INSTRUCTIONS

PHILCO
REG. TRADE MARK

Balanced-Unit

RADIO

Models 96 and 96-A
Screen Grid Plus Receivers

Philco Radio Receivers are listed as Approved Electrical Appliances by the Underwriters Laboratories of the National Board of Fire Underwriters.

Philadelphia Storage Battery Company
Ontario and C Streets
Philadelphia, Pa., U. S. A.

Philco Model 96 Screen Grid Receiver is to be used only on an alternating current supply of 50 or 60 cycles, 100 to 135 volts.

Philco Model 96A Screen Grid Receiver is to be used only on an alternating current supply of 25 to 60 cycles, 100 to 135 volts.

If connected to a direct current supply such as is used in some hotels, apartments, stores and houses in large cities, the Receiver will be damaged.

Do not insert the attachment plug in the house socket until all other connections are made and the speaker plug and all tubes are in the sockets.

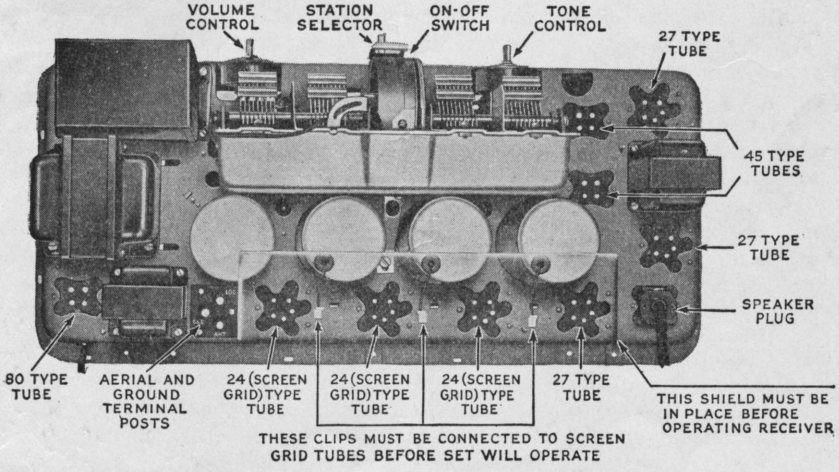

FIG. 1

Models 96 and 96-A

Tubes

Nine tubes are required, as follows:

3 type 24 screen grid tubes, or equivalent
3 type 27 tubes, or equivalent
2 type 45 power amplifier tubes, or equivalent
1 type 80 rectifier tube, or equivalent

Remove the large tube shield from the back of the Receiver by loosening the five screws along the bottom and lifting straight up on the shield.

Place the tubes in the correct sockets as shown in Figure 1.

After inserting the screen grid tubes (type 24), the clips attached to the wires coming from the round shields must be pressed down over the terminal caps on top of the tubes.

Replace the tube shield over the four tubes at the back of the Receiver and tighten the five screws to hold it in place.

Speaker

The Philco Electro-Dynamic Speaker is built to work with the Philco Receiver. It is connected by inserting the Speaker plug in the special socket at the back left-hand corner of the Receiver. This socket is shown in Figure 1.

Never turn on the Receiver unless the Speaker plug is in place in the socket.

Aerial or Antenna

The Receiver is equipped with a terminal post marked "LOC" which, when connected by a short wire to the post marked "ANT," provides a built-in aerial. This aerial connection will be found very satisfactory for the reception of local and in many cases distant broadcasting. If it is desired to use an external aerial, do not use the wire link but connect the aerial wire to the "ANT" terminal post, leaving the "LOC" post disconnected.

An outdoor aerial, consisting of a single copper wire 50 to 100 feet long, usually gives the best results. However, where there is no powerful broadcasting station within 50 miles, a longer aerial may be used and will bring in far-away stations with somewhat greater volume. The lead-in wire is an active part of the aerial and the aerial length should always be measured from the Receiver to the insulator at the far end. The outer end of the aerial should be as high as possible and the entire aerial should be spaced well away from trees and buildings and supported by glass or porcelain insulators.

Good results can also be obtained with an indoor aerial 25 feet or more in length. A shorter aerial usually will not be satisfactory. If the walls are constructed with metal lath the "LOC" post connection, described above, will usually give better results than a short indoor aerial.

When using the "LOC" post connection instead of an external aerial, try the attachment plug in both positions in the wall receptacle. Leave it in the position that gives the stronger and clearer reception of distant or weak stations.

Ground

A suitable ground clamp must be securely attached to a radiator pipe or water pipe and the bare wire end inserted in the "GND" terminal post of the Receiver.

NEVER OPERATE THE RECEIVER WITHOUT A GOOD GROUND CONNECTION.

Use separate insulated wires rather than a two-wire cord for the aerial and ground connections.

Operating the Receiver

After making the aerial and ground connections, placing all tubes in the sockets and inserting the Speaker plug in its special socket, the attachment plug on the cord should be inserted into a convenient wall receptacle. Turn on the Receiver by rotating the on-off switch in a clockwise direction. The pilot lamp should light, indicating that the power is turned on. When the on-off switch is turned off, no power is used and the attachment plug need not be withdrawn.

Wait about a minute after turning on the Receiver for the tubes to become heated, then turn the volume control (right-hand knob) clockwise about one-half the total range of movement. Turn the station selector (center knob) and different stations will be tuned in at various points on the scale.

The figures on the Philco scale represent channel numbers which by the addition of a cipher correspond with the station frequency use in kilocycles as listed in newspapers and other station logs. For example: 85 on the scale represents channel 85 and a frequency of 850 kilocycles.

The call letters of various stations can be marked with a pencil on the Philco scale. The call letters can be removed and the scale cleaned by means of a pencil eraser.

Tune the wanted station accurately to the point where it is clearest and reduce or increase the volume as desired with the volume control. Never reduce the volume of a station by detuning the station selector as this will spoil the tone quality and bring in static noise.

Always regulate the volume by means of the volume control—never by detuning.

The automatic volume control incorporated in this Receiver tends to equalize the volume of all stations at the sound level for which the manual volume control has been set. This prevents the blaring of strong stations during tuning and reduces the fading of distant stations. With the volume control in a given position, the reproduction will not vary greatly in volume, even if the tuning is changed from a weak station to a strong one, or vice versa.

Control of Station Tone

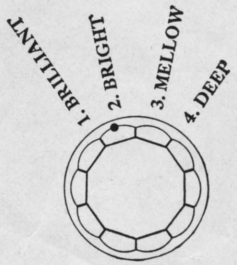

Fig. 2

The left-hand control knob operates the new Philco Tone Control which enables the user to adjust the tone quality of the reception from any broadcasting station to suit his taste.

There are four settings of the tone control which are felt as notches when the knob is turned. These have been named: (1) brilliant, (2) bright, (3) mellow and (4) deep. The approximate position of the dot on the tone control knob for each setting is shown in Figure 2.

With this control it is possible to compensate for differences in the quality of broadcasting from different stations and for differences in the human ear.

Setting 1 emphasizes the high notes and thus makes speech particularly sharp and clear. Setting 4 emphasizes the low notes and gives a deep character to the reproduction. Setting 2 will usually be found the most pleasing for music, although, under conditions where static or interference noises are bothersome, setting 3 (or in extreme cases 4) will be best as it will subdue these background noises.

Standard Warranty

We warrant each new Radio Receiver and Speaker manufactured by us to be free from defects in material and workmanship under normal use and service, our obligation under this warranty being limited to making good at our factory or factory depots any part or parts thereof which shall, within ninety (90) days after delivery of such Receiver to the original purchaser, be returned to us with transportation charges prepaid, and which our examination shall disclose to our satisfaction to have been thus defective; this warranty being expressly in lieu of all other warranties expressed or implied and of all other obligations or liabilities on our part, and we neither assume nor authorize any representative or other person to assume for us any other liability in connection with the sale of our Receivers or Speakers.

This warranty shall not apply to any Receiver or Speaker which shall have been repaired or altered outside of our factory or factory depots in any way so as, in our judgment, to affect its stability or reliability, nor which has been subject to misuse, negligence, or accident, nor which has had the serial number altered, effaced, or removed. Neither shall this warranty apply to any Receiver or Speaker which has been connected otherwise than in accordance with the instructions furnished by us.

PHILADELPHIA STORAGE BATTERY CO.
Ontario and C Streets
Philadelphia, Pa., U. S. A.

PHILCO STATION LOG

Philco Scale Numbers	STATIONS
— 55 —	WGR
	WFI–WLIT
	WWNC–WNAX
	KHQ–WOW
— 60 —	KFSD
	WIP–KFRC
	KGW–WTMJ
	WOS
	KFI–WOI
— 65 —	WSM
	WEAF
	WMAQ
	WPTF–KPO
	CANADA
— 70 —	WLW
	WOR
	WGN–WLIB
	CANADA
	WSB–KMMJ
— 75 —	WJR
	WJZ–KJR
	WBBM–WJBT
	WMC
	KGO–WGY
— 80 —	WBAP–WFAA
	WCCO
	WHAS
	KOA–WRUF
	CANADA
— 85 —	KWKH–WWL
	WABC
	WENR–WLS
	CANADA
	WKAQ
— 90 —	WKY–KHJ
	CANADA
	WWJ
	KOIN–KGU
— 95 —	KMBC–WRC
	CANADA
	WCFL–KOMO
	KDKA
	WBZ–WBZA
—100—	WHO–WOC
	KFKX–KYW
	CANADA
—105—	KNX–KFKB
	WBAL–WTIC
	KTHS–KRLD–WTAM
	WBT
	KFQA–KSL–KMOX
—110—	WPG–WLWL–WRVA
	KSOO
	WJJD
	KVOO–WAPI
—115—	WHAM
	WOWO–WWVA
	KTNT–WCAU
	WDGY–KOB
	WOAI
—120—	
	WDAE–KFKU
	KYA–WNAC
	WACO–KSAT
—125—	KIDO–KFMX
	KOIL
	WCAM–WDOD
	KDYL–WJAS
—130—	WIOD–WMBF
	WADC–KGMB
	KSCJ–WTAQ
—135—	KWK
	WKBH
	KUOA–WHK
—140—	
	KGRS
	KECA
—145—	KTBS
	WJSV–KSTP
	KGA–WLAC–WTNT
	WKBW
	WCKY–WORD
—150—	

Alphabetical List	Scale	LOCATION
KDKA	98	E. Pittsburgh, Pa.
KDYL	129	Salt Lake City, Utah
KECA	143	Los Angeles, Calif.
KFI	64	Los Angeles, Calif.
KFKB	105	Milford, Kans.
KFKU	122	Lawrence, Kans.
KFKX	102	Chicago, Ill.
KFMX	125	Northfield, Minn.
KFQA	109	Kirkwood, Mo.
KFRC	61	San Francisco, Calif.
KFSD	60	San Diego, Calif.
KGA	147	Spokane, Wash.
KGMB	132	Honolulu, T. H.
KGO	79	Oakland, Calif.
KGRS	141	Amarillo, Texas
KGU	94	Honolulu, H. I.
KGW	62	Portland, Ore.
KHJ	90	Los Angeles, Calif.
KHQ	59	Spokane, Wash.
KIDO	125	Boise, Idaho
KJR	76	Seattle, Wash.
KMBC	95	Independence, Mo.
KMMJ	74	Clay Center, Neb.
KMOX	109	St. Louis, Mo.
KNX	105	Hollywood, Calif.
KOA	83	Denver, Colo.
KOB	118	State College, N. M.
KOIL	126	Council Bluffs, Iowa
KOIN	94	Portland, Ore.
KOMO	97	Seattle, Wash.
KPO	68	San Francisco, Calif.
KRLD	107	Dallas, Texas
KSAT	124	Fort Worth, Texas
KSCJ	133	Sioux City, Iowa
KSL	109	Salt Lake City, Utah
KSOO	111	Sioux Falls, S. D.
KSTP	146	Wescott, Minn.
KTBS	145	Shreveport, La.
KTHS	107	Hot Springs, Ark.
KTNT	117	Muscatine, Iowa
KUOA	139	Fayetteville, Ark.
KVOO	114	Tulsa, Okla.
KWK	135	St. Louis, Mo.
KWKH	85	Shreveport, La.
KYA	123	San Francisco, Calif.
KYW	102	Chicago, Ill.
WABC	86	New York, N. Y.
WACO	124	Waco, Texas
WADC	132	Tallmadge, Ohio
WAPI	114	Birmingham, Ala.
WBAL	106	Baltimore, Md.
WBAP	80	Fort Worth, Texas
WBBM	77	Chicago, Ill.
WBT	108	Charlotte, N. C.
WBZ	99	E. Springfield, Mass.
WBZA	99	Boston, Mass.
WCAM	128	Camden, N. J.
WCAU	117	Philadelphia, Pa.
WCCO	81	Minneapolis, Minn.
WCFL	97	Chicago, Ill.
WCKY	149	Covington, Ky.

Alphabetical List	Scale	LOCATION
WDAE	122	Tampa, Fla.
WDGY	118	Minneapolis, Minn.
WDOD	128	Chattanooga, Tenn.
WEAF	66	New York, N. Y.
WENR	87	Chicago, Ill.
WFAA	80	Grapevine, Texas
WFI	56	Philadelphia, Pa.
WGN	72	Elgin, Ill.
WGR	55	Amherst, N. Y.
WGY	79	Schenectady, N. Y.
WHAM	115	Rochester, N. Y.
WHAS	82	Jeffersontown, Ky.
WHK	139	Cleveland, Ohio
WHO	100	Des Moines, Iowa
WIOD	130	Miami Beach, Fla.
WIP	61	Philadelphia, Pa.
WJAS	129	Pittsburgh, Pa.
WJBT	77	Chicago, Ill.
WJJD	113	Mooseheart, Ill.
WJR	75	Detroit, Mich.
WJSV	146	Mt. Vernon Hills, Va.
WJZ	76	New York, N. Y.
WKAQ	89	San Juan, Porto Rico
WKBH	138	La Crosse, Wis.
WKBW	148	Amherst, N. Y.
WKY	90	Oklahoma City, Okla.
WLAC	147	Nashville, Tenn.
WLIB	72	Chicago, Ill.
WLIT	56	Philadelphia, Pa.
WLS	87	Crete, Ill.
WLW	70	Mason, Ohio
WLWL	110	New York, N. Y.
WMBF	130	Miami Beach, Fla.
WMC	78	Memphis, Tenn.
WMAQ	67	Chicago, Ill.
WNAC	123	Boston, Mass.
WNAX	57	Yankton, S. D.
WOAI	119	San Antonio, Texas
WOC	100	Davenport, Iowa
WOI	64	Ames, Iowa
WOR	71	Newark, N. J.
WORD	149	Batavia, Ill.
WOS	63	Jefferson City, Mo.
WOW	59	Omaha, Neb.
WOWO	116	Fort Wayne, Ind.
WPG	110	Atlantic City, N. J.
WPTF	68	Raleigh, N. C.
WRC	95	Washington, D. C.
WRUF	83	Gainesville, Fla.
WRVA	110	Richmond, Va.
WSB	74	Atlanta, Ga.
WSM	65	Nashville, Tenn.
WTAM	107	Cleveland, Ohio
WTAQ	133	Twp. Washington, Wis.
WTIC	106	Avon, Conn.
WTMJ	62	Brookfield, Wis.
WTNT	147	Nashville, Tenn.
WWJ	92	Detroit, Mich.
WWL	85	New Orleans, La.
WWNC	57	Asheville, N. C.
WWVA	116	Wheeling, W. Va.

Form 2273

Printed in U. S. A.