	2SC1845
vQ103	46577801	2SC2320L
	or 46581701	2SC1845
vQ104	46367101	2SC2603
	or 46391901	2SC2785
•Diode		
vD101	46852000	RLS-73 (Chip)
vJW1	46741100	Cross Conductor
vJW2	46741100	Cross Conductor
vR101	46742800	10Ω 1/8W Chip R.
vR102	46749200	4.7kΩ 1/8W Chip R.
vR103	46752800	150kΩ 1/8W Chip R.
vR104	46751600	47kΩ 1/8W Chip R.
vR105	46750400	15kΩ 1/8W Chip R.
vR106	46752800	150kΩ 1/8W Chip R.
vR107	46744000	33Ω 1/8W Chip R.
vR108	46747800	1.2kΩ 1/8W Chip R.
vR109	46746800	470Ω 1/8W Chip R.
vR110	46752800	150kΩ 1/8W Chip R.
vR111	46748600	2.7kΩ 1/8W Chip R.
vR112	46747600	1kΩ 1/8W Chip R.
vR113	46750000	10kΩ 1/8W Chip R.
vR114	46753200	220kΩ 1/8W Chip R.
vR115	46751800	56kΩ 1/8W Chip R.
vVR101	46839300	1kΩ S.V.R., PB Level adj.
vRL101	11504700	Relay
	or 11504701	Relay LR2A-12B

5-3. F-4431 Rec Amp Circuit Board (Stock No. 00811501)

Component Side



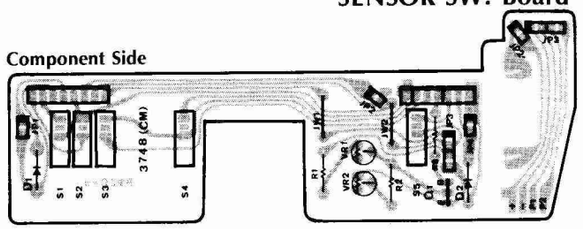
•Note: On this circuit board, the left channel is specified by "●" mark on top of the parts No.

Parts List

Parts No.	Stock No.	Description
•Transistor		
vQ201	46367101	2SC2603
	or 46391901	2SC2785
vQ202	46367101	2SC2603
	or 46391901	2SC2785
vQ203	46725801	2SC1627A
vQ204	03086101	2SD357
vQ205	46367101	2SC2603
	or 46391901	2SC2785
vQ206	46367101	2SC2603
	or 46391901	2SC2785
•Zener Diode		
vDZ201	46109400	05Z3.0-Y
vC208	46657000	3900pF 100V F.C.
vFL201	42904400	Peaking Coil
vL201	46313900	Inductor 2.7mH
vL202	46362200	Bias OSC Coil
vVR201	07262200	100kΩ(B) S.V.R., Metal Rec Level Adj.
vVR202	07262100	50kΩ(B) S.V.R., Rec Level Adj.
vVR203	07262200	100kΩ(B) S.V.R., Bias Adj.

5-4. F-3748 HALF & REVENTION TAB SENSOR SW. Board

Component Side

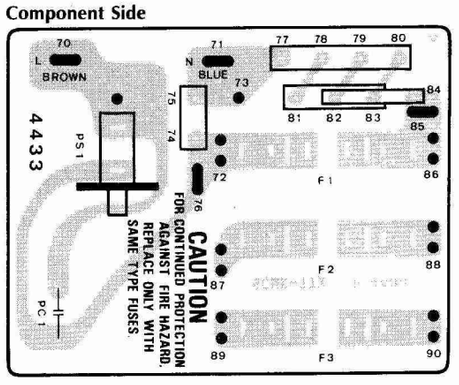


Parts List

Parts No.	Stock No.	Description
•Diode		
td1	03111600	1S2473D
td2	03111600	1S2473D
tS1	47292700	Leaf SW., half senser
tS2	47292700	Leaf SW., prevention tab senser

5-5. F-4433 Power SW. Circuit Board

Component Side

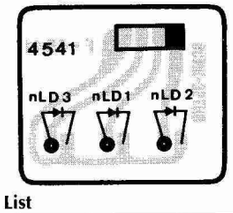


Parts List

Parts No.	Stock No.	Description
⚠pC1	46425800	0.01μF 400V C.C.
⚠	or 46943200	0.01μF 400V C.C.
⚠pS1	46360300	Push SW., POWER

5-6. F-4541 Rec, Play & Pause Indi. Board

Component Side

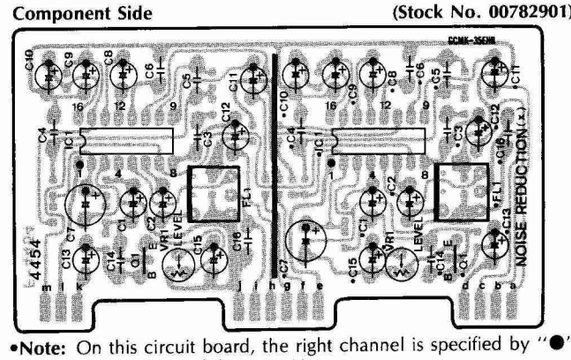


Parts List

Parts No.	Stock No.	Description
•LED		
nLD1	46176900	TLS-123, REC
nLD2	07251000	TLY-123, PAUSE
nLD3	07250900	TLG-123A, PLAY

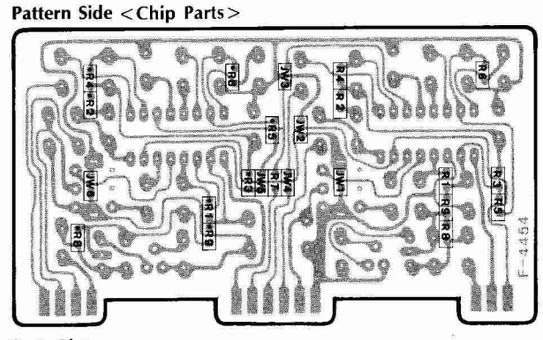
5-7. F-4454 Noise Reduction Circuit Board

Component Side (Stock No. 00782901)



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

Pattern Side <Chip Parts>

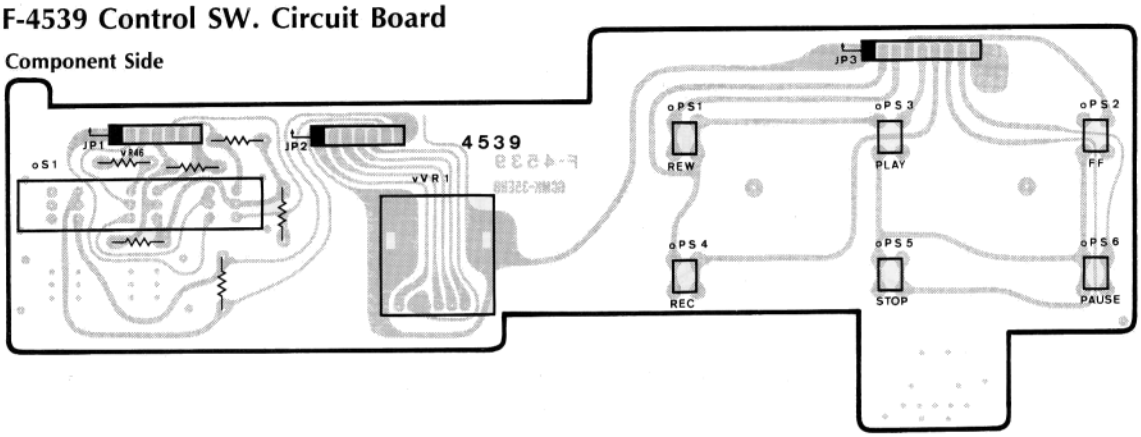


Parts List

Parts No.	Stock No.	Description
•Transistor		
xQ1	46367101	2SC2603
	or 46391901	2SC2785
•IC		
xIC1	46128200	TA7629P
xJW1	46741100	Cross Conductor (Chip)
xJW2	46741100	Cross Conductor (Chip)
xJW3	46741100	Cross Conductor (Chip)
xJW4	46741100	Cross Conductor (Chip)
xJW5	46741100	Cross Conductor (Chip)
xJW6	46741100	Cross Conductor (Chip)
xR1	46752400	100kΩ 1/8W Chip R.
xR2	46745800	180Ω 1/8W Chip R.
xR3	46748800	3.3kΩ 1/8W Chip R.
xR4	46751600	47kΩ 1/8W Chip R.
xR5	46752800	150kΩ 1/8W Chip R.
xR6	46753400	270kΩ 1/8W Chip R.
xR7	46750800	22kΩ 1/8W Chip R.
xR8	46754800	1MΩ 1/8W Chip R.
xR9	46750000	10kΩ 1/8W Chip R.
xFL1	46948100	Dolby Filter
xVR1	46839500	4.7kΩ S.V.R., gain adj.

5-8. F-4539 Control SW. Circuit Board

Component Side



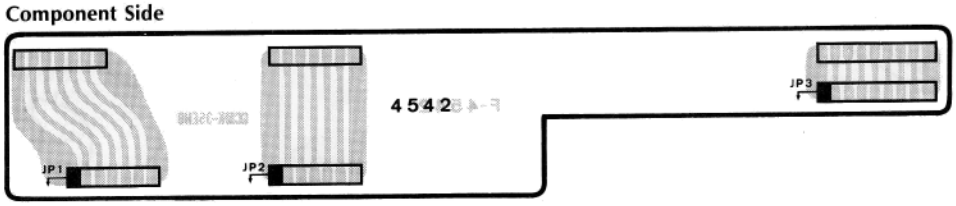
Parts List

Parts No.	Stock No.	Description
oPS1	46133300	Push SW., REW
oPS2	46133300	Push SW., FF
oPS3	46133300	Push SW., PLAY
oPS4	46133300	Push SW., REC
oPS5	46133300	Push SW., STOP

Parts No.	Stock No.	Description
oPS6	46133300	Push SW., PAUSE
oS1	46917200	Push SW., DOLBY, TAPE SELECTOR
vVR1	46917400	50kΩ V.R., REC LEVEL

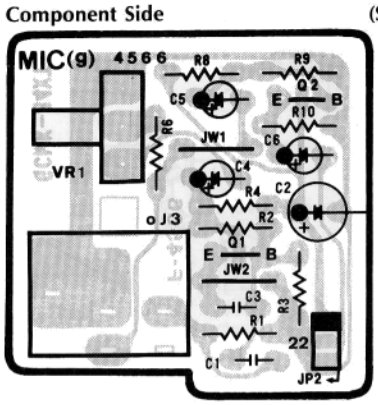
5-9. F-4542 CONNECTION Board

Component Side



5-10. F-4566 Mic Amp Circuit Board

Component Side (Stock No. 00809501)

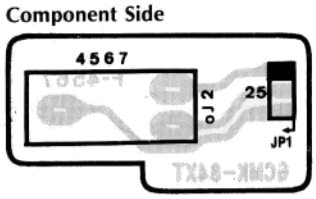


Parts List

Parts No.	Stock No.	Description
•Transistor		
gQ1	46367101	2SC2603
	or 46391901	2SC2785
	or 48058801	2SC1740S
gQ2	46367101	2SC2603
	or 46391901	2SC2785
	or 48058801	2SC1740S
gC1	46284100	0.1μF 50V F.C.
gVR1	07106701	20kΩ(A) V.R., MIC LEVEL
oJ3	46502200	Jack, MIC

5-11. F-4567 Phones Jack Board

Component Side

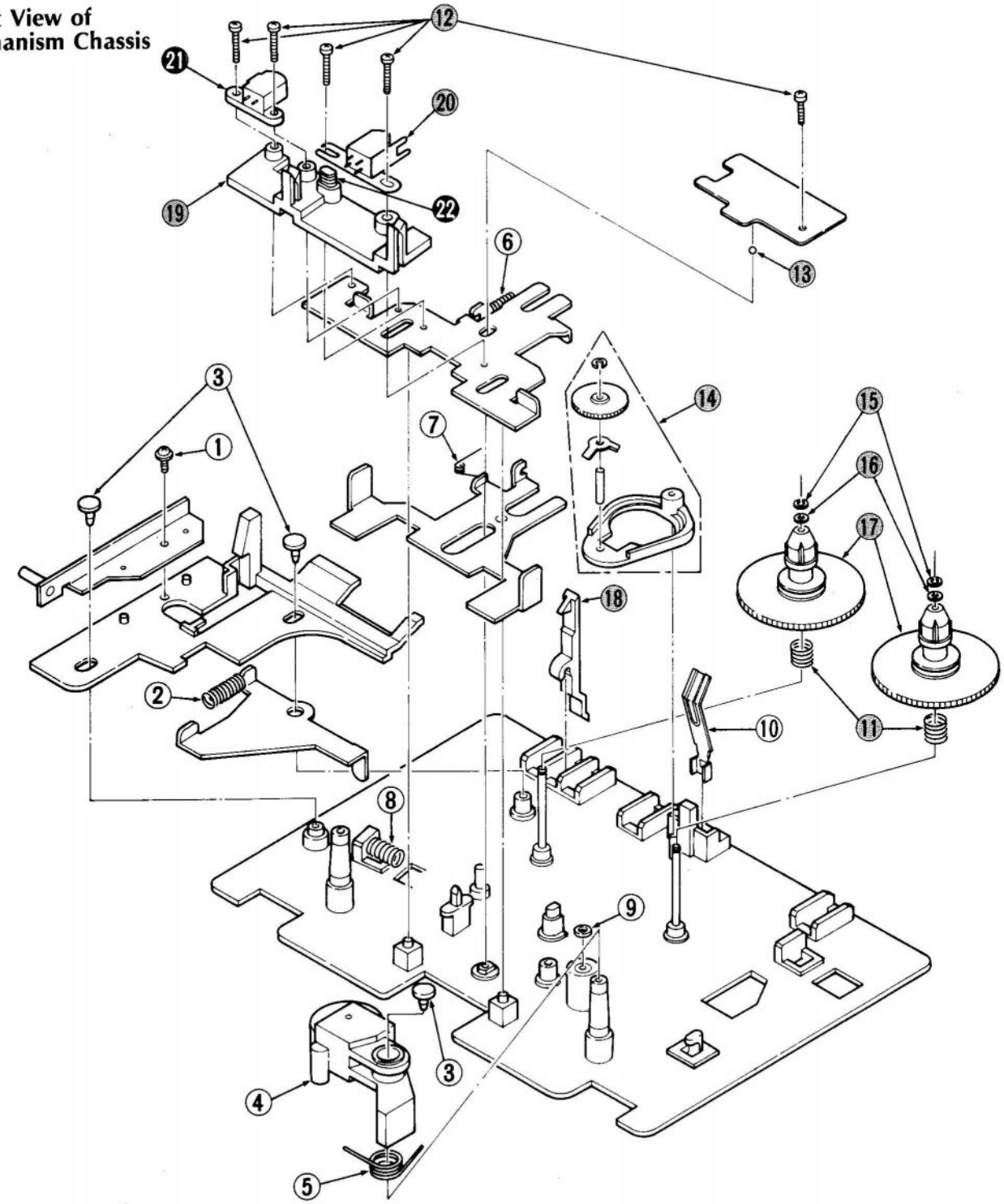


Parts List

Parts No.	Stock No.	Description
oJ2	46265700	Jack, PHONES

6. EXPLODED VIEW & PARTS LIST

6-1. Front View of Mechanism Chassis

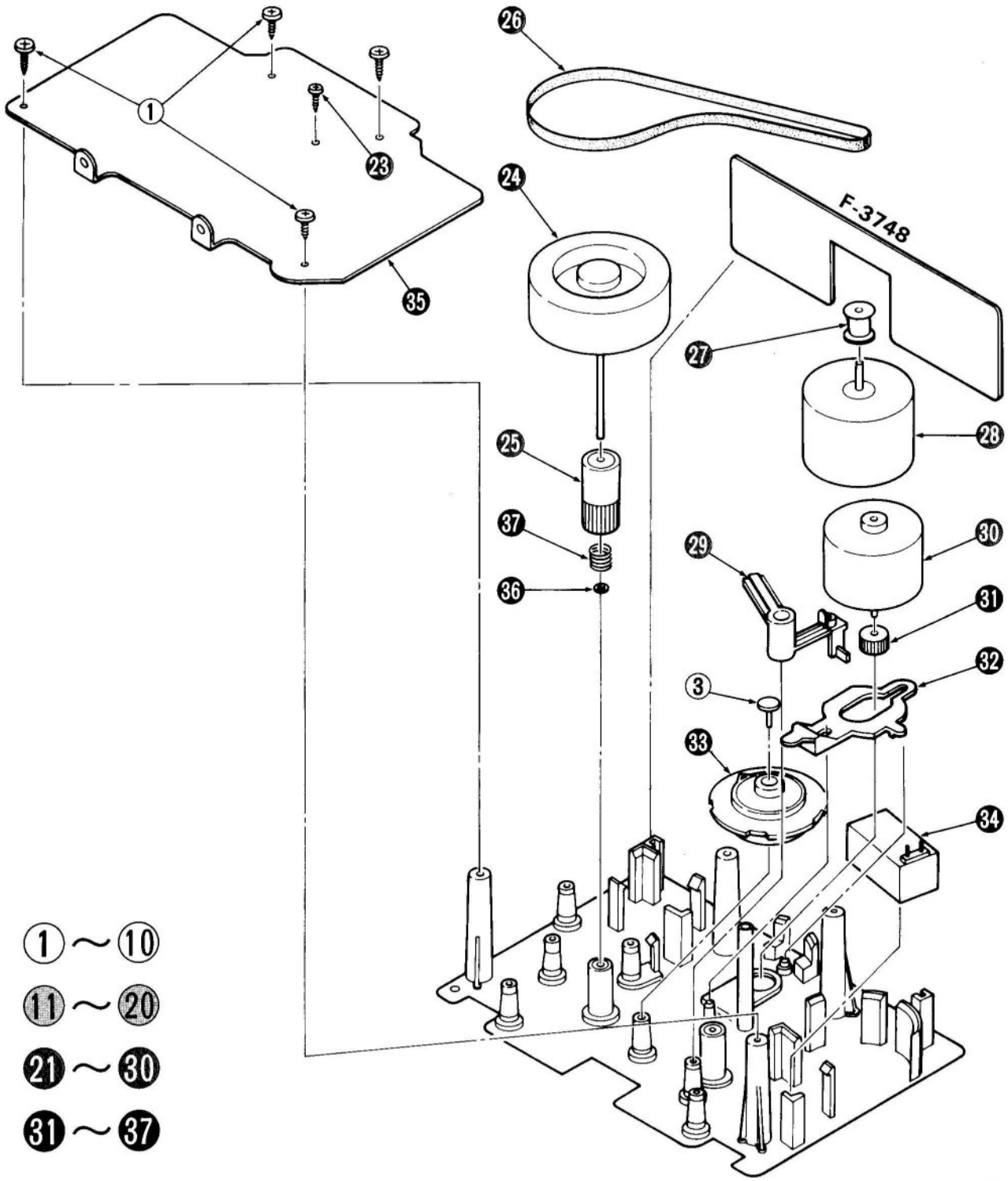


Parts List

Parts No.	Stock No.	Description
1	46731200	Tapping Screw, M2.6×8
2	47406010	Spring, eject
3	47420900	Plastic Tack
4	47281800	Pinch roller Ass'y
5	47405500	Spring, pinch roller
6	47406200	Spring, head base
7	47405600	Spring, slide base
8	47405900	Spring, plunger solenoid
9	47404700	Washer, d=2.5
10	47293510	Spring, half

Parts No.	Stock No.	Description
11	47405700	Spring, reel
12	00420900	Binding Head Screw, M2×12
13	47404900	Steel Ball, ϕ2.0
14	47405000	Arm Ass'y
15	47404800	Washer, d=1.6
16	47497100	Washer, d=2.0
17	47283400	Reel Gear A
18	47292410	Sensor Arm (A)
19	47284100	Head Base
20	48001600	REC/PB Head

6-2. Rear View of Mechanism Chassis



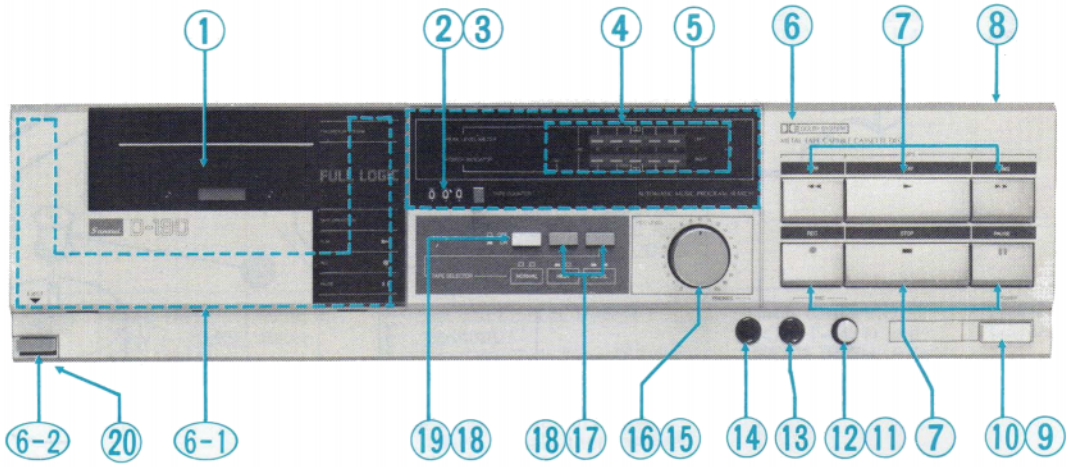
① ~ ⑩
⑪ ~ ⑳
㉑ ~ ㉚
㉛ ~ ㊲

Parts No.	Stock No.	Description
21	07997400	Erase Head
22	47406100	Spring, azimuth
23	46268900	Pan Head Deltite Screw, M2.6×6
24	47282900	Flywheel Ass'y
25	47281200	Capstan Gear
26	47405100	Belt
27	47283200	Pully
28	46737400	Capstan Motor
29	47281600	Lock Arm

Parts No.	Stock No.	Description
30	46737500	Reel Motor
31	47293100	Gear, reel motor
32	47293800	Arm (B)
33	47283800	Assist Gear
34	47292600	Plunger Solenoid
35	———	Sub Chassis
36	47404600	Washer, d=2.5
37	47530000	Spring A, Flywheel

7. OTHER PARTS

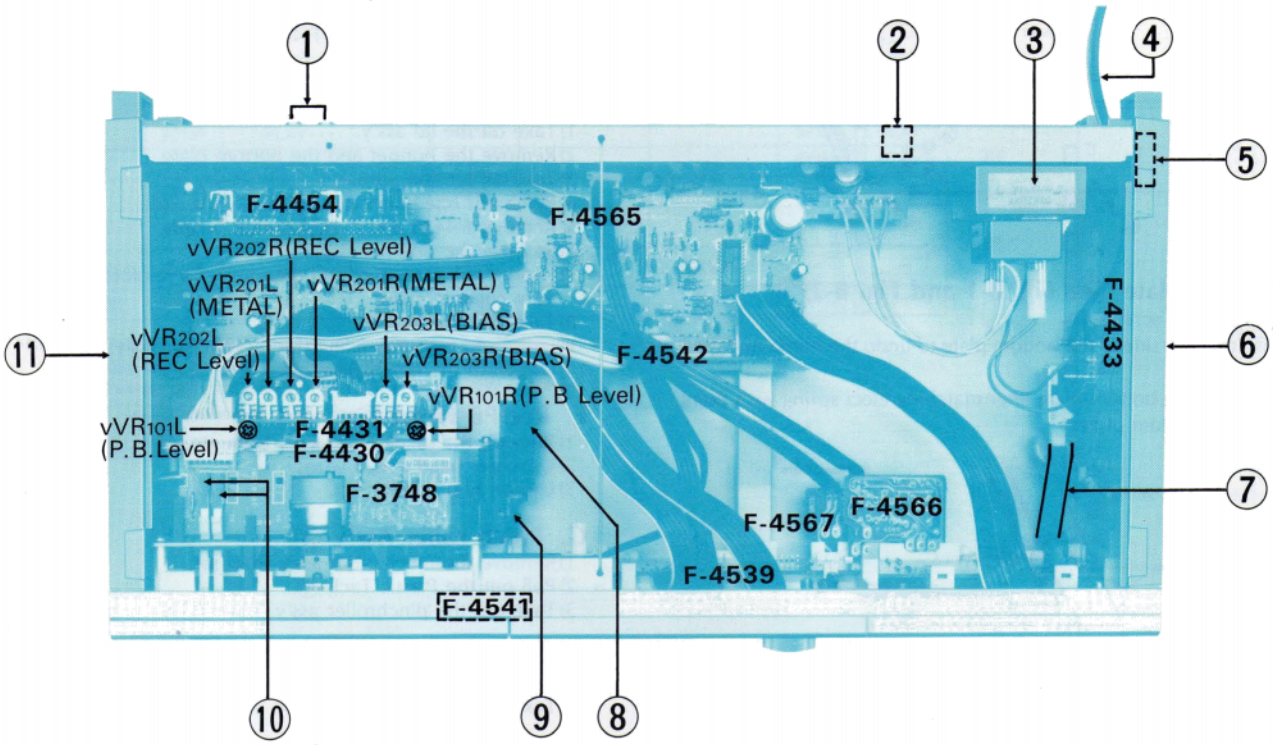
7-1. Front View



Parts List

Parts No.	Stock No.	Description
<Common Parts>		
2	46899300	Tape Counter
3	47378200	Counter Belt
4	46947900	LED LEVEL METER (LT-1125)
5	47516700	Meter Cover
6-1	47378300	Cassette Holder Ass'y
6-2	47350900	Knob, EJECT
7	46133300	Push SW., REW, F.FWD, PLAY, REC, STOP, PAUSE
9	47257100	Knob, POWER
⚠10	46360300	Push SW., POWER
12	07106701	20kΩ(A) V.R., MIC
13	46502200	Jack, MIC
14	46265700	Jack, PHONES
16	48001500	50kΩ V.R., REC LEVEL
17	47353200	Knob, TAPE SELECTOR
18	46917200	Push SW., TAPE SELECTOR, DOLBY NR
19	47353100	Knob, DOLBY NR
20	47352100	Spring, EJECT
<Silver Model>		
1	47533900	Lid Ass'y
6	47532400	Front Panel Ass'y
8	47338600	Bonnet
11	47496000	Knob, MIC
15	47511800	Knob, REC LEVEL
<Black Model>		
1	47534000	Lid Ass'y
6	47532500	Front Panel Ass'y
8	47352300	Bonnet
11	07680600	Knob, MIC
15	47511900	Knob, REC LEVEL

7-2. Top View



Parts List

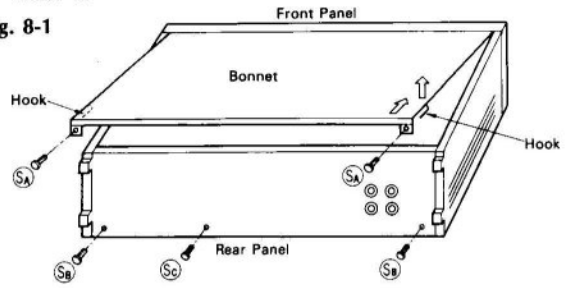
Parts No.	Stock No.	Description
1	46371500	4P Terminal Board, LINE IN/LINE OUT
⚠ 2	07204700	Slide SW., Voltage Selector (EU, BS)
⚠ 3	15015201	Power Transformer (XX)
⚠	15015202	Power Transformer (UL, CSA)
⚠	15015205	Power Transformer (EU, AS)
⚠	15015206	Power Tansformer (BS)
⚠ 4	38004700	Power Supply Cord (XX, UL, CSA)
⚠	38004500	Power Supply Cord (EU)
⚠	38004300	Power Supply Cord (BS)
⚠	07204200	Power Supply Cord (AS)
5	47157300	AC Cord Cover
6	47174920	Right Side Panel Ass'y <Silver Model>
	47491000	Right Side Panel Ass'y <Black Model>
7	47351100	Joint Shaft
8	46370300	Eject Damper Ass'y
9	47375710	Damper Holder
10	47292700	Leaf switch, harf, rec prev.
11	47174820	Left Side Panel Ass'y <Silver Model>
	47490910	Left Side Panel Ass'y < Black Model>

8. MAIN PARTS REPLACEMENT (See Exploded View on page 9 & 10)

A. Bonnet (See Fig. 8-1)

1) Remove two screws (SA).
2) Push the rear side of the bonnet to undo the hooks and then remove it.

Fig. 8-1

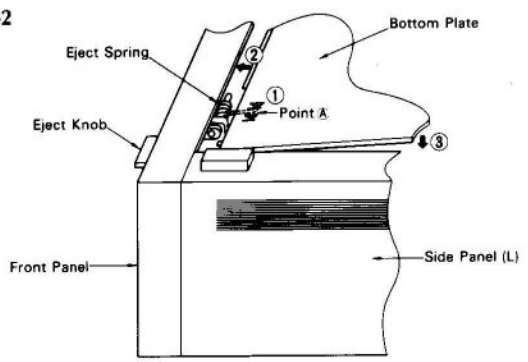


B. Bottom Plate (See Fig. 8-1 and Fig. 8-2)

1) Remove two screws (SB)
2) Push the rear side of the bottom plate to undo the hooks and then remove it.

Note: Install the bottom plate after matching eject spring with point Ⓐ of bottom plate.

Fig. 8-2



C. Side Panel L (or R) (See Fig. 8-3).

1) Remove the bonnet and the bottom plate.
2) Shift the position of the side panel L (or R) 2.0 cm in to the arrow direction ①.
3) Undo the hooks ② of the side panel and then pull it to the arrow direction ③ to remove it.

Fig. 8-3

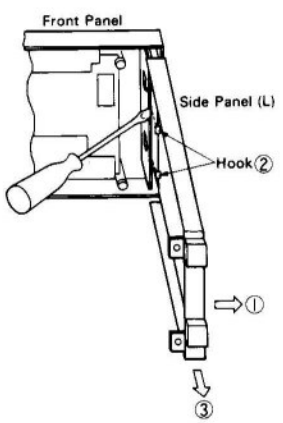
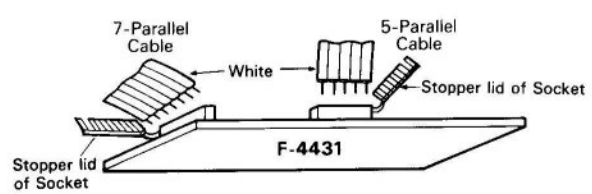


Fig. 8-4



D. F-4430 and F-4431 Circuit Board

1) Remove the bonnet and the bottom plate.
2) Pluck out two connectors from F-4430 circuit board.
3) Unhook two stopper lid of sockets on the F-4431 circuit board and then pull out two parallel cables. (See Fig. 8-4)
4) Remove the protection cover on the F-4430 circuit board.
5) Unsolder head's read wires.
6) Loosen two screws fixing F-4430 circuit board and then undo two hooks near S.V.R. on the F-4431 circuit board.

E. Mechanism Ass'y

1) Take off the lid ass'y.
2) Remove the bonnet and the bottom plate.
3) Take off tension wire.
4) Pluck out one conector from F-3748 board.
5) Remove F-4430 and F-4431 circuit board.
6) Remove the side panel L.
7) Loosen one screws (SC) and then push up reinforcement to extract from support nails.
8) Take off counter belt.
9) Loosen four screws fixing the mechanism ass'y.
10) Draw out the mechanism ass'y.

F. Rec/PB Head ⑳

1) Remove the mechanism ass'y from set.
2) Unsolder head's read wires.
3) Loosen two screws.

G. Pinch roller Ass'y ④

1) Remove the mechanism ass'y from set.
2) Pull out the Plastic Tack ③.
3) Take out the pinchroller ass'y.

H. Reel Gear ⑰

1) Remove the mechanism ass'y from set.
2) Take off two washer ⑮, ⑯ to pull out reel gear.

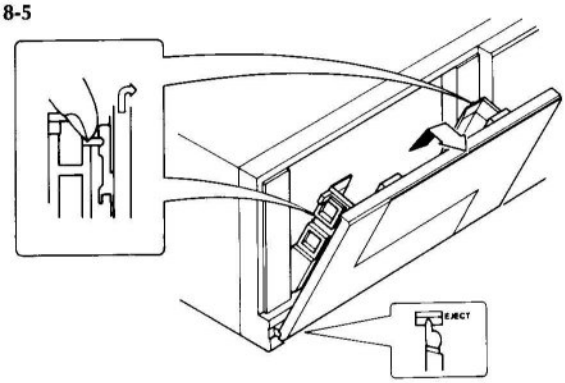
I. Capstan Motor ㉘, Reel Motor ㉚, Capstan Belt ㉖, Flywheel ㉔, Plunger Solenoid ㉞

1) Remove the F-4430 and F-4431 circuit board.
2) Remove the mechanism ass'y from set.
3) Loosen five screws ①, ㉓ fasting sub chassis ㉟.

J. Lid Ass'y

Push EJECT Knob to open the cassette holder, push the parts locked at the left and right in the figure while pulling it upward, and remove the lid ass'y.

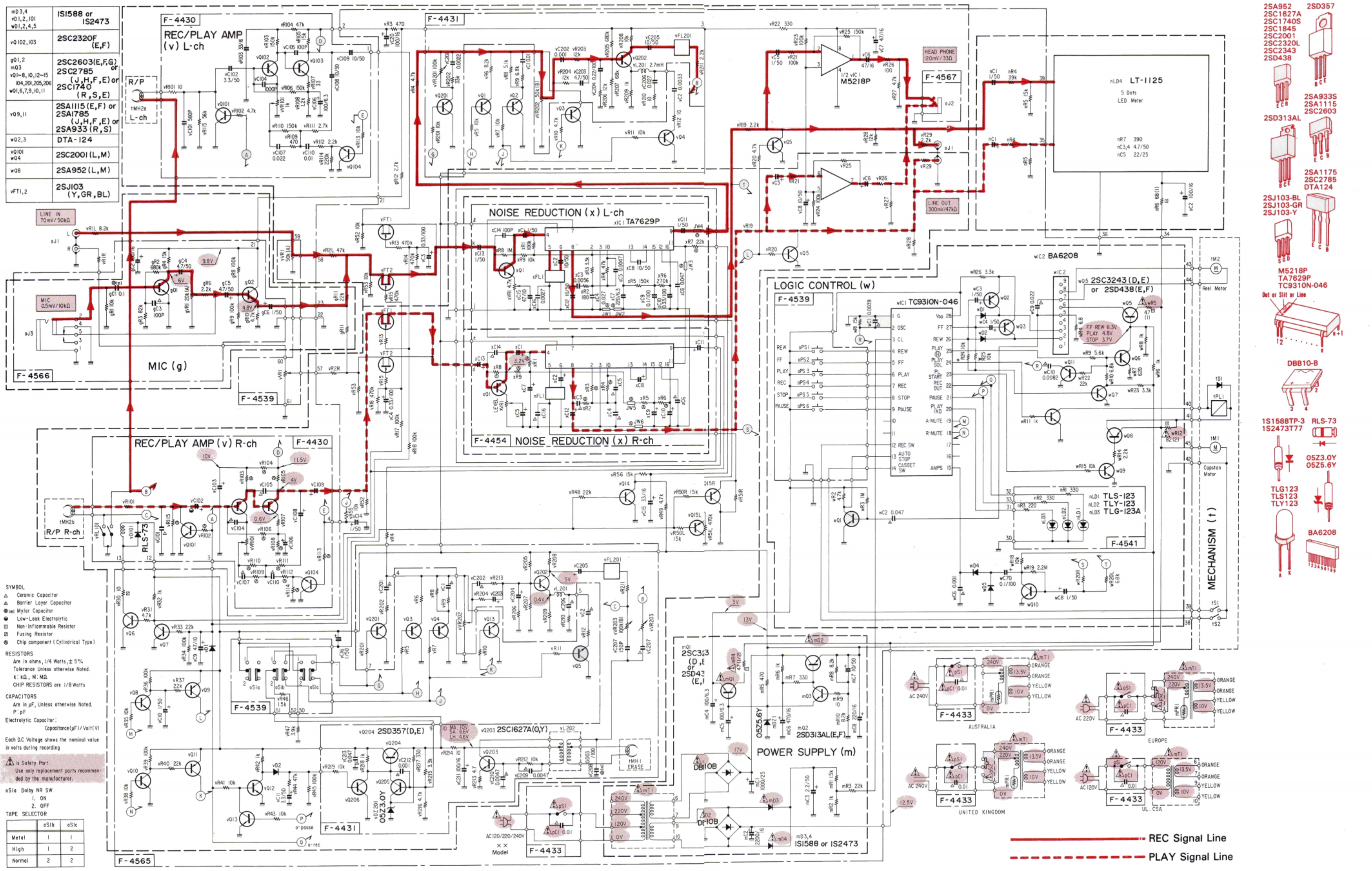
Fig. 8-5



A	B	C	D	E	F	G	H

9. SCHEMATIC DIAGRAM

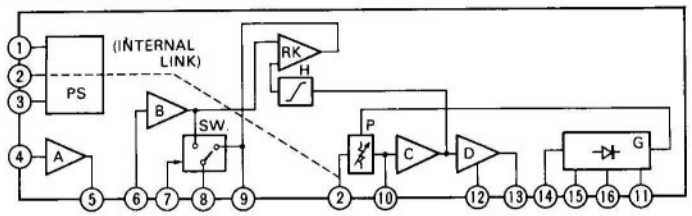
*Design and specifications subject to change without notice for improvement.
*La présentation et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éwventuelles.
*Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.



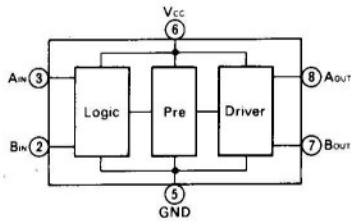
REC/PLAY AMP (v) L-ch
F-4430
F-4431
NOISE REDUCTION (x) L-ch
TA7629P
M5218P
HEAD PHONE 120mV/33Ω
F-4567
LT-1125
LED Meter
LINE OUT 300mV/47kΩ
LINE IN 70mV/50kΩ
MIC 0.5mV/10kΩ
MIC (g)
F-4566
F-4539
LOGIC CONTROL (w)
TC9310N-046
BA6208
2SC3243(D,E) or 2SD438(E,F)
F-4454 NOISE REDUCTION (x) R-ch
REC/PLAY AMP (v) R-ch
R/P L-ch
R/P R-ch
2SD357(D,E)
2SC1627A(O,Y)
POWER SUPPLY (m)
2SD313AL(E,F)
1S1588 or 1S2473
F-4541
F-4565
F-4433
AUSTRALIA
EUROPE
UNITED KINGDOM
U.L. CSA
MECHANISM (t)
Reel Motor
Capstan Motor
REC Signal Line
PLAY Signal Line
SYMBOL
Ceramic Capacitor
Barrier Layer Capacitor
Mylar Capacitor
Low-Leak Electrolytic
Non-Inflammable Resistor
Fusing Resistor
Chip component (Cylindrical Type)
RESISTORS
Are in ohms, 1/4 Watts, ±5%
Tolerance Unless otherwise Noted.
k: kΩ, M: MΩ
CHIP RESISTORS are 1/8 Watts
CAPACITORS
Are in μF, Unless otherwise Noted.
P: pF
Electrolytic Capacitor: Capacitance(μF)/Volt(V)
Each DC Voltage shows the nominal value in volts during recording
⚠ is Safety Part. Use only replacement parts recommended by the manufacturer.
σS1a Dolby NR SW 1. ON 2. OFF
TAPE SELECTOR

10. INTERIOR BLOCK DIAGRAM OF IC

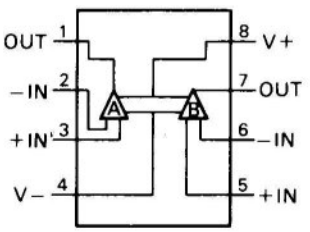
•TA7629P (B-type DOLBY Noise Reduction IC)



•BA6208 (Motor Drive IC)

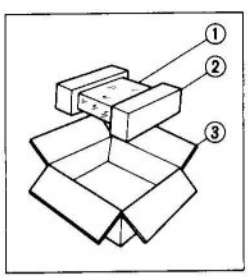


•M5218P (OP AMP. IC)



11. PACKING LIST

Parts No.	Stock No.	Description
1	91263810	Polyethylene Bag
2	47379700	Styrofoam Packing
3	47533700	Carton Case (Silver Model)
	47533800	Carton Case (Black Model)



12. ACCESSORY LIST

Stock No.	Description
38103300	Pin Plug Cord
94300500	Head Cleaner
46952300	Operating Instruction

Sansui

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