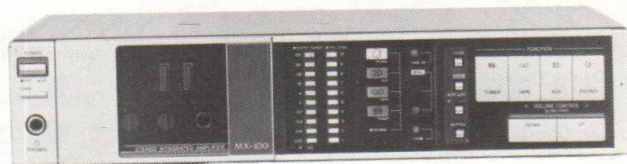


SERVICE MANUAL

MODEL NO.

STEREO INTEGRATED AMPLIFIER **MX-100**



Code No. 39-100-000-58

STEREO CASSETTE DECK **FX-100**



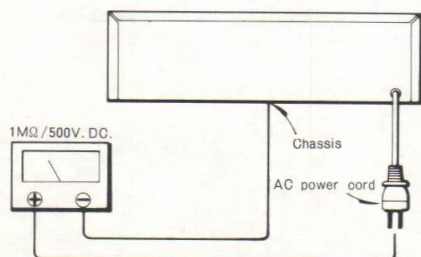
Code No. 41-100-000-58

TYPE. H, HU, E, K, G

DATE OF ISSUE 6/1982

Follow the instructions carefully, which will allow the user to optimise the products' performance and give many years of service.

1. No scratch and melting shall be made to covered lead-wires of an a.c. primary circuit including mains leads.
2. No illegibility shall be given to the specification plate, the caution labels, the fuse labels and others.
3. When, on pattern sides of circuit boards, additional repair-parts have been made up, the parts shall be firmly glued to circuit boards or other components, unless the parts can be attached firmly.
4. The following matters shall be maintained as they are, when repairing.
 - 1) Soldering of lead-wire ends
* Care should be taken of the space distance in an a.c. primary circuit as well as soldering.
 - 2) Wiring and holding of lead-wires with wire-clips and binders
 - 3) Materials of lead-wires
* e.g.; For UL models, lead-wires to be used shall be approved or accepted by the UL.
 - 4) Location of all kinds of insulators
 - 5) Setting of voltage selector switch
* Set the Voltage Selector Switch to 240V, 220V, or 120V, According to your Local Voltage.
5. After repaired, the insulation resistance or leakage current shall be measured with $500 \pm 5V$ D.C and shall be not less than $1M\Omega$.
Measuring points:



Rating: More than $1k\Omega/500V$ DC.

6. General instructions for mechanism repair

- 1) The heads, capstan and pinch roller shall be cleaned of good quality alcohol after repaired, because dirty heads shall cause distorted sounds while dirty capstan and pinch roller shall occur wow/flutter and take-up fault.
- 2) Lubricants been stained the surfaces of transmitting portion of the belts, idlers, capstan and pinch roller shall be removed, because slippery and faulty tape travel shall be caused.
- 3) When oiling, only one or two drops shall be applied so as not to run over and be dispersed. Note should be taken of the metal fitting for the capstan and rotating portions of the idlers and pinch roller, especially.
- 4) E-rings and poly slider washers shall be replaced with new ones, if once those have been removed. — No re-utilization due to unreliability.
- 5) Regular spare-parts shall always be used for repair, because using irregular parts and tampering with the products shall cause deterioration, malfunction and damage.

This service manual with jack of the remote control.

AIWA Co., Ltd. Tokyo Japan

SPECIFICATIONS = MX-100

Type:	Stereo integrated amplifier
Semiconductors:	7 ICs, 50 transistors, 2 FETs, 59 diodes, 28 LEDs
Power source:	H, HU model AC 120/220/240V switchable, 50/60 Hz E model AC 220V, 50/60 Hz K, G model AC 240V, 50/60 Hz
Power consumption:	H, HU model 110W E, K, G model 300W
Dimensions:	330(W) x 71(H) x 311(D) mm (12-7/8" x 2-5/8" x 12-1/4")
Weight:	5.75 kg (12.67 lbs.)
< Power amplifier >	
Effective output power:	H, HU model 55W + 55W (8 ohms, T.H.D. 0.01%, 1 kHz) E, K, G model 50W + 50W (8 ohms, T.H.D. 0.05%, 20 Hz ~ 20 kHz) < FTC Rule > 55 Watts per channel, Min. RMS at 8 ohms, from 20 Hz ~ 20 kHz, with no more than 0.05% Total Harmonic Distortion. Less than 0.015 ~ 0.08% (1 kHz, 35W)
Total harmonic distortion:	Less than 0.015 ~ 0.08% (1 kHz, 35W)
Output bandwidth:	5 Hz to 50,000 Hz (Less than 0.03%) [Both channels drive, 8 Ω]
Frequency response:	5 Hz to 70,000 Hz ($+0$ dB / -3 dB)
Residual noise	Less than 1.5 mV
Damping factor:	Less than 40
(1 kHz 8 Ω)	
< Preamplifier >	
Signal to noise ratio:	PHONO (MM) More than 87 dB
(Weighted)	TUNER, AUX More than 97 dB
	TAPE More than 97 dB
	(IHF A curve, short circuit)
Tone controls:	BASS 100 Hz -11 ± 1.0 dB $+11 \pm 1.5$ dB
	TREBLE 10 kHz -7.2 ± 1.0 dB $+7.4 \pm 1.0$ dB
D.S.L.:	40 Hz $+11$ dB ± 1.5 dB
	40 Hz $+20$ dB ± 2.0 dB
RIAA deviation:	± 0.2 dB (20 Hz to 20,000 Hz)
Channel separation:	More than 50 dB
Input jacks:	PHONO (MM) 4 mV/47 k Ω
(Sensitivity/	TUNER 150 mV/47 k Ω
input impedance):	TAPE 200 mV/47 k Ω
	MIC 1 mV/5 k Ω
Output jacks:	TAPE 150 mV/47 k Ω
(Level/output impedance):	HEADPHONES 1 mV/1W, 8 Ω
	SPEAKERS 8 Ω

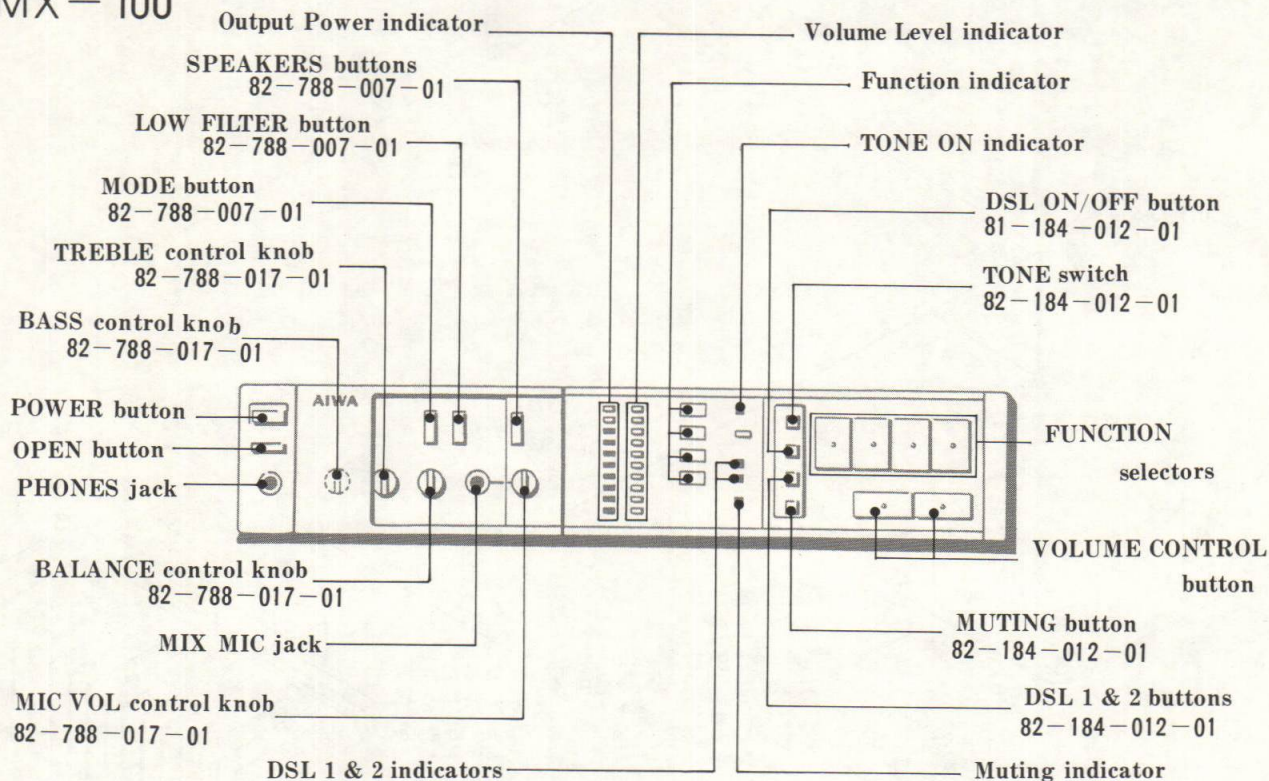
- The specifications and external appearance of this set are subject to change without prior notice.

SPECIFICATIONS = FX-100

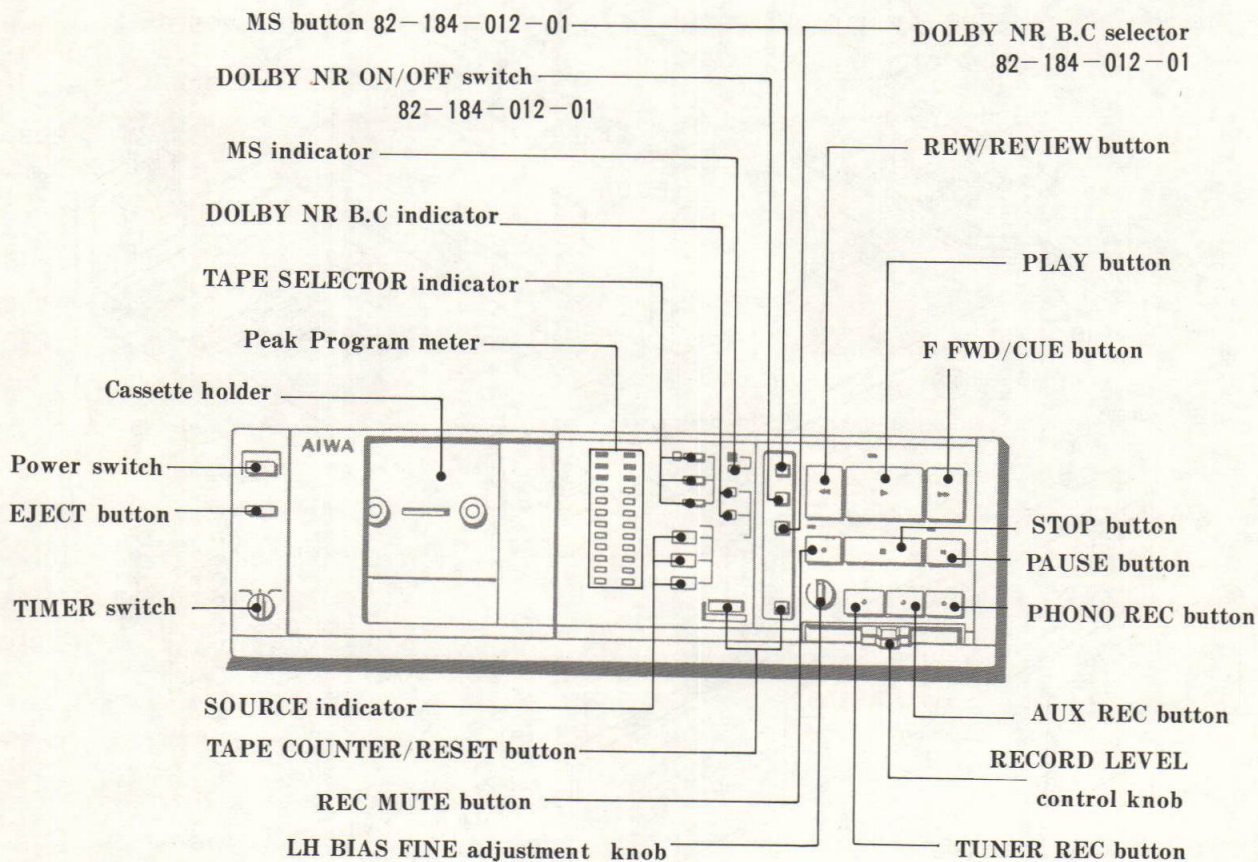
Semiconductors:	7 IC's, 54 transistors, 41 diodes 36 LED's, 3 FET H, HU model
Power supply:	AC 120V/220V/240V switchable, 50/60 Hz E model AC 220V, 50/60 Hz K, G model AC 240V, 50/60 Hz
Power consumption:	14W
Dimensions:	330(W) x 107(H) x 295(D) mm (13" x 4-1/4 x 11-5/8")
Weight:	4.0 kg (8.81 lbs.)
Track type:	4 tracks 2 channels
Tape speed:	4.8 cm/s $\pm 1.5\%$
Wow and flutter:	Less than 0.032% (WRMS)
Automatic stop system:	Full automatic stop
Automatic shut-off action time:	3 ± 1 s.
Pinch roller pressure:	350 ± 30 g (3.43 ± 0.29 N)
Take-up torque:	45 $+15$ -10g-cm (441 $+147$ -98 mN-m)
FF & rewind torque:	150 ± 50 g-cm (1470 ± 490 mN-m)
FF & rewind time:	80 ± 10 s. (C-60)
Play back output:	470 ± 40 mV (LINE)
(TTA-161)	
Play back noise:	Less than 0.7 mV (CrO ₂ , DOLBY-NR ON) Less than 1.7 mV (LH DOLBY NR OFF) 0 VU ± 1.0 dB (LINE)
Rec./PB output:	(TTA-119G)
Rec./PB distortion:	Less than 1.5% (METAL) Less than 1.5% (CrO ₂) Less than 1.5% (LH)
Rec./PB S/N ratio:	More than 45/52 dB
(Unweighted)	(METAL, CrO ₂ , DOLBY-C NR OFF/ON)
	More than 43/50 dB
	(LH, DOLBY-C NR OFF/ON)
(WTD-A)	More than 47/62 dB
	(METAL, CrO ₂ , DOLBY-C NR OFF/ON)
	More than 45/60 dB
	(LH, DOLBY-C NR OFF/ON)
	More than 35 dB
Channel separation:	(1 kHz, 0 VU)
Cross talk:	More than 60 dB
(1 kHz, 0 VU)	
Erasing ratio:	More than 60 dB
(METAL 125 Hz, 0 VU, +10 dB)	
Output level drift:	Less than 1 dB (at 10 kHz, 0 VU)
Bias frequency:	85 kHz
Frequency response:	METAL 20 ~ 18,000 Hz
(-20 VU)	CrO ₂ 20 ~ 17,000 Hz
	LH 20 ~ 16,000 Hz
Motor:	DC servo motor (capstan) DC motor (FF/REW)
Head:	Rec./PB DX head
	Erase Double gap ferrite head
Inputs:	LINE IN/REC Max. input sensitivity 50 mV (Optimum load impedance more than 50 k Ω)
Outputs:	LINE OUT/PLAY Standard output level 330 mV (0 VU) (Optimum load impedance more than 50 k Ω)

- Specifications and external appearance are subject to change without due to product improvement.
- Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.
- Dolby and the $\square\square$ symbol are trademarks of Dolby Laboratories Licensing Corporation.

MX-100



FX-100



EXPLODED VIEW-1

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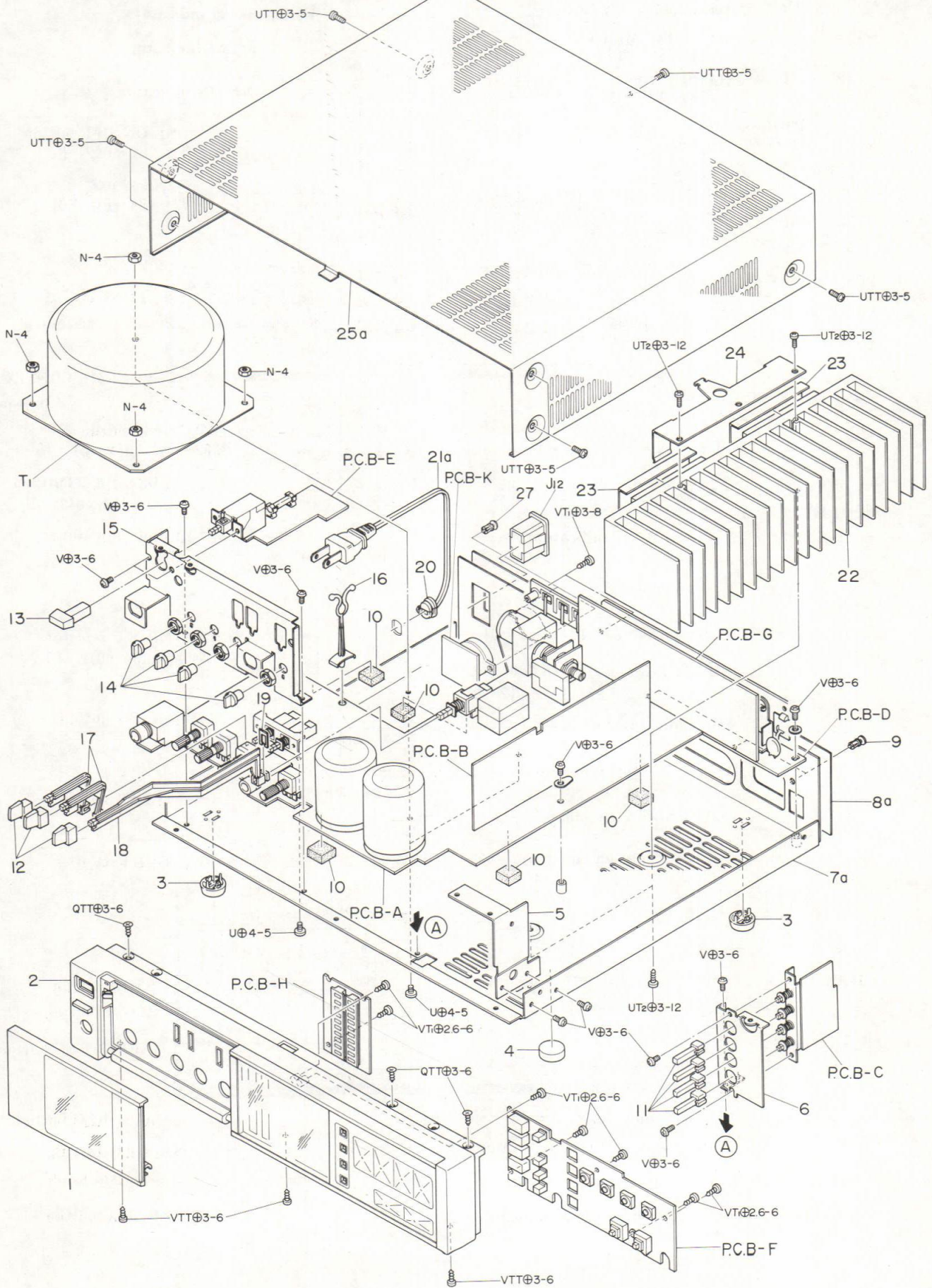
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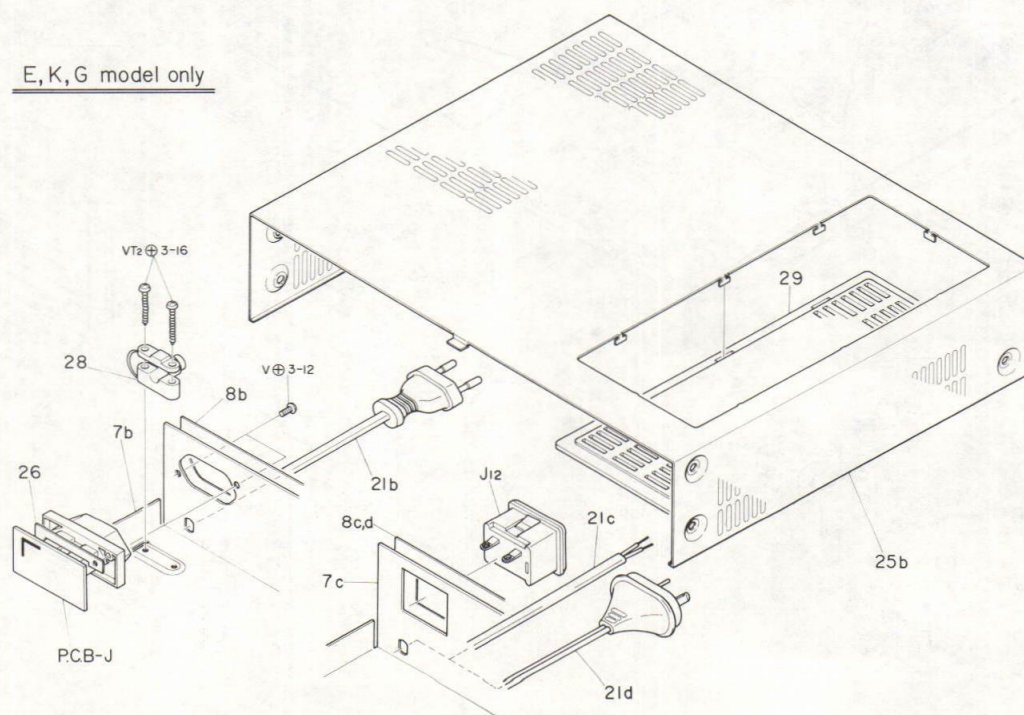


MECHANICAL PARTS

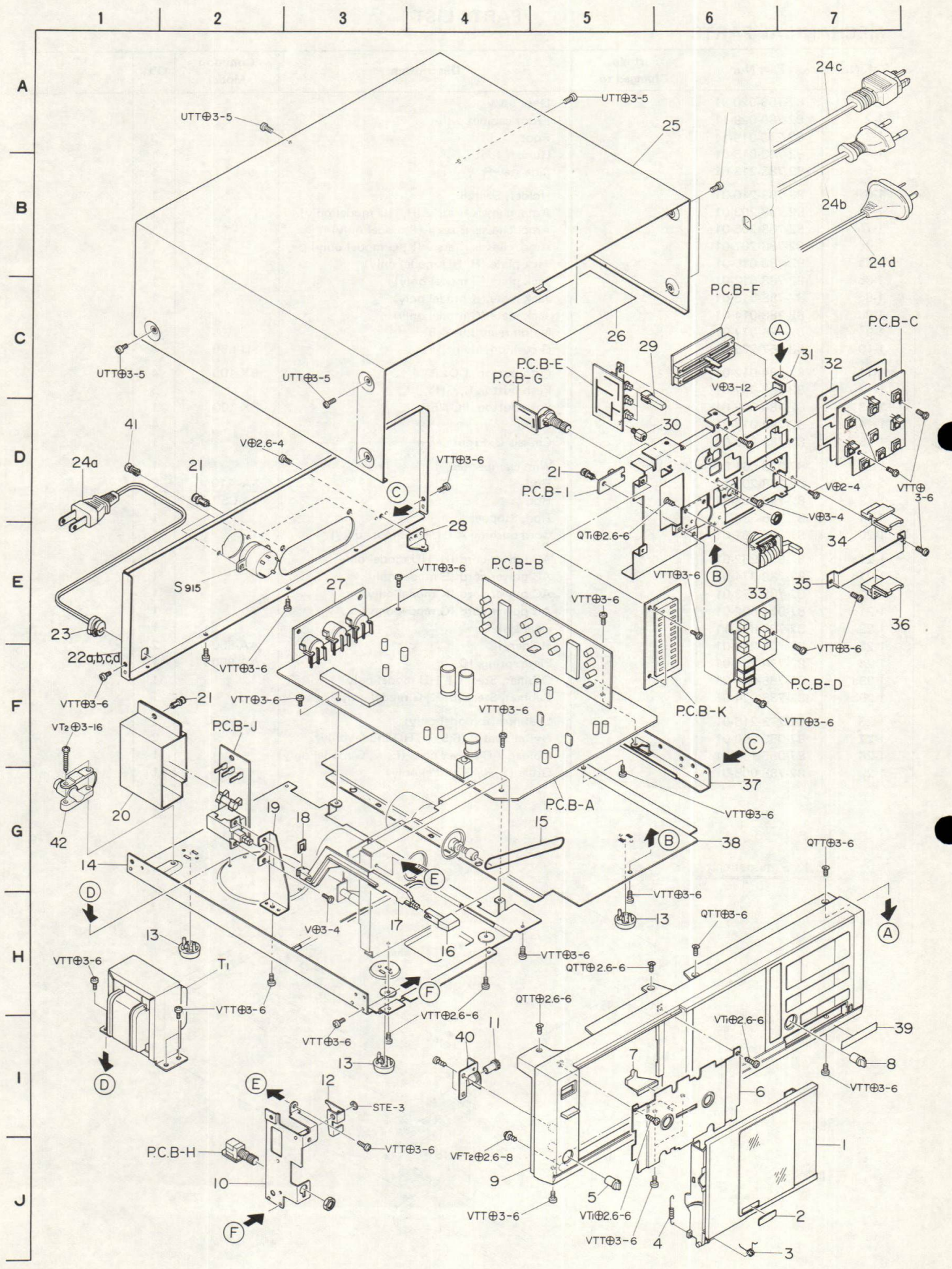
PARTS LIST

Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty
1-1	82-788-020-01		Door ass'y	*	1
1-2	82-788-029-11		Front cabinet ass'y	*	1
1-3	82-745-019-11		Foot		3
1-4	82-788-015-01		Rubber foot	*	1
1-5	82-788-213-01		Side stay R	*	1
1-6	82-788-210-01		Holder, Switch	*	1
1-7a	82-788-203-01		Amp. chassis H ass'y (H, HU model only)	*	1
1-7b	82-788-205-01		Amp. chassis E ass'y (E model only)	*	1
1-7c	82-788-207-01		Amp. chassis K ass'y (K, G model only)	*	1
1-8a	82-788-010-01		Jack plate (H, HU model only)	*	1
1-8b	82-788-012-01		Jack plate (E model only)	*	1
1-8c	82-788-013-01		Jack plate (K model only)	*	1
1-8d	82-788-014-01		Jack plate (G model only)	*	1
1-9	87-084-077-01		Nylon rivet 3.5-4.5		3
1-10	82-157-226-01		G cushion, Main	SD-L50	5
1-11	82-184-012-01		Push button, DOLBY	FX-100	4
1-12	82-788-007-01		Push button B, GRY	*	3
1-13	82-184-009-01		Push button, POWER	FX-100	1
1-14	82-788-017-01		Knob	*	4
1-15	82-788-209-01		Chassis L, Front	*	1
1-16	87-038-061-01		Wire clamber $\phi 5$		1
1-17	82-758-203-11		Rod	SA-A10	2
1-18	82-748-203-21		Rod	SA-C50	1
1-19	82-385-383-11		Rod, Stopper		1
1-20	87-085-181-01		Cord bushing A (H, HU model only)		1
1-21a	87-034-962-01		AC power cord (H, HU model only)		1
1-21b	82-788-674-01		AC power cord (E model only)	*	1
1-21c	82-788-673-01		AC power cord (K model only)	*	1
1-21d	87-034-892-01		AC power cord (G model only)		1
1-22	82-788-601-11		Heat sink	*	1
1-23	82-774-218-01		Holder, IC	AA-8500	2
1-24	82-774-205-01		Plate spring, IC	AA-8500	1
1-25a	82-788-002-21		Cabinet, Steel (H, HU model only)	*	1
1-25b	82-788-024-01		Cabinet, Steel (E, K, G model only)	*	1
1-26	82-773-216-01		Leaf nut (E model only)	AT-9500	1
1-27	87-085-090-01		Nylon rivet 3-6.5 (H, HU model only)		2
1-28	87-085-166-01		Holder, AC power cord (E, K, G model only)		1
1-29	82-788-008-01		Grille (E, K, G model only)	*	1

E, K, G model only



EXPLODED VIEW-1



PARTS LIST

MECHANICAL PARTS

■ *mark in this part list shows exclusive part.

Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty
1-1	82-184-023-01		Cassette box ass'y F	*	1
1-2	82-184-021-01		Decorative plate, Cassette box	*	1
1-3	82-184-215-01		E-spring, EJECT	*	1
1-4	82-184-213-01		T-spring, CASSETTE OPEN	*	1
1-5	82-155-008-01		Knob, Pb	AD-M800	1
1-6	82-184-019-01		Plate, Cassette	*	1
1-7	82-304-044-01		Guide, Light		1
1-8	82-184-034-01		Knob	*	1
1-9	82-184-032-11		Front cabinet ass'y F	*	1
1-10	82-184-204-21		Front chassis L ass'y	*	1
1-11	82-534-264-01		Gear, Oil damp		1
1-12	82-184-208-01		Lever, EJECT	*	1
1-13	82-745-019-11		Foot		4
1-14	82-184-201-01		Amp. chassis A	*	1
1-15	82-184-209-01		Rubber belt	*	1
1-16	82-184-009-01		Push-button, POWER	*	1
1-17	82-309-208-21		Rod, Selector	SD-L40	1
1-18	82-385-383-11		Rod stopper	AD-6300	1
1-19	82-184-210-01		Holder, POWER	*	1
1-20	82-184-228-11		Cover, Power	*	1
1-21	87-084-077-01		Nylon rivet 3.5—4.5		4
1-22 a	82-184-220-01		Panel, Rear (H, HU model only)	*	1
1-22 b	82-184-026-01		Panel, Rear (E model only)	*	1
1-22 c	82-184-027-01		Panel, Rear (K model only)	*	1
1-22 d	82-184-029-01		Panel, Rear (G model only)	*	1
1-23	87-085-165-01		Cord bushing (H, HU model only)		1
1-24 a	87-034-962-01		AC power cord (H, HU model only)		1
1-24 b	82-788-674-01		AC power cord (E model only)	MX-100	1
1-24 c	82-788-673-01		AC power cord (K model only)	MX-100	1
1-24 d	87-034-892-01		AC power cord (G model only)		1
1-25	82-184-030-01		Cabinet, Steel	*	1
1-26	82-184-667-01		Shield plate, Panel	*	1
1-27	82-184-616-01		Jack plate ass'y DINX3	*	1
1-28	82-184-223-01		Holder, Circuit board	*	1
1-29	82-184-012-01		Push-button, DOLBY	*	3
1-30	82-184-224-01		Stud M3-9	*	1
1-31	82-184-202-01		Chassis R, Front	*	1
1-32	82-184-225-01		Sheet, Insulation	*	1
1-33	87-040-159-01		Counter		1
1-34	82-184-014-11		Slide knob L	*	1
1-35	82-184-016-01		Volume plate, REC	*	1
1-36	82-184-015-11		Slide knob R	*	1
1-37	82-184-229-01		Amp. chassis B ass'y F	*	1
1-38	82-785-208-01		Bottom plate	CX-50	1
1-39	82-184-038-01		Bias insulation sheet	*	1
1-40	82-184-231-01		Oil damp holder ass'y	*	1
1-41	87-084-063-01		Nylon rivet $\phi 3 - 5.5$ (H, HU model only)		2
1-42	87-085-166-01		Holder, AC power cord (E, K, G model only)		1

EXPLODED VIEW-1

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EH

RPH

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STE-2.3

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STE-2.3

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STE-2.3

PW1.7-3.5-0.25

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CS-3

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PW1.7-3.5-0.25

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STE-2.3

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VTT $\oplus$ 2.6-6

STE-2.3

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Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty	
2-1	82-184-214-11		E-spring, Cassette OPEN	*	1	
2-2	82-184-212-01		Lock slide plate	*	1	
2-3	82-180-234-31		Outsert shaft ass'y S-1	SD-L80	1	
2-4	82-170-227-01		E-spring, Actuating pressure D		1	
2-5	87-073-005-01		Steel ball 2φ		2	
2-6	82-161-293-01		P-spring, Cassette pressure		2	
2-7	82-565-327-21		Lever, REC blocking		2	
2-8	82-161-358-01		Lever, Cassette		1	
2-9	82-184-211-01		Auto metal lever	*	1	
2-10	82-161-306-01		C-spring, BTS		1	
2-11	82-161-290-01		Washer, 5-19		1	
2-12	82-161-351-01		Felt 1—16—10		1	
2-13	82-161-259-21		Supply reel platform ass'y		1	
2-14	82-303-398-01		Cap, Take-up reel platform		2	
2-15	82-161-347-11		Lever, EJECT blocking		1	
2-16	82-180-232-01		Slide plate actuating ass'y	SD-L80	1	
2-17	82-180-231-01		Slide plate (PAUSE) S	SD-L80	1	
2-18	82-161-308-01		E-spring, Actuating		1	
2-19	82-184-226-01		Actuating chassis ass'y	*	1	
2-20	82-307-212-01		C-spring, EH		2	
2-21	82-161-292-01		P-spring, Actuating		1	
2-22	87-057-620-01		Label, Head		1	
2-23	82-357-487-11		Lead wire D		1	
2-24	82-170-251-01		Take-up reel platform ass'y		1	
2-25	82-161-249-01		Pinch roller F ass'y		1	
2-26	82-161-301-01		T-spring (Pinch F)		1	

EXPLODED VIEW-3

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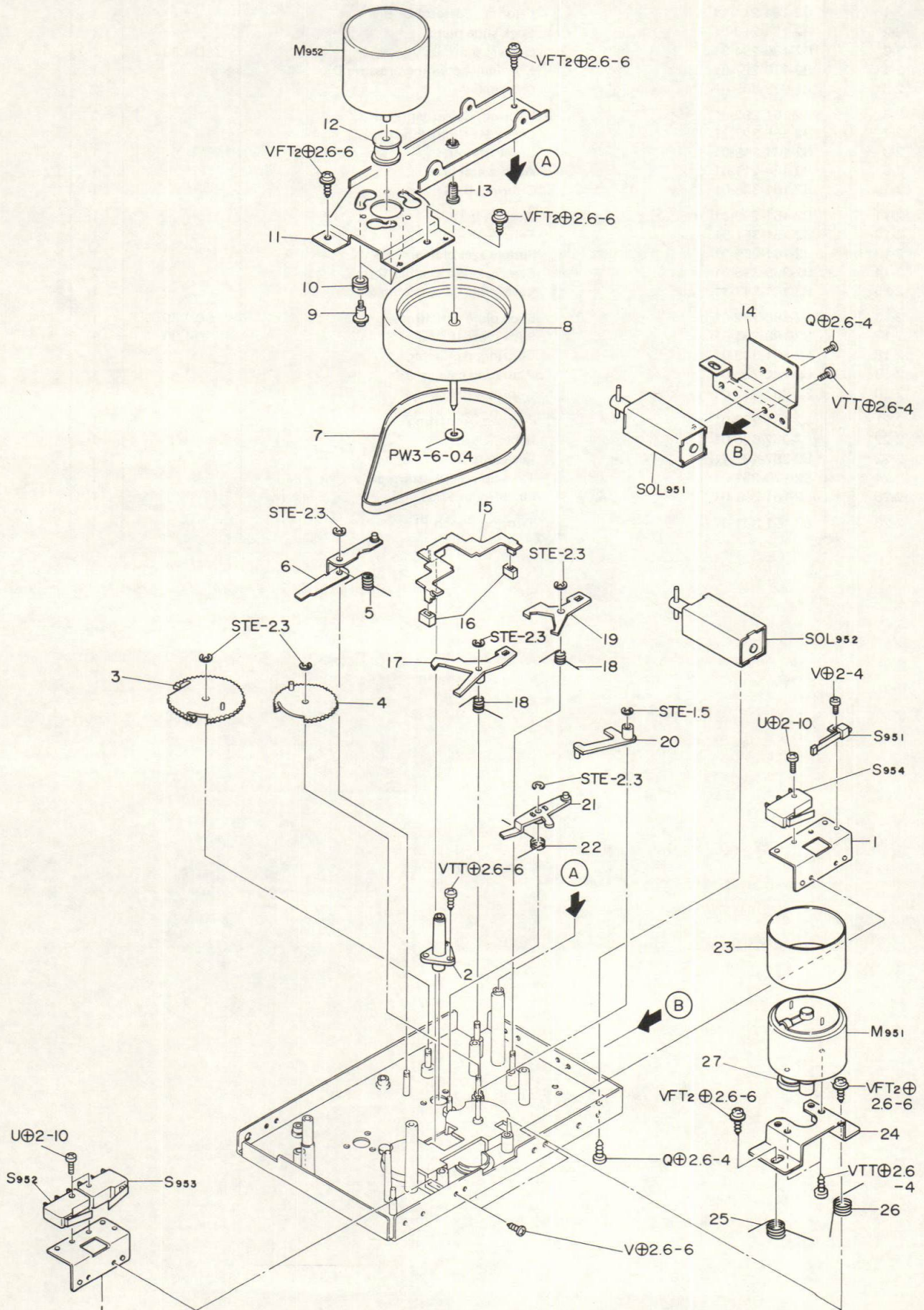
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Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty	
3-1	82-161-234-01		Holder, REC switch		2	
3-2	82-161-253-01		Shaft bearing ass'y		1	
3-3	82-161-276-11		Gear, PLAY		1	
3-4	82-161-277-21		Gear, PAUSE		1	
3-5	82-161-300-01		T-spring, PLAY		1	
3-6	82-161-218-01		PLAY Lever ass'y		1	
3-7	82-180-223-01		Rubber belt, Main	SD-L80	1	
3-8	82-180-220-01		Fly wheel ass'y	SD-L80	1	
3-9	87-081-483-01		Motor screw, M2.6		3	
3-10	87-087-029-01		Rubber cushion		3	
3-11	82-180-222-01		Plate, Flywheel	SD-L80	1	
3-12	82-180-229-01		Pulley, Main	SD-L80	1	
3-13	82-331-107-21		Thrust screw		1	
3-14	82-165-233-11		Holder, Plunger		1	
3-15	82-161-236-11		Slide plate, Brake		1	
3-16	82-397-307-01		G cushion, Eject lever		2	
3-17	82-161-269-01		Trigger lever, PLAY		1	
3-18	82-170-272-01		T-spring, Trigger		2	
3-19	82-161-270-01		Trigger lever, PAUSE		1	
3-20	82-161-272-01		Brake eject lever			
3-21	82-161-266-21		Lever FRP ass'y		1	
3-22	82-161-298-01		T-spring, Pause lever		1	
3-23	82-551-617-01		Motor shield plate A		1	
3-24	82-170-242-11		Holder, Motor		1	
3-25	82-161-296-01		T-spring, Brake R		1	
3-26	82-161-295-01		T-spring, Brake L		1	
3-27	82-170-248-01		Idler ass'y		1	

ACCESSORIES/PACKAGE=MX-100

Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty
1	82-788-854-01		Printed indiv., Packing	*	1
2	82-788-856-01		Cushion L, Printed indiv.	*	1
3	82-788-857-01		Cushion R, Printed indiv.	*	1
4	82-788-858-01		Sheet, Foamed mat	*	1
5	87-056-610-01		Poly-vinyl sack		1
6a	82-788-906-01		Instructions booklet (H, HU, G model only)	*	1
6b	82-788-905-01		Instructions booklet (E, K model only)	*	1
7	87-051-171-11		Poly-vinyl sack		1
8	87-056-008-11		Label, AC power cord (K model only)		1
9	87-056-009-51		Distributors list (H, E, K, G model only)		1
10	87-056-059-01		Guarantee card (G model only)		1
11	87-056-045-01		Guarantee card (HU model only)		1
12	87-057-133-11		Service station list (HU model only)		1
13	87-032-845-01		Siemens plug (H, HU model only)		1

ACCESSORIES/PACKAGE=FX-100

Ref. No.	Part no.	Part No. Changed to	Description	Common Model	Q'ty
1	82-184-855-01		Printed indiv., Packing	*	1
2	82-184-852-01		Cushion L, Printed indiv.	*	1
3	82-184-853-01		Cushion R, Printed indiv.	*	1
4	82-184-858-01		Sheet, Foamed mat	*	1
5	87-051-131-11		Poly-vinyl sack (H, HU model only)		1
6	87-051-135-11		Poly-vinyl sack (E, K, G model only)		1
7	87-056-627-01		Poly-vinyl sack		1
8a	82-184-905-01		Instructions booklet (H, HU, G model only)	*	1
8b	82-184-904-01		Instructions booklet (E, K model only)	*	1
9	87-051-171-11		Poly-vinyl sack		1
10	87-056-008-11		Label, AC power cord (K model only)		1
11	87-056-009-51		Distributors list		1
12	87-056-045-01		Guarantee card (HU model only)		1
13	87-056-057-01		Service station list (HU model only)		1
14	87-056-059-01		Guarantee card (G model only)		1
15	87-032-845-01		Siemens plug (H, HU model only)		1
16	87-034-969-01		Connection cord, CW-255FSK		1
17	87-034-970-01		Connection cord, CW-258FSK		1