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DENON 08330

Hi Fi Component/Record Player

SERVICE MANUAL



**SERVO-CONTROLLED
DIRECT DRIVE AUTO-LIFT
RECORD PLAYER**

MODEL DP-30L SERIES



Model DP-30L

NIPPON COLUMBIA CO., LTD.

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SAFETY PRECAUTIONS

Model DP-30L is designed and manufactured with careful consideration about product safety. For continued product safety, read following precautions and practice proper servicing.

1. Since the printed circuit board of 120V version of Model DP-30L have high voltage potential from the metal chassis regardless of the polarity of the AC supply, use an isolating transformer (1:1) for servicing.
2. Replace always with correct parts having correct rating, shape and material, etc. Especially the component with shading and  mark must be replaced only by the specified component for safety reasons.

3. For setting up the record player;
 - A) Do not damage the power cord by placing a heavy object on it, or by pinching it between angular objects. Do not fix the power cord by nails, etc. on wall.
 - B) Make sure any metal objects such as needle, hair pin or coin are not remaining inside the appliance.
 - C) Give sufficient clearance for ventilation holes at bottom. Allow more than 10cm clearance between the rear of cabinet and wall.

MODEL GROUP

The DP-30L series can be divided into two groups, the American models (including U.S.A. and Canadian models) and the European models (including continental European, U.K., Australian and Asian models).

Main difference between the above groups are whether the platter motor is directly connected to mains supply or isolated from mains by the secondary winding of power transformer, as well as different supply voltage.

The platter motor of the American models is directly connected to the mains supply. However, the major parts of

the motor control circuit is isolated from the mains supply and the final motor drive circuit by a small insulating transformer and a photo-coupler respectively.

Difference between the DP-30L and DP-30L(S) is the difference of base color, whether dark brown or silver painting.

FEATURES

- Stylus and record are free from unnecessary load of the automatic arm lift mechanism owing to the non-contact record-end sensor.
- Newly developed angular control motor enables sure and smooth tonearm cuing.
- Innovative material makes the base effective for acoustic feedback prevention.

- Operation buttons and controls are arranged outside the dust cover providing easier and more flexible operation.
- Highly accomplished magnetic recording detection system with direct drive AC motor assures wow-less, flutter-less, smooth and silent... oft-talked-about DENON quality.

NAMES OF PARTS AND FUNCTIONS

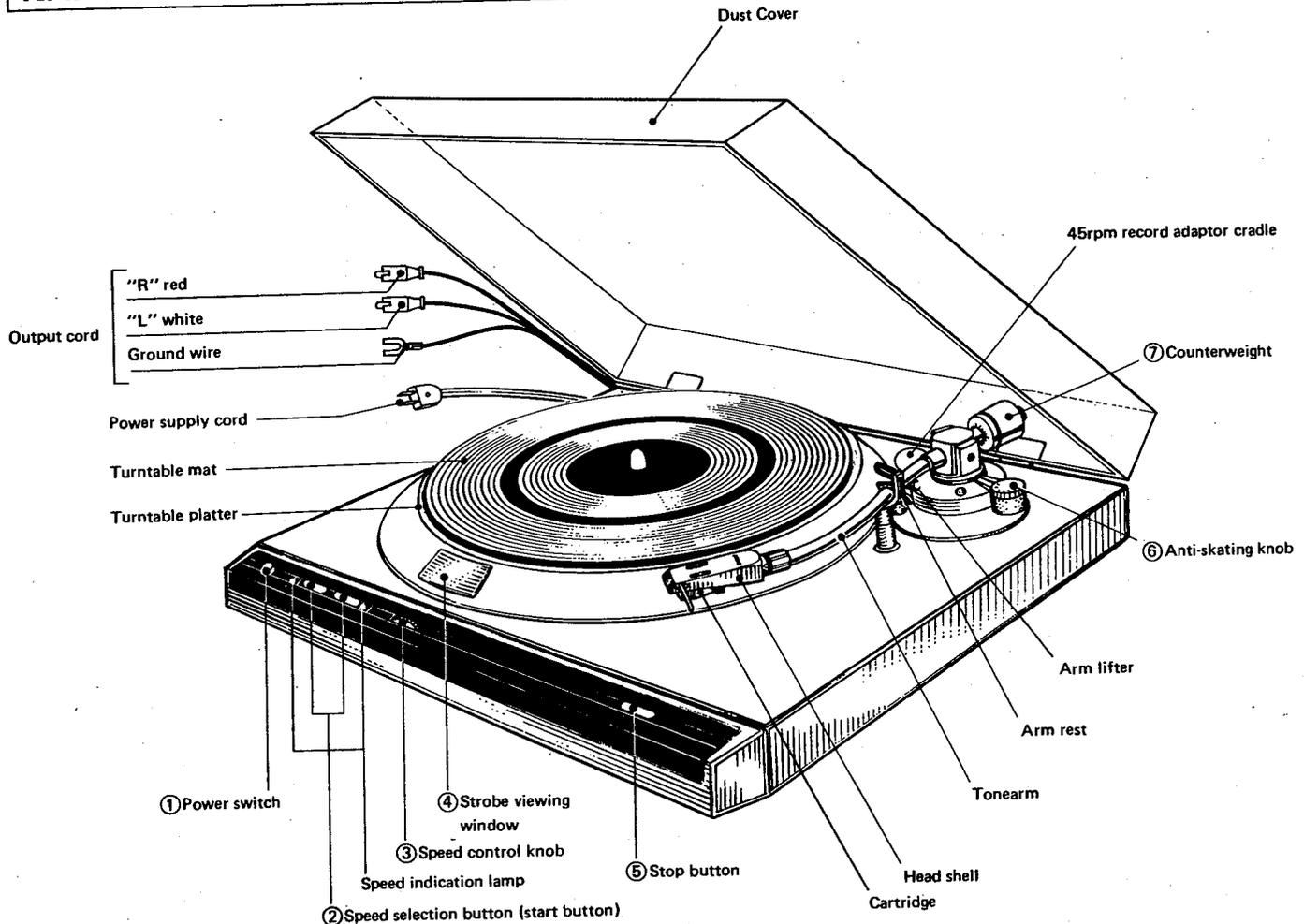


Fig. 1 Names of parts and function

- (1) Power switch**
Turns the power ON () and OFF ().
- (2) Speed selection button (Start button at the same time)**
When this button is pressed, the speed is selected, the platter starts rotation and at the same time the arm lifter lowers. Press buttons;
"33" for record at 33-1/3 rpm
"45" for record at 45 rpm.
- (3) Speed control knob**
Turn this knob left or right to vary speed.
- (4) Strobe viewing window**
Monitor flow of strobe pattern while adjusting the speed.
- (5) Stop button**
Press this button, and the arm lifter ascends and the motor is off. The platter continues rotation for a while before it stops.
- (6) Anti-skating knob**
In playback of record, an attraction force toward inside of record is introduced at the stylus. This force is varied by adjustment of this knob. Refer to Owner's manual (P. 14) for adjustment.
- (7) Counterweight**
The stylus force applied to the cartridge is adjusted by this weight. Refer to Owner's manual (P. 14) for adjustment.

THEORY OF OPERATION

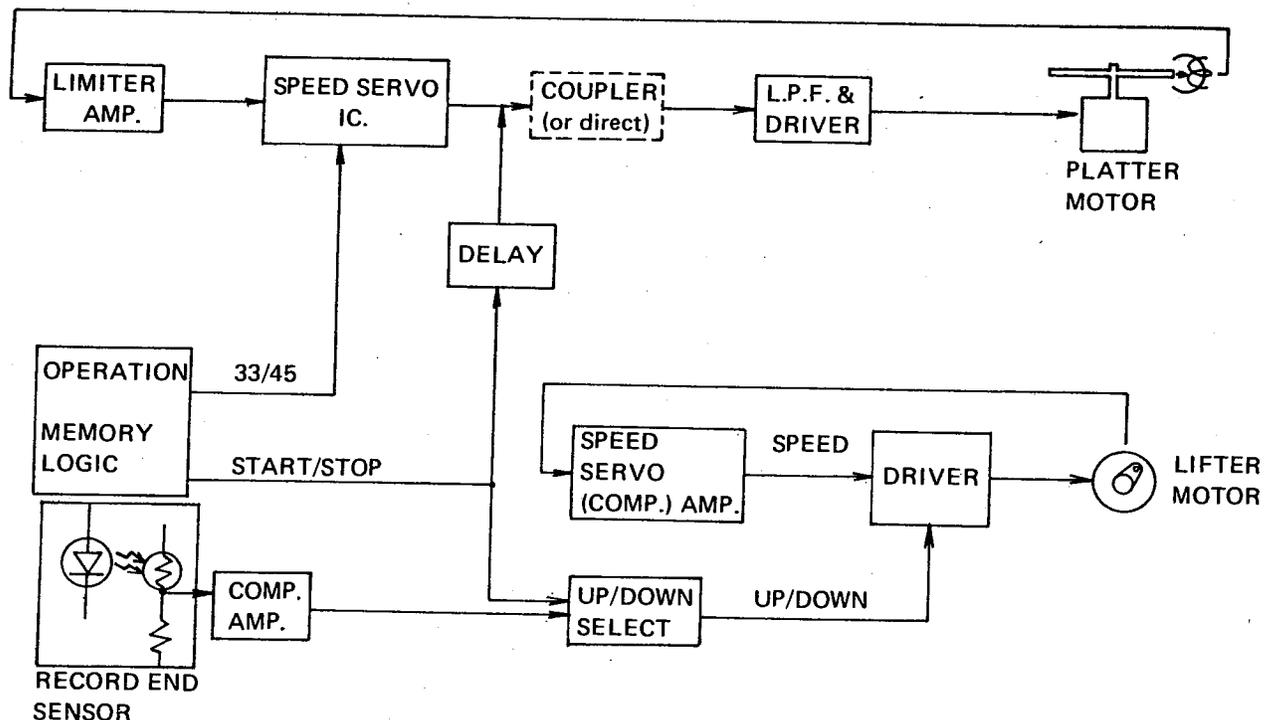


Fig. 2 Block diagram of the DP-30L

The block diagram is shown in Fig. 2.

Read the theory of operation in the service manual for the DP-1200 (Code No. 7503-043) for details of speed servo control since that of the DP-30L is in a close similarity. Main difference of the DP-30L series from the DP-1200 are as follows:

1. Photo coupler (American models only)

Photo coupler is a combination of an LED and photo transistor which are optically coupled but isolated electrically. It is useful to isolate low potential (non-hazardous) circuit from the mains supply. Of course, strict high voltage withstand is required in view point of safety.

When current (DC or pulse) flows in the LED, the photo transistor is turned on allowing signal to pass to the motor drive stage (L. P. F.).

The photo coupler is not used but by-passed in the European models since the whole control circuit including the motor is isolated from mains supply by the insulating power transformer.

2. Logic circuit

33/45 speed select (start button at the same time) and stop memory circuits consist of 4 NAND gates (HD7401P or equiv. SN7401 Texas).

3. Memory delay circuit

If the motor drive circuit is disabled when the stop button is pressed to lift up the arm in the middle of music, the platter speed slows down while the stylus is still remaining on the sound groove. This is a sort of annoyance. The time delay circuit (C16, R15, TR11) maintains platter servo control with a time constant of the circuit (approx. 2 sec. at 33 rpm.) after the stop button is pressed. Time delay for 45 rpm is held also by C15 for approx. 1 sec.

Note 1: Production models of early stage have a small and separate P.C. board for delay circuit.

Note 2: Also adjustment of the arm lifter height is important.

The gap between the arm lifter and arm tube at play decides the time for the stylus to remain on the disc groove until the arm lifter actually lifts the arm tube. Always adjust the gap to 0.5 mm when the cartridge is replaced in accordance to Page 6.

4. Automatic arm lift mechanism by the non-contact end detection

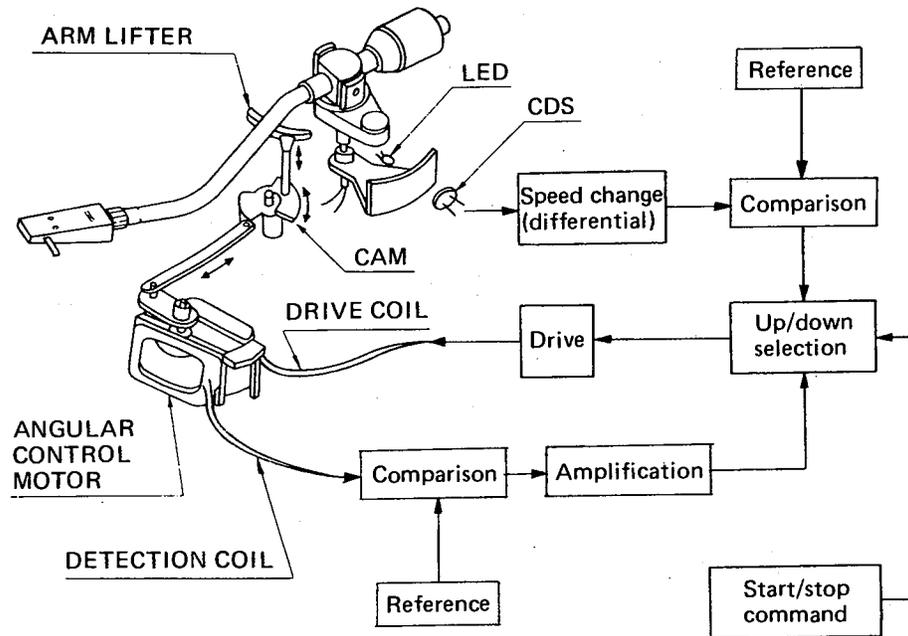


Fig. 3 Auto lift mechanism block diagram

1) End Detection

Improved version of that of the DP-1200 is employed for the end detection system.

As shown in the above Fig., a shutter is provided between LED and CDS, and the shutter moves in conformity with the movement of the tonearm. When the stylus is at the position other than the lead-out groove on the record disc, the beam of LED is intercepted by the shutter. The beam of LED gradually comes to hit CDS as the stylus moves closer to the lead-out groove and the moving speed of the tonearm is detected. In this structure, the movement of the tonearm is completely independent and not contact with any other parts at all, therefore the performance of the tonearm will not be deteriorated as no influence is caused on the horizontal sensitivity of the tonearm or the stylus force.

2) Lift Mechanism

The drive mechanism to move the arm lifter up and down is composed of the angular control motor and cam which are of the same type as those employed for DP-40F.

A speed detection coil is newly wound around the angular motor and performs the servo control by detecting the revolution speed of the motor. Consequently, the speed of the up/down movement of the arm lifter is determined by the reference voltage of the servo circuit (up speed; drop voltage of R29, down speed; drop voltage of R28) and it operates smoothly at a constant speed without being affected by the tonearm position, stylus force of the cartridge or the ambient temperature.

ADJUSTMENT POINTS

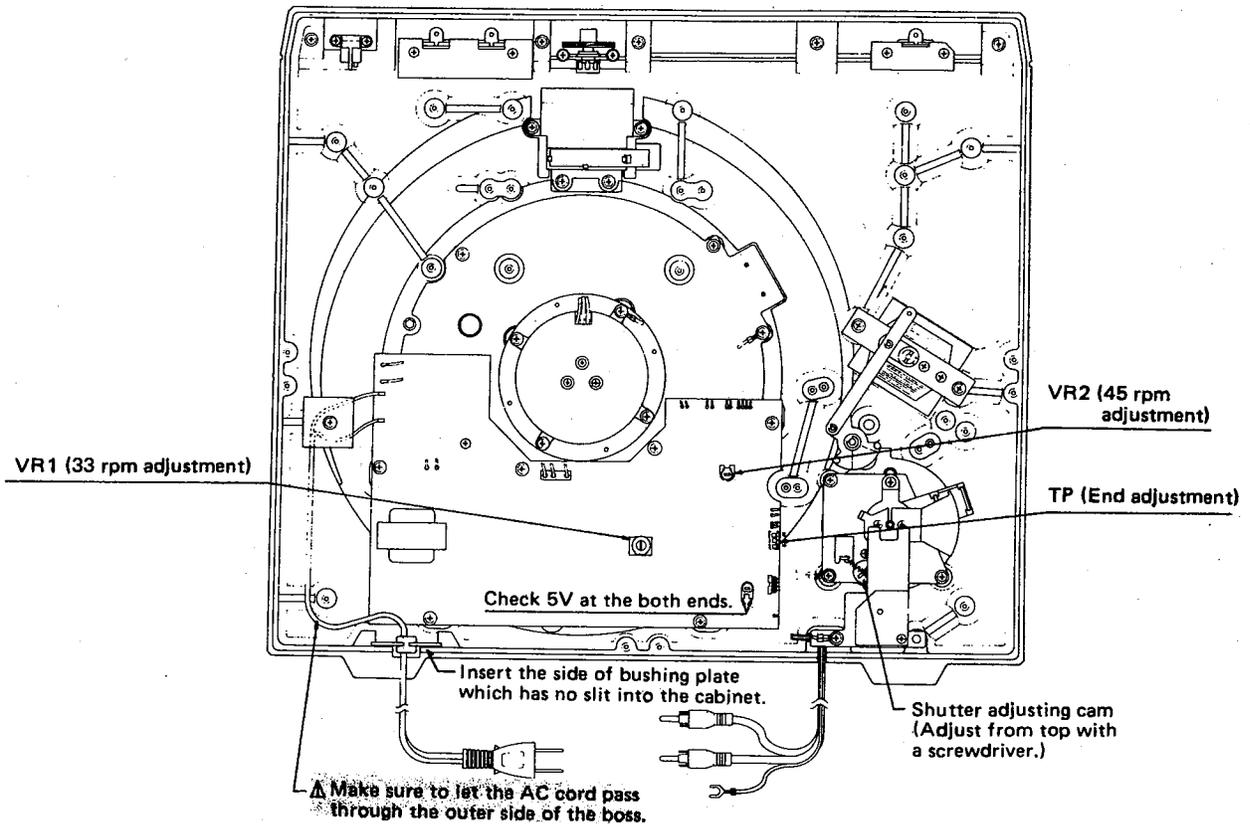


Fig. 4 Bottom view (American models)

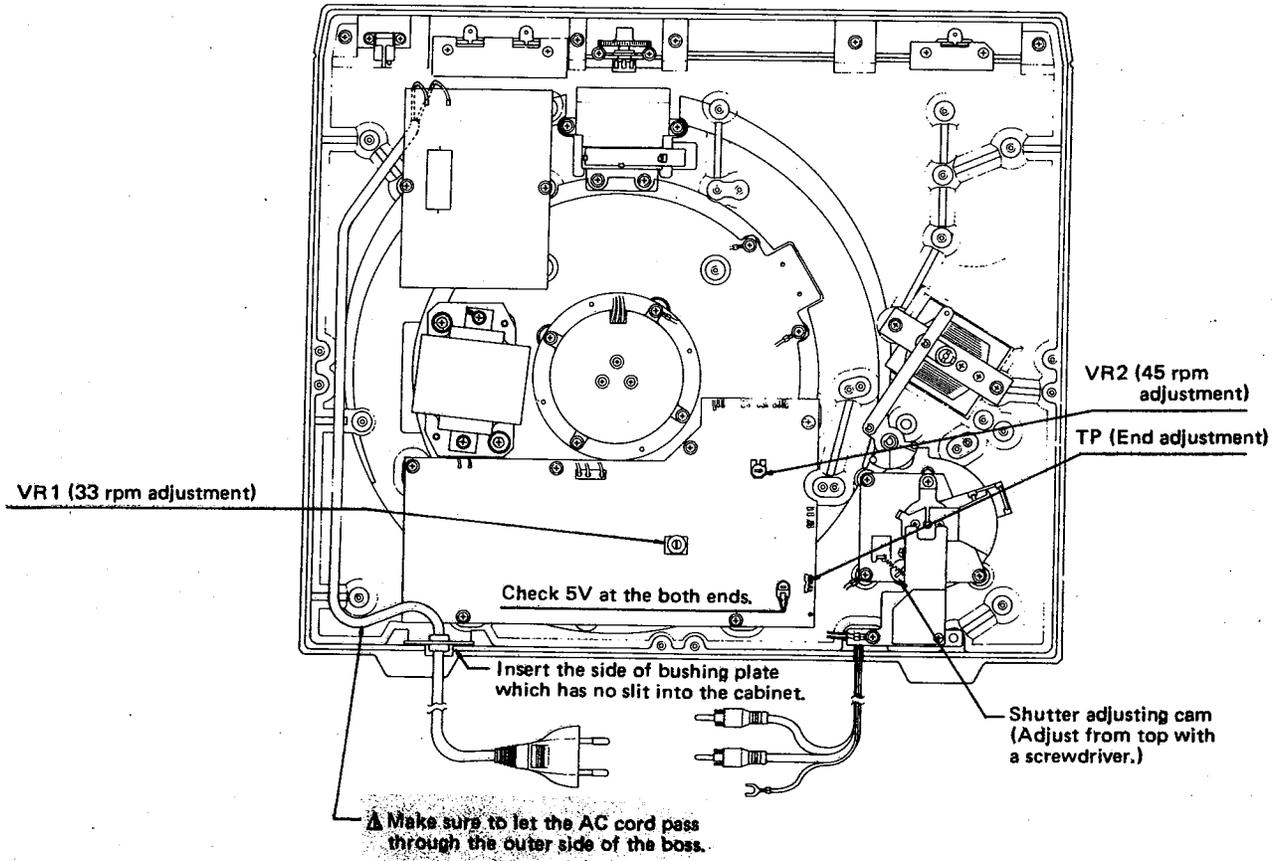


Fig. 5 Bottom view (European models)

SEQUENCE OF ADJUSTMENT

1. Checking the Line Voltage

Circuits of this model except the drive circuit of the phono motor are fed by the stabilized power source IC. Check if the respective voltage is 5V.

2. Checking the Detection Head Space

The space (clearance) between the detection head and magnet-coated surface of turntable is preadjusted to approximately 0.2 mm, however, if readjustment is required, loosen the two fitting screws for the head and adjust the space between the magnet-coated surface of the turntable and the detection head surface to approximately 0.2 mm.

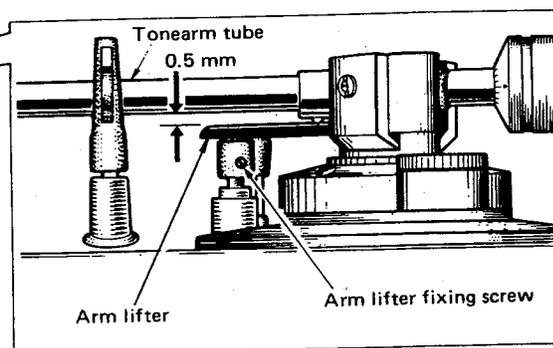
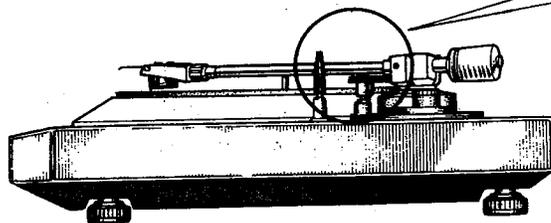


Fig. 6 Arm lifter height

4. Speed Adjustment

45 r.p.m. (make sure to adjust 45 r.p.m. first) (Fig. 7): Turn the speed control knob on panel fully leftward, and move the point P on the extreme left end where the control knob is projected out of the front panel from A to B. Repeat this operation twice and set the VR to approximately the center position. While observing the strobe of 45

r.p.m., turn the preset VR2 and make adjustment to have the strobe stripe stand still.

33-1/3 r.p.m.:

Leave the speed control knob at the position set in 45 r.p.m. adjustment, and turn the preset VR1 while observing 33-1/3 r.p.m. strobe and make adjustment to have the strobe stripe stand still.

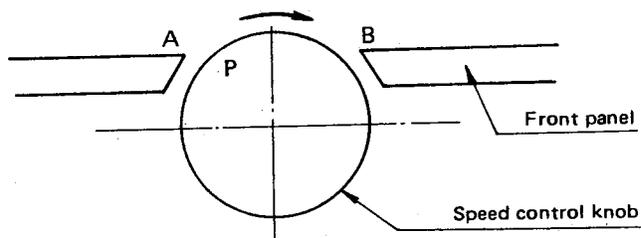


Fig. 7 Speed control knob

5. End Adjustment

Pull out the lead wire from the test points (T.P. 3P mini-connector pin) of p.c. board, and close the bottom lid again so that any light to the sensor unit other than that from LED will not hit the CDS. Place 30 cm or 25 cm record disc on the turntable. Hold the turntable still with the hand and press 33 r.p.m. or 45 r.p.m. button. Set the cartridge stylus to the last groove position (53 mm from the center spindle of the motor). Then turn the inside cam with a flat head screwdriver through the shutter adjusting hole of the arm base to adjust the voltage of the test point to

be $1.3V \pm 0.1V$.

It must be noted if the turntable is stilled by hand for too long, thermal fuse of the motor may be blown, therefore, make adjustment quickly (within 5 minutes).

6. Offset Adjustment (Make adjustment when replacing IC5)

Short-circuit between two ends of R28, TR4 base and ground, and TR7 base and ground. Adjust the preset VR3 to obtain the voltage of $1.4V \pm 0.1V$ at No.14 terminal of IC5.

EXPLODED VIEW OF MAIN PARTS (American models)

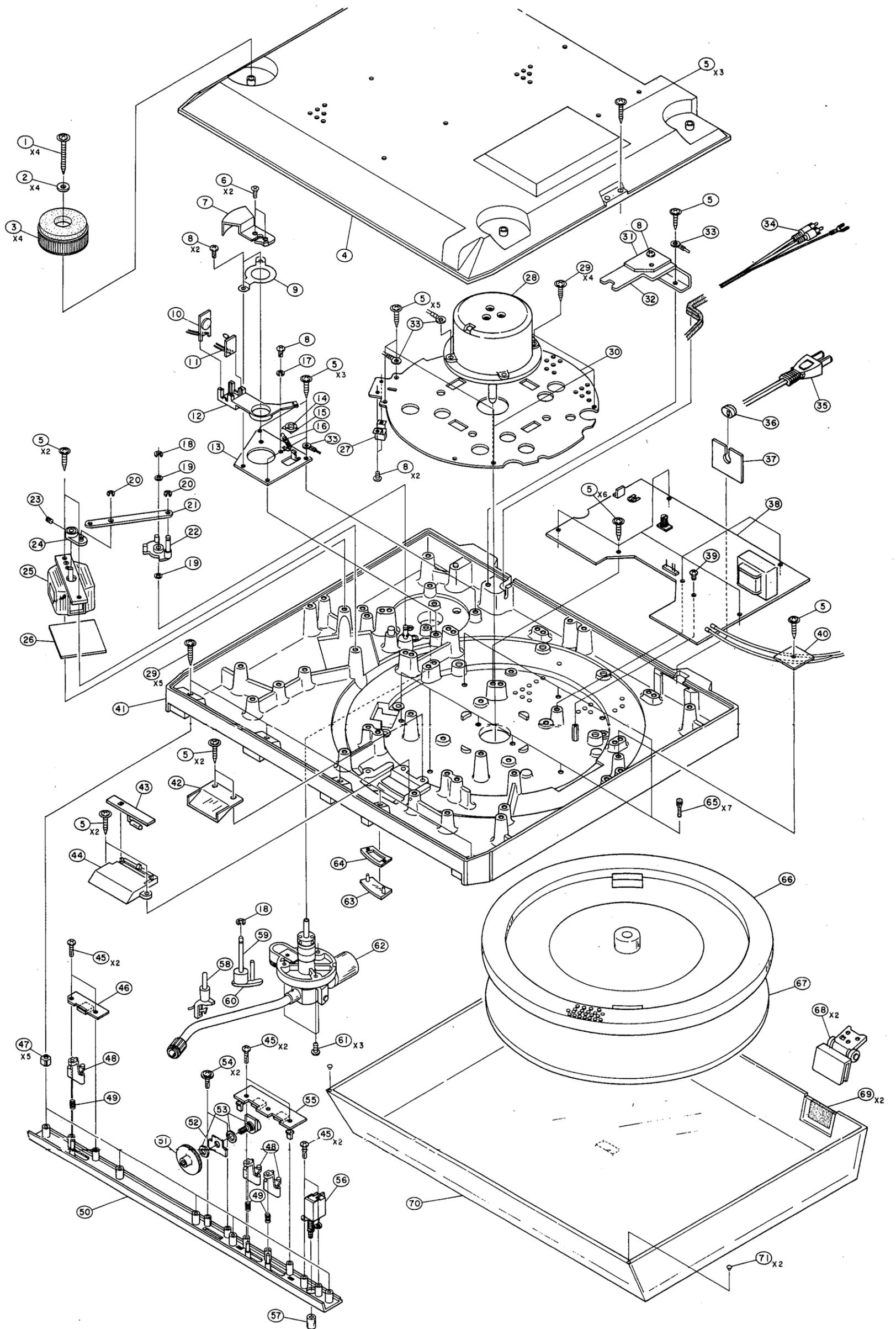
| Ref. No. | Part No. | Part Name | Remarks |
|----------|--------------|----------------------|---------|
| 1 | 4731803022 | 3 x 25 CPTS (4)W | |
| 2 | WA-01074 | WASHER | |
| 3 | 1048013317 | INSULATOR | |
| 4 | 1058034001 | BOTTOM COVER ASSY | |
| 5 | 4731803006 | 3 x 12 CPTS (4)W | |
| 6 | 4712303017 | 3 x 6 CFS | |
| 7 | 4118027308 | SHUTTER | |
| 8 | 4733800007 | 3 x 6 CBTS (2) | |
| 9 | 4418213003 | PUSH PLATE | |
| 10 | KU-325 (58D) | CDS. CIRCUIT BOARD | |
| 11 | KU-325 (58C) | LED CIRCUIT BOARD | |
| 12 | 4218115301 | SENER HOLDER | |
| 13 | 4418312205 | SENER BASE | |
| 14 | 4248004107 | ADJUST CAM | |
| 15 | 4418214109 | ADJUST PLATE | |
| 16 | 4638073007 | SHUTTER SPRING | |
| 17 | 4752003005 | 3 SW | |
| 18 | 4761003009 | 3E RING | |
| 19 | 4770090058 | WASHER | |
| 20 | 4761001001 | 2E RING | |
| 21 | 4418220203 | CONNECTION PLATE | |
| 22 | 4248007007 | CAM | |
| 23 | 4744200007 | 3 x 3 BSS | |
| 24 | 4218121104 | MOTOR ARM | |
| 25 | 2178038203 | MOTOR (C) ASSY | |
| 26 | 4418323100 | M. SHIELD PLATE | |
| 27 | 3918423006 | MAGNETIC HEAD | |
| 28 | 2178036205 | MOTOR ASSY | |
| 29 | 4731803019 | 3 x 16 CPTS (4)W | |
| 30 | 4148054309 | SHIELD PLATE | |
| 31 | KU-325 (F) | ARM WIRE BOARD | |
| 32 | 4418311303 | SHIELD COVER | |
| 33 | 2098093001 | EARTH WIRE | |
| 34 | 2033642103 | OUTPUT CORD ASSY | |
| 35 | 2062019008 | AC CORD | |
| 36 | MD-3802 | BUSHING | |
| 37 | 4418314009 | BUSH PLATE | |
| 38 | KU-325 | CONTROL CIRCUIT UNIT | |

| Ref. No. | Part No. | Part Name | Remarks |
|----------|-------------------------|--------------------|---------|
| 39 | 4713309010 | 3 x 16 CBS | |
| 40 | KU-325 (58G) | CORD STOPPER | |
| 41 | 103808510B ⁶ | CABI. ASSY | |
| 42 | 1468037009 | ACRYL COVER | |
| △ 43 | KU-325 (58E) | NEON LAMP BOARD | |
| 44 | 1468082106 | MIRROR CASE ASSY | |
| 45 | 4730305013 | 3 x 10 CBRTS (1) | |
| 46 | KU-325 (58B) | STOP BOARD | |
| 47 | 4038001006 | CAP | |
| 48 | 1138077205 | PUSH SWITCH KNOB | |
| 49 | 4638100103 | SPRING | |
| 50 | 1038067412 | FRONT PANEL | |
| 51 | 1138078217 | VOLUME KNOB | |
| 52 | 4418307100 | VOLUME SUPPORT | |
| 53 | 2118036003 | V16N15K8502 | |
| 54 | 4700026005 | 3 x 8 CRTS (2)W | |
| 55 | KU-325 (58A) | 33-45 BOARD | |
| △ 56 | 2129088011 | POWER SWITCH | |
| 57 | 1138076206 | SWITCH KNOB | |
| 58 | 315-8273100 | ARM REST ASSY | |
| 59 | 3158265105 | LIFTER SHAFT | |
| 60 | 3158272101 | ARM LIFTER ASSY | |
| 61 | 4713303029 | 3 x 6 CBS | |
| 62 | FPU-830 | TONE ARM UNIT | |
| 63 | 1468051001 | STROBO WINDOW | |
| 64 | 4148022001 | BLIND | |
| 65 | 4690012006 | RUBBER CUSHION (B) | |
| 66 | 4218080106 | RECORDED TURNTABLE | |
| 67 | 4218141113 | RUBBER SHEET | |
| 68 | 4018009109 | HINGE | |
| 69 | 1228017104 | SHEET | |
| 70 | 1468081301 | DUST COVER ASSY | |
| 71 | 4628006107 | BUSHING | |

WARNING:

△ Components with △ marks and shading have special characteristics important to safety.

They must be replaced only by specified components.

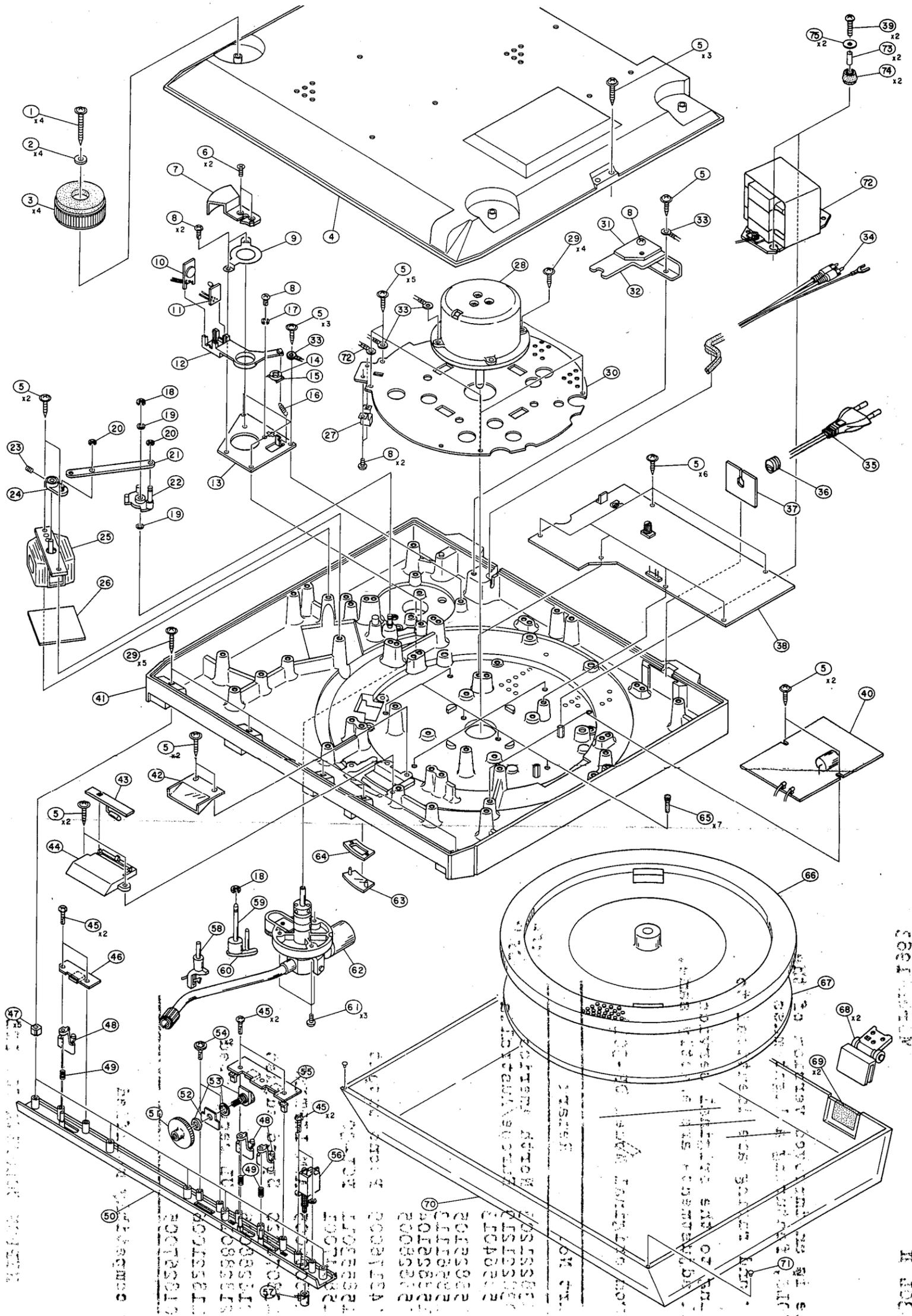


NOTE:

Special tap-in screws with frange are used to prevent loosening. Be sure to use specified screws.

These special screws with frange can be tightened with relatively high torque. Therefore, take note that the screw holes on the cabinet may be destroyed disabling fixture, if the screws are tightened excessively.

In case the screw hole is dulled, it can be of service again by inserting a small piece of vinyl tip, etc. when tightening screw.

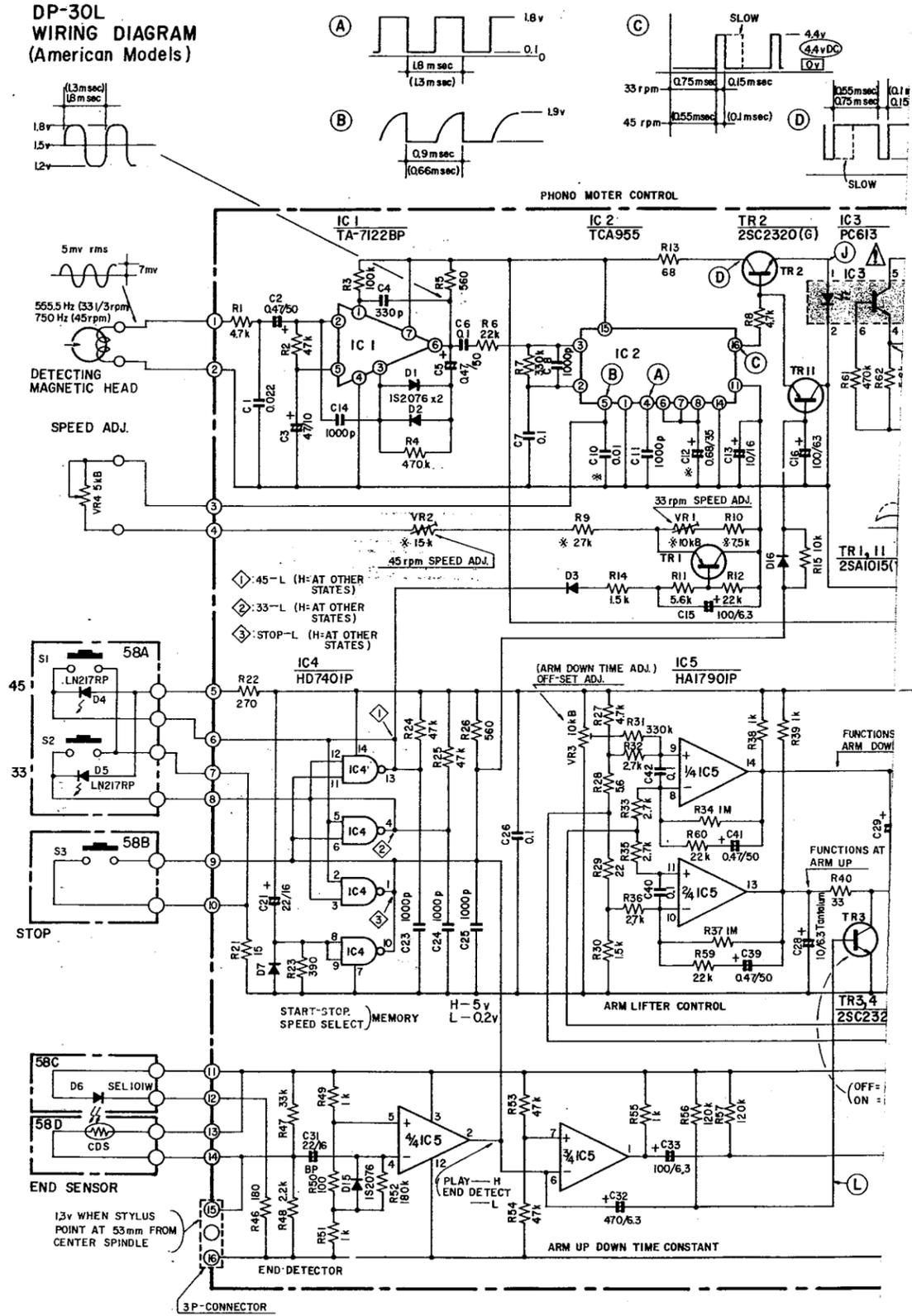


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CIRCUIT DIAGRAM OF DP-30L (American models)

DP-30L
WIRING DIAGRAM
(American Models)



EXPLODED VIEW OF MAIN PARTS (European models)

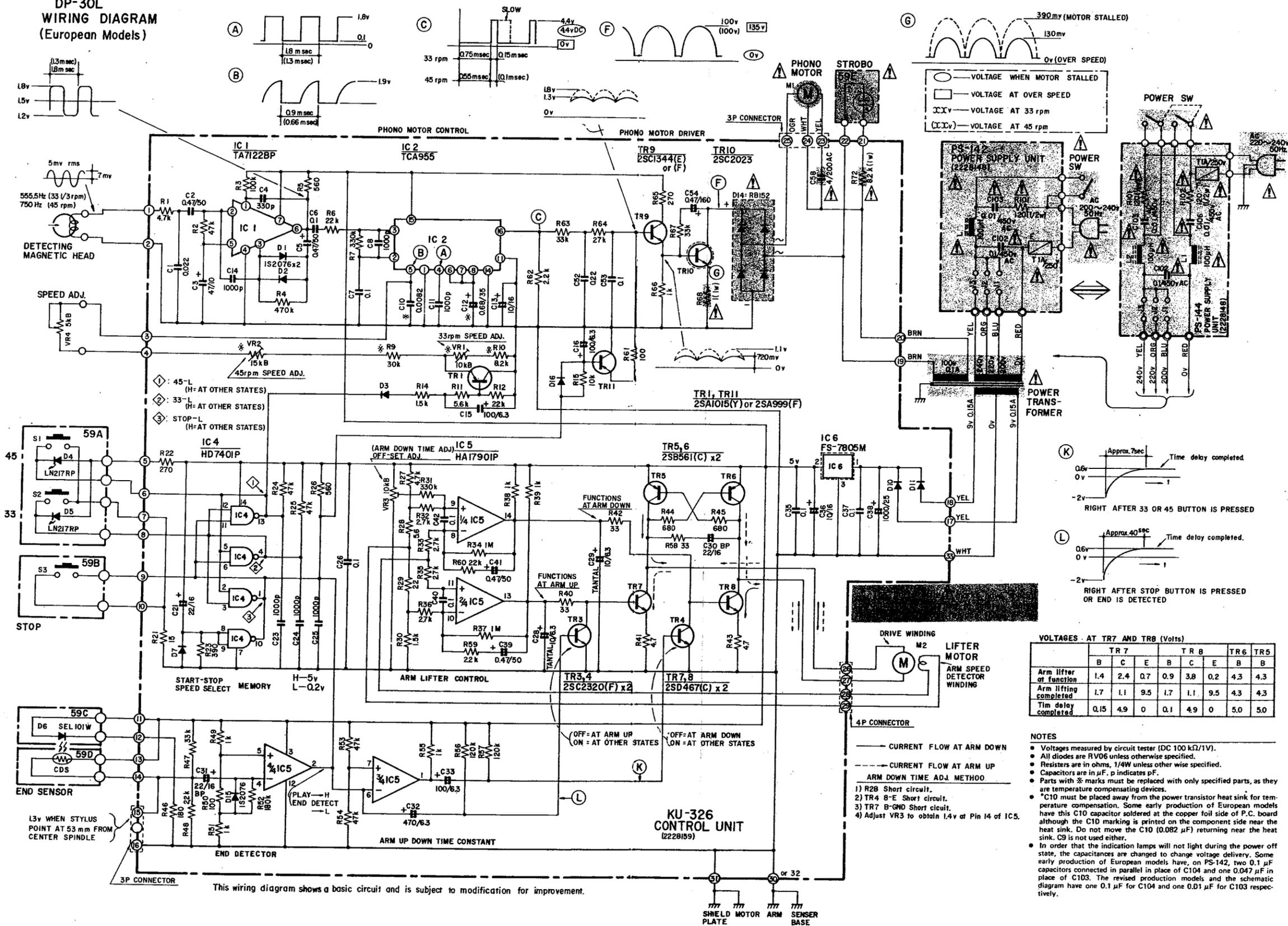
| Ref. No. | Part No. | Part Name | Remarks |
|----------|--------------|----------------------|---------|
| 1 | 4731803022 | 3 x 25 CPTS (4)W | |
| 2 | WA-01074 | WASHER | |
| 3 | 1048013304 | INSULATOR | |
| 4 | 1058034001 | BOTTOM COVER ASSY | |
| 5 | 4731803006 | 3 x 12 CPTS (4)W | |
| 6 | 4712303017 | 3 x 6 CFS | |
| 7 | 4118027308 | SHUTTER | |
| 8 | 4733800007 | 3 x 6 CBTS (2) | |
| 9 | 4418213003 | PUSH PLATE | |
| 10 | KU-326 (59D) | CDS. CIRCUIT BOARD | |
| 11 | KU-326 (59C) | LED CIRCUIT BOARD | |
| 12 | 41281153001 | SENSOR HOLDER | |
| 13 | 4418312205 | SENSOR BASE | |
| 14 | 4248004107 | ADJUST CAM | |
| 15 | 4418214109 | ADJUST PLATE | |
| 16 | 4638073007 | SHUTTER SPRING | |
| 17 | 4752003005 | 3 SW | |
| 18 | 4761003009 | 3E RING | |
| 19 | 4770090058 | WASHER | |
| 20 | 4761001001 | 2E RING | |
| 21 | 4418220203 | CONNECTION PLATE | |
| 22 | 4248007007 | CAM | |
| 23 | 4744200007 | 3 x 3 BSS | |
| 24 | 4218121104 | MOTOR ARM | |
| 25 | 2178038203 | MOTOR (C) ASSY | |
| 26 | 4418323100 | M. SHIELD PLATE | |
| 27 | 3918423006 | MAGNETIC HEAD | |
| 28 | 2178028404 | MOTOR ASSY | |
| 29 | 4731803019 | 3 x 16 CPTS (4)W | |
| 30 | 4148054309 | SHIELD PLATE | |
| 31 | KU-326 (59F) | ARM WIRE BOARD | |
| 32 | 4418311303 | SHIELD COVER | |
| 33 | 2098093001 | EARTH WIRE | |
| 34 | 2033642103 | OUTPUT CORD ASSY | |
| 35 | 2062002031 | AC CORD | |
| 36 | 4450020005 | BUSHING | |
| 37 | 4418321005 | BUSH PLATE | |
| 38 | KU326 | CONTROL CIRCUIT UNIT | |

| Ref. No. | Part No. | Part Name | Remarks |
|----------|--------------|--------------------|---------|
| 39 | 4713309010 | 3 x 16 CBS | |
| 40 | PS-142 | POWER SUPPLY UNIT | |
| 41 | 1038085009 | CABI. ASSY | |
| 42 | 1468037009 | ACRYL COVER | |
| 43 | KU-326 (59E) | NEON LAMP BOARD | |
| 44 | 1468082106 | MIRROR CASE ASSY | |
| 45 | 4730305013 | 3 x 10 CBRTS (1) | |
| 46 | KU-326 (59B) | STOP BOARD | |
| 47 | 4038001006 | CAP | |
| 48 | 1138077205 | PUSH SWITCH KNOB | |
| 49 | 4638100103 | SPRING | |
| 50 | 1038067212 | FRONT PANEL | |
| 51 | 1138078217 | VOLUME KNOB | |
| 52 | 4418307100 | VOLUME SUPPORT | |
| 53 | 2118036003 | V16N15 KB502 | |
| 54 | 4700026005 | 3 x 8 CRTS (2)W | |
| 55 | KU-326 (59A) | 33-45 BOARD | |
| 56 | 2129088024 | POWER SWITCH | |
| 57 | 1138076206 | SWITCH KNOB | |
| 58 | 3158273100 | ARM REST ASSY | |
| 59 | 3158265105 | LIFTER SHAFT | |
| 60 | 3158272101 | ARM LIFTER ASSY | |
| 61 | 4713303029 | 3 x 6 CBS | |
| 62 | FPU-830 | TONE ARM UNIT | |
| 63 | 1468051001 | STROBO WINDOW | |
| 64 | 4148022001 | BLIND | |
| 65 | 4690012006 | RUBBER CUSHION (B) | |
| 66 | 4218080106 | RECORDED TURNTABLE | |
| 67 | 4218141113 | RUBBER SHEET | |
| 68 | 4018009109 | HINGE | |
| 69 | 1228017104 | SHEET | |
| 70 | 1468081301 | DUST COVER ASSY | |
| 71 | 4628006107 | BUSHING | |
| 72 | 2339023109 | POWER TRANS | |
| 73 | 4438156108 | SPACER | |
| 74 | 1298010005 | CUSHION RUBBER | |
| 75 | 4751106042 | WASHER | |

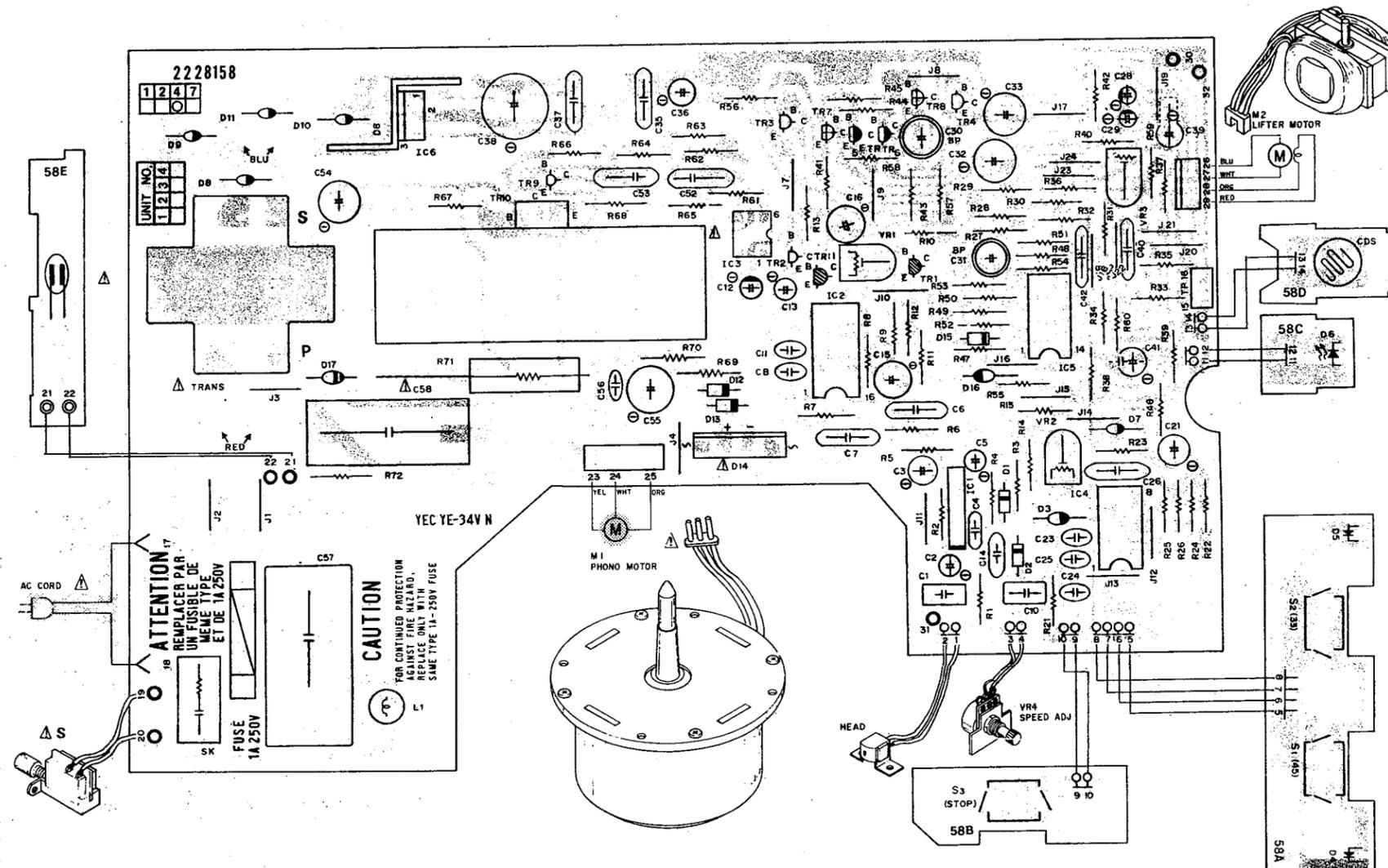
WARNING:
 Components with Δ marks and shading have special characteristics important to safety.
 They must be replaced only by specified components.

CIRCUIT DIAGRAM OF DP-30L (European models)

DP-30L
WIRING DIAGRAM
(European Models)



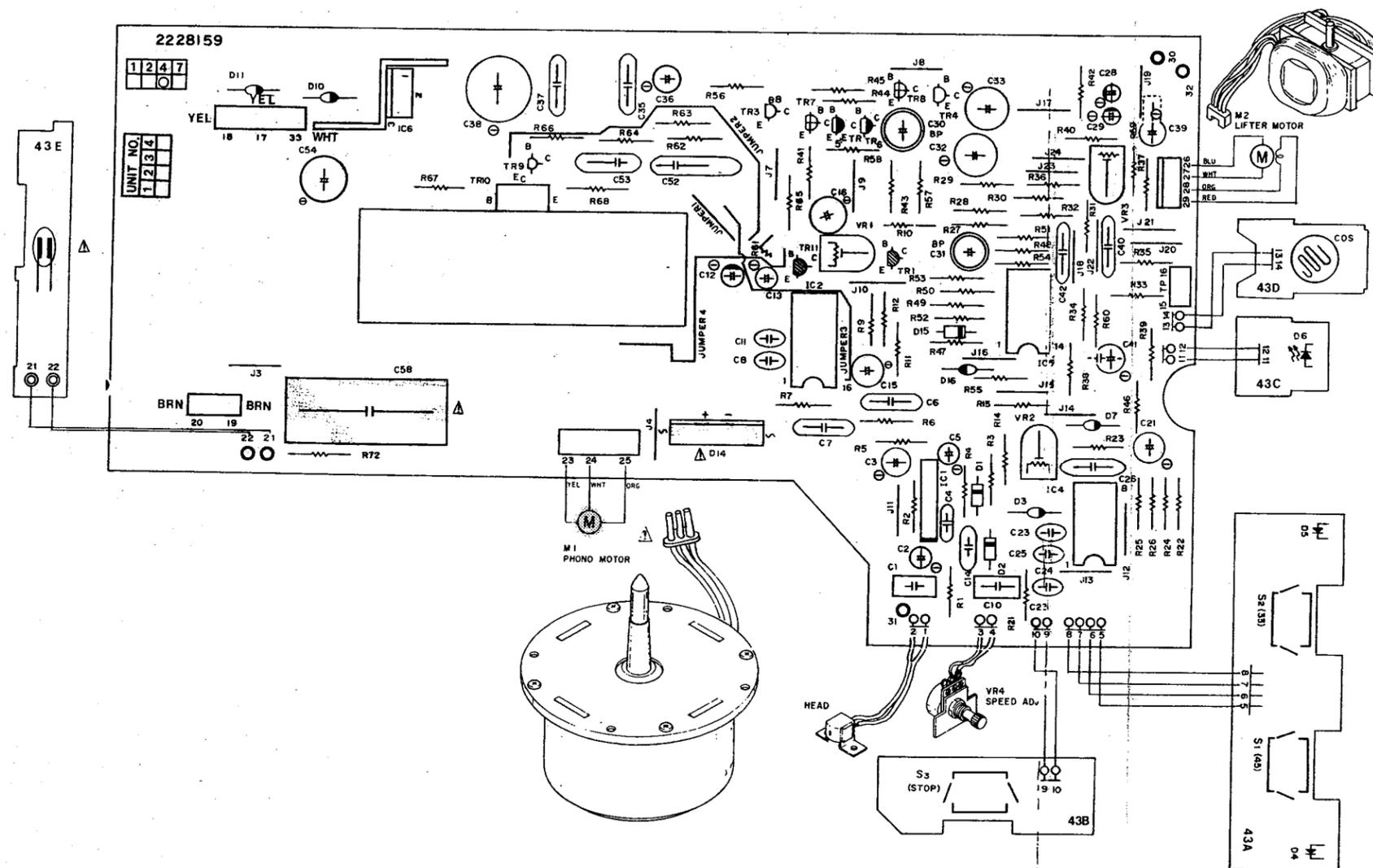
PRINTED CIRCUIT BOARD (American models)



| Ref. No. | Part No. | Part Name | Remarks |
|--|------------|---------------------|-------------------|
| SEMICONDUCTOR GROUP | | | |
| IC1 | 2630094028 | TA7122BP (C) | or (A) or (B) |
| IC2 | 2688002004 | TCA955 | |
| IC3 | 3939027009 | PC613 | |
| IC4 | 2620079008 | HD7401P | |
| IC5 | 2630076004 | HA17901P | |
| IC6 | 2680009005 | FS-7805M | |
| TR1,11 | 2710102005 | 2SA1015 (Y) | or 2SA999(F) |
| TR2,3,4 | 2730204019 | 2SC2320 (F) | or (G) |
| TR5,6 | 2720046009 | 2SB561 (C) | |
| TR7,8 | 2740038000 | 2SD467 (C) | |
| TR9 | 2730198027 | 2SC1815 (GR) | |
| TR10 | 2730196017 | 2SC2023 | |
| D1,2,15 | 2760049008 | 1S2076 | |
| D3,7,8,9 | 2760179004 | RV06 | |
| 10,11,16 | ↑ | ↑ | |
| D4,5 | 3939037031 | LED (LN217RP) | |
| D6 | 3939023003 | LED (SEL 101W) | |
| D12,13 | 2760179004 | MZ307B | or HZ7B |
| D14 | 2760246005 | RB152 | |
| D17 | 2760057029 | V06E | |
| | 3939019101 | CDS | |
| RESISTOR GROUP | | | |
| R9* | FEP1011-25 | RN1/4PS27KΩG | 27K ±2% |
| R10* | FEP1011-26 | RN1/4PS7.5KΩG | 7.5K ±2% |
| R68 | 2440005029 | RS14B3A010JNBF | 1Ω 1W |
| R69 | 2440046020 | RS14B3A272JNBF | 2.7K 1W |
| R70 | 2410193000 | RD14B2H222J | 2.2 K 1/2W |
| R71 | 2442014005 | RS98-3H222JNB | 2.2K 5W |
| R72 | 2440054025 | RS14B3A123JNBF | 12K 1W |
| VR1 | 2116019019 | K08PB103 | 10K B |
| VR2 | 2116019022 | K08PB153 | 15K B |
| VR3 | 2116000015 | V08PB103 | 10K B |
| Note: Resistors other than listed herein are all carbon film resistors of ± 5% and 1/4W. | | | |
| CAPACITOR GROUP | | | |
| C1 | 2551076002 | CQ93M1H223K | 0.022μF 50V |
| C2,5,39,41 | 2544043000 | CE04W1HR47 | 0.47μF 50V |
| C3 | 2544009002 | CE04W1A470 | 47μF 10V |
| C4,56 | 2531001000 | CK45B1H331K | 330pF 50V |
| C6,7,26,35,37,40,42,52,53 | 2531027000 | CK45F1H104Z | 0.1μF 50V |
| ↑ | ↑ | ↑ | |
| C8,11,14,23,24,25 | 2531004007 | CK45B1H102K | 1000pF 50V |
| ↑ | ↑ | ↑ | |
| C10* | 2551121025 | CQ93M1H103J | 0.01μF ±5% 50V |
| C12 | 2541047009 | CS45E1VR68K | 0.68μF 35V tantal |
| C13,36 | 2544015009 | CE04W1C100 | 10μF 16V |
| C15,16,33 | 2544003008 | CE04W0J101 | 100μF 6.3V |
| C21 | 2544054002 | CE04W1C220 | 22μF 16V |
| C28*,29* | 2541003001 | CS45EQJ100M | 10μF 6.3V tantal |
| C30,31 | 2543014043 | CE04D1C220MBP | 2.2μF 16V bipolar |
| C32 | 2544006005 | CE04W0J471 | 470μF 6.3V |
| C38 | 2544032008 | CE04W1E102 | 1000μF 25V |
| C54 | 2544070015 | CE04W2CR47 | 0.47μF 160V |
| C55 | 2544049004 | CE04W1H470 | 47μF 50V |
| C57 | 2568017012 | CF99B2BAC104MW | 0.1μF 125VAC |
| C58 | 2658013058 | CF99-2DAC405J | 4μF ±5% 200VAC |
| OTHER PARTS GROUP | | | |
| K1 | 222B158402 | P.C. BOARD | |
| S3 | 2328008106 | INDUCTOR | |
| F | 2618006009 | SPARK KILLER | |
| | EP-72663 | FUSE (1A/250V) | |
| | 3939011118 | NEON LAMP ASSY | |
| | 2129059008 | PUSH SWITCH | 33, 45, STOP |
| | 4178020413 | HEAT SINK | TR10 |
| | 4178046002 | HEAT SINK (S) | IC6 |
| | 2339022003 | POWER TRANS | |
| | 4733800007 | 3 x 6 CBTS (2) | |
| | 2033625010 | MINI CONNE PIN ASSY | |
| | 2035622008 | 3P MINI CONNE PIN | |
| | 2035622024 | 4P MINI CONNE PIN | |

WARNING:
 Components with **▲** marks and shading have special characteristics important to safety. They must be replaced only by specified components.
 * Components with * marks are temperature compensating devices.

PRINTED CIRCUIT BOARD (European models)



| Ref. No. | Part No. | Part Name | Remarks |
|----------------------------|------------|---------------|---------------|
| SEMICONDUCTOR GROUP | | | |
| IC1 | 2630094028 | TA7122BP (C) | or (A) or (B) |
| IC2 | 2688002004 | TCA955 | |
| IC4 | 2620079008 | HD7401P | |
| IC5 | 2630076004 | HA17901P | |
| IC6 | 2680009005 | FS-7805M | |
| TR1,11 | 2710102005 | 2SA1015 (Y) | or 2SA999 (F) |
| TR3,4 | 2730204019 | 2SC2320 (F) | or (G) |
| TR5,6 | 2720046009 | 2SB561 (C) | |
| TR7,8 | 2740038000 | 2SD467 (C) | |
| TR9 | 2730115001 | 2SC1344 [E] | |
| TR10 | 2730196017 | 2SC2023 | |
| D1,2,15 | 2760049008 | 1S2076 | |
| D3,7,10,11, 16 | 2760237001 | RV06 | |
| D4,5 | 3939037031 | LED (LN217RP) | |
| D6 | 3939023003 | LED (SEL101W) | |
| D14 | 2760246005 | RB152 | |
| | 3939019101 | CDS | |

| RESISTOR GROUP | | | |
|-----------------------|------------|----------------|----------|
| R9* | FEP1011-31 | RN1/4PS30KΩG | 30K ±2% |
| R10* | FEP1011-38 | RN1/4PS8.2KΩG | 8.2K ±2% |
| R68 | 2440005029 | RS14B3A010JNBF | 1Ω 1W |
| R72 | 2440052027 | RS14B3A822JNBF | 8.2K 1W |
| VR1 | 2116019019 | K08PB103 | 10K B |
| VR2 | 2116019022 | K08PB153 | 15K B |
| VR3 | 2116000015 | V08PB103 | 10K B |

Note: Resistors other than listed herein are all carbon film resistors of ± 5% and 1/4W.

| CAPACITOR GROUP | | | |
|----------------------------|------------|---------------|-------------------|
| C1 | 2551076002 | CQ93M1H223K | 0.022μF 50V |
| C2,5,39,41 | 2544043000 | CE04W1HR47 | 0.47μF 50V |
| C3 | 2544009002 | CE04W1A470 | 4.7μF 10V |
| C4 | 2531001000 | CK45B1H331K | 330pF 50V |
| C6,7,26,35, 37,40,42,53 | 2531027000 | CK45F1H104Z | 0.1μF 50V |
| C8,11,14,23, 24,25 | 2531004007 | CK45B1H102K | 1000pF 50V |
| C10* | 2551121012 | CQ93M1H822J | 0.082μF ±5% 50V |
| C12 | 2541047009 | CS45E1VR68K | 0.68μF 35V tantal |
| C13,36 | 2544015009 | CE04W1C100 | 10μF 16V |
| C15,16,33 | 2544003008 | CE04W0J101 | 100μF 6.3V |
| C21 | 2544054002 | CE04W1C220 | 22μF 16V |
| C28*,29* | 2541003001 | CS45E0J100M | 10μF 6.3V tantal |
| C30,31 | 2543014043 | CE04D1C220MBP | 22μF 16V bipolar |
| C32 | 2544006005 | CE04W0J471 | 470μF 6.3V |
| C38 | 2544032008 | CE04W1E102 | 1000μF 25V |
| C52 | 2551088003 | CQ93M1H224K | 0.22μF 50V |
| C54 | 2544070015 | CE04W2CR47 | 0.47μF 160V |
| C58 | 2568013058 | CF99=2DAC405J | 4μF ±5% 200VAC |

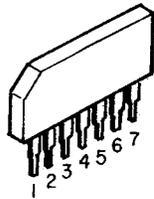
| OTHER PARTS GROUP | | | |
|--------------------------|------------|----------------------|--------------|
| | 2228159401 | P.C. BOARD | |
| | 3933011118 | NEON LAMP ASSY | |
| | 2129059008 | PUSH SWITCH | 33, 45, STOP |
| | 4178020413 | HEAT SINK | TR10 |
| | | 3 x 6 CBTS | |
| | 4178046002 | HEAT SINK (S) | IC6 |
| | 4733800007 | 3 x 6 CBTS (2) | |
| | 2033625010 | MINI CONNE PIN ASSY | |
| | 2035622008 | 3P MINI CONNE PIN | |
| | 2035622024 | 4P MINI CONNE PIN | |
| | 2050087026 | 2P WRAPPING TERMINAL | |
| | 2050087039 | 3P WRAPPING TERMINAL | |

WARNING:
 Components with Δ marks and shading have special characteristics important to safety. They must be replaced only by specified components.
 Components with * marks are temperature compensating devices.

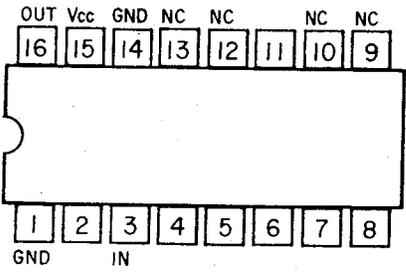
NOTE:
 C10 must be placed away from the power transistor heat sink for temperature compensation. Some early production of European models have this C10 capacitor soldered at the copper foil side of P.C. board although the C10 marking is printed on the component side near the heat sink. Do not move the C10 (0.082 μF) returning near the heat sink. C9 is not used either.

LEAD CONNECTION OF SEMICONDUCTORS

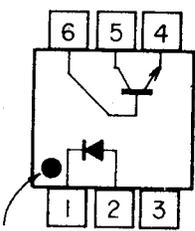
IC 1
TA7122BP



IC 2
TCA955

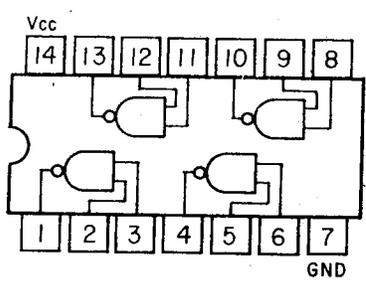


IC 3
PC613

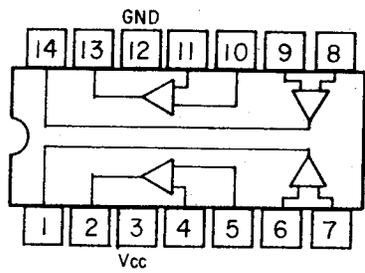


Package mark

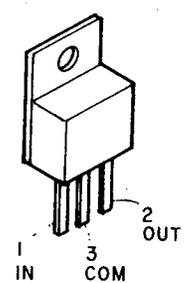
IC 4
HD7401



IC 5
HA1790IP

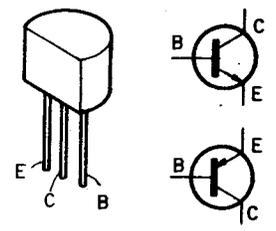


IC 6
FS-7805M

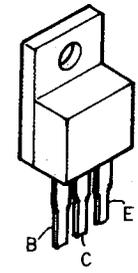


TR

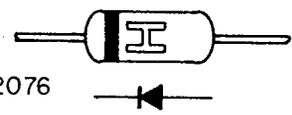
- 2SA1015(Y)
- 2SB561(C)
- 2SC2320(F)
- 2SD467(C)
- 2SC1815(GR)



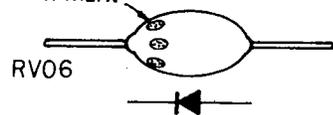
TR 10
2SC2023



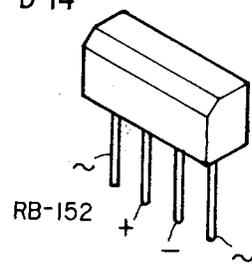
IS2076



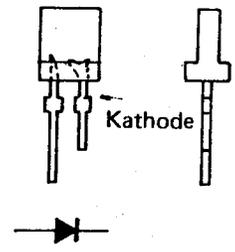
Green mark



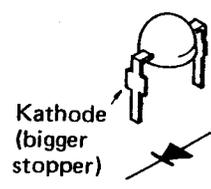
D 14



D4,5
LN217RP



D 6
SEL 101W



SPECIFICATIONS

PHONO MOTOR

| | |
|---------------------------------|--|
| Drive system | Direct drive by AC motor |
| Speed | 33-1/3 rpm, 45 rpm |
| Variable speed adjustment range | Over $\pm 3\%$ |
| Wow/flutter | Less than 0.018% wrms (1) |
| S/N | More than 75dB (DIN-B) |
| Starting time | Less than 1.5 sec. to reach 33-1/3 rpm nominal speed. |
| Turntable platter | Diecast aluminum 300 mm diam. Weight: 1.5 kg Moment of inertia: 190 kg-cm ² (including turntable mat) |
| Motor | AC servomotor |
| Speed control system | Servo control by frequency detection. |

TONARM

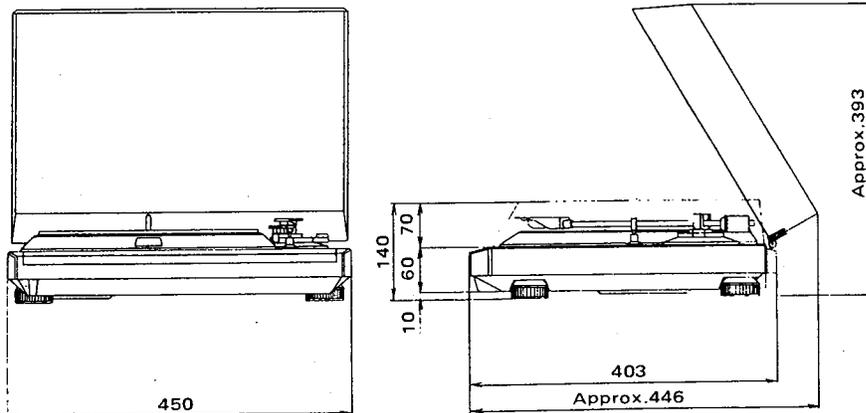
| | |
|-----------------------------|---|
| Type | Static balance type with automatic arm lift |
| Effective length | 220 mm |
| Overhang | 16 mm |
| Tracking error | Within 3° |
| Stylus force range | 0-2.5 g/rot. (1 division is 0.1 g) direct reading |
| Acceptable cartridge weight | 5-10 g (with head shell provided) |
| Weight of head shell | 8 g (excluding screws, nuts and spacer) |
| Shell connector | EIA standard 4P connector |
| Arm lifter | Servo controlled by angular control motor |

GENERAL

| | |
|-------------------|---|
| Power supply | AC 120V 60Hz, AC 200V 220V 240V 50Hz (2) |
| Power consumption | 15 W |
| Dimension | 450W x 403D x 140H (mm) (dust cover closed) |
| Weight | 9.5 kg Approx. |

Note: (1) Measured by DENON's method using magnetic pulse wheel.
(2) AC voltage preset to match that in country of original import.

** The above specifications and outward appearance are subject to alteration for improvement.



Dimensions (mm)

DENON

NIPPON COLUMBIA CO., LTD.

No. 14-14, AKASAKA 4-CHOME
MINATO-KU, TOKYO, JAPAN

TEL: 03-584-8111

TELEX: JAPANOLA J22591

CABLE: NIPPONCOLUMBIA TOKYO

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