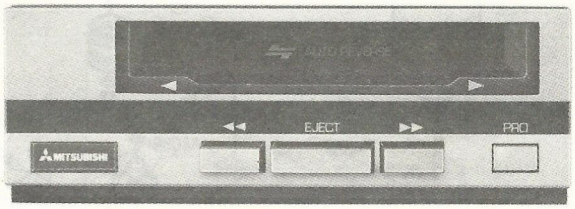
MITSUBISHI

SERVICE MANUAL

CASSETTE TAPE PLAYER

MODEL : CX-85F, FY MB414316, MB414320
: CX-86F, FY MB414317, MB414321

CX-85F



CX-86F

SPECIFICATIONS

- Power Source: 13.2V ± 2.4V
- Output Voltage: 45mV (RL = 22 kΩ)
- Current Consumption: Less than 0.4A (ACC-PLAY)
- Wow and Flutter: Less than 0.3% (NAB)
- S/N: More than 45dB
- Dimensions: 160(W) x 56(H) x 170(D)mm
- Weight: 1.55 kg (CX-85F, FY)
  1.53 kg (CX-86F, FY)

FEATURES

- Program Switch for track changing whenever you like.
- Automatic tape reverse.
- DOLBY, METAL Switch control. (CX-85F, FY only)

MITSUBISHI ELECTRIC AUSTRALIA PTY. LTD.

73-75 EPPING ROAD NORTH RYDE N.S.W. 2113 SYDNEY AUSTRALIA

1. HEAD AZIMUTH ADJUSTMENT (CX-86F, FY only)

Test Tape	Procedures
TEAC MTT-113C (8kHz, −10dB)	Adjust for maximum output then seal screw with paint.

2. OUTPUT LEVEL ADJUSTMENT (CX-86F, FY only)

Test Tape	Procedures
TEAC MTT-118 (1kHz, −10dB)	Adjust for 45mV ± 2dB by VR301 (L-CH), VR401 (R-CH) (Fig. 1, 2)

TAPE OUTPUT LEVEL ALIGNMENT POINT

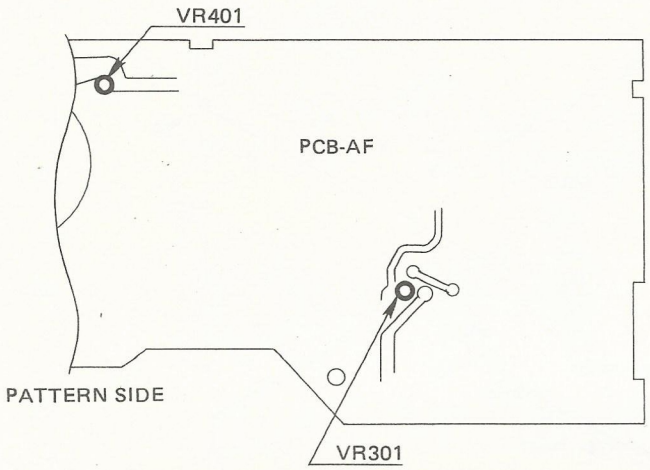
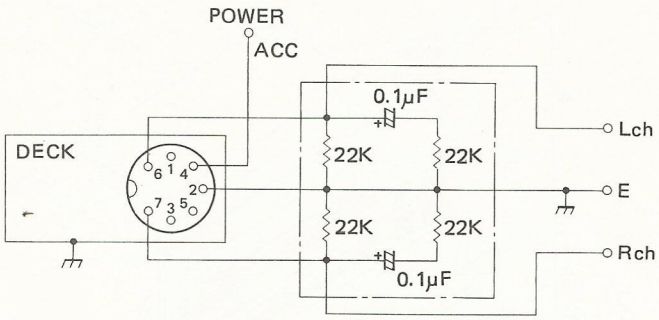


Fig. 1



Note: Connect E (GND) Line at first before turn on Acc.

Fig. 2

1. HEAD AZIMUTH ADJUSTMENT (CX-85F, FY only)

Test Tape	Procedures
TEAC MTT-114 (10kHz, −10dB)	Adjust for maximum output then seal screw with paint.

2. DOLBY LEVEL ADJUSTMENT (CX-85F, FY only)

Test Tape	Procedures
TEAC MTT-150	Adjust for 775 ± 1dB by VR301 (L-CH), VR401 (R-CH) • METAL SW: OFF • DOLBY SW: OFF (Fig. 3)

DOLBY LEVEL ALIGNMENT POINT

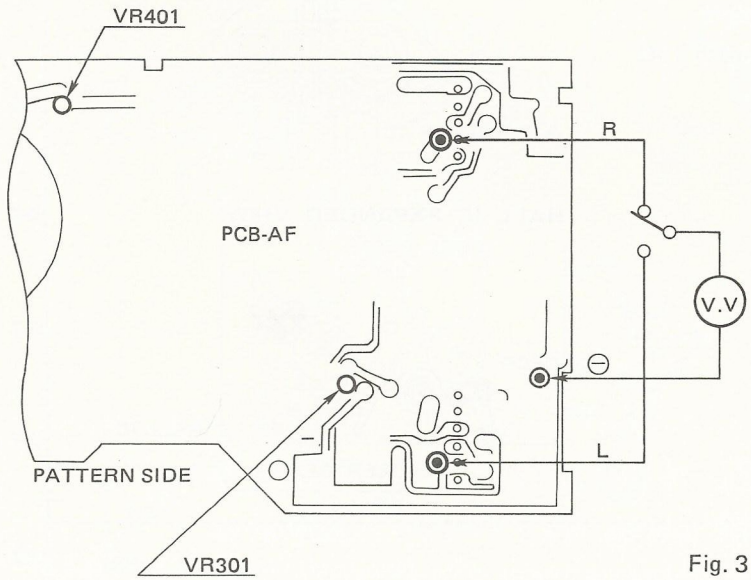
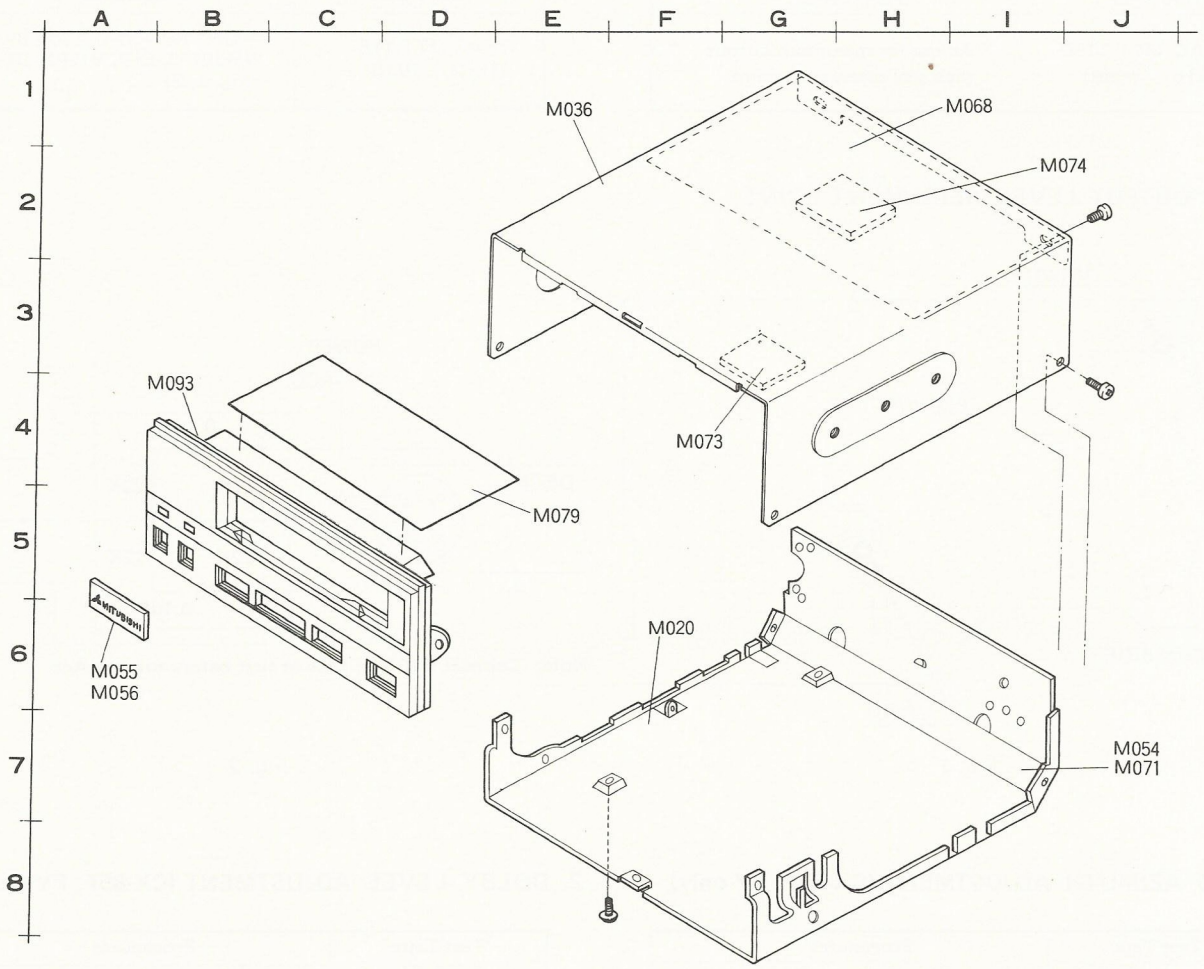


Fig. 3

EXPLODED VIEW

Chassis

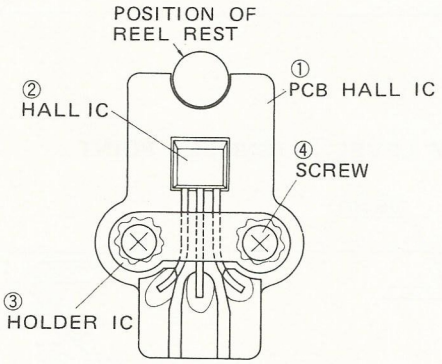


NOTE:

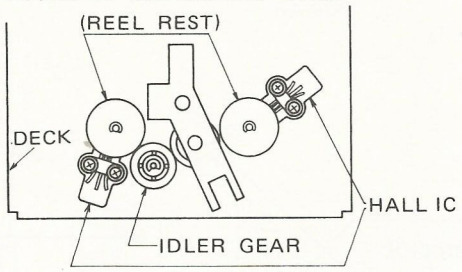
STEPS FOR FIXING HALL IC
(Refer to the figure on the right)

This HALL IC is so sensitive that care should be paid particularly when handling its pins.

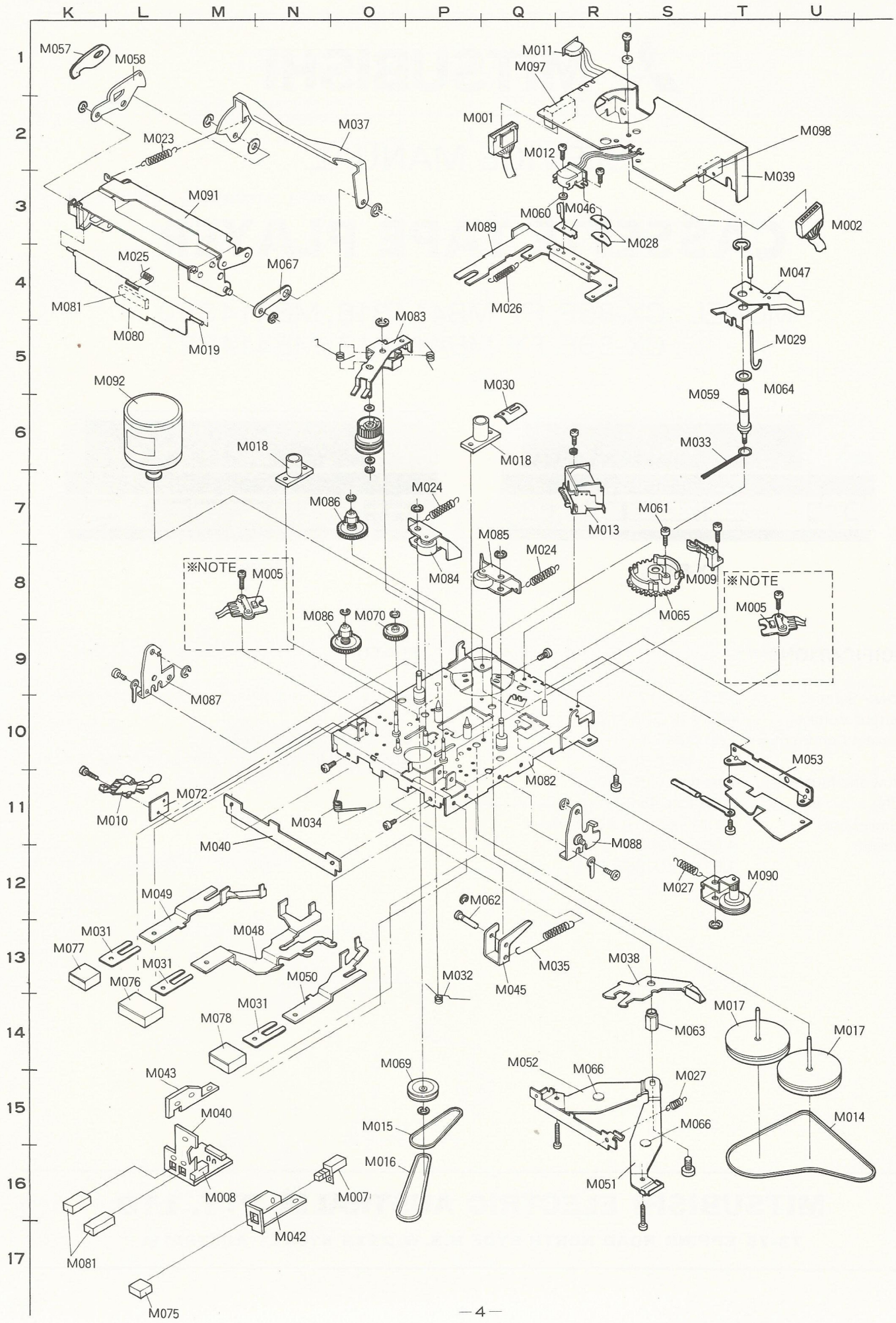
1) Set HALL IC on IC board and fix it with 1 IC holder and 2 screws.
2) Solder 3pins of IC firmly on IC board.
3) Paint the head of 2 screws.



HALL IC EXPANDED VIEW



Deck


K L M N O P Q R S T U
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
M057
M058
M037
M023
M091
M025
M067
M081
M080
M019
M011
M097
M001
M098
M012
M039
M060
M046
M089
M028
M002
M026
M047
M083
M029
M092
M030
M059
M064
M018
M018
M033
M024
M086
M013
M061
M085
M024
M084
M009
※NOTE
M005
M086
M070
M065
※NOTE
M005
M087
M082
M053
M072
M010
M034
M040
M088
M027
M090
M049
M062
M031
M048
M077
M031
M035
M038
M076
M050
M032
M045
M031
M017
M078
M063
M017
M043
M069
M052
M066
M027
M040
M015
M066
M014
M016
M051
M008
M007
M042
M081
M075

MECHANICAL PARTS LIST

MODEL No.: CX-85F (1) CX-86F (3)
CX-85FY (2) CX-86FY (4)

Chassis/Deck

Ref. No.	Part No.	Description	Index
M001	242K03801	LEAD-CONNECTOR-9S	Q-2
M002	242L39608	LEAD-CONNECTOR-9S	U-2
M003	253L01501	LAMP (1)(3)	—
M004	253L02201	LAMP (2)(4)	—
M005	266P79001	HALL-IC	T-8,M-8
M006	431P01306	SW-SLIDE	—
M007	432L02904	SW-PUSH	O-15
M008	432L02905	SW-PUSH (1)(2)	M-16
M009	435L01401	SW-SPRING	T-8
M010	439L00102	SW-SQUELTON	L-11
M011	449L00501	SOCKET-MPX	R-1
M012	460P03105	HEAD	Q-2
M013	479L00503	CLUTCH	R-7
M014	521M00801	BELT-MAIN	U-15
M015	521M02501	BELT-MI	O-15
M016	521M02601	BELT-SI	O-16
M017	524L00802	FLYWHEEL	T-14,U-14
M018	530M01301	METAL-CAPSTAN	N-6,Q-6
M019	531M06005	SHAFT-SHUTTER	M-5
M020	560K13601	BOTTOM-CHASSIS	F-6
M021			
M022			
M023	570M44901	SPRING-EV	L-2
M024	570M16002	SPRING-PR	P-7,Q-8
M025	570M17302	SPRING-SHUTTER	L-4
M026	570M18502	SPRING-EV	Q-4
M027	570M19901	SPRING-EVT	S-15
M028	570M20901	SPRING-HEAD	S-3
M029	570M21001	PIN-SW	U-5
M030	570M24201	SPRING-S	Q-5
M031	570M26801	SPRING-KNOB	K-13
M032	570M26903	SPRING-FF	P-13
M033	570M27001	SPRING-TU	S-6
M034	570M31201	SPRING-SP	N-11
M035	570M37102	SPRING-UP	Q-13
M036	590K39501	UPPER-COVER	E-1
M037	591L01302	EJECTER	O-2
M038	591M11801	TRIGGER	R-13
M039	590L78401	HOLDER-PWB	U-3
M040	591M28702	HOLDER-LEVER	M-12
M041			
M042	592M30701	HOLDER-D	N-17
M043	592M30801	HOLDER-S	L-15
M044			
M045	591M12201	LIFT-LEVER	Q-14
M046	591M12501	LEAD-CLAMPER	R-3
M047	591M28402	CRANK-LEVER	U-2
M048	591M28501	STOP-SLIDE	M-13
M049	591M28601	FF-SLIDE-L	L-12
M050	591M28602	FF-SLIDE-R	N-13
M051	591M36601	BOTTOM-FW	R-16
M052	591M36602	BOTTOM-FW	Q-14
M053	591M40001	BRACKET-PWB	U-10
M054	642M27902	INSULATOR-B (3)(4)	J-7
M055	704L31101	KNOB-INLAY (3)	A-6
M056	704L31102	KNOB-INLAY (4)	A-6
M057	591M73001	LINK-B	K-1
M058	591M73101	LOCK-LINK	L-1
M059	630M32302	POST-CL	T-5
M060	630M32702	SPACER-HEAD	Q-3
M061	630M36101	CRANK-ROLLER	S-7
M062	630M39001	SHAFT-LL	Q-12
M063	630M39201	BOSS-CL	S-14
M064	640M00207	WASHER-P	U-5
M065	641L02401	CRANK-GEAR	S-8
M066	641M09001	BOTTOM-CAP	S-15,R-14
M067	590M69801	LINK	N-4
M068	642L02901	INSULATOR	I-1
M069	641M16602	PULLEY-IDLER	O-14
M070	641M18901	IDLER-GEAR-B	O-8
M071	642M27901	INSULATOR-PLATE (1)(2)	J-7
M072	642M06201	INSULATOR-PLATE	M-11
M073	642M06802	DAMPER	E-4
M074	642M06803	DAMPER	I-2
M075	704M67201	KNOB-SW	M-15
M076	704M67301	KNOB-EJECT	L-13
M077	704M67401	KNOB-FF	K-13
M078	704M67402	KNOB-FF	N-14
M079	766M02704	SPACER	E-5
M080	768L02705	SHUTTER (3)	L-5
	768L02706	SHUTTER (4)	L-5
	768L02707	SHUTTER (1)	L-5
	768L02708	SHUTTER (2)	L-5
M081	704M68101	KNOB-DM (1)(2)	K-17
M082	891K01302	MAIN-BASE	Q-11
M083	891K01504	SLIP-PULLEY	P-4
M084	891L01901	UNIT-PINCH-ROLLER-L	P-8
M085	891L01902	UNIT-PINCH-ROLLER-R	Q-7
M086	891L04904	REEL-REST	N-8
M087	591L01101	BRIDGE-L	M-10
M088	591L01201	BRIDGE-R	R-12
M089	891M04701	SLIDE-BASE	Q-4
M090	891M04801	ASSY-PULLEY	T-12
M091	943L27606	ASSY-ELEVATOR	M-5
M092	943L35304	ASSY-MOTOR	L-5
M093	963L31801	ASSY-PANEL (1)	B-4
	963L31802	ASSY-PANEL (2)	B-4
	963L31803	ASSY-PANEL (3)	B-4
	963L31804	ASSY-PANEL (4)	B-4

ELECTRICAL PARTS LIST

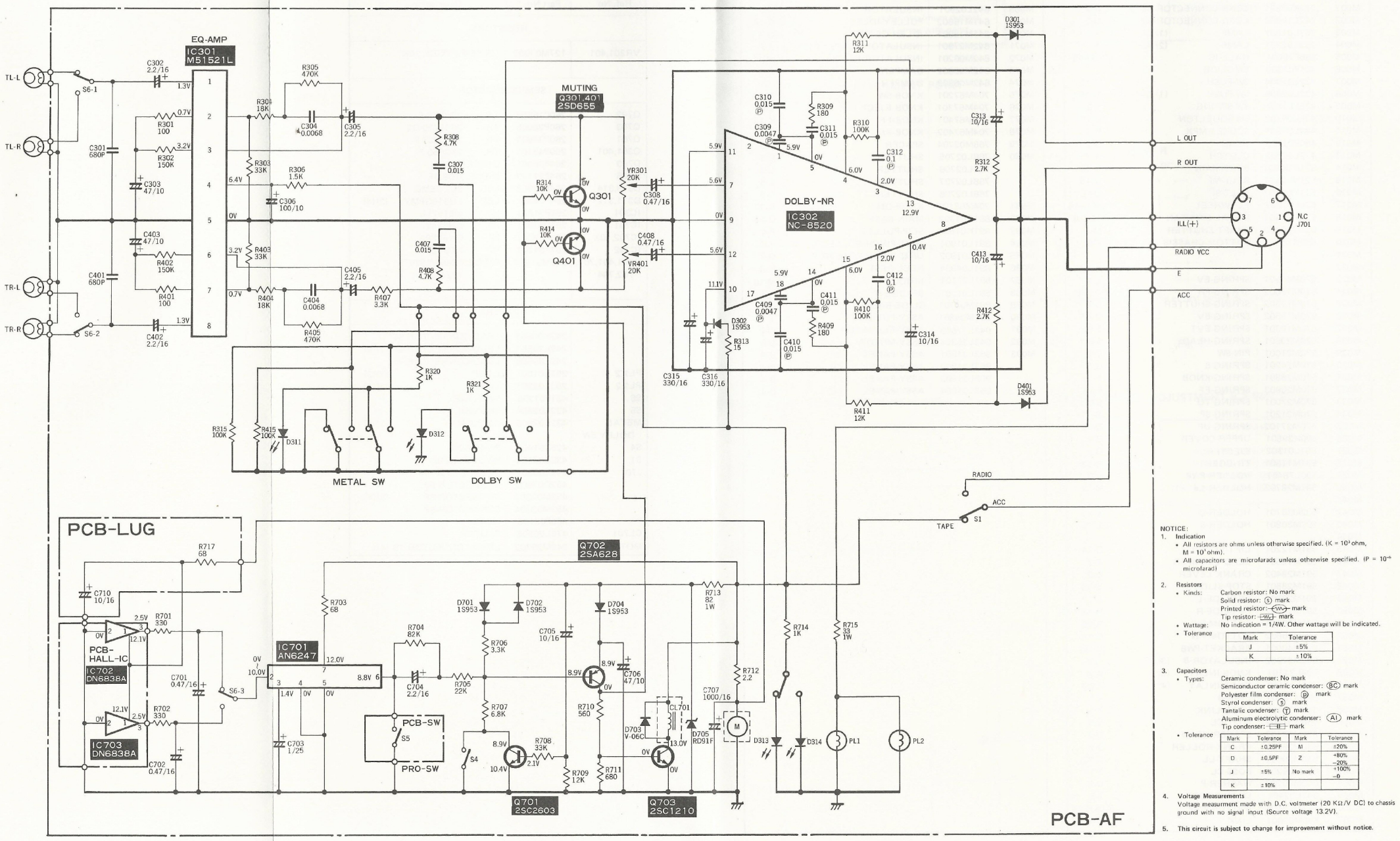
1

MODEL No.: CX-85F (1) CX-86F (3)
CX-85FY (2) CX-86FY (4)

Ref. No	Part No.	Description
		RESISTORS
VR301,401	127M03003	VR-SEMIFIXED 20K
		SEMICONDUCTORS
Q702	260P16504	TR 2SA628-F
Q703	260P28005	TR 2SC1210-D2
Q701	260P33803	TR 2SC2603-F
Q301,401	260P43101	TR 2SD655-F
D703	264P08801	DIODE V-06C
D705	264P21103	DIODE RD9.1F
D313,314	264P23903	LED SLT-35MG
D311,312	264P34301	LED LN310GPMY (3)(4)
IC301	266P31601	IC M51521L
IC701	266P62601	IC AN6247
IC702,703	266P79001	IC DN6838A
IC302	267P31701	IC NC8520
D301,401,701, 702,704	269M01201	DIODE 1S953/1S2076/ 1S2473
		OTHERS
	242K03801	LEAD-CONNECTOR-9S
	242L39505	LEAD-CONNECTOR-8S (1)(2)
	242L39608	LEAD-CONNECTOR-9S
PL1,2	253L01501	LAMP (1)(3)
PL1,2	253L02201	LAMP (2)(4)
S6	431P01306	SW-SLIDE
S5	432L02904	SW-PUSH
METAL, DOLBY SW	432L02905	SW-PUSH (3)(4)
S4	435L01401	SW-SPRING
S1	439L00102	SW-SQUELTON
J701	449L00501	SOCKET-MPX
	452D07909	CONNECTOR-9P
	452M02303	CONNECTOR-8P (3)(4)
	452M02304	CONNECTOR-9P
	460P03105	HEAD
CL701	479L00503	CLUTCH
MOTOR-ANT	242M29702	LEAD-CONNECTOR-1S (4)

SCHEMATIC DIAGRAM

MODEL : CX-85F,FY



NOTICE:

1. Indication
   - All resistors are ohms unless otherwise specified. (K = 10^3 ohm, M = 10^6 ohm).
   - All capacitors are microfarads unless otherwise specified. (P = 10^{-6} microfarad)
2. Resistors
   - Kinds: Carbon resistor: No mark; Solid resistor: (S) mark; Printed resistor: mark; Tip resistor: mark
   - Wattage: No indication = 1/4W. Other wattage will be indicated.
   - Tolerance

Mark	Tolerance
J	±5%
K	±10%

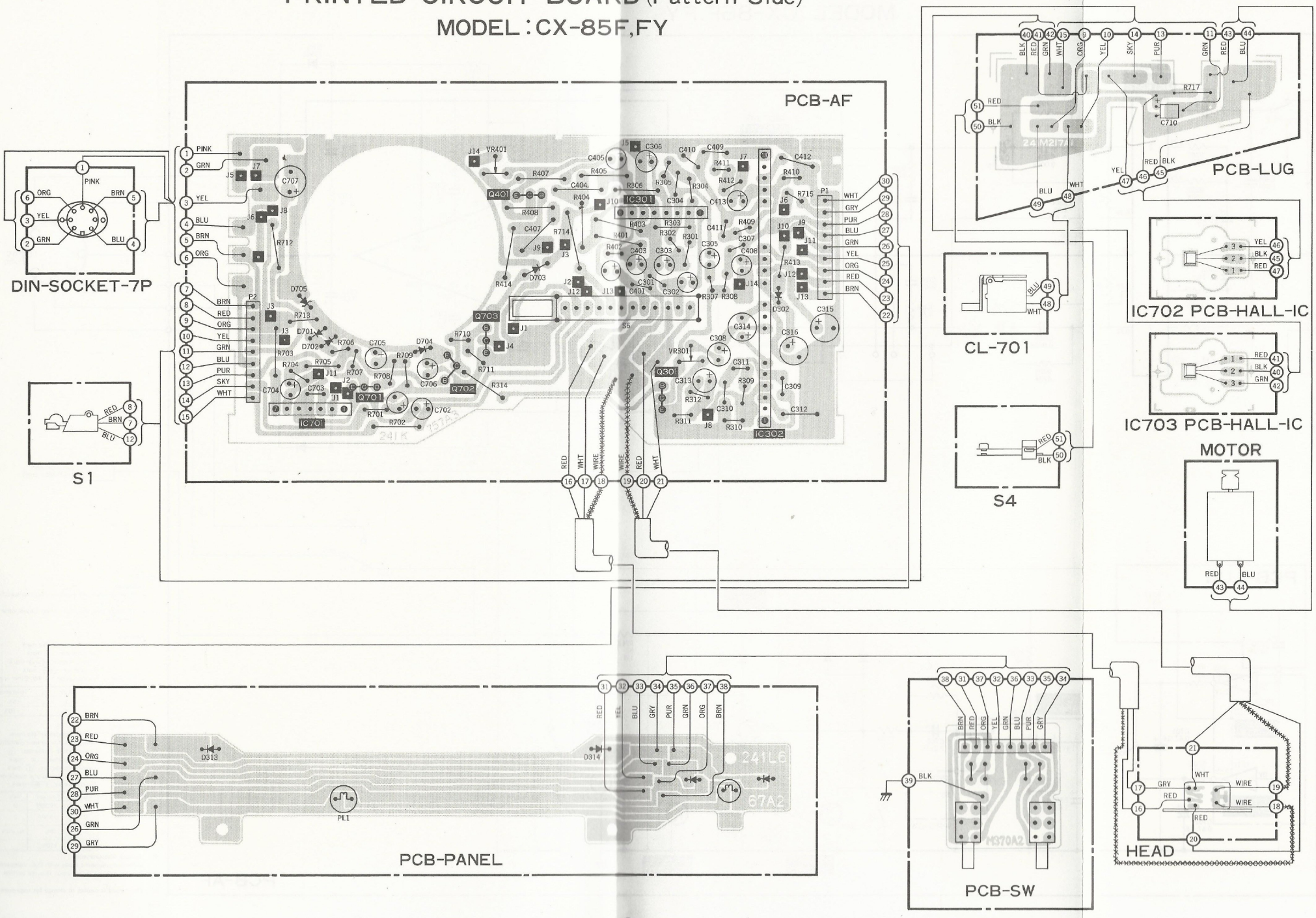
3. Capacitors
   - Types: Ceramic condenser: No mark; Semiconductor ceramic condenser: (BC) mark; Polyester film condenser: (P) mark; Styrol condenser: (S) mark; Tantalic condenser: (T) mark; Aluminum electrolytic condenser: (Al) mark; Tip condenser: mark
   - Tolerance

Mark	Tolerance	Mark	Tolerance
C	±0.25PF	M	±20%
D	±0.5PF	Z	+80% −20%
J	±5%	No mark	+100% −0
K	±10%		

4. Voltage Measurements
   Voltage measurment made with D.C. voltmeter (20 KΩ/V DC) to chassis ground with no signal input (Source voltage 13.2V).
5. This circuit is subject to change for improvement without notice.

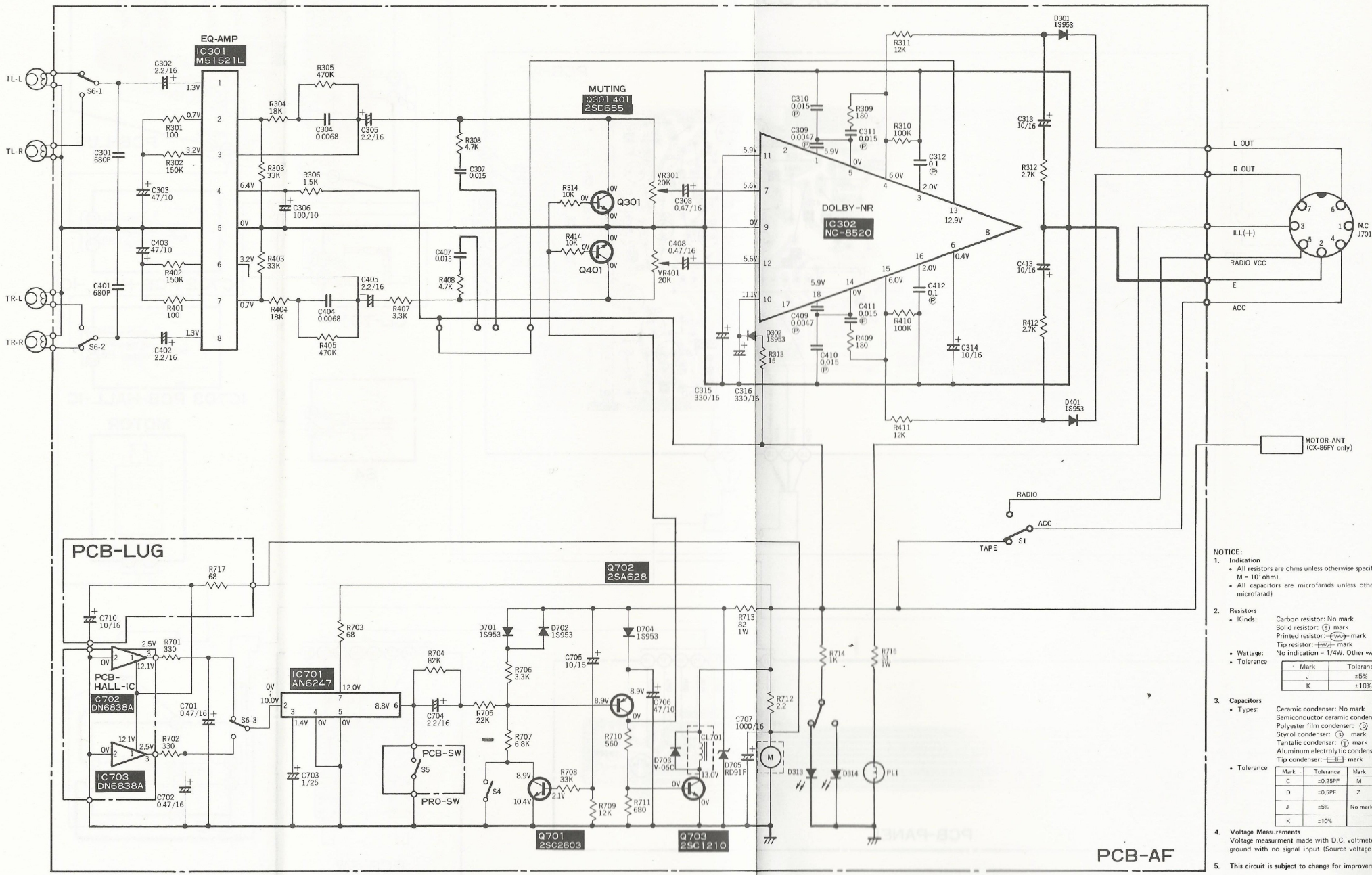
PRINTED CIRCUIT BOARD (Pattern Side)

MODEL : CX-85F,FY



SCHEMATIC DIAGRAM

MODEL : CX-86F,FY



NOTICE:

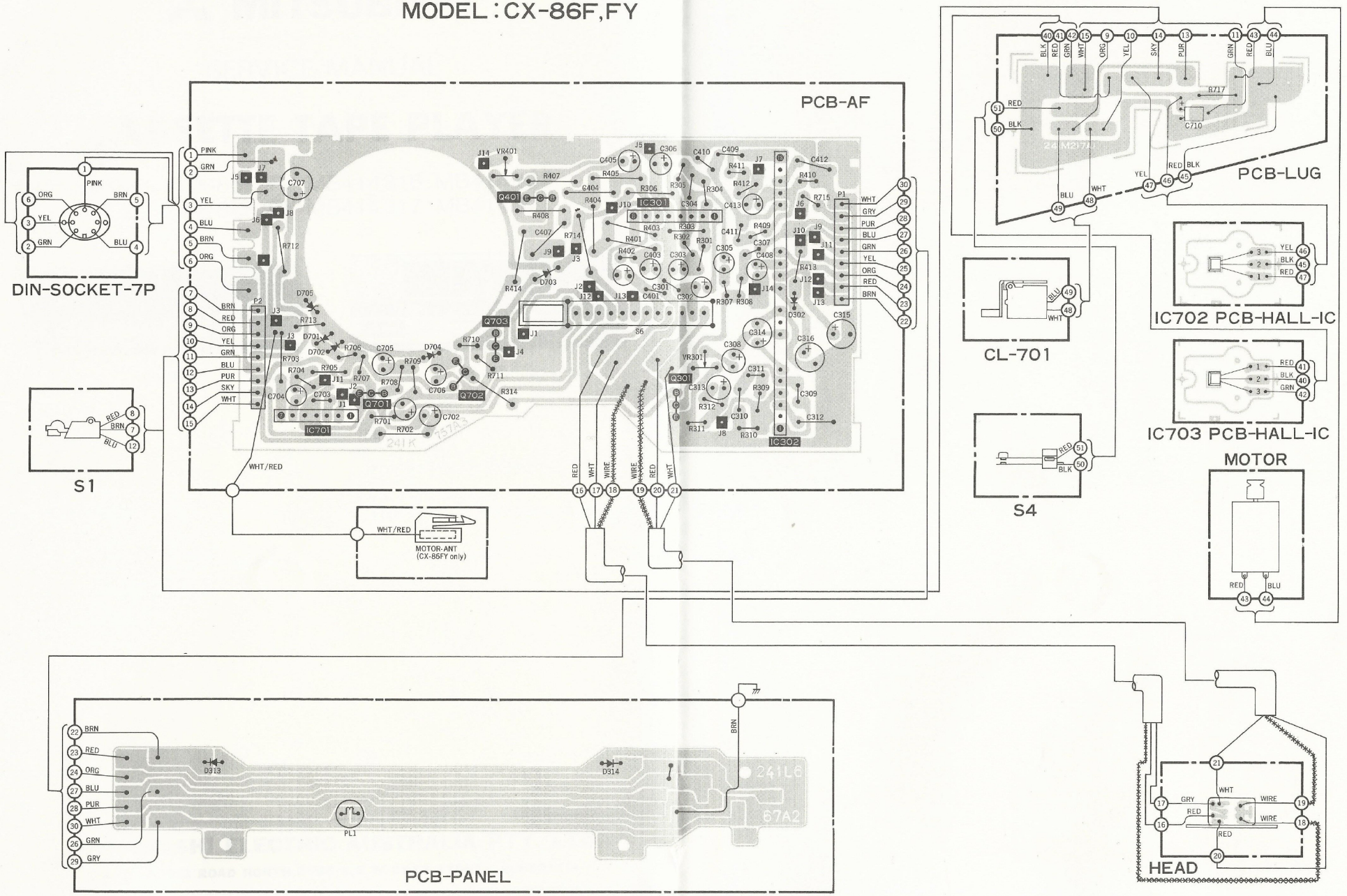
1. Indication
   - All resistors are ohms unless otherwise specified. (K = 10^3 ohm, M = 10^6 ohm).
   - All capacitors are microfarads unless otherwise specified. (P = 10^{-6} microfarad)
2. Resistors
   - Kinds: Carbon resistor: No mark; Solid resistor: (S) mark; Printed resistor: (PW) mark; Tip resistor: (MF) mark
   - Wattage: No indication = 1/4W. Other wattage will be indicated.
   - Tolerance

Mark	Tolerance
J	±5%
K	±10%

3. Capacitors
   - Types: Ceramic condenser: No mark; Semiconductor ceramic condenser: (BC) mark; Polyester film condenser: (P) mark; Styrol condenser: (S) mark; Tantalic condenser: (T) mark; Aluminum electrolytic condenser: (AL) mark; Tip condenser: mark
   - Tolerance

Mark	Tolerance	Mark	Tolerance
C	±0.25PF	M	±20%
D	±0.5PF	Z	+80% −20%
J	±5%	No mark	+100% −0
K	±10%		

4. Voltage Measurements
   Voltage measurment made with D.C. voltmeter (20 KΩ/V DC) to chassis ground with no signal input (Source voltage 13.2V).
5. This circuit is subject to change for improvement without notice.

PRINTED CIRCUIT BOARD (Pattern Side)

MODEL : CX-86F, FY