



**SERVICE
MANUAL**
6100



marantz



model 6100

Surtable



MARANTZ MODEL 6100 TURNTABLE

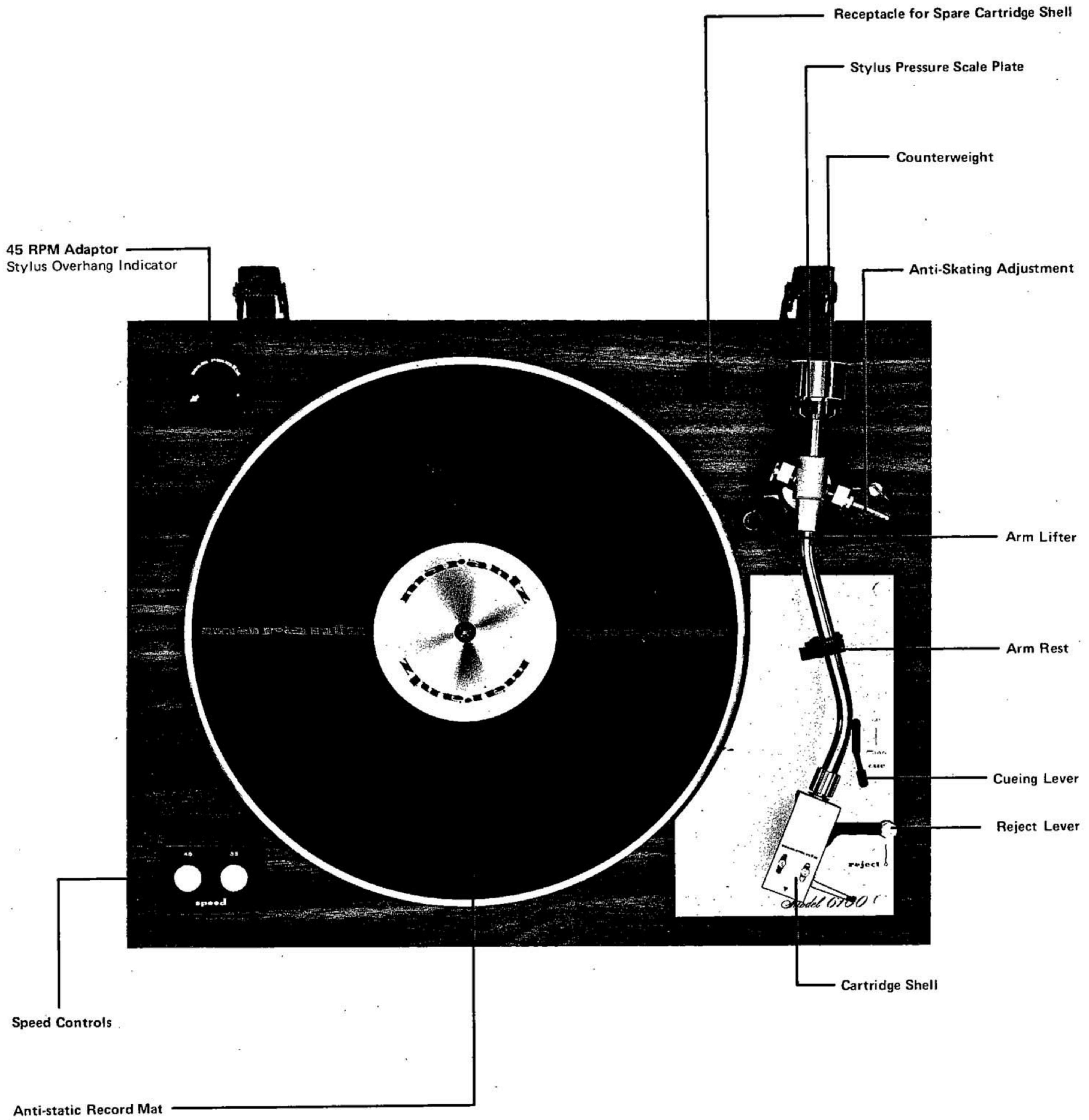


Figure 1. Main Controls and Adjustments

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1. PERFORMANCE SPECIFICATIONS

GENERAL

Speeds:	33, 45 rpm
Speed Range:	±1.3%
Drive System:	Belt Drive
Drive Motor:	4-Pole Synchronous AC Motor
Platter Weight:	1.6 lbs. (720 g)
Platter Diameter:	11-13/16 in. (300 mm)
Rumble (DIN):	-60 dB
Wow and Flutter:	0.08%
Power Requirements:	120V AC, 60 Hz (USA and Canada Model) 110-120/220-240 V AC 50 Hz (European Model)
Power Consumption:	15 Watts
Dimensions:	17-5/16 in. Wide x 6-1/2 in. High x 13-3/4 in. Deep (440 mm x 165 mm x 350 mm)
Weight:	14.5 lbs. (6.6 kg) Unpacked 33 lbs. (10.4 kg) Packed

TONE ARM

Length:	8-25/64 in. (213 mm)
Overhang:	14 mm
Tracking Force Adjustment Range:	0-4.0 g
Anti-Skating Force Compensation Range:	1.5-4.0 g (0.5 g Step Type)

2. TONE ARM ADJUSTMENTS

2-1. STYLUS TRACKING ANGLE

When setting up the arm for playing, it is important to check the tracking angle, because improper tracking angle will cause distortion and premature record wear. Most phono cartridges are designed so that when the cartridge is mounted on a surface parallel with the record surface, the stylus will track at the proper angle (see Figure 2). The surface inside of the cartridge shell (against which the cartridge is mounted) is parallel to the record surface when the stylus is touching the record surface. Visually check the angle of the tone arm in actual playing position. If it is not level and parallel with the record surface, then it is necessary to change the height of the tone arm by using the spacers supplied with the phono cartridge. This, of course, requires removing and remounting the cartridge, and some trial and error technique. With most cartridges, no spacers will be necessary.

NOTE: Some cartridges are built so that their bodies are at an angle with respect to their own mounting tabs. No attempt should be made to change this angle. Simply make sure that the cartridge mounting tab surfaces are parallel to the tone arm shell mounting surface before proceeding with the arm height adjustment.

2-2. STYLUS OVERHANG

The Model 6100 Turntable is designed to operate with the least distortion when the tip of the stylus is at a particular distance from tone arm pivot. For this reason, the cartridge shell is slotted, allowing the cartridge with its mounting screws to be slid toward or away from the pivot point. This, in effect, changes the radius of the arc described by the stylus.

Supplied in the accessory kit is a 45 RPM spindle adaptor. The adaptor has been specially marked with an arrow and a cross to aid you in setting the proper stylus overhang. Proceed as follows:

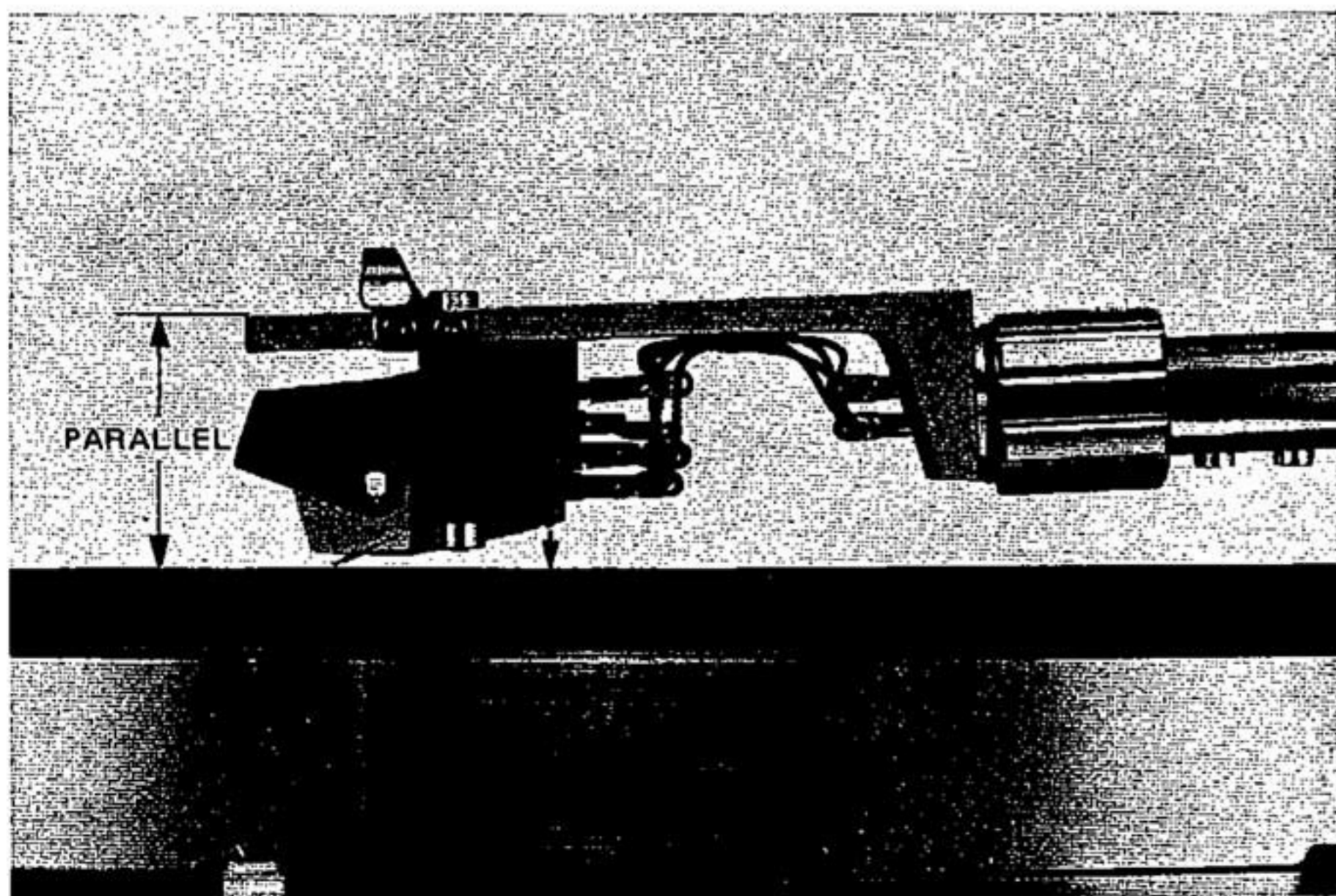


Figure 2. Tracking Angle

1. With the turntable unplugged, place the 45 RPM adaptor on the center spindle with the arrow pointing to the rear of the turntable.
2. Temporarily remove the counterweight from the tone arm.
3. Remove the arm from its arm rest and remove the protective cover (if any) from the stylus.
4. Place the stylus tip over the cross mark on the 45 RPM adaptor. It is all right for the stylus to gently touch the adaptor for checking purposes, but do not exert any downward pressure on it, or the stylus may be damaged.
5. If the stylus does not align with the cross mark, then adjustment is necessary. Place the arm in the arm rest, loosen the cartridge mounting screws, adjust, and measure again.
6. Make sure that the cartridge is installed straight; the sides of the cartridge must remain parallel to the sides of the shell.
7. When you are sure the cartridge is in the correct position, place the arm in the arm rest and snug up the mounting screws.
8. Replace the counterweight on the tone arm.

2-3. VERTICAL TONE ARM BALANCE

The adjustable counterweight at the end of the tone arm establishes tone arm balance and stylus tracking force. Since no two types of cartridges weigh the same, the balance and tracking force must be adjusted for each cartridge being used.

First, to establish a point of reference, the entire arm assembly (with cartridge installed) must be balanced. If the cartridge has a removable stylus protector, remove it, (as you would to play a record). Release the tone arm from the arm rest.

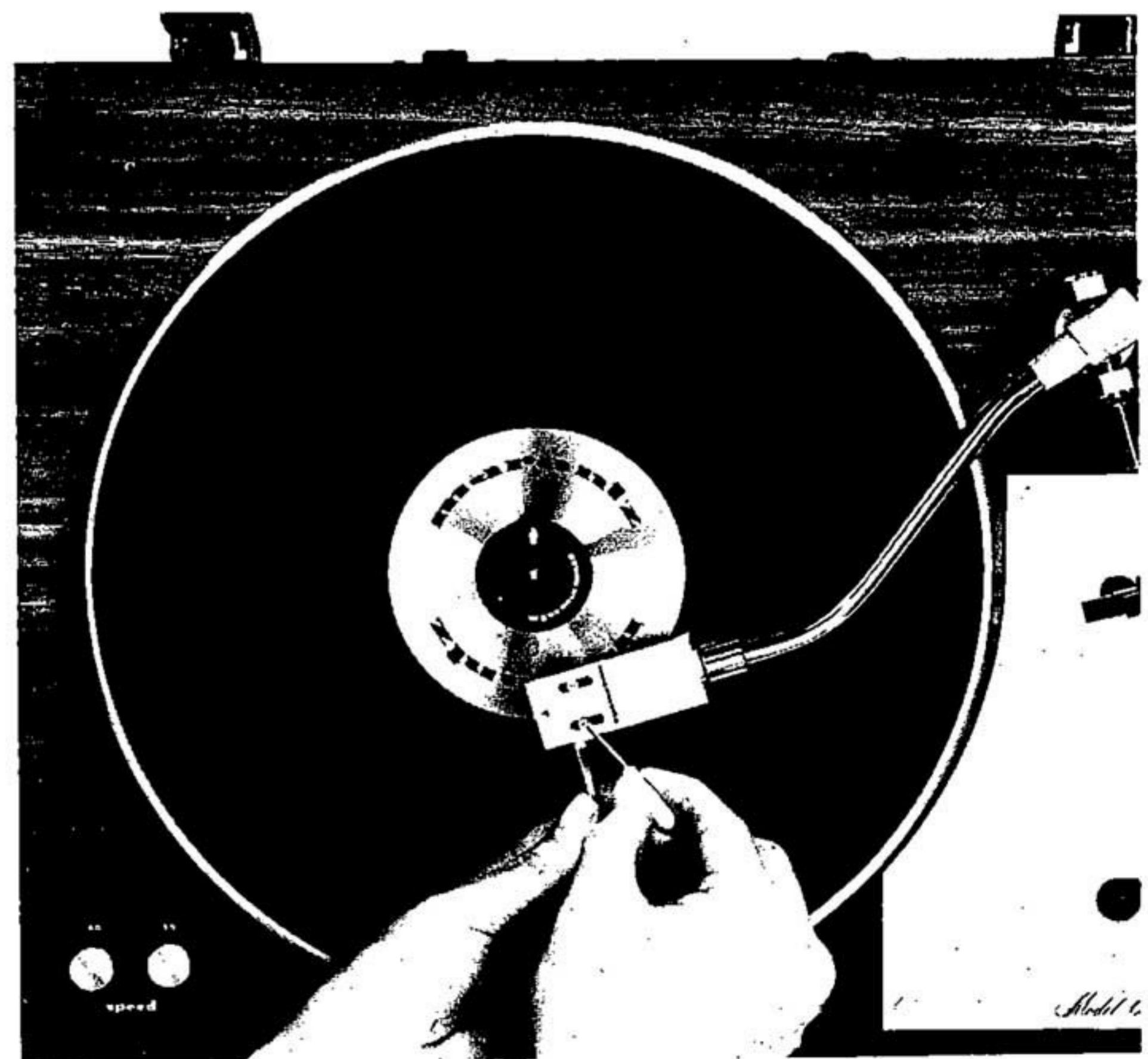


Figure 3. Stylus Overhang Adjustment

To balance the arm, adjust the position of the counterweight by rotating it. A numbered stylus pressure scale plate is located immediately in front of the counterweight. Rotating the scale plate alone does not change the counterweight's position. To change the balance, grasp and turn the counterweight itself.

Adjust the weight so that the arm is level (parallel to the turntable surface) with the cartridge suspended in mid air. Then, without moving the counterweight, set the stylus pressure scale plate to indicate zero. This establishes a reference point for setting the tracking force, which is the next adjustment.

2.4 TRACKING FORCE

For the recommended tracking force, refer to the instructions that accompany the cartridge.

Tracking force, the downward pressure of the stylus against the record, is produced by simply setting the arm off balance in the appropriate direction. That is, the counterweight is screwed inward (toward the arm pivot) until the desired downward pressure is achieved.

The stylus pressure scale plate is in frictional contact with the counterweight, so that they rotate together when the counterweight is turned. The numbers on the scale plate correspond to the tracking force measured in grams. So, if the desired tracking force is two grams, turn the counterweight inward until the stylus pressure scale plate registers 2.

2-5. ANTI-SKATING ADJUSTMENT

The anti-skating weight is provided to counteract the natural tendency of the arm to "skate" toward the center of the record as it is being played. The more tracking force used, the more anti-skating force required.

The anti-skating force can be adjusted by placing the loop in the end of the monofilament line around one of the notches in the anti-skate lever. See Figure 4 for the values these notches represent. Set the anti-skating force to the same value as the tracking force.

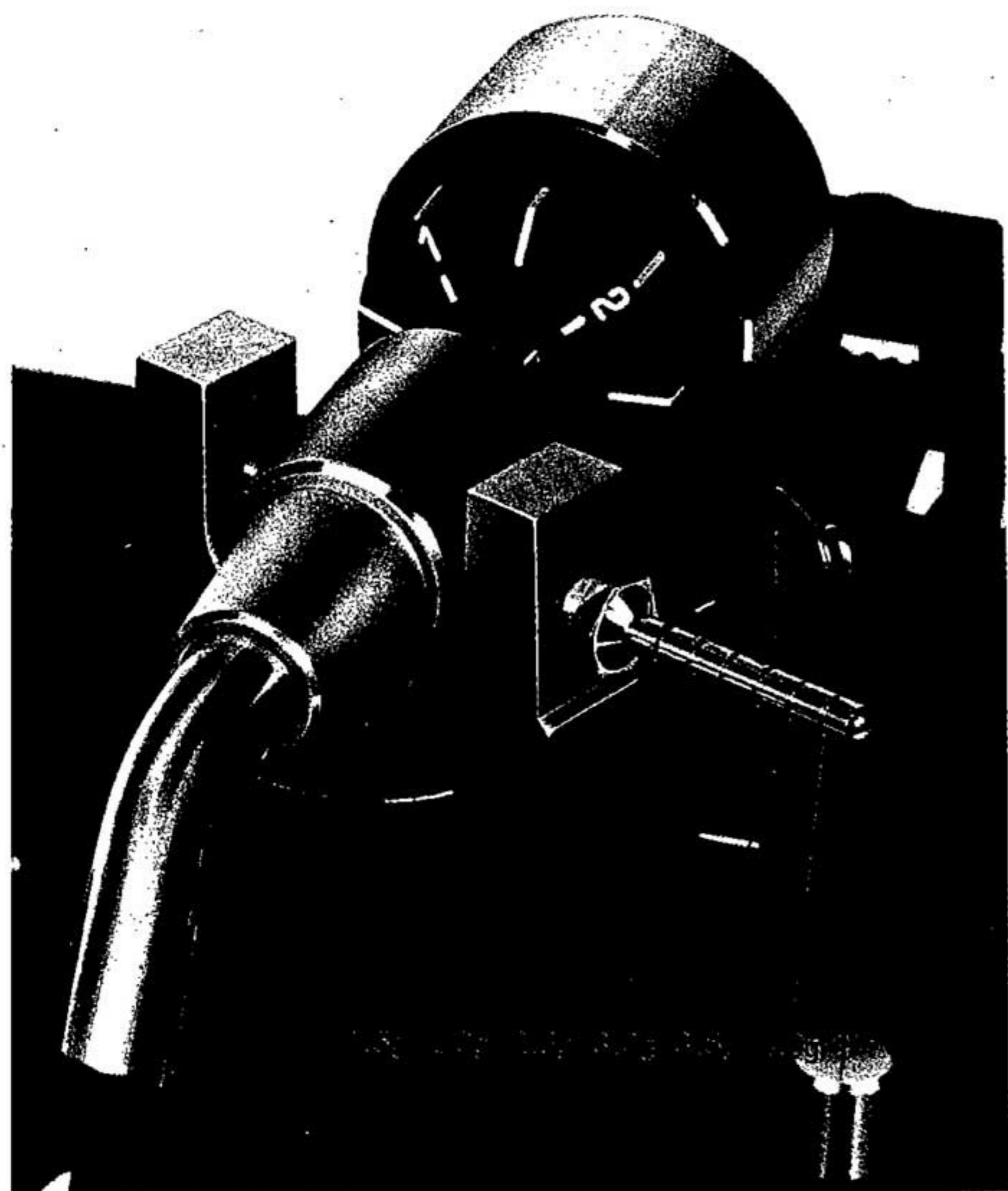


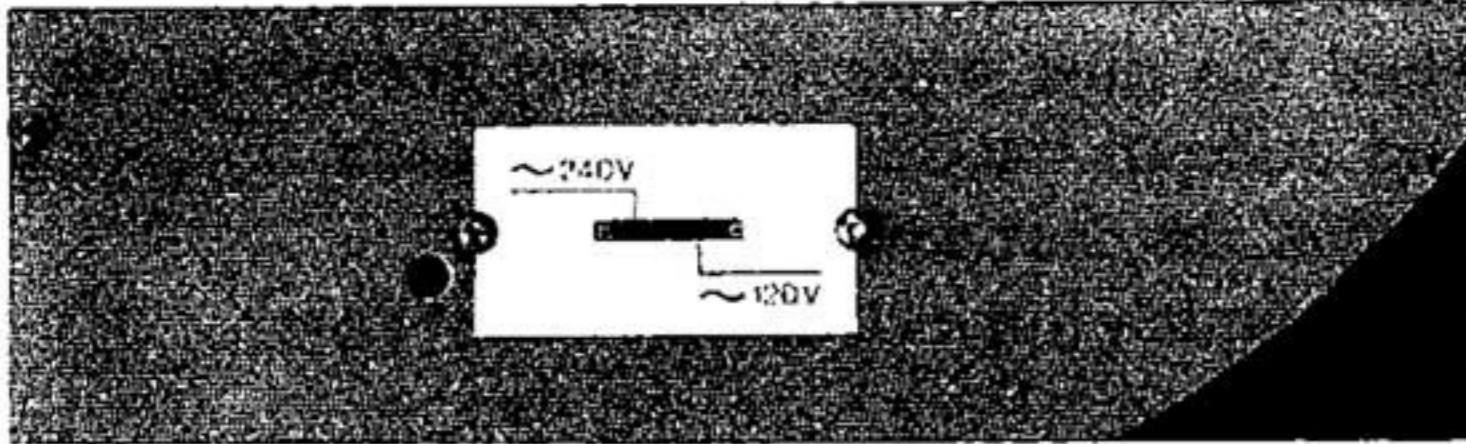
Figure 4. Anti-Skating Mechanism

3. SERVICE NOTES

3-1. HOW TO CHANGE THE LINE INPUT VOLTAGE

Lift the turntable up for removal. Turn the input voltage selector switch to the position of a specified voltage using the supplied screwdriver. Replace the turntable.

CAUTION: This Turntable unit has the 50 Hz-use pulley fixed on the motor shaft. For operating on the 60 Hz power frequency, replace it with the 60 Hz-use pulley which is available from a Marantz sales agent.



3-2. CARTRIDGE WIRE COLOR CODE

Before a cartridge is screwed into the shell, the small clips at the ends of the wires in the tone arm cartridge shell should be pushed onto their corresponding cartridge connection pins.

TONE ARM CARTRIGES SHELL — WIRE COLOR CODE —	
RIGHT CHANNEL HOT	RED
RIGHT CHANNEL GROUND	GREEN
LEFT CHANNEL HOT	WHITE
LEFT CHANNEL GROUND	BLUE

The cartridge or its accompanying technical sheet will identify the cartridge connection pins. It may be necessary to slightly compress the terminal clips with your fingers to make them fit snugly on the prongs of some cartridges.

3-3. REPLACEMENT PARTS/TECHNICAL ASSISTANCE

3-3-1. REPLACEMENT PARTS

Turntable replacement parts may be ordered by writing to;

MARANTZ COMPANY, INC.
PARTS DEPARTMENT
P.O. BOX 577
CHATSWORTH, CALIFORNIA 91311 USA

3-3-2. TECHNICAL ASSISTANCE

Inquiries regarding the operation and servicing of Marantz equipment should be directed to;

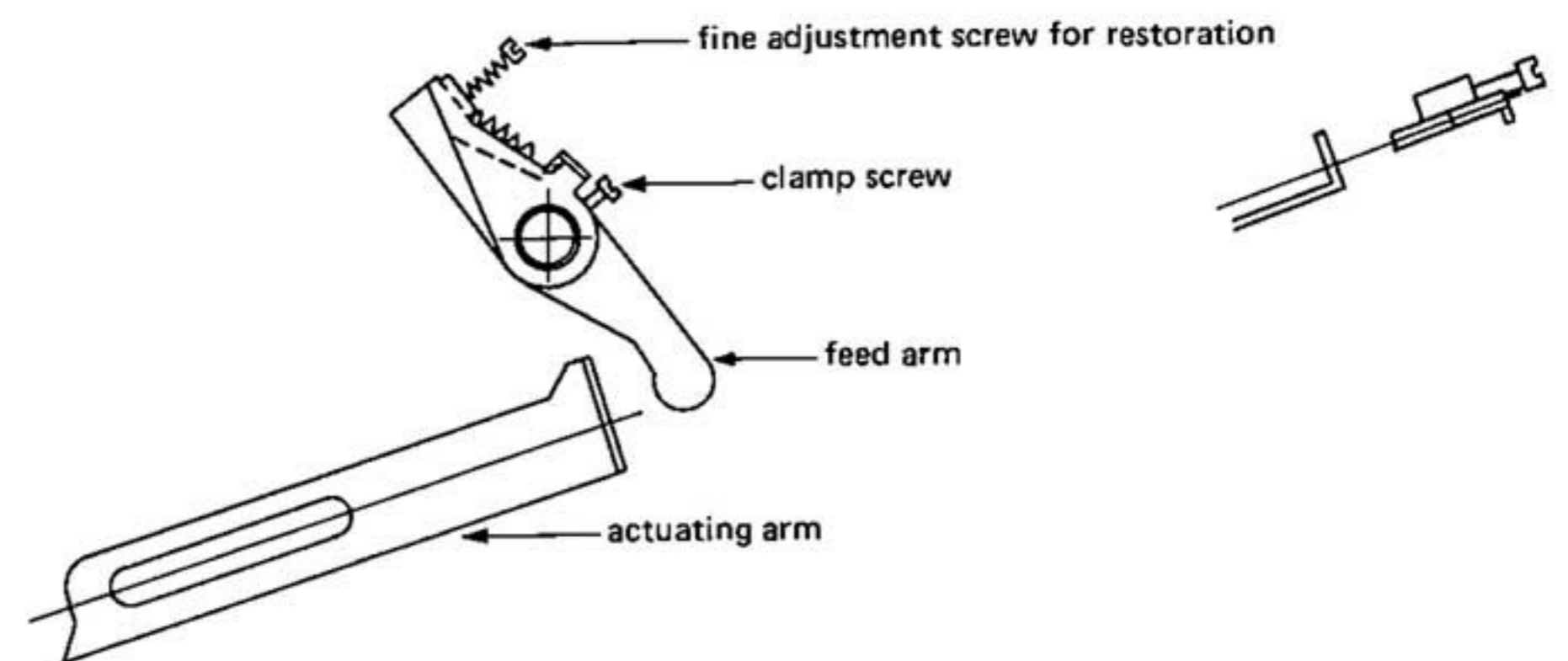
MARANTZ COMPANY, INC.
TECHNICAL SERVICES DEPARTMENT
P.O. BOX 577
CHATSWORTH, CALIFORNIA 91311 USA

4. METHOD OF PARTS ADJUSTMENT

4-1. ADJUSTMENT OF TONE ARM STYLUS RESTORATION POSITION (AUTO-RETURN)

For slight restoration deviation, proceed as follows,

- (1) When restoration is delayed, turn the fine adjustment screw in the clockwise direction.
- (2) When restoration is early, turn the fine adjustment screw in the counterclockwise direction.
- (3) Loosen the clamp screw of the feed arm, set the gap between the feed arm and actuating arm to approximately 4 mm, and temporarily tighten the clamp screw.

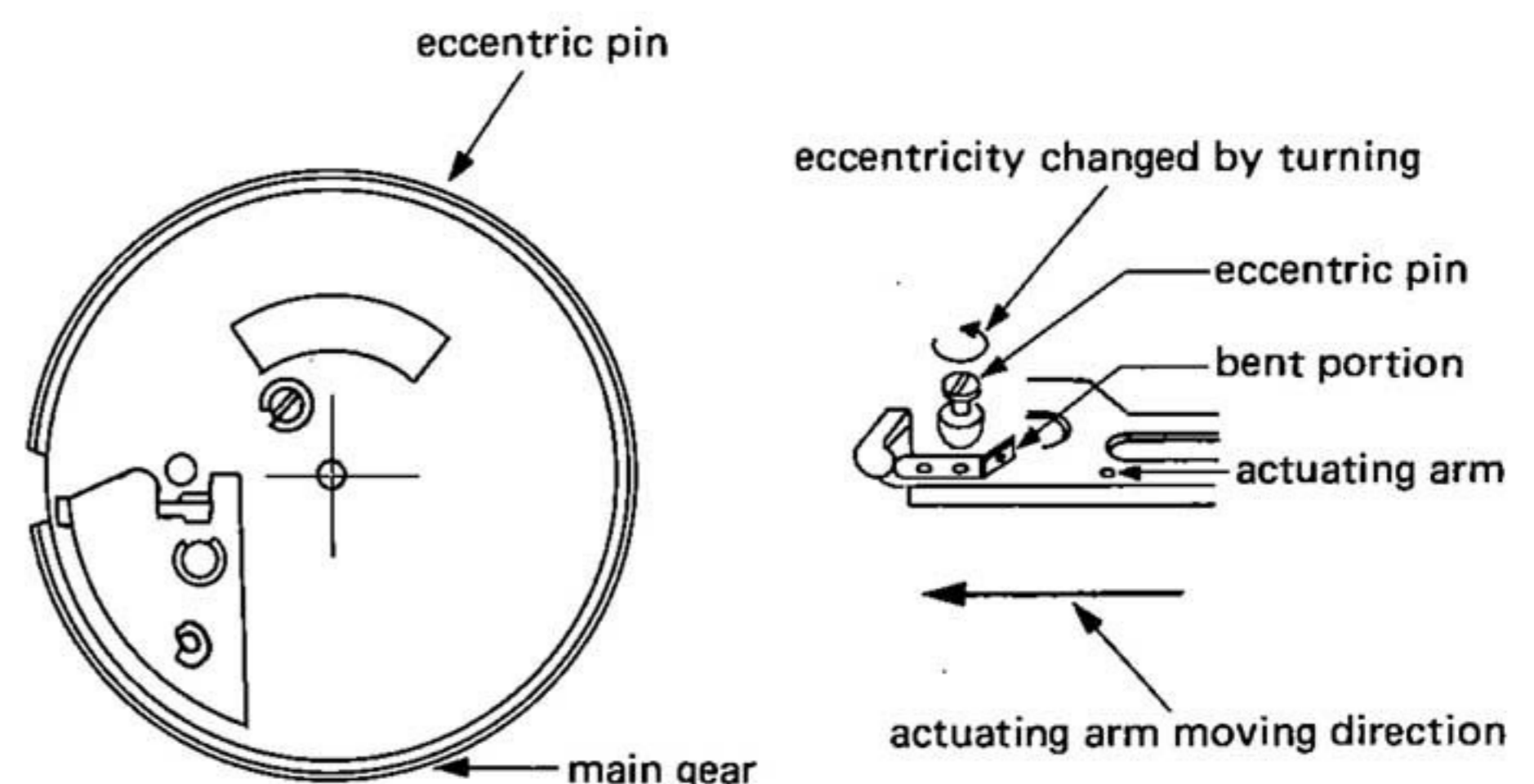


- (4) Repeat adjusting the fine adjustment screw for proper restoration as in steps (1) and (2).

4-2. ADJUSTMENT OF TONE ARM RESTORATION

When the tone arm does not return to rest at the tone arm return operation, or when return is excessive and the arm forcibly strikes the rest position, adjustment is made by turning the main gear eccentric pin.

- (1) Change the SPEED Controls (45-33) to the "33" position, take off the belt from the oval turntable hole using the index finder, and remove the turntable.
- (2) Gently move the tone arm toward the center of the turntable until it comes to a complete stop.
- (3) Gently turn the main gear counterclockwise by hand.
- (4) The tone arm rises and begins to move toward the rest position. At approximately one-half revolution (180°) the movement of the tone arm reaches maximum.

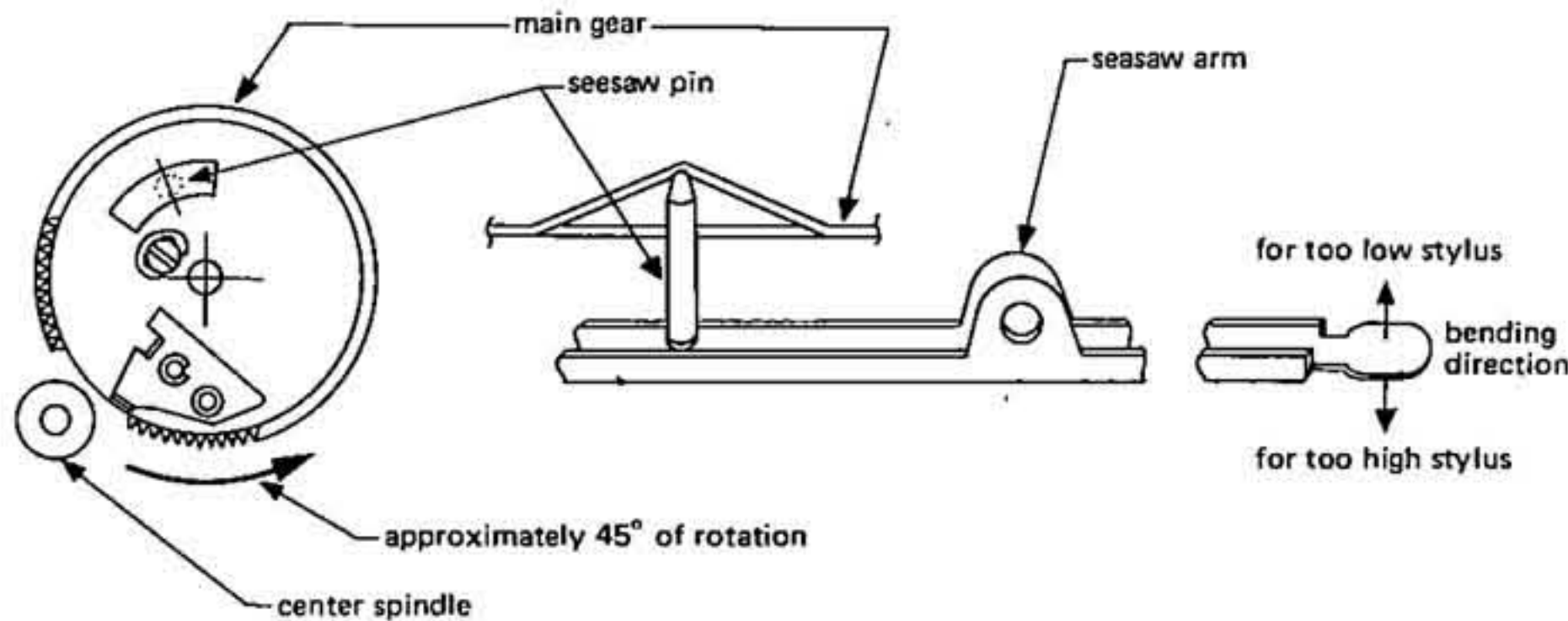


- (5) When the movement is maximized in step (4), rotate the eccentric pin right (left) and adjust the contact stroke between it and the bent position of the actuating arm.

4-3. ADJUSTMENT OF RISE AND FALL OF THE TONE ARM AT RETURN TIME

Following the completion of a record, it is normal for the tone arm to move slightly upward during the Auto-Return operation. However, when there is a marked upward or downward variation, make the following adjustments.

- (1) Take the tone arm off the arm rest, and with it placed on the elevation jig, bend and adjust the tip of the seesaw arm so as to establish a gap of approximately 5 mm between the stylus and the player board.
- (2) Following the adjustment of step (1), remove the turntable, gently turn the main gear in the counter-clockwise direction, and confirm the STOP position of the seesaw pin.



- (3) In the adjustment, note whether the bending of the seesaw arm and the height of the stylus are in a ratio of 1 : 7.
- (4) When the eccentricity is large and the stylus height excessive, the tone arm rides past the arm rest and falls off the elevation jig, where upon the stylus may be damaged by striking the board. Therefore, consider the eccentricity adjustment. Furthermore, when the stylus is extremely high, tracing of the record surface becomes impossible and sounds cannot be reproduced. The optimum stylus height is 5 or 10 mm from the record surface.

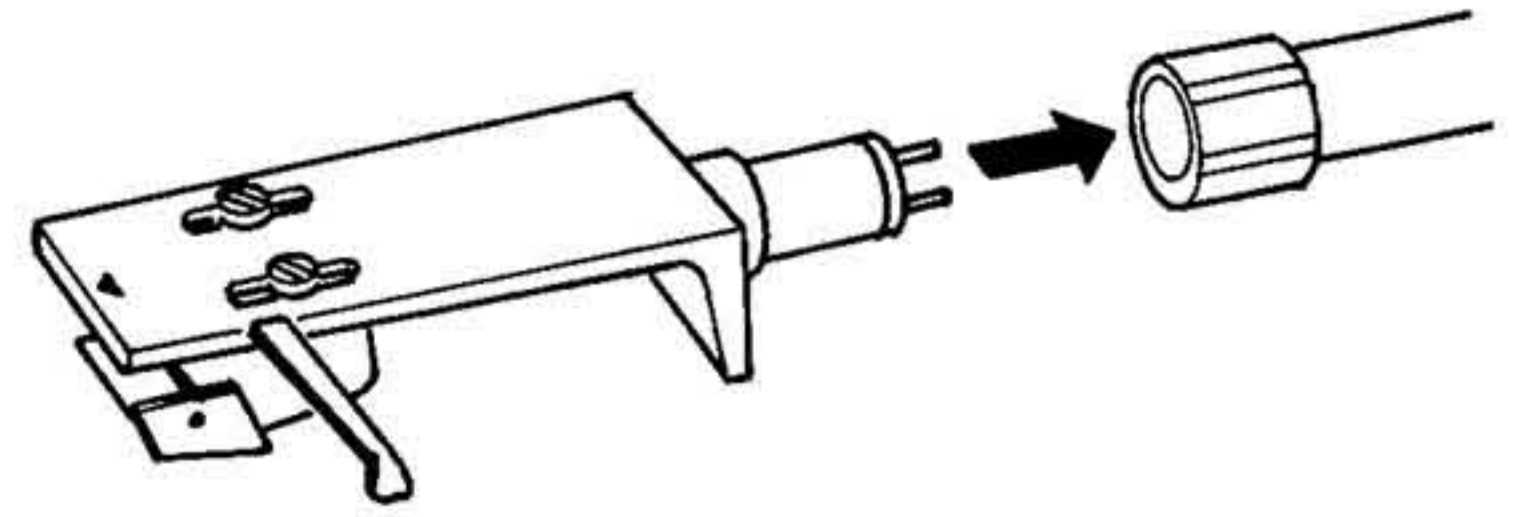
4-4. ADJUSTMENT OF HEIGHT AT THE CHANGE OF THE PULLEY

If the pulley is replaced, the pulley should be attached at a height by which the upper surfaces of the pulley and the belt are on a same height when the guide is positioned at 33 R.P.M. Further, you should also try to operate and assure that the belt does not contact with the belt guide.

4-5. TO ATTACH HEAD SHELL

Attach the head shell (with a cartridge) to the front end of the tone arm. As shown in the illustration below, turn the locking nut to secure the head shell in place. (For

safety install the head shell with the stylus cover unremoved.)



4-6. HOW TO REPLACE THE DUST COVER

- (1) Take off the dust cover assembly. Hold the dust cover at nearest portion to the hinge, and pull out the dust cover to bearing upper direction so that the dust cover is unlocked.
- (2) Disassemble the lock plate on dust cover. Unscrew to disassemble the lock plate, and fit them on the new dust cover to be replaced.
- (3) To fit dust cover assembly to hinge on wooden base, follow the step (1).

4-7. HOW TO REPLACE THE MOTOR

- (1) Turn over the turntable unit, and disassemble the bottom lid.
- (2) Disconnect 3 lead wires connected 7 pins terminal strip from the motor, including a black grounding wire.
- (3) Detach "E" washer fitted on the speed change lever joint.
- (4) Detach 3 screws fixing motor on sub-chassis for transportation purpose. Dismount the motor by following procedures (1)-(2)-(3)-(4), and mount the motor by vice versa. Adjustment of the pulley height to be followed the section 4-4.

4-8. HOW TO REPLACE THE TONE ARM ASSEMBLY

- (1) Turn over the turntable unit, and disassemble the bottom lid.
- (2) Disconnect 6 lead wires connected to 5 pins terminal strip from the tone arm assembly (color code of 6 wires are Red, Green, 2 Blacks, Blue and White).
- (3) Detach the slide arm from the tone arm shaft, by means of releasing two fixing screws on the slide arm.
- (4) Dismount the tone arm assembly by means of unscrewing the lock nut fixing the tone arm assembly on the sub-chassis.
- (5) Mount the new tone arm assembly by reversing steps (1) through (4).

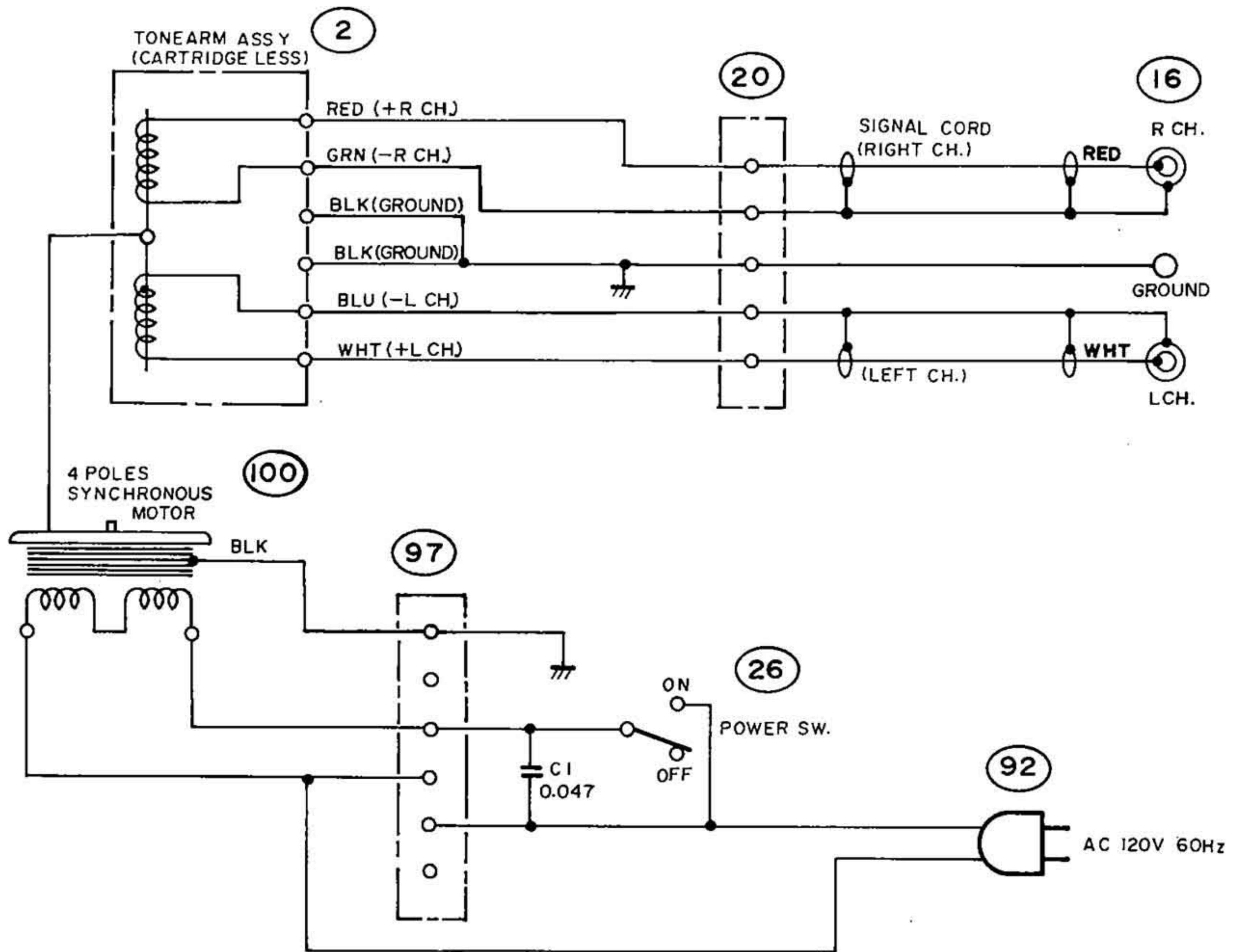
After this adjustment, perform the alignments in procedure (4-1), (4-2), and (4-3).

5. TROUBLESHOOTING

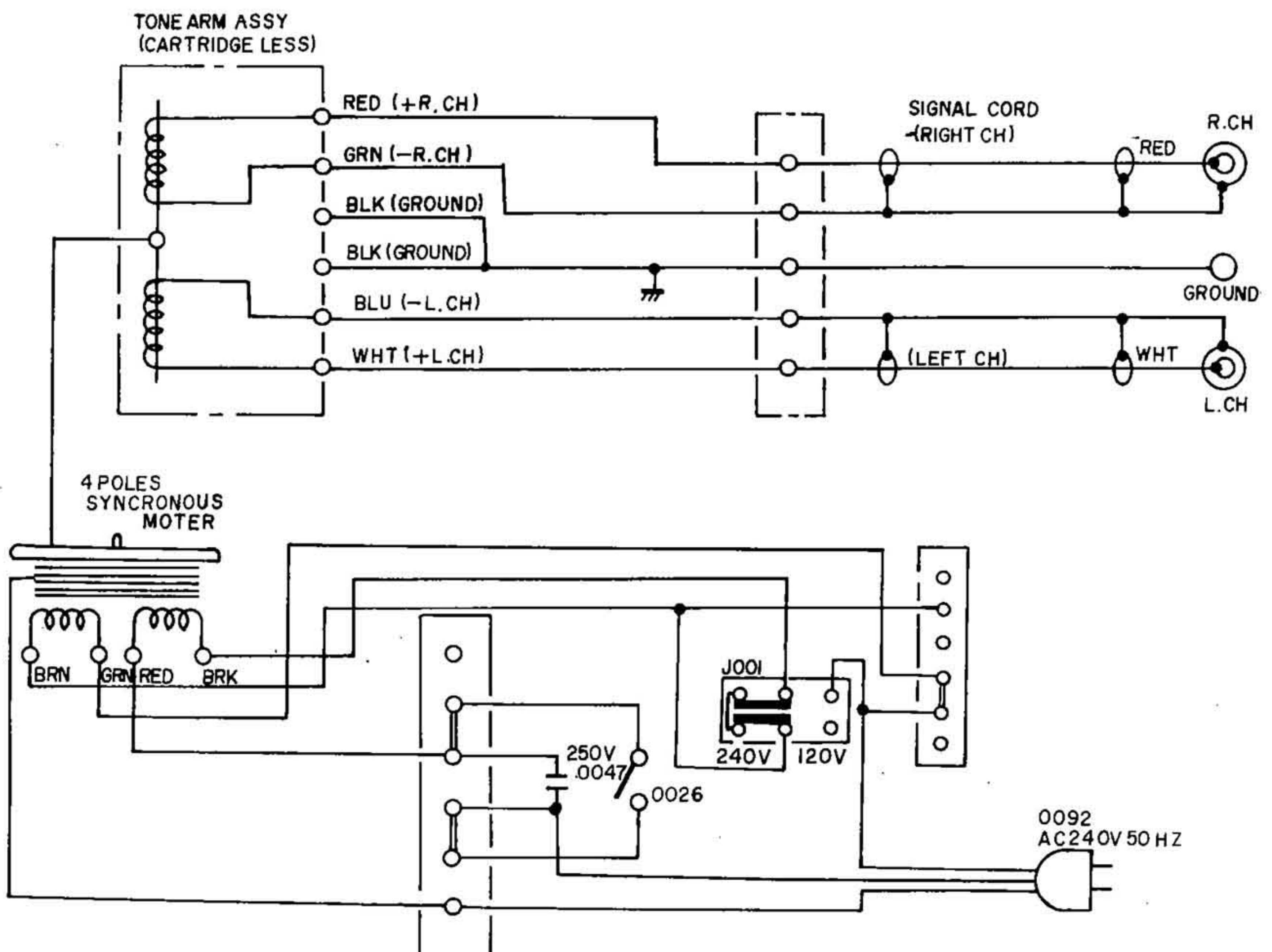
ITEM	TROUBLE	PROBABLE CAUSE	REMEDY
1	Tone arm set in the "PLAY" position, but turntable does not rotate.	<ol style="list-style-type: none"> 1. Switch contact is bad; no current supplied to motor. 2. Disconnection. 3. Motor coil burned out. 	<ol style="list-style-type: none"> 1. Check switch position gap. 2. Check circuit continuity. 3. Exchange motor.
2	REJECT lever is pulled to "REJECT", but tone arm does not return.	<ol style="list-style-type: none"> 1. Actuating arm is not functioning. 2. Gear meshing is defective. 	<ol style="list-style-type: none"> 1. Check transmission mechanism related to cut-lever, reject spring and REJECT lever. 1. Check operational form of the clutch gear. 2. Check the projection of the turntable gear.
3	Upon completion of the musical selection, the tone arm is not restored to the rest position.	<ol style="list-style-type: none"> 1. Switch position discrepancy. 2. Eccentricity is too small. 	<ol style="list-style-type: none"> 1. Confirm switch position. 2. Widen switch contact gap. 1. Adjust eccentric pin and increase eccentricity.
4	Tone arm returns during play.	<ol style="list-style-type: none"> 1. Discrepancy in feed arm position (toward turntable center). 	<ol style="list-style-type: none"> 1. Adjust feed arm position.
5	Excessive noise at Auto-Return time.	<ol style="list-style-type: none"> 1. Poor meshing between turntable gear and main gear. 1. Insufficient shifting of clutch gear, or deformation of profile. 	<ol style="list-style-type: none"> 1. Inspect main gear. 2. Inspect turntable gear. 1. Check distance between main gear center and turntable axis.
6	Tone arm stylus scratches record surface at Auto-Return time.	<ol style="list-style-type: none"> 1. Stylus height insufficient. 	<ol style="list-style-type: none"> 1. Adjust by bending leading end of seesaw arm.
7	No electrical out put from Turntable.	<ol style="list-style-type: none"> 1. Insufficient soldering of Tone arm lead wire contact. 2. Poor continuity. 3. Poor cartridge. 	<ol style="list-style-type: none"> 1. Inspect soldered contacts. 1. Inspect circuitry for continuity. 1. Replace cartridge.
8	Cueing lever is "UP" but tone arm does not rise.	<ol style="list-style-type: none"> 1. Maladjustment of the cue seasaw adjustment screw. (compression screw) 	<ol style="list-style-type: none"> 1. Turn the adjustment screw in the counterclockwise direction and when "UP", adjust the stylus to within 5 to 10 mm of the record surface.

6. DIAGRAMS

6-1. SCHEMATIC DIAGRAM

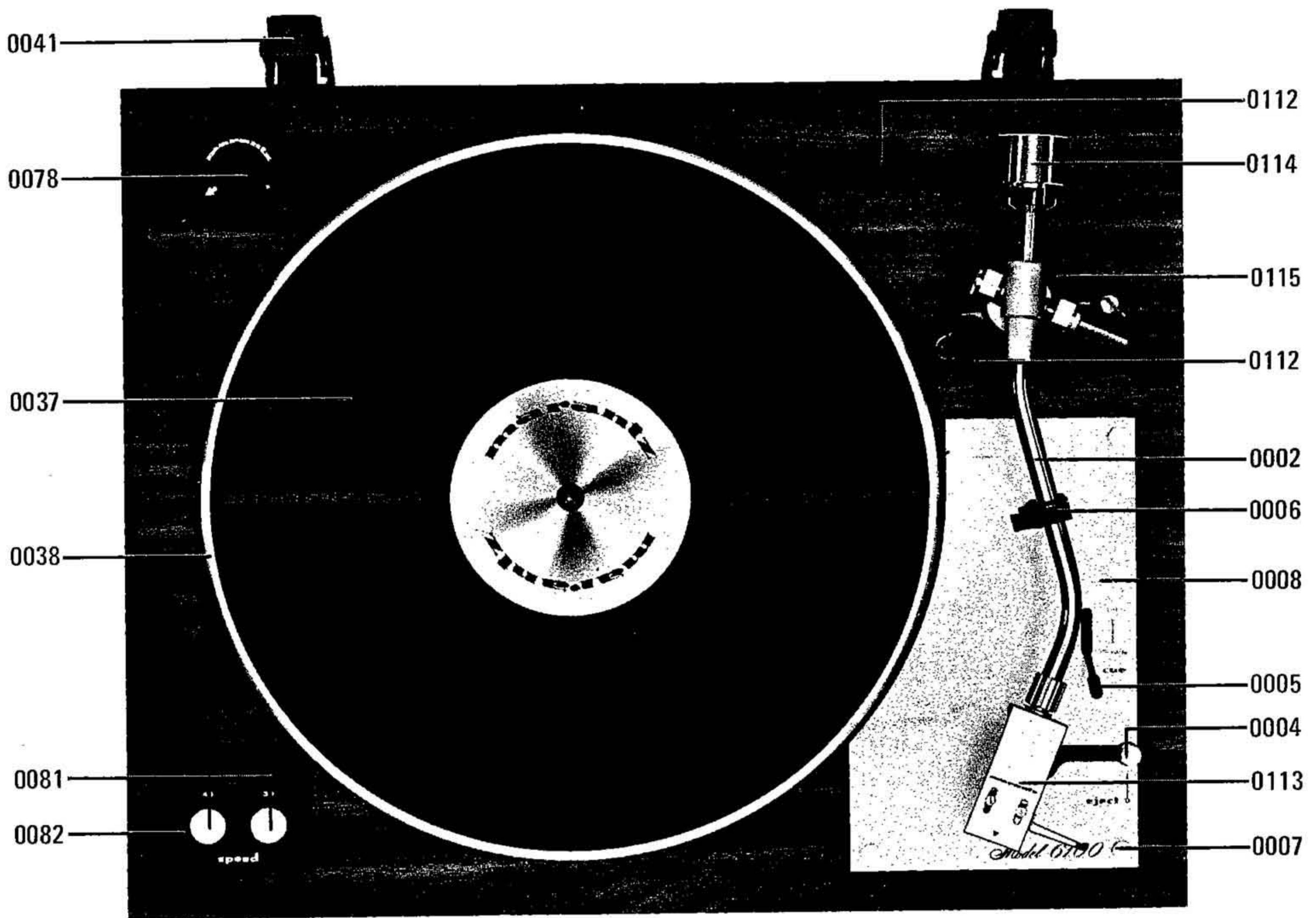


6-2. SCHEMATIC DIAGRAM-EUROPE

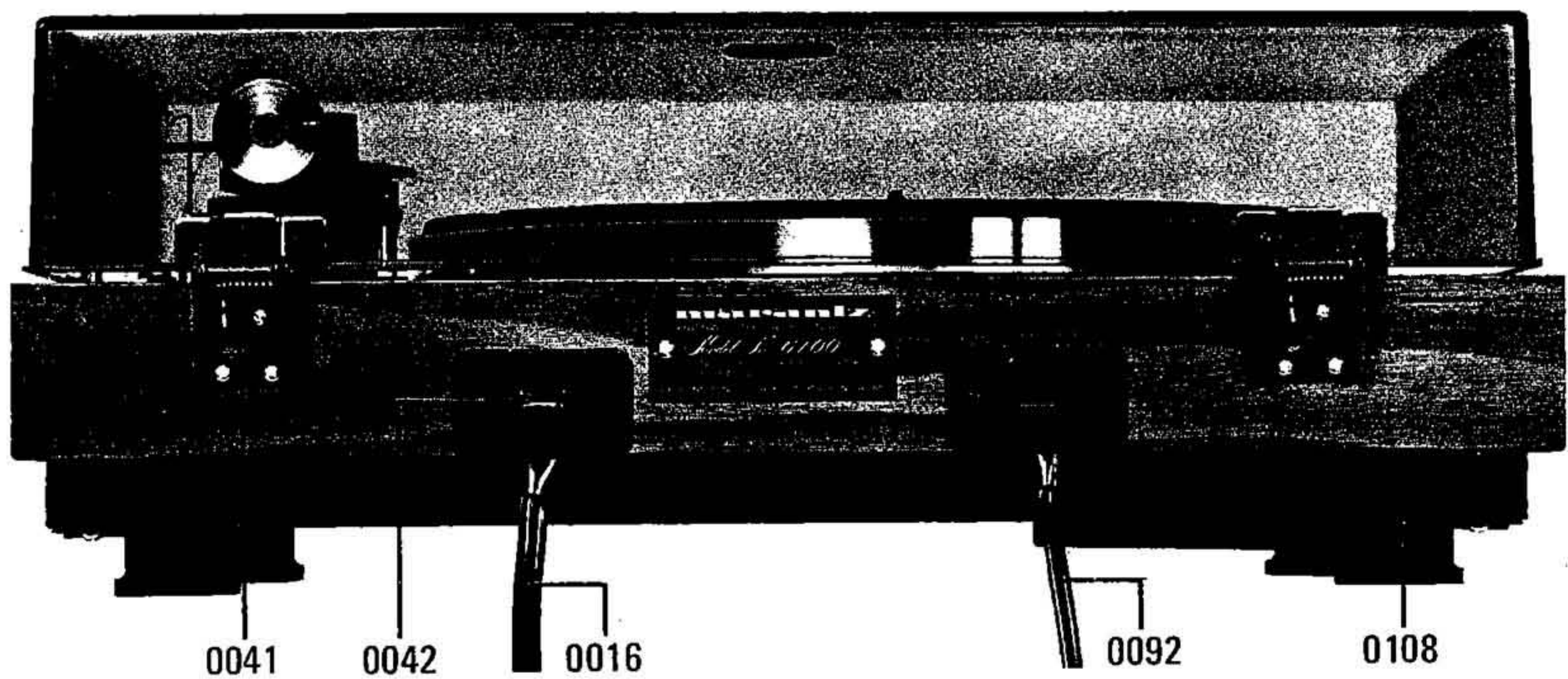


7. MAJOR COMPONENT LOCATIONS

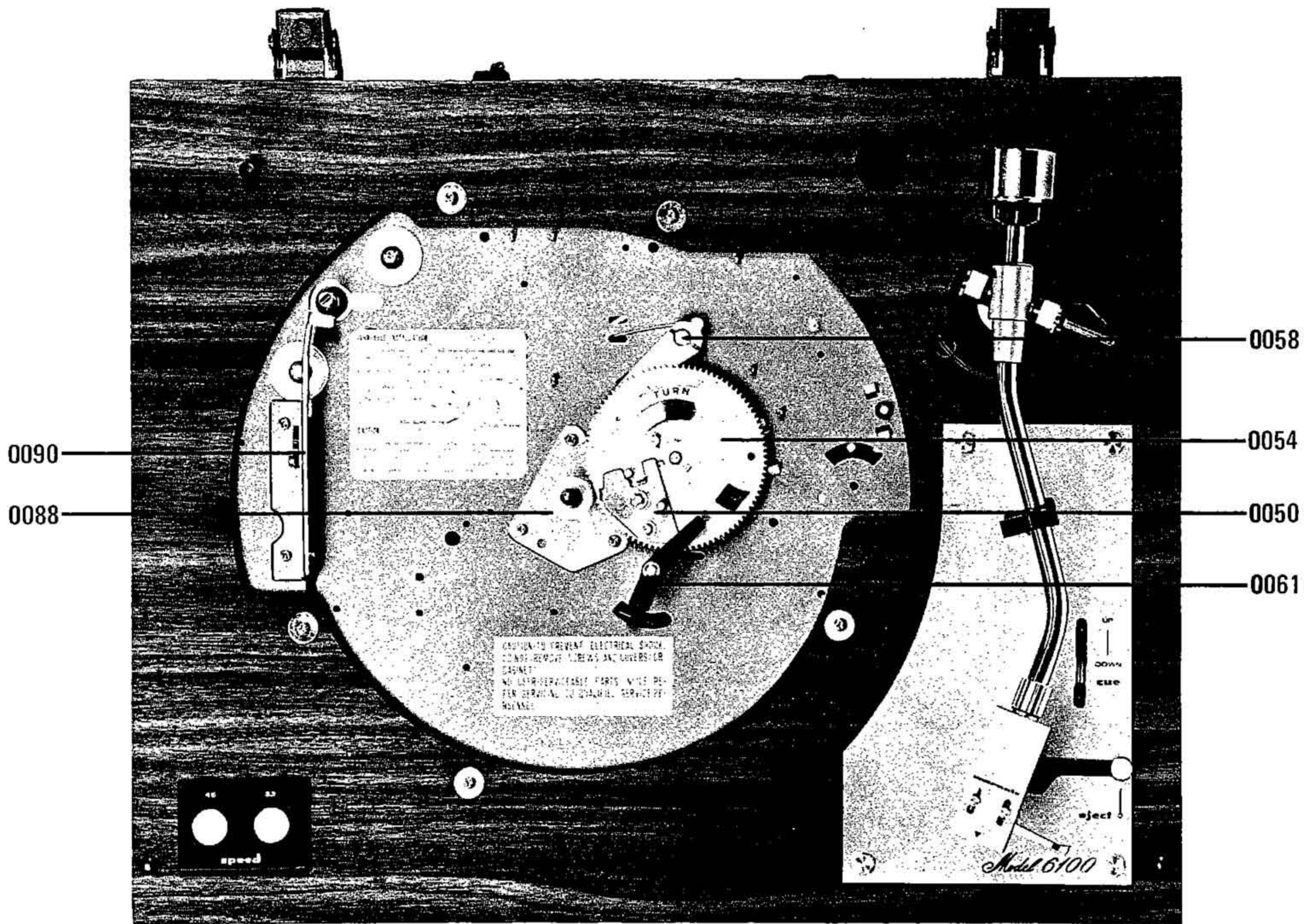
7-1. CABINET-TOP VIEW



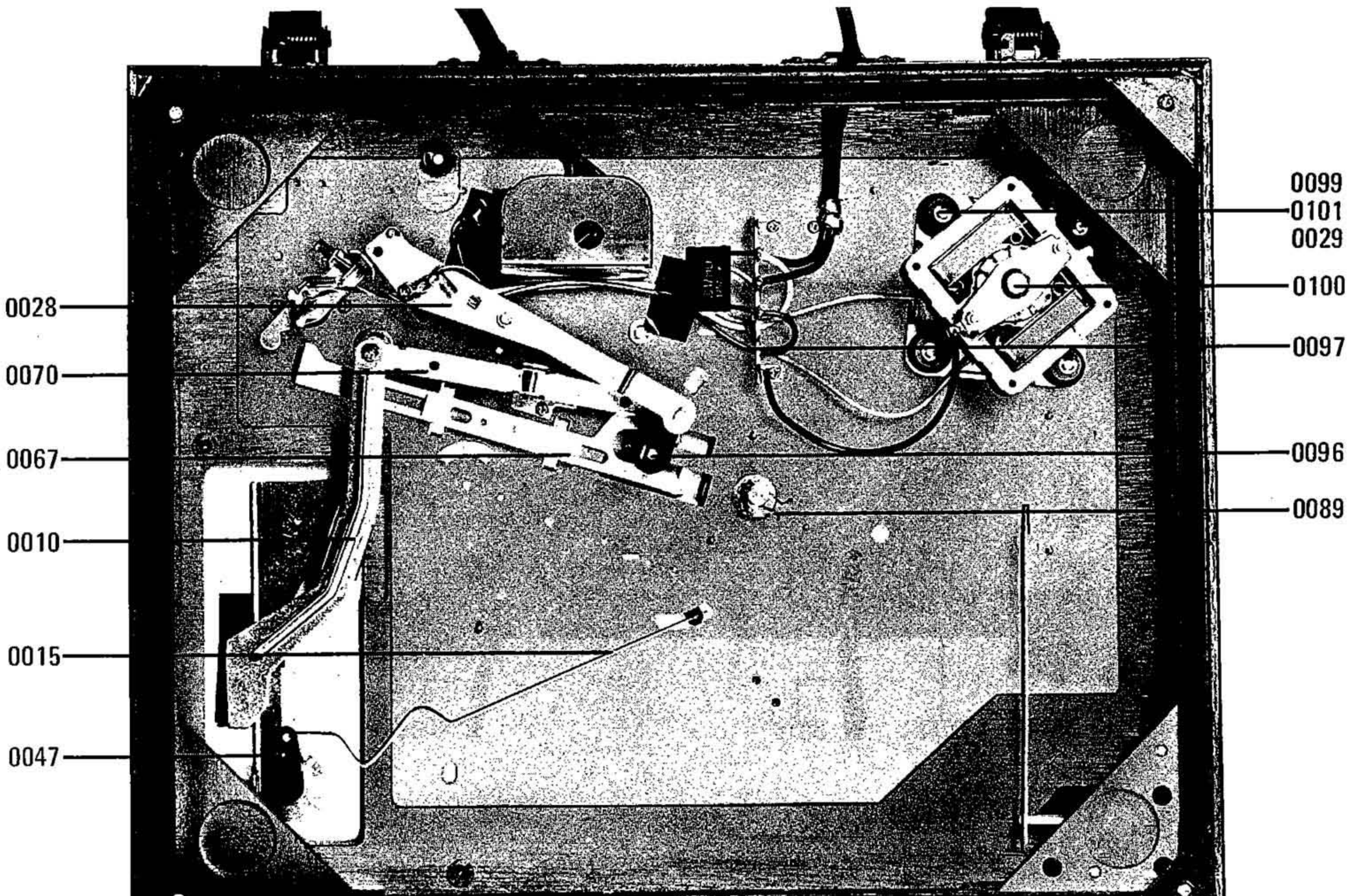
7-2. CABINET-REAR VIEW



7-3. CHASSIS-TOP VIEW

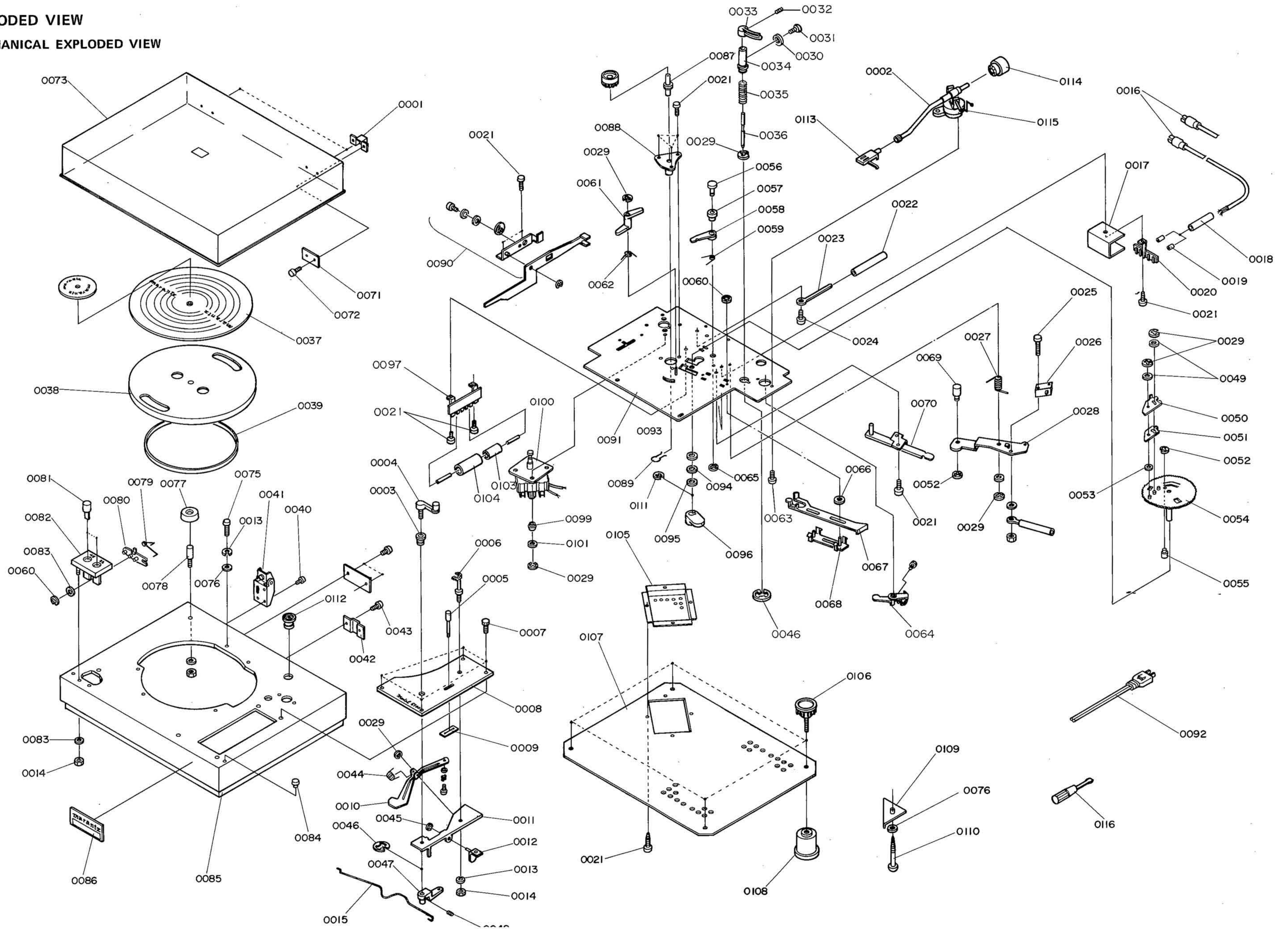


7-4. CHASSIS-BOTTOM VIEW

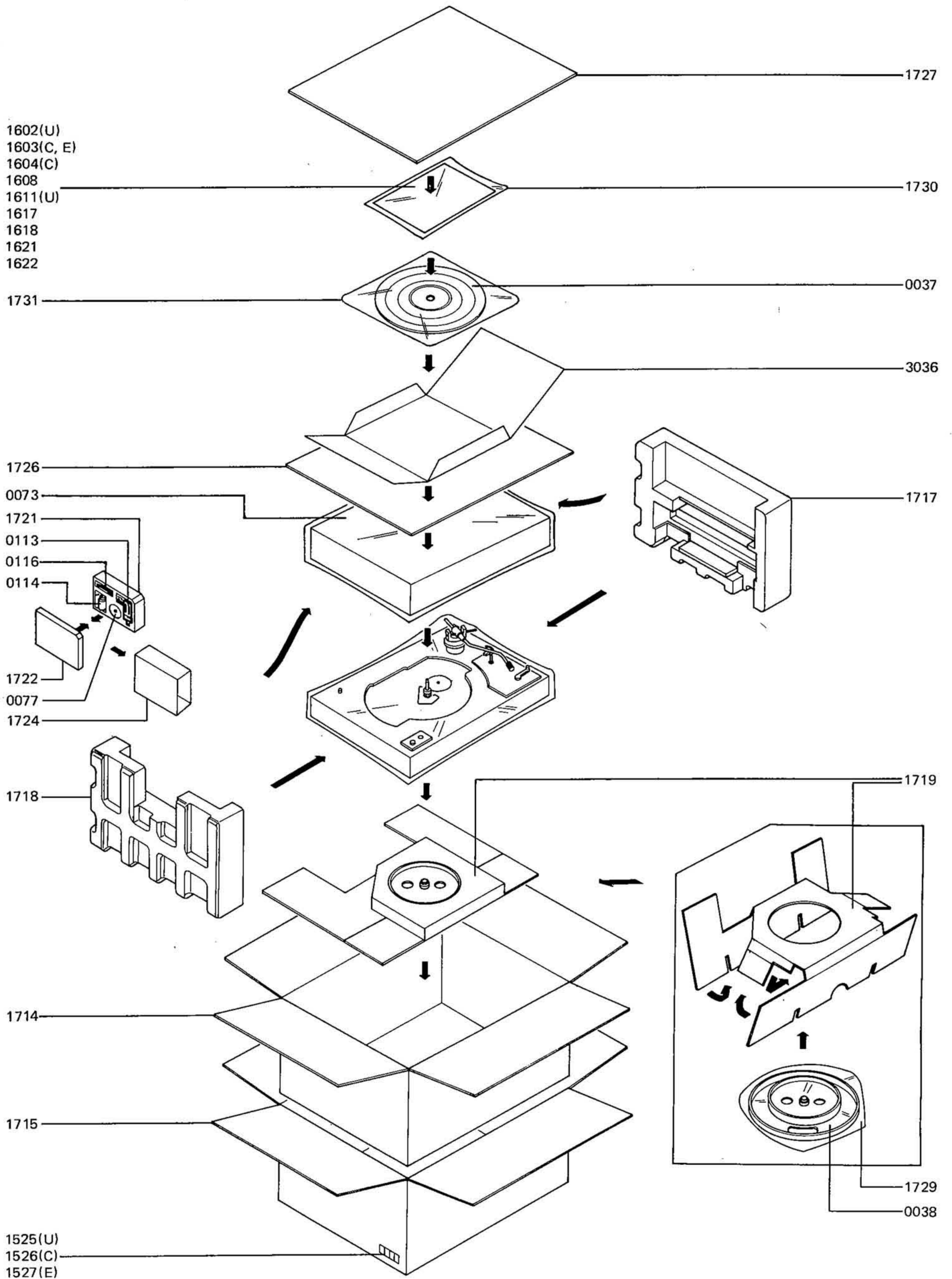


8. EXPLODED VIEW

8-1. MECHANICAL EXPLODED VIEW



8-2. PACKING MATERIAL EXPLODED VIEW



9. PARTS LIST

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION	REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	E				U	C	E		
A	1	1	1	294906440	Case Assembly	0034	1	1	1	294900402	Table
0007	4	4	4	52011699J	H. Head Bolt	0035	1	1	1	294911503	Spring
0008	1	1	1	294906301	Escutcheon	0036	1	1	1	294911201	Shaft
0014	5	5	5	53110303A	Hexagon Nut	0037	1	1	1	294910750	Sheet
0040	6	6	6	51523116A	R. H. Wood Screw	0038	1	1	1	294916501	Turntable
0041	2	2	2	294915301	Hinge	0039	1	1	1	294926401	Belt
0078	1	1	1	294911204	Shaft	0040	6	6	6	51523116A	R.H. Wood Screw
0082	1	1	1	294905302	Cover	0042	2	2	2	294900504	Clamper
0083	4	4	4	54020301A	F. Washer	0043	4	4	4	51523113S	R.H. Wood Screw
0084	2	2	2	294905601	Buffer	0044	1	1	1	294911504	Spring
0085	1	1	1	294906401	Case	0045	1	1	1	64000200R	RG Ring E Type
0086	1	1	1	294925101	Badge	0046	2	2	2	64000300R	RG Ring E Type
0112	1	1	1	294912801	Stand	0047	1	1	1	294935404	Lever
B	1	1	1	294905340	Dust Cover Assembly	0048	2	2	2	51610306A	Set Screw
0001	2	2	2	294916007	Bracket	0049	2	2	2	54010301E	F. Washer
0071	2	2	2	294916003	Bracket	0050	1	1	1	294916002	Bracket
0072	4	4	4	51060308A	P.H.M. Screw, P3x8	0051	1	1	1	294905101	Guide
0073	1	1	1	294905301	Dust Cover	0052	2	2	2	64000300R	RG Ring E Type
0092	1	1		YC0240022	AC Cord	0053	1	1	1	54010301E	F. Washer
J001			1	SS0202046	Slide Switch	0054	1	1	1	294905801	Gear
0092			1	YC0190003	AC Cord	0055	1	1	1	294925401	Pin
0016	1	1	1	YB0150001	Connective Cord	0056	1	1	1	294911301	Stud
0020	1	1	1	YL0105014	Terminal, 5P	0057	1	1	1	294911202	Shaft
0097	1	1	1	YL0106007	Terminal, 6P	0058	1	1	1	294900202	Arm
0026	1	1		SM0102011	Switch, Power	0059	1	1	1	294911505	Spring
0026			1	SM0102011	Switch, Power	0060	1	1	1	64023500Q	RG Ring E Type
C1	1	1		DF1747357	Film Cap., 0.047 μ F \pm 20%, 125V	0061	1	1	1	294935405	Lever
C1			1	DF1747358	Film Cap., 0.047 μ F \pm 20%, 250V	0062	1	1	1	294911506	Spring
0100	1	1		MI0120003	AC Motor	0063	2	2	2	51060316A	P.H.M. Screw, P3x16
0100			1	MI0240001	AC Motor	0064	1	1	1	294900203	Arm
0002	1	1	1	PA1121302	Tone Arm	0065	1	1	1	64000300R	RG Ring E Type
0113	1	1	1	YS0204001	Head Shell	0066	1	1	1	54010301E	F. Washer
0003	1	1	1	294910601	Sustainer	0067	1	1	1	294900204	Arm
0004	1	1	1	294935401	Lever	0068	1	1	1	294900205	Arm
0005	1	1	1	294935402	Lever	0069	1	1	1	294911203	Shaft
0006	1	1	1	294927101	Holder	0070	1	1	1	294935406	Lever
0009	1	1	1	294910901	Sheet	0075	5	5	5	51570316B	P. Tapped Screw P3x16ST
0010	1	1	1	294935403	Lever	0077	1	1	1	294910401	Rec Adaptor, 45rpm
0011	1	1	1	294900502	Clamper	0079	1	1	1	294911507	Spring
0012	1	1	1	294905401	Cam	0080	1	1	1	294905402	Cam
0013	8	8	8	54040302A	T.L. Washer	0081	2	2	2	294927001	Button
0015	1	1	1	294911501	Spring	0083	4	4	4	54020301A	F. Washer
0017	1	1	1	294910901	Shield	0087	1	1	1	294911205	Shaft
0018	2	2	2	294915201	Tube	0088	1	1	1	294910602	Sustainer
0019	2	2	2	294915202	Tube	0089	1	1	1	294911401	Stopper
0021	2	2	2	51380308P	P.H. Tapped Screw, P3x8ST	0090	1	1	1	294916004	Bracket
0022	3	3	3	294915203	Tube	0091	1	1	1	294910501	Chassis
0023	3	3	3	294912301	Contacto	0093	1	1	1	59051010P	Washer
0024	2	2	2	51523110A	R.H. Wood Screw	0094	1	1	1	59051005P	Washer
0025	1	1	1	51060316A	P.H.M. Screw, P3x16	0095	1	1	1	59051002G	Washer
0027	1	1	1	294911502	Spring	0096	1	1	1	294935407	Lever
0028	1	1	1	294900503	Clamper	0099	4	4	4	294905602	Buffer
0029	9	9	9	64000300R	RG Ring E Type	0101	4	4	4	59461310P	Washer
0030	1	1	1	59030610G	Washer	0102	2	2	2	294915204	Tube
0031	1	1	1	51080303B	C.H.M. Screw C3x3	0104	1	1	1	294915205	Tube
0032	1	1	1	51612604A	Set Screw	0105	1	1	1	294905303	Cover
0033	1	1	1	294900401	Table	0106	4	4	4	294905701	Leg
						0107	1	1	1	294905304	Cover
						0108	4	4	4	294905702	Leg
						0109	4	4	4	294911402	Stopper
						0110	4	4	4	51523130A	R.H. Wood Screw
						0111	1	1	1	64000400R	RG Ring E Type
						0114	1	1	1	294900801	Weight

U: For U.S.A.
 C: For Canada
 E: For Europe

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	E		
1711	1	1	1	294926211	Pulley, 50 Hz
1712	1	1	1	294926212	Pulley, 60 Hz
1714	1	1	1	294980101	Packing Case
1717	1	1	1	294980301	Partitioner
1718	1	1	1	294980302	Partitioner
1719	1	1	1	294980303	Partitioner
1721	1	1	1	294980304	Partitioner
1722	1	1	1	294980305	Partitioner
1724	1	1	1	294980401	Sleeve, Accessories
1726	1	1	1	294980701	Reinforcing
1727	1	1	1	294980702	Reinforcing
1729	1	1	1	294981101	Polyethylene Bag, Turntable
1730	1	1	1	294981102	Polyethylene Bag, Printed Matter
1731	1	1	1	294981103	Polyethylene Bag, Turntable Mat
0116	1	1	1	294916401	Adjuster
1733	2	2	2	102980401	Sleeve, AC Cord
1525	4			952281501	Serial No. Card
1526		4		952301512	Serial No. Card
1527			4	952301511	Serial No. Card
1602	1			294985101	Instructions, Set
1603		1	1	294985131	Instructions, Set
1604		1		288685110	Instructions, leaflet
1608	1	1	1	294985601	Schematic Diagram
1611	1			281885402	Guarantee Card
3036	1	1	1	293905311	Cover
1617	1	1	1	294985102	Instructions, Accessories
1618	1	1	1	281885104	Instructions, Packing
1621	1	1	1	257785401	Guarantee Card
1622	1	1	1	257785102	Instructions, Red Tag
1624	1			257781301	Envelope
1625		1		291881301	Envelope
1626			1	281881301	Envelope
1715	1	1	1	294980111	Packing Case



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