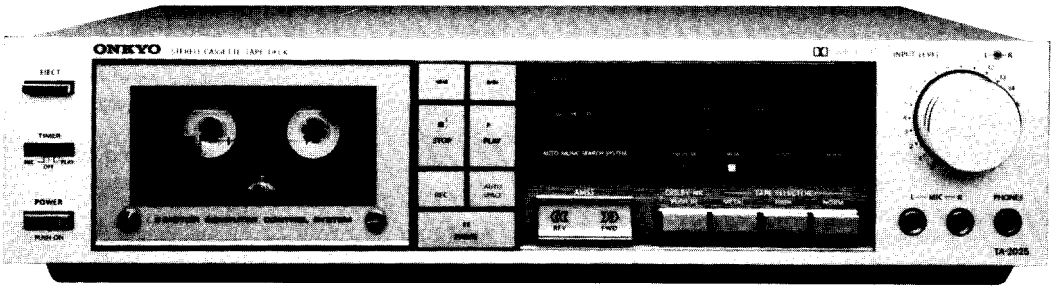
SERIAL NO. 3119

# ONKYO® SERVICE MANUAL

# STEREO CASSETTE TAPE DECK MODEL TA2025



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ONKYO®
AUDIO COMPONENTS

# SPECIFICATIONS

### D model

| | |
|---|---|
| Track Format: | 4-track, 2-channel stereo |
| Recording System: | AC bias |
| Erasing System: | AC erase |
| Tape Speed: | 4.8 cm/sec. (1-7/8 i.p.s.) |
| Wow & Flutter: | 0.045% (WRMS) |
| Frequency Response: | 20 – 15,000 Hz (30 – 14,000 Hz ±3 dB) (normal position tape)<br>20 – 16,000 Hz (30 – 15,000 Hz ±3 dB) (high position tape)<br>20 – 17,000 Hz (30 – 16,000 Hz ±3 dB) (metal position tape) |
| Signal-to-Noise Ratio: | 60 dB (Metal tape, Dolby Out)<br>A noise reduction of 10 dB above 5 kHz and 5 dB at 1 kHz is possible with the Dolby NR in. |
| Input Jacks: | Microphone Jacks: 2<br>Minimum input level: 0.3 mV/600Ω<br>Input impedance: 5 kΩ<br>Line In Jacks: 2<br>Minimum input level: 50 mV<br>Input impedance: 50 kΩ |
| Outputs: | Line Out Jacks: 2<br>Standard output level: 500 mV (0 dB)<br>Optimum load impedance: Over 50 kΩ<br>Headphone Jack: 1<br>8Ω – 200Ω |
| Motors: | DC servo: 1<br>DC: 2 |
| Heads: | Rec/pb head: Hard Permalloy<br>Erase head: Ferrite |
| Semiconductors: | TR: 41 Diodes: 28<br>IC: 10 LED: 8 |
| Power Consumption: | 18 watts |
| Dimensions: | 418(W) x 100(H) x 270(D) mm<br>(16-1/2" x 3-15/16" x 10-5/8") |
| Weight: | 4.5 kg. (9.9 lbs.) |

* Specifications and external appearance are subject to change without prior notice due to product improvements.

### Mechanism specifications

| | |
|---|---|
| 1) Tape speed: | 4.8 cm/sec. (3,000 Hz ~ 3,060 Hz)<br>Use a standard test tape<br>VTT-658 (3 kHz) or equipment. |
| 2) Wow and Flutter: | Less than 0.08% (WRMS) |
| 3) Take-up torque: | 35 –55 gr-cm |
| 4) F.F. torque: | 70 – 140 gr-cm |
| 5) Rewind torque: | 70 – 140 gr-cm |
| 6) Rewind time: | Less than 90 sec.<br>(Use a C-60 cassette tape) |

### G/W Model

| | |
|---|---|
| Track Format: | 4-track, 2-channel stereo |
| Recording System: | AC bias |
| Erasing System: | AC erase |
| Tape Speed: | 4.8 cm/sec. (1-7/8 i.p.s.) |
| Wow & Flutter: | 0.045% (WRMS) |
| Frequency Response: | 20 – 15,000 Hz (30 – 14,000 Hz ±3 dB) (normal position tape)<br>20 – 16,000 Hz (30 – 15,000 Hz ±3 dB) (high position tape)<br>20 – 17,000 Hz (30 – 16,000 Hz ±3 dB) (metal position tape) |
| Signal-to-Noise Ratio: | 60 dB (Metal tape, Dolby Out)<br>A noise reduction of 10 dB above 5 kHz and 5 dB at 1 kHz is possible with the Dolby NR in. |
| Input Jacks: | Microphone Jacks: 2<br>Miniumu input level: 0.3 mV/600Ω<br>Input impedance: 5 kΩ<br>Line In Jacks: 2<br>Minimum input level: 50 mV<br>Input impedance: 50 kΩ<br>DIN In Jack: 1<br>Minimum input level: 0.1 mV/1 kΩ<br>Input impedance: 2.7 kΩ |
| Outputs: | Line Out Jacks: 2<br>Standard output level: 500 mV (0 dB)<br>Optimum load impedance: over 50 kΩ<br>DIN Out Jack: 1<br>Standard output level: 500 mV (0 dB)<br>Optimum load impedance: over 50 kΩ<br>Headphone Jack: 1<br>8Ω – 200Ω<br>over 50 kΩ |
| Motors: | DC servo: 1<br>DC: 2 |
| Heads: | Rec/pb head: Hard Permalloy<br>Erase head: Ferrite |
| Semiconductors: | TR: 43 Diodes: 3<br>IC: 10 LED: 8 |
| Power Supply: | G model: 220 V, 50 Hz<br>W model: 120/220 V, 50/60 Hz<br>Q model: 240 V, 50 Hz |
| Power Consumption: | 18 watts |
| Dimensions: | 418(W) x 100(H) x 270(D) mm<br>(16-1/2" x 3-15/16" x 10-5/8") |
| Weight: | 4.5 kg. (9.9 lbs.) |

# SPECIAL MODE OF OPERATION

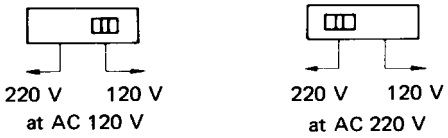
1. Using the AMSS Function

The AMSS (Automatic Music Search System) automatically locates the beginning of each song on a tape and plays the first 15 seconds (approximately) of each one. It is particularly useful to rapidly check the contents of a cassette. When AMSS FWD is pressed during normal tape playback the tape is rapidly wound to the beginning of the next song and, as the play indicator flashes on and off, the first 15 or 16 seconds of that song is played. Then the tape is rapidly wound to the beginning of the next song and, again, the first 15 or 16 seconds is played. This process is repeated until the PLAY button is depressed or the end of the tape is reached. When AMSS REV is pressed, the same process is performed in the reverse direction. If you want to hear the entire song, press the PLAY button to cancel the AMSS function and return to normal playback. The AMSS circuit operates by detection the blank sections between songs. If the space between songs is too short, the AMSS circuit may go on to the next blank space of sufficient length. In order to assure that the blank sections between songs on your cassettes are sufficiently long, you should use the auto space button to insert these spaces when making recordings.

Note: AMSS REV may not operate properly if there is a very quiet section followed by a very loud section in the 15 to 16 second long portion played at the beginning of one of the songs. If this occurs, press AMSS REV again to continue AMSS REV operation .

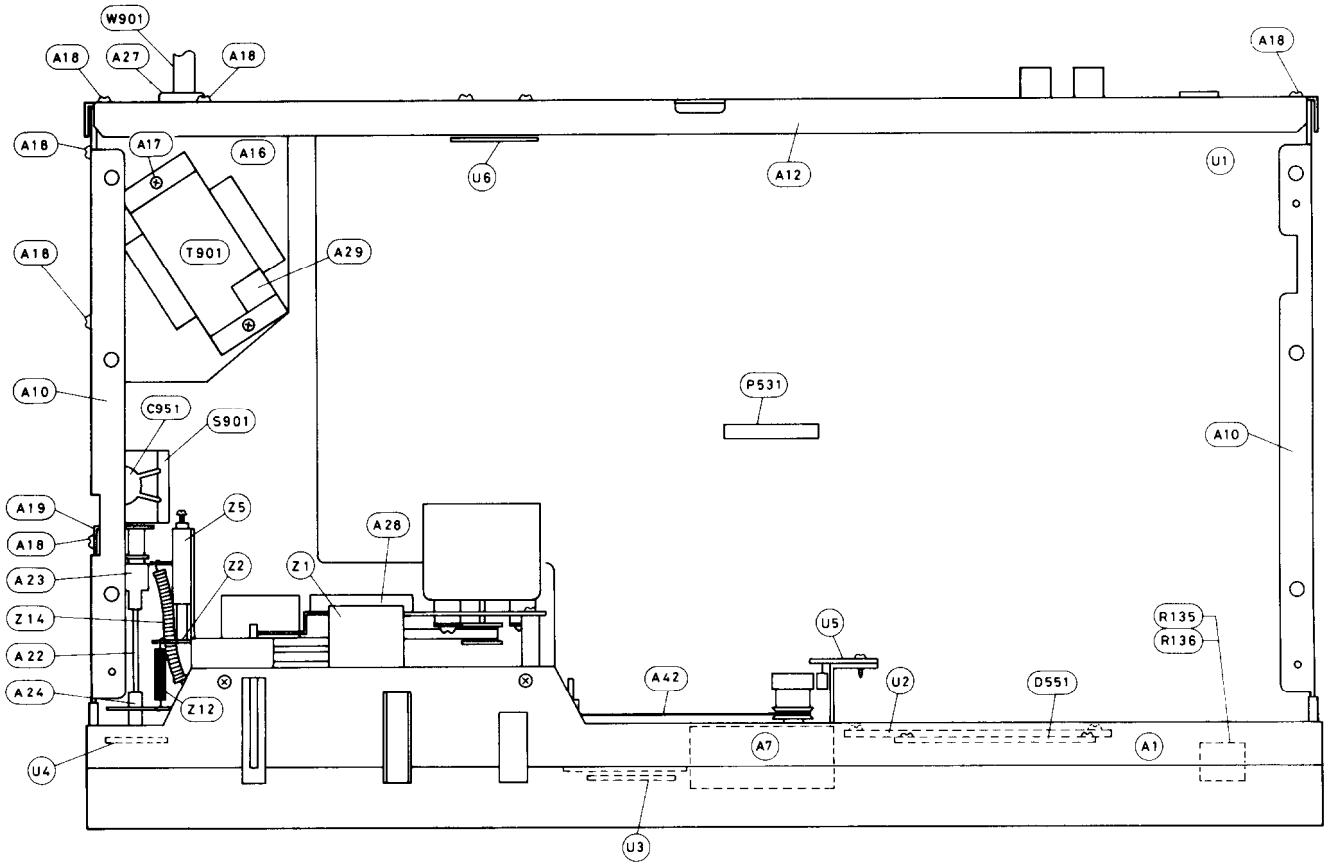
2. Voltage Selector (on Rear Panel)

W model is equipped with a voltage selector. If the unit you own has a voltage selector, be sure it is set to the proper voltage before the power is turned on. To change the selector to conform to the power supply in your area, insert the tip of a screwdriver in the groove of the switch and slide it all the way to the left or right.




Note: Units not equipped with a voltage selector can only be used in areas where the power supply agrees with the voltage specified on the rear panel.

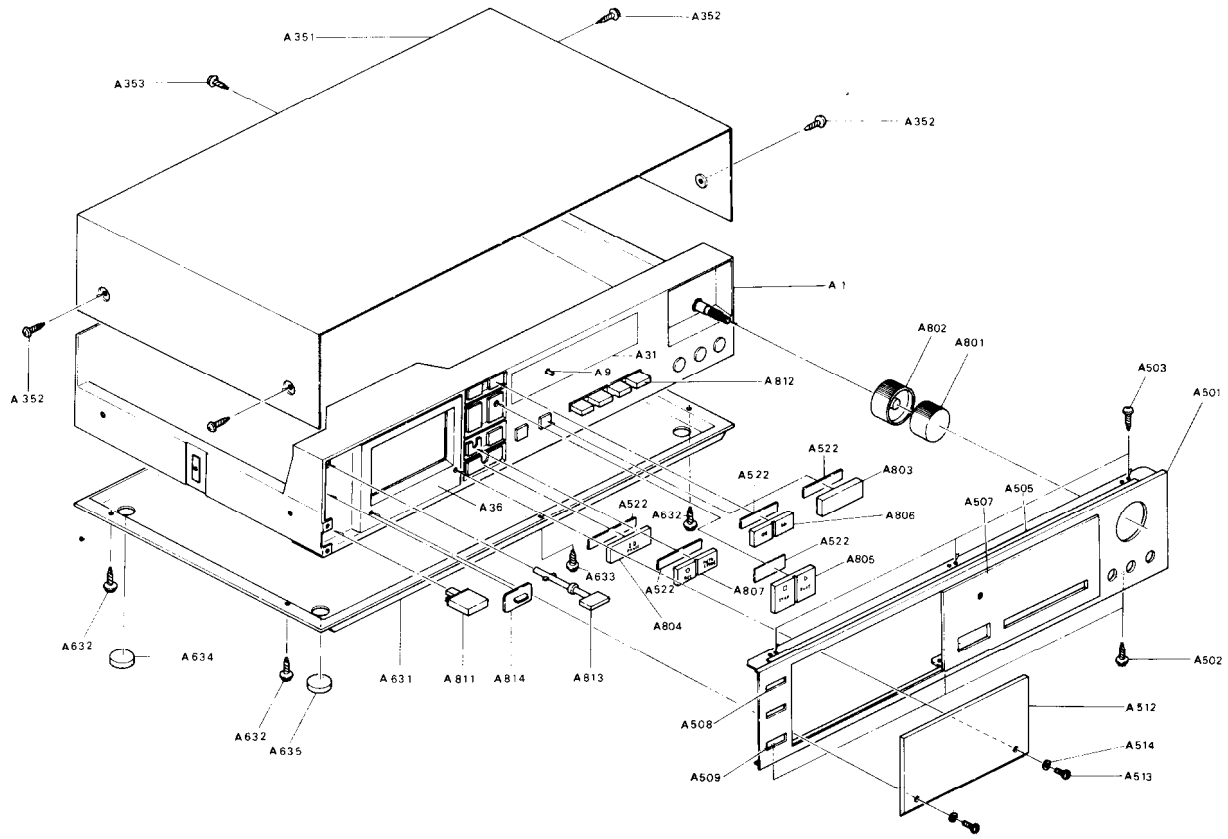
# COMPONENT LOCATION




| REF. NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| A1 | 27110154-1 | Front bracket |
| A2 | 27140586 | Bracket, pc board |
| A3 | 834130088 | 3TTS+8B, Tap screw |
| A4 | 27130282 | Bracket, pc board |
| A5 | 27270089 | Spacer |
| A6 | 831130068 | 3TTW+6B, Tap screw |
| A7 | 24601100 | Counter |
| A8 | 27140587A | Bracket, auto-stop |
| A9 | 28320387 | Knob, counter |
| A10 | 27115096A | Side bracket |
| A11 | 833130080 | 3TTP+8P, Tapping screw |
| A12 | 27120363 | Back panel (D) |
| | 27120364 | Back panel (G) |
| | 27120365 | Back panel (W) |
| A13 | 834130068 | 3TTS+6B, Tap screw |
| A14 | 838126088 | 2.6TTB+8B, Tap screw |
| A15 | 833130080 | 3TTP+8P, Tap screw |
| A16 | 27130247-1A | Bracket, power transformer |
| A17 | 833140087 | 4TTP+8S, Tap screw |
| A18 | 834130068 | 3TTS+6B, Tap screw |
| A19 | 27140478 | Bracket, power |
| A20 | 834130068 | 3TTS+6B, Tap screw |
| A21 | 82113006 | 3P+6FN, Pan head screw |
| A22 | 27260069 | Shaft, power switch |
| A23 | 28320135 | Connector |
| A24 | 27273016 | Joint |
| A25 | 28140233 | Cushion |
| A26 | 28140291 | Cushion |
| A27 | 270025 | SR-3P4, Strainrelief (D) |
| | 270280 | SR-4K-4, Strainrelief (G/W) |
| A28 | 28175045 | Shielded plate |
| A29 | 28140020 | Cushion |
| A30 | 223004-1 | Terminal |
| A31 | 28130132 | Dial plate |

| REF.NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| A32 | 24610643 | Tape mirror |
| A34 | 27190135-1 | Holder, left side |
| A35 | 27190136-1 | Holder, right side |
| A36 | 27300445-1 | Case, cassette |
| A37 | 838126088 | 2.6TTB+8B, Tap screw |
| A38 | 27180102 | Spring |
| A39 | 27300446 | Lever |
| A40 | 27180101-1 | Spring |
| A41 | 28140376 | Cushion |
| A42 | 24602128 | Belt, counter |
| A45 | 838126088 | 2.6TTB+8B, Tap screw |
| A48 | 82542610 | 2.6B+10FN(BC), Screw |
| A49 | 863126 | N-2.6FN(BC), Nut |
| A51 | 82112604 | 2.6P+4F, Pan head screw |
| A53 | 800137 | M3x6x1t, Nut |
| A54 | 8771301010 | W3x10F, Washer |
| A57 | 27190123A | Holder |
| A59 | 29110029 | Adhesive tape |
| A351 | 28184126A | Top cover |
| A352 | 834430068 | 3TTS+6B(BC), Tap screw |
| A353 | 834130068 | 3TTS+6B, Tap screw |
| A501 | 1621812 | Front panel ass'y |
| A502 | 834130088 | 3TTS+8B, Tap screw |
| A503 | 833130080 | 3TTP+8P, Tapping screw |
| A505 | 28140252 | Cushion |
| A507 | 28191104A | Clear plate |
| A508 | 27267158 | Guide, switch |
| A509 | 27267109 | Guide, power |
| A512 | 27300444 | Lid |
| A513 | 801249 | Screw |
| A514 | 870085 | Washer |
| A518 | 27180021 | Spring |
| A522 | 260701 | Adhesive tape |
| A523 | 29110029 | Adhesive tape |

# EXPLODED VIEW




| REF. NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| A631 | 27170116A | Bottom board |
| A632 | 831130068 | 3TTW+6B, Tap screw |
| A633 | 831130088 | 3TTW+8B, Tap screw |
| A634 | 27175028 | Leg |
| A635 | 28143014A | Leg |
| A636 | 838130068 | 3TTP+6B, Tap screw |
| A801 | 28320671 | Knob, input level, left side |
| A802 | 28320672 | Knob, input level, right side |
| A803 | 28320683 | Knob, REV/FWD |
| A804 | 16389704 | Knob, pause |
| A805 | 16389705 | Knob, stop/play |
| A806 | 28320681A | Knob, FF/Rew |
| A807 | 1638970€ | Knob, Rec/Auto space |
| A811 | 28320573 | Knob, push |
| A812 | 28320742 | Knob, selector |
| A813 | 28320678 | Knob, eject |
| A814 | 28320640 | Knob, switch |
| C951 | 3500060 | 0.01μF, 125V, Capacitor, CS (D) |
| C951 | 3500065A | 0.01μF, AC400V, Capacitor, IS (G) |
| C951, C952 | 3500065A | 0.01μF, AC400V, Capacitor, IS (W) |
| | 27300080 | Cover, Capacitor |
| D551 | 225099 | TLM8102, L.E.D, meter |
| P531 | 25050071 | NSAS-12P038, Socket, meter |
| R135, R136 | 5104133 | N16RK50KA25F, Variable resistor, input level |
| S901 | 25035224 | NPS-121-L188P, Power switch (D) |
| | 25035192 | NPS-122-L156P, Power switch (G) |
| | 25035207 | NPS-121-L171P, Power switch (W) |
| T901 | 230581 | NPT-762D, Power transformer (D) |
| | 230583 | NPT-762G, Power transformer (G) |
| | 230582 | NPT-762DG, Power transformer (W) |
| W901 | 253099A | AS-UC-3, Power supply cable (D) |
| | 253083 | AS-CEE, Power supply cable (G/W) |

| REF. NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| U1 | 16389555 | NAAF-1255, Rec/pb amplifier and control pc board ass'y (D) |
| | 16224555A | NAAF-1255A, Rec/pb amplifier and control pc board ass'y (G/W) |
| U2 | 16389556 | NADIS-1256, Dolby and tape selector indicator L.E.D pc board ass'y |
| U3 | 16389557 | NASW-1257, Control switch pc board ass'y |
| U4 | 16389558 | NASW-1258, Timer switch pc board ass'y |
| U5 | 16389559 | NAPD-1259, Hall IC pc board ass'y |
| U6 | 16218513 | NARM-1313, Remote control terminal pc board ass'y |
| Z1 | 244031-1 | Tape deck mechanism |
| Z2 | 27140588A | Bracket, eject |
| Z3 | 27300447A | Lever, eject |
| Z4 | 27300448 | Locked plate |
| Z5 | 24610508 | Damper |
| Z6 | 833125059 | 2.5TTP+5C, Tap screw |
| Z7 | 870090 | Washer |
| Z8 | 833126060 | 2.6TTP+6P, Tapping screw |
| Z9 | 8930301S | ES-3S, Circlip |
| Z12 | 27180109 | Spring |
| Z14 | 27180114-1 | Spring |
| Z16 | 834126068 | 2.6TTS+6B, Tap screw |
| | 25065123 | NSS-1258P, Voltage selector (W) |

Note: (D) : Only 120V model
(G) : Only 220V model
(W) : Only 120/220V model

# ADJUSTMENT PROCEDURES

## PRECAUTIONS

1. Before adjustment, clean the following parts with an alcohol moinstend swab.
   * record/playback head
   * erase head
   * pinch roller
   * capstan
   * rubber belt
2. Do not use magnitized screwdriver for adjustments.
3. Demagnetize record/playback head with a head demagnetizer.
4. The switches and controls should be set as follows unless otherwise specified.
   TAPE SEL . . . . . NORM
   DOLBY NR . . . . . OUT
   INPUT LEVEL . . . . . 0
   TIMER . . . . . OFF

## TEST EQUIPMENT/TOOLS REQUIRED:

Audio oscillator
Digital frequency counter
Oscilloscope
Attenuator
AC voltmeter
Non-magnetic screw drive
Blank tapes (completely erased)
NORMAL . . . . . UD-XL/I
HIGH . . . . . UD-XL/II
METAL . . . . . MX
Test tapes
VTT-658 : 10 kHz, – 15 dB
MTT-111 : 3 kHz, – 10 dB
MTT-150 : Dolby level calibration 400 Hz tone 200 nWb/m
TW-2111 : Torque meter

### 1. Play torque adjustment

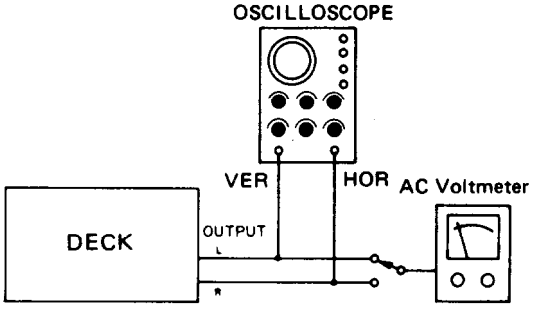
Play the torque meter TW-2111 back.
Adjust the R707 so that torque of take-up reel becomes 40 gr-cm.

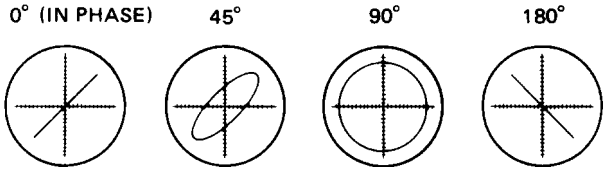
### 2. Tape speed adjustment

Connect the frequency counter to the line output terminal.
Play the MTT-111 back.
Adjust the semi-fixed resistor on the motor control pc board so that the counter indication becomes 3,000 Hz.

### 3. Head azimuth adjustment

1) Play the test tape VTT-658 back.
2) Adjust the head azimuth screw so that the phase relationship between L-and R-channels approximates 0 degrees as indicated on the oscilloscope.
3) At this time confirm that play back output level is approximately the maximum value on the AC voltmeter.
4) Then confirm that the phase difference of the respective frequency is with in the rated value 90 degreees or less in the range of 40 Hz to 10 kHz is required.
5) Secure the screw with the locking paint.

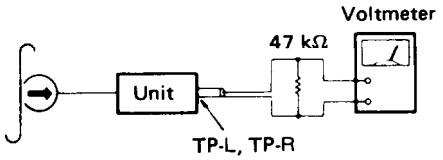



**Confirming phase relationship**

### 4. Playback output level adjustment

Connect the AC voltmeter to the TP-Rand TR-L terminals.
Play the MTT-150 back.
Adjust the R111 and R112 so that the indication of AC voltmeter becomes 580 mV.



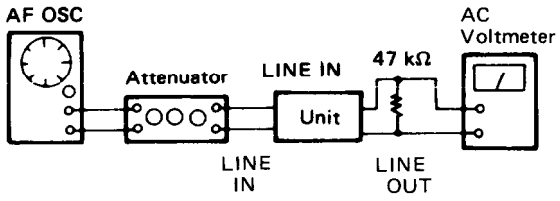

### 5. Level meter adjustment

Play the MTT-150 back.
Adjust the R533 so that the 0 dB of level meter light on.

### 6. Bias current adjustment

Insert the normal blank tape into the cassette holder. Apply the 400 Hz signal to the line input terminal. Press the rec and pause button together and set the tape deck to the recording mode. Adjust the input level volume or AF oscillator so that the 0 dB of level meter light on. Reduce the input level by 20 dB with the attenuator. Record the 400 Hz and 10 kHz signals on the tape. Adjust the R205 and R206 so that the 400 Hz and 10 kHz playback signal become the same level.

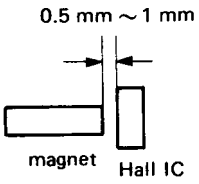
Connection diagram




### 7. Recording level adjustment

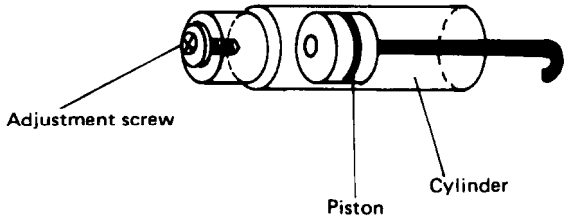
Apply the 700 Hz signal to the line input terminal. Insert the normal blank tape into the cassette holder. Connect the AC voltmeter to the line output terminal. Set the tape deck to the recording mode. Adjust the input volume or AF oscillator output so that the 0 dB of level meter light on. Reduce the input level by 3 dB. Record the 700 Hz signal on the tape and adjust the R181 and R182 so that the level of recording and playback become same.

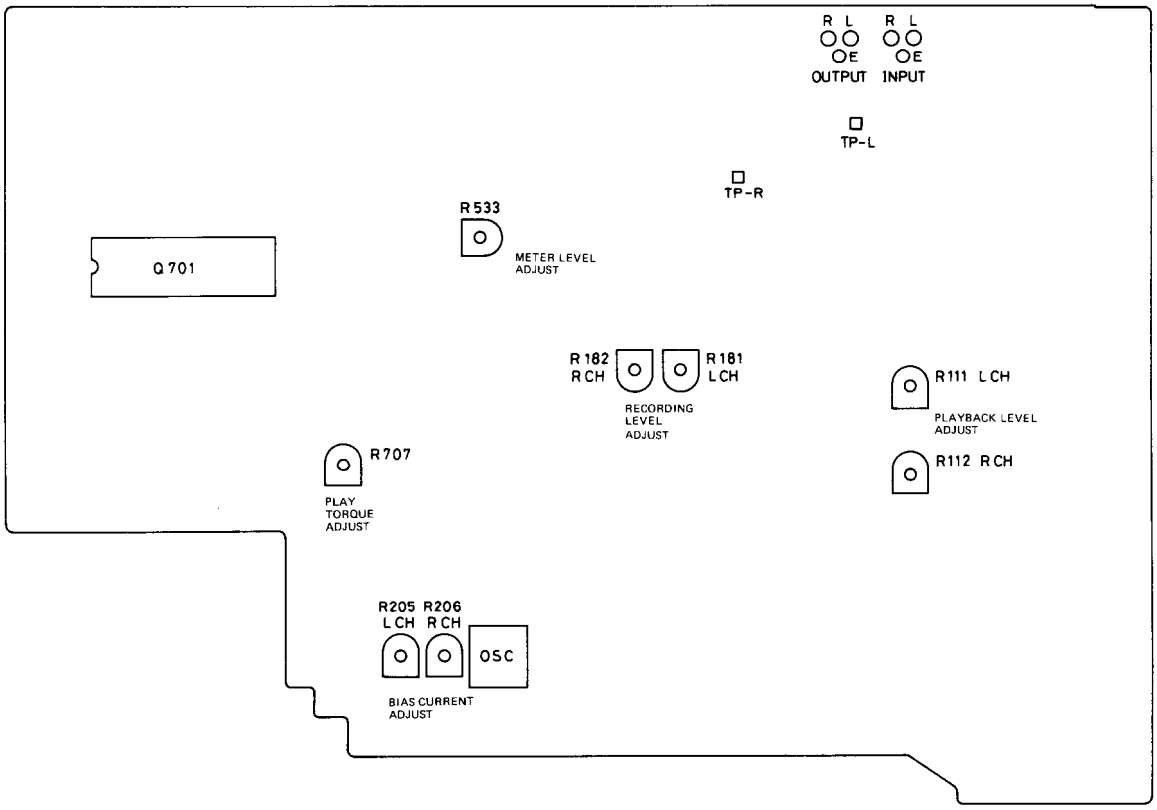
### 8. Hall IC clearance



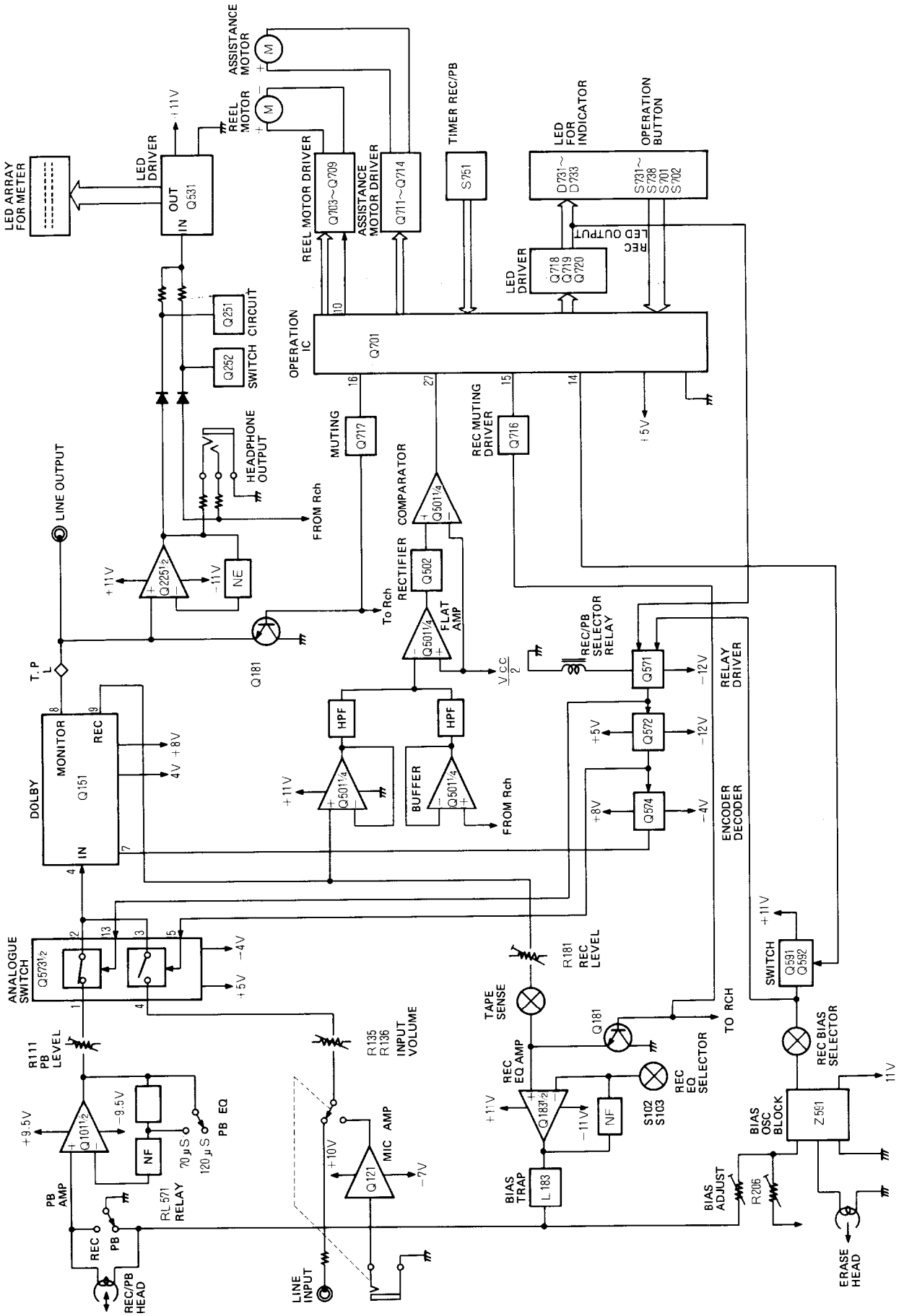

### 9. Adjustment of the eject mechanism

The speed of the opening and closing action of the cassette compartment can be controlled by the adjustment screw at the rear of the cylinder as shown in the graph. By turning the screw to the left, speed becomes faster, and to the right, and to the right, slower.

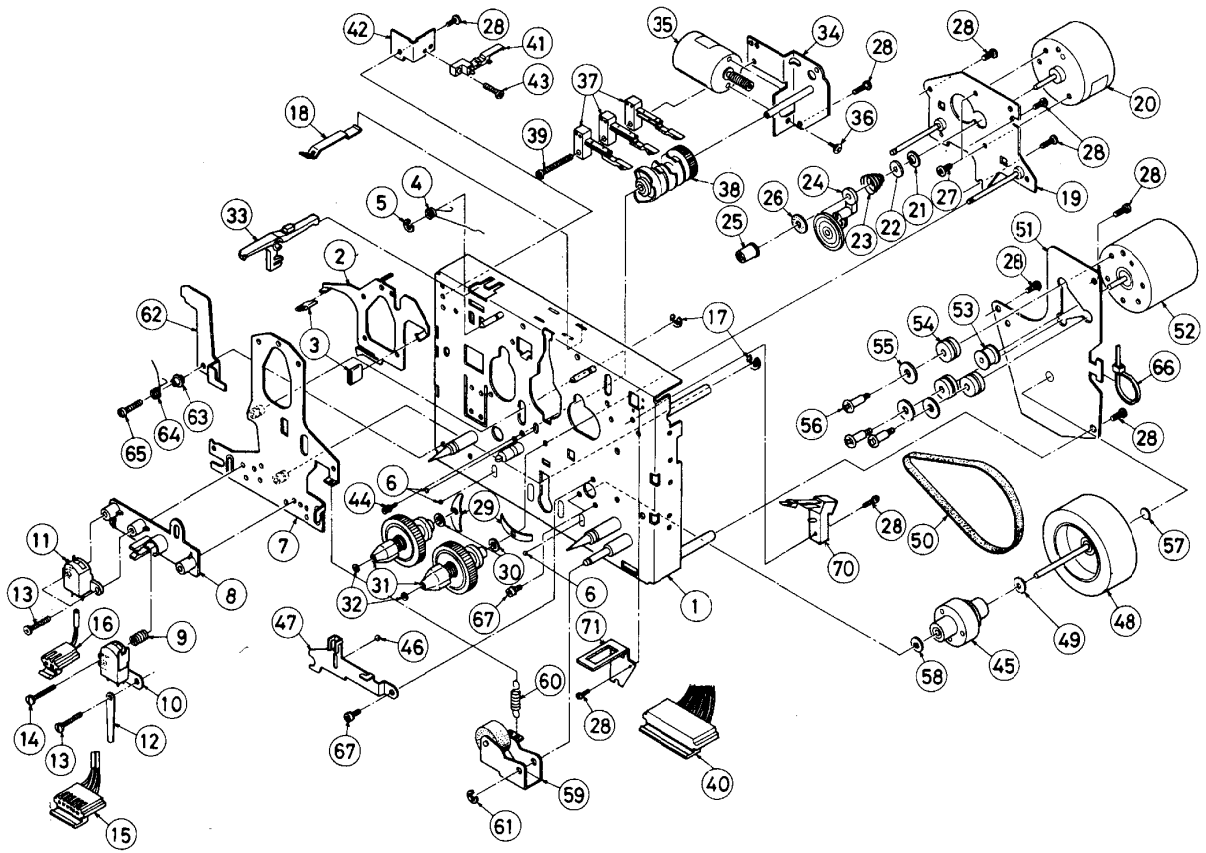


# BLOCK DIAGRAM



# TAPE MECHANISM EXPLODED VIEW



| REF. NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| 1 | 24610663 | Mechanism chassis |
| 2 | 24610664 | Brake plate |
| 3 | 24610376 | Rubber, brake |
| 4 | 24605304 | Spring |
| 5 | 8930251 | E2.5, Circlip |
| 6 | 24610351 | 2φ, steelball |
| 7 | 24610665 | Head chassis |
| 8 | 24610346 | Head stand |
| 9 | 24605185 | Spring |
| 10 | 24600018 | Rec/playback head |
| 11 | 24600025 | Erase head |
| 12 | 24610666 | Holder, lead wire |
| 13 | 82512012 | M2x13, Binding screw |
| 14 | 801198 | M2x14, Flange screw |
| 15 | 25050115 | Connector, rec/pb head |
| 16 | 25050113 | Connector, erase head |
| 17 | 8930302 | E3, Circlip |
| 18 | 24605183 | Cassette holding spring |
| 19 | 24610667 | Motor chassis |
| 20 | | Reel motor (See No.68) |
| 21 | 24610373 | Stand, spring |
| 22 | 24610374 | Washer |
| 23 | 24605194 | Spring |
| 24 | 24602076 | Idler lever ass'y |
| 25 | 24601102 | Motor pulley |
| 26 | 24610375 | Felt |
| 27 | 82512603 | M2.6x3, Binding screw |
| 28 | 833125059 | Pan head screw |
| 29 | 24605303 | Back tension spring |
| 30 | 24610992 | Washer |

| REF. NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| 31 | 24602136 | Reel stand |
| 32 | 24610349 | Washer |
| 33 | 24603205 | Recording lever |
| 34 | 24610668 | Chassis |
| 35 | 24601103 | Motor, assistance |
| 36 | 801259 | M2x3, Screw |
| 37 | 24606119 | Leafswitch |
| 38 | 24602133 | Cam gear |
| 39 | 833125209 | M2.5x20, Pan head screw |
| 40 | 25050127 | Connector, 10P (Before change) |
| | 25050117 | Connector, 11P (After change) |
| 41 | 24603129 | Leafswitch |
| 42 | 24610660 | Chassis |
| 43 | 833125069 | M2.5x6, Pan head screw |
| 44 | 801250 | M2x4, Pan head screw |
| 45 | 24610674 | Capstan holder |
| 46 | 24610279 | 3φ, steelball |
| 47 | 24610669 | Head holding plate |
| 48 | 24602135 | Flywheel |
| 49 | 24610515 | Washer |
| 50 | 24602134 | Belt |
| 51 | 24610670 | Flywheel holding plate |
| 52 | 24601085 | Capstan motor ass'y (See No. 69) |
| 53 | 24601107 | Motor pulley |
| 54 | 24610451 | Cushion |
| 55 | 24610452 | Flat washer |
| 56 | 801252 | Screw, motor |
| 57 | 24610671 | Thrust stand |
| 58 | 24610673 | Plain washer |
| 59 | 24610672 | Pinch arm ass'y 2.30 |
| 60 | 24605370 | Spring |
| 61 | 8930201 | E2, Circlip |
| 62 | 24610345 | Locked plate |
| 63 | 24610344 | Collar |
| 64 | 24605184 | Spring |
| 65 | 833125109 | M2.5x10, Pan head screw |
| 66 | 260208 | Binder |
| 67 | 801181 | M2.6x6, Pan head screw |
| 68 | 24601106 | Reel motor/idler ass'y (20-26) |
| 69 | 24601113 | Capstan motor ass'y (52, 53) |
| 70 | 24606104 | Leafswitch |
| 71 | 24610659 | Protection plate |

# PRINTED CIRCUIT BOARD-PARTS LIST

## REC. AND PLAYBACK AMPLIFIER PC BOARD (NAAF-1125) – PARTS LIST

| CIRCUIT NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| | **ICs** | |
| Q101 | 222655 | NJM4562DD |
| Q151, Q152 | 222635 | TA7629P, Dolby |
| Q183 | 222465 | NJM4558D |
| Q225 | 222654 | NJM4556D |
| Q501 | 222604 | LM324N |
| Q531 | 222507 | TA7612P, Meter drive |
| Q573 | 222575 | TC4066BP, Analogue, switch |
| Q701 | 222637 | TMP4315AP-1011, Micro computer |
| | **Transistors** | |
| Q121, Q122 | 2211406 | 2SC2240(BL) |
| Q181, Q182 | 2211255 | 2SC1815(GR) |
| Q221, Q222 | 2211255 | 2SC1815(GR) |
| Q223, Q224 | 2210274 | 2SK30A(Y), [G/W] |
| Q251, Q252 | 2211255 | 2SC1815(GR) |
| Q502 | 2211454, 2211453, 2212124 or 2212123 | 2SA1015(Y), 2SA1015(O), 2SA1048(Y) or 2SA1048(O) |
| Q571 | 2211706 | 2SD655(F) |
| Q572, Q574 | 2211254, | 2SC1815(Y), |
| Q591 | 2211253, 2212114 or 2212113 | 2SC1815(O), 2SC2458(Y) or 2SC2458(O) |
| Q592 | 2211454 or 2212124 | 2SA1015(Y) or 2SA1048(Y) |
| Q702 | 2211611 or 2211612 | 2SD471(K) or 2SD471(L) |
| Q703, Q704 | 2211554 | 2SA562TM(Y) |
| Q705, Q707 | 2212114, | 2SC2458(Y), |
| Q709, Q715 | 2212113, 2211254 or 2211253 | 2SC2458(O), 2SC1815(Y) or 2SC1815(O) |
| Q706, Q708 | 2211544 or 2211543 | 2SC1959(Y) or 2SC1959(O) |
| Q710 | 2201060 | 2SD549 |
| Q711, Q712 | 2211554 | 2SA562TM(Y) |
| Q713, Q714 | 2211706 | 2SD655(F) |
| Q716–Q720 | 2211454, 2211453, 2212124 or 2212123 | 2SA1015(Y), 2SA1015(O), 2SA1048(Y) or 2SA1048(O) |
| Q721, Q722 | 2211254, 2211253, 2212114 or 2212113 | 2SC1815(Y), 2SC1815(O), 2SC2458(Y) or 2SC2458(O) |
| Q901 | 2201285 or 2201286 | 2SD882(Q) or 2SD882(P) |
| Q902, Q903 | 2201275 or 2201276 | 2SB772(Q) or 2SB772(P) |
| Q904 | 2201074 | 2SD880(Y) |
| Q905 | 2212114 | 2SC2458(Y) |
| Q906 | 2211563 | 2SB562(C) |
| | **Diodes** | |
| D221, D222 | 223133 or 223105 | DS442X or [G/W] 1S1555 |
| D251, D252 | 223103 or 223132 | 1N60 or 1K60 |
| D253–D256 | 223133 or 223106 | DS442X or 1S1554 |
| D501, D571 | 223133 or | DS442X or |
| D531–D534 | 223105 | 1S1555 |
| D572 | 2239513 or 224100 | RD6.8EB3 or GZA6.8U |
| D701 | 2239551 or 224102 | RD8.2EB1 or GZA7.5U |
| D703 | 223133 or 223105 | DS442X or 1S1555 |
| D705–D711 | 223103 or 223132 | 1N60 or 1K60 |
| D712 | 223133 or 223105 | DS442X or 1S1555 |
| D901 | 223868 | 2W02 |
| D902 | 223804 or 223848 | SR1K-2 or GP08B |
| D903, D904 | 2239631 or 224111 | RD12EB1 or GZA12L |
| D905 | 2239472, 2239473 or 224096 | RD5.6EB2, RD5.6EB3 or GZA5.6U |
| | **Capacitors** | |
| C107, C108 | 352721019 | 100μF, 6.3V, Elect. |
| C121–C124 | 352780109 | 1μF, 50V, Elect. |
| C151, C152 | 352780109 | 1μF, 50V, Elect. |
| C153, C154 | 352732219 | 220μF, 10V, Elect. |
| C155, C156 | 352741009 | 10μF, 16V, Elect. |
| C159, C160 | 352741009 | 10μF, 16V, Elect. |
| C167, C168 | 352781099 | 0.1μF, 50V, Elect. |
| C169, C170 | 352783399 | 0.33μF, 50V, Elect. |
| C171, C172 | 352741009 | 10μF, 16V, Elect. |
| C181, C182 | 352741009 | 10μF, 16V, Elect. |
| C183, C184 | 352784799 | 0.47μF, 50V, Elect. |
| C193, C194 | 352741009 | 10μF, 16V, Elect. |
| C221, C222 | 352741009 | 10μF, 16V, Elect. |
| C251, C252 | 352780339 | 3.3μF, 50V, Elect. |
| C503 | 352741009 | 10μF, 16V, Elect. |
| C504, C505 | 352780109 | 1μF, 50V, Elect. |
| C571 | 352781099 | 0.1μF, 50V, Elect. |
| C572 | 352780229 | 2.2μF, 50V, Elect. |
| C591 | 352721019 | 100μF, 6.3V, Elect. |
| C592 | 352780109 | 1μF, 50V, Elect. |
| C703 | 352780229 | 2.2μF, 50V, Elect. |
| C704, C705 | 352780109 | 1μF, 50V, Elect. |
| C709 | 352781099 | 0.1μF, 50V, Elect. |
| C710 | 352780109 | 1μF, 50V, Elect. |
| C711 | 352741009 | 10μF, 16V, Elect. |
| C902 | 352752229 | 2,200μF, 25V, Elect. |
| C903 | 352751029 | 1,000μF, 25V, Elect. |
| C908–C911 | 352741019 | 100μF, 16V, Elect. |
| C913 | 3504168 | 13,000μF, 25V, Elect. |
| C931, C932 | 352780109 | 1μF, 50V, Elect. |
| C933 | 352741019 | 100μF, 16V, Elect. |
| C934 | 352732219 | 220μF, 10V, Elect. |
| C935 | 352721019 | 100μF, 6.3V, Elect. |
| C936 | 352731019 | 100μF, 10V, Elect. |
| | **Resistors** | |
| R111, R112 | 5215046 | N08HR50KBC, Semi-fixed |
| R181, R182 | 5215045 | N08HR10KBC, Semi-fixed |
| R205, R206 | 5215047 | N08HR100KBC, Semi-fixed |
| R533 | 5215045 | N08HR10KBC, Semi-fixed |
| R593 | 441524714KF | 470Ω, 1/2W, Metal oxide film |
| R595 | 441521024KF | 1kΩ, 1/2W, Metal oxide film |
| R702 | 441521004KF | 10Ω, 1/2W, Metal oxide film |
| R707 | 5215042 | N08HR1KBC, Semi-fixed |
| R711 | 441723904KF | 39Ω, 2W, Metal oxide film |
| R717–R726 | 49121392410 | 3.9kΩx10, 1/8W, Network |
| R727–R736 | 49121562410 | 5.6kΩx10, 1/8W, Network |
| R742–R746 | 49121223405 | 22kΩx5, 1/8W, Network |
| R901, R903 | 441520224F | 2.2Ω, 1/2W, Metal oxide film |
| R904, R906 | | |
| R907 | 441622704KF | 27Ω, 1W, Metal oxide film |
| | **Coils** | |
| L151, L152 | 233246 | NMC5030 |
| L181, L182 | 24606072 | NCH-1010 |
| L183, L184 | 233186 | NCH-3032 |
| L592 | 233235 | NCH-2050 |
| | **Osc. block** | |
| Z591 | 24606117 | NOB-018 |
| | **Transformer** | |
| L701 | 232100 | NMIF-6030 |
| | **Switches** | |
| S101–S104 | 25035285 | NPS-222-262-L251, Dolby/Tape selector |
| S701, S702 | 25035286 | NPS-111-L252, Search |
| | **Plugs** | |
| P101 | 25055037 | NPLG-6P28 |
| P102 | 25055038 | NPLG-2P29 |
| P531 | 25065133 | NPLG-12P18 |
| P701 | 25055046 | NPLG-10P34 (Before change) |
| | 25055052 | NPLG-11P40 (After change) |

| CIRCUIT NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| | **Jacks** | |
| P121, P122 | 25045111 | HLJ-4305-01-010, Microphone |
| P502 | 25045110 | HLJ-4305-01-020, Streo headphone |
| | **Terminal** | |
| P501 | 25045084 | NPJ4PDKBL42, Input/output |
| P503 | 25050064 | NSCT-5P18, DIN [G/W] |
| | **Relay** | |
| RL571 | 25065174 | NRL-2P1ADC12-09 |

## DOLBY AND TAPE SELECTOR INDICATOR L.E.D PC BOARD (NADIS-1256)

| CIRCUIT NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| D601 | 225084 | SLP-153B, Dolby, L.E.D |
| D602–D604 | 225085 | SLP-253B, Tape selector, L.E.D |

## CONTROL SWITCH PC BOARD (NASW-1257)

| CIRCUIT NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| D731, D733 | 225059 | SEL1110S, Rec/Pause indicator L.E.D |
| D732 | 225060 | SEL1301E, Play indicator L.E.D |
| S731–S738 | 25035275 | NPS-111-S239, Push switch |
| | 27190086 | Holder |

## TIMER SWITCH PC BOARD (NASW-1258)

| CIRCUIT NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| S751 | 25065170 | NSS-2377, Timer switch |

## HALL IC PC BOARD (NAPD-1259)

| CIRCUIT NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| Q751 | 222558 or | DN6838 or |
| | 222599 | TL170C, IC |

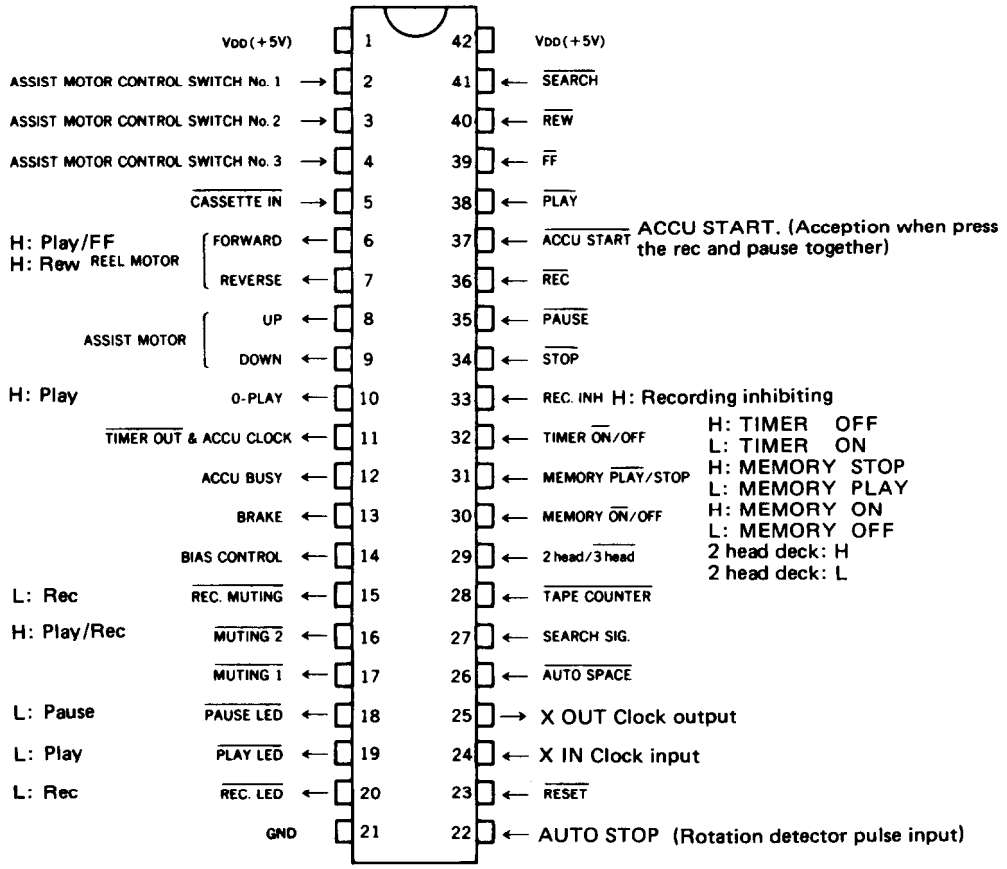
## REMOTE CONTROL TERMINAL PC BOARD (NARM-1313)

| CIRCUIT NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| | 25050070 | NSCT-7P20, DIN terminal |

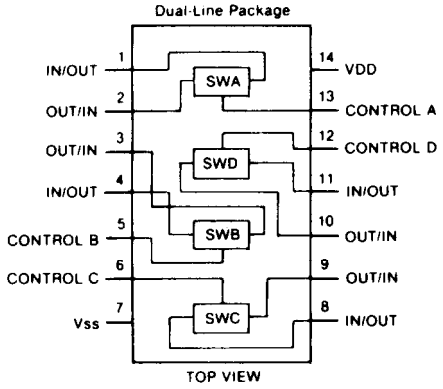
Note: G : Only 220V model
W : Only 120/220V model

# BLOCK DIAGRAM OF IC

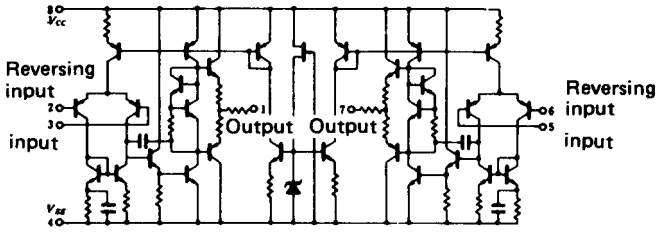
## TMP4315AP-1011



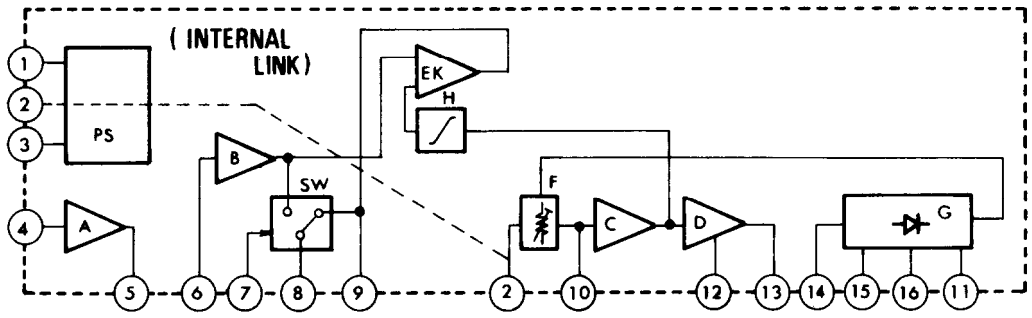

## TC4066BP (Analogue switch)



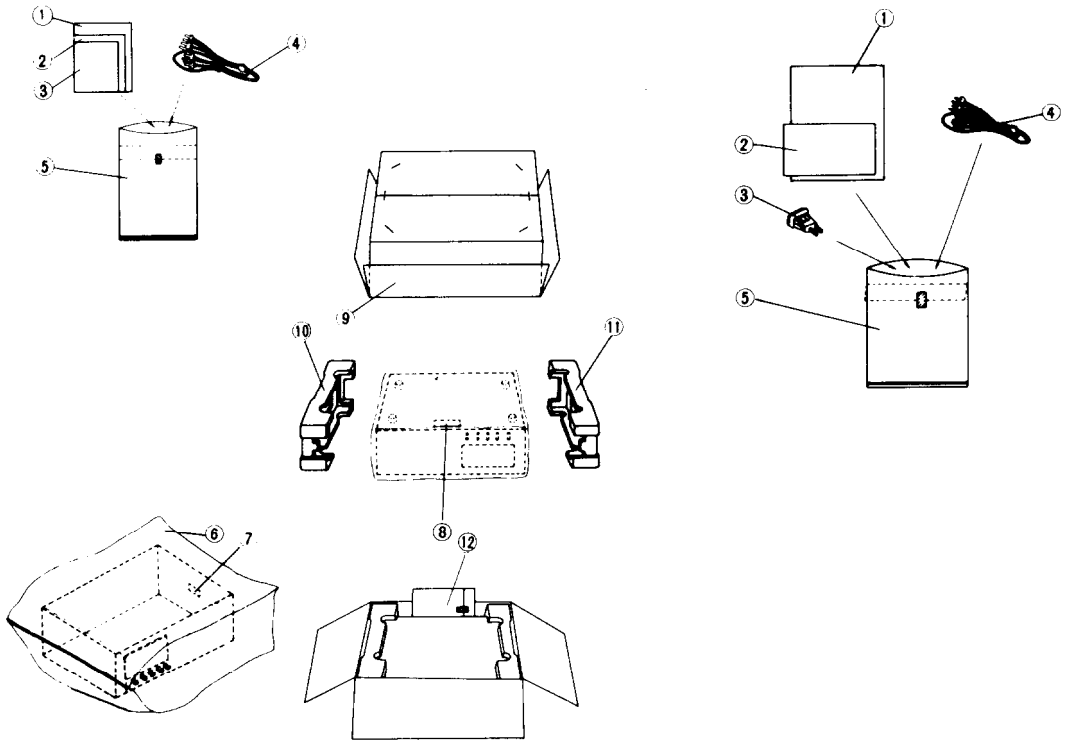

## NJM4556/4558 (Operational amplifier)




## TA7629P (Dolby B type noise reduction)



# PACKING PROCEDURES




**120V model**

| REF. NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| 1 | 29340587 | Instruction manual |
| 2 | 29358002 | Service station list (D) |
| 3 | 29365006–1 | Warranty card (D) |
| 4 | 253074 | Pin-pin connection cord |
| 5 | 29100005 | 330 x 220 mm, Poly bag |
| 6 | 29100037 | 650 x 500 mm, Poly bag |
| 7 | 29360363 | Caution label (D) |
| 8 | 29360378 | Caution label (D) |
| 9 | 29050537 | Carton box |
| 10 | 29090647 | Pad (R) |
| 11 | 29090646 | Pad (L) |
| 12 | | Accessary bag complete |

(D) : Only U.S.A. model

**G/W model**

| REF. NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| 1 | 29340588 | Instruction manual |
| 2 | 29365005–3 | Warranty card (G) |
| 3 | 25055040 | Conversion plug (W) |
| 4 | 253074 | Pin-pin connection cord |
| 5 | 29100005 | 330 x 220 mm, Poly bag |
| 6 | 29100037 | 650 x 500 mm Poly bag |
| 9 | 29050537 | Carton box |
| 10 | 29090647 | Pad (R) |
| 11 | 29090646 | Pad (L) |
| 12 | | Accessary bag complete |

(G) : Only West Germany
(W) : Only 120/220V model

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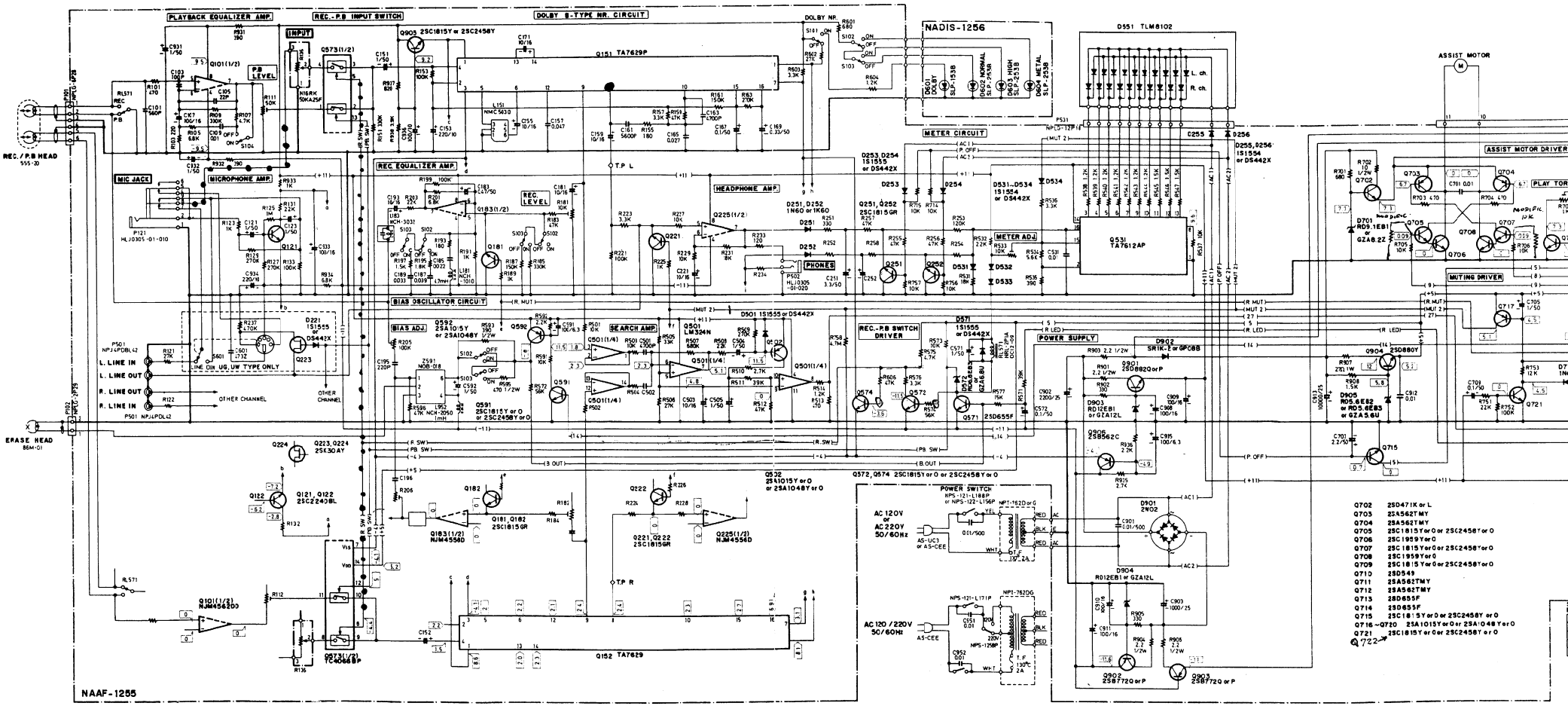
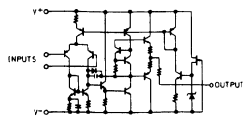
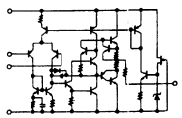
A202 Printed in Japan

# SCHEMATIC DIAGRAM



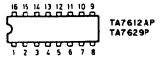
NJM4562D-D (ONE CHANNEL SHOWN)


NJM4556D (ONE CHANNEL SHOWN)



NJM4562D-D
NJM4556D
NJM4558D

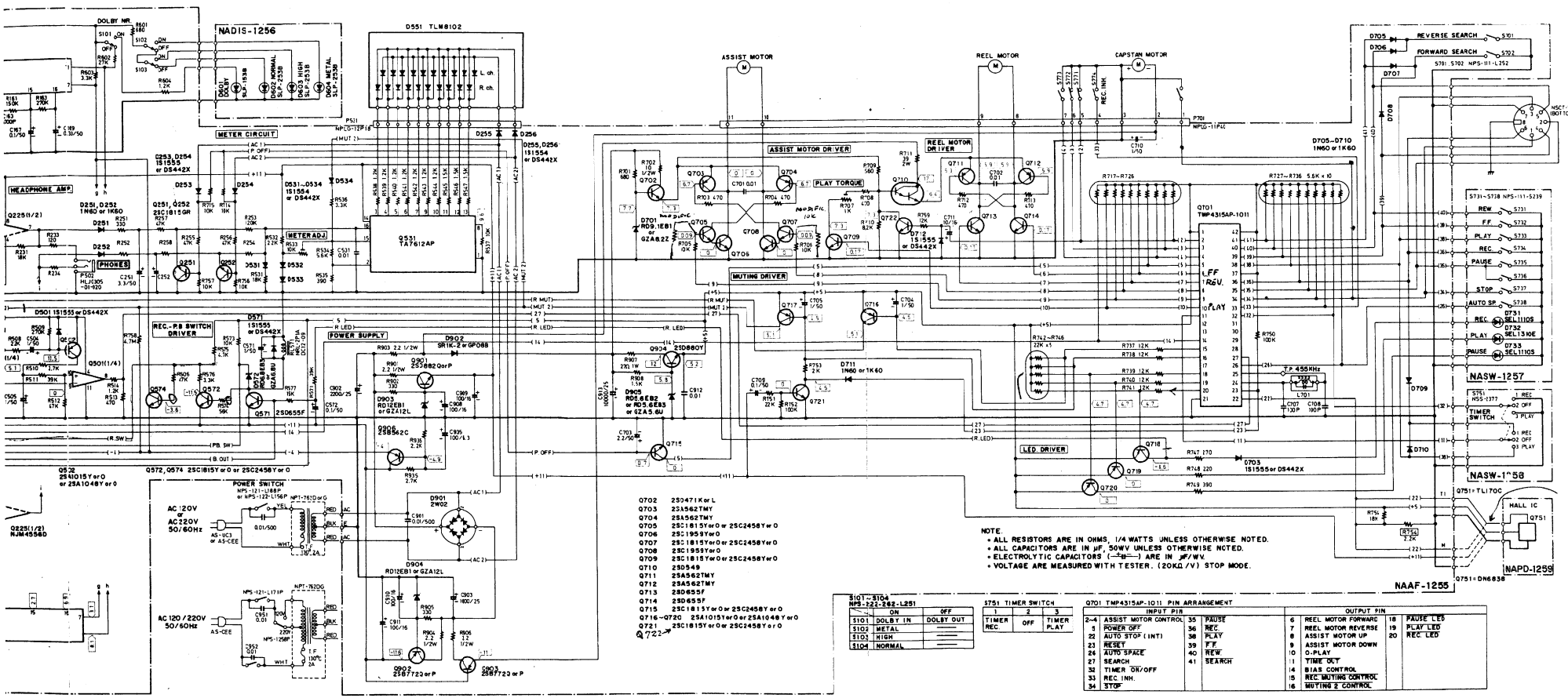

LM324N
TC4066BP


TA7612AP
TA7629P


2SD880


2SB772
2SB882
2SD549

Q702 2SD471K or L
Q703 2SA562TMY
Q704 2SA562TMY
Q705 2SC1815Y or O or 2SC2458Y or O
Q706 2SC1959Y or O
Q707 2SC1815Y or O or 2SC2458Y or O
Q708 2SC1959Y or O
Q709 2SC1815Y or O or 2SC2458Y or O
Q710 2SD549
Q711 2SA562TMY
Q712 2SA562TMY
Q713 2SD655F
Q714 2SD655F
Q715 2SC1815Y or O or 2SC2458Y or O
Q716~Q720 2SA1015Y or O or 2SA1048Y or O
Q721 2SC1815Y or O or 2SC2458Y or O
Q722




Q702 2SD471K or L
Q703 2SA562TMY
Q704 2SA562TMY
Q705 2SC1815Y or O or 2SC2458Y or O
Q706 2SC1959Y or O
Q707 2SC1815Y or O or 2SC2458Y or O
Q708 2SC1959Y or O
Q709 2SC1815Y or O or 2SC2458Y or O
Q710 2SD549
Q711 2SA562TMY
Q712 2SA562TMY
Q713 2SD655F
Q714 2SD655F
Q715 2SC1815Y or O or 2SC2458Y or O
Q716~Q720 2SA1015Y or O or 2SA1048Y or O
Q721 2SC1815Y or O or 2SC2458Y or O
Q722

S101~S104
NPS-222-262-L251

| | ON | OFF |
|---|---|---|
| S101 | DOLBY IN | DOLBY OUT |
| S102 | METAL | —— |
| S103 | HIGH | —— |
| S104 | NORMAL | —— |

S751 TIMER SWITCH

| 1 | 2 | 3 |
|---|---|---|
| TIMER REC. | OFF | TIMER PLAY |

Q701 TMP4315AP-1011 PIN ARRANGEMENT

| INPUT PIN | | | OUTPUT PIN | | |
|---|---|---|---|---|---|
| 2~4 | ASSIST MOTOR CONTROL | 35 | PAUSE | 6 | REEL MOTOR FORWARD | 18 | PAUSE LED |
| 5 | POWER OFF | 36 | REC. | 7 | REEL MOTOR REVERSE | 19 | PLAY LED |
| 22 | AUTO STOP (INT) | 38 | PLAY | 8 | ASSIST MOTOR UP | 20 | REC LED |
| 23 | RESET | 39 | FF | 9 | ASSIST MOTOR DOWN | | |
| 24 | AUTO SPACE | 40 | REW | 10 | O-PLAY | | |
| 27 | SEARCH | 41 | SEARCH | 11 | TIME OUT | | |
| 32 | TIMER ON/OFF | | | 14 | BIAS CONTROL | | |
| 33 | REC INH. | | | 15 | REC MUTING CONTROL | | |
| 34 | STOP | | | 16 | MUTING 2 CONTROL | | |

NOTE.
- ALL RESISTORS ARE IN OHMS, 1/4 WATTS UNLESS OTHERWISE NOTED.
- ALL CAPACITORS ARE IN μF, 50WV UNLESS OTHERWISE NOTED.
- ELECTROLYTIC CAPACITORS (—⊕— ) ARE IN μF/WV.
- VOLTAGE ARE MEASURED WITH TESTER. (20KΩ/V) STOP MODE.

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