

11
DOKORDER
model **1140**

CLP

SERVICE MANUAL
1976.2

SECTION **1**

**TECHNICAL DESCRIPTION AND ADJUSTMENT
PROCEDURES**

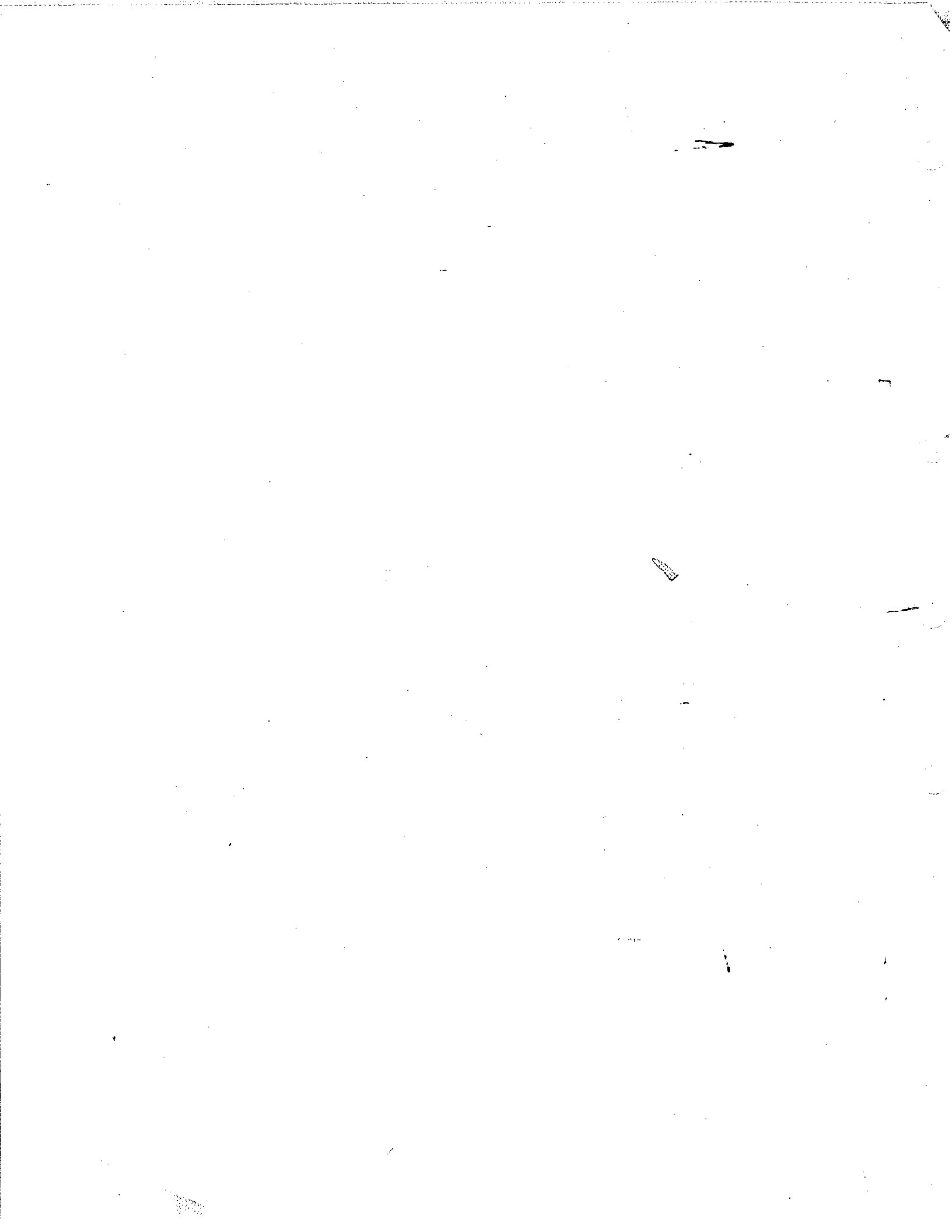


PRELIMINARY



Dokorder, Inc.

5430 ROSECRANS AVENUE, LAWDALE, CALIF. 90260 U.S.A.
DENKI ONKYO CO., LTD
26-11, 3-GHOMI, NISHI-ROKUGO, OTA-KU, TOKYO, JAP



4. ADJUSTMENT — MECHANICAL —

1. AUTO SHUT-OFF SWITCH

a. Specification

When the Auto Shut-Off Pin (2) is pushed upward, the microswitch (7) clicks (switch-on) at the point of more than 5mm (3/16") outside of the tape travel position and clicks again (switch-off) before the Auto Shut Pin returns the full-length of its operating stroke.

b. Adjustment

Mounting position of microswitch

c. Reference

Fig. 1-1 and Fig. 5 on page M-8.

d. Special Tools and/or Instruments required

None

e. Preparation

Remove Head Cover, Front Panel and Control Panel

f. Procedure

- 1) Check the on/off position of the microswitch by gently moving the Auto Shut Pin by hand.
- 2) If the spec. is not met, adjust the position of the microswitch by loosening two mount screws (6).
(Moving the microswitch to the left increases switch-on stroke.)

g. Note

- 1) Replace the dismantled parts and check again that the Auto Shut Pin moves freely through the hole in the front panel and does not come into contact with cover.
- 2) Load tape and set the deck in play mode and check if the tape travels normally. Then take up the tape completely by setting the deck in FF or REW mode, checking that the Auto Shut Arm returns to shut off the tape travel automatically at tape end.

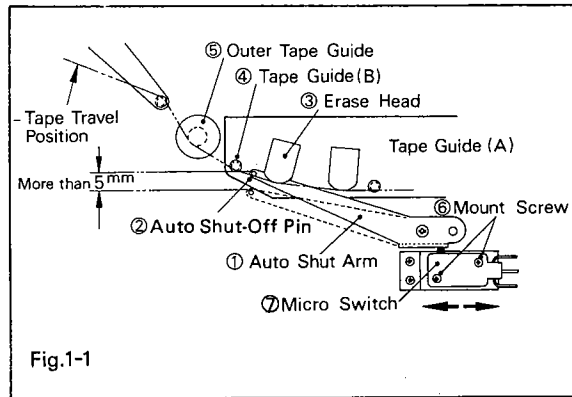


Fig.1-1

2. TAPE LIFTERS

a. Specification

Requires 1mm space between the tape and Tape Lifter Pin (3) while the deck is in play mode and the tape does not touch Erase and REC heads in FF/REW or Pause modes.

b. Adjustment

Position, Tape Lifter Solenoid (4).

c. Reference

Fig. 2 and Fig. 11 on page M-20 and Fig. 13-C on page M-24.

d. Special Tools and/or Instruments required.

None

e. Preparation

Remove Head Cover and Bottom Board.

f. Procedure

- 1) Load the tape and set the deck in Play and Pause modes alternately several times and check that the lifter operates normally.
- 2) Adjust the mounting position of the lifter solenoid by loosening the two screws (5), if the spec. is not met.

g. Note

Paint-lock the two screws after the position of the solenoid has been adjusted.

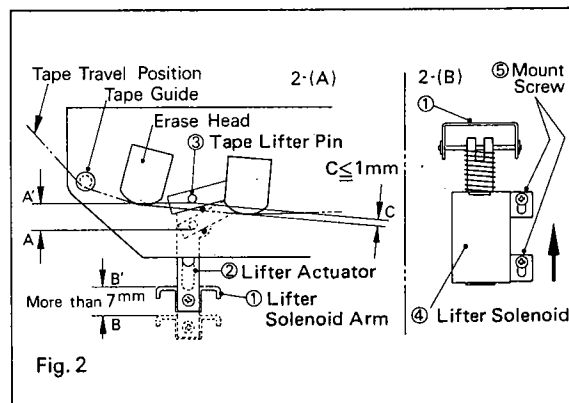
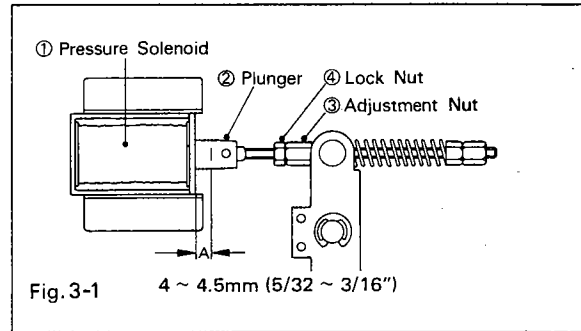


Fig. 2

3. PINCH ROLLER DRIVE MECHANISM

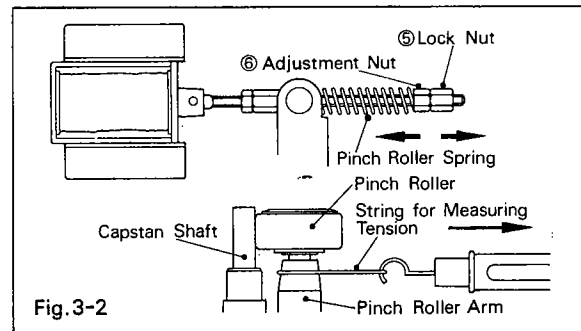
3-1 STROKE ADJUSTMENT OF THE PINCH ROLLER PRESSURE SOLENOID

- a. Specification
Stroke 4 ~ 4.5mm (5/32 ~ 3/16")
- b. Adjustment
Stroke Adjustment Nut (3)
- c. Reference
Fig. 3-1, Fig. 11 on page M-20 and Fig. 13-C on page M-24.
- d. Special Tools and/or Instruments required
4mm Open End Wrench
- e. Preparation
Remove Front Panel and Head Cover
- f. Procedure
 - 1) Push Play and Stop Buttons alternately several times, mark the positions of the solenoid plunger (2) as it pulls and returns.
 - 2) Adjust the Nut (3) so that the operating stroke of the plunger (indicated as A) is from 4 to 4.5mm (5/32 ~ 3/16").
- g. Note
Loosen the Lock Nut (4) first then proceed with step f-2.
After the stroke has been adjusted, fix the Nut (3) with the lock nut, then paint-lock it.



3-2 PINCH ROLLER PRESSURE

- a. Specification
2kg ± 0.1kg
- b. Adjustment
Pressure Adjustment Nut.
- c. Reference
Fig. 3-2, Fig. 11 on page M-20 and Fig. 13-C on page M-24.
- d. Special Tools and/or Instruments required
4mm Open End Wrench and Spring Balance (4kg)
- e. Preparation
Remove Front Panel and Head Cover
- f. Procedure
 - 1) Read the pressure indicated on the spring balance on the point when the pinch roller loses contact with the capstan and the pinch roller stops revolving.
 - 2) Adjust the pressing force of the pinch roller by turning the Nuts (5), (6), if necessary.
- g. Note
Use a precision spring balance with a scale of up to 4kg graduated in steps of 50g or less.
Loosen lock nut first before attempting step f-2.
Fix the Adjustment Nut (6) with the lock nut (5) and then paint-lock it.



4. REEL MOTOR TORQUES

a. Specification

Refer to below chart

b. Adjustment

Refer to below chart

Item	Adjustment Parts	Specifications	
1	Take-up Torque 7" reel R-1 (150 ohm)	420 ± 15 gr/cm (140 gr)	
2	Hold-back Tension 7" reel (Playback) R-4 (100 ohm)	180 ± 15 gr/cm (60 gr)	
3	Hold-back Tension 10 1/2" reel (Playback) R-3 (300 ohm)	360 ± 15 gr/cm (120 gr)	
4	Hold-back Tension (FF/REW) R-2 (1200 ohm)	135 ± 15 gr/cm (45 gr)	

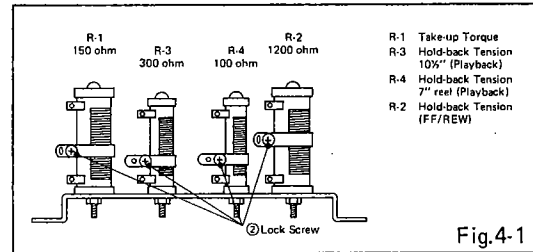


Fig.4-1

c. Reference

Fig. 4-1 and Fig. 8 on page M-14

d. Special Tools and/or Instruments required

Spring Balance (200g and 500g)

e. Preparation

Remove Amp Supporter, Back Board and Bottom Board.

f. Procedures

f-1. Holdback, 10-1/2" Reel (Playback)

- 1) Set the Reel Size Select Switch to Large and mount on the left turntable a 7" small-hub reel with a piece of string attached to it, as shown in Fig. 4-2(A).
- 2) Set the deck in Play mode and pull the spring balance gently in the arrow direction indicated in Fig. 4-2(A) and read the figures indicated by the balance.
- 3) Loosen Lock Screw ② securing the adjustment band on the R-3 in Fig. 4-1 and adjust the position of the adjustment band so that the spring balance indicate 120g.

f-2. Holdback, 7" Reel (Playback)

- 1) Set the Reel Size Select Switch to Small and follow the steps described above to obtain 60g by adjusting R-4.

f-3. Holdback (FF/REW)

- 1) Set the deck in FF mode and follow the steps described in step f-1. to obtain 45g by adjusting R-2.
- 2) Mount on the right turntable a 7" small-hub reel with a piece of string attached to it as shown Fig. 4-2(A) to check REW back tension. If you discover a considerable difference between the torques of the FF and the REW, re-adjust the R-2 to minimize the difference between them.

f-4. Take-up Torque (7" Reel, Playback)

- 1) Set the Reel Size Select Switch to Small and mount on the right turntable a 7" reel, described on f-1-1, and adjust R-1 to obtain 140g as shown Fig. 4-2(B).

g. Note

Take-up Torque in use of 10-1/2" reel in playback mode is fixed. Tighten all the lock screws to prevent the adjustment band from loosening.

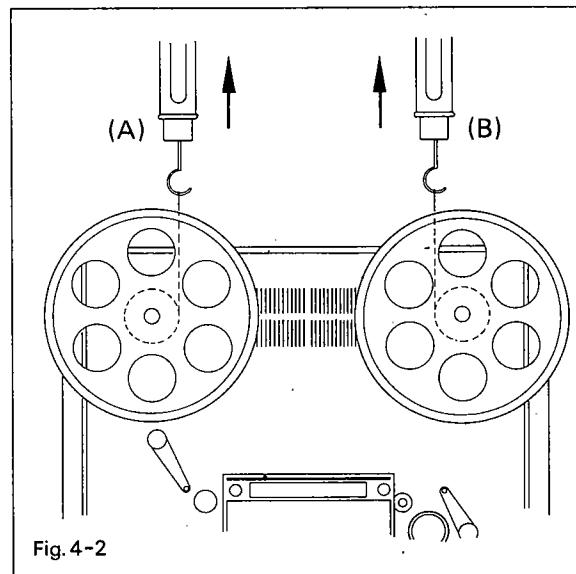


Fig. 4-2

5. BRAKE MECHANISM

5-1 BRAKE TORQUE LIMITER

- a. Specification
1 ~ 1.5mm (1/32 ~ 1/16") gap between the Damper ② and the Bracket ③
- b. Adjustment
Bracket
- c. Reference
Fig. 5-1, Fig. 8 on page M-14 and Fig. 9 on page M-16.
- d. Special Tools and/or Instruments required
None
- e. Preparation
Remove Front Panel.
- f. Procedure

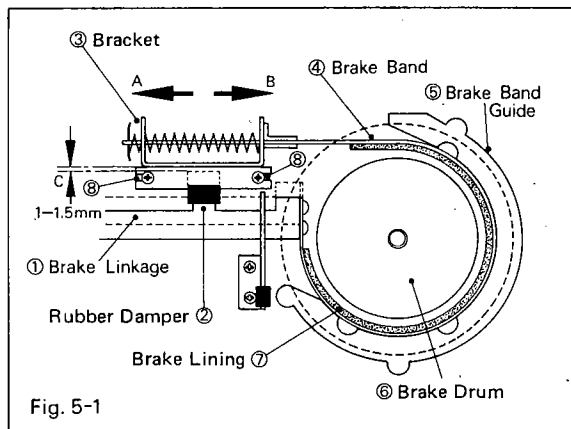


Fig. 5-1

- 1) Push the Play and Stop Buttons alternately several times and check the movement of the brake band.
- 2) Push the Stop Button once again and loosen the two screws ⑧ securing the Bracket ③ so that the space between the Rubber Damper ② and the Bracket ③ will be from 1 to 1.5mm (1/32 ~ 1/16"). (Arrow (A) direction will increase the space (C).)
- 3) Keeping the tape deck in the stop mode, push the Brake Linkage ① downward by hand, check that the Brake Band ④ contacts the inside of the Brake Band Guide ⑤ uniformly, and that the space between the Brake Drum ⑥ and the Brake Lining ⑦ is also uniform.
- g. When the adjustment has been completed, paint-lock the two screws ⑧.

5-2 STROKE OF BRAKE SOLENOID

- a. Specification
2 ~ 2.5mm (1/16 ~ 3/32")
- b. Adjustment
Mounting position of the brake solenoid
- c. Reference
Fig. 5-2
- d. Special Tools and/or Instruments required
None
- e. Procedure

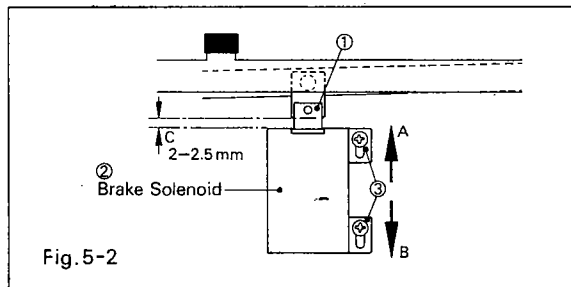


Fig. 5-2

- 1) Push the Play and Stop Buttons alternately and check the stroke of the Brake Solenoid Plunger (indicated (C) in Fig. 5-2).
- 2) Loosen two screws ③ and adjust the position of the solenoid so that the operating stroke of the solenoid plunger will be from 2 to 2.5mm.
- g. Note
After the stroke has been adjusted, paint-lock the two screws ③.

5-3 BRAKE TORQUE

- a. Specification
700g ~ 800g
- b. Adjustment
Brake Torque Adjustment Screw
- c. Reference
Fig. 5-3 and Fig. 8 on page M-14.
- d. Special Tools and/or Instruments required
Spring Balance (1kg)
- e. Preparation
Remove Front Panel and Amp Supporter.
- f. Procedure

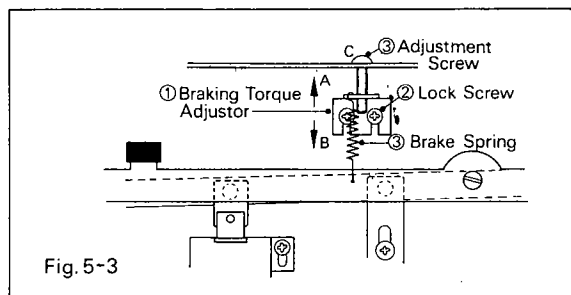


Fig. 5-3

- 1) Mount on the left turntable a 7" small-hub reel with a piece of string to it, as shown in Fig. 4-2(A).
- 2) Push the Stop Button, hook a spring balance to the string attached above reel, pull the balance gently

in the arrow direction indicated in Fig. 4-2, and read the pressure indicated by the balance when the left turntable begins to turn.

- 3) Loosen the two screws securing the Braking Torque Adjuster ① in Fig. 5-3, then turn the adjustment screw ③ so that the spring balance will indicate a brake torque of from 700 to 800g.
- 4) Repeat the steps 2 and 3 for the right turntable. If you discover a considerable difference between the brake torques for the left and right turntable, refer back to 5-1 and 5-2 to minimize the difference of the torque between them.

6. WOW/FLUTTER AND TAPE SPEED

a. Specification

	Wow/Flutter		Tape Speed Accuracy
15ips (38cm/sec)	0.08% (rms)	0.04% (wrms)	±0.5% (2985 ~ 3015 by 3KHz TEST TAPE)
7-1/2ips (19cm/sec)	0.12% (rms)	0.06% (wrms)	±0.5% (2985 ~ 3015 by 3KHz TEST TAPE)

b. Adjustment

Motor Torque, Pinch Pressure, Alignment of Tape Path.

c. Reference

Refer 1, 2, 3, 4, and 5 described above for mechanical adjustments.

d. Special Tools and/or Instruments required

Wow/Flutter Meter, Test Tape, Frequency Counter and Tools described in the mechanical adjustment above.

e. Preparation

Clean the heads, pinch roller, tape guide and all other parts that touch the tape.

f. Procedures

f-1. Wow/Flutter

- 1) Deterioration of wow/flutter may be avoided by attending to the following problems:
 1. Parts along the tape path (the pinch roller, heads, tape guides, capstan shaft) may be stained with oxide particles, etc., scraped from tape surfaces.
 2. Reel-motor torque, pinch roller pressure and tape path alignment may be needed.
 3. Capstan drive assembly (the capstan belt, flywheel, motor pulley) may be fouled.
 4. Rotational parts (such as the pinch roller metal, pinch roller shaft, capstan metal, capstan sleeve and motor sleeve) may need lubrication.
 5. Tape drive mechanism (such as the reel motors, capstan motor, guides, counter mechanism and solenoids) may need replacement.
 6. Other causes might include cases where lead cables running along the tape drive mechanism causes wear by friction, or where the disengaging action of the brake mechanism is faulty.
- 2) Adjustments should be undertaken in the most efficient manner, as suggested below:
 1. Use test tapes and measuring apparatus that are new (if possible) and well calibrated.
 2. Check first that the tape transport mechanism is in order.
 3. Carefully clean off accumulated tape particles.
 - a) Inspect, clean and lubricate the pinch roller's metal parts, pinch roller shaft, capstan shaft, capstan metal, etc.
 - b) Clean the belts, flywheel, motor pulley, etc. and check for rubbing parts or marred surfaces.
 4. Measure the wow; if it exceeds the specification, measure and adjust the torque.
 5. In most cases, the measured wow/flutter should meet the specification by the time you reach the 3rd or 4th step above. If not, a faulty pinch roller, capstan or belt may be the cause, and replacement is called for. Usually replacement of a motor should not be considered; should the motor be suspect, first apply oil to its shaft and keep it running for two or three hours, and check it again. Inspecting the phase advance capacitor may also reveals the solution.

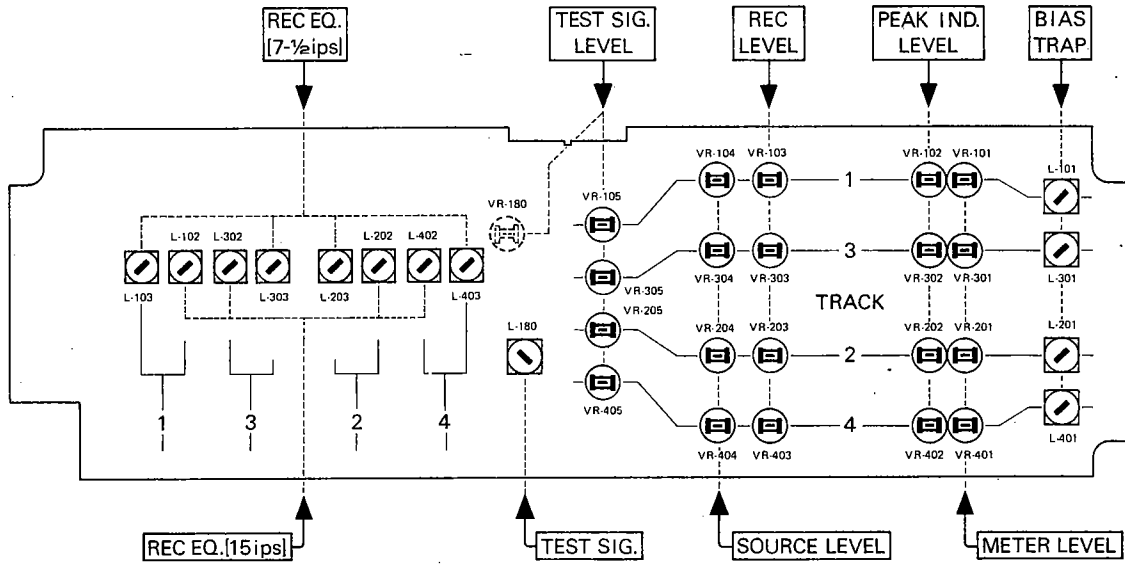
f-2. TAPE SPEED

Adjustments of tape speed should be undertaken after replacement of the motor pulley. Since the motor pulley is available in various sizes (0.5% increments and decrements), select the best suitable one. In most cases, however, replacement should be unnecessary; the most suitable pulley is selected and mounted on the deck at our factory before shipment. When the speed does not meet the specification, first adjust the motor torque and pinch roller pressure, and measure wow/flutter before actually replacing the pulley.

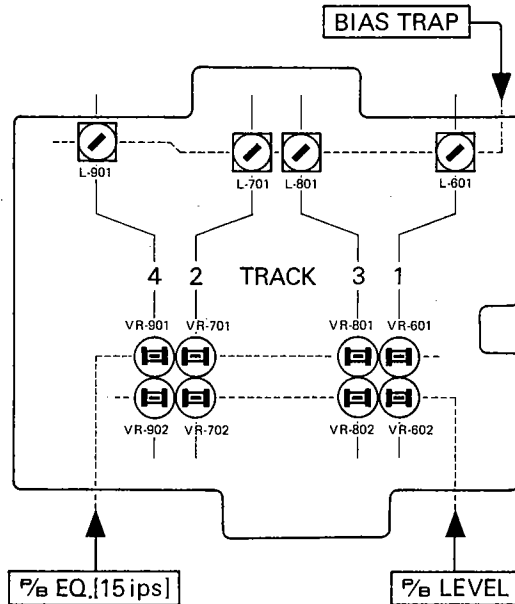
5. ADJUSTMENT — ELECTRICAL —

1. ADJUSTABLE PARTS LOCATION

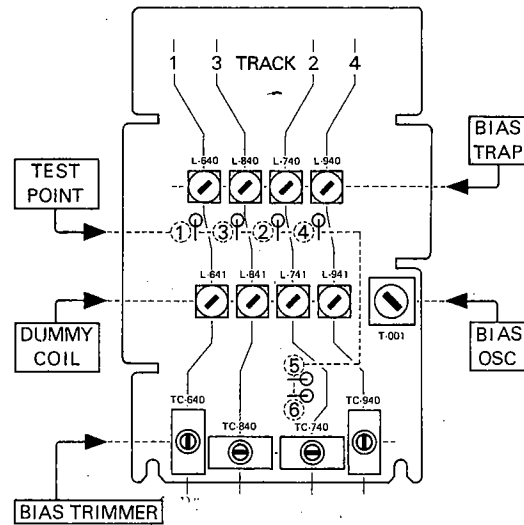
AMP (2) P.C.B. (PCM-312D)



HEAD AMP P.C.B (PCM-342E)



BIAS P.C.B. (PCM-313C)



DOKORDER

model 1140



SERVICE MANUAL
SM-0100-00
1975-11

SECTION 2

EXPLODED VIEWS AND PARTS LIST

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PARTS NOMENCLATURE

Mark	Name	Shape	Illustration	Remarks
PS	Pan Head Screw			
PF	Pan Head Screw with Flat Washer			with Spring Washer = PG
BH	Binding Head Screw			
TS	Taping Screw			
WS	Wood Screw			
BS	Binding Screw			
HB	Hexagon Bolt			
FS	Flat Countersunk Head Screw			
LS	Lock Screw			
R	Rivet			
AS	Allen Hex. Screw			
S	Spacer			
Example	PS 4 x 6			
			• Length in mm [L] • Diameter in mm [D] • Mark	
NW	Nylon Washer			
FW	Fibre Washer			
IL	Internal Lock Washer			
EL	External Lock Washer			
E	Retaining Ring [E Washer]			
N	Nut			
NF	Nut with Flat Washer			with Spring Washer = NG
K	Knurled Thumb Nut			
WN	Wing Nut			
Example	NW 4			• Diameter in mm [D] • Mark

NOTE: Items without part number and description are not available for standard spare parts.



Dokorder, Inc.

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CABINET EXPLODED VIEW

Ref. No.	Parts No.	Description	Identity No.	Source
1-11-(1)	880-0001-00	Top Board Assy, Amp.	SE2D82J3	
1-11-(2)	880-0002-00	Bottom Board Assy, Amp.	SE2D82J4	
1-12-(1)	880-0003-00	Front Panel, Amp.	SE2D82J1	
1-12-(2)	551-0001-01	Back Board, Amp.	1ST2-241044-1	
1-13-(1)	551-0002-06	Side Board, Amp.	3ST2-235003-6	
1-13-(2)	555-0016-02	Side Bezel, Amp.	4ST2-235028-2	
1-14-(1)	556-0001-00	Knob, Control	4ST2-241164	
1-14-(2)	556-0011-81	Knob, Control, Outer	4ST2-241231-1	
1-14-(3)	556-0012-83	Knob, Control, Inner	4ST2-241228-3	
1-15-(1)	553-0001-00	Emblem, 4-Ch.	3ST2-244001	
1-15-(2)	554-0001-01	Dress Plate, Head Phone	4ST2-241176-1	
1-15-(3)	554-0002-01	Dress Plate, Mic.	4ST2-241175-1	
1-15-(4)	532-0001-01	Spacer, Amp. Supporter	4ST2-235037-1	
1-16-(1)	511-0007-00	Supporter, Amp.	1ST2-241020	
1-16-(2)	555-0018-00	Dresser, Supporter	2ST2-241032	
1-16-(3)	533-0001-00	Holder, 20-P Connector	4ST2-241274	
1-16-(4)	534-0013-00	Plate, 20-P Connector Mount	4ST2-241181	
1-16-(5)	534-0003-00	Clamp, 20-P Wire Harness	4SE2-241015	
1-16-(6)	132-0002-00	Connector, 20-P	STBB172	MR-20MH (M)
1-16-(7)	535-0010-00	Cushion, Amp. Supporter	4SE2-241068	
1-17-(1)	880-0004-00	Panel Assy, Deck	SE2D81J3	
1-17-(2)	880-0005-00	Head Cover	SE2D81J4	
1-17-(3)	531-0001-00	Post, Head Cover	4ST2-241104	
1-17-(4)	558-0014-02	Screw, Head Cover Mount	4ST2-241047-2	
1-17-(5)	880-0006-00	Cover, Multi-Sync.	SE2D81J-11/13	
1-17-(6)	555-0011-01	Cover, Bias Control	4ST2-241194-1	
1-17-(7)	556-0002-03	Knob, Bias Control	4ST2-241127-3	
1-17-(8)	880-0007-00	Panel, Front, Control	SE2D81J2	
1-18-(1)	551-0004-00	Side Board (Left)	1ST2-235002	
1-18-(2)	551-0005-00	Side Board (Right)	1ST2-235003	
1-18-(3)	555-0019-00	Side Bezel, Deck	3ST2-235012	
1-19-(1)	551-0003-00	Front Board, Deck	1ST2-235013	
1-19-(2)	551-0006-02	Back Board, Deck	1ST2-241014-2	
1-19-(3)	532-0001-01	Spacer, Supporter	4ST2-235037-1	
1-20-(1)	551-0007-00	Bottom Board, Deck	2ST2-241019	
1-20-(2)	555-0001-00	Foot, Rubber		K-40

FLAME WORK EXPLODED VIEW

Ref. No.	Parts No.	Description	Identity No.	Source
2-11	511-0001-28	Chassis, Deck		1ST2-241006-28
2-12-(1)	531-0002-01	Stud, Front Panel (B)		4ST2-241239-1
2-12-(2)	531-0003-02	Stud, Front Panel (A)		4ST2-241103-2
2-13	533-0002-01	Bracket, 6-station SW Mount		4ST2-241144-1
2-14-(1)	533-0003-02	Bracket, Panel Mount (C)		4ST2-233007-2
2-14-(2)	533-0004-01	Bracket, Panel Mount (B)		4ST2-241021-1
2-14-(3)	533-0005-00	Bracket, Control Panel Mount		4ST2-241020
2-15-(1)	536-0001-10	Heat Sink		2ST2-241026-10
2-15-(2)	536-0005-02	Shield, Bias PCB		3ST2-241070-2
2-15-(3)	531-0004-00	Stud, Bias PCB		4ST2-241245
2-15-(4)	536-0013-00	Heat Sink (2)		3SE2-241009
2-16-(1)	513-0001-02	Chassis, Head Amp. PCB		2ST2-241033-2
2-16-(2)	* Not used	Stud, Head Amp. PCB		
2-16-(3)	534-0001-00	Lock, Connector		4ST2-241180
2-16-(4)	* Not used	Shield, Head Amp. PCB		
2-16-(5)	533-0038-00	Holder, Muting PCB		4SE2-241068
2-17-(1)	111-1001-80	Power Transformer	PT-1039	SE1B169
2-17-(2)	851-0001-00	PC Board Assy, Head Amp.		PCM-342E
2-17-(3)	851-0002-00	PC Board Assy, Power Supply		SE2D52J2
2-17-(4)	851-0003-00	PC Board Assy, Bias OSC.		PCM-341B
2-17-(5)	851-0004-00	PC Board Assy, Muting		PCM-313E
2-17-(6)	851-0005-00	PC Board Assy, Power Tr.		SE2D52J3
2-18-(1)	511-0002-87	Side Frame, Deck Mount (L)	PCM-319	SE2D51J4
2-18-(2)	511-0003-87	Side Frame, Deck Mount (R)		1ST2-235016-7
2-18-(3)	511-0004-87	Frame, Front, Deck Mount		1ST2-235004-7
2-18-(4)	511-0005-87	Frame, Rear, Deck Mount		1ST2-235017-7
2-18-(5)	511-0006-00	Angle, Blind		2ST2-241028
2-18-(6)	511-0008-80	Bracket, Supporter Mount		4ST2-241308
2-18-(7)	532-0001-01	Spacer, Supporter Bracket		4ST2-235037-1
2-18-(8)	533-0036-00	Holder, 20-P Connector		4ST2-235032
2-18-(9)	513-0002-00	Frame, Power Supply Chassis		3ST2-235006
2-18-(10)	533-0017-00	Holder, Remote Control Socket		4SE2-241018
2-18-(11)	533-0014-01	Holder, Heat Sink		4SE2-241057-1
2-19-(1)	134-2001-00	Connector, 10-P		251-10-50-169M
2-19-(2)	133-2001-00	Connector, 10-P		250-10-50-179M
2-19-(3)	133-6001-00	Connector, 18-P		250-18-50-179M
2-19-(4)	133-2001-00	Connector, 10-P		250-10-50-179M
2-19-(5)	134-6001-00	Connector, 18-P		251-18-50-169M
2-19-(6)	134-2001-00	Connector, 10-P		251-10-50-169M
2-19-(7)	132-0001-00	Connector, 20-P		MR-20MH (F)
2-19-(8)	136-7001-00	Socket, Remote Control 1:1P		SA-602B-D0
2-19-(9)	136-2001-00	Socket, Transistor TD-3		S2-104W-05
2-19-(10)	536-0014-00	Transistor		2SC-793Y
2-19-(11)	536-0002-00	Mylar Sheet, 2SC-793Y		SE1B078
2-19-(12)		Mylar Sheet, 2SD-234Y		
2-21	162-1001-00	U.S.A. TYPE		ST9B178
2-22	537-0002-00	AC Cord with Plug		SE1B014
2-23	554-0003-02	Stopper, Cord	4N-4	4ST2-241200-2
2-24	135-7001-00	Chassis (A), Power Supply		SE0B159
2-25	138-1001-00	Holder, Fuse	FH-001	ST8B091
		Fuse, 3 Amp.	MF-6ML-3A	

AMP EXPLODED VIEW (1)

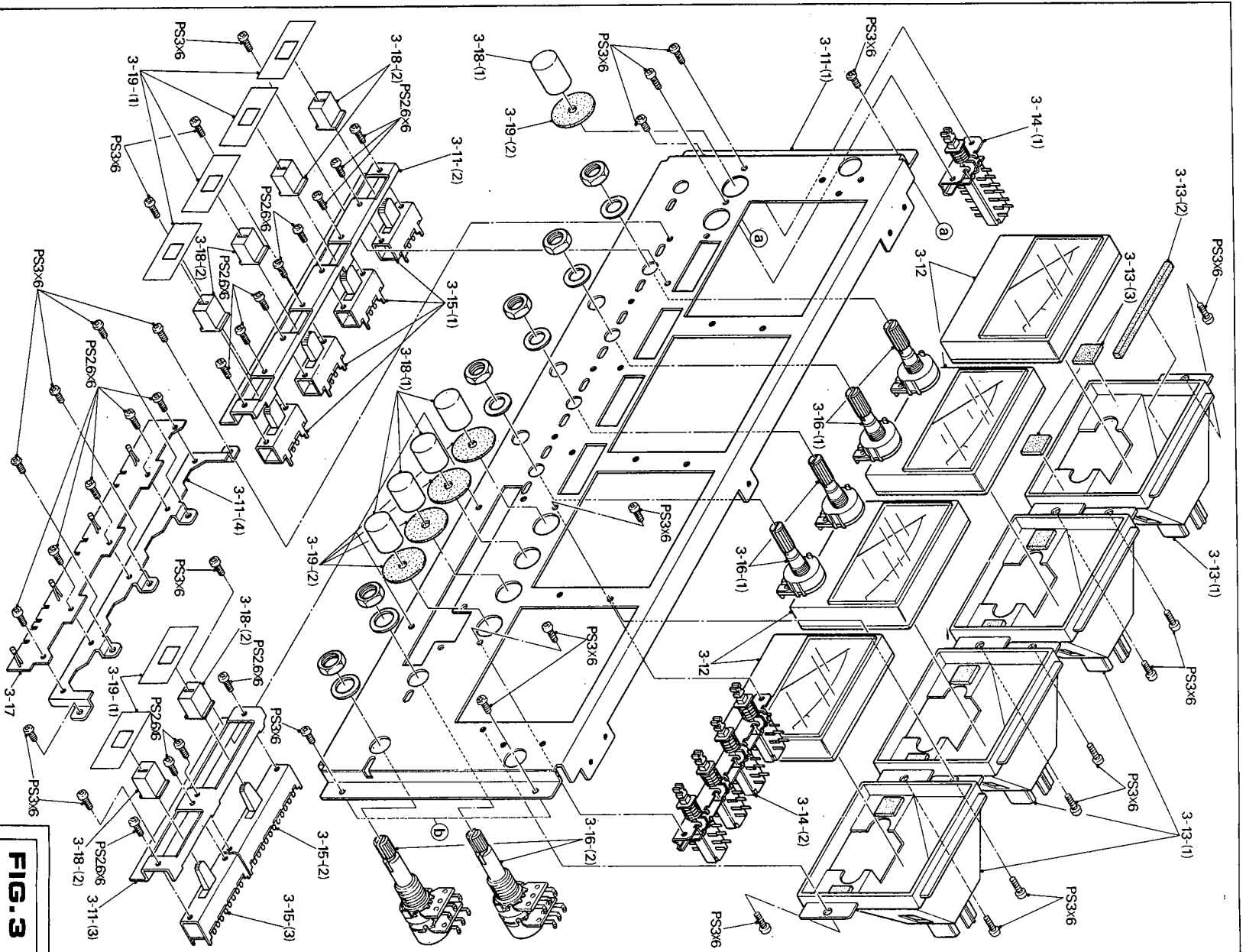


FIG. 3

AMP EXPLODED VIEW (1)

Ref. No.	Parts No.	Description	Identity No.	Source
3-11-(1)	512-0001-07	Chassis, Front, Amp.		2ST2-241042-7
3-11-(2)	533-0008-00	Bracket, Mic/Line SW Mount		4ST2-241320
3-11-(3)	533-0009-00	Bracket, EQ/Test Gen. SW Mount		4ST2-241318
3-11-(4)	533-0010-00	Bracket, Peak Indicator Mount		3ST2-241101
3-12	141-1001-00	Level Meter	MG-13F	SE1B179
3-13-(1)	536-0003-00	Lamp Shade		3ST2-241013
3-13-(2)	535-0001-03	Cushion Rubber (3), Meter		4ST2-241201-3
3-13-(3)	535-0002-01	Cushion Rubber (4), Meter		4ST2-241232-1
3-14-(1)	131-1001-00	Switch, Mode Select, 2/4-Ch.	1F-0003AF2010	SE1B005
3-14-(2)	131-1002-00	Switch, Tape/Source Monitor, 4-station	4FS-8U-85-1	SE0B-032
3-15-(1)	131-6001-00	Switch, Slide, Mic/Line Select	SL-222B4	SE1B095
3-15-(2)	131-6002-00	Switch, Slide, EQ Select	SL-282B4	SE1B172
3-15-(3)	131-6003-00	Switch, Slide, Test Gen. On/Off	SL-262B4	SE1B171
3-16-(1)	370-5036-90	Control, Single, Mic/Line	VM-10A100KB	SE2B008
3-16-(2)	360-1046-90	Control, Play Back, 2-gang, Non-friction	DM-10A50KB	SE1B057
3-17	871-0001-00	PC Board Assy, LED	PCM-349	SE2D71J7
3-18-(1)	556-0013-82	Push Button, Round, Metal		4ST2-241252-2
3-18-(2)	556-0003-00	Knob, Slide SW, Metal		4ST2-241126
3-19-(1)	555-0010-00	Blind Cloth, Slide SW		4ST2-242018
3-19-(2)	555-0017-00	Blind Cloth, Push SW		4SE2-241025

