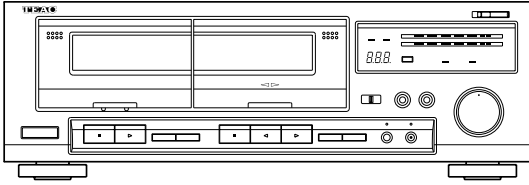


# TEAC



## SERVICE MANUAL

# W-600R/W-488R

Stereo Double Cassette Deck

### NOTES


- PC boards shown are viewed from parts side.
- Parts marked with \* require longer delivery time.
- The parts with no reference number or no parts number in the exploded views are not supplied.
- As regards the resistors and capacitors, refer to the circuit diagrams contained in this manual.
- ⚠ Parts marked with this sign are safety critical components. They must be replaced with identical components - refer to the appropriate parts list and ensure exact replacement.
- Parts of [ ] mark can be used only with the version designated.  
[US]:U.S.A. [C]:CANADA [GE]:GENERAL EXPORT [E]:EUROPE [UK]:U.K.  
[A]:AUSTRALIA

# 1 SPECIFICATIONS

Track System..... 4-track, 2-channel stereo  
 Heads  
 DECK I : .....Playback x 1  
 DECK II : .....Erase x 1, Record/Playback x 1 (rotating)  
 Type of Tape .....Cassette tape C-60 and C-90 (Phillips type)  
 Tape Speed .....4.8 cm/sec  
 Motor .....DC motor  
 Frequency Response  
 Normal .....40 - 14,000 Hz  
 CrO<sub>2</sub>.....40 - 15,000 Hz  
 FF and REW time  
 .....Approximately 100 seconds (C-60 cassette tape)  
 Wow/Flutter .....0.3% (WRMS)  
 S/N Ratio  
 Dolby B NR ON, over 5 kHz.....65 dB (CCIR/ARM)  
 Dolby NR OFF, 3% THD level, weighted ..56 dB (CCIR/ARM)

Power Consumption .....15 W  
 Power Supply .....120V AC, 60Hz (U.S.A./Canada Model)  
 120/230V AC, 50-60Hz (General Export Model)  
 230V AC, 50Hz (Europe Model)  
 Dimensions (WxHxD) .....435 x 145 x 290 mm  
 (17-1/8" x 5-11/16" x 11-7/16")  
 Weight .....3.8 kg (8-3/8 lbs.)  
 Standard Accessories .....Audio signal cord x 2  
 Remote Control Unit (RC-744) x 1 (W-488R only)  
 Battery (SUM-3, "AA", "R6" type) x 2 (W-488R only)

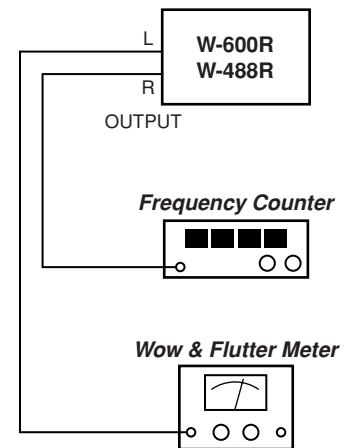
● Improvements may result in specification or feature changes without notice.

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.  
 "DOLBY" and the double-D symbol  are trademarks of Dolby Laboratories Licensing Corporation.

# 2 ADJUSTMENTS AND CHECKS

## 2-1 MECHANICAL ADJUSTMENT

ITEM	TEST TAPE	ADJUSTMENTS	MEASURING POINTS, RESULT
<b>1. Wow and flutter</b>	MTT-111N	Check	Within 0.3% (JIS WTD)
<b>2. Tape speed adjustment</b>	MTT-111N	R32	PLAYBACK <i>I</i> 3000±20Hz
		Check	REC/PLAY <i>II</i> 3000±90Hz
<b>3. Speed drifting</b>	MTT-111N	Check	Within ±80Hz
<b>4. High speed dubbing</b>	PLAYBACK <i>I</i> MTT-111N REC/PLAY <i>II</i>	Check	6000±460Hz



**Fig. 2-1**

## 2-2 ELECTRICAL ADJUSTMENT

### 2-2-1 Precautions

- Before performing adjustments and checks clean and demagnetize the entire tape path.
- In general, adjustments and checks are made in the order of Lch then Rch. Double REF. Nos. indicate Lch/Rch. (Example; R11/R21)
- 0dB is referenced to 0.775V.
- The AC voltmeter used in the procedures must have an input impedance of 1MΩ or more.
- Unless specified otherwise, adjustments and checks are made in FWD direction.

### 2-2-2 Adjustment locations

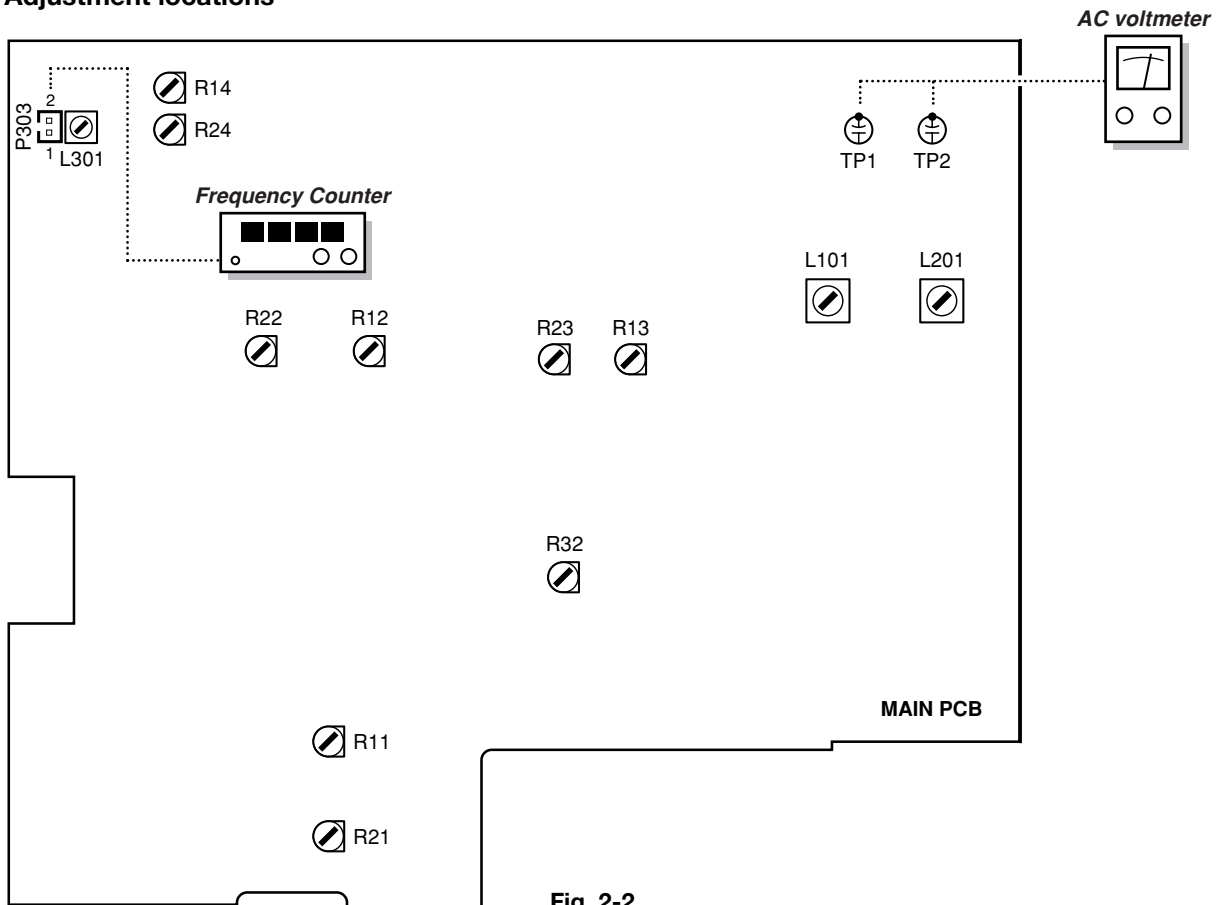


Fig. 2-2

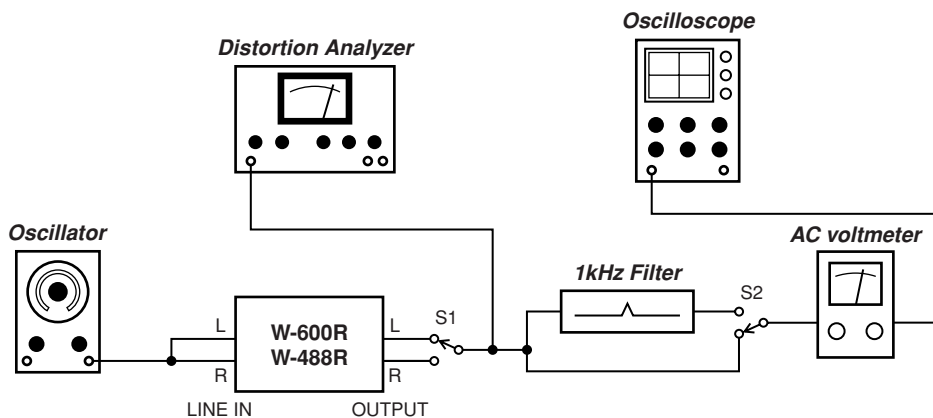


Fig. 2-3

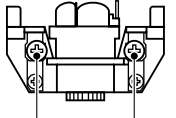
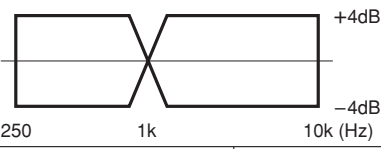
## 2-2-3 Playback performance

### Deck settings:

Mode: PLAY  
DOLBY NR Switch: OFF

### TEAC test tapes:

MTT-150C : For Dolby level calibration  
MTT-25702 : For playback frequency response check NORMAL tape  
MTT-5513 : For S/N check NORMAL tape

ITEM	SETTING	INPUT SIGNAL	ADJUSTMENTS	MEASURING POINTS, RESULT	REMARKS
1. Head azimuth adjustment	Connection: Fig. 2-4 Check and adjust in FWD, REV respectively	MTT-150C	Check	OUTPUT: Phase: within 45° (Fig. 2-5)	 FWD azimuth REV azimuth (illustration for mecha II)
		MTT-25702 (12.5kHz)	Azimuth screws	OUTPUT: Maximum output level at L & R-ch	
2. DOLBY level	Connection: Fig. 2-2 FWD PLAY	MTT-150C	R11/R21	TP1/TP2 (C119 ⊖/C219 ⊖): -10dB	PLAYBACK <i>I</i>
			R12/R22		REC/PLAY <i>II</i>
3. Playback output level	Connection: Fig. 2-3 FWD/REV PLAY	MTT-150C	Check	OUTPUT: -3.5±1dB	Ref. output level
4. Meter level		MTT-150C	Check	LEVEL METER: 0dB	
5. Playback frequency response	Connection: Fig. 2-3	MTT-25702	Check		
6. Playback S/N ratio	Connection: Fig. 2-3	MTT-5513 Playback the leader tape portion	Check	42dB min.	Ratio of ref. level to noise

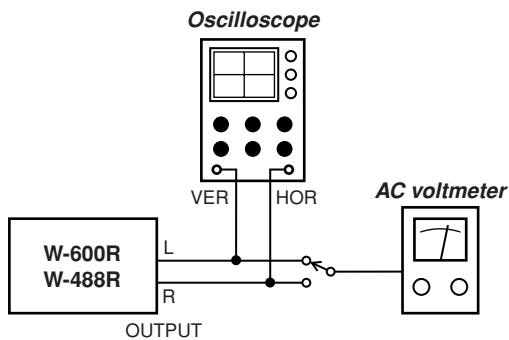


Fig. 2-4

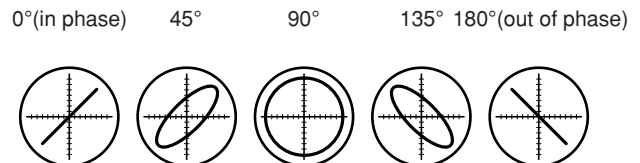


Fig. 2-5

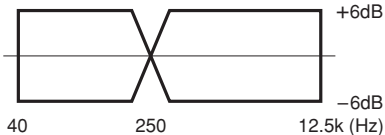
## 2-2-4 Recording performance

### Deck settings:

Mode: REC/PLAY  
 DOLBY NR Switch: OFF  
 REC LEVEL Control: Specified position (Item 7)

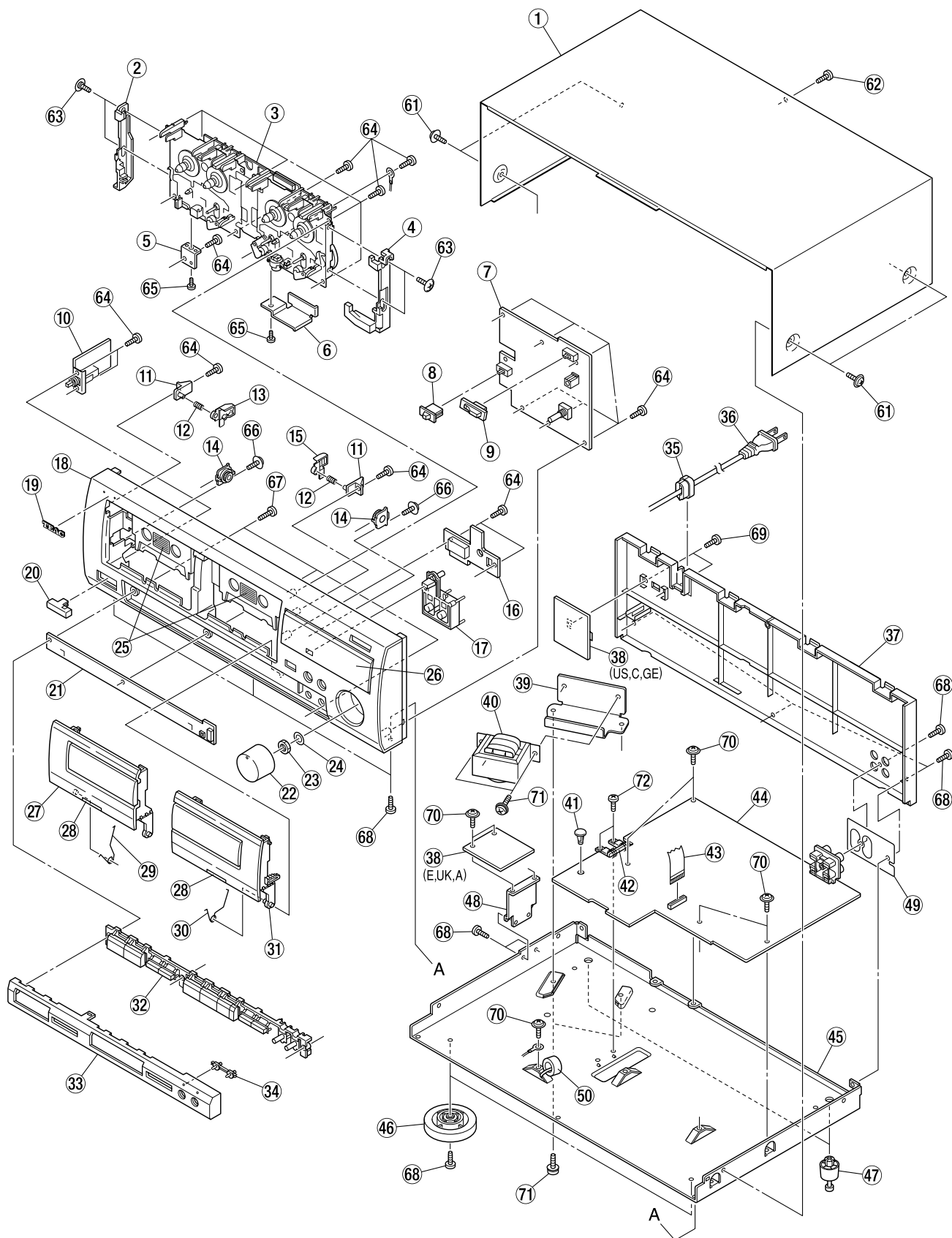
### TEAC recording test tapes:

MTT-5513 : For NORMAL  
 MTT-5563 : For CrO<sub>2</sub>

ITEM	SETTING	INPUT SIGNAL (LINE IN)	ADJUSTMENTS	MEASURING POINTS, RESULT	REMARKS
<b>7. Specified LINE input level</b>	Connection: Fig. 2-3 Mode: REC	400Hz/−9dB	REC LEVEL	OUTPUT: Lch: −3.5dB Rch: −3.5±3dB	After adjusting, do not move (Specific position)
<b>8. Bias osc frequency</b>	Connection: Fig. 2-2 TAPE: MTT-5513 Mode: REC	No signal	L301	P303 Pin 2: 75±5kHz	
<b>9. Record bias</b>	Connection: Fig. 2-3 TAPE: MTT-5513	250Hz/10kHz −42dB	R14/R24	OUTPUT: Nearly equal level at both frequencies (±0.5dB)	
<b>10. MPX filter</b>	Connection: Fig. 2-3 Mode: REC	19kHz/−12dB	L101/L201	30dB min.	Ratio of ref. level to signal
<b>11. Record level</b>	Connection: Fig. 2-3 TAPE: MTT-5513	400Hz/−12dB	R13/R23	OUTPUT: −6.5dB	
	TAPE: MTT-5563		Check	OUTPUT: −6.5±1dB	
<b>12. Total harmonic distortion</b>	Connection: Fig. 2-3 TAPE: MTT-5513 MTT-5563	400Hz/−12dB	Check	NORMAL: 2.0% or less CrO <sub>2</sub> : 2.5% or less	
<b>13. Overall frequency response</b>	Connection: Fig. 2-3 TAPE: MTT-5513 MTT-5563	40Hz−12.5kHz −42dB	Check		
<b>14. Overall S/N ratio</b>	Connection: Fig. 2-3 TAPE: MTT-5513 MTT-5563	No signal	Check	40dB min.	Ratio of ref. level to noise
<b>15. Erase efficiency</b>	Connection: Fig. 2-3 TAPE: MTT-5563 1kHz B.P.F in	1kHz/+1dB	Check	65dB min.	Ratio of the 1kHz recorded portion to the erased portion.
<b>16. Channel separation</b>	Connection: Fig. 2-3 TAPE: MTT-5563 1kHz B.P.F in	Lch: 1kHz/−9dB Rch: No signal	Check	35dB min.	Ratio of Lch (1kHz) to Rch (no signal).
<b>17. Adjacent track crosstalk</b>	Connection: Fig. 2-3 TAPE: MTT-5563	Lch: No signal Rch: 125Hz/ −9dB	Check	40dB min.	Invert tape and play Rch track. Check leakage level against the output reference of previously recorded portion.

### 3 EXPLODED VIEWS AND PARTS LIST

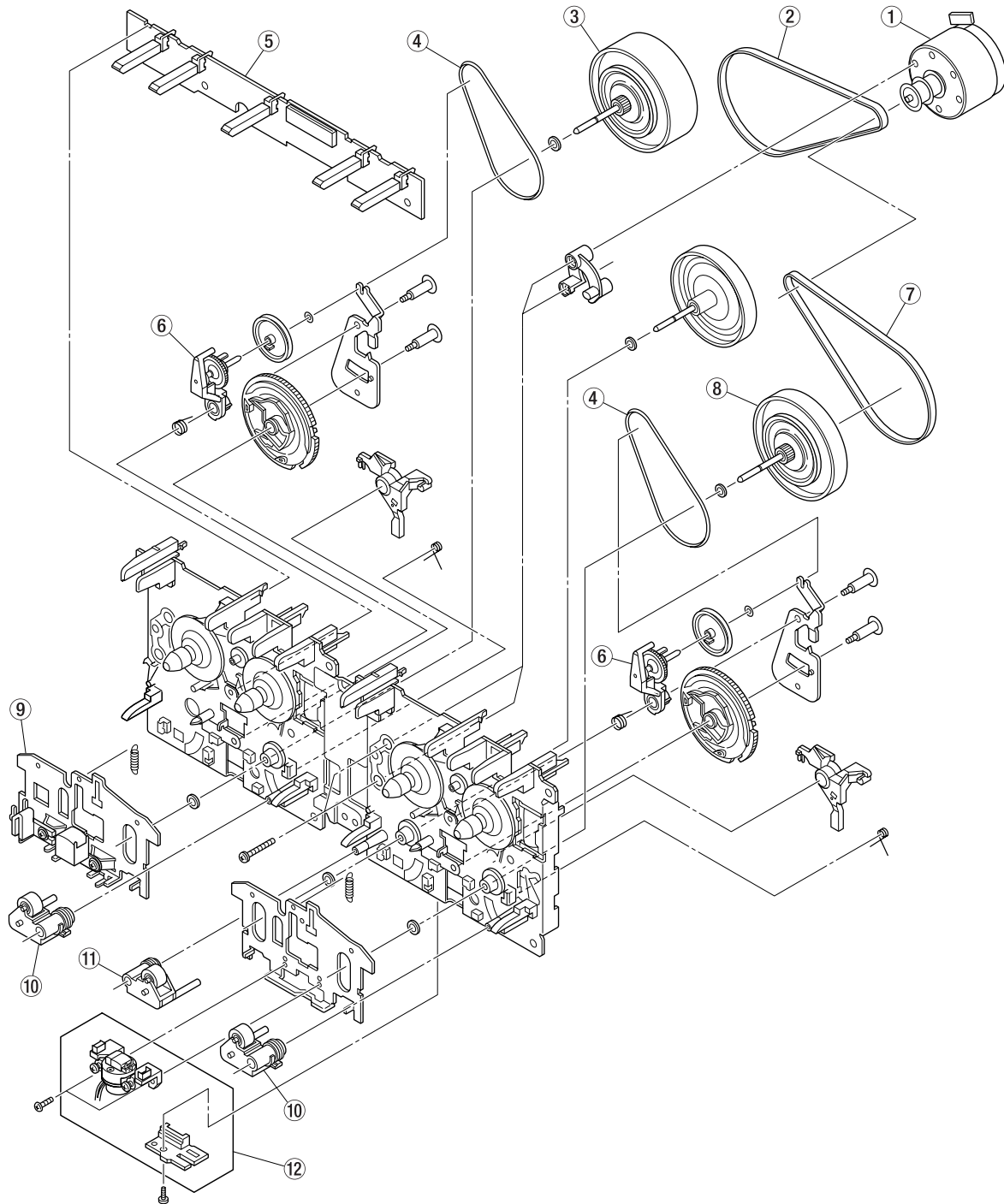
EXPLODED VIEW-1



## EXPLODED VIEW-1

REF. NO.	PARTS NO.	DESCRIPTION	REF. NO.	PARTS NO.	DESCRIPTION
1- 1	3M0011900A	BONNET	1-44	* 3E9518500B	PCB ASSY, MAIN [US, C, GE, A]
1- 2	* 3M0072100A	LEVER, LOCK (L)		* 3E9518510B	PCB ASSY, MAIN [E, UK]
1- 3	* 3M0072800A	MECH ASSY, CMAT5Z026A	1-45	* 3M0010830B	MAIN CHASSIS
1- 4	3M0072200A	LEVER, LOCK (R)	1-46	3M0009400A	FOOT ASSY, 56 (SILVER)
1- 5	* 3M0072300A	HOLDER, MECH	1-47	3M000440	FOOT, FF-D25
1- 6	* 3M0075100A	SHIELD PLATE	1-48	* 3M0078800A	BRACKET PCB [E, UK, A]
1- 7	* 3E9518600A	PCB ASSY, FRONT	1-49	* 3M0078900A	SHEET, EARTH [E, UK]
1- 8	* 3M0071100A	KNOB, SLIDE	1-50	* 3E002730	FER. CORE K5AT 13X7X5 [E, UK]
1- 9	* 3M0001600A	KNOB, DOLBY			
1-10	* 3E9518900A	PCB ASSY, POWER SW			
1-11	* 3M0072000A	HOLDER, LOCK	1-61	* 3B0001806A	SCREW, J, S M3X6 (BLK)
1-12	* 3M0072600B	CPRSN SPRING, CAM	1-62	* 3B0004808A	SCREW, BPP M3X8 (BLK)
1-13	* 3M0071800B	CASE, LOCK LEVER (L)	1-63	* 3B0006900A	SCREW, PBS M2. 6X3. 5
1-14	* 3M0036700A	DAMPER, DP-223A	1-64	* 3B0000808A	SCREW, BPP M3X8
1-15	* 3M0071900B	CASE, LOCK LEVER (R)	1-65	* 3B0003205A	SCREW, PPS M2. 6X5
1-16	* 3E9518700A	PCB ASSY, COUNTER	1-66	* 3B0002308A	SCREW, J P M3X8 (BLK)
1-17	* 3M0070900A	BUTTON, B	1-67	* 3B0000810A	SCREW, BPP M3X10
1-18	* 3M0070400B	FRONT PANEL [W-600R]	1-68	* 3B0005708A	SCREW, BPP M3X8 (BLK)
	* 3M0070410B	FRONT PANEL [W-488R]	1-69	* 3B0004406A	SCREW, BPS M3X6 (BLK)
1-19	* 3M0051600A	TEAC EMBLEM (GOLD)	1-70	* 3B0001306A	SCREW, J, S M3X6
1-20	3M0071000A	BUTTON, POWER	1-71	* 3B0004208A	SCREW, BPAW M4X8
1-21	* 3E9518800A	PCB ASSY, KEY	1-72	* 3B0000106A	SCREW, BPS M3X6
1-22	3M0001500A	KNOB, VR			
1-23	* 3M001340	NUT, VR M9			
1-24	* 3M001350	PLAIN WSHR, VR M9. 1			
1-25	3M0062400A	PLATE, REFLECT			
1-26	* 3M0071400A	WINDOW, DISP			
1-27	* 3M0075700B	CASE LOADING (L) ASSY			
1-28	* 3M0071700A	COVER, AZIMUTH			
1-29	* 3M0072400B	TRSN SPRING, CASE (L)			
1-30	* 3M0072500B	TRSN SPRING, CASE (R)			
1-31	* 3M0075800B	CASE LOADING (R) ASSY			
1-32	3M0075900A	BUTTON A ASSY			
1-33	* 3M0070700A	PANEL, BUTTON			
1-34	* 3M0071600A	LENS, LED REC			
1-35	△ * 3M000880	BUSHING, #2271			
1-36	△ 3E009230	POWER CORD [US, C, GE]			
	△ 3E000340	POWER CORD [E]			
	△ * 3E000350	POWER CORD [UK]			
	△ * 3E000360	POWER CORD [A]			
1-37	* 3M0010940A	REAR PANEL [US, C, GE]			
	* 3M0010930A	REAR PANEL [E, UK, A]			
1-38	* 3E9519010A	PCB ASSY, POWER SEL [US, C, GE]			
	* 3E9519020A	PCB ASSY, POWER SEL [E, UK]			
	* 3E9519030A	PCB ASSY, POWER SEL [A]			
1-39	* 3M0075500B	BASE, TRANS			
1-40	△ 3E0111900A	TRANS			
1-41	* 3M0075600A	PCB SPACER, RSPS-8L			
1-42	* 3E9519100A	PCB ASSY, REG			
1-43	* 3E0109500A	FFC, CUJ (1. 25) -L-17-232			

## EXPLODED VIEW-2



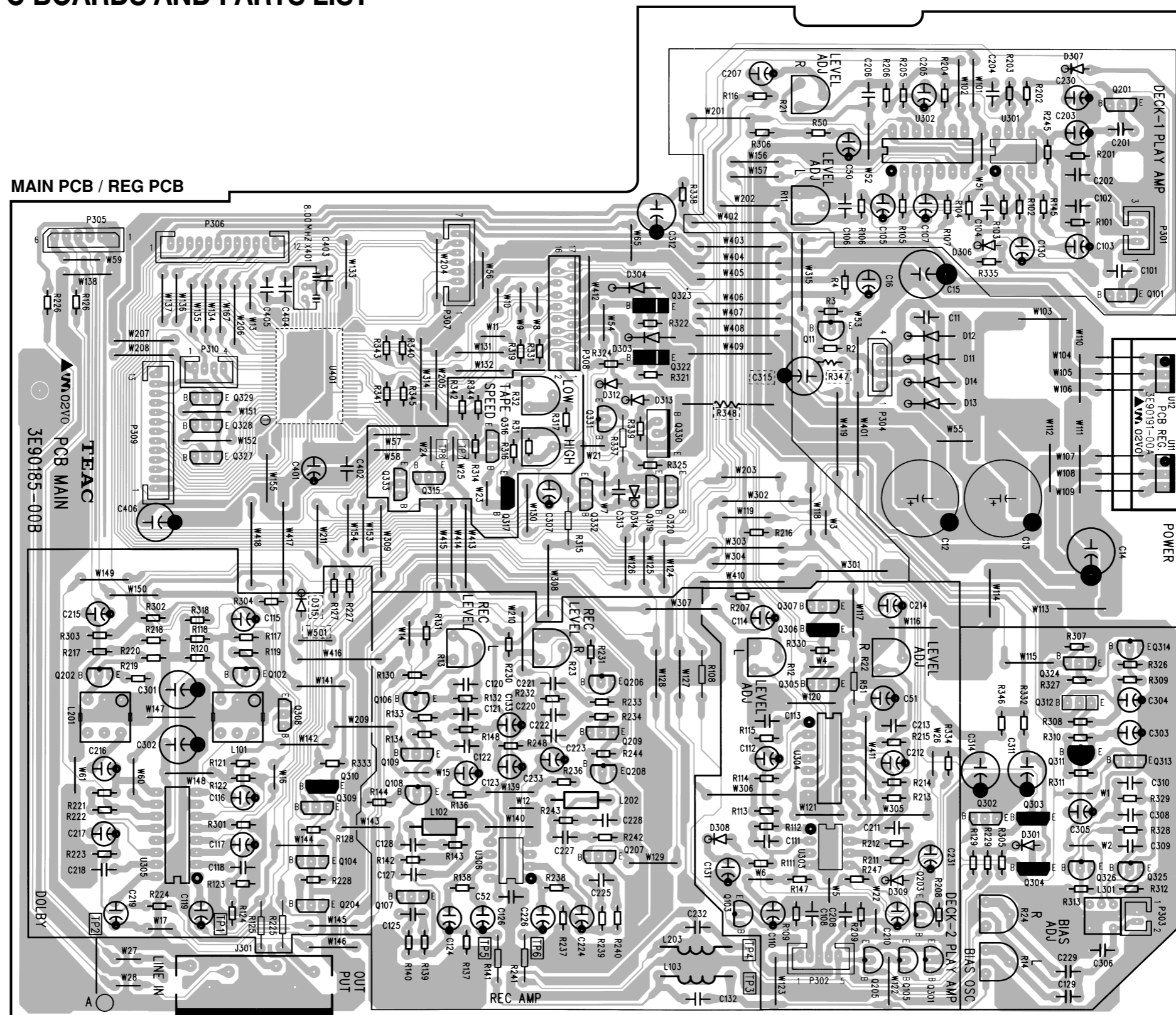
### EXPLODED VIEW-2 (CMAT5Z026A)

REF. NO.	PARTS NO.	DESCRIPTION
2- 1	9A07829200	MTR MAIN BLK
2- 2	9A07829800	JOINT BELT
2- 3	9A08028000	CLUTCH ASSY BLK
2- 4	3M002940	F/R BELT
2- 5	9A08027900	PCB CONTROL BLK
2- 6	9A07829400	CLUTCH ASSY BLK

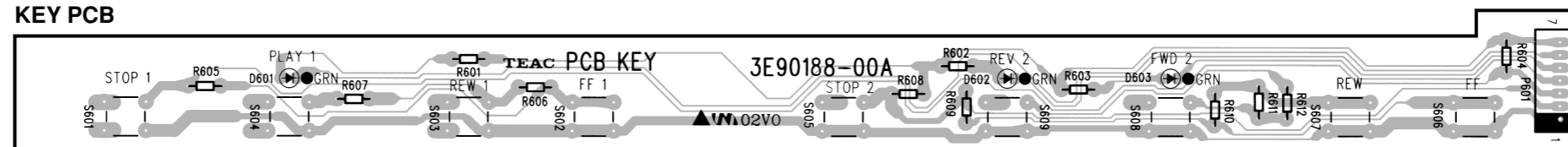
REF. NO.	PARTS NO.	DESCRIPTION
2- 7	3M002950	BELT MAIN
2- 8	9A07829600	CLUTCH ASSY BLK
2- 9	9A07829100	PLATE HD BLK
2-10	9A07829700	ROLLER PINCH BLK R
2-11	9A08028200	ROLLER PINCH BLK L
2-12	9A08027800	PLATE HD BLK



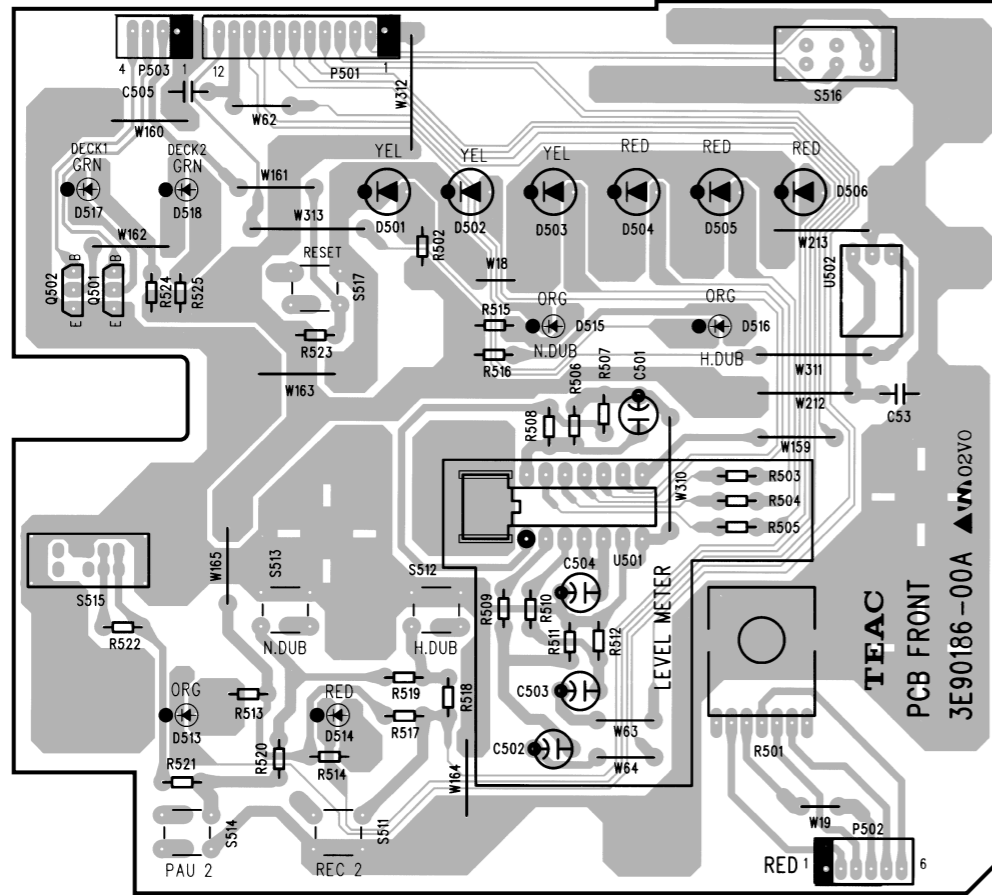
# 4 PC BOARDS AND PARTS LIST



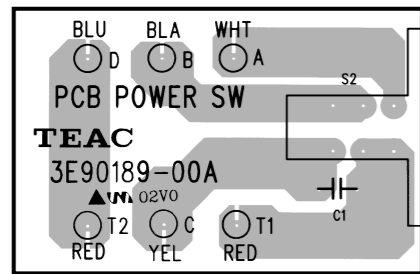
## KEY PCB



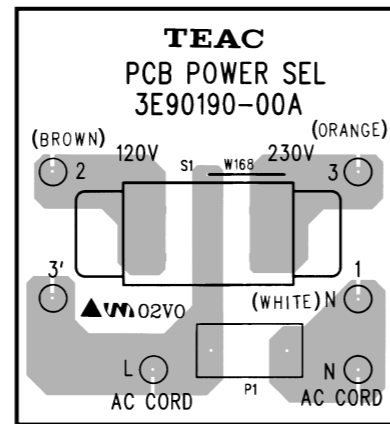
FRONT PCB



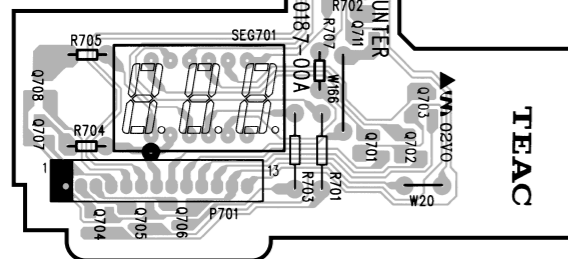
POWER SW PCB



POWER SEL PCB



COUNTER PCB



MAIN PCB ASSY

REF. NO.	PARTS NO.	DESCRIPTION
	*3E9518500B	PCB ASSY, MAIN [US, C, GE, A]
	*3E9518510B	PCB ASSY, MAIN [E, UK]
	*3E9018500B	PCB, MAIN
C12, 13	△ 3C009910	CE, 25V 2200UF GS
D11-14	△ 3S000031	DIODE, 1N4003-TR
D301	3S000241	DIODE, 1SS133
D303, 304	3S000031	DIODE, 1N4003-TR
D306-309	3S000241	DIODE, 1SS133
D312, 313	3S000241	DIODE, 1SS133
D314	3S002351	ZDI, MTZJ13B
J301	3E000010	JACK, RCA 4P [US, C, GE, A]
J301	3E010860	JACK, RCA 4P [E, UK]
L101, 201	3E000040	FILTER, LOW PASS MPX
L102, 202	3E004421	COIL, 8.2MH EC46-822J-T5
L103, 203	3E004431	COIL, 22MH EC46-223K-T5
L301	3E009490	COIL, TAPE OSC M-8G
P301	3E000670	CONNECT PLUG 3P, B3B-PH-K
P302	3E000690	CONNECT PLUG 5P, B5B-PH-K
P303	3E000660	CONNECT PLUG 2P, B2B-PH-K
P304	3E008590	CONNECT PLUG 4P, 5267-04A-X
P305	3E008610	CONNECT PLUG 6P, 5267-06A-X
P306	3E000760	CONNECT PLUG 12P, B12B-PH-K
P307	3E000710	CONNECT PLUG 7P, B7B-PH-K
P308	3E010940	CONNECTOR, FCC 17FE-BT-VK-N
P309	3E000770	CONNECT PLUG 13P, 89400-1310
P310	3E000680	CONNECT PLUG 4P, B4B-PH-K
Q11	3S002310	TR, KSC945C-GTA
Q101, 201	3S000291	TR, DTC124ES
Q102, 202	3S002310	TR, KSC945C-GTA
Q103, 203	3S002310	TR, KSC945C-GTA
Q104, 204	3S000731	TR, 2SD2144S
Q105, 205	3S002310	TR, KSC945C-GTA
Q106, 206	3S002310	TR, KSC945C-GTA
Q107, 207	3S000291	TR, DTC124ES
Q108, 208	3S002310	TR, KSC945C-GTA
Q109, 209	3S000291	TR, DTC124ES
Q301	3S002310	TR, KSC945C-GTA
Q302	3S000291	TR, DTC124ES
Q303, 304	3S000301	TR, DTA124ES
Q305	3S000291	TR, DTC124ES
Q306	3S000301	TR, DTA124ES
Q307-309	3S000291	TR, DTC124ES
Q310	3S000301	TR, DTA124ES
Q311	3S002300	TR, KSA733C-GTA
Q312	3S001550	TR, 2SD1859TV2-0
Q313	3S000291	TR, DTC124ES
Q314	3S002310	TR, KSC945C-GTA
Q315, 316	3S000291	TR, DTC124ES
Q317	3S000301	TR, DTA124ES
Q319, 320	3S000291	TR, DTC124ES
Q322, 323	3S000320	TR, 2SA1237TV2Q
Q324	3S000291	TR, DTC124ES
Q325, 326	3S002310	TR, KSC945C-GTA
Q327-329	3S000291	TR, DTC124ES
Q330	3S000400	TR, 2SB1015Y

MAIN PCB ASSY

REF. NO.	PARTS NO.	DESCRIPTION
Q331	3S002310	TR, KSC945C-GTA
Q332, 333	3S000291	TR, DTC124ES
R11, 21	3R004590	VR, SEMI-FIXED RH0615-10K
R12, 22	3R004590	VR, SEMI-FIXED RH0615-10K
R13, 23	3R004590	VR, SEMI-FIXED RH0615-10K
R14, 24	3R004600	VR, SEMI-FIXED RH0615-22K
R32	3R004600	VR, SEMI-FIXED RH0615-22K
R337	△ 3R004390	RD, 1/2W 560 OHM
U301	3S000280	IC, UPC4570C
U302	3S000430	IC, BU4066BC
U303	3S000280	IC, UPC4570C
U304	3S000430	IC, BU4066BC
U305	3S002520	IC, KA2271B
U306	3S000260	IC, NJM4558D
U401	3S0024700C	IC, CXP84412-1150
X401	3E010670	RES, CST8.00MTW

REG PCB ASSY

REF. NO.	PARTS NO.	DESCRIPTION
	*3E9519100A	PCB ASSY, REG
U11	△ 3S002420	IC, NJM7809FA
U12	△ 3S000650	IC, NJM7805FA

KEY PCB ASSY

REF. NO.	PARTS NO.	DESCRIPTION
	*3E9518800A	PCB ASSY, KEY
	*3E9018800A	PCB, KEY
D601-603	3S002460	LED, GRN (3D1A) LG2041
S601-609	3E002070	SW, TACT SKQ5AB HMR-187

FRONT PCB ASSY

REF. NO.	PARTS NO.	DESCRIPTION
	*3E9518600A	PCB ASSY, FRONT
	*3E9018600A	PCB, FRONT
D501-503	3S000170	LED, YEL (5D1A) LI3331/H0/S1
D504-506	3S000160	LED, RED (5D1A) LI3331/H0/S1
D513	3S000203	LED, YEL (3D1A) LY2041/F110
D514	3S000193	LED, RED (3D1A) LH2041/F110
D515, 516	3S000203	LED, YEL (3D1A) LY2041/F110
D517, 518	3S002463	LED, GRN (3D1A) LG2041/F57
Q501, 502	3S002450	TR, DTC114ESTP
R501	3R004510	VR, RK14K12D 50KAX2
S511-514	3E002070	SW, TACT SKQ5AB HMR-187
S515	3E010700	SW, SLIDE 2-3
S516	3E000110	SW, SLIDE 2-2
S517	3E002070	SW, TACT SKQ5AB HMR-187
U501	3S000070	IC, LB1416
U502	3S002200	REMOCON SENSER, TSOP1838RF

## POWER SW PCB ASSY

REF. NO.	PARTS NO.	DESCRIPTION
	* 3E9518900A	PCB ASSY, POWER SW
	* 3E9018900A	PCB, POWER SW
S2	△ 3E000370	SW, PUSH SPUL 12469A

## COUNTER PCB ASSY

REF. NO.	PARTS NO.	DESCRIPTION
	* 3E9518700A	PCB ASSY, COUNTER
	* 3E9018700A	PCB, COUNTER
D701	3S002410	LED, 7SEG EL-T316GWB (GRN)
Q701-703	3S002440	TR, DTB113EK
Q704, 711	3S002430	TR, DTC143EK

## POWER SEL PCB ASSY

REF. NO.	PARTS NO.	DESCRIPTION
	* 3E9519010A	PCB ASSY, POWER SEL [US, C, GE]
	* 3E9519020A	PCB ASSY, POWER SEL [E, UK]
	* 3E9519030A	PCB ASSY, POWER SEL [A]
	* 3E9019000A	PCB, POWER SEL
	△ 3E002110	SW, SLIDE SL13B-022 [US, C, GE]
P1	3E002170	TERMINAL LAPPING 2P [E, UK, A]

## INCLUDED ACCESSORIES (W-600R)

REF. NO.	PARTS NO.	DESCRIPTION
	* 3D0025600A	OWNER'S MANUAL, E/F [US, C, GE, A]
	* 3D0025700A	OWNER'S MANUAL, E/F/G/I/S/D [E, UK]
	* 3E000380	PIN CORD

## INCLUDED ACCESSORIES (W-488R)

REF. NO.	PARTS NO.	DESCRIPTION
	* 3D0025800A	OWNER'S MANUAL, E/F
	* 3E000380	PIN CORD
	* 3E0106900A	REMOTE CONTROL UNIT, RC-744
	* 3E003660	BATTERY, UM-3 (2P X ED)

# W-600R/W-488R

## TEAC

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