

PHILCO SERVICEMAN

PHILCO
Factory-Supervised
Service

Service News For Philco Servicemen

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KNOW YOUR PHILCO FIELD SERVICE ENGINEER

Do you know him? What he does? How it affects you?

We certainly hope you do! For when you see him and tell him your problems, he in turn assists you with them and passes on the latest information he has received from headquarters.

Possibly you think his activity ends there, but nothing could be farther from the truth. After he leaves, he goes to work on one of the most important functions he performs in the field—writing detailed reports on performance and problems encountered.

The information gathered by the field representatives has a great influence on the decisions made by management in planning modifications and new design. Without your cooperation with your Philco Distributor, and the accurate reports from the field men, we would be in the dark as far as knowing how our product performance is being accepted by the consumer.

The reports from the field are duplicated and distributed to seventy-five department heads. The information pertaining to television, for instance, goes to the men in Service, Production, Engineering, and Product Performance, who are responsible for its performance and quality. It is not a piece of paper merely to be read and passed on—it is the man's own copy to be retained until action has been taken and an answer sent to the field. Then it is filed for future reference.

It is interesting to find people carrying the reports around with them when you visit the factory. This continues day in and day out. The problems are brought to the attention of a great many people; they are discussed, good fixes result from the combined thinking of several people; and the matter is

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REFRIGERATION RELAY AND OVERLOAD ASSEMBLIES — OLD TYPE

The starting relay is very positive in its action, and yet very simple in the matter of parts.

Connected in series with the running winding of the motor, is the winding of a solenoid coil magnet.

When the temperature control contacts are closed, the solenoid coil winding is energized.

The magnetic field or flux developed by the solenoid coil attracts and controls an armature mounted on a spring steel arm or reed. This arm also includes a contact, and together comprise part of the motor starting winding circuit.

Energizing the armature causes the starting winding circuit to be completed, and the motor will start.

The current required by the motor, at starting, is comparatively high, based on normal running current, and as a consequence, the magnetic field developed by the solenoid coil, is also relatively high. However, as the motor speed comes up, the starting current decreases, with a consequent decrease in the strength of the aforementioned magnetic field, until the solenoid magnet will no longer hold or control the armature. The spring steel arm will then return to its original position, opening the starting winding circuit.

The relationship between rotor speed, line current, and flux density of the solenoid magnet, are very carefully determined, and no adjustments effecting any of these factors can be made or are necessary.

In series with each other and with the running winding, is a thermostatic arrangement, consisting of a bi-metal strip and heater grid. The physical relationship between the bi-metal strip and the heater grid is very close, so any heat radiation from the heater grid will affect the bi-metal strip.

Attached to the bi-metal strip is a

contact, which, with another contact properly mounted, form part of the main line circuit.

The bi-metal strip is so mounted, and its action is such that under normal conditions, these contacts remain closed. The application of heat, as caused by an overload condition, will in turn cause the bi-metal strip to shift its position and pull the two contacts apart, breaking the main line to both the relay and the motor.

As will be readily apparent, this action and consequent break would tend to lag and be quite sluggish in its operation.

To overcome this condition, a very unique feature has been incorporated as part of the overload protection. On the free end of the bi-metal strip, is mounted the keeper or armature, of a miniature magnet. The magnet proper is mounted in the base of the relay. The bi-metal strip, as previously mentioned, when heated, will flex or shift in position. The strength of the magnet is carefully worked out, so that when a definite point is reached, the armature or keeper will be instantly drawn to the magnet, effecting a quick break for the contacts.

As soon as the main line circuit to both the relay and motor is broken, current will cease to flow through the heater grid, and the temperature of the bi-metal will decrease. After an interval of time, the holding action of the magnet will be overcome by the action of the bi-metal strip. The main line circuit will again be closed, the starting relay will operate, and the motor will tend to start and run. If the overload still remains, the overload protection will again function.

New type overload and relay assemblies will be discussed in a future issue.

TV CHECK-UP CAMPAIGN MEANS MORE SERVICE DOLLARS FOR YOU!

Promotions that follow a definite pattern are more likely to be successful than half-hearted attempts to contact potential customers with ill-timed and intermittent promotions.

Philco FACTORY-SUPERVISED SERVICE has prepared a television check-up campaign consisting of a mailing piece, newspaper advertisement, and follow-up letter—a complete campaign designed to reach your customers from every angle



**HERE'S WHAT WE'LL DO
FOR ONLY \$0.00**

**COMPLETE TELEVISION
SERVICE CHECK-UP**
For Brightest Picture—Clearest Sound

1. Inspect transmission line, antenna, and all connections for mechanical and electrical efficiency.	2. Inspect all chassis components for security of mechanics and signs of electrical breakdowns.
3. Adjust back controls to assure maximum picture linearity.	4. Check range of all front controls to assure best tuning control by set owner.
5. Adjust picture tube focusing, centering beam border for maximum brilliance.	6. Clean and polish picture glass panel and picture tube lens.
7. Check test pattern to assure maximum height and width with good linearity.	8. Check oscillator and fine tuning range for maximum sound and picture clarity.
9. Adjust horizontal hold system for maximum horizontal steadiness.	10. Furnish accurate written technical report of inspection and general operative condition of set.

YOUR SET ALONE INFORMATION

MAIL THIS CARD

Now!

NO POSTAGE NECESSARY IF MAILED IN THE U.S.

DEALER IMPRINT

BUSINESS REPLY CARD
NO POSTAGE NECESSARY IF MAILED IN THE U.S.

and sell them with a hard-hitting approach while creating the urge for action.

This campaign has been devised by promotion men who are old hands at knowing customer psychology. And their knowledge is being passed on to you for an opportunity to gather more service dollars!

The colorful mailing piece with its attractive illustrations will surely start your customers thinking about a television check-up. As illustrated, the mailer lists the ten check points and contains a postpaid business reply card for the convenience of your customers.

The big 2 column by 9 inch advertisement over your shop name will catch their eye as they read the newspaper—a good place to impress prospective customers.

TELEVISION SERVICE!
*Here's What We'll Do
For Only \$0.00*

**Complete
CHECK-UP**
For Brightest Picture
Clearest Sound!



1. Inspect transmission line, antenna, and all connections for mechanical and electrical efficiency.

2. Inspect all chassis components for security of mechanics and signs of electrical breakdowns.

3. Adjust back controls to assure maximum picture linearity.

4. Check range of all front controls to assure best tuning control by set owner.

5. Adjust picture tube focusing, centering beam border for maximum brilliance.

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9. Adjust horizontal hold system for maximum horizontal steadiness.

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Call Exchange Now!
0-0000

DEALER'S NAME
ADDRESS
CITY AND STATE
AUTHORIZED DEALER - PHILCO FACTORY-SUPERVISED SERVICE

PHOTO-2 only, a 9 inches

And finally, if you time it right, the sales letter will go to work on any remaining doubts they may have about getting a television receiver check-up. The letter also includes a return card making it easy for the customer to sign and engage your services.

Remember, the psychology of TV servicing is a lot different than radio. Television owners are far more critical of picture quality than they were about radio performance. Many radio owners may have had "tin ears," but there are no "tin

eyes" in television! These people want the best reception and they are willing to pay for service to get it!

Philco's Television Service Department has prepared ten major points for receiver performance analysis. These are checking and adjustment procedures only and designed to disclose serious faults if they exist. A standard flat charge for the check-up alone, plus extra charges for repairs, as needed, can guarantee you a sizeable profit for each of the sets you service in this manner.

A successful television service check-up campaign can mean profits for you that would otherwise not have been gained, it can keep your servicemen busy during normal seasonal lulls; and for you servicing dealers, think of the leads you can obtain on the sale of new merchandise!

YOUR NAME HERE
Address _____ City and State _____

permitted service - all values and trade

Customer's name _____

A SPECIAL LETTER TO SERVICE
AND TELEVISION SERVICE

1. Inspect transmission line, antenna, and all connections for mechanical and electrical efficiency.

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This is another example of Philco FACTORY - SUPERVISED SERVICE cooperation with its members. Be quick to take advantage of its possibilities! Ask your local Philco Distributor immediately how you can acquire this big-time promotional lineup!

PHILCO PRODUCTS . . . THE INTERNATIONAL FAVORITE!

Dateline Cuba!

Here's another orchid featuring Philco performance in action from far off Santiago de Cuba.

Philco Headquarters recently received a letter written in Spanish from Philco Serviceman Santiago Juan Ravelo Renedo, which, after translation, reads:

"I am very grateful to you for your having mailed to me the Philco SERVICEMAN AND ACCESSORY MERCHANDISER, all of which I have found to be extremely interesting and of great value to those who, like myself, render qualified service to Philco Radios."

"As an example, I will cite the case of a lady customer who, after following my suggestion that she have an outdoor aerial installed for her Philco-Tropic Radio, was able to listen to the Vatican Broadcasting Station at 2:00 in the morning—and who is now so satisfied with this excellent Philco brand of radio, that she is making free promotion not only for my services, but also for Philco Radios. In this way, which is one of the simplest and most economical, I also work for Philco Corporation in the way you deserve it."

"I trust that you will continue to send me literature that will help me to keep the Philco name at the high level where it belongs."

Yes, time and time again instances such as this pop up to prove the overwhelming superiority of Philco Products in use!

Operating under some of the most exasperating circumstances of an unpredictable Nature—from seething humidity to bone-chilling freezes—Philco electrical appliances



have carved an excellent reputation in a field known for its high standards. This reputation is a tribute to the thousands of employees, dealers, and servicemen who have together built, sold, and maintained the products worthy of such high praise.

Senor Renedo and Senora Customer of Cuba are only two of the many, many people outside the continental limits of this country who have been benefited by the quality in Philco Products.

From Algiers to the Arctic, from Siam to Somaliland, the name "Philco" on an electrical appliance means dependability.

Philco has based its philosophy on the words, "FAMOUS FOR QUALITY THE WORLD OVER." Letters like the one above are the basis and proof of this philosophy.

GOOD NEWS FOR PHILCO SERVICEMEN!

Yes, good news! Philco and Utilities Engineering Institute have again joined forces to bring Philco FACTORY - SUPERVISED SERVICE members a valuable refrigerator and air conditioner training program. A program designed to give you more knowledge in order that you make more money!

In the past, these training programs were enthusiastically received by Philco Servicemen everywhere. Available only to Philco FACTORY - SUPERVISED SERVICE members by arrangement with Utilities Engineering Institute, this special course represents a real saving and value which cannot be duplicated.

The UEI Refrigerator and Air Conditioner Program is known throughout the appliance field as top-notch. Training includes all vital subjects from principles to specialized service techniques that will put you head and shoulders above the ordinary refrigeration serviceman! And upon completion of this program you will be fully qualified to properly service all types of refrigerators, freezers, and air conditioners.

This program is open to all members of Philco FACTORY - SUPERVISED SERVICE, regardless of category! Here is an excellent chance for you radio and television members to branch off into the highly lucrative field of refrigerator and air conditioner servicing, making you a triple threat combination that will cover every type of service request from your customers! It's the opportunity of a lifetime at low special cost, exclusively at the disposal of Philco FACTORY - SUPERVISED SERVICE members.

The Utilities Engineering Institute Program in no way conflicts with "Advanced Home Study Course on Philco Products" offered as part of your regular membership in Philco FACTORY - SUPERVISED SERVICE. This means you can cover every aspect of a field that's providing more and more opportunities to servicemen every day!

Your local Philco Distributor will have application blanks for your convenience shortly. When they are available, rush down and sign up with Philco and UEI for your future success!

AUTOMATIC CONTROL CLOCKS

These time-keeping control clocks, constructed with an internal automatic switching mechanism, are often referred to as "timers." Since the trend of minute-minders and our own minitimer has been generally from spring wound to electric driven, the word timer is often used in reference to them. Actually they are a timer in the sense that they give a warning sound after a time interval has elapsed from their original setting. On the other hand, calling a control clock a timer as was formerly done, is somewhat misleading and the trade now generally lists them as automatic control clocks.

An automatic control clock on an electric range is always connected

in the oven circuit and on some ranges also controls an appliance outlet. On Philco's Electromaster 1949 R84D Range, the automatic clock controlled the oven, one outlet, and also the deep well cooker by having the control clock wired through a selector switch. The selector switch, besides having three individual load selections, also has an "off" position which shunts the three load circuits direct to their units instead of through the clock.

On Philco full size 1950 and 1951 ranges, the control clocks have a center blue dial, and an outer white and maroon dial for setting purposes. The window in the blue dial is for the "stop" time and the

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QUESTIONS AND ANSWERS

Q. An air-conditioner shows signs of trying to start; the relay keeps clicking and/or the motor hums.

What is the cause?

1. Low line voltage.
2. Defective relay.
3. Defective starting condenser.

REMEDY

1. Check the line voltage (the full load line voltage at the outlet should not deviate more than 10% from no load voltage).

2. Check the relay for a shorted holding winding, poor and/or maladjusted contacts (a reliable check can be made by substituting a relay of known performance).

3. Check the capacitor by substituting a good one.

Q. What is the major contributing factor to corner shadows in 20" television receivers?

A. In most cases corner shadow is due to incorrect forward placement of the deflection coil assembly. To correct "neck" shadow as it is commonly called, the assembly should be moved forward as close to the neck flange as possible.

Q. I have in for service, a Model PD-4908 Auto Radio which the owner claims will not start until he has driven a few miles in the morning.

After it starts to play, it operates satisfactorily, but it won't start first thing in the morning. It plays satisfactorily on our bench so we have been unable to find the trouble. Can you give me any suggestions?

A. There are two possible reasons why the set will not start. First, there is a possibility that the customer's battery may be low, and as a result, the set does not satisfactorily operate until this voltage has been built up a little due to his driving. This, of course, would not normally stop the set from playing, but it is probably coupled with some problem in the oscillator circuit so that during the period of low voltage the oscillator will not start.

We recommend replacing the oscillator tube and checking the plate voltage to see that it is normal.

The second reason for non-start might be a thermal joint; that is a poorly soldered connection in the set that does not make good connection until the set warms up. You might be able to locate this by putting the set in a refrigerator for a short time so that it is thoroughly chilled, then try the set on your bench. If it is dead, then you, of course, can use the usual service procedure to locate the circuit that is not operating.

Automatic Control Clocks

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maroon dial is for the "cooking" time. The left knob is used to set the stop cooking time and then reversed to set the hours to cook. The right knob called "automatic set knob" is used to trip the switch from the vertical manual position to the inverted set position. As the clock progresses through its cycles, this set knob automatically rotates upward to "on" position and then to "off" position where it remains until the operator re-sets it to the vertical position.

Forgetting to trip the set knob back to manual position has caused a great many unnecessary service calls for complaints of a non-operating oven. The first question a dispatcher or complaint clerk should ask on a customer's call of a dead oven complaint, is to see if she has set the knob in the vertical position.

The optional equipment clocks on Philco Spacesavers 401 to 404 models, and standard equipment clocks on Philco 1949 and Electromaster 1948 models, are a different type and the set knob is tripped down one notch, instead of all the way down, to put it on set position. From there it automatically works downward to "on" and further down to "off" where it remains, which is just the opposite of the 1950 and 1951 models. However, they are both in manual operation when they are in a vertical position and both will spring back to manual by just pressing on the knob.

From time to time we will continue to print up-to-date hints about Philco Electric Range servicing which will, we hope, supplement the other information you receive in other Philco servicing publications.

It is encouraging to see more and more servicemen sign up for the profit opportunity of a lifetime and become Philco FACTORY-SUPERVISED SERVICE members in the Electric Range Category. With electric ranges increasing their usefulness in thousands of homes, servicemen will do well to think of the tremendous amount of business they can get through electric range servicing.

If you think you can qualify for this category don't hesitate to sign up! By taking advantage of the invaluable Philco FACTORY-SUPERVISED SERVICE information on radio, television, refrigeration, and electric range you can just about cover the electrical appliance field from every angle!

KNOW YOUR PHILCO FIELD SERVICE ENGINEER

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brought to the attention of responsible men who can get the corrections incorporated in production within a short period of time.

The emphasis placed on these reports are active illustrations of the importance of the field service engineer's activities. But the field man cannot possibly gather all the information, recommendations, and pertinent data that is available.

As Philco Servicemen you are an important part of our field operation. Our field man can spend only

a limited time with each Distributor. You spend a part of every day servicing Philco Products. As a result, you are in a position to gather a wealth of information which can be relayed to headquarters in Philadelphia through the distributor. Please continue your excellent cooperation. Quality and performance are tops right now; however, perfection has not been achieved, and it never will be. But it is something to shoot at—so let's all work together with that goal in sight!