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ONKYO® SERVICE MANUAL

DIRECT DRIVE FULLY AUTOMATIC TURNTABLE

MODEL CP-1130F



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SPECIFICATIONS

| | | | |
|-----------------------------------|---|---------------------------------------|---|
| Type: | Direct drive fully automatic turntable auto lead-in and return; reject, repeat, search and cue by button function; two motor micro-computer design. | Tracking Force: | 0 – 3.0 grams |
| Turntable platter: | 310 mm (12-1/4") aluminum die-cast, 1.2 kg (2.6 lbs.) (with platter mat) | Other Features: | Tracking force direct readout scale Removable headshell Slide-type anti-skating control |
| Motor: | Electronic servo direct drive brushless DC motor | Power Supply: | AC 120 V 50/60 Hz, AC 110-120/220-240 V 50/60Hz |
| Speeds: | 33-1/3, 45 rpm, adjustable $\pm 3\%$ | Power Consumption: | 22 Watts (Max.) 10 Watts (Normal) |
| Wow & Flutter: | less than 0.025% (WRMS) | Dimensions (WxDxH): | 418 x 380 x 130 mm (16-1/2" x 15" x 5-1/8") |
| Signal-to-Noise Ratio: | better than 72 dB (DIN B) | Weight: | 5.6 kg (12.3 lbs.) |
| Tonearm: | Statically balanced straight type, carbon fiber/pipe construction | Accessories: | Headshell, counterweight, overhang gauge, adapter, instruction manual |
| Effective Arm Length: | 224 mm (8-7/8") | Cabinet Composition | |
| Overhang: | 13 mm (1/2") | Turntable Cabinet: | Plastic |
| Offset Angle: | 21 degrees | Bottom Panel: | Plastic (ABS) |
| Maximum Tracking Error: | +3 degrees, -1 degrees | Dust Cover: | Polystyrene |
| Suitable Cartridge Weight: | Min. 5, Max. 9 grams | Optional Recommended Headshell | SH-21E |

Specifications are subject to change for further product improvements.

SERVICE GUIDE

1. Cautions

- The printed resistors are used on the digital circuit pc board. The surface is strong, but it is not damaged with driver etc. If it becomes necessary to replace the printed resistor for any reason, cut the printed resistor with cutter, and add the same rating solid resistor.
- Do not rotate the main motor with the unit turned upside down. If it becomes necessary to invert the unit for check purposes, remove the socket of main motor.

2. Replacing the fuse

Remove the bottom board. The fuse is located on the digital circuit PC board.

Note: For continued protection against fire hazard, replace only with same type and same rating fuse.

| Part No. | Description |
|----------|------------------------------------|
| 252046 | 1.5A-ST-6 (Only 120 V model) |
| 252073 | 1.6A-SE-EAK (Only Universal model) |

3. Voltage selector (Universal model)

The voltage selector is located on bottom of the cabinet. If a voltage change is necessary, change the voltage selector switch to the proper voltage.

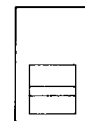
4. Precision Platter Sheet

This platter sheet is precision molded using a special type of plastic that improves platter-to-disc interface characteristics. Always handle the sheet with care to avoid scratching the mirror-finished surface.

Cleaning

- Wipe the surface with damp cotton.
- While the surface is still damp, wipe off the surface of the sheet with a velvet record cleaning cloth using a circular could electric charges so that dust and dirt particles do not stick to the sheet. This chemical may appear on the surface of the sheet at times, but it has no effect on records. If it detracts from the appearance of the platter sheet, wipe it off using the method described above.

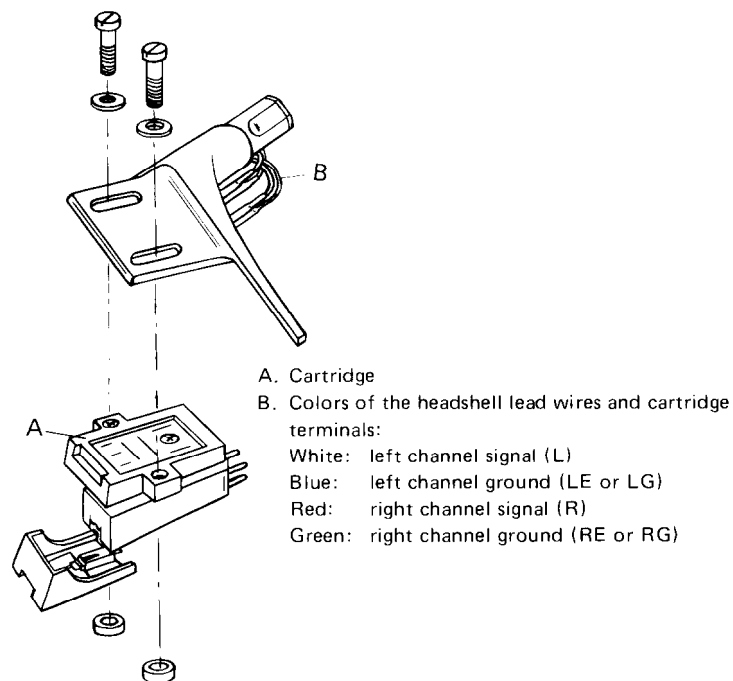
110 – 120 V ~



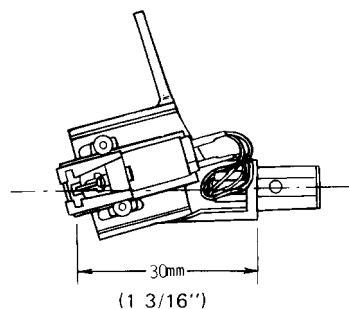
220 – 240 V ~

5. Attaching the cartridge

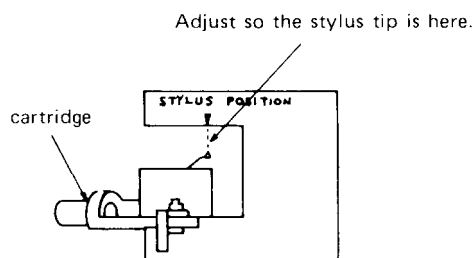
Attach the cartridge as shown below, connecting each of the color coded lead wires to the proper terminal. If a mistake is made, no sound will be heard or stereo reproduction will be lost. Also, to prevent damage to the stylus during installation operations, leave its cover on or remove the stylus completely.



Adjust so the distance between the stylus tip and the base of the headshell is 30 mm (1 3/16") and tighten the screws. This assures the effective length and overhang of the tonearm are correct.



Use the included overhang gauge as shown below, placing the cartridge in the gauge and setting the location of the stylus tip as indicated.



After attaching a different cartridge, always balance the tonearm again and set the appropriate tracking force.

6. Search Operation

When the Search Button is depressed, the tonearm rises and slowly moves over the record toward the center stopping when the button is released. Depress the Cue Button to lower the tonearm to the record surface and start record play. If the Search Button is depressed only once, the tonearm will move to the innermost grooves of the record; if depressed once more, the tonearm will return to the outermost grooves. Use the Search Button to simplifier manual operation.

7. Remote Control

This unit is equipped with a jack so that the RC-5T remote control unit (sold separately) can be used to perform the following tuntable operations from the comfort of your listening position.

- 1) Play/Reject
- 2) Cue (UP/DOWN)
- 3) Search (IN/OUT)
- 4) Repeat

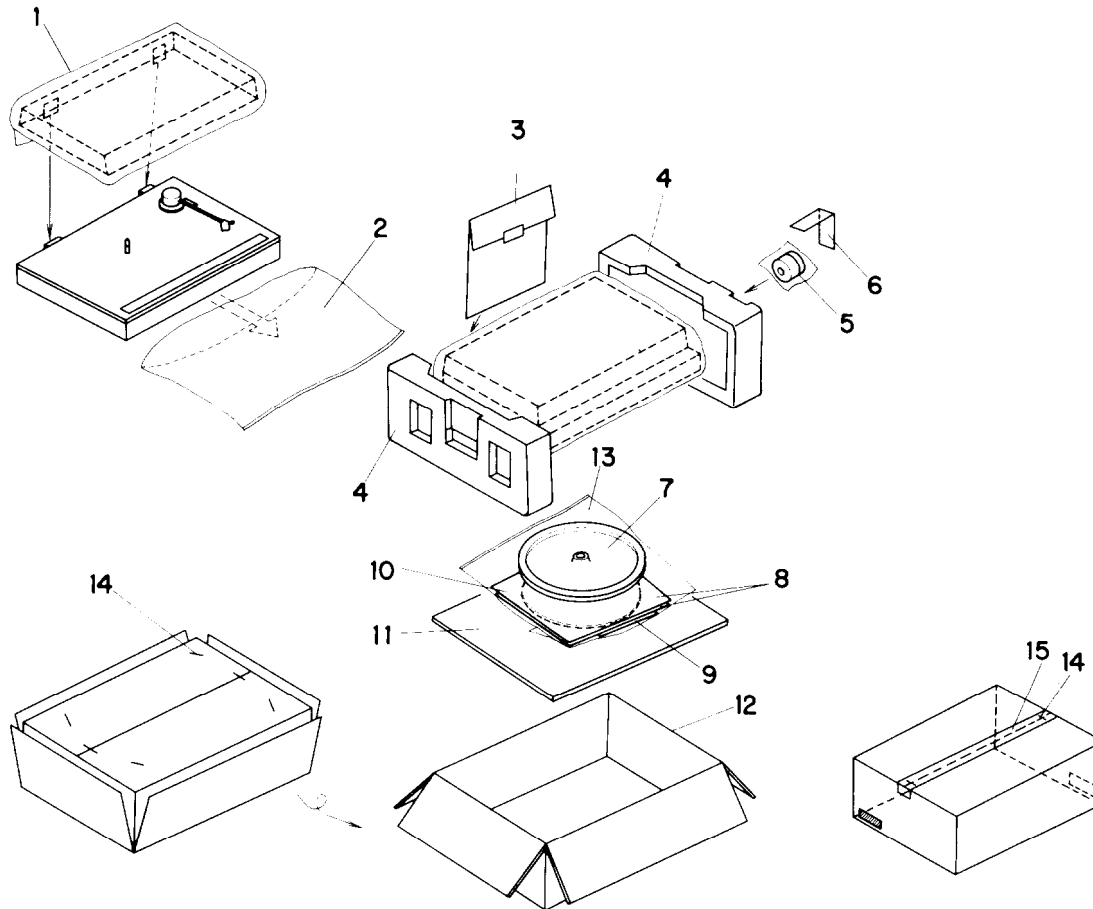
8. Memory Repeat

The memory repeat function is used to repeatedly play a record from a desired selection. Read the following instructions carefully to assure correct operation.

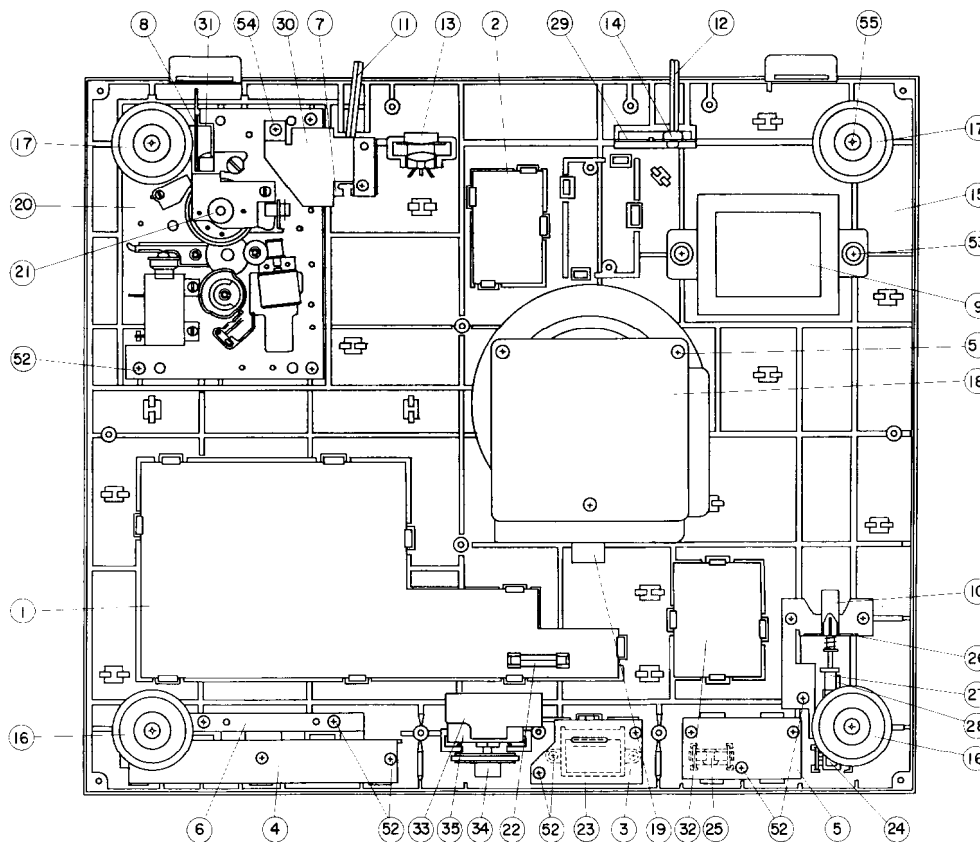
1. Start the memory repeat function only with the tonearm still in the arm rest. If memory repeat is operated during record play, the tonearm will repeatedly play the record from the beginning.
2. Using the Search Button, move the tonearm until it is directly over the section where record play is to be repeated.
3. Depress the Repeat Button to the Repeat position.
4. Depress the Cue Button to lower the tonearm onto the record and memory repeat operation will begin. Note that if the Cue Button is depressed before the Repeat Button, normal repeat operation (i.e., from the beginning of the record) will begin.

Note: Memory repeat can be used for any section of the record from the outer edge (set by the record size selector) to the innermost grooves.

PACKING PROCEDURES



| REF. NO. | PARTS NO. | DESCRIPTION |
|----------|------------|---|
| 1 | 29100050 | Protection bag |
| 2 | 29100049 | 640×620mm, Poly bag |
| 3 | 292049A | 45 rpm adaptor |
| | 24509197 | Overhang gauge |
| | 28199039 | Film for T.T. sheet |
| | 29340451 | Instruction manual (120V model) |
| | 29340452 | Instruction manual (Universal model) |
| | 29365006 | Warranty card (U.S.A. model) |
| | 29365005-3 | Warranty card (Germany model) |
| | 29358002 | Service station list (U.S.A. model) |
| | 24501330 | Mounting screw for cartridge |
| | 25055018 | CV-K-1, Conversion plug (Universal model) |
| | 29100005 | 220×330mm, Poly bag |
| 4 | 29090536 | Pad |
| 5 | 24501341 | Counter weight |
| | 29100002 | 80×150mm, Poly bag |
| 6 | 260013 | 50×110mm, Tape |
| 7 | 24502111 | Turntable platter |
| 8 | 29095161 | Protection sheet for T.T. mat |
| 9 | 29355065 | Caution sheet |
| 10 | 24509231 | T.T. mat |
| 11 | 29090526 | Pad sheet |
| 12 | 29050387 | Master carton box |
| 13 | 29100046 | 370×470mm, Poly bag |
| 14 | 282301 | Sealing hook |
| 15 | 260012 | W50mm, Tape |



Universal model

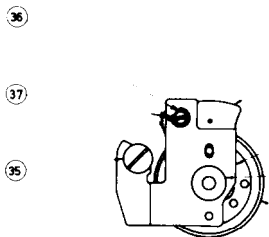
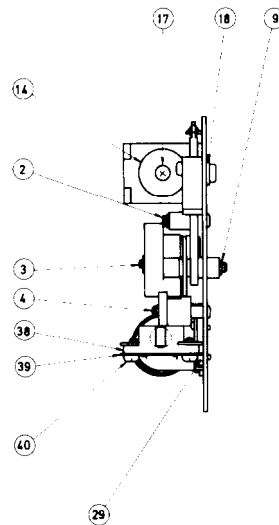
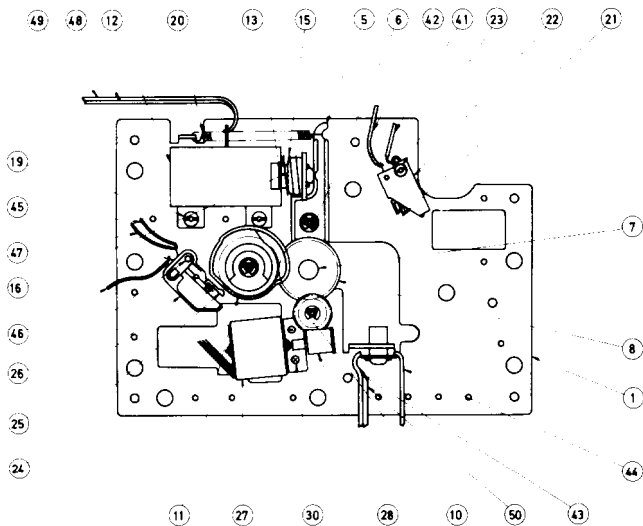
| REF. NO. | PARTS NO. | DESCRIPTION |
|----------|------------|--|
| 1 | 16720510C | NADG-910c, Digital circuit pc board ass'y |
| 2 | 16740511A | NAPS-911a, Power supply pc board ass'y |
| 3 | 16719512A | NADIS-912a, Power indicator pc board ass'y |
| 4 | 16739513 | NASW-913, Switch pc board ass'y |
| 5 | 16719514A | NASW-914a, Switch pc board ass'y |
| 6 | 16739515 | NACOV-915, Cover pc board ass'y |
| 7 | 16739516 | NAPI-916, Tonearm terminal pc board ass'y |
| 8 | 16739517 | NARET-917, Return pc board ass'y |
| 9 | 230400 | NPT-709AG, Power transformer |
| 10 | 25035191 | NPS-111-L155P, Power switch |
| 11 | 24505127 | Output cable |
| 12 | 253083 | AS-CEE, Power supply cable |
| 13 | 25050045 | NSCT-7P14, Remote terminal |
| 14 | 270280 | SR-4K-4, Strainrelief |
| 15 | 28110188 | Cabinet |
| | 27262066-1 | Plate (R) |
| | 27262067 | Plate (L5) |
| 16 | 24509216-2 | Leg |
| 17 | 24509216-3 | Leg |
| 18 | 24502110 | Motor with control pc board |
| 19 | 25050068 | NSAS-6P036, 6P socket |
| 20 | 24506450A | Mechanism ass'y |
| 21 | 24501340 | Tonearm |

120V model

| REF. NO. | PARTS NO. | DESCRIPTION |
|----------|------------|--|
| 1 | 16719510B | NADG-910b, Digital circuit pc board ass'y |
| 2 | 16739511 | NAPS-911, Power supply pc board ass'y |
| 3 | 16719512A | NADIS-912a, Power indicator pc board ass'y |
| 4 | 16739513 | NASW-913, Switch pc board ass'y |
| 5 | 16719514A | NASW-914a, Switch pc board ass'y |
| 6 | 16739515 | NACOV-915, Cover pc board ass'y |
| 7 | 16739516 | NAPI-916, Tonearm terminal pc board ass'y |
| 8 | 16739517 | NARET-917, Return pc board ass'y |
| 9 | 230399 | NPT-709D, Power transformer |
| 10 | 25035191 | NPS-111-L155P, Power switch |
| 11 | 24505127 | Output cable |
| 12 | 253099A | AS-UC-3, Power supply cable |
| 13 | 25050045 | NSCT-7P14, Remote terminal |
| 14 | 270025 | SR-3P-4, Strainrelief |
| 15 | 28110188 | Cabinet |
| | 27262066-1 | Plate (R) |
| | 27262067 | Plate (L5) |
| 16 | 24509216-2 | Leg |
| 17 | 24509216-3 | Leg |
| 18 | 24502110 | Motor with control pc board |
| 19 | 25050068 | NSAS-6P036, 6P socket |
| 20 | 24506450A | Mechanism ass'y |

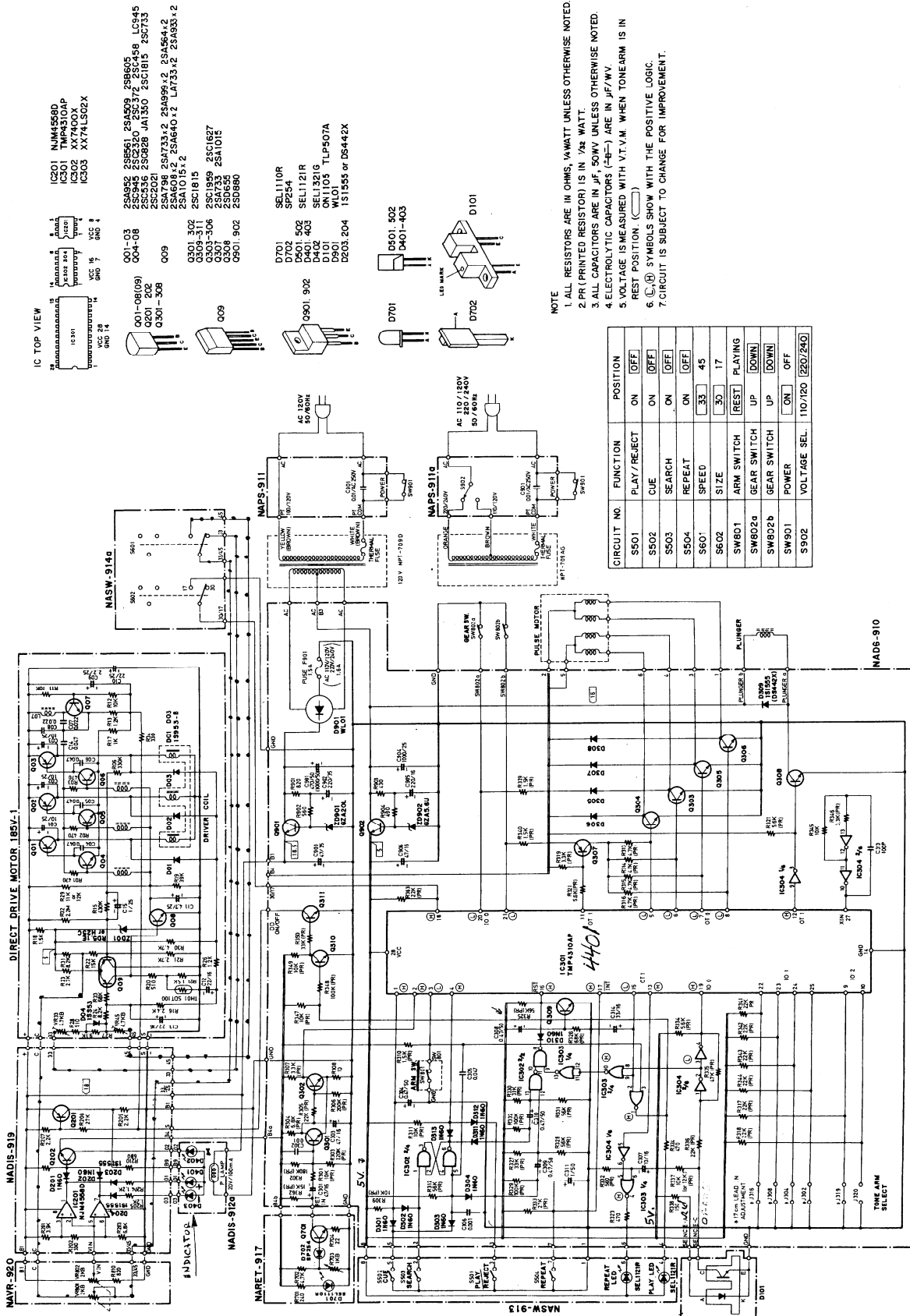
| | | | | | |
|----|-----------|--|----|-----------|--|
| | 24501321 | Screw for headshell | 21 | 24501340 | Tonearm |
| | 24501325 | Headshell | | 24501321 | Screw for headshell |
| | 24501341 | Counter weight | | 24501325 | Headshell |
| 22 | 252073 | 1.6A-SE-EAK, AC fuse | | 24501341 | Counter weight |
| 23 | 28191064 | Clear plate | 22 | 252046 | 1.5A ST-6, AC fuse |
| | 28133032 | Back plate | 23 | 28191064 | Clear plate |
| 24 | 28320447 | Knob | | 28133032 | Back plate |
| 25 | 28320446 | Knob | 24 | 28320447 | Knob |
| 26 | 27140409 | Bracket for power | 25 | 28320446 | Knob |
| 27 | 24504305 | Cam | 26 | 27140409 | Bracket for power |
| 28 | 27180062 | Spring | 27 | 24504305 | Cam |
| 29 | 27140393 | Bracket for power supply cable | 28 | 27180062 | Spring |
| 30 | 27150120 | Shielded plate | 29 | 27140393 | Bracket for power supply cable |
| 31 | 27140411 | Bracket for interruptor | 30 | 27150120 | Shielded plate |
| 32 | 16719519 | NADIS-919, Display pc board ass'y | 31 | 27140411 | Bracket for interruptor |
| 33 | 16719520 | NAVR-920, Speed control pc board ass'y | 32 | 16719519 | NADIS-919, Display pc board ass'y |
| 34 | 24506402 | Knob, Speed control | 33 | 16719520 | NAVR-920, Speed control pc board ass'y |
| 35 | 27140414 | Bracket, volume | 34 | 24506402 | Knob, Speed control |
| 51 | 833140120 | 4TTP+12P, Tapping screw | 35 | 27140414 | Bracket, volume |
| 52 | 834130100 | 3TTS+10P, Tapping screw | 51 | 833140120 | 4TTP+12P, Tapping screw |
| 53 | 28140209 | Cushion | 52 | 834130100 | 3TTS+10P, Tapping screw |
| | 87614012 | W4x12F, Washer | 53 | 28140209 | Cushion |
| | 27265035 | Ring | | 87614012 | W4 x 12F, Washer |
| | 833142200 | 4TTP+20P, Tapping screw | | 27265035 | Ring |
| 54 | 834130082 | 3STS+8BQ, Tapping screw | 54 | 833142000 | 4TTP+20P, Tapping screw |
| 55 | 833140120 | 4TTP+12P, Tapping screw | 55 | 834130082 | 3STS+8BQ, Tapping screw |
| | 24509215 | Dust cover | | 833140120 | 4TTP+12P, Tapping screw |
| | 28180062 | Hinge | | 24509215 | Dust cover |
| | 27170086 | Bottom board | | 28180062 | Hinge |
| | 242935 | OC-201V, Cartridge | | 27170086 | Bottom board |
| | 242936 | DN-201ST, Stylus | | | |

MECHANISM-COMPONENT LOCATION



REF. NO. PARTS NO. DESCRIPTION

| | | | | | |
|-------|----------|----------------|--------|-----------|-------------------|
| 1 | 24506452 | Chassis | 24 | 24503102 | Switch |
| 2 | | Shaft | 25 | 24506463 | Cover |
| 3 | | Shaft | 26 | 82112022 | Screw |
| 4 | | Shaft | 27, 28 | 24502113 | Motor ass'y |
| 5 | 24504304 | Lever | 29 | 24506464 | Rubber plate |
| 6 | 893020 | E-2, Circlip | 30 | 82152006 | Machine screw |
| 7, 8 | 24503104 | Gear ass'y | 31-34 | 24502106 | Pulley ass'y |
| 9 | 893030 | E-3, Circlip | 32 | | Bush |
| 10 | 24503097 | Gear | 33 | | Plate |
| 11 | 24503098 | Cam gear | 34 | | Shutter |
| 12-18 | 24506474 | Solenoid ass'y | 35 | 24506468 | Eccentric pin |
| 19 | 24506470 | Screw | 36 | 24506469 | Eccentric pin |
| 20 | 24503100 | Spring | 37 | 893030 | E-3, Circlip |
| 21 | 24503101 | Switch | 38-40 | 24506142 | Interruptor ass'y |
| 22 | 24506462 | Cover | 41-50 | | Lead wire |
| 23 | | Screw | | 24506450A | Mechanism ass'y |
| | | | 38-40 | 24506471 | Interruptor |



NOTE

1. ALL RESISTORS ARE IN OHMS, 1/4WATT UNLESS OTHERWISE NOTED.
2. PR (PRINTED RESISTOR) IS IN 1/2 WATT.
3. ALL CAPACITORS ARE IN μ F, 50V UNLESS OTHERWISE NOTED.
4. ELECTROLYTIC CAPACITORS (- μ) ARE IN μ F/WV.
5. VOLTAGE IS MEASURED WITH V.T.M. WHEN TONEARM IS IN REST POSITION (\odot).
6. \odot SYMBOLS SHOW WITH THE POSITIVE LOGIC.
7. CIRCUIT IS SUBJECT TO CHANGE FOR IMPROVEMENT.

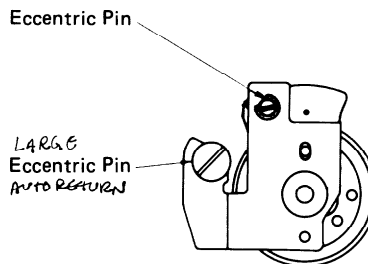
| CIRCUIT NO. | FUNCTION | POSITION |
|-------------|---------------|-----------------|
| S501 | PLAY / REJECT | ON OFF |
| S502 | CUE | ON OFF |
| S503 | SEARCH | ON OFF |
| S504 | REPEAT | ON OFF |
| S601 | SPEED | 33 45 |
| S602 | SIZE | 30 17 |
| SWB01 | ARM SWITCH | PLAYING |
| SWB02a | GEAR SWITCH | UP DOWN |
| SWB02b | GEAR SWITCH | UP DOWN |
| SW901 | POWER | ON OFF |
| S902 | VOLTAGE SEL. | 110/120 220/240 |

ADJUSTMENT PROCEDURES

1. Tonearm height

- 1) Remove the T.T. mat.
- 2) Press the record size selector to 17cm position and the power switch to the ON position.
- 3) Press the play/reject button.
- 4) As soon as the tonearm comes over the turntable platter, press the power switch to the off position.
- 5) Adjust the screw on the lifter plate for 14 ± 1 mm height between the stylus tip and the turntable platter.

Note: To adjust the height for lower, turn the screw clockwise. To adjust the height for higher, turn the screw counter-clockwise.



2. Auto-return position

Adjust the return position by the large eccentric pin attached by the tonearm base. To adjust the return position for faster, turn the eccentric pin clockwise. To adjust the return position for later, turn the eccentric pin counter-clockwise.

3. Lead-in position

Adjust the lead-in position by the small eccentric pin attached by the tonearm base. Press the record size selector to 30cm position and the speed selector to 45 r.p.m.

To adjust lead-in position for faster (outside), turn the eccentric pin clockwise. To adjust the lead-in position for later (inside), turn the eccentric pin counter-clockwise.

Press the record size selector to 17cm position and confirm the lead-in position. When outside the lead-in position, connect or cut the jumper wires by referring to the below table.

| | Cut | Connect |
|------|--------|---------|
| J319 | fast | late |
| J302 | 0.4 mm | |
| J304 | 0.8 mm | |
| J308 | 1.6 mm | |
| J316 | 3.2 mm | |

4. PITCH CONTROL ADJUSTMENT

- 1) Put the stroboscope on the turntable platter.
- 2) Set the pitch control so that the center L.E.D. lights up.
- 3) Press the speed switch to 33 rpm., and adjust VR33 so that the stroboscope stripes appear to be stationary.
- 4) Then switch over to 45 rpm., and adjust VR45 to obtain the same stationary stroboscope condition.