

# ONKYO® SERVICE MANUAL


## STEREO CASSETTE TAPE DECK

### MODEL TA-RW909

#### Black models

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

#### SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  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 PART 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

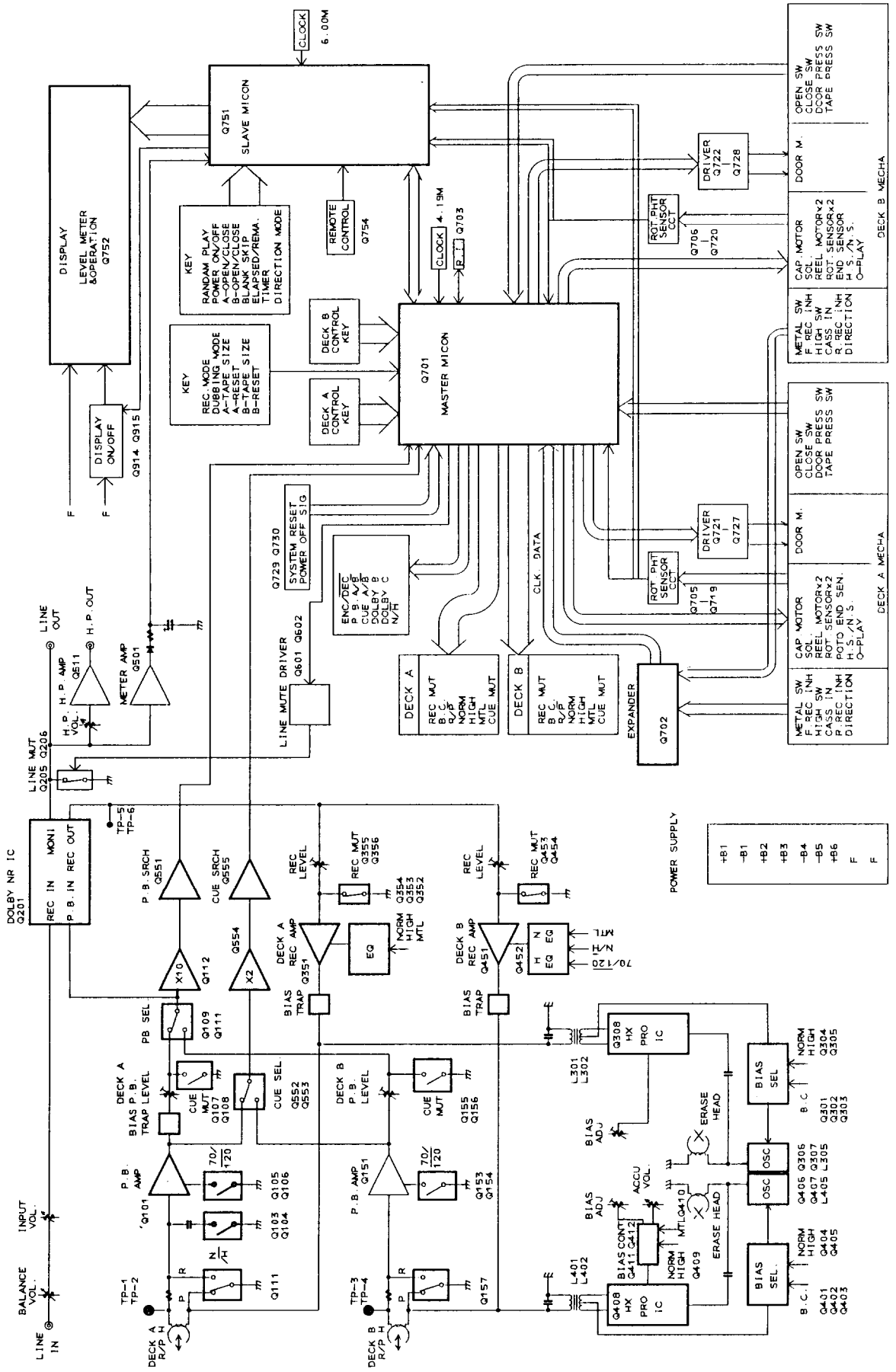
|                 |   |
|-----------------|---|
| Track System:   | 4-tracks, 2-channels  |
| Erasing System: | AC erase  |
| Tape Speed:     | 4.8 cm/sec. (1-7/8 i.p.s.)<br>9.6 cm/sec. (3-3/4 i.p.s.) (high speed dubbing) |

|                     |   |
|---------------------|---|
| Wow and Flutter:    | 0.065% (WRMS)   |
| Frequency Response: | 20 – 15,000Hz (Normal)<br>(30 – 14,000Hz ±3dB)<br>20 – 16,000Hz (High)<br>(30 – 15,000Hz ±dB)<br>20 – 17,000Hz (Metal)<br>(30 – 16,000Hz ±3dB)  |
| S/N Ratio:          | Dolby NR off: 58dB (metal position tape)<br>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<br>Input sensitivity: 60mV<br>Input impedance: 50 kohms  |
| Outputs:            | Headphone jack: 1<br>Optimum load impedance: 8 to 200 ohms<br>Line OUT: 2<br>Standard output level: 500mV (0dB)<br>Optimum load impedance: over 50 kohms  |
| Motors:             | DC servo motor x 2; DC motor x 4  |
| Heads:              | REC/PB: special hard permalloy x 2;<br>Erase head: ferrite x 2  |
| Power Supply:       | <ul style="list-style-type: none"> <li>● U.K and Australian models:<br/>AC 240V, 50 Hz</li> <li>● U.S.A and Canadian models:<br/>AC 120 V, 60 Hz</li> <li>● Worldwide models:<br/>AC120 and 220 V switchable, 50/60 Hz</li> </ul> |
| Power Consumption:  | 35 watts  |
| Dimensions:         | 455(W) x 131(H) x 362(D)mm<br>(17-15/16" x 5-3/16" x 14-1/4")   |
| Weight:             | 8.2 kg. (18.1 lbs.)   |

Specifications and external appearance are subject to change without notice because of product improvements.



# BLOCK DIAGRAM



# CIRCUIT DESCRIPTION

## POWER GLIDE LOADING

For the operation of this function, switch circuits are available as follows:

1. OPEN SW (Mecha. Drwg. 66: Upper 101)
  2. CLOSE SW (Mecha. Drwg. 66: Lower 100)
  3. DOOR PRESS SW (Mecha. Drwg. 68: Appx. 101)
  4. HALF PRESS SW (Mecha. Drwg. 67: Appx. 101)
  5. OPEN/CLOSE SW (Front panel)
1. OPEN SW  
The Loading Motor is to rotate, while operating OPEN, until turned ON this SW by the projection of Cam Gear. Then, because of this SW turned ON, the microcomputer will make a decision that OPEN operation is finished, and stop the Loading Motor.  
If not turned ON this SW within 5 sec. after started OPEN operation, the microcomputer will judge the state to be wrong and then rotate the Loading Motor backwards to make CLOSE operation.
  2. CLOSE SW  
The Loading Motor is to rotate, while operating CLOSE, until turned ON this SW by the projection of Cam Gear. Then, because of this SW turned ON, the microcomputer will make a decision that CLOSE operation is finished, and stop the Loading Motor.  
If not turned ON this SW within 5 sec. after started CLOSE operation, the microcomputer will judge the state to be wrong and then rotate the Loading Motor backwards to make OPEN operation.

3. DOOR PRESS SW  
Under OPEN state, by pressing DOOR manually this SW is to be ON and by letting DOOR go to the original position, this SW will be OFF. The microcomputer will detect this ON to OFF trailing and then rotate Loading Motor so as to carry out CLOSE operation.  
Such an operation, however, shall be carried out only in case where cassette is not put.
4. HALF PRESS SW  
When set the Cassette Half under OPEN condition, this SW is to be ON by pressing upper part of the Cassette Half downward. The microcomputer will detect this OFF to ON rise and then rotate Loading Motor so as to carry out CLOSE operation.

## TEST MODE

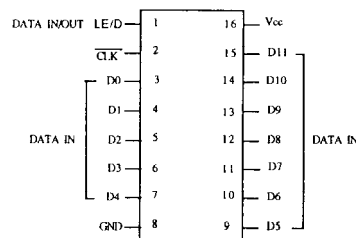
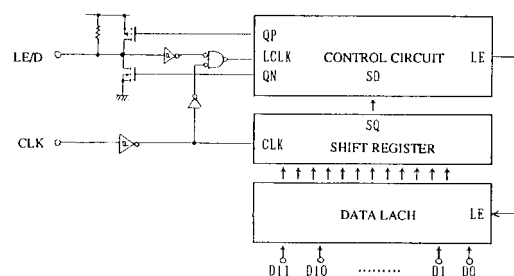
1. By connecting FT Terminal with GND, TEST MODE is to be set up. This operation is to be carried out when adjusting HIGH SPEED.  
At FT Mode, by pressing FWD Button twice continuously, high speed will be set up and, by pressing it again, normal speed will be reset.
2. In order to release TEST MODE, plug off AC cord first and then plug it in again to be reset.

## INPUT EXPANDER (M66007P)

### OPERATION

- (1) When turned power on, LE/D is to be the mode with indefinite Input/Output. And then, after detecting the trailing edge of CLK 13 times and more, LE/D is to be set as Input Mode.
- (2) The access will be started under Input Mode for LE/D with trailing edge from "H" to "L" of LE/D when CLK at "H", and the states from D0 to D11 will be latched.
- (3) Then, LE/D is to be changed into Output Mode from Input and then "L" will be output.
- (4) With trailing edge of CLK from "H" to "L", the data latched in foregoing (2) will be shifted in order and then output in order from D0 to D11 by LE/D.
- (5) After output 12-bit data for D0 ~ D11, the 13th trailing edge of CLK will change LE/D into Input Mode to be ready for the next access.

## M66007P (12 BIT INPUT EXPANDER)



# ADJUSTMENT PROCEDURES

## PRECAUTIONS

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

## TEST EQUIPMENT/TOOLS REQUIRED:

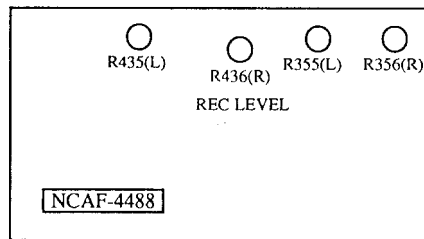
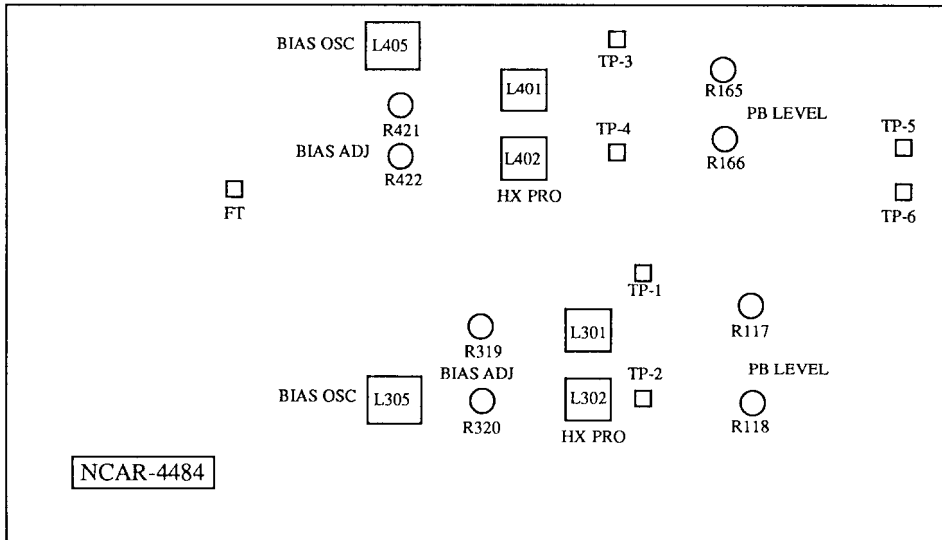
- Audio oscillator
- Digital frequency counter
- Oscilloscope
- Attenuator
- AC voltmeter
- Non-magnetic screw driver
- Test tapes
  - TCC-153 : 10 KHz, - 5dB
  - MTT-111 : 3 kHz, - 0dB
  - MTT-150 : Dolby level calibration  
400Hz, tone 200nWb/m

| 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 mechanism P.C.B.                                   | DECK-A<br>3045±5Hz<br>6010±10Hz<br>DECK-B<br>3030±5Hz<br>6010±10Hz   | High speed connect the FT terminal to GND push the FWD button twice continuously |                   |
| 2    | Head azimuth             | AC voltmeter and oscilloscope to LINE output terminal                 | TCC-153                      | PB         | AC voltmeter      | Head azimuth screw   | Maximum and same phase at channels L and R                           | fig-1  |                   |
| 3    | Play-back level          | AC voltmeter to terminals TP-5 and TP-6                               | MTT-150                      | PB         | AC voltmeter      | T1 R117 (Ch.L)<br>T1 R118 (Ch.R)<br>T2 R165 (Ch.L)<br>T2 R166 (Ch.R) | 300mV  |  |                   |
| 4    | OSC Block                | Frequency counter to P301 (DECK-A), P401 (DECK-B) read loose coupling | T1, T2 METAL TAPE XS C-60    | T1, T2 REC | Frequency counter | DECK-A<br>L-305<br>DECK-B<br>L-405                                   | 105KHz (±1KHz)   |  |                   |
| 5    | HX-PRO                   | AC voltmeter to TP1, 2 (DECK-A) TP3, 4 (DECK-B)                       | METAL TAPE XS C-60           | REC        | AC voltmeter      | DECK-A<br>L-301, L-302<br>DECK-B<br>L-401, L-402                     | Maximum  | DECK-A<br>R-319, R-320<br>DECK-B<br>R-421, R-422<br>maximum                      |                   |
| 6    | Bias current             | fig-2   | 1KHz, -20dB and 12kHz, -20dB | XL-II C-90 | REC/PB            | AC voltmeter   | T1 R319 (Ch.L)<br>T1 R320 (Ch.R)<br>T2 R421 (Ch.L)<br>T2 R422 (Ch.R) | Same level at REC/PB   | Input VR maximum. |
| 7    | Record level             | fig-2   | 1KHz                         | XL-II C-90 | REC               | AC voltmeter   | Attenuator or AF OSC output  | 350mV  |                   |
|      |                          |   |                              |            | REC/PB            | AC voltmeter   | T1 R355 (Ch.L)<br>T1 R356 (Ch.R)<br>T2 R435 (Ch.L)<br>T2 R436 (Ch.R) | Same level at REC/PB   |                   |

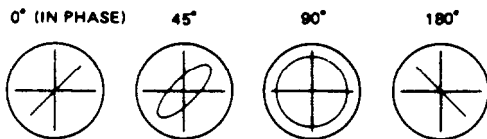
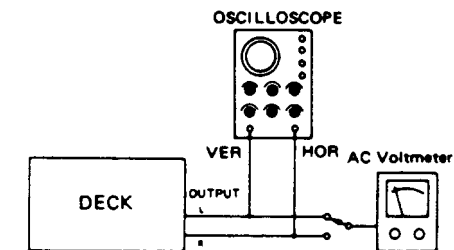
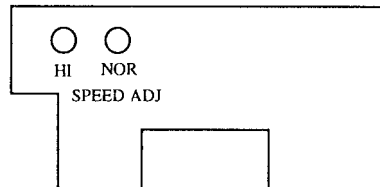
Blank tape

NORMAL ..... UD-1 C-90  
 HIGH ..... XL-II C-90  
 METAL ..... MS C-60  
 PLAY torque ..... 30~70g/cm  
 FF.REW torque ..... 90~180g/cm  
 Back tension ..... 2~6g/cm

# ADJUSTMENT POINT



## DECK MECHA PC BOARD



Confirming phase relationship

fig-1

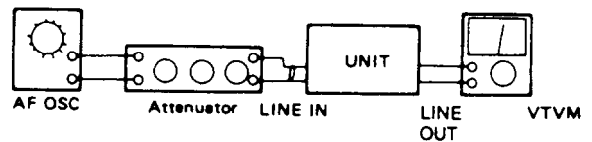
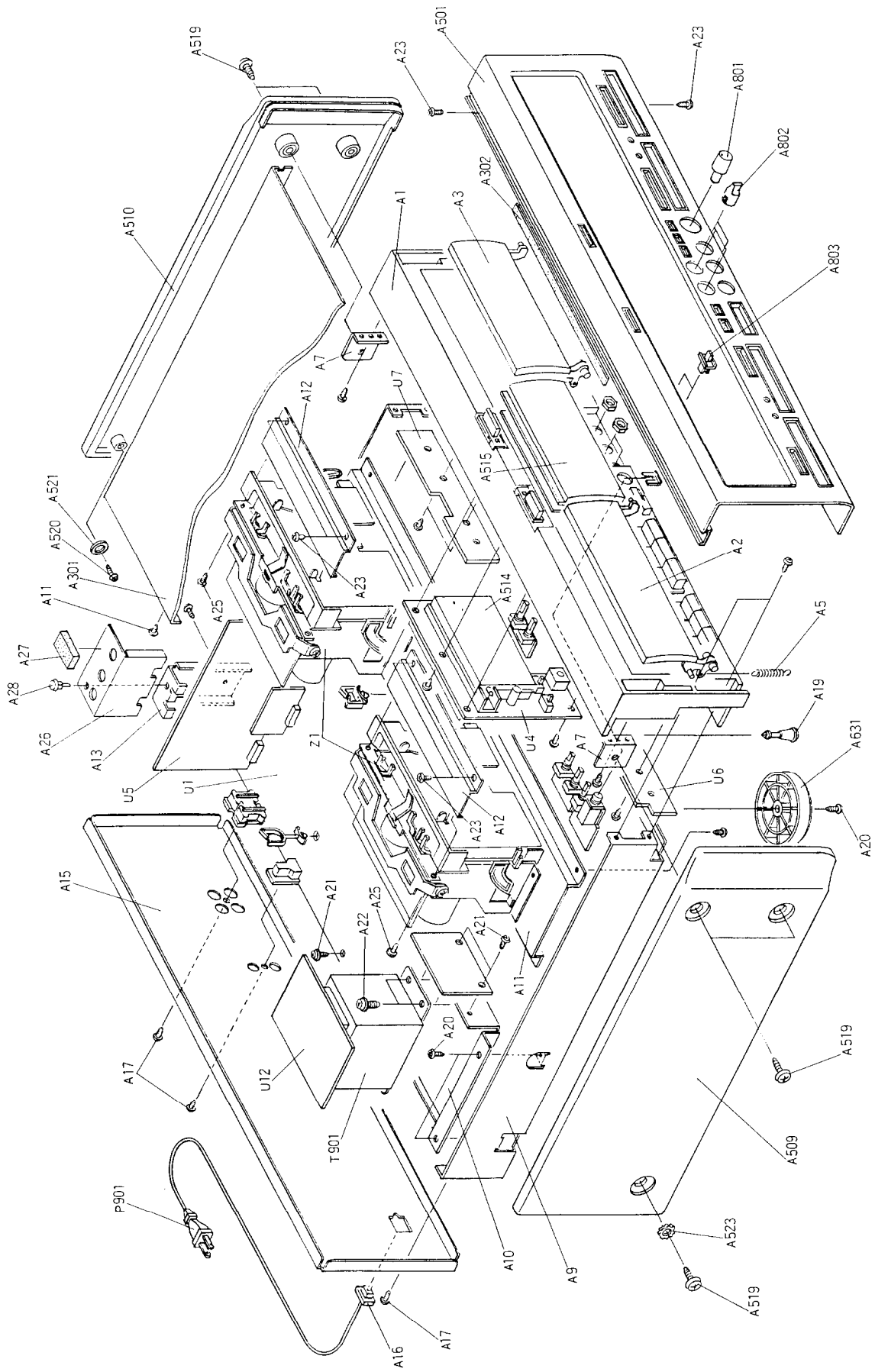


fig-2


# CHASSIS-EXPLODED VIEW



# CHASSIS-EXPLODED VIEW PARTS LIST

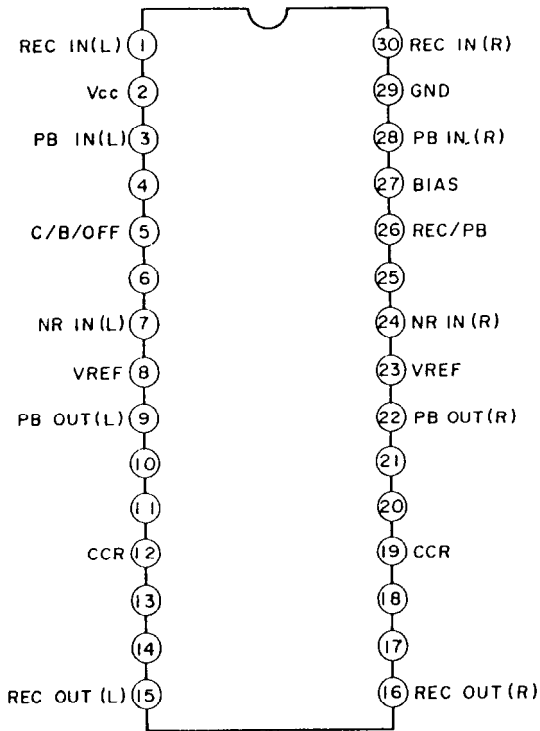
| REF. NO. | PARTS NO.   | DESCRIPTION               | REF. NO. | PARTS NO.  | DESCRIPTION             |
|----------|-------------|---------------------------|----------|------------|-------------------------|
| A1       | 27110707A   | FRONT BRACKET AS          | P901     | 253146     | AC CORD AS-UC6-#18 [D]  |
| A2       | 28148266A   | DOOR AS (A)               |          | 253149     | AC CORD AS-CEE [P/W]    |
| A3       | 28148267A   | DOOR AS (B)               | T901     | 2300804    | NPT-1145D [D]           |
| A5       | 27180517    | SPRING (LID)              |          | 2300805    | NPT-1145P [P]           |
| A7       | 27141496A   | BRACKET (S)               |          | 2300806    | NPT-1145DG [W]          |
| A9       | 27100247-1A | CHASSIS                   | U1       | IN130584-1 | NASR-4484-1             |
| A10      | 27130695    | BRACKET (PT)              | U2       | IN130585-1 | NAETC-4485-1            |
| A11      | 27130690B   | BRACKET (B)               | U4       | IN130587-1 | NADIS-4487-1            |
| A12      | 27141542A   | BRACKET (T)               | U5       | IN130588-1 | NAAF-4488-1             |
| A13      | 27141544B   | BRACKET (PC)              | U6       | IN130589-1 | NASW-4489-1             |
| A15      | 27121583    | BACK PANEL [D]            | U7       | IN130590-1 | NASW-4490-1             |
|          | 27121584    | BACK PANEL [P]            | U8       | IN130591-1 | NAETC-4491-1            |
|          | 27121586    | BACK PANEL [W]            | U9       | IN130592-1 | NAETC-4492-1            |
| A16      | 27300750    | BUSHING (CORD)            | U10      | IN130593-1 | NAETC-4493-1            |
| A17      | 801230      | TAPPING SCREW 3STS+8BQBC  | U11      | IN130594-1 | NAETC-4494-1            |
| A18      | 27190480    | HOLDER                    | U12      | IN130595-1 | NAETC-4495-1            |
| A19      | 27190657    | HOLDER                    | U14      | IN130565-1 | NAETC-4565-1            |
| A20      | 834430088   | TAP-TIGHT SCREW 3TTS+8BBC | Z1       | 244167     | NASW-4499-1 [W]         |
| A21      | 831130088   | TAP-TIGHT SCREW 3TTW+8B   |          |            | CASSETTE DECK MECHANISM |
| A22      | 830440069   | TAP-TIGHT SCREW 4TTC+6CBC |          |            | (DECK-A, DECK-B)        |
| A23      | 833430080   | TAP-TIGHT SCREW 3TTP+8PBC | Z2       | 24611487A  | SHIELD PLATE            |
| A25      | 834430068   | TAP-TIGHT SCREW 3TTS+6BBC | Z3       | 801437     | TAPPING SCREW           |
| A26      | 28175198    | SHIELD PLATE              |          |            |                         |
| A27      | 28141209    | CUSHION                   |          |            |                         |
| A28      | 880016      | PLASTIC RIVET             |          |            |                         |
| A301     | 128184490A  | TOP COVER                 |          |            |                         |
| A302     | 28140837    | CUSHION 250x10x9t         |          |            |                         |
| A501     | IN130701K   | FRONT PANEL               |          |            |                         |
| A505     | 28191629A   | CLEAR PLATE (RE)          |          |            |                         |
| A509     | 28185371    | SIDE BOARD (L)            |          |            |                         |
| A510     | 28185377    | SIDE BOARD (L) [N]        |          |            |                         |
|          | 28185372    | SIDE BOARD (R)            |          |            |                         |
|          | 28185378    | SIDE BOARD (R) [N]        |          |            |                         |
| A512     | 28175190    | SHIELD PLATE              |          |            |                         |
| A514     | 28133285A   | BACK PLATE                |          |            |                         |
| A515     | 28191630    | CLEAR PLATE               |          |            |                         |
| A519     | 837440169   | TAP-TIGHT SCREW 4TTT+16CB |          |            |                         |
| A520     | 834440088   | TAP-TIGHT SCREW 4TTS+8BBC |          |            |                         |
| A521     | 87644012    | WASHER W4x12FBC           |          |            |                         |
| A523     | 87314008    | TOOTH LOCK WASHER M-4B    |          |            |                         |
| A631     | 27175254    | LEGAS                     |          |            |                         |
| A801     | 28324620    | KNOB (INP)                |          |            |                         |
| A802     | 28324621    | KNOB (BAL)                |          |            |                         |
| A803     | 28324625A   | KNOB (DOL)                |          |            |                         |

NOTE [D] Only 120V model  
 [P] Only 230V model  
 [W] Only worldwide model  
 [N] Only U.S.A. model

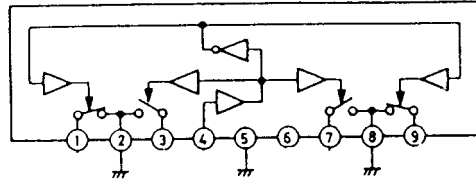
**NOTE: THE COMPONENTS IDENTIFIED BY MARK  ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.**

# IC BLOCK DIAGRAM

HA12142NT (DOLBY NR)



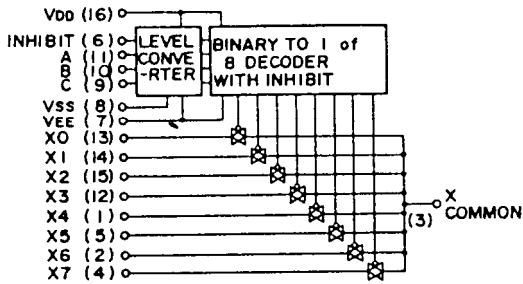
μPC 1330HA (REC/PB SW)



μPC1330HA

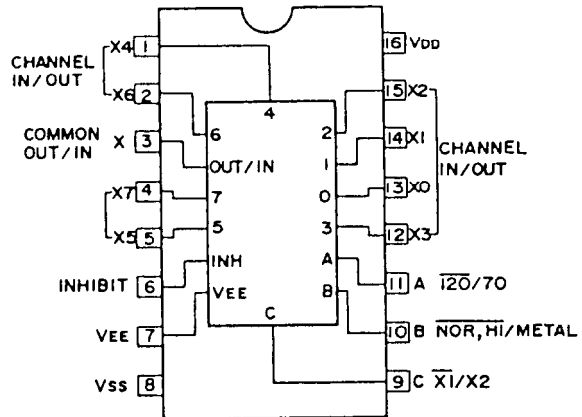
| Pin No. | Function          |
|---------|-------------------|
| 1, 9    | PB. signal        |
| 2       | GND               |
| 3, 7    | REC signal        |
| 4       | REC/PB SW control |
| 5       | GND               |
| 6       | +B                |
| 8       | GND               |

4051B (ANALOG SW)



| INHIBIT | A(11) | B(10) | C(9) | ON SWITCH |
|---------|-------|-------|------|-----------|
| L       | L     | L     | L    | X0 (13)   |
| L       | H     | L     | L    | X1 (14)   |
| L       | L     | H     | L    | X2 (15)   |
| L       | H     | H     | L    | X3 (12)   |
| L       | L     | L     | H    | X4 (1)    |
| L       | H     | L     | H    | X5 (5)    |
| L       | L     | H     | H    | X6 (2)    |
| L       | H     | H     | H    | X7 (4)    |
| H       | X     | X     | X    | NONE      |

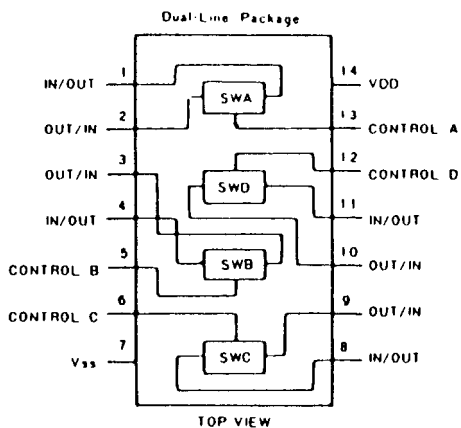
X: Don't Care



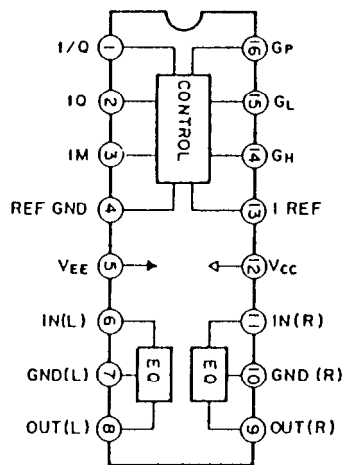


# IC BLOCK DIAGRAM

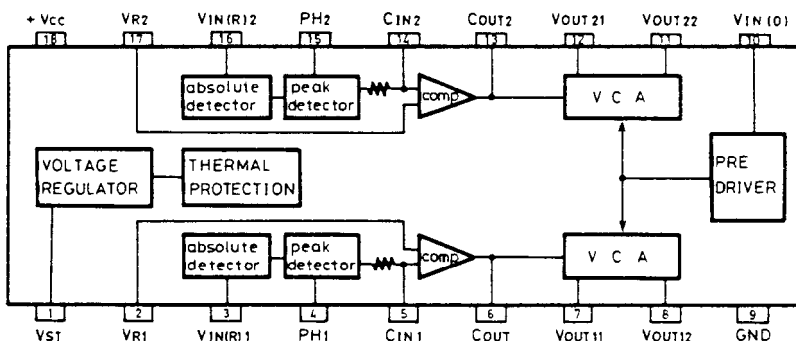
4066(ANALOG SW)



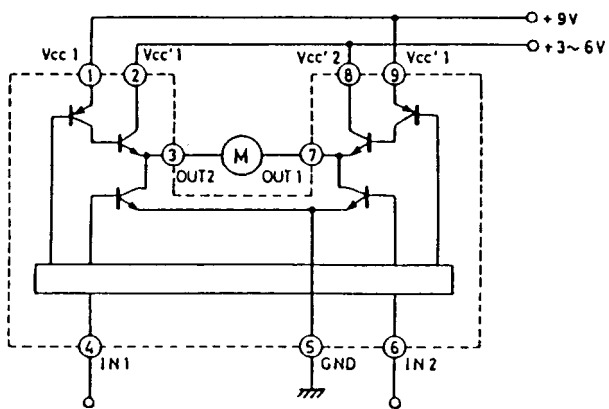
CXA1198A(REC EQ)



μPC1297CA(HX PRO)

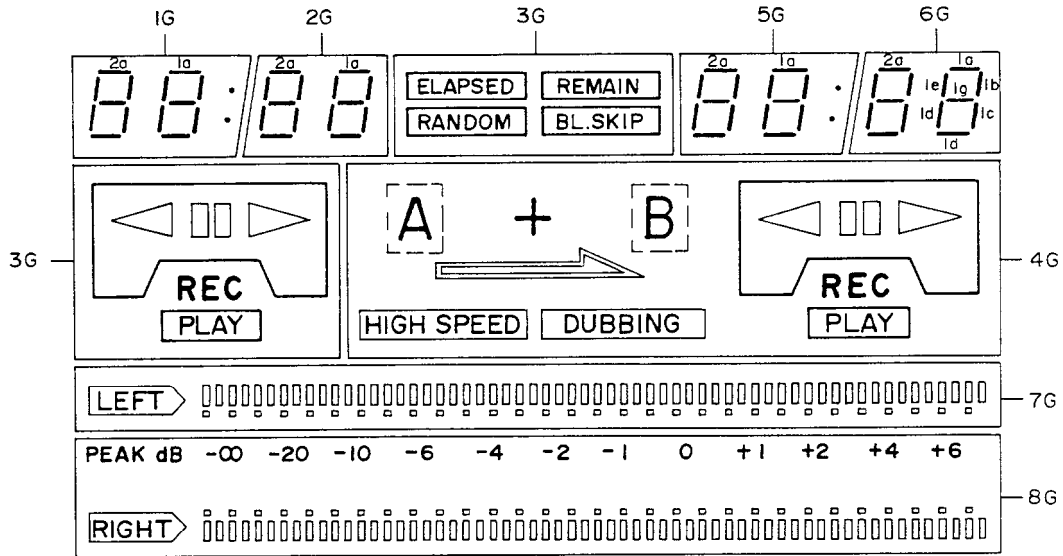


M54544AL(MOTOR DRIVE)



| INPUT |     | OUTPUT |     | Remark |
|-------|-----|--------|-----|--------|
| # 4   | # 6 | # 3    | # 7 |        |
| L     | L   | OFF    | OFF | —      |
| H     | L   | H      | L   | FWD    |
| L     | H   | L      | H   | REV    |
| H     | H   | L      | L   | Brake  |

BJ072GK(DISPLAY TUBE)



PIN CONNECTION

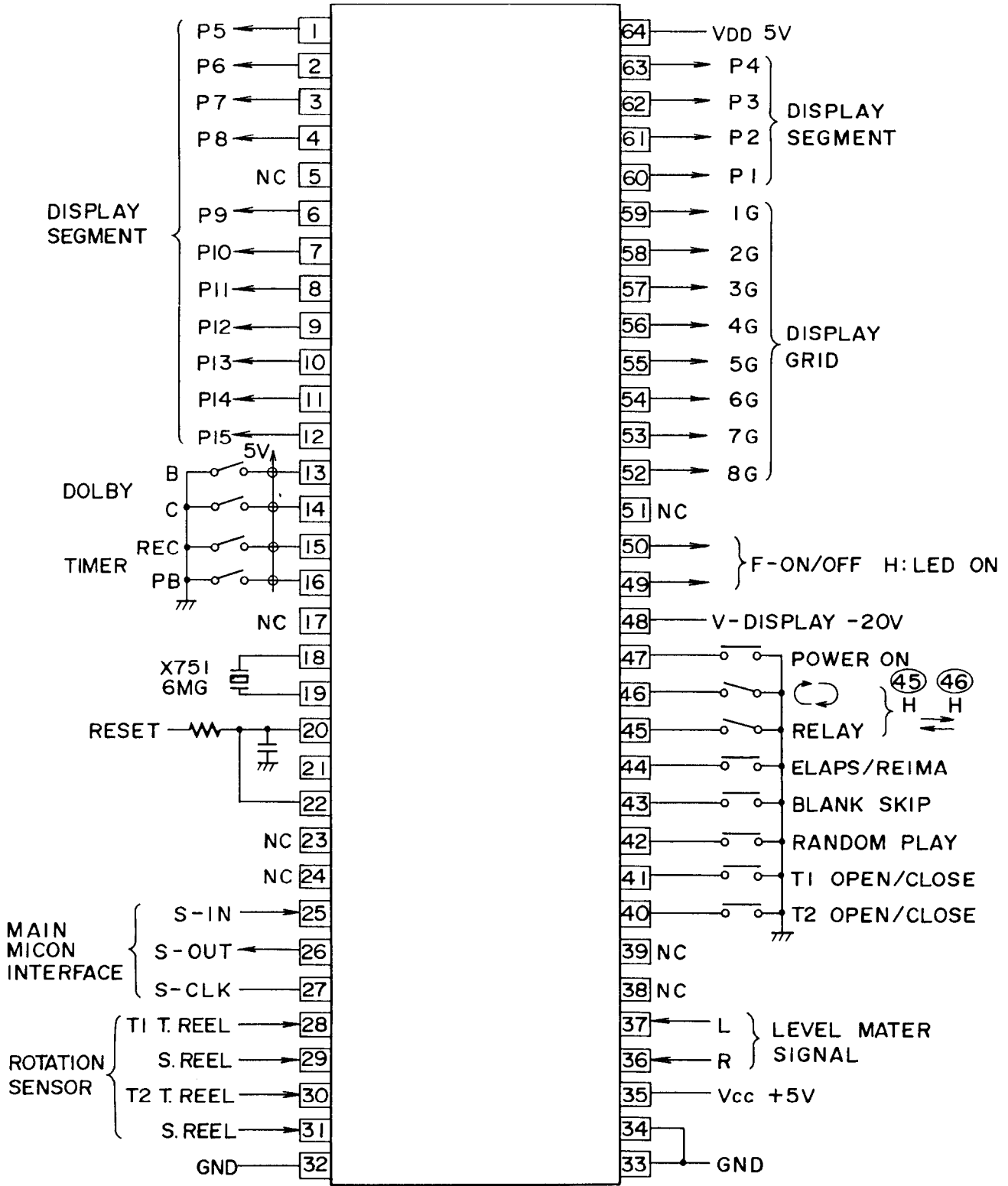
|            |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PIN NO.    | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |   |   |
| CONNECTION | F | F | F | N | N | P | P | P | P | P | P | P | P | P | P | P | N | N | N | N | N | N | N | N | N | N | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | N | N | F | F |
|            | 2 | 2 | 2 | P | P | 5 | 4 | 3 | 2 | 1 | 0 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | C | C | C | C | C | G | G | 6 | G | G | G | G | G | P | P | 1 | 1 |   |

- NOTE 1) F1, F2 --- Filament  
 2) NP ----- No pin  
 3) NC ----- No connection  
 4) 1G~8G --- Grid

ANODE CONNECTION

|     | 1G | 2G | 3G      | 4G         | 5G | 6G | 7G  | 8G  |
|-----|----|----|---------|------------|----|----|-----|-----|
| P1  | °  | -  | ELAPSED | +          | °  | -  | B1  | B1  |
| P2  | 1a | 1a | REMAIN  |            | 1a | 1a | B2  | B2  |
| P3  | 1b | 1b | RANDOM  | HIGH SPEED | 1b | 1b | B3  | B3  |
| P4  | 1c | 1c | BL.SKIP | DUBBING    | 1c | 1c | B4  | B4  |
| P5  | 1d | 1d |         |            | 1d | 1d | B5  | B5  |
| P6  | 1e | 1e |         |            | 1e | 1e | B6  | B6  |
| P7  | 1f | 1f |         |            | 1f | 1f | B7  | B7  |
| P8  | 1g | 1g |         |            | 1g | 1g | B8  | B8  |
| P9  | 2a | 2a | REC     | REC        | 2a | 2a | B9  | B9  |
| P10 | 2b | 2b | PLAY    | PLAY       | 2b | 2b | B10 | B10 |
| P11 | 2c | 2c | -       | -          | 2c | 2c | B11 | B11 |
| P12 | 2d | 2d | -       | -          | 2d | 2d | -   | -   |
| P13 | 2e | 2e | -       | -          | 2e | 2e | -   | -   |
| P14 | 2f | 2f | -       | -          | 2f | 2f | -   | -   |
| P15 | 2g | 2g | -       | -          | 2g | 2g | -   | -   |

# MICROCOMPUTER (TMP47C662N)



# PRINTED CIRCUIT BOARD PARTS LIST

**NAAR-4484-1**

| CIRCUIT NO. | PART NO.               | DESCRIPTION                |
|-------------|------------------------|----------------------------|
|             | <b>Ics</b>             |                            |
| Q101        | 222956                 | NJM-2068D-D                |
| Q109        | 222840661 or<br>222933 | 4066B or<br>BU-4066B       |
| Q111        | 22240147               | $\mu$ PC1330HA             |
| Q112        | 222465                 | NJM-4558D                  |
| Q151        | 222956                 | NJM-2068D-D                |
| Q157        | 22240147               | $\mu$ PC1330HA             |
| Q201        | 22240388               | HA12142NT                  |
| Q308        | 222959                 | $\mu$ PC1297CA             |
| Q408        | 222959                 | $\mu$ PC1297CA             |
| Q501        | 22240368 or<br>222652  | M5218AL or<br>M5218L       |
| Q551        | 222940                 | BA335H                     |
| Q701        | 22240609               | HD404719A18FS              |
| Q702        | 22240610               | M66007P                    |
| Q727, Q728  | 222953                 | M-54544AL                  |
| Q907        | 222780065JRC           | 78M06                      |
| Q908        | 222790065JRC           | 79M06                      |
| Q910        | 222780055MIT           | 78M05                      |
| Q911, Q912  | 222780125MIT           | 78M12                      |
|             | <b>Transistors</b>     |                            |
| Q103-Q108   | 221281 or<br>2213570   | DTC114YS or<br>RN1207      |
| Q110        | 2213570 or<br>221281   | RN1207 or<br>DTC114YS      |
| Q153-Q156   | 221281 or<br>2213570   | DTC114YS or<br>RN1207      |
| Q202-Q204   | 221281 or<br>2213570   | DTC114YS or<br>RN1207      |
| Q205, Q206  | 2211706 or<br>2211705  | 2SD655-F or<br>2SD655-E    |
| Q207, Q208  | 221281 or<br>2213570   | DTC114YS or<br>RN1207      |
| Q301        | 221281 or<br>2213570   | DTC114YS or<br>RN1207      |
| Q302        | 2212853 or<br>2212855  | 2SB1068-K or<br>2SB1068-U  |
| Q303        | 2211544 or<br>2211545  | 2SC1959-Y or<br>2SC1959-GR |
| Q304, Q305  | 221281 or<br>2213570   | DTC114YS or<br>RN1207      |
| Q306, Q307  | 2211544 or<br>2211545  | 2SC1959-Y or<br>2SC1959-GR |
| Q401        | 221281 or<br>2213570   | DTC114YS or<br>RN1207      |
| Q402        | 2212853 or<br>2212855  | 2SB1068-K or<br>2SB1068-U  |
| Q403        | 2211544 or<br>2211545  | 2SC1959-Y or<br>2SC1959-GR |
| Q404, Q405  | 221281 or<br>2213570   | DTC114YS or<br>RN1207      |
| Q406, Q407  | 2211544 or<br>2211545  | 2SC1959-Y or<br>2SC1959-GR |
| Q409-Q411   | 221281 or<br>2213570   | DTC114YS or<br>RN1207      |
| Q412        | 2212600 or<br>2213580  | DTA124ES or<br>RN2203      |
| Q601        | 2213354 or<br>2213355  | 2SA933S-R or<br>2SA933S-S  |
| Q602        | 221281 or<br>2213570   | DTC114YS or<br>RN1207      |
| Q703        | 2212600 or             | DTA124ES or                |

| CIRCUIT NO. | PART NO.              | DESCRIPTION                 |
|-------------|-----------------------|-----------------------------|
|             | 2213580               | RN2203                      |
| Q705-Q716   | 2213284 or<br>2213285 | 2SC1740S-R or<br>2SC1740S-S |
| Q717-Q722   | 221281 or<br>2213570  | DTC114YS or<br>RN1207       |
| Q723, Q724  | 2213284 or<br>2213285 | 2SC1740S-R or<br>2SC1740S-S |
| Q725, Q726  | 2201285 or<br>2201286 | 2SD882-Q or<br>2SD882-P     |
| Q729        | 2213354 or<br>2213355 | 2SA933S-R or<br>2SA933S-S   |
| Q730        | 2212600 or<br>2213580 | DTA124ES or<br>RN2203       |
| Q907        | 222780065JRC          | 78M06                       |
| Q908        | 222790065JRC          | 79M06                       |
| Q913        | 2213354 or<br>2213355 | 2SA933S-R or<br>2SA933S-S   |
| Q914, Q915  | 2211705<br>2211706    | 2SD655-E<br>2SD655-F        |
|             | <b>Diodes</b>         |                             |
| D201-D205   | 223163 or<br>223205   | 1SS133 or<br>1SS270A        |
| D401, D402  | 223163 or<br>223205   | 1SS133 or<br>1SS270A        |
| D501-D504   | 223163 or<br>223205   | 1SS133 or<br>1SS270A        |
| D701, D702  | 223163 or<br>223205   | 1SS133 or<br>1SS270A        |
| D703, D704  | 22380046              | AM01Z                       |
| D705        | 223163 or<br>223205   | 1SS133 or<br>1SS270A        |
| D706        | 224450562             | MTZ5.6B                     |
| D707-D713   | 223163 or<br>223205   | 1SS133 or<br>1SS270A        |
| D901-D904   | 22380046              | AM01Z                       |
| D905        | 223163 or<br>223205   | 1SS133 or<br>1SS270A        |
| D906-D909   | 22380046              | AM01Z                       |
| D911        | 224450391             | MTZ3.9A                     |
| D912        | 224451803             | MTZ18C                      |
| D914-D916   | 223163<br>223205      | 1SS133<br>1SS270A           |
| D917        | 224450623             | MTZ6.2C                     |
|             | <b>Coils</b>          |                             |
| L101, L102  | 231086                | NCH-2134                    |
| L201, L202  | 233328                | NMC-6051                    |
| L301, L302  | 231127                | NCH-4183                    |
| L303, L304  | 231101                | NCH-2148                    |
| L305        | 231211                | NLO-2056                    |
| L401, L402  | 231127                | NCH-4183                    |
| L403, L404  | 231101                | NCH-2148                    |
| L405        | 231211                | NLO-2056                    |
| X701        | 3010163               | CST4, IMGF                  |
|             | <b>Capacitors</b>     |                             |
| C105, C106  | 391942217             | 220 $\mu$ F16V, ELECT.      |
| C121, C122  | 391944717             | 470 $\mu$ F16V, ELECT.      |
| C153, C154  | 391942217             | 220 $\mu$ F16V, ELECT.      |
| C161, C162  | 391944717             | 470 $\mu$ F16V, ELECT.      |
| C201-C204   | 391980227             | 2.2 $\mu$ F50V, ELECT.      |
| C205        | 391942207             | 22 $\mu$ F16V, ELECT.       |
| C219, C220  | 391941007             | 10 $\mu$ F16V, ELECT.       |
| C221, C222  | 391941017             | 100 $\mu$ F16V, ELECT.      |
| C223, C224  | 391980107             | 1 $\mu$ F50V, ELECT.        |
| C225, C226  | 391942217             | 220 $\mu$ F16V, ELECT.      |

| CIRCUIT NO. | PART NO.            | DESCRIPTION                      | CIRCUIT NO.          | PART NO.             | DESCRIPTION             |
|-------------|---------------------|----------------------------------|----------------------|----------------------|-------------------------|
| C301        | 391921017           | 100 $\mu$ F6.3V, ELECT.          | P709                 | 25045330             | NPJ-2PDBL184            |
| C303        | 391941007           | 10 $\mu$ F16V, ELECT.            | P710, P711           | 25055184             | NPLG-3P168              |
| C307        | 370131234           | 0.012 $\mu$ F100V, APS           | P712                 | 25050529             | NSCT-7P352              |
| C309        | 391941007           | 10 $\mu$ F16V, ELECT.            | P713                 | 25050531             | NSCT-9P354              |
| C311        | 370131214           | 120PF100V, APS                   | P901                 | 25055137             | NPLG-7P121              |
| C312        | 370131214           | 120PF100V, APS                   |                      |                      |                         |
| C313, C314  | 370131014           | 100PF 100V, APS                  |                      |                      |                         |
| C323, C324  | 391941007           | 10 $\mu$ F16V, ELECT.            |                      |                      |                         |
| C325        | 391980227           | 2.2 $\mu$ F50V, ELECT.           |                      |                      |                         |
| C401        | 391921017           | 100 $\mu$ F6.3V, ELECT.          |                      |                      |                         |
| C403        | 391941007           | 10 $\mu$ F16V, ELECT.            |                      |                      |                         |
| C407        | 370131234           | 0.012 $\mu$ F100V, APS           |                      |                      |                         |
| C409        | 391941007           | 10 $\mu$ F16V, ELECT.            |                      |                      |                         |
| C411        | 370131214           | 120PF100V, APS                   |                      |                      |                         |
| C412        | 370131214           | 120PF100V, APS                   |                      |                      |                         |
| C413, C414  | 370131014           | 100PF 100V, APS                  |                      |                      |                         |
| C423, C424  | 391941007           | 10 $\mu$ F16V, ELECT.            |                      |                      |                         |
| C501, C502  | 391980337           | 3.3 $\mu$ F50V, ELECT.           |                      |                      |                         |
| C551        | 391980477           | 4.7 $\mu$ F50V, ELECT.           |                      |                      |                         |
| C553        | 391980107           | 1 $\mu$ F50V, ELECT.             |                      |                      |                         |
| C554        | 391984797           | 0.47 $\mu$ F50V, ELECT.          |                      |                      |                         |
| C555        | 391941007           | 10 $\mu$ F16V, ELECT.            |                      |                      |                         |
| C703        | 391941007           | 10 $\mu$ F16V, ELECT.            |                      |                      |                         |
| C705, C708  | 391941007           | 10 $\mu$ F16V, ELECT.            |                      |                      |                         |
| C711, C712  | 391980107           | 1 $\mu$ F50V, ELECT.             |                      |                      |                         |
| C713, C714  | 391921017           | 100 $\mu$ F6.3V, ELECT.          |                      |                      |                         |
| C715, C716  | 391980477           | 4.7 $\mu$ F50V, ELECT.           |                      |                      |                         |
| C720        | 391980107           | 1 $\mu$ F50V, ELECT.             |                      |                      |                         |
| C721, C722  | 391942217           | 220 $\mu$ F16V, ELECT.           |                      |                      |                         |
| C723, C724  | 352980476           | 4.7 $\mu$ F50V, NP.              |                      |                      |                         |
| C725        | 391980107           | 1 $\mu$ F50V, ELECT.             |                      |                      |                         |
| C905, C906  | 393362227S          | 2200 $\mu$ F35V, ELECT.          |                      |                      |                         |
| C907, C908  | 391980107           | 1 $\mu$ F50V, ELECT.             |                      |                      |                         |
| C913, C914  | 391944717           | 470 $\mu$ F16V, ELECT.           |                      |                      |                         |
| C918, C919  | 391941017           | 100 $\mu$ F16V, ELECT            |                      |                      |                         |
| C923        | 391980107           | 1 $\mu$ F50V, ELECT.             |                      |                      |                         |
| C926        | 391981017           | 100 $\mu$ F50V, ELECT.           |                      |                      |                         |
| C927, C928  | 391980477           | 4.7 $\mu$ F50V, ELECT.           |                      |                      |                         |
| C932        | 391961017           | 100 $\mu$ F35V, ELECT.           |                      |                      |                         |
| C929        | 391962207           | 22 $\mu$ F35V, ELECT.            |                      |                      |                         |
|             | <b>Resistors</b>    |                                  |                      |                      |                         |
| R117, R118  | 5210220             | N06HR50KBD                       |                      |                      |                         |
| R165, R166  | 5210220             | N06HR50KBD                       |                      |                      |                         |
| R319, R320  | 5210217             | N06HR10KBD                       |                      |                      |                         |
| R421, R422  | 5210217             | N06HR10KBD                       |                      |                      |                         |
| R715        | 49163392404         | 3.9K $\Omega$ $\times$ 4, 1/10W  |                      |                      |                         |
| R718        | 49163392406         | RM1/10IJ3.9K $\Omega$ $\times$ 6 |                      |                      |                         |
| R719        | 49163392406         | RM1/10IJ3.9K $\Omega$ $\times$ 6 |                      |                      |                         |
| R914, R915  | 442520224FRS1/2     | WBJ 2.2 $\Omega$                 |                      |                      |                         |
| R917        | 441723904F          | RS2WBJ39 $\Omega$                |                      |                      |                         |
|             | <b>Plug, Socket</b> |                                  |                      |                      |                         |
| P101, P102  | 25055136            | NPLG-6P120                       |                      |                      |                         |
| P201        | 25045338            | NPJ-4PDBL189                     |                      |                      |                         |
| P202, P203  | 25055133            | NPLG-3P117                       |                      |                      |                         |
| P301        | 25055132            | NPLG-2P116                       |                      |                      |                         |
| P302        | 25055106            | NPLG-9P90                        |                      |                      |                         |
| P401        | 25055132            | NPLG-2P116                       |                      |                      |                         |
| P402        | 25055107            | NPLG-10P91                       |                      |                      |                         |
| P403        | 25050525            | NSCT-3P348                       |                      |                      |                         |
| P501        | 25050525            | NSCT-3P348                       |                      |                      |                         |
| P502        | 25055147            | NPLG-3P131                       |                      |                      |                         |
| P503        | 25050525            | NSCT-3P348                       |                      |                      |                         |
| P504        | 25055412            | NPLG-10P394                      |                      |                      |                         |
| P701, P702  | 2002342210          | NSAS-22P0365                     |                      |                      |                         |
| P703, P704  | 2002391005          | NSAS-10P0366                     |                      |                      |                         |
| P705, P706  | 2002391410          | NSAS-14P0221                     |                      |                      |                         |
| P707, P708  | 25055148            | NPLG-4P132                       |                      |                      |                         |
|             |                     |                                  | <b>Miscellaneous</b> |                      |                         |
|             |                     |                                  | 27160211             |                      | RAD-68, RADIATOR        |
|             |                     |                                  | 27160211-1           |                      | RAD-68B, RADIATOR       |
|             |                     |                                  | 82143006             |                      | 3P+6FN(BC), SCREW       |
|             |                     |                                  | 27141059             |                      | BRACKET                 |
|             |                     |                                  | <b>NAETC-4485-1</b>  |                      |                         |
|             |                     |                                  | <b>CIRCUIT NO.</b>   | <b>PART NO.</b>      | <b>DESCRIPTION</b>      |
|             |                     |                                  |                      | <b>Ics</b>           |                         |
|             |                     |                                  | Q552                 | 222840661            | 4066BP                  |
|             |                     |                                  | Q554                 | 222465               | NJM4558D                |
|             |                     |                                  | Q555                 | 222940               | BA.335H                 |
|             |                     |                                  |                      | <b>Transistoer</b>   |                         |
|             |                     |                                  | Q553                 | 221281 or<br>2213570 | DTC114YS or<br>m1207    |
|             |                     |                                  |                      | <b>Capacitors</b>    |                         |
|             |                     |                                  | C571                 | 391980477            | 4.7 $\mu$ F50V, ELECT.  |
|             |                     |                                  | C573, C574           | 391984797            | 0.47 $\mu$ F50V, ELECT. |
|             |                     |                                  | C575                 | 391941007            | 10 $\mu$ F16V, ELECT.   |
|             |                     |                                  | C578, C579           | 391941007            | 10 $\mu$ F16V, ELECT.   |
|             |                     |                                  |                      | <b>Socket</b>        |                         |
|             |                     |                                  | P705A                | 25050678             | NSCT-10P482             |
|             |                     |                                  | <b>NADIS-4487-1</b>  |                      |                         |
|             |                     |                                  | <b>CIRCUIT NO.</b>   | <b>PART NO.</b>      | <b>DESCRIPTION</b>      |
|             |                     |                                  |                      | <b>Ics</b>           |                         |
|             |                     |                                  | Q751                 | 22240611             | TMP47C662N              |
|             |                     |                                  | Q754                 | 24130003             | GP1U50XS                |
|             |                     |                                  |                      | <b>Display tube</b>  |                         |
|             |                     |                                  | Q752                 | 212113               | BJ072GK                 |
|             |                     |                                  |                      | <b>Transistor</b>    |                         |
|             |                     |                                  | Q753                 | 221281 or<br>2213570 | DTC114YS or<br>RN1207   |
|             |                     |                                  |                      | <b>LED</b>           |                         |
|             |                     |                                  | D751                 | 225259               | SEL2910A                |
|             |                     |                                  |                      | <b>Xtal</b>          |                         |
|             |                     |                                  | X751                 | 3010149              | CST6.00MGW              |
|             |                     |                                  |                      | <b>Resistor</b>      |                         |
|             |                     |                                  | R801                 | 49163392404          | RM1/10IJ3.9k $\times$ 4 |
|             |                     |                                  | R803                 | 49163392408          | RM1/10IJ3.9k $\times$ 8 |
|             |                     |                                  |                      | <b>Switch</b>        |                         |
|             |                     |                                  | S723-S726            | 25035548             | NPS-111-S510            |
|             |                     |                                  | S727, S728           | 25065459             | NSS-13163               |
|             |                     |                                  | S730, S731           | 25035548             | NPS-111-S510            |
|             |                     |                                  |                      | <b>Holder</b>        |                         |
|             |                     |                                  |                      | 27190890             | HOLDER(FL)              |
|             |                     |                                  | <b>NAAF-4488-1</b>   |                      |                         |
|             |                     |                                  | <b>CIRCUIT NO.</b>   | <b>PART NO.</b>      | <b>DESCRIPTION</b>      |
|             |                     |                                  |                      | <b>Ics</b>           |                         |
|             |                     |                                  | Q351                 | 22240267             | CXA1198A                |
|             |                     |                                  | Q451                 | 22240267             | CXA1198A                |
|             |                     |                                  | Q452                 | 222840511            | TC4051B                 |
|             |                     |                                  |                      | <b>Transistors</b>   |                         |
|             |                     |                                  | Q352-Q354            | 221281 or            | DTC114YS or             |

| CIRCUIT NO.       | PART NO.              | DESCRIPTION             |
|-------------------|-----------------------|-------------------------|
|                   | 2213570               | RN1207                  |
| Q355, Q356        | 2211706 or<br>2211705 | 2SD655-F or<br>2SD655-E |
| Q453, Q454        | 2211706 or<br>2211705 | 2SD655-F or<br>2SD655-E |
| <b>Diode</b>      |                       |                         |
| D351-D353         | 223163 or<br>223205   | ISS133 or<br>ISS270A    |
| D451              | 223163 or<br>223205   | ISS133 or<br>ISS270A    |
| <b>Capacitors</b> |                       |                         |
| C351, C352        | 391980107             | 1 $\mu$ F50V, ELECT.    |
| C353-C356         | 391980477             | 4.7 $\mu$ F50V, ELECT.  |
| C451, C452        | 391980107             | 1 $\mu$ F50V, ELECT.    |
| C453, C457        | 391980477             | 4.7 $\mu$ F50V, ELECT.  |
| C459, C460        | 391941007             | 10 $\mu$ F16V, ELECT.   |
| <b>Resistor</b>   |                       |                         |
| R355, R356        | 5210240               | N06HR10kBE              |
| R435, R436        | 5210240               | N06HR10kBE              |
| <b>Socket</b>     |                       |                         |
| P302A             | 25050461              | NSCT-10P566             |
| P402A             | 25050460              | NSCT-9P565              |

**NASW-4489-1**

| CIRCUIT NO.    | PART NO. | DESCRIPTION  |
|----------------|----------|--------------|
| <b>Switchs</b> |          |              |
| S701-S710      | 25035548 | NPS-111-S510 |
| S732           | 25035548 | NPS-111-S510 |
| <b>Socket</b>  |          |              |
| P710A          | 2000519  | NAAS-6P475   |

**NASW-4490-1**

| CIRCUIT NO.   | PART NO. | DESCRIPTION  |
|---------------|----------|--------------|
| <b>Switch</b> |          |              |
| S711-S722     | 25035548 | NPS-111-S510 |
| S733          | 25035548 | NPS-111-S510 |

**NAETC-4491-1**

| CIRCUIT NO.     | PART NO. | DESCRIPTION        |
|-----------------|----------|--------------------|
| <b>Resistor</b> |          |                    |
| R203            | 5104307  | N09RLC250KW20, VR. |
| <b>Socket</b>   |          |                    |
| P202A           | 2000804  | NSAS-6P760         |

**NAETC-4492-1**

| CIRCUIT NO.     | PART NO. | DESCRIPTION        |
|-----------------|----------|--------------------|
| <b>Resistor</b> |          |                    |
| R204            | 5104308  | N14RGL50KA20Z, VR. |
| <b>Socket</b>   |          |                    |
| P203A           | 2000931  | NSAS-6P884         |

**NAETC-4493-1**

| CIRCUIT NO.     | PART NO. | DESCRIPTION      |
|-----------------|----------|------------------|
| <b>Resistor</b> |          |                  |
| R418            | 5104309  | N09RLC5KB20, VR. |
| <b>Switch</b>   |          |                  |
| S729            | 25030355 | NRSF-123-20SBM   |

**NAETC-4494-1**

| CIRCUIT NO.      | PART NO.   | DESCRIPTION           |
|------------------|------------|-----------------------|
| <b>lc</b>        |            |                       |
| Q511             | 22240396   | M5218AP               |
| <b>Capcitors</b> |            |                       |
| C505, C506       | 391941007  | 10 $\mu$ F16V, ELECT. |
| C509, C510       | 391941007  | 10 $\mu$ F16V, ELECT. |
| <b>Resistor</b>  |            |                       |
| R513             | 5104310    | N09RGL50KA20          |
| <b>Jack</b>      |            |                       |
| P504             | 25045221   | HLJ0540-01-410        |
| <b>Socket</b>    |            |                       |
| P502A            | 2009990218 | NSAS-6P0319           |

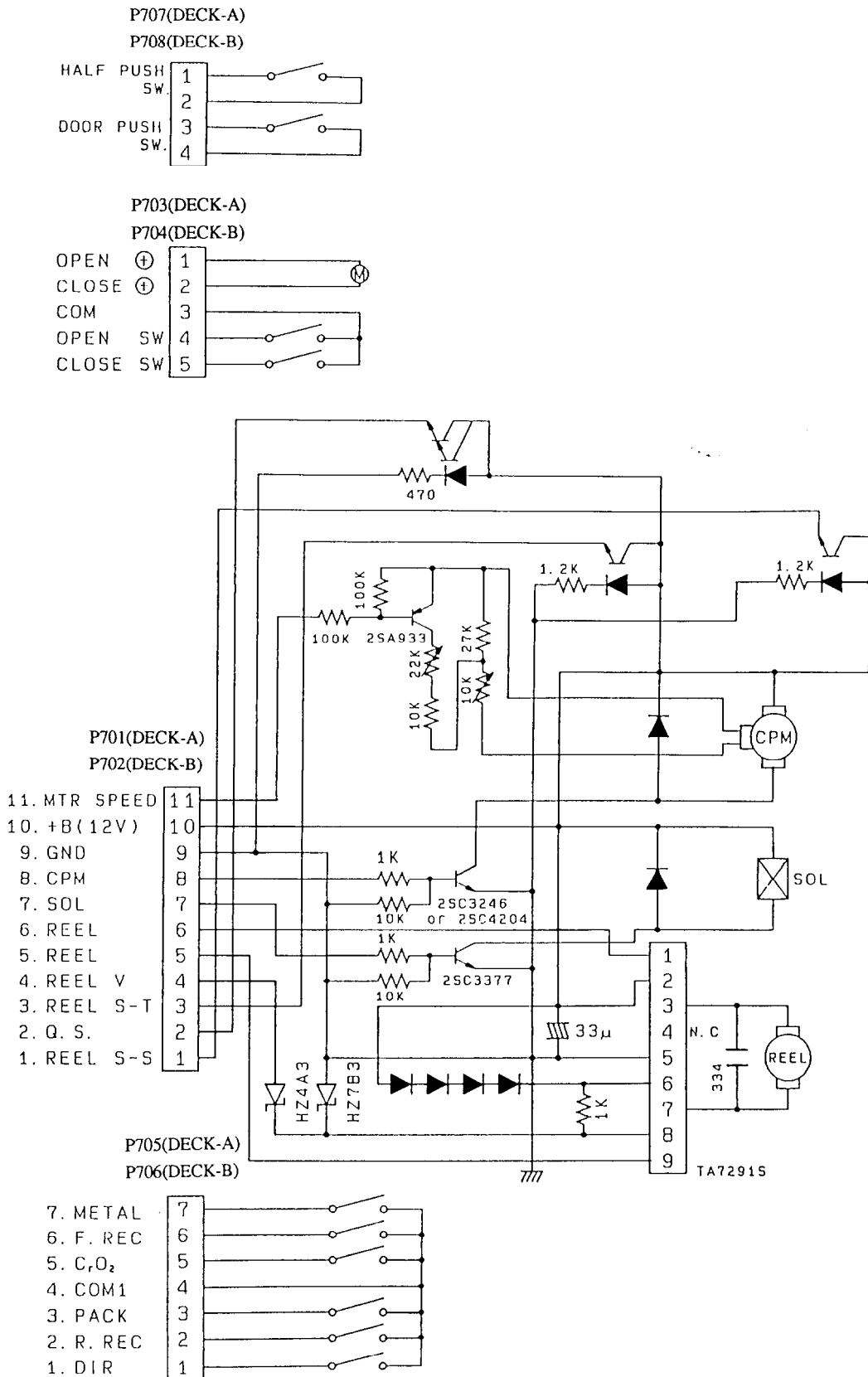
**NAETC-4495-1**

| CIRCUIT NO.   | PART NO.   | DESCRIPTION  |
|---------------|------------|--------------|
| <b>Socket</b> |            |              |
| P901A         | 2009990252 | NSAS-7P-0367 |

**NASW-4499-1**

| CIRCUIT NO.   | PART NO. | DESCRIPTION |
|---------------|----------|-------------|
| <b>Switch</b> |          |             |
| S901          | 25065437 | NSS-22157P  |

# MECHANISM CONNECTION DIAGRAM



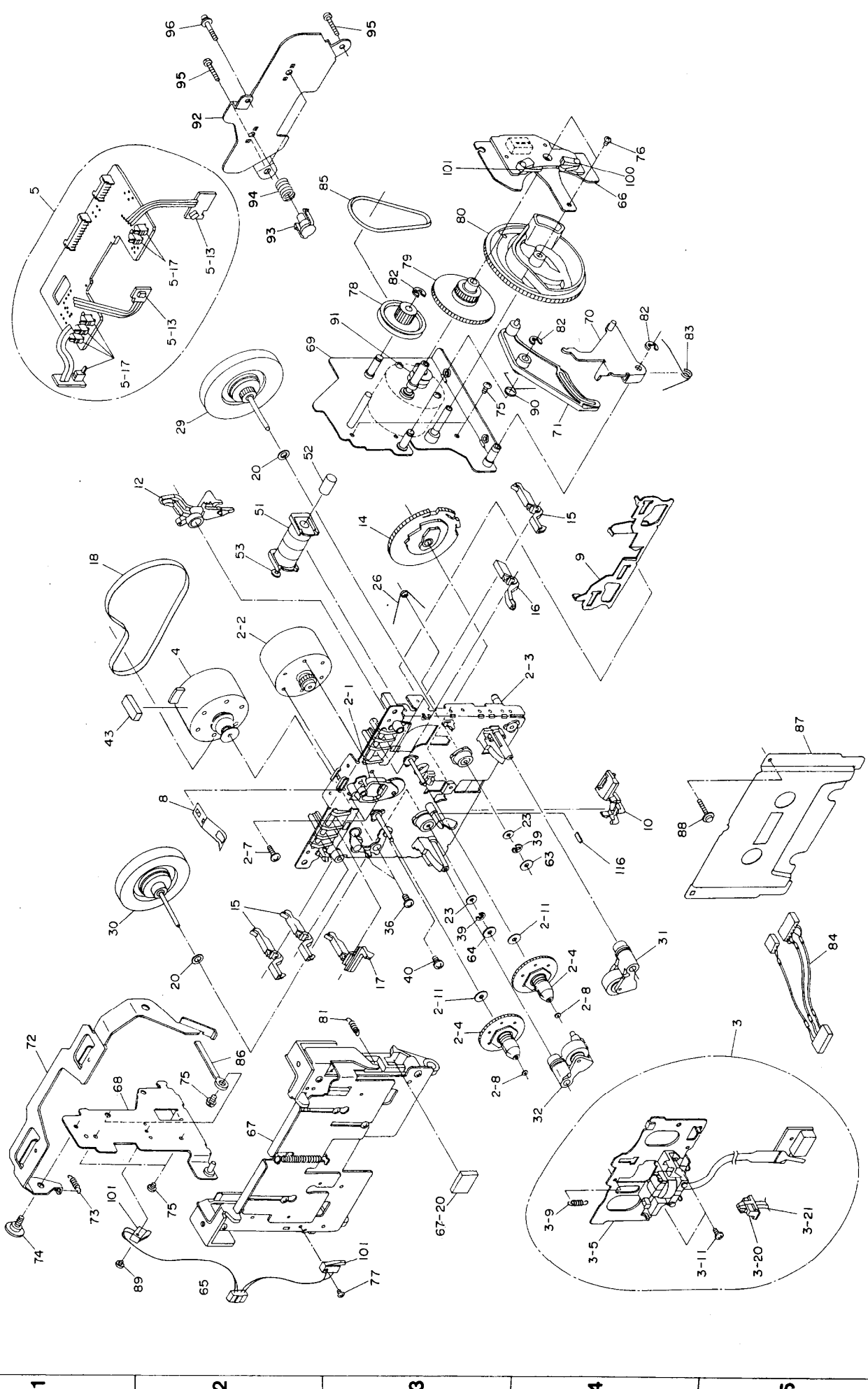
# TAPE MECHANISM PARTS LIST

| REF. NO. | PART NO.  | DESCRIPTION                 | REF. NO. | PART NO.  | DESCRIPTION              |
|----------|-----------|-----------------------------|----------|-----------|--------------------------|
| 2-1      | 24602482  | IDLER AS                    | 84       | 24606496  | WIRE CONNECTOR (R/P, E)  |
| 2-2      | 24601245  | REEL MOTOR                  | 85       | 24602538  | BELT                     |
| 2-3      | 24611498  | BASE AS (CHASSIS)           | 86       | 24611323  | LUG                      |
| 2-4      | 24602483  | BASE AS (REEL)              | 87       | 24611527  | BACK PLATE (CASSETTE)    |
| 2-7      | 24609032  | PAN HEAD SCREW 2.6×6.4ZN    | 88       | 24609049  | TAP-TIGHT SCREW          |
| 2-8      | 24611177  | PLASTIC WASHER 1.7×3.2 ×.25 | 89       | 24609058  | PAN HEAD SCREW TT2.0×8ZN |
| 2-11     | 24611175  | PLASTIC WASHER              | 90       | 24605761  | SPRING (SLIDER)          |
| 3        | 24600091  | HEAD PLATE AS               | 93       | 24611504  | THRUST WASHER            |
| 3-5      | 24611493  | BASE (HEAD)                 | 94       | 24605763  | SPRING (THRUST)          |
| 3-9      | 24605711  | SPRING                      | 95       | 838126080 | SCREW 2.6×8              |
| 3-11     | 833120059 | TAPPING SCREW 2×5ZN         | 96       | 24609042  | S-TIGHT SCREW M2.6×25    |
| 3-20     | 24606465  | PHOTO REFLECTER, SPI-320-B  | 100      | 24606453  | SWITCH SPPB21            |
| 3-21     | 24611500  | LEAD WIRE (QS)              | 101      | 24606454  | SWITCH SOOB22            |
| 4        | 24601252  | MAIN MOTOR AS               | 116      | 24611499  | REFLECTER                |
| 5        | 24606498  | P.C.B. AS (CONTROL)         |          |           |                          |
| 5-13     | 24606494  | SG-107F3                    |          |           |                          |
| 5-17     | 24606271  | PUSH SWITCH                 |          |           |                          |
| 8        | 24605739  | SPRING                      |          |           |                          |
| 9        | 24611384A | SLIDE PLATE                 |          |           |                          |
| 10       | 24611385  | LEAD HOLDER                 |          |           |                          |
| 12       | 24607101  | ARM (PLAY)                  |          |           |                          |
| 14       | 24602550  | CAM GEAR                    |          |           |                          |
| 15       | 24603365A | LEVER (REC)                 |          |           |                          |
| 16       | 24603387  | LEVER (PAC) P               |          |           |                          |
| 17       | 24603367  | LEVER (METAL) L             |          |           |                          |
| 18       | 24602486  | MAIN BELT                   |          |           |                          |
| 20       | 24611041  | PLASTIC WASHER 2.6×0.25     |          |           |                          |
| 23       | 24610841  | PLASTIC WASHER 2.6×4.7×.5   |          |           |                          |
| 26       | 24605716  | SPRING                      |          |           |                          |
| 29       | 24602487  | FLYWHEEL AS                 |          |           |                          |
| 30       | 24602528  | FLYWHEEL AS                 |          |           |                          |
| 31       | 24602414C | PINCH ROLLER AS (R)         |          |           |                          |
| 32       | 24602421C | PINCH ROLLER AS             |          |           |                          |
| 36       | 24609001  | PAN HEAD SCREW SW2.6×5ZN    |          |           |                          |
| 39       | 8930151   | E WASHER 1.5S               |          |           |                          |
| 40       | 838130080 | WAVE SCREW 3×8              |          |           |                          |
| 43       | 24611488  | CUSHION (HOLDER)            |          |           |                          |
| 51       | 24606333  | SOLENOID COIL AS            |          |           |                          |
| 52       | 24606332A | CORE                        |          |           |                          |
| 53       | 24606331  | PLANGER                     |          |           |                          |
| 63       | 24611188A | WASHER (OIL SEAL)           |          |           |                          |
| 64       | 24610844  | WASHER 1.9×5×0.25           |          |           |                          |
| 65       | 24606497  | BASE AS (SW)                |          |           |                          |
| 66       | 24606449  | BASE AS (SW)                |          |           |                          |
| 67       | 24611528  | PLATE (HOLD BLOCK)          |          |           |                          |
| 67-20    | 24611529  | HOLDER CUSHION              |          |           |                          |
| 68       | 24611490  | PLATE AS (HOLDER)           |          |           |                          |
| 69       | 24611491  | PLATE AS (HOLDER)           |          |           |                          |
| 70       | 24603388  | LEVER AS (PLAY)             |          |           |                          |
| 71       | 24603389  | LEVER AS (PLAY)             |          |           |                          |
| 72       | 24603390  | EJECT LEVER                 |          |           |                          |
| 73       | 24605758  | SPEING (EJECT)              |          |           |                          |
| 74       | 24609048  | SCREW                       |          |           |                          |
| 75       | 833126049 | TAP-TIGHT SCREW 2.6TTP+4C   |          |           |                          |
| 76       | 833120039 | PAN HEAD SCREW TT2.0×3ZN    |          |           |                          |
| 77       | 838120130 | WAVE SCREW 2×13             |          |           |                          |
| 78       | 24602535  | GEAR (A)                    |          |           |                          |
| 79       | 24602536  | GEAR (B)                    |          |           |                          |
| 80       | 24602537  | CAM GEAR                    |          |           |                          |
| 81       | 24605769  | SPRING (LEVER)              |          |           |                          |
| 82       | 893030    | E WASHER 3                  |          |           |                          |
| 83       | 24605760  | SPRING (DOOR)               |          |           |                          |



**TAPE MECHANISM-EXPLODED VIEW**

A B C D E F G



1

2

3

4

5

# MICROCOMPUTER TERMINAL DESCRIPTION

| NO.   | NAME                               | IN/OUT | FUNCTION                       | NO.   | NAME                              | IN/OUT | FUNCTION                       |
|-------|------------------------------------|--------|--------------------------------|-------|-----------------------------------|--------|--------------------------------|
| 1-3   | AN5~AN7                            | IN     | Key input                      | 42    | T2 OPEN                           | OUT    | Door motor drive for open      |
| 4     | AGND                               |        |                                | 43    | T2 CAPSTAN X1/X2                  | OUT    | Capstan motor NOR/Hi selection |
| 5     | RESET                              |        | System reset for microcomputer | 44    | T2 CAPSTAN CONTROL                | OUT    | Capstan motor drive            |
| 6, 7  | OSC1, OSC2                         |        | Clock 4.19MHz                  | 45    | T2 SOLENOID                       | OUT    | Solenoid drive                 |
| 8     | GND                                |        |                                | 46    | T2 REEL-REW                       | OUT    | Reel motor drive for REW       |
| 9, 10 | CL1, CL2                           |        |                                | 47    | T2 REEL-FF                        | OUT    | Reel motor drive for FF        |
| 11    | $\overline{\text{TEST}}$           |        |                                | 48    | T2 O-PLAY                         | OUT    | Reel motor drive for PLAY      |
| 12    | V <sub>CC</sub>                    |        | Power source terminal +5V      | 49    | $\overline{\text{T1 DOOR PRESS}}$ | IN     | Door press signal detection    |
| 13    | LINE MUTE                          | OUT    | Line muting                    | 50    | $\overline{\text{T1 TAPE PRESS}}$ | IN     | Tape press signal detection    |
| 14    | T2 CUE MUTE                        | OUT    | Cue muting                     | 51    | $\overline{\text{T1 OPEN SW}}$    | IN     | Door open detection            |
| 15    | T2 REC/PB                          | OUT    | T2 REC/PB selection            | 52    | $\overline{\text{T1 CLOSE SW}}$   | IN     | Door close detection           |
| 16    | T2 BIAS CONTROL                    | OUT    | T2 bias control                | 53    | T1 CLOSE                          | OUT    | Door motor drive for close     |
| 17    | STAND BY                           |        |                                | 54    | T1 OPEN                           | OUT    | Door motor drive for open      |
| 18    | DOLBY ENC/ $\overline{\text{DEC}}$ | OUT    | Dolby                          | 55    | T1 CAPSTAN X1/X2                  | OUT    | Capstan motor NOR/Hi selection |
| 19    | DOLBY B                            | OUT    | H: Dolby B tapy                | 56    | T1 CAPSTAN CONTROL                | OUT    | Capstan motor drive            |
| 20    | DOLBY C                            | OUT    | H: Dolby C tapy                | 57    | T1 SOLENOID                       | OUT    | Solenoid drive                 |
| 21    | PB SEL. T1/T2                      | OUT    | T1/T2 playback selection       | 58    | T1 REEL-REW                       | OUT    | Reel motor drive for REW       |
| 22    | T1 BIAS CONTROL                    | OUT    | T1 bias control                | 59    | T1 REEL-FF                        | OUT    | Reel motor drive for FF        |
| 23    | T1 REC/PB                          | OUT    | T1 REC/PB selection            | 60    | T1 O-PLAY                         | OUT    | Reel motor drive for PLAY      |
| 24    | T1 CUE MUTE                        | OUT    | Cue muting                     | 61    | EXP. DATA                         | IN/OUT | EXP IC Q702 Data               |
| 25    | CUE SEL. T1/T2                     | OUT    | T1/T2 Cue selection            | 62    | EXP. CLOCK                        | OUT    | EXP IC Q702 Clock              |
| 26    | TAPE SPEED X1/X2                   | OUT    | Tape speed NOR/Hi selection    | 63    | T2 ROTATION SENSOR                | IN     | Reel rotation detection        |
| 27    | $\overline{\text{T1 PHOTO-END}}$   | IN     | Tape end detection             | 64    | T1 ROTATION SENSOR                | IN     | Reel rotation detection        |
| 28    | $\overline{\text{T2 PHOTO-END}}$   | IN     | Tape end detection             | 65    | REMOTE SENSOR                     | IN     | Remote control signal input    |
| 29    | T2 REC. MUTE                       | OUT    | Recording muting : H           | 66    | S-CLOCK                           | OUT    | Slave micon clock              |
| 30    | T2 NOR                             | OUT    | Normal tape : H                | 67    | S-IN                              | IN     | Slave micom data in            |
| 31    | T2 HIGH                            | OUT    | High tape : H                  | 68    | S-OUT                             | OUT    | Slave micom data out           |
| 32    | T2 METAL                           | OUT    | Metal tape : H                 | 69    | $\overline{\text{SLAVE-RESET}}$   | OUT    | Slave micon reset              |
| 33    | T1 REC. MUTE                       | OUT    | Recording muting : H           | 70    | P-OFF                             | IN     | Power off reset                |
| 34    | T1 NOR                             | OUT    | Normal tape : H                | 71    | NRSC OUT                          | OUT    | Remote control                 |
| 35    | T1 HIGH                            | OUT    | High tape : H                  | 72    | NRSC IN                           | IN     | Remote control                 |
| 36    | T1 METAL                           | OUT    | Metal tape : H                 | 73    | PLAY SEARCH SIG.                  | IN     |                                |
| 37    | $\overline{\text{T2 DOOR PRESS}}$  | IN     | Door press signal detection    | 74    | CUE SEARCH SIG.                   | IN     |                                |
| 38    | $\overline{\text{T2 TAPE PRESS}}$  | IN     | Tape press signal detection    | 75    | AV <sub>CC</sub>                  |        |                                |
| 39    | $\overline{\text{T2 OPEN SW}}$     | IN     | Door open detection            | 76    | $\overline{\text{FT}}$            |        |                                |
| 40    | $\overline{\text{T2 CLOSE SW}}$    | IN     | Door close detection           | 77-79 | AN1~AN3                           |        |                                |
| 41    | T2 CLOSE                           | OUT    | Door motor drive for close     | 80    | AN4                               | IN     | Key input                      |

A

B

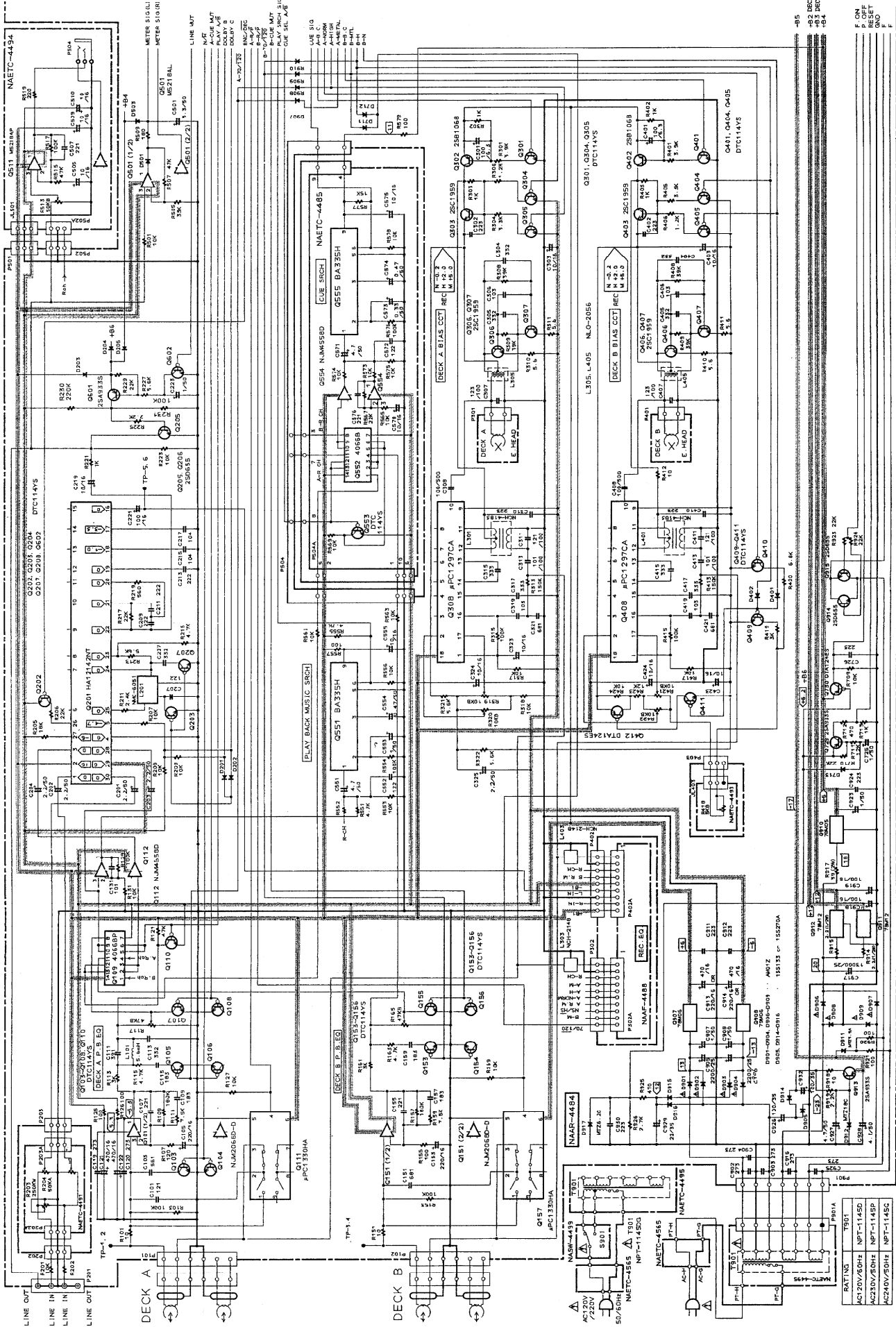
C

D

E

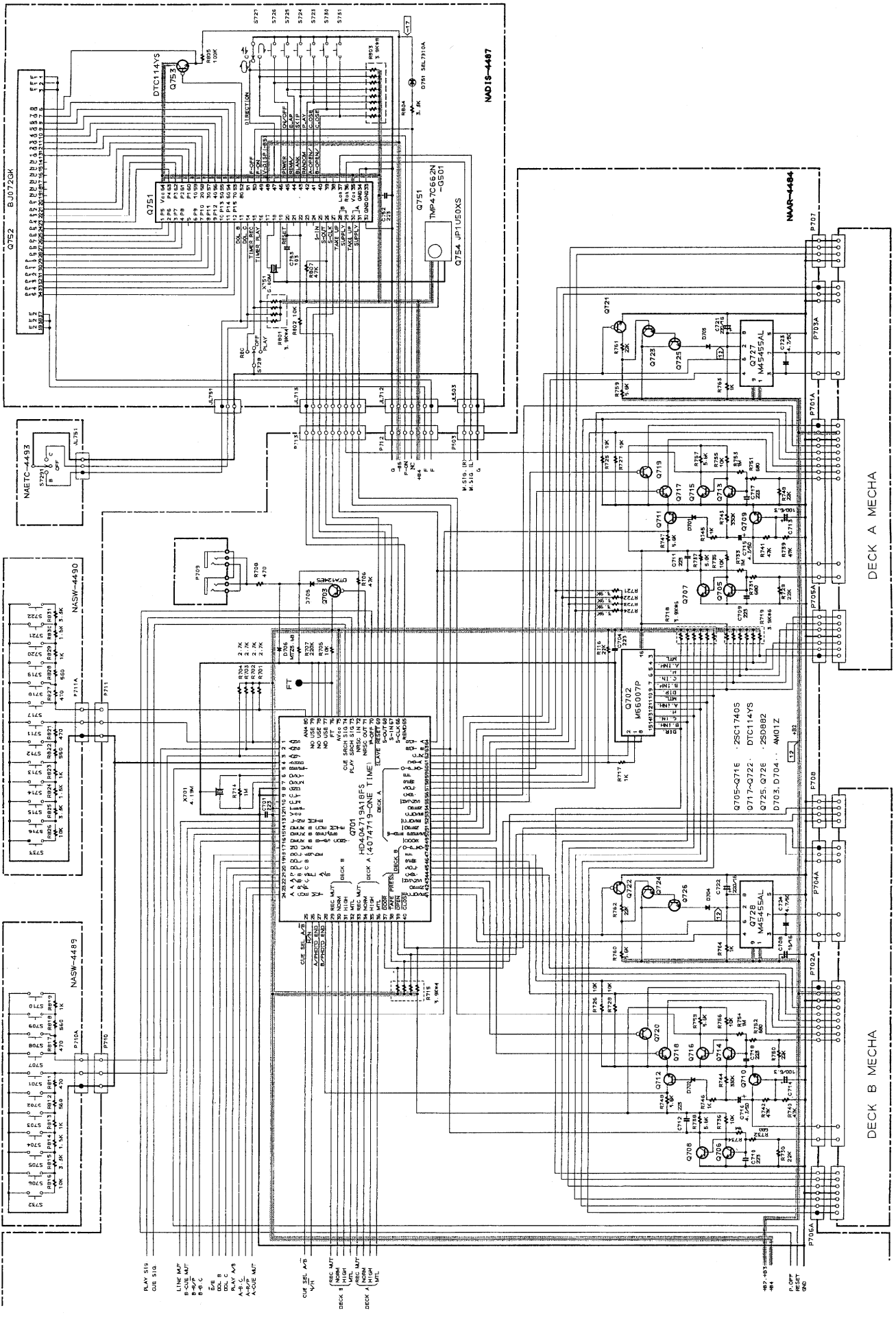
F

G

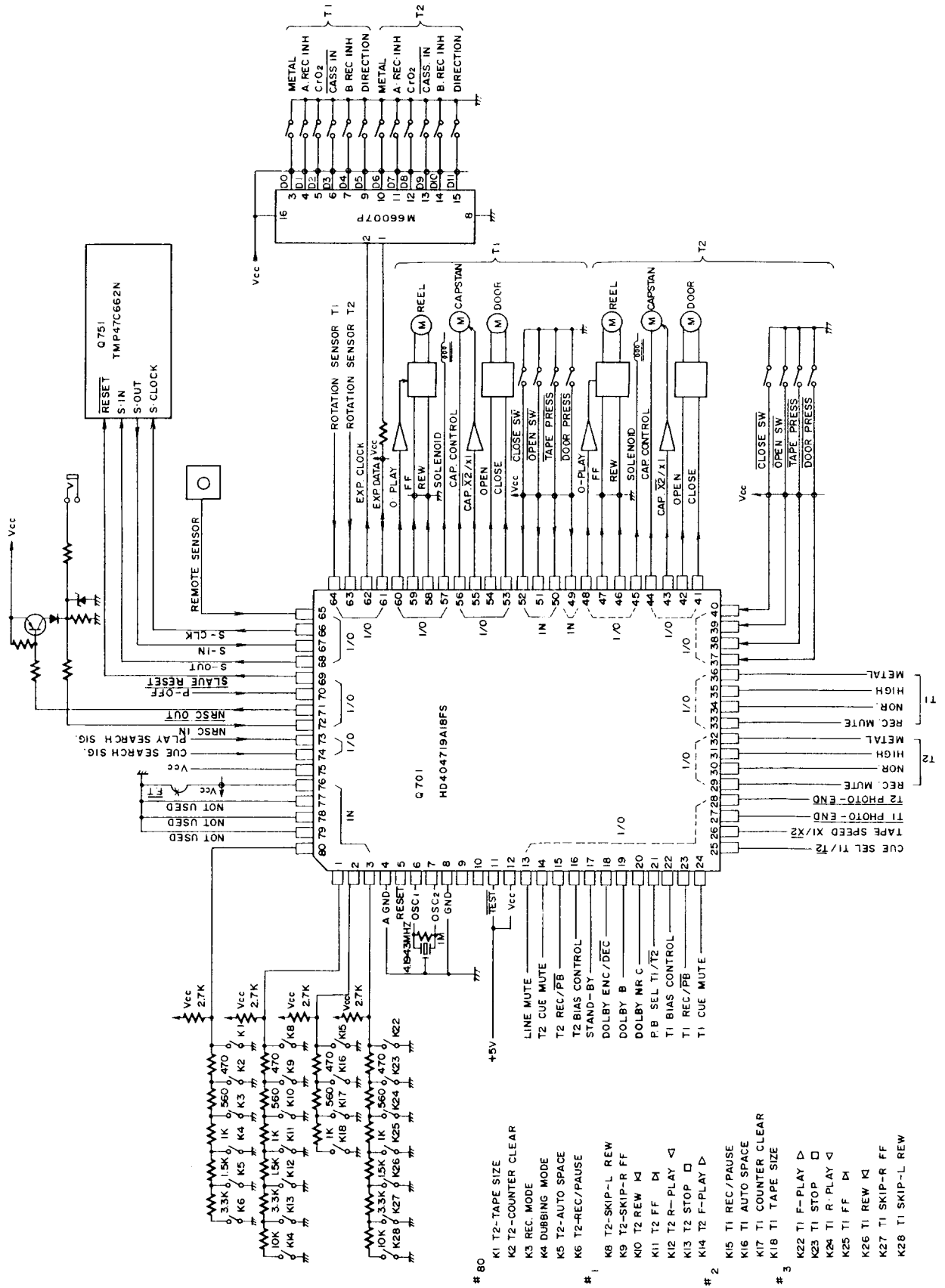


|             |           |
|-------------|-----------|
| BATING      | T801      |
| AC220V/50HZ | NPT-1145D |
| AC230V/50HZ | NPT-1145P |
| AC240V/50HZ | NPT-1145C |

A B C D E F G



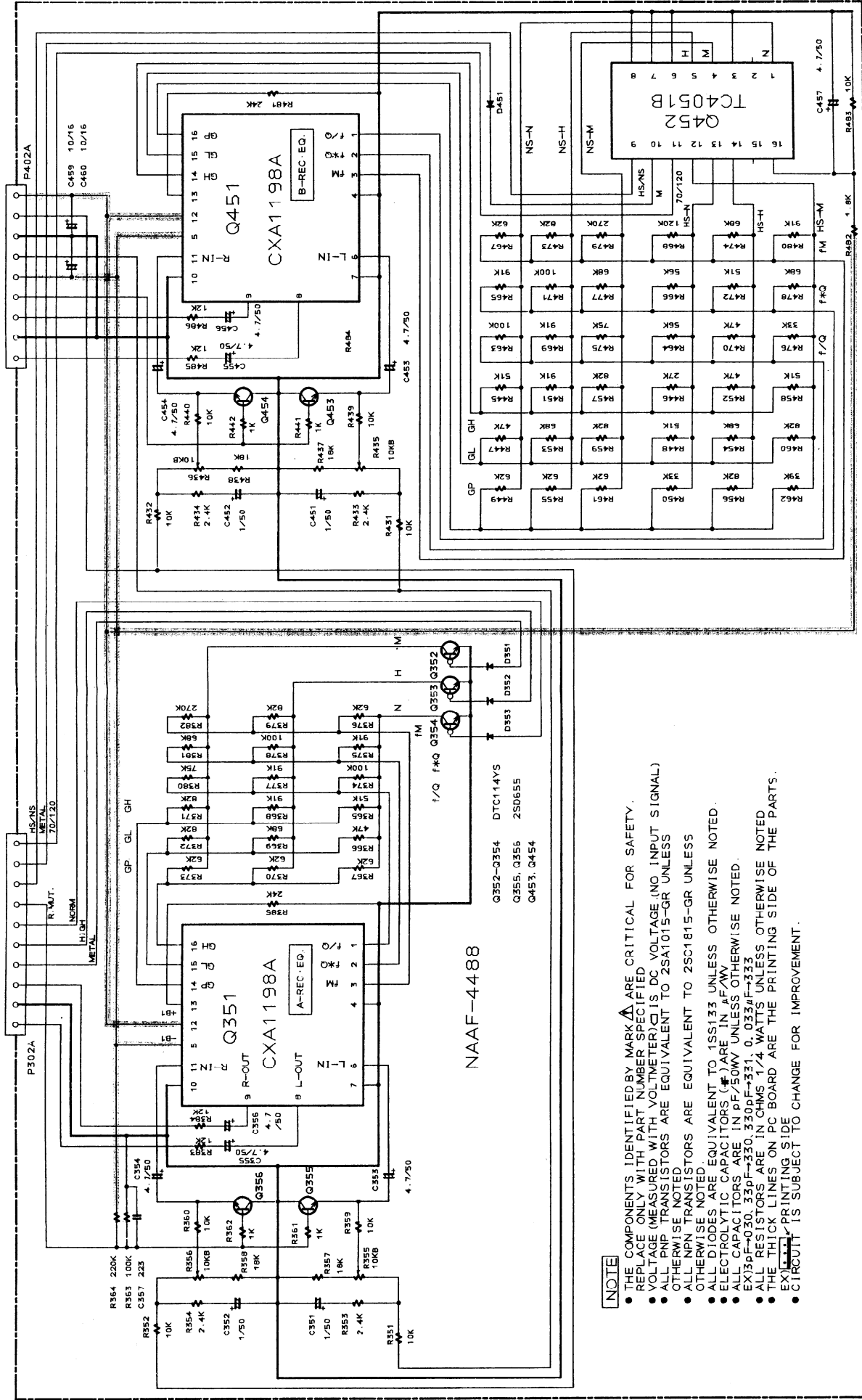
# MICROCOMPUTER (HD404719A18FS)



**SCHEMATIC DIAGRAM**

1A-RW5909

A B C D E F G

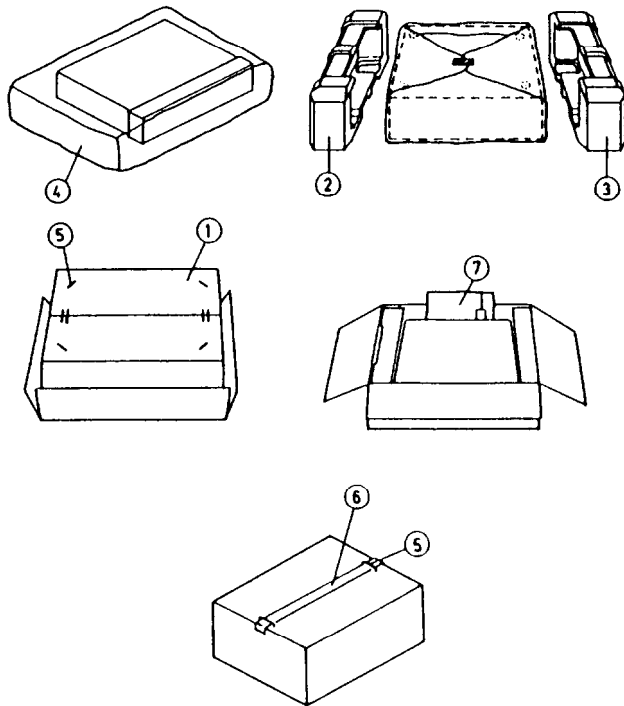


**NOTE**

- THE COMPONENTS IDENTIFIED BY MARK  $\Delta$  ARE CRITICAL FOR SAFETY.
- REPLACE ONLY WITH PART NUMBER SPECIFIED
- VOLTAGE (MEASURED WITH VOLTMETER) IS DC VOLTAGE (NO INPUT SIGNAL)
- ALL PNP TRANSISTORS ARE EQUIVALENT TO 2SA1015-GR UNLESS OTHERWISE NOTED
- ALL NPN TRANSISTORS ARE EQUIVALENT TO 2SC1815-GR UNLESS OTHERWISE NOTED
- ALL DIODES ARE EQUIVALENT TO 1SS133 UNLESS OTHERWISE NOTED.
- ELECTROLYTIC CAPACITORS ( $\Psi$ ) ARE IN  $\mu$ F/WV
- ALL CAPACITORS ARE IN pF/50WV UNLESS OTHERWISE NOTED.
- EX13pF-0.330, 330pF-0.331, 0, 0.33nF-0.333
- ALL RESISTORS ARE IN OHMS 1/4 WATTS UNLESS OTHERWISE NOTED
- THE THICK LINES ON PC BOARD ARE THE PRINTING SIDE OF THE PARTS.
- EXCEPT PRINTING SIDE
- CIRCUIT IS SUBJECT TO CHANGE FOR IMPROVEMENT.

**ONKYO CORPORATION**

## PACKING VIEW



## PACKING VIEW PARTS LIST

| REF. NO. | PART NO.                   | DESCRIPTION                 |
|----------|----------------------------|-----------------------------|
| 1        | 29052406                   | Master carton box           |
| 2        | 29091518A                  | Pad (L)                     |
| 3        | 29091519A                  | Pad (R)                     |
| 4        | 29100105                   | 620×550 Poly bag            |
|          | 29095012-1                 | 800×500 Protection sheet    |
| 5        | 282301                     | Sealing hook                |
| 6        | 29110071                   | Damp tape                   |
| 7        | <b>Accessory bag ass'y</b> |                             |
|          | 29341731A                  | Instruction manual (D)      |
|          | 29341733A                  | Instruction manual (UP/UW)  |
|          | 2010098A                   | Connection cable            |
|          | 24140231                   | Remote control unit RC-232K |
|          | 3010054                    | Battery UM-3                |
|          | 29365019A                  | Warranty card (N)           |
|          | 29358002J                  | Service station list (N)    |
|          | 29100006A                  | 350×250 Poly bag            |
|          | 25055040                   | CV plug CV-K-2 (W)          |
|          | 29365024A                  | 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