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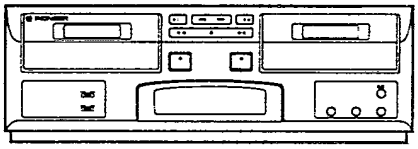
The Art of Entertainment

Service Manual



ORDER NO.
RRV1036

STEREO DOUBLE CASSETTE TAPE DECK

CT-J320WR

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model	Power Requirement	Remarks
	CT-J320WR		
AEM	O	AC power supplied from power transformer's secondary of other system component	
AB	O		
ADL	O		

- **This product is a system(s) component.**
  This product does not function properly when independent; to avoid malfunctions, be sure to connect it to the prescribed system component(s), otherwise damage may result.
  This product's instructions are contained within the instruction manual of the related system component(s).
  The manual is packed with those component(s).
  This product's accessories etc. are packed with its related component(s).

CONTENTS

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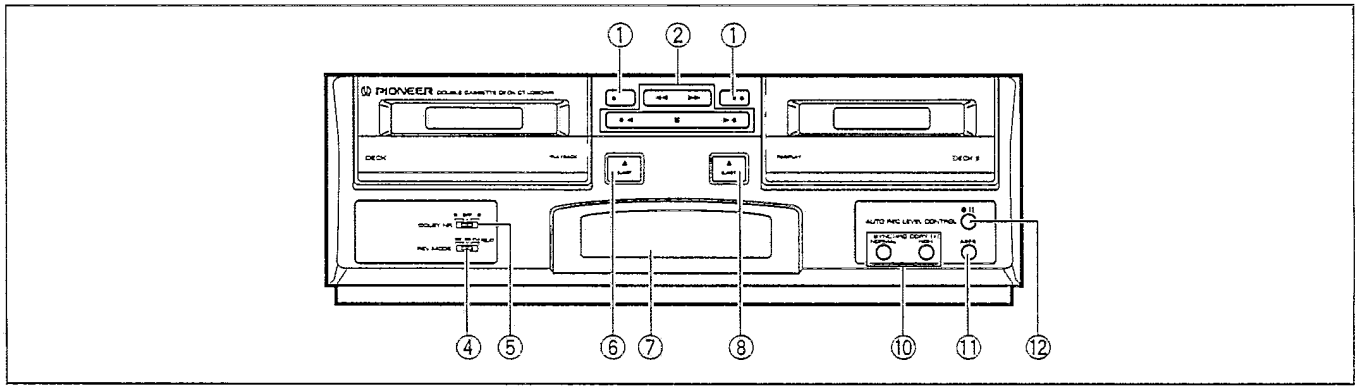
CHAPTER 1
1.1 PANEL FACILITIES



① Deck I/II selector button/indicator
Use to select the deck to use (I or II). The indicator lights to show the deck which has been selected.

② Deck I/II operation buttons

► (play):	For playing back a tape in the forward mode.
◄ (play):	For playing back a tape in the reverse mode.
■ (stop):	For stopping the tape.
►► (fast):	Fast forward in forward mode, rewind in reverse mode. Music search (MS) starts if this is pressed during playback.
◄◄ (fast):	Rewind in forward mode, fast forward in reverse mode. Music search (MS) starts if this is pressed during playback.

④ REV (reverse) MODE switch
Use this to select tape travel direction during play and record.

⇄:	One-sided play and record.
⇄:	This enables auto reverse recording and auto reverse play. If you start with the tape running in reverse, only reverse play and recording are possible.
⊂⊃ **(RELAY):**	This enables auto reverse recording and auto repeat playback. The tape does not reverse if recording starts from the (◄) direction. Select this position for DECK I and II relay play.

⑤ DOLBY* NR switch
Set this switch to B or C for recording with the built-in Dolby Noise Reduction system and for playback of tapes which have been recorded using the Dolby Noise Reduction system. For other tapes, set the DOLBY NR switch to OFF.

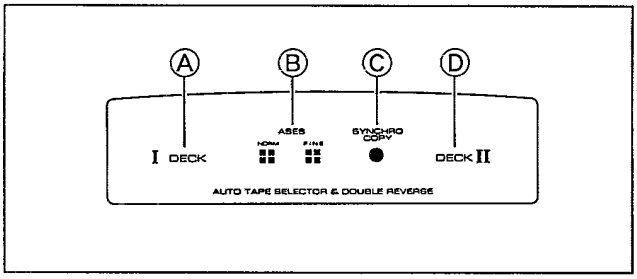
NOTE:
When playing back DOLBY NR-encoded tapes, always set this switch to the same position (B-type or C-type) used for recording.

*
- *Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.*
- *"DOLBY" and the double-D symbol ⧈ are trademarks of Dolby Laboratories Licensing Corporation.*

⑥ Deck I EJECT ▲ button
Press to open the cassette door.

NOTE:
This button functions only when the power is turned on.

⑦ Display section



Ⓐ Lights when deck I is operating.
Ⓑ Lights during ASES MODE.
Ⓒ Lights during tape copy.
Ⓓ Lights when deck II is operating.

⑧ Deck II EJECT ⏏ button

⑩ SYNCHRO COPY I ► II buttons

Used for tape copying.

NORMAL: Copying from the deck I tape to the deck II tape at normal speed.

HIGH: Copying at about twice normal tape speed. (Copies can be made in about half the NORMAL time.)

⑪ ASES button

This can be used when recording from a PD-J920M/PD-J520/PD-J320 CD player or CLD-J420 CD CDV LD player. The A.S.E.S. (Auto Synchro Editing System) function automatically edits when recording from a CD to a tape.

⑫ Recording pause button/indicator (● II)

When this button is pressed, the unit enters the recording pause (standby) mode, and the corresponding indicator lights. At the same time, the play button's indicator begins flashing.

1.2 SPECIFICATIONS

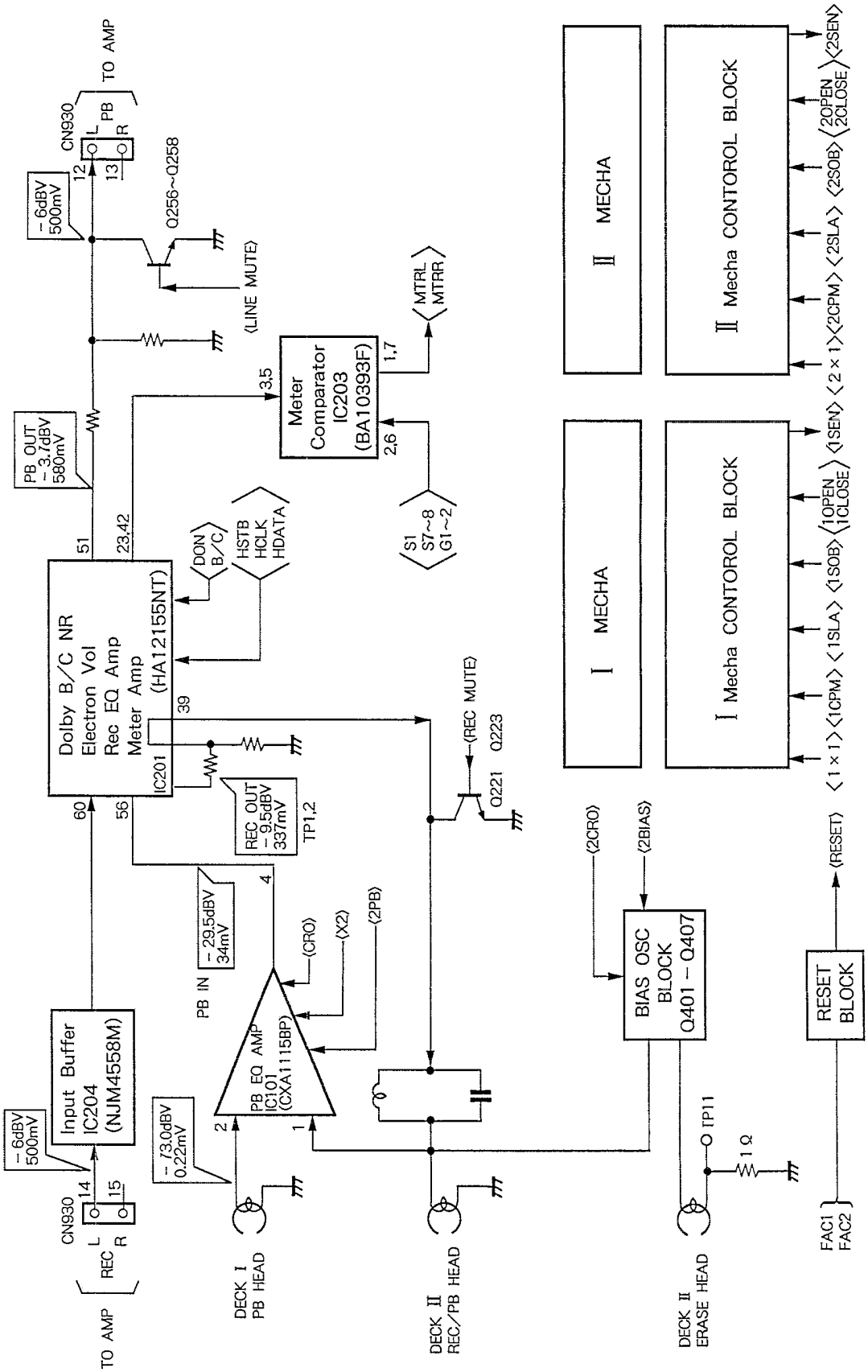
Systems ..... 4 track, 2-channel stereo
Heads ..... "Hard Permalloy" playback head x 1
"Hard Permalloy" recording/playback head x 1
"Ferrite" erasing head x 1
Motor ..... DC servo 2 speed motor x 2
Wow and flutter ..... ±0.19 % (DIN)
0.09 % (WRMS)
Fast winding Time ..... Approximately 120 seconds (C-60 tape)
Frequency Response (–20 dB recording):
TYPE I (Normal) ..... 20 Hz to 16,000 Hz ± 6 dB
TYPE II (HIGH/CrO_2) ..... 20 Hz to 16,000 Hz ± 6 dB
Signal-to-Noise ratio
Dolby NR OFF ..... More than 58 dB
Noise Reduction Effect
Dolby B type NR ON ..... More than 10 dB (at 5 kHz)
Dolby C type NR ON ..... More than 19 dB (at 5 kHz)
Harmonic distortion ..... No more than 1.0 % (–4 dB: 160 nwb/m)

Miscellaneous

Dimensions ..... 360 (W) x 348 (D) x 120.5 (H) mm
Weight (without package) ..... 3.7 kg

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

1.3 BLOCK DIAGRAM



1.4 ADJUSTMENTS

1. MECHANICAL ADJUSTMENT

This adjustment should be performed in test mode.
- Entering the test mode. – Short circuit JP1 and JP2 inside the main unit and turn the power on.

1. Tape Speed Adjustment and Check						
No.	Deck	Mode	Test tape	Adjusting points	Specifications/Ratings (playback frequency)	Remarks
1	I	Normal speed PLAY	STD-301 (3 kHz)	Play back for 1 minute and press the FF (REW) key. *1		
2		Double speed PLAY		check	6000 Hz ± 600 Hz	
3		Normal speed PLAY		Release the FF (REW) key after checking.		
4	II			Play back for 1 minute and press the FF (REW) key. *1		
5		Double speed PLAY		VR851	Within ± 10 Hz of step 2 (deck I) check value.	
6		Normal speed PLAY		Release the FF (REW) key after checking.		
7				VR852	3020 Hz ± 5 Hz	
8	I			VR802	Within ± 5 Hz of step 7 (deck II) adjustment value.	

*1: As long as the FF (REW) key is pressed during playback, the unit is set to double speed mode.

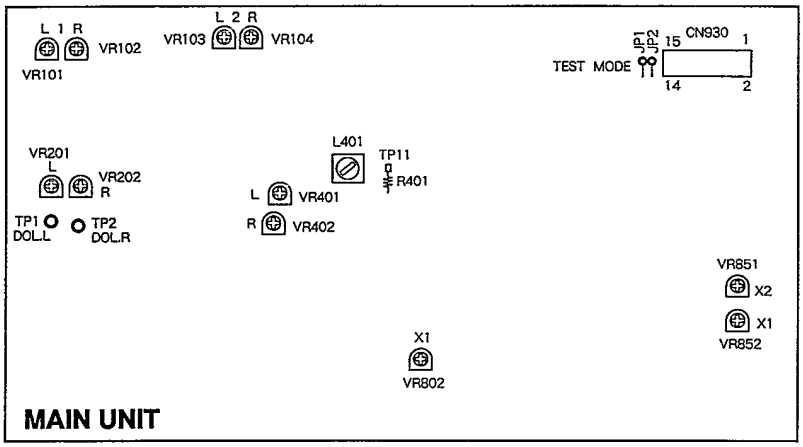
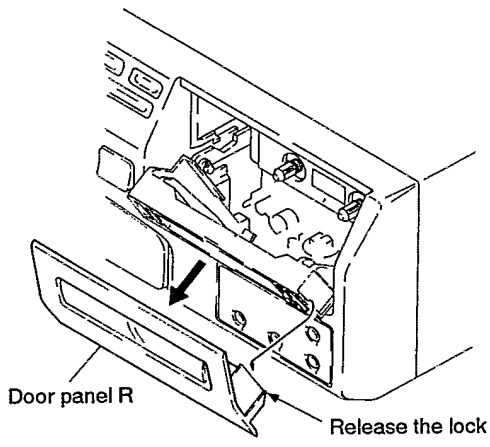


Fig. 1 Adjusting points

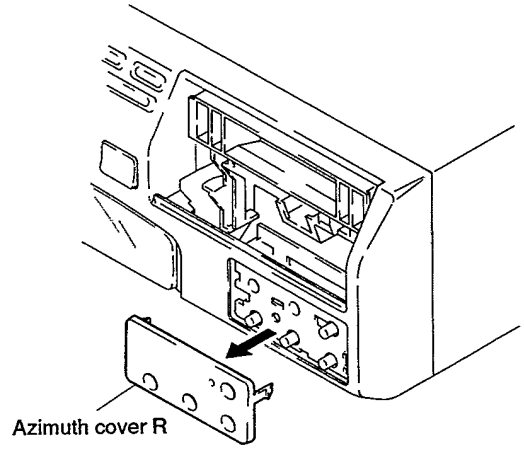
■ Removal of door panels L and R



Note) Remove door panel L (deck I side) in the same way.

Fig. 2 Removal of door panel R (deck II side)

■ Removal of azimuth covers L and R



Note) Remove azimuth cover L (Deck I side) in the same way.

Fig. 3 Removal azimuth cover R (deck II side)

2. ELECTRICAL ADJUSTMENTS

Adjustment Conditions

1. The mechanical adjustments must be completed first.
2. The head must be cleaned and demagnetized.
3. Turn power on allow the deck to warm up for at least a few minutes before commencing any electrical adjustments.
4. The reference signal is 0 dBV=1 Vrms.
5. Connect a 50 kΩ (or between 47k to 52 kΩ) load resistance to the OUTPUT terminals.
6. Unless otherwise specified, the switches listed below are left in the positions indicated.
   DOLBY NR : OFF
   TAPE SELECTOR : NORM

Test Tapes

STD–331E : Playback adjustments (See Fig. 4)
STD–631 or STD–632 : NORMAL blank tape
STD–621 : CrO_2 blank tape

* As the reference recording level is 250 nwb/m for STD–331E, the recording level will be higher by 4dB for STD–331B (160 nwb/m). When adjusting, pay carefull attention to the type of tape used.

List of Adjustments

Playback sections

1. Head azimuth adjustment.
2. Playback level adjustment.

Recording sections

1. Recording bias adjustment.
2. Recording level adjustment.

NOTE: This unit has an automatic tape selection feature.

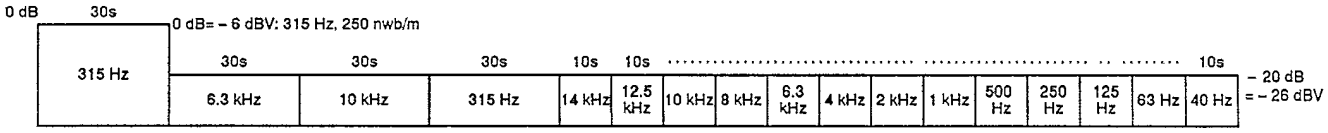


Fig. 4 Constants of the test tape STD–331E

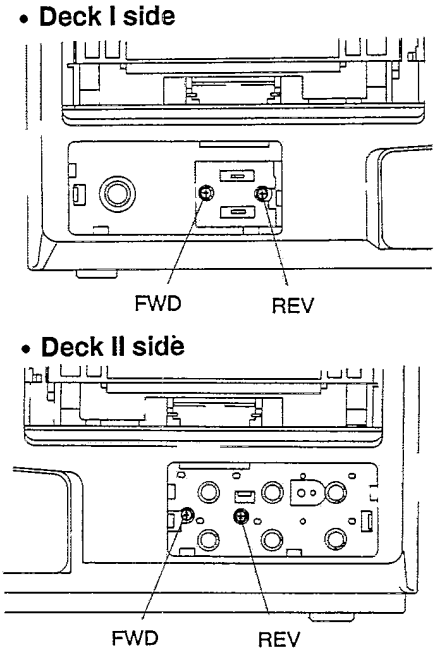


Fig. 5 Head azimuth adjustment

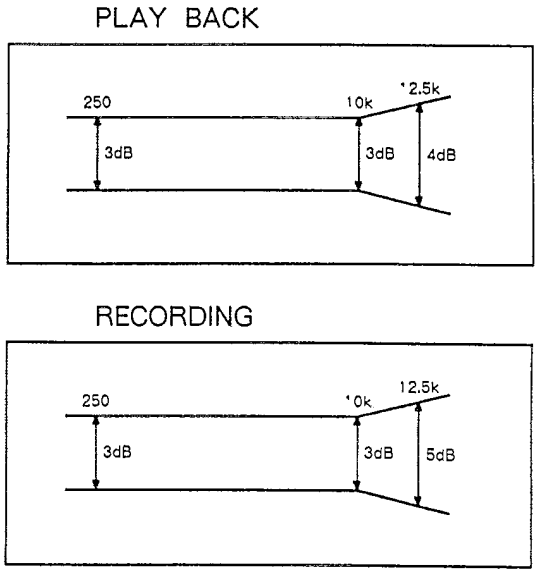


Fig. 6 Frequency response zone

PLAYBACK SECTION

1. Head Azimuth Adjustment

- Turn VR101, VR102 (Deck I) or VR103, VR104 (Deck II) to mechanical center positions.

No.	Mode	Input signal & test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1.	PLAY	Play the 10 kHz/–26 dBV section of STD–331E test tape.	Head azimuth adjustment screw. (See Fig. 5)	CN930–12 pin (Lch) CN930–13 pin (Rch)	Maximum playback signal level.	
2.	STOP	Lock the screw with screw lock after completing adjustment.				

2. Playback Level Adjustment

- This adjustment determines the DOLBY NR level, and must be performed with great care.

No.	Mode	Input signal & test tape	Adjustment location		Measuring location	Adjustment value	Remarks
1.	PLAY	Play the 315 Hz/–6 dBV section of the STD–331E test tape.	Deck I	VR101 (Lch) VR102 (Rch)	TP. 1 (Lch) TP. 2 (Rch)	–9.5 dBV	
			Deck II	VR103 (Lch) VR104 (Rch)			

RECORDING SECTION

1. Recording Bias Adjustment

- After the adjustment, caution should be exercised so as not to become under bias by checking the distortion rate.

No.	Mode	Input signal & test tape	Adjustment location		Measuring location	Adjustment value	Remarks
1.	REC/ PAUSE	Apply a 315 Hz/–26 dBV signal to the CN930–14 and 15 pins, load the STD–631 or STD–632 test tape.	—		CN930–12 pin (Lch) CN930–13 pin (Rch)	—	
2.	REC/ PLAY	Record the 315 Hz and 6.3 kHz signals at –26 dBV input level and playback.	Deck II	VR401 (Lch) VR402 (Rch)		Repeatedly record, playback and adjust so that the plyaback level of 6.3 kHz signal becomes +0.5 dB ± 0.5 dB when compared with the 315 Hz signal.	
3	Check distortion value after adjustment is completed and confirm that there is no underbias.						

2. Recording Level Adjustment

- Turn the DOLBY NR switch is OFF.

No.	Mode	Input signal & test tape	Adjustment location		Measuring location	Adjustment value	Remarks
1.	REC/ PAUSE	Apply a 315 Hz signal to the CN930–14 and 15 pins, load the STD–631 or STD–632 (NORM) test tape.	Applied signal level		TP. 1 (Lch) TP. 2 (Rch)	–13.5 dBV	
2.	REC/ PLAY	Record the 315 Hz/–10 dBV signal and playback.	Deck II	VR201 (Lch) VR202 (Rch)	TP. 1 (Lch) TP. 2 (Rch)	Repeatedly record, playback and adjust so that the playback signal level becomes –13.5 dBV ± 1.5 dB.	
3.	REC/ PLAY	Record the above signal onto the STD–621 (CrO2) test tape, and playback.	Check			–13.5 dBV ± 1.5 dB	

3. TEST MODES

1. OUTLINE OF TEST MODES

There are two types of test modes–test mode 1 which performs special operations and test mode 2 which performs the same MUTE operations as the single deck.

2. Test Mode 1

■ Entering the Test Mode 1

Turn on the power with Pin 48 of the microprocessor (IC902) connected to +5V (Short–circuit the jumper wire.)

■ Operations of Test Mode 1

- The "I, II KEY SEL" will blink during test mode 1. (Displayed during Test mode 1)
- Like for the single deck, LINE MUTE will be open during REC and REC PAUSE.
- The mechanism will operate regardless of whether the tape has been inserted or not.
- ASES will not operate.
- If at tape end, tape end processing will always start within one second.
- After the power is turned on, operation keys will be accepted as soon as initialization completes.
- The following special operations will be carried out.

① Passport operation Check

When ENA/REQ (Pin 23) of the microprocessor is set to "L", SD (Pin 22) will output the reversed voltage level that is opposite to the voltage level ("H" or "L") supplied to SLK (Pin 24).

Table of SD port output

		SCK	
		L	H
ENA/REQ	L	H	L
	H	—	—

② Electronic VR (Incorporated in IC201, HA12155NT) Operation Check

The attenuation amount (ATT) can be selected using the REVERSE MODE SW. It can be changed using the I–FWD PLAY key (VR+) and I–REV PLAY key (VR −) only during REC PAUSE Furthermore, ASES LED will be lit by D − 411.

REV MODE SW	Attenuation Amt (dB)	ASES LED
⇄	–30	NORM LED lights up
⊃	–14 (ALC operations)	LED turns off
↻	–6	FINE LED lights up

③ Tape Speed Selection

The tape speed will double when the FF or REW key is pressed during PLAY. The FF and REW keys of both mechanisms 1 and 2 can be used to set × 2 speed PLAY. (See Fig. 7)

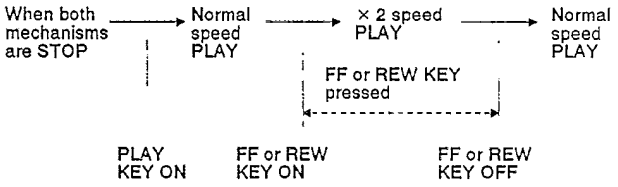


Fig. 7

■ Exiting Test Mode 1

Press the ASES key twice with both mechanisms in the STOP state. Test mode 1 will be ended and normal operations will return. When the key is pressed only once, test mode 2 will be set.

3. Test Mode 2

■ Entering Test Mode 2

Press the ASES key once with both mechanisms in the STOP state in test mode 1.

■ Operations

LINE MUTE will open in the REC mode as for the single deck.

■ Exiting Test Mode 2

Press the ASES key or turn off the power supply.

1.5 PARTS LIST FOR PACKING AND EXPLODED VIEWS

NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- 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.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

1. EXTERIOR AND PACKING

Mark	No.	Description	Part No.
	1	MAIN UNIT	RWX1097
	2	Lead card 33P	RDD1284
	3	Connector assy 15P	RKP1358
	4	1 Mechanism unit	RYM1227
	5	2 Mechanism unit	RYM1228
	6	Rubber sheet	AEB1111
NSP	7	PCB spacer	PNY – 404
	8	Foot assy	PXA1201
NSP	9	Rubber spacer	REB1077
NSP	10	spacer	REC1210
NSP	11	Main chassis	RNB1094
NSP	12	Mechanism shield plate	RNE1503
	13	Cord clamper	RNH – 184
	14	Half pressure spring	RBK1004
	15	Door pocket L	RNK2048
	16	Door pocket R	RNK2049
	17	Control knob A	RAC1848
	18	Control knob B	RAC1873
	19	Slide SW knob	RAC1738
	20	Front panel	RAH2380
	21	Connector assy 5P	RKP1682
	22	Door lens	RAH2335
	23	FL lens	RAH2382
	24	Name plate	PAM1407
NSP	25	HALF LIGHT 2 UNIT	RWZ3054
	26	Remain display paper	REE1019
	27	Connector assy 3P	RKP1683
NSP	28	Rear panel (CT – J320WR/AEM and ADL)	RNA1794
NSP	28	Rear panel (CT – J320WR/AB)	RNA1792
	29	Indicator lens	RNK1591
	30	Spot lens	RNK1847
NSP	31	HALF LIGHT 1 UNIT	RWZ3053
	32	Knob lens	RNK1926
	33	Door panel L	REA1119
	34	Door panel R	REA1120
	35	Azimuth cover L	REA1121
	36	Azimuth cover R	REA1122
	37	Bonnet assy	REA1031
	38	POWER SUPPLY UNIT	RWZ3106
NSP	39	DISPLAY UNIT	RWZ3107
NSP	40	OPERATION UNIT	RWZ3108
NSP	41	REGULATOR 1 UNIT	RWZ3026
NSP	42	REGULATOR 2 UNIT	RWZ3027
	43	LED lens	RAH2383
NSP	44	LED holder	RNK1810
	45	Door coil spring L	RBH1301
	46	Door coil spring R	RBH1302
	47	Eject knob L	REA1128
	48	Eject knob R	REA1129
	49	Damper assy	REC1013
	50	Center bracket	RNK2050
	51	Screw	IBZ30P080FMC
	52	Screw	BBZ30P080FMC
	53	Screw	BBZ30P080FZK
	54	Screw	IBZ30P150FCU
	55	Screw	IPZ26P080FMC
	56	Caution card (CT – J320WR/AB only)	RRN1001
	57	Pad F	RHA1130
	58	Pad R	RHA1131
	59	Sheet	RHX1006
	60	Packing case (CT – J320WR/AEM and AB)	RHG1535
	60	Packing case (CT – J320WR/ADL)	RHG1537

2. 1 MECHANISM UNIT AND 2 MECHANISM UNIT

Mark	No.	Description	Part No.
	1	ASSY HOLDER HEAD (2 Mechanism unit)	RXA1477
	1	ASSY HOLDER HEAD (1 Mechanism unit)	RXA1500
	2	FLAME HEAD	RNK1715
	3	LEVER HEAD	RNK1716
	4	SPRING AZIMUTH	RBK1006
	5	ASSY ARM ASSIST	RXA1401
	6	GEAR ARM HEAD	RNK1717
	7	SPRING CASSETTE	RBK1039
	8	EJECT LOCK	RNK1718
	9	CAP REEL	RNK1719
	10	ASSY PINCH ARM L	RXA1403
	11	CHASSIS HEAD	RNE1437
	12	ASSY PINCH ARM R	RXA1404
	13	ARM PLAY L	RNK1866
	14	GEAR PLAY	RNK1867
	15	ARM PLAY R	RNK1868
	16	CHASSIS OS.	RXA1411
	17	ASSY SUB REEL L	RXA1407
⚠	18	SOLENOID	RXP1020
	19	WIRE	RDC1006
	20	ARM RVS	RNK1721
	21	GEAR FF	RNK1723
	22	ASSY ARM FR	RXA1412
	23	ASSY PULLEY FR	RXA1413
	24	BELT FR	REB1158
	25	METAL	RNG1048
	26	ASSY FLYWHEEL L (1 Mechanism unit)	RXA1423
	26	ASSY FLYWHEEL L (2 Mechanism unit)	RXA1476
	27	METAL	RNG1005
	28	ARM BRAKE	RNK1724
	29	ASSY SUB REEL R	RXA1408
	30	ARM TRIGGER	RNK1722
	31	GEAR CAM	RNK1725
	32	METAL	RNG1049
	33	ASSY FLYWHEEL R (1 Mechanism unit)	RXA1424
	33	FLYWHEEL R (2 Mechanism unit)	RXA1415
	34	METAL	RNG1004
	35	WIRE (14P) (2 Mechanism unit)	RDD1217
	35	WIRE (12P) (1 Mechanism unit)	RDD1216
	36	HOLDER WIRE	RNK1683
	37	P.C. BOARD	RNP1436
	38	SWITCH MODE	RSN1020
	39	SWITCH (LEAF)	RSN1019
	40	HALL IC.	DN6851A
	41	BRACKET FW	RNE1438
	42	SPACER	RNK1822
	43	ASSY MOTOR (2 Mechanism unit)	RXM1063
	43	ASSY MOTOR (1 Mechanism unit)	RXM1062
	44	WIRE	RDD1012
	45	BELT MAIN (1 Mechanism unit)	REB1159
	45	BELT MAIN (2 Mechanism unit)	REB1162
	46	P.C. BOARD	RNP1348
	47	HOUSING (2 Mechanism unit)	RKP1397
	47	HOUSING (1 Mechanism unit)	RKP1396
	48	EJECT LEVER L (2 Mechanism unit)	RNK1831
	48	EJECT LEVER R (1 Mechanism unit)	RNK1811
	49	COLLAR	RNK1704
	61	SPRING	RBH1282
	62	SPRING	RBH1283
	63	SPRING	RBH1284
	64	SPRING	RBH1286
	65	SPRING	RBH1288
	66	SPRING	RBH1291
	67	SPRING	RBH1285
	68	SPRING	RBH1287
	69	SPRING	RBH1289
	70	SPRING	RBH1290
	71	SPRING	RBH1292
	72	SPRING	RBH1061
	73	SPRING	RBH1325
	74	SPRING (L) (2 Mechanism unit)	RBH1319
	74	SPRING (R) (1 Mechanism unit)	RBH1320
	81	SCREW	RBA1023
	82	SCREW	RBA1027
	83	SCREW	RBA1030
	84	SCREW	PCZ20P040FMC
	85	SCREW	RBA1093
	86	SCREW	RBA1094
	87	SCREW	RBA1100
	88	SCREW	RBA1095
	89	.....	
	90	GEAR FW R (2 Mechanism unit)	RNK1733
	101	COLLAR (2 Mechanism unit)	RNK1905
	102	WASHER	RBF1046
	103	WASHER	WA26D047D013

1.6 PCB PARTS LIST

NOTES:

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- 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.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- 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%).

560 Ω → 56 × 10^1 → 561 ····· RD1/8PM[5][6][1]J
47k Ω → 47 × 10^3 → 473 ····· RD1/4PS[4][7][3]J
0.5 Ω → 0R5 ····· RN2H[0][R][5]K
1 Ω → 010 ····· RS1P[0][1][0]K

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

5.62k Ω → 562 × 10^1 → 5621 ····· RN1/4PC[5][6][2][1]F

Mark	No.	Description	Part No.
LIST OF ASSEMBLIES			
		MAIN UNIT	RWX1097
NSP		SUB UNIT	RWM1667
NSP		├REGULATOR 1 UNIT	RWZ3026
NSP		├REGULATOR 2 UNIT	RWZ3027
NSP		├HALF LIGHT 1 UNIT	RWZ3053
NSP		├HALF LIGHT 2 UNIT	RWZ3054
		├POWER SUPPLY UNIT	RWZ3106
NSP		├DISPLAY UNIT	RWZ3107
NSP		└OPERATION UNIT	RWZ3108
MAIN UNIT			
SEMICONDUCTORS			
	IC101		CXA1115BP
	IC201		HA12155NT
	IC203		BA10393F
	IC204		NJM4558M
	IC1011, IC1012		ICP-N75
	IC902		PD3263A
	Q256, Q802, Q852, Q945, Q946		2SA1309A
	Q404, Q804, Q854		2SB1238X
	Q401-Q403		2SC1815
	Q109, Q110, Q406, Q949		2SC3311A
	Q807, Q857		2SD1858X
	Q221, Q222, Q257, Q258		2SD2144S
	Q107, Q108		2SK373
	Q115, Q223		XDA114ES
	Q103-Q106, Q215, Q216		XDC114ES
	Q941-Q944		XDC114ES
	Q101, Q102, Q111-Q114, Q116		XDC124ES
	Q803, Q805, Q853, Q855		XDC124ES
	Q981, Q982		XDC124ES
	D801, D851		11ES2
	D101-D104, D109-D112, D201		1SS254
	D262, D269, D270, D272, D273		1SS254
	D401, D405, D802, D803		1SS254
	D806, D807, D852-D857, D931		1SS254
	D933, D934		1SS254

Mark	No.	Description	Part No.
COILS AND FILTERS			
	L402		LFA121K
	L401		RTD1068
	L101, L102 (5.6MH)		RTF1099
	L201, L202 (10MH)		RTF1102
	F201, F202		RTF1208
CAPACITORS			
	C257, C258		CCCSL101J50
	C451, C452		CCCSL101K500
	C131, C132		CCSQCH100D50
	C952		CCSQCH220J50
	C113-C116, C261, C262		CCSQSL101J50
	C111, C112		CEANL101M10
	C223, C224, C259, C260		CEAS010M50
	C267, C268		CEAS010M50
	C209, C210, C935		CEAS100M50
	C201, C202		CEAS101M16
	C225, C226		CEAS2R2M50
	C221, C222, C408, C409		CEAS330M16
	C129, C130, C263, C264, C902		CEAS470M16
	C119, C120, C227-C230		CEAS4R7M50
	C133, C247, C248		CEASR10M50
	C203, C204, C207, C208		CEASR47M50
	C241, C242		CEASR47M50
	C271, C272		CFTXA103J50
	C217-C220		CFTXA104J50
	C404		CFTXA183J50
	C211-C216		CFTXA222J50
	C121, C122, C249, C250		CFTXA223J50
	C406, C407		CFTXA332J50
	C405		CFTXA472J50
	C117, C118		CFTXA822J50
	C105, C106, C931-C934		CKSQYB102K50
	C236, C237, C243, C244		CKSQYB221K50
	C125, C126		CKSQYB391K50
	C101, C102, C123, C124, C235		CKSQYB471K50
	C103, C104		CKSQYB561K50
	C127, C128, C802, C852		CKSQYB681K50
	C134, C903		CKSQYF103Z50

Mark	No.	Description	Part No.
	C801, C901		CKSQYF473Z50
	C403		CQPA682J100
RESISTORS			
	R920		RA4T223J
	R401		RD1/2LF010J
	R414		RD1/2VM100J
	R408		RD1/2VM161J
	R409		RD1/2VM560J
	R404		RD1/2VM5R6J
	R950		RD1/6PM271J
	R333, R334		RD1/6PM392J
	R980-R983		RD1/6PM471J
	R932		RD1/6PM561J
	VR851 (4.7K)		RCP1020
	VR802, VR852 (10K)		RCP1045
	VR101-VR104, VR201, VR202 (22K)		RCP1046
	VR401, VR402 (100K)		RCP1048
	Other Resistors		RS1/10S□□□J
OTHERS			
	CN930 CONNECTOR		52004-1510
	CN902 33P CONNECTOR		52045-3345
	CN1002 15P JUMPER CONNECTOR		52147-1510
	CN801 12P JUMPER CONNECTOR		52328-1220
	CN851 14P JUMPER CONNECTOR		52328-1420
	CN103 2P TOP POST		B2B-EH
	CN905, CN906 KR CONNECTOR POST		B2B-PH-K
	CN102 3P TOP POST		B3B-EH
	CN101 3P TOP POST		B3B-EH-R
	PCB BINDER		VEF1008
	X901 CERAMIC RESONATOR (4.19MHz)		VSS1014

REGULATOR 1 UNIT

SEMICONDUCTORS			
⚠	IC1003		NJM7805FA

REGULATOR 2 UNIT

SEMICONDUCTORS			
⚠	IC1004		NJM7812FA

HALF LIGHT 1 UNIT

SEMICONDUCTORS			
	D3001-D3004		SEL6410E

HALF LIGHT 2 UNIT

SEMICONDUCTORS			
	D3501-D3504		SEL6410E

POWER SUPPLY UNIT

SEMICONDUCTORS			
⚠	IC1006		NJM7806FA
⚠	IC1002		NJM7906FA
	Q1004		DTC124TS
⚠	D1015, D1016		1SS254
⚠	D1013		S2VB20

Mark	No.	Description	Part No.
CAPACITORS			
	C1008		CEAS102M25
	C1007, C1009, C1011, C1015		CEAS221M16
	C1004, C1005		CEAS222M25
	C1023		CEAS4R7M50
	C1016		CKCYF473Z50
RESISTORS			
	All Resistors		RD1/6PM□□□J
OTHERS			
	HEAT SINK		ANH-575
	EARTH METAL FITT		VNF-091

DISPLAY UNIT

SEMICONDUCTORS			
	D2001, D2002, D2006, D2007		1SS254
	D2009-D2011		1SS254
	D2019, D2020		SEL6910A
	D2012, D2021-D2023		SEL6C10R
SWITCHES AND RELAYS			
	S2003, S2004, S2007, S2008		RSG1033
	S2024, S2025		RSH1041
RESISTORS			
	All Resistors		RD1/6PM□□□J
OTHERS			
	CN9020 33P FFC CONNECTOR		52045-3345

OPERATION UNIT

SEMICONDUCTORS			
	D2004, D2005		1SS254
	D2016, D2017		SEL6410E
	D2013, D2014		SEL6910A
SWITCHES AND RELAYS			
	S2018, S2019, S2022, S2023		RSG1033
	S2013-S2015		RSG1034
RESISTORS			
	All Resistors		RD1/6PM□□□J

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Service Manual

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CT-J320WR

CHAPTER 2

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
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PIONEER ELECTRONICS OF CANADA, INC. 300 Allstate Parkway Markham, Ontario L3R 0P2 Canada
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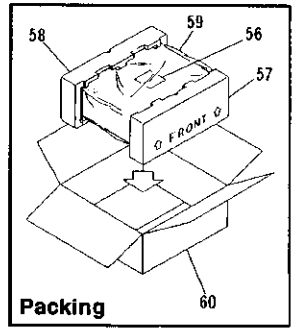
O—SSN JAN. 1994 Printed in Japan

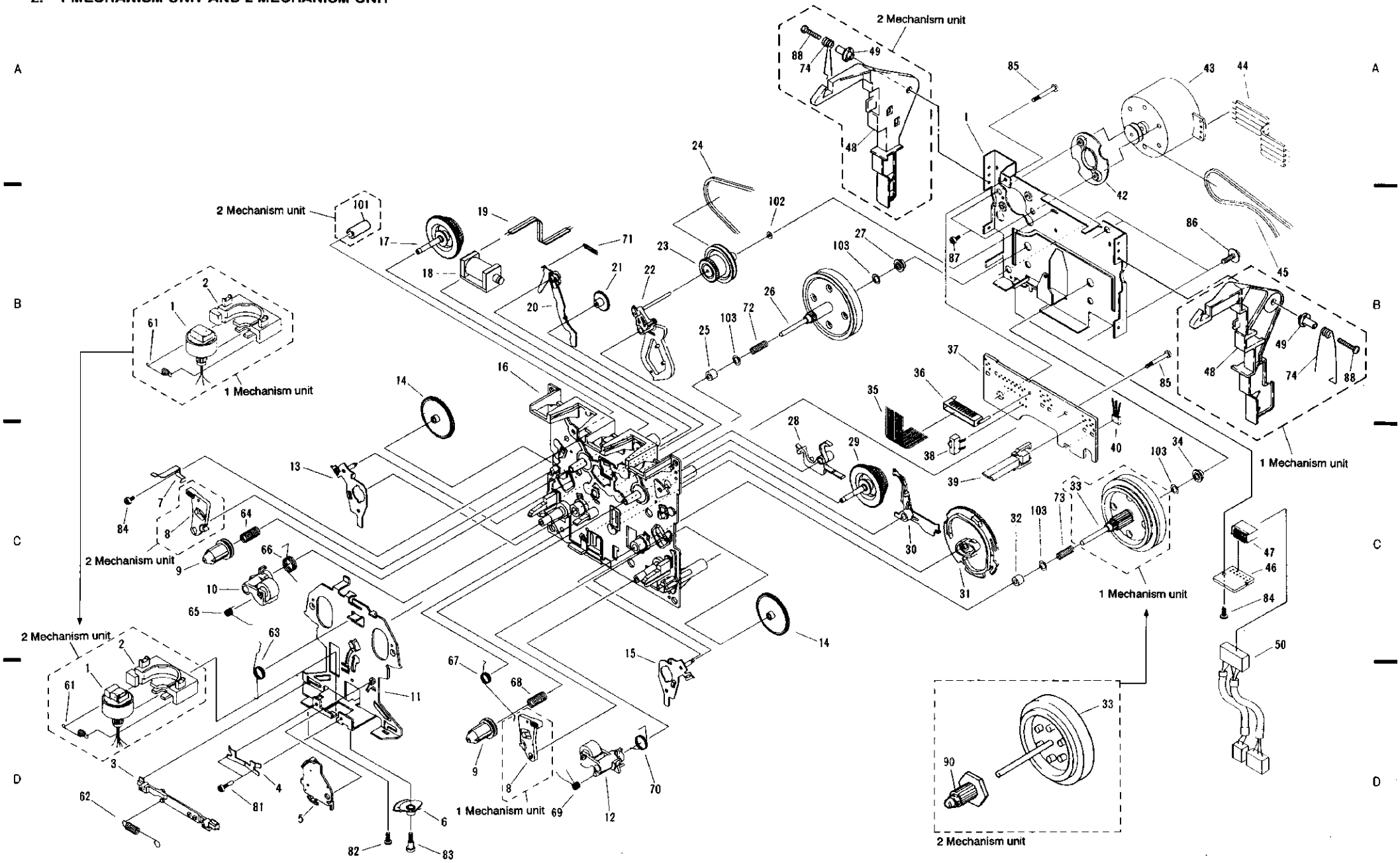
2.1 PACKING AND EXPLODED VIEWS

1. EXTERIOR AND PACKING

NOTE: Screws adjacent to ▼ mark on the product are used for disassembly.

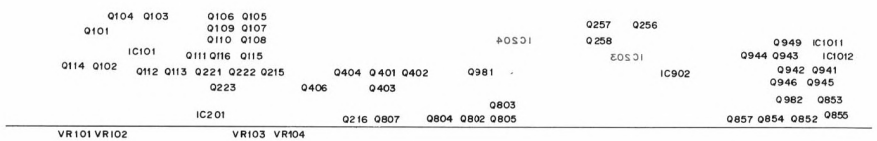


2. 1 MECHANISM UNIT AND 2 MECHANISM UNIT

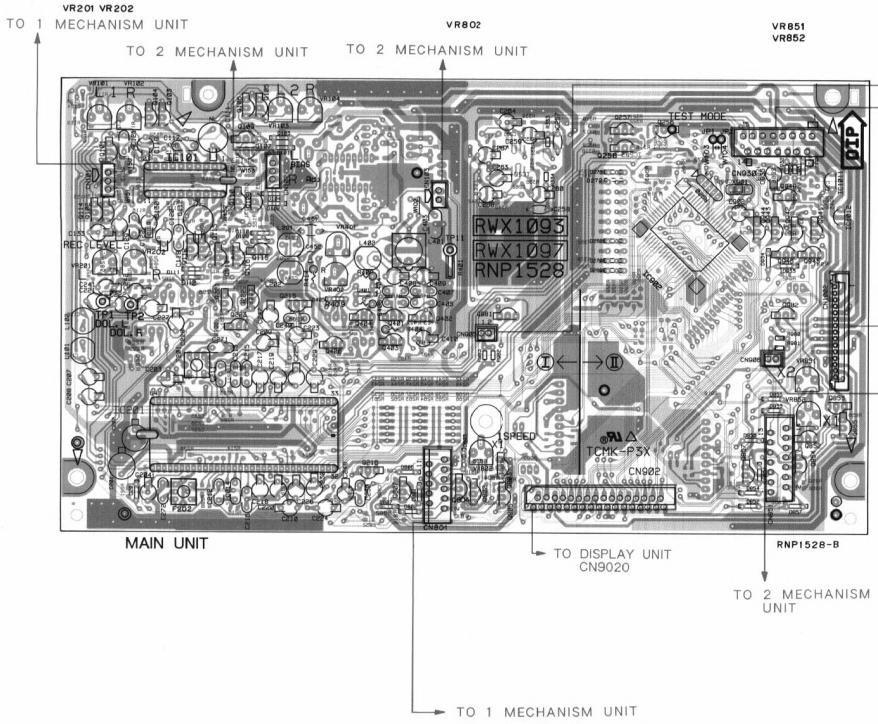


2.2 PCB CONNECTION DIAGRAM

- This diagram is viewed from the gray colored foil side.
- This PCB is double sided.



- **This diagram is viewed from the pink colored foil side.**
- **This PCB is double sided.**



NOTE FOR SCHEMATIC DIAGRAMS (Type 6A)

1. **When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".**
2. **Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.**
3. **RESISTORS:**
   Unit: k kΩ, M MΩ, or Ω unless otherwise noted.
   Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.
   Tolerance: (F): ±1%, (G): ±2%, (K): ±10%, (M): ±20% or ±5% unless otherwise noted.
4. **CAPACITORS:**
   Unit: p pF or µF unless otherwise noted.
   Ratings: capacitor (µF)/ voltage (V) unless otherwise noted.
   Rated voltage: 50V except for electrolytic capacitors.
5. **COILS:**
   Unit: m mH or µH unless otherwise noted.
6. **VOLTAGE AND CURRENT:**
   ⊏⊐ or ⊐ V
   DC voltage (V) in STOP mode unless otherwise noted.
   ⇨ mA or ⇦ mA
   DC current in STOP mode unless otherwise noted.
7. **OTHERS:**
   - ⊕ or ● : Adjusting point.
   - ◁▷ : Measurement point.
   - The ⚠ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.
8. **SCH-□ ON THE SCHEMATIC DIAGRAM:**
   - SCH-□ indicates the drawing number of the schematic diagram. (SCH stands for schematic diagram.)
9. **SWITCHES** (Underline indicates switch position):

DISPLAY UNIT	OPERATE UNIT
S2003 : RECORDING PAUSE	S2013 : STOP
S2004 : ASES	S2014 : REV
S2007 : X1 ┐ SYNCHRO COPY I▶II	S2015 : FWD
S2008 : X2 ┘	S2018 : REW
S2024 : MODE ⊏ ⊏ ⊏	S2019 : FF
S2025 DOLBY NR B – OFF – C	S2022 : 1KEY
	S2023 : 2KEY

NOTE FOR PCB DIAGRAMS:

1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol in PCB Diagrams	Symbol in Schematic Diagrams	Part Name
Q504 (E B C) Q504	Q504 Q504	Transistor
D203 D203	D203	Diode
C513 C513	C513	Capacitor (Polarized)

3. The transistor terminal marked with E or ⊏ shows the emitter.
4. The diode terminal marked with ⊖ or ⊐ shows cathode side.
5. The capacitor terminal marked with ⊖ or ⊏ shows negative terminal.

2.3 SCHEMATIC DIAGRAM