

AIWA®

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SERVICE MANUAL

AM/FM STEREO RADIO CASSETTE PLAYER

MODEL NO.

HS-T70

Free service manuals
Gratis schema's

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AM/FM STEREO RADIO CASSETTE RECORDER

MODEL NO.

HS-J70, J400MKII

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TYPE. Y

This service manual contains service information for only altered and added sections of Model HS-T70, J70 and J400MKII. If requiring other service information, see the service manual of Model HS-J07, J400.

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

1. No illegibility shall be given to the specification plate, the caution labels, the fuse labels and others.
2. 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.
3. The following matters shall be maintained as they are, when repairing.
 - 1) Soldering of lead-wire ends
 - 2) Wiring and holding of lead-wires with wire-clips and binders
 - 3) Materials of lead-wires
 - 4) Location of all kinds of insulators
4. 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.

SPECIFICATIONS

HS-T70

<Radio Section >

Frequency range: FM: 88—108 MHz
AM: 530—1,605 kHz
Antenna: FM headphone antenna
AM ferrite bar antenna

<Tape Section >

Track arrangement: 4-track, 2-channel, stereo
Frequency range: 40 to 12,500 Hz (NORMAL tape)
40 to 16,000 Hz (METAL tape)
Maximum output: 20 mW + 20 mW (EIAJ/DC)
Output terminal: Phones jack, 3.5 ϕ stereo mini $\times$ 2
Power source: Battery DC 3V R6P (SUM-3, AA, LR-6) $\times$ 2
Domestic AC power (using optional AC adapter)

Battery life:

- Using manganese batteries (R6P, SUM-3, AA)
Approx. 7.5 hours (EIAJ, 1 mW output, playback mode)
- Using alkaline batteries (LR-6, AA)
Approx. 15 hours (EIAJ, 1 mW output, playback mode)

Dimensions: 80.5 (W) $\times$ 113 (H) $\times$ 29.9 (D) mm (excluding any projecting parts)

Maximum dimensions: 81.3 (W) $\times$ 117 (H) $\times$ 30.7 (D) mm

Weight: 320 g (including batteries)

Accessories: Stereo headphones $\times$ 1
Belt clip $\times$ 1
Carrying case $\times$ 1

HS-J70, J400MKII

<Radio Section >

Frequency range: FM: 88—108 MHz
AM: 530—1,605 kHz
Antenna: FM headphone antenna
AM ferrite bar antenna

<Tape Recorder Section >

Track arrangement: 4-track, 2-channel, stereo
Frequency range: 40 to 12,500 Hz (NORMAL tape)
40 to 16,000 Hz (METAL tape)
Microphone: Electret-condenser microphone (Single-point stereo, detachable)
Maximum output: 20 mW + 20 mW (EIAJ/DC)
Input terminal: MIC jack, 3.5 ϕ stereo mini $\times$ 1
Output terminal: Phones jack, 3.5 ϕ stereo mini $\times$ 1
Power source: Battery DC 3V R6P (SUM-3, AA, LR-6) $\times$ 2
Domestic AC power (using optional AC adapter)

Battery life:

- Using manganese batteries (R6P, SUM-3, AA)
Approx. 4.5 hours (EIAJ, recording mode)
Approx. 7.5 hours (EIAJ, 1 mW output, playback mode)
- Using alkaline batteries (LR-6, AA)
Approx. 9 hours (EIAJ, recording mode)
Approx. 15 hours (EIAJ, 1 mW output, playback mode)

Dimensions: 80.5 (W) $\times$ 113 (H) $\times$ 29.9 (D) mm (excluding any projecting parts)

Maximum dimensions: 83.5 (W) $\times$ 117 (H) $\times$ 30.7 (D) mm

Weight: 320 g (including batteries)

Accessories: Stereo headphones $\times$ 1
Belt clip $\times$ 1
Carrying case $\times$ 1
Microphone $\times$ 1

- Design and specifications are subject to change without notice.
- Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.
- Dolby and the  symbol are trademarks of Dolby Laboratories Licensing Corporation.

- *-mark in this part list shows exclusive part.
- *-mark means less required items availabilities may be limited.
- No availability part is marked with — in Part No. list.
- [S]=SILVER, [R]=RED, [B]=BLACK

MECHANICAL PARTS LIST

HS-J70, J400MKII (Alteration Parts List as against HS-J07)

Part No. changed to	Ref. No.	Part No.	Description	Common Model	Q'ty
	1-1	09-027-366	CASSETTE BOX Ass'y [S]	※	1
		09-027-367	CASSETTE BOX Ass'y [R]	※	1
		09-027-368	CASSETTE BOX Ass'y [B]	※	1
		09-027-369	CASSETTE BOX Ass'y (J 400MKII YUB)	※	1
	1-2	★84-407-007	CENTER CABINET	※	1
	1-10	84-407-016	LID, BATTERY [R]	※	1
	1-17	★84-407-004	CONTROL PANEL Ass'y [S]	※	1
		★84-407-018	CONTROL PANEL Ass'y [R, B]	※	1
	1-21	84-407-006	REAR CABINET [S]	※	1
		84-407-012	REAR CABINET [R]	※	1
		84-407-014	REAR CABINET [B]	※	1
	2-8	★86-511-470	E-SPRING, STOP LEVER J		1
	2-10	86-511-483	PINCH LEVER L Ass'y		1
	2-12	86-511-481	PINCH LEVER		1
	2-13	★86-514-291	T-SPRING, PINCH LEVER R		1
	3-1	★86-511-493	MOTOR COLLAR U8		2
	3-4	86-511-505	FLYWHEEL R Ass'y N		1
	3-7	86-514-284	GEAR, MAIN		1
	3-17	86-511-506	FLYWHEEL L Ass'y N		1
	3-22	86-511-498	PULLEY MAIN Ass'y		1

The following Ref. Nos. are not used in this model.

Ref. No. 2-6

3-19, 3-25

- +++ mark denotes a component of assembled part which part code is represented by a previously stated component.
- * -mark means less required items and availabilities may be limited.

CAPACITORS
No mark, U, UF: μ F
P, PF : pF

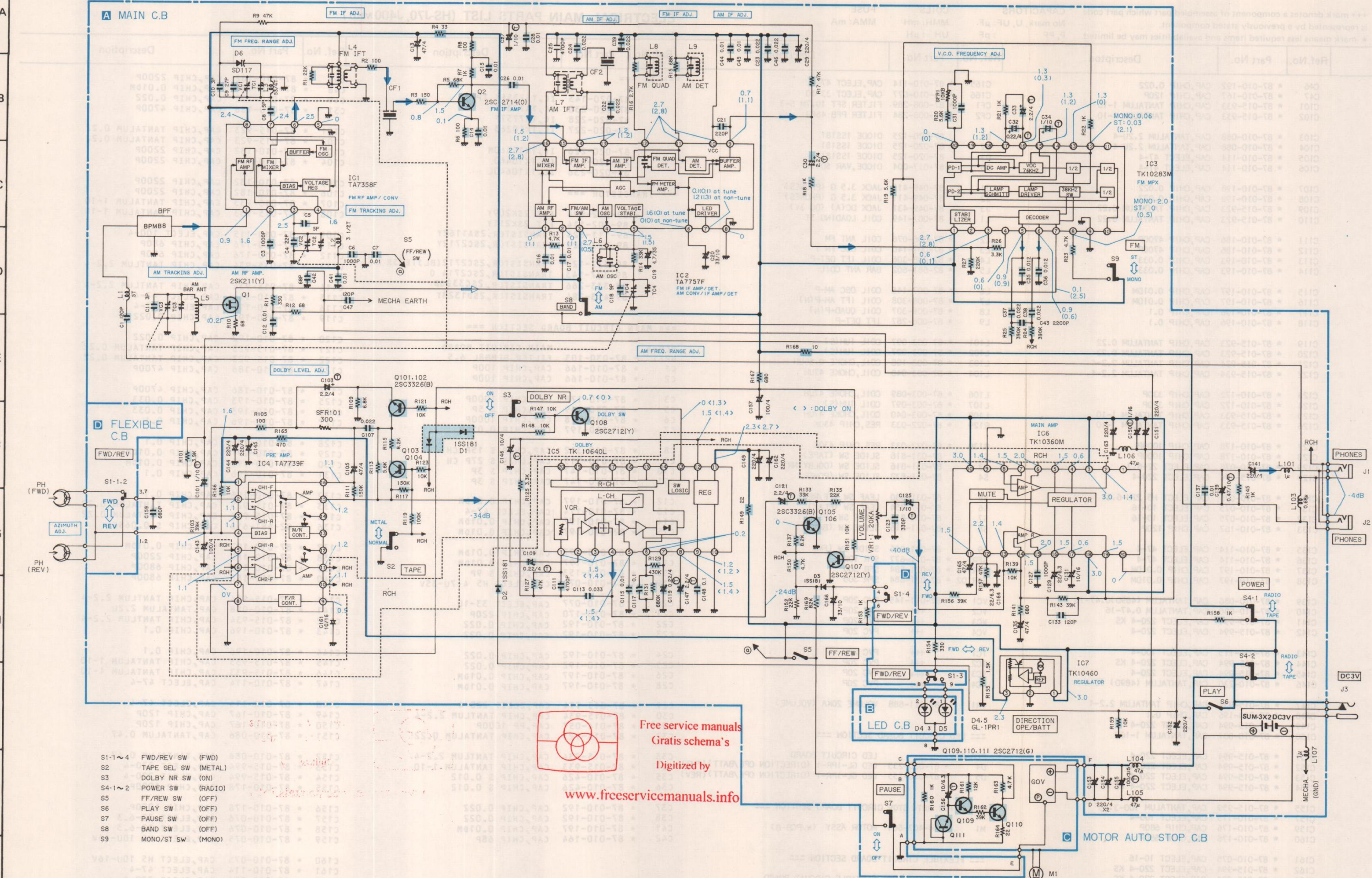
COILS
MMH: mH
UH : μ H

FUSE
MMA: mA

Ref. No.	Part No.	Description	Ref.No.	Part No.	Descripton
=== IC ===					
	87-020-143	IC,TA7358F	C46	* 87-010-192	CAP,CHIP 0.022
	87-020-230	IC,TA7739F	C47	* 87-010-167	CAP,CHIP 120P
	87-020-228	IC,TA7757F	C101	* 87-015-933	CAP,CHIP TANTALUM 1-10
	87-020-227	IC,TK10283 M	C102	* 87-015-933	CAP,CHIP TANTALUM 1-10
	87-020-226	IC,TK10360M	C103	* 87-010-088	CAP,TANTALUM 2.2U-4
	87-020-229	IC,TK10460	C104	* 87-010-088	CAP,TANTALUM 2.2U-4
	87-020-236	IC,TK10640L	C105	* 87-015-923	CAP,CHIP 47-4
			C106	* 87-010-114	CAP,ELECT 47-4
=== TRANSISTOR ===					
	89-502-114	FET 2SK211Y	C107	* 87-010-198	CAP,CHIP 0.022
	89-111-624	TRANSISTOR,2SA1162Y	C108	* 87-010-198	CAP,CHIP 0.022
	89-327-124	TRANSISTOR,2SC2712Y	C109	* 87-015-923	CAP,CHIP TANTALUM 0.22
	89-327-143	TRANSISTOR,2SC2714 O	C110	* 87-015-923	CAP,CHIP TANTALUM 0.22
	89-333-266	TRANSISTOR,2SC3326B	C111	* 87-010-186	CAP,CHIP 4700P
			C112	* 87-010-186	CAP,CHIP 4700P
			C113	* 87-010-193	CAP,CHIP 0.033
			C114	* 87-010-193	CAP,CHIP 0.033
=== MAIN CIRCUIT BOARD SECTION ===					
PCB-A		MAIN CIRCUIT BOARD	C115	* 87-010-197	CAP,CHIP 0.01DM
BPF	* 87-030-103	FILTER BPMB8L 6.5	C116	* 87-010-197	CAP,CHIP 0.01DM
C1	* 87-010-167	CAP,CHIP 120P	C117	* 87-010-196	CAP,CHIP 0.1
C3	* 87-010-178	CAP,CHIP 1000P	C118	* 87-010-196	CAP,CHIP 0.1
C4	* 87-010-158	CAP,CHIP S 22P	C119	* 87-015-923	CAP,CHIP TANTALUM 0.22
C5	* 87-010-149	CAP,CHIP S 5P	C120	* 87-015-923	CAP,CHIP TANTALUM 0.22
C6	* 87-010-178	CAP,CHIP 1000P	C121	* 87-015-934	CAP,CHIP TANTALUM 2.2-4
C7	* 87-010-197	CAP,CHIP 0.01DM	C122	* 87-015-934	CAP,CHIP TANTALUM 2.2-4
C8	* 87-010-312	CAP,CHIP S 15P CH	C123	* 87-010-172	CAP,CHIP 330P
C9	* 87-010-315	CAP,CHIP S 27P CH	C124	* 87-010-172	CAP,CHIP 330P
C10	* 87-010-147	CAP,CHIP S 3P	C125	* 87-015-933	CAP,CHIP TANTALUM 1-10
C11	* 87-010-147	CAP,CHIP S 3P	C126	* 87-015-933	CAP,CHIP TANTALUM 1-10
C12	* 87-010-197	CAP,CHIP 0.01DM	C127	* 87-010-178	CAP,CHIP 1000P
C13	* 87-010-114	CAP,ELECT 47/4	C128	* 87-010-178	CAP,CHIP 1000P
C14	* 87-010-197	CAP,CHIP 0.01DM	C129	* 87-010-076	CAP,ELECT 22-6.3
C15	* 87-010-197	CAP,CHIP 0.01DM	C129	* 87-015-994	CAP,ELECT 220-4
C16	* 87-010-197	CAP,CHIP 0.01DM	C130	* 87-010-076	CAP,ELECT H5 22U-6.3V
C17	* 87-010-197	CAP,CHIP 0.01DM	C131	* 87-010-075	CAP,ELECT 10-16
C18	* 87-010-153	CAP,CHIP S 9P	C132	* 87-010-075	CAP,ELECT 10-16
C19	* 87-010-074	CAP,ELECT H5 4.7U-35V	C133	* 87-010-167	CAP,CHIP 120P
C20	* 87-010-077	CAP,ELECT 33-10	C135	* 87-010-114	CAP,ELECT 47-4
C21	* 87-010-170	CAP,CHIP 220P	C136	* 87-010-114	CAP,ELECT 47-4
C22	* 87-010-192	CAP,CHIP 0.022	C137	* 87-010-197	CAP,CHIP 0.01DM
C23	* 87-010-192	CAP,CHIP 0.022	C138	* 87-010-197	CAP,CHIP 0.01DM
C24	* 87-010-192	CAP,CHIP 0.022	C139	* 87-010-086	CAP,TANTALUM (489D)0.47-16
C25	* 87-010-186	CAP,CHIP 4700P	C140	* 87-010-086	CAP,TANTALUM 0.47-16
C26	* 87-010-197	CAP,CHIP 0.01DM	C141	* 87-015-994	CAP,ELECT 220-4 KS
C27	* 87-010-087	CAP,TANTALUM 1U-16	C142	* 87-015-994	CAP,ELECT 220-4
C28	* 87-010-197	CAP,CHIP 0.01DM	C143	* 87-010-115	CAP,ELECT 100-4
C30	* 87-015-934	CAP,CHIP TANTALUM 2.2-4	C144	* 87-015-994	CAP,ELECT 220-4 KS
C31	* 87-014-057	CAP,PP 1000P	C145	* 87-015-994	CAP,ELECT 220-4
C32	* 87-015-923	CAP,CHIP TANTALUM 0.22	C146	* 87-010-230	CAP,TANTALUM (489D) 10-4
C33	* 87-015-934	CAP,CHIP TANTALUM 2.2-4	C147	* 87-015-934	CAP,CHIP TANTALUM 2.2-4
C34	* 87-015-933	CAP,CHIP TANTALUM 1-10	C148	* 87-010-196	CAP,CHIP 0.1
C35	* 87-010-426	CAP,CHIP S 0.012	C149	* 87-015-994	CAP,ELECT 220-4
C36	* 87-010-426	CAP,CHIP S 0.012	C150	* 87-010-087	CAP,TANTALUM 1-16V
C37	* 87-010-198	CAP,CHIP 0.022	C151	* 87-015-994	CAP,ELECT 220-4
C38	* 87-010-198	CAP,CHIP 0.022	C152	* 87-015-994	CAP,ELECT 220-4
C39	* 87-010-192	CAP,CHIP 0.022	C153	* 87-015-994	CAP,ELECT 220-4
C41	* 87-010-197	CAP,CHIP 0.01DM	C154	* 87-015-994	CAP,ELECT 220-4 KS
C42	* 87-010-164	CAP,CHIP 68P	C155	* 87-015-959	CAP,TANTALUM 100-3.15
C43	* 87-010-182	CAP,CHIP 2200P	C157	* 87-010-115	CAP,ELECT 100-4
C44	* 87-010-197	CAP,CHIP 0.01DM	C159	* 87-010-176	CAP,CHIP 680P
C45	* 87-010-197	CAP,CHIP 0.01DM	C160	* 87-010-176	CAP,CHIP 680P

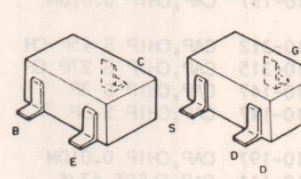
Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
C165	* 87-010-114	CAP,ELECT 47-4	L101	* 87-003-097	COIL 1UH(S)
C166	* 87-010-077	CAP,ELECT 33-10	L102	* 87-003-097	COIL 1UH(S)
CF1	* 87-008-289	FILTER SFT 10.7M S-3	L103	* 87-003-108	COIL,CHOKE 0.68UH
CF2	* 87-008-284	FILTER PFB 468J	L104	* 87-003-040	COIL,CHOKE 47UH
D1	87-020-125	DIODE 1SS181	L106	* 87-003-089	COIL,CHOKE 47UH
D2	87-020-125	DIODE 1SS181	L107	* 87-003-097	COIL 1UH(S)
D3	87-020-125	DIODE 1SS181	L108	* 87-003-040	COIL,CHOKE 47UH
D6	87-017-004	DIODE,VAR SD117	R129	* 87-022-033	RES,CHIP 430K
J1	87-049-411	JACK 3.5 G (PHONES)	R130	* 87-022-033	RES,CHIP 430K
J2	87-049-411	JACK 3.5 G (PHONES)	S2	87-031-816	SLIDE SW (TAPE)
J3	87-049-431	JACK DC(A) (DC 3V)	S3	87-031-816	SLIDE SW (DOLBY NR)
L1	* 87-007-149	COIL LOADING 5T	S4	87-031-832	SLIDE SW (POWER)
L2	* 87-006-076	COIL ANT FM	S5	87-031-830	LEAF SW (FF/REW)
L3	* 87-007-140	COIL OSC FM Y	S6	87-031-854	LEAF SW (PLAY)
L4	* 87-008-306	COIL IFT DET-P	S7	87-031-816	SLIDE SW (PAUSE)
L5	* 82-681-602	BAR ANT COIL	S8	87-031-816	SLIDE SW (BAND)
L6	* 87-007-146	COIL OSC AM-P	S9	87-031-816	SLIDE SW (FM)
L7	* 87-008-308	COIL IFT AM-P(N)	SFR1	* 87-021-677	SFR 10KB
L8	* 87-008-307	COIL QUAD-P(N)	SFR101	* 87-021-884	SFR 300
L9	* 87-008-287	IFT DET-P	SFR102	* 87-021-884	SFR 300
VC1	* 87-011-145	PVC 20P	VC1	+++	PVC 20P
VC2	+++	PVC 20P	VC2	+++	PVC 20P
VC3	+++	PVC 20P	VC3	+++	PVC 20P
VC4	+++	PVC 20P	VC4	+++	PVC 20P
TC1	+++	PVC 20P	TC1	+++	PVC 20P
TC2	+++	PVC 20P	TC2	+++	PVC 20P
TC3	+++	PVC 20P	TC3	+++	PVC 20P
TC4	+++	PVC 20P	TC4	+++	PVC 20P
VR1	87-021-888	VOLUME 20KA (VOLUME)			
=== LED CIRCUIT BOARD SECTION ===					
PCB-B		LED CIRCUIT BOARD			
D4	* 87-020-255	LED GL-1PR-1 (DIRECTION OPE/BATT)(FWD)			
D5	* 87-020-255	LED GL-1PR-1 (DIRECTION OPE/BATT)(REV)			
=== MOTOR AUTO STOP CIRCUIT BOARD SECTION ===					
M1	84-407-604	MOTOR ASSY (W/PCB-B)			
=== FLEXIBLE CIRCUIT BOARD SECTION ===					
PCB-D	* 82-681-609	FLEXIBLE CIRCUIT BOARD			
PH	82-689-604	PH ASSY			
S1	87-031-829	SLIDE SW (FWD/REV)			

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
=== IC ===					
	87-020-143	IC,TA7358F TP-1	C43	* 87-010-182	CAP,CHIP 2200P
	87-020-230	IC,TA7739F	C48	* 87-010-197	CAP,CHIP 0.01DM
	87-020-228	IC,TA7757F	C49	* 87-010-192	CAP,CHIP 0.022
	87-020-227	IC,TK10283 M	C51	* 87-010-186	CAP,CHIP 4700P
	87-020-226	IC,TK10360M	C101	* 87-015-923	CAP,CHIP TANTALUM 0.22
	87-020-229	IC,TK10460	C102	* 87-015-923	CAP,CHIP TANTALUM 0.22
	87-020-236	IC,TK10640L	C103	* 87-010-182	CAP,CHIP 2200P
			C104	* 87-010-182	CAP,CHIP 2200P
=== TRANSISTOR ===					
	89-502-094	FET 2SK209Y	C105	* 87-010-182	CAP,CHIP 2200P
	89-502-114	FET 2SK211Y	C106	* 87-010-182	CAP,CHIP 2200P
	89-111-624	TRANSISTOR,2SA1162Y	C107	* 87-015-933	CAP,CHIP TANTALUM 1-10
	89-327-124	TRANSISTOR,2SC2712Y	C108	* 87-015-933	CAP,CHIP TANTALUM 1-10
	89-327-126	TRANSISTOR,2SC2712(BL)TE85R	C109	* 87-010-115	CAP,ELECT 100-4
	89-327-143	TRANSISTOR,2SC2714 O	C111	* 87-010-176	CAP,CHIP 680P
	89-333-266	TRANSISTOR,2SC3326B	C112	* 87-010-176	CAP,CHIP 680P
	89-413-284	TRANSISTOR,2SD1328T	C113	* 87-015-934	CAP,CHIP TANTLUM 2.2-4
			C114	* 87-015-934	CAP,CHIP TANTLUM 2.2-4
			C115	* 87-010-114	CAP,ELECT 47-4
			C116	* 87-010-114	CAP,ELECT 47-4
			C119	* 87-010-192	CAP,CHIP 0.022
			C120	* 87-010-192	CAP,CHIP 0.022
			C121	* 87-015-923	CAP,CHIP TANTALUM 0.22
			C122	* 87-015-923	CAP,CHIP TANTALUM 0.22
			C123	* 87-010-186	CAP,CHIP 4700P
			C124	* 87-010-186	CAP,CHIP 4700P
			C125	* 87-010-193	CAP,CHIP 0.033
			C126	* 87-010-193	CAP,CHIP 0.033
			C127	* 87-010-196	CAP,CHIP 0.1
			C128	* 87-010-196	CAP,CHIP 0.1
			C129	* 87-010-197	CAP,CHIP 0.01DM
			C130	* 87-010-197	CAP,CHIP 0.01DM
			C131	* 87-010-196	CAP,CHIP 0.1
			C132	* 87-010-196	CAP,CHIP 0.1
			C133	* 87-015-923	CAP,CHIP TANTALUM 0.22
			C134	* 87-015-923	CAP,CHIP TANTALUM 0.22
			C136	* 82-681-618	CAP,CHIP S 0.068FZ
			C137	* 87-010-197	CAP,CHIP 0.01DM
			C138	* 87-010-182	CAP,CHIP 2200P
			C139	* 87-010-188	CAP,CHIP 6800P
			C140	* 87-010-188	CAP,CHIP 6800P
			C141	* 87-015-934	CAP,CHIP TANTLUM 2.2-4
			C141	* 87-010-088	CAP,TANTALUM 2.2U
			C142	* 87-015-934	CAP,CHIP TANTLUM 2.2-4
			C143	* 87-010-196	CAP,CHIP 0.1
			C144	* 87-010-196	CAP,CHIP 0.1
			C145	* 87-015-933	CAP,CHIP TANTALUM 1-10
			C146	* 87-015-933	CAP,CHIP TANTALUM 1-10
			C147	* 87-010-114	CAP,ELECT 47-4
			C148	* 87-010-114	CAP,ELECT 47-4
			C149	* 87-010-167	CAP,CHIP 120P
			C150	* 87-010-167	CAP,CHIP 120P
			C151	* 87-010-086	CAP,TANTALUM 0.47
			C152	* 87-010-086	CAP,TANTALUM 0.47
			C153	* 87-015-994	CAP,ELECT 220-4
			C154	* 87-015-994	CAP,ELECT 220-4
			C155	* 87-010-178	CAP,CHIP 1000P
			C156	* 87-010-178	CAP,CHIP 1000P
			C157	* 87-010-076	CAP,ELECT 22-6.3
			C158	* 87-010-076	CAP,ELECT 22-6.3
			C159	* 87-010-075	CAP,ELECT H5 10U-16V
			C160	* 87-010-075	CAP,ELECT H5 10U-16V
			C161	* 87-010-114	CAP,ELECT 47-4
			C162	* 87-015-994	CAP,ELECT 220-4
			C163	* 87-015-994	CAP,ELECT 220-4
PCB-A					
MAIN CIRCUIT BOARD					
BPF1	* 87-030-103	FILTER BPMB8L 6.5			
C1	* 87-010-166	CAP,CHIP 100P			
C2	* 87-010-166	CAP,CHIP 100P			
C3	* 87-010-178	CAP,CHIP 1000P			
C5	* 87-010-149	CAP,CHIP S 5P			
C6	* 87-010-178	CAP,CHIP 1000P			
C7	* 87-010-197	CAP,CHIP 0.01DM			
C8	* 87-010-312	CAP,CHIP S 15P CH			
C9	* 87-010-315	CAP,CHIP S 27P CH			
C10	* 87-010-147	CAP,CHIP S 3P			
C11	* 87-010-147	CAP,CHIP S 3P			
C12	* 87-010-197	CAP,CHIP 0.01DM			
C13	* 87-010-114	CAP,ELECT 47-4			
C14	* 87-010-197	CAP,CHIP 0.01DM			
C15	* 87-010-197	CAP,CHIP 0.01DM			
C16	* 87-010-197	CAP,CHIP 0.01DM			
C17	* 87-010-197	CAP,CHIP 0.01DM			
C18	* 87-010-153	CAP,CHIP S 9P			
C19	* 87-010-074	CAP,ELECT H5 4.7U-35V			
C20	* 87-010-077	CAP,ELECT 33-10			
C21	* 87-010-170	CAP,CHIP 220P			
C22	* 87-010-192	CAP,CHIP 0.022			
C23	* 87-010-192	CAP,CHIP 0.022			
C24	* 87-010-192	CAP,CHIP 0.022			
C25	* 87-010-192	CAP,CHIP 0.022			
C26	* 87-010-197	CAP,CHIP 0.01DM			
C28	* 87-010-197	CAP,CHIP 0.01DM			
C29	* 87-015-994	CAP,ELECT 220-4			
C30	* 87-015-934	CAP,CHIP TANTLUM 2.2-4			
C31	* 87-014-057	CAP,PP 1000P			
C32	* 87-015-923	CAP,CHIP TANTALUM 0.22			
C33	* 87-015-934	CAP,CHIP TANTLUM 2.2-4			
C34	* 87-015-933	CAP,CHIP TANTALUM 1-10			
C35	* 87-010-426	CAP,CHIP S 0.012			
C36	* 87-010-426	CAP,CHIP S 0.012			
C37	* 87-010-192	CAP,CHIP 0.022			
C38	* 87-010-192	CAP,CHIP 0.022			
C41	* 87-010-197	CAP,CHIP 0.01DM			
C42	* 87-010-164	CAP,CHIP 68P			



- 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. But () is with AM reception or recording. An asterisk (*) indicates that the value was measured with a vacuum-tube voltmeter during recording.
 - 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
 - Tantalum capacitor
 - Chip parts
 - Chip capacitor
 - Chip tantalum capacitor
 - Chip resistor
 - Chip diode
 - Chip transistor
- This schematic diagram is subject to change without notice in the interests of improved performance.

HS-T70, J70, J400MKII

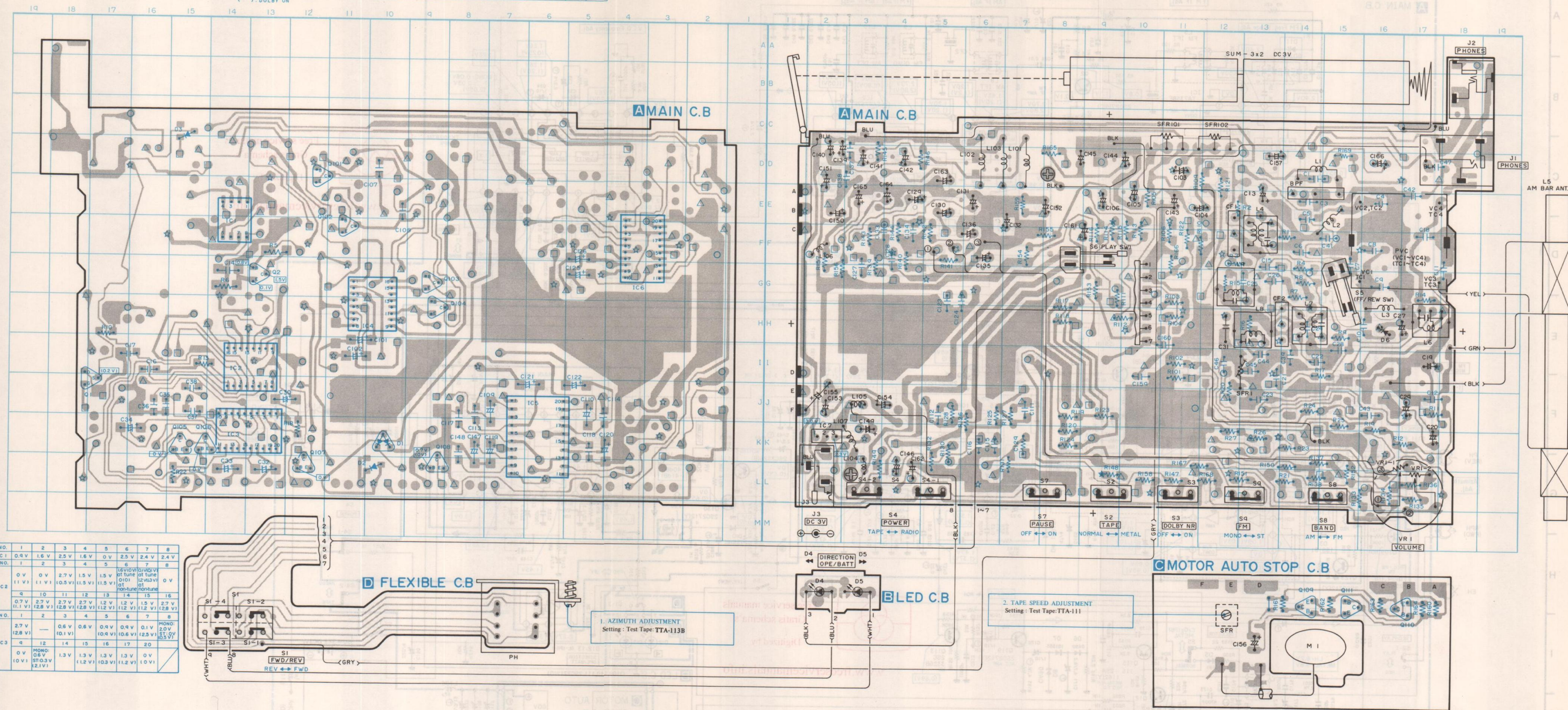


2SA1162
2SC2712
2SC2714
2SC3326
2SD1328
2SK209
2SK211

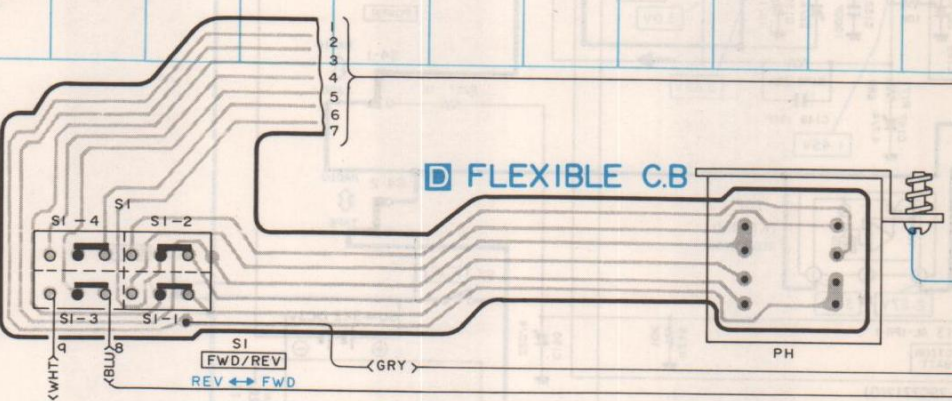
WIRING-1(HS-T70)

NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
IC4	1.6V	1.1V	1.1V	1.1V	1.1V	1.1V	0V	0V	0.9V	1.1V	1.2V	—	—	—	1.2V	1.1V	—	—	—	—
IC5	1.5V	1.5V	1.3V	1.5V	1.5V	0.2V	0.2V	1.5V	1.2V	0V	2.3V	1.5V	0V	—	—	—	—	—	—	—
IC6	—	1.4V	3.0V	0.6V	1.5V	2.0V	1.5V	1.4V	0V	3.0V	1.5V	2.2V	1.4V	1.5V	2.0V	1.5V	0.6V	3.0V	1.5V	0V

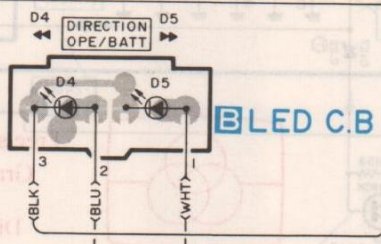
() : DOLBY ON



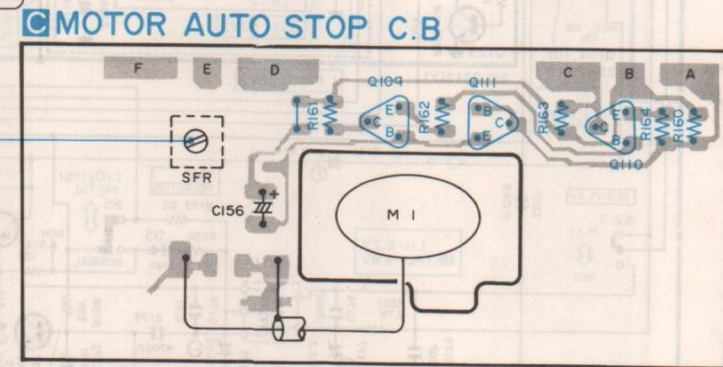
NO.	1	2	3	4	5	6	7	8
IC1	0.9V	1.6V	2.5V	1.6V	0V	2.5V	2.4V	2.4V
NO.	1	2	3	4	5	6	7	8
IC2	0V	0V	2.7V	1.5V	1.5V	1.5V	0V	0V
NO.	1	2	3	4	5	6	7	8
IC3	2.7V	2.7V	2.7V	2.7V	1.2V	1.2V	1.5V	2.7V
NO.	1	2	3	4	5	6	7	8
IC3	0V	MONO: 0.6V	1.3V	1.3V	1.3V	1.3V	0V	0V



1. AZIMUTH ADJUSTMENT
Setting : Test Tape: TTA-113B

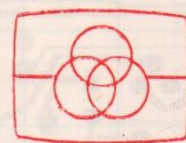
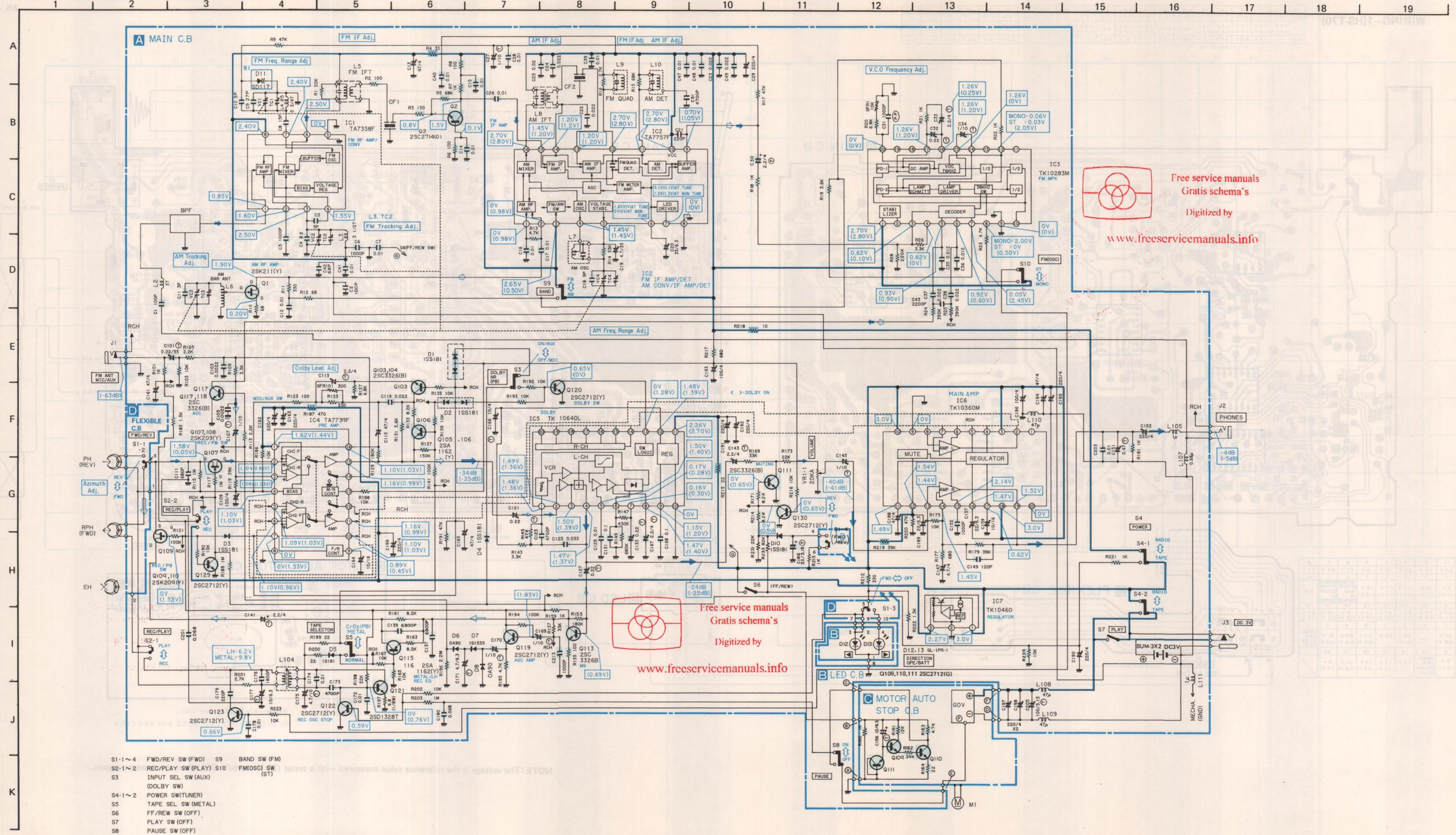


2. TAPE SPEED ADJUSTMENT
Setting : Test Tape: TTA-111



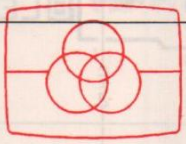
Note: — is for chip jumper (0 Ω)
○, △, □, ☆ THROUGH HOLE CONNECTION

NOTE: The voltage is the reference value measured with a tester (20 K ohms/V DC) when there are no signals.



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Gratis schema's
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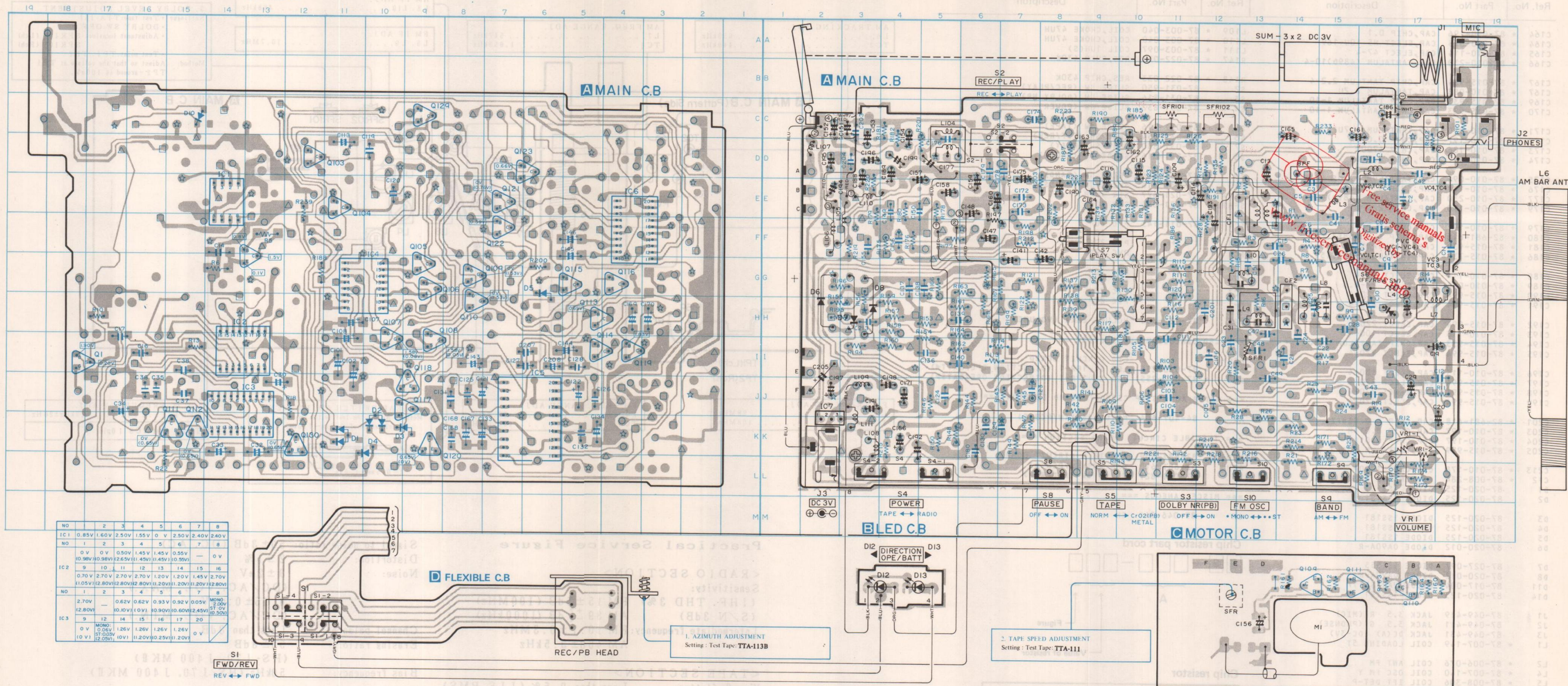
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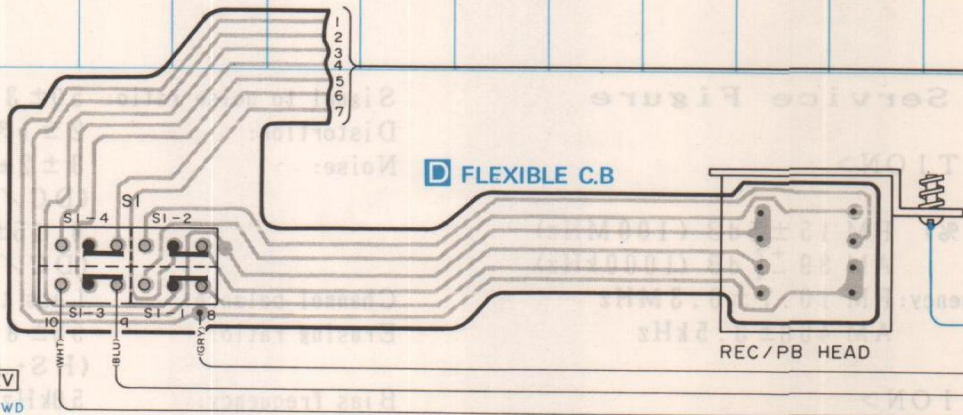
NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
IC 4	1.62V (1.44V)	1.1V (0.96V)	1.09V (1.03V)	1.10V (1.03V)	1.09V (0.96V)	0V (0.53V)	0V	0.89V (0.45V)	1.10V (1.03V)	1.16V (0.99V)	—	—	—	—	1.16V (0.99V)	1.10V (1.03V)	—	—	—	—
IC 5	1.48V (1.36V)	1.49V (1.39V)	1.50V (1.39V)	1.47V (1.37V)	1.50V (1.40V)	0.17V (0.28V)	0.16V (0.3V)	1.47V (1.40V)	1.15V (1.2V)	0V (0.27V)	2.26V (1.39V)	1.48V (1.28V)	0V (0.28V)	—	—	—	—	—	—	—
IC 6	—	—	—	—	—	—	—	0V	3.0V	1.49V	1.54V	1.44V	1.45V	2.14V	1.47V	0.62V	3.0V	0V	1.52V	0V

> DOLBY ON

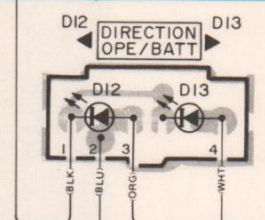


NO	1	2	3	4	5	6	7	8
IC 1	0.85V (0.98V)	1.60V (1.45V)	2.50V (2.65V)	1.55V (1.45V)	0V (0.55V)	2.50V (2.65V)	2.40V (2.55V)	2.40V (2.55V)
NO	1	2	3	4	5	6	7	8
IC 2	0V (0.98V)	0V (0.98V)	0.50V (2.65V)	1.45V (1.45V)	0.55V (0.55V)	—	0V (0.55V)	—
NO	1	2	3	4	5	6	7	8
IC 3	2.70V (2.80V)	2.70V (2.80V)	2.70V (2.80V)	2.70V (2.80V)	1.20V (1.20V)	1.45V (1.20V)	2.70V (2.80V)	2.70V (2.80V)
NO	1	2	3	4	5	6	7	8
IC 4	0V (0.5V)	0.62V (0.62V)	0.62V (0.62V)	0.93V (0.93V)	0.92V (0.92V)	0.05V (0.05V)	MONO (2.20V)	2.20V (2.20V)
NO	1	2	3	4	5	6	7	8
IC 5	0V (0.5V)	0.62V (0.62V)	0.62V (0.62V)	0.93V (0.93V)	0.92V (0.92V)	0.05V (0.05V)	MONO (2.20V)	2.20V (2.20V)
NO	1	2	3	4	5	6	7	8
IC 6	0V (0.5V)	0.62V (0.62V)	0.62V (0.62V)	0.93V (0.93V)	0.92V (0.92V)	0.05V (0.05V)	MONO (2.20V)	2.20V (2.20V)

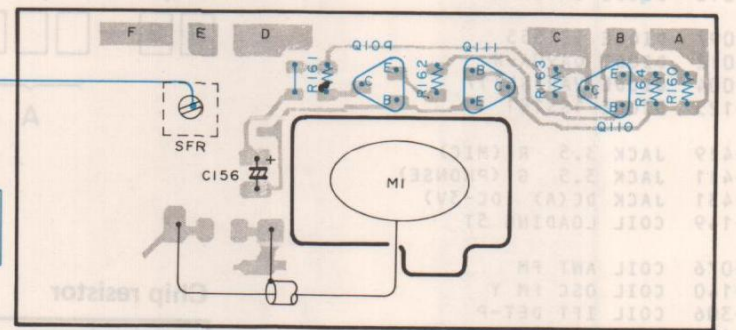
S1
FWD/REV
REV ↔ FWD



1. AZIMUTH ADJUSTMENT
Setting : Test Tape : TTA-113B



2. TAPE SPEED ADJUSTMENT
Setting : Test Tape : TTA-111



Note: → is for chip jumper (0Ω)
○, △, □, ☆ THROUGH HOLE CONNECTION

NOTE: The voltage is the reference value measured with a tester (20 K ohms/V DC) when there are no signals.

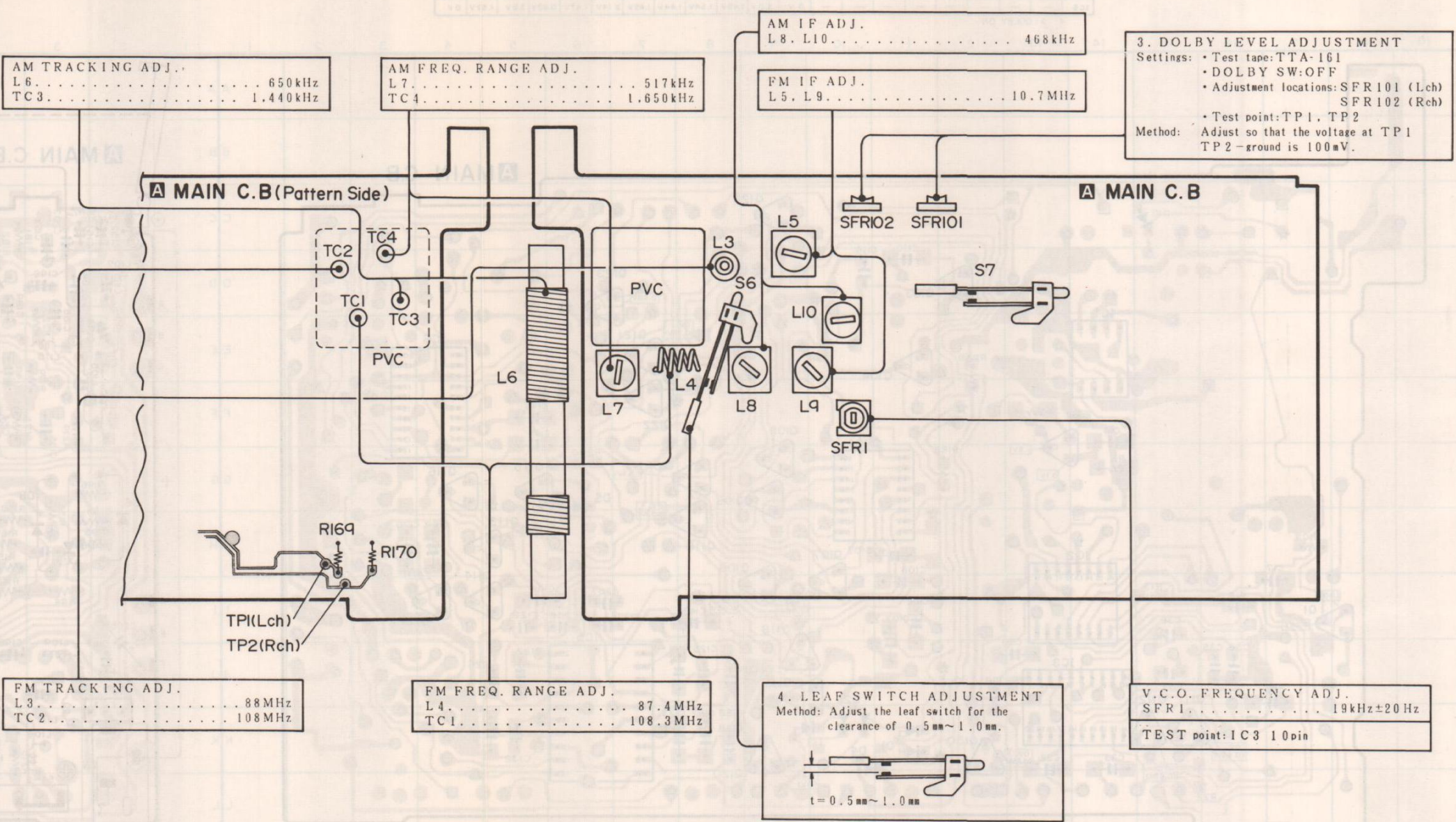
ELECTRICAL MAIN PARTS LIST (HS-J70,J400mkII)

—Continued from page 5—

Ref. No.	Part No.	Description	Ref.No.	Part No.	Descripton
C164	* 87-010-196	CAP,CHIP 0.1	L109	* 87-003-040	COIL,CHOKE 47UH
C164	* 87-010-075	CAP,ELECT H5 10U-16V	L110	* 87-003-040	COIL,CHOKE 47UH
C165	* 87-010-114	CAP,ELECT 47-4	L111	* 87-003-097	COIL 1UH(S)
C166	* 87-010-230	CAP,TANTALUM (489D)10-4	R147	* 87-022-033	RES,CHIP 430K
C167	* 87-015-934	CAP,CHIP TANTLUM 2.2-4	R148	* 87-022-033	RES,CHIP 430K
C167	* 87-010-088	CAP,TANTALUM 2.2U	S2	87-031-950	SLIDE SW (REC/PLAY)
C169	* 87-015-933	CAP,CHIP TANTALUM 1-10	S3	87-031-816	SLIDE SW (DOLBY NR)
C170	* 87-015-933	CAP,CHIP TANTALUM 1-10	S4	87-031-832	SLIDE SW (POWER)
C171	* 87-010-090	CAP,TANTALUM 4.7UF	S5	87-031-816	SLIDE SW (TAPE)
C172	* 87-010-197	CAP,CHIP 0.01DM	S6	87-031-854	LEAF SW (F.F/REW)
C173	* 87-010-186	CAP,CHIP 4700P	S7	87-031-830	LEAF SW (PLAY)
C174	* 87-010-197	CAP,CHIP 0.01DM	S8	87-031-816	SLIDE SW (PAUSE)
C175	* 87-010-090	CAP,TANTALUM 4.7UF	S9	87-031-816	SLIDE SW (BAND)
C176	* 87-010-181	CAP,CHIP S 1800P	S10	87-031-816	SLIDE SW (FM/OSC)
C177	* 87-010-230	CAP,TANTALUM (489D)10-4	SFR1	* 87-021-677	SFR 10KB
C179	* 87-010-170	CAP,CHIP 220P	SFR101*	87-021-884	SFR 300
C179	* 87-010-197	CAP,CHIP 0.01DM	TC1	* 87-011-145	PVC 20P
C180	* 82-681-618	CAP,CHIP S 0.068FZ	TC2	+++	PVC 20P
C181	* 87-015-934	CAP,CHIP TANTLUM 2.2-4	TC3	+++	PVC 20P
C186	* 87-015-738	CAP,TANTALUM 33-3.15V	TC4	+++	PVC 20P
C188	* 87-010-114	CAP,ELECT 47-4	VC1	+++	PVC 20P
C189	* 87-010-076	CAP,ELECT 22-6.3	VC2	+++	PVC 20P
C190	* 87-015-994	CAP,ELECT 220-4	VC3	+++	PVC 20P
C191	* 87-015-994	CAP,ELECT 220-4	VC4	+++	PVC 20P
C192	* 87-015-994	CAP,ELECT 220-4	VR1	87-021-888	VOLUME 20KA (VOLUME)
C193	* 87-010-115	CAP,ELECT 100-4	=== LED CIRCUIT BOARD SECTION ===		
C194	* 87-015-933	CAP,CHIP TANTALUM 1-10	PCB-B		LED CIRCUIT BOARD
C195	* 87-015-994	CAP,ELECT 220-4	D12	* 87-020-255	LED GL-1PR-1 (DIRECTION OPE/BATT◄)
C196	* 87-010-115	CAP,ELECT 100-4	D13	* 87-020-255	LED GL-1PR-1 (DIRECTION OPE/BATT►)
C197	* 87-015-994	CAP,ELECT 220-4	=== MOTOR AUTO STOP CIRCUIT BOARD SECTION ===		
C198	* 87-015-994	CAP,ELECT 220-4	M1	84-407-604	MOTOR ASSY(W/PCB-C)
C199	* 87-015-994	CAP,ELECT 220-4	=== FLEXIBLE CIRCUIT BOARD SECTION ===		
C201	* 82-681-618	CAP,CHIP S 0.068FZ	PCB-D	82-681-609	FLEXIBLE CIRCUIT BOARD
C203	* 87-010-197	CAP,CHIP 0.01DM	RPH	82-681-610	RPH ASSY(W/PCB-D)
C204	* 87-010-197	CAP,CHIP 0.01DM	S1	87-031-829	SLIDE SW (FWD/REV)
C205	* 87-015-959	CAP,TANTALUM 100-3.15	=== MISCELLANEOUS ===		
C213	* 87-010-178	CAP,CHIP 1000P	EH	87-046-241	EH
CF2	* 87-008-284	FILTER PFB 468J	Chip resistor part cord		
D1	87-020-125	DIODE 1S181	88-□□□-□□□ A Figure Value of resistor		
D2	87-020-125	DIODE 1S181			
D3	87-020-125	DIODE 1S181			
D4	87-020-125	DIODE 1S181			
D5	87-020-125	DIODE 1S181			
D6	87-020-012	DIODE 0A90A-R			
D7	87-027-097	DIODE 1S1555			
D8	87-020-012	DIODE 0A90A-R			
D11	87-017-004	DIODE,VAR SD117			
D14	87-020-125	DIODE 1S181			
J1	87-049-419	JACK 3.5 R (MIC)			
J2	87-049-411	JACK 3.5 G (PHONSE)			
J3	87-049-431	JACK DC(A) (DC-3V)			
L1	* 87-007-149	COIL LOADING 5T			
L2	* 87-006-076	COIL ANT FM			
L4	* 87-007-140	COIL OSC FM Y			
L5	* 87-008-306	COIL IFT DET-P			
L6	* 82-681-602	BAR ANT COIL			
L7	* 87-007-146	COIL OSC AM-P			
L8	* 87-008-308	COIL IFT AM-P(N)			
L9	* 87-008-307	COIL QUAD-P(N)			
L10	* 87-008-287	IFT DET-P			
L104	* 87-007-145	COIL OSC			
L105	* 87-003-097	COIL 1UH(S)			
L106	* 87-003-097	COIL 1UH(S)			
L107	* 87-003-108	COIL,CHOKE 0.68UH			

Example of chip resistor

560 Ω 88-129-561
10kΩ 88-129-103



Practical Service Figure

<RADIO SECTION>

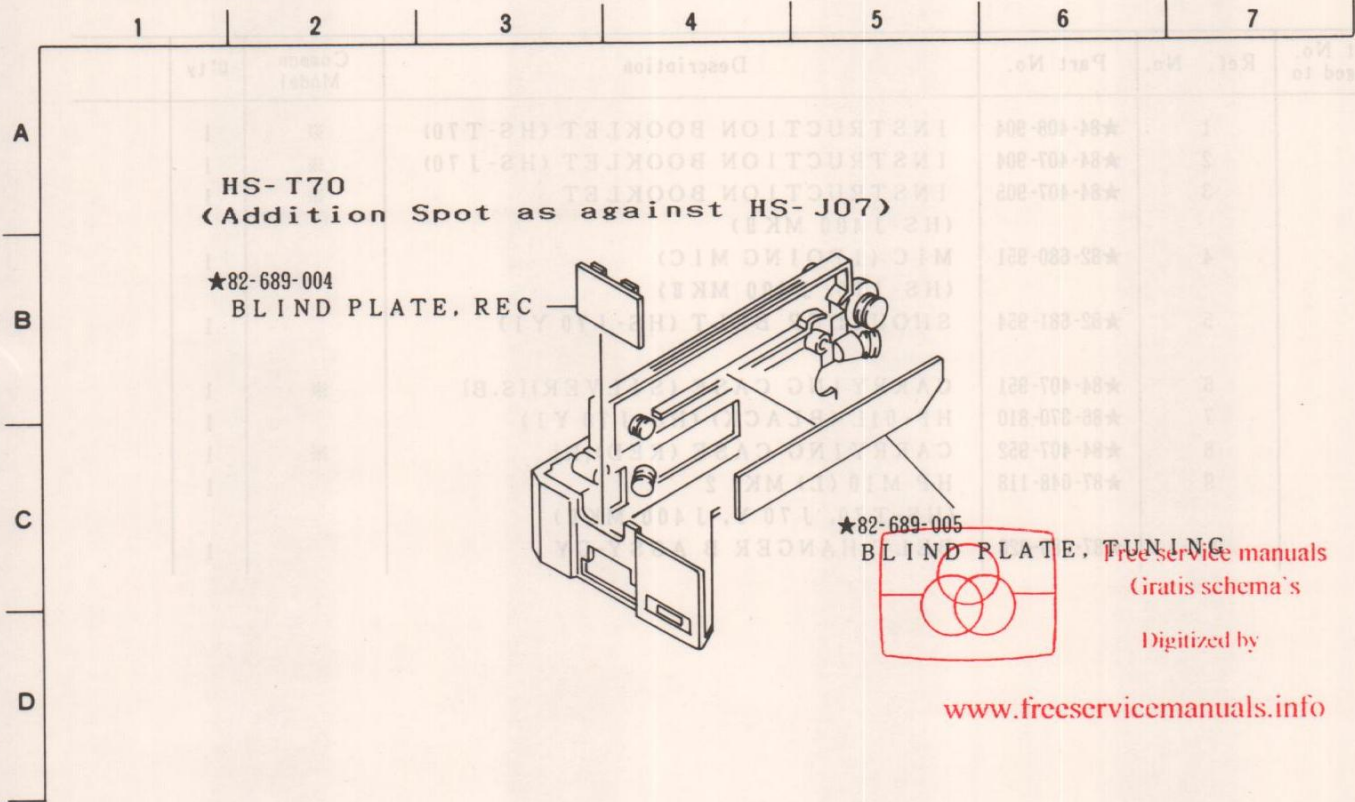
Sensitivity:
(IHF, THD 3%) FM 15±5dB (100MHz)
(S/N 3dB) AM 39⁺²₋₄ dB (1000kHz)
Intermediate frequency: FM 10.7±0.3MHz
AM 468±3.5kHz

<TAPE SECTION>

Wow & flutter: Less than 0.5% (JIS RMS)
Pinch roller pressure: 170±10g (1.67±0.098N)
Take up torque: 25⁺⁷₋₀ g·cm (0.25^{+0.069}₋₀ mN·m)
F.F/REW torque: 90⁺³⁰₋₂₀ g·cm (0.88^{+0.29}_{-0.2} mN·m)
Back tension: 3.5±1.0g·cm
(0.034±0.0098mN·m) (FWD)
2.5^{+1.5}_{-0.5} g·cm
(0.025^{+0.015}_{-0.0049} mN·m) (REV)

Signal to noise ratio: 50±3dB (DC, AC)
Distortion: 2±1%
Noise: 3±2mV
(DC/AC, VOL. MAX.)
0.15±0.1mV
(DC/AC, VOL. MIN.)
Channel balance: Less than 3dB
Erasing ratio: 58±8dB
(HS-J70, J400 MKII)
Bias frequency: 50kHz (HS-J70, J400 MKII)

EXPLODED VIEW



MECHANICAL PARTS LIST
HS-T70 (Alteration Parts List as against HS-J07)

- ※-mark in this part list shows exclusive part.
- ★-mark means less required items availabilities may be limited.
- No availability part is marked with — in Part No. list.
- [S]=SILVER, [R]=RED, [B]=BLACK

Part No. changed to	Ref. No.	Part No.	Description	Common Model	Q'ty
	1-1	09-027-370	CASSETTE BOX Ass'y [S]	※	1
		09-027-371	CASSETTE BOX Ass'y [R]	※	1
		09-027-372	CASSETTE BOX Ass'y [B]	※	1
	1-2	★84-407-007	CENTER CABINET	HS-J 70	1
	1-10	84-407-016	LID, BATTERY [R]	HS-J 70	1
	1-17	★84-408-004	CONTROL PANEL Ass'y [S]	※	1
		★84-408-013	CONTROL PANEL Ass'y [R, B]	※	1
	1-21	84-408-006	REAR CABINET [S]	※	1
		84-408-010	REAR CABINET [R]	※	1
		84-408-012	REAR CABINET [B]	※	1
	2-1	★86-511-475	MECHANISM CHASSIS Ass'y T		1
	2-8	★86-511-470	E-SPRING, STOP LEVER J		1
	2-10	86-511-483	PINCH LEVER L Ass'y		1
	2-12	86-511-481	PINCH LEVER R Ass'y		1
	2-13	★86-514-291	T-SPRING, PINCH LEVER R		1
	3-1	★86-511-493	MOTOR COLLAR U8		2
	3-4	86-511-505	FLYWHEEL R Ass'y N		1
	3-7	86-514-284	GEAR, MAIN		1
	3-17	86-511-506	FLYWHEEL L Ass'y N		1
	3-22	86-511-498	PULLEY MAIN Ass'y		1

The following Ref. Nos. are not used in this model.

- Ref. No. 1-9
2-3~2-7, 2-14~2-16
3-19

ACCESSORIES/PACKAGE LIST (HS-T70,J70,J400 MKII)

Part No. changed to	Ref. No.	Part No.	Description	Common Model	Q'ty
	1	★84-408-904	INSTRUCTION BOOKLET (HS-T70)	※	1
	2	★84-407-904	INSTRUCTION BOOKLET (HS-J70)	※	1
	3	★84-407-905	INSTRUCTION BOOKLET (HS-J400 MKII)	※	1
	4	★82-680-951	MIC (1POING MIC) (HS-J70, J400 MKII)		1
	5	★82-681-954	SHOULDER BELT (HS-J70 Y1)		1
	6	★84-407-951	CARRYING CASE (SILVER)(S,B)	※	1
	7	★86-370-810	HP-01L (BLACK) (HS-J70 Y1)		1
	8	★84-407-952	CARRYING CASE (RED)(R)	※	1
	9	★87-048-118	HP-M10 (L) MK. 2 (HS-T70, J70 Y, J400 MKII)		1
	10	★87-080-020	BELT HANGER B ASSY-GY		1

* made in this list shows exclusive part
* mark means that required items availability may be limited
* no availability part is marked with --- to Part No. list
* [S]-SILVER, [R]-RED, [B]-BLACK

MECHANICAL PARTS LIST
HS-T70 (Alteration Parts List as against HS-107)

Part No. changed to	Ref. No.	Part No.	Description	Common Model	Q'ty
	1-1	08-027-370	CASSETTE BOX Ass'y [S]		1
		08-027-371	CASSETTE BOX Ass'y [R]		1
		08-027-372	CASSETTE BOX Ass'y [B]		1
	1-2	*84-407-007	CENTER CABINET	HS-170	1
	1-10	84-407-016	LID. BATTERY [R]	HS-170	1
	1-17	*84-408-004	CONTROL PANEL Ass'y [S]		1
		*84-408-012	CONTROL PANEL Ass'y [R, B]		1
	1-21	84-408-005	REAR CABINET [S]		1
		84-408-010	REAR CABINET [R]		1
		84-408-012	REAR CABINET [B]		1
	2-1	*86-211-472	MECHANISM CHASSIS Ass'y T		1
	2-2	*86-211-470	E-SPRING, STOP LEVER		1
	2-10	86-211-483	PINCH LEVER L Ass'y		1
	2-12	86-211-481	PINCH LEVER R Ass'y		1
	2-13	*86-214-231	T-SPRING, PINCH LEVER		1
	3-1	*86-211-482	MOTOR COLLAR US		2
	3-4	86-211-502	FLYWHEEL R Ass'y N		1
	3-7	86-214-284	GEAR, MAIN		1
	3-17	86-211-506	FLYWHEEL L Ass'y N		1
	3-22	86-211-486	PULLEY MAIN Ass'y		1

The following Ref. Nos. are not used in this model.
Ref. No. 1-3
2-3-2-7, 2-14-2-16