

# PHILCO SERVICEMAN



RADIO • MANUFACTURERS • SERVICE • NEWS



JANUARY, 1941

## EDITORIAL

### JUBILEE SERVICE

The Philco 15 Millionth Jubilee celebration has been one of the greatest profit promotions the radio industry has ever experienced, and Philco dealers everywhere are cashing in on this immense promotion of the radio business. Servicemen who are members of Radio Manufacturers Service can likewise take advantage of all this Philco publicity to tie in with the Jubilee celebration and make more money in their own service business. With well over 2,000 R.M.S. members in Canada, there are several hundreds of Philco radios alone that are the service responsibility of each member. These Philco service customers should be yours for the asking.

#### Philco Recommendation

R.M.S. members are being recommended by Philco in the customers' instruction sheets packed with each Philco radio. In addition, the yellow label bearing the R.M.S. insignia is pasted on the inside of the cabinet on every new Philco manufactured, telling the customer to look for the R.M.S. sign when in need of service.

#### Active Service Business

For sales achievement this record of 15 Million Philcos is the most enviable in the entire history of the radio industry. But for the serviceman it means more than past selling achievement—it means present and future service business keeping these sets in operation.

#### How to Tie-in

Tying in with the 15 Millionth Philco promotion will mean additional service business for the R.M.S. member. Using the Jubilee signs and advertising pieces available from the Philco distributor, and the R.M.S. metal signs—all of these will tell the Philco owners in your neighborhood that you are the local headquarters for Philco Service.

### YOUR PHILCO DISTRIBUTOR IS YOUR LOCAL R.M.S. HEADQUARTERS

1. For all R.M.S. items.
2. For all Repair Parts for EVERY Philco Radio.
3. For all Repair Parts for ALL MAKES of Radios.
4. For PHILCO TUBES.
5. For PHILCO ACCESSORIES.
6. For PHILCO TEST EQUIPMENT.
7. For PHILCO CAR RADIO AND HOME RADIO AERIALS.
8. For PHILCO SERVICE INFORMATION.

## Cabinet Touch-Up Work Another Source of Service Income

With a little experience, the average serviceman can become quite expert at touching up radio cabinet finishes and in this way he can readily add to his source of income. The PHILCO Cabinet Touch-up Kit, Part No. 45-1326, contains all the materials necessary for touching up and repairing the various finish injuries encountered on radio cabinets, furniture and other wood surfaces which have a lacquer finish.

The first requirement in cabinet touch-up and refinishing is understanding the nature and purpose of the various materials required in the work. With a little practice, anyone can satisfactorily touch-up and refinish any lacquered wood surface. It is suggested that experimental work be done on old or unused furniture in order to acquire skill.

In the following procedure, a description of the various materials used in the PHILCO Touch-up Kit and the methods for applying them are given.

#### Types of Finishes

There are two general types of walnut finishes. These finishes are "light" and "dark".

The walnut stains included in this kit will take care of all "light" and "dark" walnut finishes.

#### Walnut Stains

Two stains are provided for staining the wood the proper color in the event of sanding through the finish or when an entire section is to be finished.

Part No. 45-1328 is to be used for repairing finish on floor models having a light walnut finish; Part No. 45-1329 is to be used only on floor and table type cabinets having a dark walnut finish. These materials should be applied by spraying or brushing on areas of parts affected and should air-dry for not less than 30 minutes.

#### Grille Edge Stain

This material is used for repairing of the finish on grille edges or base mouldings of cabinets having a dark walnut finish. It is best applied with a pencil brush and should be allowed to dry for not less than 30 minutes.

#### Walnut Filler

Two ready mixed fillers are provided for filling the grain of the wood after stain has become dry. The light walnut filler, Part No. 45-1331, is to be used on floor models in the event of repairing white wood due to sanding through; Part No. 45-1330 is to be used on floor and table models having a dark walnut finish. The filler should be stirred well and applied with a brush or cloth across the grain of the wood. After allowing an interval of

several minutes for the filler to become flat, pad in thoroughly with a clean cloth by rubbing with a circular motion. Finally wipe clean across the grain and with the grain, using a clean cloth. Allow filler to dry for not less than four hours before coating with lacquer.

#### Lacquer Sealer

A coat of lacquer sealer should be applied to the wood surface before applying the clear brushing lacquer, Part No. 45-1332. The sealer should be allowed to dry for three hours before sanding with fine sandpaper. After that, the surface is ready for the brushing lacquer.

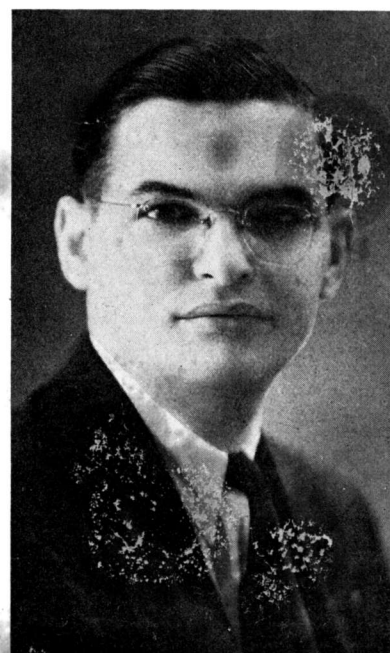
#### Clear Brushing Lacquer

Apply by brush. Do not brush hard, but apply with flowing stroke. Air-dry for not less than 24 hours before rubbing.

#### Philco Rubbing Compound

Rubbing compound is used to remove packing marks, lacquer shrinkage, slight surface scratches and other surface imperfections on the lacquer finish.

Apply with a clean cloth. Rub until the desired smooth surface is obtained, then polish out to a bright lustre with another clean cloth. After which, Polish Part No. 45-1175 should be applied to the finish as a cleaner.



Mr. G. J. IRWIN, Chief Engineer, Philco Products Limited, Toronto

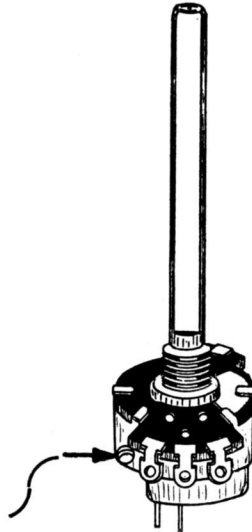
# NEW PHILCO UNIVERSAL VOLUME CONTROLS

FOR ALL MAKES OF RADIOS

**Only  
\$1.35  
List**

PRICED WITH SWITCH LOWER  
THAN OTHER CONTROLS  
WITHOUT SWITCH!

No further need to stock duplicate controls with and without switches. No assembly operation or special tools required. One volume control now serves both purposes. If the switch is to operate in set simply remove this stop screw!



**With Switch  
THEN THE SAME CONTROL  
BY TURNING A SCREW CAN  
BE USED  
Without Switch**

**QUIET** — No wiping contacts — rotor is connected to terminal through spiral lead, welded at both ends.

**LONG LIFE** — Resistance element is formed on high grade, moisture and heat-resisting material. Double contact finger minimizes wear.

**EASY TO INSTALL**—3" aluminum shaft easily cut to proper length. 2½" x .218" flat (used in most sets) can be quickly filed to .156" flat.

**ONLY NINE CONTROLS TO STOCK!**

PART No.	RESISTANCE — OHMS	TAP — OHMS	TYPE CURVE
33-5419	5,000		Linear
33-5420	10,000		Semi-Log
33-5421	25,000		Linear
33-5422	50,000		Semi-Log
33-5423	100,000		Semi-Log
33-5424	250,000	125,000	Logarithmic
33-5425	500,000	250,000	Logarithmic
33-5426	1,000,000	500,000	Logarithmic
33-5427	2,000,000	1,000,000	Logarithmic

ORDER FROM YOUR PHILCO DISTRIBUTOR

## Precautions to Prevent Microphonic Troubles in Philco Combination Model 715P

1. The chassis bolts (4) must be loosened, and the shipping strips completely removed from under the radio chassis.

2. The record changer hold-down bolts (4) must be loosened sufficiently to permit the record changer to float freely on the moulded rubber supports, and all packing must be removed from around the record changer.

3. The screw which holds the phonograph motor to the turntable mounting plate must be completely removed in order to permit the motor to float in its suspension from this board.

The speaker is rubber mounted to prevent feedback and to permit the use of much greater volume without encountering microphonics. However, if the lamp in the photo electric pick-up head is not installed properly in its metal sleeve, and touches the sleeve at any point, this will cause a high pitched microphonic singing condition. This is easily corrected by relocating the lamp properly in the sleeve.

## Questions and Answers

1. Q. Does the new Philco Photo-electric Reproducer require a special pilot lamp?

A. Yes, only the special pilot lamp No. 34-2408 will operate in the pick-up of the Philco Model 715P. This lamp lists at 60 cents.

## Battery Complement of New Philco Battery and Portable Models

Model	Philco Battery Part No.
207T .....	P60B6L
209T .....	P60D11L
210T .....	P60B6L
211T .....	P60D11L
212F .....	P60D11L
213K .....	P60D11L
214T .....	{ 1—151-18L
	{ 2—P30F
405T .....	P41A4G
406T .....	P41A4G
407T .....	P60A8F4
408T .....	P841

## R.M.S. Appreciation

Our thanks to the following R.M.S. members, who have so kindly written us to express their appreciation for the R.M.S. mailings and the Philco Serviceman. We are only sorry we haven't space to list the names of all the members who have written us in this regard.

Mr. L. F. Hedberg, of Melfort, Sask., says—"I wish to express my appreciation to the Philco company for the monthly receipt of the 'Serviceman' and circuit data, both of which are of great help."

Mr. Ernie Smith, of 986 Garfield Street, Winnipeg, says—"May I once again extend to you and the Philco Company the Compliments of the Season. I wish to thank you for the wonderful assistance given me from the Radio Manufacturers Service."

## Record Changer Information Helps Promote Sales Intermix Changer Adjustments Easily Made

Radio phonograph combinations are big business in the industry this year, and it is Philco's policy to furnish as much helpful information to dealers and servicemen as possible so that these fine new instruments can be kept in the peak of performance at all times.

### Intermix Record Changer Adjustments

Before attempting any adjustments whatever, be sure that you are thoroughly familiar with the functions and with the cycle of operations of the record changer. These are fully described in Philco Service Bulletin No. 344. If a record changer is not operating properly, carefully analyze the operations before making any changes in the adjustments since many of the adjustments are interdependent. Changing one adjustment will often affect others.

### Tone Arm Drag

Tone arm drag may be responsible for poor tone quality as well as faulty operation of the automatic record changer mechanism. With too much drag on the tone arm, the tone arm will not be free to follow the groove in the record and the sapphire will be pulled out of line and will turn the mirror so that the light beam is deflected from the light sensitive cell.

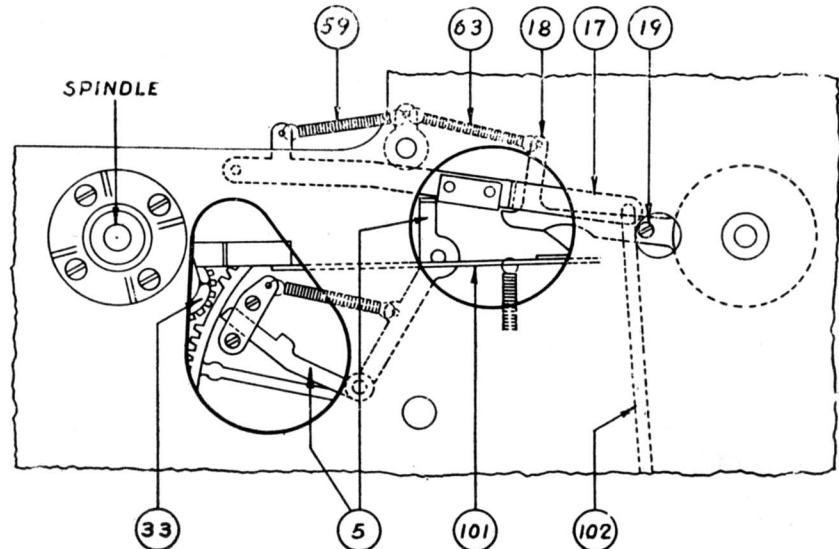
Too much drag on the tone arm may cause the changer mechanism to fail to trip at the end of the record. If the drag is too heavy, the sapphire will leave the spiral groove at the end of the record, when set for automatic operation. When set for manual operation, the friction of the clutch will cause the sapphire to jump from the trip groove at the end of the record, which is normal.

The tone arm drag should be less than 1/10th of an ounce. To check this, the changer mechanism should be stopped with the clutch members disengaged, i.e.—with the clutch release lever 101 on a high spot on the cam on the intermediate gear 33. The record changer must be set for manual operation.

Block up the tone arm by inserting a piece of cardboard between the adjusting screw on the light beam pick-up mounting bracket and the tone arm. With a spring scale measure the tone arm drag. Attach the spring scale to the head end of the tone arm and measure the tone arm by pulling the head toward the turntable spindle. The drag should not be greater than 1/10th of an ounce. If the drag is greater it is caused by:—

(a) Insufficient clearance between the clutch members.

Watch the clutch assembly while swinging the tone arm back and forth. The two moving members of the clutch must not transmit any motion to the other two clutch plates. If the clutch



5—CAM LATCH AND TRIGGER ASSEMBLY  
17—TRIP ARM ASSEMBLY  
18—TRIP LEVER ASSEMBLY  
19—TRIP ADJUSTING CAM

33—INTERMEDIATE GEAR ASSEMBLY  
59—TRIP ARM SPRING  
63—TRIP LEVER SPRING  
101—CLUTCH RELEASE LEVER  
102—TRIP LOCK ROD

is not opening enough, bend the forked end of the release lever 101 slightly to give greater opening between the clutch plates.

(b) Friction in the tone arm spindle assembly.

The tone arm shaft and the tone arm elevator pin must be free to lift up and down and must seat freely. If the spindle binds at any point it may be due to insufficient clearance in the hole in the end of the swing bracket 64, or the shaft or pin may be bent. If the shaft or pin is bent, it will be necessary to replace it. If there is insufficient clearance in the hole in the bracket, the stud at the other end of the bracket should be bent in the direction to give the proper clearance.

(c) Insufficient clearance between the trip lever 18 and the trip arm 17.

There must be a perceptible clearance between the trip arm 17 and the trip lever 18. With the changer set for manual operation, the trip lever 18 must pulse freely without rubbing on the trip arm while the motor is turning over. Also, the trip arm 17 must have a small amount of play and must not bind on the cam trigger 5.

This is covered under Trip Sensitivity, since these adjustments likewise affect the Trip Sensitivity adjustments.

### Trip Sensitivity

In addition to tone arm drag, other conditions affecting trip operation are:—

(a) Too little tension or too much friction in the trip mechanism. To check trip sensitivity, the motor should be stopped and the clutch plates engaged, i.e.—with the clutch release

arm 101 on a low spot on the cam on the intermediate gears and with the master gear in the playing position. With the changer set for automatic operation, measure the pull of the tone arm required to trip the cam latch and trigger assembly. It should be between  $\frac{3}{8}$  and  $\frac{5}{8}$  ounces.

If the cam latch is released with less than  $\frac{3}{8}$  ounce tension, the mechanism will be too sensitive and will pre-trip in operation.

If more than  $\frac{5}{8}$  ounce is required to trip the cam latch, it is quite possible that the mechanism will fail to trip on an oscillating groove in a record. The amount of pull required to trip the cam latch can be adjusted by stretching or shortening the spring 59 on the trip arm, provided, however, there is no friction or binding of parts which is making the trip mechanism too insensitive.

With the motor stopped, change the control to the manual setting. There must be a small amount of play between trip arm 17 and the cam trigger 5. This can be obtained by bending the end of the trip arm 17 with a pair of pliers, twisting it toward the switch knob assembly. This is equivalent to lengthening the trip lock rod 102. There should not be so much play that the cam trigger 5 can be tripped by the movement of the trip arm 17 while in the manual position. After this adjustment has been properly made, there will be no apparent movement of the trip arm when changing from the manual to automatic setting.

There must be a perceptible clearance (.005") between the trip arm 17 and the trip lever 18 so that the trip lever will pulse freely while the motor

(Continued on Page Four)

## 38 Philco Tube Types Service All New Philco Radios

Only 38 Philco tube types are required to service all new Philco electric radios, battery radios, portable radios and car radios.

### Electric Home Radios

37	84	7A8E	7Y4
41E	6A8EG	7B5E	35A5E
42E	6J8EG	7B6	35Z3
75	6Q7G	7B7E	XXL
78E	7A6	7C6	
80	7A7E	7J7E	

### Battery Radios

1A5EG	1H5G	1LN5E	3LE4E
1A7EG	1LA6E	1N5EG	

### Portable Radios

1A5EG*	1LA4E	1LH4	3Q5EG
1A7EG*	1LA6E*	1LN5E*	117Z6G
1H5G*	1LD5E	1N5EG*	

### Car Radios

7A5E	7B6§	7C5E	7L7E
7A7E§	7B7E§	7C6§	7Y4§
7A8E§	7B8E	7J7E§	

\*Also used on battery radios

§Also used on electric radios

Every Philco dealer should be equipped to take care of minor service, such as replacing a defective tube. The above list of Philco tube types should be the minimum stock of tubes.

## New Philco Handbill

A new "Philco Necessities" Handbill is now available from your Philco Distributor at the nominal price of \$1.00 per thousand, not imprinted. This handbill describes a number of the fast moving Philco Accessories, such as polishes, accessory speakers, home radio aerials, phonograph needles, etc., that appeal to every radio and refrigerator owner, and to every householder.

This new handbill is intended for dealer and serviceman use in increasing counter sales. Displayed on the counter, used as an envelope stuffer, or placed in mail boxes, it will greatly increase your parts sales, because "there is something that every person needs" described on it.

See it now, and order your quantity from your Philco Distributor.

## R. M. S. Notes

The January R.M.S. mailing, which has just gone out from Philco to all R.M.S. members, contained more Philco Service Bulletins on new Philco models, and a new 1941 R.M.S. Identification card.

If you are not yet a member of Radio Manufacturers Service, consult your Philco distributor, so that you too may receive all R.M.S. benefits at no charge to you.

## R.M.S. In England

You may be interested in knowing that our English Philco Company is still carrying on with their R.M.S. activities from Perivale. We have just received a copy of the English Philco Serviceman for May-October, 1940, in which they assure their R.M.S. members that they are still very much alive and still carrying on.

We know that all Canadian R.M.S. members wish them well—and our own best wishes go along too.

## Philco Four Section Cowl Aerial

The special Philco Short Wave Aerial which was supplied as standard equipment with the now famous Philco Model 809 Short Wave Auto Radio, is now available separately from Philco distributors.

This aerial is a four section cowl type aerial, which extends to a maximum height of 88" and is less than 27" in height when closed. It is particularly suitable in car radio installations, where great sensitivity and ruggedness are required.

Part No. 91-0144—List Price \$6.00

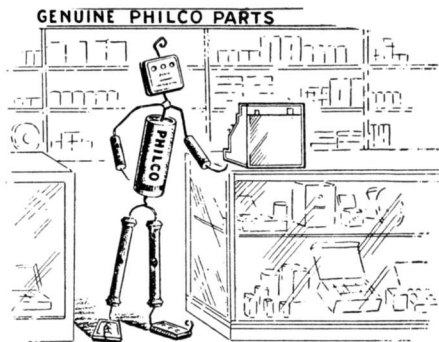
## Philco Volume Control Kit

New, Fast Moving Assortment of 12 Genuine Philco Volume Controls

This assortment gives you the RIGHT control for the majority of Philco radios. Eliminates frequent trips for separate controls, or any waiting for replacements by having this assortment in stock.

Always use genuine PHILCO volume controls in Philco radios. They cost no more—you don't have to cut shafts, build switches, etc.

Kit of 12 Philco Volume Controls No. 45-1445—\$14.10 net.



## Record Changer Information Helps Promote Sales

(Continued from Page Three)

is running and with the mechanism set for manual operation. This can be obtained by adjusting the cam 19.

The spring 59 must have sufficient tension to return the trip arm to its normal position after the change cycle has started. If it does not, the trouble is probably caused by too much friction somewhere along the trip lock rod 102, which locks the trip arm and prevents it from operating when the mechanism is in the manual position. If this rod and the switch latch are absolutely free and do not bind whatever, and the switch arm still does not re-set itself, then the trip arm spring 59 requires shortening.

## Lubriplate---The New Universal Lubricant

The special usefulness of Lubriplate for eliminating noisy operation of radio push button switches was discovered by Philco engineers about a year ago. Shortly afterward, Lubriplate was made available in the small 1/2-oz. tubes at \$ .25 list.

Since then the demand for Lubriplate among servicemen has increased to the extent that Philco is now supplying this universal lubricant in the new, larger, more economical 50-cent tube. More uses are being found for Lubriplate every day—everything in electrical-mechanical contacts, and everywhere that mechanical friction can be eliminated.

Part No. 45-2806, at \$ .50 list per tube

## MIKE FARAD

AT YOUR SERVICE  
WHEN YOU GO TO  
THE ONE-STOP  
PARTS STORE

# PHILCO PRODUCTS LIMITED

PARTS AND SERVICE DIVISION  
TORONTO

The Philco Serviceman is distributed to you free of charge  
with the compliments of your Philco Distributor