

ONKYO SERVICE MANUAL

STEREO CASSETTE TAPE DECK MODEL TA-203

Black model

| | |
|--------------|-------------------------|
| UDN, UDC, UD | 120V AC, 60Hz |
| UP | 230V AC, 50Hz |
| UW | 120 or 220V AC, 50/60Hz |
| UQA | 240V AC, 50Hz |

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK \triangle ON THE SCHEMATIC DIAGRAM AND IN THE PARTS LIST ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE THESE COMPONENTS WITH ONKYO PARTS WHOSE PARTS NUMBERS APPEAR AS SHOWN IN THIS MANUAL.

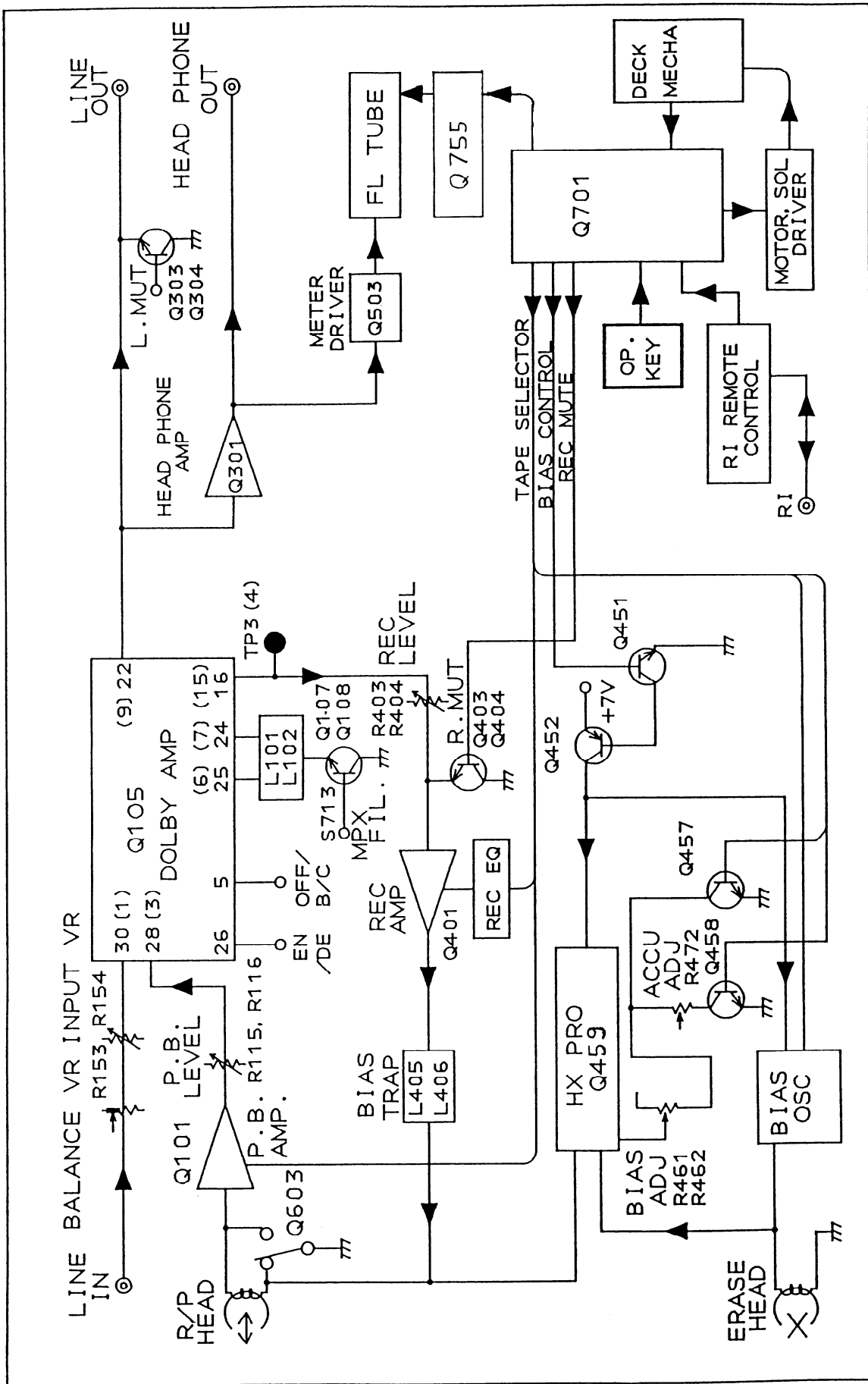
MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

SPECIFICATIONS

| | |
|--|---|
| Track Format: | 4-tracks, 2-channels |
| Erasing System: | AC erase |
| Tape Speed: | 4.8 cm/sec. (1-7/8 i.p.s) |
| Wow and Flutter: | 0.07% (WRMS) |
| Frequency Response: | 20-17,000Hz (Normal) (30-16,000Hz \pm 3dB) 20-18,000Hz (High) (30-17,000Hz \pm 3dB) 20-19,000Hz (Metal) (30-18,000Hz \pm 3dB) |
| S/N Ratio: | 58dB (metal tape, Dolby NR off) A noise reduction of 10dB above 5kHz and 5dB at 1kHz is possible with Dolby B NR, A noise reduction of 20dB at 5kHz is possible with Dolby C NR. |
| Input Jacks: | Line IN: 2 Input sensitivity: 80mV Input impedance: 50kohms |
| Outputs: | Line OUT: 2 Standard output level: 500mV (0dB) Optimum load impedance: over 50 kohms Headphone jack: 1 Optimum load impedance: 8 to 200 ohms |
| Motors: | DC servo motor: 1 DC motor: 1 |
| Heads: | REC/PB: Special Hard Permalloy \times 1; Erase head: Ferrite \times 1 |
| Power Supply Rating: | U.K. and Australian models: AC 240V, 50Hz U.S.A. and Canadian models: AC 120V, 60Hz Worldwide models: AC 120V and 220V switchable, 50/60Hz |
| Power Consumption: | 17 watts |
| Dimensions: | 455(W) \times 120(H) \times 308(D) mm (17-15/16" \times 4-3/4" \times 12-1/8") |
| Weight: | 5.1g. (11.2lbs.) |
| Specifications and external appearance are subject to change without notice because of product improvements. | |

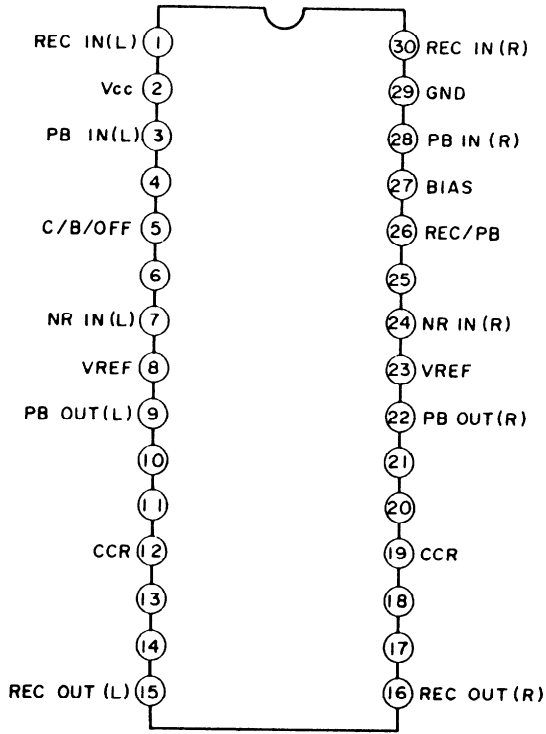
ONKYO.
AUDIO COMPONENTS

BLOCK DIAGRAM

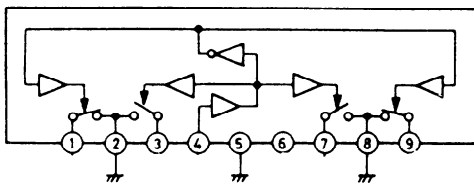


IC BLOCK DIAGRAM

HA12142NT (DOLBY NR)



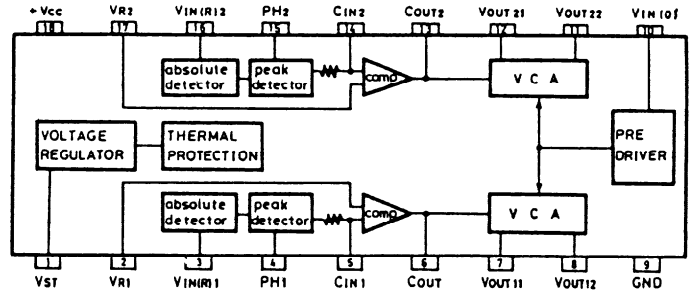
μPC1330HA (REC/PB SW)



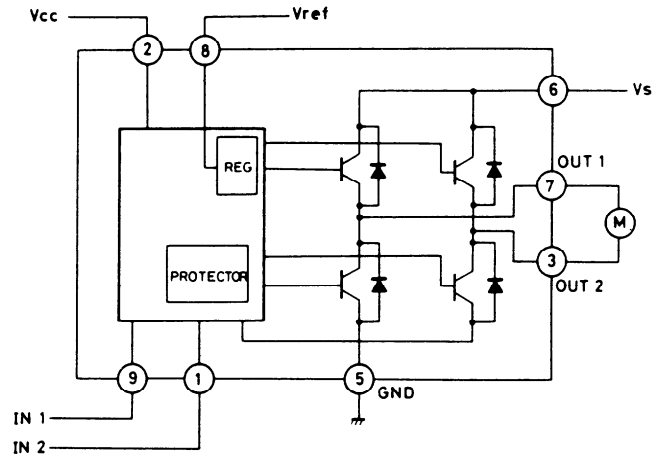
μPC133HA

| Pin No. | Function |
|---------|-------------------|
| 1, 9 | PB. signal |
| 2 | GND |
| 3, 7 | REC signal |
| 4 | REC/PB SW control |
| 5 | GND |
| 6 | +B |
| 8 | GND |

μPC 1297CA (HX PRO)

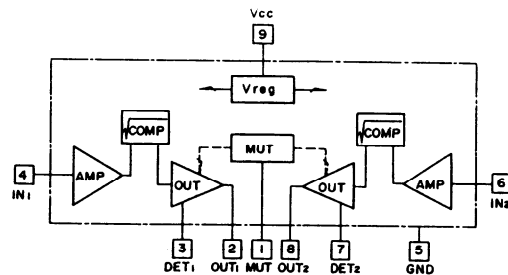


TA7291S (MOTOR DRIVE)

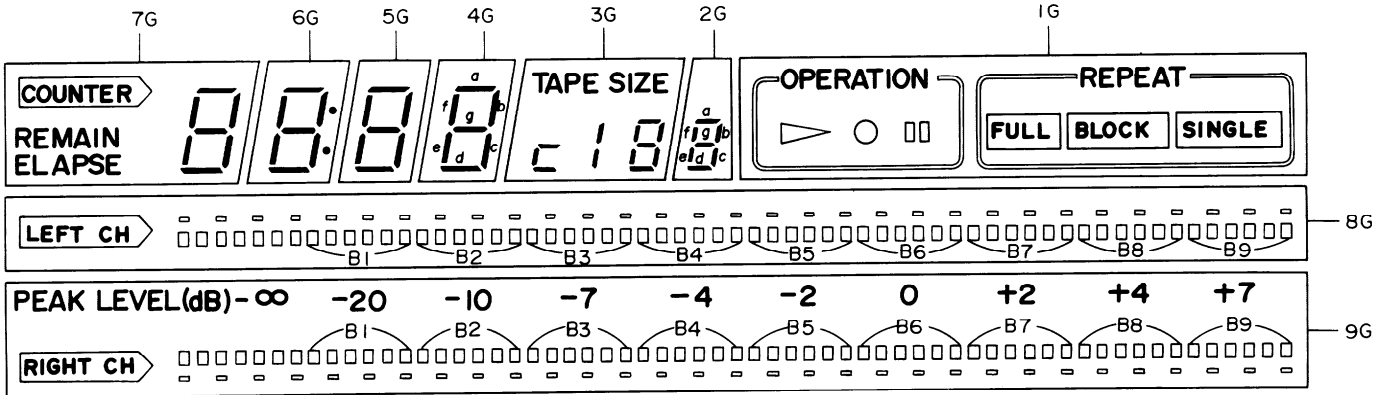


| INPUT | | OUTPUT | | MODE |
|-------|------|--------|-------|--------|
| IN 1 | IN 2 | OUT 1 | OUT 2 | |
| 0 | 0 | ∞ | ∞ | STOP |
| 1 | 0 | H | L | CW/CCW |
| 0 | 1 | L | H | CCW/CW |
| 1 | 1 | L | L | BRAKE |

BA6138 (METER DRIVE)



BG-923GK (DISPLAY TUBE)



PIN CONNECTION

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PIN.NO. | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | |
| CONNECTION | F | F | N | P | P | P | P | P | P | N | N | N | N | N | N | N | N | N | N | N | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | N | F | F | | | |
| | 2 | 2 | P | P | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | C | C | C | P | P | P | P | P | P | C | C | C | G | G | G | G | G | G | G | P | 1 | 1 |

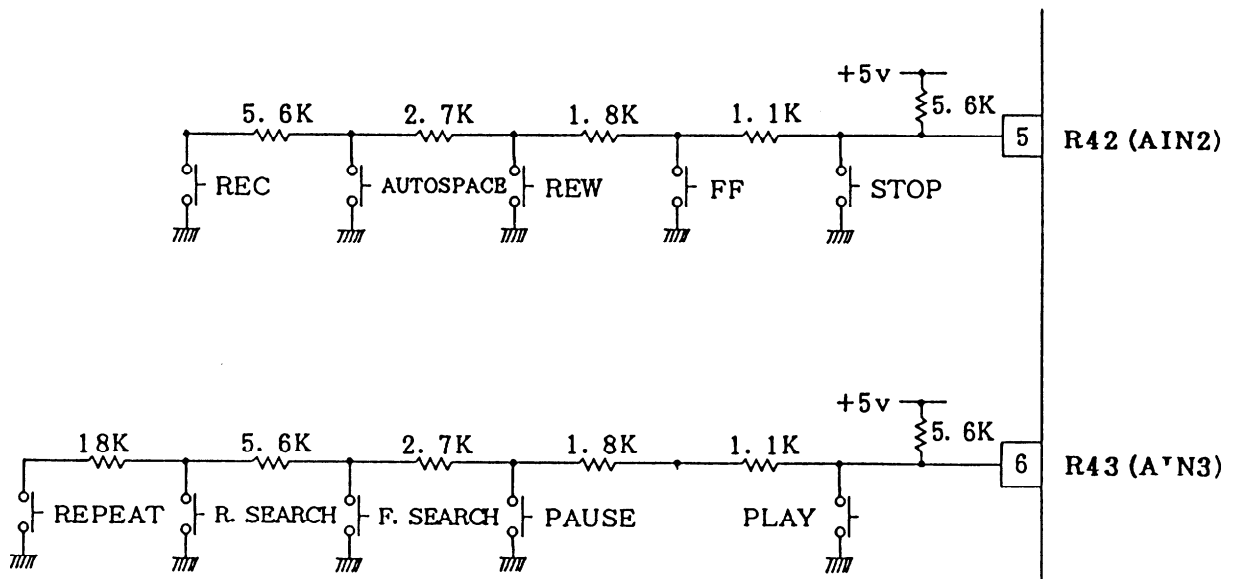
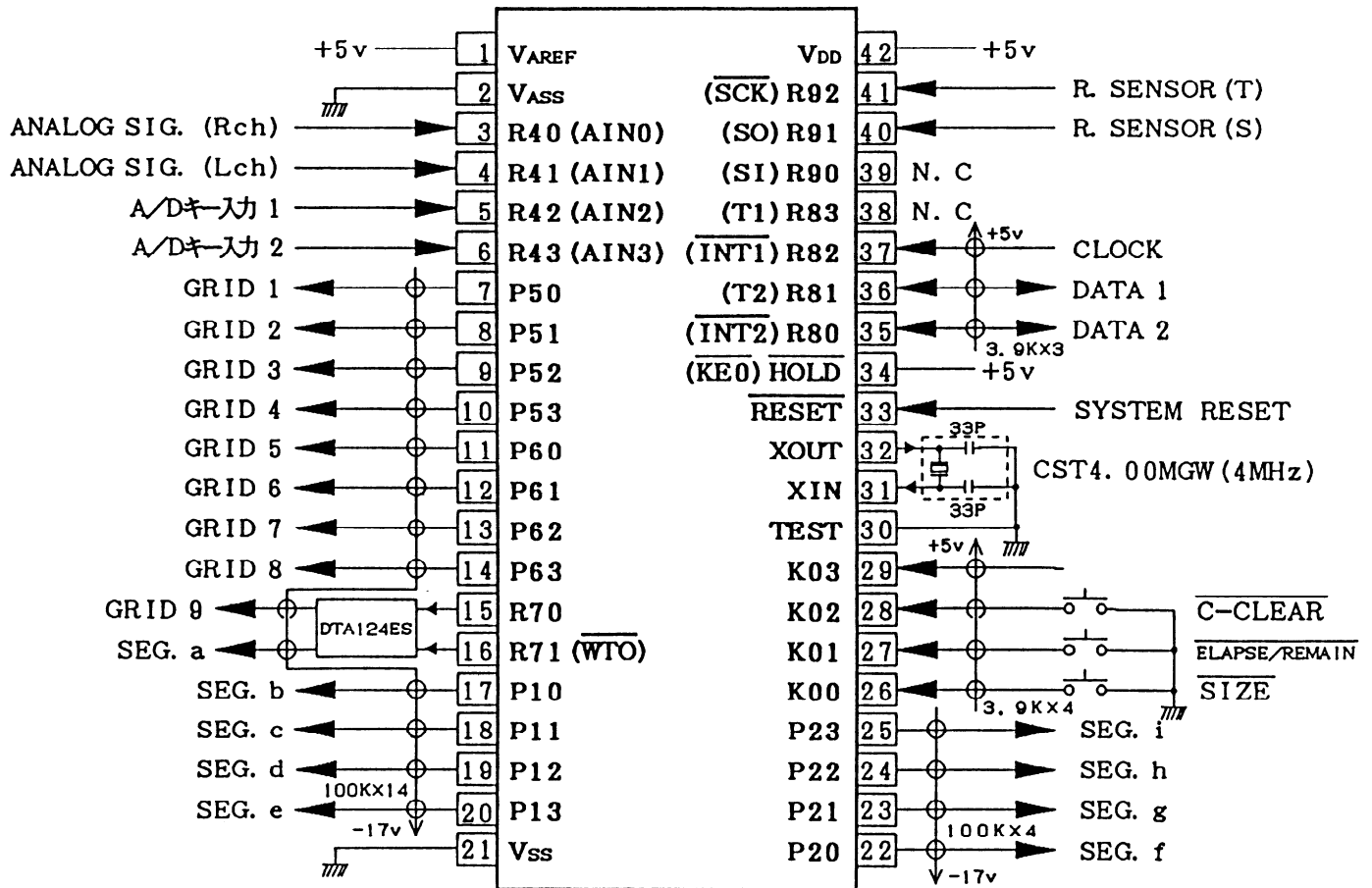
- NOTE
- 1) F1,F2 --- Filament
 - 2) NP ----- No pin
 - 3) NC ----- No connection
 - 4) 1G~9G --- Grid

ANODE CONNECTION

| | 9G | 8G | 7G | 6G | 5G | 4G | 3G | 2G | 1G |
|----|----|----|--------|---------|----|----|----|----|--------|
| P1 | B1 | B1 | a | a | a | a | a | a | ▷ |
| P2 | B2 | B2 | b | b | b | b | b | b | ○ |
| P3 | B3 | B3 | c | c | c | c | c | c | □□ |
| P4 | B4 | B4 | d | d | d | d | d | d | - |
| P5 | B5 | B5 | e | e | e | e | e | e | FULL |
| P6 | B5 | B6 | f | f | f | f | f | f | BLOCK |
| P7 | B7 | B7 | g | g | g | g | g | g | SINGLE |
| P8 | B8 | B8 | REMAIN | • | - | - | - | - | - |
| | | | | • (col) | | | | | |
| P9 | B9 | B9 | ELAPSE | - | - | - | - | - | - |

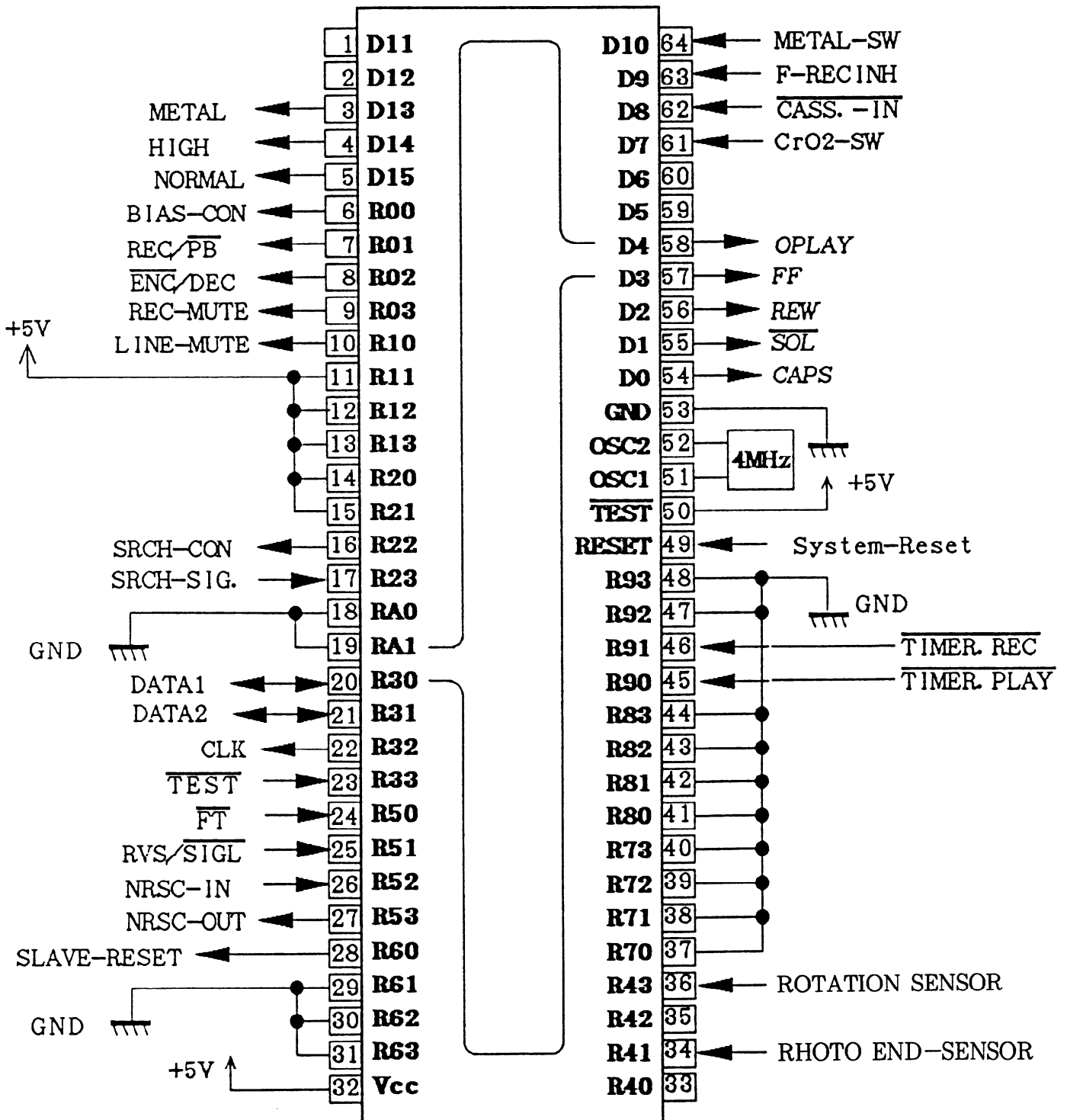
MICRO COMPUTER (COUNTER)

TMP47C441AN1637



MICRO COMPUTER (MASTER)

HD614089SC56



MICRO COMPUTER (MASTER)

HD614089SC56

| No. | Name | IN/OUT | Function |
|-------|------------------------------------|--------|---|
| 1 | NC | | |
| 2 | NC | | |
| 3 | METAL | OUT | Metal tape selector H |
| 4 | HIGH | 〃 | High 〃 〃 |
| 5 | NORMAL | 〃 | Normal 〃 〃 |
| 6 | BIAS-CON | OUT | Bias oscillation control H:ON |
| 7 | REC/ $\overline{\text{PB}}$ | 〃 | REC/PB selection |
| 8 | $\overline{\text{ENC}}/\text{DEC}$ | 〃 | Dolby ENC/DEC selector |
| 9 | REC-MUTE | OUT | Recording muting H:ON |
| 10 | LINE-MUTE | 〃 | Line output muting H:ON |
| 11~15 | NC | | |
| 16 | SRCH-CON | OUT | Search gain control H:PLAY |
| 17 | SRCH-SIG | IN | Search signal input |
| 18~19 | NC | | |
| 20 | DATA1 | IN/OUT | Master-slave communication data |
| 21 | DATA2 | | Master-slave communication data |
| 22 | CLK | OUT | Master-slave communication clock output |
| 23 | $\overline{\text{TEST}}$ | IN | |
| 24 | $\overline{\text{FT}}$ | 〃 | |
| 25 | RVS/ $\overline{\text{SIGL}}$ | 〃 | RVS deck :H |
| 26 | NRSC-IN | IN | |
| 27 | NRSC-OUT | OUT | |
| 28 | SLAVE-RESET | OUT | Slave micon reset |
| 29~31 | NC | | |
| 32 | VCC | | +5V |
| 33 | NC | | |
| 34 | POFF | IN | Power 055 micon reset |
| 35 | NC | | |
| 36 | ROTATION SENSOR | IN | Reel rotation sensor |
| 37~44 | NC | | |
| 45 | $\overline{\text{TIMER-PLAY}}$ | IN | Timer Play :L |
| 46 | $\overline{\text{TIMER-REC}}$ | 〃 | Timer Rec :L |
| 47~48 | NC | | |
| 49 | RESET | IN | |
| 50 | $\overline{\text{TEST}}$ | | System reset for microcomputer |
| 51 | OSC1 | | System clock OSC |
| 52 | OSC2 | | |
| 53 | GND | | |
| 54 | CAPS | OUT | Capstan motor control H:ON |
| 55 | $\overline{\text{SOL}}$ | 〃 | Solenoid drive L:ON |
| 56 | REW | 〃 | Reel motor rotation in rewind |
| 57 | FF | 〃 | Reel motor rotation fast forward |
| 58 | OPLAY | 〃 | Reel motor rotation PLAY with H |
| 59 | | | |
| 60 | NC | | |
| 61 | HIGH-SW | IN | Tape selector |
| 62 | CASS-IN | 〃 | Cassette loading detection |
| 63 | F-REC INH | 〃 | Recording prevention side - A |
| 64 | METAL-SW | 〃 | Tape selector |

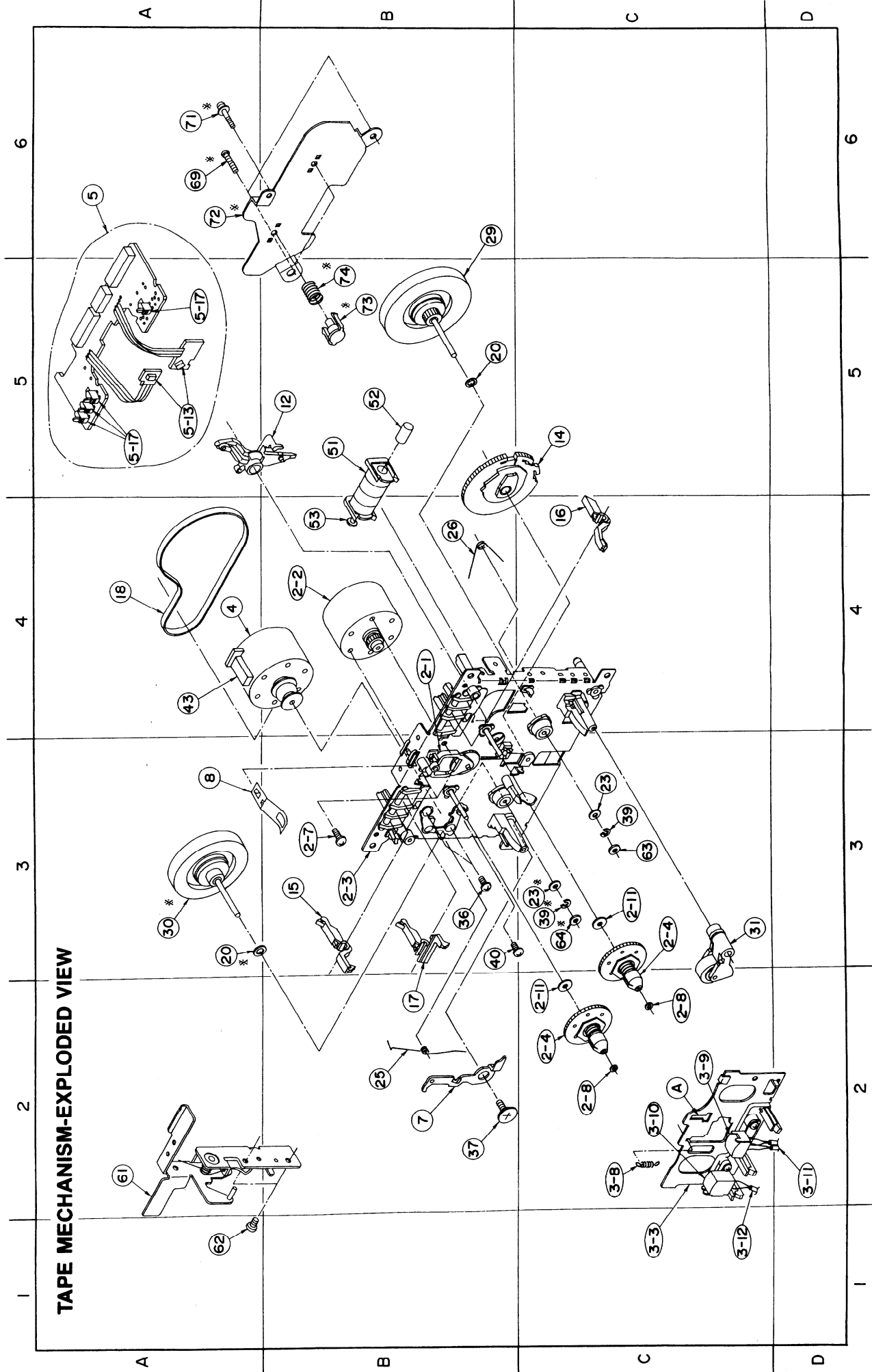
TAPE MECHANISM PARTS LIST

| REF.NO. | ADDRESS | PARTS NO. | DESCRIPTION |
|---------|---------|-----------|----------------------------|
| 2-1 | B4 | 24602482 | IDLER AS |
| 2-2 | B4 | 24601245 | REEL MOTOR |
| 2-3 | B3 | 24611382A | BASE AS (CHASSIS) |
| 2-4 | C2 | 24602483 | BASE AS (REEL) |
| 2-7 | B3 | 24609032 | PAN HEAD SCREW 2.6×6.4ZN |
| 2-8 | C2 | 24611177 | PLASTIC WASHER 1.7×3.2×.25 |
| 2-11 | C3 | 24611175 | PLASTIC WASHER 2.1×7×.25 |
| 3-3 | C1 | 24611501 | BASE (HEAD) |
| 3-8 | C2 | 24605711 | SPRING |
| 3-9 | C2 | 24600067 | R/P HEAD |
| 3-10 | C2 | 24600032 | E HEAD |
| 3-11 | D2 | 24606466 | WIRE CONNECTOR (R/P) |
| 3-12 | C1 | 24606477 | WIRE CONNECTOR (E) |
| 4 | A4 | 24601253 | MAIN MOTORAS |
| 5 | A6 | 24606478 | P.C.B. AS (CONTRO) |
| 5-13 | A5 | 24606463 | PHOTO REFLECTOR |
| 5-17 | A5 | 24606271 | PUSH SWITCH |
| 7 | B2 | 24607102 | ARM (EJECT) L |
| 8 | A3 | 24605739 | SPRING |
| 12 | B5 | 24607116 | ARM (PLAY) |
| 14 | C5 | 24602485A | CAM GEAR (3R) |
| 15 | B3 | 24603365A | LEVER (REC) |
| 16 | C4 | 24603366 | LEVER (PACK) L |
| 17 | B2 | 24603367 | LEVER (METAL) L |
| 18 | A4 | 24602543 | BELT (MAIN) (P) |
| 18 | A4 | 24602542 | BELT (MAIN) (D) |
| 20 | A3,B5 | 24611041 | PLASTIC WASHER 2.6×0.25 |
| 23 | C3 | 24610841 | PLASTIC WASHER 2.6×4.7×.5 |
| 25 | B2 | 24605714 | SPRING |
| 26 | B4 | 24605716 | SPRING |
| 29 | B6 | 24602487 | FLYWHEEL AS |
| 30 | A3 | 24602544 | FLYWHEEL AS (P) |
| 31 | C3 | 24602541 | PINCHROLLER AS |
| 36 | B3 | 24609001 | PAN HEAD SCREW SW 2.6×5ZN |
| 37 | B2 | 24609006A | SCREW |
| 39 | C3 | 8930151 | E WASHER 1.5S |
| 40 | B3 | 838130080 | WAVE SCREW 3×8 |
| 43 | A4 | 24611488 | CUSHION (HOLDER) |
| 51 | B5 | 24606333 | SOLENOID COIL AS |
| 52 | B5 | 24606332A | CORE |
| 53 | B4 | 24606331 | PLANGER |
| 61 | A2 | 24611447 | PLATE HOLDER AS |
| 62 | A1 | 833126049 | TAP-TIGHT SCREW 2.6TTP+4C |
| 63 | C3 | 24611188A | WASHER (OIL SEAL) |
| 64 | C3 | 24610844 | WASHER 1.9×5×0.25 (P) |
| 69 | A6 | 838126080 | SCREW 2.6×8 (P) |
| 71 | A6 | 24609042 | S-TIGHT SCREWM 2.6×25 (P) |
| 72 | A6 | 24607118 | BRACKET (F/W) (P) |
| 73 | B5 | 24611504 | THRUST WASHER (P) |
| 74 | B5 | 24605763 | SPRING (THRUST) (P) |

NOTE

D:120V Model

P:230V Model



ADJUSTMENT PROCEDURES

PRECAUTIONS

- Before adjustment, clean the following parts with an alcohol moistend awab.
 - * record/play back head
 - * pinch roller
 - * erase head
 - * capstan
- Do not use magnetized screwdriver for adjustments.
- Demagnetize record/playback head with a liead demagnetizer.

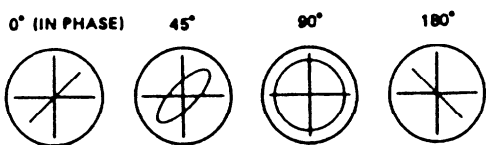
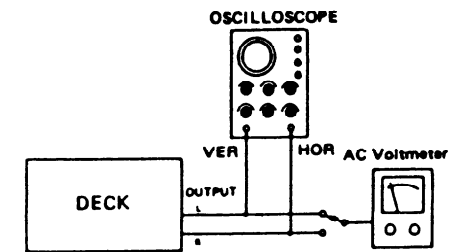
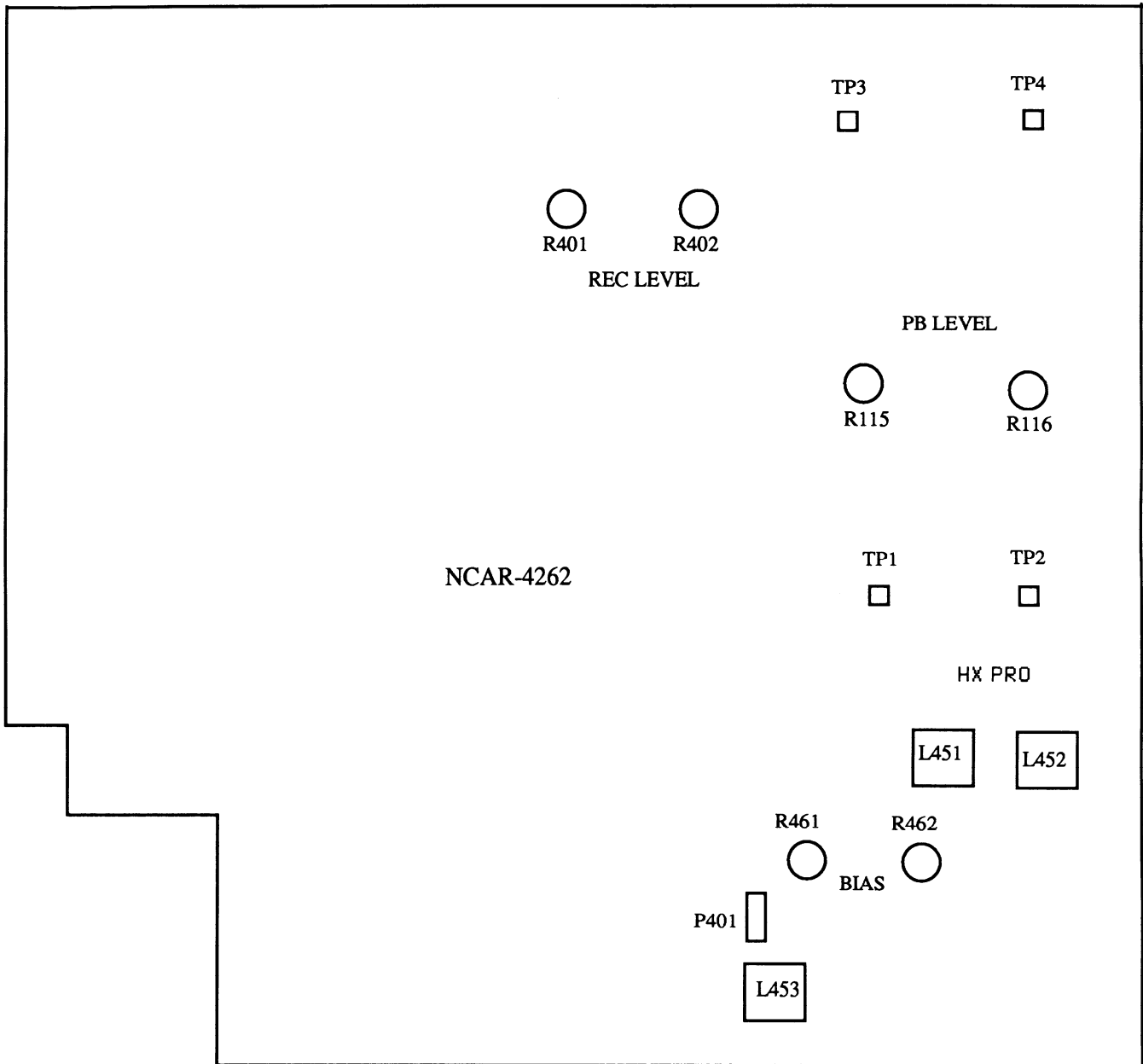
TEST EQUIPMENT/TOOLS REQUIRED:

- Audio oscillator
- Digital frequency counter
- Oscilloscope
- Attenuator
- AC voltmeter
- Non-magnetic screw driver
- Test tapes
 - TCC-153 : 10KHz, -15dB
 - MTT-111 : 3kHz, -10dB
 - MTT-150 : Dolby level calibration
400Hz, tone 200nWb/m

| Item | Connection of instrument | Line input | Test tape | Mode | Output indicator | Adjustment point | Adjust | Remarks | |
|------|--------------------------|---|------------------------------|-------------|-------------------|------------------------------|--|---------------------------|------------------|
| 1 | Tape speed | Frequency counter to LINE output terminal | MTT-111 | PB | Frequency counter | Semi-fixed on the moter | 3010Hz | | |
| 2 | Head azimuth | AC voltmeter and oscilloscope to LINE output terminal | TCC-153 | PB | AC voltmeter | Haed azimuth screw | Maximum and same phase at channels L and R | fig-1 | |
| 3 | Playback level | AC voltmeter to terminals TP-3 and TP-4 | MTT-150 | PB | AC voltmeter | R115 (Ch.L) R116 (Ch.R) | 300 mV | | |
| 4 | OSC Block | Frequency counter to P401 read loose coupling | | REC | Frequency counter | L453 | 85kHz ±2kHz | | |
| 5 | HX-PRO | AC voltmeter to terminals TP-1 and TP-2 | METAL TAPE | REC | AC voltmeter | L-451 (Ch.L) L-452 (Ch.R) | Maximum | R-461 R-462 Maximum | |
| 6 | Bias current | fig-2 | 1kHz, -20dB and 12kHz, -20dB | NORMAL TAPE | REC/PB | AC voltmeter | R461 (Ch.L) R462 (Ch.R) | Same level at REC/PB | Input VR maximum |
| 7 | Record level | fig-2 | 1kHz | NORMAL TAPE | REC | AC voltmeter | Attenuator or AF OSC output | 350 mV | |
| | | | | | REC/PB | AC voltmeter | R401 (Ch.L) R402 (Ch.R) | Same level at REC/PB | |

Blank tape

- NORMAL UD-1 C-90
- HIGH XL-5H C-90
- METAL XS-C60
- PLAY torque 30~70g/cm
- FF.REW torque 80~180g/cm
- Back tention 2~7g/cm



Confirming phase relationship

fig-1

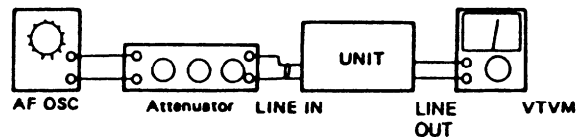



fig-2

CHASSIS-EXPLODED VIEW PARTS LIST

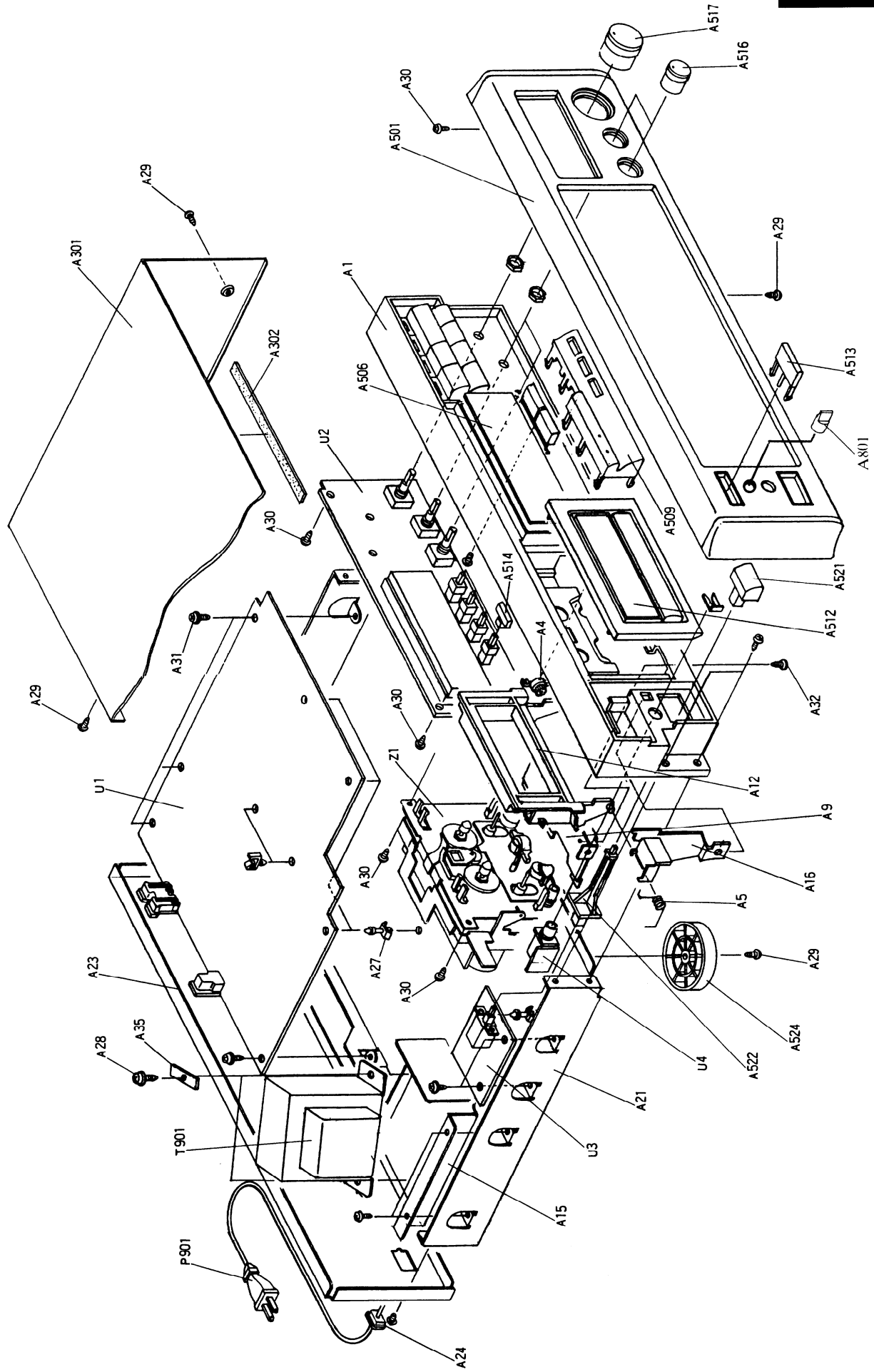
| REF.NO. | PART NO. | DESCRIPTION | REF.NO. | PART NO. | DESCRIPTION |
|---------|-------------|---------------------------|---------|------------|---------------------------------------|
| A1 | 27110648 | FRONT BRACKET AS (B) | T901 | 2300642 | NPT-1105D (D) |
| | 27110649 | FRONT BRACKET AS (S) | | 2300643 | NPT-1105P (P) |
| A4 | 28400282 | DAMPER | | 2300644 | NPT-1105DG (W) |
| A5 | 27180478 | SPRING (B) | S902 | 25065123 | NSS-1258P (W) |
| A9 | 27130646C | BRACKET (F) | U1 | IN111562-1 | NAAR-4262-1 |
| A12 | 28400473-1A | FRAME AS (CASSETTE) | U2 | IN111563-1 | NADIS-4263-1 |
| -a | 28400463B | FRAME (CASSETTE) | U3 | IN111564-1 | NAPS-4264-1 |
| -b | 27180435 | SPRING | U4 | IN111565-1 | NAETC-4265-1 |
| -c | 28141109 | CUSHION | Z1 | 244158 | CASSETTE DECK MECHANISM,NDM-148 (D) |
| A15 | 27130608D | BRACKET (PT) | | 244159 | CASSETTE DECK MECHANISM,NDM-149 (P/W) |
| A16 | 27273137 | JOINT (EJ) | | | |
| A21 | 27100233 | CHASSIS | | | |
| A23 | 27121488 | BACK PANEL (D) | | | |
| | 27121491 | BACK PANEL (W) | | | |
| A24 | 27300750 | BUSHING (CORD) | | | |
| A27 | 27190480 | HOLDER | | | |
| A28 | 830440089 | TAP-TIGHT SCREW 4TTC+8CBC | | | |
| A29 | 834430088 | TAP-TIGHT SCREW 3TTS+8BBC | | | |
| A30 | 833430080 | TAP-TIGHT SCREW 3TTP+8PBC | | | |
| A31 | 831130088 | TAP-TIGHT SCREW 3TTW+8BBC | | | |
| A32 | 835430068 | TAP-TIGHT SCREW 3TTF+6BBC | | | |
| A35 | 870065 | PT WASHER | | | |
| A301 | 28184479 | TOP COVER | | | |
| A302 | 28140837 | CUSHION 250X10X.9t | | | |
| A501 | IN111121 | FRON TPANEL (B) | | | |
| | IN112121 | FRON TPANEL (S) | | | |
| A506 | 28191594A | CLEAR PLATE | | | |
| A509 | 27267745 | GUIDE AS (VOL) (B) | | | |
| | 27267746 | GUIDE AS (VOL) (S) | | | |
| A512 | 28400640 | CASSETTE LID AS (B) | | | |
| | 28400641 | CASSETTE LID AS (S) | | | |
| A513 | 28323985 | KNOB (EJ) (B) | | | |
| | 28314337 | KNOB (EJ) (S) | | | |
| A514 | 28324325 | KNOB (DOL) (B) | | | |
| | 28324326 | KNOB (DOL) (S) | | | |
| A516 | 28324150-1 | KNOB (LEV) (B) | | | |
| | 28324151 | KNOB (LEV) (S) | | | |
| A517 | 28324335A | KNOB (INP) (B) | | | |
| | 28324336 | KNOB (INP) (S) | | | |
| A521 | 28324140 | KNOB (POW) (B) | | | |
| | 28324184 | KNOB (POW) (S) | | | |
| A522 | 27273136 | JOINT (POW) | | | |
| A524 | 27175254 | LEG AS | | | |
| A801 | 28324432 | KNOB (TIM) (B) | | | |
| | 28324433 | KNOB (TIM) (S) | | | |
| P901 | 253112A | AC CORD AS-UC-4 # 18 (D) | | | |
| | 253149 | AC CORD AS-CEE (P/W) | | | |

NOTE

- B:Black model
- S:Silver model
- D:Only 120V model
- P:Only 230V model
- W:Worldwide model

NOTE: THE COMPONENTS IDENTIFIED BY MARK  ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

CHASSIS-EXPLODED VIEW



PC BOARD PARTS LIST

NAAR-4262-1

| CIRCUIT NO. | PARTS NO. | DESCRIPTION |
|-------------|-----------------------|-----------------------------|
| | Ics | |
| Q101 | 222956 | NJM-2068D-D |
| Q105 | 22240388 | HA12142NT |
| Q301 | 22240368 | M5218AL |
| Q401 | 22240369 | M5218AP |
| Q402 | 22240240 | IR2C30 |
| Q459 | 222959 | # PC1297CA |
| Q503 | 22240313 | BA6138 |
| Q505 | 222940 | BA335H |
| Q603 | 22240147 | # PC1330HA |
| Q701 | 22240518 | HD614089SC56 |
| Q708 | 22240239 | TA-7291S |
| Q901 | 222780075MIT | 78M07L |
| Q902 | 222790065JRC | 79M06 |
| Q905 | 222780055MIT | 78M05 |
| | Transistors | |
| Q103,Q104 | 2213284 or 2213285 | 2SC1740S-R or 2SC1740S-S |
| Q106 | 221281 or 2213570 | DTC114YS or RN1207 |
| Q107,Q108 | 221299 | DTC114TS |
| Q303,Q304 | 2211706 | 2SD655-F |
| Q403,Q404 | 2213284 or 2213285 | 2SC1740S-R or 2SC1740S-S |
| Q451 | 221281 or 2213570 | DTC114YS or RN1207 |
| Q452 | 2212853 or 2212855 | 2SB1068-K or 2SB1068-U |
| Q453 | 2211544 | 2SC1959-Y |
| Q454,Q455 | 221281 or 2213570 | DTC114YS or RN1207 |
| Q456 | 2211544 | 2SC1959-Y |
| Q457,Q458 | 221281 or 2213570 | DTC114YS or RN1207 |
| Q507 | 221281 or 2213570 | DTC114YS or RN1207 |
| Q601 | 2213354 or 2213355 | 2SA933S-R or 2SA933S-S |
| Q602 | 221281 or 2213570 | DTC114YS or RN1207 |
| Q702 | 221281 or 2213570 | DTC114YS or RN1207 |
| Q703 | 2212853 or 2212855 | 2SB1068-K or 2SB1068-U |
| Q704 | 2212600 or 2213580 | DTA124ES or RN2203 |
| Q705 | 221281 or 2213570 | DTC114YS or RN1207 |
| Q706 | 2212853 or 2212855 | 2SB1068-K or 2SB1068-U |
| Q707 | 221281 or 2213570 | DTC114YS or RN1207 |
| Q709 | 2211255 | 2SC1815-GR |
| Q710 | 221282 or 2213560 | DTC144ES or RN1204 |
| Q711 | 2211255 | 2SC1815-GR |
| Q712 | 221282 or 2213560 | DTC144ES or RN1204 |
| Q715 | 2212600 or 2213580 | DTA124ES or RN2203 |
| Q716 | 2213354 or 2213355 | 2SA933S-R or 2SA933S-S |

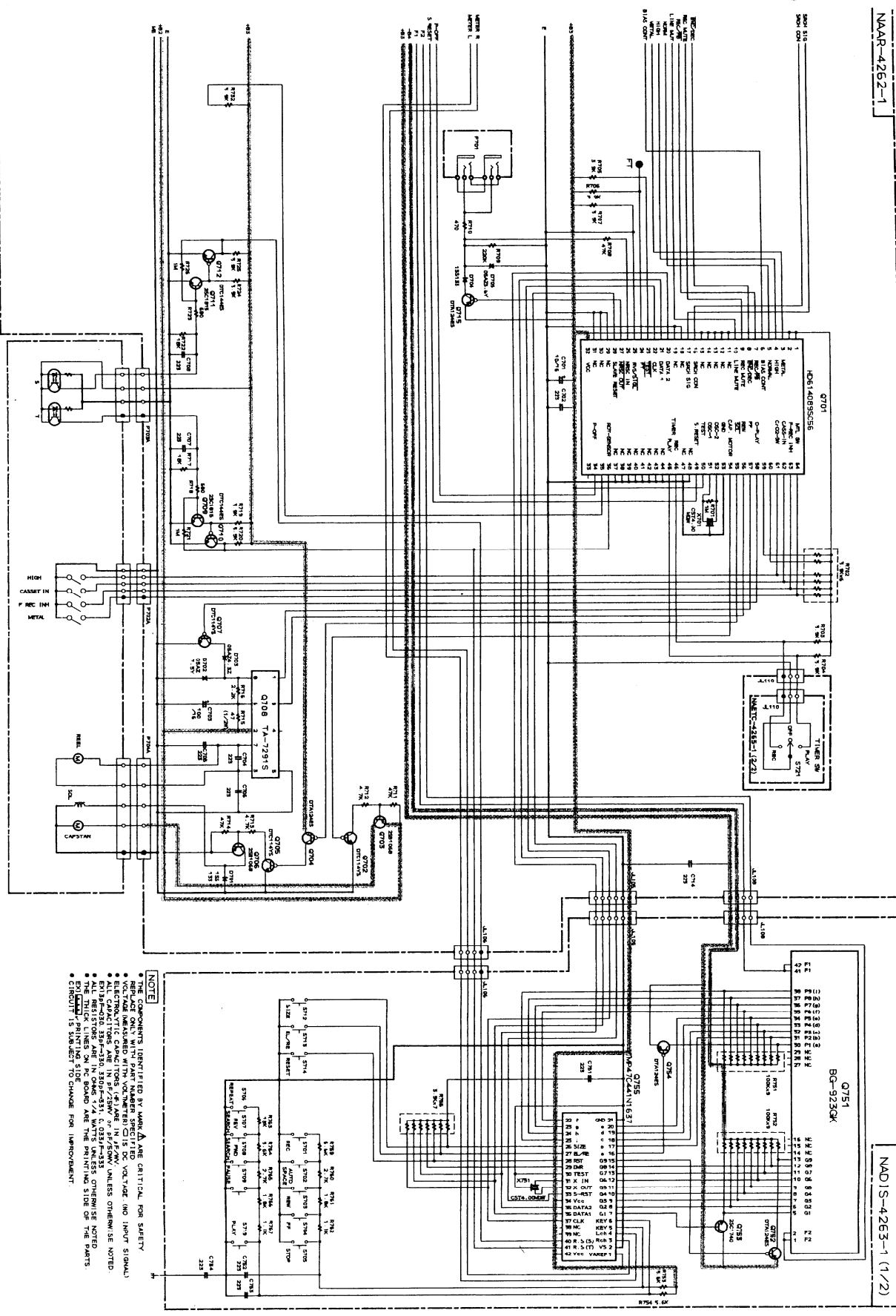
| CIRCUIT NO. | PARTS NO. | DESCRIPTION |
|-------------|-----------------------|-----------------------------|
| Q717 | 2212600 or 2213580 | DTA124ES or RN2203 |
| Q906 | 2202115 or 2202116 | 2SD2061-E or 2SD2061-F |
| Q907 | 2213284 or 2213285 | 2SC1740S-R or 2SC1740S-S |
| Q908 | 2213354 or 2213355 | 2SA933S-R or 2SA933S-S |
| | Diodes | |
| D602-D610 | 223163 | 1SS133 |
| D701 | 223163 | 1SS133 |
| D702 | 224150752 | 05AZ7.5Y |
| D703 | 224150433 | 05AZ4.3Z |
| D704 | 223163 | 1SS133 |
| D705 | 224150562 | 05AZ5.6Y |
| D707 | 223163 | 1SS133 |
| D901-D906 | 22380046 | AM01Z |
| D907 | 224151303 | 05AZ13Z |
| D908,D909 | 223163 | 1SS133 |
| D910 | 224150562 | 05AZ5.6Y |
| D911,D912 | 22380046 | AM01Z |
| D913 | 224151803 | 05AZ18Z |
| D914 | 224150512 | 05AZ5.1Y |
| D916,D917 | 223163 | 1SS133 |
| | Coils | |
| L101,L102 | 233313 | NMC-6048 |
| L401,L402 | 231085 | NCH-2133 |
| L403,L404 | 231081 | NCH-2129 |
| L405,L406 | 231165 | NTR-6506 |
| L407 | 231077 | NCH-2125 |
| L451,L452 | 231127 | NCH-4183 |
| L453 | 231180 | NLO-2053 |
| X701 | 3010150 | CST4.00MGW |
| | Capacitors | |
| C111,C112 | 391942217 | 220 μ F16V,ELECT. |
| C113 | 391944717 | 470 μ F16V,ELECT. |
| C115 | 391944717 | 470 μ F16V,ELECT. |
| C119-C122 | 391980227 | 2.2 μ F50V,ELECT. |
| C125,C126 | 391941007 | 10 μ F16V,ELECT. |
| C137,C138 | 391941017 | 100 μ F16V,ELECT. |
| C139,C140 | 391942217 | 220 μ F16V,ELECT. |
| C403,C404 | 391944707 | 47 μ F16V,ELECT. |
| C405,C406 | 391981097 | 0.1 μ F50V,ELECT. |
| C407,C408 | 391980477 | 4.7 μ F50V,ELECT. |
| C451 | 391921017 | 100 μ F6.3V,ELECT. |
| C452 | 391980477 | 4.7 μ F50V,ELECT. |
| C454 | 370131234 | 0.012 μ F100V,APS |
| C456 | 391980477 | 4.7 μ F50V,ELECT. |
| C459,C460 | 370131514 | 150PF100V,APS |
| C471-C473 | 391941007 | 10 μ F16V,ELECT. |
| C475 | 391944707 | 47 μ F16V,ELECT. |
| C501,C502 | 391941007 | 10 μ F16V,ELECT. |
| C503,C504 | 391941007 | 10 μ F16V,ELECT. |
| C505 | 391944707 | 47 μ F16V,ELECT. |
| C506 | 391980477 | 4.7 μ F50V,ELECT. |
| C508 | 391980107 | 1 μ F50V,ELECT. |
| C509,C510 | 391984797 | 0.47 μ F50V,ELECT. |
| C511 | 391944707 | 47 μ F16V,ELECT. |
| C601 | 391980477 | 4.7 μ F50V,ELECT. |
| C603 | 391980477 | 4.7 μ F50V,ELECT. |

| CIRCUIT NO. | PARTS NO. | DESCRIPTION | CIRCUIT NO. | PARTS NO. | DESCRIPTION |
|--------------------|-------------------------|----------------------------------|-------------|-------------|--------------------------|
| C604 | 391941017 | 100 μ F16V,ELECT | R153 | 5104289 | N14RGLC250KMN17Z |
| C606 | 352950476 | 4.7 μ F25V,NP. | R154 | 5104251 | N14RGL50KA17Z |
| C701 | 391941007 | 10 μ F16V,ELECT. | R471 | 5104290 | N14RGLC5KB17Z |
| C703 | 391941017 | 100 μ F16V,ELECT | R751,R752 | 49163104409 | 100K Ω ...9,1/10W |
| C711 | 391980227 | 2.2 μ F50V,ELECT. | R755 | 49163392407 | 3.9K Ω ...7,1/10W |
| C904,C905 | 391952227S | 2200 μ F25V,ELECT. | | | |
| C906-C908 | 391942217 | 220 μ F16V,ELECT. | | | |
| C912 | 3504168 | 13000 μ F25V,ELECT. | S701-S714 | 25035548 | NPS-111-510,PUSH |
| C914 | 391942217 | 220 μ F16V,ELECT. | S715-S718 | 25035611 | NPS-122-L573,PUSH |
| C916 | 391944707 | 47 μ F16V,ELECT. | S719 | 25035548 | NPS-111-S510 |
| C917 | 391942217 | 220 μ F16V,ELECT. | | 27190838A | HOLDER(FL) |
| C919 | 391962207 | 22 μ F35V,ELECT. | | | |
| C921,C922 | 391961017 | 100 μ F35V,ELECT. | | | |
| C923,C924 | 391980477 | 4.7 μ F50V,ELECT. | | | |
| | Resistors | | | | |
| R115,R116 | 5210217 | N06HR10KBD | | | |
| R401,R402 | 5210217 | N06HR10KBD | | | |
| R461,R462 | 5210217 | N06HR10KBD | | | |
| R465 | 442521014F | RS1/2WBJ100 Ω | | | |
| R702 | 49163392406 | RM1/10IJ3.9K Ω \times 6 | | | |
| R716 | 442524704F | RS1/2WBJ47 Ω | | | |
| R907 | 442520224F | RS1/2WBJ2.2 Ω | | | |
| R909 | 442524714F | RS1/2WBJ470 Ω | | | |
| R911 | 442520104F | RS1/2WBJ1 Ω | | | |
| | Plug,socket,jack | | | | |
| P101 | 25055136 | NPLG-6P120 | | | |
| P102,P103 | 25050267 | NSCT-3P95 | | | |
| P105 | 25045338 | NPJ-4PDBL189 | | | |
| P401 | 25055132 | NPLG-2P116 | | | |
| P701 | 25045330 | NPJ-2PDBL184 | | | |
| P702A | 2000231020 | NSAS-10P0241 | | | |
| P703A | 2002321020 | NSAS-10P0241 | | | |
| P704A | 2002341020 | NSAS-10P0034 | | | |
| | Miscellaneous | | | | |
| | 27160211 | RAD68,RADIATOR | | | |
| | 82143006 | 3P+6FN(BC) | | | |
| | 27141059 | BRACKET | | | |
| | 27301271 | MSC-1609,CLAMP | | | |
| | 27190713 | UAMS-11-0.CLAMP | | | |
| | NADIS-4263-1 | | | | |
| CIRCUIT NO. | PARTSNO. | DESCRIPTION | | | |
| | Display tube | | | | |
| Q751 | 212098 | BG-923GK | | | |
| | lc,transistors | | | | |
| Q752 | 2212600 or 2213580 | DTA124ES or RN2203 | | | |
| Q753 | 2213284 or 2213285 | 2SC1740S-R or 2SC1740S-S | | | |
| Q754 | 2212600 or 2213580 | DTA124ES or RN2203 | | | |
| Q755 | 22240519 | TMP47C441AN1637 | | | |
| | Xtal | | | | |
| X751 | 3010150 | CST4.00MGW | | | |

SCHEMATIC DIAGRAM 2/2

NAAR-4262-1

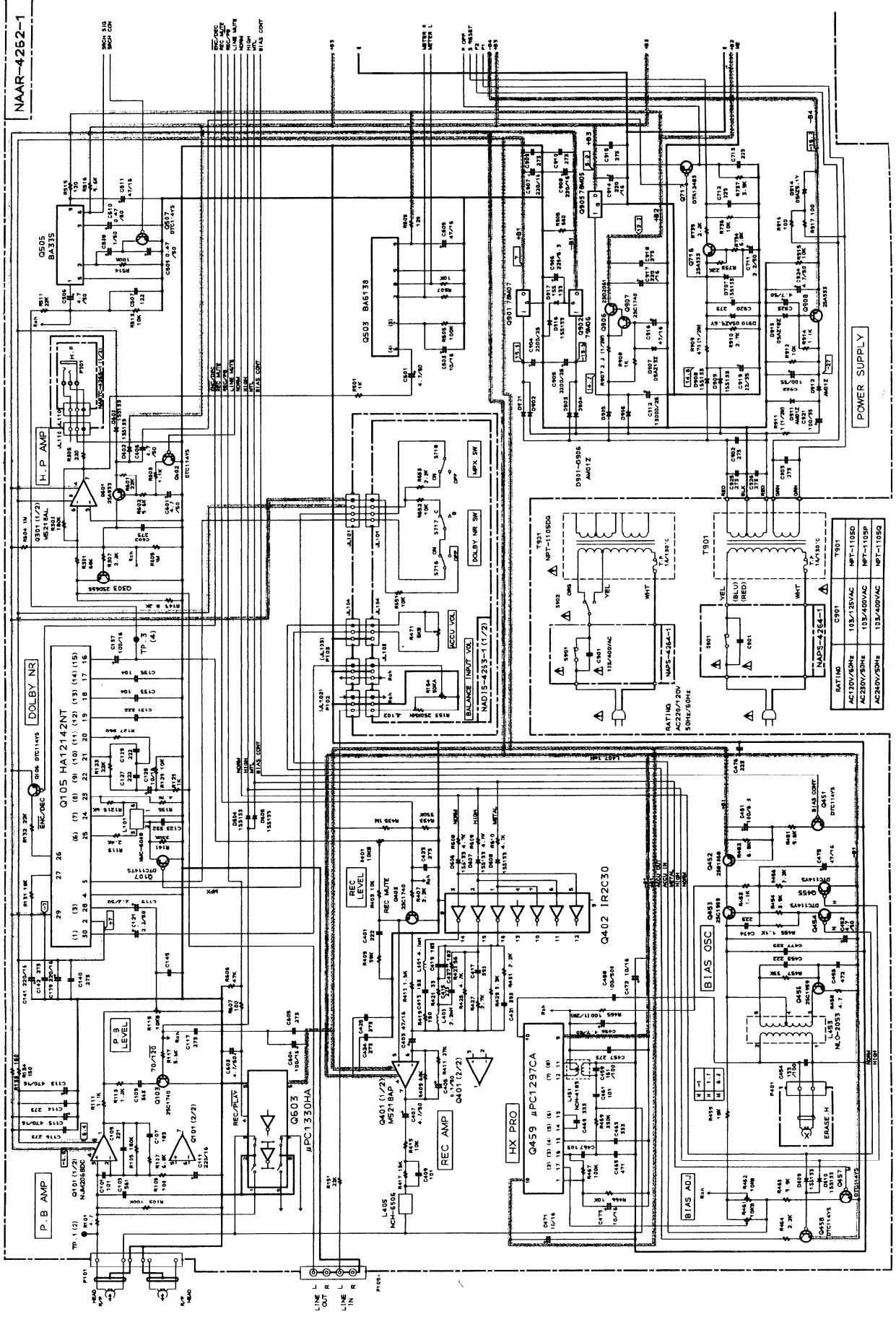
NADIS-4263-1 (1/2)



NOTE

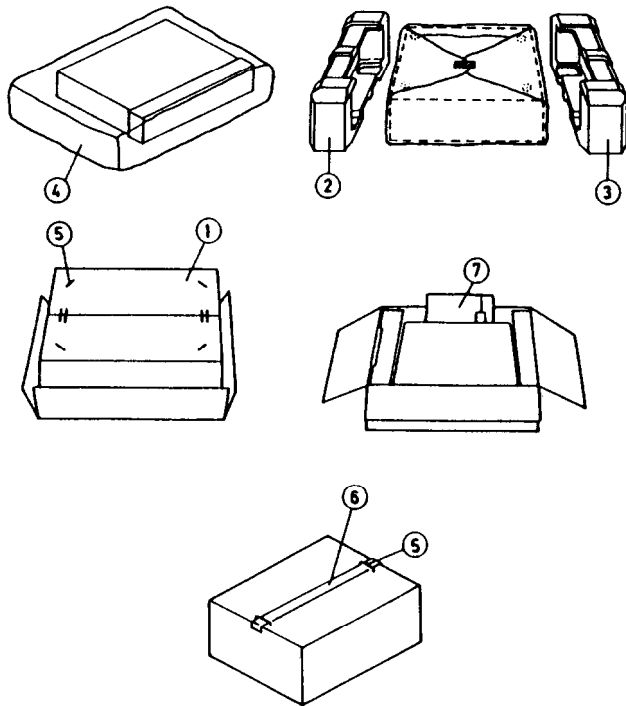
- THE COMPONENTS IDENTIFIED BY MARK A ARE CRITICAL FOR SAFETY.
- RESISTOR VALUES ARE IN OHMS UNLESS SPECIFIED OTHERWISE.
- CAPACITORS ARE IN P.F./50V UNLESS OTHERWISE NOTED.
- ALL RESISTORS ARE IN OHMS UNLESS OTHERWISE NOTED.
- DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.
- CIRCUIT IS SUBJECT TO CHANGE FOR IMPROVEMENT.

SCHEMATIC DIAGRAM 1/2



| RATING | T801 | T802 |
|-------------|-------------|-----------|
| ACT10V/50HZ | 105L/130VAC | NPT-1105D |
| ACT20V/50HZ | 105L/130VAC | NPT-1105D |
| ACT30V/50HZ | 105L/130VAC | NPT-1105D |
| ACT40V/50HZ | 105L/130VAC | NPT-1105D |

PACKING VIEW



PART LIST

| REF. NO. | PART NO. | DESCRIPTION |
|----------|----------------------------|----------------------------|
| 1 | 29052279 | Master carton box |
| 2 | 29091452B | Pad (L) |
| 3 | 29091453B | Pad (R) |
| 4 | 29100105 | 620×550 Poly bag |
| 5 | 282301 | Sealing hook |
| 6 | 29110071-1 | Damplon tape |
| 7 | Accessory bag ass'y | |
| | 29341654 | Instruction manual (D) |
| | 29341655 | Instruction manual (UP/UW) |
| | 2010098A | Connection cable |
| | 29365019A | Warranty card (N) |
| | 29358002J | Service station list (N) |
| | 29100006A | 350×250 Poly bag |
| | 25055040 | CV plug CV-K-2 (W) |
| | 29365024 | Warranty card (F) |
| | 29100107 | Poly bag (F) |

NOTE

- (N) : Only U.S.A model
- (W) : Only worldwide model
- (F) : Only France model
- (UP) : Only 230V model

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