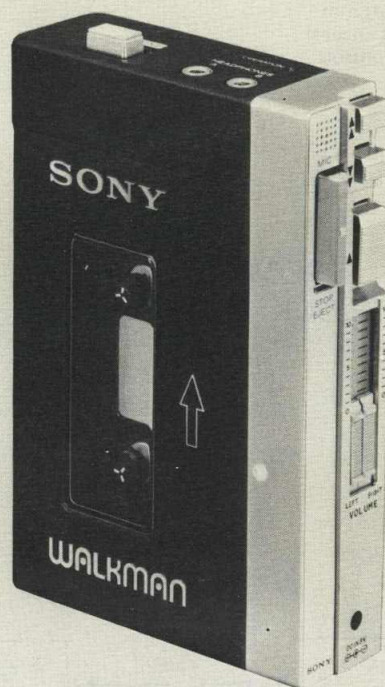
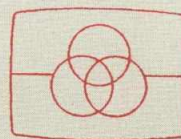


WM-3



UK Model
AEP Model
US Model
Canadian Model
E Model



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STEREO CASSETTE PLAYER

SPECIFICATIONS

Tape Track:	4 track 2-channel stereo
Fast Winding Time:	Approx. 2 min. 30 sec. with Sony Cassette C-60
Frequency Response:	40–14,000 Hz (with the TAPE selector set to METAL/CrO ₂) 40–12,000 Hz (with the TAPE selector set to NORM)
Power Output:	30 mW x 2 (max.) 20 mW x 2 (at 10 % harmonic distortion) with headphones having impedance of 8 Ω at dc operation
Outputs:	Two headphone jacks (stereo minijacks) load impedance 8 Ω or higher, and 300 Ω or lower
Power Requirements:	3 V dc Internal batteries: IEC designation R6 (size AA) x 2 External batteries (used in the supplied battery case): IEC designation R20 (size D) x 2 Optional Sony BP-33 rechargeable battery pack AC power adaptor: Refer to the following chart to choose the correct adaptor for your area.

country	ac power line voltage	optional ac power adaptor
U.S.A. and Canada	120 V ac, 60 Hz	AC-39 available in U.S.A. and Canada
the United Kingdom	240 V ac, 50 Hz	AC-37 available in the United Kingdom
European countries	220 V ac, 50 Hz	AC-37 available in European countries
other countries	120 V ac (110, 220 or 240 V ac, adjustable by Sony personnel), 50/60 Hz	AC-38 available in Japan
	110, 120, 220 or 240 V ac, adjustable, 50/60 Hz	AC-38 available in other countries

12 V car battery with optional Sony DCC-127A car battery cord (for connection with the DCC-127A, the optional PC-200 plug adaptor is required.)

— Continued on page 2 —

SONY[®]
SERVICE MANUAL

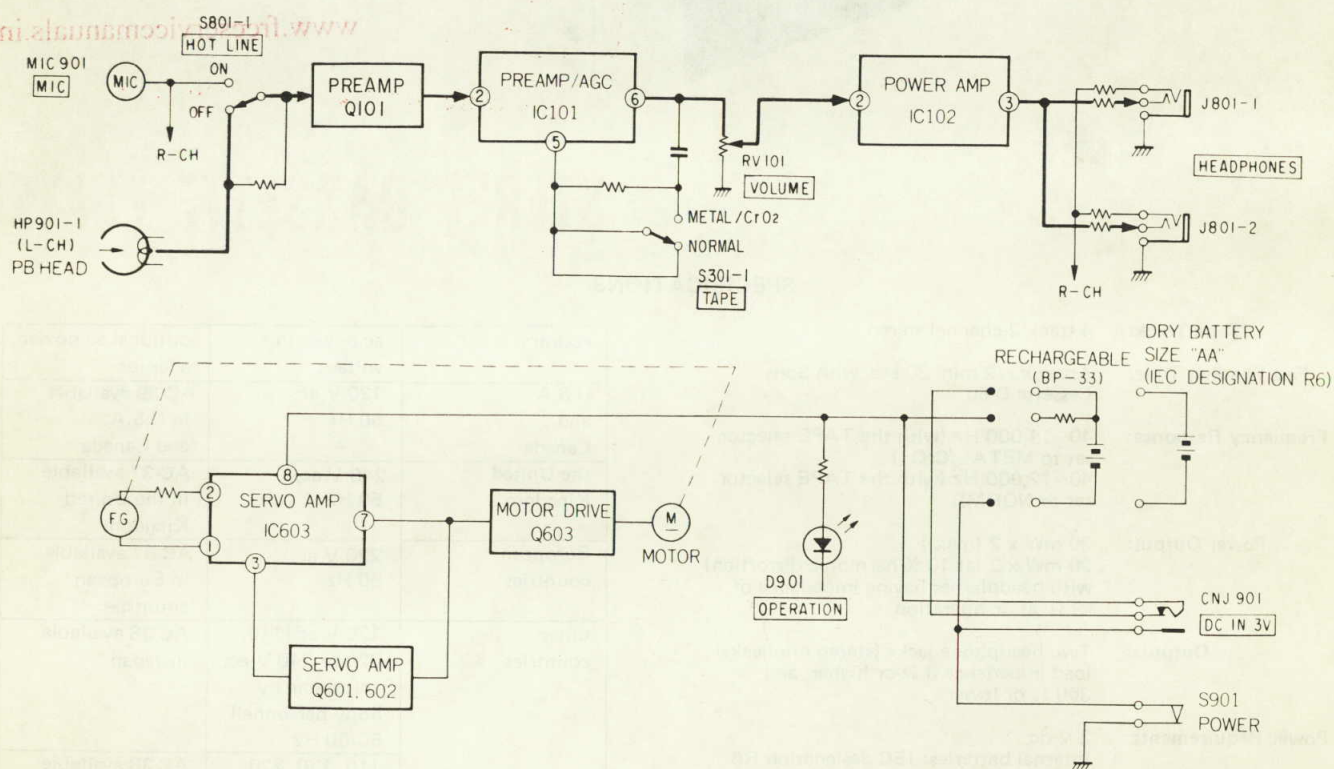


WM-3

Dimensions: Approx. 88 (w) x 133.5 (h) x 29 (d) mm
 (3½ (w) x 5¼ (h) x 1¼ inches)
 not including projecting parts and controls

Weight: Approx. 390 g (13⅞ oz)
 including batteries

SECTION 1 BLOCK DIAGRAM

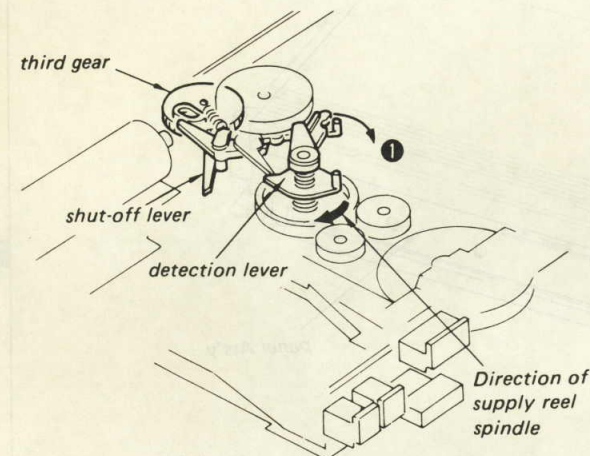


SECTION 2 OPERATION DESCRIPTION

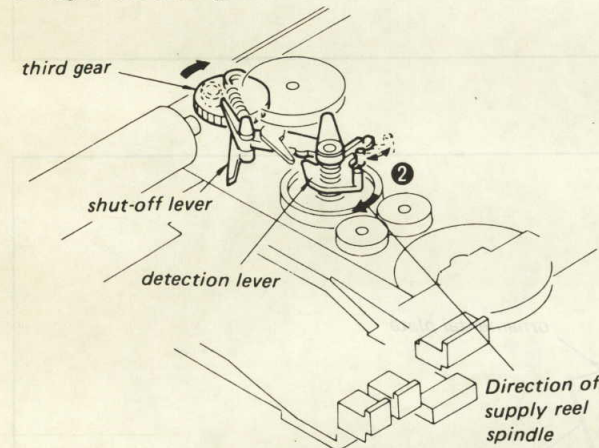
AUTOMATIC SHUT-OFF MECHANISM

• During PLAY operation

While the supply reel is rotating, the detection lever is always pulled in direction ①.



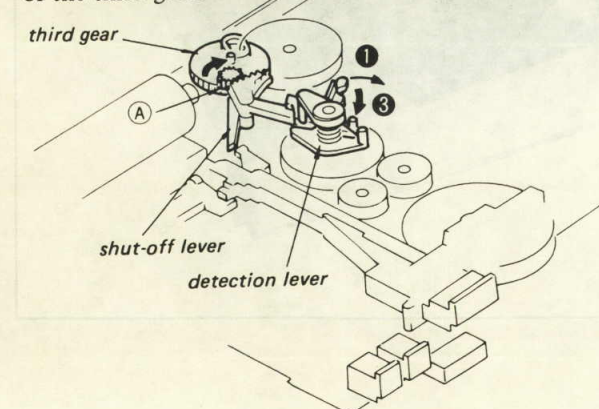
The shut-off lever is repeating the ② motion owing to the third gear rotation.



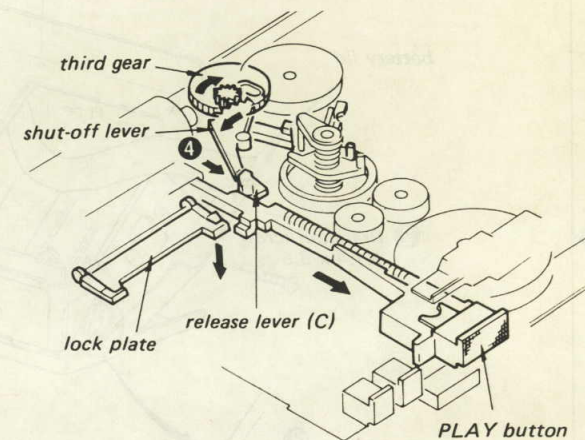
• When the supply reel spindle stops: (end of the tape)

The detection lever is not pulled in direction ① but moves in direction ③ owing to the third gear rotation.

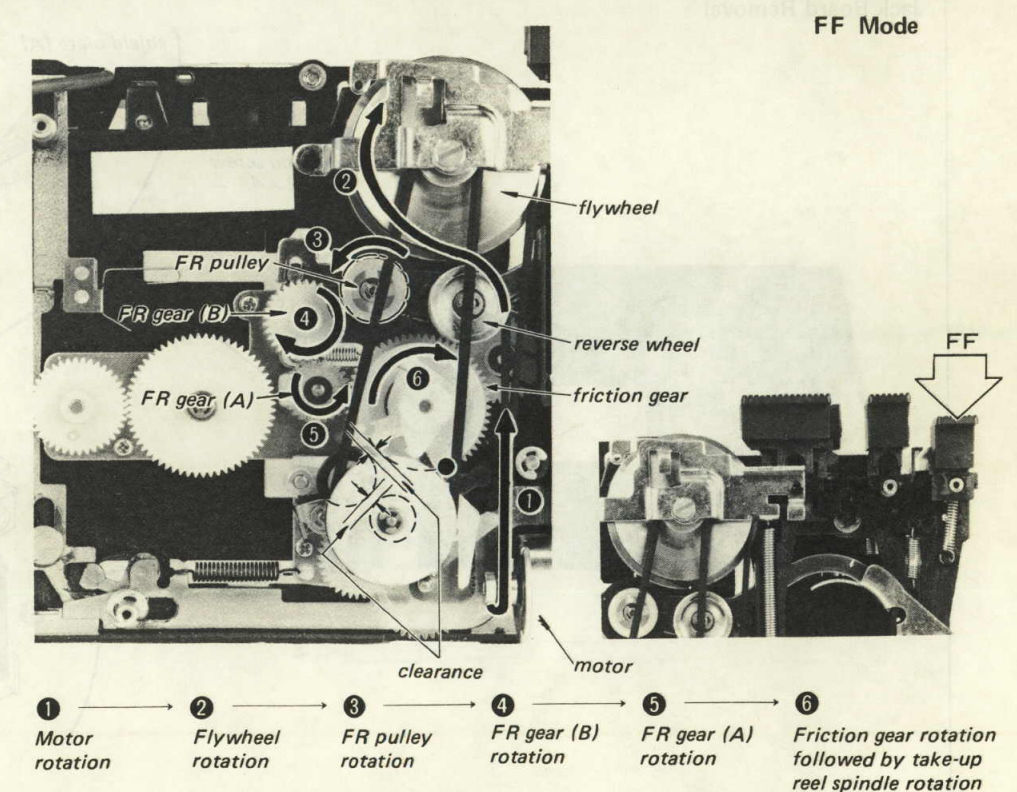
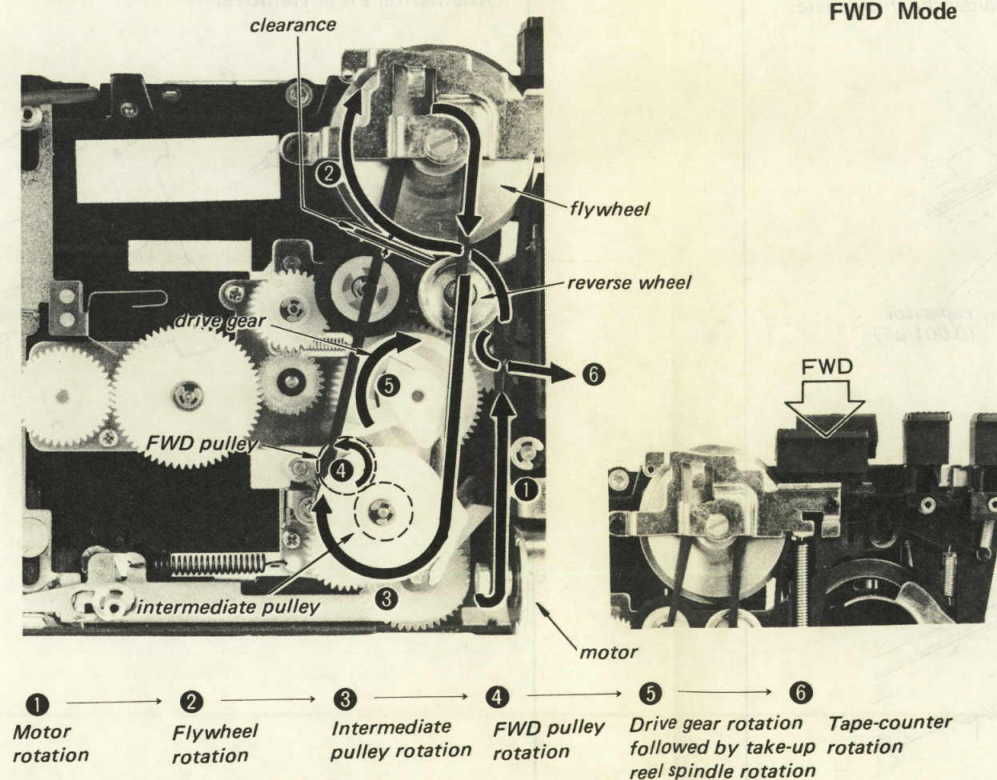
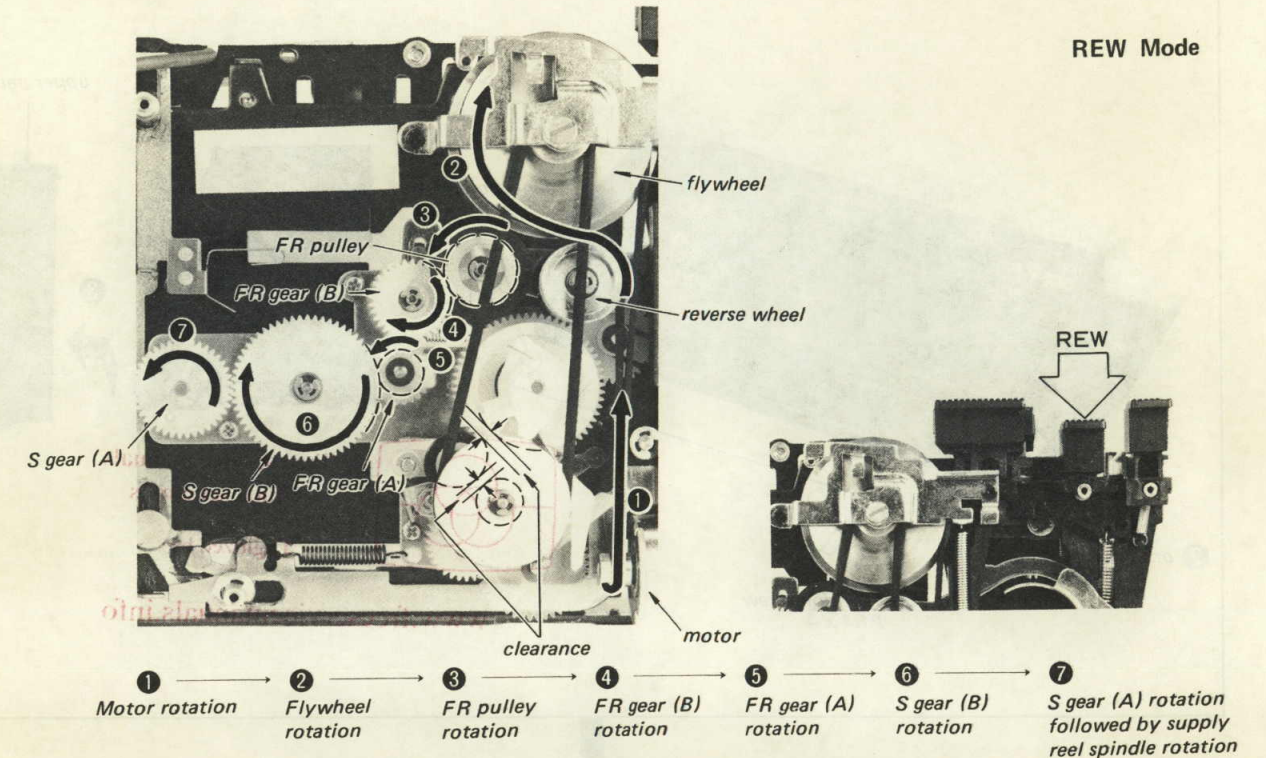
The teeth of the shut-off lever mesh with the teeth of the third gear.



As the third gear turns further, the shut-off lever moves in direction ④, pushing the release lever (c) and releasing the PLAY button.



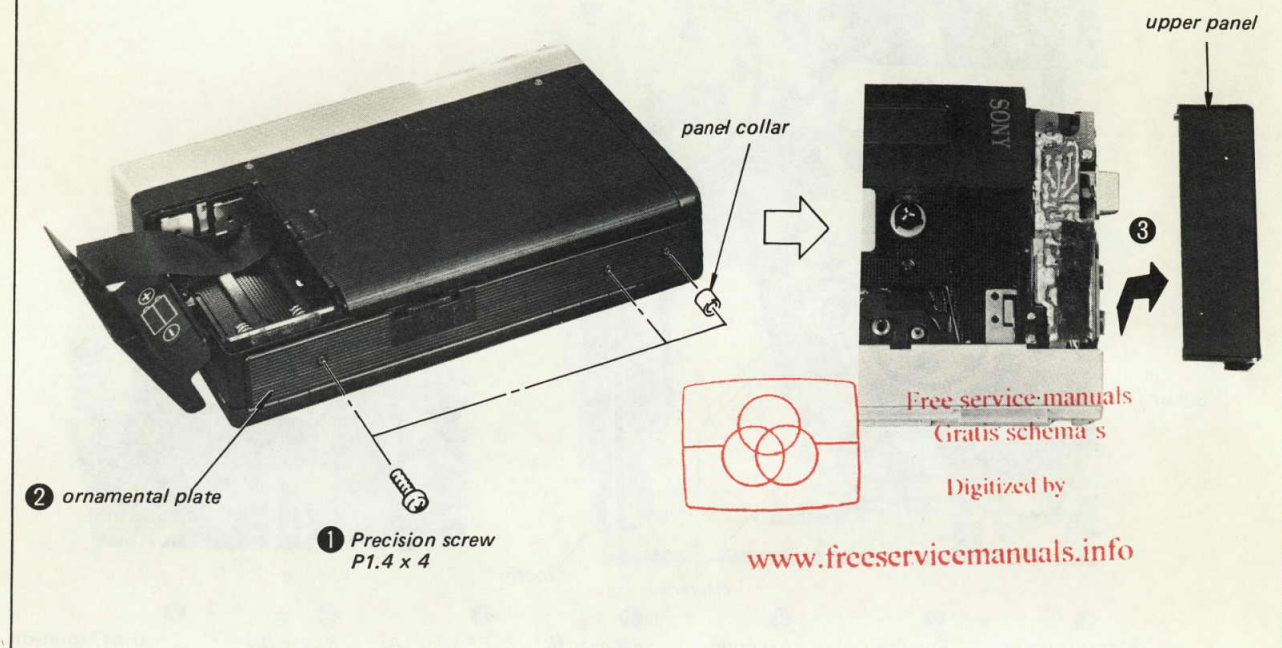
DIRECTION OF ROTATION



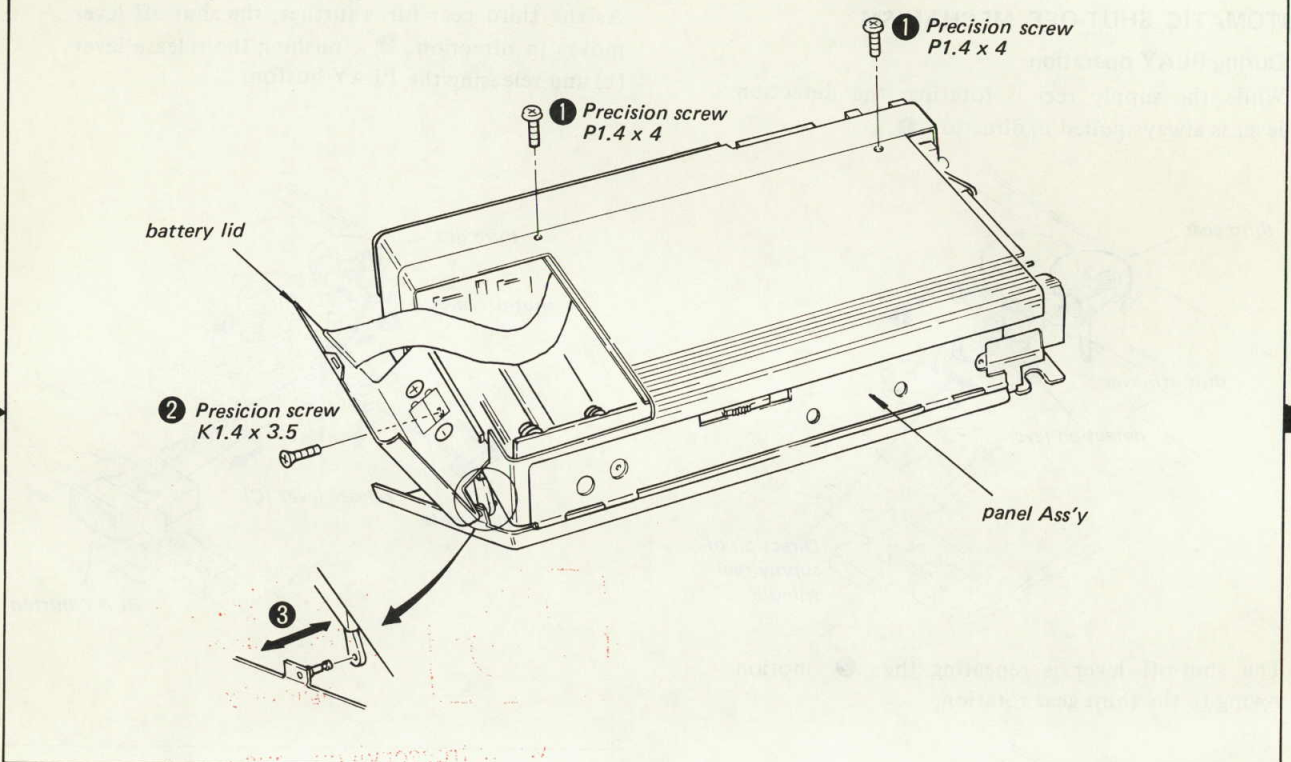
SECTION 3 DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

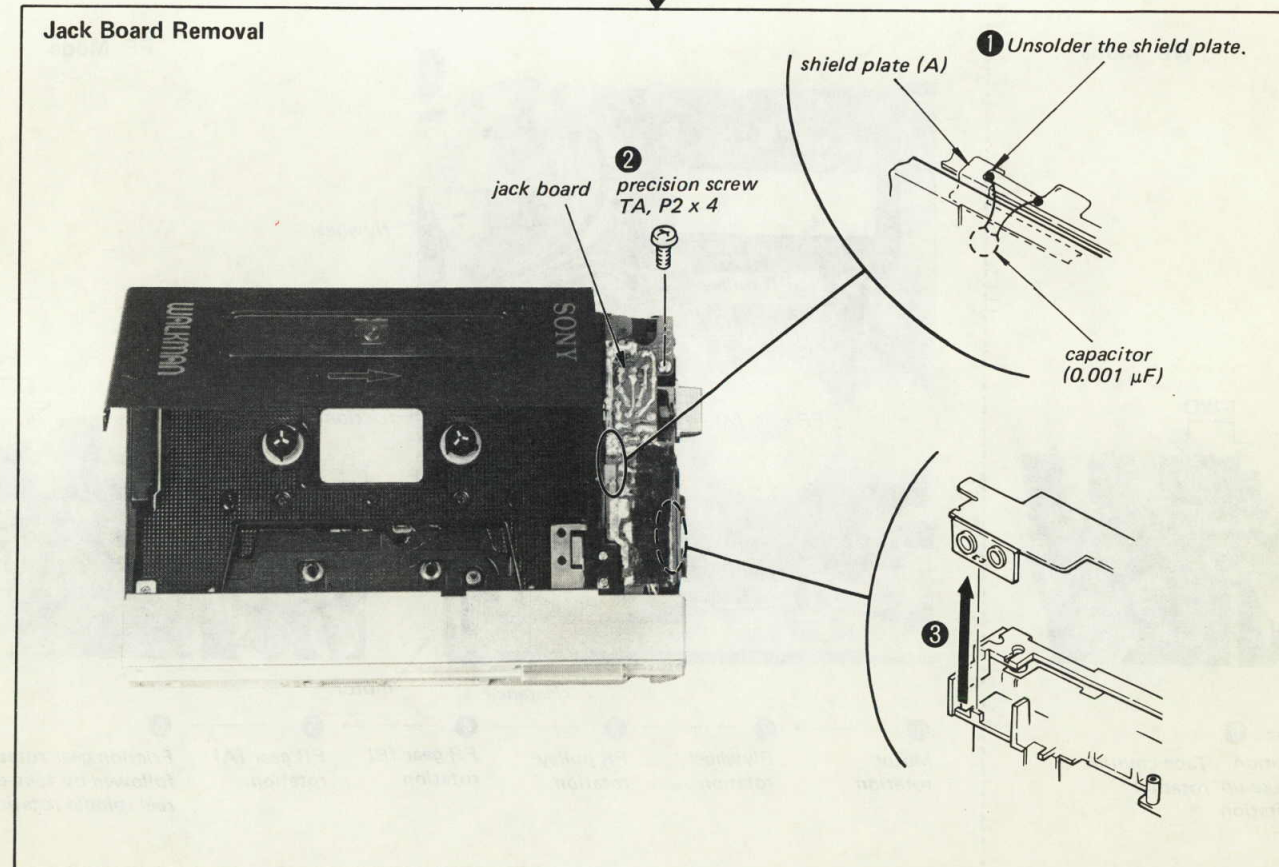
Panel Ornamental Plate and Upper Panel Removal



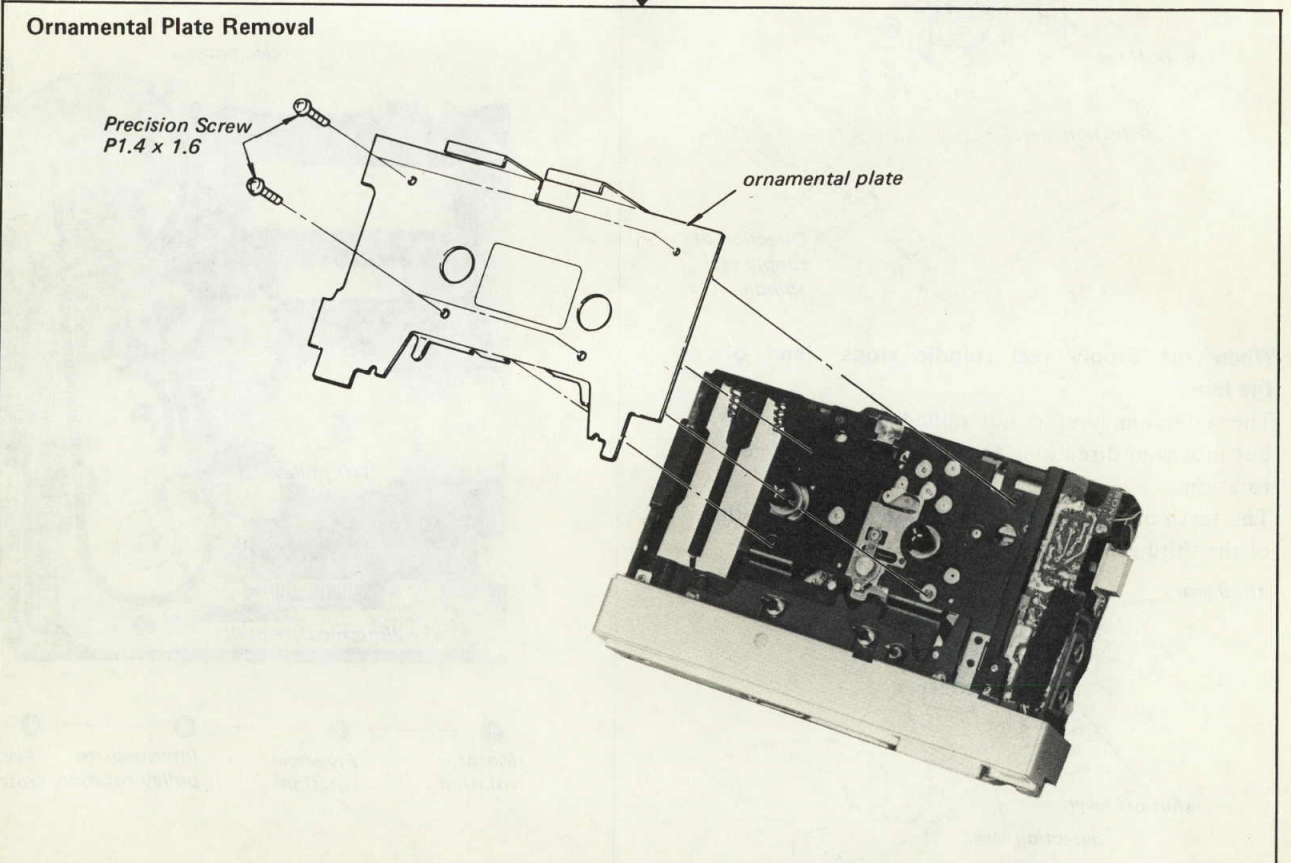
Panel and Battery Lid Removal



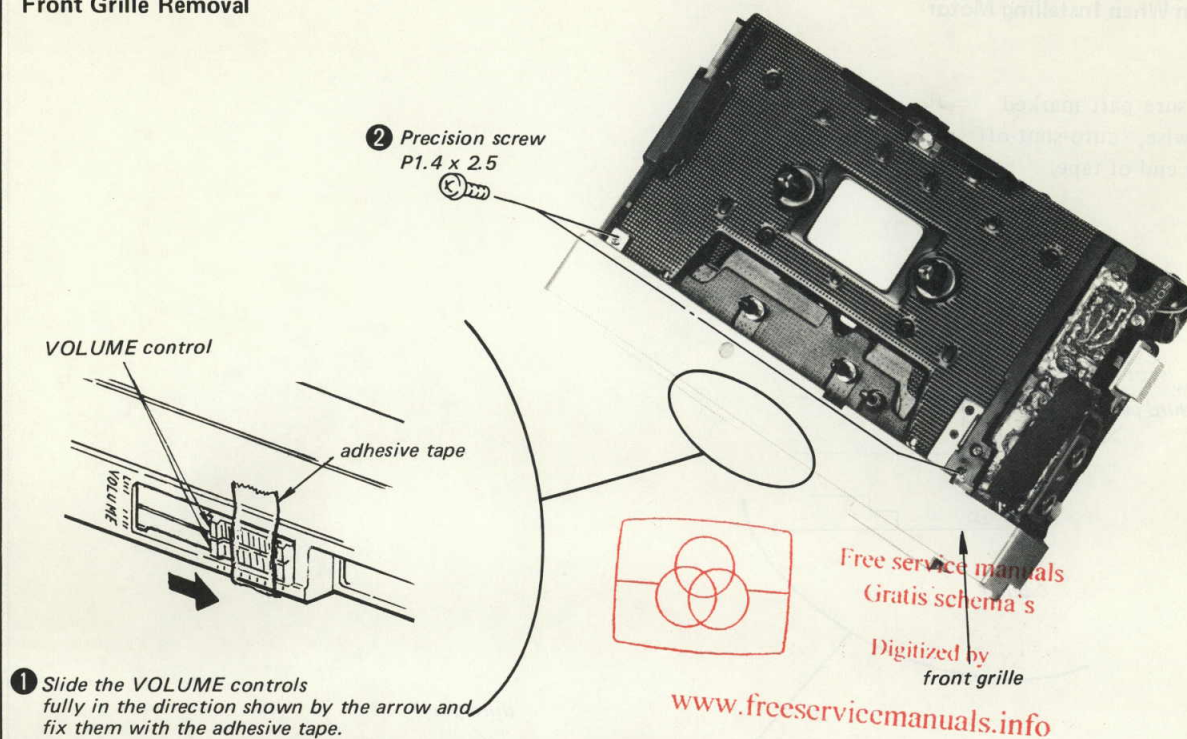
Jack Board Removal



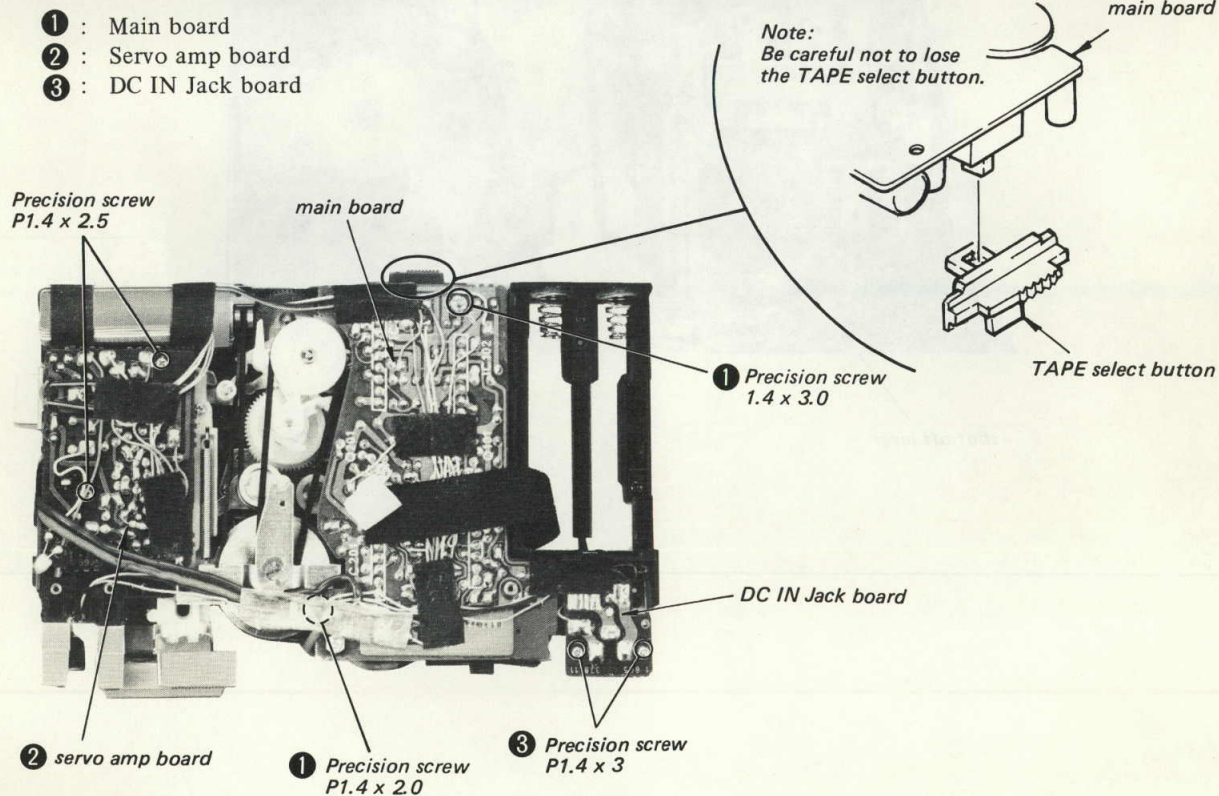
Ornamental Plate Removal




Front Grille Removal

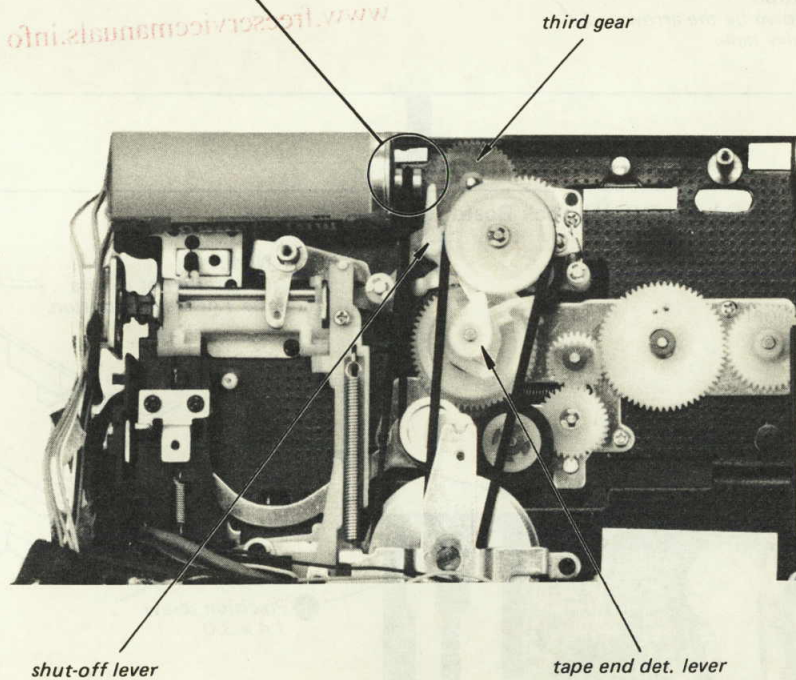
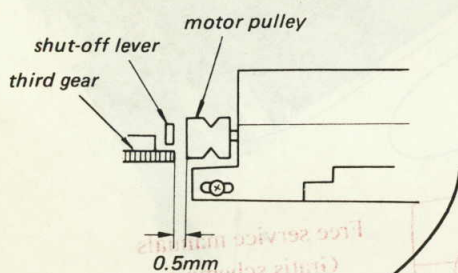


Main Board, Servo Amp Board and DC IN Jack Board Removal



WM-3**Caution When Installing Motor**

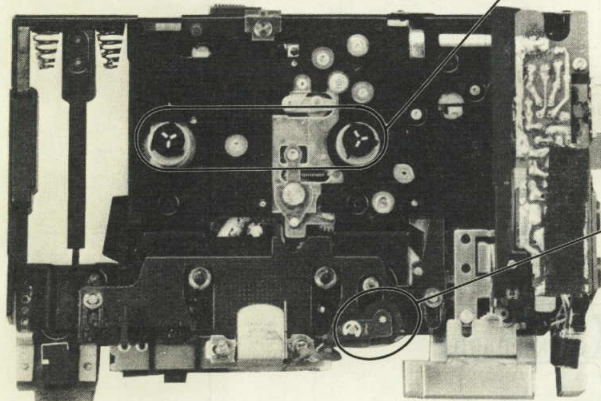
Make sure part marked  is just 0.5mm long. Otherwise, auto-shut-off mechanism may operate before end of tape.



SECTION 4
ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab:
playback head pinch roller
rubber belts
capstan idlers
2. Demagnetize the playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.



4-1. MECHANICAL ADJUSTMENTS

Torque Measurement

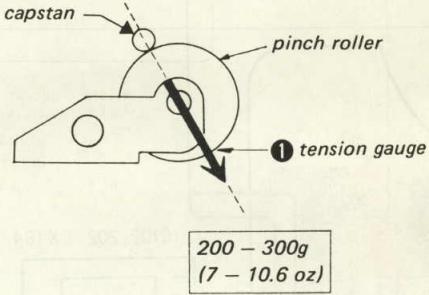
Power Supply Voltage: 2.5V dc

	SONY torque meter	Meter reading
FWD	CQ-102B	22.5 - 45g-cm
FF, REW CUE, REV	CQ-201B	more than 55g-cm
Back tension	CQ-102B	1.0 - 3.5g-cm

Pinch Roller Pressure Measurement

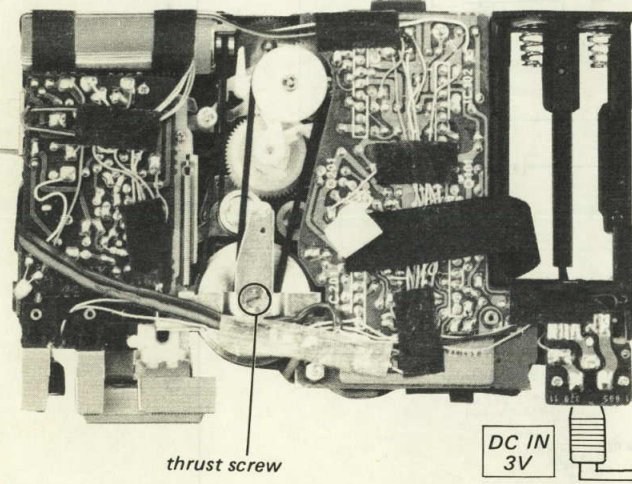
Mode: playback

2. Slowly return the pinch roller and read the tension gauge just when the pinch roller starts rotating.

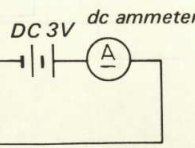


Flywheel Thrust Play Adjustment

— Playback Mode —



1. Turn the thrust screw counterclockwise until the screw tip leaves from the flywheel shaft.
2. Gradually turn the thrust screw clockwise to the position where the motor current suddenly increases.
3. Then, turn the thrust screw counterclockwise about 1/4 turn from the position obtained in step 2.
4. Secure the thrust screw with locking compound.



4-2. ELECTRICAL ADJUSTMENTS

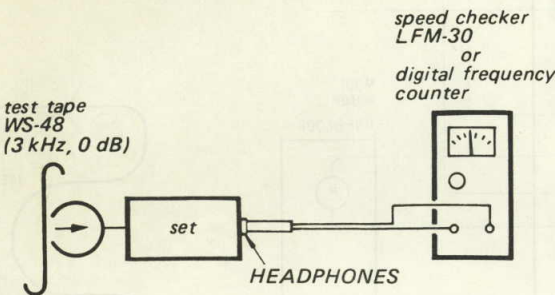
Tape Speed Adjustment

Setting:

VOLUME control: mechanical mid

Procedure:

Mode: playback

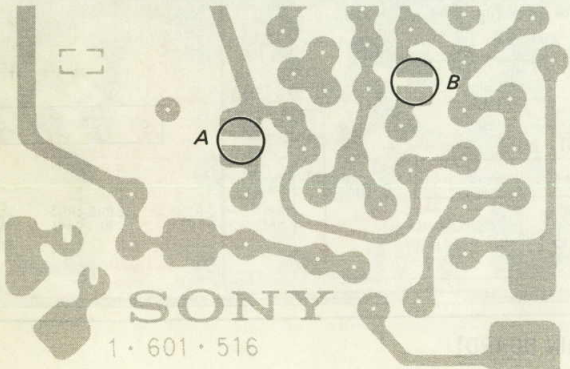
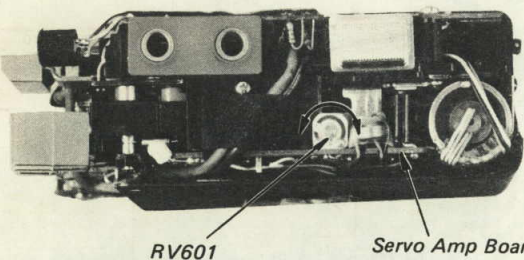


Specification:

Speed checker	Digital frequency counter
-4% - +2%	2,880 - 3,060 Hz

- 1) Connect the patterns marked "A" before this adjustment.
- 2) When adjustment is impossible by turning RV601, connect the patterns marked "B".

Adjustment Location:

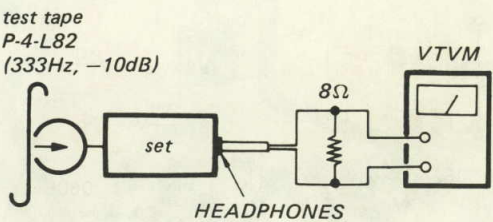


Playback Level Adjustment

Setting:

VOLUME: maximum

Procedure:

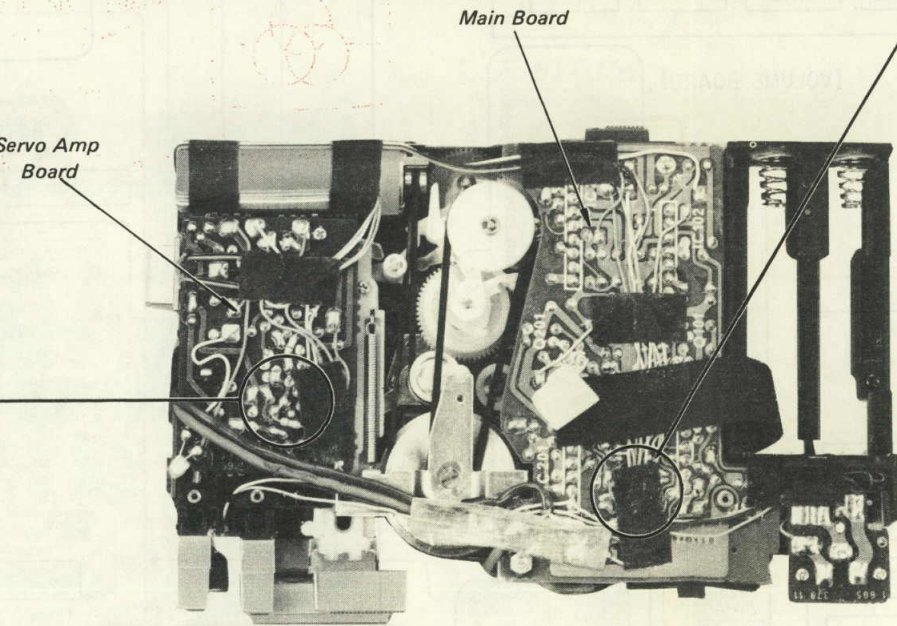
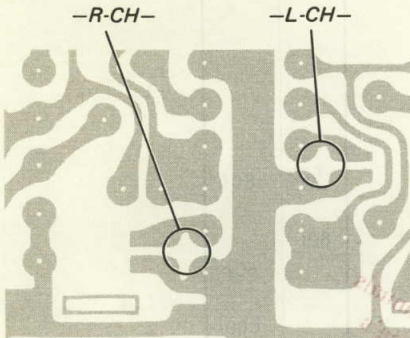


Specification:

Level difference between channels:
less than 3dB

- 1) In case the specification is not met, connect the patterns of channel indicating higher level.
- 2) Check that the HEADPHONES levels do not change in playback mode while changing the mode from playback to stop several times.

Adjustment Location:



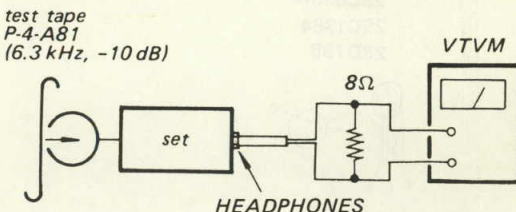
Playback Head Azimuth Adjustment

Setting:

VOLUME control: mechanical mid

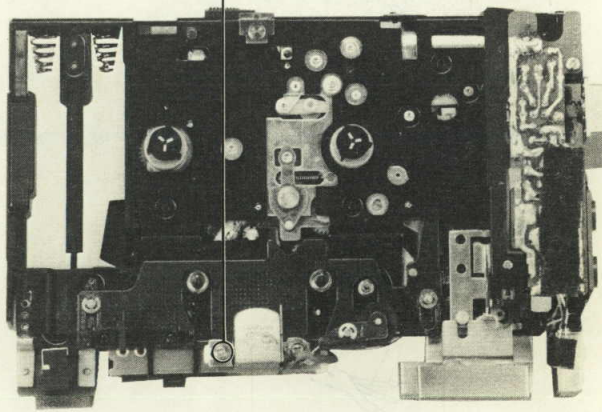
Procedure:

1. Mode: playback



2. Turn the adjustment screw for maximum VTVM reading.

Note: • Several peaks may appear, but take the maximum.
• Finish turning the adjustment screw clockwise direction.

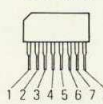


SECTION 5 DIAGRAMS

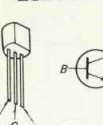
5-1. MOUNTING DIAGRAM — Conductor Side —

Semiconductor Lead Layouts

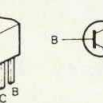
CX182
CX183
CX184



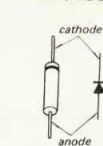
2SC633A
2SC1364
2SD788



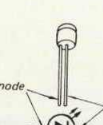
2SC2458



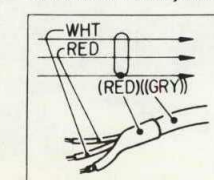
1T40
1S1555



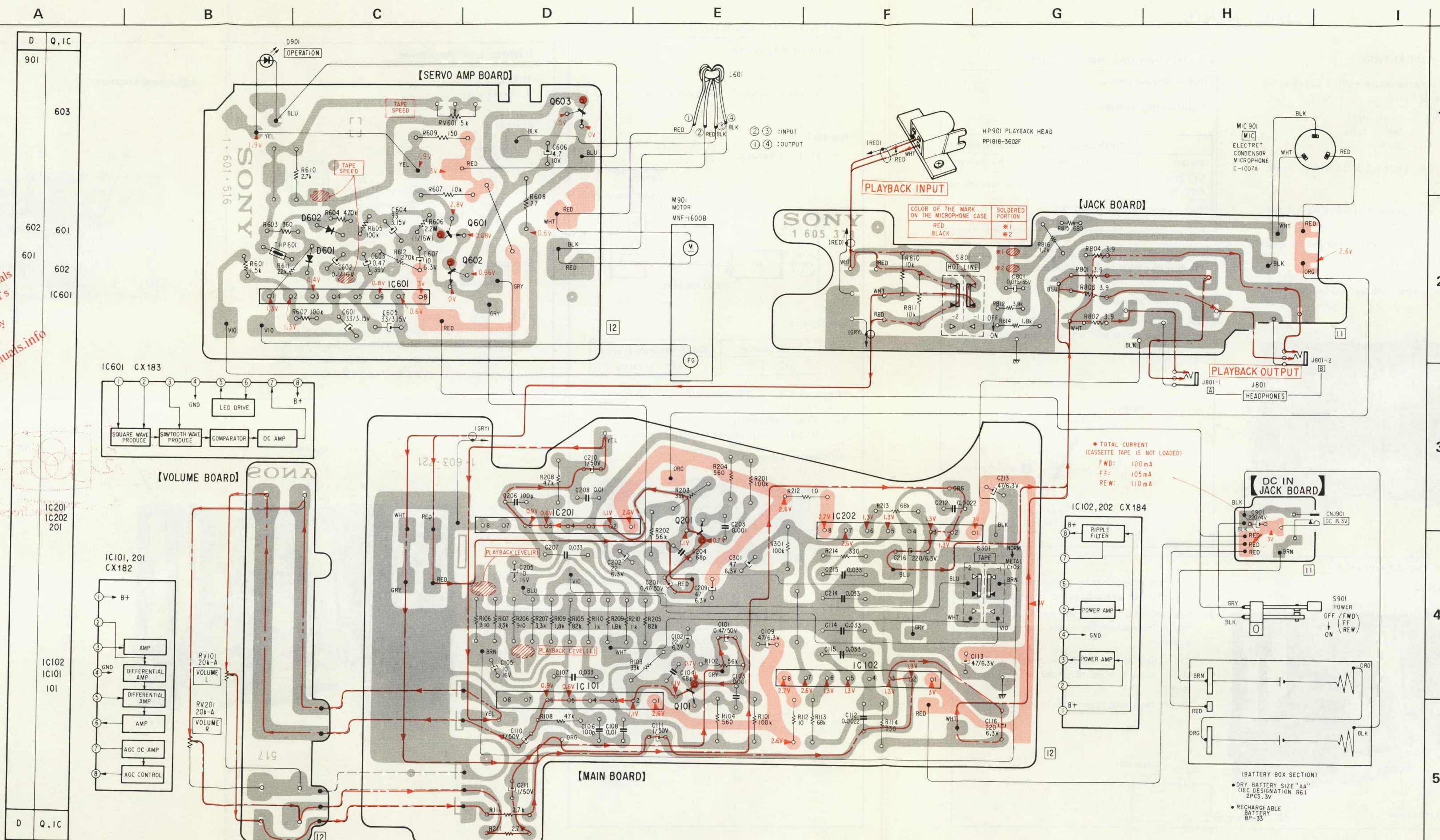
TLR109



- Color code of sleeving over the end of the jacket.

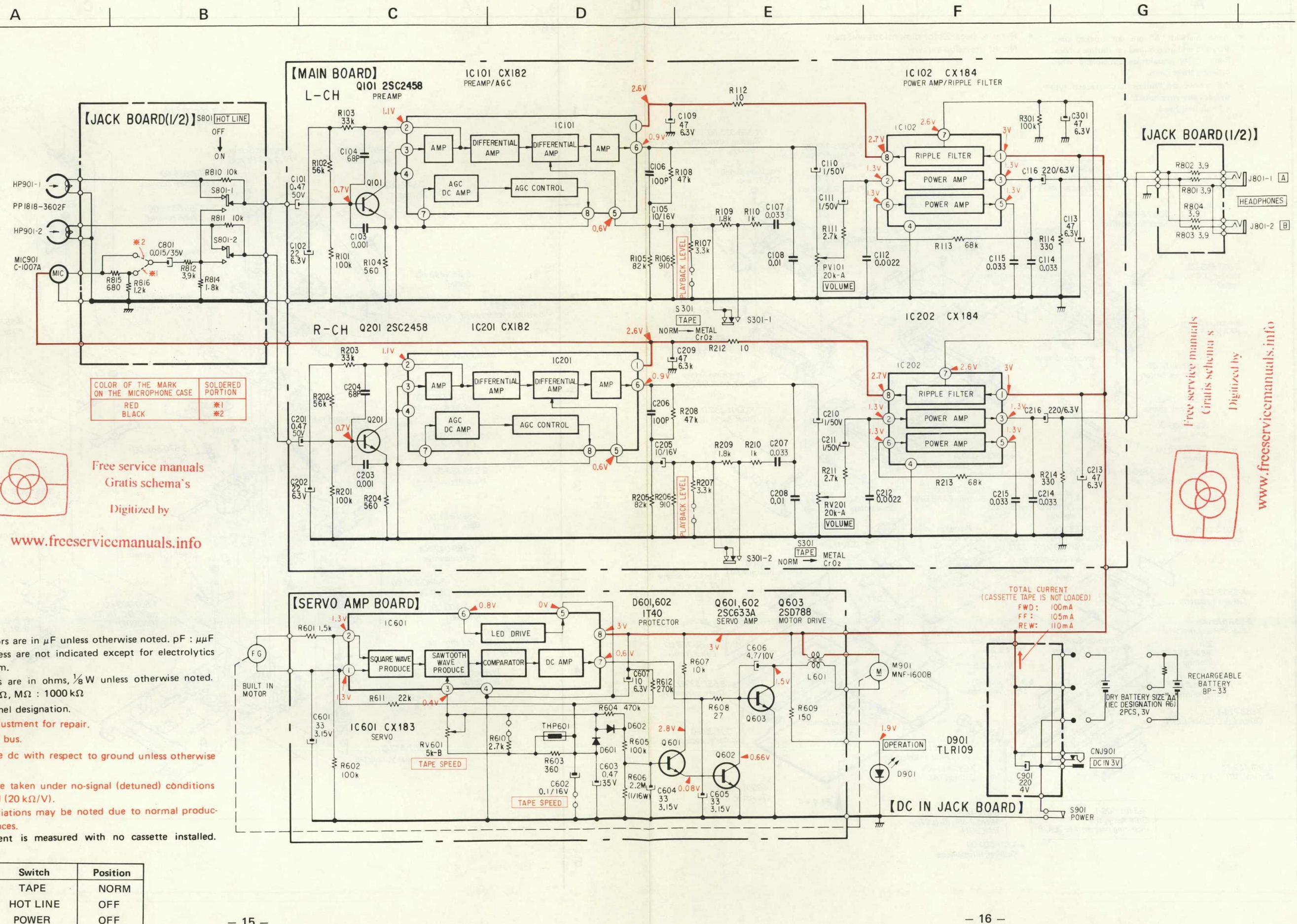


- : B+ pattern
- : signal path
- : L-CH signal path
- : R-CH signal path



WM-3 WM-3

5-2. SCHEMATIC DIAGRAM



SECTION 6

EXPLODED VIEWS

A

B

C

D

A

B

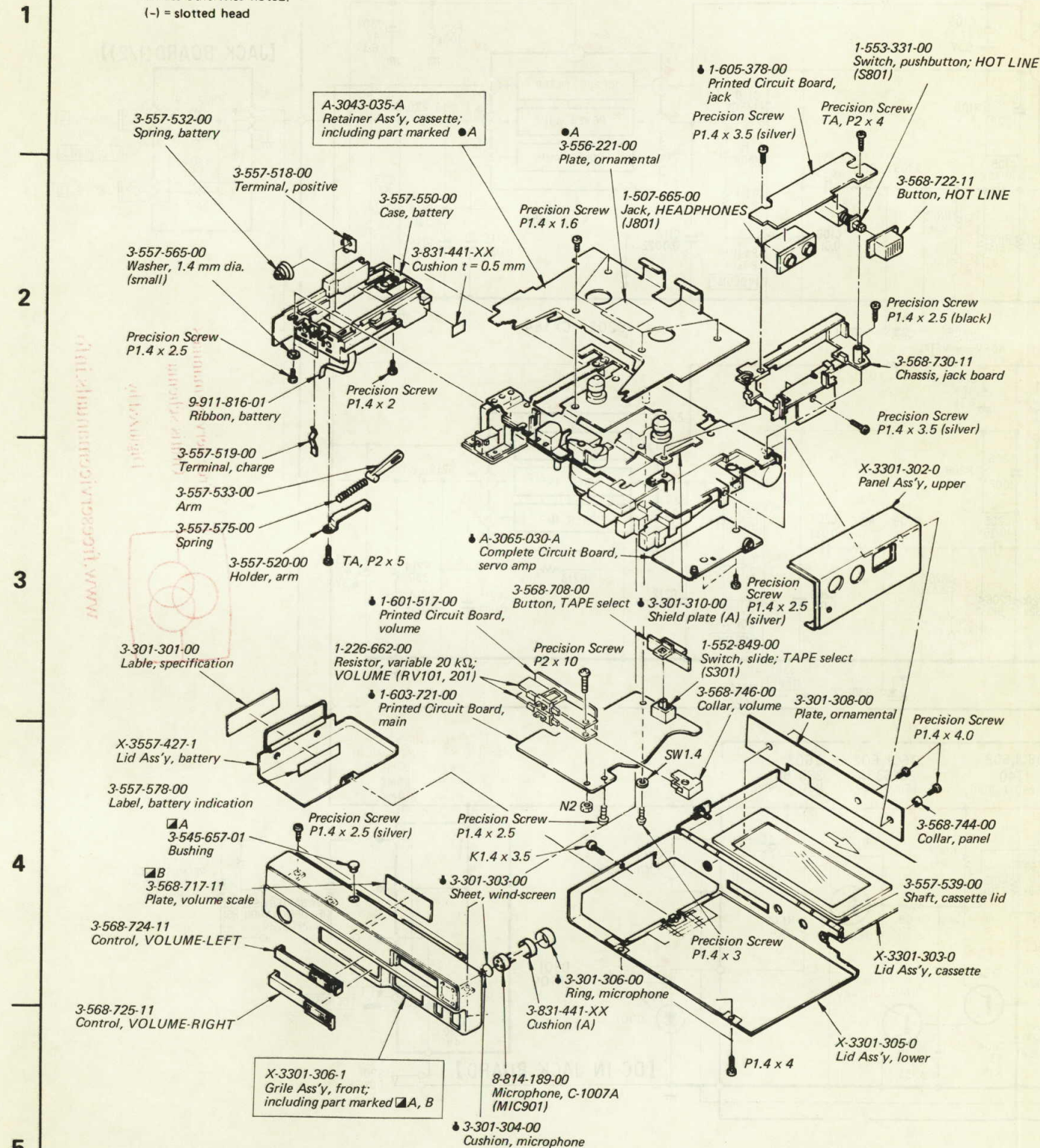
C

D

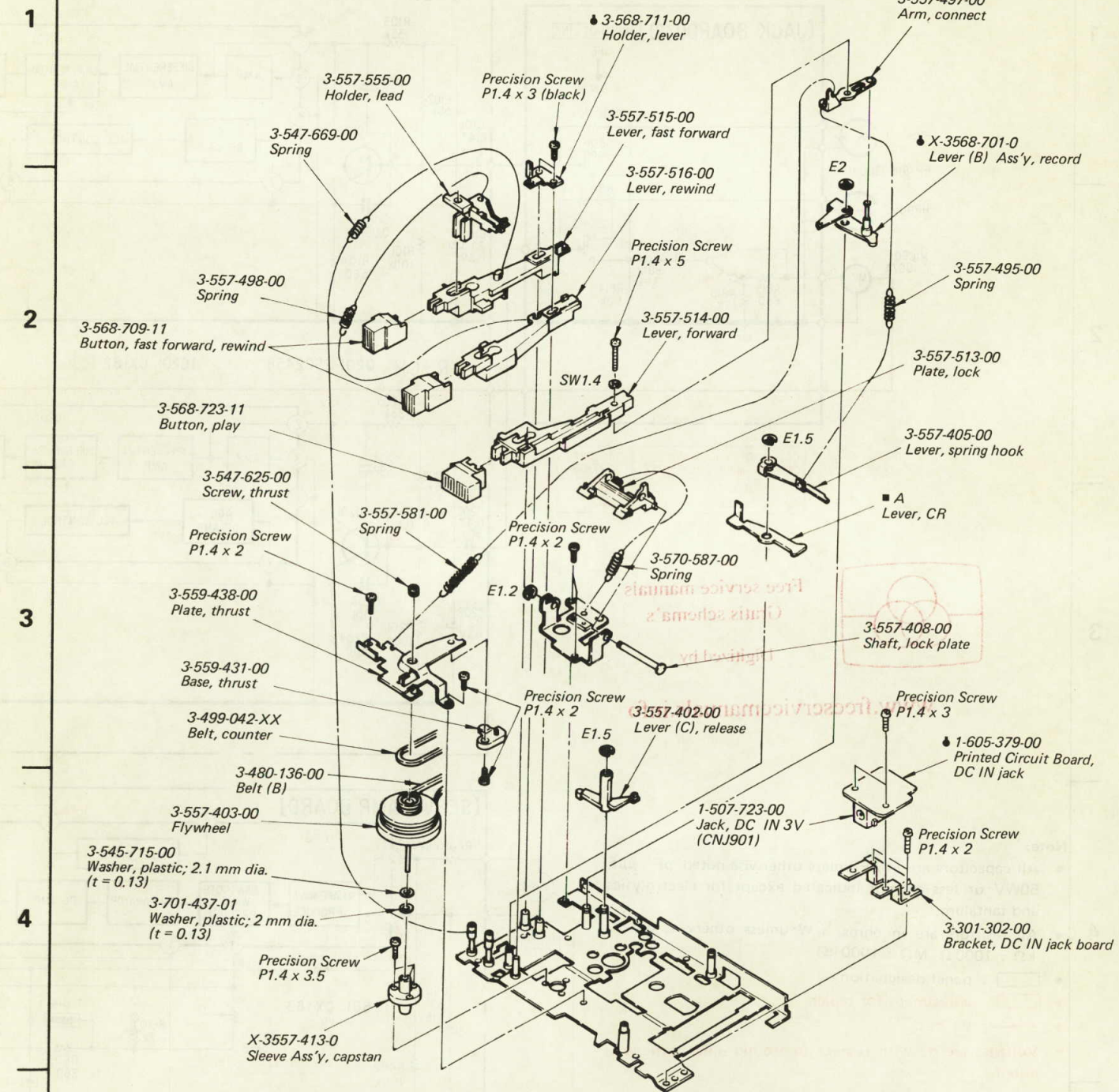
6-1. Note:

Note:

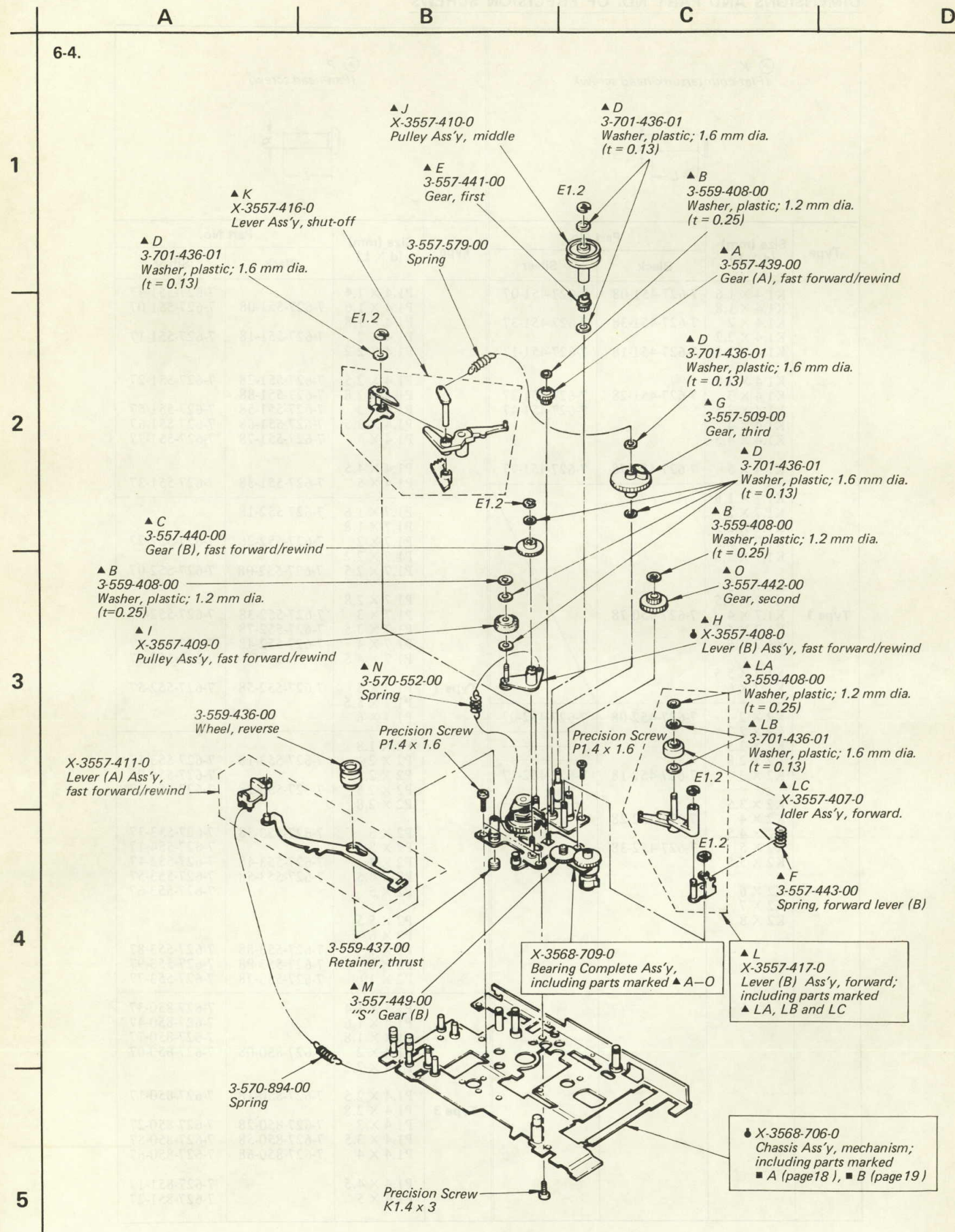
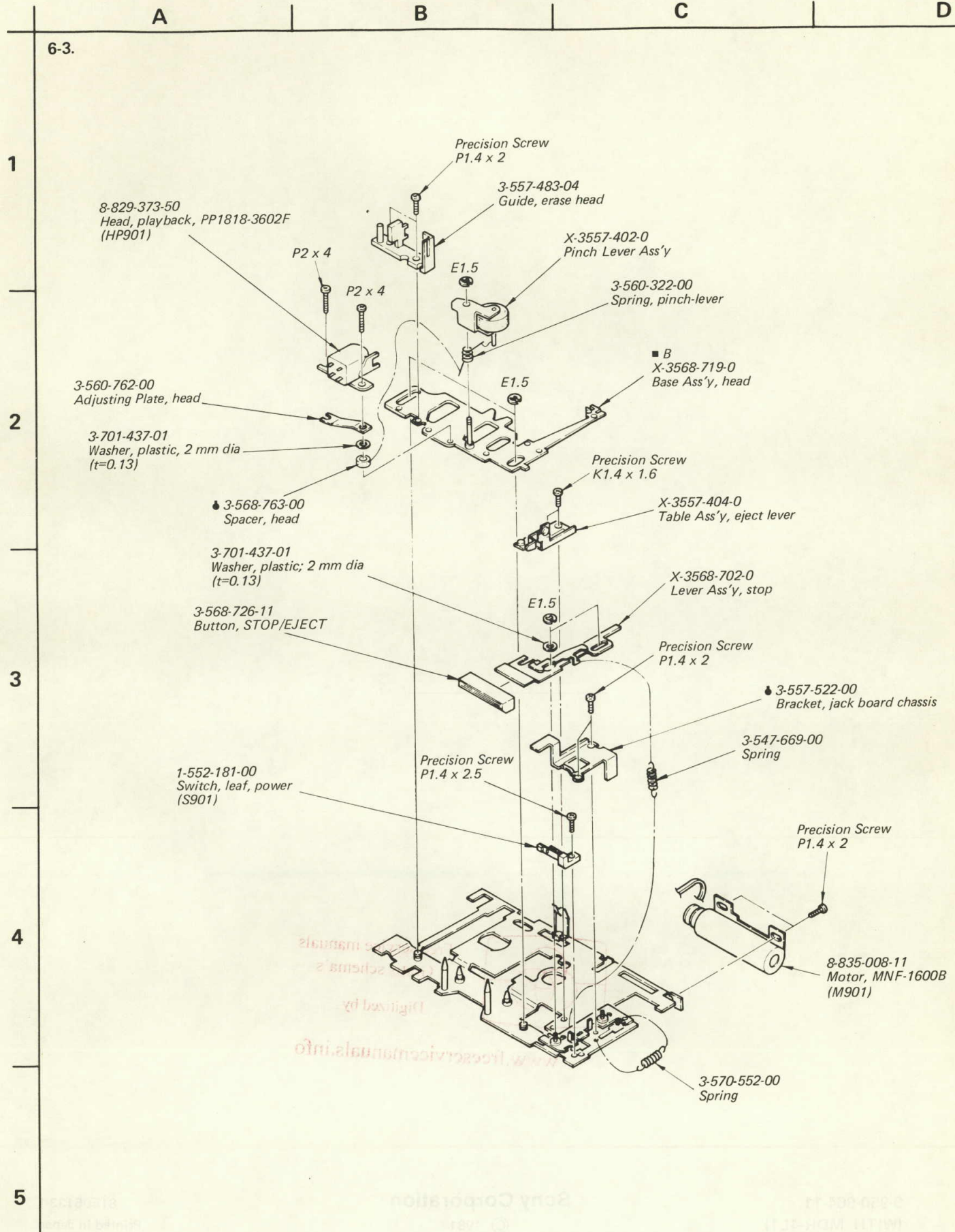
- Items marked "●" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All screws are Phillips (cross recess) type unless otherwise noted.
(-) = slotted head
- Refer to page 23 for dimensions and part No. of precision screws.



6-2.



SECTION 7
ELECTRICAL PARTS LIST



Ref. No.	Part No.	Description
SEMICONDUCTORS		
Transistors		
Q101, 201	8-729-245-83	2SC2458
Q601, 602	8-729-663-47	2SC1364
Q603	8-729-378-84	2SD788
ICs		
IC101, 201	8-751-820-00	CX182
IC102, 202	8-751-840-00	CX184
IC601	8-751-830-02	CX183
Diodes		
D601, 602	8-719-815-55	1S1555
D901	8-719-801-09	TLR109
CAPACITORS		
All capacitors are in μ F. 50WV or less are not indicated except for electrolytics and tantalums. p : μ F, elect : electrolytic		
C101, 201	1-131-455-00	0.47 16V solid aluminum
C102, 202	1-123-618-00	22 6.3V elect
C103, 203	1-101-001-00	0.001 ceramic
C104, 204	1-101-888-00	68p ceramic
C105, 205	1-123-617-00	10 16V elect
C106, 206	1-102-106-00	100p ceramic
C107, 207	1-161-019-00	0.033 ceramic (semiconductor)
C108, 208	1-161-013-00	0.01 ceramic (semiconductor)
C109, 209	1-123-647-00	47 6.3V elect
C110, 210	1-123-611-00	1 50V elect
C111, 211		
C112, 212	1-101-002-00	0.0022 ceramic
C113, 213	1-123-647-00	47 6.3V elect
C114, 214	1-161-019-00	0.033 ceramic (semiconductor)
C115, 215		
C116, 216	1-123-296-00	220 6.3V elect
C301	1-123-647-00	47 6.3V elect

Ref. No.	Part No.	Description		
C601	1-131-392-00	33	3.15V	tantalum
C602	1-131-451-00	0.1	16V	tantalum
C603	1-131-345-00	0.47	35V	tantalum
C604, 605	1-131-392-00	33	3.15V	tantalum
C606	1-131-375-00	4.7	10V	tantalum
C607	1-131-383-00	10	6.3V	tantalum
C801	1-131-397-00	0.15	35V	tantalum
C802	1-101-001-00	0.001		tip ceramic elect
C901	1-123-827-00	220	4V	elect
RESISTORS				
Common 1/8W carbon resistors are omitted. Refer to the list on 22 page for their part numbers.				
R606	1-211-697-00	2.2M Ω	1/16W	micro
RV101,201	1-226-662-00	20k Ω -A, variable; VOLUME		
RV601	1-226-488-00	5K Ω -B, adjustable; tape speed		
MISCELLANEOUS				
CNJ901	1-507-723-00	Jack, DC IN 3V		
HP901	8-829-373-50	Playback Head, PP1818-3602F		
J801	1-507-665-00	Jack, HEADPHONES		
L601	1-407-847-00	35 μ H, microinductor		
M901	8-835-008-11	Motor, MNF-1600B		
MIC901	8-814-189-91	Microphone, C-1007A		
S301	1-552-849-00	Switch, slide; TAPE select		
S801	1-553-331-00	Switch, pushbutton; HOT LINE		
S901	1-553-226-00	Switch, leaf; POWER		
THP601	1-800-535-00	Thermistor		
PRINTED CIRCUIT BOARDS				
1-601-517-00	Volume			
1-605-378-00	Jack			
1-605-379-00	Dc in jack			
COMPLETE CIRCUIT BOARDS				
A-3065-030-A	Servo Amp			
A-3068-060-A	Main			

Items marked "A" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

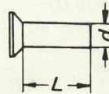
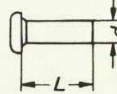
ACCESSORIES AND PACKING MATERIALS

<i>Part No.</i>	<i>Description</i>	<i>Part No.</i>	<i>Description</i>
1-528-052-00	Alkaline Battery, size AA (IEC designation R6)	3-570-631-00	Bag, polyethylene (for cassette-case)
3-568-755-21	Band, shoulder	3-783-622-11	Manual, instruction
3-301-316-00	Case, carrying	3-795-100-11	Sheet, stopper
3-301-312-00	Spacer	3-795-205-11	International Warranty Card
3-301-314-00	Carton, individual	8-893-525-10	Tape, demonstration
3-301-313-00	Cushion		Headphone, MDR-4L1
3-568-782-00	Stopper		
3-527-213-00	Label, serial No.		

1/8 WATT CARBON RESISTOR

Ω	<i>Part No.</i>	Ω	<i>Part No.</i>	Ω	<i>Part No.</i>	Ω	<i>Part No.</i>	Ω	<i>Part No.</i>	Ω	<i>Part No.</i>
2.0	—	13	1-246-821-00	91	1-246-831-00	620	1-246-841-00	4.3k	1-246-851-00	30k	1-246-861-00
2.2	1-246-751-00	15	1-246-761-00	100	1-246-771-00	680	1-246-781-00	4.7k	1-246-791-00	33k	1-246-801-00
2.4	—	16	1-246-822-00	110	1-246-832-00	750	1-246-842-00	5.1k	1-246-852-00	36k	1-246-862-00
2.7	1-246-752-00	18	1-246-762-00	120	1-246-772-00	820	1-246-782-00	5.6k	1-246-792-00	39k	1-246-802-00
3.0	—	20	1-246-823-00	130	1-246-833-33	910	1-246-843-00	6.2k	1-246-853-00	43k	1-246-863-00
3.3	1-246-753-00	22	1-246-763-00	150	1-246-773-00	1.0k	1-246-783-00	6.8k	1-246-793-00	47k	1-246-803-00
3.6	—	24	1-246-824-00	160	1-246-834-00	1.1k	1-246-844-00	7.5k	1-246-854-00	51k	1-246-864-00
3.9	1-246-754-00	27	1-246-764-00	180	1-246-774-00	1.2k	1-246-784-00	8.2k	1-246-794-00	56k	1-246-804-00
4.3	—	30	1-246-825-00	200	1-246-835-00	1.3k	1-246-845-00	9.1k	1-246-855-00	62k	1-246-865-00
4.7	1-246-755-00	33	1-246-765-00	220	1-246-775-00	1.5k	1-246-785-00	10k	1-246-795-00	68k	1-246-805-00
5.1	—	36	1-246-826-00	240	1-246-836-00	1.6k	1-246-846-00	11k	1-246-856-00	75k	1-246-866-00
5.6	1-246-756-00	39	1-246-766-00	270	1-246-776-00	1.8k	1-246-786-00	12k	1-246-796-00	82k	1-246-806-00
6.2	—	43	1-246-827-00	300	1-246-837-00	2.0k	1-246-847-00	13k	1-246-857-00	91k	1-246-867-00
6.8	1-246-757-00	47	1-246-767-00	330	1-246-777-00	2.2k	1-246-787-00	15k	1-246-797-00	100k	1-246-807-00
7.5	1-246-818-00	51	1-246-828-00	360	1-246-838-00	2.4k	1-246-848-00	16k	1-246-858-00	110k	1-246-868-00
8.2	1-246-758-00	56	1-246-768-00	390	1-246-778-00	2.7k	1-246-788-00	18k	1-246-798-00	120k	1-246-808-00
9.1	1-246-819-00	62	1-246-829-00	430	1-246-839-00	3.0k	1-246-849-00	20k	1-246-859-00	130k	1-246-869-00
10	1-246-759-00	68	1-246-769-00	470	1-246-779-00	3.3k	1-246-789-00	22k	1-246-799-00	150k	1-246-809-00
11	1-246-820-00	75	1-246-830-00	510	1-246-840-00	3.6k	1-246-850-00	24k	1-246-860-00	160k	1-246-870-00
12	1-246-760-00	82	1-246-770-00	560	1-246-780-00	3.9k	1-246-790-00	27k	1-246-800-00	180k	1-246-810-00

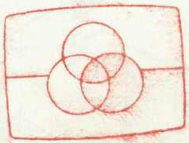
DIMENSIONS AND PART NO. OF PRECISION SCREWS

<div>\oplus K (Flat-countersunk-head screw)</div> <div></div>				<div>\oplus P (Pan-head screw)</div> <div></div>				
Type	Size (mm) (d × L)	Part No.		Type	Size (mm) (d × L)	Part No.		
		Black	Silver			Black	Silver	
Type 1	K1.4 × 1.6	7-627-451-08	7-627-451-07	Type 1	P1.4 × 1.4	7-627-551-08	7-627-551-47	
	K1.4 × 1.8				P1.4 × 1.6		7-627-551-07	
	K1.4 × 2	7-627-451-38	7-627-451-37		P1.4 × 1.8		7-627-551-18	7-627-551-17
	K1.4 × 2.2				P1.4 × 2			
	K1.4 × 2.5	7-627-451-18	7-627-451-17		P1.4 × 2.2			
	K1.4 × 2.8	7-627-451-28	7-627-451-27 7-627-451-47		P1.4 × 2.5	7-627-551-28	7-627-551-27	
	K1.4 × 3				P1.4 × 2.8	7-627-551-88		
	K1.4 × 3.5				P1.4 × 3	7-627-551-58	7-627-551-57	
	K1.4 × 4				P1.4 × 3.5	7-627-551-68	7-627-551-67	
	K1.4 × 4.5				P1.4 × 4	7-627-551-78	7-627-551-77	
	K1.4 × 5	7-627-451-78	7-627-451-77		P1.4 × 4.5	7-627-551-38	7-627-551-37	
			P1.4 × 5					
	K1.7 × 1.8	7-627-450-78			P1.7 × 1.6	7-627-552-18	7-627-552-28	7-627-552-27
	K1.7 × 2				P1.7 × 1.8			
	K1.7 × 2.2				P1.7 × 2			
	K1.7 × 2.5				P1.7 × 2.2			
	K1.7 × 2.8				P1.7 × 2.5	7-627-552-08		
	K1.7 × 3				P1.7 × 2.8	7-627-552-38	7-627-552-37	
	K1.7 × 3.5				P1.7 × 3			
	K1.7 × 4				P1.7 × 3.5			
K1.7 × 4.5	P1.7 × 4							
K1.7 × 5	P1.7 × 4.5			7-627-552-48	7-627-552-47			
K1.7 × 5.5			P1.7 × 5	7-627-552-58	7-627-552-57			
K1.7 × 6			P1.7 × 5.5					
			P1.7 × 6					
K2 × 2	7-627-452-08	7-627-452-07	P2 × 1.8	7-627-553-18	7-627-553-17			
K2 × 2.2			P2 × 2			7-627-553-28	7-627-554-07	
K2 × 2.5	7-627-452-18	7-627-452-17	P2 × 2.2					
K2 × 2.8			P2 × 2.5					
K2 × 3			P2 × 2.8					
K2 × 3.5			P2 × 3	7-627-553-38	7-627-553-37			
K2 × 4			P2 × 3.5	7-627-554-17				
K2 × 4.5	7-627-452-28		P2 × 4	7-627-553-48	7-627-553-47			
K2 × 5	7-627-452-38		P2 × 4.5	7-627-553-58	7-627-553-57			
K2 × 5.5			P2 × 5		7-627-553-67			
K2 × 6			P2 × 5.5	7-627-553-88	7-627-553-87			
K2 × 7			P2 × 6			7-627-553-98	7-627-553-97	
K2 × 8			P2 × 7					
			P2 × 8					
			P2 × 10			7-627-553-78	7-627-553-77	
Type 3	P1.4 × 1.4	7-627-850-08	7-627-850-07	Type 3	P1.4 × 1.4	7-627-850-18	7-627-850-37	
	P1.4 × 1.6				7-627-850-47			
	P1.4 × 1.8				7-627-850-77			
	P1.4 × 2				7-627-850-07			
	P1.4 × 2.2							
	P1.4 × 2.5	7-627-850-18	7-627-850-17	P1.4 × 2.8	7-627-850-28	7-627-850-27		
	P1.4 × 3	7-627-850-58	7-627-850-57					
	P1.4 × 3.5	7-627-850-68	7-627-850-67					
	P1.4 × 4							
P1.4 × 4.5			P1.4 × 4.5	7-627-851-17				
P1.4 × 5			7-627-851-27					

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