



NORELCO or PHILIPS
MODEL AG2101



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GENERAL INFORMATION

The Norelco AG2101 is a single-speed record player designed to be mounted in an automobile. The record player plays 7-inch, 45 rpm records. The unit starts automatically when a record is inserted and shuts off at the end of the record. As the unit shuts off, the record is pushed out about one inch so that it may be easily removed.

The audio amplifier of the car radio is used with the unit.

This record player is designed to operate on 6 or 12 volts DC only.

Supplied By:

North American Philips Co., Inc.
230 Duffy Avenue
Hicksville, New York

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana



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OPERATING INSTRUCTIONS

Starting

Depress the right-hand button on the front of the unit. This applies power to the unit and connects the pickup to the amplifier circuit of the car radio.

Loading

Slide a record into the record slot until a click is heard. The turntable will begin to rotate and the pickup will be lowered onto the record.

Reject

A record can be rejected at any time by de-

pressing the left-hand button. When the reject button is depressed, the tone arm swings away from the record, the motor is turned off, and the record is pushed outward until it projects out of the record slot about an inch.

Stopping

After a record is completely played, the unit automatically stops until another record is placed in the unit. If after the unit stops no more records are to be played, remove the record from the slot and depress the right-hand button. This puts the radio back into broadcast operation.

AUTOMATIC START CYCLE

As the record is pushed into the record slot, the edge of the record contacts the switch pin (38) and pushes it towards the rear of the unit. As the switch pin (38) moves to the rear, the power switch (35) is closed. At the same time, the rotation of the control and cam assembly (39) lets the pickup lift pin (28)

drop, the pickup is released, and positions itself onto the record. During rotation of the control and cam assembly (39), the cam drops the spindle lever (47) which raises the spindle (6) up through the hole in the record. The mechanism now plays the record.

AUTOMATIC SHUT-OFF

As the stylus enters the leadout groove at the end of the record, the trip bracket on the tone arm (10) pushes the feeler (29) which engages with the toothed gear under the turntable. The rotation of the turntable pushes the feeler (29) to the rear. As the feeler (29) moves to the rear, the switch lever is rotated. The cam on the control and cam assembly (39) pushes the pickup lift pin (28) up and the pickup

is lifted up off the record. At the same time, the cam on the control and cam assembly (39) raises the spindle lever (47) and the spindle (6) is pulled down below the record. The tab on the control and cam assembly (39) pushes the tone arm (10) back to its rest position. Near the end of this operation, the switch pin springs forward and pushes the record out about one inch. The power switch (35) is opened and the turntable stops.

DISASSEMBLY

1. To remove the mechanism from the case, remove two screws from the bottom edge. Using a screwdriver, pry the top front edge up and slip the mechanism forward out of the case.
2. Loosen the two screws holding the front cover and pull the cover away from the turntable.
3. Rotate the 3 large springs and the bottom cushion plate and lift the motorboard away from the bottom plate.
4. To reassemble, reverse the foregoing procedure.

ADJUSTMENTS

Stylus Pressure

The stylus pressure must be approximately 11 grams to insure proper tracking under various driving conditions. Make the necessary adjustment by bending the spring tab on the pickup arm (10).

Pickup Height

With the mechanism in the off position, measure the distance between the stylus and the record. This distance should not be less than $7/32$ inch. Increase this distance by turning the adjusting screw (9) clockwise. Turn the screw (9) counterclockwise to decrease this distance. When this adjustment is completed, place a record on the turntable. Manually actuate the mechanism. Pull the record out from under the pickup until the pickup drops free. The stylus should be $1/16$ inch below the top level of the record. If it is too high,

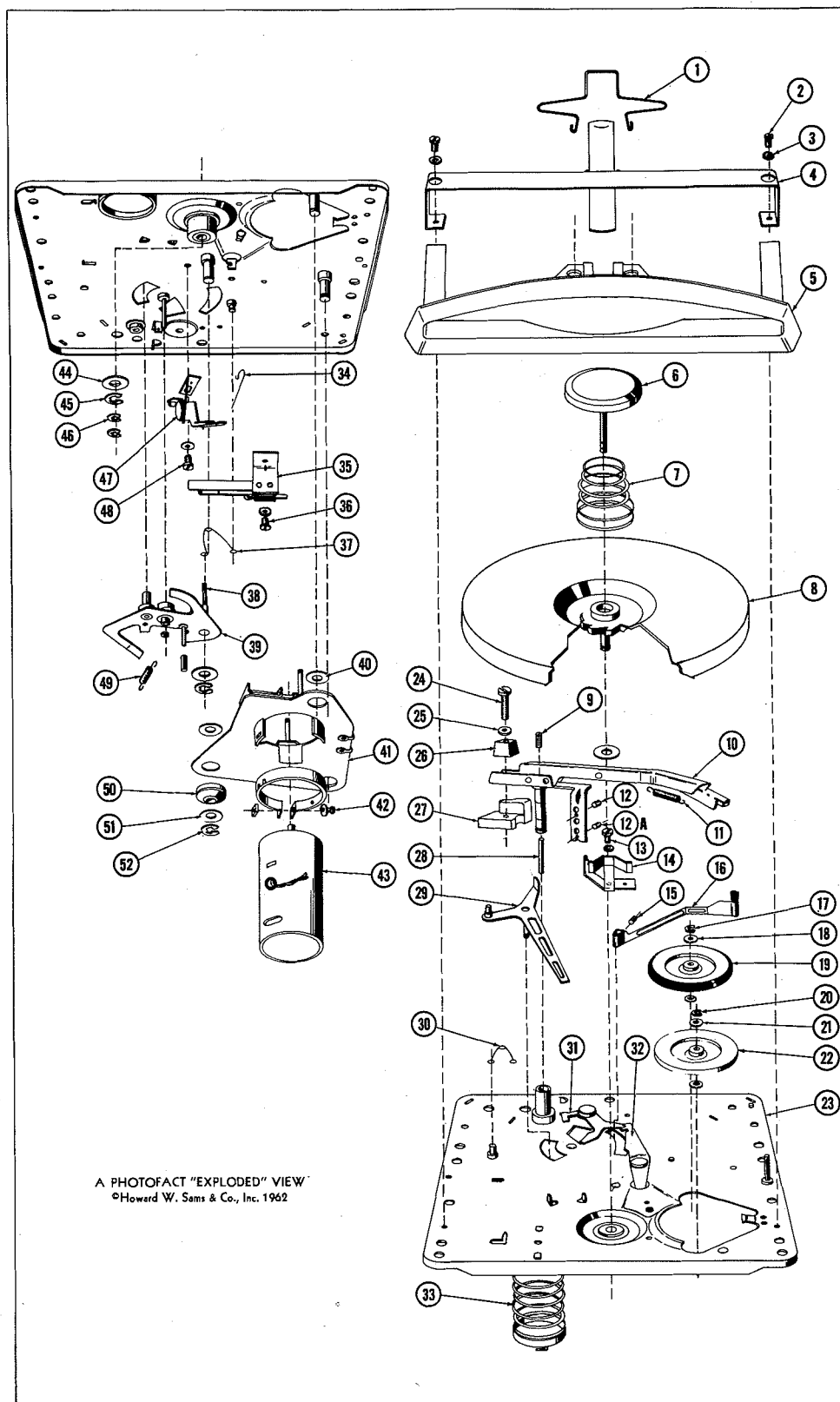
bend the tab on the control and cam assembly (39) until the proper distance is obtained.

Tone Arm Stop

Turn the unit off. Check for lateral play of the tone arm (10). The arm should be firm without any play. If any play is present, adjust screw (12A) until the arm is held snugly without play.

Turntable Speed

Rotate the turntable until the speed adjustment screw can be seen through the access hole in the motor case. Apply the proper voltage to the unit. If the turntable runs too fast, turn the screw counterclockwise. If the turntable runs too slow, turn the screw clockwise. When proper speed is obtained, seal the screw with glue or wax.



TROUBLE CHART

Symptom	Cause	Remedy
Turntable does not turn.	<ol style="list-style-type: none"> 1. Dirt or oil on idler wheels (19 & 22). 2. Defective motor (43). 3. Motor switch (35) bent out of adjustment. 4. Levers binding. 	<ol style="list-style-type: none"> 1. Clean idler wheels (19 & 22) and motor pulley. 2. Replace motor (43). 3. Align motor switch (35) for proper operation. 4. Check levers for proper operation. Straighten any bent levers.
Does not reject at end of record.	<ol style="list-style-type: none"> 1. Feeler arm (29) bent. 2. Feeler tumbler spring (30) broken or disconnected. 	<ol style="list-style-type: none"> 1. Straighten feeler arm (29). 2. Connect or replace feeler tumbler spring (30).
Stylus does not track properly.	<ol style="list-style-type: none"> 1. Stylus pressure not correctly adjusted. 2. Stylus tension spring (11) broken or disconnected. 3. Worn stylus. 	<ol style="list-style-type: none"> 1. Adjust stylus pressure as described under "Adjustments". 2. Connect or replace stylus tension spring (11). 3. Replace stylus.
Record does not come out when rejected.	<ol style="list-style-type: none"> 1. Spindle lifting lever (47) bent or binding. 2. Spindle lifting cam on control and cam assembly (39) bent. 	<ol style="list-style-type: none"> 1. Straighten spindle lifting lever (47). 2. Bend cam until proper action is obtained.
Stylus does not land at proper point on the record.	<ol style="list-style-type: none"> 1. Tone arm stop bracket (14) is not properly adjusted. 	<ol style="list-style-type: none"> 1. Adjust bracket (14) so that when tone arm (10) is against stop bracket (14), stylus is over lead-in grooves of record.
Turntable speed varies as car changes direction of travel.	<ol style="list-style-type: none"> 1. One of the idler wheel tension springs broken or disconnected. 2. Worn idler wheels (19 & 22). 	<ol style="list-style-type: none"> 1. Connect or replace the tension spring. 2. Replace worn idler wheels.

MECHANICAL PARTS LIST

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
1	PW 356 59	Record Guide Retaining Spring	27		Counterbalance Weight
2		Screw	28	PW 277 45	Tone Arm Lift Pin
3		Lockwasher	29	PW 356 67	Feeler Assembly
4		Record Guide Bracket	30	PW 277 35	Tumbler Spring
5	PW 050 81	Record Insertion Window	31	PW 277 08	Locking Bracket
6	PW 357 88	Spindle Assembly	32	PW 289 16	Locking Lever
7	PW 357 85	Conical Pressure Spring	33	PW 357 33	Motorboard Suspension Spring
8	PW 05150/12	Turntable	34		Spring
9		Set screw	35	PW 289 13	Motor Switch
10	PW 282 84	Tone Arm Assembly	36		Screw
11	PW 277 49	Pickup Tension Spring	37	PW 277 36	Tumbler Spring
12		Set screw	38		Switch Pin
12A		Set screw	39		Control & Cam Assembly
13		Screw	40		Washer
14		Tone Arm Stop Bracket	41		Motor Bracket Assembly
15		Set screw	42		Screw
16	PW 277 80	Brush Assembly	43	PW 301 65	Motor
17		"C" Washer	44		Washer
18		Washer	45		"C" Washer
19	PW 282 50	Idler Wheel	46		"C" Washer
20		"C" Washer	47	PW 277 50	Spindle Lever Assembly
21		Washer	48		Screw
22	PW 282 50	Idler Wheel	49	PW 277 14	Tension Spring
23		Motorboard	50	PW 282 28	Grommet
24		Screw	51		Washer
25		Washer	52		"C" Washer
26		Counterbalance Weight			

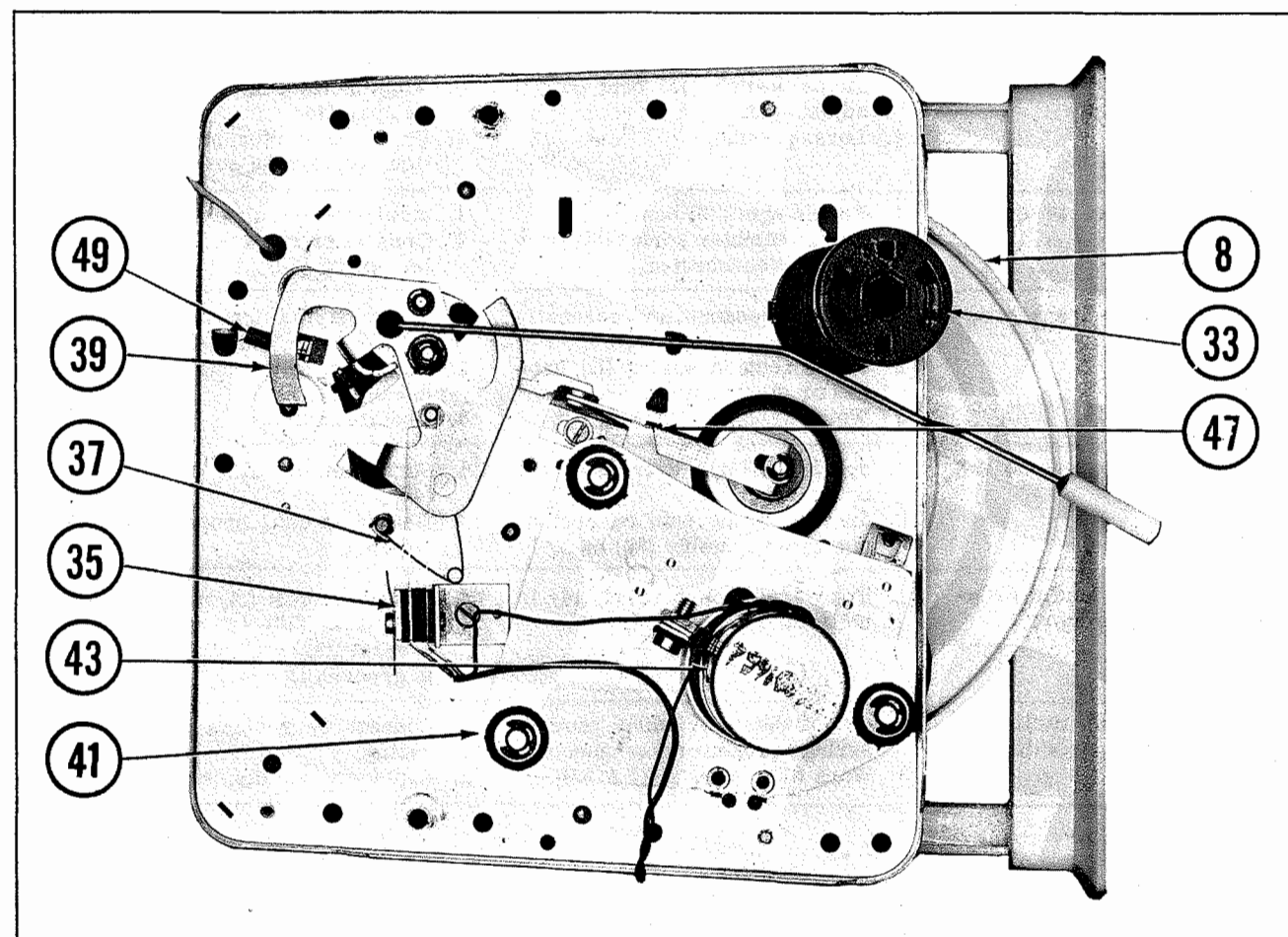


FIG.1 BOTTOM VIEW OF MECHANISM

CLEANING

When the unit is dismantled for repairs, all dust and dirt should be removed from the operating mechanism. Clean the stylus brush, stylus, turntable, and driving surfaces with a clean rag moistened with alcohol or a good cleaning solvent.

LUBRICATION

When it becomes necessary to lubricate the operating mechanism, it is important to use the proper lubricants to insure proper operation during all climatic conditions. Points to be lubricated are as listed below.

1. Points to be lubricated with a light machine oil are:

- A. Head of the control and cam assembly (39) shaft.
- B. Head of the feeler shaft (29).

2. Points to be lubricated with motor oil are:

- A. Control and cam assembly (39) shaft.

- B. Idler wheel shafts.
- C. Feeler (29) shaft.
- D. Turntable (8) shaft.
- E. Spindle (6) shaft.
- F. Tone arm lift pin (28).

3. Using a good non-hardening bearing grease, place a small amount on the following parts.

- A. The tumbler springs (30) and (37).
- B. Locking bracket (31) contact surfaces.
- C. Locking lever (32) contact surfaces.
- D. Cam surfaces of control and cam assembly (39).
- E. Spindle lifting lever (47) forks.

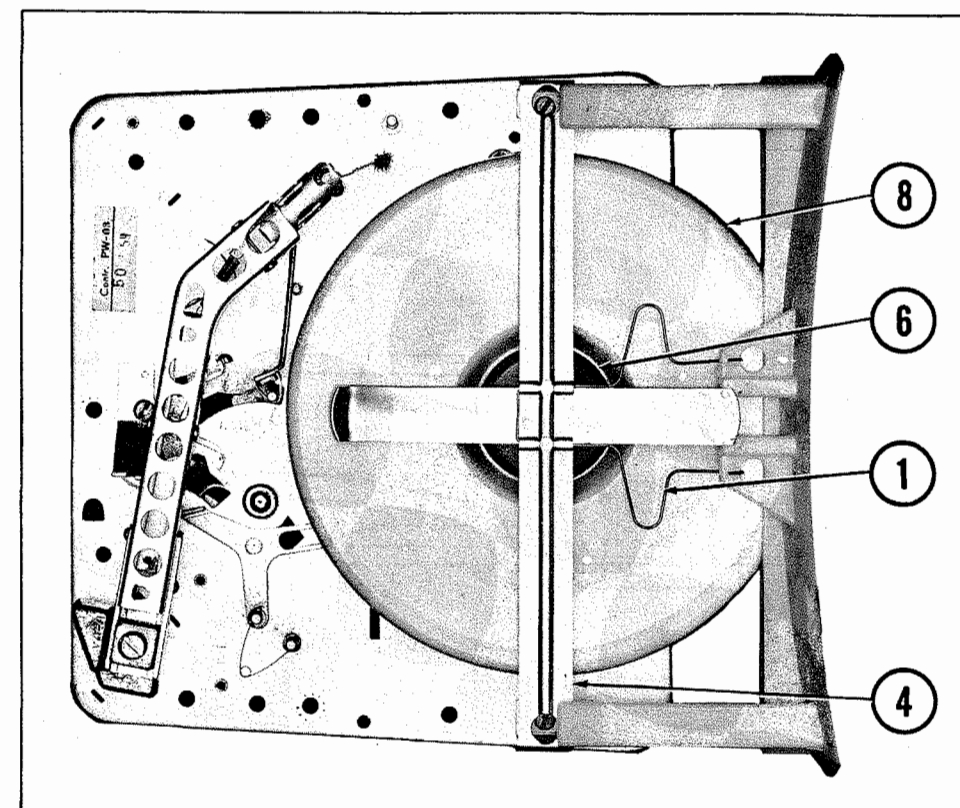


FIG.2 TOP VIEW OF MECHANISM

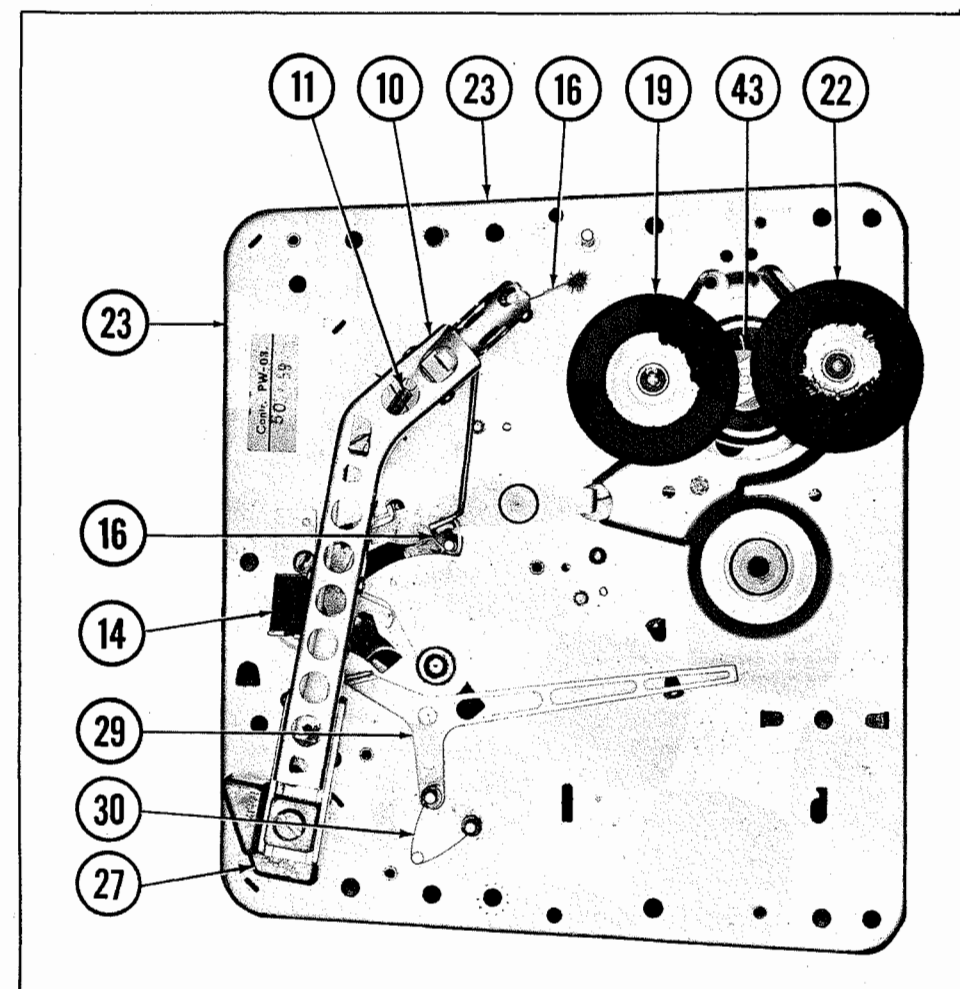


FIG.3 TOP VIEW OF MECHANISM WITH TURNTABLE AND BRACKET REMOVED