

MECHANICAL PARTS LIST

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
1	11411-1	Index Finger	42		Spring
2	12007-1	Balance Arm	43		Switch Actuating Pivot
3	13403-1	Rubber Mat	44	11801-1	Power Switch
3A	1424SBO-X43	Retaining Ring	45	11401-1	On-Off-Reject Rod
4	5707-501	Tone Arm GS-77	46		Balance Arm Wire
	5707-502	Tone Arm GS-77GE	47	12014-2	Idler Wheel Ass'y
	5707-503	Tone Arm GS-77GED	48		Cloth Washer
5	13001-1	Turntable	49		Trip Lever Washer
6	13401-1	Balance Arm Support	50		Steel Washer
7	5711-503	Base Plate Assembly (Top View)	51		Ball Bearing Retainer
8	5704-501	Rest Post	52		Steel Washer
9		Cartridge	53		Idler Arm Assembly
10		Speed Shift Cam	54		Retaining Ring
11	5702-504	Brake Lever Assembly	55		Main Gear
12	12926-5	Spring	56		Driver-Pinion
13		Main Slide Spring	57		Retaining Ring
14	5702-503	Main Slide Assembly	58		Trip Lock Assembly
15	5702-501	Switch Lever Assembly	59		Driver-Pinion Arm Ass'y
16	12307-2	Speed Knob	60		Spring
17	10151-1	On-Off-Reject Lever	61		Retaining Ring
18	1021-11	Screws #6 x 3/16 (6)	62		Tension Spring
19	5704-501	Rest Post Ass'y (Bottom View)	63		Speed Minder Lever
20		78 R. P. M. Positioning Wire	64		Speed Selector
21		Tone Arm Hinge And Pivot Ass'y	65		78 R. P. M. Position Pawl
22		Tone Arm Index Cam	66		Retaining Ring
23	5710-502	Index-Tone Arm Bracket Ass'y	67		Speed Shift Stop
24	1424SP	Retaining Ring	68		Speed Shift Shaft And Lever
25		Trip Lever	69		Retaining Ring
26		Washer	70		Motor Mounting Grommet
27		Washer	71		Idler Wheel Tension Spring
28	12926-6	Trip Lock Ass'y Spring	72		Spindle Actuating Cam
29		Tension Spring	73	13004-1	Motor (4 Pole)
30		Spacer	74	5701-501	Motor Plate Assembly
31		Balance Arm Tension Lever	75		Cam Pin
32	12956-1	Rest Post Muting Switch And Change Cycle Muting Switch	76		Spindle Mounting Nut
32A	1104-29	Screws 4-40 x 5/16 (2)	77		Compression Spring
33		Index Detent	78		Speed Shift Cam
34		Washer	79	11400-1	Speed Change Wire
35		Retaining Ring	80	12926-3	Spindle Slide Tension Spring
36		Index Detent Stop Lever	81	11000-1	Spindle Slide
37		Index Detent Positioning Lever	82	12001-1	Spindle Assembly
38		Slide Bar	83	1021-10	Screws # 6-3/8 Balance Arm Support
39		Spring	84	12925-1	Tone Arm Shaft Assembly
40		Bracket Support	85	1424SP-X21	Retaining Ring
41	12926-12	Index Finger Spring	86		Switch Actuating Pivot Wire

PHOTOFACT* Folder



GLASER-STEERS
MODELS GS-77, GE, GED

SET 399
FOLDER 7

GLASER-STEERS
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GENERAL INFORMATION

Glaser-Steers Model 77 Record Changers are designed to play in automatic sequence a stack of records and shut off after playing the last record.

The Glaser-Steers Model 77 Turntable pauses during change cycle. It resumes motion only after next record has come in to play position, and stylus is in lead-in grooves of record.

The sound output is muted, not only during change cycle, but also while arm is on the rest post during automatic or manual play.

Record separation is accomplished by movement of a finger in the center spindle. This finger directly separates records having a 1/4" centerhole.

Connect this changer to an outlet supplying 117 volts, 60 cycle AC only, unless otherwise specified.

Manufactured by:

Glaser-Steers Corporation
20 Main Street
Belleville 9, New Jersey

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SET 399

FOLDER 7

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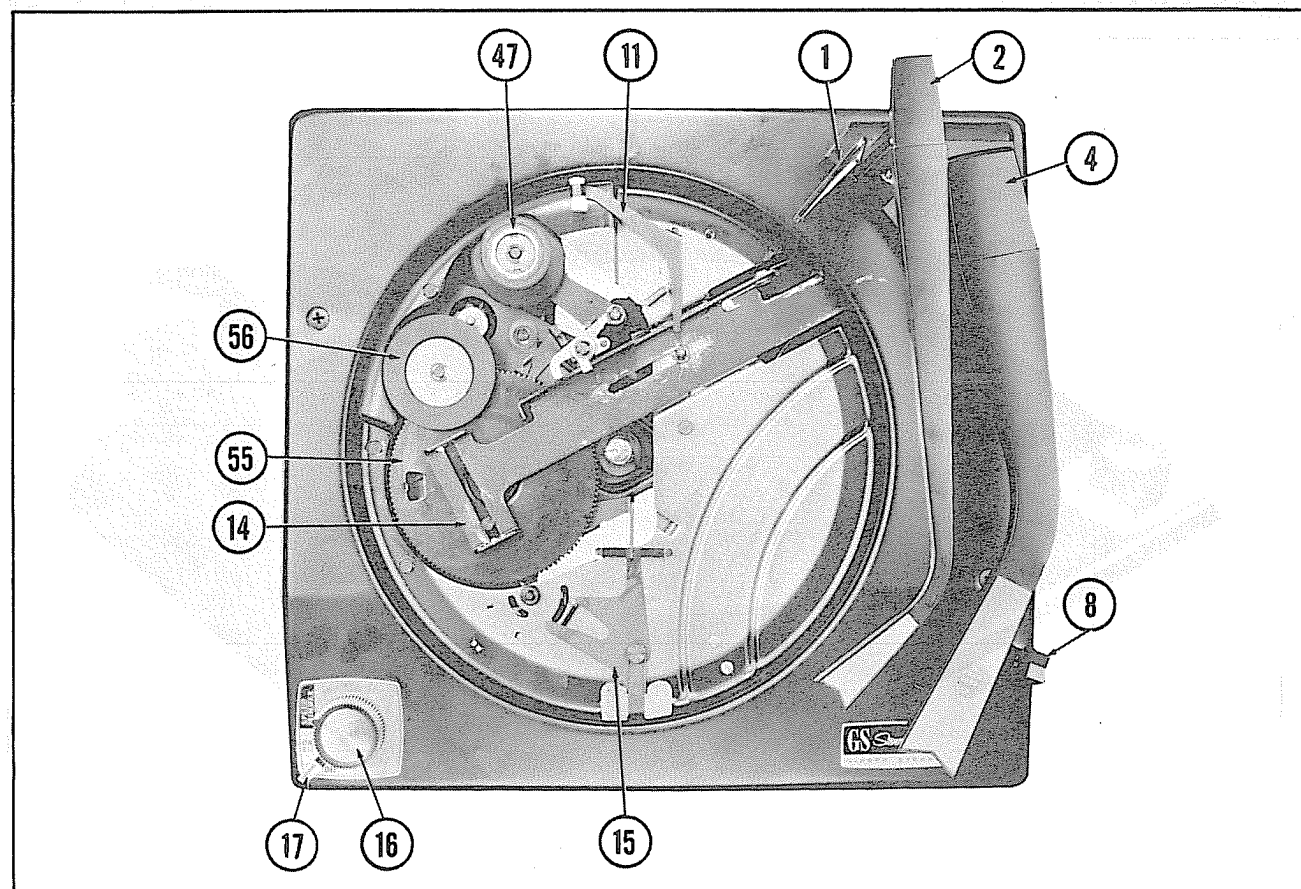


FIGURE 1

CONTROLS

Two controls are provided on the baseplate. Both are on the left front corner.

The bottom control is the "On-Off-Reject" control. Turning this control counterclockwise causes the tone arm to lift off the record, then return to the rest post. The mechanism will then shut off automatically.

Turning this control clockwise to the "On-Reject" position energizes the motor, and starts the mechanism in to cycle. The mechanism will shut off automatically after the last record has been played.

The top control is the "Speed Selector" control. By leaving the "Speed Selector" control in "Speed-Minder" position, you may play automatically all records (except 16 r.p.m.) without resetting the "Speed Selector". You need only select the proper stylus:

7, 10 and 12" records of both 33 and 45 r.p.m. speed may be intermixed in any order. They play at proper speeds. Be sure you use "33-45" stylus (LP, MG).

78 r.p.m. records of all sizes may be intermixed and will play at proper speed. Be sure you use "78" (Std.) stylus.

The speeds can also be changed by rotating the "Speed Selector" control counterclockwise from the "Speed Minder" position.

OPERATING INSTRUCTIONS

Operating With Selector Control At "Speed Minder"

1. Lift and move balance arm to the right. Then

place 45 r.p.m. records (with center inserts), or 33 r.p.m. records, or both speeds intermixed on spindle; return balance arm and lower on top record.

2. After checking to be certain that 33-45 stylus is in play position, simply push "On-Off-Reject" control to "On" and release. (The changer will now automatically play all records you have loaded and will shut off after the last record.)

3. To play 78 r.p.m. records by "Speed Minder", simply be sure that when you load 78 r.p.m. records on spindle, stylus is in 78 position. Then push "On-Off-Reject" control to "On"

4. To reject a record, push "On-Off-Reject" control to "Reject" and release. To discontinue play, push control to "Off" and release.

Automatic Operation At 16 rpm

1. Set "Speed Selector" control at 16 r.p.m.
2. Turn stylus to 33-45.
3. Load records, lower balance arm, push control to "On".

Manual Operation

1. Move balance arm over rest post. Leave in that position during manual play. Place record on turntable. Set at speed desired.

2. Push operating control to "On". Tone arm will come in to 7" position. Move tone arm back to

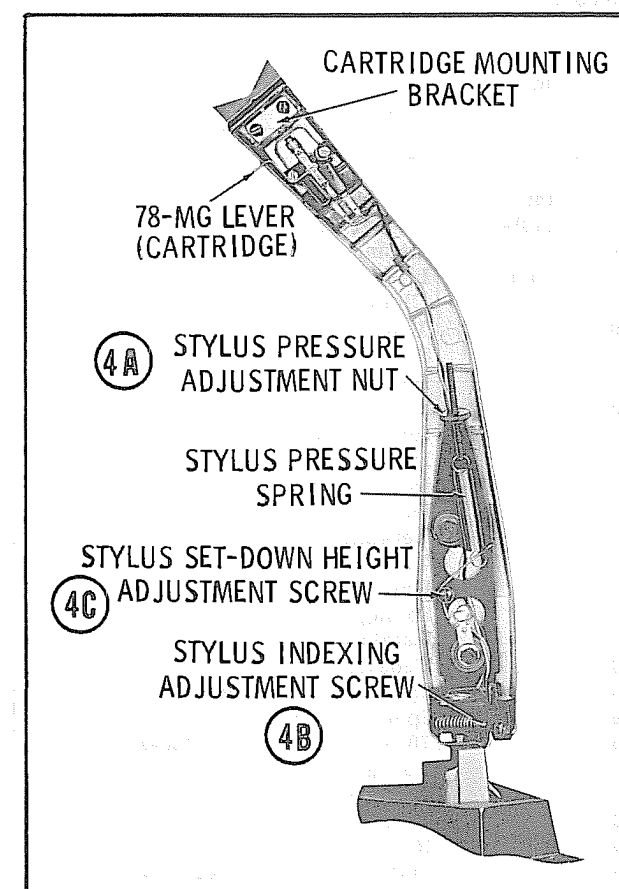


FIGURE 5

LUBRICATION

Additional lubrication should not be required for the life of the changer, but in cases of unusual use or high operating temperature, the changer should be lubricated as follows: (Refer to the exploded view).

Apply Andox "B" or Texaco "Sta-Put" to:

1. Edge of all slots in main slide assembly (14).
2. Outer edges of main slide assembly (14).
3. Cam surface on main slide (14A).
4. Top of speed shift cam (78).
5. Slot in spindle slide (81).

Apply a small quantity of light oil to:

1. Bearing of index-tone arm bracket assembly (23).
2. Bearing of driver pinion arm assembly (59).

TROUBLE CHART (CONT.)

SYMPTOM	CAUSE	REMEDY
	2. Tone arm (4) does not leave rest post.	See procedure under II.
17. Excessive low pitch noise (rumble) or thumping sound during record play.	1. Motor restrained from floating freely on rubber mounts. 2. Damaged turntable idler (47). 3. If power to changer is cut in mid-cycle and changer is left in this manner for any length of time, the rubber tires can develop a flat spot that will cause a thumping sound.	Check to see that motor is not touching any part of cabinet. Clear any power leads that may be restricting the floating action of the motor. If surface of rubber tire is not smooth or shows signs of distortion, idler (47) should be replaced. Run changer for at least 10 minutes. If thumping does not disappear, replace idler (47).
18. Tone arm does not track in record grooves.	1. Worn stylus in cartridge. 2. Improper tracking pressure for cartridge used. 3. Changer not level. 4. Cartridge leads interfering with motion of tone arm.	Replace. Check tracking pressure for cartridge used and adjust to recommended value. Relevel changer. Check to see that ample slack is provided in the tone arm leads so that the entire lateral travel of tone arm is not affected.
19. No sound during record play.	1. Defective cartridge. 2. Defective wiring. 3. Loose cartridge terminal clips. 4. Muting switch (32) out of adjustment.	Replace. Check cartridge leads for shorted or open leads. Remove clips from terminals, squeeze slightly together and re-fasten to cartridge. Check to see that switch contact points operated by main slide have approximately 1/32" clearance when cycle is completed. If necessary, bend blade (32) that cams against main slide until this clearance is obtained. Cycle the changer and check to see that contacts are touching after the main slide withdraws. Check to see that curved contact arms are allowing approximately 1/64" clearance between contact points when tone arm is off rest post and in playing position. If necessary, bend blades to obtain this clearance. Check to see that contacts are touching when tone arm is replaced on rest post.

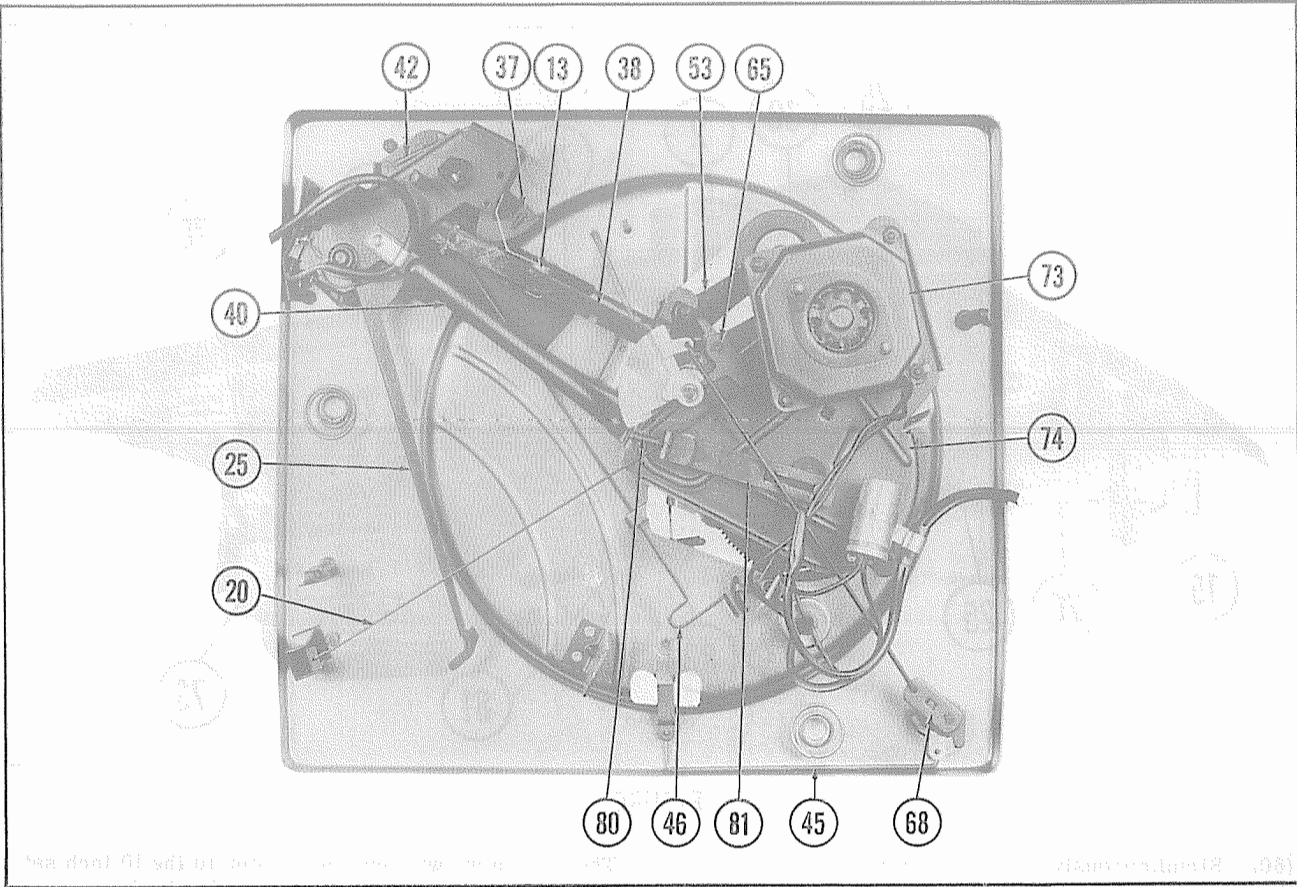


FIGURE 2

rest post. (You may stop tone arm, if you prefer, just before it lands on record, and then move it to rest post and leave it there).

3. Now, check to be sure you have "Speed Selector" control set correctly for your record, and the proper stylus chosen. Set tone arm on any position on the record and play.

NOTE: IN MANUAL PLAY, TONE ARM WILL NOT CYCLE AFTER PLAYING THE RECORD. HOWEVER, IF YOU WISH CHANGER TO STOP AUTOMATICALLY AFTER COMPLETION OF THE RECORD, MOVE BALANCE ARM OVER SPINDLE.

ADJUSTMENTS

Stylus Pressure Adjustment

Knurled nut (4A) for adjusting stylus pressure is located slightly to the rear of the tone arm center. With tone arm in horizontal position turn nut from right to left to reduce pressure; and from left to right to increase pressure. Adjust to pressure recommended for your cartridge.

Set-Down Adjustment

By lifting tone arm upward about 1" from rest post, set-down adjusting screw (4B) becomes accessible under rear of tone arm. Using any size record, adjust so that stylus comes to rest on the lead-in grooves. Turning screw (4B) clockwise moves stylus away from center.

Tone Arm Height Adjustment

By pivoting tone arm to an almost vertical position, height adjustment screw (4C) is visible. Adjust so that stylus stops 1/4" to 1/8" above changer base, when tone arm is lowered from rest post and mechanism is out of cycle.

CHANGE CYCLE

Observe the change cycle operation by manually rotating the turntable. The action described below can then be readily followed and each part's function more easily understood.

This changer has a "Velocity Trip" mechanism. Change cycle is started by the fast inward motion of the tone arm when the needle enters leadout grooves at the end of a record.

Tone arm hinge assembly and trip lever (25) are secured together so they move in unison. While a record is playing, the slight movement of trip lever (25) is not sufficient to trip the mechanism because the wiping action by trip lever washer (49) moves trip lever (25) back with each revolution of the turntable.

In the first revolution of the turntable, as the tone arm advances rapidly toward the spindle, trip lever (25) is moved fast enough and far enough to engage trip washer (49). Contact between trip lever (25) and trip lever washer (49) gives the necessary lift to force trip lock assembly (58) out of engagement with driver pinion arm (59). Driver pinion arm (59) is then pulled into contact with main gear (55), by action of spring

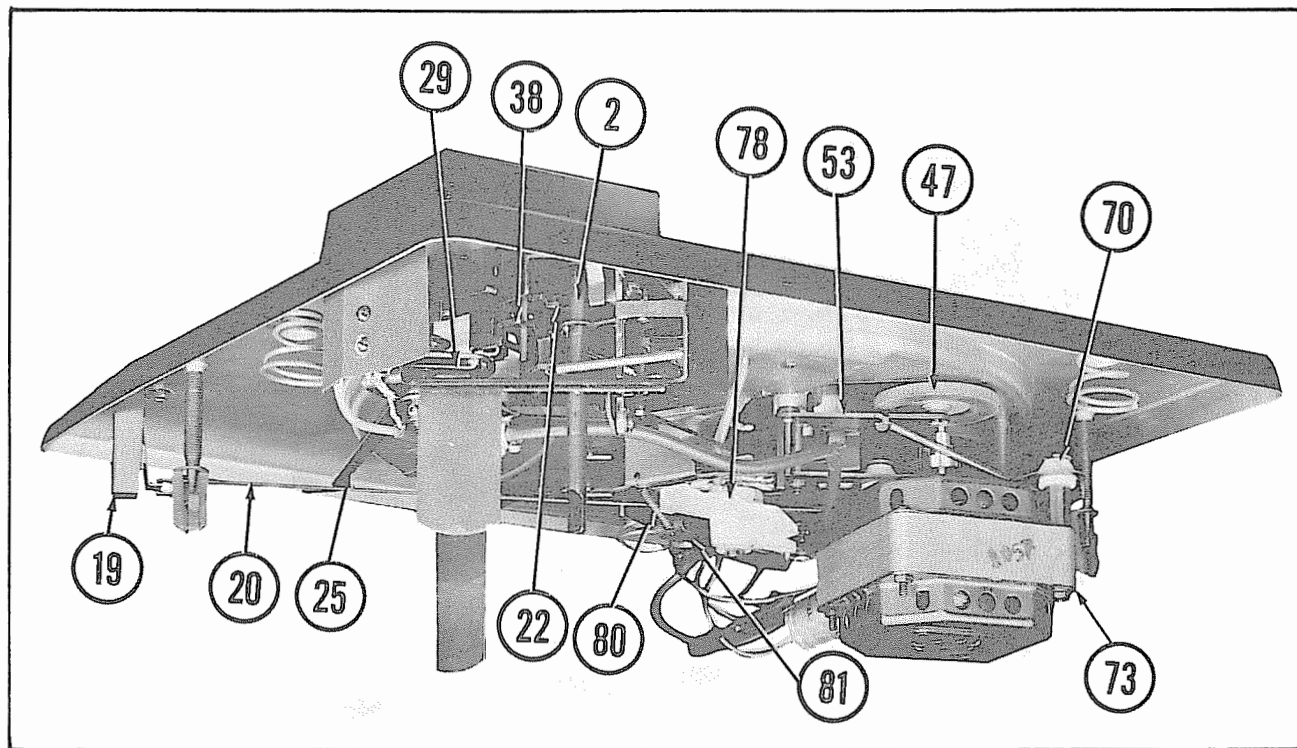


FIGURE 3

(60). Simultaneously, driver pinion wheel (56) engages the motor pulley, supplying driving force to main gear (55). As the main gear rotates, main slide (14) moves to the right thru the action of the eccentric mounted pin on main gear (55) riding in the cross slot on the main slide assembly (14).

As main slide (14) begins to move, cam (14A) (part of main slide (14)) will cause tone arm index cam (22) to move down. This pulls the back part of the tone arm hinge assembly down, lifting the front part of the tone arm up and off the record. Projection (14B) on rear of main slide (14) now comes in contact with spring (29), forcing the spring forward. Spring (29), tone arm hinge, and pivot assembly (21) are secured together so they move in unison. The action of spring (29), tone arm hinge, and pivot assembly (21) pivot the arm toward rest post (8).

As the tone arm moves toward the rest post, spindle actuating cam (72), attached to bottom part of main gear (55) has rotated far enough to actuate spindle slide (81), moving it to the left. Slide (81) actuates the spindle knives, dropping one record on the turntable. During the record drop, turntable (5) does not revolve, due to the braking action of brake lever (11), actuated by the main slide.

Simultaneously, index finger (1) moves forward by action of the main slide moving away from the index finger. As the record drops to the turntable, the record either strikes or misses index finger (1), depending on the size of the record. In the case of a 7 inch record, the record completely misses the index finger (1). This causes index detent positioning lever (37) to be caught in the first notch, which in turn places index detent (33) in the first notch of tone arm index cam (22). The tone arm will now move out to the 7 inch set-down position. In the case of a 10 inch record, the record hits the index finger just enough to move the index finger to the next series of notches.

The tone arm will now move out to the 10 inch set-down position. The 12 inch record acts the same as those described above, except the third series of notches comes into contact. The tone arm will now move out to the 12 inch set-down position.

As main slide (14) continues to move forward, spring (29) is released. The tension built up due to the main slide forcing the spring forward will move the tone arm out over the record. About this time, tone arm index cam (22) moves down cam (14A). This action places the tone arm down on the lead-in grooves of the record. Main gear now rotates to its out of cycle position, allowing the tone arm to move freely across the record.

After the mechanism has been tripped, it again follows the preceding sequence of cycling and playing the records, until the last record of the stack has been played.

As the last record of the stack drops to the turntable, balance arm (2) drops below the shelf on spindle assembly (82). Lower end of balance arm (2) contacts balance arm wire (46), forcing it downward. The balance arm wire holds index detent stop lever (36) up. Index detent stop lever (36) drops, thus blocking index detent positioning lever (37) from moving. Index detent (33) can then move to the last notch on tone arm index cam (22). This action will allow the tone arm to come to the rest post and remain there. The tone arm is held from moving in by action of index cam (22). Being in the last notch, slide bar (38), attached to index cam (22), is stopped from moving forward. When slide bar (38) fails to move in, switch actuating pivot wire (86) remains in the up position, holding switch actuating pivot (43) up and in contact with the projection on the bottom of main gear (55). As the projection on the main gear strikes switch actuating pivot (43), power is removed from the motor and the mechanism stops.

TROUBLE CHART (CON'T)

SYMPTOM	CAUSE	REMEDY
		height should be set so that the bottom edge of tone arm clears the highest point of the rest post shelf by approximately 1/8 inch.
11. With balance arm (2) raised, turning control lever to "On - Reject" position, tone arm will not leave rest post during cycle and upon completion changer shuts off.	1. Improper height adjustment. 2. Improper set-down adjustment.	See procedure under 10. See procedure under 9.
12. Changer does not index for 10" records.	1. Improper interference between 10" record and index finger (1).	If tone arm comes in to 7" position instead of 10", this indicates insufficient interference between record and finger. Turn changer off and place a 10" record on the turntable. Bring the index finger by hand toward the spindle until completely forward. Raise the record along the spindle, keeping it parallel to the turntable. The record should interfere with nose of the index finger by approximately 3/32". The finger can be adjusted to this dimension by bending forward in the direction of the record. Do not overbend so as to exceed the 3/32" interference required. If tone arm comes in to 12" position instead of 10", interference between record and index finger is too great. Use same procedure as given above, however bend the index finger in the opposite direction away from the record until proper interference is achieved.
13. Changer repeatedly indexes for a 12" record.	Index finger (1) is not coming forward during cycle. Spring (41) on finger below disengaged or too weak.	Refasten spring if disengaged. If not disengaged, stiffen spring by removing coils (2 at a time) until finger returns to forward position during cycling time.
14. Changer drops 2 records at once.	1. Center hole in record too large. 2. Small blade in upper portion of spindle (82) not fully down.	Oversize holes will cause 2 records to fall at once. Straighten blade if bent so that it falls freely of its own weight. If not bent, clean slot and blade of any foreign matter and lubricant that may be present. Do not oil. Blade must fall freely by gravity.
15. Changer will not shut off automatically after playing last record.	Balance arm (2) does not move to its full downward position.	Clean balance arm shaft and bearing holes of any foreign matter and lubricate with light oil. Arm must be free enough to fall downward by gravity. Clear any lead wires that may be interfering with the lower end of the balance arm shaft.
16. With balance arm up, changer will shut-off after every cycle.	1. Lever (46) that operates power switch fails to fall to its downward position.	Clean shaft and bearing of switch lever of any foreign material. Wipe dry of any lubricant. Do not oil.

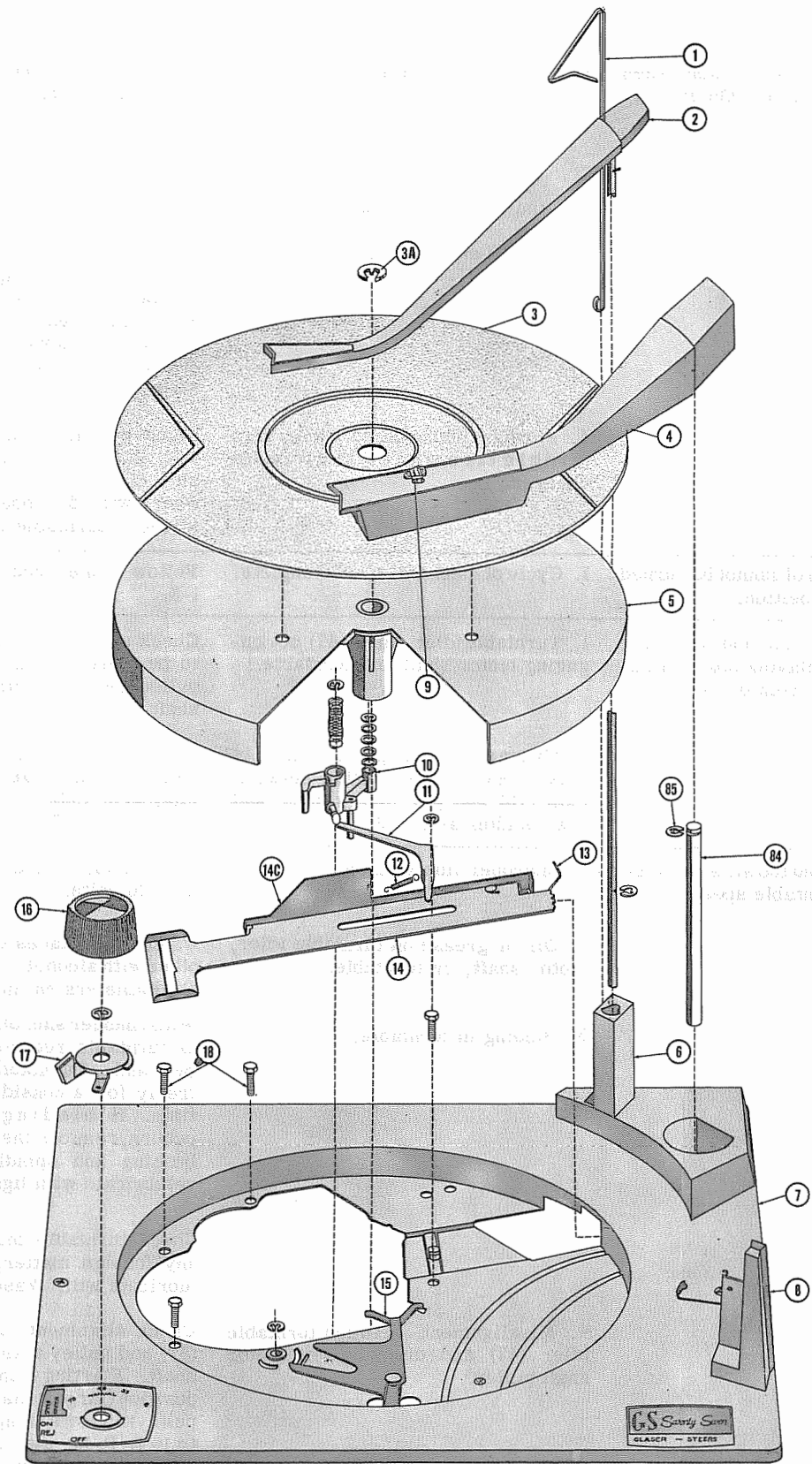
TROUBLE CHART (CONT)

SYMPTOM	CAUSE	REMEDY
5. Difficulty in changing speeds manually.	1. Motor and switch wiring interfering with speed change wire link (79).	Move all wires so that wire link (79) is not restricted by them in any speed position.
	2. Idler arm (53) badly bent.	See procedure outlined under symptom 4, cause 4.
	3. Crank on speed control shaft (68) interfering with motor board.	Check mounting of changer on motor board, making certain that the mounting springs are properly seated in the holes provided.
6. With speed control in "Speed Minder" position and stylus set at "78" or Std. play, turntable does not turn at 78 R. P. M.	1. Needle turnover lever is not moving pivot blade in rest post (8) far enough to set the mechanism for 78 speed.	Adjust the cartridge in the tone arm so that the needle turnover lever projects at least 3/16 inch beyond the tone arm. Make sure the lever can enter the hole in the rest post without any interference. Cartridge bracket has elongated holes, thereby allowing centering of the turnover lever, in the rest post (8).
7. With record balance arm over spindle, changer will not cycle when a record is finished playing.	1. Velocity trip lever (25), long narrow lever below changer that moves with the tone arm, is not reaching trip cam (49).	Check to see that none of the power or cartridge leads are restricting the motion of the trip lever. The trip lever (25) is bent either too high or too low. The correct level of the free end should be in a range from 1/8 to 1/4 inch above the motor plate.
	2. Trip cam (washer with inclined wing below turntable hub) does not have sufficient friction from turntable to operate properly.	Remove turntable and thin soft washer. Before reinstalling, wipe any lubricant off top surface of trip cam (49) which is exposed when thin washer is removed.
8. Changer cycles by tripping through tone arm when operating in "Manual" position.	1. Velocity trip is not being blocked by lever (31) located near the lower bearing hole of the balance arm shaft. This lever (31) should bear under spring pressure against the balance arm shaft (2).	Refasten spring (42) between lever (31) and vertical side of large bracket.
9. Tone arm does not land at the beginning (lead-in grooves) of 7, 10, 12 inch records. (Set-down adjustment).	1. Improper adjustment.	The set-down adjustment screw (4B) is located at the front end of the tone arm bracket. It can be readily identified by the coil spring that surrounds it. Turning the screw head 1/2 turn in a clockwise direction moves the tone arm approximately 1/8 inch to the right (measured at the stylus). Adjust so that stylus lands approximately midway in the margin found at the beginning of all records.
10. Tone arm does not drop sufficiently to play first record or tone arm interferes during cycling.	1. Improper height adjustment.	The height adjustment screw (4C) is located in the bracket that mounts the tone arm. It is located midway between the 2 screws that secure the arm. One complete turn in a clockwise direction lowers the tone arm approximately 1/8 inch. Tone arm

TROUBLE CHART

SYMPTOM	CAUSE	REMEDY
1. Changer does not function when control is turned to "On-Reject" position.	1. No power to motor.	Check to see that AC current is reaching motor. Check wiring connection at switch and motor.
	2. Line voltage too low.	Line voltage must be at least 105V.
	3. Cycle of mechanism not complete.	Remove snap ring that secures turntable on record spindle. Remove turntable by lifting it straight up. Turn main gear (55) with crank pin in counterclockwise direction till crank pin is in line with notch in main slide.
	4. Foreign lubricant on rubber tire (single tire wheel) that cycles changer.	Remove turntable and clean tire (56) with lint free cloth moistened with alcohol. Also clean motor shaft, wheel with 2 rubber tires (47) and inside of turntable rim.
2. "On-Off" control cannot be turned to "On-Reject" position.	1. Cycle of mechanism not complete.	Follow same procedure as given in 1-3.
3. Changer will cycle and tone arm will come in to playing position but turntable will not rotate.	1. Turntable idler wheel (47) not engaging motor shaft and turntable.	Check spring (71) on idler arm (53) to be certain that idler is being pulled toward the direction of motor shaft.
	2. (When switching speeds manually only). Excessive friction between cam (78) and pin that raises and lowers idler arm (53).	Lubricate top surfaces of steps on cam (78) that raises and lowers idler arm (53).
4. Turntable speed too slow or large variations in turntable speed.	1. Improper line voltage.	Line voltage should be between 105 and 130 volts.
	2. Oil or grease on turntable idler, motor shaft, or turntable.	Wash all surfaces that contact each other with alcohol. Be sure to wash all diameters on motor shaft.
	3. Binding in turntable.	With changer shut off, check freedom of turntable rotation by spinning it by hand. Turntable must coast freely for a considerable length of time. If binding or roughness occurs, remove the turntable clean bushing and spindle surfaces and relubricate with light oil.
	4. Misalignment between turntable idler (47) and diameters on motor shaft pulley.	Check turntable thrust bearing for any foreign matter, clean and relubricate with "Vaseline". Check alignment of turntable idler (47) and pulley diameters on motor shaft. Starting with the 78 R. P. M. position (largest diameter on motor pulley) and switching speeds from 78 to 16 R. P. M. the idler must raise and contact the respective diameters on the motor without touching any of the diameters below. If idler arm is bent (should be parallel to motor plate 74), straighten arm till alignment above is achieved.

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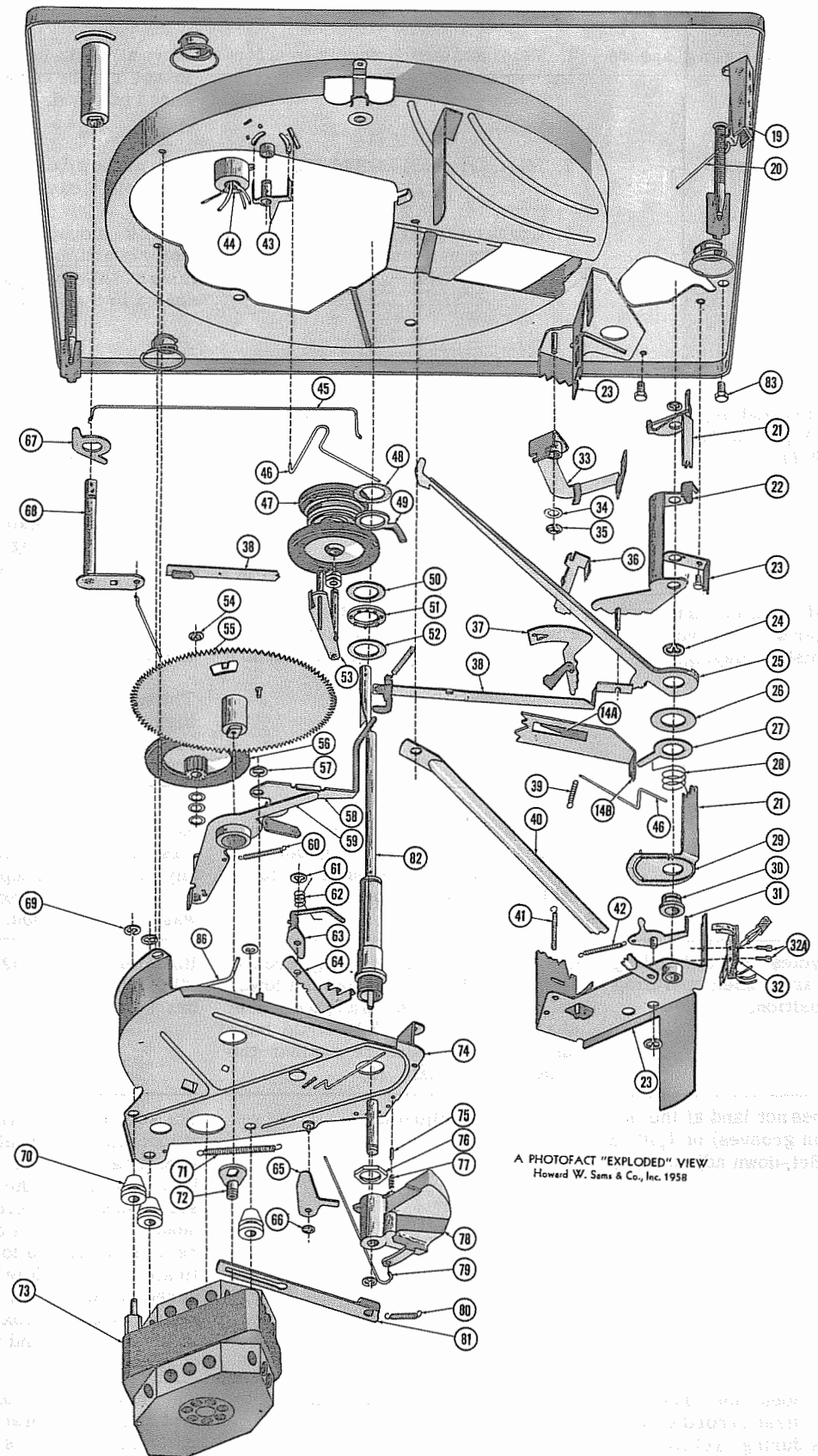


A PHOTOFACT "EXPLODED" VIEW
Howard W. Sams & Co., Inc. 1958

FIG. 4A. EXPLODED VIEW OF PARTS ABOVE BASEPLATE

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new exploded view
from dimension contact job
8/19/56*

*corrected
8/6/59*



A PHOTOFACT "EXPLODED" VIEW
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FIG. 4B. EXPLODED VIEW OF PARTS BELOW BASEPLATE

GLASER-STEERS
MODELS GS-77, GE, GED

FOLDER 7