

Directions for

Setting Up and Operating the

TRIUMPH Edison Phonograph

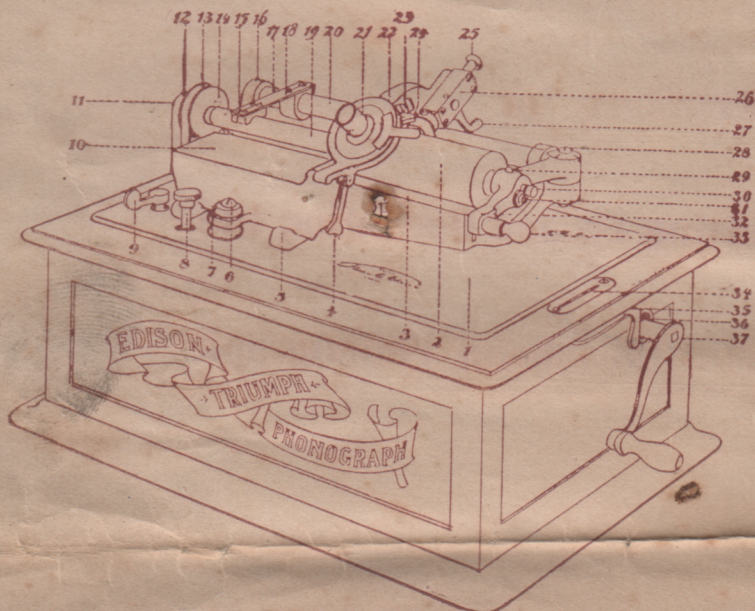
NOTICE IS HEREBY GIVEN TO YOU

That every Edison Phonograph and every Edison Record and Blank is sold by the NATIONAL PHONOGRAPH COMPANY under restrictions as to the persons to whom and the prices at which such Phonographs, Records and Blanks are to be sold, and as to the removal or change in whole or in part of the serial numbers on such Phonographs. Any violation of such restrictions terminates the license to use and vend such Phonographs, Records and Blanks implied from the sale thereof, and any subsequent use or sale of such Phonographs, Records or Blanks is an infringement of the Edison Patents.

NATIONAL PHONOGRAPH COMPANY,
ORANGE, N. J. :

INSTRUCTIONS FOR OPERATING The Triumph Edison Phonograph.

Same Instructions Apply to the Concert Edison Phonograph.



INDEX OF PARTS.

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| <ol style="list-style-type: none"> 1. Top Plate. 2. Mandrel, to hold wax cylinder. (Always assembled with Main Shaft.) 3. Straight Edge. 4. Speaker Arm Lift Lever. 5. Top Plate Lug and Body Cushion. 6. Body-holding Screw. 7. Body-holding Screw Washer. 8. Speed Adjusting Screw. 9. Start-and-Stop Switch. 10. Phonograph Body. 11. Main Shaft Center. 12. Main Shaft Center Set Screw. 13. Drive Belt. 14. Main Shaft Pulley. 15. Feed Nut. 16. Back Rod Set Screw. 17. Back Rod. 18. Feet Nut Spring. | <ol style="list-style-type: none"> 19. Main Shaft. (Always assembled with Mandrel.) 20. Back Rod Sleeve. 21. Reproducer. 22. Speaker Arm. 23. Reproducer Clamp Screw. 24. Reproducer Weight. 25. Sapphire Knife Spring Knob. 26. Turning Rest, to shave Cylinder. 27. Shaving Knife Lever. 28. Swing-arm Spring Washer. 29. Swing-arm Center Set Screw. 30. Swing-arm Center. 31. Swing-arm Center Adjusting Screw. 32. Swing-arm. 33. Lock Bolt. 34. Cover Locking Slot. 35. Cover Locking Pivot Catch. 36. Winding Key Sleeve. 37. Winding Key. |
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Always state what kind of a Phonograph you have, AND ALSO ITS NUMBER, when ordering supplies.

TO RECORD.

Machine at rest. Insert recorder and press up lift lever (4), throw down the lock bolt (33) and open swing arm (32) wide. Slip the wax cylinder, beveled end foremost, upon the tapering brass mandrel (2), and press it firmly, but not too forcibly, into place. Close the swing arm and re-lock it.

{ In closing swing arm of the *Concert Edison Phonograph*, see that the pin on }
swing arm enters hole on straight edge casting. Press the arm firmly with }
thumb, at the same time locking lock bolt with first two fingers of same hand. }

Raise the speaker arm (22) (an inch is sufficient) from the straight edge (3) upon which it rests in front, and slide to the left until directly over the beveled edge of the cylinder, or the point at which you want the record to commence. Again lower it to straight edge.

Place the speaking tube or horn upon the tube-plate, lower the lift lever (4) as far as possible, and commence dictation to the machine. Should it become necessary to pause before the end of the cylinder has been reached, raise lift lever (only) until it closes against the speaker arm; this will disengage the feed nut (15) from the fine thread upon the main shaft, and at the same time raise the recording stylus from the wax.

A fine white shaving will appear on the surface of the cylinder where it has been passed over by the stylus. Remove the horn or speaking tube; raise the speaker arm, and throwing it back as far as possible, dust off the shavings, by holding the camel's hair chip brush against the cylinder, and passing it very slowly from left to right. This operation being completed, the record, as it is now called, is ready to reproduce.

TO START OR STOP.

Start the machine by pushing the switch (9) to the left until it strike against the pin. To stop, push the switch to the right.

REGULATION OF SPEED.

The speed of the machine in revolutions of the main shaft per minute is regulated by the speed adjustment screw (8). To increase speed, unscrew this nut; to decrease it, screw the nut down.

Observe this carefully when reproducing music, as a different speed from that at which the music was recorded will produce an entirely different pitch. The standard speed at which musical records are taken is about 144 revolutions per minute (*160 per minute*—no greater—on the *New Moulded Records*) talking records considerably slower.

TO REPRODUCE.

Raise lift lever (4). Insert reproducer. Now place the hearing tube or the horn on the tube plate, and lower the speaker arm opposite the point where the record begins, by dropping the lift lever (4) after having first pushed the starting switch (9) to the left.

SHAVING CYLINDERS.

The new Edison Moulded Record cannot be shaved. The following applies only to the Edison Wax blank and Record:

Every Triumph Edison Phonograph is equipped with a single device for shaving off or smoothing blank cylinders, which preparation is necessary before a blank can be used for recording. Here are the instructions for operating the turning rest.

Machine at rest. Wax cylinder firmly set upon mandrel; hearing tube removed. Fasten back the speaker weight by passing rubber band around lower end of the weight and over the speaker arm. Or remove reproducer as preferred.

Lower the speaker arm and lever (4) about over the center of the cylinder. Hold the end of the arm down firmly with the thumb and forefinger of the left hand, while with the same fingers of the right *gently* press the button (25) of the

knife lever downward and toward the machine. Then press down the knife lever (27) as far as it will go, then close lift lever (4) up into its slot in the speaker arm, slide the arm to the extreme left, again lower the lever (4) and start the machine.

The knife should always be allowed to pass over the entire length of the surface of the cylinder, otherwise there will remain a portion of the wax, which is thicker than the rest; and if a new adjustment of the knife be made to the right of the end of former cut, it will not touch the surface to the left of it. If adjusted to the left, on reaching that part which was before unturned, the knife will take too deep a chip and tear, instead of cutting, the wax.

After very little practice the eye and ear of the operator will become accustomed to the sound and appearance of a proper cut, and will readily detect anything wrong.

The thinnest possible shaving will leave the smoothest surface and waste the least wax. Shave several times if necessary, in preference to a single deep cut.

New blank cylinders require trueing, as they are likely to be eccentric, and do not have prepared surfaces. In trueing these, set the shaving knife on the highest part, if any, of the blank. When once trued, they always remain perfectly cylindrical.

When the turning off of a cylinder is completed, always see that the knife lever (27) is thrown up and back of far as it will go.

To stop recording, reproducing or shaving while the machine is running raise the lift lever (4).

HANDLING CYLINDERS.

Blanks and former process wax Records should be handled gently at first until the operator becomes practised. Thrust the first and second fingers of the right hand into the thick end of the cylinder, and hold it fast by spreading the fingers apart.

The high speed hard wax Moulded Edison Records are made of an entirely new composition, much harder than the ordinary wax Record. They may be handled without fear of spoiling the surface with finger marks; they are not, however, indestructible.

Cylinders should be kept in boxes or cabinets made for the purpose, which have perpendicular pegs at fixed distances to prevent cylinders from coming in contact with each other. Over these pegs they are placed beveled end down. Use the camel's-hair chip brush to remove chips and dust from the wax. Do not attempt to blow it off.

Do not leave the cylinder upon the brass mandrel (2) of the Phonograph for any length of time when the machine is not in use.

OILING.

Always keep the entire machine perfectly clean and free from dust. It is an essential to perfect work with any piece of machinery, and the Phonograph is no exception.

Apply oil sparingly but often to the following parts, never over a drop at a



time in any one place except where otherwise specified: End bearings of main shaft; thread of main shaft, (several drops); back rod, (several drops); straight edge; the two bearings of the winding shaft; the teeth of the ratchet wheel on which pawl works; the inside surface of the friction disc of governor, where the leather touches it; the cupped centers at the end of every gear shaft; the governor shaft, where the governor-disc sleeve moves on the shaft, if dry.

Three places will be found for oiling the barrels and to these places several drops should be applied. (a) The main oil hole is plainly marked on the large barrel. The other two are in the hubs. (b) There is a square opening in the hub of the loose barrel plate at the right hand end. By turning the winding shaft the oil hole can be seen through this opening. (c) The oil hole in the left-hand hub, if not in view, can be found by allowing the machine to run part of one revolution.

Use best phonograph oil only.

Keep gear teeth free from dirt, to prevent wear and noise. Use benzine for this purpose if necessary, and afterwards apply a drop of oil. Care should be taken not to get any oil upon the drive belt, as it will cause it to stretch and slip loose. Oil only where directed. In smearing oil upon any other part you simply set a trap for dust.

GENERAL INSTRUCTIONS.

Before winding or starting machine, see that all set screws holding bushings, pinions and shafts are tight. They sometimes work loose from the jar of travel.

See that all working parts are free and particularly that there are no particles of wood or packing material in the mechanism.

The belt (13) should not be too tight, but almost loose enough to slip when main-shaft pulley (14) of the Phonograph is held stationary with the motor running and wound up tight. New belt should be brought to proper tension upon setting up machine the first time.

If belt is too tight it will act as a brake on the machine. After being once stretched it will require little or no attention.

The tension of the belt is regulated by turning the thumb screw at the front of the motor below. This belt-tightening screw should not be used when machine is in motion, as there is danger of hitting the moving governor and disarranging the governor springs.

Observe that the rubber cushions on top edge of the body box, and body cushions (5) are in place, and that the main-shaft pulley (14) of the Phonograph is directly above the drive pulley of the spring motor, so that belt runs true. The belt must never run on the flange of the wheel. Care should be observed to keep the rubber cushions and washers of the spring motor in good condition at all times.

The Phonograph should never be shipped with springs wound up.

The sapphires upon the reproducer and the turning rest are perfectly adjusted before shipment.

The bearings of the main shaft, called the centers, should be snug but not tight. There must be no shake.

The sapphire recording and reproducing points should be kept free from dust and wax scales by brushing, or they may be touched with a little benzine on the finger tip.

Never attempt to slide the speaker arm from side to side without either raising it or closing the lift lever, as you are liable to damage the thread upon main shaft by scraping the twin nuts across it.

Do not remove main shaft from machine unless it becomes absolutely necessary, then use great care in drawing it out to avoid injuring the thread.

EDISON MODEL C REPRODUCER.

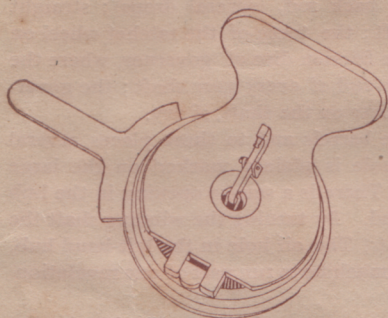


Fig. 1. Outline View

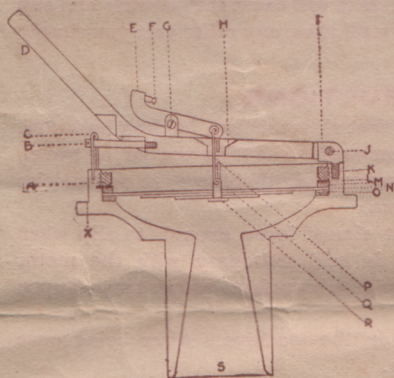


Fig. 2. Cross Section View.

INDEX OF PARTS.

A—Clamp Ring.	J—Hinge Screw.
B—Weight Limiting Screw.	K—Hinge Swivel Screw.
C—Weight Limiting Loop.	L—Metal Ring.
D—Reproducer Weight.	M—Rubber Gasket.
E—Reproducer Arm.	N—Mica Diaphragm.
F—Sapphire Button Ball.	O—Rubber Gasket.
G—Reproducer Arm Screw.	P—Link.
H—Hole in Reproducer Weight.	Q—"Built up" part of Mica Diaphragm.
I—Hinge.	R—Crosshead.
	S—Tube.
	X—Slot in Reproducer Rim.

Here is a brief description of the parts, and directions to follow, if readjustment or repairs are necessary.

Unscrew the reproducer arm screw G thus releasing the reproducer arm E. Next unscrew the weight limiting screw B. This frees the reproducer weight D, and by lifting it and holding the arm E vertically, the arm will pass through the hole H in the reproducer weight. Now swing the weight around on the swivel screw K. This leaves the inside of the reproducer open to view. Next detach the link P from the end of the arm E and also from end of crosshead R, which projects through a tiny hole in the center of the mica diaphragm, and to which it is cemented with straten. Note that the diaphragm in the Edison Model C Reproducer is of mica, and is "built up" in the middle; that is, it is thicker in the center than at the outer edges, as shown on the cross section at Q. The "built up" mica diaphragm is the most sensitive diaphragm ever put on the market, and will not break except by *very* rough handling; a great improvement over glass diaphragms. Next unscrew the clamp ring A, using the special spanner or wrench that comes for the purpose. There are two deep grooves cut in the clamp ring A into which the wrench fits. After the ring is loosened with the wrench, the knurled top of clamp ring may be turned by the fingers. Under the clamp ring A there is a metal ring L. Then comes a rubber gasket M, then the mica diaphragm N, and then a second rubber gasket O, as shown in cut. Replace the parts in exact opposite order to above.

- 1st. A rubber gasket.
- 2d. The new mica diaphragm.
- 3d. A rubber gasket.
- 4th. The metal ring.
- 5th. The clamp ring. This should not be screwed too tight or left too loose.

If too tight the diaphragm is not so sensitive. If too loose the record will whistle or blast. There is a happy medium, which you must discover for yourself. Use the fingers first in screwing in the clamp ring and tighten with the spanner.

- 6th. Connect crosshead R and the arm E with the link.

7th. Swing the weight around and pass the arm E through hole H in weight.
 8th. Adjust weight limiting screw B, taking care that the screw passes through the weight limiting loop C. This loop C needs no adjustment, as it is set exactly right to allow the new sapphire button ball F to track into the groove on the record.

9th. Replace reproducer arm screw G and the reproducer is ready for use.

A projection on the speaker arm of the phonograph fits into the slot X in the rim of the reproducer, and determines its proper position and holds it firmly in place, thus doing away with the speaker clamps.

THE NEW EDISON RECORDER.

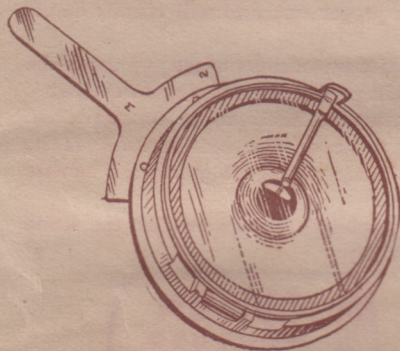


Fig. 3. Outline View.

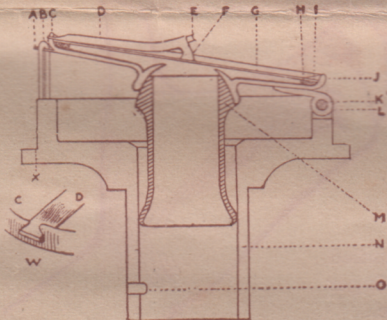


Fig. 4. Cross Section View.

INDEX OF PARTS.

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|---------------------------|----------------------------|
| A—Weight Limiting Lug. | I—Paraffine Wax. |
| B—Weight Limiting Loop. | J—Rim of Recorder Weight. |
| C—Rim of Recorder Weight. | K—Hinge Screw. |
| CJ—Recorder Weight. | L—Hinge. |
| D—Recorder Arm. | M—Ball Joint. |
| E—Sapphire Point. | N—Tube. |
| F—Foot of Recorder Arm. | O—Tube Pin. |
| G—Glass Diaphragm. | W—Notch in Rim of Weight. |
| H—Rubber Gasket. | X—Slot in Rim of Recorder. |

Here is a brief description of the parts, and directions to follow, if readjustment or repairs are necessary.

Scrape away the wax I that holds the glass diaphragm G in position in the recorder weight CJ. If the glass is not broken and you wish to substitute a thicker or thinner diaphragm, the strata that cements the foot F of the recorder arm to the glass may be melted by applying heat to it. The safest way is to heat the head of a small headed nail fairly hot and press it gradually against the glass under the crosshead. It may crack the glass, but it is the surest way of detaching the crosshead. The recorder arm D is now free from the glass but is wedged fast at its flat end in a dovetail notch W in the rim at C. Draw the arm D out of the notch at C, taking care *not* to bend it upward. The glass G may now be lifted out (or, if broken, the pieces removed), showing the rubber gasket H. Only one rubber gasket is used in the New Edison Recorder, under the glass; which is held in position by paraffine wax around the edge of the rim, as shown in cross section I. The weight of the New Recorder has a rounded hollow in the under side, into which the ball joint M plays, thus allowing absolutely no sound vibrations to escape. This ball joint M plays up and down the inside of the tube N, and is limited by the pin O so that it does not fall out. To get at the under side of the recorder weight CJ bend the weight limiting loop B slightly, just enough to

allow the weight limiting lug A to pass out of the loop B. The loop B is set exactly right to allow the sapphire point E to engrave the surface of the blank when making a record.

The arm is now off, the wax scraprd away, the glass is removed and also the rubber gasket. Replace the rubber gasket, if it is in good condition. If the gasket has become hard or is old, better throw it away and substitute a new one. This ring of soft rubber acts as a cushion on which the glass rests, so it must be soft. Next lay the glass diaphragm in place on the gasket, then apply the paraffine wax around the inside edge of the rim, pressing it on firmly so that the glass stays in place. The new glass must be cleaned thoroughly before putting into place (preferably with benzene) as any oil or dirt on either the diaphragm or arm makes it difficult to make a good joint with cement. Dip the end of a match into the stratena and drop a very small drop in the center of the glass diaphragm. Next insert the flat end of the arm D into the dovetail notch W in the rim C, and then adjust the foot F of the arm D to the glass, holding it firmly in place for a few minutes. Next bend the loop B back to its original position, taking care that the lug A is *inside* the loop. Then turn the recorder so that it stands on the tube, as shown in Fig. 4, and allow the stratena to dry for at least *one hour*.

A projector on the speaker arm of the phonograph fits into the slot X in the rim of the recorder and determines its proper position and holds it firmly in place; thus doing away with the speaker clamps.

A WORD ABOUT BELTS.

The slipping of the drive belt on the main shaft pulley is due to the following conditions:

An Oily Belt is the most frequent cause. When oiling a Phonograph absolutely no oil should be put on the surface of the pulley or on the belt. When this happens it not only makes the belt slip but softens the leather, thus causing it to stretch very easily.

A Loose Belt.—In spite of great care used in selecting material, a belt is sometimes cut from a stretchy part of the leather, or, again (as above noted), oil will cause the best belt to stretch very quickly. With ordinary care a belt will last a year without the need of renewal. A belt should not be renewed or shortened under the impression that it is too loose, until the idler pulley (which is placed on every Phonograph for the very purpose of taking up the slack in a belt) touches, or nearly touches, the drive wheel inside of the mechanism.

To Shorten a Belt.—Dampen it at the point where it is already joined. When the ends separate, dry thoroughly. Apply stratena on the parts to be joined, overlap a quarter to a half an inch as may be necessary and press firmly together for an hour or two. If the belt is oily it will be impossible to make the cement stick. Buy a new one.