

PILOT RADIO PRODUCTS



PILOT RADIO & TUBE CORPORATION

323 BERRY ST., BROOKLYN, N. Y. — LAWRENCE, MASS.

234 So. Wells St., Chicago — 1278 Mission St., San Francisco

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JUNE 1, 1930



TRADE MARK

The "SUPER-WASP" Short-Wave Receiver Kits

No. K-115 for Operation From the A.C. Lamp Socket

No. K-110 for Operation on Batteries



TRADE MARK

Kit of Parts
for
A. C.
"Super-Wasp"
Cat. No. K-115
Code: YUGIT



Kit of Parts
for
Battery operated
"Super-Wasp"
Cat. No. K-110
Code: ZWAGS

There is nothing in radio more thrilling and exciting than the short waves. Radio fans who have constructed the most expensive and complicated of regular broadcast receivers and who think there is nothing else in the "game" to interest them are discovering a new and fertile field for amusement in the regions below 200 meters, where actually thousands of stations are transmitting. With ridiculously cheap and simple receivers, people all over the country are picking up short-wave broadcasting stations in Europe, Siberia, Australia and many other places that exist for most of us only in geography books. Heretofore it has been an accomplishment for a man in New York to hear Los Angeles on even a six or eight-tube set; now a short-wave fan in New York considers the West Coast local, and tries to reach for Khabarovsk, Siberia, where the Russians maintain a fine broadcasting station!

Most short-wave sets put out in kit form have been highly critical straight regenerative affairs. It was not until the advent of the Pilot Super-Wasp that short-wave receivers graduated from the 1921 stage and grew into modern instruments possessing some of the numerous refinements that have been built into regular broadcast sets.

In addition to its use of the screen-grid tube and double shielding, the Super-Wasp works ON ALTERNATING CURRENT. A neat, compact power unit (the Pilot K-111, furnished separately) supplies all the filament, grid and plate voltages. The A.C. "Super-Wasp" allows you to enjoy the unlimited thrills of short-wave reception with all the conveniences of full lamp socket operation.

Satisfied owners attest that the "Super-Wasp" is the best short-wave receiver because of the following points:

- 1) FULL A.C. OPERATION.
- 2) Increased sensitivity and selectivity made possible by TUNED screen-grid R. F. stage.
- 3) Universal wavelength range. Tunes from 14 to 500 meters. An excellent broadcast receiver as well as the finest of all short-wave instruments.
- 4) Absolutely no hand capacity effects.
- 5) All metal chassis—completely shielded.
- 6) Inexpensive.
- 7) Ability to bring in short-wave broadcasting stations better than all previous short-wave sets.

Booster Unit for A.C. Super-Wasp

Because of its excellence on the 200-500 meter range (with the blue-ring coils), the A.C. Super-Wasp is used by many people as a regular broadcast receiver. However, in some locations, removed a considerable distance from broadcasting stations, the volume is not quite enough for reliable loud speaker results and additional audio amplification is necessary. (Remember that the Super-Wasp uses only four tubes, as compared with seven and eight in regular broadcast sets.)

To meet this condition, we have brought out a kit of parts for a "booster unit," which is merely a single stage audio amplifier using a P-171A tube. This plugs right into the output



jack on the front panel of the A.C. Super-Wasp, and obtains all its power from the K-111 power pack. The kit contains one input and one output transformer, tube socket, biasing resistor, by-pass condenser, loud speaker jack, binding posts, a drilled bakelite base panel 10 x 4 1/4 inches, and two supporting brackets, with all necessary hardware. Assembling and wiring this "booster" takes about a half hour. The unit gives the Super-Wasp as much "kick" on the broadcast band as larger and more expensive broadcast sets, and is a desirable addition to the receiver.

"Booster Unit" for A. C. Super-Wasp—Cat. No. K-120 Code: ZUSYG



Broadcast Receivers in Kit Form

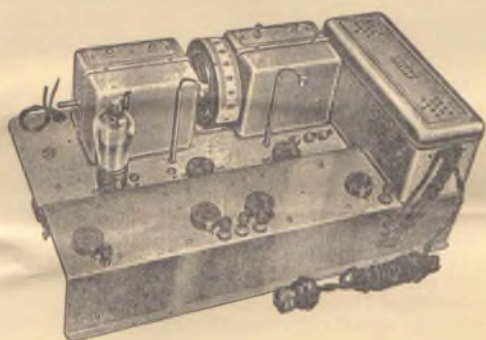
*The "Pre-Selector," in Chassis and Cabinet Models, and the
"Auto Radio" Set, Both Using Screen-Grid Tubes*



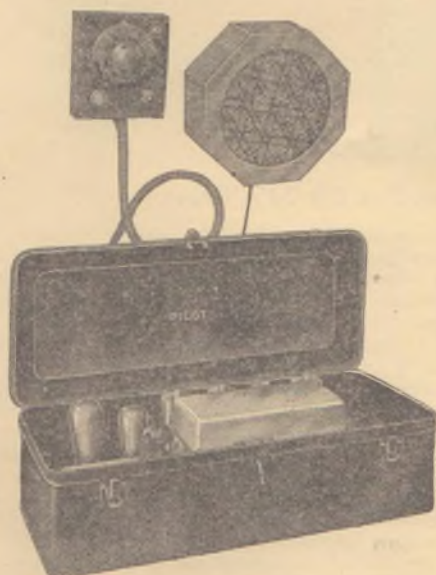
TRADE MARK



A finished "Pre-Selector" made from a K-128 kit.



Back view of the "Pre-Selector" chassis, with the detector tube in place.



The Pilot "Auto" Set with Control panel and loud speaker.

The Pilot "Pre-Selector" Broadcast Receiver

The Pilot "Pre-Selector", supplied in kit or "knockdown" form for home assembly, is a deluxe broadcast receiver of the latest and most advanced design. It obtains its name from its use of a band-pass or pre-selecting circuit ahead of the radio-frequency amplifying system, which comprises two tuned stages with screen-grid tubes. This feeds into a non-overloading screen-grid detector, which is resistance-coupled to a straight 227 audio stage. The latter in turn works into a push-pull stage using two P-245's. This combination gives the set unrivalled selectivity, sensitivity and tone quality, and places it in a class with the most expensive factory-built receivers. The sensitivity is of such high order that the Pre-Selector in most cases works with an indoor aerial only ten or fifteen feet long.

All the parts of the set are mounted on a formed and drilled aluminum foundation unit or chassis, which already has a fully assembled and wired power pack mounted permanently in place at the left end. The receiver is easily and quickly assembled, the only tools required being a screwdriver, Spintite wrench, pliers and soldering iron. Many people without previous radio or mechanical experience have had no difficulty in putting the outfit together and making it work from the start. The completed set has that fine commercial appearance not usually achieved in home-built receivers.

There are two Pre-Selector kits. The K-126 is the chassis model, and includes all necessary parts down to the last washer and soldering lug, but no cabinet. It measures 18½ inches long, 11¼ inches deep and 6⅞ inches high, and will fit practically all standard 7-by-18 cabinets and consoles. The K-128 kit includes this same complete chassis and also a handsome walnut finished metal cabinet of the table type. This cabinet measures 19½ inches long, 12½ inches deep and 9 inches high. Its front is already drilled for the tuning dial, the volume control and the power switch.

The following tubes are required for the Pre-Selector, but are not supplied with the kits: three P-224, one P-227, two P-245, one P-280.

Complete Pre-Selector kit, chassis model,

(for 115 volts, 50-60 cycles A. C.)—No. K-126 Code: YEADZ

Complete Pre-Selector kit, cabinet model,

(for 115 volts, 50-60 cycles A. C.)—No. K-128 Code: YIANP

Complete Pre-Selector kit, chassis model,

(for 220 volts, 50-60 cycles A. C.)—No. K-126A Code: YEGOG

Complete Pre-Selector kit, cabinet model,

(for 220 volts, 50-60 cycles A. C.)—No. K-128A Code: YIBDE

The Pilot Automobile Receiver

Radio in the automobile is just as useful and enjoyable as radio in the home, and greatly increases the pleasure you can obtain from your week-end jaunts in the country with your friends or family. When you stop by the roadside or drive into a clearing off the road to eat lunch, you can turn on the set quietly and enjoy the programs while admiring the beauties of nature.

The Pilot automobile radio receiver, supplied in kit form, is just the thing for the owner of a car. It is a six-tube outfit, using three stages of screen-grid R. F. amplification, screen-grid detection, and two stages of audio amplification. The parts fit on a formed and drilled aluminum chassis, which in turn fits in a black japanned metal case that is mounted most conveniently on the left running board. The set is tuned from the inside of the car, a small, neat control panel being supplied. This may be attached to the instrument board or to the back of the front seat. Between this control panel and the receiver itself are a six-foot flexible cable, by means of which the tuning condenser is turned, and a series of wires for the loud speaker, volume control and filament switch connections. On the little control panel are the dial, the volume control and the filament switch.

The control panel measures 6½ by 5½ by 1¼ inches; the receiver box 22 inches long, 8 inches wide and 6⅞ inches high. Because of its relative flatness, this case will not interfere with the opening of the doors of practically all makes of cars.

The tubes used in the receiver are of the A. C. type, operating in series-parallel off the regular six-volt storage battery in the car. The total drain is only about four amperes. Four P-224, one P-227 and one P-245 tubes are employed. Plate current must be furnished by three 45-volt "B" battery blocks or a single 135-volt block of the kind made for aircraft work. The "B" battery or batteries may be slung in a wooden or metal box anywhere under the car. The aerial may be a piece of copper screening tacked to the inside top of the car, or one or two wires stretched under the body between the front and rear axles. The frame of the car provides an artificial ground or counterpoise. Any small loud speaker of the magnetic type may be used. It may be placed under the instrument board or in a back corner.

No attempt has been made to eliminate ignition noises from the radio receiver, as we believe an automobile radio set should be used only when the car is stationary. For your own safety and the safety of other drivers, we suggest that you use the set only in this way. With road conditions the way they usually are drivers should concentrate on driving, and should not be distracted by musical programs or talks while the car is in motion.

Automobile Radio Receiver Kit,

(without tubes or loud speaker)—No. K-140 Code: ZEMAD

Special Auto Loud Speaker, magnetic cone type, Octagonal

shape, 8⅞ inches diameter, 3¾ inches thick—No. 8000 Code: ZALOB



TRADE MARK

Power Amplifiers

The Public Address Unit, Using Two 250 Tubes, and the K-113, Using Two 245 Tubes; Microphones and Accessories



TRADE MARK

The Pilot Public Address Amplifier

To meet the increasing demand for a heavy duty audio amplifier suitable for the operation of loud speakers in public places, we have brought out the new Pilot Public Address Amplifier, which uses two 250 type tubes in the last stage and has a maximum undistorted output of 15 watts. It will work six auditorium model dynamic speakers at full volume, for the reproduction of programs from a phonograph disc or announcements through a microphone. It is suitable for use in dance halls and dancing pavilions, amusement parks, race tracks, swimming pools, gymnasiums, armories, exhibition halls, hotels, skating rinks, churches, restaurants, railroad stations and airports. The amplifier is supplied only in fully assembled and wired form, all ready for use.

The wide-awake custom set builder or technically-trained radio dealer who is familiar with the various public places of his city should try to sell their owners on the desirability of such an amplifier as a publicity medium and business-getter. There is real profit in public address systems for both the seller and the buyer.

The amplifier is a strong, compact unit, 22 inches square and 9 inches deep, constructed on an angle iron frame. Three aluminum panels fit in this frame. The top one is the mixing panel, containing the various control devices; the center one the amplifier panel; and the bottom one the power supply panel. Electrically, the amplifier comprises three high-quality resistance-capacity coupled stages, using P-227's, feeding into a 250 push-pull stage. The circuit has been engineered very carefully and possesses rather unusual characteristics. Its overall voltage amplification is 2200 and its frequency response curve is really flat from 100 to 9,000 cycles, with only a slight drop from 100 down to 60 cycles.

The filaments of the amplifier tubes are lighted by a separate transformer. The plate voltage is supplied by an oversize pack using two 281 rectifier tubes. The primaries of the filament and high-voltage transformers are rated at 100 volts, a line rheostat and a line voltmeter being provided to insure the correct adjustment regardless of line conditions.

There are three other meters on the amplifier: a milliammeter in the plate circuit of the 250's to indicate the general operation of the high-voltage circuit; a highly sensitive galvanometer in the grid return lead of the push-pull input transformer, to indicate distortion, if any; and a milliammeter in the microphone circuit, to read the "mike" current. This meter equipment, which tells instantly how the circuits are functioning, is usually found only on public address amplifiers costing two and three times as much as the Pilot unit.

The mixing panel holds four sets of jacks, switches and volume controls, which allow the quick connection of the "mike", phonograph pick-up or radio receiver. The arrangement is a very flexible one, and permits quick changeovers from one input device to another without change in the loud speaker output level. Once the amplifier has been set up, it can be manipulated without trouble by any intelligent person; the services of an expert operator are not required.

Pilot Public Address Amplifier, completely assembled and wired, for 115 volts, 50-60 cycles A. C. without tubes or other accessories.

No. W-145 Code: WYOWB

Same amplifier for 220 volts, 50-60 cycles A. C. No. W-145A Code: YESSO

Amplifier accessories:

Double button microphone, table type. No. 1101 Code: YIIMO

Floor stand for above microphone, maximum height 5½ feet.

No. 1102 Code: YOOGV

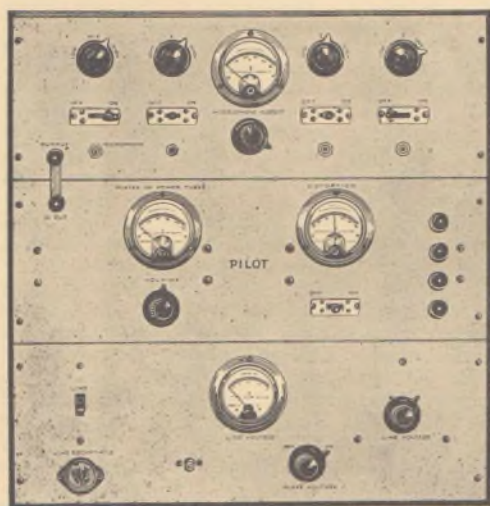
Phonograph turntable, electric motor drive,

(Motor for 115 volts, 50-60 cycle A. C.) No. 1103 Code: YUGRA

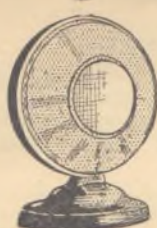
Same turntable for 220 volts, 50-60 cycles A. C. No. 1104 Code: ZAWPY

2½ volt flashlight bulbs, used as high voltage fuses in power pack.

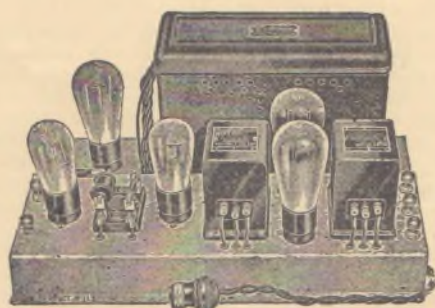
No. F-43 Code: ZOOCH



Front panel view of the Public Address Amplifier.



The No. 1101 table type double-button microphone.



Appearance of an assembled K-113 amplifier. The tubes are not supplied with the kit.

K-113 Push-Pull Amplifier for 245 Tubes

For use in homes or small places where the Public Address Amplifier would be too powerful, we recommend the K-113 amplifier, supplied in kit form. This consists of the K-112 power pack, which is already wired, and an aluminum base panel, drilled for five tube sockets, two push-pull transformers, a Resistoblock, a grid-leak mounting and six binding posts. Despite its lightness, the base panel is extremely rigid, because of the manner in which it is formed. It is 16 inches long and 9¾ inches wide. When the amplifier is completely assembled, it stands 8 inches high.

The first amplifier tube, a 227, is not accompanied by any coupling device, the choice of the input system being left to the constructor. Some people may want to use the amplifier for public address work, and will therefore connect the microphone modulation transformer to this tube. Others may want to use the first transformer in their radio receivers, or a resistance coupling unit.

The first tube is resistance coupled to the second, which is also a 227, and this in turn works into a push-pull stage using 245 tubes. The output transformer is a special instrument with a tapped secondary giving output impedances of 1500, 2500 and 4000 ohms, respectively. The amplifier may thus be matched to any speaker or combination of speakers; it will handle two large dynamics or from three to five magnetic speakers.

Power amplifier kit, for 110 volts, 50-60 cycles—No. K-113 Code: YOTHY

Power amplifier kit, for 220 volts, 50-60 cycles—No. K-113A. Code: WYUTZ
(tubes extra)



TRADE MARK

Pilotrons—Radio Tubes for all Purposes

*The P-227, Special Short-Wave Detector; the P-245 "Pilotron Twins",
Matched for Push-Pull; and Other General Purpose Tubes*



TRADE MARK

Radio Tubes for All Purposes

Before the Pilot company decided to announce its line of radio tubes, its engineers spent more than a year in a specially constructed laboratory, making experimental tubes and observing their behavior under severe test conditions. They made and discarded thousands of tubes until they finally were able to say, "We can produce good tubes, uniformly, and in any quantity." First they built a small plant in Brooklyn, N. Y., then a very much larger one in Detroit, Mich., and then a still larger one in Lawrence, Mass.

If you have used Pilot parts in the past, you can buy Pilot tubes with the assurance that you will obtain the same high quality of manufacture and the same full measure of satisfactory service.

Pilotrons may be used in radio receivers of all types—short wave, medium wave and long wave. The P-227, the P-224, the P-245 and the P-280 are especially suitable for the 1930 broadcast sets which require tubes of these model numbers, and will have long life in them, assuring the maximum number of hours of enjoyment from the receivers with the minimum amount of interruption and bother.

For best results, the rated filament voltages should be adhered to strictly. Wherever possible, the values should be checked with an accurate voltmeter.

Pilotrons are made to meet one high standard of operation. Any tubes that do not meet it are destroyed; they are not sold under other names and at cut prices. You can be certain that every Pilotron is a "first", and that you are receiving a tube that has been subjected to more than a dozen individual testing operations.



Pilotron P-227



Pilotron P-224



P-245's, Pilotron "Twins"
Matched for Push-Pull



Pilotron P-280

Pilotrons

P-227 Special Short-Wave Detector and General Purpose Detector and Amplifier: When the Pilot engineers were engaged in developing the A.C. Super-Wasp, they discovered that none of the 227 type tubes on the market would work quietly in short-wave circuits. Accordingly, they designed a tube of their own, the Pilotron P-227, which works smoothly and without hum. Outside of its special short-wave features, the P-227 is a superlative tube for any regular broadcast receiver, in any socket calling for a tube of standard 227 characteristics. It has a five-prong base, and the filament takes $1\frac{3}{4}$ amperes at $2\frac{1}{2}$ volts.

Code: ZABMA

P-224 A.C. Screen-Grid Amplifier and Detector: A sensitive, strongly-built tube for use in present-day A.C. screen-grid receivers of any make. The cap electrode is securely cemented to the top of the glass bulb, and will not work loose. Five-prong base, filament takes $1\frac{3}{4}$ amperes at $2\frac{1}{2}$ volts, A.C.

Code: ZAAWJ

P-245's, Pilotron "Twins" Matched for Push-Pull: All the advantages of push-pull audio amplification are lost if the two tubes are not exactly alike in characteristics. Pilotron P-245's are carefully tested by hand, and pairs of tubes that are exactly matched are packed in a single box. When you buy a box of Pilotron "Twins", you can be certain that you have two P-245's that will make the push-pull amplifier perform in perfect fashion. Don't take chances on single tubes. Four-prong base, filament takes $1\frac{1}{2}$ amperes at $2\frac{1}{2}$ volts, A.C.

Code: ZABSY

P-280 Full-Wave Rectifier Tube: For all power packs designed for 171A or 245 tubes. Required for the K-111 and K-112 units. Capable of supplying a maximum of 125 milliamperes of current, enough for the largest receiver. Four prong base, filament takes 2 amperes at 5 volts, A.C.

Code: ZACOR

P-226 General Purpose Amplifier: Although the 226 type of tube has been replaced entirely in 1929-1930 sets by the 227, there are many older receivers still in use that require it for the R.F. and first stage A.F. sockets. The Pilotrons P-226 is desirable for such use. Four-prong base, filament takes 1 ampere at $1\frac{1}{2}$ volts, A.C.

Code: ZABEN

P-171A Power Tube: Although the P-245 is now the standard power amplifier tube, the P-171A is still a favorite among many radio fans, and is needed for many receivers of both the A.C. and battery types. Four prong base, filament takes $\frac{1}{4}$ amperes at 5 volts, either D.C. or A.C.

Code: ZACUS

P-201A General Purpose Detector and Amplifier: Many thousands of battery-operated receivers, of the short-wave and broadcast type, are in active use, and the P-201A finds application in them. Four-prong base, filament takes $\frac{1}{4}$ ampere at 5 volts.

Code: ZAARD

P-112A General Purpose Tube: Generally used as an audio output tube, but also makes an excellent R.F. amplifier on broadcast frequencies and a sensitive detector. Four-prong base, filament takes $\frac{1}{4}$ ampere at 5 volts, direct current. Code: YUTOK



Power Units for the 250-Type Tube

*Plate and Filament Transformers, Filter Chokes and Condensers,
Push-Pull Audio and Microphone Transformers*



Jumbo Power Units for 250 Tubes

The No. 441 transformer, the No. 443 choke coil and the No. 444 condenser block are similar to units used in the power pack of the Pilot Public Address Amplifier. They are extremely heavy and well-built, and are generously under-rated to enable them to operate over long periods without overheating or overloading. When used with a pair of 281 rectifier tubes, they make up ideal power packs for heavy-duty audio amplifiers and low-powered amateur short-wave transmitters.

The same steel case is used for all three units. This is 5 inches by 4 3/4 inches by 5 1/4 inches high, finished in black Japanese lacquer. It is sealed moisture proof, and has two pairs of strong mounting legs. The connection plates are of molded bakelite, with screw terminals. The No. 441 transformer has two secondaries: 7 1/2 volts, at 3 1/2 amperes, to light the filaments of the 281's, and 1200 volts, center-tapped, at 140 milliamperes, for the plate voltage of one or two 210 or 250 tubes. If a suitable output resistor is used the power pack can also supply plate current to the tubes used in the tuner portion of the receiver.

The No. 443 choke has an inductance of 32 henries at 145 milliamperes. The No. 444 condenser block has three sections: 2 mf. and 3 mf., 900-volt working, 5,000-volt flash test, and 3 mf., 650-volt working, 3,600-volt flash test. These high working voltage ratings guard against breakdowns in service when peak voltages are encountered.

To complete a power pack using the new 250 units, it is necessary to have special heavy-duty resistors. The main dividing resistor used in the Public Address Amplifier has a total resistance of 39,000 ohms, with a tap which divides the units into two sections of 12,000 and 27,000 ohms. The second resistor has a resistance of 47,000 ohms and has no taps. Both resistors are wound on insulating tubing 4 1/2 inches long and 3/4 inch in diameter. Connections to the wire are made by means of straps encircling the tubes. The first resistance has the catalogue No. 970 and the second has the No. 969. Power transformer for 250 tubes, for 115 volts, 50-60 cycles A. C.

No. 441 Code: YIPUV

Same transformer for 220 volts, 50-60 cycles A. C.,

No. 441A Code: YUTIJ

32 henry choke coil for 250 tubes, No. 443 Code: YIUGM

Filter condenser block for 250 tubes, No. 444 Code: YOBLO

Tapped resistor, 39,000 ohms—No. 970 Code: ZUTYH

Resistor, 47,000 ohms—No. 969 Code: ZYDUC

Filament Lighting Transformer for 250 Tubes

The No. 441 power transformer is not provided with filament windings for the 250 tubes, the use of a separate heating transformer being very advisable because of the possibility of leakage in a common transformer. The No. 446 transformer serves the purpose. It has the same size can as the No. 411 transformer, and gives 7 1/2 volts at 3 1/2 amperes, for one or two 210's or 250's, and 2 1/2 volts at 8 amperes, for four of five 227's. A separate filament transformer has another advantage in that it can be turned on independently of the plate transformer, thus allowing the tubes to warm up before the high voltage is thrown on. If the two circuits are turned on together, the plate voltage runs very high until the tubes warm properly, endangering the filter condensers and the tubes themselves.

Filament lighting transformer for 250 tubes, for 115 volts, 50-60 cycles

A. C. No. 446 Code: YUJOY

Same transformer for 220 volts, 50-60 cycles A. C.

No. 446A Code: YUZME

Push-Pull Transformers for 250 Tubes

The high plate voltage and heavy plate current of the 250 tubes make the use of an ordinary push-pull output transformer impossible, as the windings quickly burn out under the load. To overcome the situation and to take advantage of the full possibilities of the 250 power tubes in push-pull, Pilot engineers have designed a pair of new push-pull transformers especially for this class of service. The input transformer, which has a center-tapped secondary, is contained in the same one-piece steel case used for the No. 422 series transformers. This can is 4 inches long, 2 1/2 inches wide, and 2 7/8 inches high, is sealed, air and moisture-proof, and is finished in black Japanese lacquer. This input transformer has a ratio of 1:1 1/4. The output transformer is contained in a special large case which is 3 3/4 inches high, 2 3/4 inches wide, and 3 5/8 inches thick. The secondary winding has a total impedance of 2,000 ohms and is center-tapped. The impedance between the center-tap and either of the outside connections is 500 ohms. This arrangement permits the most advantageous connection of from one to six dynamic speakers. The input transformer has been assigned the catalogue number 429, the output transformer, 430.

Push-pull input transformer for 250 tubes—No. 429 Code: YUOFT

Push-pull output transformer for 250 tubes—No. 430 Code: ZADPA

Microphone Coupling Transformer

The No. 428 transformer is used to couple any standard two-button microphone to the first amplifying tube. The primary is accurately center-tapped; the secondary connects directly to the input side of the first tube. The No. 422 series case is used. This is the same transformer used in the Public Address Amplifier and was designed particularly for No. 428 double button microphone.

Microphone coupling transformer—No. 428 Code: ZEEWP



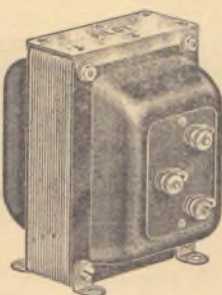
Appearance of No. 441 transformer and
No. 444 condenser block



No. 443 Choke



No. 970 Resistor



No. 430 Output Transformer



Appearance of the No. 429
Amplifying Transformer and the No. 428
Microphone Transformer



TRADE MARK

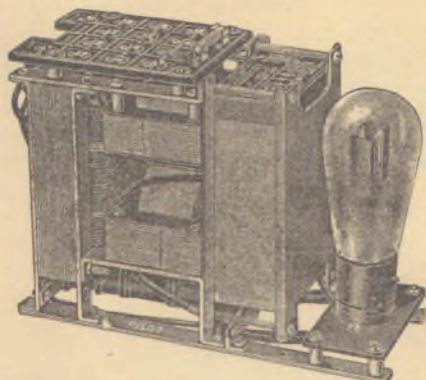
Wired Power Packs -- Separate Power Units

K-111 and K-112 Supply A, B and C Power for All Types of A.C. Tubes;
Separate Components for Home-Made Packs



TRADE MARK

K-111 Power Pack, for 171A Tubes



Inside view of K-111 Power Pack,
showing rectifier tube in place

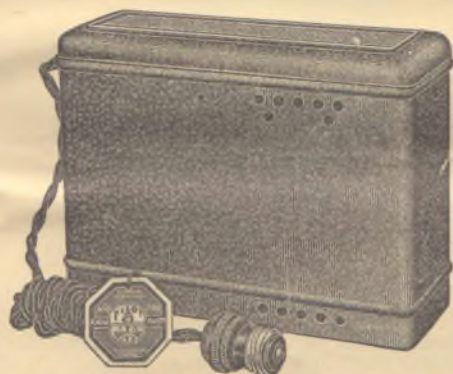
The Pilot K-111 power pack is suitable for use with any receiver in which the total plate current load is not more than 60 milliamperes. It will furnish plate current for one or two 171A's in the last audio position, and for five or six 201A's, 226's or 227's. The direct current output is thoroughly filtered and will cause no noticeable hum in the loud speaker. The maximum available voltage is 220, lower values of 180, 135, 90 and 45 volts also being available. The output resistor which gives these voltages is carefully by-passed by fixed condensers of suitable size.

The power transformer in the pack has three low voltage windings for the lighting of A.C. tubes. The first gives 5 volts at .8 ampere, and will heat three 171A's. The second gives $2\frac{1}{2}$ volts at 8 amperes, and will handle four 227's, or five if the third winding is left idle. This latter winding delivers $1\frac{1}{2}$ volts at 4 amperes, for four 226's.

The parts of the K-111 pack are mounted compactly in a neat can 10 inches long, $6\frac{7}{8}$ inches high and $3\frac{1}{2}$ inches wide, attractively finished in black Japanese lacquer. The 280 rectifier tube fits inside this can, adequate ventilation for it being provided. All connections are brought out to a molded bakelite terminal plate, which also holds a fuse connected in the 110-volt power circuit. The cover of the can is removable, and allows convenient access to the terminal plate and the rectifier tube. Because of its compact construction, the K-111 can be placed behind or on one side of a receiver installed in a cabinet, and is therefore particularly valuable to the custom set builder who has occasion to "electrify" old battery-type receivers.

Same pack for 220 volts, 50-60 cycles—No. K-111A.....Code: ZYROP
171A power pack for 110 volts, 50-60 cycles—No. K-111.....Code: ZYPYP
(P-280 rectifier tube required; not furnished with packs.)

K-112 Power Pack, for 245 Tubes



Outside appearance of K-111 and K-112
Power Packs. The socket for the rectifier
tube for the K-111 is inside the can, but
for the K-112 it must be mounted outside.

The K-112 power pack is similar to the K-111, but is designed to supply filament and plate current for the 245 tube and the others of the $2\frac{1}{2}$ -volt filament family. The transformers, chokes, resistances, etc., are mounted in a can exactly the same size as that used for the K-111, but the socket for the 280 rectifier tube must be supported externally. All connections are made to terminals on a molded bakelite plate under the removable cover of the can. The wires are led in through a hole in one end of the latter.

The "B" pack will deliver a maximum of 90 milliamperes and will take care of two 245's in push-pull and five or six extra tubes of the 227 and 224 variety. It is thus suitable for practically any present-day receiver. Taps are provided for voltages of 300, 180, 135, 90 and 45. The tap for the 245 tubes is taken between the filter choke coils, so there is no audio coupling between the last audio stage and the preceding circuits. A feature of the "B" pack is the use of a variable resistance to insure the delivery of the rated voltages from the various taps. This does not affect the voltage for the 245's, but only the output of the voltage divider. This resistance is highly valuable because it allows the power unit to be adjusted to the exact current requirements of each individual receiver.

There are three filament windings. The first develops 5 volts at 2 amperes, and is intended for the filament of the rectifier tube. The second delivers $2\frac{1}{2}$ volts at a maximum of 12 amperes, and will handle 6 or 7 tubes of the 224 or 227 type. The last winding also gives $2\frac{1}{2}$ volts, but at a maximum of 3.6 amperes, and is for one or two 245's. These ratings are quite conservative, and the transformer will not heat up unduly under the load.

The K-112 pack, like the K-111, is a most handy unit because of its compact mechanical construction and its flexible electrical arrangement.

245 power pack for 110 volts, 50-60 cycles—No. K-112.....Code: ZYZHT
Same pack for 220 volts, 50-60 cycles—No. K-112A.....Code: ZYTPE
(P-280 rectifier tube required; not furnished with packs.)

Jumbo Power Units for 245 Tubes



Appearance of Nos. 411 and 386
Transformers

The Pilot No. 411 power transformer, the No. 421 filter condenser block and the No. 431 double choke coil are husky "Jumbo" instruments designed for the 245-type tube. When used with a P-280 rectifier tube, a Pilot No. 960 output resistance and a Pilot Resistograd, they make up a power pack that will supply all the filament, grid and plate power requirements of any modern receiver employing any combination of 224, 227 and 245 type tubes.

The three units have the same size steel case, $5\frac{1}{2}$ " high, 5" long and 3" wide, beautifully finished in black Japanese lacquer. All connections are brought out to screw-type binding posts on molded bakelite terminal plates.

The No. 411 transformer has three filament windings (not center-tapped) and one plate winding. The first filament secondary gives $2\frac{1}{2}$ volts at a maximum of 12 amperes (enough for as many as seven 224's or 227's); the second, $2\frac{1}{2}$ volts at 3.6 amperes (enough for two 245's); and the third, 5 volts at 2 amperes (for the 280 rectifier tube filament). The plate secondary develops 330 volts across each side of the center tap (660 volts altogether) and will deliver 90 milliamperes of current through a filter system using a No. 421 filter block and a No. 431 choke.

The grid biases for the various tubes are furnished by fixed resistances connected in the cathode leads, in the case of the 224's and 227's, and to the center-tapped resistance in the case of the 245's. Use a 450 ohm resistance for each 224 (A.C. screen-grid tube),



TRADE MARK

Power Transformers and Filter Units

*Reliable Instruments for the Man Who Assembles His Own Power Packs;
Conservative Ratings for Good Service*



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Appearance of Nos. 421 and 396
Condenser Blocks



Appearance of Nos. 431 and 395
Choke Coils



No. 398 Power Transformer



Appearance of Nos. 387 and 407
Transformers

and a 2000-ohm for each 227. For a single 245 tube use 1500 ohms, and for two 245's in push-pull, 750 ohms. A 227 used as a detector does not require any biasing. Each biasing resistor used with an R.F. tube should be by-passed by a .006 mf. condenser; each resistor for an A.F. tube by a 1.0 mf. condenser.

The No. 421 filter block has a total capacity of 11 microfarads. Two of the sections, of 2 and 3 mf. capacity each, are rated at 400 volts working voltage, and are flash tested at 1600 volts. The other four sections, of 3, 1, 1 and 1 mf. each, are rated at 300 volts working and 1250 volts flash test. The double choke has a total inductance of 50 henries. The first section, which carries the plate current of the 245 tubes, is rated at 25 henries at the maximum load of 90 milliamperes; the second is rated at 35 henries at 45 milliamperes.

Jumbo Power Transformer for 245 tubes—No. 411.....Code: ZUAJP
(for 110 volts, 50-60 cycles A.C.)

Same Transformer for 220 volts, 50-60 cycles—No. 411A.....Code: ZOZAB

Jumbo Filter Condenser Block for 245 tubes—No. 421.....Code: ZUPOZ

Jumbo Double Choke Coil for 245 tubes—No. 431.....Code: ZUVED

Jumbo Power Units for 171A Tubes

The No. 398 power transformer, the No. 396 filter condenser block and the No. 395 double choke coil fulfill the power supply requirements of receivers employing a combination of A.C. tubes of the 226, 227 and 171A type. The units are mounted in strong steel cases having a black Japanese lacquered finish, and are all 5½" high, 5" long and 3" wide. All connections are brought out to screw binding posts on molded bakelite panels. This series of units is identical in appearance with the Nos. 411, 421 and 431.

The No. 398 transformer has five secondary windings, all with center-tap connections. They are rated as follows: 1½ volts at 6 amperes; 5 volts at .8 ampere; 5 volts at 2 amperes; 500 volts at 60 milliamperes.

The No. 396 filter condenser block comprises sections of 1, 1, 3, 3 and 6 mf. capacity, and also two .1 mf. sections, giving a total of over 14 microfarads. The block is rated at 300 volts working voltage.

The No. 395 double choke coil unit consists of two individual coils connected in series, with an additional connection provided for a center tap. The total overall inductance is 60 henries, each coil having 30 henries. This is sufficient to provide an effective A.C. transient surge reduction (or choking) effect in filter circuits carrying rectified A.C. voltages, where not more than 60 milliamperes of direct current is required.

NOTE: The Nos. 398, 396 and 395 cannot be used for sets employing the 245 tube.

Jumbo power transformer for 171A tubes—No. 398.....Code: YEMMO
(for 110 volts, 50-60 cycles A.C.)

Same transformer for 220 volts, 50-60 cycles—No. 398A.....Code: ZWUMP

Jumbo condenser block for 171A tubes—No. 396.....Code: YEKUL

Jumbo double choke for 171A tubes—No. 395.....Code: YEJLY

Nos. 386 and 407 Filament Lighting Transformers

There is a wide demand for separate transformers for heating the filaments of A.C. tubes. They are particularly useful for "electrifying" old battery type receivers. Pilot makes two such transformers.

The first transformer, the No. 386, is intended primarily for sets using a combination of 226, 227 and 171A tubes. It has three windings (center-tapped). One delivers 1½ volts at a maximum of 4.2 amperes, enough for four 226 tubes; the second gives 2½ volts at 5 amperes, for three or four 227 tubes; and the third 5 volts at .8 amperes, enough for three 171A's. This transformer has the same case and terminal plate as the No. 411.

The second transformer, the No. 407, is intended for the more modern combinations of 224, 227 and 245 tubes. It has two 2½ volt windings, one delivering a maximum of 3.6 amperes, enough for a pair of 245's in push-pull, and the other a maximum of 10 amperes, enough for six or seven 224's or 227's. The third winding develops 5 volts at ½ ampere. These windings are not center-tapped. This transformer has the same case and terminal plate as the No. 421 condenser block.

Filament lighting transformer for 171A tubes—No. 386.....Code: YOHPE
(for 110 volts, 50-60 cycles A.C.)

Same transformer for 220 volts, 50-60 cycles—No. 388.....Code: YUFTO

Filament lighting transformer for 245 tubes—No. 407.....Code: ZYTAN
(for 110 volts, 50-60 cycles A.C.)

Same transformer for 220 volts, 50-60 cycles—No. 407A.....Code: ZYULK

No. 387 "B" Transformer for 171A Tubes

The No. 387 "B" transformer is designed for power packs using either the 280 or Raytheon type of rectifier tubes. It has two secondary windings, one giving 5 volts at 2 amperes for lighting the filament of the 280 tube, or the 171A's in the receiver; and the other giving 275 volts across each of two sections, for the plate voltage. The latter winding will deliver 60 milliamperes of current. The primary winding is tapped, so that the right secondary voltages will be delivered for whichever type of rectifier tube is used. This transformer is identical in size and appearance with the No. 421 filter condenser block.

Note that this transformer supplies only "B" power; it has no filament windings other than the one for the rectifier tube.

"B" power transformer for 171A tubes—No. 387.....Code: YOYMZ
(110 volts, 50-60 cycles)

Same transformer for 220 volts, 50-60 cycles—No. 389.....Code: YUGYX



TRADE MARK

Audio Amplifying Transformers and Chokes

*Heavy Cores and Oversize Windings Give High-Quality
Reproduction at All Volume Levels*



TRADE MARK



Appearance of No. 390 Series
Transformers and Chokes

No. 390 Series Transformers and Chokes—Bakelite Case Type

The Pilot bakelite case transformers and chokes are unquestionably the most widely used instruments of their kind. The cases are molded solid in one piece, and are so completely sealed that the instruments can be kept immersed in water for a month without being affected in the slightest degree. The five units listed below all have the same case, differing in external appearance only in the number of binding posts.

For a straight two stage amplifier, the best combination is a No. 391 in the first stage and a No. 390 in the second, with a P-171A output tube. A better combination would use a No. 391 in the first stage, with a No. 399 feeding two P-171A's in push-pull and the tubes feeding the loud speaker through a No. 401 output impedance.

The bakelite case is 3 13/32" high and approximately 2 3/8" square.

Audio transformer, 2-1 ratio—No. 390.....	Code: YEERP
Audio transformer, 3 1/2-1 ratio—No. 391.....	Code: YEFBA
Audio output transformer—No. 394.....	Code: YEIZY
Push-pull input transformer—No. 399.....	Code: YIOCH
Push-pull output impedance—No. 401.....	Code: YIRUX



Appearance of No. 412 Series
Transformers and Chokes

No. 412 Series Transformers and Chokes

These small audio transformers and chokes will appeal to the constructor because they can be mounted on the underside of sub-panels, the one-piece steel cases being only 2 7/8" square and 2 1/8" high. They are neatly finished in black lacquer, and have mounting feet. Their tone quality is of the highest order.

The advantage of sub-panel mounting of the audio transformers is that the heaviest units of the set are placed very low, making it very stable mechanically. Some constructors arrange the transformers so that they act as supporting feet for the receiver, being suitable for this purpose because of their strong steel cases.

The best circuit combination for these transformers consists of a No. 413 in the first stage, working into a 227-type tube in A.C. sets or a 201A in battery sets, with a No. 412 in the second stage, feeding a 171A. The latter may be operated on either batteries or alternating current. The loud speaker should be connected to the 171A through a protective filter consisting of a No. 414 or 415 choke coil and a No. 9302 2 mf. fixed condenser, or through a No. 418 output transformer.

Small metal case audio transformer, 2-1 ratio—No. 412.....	Code: ZWARP
Small metal case audio transformer, 3 1/2-1 ratio—No. 413.....	Code: ZWAWK
Audio output filter (choke and condenser)—No. 392.....	Code: YEGAC
Audio output transformer—No. 418.....	Code: ZICZE
30-henry choke, 45 milliamperes capacity—No. 414.....	Code: ZYFAY
30-henry output choke—No. 415.....	Code: ZYGZA



Appearance of No. 422 Series
Transformers and Chokes

No. 422 Series Transformers and Chokes

These instruments are similar to the units of the No. 412 series, but are larger and heavier in construction, and include a push-pull combination. The one-piece steel cases are 4" long, 2 1/2" wide and 2 7/8" high.

The large metal case audio units may be used in any standard amplifier circuits calling for either 171A or 245 tubes in the output stage. Where the amplifier is required to handle a medium amount of volume, a straight two-stage circuit with a single 171A output tube should be used, with a No. 423 in the first stage and a No. 422 in the second. A single 245 may also be used. In either case an output filter consisting of a No. 424 or 425 choke and a 2 mf. condenser, must be used.

A push-pull output stage is necessary when high volume levels must be handled. The first stage may use either a No. 423 or a No. 422, followed by the Nos. 426 and 427 push-pull units. Tubes of the 245 type are preferable as the output tubes. No output filter is necessary, as the push-pull output transformer serves the same protective purpose.

Large metal case transformer, 2-1 ratio—No. 422.....	Code: ZYIXT
Large metal case transformer, 3 1/2-1 ratio—No. 423.....	Code: ZYHID
Push-pull input transformer, 2-1 ratio—No. 426.....	Code: ZYLLY
Push-pull output transformer—No. 427.....	Code: ZYIMP
30-henry filter choke, 60 milliamperes capacity—No. 424.....	Code: ZYJOG



No. 381 No. 409
Audio Transformers



No. 381 Series Transformers

The No. 381, No. 408 and No. 409 transformers are the same electrically as the No. 422, No. 426 and No. 427, but are supplied in a case that is 2 7/8 inches square and 3 1/4 inches high. The smaller base area makes them useful in many sets where sub-panel space is limited.

Large metal case audio transformer, 2:1 ratio—No. 381.....	Code: WYZBE
Large metal case push-pull input transformer, 2:1 ratio, No. 408.....	Code: ZUARY
Large metal case push-pull output transformer—No. 409.....	Code: ZYBVE

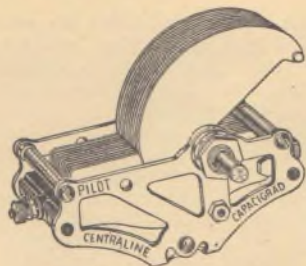


Variable Condensers--All Types

Single, Double, Triple, and Quadruple Units; Centraline
and Vaultype Models.



Centraline Variable Condensers—1600 Series



1600 Series Condensers



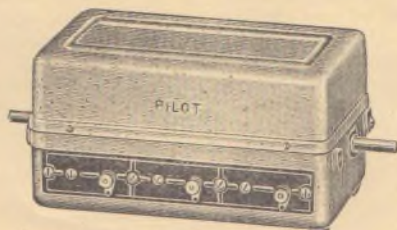
No. 12A Coupling



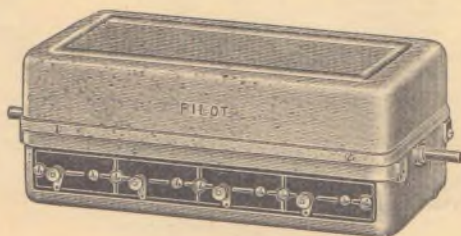
No. 3021



No. 3042



No. 3063



No. 3084

The Pilot variable condensers are made of non-corroding brass parts, gold finished, with highly polished aluminum end plates. They are manufactured by automatic machines of the highest precision.

The 1600 series is of a modified straight line frequency type. They open up the lower end of the tuning scale without crowding the upper end too much, as many S.L.F. condensers do. The instruments are supplied with mounting feet and removable shafts, and because of their reversible feature can be mounted on either clockwise or counterclockwise dials. The insulation is of molded bakelite. They mount in a single hole and can be secured against turning by additional panel screws. Two or more can be "ganged" together by means of a long $\frac{1}{4}$ " shaft, or by No. 12A couplings.

The steel shafts are held in place by two set screws, and may be removed in an instant. This is a valuable feature, as it allows a number of condensers to be controlled by one long shaft, and also permits the use of insulated shafts when a particular circuit calls for them.

Connection to the rotor plates is made by a brass "pigtail", which insures noiseless contact.

The No. 1611 condenser is recommended for short-wave receivers, as it has especially wide spacing between the plates.

These condensers are the handiest ones made, and are suitable for use in any kind of a receiver, short wave or long wave.

.00016 mf. maximum—No. 1611	Code: ZYGAZ
.00025 mf. maximum—No. 1613	Code: SELRE
.00035 mf. maximum—No. 1617	Code: SELSI
.00050 mf. maximum—No. 1623	Code: SELVO

Condenser Coupling

It is often necessary or desirable to "gang" a number of individual variable condensers so that they will turn as one. The No. 12A condenser coupling is very handy for this purpose, as it is small and simple and is quickly mounted. This coupling is like a universal joint in that it compensates for any slight irregularities in the mounting of the condensers. That is, even if the condensers are slightly out of line, they will still turn easily. The two halves of the coupling are insulated from each other.

The No. 12A is made for $\frac{1}{4}$ inch shafts only.

Insulated flexible coupling—No. 12A.....Code: YITIX

"Vaultype" Variable Condensers

The new Pilot "Vaultype" variable condensers are the heaviest and best condensers ever brought out for the set constructor. They are made in single, double, triple and quadruple units, the maximum capacity per section being .000365 mf. The calibration curve is of the "centraline" type, which strikes the best balance for tuning purposes in a broadcast receiver.

The cases are made of die cast aluminum, with pressed aluminum covers. They are also dustproof and completely shielded, the plates being entirely enclosed. The plates are extremely rigid and will not bend. The condensers are very flexible for set building, as they may be mounted from either end or on any side. The rotor friction may be adjusted without changing the capacity.

Each .000365 mf. section is provided with a balancing condenser, which, because it is grounded to the frame, may be adjusted with the fingers while the set is in actual operation. This feature is a great improvement over older methods which required special long insulated screw-drivers. The insulation between the rotor and the stator is of molded bakelite.

The "Vaultype" condensers are 4" wide and $3\frac{5}{8}$ " high, and vary in length as follows: single condenser, $2\frac{7}{8}$ "; double, $4\frac{7}{8}$ "; triple, $6\frac{7}{8}$ "; quadruple, $8\frac{7}{8}$ ". The $\frac{1}{4}$ " shaft extends $\frac{7}{8}$ " from each end. Any combination of these condensers may be "ganged" by means of the No. 12A condenser couplings.

Single Vaultype condenser—No. 3021.....	Code: YBTEM
Double Vaultype condenser—No. 3042.....	Code: ZENEG
Triple Vaultype condenser—No. 3063.....	Code: ZEHUD
Quadruple Vaultype condenser—No. 3084.....	Code: ZARDA



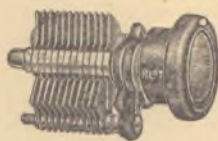
TRADE MARK

Midget Condensers - - Tuning Dials

Neutrograd, Micograd and Adjustograd; Plain and Vernier Dials of All Types



TRADE MARK



Neutrograd Midget Condenser



No. 1001 Adjustograd



Micograd

Neutrograd—Midget Variable Condenser

This extremely handy midget variable condenser has a molded bakelite frame and rigid brass plates. It mounts in a single hole, and is supplied with a bakelite knob. Made in four sizes: 5, 7, 13 and 23 plates, respectively. Useful for a wide variety of purposes, such as neutralizing R.F. amplifiers, antenna coupling, tuning verniers, regeneration control, short-wave tuning, etc. Every radio experimenter should have a few on hand. Only 1½" wide, 1" to 1¾" deep, depending on capacity.

.000015 mf. maximum—No. J 5	Code: YIAST
.000025 mf. maximum—No. J 7	Code: GET
.000050 mf. maximum—No. J13	Code: GOR
.000100 mf. maximum—No. J23	Code: WYILN

Micrograd—Compression Type Condenser

This is a mica dielectric compression condenser, the capacity being varied by a small slotted knob which can be turned by hand or by a screwdriver. Once adjusted, it will hold its capacity indefinitely. Molded bakelite case, 2½" long, 1¼" wide, 1½" high, maximum. Made in three sizes. The VM80 is excellent for balancing ganged condensers or neutralizing R.F. amplifiers. The VM81 makes a good variable grid condenser or antenna coupling condenser in both broadcast and short-wave receivers. The VM82 is intended as a variable by-pass condenser.

.000006 to .00005 mf.—No. VM80	Code: VAMIC
.000045 to .0005 mf.—No. VM81	Code: VEMCO
.00015 to .001 mf.—No. VM82	Code: VULVK

Adjustograd

The Pilot adjustograd is a small variable resistance with a range from 0 to 1,000 ohms, and is intended for use as an oscillation "suppressor" in tuned R.F. circuits. The resistance element is wound with Nichrome wire, and is housed in an attractive molded bakelite shell. The instrument is adjusted by means of a screw projecting through the top of the case. Dimensions 2½" long, 1½" wide, 1" high.

Adjustograd, 0-1,000 ohms—No. 1001.....Code: YUTAG

No. 1274 Plain Bakelite Dial

For many purposes a plain flat dial may be used to good advantage instead of more expensive and complicated vernier dials, particularly when the adjustments to be made are not critical. The No. 1274 dial fills this need. It is made of genuine black bakelite, and is 4 inches in diameter. The bushing is fitted with a set screw for tightening against the shaft of the condenser or other instrument; it takes shafts only of ¼-inch diameter. The dial has white graduations from 0 to 100, the readings going in the counterclockwise direction.

Plain bakelite dial—No. 1274.....Code: DONT

No. 1275 Kilograd Vernier Dial

The Kilograd is a quick mounting precision dial. It is made of black molded bakelite, and presents a handsome appearance. Both knob and scale turn in the same direction, and there is no slipping or backlash. Two scales are provided, one reading clockwise and the other counterclockwise; the dial may thus be used with any type of variable condenser. It is held securely against the panel by a single inconspicuous machine screw. The dial is 4 inches in diameter.

Kilograd dial—No. 1275.....Code: VERN

No. 1278 Vernier Art Dial

This is a highly ornamental vernier dial which can be used to replace less decorative dials already on a receiver. It is made of solid bakelite, and lends an air of distinction to any set. It is available in either black or walnut color. A positive friction drive prevents slipping or backlash, even with heavy triple condensers. Mounts with a single machine screw. The scale is double reading, making it suitable for clockwise or counterclockwise condensers. This dial is 4 inches high and 3½ inches wide.

Art dial, black bakelite—No. 1278.....Code: VEISI
Art dial, walnut bakelite—No. 1279.....Code: VEGOL

No. 1282 Illuminated Single Vernier Dial

In the No. 1282 dial the adjusting knob is centered on the bronze panel plate below the window through which the scale is viewed. The scale is illuminated, and has large figures which are easily read. The vernier action is smooth and accurate, and the framework is strong enough to support large multiple condensers. The scale is parallel to the panel, the condenser or other instrument being mounted at right angles to the latter. This dial is very popular because it is easy to mount, works smoothly, and presents a handsome appearance. The panel plate is 5½ inches high, and the scale is 4¾ inches in diameter.

Illuminated vernier dial, without bulb—No. 1282.....Code: YUBEN
Illuminated vernier dial, with bulb—No. 1282L.....Code: ZIRAN



No. 1274



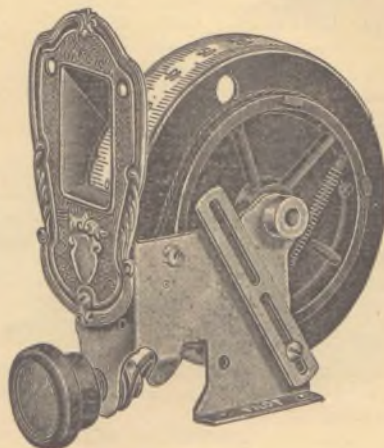
No. 1275



No. 1278



No. 1282



No. 1285 Dial



TRADE MARK

Vernier Dials - - Bakelite Knobs

Drum and Window Type Dials; Black and Walnut Knobs in Plain and Fancy Designs; Wire



TRADE MARK

Nos. 1285 and 1286 Single Drum Dial

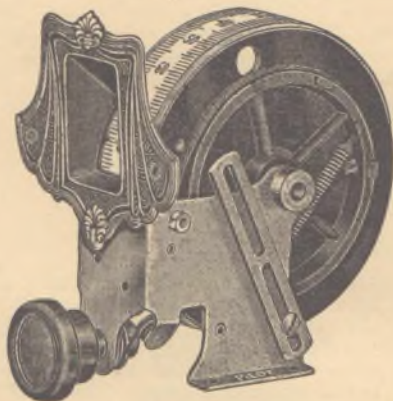
The Nos. 1285 and 1286 are the newest and finest of the Pilot single illuminated drum dials. The mechanism in the two models is the same, the panel plates being different. In the No. 1285 the plate is more or less oblong in shape, while in the No. 1286 it is bell shaped. The plates are of genuine bronze, beautifully decorated with scroll work. The control knob is centered below the plate, and does not touch the latter.

In these dials, the solid molded bakelite drum carrying the condensers is driven by a specially treated cord which is wound around the drum and connects with a small pulley on the shaft turned by the control knob. The cord is kept taut at all times by a strong spring (visible in the illustrations on the left), which also automatically compensates for any wear in the mechanism. The dial turns easily and smoothly, yet there is absolutely no backlash, even with the largest and heaviest "bath-tub" condensers. A multiple unit consisting of eight .00035 mf. condensers is easily handled by these dials.

Brackets on both sides of the drum permit any combination of condensers to be mounted. Additional brackets are supplied with the dials to support the outermost ends of large triple or quadruple condensers. The dial is equipped with a mounting foot, by means of which it can be fastened to the sub-panel or baseboard, in addition to the front panel. This additional bracing gives the instrument great rigidity.

The scale is of white material, with clear, black letters, and is removable. It is illuminated by a small flashlight bulb set in a clamp which is insulated from the frame of the dial.

Single drum dial, oblong panel plate, without lamp—No. 1285.....Code: ZYGGY
Single drum dial, with lamp—No. 1285L.....Code: ZYICY
Single drum dial, bell shaped panel plate, without lamp—No. 1286.....Code: ZYKEP
Single drum, with lamp—No. 1286L.....Code: ZYEPK



No. 1286 Dial



No. 1283

No. 1283 Illuminated Drum Dial

The No. 1283 dial is smooth running and free of backlash. The panel plate is of rich bronze and looks well against either black or walnut panels. The scale is indirectly illuminated by a small bulb that works off the power transformer of the set. The bearings are substantial and will support the heaviest condensers. The dial will take practically all types and makes of condensers, in single, double or triple-gang units.

Double illuminated drum dial, without bulb—No. 1283.....Code: YUCRO
Double illuminated drum, with bulb—No. 1283L.....Code: YASON

Bakelite Knobs

All Pilot knobs are molded of genuine bakelite and are fitted with brass inserts to go over 1/4-inch shafts. The No. 1257 is a tapered knob with an ornamental finish, a fleur de lis design being molded into the top. It is 1 1/8 inches in diameter, and is available in either black or walnut color. The Nos. 1256 and 1252 are plain "button" knobs with finely corrugated edges; they are alike in appearance and differ only in size, the 1256 being 1 1/4 inches in diameter and the 1252, 1 inch. The Nos. 1258 and 1260 are of smooth bakelite, finished in beautiful spotted walnut. (No black finish.) May be had with or without a white indicating spot on the outer edge. The 1258 is 1 1/8 inches in diameter, the 1260, 7/8 inch. The No. 1255 is a popular pointer knob, 1 3/8 inches in diameter.

Fleur de lis knob, black, 1 1/8"—No. 1257.....Code: ZIMYP
Fleur de lis knob, walnut, 1 1/8"—No. 1257W.....Code: ZIOXY
Plain black knob, 1 1/4"—No. 1256.....Code: ZIKOK
Plain walnut knob, 1 1/4"—No. 1256W.....Code: ZILLO
Plain black knob, 1"—No. 1252.....Code: DEXOF
Plain walnut knob, 1"—No. 1252W.....Code: YEVYX
Smooth walnut knob, 1 1/8", with spot—No. 1258W.....Code: ZYBEV
Smooth walnut knob, 1 1/8", without spot—No. 1259W.....Code: ZYCUB
Smooth walnut knob, 7/8", with spot—No. 1260W.....Code: ZWENC
Smooth walnut knob, 7/8", without spot—No. 1261W.....Code: ZURYA
Black pointer knob, 1 3/8"—No. 1255.....Code: DILLY
Walnut pointer knob, 1 3/8"—No. 1255W.....Code: ZISSO



No. 1255



No. 1257



No. 1258W



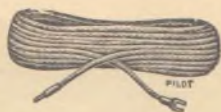
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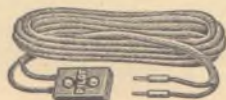
No. 1252



No. 1105



No. 1107



No. 1106

Wire

The Pilot hook-up wire is very convenient for making quick connections in either temporary or permanent sets. The wire itself is No. 20 tinned copper and is covered with a layer of thin rubber, and over this a layer of strong black fabric. The insulation is of the push-back type, it being unnecessary to trim off the cover in order to expose the wire. The standard rolls are 50 feet in length.

The Pilot indoor aerial is 65 feet in length, and consists of a well insulated flexible wire. It is equipped with a tip connection on one end and a spade connection on the other. This wire may be tacked around the picture molding or room, or around the edge of the floor.

It is sometimes desirable to extend the loud speaker connection from one room to another. The Pilot loud speaker extension cord allows this to be done quickly and without the aid of tools. The cord is 20 feet long.

Roll of hook-up wire—No. 1105.....Code: ZAZYR
Indoor aerial—No. 1107.....Code: ZIASP
Loud speaker extension cord—No. 1106.....Code: ZEANP



TRADE MARK

Fixed Condensers, All Types

Filter and By-Pass Condensers, in Bakelite, Metal and Paper Cases,
for Low and High Voltages



TRADE MARK

Isograds—Mica Fixed Condensers

Pilot mica fixed condensers are hermetically sealed in genuine bakelite, and are absolutely constant in capacity under all normal conditions of temperature and humidity. In the standard No. 50 series, connections are made to threaded brass bushings set in the bakelite, so there is no squeezing effect by the terminal screws to alter the capacity. Separate screw holes for mounting are provided. Grid leak clips are detachable. In the manufacturers' No. 60 series, plain connection lugs are furnished, and grid leak clips, when ordered, are eyeleted permanently in place. Condensers are $1\frac{1}{8}$ " long, $1\frac{19}{32}$ " wide, $11/32$ " thick.



No. 50 Series
Condensers



Model No. 51M



No. 60 Series



Group of filter condensers held together
by No. 9000 clamps



No. 800
No. 801



No. 806



No. 9302
No. 9651
No. 9501

Standard Series 50		
.00002 mf.—No. 50E	Code: WYMUR	
.00004 mf.—No. 50A	Code: WYJJA	
.0001 mf.—No. 50B	Code: WYJMO	
.00015 mf.—No. 50C	Code: WYKAK	
.0002 mf.—No. 50D	Code: WYKEL	
.00025 mf.—No. 51	Code: FIX	
.00025 mf.—No. 51M	Code: YOAGM	
(with grid leak clips)		
.0005 mf.—No. 52	Code: FAN	
.001 mf.—No. 53	Code: FAD	
.002 mf.—No. 54	Code: FED	
.003 mf.—No. 55	Code: FIB	
.004 mf.—No. 56	Code: FIG	
.005 mf.—No. 57	Code: FOP	
.006 mf.—No. 58	Code: FOG	
.01 mf.—No. 59	Code: FUL	
.015 mf.—No. 60	Code: FUS	
Grid leak clips—No. 50	Code: CLIP	
per pair		

Manufacturers' Series 60		
.00002 mf.—No. 76	Code: WYNBP	
.00004 mf.—No. 72	Code: MANAG	
.0001 mf.—No. 73	Code: MISTO	
.00015 mf.—No. 74	Code: MOTHE	
.0002 mf.—No. 75	Code: WYJEK	
.00025 mf.—No. 61	Code: MAB	
.00025 mf.—No. 61M	Code: YOBUM	
(with grid leak clips)		
.0005 mf.—No. 62	Code: MEC	
.001 mf.—No. 63	Code: MID	
.002 mf.—No. 64	Code: MOP	
.003 mf.—No. 65	Code: MUG	
.004 mf.—No. 66	Code: MAKO	
.005 mf.—No. 67	Code: METI	
.006 mf.—No. 68	Code: MIMI	
.01 mf.—No. 69	Code: MONO	
.015 mf.—No. 70	Code: MULE	
Grid leak clips attached.		
extra, per pair—No. 71. Code: CLOO		

Filter and By-Pass Condensers

These are carefully made condensers, and are tested four times before they are released for sale. They are thoroughly impregnated and are absolutely impervious to moisture. For heavy duty power packs the Nos. 9501 and 9651 are recommended. These have a capacity of 1 mf. each. The first is rated at 500 volts D.C. working voltage, and flash tested at 2400 volts. The second 650 volts working and 3600 volts flash test. The No. 9302 is a 2 mf. condenser, for 300 volts D.C. working voltage, and is flash tested at 1200 volts. As many as nine of them may be mounted together into a convenient block by means of the No. 9000 mounting clamps. The No. 9110 is a buffer condenser consisting of two .1 mf. sections; 400 volts working voltage, 2000 volts flash test. The Nos. 800 and 807, $\frac{1}{2}$ and 1 mf. respectively, are rated at 180 volts working, 750 volts flash test. They are furnished with mounting feet.

All these condensers have pressed steel cases, finished in durable black enamel. The 800 and 801 are $2\frac{1}{2}$ inches high, 2 inches wide and $\frac{7}{8}$ inch thick. The other four are all 5 inches high, 2 inches wide and $\frac{7}{8}$ inch thick.

1 mf. filter, 650 v.—No. 9651	Code: ZYDIZ
1 mf. filter, 500 v.—No. 9501	Code: ZAYHZ
2 mf. filter, 300 v.—No. 9302	Code: PCUKI
.1-.1 buffer—No. 9110	Code: WYHLO
$\frac{1}{2}$ mf. by-pass—No. 800	Code: YESAP
1 mf. by-pass—No. 801	Code: YETUV
Mounting clamps—No. 9000	Code: YEROR

Special Non-Inductive By-Pass Condensers

Filter condensers of the rolled type (like all of the foregoing) are perfectly satisfactory when used in regular broadcast receivers. However, they are practically useless for by-passing purposes in short-wave receivers, for on the very low wavelengths they act more as inductances than as capacities. For this reason, Pilot has developed three special non-inductive by-pass condensers, designed particularly for short-wave circuits. These condensers are used successfully in the A.C. Super-Wasp.

The No. 805 is a single condenser having a capacity of .2 mf. The No. 806 consists of three such condensers in one case, with one common terminal and three separate ones for the individual sections. The No. 807 is a single .6 mf. condenser, consisting of three No. 805's permanently connected in parallel. These condensers are provided with strong cardboard cases, $1\frac{1}{8}$ " long and $1\frac{1}{4}$ " high, and $\frac{1}{4}$ " thick for the No. 805 and $\frac{3}{8}$ " thick for the Nos. 806 and 807. They are fitted with flexible connection wires. They are rated at 300 volts working voltage, 1250 volts flash test.

Single non-inductive condenser, .2 mf.—No. 805	Code: WYPSO
Three section condenser, .2 mf. per section—No. 806	Code: YAARJ
Single .6 mf. size—No. 807	Code: YADUZ
Single .1 mf. size—No. 808	Code: YUERF



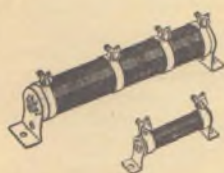
TRADE MARK

Fixed and Variable Resistors

*Biasing and Center-Tapped Resistors; Rheostats, Potentiometers
and the Resistograd*



TRADE MARK



Appearance of No. 960 Resistor (Top),
and Smaller Resistors



Nos. 352-4-6-8
Molded in Bakelite



Appearance of
Rheostats and Potentiometers



No. 350 Resistograd

Fixed Resistors—Wire Wound Type

All Pilot wire resistors are wound with Nichrome wire on porcelain tubes, and are impregnated with a black elastic coating that protects them against dampness and corrosion. The resistors are equipped with removable feet, and can be mounted either vertically or horizontally.

The No. 961 is a special filament resistor for 222 type tubes, being supplied with a tap for "C" bias. The next eleven sizes are intended for use as "C" bias resistors. The 3,000 and 10,000 ohm sizes can be used as loading resistors in power packs and for numerous other purposes. The No. 960 is a "B" power-pack output resistor, for use with any unit that supplies 180-200 volts to it. Taps to give lower voltages are fitted to the resistor. The first twelve resistors are $\frac{3}{8}$ " in diameter and $1\frac{1}{4}$ " long; the No. 953 is $\frac{3}{8}$ " by 2" long, and the No. 960 $\frac{3}{4}$ " in diameter and $4\frac{1}{2}$ " long.

Resistor, 15 ohms, tapped (for 222 tubes)—No. 961	Code: YIBIF
Resistor, 225 ohms—No. 967	Code: YERAN
Resistor, 450 ohms—No. 966	Code: YABRA
Resistor, 900 ohms, center-tapped—No. 959	Code: YOMUX
Resistor, 650 ohms—No. 954	Code: YAEBS
Resistor, 750 ohms—No. 965	Code: YAPOK
Resistor, 850 ohms—No. 955	Code: YAPAV
Resistor, 1,000 ohms—No. 962	Code: ZUNTA
Resistor, 1,500 ohms—No. 963	Code: ZUOJS
Resistor, 1,200 ohms—No. 956	Code: YAGBO
Resistor, 2,000 ohms—No. 958	Code: YISOY
Resistor, 2,250 ohms—No. 951	Code: YABYX
Resistor, 3,000 ohms—No. 964	Code: ZUPCY
Resistor, 10,000 ohms—No. 953	Code: YADOY
"B" power pack resistor, 12,700 ohms—No. 960	Code: YOZAG

Center-Tapped Resistance

The Pilot center-tapped resistances, being only $1\frac{1}{2}$ inches long, can be connected directly across the filament posts of the tube sockets, and when so installed save considerable wiring. They obviate the necessity for center taps on the filament windings of the power transformer, and keep the hum in an A.C. receiver at a maximum.

Center-tapped resistance, 10 ohms—No. 352	Code: ZWEGT
Center-tapped resistance, 20 ohms—No. 354	Code: ZWEWL
Center-tapped resistance, 50 ohms—No. 356	Code: ZWIPF
Center-tapped resistance, 75 ohms—No. 358	Code: ZWUCT

Rheostats and Potentiometers

The Pilot rheostats and potentiometers have molded bakelite bases and wire-wound resistance strips. The rheostats are equipped with two binding posts, the potentiometers with three. Single hole mounting. Furnished with bakelite knob. Dimensions: 2" in diameter, $\frac{9}{16}$ " thick.

Rheostats

Rheostat, 2 ohms—No. 902	Code: ZUOVG
Rheostat, 4 ohms, for 6 to 8 201A's—No. 904	Code: WYLOP
Rheostat, 6 ohms, for 3 or more 201-A's—No. 906	Code: RAF
Rheostat, 10 ohms, for 3 or more 199's—No. 910	Code: REED
Rheostat, 20 ohms, for 2 199's or 1 201-A—No. 920	Code: RAGE
Rheostat, 30 ohms, for 1 199—No. 930	Code: RIDE
Rheostat, 1,000 ohms—No. 931	Code: YITVA
Rheostat, 2,000 ohms—No. 932	Code: YIUJP
Rheostat, 400 ohms—No. 935	Code: ZICCO

Potentiometers

Potentiometer, 200 ohms—No. 200	Code: PAF
Potentiometer, 400 ohms—No. 400	Code: PAGE
Potentiometer, 4 ohms—No. 904-P	Code: ZEORM
Potentiometer, 6 ohms—No. 906-P	Code: ZEPHE
Potentiometer, 10 ohms—No. 910-P	Code: ZERIL
Potentiometer, 20 ohms—No. 920-P	Code: ZETVR
Potentiometer, 30 ohms—No. 930-P	Code: ZEWTY
Potentiometer, 1,000 ohms—No. 931-P	Code: ZADAP
Potentiometer, 2,000 ohms—No. 932-P	Code: ZIJGE
Potentiometer, 3,000 ohms—No. 3,000	Code: WYMAM

Resistograd—Universal Range Resistance

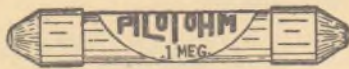
The Resistograd is a variable resistance having a "jumpless" range from 40 to about 10,000,000 ohms, which is covered by four turns of the knob. Absolutely non-inductive and non-packing. Will handle 20 watts of power. The case is turned out of solid brass, and is ribbed to radiate the heat generated during normal operation. The Resistograd is highly useful for control of output voltages in "B" power units, and also for general oscillation and volume control. Dimensions: $2\frac{3}{4}$ " long overall and $1\frac{1}{8}$ " in diameter. Mounts in a single hole. Bakelite adjusting knob furnished.

Resistograd—No. 350	Code: RESGD
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Resistors - - Tube Sockets

Volumgrad, Grid Leaks, Resistoblock and Resistochoke; Sockets for All Tubes



Appearance of all
Grid Leaks



Manufacturers'
Type Grid Leak



Front and back views of
Volumgrad



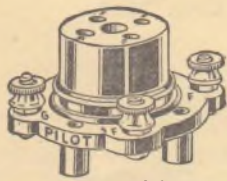
No. 770 Resistochoke



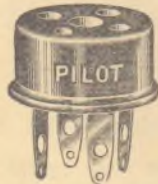
No. 500 Resistoblock



No. 214



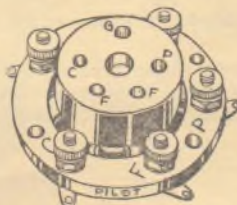
No. 206



No. 205



No. 216



No. 212

Volumgrad

The Volumgrad is a smooth action variable resistor designed especially for volume and oscillation control purposes. It is made in the four resistance ranges listed below, the four models being exactly alike in size and appearance. The volume can be adjusted from zero to maximum with one turn of the knob. The case is of molded bakelite, 2" in diameter. A special arrangement of the contact arm prevents the resistance strip from wearing out. The arm is insulated from the shaft, so the Volumgrad can be mounted directly on a metal panel.

0 - 50,000 ohms—No. 940	Code: ZUJUT
0 - 100,000 ohms—No. 941	Code: ZUKRE
0 - 200,000 ohms—No. 942	Code: ZULYX
0 - 500,000 ohms—No. 945	Code: ZUMIV

Pilotohms—Grid Leaks

The Pilotohm metal grid leaks are dependable resistances that will not change in value with currents of different strength passing through them. Every leak is marked with its resistance in ohms. Sealed airtight as protection against moisture.

In some receivers it is desirable to connect grid leaks by means of wires rather than by spring clips. For this purpose, the manufacturers' type leaks are recommended. They are exactly the same as the ones described above, except that they have one-inch lengths of No. 20 tinned copper wire soldered to the end caps.

All these grid leaks are $1\frac{1}{8}$ " long and $\frac{1}{4}$ " in diameter.

STANDARD TYPE			MANUFACTURERS' TYPE	
No. 768	Code: ZAJVE	.03 meg.	No. 868	Code: ZEFZO
No. 750	Code: YIDLY	.1 meg.	No. 850	Code: ZAETH
No. 767	Code: ZAFUV	.2 meg.	No. 867	Code: ZEDOY
No. 751	Code: YIERT	.25 meg.	No. 851	Code: ZAGOV
No. 752	Code: YIFIJ	.5 meg.	No. 852	Code: ZAHIV
No. 753	Code: YIGLO	.75 meg.	No. 853	Code: ZAIFS
No. 754	Code: YIHIL	1. meg.	No. 854	Code: ZAJJOY
No. 755	Code: YIJUP	1.5 meg.	No. 855	Code: ZAKUB
No. 756	Code: YIKYR	2. meg.	No. 856	Code: ZAMCO
No. 757	Code: YILYS	2.5 meg.	No. 857	Code: ZAOFT
No. 758	Code: YIMUS	3. meg.	No. 858	Code: ZAPID
No. 765	Code: YAMJOJ	3.5 meg.	No. 865	Code: ZEACS
No. 759	Code: YINSO	4. meg.	No. 859	Code: ZARUJ
No. 760	Code: YIOPT	5. meg.	No. 860	Code: ZATAG
No. 762	Code: YAJIC	6. meg.	No. 862	Code: ZAVJE
No. 764	Code: YAMOH	7. meg.	No. 864	Code: ZAZAL
No. 763	Code: YAKEC	8. meg.	No. 863	Code: ZAYBS
No. 766	Code: YAPAG	9. meg.	No. 866	Code: ZEBYX
No. 761	Code: YIPER	10. meg.	No. 861	Code: ZAUDT

Resistoblock

The Pilot Resistoblock is designed to fit the requirements of any circuit employing resistance coupling. The molded bakelite base has a depression in which any 50 series fixed condenser can be fastened. Any combination of capacity and resistance can be had. Dimensions $2\frac{1}{4}$ " long, $1\frac{25}{32}$ " wide and $1\frac{1}{8}$ " high.

Resistoblock, without leaks or condenser—No. 501	Code: BLUKI
Resistoblock, with .01 mf. condenser—No. 500	Code: BLOKE

Resistochoke

The increasing popularity of resistance-coupled audio amplifiers has made necessary the development of compact wire-wound resistances of high value, to fit in the clips of units like the Resistoblock. The Resistochoke is a special 100,000-ohm wire-wound resistance designed to meet this condition. It is suitable for all resistance-coupled circuits. Resistochoke, wire-wound 100,000-ohm resistance—No. 770.....Code: YEYTA

Tube Sockets

Pilot sockets are made of genuine molded bakelite and hold the tubes firmly but not too tightly. The contact springs and soldering lugs are actually one piece, so there are no losses in the sockets themselves. The No. 212 socket is very popular as a receptacle for the Pilot plug-in coil forms. The No. 216 and No. 217 sockets have a circular trough cut in their tops, to guide the pins of the tube into the holes. All binding posts and terminal lugs are marked by letters molded right into the bakelite.

Set builders' socket, UX and UV tubes (4 prongs)—No. 205	Code: UNSIL
Shock-proof socket, UX and UV tubes (4 prongs)—No. 206	Code: UNSHK
Base type socket, UY tubes (5 prongs)—No. 212	Code: YIZHY
Base type socket, UX and UV tubes (4 prongs)—No. 213	Code: YUPYH
Set builders' socket screw contacts, for UX and UV tubes (4 prongs) No. 214	Code: ZIGGO
Set builders' socket, screw contacts, for UY tubes (5 prongs) No. 215	Code: YAALC
Universal socket, UX and UV tubes (4 prongs)—No. 216	Code: YAEAL
Universal socket, UY tubes (5 prongs)—No. 217	Code: YAFWE



General Accessories

Shelf Brackets, Binding Posts, Jack, Plug, Switches and Pilot Light



No. 37 Bracket

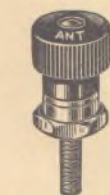
Metal Sub-Panel Bracket

The No. 37 metal shelf bracket is ideal for all sets. It is strong and rigid, and drilled with numerous holes for the mounting of the sub-panel and small parts. It is 9" long, stands 1 1/4" high and is 3/8" wide. It is neatly nickel-plated.

Metal bracket—No. 37.....Code: ZURIB

Engraved Bakelite Top Binding Posts

These binding posts have non-removable tops of genuine bakelite, engraved with white letters as listed below. The drilled shanks take phone tips as well as lugs and plain wires. Handsome and durable, these posts will last a lifetime.



Binding Post



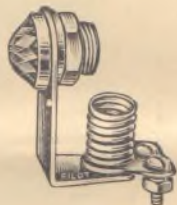
No. 1165

ANT	No. 20	—Code: BANNO
SHORT ANT.	No. 16	—Code: WYNUS
GND	No. 21	—Code: BAGIS
A—	No. 22	—Code: BINET
A—C+	No. 17	—Code: WYOHL
A+	No. 23	—Code: BUSAZ
A+B—	No. 18	—Code: WYOPS
B—	No. 24	—Code: BIBUG
B+DET	No. 25	—Code: BETEC
B+90 V.	No. 31	—Code: WYRVD
B+135V.	No. 15A	—Code: ZEBAR
B+180V.	No. 16A	—Code: ZECIV
B+220V.	No. 17A	—Code: ZEDTA
B+AMP	No. 26	—Code: BEPUS

C+	No. 28	—Code: BICUS
C—	No. 27	—Code: BECMI
C—4 1/2 V.	No. 30	—Code: WYRIT
C—9V.	No. 18A	—Code: ZEEGY
C—40V.	No. 19A	—Code: ZEFUB
A.C.	No. 15	—Code: WYNOR
A.C. 1 1/2 V.	No. 20A	—Code: ZEHCO
A.C. 2 1/2 V.	No. 21A	—Code: ZEILF
A.C. 5V.	No. 22A	—Code: ZEJYG
A.C. 7 1/2 V.	No. 23A	—Code: ZEKYH
L.S.+	No. 19	—Code: WYPAP
L.S.—	No. 32	—Code: WYSIV
Plain	No. 29	—Code: BLAIN



No. 275
Phone
Plug



No. 40
Jeweled
Pilot Light

Plain Nickel Plated Binding Post—No. 11.....Code: BINP.

Midget Phone Jack

A small, convenient telephone jack for general use in conjunction with phone plugs. Can be mounted on the front panel of a set for a phonograph pick-up, or in the rear for loud speaker or earphone connection. It is of the single closed circuit type, adaptable to practically all circuits. Mounts in a single hole, and is 1 inch deep. Because of its small size, this jack is easily installed on low sub-panels, or on front panels where room is at a premium. Its connections lugs are of generous size and spaced so as to avoid short circuits.

Phone Jack—No. 1165.....Code: COJAC



No. 46



No. 42

Bakelite Phone Plug

A simple, sturdy plug, to which phone and loud speaker cord tips can be connected in an instant without tools. Will work in all standard jacks. The handle is of bakelite. The insulation between the contacts will withstand 500 volts. The shank of this plug is provided with a hole in which the tie string of the phone or loud speaker cord may be fastened so as to relieve the strain on the tips.

Phone plug—No. 275.....Code: PLEB

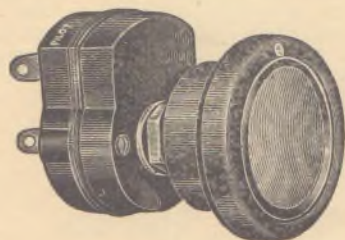
Switches

Power Switches—Pilot Light

Three different types of switches are made by Pilot, to satisfy different tastes and requirements. The No. 42 is of the toggle type, and will handle 1 1/2 amperes at 110 volts. It has a bakelite case and requires three mounting holes. The No. 44 is of the snap type, and will handle 3 amperes at 220 volts. It is supplied with a round bakelite on-off knob, and mounts a single hole. The No. 46 is exactly like the No. 44, except that a little lever is furnished instead of a knob. All three switches are suitable for battery or house-current sets.

The No. 40 pilot light lends an attractive touch to a set not equipped with illuminated dials. The red jewel glows as long as the set is turned on, and acts as a reminder. No bulb is supplied, but any miniature base lamp can be used.

Toggle switch, black case—No. 42Code: SWOOF
Toggle switch, walnut case—No. 42WCode: ZOPTO
Knob switch—No. 44Code: ZYAHB
Lever switch—No. 46Code: ZYEDY
Jeweled pilot light—No. 40Code: PLITE



No. 44



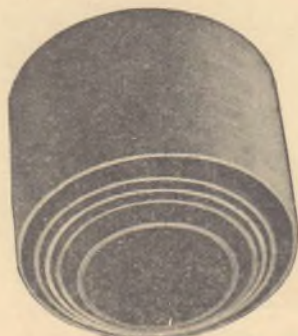
Products of the Twin Coupler Co., Inc.

A Division of the Pilot Radio & Tube Corporation
Specializing in the Manufacture of Radio Coils

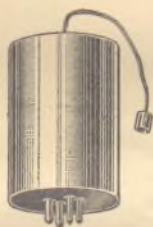


Formalite Tubing—A Twin Coupler Product

Formalite tubing is a hard, strong tube, made of thoroughly impregnated paper. It has a polished finish, either natural light brown or black in color. Sold in standard lengths of 42 inches. We make all kinds of tubing; write us about your needs.



Formalite Tubing



Appearance of No. 230
and No. 235 Coils

NUMBER	INSIDE DIAMETER	CODE	NUMBER	CODE
	1/32" — WALL THICKNESS — 1/16"			
T-525	7/8"	ZYZSA	T-545	ZYRLA
T-526	1 1/8"	ZYMAG	T-546	ZYKOH
T-527	1"	ZUZHE	T-547	ZYVVV
T-528	1 1/8"	YODNO	T-548	YOERZ
T-529	1 1/8"	YOFLA	T-549	YOGIP
T-530	1 1/8"	YOHOR	T-550	YOIRB
T-531	1 1/4"	YOJAP	T-551	YOKRE
T-532	1 3/8"	YOLAR	T-552	YOMET
T-533	1 3/8"	YONNOY	T-553	YOOKT
T-534	1 3/4"	YOPUB	T-554	YORIB
T-535	1 7/8"	YOSUP	T-555	YOWAD
T-536	2 1/8"	YIZID	T-556	YITAV
T-537	2 1/4"	YINAP	T-557	YELIK
T-538	2 3/8"	YATAL	T-558	YAZUV
T-539	2 3/8"	YEDOD	T-559	YUNDO
T-540	2 3/4"	YUSOJ	T-560	YUCEP
T-541	2 7/8"	YAVMA	T-561	YANYL
T-542	3 3/8"	YAGUC	T-562	YACAS

COLORS

Black.....Codeword ZOOSY Natural.....Codeword ZIYHK

No. 230 Screen-Grid Plug-In Coils

Circuits using the screen-grid tube require radio-frequency transformers or coils of special design. Ordinary R.F. coils are worthless, as with them the tuning is very broad and the amplification poor. The No. 230 coils are designed particularly for screen-grid sets, and will make the circuit sensitive and selective.

The No. 230 combination includes four coils in one box. One is an antenna coupler, the other three interstage transformers. The actual coils are enclosed in polished, round aluminum cans, 2 1/2" in diameter and 3 1/2" high, which shield them fully. The bottoms of the cans are equipped with prongs, which fit standard tube sockets. Coming through the tops are short lengths of flexible wire, fitted with caps to snap on the cap electrodes of screen-grid tubes. The antenna coil plugs into a five-prong socket; the others into four-prong sockets. These coils must be tuned by .00035 mf. condensers.

Set of four screen-grid plug-in coils—No. 230.....Code: YEYMP

No. 235 Screen-Grid Coils

The No. 235 coils are similar to the No. 230, being intended for two-stage R.F. circuits. There are three coils to the set: an antenna coupler and two interstage transformers. The tuning condensers must be .00035 mf. each. The shield cans are 2" in diameter and 4" high. The antenna coupler requires a five-prong socket, the others, four-prong sockets.

Set of three screen-grid plug-in coils—No. 235.....Code: YORZE

Space-Wound R.F. Transformers

The No. 175 is a very convenient radio-frequency transformer for general use in T.R.F. circuits, as it is very small and its magnetic field does not extend very far from it. With a .00035 mf. variable condenser it tunes from 200 to 550 meters. The wire is space wound on a molded bakelite form 2 1/2 inches high and 1 3/8 inches in diameter, through the bottom of which there is a hole to pass a mounting screw. The connections are brought out to soldering lugs at the base of the coil. The No. 175 coil, when equipped with four pins to make it fit a standard UX socket, is sold as the No. 176.

Where space in a set is at a premium, and it is desired to use small R.F. transformers, the No. 125 midgets will be found entirely satisfactory. They are wound with enameled wire, and cover the entire broadcast band (200-550 meters) when tuned by .00035 mf. condensers. The forms are of Formalite tubing, which is light but strong. Dimensions: 1 3/4" long, 1 1/4" diameter.

Base mounting R.F. transformer—No. 175.....Code: WYKNO

Plug-in transformer—No. 176.....Code: WYKUP

Set of 3 midget coils—No. 125.....Code: YAVSY



No. 176



No. 175



No. 125



Products of the Twin Coupler Co., Inc.

Short-Wave Coils and Forms; Radio Frequency Choke Coil,
Three-Circuit Tuner, Screen-Grid Tube Shield



No. 236 "Pre-Selector" Coils

The special coils used in the Pre-Selector receiver are available separately as the No. 236. The set of four includes one antenna, one band-pass and two interstage coils, wound on Formalite tubes $2\frac{3}{8}$ inches long and 1 inch in diameter, and also the four special aluminum shields designed for the coils. These shields are 4 inches long and 2 inches square on end, being open on the long side. The No. 236 coils must be tuned by condensers of .000365 mf. capacity, being designed particularly for the Vaultype condensers.

Pre-Selector coils, with shields—No. 236 Code: YUKVA

R.F. Choke Coil

The No. 130 is an 80-millihenry radio-frequency choke coil for general use in short wave and regular broadcast receivers. Its choking effect extends from about 20 meters up to 600, its distributed capacity being very low. Dimensions: $1\frac{1}{2}$ " high, 1" diameter. R.F. choke coil—No. 130 Code: YEMEK

Blank Plug-In Coil Form

Amateurs who prefer to wind their own short-wave coils, for band-covering tuners, super-heterodynes and other special sets, will find the Pilot blank plug-in coil forms very convenient. They have five pins in the base, and fit any standard five-prong UY socket. They also have a handy ring at the top to facilitate withdrawal from the socket. Contact pins and handle are removable. The forms are of genuine bakelite, with ribs on the surface to keep the wire as free as possible. Length of form is $2\frac{1}{2}$ ", diameter $1\frac{3}{8}$ ". Blank coil form, with pins and handle—No. 185 Code: YIDYL

Short-Wave Plug-In Coils

This set of short-wave plug-in coils consists of five of the No. 185 forms, each wound with a primary winding, a secondary and a tickler. When used in a straight regenerative circuit, with a .00016 mf. variable condenser tuning the secondary, the wavelength ranges are as follows: red ring coil, 17-30 meters; orange, 30-52; yellow, 48-105; green, 73-202; and blue, 200-500 meters. They take in all the short-wave channels, and the regular broadcast band as well. These coils are in use all over the world, and are without question the most convenient coils of their kind.

Set of five coils as described—No. 180-4 Code: YUDIR
Red handle coil alone—No. 180 Code: YAYOS
Orange coil alone—No. 181 Code: YEANK
Yellow coil alone—No. 182 Code: YECYA
Green coil alone—No. 183 Code: YEDYG
Blue coil alone—No. 184 Code: YICUJ

Super-Wasp Plug-In Coils

These are the coils supplied with the K-110 and K-115 kits. The No. 601A are the antenna coils, which contain a single winding apiece. The No. 601D are the detector coils, which have a grid winding and a tickler apiece. There are five coils to each set, fitted with handles of different colors. These coils were designed especially for the Super-Wasp, and will work satisfactorily in other receivers only if their circuits and constants closely match those of the Super-Wasp.

These coils also use the No. 185 forms.
Super-Wasp antenna coils—No. 601A Code: YUBMA
Super-Wasp detector coils—No. 601D Code: YUCYT

Three-Circuit Tuner

Although considered old-fashioned by many people, the No. 121 three-circuit tuner continues to find widespread application, particularly in simple elementary receivers constructed by boys. The tuner is wound on $2\frac{1}{2}$ inch Formalite tubing, and consists of a fixed primary and secondary and a rotating tickler. It mounts in a single hole. The tuning range with a .00035 mf. condenser is from 200 to 550 meters.

For receivers using a screen-grid tube ahead of the detector, the No. 133 tuner is recommended.

Three-circuit tuner, standard—No. 121 Code: ZEMIG
Three-circuit tuner, special for screen-grid tubes—No. 133 Code: ZAVUM
R.F. antenna coil, to match No. 121—No. 123 Code: ZATHE

Tube Shield

It is necessary in some receivers, and desirable in others, to shield the 222 or 224 screen-grid tubes used in them. The No. 222S shield is convenient for the purpose. It is made of polished aluminum and is 2 inches in diameter and 4 inches high, with an insulated hole in the top for the cap of the tube. The base over which it slips fits right over the tube socket. If the No. 216 or No. 217 socket is used, the same screws that hold the socket will hold the shield base.

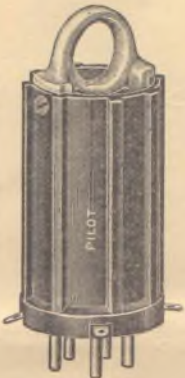
Screen-grid tube shield No. 222S Code: ZAMOC



No. 236
Coil



No. 130
R.F. Choke



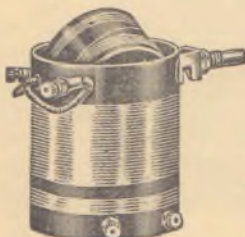
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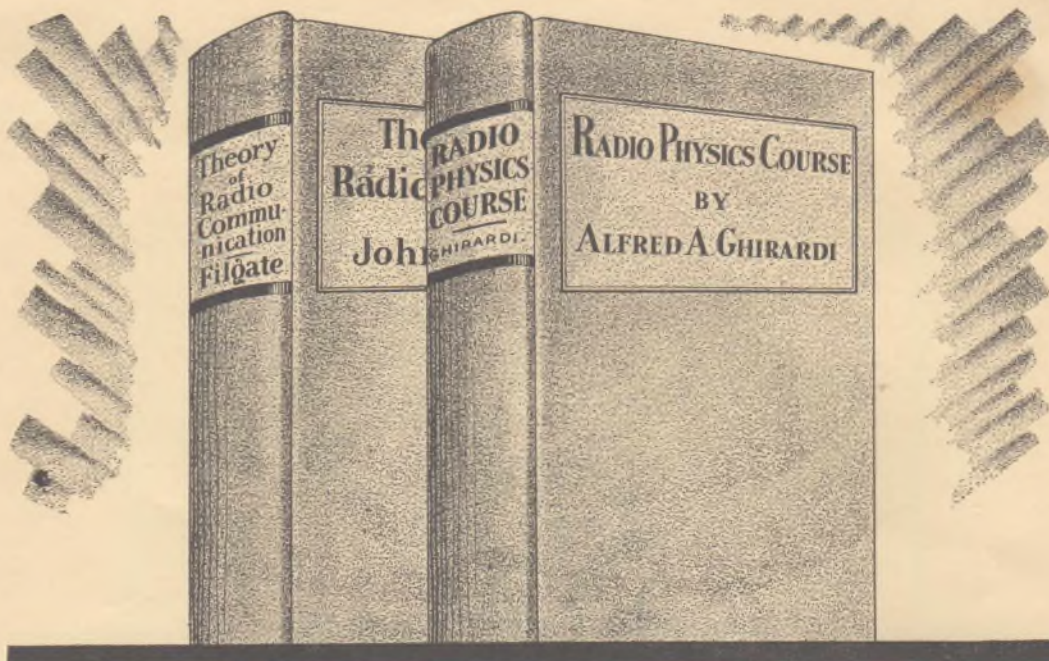
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No. 180-4
Short-wave Plug-in Coils



No. 121
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