

2-7690

PHILCO
TRANSITONE

AUTOMOBILE RADIO

INSTALLATION AND SERVICE BULLETIN

Models 7, 8 and 12

*When In Doubt Call
apple Radio Service
2-6256 - 7-4449-J*

TRANSITONE AUTOMOBILE RADIO CORPORATION

Ontario and C Streets

PHILADELPHIA, PA.

Standard Installation Procedure

Top Construction and Factory Antenna List

Car	Top Construction		Antenna		Lead-in Location
	Wood Slat	Poultry Screen	Wire	Poultry Screen	
*Auburn	V				
Buick	V				
Cadillac	V		V		Front rt. post
Chevrolet	V				
*Chrysler	Imp. 80	All others	Imp. 80	All others	Front rt. post
*Cord					
*DeSoto		V		V	Front rt. post
*Dodge		V		V	Front rt. post
*Duesenberg			Special	Bodies	
Durant		V			
*Essex	Fabric				
Ford A		V			
Ford 1932		V		V	No lead in
*Franklin		V		V	Front rt. post
Graham	V				
*Hudson	Fabric	Club Sdn.			
Hupmobile		V			
Jordan		V			
LaSalle	V		V		Front rt. post
*Lincoln		V	Tops are	Cleared	
Marmon		V		V	Front rt. post
*Nash			V		Front rt. post
Oldsmobile					
Packard		V			
Peerless		V		V	Front left post
*Pierce Arrow		V		V	Front rt. post
*Plymouth		V		V	Front rt. post
Pontiac					
*Reo		V		V	Front rt. post
Rolls Royce					
*Studebaker		V		V	Front rt. post
Stutz					
Willys-Knight					

* These cars can be ordered from the car factory equipped with Phileo Transitone.

By maintaining clearance between the poultry wire and the metal quarters of the body during the construction of the car, the car manufacturers have been able to build in a good car antenna. A few of the car factories install a wire antenna in the roof.

Installing an Antenna in Cars with Slat Top Construction—The headlining should be lowered from front to back so that a copper screen antenna can be installed in the roof.

1. Use a good grade of copper screen. No. 14 or No. 16 mesh, 36-inches wide is satisfactory and can be used in practically all installations.

2. Maintain three inches clearance between the screen and the car body and all metal work in the top. Cut out a section of the screen to get this clearance around the dome light.

3. The wiring in the top to the dome light and switch must be run along the side of the top frame, then along the top edge of the side of a bow to the dome light fixture.

4. An 18-gauge stranded copper, rubber and cotton covered antenna lead-in should be soldered to a front corner of the antenna screen. If the Receiver is to be located on the right side of the car, solder the lead-in to the right front corner of the antenna; if the Receiver is to be located on the left side, the antenna lead-in should be soldered to the left front corner. It is a good plan to solder or bond the whole front edge of the antenna screen.

5. The copper screen must be tacked securely so that it cannot come loose.

6. The headlining and all trim must be carefully replaced.

Tack the screen to the farthest bow in the rear that will give three inches clearance from the rear metal apron. With the edge of the screen lined up with the bottom front edge of the bow, the screen is tacked against the face of the bow, close to the top. It is necessary to tack the screen in this manner, so that the listing strip used to support the headlining can be tacked to the face of the bow.

On bows on which the listing strip is not tacked, it will be quite all right to tack the screen along the bottom of the bow. Tack the screen to each bow from the back to the front of the screen. Do not come closer than three inches to the metal aprons along the sides and the metal frame above the windshield.

The lead-in should be concealed behind the windshield moulding, or if the front corner post is hollow, it can be run down the inside of the post. In a few cases, it may be necessary to bring the lead-in down through the wind hose along the side of the corner post.

After the antenna and lead-in have been installed, test the antenna for grounds. Use a high resistance

volt-meter and a 45-volt battery, testing between the antenna lead-in and the body of the car. Do not hold the test connections to the antenna and the car body with your fingers,—as the leakage across your body will cause a high reading on the meter.

Having made certain that the antenna system is clear of grounds and leaks, proceed with replacing the headlining and trim.

Installing an Antenna in Cars with Poultry Wire Reinforcement—The poultry wire when cleared of grounds may be used as an antenna. This may be done in either of two ways. The top deck may be removed and the netting cleared where the edges ground on the car body. The more practical way is to drop the headlining the entire length of the car and clear from beneath.

A strip three inches wide is cut from the poultry wire reenforcement around the four sides. The poultry screen is then laced securely in place using double strands of number six waxed linen cord. Use short lengths of cord and fasten securely. The poultry wire must be held taut so the top will not sag. Care must be taken to keep the sharp ends of the screen bent back so they will not puncture the padding and the top deck material and will not extend through the headlining.

On standard installations, the antenna lead-in must be soldered across the front end of the screen and brought down the front right corner post. In cases where the post is solid, the lead-in may sometimes be brought down inside the windshield moulding or down the hollow rubber wind hose which is used in many cars.

Rearrange the dome light wiring so that there is a minimum coupling between the wires and the poultry wire antenna. Test the installation for grounds, using a 45-volt "B" battery and a high resistance voltmeter. Replace the headlining and trim carefully.

Installing an Antenna in Cars with Fabric Top Construction—In a few cars, the top padding is supported by muslin strips stretched over wood bows. An antenna can be easily installed in these cars in much the same manner used in cars with the slat top construction. Instead of tacking the screen under the bows however, the screen can be placed over the bows and tacked only at the rear and the front. Otherwise the procedure is the same.

Installing an Antenna in Cars with Metal Braces—In case there are metal diagonal braces in the top, the braces must be freed of grounds or the efficiency of the antenna will be greatly impaired.

Usually the rear ends of the braces are fastened to the wood top frame while the front ends are fastened by means of brackets to the front corner posts.

Drop the headlining and work from the inside of the car. Release the front end of the braces. Ream out the hole in the bracket and use fibre washers and sleeve bushings to insulate the cross brace bolts from the brackets.

Usually the dome light is connected to one of the braces. Disconnect the lead from the brace and run a new ground to the car body.

When both braces have been insulated, the antenna can be installed in the standard manner.

Open and Convertible Model Cars—The tops of the open and convertible models are designed to fold back. Since the antenna cannot in any manner interfere with this, a wire antenna is the only practical one.

Remove the top material and lay it back, leaving the side flaps in place. Secure a piece of top fabric, matching that removed, and fasten it properly in place over the cross ribs and over the side flaps.

Cut a piece of drill cloth or muslin approximately three inches smaller than the width of the top and about the length of it. Punch holes in the drill cloth through which the antenna wire is to be woven. The holes should be in rows, three inches apart, parallel to the cross ribs. Space the holes about ten inches apart in each row. In case metal bows are used, be sure to space the wires three inches from each bow.

Use 18-gauge stranded rubber covered wire and weave it back and forth through the holes in the cloth. When completed, the cloth is fastened to the front and rear bows only.

The antenna lead-in must be brought down in the rear so the top may be lowered easily.

The top material and all trim must be carefully replaced. While it is hardly probable that the antenna is grounded, check it with a voltmeter to make sure.

Receiver Installation—Install the Receiver on the inside of the dash, high and as far to the right as possible. Two sets of clinch-on nuts are pro-

vided, one set on the back, the other on the left end, so that the Receiver may be mounted on the dash in either position. The end mounting will be found very convenient when a car is equipped with a hot water heater and not much room is available for the Receiver.

Using a template, mark the location of the bolt holes. Be sure to allow sufficient clearance for the Receiver. Center-punch and drill three small holes from the inside of the dash. Then drill again, using a $\frac{3}{8}$ -inch drill. This can usually be done from the engine side of the dash.

In case there is a vacuum tank or other apparatus near where the holes are to be drilled, remove the apparatus to avoid damaging it. Smooth off any burrs or rough edges on the holes. The paint on the dash around the holes should be scraped so that there will be good contact between the Receiver and the dash.

The Receiver which is being installed should be given a quick operating check as a precautionary measure. While the Receiver is still on the bench, remove the front cover plate. Place the plate and the screws to one side. Remove the corks from the set of clinch-on nuts which are to be used and then install the Receiver mounting studs in the Receiver. Place a 5/16-inch shake-proof lock washer on the short end of the stud and screw the bolt into the Receiver. The bolts should be fastened securely.

Install the Receiver on the dash, placing the large flat washers on the inside against the padding and the small washers against the metal side of the dash. The Receiver must be bolted securely to the dash.

In the Model "A" Ford, due to the location of the gas tank, it is necessary to mount the Receiver on the left side of the dash in the engine compartment.

Speaker—The speaker should be mounted on the inside of the dash over the steering column or toward the center. It should be placed high enough so that it will not interfere with the operation of any of the pedals or controls.

Using a template, mark the location for the two bolt holes. Be sure to allow sufficient clearance for the speaker housing. Center-punch and drill two small holes from the inside of the dash. Then drill again, using a $\frac{7}{16}$ -inch drill. Install the speaker and bolt it securely to the dash. The tone control should be on the right.

In the Model "A" Ford, the Speaker must be mounted on brackets against the right kick pad. The brackets should be made up locally.

Bus and Boat Installations—The Model 12 is designed to operate from a 12-volt battery and is intended primarily for buses and motor boats.

In buses the Receiver and speaker will be installed in the most suitable location. In most installations, it will be possible to place the Receiver, speaker and Dynamotor in a metal container mounted on the baggage rack directly in back of the driver's seat.

In boats, the Receiver and dynamotor must be placed in the most convenient location available. The speaker can be bolted to a locker door or a wood partition in one of the cabins. The control unit usually must be located on a partition also.

Control Unit—The control unit has been designed so that it may be mounted in either of two positions on the steering column. The unit is compact, simple to install, easy to operate and has an artistic and well balanced appearance. It is shipped from the factory with two flexible shafts for the volume control and the tuning control coupled to it, although they may be removed very easily if it is ever necessary.

There is a mounting bracket which must be fastened to the steering column by means of a metal strap. This bracket should be installed in a horizontal position on the right side of the steering column, or in a vertical position above the steering column. Bend the metal strap around the steering column without using the felt pad. The round nut should be on the inside against the column. The strap should be fitted closely around the column and lapped over the end.

There are four small holes in the end of the strap. Cut off the excess strap about $\frac{3}{8}$ -inch beyond the hole that is to be used. Ream out the hole to $\frac{1}{4}$ -inch.

Place the strap in position around the column again, this time placing the felt pad between the strap and the column. Fit the metal bracket against the column in the position desired, with the planed surface up. The fastening screw extends through the bracket and the hole in the strap and engages the round nut. Tightening the screw draws up the metal strap so that the bracket is clamped securely in place. Fasten the control to the bracket by means of the fillister head screw on the back of the housing.

The volume control and switch knob is on the left and is connected to the left hand flexible shaft. The tuning control knob is on the right and is coupled to the flexible shaft on the right. The black wire from the rear of the housing is the pilot lamp lead which must be connected to the Fahstock terminal on the upper front edge of the Receiver. Dress the two flexible shafts and the wire neatly along the steering column and then up under the cowl. The two shafts should be held in place along the column by clamping them to the bottom edge of the instrument panel.

The volume control shaft must be fitted in the sleeve on the left hand side of the upper front panel of the Receiver. The shaft should be pushed in until the tip is all the way in the coupling on the volume control shaft. Fasten the casing by tightening the set screw on the bottom of the sleeve. This is inside of the Receiver.

With the volume control and switch knob turned off (in a counter-clockwise direction) and locked and with the volume control in the same position, tighten the bottom set screw in the coupling. Then rotate the shaft in a clockwise direction and tighten the other two set screws.

The tuning control shaft should be fastened in a similar manner. After dressing the shaft and fastening it in place, fit the shaft in the remaining sleeve in the upper front panel, and fasten the casing in place. The dial should be set at 55 and the condenser plates should be fully meshed. Tighten the bottom set screw, turn the shaft clockwise and then tighten the other two set screws.

After the flexible shaft is connected, a finer adjustment of the tuning condenser can be made so that the dial is properly lined up. This is done by tuning the Receiver to a station whose frequency is known. Check the scale to see how far off the dial setting is. If it needs changing, remove the face plate from the control housing. This is held on by two screws, one at the top and one at the bottom, which can be reached from the back of the housing.

Hold the tuning control to keep it from turning and lift the toothed edge of the scale over the teeth of the drive assembly and turn the dial to the proper setting. Then allow the dial to drop back in place so that the teeth on the dial mesh with the teeth on the drive assembly.

After the steering column control has been installed and the flexible shafts connected, replace the front cover plate on the Receiver.

Dynamotor—The Model EA Dynamotor is supplied as standard equipment with all Model 8 Receivers and the Model EC with the Model 12 Receivers. The Model 7 will be furnished with the Model EA Dynamotor in place of batteries when specified, or the Model EA can be ordered as a replacement unit for the Model 3 and Model 7 Receivers sold previously with batteries. The Model EA is for operation on 6 volt battery systems; the Model EC on 12 volt battery systems.

The dynamotor housing or box can be conveniently located in the floor of the car. Simply cut a hole $6\frac{1}{8}$ by $8\frac{7}{16}$ inches in the floor and drop the box in place from the top. Fasten the flange to the floor by means of screws or bolts.

It will be necessary to drill a hole in the end of the box for the battery cable. The tapered rubber bushing must be used over the hole to make it water-proof.

Model EA Terminal Arrangement

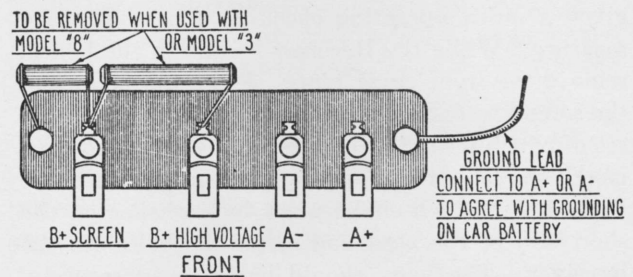


FIG. 1

When the Model EA is used with the Model 7 Receiver the blue lead must be connected to the "B+" High Voltage terminal and the green lead to the "B+" Screen terminal. The black-white lead must be connected to the relay switch which controls the operation of the dynamotor.

Looking at the top of the relay with the mounting bracket nearest the observer, the terminal on the side opposite the bracket must be connected to the car battery through a 15 ampere fuse. The terminal on the right must be connected to the "A" terminal on the dynamotor that corresponds with the live (non-grounded) side of the car battery. The remaining terminal on the left must be connected to the black-white lead of the battery cable. The relay should be mounted on the frame of the car near the car battery. The ground connection on the dynamotor and the shield on the cable must be connected to the other "A" terminal.

The dynamotor box must be grounded to the frame of the car by means of a heavy copper braid.

When used with the Model 8 Receiver, remove the two small fixed resistors at the left end of the terminal panel.

Connect the white-black lead to the "A" terminal on the dynamotor that corresponds with the live (non-grounded) side of the car battery. The ground lead on the dynamotor must be connected to the remaining "A" terminal. The cable shield must also be connected to this terminal.

Connect the blue lead to the "B+" High Voltage terminal. The dynamotor box must be grounded securely to the frame of the car by means of a heavy copper braid.

When the Model EA is used with the Model 3 Philco Transitone Receiver, remove the two resistors at the left end of the panel. The ground lead from the filter condenser must be removed from the ground terminal and must be spliced out and connected to the B+ Screen terminal.

The "B—" lead, the black lead which is grounded at the rear end of the dynamotor, must be removed from ground and must be spliced out and connected to the B+ Screen terminal also. This terminal now becomes "B—". Connect the blue-white lead to B+ High Voltage terminal and the green-white to B+ Screen terminal.

The relay switch must be used to control the dynamotor. With the relay in the same position as described above, the middle terminal must be connected to the car battery through a 15 amp. fuse. The terminal on the right must be connected to the "A" terminal on the dynamotor that corresponds with the live (non-grounded) side of the car battery. The remaining terminal on the left must be connected to the black-white lead of the battery cable. The relay should be mounted on the frame of the car near the battery. The ground connection on the dynamotor and the shield on the cable must be connected to the other "A" terminal.

The dynamotor box must be grounded to the frame of the car by means of a heavy copper braid.

The Model EC Philco Transitone dynamotor must be used only on a 12 volt battery system.

Connect the white-black lead to the "A" terminal on the dynamotor that corresponds with the live (non-grounded) side of the car battery. The ground lead on the dynamotor must be connected to the remaining "A" terminal. The cable shield must also be connected to this terminal.

Connect the blue lead to the "B+" High Voltage terminal. The dynamotor box must be grounded

securely to the frame of the car by means of a heavy copper braid.

Battery Box—The battery box is designed so that it can be installed in the floor of the car or suspended from it. In either case, check the location carefully so that there is sufficient riding clearance between the box and all the tie rods, braces, etc., on the chassis when the rear springs are depressed. Don't put the box too close to the exhaust pipe or the propellor shaft.

To install the box in the floor, after the proper location is found, cut a hole $10\frac{1}{4} \times 8\frac{5}{8}$ in the floor boards and drop the box in the hole so that it is supported by the flanges.

Drill two holes in the side of the box, a $\frac{9}{16}$ -inch hole for the small "A" cable bushing and a $\frac{3}{4}$ -inch hole for the "A-B" cable bushing.

Fasten the box to the floor by means of four No. 8 $\frac{3}{4}$ -inch wood screws. The holes for these screws are punched in the flange of the box but are covered by the cork gasket. These can be located and the cork punched out, before the box is installed.

When installing the box beneath the floor, after the proper location is found, drill two holes in the floor, $\frac{5}{16}$ -inch, for wood floors and $\frac{1}{2}$ -inch for metal floors. The flat bolt strap can be used as a template for drilling the holes.

After the holes are drilled, place this flat strap on the floor over the holes and push the long carriage bolts through from the top.

Holes must be drilled and the cable couplings installed, three Philco dry "B" batteries, P-302, placed in the box and connected,—and all cable connections made to the fuse mountings. Then the lid must be screwed down tightly, so that the entire box is water-tight.

Push the battery box up against the floor with the bolts extending through the square holes in the flange. Put the box support on next, with a bolt passing through the hole in the end. Run a nut up on both bolts and slip the slotted end of the support over the other bolt and nut. After tightening both nuts, put on a lock nut and a cotter pin in the end of each bolt.

The battery box is shipped from the factory with a cardboard liner inside it. This liner must be left in the box. After the cable couplings are installed, place three P-302 Philco dry "B" batteries in it and connect them in series. The battery cable should

then be cut off at the proper length and connections made to the fuses and batteries.

The blue-white lead must be connected to B+135 volts and the green-white lead to B+67½ volts. The black-white wire is the "A" lead which must be connected to the ten-ampere fuse and from there, a single lead which is supplied, must be run to the car battery. "B"— of the batteries must be connected through the one-ampere fuse to the battery side of the ten-ampere "A" fuse.

The bakelite fuse mountings should be screwed to the wood hold-down which is placed over the batteries. Before the lid is put on, the flaps of the liner should be folded over the hold-down.

Three heavy duty Philco batteries, P-308, can be used in place of the standard size batteries and will give relatively longer life. Use the large box and lid (04585) and place one battery in upright and the other two on their sides with the terminals in the center. Pack the batteries to prevent bumping around.

Cable Connections—MODEL 7—The speaker and battery plugs must be connected in their respective sockets on the front panel and the ground tabs from the cable shields grounded under a screw head. The cable should be dressed and fastened in place.

The battery cable should be run down in back of the right kick pad and then through the floor and along the frame to the "B" battery box or dynamotor. It should be clamped in place securely.

Cable Connections—MODELS 8 and 12—The speaker and battery cables and the antenna lead are all formed in a one piece cable and are totally shielded. Connect the battery plug (female) to the socket on the Receiver. The speaker plug is on the end of the cable and must be connected to the socket on the side of the speaker housing. Ground the shield pigtailed on these cables on the speaker and Receiver housings.

The antenna lead is the next leg of the cable. Connect this to the antenna lead-in as close to the corner post as possible. Solder and tape the splice and then ground the shield pigtail on the bottom edge of the instrument panel. For best results, the shield should extend up into the corner post.

The shielded black-white lead must be connected through the 15 amp. fuse to the live side of the storage battery and the shielding grounded to the frame of the car or to the grounded terminal of the battery.

The Model 8 is for operation on 6 volt battery systems,—the Model 12 on 12 volt battery systems.

The end of the cable must be run to the dynamotor and connected properly. The black lead, the cable shield, must be grounded to the terminal panel. Keep the cables out of the motor compartment.

Suppression—The standard spark plug resistors 4531 can be installed on the plugs in most cars. Likewise the standard distributor resistor 4546 can be used in the distributor head in most cases.

On cars such as the Buick, where the standard spark plug resistor cannot be used, the special screw type resistor 4851 should be used. In a few cars, it will be necessary to use it at the distributor head also. When using the latter resistor, be sure it is as near as possible to the end of the lead.

Standard suppression calls for the use of one resistor on each spark plug or in the plug end of each lead and one resistor at the distributor in the high tension coil to the distributor lead.

In the case of a two coil system, two resistors are necessary, one in each high tension coil lead at the distributor. When dual ignition is used, each spark plug must be equipped with a resistor.

There are numerous exceptions to the above. If the radio installations are carefully made, it will be possible in many Buick and Cadillac installations to do without the spark plug resistors, using only one resistor in the distributor head. On the new Ford V-8, no resistor is used in the distributor head.

In addition to the standard use of resistors, two 4522 Condensers are also required, one on the brush side of the generator cut-out, the other on the battery terminal of the ignition coil.

When installing an interference condenser, connect the lead to the apparatus terminal. The bracket of the condenser must be bolted to the engine or some other grounded metal part of the chassis.

The use of resistors on the spark plugs and distributor head, and of condensers on the coil and generator, is termed standard suppression and is required in most installations.

In a great many cases, when radio installations are made by the car factories, radio spark plugs are used. These are regular spark plugs with the resistor unit built in the plug and sealed. In addition to making a very neat installation on the motor, their performance is entirely satisfactory.

Plugs of this character are invariably marked "radio." Don't install the standard resistors on plugs of this type.

Peening the Rotor Arm—Quite frequently it is necessary to peen the rotor in the distributor in order to reduce the gap between the rotor and the high tension contacts. The gap should be held to about .004 inches maximum, but care should be taken that the rotor does not brush any of the contacts.

Place the rotor on a flat steel block and hammer the end of the rotor carefully with a small machinist's hammer. Repeat this operation until there is just sufficient clearance between the rotor and the contacts. Using a file, dress the end of the rotor to its original shape. If a double end rotor is used, both ends should be treated alike, completing the operation first on one end, then the other.

Extreme caution should be used in this operation so that the distributor will not be damaged. Never pass an installation if the rotor brushes the contacts, as this affects the timing.

On the Ford V-8, the rotors cannot be removed easily, so instead of peening the rotors, build them up with solder.

Shielding—In the past, a great number of service men were prone to shield the high tension leads indiscriminately. This gave rise to numerous complaints on the car performance.

There is no need for shielding the high tension leads. The only possible exception to this is when the coil is mounted on the instrument panel. Relocate the high tension cable if necessary, so that it goes direct from the coil through the dash. Shield the lead by covering it with a standard length of shielded loom,—L-1387.

Shielding—Antenna Lead—All Receivers are now wired with a shielded antenna lead. This must be spliced to the antenna lead-in as close to the corner post as possible. Avoid all excess slack. It is advisable to continue the shielding up into the corner post for an inch or so. Ground the shielding at the corner post.

Additional Suppression—The intense high frequency field present under the hood is sometimes carried beyond the dash by pipe lines, rods and wires. To prevent this, some precautions are necessary.

In case of severe motor interference, isolate the high tension leads from the rest of the car wiring. Remove the low tension wires to the coil, horn wires or other cables from the high tension manifold.

Additional interference condensers may sometime be needed on fuse blocks, on the ammeter, or possibly on the dome light lead where it enters the front corner post. It is more important to by-pass the dome-light lead at the corner post than to connect the condenser to the ignition coil in some installations.

Always connect the "A" lead to the car battery. Unnecessary interference will be encountered if the "A" lead is connected elsewhere.

Occasionally it will be necessary to bond the dash to engine block. Use heavy copper braid for this, bolting the braid to both the dash and the engine block.

Use a smaller copper braid for bonding rods and pipe lines, fastening the braid to the dash with self tapping screws, and soldering the other end to the parts to be bonded. Keep all bonds as short as possible, but allow sufficient slack so as not to interfere with the operation of choke rods, etc.

Adjusting the R. F. Padding Condensers—In order to obtain the maximum results from the radio installation, the first and second R. F. padders should be adjusted after the installation is completed. This should not be attempted except by a competent service man.

It will be necessary to remove the front cover plate and to set up a good oscillator capable of generating a signal of approximately 1400 K. C. The Philco Oscillator, Model 095, can be used very satisfactorily for this adjustment as well as all other adjustments on the Receiver. Connect a six foot lead to the oscillator output terminal, simply dropping it over the back of the seat, and turn on the oscillator. Turn on the Receiver and tune to approximately 140 on the Receiver scale. Adjust the oscillator frequency to 1400 K. C. When using the Philco oscillator, set it for the 175 K. C. range and use the eighth harmonic. Turn on full volume on the Receiver and adjust the output of the oscillator until the signal is barely audible. Tune the Receiver sharply to the signal and then adjust the first R. F. padder. This is the one mounted to the extreme right on the condenser housing. Adjust this for maximum signal and then proceed with the second padder, the one in the

center. Use only the standard fibre padding wrench. Replace the front panel and the adjustment is completed.

Service—Philco Transitone products are designed and built to give the greatest owner satisfaction possible. Don't jeopardize the performance or the name of these products by poor service or the use of other than genuine parts.

Lack of knowledge of the product, incorrect procedure, careless workmanship, lack of courtesy in dealing with the customer or an inadequate stock of replacement parts, tubes, batteries and testing equipment will result in poor service and in actual loss in business.

Learn everything possible in connection with the Receiver and the correct installation procedure. Give the customers more attention than they expect. Don't tolerate rudeness on the part of the installation station employees. See that you have a complete stock of all Philco Transitone parts required for prompt service in case it is needed.

Don't overlook the replacement tube and battery business. There is a Philco tube or battery for every purpose. Always have enough on hand. There is also a growing market for suppression material. Every motor radio needs suppression material to complete the installation and make it satisfactory. Philco Transitone installation stations should get this business.

Installation stations should also find a good market for the dynamotor, to be used with other Receivers as well as the former Philco Transitone models. All this extra business is within the reach of any good installation station that renders proficient service.

Special Adjustments—In order to render proficient service, the installation station must be able to make the proper adjustments to the Receivers whenever they are needed. This is impossible without the use of a good service oscillator. The best and most economical oscillator for this work is the Philco Oscillator, Model 095. Complete information and instructions for its use can be had on request from your Philco Transitone distributor or from the service department at the factory.

The adjustments should be made as follows:

Intermediate Frequency or I. F. Stages—Remove the grid clip from the detector oscillator tube and connect the output of the oscillator to the con-

trol grid. The detector oscillator is the second tube from the right.

With the Receiver and oscillator turned "on", set the oscillator for 175 K. C. Adjust the oscillator attenuator so that the signal is barely audible with the Receiver volume control turned on full. If the oscillator is equipped with an output meter, connect the meter and adjust the attenuator so that a half scale reading is obtained.

Using a Philco 3164 fibre wrench, adjust the second I.F. condenser. This is numbered ⑳ on figs. 3 and 5 and ㉑ on figs. 4 and 6.

The correct adjustment is obtained when the strongest signal is heard in the speaker or the maximum reading is secured on the meter.

Next adjust the secondary and primary I.F. condensers. These are ㉒ and ㉓ respectively on figs. 3 and 5 and ㉔ and ㉕ on figs. 4 and 6.

Disconnect the oscillator and reconnect the clip to the control grid.

High Frequency Compensator—Connect the output of the oscillator to the antenna lead and the housing of the Receiver. With the Receiver turned on and the oscillator set for 175 K. C., tune the Receiver to 1400 K. C., the eighth harmonic of 175 K. C., and adjust the third padder on the tuning condenser for maximum signal. This is the one on the extreme left of the housing. The purpose of this adjustment is to line up the condenser so that 1400 K. C. is tuned in at 140 on the scale when the scale is set properly.

It may be necessary to adjust the first two compensators on the tuning condensers at 1400 K. C., in order to get a strong enough signal through.

R. F. Compensators—After the detector oscillator has been padded at 1400 K. C., adjust the first and second R. F. Condensers on tuning condenser at 1400 K. C.

Low Frequency Condenser—Now tune the Receiver to 700 K. C. and adjust the condenser ㉖ on figs. 3 and 5 and ㉗ on figs. 4 and 6. During this operation the tuning condenser must be shifted and the compensators must be adjusted to bring in the maximum signal.

After this has been done, check the adjustment of the high frequency condenser at 1400 K. C. again.

Model EA Dynamotor Wiring Diagram

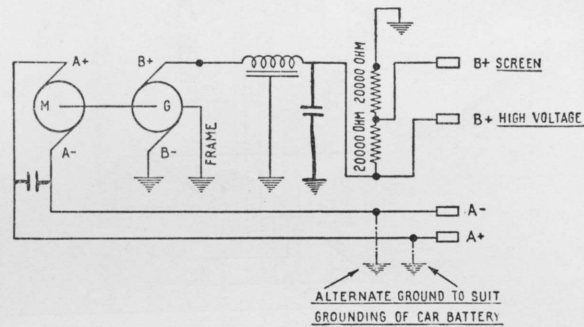


FIG. 2

Table 1—Resistor Data

Nos. on Figs. 3 and 5	Nos. on Figs. 4 and 6	Resistance (Ohms)	Color		
			Body	Tip	Dot
46	10	2.7		wire resistor	
38	44	7		" "	
..	50	30		" "	
21	..	225		" "	
..	23 7	500		" "	
36	42	700		" "	
1 11	1 15	5,000	Green	Black	Red
..	24 25	20,000	Red	Black	Orange
31	37	50,000	Green	Black	Orange
8 23 24	3 27 28	99,000	White	White	Orange
20 26	21 31	490,000	Yellow	White	Yellow

Table 2—Condenser Data

Nos. on Figs. 3 and 5	Nos. on Figs. 4 and 6	Capacity (Mfd.)	Color
28	30	.00025	Yellow
10 15	14 18	.0007	White and Yellow
28 34	..	.001	Green and White
..	33 35	.00125	Blue and Orange
37	45	.002	Blue
33	39	.01	Black Bakelite
4 18	5 7 20	.05	Black Bakelite
29	36	.25	Metal Can
..	11	.25, .5	Metal Can
16	See Note 1	.25, .25, .5	Metal Can
	..	.25, .5, 20.0	Metal Can

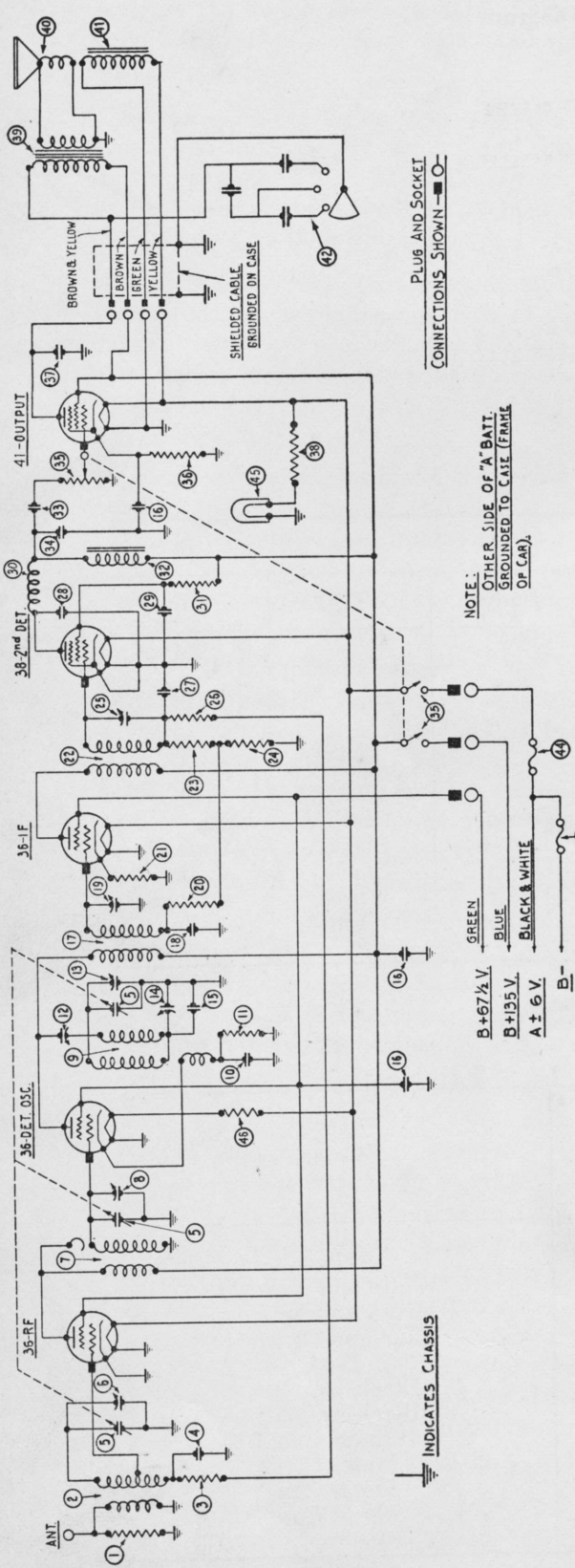


Fig. 3—Model 7—Wiring Diagram

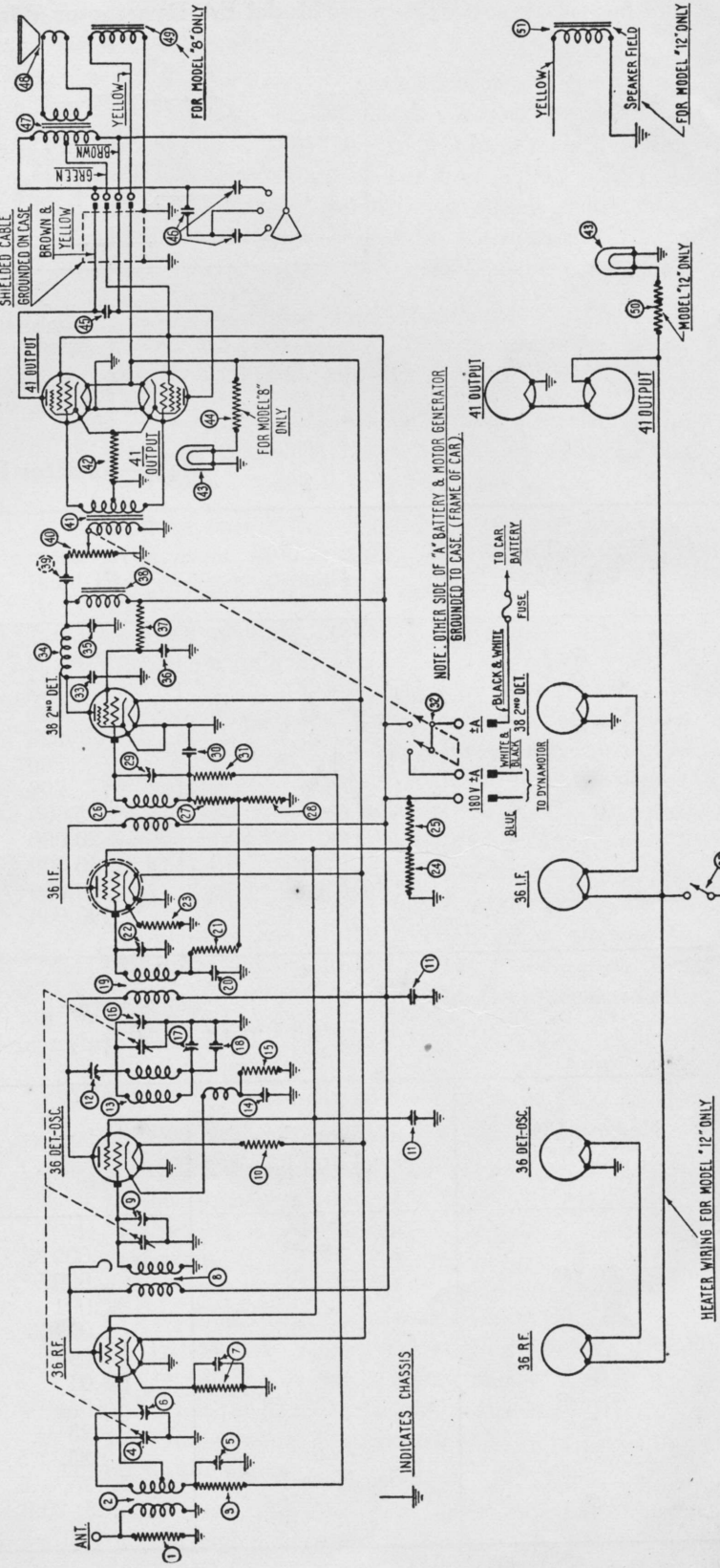


Fig. 4—Models 8 and 12—Wiring Diagram

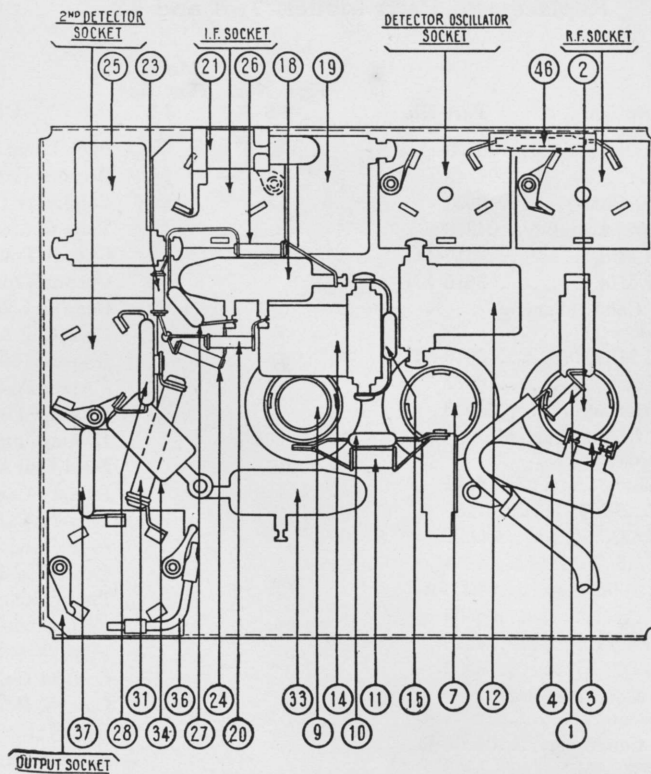


FIG. 5—Model 7—Chassis

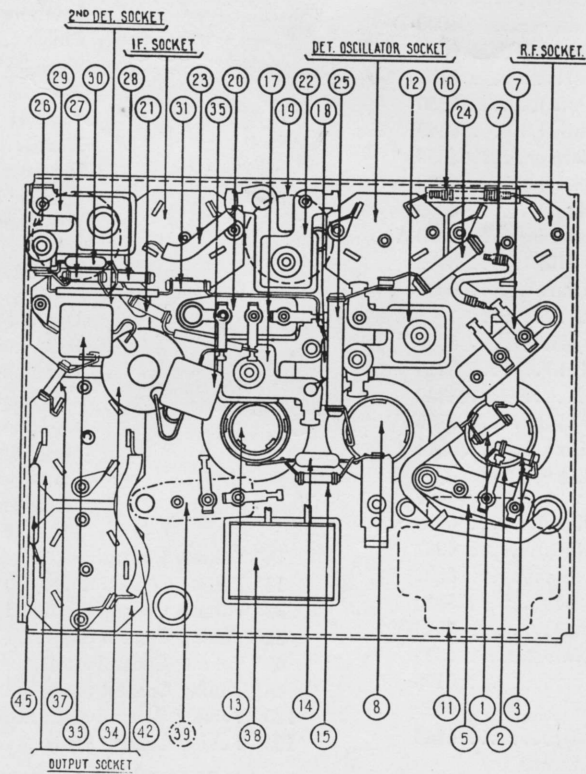


FIG. 6—Models 8 and 12—Chassis

Replacement Parts Models 7, 8 and 12

Models 8-12 Figs. Nos.	Model 7 Figs. Nos.	Description	Part No.	Models 8-12 Figs. Nos.	Model 7 Figs. Nos.	Description	Part No.
4-6	3-5			4-6	3-5		
①	①	Resistor (5,000 Ohms).....	6096	④③	④⑤	Pilot Lamp.....	4567
②	②	Antenna Coil.....	04348	④④	③⑧	Resistor (7 Ohms).....	5110
③	③	Resistor (99,000 Ohms).....	6099	④⑤	③⑦	Condenser (.002 Mfd.).....	6583
④	⑤	Tuning Condenser Assembly.....	04308	④⑥	④②	Tone Control.....	05366
	④	Condenser (.05 Mfd.).....	3615-AG	④⑦		Output Transformer.....	2565
⑤		Condenser (.05 Mfd.).....	3615-AN		③⑨	Output Transformer.....	2598
⑥	⑥	Compensating Cond. (Part of Tuning Condenser).....		④⑧	④⑩	Cone and Voice Coil.....	02823
⑦		Condenser (.05 Mfd.).....	3615-AE	④⑨	④①	Field Coil Assembly (6V).....	02794
⑦		Resistor (500 Ohms).....	6977	⑤①		Resistor (30 Ohms).....	7155
⑧	⑦	Detector Transformer.....	04509		④③	1 Amp. Fuse.....	4540
⑨	⑧	Compensating Cond. (Part of Tuning Condenser).....			④④	10 Amp. Fuse.....	5676
⑩	④⑥	Resistor (2.7 Ohms).....	6511			15 Amp. Fuse.....	7227
⑪		Condenser (.25, .5 Mfd.).....	04959			Field Coil Assembly (12V).....	02688
		See Note 1 (.25, .25, .5 Mfd.).....	05622			Battery Cable (Model 7).....	04416
	①⑥	Condenser (.25, .5, 20. Mfd.).....	04354			Battery Cable (Model 8-12).....	05419
⑫	⑫	Compensating Condenser.....	04000-A			Plug (Model 7).....	4539
⑬	⑨	Oscillator Coil.....	04508			Cap (Model 7).....	4885
⑭	⑩	Condenser (.0007 Mfd.).....	4520			Plug (Model 8).....	7122
⑮	⑪	Resistor (5,000 Ohms).....	6096			Cap (Model 8).....	7123
⑯	⑬	Compensating Cond. (Part of Tuning Condenser).....				Fibre Wrench.....	3164
⑰	⑭	Compensating Condenser.....	04000-R			Control Unit Assembly.....	04343
⑱	⑮	Condenser (.0007 Mfd.).....	5863			Control Housing Cover.....	6030
⑲	⑰	First I.F. Transformer.....	04352			Key (Interchangeable).....	6091
⑳	⑱	Condenser (.05 Mfd.).....	3615-AK			Speaker Extension Cable.....	02984
㉑	⑳	Resistor (490,000 Ohms).....	6097			Spark Plug Resistor.....	4531
㉒	⑲	Compensating Condenser.....	04000-D			Distributor Head Resistor....	4546
㉓		Resistor (500 Ohms).....	9042			Special Resistor (Screw Type) .	4581
㉔	㉑	Resistor (225 Ohms).....	6107			Interference Condenser.....	4522
㉕		Resistor (20,000 Ohms).....	6650			Philco I. F. Oscillator...Model	095
㉖	㉒	Resistor (20,000 Ohms).....	6649			Type 36 Tube.....	5582
㉗	㉒	Second I.F. Transformer.....	04353			Type 38 Tube.....	5584
㉘	㉓	Resistor (99,000 Ohms).....	6099			Type 41 Tube.....	6446
㉙	㉔	Resistor (99,000 Ohms).....	6099			Knobs.....	5166
㉚	㉕	Compensating Condenser.....	04000-A			Receiver Housing.....	6058
㉛	㉗	Condenser (.00025 Mfd.).....	3082			Speaker Housing.....	2710
㉜	㉖	Resistor (490,000 Ohms).....	6097			Dynamotor Complete—Model	
㉝		Switch (See Note 2).....				EA.....	05388
㉞	㉘	Condenser (.00125 Mfd.).....	5886			Dynamotor Complete—Model	
㉟	㉙	Condenser (.001 Mfd.).....	5215			EC.....	05424
㊱	㉚	R.F. Choke.....	04342			Dynamotor Only 6V.....	6651
㊲		Condenser (.00125 Mfd.).....	5886			Dynamotor Only 12V.....	7165
㊳	㉜	Condenser (.001 Mfd.).....	5215			Dynamotor Filter Choke.....	6658
㊴	㉝	Condenser (.25 Mfd.) See Note 3.....	04360			Dynamotor Filter Condenser..	05386
㊵		Resistor (50,000 Ohms).....	6098			Dynamotor Housing.....	6655
㊶	㉞	Resistor (50,000 Ohms).....	4237			Large Battery Box (Complete).04585	
㊷	㉟	Audio Choke.....	6602			Small Battery Box (Complete).04581	
㊸	㊱	Audio Choke.....	5930			Receiver Studs.....	6122
㊹	㊲	Condenser (.01 Mfd.).....	3903-Y			Shielded Loom.....	L-1387
㊺	㊳	Volume Control (Note 2).....	7322			18" Volume Control Shaft.....	6351
㊻	㊴	Volume Control.....	6109			18" Tuning Control Shaft.....	6352
㊼		Input Transformer.....	6582			32" Volume Control Shaft.....	6128
㊽	㊵	Resistor (700 Ohms).....	6443			32" Tuning Control Shaft.....	6129
						48" Volume Control Shaft.....	6298
						48" Tuning Control Shaft.....	6299
						120" Volume Control Shaft.....	6355
						120" Tuning Control Shaft.....	6356

NOTE 1—In some Receivers, 04959 is replaced by 05622. ③⑨ is omitted and a .25 Mfd. section of 05622 is used in its place.
NOTE 2—Switch ③②, in fig. 4 is integral part of volume control ④①, part No. 7322.

