

FIGURE 1

GENERAL INFORMATION

The Markel Playmaster Models 74 and 75 are designed to play, automatically, one side or both sides, twelve 10" or 12", 331/3 RPM records, twelve 10" or ten 12", 78 RPM records, without interruption, in sequence, and without turning them over. The Playmaster automatically stops and shuts off upon completion of the last 10" or 12" record.

It is also designed to play automatically twelve 7", 33½, RPM or ten 7", 45 RPM records one side only—and will continue playing the last 7" record until the "Off" button is pressed.

Manual operation is provided for playing home recordings or odd-sized records.

The Playmaster is equipped with two interchangeable pick-ups (playing heads) whose outputs are simply and easily adapted to conventional amplifiers. The black pick-up is used for playing all 78 RPM records, while the red pick-up is used for playing all microgroove (33½ and 45 RPM) rec-

ords. The tone arm weight on 78 RPM records is approximately a half ounce (15 grams), and approximately $\frac{1}{5}$ of an ounce (6 grams) on all microgroove (33½ and 45 RPM) records.

The motor operates on 115 to 117 volts, 60 cycles, A.C. only.

"B" models are available to operate on 115 to 117 volts, 50 cycles, A.C.

"H" models are available to operate on 234 volts, 60 cycles A.C.

"BH" models are available to operate on 234 volts, 50 cycles A.C.

The electrical control circuit operates on 6 to 10 volts, momentary contact only.

Approximately one ampere, required for operation of cycling mechanism and automatic shut-off, is supplied by an attached transformer.

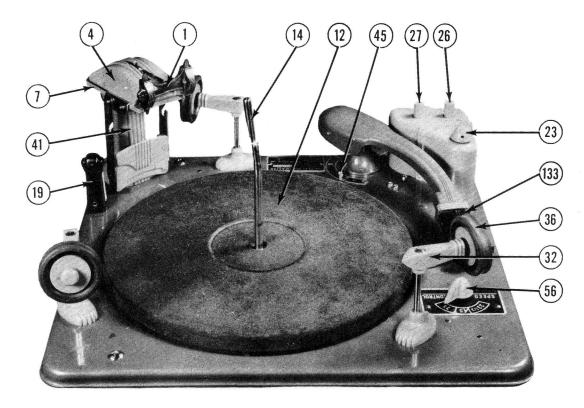


FIGURE 2

AUTOMATIC OPERATION

In placing the Markel Playmaster in operation, the following procedures are necessary to assure proper operation of the mechanism.

1. Insert the proper pick-up (19 or 133) in the tone arm (16), then place the tone arm on the needle rest (55). The red pick-up (19) is used for microgroove records (33½) or 45 RPM), the black pick-up (133) is used for 78 RPM records.

2. Turn the speed control knob (56) to 331/3, 45, or 78 to

correspond to the records to be played.

3. Pick the tone arm up and move it to the edge of the turntable. Hold it firmly in this position, then slide the set-down knob (45) to 7" or 10/12", depending on size of record to be played. Return the arm to the needle rest.

1. Before loading records, be sure that the tone arm is resting on the needle rest and that all three wheels that support the records are in the correct non-playing position as shown in Figure 3. If the three wheels are not in the correct non-playing position, turn each one to its correct position (you will hear a

click when each wheel is positioned).

2. Rotate the record support in either direction until the support snaps into position to the size of records to be played— 10" or 12"—and fold back the record stabilizer (1) away from the center post. When loading 7" records, raise the 7" push-off shelf (6A), then slide it back to lock into position. The center hole inserts must first be snapped into 45 RPM records.

3. Place a series of records on the center post so they will rest on the ledge of the center post and the record support. CAUTION: Do not intermix sizes or types of records.

4. Fold back the record stabilizer, so that it rests on the top record. In playing 7" records, the record stabilizer should rest on 7" push-off shelf (6A).

CAUTION: If stabilizer (1) is not placed on the records or

push-off shelf (6A), the changer will shut off after playing the first record.

5. Set the sequence selector knob (23) to whatever sequence of operation is desired—one side or two sides. NOTE: 7" record will play one side only.

6. Press the "On" button (26) completely down. The changer will now play the entire stack of records. Upon completion of a stack of 10" or 12" records, the changer will shut off, automatically; when 7" records are used, the changer will have to be turned off manually.

7. Any record, while playing, can be rejected by pressing the "Reject" button (26) all the way down and releasing slowly.

Reject button (26) all the way down and releasing slowly. The reject button will not operate when the sequence selector knob is set at "Manual."

8. The "Off" button (27) can be pressed during any portion of the change cycle or while the record is being played. The cycle can be resumed by pressing the "On" button. The tone arm may be moved manually, at any time, without damage to the mechanism. the mechanism.

CAUTION: For best performance, do not leave changer with records resting on wheels, or with wheels resting on turntable, or with tone arm resting on records or turntable.

- 9. Upon completion of the last record, the motor automatically shuts off (except when 7" records are played, in which case the last record will repeat itself until the "Off" button is pressed). The tone arm remains on the record; pick up the tone
- arm and gently place it on the needle rest. 10. Fold back the record stabilizer (1).
 - 11. Lift the records straight up the center post.

NOTE: When all of the records have not been played, and the operator wishes to stop the changer and remove records when wheels (36) are resting on the records, it may be accom-

plished as follows:

1. Press the "Reject" button (26), and when the changer cycles, the wheels will automatically move off the record. When the tone arm sets down on the next record, press the button (27).

2. Pick up the tone arm and place it on the needle rest (55).

3. Fold back the record stabilizer (1)

3. Fold back the record stabilizer (1).
4. Remove the records by lifting them straight up the center post.

MANUAL OPERATION

The following procedure is necessary to operate the changer manually, such as playing home recordings, odd-sized or single record selections:

- 1. Rotate the record support (7) to the 12" position. (If the wheels are on the turntable, press the "Reject" button, and when machine cycles, the wheels will automatically move off the turntable.)
 - Move the record stabilizer (1) away from the center post. Turn the control knob (23) to "Manual" position.
- Place the record to be played on the turntable.
 Push down on the "On" button (26) and release.
 Raise the tone arm from its rest position and place it on
- the starting grooves of the record.

 7. The mechanism will shut off automatically at the end of the record if the record has a standard eccentric groove. If the mechanism does not stop, press the "Off" button (27).

 8. Raise the tone arm from the record and place it on the
- needle rest.
 - 9. Remove the record from the turntable.

CHANGER CYCLE

As the tone arm moves toward the center of the record, the tone arm collar assembly (65), which is fastened to the tone arm hinge and sleeve assembly (22), moves toward the trip switch (107). At the completion of the record, when the needle enters the eccentric groove, the trip screw (64) of the collar assembly (65) engages the trip switch (107), thus closing the trip switch and energizing the solenoid (105).

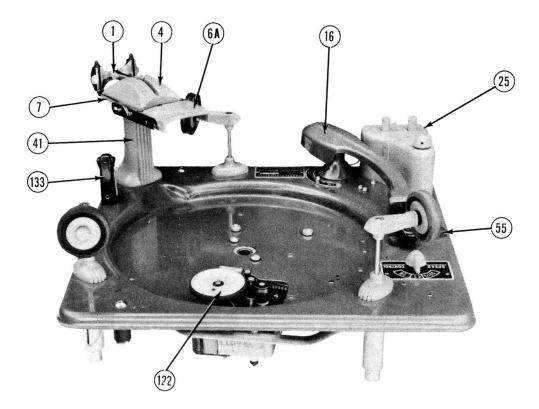


FIGURE 3

The tripping point for 33½ and 45 RPM records is earlier than for 78 RPM records. Therefore, when knob (56) is turned to 33½—45, the first two contacts on the trip switch cause the solenoid (105) to be energized. However, when knob (56) is turned to 78, all three contacts must be closed.

Energizing the solenoid pulls the starting pawl (A) of the main cam (127), Figure 5, causing the teeth of the pawl to mesh with turntable gear (120). This starts the cam (127) rotating, thus starting the change cycle.

As the cam (127) rotates, the hooked end of the tone arm follower (103) moves out of the recess (H), shown in Figure δ , closing the muting switch (119).

The tone arm raise lever (115) rides up the incline portion of track (G), shown in Figures 6 and 7, actuating the lift pin (20), which in turn raises the tone arm from the record.

The tone arm follower (103), riding around the cam face (F), pivots the retracting lever, which is staked to the tone arm follower (103), against the 7''/10''/12'' adjusting pin (66) of the tone arm collar assembly (65), swinging the tone arm out clear of the records and bringing the pin (66) into contact with the tone arm set-down lever (102).

Also, at this stage of the cam rotation, when the control knob is in the position marked "two sides," the selector lever (109) is pivoted clear of the path of the cam gate boss (C), and the cam gate (C) is switched from one side to the other by the pin of the main cam follower (98). Therefore, on the next rotation of the cam, the main cam follower pin is shunted into the inner cam track (E) for playing the underside of the record, or into the outer cam track (D) for playing the top side of the record. If the control kpob (23) is in the position marked "one side," the boss on the cam gate (C) contacts the flange on the selector lever assembly (109), pivoting the gate outward so that the pin of the main cam follower always remains in the outer track (D)

As the tone arm moves outward, the riser head assemblies (32) are rotated inward by the movement of the main cam follower through the following connected parts: the formed wheel turn lever (94), the straight wheel turn lever (95), and the offset wheel turn lever (123). The stud on the straight wheel turn lever (95) also actuates the push-off cam assembly (81), which in turn actuates the push-off lever (13) and the push-off slide plate (6), thereby dropping a record to the wheels. As the cam follower pin (98) moves by the cam gate (C), Figure 5, it is switched into the inner cam track (E) and the design of the cam track causes the cam follower to continue to pivot the riser heads inward and to lower the wheels to the turntable. During the next change cycle, or during one side operation, the cam gate switches the cam follower pin into the outer cam track (D) and the design of the cam track causes the cam follower to return the riser heads and the push-off slide plate to their original positions, thus dropping the record to the turntable.

The shape of the cam face (F), Figure 6, and the spring (101) which pulls on the retracting lever of assembly (103) now moves the retracting lever away from the 7''/10''/12'' pin (66) on the tone arm collar (65). This causes the tone arm set-down

lever assembly (102) to move out (due to the friction set up by the parts [100 to 103]) until the set-down lever (102) contacts the $10^{\prime\prime}/12^{\prime\prime}$ change lever (99). This positions the tone arm for set-down. The tone arm is held in stationary position by the tone arm set-down lever assembly (102) until the tone arm comes to a rest on the record, at which time the pin on tone arm follower assembly (103) moves against set-down lever assembly (102), thus giving free movement to the tone arm.

The tone arm tension arm (106) pivots on the same stud as does the selector lever assembly (109). The extension arm stud (part of tension arm assembly 106) slides in the groove of the main cam follower (98) and is actuated by this follower. The finger on the tension arm assembly slides in the slot in the link of the raise lever assembly (115). As a result, when the main cam follower rides in the cam groove (D), the finger of the tension arm moves against the end of the slot of the link (assembly 115), Figure 7. This relieves the spring tension on the link, allowing the raise lever (115) to ride down the incline surface of the cam track (G), Figure 6, lowering the tone arm to the record. However, when the control knob is in the position marked "two sides," with the main cam follower riding in the cam groove (E), the tension arm (106) is moved forward, allowing the spring (108) to pull on the link, which in turn pivots the raise lever (115) upward. This action raises the tone arm to the record.

The hooked end of the tone arm follower (103) now rides into the recess (H) of the cam, Figure 6, moving away from the muting switch; at the same time, this causes the pin in the retracting lever (part of assembly 103) to move against the tone arm set-down lever of assembly (102), thus giving free movement to the tone arm. In this position, the tone arm follower (103) also holds the main cam in a neutral position. This completes the change cycle.

AUTOMATIC SHUT-OFF

When the last 10" or 12" record is ejected from the record shelf, the record stabilizer (1) drops down against the automatic stop hinge (5), which in turn pushes down on the push-off lever (13). As the push-off cam (81) returns the slide plate (6) to its original position, the push-off lever (13) is pulled against the shut-off spring (83), closing the contacts of the bale switch (96). When the record is finished playing, the adjusting screw (64) of the collar assembly (65) contacts the trip switch (107). This closes the circuit energizing the latching solenoid (129), tripping the main switch (53), shutting off the unit.

MANUAL POSITION

Normally, the manual switch (110) is held in a closed position; however, when the control is turned to "Manual," the switch (110) is opened, thereby opening the circuit to the trip solenoid (105).

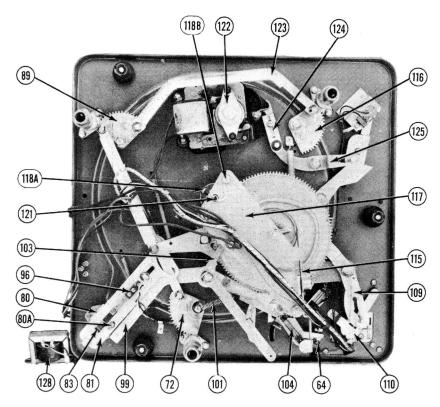


FIGURE 4

GENERAL SERVICE INFORMATION

Electrical Circuit

A careful study of the schematic diagram incorporated with this manual will show that basically there are two electrical circuits employed.

First a 110-volt circuit opened and closed by two contacts on main switch (53) and connected to operate the motor (122) and step-down transformer (128).

Second, a low voltage control circuit consisting of two sole-noids (105, 129), two leaf switches (107, 96), two slide switches (53, 52), one toggle switch (110) and a sliding snap switch (126). The latching solenoid (129) when energized pulls the latch away from the plunger of main switch (53), thus releasing latch away from the plunger of main switch (53), thus releasing the switch which springs up and cuts off the motor and step-down transformer. The trip solenoid (105) when energized moves the cam cycling pawl (A), Figure 5, into contact with the turntable gear (120), starting the cam motion and changer cycle. The leaf trip switch (107) is adjusted to determine when action takes place, cycling, and shut-off. The leaf bale switch (96) determines which action takes place, cycling or shut-off.

The changer will start to cycle when the trip switch (107) is closed, if the bale switch (96) center leaf is making contact with the third leaf. The changer will shut off when the trip switch (107) is closed if the bale switch (96) center leaf is making contact with the first leaf.

The slide switch (53) opens and closes both 110-volt circuits and low voltage energizing circuit in the first two of its positions. In the third position, this switch also closes a low voltage reject circuit which energizes the trip solenoid (105) and starts the machine to cycle.

The slide switch (53) closes the low voltage shut-off circuit,

The state switch (35) closes the low voltage state-or circuit, energizing the latching solenoid (129), shutting off the machine. The toggle switch (110) is normally closed, completing the circuit to the trip solenoid (105). When this switch is open for manual playing, the trip solenoid circuit is open and the changer will not cycle.

The sliding snap switch (126) is activated by the speed control knob. At $33\frac{1}{3}$ or 45 RPM this switch is closed, energizing the first and second leaves of trip switch (107). At 78 RPM this switch is open, energizing the first and third leaves of trip switch (107).

Adjustment of Electrical Circuit

(a) Trip Switch (107)

Adjust the trip screw (64) so that the first and second leaves of the trip switch (107) are closed when the tone arm reaches the inside eccentric groove of 33½ and 45 RPM records—then lock the nut on the trip screw (64). To adjust for tripping of 78 RPM records, bend the third leaf slightly so that contact is not closed until the tone arm reaches the inside eccentric groove of the 78 RPM records. The eccentric groove on 78 RPM records is further to the inside than on microgroove records. (b) Bale Switch (96)

(b) Bale Switch (96)

The bale switch (96) determines what happens—shut-off or cycle. When there are one or more records on the push-off shelf (7) or the 7" push-off shelf (6A) is in a horizontal position, the center and third leaf should be making contact. This permits the unit to cycle automatically. When the last 10" or 12" record is pushed off the shelf, the push-off lever (13) presses down on the shut-off spring (83), which causes the center leaf to break with the third leaf and make contact with the first leaf. If the first and third leaves are not so spaced, they must be hear slightly first and third leaves are not so spaced, they must be bent slightly so as to operate in this manner. The bale switch causes the unit to cycle if leaves two and three are made—shut off if leaves two and one are made (see schematic diagram).

Removing the Center Post

To remove the center post, loosen screw (118A), then loosen the center post spring mounting screw (118B) and pivot the spring (121) out of the hole in the center post (see Figure 4). The center post may now be removed by lifting it straight up.

In replacing the center post, be sure that the ledge of the center post is facing away from the push-off shelf (7). Insert the spring (121) in the center post and tighten the screw (118B). Then tighten screw (118A), Figure 4, then lock with nut.

Removing the Turntable

In removing the turntable, it is necessary to first remove the center post and then loosen the two set screws holding the turntable gear (120) to the turntable sleeve. After this is done, the turntable may be removed by lifting it straight up.

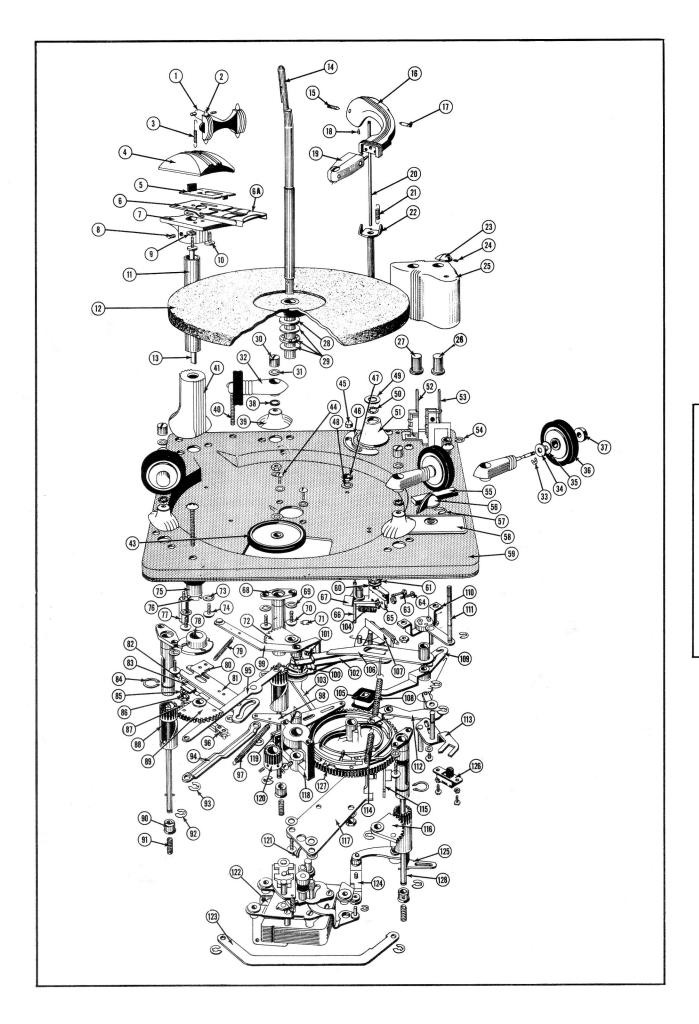
In replacing the turntable, be sure to replace the felt washer (28) and the thrust bearing assembly (29) in their proper positions, as shown in the exploded view. Push the idler wheel (43) back out of the way so that the turntable will be seated and the idler wheel will contact the rim of the turntable. Also, before the turntable is seated, the turntable sleeve must be inserted in the turntable gear (120).

After these steps have been taken, push the turntable gear up, leaving a space of approximately .015" between the gear and the bearing in the center bearing support (118). Tighten the set screws.

Record Support Alignment

Proper alignment of the record support is necessary for proper record ejection:

- 1. Be sure the mechanism is out of cycle.
- 2. Rotate the record shelf to the 10" position.
- 3. Place a 10" record on the step of the center post (14), allowing it to rest on the support shelf (7).
- 4. Loosen the set screw (8) and align the curvature of the support shelf (7) to the edge of the record.
 - 5. Tighten the set screw.



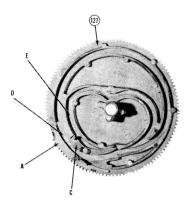


FIGURE 5

Two Records Drop at Once

- 1. Hole in record too large: Check the diameter of the hole in the record. An oversize hole will cause two records to drop at once.
 - 2. Center post slide not fully down:
- (a) Check the slide to be sure it is free and does not bind at any point. Clean out all foreign material or straighten, if necessary. Do not oil.

 (b) When records are placed on the center post, be sure
- the slide is all the way down.

Record Does Not Drop When Changer Cycles

- 1. Push-off slide plate (6) out of adjustment. The slide plate (6) should move far enough forward to push the record off the edge of the record support shelf (7).
- (a) Loosen the set screw (80A), Figure 4, and slide the push-off cam adjuster (80) away from the center post. Tighten the screw and check the adjustment.
- CAUTION: If push-off cam adjuster (80) is set too far away from center post, the slide plate (6) will over-travel and changer will bind.
- 2. Hole in record too small: Check the diameter of the hole in the record. An undersize hole will cause the record to hang
- up on the center post.

 3. Screw (80A) loose, thereby allowing the push-off cam adjuster (80) to slide on the push-off cam instead of actuating the push-off lever (13). Adjust and tighten screw (80A) as in Number 1 above.

Tone Arm Does Not Move Horizontally When the Mechanism Is Cycling

- 1. Tone arm lift pin (20) is missing.
 2. Cam follower spring (101) loose: If this spring is loose the tone arm follower (103) will not be held against the cam face (F), thereby not actuating the collar assembly (65).
 3. Collar assembly (65) loose on the tone arm mounting bracket. If this condition exists, the tone arm may not move with the collar.
- with the collar.

Irregular Landing of the Tone Arm

- 1. Toggle spring on set-down lever assembly (102) loose and/or has lost tension. If the toggle spring is loose, the set-down lever of assembly (102) will not be snapped around the 7" or 10" pin of the collar assembly (65), and the arm may move slightly, either direction, when it is lowered to the turntable.
- 2. Collar assembly (65) loose on the tone arm hinge and assembly sleeve (22).
 - 3. Set screws in change cam (78) loose.
- 4. Spring (104) loose. If spring (104) is loose, it will allow the tone arm to move around since this spring holds the pin in position. The pin determines the 7'' and 10''/12'' set-down.
- 5. The tone arm follower and retracting lever assembly is pre-set at the factory so that the clutch slips at approximately $3\frac{1}{2}$ to $5\frac{1}{2}$ ounces. Adjust nut (100) to increase or decrease this clutch to these limits.
- 6. Excess play between tone arm and hinge or any play in tone arm hinge and sleeve assembly (22).

Tone Arm Does Not Set Down Properly on 7"-10"-12" Records

- -12" records.
- (a) Place a 10" record on the turntable.
 (b) Trip the mechanism, stop the mechanism just as soon as the tone arm starts to drop to the record and while the pin on the 7" and 10"/12" index adjusting lever (66) is held firmly
- the / and 10 / 12 makes adjusting lever (00) is field firmly by the tone arm, set down lever assembly (102).

 (c) Loosen hex cap screw (63) and re-set tone arm to correct position maintaining approximately .005" vertical movement in the tone arm post assembly. Tighten hex cap screw (d) After tone arm set-down is readjusted, it may be nec-
- essary to readjust trip screw (64) to assure correct trip position.

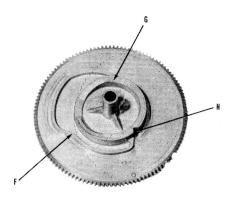


FIGURE 6

- 2. 7" records.
- (a) Place a 10" record on the turntable and also a 7"
- (b) Be certain that the 10" set-down is correct. If not,

- (b) Be certain that the 10" set-down is correct. If not, correct according to instructions in above.

 (c) Set unit for playing 7" records by moving hex cap nut (45) into 7" set-down position.

 (d) Set selector control knob (23) into one-side position and press "On" button (26).

 (e) Allow needle to set down on record and stop immediately. Note the amount and direction of the deviation of set-down.

 (f) Adjustment of the 7" set-down is made by heading the
- (f) Adjustment of the 7" set-down is made by bending the ear (67) of the 7" index adjusting lever. There are two ears on this lever—bend only the one closest to the edge of the changer base plate. Be careful not to loosen staking of this lever when
- bending the ear.

 (g) If the set-down on the record is too far toward the inside, bend the ear (67) inward to restrict the amount of travel of the 7" index lever.

 (h) If the set-down is on the outside of the record, bend
- the ear (67) outward to increase the amount of travel of the 7 index lever. A very minimum of bend in either direction changes the degree of set-down considerably.

Tone Arm Does Not Raise to Play Under Side of a Record

- Black pick-up will prevent raise of tone arm if speed selector knob is set at 33½ or 45 RPM.
 Tone arm lift pin (20) is missing.
- 3. Raise lever springs (108) and/or (114) disconnected or missing. These springs apply tension to the link of the raise lever assembly (115), raising the tone arm to the record. (See adjustment of tone arm pressures.)
- 4. The counter balance spring in rear of tone arm has become detached.
- 5. Tone arm raise lever assembly (115) is not riding on track (G), shown Figures 6 and 7.

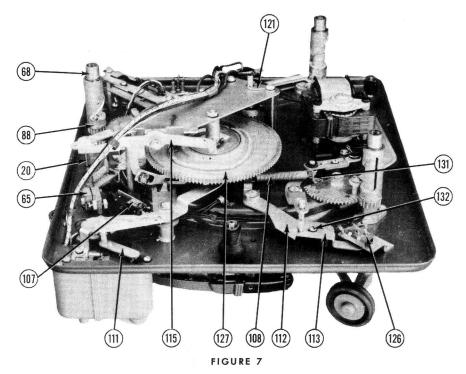
Changer Trips Before Needle Reaches End of Record or Fails to Trip

- 1. Trip screw (64) out of adjustment: The trip screw (64) should be adjusted so that it will close the contacts of the trip switch (107) upon completion of a record. This trip point may be adjusted by turning the screw (64) in to advance tripping, and out to delay the tripping action. (See adjustment of electrical circuit.)
- 2. Study schematic diagram incorporated in this manual and "Electrical Circuit" section.

Adjustment of Tone Arm Pressures

Readjustment of pressures of the tone arm should be made strictly according to following sequence:

- 1. The tone arm (16) should be perfectly balanced and move freely on pivot pins (15-17) when there is no cartridge inserted in the arm and the counterbalance spring (21) is disconnected. There should be no excess play.
- 2. (a) Connect up the counterbalance spring (21), insert the red pick-up (19). The downward pressure at the tip of the cartridge should be approximately 6 grams. If incorrect, this pressure can be varied either way by slightly bending the tail of the tone arm hinge (22).
- (b) The upward pressure can be checked by putting the changer in an upward cycle. Set speed control knob at 33½ or 45 RPM. A six-gram weight placed on tip of pick-up should balance the arm. If this condition does not exist, the pressure can be varied by bending the adjustment lug (131) either way.
- 3. (a) Inserting the black pick-up (133) changes the downward pressure to approximately 15 grams. The weight of the black pick-up itself compensates for this required increase. No adjustment is necessary.
- (b) The upward pressure for 78 RPM can be checked by putting changer in an upward cycle and changing speed control to 78 RPM. With black pick-up (133) inserted, a 15 gram



weight placed on the tip of pick-up should balance the arm. If this condition does not exist, the pressure can be varied by changing slightly the adjustment screw (132).

Changer Does Not Cycle

- Selector switch (110) is set at manual.
- 2. Faulty wiring may prevent power being supplied to the solenoid (105). See above section on electrical circuit.
- 3. Turntable gear (120) loose on turntable sleeve.
 4. Cam cycling pawl (A), Figure 5, binds, therefore not actuated by the solenoid (105).

Changer Does Not Shut Off After Last Record Has Been Played

- Record stabilizer resting on 7" push-off shelf (6A).
 Faulty wiring: Check the wiring diagram; also see above
- section on electrical circuit and adjustments.
- 3. Spring (83) loose or moved to one side. If this condition exists, the spring (83) will not close the switch contacts when the push-off lever (13) is pushed down and forward. (See adjust-
- ment electrical circuit.)

 4. "Reject-On" button binds in plastic switch cover.

Wheels Chatter on Record

1. Turn wheels to proper position. You will hear a click when the proper position is reached.

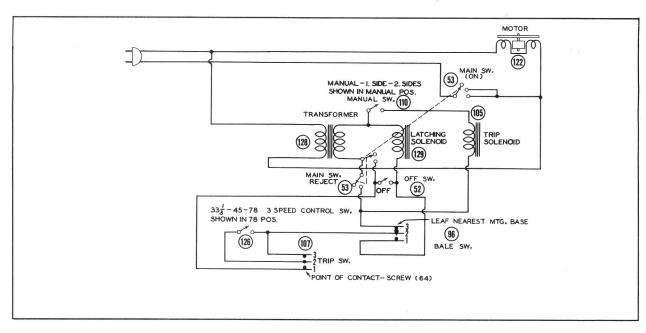
2. The wheels should be adjusted so that the wheel shaft in the riser head (32) is directly pointing to the center post. This is done by loosening the cap nut (30) and rotating the riser head. It is necessary to hold the riser shaft (128) firmly while tightening cap nut (30).

LUBRICATION

Lubrication applied at the time of manufacture is usually sufficient for a long period of time; however, should it become necessary to lubricate, due to excessive use or high-operating temperature, the mechanism should be lubricated as follows:

Use a good, light grease on the teeth, the cam tracks and cam surfaces, and gate of the main cam (127). Turntable thrust bearing assembly (29), ball bearings in the post assembly (50 and 61), and all other pivot and frictional points may be lubricated disable. cated slightly.

CAUTION: Avoid excessive lubrication. Excessive or heavy grease on the starting pawl (A) of the cam (127) will tend to overcome action of the solenoid (105) and machine will not cycle. Do not, under any circumstances, permit oil or grease to come in contact with the idler wheel (43), the turntable rim, or the rubber wheel (36). Any oil or grease at these points should be removed with naphtha.



PARTS LIST

Ref. No.	Part No.	DESCRIPTION	Ref. No.	Part No.	DESCRIPTION
1	B-7010	Record stabilizer	69	Z-139	8/32 x 1/32 shakeproof lockwasher
2	A-7012	Rubber bumper for bale	70	M-254	8/32 x 7/16 R.H.M.S.
3	W-7008	Record stabilizer spring	71	M-7003	Screw riser barrel bushing
4	GP-7009	Push-off cap	72	B-7007-2	Quadrant gear
5	S-7026	Automatic stop hinge	73	Z-138	6-32 x 1/32 lockwasher
6	S-7046	Three-speed push-off plate	74	M-158	10-24 x 5/16 R.H.M.S.
6A	GP-7015	7" Push-off shelf	75	A-7016	Rubber mounts
7	GP-7008	Push-off shelf	2000	And the second s	
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8	M-449	10-32 x ½ headless set screw	77	E-7015	Push-off cam post
9	Z-7017	"Kantlink" washer No. 6	78	B-7008-1	10"—12" change cam
10	M-269	6-32 x % R. H. machine screw	79	W-7003	10"—12" change lever spring
11	U-7002	Push-off post shaft	80	S-7030	Push-off cam adjuster
12	A-7018-K	10" turntable assembly	81	S-7013-A	Push-off cam assembly (including push-off
13	S-7015	Push-off lever			switch) (item 96)
14	R-7001	Centerpost	82		Flatwasher
15	M-7023	8-32 x 5/8-60° cone point headless pivot screw	83	W-7015	Shut-off spring
16	B-7016	Tone arm	84	Z-7007	"C" washer—riser barrel
17	E-7042	Tone arm pivot pin	85	Z-7015	Spacer
18	M-7022	8-32 x ½ round point set screw	86	F-218	Hex nut
19	A-7094	Cartridge—1 mil—with styluses	87	Z-7005	"C" washer
	A-7060	Stylus—1 mil osmium-tipped, for A-7094	88	B-7012	Outside barrel
	A-7062			Control Control Control Control	
122		Stylus sapphire—1 mil tip, for A-7094	89	B-7007-1	Quadrant gear
133	A-7095	Cartridge—3 mil—with styluses	90	V-7005	Bushing—riser barrel
	A-7059	Stylus—3 mil osmium-tipped, for A-7095	91	W-7016	Riser head bearing spring
	A-7061	Stylus—sapphire—3 mil tip, for A-7095	92	Z-7010	"C" washer—riser shaft
20	R-7009	Tone arm lift pin	93		"C" washer
21	W-7017	Tone arm counterweight spring	94	S-7010	Formed wheel turn lever
22	S-7026-A	Tone arm hinge and sleeve	95	S-7012	Straight wheel turn lever
23	GP-7014	Turn knob for switch	96	A-7006	Bale switch
24	M-1715	5-40 x 3/16 socket headless set screw cone point	97	W-7009-1	Main cam follower spring
25	GP-7010	Main switch cover	98	S-7009-1	Main cam follower
26	GP-7013	Push button		0.0	and the same of th
	CONTRACTOR AND ADDRESS OF THE PARTY.	The state of the s	99	S-7016	10"—12" changer lever
27	GP-7013	Push button	100	F-7004	Hex Nut
28	Z-7001	Felt washer		Z-7034	Spring washer
29	A-7003	Thrust bearing assembly		Z-7037	Lockwasher, external shakeproof
30	E-7035	Slotted cap nut—riser shaft		Z-7032	Fiber washer
31	Z-139	8-32 x 1/32 shakeproof lockwasher		Z-7038	Asbestos fiber washer
32	GP-7004-A	Riser head and wheel assembly	101	1	Tone arm cam follower spring
33	Z-7006	"C" washer	101	W-7021	
34	Z-7008	Felt washer	102	S-7058	Tone arm set down lever assembly
35	Z-7020	Paper washer	103	S-7019	Tone arm follower and retracting lever assembly
	1		104	W-7006	7" trip stud spring
36	A-7011-A	Wheel assembly	105	A-7092	Trip solenoid
37	GP-7011	Wheel shaft cap	106	S-7008	Tone arm tension arm
38	Z-7016	Flat washer	107	A-7055	Trip switch
39	GP-7006	Riser bushing	108		_
40	M-7013	10-32 x 1½ Ph. Hd. machine screw		W-7019	Tone arm spring 33½3—45
41	GP-7007	Push-off post	109	S-7022	Selector lever assembly (including spring W70)
42	G1 1001	Lockwasher	110	A-7023	Manual switch
		10000M-10000000000000000000000000000000	111	E-7032	Selector control shaft
43	1	Idler wheel	112	S-7049-1	Spring tension arm
44		Center bearing support mounting screw	113	S-7066	3-speed change arm and switch actuating leve
45	F-69-1	Hex cap nut	114	W-7018	Tone arm spring 78
46	A-7088	7"—10" indicator plate		properties constructed in	
47		Hex nut	115	S-7005-1	Tone arm raise lever assembly
48		Flat washer	116	B-7007-3	Quadrant gear
	7.7030	ACCOUNTS ACC	117	S-7004	Cam plate sub-assembly
49	Z-7030	5/16 I.D. x 3/4 O.D. x .015 washer	118	B-7002-1	Center bearing support
50	A-7032	1/8" ball bearing	119	A-7026	Muting switch
51	B-7009	Tone arm post housing	120	B-7013	Turntable gear
52	A-7022	Shut-off switch	1	The second secon	
53	A-7021	Main switch	121	W-7012	Centerpost spring
54	Z-7004	"C" washer	122	A-7091	3-speed motor (GI) (includes idler wheel)
55	A-7056	Tone arm rest pad	123	S-7011-2	Offset wheel turn lever
	The common of th		124	S-7052	3-speed adjustment lever
56	GP-7014	Speed change selector knob	125	S-7067	3-speed change lever assembly
57		"C" washer	126	A-7089-3	3-speed control switch
58	A-7093	Indicator plate (78-45-331/ ₃)	127	B-7003	Main cam assembly
59	S-7001-4	Base plate	1 50000000		
60	Z-7030	Washer 5/16 I.D. x 3/4 O.D. x .015	128	A-7033	Transformer
61	A-7067	Ball and retainer needle bearing	129	A-7015	Latching solenoid
			130	A-7023	Manual switch
62	F-217	Hex nut	131	S-7047	Adjustment lug for 331/3—45 R.P.M. upward
63	M-7010	Hex cap screw			tone arm tension
64	M-251	8-32 x 5/8 R.H.M.S. trip screw		l	
65	B-7006-2	Tone arm adjusting collar	132	M-170	Adjustment screw for 78 R.P.M. upward tone
66 & 67	S-7065	7" and 10" index adjusting lever		1	arm tension
	1			l	1 0 1 1 0 1 10 11
68	B-7011	Inside barrel	133	A-7095	Cartridge—3 mil—with stylus