

PHILCO



SERVICE

New Product News

MAY, 1951

REFRIGERATION



FIGURE 1

Philco is featuring for 1951 two home freezers of outstanding quality and capacities designed to meet the requirements of the public. The tremendous extent to which home freezing has grown within the past few years has dictated that freezers be produced capable of freezing food in large quantities or merely storing a small supply for an indefinite period.

The trend for greater volume, in home freezers, has naturally followed the increase in home freezing. This is true also with refrigerators, where once five and six cubic foot refrigerators

PHILCO HOME FREEZERS FOR 1951

were popular, the demand has now swung to ten cubic feet and larger. Freezers for home use then must be made with greater storage volume. For that reason Philco has swung from the 2.5 and 5 cubic foot freezers to models with larger capacities. The Philco freezer shown in Figure 1 is the very popular FH-81 model. This freezer has a capacity of 8.1 cubic feet, which is divided into two spacious storage compartments. The compartment on the left, shown in Figure 1, is made up by the two cold plates of the evaporator of the hermetically sealed unit. This compartment is especially valuable when warm foods are placed in the freezer



FIGURE 2

for quick freezing, for it is this area which attains the coldest temperatures. This procedure will be explained fully later. Figure 2 shows the practical, ever dependable EH-121 Philco Freezer which provides 12.5 cubic feet of storage area. This is truly the last word in excellence of design, providing a home freezer capable of fulfilling the requirements of a large family, and still requiring only a minimum of installation space in the average home. The roomy interior of the EH-121 Freezer is divided into three compartments providing space large enough to store up to 435 pounds of frozen foods.

Both the FH-81 and the EH-121 Philco Freezers are similar in design in many respects. As mentioned before, both freezers have convenient, spacious compartments for storage of frozen foods. The interior liner of the storage area is porcelain enamel providing a gleaming white, durable finish, which is exceptionally easy to keep clean and insures a permanent beauty to a cherished possession.

In each of the freezers, Easy-Lift storage baskets (Figure 3) are provided permitting access



FIGURE 3



FIGURE 4

to frozen foods even though they may be stored at the bottom of a full compartment. It is always a nuisance to search through the entire contents of a freezer for one small package, for instance, and find it buried at the bottom. Then every item that was disturbed "in the search", must be sorted and restacked in their proper places. In the EH-121 Philco Freezer a very handy Utila Tray (Figure 4), is provided which serves as a convenient shelf on which packages going in or coming out of the freezer can be placed.

The new sloping front design is provided with the user in mind. This feature allows for increased storage above knee level, so that the contents of the freezer can more easily be reached. Other advantages to the sloping front is that it provides toe space and gives the outline of the exterior of the freezer that handsome, new streamlined look.

The handle and latch assembly is of an entirely different construction from any previously used on Philco Freezers. Little effort is required to open or close the new assembly and the overall simplicity of the design permits comparatively minor

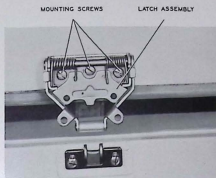


FIGURE 5

adjustments for easy action and tight seal. Figure 5 shows latch assembly with the handle removed, and the latch strike. The latch roller should be centered with the strike, if it is not, merely loosen the three screws shown and move the latch laterally as required. Tension on the seal gasket can be increased or decreased by loosening the two strike mounting screws and move the strike in the required direction.

Looking at the massive lid on these freezers, one would get the idea they are quite heavy to lift, but such it not the case. By using an ingeniously engineered hinge, or lid stay, there is practically no effort required. The lid stay is spring loaded with sufficient tension to assist opening the lid, and then holding it in the required position. Figure 6 shows the assembly and the adjusting nut which can be turned to provide the correct amount of tension against the spring.

Philco Freezers have a very responsible duty to perform when in household use, that of keeping, at safe temperatures, food which may represent hundreds of dollars in value to the customer, this cannot be overlooked. There is no doubt of the freezers capacity to do this job, but failures can occur which are beyond human control. For instance, power failure due to lightning,

line breaks, or blown fuses can cause the freezer to become inoperative causing considerable loss of valuable food, if safety warning devices were not provided. Every freezer is equipped with a battery operated bell, which will ring continuously, if the temperature within the freezer should rise to approximately 12 degrees above zero. Due to the fact that Philco Freezers are so well insulated, it may take up to twenty-four hours, for the temperatures to reach the danger point, providing the freezer is not opened. However, should such a failure occur, the warning bell, shown in Figure 7, will ring continuously or until it is shut off by the control knob, also shown in Figure 7, and the cause of failure determined. It is possible that mechanical failure within the freezer itself may occur or that the lid was left open allowing the cold air to escape. It is a very wise idea to check the battery at least once a year. This can easily be done by placing a hot towel against the feeler tube until the bell rings, or by shorting the bell terminals on the rear of the temperature control. If the bell does not ring, the battery should be replaced immediately. It should be remembered that when the

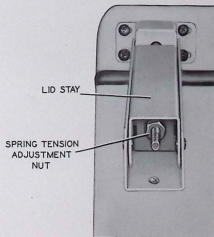


FIGURE 6

freezer is first installed in a customer's home, the control knob should be turned to **ALARM OFF**, until the unit has had an opportunity to cycle a few times and bring the temperature of the freezer interior down to a safe level.

The hermetically sealed unit, or super power system, is of the very finest design, engineered for efficiency and built to give many years of dependable service. The evaporator of the unit forms one of the compartments mentioned earlier. In the FH-81 freezer, it is the left hand section and in the spacious EH-121 freezer the evaporator forms the center compartment. If warm foods are to be placed in the freezer for quick freezing, they should be placed in this compartment because it is an integral part of the unit and for that reason is the coldest section of the interior.

The entire super power system shown in shipping crate (Figure 8), is hermetically sealed which insures the owner of a minimum of failure, due to leaks, while getting peak performance at low cost.

Philco can be justly proud for the strides made to produce freezers that meet every requirement

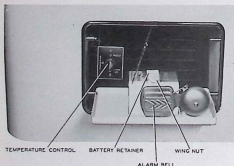


FIGURE 7

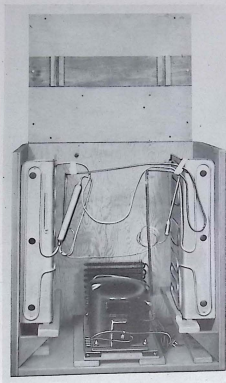


FIGURE 8

of the consumer and maintain a high rate of quality. Philco Freezers can be counted on to give dependable service through many years of use. If a mechanical failure should occur, any service or parts replacement that may be required can be performed in a minimum of time due to the simplicity of engineering design.

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New Product News

JULY, 1951

REFRIGERATION

AIR CONDITIONING



Figure 1 — Philco Air Conditioner Model 200-GCW

Air conditioning for human comfort is the scientific preparation and simultaneous control of the atmosphere within an enclosure, with regard to temperature, humidity, air motion and distribution, dust and dirt. The factors which most commonly affect human comfort are temperature, humidity and air motion.

The Philco Water-Cooled Air Conditioners function to create a comfortable, clean and healthful pleasant atmosphere condition in the room where the air conditioner is installed. Comfort is accomplished not only by a reduction of the air temperature, as shown by the ordinary thermometer, but rather by the attainment of the proper combination of air temperature and moisture content or humidity.

The room air is cooled and dehumidified by passing it over chilled evaporator surface of a very efficient sealed unit assembly. When warm air comes in contact with the chilled surface, heat is removed from the air, thereby lowering the dry bulb temperature of the atmosphere. If this air is cooled below the dew point during the cooling process, the temperature is not only lowered, but since moisture has been condensed from the air, the humidity has also been reduced. Too great a difference between the outside air temperature and the inside air temperature is not desirable. If the outside air temperature went up to 100° F and a temperature of 80° F were maintained in the room, this temperature differential might be a shock to a person entering or leaving a room. This Philco Air Conditioner is designed to provide the proper combination of dehumidification and cooling to a maximum amount of mild weather comfort without excessive differences between the temperature of the conditioned space and that of the outdoor.

Research has established the relationship of inside to outside conditions for the maximum comfort of the average person. There are temperature and humidity relationships which will produce the greatest summer comfort, these relations are known as the "Comfort Zone". Temperature reductions and should range within limits of 10 degrees and 18 degrees Fahrenheit with a relative humidity of between 40 and 60 percent. The exact conditions will vary according to the activity within the room, the number of persons in the room, the length of occupancy, air infiltration and circulation, heat load due to lights and operating electric appliances, local climatic conditions and the insulating factor of the building.

For example in our Air Conditioner, Model 200-GCW we use two complete hermetically sealed cooling units to provide an adequate amount of cooling and dehumidification for rooms up to 1500 square feet in floor area, with a ceiling of normal height (9 feet).

There are a number of advantages in the use of a dual unit assembly as used in the model 200-GCW:

1. Sequential starting which is accomplished by using an automatic sequence starting relay which reduces starting current approximately 50%.
2. Only one cooling unit is required to operate when the heat load in the room is moderate.
3. When the heat load in the conditioned area increases, one system operates continuously and the second unit cycles. This dual system will, therefore, maintain a more uniform temperature and humidity level in the room.

This Air Conditioner cools, filters, and circulates up to 925 cubic feet of air per minute and is capable of removing 3.2 quarts of water per hour. The desired room temperature is automatically maintained through the use of thermostatic control.

This selector is an adjustable thermostatic room temperature control, located under a hinged cover at the top-rear of the air conditioner. This control automatically governs the operation of the twin, hermetically sealed cooling systems, when the power switch is positioned to cool. The thermostatic temperature control will maintain any desired room air temperature between 74° F and 86° F, depending upon the setting of the Temperature Selector.

The thermostatic control is so designed that when the temperature selector is set at its mid position, and the air entering the air conditioner is between 78° F and 80° F, only one cooling system will operate. If the air temperature rises to approximately 82° F, the second cooling system will start and continue to operate until the air temperature is reduced to 80° F. The first system will continue to operate until the air temperature is further reduced to 78° F. At this temperature, only the air circulation fan will operate until a rise in air temperature causes the thermostat to function and start the first cooling system.

Under conditions where the temperature of the air surrounding the air conditioner is below approximately 74° F, with the power switch in the cool position, and the temperature selector knob



Figure 2 — Temperature Control and Power Switch

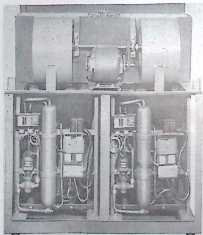


Figure 3 — Model 200-GCW with cabinet removed

turned to the extreme clockwise position, only the room air circulator fan will operate. The Air Conditioner unit will operate in accordance with this sequence when the air conditioner is operated to produce a comfortable atmospheric condition of the room air, or until such time as the Power Switch is placed in its OFF position.

Since this air conditioner is a water cooled unit, it does not require duct or window connections for access to outside air, it may be located at any location in the room where the best air conditioning coverage can be obtained.

As a water conservation measure each cooling unit has an individual automatic regulator valve which permits a flow of water only when the unit is in operation. These valves are located in the lower lefthand corner of the units as shown in Figure 3.

Air circulation in this air conditioner is achieved by using a 1/4 HP Fan Motor rated at 1725 R.P.M. used in conjunction with two (2) squirrel cage fans, this combination being capable of circulating air in the room at the rate of 925 C. F. M.

Movement of recirculated air is directed by means of six (6) square adjustable air grilles located on the top of the cabinet as shown in Figure 1, and are designed to provide control of the conditioned air in various directions for the best distribution in the room.

The air grilles may be repositioned by grasping the center knob, raising, rotating in either direction, and reseating the grilles in position on the channel supports in the top of the cabinet. This feature makes it possible to direct the conditioned air around the room in various directions so that regardless of the position of the occupants in the room or the shape of the room, the best distribution can be obtained and objectionable drafts avoided. When the air grilles have been positioned so that the conditioned air is directed as desired, it will not be necessary to reposition them each time the air conditioner is operated. Avoid placing any object on top of the cabinet so that the free passage of air is restricted at the conditioned outlets.

Air filtering is accomplished with the use of two (2) oversized air filters 12" x 19" x 5/8" which are made of expanded paper, which are treated

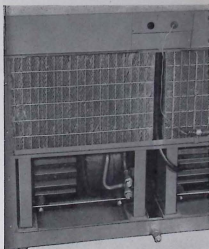


Figure 4 — Rear View of Air Conditioner

to effectively remove matter, such as pollen, dust, dirt, soot and other solid impurities from air passing through them. They are readily accessible, as can be seen in Figure 4 and are easy and economical to replace.

The length of time a filter can be used will depend upon the amount of dust and dirt entering the room from the outside. This time is greatly affected by neighborhood conditions such as industrial and other commercial activities.

Clogged or dirty air filters not only cannot perform the function for which they are intended, but also impairs the flow of air through the air conditioner. Filters that offer minimum restriction to the passage of air are as important as the proper function of the duplex refrigeration system in the air conditioner.

Inspect the air filter at each side location of the air conditioner by sliding it out of its mounting channel. By looking at each filter and noting whether it is saturated with solid matter, you can tell whether or not one or both should be replaced. Never operate the air conditioner with the filters removed.

To install new air filters position and guide them into their mounting channels so that they are pushed in as far as they will go to completely cover the air intake ports.

The Philco Water-Cooled Air Conditioner is designed and built to give many years of good service. However, to insure against possible future troubles, after the air conditioner has been installed and placed in operation, it should be inspected periodically. These inspections should include checking the air filter, oiling the fan motor and fan shaft bearings, checking the fan drive belt and cleaning the bottom pan to insure proper condensate disposal.

The twin hermetically sealed refrigerating system requires no attention other than seasonal cleaning to remove possible accumulation of dust, dirt or other foreign material on the external surfaces. The sealed compressor motors operate in oil, they require no other lubrication.

Fan Motor and Bearing Lubrication. The dual air circulating fans are belt driven by a single fraction horsepower motor. The fan shaft and

motor bearings should be oiled at the beginning of each cooling season. If the air conditioner is operated throughout the year, the shaft and motor bearing should be oiled every six months. Use a good grade of high lubricating oil, no heavier than SAE 10, do not overlubricate.

To reach the four oiling points in the air conditioner, remove the Power Switch nut, the Temperature Selector knob and the two switch plate screws, and proceed to remove the cabinet as follows:

1. Remove the front panel by pulling outward on the panel at the top, then lift it away from the air conditioner.
2. Remove the enclosure mounting screws from the front and rear, and lift the enclosure from the air conditioner.
3. Place a few drops of oil in each of the four shaft bearing oilers, as shown in the upper portion of Figure 3.
4. Reinstall the cabinet enclosure and replace the parts removed.

Model	Cabinet Finish	Operating Voltage And Frequency	Power and Water Connections	Replacement Unit Part No.
200-GCW - 10	Tan	Volts Cycles	Permanent water and electrical connections to be made in field	4010-16
		230 60		

Condenser type	Water cooled
Cabinet type	Console
Compressor type (2 reg.), Hermetic	reciprocating
Water connections	
Cylinders	3 (each)
Compressor motor rating, at 1725	
R. P. M.	1 H. P. (each)
Refrigerant	Freon F-22
Watts input, compressor motor	2320 watts (both)
Watts input, fan motor (split-phase type)	275 watts
Fan motor rating, at 1725 R. P. M.	H.P.
Fan type, evaporator (2 reg.)	Squirrel Cage
Maximum outside air intake	Depends upon installation
Maximum room air exhaust	Depends upon installation

Maximum room air recirculation	925 C.F.M.
Dehumidification	3.2 qts. per hr.
Filter expanded paper (2 reg.)	12" x 19" x 5/8"
*Water consumption, total	190 gals. per hr.
Inlet (2 reg.)	1/2" S. A. E. flare nut
Outlet (2 reg.)	1/2" S. A. E. flare nut
Condensate drain (1 reg.)	3/4" female pipe thread
Net Weight air conditioner only	460 lbs.
Net Weight, replacement unit (each)	135 lbs.
Shipping Weight, air conditioner complete	510 lbs.
Shipping Weight, replacement unit (each)	155 lbs.
* Based on the following conditions:	
Inside air	80° F dry bulb 50% relative humidity
Inlet water	75° F
Outlet water	95° F

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New Product News REFRIGERATION

AUGUST, 1951

FREEZER — MODEL EH-121

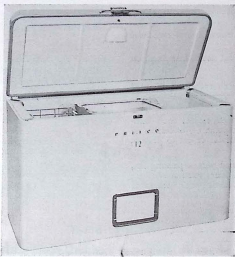


FIGURE 1

The Philco Freezer, Model EH-121 is designed to fulfill every requirement for the proper freezing and storage of all types of frozen food. It equips the home for modern living, giving the housewife a spacious frozen food pantry where an ample supply and variety of frozen foods for many meals can be safely stored at proper sub-zero temperatures.

This model has a total storage space of 12.5 cubic feet which is divided into three (3) frozen food storage compartments with a refrigerated wall in each section, which gives uniform temperature regulation throughout the freezer. The food compartment tank is a one piece porcelainized metal liner which has a high grade porcelain finish, it is easily cleaned, free of odor and cannot be readily stained by meat juices or vegetable dyes.

The evaporator is constructed of sheet aluminum, giving a very good cold transfer over its entire surface.

All compartments are readily accessible to the housewife for the insertion or removal of storage items. The center compartment is designed to quick freeze fresh foods when the temperature control is set on the freeze position.

The accessories of this freezer are comprised of a storage basket to make food packages more accessible. A plastic tray which serves as a shelf for temporary placement of basket, or as a tray for food being taken to or from the freezer. A locking bar for a padlock to prevent tampering with the content of the freezer. An easy lift lid and has adjustable counterbalanced hinges which makes the lid easy to lift, holds it open

and closes it gently. Built into the lid is an automatic light which illuminates all portions of the freezer. The attractive appearance and durable dulux exterior of the cabinet makes the freezer desirable for location in the kitchen where it is easily accessible.

UNPACKING AND INSTALLATION

The importance of care and proper handling in unpacking a piece of equipment cannot be stressed too much. An ounce of precaution in removing the freezer from its packing will save a large amount of time in adjusting minor damages incurred by improper or hasty unpacking. To properly remove the EH-121 Freezer from its packing the following procedure should be used:

1. Tilt crate forward and remove two rear screws from crate base.
2. Tilt crate backward and remove two front screws from base.
3. Dismantle crate being careful not to mar finish on cabinet.
4. Carefully shift freezer until adjustable feet are clear of counterbored holes in crate base.
5. Slide freezer off crate base.
6. Remove steel banding which secures food compartment door, cut banding at point on underside of cabinet, hold banding on both sides of cut to prevent the banding from whipping.

Each Philco product is supplied with a packing list, against which you can check the items you remove from the freezer to inspect them for breakage or damage of any kind.

After the housewife has chosen a convenient location for her freezer, check to make sure there is sufficient clearance to lift the food compartment lid, and is located in a spot which will permit the unit to receive adequate ventilation. With the freezer in position, check the level. Leveling is accomplished by adjusting the leveling feet of which there are four, which can be screwed in or out to compensate for an uneven floor.

With the freezer in a permanent position and level, the lid seal should be checked. A simple test of correct lid seal can be made with a glossy piece of paper, two inches by six inches, insert it between the gasket and the cabinet, with the lid closed. If it can be removed easily, the lid seal is not positive and will result in the loss of operating efficiency. This check should be made at several places around the cabinet.

FREEZER CONTROLS

In the construction of the Philco Freezer there has been no provision made for an on-off switch. This switch has been left out of the freezer so that it cannot be turned off accidentally. To put the freezer into operation, plug the power cord into the A.C. outlet.

The Temperature Control is a single automatic control used for both temperature and alarm; only one

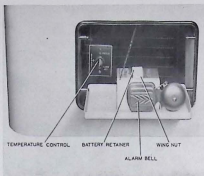


FIGURE 2

Feeler Tube from the control to the evaporator is used. This control is concealed in the unit compartment, as shown in Figure 2. To gain access to the control, which is located in the center front portion of the freezer, raise the panel slightly and tilt out from the top. The location of the control inside the compartment tends to prevent accidental change in the setting.

The temperature may be set for two (2) ranges of cabinet temperatures, either STORAGE or FREEZE and may also be used to turn off the automatic warning bell.

STORAGE

This position which is the normal temperature control setting, produces approved sub-zero temperatures suitable for frozen food.

FREEZE

This position is used when freezing foods, it causes the unit to run continuously, thus creating temperatures as low as 15° F. below zero, within the cabinet. These low temperatures result in shorter freezing time.

ALARM OFF

This position is used to turn off the warning bell. With the switch in the off position, the cabinet temperature obtained is the same as in the storage position. Never leave the control switch in the ALARM OFF position after the cabinet is cold, since the warning bell cannot ring with the switch in this position.

INITIAL RUNNING PERIOD

During the initial running period, the alarm switch should be turned off, or the bell will ring until the freezer has cooled to approximately 12°F. After the freezer has cooled down sufficiently, to prevent the bell from ringing, the alarm switch should be set to the storage position. It must be in this position to give warning of any future temperature rise within the cabinet.

AUTOMATIC WARNING BELL

The battery operated warning bell gives warning of a rise in temperature within the cabinet that would be detrimental to the frozen foods. The bell will ring when such a rise in temperature occurs, if the temperature control is in either the FREEZE or STORAGE position. Once the bell is set in operation, it will sound continuously for 48 hours unless it is shut off by setting the control to the ALARM OFF position. This setting will stop the ringing of the bell, but will not remove the cause of the warning. Some of the conditions which will cause the bell to ring are:

1. Blown house fuse.
2. Accidental removal of the power cord plug from the electric outlet.
3. Exceptionally large quantities of warm food placed in the freezer at one time.
4. Temporary failure of the electric power source.

Any of these four conditions can easily be corrected. After this is done, allow the freezer to operate until it has cooled to a safe temperature and reset the control to the STORAGE or FREEZE position, as the housewife may desire.

Since the warning bell is constantly standing guard over a large investment in frozen food, it is advisable that the owner of a freezer be shown how to test the operation of the warning bell system. This can be easily accomplished by leaving the temperature control knob set to the STORAGE position during the warm-up for total defrosting. When the bell sounds, reset the control to ALARM OFF. If the bell fails to ring, renew the battery and test again (battery Philco part number P-4F4R). It is advisable to renew the battery each year.

CARE AND CLEANING

The freezer should be defrosted when the accumulation of frost around the interior interferes with the storing of foods, or with the operation of the freezer. No more than one-half inch of frost should be allowed to accumulate over a good portion of the evaporator plates.

The normal defrosting procedure consists of removing the frost by scraping with a wooden paddle or similar instrument. Do not use a knife or other sharp-edged instrument which will scratch or cut the interior surfaces.

When frost is glazed and hard, remove the frozen food from the freezer, place in cardboard cartons, and cover completely with newspaper or a blanket to prevent thawing. Remove the power cord from the A.C. outlet. Spread a turkish towel over the bottom of each compartment. Place an electric fan in front of the freezer so that the air is deflected into the cabinet by the partially opened lid. (This is the time to test the alarm bell). The warm air will cause the frost (or ice) to loosen sufficiently so that it can be removed from the cabinet walls. The towels serve two purposes, first to

catch the ice and frost that falls to the bottom of the compartment and can be removed one at a time, and second, to soak up any water from the bottom of the freezer. If a fan is not available, pans containing hot water may be placed in the various compartments.

CLEANING THE INTERIOR

The interior of the freezer should be cleaned whenever it is defrosted. The interior surfaces are constructed of porcelain-covered steel, and can be easily cleaned with a solution of warm water and baking soda (approximately one tablespoon of soda to one quart of water). Rinse with clear water and dry thoroughly before putting the freezer back in operation. Do not use soap on the interior, as its use may result in unpleasant odors in the food compartment. The interior accessories such as the baskets, basket stand, and utility tray should also be cleaned in the same manner.

CLEANING THE EXTERIOR

The exterior finish may be washed with lukewarm water and mild soap, then rinsed and dried. Philco Refrigerator Polish, obtainable from your Philco Dealer, Part Number 8020-2, is recommended to clean, polish, and protect the exterior finish in one simple operation. Never use abrasives, such as scouring powder, on the exterior of your freezer.

CLEANING THE CONDENSER

The only other part that must be cleaned periodically, if the full freezing capacity and efficiency of the freezer is to be maintained, is the condenser. This is located a few inches behind the small hinged panel on the front of the cabinet. The condenser can best be cleaned by using the suction end of a vacuum-cleaner hose with a small brush attachment. No maintenance of any kind is required on the fan motor.

SERVICE ITEM

Alternate Temperature Control

Due to a shortage of standard type temperature control it was necessary to use an alternate control. This is a temporary measure which will affect approximately 6000 Freezers. This control differs from the standard type in that it is composed of two parts, a three position toggle type switch which is separately mounted. Use of this control results in the following changes:

1. A stamped aluminum escutcheon plate was placed over the standard escutcheon plate. See Figure 3.
2. A special chrome nut was used for mounting the toggle switch.
3. A switch mounting plate was used, because the hole in the control mounting bracket is too large to accommodate the toggle switch.
4. A new bell-wiring harness and a new switch lead wire used to connect the switch. See Figure 4.

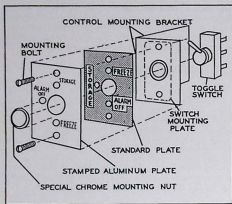


FIGURE 3

If the alternate control must be replaced, use the standard temperature control, Part Number 5530-8. To remove the alternate control switch, proceed as follows:

1. Remove and discard the special chrome nut.
2. Remove and discard the bell-wiring harness. See Figure 4.
3. Remove and discard the stamped aluminum escutcheon plate. See Figure 3.
4. Remove the toggle switch.
5. Remove all leads from the toggle switch. See Figure 4.
6. Remove the switch mounting plate. See Figure 3.
7. Replace the standard escutcheon plate.

The alternate temperature control is mounted at the rear of the motor-compressor, on a bracket held in place by one of the compressor mounting bolts, to remove the alternate control, proceed as follows:

1. Remove the control mounting bracket.
2. Remove the alarm lead from the control (this lead is part of the bell-wiring harness). See Figure 4.
3. Remove the switch lead from the control.
4. Remove and discard the lead between the control and the terminal block.
5. Remove the control.

The procedure for installing the standard temperature control is given in PR-1922-B. When replacing the alternate temperature control with the standard type, the following additional steps are necessary:

1. Use the switch lead, shown in Figure 4, to connect the standard control to the terminal strip.

2. Install wiring harness, Part Number 6258-4, in place of the bell-wiring harness shown in Figure 4.

NOTE: Wiring harness, Part Number 6258-4 must be ordered along with the standard control if the standard control is to replace an alternate control.

SPECIFICATIONS

Total Storage volume	12.5 Cu. Ft.
Number of compartments	3
Over-all dimensions	36" high, 57" wide, 29" deep
Over-all dimensions with lid and strike removed	33" high
Crated shipping weight	417 lbs.
Net weight	345 lbs.
Replacement unit	(115 volts, 50/60 cycles, a.c.) 5250-270

Estimated replacement unit crated shipping weight,	127 lbs.
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With the installation of the freezer completed, the owner should be reminded that a study of the User's Instruction will be very helpful to them in operating their Philco Freezer at maximum efficiency.

Assist the owner in filling out the Freezer Owner's Registry card. The quicker the registry card is mailed, the quicker the freezer warranty is in effect.

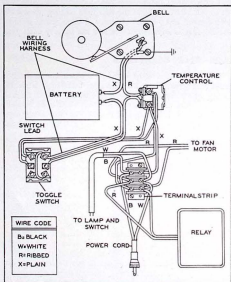


FIGURE 4

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SERVICE

New Product News REFRIGERATION

SEPTEMBER, 1951

REFRIGERATOR MODELS F-916 AND F-1116

Philco has introduced two new "F" line refrigerators to meet the mid-season sales requirements as dictated by the homemaker.

The Model F-916 has been designed to fulfill the requirements of a moderate size family. This refrigerator has a storage capacity of 9 cubic feet for the preservation of perishable foods, with 1.2 cu. ft. of space available for the storage of frozen food packages and frozen meats. There is additional space above the evaporator to quick freeze 42 ice cubes at one time, or store small packages of frozen foods.

Temperature Control is achieved by turning the Temperature Control from the OFF position to any one of the five numbered positions, to start the refrigerator. The position chosen will determine the temperature that will be automatically maintained in the refrigerator. Position 1 is the warmest, and position 5 is the coldest. Use the Temperature Control setting that provides the desired degree of cold in the cabinet. The suggestions below may help in choosing the right setting.

Use position 1 when the owner is away from home for a time (as on vacation). Do not leave frozen food in the freezer during this period.

In moderately warm weather, position 2 or 3 will ordinarily be used. The use of position 4 or even 5, may be required to maintain the proper temperature within the cabinet under the conditions listed below:

When the weather is extremely hot and humid.

When a very large quantity of food is to be refrigerated.

When the refrigerator door is opened frequently.

When any other conditions impose a heavy load on the refrigerator.

During cold weather, a lower-numbered position will ordinarily be used than during warm weather.

Position 5 may be used at any time to quick-freeze ice cubes and desserts. Be sure to reset the temperature control to a lower number when the freezing is complete, or the food on the shelves may become frosted.

The accessories incorporated into this refrigerator for the convenience of the housewife are; a Quick Chiller

which is located directly under the evaporator used for short time storage of meats, and for quick chilling of foods and beverages. Two-half shelves are provided for the storage of small items that require normal refrigeration, these shelves are removable so that the refrigerator may be used for the storage of very large items.

There are two full-width shelves for the general storage of foods, these shelves can be adjusted to numerous positions on their support ladders to satisfy the housewife in her need for various shelf arrangements.

One full-width split glass shelf which is also utilized as a crisper top.

There are two spacious crisper drawers for the storage of fruits and vegetables under high humidity storage conditions.

A full-length door which provides increased refrigerator space without taking up additional room in the kitchen.

Refrigerator Model F-1116 is similar to the Model F-916 in design and accessories features with additional Freezer and Food storage space. It is this year's improved Model replacing the very popular E-1104. It has a total storage volume of 10.7 cubic feet, a frozen food storage volume of 2.1 cu. ft. with a shelf area of 18.5 square feet, and an ice capacity of 42 cubes.

CARE AND CLEANING OF THE REFRIGERATOR

To keep the Philco Refrigerator looking as bright and spotless as the day it was installed, it should be cleaned regularly. To thoroughly clean the refrigerator all food, shelves and drawers should be removed.

To remove the special half-shelf, raise the front of the shelf sufficiently to clear the front support, then unhook it from the rear support, remove the shelf by sliding forward from the remaining side supports.

To remove the full-width shelf, raise the rear portion of the support hooks and slide it forward from the side ladder supports.

To remove the shelf covering the crisper, release the right and left hand rear latches by pulling them upward,



Figure 1—Removing the shelf covering the crisper.

then slide the shelf forward from its remaining side supports.

With all shelves and food removed, wash the interior walls and floor of the cabinet with a solution of warm water and baking soda (approximately one tablespoon of soda to one quart of water). Wipe the interior with a clean dry cloth before replacing the shelves.

Wash the ice cube trays in lukewarm or cold water only, (with baking soda if necessary), the use of hot water may damage the protective coating on the trays.

To clean the crisper, use warm water. Do not use hot water as it may crack the glass. Rinse with clean water and dry with a clean cloth.

The shelves should be washed with a solution of water and baking soda. Rinse and dry the shelves thoroughly before replacing them in the cabinet.

Wash the door gasket when you are cleaning the interior of the refrigerator.

The trays and drawers should also be washed with a solution of warm water and baking soda as often as necessary to keep them clean and fresh. When clean, rinse and dry thoroughly.

TO DEFOST

RAPID METHOD — Turn the Temperature Control to the OFF position. Remove all food from the Freezer and Quick Chiller, and wrap it in several thicknesses of paper. Remove the ice-cube trays. Fill a large pan with hot water and place it in the Freezer. Leave the door of the refrigerator open. The Quick Chiller tray will catch the melting ice and frost. When all frost has melted, remove the pan of water; then empty, clean and replace the Quick Chiller tray. Turn the Temperature Control to its original setting, and return the food to the Quick Chiller and Freezer; then empty, clean and replace the ice-cube trays.

Never use a sharp or pointed instrument to remove frost from the Freezer!

SLOW METHOD — Do not use this method if there is frozen food in the Freezer; use the rapid method explained above. To defrost slowly (or overnight) turn

the temperature control to OFF, remove all food from the Quick Chiller tray, and place on one of the shelves. Allow the refrigerator to remain idle with the door closed until all frost has melted, then turn the Temperature Control to its original setting. Empty, clean and replace the Quick Chiller, and place the food back in the tray.

UNIT TESTING

The following operational checks may be made on the Philco Super Power System:

Visual Check — to determine the extent of frosting on the evaporator and on the return line.

Temperature Check — to determine whether the refrigerator is maintaining temperatures within the established limits.

Wattage Check — to determine the maximum and minimum power consumption. These three checks are described below:

Visual Check

Uniform frost distribution over the entire evaporator indicates that the Super Power System is operating normally, and that the required amount of refrigerant is circulating. In all 1951 models, the "frost-back" may be observed by removing the outer rear cover plate and the insulation that covers the return line. The frost-back should extend from the evaporator to within ± 4 inches of the point where the continuous soldering of the two lines ends. Excessive frost-back results from the circulation of too much refrigerant (overcharged unit).

Temperature Check

Check the evaporator temperature with a thermometer, as directed under CHECKING TEMPERATURE CONTROL. If the Super Power System is not absorbing sufficient heat to maintain the evaporator temperatures shown in the CUT-ON AND CUT-OFF TEMPERATURE LIMITS chart, the trouble may be caused by one or more of the following conditions:

1. Improper connection between the feeler tube and evaporator.
2. Temperature Control not functioning properly.
3. Line voltage too low.
4. Trouble within Super Power System.

Check each of the first three items. Clean the condenser and defrost the refrigerator, if necessary; replace the Temperature Control if not within the operating limits. Check the line voltage. If the surrounding temperature is too high, consider the possibility of relocating the refrigerator. After the above items have been checked, and the required corrections made, operate the refrigerator through at least two cycles, and take new temperature readings.

If, after the above corrections are made and after a prolonged cycling run, the evaporator temperature for the model under test does not fall within the limits shown in the chart, the Super Power System should be replaced.

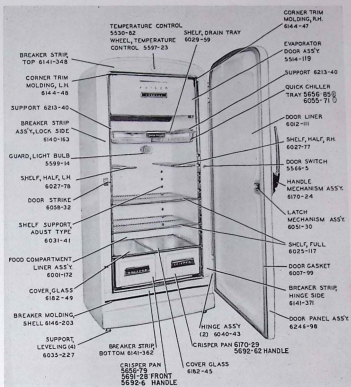


Figure 2—Model F-916

Wattage Check

With the Temperature Control set at Position 1, connect a volt-wattmeter to the power outlet. Connect the refrigerator power-cord plug to the receptacle on the volt-wattmeter, and observe the running wattage. The running wattage will vary with room temperature, the line voltage, and the portion of the running cycle in which the observation is made.

Wattage readings for a given model should be within the minimum and maximum values shown in the chart. A reading greater than the maximum value shown always indicates trouble within the unit. A slight variation from the chart values should not be sufficient cause for removing the unit.

After the refrigerator has been idle long enough to become warm, the running wattage will be considerably higher than normal, but should be fairly stable after the first cycle. The starting wattage is always higher than normal, but this condition exists only momentarily.

CUT-ON AND CUT-OFF TEMPERATURE LIMITS

Model	Cut-on Temperature	Cut-off Temperature
F-916	29-19	10-20
F-1116	29-19	10-20

WATTAGE CHART

MODEL	F-916	F-1116
Minimum Wattage	115	125
Maximum Wattage	215	260

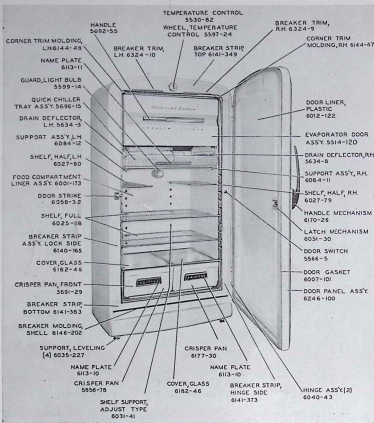


Figure 3—Model F-1116

SERVICE NOTES

Changes of Part Number

The information for the specifications and major parts identification of these models, PR-1921-A-2 for the F-916 and PR-1921-A-3 for the F-1116 was compiled from the laboratory sample refrigerators when these models were put into production a few of the part numbers were changed. We suggest that the following corrections be made to your service manual.

On the Model F-916, the Evaporator Door Assembly part number should be changed from 5514-117 to 5514-119. The Quick-Chiller tray Assembly part number from

5696-26 to component part numbers 5656-85, Utility Pan, quantity two, and 6055-71, Quick-Chiller Escutcheon, one. Crisper Pan Assembly (right) part number should be changed from part number 6177-36 to component part numbers 6170-29 crisper pan, and 5692-62 handles. Crisper Pan Assembly (left) part number 5690-64 should be changed to component part numbers, 5656-79 crisper pan, 5691-28 pan front and 5692-6 handle. Drain Tray Shelf part number 6029-50 has been added.

On Refrigerator Model F-1116 Evaporator Door Assembly part number 5516-118 has been changed to 5514-120.

PHILCO



SERVICE

New Product News

October, 1951

REFRIGERATION

REFRIGERATOR MODEL F-1315



FIGURE 1 — Model F-1315

The Philco refrigerator Model F-1315 is designed to meet every requirement for the preservation of all types of foods and the fast freezing of ice cubes and frozen desserts at the lowest possible operating costs. This refrigerator, the result of exhaustive research and years of experience by Philco's Engineering Staff, represents the last word in beauty and utility; its advanced design is far beyond the normal standards of quality and construction.

The refrigerator cabinet is of all steel construction, one continuous piece of drawn and formed steel. Every part is strong and permanently sealed against heat and moisture. The door is simply constructed of one piece of steel, reinforced with welded gussets, which prevents sag or warp. The cabinet and door are insulated with mineral fiber, which is one of the finest types of insulation, sealed into the airtight walls and door. This material will not deteriorate and is moisture and vermin proof. The food compartment liner is protected with an acid resistant porcelain over a heavy enamel-steel base. This porcelain has a beautiful clean finish and is not subject to stains or discoloration. The external portion of the cabinet is finished with DULUX enamel, which remains brilliantly and permanently white; is resistant to checking and cracking. The steel beneath this finish is Bonderized, which makes possible the beautiful and durable surface as developed on this refrigerator. These cabinet construction features assure greater efficiency of operation and life long dependability.

The Model F-1315 has a total storage capacity of 13.0 cubic feet, a frozen food storage volume of 2.0 cubic feet, and a shelf area of 21.3 square feet. A few of the more desirable features incorporated into this refrigerator are: A six point temperature control to accurately set and maintain the desired temperature within the cabinet; a butter storage compartment built into the liner of the food compartment door, convenient for the storage of butter for immediate table use; a defrost indicator which shows the housewife when to de-



FIGURE 2—Defrost Indicator

frost her refrigerator so that it will be operated at its most efficient level; a deflector damper which allows the freezer locker to operate at extra cold temperatures without freezing foods stored in the refrigerator compartment; and completely adjustable shelves which are removable and adjustable to permit a wide variety of shelf arrangements, for the storage of foods of all sizes and shapes.

A quick chiller tray is provided directly beneath the freezer compartment for quick chilling of foods and beverages and also a covered meat storage compartment for the short time storage of meats. The evaporator compartment is isolated from the food compartment of the refrigerator by the evaporator door assembly to maintain a constant freezer compartment temperature during periods when the refrigerator door is opened. Dual crispers are included in the accessories of this refrigerator for the storage of fruits and vegetables. These crispers are sealed off from the dry cold portion of the cabinet by a large spacious glass shelf of sturdy construction. The interior of the cabinet is illuminated by a lamp built into the rear center portion of the food compartment; this lamp is activated by a light switch installed in the right hand breaker strip of the cabinet.

The proper installation of an appliance will reduce considerable service call-backs from housewives, whose food packed refrigerators are annoying and costly to the homemaker, this places a burden of responsibility on you to see that service is rendered immediately at a cost of time and energy to you.

To properly remove the model F-1315 refrigera-



FIGURE 3—Deflector Damper

tor from its packing, the following procedure should be followed:

1. Tilt crated refrigerator forward and remove the two rear anchor screws from crate base.
2. Tilt crate backward and remove the two front anchor screws from base.
3. Remove front and rear panels from crate.
4. Remove all nails from base of side panels.
5. Slide side and top panels off crate base being careful not to mar refrigerator cabinet finish.
6. Carefully shift refrigerator until adjustable feet are clear of counter-bored holes in crate base.
7. Slide refrigerator off crate base.
8. Remove steel banding which secures food compartment door, cut banding at the rear of the cabinet, hold banding on both sides of cut to prevent the banding from whipping.

A packing list is enclosed with each Philco product shipped from our factories. This list should be used to check shortages or shipping damage to the refrigerator and its accessories. An immediate report of any discrepancy will mean faster service to correct any shortage.

After the housewife has selected a convenient location in her kitchen or pantry for the placement of her new refrigerator, you should check this location for adequate ventilation and that the source of power is sufficient to properly operate the refrigerator.

With the refrigerator in position, it should be properly levelled. This is accomplished by ad-

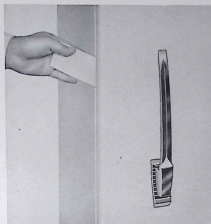


FIGURE 4 — Gasket Seal Check

justing the four screw type leveling feet. An efficient check for proper level can be made by opening the refrigerator door half way; if properly leveled the door will not swing open or closed.

To complete the installation, it is necessary to check the door seal and strike adjustment. A check to determine whether the gasket is functioning to prevent heat leakage into the cabinet interior may be made by either of the following two tests:

1. Cut a strip of unglazed paper approximately two inches wide, insert the paper strip between the seal gasket and the cabinet front. If the paper can be removed easily without drag when the door is closed and completely latched, the seal is not making positive contact with the cabinet. This check should be made at several places around the door.

2. Remove the twenty-five watt bulb from the socket in the food liner and temporarily replace with a bulb rated at one-hundred watts. Unscrew the switch retaining nut to release the light switch, so that it can be pushed back into the insulation behind the breaker strip which will permit the bulb to remain lighted when the cabinet door is closed. A thorough visual check can now be made around the complete door for gasket seal. If no light is visible, gasket-seal may be considered satisfactory.

To tighten the door seal gasket on the refrigerator, correction may be made by adjusting the position of the door strike assembly. The strike assembly may be adjusted by the following procedure:

1. Loosen the screw in the outer end of the strike. With the screw loose all adjustments may be made. See figure 5.

2. The strike will be moved outward by turning counter-clockwise, turning clockwise will move the strike in.

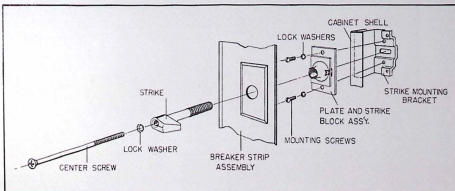


FIGURE 5 — Door Strike

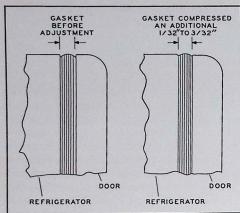


FIGURE 6—Gasket Compression Check

3. Adjustment of the strike laterally (nearer or farther away from the latch) is made while the end screw is loosened. The proper clearance between the latch roller and the nose of the strike is $1/16''$.

4. When the proper seal has been made the end screw should be firmly tightened. The strike may be removed completely by taking out the end screw, then screwing the strike completely out. There are no adjustments to be made in the latch assembly; all adjustments are made in the strike assembly.

The correct amount of gasket compression is shown in figure 6. Too much compression causes the gasket to deteriorate quickly. If seal adjustment is necessary on the hinge side check as follows:

Standing by the strike, close the cabinet door slowly and watch the gasket along the hinge side of the door. When the door is about 3" open, the gasket should just touch the cabinet on the hinge side. This condition can be determined by noting when light no longer appears between the cabinet

and the door seal gasket. With the door near the completely closed position, and light can be still seen between the cabinet and gasket, the hinges should be set back to take up the space between the gasket and cabinet. If the gasket touches the cabinet when the door is opened (6" or more), the gasket compression will be too great when the door is completely closed.

If either of these two conditions exist, the door can be adjusted as follows:

Take the hinge escutcheon covers off and remove the hinge anchor screws (the center hinge screw). Loosen the hinge mounting screws so that the door can be shifted in or out. With the strike out of adjustment, take the measurements as explained previously. If necessary, reposition the hinge anchor screws in the alternate hinge plate holes after proper door adjustment has been made. This can be done by using the lower anchor screw hole in each hinge as a guide, drill new holes "into the cabinet wall and tapping plate A.136" diameter (No. 29) steel twist drill should be used. Insert and firmly tighten the self-threading anchor screws, recheck the hinge mounting screws for a firm fit, replace the hinge escutcheons.

NOTE: Before installing the anchor and hinge mounting screws, press a quantity of permagum into the screw holes to give a good cabinet seal.

SPECIFICATIONS

Total storage volume	13.0 cu. ft.
Frozen storage volume	2.0 cu. ft.
Shelf area	21.3 sq. ft.
Ice capacity	4 trays, 56 cubes, 8 lbs.
Over-all dimensions— height, 63 $\frac{1}{2}$ "; width, 33"; depth, 28 $\frac{1}{2}$ "	
Crated shipping weight	415 lbs.
Net weight	360 lbs.
Relay	5192-31
Circuit breaker	5198-10
Replacement unit (115 volts, 60 cycles, a.c.)	5250-283
Estimated crated replacement unit weight	147 lbs.

PHILCO



SERVICE

New Product News

NOVEMBER, 1951

REFRIGERATION

REFRIGERATOR MODEL F-712

The refrigerator Model F-712 is fast becoming very popular with those people who require a maximum amount of utility and food storage space in a minimum amount of floor space. This modern refrigerator efficiently makes use of the major portion of its space displacement for the storage of refrigerated foods. It is ideally suited for installation in trailers, mobile equipment and very small pantries. When a refrigerator is installed in a confined space such as a wall alcove or a cabinet paneled wheel well of a trailer, provisions must be made for adequate ventilation of the condenser and motor compressor assemblies. This can be accomplished by cutting wall louvers for the free passage of air in and around the refrigerator.

In the floor space that an out-moded model four cubic foot refrigerator takes up, the Model F-712 gives the consumer 7.2 cubic foot of cold storage space, utilizing .8 of cubic feet for frozen food storage in a full width horizontal freezer compartment. Rigid full width steel shelves with a permanent bright, corrosion proof finish, provides 12.2 square feet of storage area. The four shelves may be removed for cleaning or service by lifting the right hand rear corner of the shelf approximately 1/2 inch to clear the right hand rear shelf stud. Slide the shelf forward approximately 1/2 inch to clear the right hand front shelf stud. Raise the right hand side of the shelf about 5 inches and slide to the right to clear the left hand shelf retaining loops from the hanger studs. Slide the shelf grid forward to clear the food compartment liner. Its accessories include two ice cube

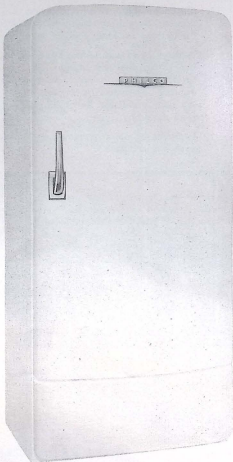


FIGURE 1



FIGURE 1A

trays which have a 4 lb. ice making capacity of 42 cubes. A double utility tray which can be arranged as a covered compartment for meat storage or vegetable crisper. If divided in half on the utility shelf rack (as shown in figure 1A), it is ideally suited as a quick chiller for desserts and beverages. When defrosting the refrigerator, it very efficiently catches all frost accumulations and moisture.

The refrigerator door latch is self-cocking when the refrigerator door is opened, and automatically pulls the door shut on contact, without slamming. The refrigerator is operated by a very efficient super-power system with a new advanced design 1/8 Horse Power pan-cake type compressor, suspended in the lower rear section of the cabinet. It utilizes a minimum amount of cabinet space for quiet trouble free, economical operation, consuming very little power when the sealed unit cycles (100 to 175 watts). Temperature is maintained at a constant level through the use of a six point variable control, which may be set through a wide range of freezer compartment temperatures.

Since the design of the sealed unit of this refrigerator deviates from the normal construction style of the rest of our line, we feel that it would be to our advantage to review the replacement procedure.

REPLACING SUPER-POWER SYSTEM

To remove the sealed unit assembly:

1. Remove all food from the refrigerator (to maintain cold temperatures of frozen food wrap in wax-paper, then wrap in newspaper). Disconnect the power cord plug from the A.C. outlet.

2. Remove the temperature control feeler tube mounting screws and clamp, from the bottom section of the evaporator, at the front right hand side. Push the feeler tube out of the way, taking care not to krimp or kink the tubing.
3. Remove the defrost indicator from the bottom of the evaporator.
4. Remove the rear cover plate.
5. Disconnect the three wiring harness connections, by pulling them apart. These connections are located in the cutout.
6. Remove the insulation to uncover the inner cover plate mounting nails, and spring clip fastener, located as shown in Figure 2. To release the fasteners remove the nail, preferably by pushing it out from the rear.
7. Remove the 8 condenser mounting screws, as shown in Figure 3.

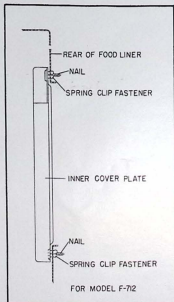


FIGURE 2 — Inner Cover Plate Mounting

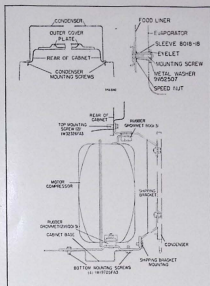


FIGURE 3 — Super Power System Mounting (Model F-712)

8. Remove the four bottom motor compressor mounting screws and the two top mounting screws. Access to the two forward base mounting screws is gained by removing the refrigerator motor compressor door panel, this is done by loosening the philips head screw in the center of the rail and sliding the panel up off its two top retaining clips. The rear bottom mounting screws are accessible from the rear of the cabinet. The top mounting screws are removed through a cut-out in the center of the condenser approximately ten inches above the base line.
9. Remove the evaporator mounting screws, as shown in Figure 3.
10. Move the evaporator back until it rests on the edge of the food liner and cabinet shelf cut-out.

CAUTION

Extreme care should be used in removing the sealed unit assembly, to prevent kinking or break-

ing of the capillary and suction line tubing. The condenser is not fastened to the motor compressor in any way except by its connecting tubing.

11. Remove the wiring harness clamp from the condenser. Disconnect the wiring harness from the motor compressor and leave the harness with the cabinet.
12. Remove the motor compressor from the cabinet by sliding it to the rear, support the evaporator so that it does not collapse the inner connecting tubing.

PRE-INSTALLATION CHECK

1. Remove front panel of sealed unit assembly shipping crate, and inspect all components for possible shipping damage.
2. Make an operational check of replacement sealed unit assemblies with the refrigerator test cord.

To determine if the motor compressor is operating properly, this check should be made for a sufficient period of time to assure you of adequate cooling, functioning of the starting relay and no abnormal load condition to cause the overload switch to cut the motor compressor off.

A few minutes spent to determine if the sealed unit assembly is operating properly before removing it from its shipping crate will save many minutes of a second installation. That last jar when delivering a sealed unit to its destination, can cause just as much trouble as the one it may receive in careless handling in transit. There is no profit in doing the same job twice.

INSTALLING SUPER-POWER SYSTEM

1. The shipping angle which secures the condenser to the motor compressor should not be removed until the motor compressor is in the installed position. With the motor compressor in place, remove the two shipping bracket condenser retaining screws (as shown in Figure 3), raise the condenser and remove the shipping bracket from the motor compressor base.
2. Reverse the procedure for the removal of the sealed unit assembly.
3. Make sure that all seals and tubing plugs are

securely closed with their sealing strips or perma-gum.

4. Connect all wiring in accordance with the electrical system wiring diagram, as shown in Figure 4. When the temperature control feeler tube is re-installed, dress it in such a manner as to give positive contact with the evaporator for a good thermal transfer.

5. Dress the capillary tube, feeler tube and return line in such a manner that they will not cause rattling noises through resonant vibration of the motor compressor when in operation.

6. Replace all insulation making sure there are not voids that may cause condensate formation on the outside of the cabinet.

7. Install the shipping angle on the defective sealed unit assembly (as shown in Figure 3). The same care should be observed in repacking the defective unit as was observed in the handling of the replacement unit. Any damage caused by negligence on your part will absorb part of the normal profit that you are entitled to for a job well done.

Whether we are making an initial installation,

replacing a sealed unit assembly or taking care of a minor complaint, the following points should be checked.

1. Proper latch and strike adjustment.
2. Positive door seal, without abnormal compression of the gasket.
3. Normal cycling of the motor compressor.
4. The current consumption of the refrigerator for normal power consumption.
5. Check the refrigerator for proper level, and adequate ventilation for the condenser and motor assembly.

SPECIFICATIONS

Total storage volume	7.2 cu. ft.
Frozen storage volume	8 cu. ft.
Shelf area	12.2 sq. ft.
Ice capacity	2 trays, 42 cubes, 4 lbs.
Over all dimensions	height, 57-1/8 in.; width, 25 in.; depth, 26-9/16 in.
Crated shipping weight	268 lbs.
Net weight	227 lbs.
Relay	5192-25
Circuit breaker	5198-3
Replacement unit (115 volts, 60 cycles, a.c.)	5250-277
Estimated crated replacement unit weight	95 lbs.

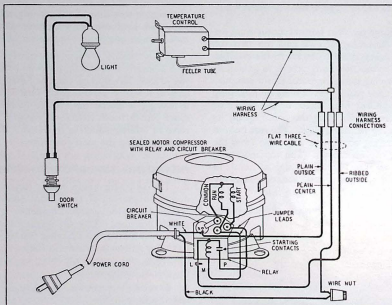


FIGURE 4 — Wiring Diagram (All F-Line Models Except Duplex)

PHILCO



SERVICE

New Product News REFRIGERATION

DECEMBER, 1951

REFRIGERATOR MODEL F-713

An advanced design quality leader among the low priced field refrigerator.

Deluxe equipped for the convenience of the housewife, a bigger, roomier refrigerator with increased storage space. Smartly styled in the modern trend, to enhance the beauty of the modern kitchen or pantry.

The modern full-width evaporator compartment for frozen foods, is fully enclosed all around, and has an insulated door, so that the housewife has access to the refrigerator compartment without disturbing the zero zone temperatures of the frozen food locker. The frozen food storage space provided is sufficient to store 28 pounds of frozen foods, including bulk package ice cream. (See Figure 2)

The full-width quick-chiller tray provides an extra cold zone storage area with a temperature of 7 to 10 degrees colder than the main food compartment. It is very handy for quick-chilling beverages, desserts and the short storage of leftovers. When defrosting the refrigerator, it is ideally suited for use as a defrost receptacle, and slides smoothly in and out on tracks for accessibility.

The rigid sag proof steel shelves have a corrosion proof protective finish for lasting beauty and freedom from stain and deterioration. This refrigerator takes up no more floor space than than the former 4 cubic foot cabinet, but has almost double the food storage capacity (7.2 cubic feet with a shelf area of 13.6 square feet).

A deep glass covered crisper drawer for safe storage of fruits, vegetables and fresh greens in a state of crisp, moist cold.

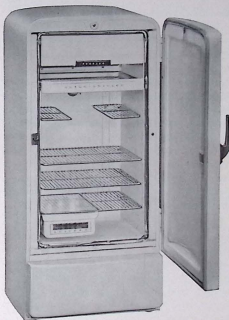


FIGURE 1 — Model F-713

Refrigeration is efficiently sustained through the use of a Philco Super Power sealed unit assembly, which utilizes a plate type condenser, horizontal evaporator, with an internally spring mounted hermetically sealed 1/8 horsepower compressor of the pan-cake type. This compressor is engineered to supply the required power for fast freezing, long life and extra economy, plus a reserve of 24% above the power required to scientifically maintain correct temperatures.

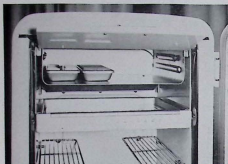


FIGURE 2

Operation of this super power system is controlled through the use of a six point temperature control which can be optionally set to adjust the freezer compartment temperature from approximately 14 degrees below zero through 26 degrees above zero Fahrenheit. The activating agent in the bellows and feeler tube of this control is Propane which reacts very quickly to minute changes in temperature. The mechanical swing of this control is through 315 degrees of rotation, permitting the consumer to make use of innumerable temperature settings.

Illumination is provided in the cabinet by a lamp receptacle built into the center rear portion of the food liner tank. This lamp is turned on and off automatically by a depression switch installed in the right hand cabinet breaker strip (in the left hand model in the left hand cabinet breaker strip) when the refrigerator compartment door is opened or closed.

Leveling supports are provided on the cabinet to compensate for small deviation in floor construction. These four leveling feet can be adjusted in or out by screw type action. Locking nuts are mounted on the inside portion of the adjustable bolt and can be made accessible by removing the motor compressor compartment door panel.

The hardware and cabinet trim pieces are finished with a long lasting chrome finish that is resistant to stain and discoloration. Surface

stains can be removed by merely wiping clean with a damp cloth and drying with a soft felt cloth.

The positive action self-closing door latch is constructed of sturdy material for long trouble free service. When the door is opened the latch mechanism is cocked, so that when the door is closed, and the latch makes contact with the strike assembly, it will trigger and pull the food compartment door in tight for a leak proof positive cabinet seal. The strike mechanism is adjustable to compensate for abnormally rough handling and usage.

ADJUSTING AND REMOVING DOOR STRIKE

1. Remove the strike escutcheon by loosening the latch side breaker molding sufficiently to release the escutcheon.
2. Slide the escutcheon toward the center of the refrigerator to release the retaining clip on the underside of the escutcheon.
3. The three adjusting screws shown in Figure 3 are accessible after the escutcheon is removed.

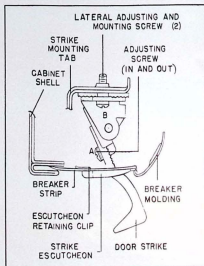


FIGURE 3 — Door Strike

To adjust laterally, loosen the two screws at point B and adjust until the heel of the strike just misses the roller when the door is closed.

To adjust in or out, loosen the screw at point A. An offset screw driver will be necessary to make the in-and-out adjustment.

To remove the entire strike assembly, remove the latch-side breaker strip and two mounting screws, (at point B) in the rear of the strike mechanism.

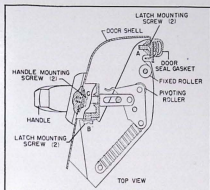


FIGURE 4 — Latch and Handle

REMOVING LATCH MECHANISM

There are no adjustments to be made in the door latch of Model F-713, all adjustments are made in the strike. To remove the latch mechanism, proceed as follows:

1. Remove the food compartment door liner, take out all retaining screws under the door seal gasket.
2. Remove the fiber latch cover.
3. Refer to Figure 4 and remove the two mounting screws in the door flange (at point A) and the two screws that connect the latch mechanism to the side of the handle escutcheon (at point B).
4. Remove the latch mechanism from the door.

To remove the door handle, proceed as follows:

1. Remove the food compartment door liner.
2. Remove the fiber latch cover.

3. Remove the two screws that fasten the latch mechanism to the handle escutcheon (at point B). Refer to Figure 4.
4. Remove the two escutcheon mounting screws (at point C) — one from the top and the other from the bottom.
5. Remove the handle assembly from the front.

After re-installing the strike assembly or the latch and handle mechanism it will be necessary to check the refrigerator for door gasket seal. This may be done by using the paper strip procedure or the light bulb procedure as outlined in previous issues of the "New Product News" and "Shop Practices and Service Techniques".

The importance of good cabinet seal cannot be too highly stressed. A poor seal will cause loss of refrigeration, excessively long operating periods of unit and abnormal sweating of cabinet at points of air leakage around the refrigerator door. When re-installing, door liners, hinges or gaskets, care should be observed in replacing all permagum seals for screw holes and seams where an air tight seal is required in the cabinet.

SEALED UNIT CHECK

In checking the sealed unit assembly the following three tests may be made:

A visual check to determine the extent of frosting of the evaporator and the frost back of the return line. The evaporator should have a very light accumulation of frost on right and left walls and base. The return line when exposed to room atmosphere, for at least two to three cycles of the sealed unit assembly, should show a frost accumulation on the line from the point where it leaves the evaporator around the expansion loop to within three to five inches of the point where the heat exchanger begins.

A temperature check to determine whether the refrigerator is maintaining temperatures within established limits. By freezing a thermometer or thermo-couple in the bottom center portion of the evaporator. For position No. 1 of the temperature control a reading of 21 to 31 degrees Fahrenheit will be shown for the cut-on temperature of

the evaporator and a reading of 8 to 18 degrees will be the cut-off temperature when the sealed unit cycles.

Temperature correction for elevation above sea level, for each additional 1000 feet above sea level, the freezer compartment temperature will be 1 degree Fahrenheit lower (colder) than the value given in this text. For example: at 4000 feet elevation the cut-on limit for Model F-713 will be 27-17 instead of 31-21.

A wattage check to determine the maximum and minimum power consumption of the compressor motor. Connect a wattmeter to the A.C. power outlet. Connect the refrigerator power cord to the receptacle on the wattmeter and observe the running wattage. For refrigerator Model F-713, the normal operating power will be between 100 and 175 watts when the refrigerator is operating with a chilled food load at an ambient temperature of 80 degrees. In the initial cooling cycle or when large quantities of warm foods are placed in the refrigerator the power consumed by the unit will be quite a bit higher until it can draw the cabinet temperature down to normal. At the instant of starting the unit motor, a very high reading of the power being drawn from the line will occur. This reading will only prevail for an instant.

At the time a wattage check is being made on the refrigerator, it is also advisable to take a voltage reading of the A.C. line to determine if the line is supplying a high enough voltage to efficiently operate the sealed unit assembly.

Replacement of the Super Power system is very similar to that of the Model F-712 and is covered step by step in the "New Product News" for the month of November.

SPECIFICATIONS

Total storage volume	7.2 cu. ft.
Frozen storage volume	8 cu. ft.
Shelf area	13.6 sq. ft.
Ice capacity	2 trays, 28 cubes, 4 lbs.
Over-all dimensions .. height, 57 1/8"; width, 25"; depth, 26 9/16"	
Crated Shipping weight	287 lbs.

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Net weight	246 lbs.
Relay	5192-23
Circuit breaker	5198-6
Replacement unit (115 volts, 60 cycles a.c.)	5250-272
Estimated crated replacement unit weight	129 lbs.

GENERAL INFORMATION

Three transformers are available for converting standard 115-volts, 60-cycles refrigerators for operation on other voltages and on 50-cycles. The purpose of each transformer is listed below:

1. Single-Ratio Transformer, Philco Part No. 8675-9, is used to convert a 115-volt, 60-cycle refrigerator for operation on a 115-to-130 volt, 50-cycle power supply. An extra power cord is supplied with the transformer, therefore, no kit number is required.
2. Multi-tap Transformer Kit, Philco Part No. 8040-153, is used to convert a 115-volt, 60 cycle refrigerator for operation on a 210-to-250 volt, 50-cycle power supply. This transformer kit uses the same mounting hardware as the single-ratio transformer, and contains a plug-and-wire assembly, a power cord, and a multi-tap transformer.
3. Dual-Ratio Transformer Kit, Philco Part No. 8040-154, is used to convert a 115-volt, 60-cycle refrigerator for operation on a 105-to-130 volt, 50-cycle power supply, or on a 120-to-150 volt, 60-cycle power supply. This transformer kit uses the same mounting hardware as the single-ratio transformer, and contains a plug-and-wire assembly, a power cord, and a dual-ratio transformer.

The mounting hardware required to install the desired transformer on the F-713 refrigerator is:

1. Mounting Rail — 5301-9
2. Machine screws — 1W59860FA3
3. (2) Lock washer — 1W57224FA3
4. (2) Machine screws (8-32 x 7/16) — 1W10635FA3
5. (2) Lock washer #8 — 1W35046FA3
6. (2) Hex nut #832 — 1W20519FA3
7. (2) Rubber bumper — 6037-52