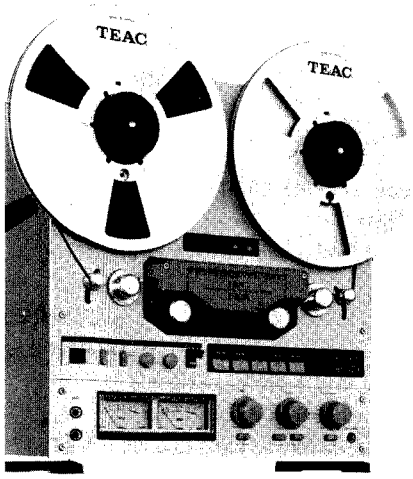
TEAC®



SERVICE MANUAL

X-10R/X-10

Stereo Tape Deck

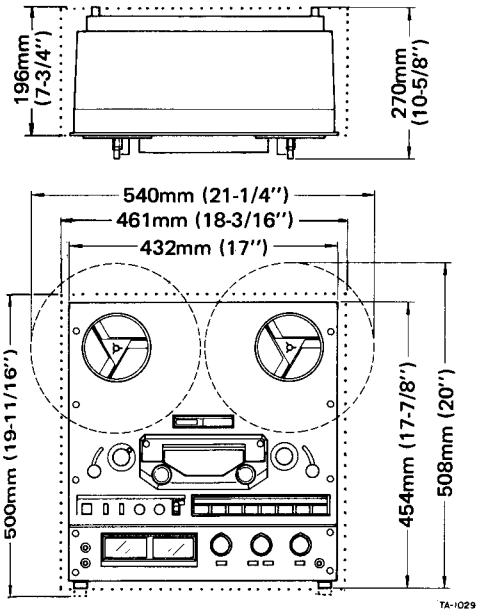
Effective: July, 1979 A90026

5704000200

1 SPECIFICATIONS AND SERVICE DATA

SPECIFICATIONS

Track System ¼-track, 2-channel stereo
Head System
X-10R: 6 heads: forward erase, forward record, reverse playback, forward playback, reverse record, reverse erase.
X-10: 3 heads: erase, record, playback
Reel Size 10-½" and 7"
Tape Speed 19 cm/s (7-½ ips) and 9.5 cm/s (3-¾ ips)
Inputs (level and impedance)
MIC: Specified input level: −60dB (0.775mV)/10kohms
Min. input level: −70dB (245μV)
LINE IN: Specified input level: −12dB (195mV)/50kohms
Min. input level: −22dB (61.5mV)
Outputs (level and impedance)
OUTPUT: Specified output level: −5dB (436mV)/10kohms
Max. output level: +1dB (0.869V)
PHONES: Specified output level: −24dB (48.9mV)/8ohms
Playback Equalization
19cm/s: 3,180μs + 50μs (NAB)
9.5cm/s: 3,180μs + 90μs (NAB)
Motors
Capstan motor: DC brush motor with FG servo
Reel motor: 2 DC slotless motors
Bias Frequency 100kHz
Operating Position Vertical, horizontal, angled
Power Requirements
100/117/220/240V, AC 50/60Hz, 88W, 83W for X-10 (General export model)
220V AC 50Hz, 88W, 83W for X-10 (Europe model)
240V AC 50Hz, 88W, 83W for X-10 (U.K./Australia model)
117V AC 60Hz, 88W, 83W for X-10 (U.S.A./Canada model)
Weight 20kg (44-1/16 lbs.) net (X-10R)
19kg (41-7/8 lbs.) net (X-10)



Dotted line indicates General Export Models for Limited Areas.

Fig. 1-1 Dimensions

SERVICE DATA

MECHANICAL

Tape Speed Deviation 3,000Hz ± 30Hz
Tape Speed Drift 15Hz
FWD/REV Tape Speed Differential (X-10R only) 30Hz
Wow and Flutter
Playback: 0.05% (WRMS), 0.10% (RMS) at 19cm/s
0.07% (WRMS), 0.12% (RMS) at 9.5cm/s
Record/Playback: 0.12% (RMS) at 19cm/s
0.15% (RMS) at 9.5cm/s
Pinch Roller Pressure 1.35kg ~ 1.9kg (3.0 lbs ~ 4.2 lbs)
Reel Torque
Play mode:
Take-up (LARGE): 480 ± 40 g-cm (6.1 ~ 7.2 oz-inch)
(SMALL): 260 ± 40 g-cm (3.1 ~ 4.2 oz-inch)
Back tension (LARGE): 300 ± 40 g-cm (3.6 ~ 4.7 oz-inch)
(SMALL): 180 ± 40 g-cm (1.9 ~ 3.1 oz-inch)
Fast winding mode:
Take-up: 1100 g-cm (15.3 oz-inch)
Back tension: 50 g-cm (0.7 oz-inch)
Brake Torque
Forward direction: 1.2 ~ 1.7 kg-cm (17 ~ 24 oz-inch)
Reverse direction: 0.6 kg-cm (8.3 oz-inch) or less
Left/right deviation: 0.2 kg-cm (2.8 oz-inch) or less
Fast Winding Time 100 seconds or less for 550m (1800 feet)
Pitch Control Standard tape speed ±6% or more
FWD/REV Change Time (X-10R only) 3.5 sec. ±0.5 sec.
TIMER Activate Time 4 sec. ±2 sec.

ELECTRICAL

Frequency Response **Playback:** 40Hz ~ 22kHz ±3dB at 19cm/s
40Hz ~ 14kHz ±3dB at 9.5cm/s
Overall: 40Hz ~ 20kHz ±3dB at 19cm/s
40Hz ~ 16kHz ±3dB at 9.5cm/s
Signal to Noise Ratio **Playback:** 50dB min. at 19cm/s
49dB min. at 9.5cm/s
Overall: 48dB min. at 19cm/s
46dB min. at 9.5 cm/s
Erase Efficiency 68dB min. at 1kHz (measured with input 10dB higher than the specified input level)
Channel Separation 50dB min. at 1kHz
Adjacent Track Crosstalk 40dB min. at 125Hz
Total Harmonic Distortion 0.8% or less at 1kHz

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

⚠ 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.

- dbx noise reduction system made under license from dbx, Incorporated. The word dbx and the dbx Symbol are trademarks of dbx, Incorporated.

2 MECANICAL ADJUSTMENTS AND CHECKS

NOTE: All the explanations are for the X-10R. But unless specified they can also be applied to the X-10 except for those in relation to the REVERSE direction.

2-1 CONTROL PCB ASSY CHECK

Hooking CONTROL PCB ass'y as shown facilitates this check.

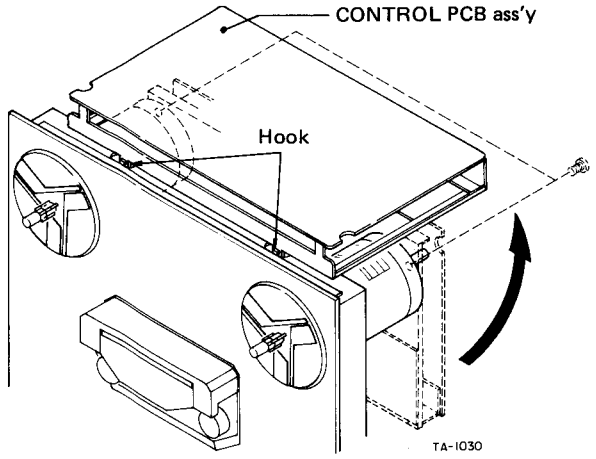


Fig. 2-1

2-2 BRAKE ADJUSTMENT

NOTE: The explanation and figure in this paragraph are for the left side brake, similar checks and adjustments are applicable for the right side one.

1. Adjust by moving the brake band bracket in either direction (arrow (A)) so that the reel motor chassis is in parallel with the brake arm, and so that the brake band makes proper clearance equally all around the reel table base.
2. Adjust by moving the brake solenoid in either direction (arrow (D)) so that the stroke of the solenoid plunger is about 2 mm.
3. Adjust by moving the band ass'y retaining plate as shown in (B, C, E) so that, when the plunger is pushed in the direction of the solenoid housing, the reel table base is not rubbed by the brake band and is properly spaced.

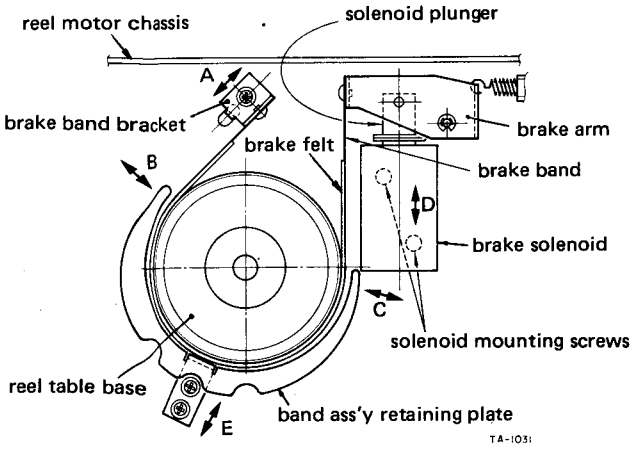
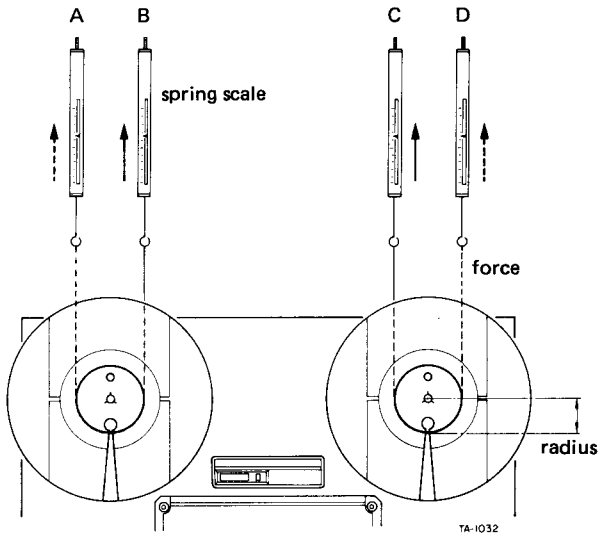


Fig. 2-2

2-3 BRAKE TORQUE MEASUREMENT

1. Place an empty 7" reel, connected to a spring scale by a string, on the reel table.
2. Pull the scale away from the reel and read the scale indication only when the reel table is steady motion.
3. Do steps 1 and 2 for each measuring condition, (A) through (D) in Fig. 2-3.
4. The values are as chart in Fig. 2-3.



↑ Forward direction (B) (C)	1.2 to 1.7 kg-cm (17 to 24 oz-inch)
↓ Reverse direction (A) (D)	0.6 kg-cm (8.3 oz-inch) or less
Left/right deviation	0.2 kg-cm (2.8 oz-inch) or less

NOTES: 1. The reverse direction values are reference.
2. The specification of left/right deviation only applies for forward direction torques.

Torque calculating formulas:

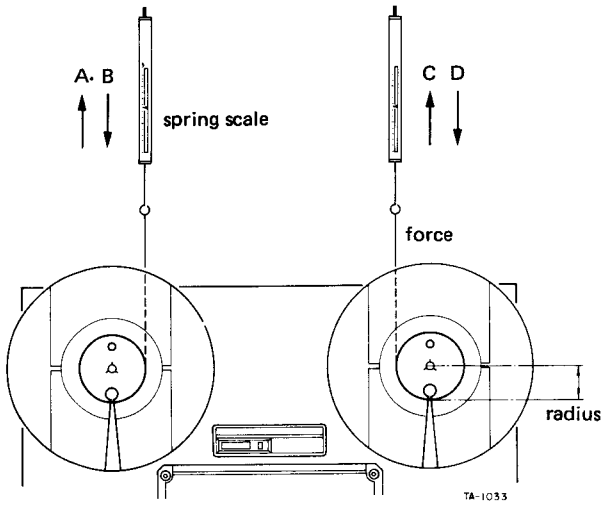
(1) Torque (in g-cm or oz-inch)
= Force or Weight (in g or oz) x Radius (in cm or inch)

(2) Conversion of g-cm to oz-inch:
g-cm x 0.0139 = oz-inch

Fig. 2-3

2-4 REEL MOTOR TORQUE MEASUREMENT

1. Hold both left and right tension arms in the upper position using rubber bands.
2. See Fig. 2-4. Measure torques for each operating mode with the conditions specified in the chart.
3. Since all the torque values are reference values, it is allowable that the take-up torque during the fast forward or rewind mode is 1 kg-cm or more, and that the back tension torque during these mode is good unless the left or right tension arms are shut-off.
4. There is no specially provided adjustment, so if any torque correction are needed, repair or replace defective part(s) and/or circuit(s).



Reel torque reference value

Play mode

Mode	REEL sw.	Torque
Take-up: (B) in REV (D) in FWD	LARGE	480 ± 40 g-cm (6.1 ~ 7.2 oz-inch)
	SMALL	260 ± 40 g-cm (3.1 ~ 4.2 oz-inch)
Back tension: (A) in FWD (C) in REV	LARGE	300 ± 40 g-cm (3.6 ~ 4.7 oz-inch)
	SMALL	180 ± 40 g-cm (1.9 ~ 3.1 oz-inch)

Fast winding mode

Mode	Torque
Take-up: (B) in REW, (D) in F.F.	1100 g-cm (15.3 oz-inch)
Back tension: (A) in F.F., (C) in REW	50 g-cm (0.7 oz-inch)

NOTES: For torque calculation, refer Fig. 2-3.

Fig. 2-4

2-5 PAUSE POSITION ADJUSTMENT

1. Place the deck in the pause mode.
2. Adjust by turning the pause positioning nut so that the clearance between the capstan shaft and the tape is 0.5 mm to 1.0 mm.
3. Of the two capstan shaft/pinch rollers, adjustment is allowable only for the side having the narrower clearance.
4. Check that, by repetition of play mode to pause mode and stop mode to pause mode, there is clearance at both sides.

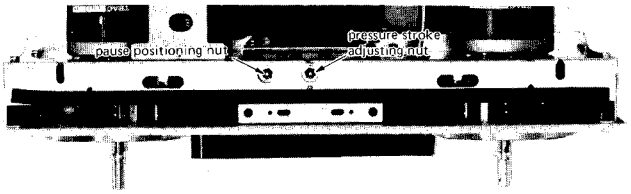


Fig. 2-5 Pause position and pinch roller pressure stroke adjustments

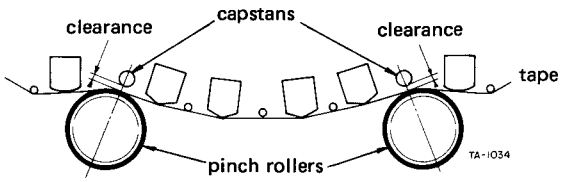
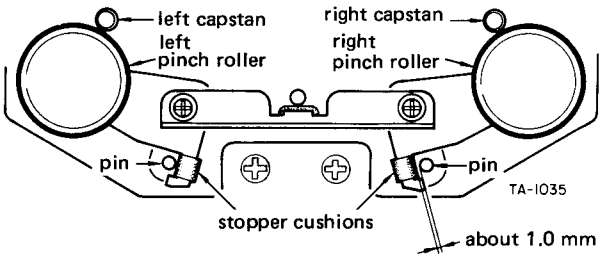


Fig. 2-6 Pause position adjustment

2-6 PINCH ROLLER PRESSURE STROKE ADJUSTMENT

1. Set the deck in the forward or reverse play mode.
2. Adjust by turning the pressure storke adj. nut (Fig. 2-5) so that the clearance between the pin and the stopper cushion is about 1.0 mm.
3. Since the clearance is produced at one side (left or right), adjustment for this side only is permissible.



Either the left or right should have a clearance of about 1.0 mm.

Fig. 2-7

2-7 PINCH ROLLER PRESSURE MEASUREMENT

NOTES: 1. The explanation below applies to both the left and right pinch rollers.
2. Both pinch roller pressures are automatically set with equal value.

1. Hold both the left and right tension arms in the upper positions using rubber bands, string etc.
2. Set the deck in either play mode with no tape loaded.
3. Attach the spring scale to the pinch roller as shown in the figure.
4. Draw the pinch roller away from the capstan shaft (in the direction of a line intersecting the centers of the capstan shaft and the pinch roller) until the capstan shaft and the pinch roller are separated.
5. Return the scale back until the pinch roller just begins to turn. The scale should then be reading as follow.
   Reference value: 1.35 kg to 1.9 kg. (3.0 lbs to 4.2 lbs)
6. If the reading is out of specification, replace defective part(s). There are no adjustable parts.

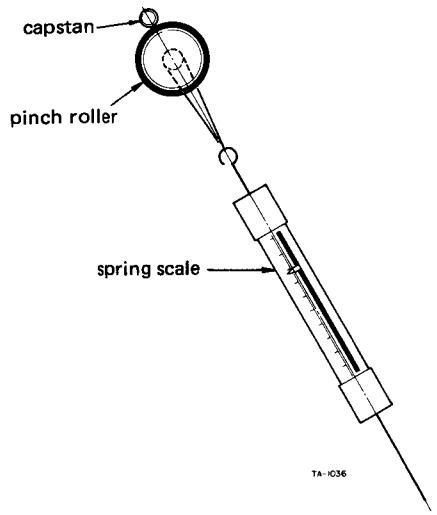


Fig. 2-8

2-8 TENSION ARM HEIGHT ADJUSTMENT

1. Thread any standard tape on the deck using a standard empty reels such as TEAC RE-702.
2. Set the deck in the forward or reverse play mode.
3. Stop left (right) guide roller's rotation by hand. Adjust by turning the left (right) tension arm adjusting nut (refer Fig. 2-9) so that the tape moves in the center of the guide roller.
4. Release the guide roller. Fine-adjust the adjusting nut again until there is no tape curling at the tape guide pin between the erase head and the left (right) guide roller.
5. After adjusting the height of both left and right tension arms, check that the tape running condition is good by repetition of fast forward and rewind modes.
6. If the tape running position is different when the guide roller stops and when it turns, the condition when the guide roller is rotating has priority.

2-9 TENSION ARM FORCE ADJUSTMENT

NOTE: The description below applies to both left and right sides.

1. Check the shut-off switch operates correctly with the deck in the horizontal and vertical positions.
2. Adjustment can be done by changing the hooking position of the tension arm spring against the spring hook.

2-10 DAMPER FUNCTION CHECK

NOTE: The explanation below applies to both left and right sides.

1. Check that the damper string begins to function after the tension arm has moved 10 to 15 mm from the lowest position, while the damping function is working, there is a feeling of resistance.
2. Check that the tension arm returns freely from the above position to the lowest position.

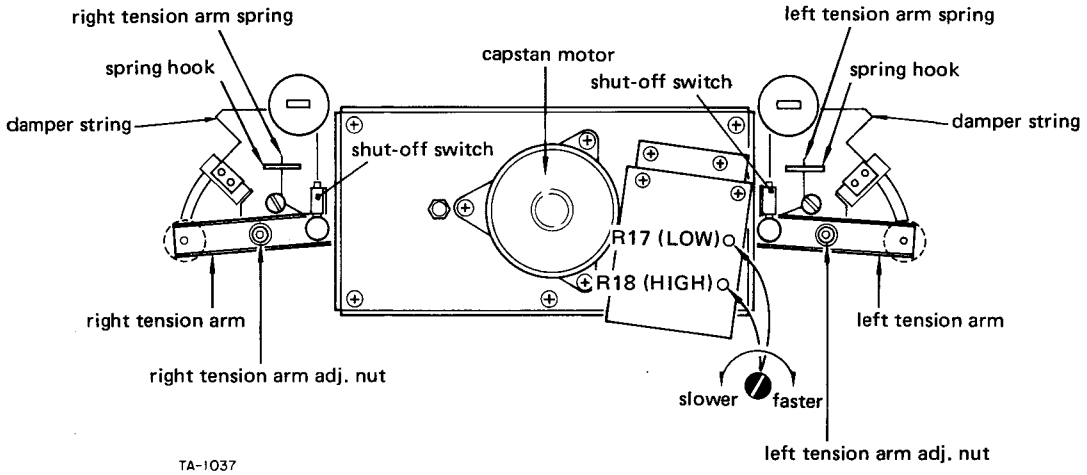


Fig. 2-9 Tension arm height, tension arm force, damper function, and tape speed

2-11 REEL TABLE HEIGHT ADJUSTMENT

1. Adjust the tension arm height beforehand. (See 2-8)
2. Check each reel table height using a TEAC RE-702 empty reel and letting the tape run in each tape operating mode.
3. If the tape rubs against the reel flanges, adjust the reel table height by means of the two reel table mounting screws.

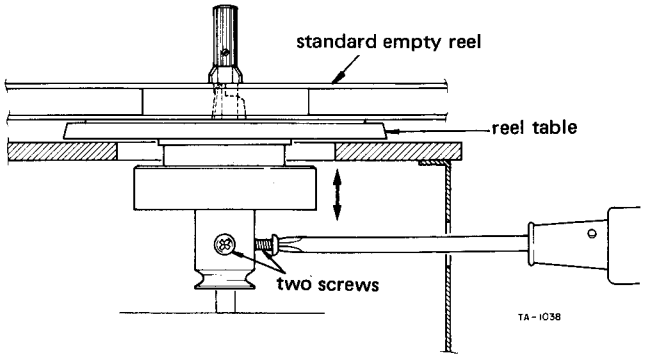


Fig. 2-10

2-12 STOP SENSOR ASS'Y (MAGNETIC RESISTANCE ELEMENT) POSITION ADJUSTMENT

1. Adjust by moving the stop sensor PCB ass'y so that the clearance (A) is about 1 mm ±0.5 mm.
2. Be careful not to adjust only the position of the magnetic resistance element when making this adjustment.

Photo seen from the rear of the right reel motor.

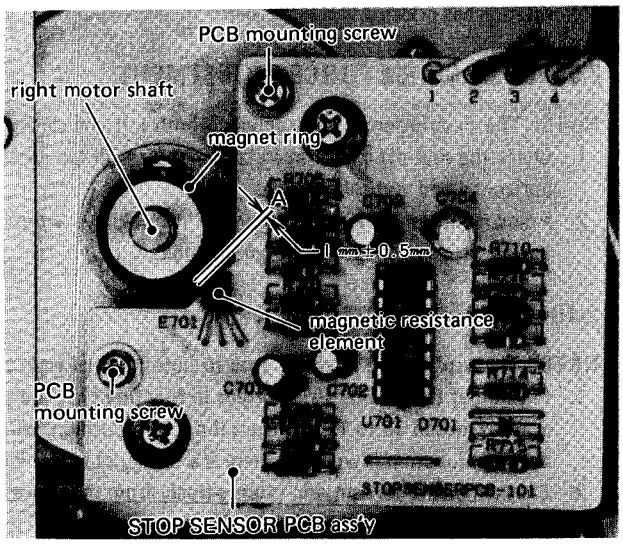
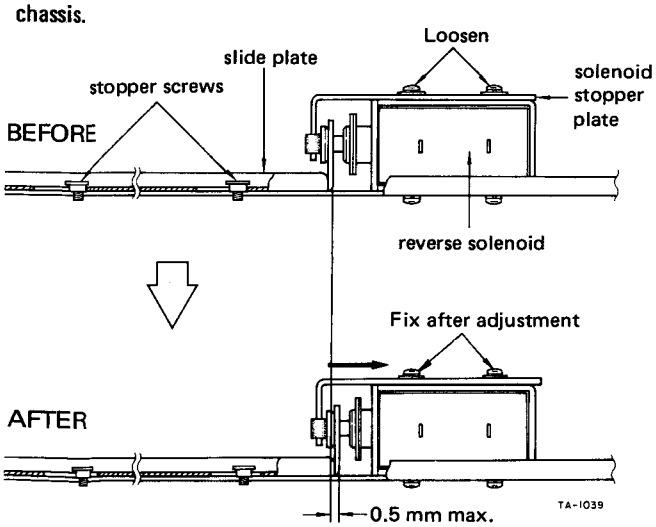


Fig. 2-11

2-13 REVERSE SOLENOID ADJUSTMENT (X-10R ONLY)

1. When the reverse solenoid releases, if the slide plate hits the stopper screw/s noisily, the solenoid stopper plate may be adjusted in the direction of the solenoid housing. See illustration.

Parts below are accesible from the rear of the amplifier chassis.



Adjustment range is 0.5 mm max. in solenoid-off condition.

Fig. 2-12

2-14 ROTATING PART THRUST CLEARANCE CHECKS

Reference values

Capstan shaft:	0.1 mm to 0.25 mm (magnefloat type)
Guide roller:	0.05 mm to 0.3 mm
Tension arm guide roller:	0.05 mm to 0.3 mm
Reel motor:	0 (spring type)
Tension arm:	0 (spring type)

NOTE: Since the capstan shaft is a magnefloat type, check that it is forced towards the rear of the deck while rotating.

2-15 CAPSTAN MOTOR REPLACEMENT

1. When the capstan motor is replaced, install it with its lead wires and washers as shown.
2. Check that, when the deck is operated by repeating the forward and reverse play modes, the capstan drive belt changes position on the flywheels smoothly.

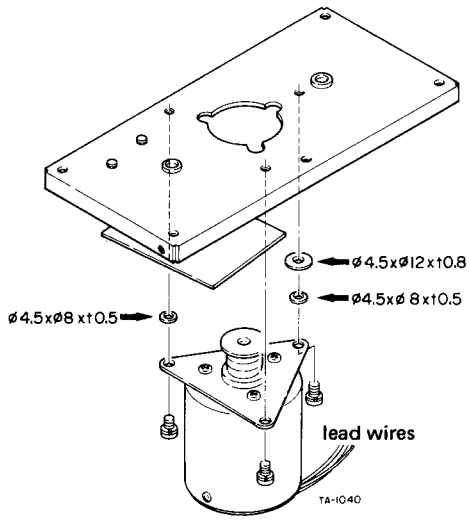


Fig. 2-13

2-16 TAPE SPEED ADJUSTMENT

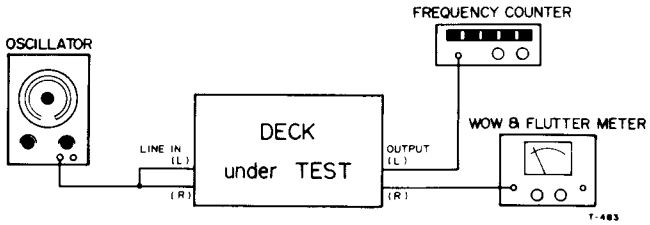


Fig. 2-14

NOTES: 1. Conduct all the following in both forward and reverse play modes.
2. When ordering test tapes, allow for the longer delivery time that is required for them.

1. Connect a frequency counter to either OUTPUT terminal.
2. Load a TEAC YTT-2003 test tape. Set the SPEED switch–HIGH, and PITCH CONT knob–OFF.
3. Play the tape. Adjust R18 (see Fig. 2-9) for a reading of 3,000 Hz ±5 Hz.
4. Check the following at the beginning and the end of the tape.
   Specifications:
   Tape Speed deviation. . . . . .3,000 Hz ±30 Hz
   Tape speed drift. . . . . 15 Hz
   FWD/REV tape speed differential . . .30 Hz (X-10R only)
5. Change the test tape to a TEAC YTT-2002, and SPEED switch setting to LOW.
6. Repeat steps 3 through 4. Adjust R17 if necessary.
7. Pull the PITCH CONT knob out. Set SPEED switch HIGH. Play a YTT-2003 tape.
8. Check if the speed variation of at least 3,000 Hz ±180 Hz is obtained when the PITCH CONT knob is rotated fully in both directions.
9. Change the test tape to YTT-2002, SPEED switch setting to LOW. Repeat step 8.

2-17 WOW AND FLUTTER CHECKS

NOTES: 1. All the following apply to both forward and reverse play modes.
2. The following measurements should be made at the beginning and the end of the tape.
3. When ordering test tapes, allow for the longer delivery time that is required for them.

Playback

1. Connect the test equipment to the deck as shown in Fig. 2-14.
2. Load and play a TEAC YTT-2003 test tape for HIGH speed (19 cm/s or 7-½ ips), or a TEAC YTT-2002 test tape for LOW speed (9.5 cm/s or 3-¾ ips).
3. Read the indication on the wow and flutter meter.
   Specifications:
   HIGH speed: 0.05% WRMS
   0.10% RMS
   LOW speed: 0.07% WRMS
   0.12% RMS

Overall

4. Load a TEAC YTT-8013 test tape (blank). Apply and record a 3,000 Hz signal.
5. During simultaneous tape monitoring (playing) the recorded signal, read the wow and flutter meter display.
   Specifications:
   HIGH speed: 0.12% RMS
   LOW speed: 0.15% RMS

2-18 VOLTAGE CONVERSION (FOR GENERAL EXPORT MODELS)

Always disconnect the power line cord before making these adjustments.

Frequency Conversion

Since the X series uses DC motors, frequency conversion is not necessary.

Voltage Conversion

1. First remove the two feet by removing the screws in each one.
2. Unscrew the left and right sides of the cabinet.
3. Locate the voltage selector to the right of the power transformer as seen from the rear of the deck.
4. Turn the slotted center post of the selector with a screw-driver until the desired voltage numerals appear in the cut-out section of the selector.
5. Replace the cabinet and feet.

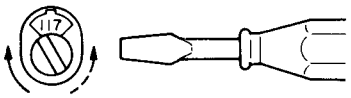


Fig. 2-15

2-19 LUBRICATION

Oiling is needed after every 1,000 hours of operation or once a year if the deck is infrequently used. For this purpose, TEAC spindle oil (from TEAC TZ-255 oil kit), Mobil D.T.E. Oil Light, etc are recommended. Lubrication is normally not necessary except at the points shown.

1. Place the deck in the horizontal position.
2. Apply a few drops of oil to the respective spindles shown, excluding capstans, then spread the oil evenly on the spindle surfaces using a cotton cloth, etc.
3. For capstans, apply a few drops to the indicated position.
4. After oiling all the points, leave the deck for 1 to 2 hours until the oil is thoroughly absorbed.

Figure shows left side. Do also for right side.

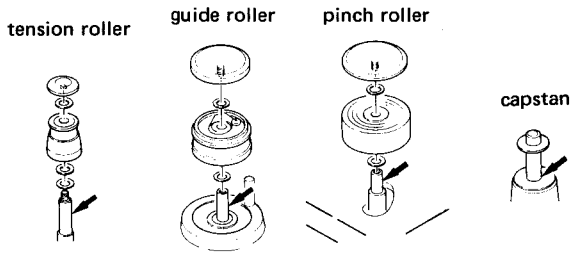


Fig. 2-16

2-20 HEAD AND TAPE PATH ALIGNMENTS

NOTES: 1. The head and tape path alignments for the X-10R and X-10 are the same. The procedure for the X-10R is given below.
2. For detailed alignment principles, refer to the book "Audio Fundamental -TAPE DECK-, 8. Mechanical Adjustments" published by TEAC CORPORATION.

Head adjusting screws

Erase	Record and playback
Tilt	Azimuth
Height and azimuth	Height and tilt
Tangency	Tangency

2-20-1 HEAD ARRANGEMENT (for X-10R)

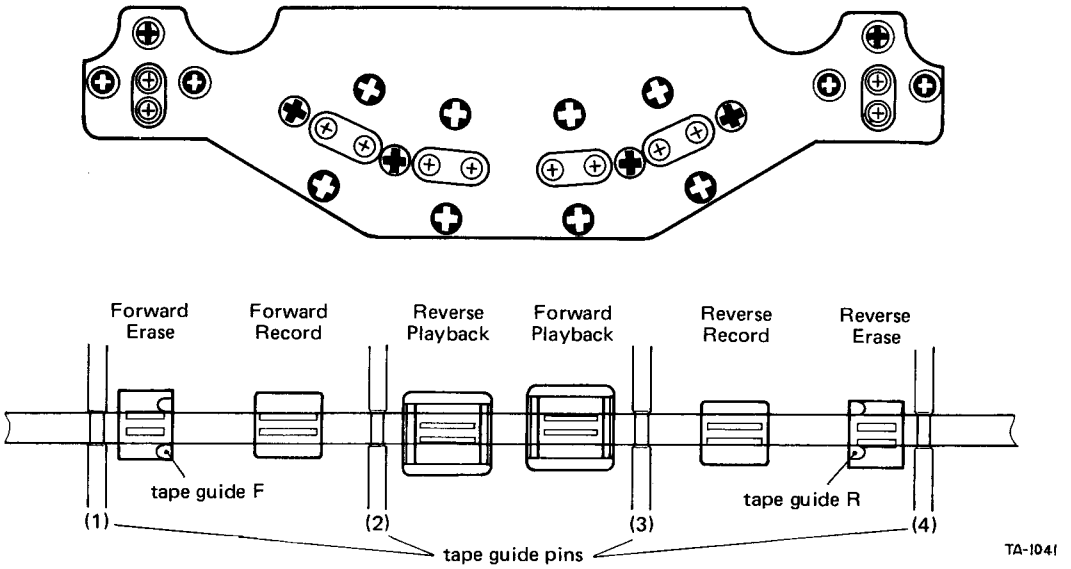
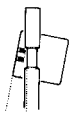


Fig. 2-17 Head arrangement

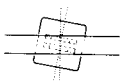
2-20-2 HEAD REGULATION ELEMENTS

Adjust each head to satisfy each of the following:

TILT
The head surface should be paralell to the tape guide pin surface.



AZIMUTH
The gap of the head core should be perpendicular to the tape travel.



HEIGHT
The upper core of the head should be level with the upper edge of the tape.



TANGENCY
The dotted line should be perpendicular to the surface of the tape.

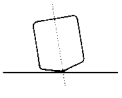
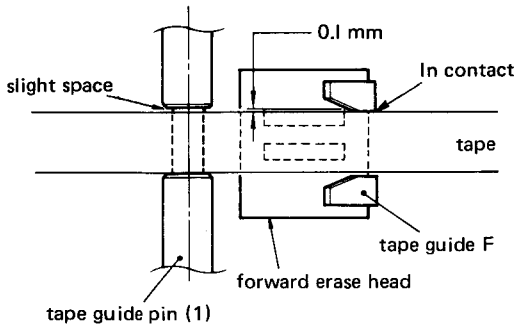


Fig. 2-18 Head regulation elements

2-20-3 ALIGNMENT PROCEDURE

1. Visually make the tilt adjustment of each record and playback head based on nearest tape guide pin.
2. Make coarse azimuth adjustments of the record and playback heads by viewing each head from in front (without tape).
3. Adjust the erase head's azimuth as seen from the front of the head. Then adjust its tilt using an adjacent tape guide pin for reference. Do this for both forward and reverse heads.
4. Temporarily adjust the height of both erase heads visually (with no tape loaded) so that the tape guide on the erase head matches the neighboring tape guide pin. Note that unless the three adjusting screws are turned equally, the tilt and azimuth adjustments (step 3) are likely to be disturbed.
5. Thread a TEAC YTT-8013 test tape (thickness = 35 μm). With the tape running in the forward direction, fine-adjust the height of the forward erase head so that the upper edge of the tape is just in contact with the upper edge of the tape guide, F, on the head. The lower edge of the tape should just touch the lower edge of the tape guide pin (1). See Fig. 2-19.
6. Check that the forward erase head core protrudes 0.1 mm above the moving tape. If not, adjust its azimuth, and recheck its tilt and height, then correct tilt and height if necessary.
7. Do exactly the same adjustment (steps 5 and 6) for the reverse erase head. Substitute reverse play mode for forward play mode.
8. Check that, by pulling the tape away from the head assembly then setting in either play mode, the tape guide on the erase head has about 1 mm clearance against the pinch roller. Do this for both the left and right sides.

Fig. shows forward erase head.



NOTE: In the case of the reverse erase head the tape should contact the upper tape guide plate and the tape guide pin lower suface in the same way.

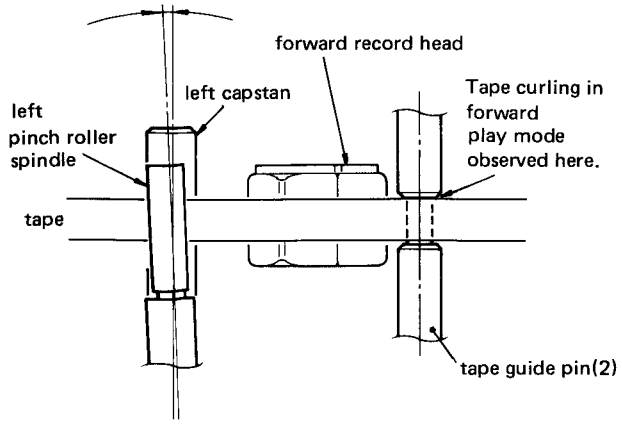
TA-1043

Fig. 2-19 Erase head height fine-adjustment

9. If there is a narrower space, correct the erase head position by loosing the erase heads's tangency adjusting screws and moving the head away from pinch roller.
10. Check to see if there is any tape curling at either tape guide pin in the closed loop portion of the tape (i.e. between the capstans).
11. If, during forward play, there is any tape curling at tape guide pin (2), conduct the following: Unthread the tape from the head assembly front. Remove both pinch rollers. Set the deck in the play mode. Visually line-up the capstan and pinch roller spindles.

Fig. shows left side.

Pinch roller spindle is tilted to the left



If the pinch roller spindle is tilted to the left (right) side from the capstan shaft, tape curling may occur at the upper (lower) edge of the tape guide pin (2).

TA-1044

Fig. 2-20 Example of mon-parallel pinch roller/capstan.

12. If not parallel, loosen the two screws mounting the reinforcement plate then adjust using the correction jig (TEAC P/N 5736000100) as shown in Fig. 2-21.
    Note that:
    (1) Use the jig as near as possible to the pinch roller spindle.
    (2) Do not touch the surface of spindle.
    (3) Use no other tool for this adjustment!

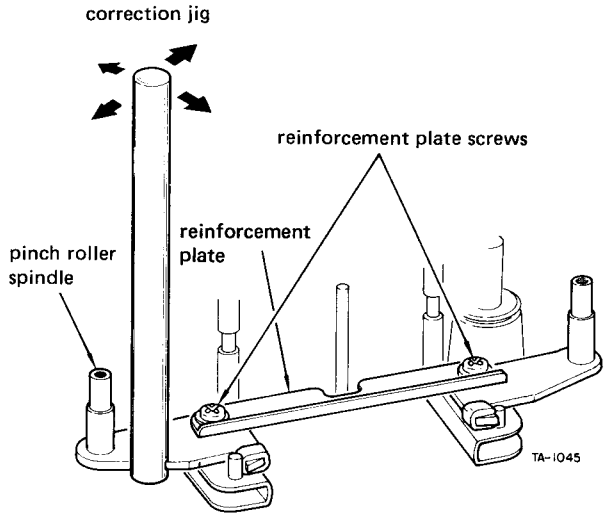


Fig. 2-21 Correction of pinch roller/capstan non-parallelism.

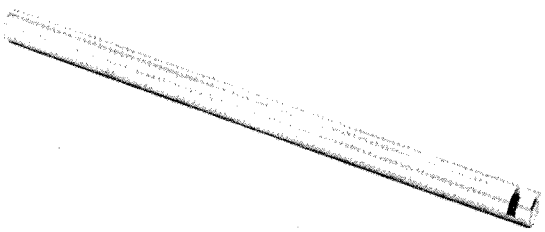


Fig. 2-22 Correction jig (TEAC P/N 5736000100)

13. If the tape curls at tape guide pin (3) in reverse play, correct in the same way (steps 11 and 12).
14. After it is entirely corrected that there is no tape curling condition in the head assembly, fine-adjust each record and playback height so that the brass-colored spacer of forward (reverse) direction purpose head will show above (below) the moving tape. (About as thick as a thin pencil line). Adjustment should be done by equally turning three screws required correction not to disturb tilt and azimuth regulation conducted before.
15. Finally, if necessary, make rough tangency adjustment of respective head with tape running. After doing for erase head/s recheck steps 8 and 9 (erase head/pinch roller space).

3 ELECTRICAL ADJUSTMENTS AND CHECKS

NOTES

1. The following data in both the charts and the illustrations are for the X-10R. All the procedures, however, are applicable to the X-10 except for those relating to the REVERSE direction.
2. Before performing adjustments and checks, clean and demagnetize the entire tape path.
3. Check that the deck is properly set for the voltage in your locality.
4. In general, adjustments and checks are done in the order of L-ch then R-ch. Double REF. Nos. indicate L-ch/R-ch. (Example: R371/R372)
5. 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.
6. The AC voltmeter used in the procedures must have an input impedance of 1 M-ohms or more.
7. When ordering test tapes, allow for the longer delivery time that is required for them.

3-1 MONITOR PERFORMANCE

ITEM		CONNECTION	MODE/ INSTRUCTION	SIGNAL SOURCE	ADJUST (or CHECK)	OUTPUT	REMARKS
1. dbx level	1-1	OSC → ATT to LINE IN (L) AC voltmeter to VR PCB terminal #14	MONITOR sw.–SOURCE OUTPUT cont.–CAL LINE cont.–MAX MIC cont.–MIN	400 Hz/–22 dB (61.5 mV)	R369(L)	–8 dB(308 mV)	LINE min. input level (L)
	1-2	〃	〃	400 Hz/–12 dB (195 mV)	LINE cont. (L/R)	〃	LINE spec. input level (L)
	1-3	〃 , but LINE IN (L) → LINE IN (R) #14 → #17	LINE spec. input level condition	〃	R370 (R)	〃	LINE spec. input level (R)
2. MONITOR output level	2-1	Fig. 3-1	LINE spec. input level condition	400 Hz/–12 dB (195 mV)	R403/R404	–5 dB(436 mV)	
3. VU meter	3-1	Fig. 3-1	LINE spec. input level condition	400 Hz/ –12 dB (195 mV)	R371/R372	0 VU on VU meter	
4. MIC input level	4-1	Fig. 3-1 , but LINE IN → MIC	LINE cont.–MIN MIC cont.–MAX	400 Hz/ –70 dB ±2 dB (195 μV ~ 308 μV)	Check	–5 dB(436 mV)	MIC min. input level
	4-2	〃	〃	400 Hz/–60 dB (0.775 mV)	MIC cont. (L/R)	〃	MIC spec. input level
	4-3	Fig. 3-1	LINE cont.–spec. position (Item 1-2) MIC cont.–MIN	–	–	–	**IMPORTANT: Do not disturb these cont's during later checks.**

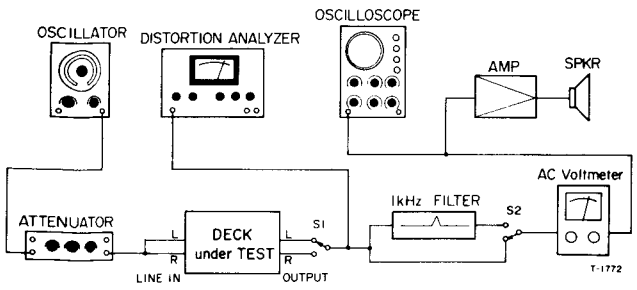


Fig. 3-1 Basic connection

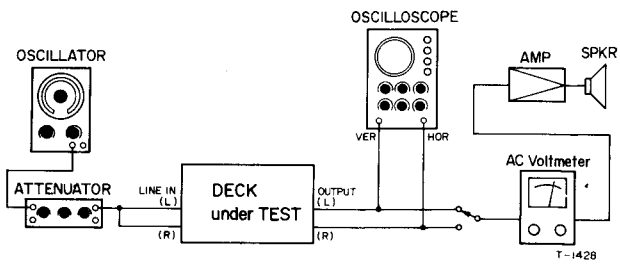


Fig. 3-2 Connection

3-2 PLAYBACK PERFORMANCE

TEAC test tape: **YTT-1002: For playback alignment (9.5 cm/s or 3-¾ ips)**
YTT-1003: For playback alignment (19 cm/s or 7-½ ips)
YTT-8013: For recording alignment (blank)

ITEM		CONNECTION	MODE/ INSTRUCTION	SIGNAL SOURCE	ADJUST (or CHECK)	OUTPUT	REMARKS
5. Playback head azimuth	5-1	Fig. 3-2	Do for both FWD & REV heads MONITOR sw.—TAPE SPEED sw.—HIGH	YTT-1003 (16 kHz/—10 dB)	Azimuth adj. screw/s of head (Fig. 2-17)	Phase: within 45° on oscilloscope (Fig. 3-3)	
6. Playback level	6-1	Fig. 3-1	FWD & REV OUTPUT cont.—CAL SPEED sw.—HIGH	YTT-1003 (400 Hz/0 dB)	R313/R314 (FWD) R315/R316 (REV)	—5 dB (436 mV)	Spec. PB condition
	6-2	〃	OUTPUT cont.—MAX	〃	Check	+1 dB ±2 dB (690 mV～1.09 V)	Max. output level
	6-3	〃	OUTPUT cont.—CAL	〃	—	—5 dB (436 mV)	Spec. PB condition **IMPORTANT: Do not disturb OUTPUT cont. during later checks.**
7. VU meter	7-1	Fig. 3-1	FWD Spec. PB condition	YTT-1003 (400 Hz/0 dB)	R389/R390	0 VU on VU meter	
8. Frequency response	8-1	Fig. 3-1	FWD & REV — SPEED-HIGH	YTT-1003	R327/R328 (FWD) R329/R330 (REV)	40 Hz～22 kHz ±3 dB	Reference: 400 Hz
	8-2	〃	〃 — SPEED-LOW	YTT-1002	R333/R334 (FWD) R335/R336 (REV)	40 Hz～14 kHz ±3 dB	
9. Phase shift	9-1	Fig. 3-2	FWD & REV — SPEED-HIGH	YTT-1003	Check	Phase: within 45° on oscilloscope (50 Hz～18 kHz) (Fig. 3-3)	
	9-2	〃	〃 — SPEED-LOW	YTT-1002	〃	〃 , (50 Hz～10 kHz)	
10. Headphone output level	10-1	Fig. 3-4	Spec. PB condition	YTT-1003 (400 Hz/0 dB)	Check	—24 dB ±2 dB (38.8 mV～61.5 mV) (at PHONES jack)	When OUTPUT terminal is at —5 dB
11. Signal to noise ratio	11-1	Fig. 3-1	FWD & REV Spec. PB condition Use fully erased tape (Use bulk tape eraser)	YTT-8013	Check	HIGH, 50 dB min. ratio LOW 49 dB min. ratio	-Ratio of spec.—5 dB and noise -Change-over the polarity of the AC Line plug. The worse reading should be within spec.

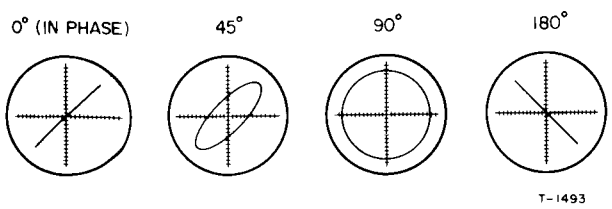


Fig. 3-3 Confirming phase relationship

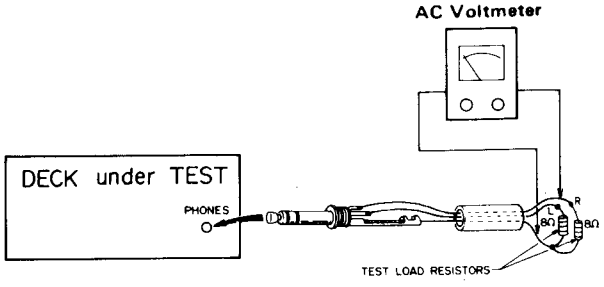


Fig. 3-4 Connection

3-3 RECORDING PERFORMANCE

TEAC test tape: YTT-8013: For recording alignment (blank)

ITEM		CONNECTION	MODE/ INSTRUCTION	SIGNAL SOURCE	ADJUST (or CHECK)	OUTPUT	REMARKS
12. Bias trap	12-1	AC voltmeter between BIAS TRAP TP & GND	Rec-pause mode	–	L303/L304	Min. reading	Bias freq.: 100 kHz ±5 kHz
	12-2	Fig. 3-1	Rec-pause mode MONITOR sw.–TAPE OUTPUT cont.–CAL	–	L301/L302	Min. reading (–45 dB or more (4.36 mV or less))	
	12-3	〃	〃	–	Check	VU: no deflection	
13. Record head azimuth	13-1	Fig. 3-2	Do for both FWD & REV heads MONITOR sw.–TAPE	10 kHz/–32 dB (19.5 mV)	Azimuth adj. screw/s of head (Fig. 2-17)	Phase: within 45° on oscilloscope (Fig. 3-3)	
14. Record bias (position 1)	14-1	Fig. 3-1	FWD & REV Test tape: YTT-8013 SPEED sw.–LOW REC BIAS sw.–1 REC EQ sw.–1 MONITOR sw.–TAPE	7 kHz/–22 dB (61.5 mV)	C301/C302 (FWD) C303/C304 (REV)	Over-bias value 3.5 dB ±0.5 dB (from peak)	Simultaneous monitoring
15. Record level	15-1	Fig. 3-1	Same as above SPEED sw.–HIGH	400 Hz/–12 dB (195 mV)	R429/R430 (FWD) R431/R432 (REV)	–5 dB (436 mV)	Spec. REC condition
16. Distortion	16-1	Fig. 3-1	FWD &REV Spec. REC condition	1 kHz/–12 dB (195 mV)	Check	0.8% or less	
17. Signal to noise ratio	17-1	Fig. 3-1	FWD & REV Spec. REC condition SPEED–HIGH & LOW	1 kHz/–12 dB (195 mV) then No signal recording	Check	HIGH: 48 dB min. ratio LOW: 46 dB min. ratio	Ratio of spec. –5 dB and noise
18. Erase efficiency	18-1	Fig. 3-1 switch on 1 kHz filter	FWD & REV Spec. REC condition SPEED sw.–HIGH	1 kHz/–2 dB (615 mV) (+10 VU) then erasing	Check	OUTPUT: –63 dB or more (436 μV or less) (68 dB min. ratio)	-Reference output level: +5 dB -The worst value should be within spec.
19. REC MUTE function	19-1	Fig. 3-1 switch on 1 kHz filter	FWD & REV Spec. REC condition rec-mute mode	1 kHz/–2 dB (615 mV) (+10 VU) then record muting	Check	OUTPUT: –60 dB or more (1.38 mV or less) (65 dB min. ratio)	-Reference output level: +5 dB -The worst value should be within spec.
20. Frequency response	20-1	Fig. 3-1	FWD & REV Spec. REC condition SPEED–LOW	40 Hz~16 kHz/ –32 dB (19.5 mV)	L305/L306 (FWD) L307/L308 (REV)	40 Hz~16 kHz ±3 dB	Reference: 400 Hz
	20-2	〃	〃 SPEED–HIGH	40 Hz~20 kHz/ –32 dB	Check	40 Hz~20kHz ±3 dB	

ITEM		CONNECTION	MODE/ INSTRUCTION	SIGNAL SOURCE	ADJUST (or CHECK)	OUTPUT	REMARKS
21. Phase shift	21-1	Fig. 3-2	FWD & REV Spec. REC condition SPEED sw.– HIGH	40 Hz ~ 16 kHz/ –32 dB (19.5 mV)	Check	Phase: within 45° on oscilloscope (40 Hz ~ 16 kHz) (Fig. 3-3)	
22. Record Bias (position 2)	22-1	Fig. 3-1	FWD & REV Spec. REC condition Test tape– YTT-8013 SPEED sw.– HIGH	10 kHz/–32 dB (19.5 mV)	R493 (FWD) R494 (REV)	When BIAS/EQ sw's are changed 1 → 2, output level should raise +4 dB ±1 dB	
	22-2	〃	〃	16 kHz/–32 dB	Check	〃 +6 dB ±2 dB	
23. Adjacent track crosstalk	23-1	Fig. 3-1	FWD record. Spec. REC condition SPEED sw.– HIGH REC BIAS sw. –1 REC EQ sw. –1	125 Hz/–12 dB (195 mV)	–	–	For FWD record.
	23-2	〃	REV playback the portion recorded above	–	Check	At both L-and R-ch 125 Hz: –45 dB or more (4.36 mV or less) (40 dB min. ratio)	
	23-3	〃	Interchange R & L reels then do FWD playback	–	〃	〃	
	23-4	Repeat 23-1 through 23-3, but interchange FWD and REV					For REV record.
24. Channel separation	24-1	Fig. 3-1 switch on 1 kHz filter	Same as 23-1	L: 1 kHz/–12 dB (195 mV) R: No signal record.	Check	R, –55 dB or more (1.38 mV or less) (50 dB min. ratio)	For FWD record.
	24-2	〃	〃	L: No signal record. R: 1 kHz/–12 dB	〃	L, 〃	
	24-3	Repeat 24-1 and 24-2 with REV recording.					For REV record.

3-4 ADJUSTMENT AND TEST POINT LOCATIONS

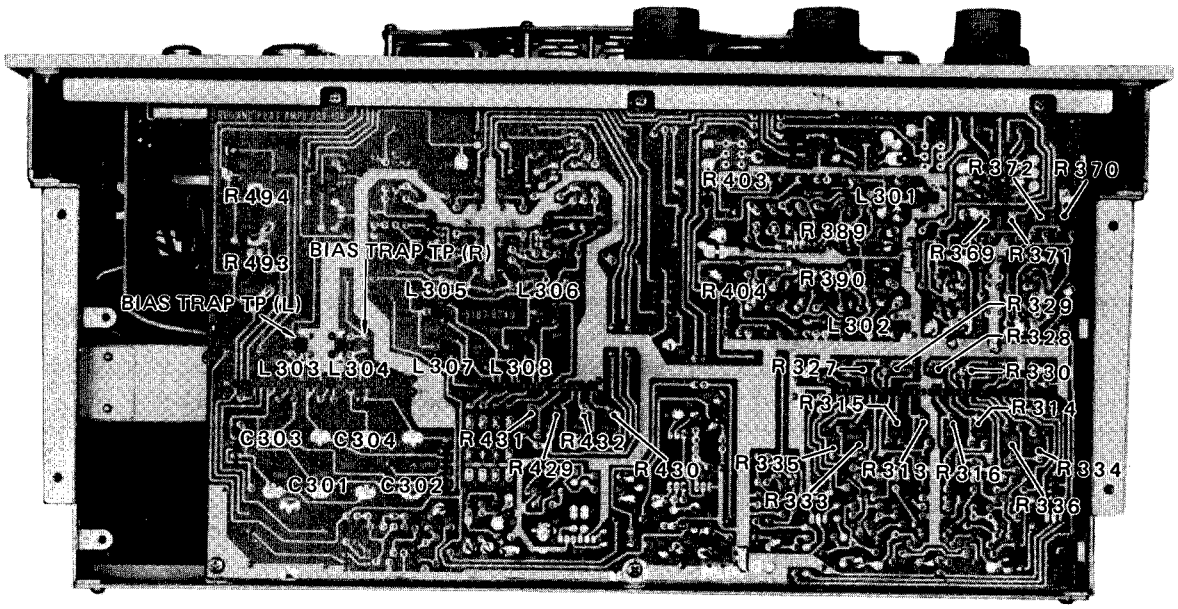
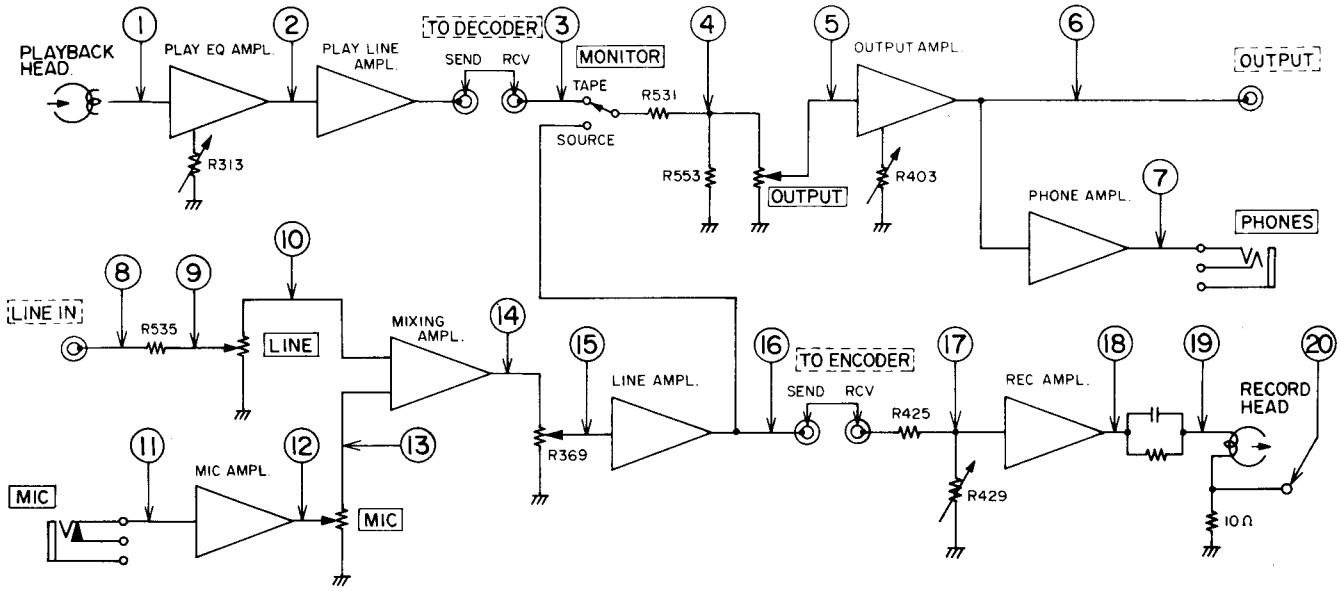


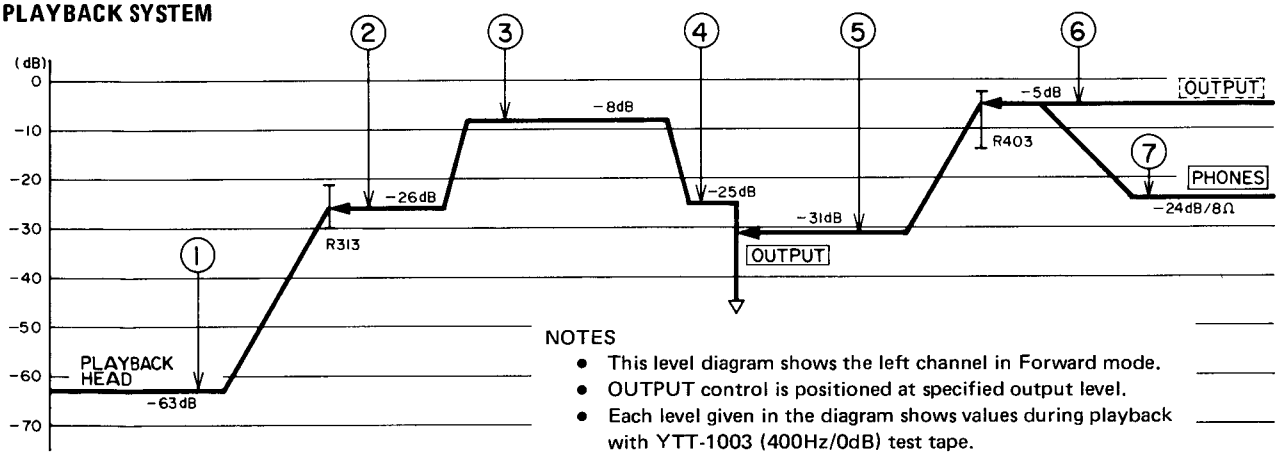
Fig. 3-5

R313/R314	Playback level (FWD)	R429/R430	Record level (FWD)
R315/R316	Playback level (REV)	R431/R432	Record level (REV)
R327/R328	Playback EQ (HIGH FWD)	R493	Record Bias 2 (FWD)
R329/R330	Playback EQ (HIGH REV)	R494	Record Bias 2 (REV)
R333/R334	Playback EQ (LOW FWD)	L301/L302	Bias trap (output)
R335/R336	Playback EQ (LOW REV)	L303/L304	Bias trap (record)
R369/R370	dbx level	L305/L306	Record EQ (FWD)
R371/R372	VU meter (monitor)	L307/L308	Record EQ (REV)
R389/R390	VU meter (playback)	C301/C302	Record Bias 1 (FWD)
R403/R404	Output level	C303/C304	Record Bias 1 (REV)

3-5 LEVEL DIAGRAM

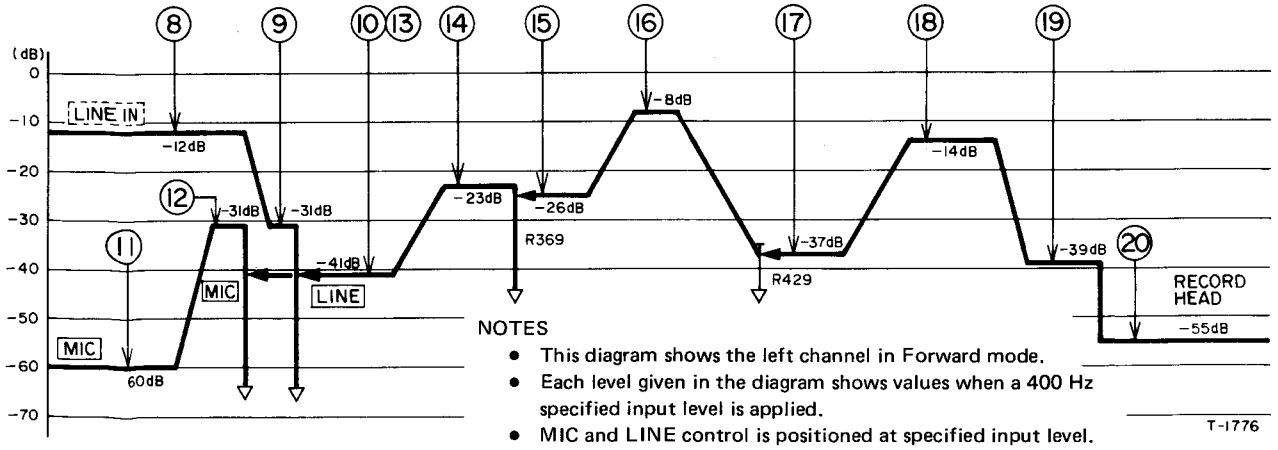


PLAYBACK SYSTEM



NOTES
- This level diagram shows the left channel in Forward mode.
- OUTPUT control is positioned at specified output level.
- Each level given in the diagram shows values during playback with YTT-1003 (400Hz/0dB) test tape.
- 0dB=0.775V

RECORDING SYSTEM



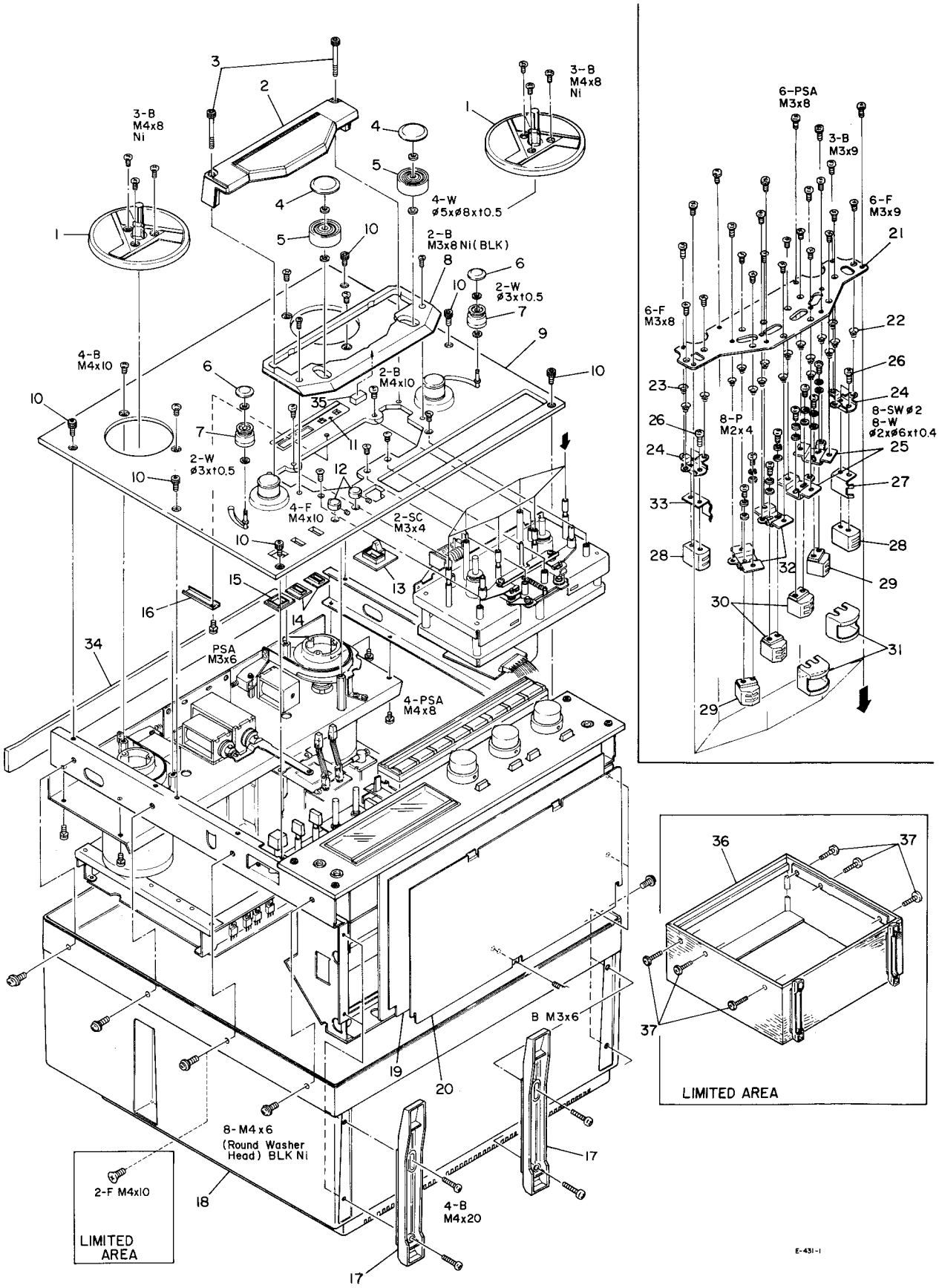
NOTES
- This diagram shows the left channel in Forward mode.
- Each level given in the diagram shows values when a 400 Hz specified input level is applied.
- MIC and LINE control is positioned at specified input level.
- OUTPUT control is positioned at specified output level.
- 0dB=0.775V

T-1776

Fig. 3-6

4 EXPLODED VIEWS AND PARTS LIST

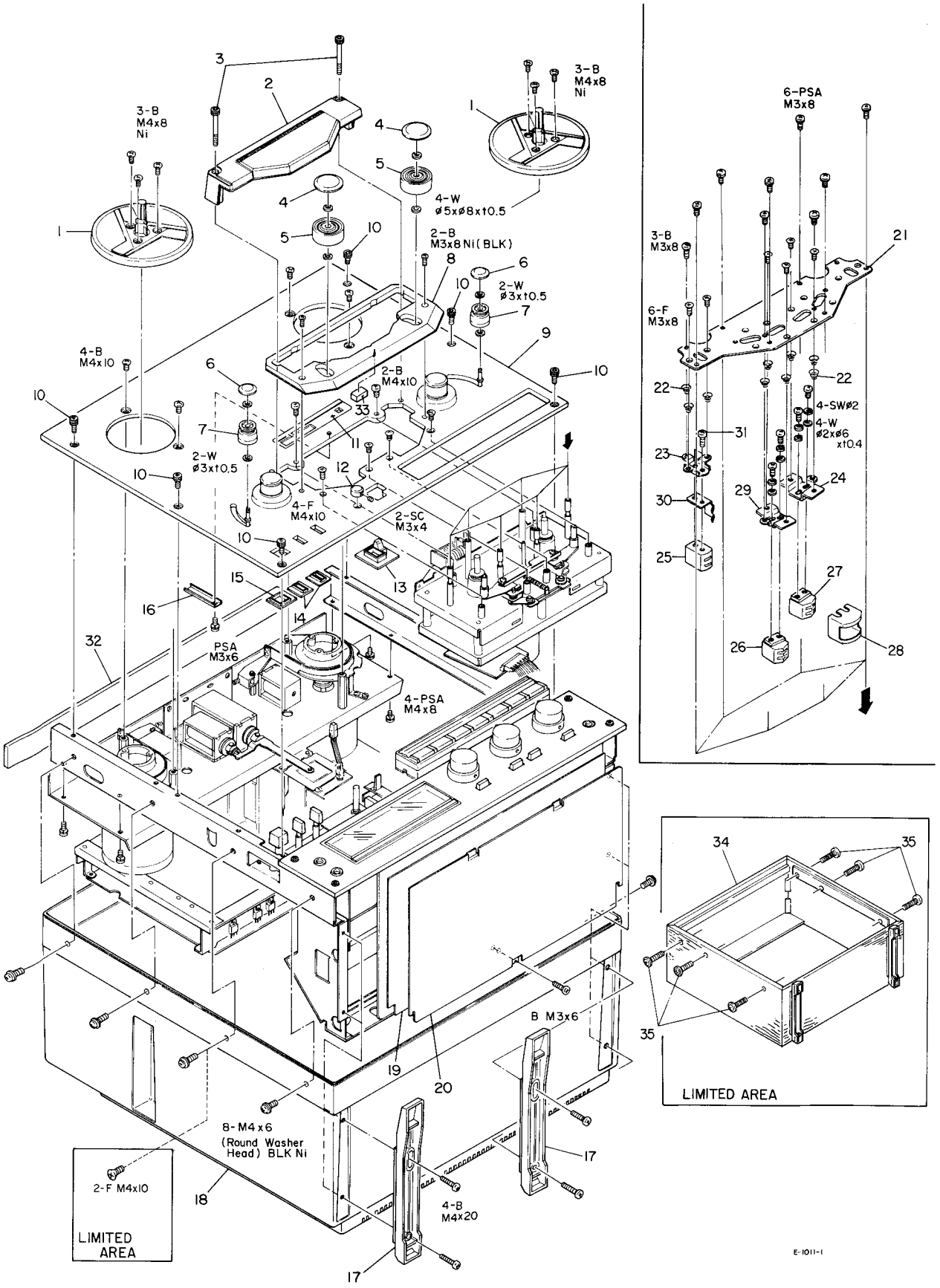
EXPLODED VIEW-1 (X10-R)



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

REF. NO.	PARTS NO.	DESCRIPTION	REMARKS
1 - 1	5504744000	Reel Table Assy	
1 - 2	5533201000	Head Housing	
1 - 3	5581065000	Screw, Head Housing; A	
1 - 4	5545014000	Cap, Pinch Roller	
1 - 5	5534691100	Pinch Roller	
1 - 6	5545009000	Cap, Tension Roller	
1 - 7	5504718100	Roller Assy, Tension	
1 - 8	*5532061000	Cover, Head Base Plate	
1 - 9	*5553291100	Panel, Top; C	
1 - 10	*5581067000	Screw, Top Panel; B	
1 - 11	*5534709100	Escutcheon, Counter; R	
1 - 12	5534705000	Knob, VR; C	
1 - 13	*5534708000	Escutcheon, Cue	
1 - 14	*5534706000	Escutcheon, Button	
1 - 15	*5534707000	Escutcheon, Power Switch	
1 - 16	*5555698000	Plate, Escutcheon Pressure	
1 - 17	*5533190000	Foot	
1 - 18	*5531024100	Case Assy, Deck	
1 - 19	*5553308001	Paper, Ampl. Insulating	
1 - 20	*5553306000	Plate, Ampl. Shield	
1 - 21	*5553289100	Plate, Head Base	
1 - 22	*5022050000	Spring, B	
1 - 23	*5520182000	Spring, D	
1 - 24	*5555674100	Bracket, Erase Head	
1 - 25	*5555673000	Bracket, Head; R	
1 - 26	5581071000	Screw, B M2 x 4	
1 - 27	*5555670100	Guide, Tape; R	
1 - 28	5569209000	Head, Erase	
1 - 29	5569202000	Head, Record	
1 - 30	5569203000	Head, Playback	
1 - 31	*5013389100	Head Shield, A	
1 - 32	*5555672000	Bracket, Head; L	
1 - 33	*5555669100	Guide, Tape; F	
1 - 34	*5555887000	Cushion, Case	
1 - 35	*5800002700	Cushion, Head Base Plate Cover	
1 - 36	*5502277000	Case Assy, Wooden	LIMITED AREA
1 - 37	*5504499000	Screw Assy, Case	LIMITED AREA

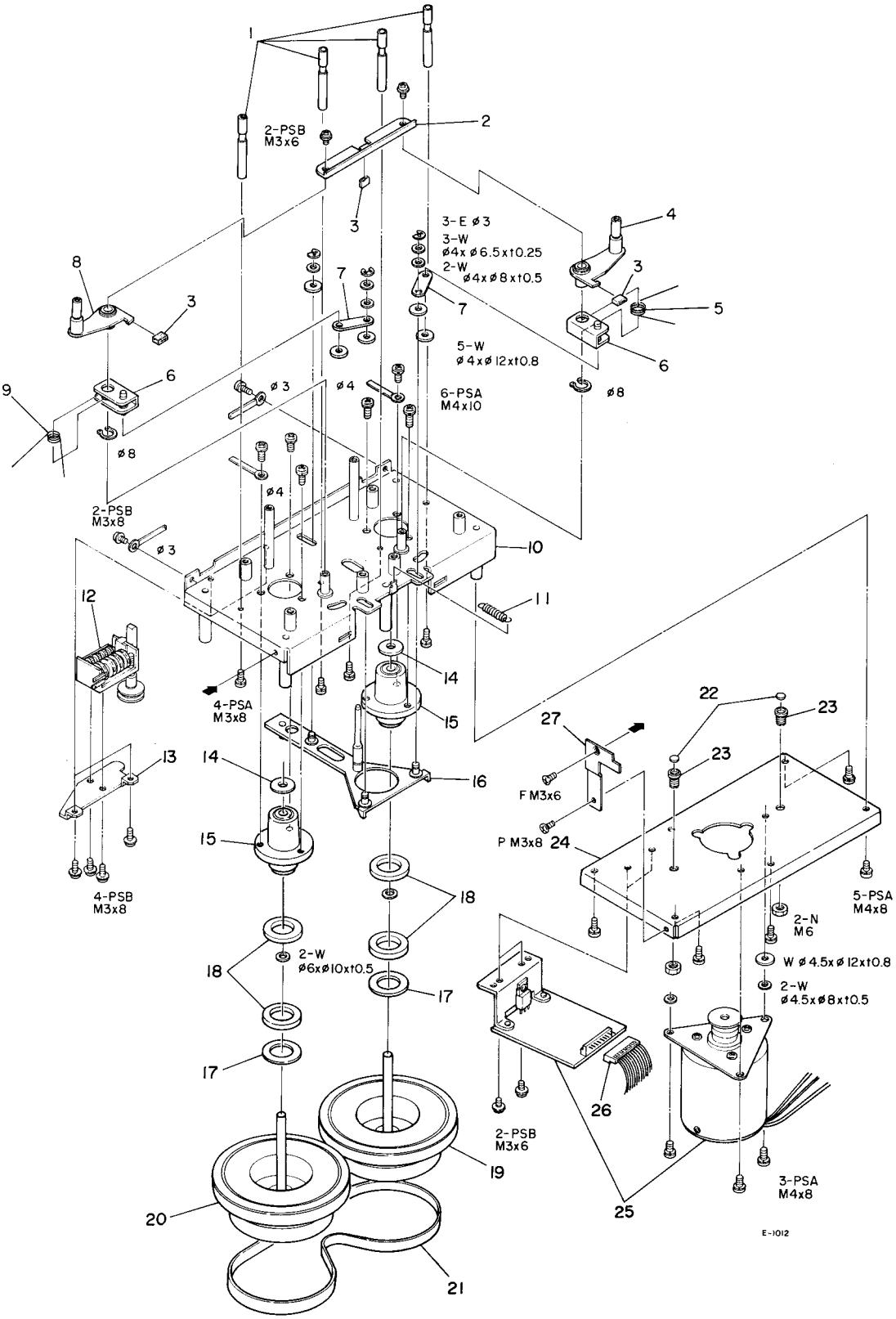
EXPLODED VIEW-2 (X-10)



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

REF. NO.	PARTS NO.	DESCRIPTION	REMARKS
2 - 1	5504744000	Reel Table Assy	
2 - 2	5533213000	Head Housing	
2 - 3	5581065000	Screw, Head Housing; A	
2 - 4	5545014000	Cap, Pinch Roller	
2 - 5	5534691100	Pinch Roller	
2 - 6	5545009000	Cap, Tension Roller	
2 - 7	5504718100	Roller Assy, Tension	
2 - 8	*5532061000	Cover, Head Base Plate	
2 - 9	*5553292001	Panel, Top; D	
2 - 10	*5581067000	Screw, Top Panel	
2 - 11	*5534721001	Escutcheon, Counter; P7	
2 - 12	5534705000	Knob, VR; C	
2 - 13	*5534708000	Escutcheon, Cue	
2 - 14	*5534706000	Escutcheon, Button	
2 - 15	*5534707000	Escutcheon, Power Switch	
2 - 16	*5555698000	Plate, Escutcheon Pressure	
2 - 17	*5533190000	Foot	
2 - 18	*5800002800	Case Assy, Deck	
2 - 19	*5553308001	Paper, Ampl. Insulating	
2 - 20	*5553306000	Plate, Ampl. Shield	
2 - 21	*5553289100	Plate, Head Base	
2 - 22	*5520182000	Spring, D	
2 - 23	*5555674100	Bracket, Erase Head	
2 - 24	*5555673000	Bracket, Head; R	
2 - 25	5569209000	Head, Erase	
2 - 26	5569202000	Head, Record	
2 - 27	5569203000	Head, Playback	
2 - 28	*5013389100	Head Shield, A	
2 - 29	*5555672000	Bracket, Head; L	
2 - 30	*5555669100	Guide, Tape; F	
2 - 31	*5581071000	Screw, B M2 x 4	
2 - 32	*5555887000	Cushion, Case	
2 - 33	*5800002700	Cushion, Head Base Plate Cover	
2 - 34	*5502277000	Case Assy, Wooden	LIMITED AREA
2 - 35	*5504499000	Screw Assy, Case	LIMITED AREA

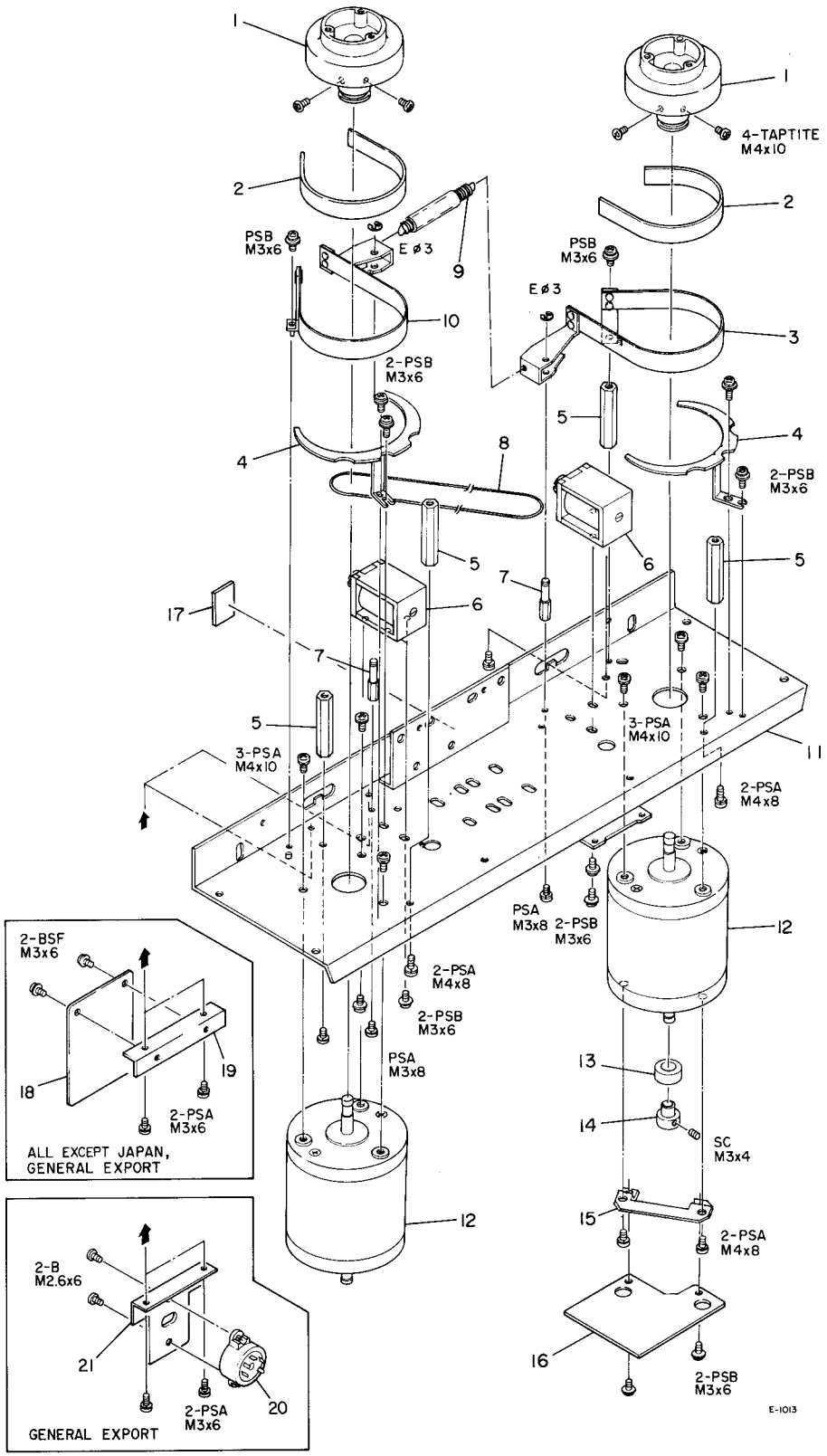
EXPLODED VIEW-3



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

REF. NO.	PARTS NO.	DESCRIPTION	REMARKS
3 - 1	*5545023000	Pin, Tape Guide	
3 - 2	*5555666000	Plate, Reinforcement	
3 - 3	*5534694000	Cushion, Stopper	
3 - 4	*5504729000	Arm Assy, Pinch Roller; R	
3 - 5	*5524216000	Spring, Pinch Roller; R	
3 - 6	*5504731000	Bracket Assy, Pinch Roller Arm	
3 - 7	*5555667000	Plate, Joint	
3 - 8	*5504730000	Arm Assy, Pinch Roller; L	
3 - 9	*5524217000	Spring, Pinch Roller; L	
3 - 10	*5503196000	Chassis, Capstan	
3 - 11	*5524219000	Spring, Slide Plate	
3 - 12	*5504724000	Counter Assy, Index; A	X-10R
	*5504725000	Counter Assy, Index; B	X-10
3 - 13	*5555665000	Bracket, Counter Assy	
3 - 14	*5534695000	Washer, Oil Retaining	
3 - 15	5504726100	Housing Assy, Capstan Flywheel	
3 - 16	*5504733000	Plate Assy, Slide	
3 - 17	*5555704000	Tape, Adhesive	
3 - 18	*5534715000	Ring, Magnet; Thrust	
3 - 19	5504727000	Flywheel Assy, Capstan; R	
3 - 20	5504728000	Flywheel Assy, Capstan; L	
3 - 21	5534692000	Belt, Capstan Drive	
3 - 22	*5555703000	Bearing	
3 - 23	*5544003000	Screw, Bearing	
3 - 24	*5553290000	Bracket, Motor Mounting	
3 - 25	7105018000	DC Motor Assy, Capstan	
	*5168886000	PCB Assy, CAPSTAN SERVO	Part of 3 - 25
3 - 26	*5122172000	Connector Socket, 10P	
3 - 27	*5555914100	Plate, Capstan Chassis	X-10R

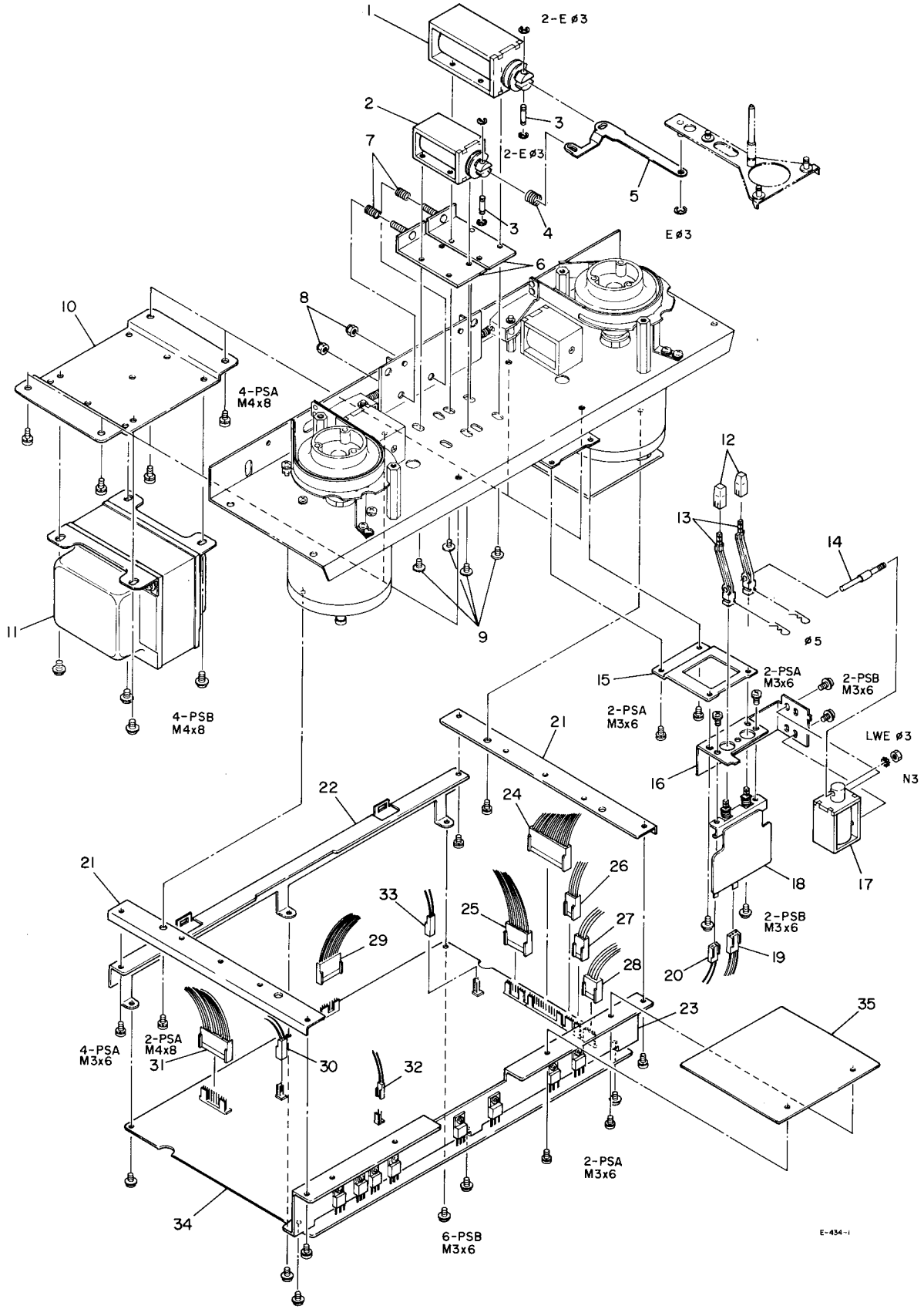
EXPLODED VIEW-4



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

REF. NO.	PARTS NO.	DESCRIPTION	REMARKS
4 - 1	*5533189000	Base Assy, Reel Table	
4 - 2	5555274000	Shoe, Brake	
4 - 3	5504736000	Band Assy, Brake; R	
4 - 4	*5555685000	Plate, Band Assy Retaining	
4 - 5	*5544916000	Stay, Top Panel	
4 - 6	5163044000	Solenoid, Brake	
4 - 7	*5545033000	Shaft, Brake Band	
4 - 8	5534370000	Belt, Counter	
4 - 9	*5524294000	Spring, Brake	
4 - 10	5504735000	Band Assy, Brake; L	
4 - 11	*5503194000	Chassis, Reel Motor	
4 - 12	7105019000	DC Motor, Reel	
4 - 13	*5534487000	Ring, Magnet	
4 - 14	*5545036000	Collar, Magnet Ring	
4 - 15	5555695100	Bracket, PCB	
4 - 16	5168940000	PCB Assy, STOP SENSOR	
4 - 17	5555570000	Cushion	
4 - 18	*5168997000	PCB Assy, FUSE	U.S.A., CANADA
	*5167997000	PCB, FUSE	U.S.A., CANADA
	*5041237000	Holder, Fuse	U.S.A., CANADA
	⚠*5142117000	Fuse, 125V 7A (F1, F2)	U.S.A., CANADA
	⚠*5041144000	Fuse, 250V 2A (F3)	U.S.A., CANADA
	*5158105000	PCB Assy, FUSE	EUROPE, AUSTRALIA, U.K.
	*5157105000	PCB, FUSE	EUROPE, AUSTRALIA, U.K.
	*5142087000	Holder, Fuse	EUROPE, AUSTRALIA, U.K.
	⚠*5142193000	Fuse, 250V 5AT (F1, F2)	EUROPE, AUSTRALIA, U.K.
	⚠*5142189000	Fuse, 250V 2AT (F3)	EUROPE, AUSTRALIA, U.K.
4 - 19	*5555789000	Bracket, FUSE PCB Assy	All except JAPAN, GENERAL EXPORT
4 - 20	⚠*5131007000	Switch, Voltage Selector	GENERAL EXPORT
4 - 21	*5555790000	Bracket, Switch	GENERAL EXPORT

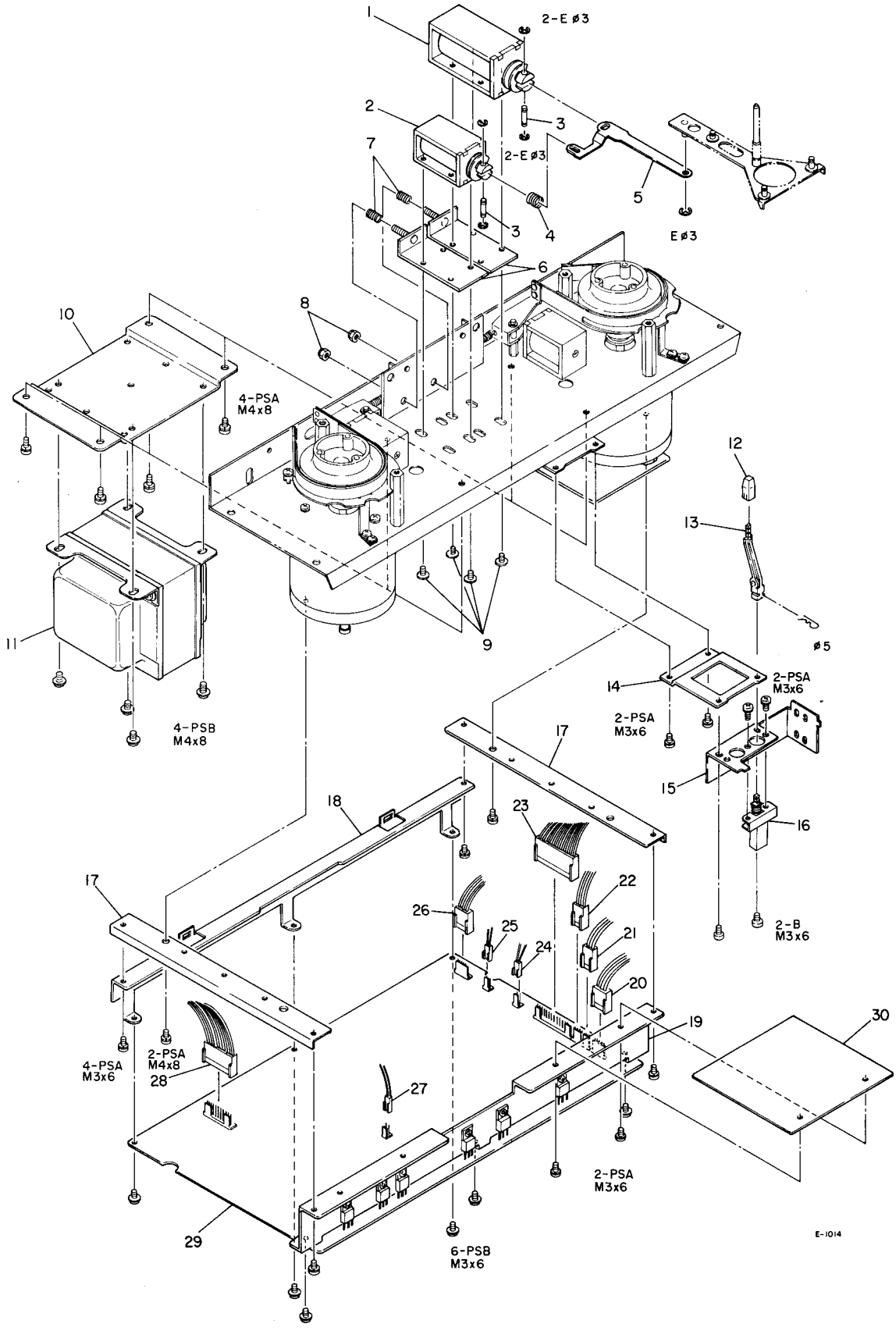
EXPLODED VIEW-5 (X-10R)



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

REF. NO.	PARTS NO.	DESCRIPTION	REMARKS
5 - 1	5163041000	Solenoid, Pinch Roller	
5 - 2	5163042000	Solenoid, Pause	
5 - 3	*5545022000	Pin, Solenoid	
5 - 4	*5524071000	Spring, Solenoid	
5 - 5	*5555668000	Plate, C	
5 - 6	*5504732000	Plate Assy, Solenoid	
5 - 7	*5524218000	Spring, Pinch Roller Pressure	
5 - 8	*5581066000	Nut, Nylon; M4	
5 - 9	5800002600	Screw, Shoulder; F	
5 - 10	*5555681100	Bracket, Power Transformer	
5 - 11	⚠ 5152192000	Transformer, Power	JAPAN
	⚠ 5152225000	Transformer, Power	U.S.A., CANADA
	⚠ 5152226000	Transformer, Power	GENERAL EXPORT
	⚠ 5152239000	Transformer, Power	EUROPE, U.K., AUSTRALIA
5 - 12	5534714000	Button, B	
5 - 13	*5534685000	Rod, Switch	
5 - 14	*5545024000	Shaft, Timer Solenoid	
5 - 15	*5555664000	Plate, Joint	
5 - 16	*5555671100	Bracket, Timer Switch	
5 - 17	5163045000	Solenoid, Timer	
5 - 18	*5168926100	PCB Assy, TIMER	
	*5167260000	PCB, TIMER	Part of 5 - 18
	*5143243000	Diode, ERB12-02G1 (D641)	Part of 5 - 18
	*5122145000	Connector Plug, 2P (P641)	Part of 5 - 18
	*5122146000	Connector Plug, 3P (P642)	Part of 5 - 18
	*5134090000	Push Switch, 2-gang; DP4T (S32, S33)	Part of 5 - 18
5 - 19	*5122281000	Connector Socket, 3P (Red)	
5 - 20	*5122164000	Connector Socket, 2P	
5 - 21	*5553296000	Frame, Joint	
5 - 22	*5552390000	Frame, PCB	
5 - 23	*5552391000	Frame, HS	
5 - 24	*5122177000	Connector Socket, 15P	
5 - 25	*5122170000	Connector Socket, 8P	
5 - 26	*5122322000	Connector Socket, 3P (Black)	
5 - 27	*5122165000	Connector Socket, 3P	
5 - 28	*5122166000	Connector Socket, 4P	
5 - 29	*5122169000	Connector Socket, 7P	
5 - 30	*5122164000	Connector Socket, 2P	
5 - 31	*5122172000	Connector Socket, 11P	
5 - 32	*5122280000	Connector Socket, 2P (Red)	
5 - 33	*5122221000	Connector Socket, 2P (Black)	
5 - 34	*5168932401	PCB Assy, CONTROL	
5 - 35	*5555888000	Heat Sink, C	

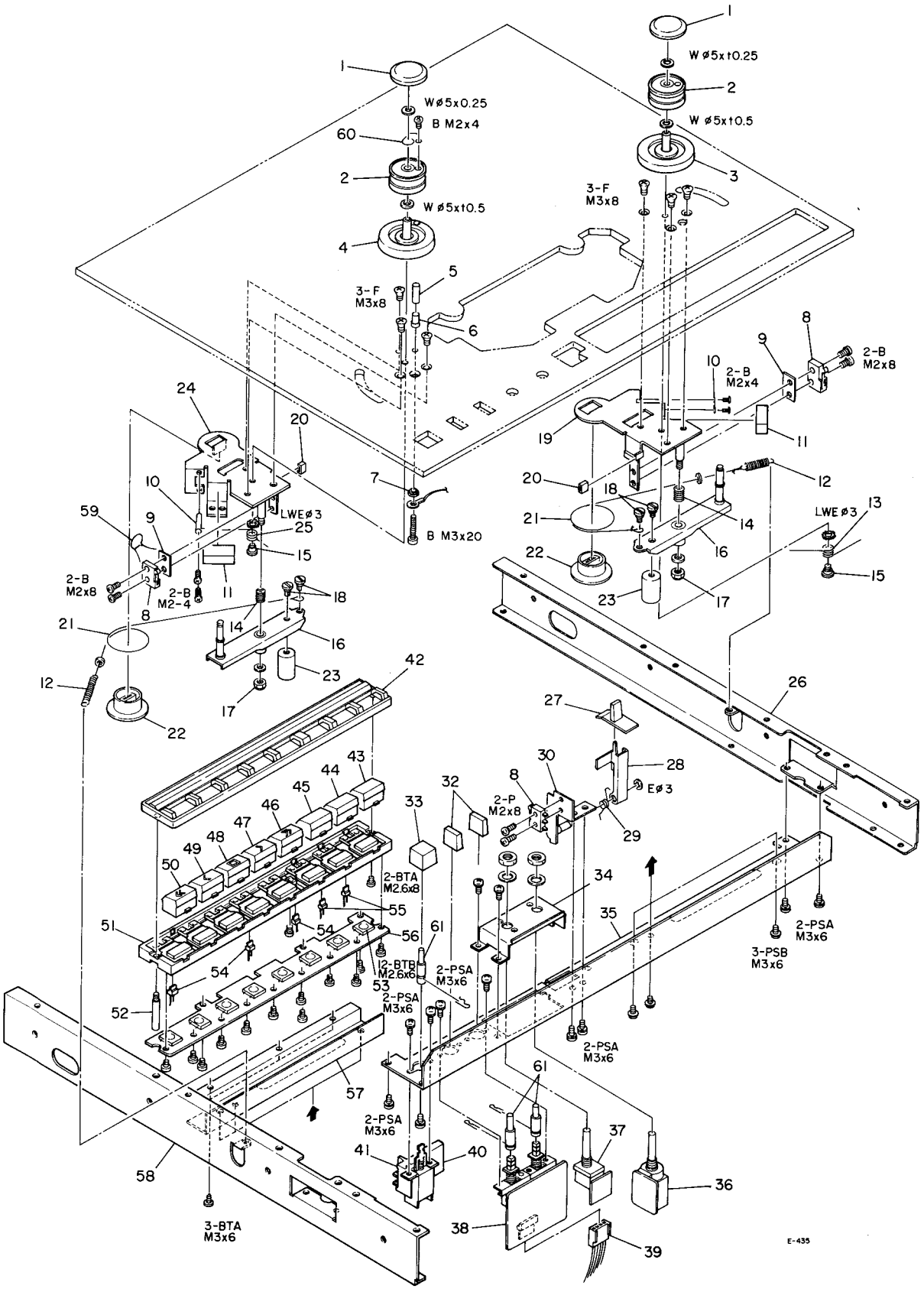
EXPLODED VIEW-6 (X-10)



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

REF. NO.	PARTS NO.	DESCRIPTION	REMARKS
6 - 1	5163041000	Solenoid, Pinch Roller	
6 - 2	5163042000	Solenoid, Pause	
6 - 3	*5545022000	Pin, Solenoid	
6 - 4	*5524071000	Spring, Solenoid	
6 - 5	*5555668000	Plate, C	
6 - 6	*5504732000	Plate Assy, Solenoid	
6 - 7	*5524218000	Spring, Pinch Roller Pressure	
6 - 8	*5581066000	Nut, Nylon; M4	
6 - 9	*5800002600	Screw, Shoulder; F	
6 - 10	*5555681100	Bracket, Power Transformer	
6 - 11	⚠ 5152192000	Transformer, Power	JAPAN
	⚠ 5152225000	Transformer, Power	U.S.A., CANADA
	⚠ 5152226000	Transformer, Power	GENERAL EXPORT
	⚠ 5122239000	Transformer, Power	EUROPE, U.K., AUSTRALIA
6 - 12	5534714000	Button, B	
6 - 13	*5534685000	Rod, Switch	
6 - 14	*5555664000	Plate, Joint	
6 - 15	*5555671100	Bracket, Timer Switch	
6 - 16	5134115000	Switch, Push	
6 - 17	*5553296000	Frame, Joint	
6 - 18	*5552390000	Frame, PCB	
6 - 19	*5552391000	Frame, HS	
6 - 20	*5122166000	Connector Socket, 4P	
6 - 21	*5122165000	Connector Socket, 3P	
6 - 22	*5122222000	Connector Socket, 3P (Black)	
6 - 23	*5122174000	Connector Socket, 12P	
6 - 24	*5122221000	Connector Socket, 2P (Black)	
6 - 25	*5122164000	Connector Socket, 2P	
6 - 26	*5122167000	Connector Socket, 5P	
6 - 27	*5122280000	Connector Socket, 2P (Red)	
6 - 28	*5122171000	Connector Socket, 9P	
6 - 29	*5168933000	PCB Assy, CONTROL	
6 - 30	*5555888000	Heat Sink, C	

EXPLODED VIEW-7 (X-10R)

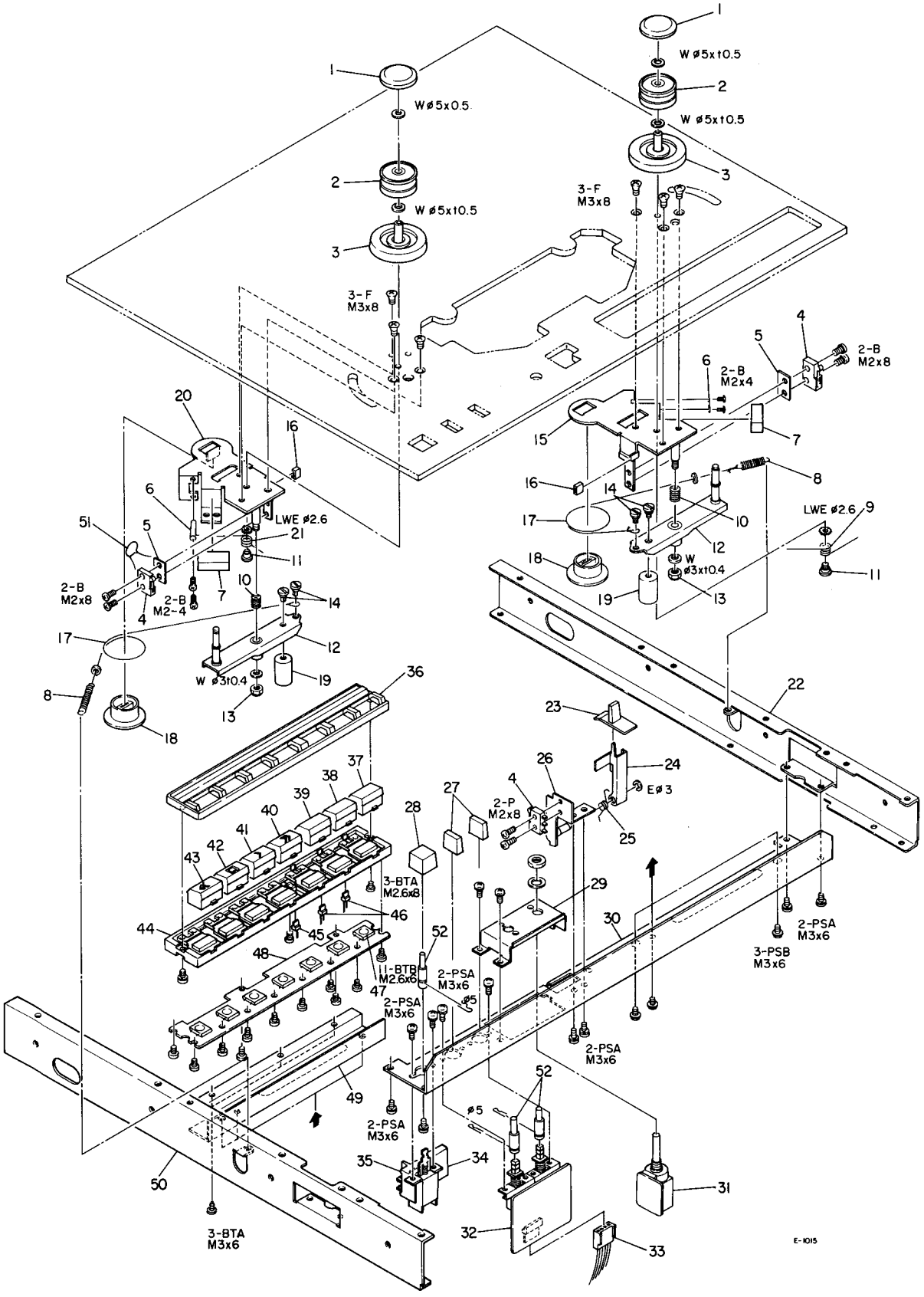


Parts marked with *require longer delivery time than regular parts.

REF. NO.	PARTS NO.	DESCRIPTION	REMARKS
7 - 1	5545037000	Cap, Roller	
7 - 2	5504740000	Roller Assy, A	
7 - 3	*5504742000	Base Assy, Roller; B	
7 - 4	*5504739000	Base Assy, Roller; A	
7 - 5	*5545042000	Post, Sensing	
7 - 6	*5534716000	Post, Insulating	
7 - 7	*5534368100	Washer, Insulating	
7 - 8	5130003000	Switch, Micro	
7 - 9	*5550025100	Plate, Insulating	
7 - 10	*5524215000	Wire, String Stopper	
7 - 11	*5534686000	Cushion	
7 - 12	*5524183000	Spring, Motor Switch Lever	
7 - 13	*5524230001	Spring, Tension Arm; R	
7 - 14	*5524069000	Spring, Roller Arm	
7 - 15	*5581064000	Screw, Shoulder; E	
7 - 16	*5504723000	Arm Assy, Tension	
7 - 17	*5581045000	Nut, Nylon	
7 - 18	*5800002600	Screw, Shoulder; F	
7 - 19	*5504720100	Base Assy, Shut off; R	
7 - 20	*5027699000	Collar, Rubber	
7 - 21	*5504721000	String Assy, Damper	
7 - 22	*5534684000	Drum, Damper	
7 - 23	*5545010000	Weight, Counter	
7 - 24	*5504719100	Base Assy, Shut off; L	
7 - 25	*5524229001	Spring, Tension Arm; L	
7 - 26	*5552393100	Angle, Side; R	
7 - 27	*5534703000	Knob, Cue	
7 - 28	*5555697000	Lever, Cue	
7 - 29	*5524223000	Spring, Cue	
7 - 30	*5504737000	Bracket Assy, Cue	
7 - 31		(Not used)	
7 - 32	5534701000	Button, Switch	
7 - 33	5534702000	Button, Power Switch	
7 - 34	*5555699000	Bracket, Speed Switch	
7 - 35	*5552392001	Chassis, Control	
7 - 36	*5168938000	PCB Assy, PITCH CONT	
	*5167938000	PCB, PITCH CONT	Part of 7 - 36
	5150239000	Var. Res. w/Switch; 5 k ohm-B	Part of 7 - 36
7 - 37	*5168928000	PCB Assy, SWITCH	
	*5167928000	PCB, SWITCH	Part of 7 - 37
	5133013000	Switch, Rotary	Part of 7 - 37
7 - 38	*5168927200	PCB Assy, SPEED SW	
7 - 39	*5122168000	Connector Socket, 6P	
7 - 40	⚠ 5052907000	Spark Killer, 0.01 mfd + 300 ohm 400V	JAPAN, GENERAL EXPORT, AUSTRALIA
	⚠ 5052910000	Spark Killer, 0.033 mfd + 120 ohm 125V AC	U.S.A.
	⚠ 5052911000	Spark Killer, 0.033 mfd + 120 ohm 250V AC	CANADA
	⚠ 5052908000	Spark Killer, 4700 pfd 250V AC	EUROPE, U.K.
7 - 41	⚠ 5134036000	Switch, Power	JAPAN, GENERAL EXPORT
	⚠ 5134018000	Switch, Power	U.S.A., AUSTRALIA
	⚠ 5134018000	Switch, Power	CANADA
	⚠ 5134011000	Switch, Power	EUROPE, U.K.
7 - 42	*5533192000	Escutcheon, Button; Operation	
7 - 43	5533199000	Button, G	
7 - 44	5533219000	Button, H	
7 - 45	5533198000	Button, F	
7 - 46	5533195000	Button, C	
7 - 47	5533193000	Button, A	
7 - 48	5533197000	Button, E	
7 - 49	5533194000	Button, B	
7 - 50	5533196000	Button, D	

(Continued on page 52)

EXPLODED VIEW-8 (X-10)



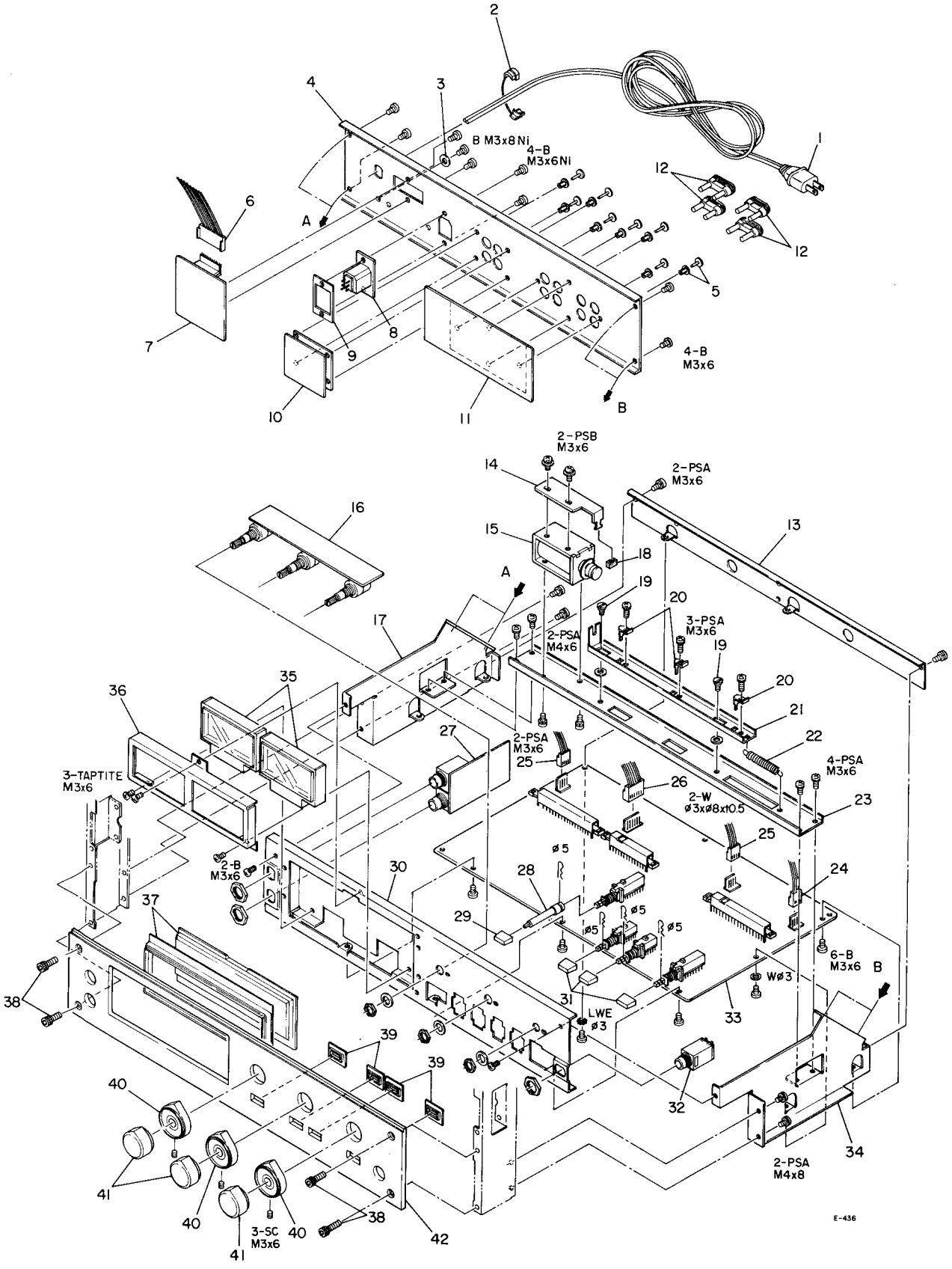
Parts marked with *require longer delivery time than regular parts.

REF. NO.	PARTS NO.	DESCRIPTION	REMARKS
8 - 1	5545037000	Cap, Roller	
8 - 2	*5504743000	Roller Assy, B	
8 - 3	*5504742000	Base Assy, Roller; B	
8 - 4	5130003000	Switch, Micro	
8 - 5	*5550025100	Plate, Insulating	
8 - 6	*5524215000	Wire, String Stopper	
8 - 7	*5534686000	Cushion	
8 - 8	*5524183000	Spring, Motor Switch Lever	
8 - 9	*5524230001	Spring, Tension Arm; R	
8 - 10	*5524069000	Spring, Roller Arm	
8 - 11	*5581064000	Screw, Shoulder; E	
8 - 12	*5504723000	Arm Assy, Tension	
8 - 13	*5581045000	Nut, Nylon	
8 - 14	*5800002600	Screw, Shoulder; F	
8 - 15	*5504720100	Base Assy, Shut off; R	
8 - 16	*5027699000	Collar, Rubber	
8 - 17	*5504721000	String Assy, Damper	
8 - 18	*5534684000	Drum, Damper	
8 - 19	*5545010000	Weight, Counter	
8 - 20	*5504719100	Base Assy, Shut off; L	
8 - 21	*5524229001	Spring, Tension Arm; L	
8 - 22	*5552393100	Angle, Side; R	
8 - 23	*5534703000	Knob, Cue	
8 - 24	*5555697000	Lever, Cue	
8 - 25	*5524223000	Spring, Cue	
8 - 26	*5504737000	Bracket Assy, Cue	
8 - 27	5534701000	Button, Switch	
8 - 28	5534702000	Button, Power Switch	
8 - 29	*5555699000	Bracket, Speed Switch	
8 - 30	*5552392001	Chassis, Control	
8 - 31	*5168938000	PCB Assy, PITCH CONT	
	*5167938000	PCB, PITCH CONT	Part of 8 - 31
	5150239000	Var. Res., w/Switch; 5 k ohm-B	Part of 8 - 31
8 - 32	*5168927200	PCB Assy, SPEED SW	
8 - 33	*5122168000	Connector Socket, 6P	
8 - 34	⚠ 5052907000	Spark Killer, 0.01 mfd + 300 ohm 400V	JAPAN, GENERAL EXPORT, AUSTRALIA
	⚠ 5052910000	Spark Killer, 0.033 mfd + 120 ohm 125V AC	U.S.A.
	⚠ 5052911000	Spark Killer, 0.033 mfd + 120 ohm 250V AC	CANADA
	⚠ 5052908000	Spark Killer, 4700 pfd 250V AC	EUROPE, U.K.
8 - 35	⚠ 5134036000	Switch, Power	JAPAN, GENERAL EXPORT
	⚠ 5134037000	Switch, Power	U.S.A., AUSTRALIA
	⚠ 5134018000	Switch, Power	CANADA
	⚠ 5134011000	Switch, Power	EUROPE, U.K.
8 - 36	*5533191000	Escutcheon, Button; Operation	
8 - 37	5533199000	Button, G	
8 - 38	5533219000	Button, H	
8 - 39	5533198000	Button, F	
8 - 40	5533195000	Button, C	
8 - 41	5533193000	Button, A	
8 - 42	5533197000	Button, E	
8 - 43	5533196000	Button, D	
8 - 44	*5503205000	Base Assy, Button; Operation	
8 - 45	5142139000	LED (Green)	
8 - 46	5143140000	LED (Red)	
8 - 47	5138011000	Switch, Tact	
8 - 48	*5168930000	PCB Assy, OPERATION SW	
	*5167930000	PCB, OPERATION SW	Part of 8 - 48
8 - 49	*5553300000	Angle, Button Base; A	
8 - 50	*5552394100	Angle, Side; L	
8 - 51	*5054230000	Capacitor, Ceramic; 0.047 mfd 50V	
8 - 52	*5534713000	Rod, Switch; C	

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

REF. NO.	PARTS NO.	DESCRIPTION	REMARKS
8 - 1	5545037000	Cap, Roller	
8 - 2	*5504743000	Roller Assy, B	
8 - 3	*5504742000	Base Assy, Roller; B	
8 - 4	5130003000	Switch, Micro	
8 - 5	*5550025100	Plate, Insulating	
8 - 6	*5524215000	Wire, String Stopper	
8 - 7	*5534686000	Cushion	
8 - 8	*5524183000	Spring, Motor Switch Lever	
8 - 9	*5524230001	Spring, Tension Arm; R	
8 - 10	*5524069000	Spring, Roller Arm	
8 - 11	*5581064000	Screw, Shoulder; E	
8 - 12	*5504723000	Arm Assy, Tension	
8 - 13	*5581045000	Nut, Nylon	
8 - 14	*5800002600	Screw, Shoulder; F	
8 - 15	*5504720100	Base Assy, Shut off; R	
8 - 16	*5027699000	Collar, Rubber	
8 - 17	*5504721000	String Assy, Damper	
8 - 18	*5534684000	Drum, Damper	
8 - 19	*5545010000	Weight, Counter	
8 - 20	*5504719100	Base Assy, Shut off; L	
8 - 21	*5524229001	Spring, Tension Arm; L	
8 - 22	*5552393100	Angle, Side; R	
8 - 23	*5534703000	Knob, Cue	
8 - 24	*5555697000	Lever, Cue	
8 - 25	*5524223000	Spring, Cue	
8 - 26	*5504737000	Bracket Assy, Cue	
8 - 27	5534701000	Button, Switch	
8 - 28	5534702000	Button, Power Switch	
8 - 29	*5555699000	Bracket, Speed Switch	
8 - 30	*5552392001	Chassis, Control	
8 - 31	*5168938000	PCB Assy, PITCH CONT	
	*5167938000	PCB, PITCH CONT	Part of 8 - 31
	5150239000	Var. Res., w/Switch; 5 k ohm-B	Part of 8 - 31
8 - 32	*5168927200	PCB Assy, SPEED SW	
8 - 33	*5122168000	Connector Socket, 6P	
8 - 34	⚠ 5052907000	Spark Killer, 0.01 mfd + 300 ohm 400V	JAPAN, GENERAL EXPORT, AUSTRALIA
	⚠ 5052910000	Spark Killer, 0.033 mfd + 120 ohm 125V AC	U.S.A.
	⚠ 5052911000	Spark Killer, 0.033 mfd + 120 ohm 250V AC	CANADA
	⚠ 5052908000	Spark Killer, 4700 pfd 250V AC	EUROPE, U.K.
8 - 35	⚠ 5134036000	Switch, Power	JAPAN, GENERAL EXPORT
	⚠ 5134037000	Switch, Power	U.S.A., AUSTRALIA
	⚠ 5134018000	Switch, Power	CANADA
	⚠ 5134011000	Switch, Power	EUROPE, U.K.
8 - 36	*5533191000	Escutcheon, Button; Operation	
8 - 37	5533199000	Button, G	
8 - 38	5533219000	Button, H	
8 - 39	5533198000	Button, F	
8 - 40	5533195000	Button, C	
8 - 41	5533193000	Button, A	
8 - 42	5533197000	Button, E	
8 - 43	5533196000	Button, D	
8 - 44	*5503205000	Base Assy, Button; Operation	
8 - 45	5142139000	LED (Green)	
8 - 46	5143140000	LED (Red)	
8 - 47	5138011000	Switch, Tact	
8 - 48	*5168930000	PCB Assy, OPERATION SW	
	*5167930000	PCB, OPERATION SW	Part of 8 - 48
8 - 49	*5553300000	Angle, Button Base; A	
8 - 50	*5552394100	Angle, Side; L	
8 - 51	*5054230000	Capacitor, Ceramic; 0.047 mfd 50V	
8 - 52	*5534713000	Rod, Switch; C	

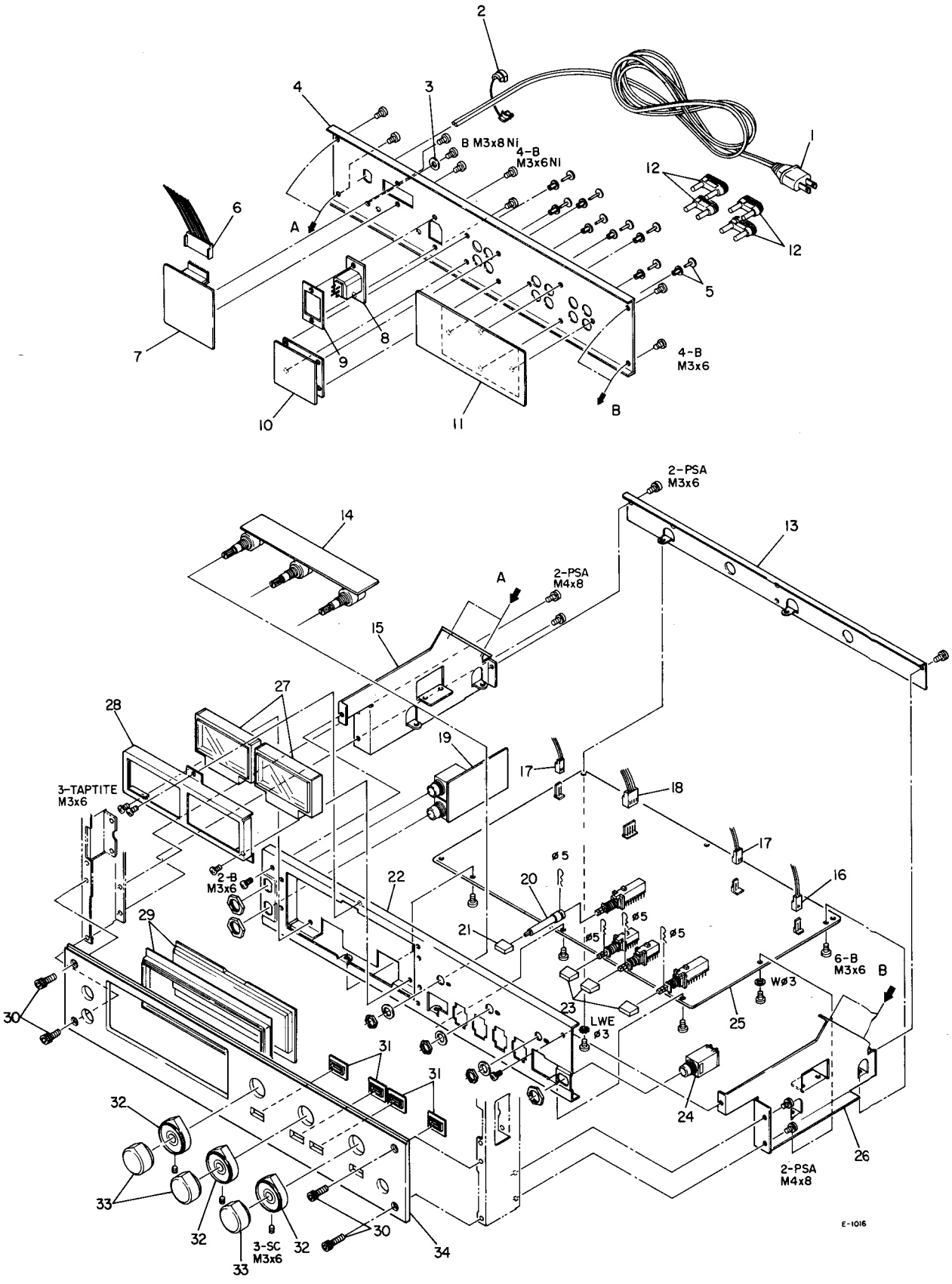
EXPLODED VIEW-9 (X-10R)



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

REF. NO.	PARTS NO.	DESCRIPTION	REMARKS
9 - 1	⚠*5128027000	Cord, AC Power	JAPAN, GENERAL EXPORT
	⚠*5128075000	Cord, AC Power	U.S.A., CANADA
	⚠*5128018000	Cord, AC Power	EUROPE
	⚠*5128031000	Cord, AC Power	AUSTRALIA
	⚠*5128047000	Cord, AC Power	U.K.
9 - 2	*5534660000	Strain Relief, AC Power Cord	All except AUSTRALIA, U.K.
	*5534663000	Strain Relief, AC Power Cord	AUSTRALIA
	*5534661000	Strain Relief, AC Power Cord	U.K.
9 - 3	*5555063000	Washer, GND	All except EUROPE, U.K.
9 - 4	*5552395000	Panel, Ampl.; Rear	
9 - 5	*5534118000	Push Rivet	
9 - 6	*5122177000	Connector Socket, 15P	
9 - 7	*5168931100	PCB Assy, CONNECTOR	
9 - 8	*5122339000	Connector Socket, 6P	
9 - 9	*5555700000	Nut, Plate	
9 - 10	*5168937201	PCB Assy, IN/OUTPUT	
	*5167937101	PCB, IN/OUTPUT	Part of 9 - 10
	*5124058000	Jack, Pin; 4P	Part of 9 - 10
	5183124000	Carbon Res., 56 k ohm ¼W ±5% (R535, R536)	Part of 9 - 10
9 - 11	*5168936000	PCB Assy, IN/OUTPUT; DBX	
9 - 12	*5124051000	Plug, Short Pin	
9 - 13	*5553297100	Bracket, REC AND PLAY AMPL PCB	
9 - 14	*5555701000	Plate, Solenoid Stopper	
9 - 15	5163043000	Solenoid, Reverse	
9 - 16	*5168939100	PCB Assy, VR	
9 - 17	*5553294100	Frame, Ampl.; L	
9 - 18	*5524116000	Cushion	
9 - 19	*5581056000	Screw, Shoulder; A	
9 - 20	*5524224000	Spring, Plate; Change	
9 - 21	*5555694000	Plate, Slide	
9 - 22	*5524222000	Spring, Return	
9 - 23	*5553298000	Bracket, Solenoid	
9 - 24	*5122282000	Connector Socket, 4P (Red)	
9 - 25	*5122166000	Connector Socket, 4P	
9 - 26	*5122170000	Connector Socket, 8P	
9 - 27	*5168935100	PCB Assy, MIC AMP	
9 - 28	*5534712000	Rod, B	
9 - 29	5534701000	Button, Switch	
9 - 30	*5503195100	Chassis, Ampl.; A	
9 - 31	*5534740000	Button	
9 - 32	5124026000	Jack, PHONES	
9 - 33	*5168934601	PCB Assy, REC AND PLAY AMPL	
9 - 34	*5553295100	Frame, Ampl.; R	
9 - 35	5165068000	Meter, VU	
9 - 36	*5553293000	Plate, Meter	
9 - 37	*5504748000	Cover Assy, Meter	
9 - 38	*5581067000	Screw, Ampl. Panel; B	
9 - 39	*5534706000	Escutcheon, Button	
9 - 40	5534704000	Knob, VR; B	
9 - 41	5552188000	Knob, VR; A	
9 - 42	*5552384100	Panel, Ampl.; 4T	

EXPLODED VIEW-10 (X-10)



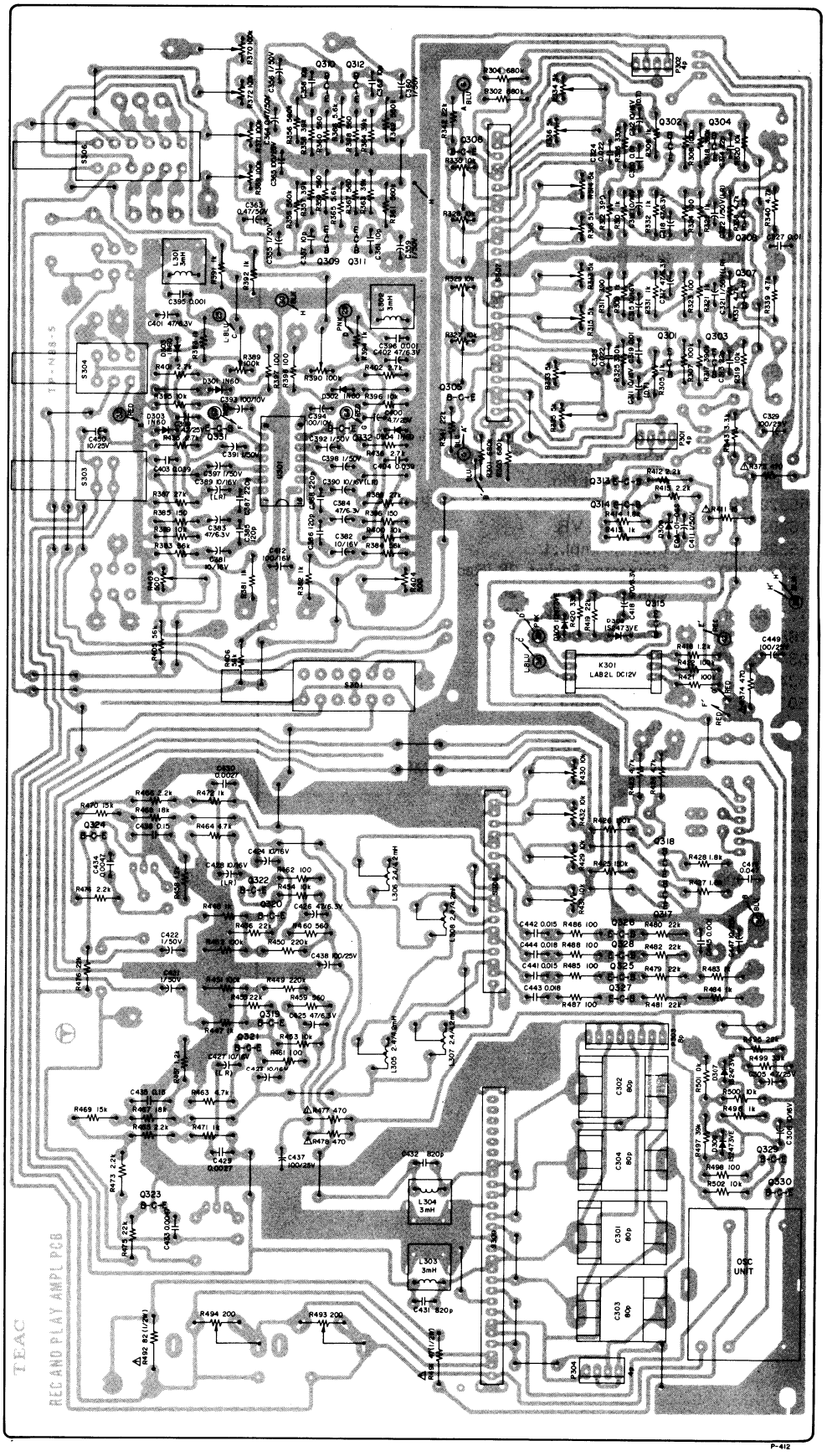
Parts marked with *require longer delivery time than regular parts.

REF. NO.	PARTS NO.	DESCRIPTION	REMARKS
10 - 1	⚠*5128027000	Cord, AC Power	JAPAN, GENERAL EXPORT
	⚠*5128075000	Cord, AC Power	U.S.A., CANADA
	⚠*5128018000	Cord, AC Power	EUROPE
	⚠*5128031000	Cord, AC Power	AUSTRALIA
	⚠*5128047000	Cord AC Power	U.K.
10 - 2	*5534660000	Strain Relief, AC Power Cord	All except AUSTRALIA, U.K.
	*5534663000	Strain Relief, AC Power Cord	AUSTRALIA
	*5534661000	Strain Relief, AC Power Cord	U.K.
10 - 3	*5555063000	Washer, GND	All except EUROPE, U.K.
10 - 4	*5552395000	Panel, Ampl.; Rear	
10 - 5	*5534118000	Push Rivet	
10 - 6	*5122174000	Connector Socket, 12P	
10 - 7	*5168002000	PCB Assy, CONNECTOR	
10 - 8	*5122339000	Connector Socket, 6P	
10 - 9	*5555700000	Nut,Plate	
10 - 10	*5168937201	PCB Assy, IN/OUTPUT	
	*5167937101	PCB, IN/OUTPUT	Part of 10 - 10
	*5124058000	Jack, Pin; 4P	Part of 10 - 10
	5183124000	Carbon Res., 56 k ohm ¼W ±5% (R535, R536)	Part of 10 - 10
10 - 11	*5168936000	PCB Assy, IN/OUTPUT; DBX	
10 - 12	*5124051000	Plug, Short Pin	
10 - 13	*5553297100	Bracket, REC AND PLAY AMPL PCB	
10 - 14	*5168939101	PCB Assy, VR	
10 - 15	*5553294100	Frame, Ampl.; L	
10 - 16	5122280000	Connector Socket, 2P (Red)	
10 - 17	5122164000	Connector Socket, 2P	
10 - 18	5122166000	Connector Socket,4P	
10 - 19	*5168935100	PCB Assy, MIC AMPL	
10 - 20	*5534712000	Rod, B	
10 - 21	5534701000	Button, Switch	
10 - 22	*5503195100	Chassis, Ampl.; A	
10 - 23	*5534740000	Button	
10 - 24	5124026000	Jack, PHONES	
10 - 25	*5168984000	PCB Assy, REC AND PLAY AMPL	
10 - 26	*5553295100	Frame, Ampl.; R	
10 - 27	5165068000	Meter, VU	
10 - 28	*5553293000	Plate, Meter	
10 - 29	*5504748001	Cover Assy, Meter	
10 - 30	*5581067000	Screw, Ampl. Panel; B	
10 - 31	*5534706000	Escutcheon, Button	
10 - 32	5534704000	Knob, VR; B	
10 - 33	5533188000	Knob, VR; A	
10 - 34	*5552384100	Panel, Ampl.; 4T	

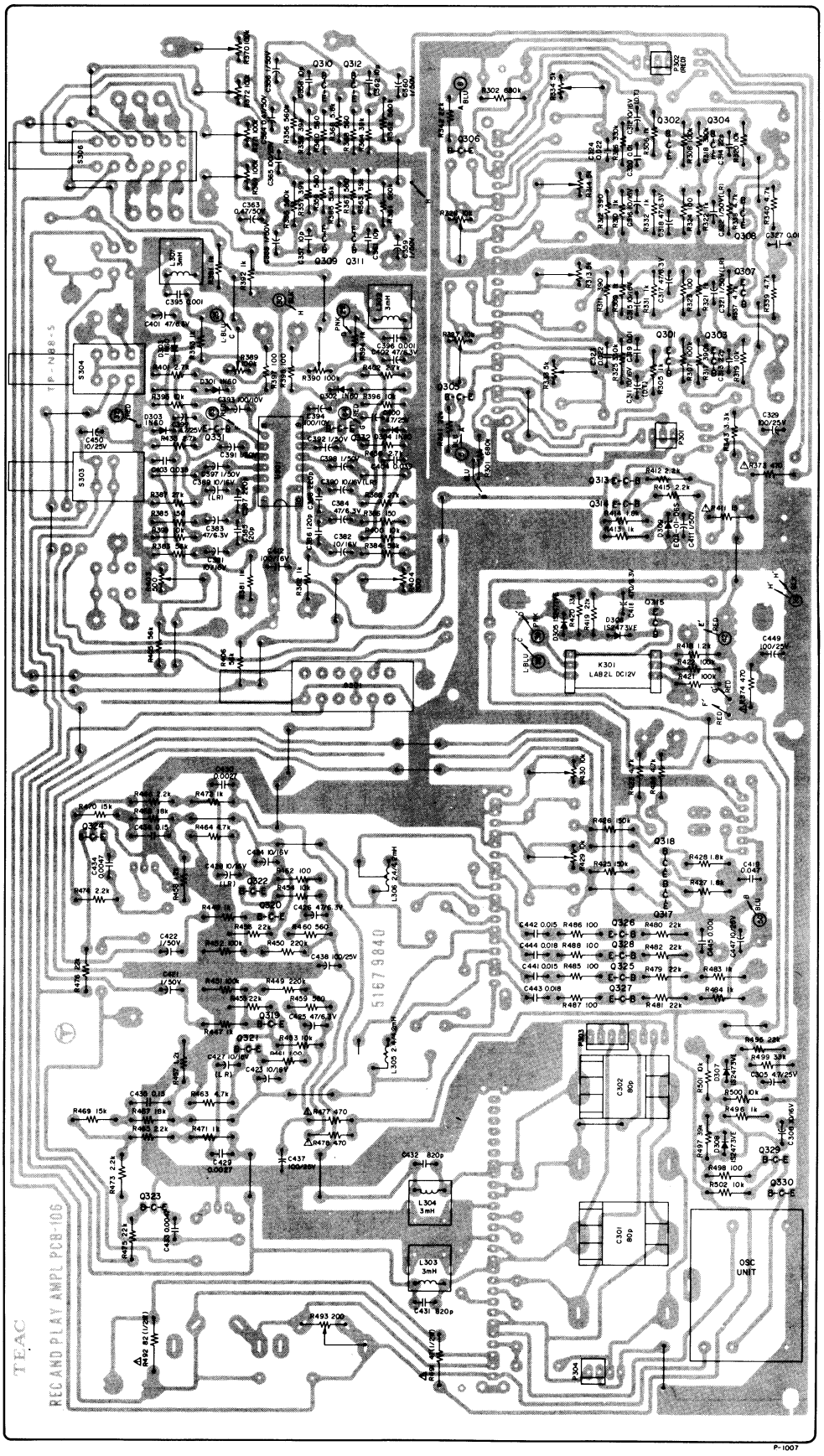
5 PC BOARDS AND PARTS LIST

PC Boards shown viewed from foil side.

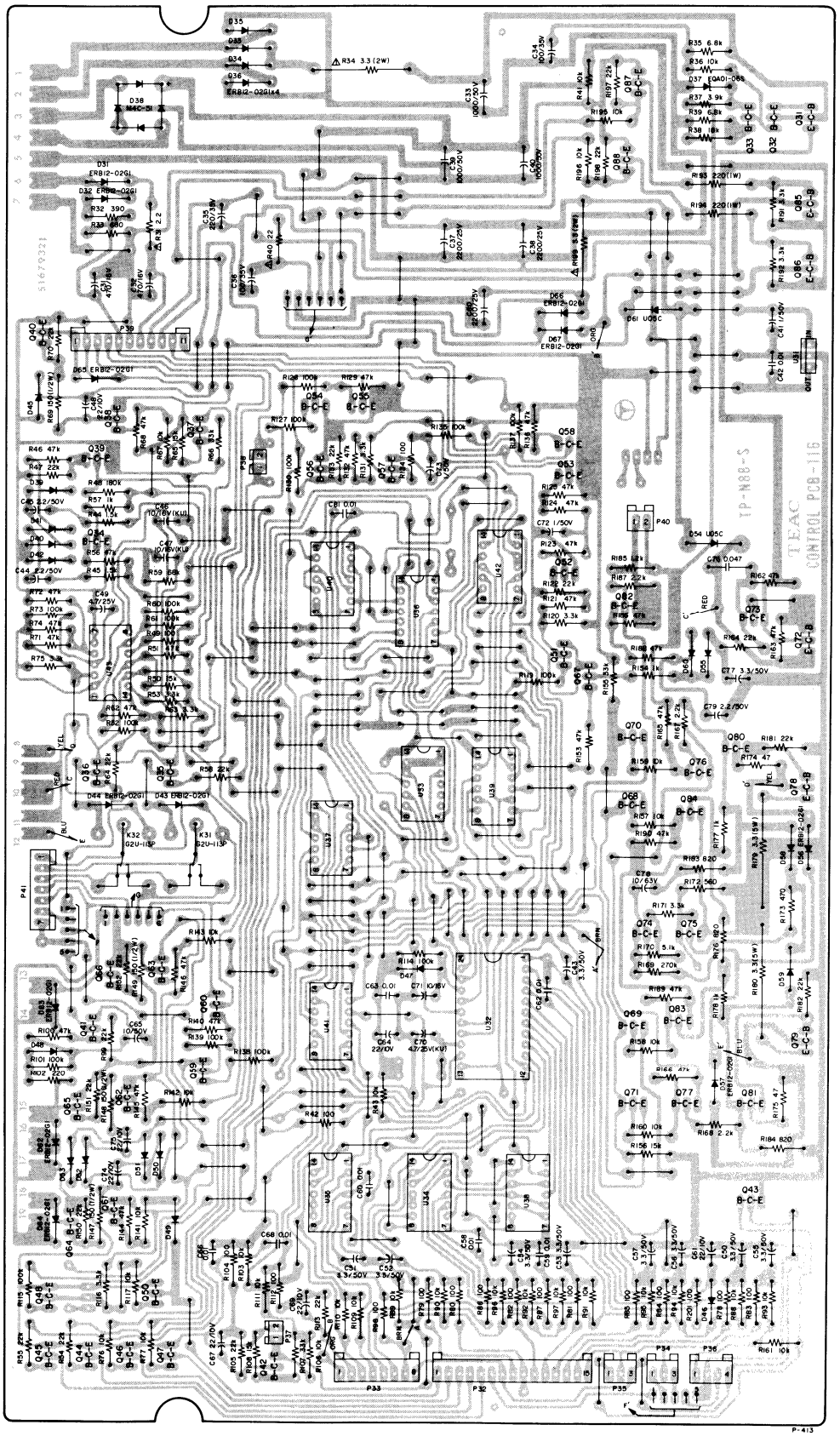
REC AND PLAY AMPL PCB ASSY (X-10R)



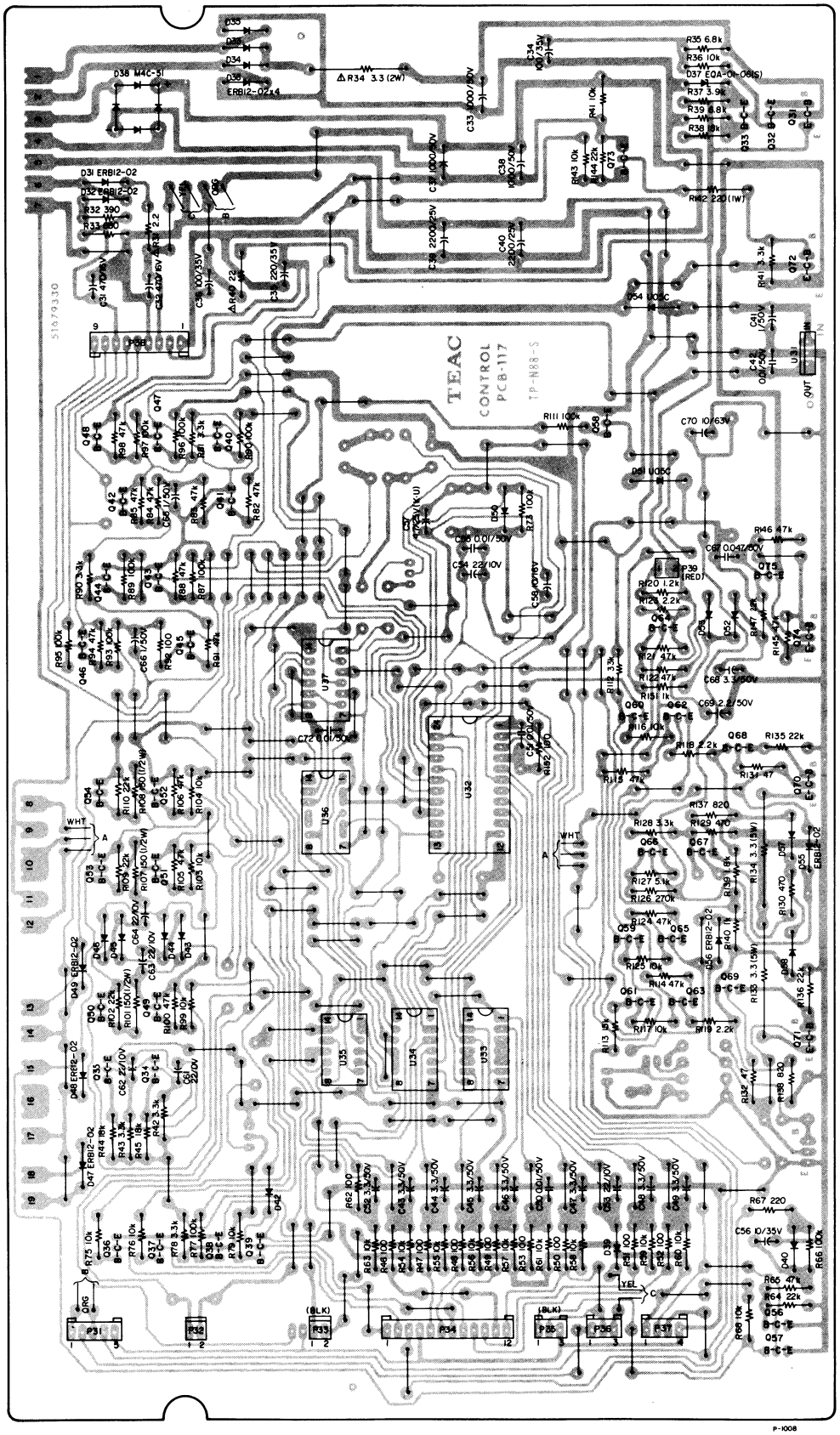
REC AND PLAY AMPL PCB ASSY (X-10)



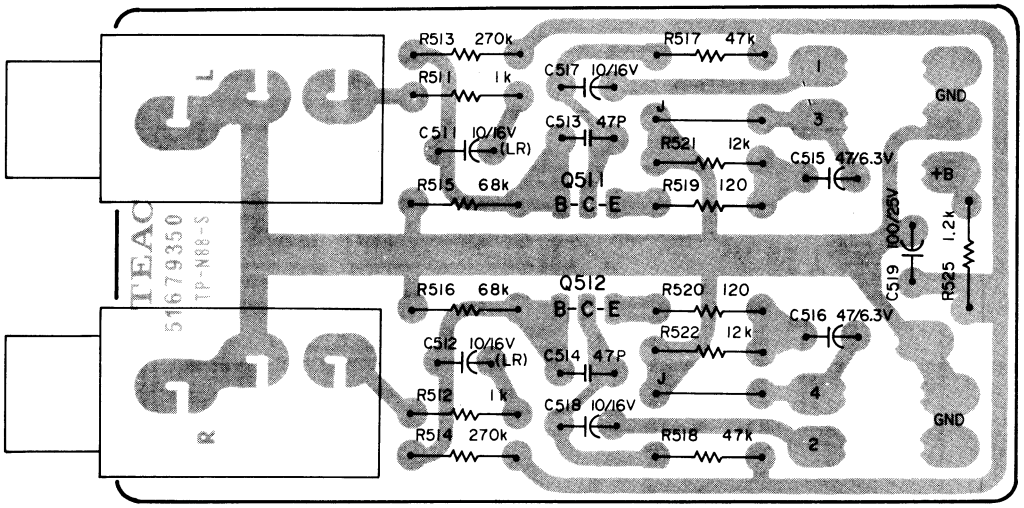
CONTROL PCB ASSY (X-10R)



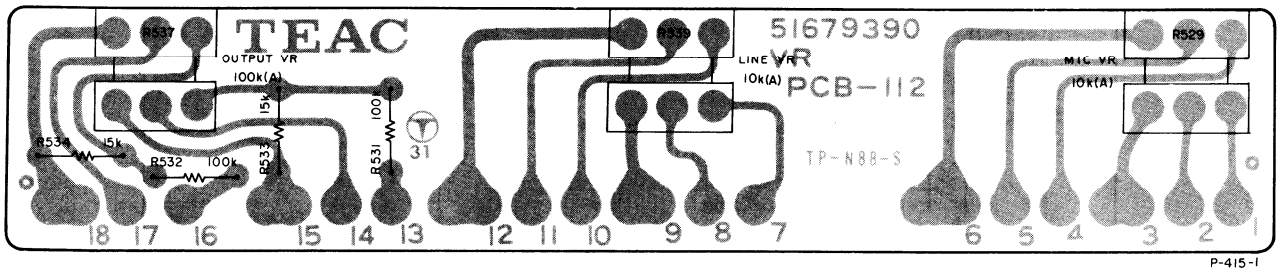
CONTROL PCB ASSY (X-10)



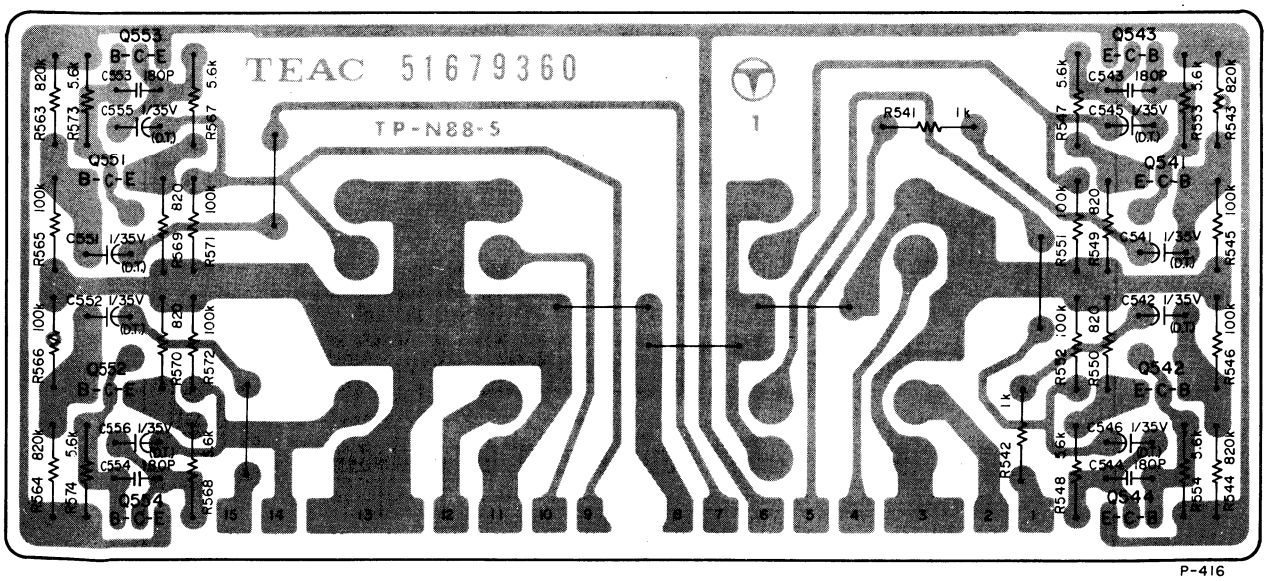
MIC AMP PCB ASSY



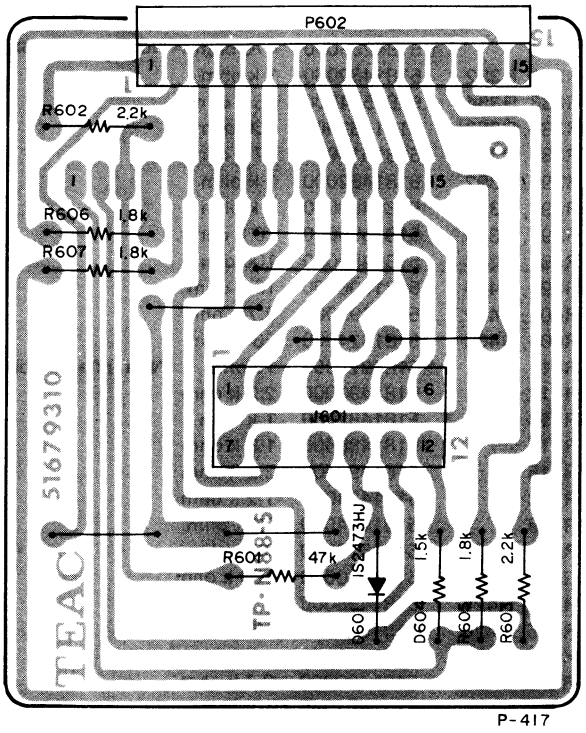
VR PCB ASSY



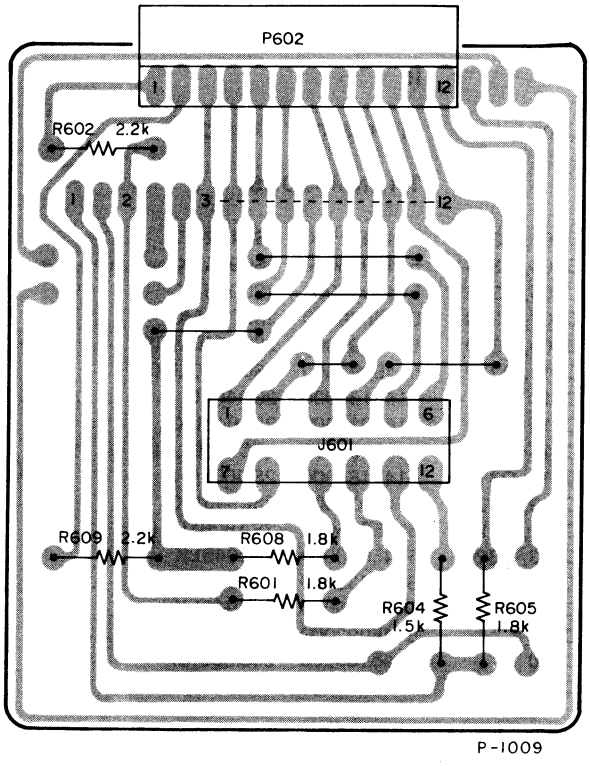
IN/OUTPUT PCB ASSY (DBX)



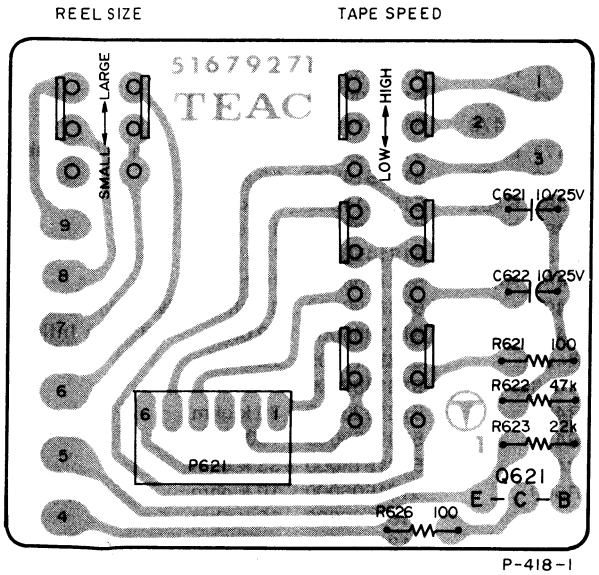
CONNECTOR PCB ASSY (X-10R)



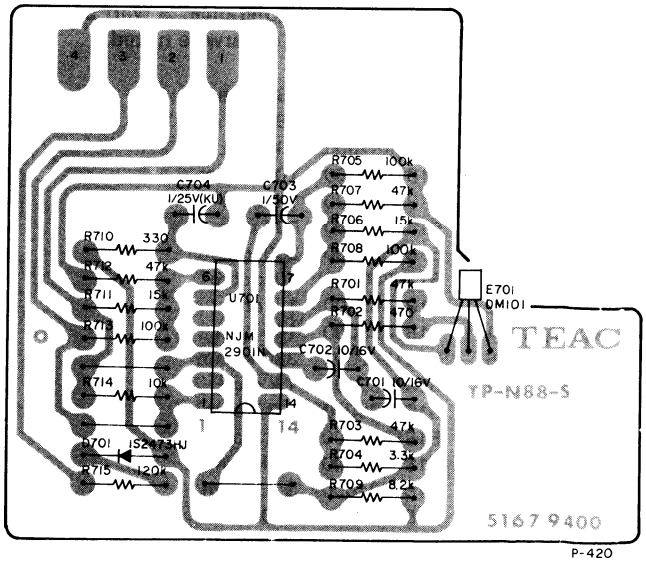
CONNECTOR PCB ASSY (X-10)



SPEED SW PCB ASSY



STOP SENSOR PCB ASSY



REC AND PLAY AMPL PCB ASSY (X-10R)

REF.NO.	PARTS NO.	DESCRIPTION
	5168934601	PCB Assy
	5167934200	PCB
	IC	
U301	5147053000	HA11122W
	TRANSISTORS	
Q301, Q302	5042461000	2SC1327(T)
Q303, Q304	5145036000	2SC945LK
Q305, Q306	5145036000	2SC945LK
Q307, Q308	5145036000	2SC945LK
Q309, Q310	5145092000	2SC1740LN(S)
Q311, Q312	5145092000	2SC1740LN(S)
Q313	5145135000	2SD400E
Q314	5145036000	2SC945LK
Q315	5145092000	2SC1740LN(S)
Q317, Q318	5145185000	2SD655(E)
Q319, Q320	5145036000	2SC945LK
Q321, Q322	5145095000	2SA8261LN(S)
Q323, Q324	5145036000	2SC945LK
Q325, Q326	5145036000	2SC945LK
Q327, Q328	5145036000	2SC945LK
Q329	5145092000	2SC1740LN(S)
Q330	5145185000	2SD655(E)
Q331, Q332	5145036000	2SC945LK
	DIODES	
D301, D302	5042213000	1N60
D303, D304	5042213000	1N60
D305, D306	5042517000	1S2473VE
D307, D308	5042517000	1S2473VE
D309	5143154000	Zener, EQA-01-06S
	RESISTORS	
	All resistors are rated ±5% tolerance, ¼ watt and of carbon type unless otherwise noted.	
R301, R302	5181550000	680 k ohm
R303, R304	5181550000	680 k ohm
R305, R306	5181482000	1 k ohm
R307, R308	5181530000	100 k ohm
R309, R310	5181482000	1 k ohm
R311, R312	5181472000	390 ohm
R317, R318	5181544000	390 k ohm
R319, R320	5181506000	10 k ohm
R321, R322	5181482000	1 k ohm
R323, R324	5181458000	100 ohm
R325, R326	5181542000	330 k ohm
R331, R332	5181482000	1 k ohm
R337, R338	5181498000	4.7 k ohm
R339, R340	5181498000	4.7 k ohm
R341, R342	5181514000	22 k ohm
R343	5181494000	3.3 k ohm
R355, R356	5181548000	560 k ohm
R357, R358	5181520000	39 k ohm
R359, R360	5181476000	560 ohm
R361, R362	5181548000	560 k ohm
R363, R364	5181520000	39 k ohm

REF. NO.	PARTS NO.	DESCRITION	
R365, R366	5181500000	5.6 k ohm	
R367, R368	5181476000	560 ohm	
R373	⚠5184265000	470 ohm	Non Inflammable
R374	⚠5184265000	470 ohm	Non Inflammable
R381, R382	5181482000	1 k ohm	
R383, R384	5181524000	56 k ohm	
R385, R386	5181462000	150 ohm	
R387, R388	5181516000	27 k ohm	
R391, R392	5181482000	1 k ohm	
R393, R394	5181482000	1 k ohm	
R395, R396	5181506000	10 k ohm	
R397, R398	5181458000	100 ohm	
R399, R400	5181506000	10 k ohm	
R401, R402	5181492000	2.7 k ohm	
R405, R406	5181424000	56 k ohm	
R411	⚠5184229000	15 ohm	Non Inflammable
R412	5181490000	2.2 k ohm	
R413	5181482000	1 k ohm	
R414	5181488000	1.8 k ohm	
R415	5181490000	2.2 k ohm	
R418	5181484000	1.2 k ohm	
R419	5181514000	22 k ohm	
R420	5181518000	33 k ohm	
R421, R422	5181530000	100 k ohm	
R423, R424	5181498000	4.7 k ohm	
R425, R426	5181534000	150 k ohm	
R427, R428	5181488000	1.8 k ohm	
R435, R436	5181492000	2.7 k ohm	
R447, R448	5181482000	1 k ohm	
R449, R450	5181538000	220 k ohm	
R451, R452	5181530000	100 k ohm	
R453, R454	5181506000	10 k ohm	
R455, R456	5181514000	22 k ohm	
R457, R458	5181484000	1.2 k ohm	
R459, R460	5181476000	560 ohm	
R461, R462	5171458000	100 ohm	
R463, R464	5181498000	4.7 k ohm	
R465, R466	5181490000	2.2 k ohm	
R467, R468	5181512000	18 k ohm	
R469, R470	5181510000	15 k ohm	
R471, R472	5181482000	1 k ohm	
R473, R474	5181490000	2.2 k ohm	
R475, R476	5181514000	22 k ohm	
R477, R478	⚠5184265000	470 ohm	Non Inflammable
R479, R480	5181514000	22 k ohm	
R481, R482	5181514000	22 k ohm	
R483, R484	5181482000	1 k ohm	
R485, R486	5181458000	100 ohm	
R487, R488	5181458000	100 ohm	
R491	⚠5181990000	47 ohm	½W Non Inflammable
R492	⚠5181996000	82 ohm	½W Non Inflammable
R495	5181514000	22 k ohm	
R496	5181482000	1 k ohm	
R497	5181520000	39 k ohm	
R498	5181458000	100 ohm	
R499	5181518000	33 k ohm	
R500	5181506000	10 k ohm	
R501	5181506000	10 k ohm	
R502	5181506000	10 k ohm	

REF. NO.	PARTS NO.	DESCRIPTION		
	CAPACITORS			
C305	5055453000	Elec.	4.7 mfd	25V
C306	5055405000	Elec.	10 mfd	16V
C311	5172110000	Dip. Tant.	10 mfd	16V
C312	5172111000	Dip. Tant.	10 mfd	16V
C313, C314	5172204000	Ceramic	22 pfd	50V
C315	5171314000	Elec.	10 mfd	16V
C316	5171315000	Elec.	10 mfd	16V
C317	5171344000	Elec.	47 mfd	6.3V
C318	5171344000	Elec.	47 mfd	6.3V
C319, C320	5054877000	Mylar	0.01 mfd	50V 5%
C321	5170086000	Elec.	1 mfd	50V (LR)
C322	5170086000	Elec.	1 mfd	50V (LR)
C323, C324	5171864000	Mylar	0.022 mfd	50V 5%
C327	5054877000	Mylar	0.01 mfd	50V 5%
C329	5055417000	Elec.	100 mfd	25V
C355	5171284000	Elec.	1 mfd	50V
C356	5171285000	Elec.	1 mfd	50V
C357, C358	5172200000	Ceramic	10 pfd	50V
C359	5171285000	Elec.	1 mfd	50V
C360	5171284000	Elec.	1 mfd	50V
C361, C362	5172200000	Ceramic	10 pfd	50V
C363	5171280000	Elec.	0.47 mfd	50V
C364	5171281000	Elec.	0.47 mfd	50V
C365	5055417000	Elec.	100 mfd	25V
C381	5055405000	Elec.	10 mfd	16V
C382	5055405000	Elec.	10 mfd	16V
C383	5055403000	Elec.	47 mfd	6.3V
C384	5055403000	Elec.	47 mfd	6.3V
C385, C386	5172213000	Ceramic	120 pfd	50V
C387, C388	5172316000	Ceramic	220 pfd	50V
C389	5170077000	Elec.	10 mfd	16V (LR)
C390	5170077000	Elec.	10 mfd	16V (LR)
C391	5171285000	Elec.	1 mfd	50V
C392	5171284000	Elec.	1 mfd	50V
C393	5171357000	Elec.	100 mfd	10V
C394	5171356000	Elec.	100 mfd	10V
C395, C396	5170352000	Mylar	0.001 mfd	50V 5%
C397	5055454000	Elec.	1 mfd	50V
C398	5055454000	Elec.	1 mfd	50V
C399	5171305000	Elec.	4.7 mfd	25V
C400	5171304000	Elec.	4.7 mfd	25V
C401	5171345000	Elec.	47 mfd	6.3V
C402	5171344000	Elec.	47 mfd	6.3V
C403, C404	5054924000	Mylar	0.039 mfd	50V 5%
C411	5171285000	Elec.	1 mfd	50V
C412	5055420000	Elec.	100 mfd	16V
C418	5055460000	Elec.	470 mfd	6.3V
C419	5054738000	Mylar	0.047 mfd	50V
C421	5171285000	Elec.	1 mfd	50V
C422	5171285000	Elec.	1 mfd	50V
C423	5171315000	Elec.	10 mfd	16V
C424	5171315000	Elec.	10 mfd	16V
C425	5171345000	Elec.	47 mfd	6.3V
C426	5171345000	Elec.	47 mfd	6.3V
C427	5170077000	Elec.	10 mfd	16V
C428	5170077000	Elec.	10 mfd	16V
C429, C430	5170362000	Mylar	0.0027 mfd	50V 5%
C431, C432	5054344000	Polyst.	820 pfd	50V 5%

REF. NO.	PARTS NO.	DESCRIPTION		
C433, C434	5170368000	Mylar	0.0047 mfd	50V 5%
C435, C436	5054930000	Mylar	0.15 mfd	50V 5%
C437, C438	5055417000	Elec.	100 mfd	25V
C441, C442	5054887000	Mylar	0.015 mfd	50V 5%
C443, C444	5054897000	Mylar	0.018 mfd	50V 5%
C445	5170352000	Mylar	0.001 mfd	50V 5%
C447	5171316000	Elec.	10 mfd	25V
C449	5055417000	Elec.	100 mfd	25V
C450	5171316000	Elec.	10 mfd	25V
	VARIABLE RESISTORS			
R313, R314	5150097000	Semi-fixed, 5 k ohm		
R315, R316	5150097000	Semi-fixed, 5 k ohm		
R327, R328	5150092000	Semi-fixed, 10 k ohm		
R329, R330	5150092000	Semi-fixed, 10 k ohm		
R333, R334	5150097000	Semi-fixed, 5 k ohm		
R335, R336	5150097000	Semi-fixed, 5 k ohm		
R369, R370	5150096000	Semi-fixed, 100 k ohm		
R371, R372	5150096000	Semi-fixed, 100 k ohm		
R389, R390	5150096000	Semi-fixed, 100 k ohm		
R403, R404	5150240000	Semi-fixed, 500 ohm		
R429, R430	5150092000	Semi-fixed, 10 k ohm		
R431, R432	5150092000	Semi-fixed, 10 k ohm		
R493	5053902000	Semi-fixed, 200 ohm		
R494	5053902000	Semi-fixed, 200 ohm		
	TRIMMER CAPACITORS			
C301, C302	5054707000	Max. 80 pfd		
C303, C304	5055707000	Max. 80 pfd		
	COILS			
L301, L302	5056659000	Trap, 3 mH		
L303, L304	5056659000	Trap, 3 mH		
L305, L306	5056637000	Record, EQ; 2.4/4.2 mH		
L307, L308	5056637000	Record, EQ; 2.4/4.2 mH		
	MISCELLANEOUS			
S301, S306	5134095000	Switch, Push; 4PDT		
S303, S304	5134094000	Switch, Push; DPDT		
S307, S309	5131044000	Switch, Slide; 9PDT		
S308	5131045000	Switch, Slide; 6PDT		
P301, P304	5122128000	Connector Plug; 4P		
P302	5122301000	Connector Plug; 4P		
P303	5122136000	Connector Plug; 8P		
K301	5061137000	Relay, Reed; LAB-2L DC12V		
	5122173000	Connector Socket; 11P		
	5122168000	Connector Socket; 6P		
	5040090000	OSC Unit		

REC AND PLAY AMPL PCB ASSY (X-10)

REF. NO.	PARTS NO.	DESCRIPTION
	5168984000	PCB Assy
	5167984000	PCB
	IC	
U301	5147053000	HA11122W
	TRANSISTORS	
Q301, Q302	5042461000	2SC1327(T)
Q303, Q304	5145036000	2SC945LK
Q305, Q306	5145036000	2SC945LK
Q307, Q308	5145036000	2SC945LK
Q309, Q310	5145092000	2SC1740LN(S)
Q311, Q312	5145092000	2SC1740LN(S)
Q313	5145135000	2SD400E
Q314	5145036000	2SC945LK
Q315	5145092000	2SC1740LN(S)
Q317, Q318	5145185000	2SD655(E)
Q319, Q320	5145036000	2SC945LK
Q321, Q322	5145095000	2SA826LN(S)
Q323, Q324	5145036000	2SC945LK
Q325, Q326	5145036000	2SC945LK
Q327, Q328	5145036000	2SC945LK
Q329	5145092000	2SC1740LN(S)
Q330	5145185000	2SD655(E)
Q331, Q332	5145036000	2SC945LK
	DIODES	
D301, D302	5042213000	1N60
D303, D304	5042213000	1N60
D305, D306	5042517000	1S2473VE
D307, D308	5042517000	1S2473VE
D309	5143154000	Zener, EQA-01-06S
	RESISTORS	
	All resistors are rated ±5% tolerance, ¼ watt and of carbon type unless otherwise noted.	
R301, R302	5181550000	680 k ohm
R305, R306	5181482000	1 k ohm
R307, R308	5181530000	100 k ohm
R309, R310	5181482000	1 k ohm
R311, R312	5181472000	390 ohm
R317, R318	5181544000	390 k ohm
R319, R320	5181506000	10 k ohm
R321. R322	5181482000	1 k ohm
R323, R324	5181458000	100 ohm
R325, R326	5181542000	330 k ohm
R331, R332	5181482000	1 k ohm
R337, R338	5181498000	4.7 k ohm
R339, R340	5181498000	4.7 k ohm
R341, R342	5181514000	22 k ohm
R343	5181494000	3.3 k ohm
R355, R356	5181548000	560 k ohm
R357, R358	5181520000	39 k ohm
R359, R360	5181476000	560 ohm
R361, R362	5181548000	560 k ohm
R363, R364	5181520000	39 k ohm

REF. NO.	PARTS NO.	DESCRIPTION	
R365, R366	5181500000	5.6 k ohm	
R367, R368	5181476000	560 ohm	
R373	⚠5184265000	470 ohm	Non Inflammable
R374	⚠5184265000	470 ohm	Non Inflammable
R381, R382	5181482000	1 k ohm	
R383, R384	5181524000	56 k ohm	
R385, R386	5181462000	150 ohm	
R387, R388	5181516000	27 k ohm	
R391, R392	5181482000	1 k ohm	
R393, R394	5181482000	1 k ohm	
R395, R396	5181506000	10 k ohm	
R397, R398	5181458000	100 ohm	
R399, R400	5181506000	10 k ohm	
R401, R402	5181492000	2.7 k ohm	
R405, R406	5181524000	56 k ohm	
R411	⚠5184229000	15 ohm	Non Inflammable
R412	5181490000	2.2 k ohm	
R413	5181482000	1 k ohm	
R414	5181488000	1.8 k ohm	
R415	5181490000	2.2 k ohm	
R418	5181484000	1.2 k ohm	
R419	5181514000	22 k ohm	
R420	5181518000	33 k ohm	
R421, R422	5181530000	100 k ohm	
R423, R424	5181498000	4.7 k ohm	
R425, R426	5181534000	150 k ohm	
R427, R428	5181488000	1.8 k ohm	
R435, R436	5181492000	2.7 k ohm	
R447, R448	5181482000	1 k ohm	
R449, R450	5181538000	220 k ohm	
R451, R452	5181530000	100 k ohm	
R453, R454	5181506000	10 k ohm	
R455, R456	5181514000	22 k ohm	
R457, R458	5181484000	1.2 k ohm	
R459, R460	5181476000	560 ohm	
R461, R462	5171458000	100 ohm	
R463, R464	5181498000	4.7 k ohm	
R465, R466	5181490000	2.2 k ohm	
R467, R468	5181512000	18 k ohm	
R469, R470	5181510000	15 k ohm	
R471, R472	5181482000	1 k ohm	
R473, R474	5181490000	2.2 k ohm	
R475, R476	5181514000	22 k ohm	
R477, R478	⚠5184265000	470 ohm	Non Inflammable
R479, R480	5181514000	22 k ohm	
R481, R482	5181514000	22 k ohm	
R483, R484	5181482000	1 k ohm	
R485, R486	5181458000	100 ohm	
R487, R488	5181458000	100 ohm	
R491	⚠5181990000	47 ohm	½W Non Inflammable
R492	⚠5181996000	82 ohm	½W Non Inflammable
R495	5181514000	22 k ohm	
R496	5181482000	1 k ohm	
R497	5181520000	39 k ohm	
R498	5181458000	100 ohm	
R499	5181518000	33 k ohm	
R500	5181506000	10 k ohm	
R501	5181506000	10 k ohm	
R502	5181506000	10 k ohm	

REF. NO.	PARTS NO.	DESCRIPTION		
	CAPACITORS			
C305	5055435000	Elec.	4.7 mfd	25V
C306	5055405000	Elec.	10 mfd	16V
C311	5172110000	Dip. Tant.	10 mfd	16V
C312	5172111000	Dip. Tant.	10 mfd	16V
C313, C314	5172204000	Ceramic	22 pfd	50V
C315	5171314000	Elec.	10 mfd	16V
C316	5171315000	Elec.	10 mfd	16V
C317	5171344000	Elec.	47 mfd	6.3V
C318	5171344000	Elec.	47 mfd	6.3V
C319, C320	5054877000	Mylar	0.01 mfd	50V 5%
C321	5170086000	Elec.	1 mfd	50V (LR)
C322	5170086000	Elec.	1 mfd	50V (LR)
C323, C324	5171864000	Mylar	0.022 mfd	50V 5%
C327	5054877000	Mylar	0.01 mfd	50V 5%
C329	5055417000	Elec.	100 mfd	25V
C355	5171284000	Elec.	1 mfd	50V
C356	5171285000	Elec.	1 mfd	50V
C357, C358	5172200000	Ceramic	10 pfd	50V
C359	5171285000	Elec.	1 mfd	50V
C360	5171284000	Elec.	1 mfd	50V
C361, C362	5172200000	Ceramic	10 pfd	50V
C363	5171280000	Elec.	0.47 mfd	50V
C364	5171281000	Elec.	0.47 mfd	50V
C365	5055417000	Elec.	100 mfd	25V
C381	5055405000	Elec.	10 mfd	16V
C382	5055405000	Elec.	10 mfd	16V
C383	5055403000	Elec.	47 mfd	6.3V
C384	5055403000	Elec.	47 mfd	6.3V
C385, C386	5172213000	Ceramic	120 pfd	50V
C387, C388	5172316000	Ceramic	220 pfd	50V
C389	5170077000	Elec.	10 mfd	16V (LR)
C390	5170077000	Elec.	10 mfd	16V (LR)
C391	5171285000	Elec.	1 mfd	50V
C392	5171284000	Elec.	1 mfd	50V
C393	5171357000	Elec.	100 mfd	10V
C394	5171356000	Elec.	100 mfd	10V
C395, C396	5170352000	Mylar	0.001 mfd	50V 5%
C397	5055454000	Elec.	1 mfd	50V
C398	5055454000	Elec.	1 mfd	50V
C399	5171305000	Elec.	4.7 mfd	25V
C400	5171304000	Elec.	4.7 mfd	25V
C401	5171345000	Elec.	47 mfd	6.3V
C402	5171344000	Elec.	47 mfd	6.3V
C403, C404	5054924000	Mylar	0.039 mfd	50V 5%
C411	5171285000	Elec.	1 mfd	50V
C412	5055420000	Elec.	100 mfd	16V
C418	5055460000	Elec.	470 mfd	6.3V
C419	5054738000	Mylar	0.047 mfd	50V 5%
C421	5171285000	Elec.	1 mfd	50V
C422	5171285000	Elec.	1 mfd	50V
C423	5171315000	Elec.	10 mfd	16V
C424	5171315000	Elec.	10 mfd	16V
C425	5171345000	Elec.	47 mfd	6.3V
C426	5171345000	Elec.	47 mfd	6.3V
C427	5170077000	Elec.	10 mfd	16V (LR)
C428	5170077000	Elec.	10 mfd	16V (LR)
C429, C430	5170362000	Mylar	0.0027 mfd	50V 5%
C431, C432	5054344000	Polyst.	820 pfd	50V 5%

REF. NO.	PARTS NO.	DESCRIPTION		
C433, C434	5170368000	Mylar	0.0047 mfd	50V 5%
C435, C436	5054930000	Mylar	0.15 mfd	50V 5%
C437, C438	5055417000	Elec.	100 mfd	25V
C441, C442	5054887000	Mylar	0.015 mfd	50V 5%
C443, C444	5054897000	Mylar	0.018 mfd	50V 5%
C445	5170352000	Mylar	0.001 mfd	50V 5%
C447	5171316000	Elec.	10 mfd	25V
C449	5055417000	Elec.	100 mfd	25V
C450	5171316000	Elec.	10 mfd	25V
	VARIABLE RESISTORS			
R313, R314	5150097000	Semi-fixed, 5 k ohm		
R327, R328	5150092000	Semi-fixed, 10 k ohm		
R333, R334	5150097000	Semi-fixed, 5 k ohm		
R369, R370	5150096000	Semi-fixed, 100 k ohm		
R371, R372	5150096000	Semi-fixed, 100 k ohm		
R389, R390	5150096000	Semi-fixed, 100 k ohm		
R403, R404	5150240000	Semi-fixed, 500 ohm		
R429, R430	5150092000	Semi-fixed, 10 k ohm		
R493	5053902000	Semi-fixed, 200 ohm		
	TRIMMER CAPACITORS			
C301, C302	5054707000	Max. 80 pfd		
	COILS			
L301, L302	5056659000	Trap, 3 mH		
L303, L304	5056659000	Trap, 3 mH		
L305, L306	5056637000	Record, EQ; 2.4/4.2 mH		
	MISCELLANEOUS			
S301, S306	5134095000	Switch, Push; 4PDT		
S303, S304	5134094000	Switch, Push; DPDT		
P301, P304	5122126000	Connector Plug; 2P		
P302	5122299000	Connector Plug; 2P (Red)		
P303	5122128000	Connector Plug; 4P		
K301	5061137000	Relay, Reed; LAB-2L DC 12V		
	5122171000	Connector Socket; 9P		
	5122168000	Connector Socket; 6P		
	5040090000	OSC Unit		

CONTROL PCB ASSY (X-10R)

REF. NO.	PARTS NO.	DESCRIPTION
	5168932401	PCB Assy
	5167932100	PCB
	ICs	
U31	⚠5147058000	NJM78M05A
U32	5147054000	AN6251
U33～U37	5147056000	HD7400P
	5042712000	SN7400N
U38～U42	5147057000	HD7402P
	5042713000	SN7402N
U43	5147039000	NJM2901N
	TRANSISTORS	
Q31	⚠5145087000	2SD313(E)
Q32	5042625000	2SC1318(S)
Q33～Q37	5042383000	2SC536(F)
Q38	5042553000	2SA733(P)
Q39	5042383000	2SC536(F)
Q40	5042564000	2SC1061(C)
Q41～Q48	5042383000	2SC536(F)
Q50～Q52	5042383000	2SC536(F)
Q53	5042553000	2SA733(P)
Q54～Q57	5042383000	2SC536(F)
Q58	5042553000	2SA733(P)
Q59	5042383000	2SC536(F)
Q60～Q63	5042553000	2SA733(P)
Q64～Q66	5042564000	2SC1061(C)
Q67～Q71	5042383000	2SC536(F)
Q72	5145087000	2SD313(E)
Q73	5145043000	2SA720(Q)
Q74	5042625000	2SC1318(S)
Q75	5042383000	2SC536(F)
Q76, Q77	5042553000	2SA733(P)
Q78, Q79	5145087000	2SD313(E)
Q80, Q81	5042625000	2SC1318(S)
Q82～Q84	5042553000	2SA733(P)
Q85, Q86	5145129000	2SB507(E)
Q87, Q88	5042625000	2SC1318(S)
	DIODES	
D31～D36	⚠5143243000	ERB12-02G1
D37	5143154000	Zener, EQA01-06S
D38	⚠5143142000	M4C-51
D39～D42	5143118000	1S2473HJ
D43, D44	5143243000	ERB12-02G1
D45～D53	5143118000	1S2473HJ
D54	5143017000	U05C
D55	5143118000	1S2473HJ
D56, D57	5143243000	ERB12-02G1
D58～D60	5143118000	1S2473HJ
D61	5143017000	U05C
D62～D67	5143243000	ERB12-02G1

REF. NO.	PARTS NO.	DESCRIPTION	
	RESISTORS		
	All resistors are rated ±5% tolerance, ¼ watt and of carbon type unless otherwise noted.		
R31	⚠5184209000	2.2 ohm	Non Inflammable
R32	5181472000	390 ohm	
R33	5181478000	680 ohm	
R34	5184306000	Cement, 3.3 ohm 2W	
R35	5181502000	6.8 k ohm	
R36	5181506000	10 k ohm	
R37	5181496000	3.9 k ohm	
R38	5181512000	18 k ohm	
R39	5181502000	6.8 k ohm	
R40	⚠5184233000	22 ohm	Non Inflammable
R41	5181506000	10 k ohm	
R42	5181458000	100 ohm	
R43	5181506000	10 k ohm	
R44, R45	5181486000	1.5 k ohm	
R46	5181522000	47 k ohm	
R47	5181514000	22 k ohm	
R48	5181536000	180 k ohm	
R49	5181458000	100 ohm	
R50	5181510000	15 k ohm	
R51	5181522000	47 k ohm	
R52	5181530000	100 k ohm	
R53	5181494000	3.3 k ohm	
R54, R55	5181514000	22 k ohm	
R56	5181522000	47 k ohm	
R57	5181482000	1 k ohm	
R58	5181514000	22 k ohm	
R59	5181526000	68 k ohm	
R60, R61	5181530000	100 k ohm	
R62	5181522000	47 k ohm	
R63	5181494000	3.3 k ohm	
R64	5181514000	22 k ohm	
R65	5181510000	15 k ohm	
R66	5181518000	33 k ohm	
R67	5181506000	10 k ohm	
R68	5181522000	47 k ohm	
R69	5180062000	150 ohm	½W
R70	5181514000	22 k ohm	
R71, R72	5181522000	47 k ohm	
R73	5181530000	100 k ohm	
R74	5181522000	47 k ohm	
R75	5181494000	3.3 k ohm	
R76, R77	5181506000	10 k ohm	
R78～R87	5181458000	100 ohm	
R88～R97	5181506000	10 k ohm	
R98	5181458000	100 ohm	
R99	5181514000	22 k ohm	
R100	5181522000	47 k ohm	
R101	5181530000	100 k ohm	
R102	5181538000	220 ohm	
R103	5181506000	10 k ohm	
R104	5181458000	100 ohm	
R105	5181514000	22 k ohm	
R106	5181506000	10 k ohm	
R107	5181518000	33 k ohm	
R108	5181510000	15 k ohm	
R109～R111	5181506000	10 k ohm	
R112	5181458000	100 ohm	
R113	5181514000	22 k ohm	

REF. NO.	PARTS NO.	DESCRIPTION
R114	5181530000	100 k ohm
R115	5181530000	100 k ohm
R116	5181494000	3.3 k ohm
R117	5181506000	10 k ohm
R119	5181530000	100 k ohm
R120	5181494000	3.3 k ohm
R121	5181522000	47 k ohm
R122	5181514000	22 k ohm
R123	5181522000	47 k ohm
R124	5181522000	47 k ohm
R125	5181522000	47 k ohm
R127, R128	5181530000	100 k ohm
R129	5181522000	47 k ohm
R130	5181530000	100 k ohm
R131	5181494000	3.3 k ohm
R132	5181522000	47 k ohm
R133	5181514000	22 k ohm
R134	5181458000	100 ohm
R135	5181530000	100 k ohm
R136	5181522000	47 k ohm
R137～R139	5181530000	100 k ohm
R140	5181522000	47 k ohm
R141～R143	5181506000	10 k ohm
R144～R146	5181522000	47 k ohm
R147～R149	5180062000	150 ohm ½W
R150～R152	5181514000	22 k ohm
R153	5181522000	47 k ohm
R154	5181482000	1 k ohm
R155	5181518000	33 k ohm
R156	5181510000	15 k ohm
R157～R161	5181506000	10 k ohm
R162, R163	5181522000	47 k ohm
R164	5181514000	22 k ohm
R165, R166	5181522000	47 k ohm
R167, R168	5181490000	2.2 k ohm
R169	5181540000	270 k ohm
R170	5181499000	5.1 k ohm
R171	5181494000	3.3 k ohm
R172	5181476000	560 ohm
R173	5181474000	470 ohm
R174, R175	5181450000	47 ohm
R176	5181480000	820 ohm
R177, R178	5181482000	1 k ohm
R179, R180	5184410000	Cement, 3.3 k ohm 5W
R181, R182	5181514000	22 k ohm
R183, R184	5181480000	820 ohm
R185	5181484000	1.2 k ohm
R186	5181522000	47 k ohm
R187	5181490000	2.2 k ohm
R188～R190	5181522000	47 k ohm
R191, R192	5181494000	3.3 k ohm
R193, R194	5184763000	Metal Film, 220 ohm 1W
R195, R196	5181506000	10 k ohm
R197, R198	5181514000	22 k ohm
R199	5184306000	Cement, 3.3 ohm 2W
R201	5181458000	100 ohm

REF. NO.	PARTS NO.	DESCRIPTION		
		CAPACITORS		
C31, C32	5055440000	Elec.	470 mfd	16V
C33	5055585000	Elec.	100 mfd	50V
C34	5055463000	Elec.	100 mfd	35V
C35	5055438000	Elec.	220 mfd	35V
C36	5055463000	Elec.	100 mfd	35V
C37, C38	5055714800	Elec.	2200 mfd	25V
C39, C40	5055585000	Elec.	1000 mfd	50V
C41	5171284000	Elec.	1 mfd	50V
C42	5172236000	Ceramic	0.01 mfd	50V
C43	5171298000	Elec.	3.3 mfd	50V
C44, C45	5171290000	Elec.	2.2 mfd	50V
C46, C47	5054977000	Elec.	10 mfd	16V (KU)
C48	5171325000	Elec.	22 mfd	10V
C49	5171304000	Elec.	4.7 mfd	25V
C50, C51	5055573000	Elec.	4.4 mfd	50V
C52	5071298000	Elec.	3.3 mfd	50V
C53～C57	5055573000	Elec.	3.3 mfd	50V
C58, C60	5172236000	Ceramic	0.01 mfd	50V
C59	5054204000	Ceramic	0.01 mfd	50V
C61	5055472000	Elec.	22 mfd	10V
C62, C63	5172236000	Ceramic	0.01 mfd	50V
C64	5171325000	Elec.	22 mfd	10V
C65	5055435000	Elec.	10 mfd	50V
C66	5172236000	Ceramic	0.01 mfd	50V
C67	5171324000	Elec.	22 mfd	10V
C68	5054204000	Ceramic	0.01 mfd	50V
C69	5171324000	Elec.	22 mfd	10V
C70	5054969000	Elec.	4.7 mfd	25V (KU)
C71	5055405000	Elec.	10 mfd	16V
C72, C73	5171284000	Elec.	1 mfd	50V
C74	5171325000	Elec.	22 mfd	10V
C75	5055472000	Elec.	22 mfd	10V
C76	5054230000	Ceramic	0.047 mfd	50V
C77	5171299000	Elec.	3.3 mfd	50V
C78	5171323000	Elec.	10 mfd	63V
C79	5171291000	Elec.	2.2 mfd	50V
C80	5055714800	Elec.	2200 mfd	25V
C81	5172236000	Ceramic	0.01 mfd	50V
		MISCELLANEOUS		
P32	5122139000	Connector Plug, 15P		
P33	5122132000	Connector Plug, 8P		
P34	5122127000	Connector Plug, 3P		
P35	5122184000	Connector Plug, 3P		
P36	5122128000	Connector Plug, 4P		
P37	5122183000	Connector Plug, 2P (Black)		
P38	5122126000	Connector Plug, 2P		
P39	5122135000	Connector Plug, 11P		
P40	5122299000	Connector Plug, 2P (Red)		
P41	5122131000	Connector Plug, 7P		
K31, K32	5061144000	Relay; G2U-113P		24V
	5147041000	Socket, IC; 24P		
	5033291000	Plate, Insulating		
	5033295000	Tube, Insulating		
	5555888000	Heat Sink (C)		
	5553296000	Frame, Joint		
	5552390000	Frame, PCB		
	5552391000	Frame, Heat Sink		

CONTROL PCB ASSY (X-10)

REF. NO.	PARTS NO.	DESCRIPTION
	5168933000	PCB Assy
	5167933000	PCB
	ICs	
U31	⚠5147058000	NJM78M05A
U32	5147054000	AN6251
U33～U35	5147056000	HD7400P
	5042712000	SN7400N
U36, U37	5147057000	HD7402P
	5042713000	SN7402N
	TRANSISTORS	
Q31	⚠5145087000	2SD313(E)
Q32	5042625000	2SC1318(S)
Q33～Q41	5042383000	2SC536(F)
Q42	5042553000	2SA733(P)
Q43～Q45	5042383000	2SC536(F)
Q46	5042553000	2SA733(P)
Q47	5042383000	2SC536(F)
Q48, Q49	5042553000	2SA733(P)
Q50	5042564000	2SC1061(C)
Q51, Q52	5042553000	2SA733(P)
Q53, Q54	5042564000	2SC1061(C)
Q56～Q61	5042383000	2SC536(F)
Q62～Q65	5042553000	2SA733(P)
Q66	5042625000	2SC1318(S)
Q67	5042383000	2SC536(F)
Q68, Q69	5042625000	2SC1318(S)
Q70, Q71	5145087000	2SD313(E)
Q72	5145192000	2SB507(E)
Q73	5042625000	2SC1318(S)
Q74	5145087000	2SD313(E)
Q75	5145043000	2SA720(Q)
	DIODES	
D31～D36	⚠5143243000	ERB12-02G1
D37	5143154000	Zener, EQA01-06S
D38	⚠5143142000	M4C-51
D39, D40	5143118000	1S2473HJ
D42～D46	5143118000	1S2473HJ
D47～D49	5143243000	ERB12-02G1
D50	5143118000	1S2473HJ
D51	5143071000	U05C
D52, D53	5143118000	1S2473HJ
D54	5143017000	U05C
D55, D56	5143243000	ERB12-02G1
D57, D58	5143118000	1S2473HJ
	RESISTORS	
	All resistors are rated ±5% tolerance, ¼ watt and of carbon type unless otherwise noted.	
R31	⚠5184109000	2.2 ohm Non Inflammable
R32	5181472000	390 ohm
R33	5181478000	680 ohm
R34	5184306000	Cement, 3.3 ohm 2W
R35	5181502000	6.8 k ohm
R36	5181506000	10 k ohm
R37	5181496000	3.9 k ohm
R38	5181512000	18 k ohm
R39	5181502000	6.8 k ohm
R40	⚠5184133000	22 ohm Non Inflammable
R41	5181506000	10 k ohm
R42, R43	5181494000	3.3 k ohm
R44, R45	5181512000	18 k ohm
R46～R53	5181458000	100 ohm
R54～R61	5181506000	10 k ohm
R62	5181458000	100 ohm
R63	5181506000	10 k ohm
R64	5181514000	22 k ohm
R65	5181522000	47 k ohm
R66	5181530000	100 k ohm
R67	5181538000	220 ohm
R68	5181506000	10 k ohm
R73	5181530000	100 k ohm
R75, R76	5181506000	10 k ohm
R77	5181530000	100 k ohm
R78	5181494000	3.3 k ohm
R79	5181506000	10 k ohm
R80	5181530000	100 k ohm
R81	5181494000	3.3 k ohm
R82	5181522000	47 k ohm
R83～R85	5181522000	47 k ohm
R87	5181530000	100 k ohm
R88	5181522000	47 k ohm
R89	5181530000	100 k ohm
R90	5181494000	3.3 k ohm
R91	5181522000	47 k ohm
R92	5181458000	100 ohm
R93	5181530000	100 k ohm
R94	5181522000	47 k ohm
R95～R97	5181530000	100 k ohm
R98	5181522000	47 k ohm
R99	5181506000	10 k ohm
R100	5181522000	47 k ohm
R101	5180062000	150 ohm ½W
R102	5181514000	22 k ohm
R103, R104	5181506000	10 k ohm
R105, R106	5181522000	47 k ohm
R107, R108	5180062000	150 ohm ½W
R109, R110	5181514000	22 k ohm
R111	5181530000	100 k ohm
R112	5181518000	33 k ohm
R113	5181510000	15 k ohm
R114, R115	5181522000	47 k ohm
R116, R117	5181506000	10 k ohm
R118, R119	5181490000	2.2 k ohm
R120	5181484000	1.2 k ohm
R121, R122	5181522000	47 k ohm
R123	5181490000	2.2 k ohm
R124	5181522000	47 k ohm
R125	5181506000	10 k ohm
R126	5181540000	270 k ohm
R127	5181499000	5.1 k ohm
R128	5181494000	3.3 k ohm
R129, R130	5181474000	470 ohm
R131, R132	5181450000	47 ohm
R133, R134	5184410000	Cement, 3.3 ohm 5W
R135, R136	5181514000	22 k ohm
R137, R138	5181480000	820 ohm
R139	5181488000	1.8 k ohm
R140	5181482000	1 k ohm

REF. NO.	PARTS NO.	DESCRIPTION
R141	5181494000	3.3 k ohm
R142	5184763000	Metal Film, 220 ohm 1W
R143	5181506000	10 k ohm
R144	5181514000	22 k ohm
R145, R146	5181522000	47 k ohm
R147	5181514000	22 k ohm
R151	5181482000	1 k ohm
R152	5181458000	100 ohm

CAPACITORS

C31, C32	5055440000	Elec.	470 mfd	16V
C33	5055585000	Elec.	1000 mfd	50V
C34	5055463000	Elec.	100 mfd	35V
C35	5055438000	Elec.	220 mfd	35V
C36	5055463000	Elec.	100 mfd	35V
C37, C38	5055585000	Elec.	1000 mfd	50V
C39, C40	5055714800	Elec.	2200 mfd	25V
C41	5171284000	Elec.	1 mfd	50V
C42	5172236000	Ceramic	0.01 mfd	50V
C43 ~ C49	5171299000	Elec.	3.3 mfd	50V
C50, C51	5172236000	Ceramic	0.01 mfd	50V
C52	5171299000	Elec.	3.3 mfd	50V
C53, C54	5171325000	Elec.	22 mfd	10V
C55	5172236000	Ceramic	0.01 mfd	50V
C56	5171319000	Elec.	10 mfd	35V
C57	5054969000	Elec.	4.7 mfd	25V (KU)
C58	5171314000	Elec.	10 mfd	16V
C61 ~ C63	5171325000	Elec.	22 mfd	10V
C64	5171324000	Elec.	22 mfd	10V
C65, C66	5171284000	Elec.	1 mfd	50V
C67	5172244000	Ceramic	0.047 mfd	50V
C68	5171299000	Elec.	3.3 mfd	50V
C69	5171291000	Elec.	2.2 mfd	50V
C70	5171323000	Elec.	10 mfd	63V
C72	5172236000	Ceramic	0.01 mfd	50V

MISCELLANEOUS

5122126000	Connector Plug, 2P
5122127000	Connector Plug, 3P
5122128000	Connector Plug, 4P
5122129000	Connector Plug, 5P
5122133000	Connector Plug, 9P
5122136000	Connector Plug, 12P
5122184000	Connector Plug, 3P (Black)
5122183000	Connector Plug, 2P (Black)
5122299000	Connector Plug, 2P (Red)
5147041000	Socket, IC; 24P
5033291000	Plate, Insulating
5033295000	Tube, Insulating
5555888000	Heat Sink, C
5553296000	Frame, Joint
5552390000	Frame, PCB
5552391000	Frame, Heat Sink

MIC AMP PCB ASSY

REF. NO.	PARTS NO.	DESCRIPTION
	5168935100	PCB Assy
	5167935000	PCB

TRANSISTOR

Q511, Q512	5042461000	2SC1327(T)

CARBON RESISTORS

All resistors are rated ±5% tolerance and ¼ watt.

R511, R512	5181482000	1 k ohm
R513, R514	5181540000	270 k ohm
R515, R516	5181526000	68 k ohm
R517, R518	5181522000	47 k ohm
R519, R520	5181460000	120 ohm
R521, R522	5181508000	12 k ohm
R525	5181484000	1.2 k ohm

CAPACITORS

C511, C512	5170077000	Elec.	10 mfd	16V (LR)
C513, C514	5172208000	Ceramic	47 pfd	50V
C515, C516	5055403000	Elec.	47 mfd	6.3V
C517, C518	5055405000	Elec.	10 mfd	16V
C519	5055417000	Elec.	100 mfd	25V

MISCELLANEOUS

5123045000	Jack, MIC

VR PCB ASSY

REF. NO.	PARTS NO.	DESCRIPTION
	5168939100	PCB Assy
	5167939001	PCB
R531, R532	5183130000	Res., Carbon; 100 k ohm
R533, R534	5183110000	Res., Carbon; 15 k ohm
R529	5150236000	Var. Res., 10 k ohm - A x 2
R537	5150237000	Var. Res., 100 k ohm - A x 2
R539	5150236000	Var. Res., 10 k ohm - A x 2

IN/OUTPUT PCB ASSY (DBX)

REF. NO.	PARTS NO.	DESCRIPTION
	5168936000	PCB Assy
	5167936000	PCB
	TRANSISTORS	
Q541, Q542	5145036000	2SC945L(K)
Q543, Q544	5145095000	2SA826LN(S)
Q551, Q552	5145036000	2SC945L(K)
Q553, Q554	5145095000	2SA826LN(S)
	CARBON RESISTORS	
	All resistors are rated ±5% tolerance and ¼ watt.	
R541, R542	5183082000	1 k ohm
R543, R544	5183152000	820 k ohm
R545, R546	5183130000	100 k ohm
R547, R548	5183100000	5.6 k ohm
R549, R550	5183080000	820 ohm
R551, R552	5183130000	100 k ohm
R553, R554	5183100000	5.6 k ohm
R563, R564	5183152000	820 k ohm
R565, R566	5183130000	100 k ohm
R567, R568	5183100000	5.6 k ohm
R569, R570	5183080000	820 ohm
R571, R572	5183130000	100 k ohm
R573, R574	5183100000	5.6 k ohm
	CAPACITORS	
C541, C542	5054670100	Dip. Tant. 1 mfd 35V
C543, C544	5172315000	Ceramic 180 pfd
C545, C546	5054670100	Dip. Tant. 1 mfd 35V
C551, C552	5054670100	Dip. Tant. 1 mfd 35V
C553, C554	5172315000	Ceramic 180 pfd
C555, C556	5054670100	Dip. Tant. 1 mfd 35V
	MISCELLANEOUS	
	5126035000	Terminal Assy, DBX

CONNECTOR PCB ASSY (X-10R)

REF. NO.	PARTS NO.	DESCRIPTION
	5168931100	PCB Assy
	5167931000	PCB
	DIODES	
D601	5143118000	1S2473HJ
	CARBON RESISTORS	
	All resistors are rated ±5% tolerance and ¼ watt.	
R601	5183122000	47 k ohm
R602, R603	5183090000	2.2 k ohm
R604	5183086000	1.5 k ohm
R605~R607	5183088000	1.8 k ohm
	MISCELLANEOUS	
P602	5122158000	Connector Plug, 15P
J601	5122336000	Connector Socket, 12P
	5554099100	Bracket, Connector

CONNECTOR PCB ASSY (X-10)

REF. NO.	PARTS NO.	DESCRIPTION
	5158002000	PCB Assy
	5167931000	PCB
	CARBON RESISTORS	
	All resistors are rated ±5% tolerance and ¼ watt.	
R601	5183088000	1.8 k ohm
R602	5183090000	2.2 k ohm
R604	5183086000	1.5 k ohm
R605	5183088000	1.8 k ohm
R608	5183088000	1.8 k ohm
R609	5183090000	2.2 k ohm
	MISCELLANEOUS	
J601	5122336000	Connector Socket, 12P
	5122155000	Connector Plug, 12P
	5554099100	Bracket, Connector

SPEED SW PCB ASSY

REF. NO.	PARTS NO.	DESCRIPTION
	5168927200	PCB Assy
	5167927100	PCB
	TRANSISTOR	
Q621	5042383000	2SC536(F)
	CARBON RESISTORS	
	All resistors are rated ±5% tolerance and ¼ watt.	
R621	5057058000	100 ohm
R622	5057122000	47 k ohm
R623	5057114000	22 k ohm
R626	5057058000	100 ohm
	CAPACITORS	
C621, C622	5055404000	Elec. 10 mfd 25V
	MISCELLANEOUS	
P621	5122149000	Connector Plug, 6P
	5134093000	Push Switch, 6PDT
	5134092000	Push Switch, DPDT

STOP SENSOR PCB ASSY

REF. NO.	PARTS NO.	DESCRIPTION
	5168940000	PCB Assy
	5167940000	PCB
	IC	
U701	5147039000	NJM2901N
	DIODE	
D701	5143118000	1S2473HJ
	CARBON RESISTORS	
	All resistors are rated ±5% tolerance and ¼ watt.	
R701	5183122000	47 k ohm
R702	5183074000	470 ohm
R703	5183122000	47 k ohm
R704	5183094000	3.3 k ohm
R705	5183130000	100 k ohm
R706	5183110000	15 k ohm
R707	5183122000	47 k ohm
R708	5183130000	100 k ohm
R709	5183104000	8.2 k ohm
R710	5183070000	330 ohm
R711	5183110000	15 k ohm
R712	5183122000	47 k ohm
R713	5183130000	100 k ohm
R714	5183106000	10 k ohm
R715	5183132000	120 k ohm
	CAPACITORS	
C701, C702	5055405000	Elec. 10 mfd 16V
C703	5055454800	Elec. 1 mfd 50V
C704	5054966000	Elec. 1 mfd 25V (KU)
	MISCELLANEOUS	
E701	5143105000	Magnetic Resistance Element, DM-101

(Continued from page 29)

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

REF. NO.	PARTS NO.	DESCRIPTION	REMARKS
7 - 51	*5503204000	Base Assy, Button; Operation	
7 - 52	*5545150000	Stay, Button Escutcheon	
7 - 53	5138011000	Switch, Tact	
7 - 54	5143140000	LED (Green)	
7 - 55	*5143139000	LED (Red)	
7 - 56	*5168929000	PCB Assy, OPERATION SW	
	*5167929000	PCB, OPERATION SW	Part of 7 - 56
7 - 57	*5553300000	Angle, Button Base; A	
7 - 58	*5552394100	Angle, Side; L	
7 - 59	*5054230000	Capacitor, Ceramic; 0.047 mfd 50V	
7 - 60	*5524225000	Spring, GND	
7 - 61	*5534713000	Rod, Power Switch	

INCLUDED ACCESSORIES

REF. NO.	PARTS NO.	DESCRIPTION	REMARKS
	5128093000	Cord, Input-output Connection	
	5598054000	Reel Adapter, Clamp (TZ-612A)	
	RE-1002	Empty Reel, 10 inch	
	5062962000	Splicing Tape	
	5027288000	Sensing Foil	X-10R
	5101337100	Open Reel Supplement	U.S.A.
	5101708000	Open Reel Supplement	All Except JAPAN, U.S.A.
	5101670000	X-10R Owner's Manual	JAPAN
	5101667000	X-10 Owner's Manual	JAPAN
	5101671000	X-10R/X-7R Owner's Manual	U.S.A.
	5101668000	X-10/X-7 Owner's Manual	U.S.A.
	5101672000	X-10R/X-7R Owner's Manual	All except JAPAN, U.S.A.
	5101669000	X-10/X-7 Owner's Manual	All except JAPAN, U.S.A.

ASSEMBLING HARDWARE CODING LIST

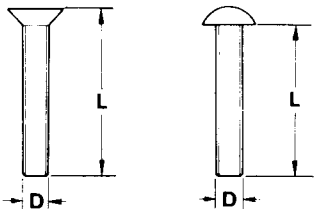
All screws conform to ISO standards, and have crossrecessed heads, unless otherwise noted. ISO screws have the head inscribed with a point as in the figure to the right.



FOR EXAMPLE:

B M3 x 6

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

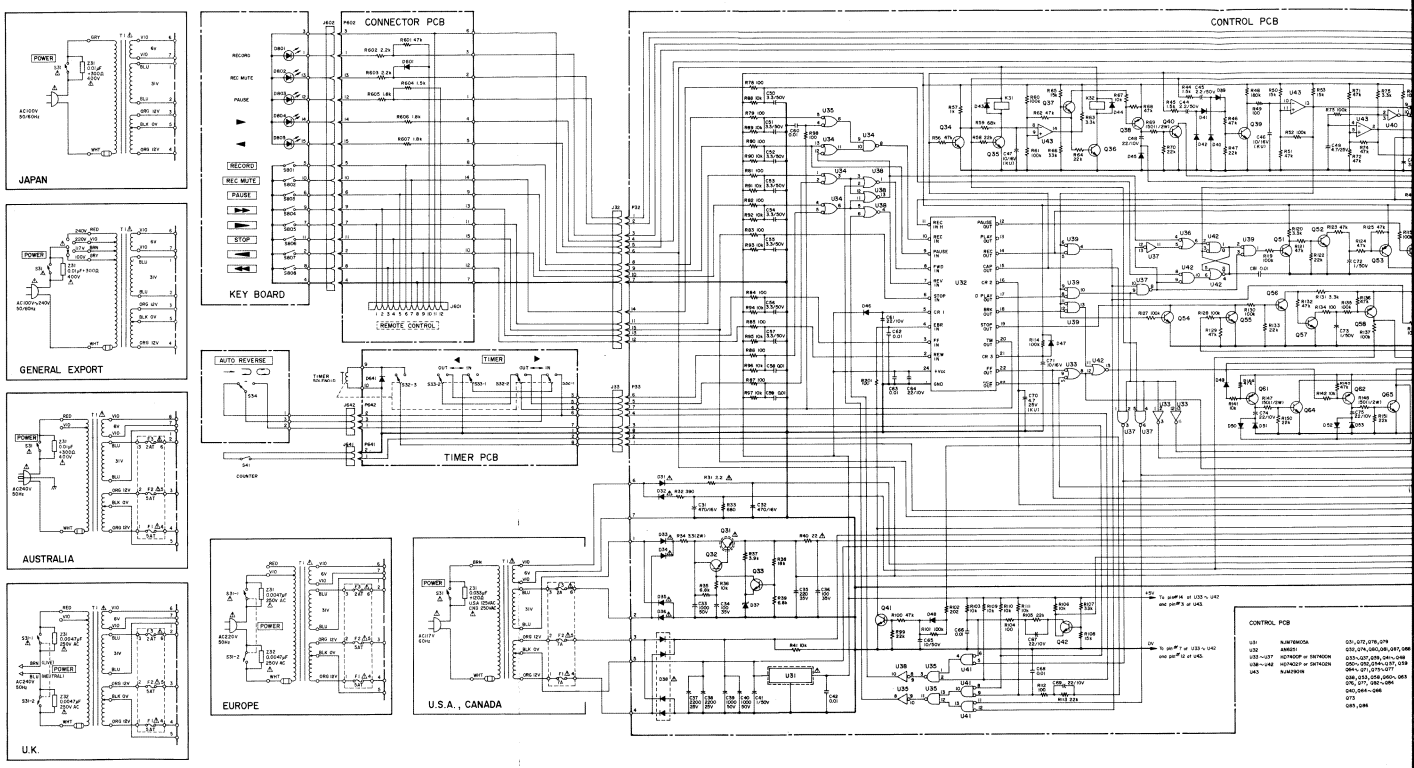


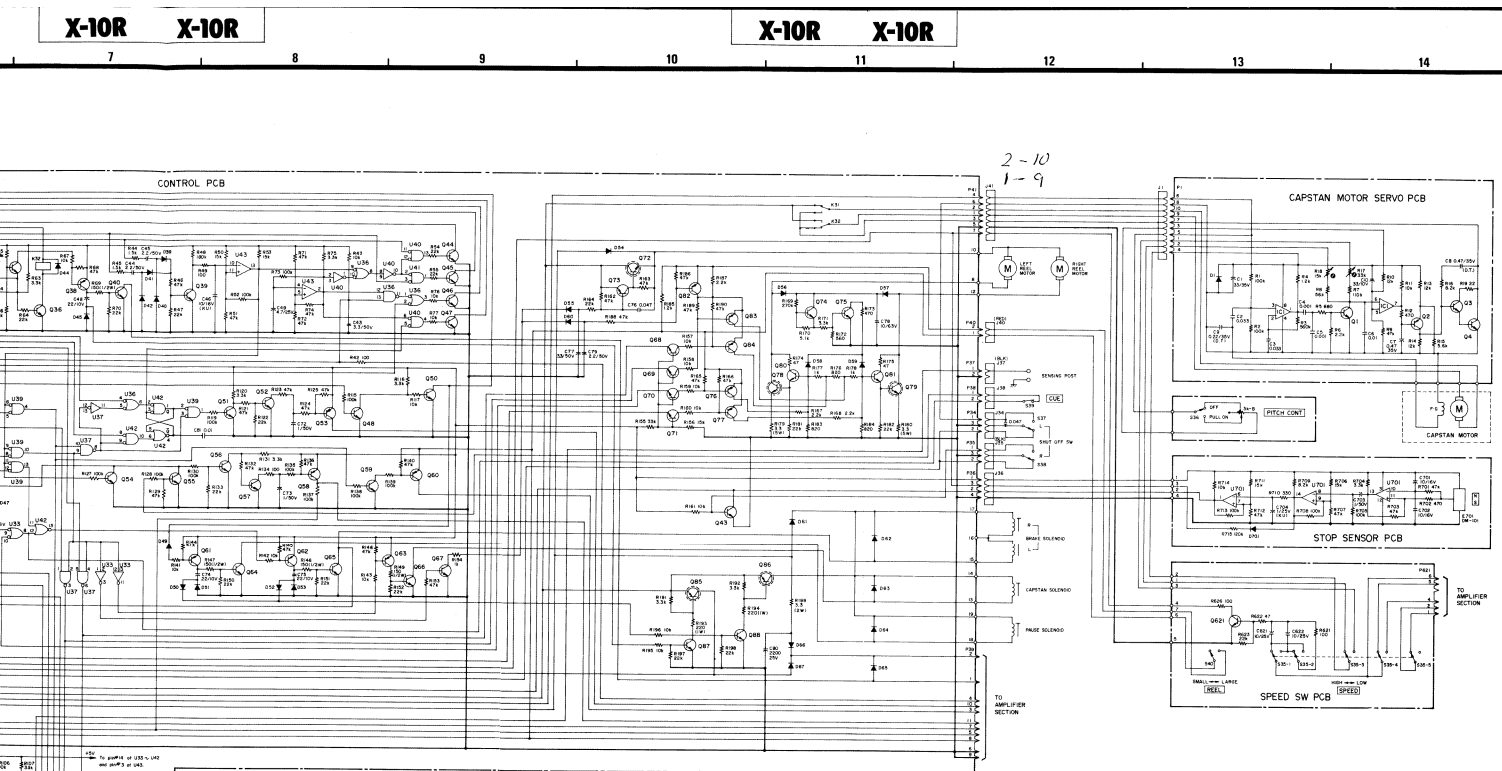
* Inner dia. for washers and nuts

	Code	Name	Type
MACHINE SCREW	R	Round Head Screw	
	P	Pan Head Screw	
	T	Stove Head Screw (Truss)	
	B	Binding Head Screw	
	F	Flat Countersunk Head Screw	
	O	Oval Countersunk Head Screw	
WOOD SCREW	RW	Round Head Wood Screw	
TAPTITE SCREW	PTT	Pan Head Taptite Screw	
	WTT	Washer Head Taptite Screw	
SEMS SCREW	BSA	Binding Head SEMS Screw(A Type)	
	BSB	Binding Head SEMS Screw(B Type)	
	BSF	Binding Head SEMS Screw(F Type)	
	PSA	Pan Head SEMS Screw(A Type)	
	PSB	Pan Head SEMS Screw(B Type)	

	Code	Name	Type
TAPPING SCREW	BTA	Binding Head Tapping Screw(A Type)	
	BTB	Binding Head Tapping Screw(B Type)	
	RTA	Round Head Tapping Screw(A Type)	
	RTB	Round Head Tapping Screw(B Type)	
SETSCREW	SF	Hex Socket Setscrew(Flat Point)	
	SC	Hex Socket Setscrew(Cup Point)	
	SS	Slotted Socket Setscrew(Flat Point)	
WASHER	E	E-Ring (Retaining Washer)	
	W	Flat Washer (Plain)	
	SW	Lock Washer (Spring)	
	LWI	Lock Washer (Internal Teeth)	
	LWE	Lock Washer (External Teeth)	
	TW	Trim Washer (Countersunk)	
NUT	N	Hex Nut	

06121 74225


JAPAN
GENERAL EXPORT
AUSTRALIA
U.K.
EUROPE
U.S.A., CANADA
KEY BOARD
CONNECTOR PCB
REMOTE CONTROL
TIMER PCB
CONTROL PCB
RECORD
REC MUTE
PAUSE
STOP
AUTO REVERSE
TIMER
POWER



CONTROL PCB

U31	NJM78M05A	Q1, Q70, Q76, Q79	2SD313(E)	D1~D36, D42, D44, D56, D57, D60~D67
U32	AN6251	Q32, Q74, Q80, Q81, Q87, Q88	2SC1384(S)	
U33~U37	HD74HC02P or SN74HC02N	Q33~Q37, Q39, Q44~Q46, Q50~Q52, Q54~Q57, Q59	2SC536(F)	D37
U38~U42	HD74HC27P or SN74HC27N	Q38, Q58, Q60, Q62~Q67, Q69, Q71, Q82, Q84, Q85, Q86, Q89, Q90, Q91	2SA733(P)	D38
U43	NJM2904N		2SC1740(C)	D39~D41, D43, D45~D55, D58, D59, D60~D67, D68, D69
		Q40, Q64~Q66	2SA720(D)	
		Q73	2SA607(E)	
		Q83, Q86		

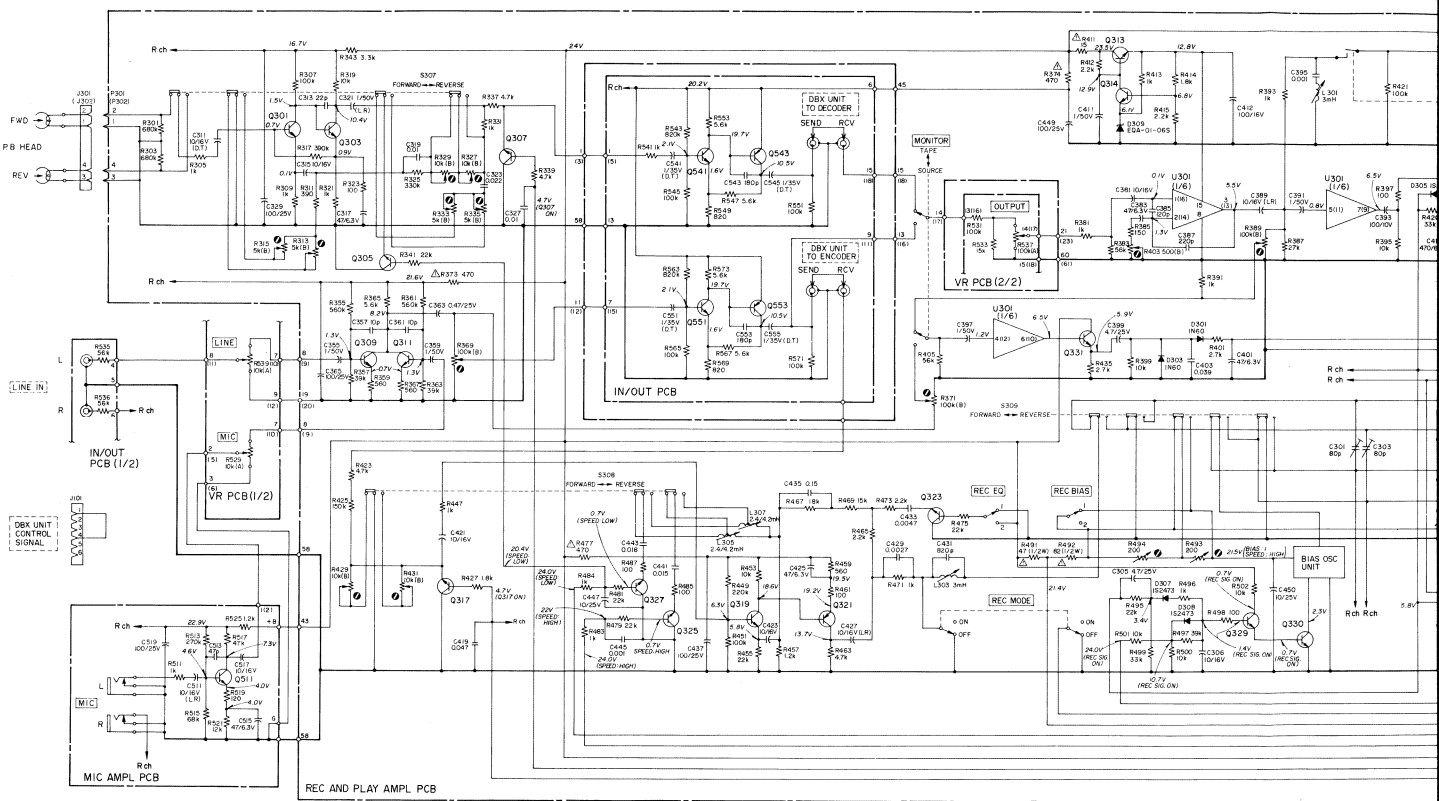
CONNECTOR PCB		CAPSTAN MOTOR SERVO PCB		STOP SENSOR PCB		TIMER PCB	
D801	152473HJ	IC1	NJM2030	UT01	NSM2903N	D041	ERB12-020J
		Q1	2SC1684(R) or 2SC945(P)	D701	152473HJ		
		Q2	2SC1684(R) or 2SA733(P)				
		Q3	2SC1815(R)				
		Q4	2SC2911(O)				
		D1	152473VE				

ERB2-020J
EQA01-060
MAC-5
152473HJ
UOSC

⚠ 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.

NOTES

1. ALL RESISTORS ARE ¼ WATT, 5%, UNLESS MARKED OTHERWISE. RESISTOR VALUES ARE IN OHMS (k = 1,000 OHMS, M = 1,000,000 OHMS).
2. ALL CAPACITOR VALUES ARE IN MICROFARADS (p = PICOFARADS).



MIC AMPL PCB

Q511/Q512 2SC1327(T)

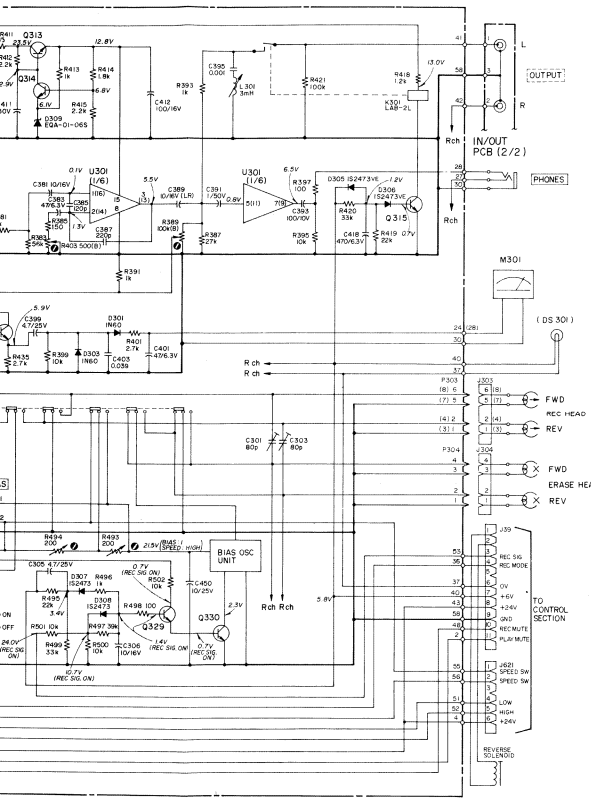
REC AND PLAY AMPL PCB

U301	HA1122W	Q307/Q308	2SC945L(K)	Q314	2SC945L(K)	Q321/Q322	2SA826L(NS)	Q329	2SC1740L(NS)
Q301/Q302	2SC1327(T)	Q309/Q310	2SC1740L(NS)	Q315	2SC1740L(NS)	Q323/Q324	2SC945L(K)	Q330	2SD655E
Q303/Q304	2SC945L(K)	Q311/Q312	2SC1740L(NS)	Q317/Q318	2SD655E	Q325/Q326	2SC945L(K)	Q331/Q332	2SC945L(K)
Q305/Q306	2SC945L(K)	Q313	2SD400E	Q319/Q320	2SC945L(K)	Q327/Q328	2SC945L(K)		

IN/OUT PCB

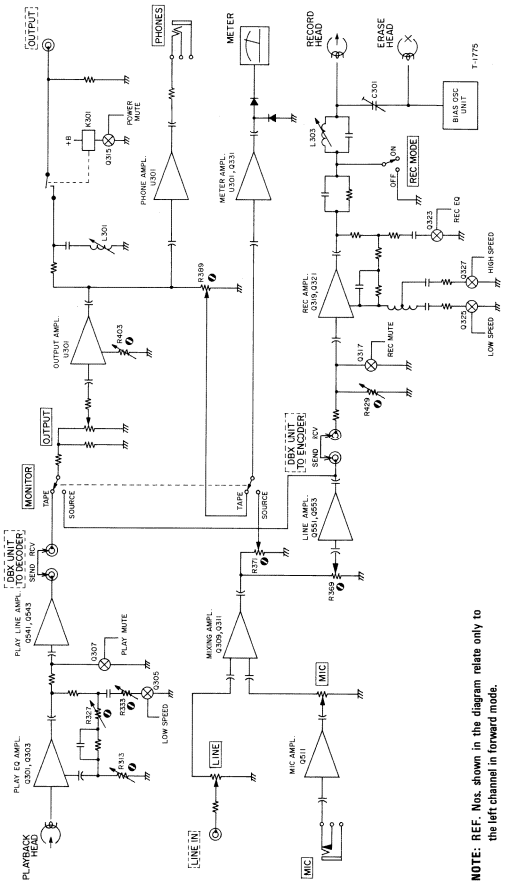
Q541/Q542	2SC945L(K)
Q543/Q544	2SA826L(NS)
Q551/Q552	2SC945L(K)
Q553/Q554	2SA826L(NS)

⚠ Parts marked with this sign are
They must always be replaced w
refer to the TEAC Parts List and er



⚠ 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.

BLOCK DIAGRAM

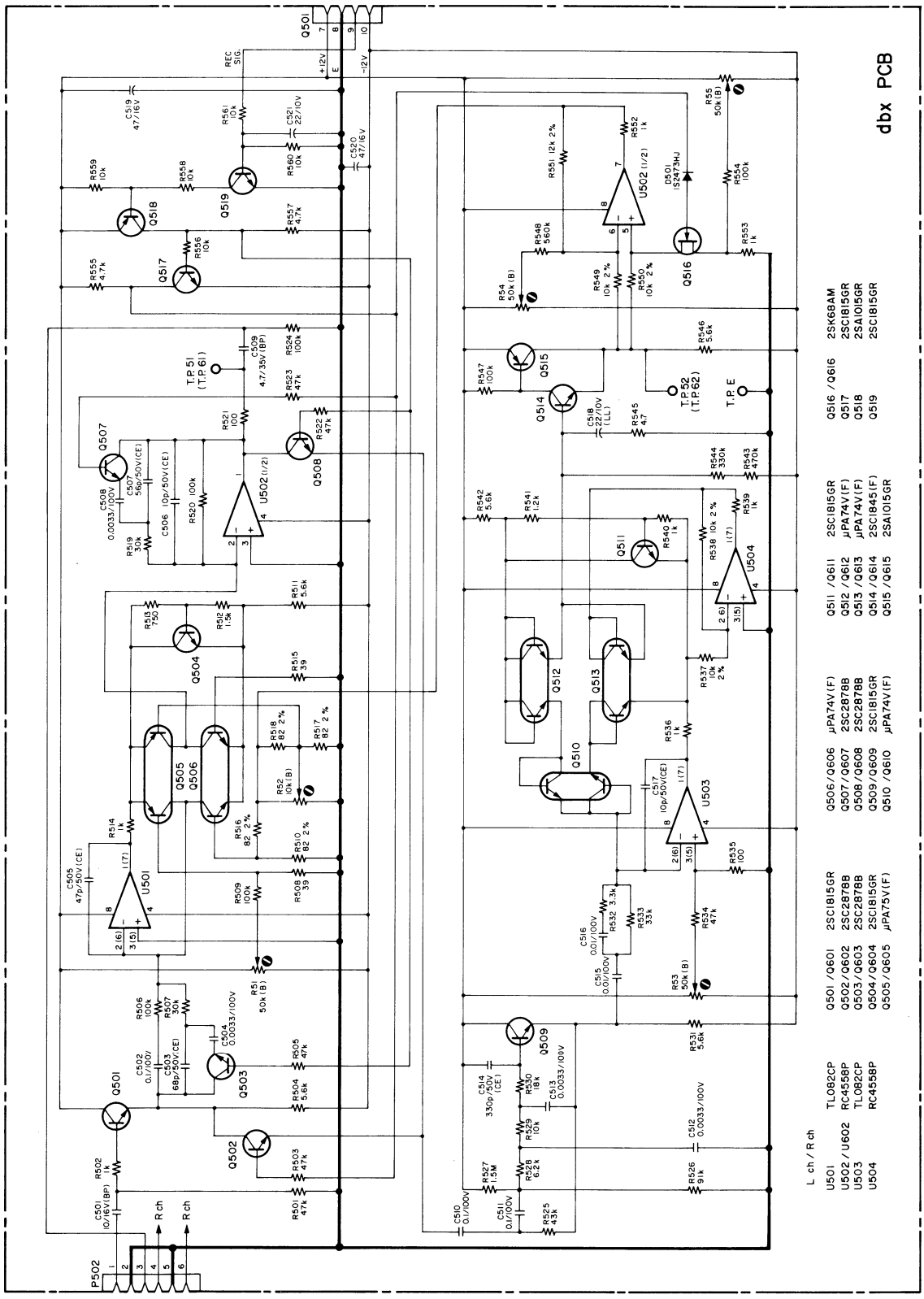


NOTE: REF. Nos. shown in the diagram relate only to the left channel in forward mode.

NOTES

1. ALL RESISTORS ARE ¼ WATT, 5%, UNLESS MARKED OTHERWISE. RESISTOR VALUES ARE IN OHMS (k = 1,000 OHMS, M = 1,000,000 OHMS).
2. ALL CAPACITOR VALUES ARE IN MICROFARADS (p = PICOFARADS).
3. SCHEMATIC DIAGRAM SHOWN FOR LEFT CHANNEL EXCEPT FOR SOME OF THE COMPONENTS.
4. DC VOLTAGES WERE MEASURED DURING RECORD PAUSE MODE UNLESS OTHERWISE NOTED.

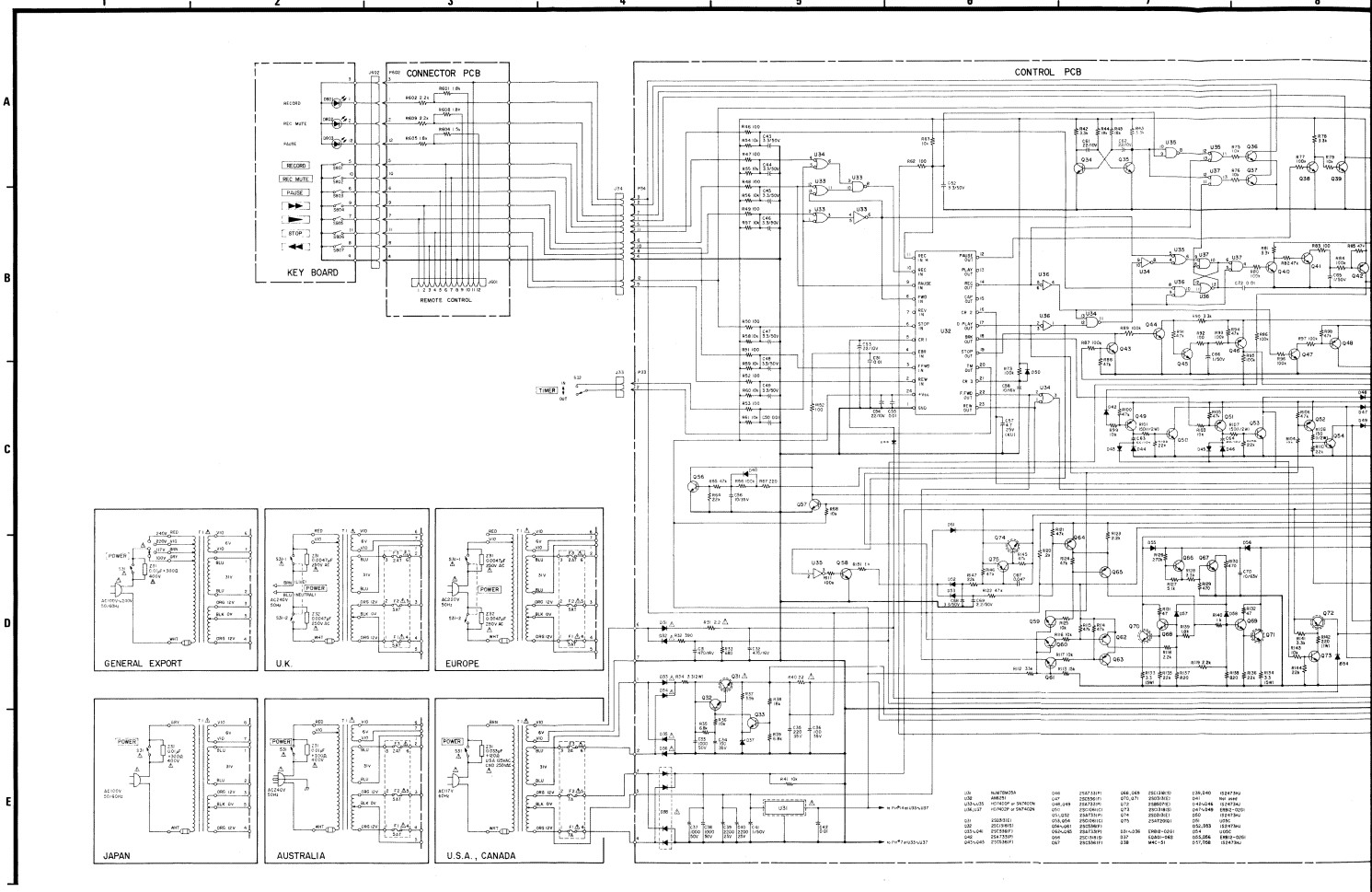
TEAC®

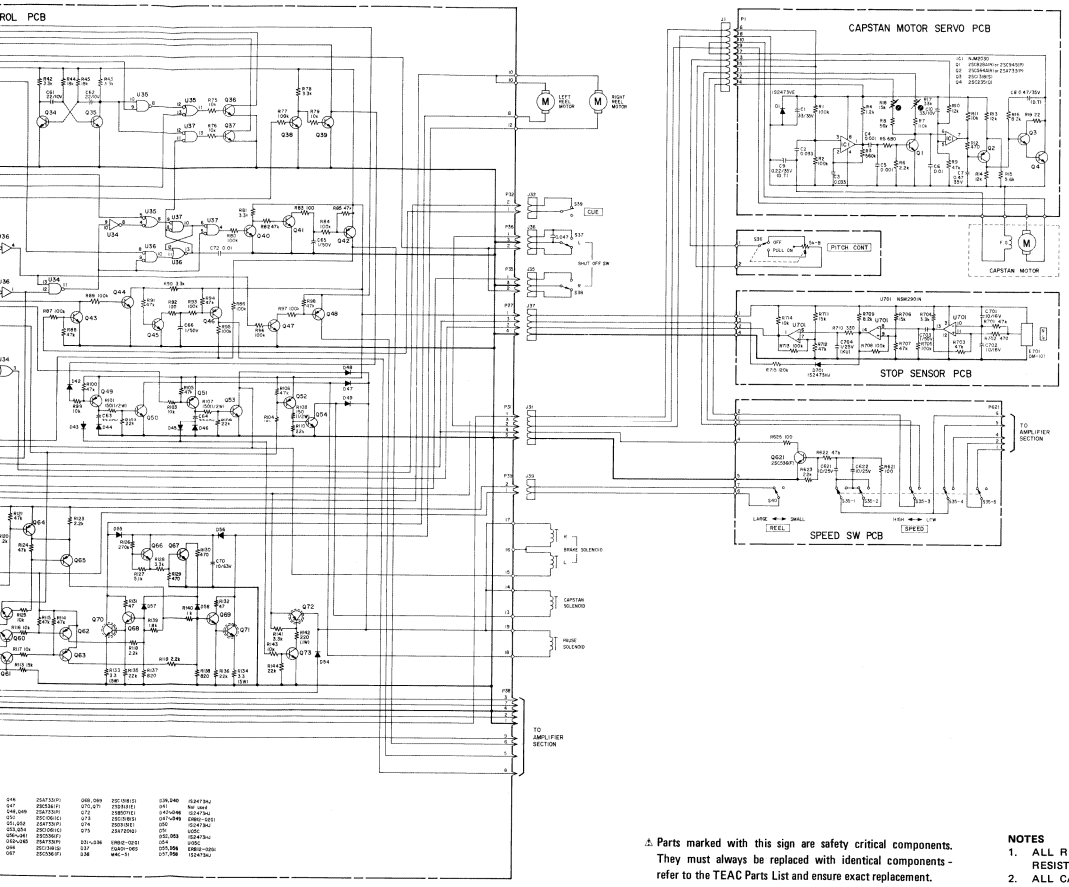

dbx PCB
dbx Unit
L ch / R ch
U501 TL082CP
U502 / U602 RC4558P
U503 TL082CP
U504 RC4558P
Q501 / Q601 2SC1815GR
Q502 / Q602 2SC2878B
Q503 / Q603 2SC2878B
Q504 / Q604 2SC1815GR
Q505 / Q605 μPA75V(F)
Q506 / Q606 μPA74V(F)
Q507 / Q607 2SC2878B
Q508 / Q608 2SC2878B
Q509 / Q609 2SC1815GR
Q510 / Q610 μPA74V(F)
Q511 / Q611 2SC1815GR
Q512 / Q612 μPA74V(F)
Q513 / Q613 μPA74V(F)
Q514 / Q614 2SC1845(F)
Q515 / Q615 2SA1015GR
Q516 / Q616 2SK68AM
Q517 2SC1815GR
Q518 2SA1015GR
Q519 2SC1815GR
T.P.51 (T.P.61)
T.P.52 (T.P.62)
T.P.E
P502
Q501
U501
U502 (1/2)
U503
U504
Q501
Q502
Q503
Q504
Q505
Q506
Q507
Q508
Q509
Q510
Q511
Q512
Q513
Q514
Q515
Q516
Q517
Q518
Q519
D501 1S2473HJ
R Ch
R Ch
REC SIG
+12V
-12V

TEAC SCHEMATIC DIAGRAM (TAPE TRANSPORT)

X-10 X-10

X-10 X-10

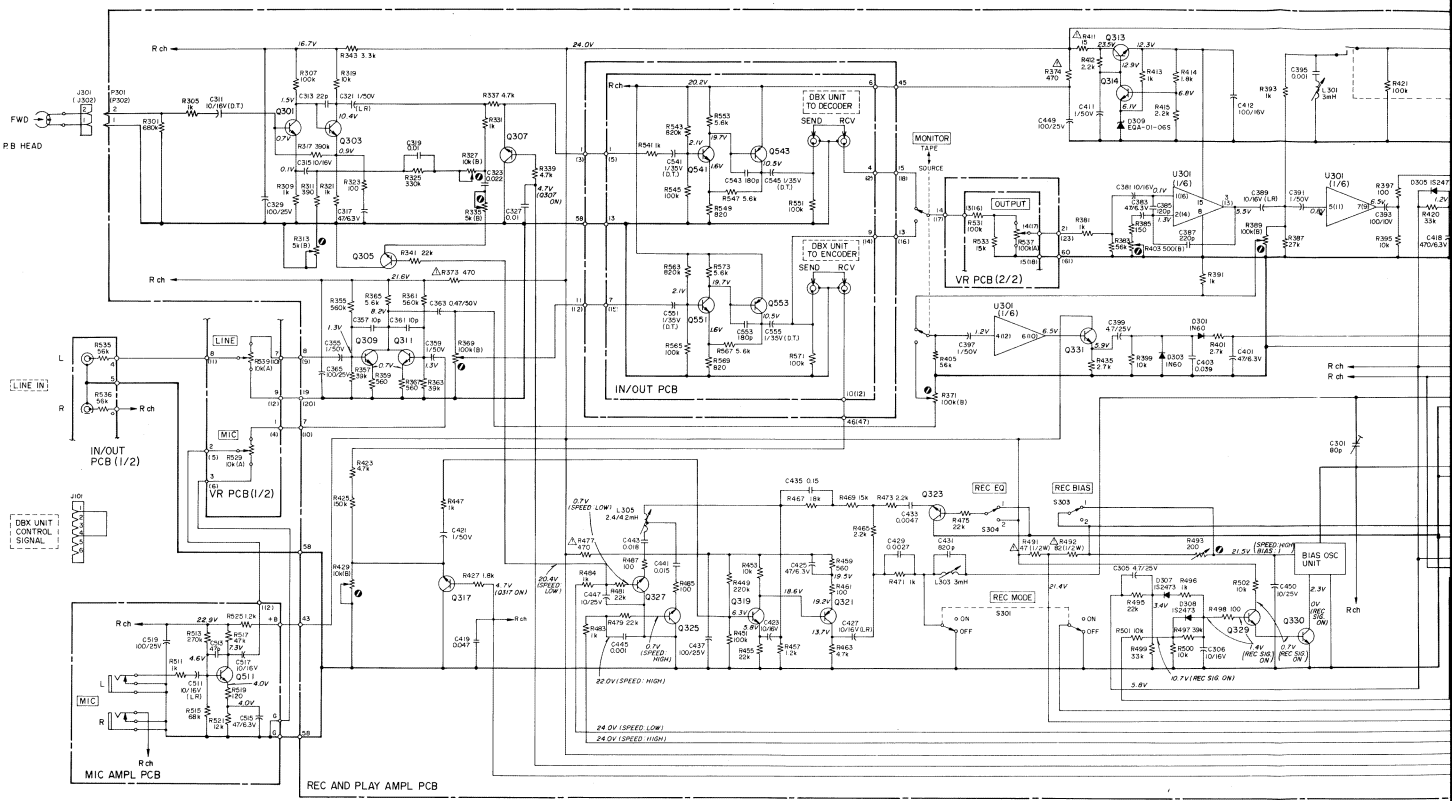




⚠ Parts marked with this sign are safety critical components. They must always be replaced with identical components - refer to the TEAC Parts List and ensure exact replacement.

NOTES

1. ALL RESISTORS ARE ¼ WATT, 5%, UNLESS MARKED OTHERWISE. RESISTOR VALUES ARE IN OHMS (k = 1,000 OHMS, M = 1,000,000 OHMS).
2. ALL CAPACITOR VALUES ARE IN MICROFARADS (p = PICOFARADS).



MIC AMPL PCB

Q511/Q512 2SC1327(T)

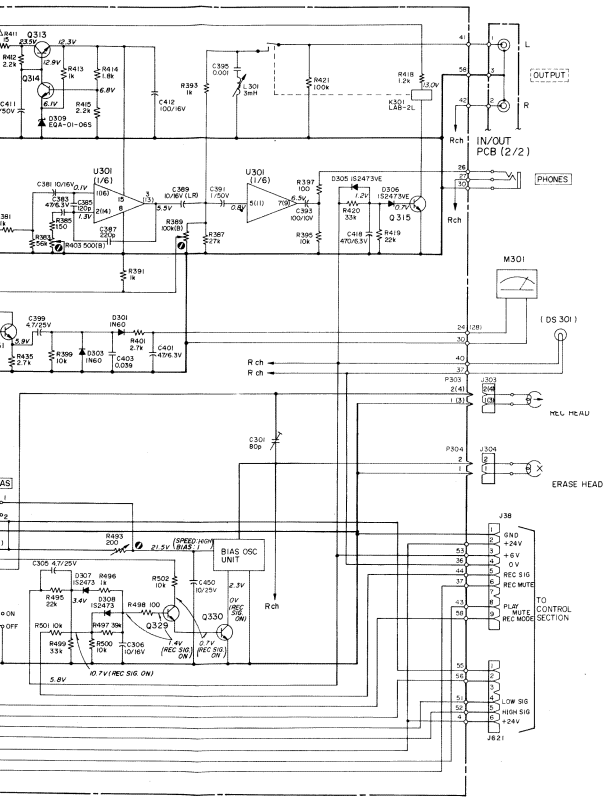
REC AND PLAY AMPL PCB

U301	HA1122W	Q307/Q308	2SC945L(K)	Q314	2SC945L(K)	Q321/Q322	2SA826LN(S)	Q329	2SC1740LN(S)
Q301/Q302	2SC1327(T)	Q309/Q310	2SC1740LN(S)	Q315	2SC1740LN(S)	Q323/Q324	2SC945L(K)	Q330	2SD655N(E)
Q303/Q304	2SC945L(K)	Q311/Q312	2SC1740LN(S)	Q317/Q318	2SD655N(E)	Q325/Q326	2SC945L(K)	Q331/Q332	2SC945L(K)
Q305/Q306	2SC945L(K)	Q313	2SD400E	Q319/Q320	2SC945L(K)	Q327/Q328	2SC945L(K)		

IN/OUT PCB

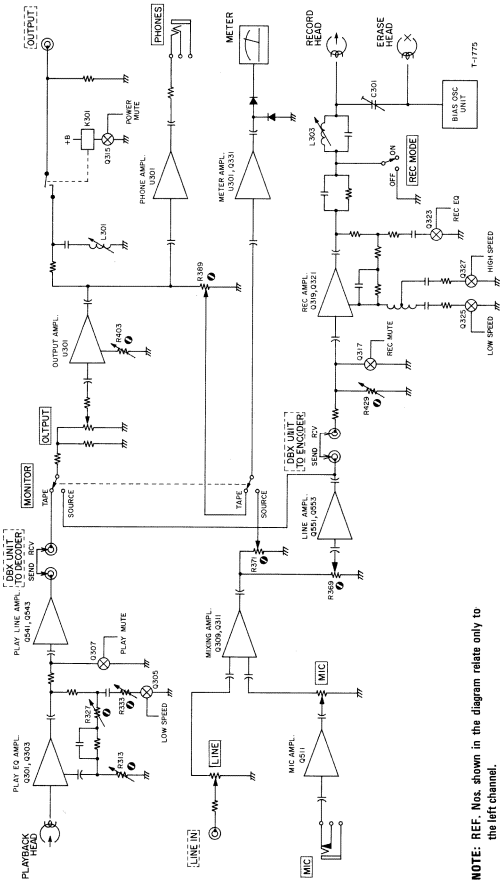
Q541/Q542	2SC945L(K)
Q543/Q544	2SA826LN(S)
Q551/Q552	2SC945L(K)
Q553/Q554	2SA826LN(S)

⚠ 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.



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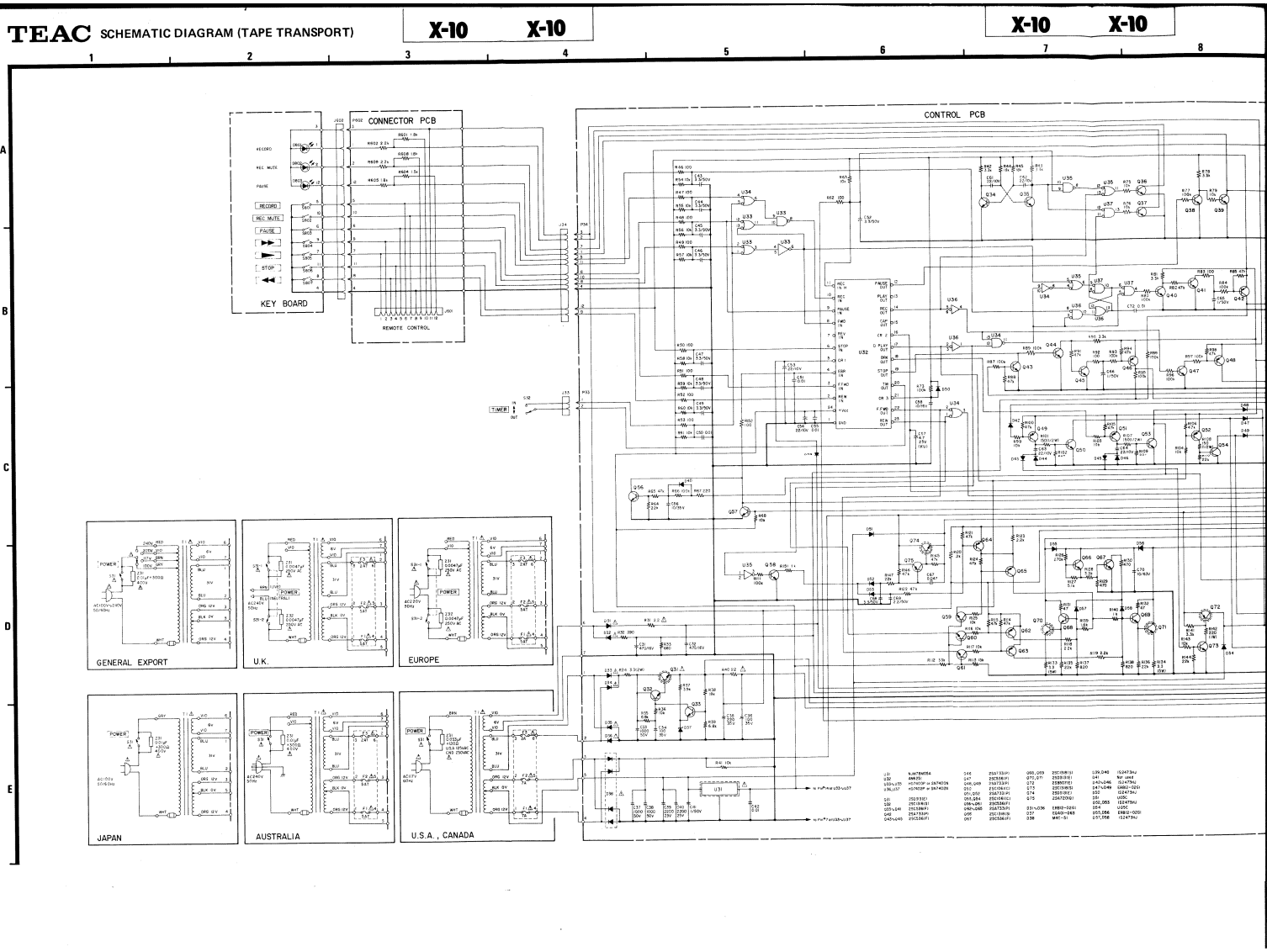
BLOCK DIAGRAM

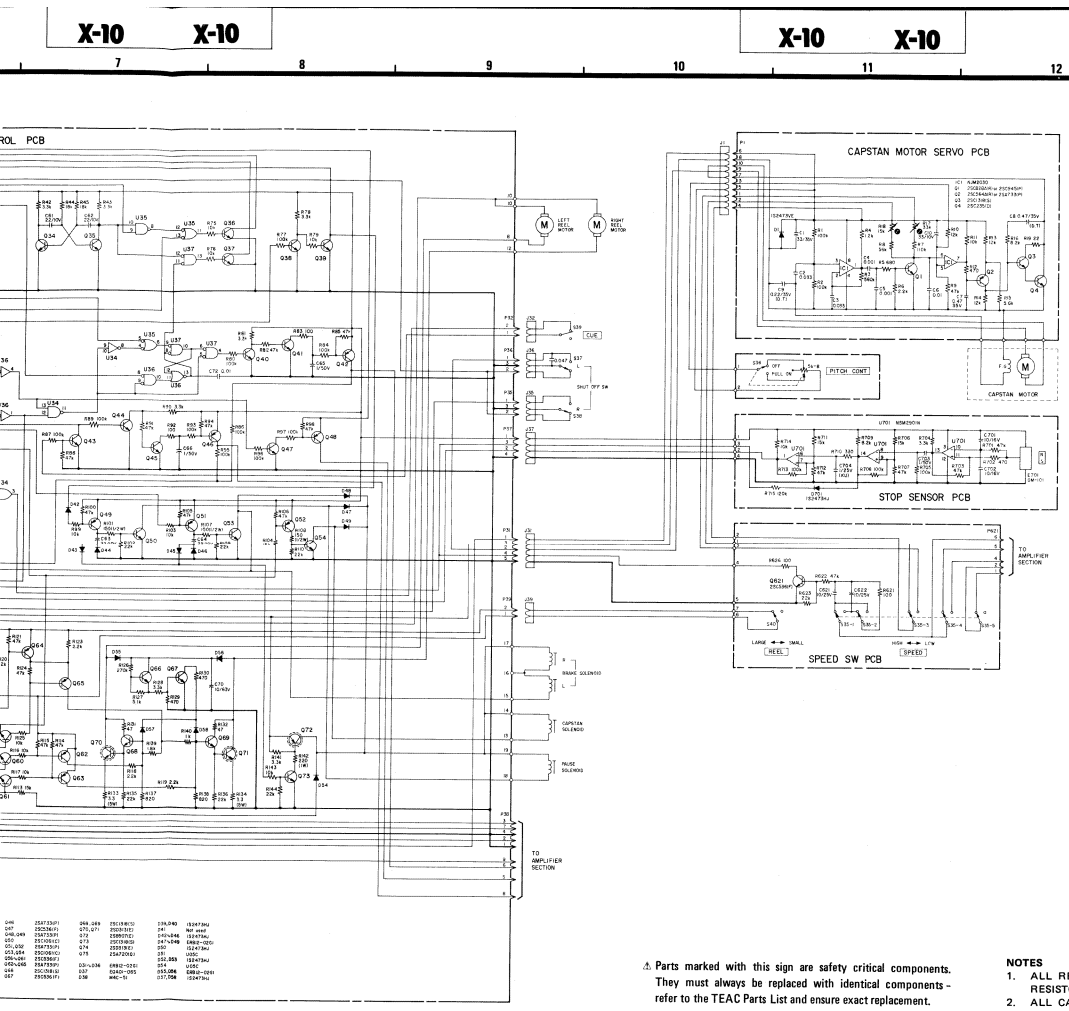


NOTE: REF. Nos. shown in the diagram relate only to the left channel.

NOTES

1. ALL RESISTORS ARE ¼ WATT, 5%, UNLESS MARKED OTHERWISE. RESISTOR VALUES ARE IN OHMS (k = 1,000 OHMS, M = 1,000,000 OHMS).
2. ALL CAPACITOR VALUES ARE IN MICROFARADS (p = PICOFARADS).
3. SCHEMATIC DIAGRAM SHOWN FOR LEFT CHANNEL EXCEPT FOR SOME OF THE COMPONENTS.
4. DC VOLTAGES WERE MEASURED DURING RECORD PAUSE MODE UNLESS OTHERWISE NOTED.


CONNECTOR PCB
KEY BOARD
REMOTE CONTROL
CONTROL PCB
GENERAL EXPORT
U.K.
EUROPE
JAPAN
AUSTRALIA
U.S.A., CANADA



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NOTES

1. ALL RESISTORS ARE ¼ WATT, 5%, UNLESS MARKED OTHERWISE. RESISTOR VALUES ARE IN OHMS (k = 1,000 OHMS, M = 1,000,000 OHMS).
2. ALL CAPACITOR VALUES ARE IN MICROFARADS (p = PICOFARADS).