


ONKYO SERVICE MANUAL**STEREO CASSETTE
TAPE DECK****MODEL TA-2036**

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

Black and silver model

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 PARTS NUMBERS APPEAR AS SHOWN IN THIS MANUAL.

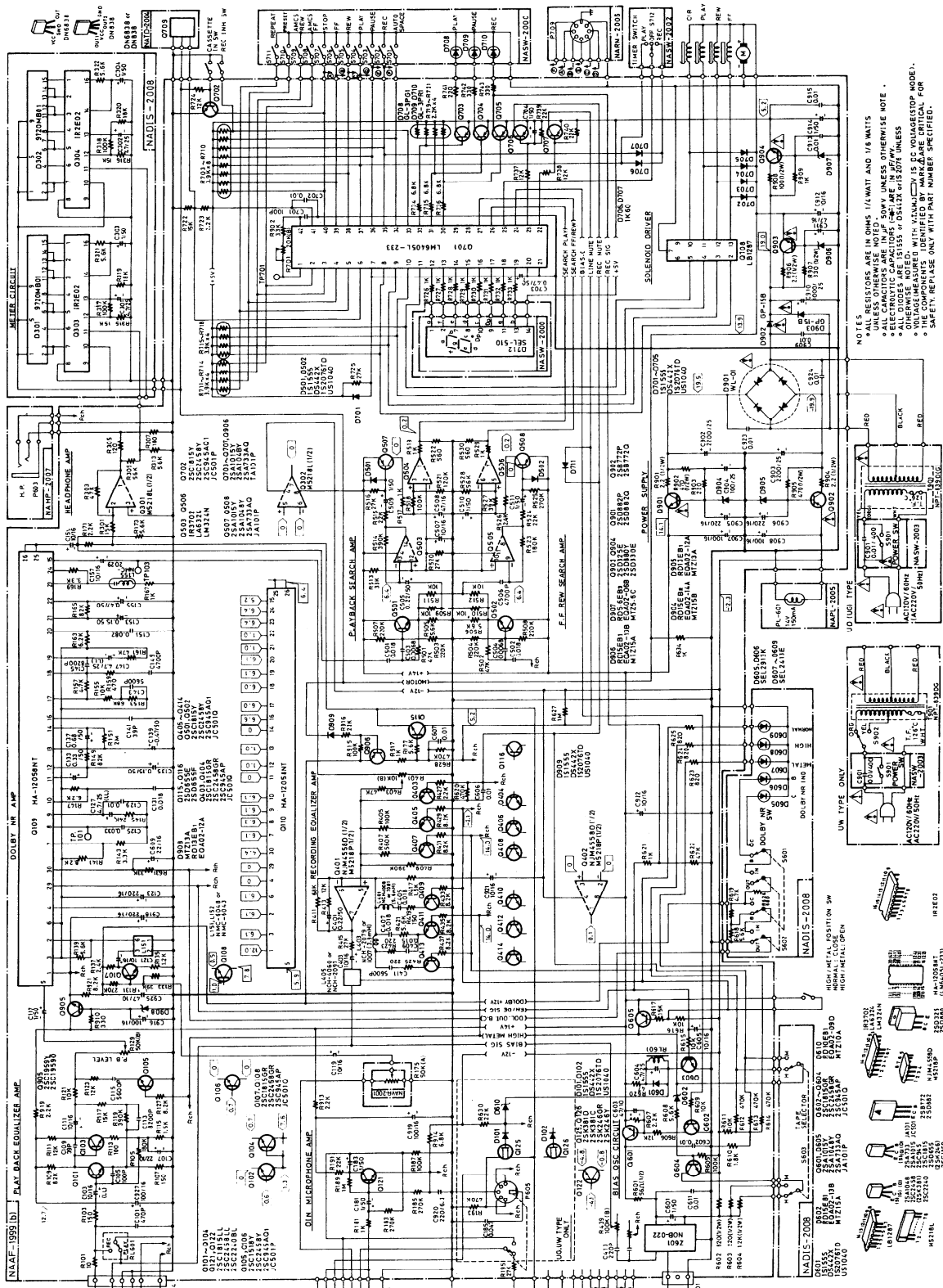
MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

SPECIFICATIONS

| | |
|------------------------|--|
| Track Format: | 4 tracks, 2 channels |
| Erasing System: | AC erase |
| Tape Speed: | 4.8 cm/sec. (1-7/8 i.p.s.) |
| Wow & Flutter: | 0.05% (WRMS) |
| Frequency Response: | 20–15,000 Hz (30–14,000 Hz \pm 3dB) (normal position tape) 20–16,000 Hz (30–15,000 Hz \pm 3 dB) (high position tape) 20–17,000 Hz (30–16,000 Hz \pm 3 dB) (metal position tape) |
| Signal-to-Noise Ratio: | 60 dB (metal position tape, Dolby NR out) A noise reduction of 10 dB above 5 kHz and 5 dB at 1 kHz is possible with Dolby B NR. A noise reduction of 20 dB at 5 kHz is possible with Dolby CNR. |
| Input Jacks: | Mic Jacks: 2 Input sensitivity: 0.3 mV/600 ohms Input impedance: 2.7 kohms Line IN: 2 Input sensitivity: 60 mV Input impedance: 50 kohms |



SCHEMATIC DIAGRAM

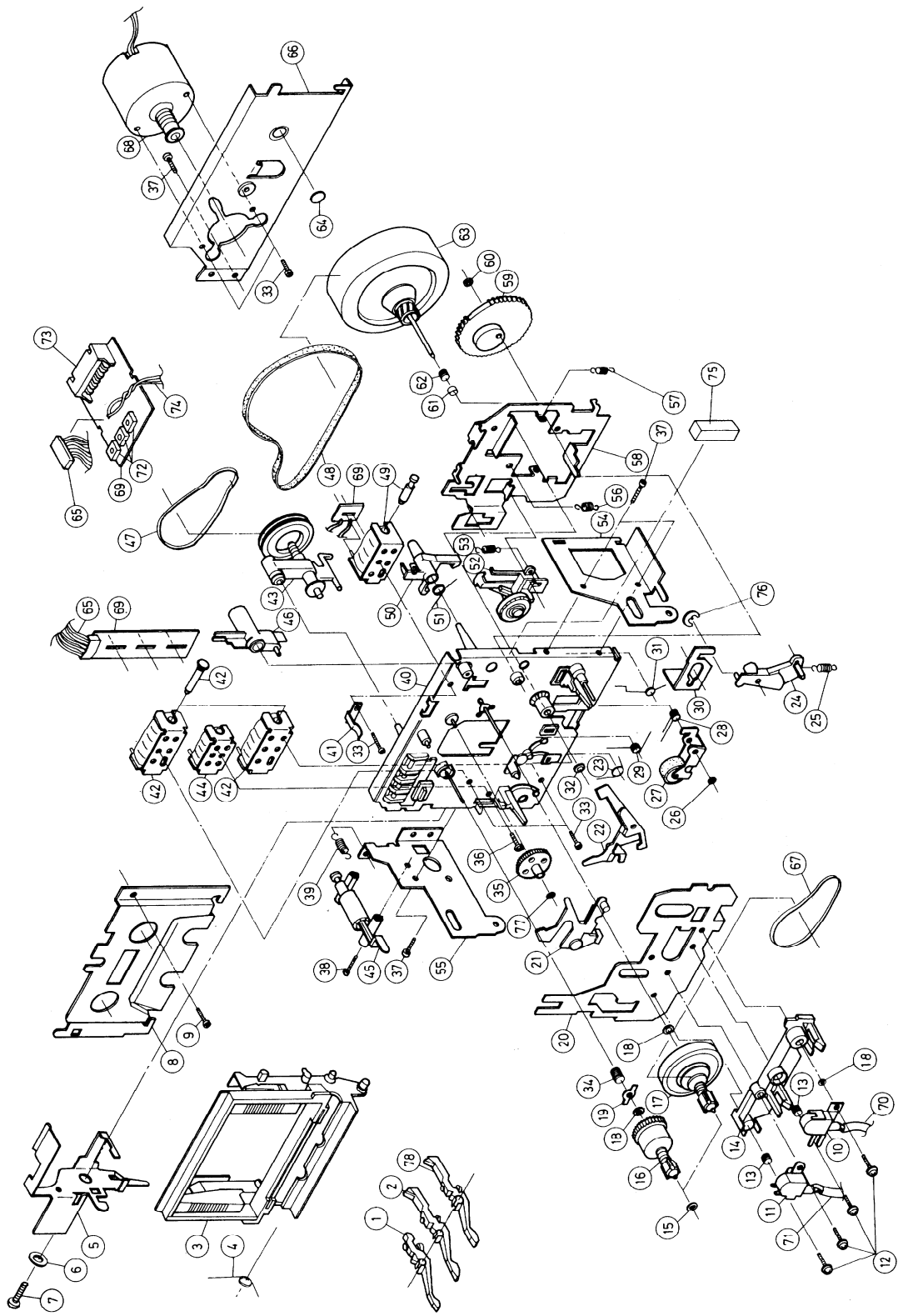


NOTES

- * ALL RESISTORS ARE IN OHMS 1/4 WATT AND 1% TOLERANCE
- * ALL CAPACITORS ARE IN PF UNLESS OTHERWISE NOTED
- * ELECTROLYTIC CAPACITORS ARE 50V UNLESS OTHERWISE NOTED
- * OTHERWISE NOTED WITH VOLTAGE AND IS CC VOLTAGE STOP MODE.
- * THE COMPONENTS IDENTIFIED BY MARK ARE CRITICAL FOR SAFETY. REPLACE ONLY WITH PART NUMBER SPECIFIED.

A B C D E F G

TAPE MECHANISM-EXPLODED VIEW



1 2 3 4 5

Outputs: Line OUT: 2
 Std output level: 500 mV (0 dB)
 Opt load impedance: over 50 kohms
 Headphone Jack: 1
 Opt load impedance: 8–200 ohms

Motor: DC servo motor: 1
 Rec/PB head: Special Hard Permalloy
 Erase head: Ferrite

Semiconductors: TR: 45 Diodes: 21 IC: 10
 LED: 11

Power Supply: AC 120V/60 Hz
 Power Consumption: 24 watts
 Dimensions: 418(W) x 112(H) x 270(D) mm
 (16-1/2" x 4-3/8" x 10-5/8")
 Weight: 4.5 kg (9.9 lbs.)

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

SERVICE PROCEDURES

1. Replacing the lamp

This unit used the lamp listed below.

| Circuit No. | Parts No. | Description |
|-------------|-----------|-------------|
| PL-601 | 210090 | PL14V 150mA |

Caution; Before replacing the lamp. Be sure to unplug the power supply cable.

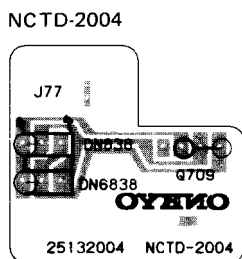
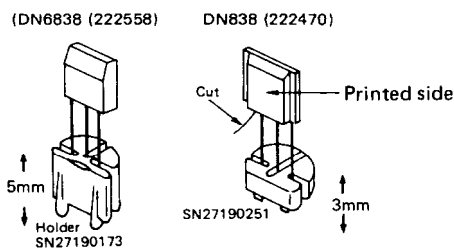
2. Instruction resistance measurement

Connect the insulating-resistance tester between the plug of power supply cord and chassis.

Specifications; 500V more than 10MΩ

3. Replacing the Hall ICs

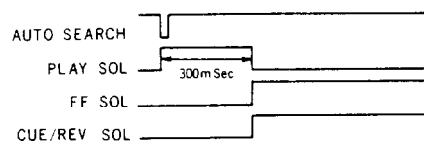
Cautions: As the position of leg of DN6838 and DN838 differ, use the same Hall IC when replacing.



MICROCOMPUTER OPERATION TIMING

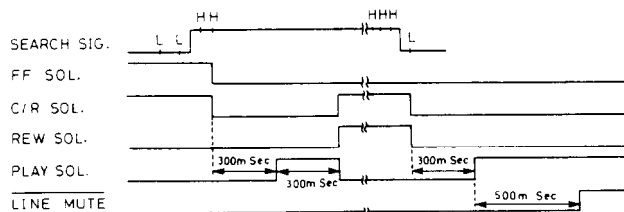
1. Start of Cue/Rewind (Auto Search and song location)

When the auto search (in the FF or REW direction) or the FF or REW button (for song location) is pressed, the FF or REW and Cue/Review solenoids are both switched on simultaneously 300 msec. after the play solenoid has been switched on.



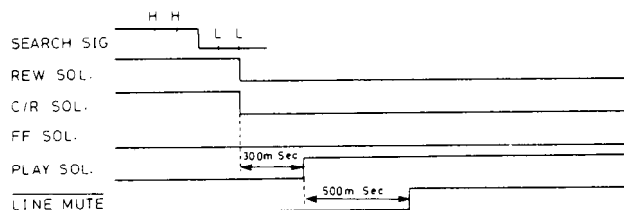
2. Song Location with Cue (AMCS in FF direction and song skip song location)

When the beginning of the desired song is detected, the deck is switched to the stop mode for 300 msec. and, in order to return to the beginning of the song, review operation is performed. When the beginning is located, the deck is again switched to the stop mode for 300 msec. and then switched to the play mode. 500 msec. after play has begun, muting on line out is switched off. If the beginning of the song is not located during review operation, the deck is switched to the play mode 500 msec. later.

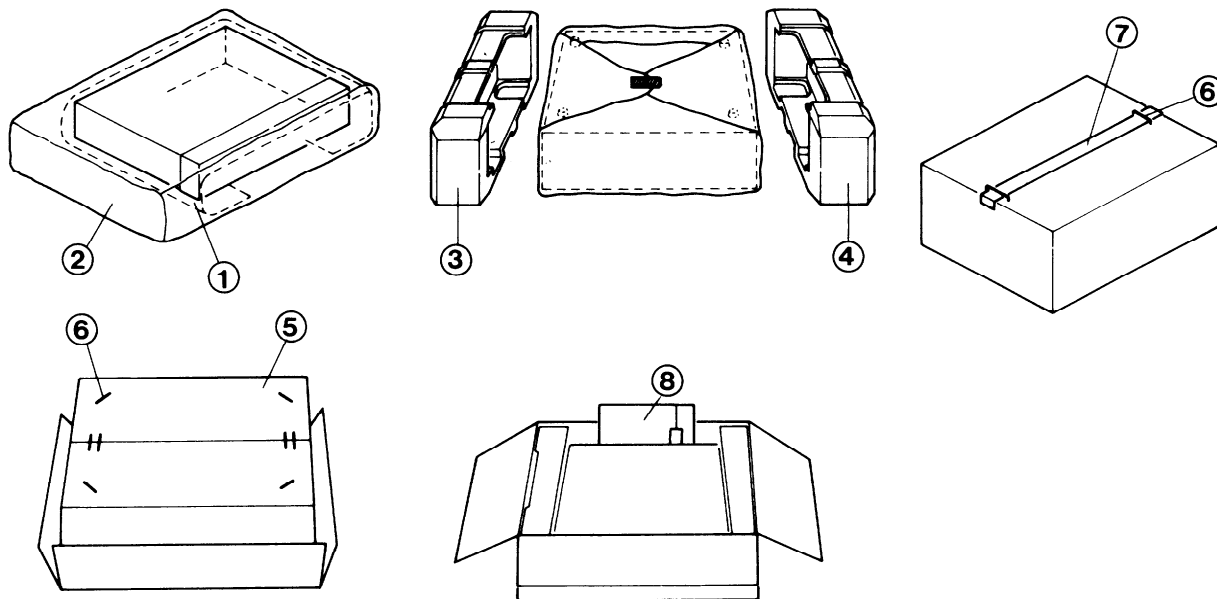


3. Song Location with Review (AMCS in REW direction and song skip song location)

When the beginning of the desired song is detected, the deck is switched to the stop mode for 300 msec. and then switched to the play mode. 500 msec. after play has begun, muting on line out is switched off.



PACKING VIEW



D MODEL

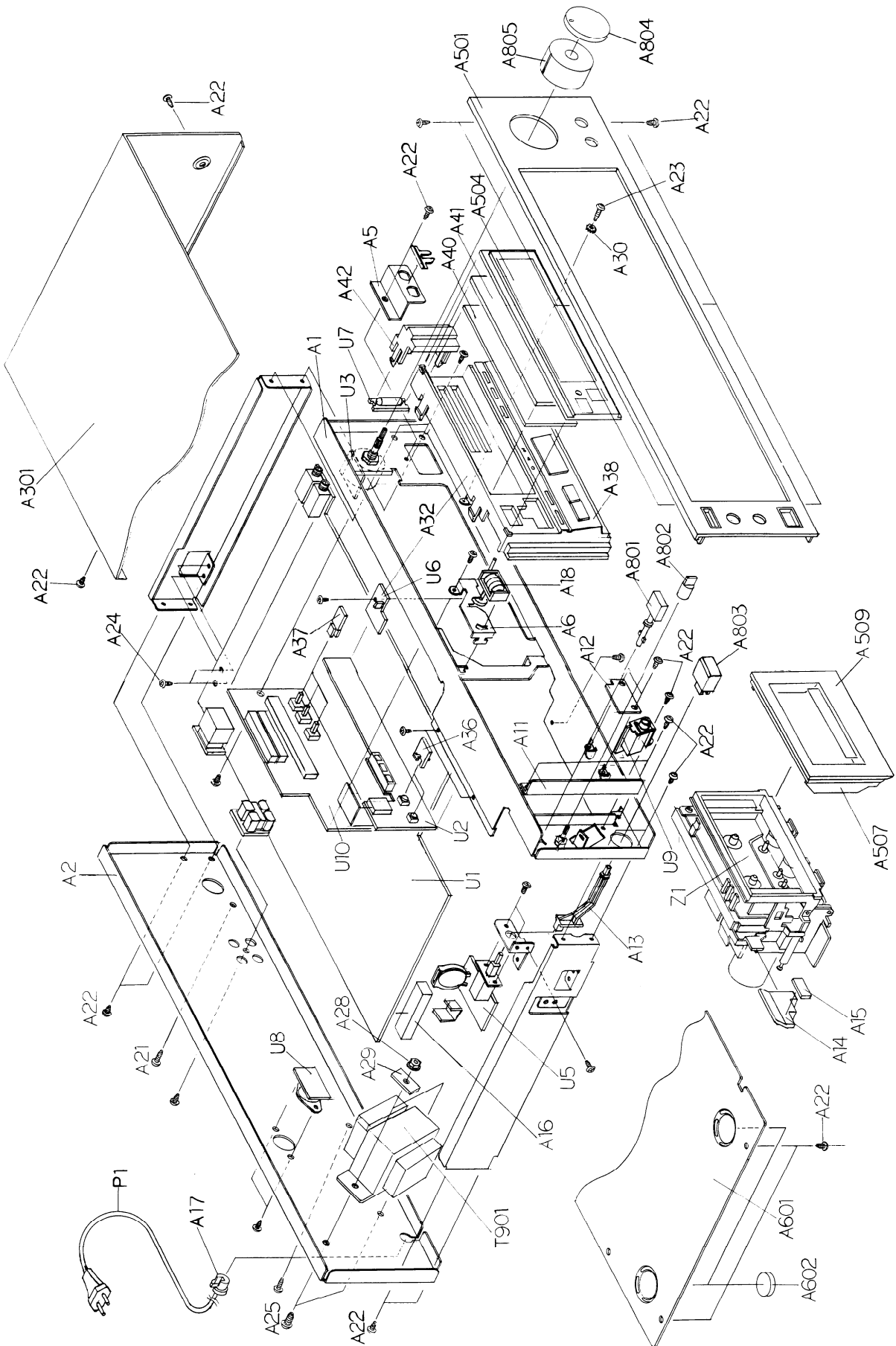
| REF. NO. | PART NO. | DESCRIPTION |
|----------|---------------------|------------------------------|
| 1 | 29095012-1 | 500x800 Protection sheet (B) |
| 2 | 29100063 | 500x750 Poly bag |
| 3 | 29090746 | Pad (L) |
| 4 | 29090747 | Pad (R) |
| 5 | 29050945 | Master carton box |
| | 29050946 | Master carton box (B) |
| 6 | 282301 | Sealing hook |
| 7 | 260012 | Damplon tape |
| 8 | Accessory bag ass'y | |
| | 29340778 | Instruction manual |
| | 2010095 | Connection cable |
| | 29365006-5 | Waranty card (N) |
| | 29358002A | Service station list (N) |
| | 29100005 | 220x330 Poly bag |

G/W MODEL

| REF. NO. | PART NO. | DESCRIPTION |
|----------|---------------------|------------------------------|
| 1 | 29095012-1 | 500x800 Protection sheet (B) |
| 2 | 29100063 | 500x750 Poly bag |
| 3 | 29090746 | Pad (L) |
| 4 | 29090747 | Pad (R) |
| 5 | 29050945 | Master carton box |
| | 29050946 | Master carton box (B) |
| 6 | 282301 | Sealing hook |
| 7 | 260012 | Damplon tape |
| 8 | Accessory bag ass'y | |
| | 29340779 | Instruction manual (G) |
| | 2010095 | Connection cable |
| | 25055040 | Conversion plug CV-K-2 (G) |
| | 29100005 | 220x330 Poly bag |

NOTE (N) : Only U.S,A Model
 (G) : Only 120/220V Model
 (B) : Black Model

CHASSIS EXPLODED VIEW



CHASSIS EXPLODED VIEW-PARTS LIST

| REF. NO. | PART NO. | DESCRIPTION | REF. NO. | PART NO. | DESCRIPTION | REF. NO. | PART NO. | DESCRIPTION |
|----------|-----------|---|----------|-----------|--|----------|----------|---|
| A1 | 27110219 | Front bracket | A301 | 28184193 | Top cover (S) | △ U5 | 11228503 | NASW-2003, Power switch pc board ass'y |
| A2 | 27120599 | Back panel (D) | A501 | 28184192 | Top cover (B) | U6 | 11228504 | NATD-2004, Holl IC pc board ass'y |
| A3 | 27120600 | Back panel (G) | A502 | 11228121 | Front panel ass'y (S) | U7 | 11228505 | NAPL-2005, Edge light pc board ass'y |
| A4 | 27120602 | Back panel (W) | A503 | 27267216 | Guide, eject | U8 | 11228506 | NARM-2006, Remote control terminal pc board ass'y |
| A5 | 27140896 | Bracket, headphone | A501 | 27267215 | Guide, power | U9 | 11228507 | NAHP-2007, Headphone terminal pc board ass'y |
| A6 | 27140706 | Bracket, microphone | A502 | 11248121 | Front panel ass'y (B) | U10 | 11228508 | NADIS-2008, Display pc board ass'y |
| A7 | 27140897 | Bracket, counter | A503 | 27267273 | Guide, eject | Z1 | 244050 | NDM-45, Cassette mechanism ass'y |
| A8 | 27175104 | Insulating plate (G) | A504 | 27267272 | Guide, power | | | |
| A9 | 28400098B | Plate | A507 | 28400182 | Clear plate | | | |
| A10 | 28175075 | Insulating plate | A504 | 28191248A | Cassette lid ass'y (S) | | | |
| A11 | 27273030B | Joint (L) | A507 | 28400184A | Cassette lid ass'y (B) | | | |
| A12 | 27273024 | Joint | A509 | 28400183 | Window | | | |
| A13 | 27270117 | Spacer | A601 | 28400185A | Window | | | |
| A14 | 28140553 | 60x10x13mm, Cushion | A602 | 27170155 | Bottom board | | | |
| A15 | 270025 | SR-3PM, Strainrelief (D) | A701 | 27175028 | Leg | | | |
| A16 | 270028 | SR-4K-4, Strainrelief (G/W) | A801 | 834430068 | 3TTS+6B (BC), Tapping screw | | | |
| A17 | 24601163 | Counter | A801 | 28320856 | Knob, eject (S) | | | |
| A18 | 28140552 | 28x28x0.5mm, Cushion | A802 | 28321165A | Knob, eject (B) | | | |
| A19 | 834230108 | 3TTS+10B (Ni), Nickel screw | A803 | 28320797 | Knob, selector (S) | | | |
| A20 | 834420068 | 3TTS+6B (BC), Tapping screw | A803 | 28321130 | Knob, selector (B) | | | |
| A21 | 834420108 | 3TTS+10B (BC), Tapping screw | A803 | 28320852 | Knob, power (S) | | | |
| A22 | 831130088 | 3TTW+8B (BC), Tapping screw | A804 | 28321160 | Knob, power (B) | | | |
| A23 | 838440109 | 4TTB+10C (BC), Tapping screw | A805 | 28320671 | Knob L (S) | | | |
| A24 | 82142604 | 2.6P+4F (BC), Pan head screw | A805 | 28321711 | Knob L (B) | | | |
| A25 | 82143006 | 3P+6FN (BC), Pan head screw | A805 | 28320672A | Knob R (S) | | | |
| A26 | 86414010 | FWN4x10FN, Flange nut | △ P1 | 28321712 | Knob R (B) | | | |
| A27 | 870065 | Special washer | P2 | 253098B | AS-UC-3, Power supply cord (D) | | | |
| A28 | 87313006 | M-3B, Toothed washer | △ S902 | 253083-1 | AS-CEE, Power supply cord (G/W) | | | |
| A29 | 28321531B | Knob ass'y (S) | | 260208 | Binder | | | |
| A30 | 28321532B | Knob ass'y (B) | | 25065123 | NSS-1258P, Voltage selector switch (W) | | | |
| A31 | 28321540 | Knob, repeat (S) | △ T901 | 230811 | NPT-839D, Power transformer (D) | | | |
| A32 | 28321541 | Knob, repeat (B) | | 230799 | NPT-839G, Power transformer (D) | | | |
| A33 | 28321542 | Knob, selector (S) | | 230800 | NPT-839DG, Power transformer (G) | | | |
| A34 | 28321543 | Knob, selector (B) | | | (W) | | | |
| A35 | 27262278A | Plate (S) | U1 | 11225899 | NAAF-1999, Rec./pb amplifier pc board ass'y (D) | | | |
| A36 | 27262279A | Plate (B) | | | board ass'y (D) | | | |
| A37 | 28133099 | Back plate | | 11234599B | NAAF-1999b, Rec./pb amplifier pc board ass'y (G/W) | | | |
| A38 | 28130214 | Dial plate | U2 | 11228500 | NASW-2000, Control switch pc board ass'y | | | |
| A39 | 27190276 | Holder, lamp | U3 | 11228501 | NAVR-2001, Input volume pc board ass'y | | | |
| A40 | 834430108 | 3TTW+10B (BC), Tapping screw (G) | U4 | 11228502 | NASW-2002, Timer switch pc board ass'y | | | |
| A41 | 82143006 | 3P+6FN (BC), Pan head screw for voltage selector switch (W) | | | | | | |

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

TAPE MECHANISM PARTS LIST

| PLACE | REF. NO. | PARTS NO. | DESCRIPTION | PLACE | REF. NO. | PARTS NO. | DESCRIPTION |
|------------|----------|-----------|---------------------------|------------|----------|-----------|------------------------------|
| D1 | 1 | 24610913 | Cassette detection lever | D5 | 61 | 24604051 | Collar |
| D1 | 2 | 24610914 | Recording detection lever | D5 | 62 | 24605449 | Spring |
| B3 | 3 | 24610915 | Cassette holder ass'y | D6 | 63 | 24602218 | Flywheel |
| B4 | 4 | 24605399 | Spring for door | C6 | 64 | 24604050 | Spacer |
| A1 | 5 | 24607025 | Eject arm | A4-A5 | 65 | 2000234 | Connector |
| A1 | 6 | 24604048 | Spacer | C7 | 66 | 24607024 | Motor bracket |
| A1 | 7 | 82113006 | 3x6mm, Pan head screw | G3 | 67 | 24602231 | Counter belt |
| B2 | 8 | 24610912 | Cassette panel | B7 | 68 | 24601132 | Motor |
| B2 | 9 | 801293 | 2.6x12mm, Tapping screw | B4, B5, C5 | 69 | 24606178 | Pc board |
| G1 | 10 | 24600040 | Rec/pb head | H2 | 70 | | Connector |
| G1 | 11 | 24600032 | Erase head | G1 | 71 | | Connector |
| H1 | 12 | 801291 | Screw | B5 | 72 | 25035389 | Tact switch |
| G1, G2 | 13 | 24605387 | Head azimuth spring | A6 | 73 | | Connector |
| F1 | 14 | 24604049 | Head stand | B4 | 74 | | Lead wire |
| F1 | 15 | 24610923 | Washer | F5 | 75 | 24610977 | Cushion |
| F1 | 16 | 24602211 | Supply reel ass'y | G4 | 76 | 893015 | E1.5, Circlip |
| F2 | 17 | 24602256 | Take-up reel ass'y | E3 | 77 | 24610840 | Washer |
| F2, G2 | 18 | 24610924 | Poly-slider washer | D1 | 78 | 24610978 | Chrome tape detection switch |
| E2 | 19 | 24610921 | Spring holder | | | | |
| E2 | 20 | 24610916 | Head chassis | | | | |
| E2 | 21 | 24607018 | Brake arm L | | | | |
| E3 | 22 | 24607019 | Brake arm R | | | | |
| E3 | 23 | 24605437 | Brake spring | | | | |
| G4 | 24 | 24610917 | Lock plate | | | | |
| G4 | 25 | 24605438 | Spring for 24 | | | | |
| F3 | 26 | 2480104 | Washer | | | | |
| F3 | 27 | 24602214 | Pinch roller ass'y | | | | |
| F4 | 28 | 24605439 | Spring for 27 | | | | |
| F3 | 29 | 24605440 | Spring | | | | |
| F4 | 30 | 24610918 | Operation plate | | | | |
| F4 | 31 | 24605441 | Assist spring | | | | |
| E3 | 32 | 24610926 | Washer | | | | |
| C6, D4, E3 | 33 | 801176 | 2.6x4, Screw with washer | | | | |
| E2 | 34 | 24605442 | Back tension spring | | | | |
| E3 | 35 | 24602213 | Idler gear | | | | |
| D3 | 36 | 801177 | 2.6x5, Screw with washer | | | | |
| B6, D2, F5 | 37 | 833130057 | 3x5, Tapping screw | | | | |
| C2 | 38 | 833120127 | 2x12, Tapping screw | | | | |
| C3 | 39 | 24605443 | Eject arm spring | | | | |
| D4 | 40 | 24610919 | Chassis | | | | |
| C4 | 41 | 24605444 | Cassette holding spring | | | | |
| A3, A4 | 42 | 24606156 | Solenoid | | | | |
| C4 | 43 | 24610920 | Clutch ass'y | | | | |
| A3 | 44 | 24606157 | Solenoid | | | | |
| D2 | 45 | 24610834 | Damper | | | | |
| C4 | 46 | 24607020 | Change arm | | | | |
| B5 | 47 | 24602186 | Belt | | | | |
| C5 | 48 | 24602215 | Belt | | | | |
| D5 | 49 | 24606158 | Solenoid | | | | |
| D4 | 50 | 24607021 | Plyback arm | | | | |
| D4 | 51 | 24605445 | Spring for 50 | | | | |
| D4 | 52 | 24602216 | Idler ass'y | | | | |
| D5 | 53 | 24605446 | Spring for 52 | | | | |
| E5 | 54 | 24607022 | Bracket R | | | | |
| D2 | 55 | 24607023 | Bracket L | | | | |
| F5 | 56 | 24605447 | Head base spring | | | | |
| F5 | 57 | 24605448 | Assist base spring | | | | |
| F5 | 58 | 24610922 | Assist base | | | | |
| E6 | 59 | 24602217 | Playback gear | | | | |
| D6 | 60 | 870094 | Washer | | | | |

ADJUSTMENT PROCEDURES

PRECAUTIONS

1. Before adjustment, clean the following parts with an alcohol moistend swab.
 - * record/playback head
 - * erase head
 - * pinch roller
 - * capstan
2. Do not use magnetized screwdriver for adjustments.
3. 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
Blank tapes (completely erased)

| | |
|--------|-------------|
| NORMAL | NEW UD90 |
| HIGH | NEW XL-II90 |
| METAL | NEW MX60 |

Test tapes

| | |
|---------|---|
| VTT-658 | : 10 KHz, -15dB |
| MTT-111 | : 3 kHz, -10dB |
| MTT-150 | : Dolby level calibration 400Hz, tone 200nWb/m |

| Item | Connection of instrument | Line input | Test tape | Mode | Output indicator | Adjustment point | Adjust | Remarks | |
|------|--|---|------------------------------|--------------|-------------------|------------------------------|---|--|----------------------------|
| 1 | Tape speed | Frequency counter to LINE output terminal | MTT-111 | PB | Frequency counter | Semi-fixed on the moter | 3,010 to 3,020Hz | | |
| 2 | Head azimuth | AC voltmeter and oscilloscope to LINE output terminal | VTT-658 | PB | AC voltmeter | Head azimuth screws | Maximum and same phase at channels L and R. | See fig. 1 Set the semi-fixed resistors R129 and R130 to center position. | |
| 3 | Playback level | AC voltmeter to terminals TP-101 and TP-102 | MTT-150 | PB | AC voltmeter | R129 (Ch. L) R130 (Ch. R) | 580mV | | |
| 4 | Bias current | Fig. 2 | 1kHz, -20dB and 12kHz, -20dB | NEW XL-II 90 | REC/PB | AC voltmeter | R439 (Ch. L) R440 (Ch. R) | Same level at REC/PB | INPUT VOLUME maximum |
| 5 | Record level | Fig. 2 | 1kHz | REC PAUSE | AC voltmeter | Attenuator or AF OSC output | 350mV | INPUT VOLUME maximum | |
| | | | | REC/PB | AC voltmeter | R401, R402 | Same level at REC/PB. | | |
| 6 | <p>Clock adjustment Connect the frequency counter via the resistor 100 kΩ to the terminal TP701 on the control pc board. Adjust the R701 so that the frequency counter indication becomes 170 ± 10 kHz.</p> <div style="text-align: right;"> <pre> graph LR TP701[Test point TP701] --- R100K[100K] --- FC[Frequency Counter] </pre> </div> | | | | | | | | |

PLAY torque 35 ~ 55gcm
FF, REW torque 70 ~ 130gcm

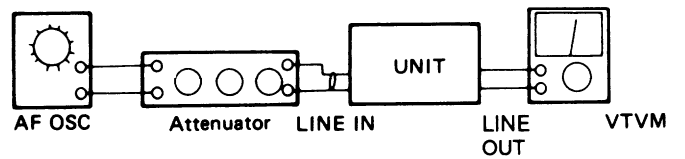
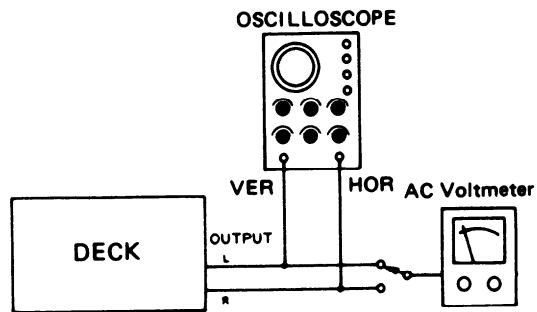
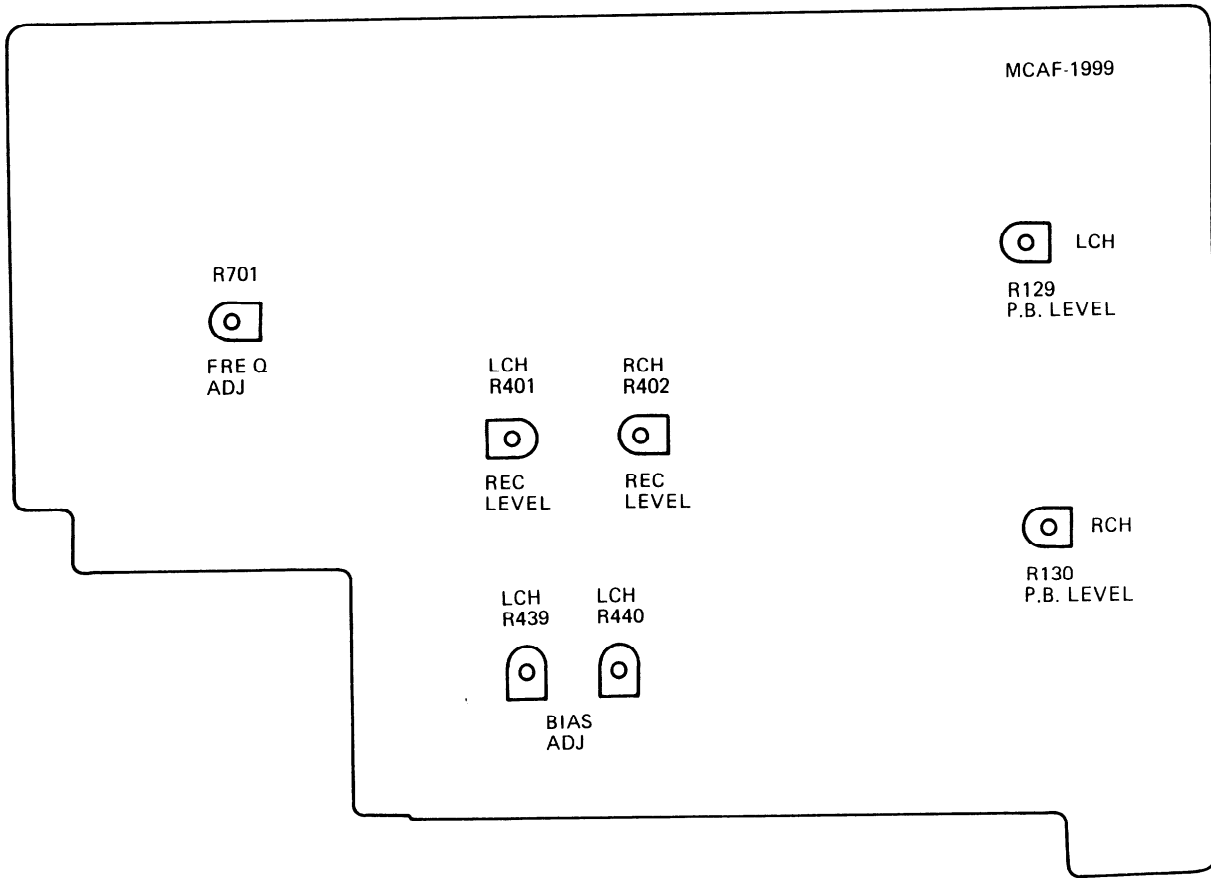
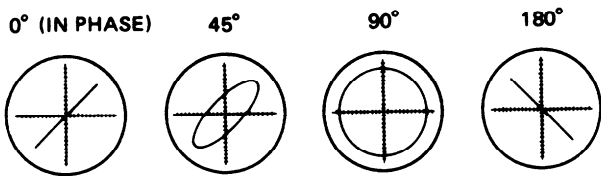


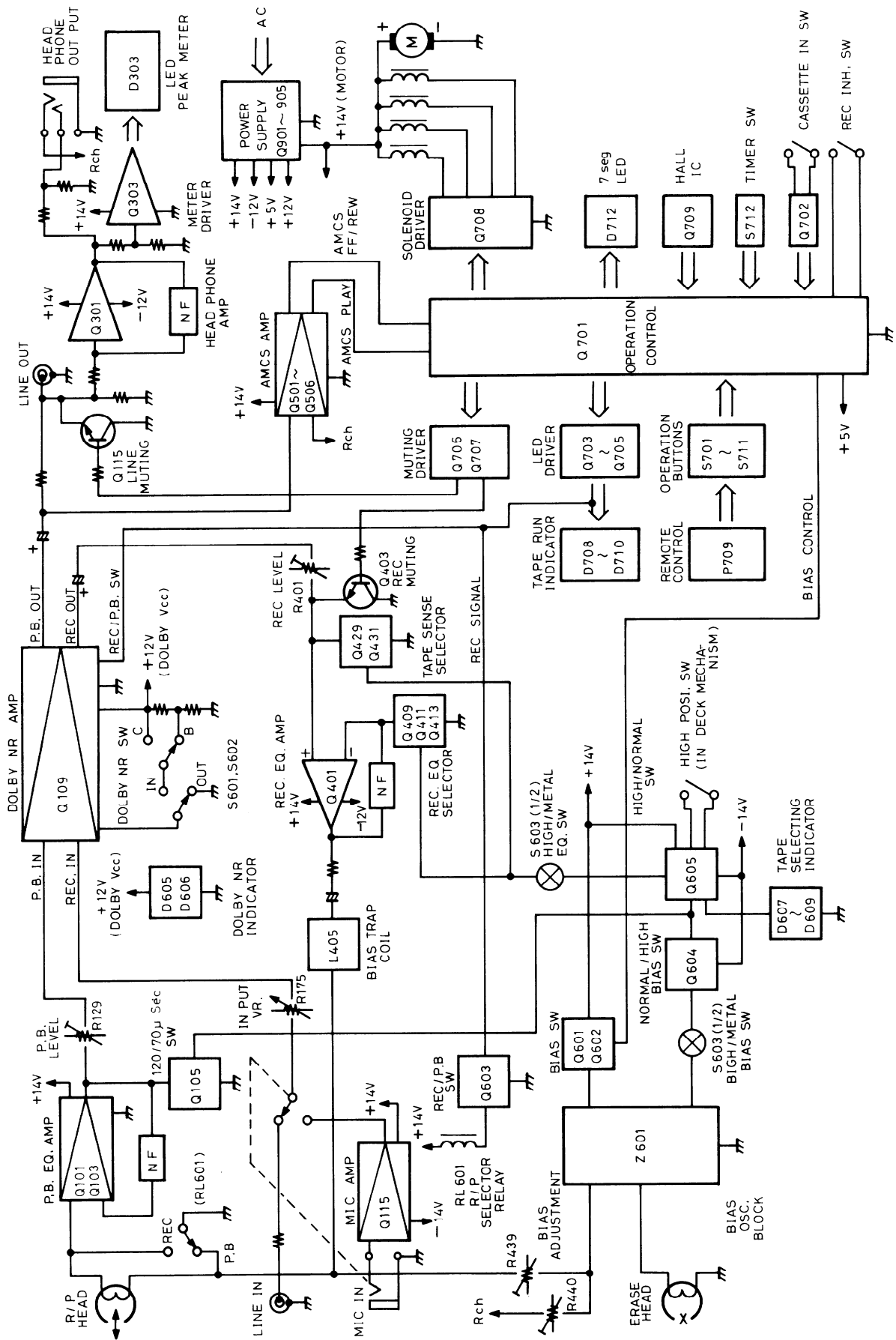
fig-2



Confirming phase relationship

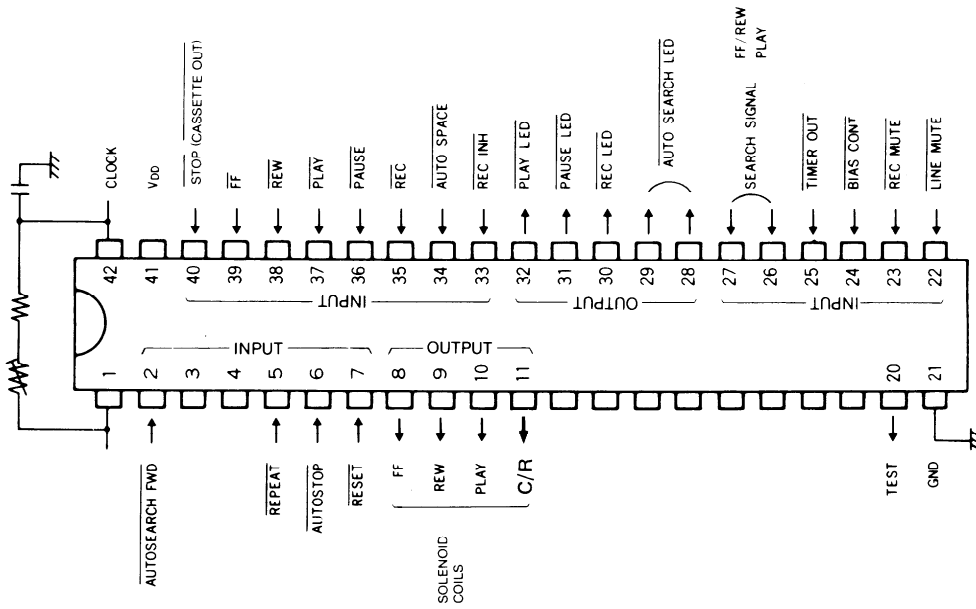
fig-1

BLOCK DIAGRAM

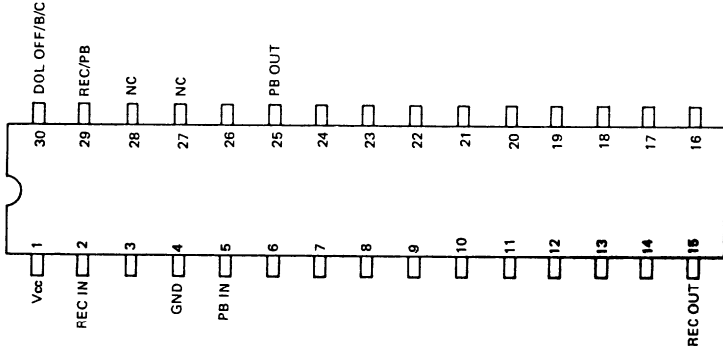


IC BLOCK DIAGRAM

**LM6405L-233
(MICROCOMPUTER)**



**HA-12058 NT
(DOLBY B & C TYPE NOISE REDUCTION SYSTEM)**



**LB-1287
(SOLENOID DRIVER)**

