

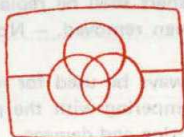
AIWA®

S/M Code No. 84-015

DATE OF ISSUE 7/1984

SERVICE MANUAL

STEREO CASSETTE DECK



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MODEL NO.

FX-W50**TYPE. HS, HB, UB, ES, EB, KS, KB, G, ZB**

SPECIFICATIONS

GENERAL

Power source: HS, HB models
AC 120V/220V/240V
Switchable 50/60 Hz
UB model
AC 120V, 60 Hz
ES, EB, ZB models
AC 220V, 50/60 Hz
KS, KB, G models
AC 240V, 50/60 Hz

Power consumption: 15W

Dimensions: 330(W) × 107(H) × 230(D) mm
(13" × 4 1/4" × 7/8")

Weight: 4.3 Kg (9.47 lbs.)

Track type: 4 track 2 channels

Tape speed: 4.8 cm/s. (1-7/8 ips)
9.5 cm/s. (High speed)

Wow and flutter: 0.04% (WRMS)

Automatic stop system:
Full auto stop

Automatic shut-off action time:
Less than 3s.

Pinch roller pressure:
155 ± 10g (1.52 ± 0.098 N)

Take-up torque: 40⁺¹⁰₋₁₃ g-cm (0.39^{+0.098}_{-0.12} mN·m)

FF & rewind torque:
150 ± 30 g-cm (1.47 ± 0.29 mN·m)

FF & rewind time:
65 ± 10s. (C-60)

Back tension: 3 ± 1g-cm

Counter indication error:
0 ± 3

Playback output: 400 mV ± 1 dB (LINE)
(TTA-161)

Playback noise: Less than 1.5 mV
(CrO₂, DOLBY B NR ON)
Less than 2.0 mV
(METAL DOLBY C NR)
Less than 3.0 mV
(NORMAL DOLBY NR OFF)

Timer recording operation time:
4 ± 2s

REC/PB output: 280 mV ± 1.5 dB

Recording system: AC bias

Erasing system: AC erase

REC/PB distortion:

(400 Hz, OVU) Less than 2.0%
(LINE IN, REC/PB, METAL, CrO₂)
Less than 2.5%
(LINE IN NORMAL)

REC/PB SN ratio: More than 42 dB

(400 Hz, OVU) (METAL, CrO₂, DOLBY NR OFF)
(Un weighted) More than 40 dB

(NORMAL, DOLBY NR OFF)

(WTD-A) More than 47/48 dB

(METAL, CrO₂, DOLBY B/C NR)
More than 45/46 dB

(NORMAL, DOLBY B/C NR)

Channel separation:

(1 kHz, OVU) More than 30 dB

Erasing ratio: More than 60 dB (125 Hz)

Bias frequency: 100 kHz

Frequency response:

METAL : 20 ~ 18,000 Hz

CrO₂ : 20 ~ 17,000 Hz

NORMAL : 20 ~ 16,000 Hz

Motor: DC servomotor × 2

DC motor × 2

Heads: Playback head : DX head (DECK I)

Record /playback head :

DX head (DECK II)

Erase head : Double-gap ferrite head

Input/impedance: LINE IN 230 mV/47 kΩ

Output/impedance/load impedance:

LINE OUT 280mV/2.2 kΩ

(Suitable load impedance 27 kΩ)

TEST TAPE: TTA-119MX (METAL)

TTA-119G (CrO₂)

TTA-119J (NORMAL)

- 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 symbol are trademarks of Dolby Laboratories Licensing Corporation.

EXPLODED VIEW-I

1 2 3 4 5 6 7

Ref. No.	Part No.	Description
A	87-356-074-21	VT ₁ +2.6-8
B	87-353-095-21	VT ₂ +3-8
C	87-340-095-01	UT ₂ +3-8
D	87-323-095-21	QT ₂ +3-8
E	87-081-511-01	VTT+3-6
F	87-067-054-01	VTT+3-6
G	87-517-094-21	VFT ₂ +3-6
H	87-081-531-01	QTT+3-6
I	87-513-094-21	VFT ₂ +3-6

A

B

C

D

E

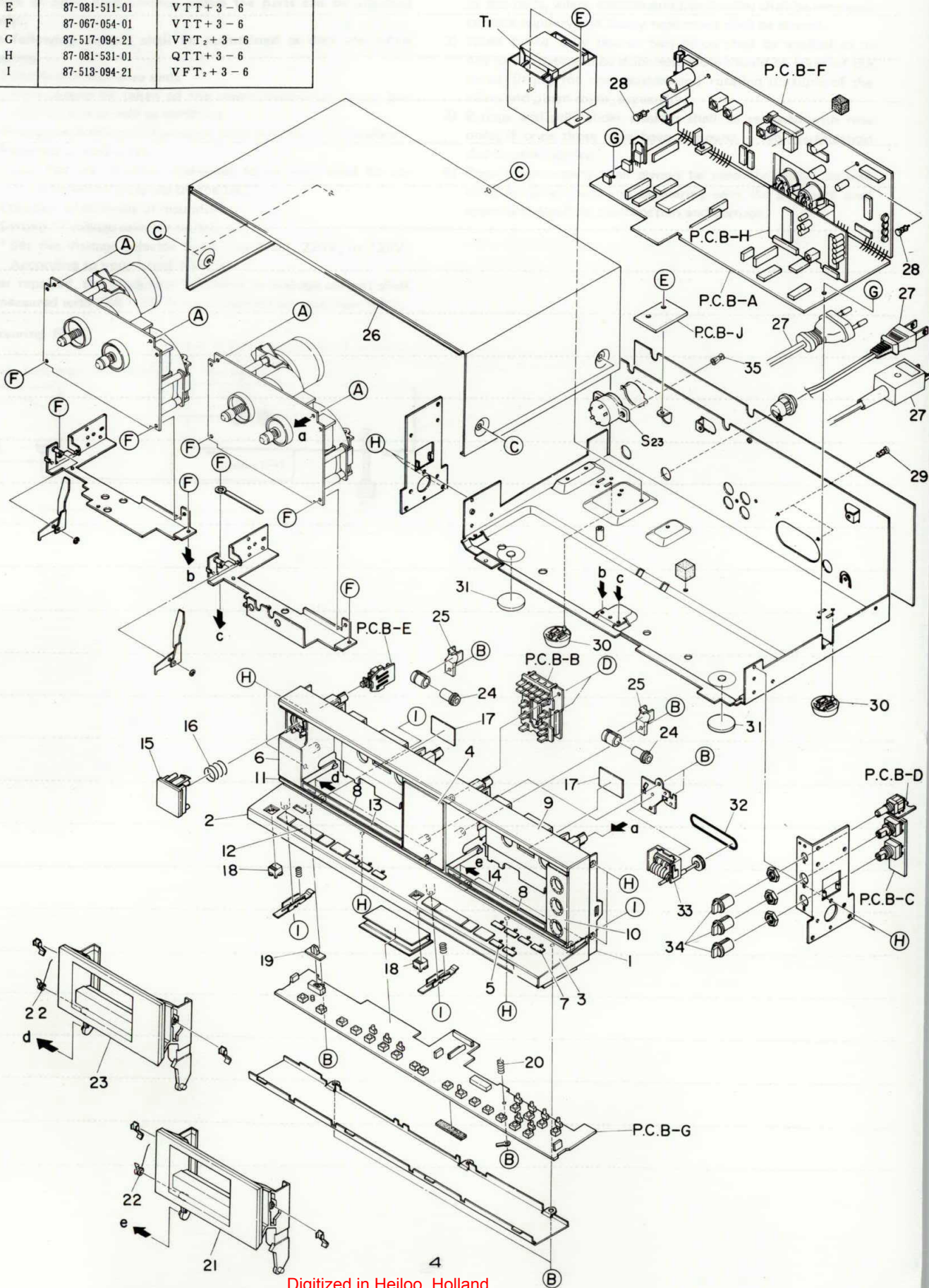
F

G

H

I

J



PARTS LIST

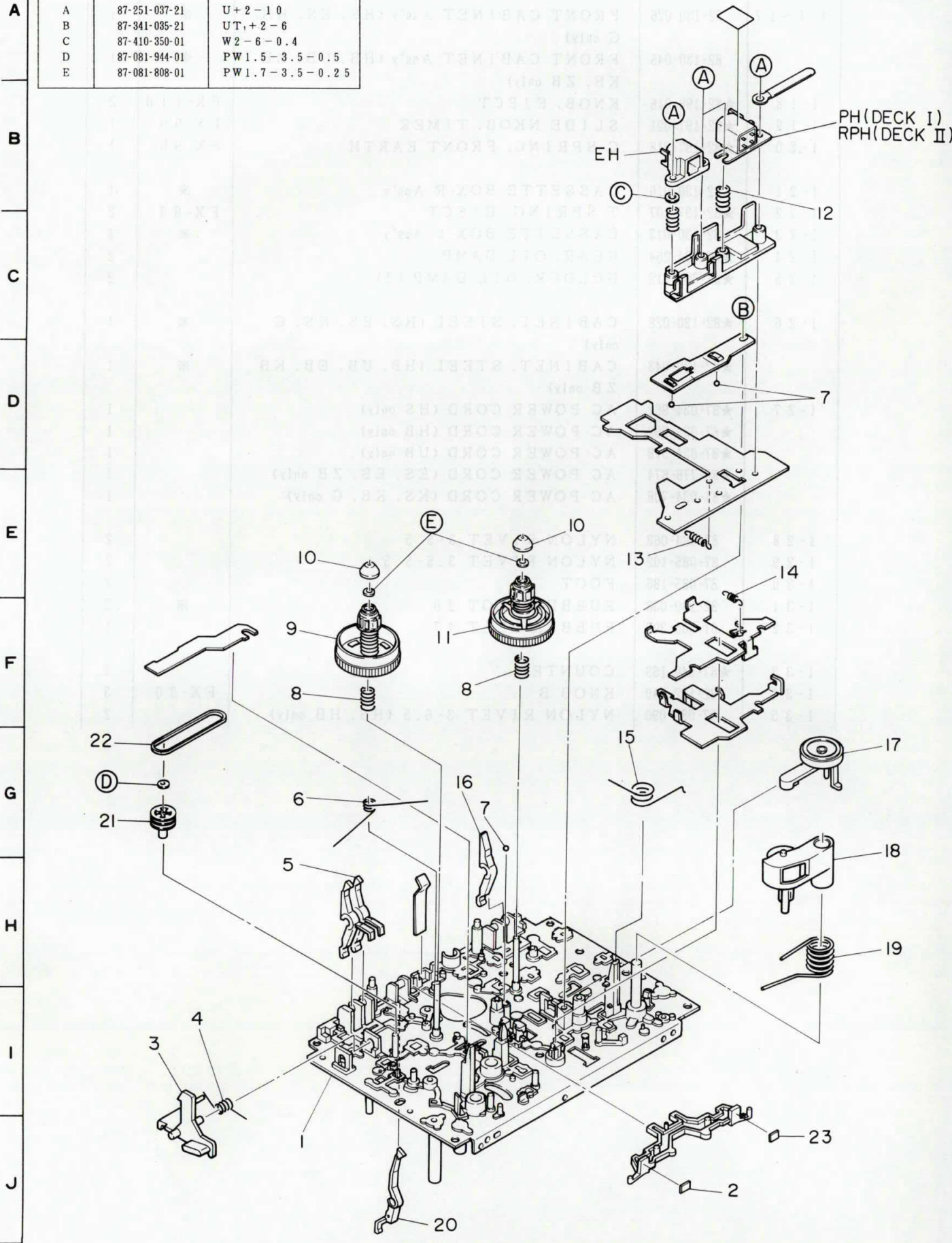
MECHANICAL PARTS

•※ mark in this part list shows exclusive part.
 •★-mark means less required items and availabilities may be limited.

Part No. changed to	Ref. No.	Part No.	Description	Common Model	Q'ty
	1-1~17	82-130-026	FRONT CABINET Ass'y (HS, ES, KS, G only)	※	1
		82-130-045	FRONT CABINET Ass'y (HB, UB, EB, KB, ZB only)	※	1
	1-18	★82-198-016	KNOB, EJECT	FX-110	2
	1-19	★82-197-021	SLIDE KNOB, TIMER	FX-90	1
	1-20	★82-197-218	C-SPRING, FRONT EARTH	FX-90	1
	1-21	82-130-016	CASSETTE BOX-R Ass'y	※	1
	1-22	★82-197-207	T-SPRING, EJECT	FX-90	2
	1-23	82-130-013	CASSETTE BOX-L Ass'y	※	1
	1-24	★82-534-264	GEAR, OIL-DAMP		2
	1-25	★82-683-212	HOLDER, OIL-DAMP (2)		2
	1-26	★82-130-028	CABINET, STEEL (HS, ES, KS, G only)	※	1
		★82-130-043	CABINET, STEEL (HB, UB, EB, KB ZB only)	※	1
	1-27	★87-034-962	AC POWER CORD (HS only)		1
		★87-034-992	AC POWER CORD (HB only)		1
		★87-034-578	AC POWER CORD (UB only)		1
		★82-778-674	AC POWER CORD (ES, EB, ZB only)		1
		★87-034-708	AC POWER CORD (KS, KB, G only)		1
	1-28	87-084-063	NYLON RIVET 3-5.5		2
	1-29	87-085-102	NYLON RIVET 3.5-5.5		2
	1-30	87-085-186	FOOT		2
	1-31	82-130-038	RUBBER FOOT 20	※	2
	1-32	81-505-309	RUBBER BELT 47		1
	1-33	★87-040-169	COUNTER		1
	1-34	82-192-040	KNOB B	FX-30	3
	1-35	87-085-090	NYLON RIVET 3-6.5 (HS, HB only)		2

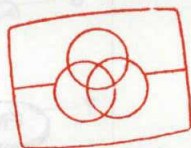
EXPLODED VIEW -2

Ref. No.	Part No.	Description
A	87-251-037-21	U+2-1 0
B	87-341-035-21	UT,+2-6
C	87-410-350-01	W2-6-0.4
D	87-081-944-01	PW1.5-3.5-0.5
E	87-081-808-01	PW1.7-3.5-0.25



* The following parts list shows the common parts of I and II Decks, and also the exclusive parts of II Deck.

Part No. changed to	Ref. No.	Part No.	Description	Common Model	Q'ty
	2-1	★81-505-297	OUTSERT Ass'y P1 (DECK I)		1
		★81-505-312	OUTSERT Ass'y P2 (DECK II)		1
	2-2	★81-505-313	FELT 6-3-3.3		1
	2-3	★81-505-239	LEVER. EJECT		1
	2-4	★81-505-273	T-SPRING. LID LOCK		1
	2-5	★81-505-241	LEVER CrO ₂ . REC BLOCKING	DECK I: 1 / DECK II: 2	
	2-6	★81-505-268	T-SPRING. SLIDE BRAKE		1
	2-7	★81-073-005	STEEL BALL 2		3
	2-8	★81-505-274	C-SPRING. SUPPLY REEL PLATFORM		2
	2-9	81-505-275	SUPPLY REEL PLATFORM Ass'y		1
	2-10	★82-303-398	CAP. TAKE-UP REEL PLATFORM		2
	2-11	81-505-276	TAKE-UP REEL PLATFORM Ass'y		1
	2-12	★81-505-262	C-SPRING. RPH		1
	2-13	★81-505-333	E-SPRING. ACTUATING CHASSIS A		1
	2-14	★81-505-266	E-SPRING. PLATE PAUSE		1
	2-15	★81-505-270	T-SPRING. IDLER LEVER		1
	2-16	★81-505-240	LEVER. CASSETTE CENSER		1
	2-17	★81-505-344	IDLER LEVER Ass'y 2		1
	2-18	81-505-210	PINCH LEVER F Ass'y		1
	2-19	★81-505-302	T-SPRING. PINCH FP		1
	2-20	★81-505-242	LEVER. METAL (DECK II only)		1
	2-21	82-585-427	RELAY PULLEY (DECK II only)		1
	2-22	82-461-318	COUNTER BELT B (DECK II only)		1
	2-23	★81-505-346	FELT 6.3-2.5		1



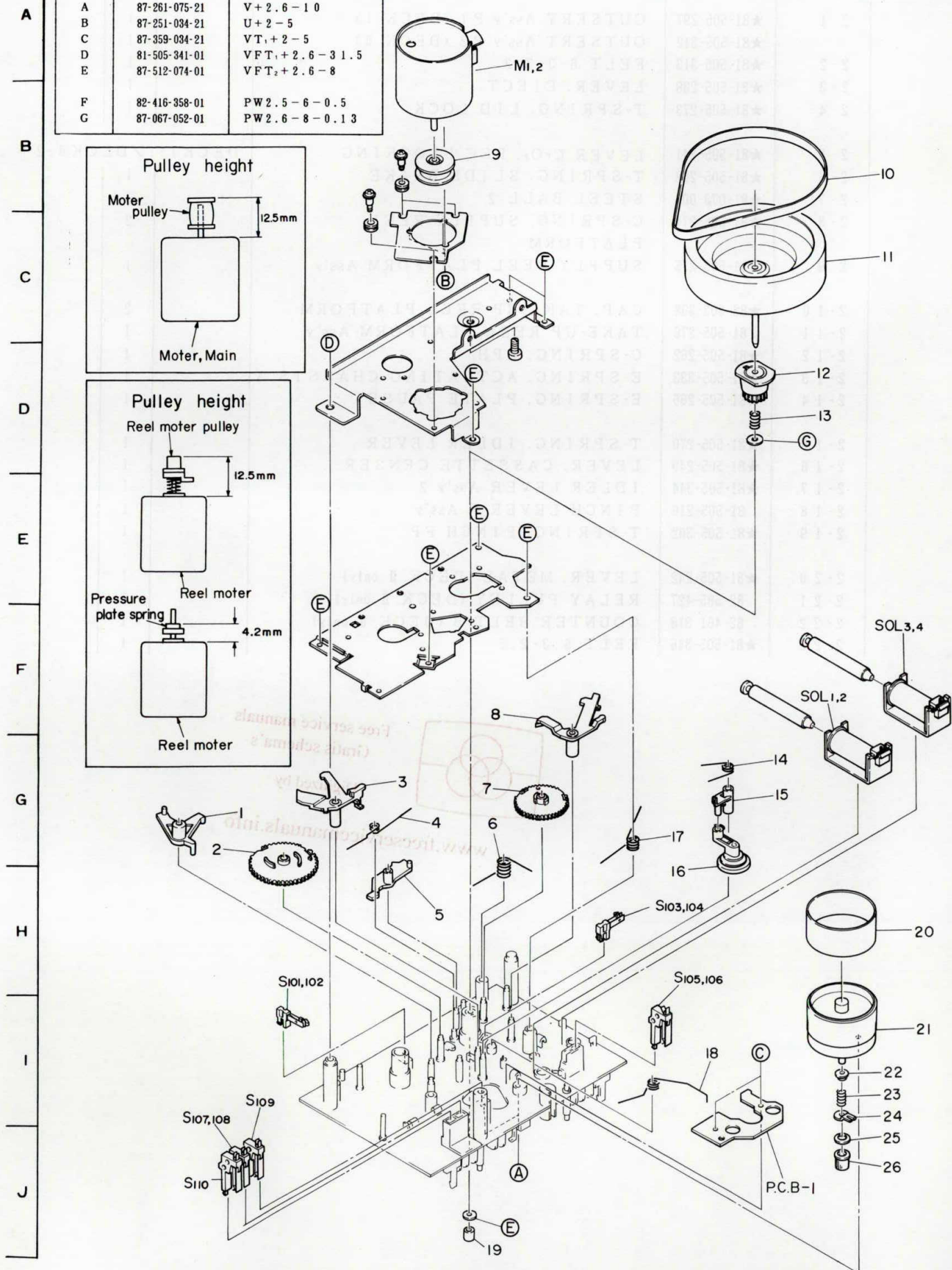
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EXPLODED VIEW-3

Ref. No.	Part No.	Description
A	87-261-075-21	V+2.6-10
B	87-251-034-21	U+2-5
C	87-359-034-21	VT ₁ +2-5
D	81-505-341-01	VFT ₁ +2.6-31.5
E	87-512-074-01	VFT ₂ +2.6-8
F	82-416-358-01	PW2.5-6-0.5
G	87-067-052-01	PW2.6-8-0.13



ACCESSORIES / PACKAGE LIST

Part No. changed to	Ref. No.	Part No.	Description	Common Model	Q'ty
	3-1	★81-505-230	LEVER, PLAY		1
	3-2	81-505-234	GEAR, PLAY CAM		1
	3-3	★81-505-231	TRIGGER LEVER, PLAY		1
	3-4	★81-505-332	T-SPRING, CAM A		1
	3-5	★81-505-232	LEVER, PAUSE		1
	3-6	★81-505-283	T-SPRING, LEVER PAUSE		1
	3-7	81-505-235	GEAR, PAUSE CAM		1
	3-8	★81-505-233	TRIGGER LEVER, PAUSE		1
	3-9	81-505-349	MOTOR PULLEY 2-15		1
	3-10	81-506-318	RUBBER BELT C		1
	3-11	81-505-316	FLYWHEEL C Ass'y		1
	3-12	81-505-225	GEAR, FLYWHEEL		1
	3-13	★81-505-261	C-SPRING, FLYWHEEL F		1
	3-14	★81-505-282	T-SPRING, FR IDLER		1
	3-15	★81-505-254	IDLER LEVER, FRA		1
	3-16	81-505-301	FR IDLER Ass'y P		1
	3-17	★81-505-271	T-SPRING, TRIGGER LEVER		1
	3-18	★81-505-269	T-SPRING, PLATE PINCH		1
	3-19	81-505-246	RUBBER, DRIVE		1
	3-20~26	09-047-198	REEL MOTOR Ass'y		1

■ ACCESSORIES / PACKAGE LIST

Part No. changed to	Ref. No.	Part No.	Description	Common Model	Q'ty
	1	82-130-907	INSTRUCTIONS BOOKLET	※	1
	2	★87-034-970	CONNECTION CORD. CW-258FSK		2
	3	★87-034-978	CONNECTION CORD. CW-254BSK		2

ELECTRICAL MAIN PARTS LIST

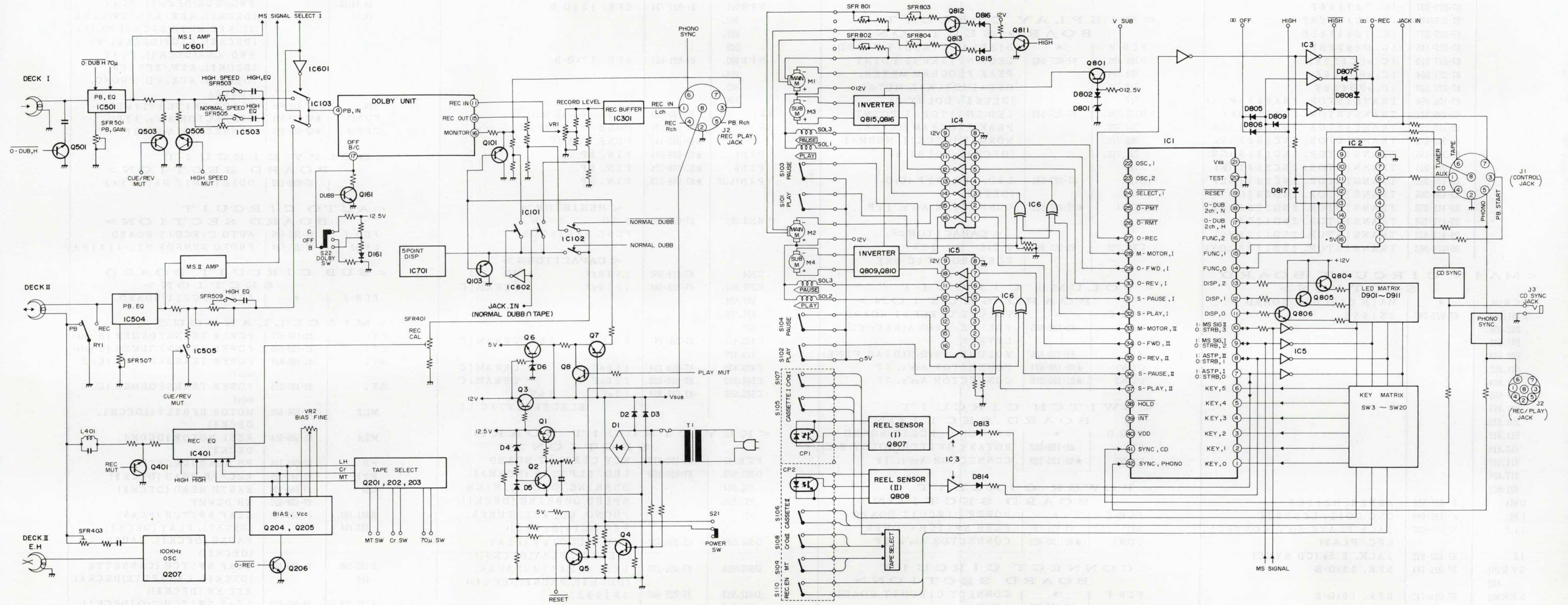
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Symbol No.	Part No.	Description	Symbol No.	Part No.	Description	Symbol No.	Part No.	Description	Symbol No.	Part No.	Description					
④	82-130-640	IC. LC6502C-652	C603.607 C604.608. 807	87-018-036	< CAPACITORS > 220pF CERAMIC	SFR403.	87-021-745	SFR. 47kΩ-B	S1.2.3.4.5. 6.7.8.9. 10.11. 12-1.12-2. 13.14.15. 16.17	87-031-771	TACT SWICTH (HIGH SPEED DUBBING[DECKI]. NORMAL DUBBING[DECKI]. PAUSE [DECKI]. STOP[DECKI]. F·FWD/CUE[DECKI]. PLAY [DECKI]. REW/REVIEW[DECK I]. REC MUTE[DECKII].PAUSE [DECKII]. STOP[DECKII]. F·FWD/CUE[DECKII]. PLAY [DECKII]. REW/REVIEW [DECKII]. AUX. CD. PHONO. TUNER)					
	87-027-895	IC. M5218L		87-018-044	1000pF CERAMIC	404.										
	87-027-948	IC. M54514AP				509.										
	87-027-909	IC. M54523P	< DISPLAY CIRCUIT BOARD SECTION >			510										
	87-027-837	IC. TA7666P				SFR501.	87-021-734	SFR. 100Ω-B								
	87-027-429	IC. TC4016BP				502.										
	87-027-657	IC. TC4028BP				507.										
	87-020-146	IC. M4030BP				508										
	87-027-910	IC. μPC1228H				SFR503.	87-021-867	SFR. 47kΩ-B								
	87-027-554	IC. μPD4066				504.										
	87-027-538	IC. μPD4069				505.										
	89-108-854	TRANSISTOR. 2SA885 (R. S)				506										
	89-109-521	TRANSISTOR. 2SA952 (K)				△F1	87-035-253	FUSE. 2A (H only)	S20 CON13 CON14	87-031-695 ★82-130-621 ★82-130-628	SLIDE SWITCH (TIMER) CONNECTOR Ass'y. 13P CONNECTOR Ass'y. 3P					
	89-110-155	TRANSISTOR. 2SA1015 (GR)				△F1	87-035-190	FUSE "T" 2A (E. K. G only)								
	89-313-833	TRANSISTOR. 2SC1383 (R)				★87-033-147	FUSE CLAMP									
	89-318-155	TRANSISTOR. 2SC1815 (GR)				★87-049-279	PIN. 9P	< DOLBY CIRCUIT BOARD SECTION >								
	89-320-011	TRANSISTOR. 2SC2001 (K)				★87-049-276	PIN. 6P	87-020-132 DOLBY UNIT HA12058J								
	89-320-012	TRANSISTOR. 2SC2001 (L)				★87-049-273	PIN. 3P	< AUTO CIRCUIT BOARD SECTION >								
	89-406-365	TRANSISTOR. 2SD636(S)						PCB-I 81-505-605 AUTO CIRCUIT BOARD								
	89-412-653	TRANSISTOR. 2SD1265 (OP)						CPI.2 87-027-644 PHOTO SENSOR NJL-5141EA								
	89-412-753	TRANSISTOR. 2SD1275						< SUB CIRCUIT BOARD SECTION >								
	89-413-023	TRANSISTOR. 2SD1302 (S)						PCB-J * SUB CIRCUIT BOARD								
	89-414-063	TRANSISTOR. 2SD1406 (OY)						< MISCELLANEOUS >								
< MAIN CIRCUIT BOARD SECTION >																
PCB-A	*	MAIN CIRCUIT BOARD	< VOLUME CIRCUIT BOARD SECTION >													
D161.163.	87-027-097	1S1555	PCB-C	*	VOLUME CIRCUIT BOARD	< SWITCH CIRCUIT BOARD SECTION >										
201.202.			VR1	82-130-635	VOLUME. 10kΩ-A(RECORD LEVEL)	PCB-D	*	SWITCH CIRCUIT BOARD	△T1	82-130-617	POWER TRANSFORMER (H only)					
203.601.						S22	82-198-602	ROTARY SWITCH(DOLBY B-C)	△T1	82-130-616	POWER TRANSFORMER (U only)					
602.603.			VR2	82-130-636	VOLUME. 10kΩ-B(BIAS FINE)	CON1	★82-130-624	CONNECTOR Ass'y. 6P	△T1	82-130-618	POWER TRANSFORMER (E. Z only)					
604.802.			CON1	★82-130-624	CONNECTOR Ass'y. 6P	CON3	★82-130-626	CONNECTOR Ass'y. 3P	△T1	82-130-619	POWER TRANSFORMER (K. G only)					
803.804.			CON3	★82-130-626	CONNECTOR Ass'y. 3P	< POWER CIRCUIT BOARD SECTION >										
805.806.			< CONNECT CIRCUIT BOARD SECTION >													
807.808.			PCB-E	*	POWER CIRCUIT BOARD	< KEY CIRCUIT BOARD SECTION >										
809.810.			S21	87-031-787	PUSH SWITCH (POWER)	PCB-G	82-130-612	KEY CIRCUIT BOARD	M1.2	81-506-605	MOTOR BFB2L71[DECKI. DECKII]					
811.812.			CON2	★82-130-623	CONNECTOR Ass'y. 7P	D901.902.	87-020-168	LED. SLP177B (NORMAL DUBBING [DECKI]. HIGH SPEED DUBBING [DECKI]. PHONO. CD. AUX. TUNER. REC MUTE[DECKII])	M3.4	81-505-604	REEL MOTOR [DECKI. DECKII]					
813.814.			< POWER CIRCUIT BOARD SECTION >													
815.816.			PCB-F	*	CONNECT CIRCUIT BOARD	903.904.			PH	87-046-226	PB HEAD [DECKI]					
817.820.			D1	87-027-376	1B4B41	905.908.			RPH	87-046-226	REC/PB HEAD [DECKII]					
821.822			D2.3	87-027-365	S5277B	911			EH	87-046-196	EARTH HEAD [DECKII]					
D801	87-027-556	ZENER. HZ11B3	D4	87-027-686	ZENER. HZ12A1	D906.909	83-203-731	LED. TLUG163 (PLAY [DECKII]. PLAY[DECKI])	S101.102. 103.104	81-505-601	LEAF SWITCH (PLAY [DECKI]. PLAY [DECKII]. PAUSE [DECKI]. PAUSE [DECKII])					
L801	82-196-649	OSC COIL. LC6502C	D5.529	87-027-097	1S1555			LED. SLP477B (PAUSE [DECKII]. PAUSE[DECKI])								
J1.2	82-198-607	JACK PLATE Ass'y (CONTROL. REC/PLAY)	D6	87-027-475	ZENER. HZ6B1			1S1555								
J3	87-032-892	JACK. 2.5φ (CD SYNC)	L201	87-003-051	CHOKE COIL. 470μH				S107.108. 109	81-505-602	LEAF SWITCH(CrO ₂ [DECKI]. CrO ₂ [DECKII]. METAL[DECKII])					
SFR401.	87-021-744	SFR. 33kΩ-B	L401.402	82-196-603	TRAP COIL. 100k											
402			L403.404	82-196-604	COIL. 2.2/6.8mH											
SFR801.	87-021-742	SFR. 10kΩ-B	L406	82-130-639	OSC COIL. 100k											
802.			RY1	87-045-218	RELAY FBR244D012-A59											
803.																
804.																
PIN1	★87-049-276	PIN. 6P														
PIN2	★87-049-277	PIN. 7P														
PIN3.7.8.	★87-049-273	PIN. 3P														
14																
PIN4.12	★87-049-281	PIN. 11P														
PIN9.10	★87-049-280	PIN. 10P														
PIN11	★87-049-278	PIN. 8P														
PIN13	★87-049-283	PIN. 13P														
CON17	★82-130-629	CONNECTOR Ass'y. 9P														

To overleaf of 3 / 3

To overleaf of 3 / 3

BLOCK DIAGRAM (FX-W50)



ADJUSTMENT (FX-W50)

7. Record/playback frequency characteristics adjustment
 Settings: • Test tape: TTA-119J
 • BIAS FINE, REC LEVEL: Center detent positions
 • Input signal: DIN IN pin1 (L-ch) and pin4 (R-ch), 1kHz/10kHz, 23mV.
 Method: Set Deck II to the record mode, and check that the output level of DIN OUT is set to 2.8 mV $\pm$ 0.5dB. Load tape TTA-119J, record and play back the 1kHz/10kHz signals and adjust so that the output level of 10kHz is set to 0 $\pm$ 0.5dB against the one of 1kHz.
 Check: Play back the above recorded sections using Deck I and check that the output level of 10kHz is 0 $\pm$ 0.5dB against the one of 1kHz.
 Ratings: • CrO₂ tape (TTA-119G): 0 $\pm$ 2.5dB
 • METAL tape (TTA-119MX): 0 $\pm$ 0.8dB

3. Playback frequency response adjustment
 Settings: • Test tape: TTA-317E
 • Test points: DIN OUT pin3 (L-ch) and pin5 (R-ch)
 • Adjusting points: (DECK I)
 SFR505 (L-ch) and
 SFR506 (R-ch)
 (DECK II)
 SFR509 (L-ch) and
 SFR510 (R-ch)
 Method: Play back alignment tape and adjust so that the output level of 10kHz is 0 $\pm$ 0.5dB against the one of 1kHz.

4. PB sensitivity adjustment
 Settings: • Test tape: TTA-161
 • Test points: DIN OUT pin3 (L-ch) and pin5 (R-ch)
 • Adjusting points: (DECK I)
 SFR501 (L-ch) and
 SFR502 (R-ch)
 (DECK II)
 SFR507 (L-ch) and
 SFR508 (R-ch)
 Method: Adjust so that the output level of DIN OUT is set to 400mV $\pm$ 0.5dB in Deck I and Deck II.

5. Deck I PB frequency characteristics adjustment in the high speed mode.
 Settings: • Test tape: TTA-317H (or TTA-317E)
 • Dubbing switch: HIGH SPEED
 • Test points: DIN OUT pin3 (L-ch) and pin5 (R-ch)
 • Adjusting points: SFR503 (L-ch) and SFR504 (R-ch)
 Method: Play back the 2kHz/20kHz signals (high speed mode) (1kHz/10kHz signals in normal speed mode) and adjust so that the output level difference of DIN OUT is 1 $\pm$ 0.5dB.

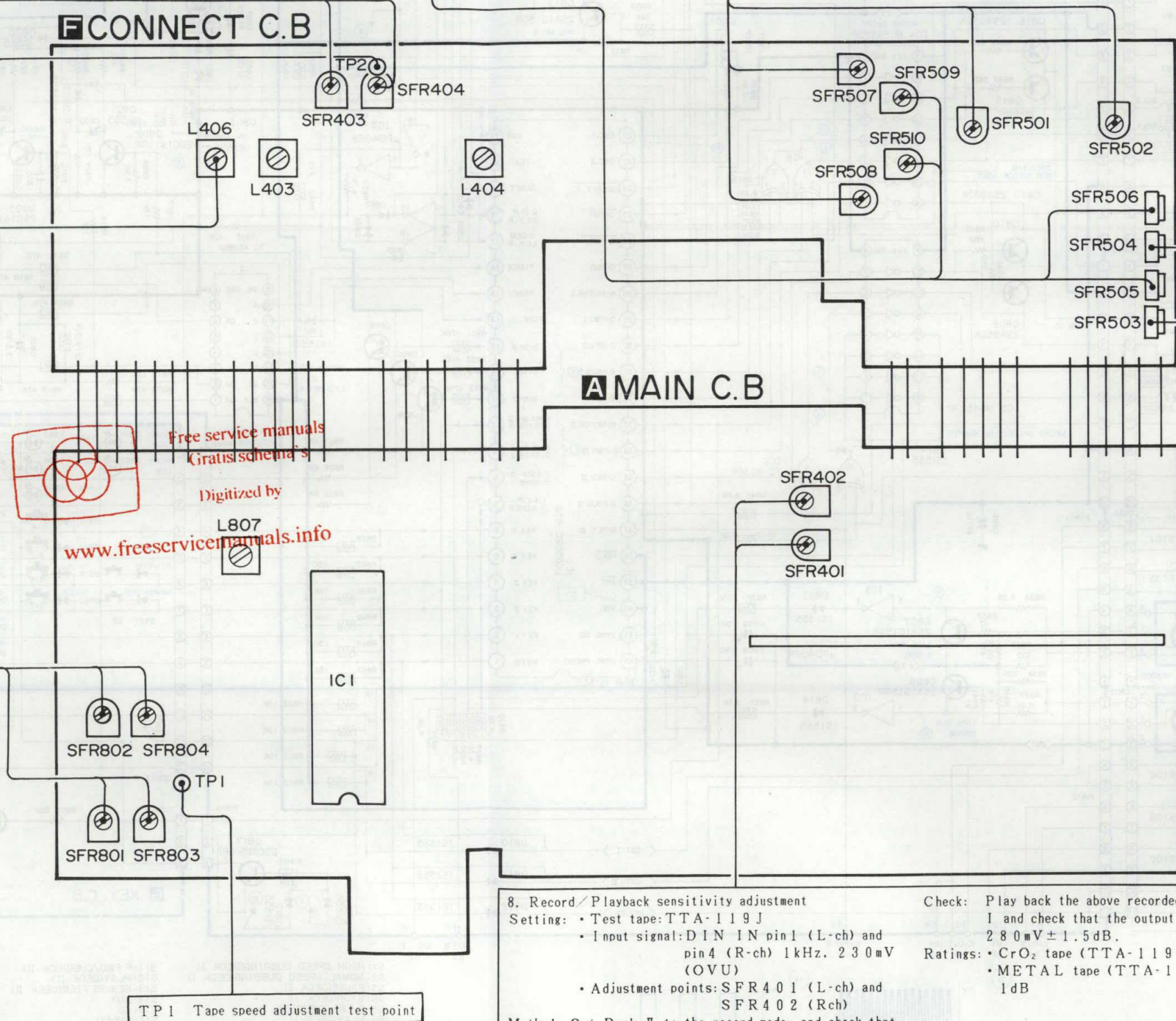
6. Bias oscillation frequency adjustment
 Settings: • Test tape: TTA-119MX
 • Test point: TP2
 • Adjusting point: L406
 Method: Set Deck II to the record mode, adjust so that the oscillation frequency is 100kHz $\pm$ 5kHz.

2. Tape speed adjustment
 Settings: • Test point: TP1

	High speed	Normal speed
Test tape	TTA-111H	TTA-111S
TP1 (Test pin)	To chassis ground	Open
Adjustment point (DECK I)	SFR802	SFR804
Adjustment point (DECK II)	SFR801	SFR803

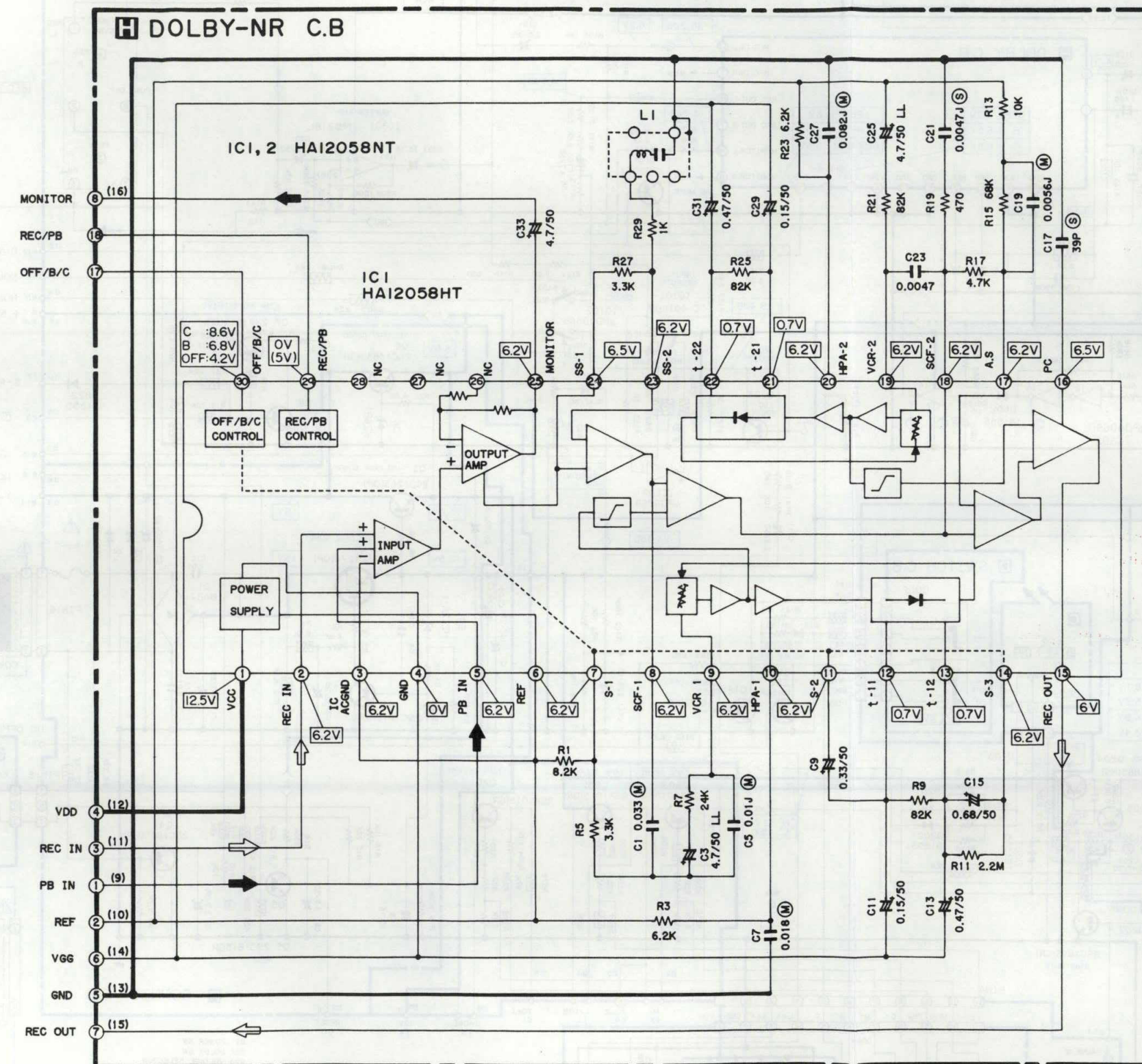
Method: (DECK I)
 • High speed: Load TTA-111H, set to the high speed play mode.
 (Connect TP1 to GND)
 Adjust SFR802 so that the speed is set to -0.8 $\sim$ -0.5%.
 • Normal speed: Load TTA-111S, set to the normal speed play mode.
 (Open the TP1)
 Adjust SFR804 so that the speed is set to -0.8 $\sim$ -0.5%.
 (DECK II)
 • High speed: Load TTA-111H, set to the high speed play mode.
 (Connect TP1 to GND)
 Adjust SFR801 so that the speed is set to -0.8 $\sim$ -0.5%.
 • Normal speed: Load TTA-111S, set to the normal speed play mode.
 (Open the TP1)
 Adjust SFR803 so that the speed is set to -0.8 $\sim$ -0.5%.

Caution: Be sure to perform high speed adjustment and normal speed adjustment in sequence. When the adjustment is performed in the reverse procedure or when only the normal speed adjustment is performed, the high speed may become out of order.

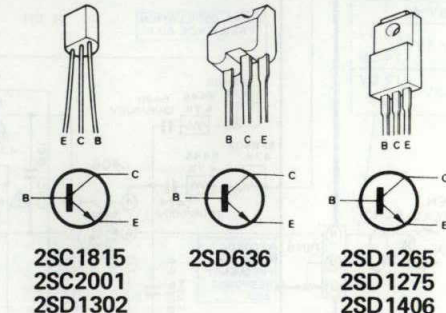
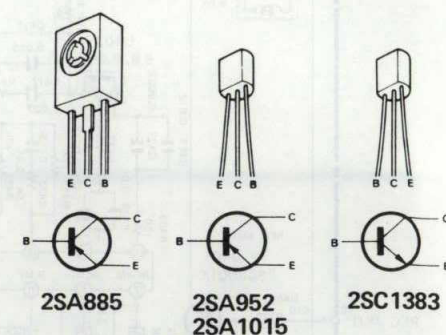


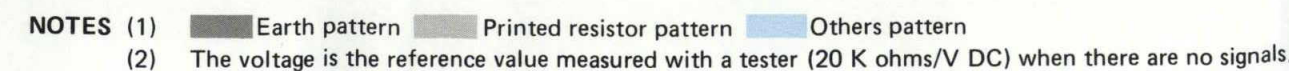
8. Record/Playback sensitivity adjustment
 Setting: • Test tape: TTA-119J
 • Input signal: DIN IN pin1 (L-ch) and pin4 (R-ch) 1kHz, 230mV (OVU)
 • Adjustment points: SFR401 (L-ch) and SFR402 (Rch)
 Method: Set Deck II to the record mode, and check that the output level of DIN OUT is set to 280mV $\pm$ 0.5dB. Load tape TTA-119J, record and play back the 1kHz signal and adjust so that the output level is set to 280mV $\pm$ 0.5dB.
 Check: Play back the above recorded sections using Deck I and check that the output level of 1kHz is 280mV $\pm$ 1.5dB.
 Ratings: • CrO₂ tape (TTA-119G): 280mV $\pm$ 1dB
 • METAL tape (TTA-119MX): 280mV $\pm$ 1dB

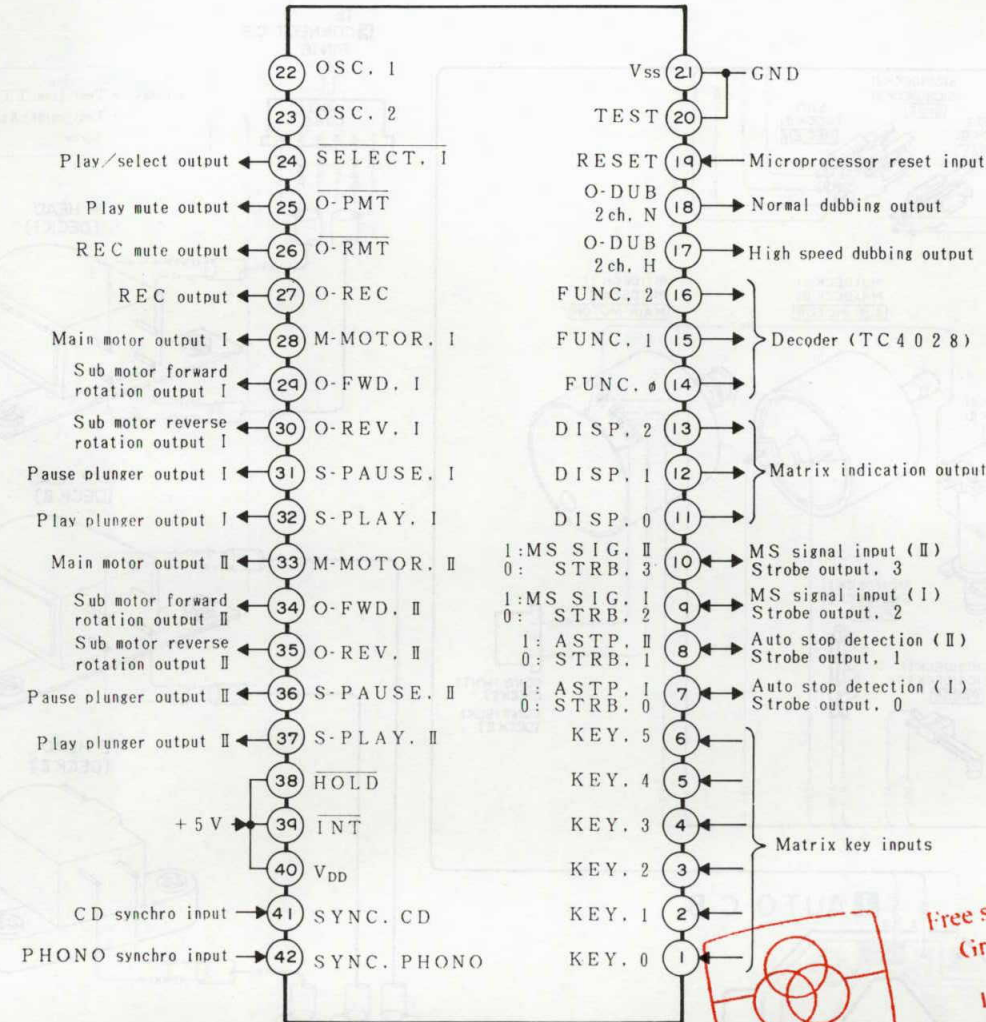
SCHEMATIC DIAGRAM-1 (FX-W50)



- NOTES:**
- 1) B (+) power supply
 - 2) Signal path
 - 3) The voltage is the reference value measured with a tester (20 k-ohms/V DC) when there are no signals.
 - 4) Resistors with no designation have a rated power of 1/8W and a tolerance of $\pm 5\%$.
 - 5) Capacitors with no designation have a dielectric strength of less than 50WV.
 - 6) The only capacitor tolerance indicated are $\pm 5\%$ (J) and $\pm 10\%$ (K).
 - 7) Ceramic capacitor symbols:
 - For temperature compensation (SL)
 - High dielectric constant system (YY)
 - High dielectric constant system (YW, YP, YZ)
 - Semiconductor ceramic
 - For temperature compensation (SH)
 - 8) Explanation of symbols
 - Mylar capacitor
 - Aluminum solid capacitor
 - Polypropylene film capacitor
 - Bi-polarized capacitor
 - Low-leakage capacitor
 - Tantalum capacitor
 - Styrol capacitor
 - Printed resistor
 - Fuse resistor
 - Nonflammable resistor
 - Low noise resistor
- Safety component symbol**
 This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications. Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.
- This schematic diagram is subject to change without notice in the interests of improved performance.





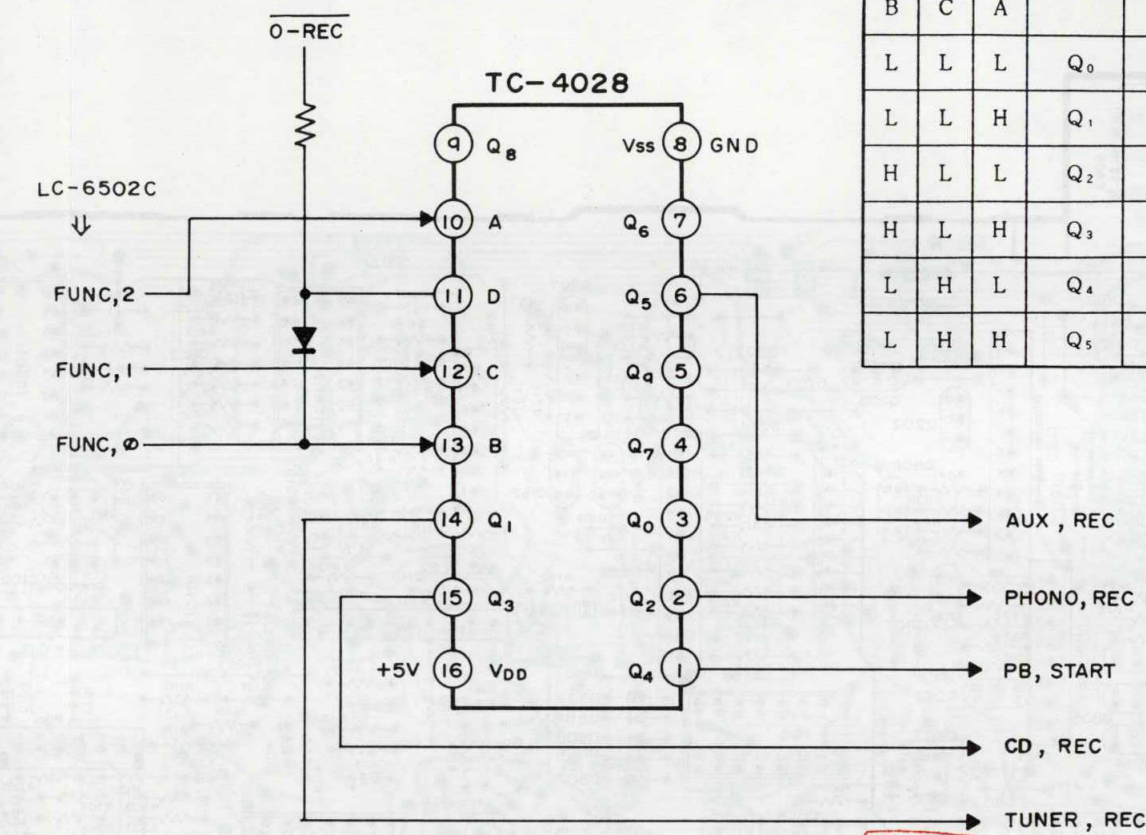
CIRCUIT DESCRIPTION
Description of IC1 LC6502C**Terminal name**

The direction of the arrow shows the signal flow.

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www.freeservicemanuals.info**Pin description**

Pin No.	Pin mark	Functional description			
1 7 6	KEY. 0 KEY. 5	Become various key inputs via the matrix with the strobe outputs 0~3.			
7	ASTP. I STRB. 0	Detects the auto stop of mechanism I when working as an input pin. Becomes the strobe output when working as an output pin.			
8	ASTP. II STRB. 1	Detects the auto stop of mechanism II when working as an input pin. Becomes the strobe output when working as an output pin.			
9	MS SIG. I STRB. 2	Detect the MS of mechanism I when working as an input pin. Becomes the strobe output when working as an output pin.			
10	MS SIG. II STRB. 3	Detects the MS of mechanism II when working as an input pin. Becomes the strobe output when working as an output pin.			
		STRB. 0 : "H" level	STRB. 1 : "H" level	STRB. 2 : "H" level	STRB. 3 : "H" level
11	DISP. 0	PLAY indication (I)	PLAY indication (II)	PHONO REC indication	NORMAL DUBB indication
12	DISP. 1	PAUSE indication (I)	PAUSE indication (II)	CD REC indication	HIGH DUBB indication

Pin No.	Pin mark	Functional description			
13	DISP. 2	REC. MUT indication	TUNER REC indication	AUX REC indication	
14 15 16	FUNC. 0 FUNC. 1 FUNC. 2	The signal is output to the decoder (TC 4028) and converted to the synchro-recording output.			
17	O-DUB 2ch H	"H" signal is output only during double speed dubbing.			
18	O-DUB 2ch N	"H" signal is output only during the normal speed dubbing.			
19	RESET	The MPU is set with "H" signal input approx. 2 sec later than the power supply (V _{DD}).			
20	TEST	Connected to GND.			
22 23	OSC. 1 OSC. 2	The 400kHz clock frequency is produced by connection of L. C. R circuits.			
24	SELECT. I	Selects the play of mechanisms I and II. When this pin is set to "H", playback with mechanism II is output.			
25	O-PMT	Play mute is applied when this pin is set to "L".			
26	O-RMT	Record mute is applied with this pin set to "L".			
27	O-REC	Outputs "H" signal during recording and dubbing.			
28	M-MOTOR. I	Outputs "H" signal in the F.F. and FWD modes while playing back mechanism I.			
29	O-FWD. I	This is the sub-motor forward rotation output: "H" signal is output in the RWD and REV modes with mechanism I.			
30	O-REV. I	This is the sub-motor reverse rotation output: "H" signal is output in the REW and REV modes with mechanism I.			
31	S-PAUSE. I	This is the pause plunger output: "H" signal is output in the CUE and REV modes with mechanism I set to the pause mode.			
32	S-PLAY. I	This is the play plunger output: "H" signal is output during play with mechanism I.			
33	M-MOTOR. II	"H" signal is output in the FF and FWD modes during recording with mechanism II.			
34	O-FWD. II	This is the sub-motor forward rotation output: "H" signal is output in the FF and CUE modes of mechanism II.			
35	O-REV. II	This is the sub-motor reverse rotation output: "H" signal is output in the RWD and REV modes with mechanism II.			
36	S-PAUSE. II	This is the pause plunger output: "H" signal is output during pause of mechanism II. and the CUE and REV modes.			
37	S-PLAY. II	This is the play plunger output: "H" signal is output during recording with mechanism II.			
38 39 40	HOLD INT V _{DD}	Connected to +5V.			
41	SYNC. CD	When "L" signal is input to this pin during synchro-recording, the unit enters the record/play mode, and when "H" signal is input, the unit enters the record pause mode.			
42	SYNC. PHONO	When "L" signal is input to this pin during synchro-recording, the unit enters the record/play mode, and when "H" signal is input, the unit enters the record pause mode.			

Description of IC2 TC4028**Description of pin (11) (D-terminal)**

When the D terminal is set to "H", the Q₁~Q₅ outputs are set to "L" regardless of A, B and C. The function of the amp. is prevented from being set to "PHONO" with the power set to OFF by the diode and resistor.

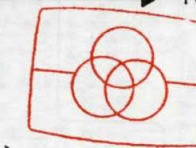
Description of terms

PB. START No. 3 pin of the control jack. When mechanism I or II is set to the play mode, a pulse is output to this pin, and the function of the amp. is set to "TAPE".

FIX No. 7 pin of the control jack. When synchro-recording is performed by the deck, this pin is set to "H" from "L", and the function of the amp. is fixed. The function is fixed only during synchro-recording and the function can be changed over during dubbing.

JACK IN This is a name used in the circuit and is not output externally. When the function of the amp is set to "TAPE" during normal speed dubbing, the play signal of mechanism I is input from the DIN JACK via the amp. "JACK IN" is the control signal which is set to "H" when the function of the amp is set to "TAPE" during normal speed dubbing.

Input			Output	Output function
B	C	A		
L	L	L	Q ₀	
L	L	H	Q ₁	TUNER, REC
H	L	L	Q ₂	PHONO, REC
H	L	H	Q ₃	CD, REC
L	H	L	Q ₄	PB. START
L	H	H	Q ₅	AUX. REC

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Symbol No.	Part No.	Description
SOL1,2,3. 4	81-505-603	SOLENOID ([DECK I], [DECK II], [DECK I], [DECK II])
Δ	★87-085-184	CODE BUSHING (H. U only)
	87-085-185	CORD BUSHING (E. K. G. Z only)
Δ	87-033-140	SPLICE CONNECTOR (H only)
Δ	87-034-962	AC POWER CORD (HS only)
Δ	87-034-992	AC POWER CORD (HB only)
Δ	87-034-578	AC POWER CORD (UB only)
Δ	82-788-674	AC POWER CORD (E. ZB only)
Δ	87-034-710	AC POWER CORD (KS only)
Δ	87-034-708	AC POWER CORD (KB, G only)
CON5	★82-130-630	CONNECTOR Ass'y. 9P[DECK II]
CON6	★82-130-633	CONNECTOR Ass'y. 6P[DECK I]
CON7	★82-130-644	CONNECTOR Ass'y. 3P[DECK II]
CON8	★82-130-643	CONNECTOR Ass'y. 3P[DECK I]
CON9	★82-196-629	CONNECTOR Ass'y. 10P[DECK I]
CON10	★82-196-635	CONNECTOR Ass'y. 10P[DECK II]
CON11	★82-196-628	CONNECTOR Ass'y. 8P[DECK I]
CON12	★82-196-634	CONNECTOR Ass'y. 11P[DECK II]

Note; Combination Circuit Board

The parts on the electrical parts list which are indicated by an asterisk (*) are supplied as one single combined circuit board. Therefore, they will not be supplied separately. If this becomes necessary, please order the entire circuit board.

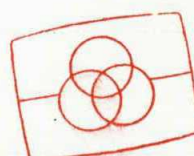
Combination circuit board 82-130-601

PCB-A 82-130-603
PCB-B 82-130-604
PCB-C 82-130-605
PCB-D 82-130-606
PCB-E 82-130-607
PCB-F 82-130-602
PCB-J 82-130-608

Δ Safety component symbol

This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications. Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.

1. The ICs on the electrical parts which are indicated by an C-MOS IC symbol mark (Δ).



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