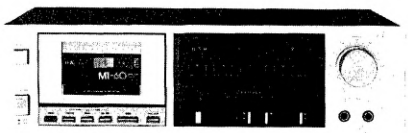
PIONEER®

Service Manual

REPAIR & ADJUSTMENTS



ORDER NO.
ART-687-0

STEREO CASSETTE TAPE DECK

CT-320

MODEL CT-320 COMES IN SIX VERSIONS DISTINGUISHED AS FOLLOWS:

Type	Voltage	Remarks
KU	120V only	U.S.A. model
HE	220V and 240V (switchable)	Europe model
HB	220V and 240V (switchable)	U.K. model
HP	220V and 240V (switchable)	Australia model
D	120V, 220V and 240V (switchable)	General export model
D/G	120V, 220V and 240V (switchable)	U.S. military model

- **This service manual is applicable to the KU type. For servicing of the other types, please refer to the additional service manual.**
- **For the mechanism & circuit descriptions, please refer to the supplement of model CT-720 service manual (ARP-003).**
- **Ce manuel d'instruction se refère au mode de réglage, en français.**
- **Este manual de servicio trata del método de ajuste escrito en español.**

CONTENTS

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1. SPECIFICATIONS

Tape Deck Section

System	Compact cassette, 2-channel stereo
Motor	DC servo motor x 1
Heads	"Hard Permilloy" Recording/Playback head x 1 "Ferrite" Erasing head x 1
Fast Winding Time	Approximately 110 seconds (C-60 tape)
Wow and Flutter	No more than 0.05% (WRMS)
Frequency Response	
-20 dB recording:	
Standard, LH tapes	20 to 14,000 Hz (35 to 12,000 ±3 dB)
Chromium dioxide tape	20 to 16,000 Hz (35 to 15,000 Hz ±3 dB)
Metal tape	20 to 17,000 Hz (35 to 16,000 Hz ±3 dB)
0 dB recording:	
Chromium dioxide tape	35 to 8,000 Hz ±3 dB
Metal tape	35 to 12,500 Hz ±3 dB
Signal-to-Noise Ratio	
Dolby NR OFF	More than 58 dB
Dolby NR ON	More than 68 dB (over 5 kHz)
Harmonic Distortion	No more than 1.2% (0 dB)
Input (Sensitivity/Miximum allowable input/Impedance)	
Mic (L, R)	0.3 mV/57 mV/10 kΩ, 6 mm diam. jack
(Reference MIC impedance; 250 Ω to 10 kΩ)	
LINE (INPUT)	50 mV/25 V/75 kΩ, Pin jack
Output (Reference level/Load impedance)	
LINE (OUTPUT)	450 mV/50 kΩ, Pin jack

Subfunctions

Dolby NR system (ON/OFF)
One touch recording system
Stand-by mechanism with unattended recording
REC muting function
MS (Music Search) system
Soft push operating mechanism
5 point LED, Peak level meter
3 position tape selector (NORM/CrO_2/METAL)

Miscellaneous

Power Requirements	AC120 V, 60 Hz
Power Consumption	16 W
Dimension	420 (W) x 110 (H) x 220 (D) mm 16-9/16 (W) x 4-5/16 (H) x 8-7/16 (D) in.
Weight (without package)	3.9 kg (8 lb 9 oz)

Furnished Parts

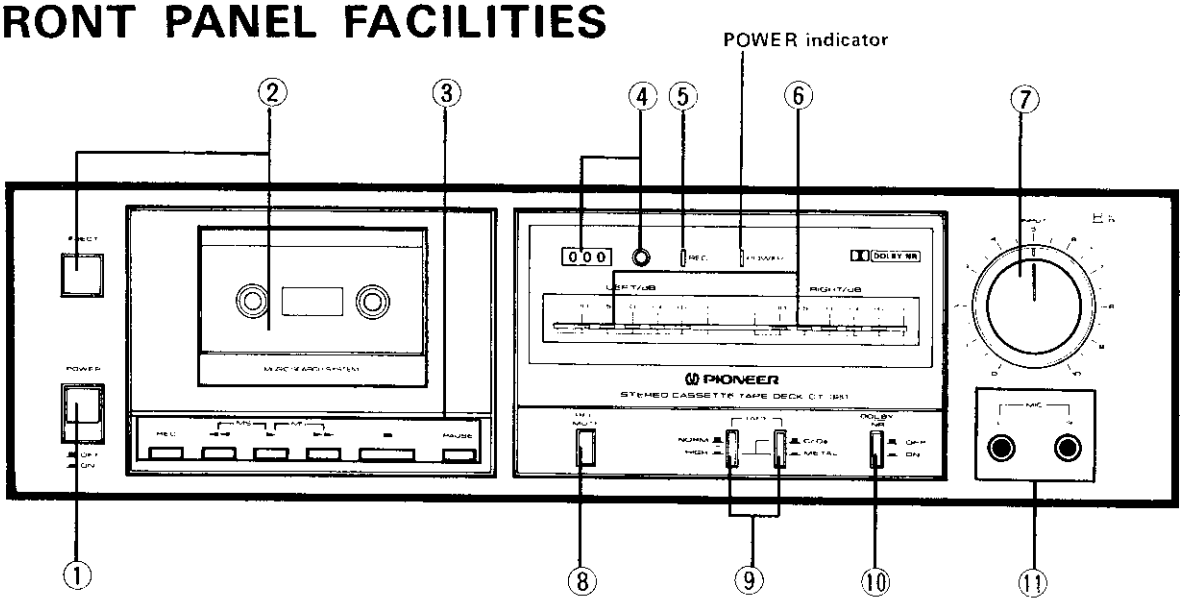
Connection cord with pin plugs	2
Operating instructions	1

NOTE:
Specifications and the design subject to possible modification without notice due to improvements.

NOTES:
1. Reference Recording Level: Meter 0 dB indicating level (160 nwb/m magnetic level = Philips cassette reference level)
2. Reference Signal: 333 Hz
3. Wow & Flutter: • JIS [3 kHz, with acoustic compensation (weighted), rms value]
4. Frequency Response: • Measured at -20 dB level, DOLBY NR OFF, level deviation is ±6 dB without indication.
5. Signal to Noise Ratio: • Measured at the third harmonic distortion 3% level, weighted.
6. Sensitivity: Input level (mV) required for reference recording level with input (REC) controls set to maximum.
7. Maximum allowable Input: While decreasing settings of input (REC) level control and increasing level at input jacks, this is the maximum input level (mV) at the point where recording amplifier output waveform becomes clipped.
8. Reference Output Level: Playback output level when meter indicates 0 dB.

*

2. FRONT PANEL FACILITIES



* The word "Dolby" and DD are trademark of Dolby Laboratories Licensing Corporation.

①POWER switch

Depress this switch to turn on or turn off power. When switch is depressed power is supplied and POWER indicator lights. When switch is released power is turned off and POWER indicator is extinguished.

②EJECT button and cassette holder

The cassette tape is housed in this holder .

To open the holder: Depress the EJECT button.
To close the holder: Push the holder by hand.

③Function switches

REC switch:
Depress to start the recording operations.

REWIND switch (◂◂):
Depress to rewind the tape.

PLAY switch (▸):
Depress to start tape play.
When using the Music Search(MS) function, operate the PLAY switch(▸) and REWIND switch (◂◂) or the FAST FORWARD switch (▸▸) in combination.

FAST FORWARD switch (▸▸):
Depress to fast forward the tape.

PAUSE switch:
Depress to temporarily suspend recording or to adjust the recording level.
Release the PAUSE switch to resume recording.
NOTE: The tape will not stop even if this switch is depressed when you are performing a rewind or fast forward operation.

STOP switch (■):
Depress to stop the playback, recording, fast forward and rewind operations.

④Tape COUNTER and RESET button

The figures on the tape counter increase or decrease in line with the forward or reverse movement of the tape. If the counter is set to "000" at the start of recording, it will be easy to find the recording start position when you want to listen to the program again at a later date. (Rewind the tape to the "000" position on the counter.)

⑤REC indicator

This lights when the REC switch is depressed.

⑥Recording/playback level meter

This indicates the strength of the sound being played back or the sound about to be recorded.

⑦INPUT recording level controls

Rotate these controls while observing the level meter when adjusting the strength of the sound that is to be recorded. The strength is increased when the controls are rotated clockwise from the "0" minimum position.
Front control: For left channel adjustments
Rear control: For right channel adjustments
The controls normally rotate together. To rotate only one control, hold the other so that it will not move.

⑧REC MUTE switch

Depress to create unrecorded blanks between tape programs. When the switch is pushed during recording, no sound is recorded for as long as the switch is in the depressed position (thereby creating an unrecorded blank).

⑨TAPE SELECTOR switches

Use these switches in line with the tapes being used.

For normal tapes:
- Set the left-side switch to the NORM (out) position.
- The right-side switch position is not used.

For chrome tapes:
- Depress the left-side switch to the HIGH (in) position.
- Set the right-side switch to the CrO_2 (out) position.

For metal tapes:
- Depress the left-side switch to the HIGH (in) position.
- Depress the right-side switch to the METAL (in) position.

⑩DOLBY* NR switch

Set to the depressed ON position when recording and this will reduce the amount of tape hiss. Also set to ON when playing a tape which has been recorded using the Dolby noise reduction system.

⑪MIC jacks

Insert the microphone plugs (L and R) into these jacks when recording with microphones.

3. DISASSEMBLY

NOTE:
Do not apply unnecessary force to hooks since this may result in damage.

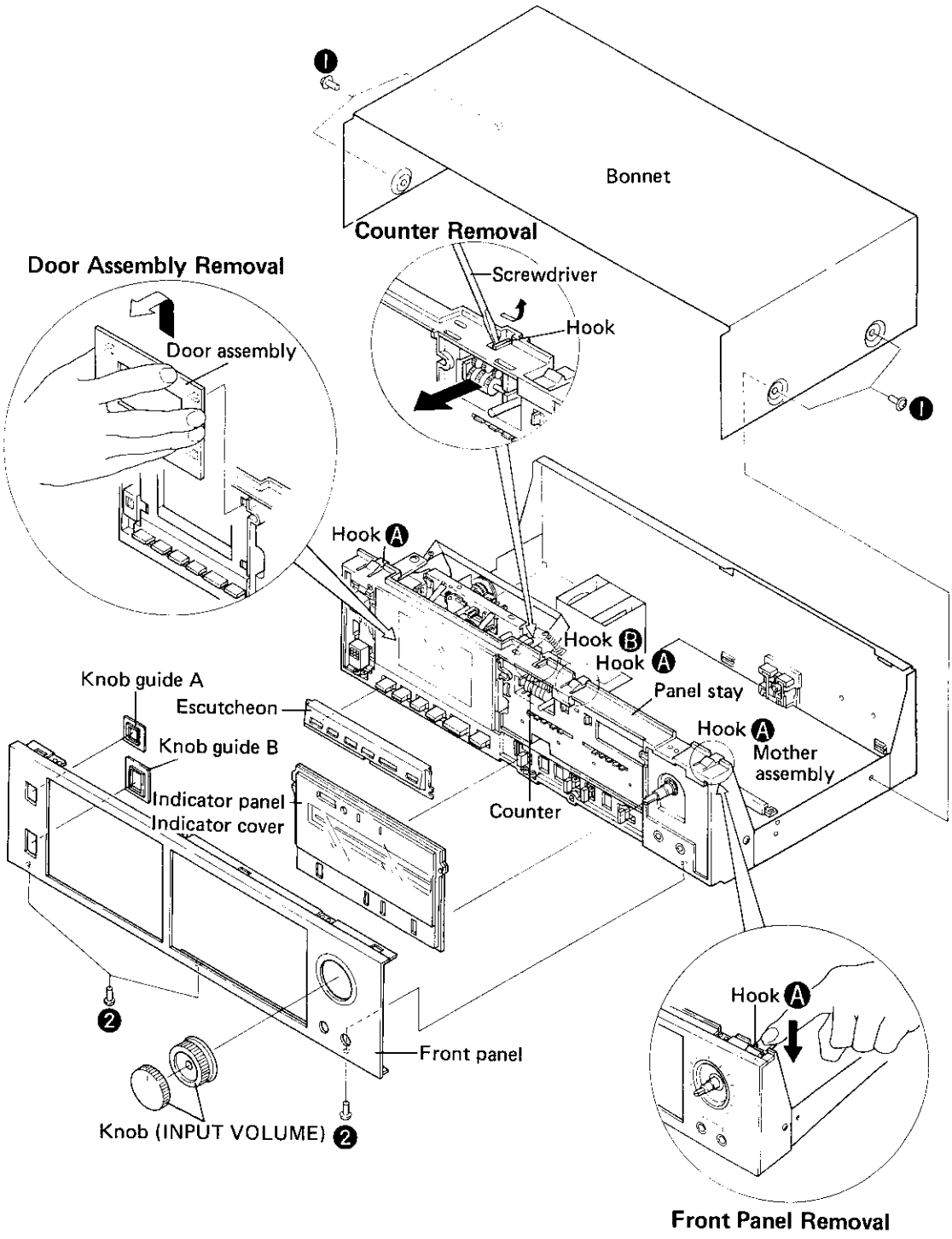


Fig. 3-1 Disassembly 1

Bonnet Removal

Remove the four screws ❶ on each side of the bonnet.

Front Panel Removal

1. Pull off the INPUT VOLUME knobs.
2. Remove the three screws ❷ from the bottom edge of the front panel.
3. Gently push the hooks Ⓐ of the panel stay and remove the front panel.
4. Then indicator panel, indicator cover and escutcheon can be removed.

Door Assembly Removal

1. Depress the EJECT button and open the cassette holder.
2. Pull up the door assembly and remove it.

Counter Removal

1. Gently push the hook Ⓑ of the panel stay with the small screwdriver.
2. Pull the counter toward you and remove it.

Mechanism Assembly Removal

1. Remove the counter belt and the REC joint.
2. Remove the six screws ❸.

Indicator Assembly Removal

Remove the hooks Ⓒ of the panel stay and remove the indicator panel.

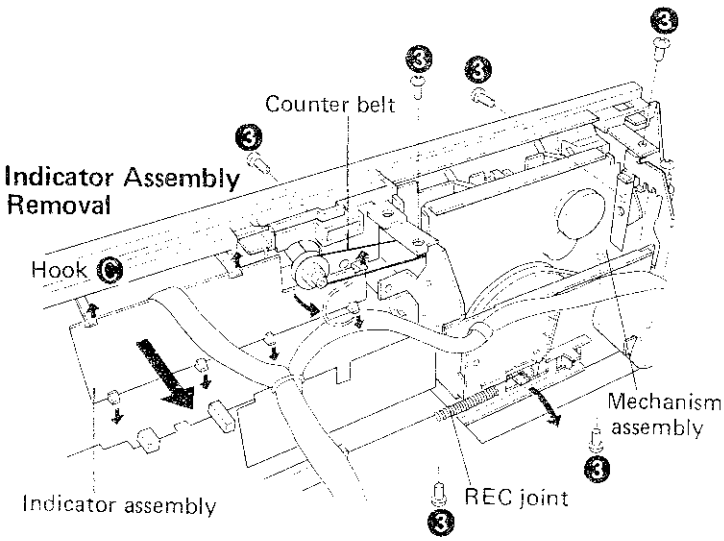


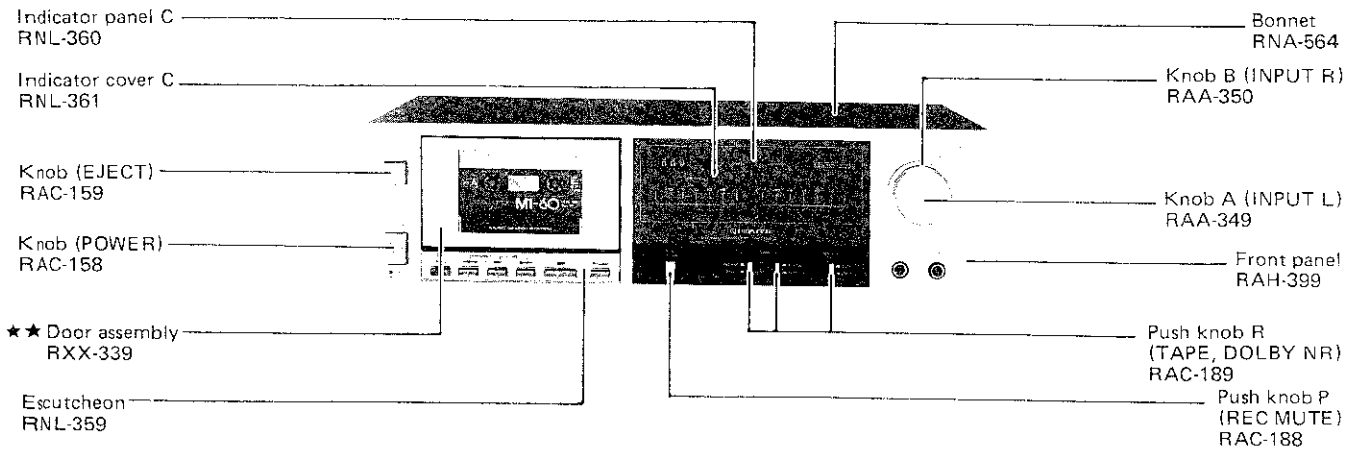
Fig. 3-2 Disassembly 2

4. PARTS LOCATION

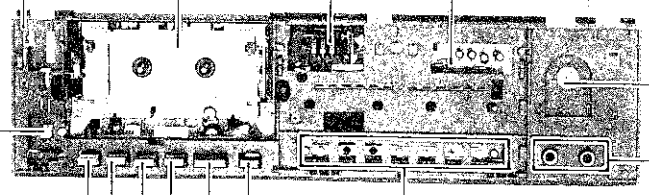
NOTES:

- *Parts without part number cannot be supplied.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.*
  ★★ GENERALLY MOVES FASTER THAN ★.
  This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.

Front Panel View



Front View with Front Panel Removed



Cassette plate
RAH-397

Panel stay

⚠ ★★ Power switch
RSA-046

Function knob L
RAC-191

Function knob K
RAC-190

Counter
RAW-169

Indicator assembly
RWX-516

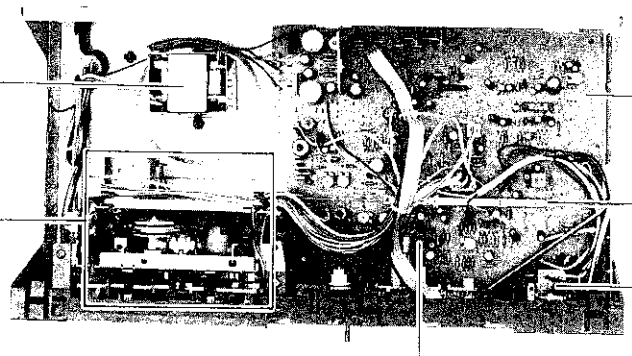
★ Volume (INPUT)
RCV-095

MIC jack
RKN-073

★★ Push switch assembly
RSG-120

Function knob P
RAC-212

Top View with Bonnet Removed



⚠ ★ Power transformer (120V)
RTT-235

Mechanism assembly
RYM-119

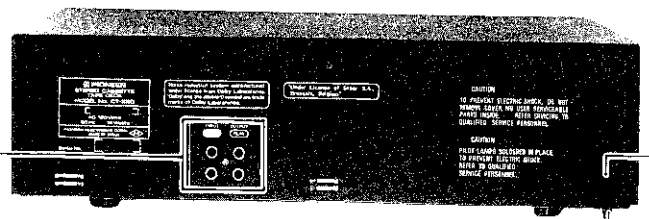
Mother assembly
RWX-514

★★ Slide switch
RSH-043

Volume assembly

REC amplifier assembly
RWX-517

Rear Panel View

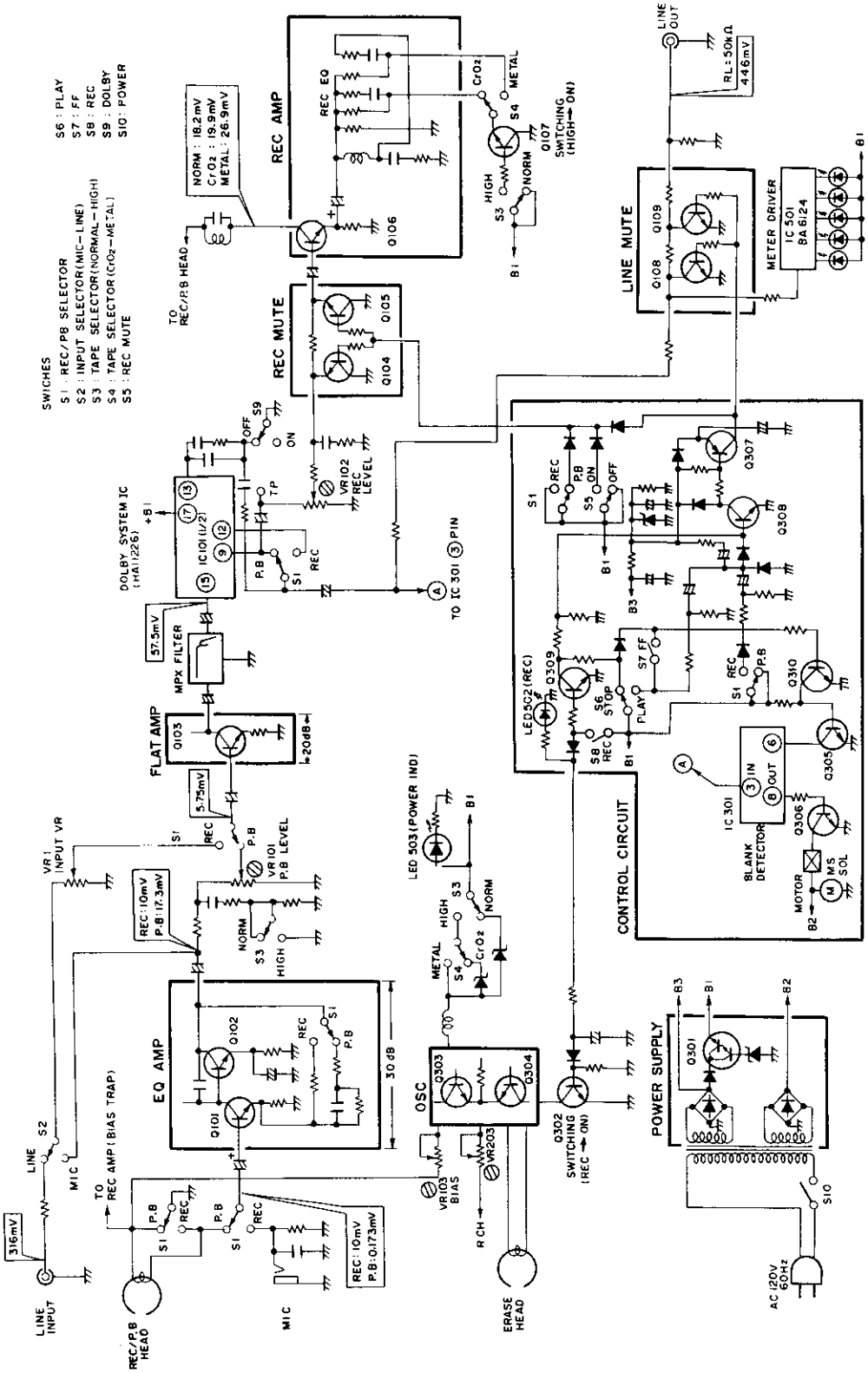


Terminal (LINE)
RKB-018

⚠ Strain relief
REC-376

⚠ AC cord
RDG-022
(RDG-030)

5. BLOCK DIAGRAM



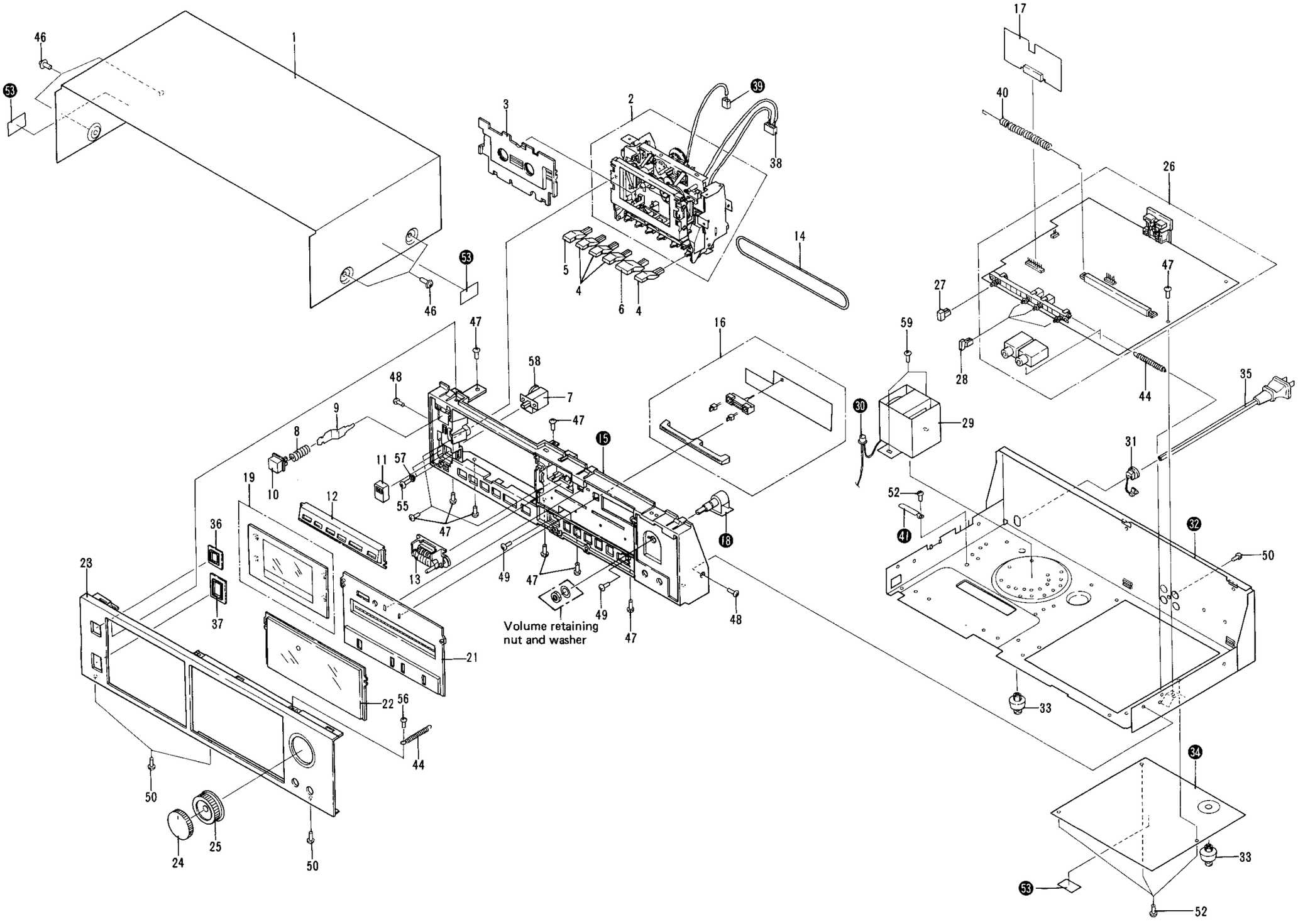
6. EXPLODED VIEWS AND PARTS LIST

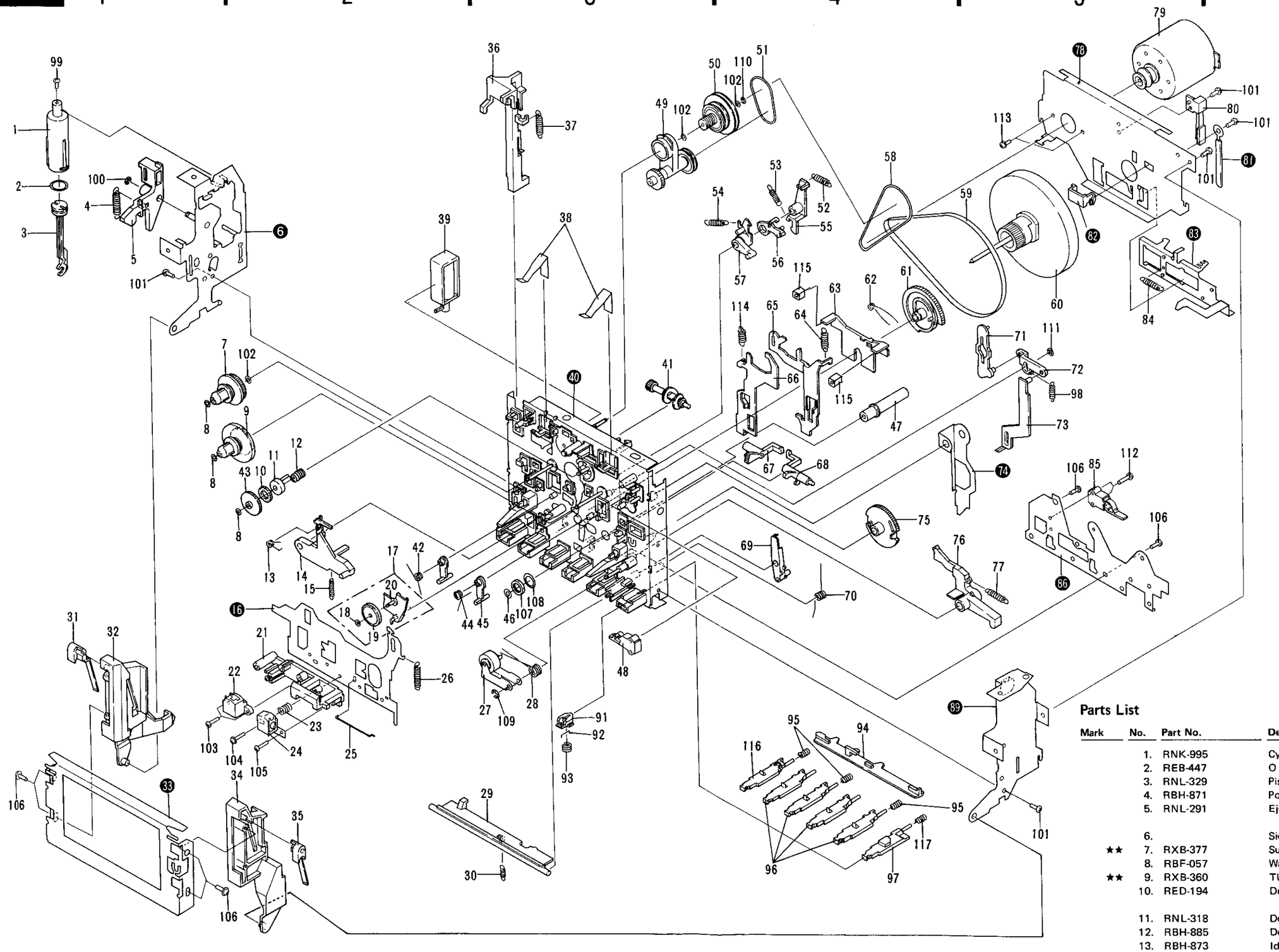
NOTES:

- *Parts without part number cannot be supplied.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.*
  ★★ *GENERALLY MOVES FASTER THAN* ★.
  This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.

Parts List

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1.	RNA-564	Bonnet		36.	RNL-224	Knob guide A
	2.	RYM-119	Mechanism assembly		37.	RNL-185	Knob guide B
	3.	RAH-397	Cassette plate		38.	RKP-296	Connector assembly 6P
	4.	RAC-190	Function knob K		39.		Connector assembly 2P
	5.	RAC-191	Function knob L		40.	RBH-896	REC joint B
	6.	RAC-212	Function knob P		41.		UL cord clamper B
⚠ ★★	7.	RSA-046	Power switch		42.	.....	.....
	8.	RBH-750	Eject spring		43.	.....	.....
	9.	RNH-106	Eject plate		44.	RBH-899	Earth spring
	10.	RAC-159	Knob (EJECT)		45.	.....	.....
	11.	RAC-158	Knob (POWER)		46.	RBA-053	Screw
	12.	RNL-359	Escutcheon		47.	VCZ30P080FMC	Screw
	13.	RAW-169	Counter		48.	CMZ30P060FMC	Screw
★★	14.	REB-240	Sensing belt		49.	PMA30P060FMC	Screw
	15.		Panel stay		50.	BBZ30P080FMC	Screw
	16.	RWX-516	Indicator assembly		51.	.....	.....
	17.	RWX-517	REC amplifier assembly		52.	VCZ30P060FMC	Screw
	18.		Volume assembly		53.		UL caution label
	19.	RXX-339	Door assembly		54.	.....	.....
	20.	.....	.....		55.	RBA-077	Step screw
	21.	RNL-360	Indicator panel C		56.	PSZ26P040FMC	Screw
	22.	RNL-361	Indicator cover C		57.	WA42N080W030	Washer
	23.	RAH-399	Front panel		58.	RCG-006	Capacitor (0.01/AC250)
	24.	RAA-349	Knob A (INPUT L)		59.	VBZ40P100FMC	Screw
	25.	RAA-350	Knob B (INPUT R)				
	26.	RWX-514	Mother assembly				
	27.	RAC-188	Push knob P (REC MUTE)				
	28.	RAC-189	Push knob R (TAPE, DOLBY NR)				
⚠ ★	29.	RTT-235	Power transformer (120V)				
	30.		Wire nut				
⚠	31.	REC-376	Strain relief				
	32.		Main chassis				
	33.	REC-369	Foot assembly				
	34.		Bottom plate				
⚠	35.	RDG-022	AC cord				
⚠		(RDG-030)					


Volume retaining
nut and washer



Parts List

Mark	No.	Part No.	Description
	1.	RNK-995	Cylinder
	2.	REB-447	O ring
	3.	RNL-329	Piston
	4.	RBH-871	Pocket return spring
	5.	RNL-291	Eject lever
	6.		Side plate L assembly B
★★	7.	RXB-377	Supply reel base assembly
	8.	RBF-057	Washer
★★	9.	RXB-360	TU reel base assembly
	10.	RED-194	Detector felt
	11.	RNL-318	Detector disk
	12.	RBH-885	Detector spring
	13.	RBH-873	Idler pressure spring
	14.	RNL-298	Action lever
	15.	RBH-875	Action lever spring

Mark	No.	Part No.	Description
	16.		Head base
	17.	RXB-579	Idler arm full assembly
	18.	WA17D040D025	Washer
★★	19.	RNL-337	TU idler
	20.		Idler arm assembly
	21.	RNL-050	Sub head base
★	22.	RPB-085	Erase head
	23.	RBH-723	Head adjust spring
★★	24.	RPB-091	REC/PB head
	25.	RBH-782	HB drive spring
	26.	RBH-874	HB return spring
★★	27.	RXB-495	Pinch arm assembly
	28.	RBH-890	Pinch pressure spring
	29.	RNL-303	Lock plate
	30.	RBH-887	Lock plate spring
	31.	RNL-057	Pocket spring L
	32.	RNL-332	Pocket L
	33.		Pocket frame A
	34.	RNL-333	Pocket R
	35.	RNL-058	Pocket spring R
	36.	RNL-284	REC detector arm
	37.	RBH-883	Detector arm spring
	38.	RBK-166	Half set spring
★	39.	RXP-112	Plunger solenoid
	40.		Chassis assembly
	41.	RNL-322	Cam gear
	42.	RBH-905	Lock lever spring L
	43.	RNK-998	Idler gear
	44.	RBH-908	Lock lever spring R
	45.	RNL-285	HB lock lever
	46.	RBF-030	Oil stopper
	47.	RXB-582	Metal holder assembly
★★	48.	RSN-034	Lever switch
	49.	RXB-577	Drive arm full assembly
	50.	RXB-580	Drive pulley assembly
★★	51.	REB-455	Drive belt B
	52.	RBH-876	Gear lever spring A
	53.	RBH-877	Gear lever spring B
	54.	RBH-878	Gear lever spring C
	55.	RNL-297	Gear lever A
	56.	RNL-282	Gear lever B
	57.	RNL-296	Gear lever C
★★	58.	REB-454	Drive belt A
★★	59.	REB-453	Capstan belt
	60.	RXB-576	Flywheel assembly
	61.	RNL-288	Cam gear
	62.	RBH-879	Trigger spring
	63.	RNL-280	Brake plate
	64.	RBH-884	Action plate spring
	65.	RNL-292	FF action plate
	66.	RNL-290	REW action plate
	67.	RNL-277	Joint L
	68.	RNL-276	Joint R
	69.	RNL-281	Gear lever R
	70.	RBH-881	Trigger spring R

Mark	No.	Part No.	Description
	71.	RNL-274	Detector lever
	72.	RNL-275	Link
	73.	RNL-289	Stop lever
	74.		REC action lever
	75.	RNL-294	Cam gear R
	76.	RNL-295	Pause lever
	77.	RBH-880	Pause lever spring
	78.		Flywheel receptacle
★★	79.	RXM-088	Motor assembly
★★	80.	RSN-025	Leaf switch
	81.		UL cord clamper
	82.		Thrust receptacle
	83.		REC action plate
	84.	RBH-882	REC return spring
★★	85.	RSN-033	Lever switch
	86.	...	Plate
	87.	.....	.....
	88.	.....	.....
	89.		Side plate R
	90.	.....	.....
	99.	VCZ26P090FMC	Screw
	100.	YE25FUC	Washer
	101.	VCZ26P060FMC	Screw
	102.	WA21D040D25	Washer
	103.	PMZ20P130FMC	Screw
	104.	iMZ20Y120FMC	Screw
	105.	PMZ20P120FMC	Screw
	106.	ATZ26P060FZK	Screw
	107.	NK90FUC	Nut
	108.	WG90FUC	Washer
	109.	YE20FUC	Washer
	110.	YE15FUC	Washer
	111.	YS20FBT	Washer
	112.	PMZ20P080FMC	Screw
	113.	PMA26P040FMC	Screw
	114.	RBH-911	Action plate spring L
	115.	REB-466	Brake shoe
	116.	RNL-384	REC button
	117.	RBH-909	Pause button spring

7. PARTS LIST

NOTES:

- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*
  Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω	*56 x 10¹*	*561*	*RD¼PS 5611 J*
47kΩ	*47 x 10³*	*473*	*RD¼PS 4733 J*
0.5Ω	*0R5*		*RN2H 0R55 K*
1Ω	*010*		*RS1P 0100 K*

  Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ	*562 x 100*	*5621*	*RN¼SR 5621 F*

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  ★★ GENERALLY MOVES FASTER THAN ★.
  This classification shall be adjusted by each distributor because it depends on model number , temperature, humidity, etc.

Miscellaneous Parts

P.C. BOARD ASSEMBLIES

Mark	Part No.	Symbol & Description
	RWX-514	Mother assembly
		Volume assembly
	RWX-517	REC amplifier assembly
	RWX-516	Indicator assembly

OTHERS

Mark	Part No.	Symbol & Description
⚠ ★	RTT-235	Power transformer (120V)
⚠	RDG-022	AC cord
⚠	(RDG-030)	
★★	RPB-091	REC/PB head
★	RPB-085	Erase head
	RYM-119	Mechanism assembly

Mother Assembly (RWX-514)

SWITCHES

Mark	Part No.	Symbol & Description	
★★	RSH-043	S1	Slide switch (REC/PB SELECTOR)
	RKN-073	S2	MIC jack
★★	RSG-120	S3–S5, S9	Push switch assembly (TAPE, DOLBY NR, REC MUTE)

COILS

Mark	Part No.	Symbol & Description	
	RTF-089	L101, L201	MPX filter
	RTF-084	L103, L203	Trap coil
	RTF-057	L301	Line coil
	RTD-026	L302	OSC coil

CAPACITORS

Mark	Part No.	Symbol & Description
	CKDYF 473Z 50	C101, C201, C327
	CEA R10M 50	C124, C126, C224, C226, C315, C316
	CEA R33M 50	C123, C127, C223, C227, C318
	CEA R47M 50	C129, C229
	CEA 010M 50	C320
	CEA 4R7M 50	C307, C322
	CEA 100M 16	C109, C110, C113, C115, C117, C119, C125, C128, C137, C209, C210, C213, C215, C217, C219, C225, C237
	CEA 220M 16	C324, C325, C332
	CEA 330M 16	C108, C208, C306, C311, C319, C326
	CEA 470M 16	C103, C203, C329, C333
	CEA 101M 16	C304
	CEA 101M 25	C303, C331
	CEA 221M 16	C328
	CEA 471M 16	C118, C305
	CEA 102M 25	C301, C302
	CEANL 100M 16	C105, C205
	CQMA 102K 50	C308, C309, C323
	CQMA 182K 50	C310
	CQMA 332K 50	C116, C216
	CQMA 472K 50	C121, C221
	CQMA 103K 50	C111, C211, C317
	CQMA 153K 50	C120, C122, C220, C222
	CQMA 223K 50	C330
	CQMA 104K 50	C321
	CQMA 153J 50	C112, C212
	CQPA 332J 100	C312
	CCDSL 220K 50	C107, C207
	CCDSL 101K 50	C106, C114, C206, C214
	CCDSL 181K 50	C104, C204
	CCDSL 471K 50	C102, C136, C202, C236
	CCDSL 473K 50	C313, C314

7. PARTS LIST

NOTES:

- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*
  Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω	*56 x 10¹*	*561*	*RD¼PS 5 6 1 J*
47kΩ	*47 x 10³*	*473*	*RD¼PS 4 7 3 J*
0.5Ω	*0R5*		*RN2H 0 R 5 K*
1Ω	*010*		*RS1P 0 1 0 K*

  Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ	*562 x 100*	*5621*	*RN¼SR 5 6 2 1 F*

- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.*
  ★★ GENERALLY MOVES FASTER THAN ★.
  This classification shall be adjusted by each distributor because it depends on model number , temperature, humidity, etc.

Miscellaneous Parts

P.C. BOARD ASSEMBLIES

Mark	Part No.	Symbol & Description
	RWX-514	Mother assembly
		Volume assembly
	RWX-517	REC amplifier assembly
	RWX-516	Indicator assembly

OTHERS

Mark	Part No.	Symbol & Description
⚠ ★	RTT-235	Power transformer (120V)
⚠	RDG-022	AC cord
⚠	(RDG-030)	
★★	RPB-091	REC/PB head
★	RPB-085	Erase head
	RYM-119	Mechanism assembly

Mother Assembly (RWX-514)

SWITCHES

Mark	Part No.	Symbol & Description	
★★	RSH-043	S1	Slide switch (REC/PB SELECTOR)
	RKN-073	S2	MIC jack
★★	RSG-120	S3–S5, S9	Push switch assembly (TAPE, DOLBY NR, REC MUTE)

COILS

Mark	Part No.	Symbol & Description	
	RTF-089	L101, L201	MPX filter
	RTF-084	L103, L203	Trap coil
	RTF-057	L301	Line coil
	RTD-026	L302	OSC coil

CAPACITORS

Mark	Part No.	Symbol & Description
	CKDYF 473Z 50	C101, C201, C327
	CEA R10M 50	C124, C126, C224, C226, C315, C316
	CEA R33M 50	C123, C127, C223, C227, C318
	CEA R47M 50	C129, C229
	CEA 010M 50	C320
	CEA 4R7M 50	C307, C322
	CEA 100M 16	C109, C110, C113, C115, C117, C119, C125, C128, C137, C209, C210, C213, C215, C217, C219, C225, C237
	CEA 220M 16	C324, C325, C332
	CEA 330M 16	C108, C208, C306, C311, C319, C326
	CEA 470M 16	C103, C203, C329, C333
	CEA 101M 16	C304
	CEA 101M 25	C303, C331
	CEA 221M 16	C328
	CEA 471M 16	C118, C305
	CEA 102M 25	C301, C302
	CEANL 100M 16	C105, C205
	CQMA 102K 50	C308, C309, C323
	CQMA 182K 50	C310
	CQMA 332K 50	C116, C216
	CQMA 472K 50	C121, C221
	CQMA 103K 50	C111, C211, C317
	CQMA 153K 50	C120, C122, C220, C222
	CQMA 223K 50	C330
	CQMA 104K 50	C321
	CQMA 153J 50	C112, C212
	CQPA 332J 100	C312
	CCDSL 220K 50	C107, C207
	CCDSL 101K 50	C106, C114, C206, C214
	CCDSL 181K 50	C104, C204
	CCDSL 471K 50	C102, C136, C202, C236
	CCDSL 473K 50	C313, C314

RESISTORS

Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Part No.	Symbol & Description
★	RCP-150 (RCP-195)	VR101, VR201 Semifixed (22k-B)
★	RCP-149 (RCP-193)	VR102, VR202, VR301 Semifixed (10k-B)
★	RCP-155 (RCP-200)	VR103, VR203 Semifixed (150k-B)
	RD¼PM□□□J	R101–R115, R117–R120, R122–R134, R146–R151, R153–R156, R201–R215, R217–R220, R222–R234, R246–R251, R253–R256, R302–R307, R309–R315, R328, R330–R345
	RD½PSF□□□J	R116, R301, R327, R346

SEMICONDUCTORS

Mark	Part No.	Symbol & Description
★★	2SC2240	Q101, Q201
★★	2SC1740LN (2SC2021) (2SC1815) (2SC2634NC)	Q102–Q105, Q108, Q109, Q202–Q205, Q208, Q209, Q305, Q308–Q310
★★	2SC1740LN-S (2SC1815-GR)	Q302–Q304
⚠ ★★	2SC2026 (2SC2673) (2SC1383NC)	Q306
⚠ ★★	2SD837 (2SD686) (2SD1031)	Q301
★★	2SA933LN (2SA937) (2SA1127NC) (2SA1015)	Q307
★★	HA11226	IC101
★★	BA336	IC301
⚠ ★	SIVB10	D301, D302
⚠ ★	W03B (W03C)	D304, D314, D320
★	1K34A (1K60A) (0A90)	D101, D201
★	1S2473 (US1015)	D102, D202, D303, D305–D313

OTHER

Mark	Part No.	Symbol & Description
	RKB-018	Terminal (LINE)

Volume Assembly

Mark	Part No.	Symbol & Description
★	RCV-095	VR1 volume (INPUT)

REC Amplifier Assembly (RWX-517)

COILS

Mark	Part No.	Symbol & Description
	RTF-085	L102, L202 Peaking coil (3.9mH)

CAPACITORS

Mark	Part No.	Symbol & Description
	CEA 100M 16	C130–C132, C230–C232
	CQMA 333J 50	C133, C134, C233, C234
	CQMA 103J 50	C135, C235
	CEA 010M 50	C132, C232

RESISTORS

Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Part No.	Symbol & Description
	RD¼PM□□□J	R135–R145, R152, R235–R245, R252

SEMICONDUCTORS

Mark	Part No.	Symbol & Description
★★	2SC2021 (2SC1740LN) (2SC1815) (2SC2634NC)	Q106, Q107, Q206, Q207

Indicator Assembly (RWX-516)

CAPACITORS

Mark	Part No.	Symbol & Description
	CEA 100M 16	C501–C504
	CKDYF 473Z 50	C505

RESISTORS

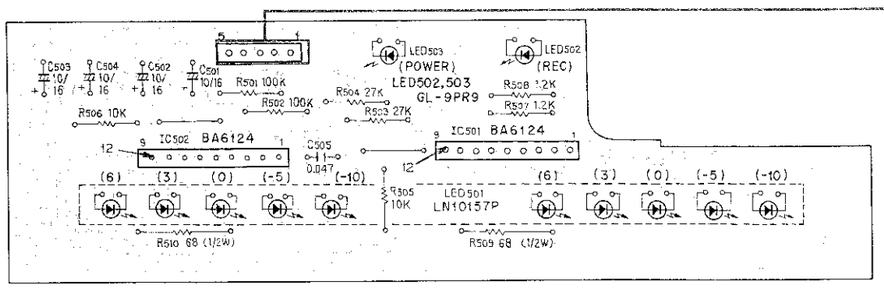
Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Part No.	Symbol & Description
	RD¼PM□□□J	R501–R508
	RD½PSF□□□J	R509, R510

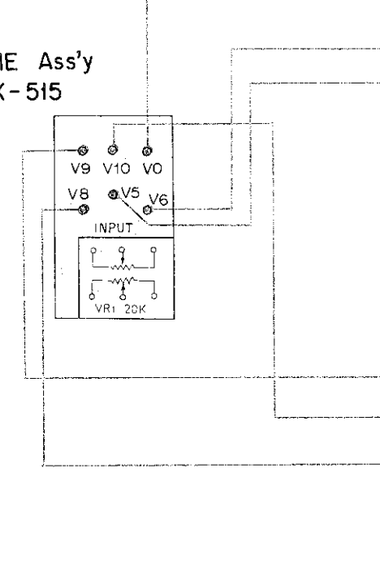
SEMICONDUCTORS

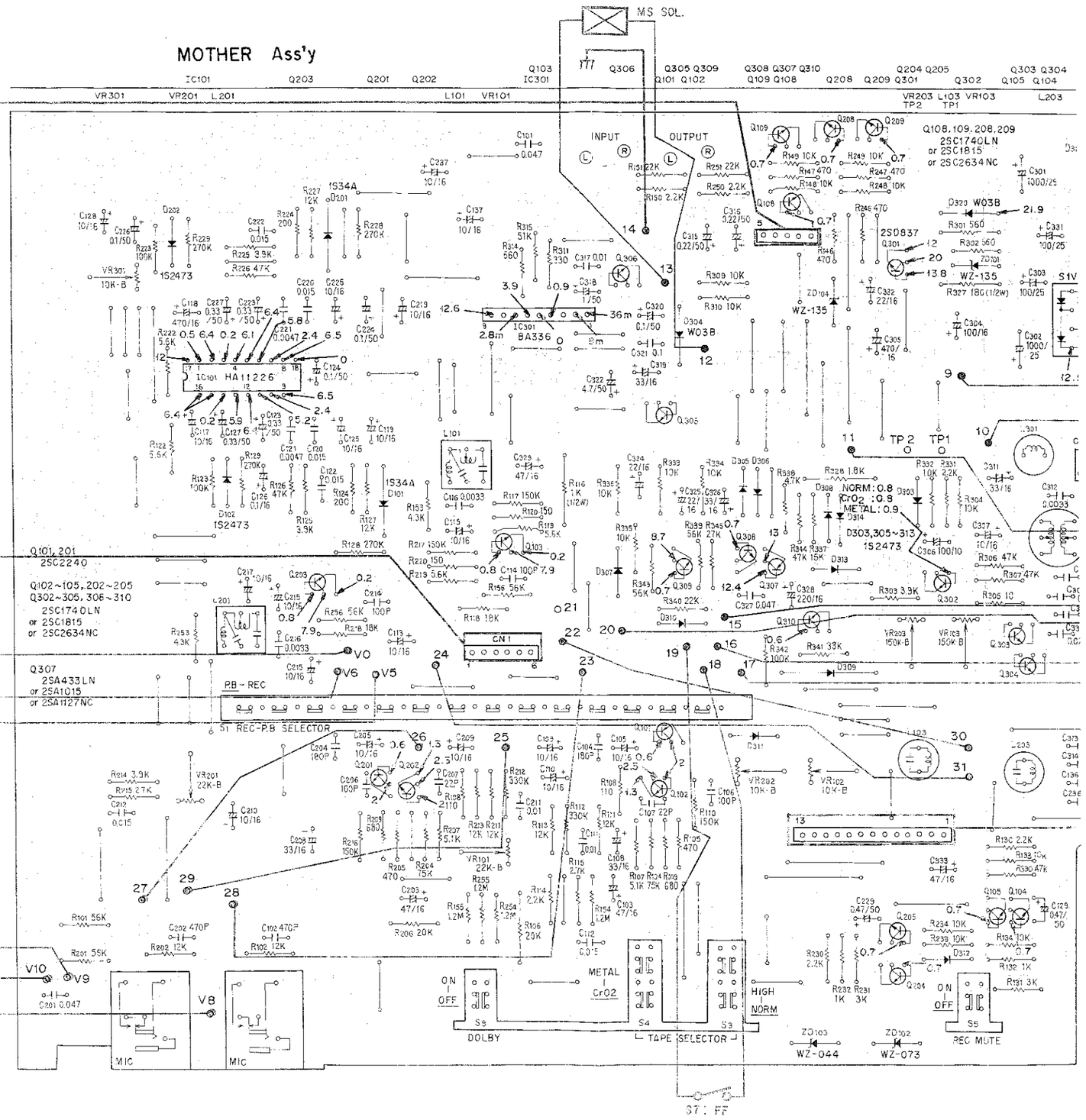
Mark	Part No.	Symbol & Description
★★	BA6124	IC501, IC502
	LN10157P	LED501
	GL-9PR9	LED502, LED503

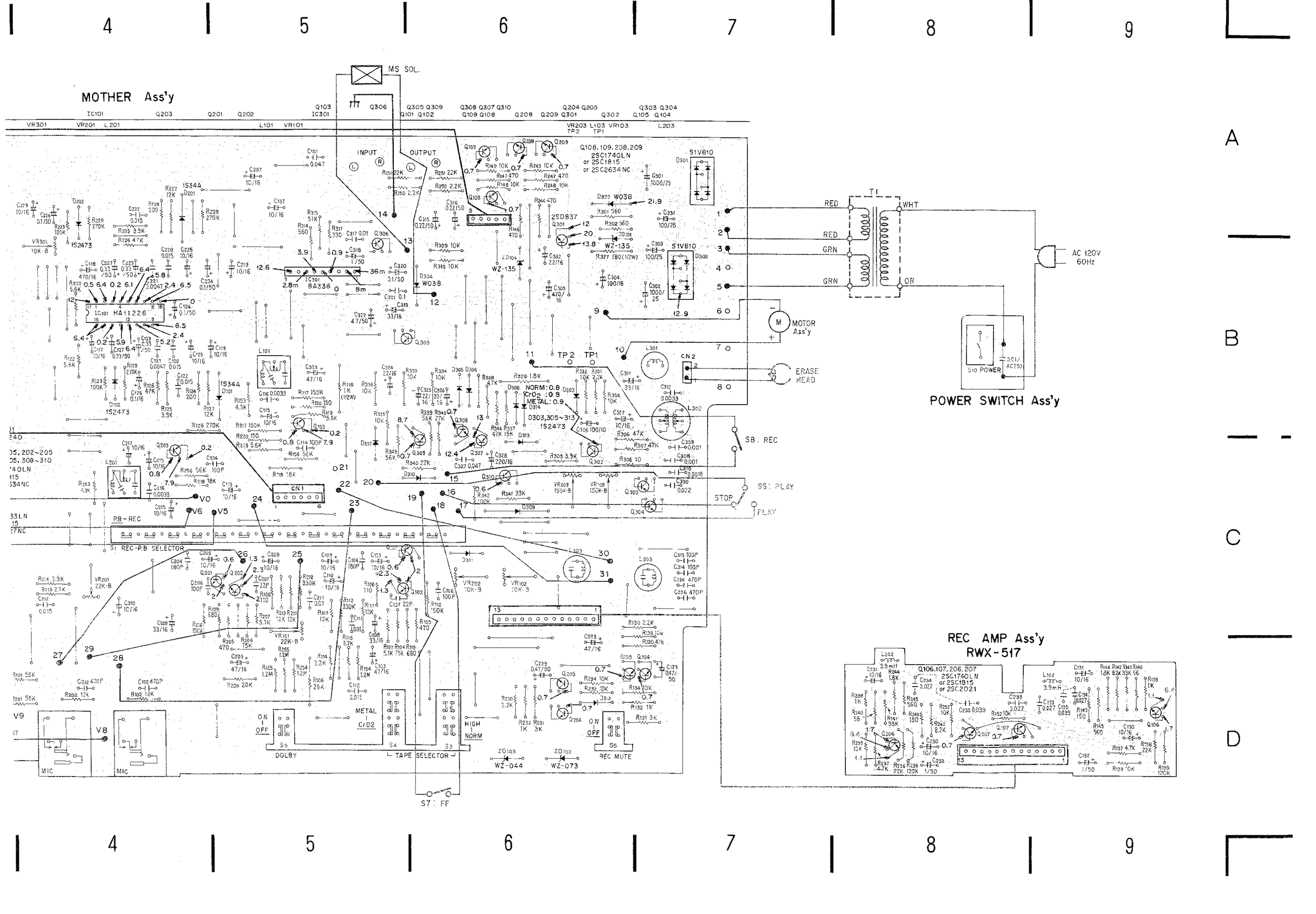
8. P.C. BOARD CONNECTION DIAGRAM



INDICATOR Ass'y

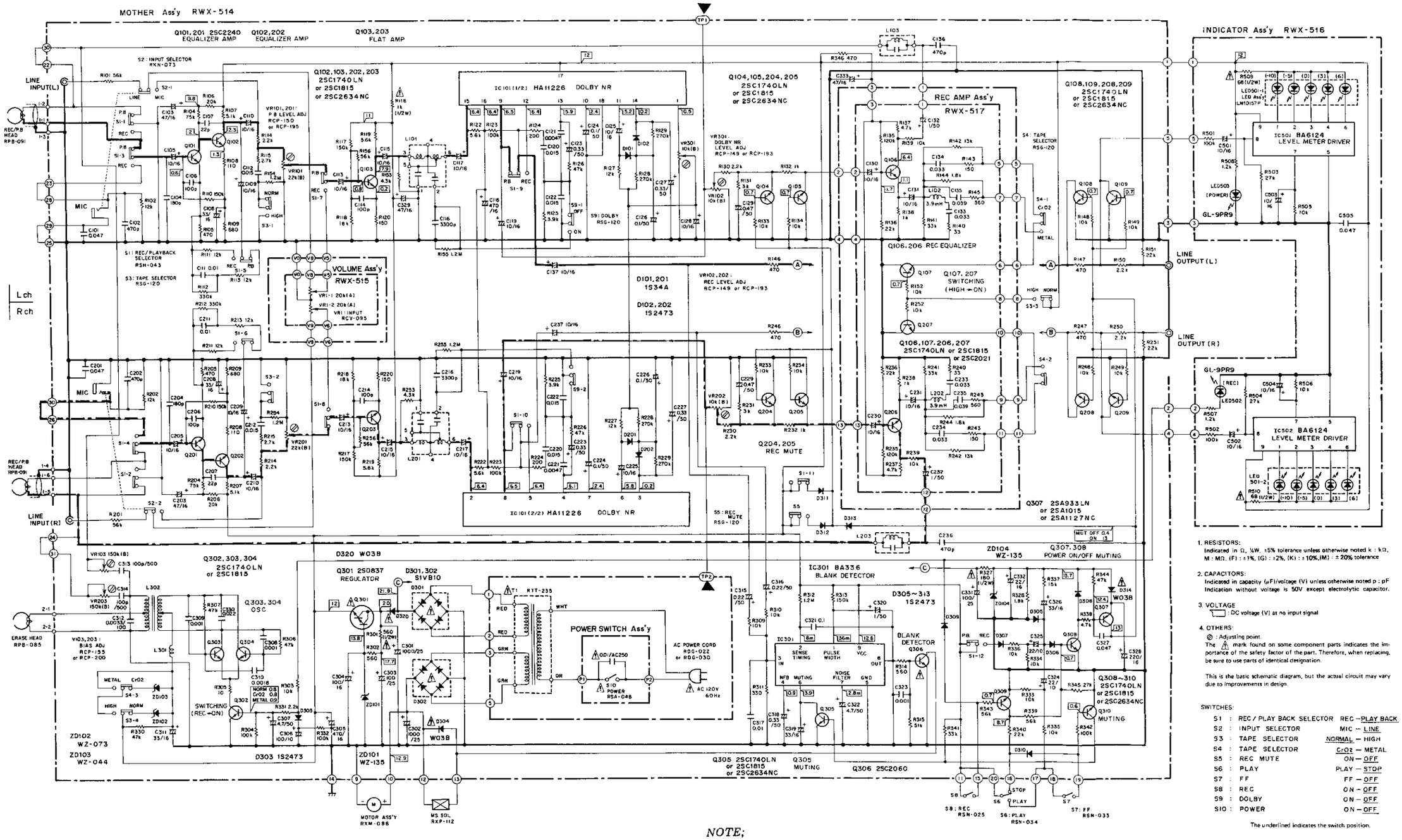





MOTHER Ass'y
MS SOL.
INPUT
OUTPUT
Q108.109.208.209
2SC1740LN
or 2SC1815
or 2SC2634NC
2SD837
HA1126
BA336
WZ-135
W03B
1S2473
1S34A
T1
RED
RED
GRN
GRN
WHT
OR
AC 120V
60Hz
M
MOTOR
Ass'y
ERASE
HEAD
S10 POWER
POWER SWITCH Ass'y
S8 : REC
S9 : PLAY
STOP
PLAY
PB-REC
S1 REC-P.B SELECTOR
ON
OFF
METAL
CrO2
HIGH
NORM
DOLBY
TAPE SELECTOR
REC MUTE
S7 : FF
MIC
MIC
REC AMP Ass'y
RWX-517
Q106.107.206.207
2SC1740LN
or 2SC1815
or 2SC2021

9. SCHEMATIC DIAGRAM

NOTE:
The indicated semiconductors are representative ones only. Other alternative semiconductors may be used and are listed in the parts list.



NOTE;
Playback signal route ——————
Recording signal route — — — —

1. RESISTORS:
Indicated in Ω, ¼W, ±5% tolerance unless otherwise noted k : kΩ, M : MΩ, (F) : ±1%, (G) : ±2%, (K) : ±10%,(M) : ±20% tolerance

2. CAPACITORS:
Indicated in capacity (μF)/voltage (V) unless otherwise noted p : pF
Indication without voltage is 50V except electrolytic capacitor.

3. VOLTAGE
□ : DC voltage (V) at no input signal

4. OTHERS:
⊘ : Adjusting point.
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

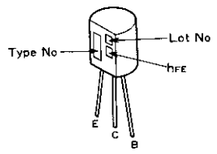
SWITCHES:

S1	:	REC / PLAY BACK SELECTOR	REC → PLAY BACK
S2	:	INPUT SELECTOR	MIC — LINE
S3	:	TAPE SELECTOR	NORMAL — HIGH
S4	:	TAPE SELECTOR	CrO2 — METAL
S5	:	REC MUTE	ON — OFF
S6	:	PLAY	PLAY — STOP
S7	:	FF	FF — OFF
S8	:	REC	ON — OFF
S9	:	DOLBY	ON — OFF
S10	:	POWER	ON — OFF

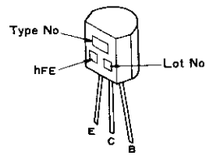
The underlined indicates the switch position.

External Appearance of Transistors and ICs

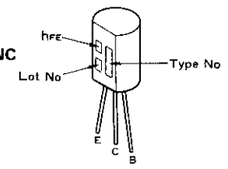
2SA1015
2SC1815
2SC2240



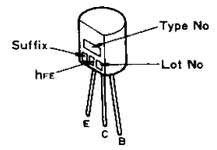
2SC2060



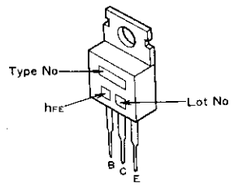
2SC1383NC



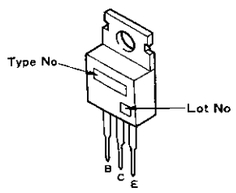
2SA933LN
2SC1740LN



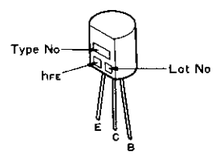
2SD837



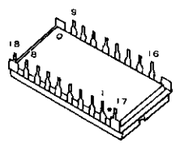
2SD686



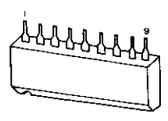
2SA1127NC
2SC2634NC



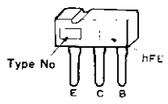
HA11226



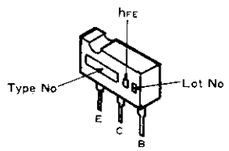
BA338
BA6124



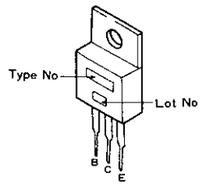
2SC2021
2SA937



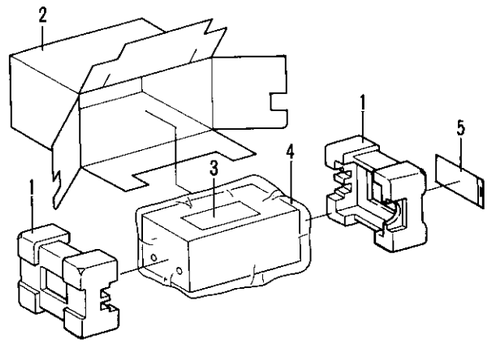
2SC2673



2SD1013



10. PACKING



Parts List

Mark	No.	Part No.	Description
	1.	RHA-235	Pad
	2.	RHG-430	Packing case
	3.	RRB-150	Operating instructions
	4.	RHX-031	Sheet C
	5.	RDE-010	Connection cord

11. MECHANICAL ADJUSTMENTS

Prior to adjustment

Clean the both reel base, the capstan and the pinch roller with an alcohol moistened swab.

11.1 PINCH ROLLER PRESSURE ADJUSTMENT

1. Put the tape deck into the playback mode.
2. Gently push against the pinch roller arm with the tension gauge and separate the pinch roller slightly from the capstan.
3. Then the pinch roller back onto the capstan, and read the value when the pinch roller starts to rotate. If the reading fails to lie within 350g ~ 550g, replace the pinch pressure spring.

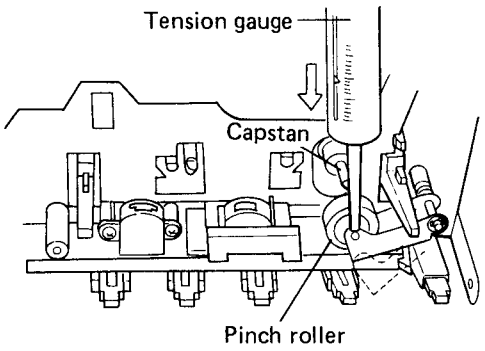


Fig. 11-1 Pinch roller pressure adjustment

11.2 REEL BASE TORQUE ADJUSTMENT

Measure the torque with the torque meter during playback, fast forward (FF) and rewind (REW) modes. The measured values should normally lie within the allowable ranges listed in the table 1.

If the measured values lie outside the relevant ranges, replace the TU (take-up) reel base assembly and/or supply reel base assembly, TU idler, or drive arm full assembly.

Table 1

	TU reel base	Supply reel base
Playback mode	35 – 55g.cm	* 2 – 5g.cm
FF mode	75 – 110g.cm	* 2 – 5g.cm
REW mode	* 2 – 5g.cm	75 – 110g.cm

** Do notes back tension torque*

11.3 TAPE SPEED ADJUSTMENT

1. Connect the frequency counter to the LINE OUTPUT terminals.
2. Playback the 3kHz portion of the STD-301 test tape. At the beginning, the frequency should be lie within the 2995Hz ~ 3010Hz range, and may be adjusted by turning the semi-fixed resistor located in the capstan motor adjustment hole as shown in Fig. 11-2.

Tape speed is increased by turning the semi-fixed resistor clockwise, and decreased by turning counter-clockwise.

11.4 REC SWITCH ADJUSTMENT

1. Depress REC button. REC action lever moves to Ⓐ direction. At this time, check that REC switch is ON.
2. Depress STOP button. The REC action lever moves slightly to Ⓑ direction. At this time, bend and adjust the REC action lever so that a contact distance of REC switch is 0.2 ~ 0.5 mm.

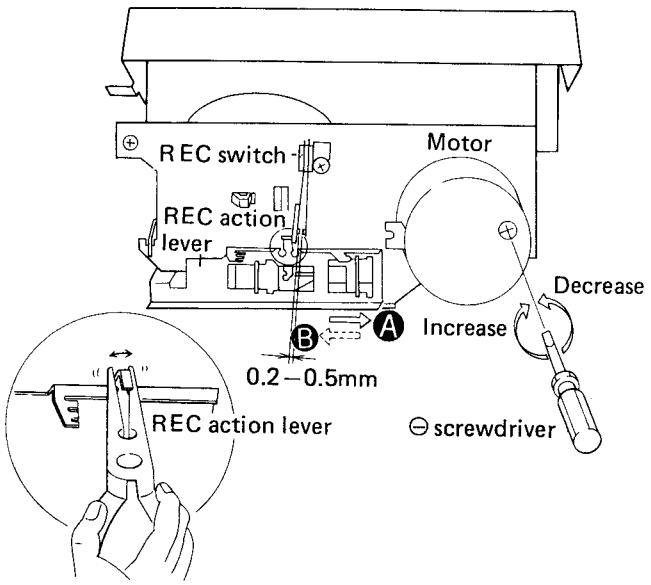


Fig. 11-2 Tape speed and REC switch adjustment

11. RÉGLAGES MÉCANIQUES

Avant de procéder au réglage

Nettoyer les deux supports de bobine, le cabestan et le galet presseur à l'aide d'un bâtonnet imbibé d'alcool.

11.1 RÉGLAGE DE LA FORCE D'APPUI DU GALET PRESSEUR

1. Mettre la platine en mode de lecture.
2. Appuyer doucement sur le bras du galet presseur à l'aide d'une jauge de pression et séparer légèrement le galet presseur du cabestan.
3. Laisser ensuite revenir le galet presseur sur le cabestan et lire la valeur lorsque le galet presseur commence à tourner. Si la valeur lue ne se situe pas entre 350g et 550g, remplacer le ressort du galet presseur.

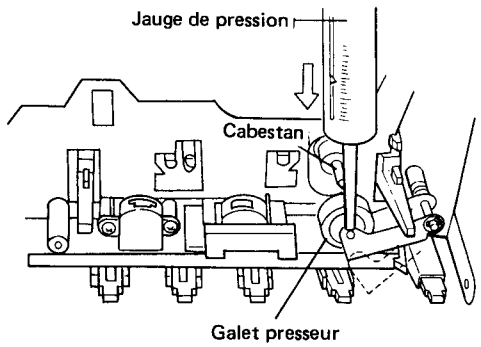


Fig. 11-1 Réglage de la force d'appui du galet presseur

11.2 RÉGLAGE DU COUPLE DU SUPPORT DE BOBINE

Mesurer le couple à l'aide d'un dynamomètre dans les modes de lecture, d'avance rapide (FF) et de rebobinage (REW). Les valeurs mesurées doivent normalement se situer dans les limites admissibles données au tableau 1.

Si les valeurs mesurées se trouvent en dehors des plages indiquées, remplacer l'ensemble support de bobine TU (réception) et/ou l'ensemble support de bobine débiteur, la poulie libre TU ou l'ensemble complet du bras d'entraînement.

Tableau 1

	Support de bobine TU	Support de bobine débitrice
Mode de lecture	35 à 55g.cm	• 2 à 5g.cm
Mode FF	75 à 110g.cm	• 2 à 5g.cm
Mode REW	• 2 à 5g.cm	75 à 110g.cm

• *Couple de tension inverse*

11.3 RÉGLAGE DE LA VITESSE DE DEFILEMENT DE LA BANDE

1. Raccorder le fréquencemètre aux bornes de sortie LINE OUTPUT.
2. Reproduire la partie à 3kHz de la bande d'essai STD-301. Au début, la fréquence doit se situer dans la plage de 2995Hz à 3010Hz, et elle peut être réglée en tournant la résistance ajustable située dans le trou de réglage du moteur-cabestan, comme indiqué à la figure 11-2.

La vitesse de défilement de la bande augmente lorsque la résistance ajustable est tournée dans le sens des aiguilles d'une montre, et elle décroît lorsque l'on tourne la résistance en sens inverse.

11.4 RÉGLAGE DU COMMUTATEUR D'ENREGISTREMENT (REC)

1. Appuyer sur la touche d'enregistrement (REC). Le levier de commande REC se déplace dans la direction Ⓐ.
2. Appuyer sur la touche d'arrêt (STOP). Le levier de command REC se déplace légèrement dans la direction Ⓑ. Courber et ajuster alors le levier de commande REC, de manière à ce que la course de contact du commutateur d'enregistrement soit de 0,2 à 0,5mm.

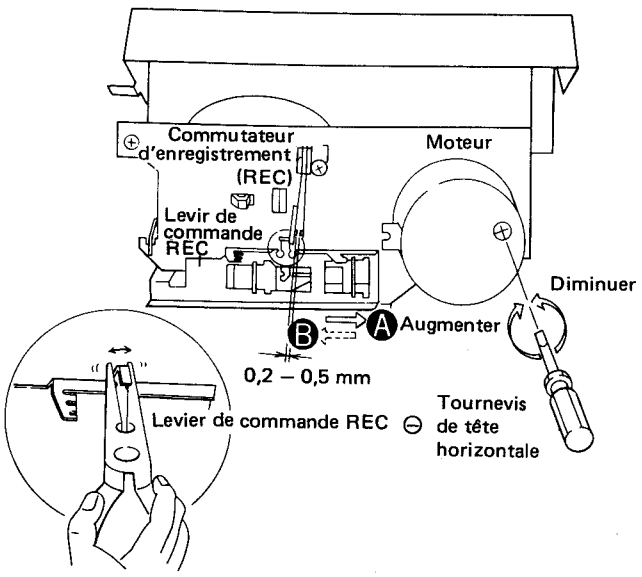


Fig. 11-2 Réglage de la vitesse de defilement de la bande et du commutateur d'enregistrement (REC)

11. AJUSTES MECÁNICOS

Antes del ajuste

Limpiar ambas bases de los carretes, eje de arrastre y rodillo de presión con algodón humedecido en alcohol.

11.1 AJUSTE DE LA PRESIÓN DEL RODILLO DE PRESIÓN

1. Establecer el magnetófono en el modo de reproducción.
2. Con el calibrador de tensión presionar ligeramente contra el brazo del rodillo de presión y separar un poco dicho rodillo del eje de arrastre.
3. Luego reposicionar el rodillo de presión sobre el eje de arrastre, y leer el valor en el momento en que el rodillo de presión empieza a girar. Si la indicación cae dentro de 350g ~ 550g, reemplazar el muelle del rodillo de presión.

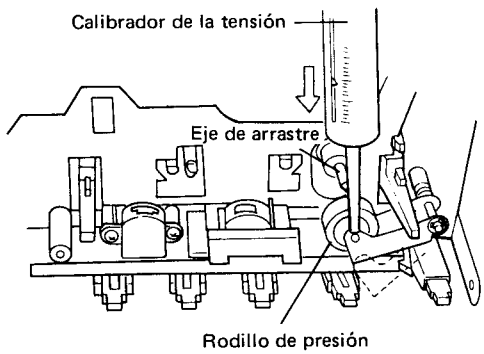


Fig. 11-1 Ajuste de la presión del rodillo de presión

11.2 AJUSTE DE LA TORSIÓN DE LA BASE DEL CARRETE

Utilizar el modidor de torsión para medir la torsión durante las funciones de reproducción, avance rápido (FF) y rebobinado (REW). Los valores medidos deberán estar normalmente dentro de los límites permisibles enumerados en la tabla 1.

Si los valores medidos no están dentro de tales límites, reemplazar el conjunto de la base del carrete de arrastre (TU) y/o conjunto de la base del carrete de suministro, rueda de guía TU, o todo el conjunto del brazo de arrastre.

Tabla 1

	Base del carrete TU	Base del carrete de suministro
Modo de reproducción	35 – 55g.cm	• 2 – 5g.cm
Modo de avance rápido	75 – 110g.cm	• 2 – 5g.cm
Modo de rebobinado	• 2 – 5g.cm	75 – 110g.cm

• *Las notas se apoyan en la torsión de la tensión*

11.3 AJUSTE DE LA VELOCIDAD DE LA CINTA

1. Conectar el frecuencímetro a los terminales de salida de línea (LINE OUTPUT).
2. Reproducir la parte de 3kHz de la cinta de prueba STD-301. Al principio, la frecuencia deberá estar entre 2995Hz ~ 3010Hz, y podrá ajustarse girando el resistor semifijo, situado en el orificio de ajuste del motor del eje de arrastre, como se muestra en la figura 11-2.

La velocidad de la cinta aumentará girando hacia la derecha el resistor semifijo, y se reducirá girándolo hacia la izquierda.

11.4 AJUSTE DEL INTERRUPTOR DE GRABACIÓN (REC)

1. Presionar el botón REC. La palanca de accionamiento de REC se mueve en la dirección Ⓐ. Entonces, comprobar que el interruptor REC esté en la posición ON.
2. Presionar el botón de parada (STOP). La palanca de accionamiento de REC se mueve ligeramente en la dirección Ⓑ. Entonces, doblar y ajustar la palanca de accionamiento de REC de modo que la distancia de contacto del interruptor REC sea de 0,2 ~ 0,5mm.

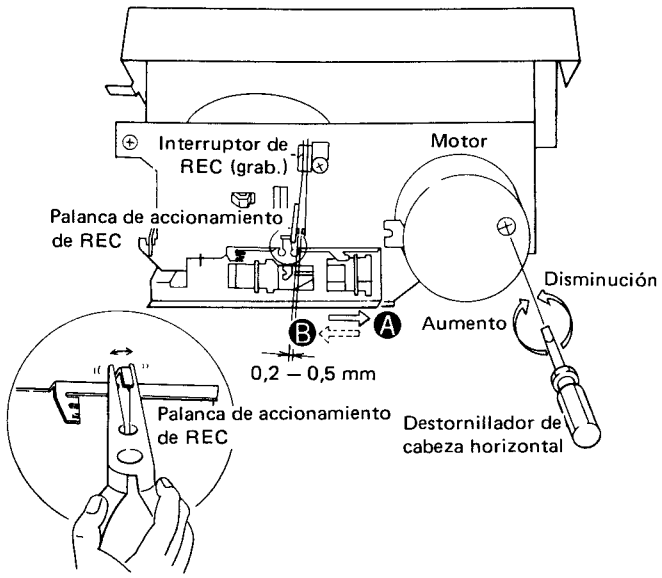


Fig. 11-2 Ajuste de la velocidad de la cinta y del interruptor de grabación (REC)

12. ELECTRICAL ADJUSTMENTS

Precaution

1. Mechanical adjustment should be completed.
2. Clean the following parts with an alcohol moistened swab: Record/Playback head, Pinch roller, Erase head, Rubber belts and Capstan.
3. Demagnetize record/playback head with a head demagnetizer.
4. Do not use magnetized screwdriver for adjustments.
5. Adjustments and measurements should be performed for both L ch and R ch with rated power supply voltage.
6. Adjustments should be performed in the order given in this service manual. Altering the order can hinder proper adjustments, resulting in loss of performance.
7. Level during measurements are based on 0dBv = 1V. Connect a 50kΩ (47 — 52kΩ) dummy resistor across the OUTPUT terminals.
8. Let the CT-320 warm up (aging) for a few minutes before proceeding with the adjustment.
9. Set the DOLBY NR switch to OFF and TAPE SELECTOR to the NORM position unless directed otherwise.

Test Equipments/Tools Required:

1. Test tape
   STD-341A ..... For playback adjustment
   STD-608A ..... NORMAL blank tape
   STD-603 ..... CrO_2 blank tape
   STD-604 ..... METAL blank tape
2. Audio oscillator
3. AC millivoltmeter (AC mV)
4. Attenuator
5. Oscilloscope
6. Resistor 50kΩ (47 — 52kΩ)

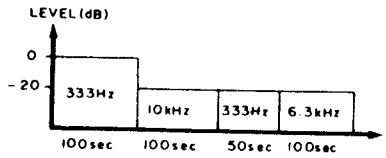


Fig. 12-1 Contents of the test tape STD-341A

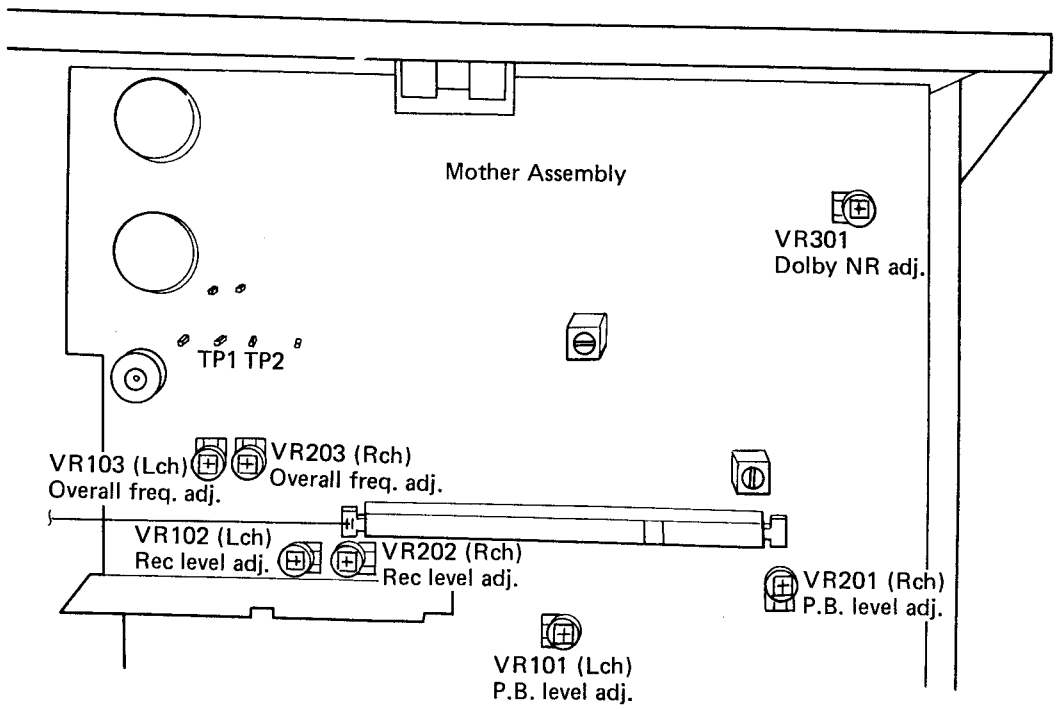


Fig. 12-2 Adjustment points

12.1 DOLBY NR ADJUSTMENT

Setting

Mode ..... Record
AC mV meter ..... TP1 (L ch) and TP2 (R ch) of the mother assembly
Input Signal ..... 2kHz, -10dBv (316 mV) to LINE INPUT

Procedure

1. Adjust the INPUT level control so that the AC mV meter reads -2.2dBv (776 mV).
2. Next change the input signal level to -30dBv (31.6 mV) and DOLBY NR switch to the ON position.
3. Adjust the VR301 so that the AC mV meter reads -17.9dBv (127 mV).

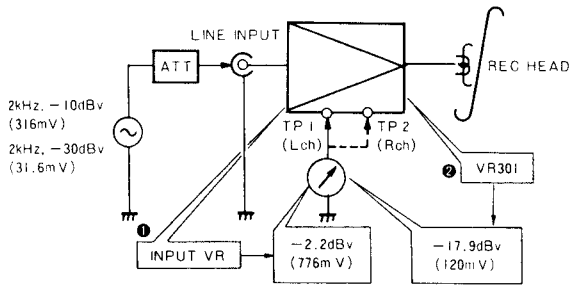


Fig. 12-3 Dolby NR adjustment

12.2 HEAD AZIMUTH ADJUSTMENT

Setting

Mode ..... Playback
Test Tape ..... STD-341A (10kHz, -20dB)
AC mV meter ..... LINE OUTPUT
VR101, VR201 ..... Turn up to maximum position

Procedure

Adjust the azimuth adjusting screw for maximum AC mV meter readings for both L and R channels. After this adjustment, lock the screw with **screw lock**.

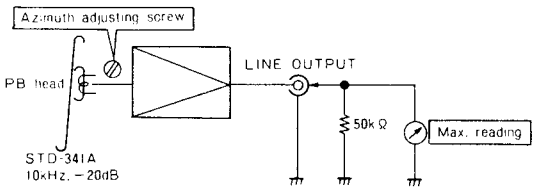


Fig. 12-4 Head azimuth adjustment

12.3 PLAYBACK EQUALIZER ADJUSTMENT

Setting

Mode ..... Playback
Test Tape ..... STD-341A (333Hz and 6.3kHz, -20dB)
AC mV meter ..... LINE OUTPUT

Procedure

1. Set the TAPE SELECTOR to the NORM position. Play back the 333Hz and 6.3kHz portions of the STD-341A, and check that difference between the two output levels does not exceed 0dB±1dB.
2. Next set the TAPE SELECTOR to the HIGH position. Play back the 333Hz and 6.3kHz portions again, and check that the difference between the two output levels does not exceed -4dB±1dB.

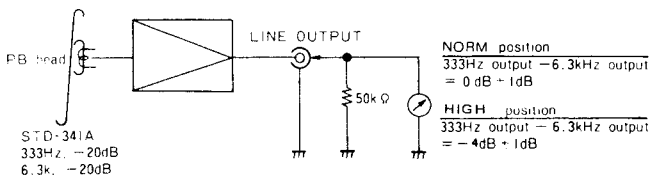


Fig. 12-5 Playback equalizer check

12.4 PLAYBACK LEVEL ADJUSTMENT

Since this adjustment determines the DOLBY NR level during playback, it should be performed precisely.

Setting

Mode ..... Playback
Test Tape STD-341A (333Hz, 0dB)
AC mV meter ..... TP1 (L ch) and TP2 (R ch) of the mother assembly

Procedure

Adjust the VR101 (L ch) and VR201 (R ch) so that the AC mV meter reads -1.2 dBv (0.87V).

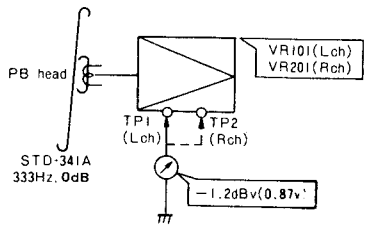


Fig. 12-6 Playback level adjustment

12.5 LEVEL METER CHECK

Setting

Mode ..... Record
Input signal ..... 333Hz, -10dBv (316mV) to LINE INPUT
AC mV meter ..... TP1 (Lch) and TP2 (Rch) of the mother assembly

Procedure

Adjust the INPUT level control so that the AC mV meter reads -5.2dBv (0.54V). Then check the level meter reads 0dB.

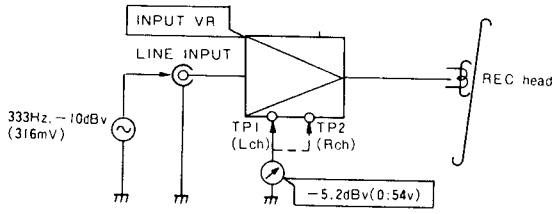


Fig. 12-7 Level meter check

12.6 OVERALL FREQUENCY RESPONSE ADJUSTMENT

Setting

Mode ..... Record
Test Tape STD-608A
AC mV meter ..... LINE OUTPUT
Input Signal ..... 333Hz, -30dBv (31mV) to LINE INPUT

Procedure

1. Set the TAPE SELECTOR to the NORM position.
2. Adjust the INPUT level control so that the AC mV meter reads -27dBv (44.6 mV).
3. Record the 333Hz and 6.3kHz signals onto the STD-608A. Play back the tape and adjust the VR103 (L ch) and VR203 (R ch) so that the difference between two is 0.5dB $^{+1}_{-0.5}$dB.

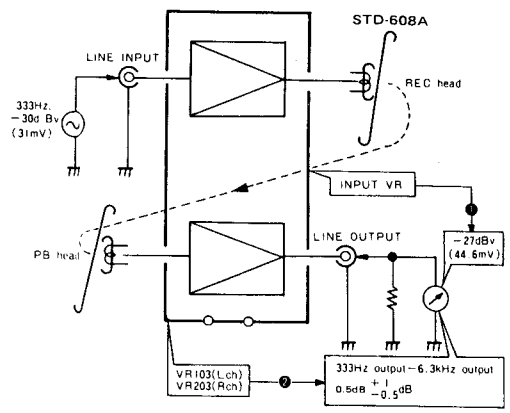


Fig. 12-8 Overall frequency response adjustment

12.7 RECORD LEVEL ADJUSTMENT

Since this adjustment determines the DOLBY NR level during reocrding, it should be performed precisely.

Setting

Mode ..... Record
Test Tape STD-608A, STD-603, STD-604
AC mV meter ..... TP1 (L ch) and TP2 (R ch) of the mother assembly
Input Signal ..... 333Hz, -10dBv (316mV) to LINE INPUT

Procedure

1. Set the TAPE SELECTOR to the NORM position.
2. Adjust the INPUT level control so that the AC mV meter reads -5.2dBv (0.54V).
3. Next set the DOLBY NR switch to the ON position.
4. Record the 333Hz signal onto the STD-608A. Playback the tape and adjust the VR102 (L ch) and VR202 (R ch) so that the AC mV meter reads -5.2dBv (0.54V).
5. Set the TAPE SELECTOR to the CrO_2 position and record the 333Hz signal onto the STD-603. Play back the tape and check that the AC mV meter reads -5.2dBv (0.54V) ±1.5dB.
6. Next set the TAPE SELECTOR to the METAL position and record the 333Hz signal onto the STD-604. Play back the tape and check that the AC mV meter reads -5.2dBv (0.54V) ±1.5dB.

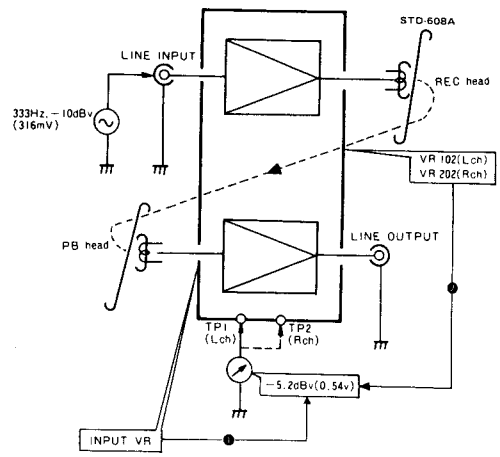
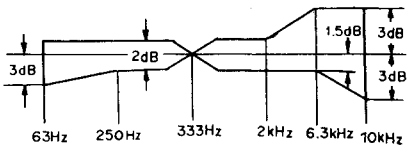


Fig. 12-9 Recording level adjustment

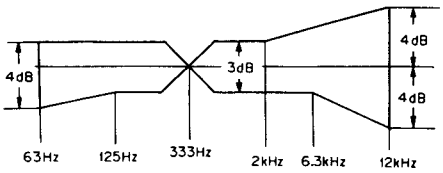
Frequency Response

Using STD-341A and the TAPE SELECTOR NORM position, with DOLBY NR OFF
However, the right channel is compensated by −1dB at 63Hz, and −0.5dB at 125Hz because of the insulation effect.

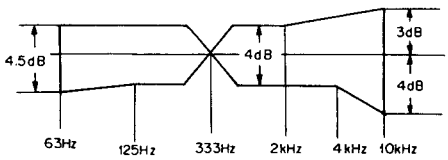


Overall Frequency Response

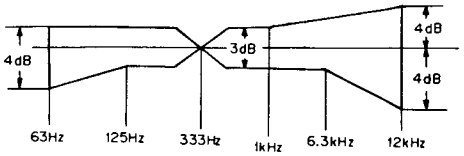
Using STD-608A and TAPE SELECTOR NORM position, with DOLBY NR OFF



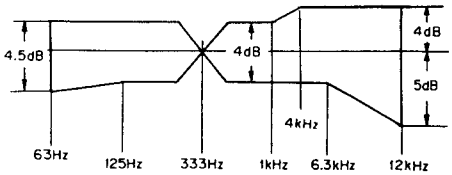
Using STD-608A and TAPE SELECTOR NORM position, with DOLBY NR ON



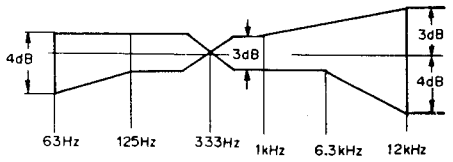
Using STD-603 and TAPE SELECTOR CrO_2 position, with DOLBY NR OFF



Using STD-603 and TAPE SELECTOR CrO_2 position, with DOLBY NR ON



Using STD-604 and TAPE SELECTOR METAL position, with DOLBY NR OFF



Using STD-604 and TAPE SELECTOR METAL position, with DOLBY NR ON

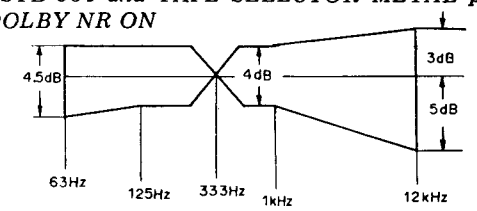


Fig. 12-10 Frequency response

12. RÉGLAGES ÉLECTRIQUES

Précautions

1. Les réglages mécaniques doivent être terminés.
2. Nettoyer les pièces suivantes à l'aide d'un bâtonnet imbibé d'alcool: tête d'enregistrement/lecture, galet presseur, tête d'effacement, courroies en caoutchouc et cabestan.
3. Démagnétiser la tête d'enregistrement/lecture à l'aide d'un démagnétiseur de tête.
4. Ne pas utiliser de tournevis magnétisé pour les réglages.
5. Les réglages et les mesures doivent être réalisés pour les canaux de gauche et de droite avec la tension d'alimentation nominale.
6. Les réglages doivent être effectués dans l'ordre indiqué dans ce manuel de service. Une modification de cet ordre peut empêcher la réalisation de réglages corrects et peut provoquer une baisse de performance.
7. Les niveaux en cours de mesure sont basés sur 0dBv = 1V. Raccorder une charge fictive de 50 kΩ (47 à 52 kΩ) entre les bornes de sortie (OUTPUT).
8. Laisser chauffer (vieillissement) le CT-320 pendant quelques minutes avant de procéder aux réglages.
9. Placer le commutateur DOLBY NR sur OFF et le sélecteur TAPE SELECTOR sur la position NORM, sauf indication contraire.

Equipements/outils d'essai requis

1. Bande d'essai
   - STD-341A ..... Pour le réglage de la reproduction
   - STD-608A ..... Bande "NORMAL" vierge
   - STD-603 ..... Bande "CrO_2" vierge
   - STD-604 ..... Bande "METAL" vierge
2. Oscillateur BF
3. Millivoltmètre alternatif (mV CA)
4. Atténuateur
5. Oscilloscope
6. Résistance 50 kΩ (47 à 52 kΩ)

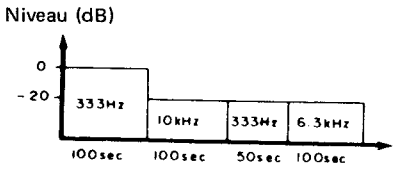


Fig. 12-1 Contenu de la bande d'essai STD-341A

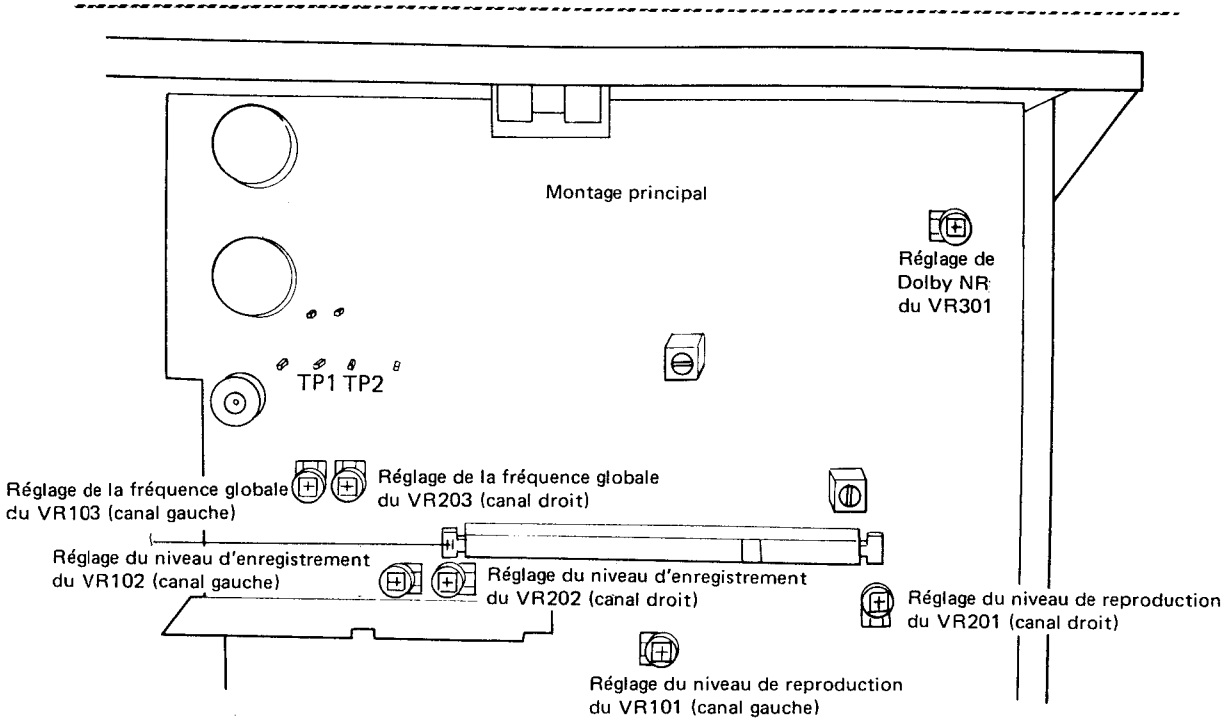


Fig. 11-2 Points de réglage

12.1 RÉGLAGE DU CIRCUIT DOLBY NR

Préparation

Mode ..... Enregistrement
Millivoltmètre CA ..... TP1 (canal de gauche "L") et TP2 (canal de droite "R") de l'ensemble principal
Signal d'entrée ..... 2kHz, - 10dBv (316mV) à LINE INPUT

Procédure

1. Régler la commande de niveau d'entrée INPUT de manière à ce que le millivoltmètre CA indique - 2,2dBv (776mV).
2. Faire ensuite passer le niveau du signal d'entrée à - 30dBv (31,6mV) et placer le commutateur DOLBY NR sur la position ON.
3. Régler VR301 de manière à ce que le millivoltmètre CA indique - 17,9dBv (127mV).

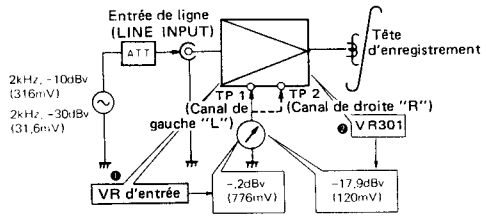


Fig. 12-3 Réglage du circuit Dolby NR

12.2 RÉGLAGE EN AZIMUT DE LA TÊTE

Préparation

Mode ..... Lecture
Bande d'essai ..... STD-341A (10kHz, - 20dB)
Millivoltmètre CA ..... A la sortie de ligne (LINE OUTPUT)
VR101, VR201 ..... Tournées en position maximum

Procédure

Régler la vis de réglage d'azimut de manière à obtenir l'indication maximum du millivoltmètre CA pour les canaux de gauche et de droite. Lorsque ce réglage est terminé, verrouiller la vis à l'aide du blocage de vis.

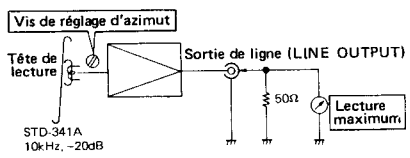


Fig. 12-4 Réglage d'azimut de la tête

12.3 RÉGLAGE DE L'ÉGALISATION DE LECTURE

Préparation

Mode ..... Lecture
Bande d'essai ..... STD-341A (333Hz et 6,3kHz, - 20dB)
Millivoltmètre CA ..... Sortie de ligne (LINE OUTPUT)

Procédure

1. Placer le sélecteur de bande TAPE SELECTOR sur la position NORM. Procéder à la reproduction des passages de 333Hz et de 6,3kHz de la bande STD-341A et vérifier que la différence entre les deux niveaux de sortie n'excède pas 0dB ± 1dB.
2. Placer ensuite le sélecteur TAPE SELECTOR sur la position HIGH. Procéder de nouveau à la reproduction des passages de 333Hz et de 6,3kHz et vérifier que la différence entre les deux niveaux de sortie n'excède pas -4dB ±1dB.

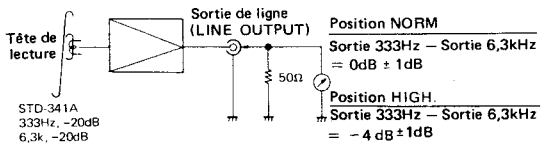


Fig. 12-5 Contrôle de l'égalisation de lecture

12.4 RÉGLAGE DU NIVEAU DE LECTURE

Ce réglage déterminant le niveau de DOLBY NR pendant la lecture, il doit être réalisé avec précision.

Préparation

Mode ..... Lecture
Bande d'essai STD-341A (333Hz, 0dB)
Millivoltmètre CA ..... TP1 (canal de gauche "L") et TP2 (canal de droite "R") de l'ensemble principal

Procédure

Régler VR101 (canal de gauche) et VR201 (canal de droite), de manière à ce que le millivoltmètre CA indique - 1,2dBv (0,87V).

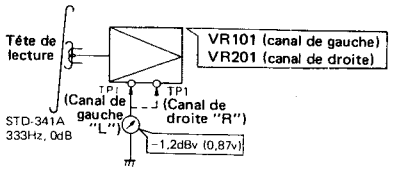


Fig. 12-6 Réglage du niveau de lecture

12.5 CONTRÔLE DE L'INDICATEUR DE NIVEAU

Préparation

Mode ..... Enregistrement
Signal d'entrée ..... 333Hz, -10dBv (316mV) à l'entrée de ligne LINE INPUT
Millivoltmètre CA ..... TP1 (canal de gauche) et TP2 (canal de droite) de l'ensemble principal

Procédure

Régler la commande de niveau d'entrée INPUT de manière à ce que le millivoltmètre CA indique -5,2dBv (0,54V). Contrôler ensuite que l'indicateur de niveau affiche 0dB.

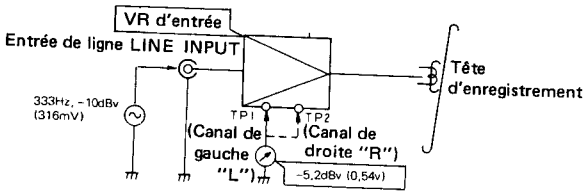


Fig. 12-7 Contrôle de l'indicateur de niveau

12.6 RÉGLAGE DE LA RÉPONSE EN FRÉQUENCE GLOBALE

Préparation

Mode ..... Enregistrement
Bande d'essai STD-608A
Millivoltmètre CA ..... Sortie de ligne LINE OUTPUT
Signal d'entrée ..... 333Hz, -30dBv (31mV) à l'entrée de ligne LINE INPUT

Procédure

1. Placer le sélecteur de bande TAPE SELECTOR sur la position NORM.
2. Régler la commande de niveau d'entrée INPUT de manière à ce que le millivoltmètre CA indique -27dBv (44,6mV).
3. Enregistrer les signaux à 333Hz et à 6,3kHz sur STD-608A. Lire la bande et régler VR103 (canal de gauche) et VR203 (canal de droite) de manière à ce que la différence entre les deux soit de 0,5 dB $^{+1}_{-0,5}$ dB.

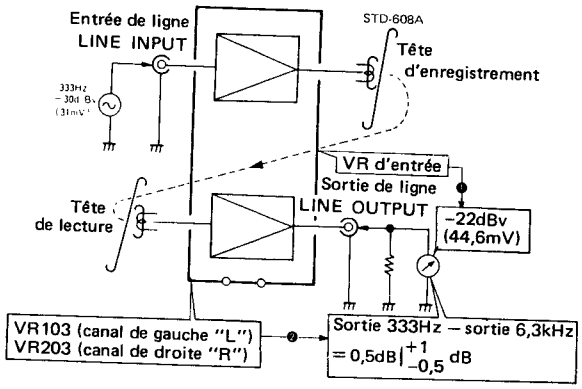


Fig. 12-8 Réglage de la réponse en fréquence globale

12.7 RÉGLAGE DU NIVEAU D'ENREGISTREMENT

Ce réglage déterminant le niveau de DOLBY NR pendant l'enregistrement, il doit être réalisé avec précision.

Préparation

Mode ..... Enregistrement
Bande d'essai STD-608A, STD-603, STD-604
Millivoltmètre CA ..... TP1 (canal de gauche "L") et TP2 (canal de droite "R") de l'ensemble principal
Signal d'entrée ..... 333Hz, -10dBv (316mV) à l'entrée de ligne LINE INPUT

Procédure

1. Placer le sélecteur de bande TAPE SELECTOR sur la position NORM.
2. Régler la commande de niveau d'entrée INPUT de manière à ce que le millivoltmètre CA indique -5,2dBv (0,54V).
3. Placer ensuite le commutateur DOLBY NR sur la position ON (enclenché).
4. Enregistrer le signal de 333Hz sur la bande STD-608A. Lire la bande et régler VR102 (canal de gauche) et VR202 (canal de droite) de manière à ce que le millivoltmètre CA indique -5,2dBv (0,54V).
5. Placer le sélecteur de bande TAPE SELECTOR sur la position CrO_2 et enregistrer le signal de 333Hz sur la bande STD-603. Lire la bande et vérifier que le millivoltmètre CA indique -5,2dBv (0,54V) ±1,5dB.
6. Placer ensuite le sélecteur de bande TAPE SELECTOR sur la position METAL et enregistrer le signal de 333Hz sur la bande STD-604. Lire la bande et vérifier que le millivoltmètre CA indique -5,2dBv (0,54V) ±1,5dB.

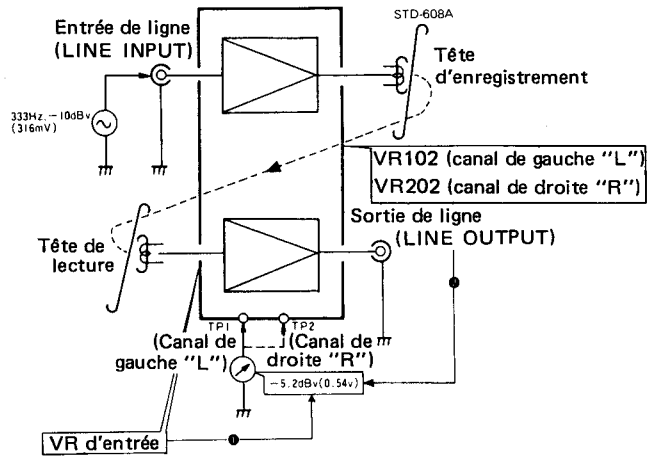
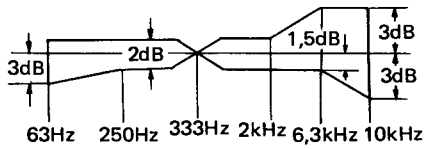


Fig. 12-9 Réglage du niveau d'enregistrement

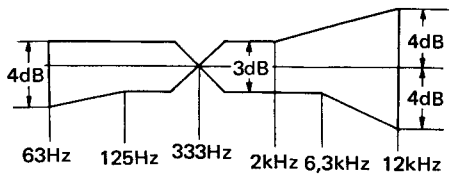
Réponse en fréquence

Utilisation de STD-341A avec TAPE SELECTOR sur la position NORM et le circuit DOLBY NR hors service (OFF)
Le canal de droite est compensé de -1dB à 63Hz et de -0,5dB à 125Hz, à cause de l'effet d'isolement

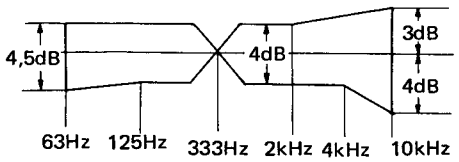


Réponse en frérquence globale

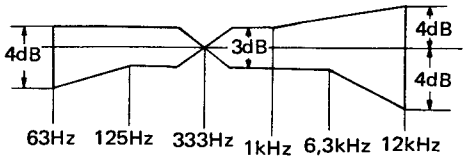
Utilisation de STD-608A avec TAPE SELECTOR sur la position NORM et le circuit DOLBY NR hors service (OFF)



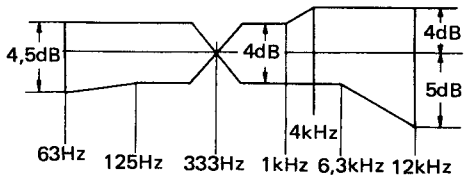
Utilisation de STD-608A avec TAPE SELECTOR sur la position NORM et le circuit DOLBY NR en service (ON)



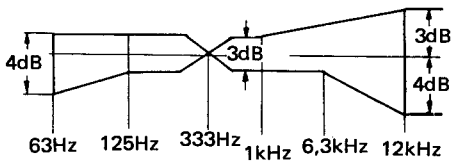
Utilisation de STD-603 avec TAPE SELECTOR sur la position CrO2 et le circuit DOLBY NR hors service (OFF)



Utilisation de STD-603 avec TAPE SELECTOR sur la position CrO2 et le circuit DOLBY NR en service (ON)



Utilisation de STD-604 avec TAPE SELECTOR sur la position METAL et le circuit DOLBY NR hors service (OFF)



Utilisation de STD-604 avec TAPE SELECTOR sur la position METAL et le circuit DOLBY NR en service (ON)

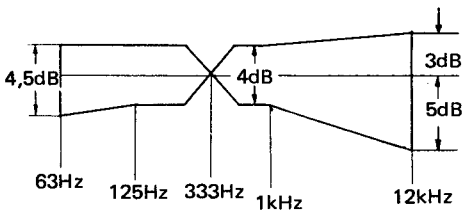


Fig. 12-10 Réponse en fréquence

12. AJUSTES ELÉCTRICOS

Precauciones

1. Deberán completarse los ajustes mecánicos.
2. Limpiar las partes siguientes con algodón humedecido en alcohol: cabeza de grabación/reprodución, rodillo de arrastre, cabeza de borrado, correas de goma y eje de arrastre.
3. Desmagnetizar la cabeza de grabación/reproducción con un desmagnetizador de cabezas.
4. No utilizar destornilladores magnetizados para los ajustes.
5. Los ajustes y las mediciones deberán realizarse para la tensión nominal de suministro de los canales izquierdo y derecho.
6. Los ajustes deberán realizarse en el orden dado en este manual de servicio. Si se altera el orden los ajustes pueden resultar inútiles, dando como resultado una pérdida de rendimiento.
7. El nivel durante las mediciones se basa en 0dBv = 1V. Conectar un resistor fícticio de 50Kohmios (47 ~ 52Kohmios) a los terminales de salida (OUTPUT).
8. Dejar que el CT-320 se precaliente durante algunos minutos antes de proceder con el ajuste.
9. Poner el interruptor de reducción de ruido Dolby (DOLBY NR) en la posición OFF y el selector de cintas (TAPE SELECTOR) en la posición NORM a menos de que se diga otra cosa.

Equipos/herramientas de pruebas requeridos:

1. Cinta de prueba
   - STD-341A ..... para el ajuste de reproducción
   - STD-608A ..... cinta NORMAL en blanco
   - STD-603 ..... cinta CrO_2 en blanco
   - STD-604 ..... cinta de METAL en blanco
2. Oscilador sonoro
3. Milivoltímetro de CA (AC mV)
4. Atenuador
5. Osciloscopio
6. Resistor de 50Kohmios (47 ~ 52Kohmios)

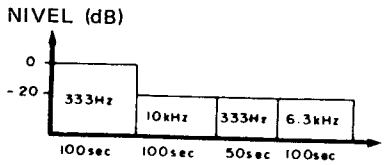


Fig. 12-1 Contenido de la cinta de prueba STD-341A

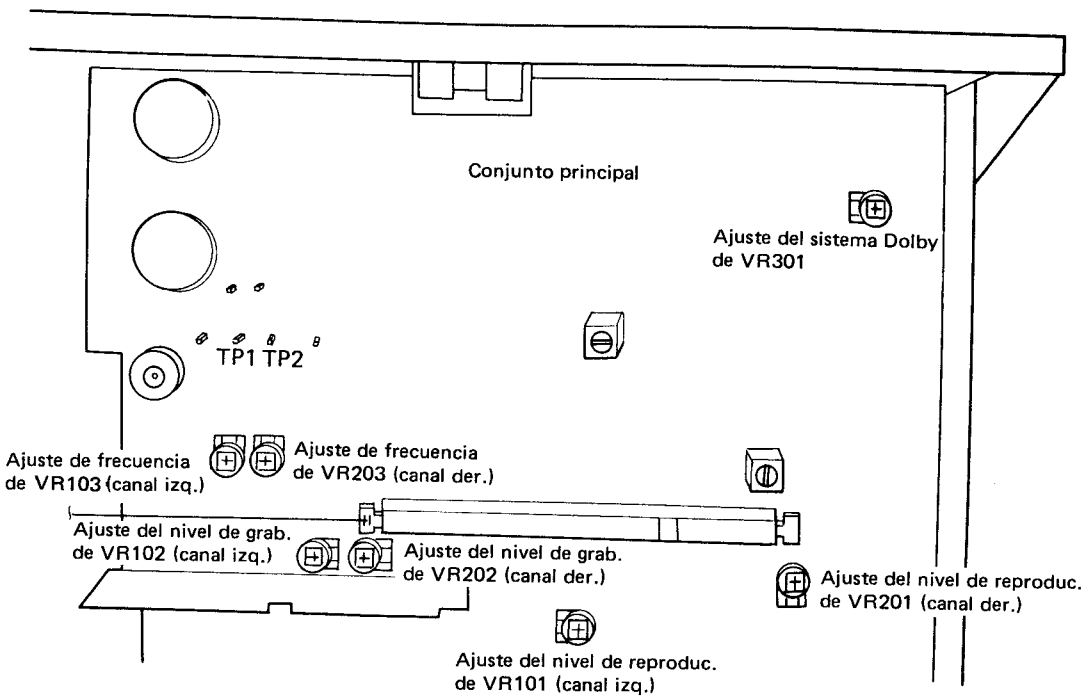


Fig. 12-2 Puntos de ajuste

12.1 AJUSTE DEL SISTEMA DOLBY

Ajuste

Mode ..... grabación
Milivoltímetro de CA ... TP1 (canal izq.) y TP2 (canal der.) del conjunto principal.
Señal de entrada ..... 2kHz, -10dBv (316mV) a LINE INPUT

Procedimiento

1. Ajustar el control del nivel de entrada (INPUT) de modo que el milivoltímetro de CA indique -2,2dBv (776mV).
2. Luego, cambiar el nivel de la señal de entrada a -30dBv (31,6mV) y el interruptor DOLBY NR a la posición ON.
3. Ajustar la VR301 de modo que el milivoltímetro de CA indique -17,9dBv (127mV).

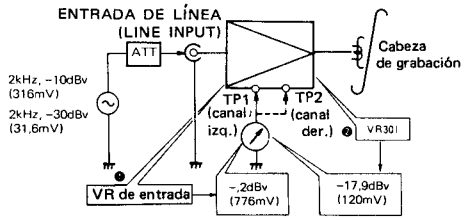


Fig. 12-3 Ajuste del sistema Dolby

12.2 AJUSTE DEL ACIMUT DE LA CABEZA

Ajuste

Modo ..... reproducción
Cinta de prueba ..... STD-341A (10kHz, -20dB)
Milivoltímetro de CA ... LINE OUTPUT
VR101, VR201 ..... incrementar a la posición máxima

Procedimiento

Ajustar el tornillo de ajuste del acimut para que el milivoltímetro de CA ofrezca las lecturas máximas de los canales izquierdo y derecho. Después de este ajuste, enclavar el tornillo con el bloqueador del tornillo.

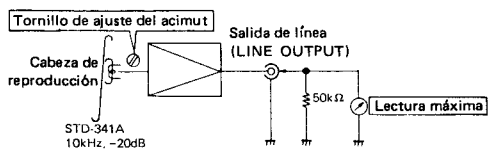


Fig. 12-4 Ajuste del acimut de la cabeza

12.3 AJUSTE DEL ECUALIZADOR DE REPRODUCCIÓN

Ajuste

Modo ..... reproducción
Cinta de prueba ..... STD-341A (333Hz y 6,3kHz, -20dB)
Milivoltímetro de CA ... LINE OUTPUT

Procedimiento

1. Poner el selector de cintas (TAPE SELECTOR) en la posición NORM. Reproducir las partes de 333Hz y 6,3kHz de la STD-341A, y comprobar la diferencia entre los dos niveles de salida no exceda de 0dB ± 1dB.
2. Luego, poner el selector de cintas (TAPE SELECTOR) en la posición HIGH. Reproducir de nuevo las partes de 333Hz y 6,3kHz, y comprobar que la diferencia entre los dos niveles de salida no exceda de -4dB ±1dB.

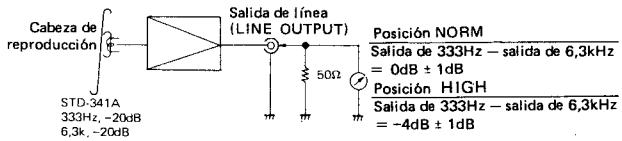


Fig. 12-5 Comprobación del ecualizador de reproducción

12.4 AJUSTE DEL NIVEL DE REPRODUCCIÓN

Puesto que este ajuste determina el nivel del sistema Dolby durante la reproducción, deberá realizarse con precisión.

Ajuste

Modo ..... reproducción
Cinta de prueba STD-341A (333Hz, 0dB)
Milivoltímetro de CA ... TP1 (canal izq.) y TP2 (canal der.) del conjunto principal

Procedimiento

Ajustar la VR101 (canal izquierdo) y la VR201 (canal derecho) de modo que el milivoltímetro de CA indique -1,2dBv (0,87V).

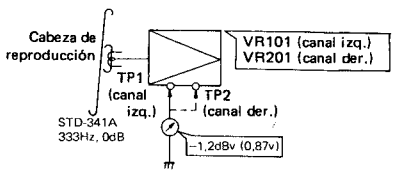


Fig. 12-6 Ajuste del nivel de reproducción

12.5 COMPROBACIÓN DEL MEDIDOR DE NIVEL

Ajuste

Modo ..... grabación
Señal de entrada ..... 333Hz, -10dBv (316mV) a LINE INPUT
Milivoltímetro de CA ... TP1 (canal izq.) y TP2 (canal der.) del conjunto principal

Procedimiento

Ajustar el control del nivel de entrada (INPUT) de modo que el milivoltímetro de CA indique -5,2dBv (0,54V). Luego, verificar que el medidor de nivel indique 0dB.

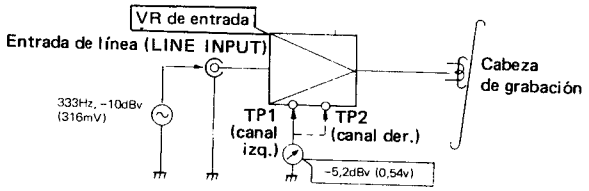


Fig. 12-7 Comprobación del medidor de nivel

12.6 AJUSTE GENERAL DE LA RESPUESTA EN FRECUENCIA

Ajuste

Modo ..... grabación
Cinta de prueba STD-608A
Milivoltímetro de CA ... LINE OUTPUT
Señal de entrada ..... 333Hz, -30dBv (31mV) a LINE INPUT

Procedimiento

1. Poner el selector de cintas (TAPE SELECTOR) en la posición NORM.
2. Ajustar el control del nivel de entrada (INPUT) de modo que el milivoltímetro de CA indique -27dBv (44,6mV).
3. Grabar las señales de 333Hz y 6,3kHz de la STD-608A. Reproducir la cinta y ajustar la VR103 (canal izquierdo) y VR203 (canal derecho) de modo que la diferencia entre las dos sea de $0{,}5\text{dB}^{+1}_{-0{,}5}\text{dB}$.

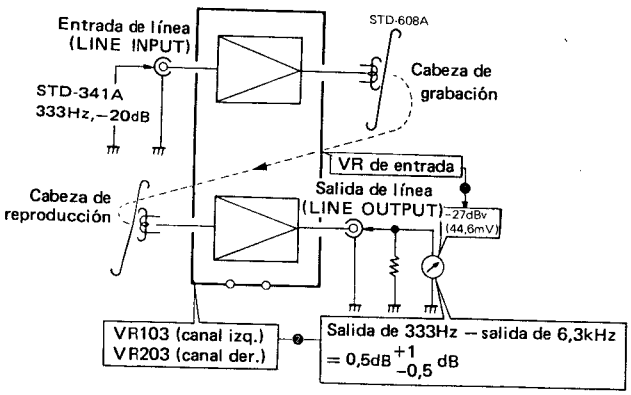


Fig. 12-8 Ajuste general de la respuesta en frecuencia

12.7 AJUSTE DEL NIVEL DE GRABACIÓN

Puesto que este ajuste determina el nivel del sistema Dolby durante la grabación, deberá realizarse con precisión.

Ajuste

Modo ..... grabación
Cinta de prueba STD-608A, STD-603, STD-604
Milivoltímetro de CA ... TP1 (canal izq.) y TP2 (canal der.) del conjunto principal
Señal de entrada ..... 333Hz, -10dBv (316mV) a LINE INPUT

Procedimiento

1. Poner el selector de cintas (TAPE SELECTOR) en la posición NORM.
2. Ajustar el control del nivel de entrada (INPUT) de modo que el milivoltímetro de CA indique -5,2dBv (0,54V).
3. Luego, poner el interruptor del sistema Dolby (DOLBY NR) en la posición ON.
4. Grabar la señal de 333Hz en la STD-608A. Reproducir la cinta y ajustar la VR102 (canal izquierdo) y la VR202 (canal derecho) de modo que el milivoltímetro de CA indique -5,2dBv (0,54V).
5. Poner el selector de cinta (TAPE SELECTOR) en la posición CrO_2 y grabar la señal de 333Hz en la STD-603. Reproducir la cinta y verificar que el milivoltímetro de CA indique -5,2dBv (0,54V) ±1,5dB.
6. Luego, poner el selector de cintas (TAPE SELECTOR) en la posición METAL y grabar la señal de 333Hz en la STD-604. Reproducir la cinta y verificar que el milivoltímetro de CA indique -5,2dBv (0,54V) ±1,5dB.

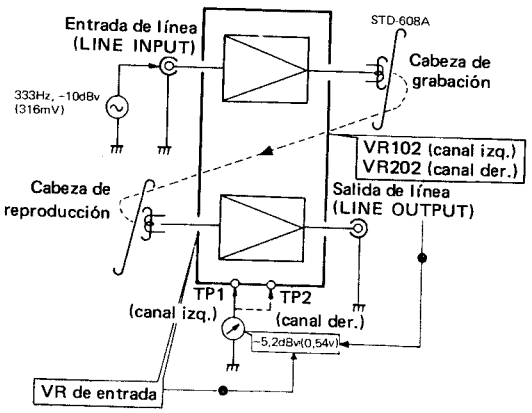
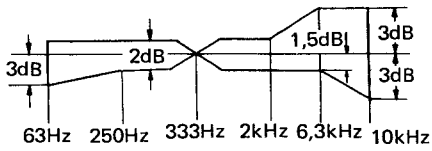


Fig. 12-9 Ajuste del nivel de grabación

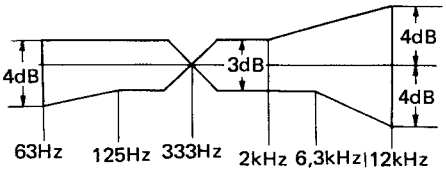
Respuesta en frecuencia

Empleando la STD-341A y el selector de cintas (TAPE SELECTOR) en la posición NORM con el sistema Dolby (DOLBY NR) en la posición OFF
Sin embargo, se compensa el canal derecho en -1dB a 63Hz, y -0,5dB a 125Hz debido al efecto aislante

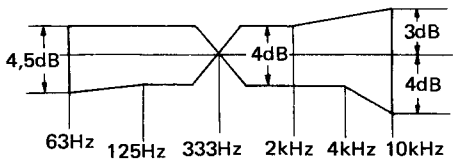


Respuesta en frecuencia general

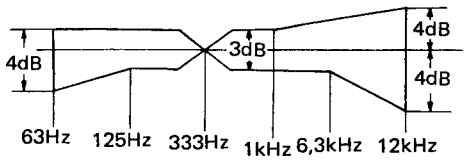
Empleando la STD-608A el selector de cintas (TAPE SELECTOR) en la posición NORM con el sistema Dolby (DOLBY NR) en la posición OFF



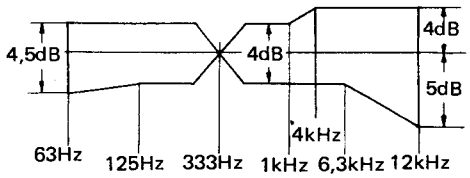
Empleando la STD-608A el selector de cintas (TAPE SELECTOR) en la posición NORM con el sistema Dolby (DOLBY NR) en la posición ON



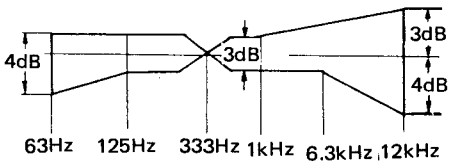
Empleando la STD-603 y el selector de cintas (TAPE SELECTOR) en la posición CrO_2 con el sistema Dolby (DOLBY NR) en la posición OFF



Empleando la STD-603 y el selector de cintas (TAPE SELECTOR) en la posición CrO_2 con el sistema Dolby (DOLBY NR) en la posición ON



Empleando la STD-604 y el selector de cintas (TAPE SELECTOR) en la posición METAL con el sistema Dolby (DOLBY NR) en la posición OFF



Empleando la STD-604 y el selector de cintas (TAPE SELECTOR) en la posición METAL y el sistema Dolby (DOLBY NR) en la posición ON

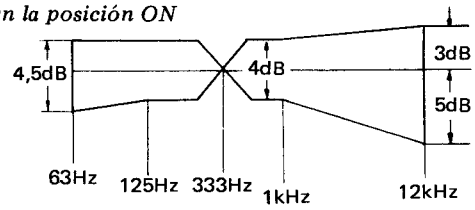


Fig. 12-10 Respuesta en frecuencia

PIONEER®

Service Manual

CIRCUIT & MECHANISM DESCRIPTIONS

The photo shows the model CT-720.

ORDER NO.
ARP-003-0

STEREO CASSETTE TAPE DECK

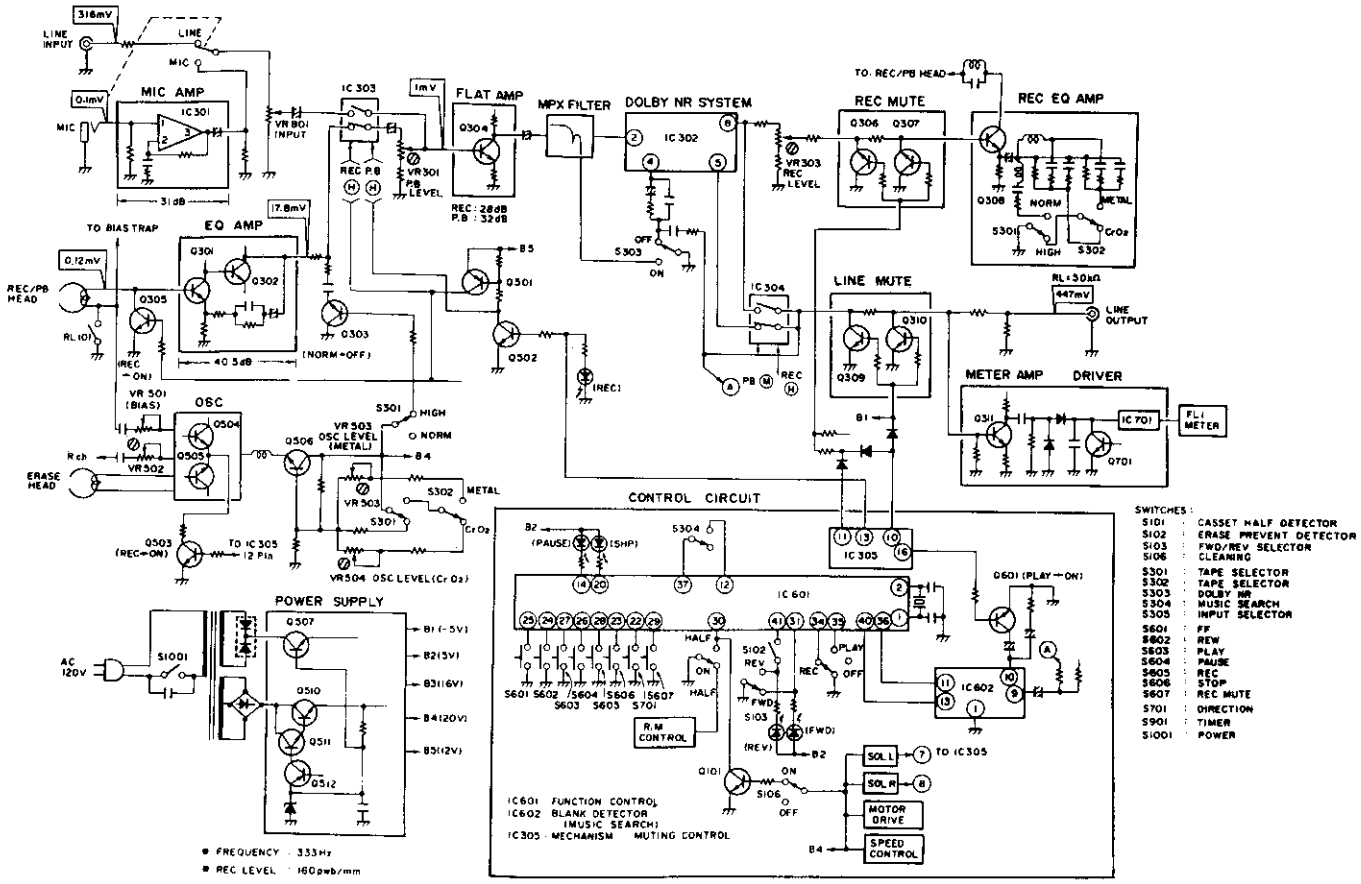
CT-720
CT-520
CT-320

- This Service Manual should be used together with the Service Manual <ARP-001-0> for CT-6R and 7R, and <ARP-002-0> for CT-4 and 5.

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
U.S. PIONEER ELECTRONICS CORPORATION 85 Oxford Drive, Moonachie, New Jersey 07074, U.S.A.
PIONEER ELECTRONIC (EUROPE) N.V. Luithagen-Haven 9, 2030 Antwerp, Belgium
PIONEER ELECTRONICS AUSTRALIA PTY. LTD. 178-184 Boundary Road, Braeside, Victoria 3195, Australia

1. CT-720

Block Diagram



Refer to the block diagram for circuit details.

1.1 SIGNAL PATHS

Playback Mode

The signal from the REC/PB head is passed via the equalizer amplifier (Q301/Q302), a bilateral switch (IC303), a flat amplifier (Q304) and MPX filter to the Dolby NR processor (pin 2 of HA11226). The Dolby NR processor output (pin 8 of HA11226) is passed to the LINE OUTPUT via another bilateral switch (IC304) and the line muting circuit (Q309/Q310).

Recording Mode

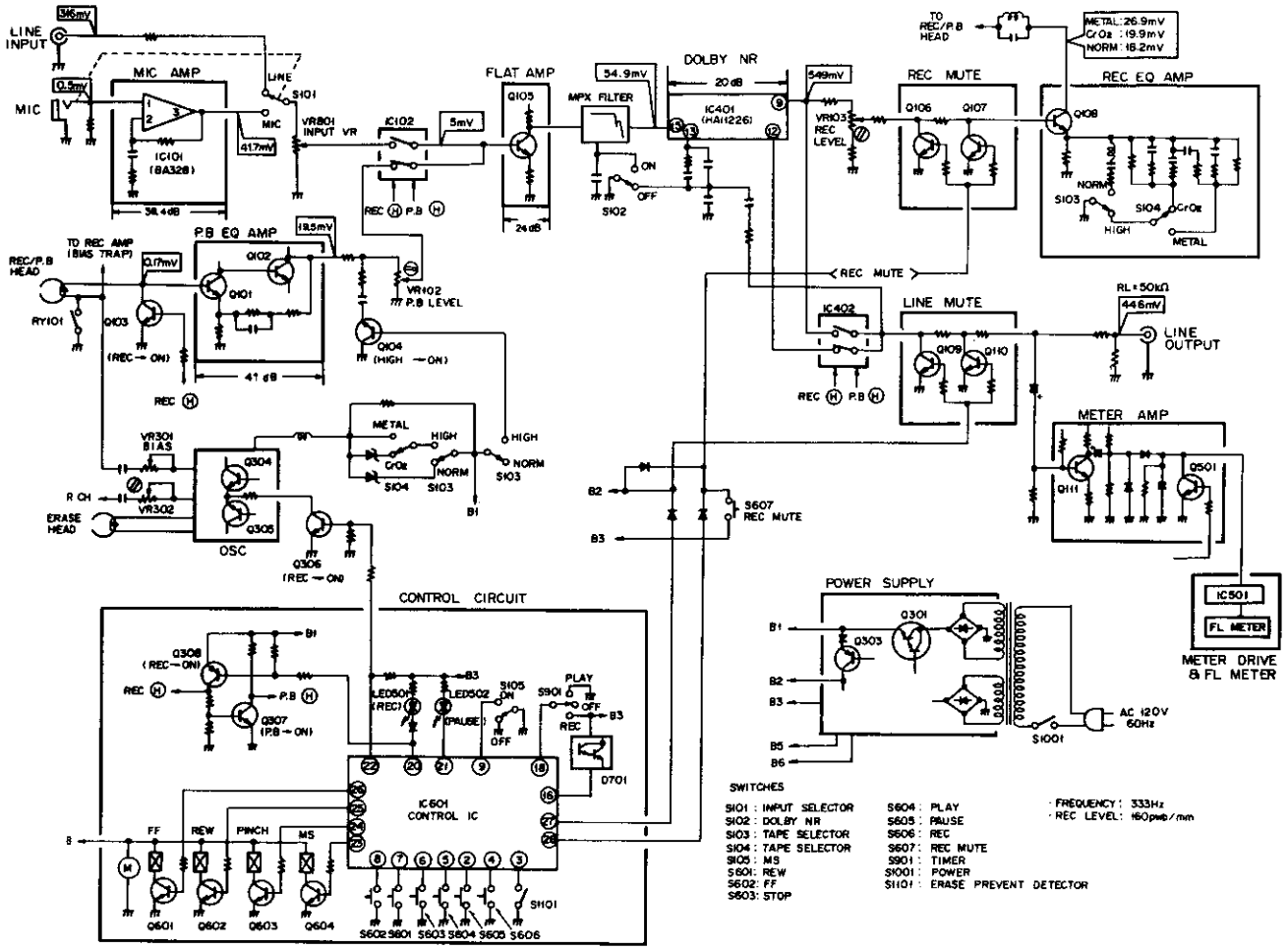
The LINE INPUT signal or MIC signal (mic amplifier output) is passed to the Dolby NR processor (pin 2 of HA11226) via the INPUT level control (VR801), a bilateral switch (IC303), a flat amplifier (Q304) and MPX filter.

The Dolby NR processor output (pin 8 of HA11226) is applied to the REC/PB head via the REC muting circuit (Q306/Q307), the recording amplifier (Q308) and a bias trap.

- For Mechanism Descriptions, refer to the Service Manual (CIRCUIT & MECHANISM DESCRIPTIONS) <ARP-001-0> for CT-6R and 7R.

2. CT-520

Block Diagram



Refer to the block diagram for circuit details.

2.1 SIGNAL PATHS

Playback Mode

The signal from the REC/PB head is passed via the equalizer amplifier (Q101/Q102), a bilateral switch (IC102), flat amplifier (Q105) and MPX filter before being applied to the Dolby NR processor (pin 15 of HA11226). The Dolby NR processor output (pin 9 of HA11226) is then passed via another bilateral switch (IC402) and the line muting circuit (Q109/Q110) to the LINE OUTPUT.

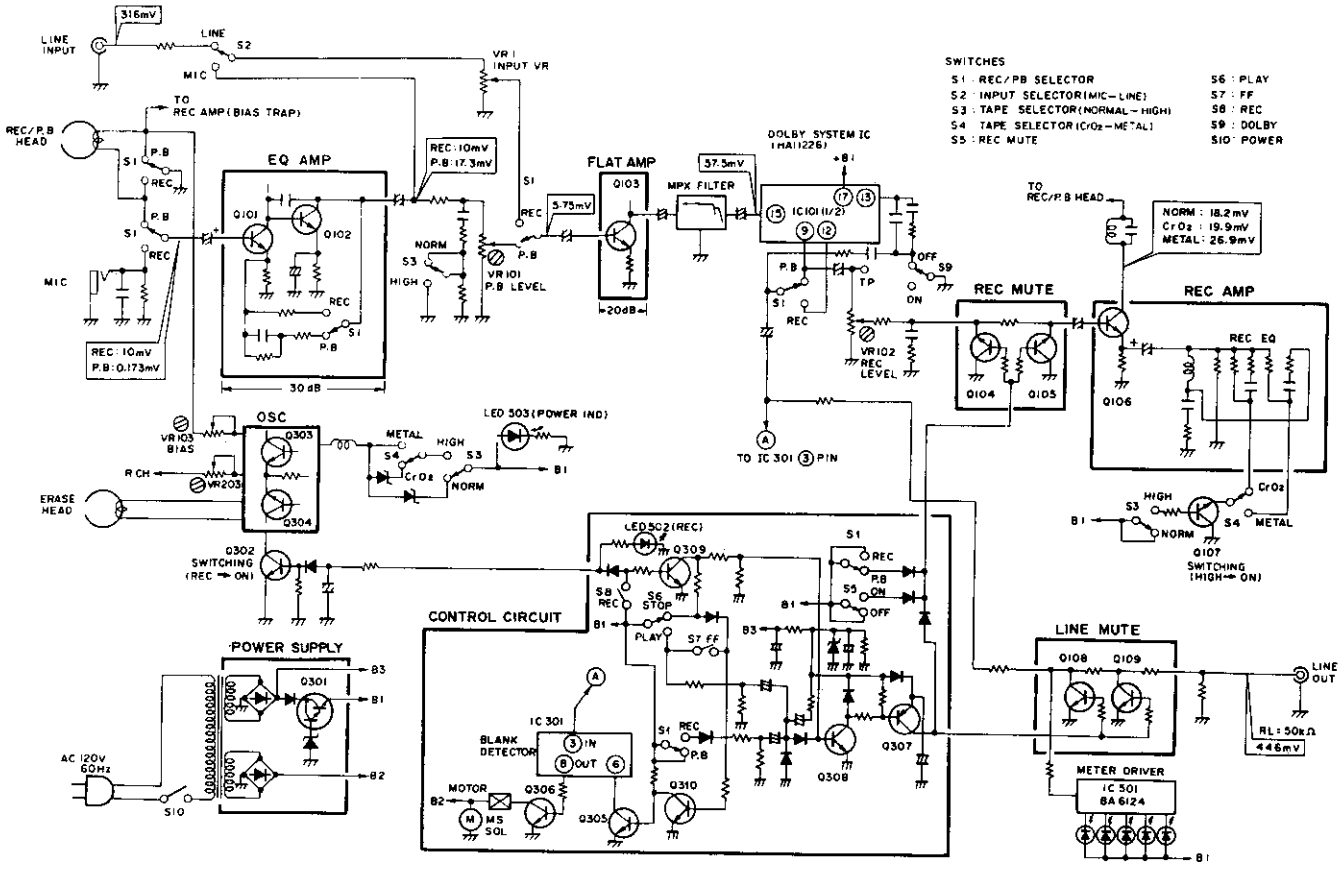
Recording Mode

The LINE INPUT signal or MIC signal (output from the MIC amplifier) is passed via the INPUT level control (VR801), a bilateral switch (IC102), a flat amplifier (Q105) and MPX filter to the Dolby NR processor (pin 15 of HA11226). The Dolby NR processor output (pin 9 of HA11226) is then passed to the REC/PB head via the REC mute circuit (Q106/Q107), recording amplifier (Q108) and bias trap.

- Control circuit and Mechanism Descriptions are basically the same as those in CT-5. Refer to pages 4 through 9 of the Service Manual (CIRCUIT & MECHANISM DESCRPITIONS) <ARP-002-0> for CT-4 and 5.

3. CT-320

Block Diagram



Refer to the block diagram for circuit details.

3.1 SIGNAL PATHS

Playback Mode

The signal from the REC/PB head is passed via the equalizer/mic amplifier (Q101/Q102) and flat amplifier (Q103) to the Dolby NR processor (pin 15 of HA11226). The Dolby NR processor output (pin 9 of HA11226) is applied to the LINE OUTPUT via the line muting circuit (Q108/Q109).

Recording Mode

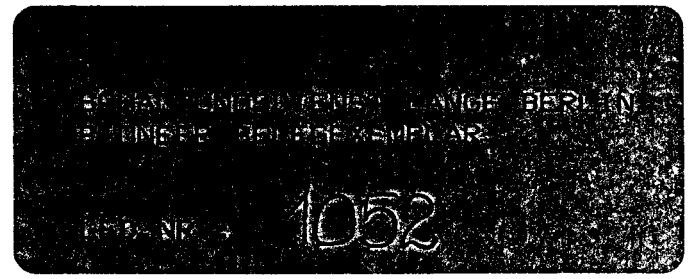
The LINE INPUT signal is passed via the INPUT SELECTOR switch (S2), the INPUT level control (VR1), a flat amplifier (Q103), the MPX filter and finally to the Dolby NR processor (pin 15 of HA11226).

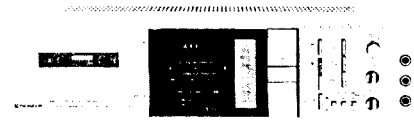
The MIC output signal, on the other hand, is passed to the equalizer/mic amplifier (Q101/Q102) before being passed to the INPUT SELECTOR switch (S2), the INPUT level control (VR1), flat amplifier (Q103), MPX filter switch and Dolby NR processor (pin 15 of HA11226). The Dolby NR processor output (pin 9 of HA11226) is passed to the REC muting circuit (Q104/Q105), recording amplifier (Q106), bias trap and REC/PB head.

- MUTING circuit, MUSIC SEARCH and Mechanism Descriptions are basically the same as those in CT-4. Refer to pages 11 through 21 of the Service Manual (CIRCUIT & MECHANISM DESCRIPTION) <ARP-002-0> for CT-4 and 5.

Service Manual

PIONEER





This photograph is CT-7R.

ORDER NO.
ARP-001-0

STEREO CASSETTE TAPE DECK

CT-7R
CT-6R

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
U.S. PIONEER ELECTRONICS CORPORATION 85 Oxford Drive, Moonachie, New Jersey 07074, U.S.A.
PIONEER ELECTRONIC (EUROPE) N.V. Luithagen-Haven 9, 2030 Antwerp, Belgium
PIONEER ELECTRONICS AUSTRALIA PTY. LTD. 178-184 Boundary Road, Braeside, Victoria 3195, Australia

 Printed in Japan

1. MECHANICAL DESCRIPTIONS

1.1 Mechanism Operation

The various mechanical sections of the recorder are operated using the capstan motor to provide the driving force. The various modes are activated by solenoid L and R, and these are controlled by commands from CPU PD6006.

Both the capstan and reel-motor are direct-drive motors fitted with a Hall sensing element. Reel-motor L and reel-motor R (hereafter called RM L, RM R) are used exclusively for tape take-up in the FF, REW, PLAY, and REC/PLAY modes. The direction of rotation and rotational speed of these motors are controlled by commands from CPU PD6006.

The right side capstan motor is the DD type, and the left side capstan motor is belt-driven by the right side-motor. A sub-rotor acts as the actual capstan. (Refer to Fig. 1-1).

The mechanism forming the right and left-hand side of the unit is essentially symmetrical in configuration, and in forward and reverse (hereafter abbreviated FWD, REV) operations, each side acts together. This description covers the mechanical operations for FWD movement.

■ Basic Operations of the Mechanism

The mechanism assumes three different states: STOP, PAUSE, and PLAY. Consequently, since it can travel in the FWD and REV direction, there are a total of six states possible. There is also a direction operation for switching between FWD and REV travel. Transition between the FWD and REV state will be described using only one example.

When the mechanism, presently in the FWD-PLAY mode, is switched to the REV-PLAY mode, a direction operation is required, then the mechanism will make the transition following the steps listed below. (Refer to Fig. 1-2).

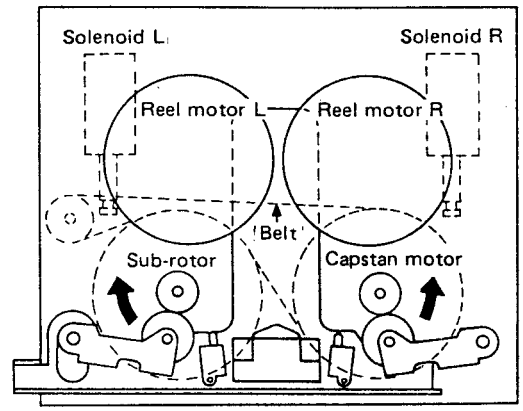


Fig. 1-1 Mechanical construction

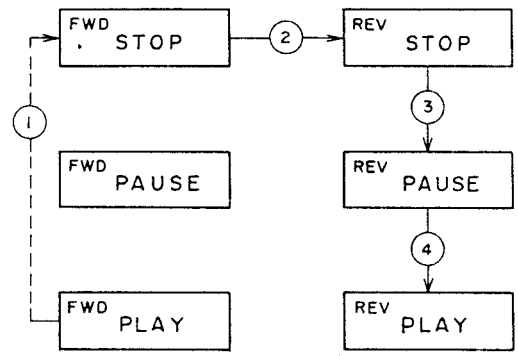


Fig. 1-2 Mechanism mode transition (example)

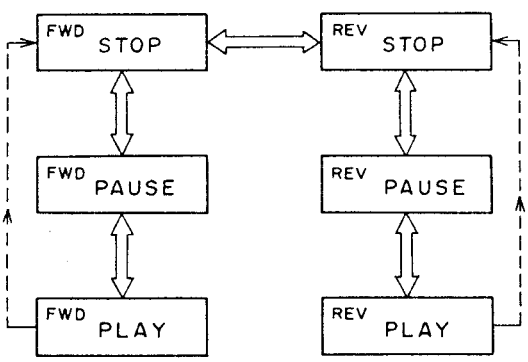
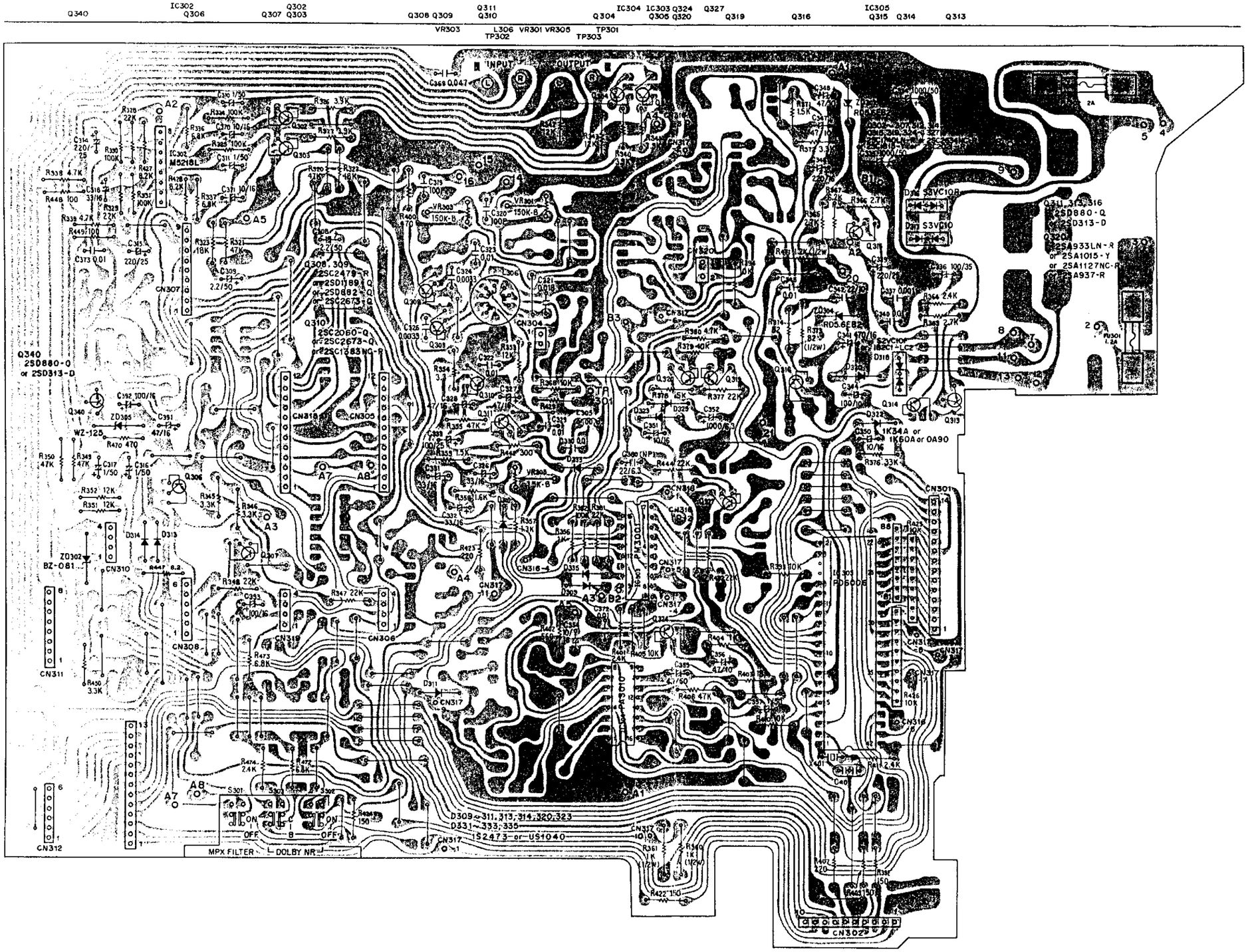
Mechanism Mode Transition Flow	State	Mode
	STOP state	STOP, DIRECTION (DIR)
	PAUSE state	PAUSE, PLAY/PAUSE, REC-PLAY/PAUSE, FF, REW.
	PLAY state	PLAY, REC/PLAY.

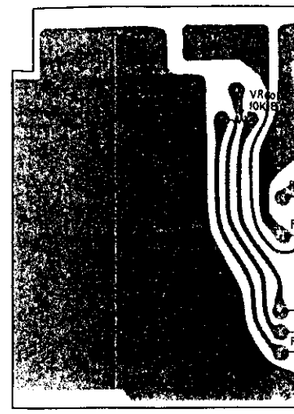
Fig. 1-3 Mechanism mode transition flow and modes

2. P.C. BOARD PATTERNS

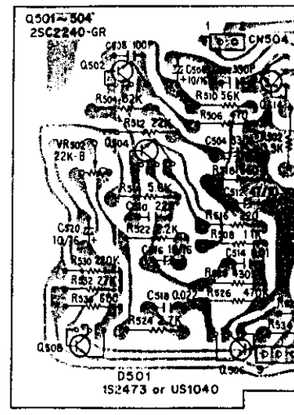
Mother Assembly (RWX-593)



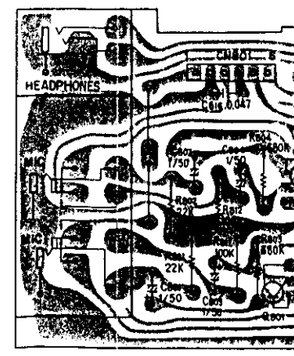
Dolby NR Assembly (RWX-



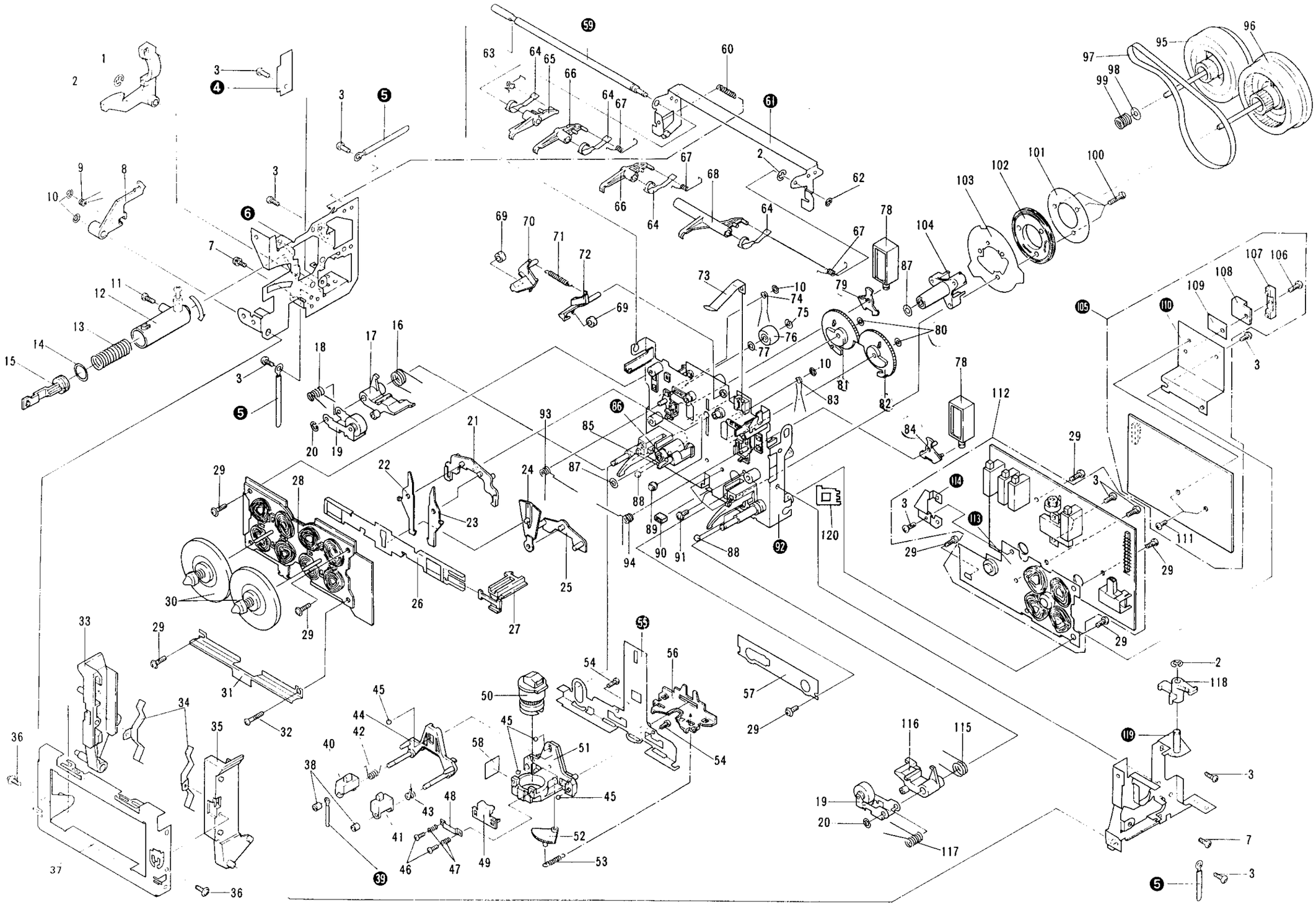
Amplifier Assembly (RWF-1

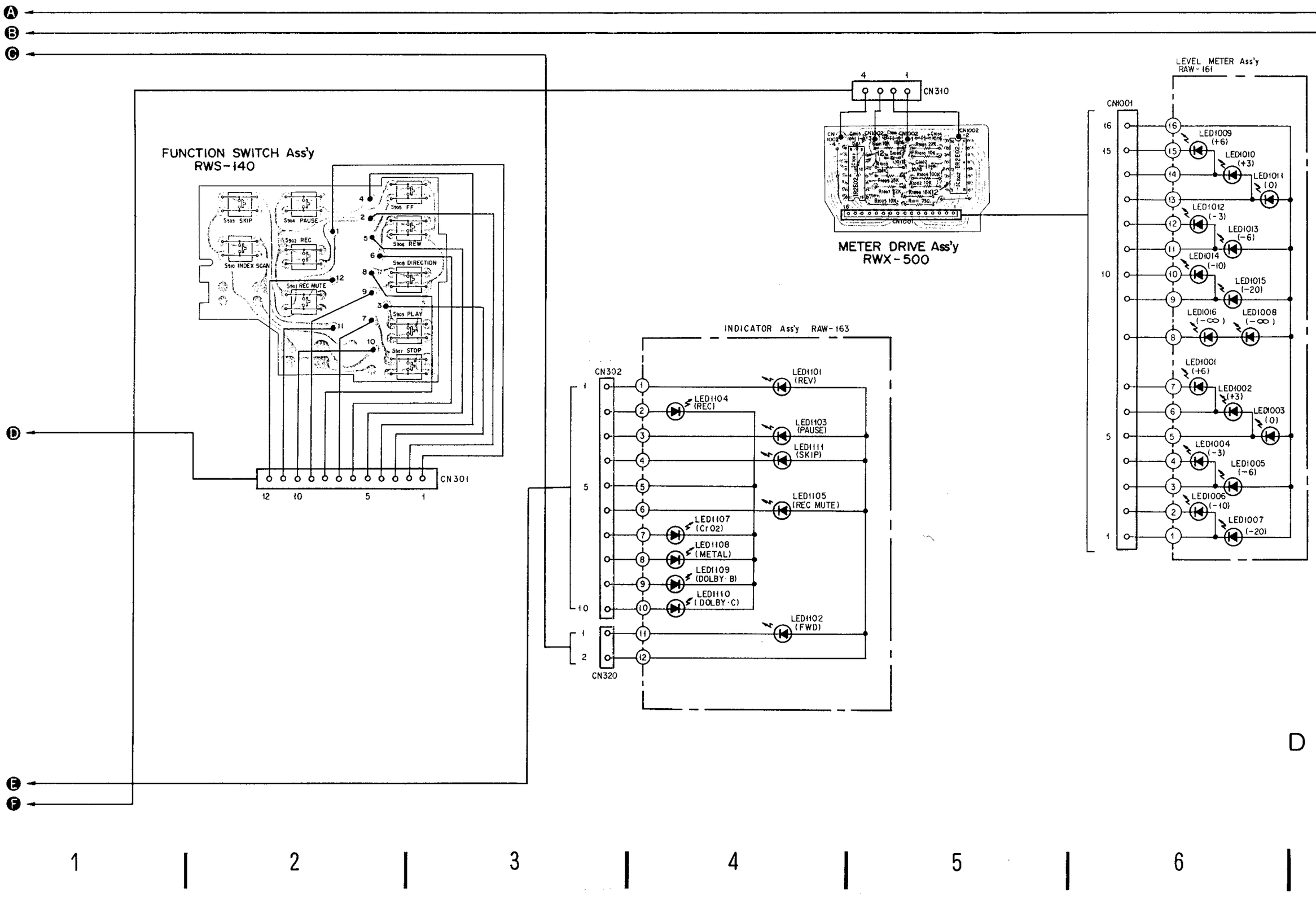


Jack Assembly (RWX-575)



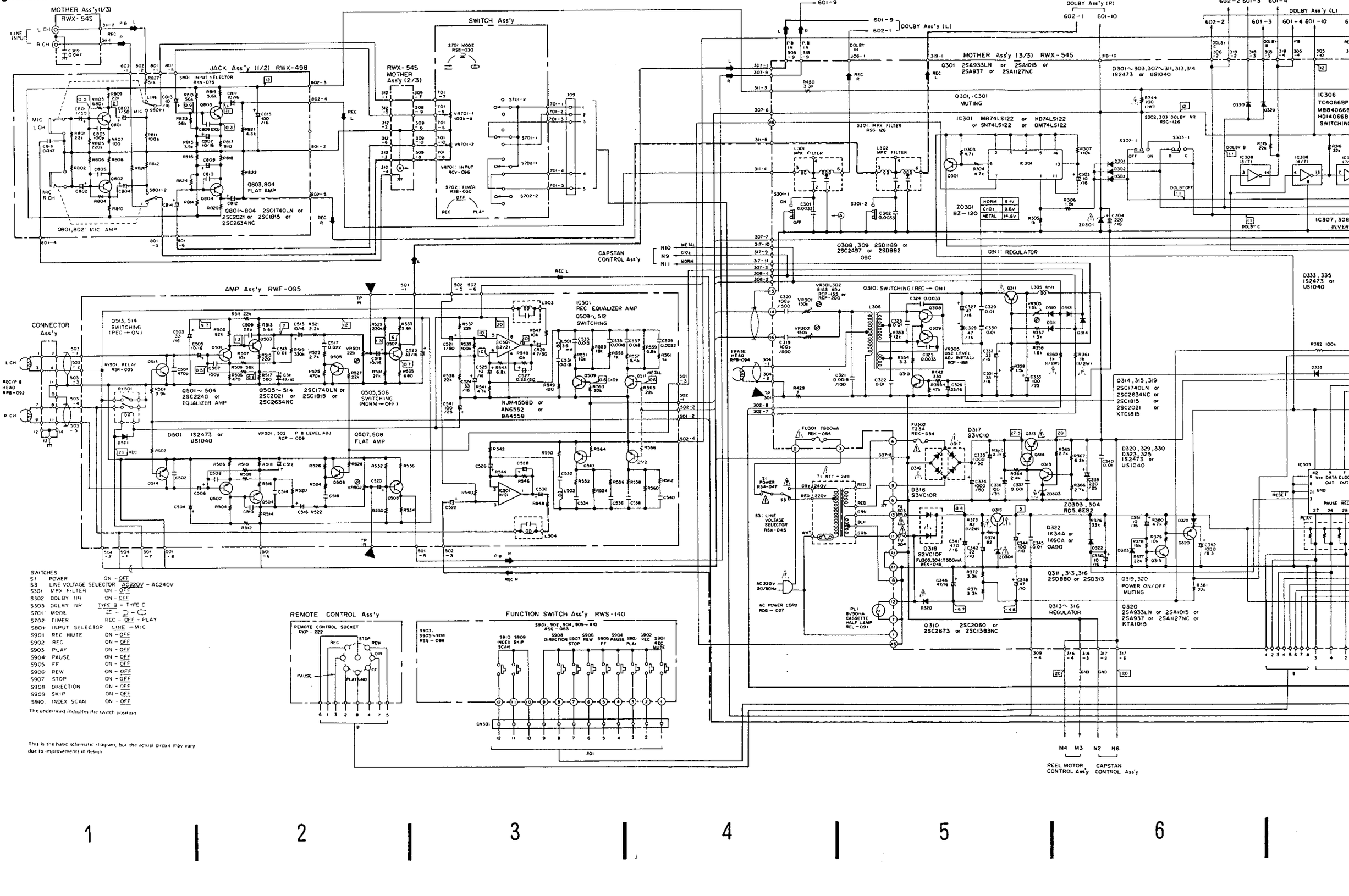
Tape Transport Mechanism RYM-157



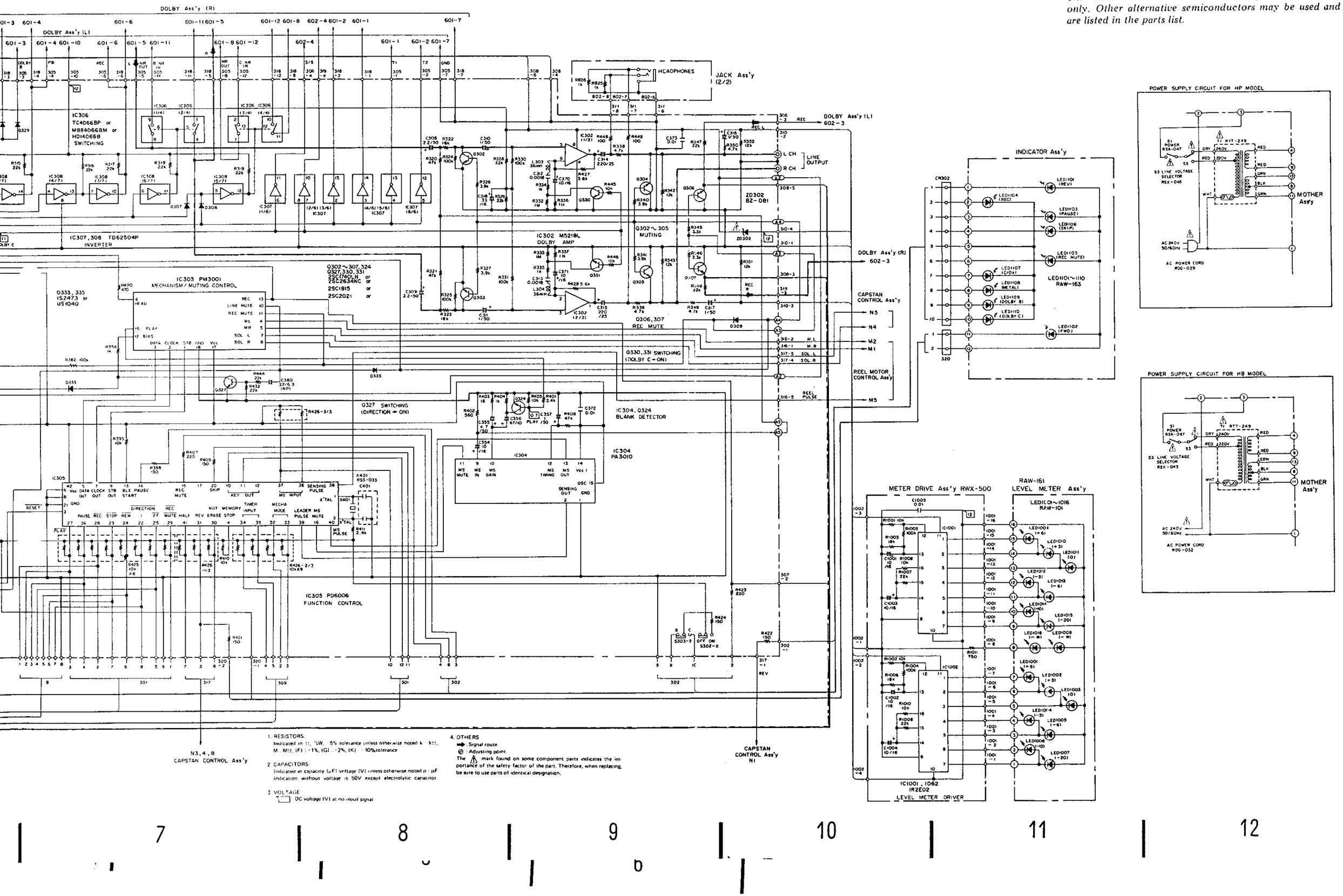

FUNCTION SWITCH Ass'y
RWS-140
S903 SKIP
S904 PAUSE
S905 FF
S902 REC
S906 REW
S910 INDEX SCAN
S908 DIRECTION
S901 REC MUTE
S909 PLAY
S907 STOP
CN301
12
10
5
1
CN310
METER DRIVE Ass'y
RWX-500
INDICATOR Ass'y RAW-163
CN302
LED1101 (REV)
LED1104 (REC)
LED1103 (PAUSE)
LED1111 (SKIP)
LED1105 (REC MUTE)
LED1107 (Cr02)
LED1108 (METAL)
LED1109 (DOLBY·B)
LED1110 (DOLBY·C)
LED1102 (FWD)
CN320
LEVEL METER Ass'y
RAW-161
CN1001
LED1009 (+6)
LED1010 (+3)
LED1011 (0)
LED1012 (-3)
LED1013 (-6)
LED1014 (-10)
LED1015 (-20)
LED1016 (-∞)
LED1008 (-∞)
LED1001 (+6)
LED1002 (+3)
LED1003 (0)
LED1004 (-3)
LED1005 (-6)
LED1006 (-10)
LED1007 (-20)

3. SCHEMATIC DIAGRAM

Signal and Control Section



NOTE:
The indicated semiconductors are representative ones only. Other alternative semiconductors may be used and are listed in the parts list.



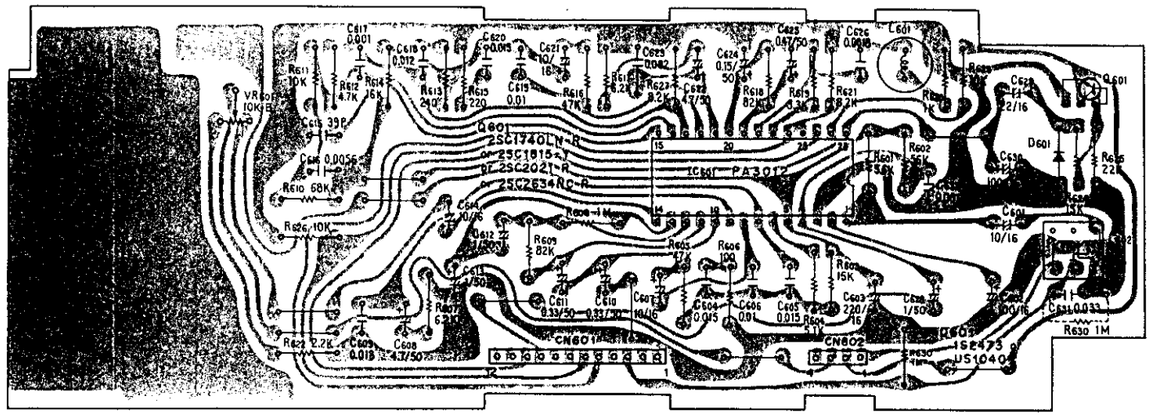
1. RESISTORS
Indicated in Ω, ¼W, ±5% tolerance unless otherwise noted k : kΩ, M : MΩ, (F) : ±1%, (G) : ±2%, (K) : ±10% tolerance

2. CAPACITORS
Indicated in capacity (μF) voltage (V) unless otherwise noted p : pF
Indication without voltage is 50V except electrolytic capacitor.

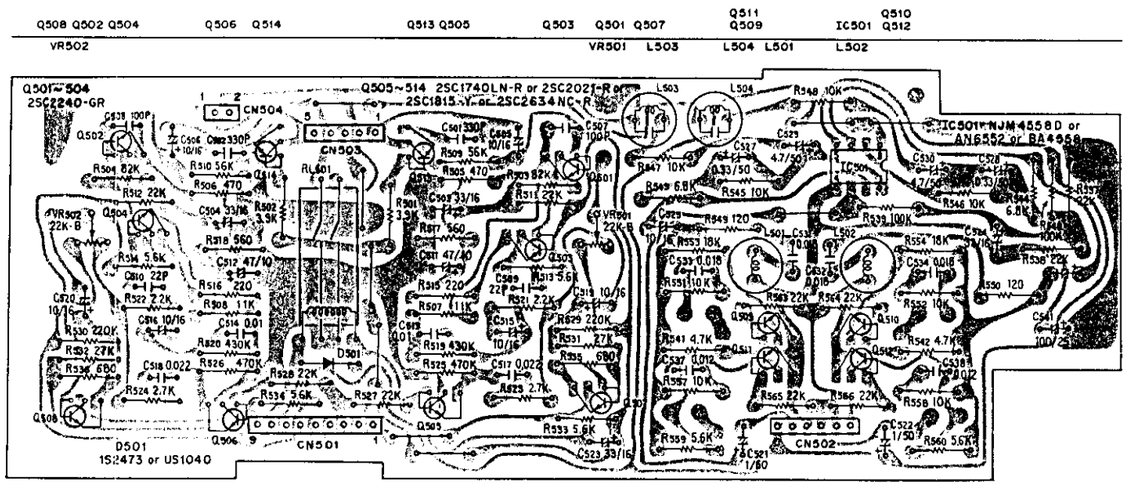
3. VOLTAGE
DC voltage (V) at no input signal

4. OTHERS
➡ : Signal route.
⊛ : Adjusting point.
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

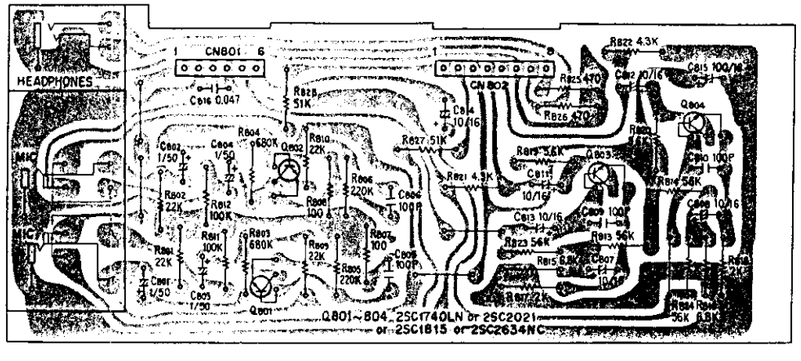
Dolby NR Assembly (RWX-597)

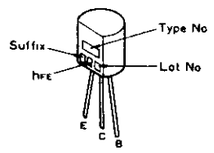
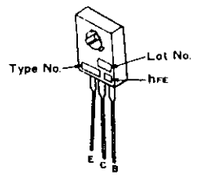
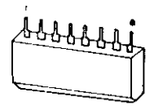
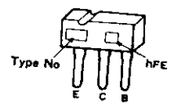
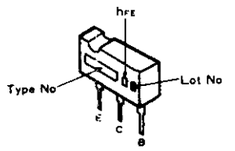
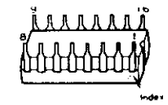
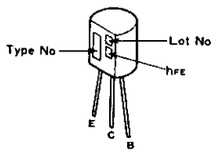
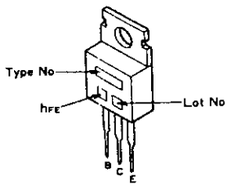
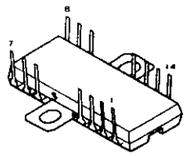
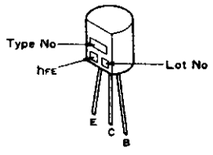
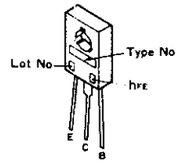
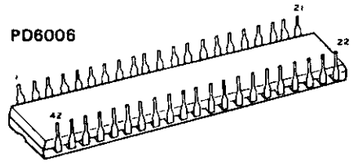
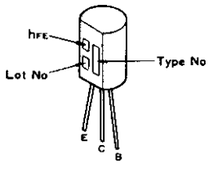
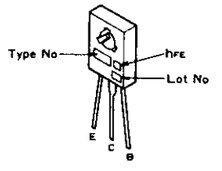
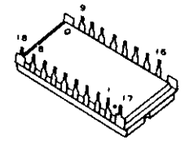
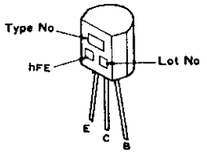
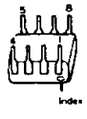
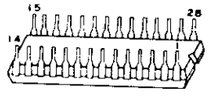


Amplifier Assembly (RWF-105)



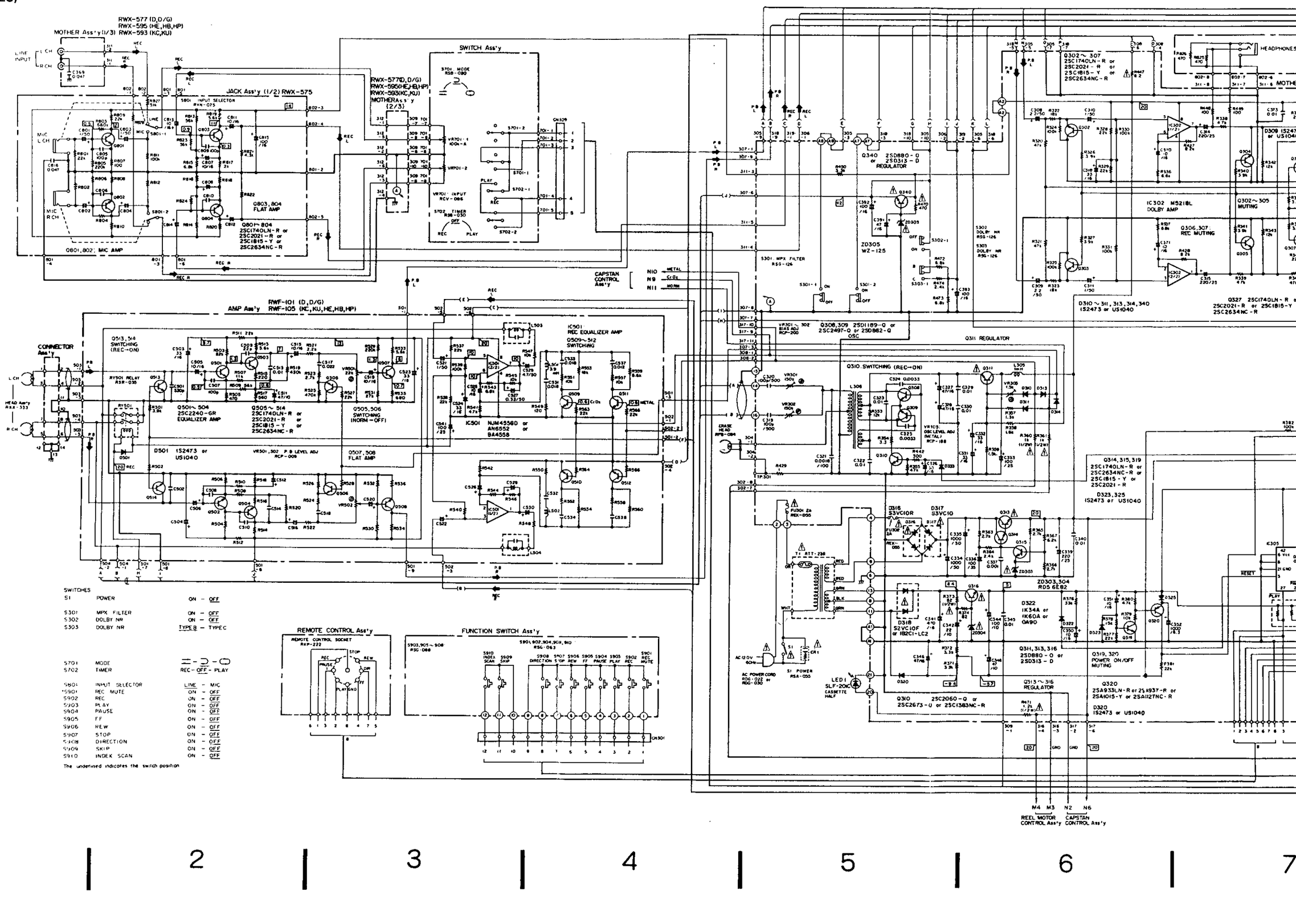
Jack Assembly (RWX-575)



2SA933LN 2SC1740LN		2SC2497		M5218L		A
2SA937 2SC2021		2SC2673		IR2E02 PA2007 PA2009 PA3010		—
2SA1015 2SC1815 2SC2240		2SD313 2SD880		PA2012		B
2SA1127NC 2SC2634NC		2SD882		PD6006		C
2SC1383NC		2SD1189		PM3001		—
2SC2060		AN6552 BA4558 NJM4558D		PA3012		D

3. SCHEMATIC DIAGRAMS

(KU AND KC TYPES)



SWITCHES

S1	POWER	ON - OFF
S301	MPX FILTER	ON - OFF
S302	DOLBY NR	ON - OFF
S303	DOLBY NR	TYPE B - TYPE C
S701	MODE	⇄ - ⊃ - ⊂
S702	TIMER	REC - OFF - PLAY
S801	INPUT SELECTOR	LINE - MIC
*S901	REC MUTE	ON - OFF
S902	REC	ON - OFF
S903	PLAY	ON - OFF
S904	PAUSE	ON - OFF
S905	FF	ON - OFF
S906	REW	ON - OFF
S907	STOP	ON - OFF
S908	DIRECTION	ON - OFF
S909	SKIP	ON - OFF
S910	INDEX SCAN	ON - OFF

The underlined indicates the switch position

NOTE:
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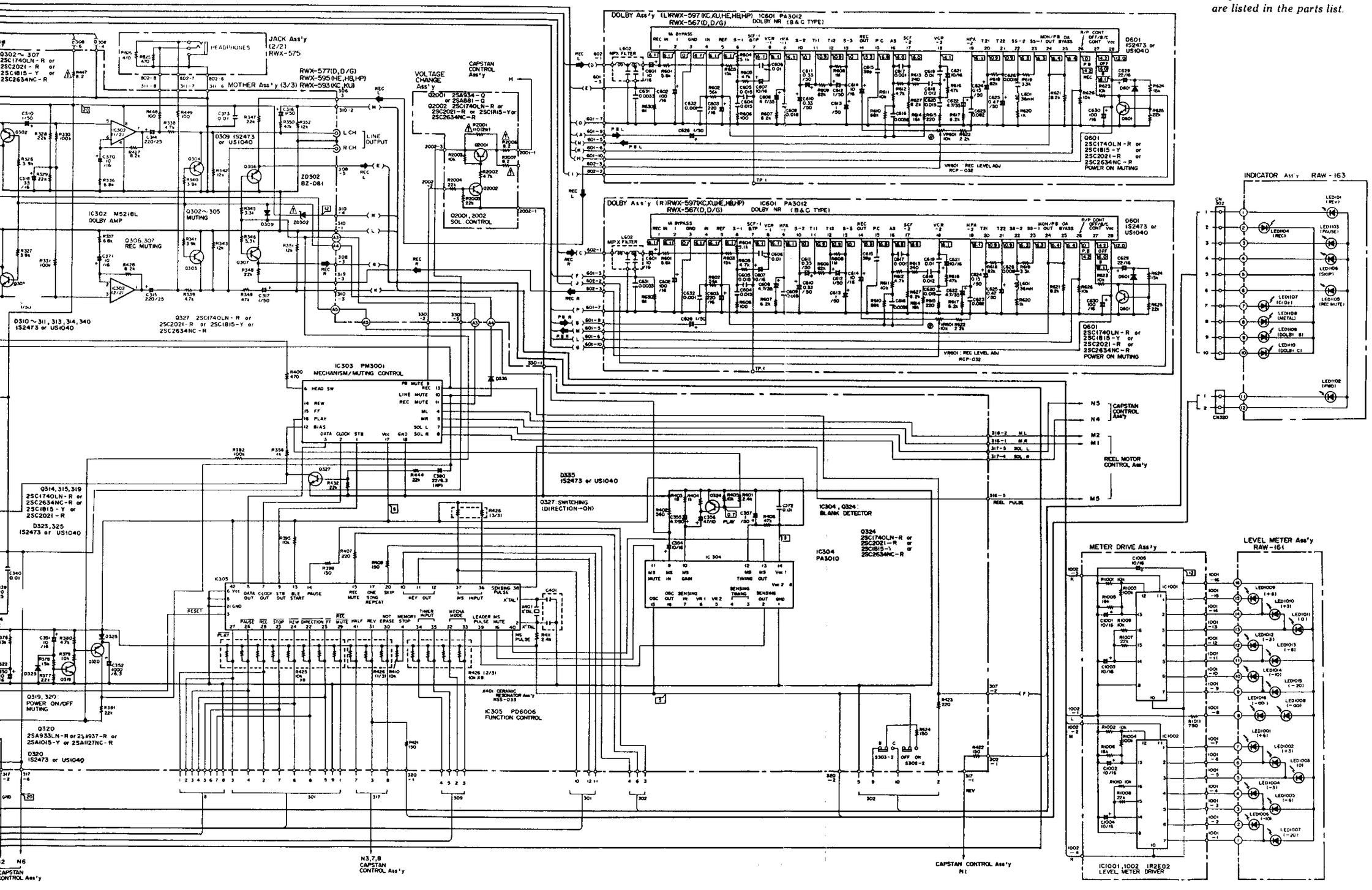
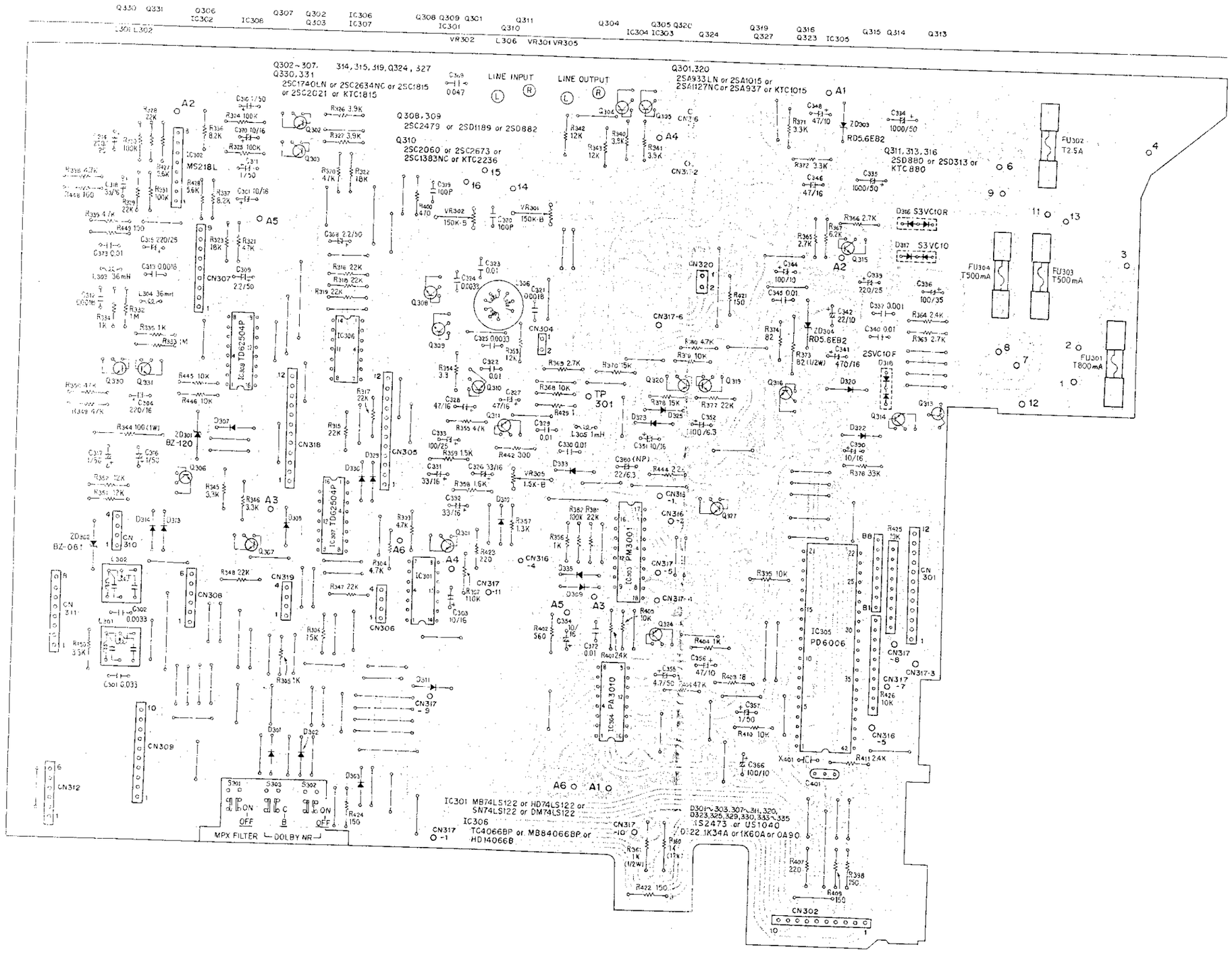
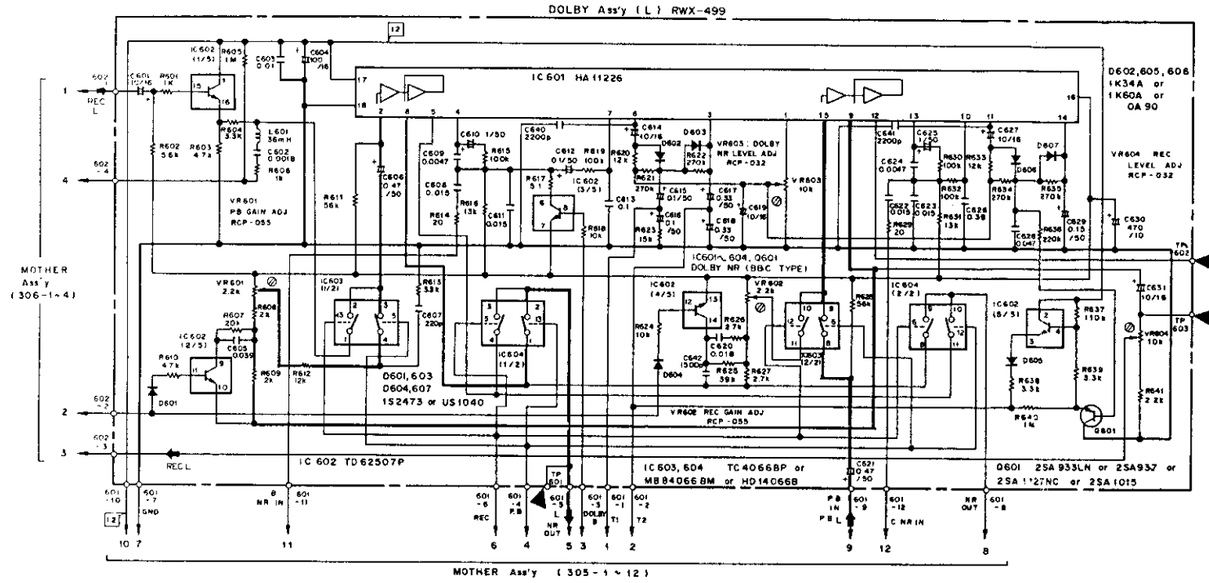
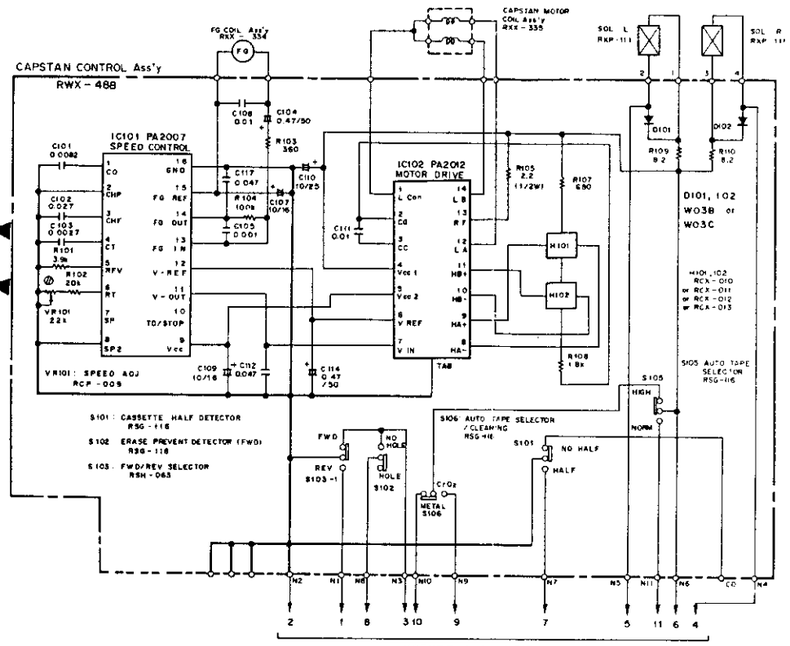


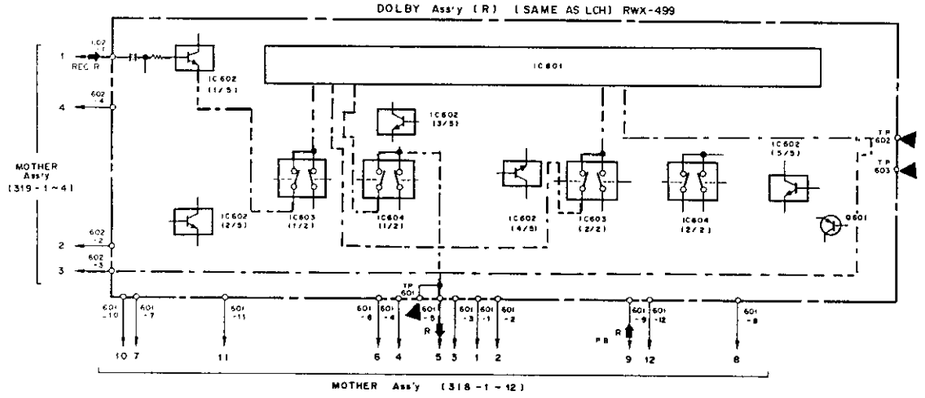
4. MOTHR ASSEBLY(RWX-545)



DOLBY NR and Mother Section







1. RESISTORS
Indicated in Ω, kΩ, MΩ, ±5% tolerance unless otherwise noted K: ±10%, M: ±20%, (F): ±1%, (G): ±2%, (K): 10% tolerance

2. CAPACITORS
Indicated in capacity (μF) voltage (V) unless otherwise noted P: pF
Indication without voltage is 50V except electrolytic capacitor.

3. VOLTAGE
DC voltage (V) at no input signal

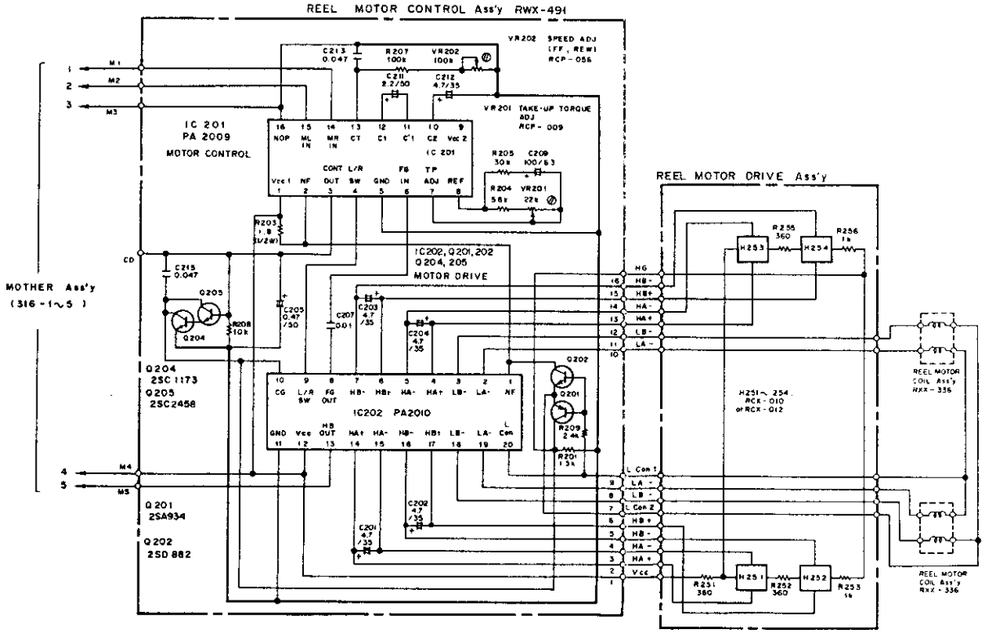
4. OTHERS
Signal route
Adjusting point
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

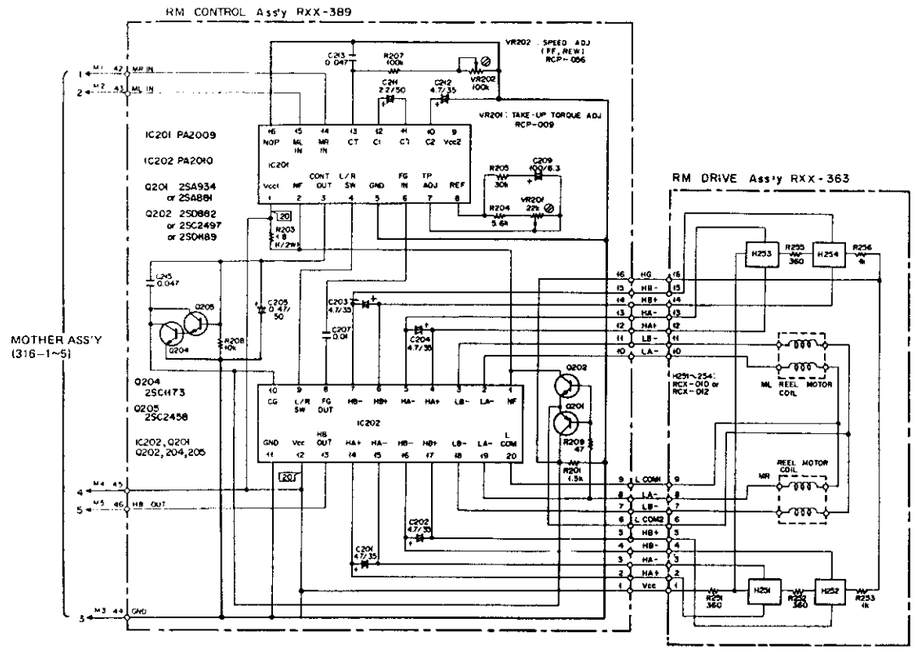
SWITCHES
S101 CASSETTE HALF DETECTOR NO HALF – HALF
S102 ERASE PREVENT DETECTOR (FWD) HOLE – NO HOLE
S103 FWD/REV SELECTOR FWD – REV
S105 AUTO TAPE SELECTOR NORM – HIGH
S106 AUTO TAPE SELECTOR/CLEANING CrO2/ON – METAL/OFF

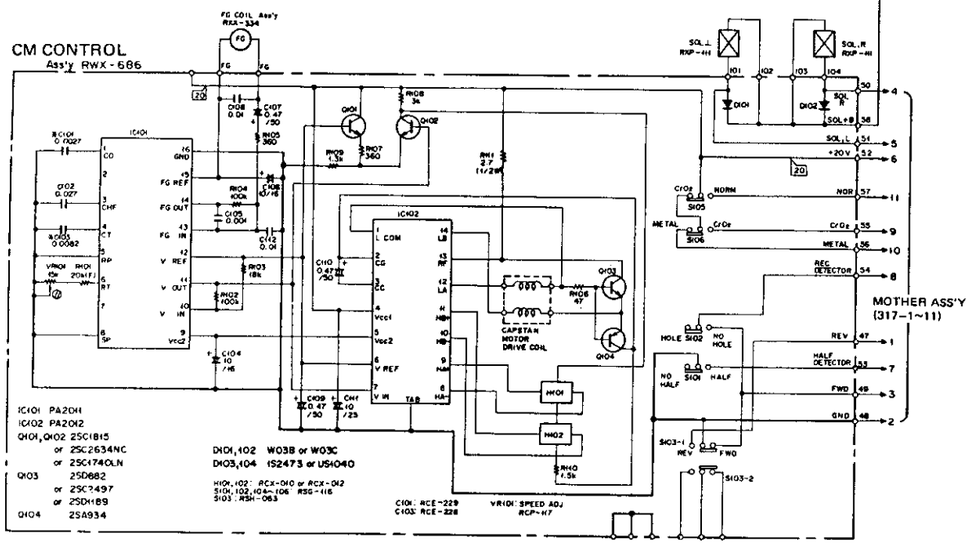
The underlined indicates the switch position.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

NOTE;
Playback signal route ——
Recording signal route — — —







SWITCHES
CM CONTROL Ass'y
S101 CASSETTE HALF DETECTOR NO HALF – HALF
S102 ERASE PREVENT DETECTOR (FWD) NO HOLE – HOLE
S103 FWD/REV SELECTOR FWD – REV
S105 AUTO TAPE SELECTOR NORM – CrO2
S106 AUTO TAPE SELECTOR CrO2 – METAL
The underlined indicates the switch position

RM Full Assembly B (RXX-389)

SEMICONDUCTORS

Mark	Part No.	Symbol & Description
★★	PA2009	IC201
★★	PA2010	IC202
★★	2SA934 (2SA881)	Q201
★★	2SD882 (2SC2497-R) (2SD1189)	Q202
★★	2SC2458	Q205
★★	2SC1173	Q204

CAPACITORS

Mark	Part No.	Symbol & Description
	CEA 4R7M 35	C201, C204, C212
	CEA R47M 50	C205
	CEA 2R2M 50	C211
	CEA 101M 6R3	C209
	CEA 4R7M 35	C202, C203
	CQMA 373K 50	C213
	CKDYF 103Z 50	C207
	CKDYF 473Z 50	C215

RESISTORS

Note: When ordering resistors, convert the resistance value into code from, and then rewrite the part no. as before.

Mark	Part No.	Symbol & Description
★	RCP-009	VR201 Semi-fixed (22k-B)
★	RCP-056	VR202 Semi-fixed (100k-B)
	RD¼PM □□□J	R201, R204, R205, R207, R209
	RD½PS 1R8J	R203

OTHERS

Mark	Part No.	Symbol & Description
	REE-051	Spacer
	RKH-005	Transistor holder
	RBA-026	Screw

RM Assembly (RXX-363)

SEMICONDUCTORS

Mark	Part No.	Symbol & Description
★	RCX-010 (RCX-012)	H251–H254 Hall device A (Hall device C)
★	TLN-104	D251

RESISTORS

Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Part No.	Symbol & Description
	RD¼PM □□□J	R251–R253, R255, R256

CM Control Assembly (RWX-686)

SEMICONDUCTORS

Mark	Part No.	Symbol & Description
★★	PA2011	IC101
★★	PA2012	IC102
★★	2SC1815 (2SC2634NC) (2SC1740LN)	Q101, Q102
★★	2SA934	Q104
★★	2SD882 (2SC2497-R) (2SD1189)	Q103
★	W03B (W03C)	D101, D102
★	RCX-010 (RCX-012)	H101, H102 Hall device A (Hall device C)

SWITCHES

Mark	Part No.	Symbol & Description
★★	RSG-116	S101, S102, S105, S106 Push switch
★★	RSH-063	S103 Slide switch

CAPACITORS

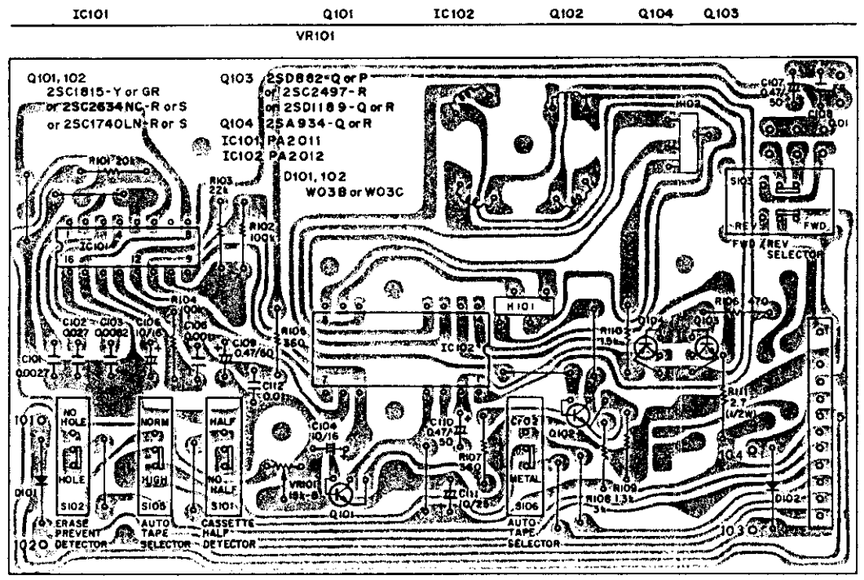
Mark	Part No.	Symbol & Description
	RCE-229	C101 Film (0.0027)
	CEA R47M 50	C107, C109, C110
	CEA 100M 16	C104, C106
	CEA 100M 25	C111
	CQMA 273K 50	C102
	RCE-228	C103 Film (0.0082)
	CKDYF 102Z 50	C105
	CKDYF 103Z 50	C108, C112

RESISTORS

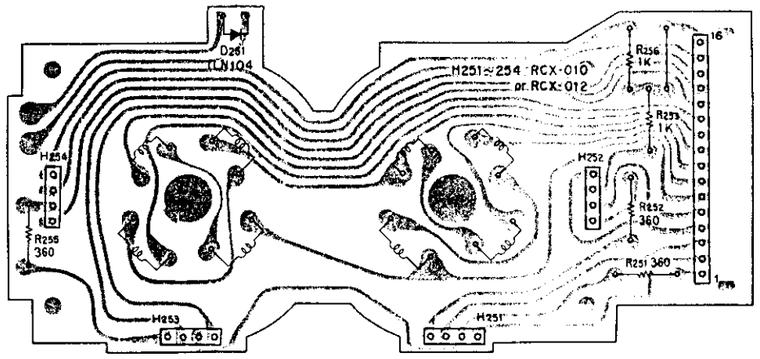
Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Part No.	Symbol & Description
★	RCP-117	VR101 Semi-fixed (15k-B)
	RN¼PQ 203F	R100
	RD¼PS 2R7J	R111
	RD¼PM □□□J	Other resistors

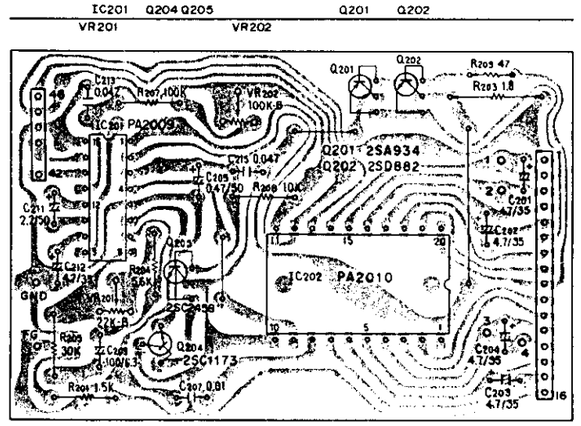
CM CONTROL Ass'y RWX-686



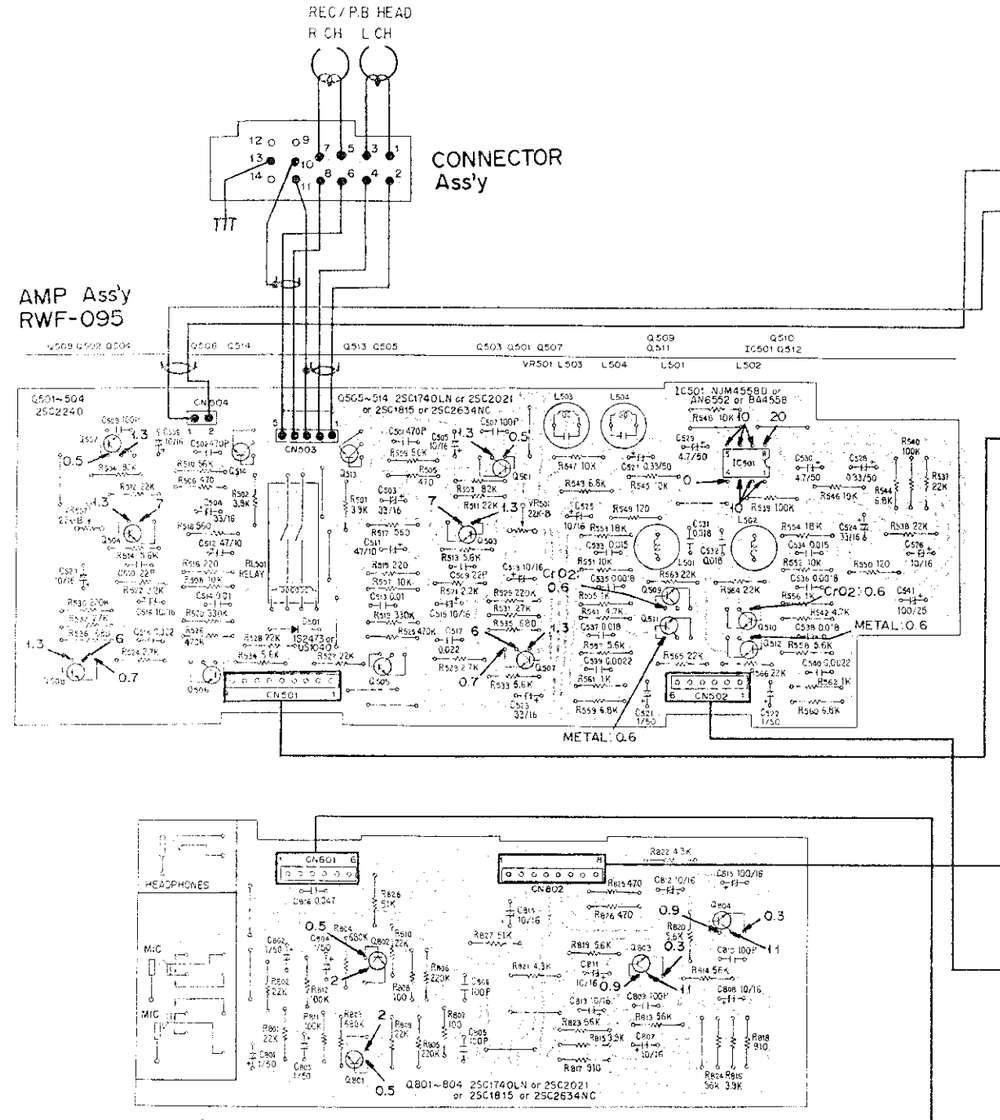
RM DRIVE Ass'y RXX-363



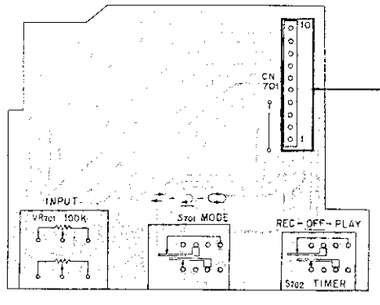
RM CONTROL Ass'y RXX-389

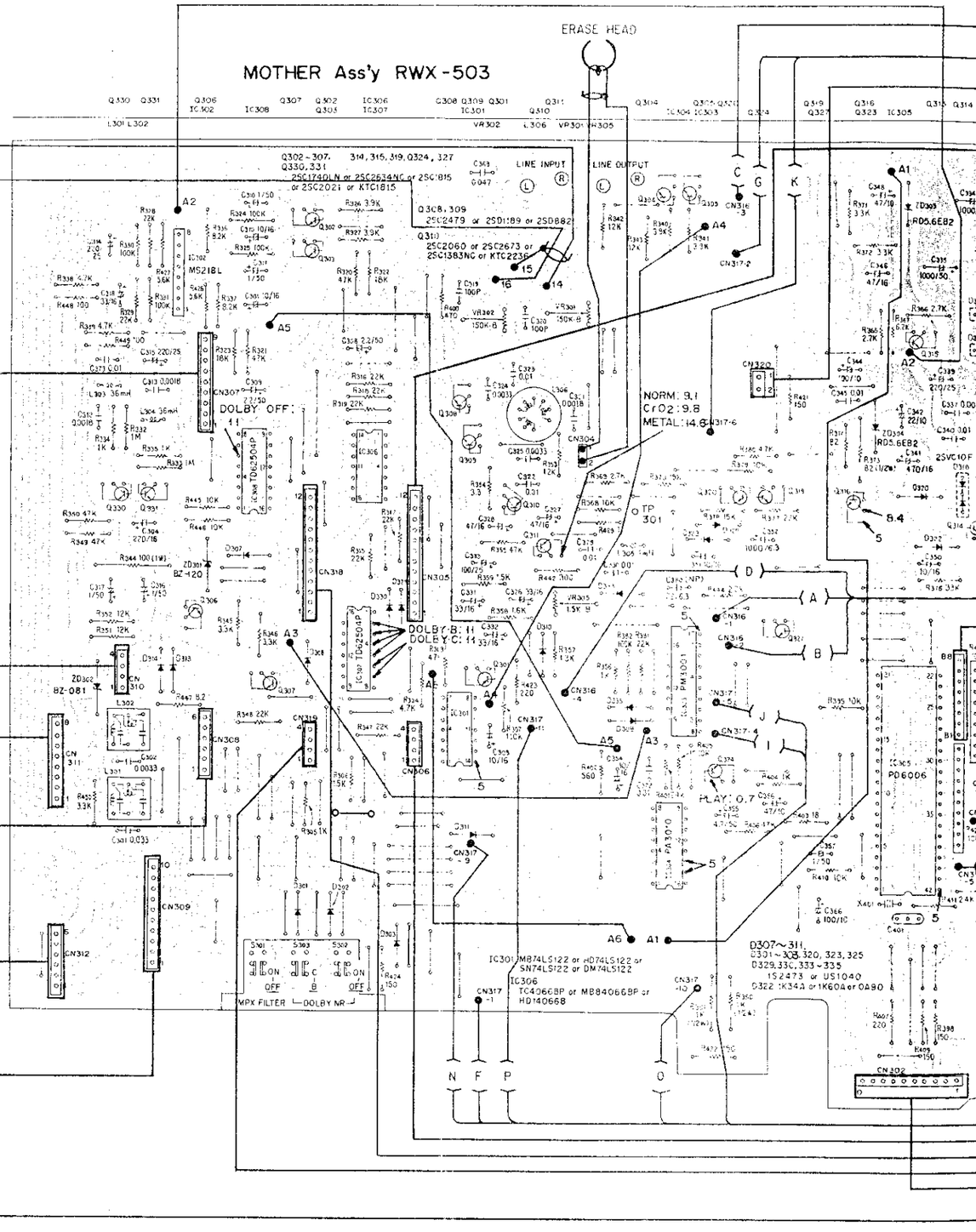


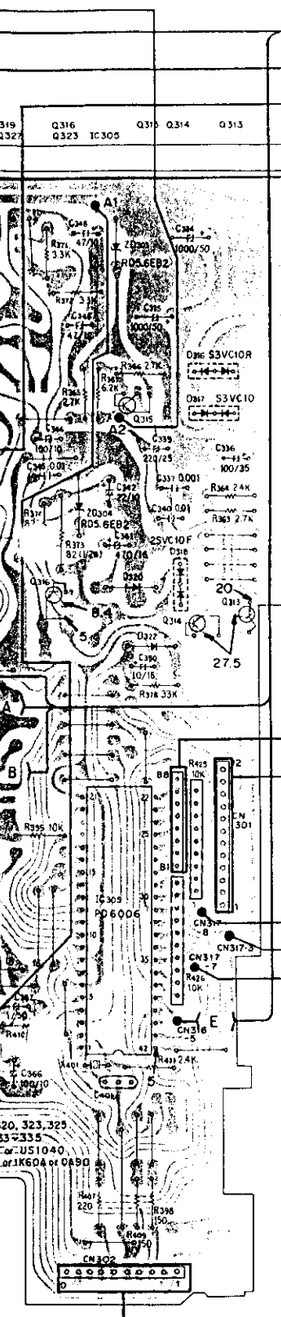
7. P.C. BOARDS CONNECTION DIAGRAM

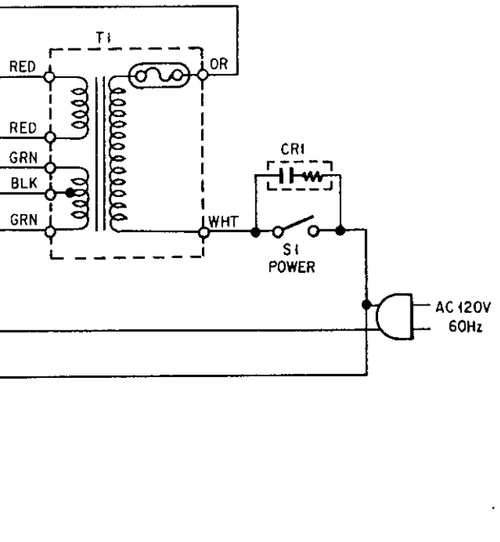


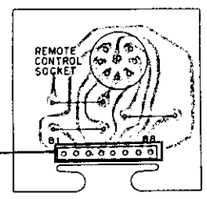
JACK Ass'y RWX-498





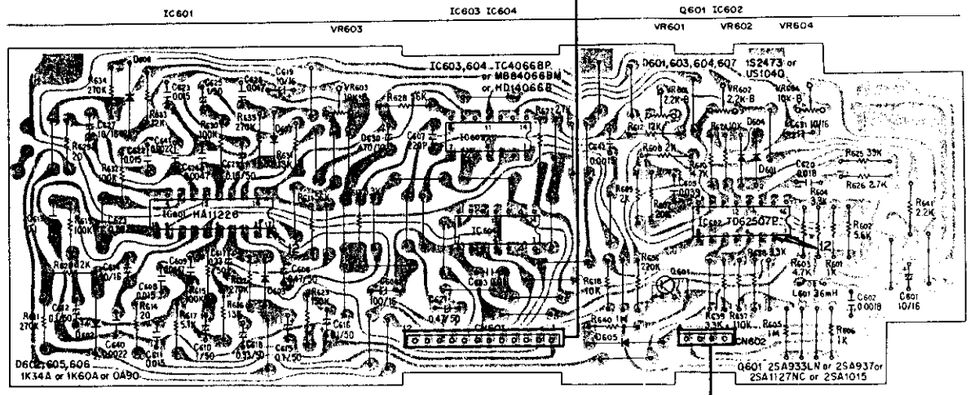


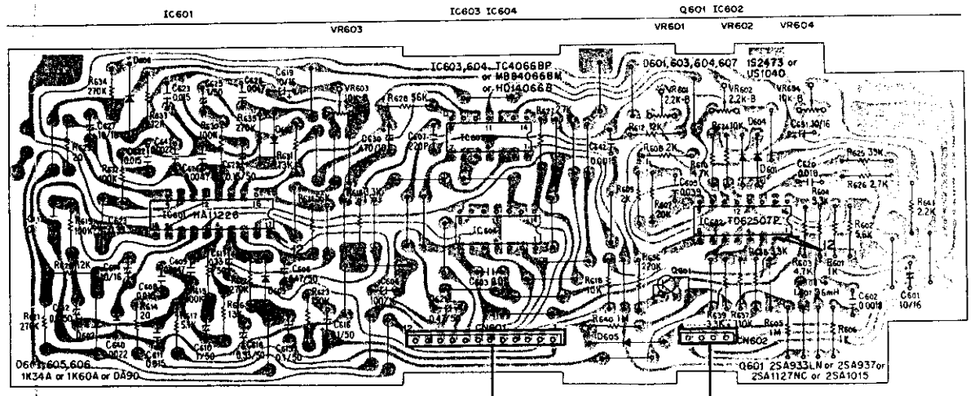




REMOTE CONTROL
Ass'y

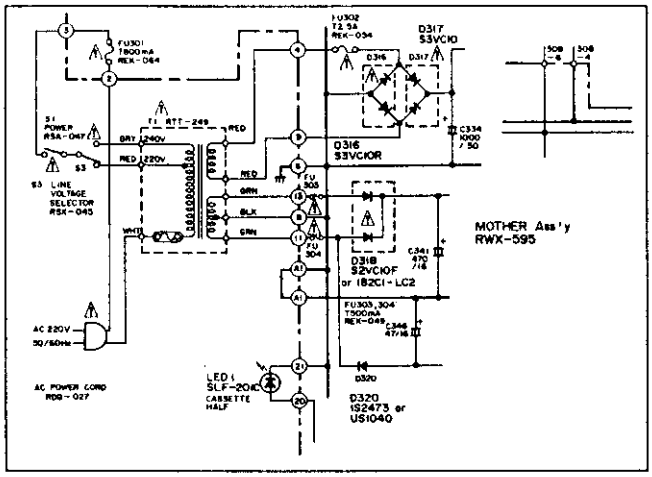
DOLBY Ass'y (L) RWX-499



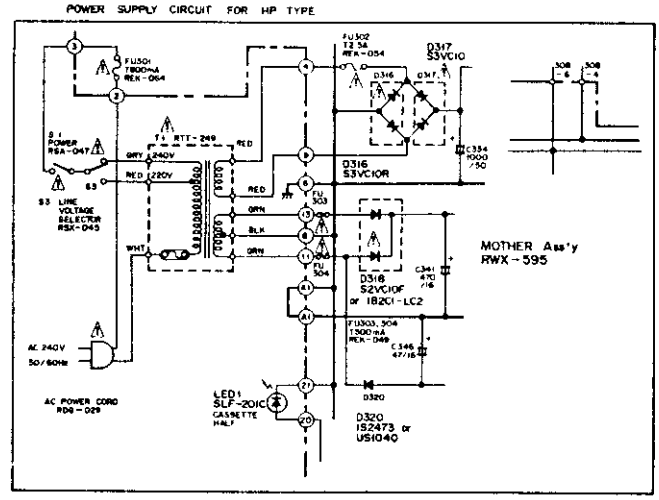


DOLBY Ass'y (R) RWX-499

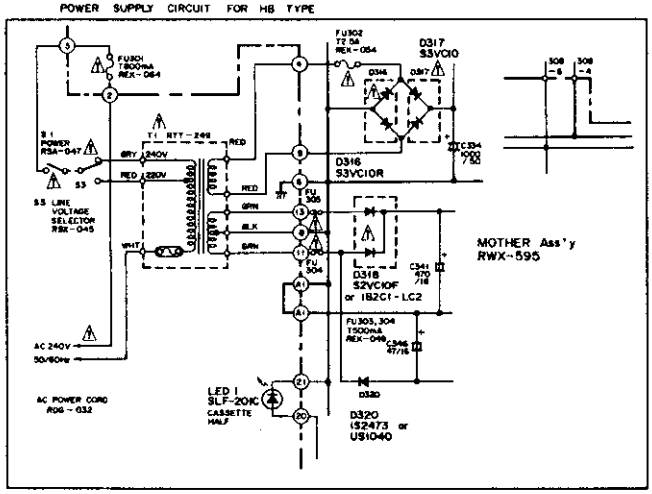
POWER SUPPLY CIRCUIT FOR HE TYPE



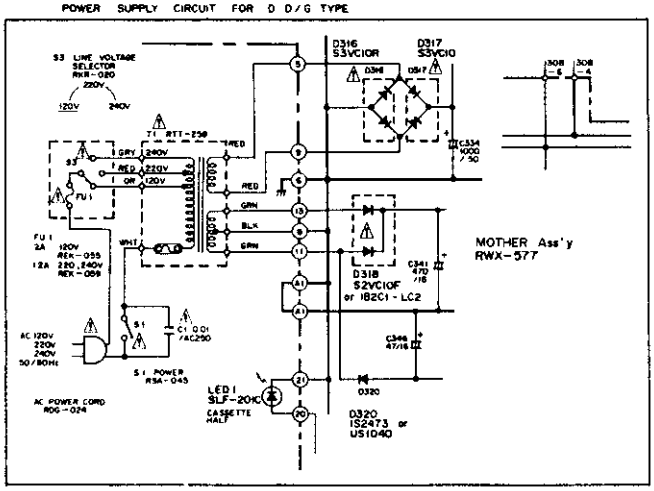
POWER SUPPLY CIRCUIT FOR HP TYPE



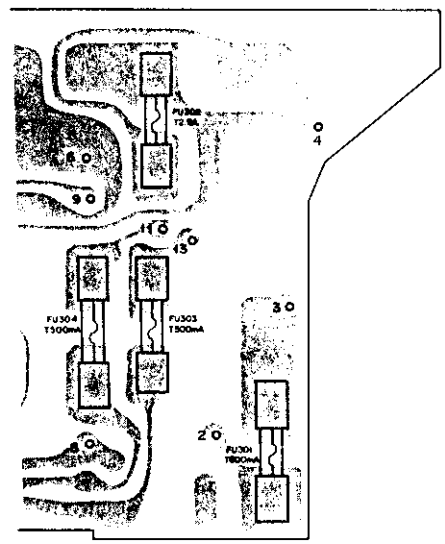
POWER SUPPLY CIRCUIT FOR HB TYPE



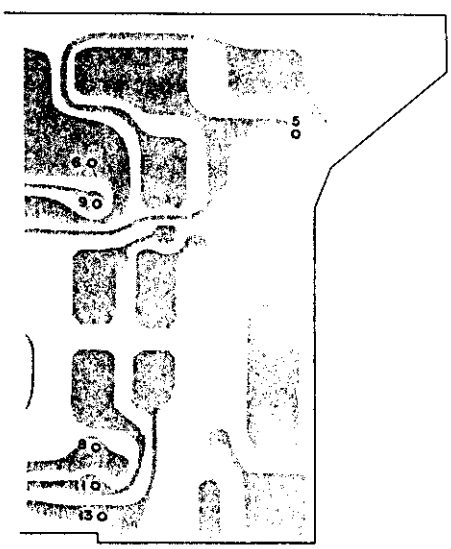
POWER SUPPLY CIRCUIT FOR D D/G TYPE



For HE, HB and HP models (Mother Ass'y)



For D and D/G models (Mother Ass'y)



CT-6R/KU,KC,HE,HB,HP,D,D/G

12. ADJUSTMENTS

12.1 MECHANICAL ADJUSTMENTS

12.1.1 Pinch roller pressure adjustment

1. Set to forward direction, and switch to playback mode without loading a cassette half.
2. Using a tension gauge as shown in Fig. 12-1, gently press against the pinch roller arm. The tension gauge reading should lie between 250g and 400g at the moment that the pinch roller is separated from the capstan, and the capstan stops rotating.
3. If the reading lies outside the above range, replace the pinch roller pressure spring.
4. Set to reverse direction and measure the pinch roller pressure for the pinch roller on the other side in the same way as described above.

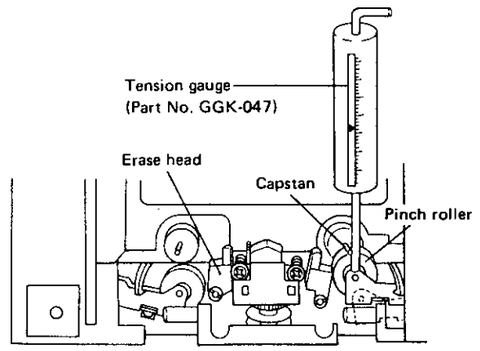


Fig. 12-1 Pinch roller pressure adjustment

12.1.2 Preliminary azimuth adjustment

1. Set to forward direction, and switch to stop mode.
2. Using a screwdriver as shown in Fig. 12-2, adjust gap A between the housing and the revolving base to 1.5mm by turning screw ❶ .
3. Set to reverse direction.
4. Using the screwdriver again, adjust gap B between the housing and the revolving base to 1.5mm by turning screw ❷ .

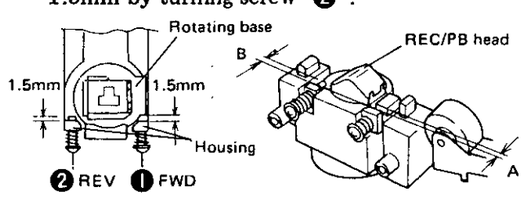


Fig. 12-2 Azimuth adjustment point

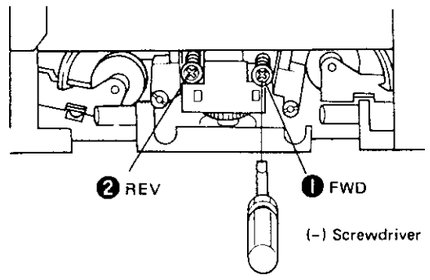


Fig. 12-3 Azimuth preadjustment

12.1.3 Tape travel adjustment

1. Set to forward direction, load a mirror-equipped cassette, and switch to playback mode.
2. Adjust nut ❶ to ensure that no tape curling occurs in the guide section of the recording and erase heads as shown in Fig. 12-4.
3. Set to reverse direction.
4. Adjust nut ❷ to ensure that no tape curling occurs in the guide section of the recording and dummy heads.
5. Check that there is no tape curling during repeated forward and reverse tape travel.

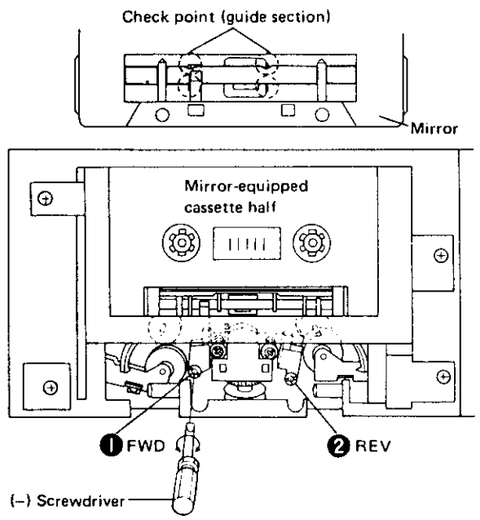


Fig. 12-4 Tape travel adjustment

12.1.4 Fast forward and rewind rotational speed adjustment

1. Connect a frequency counter between the FG and GND terminals on the reel motor control ass'y (see Fig. 12-5).
2. Set to forward direction, and switch to fast forward mode.
3. Adjust the frequency counter reading to 72Hz ±2Hz by means of VR202.
4. Switch to rewind mode, and check that the frequency counter reading lies in the 72Hz ±5Hz range.

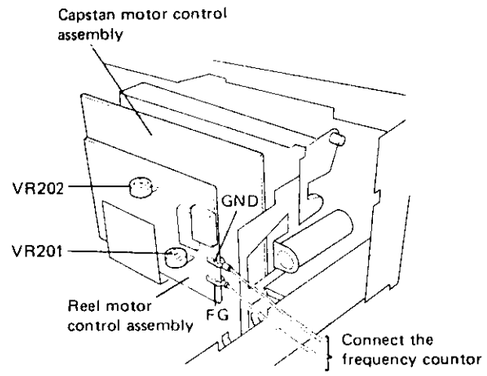


Fig. 12-5 FF/REW Rotating speed adjustment

12.1.5 Playback mode winding torque adjustment

1. Set to forward direction, mount a cassette-type torque meter, and switch to playback mode.
2. Adjust the winding torque to 45g.cm ±5g.cm by VR201.
3. Set to reverse direction.
4. Check that the winding torque is 45g.cm ±10g. cm.

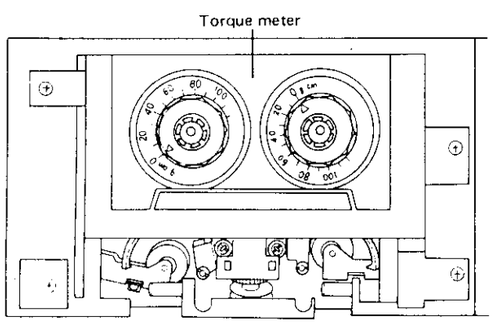


Fig. 12-6 Take-up torque adjustment

12.1.6 Tape speed adjustment

1. Connect the frequency counter to the OUTPUT terminals.
2. Set to forward direction, load a STD-301 test tape wound to the start of the tape, and switch to playback mode.
3. Adjust the frequency counter reading to 3005Hz ±20Hz by VR101.
4. Set to reverse direction, wind the test tape to the start of the tape, and switch to playback mode.
5. Check that the frequency counter reading lies within the 3005Hz ±20Hz range.

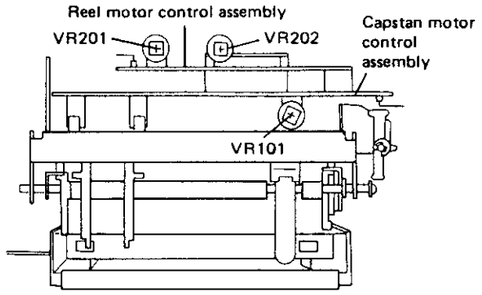


Fig. 12-7 Tape speed adjustment

12.1.7 Fast travel torque check

1. Set to forward direction, mount a cassette-type torque meter, and switch to fast forward mode.
2. Check that the fast forward torque is within the 100g.cm ±30g.cm range.
3. Switch the mode to rewind, and again check that the rewind torque lies within the 100g.cm ±30g.cm range.

12.1.8 Back-tension torque check

1. Set to forward direction, mount a cassette-type torque meter, and switch to playback mode.
2. Check that the supply reel back-tension lies within the 3.5g.cm ±1.5g.cm range.
3. Reverse the direction.
4. Check that the supply reel back-tension again lies within the 3.5g.cm ±1.5g.cm range.

12. RÉGLAGE

12.1 RÉGLAGES MÉCANIQUES

12.1.1 Réglage de la pression du rouleau de serrage

1. Faire marcher le magnétophone en direction avant et commuter le mode de lecture sans insérer de cassette.
2. Pousser doucement contre le bras du rouleau de serrage avec un étalon de tension comme indiqué Fig. 12-1. La lecture doit se situer entre 250 et 400gr. au moment où le rouleau de serrage est séparé du cabestan, et où le cabestan se arrêter à tourner.
3. Si la lecture se situe hors de ces limites, remplacer le ressort de serrage.
4. Faire marcher en direction opposée et mesurer la pression du rouleau de serrage de l'autre côté de la même manière que précedemment.

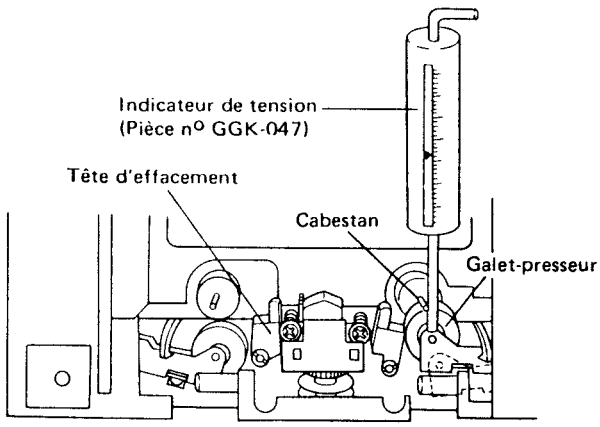


Fig. 12-1 Réglage de la pression du rouleau de serrage

12.1.2 Réglage préliminaire d'azimuth

1. Mettre en marche le magnétophone vers l'avant, en mode d'arrêt.
2. Au moyen d'un tournevis, comme il est montré Fig. 12-2 régler l'intervalle A à 1,5mm. entre le logement et la base tournante, en tournant la vis ❶ .
3. Faire marcher en direction inverse.
4. Au moyen du même tournevis, régler l'intervalle B à 1,5mm entre le logement et la base tournante, en tournant la vis ❷ .

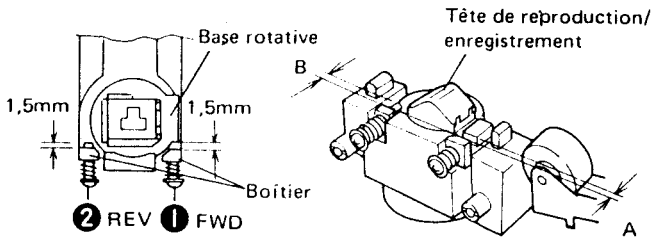


Fig. 12-2 Réglage préliminaire d'azimuth

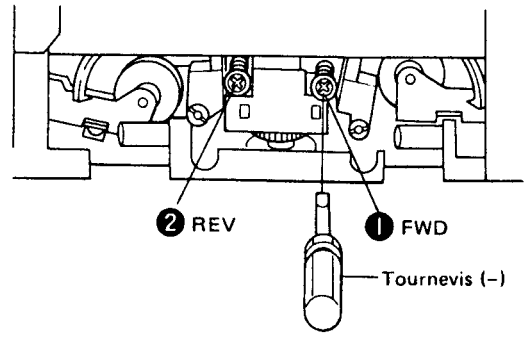


Fig. 12-3 Préréglage d'azimuth

12.1.3 Réglage du défilement de bande

1. Faire marcher en direction avant et insérer une cassette munie d'un mirroir, puis commuter en mode de lecture.
2. Régler l'écrou ❶ pour assurer qu'entre les guides et les têtes d'enregistrement et d'effacement, la bande ne se gondole pas. Voir Fig. 12-4.
3. Faire marcher en direction opposée.
4. Régler l'écrou ❷ pour assurer qu'entre les guides et la tête d'enregistrement et la tête factice, la bande ne se gondole pas.
5. Vérifier qu'il n'y a pas de gauchissement de la bande en répétant plusieure fois le défilement dans les deux sens.

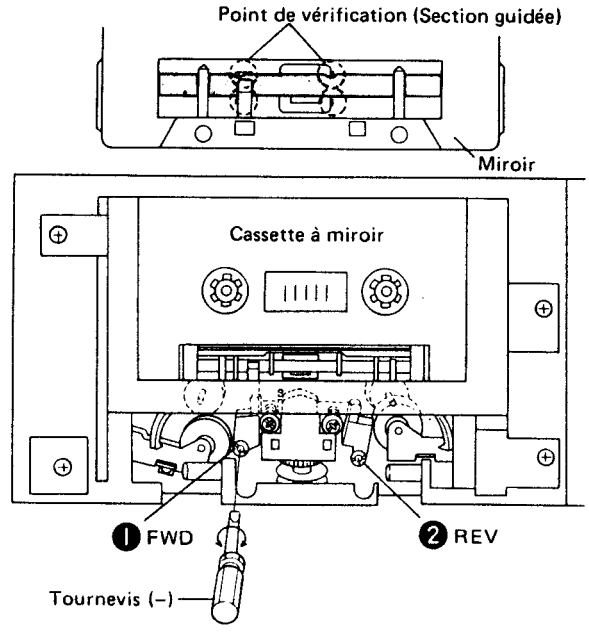
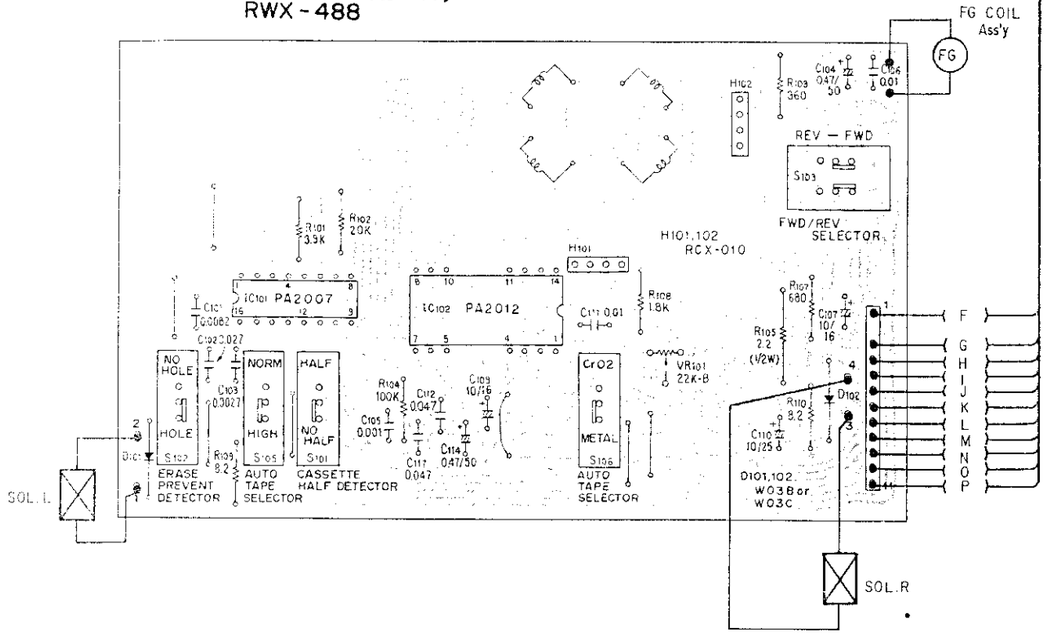
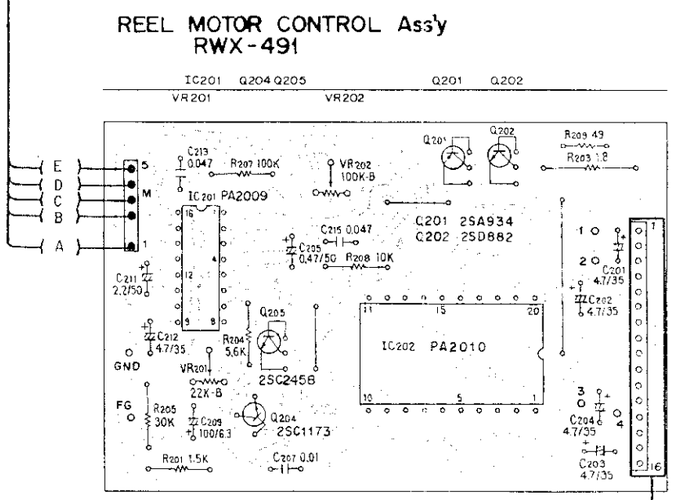


Fig. 12-4 Réglage du défilement de bande

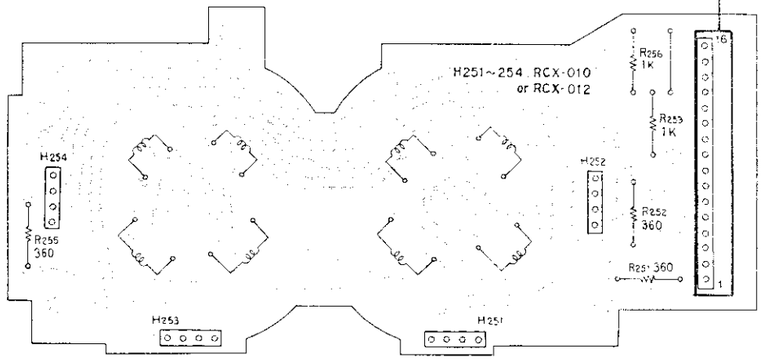
CAPSTAN CONTROL Ass'y RWX-488



REEL MOTOR CONTROL Ass'y RWX-491



REEL MOTOR DRIVE Ass'y



Mechanism viewed from the top

1. As assist gear L rotates, its cam drives the G point of the cam follower lever in an upward direction.
2. As the E point is driven upwards, point F on the right-hand side of the cam follower lever starts forcing the switching plate to the left.
3. As the switching plate is forced to the left, it carries the G point on the coupling plate to the left with it.

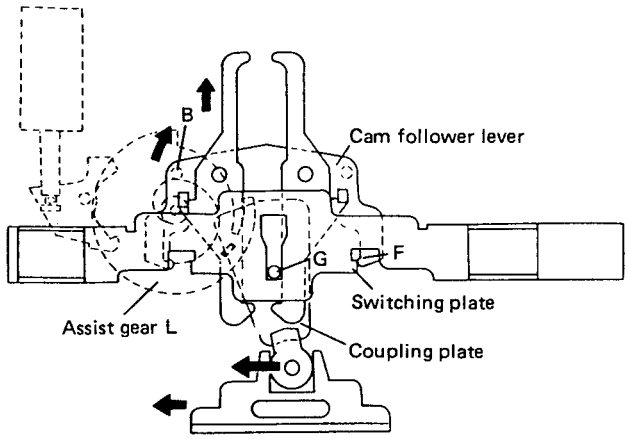


Fig. 1-20 DIRECTION operation 4

4. Since the H point on the coupling plate functions as a support point, as the G point is shifted to the left, the slide plate also moves to the left with the two plates above. This is shown in Fig. 1-21.

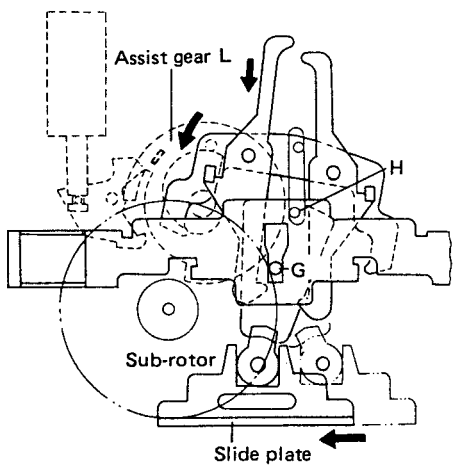


Fig. 1-21 DIRECTION operation 5

5. As the slide plate moves from right to left, the head rotates to the REV direction attitude. (Refer to Fig. 1-23)
6. After assist gear L has turned through about 3/4ths of a revolution, it disengages from the sub-rotor. Spring pressure forces it back to its original state, completing the direction operation, and switching the unit from REV to STOP.

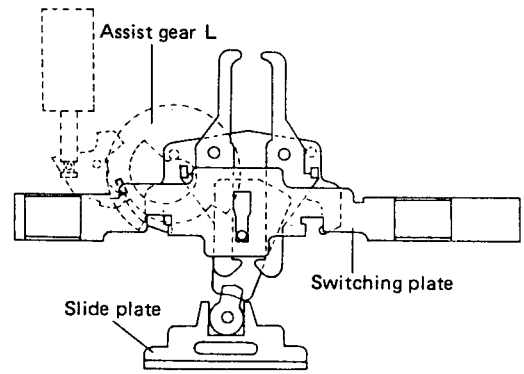


Fig. 1-22 DIRECTION operation 5

4. Head Rotation

As the slide plate moves from right to left in the direction operation (described above), the pin on the sector gear also is forced from right to left. This is shown in Fig. 1-23. As the sector gear pin goes past the center point, the force of the gear spring rotates the sector gear through approximately a 90° angle. This causes the head meshed to sector gear to rotate 180°, placing the unit in a REV state.

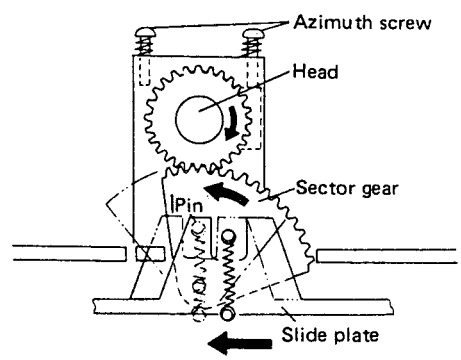


Fig. 1-23 Head rotation operation 1

Direction switch ON

1. Instantaneous transit from FWD-PLAY to FWD-STOP.
2. Approx. 500msec after FWD-STOP entered, dirction operation effects REV-STOP.
3. Approx. 425msec after REV-STOP entered, REV-PAUSE entered.
4. Approx. 325msec after REV-PAUSE entered, REV-PLAY entered, thereby concluding the switching operation.

The above operational flow is also shown using interconnecting arrows in Fig. 1-3. This figure additionally shows other mechanism states possible with the various modes.

Next, the mechanism operation when switching between the various states (in the FWD direction) will be described.

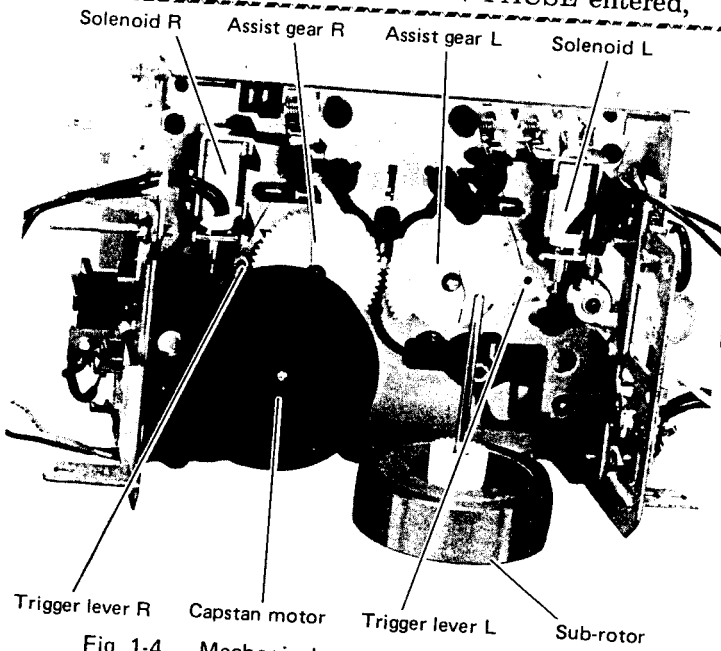


Fig. 1-4 Mechanical construction (Rear view)

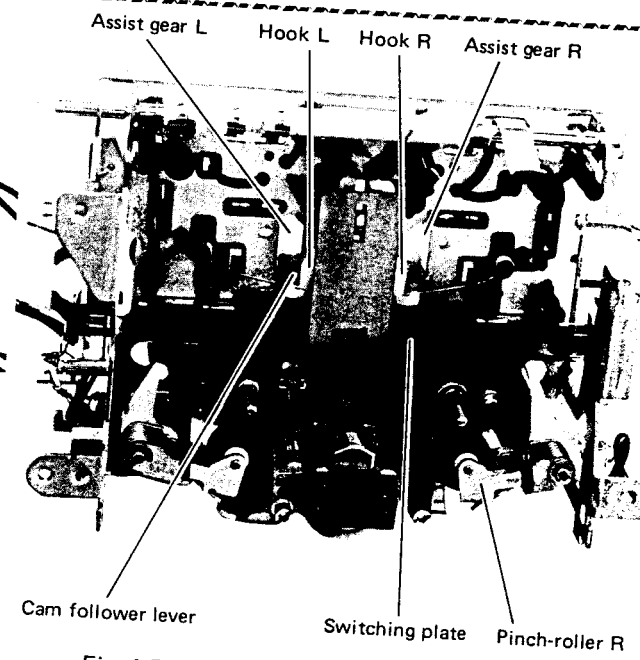


Fig. 1-5 Mechanical construction (Front view)

1. Mechanism Transition from STOP to PAUSE

Mechanism viewed from underneath

1. Upon command transmission from PD6006, solenoid R turns ON (plunger retracted). (Fig. 1-6).)
2. The movement of the solenoid plunger causes the trigger lever R to disengage from the stopper, allowing the assist gear R to turn.
3. Rotation of assist gear R is meshed with the capstan motor.

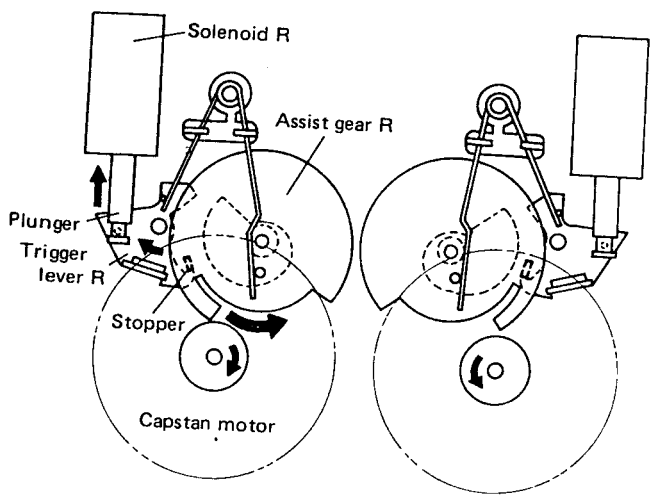


Fig. 1-6 STOP-PAUSE operation 1

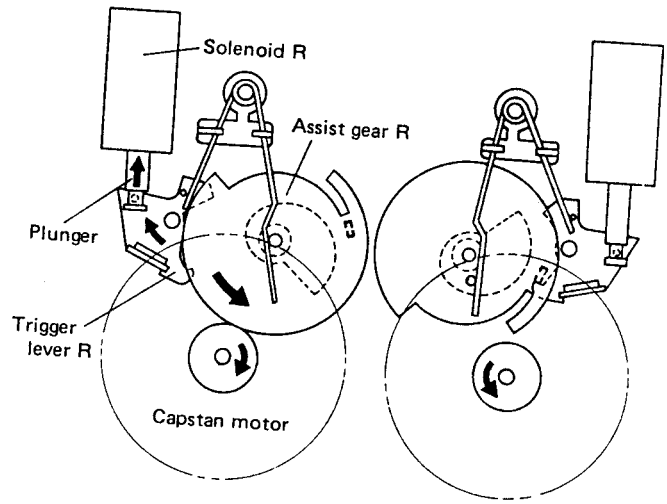


Fig. 1-7 STOP-PAUSE operation 2

4. After assist gear R has turned through about 3/4ths of a revolution, it disengages from the capstan motor.
5. Since solenoid R is in an ON state, the stopper on assist gear R contacts trigger lever R at point A, and stops. The above series of operations covers the events occurring on the backside of the mechanism. Next, the operations occurring simultaneous to the above, but as viewed from the top of the unit will be given.

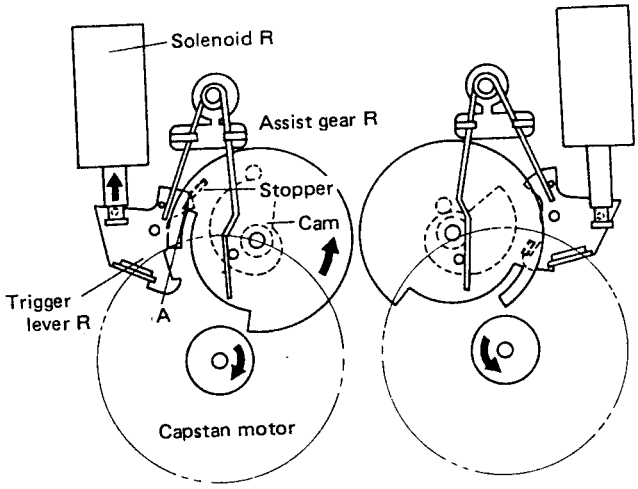


Fig. 1-8 STOP-PAUSE operation 3

Mechanism viewed from the top

1. As assist gear R rotates, its cam drives the B point of the cam follower lever in an upward direction.

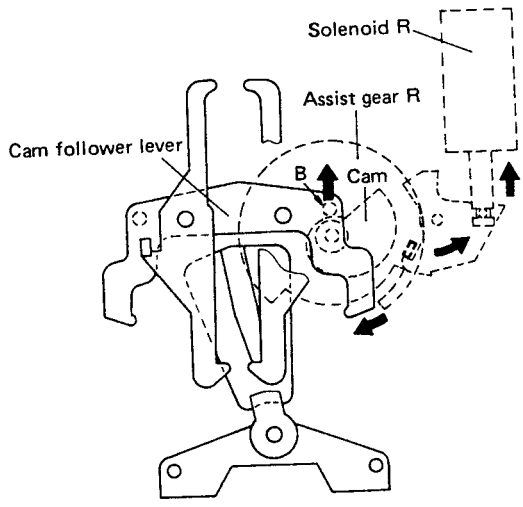


Fig. 1-9 STOP-PAUSE operation 4

2. As the B point is raised, hook R (coupled to B point) is also raised.
3. At point C, hook R catches the coupling plate and continues to rise, carrying the coupling plate and pinch-roller drive-plate with it.
4. The pinch-roller drive-plate continues to rise until the pinch-roller goes into a PAUSE status, then stops.

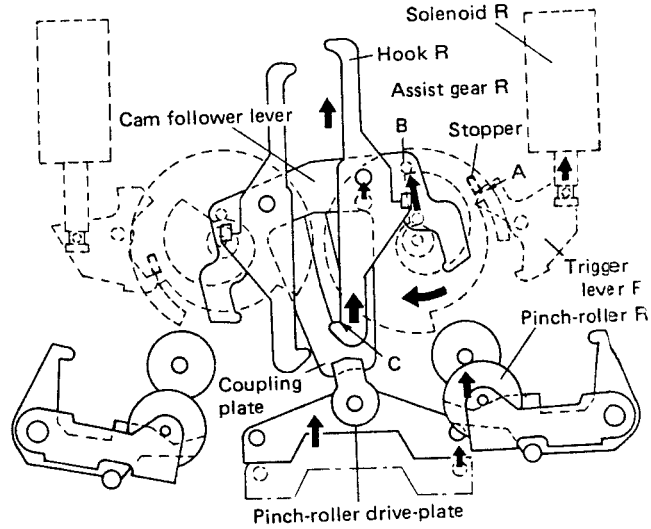


Fig. 1-10 STOP-PAUSE operation 5

2. Mechanism Transition from PAUSE to PLAY

Mechanism viewed from underneath

Solenoid R is presently ON, and the mechanism is in a PAUSE state.

1. Upon command transmission from PD6006, solenoid L turns ON (plunger retracted).
2. The movement of the solenoid plunger causes the trigger lever L to disengage from the stopper, allowing assist gear L to start turning.

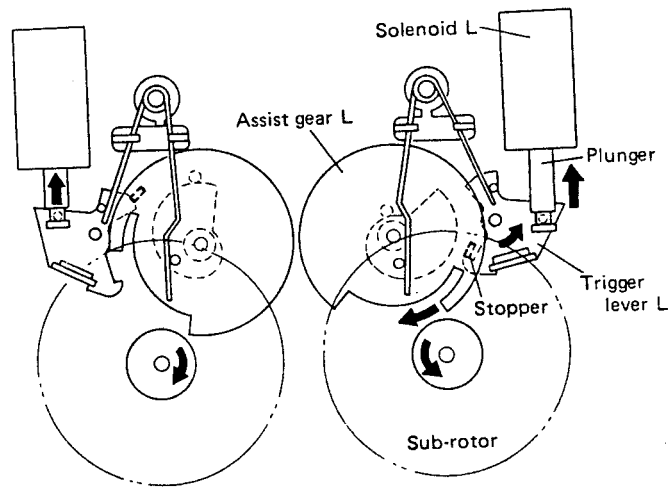


Fig. 1-11 PAUSE-PLAY operation 1

3. Rotation of assist gear L is meshed with the sub-rotor.

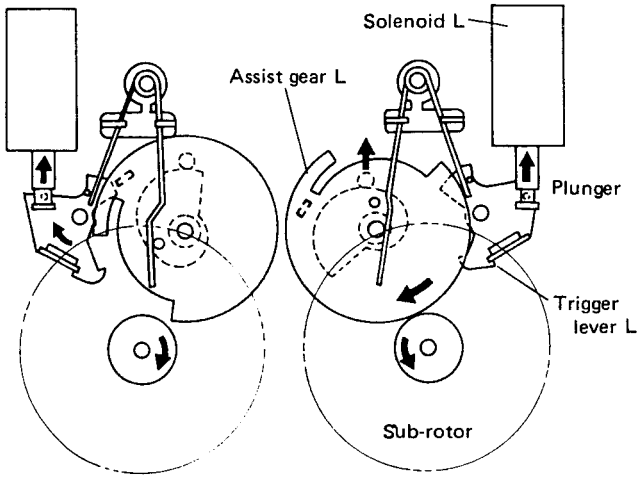


Fig. 1-12 PAUSE-PLAY operation 2

4. After assist gear L has turned through about 3/4ths of a revolution, it disengages from the sub-rotor.
5. Since solenoid L is in an ON state, the stopper on assist gear L contacts trigger lever L at point D, and stops.

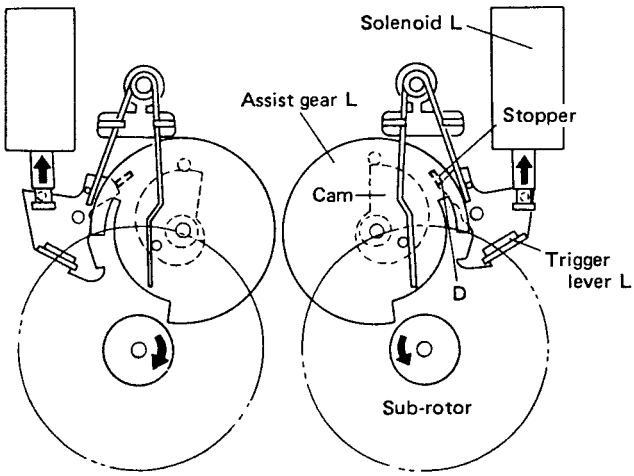


Fig. 1-13 PAUSE-PLAY operation 3

Mechanism viewed from the top

1. As assist gear L rotates, its cam drives the E point of the cam follower lever in an upward direction.
2. As the E point is raised, hook L (coupled to E point) is also raised.

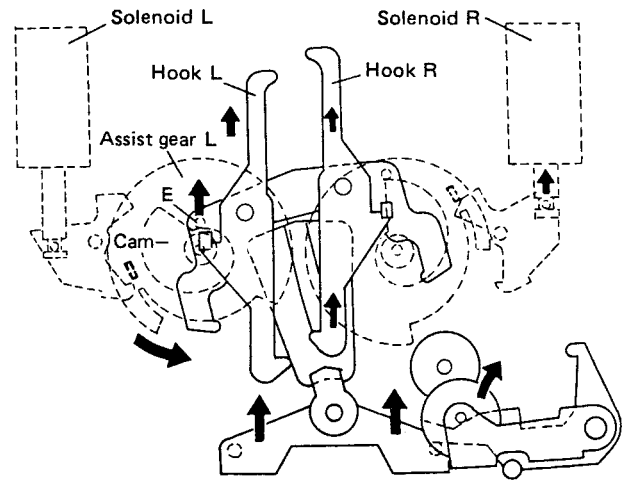


Fig. 1-14 PAUSE-PLAY operation 4

3. When point E reaches the same height as point B, it stops. The head and pinch-roller at this point is shown in Fig. 1-15. Here, since the E point has reached the same height as the B point, the X point rises higher than that of the PAUSE status. Consequently, the head makes contact with the tape, and the tape is pinched between pinch-roller R and the capstan shaft, completing PLAY mode entry.

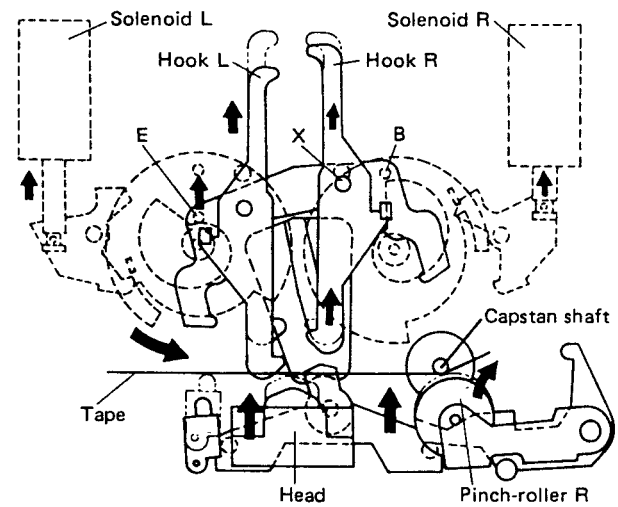


Fig. 1-15 PAUSE-PLAY operation 5

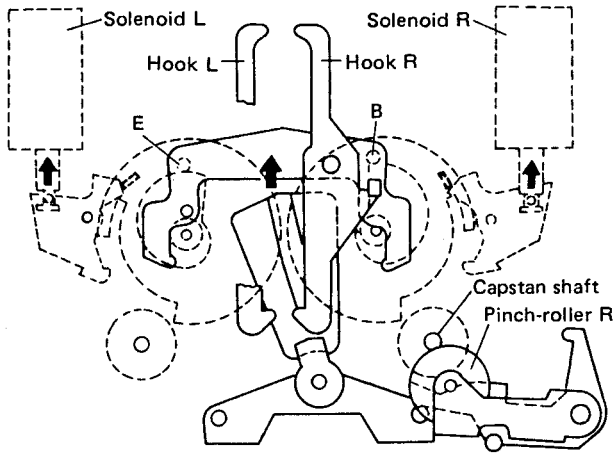


Fig. 1-16 PAUSE-PLAY operation 6

3. Direction Operation

Mechanism viewed from underneath

Mechanism is presently in STOP status

1. Upon command transmission from PD6006, solenoid L turns ON (plunger retracted).
2. The movement of the solenoid plunger causes the trigger lever L to disengage from the stopper, allowing assist gear L to start turning.

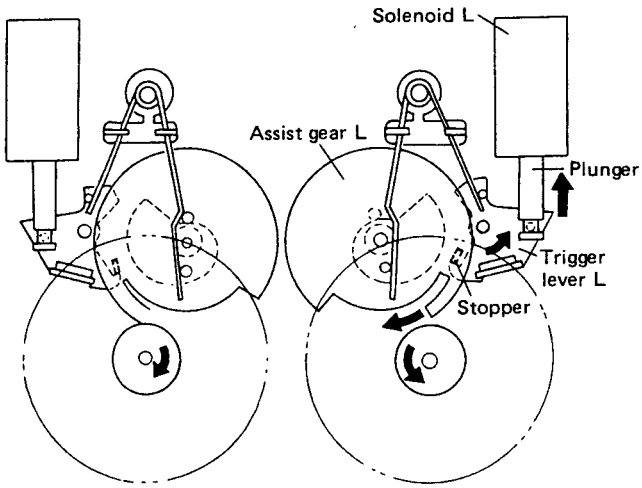


Fig. 1-17 DIRECTION operation 1

3. Solenoid L then goes OFF, returning trigger lever L to it's original position.
4. Rotation of assist gear L is meshed with the sub-rotor.

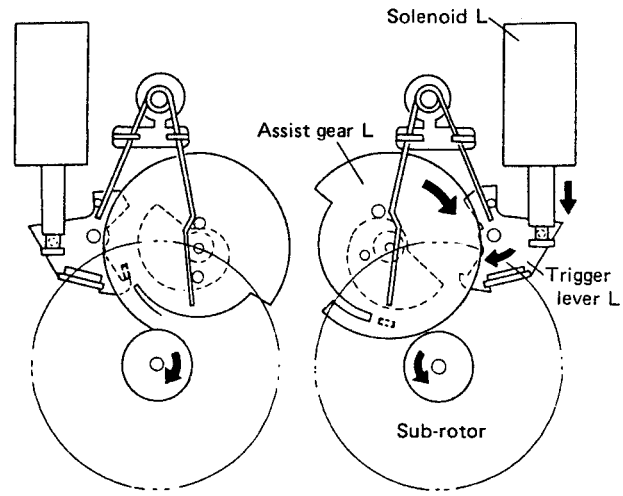


Fig. 1-18 DIRECTION operation 2

5. After assist gear L has turned through about 3/4ths of a revolution, it disengages from the sub-rotor.
6. When the sub-rotor and assist gear L become unmeshed, since the solenoid lever has already returned to its out position, spring tension is allowed to return the assist gear to its original position after making only one revolution. This completes the operation.

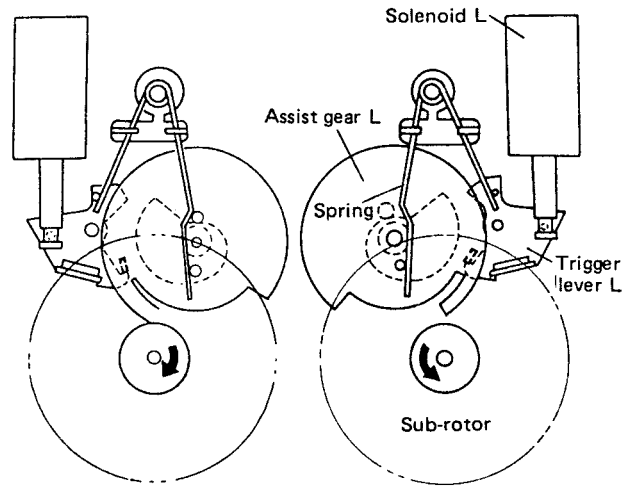


Fig. 1-19 DIRECTION operation 3

ADDITIONAL

Service Manual

PIONEER®

ORDER NO.
ARP-220-0

STEREO CASSETTE TAPE DECK

CT-7R
CT-6R

- In CT-7R, a one-chip IC (PA3012) is incorporated in the Dolby NR circuit with the following Serial No.
  For mechanical adjustments, please see the service manuals ART-667-0 and ARP-095.
- Ce manuel d'instruction se refère au mode de réglage, en fançais.
- Este manual de servicio trata del método de ajuste escrito en español.

Type	Serial No.	
KU	3635101	~
KC	3401101	~
HE	8405701	~
HB	8500501	~
HP	8600201	~
D	9303301	~
D/G	9304201	~

- In CT-6R, a one-chip IC (PA3012) is incorporated in the Dolby NR circuit with the following Serial No.
  For mechanical adjustments, please see the service manuals ART-671-0 and ARP-094.
- Ce manuel d'instruction se refère au mode de réglage, en fançais.
- Este manual de servicio trata del método de ajuste escrito en español.

Type	Serial No.	
KU	3655401	~
KC	3402601	~
HE	8411501	~
HB	8501801	~
HP	8600401	~
D	9303201	~
D/G	9302501	~

HI 012b

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
PIONEER ELECTRONICS [USA] INC. 1925 E. Dominguez St., Long Beach, California 90810 U.S.A.
PIONEER ELECTRONIC [EUROPE] N.V. Keetberglaan 1, 2740 Beveren, Belgium
PIONEER ELECTRONICS AUSTRALIA PTY. LTD. 178-184 Boundary Road, Braeside, Victoria 3195, Australia

ELECTRICAL ADJUSTMENTS

Precaution

1. Mechanical adjustment should be completed.
2. Clean the following parts with an alcohol moistened swab; Record/Playback head, Pinch roller, Erase head, Rubber belts and Capstan.
3. Demagnetize record/playback head with a head demagnetizer.
4. Do not use magnetized screwdriver for adjustments.
5. Adjustment and measurements should be performed for both L-ch and R-ch with rated power supply voltage.
6. Adjustments should be performed in the order given in this service manual. Altering the order can hinder proper adjustments, resulting in loss of performance.
7. Level during measurements are based on 0dBv=1V. Connect a 50kΩ dummy resistor across the OUTPUT terminals.
8. Let the unit warm up (aging) for a few minutes before proceeding with the adjustment.
9. Set the DOLBY NR switch OFF unless directed otherwise.

Test Equipment/Tools Required;

1. Test tape
   - STD-331A ..... for general playback purpose
   - STD-341A ..... for playback adjustment
   - STD-608A ..... NORMAL blank tape
   - STD-603 ..... CrO_2 blank tape
   - STD-604 ..... METAL blank tape
2. Audio oscillator
3. AC millivoltmeter (AC mV)
4. Attenuator
5. Oscilloscope
6. Resistor 50kΩ (1/4W)

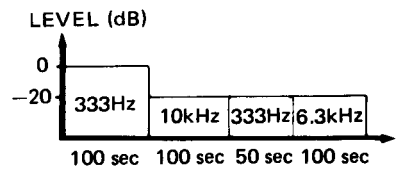


Fig. 1 Contents of the test tape STD-341A

HEAD AZIMUTH ADJUSTMENT

Setting:

Mode ..... Playback (FWD and REV)
Test tape ..... STD-341A, 10kHz portion
AC mV meter ..... OUTPUT terminals
VR501, VR502 ..... Max.

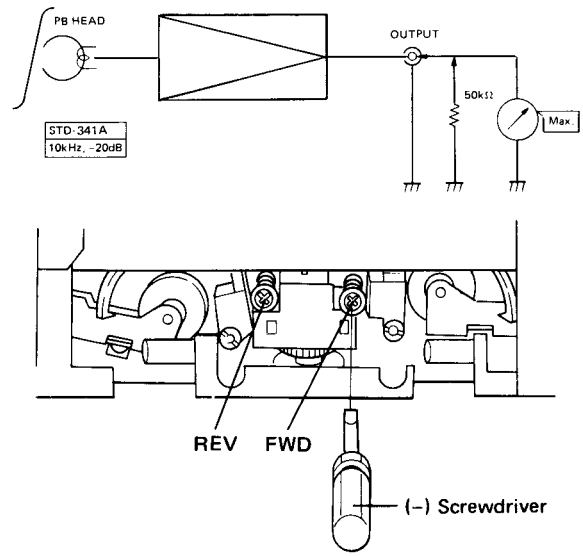


Fig. 2 Azimuth preadjustment

Procedure:

Play a tape in both forward and reverse directions. Adjust the head azimuth screw to the position of maximum output level.

TAPE TRANSPORT ADJUSTMENT

1. Load a mirror-equipped cassette half.
2. Set the DIRECTION switch to FORWARD and then the mode to PLAY.
3. Adjust the adjust nut ❶ so that no curling takes place on REC/PB head guide and erase head guide as shown in Fig. 3.
4. Set the DIRECTION switch to REVERSE.
5. Adjust the adjust nut ❷ so that no curling occurs on REC/PB head guide and erase head guide.
6. Play a tape in both FORWARD and REVERSE directions and check that no curling on tape is found.

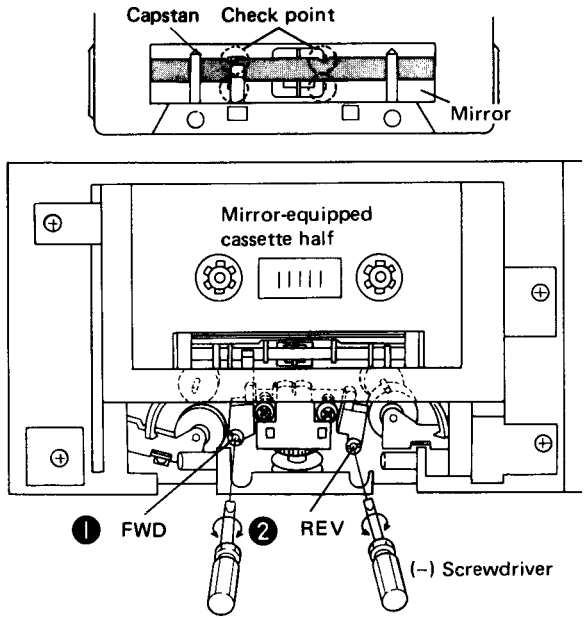


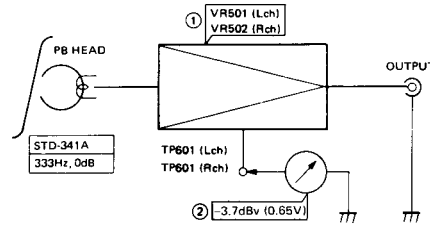
Fig. 3 Tape transport adjustment

PLAYBACK LEVEL ADJUSTMENT

Since this adjustment determines the DOLBY NR level during playback, it should be performed precisely.

Setting:

Mode ..... Playback (FWD)
Test tape ..... STD-341A, 333Hz 0dB portion
AC mV meter ..... TP601 of the DOLBY NR assembly L
TP601 of the DOLBY NR assembly R



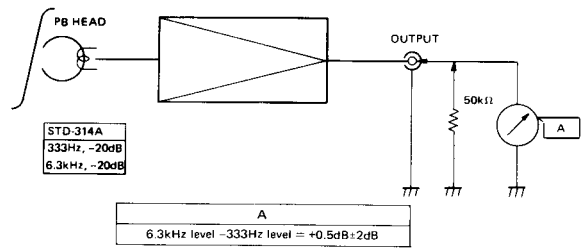
Procedure:

Adjust the VR501 (Lch) and VR502 (Rch) of the AMP assembly so that the AC mV meter reads - 3.7dBv (0.65V).

PLAYBACK EQUALIZER CHECK

Setting:

Mode ..... Playback (FWD and REV)
Test tape ..... STD-341A, 333Hz and 6.3kHz portions
AC mV meter ..... OUTPUT terminals



Procedure:

Play the 333Hz and 6.3kHz portions of the test tape. Check that the difference between the two output levels does not exceed +0.5dB±2dB.

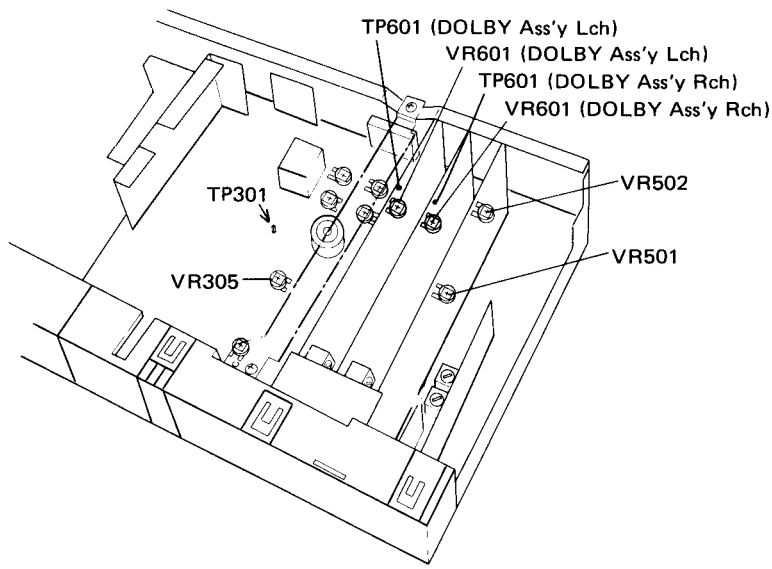


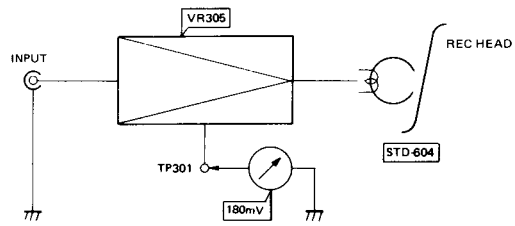
Fig. 4 Adjustment points

ERASURE CURRENT ADJUSTMENT

The adjustment procedure is the same for both the FWD and REV directions, but if there is a difference between the two indications, adjust so that the lower of the two erasure current indications is 180mV $^{+0}_{-40}$ mV.

Setting:

Mode ..... Record
INPUT Level Control ... Min.
AC mV meter ..... TP301 of the Mother assembly
Test tape STD-604



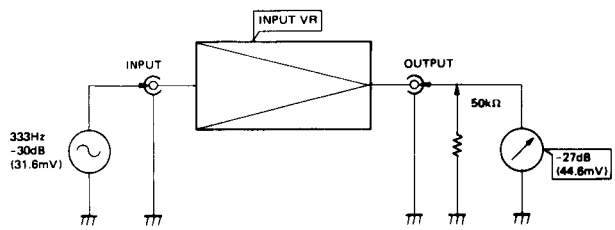
Procedure:

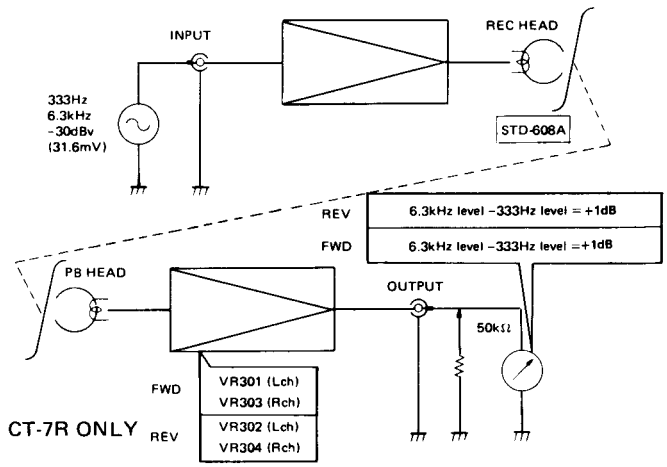
1. Set the unit to the FWD position and adjust the VR305 so that the AC mV meter reads 180mV.
2. Likewise, set the CT-7R to the REV position and confirm that AC mV meter reads 180mV $^{+0}_{-40}$ mV. CT-7R ONLY

RECORDING/PLAYBACK FREQUENCY RESPONSE ADJUSTMENT

Setting:

Mode ..... Record
Record/Playback
Input Signal ..... 333Hz, -30dBv
(from INPUT) (31.6mV)
6.3kHz, -30dBv
(31.6mV)
Test tape STD-608A
AC mV meter ..... OUTPUT terminals





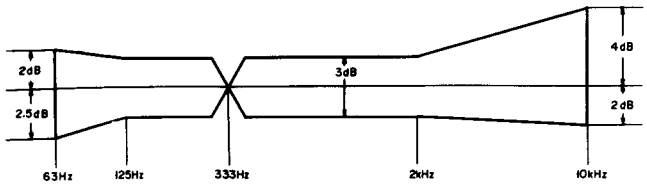
Procedure:

1. Adjust the INPUT level control so that the AC mV meter reads -27dBv (44.6mV).
2. Set the unit to the FWD position and record and play back the input signals (333Hz and 6.3kHz) onto the STD-608A. Adjust the VR301 (Lch) and VR303 (Rch) so that the difference between two is +1dB.
3. Likewise, set the CT-7R to the REV position and record and play back the input signals (333Hz and 6.3kHz) onto the STD-608A. Then adjust the VR302 (Lch) and VR304 (Rch) so that the difference two outputs is +1dB. CT-7R ONLY

* As listed in the specifications in Fig. 5, check to see that performance meets specifications.

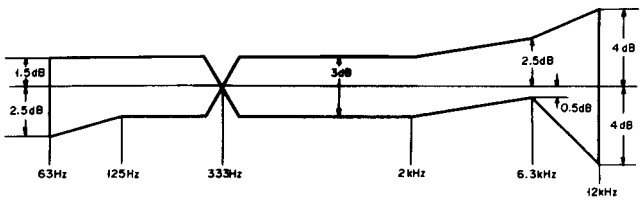
Frequency Response

Using STD-341A with DOLBY NR OFF
However, the right channel is compensated by −1dB at 63Hz, and −0.5dB at 125Hz because of the insulation effect.

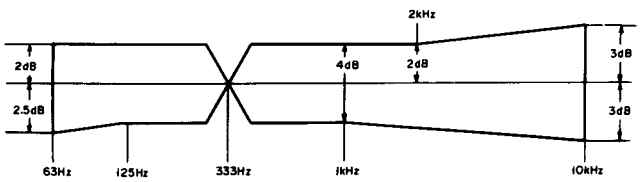


Overall Frequency Response

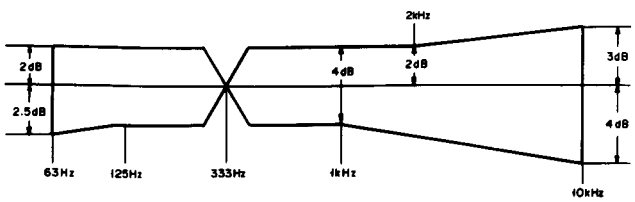
Using STD-608A with DOLBY NR OFF



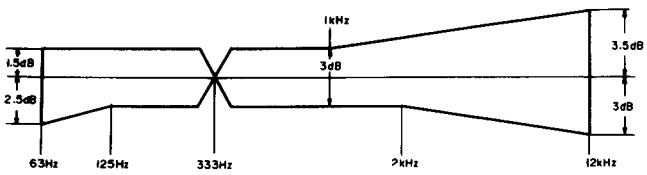
Using STD-608A with DOLBY NR ON (B type)



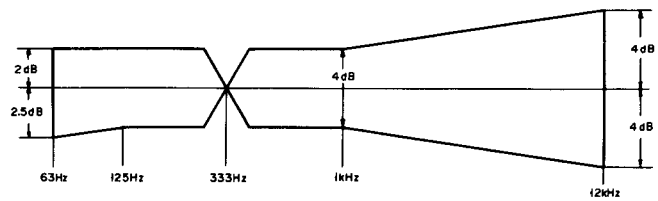
Using STD-608A with DOLBY NR ON (C type)



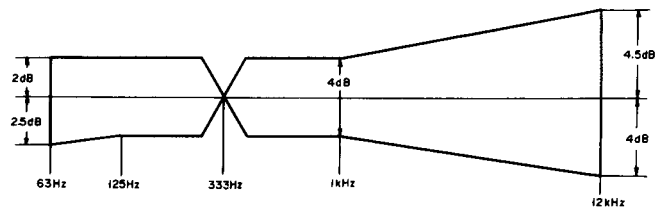
Using STD-603with DOLBY NR OFF



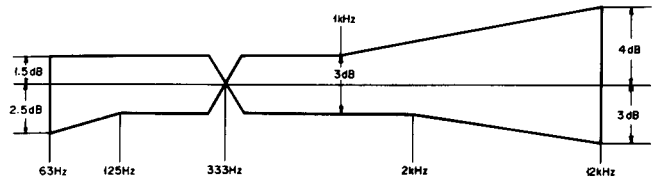
Using STD-603 with DOLBY NR ON (B type)



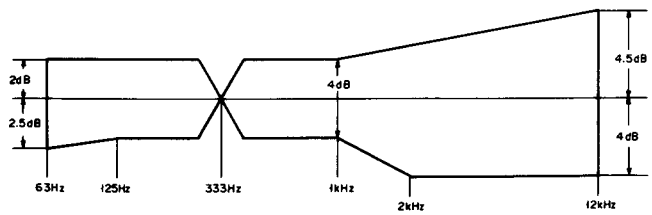
Using STD-603 with DOLBY NR ON (C type)



Using STD-604 with DOLBY NR OFF



Using STD-604 with DOLBY NR ON (B type)



Using STD-604 with DOLBY NR ON (C type)

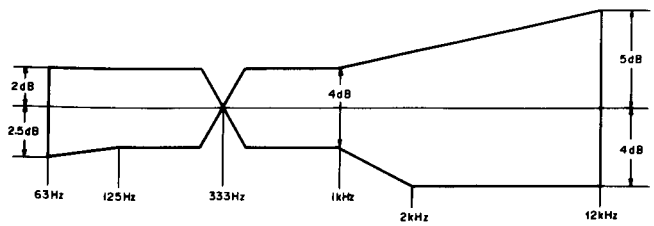
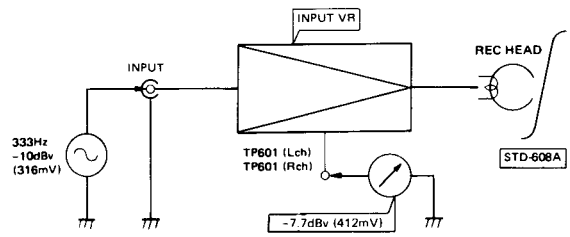


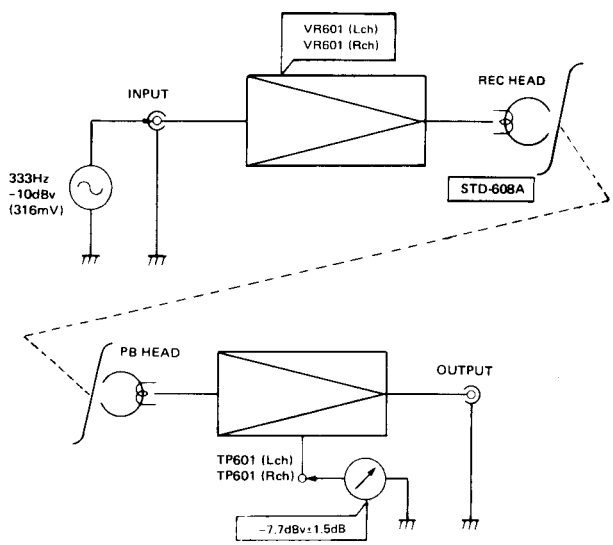
Fig. 5 Frequency response

RECORDING LEVEL ADJUSTMENT

Setting:

Mode	Record Record/Playback
Input Signal (from INPUT)	333Hz, -10dBv (316mV)
Test tape	STD-608A (NORM) STD-603 (CrO_2) STD-604 (METAL)
AC mV meter	TP601 of the DOLBY NR assembly L TP601 of the DOLBY NR assembly R





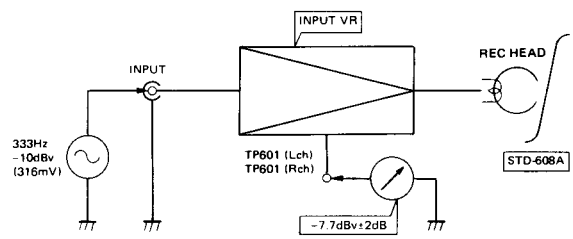
Procedure:

1. Set the test tape STD-608A and adjust the INPUT level control so that the AC mV meter reads -7.7dBv (0.41V).
2. Set the DOLBY NR switch to ON position. Set the unit to the FWD position and record and play back the input signal onto the STD-608A. Adjust the VR601 (Lch) and VR601 (Rch) so that the AC mV meter reads -7.7dBv (0.41V).
3. Set the test tape STD-603 and DOLBY NR switch to the ON position and record and play back the input signal onto the STD-603. Confirm that the AC mV meter reads -7.7dBv ±1.5dB.
4. Set the test tape STD-604 and DOLBY NR switch to the ON position and record and play back the input signal onto the STD-604. Confirm that the AC mV meter reads -7.7dBv ±1.5dB.

LEVEL METER CHECK

Setting:

MODE	Record pause
Input signal (from INPUT)	333Hz, -10dBv (316mV)
AC mV meter	TP601 of the DOLBY NR assembly L TP601 of the DOLBY NR assembly R



Procedure:

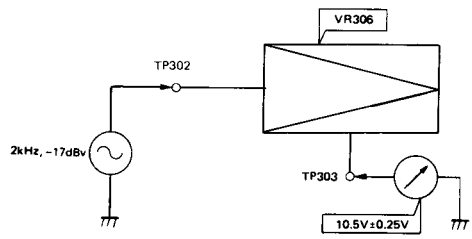
Adjust the INPUT level control so that the level meter reads 0 VU. Then check the AC mV meter reads -7.7dBv±2dB.

LEADER TAPE DETECT ADJUSTMENT (CT-7R ONLY)

Step 1.

Setting:

Mode ..... Stop
Input Signal ..... 2kHz, - 17dBv (0.4V P-P Sin wave) to TP302 of the Mother assembly
DC mV meter ..... TP303 of the Mother assembly



Procedure:

1. Remove the connector CN315 of the Mother assembly.
2. Adjust the VR306 so that the DC mV meter reads 10.5V±0.25V.
3. Return the connector CN315 to the original position.

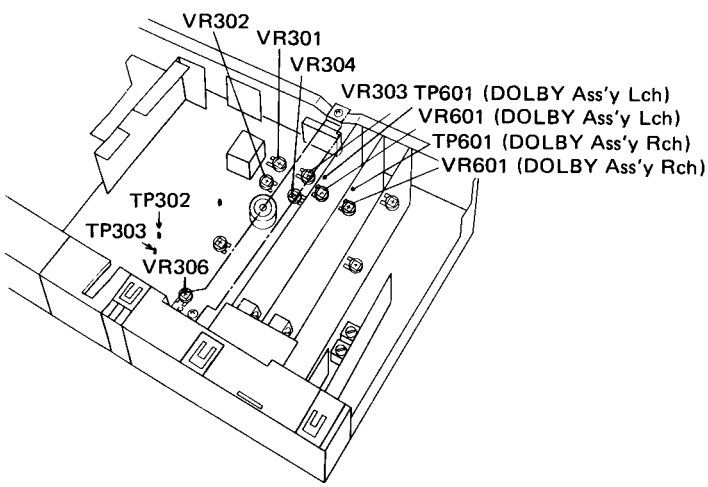
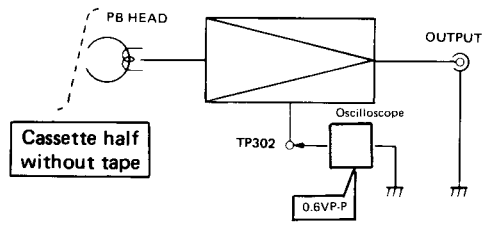


Fig. 6 Adjustment points

Step 2.

Setting:

Mode ..... Playback
Tape ..... Cassette half without tape
Oscilloscope ..... TP302 of the Mother assembly



Procedure:

1. Confirm that the Oscilloscope reads - 10dBv (0.6V P-P square wave).
2. If - 10dBv is exceeded, bridge the section shown in Fig. 7 by soldering.

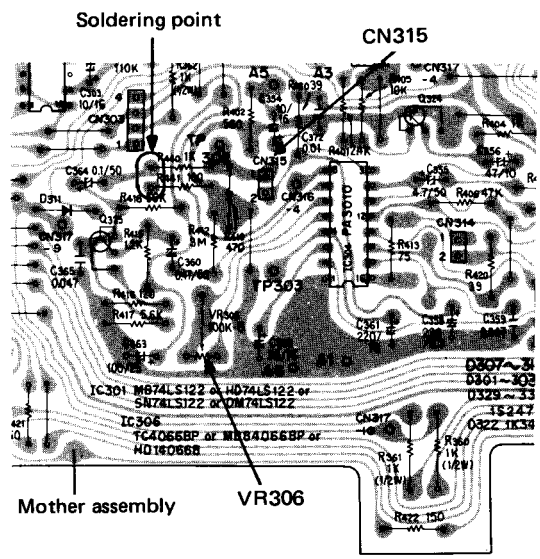


Fig. 7 Soldering point

RÉGLAGES ÉLECTRIQUES

Précautions

1. Les réglages mécaniques doivent être terminés.
2. Nettoyer les pièces suivantes à l'aide d'un bâtonnet imbibé d'alcool: tête d'enregistrement/lecture, galet presseur, tête d'effacement, courroies en caoutchouc et cabestan.
3. Démagnétiser la tête d'enregistrement/lecture à l'aide d'un démagnétiseur de tête.
4. Ne pas utiliser de tournevis magnétisé pour les réglages.
5. Les réglages et les mesures doivent être réalisés pour les canaux de gauche et de droite avec la tension d'alimentation nominale.
6. Les réglages doivent être effectués dans l'ordre indiqué dans ce manuel de service. Une modification de cet ordre peut empêcher la réalisation de réglages corrects et peut provoquer une baisse de performance.
7. Les niveaux en cours de mesure sont basés sur 0dBv = 1V. Raccorder une charge fictive de 50 kΩ entre les bornes de sortie (OUTPUT).
8. Laisser chauffer (vieillissement) le unité pendant quelques minutes avant de procéder aux réglages.
9. Placer le commutateur DOLBY NR sur OFF sauf indication contraire.

Equipements/outils d'essai requis

1. Bande d'essai
   - STD-331A ..... Pour la reproduction générale.
   - STD-341A ..... Pour le réglage de la reproduction
   - STD-608A ..... Bande "NORMAL" vierge
   - STD-603 ..... Bande "CrO_2" vierge
   - STD-604 ..... Bande "METAL" vierge
2. Oscillateur BF
3. Millivoltmètre alternatif (mV CA)
4. Atténuateur
5. Oscilloscope
6. Résistance 50 kΩ (1/4W)

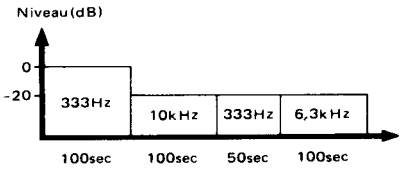


Fig. 1 Contenu de la bande d'essai STD-341A

RÉGLAGE DE L'AZIMUT DE TÊTE

Montage:

Mode ..... Lecture (FWD et REV)
Bande d'essai ..... STD-341A, partie de 10kHz
Millivoltmètre alternatif ..... Bornes de sortie OUTPUT
VR501, VR502 ..... Maximum

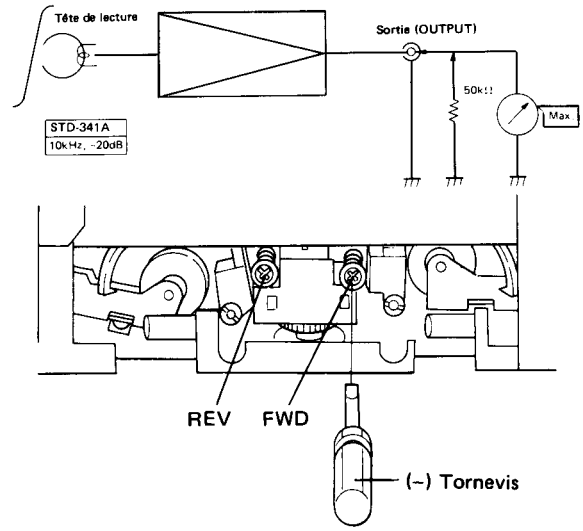


Fig. 2 Préréglage d'azimut

Procédure:

Lire la bande en sens avant et en sens arrière. Régler la vis d'azimut de tête sur la position donnant le niveau de sortie maximum.

RÉGLAGE DE L'ENTRAINEMENT DE LA BANDE

1. Charger une demi-cassette munie d'un miroir.
2. Placer le commutateur de DIRECTION sur la position FORWARD (avant) et le mode sur PLAY (lecture).
3. Régler l'écrou de réglage ❶ de manière à ce qu'aucune ondulation ne se produise sur la pièce de guidage de la tête d'enregistrement/lecture (REC/PB) ni sur le guide de la tête d'effacement, comme indiqué à la Fig. 3.
4. Placer le commutateur de DIRECTION sur la position REVERSE (arrière).
5. Régler l'écrou de réglage ❷ de manière à ce qu'aucune ondulation ne se produise sur le guide de la tête d'enregistrement/lecture (REC/PB) ni sur le guide de la tête d'effacement.
6. Faire défiler une bande en avant (FORWARD) et en arrière (REVERSE) et vérifier qu'aucune ondulation ne se produit.

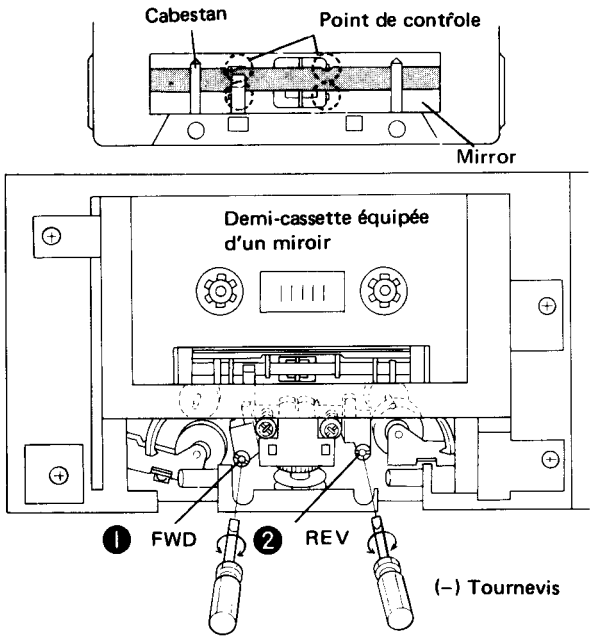


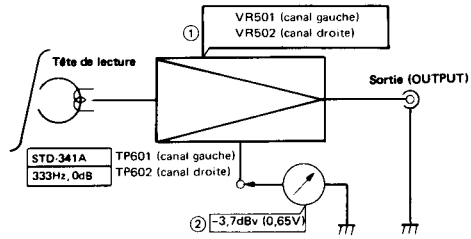
Fig. 3 Réglage de l'entraînement de la bande

RÉGLAGE DU NIVEAU DE LECTURE

Ce réglage doit être effectué avec précision car il détermine le niveau Dolby NR pendant la lecture.

Montage:

Mode ..... Lecture (avant (FWD))
Bande d'essai ..... STD-341A, partie de 333Hz, 0dB
Millivoltmètre alternatif ..... TP601 de l'ensemble Dolby NR de gauche (L)
TP601 de l'ensemble Dolby NR de droite (R)



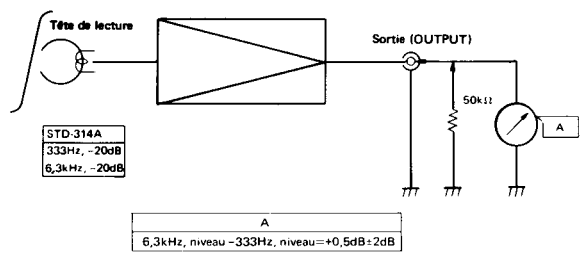
Procédure:

Régler VR501 (canal de gauche) et VR502 (canal de droite) de l'ensemble AMP, de mianière à ce que le millivoltmètre alternatif indique - 3,7dBv (0,65V).

CONTRÔLE DE L'EGALISEUR DE LECTURE

Montage:

Mode ..... Lecture (avant (FWD) et arrière (REV))
Bande d'essai ..... STD-341A, parties de 333Hz et de 6,3kHz
Millivoltmètre alternatif ..... Bornes de sortie (OUTPUT)



Procédure:

Lire les parties 333Hz et 6,3kHz de la bande d'essai. Vérifier que la différence entre les deux niveaux de sortie ne dépasse pas +0,5dB ±2dB.

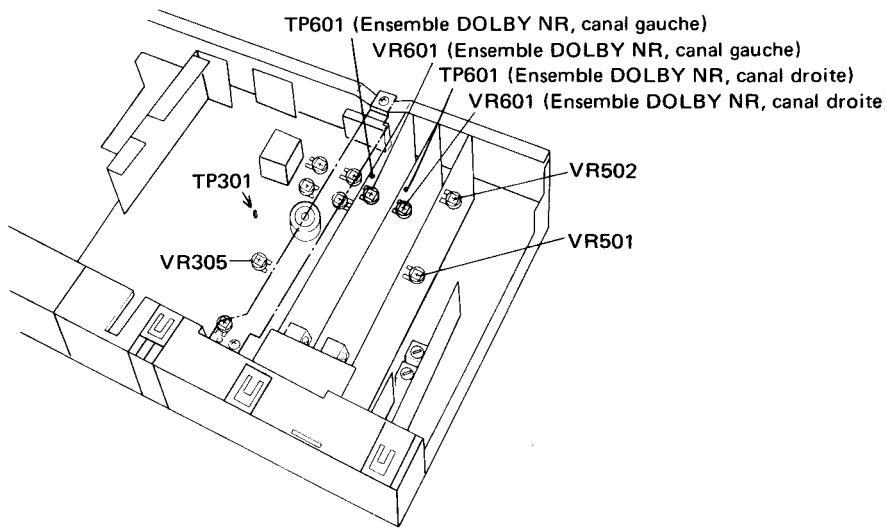
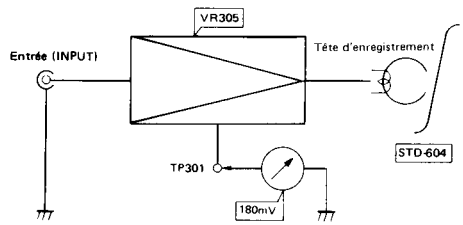


Fig. 4 Points de réglage

RÉGLAGE DU COURANT D'EFFACEMENT

La procédure de réglage est la même dans les deux directions, avant (FWD) et arrière (REV), mais les deux valeurs indiquées sont différentes. Le réglage doit être effectué de manière à ce que le plus faible des deux courants d'effacement soit de 180mV$^{+0}_{-40}$ mV.



Montage:

Mode ..... Enregistrement
Réglage du niveau d'entrée (INPUT) .... Minimum
Millivoltmètre alternatif ..... TP301 de l'ensemble principal
Bande d'essai STD-604

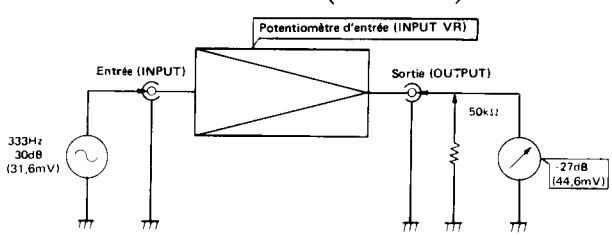
Procédure:

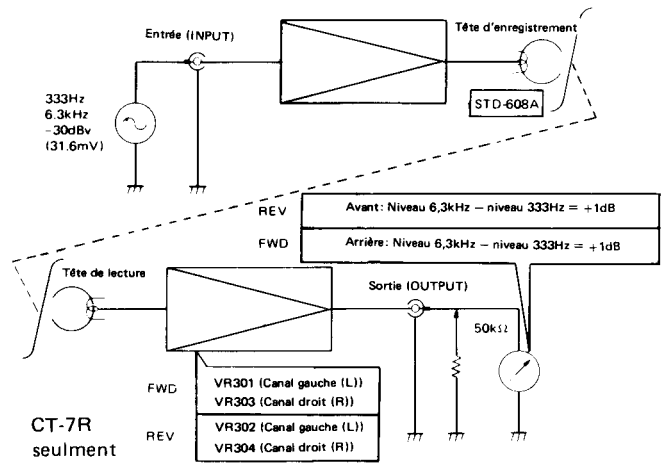
1. Régler le unité sur la position de défilement avant (FWD) et régler VR305 de manière à ce que le millivoltmètre alternatif indique 180mV.
2. De la même manière, régler le CT-7R sur la position de défilement arrière (REV) et vérifier que le millivoltmètre alternatif indique 180mV $^{+0}_{-40}$ mV.
   CT-7R seulment

RÉGLAGE DE LA REPONSE EN FREQUENCE D'ENREGISTREMENT/LECTURE

Montage:

Mode ..... Enregistrement
Enregistrement/lecture
Signal d'entree (à INPUT) ..... 333Hz, -30dBv (31,6mV)
6,3kHz, 30dBv (31,6mV)
Bande d'essai STD-608A
Millivoltmètre alternatif ..... Bornes de sortie (OUTPUT)





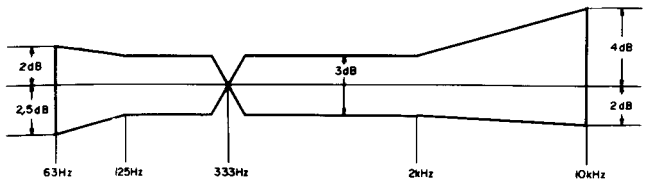
Procédure:

1. Régler le niveau d'entrée (INPUT) de manière à ce que le millivoltmètre alternatif indique -27dBv (44,6mV).
2. Placer le unite en position de défilement avant (FWD) puis enregistrer et lire les signaux d'entrée (333Hz et, 6,3kHz) sur STD-608A. Régler VR301 (canal de gauche (L)) et VR303 (canal de droite (R)), de manière à ce que la différence entre les deux soit de +1dB.
3. De la même manière, placer le CT-7R en position de défilement arrière (REV) puis enregistrer les signaux d'entrée (333Hz et 6,3kHz) sur STD-608A. Régler VR-302 (canal de gauche et VR304 (canal de droite), de manière à ce que la différence entre les deux sorties soit de +1dB.
   CT-7R seulment

* Comme indiqué dans les spécifications de la Fig. 5, vérifier que les performances correspondent aux spécifications.

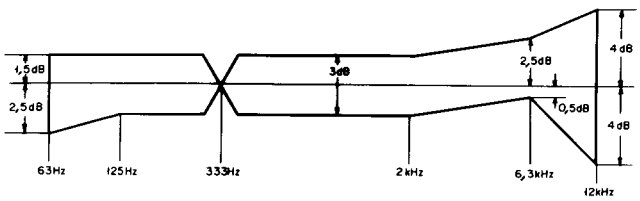
Réponse en fréquence

Utilisation de STD-341A, avec Dolby NR DECLENCHE
A cause de l'effet d'isolement, le canal de droite est compensé de -1dB à 63Hz et de -0,5dB à 125Hz.

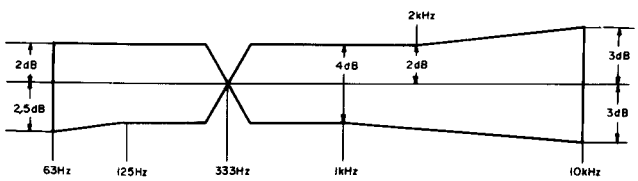


Réponse en fréquence globale

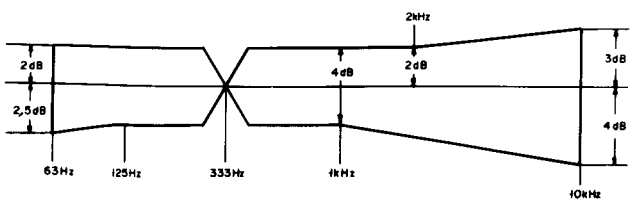
Utilisation de STD-608A, avec Dolby NR DECLENCHE



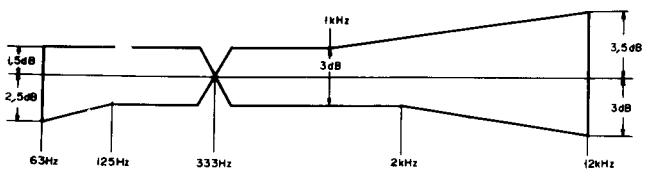
Utilisation de STD-608A, avec Dolby NR ENCLENCHE (type B)



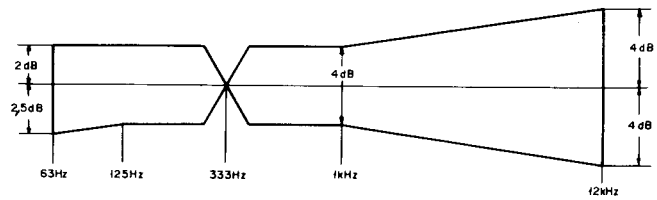
Utilisation de STD-608A, avec Dolby NR ENCLENCHE (type C)



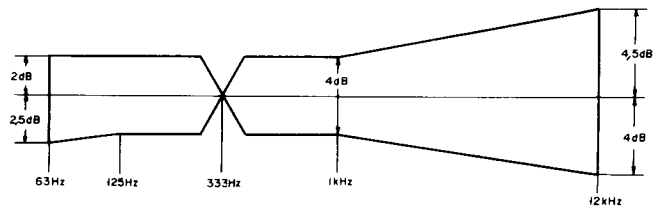
Utilisation de STD-603, avec Dolby NR DECLENCHE



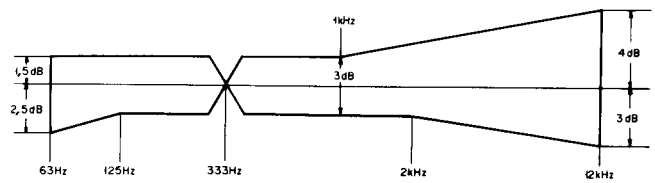
Utilisation de STD-603, avec Dolby NR ENCLENCHE (type B)



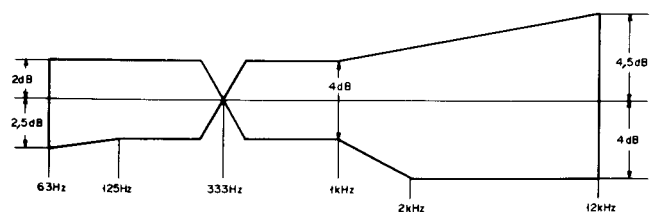
Utilisation de STD-603, avec Dolby NR ENCLENCHE (type C)



Utilisation de STD-604, avec Dolby NR DECLENCHE



Utilisation de STD-604, avec Dolby NR ENCLENCHE (type B)



Utilisation de STD-604, avec Dolby NR ENCLENCHE (type C)

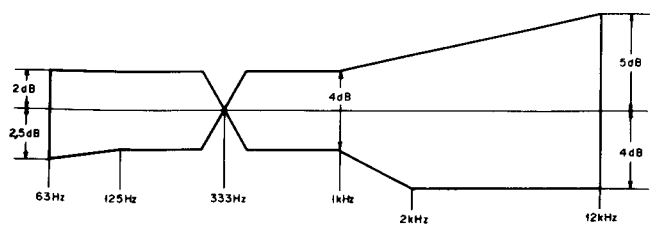


Fig. 5 Réponse en frequence

RÉGLAGE DU NIVEAU D'ENREGISTREMENT

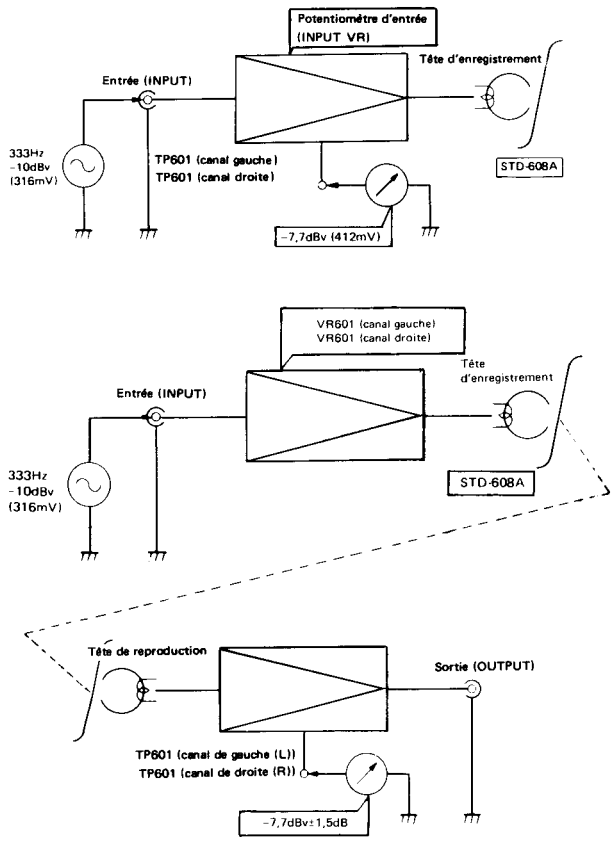
Montage:

Mode ..... Enregistrement
Enregistrement/lecture

Signal d'entrée
(à INPUT) ..... 333Hz, -10dBv
(316mV)

Bande d'essai ..... STD-608A (NORM)
STD-603 (CrO_2)
STD-604 (METAL)

Millivoltmètre
alternatif ..... TP601 de l'ensemble
Dolby NR de gauche
TP601 de l'ensemble
Dolby NR de droite



Procédure:

1. Installer la bande d'essai STD-608A et régler le niveau d'entrée (INPUT) de manière à ce que le millivoltmètre alternatif indique -7,7dBv (0,41V).
2. Placer le commutateur Dolby NR sur la position ON (enclenché). Placer le unité en position de défilement avant (FWD) puis enregistrer et lire le signal d'entrée sur STD-608A. Régler VR601 (canal de gauche) et VR601 (canal de droite) de manière à ce que le millivoltmètre alternatif indique -7,7dBv (0,41V).
3. Installer la bande d'essai STD-603 et placer le commutateur Dolby NR sur la position ON (enclenché), puis enregistrer et lire le signal d'entrée sur STD-603. Vérifier que le millivoltmètre alternatif indique -7,7dBv ±1,5dB.
4. Installer la bande d'essai STD-604 et placer le commutateur Dolby NR sur la position ON (enclenché), puis enregistrer et lire le signal d'entrée sur STD-604. Vérifier que le millivoltmètre alternatif indique -7,7dB ±1,5dB.

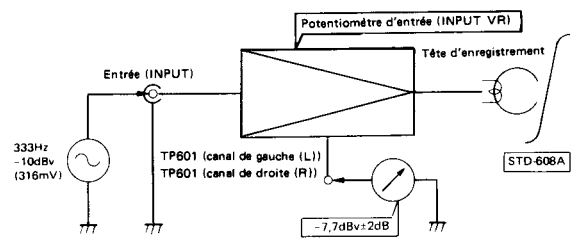
CONTRÔLE DE L'INDICATEUR DE NIVEAU

Montage:

Mode ..... Enregistrement/pause

Signal d'entrée
(à INPUT) 333Hz, 10dBv
(316mV)

Millivoltmètre
alternatif ..... TP601 de l'ensemble
Dolby NR de gauche
TP601 de l'ensemble
Dolby NR de droite



Procédure:

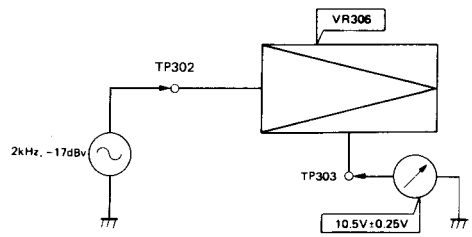
Régler le niveau d'entrée (INPUT) de manière à ce que l'indicateur de niveau affiche 0 VU. Contrôler alors que le millivoltmètre alternatif indique -7,7dBv±2dB.

RÉGLAGE DE LA DETECTION D'AMORCE (CT-7R seul)

Etape 1.

Montage:

Mode ..... Arrêt (STOP)
Signal d'entrée ..... 2kHz, - 17dBv (onde sinusoïdale de 0,4Vc-c) à TP302 de l'ensemble principal
Millivoltmètre continu ..... TP303 de l'ensemble principal



Procédure:

1. Retirer le connecteur CN315 de l'ensemble principal.
2. Régler VR306 de manière à ce que le millivoltmètre continu indique 10,5V ±0,25V.
3. Remettre le connecteur CN315 à sa position originale.

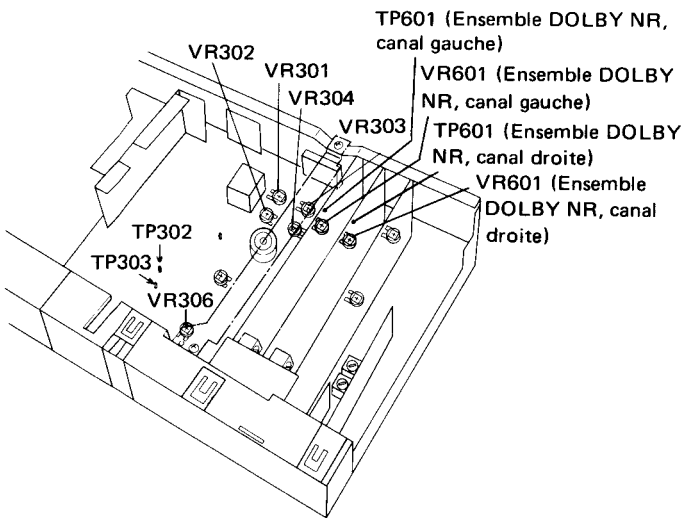
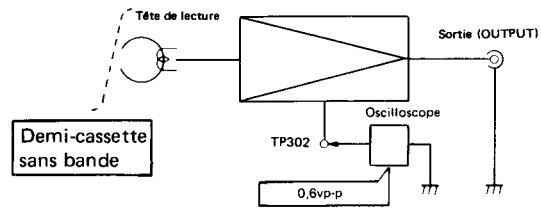


Fig. 6 Points de réglage

Etape 2.

Montage:

Mode ..... Lecture
Bande ..... Demi-cassette sans bande
Oscilloscope ..... TP302 de l'ensemble principal



Procédure:

1. Vérifier que le oscilloscope indique - 10dBv (onde carrée de 0,6Vc-c).
2. Si la valeur - 10dBv est dépassée, ponter par soudure la partie indiquée à la Fig. 7.

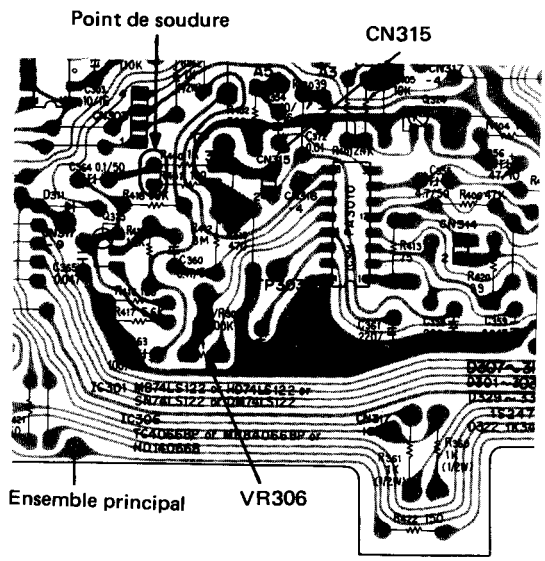


Fig. 7 Point de soudure

AJUSTES ELÉCTRICOS

Precauciones

1. Deberán completarse los ajustes mecánicos.
2. Limpiar las partes siguientes con algodón humedecido en alcohol: cabeza de grabación/reprodución, rodillo de arrastre, cabeza de borrado, correas de goma y eje de arrastre.
3. Desmagnetizar la cabeza de grabación/reproducción con un desmagnetizador de cabezas.
4. No utilizar destornilladores magnetizados para los ajustes.
5. Los ajustes y las mediciones deberán realizarse para la tensión nominal de suministro de los canales izquierdo y derecho.
6. Los ajustes deberán realizarse en el orden dado en este manual de servicio. Si se altera el orden los ajustes pueden resultar inútiles, dando como resultado una pérdida de rendimiento.
7. El nivel durante las mediciones se basa en 0dBv = 1V. Conectar un resistor fícticio de 50Kohmios a los terminales de salida (OUTPUT).
8. Dejar que el unidad se precaliente durante algunos minutos antes de proceder con el ajuste.
9. Poner el interruptor de reducción de ruido Dolby (DOLBY NR) en la posición OFF a menos de que se diga otra cosa.

Equipos/herramientas de pruebas requeridos:

1. Cinta de prueba
   - STD-331A ..... Para el propósito de reporoducción general.
   - STD-341A ..... para el ajuste de reproducción
   - STD-608A ..... cinta NORMAL en blanco
   - STD-603 ..... cinta CrO_2 en blanco
   - STD-604 ..... cinta de METAL en blanco
2. Oscilador sonoro
3. Milivoltímetro de CA (AC mV)
4. Atenuador
5. Osciloscopio
6. Resistor de 50Kohmios (1/4W)

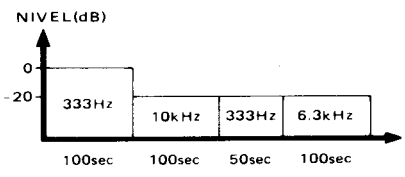


Fig. 1 Contenido de la cinta de prueba STD-341A

AJUSTE DEL AZIMUT DE LA CABEZA

Ajuste:

Modo ..... Reproducción (FWD y REV)
Cinta de prueba ..... STD-341A, parte de 10kHz
Voltímetro de CA .... Terminales OUTPUT (escala de mV)
VR501, VR502 ..... Máx.

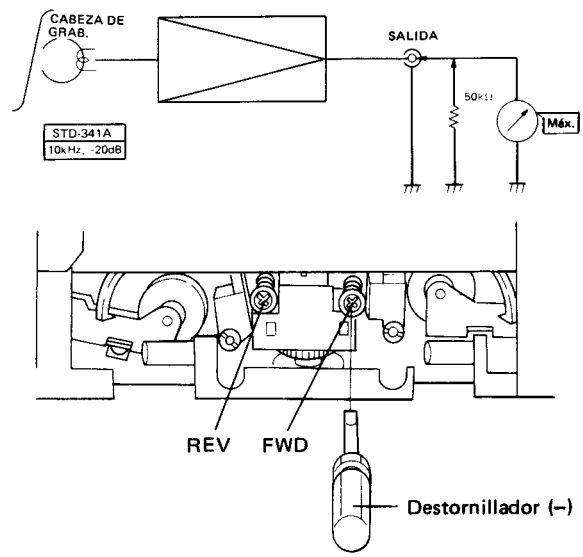


Fig. 2 Preajuste del azimut

Procedimiento:

Poner una cinta en reproducción en ambas direcciones, de ida y retorno. Ajustar el tornillo del azimut de la cabeza hasta la posición que ofrezca el mayor nivel de salida.

AJUSTE DEL TRANSPORTE DE LA CINTA

1. Insertar un casete provisto de espejo.
2. Poner el selector DIRECTION en la posición FORWARD y el de modo en PLAY.
3. Ajustar la tuerca de ajuste ❶ de modo que no oscile la quía de la cabeza REC/PB ni la quía de la cabeza de borrado como muestra la figura 3.
4. Poner el selector DIRECTION en la posición REVERSE.
5. Ajustar la tuerca de ajuste ❷ de modo que no oscile la quía de la cabeza REC/PB ni la quía de la cabeza de borrado
6. Poner la cinta en reproducción en ambas direcciones, de ida y retorno, y comprobar que no ocurra oscilación en la cinta.

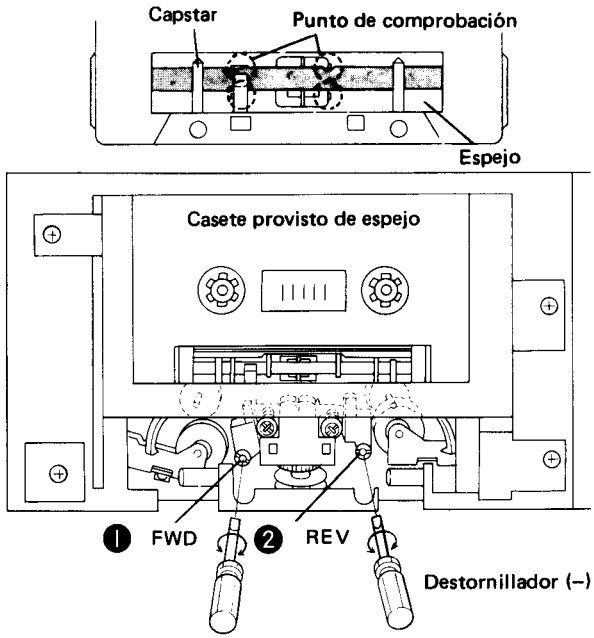


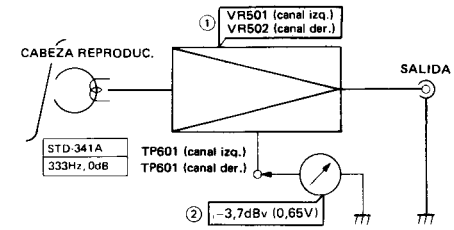
Fig. 3 Ajuste del transporte de la cinta

AJUSTE DEL NIVEL DE REPRODUCCION

Puesto que este ajuste determina el nivel de reducción de ruido DOLBY de grabación, deberá realizarse de modo prociso.

Ajuste:

Modo ..... Reproducción (FWD)
Cinta de prueba ..... STD-341A, posición 333Hz, 0dB
Voltímetro de CA .... TP601 del conjunto L de DOLBY NR
(escala de mV) TP601 del conjunto R de DOLBY NR



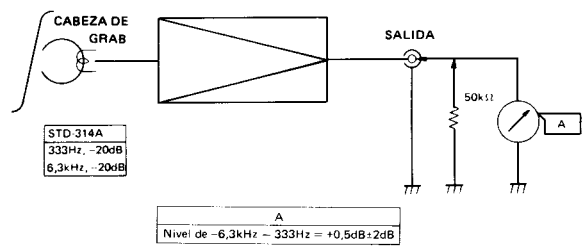
Procedimiento:

Ajustar el VR501 (canal izq.) y el VR502 (canal der.) del conjunto del AMP de modo que el voltímetro de CA indique -3,7dBv (0,65V).

COMPROBACIÓN DEL ECUALIZADOR DE REPRODUCCIÓN

Ajuste:

Modo ..... Reproducción (FWD y REV)
Cinta de prueba ..... STD-341A, posiciónes 333Hz y 6,3kHz
Voltímetro de CA .... Terminales OUTPUT
(escala de mV)



Procedimiento:

Poner en reproducción la cinta de prueba en las posiciones de 333Hz y 6,3kHz. Comprobar que la diferencia entre los dos niveles de salida no soprepase +0,5dB ± 2dB.

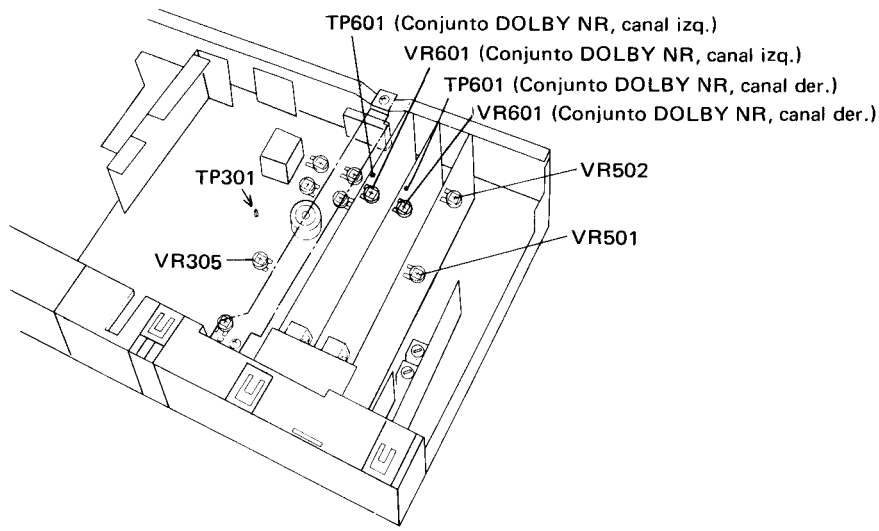


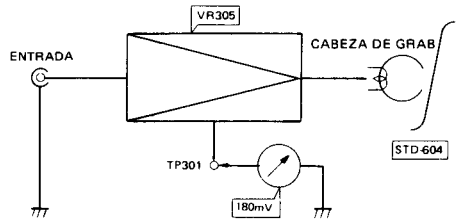
Fig. 4 Puntos de ajuste

AJUSTE DE LA CORRIENTE DE BORRADO

El procedimiento de ajuste es el mismo para ambas direcciones, FWD y REV, pero si existe alguna diferencia entre las dos indicaciones, ajustar de modo que la inferior de ellas sea 180 mV $^{+0}_{-40}$ mV.

Ajuste:

Modo ..... Grabación
Control del nivel ..... Min.
de entrada
Voltímetro de CA .... TP301 del conjunto
(escala de mV) principal
Cinta de prueba STD-604



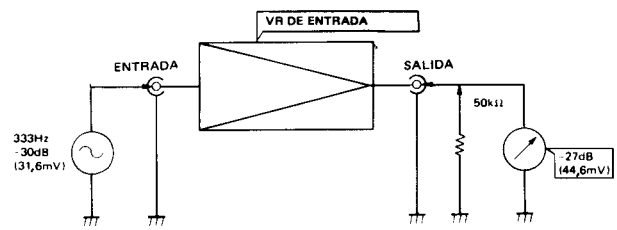
Procedimiento:

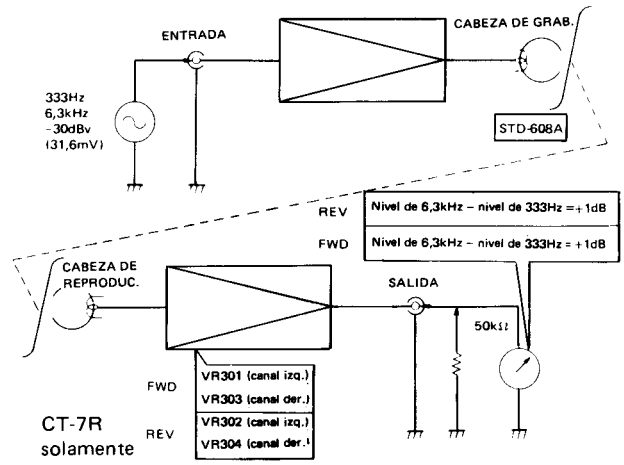
1. Ajustar el unidad en la posición FWD y el VR-305 de modo que el voltímetro de CA indique 180 mV.
2. De igual forma, ajustar el CT-7R en la posición REV y confirmar que el voltímetro de CA indique 180 mV $\pm ^{0}_{4,0}$ mV.
   CT-7R solamente

AJUSTE DE LA RESPUESTA EN FRECUENCIA DE GRABACIÓN/REPRODUCCIÓN

Ajuste:

Modo ..... Grabación
Grabación/reproducción
Señal de entrada ..... 333Hz, - 30dBv
(desde INPUT) (31,6 mV)
6,3kHz, −30dBv
(31,6 mV)
Cinta de prueba STD-608A
Voltímetro de CA .... Terminales OUTPUT
(escala mV)





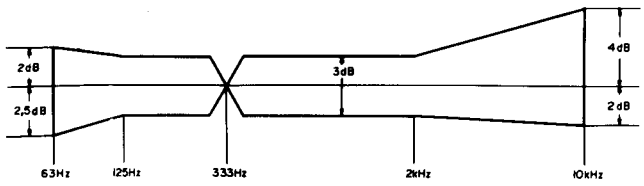
Procedimiento:

1. Ajustar el control de nivel de entrada de modo que el voltímetro de CA indique - 27dBv (44,6 mV).
2. Ajustar el unidad en la posición FWD y grabar y reproducir señales de entrada (333Hz y 6,3kHz) en la STD-608A. Ajustar el VR301 (canal izq.) y el VR303 (canal der.) de modo que la diferencia entre ambos sea de +1dB.
3. De igual forma ajustar et CT-7R en la posición REV y grabar y reproducir señales de entrada (333Hz y 6,3kHz) en la STD-608A. Después, ajustar el VR302 (canal izq.) y el VR304 (canal der.) de modo que la diferencia entre las dos salidas sea de +1dB. CT-7R solamente

* Como indica en las especificaciones de la figura 5, comprobar que el rendimiento satisfaga dichas especificaciones.

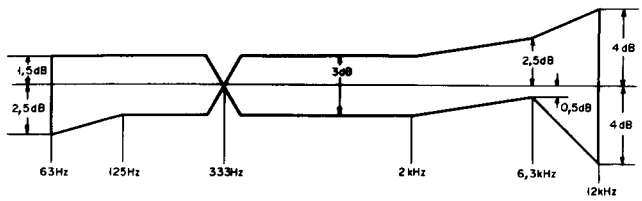
Respuesta en frecuencia

Utilizando la STD-341A con el interruptor DOLBY NR en la posición OFF
El canal izquierdo se compensa en -1dB a 63Hz y a -0,5 a 125Hz debido al efecto de aislamiento.

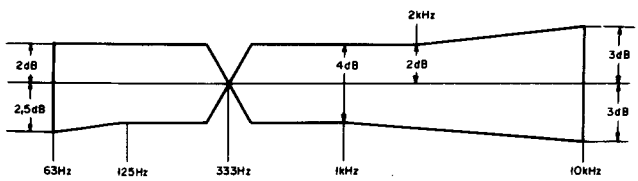


Repuesta global en frecuencia

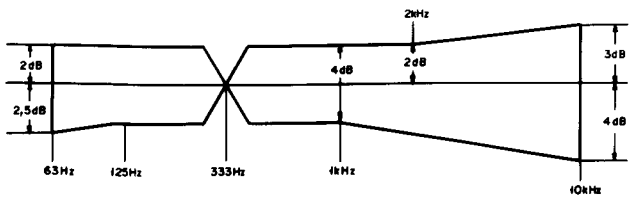
Utilizando la STD-608A con el interruptor DOLBY NR en la posición OFF.



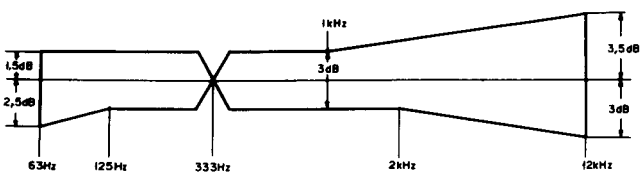
Utilizando la STD-608A con el interruptor DOLBY NR en la posición ON (tipo B).



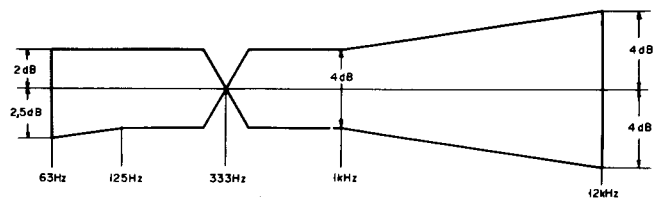
Utilizando la STD-608A con el interruptor DOLBY NR en la posición ON (tipo C).



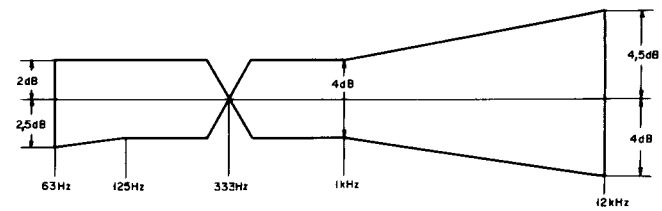
Utilizando la STD-603 con el interruptor DOLBY NR en la posición OFF.



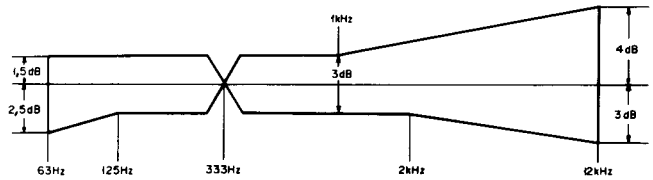
Utilizando la STD-603 con el interruptor DOLBY NR en la posición ON (tipo B).



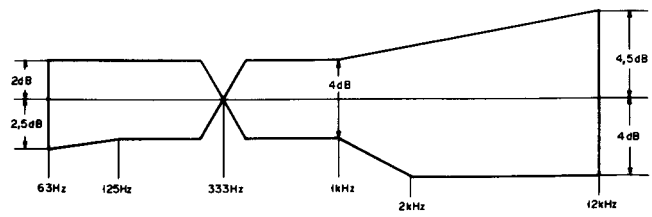
Utilizando la STD-603 con el interruptor DOLBY NR en la posición ON (tipo C).



Utilizando la STD-604 con el interruptor DOLBY NR en la posición OFF.



Utilizando la STD-604 con el interruptor DOLBY NR en la posición ON (tipo B).



Utilizando la STD-604 con el interruptor DOLBY NR en la posición ON (tipo C).s

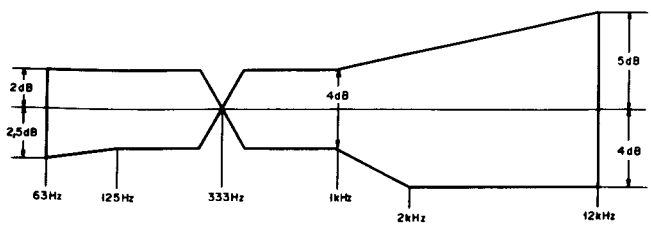
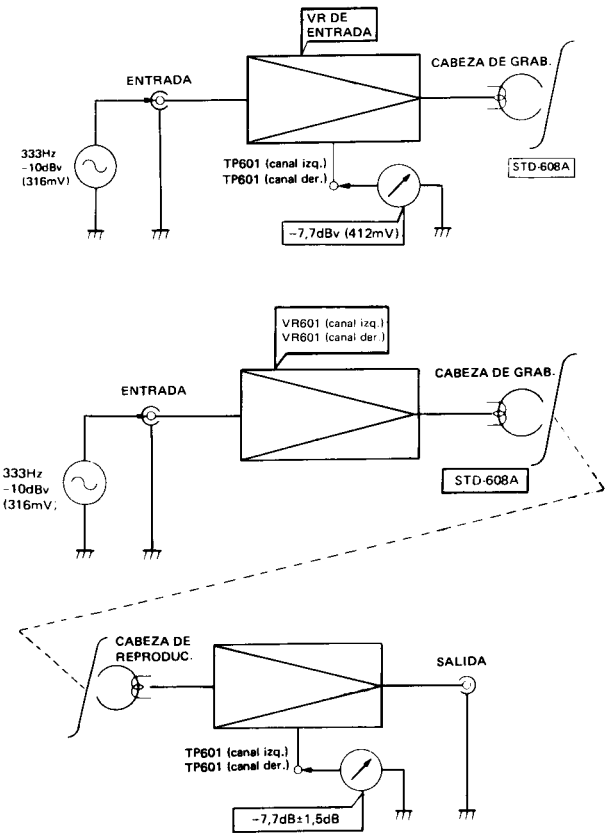


Fig. 5 Respuesta en frecuencia

AJUSTE DEL NIVEL DE GRABACIÓN

Ajuste:

Modo	Grabación Grabación/reproducción
Señal de entrada	333Hz, -10dBv
(desde INPUT)	(316 mV)
Cinta de prueba	STD-608A (NORM) STD-603 (CrO_2) STD-604 (METAL)
Voltímetro de CA	TP601 del conjunto L
(escala de mV)	de DOLBY NR TP601 del conjunto R de DOLBY NR



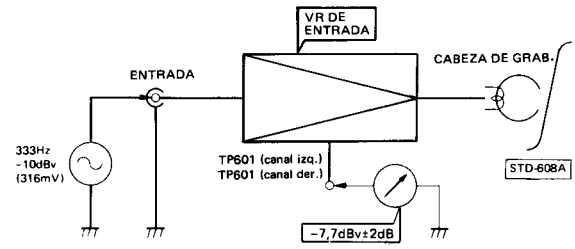
Procedimiento:

1. Poner la cinta de prueba STD-608A y ajustar el control de nivel de entrada (INPUT) de modo que el voltímetro de CA indique -7,7dBv (0,41V).
2. Poner el interruptor DOLBY NR en la posición ON. Ajustar el unidad en la posición FWD y grabar y reproducir señales de entrada en la STD-608A. Ajustar el VR601 (canal izq.) y el VR601 (canal der.) de modo que el voltímetro indique -7,7dBv (0,41V).
3. Poner la cinta de prueba STD-603 y el interruptor DOLBY NR en la posición ON y el grabar y reproducir señales de entrada en la STD-603. Confirmar que el voltímetro de CA indique -7,7dBv±1,5dB.
4. Poner la cinta de prueba STD-604 y el interruptor DOLBY NR en la posición ON y grabar y reproducir señales de entrada en la STD-604. Confirmar que el voltímetro de CA indique -7,7dBv±1,5dB.

COMPROBACIÓN DEL MEDIDOR DE NIVEL

Ajuste:

Modo	Pausa de grabación
Señal de entrada	333Hz, -10dBv
(desde INPUT)	(315 mV)
Voltímetro de CA	TP601 del conjunto L
(escala mV)	de DOLBY NR TP601 del conjunto R de DOLBY NR



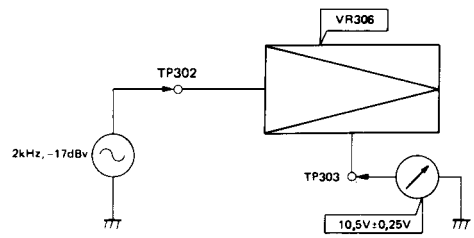
Procedimiento:

Ajustar el control de nivel de entrada (INPUT) de modo que el medidor de nivel indique 0 VU. Después comprobar que el voltímetro de CA indique -7,7dBv ± 2dB.

AJUSTE DE DETECCIÓN DE LA CINTA GUIA (CT-7R solamente)

Ajuste.

Modo ..... Parada
Señal de entrada ..... 2kHz, - 17dBv (0,4V P-P, onda senoidal) a TP302 del conjunto principal
Voltímetro de CA (escala mV) .... TP303 del conjunto principal



Procedimiento:

1. Extraer el conector CN315 del conjunto principal.
2. Ajustar el VR306 de modo que el voltímetro de CA indique 10,5V ± 0,25V.
3. Volver a poner el conector CN315 en su posición original.

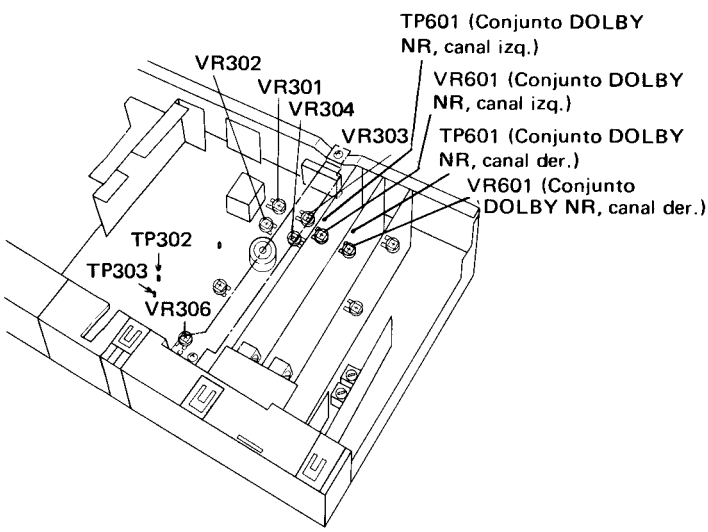
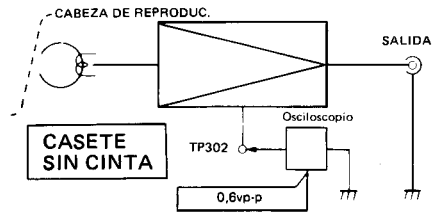


Fig. 6 Puntos de ajuste

Paso 2.

Ajuste:

Modo ..... Reproducción
Cinta ..... Casete sin cinta
Osciloscopio ..... TP302 del conjunto principal



Procedimiento:

1. Confirmar que el osciloscopio indique - 10dBv (0,6V P-P, onda cuadrada).
2. Si se sobrepasan los 10dBv, puentear la sección mostrada en la figura 7 mediante soldadura.

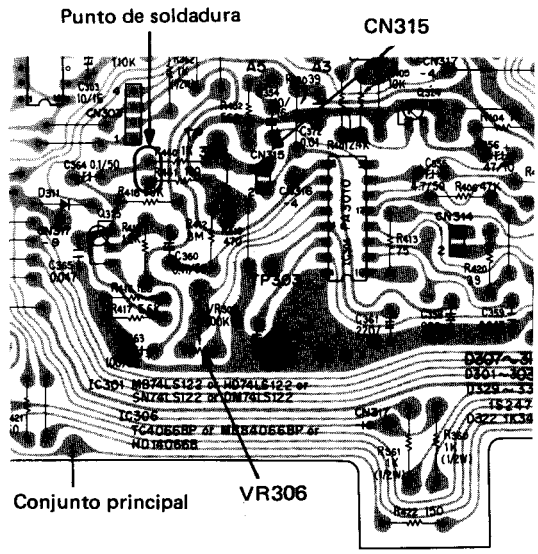


Fig. 12-7 Punto de soldadura