

ONKYO® SERVICE MANUAL

TURNTABLE SYSTEM CP-5000A



AM/FM STEREO TUNER T-5000



INTEGRATED STEREO AMPLIFIER A-3000



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ONKYO®
AUDIO COMPONENTS

SPECIFICATIONS

A-3000

| | | | |
|---------------------------|--|-----------------------|---|
| Power Output | | DIN rec out: | 30 mV/100 k Ω |
| Dynamic: | 100 watts total | Bass Control | ± 9 dB at 100 Hz |
| Continuous: | 35 watts per channel at 4 ohms both channels driven 1 kHz, 0.8% THD 28 watts per channel at 8 ohms both channels driven 1 kHz, 0.8% THD | Treble Control | ± 9 dB at 10,000 Hz |
| Power Supply Rating | AC 110/120/220/240V 50/60 Hz | Signal to Noise Ratio | Phono: 70 dB (IHF C Network) Tuner: 90 dB (IHF C Network) |
| Total Harmonic Distortion | 0.8% at rated power 0.2% at 1 watt output | Loudness | +5.5 dB at 70 Hz +4.5 dB at 10,000 Hz |
| IM Distortion | 0.5% at rated power | Controls | POWER, SPEAKER (OFF, A, B, A+B), SELECTOR (PHONO, TUNER), VOLUME, BALANCE, BASS, TREBLE, TAPE MONITOR-1 and 2, LOUDNESS, MIC VOLUME |
| Damping Factor | 35 at 8 ohms 1 kHz 10 watts | Outputs | SPEAKER A and B, HEADPHONE, TAPE REC OUT-1 and 2, DIN REC OUT |
| Frequency Response | 15 ~ 25,000 Hz (± 1 dB) | Inputs | PHONO, TUNER, TAPE PLAY-1 and 2, DIN PLAY, MIC |
| Power Bandwidth | 20 ~ 40,000 Hz (0.8% THD -3 dB) | Semiconductors | 2 ICs, 13 Transistors, 6 Diodes |
| Sensitivity and Impedance | | Dimensions | 414 (16 5/16") x 150 (5 7/8") x 301mm (11 7/8") |
| Phono: | 2.5mV/50 k Ω | Weight | 7.2 kg (15.9 lbs.) |
| Tuner: | 200 mV/50 k Ω | | |
| Mic.: | 9 mV/50 k Ω | | |
| Tape play: | 200 mV/50 k Ω | | |
| Tape rec Out: | 200 mV/10 k Ω | | |
| DIN play: | 200 mV/50 k Ω | | |

T-5000

| | | | |
|-------------------------------|---|----------------------|---|
| Power Supply Rating | AC 110/120/220/240V, 50/60 Hz | AM Suppression Ratio | FM: 50 dB |
| Tuning Range | FM: 87.5 ~ 108 MHz AM: 530 ~ 1605 kHz | Harmonic Distortion | FM Mono: 0.3% FM Stereo: 0.5% |
| Usable Sensitivity | FM Mono: 2.5 μ V (13.2 dBf) IHF 1.7 μ V DIN FM Stereo: 7 μ V (22.1 dBf) IHF 50 μ V DIN AM: 40 μ V | Frequency Response | FM: 30 ~ 15,000 Hz (+2, -3 dB) |
| 50 dB Quieting Sensitivity | FM Mono: 5 μ V (19.2 dBf) IHF FM Stereo: 40 μ V (37.2 dBf) IHF | Stereo Separation | FM: 37 dB at 1 kHz 30 dB at 100 ~ 10,000 Hz |
| Intermediate Frequency | FM: 10.7 MHz AM: 455 kHz | Pilot Suppression | FM: 55 dB |
| Capture Ratio | FM: 1.5 dB | Controls | POWER, TUNING, SELECTOR (FM, AM), LEVEL, MUTING, STEREO NOISE FILTER |
| Image Rejection Ratio | FM: 35 dB AM: 40 dB | Output Voltage | Variable max. FM: 1.2V AM: 0.35V |
| IF Rejection Ratio | FM: 80 dB AM: 30 dB | Semiconductors | 1 FET, 12 Transistors, 2 IC, 13 Diodes |
| Signal to noise ratio | FM: 60 dB IHF FM: 55 dB DIN | Antennas | FM: 300 Ω balanced, 75 Ω unbalanced AM: Built in ferrite core antenna and external terminal |
| Alternate Channel Attenuation | FM: 50 dB (IHF) | Dimensions | 414 (16 5/16")W x 150 (5 7/8")H x 306 (12 1/16")D mm |
| | | Weight | 5 kg (11 lbs) |

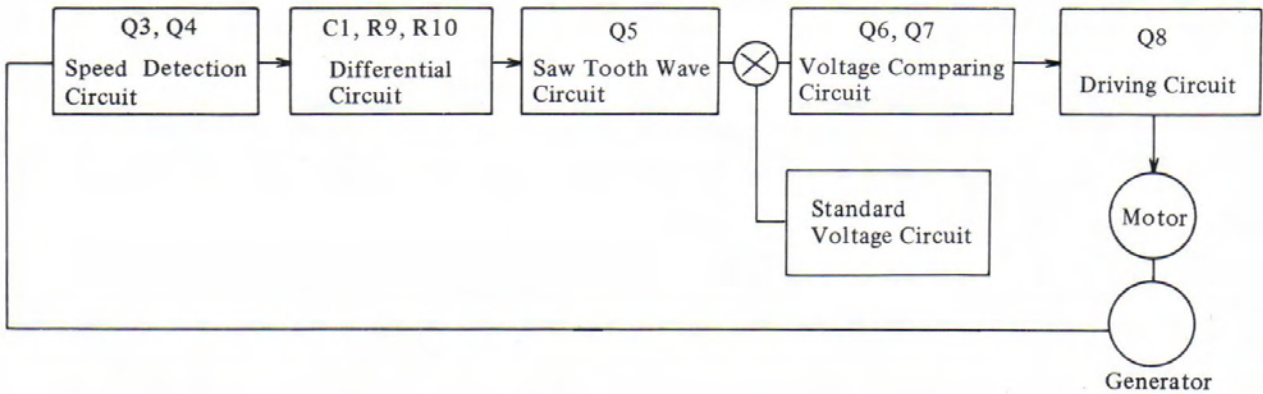
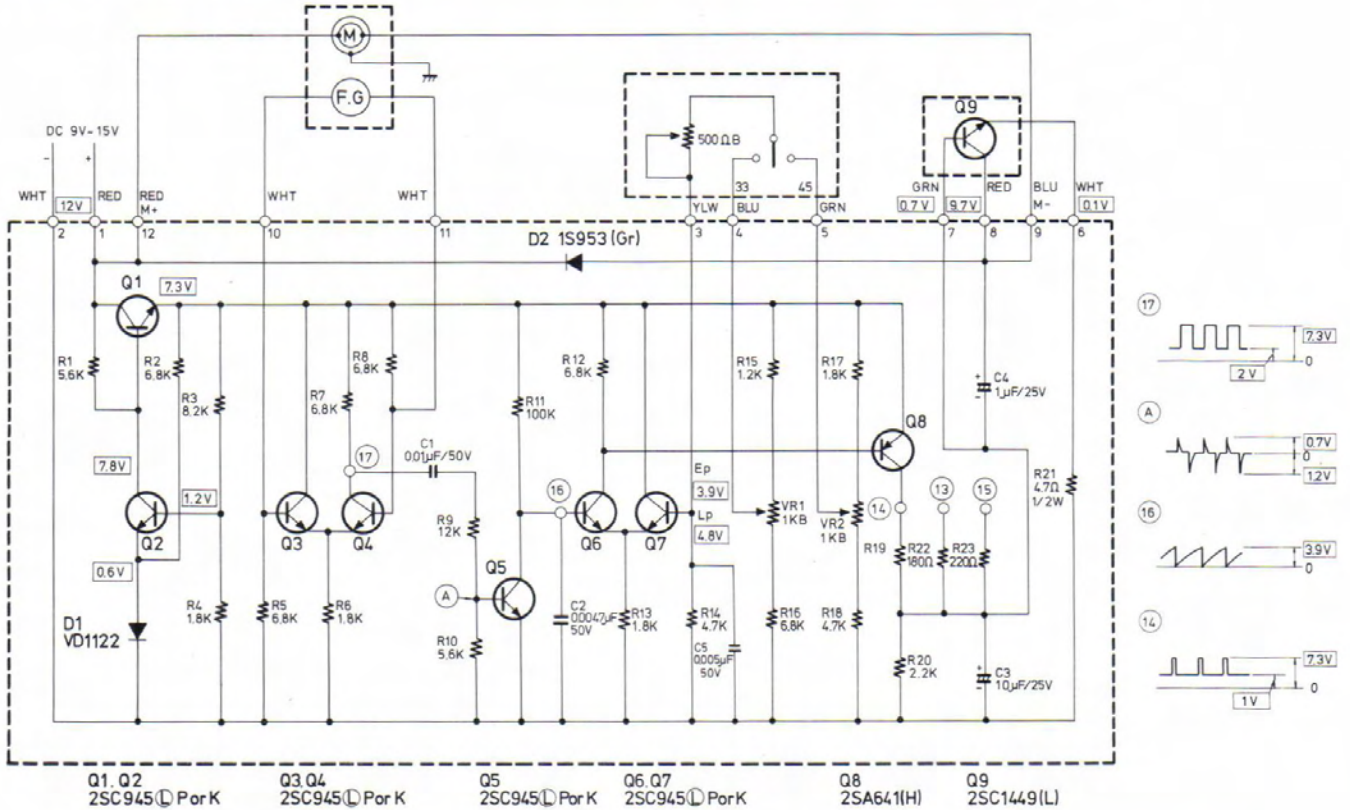
CP-5000A

| | | | |
|-------------------|--|-----------------------|--------------------------------------|
| Type | 2 speed, belt driven, auto-return, auto-cut turntable with arm lifter. | Overhang: | 11mm. |
| Turntable platter | 30cm aluminum diecast with stroboscope. 1.1 kg. | Effective arm length: | 210mm |
| Motor | FG servo controlled DC motor. | Tracking error: | less than $\pm 1.5^\circ$. |
| Speeds | 33 1/3 and 45 rpm. Adjustable range $\pm 2\%$. | Cartridge | VM type OC-35V |
| Wow and flutter | Less than 0.06% (WRMS) | Frequency response | 20-20,000 Hz |
| S/N ratio | More than 55 dB | Impedance | 47 k Ω |
| Tonearm | Static balanced S-shaped pipe arm with lockable head shell, anti-skating device, and direct read tracking force scale. Tracking force adjustment: 0 ~ 3gr. | Compliance | 7 x 10 ⁻⁶ cm./dyne |
| | | Output | 3.5 mV |
| | | Separation | 20 dB |
| | | Stylus | DN-35ST |
| | | Tip | 0.65 mil (16.5 μ) Diamond |
| | | Tracking force | 2 g. |
| | | Power supply | 110V ~ 120V or 220V ~ 240V, 50/60 Hz |
| | | Power consumption | 3W |

Specifications and design are subject to change without notice.

CP-5000A SCHEMATIC DIAGRAM

Voltage Controlling Circuit



The signal from the AC generator, provided coaxially with the motor rotation axis, is shaped into rectangular wave from by means of the speed detection circuit and then a differential wave form synchronized with the rotation frequency is obtained through the differential circuit. By the use of the stepping up portion of the differential wave form, a sawtooth wave which has the wave height proportionate to the frequency at the time of ON-OFF of a transistor is produced.

This sawtooth wave is compared with the standard voltage which is the output of the separately constituted standard voltage circuit, and the portion where the sawtooth wave peak value becomes higher than the standard voltage is taken out as a control signal. The control signal (rectangular wave pulse) is integrated for use as a motor driving signal.

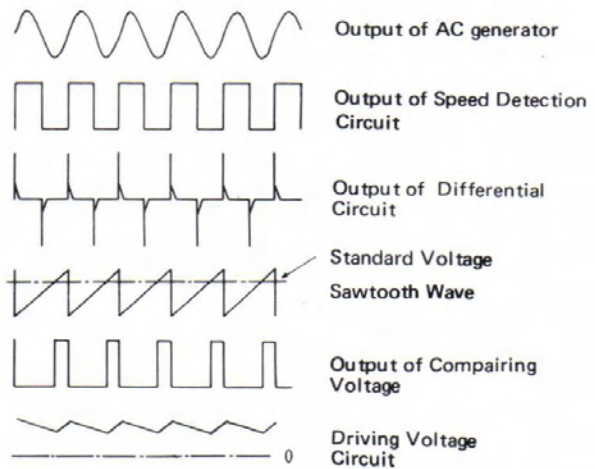
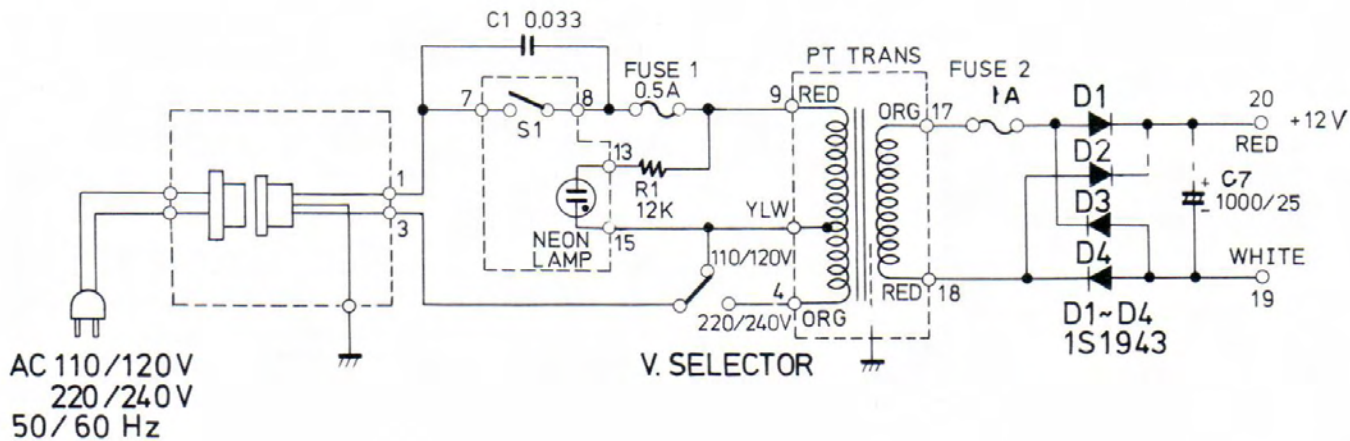


fig - 1

CP-5000A SCHEMATIC DIAGRAM

Power Supply Circuit



CP-5000A SERVICE ADJUSTMENT AND PROCEDURE

Power Voltage Selection

The record player has been set at a voltage of 220/240V before shipment. To change for 110/120V, turn switch to the right position. To change voltage, detach the fixture plate, adjust switch position and reattach the fixture plate. The voltage selector switch is located on the side of the turntable.

Auto-return

Adjust the return position with the fine adjustment nut shown in fig.3. After final adjustment, apply lock-tite to the nut. The stylus point moves below the correct point when it is rotated clockwise. The stylus point moves closest to the record edge when it is rotated counter-clockwise.

Motor Speed Adjustment

When motor, turntable, belt, etc. are to be replaced or when the setting of revolution has been deviated by the lapse of time, carry out adjustments in the following manner. When the turntable is stopped during energizing (more than continuously 1 minute), it rarely occurs that the motor may be locked and damaged, or, even if the motor is not locked, the belt may sustain an unreasonable force, giving rise to a partial elongation or flaw, and a poor stability of revolution.

Adjustment:

Set the VR (Z411-C) for fine adjustment nearly at the center, set the speed selector at 33-1/3, turn VR1 provided on the control circuit PC plate to the point to stop the upper part of the stroboscopic stripes. Then, switchover the rotation to 45 r.p.m., and adjust VR2 so as to stop the lower side of the stroboscopic stripes.

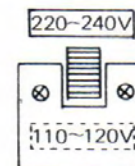


fig. - 2

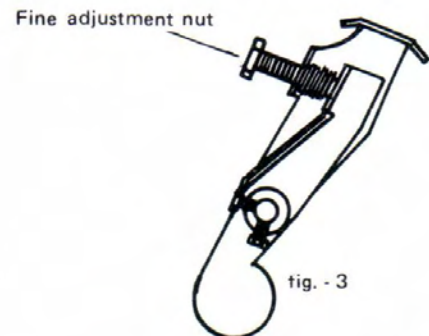


fig. - 3

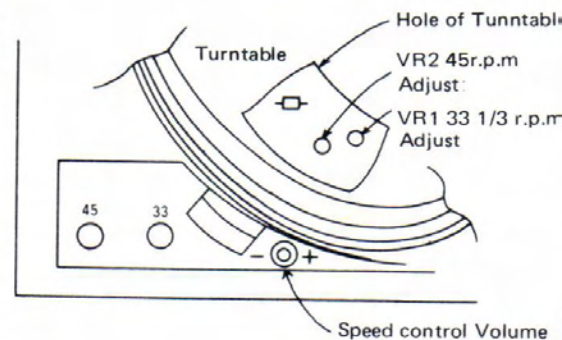


fig. - 4

Replacement of Motor

As for the screws for mounting motor, there are two kinds used, i.e., one chrome plated panhead screw (2.6 x 4) and two unichrome plated panhead screw (2.6 x 3) for ground co-fastening part. If the 4m/m size screw is applied to the portion of the 3m/m size screw, the motor insulation rubber is damaged to provide unstable motion of motor. Be careful not to mistake. Spring washers are provided for fastening purpose. Never fail to use them.

Replacement of Belt

- 1) In order to give an improved stability of the tension of the belt from the viewpoint of the motor construction, a one-side shaped belt is used. For replacement, please use the regular one SN242129B. The SN of the conventional both side cut belt is 242129. With regard to the one-side polished belt, the use in a manner that the polished side is in contact with the pulley and the turntable is the correct method, but the reverse manner may also be practically acceptable, where the S/N ratio and the revolution vary to a very slight degree. The polished surface is the side where the surface is uniform and mat. The opposite side is slightly lustrous and uneven.
- 2) The pulley is a single step without any belt guide.
Apply the belt to the turntable to the side near the lower end of the drum. Should the belt be set to the upper side, it would slip upward to the flange of the pulley at the time of the application to the pulley, with the result that the correct revolution may not be obtained or the belt may go out of the pulley.
- 3) Since the shaft of the motor is extremely fine at 2ϕ , be careful that any collision of turntable, etc. during service may cause a bend to the shaft or an irregular revolution in consequence of the deviation of the position of the bearing holder, etc.

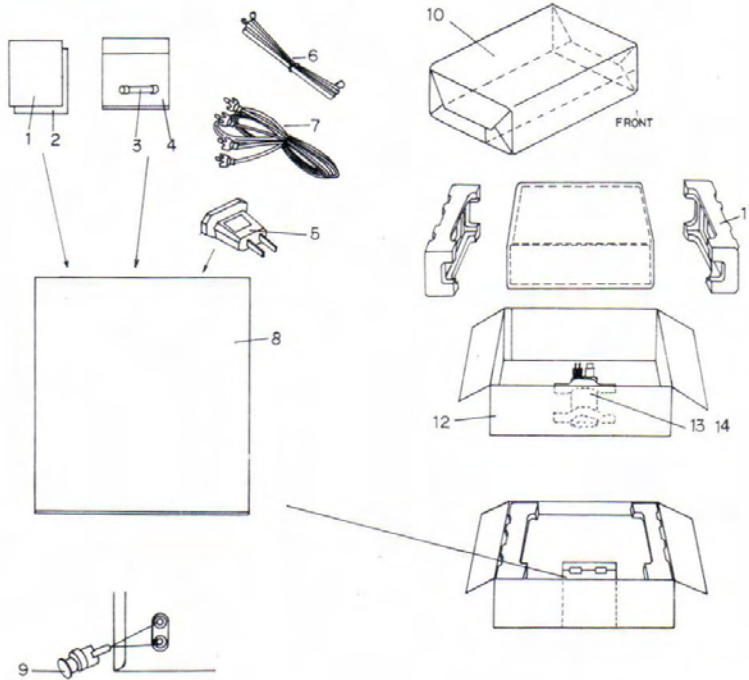
Fitting of Neon Lamp

Fit the neon lamp in a manner to set the electrode of the neon lamp nearly to the center of the claw of the lamp holder. If the neon lamp is not correctly fitted, the lamp house may include a dark area for lighting.

Others

- 1) Since the stopper of TT shaft is a molded product, do not use the one once disconnected but replace with a new one (because the continued use provides a cause for the leakage of oil and the coming off of shaft).
- 2) For lubrication of TT shaft, use the oil of ANDEROL #465 or #402.
- 3) For lubrication of motor bearing, the oil of LAUNA #40 is used. Use of other oil may cause irregular rotation and unstable revolution.
- 4) For disconnecting the PC plate, extract after sufficiently constricting the stopper for the mold.
Be careful not to exert unreasonable power for disconnecting the PC plate, or the PC plate will cause breakage.

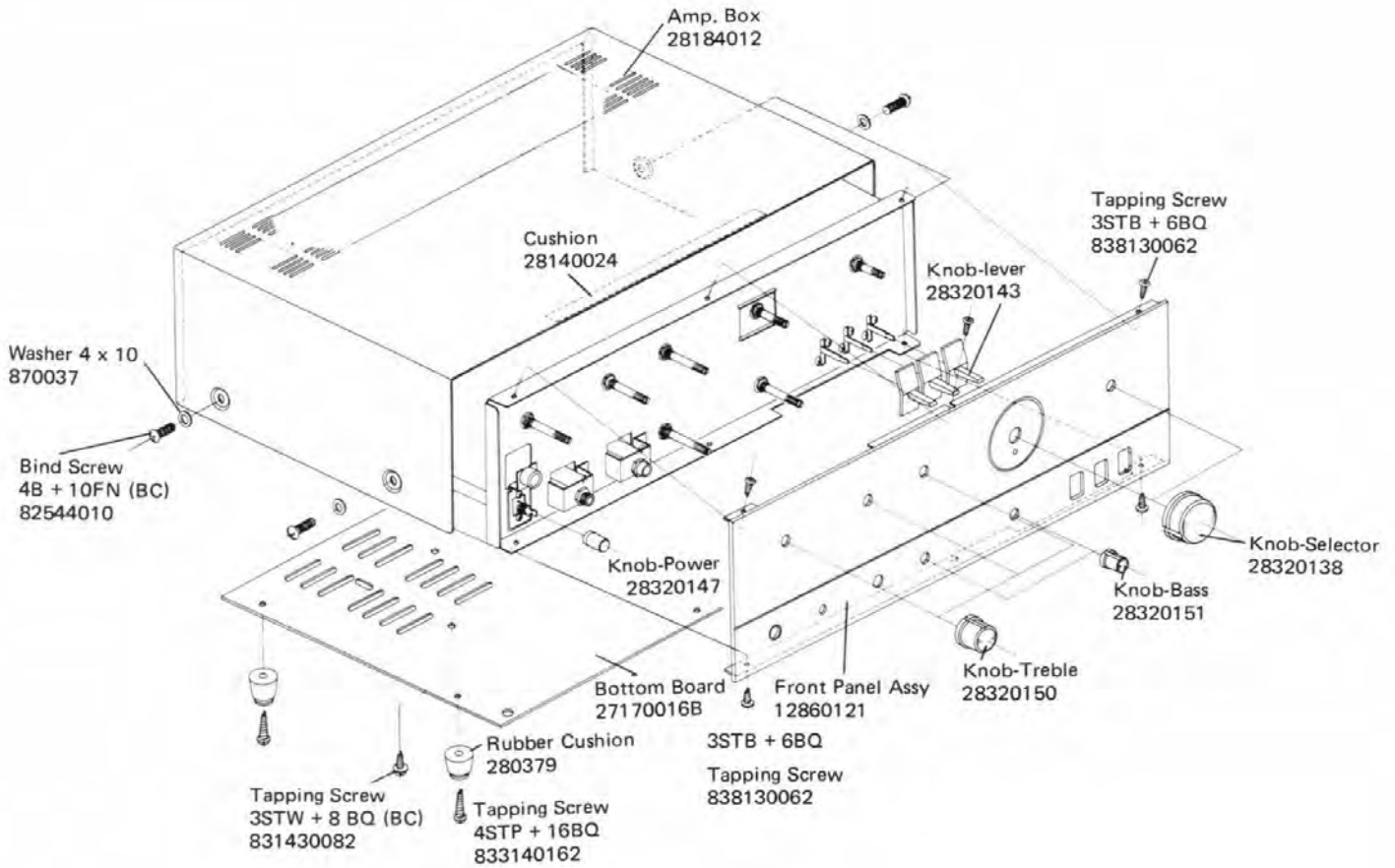
PACKING PROCEDURE



PARTS LIST

| ITEM | DESCRIPTION | SPECIFICATIONS | A - 3000 | | T - 5000 | |
|------|--------------------|----------------|--------------------|------|--------------------|------|
| | | | STOCK NO. | Q'TY | STOCK NO. | Q'TY |
| 1. | Schematic Diagram | | 29345011 | 1 | 29345012 | 1 |
| 2. | Instruction Manual | | 29340166 | 1 | 29340167 | 1 |
| 3. | Fuse | 3A - T | 252003 | 2 | - | |
| | Fuse | 1A - T | - | | 252001 | 1 |
| 4. | Poly Bag | 150 x 80 mm | 29100002 | 1 | 29100002 | 1 |
| 5. | Conversion Plug | CV-K or CV-K-1 | 292063 or 25055018 | 1 | 292063 or 25055018 | 1 |
| 6. | FM Antenna | | - | | 292064 | 1 |
| 7. | Output Cord | | - | | 253074 | 1 |
| 8. | Poly Bag | 350 x 250mm | 29100006A | 1 | 29100006A | 1 |
| 9. | Shorted Pin | | 250153 | 2 | - | |
| 10. | Protection Sheet | 670 x 1000 mm | 29095016 | 1 | 29095016 | 1 |
| 11. | Pad | | 29090124 | 2 | 29090124 | 2 |
| 12. | Master Cartor Box | | 29050093 | 1 | 29050097 | 1 |
| 13. | Tag - Voltage | | 293268 | 1 | 293268 | 1 |
| 14. | Power Supply Cord | | 13876801 | 1 | 13876801 | 1 |

A-3000 EXPLODED VIEW



CAUTIONS

LINE VOLTAGE AND FUSE

This model operates on each one of the four line voltages, 110V, 120V, 220V and 240V.

Set the unit to the proper line voltage by the following procedure described below.

CHANGE LINE VOLTAGE SETTING AND FUSE

To remove the fuse, turn the fuse cap located on the line voltage selector counter-clockwise.

Then remove the fuse plug from the unit. Put the fuse plug back so that the proper line voltage marking can be seen through the cut in the edge of the plug.

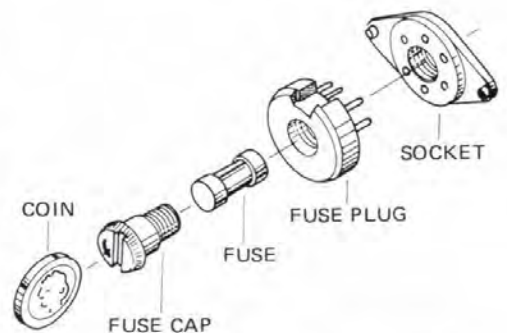
Whenever the position of the selector is changed, check the rating of the fuse.

A 0.5A fuse is for 220V or 240V operation and a 1.0A fuse is for 110V or 120V operation. (T-5000)

If the rating of the fuse is correct, replace the cap.

FUSE REPLACEMENT

When the fuse has blown, remove the fuse cap and replace the fuse with a new one.



Fuse ratings are:

A - 3000

110 ~ 120V -- 3A

220 ~ 240V -- 2A

T-5000 ALIGNMENT PROCEDURE

INSTRUMENTS REQUIRED

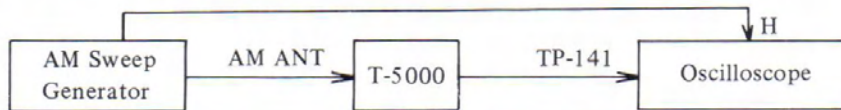
1. AM Sweep Generator
2. AM and FM Signal Generator
3. Vacume Tube Voltage Meter (VTVM) AC, DC
4. Oscilloscope
5. Distortion Analyzer
6. Stereo Modulator
7. Frequency Counter

GENERAL ALIGNMENT CONDITIONS

1. Signal input should be kept as low as possible.
2. Standard modulation is 400Hz 30% (AM), 400Hz 100% (FM MONO) pilot 10% sub and main 90% (FM STEREO).

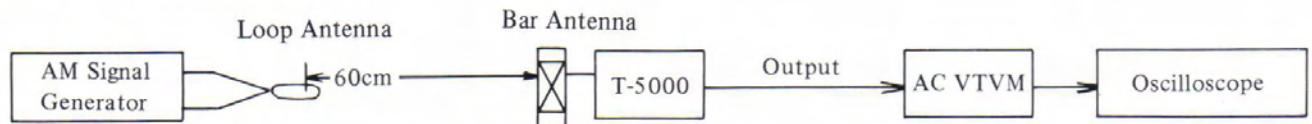
(1) AM IF ALIGNMENT

1. Set SELECTOR switch to AM.
2. Set radio dial to quiet point.



| Set signal | Adjust | Oscilloscope | Remarks |
|------------|------------------------------------|------------------------------|---------------------------------|
| 455 kHz | X151 (CFZ-455C) L153 (NIT-7520) | Maximum Symmetrical Response | Usually not necessary to adjust |

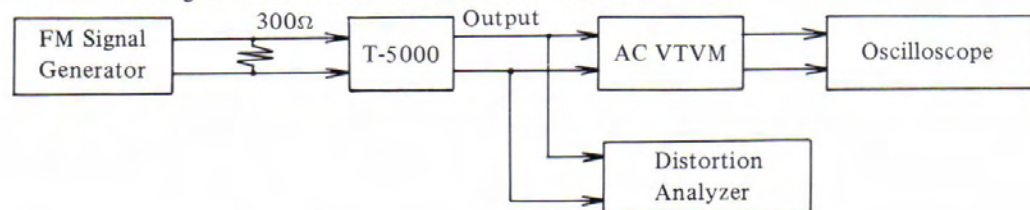
(2) AM RF ALIGNMENT



| Step | Set Signal | Set Radio Dial | Adjust | VTVM reading | Remarks |
|------|------------------------|-------------------------|------------------|--------------|----------------------------------|
| 1 | 515 KHz 400Hz 30% | Lower end (515 KHz) | L152 NMO-2503 | Maximum | Repeat step 1 and 2 as necessary |
| 2 | 1680 KHz 400 Hz 30% | Upper end (1680 KHz) | TC-4 | Maximum | |
| 3 | 600 KHz 400 Hz 30% | 600 KHz | L151 NMA-2523 | Maximum | Repeat step 3 and 4 as necessary |
| 4 | 1400 KHz 400 Hz 30% | 1400 KHz | TC-3 | Maximum | |

(3) FM FRONT END ALIGNMENT

1. Set SELECTOR switch to FM.
2. Push MUTING switch.
3. Connect FM Signal Generator to 300-ohm antenna terminals.

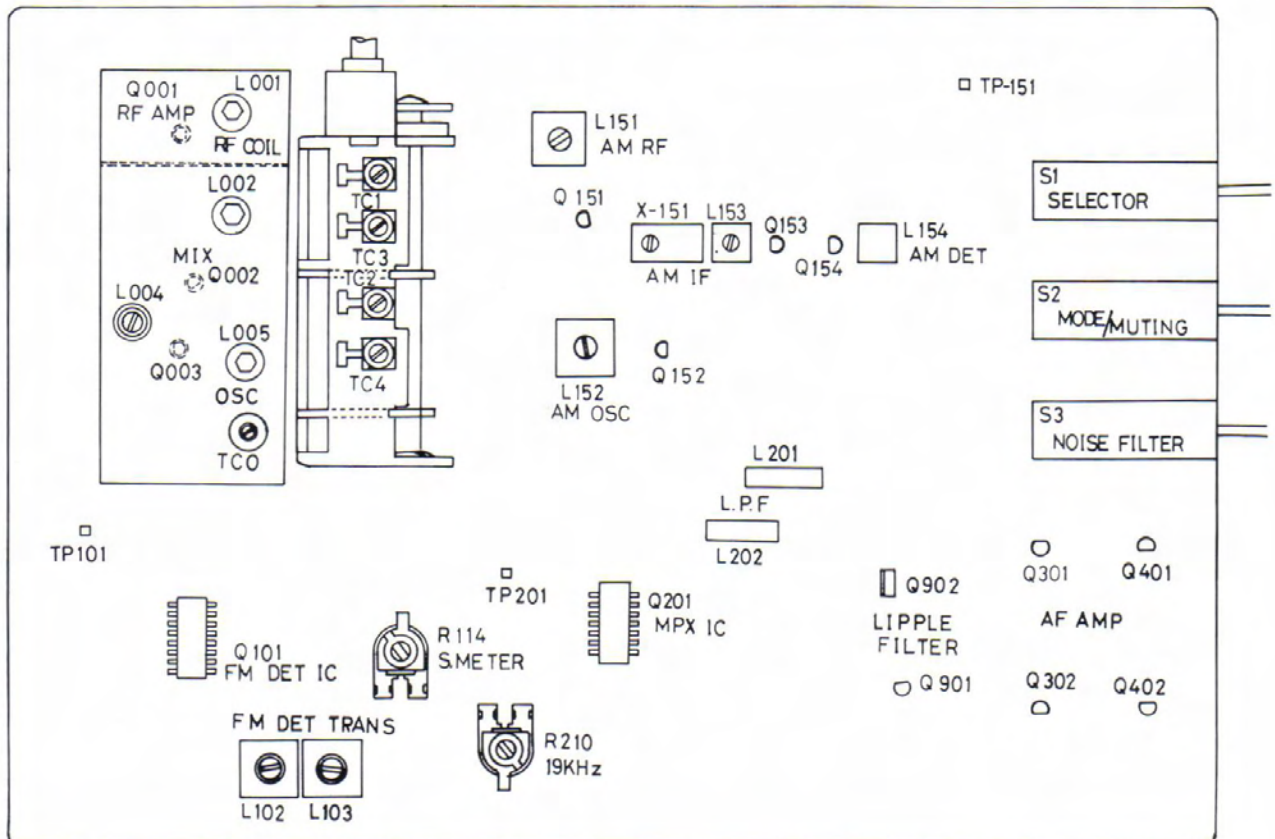


When adjust step 5 and 6, Set FM Signal Generator level as low as possible.

| Step | FM Signal Generator | Dial to set | Adjust | Output Indicator | Adjust for | Remarks |
|------|-----------------------------------|-------------|-----------------------------|----------------------------|------------|-----------------------------------|
| 1 | No signal | Quiet Point | L102 NIT-0519P | Tuning Indicator | Center | Repeat step 1 and 2 as necessary. |
| 2 | 98 MHz 60 dB 400 Hz 100% mod. | 98 MHz | L103 Blue core NIT-0519S | Distortion Analyzer | Minimum | |
| 3 | 90 MHz 60 dB 400 Hz 100% mod. | 90 MHz | L005 OSC Coil NFO-3003 | AC VTVM or Oscilloscope | Maximum | Repeat step 3 and 4 as necessary. |
| 4 | 106 MHz 400 Hz 60 dB 100% mod. | 106 MHz | TCO | | Maximum | |
| 5 | 90 MHz 400 Hz 100% mod. | 90 MHz | L001, L002 | | Maximum | Repeat step 5 and 6 as necessary. |
| 6 | 106 MHz 400Hz 100% mod. | 106 MHz | TC001 TC002 | | Maximum | |
| 7 | 98 MHz 400 Hz 100% mod. | 98 MHz | L004 | | Maximum | |

FM MPX ALIGNMENT

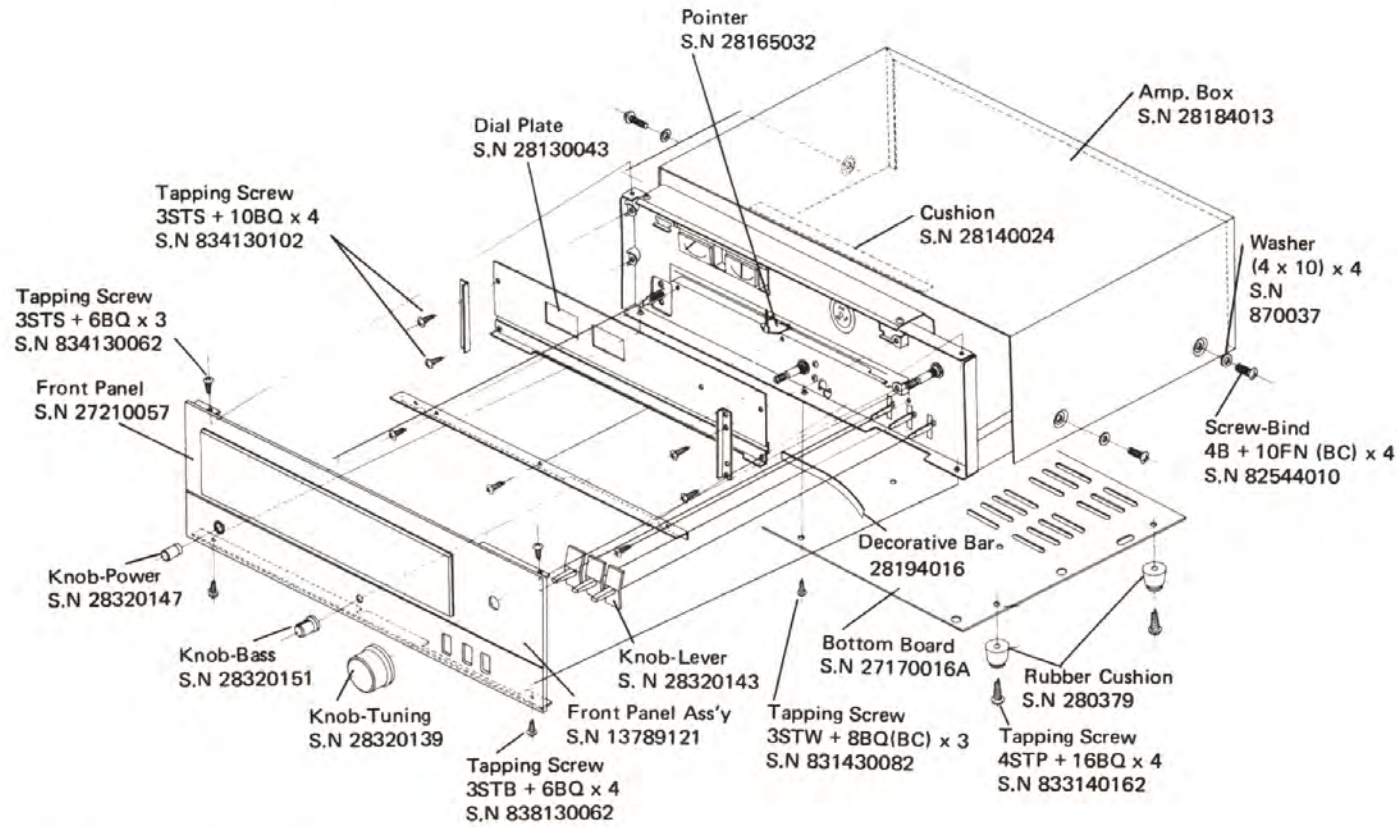
1. Connect FM Signal Generator to 300-ohm antenna terminals.
2. Connect Frequency Counter to TP-201.
3. Set FM Signal Generator to no mod. (98 MHz, 400Hz, 60 dB)
4. Set radio dial to 98 MHz.
5. Adjust the Frequency to 19000 ± 19 Hz with R201.
6. The stereo indicator should light up when an FM stereo program is being received.



A-3000 PARTS LIST

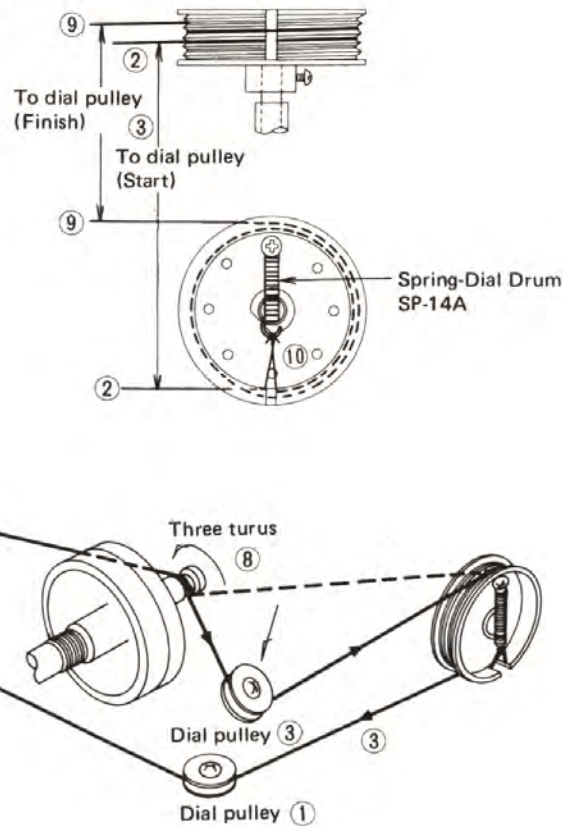
| PARTS NO. | DESCRIPTION | SPECIFICATIONS | Q'TY | STOCK NO. | REMARKS |
|--|---------------------------|-----------------------|------|------------------|-------------------|
| | AF-AS | NAAF-358 | 1 | 12870558 | |
| | SW-AS | NASW-359 | 1 | 12870559 | |
| Q501, Q601 | IC | STK-077 | 2 | 222007 | Power Amp. |
| PL901 | Pilot Lamp | 6.3V 0.05AW3 | 1 | 210015 | Power Source Ind. |
| T901 | Transformer-Power | NPT-580ADGQ | 1 | 230174 | |
| C901, C902 | Capacitor-IS | PME271Y510CEE | 2 | 3500052 | 0.01 μ F 250V |
| C907, C908 | Capacitor-Elect. | CE62W35V6800 μ F | 2 | 3504077 | |
| R368 | Resistor-Variable | N16R250KW35 | 1 | 5146004 | Balance |
| R504, R604 | Resistor-Metal Oxide Film | RS1WBJ330 ohm | 2 | 441623314 | |
| R706 | Resistor-Variable | N16R100KA35 | 1 | 5146005 | Mic Volume |
| S801 | Switch-Rotary | NRS-124-35Y | 1 | 25030044 | Speakers |
| P801 | Pin Jack | NPJ-2PRBL-02 | 1 | 25045023 | Phono |
| P802 | Pin Jack | NTM-6WPBL-E1 | 1 | 250171 | Tape |
| P803 | Terminal | | 1 | 25060008 | GND |
| P804 | Socket-DIN | | 1 | 250008 | |
| P805 | Jack-Microphone | HJ-631S-H2 | 1 | 250051 | |
| P806 | Jack-Stereo Headphone | XG-7716 | 1 | 250078 | |
| P807, P808 | Terminal-Speaker | NTM-4WPUN1 | 2 | 25060001A | |
| P809 | Pin Jack | NTM-4WPBL-E1 | 1 | 250169 | Tuner |
| F501, F601 | Holder-Fuse | | 1 | 25050004 | With the cover |
| F501a, F601a | Fuse | 3A-T | 2 | 252003 | Speaker |
| S901 | Switch-Push | NPS-121-L | 1 | 25035034 | Power Source |
| S321 | Rotary Switch | NRS-132-35F | 1 | 25030066 | Selector |
| P901 | Inlet-3P | CM-3 | 1 | 25050013 | |
| F901 | Socket-VS | S-17205-7 | 1 | 250186 | |
| F901a | Fuse | 2A-T | 1 | 252002 | |
| W901 | Power Supply cord | AS-CEE | 1 | 253083 | |
| W901a | Plug-PS | SFO-40A3 | 1 | 250227 | |
| | Binder | SKB-1 | 8 | 260208 | |
| A006 | Back Panel | | 1 | 27120052 | |
| A026 | Heat Sink | | 1 | 27160008 | |
| ⊕ NAAF-358 ⊕ | | | | | |
| Q301, Q302, Q401, Q402, Q351, Q352, Q451, Q452 Q701~Q704 | Transistor | 2SC1312-31(G) | 8 | 2210137 | |
| Q901 | Transistor | 2SC1312-31(F) | 4 | 2210136 | |
| | Transistor | 2SC734(Y) | 1 | 2210064 | |
| D901, D903, D905, D907 | Silicon diode | ERD03-02 | 4 | 223832 | |
| D909, D910 | Silicon Diode | 10D1 or 1S1885 | 2 | 223801 or 223802 | |
| C301, C401, C706, C710 | Capacitor-Elect. | CE04W50V3.3 μ F | 4 | 352780331 | |
| C304, C404 | Capacitor-Elect. | CE04W16V220 μ F | 2 | 352742211 | |
| C301, C406, C707, C709 | Capacitor-Elect. | CE04W10V33 μ F | 4 | 352733301 | |
| C352, C452, C503, C603 | Capacitor-Elect. | CE04W10V47 μ F | 4 | 352734701 | |
| C357, C359, C502, C457, C459, C602, C708 | Capacitor-Elect. | CE04W50V1 μ F | 7 | 352780101 | |
| C504, C509, C701, C711, C604, C609, C704, C916 | Capacitor-Elect. | CE04W35V220 μ F | 8 | 352762211 | |
| C505, C507, C605, C607 | Capacitor-Elect. | CE04W35V10 μ F | 4 | 352761001 | |
| C712, C913, C915 | Capacitor-Elect. | CE04W35V100 μ F | 3 | 352761011 | |
| C910 | Capacitor-Elect. | CE04W50V220 μ F | 1 | 352782211 | |
| C912 | Capacitor-Elect. | CE04W50V100 μ F | 1 | 352781011 | |
| C310, C410, C351, C451 | Capacitor-LL | LL04B50V0.22 μ F | 4 | 392882297 | |
| C702 | Capacitor-LL | LL04B50V0.47 μ F | 1 | 392884797 | |
| C355, C455 | Capacitor-DE | DE93M50V0.047 μ F | 2 | 374124735 | |
| C356, C456 | Capacitor-DE | DE93M50V0.056 μ F | 2 | 374125635 | |
| R351, R451 | Resistor-Variable | N24RGL41C250KBTP35 | 1 | 5172045 | VOLUME |
| R359, R362, R459, R462 | Resistor-Variable | N16RGC100KB35 | 2 | 5104037 | TONE |
| R904 | Resistor-Metal Oxide Film | RS1WBJ300 ohm | 1 | 441623014 | |
| ⊕ NASW-359 ⊕ | | | | | |
| C322, C422, | Capacitor-DE | DE93M50V0.027 μ F | 2 | 374122735 | |
| S322-S324 | Switch-Lever | NLS-122-27-SL | 3 | 25040021 | T. MONI. LOUDNESS |

T-5000 EXPLODED VIEW



T-5000 DIAL CORD ARRANGEMENT

1. Close the variable capacitor complete and tie dial cord to the spring of the drum.
2. Thread dial cord in the direction of arrow-marked from 1 to 7 and wind dial cord three turns around the tuning shaft clockwise.
3. Thread dial cord in the direction of arrow-marked from 8 to 10.
4. Thread dial cord to the dial pulley 3.

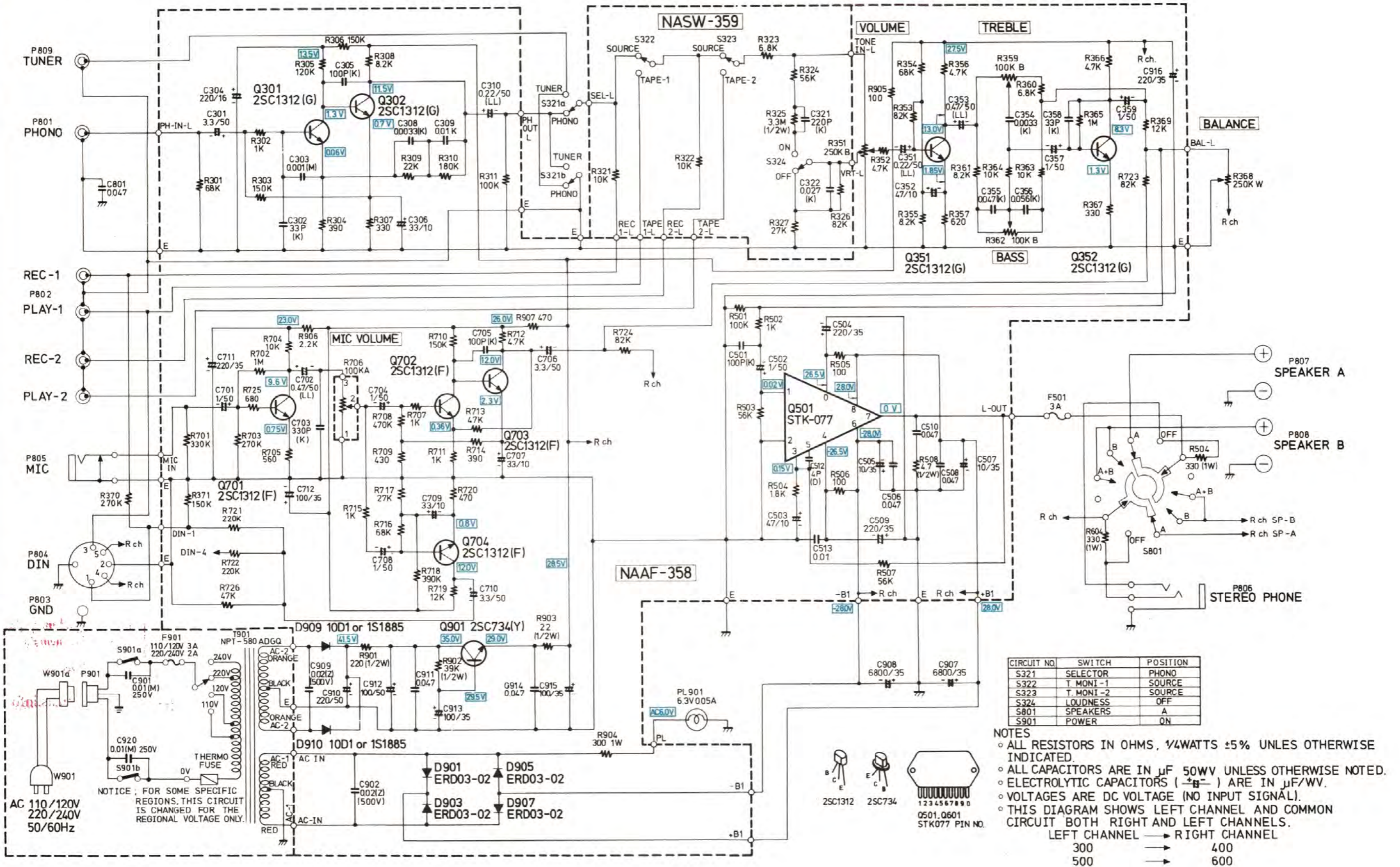


Loosen the tapping screw which stops the drum angle, move the metal fitting forward and backward and adjust the tension of the thread. Be sure to place the side bearing S.N. upward.

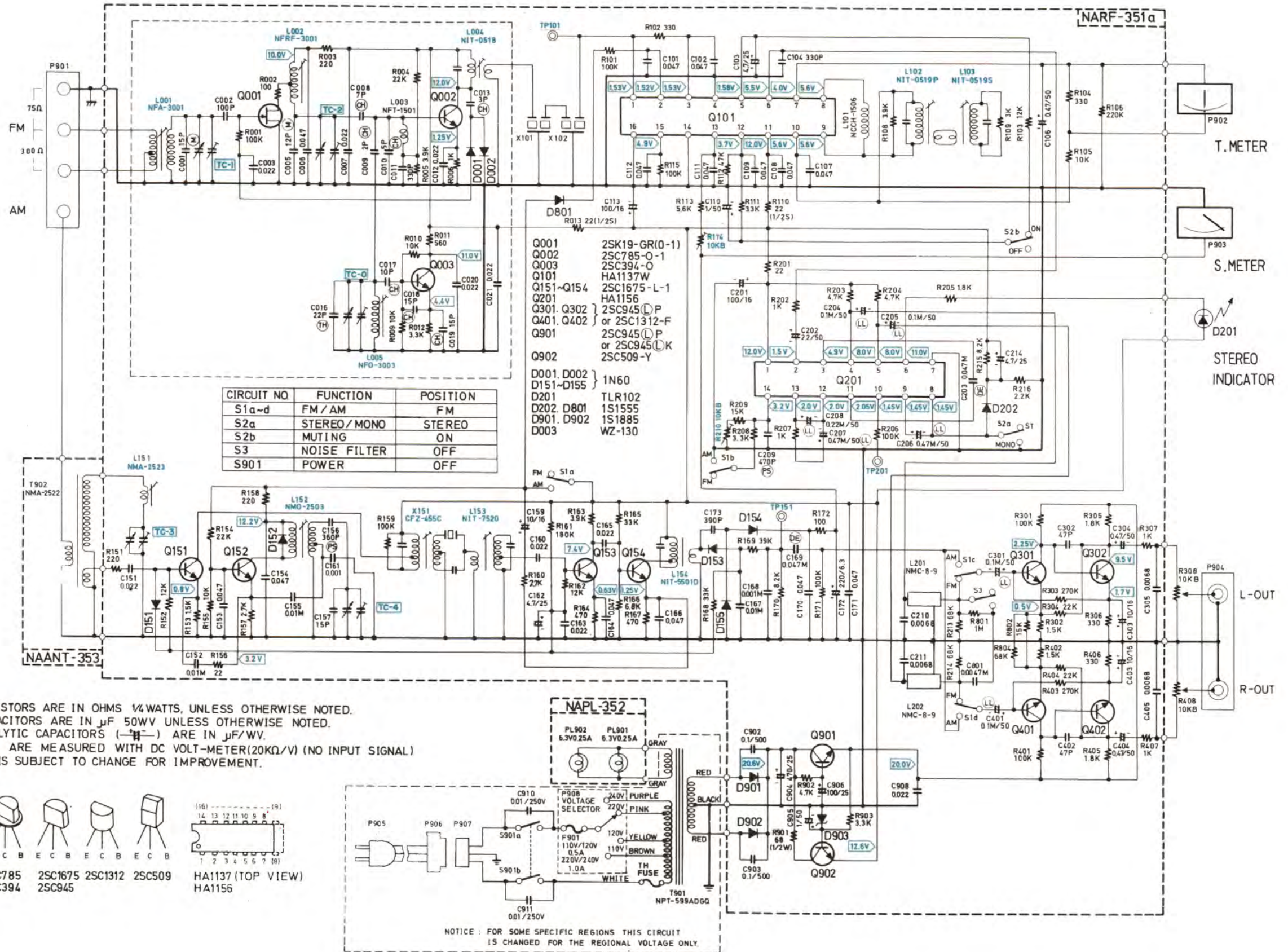
T-5000 PARTS LIST

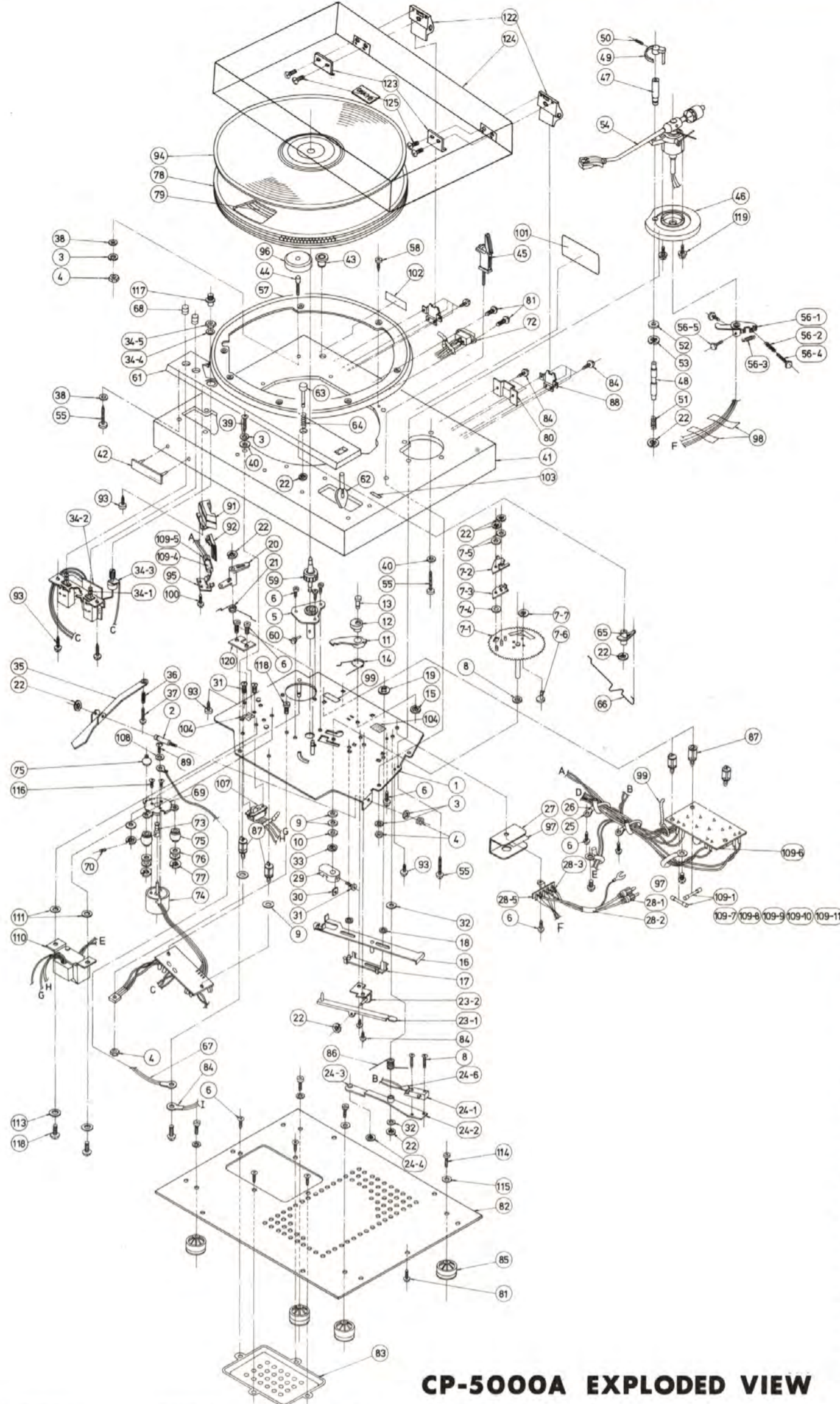
| PARTS NO. | DESCRIPTION | SPECIFICATIONS | Q'TY | STOCK NO. | REMARKS |
|------------------------|-----------------------|------------------------------|------|--------------------|----------------------|
| U1 | RF-AS | NARF-351a | 1 | 13789551A | |
| U2 | PL-AS | NAPL-352 | 1 | 13799552 | |
| U3 | ANT-AS | NAANT-353 | 1 | NMA2522AS | |
| D201 | Light Emitting Diode | TLR-102 | 1 | 225005 | Stereo Indicator |
| T901 | Transformer-Power | NPT-599ADGQ | 1 | 230172 | |
| C910, C911 | Capacitor-IS | PME271Y5T0 | 2 | 3500052 | |
| R308, R408 | Resistor-Variable | N16RG10KB35 | 1 | 5147005 | Level |
| S901 | Switch-Push | NPS-121-L | 1 | 25035034 | Power |
| F901 | Fuse | 0.5A-T | 1 | 252023 | |
| P901 | Terminal | NTM-4PUNI-L | 1 | 25060003 | Antenna |
| P902 | Tuning Indicator | NIND-0250S61 | 1 | 243061 | Center |
| P903 | Tuning Indicator | NIND-0500S60 | 1 | 243060 | Strength |
| P904 | Pin Jack | NPJ-2PRBL02 | 1 | 25045023 | Output |
| P905 | Power Supply Cord | AS-CEE | 1 | 253083 | |
| P906 | Plug-PS | SFO-40A3 | 1 | 250227 | |
| P907 | Inlet-3P | CM-3 | 1 | 25050013 | |
| P908 | Socket-VS | SI-7205-7 | 1 | 250186 | |
| | Binder | SKB-1 | 2 | 260208 | |
| | Back Panel | | 1 | 27120054 | |
| ◀ NARF-351a ▶ | | | | | |
| Q001 | Transistor | 2SK19-Y(O-1) or 2KS19GR(O-1) | 1 | 2210374 or 2210375 | RF AMP (F.E.T) |
| Q002 | Transistor | 2SC785 (O-1) | 1 | 2210380 | MIX |
| Q003 | Transistor | 2SC394 (O) | 1 | 2210393 | OSC |
| Q101 | IC | HA-1137W | 1 | 222421 | FM DET |
| Q151-Q154 | Transistor | 2SC1675 (L-1) | 4 | 2210823 | AM IF |
| Q201 | IC | HA-1156 | 1 | 222419 | FM MPX |
| Q301, Q302, Q401, Q402 | Transistor | 2SC945 L (P) or 2SC1312 (F) | 4 | 2210743 or 2210136 | AF AMP |
| Q901 | Transistor | 2SC945 L (P) or (K) | 1 | 2210734 or 2210741 | Lipple Filter |
| Q902 | Transistor | 2SC509Y | 1 | 2210901 | Lipple Filter |
| D001, D002, D151-D155 | Diode-Germanium | 1N60 N FM | 7 | 2231031 | |
| D202, D801 | Diode-Silicon | 1S1555 | 2 | 223105 | |
| D901, D902 | Diode-Silicon | 1S1885 | 2 | 223802 | |
| D903 | Diode-Zener | WZ-130 | 1 | 223924 | |
| L001 | Coil-Antenna | NFA-3001 | 1 | 233088-1 | |
| L002 | Coil-RF | NFRF-3001 | 1 | 233091 | |
| L003 | Coil-Trap | NFT-1501 | 1 | 233037 | |
| L004 | Transformer-IF | NIT-0518 | 1 | 233085 | |
| L005 | Coil-OSC | NFO-3003 | 1 | 233090 | |
| L101 | Choke Coil | NCCH-1506 | 1 | 233074 | |
| L102 | Transformer-IF | NIT-0519P | 1 | 233086 | FM DET |
| L103 | Transformer-IF | NIT-0519S | 1 | 233087 | FM DET |
| L151 | Coil-Antenna | NMA-2523 | 1 | 232057 | |
| L152 | Coil-OSC | NMO-2503 | 1 | 232013 | |
| L153 | Transformer-IF | NIT-7520 | 1 | 232058 | |
| L154 | Transformer-IF | NIT-5501D | 1 | 232012 | |
| L201, L202 | Coil-MPX | NMC-8-9 | 2 | 233073 | L.P.F. |
| X101, X102 | Ceramic Filter | SFE-10.7MA | 2 | 3010003 | |
| X151 | Ceramic Filter | CFZ-455C | 1 | 3010004 | |
| VC001 | Capacitor-Variable | NVC2-327SA | 1 | 3050004 | |
| TC001 | Capacitor-Trimmer | NTC-F | 1 | 3060001 | |
| C103, C162, C214 | Capacitor-Elect. | CE04W25V4.7μF | 3 | 352750471 | |
| C106, C304, C404 | Capacitor-Elect. | CE04W50V0.47μF | 3 | 352784791 | |
| C110, C905 | Capacitor-Elect. | CE04W50V1μF | 2 | 352780101 | |
| C159, C303, C403 | Capacitor-Elect. | CE04W16V10μF | 3 | 352741001 | |
| C172 | Capacitor-Elect. | CE04W6.3V220μF | 1 | 352722211 | |
| C201 | Capacitor-Elect. | CE04W16V100μF | 1 | 352741011 | |
| C202 | Capacitor-Elect. | CE04W50V2.2μF | 1 | 352780221 | |
| C904 | Capacitor-Elect. | CE04W25V470μF | 1 | 352754711 | |
| C906 | Capacitor-Elect. | CE04W25V100μF | 1 | 352751011 | |
| C156 | Capacitor-Polystyrene | ST08-50V360PF | 1 | 372323615 | |
| C209 | Capacitor-Polystyrene | ST08-50V470PF | 1 | 372324715 | |
| C169, C203, | Capacitor-DE | DE93M50V0.047μF | 2 | 374124737 | |
| C204, C205, C301, C401 | Capacitor-LL | LL04B50V0.1μF | 4 | 392881097 | |
| C206, C207 | Capacitor-LL | LL04B50V0.47μF | 2 | 392884797 | |
| C208 | Capacitor-LL | LL04B50V0.22μF | 1 | 392882297 | |
| R114 | Resistor-Semi Fixed | R-HK10KB3P | 1 | 5225017 | S. Meter Adjust |
| R210 | Resistor-Semi Fixed | R-HK10KB3P | 1 | 5225017 | 19 KHz Adjust |
| S1 | Switch-Lever | NLS-142-27-SL | 1 | 25040022 | Selector |
| S2, S3 | Switch-Lever | NLS-122-27-SL | 2 | 25040021 | Muting, Noise Filter |
| | Shielded Plate F | | 1 | 27150010 | |
| | Shielded Plate H | | 1 | 27150012 | |
| | Shielded Plate | | 1 | 27150044 | |
| ◀ NAPL-352 ▶ | | | | | |
| PL901, PL902 | Pilot Lamp | 6.3V0.25A | 2 | 210026 | |
| PL901a, PL902a | Fuse Holder | SN5051 | 4 | 250113 | |
| ◀ NAANT-353 ▶ | | | | | |
| T902 | Coil-Antenna | NMA-2522 | 1 | 232056 | |
| | Cover-Antenna | | 1 | 27300040 | |
| | Holder-Antenna | | 1 | 27190016 | |

MODEL A-3000 SCHEMATIC DIAGRAM



MODEL T-5000 SCHEMATIC DIAGRAM

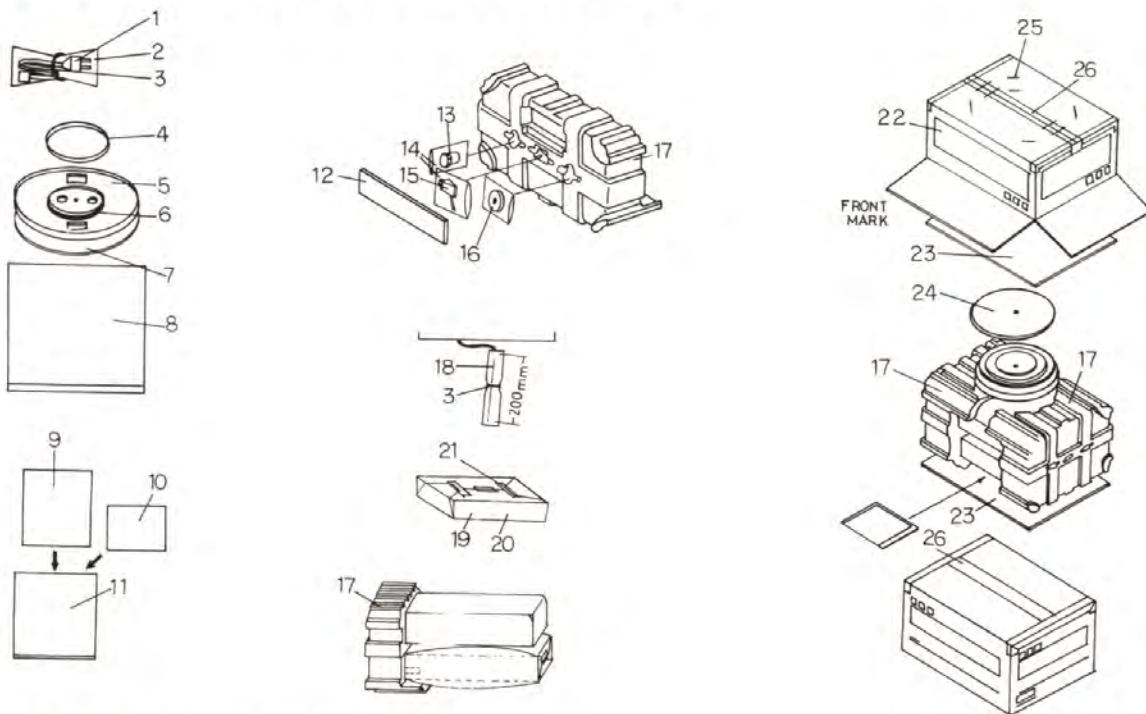




| NO. | DESCRIPTION | S. M |
|--------|-------------------------------------|------------|
| 1 | Mechanical Chassis Ass'y | 24506089 |
| 2 | Reject Lever Shaft | 24500749 |
| 3 | S.S.W-3 | |
| 4 | FLN-3 | |
| 5 | T.T Bearing Ass'y (2) | 24502031 |
| 6 | BT + 3 x 8 | |
| 7 | R Gear Ass'y (2) | 24500750 |
| 7-1 | R Gear Ass'y (1) | 24503015 |
| 7-2 | Clutch Plate | 24504043 |
| 7-3 | Clutch Guide | 24500406 |
| 7-4 | Washer | |
| 7-5 | Washer | |
| 7-6 | Escentric Pin | 24506021 |
| 7-7 | Spring-Washer | |
| 8 | Fieber Washer | |
| 9 | Fieber Washer | |
| 10 | Fieber Washer | |
| 11 | GS Arm | 24500286 |
| 12 | GS Escentric Pin | 24500777 |
| 13 | GS Stud | 24500776 |
| 14 | GS Spring | 24500778 |
| 15 | Circlip | |
| 16 | Actuating Slide | 24500283 |
| 17 | Actuating Base | 24500779 |
| 18 | Washer | 24506027 |
| 19 | CS Circlip | |
| 20 | Kicked Lever | 24500311 |
| 21 | Spring | 24500768 |
| 22 | E-3.2 | |
| 23 | Cueesaw Ass'y | 24500315 |
| 23-1 | Cueesaw Arm | 24500290 |
| 23-2 | Seesaw Base Ass'y | 24500780 |
| 24 | Switch Ass'y | 24506090 |
| 24-1 | Microswitch | 24500241 |
| 24-2 | Switch Arm | 24500298 |
| 24-3 | Escentric Pin | 24500425 |
| 24-4 | Spring Washer | |
| 24-5 | FM + 3 x 16 | |
| 24-6 | Sleeve | |
| 25 | Lug Plate | |
| 26 | Tube | |
| 27 | Shielded Plate | 24506032 |
| 28 | 5P Lug Plate Ass'y | 24505039 |
| 28-1 | Shielded Cord Ass'y | |
| 28-2 | Tube | |
| 28-3 | Tube | |
| 28-4 | 5P Lug Plate | |
| 29 | Switch Lever | 24504048 |
| 30 | Nut | |
| 31 | FM + 3 x 8 | |
| 33 | E-4 | |
| 34 | Volume and Switch Ass'y | 24506092 |
| 34-1 | Push Switch | 25035036 |
| 34-2 | Printed Circuit Board | 25130327 |
| 34-3 | Variable Resistor | 5146004 |
| 34-4 | Washer | |
| 34-5 | Nut | |
| 35 | Cueesaw | 24504034 |
| 36 | Spring | 24500773 |
| 37 | FM + 3 x 12 | |
| 38 | FW 3.2φ x 8φ x 1t | |
| 39 | BT + 3 x 16 | |
| 40 | FW 3.2φ x 10φ x 1t | |
| 41 | Cabinet | 24509041 |
| 42 | Badge | 28135032 |
| 43 | Headshell Stand | 280677 |
| 44 | Shaft-45 Adaptor | 24504051 |
| 45 | Arm Rest Ass'y | 24501065 |
| 46 | Tone arm Base | 24504123 |
| 47 | Elevation Base | 24504124 |
| 48 | Elevation Shaft | 24500416 |
| 49 | Elevation Plate | 24500354 |
| 50 | FT - 3 x 3 | |
| 51 | Elevation Spring | 24500774 |
| 52 | Washer | |
| 53 | Circlip E-6 | |
| 54 | Tonearm Ass'y | 24501130 |
| 55 | FMT + 3 x 16 | |
| 56 | Arm Base Ass'y (2) | 24506039 |
| 56-1 | Arm Base Ass'y (1) | |
| 56-2 | Spring | |
| 56-3 | Spring-Tone arm | |
| 56-4 | Hex Volt | |
| 56-5 | Hex Volt | |
| 57 | Frame - Turntable | 24506009 |
| 58 | FMT + 3 x 10 | |
| 59 | T.T Shaft | 24502032 |
| 60 | Pin | 24506086 |
| 61 | Cover | 24504126 |
| 62 | Cue Lever Ass'y | 24504037 |
| 63 | Reject Button Ass'y | 24504038 |
| 64 | Spring - Button | 24503011 |
| 65 | Reject - Lever | 24504039 |
| 66 | Spring - Reject | |
| 67 | Shielded Cord Ass'y | 24505038 |
| 68 | Push Button Ass'y | 28320118 |
| 69 | Motor Cover Ass'y | 24506093 |
| 70 | A 2 x 3 | |
| 71 | FW 3.2φ x 8φ x 0.5t | |
| 72 | 3P Inlet CM-3 | 25050013 |
| 73 | Motor Pulley | 24502040 |
| 74 | Motor Ass'y | 24502033 |
| 75 | Motor Cushion | 24502037 |
| 76 | Fieber Washer | |
| 77 | E-3 | |
| 78 | Turntable | 24502038 |
| 79 | Belt | 24212913 |
| 80 | Stopper | |
| 81 | WM + 3.1 x 13 | |
| 82 | Bottom Board | 24506087 |
| 83 | Cover-Motor | 27300007 |
| 84 | Shielded Cord | |
| 85 | Cushion-Motor | 24509031 |
| 86 | Spring-Arm | 24500767 |
| 87 | PC Support | 24506085 |
| 88 | Plate-Hinge | |
| 89 | FM + 2.6 x 4 | |
| 91 | Lamp House | 24504137 |
| 92 | Lamp Cover | 24504138 |
| 93 | FMT + 3 x 8 | |
| 94 | T.T Mat | 292045A |
| 95 | Lamp Holder | |
| 96 | 45 Adaptor | 292023 |
| 99 | Band | |
| 100 | FMT + 3 x 6 | |
| 101 | Rating Plate | 29360120 |
| 102 | Label-Model | |
| 103 | Label-Stylus | 29375012 |
| 104 | Tag-Voltage | |
| 107 | Slide Switch S-J0275 | 250159 |
| 108 | S. SW2.6φ | |
| 109 | Power Supply Ass'y | |
| 109-1 | Fuse 0.5A | 252023 |
| 109-2 | Fuse 1A | |
| 109-4 | Neon Lamp NE-2HU | 211003 |
| 109-6 | Printed Circuit Board | |
| 109-7 | Capacitor-Ceramic 1500WV0.033μF | |
| 109-9 | Diode 1S1943 | 223836 |
| 109-10 | Fuse Holder | |
| 109-11 | Resistor 12 kΩ 1W | |
| 109-12 | Capacitor-Elect. 25WV 1000μF | 351251021 |
| 110 | Transformer-Power NPT-604DG | 230169 |
| 111 | Ring-Transformer | |
| 114 | FM + 4 x 10 | |
| 115 | FW 4φ x 10φ x 0.5t | |
| 116 | FM + 2.6 x 3 | |
| 117 | Knob-Volume | 24504128 |
| 118 | CT + 3 x 8 | |
| 120 | Fixture Plate | 270444 |
| 121 | Phono Motor Ass'y (67, 69, 74, 116) | |
| 122 | Hinge Ass'y | 28180037 |
| 123 | Plate | 28180022 |
| 124 | Dust cover | 28165028-1 |
| 125 | Screw BM x 4 x 10 | |
| | Player Ass'y MSS-7312A | 242253 |
| | Headshell | |
| | Cartridge OC-35V | 24501108 |
| | Stylus DN-35ST | 24501110 |

CP-5000A EXPLODED VIEW

CP-5000A PACKING PROCEDURE



CP-5000A PARTS LIST

| NO. | DESCRIPTION | SPECIFICATIONS | Q'TY | S. N. |
|------|-------------------------|----------------|------|--------------------|
| 1 | Power Supply Cord Ass'y | | 1 | |
| 1-a | Power Supply Cord | AS-CEE | 1 | 253083 |
| 1-a | Conversion Plug | CV-K or CV-K-1 | 1 | 292063 or 25055018 |
| 1-a | Plug-PS | SFO-40A3 | 1 | 250227 |
| 1-b | Power Supply cord | AS-VDE-C | 1 | 253089 |
| 1-c | Power Supply cord | | 1 | 253077 |
| 1-c | Plug-PS | SFO-40A3 | 1 | 250227 |
| 2 | Poly Bag | | 1 | |
| 3 | Rubber Band | | 1 | 262001 |
| 4 | Pad Sheet | | 1 | |
| 5 | Turntable | | 1 | 24502038 |
| 6 | Belt | | 1 | 242129B |
| 7 | T. T Mat | | 1 | 292045A |
| 8 | Poly Bag – Turntable | 450x350mm | 1 | 29100008 |
| 9-a | Instruction Manual | | 1 | 29340160 |
| 9-b | Instruction Manual | | 1 | 29340161 |
| 10-b | Warranty Card | | 1 | 29365001-1 |
| 11 | Poly Bag | 330x220mm | 1 | 29100005 |

| NO. | DESCRIPTION | SPECIFICATIONS | Q'TY | S. N. |
|-----|-------------------|----------------|------|------------|
| 12 | Pad Sheet – Side | | 1 | 29095031 |
| 13 | Counter Weight | | 1 | |
| 14 | Poly Bag | 150x80mm | 2 | 29100002 |
| 15 | Headshell Ass'y | | 1 | |
| 16 | 45 Adaptor | | 1 | 292023 |
| 17 | Pad-Side | | 2 | 29090078-1 |
| 18 | Paper-Output Cord | | 1 | 290076 |
| 19 | Dust Cover | | 1 | 28165028-1 |
| 20 | Sheet | 670x1000mm | 2 | 29095016 |
| 21 | Adhesive Tape | | | |
| 22 | Master Carton Box | | 1 | 29050088 |
| 23 | Pad Sheet | | 2 | 29095030 |
| 24 | Pad – Turntable | | 1 | 24509019 |
| 25 | Sealing Hook | | 8 | 282301 |
| 26 | Adhesive Tape | W50mm | | 262037 |

a: Universal Type
b: Germany Type
c: Australia Type

| PARTS NO. | DESCRIPTION | SPECIFICATIONS | Q'TY | S. N. |
|-------------|---------------------|----------------------|------|--------------------|
| Q1 ~ Q7 | Transistor | 2SC945(D) Por K | 7 | 2210743 or 2210741 |
| Q8 | Transistor | 2SA641 (H) | 1 | 2210981 |
| Q9 | Transistor | 2SC1449 (L) | 1 | 2200623 |
| D1 | Varistor | VD1122 | 1 | 4000030 |
| D2 | Diode | 1S953 | 1 | 223104 |
| VR1, VR2 | Resistor-Semi Fixed | NO 8 HRIKBC | 2 | 5215001 |
| C3 | Capacitor-Elect. | CE04W 25V 10 10µF | 1 | 352751001 |
| C4 | Capacitor-Elect. | CE 04W 25V 10µF | 1 | 352750101 |

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