

TEAC[®]



SERVICE MANUAL

CX-310/CX-311

Stereo Cassette Deck

PARTS COMPARISON TABLE BETWEEN CX-310 AND CX-315

The CS-315 is a FL (Fluorescent) Peak Meter version of the CX-310. Therefore all the parts information which is included in the CX-310/CX-311 SERVICE MANUAL published already is applicable to the CX-315 except for that outlined in the following table.

EXPLODED VIEW - 1 (Page 12 ~ 13)

	CX-310		CX-315	
REF. NO.	PARTS NO.	DESCRIPTION	PARTS NO.	DESCRIPTION
1 - 8	5640005100	Panel Assy, Front	9295233000	Panel Assy, Front

EXPLODED VIEW - 2 (Page 14 ~ 15)

	CX-310		CX-315	
REF. NO.	PART NO.	DESCRIPTION	PARTS NO.	DESCRIPTION
	COMMON		COMMON	

EXPLODED VIEW - 3 (Page 16 ~ 17)

	CX-310		CX-315	
REF. NO.	PARTS NO.	DESCRIPTION	PARTS NO.	DESCRIPTION
3 - 27	5301752500	Switch, Leaf	5135003000	Switch, Leaf
3 - 32	5200009700	PCB Assy, MECHANISM	9131086000	PCB Assy, MECHANISM

EXPLODED VIEW - 4 (Page 18 ~ 19)

	CX-310		CX-315	
REF. NO.	PARTS NO.	DESCRIPTION	PARTS NO.	DESCRIPTION
4 - 7	5296000500	Meter, VU	5040108000	Meter, FL Peak Level
4 - 8	5800008700	Bracket, Meter	5800050100	Bracket, Meter
4 - 29	5800001120	Chassis Assy, L	9227027000	Chassis Assy, L
4 - 32	5320000500	Transformer, Power	9125105000	Transformer, Power
_____			5800050200	Bracket, Meter PCB
_____			5200008100	PCB Assy, FL Meter
_____			5210001300	PCB Assy, Bar Graph Ampl.
_____			5504681000	Knob Assy, Push Switch

1 SPECIFICATIONS AND SERVICE DATA

SPECIFICATIONS

Track System 4-track, 2-channel stereo
2 Heads Erase, record/playback
Type of Tape Cassette tape, C-60 and C-90 (Philips type)
Tape Speed 4.8 cm/s (1-7/8 ips)
Input (level and impedance)
MIC: Specified input level; -57 dB (1.09 mV)/10 kohms
Min. input level; -67 dB (346 μ V)
LINE IN: Specified input level; -9 dB (275 mV)/50 kohms
Min. input level; -19 dB (86.9 mV)
DIN*: Min. input level; -45 dB (4.36 mV)
*Pursuant to DIN standards
Output (level and load impedance)
OUTPUT: Spec. output level; -5 dB (436 mV)/50 kohms
PHONES: Spec. output level; -16 dB (123 mV)/8 ohms
Equalization
METAL: 3180 μ s + 70 μ s
Co (CrO₂): 3180 μ s + 70 μ s
NORMAL: 3180 μ s + 120 μ s
Head Configuration
1/2-track, 1-channel erase head
1/4-track, 2-channel record/playback head
Motor DC servo motor
Bias Frequency 100 kHz
Operation Position Horizontal
Power Requirements
100/117/220/240V AC, 50/60 Hz, 11W (General Export Model)
117V AC, 60 Hz, 11W (U.S.A./Canada Model)
220V AC, 50 Hz, 11W (Europe Model)
240V AC, 50 Hz, 11W (U.K./Australia Model)
Weight 6.0 kg (13-4/16 lbs.) net
Dimensions See page 3.

* Noise reduction circuit made under license from Dolby Laboratories. The word "Dolby" and the Double-D symbol are trademarks of Dolby Laboratories.

CAUTION

△Parts marked with this sign are safety critical components. They must always be replaced with identical components – refer to the TEAC parts list and ensure exact replacement.

SERVICE DATA

MECHANICAL
Tape Speed Deviation 3,000 Hz $\pm$ 60 Hz
Tape Speed Drift 60 Hz
Wow and Flutter
Playback: 0.10% (WRMS)
Record/Playback: 0.25% (RMS)
Pinch Roller Pressure 350 g to 450 g (12.3 oz to 15.9 oz)
Reel Torque
Take-up: 40 to 60 g-cm (0.56 to 0.83 oz-inch)
Supply: 2 to 6 g-cm (0.028 to 0.083oz-inch)
F.F.: 80 to 150 g-cm (1.1 to 2.1 oz-inch)
REW.: 90 to 150 g-cm (1.2 to 2.1 oz-inch)
Fast Wind Time
110 sec. or less for MTT-501 (C-60)
Auto End-stop Time 6 sec. or less

ELECTRICAL

Frequency Response			
Playback	(Co (CrO ₂))	40 Hz	+2, -4 dB
	(METAL)	63 Hz	+2, -2 dB
		315 Hz	0 dB (Ref.)
		2 kHz	+2, -2 dB
		4 kHz	+4, -2 dB
		6.3 kHz	+4, -2 dB
		10 kHz	+4, -5 dB
	Overall	40 Hz	+4, -4 dB
		63 Hz	+4, -4 dB
		125 Hz	+4, -2 dB
		250 Hz	+2, -2 dB
		400 Hz	0 dB (Ref.)
		6.3 kHz	+2, -2 dB
		8 kHz	+3, -2.5 dB
		12.5 kHz	+3, -4 dB
		8 kHz	+3, -3 dB
		10 kHz	+3, -4 dB

Signal-to-noise Ratio
Playback NORMAL; 46 dB min.
Record/Playback
METAL, Co (CrO₂); 45 dB min.
NORMAL; 44 dB min.
S/N is improved by 5 dB at 1 kHz and 10 dB above 5 kHz when Dolby NR* is used.
Erase Efficiency 65 dB min. at 1 kHz (measured with input 10 dB higher than the specified input level).
Channel Separation 30 dB min. at 1 kHz
Adjacent Track Crosstalk 40 dB min. at 125 Hz
Total Harmonic Distortion 2.0% or less with 3 types of tapes

NOTES:

- Improvements may result in SPECIFICATIONS AND SERVICE DATA changes.
- Value of "dB" in the data refers to 0 dB (0.775 V), except where specified.

2 REMOVAL OF EXTERNAL COMPONENTS

Disassemble in number-order

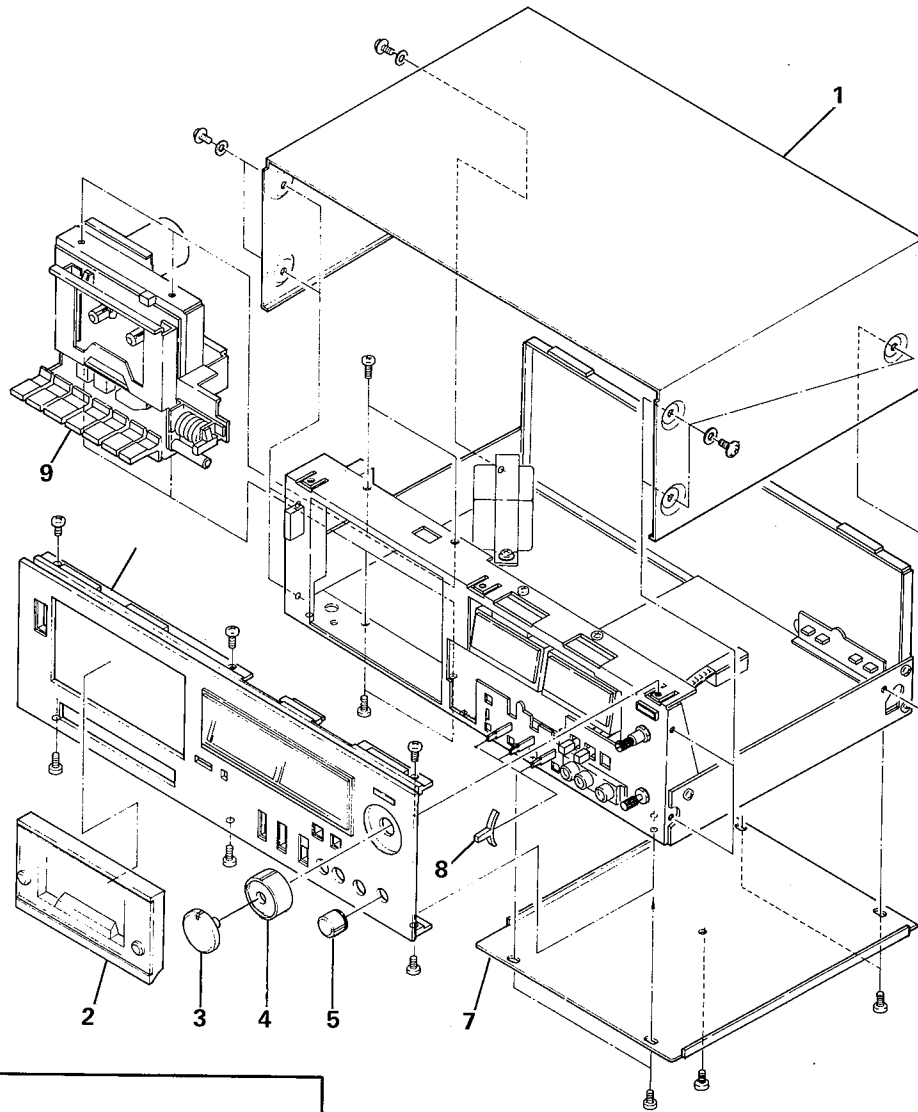


Fig. 2-1

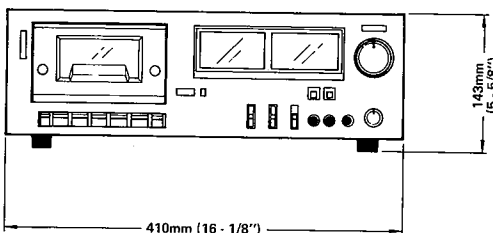
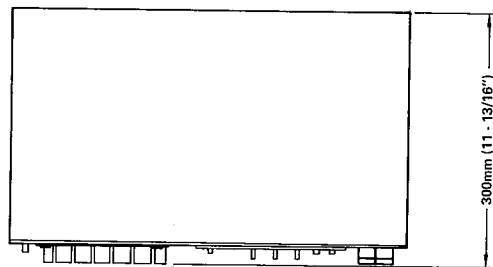


Fig. 1-1 Dimensions

TA-1179-1

3 PARTS LOCATION

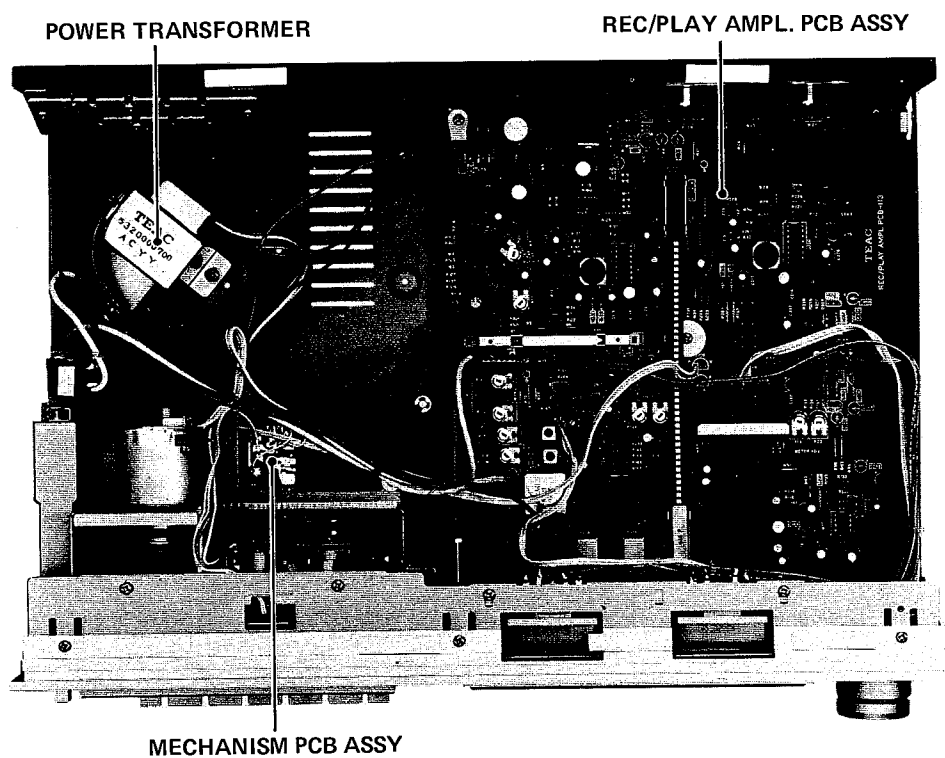


Fig. 3-1

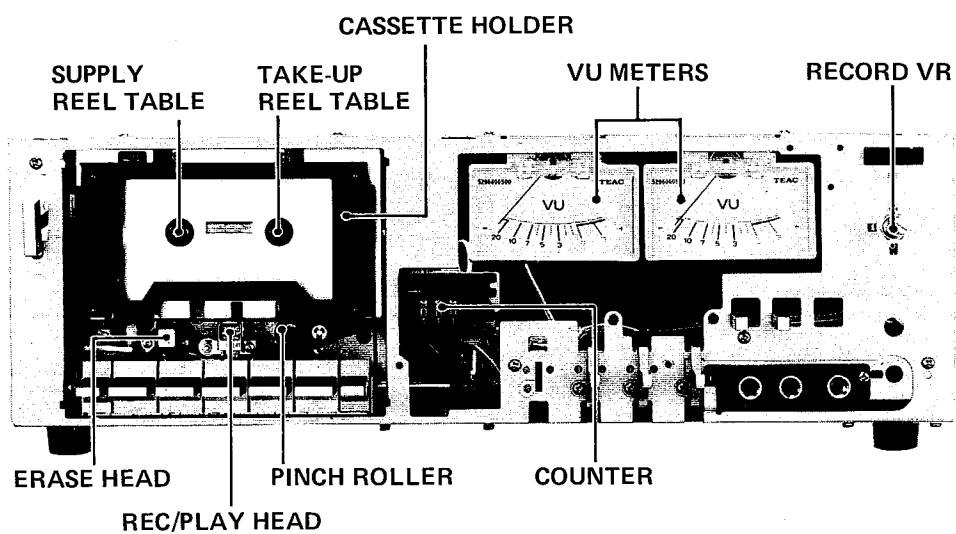


Fig. 3-2

4 MECHANICAL ADJUSTMENTS AND CHECKS

4-1 CAPSTAN ASSEMBLY THRUST

Capstan shaft thrust value: 0.05 mm to 0.15 mm

4-2 PINCH ROLLER PRESSURE

1. Set in the play mode with no tape.
2. Measure the pinch roller pressure when the pinch roller just begins rotation after it is separated from the capstan shaft.

Pinch roller pressure: 350 g to 450 g (12.3 oz to 15.9 oz)

4-3 REEL TORQUE

1. Load a cassette torque meter and read the pointer indication on the dial scale for each tape movement operation.

Take-up: 40 to 60 g-cm (0.56 to 0.83 oz-inch)

Supply: 2 to 6 g-cm (0.028 to 0.083 oz-inch)

F.F.: 80 to 150 g-cm (1.1 to 2.1 oz-inch)

REW.: 90 to 150 g-cm (1.2 to 2.1 oz-inch)

4-4 TAPE SPEED

1. Load and play a TEAC MTT-111 test tape.
2. Using a common slotted screwdriver with a handle completely insulated from the screwdriver blade, adjust the control on the motor (as far as possible) for a reading of 3,000 Hz (Spec.: 3,000 Hz $\pm$ 5 Hz).

NOTE: This tape speed setting should be done after about 20 seconds of operating time.

3. Check the following at any portion of the tape run.

Tape speed deviation 3,000 Hz $\pm$ 60 Hz

Tape speed drift 60 Hz

4-5 MUTING SWITCH

1. When the PLAY key is pressed then locked, the muting switch should be pushed positively.
2. When in the STOP mode, the switch should return to the original released condition.

4-6 MOTOR SWITCH

1. When the PLAY, F.F. or REW. keys are depressed, the motor switch should become ON to start motor rotation.
2. When in the STOP condition, the switch should be off to stop motor rotation.

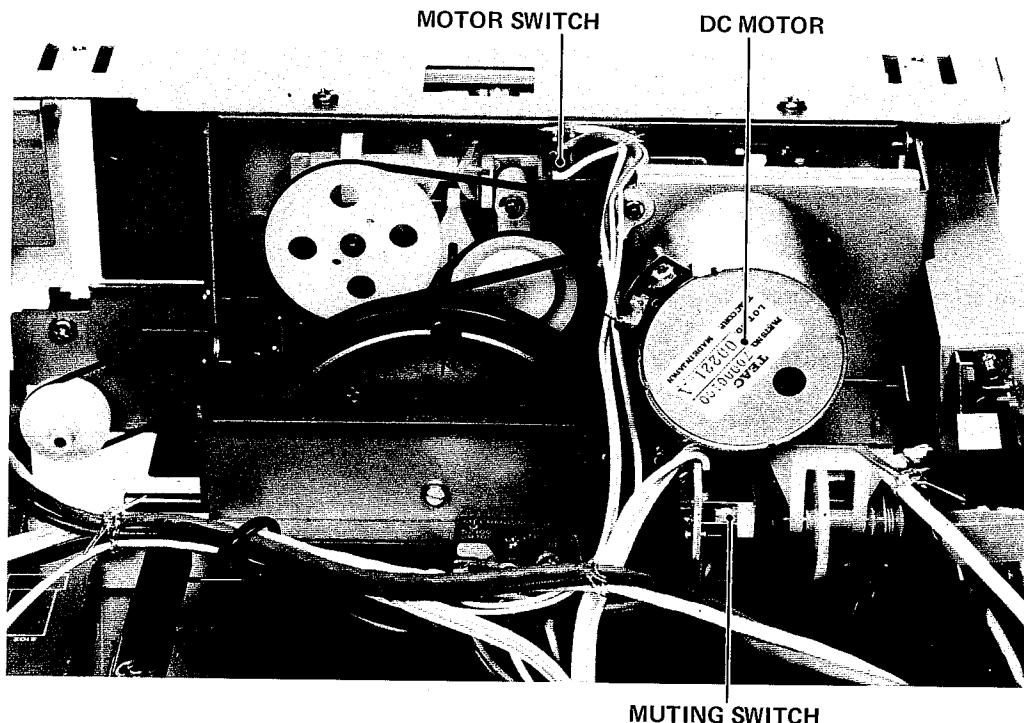


Fig. 3-3

4-7 LUBRICATION

Lubrication is only required when parts are replaced. For this purpose, use the oil and grease specified below.

Oil: TEAC spindle oil (from TEAC TZ-255 oil kit),

Mobil D.T.E. Oil Light, or equivalent

Grease: ORE-LUBE G1/3 or equivalent

1. Apply a drop of oil with an oil applicator to a point about 1/3 the way down the shaft (from the free end) of the flywheel, then insert the shaft into the capstan housing.
2. Apply a suitable amount of light grease to the well of the flywheel bearing.

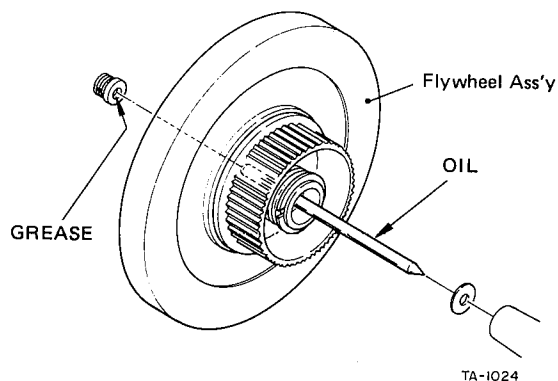


Fig. 4-1

4-8 VOLTAGE CONVERSION (GENERAL EXPORT MODEL ONLY)

ALWAYS DISCONNECT THE POWER LINE CORD BEFORE MAKING THESE ADJUSTMENTS.

1. Remove the top cover of the deck by removing the screws from the sides.
2. Locate the voltage selector, shown in the illustration, near the power transformer.
3. Loosen the two screws in the shorting bar and move the bar so that it shorts across the terminals marked with the required voltage (100, 117, 220 or 240).
4. Retighten the screws.
5. Replace the top cover.

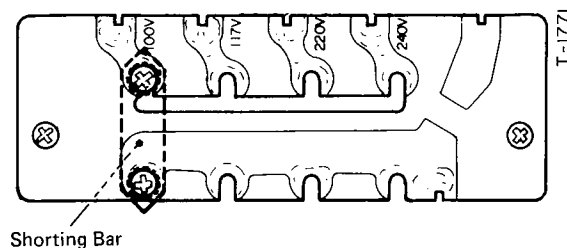


Fig. 4-2

5 ELECTRICAL ADJUSTMENTS AND CHECKS

PRECAUTIONS

1. Before performing adjustments and checks, clean and demagnetize the entire tape path.
2. Make sure the deck is properly set for the voltage in your locality.
3. In general, adjustments and checks are done in the order of L-ch then R-ch. Double REF. NOs. and test point designations indicate L-ch/R-ch.
(Example: R11/R21)
4. The value of "dB" refers to 0 dB (0.775 V). If an AC voltmeter calibrated to 0 dB (1 V) is to be used, appropriate compensation should be made.
5. The AC voltmeter used in the procedures must have an input impedance of 1 M-ohms or more.
6. Note the "Deck settings" at the top of each chart. The settings must be used for all the checks or the chart unless explicitly stated otherwise.

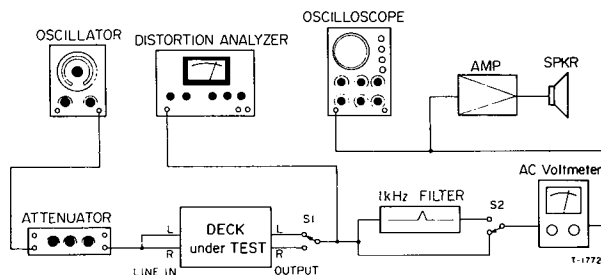


Fig. 5-1 Basic test setup

5-1. PLAYBACK PERFORMANCE

Deck settings:
EQ sw.—METAL
Dolby NR sw.—OUT

TEAC test tapes:

MTT-150: For Dolby level calibration

MTT-316: For playback frequency response check for METAL, Co (CrO₂)

MTT-216: For playback frequency response check for NORMAL

ITEM	INSTRUCTION	INPUT SIGNAL	ADJUST (or CHECK)	MEASURING POINT RESULT	REMARKS
1. Head azimuth	Conn. — Fig. 5-2	MTT-150	Check	OUTPUT • Phase: 45° max. on 'scope (Fig. 5-4)	
		MTT-316 (10 kHz)	Azimuth nut of R/P head (Fig. 5-3)	OUTPUT • Phase: about 0° • Max. output at L- & R-ch's on VTVM	
2. Output level	—	MTT-150	R11/R21	DOLBY TP 580 mV (−2.5 dB)	
	—	MTT-150	Check	OUTPUT −5 dB ± 1 dB (388 mV ~ 489 mV)	• Spec. output level
3. VU meter	—	MTT-150	R13/R23	VU meter +3 VU	

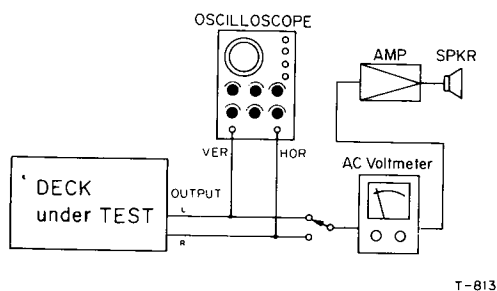


Fig. 5-2 Test setup for azimuth check

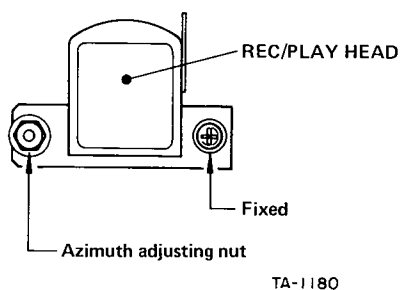
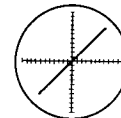
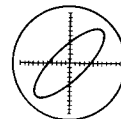


Fig. 5-3 Azimuth nut location

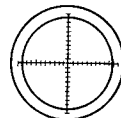
0° (IN PHASE)



45°



90°



180°

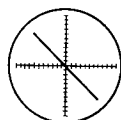


Fig. 5-4 Confirming phase relationship

ITEM	INSTRUCTION	INPUT SIGNAL	ADJUST (or CHECK)	MEASURING POINT RESULT	REMARKS
4. Frequency response	If 10 kHz output is low, adjust by cutting R137/R237.	MTT-316	Resistors R137/ R237.	OUTPUT 40 Hz +2, -4 dB 63 Hz +2, -2 dB 315 Hz 0 dB (Ref.) 2 kHz +2, -2 dB 4 kHz +4, -2 dB 6.3 kHz +4, -2 dB 10 kHz +4, -5 dB	
	EQ sw. — NORMAL	MTT-316	Check	10 kHz output should be about 4 dB higher than in the step above.	
5. Signal-to-noise ratio	EQ sw. — NORMAL	Fully erased MTT-501 tape (Use bulk tape eraser)	Check	OUTPUT 46 dB min. ratio	Ratio of spec. output -5 dB to noise
6. Headphone output level	Conn. — Fig. 5-5	MTT-150	Check	PHONES -16 dB $\pm$ 3 dB (86.9 mV $\sim$ 173 mV)	8 ohm load

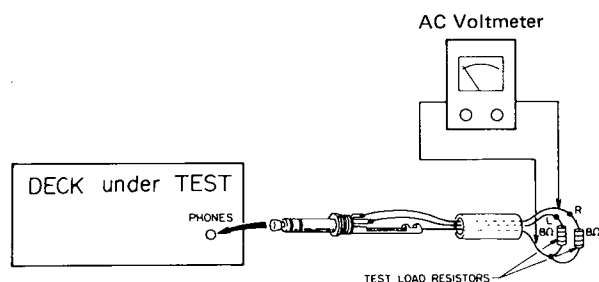


Fig. 5-5 Test setup for headphone check

Deck settings:

REC/PAUSE mode
DOLBY NR sw.—OUT
INPUT sw.—LINE

5.2. MONITOR PERFORMANCE

ITEM	INSTRUCTION	INPUT SIGNAL	ADJUST (or CHECK)	MEASURING POINT RESULT	REMARKS
7. Min. input level	RECORD cont. — Max. INPUT sw. — MIC	MIC 400 Hz/-67 dB (346 μ V)	Check	OUTPUT -5 dB $\pm$ 3 dB (308 mV $\sim$ 615 mV)	MIC min. input level
	INPUT sw. — MIC	DIN IN 400 Hz/-45 dB (4.36 mV)	Check	OUTPUT -5 dB $\pm$ 3 dB (308 mV $\sim$ 615 mV)	DIN min. input level (For General Export Models)
	INPUT sw. — LINE	LINE IN 400 Hz/-19 dB (86.9 mV)	Check	OUTPUT -5 dB $\pm$ 2 dB (346 mV $\sim$ 548 mV)	LINE min. input level
8. LINE spec. input level	—	LINE IN 400 Hz/-9 dB (275 mV)	Record cont.	DOLBY TP 580 mV (-2.5 dB)	Spec. setting of RECORD cont.
	—	LINE IN 400 Hz/-9 dB (275 mV)	Check	OUTPUT -5 dB $\pm$ 1 dB (388 mV $\sim$ 489 mV)	
	IMPORTANT : Do not move RECORD control during any later process.				
9. VU meter	—	LINE IN 400 Hz/-9 dB (275 mV)	Check	VU meter +3 VU $\pm$ 1 VU	

5.3. RECORDING PERFORMANCE
Deck settings:

DOLBY NR sw.—OUT
 INPUT sw.—LINE
 RECORD cont.—Spec. position (item 8)

TEAC test tapes:

MTT-506: For record test with Co (CrO₂)
 MTT-501: For record test with NORMAL
 METAL: For record test with METAL

ITEM	INSTRUCTION	INPUT SIGNAL	ADJUST (or CHECK)	MEASURING POINT RESULT	REMARKS
10. Bias trap	Record-pause mode	LINE IN No signal	U106/U206	BIAS TRAP TP Min. reading	
11. Record bias	① METAL/METAL tape ② Co (CrO ₂)/MTT-506 ③ NORMAL/MTT-501	LINE IN 400 Hz & 6.3 kHz alternately/—42 dB (6.15 mV)	R14/R24 R17 R18	OUTPUT Nearly equal level at both freq.	Adjust in the order of ①→②→③
12. Record level	BIAS/EQ — METAL METAL tape Co (CrO ₂)/MTT-506 tape NORMAL/MTT-501	LINE IN 400 Hz/—12 dB (195 mV) LINE IN 400 Hz/—12 dB (195 mV)	R12/R22 Check	OUTPUT —8 dB (308 mV) OUTPUT —8 dB ±1.5 dB (259 mV ~ 367 mV)	
13. Total harmonic distortion	METAL/METAL tape Co (CrO ₂)/MTT-506 NORMAL/MTT-501	LINE IN 400 Hz/—12 dB (195 mV)	Check	OUTPUT 2.0% or less distortion	
14. Frequency response	METAL/METAL tape Co (CrO ₂)/MTT-506 NORMAL/MTT-501	LINE IN Required signal/ —42 dB (6.15 mV)	Check	OUTPUT 40 Hz +4, —4 dB 63 Hz +4, —4 dB 125 Hz +4, —2 dB 250 Hz +2, —2 dB 400 Hz 0 dB (Ref.) 6.3 kHz +2, —2 dB 8 kHz +3, —2.5 dB 12.5 kHz +3, —4 dB 8 kHz +3, —3 dB 10 kHz +3, —4 dB	}METAL, Co (CrO ₂) }NORMAL
If frequency response is wrong, recheck steps 11 and 13.					
15. Signal-to-noise ratio	METAL/METAL tape } Co (CrO ₂)/MTT-506 } NORMAL/MTT-501...	LINE IN 1 kHz/—9 dB (275 mV) ↓ no signal	Check	OUTPUT } ... 45 dB min. ratio ... 44 dB min. ratio	Ratio of spec. output —5 dB to noise
16. Erase efficiency	• Connection — Fig. 5-1. But switch ON 1 kHz filter. • Record 1 kHz. Rewind tape to mid point of recorded portion. Do "no signal" recording. Get difference between 1 kHz portion and its erased portion.				
	METAL/METAL tape	LINE IN 1 kHz/+1 dB (0.869V) ↓ no signal	Check	OUTPUT 65 dB min. ratio	Ref. output level: +5 dB (1.38V)
17. Channel separation	• Connection — Fig. 5-1. But do not connect LINE IN (R), switch ON 1 kHz filter. • Set deck in record mode. Find differences between 1 kHz recorded portion (L-ch) and "no signal" portion (R-ch).				
	Co (CrO ₂)/MTT-506	LINE IN L-ch 1 kHz/—9 dB (275 mV) R-ch No signal	Check	OUTPUT 30 dB min. ratio	

ITEM	INSTRUCTION	INPUT SIGNAL	ADJUST (or CHECK)	MEASURING POINT RESULT	REMARKS
18. Adjacent track crosstalk	• Connection — Fig. 5-1. But do not connect LINE IN (L) and OUTPUT (L). • Record 125 Hz on R-ch. Note output level of its recorded portion. Invert tape and play R-ch track. Check leakage level against the output reference of previously recorded portion.				
	Co (CrO ₂)/MTT-506	LINE IN L-ch No signal R-ch 125 Hz/−9 dB (275 mV)	Check	OUTPUT 40 dB min. ratio	
19. Dolby NR effect	• Record 1 kHz with Dolby NR switch to OUT. Play its portion with switch, OUT and IN. Get the output level difference between OUT and IN positions. Repeat the above process for 10 kHz.				
	Co (CrO ₂)/MTT-506	LINE IN 1 kHz/−29 dB (27.5 mV)	Check	OUTPUT Variation 3 dB ~ 8 dB	
	Co (CrO ₂)/MTT-506	LINE IN 10 kHz/−39 dB (8.69 mV)	Check	OUTPUT Variation 8 dB ~ 12 dB	

5-4. ADJUSTMENT AND TEST POINT LOCATIONS

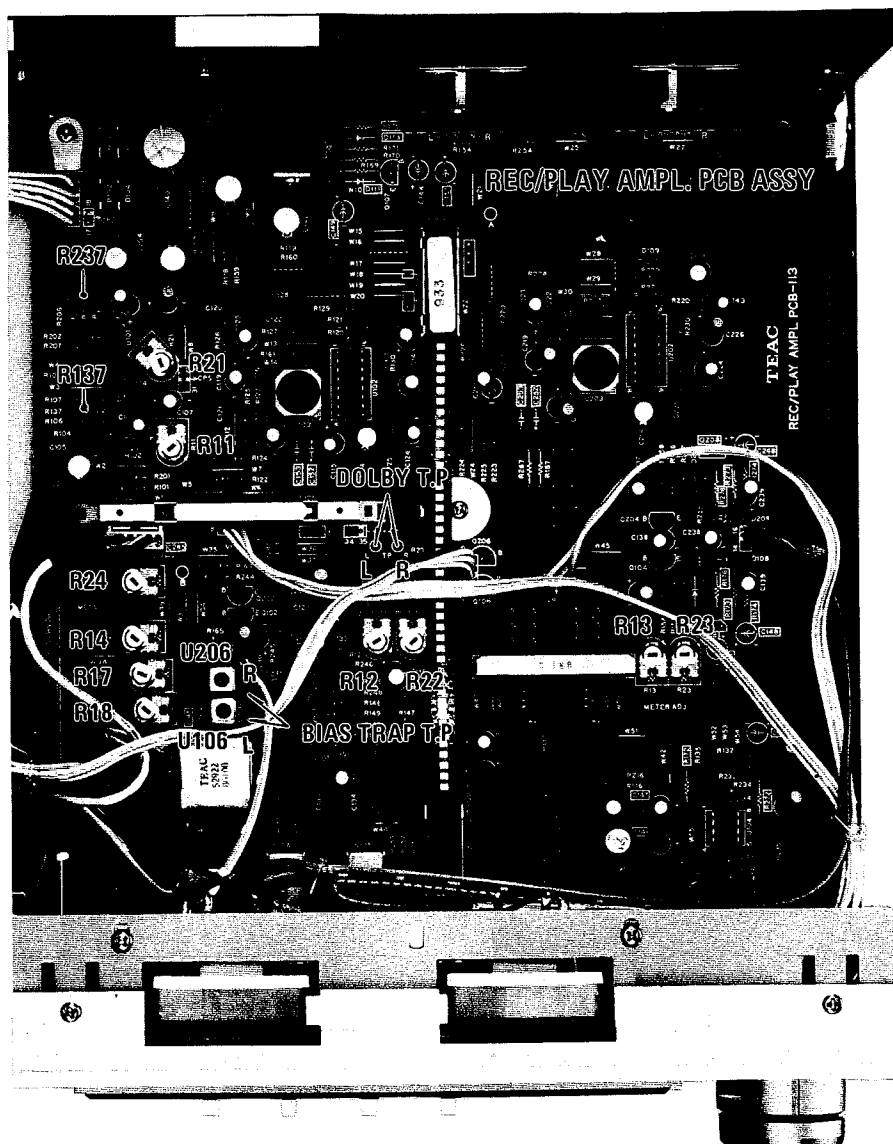
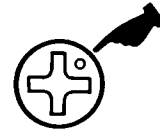


Fig. 5-6

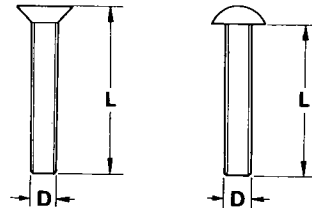
ASSEMBLING HARDWARE CODING LIST

All screws conform to ISO standards, and have crossrecessed heads, unless otherwise noted.
ISO screws have the head inscribed with a point as in the figure to the right.



FOR EXAMPLE:

B M 3 x 6
 ----- Length in mm (L)
 ----- Diameter in mm (D) *
 ----- Metric System
 ----- Nomenclature

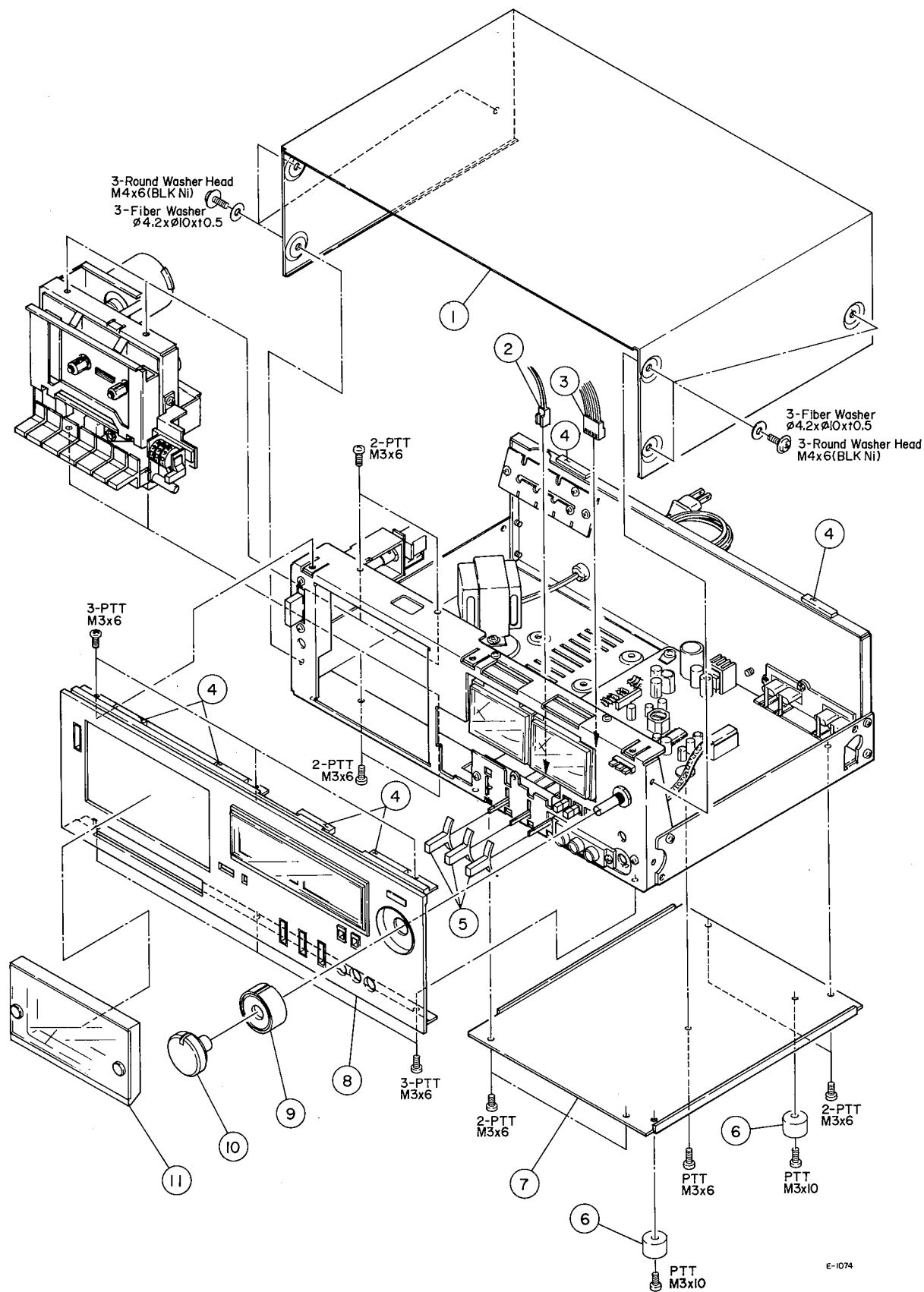


* Inner dia. for washers and nuts

	Code	Name	Type		Code	Name	Type
MACHINE SCREW	R	Round Head Screw		TAPPING SCREW	BTA	Binding Head Tapping Screw(A Type)	
	P	Pan Head Screw			BTB	Binding Head Tapping Screw(B Type)	
	T	Stove Head Screw (Truss)			RTA	Round Head Tapping Screw(A Type)	
	B	Binding Head Screw			RTB	Round Head Tapping Screw(B Type)	
	F	Flat Countersunk Head Screw		SETSCREW	SF	Hex Socket Setscrew(Flat Point)	
	O	Oval Countersunk Head Screw			SC	Hex Socket Setscrew(Cup Point)	
WOOD SCREW	RW	Round Head Wood Screw			SS	Slotted Socket Setscrew(Flat Point)	
TAPTITE SCREW	PTT	Pan Head Taptite Screw		WASHER	E	E-Ring (Retaining Washer)	
	WTT	Washer Head Taptite Screw			W	Flat Washer (Plain)	
SEMS SCREW	BSA	Binding Head SEMS Screw(A Type)			SW	Lock Washer (Spring)	
	BSB	Binding Head SEMS Screw(B Type)			LWI	Lock Washer (Internal Teeth)	
	BSF	Binding Head SEMS Screw(F Type)			LWE	Lock Washer (External Teeth)	
	PSA	Pan Head SEMS Screw(A Type)			TW	Trim Washer (Countersunk)	
	PSB	Pan Head SEMS Screw(B Type)		NUT	N	Hex Nut	

6 EXPLODED VIEWS AND PARTS LIST

EXPLODED VIEW - 1



E-1074

EXPLODED VIEW - 1

REF. NO.	PARTS NO.	DESCRIPTION
1 - 1	* 5800009900	Cover, Top [CX-310]
	* 5552438000	Cover, Top [CX-311]
1 - 2	* 5122164000	Connector, Socket; 2P
1 - 3	* 5122168000	Connector, Socket; 6P
1 - 4	* 5555570000	Cushion, Top Cover; B
1 - 5	5800009600	Knob, Lever Switch [CX-310]
	* 5800018300	Knob, Lever Switch [CX-311]
1 - 6	* 5534432000	Foot
1 - 7	* 5800010400	Chassis, Bottom
1 - 8	* 5640005100	Panel Assy, Front [CX-310]
	* 5640005110	Panel Assy, Front [CX-311]
1 - 9	5800011800	Knob, REC; B [CX-310]
	5800018400	Knob, REC; B [CX-311]
1 - 10	5800011700	Knob, REC; A [CX-310]
	5800018200	Knob, REC; A [CX-311]
1 - 11	5640002100	Cover Assy, Cassette [CX-310]
	5800005400	Cover Assy, Cassette [CX-311]

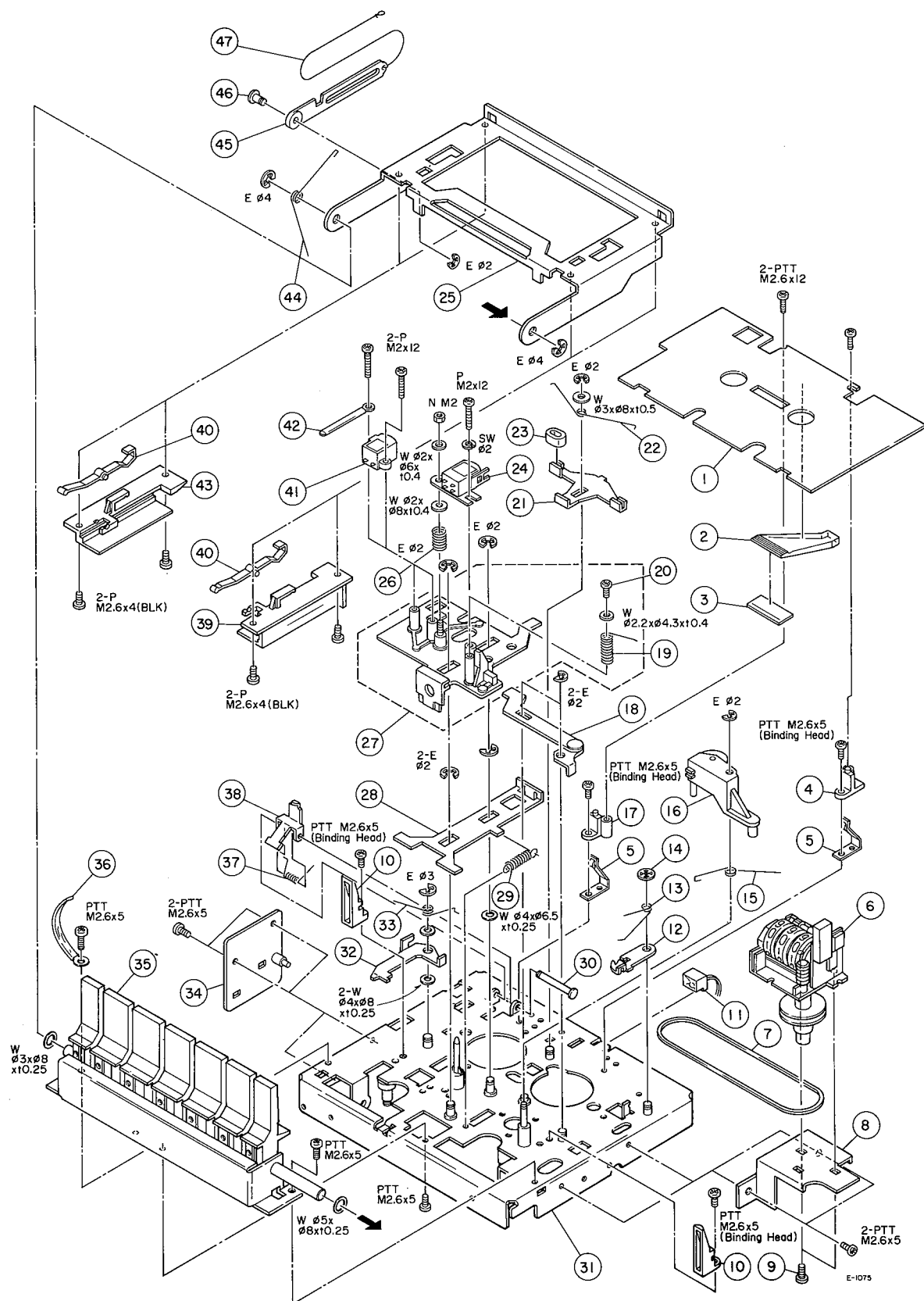
INCLUDED ACCESSORIES

REF. NO.	PARTS NO.	DESCRIPTION
	5128107000	Cord, In-output Connection
	5101345000	Information Supplement, Cassete [U]
	5101495000	Information Supplement, Cassete [All except U]
	5700004200	CX-310/CX-311 Owner's Manual [U]
	5700004300	CX-310/CX-311 Owner's Manual [All except U]

Parts marked with *require longer delivery time than regular parts.

[U]: U.S.A. [C]: CANADA [GE]: GENERAL EXPORT
[A]: AUSTRALIA [E]: EUROPE [UK]: U.K.

EXPLODED VIEW - 2

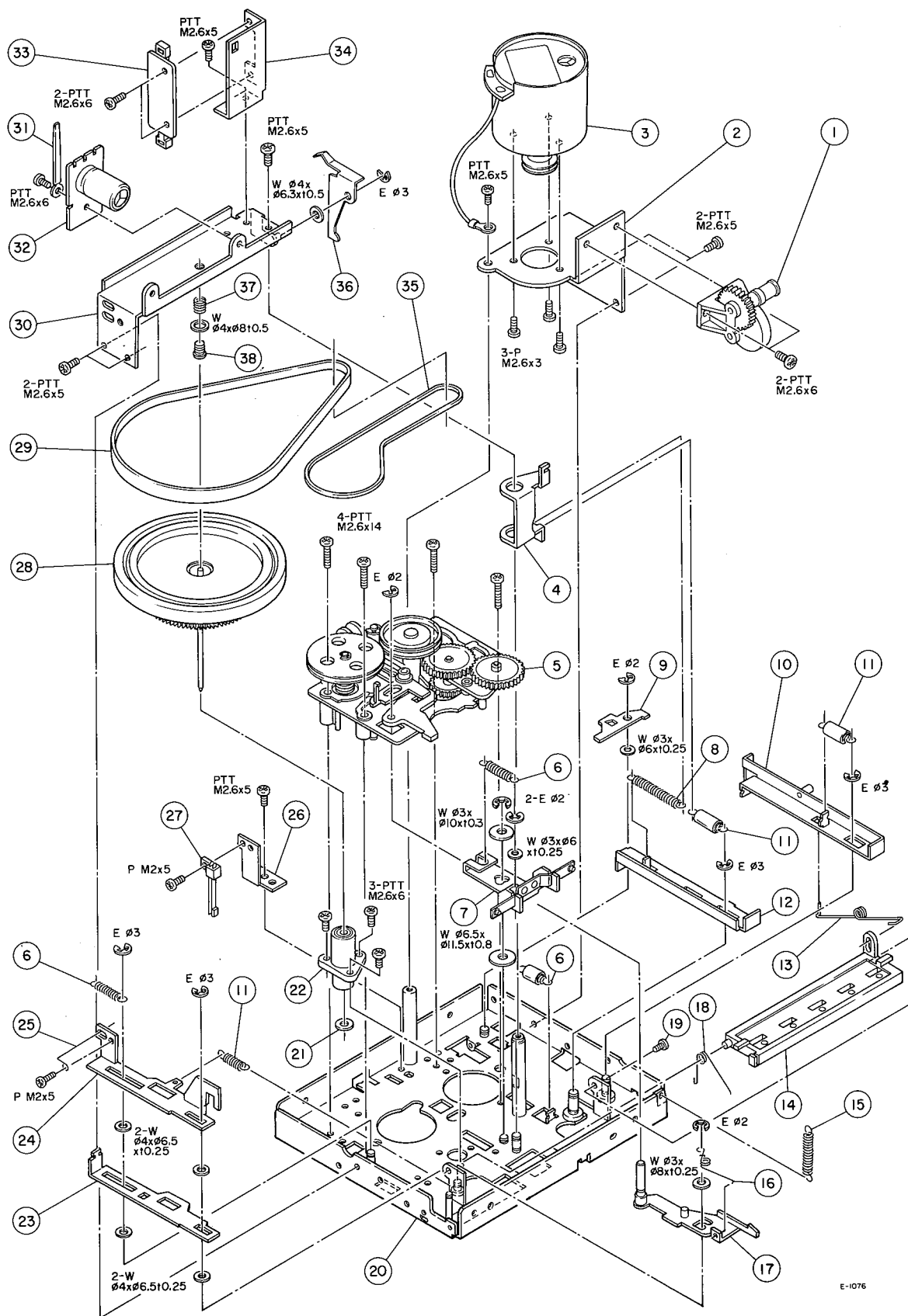


EXPLODED VIEW - 2

REF. NO.	PARTS NO.	DESCRIPTION
2 - 1	* 5555770001	Plate, Cassette Holder
2 - 2	* 5534761000	Lens, Cassette
2 - 3	* 5555771000	Plate, Reflective
2 - 4	* 5534766000	Guide, Cassette; R
2 - 5	* 5555773000	Plate, Cassette Pressure
2 - 6	5504769000	Counter Assy
2 - 7	5534769000	Belt, Counter
2 - 8	* 5800015100	Bracket, Counter
2 - 9	* 5781003005	Screw, Pan Head Tapping; M3 x 5
2 - 10	* 5534444200	Guide, Cassette
2 - 11	* 5310005000	Lamp, Cassette
2 - 12	* 5084643200	Plate, Lock
2 - 13	* 5084550200	Spring, Lock
2 - 14	* 5786102400	Ring, CS; $\phi 2.4$
2 - 15	* 5800022500	Spring, Pinch Roller Arm
2 - 16	5504760002	Arm Assy, Pinch Roller
2 - 17	* 5534765000	Guide, Cassette; L
2 - 18	* 5504773000	Arm Assy, Pause
2 - 19	* 5524234001	Spring, Pressure
2 - 20	* 5781022004	Screw, Pan Head; M2 x 4
2 - 21	* 5555759000	Plate, Brake
2 - 22	* 5524241000	Spring, Brake
2 - 23	* 5534844000	Cushion, B
2 - 24	* 5378600100	Head, REC/PLAY
2 - 25	* 5553323000	Holder, Cassette
2 - 26	* 5524120000	Spring, Head Adjusting
2 - 27	* 5504755002	Plate Assy, Head Base
2 - 28	* 5555758000	Plate, Brake Actuating
2 - 29	* 5524240000	Spring, Brake Actuating Plate
2 - 30	* 5544656000	Shaft, Record Preventing
2 - 31	* 5502239004	Chassis Assy, Mechanism
2 - 32	* 5555762000	Arm, Eject Preventing
2 - 33	* 5800025500	Spring, Arm; B
2 - 34	* 5800013300	Bracket Assy, Solenoid
2 - 35	5800025001	Button Assy [CX-310]
	5800025101	Button Assy [CX-311]
2 - 36	* 5581038000	Clamper, Cord; A
2 - 37	* 5520349000	Spring, Safety Lever
2 - 38	* 5555081100	Lever, Safety; C
2 - 39	5534614000	Guide, Cassette; R
2 - 40	5534615000	Spring, Cassette Pressure
2 - 41	5569613000	Head, Erase
2 - 42	* 5581062000	Clamper, Cord; E
2 - 43	5534613000	Guide, Cassette; L
2 - 44	* 5524247000	Spring, Cassette Holder
2 - 45	* 5534612000	Plate, Lock
2 - 46	* 5545089000	Shaft, Lock Plate
2 - 47	* 5788202100	String, Damper

Parts marked with *require longer delivery time than regular parts.

EXPLODED VIEW - 3



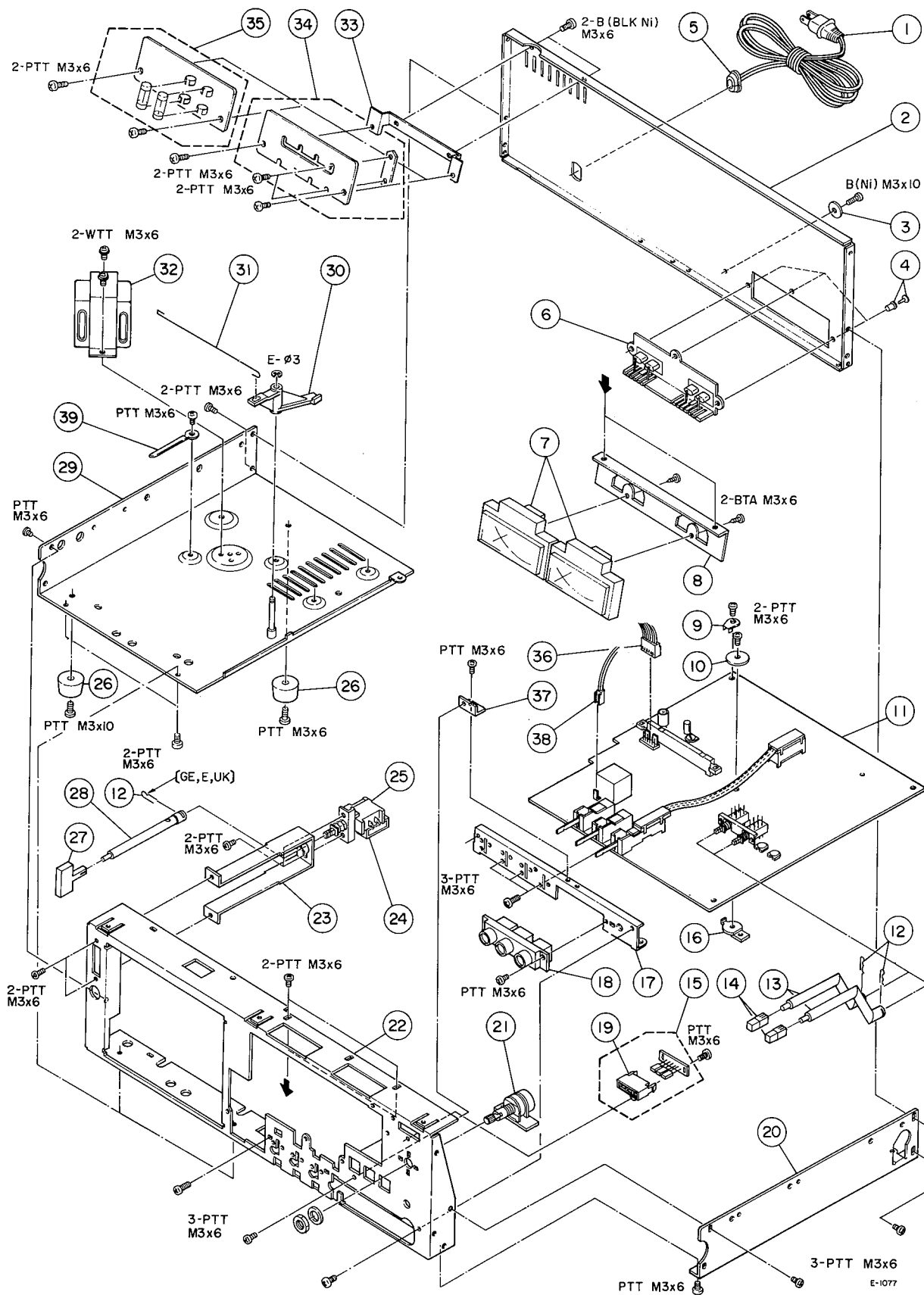
E-1076

EXPLODED VIEW - 3

REF. NO.	PARTS NO.	DESCRIPTION
3 - 1	* 5504777000	Damper Assy, C
3 - 2	* 5555751001	Bracket, Motor
3 - 3	5370000100	Motor Assy, Capstan
3 - 4	* 5555764000	Arm, Record Actuating
3 - 5	5502240006	Gear Assy, Sub Base
3 - 6	* 5524250000	Spring, Base Return
3 - 7	* 5800017100	Lever Assy, FF; B
3 - 8	* 5524243000	Spring, Record
3 - 9	* 5555761000	Arm, Actuating
3 - 10	* 5504771000	Lever Assy, Eject
3 - 11	* 5524235000	Spring, Lever Return
3 - 12	* 5555763001	Rever, REC
3 - 13	* 5524293001	Lever, Lock Actuating
3 - 14	* 5533221002	Plate, Button Lock
3 - 15	* 5524203000	Spring, Damper
3 - 16	* 5524246001	Spring, Lever Return
3 - 17	* 5504774000	Lever Assy, Stop
3 - 18	* 5800037501	Spring, Lock Plate; B
3 - 19	* 5781013005	Screw, Pan Head Tapping M3 x 5
3 - 20	* 5502239004	Chassis Assy, Mechanism
3 - 21	* 5534130000	Washer, Oil Retaining
3 - 22	5504091000	Housing Assy, Capstan
3 - 23	* 5555766001	Lever, Pause; B
3 - 24	* 5555765000	Lever, Pause; A
3 - 25	* 5524244001	Spring, Pause
3 - 26	* 5555755000	Bracket, Switch; B
3 - 27	* 5301752500	Switch, Leaf
3 - 28	5504756002	Flywheel Assy, Capstan
3 - 29	5534767000	Belt, Capstan Drive
3 - 30	* 5800020000	Plate Assy, Flywheel
3 - 31	* 5581038000	Clamper, Cold; A
3 - 32	* 5200009700	PCB Assy, MECHANISM
3 - 33	* 5200009800	PCB Assy, SW
3 - 34	* 5555754000	Bracket, Switch
3 - 35	5534768000	Belt
3 - 36	* 5555753000	Lever, Slide Switch
3 - 37	* 5524251001	Spring, Thrust
3 - 38	* 5534744000	Screw, Thrust

Parts marked with *require longer delivery time than regular parts.

EXPLODED VIEW - 4



EXPLODED VIEW - 4

REF. NO.	PARTS NO.	DESCRIPTION
4 - 1	△ 5128034000	Cord, AC Power [GE]
	△ 5128075000	Cord, AC Power [U, C]
	△ 5128017000	Cord, AC Power [E]
	△ 5128036000	Cord, AC Power [UK]
	△ 5128031000	Cord, AC Power [A]
4 - 2	* 5800010300	Panel, Rear
4 - 3	* 5555063000	Washer, GND
4 - 4	* 5534118000	Rivet, Push
4 - 5	* 5534661000	Strain Relief, Cord [UK]
	* 5534660000	Strain Relief, Cord [U, C, GE, E]
	* 5534663000	Strain Relief, Cord [A]
4 - 6	* 5126037000	Terminal Assy, IN/OUT [E]
	* 5126038000	Terminal Assy, IN/OUT [All except E]
4 - 7	5296000500	Meter, VU
4 - 8	* 5800008700	Bracket, Meter
4 - 9	* 5555590000	Prate, GND; A
4 - 10	* 5580007000	Washer
4 - 11	* 5200008400	PCB Assy, REC/PLAY AMPL. [All except E]
	* 5200008410	PCB Assy, REC/PLAY AMPL. [E]
4 - 12	* 5786360500	R-Pin, φ5
4 - 13	* 5534652000	Rod, Switch; C
4 - 14	* 5534775000	Button, B [CX-310]
	* 5800004500	Button, C [CX-311]
4 - 15	* 5200003000	PCB Assy, LED B
4 - 16	* 5800009000	Bracket, PCB
4 - 17	* 5800009400	Bracket, Switch
4 - 18	* 5124063000	Jack Assy, 3-gang
4 - 19	* 5800010600	Holder, LED
4 - 20	* 5800009500	Chassis, R; B
4 - 21	* 5200003100	PCB Assy, VR
4 - 22	* 5800010501	Chassis, Front
4 - 23	* 5800008800	Bracket, Power Switch
4 - 24	△ * 5052907000	Spark Killer, 0.01μF + 300Ω/300V [GE, A]
	△ * 5052910000	Spark Killer, 0.033μF + 120Ω/125V [U]
	△ * 5052911000	Spark Killer, 0.033μF + 120Ω/250V [C]
	△ * 5267702600	Spark Killer, 0.047μF/250V [E, UK]
4 - 25	△ 5134018000	Switch, Power [C]
	△ 5134036000	Switch, Power [A]
	△ 5134037000	Switch, Power [U]
	△ 5134044000	Switch, Power [E, UK]
	△ 5300017800	Switch, Power [GE]
4 - 26	* 5534432000	Foot
4 - 27	* 5534730000	Button, Push; A [CX-310]
	* 5800017700	Button, Push; A [CX-311]
4 - 28	* 5800008300	Rod, Power Switch
4 - 29	* 5800011200	Chassis Assy, L
4 - 30	* 5800008100	Lever, Record
4 - 31	* 5800008600	Link, Record
4 - 32	△ 5320000500	Transformer, Power [U]
	△ 5320000600	Transformer, Power [C]
	△ 5320000700	Transformer, Power [GE]
	△ 5320000800	Transformer, Power [E, UK, A]

REF. NO.	PARTS NO.	DESCRIPTION
4 - 33	* 5800009300	Bracket, FUSE PCB [GE, E, UK]
4 - 34	* 5168548100	PCB Assy, VOLTAGE SELECTOR [GE]
4 - 35	* 5200002400	PCB Assy, FUSE [E, UK]
4 - 36	* 5122168000	Connector, Socket; 6P
4 - 37	* 5800008900	Plate, Reinforcing; B
4 - 38	* 5122164000	Connector, Socket; 2P
4 - 39	* 5581038000	Clamper, Cord; A

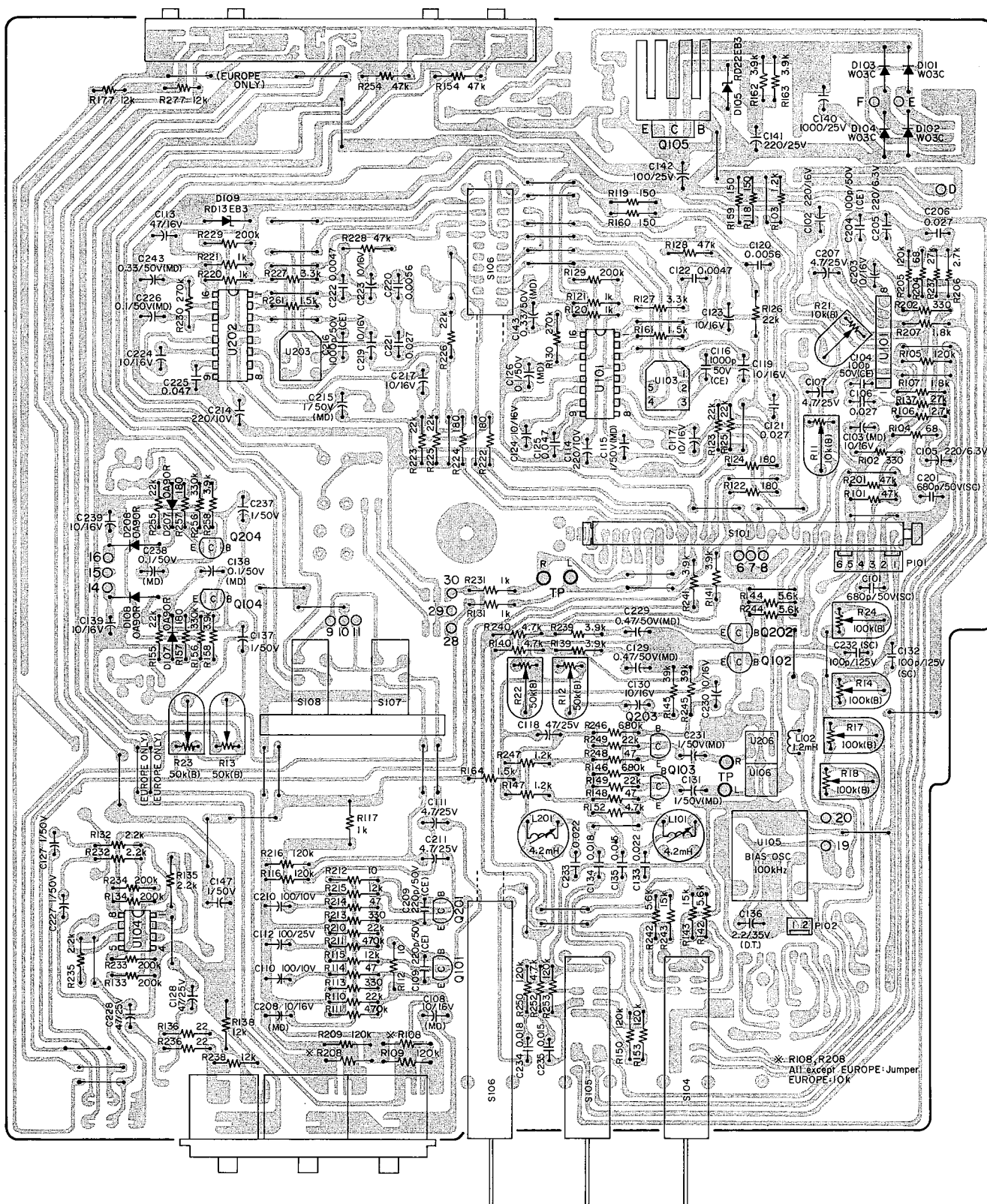
Parts marked with *require longer delivery time than regular parts.

[U] : U.S.A. [C] : CANADA [GE] : GENERAL EXPORT
[A] : AUSTRALIA [E] : EUROPE [UK] : U.K.

7 PC BOARD AND PARTS LIST

PC Board shown viewed from foil side.

REC/PLAY AMPL. PCB ASSY



REC/PLAY AMPL PCB ASSY

REF. NO.	PARTS NO.	DESCRIPTION
	5200008400	PCB Assy [All except E]
	5200008410	PCB Assy [E]
	5210002701	PCB
	IC's	
U101	5147061000	μPC1032H
U102, U202	5147046000	NE646B
U104	5220405000	μPC4557C
	TRANSISTORS	
Q101, Q201	5042495000	2SC1222E
Q102, Q202	5145185000	2SD655E
Q103, Q203	5145091000	2SC945AK
Q104, Q204	5145091000	2SC945AK
Q105	Δ 5145087000	2SD313E
	DIODES	
D101~D104 Δ	5143315000	W03C
D105	5224517500	Zener, RD22EB3
D107, D207	5224012800	OA90R
D108, D208	5224012800	OA90R
D109	5143108000	Zener, RD13EB3
	CARBON RESISTORS	
All resistors are rated ±5% tolerance and ¼ watt.		
R101, R201	5183122000	47kΩ
R102, R202	5183070000	330Ω
R103	5183084000	1.2kΩ
R104, R204	5183054000	68Ω
R105, R205	5183132000	120kΩ
R106, R206	5183092000	2.7kΩ
R107, R207	5183088000	1.8kΩ
R108, R208	5183106000	10kΩ [E]
R109, R209	5183132000	120kΩ
R110, R210	5183114000	22kΩ
R111, R211	5183146000	470kΩ
R112, R212	5183034000	10Ω
R113, R213	5183070000	330Ω
R114, R214	5183050000	47Ω
R115, R215	5183108000	12kΩ
R116, R216	5183132000	120kΩ
R117	5183082000	1kΩ
R118	5183062000	150Ω
R119	5183062000	150Ω
R120, R220	5183082000	1kΩ
R121, R221	5183082000	1kΩ
R122, R222	5183064000	180Ω
R123, R223	5183114000	22kΩ
R124, R224	5183064000	180Ω
R125, R225	5183114000	22kΩ
R126, R226	5183114000	22kΩ
R127, R227	5183094000	3.3kΩ
R128, R228	5183122000	47kΩ
R129, R229	5183137000	200kΩ
R130, R230	5183140000	270kΩ
R131, R231	5183082000	1kΩ
R132, R232	5183090000	2.2kΩ
R133, R233	5183137000	200kΩ
R134, R234	5183137000	200kΩ
R135, R235	5183090000	2.2kΩ
R136, R236	5183042000	22Ω
R137, R237	5183116000	27kΩ
R138, R238	5183108000	12kΩ

REF. NO.	PARTS NO.	DESCRIPTION
R139, R239	5183096000	3.9kΩ
R140, R240	5183098000	4.7kΩ
R141, R241	5183096000	3.9kΩ
R142, R242	5183100000	5.6kΩ
R143, R243	5183110000	15kΩ
R144, R244	5183108000	12kΩ
R145, R245	5183120000	39kΩ
R146, R246	5183150000	680kΩ
R147, R247	5183084000	1.2kΩ
R148, R248	5183050000	47Ω
R149, R249	5183114000	22kΩ
R150, R250	5183132000	120kΩ
R152, R252	5183098000	4.7kΩ
R153, R253	5183132000	120kΩ
R154, R254	5183122000	47kΩ
R155, R255	5183114000	22kΩ
R156, R256	5183142000	330kΩ
R157, R257	5183064000	180Ω
R158, R258	5183096000	3.9kΩ
R159	5183062000	150Ω
R160	5183062000	150Ω
R161, R261	5183086000	1.5kΩ
R162	5183096000	3.9kΩ
R163	5183096000	3.9kΩ
R164	5183086000	1.5kΩ
R165	5183086000	1.5kΩ
R166	5183086000	1.5kΩ
R177, R277	5183108000	12kΩ
	CAPACITORS	
C101, C201	5172322000	Ceramic 680pF 50V 10%
C102	5173054000	Elec. 220μF 16V
C103, C203	5173571800	Elec. 10μF 16V
C104, C204	5172312000	Ceramic 100pF 50V 10%
C105, C205	5173052000	Elec. 220μF 6.3V
C106, C206	5170435000	Myler 0.027μF 100V 5%
C107, C207	5173004000	Elec. 4.7μF 25V
C108, C208	5173571800	Elec. 10μF 16V
C109, C209	5172316000	Ceramic 220pF 50V 10%
C110, C210	5173044000	Elec. 100μF 10V
C111, C211	5173004000	Elec. 4.7μF 25V
C112	5173046000	Elec. 100μF 25V
C113	5173036000	Elec. 47μF 16V
C114, C214	5173053000	Elec. 220μF 10V
C115, C215	5173556800	Elec. 1μF 50V
C116, C216	5172324000	Ceramic 0.001μF 50V 10%
C117, C217	5173010000	Elec. 10μF 16V
C118	5173037000	Elec. 47μF 25V
C119, C219	5173010000	Elec. 10μF 16V
C120, C220	5170419000	Myler 0.0056μF 100V 5%
C121, C221	5170435000	Myler 0.027μF 100V 5%
C122, C222	5170417000	Myler 0.0047μF 100V 5%
C123, C223	5173010000	Elec. 10μF 16V
C124, C224	5173010000	Elec. 10μF 16V
C125, C225	5170441000	Myler 0.047μF 100V 5%
C126, C226	5173550800	Elec. 0.1μF 50V
C127, C227	5172992000	Elec. 1μF 50V
C128, C228	5173037000	Elec. 47μF 25V
C129, C229	5173554800	Elec. 0.47μF 50V
C130, C230	5173010000	Elec. 10μF 16V
C131, C231	5173556800	Elec. 1μF 50V

[U]: U.S.A.
[A]: AUSTRALIA

[C]: CANADA
[E]: EUROPE

[GE]: GENERAL EXPORT
[UK]: U.K.

REF. NO.	PARTS NO.	DESCRIPTION
C132, C232	5265041010	Polyst. 100pF 125V 5%
C133, C233	5170433000	Myler 0.022μF 100V 5%
C134, C234	5170431000	Myler 0.018μF 100V 5%
C135, C235	5170429000	Myler 0.015μF 100V 5%
C136	5054672000	Dip. Tant. 2.2μF 35V
C137, C237	5172992000	Elec. 1μF 50V
C138, C238	5172992000	Elec. 1μF 50V
C139, C239	5173010000	Elec. 10μF 16V
C140	5173083000	Elec. 1000μF 35V
C141	5173055000	Elec. 220μF 25V
C142	5173055000	Elec. 220μF 25V
C143, C243	5173553800	Elec. 0.33μF 50V
C147	5172992000	Elec. 1μF 50V
VARIABLE RESISTORS		
R11, R21	5280003502	Semi-fixed 10kΩ(B)
R12, R22	5280004002	Semi-fixed 50kΩ(B)
R13, R23	5280004002	Semi-fixed 50kΩ(B)
R14, R24	5280004202	Semi-fixed 100kΩ(B)
R17	5280004202	Semi-fixed 100kΩ(B)
R18	5280004202	Semi-fixed 100kΩ(B)
COILS		
L101, L201	5286000100	Choke 4.2mH, Variable
L102	5160151000	Choke 1.2mH, fixed
MISCELLANEOUS		
U103, U203	5292802500	Filter, Low-pass
U105	5292200100	OSC Unit, 100kHz
U106, U206	5286000200	Coil, Trap
S101	5131043000	Switch, Slide; 9PDT
S104	5132034000	Switch, Lever; 4P3T
S105	5132034000	Switch, Lever; 4P3T
S106	5300510000	Switch, Lever; Actuator
S106	5300907500	Switch, Slide; Switching Section
S106	5302100000	Wire
S107, S108	5300017700	Switch, Push; DPDT (2-gang)
	5126037000	Terminal Assy, IN/OUTPUT [E]
	5126038000	Terminal Assy, IN/OUTPUT [All except E]
	5124063000	Jack, 3-gang
P101	5122130000	Connector Plug, 6P
P102	5122126000	Connector Plug, 2P
	5544750000	Pin, T.P. (4 used)

MECHANISM PCB ASSY (PC Board omitted)

REF. NO.	PARTS NO.	DESCRIPTION
C301	5200009700	PCB Assy
	5210009700	PCB
	5173082000	Capacitor, Elec. 1000μF 25V

SW PCB ASSY (PC Board omitted)

REF. NO.	PARTS NO.	DESCRIPTION
S301	5200009800	PCB Assy
	5210006800	PCB
	5131030000	Switch, Slide; 6PDT

VR PCB ASSY (PC Board omitted)

REF. NO.	PARTS NO.	DESCRIPTION
R16	5200003100	PCB Assy
	5210003100	PCB
	5282705002	Var. Res. 100kΩ(A) x 2

LED PCB B ASSY (PC Board omitted)

REF. NO.	PARTS NO.	DESCRIPTION
D111~D113	5200003000	PCB Assy
	5210003000	PCB
	5225005100	LED (Red)
	5800010600	Holder, LED

[U]: U.S.A.
[A]: AUSTRALIA

[C]: CANADA
[E]: EUROPE

[GE]: GENERAL EXPORT
[UK]: U.K.

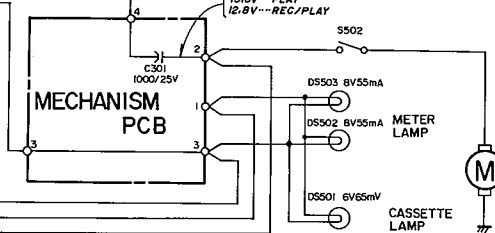
VOLTAGE SELECTOR PCB ASSY [GE] (PC Board omitted)

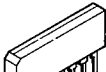
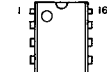
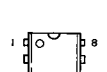
REF. NO.	PARTS NO.	DESCRIPTION
	5168548100	PCB Assy
	5167548100	PCB
	5555062000	Bar, Shorting; A
	5780163006	Screw, M3 x 6

FUSE PCB A ASSY [E, UK] (PC Board omitted)

REF. NO.	PARTS NO.	DESCRIPTION
	5200002400	PCB Assy
	5210002400	PCB
	5142087000	Holder, Fuse (4 used)
F501, F502	5041138000	Fuse, T500mA 250V

[U]: U.S.A. [C]: CANADA [GE]: GENERAL EXPORT
[A]: AUSTRALIA [E]: EUROPE [UK]: U.K.



- | | | | | | | | |
|---|--|--|---|---|---|--|--|
| <p>μPC1032H</p>  | <p>NE646B
(TOP VIEW)</p>  | <p>μPC4557C
(TOP VIEW)</p>  | <p>2SC1222
2SD655E
2SC945AK</p>  | <p>2SD313E</p>  | <p>W03C</p>  | <p>RD13EB3
RD22EB3</p>  | <p>0A90R</p>  |
|---|--|--|---|---|---|--|--|

CX-310/CX-311

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