

**AUTOMATIC**



**ELECTRIC**

**TELEPHONES,  
TELEPHONE PARTS  
AND ACCESSORIES**

CATALOG 4055-A

**AMERICAN AUTOMATIC ELECTRIC SALES COMPANY**

1033 West Van Buren Street, Chicago, U. S. A.

*Distributor for Products of* **AUTOMATIC ELECTRIC COMPANY** *and Other Companies*

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**EXPORT DISTRIBUTORS: AUTOMATIC ELECTRIC SALES COMPANY, LIMITED**



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## Ordering Information

### Orders

Orders for shipment within U. S. and possessions should be placed on American Automatic Electric Sales Company, 1033 W. Van Buren Street, Chicago, Illinois. Orders for foreign shipment should be placed on Automatic Electric Sales Company, Limited, 1027 W. Van Buren Street, Chicago, Illinois, U. S. A.

When ordering, give quantity desired, catalog number and description as shown in catalog. If there is any doubt as to the exact instrument required for any purpose, please provide us with complete details regarding its application. Our Engineering Department will then be in a position to enter your order properly, and without unnecessary correspondence.

### Special Apparatus

Where variations from standard listed items are desired, please give catalog number of standard item, together with complete details of modifications desired.

### Shipments

Shipments will be made in accordance with instructions received with order. Please specify method of shipping, and give preferred routing. In the absence of instructions, we will use our best judgment in routing shipments to give you the very best service.

### Claims

We assume no responsibility for breakage or loss after receiving an "In Good Order" receipt from the transportation company, and all claims of this kind should be made direct to them without delay. We will be glad to cooperate in securing satisfactory adjust-

ment of such claims. Mail shipments of considerable value are insured, at the customer's expense.

Claims for shortage should be made promptly, and should be accompanied by packer's ticket, which is placed in each case.

If it is desired to return goods for credit, exchange or repairs, please secure our consent and shipping instructions before shipping.

### Prices

Price lists are issued from time to time, and the current list will be gladly sent upon request. Unpriced orders will be filled at prices prevailing at date of shipment. Small orders priced from obsolete price lists will be shipped at latest prices without re-quotation, unless revised quotations are requested before shipment. Large orders so priced will be quoted on, and your approval secured before shipment is made.

### Terms

Accounts with companies with approved credit are payable net 30 days from date of invoice, except where quotations indicate otherwise.

New credit accounts are solicited. In order to facilitate prompt shipment, send references or other information of a credit character with your order, if you are not rated by the commercial agencies. If it is desired to avoid delay on your first order incidental to communicating with references, etc., instruct us to ship C.O.D. by express or parcel post, or by freight, subject to sight draft through a local bank against the bill of lading.

*Apparatus manufactured by Automatic Electric Company is guaranteed to be free from mechanical and electrical defects, and any part or unit which proves defective under normal conditions, and when used as intended, will be replaced or repaired without charge, if returned to our general offices within one year. Apparatus of other makes bears the standard guarantee of the manufacturer.*

# Automatic Electric Telephones, Telephone Parts and Accessories

In this catalog, Automatic Electric Company presents a complete selection of telephone instruments, to meet all requirements of modern telephone service. Telephone companies or administrations operating any type of equipment—automatic or manual, central-battery or magneto—will find herein telephones which will exactly meet their needs—and which will also have a definite appeal to subscribers.

The value of modern telephone apparatus as a means of attracting subscribers, and of securing their goodwill, has been given increasing attention in recent years by the more progressive telephone companies. In every case, they have found that telephone instruments offering pleasing appearance, and the utmost in convenience, are of real help in "selling" telephone service.

This attention now being given to "subscriber appeal" in telephone apparatus had its beginning in 1925, when Automatic Electric Company introduced the Monophone. This new instrument—the first practical telephone of the modern handset type—represented also the first successful attempt to build into telephone apparatus the beauty and convenience which would appeal to telephone users.

The Monophone, and all of the other Automatic Electric telephones are designed to be *right*, not only technically, but also from the viewpoint of the telephone subscriber. In appearance, operating convenience, and dependability, they will serve as a continual source of goodwill for any telephone company or operating administration.

## Transmission

Transmission quality and volume has been the subject of many years of study in our laboratories, and continual development permits us now to offer transmission equipment of the very finest types, and transmission circuits capable of securing the best results from this equipment.

Automatic Electric transmitters have been developed to such a point that they now provide almost uniform response over the entire range of speech frequencies, without distortion, and without sacrifice of volume.

They withstand to an exceptional degree the conditions of actual operation—vibration, excessive humidity, etc.—to provide dependable, trouble-free service. And they continue to provide this service, without appreciable deterioration, not merely for a few months or years, but throughout the life of the telephone.

Transmission circuits used in Automatic Electric telephones have undergone a parallel development to provide high transmission efficiency without the disturbance of extraneous noises. Organizations interested in securing the very finest of telephone transmission (which is demanded by the conditions of modern telephone service) are earnestly invited to compare the transmission qualities of Automatic Electric and other telephones, either in their laboratories, or under actual working conditions. Such tests will serve to emphasize not only the faithfulness of reproduction, but also the complete absence of sidetone which results from the use of exclusive circuit and mechanical designs.

## Automatic Telephones

Basically, the only difference between automatic and manual central-battery telephones is the addition of the dial on the automatic instrument. The dial includes a pair of "impulse" springs, which are inserted to interrupt the line circuit and thus control the automatic switchboard equipment; and a set of "shunt" springs, which shunt the transmitter and receiver during dialing, to remove these resistances from the dialing circuit, and to prevent the dial impulses from "clicking" in the receiver.

## The Type 24A36 Dial

Automatic telephones are supplied with the new and improved Type 24A36 Dial. The Automatic Electric dial is world-famous for its ease of operation and its almost unbelievably long life, and in this new dial a quiet pawl has made operation almost absolutely noiseless. Dials are available with various arrangements of shunt springs for various circuits as described in this catalog.

The standard dial number plate is numbered from 1 to 0, but other types of plates are also available,

## Automatic Electric Telephones, Telephone Parts and Accessories—Continued

as shown herein. Standard finger-plate is of "full-circle" type, as illustrated, but a special "cutaway" finger plate (see page 33) can be furnished. A dial card, providing space for the telephone number, is inserted under a transparent celluloid cover in the center of the dial finger plate; and this card, also, is available in a standard design as shown in this catalog, or in other designs, if required.

### Conversion Feature

A valuable feature of Automatic Electric telephones is the provision for ready conversion from manual to automatic operation. Practically all telephone companies and operating administrations, even though not now operating automatic equipment, expect to do so at some future date. For such organizations, "Manual—Convertible" instruments are shown in this catalog, and we recommend that new instruments be selected from among these types. These telephones are provided with space for the automatic dial, which can be easily and quickly installed, and no other change is required for conversion to automatic operation. The economy of this arrangement is self-evident.

### Ringling

Automatic Electric central-battery telephones are available with ringing equipment to meet any requirements. Ringling may be metallic or grounded, with polarized ringers of either the "straight-line" type (for single-party metallic, or two-party divided ground ringling), or of the harmonic type in any of the standard multiple or non-multiple frequencies. The multiple frequencies are normally used when rotary ringling machines are employed; the non-multiple frequencies, when ringling current is supplied by harmonic converters. Ringers of the "straight-line" type are provided with a "biasing" spring, permitting the use of pulsating ringling current to provide two-party selective metallic, or four-party selective ground ringling.

### For Magneto Exchanges

Automatic Electric Company manufactures a complete line of magneto telephones, incorporating many of the same features of design and equipment as are found in the central-battery instruments.

However, through the recent development of the Automatic Electric Central-Battery Line Adapter, it is now possible for companies operating magneto exchanges to offer their subscribers the beauty and convenience of the newest central-battery telephones. These instruments will thus be available whenever the system is to be converted to central-battery operation.

Complete details of the Automatic Electric Central-Battery Line Adapter will be gladly furnished on request.

### Special Telephones

In addition to the "standard" types of instruments, there are listed in this catalog a large number of telephones especially adapted to meet special requirements—for outdoor installation; for use in mines and boiler rooms; for installation in corridors or other confined spaces; and for other such purposes. These instruments are built to the same high standards of performance and durability as all other Automatic Electric telephones—they are "special" only in their design and application.

### Maintenance

Automatic Electric telephones are designed and constructed to require a minimum of maintenance attention. Materials are of the finest, and each is carefully selected for its purpose. Life tests, both in our laboratories and in the field, have demonstrated their durability.

Standard, full-size parts are used in all Automatic Electric telephones described herein. Compactness has been attained without sacrificing efficiency in any way. And for easy maintenance, all parts are ingeniously arranged so as to be easily accessible when the telephone is opened.

### Telephone Accessories

A feature of this catalog is the section on telephone accessories. These accessories are designed to further increase the convenience of telephone service, and the subscriber's enjoyment and use of his telephone. They are being increasingly used by telephone companies desiring to meet subscribers' demands for the most up-to-date and convenient telephone facilities available, and are serving such companies as a ready source of increased revenue.

## The Monophone—Today's Telephone

The development of the modern "handset type" telephone had its beginning in 1925, with the introduction of the Monophone—the first really practical instrument of this type. This great advance in telephone design provided telephone users, for the first time, with instruments adapted to their requirements—providing high transmission efficiency, "one-hand" convenience, modern beauty, and a durability which assured dependable service. Today's Monophone represents further development of the original Monophone idea.

### "All-Positions" Transmitter

The exceptionally clear transmission of the first Monophone has been further enhanced by the development of a new "all-positions" transmitter. This transmitter provides practically unvarying volume in whatever position it is held, and provides greatly improved fidelity of response over the entire range of transmitted frequencies up to about 4500 cycles.

The "all-positions" transmitter is ideally adapted for use under conditions of extreme humidity, all working parts being tightly sealed. Even after being actually immersed in water for long periods, it continues to operate without any loss of efficiency.

The characteristics of the "all-positions" transmitter are such that it may be used at any point on lines of any length, and for either central-battery or local-battery service. It is not necessary to change transmitters to adapt the Monophone to its particular location on the line.

### Convenience

The convenience of "one-hand" operation provided by the first Monophone has been extended in new directions by the design of two strikingly original instruments—the Type 34A3 Self-Contained Desk Monophone and the Type 35A5 Wall-Mounting Monophone. These instruments provide all of the equipment for a subscriber's station—including the ringer and ringing equipment—in compact, handsome assemblies.

### Metallic and Ground Ringing

The anti-sidetone booster circuits used in the Monophone require a condenser in the talking circuit, as well as in the ringing circuit. In manual instruments, or in automatic instruments arranged for

metallic ringing, one condenser is used for both purposes. If automatic telephones are to be arranged for ground ringing, however, a separate condenser must be provided for each circuit. For this reason, automatic instruments, and "manual—convertible" instruments listed in this section are offered in two different assemblies—with one condenser for metallic, or two condensers for ground ringing.

### Art Shades

Molded of plastic materials, the newer types of Monophones provide light weight and strength, together with the modern touches of streamline design and COLOR, in beautiful art shades.

These art shades are designed to satisfy the modern desire for color in the accessories of the home or office, and were selected, after careful study of color harmony and investigation of popular preference, as best meeting the widest possible variety of conditions. They are part of the material itself, and cannot wear off or fade.

The colors available in the various types of Monophones are listed under the descriptions herein. These colors include:

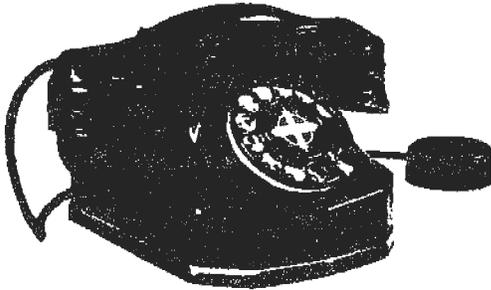
- Mahogany—reddish brown, grained in black in simulation of highly polished mahogany.
- Walnut—brown, with black grain closely resembling polished dark walnut.
- Black—with gold or chromium trim, makes an instrument of dignified beauty.
- Chinese Red—the beauty of brilliant red lacquer reproduced in molded plastic.
- Old Ivory—a rich ivory, suggested particularly for use in bedrooms, living rooms, etc.
- Jade Green—bright green, especially attractive when trimmed in gold.
- Nile Green—a light "pastel" green, for bedrooms, kitchens, etc.
- Royal Blue—dark powder blue, particularly handsome with chromium trim.
- Orchid—pale lavender, particularly appropriate for use as a bedside telephone.
- Maroon—deep, dark red, of striking beauty when trimmed in gold.

The metal fittings—dial, cradle, and hand unit bands—of these instruments are available in either heavy chromium plate, highly polished, or in heavy pure gold plate with a satin finish.

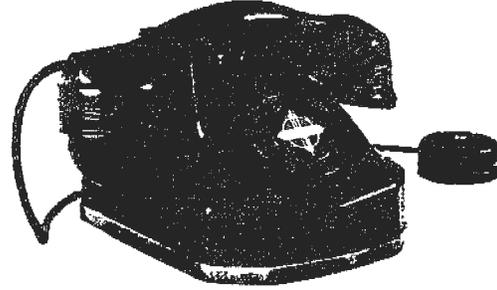
## Central-Battery Monophones

### The Type 34A3 Self-Contained Desk Monophone

Automatic, or Manual—Convertible



Type 34A3 Self-Contained Desk Monophone  
Cat. Nos. AA-10 and AA-11



Type 34A3 Self-Contained Desk Monophone  
Cat. Nos. AA-12 and AA-13

A handsome, compact instrument—selected by telephone companies for its sturdiness and the accessibility of all its parts—admired by telephone users for its distinctive modern lines, and because *it requires no bell box.*

The Type 34A3 Self-Contained Desk Monophone contains all of the ringing equipment—in addition to the Monophone cradle switch, and the dial (on the automatic model) or the number-card holder (on the convertible model). The cradle for the Monophone hand unit is molded directly onto the molded plastic case, and provides no projections which might be easily broken.

Through ingenious design, all of the parts, though standard and full-sized, are readily accessible. The cradle switch, dial (or number plate), and cord terminals are placed in the cover; the ringer, induction coil and condenser are mounted on a pressed steel base plate; and when these two assemblies are placed together, the various parts “dovetail” neatly into place with no waste space. A black rubber cushion ring is provided on the base plate, to protect highly polished surfaces.

Line connections to the Type 34A3 Monophone are made through a Monotype cord, six feet long, terminating in a small Bakelite terminal block which can be mounted inconspicuously near the location of the telephone.

The Type 34A3 Monophone, providing a complete telephone station in one unit, is an ideal instrument for use with a Portable Telephone Plug and Jack (see page 45).

*Circuit*—Anti-sidetone booster.

*Equipment*—Complete instrument includes desk stand, line cord and terminal block, and Monophone hand unit with “all-positions” transmitter, and 3-conductor Monotype cord, fifty-three inches long. Basic equipment of desk stand includes 3-winding induction coil, polarized ringer for straight-line, biased-bell, or code ringing, one condenser (1 mf.) for metallic ringing or two for ground ringing, and the Monophone switch. Instrument is completely wired, including dial wiring (with impulse spring leads connected together) on manual convertible models. Type 24A36 dial, with number plate, finger plate, and dial card as illustrated, is provided on automatic models, number card holder on convertible models.

*Special Equipment*—For harmonic ringer, in any of the standard multiple or non-multiple frequencies, specify frequency desired.

If “radio suppressor” dial, special dial number plate or dial card, or “cutaway” finger plate, is desired on automatic models, give catalog numbers.

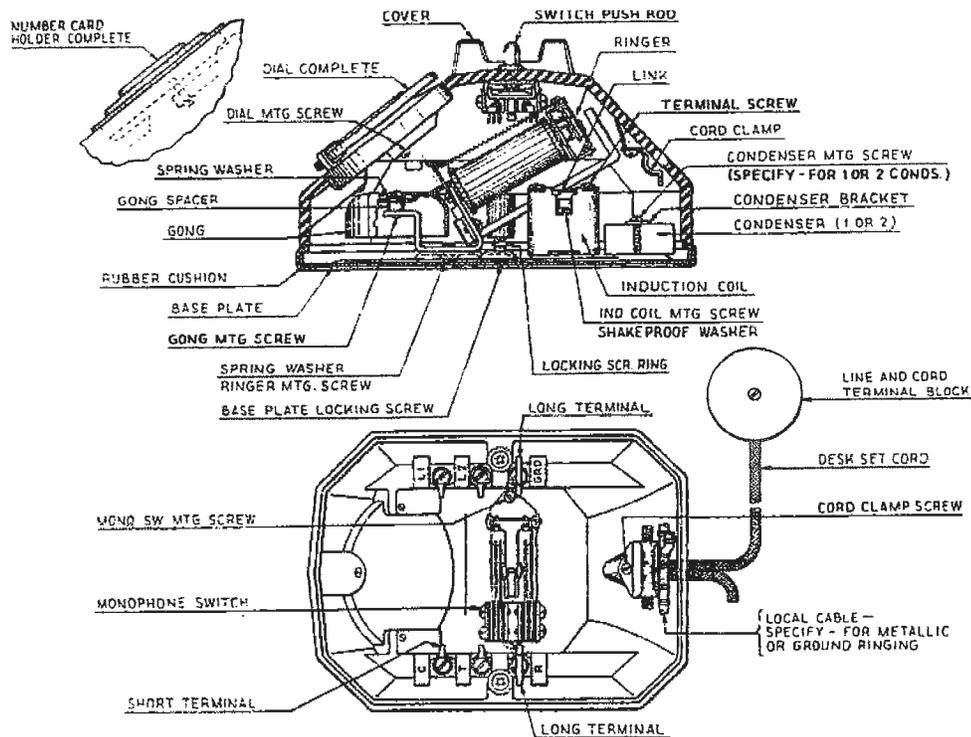
The Type 34A3 Monophone can be supplied with induction-coil-receiver circuit if specified on order.

*Finish*—Lustrous black Bakelite, with transmitter and receiver bands, and dial finger plate heavily black japanned. Dial finger stop is polished nickel plate.

The Type 34A3 Monophone is also available in Black, Walnut, Mahogany, Chinese Red, Old Ivory, Jade Green, Nile Green, Royal Blue, Orchid, or Maroon, with gold- or chromium-plated trim. If art shade Monophone is desired, specify color *and trim.*

*Dimensions*—Height, 5½”; width of base, 5¾”; depth of base, 7¾”. The Monophone hand unit is 9” long.

The Type 34A3 Monophone—Continued



Sectional Drawing of Type 34A3 Self-Contained Desk Monophones  
 Cat. Nos. AA-10, AA-11, AA-12 and AA-13, showing Replacement Parts

Net Weight—6½ lbs.

Shipping Weight—13 lbs.

Cat. No.	Description
AA-10	Type 34A3 Monophone—Automatic—Met. Ring.
AA-11	Type 34A3 Monophone—Automatic—Grd. Ring.
AA-12	Type 34A3 Monophone—Man., Conv.—Met. Ring.
AA-13	Type 34A3 Monophone—Man., Conv.—Grd. Ring.

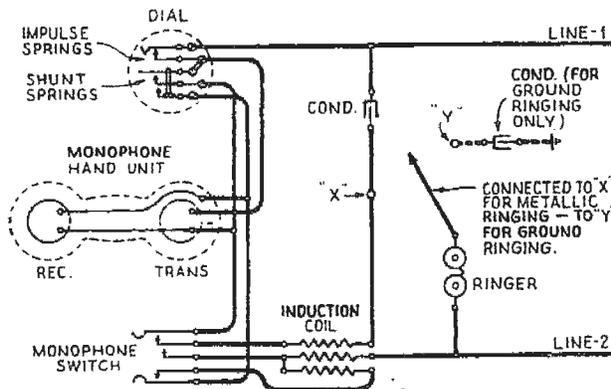
When ordering, give catalog number and description. Monophones are supplied with straight-line ringers unless otherwise ordered. If harmonic ringers are desired, specify frequency.

Principal Replacement Parts

Cat. No.	Description
AK-11	Type 24A36 Dial (for Automatic models)
AK-17	Number-Card Holder (for Man. Convertible models)
AS-10	Central-Battery Ringer—Straight-line
AU-11	3-Winding Induction Coil
AT-12	Condenser (1 mf.) (1 required for metallic ringing, 2 for ground ringing).
AF-10	Hand Unit with cord—Polarized Receiver.
AD-12	Desk Set Cord—2-cond. (for metallic ringing)
AD-10	Desk Set Cord—3-cond. (for ground ringing)

When Ordering

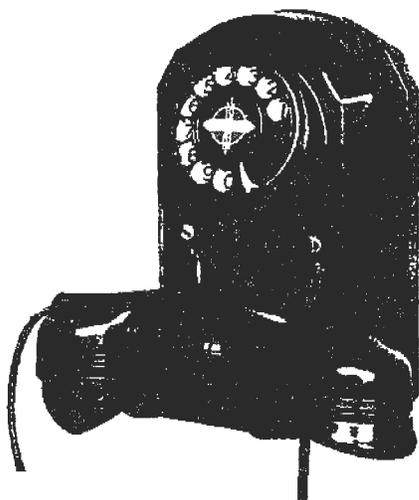
- 1 Principal replacement parts should be ordered by catalog number and description as listed above. Other parts should be ordered by name, as shown in above drawing, together with catalog number of instrument for which they are ordered.
- 2 Standard Monophones are black Bakelite, and parts will be furnished for black Monophones, unless otherwise ordered.
- 3 Replacement parts are furnished *without* mounting material. If mounting screws, etc., are required, please specify, and give catalog number of telephone.
- 4 When ordering condenser to convert from metallic to ground ringing, please specify "for conversion," giving catalog number of telephone, and necessary mounting screws and connecting cord will be furnished.



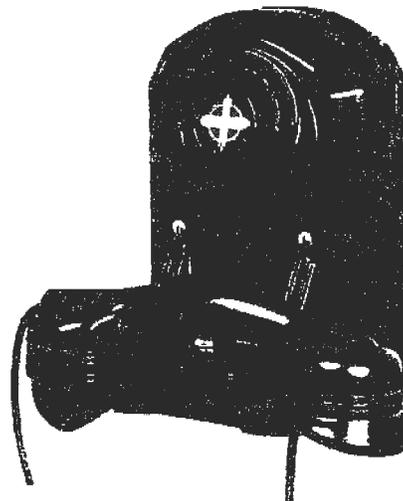
The Anti-Sidetone Booster Circuit used in Type 34A3 Self-Contained Desk Monophones

## The Type 35A5 Wall-Mounting Monophone

Automatic, or Manual—Convertible



Type 35A5 Wall-Mounting Monophone  
Cat. Nos. AA-14 and AA-15



Type 35A5 Wall-Mounting Monophone  
Cat. Nos. AA-16 and AA-17

This newest addition to the Monophone line establishes a new standard of beauty and convenience in wall-mounting telephones. It is handsome and compact—two features new in wall telephone design—and it adds to the advantages of wall mounting the convenience of the Monophone hand unit. Unlike its old-style predecessors, it does not need to be placed high up on the wall, but can be installed at a height convenient for the *seated* user.

The Type 35A5 Monophone is cased in Bakelite, both base and cover being molded of this material. All working parts are mounted on the base, the cover carrying no equipment nor wiring. Parts are standard and full-sized, providing a degree of sturdiness which assures low maintenance costs. The sound openings in the cover are lined with radio grille cloth, to exclude dust and insects, and the wiring is rubber-covered, to meet the most trying climatic conditions.

The mounting holes in the base are molded with a thin film closure, which may be "knocked out" as needed, and are located to permit mounting on a standard (U.S.A.) electrical outlet box if desired. Line wiring is connected to a terminal strip molded into the base of the telephone.

*Circuit*—Anti-sidetone booster.

*Equipment*—Basic equipment includes three-wind-

ing induction coil, polarized ringer for straight-line, biased-bell, or code ringing, one condenser (1 mf.) for metallic ringing or two for ground ringing, the Monophone switch, and the Monophone hand unit with "all-positions" transmitter and 3-conductor Monotype cord, fifty-three inches long. Instrument is completely wired, including dial wiring (with impulse spring leads connected together) on manual convertible models. Type 24A36 dial, with number plate, finger plate, and dial card as illustrated, is provided on automatic models, number card holder on convertible models.

*Special Equipment*—For harmonic ringer, in any of the standard multiple or non-multiple frequencies, specify frequency desired.

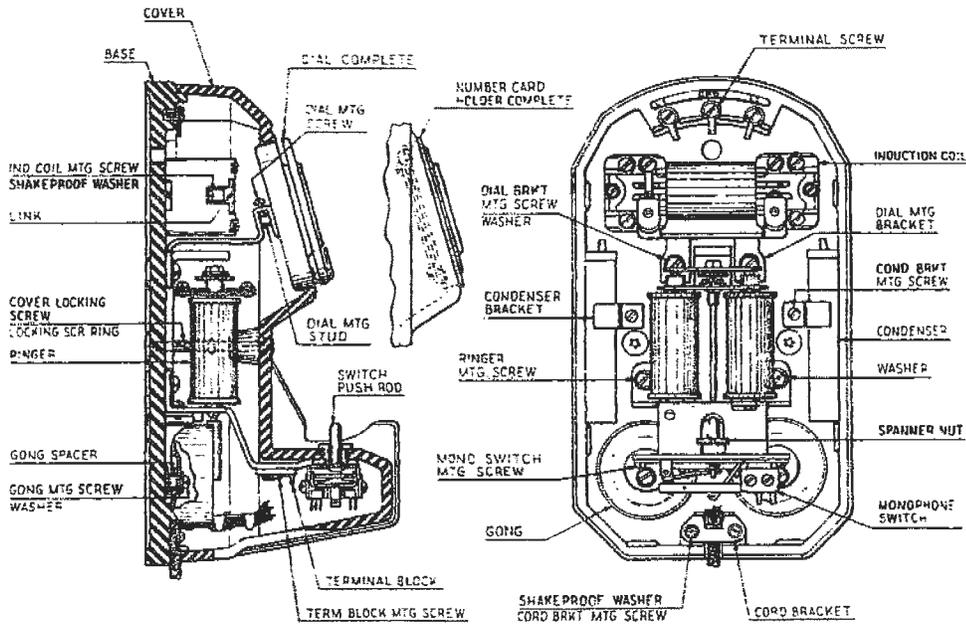
If "radio suppressor" dial, special dial number plate or dial card, or "cutaway" finger plate, is desired on automatic models, give catalog numbers.

The Type 35A5 Monophone can be supplied with induction-coil-receiver circuit, if specified on order.

A directory hook, finished in black japan, is available.

*Finish*—Lustrous black Bakelite, with transmitter and receiver bands, and dial finger plate, heavily black japanned. Other exposed metal parts are polished nickel plate.

The Type 35A5 Monophone—Continued



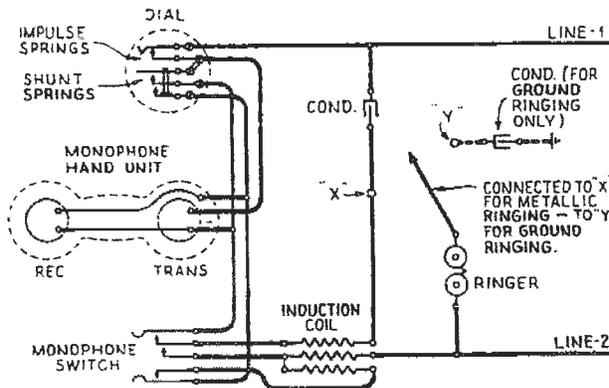
Sectional Drawing of Type 35A5 Wall-Mounting Monophones  
 Cat. Nos. AA-14, AA-15, AA-16 and AA-17, showing Replacement Parts

The Type 35A5 Monophone is also available in Black, Walnut, Mahogany, Chinese Red, Old Ivory, or Jade Green, with gold- or chromium-plated trim. If art shade Monophone is desired, specify color and trim.

Dimensions—Height, 9½": width, 5¾": depth, 5".  
 The Monophone hand unit is 9" long.

Net Weight—7 lbs.

Shipping Weight—13 lbs.



The Anti-Sidetone Booster Circuit used in Type 35A5 Wall-Mounting Monophones

Cat. No.	Description
AA-14	Type 35A5 Monophone—Automatic—Met. Ring.
AA-15	Type 35A5 Monophone—Automatic—Grd. Ring.
AA-16	Type 35A5 Monophone—Man. Conv.—Met. Ring.
AA-17	Type 35A5 Monophone—Man. Conv.—Grd. Ring.
AW-12	Directory Hook for Type 35A5 Monophone.

When ordering, give catalog number and description. Monophones are supplied with straight-line ringers unless otherwise ordered. If harmonic ringers are desired, specify frequency.

Principal Replacement Parts

Cat. No.	Description
AK-11	Type 24A36 Dial (for Automatic models)
AK-18	Number-Card Holder (for Man. Convertible models)
AS-20	Central-Battery Ringer—Straight-line
AU-12	3-Winding Induction Coil
AT-12	Condenser (1 mf.) (1 required for metallic ringing, 2 for ground ringing)
AF-10	Hand Unit with cord—Polarized Receiver

When Ordering

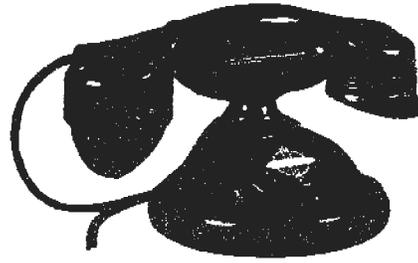
- 1 Principal replacement parts should be ordered by catalog number and description as listed above. Other parts should be ordered by name as shown in above drawing, together with catalog number of instrument for which they are ordered.
- 2 Standard Monophones are black Bakelite, and parts will be furnished for black Monophones, unless otherwise ordered.
- 3 Replacement parts are furnished without mounting material. If mounting screws, etc., are required, please specify, and give catalog number of telephone.
- 4 When ordering condenser to convert from metallic to ground ringing, please specify "for conversion," giving catalog number of telephone, and necessary mounting parts and connecting cord will be furnished.

## The Type 1A Desk Monophone

Automatic, or Manual—Convertible



Type 1A Desk Monophone  
Cat. Nos. AA-18 and AA-20



Type 1A Desk Monophone  
Cat. Nos. AA-19 and AA-21

The Type 1A Desk Monophone is of conventional design, requiring the use of a separate ringer box. Used with the Compact Type 32 Ringer Box it provides the finest and most modern equipment of this type to be had (metal ringer boxes are also available).

The base of this instrument is of molded Bakelite, with a cradle of the same material. The cradle is mounted somewhat back of the center of the base, providing space for mounting the dial at a convenient angle, and well protected from injury. The Bakelite base is screwed to a pressed steel base plate, with a black rubber cushion ring to protect highly polished surfaces and keep the instrument from moving during dialing. A terminal block for all connections is molded as an integral part of the base, and a 6-foot Monotype cord is furnished for connection to the ringer box.

When the Type 1A Desk Monophone is to be used with the Compact Type 32 Ringer Box, these units are wired in accordance with the same anti-sidetone circuit as is used in the Type 34A3 and Type 35A5 Monophones. If it is desired, however, to replace old types of telephones with the Type 1A Monophone, without discarding the existing ringer boxes, the Type 1A Monophone can be supplied with an induction-coil receiver, which makes a separate induction coil unnecessary. This instrument can be used in connection with any conventional ringer box containing a ringer and one or two condensers, as required, for metallic or ground ringing (Compact Type 32 Ringer Boxes providing this equipment are also available).

Ringer boxes for use with the Type 1A Monophone should be ordered separately, if required.

*Circuits*—Anti-sidetone booster, or induction-coil-

receiver—see circuit diagrams. (Note: On manual convertible models, dial wiring is omitted, impulse spring leads being replaced by a direct connection.)

*Equipment*—Basic equipment includes the Monophone hand unit with “all-positions” transmitter and three-conductor Monotype cord, fifty-three inches long, and the desk stand with Monophone switch and 6-foot Monotype cord. Type 24A36 dial, with number plate, finger plate, and dial card as illustrated, is provided on automatic models, number-card holder on manual convertible models. A small resistance coil is also included in the induction-coil-receiver type. When manual model is to be converted to automatic, it is merely necessary to order the dial, specifying catalog number of instrument to be converted. All necessary connecting wires are then furnished, and can easily be connected to the proper terminals in the desk stand.

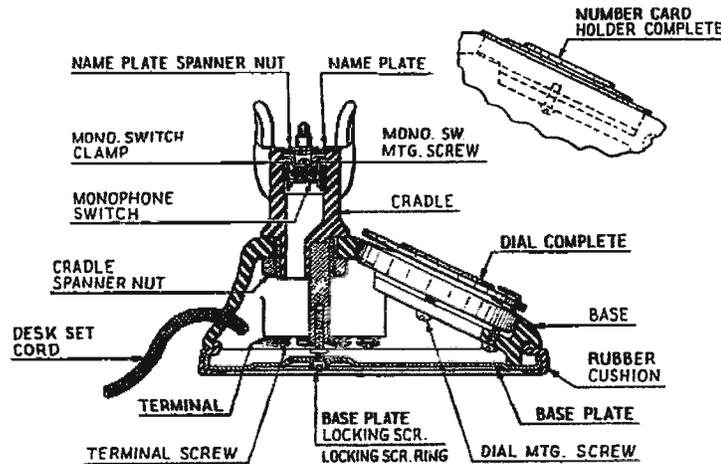
*Special Equipment*—If “radio suppressor” dial, special dial number plate or dial card, or “cutaway” finger plate, is desired on automatic models, give catalog numbers.

Desk stand can be furnished with black-japanned brass base, and aluminum alloy cradle, instead of Bakelite, when specified.

*Finish*—Lustrous black Bakelite, with transmitter and receiver hands, and dial finger plate heavily black japanned. Dial finger stop is polished nickel plate.

The Type 1A Desk Monophone is also available in Black, Walnut, Mahogany, Chinese Red, Old Ivory, Jade Green, Nile Green, Royal Blue, Orchid, or Maroon, with metal trim gold- or chromium-plated. If art shade Monophone is desired, specify color *and trim*.

The Type 1A Monophone—Continued



Sectional Drawing of Type 1A Desk Monophones

Cat. Nos. AA-18, AA-19, AA-20 and AA-21

Dimensions—Height, 5"; diameter of base, 5<sup>5</sup>/<sub>8</sub>".  
The Monophone hand unit is 9" long.

Net Weight—3<sup>1</sup>/<sub>2</sub> lbs.

Shipping Weight—6 lbs.

Cat. No. Description  
Type 1A Desk Monophone

AA-18 Anti-Sidetone Booster Circuit—Automatic  
AA-19 Anti-Sidetone Booster Circuit—Manual, Convertible  
(Require anti-sidetone ringer boxes—order separately)

AA-20 Induction-Coil-Receiver Circuit—Automatic  
AA-21 Induction-Coil-Receiver Circuit—Manual, Convertible  
(For use with existing ringer boxes)

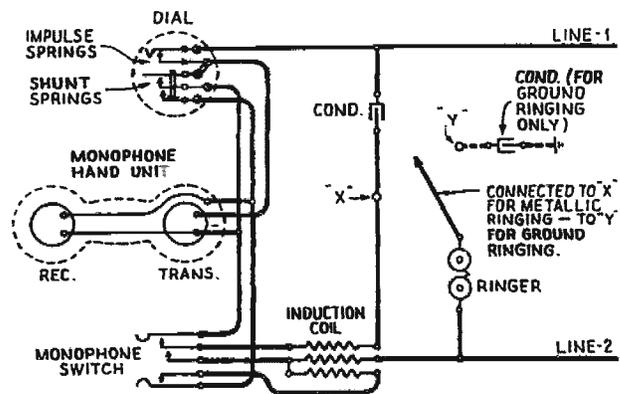
When ordering, give catalog number and description as above.

Principal Replacement Parts

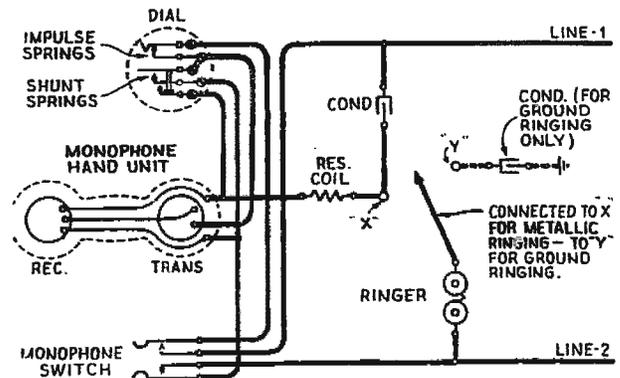
- AK-11 Type 24A36 Dial (for Automatic models)
- AK-17 Number-Card Holder (for Man., Convertible models)
- AF-10 Hand Unit with cord (for Anti-Sidetone Booster Circuit)
- AF-11 Hand Unit with cord (with Ind.-Coil Receiver)
- AU-16 Resistance Coil (for Ind.-Coil-Receiver Circuit)
- AD-13 Desk Set Cord—4-cond. (for AA-18 and AA-19)
- AD-10 Desk Set Cord—3-cond. (for AA-20 and AA-21)

When Ordering

- 1 Principal replacement parts should be ordered by catalog number and description as listed above. Other parts should be ordered by name as shown in above drawing, together with catalog number of instrument for which they are ordered.
- 2 Standard Monophones are black Bakelite, and parts will be furnished for black Monophones, unless otherwise ordered.
- 3 Replacement parts are furnished *without* mounting material. If mounting screws, etc., are required, please specify, and give catalog number of telephone.
- 4 When ordering dial for conversion, please specify "for conversion," giving catalog number of telephone, and proper connecting cords will be furnished.



Circuit of Type 1A Monophones AA-18 and AA-19  
as Connected to Anti-Sidetone Ringer Box



Circuit of Type 1A Monophones AA-20 and AA-21  
(Induction Coil Receiver Circuit) as Connected to Ringer Box

## "Two-Line" Monophones

Automatic, or Manual—Convertible



"Two-Line" Monophone—Automatic  
Cat. No. AA-22



"Two-Line" Monophone—Manual, Convertible  
Cat. Nos. AA-25 and AA-27

"Two-Line" Monophones provide, in convenient and very attractive form, the facilities required for "double-track" service, executive-secretarial service, and other similar switching services. These special services are of great value for subscribers who need more than one telephone, but who cannot justify the installation of a private exchange. Telephone users appreciate the convenience of such switching facilities, and "Two-Line" Monophones make it possible to provide them, without the use of separate switch boxes, desk keys, etc. For use in the finest executive offices, these instruments are available in the entire range of art shades.

A "Two-Line" Monophone consists of a Type FA Monophone mounted on a sub-base which contains key equipment for connecting the telephone to either of two telephone lines, and, if desired, for "holding" a connection on one line while talking on the other. The "holding" keys, when provided, are mechanically linked to the handset cradle switch, and are released when the handset is replaced in the cradle. For this reason, a small pushbutton is provided in the top of the sub-base, and is used instead of the cradle switch, for releasing a connection in case it is desired to dial a second time on one line while holding a call on the other, or for recalling the operator in a manual system.

"Two-Line" Monophones are made in three styles, for various service requirements:

Cat. Nos. AA-22 and AA-23 are equipped with three keys, one of which is used for switching from one line to the other. The other two keys are "holding" keys for lines Nos. 1 and 2, respectively. A call can be "held" on either line while the other line is being answered, but if a "holding" key is left operated when

the hand unit is placed in the cradle, it will be automatically restored to normal.

These instruments are furnished complete with 11-conductor cord. Special ringer boxes, listed below, are required for use with these telephones, and can be used for either metallic or ground ringing.

Cat. Nos. AA-24 and AA-25 have only one key, through which the telephone is normally connected to line No. 1. When the lever key is depressed (with the hand unit off the cradle), the telephone is connected to line No. 2, and a "holding" bridge is placed across this line, so that a call on line No. 2 can be "held" while the key is switched back to line No. 1. No "holding" bridge is provided for line No. 1, so it is recommended that this type of "Two-Line" Monophone be used only where one line is a local or private line.

These Monophones are furnished complete with 9-conductor cord. A special ringer box which contains two single-gong ringers of different tones, and the Monophone induction coil, is available for *straight-line ringing only*. Or, two special ringer boxes can be provided, for straight-line ringing or any harmonic frequency. Any of these ringer boxes can be used for either metallic or ground ringing.

Cat. Nos. AA-26 and AA-27 have a simple switching key only, with no holding feature, and no connection between the key and the cradle switch. The switching key remains connected to whatever line was last used.

These instruments are furnished complete with 11-conductor cord. They require ringer boxes as described above for Cat. Nos. AA-24 and AA-25.

*Circuit—Anti-sidetone booster, only.*

**"Two-Line" Monophones—Continued**

*Equipment*—Basic equipment includes desk stand, with keys as described above. Monophone switch, and six-foot Monotype cord, and Monophone hand unit with "all-positions" transmitter, and 3-conductor Monotype cord, fifty-three inches long. Type 24A36 dial, with number plate, finger plate, and dial card as illustrated, is provided on automatic models, number card holder on manual convertible models. When manual model is to be converted to automatic, it is merely necessary to order the dial, specifying catalog number of instrument to be converted. All necessary connecting wires are then furnished, and can easily be connected to the proper terminals in the desk stand.

*Special Equipment*—If "radio suppressor" dial, special dial number plate or dial card, or "cutaway" finger plate, is desired on automatic models, give catalog numbers.

Ringer box Cat. No. AO-27 can be supplied special with 2 AC ringers and 1 3-volt D.C. buzzer, or with 1 AC ringer, and 1 6-12-volt D.C. ringer, if specified. Other ringer boxes listed can be equipped with harmonic ringer, in any of the standard multiple or non-multiple frequencies. Please specify frequency, if desired.

Ringer boxes can be furnished with cover and base of brass instead of steel, when specified.

*Finish*—Lustrous black Bakelite, with transmitter and receiver bands, and dial finger plate heavily black japanned. Dial finger stop, and switching keys, are polished nickel plate.

Two-Line Monophones are available also in Black, Walnut, Mahogany, Chinese Red, Old Ivory, Jade Green, Nile Green, Royal Blue, Orchid, or Maroon, with metal trim gold- or chromium-plated. If art shade Monophone is desired, specify color and trim.

Ringer boxes are available only in black japan finish.

*Dimensions*—Desk Stand: height, 6 $\frac{1}{4}$ "; diameter of base, 6 $\frac{3}{8}$ ". The Monophone hand unit is 9" long. Ringer Box: height, 9 $\frac{5}{8}$ "; width, 7 $\frac{1}{4}$ "; depth, 4".

*Net Weight*—Desk Stand, 5 lbs.; Ringer Box, 5 lbs.

*Shipping Weight*—Desk Stand, 8 lbs.; Ringer Box, 7 lbs.

Cat. No.	Description
	Two-Line Monophone
AA-22	Holding on both lines—Automatic
AA-23	Holding on both lines—Manual, Convertible
AA-24	Holding on one line only—Automatic
AA-25	Holding on one line only—Manual, Convertible
AA-26	Switching only (no holding feature)—Automatic
AA-27	Switching only (no holding feature)—Man., Conv.
	Ringer Boxes for Cat. Nos. AA-22 or AA-23
AO-25	Ringer Box for Two-Line Monophone—Line 1
AO-26	Ringer Box for Two-Line Monophone—Line 2
	Ringer Boxes for other "Two-Line" Monophones
AO-27	Ringer Box with 2 ringers
AO-28	Ringer Box with regular gongs—for Line 1
AO-29	Ringer Box with slotted gongs—for Line 2

**Principal Replacement Parts**

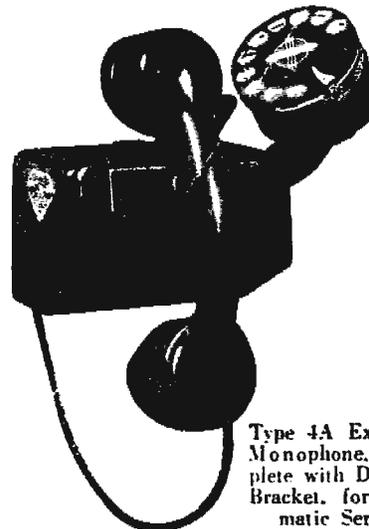
AK-11	Type 24A36 Dial (for Automatic models)
AK-17	Number-Card Holder (for Man., Conv. models)
AF-10	Monophone Hand Unit with cord—Polarized Rec.
AD-24	Monotype Desk Set Cord—9-conductor
AD-14	Monotype Desk Set Cord—11-conductor
AT-25	Condenser (1 mf.)

**When Ordering**

- 1 Give catalog number and description as above.
- 2 Standard Monophones are black Bakelite, and parts will be furnished for black Monophones, unless otherwise ordered.
- 3 Above replacement parts are furnished *without* mounting material. If mounting screws, etc., are required, please specify, and give catalog number of telephone.
- 4 When ordering dial for conversion, please specify "for conversion," giving catalog number of telephone, and proper connecting cords will be furnished.

**The Type 4A Extension Monophone**

Automatic, or Manual—Convertible



Type 4A Extension Monophone, complete with Dial and Bracket, for Automatic Service

This compact Monophone is intended for use at extension stations, permitting both incoming and outgoing calls on automatic or manual lines. It requires a mounting space of only 3 $\frac{3}{4}$ " x 5 $\frac{1}{4}$ ", making it convenient for mounting in practically any location where the ringer of the main-line telephone can be heard.

### Type 4A Monophone—Continued

This instrument is also ideally adapted to meet requirements for a main-line telephone to be mounted on the end of a desk. It provides convenient telephone service without occupying valuable desk space. It is complete except for the ringer, and can be used with any ringer box. And the dial-mounting bracket may be located at either end of the cover, so that the dial is presented at a convenient angle when the telephone is mounted on either end of the desk.

The Type 4A Extension Monophone is assembled on a sturdy frame of cast aluminum alloy, which serves as the mounting plate. The molded Bakelite cover slides over the complete assembly, and is held in place by the spanner nut of the Monophone switch. On the frame are mounted the cradle hook and switch for the Monophone hand unit, the condenser, a terminal strip for the line and dial connections, and (in the anti-sidetone booster type) the 3-winding induction coil. The assembly is very compact, but all parts and connecting terminals are readily accessible when the cover is slid off.

The dial-mounting bracket is completely assembled with the dial, and with cords for the dial connections, but is not assembled to the telephone. It can be mounted at either end of the cover, a nicked plate being supplied to cover the mounting holes at the other end.

Where the dial is not required, the Type 4A Extension Monophone can be supplied with dial-mounting holes drilled at each end, and covered, so that a dial can be easily added when desired.

*Circuits*—Anti-sidetone booster, or induction-coil-receiver.

*Equipment*—Basic equipment includes condenser, Monophone switch, Monophone hand unit with "all-positions" transmitter and 3-conductor Monotype cord, fifty-three inches long; and 3-winding induction coil (for anti-sidetone booster circuit) or Monophone resistance coil (for induction-coil-receiver circuit). Type 24A36 dial and mounting bracket is provided on automatic models.

*Special Equipment*—If "radio suppressor" dial, special dial number plate or dial card, or "cutaway" finger plate, is desired on automatic models, give catalog numbers.

Type 4A Monophones of the induction-coil-receiver type can be furnished with 500-ohm A.C. buzzer, for use at main-line stations (metallic ringing only) where the buzzer signal will be satisfactory. If desired, please specify.

An L-shaped mounting bracket, black japan finished, is available for mounting the set at right angles to an existing mounting surface. This bracket requires a mounting space of only  $2\frac{1}{2}'' \times 3\frac{3}{4}''$ .

*Finish*—Lustrous black Bakelite, with nickel-plated finger stop, and other metal trim heavily black japanned.

*Dimensions*—Height of wall box,  $3\frac{3}{4}''$ ; width,  $5\frac{1}{4}''$ . Depth, overall,  $4\frac{1}{2}''$ ; height,  $9\frac{1}{2}''$ ; width,  $8\frac{1}{2}''$ . The Monophone hand unit is 9" long.

*Net Weight*—5 lbs.

*Shipping Weight*—8 lbs.

Cat. No.	Description
<b>Type 4A Extension Monophone</b>	
AA-28	Anti-Sidetone Booster Circuit—Automatic
AA-29	Anti-Sidetone Booster Circuit—Manual, Conv.
AA-30	Induction-Coil-Receiver Circuit—Automatic
AA-31	Induction-Coil-Receiver Circuit—Manual, Conv.
AW-10	Angle Mounting Bracket for Extension Monophone

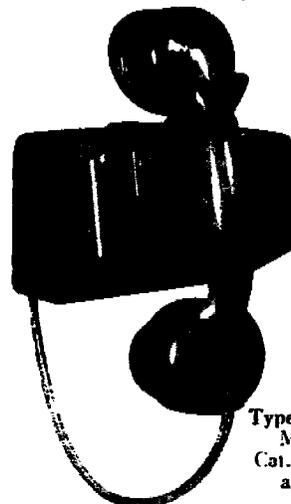
### Principal Replacement Parts

AK-11	Type 24A36 Dial, only
AK-19	Dial and Mtg. Brkt. Assem., complete with cords
AU-13	Induction Coil (for Anti-Sidetone Booster Ckt.)
AU-16	Resistance Coil (for Ind.-Coil-Receiver Ckt.)
AT-25	Condenser (1 mf.)
AF-10	Hand Unit with cord (for Anti-Sidetone Booster Ckt.)
AF-11	Hand Unit with cord (with Ind.-Coil Receiver)

### When Ordering

- 1 Give catalog number and description as above
- 2 Above replacement parts are furnished *without* mounting material. If mounting screws, etc., are required, please specify, and give catalog number of telephone.

## The Type 4 Extension Monophone Manual Only



Type 4 Extension  
Monophone  
Cat. Nos. AA-32  
and AA-33

This compact instrument is identical with the Type 4A Extension Monophone, except that it has no provision for the dial. For description, circuits, and equipment, see above.

**Type 4 Monophone—Continued**

*Dimensions*—Height of wall box,  $3\frac{3}{4}$ " ; width,  $5\frac{1}{4}$ " .  
Height, over all, 9" ; width,  $5\frac{1}{4}$ " ; depth,  $4\frac{1}{2}$ " .

*Net Weight*—4 lbs.

*Shipping Weight*—6 lbs.

<i>Cat. No.</i>	<i>Description</i>
AA-32	Type 4 Monophone—Anti-Sidetone Booster Circuit
AA-33	Type 4 Monophone—Induction-Coil-Receiver Circuit
AW-10	Angle Mounting Bracket for Extension Monophone For ringer boxes, see pages 29 and 30

**Principal Replacement Parts**

AU-13	Induction Coil (for Anti-Sidetone Booster Ckt.)
AU-16	Resistance (coil (for Ind.-Coil-Receiver Ckt.)
AT-25	Condenser (1 mf.)
AF-10	Hand Unit with cord (for Anti-Sidetone Booster Ckt.)
AF-11	Hand Unit with cord (with Ind.-Coil Receiver)

**When Ordering**

- 1 Give catalog number and description as above.
- 2 Above replacement parts are furnished *without* mounting material. If mounting screws, etc., are required, please specify, and give catalog number of telephone.

**The Type 7 Desk Monophone  
Manual Only**

This instrument is equipped complete with a 3-winding induction coil and a condenser in the base, and can be used with any conventional central-battery ringer box to provide the exceptional transmission quality of the Monophone anti-sidetone booster circuit. It can be used for main-line service on manual lines, or for answering extensions on automatic lines, but has no provision for a dial.

The base of this instrument is of heavy stamped brass, and the cradle of aluminum alloy, all heavily black-japanned. The pressed steel base plate, fastened with a single non-losable screw, has a black rubber cushion ring to protect highly polished surfaces. A



Type 7 Desk Monophone  
Cat. No. AA-34

terminal block is provided for all connections, and a 2-conductor Monotype cord is furnished for connecting to the ringer box.

*Circuit*—Anti-sidetone booster.

*Equipment*—Includes desk stand with 3-winding induction coil, condenser, Monophone switch, and 6-foot Monotype cord, and Monophone hand unit with "all-positions" transmitter, and 3-conductor Monotype cord, fifty-three inches long.

*Dimensions*—Height,  $5\frac{1}{2}$ " ; diameter of base,  $5\frac{5}{8}$ " .  
The Monophone hand unit is 9" long.

*Net Weight*—5 lbs.

*Shipping Weight*—8 lbs.

<i>Cat. No.</i>	<i>Description</i>
AA-34	Type 7 Manual Desk Monophone

**Principal Replacement Parts**

AU-13	Anti-Sidetone Booster Induction Coil
AF-10	Monophone Hand Unit with cord—Polarized Rec.
AD-12	Monotype Desk Set Cord—2-conductor

**When Ordering**

- 1 Give catalog number and description as above.
- 2 Above replacement parts are furnished *without* mounting material. If mounting screws, etc., are required, please specify, and give catalog number of telephone.

## Type 21 Telephones

In Type 21 telephones we have incorporated many of the most recent developments in transmission circuits and equipment. In addition to the regular booster circuit, employing a 2-winding induction coil, these telephones can be furnished with an anti-sidetone booster circuit employing a 3-winding induction coil similar to that employed in the Monophone.

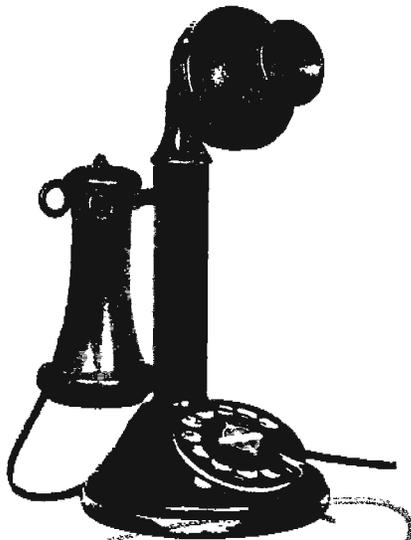
These circuits require a condenser in the talking circuit, as well as in the ringing circuit. In manual instruments, or automatic instruments arranged for metallic ringing, one condenser is used for both purposes. In automatic telephones which are to be arranged for ground ringing, however, a separate con-

denser must be provided for each circuit. For this reason, all automatic instruments and manual, convertible instruments using these booster circuits are offered with one condenser for metallic, or two condensers for ground ringing.

For certain limited applications, Type 21 telephones are also supplied with a "series" circuit. The receiver used in this circuit is not polarized, but must receive all of its energy from the line current. For this reason it should be used *only* for local service. The series circuit does not employ an induction coil, and requires only one condenser for either metallic or ground ringing.

## The Type 21 Desk Telephone

Automatic, or Manual—Convertible



Type 21 Desk Telephone  
Cat. Nos. AB-10, AB-12 and AB-14

This telephone, of the upright or candlestick type, is gracefully designed, with the transmitter post set back of the center of the base. The base is molded of black Bakelite, the terminal block being molded integrally with it. The base plate is removed by loosening one "non-losable" screw, and this provides access to the rear of the dial without removing it from the base. A 6-foot Monotype cord is furnished with the desk telephone, for connecting it to the ringer box. For use with this instrument, we recommend the Compact Type 32 Ringer Box, which is molded of Bakelite, and is much smaller than the metal ringer boxes which were formerly standard.

**Circuits**—Anti-sidetone booster, regular booster, or (for local service only) series type.

**Equipment**—Basic equipment includes desk stand with hookswitch, molded-in terminal block, transmitter, receiver and cord, and desk stand cord. Type 24A36 dial, with number plate, finger plate and dial card as illustrated, is provided on automatic models, number card holder on manual convertible models. When manual model is to be converted to automatic, it is merely necessary to order the dial, specifying catalog number of instrument to be converted. All necessary connecting wires are then furnished, and can easily be connected to the proper terminals in the desk stand.

**Special Equipment**—If "radio suppressor" dial, special dial number plate or dial card, or "cutaway" finger plate, is desired on automatic models, give catalog numbers.



Type 21 Desk Telephone  
Cat. Nos. AB-11, AB-13 and AB-15

Desk stand can be furnished with black-japanned metal base instead of Bakelite, when specified.

**Finish**—Lustrous black Bakelite base, mouthpiece, and receiver. Post, transmitter shell, and dial finger plate (or number-card holder) heavily black japanned. Dial finger stop is polished nickel plate.

**Dimensions**—Height, 11 $\frac{1}{2}$ " ; diameter of base, 5 $\frac{3}{8}$ ".

**Net Weight**—4 lbs.

**Shipping Weight**—6 lbs.

Cat. No.	Description
AB-10	Type 21 Desk Set—Anti-Sidetone Booster—Automatic
AB-11	Type 21 Desk Set—Anti-Sidetone Booster—Man., Conv. (Require anti-sidetone ringer boxes—order separately)
AB-12	Type 21 Desk Set—Regular Booster—Automatic
AB-13	Type 21 Desk Set—Regular Booster—Man., Conv.
AB-14	Type 21 Desk Set—Series Circuit—Automatic
AB-15	Type 21 Desk Set—Series Circuit—Manual, Conv. (For ringer boxes, see pages 29 and 30)

### Principal Replacement Parts

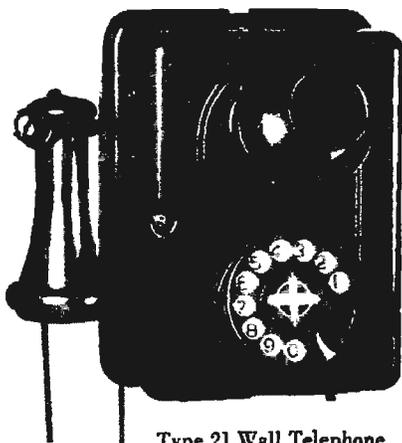
AK-11	Type 24A36 Dial (for Automatic booster models)
AK-10	Type 24A36 Dial (for Automatic series models)
AK-17	Number-Card Holder (for Man., Conv. models)
AR-14	Monotype Receiver Cord, only
AD-13	Desk Set Cord—4 cond. (for Anti-Sidetone Booster tele- phones)
AD-10	Desk Set Cord—3 cond. (for Regular Booster and Series telephones)

### When Ordering

- 1 Give catalog number and description as above.
- 2 Above replacement parts are furnished *without* mounting material. If mounting screws, etc., are required, please specify, and give catalog number of telephone.
- 3 When ordering dial for conversion, please specify "for conversion," giving catalog number of instrument, and proper connecting cords will be furnished.

## The Type 21 Wall Telephone

Automatic, or Manual—Convertible



Type 21 Wall Telephone  
Cat. Nos. AB-16, AB-18 and AB-20

A sturdy, serviceable telephone, assembled on a wall box which is made of heavy steel. The cover opens from the front, by turning a single screw, and can be entirely removed from the base if desired. The base and cover of this telephone are interchangeable with the same parts of the metal ringer boxes, so the wall telephone can be readily changed to a ringer box, or vice versa.

**Circuits**—Anti-sidetone booster, regular booster, or (for local service only) series type.

**Equipment**—Basic equipment includes transmitter, receiver and hookswitch, condenser, polarized ringer for straight-line, biased-bell, or code ringing, and 2- or 3-winding induction coil in booster circuits. Directory hook is provided.

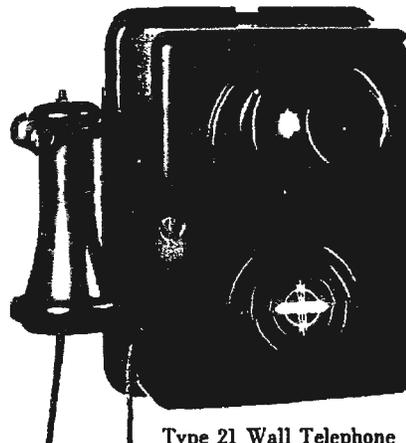
Type 24A36 dial, with number plate, finger plate, and dial card as illustrated, is provided on automatic models, number-card holder on manual convertible models. When manual model is to be converted to automatic, it is merely necessary to order the dial, specifying catalog number of instrument to be converted. All necessary connecting wires are then furnished, and can easily be connected to the proper terminals on the cover terminal strip.

**Special Equipment**—For harmonic ringer, in any of the standard multiple or non-multiple frequencies, specify frequency desired.

If additional condenser is desired, for ground ringing, please specify.

If "radio suppressor" dial, special dial number plate or dial card, or "cutaway" finger plate, is desired on automatic models, give catalog number.

Wall telephone cover and base can be furnished of brass instead of steel, when specified.



Type 21 Wall Telephone  
Cat. Nos. AB-17, AB-19 and AB-21

An adapter is available for mounting the telephone on a standard (U.S.A.) 4" outlet box if the telephone wiring is run in conduit.

**Finish**—Wall box (base and cover), transmitter shell and mounting, hookswitch, and dial finger plate heavily black-japanned. Cover locking screw, and dial finger stop, polished nickel plate. Receiver, and transmitter mouthpiece, lustrous black Bakelite.

**Dimensions**—Mounting space: height, 9 $\frac{3}{4}$ "; width, 7 $\frac{1}{4}$ ". Over all: height, 9 $\frac{3}{4}$ "; width, 10"; depth, 7 $\frac{1}{2}$ ".

**Net Weight**—8 lbs.

**Shipping Weight**—10 lbs.

Cat. No.	Description
Type 21 Wall Telephones	
AB-16	Anti-Sidetone Booster—Automatic—Met. Ring.
AB-17	Anti-Sidetone Booster—Man., Conv.—Met. Ring.
AB-18	Regular Booster—Automatic—Metallic Ring.
AB-19	Regular Booster—Man., Conv.—Metallic Ring.
AB-20	Series Ckt.—Automatic—Met. or Grd. Ring.
AB-21	Series Ckt.—Man. Conv.—Met. or Grd. Ring.
AW-11	Outlet Mounting Adapter

### Principal Replacement Parts

AK-11	Type 24A36 Dial (for Automatic booster models)
AK-10	Type 24A36 Dial (for Automatic series models)
AK-20	Number-Card Holder (for Man., Conv. models)
AS-30	Central-Battery Ringer—Straight-line
AU-14	2-winding Ind. Coil (for Regular Booster Circuit)
AU-13	3-winding Ind. Coil (for Anti-Sidetone Booster Ckt.)
AT-25	Condenser (1 mf.)
AR-14	Monotype Receiver Cord, only

### When Ordering

- 1 Give catalog number and description. Telephones are supplied with straight-line ringers unless otherwise ordered. If harmonic ringers are desired, specify frequency.
- 2 Above replacement parts are furnished *without* mounting material. If mounting screws, etc., are required, please specify, and give catalog number of telephone.
- 3 When ordering dial for conversion, please specify "for conversion," giving catalog number of instrument, and proper connecting cords will be furnished.

## Special Telephones and Fittings

For exceptional requirements, the standard instruments shown in this catalog can be supplied with construction modifications and special fittings, including:

Pushbuttons for auxiliary buzzer signaling circuits, or for connecting and disconnecting the transmitter, when desired.

Splashproof and dustproof dials, for outdoor use, grain elevators, boiler rooms, etc.

Luminous dial cards, which make it possible to operate a telephone in the dark.

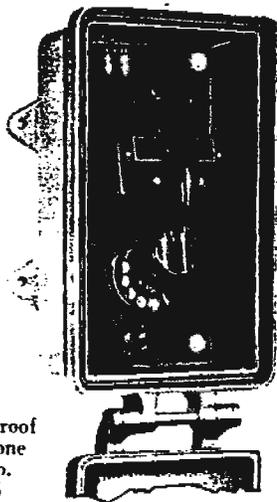
Special moistureproof wiring of instrument and hand unit, for tropical use.

An "Anti-Noise" Monophone transmitter, which cuts off all sounds not spoken directly into the mouthpiece, and thus assures perfectly quiet transmission, even in noisy locations.

To order any of these instruments, add the word "Special" to the catalog number of the standard instrument, and state as fully as possible what changes are desired.

For special requirements which cannot be met by simple modifications of standard instruments, a number of "special telephones" are illustrated below, and on the following pages.

### The Weatherproof Monophone Automatic, or Manual—Convertible



Weatherproof  
Monophone  
Cat. No.  
AM-25

The Weatherproof Monophone was designed to meet the exacting requirements of marine service, and may be used in any location where the telephone may be exposed to extreme humidity, or to mechanical injury.

The working parts are all protected in a heavy cast aluminum alloy case, with a cam-locking cover which is tightly gasketed when closed. A splashproof dial is used on the automatic model, and all other parts as well are so designed and arranged that the telephone may be mounted in the most exposed locations, and used under severe weather conditions.

The working parts of this instrument consist of a Type 4 Extension Set and a dial, mounted on a Bakelite panel. A separate ringer or other signal is required.

*Circuit*—Induction-coil-receiver.

*Equipment*—Basic equipment includes Monophone switch, resistance coil, condenser, and Monophone "tropical" hand unit with 3-conductor Monotype cord, fifty-three inches long. Splashproof dial provided on automatic model has black-finished brass dial card, numbered 1 to 0 with luminous paint, so that it can be seen in the dark. Number plate is black Bakelite, numbered 1 to 0 with white enamel. "Full-circle" finger plate, as illustrated, is provided. Manual convertible model is equipped with number-card holder instead of dial.

*Special Equipment*—If different dial number plate or dial card, or "cutaway" finger plate, is desired on automatic model, give catalog numbers.

*Finish*—The Monophone Extension Set, and the mounting panel, are of lustrous black Bakelite. Transmitter and receiver bands, and the dial mounting and dial finger plate, are heavily black japanned. Dial finger stop is polished nickel plate. The case of the Weatherproof Monophone is finished in battleship gray enamel, but can be furnished in any other color desired, on special order.

*Dimensions*—Overall height, 15 $\frac{1}{8}$ "; width, 8 $\frac{3}{8}$ "; depth, 8 $\frac{1}{2}$ ".

*Net Weight*—18 lbs.

*Shipping Weight*—35 lbs.

Cat. No.	Description
AM-25	Weatherproof Monophone—Automatic
AM-26	Weatherproof Monophone—Manual—Convertible

#### Principal Replacement Parts

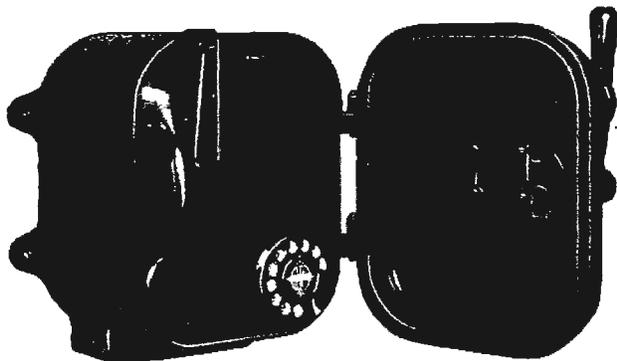
AK-22	Type 24A36 Dial (for Automatic model)
AK-20	Number-Card Holder (for Manual Convertible model)
AU-16	Monophone Resistance Coil
AT-25	Condenser (1 mf.)
AF-15	Monophone Hand Unit with cord—Ind.-Coil Rec.

#### When Ordering

- 1 Give catalog number and description as above.
- 2 Above replacement parts are furnished *without* mounting material. If mounting screws, etc., are required, please specify, and give catalog number of telephone.
- 3 When ordering dial for conversion, please specify "for conversion," giving catalog number of instrument, and proper connecting cords will be furnished.

## Outdoor Monophone Sets

Automatic, or Manual—Convertible



Outdoor Monophone Set  
Cat. Nos. AM-10 and AM-11

These sturdy instruments are especially adapted to severe conditions of use—particularly for outdoor service and for indoor locations exposed to moisture, humidity, or dust. All wiring is rubber-covered, and ringer and induction-coil windings are impregnated with waterproofing compound. Materials throughout are selected and finished to withstand extreme humidity. And, because of a unique arrangement of the ringer gongs and sound-hole openings, these telephones can be used even where there is danger of water being splashed up from below, as in boiler and engine rooms, dairies, refrigerating and ice-making plants, etc.

The Outdoor Monophone Set is enclosed in a case of cast aluminum alloy, with a cam-locking door closing tightly against a rubber gasket. A lock is provided, with two keys. Provision is made for molding into the cover the telephone company's name or other designation, at small additional cost.

The hookswitch for the Monophone hand unit, and (in the automatic models) the dial, are mounted on an inner panel. This panel is removed only for the installation or inspection of the telephone set, and is provided with a screw-eye so that during installation or inspection of the instrument it may be hung on a hook on the door, provided for that purpose.

The Monophone hand unit contains Automatic Electric Company's new "all-positions" transmitter, which operates with full efficiency in any position (or, for installation in very noisy locations, an especially designed "Anti-Noise" transmitter can be provided). A rubber-covered cord is provided, and a small coil spring takes up the slack in the cord, as it is released, and keeps it from being caught as the door is closed.

All connections are made through the terminal strip, and can be easily changed if required. Tapped conduit

openings at both top and bottom of the case permit the use of  $1\frac{1}{2}$ " conduit for the line wires. A wiring diagram is mounted on the back of the panel, showing connections both for manual and for automatic use.

*Circuit*—Anti-sidetone booster.

*Equipment*—Basic equipment includes 3-winding induction coil, polarized ringer for straight-line, biased-bell, or code ringing, one condenser for metallic ringing or two for ground ringing, hookswitch, and the Monophone hand unit with "all-positions" transmitter. Instrument is completely wired, including dial wiring on manual convertible models. Type 24A36 dial, with number plate, finger plate, and dial card as illustrated, is provided on automatic models, number-card holder on convertible models.

*Special Equipment*—For harmonic ringer, in any of the standard multiple or non-multiple frequencies, specify frequency desired.

If special dial number plate or dial card, or "cut-away" finger plate, is desired on automatic models, give catalog numbers.

If "Anti-Noise" transmitter is desired, so specify on order.

*Finish*—Case is handsomely finished in black "crackle" enamel, with inner panel, Monophone hook, and dial finger plate (or number-card holder) heavily black japanned. Dial finger stop is polished nickel plate.

*Dimensions*—Height, 12"; width, 8 $\frac{1}{2}$ "; depth, 8 $\frac{1}{2}$ ".

*Net Weight*—28 lbs.

*Shipping Weight*—45 lbs.

Cat. No.	Description
AM-10	Outdoor Monophone—Automatic—Met. Ring.
AM-11	Outdoor Monophone—Automatic—Grd. Ring.
AM-12	Outdoor Monophone—Man., Conv.—Met. Ring.
AM-13	Outdoor Monophone—Man., Conv.—Grd. Ring.

### Principal Replacement Parts

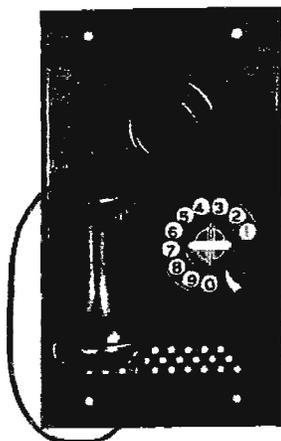
AK-11	Type 24A36 Dial (for Automatic models)
AK-20	Number-Card Holder (for Man., Convertible models)
AU-17	Anti-Sidetone Induction Coil
AT-12	Condenser (1 mf.) (1 req. for met. rg., 2 for grd. rg.)
AF-14	Monophone Hand Unit with cord—Polarized Receiver

### When Ordering

- 1 Give catalog number and description. Monophones are supplied with straight-line ringers unless otherwise ordered. If harmonic ringers are desired, specify frequency.
- 2 Above replacement parts are furnished *without* mounting material. If mounting screws, etc., are required, please specify, and give catalog number of telephone.
- 3 When ordering dial for conversion, please specify "for conversion," giving catalog number of instrument, and proper connecting cords will be furnished.

## Flush Wall Telephones

Automatic, or Manual—Convertible



Cat. Nos. AM-17 and AM-19



Cat. No. AM-21  
Flush Wall Telephones



Cat. No. AM-23

Telephones of this type are designed to be mounted over a steel outlet box set into the wall. They are used in hotels, theatres and other places where a distinctive wall instrument is desired, as well as in corridors, where the usual type of wall telephone might be subject to damage. Used also as elevator cab telephones.

Flush wall telephones are available in a number of styles. Cat. Nos. AM-17 and AM-18 use a polarized receiver in a regular booster circuit, with standard straight-line ringer. All working parts are mounted on a bevel-edged steel plate, heavily black-japanned, and perforated so that the ringer can be plainly heard. Dimensions of plate: height, 13"; width,  $7\frac{3}{8}$ ". Supplied with standard outlet box—height, 12"; width,  $6\frac{3}{8}$ "; depth,  $4\frac{1}{16}$ ".

The other styles of flush wall telephones are wired in accordance with the series circuit, and should be used only for local service.

Cat. Nos. AM-19 and AM-20 are identical, except for circuit, with Nos. AM-17 and AM-18.

Cat. Nos. AM-21 and AM-22 use a watch-case receiver, and a 500-ohm A.C. buzzer instead of a ringer, and are assembled on a bevel-edged plate of black Bakelite, with a dull-rubbed finish. This face plate acts as a resonator, so no sound-escape holes are necessary. Dimensions of plate: height,  $10\frac{3}{4}$ "; width,  $7\frac{1}{8}$ ". Supplied with standard outlet box—height,  $9\frac{3}{16}$ "; width,  $5\frac{3}{16}$ "; depth,  $1\frac{1}{2}$ ". Or, a special, 3" deep, outlet box, can be supplied if specified.

Cat. Nos. AM-23 and AM-24 provide the same equipment as Nos. AM-21 and AM-22, but the Bakelite face plate is only  $9\frac{1}{16}$ " high and  $5\frac{3}{16}$ " wide, and has rounded

corners. These models are designed for use in elevator cabs, and are not supplied with outlet boxes.

**Equipment**—Transmitter, receiver, bell or buzzer signal as described above, hookswitch, condenser, and induction coil (in booster types). Instruments are completely wired, including dial wiring on manual convertible models. Type 24A36 dial, with number plate, finger plate, and dial card as illustrated, is provided on automatic models, number-card holder on convertible models. Transmitter is mounted flush with face of telephone, so that only the mouthpiece projects.

**Special Equipment**—If "radio suppressor" dial, special dial number plate or dial card, or "cutaway" finger plate, is desired on automatic models, give catalog numbers.

If additional condenser is desired, for ground ringing, please specify.

Cat. Nos. AM-17, AM-18, AM-19, and AM-20 can be furnished with harmonic ringers, in any of the standard multiple or non-multiple frequencies. If desired, specify frequency.

**Net Weight**—3 lbs.

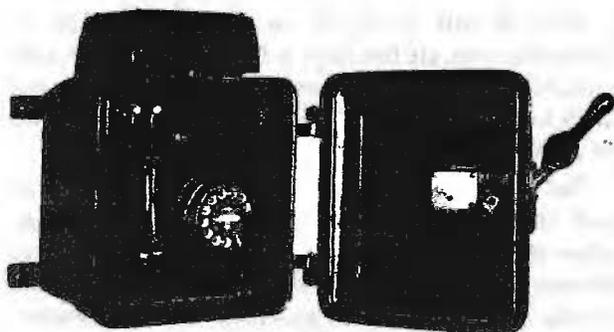
**Shipping Weight**—6 lbs.

**Cat. No.**                      **Description**  
Flush Wall Telephones

AM-17 Booster Circuit—Regular Ringer—Automatic  
AM-18 Booster Circuit—Regular Ringer—Man., Conv.  
AM-19 Series Circuit—Regular Ringer—Automatic  
AM-20 Series Circuit—Regular Ringer—Man., Conv.  
AM-21 Series Circuit—A. C. Buzzer—Automatic  
AM-22 Series Circuit—A. C. Buzzer—Man., Conv.  
AM-23 Series Circuit—Elev. Cab. Model—Automatic  
AM-24 Series Circuit—Elev. Cab. Model—Man., Conv.

**When ordering,** give catalog number and description as above.

### The Mine-Type Telephone Automatic, or Manual—Convertible



Mine-Type Telephone  
Cat. Nos. AM-27 and AM-28

This type of telephone is ideal for use where great strength and moistureproof construction are required. The case is of heavy cast iron, and is provided with double doors. All coils are wound with enameled wire, and other wires are impregnated with "Sarco" moistureproofing compound.

The outer door of the Mine-type telephone is provided with a rubber gasket, and with a cam-type locking handle, for which two keys are supplied. The working parts of the telephone are mounted on the inner door, which is opened only for installation or inspection. The telephone line wires are brought in through either the top or the bottom of the case, through holes tapped for  $\frac{1}{2}$ " conduit.

This telephone is equipped with a polarized ringer with 3" loud-ringing gongs, which is mounted under a cast-iron hood on top of the case. Connections to the ringer coils are made through insulated brass rods extending through watertight bushings from the inside of the case.

*Circuit*—Anti-sidetone booster.

*Equipment*—Basic equipment includes transmitter, receiver and hookswitch, three-winding induction coil, one condenser for metallic ringing or two for ground ringing, and polarized ringer for straight-line, biased-bell, or code ringing. Type 24A36 dial, with number plate, finger plate, and dial card as illustrated, is provided on automatic models, number-card holder on manual convertible models.

*Special Equipment*—If special dial number plate or dial card, or "cutaway" finger plate, is desired on automatic models, give catalog numbers.

*Finish*—Case is finished, inside and out, with black rust-resisting paint. Receiver, and transmitter mouth-piece, are black Bakelite, dial finger plate and receiver hook heavily black japanned, dial finger stop polished nickel plate.

*Dimensions*—Height, 15"; width,  $11\frac{1}{2}$ "; depth,  $12\frac{1}{4}$ ".

*Net Weight*—66 lbs.

*Shipping Weight*—81 lbs.

Cat. No.	Description
AM-27	Mine Telephone—Automatic—Metallic Ringing
AM-28	Mine Telephone—Automatic—Ground Ringing
AM-29	Mine Telephone—Man., Conv.—Metallic Ringing
AM-30	Mine Telephone—Man., Conv.—Ground Ringing

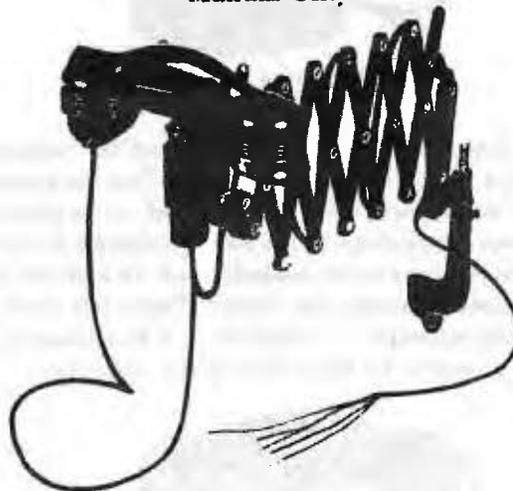
#### Principal Replacement Parts

AK-11	Type 24A36 Dial (for Automatic models)
AK-20	Number-Card Holder (for Man., Convertible models)
AU-13	Anti-Sidetone Booster Induction Coil
AT-25	Condenser (1 mf.) (1 req. for met. rg., 2 for grd. rg.)
AF-38	Polarized Receiver, with Monotype Cord
AR-32	Receiver Cord, only

#### When Ordering

- 1 Give catalog number and description as above.
- 2 Above replacement parts are furnished *without* mounting material. If mounting screws, etc., are required, please specify, and give catalog number of telephone.
- 3 When ordering dial for conversion, please specify "for conversion," giving catalog number of telephone, and proper connecting cords will be furnished.

### The Bracket Monophone Manual Only



Bracket Monophone  
Cat. No. AM-31

A Monophone hand unit with "all-positions" transmitter, on a black japanned cradle and bracket, which can be screwed to a wall or to the side of desk. Bracket may be turned on the base, and extends to a length of 28". Anti-sidetone booster circuit, for either central-battery or magneto service, requires ringer box with 3-winding induction coil. Four-conductor cord is provided for connection to the ringer box.

*Net Weight*—7 lbs.

*Shipping Weight*—10 lbs.

Cat. No.	Description
AM-31	Bracket Monophone (Requires anti-sidetone ringer box—order separately)

When ordering, give catalog number and description as above.

## Magneto Telephones

Magneto telephones of the most modern types are shown on this and the following pages. They include Monophones employing the same hand unit with "all-positions" transmitter as is provided in the foregoing central-battery instruments, and desk- and wall-style telephones of the conventional type, but with new beauty of finish and compact design. Included in both Monophone and conventional types are especially designed instruments for installation in exposed locations.

### Magneto Monophone Desk Sets

Types 1A, 8, and 19



Type 1A Magneto Monophone  
Cat. No. AA-19

The Type 1A Desk Monophone is used for magneto as well as central-battery service, and offers the advantage of ready conversion, when desired, to automatic operation. It requires a ringer box containing a 3-winding anti-sidetone booster induction coil, in addition to the magneto generator and ringer. Ringer box should be ordered separately, if required. A 6-foot Monotype cord is provided, for connection to the ringer box.

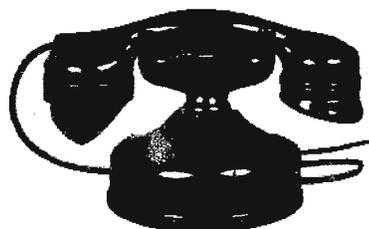


Type 8 Magneto Monophone  
Cat. No. AE-10

The Type 8 Desk Monophone combines all of the equipment of a magneto telephone station (except batteries) in an attractive table set, 10" high, and requiring

a space of only 5" by 6" on the desk or table. A Monotype cord, six feet long, is furnished, together with a small terminal block through which connections are made to the line wires and the battery. The battery can be placed in a battery box in any desired location.

The Type 8 Monophone contains a 2-bar generator and 1000-ohm ringer, which will be found adequate where there are not more than four parties on a line. However, for long and heavily loaded lines, the use of telephones with 3- or 5-bar generators is recommended.



Type 19 Magneto Monophone  
Cat. No. AE-11

The Type 19 Desk Monophone was designed to provide Monophone convenience, and the efficiency of the anti-sidetone booster circuit, when used with any conventional magneto ringer box. The anti-sidetone induction coil is mounted in the slightly raised base of the instrument. A 6-foot Monotype cord is provided for connection to the ringer box.

Types 1A, 8, and 19 Monophones are supplied complete with Monophone hand unit having the "all-positions" transmitter.

*Net Weights*—Type 1A—31½ lbs.; Type 8—12 lbs.; Type 19—5 lbs.

*Shipping Weights*—Type 1A—6 lbs.; Type 8—20 lbs.; Type 19—7 lbs.

Cat. No.	Description
AA-19	Type 1A Desk Monophone—Magneto—Black (Requires anti-sidetone ringer box—order separately)
AE-10	Type 8 Desk Monophone—Magneto
AE-11	Type 19 Desk Monophone—Magneto (For use with existing ringer box)

### Principal Replacement Parts

AF-10	Monophone Hand Unit with cord—Polarized Rec.
AS-40	Ringer (for Type 8 Monophone)
AD-13	Monotype Desk Set Cord
AU-18	Induction Coil (for Types 8 and 19 Monophones)
AQ-10	Generator—2-bar (for Type 8 Monophone)

### When Ordering

- 1 Give catalog number and description as above.
- 2 Above replacement parts are furnished *without* mounting material. If mounting screws, etc., are required, please specify, and give catalog number of telephone.

## Magneto Monophone Wall Sets

Types 10 and 18



Type 10 Magneto Wall Monophone  
Cat. No. AE-12

These instruments combine the advantages of wall mounting with the convenience of the Monophone hand unit. They are out of the way, yet always at hand. May be mounted at any height, for use either while seated or standing, and present the transmitter mouthpiece always in the best position for use.

The Type 10 Wall Monophone is assembled in a steel wall box of the same type as is used in our metal ringer boxes, but provided with a Monophone cradle and a number-card holder. The wall box contains a 2-bar generator and 1000-ohm ringer, which will be found adequate where there are not more than four parties on a line.

For long and heavily loaded lines, the Type 18 Monophone is available, with 3- or 5-bar generator as required. This instrument is assembled in a solid oak cabinet.

These telephones do not provide space for the battery, which can be placed in a battery box in any desired location.

*Circuit*—Anti-sidetone booster.

*Equipment*—Includes 3-winding induction coil, ringer, magneto generator, Monophone switch, and Monophone hand unit with "all-positions" transmitter, and 3-conductor Monotype cord, fifty-three inches long.

*Special Equipment*—A condenser can be provided, wired in series with the receiver, or the ringer, or both. If desired, please specify.



Type 18 Magneto Wall Monophone  
Cat. Nos. AE-13 and AE-14

A pushbutton can be provided either to cut in the transmitter battery, to produce code-ringing signals, or to make the ringing semi-selective by putting the ringing current on one or the other side of the line. If desired, please specify.

*Finish*—Type 10, heavily black japanned throughout. Type 18, beautiful rubbed golden oak, with exposed metal parts heavily black japanned. Monophone hand unit is lustrous black Bakelite, with black japanned transmitter and receiver bands.

*Dimensions*—Type 10: height, 12"; width, 9"; depth, 4" over all. Type 18: height, 12<sup>3</sup>/<sub>4</sub>"; width, 9"; depth, 5<sup>1</sup>/<sub>2</sub>" over all. The Monophone hand unit is 9" long.

*Net Weights*—Type 10—11 lbs.; Type 18—15 lbs.

*Shipping Weights*—Type 10—16 lbs.; Type 18—20 lbs.

Cat. No.	Description
AE-12	Type 10 Monophone—1000-ohm Ringer, 2-bar Gen.
AE-13	Type 18 Monophone—1000-ohm Ringer, 3-bar Gen.
AE-14	Type 18 Monophone—1600-ohm Ringer, 5-bar Gen.

### Principal Replacement Parts

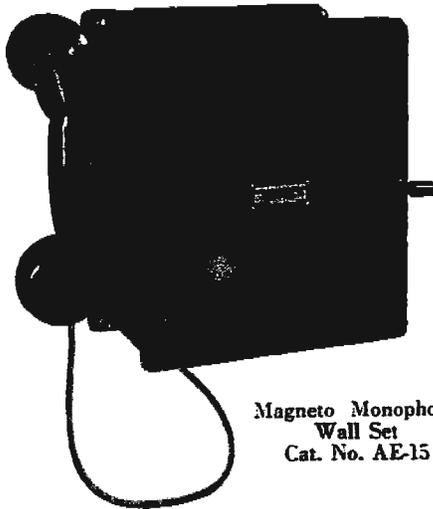
AF-10	Monophone Hand Unit with cord—Polarized Rec.
AS-47	Ringer—1600-ohm (for Type 18 Monophone)
AS-48	Ringer—1000-ohm (for Type 18 Monophone)
AS-49	Ringer—1000-ohm (for Type 10 Monophone)
AU-18	Local-Battery Induction Coil

### When Ordering

- 1 Give catalog number and description as above.
- 2 Above replacement parts are furnished *without* mounting material. If mounting screws, etc., are required, please specify, and give catalog number of telephone.

## Magneto Monophone Wall Sets

### Special Types



Magneto Monophone  
Wall Set  
Cat. No. AE-15

Special types of magneto wall Monophones are also available as illustrated. They are assembled in sturdy oak cabinets, finished in golden oak.

Cat. No. AE-15 contains a 5-bar generator and 2500-ohm ringer, and is equipped with .5 mf. condenser wired into the receiver circuit.



Magneto Monophone  
Wall Set  
Cat. No. AE-16

Cat. No. AE-16 contains a specially-designed generator providing a higher voltage of ringing current, and a special 2500-ohm ringer with exposed gongs. This instrument is designed for use on long and heavily loaded lines where a very loud ringing signal is desired.

Cat. No.	Description
AE-15	Special Magneto Monophone Wall Set
AE-16	Magneto Monophone Wall Set—Exposed Gongs

When ordering, give catalog number and description as above.

## Magneto Monophone Extension Set

### Type 17



Magneto Monophone  
Extension Set  
Cat. No. AE-17

This convenient Extension Set consists of a Monophone hand unit mounted on a molded Bakelite wall box. It is designed for answering extension service only, in locations where the ringer of the main-line station can be plainly heard, and therefore does not contain a ringer or generator. Terminals are provided for connections to the line, and to the battery, which can be placed in a battery box in any desired location.

*Circuit*—Anti-sidetone booster.

*Equipment*—Includes 3-winding induction coil, Monophone switch, and Monophone hand unit with "all-positions" transmitter, and 3-conductor Monotype cord, fifty-three inches long.

An L-shaped mounting bracket, black-japan finished, is available for mounting the set at right angles to an existing mounting surface. This bracket requires only  $2\frac{1}{2}$ " x  $3\frac{3}{4}$ " of mounting space. Order separately, if desired.

*Finish*—Wall box and Monophone hand unit are lustrous black Bakelite, with cradle and transmitter and receiver bands heavily black japanned.

*Dimensions*—Height of wall box,  $3\frac{3}{4}$ "; width,  $5\frac{1}{4}$ ". Height, over all, 9"; width,  $5\frac{1}{4}$ "; depth,  $4\frac{1}{2}$ ".

*Net Weight*—4 lbs.

*Shipping Weight*—6 lbs.

Cat. No.	Description
AE-17	Type 17 Magneto Monophone Extension Set
AW-10	Angle Mounting Bracket for Extension Monophone

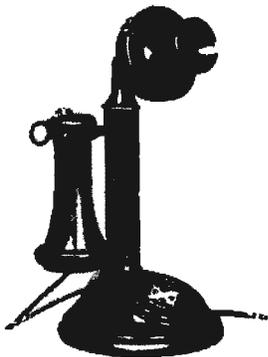
### Principal Replacement Parts

AU-18	Local-Battery Induction Coil
AX-23	Monophone Switch
AF-10	Monophone Hand Unit with cord—Polarized Rec.

### When Ordering

- 1 Give catalog number and description as above.
- 2 Above replacement parts are furnished *without* mounting material. If mounting screws, etc., are required, please specify, and give catalog number of telephone.

## Type 200 Magneto Desk Telephone



Type 200 Magneto  
Desk Telephone  
Cat. No. AG-10

This telephone is identical in appearance with the Type 21 Manual Convertible Central-Battery Desk Telephone (see page 18), but has a local-battery transmitter, and is wired for use in the local-battery booster circuit. A 6-foot, 3-conductor Monotype cord is provided for connection to the ringer box and battery.

*Net Weight*—4 lbs.

*Shipping Weight*—6 lbs.

Cat. No.	Description
AG-10	Type 200 Magneto Desk Telephone

### Principal Replacement Parts

AF-21	Local-Battery Transmitter
AF-31	Polarized Receiver, with Monotype Cord
AR-14	Monotype Receiver Cord, only
AD-10	Monotype Desk Stand Cord

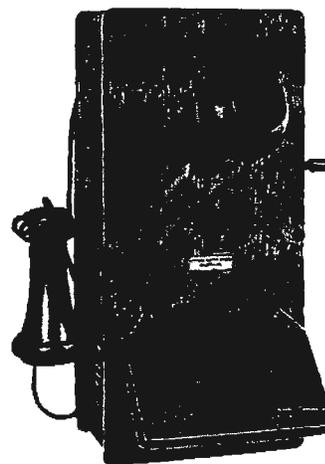
### When Ordering

- 1 Give catalog number and description as above.
- 2 Above replacement parts are furnished *without* mounting material. If mounting screws, etc., are required, please specify, and give catalog number of telephone.

## Type 200 Magneto Wall Telephone

This instrument has been, for many years, the standard of a large number of telephone companies operating magneto equipment. It is handsome in appearance, with modern simplicity of line, and, though compact in design, it provides ample space for batteries, so no separate battery box is required.

For lines of various lengths and characteristics, the Type 200 Magneto Wall Telephone is furnished with 3-bar or 5-bar generator, and with 1000-, 1600-, or 2500-ohm ringer. These instruments provide space for two standard (U.S.A.) No. 6 dry cells. Where exceptionally powerful ringing signals, and maximum transmission efficiency, are required, a special instrument can be furnished, with 2500-ohm ringer having 3"



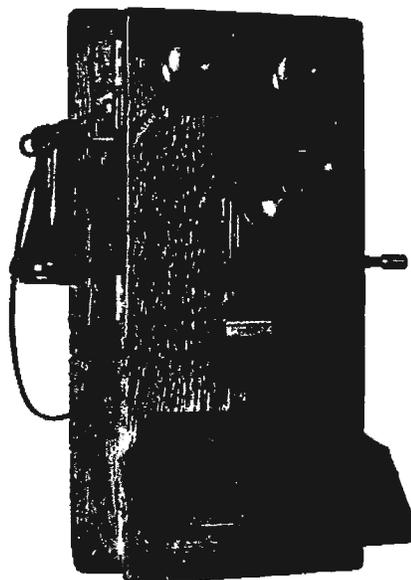
Type 200 Wall Telephone  
Cat. Nos. AG-11, AG-12 and AG-13

gongs mounted outside of the cabinet, and space in the cabinet for three No. 6 dry cells.

*Equipment*—Three-terminal induction coil, ringer, magneto generator, receiver and hookswitch, and local-battery transmitter. *Dry cells are not furnished.*

*Special Equipment*—A condenser can be provided, wired in series with the receiver, or the ringer, or both. If desired, please specify.

A pushbutton can be provided, either to cut in the transmitter battery, to produce code-ringing signals, or to make the ringing semi-selective by putting the ringing current on one or the other side of the line. If desired, please specify.



Type 200 Wall Telephone  
Cat. No. AG-14

### Type 200 Wall Telephone—Continued

*Finish*—Cabinet is quarter-sawed oak, with golden oak finish. All exposed metal parts are heavily black japanned. Receiver, and transmitter mouthpiece, are lustrous black Bakelite.

*Dimensions*—Cat. Nos. AG-11, AG-12 and AG-13—height, 15¼"; width, 7¼"; depth, 10¼", over all. Cat. No. AG-14—height, 20½"; width, 9¼"; depth, 10½", over all.

*Net Weight*—18 lbs.

*Shipping Weight*—24 lbs.

Cat. No.	Description
AG-11	Type 200 Wall Set—1000-ohm Ringer, 3-bar Gen.
AG-12	Type 200 Wall Set—1600-ohm Ringer, 5-bar Gen.
AG-13	Type 200 Wall Set—2500-ohm Ringer, 5-bar Gen.
AG-14	Type 200 Wall Set—Special Ringer, 5-bar Gen.

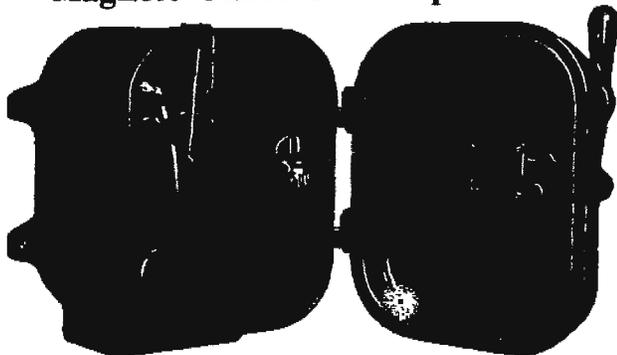
### Principal Replacement Parts

AF-21	Local-Battery Transmitter, only
AF-31	Polarized Receiver, with Monotype Cord
AR-14	Monotype Receiver Cord, only
AU-19	Local-Battery Induction Coil

### When Ordering

- 1 Give catalog number and description as above.
- 2 Above replacement parts are furnished *without* mounting material. If mounting screws, etc., are required, please specify, and give catalog number of telephone.

### Magneto Outdoor Monophone Set



Magneto Outdoor Monophone Set  
Cat. Nos. AM-14, AM-15 and AM-16

This telephone set is adapted to the same severe conditions of use as the corresponding central-battery instruments (see page 21). It employs a 3-volt dry cell battery of a new, compact type, for transmission, and a standard magneto generator for signaling.

*Circuit*—Anti-sidetone booster.

*Equipment*—Includes 3-winding induction coil, ringer, magneto generator, hookswitch, and the Monophone hand unit with "all-positions" transmitter, and 3-conductor Monotype cord, fifty-three inches long. Dry cell battery is not furnished, but should be ordered separately.

*Special Equipment*—If "Anti-Noise" transmitter is desired, so specify on order.

*Finish*—Case is handsomely finished in black "crackle" enamel, and is furnished plain, as shown, or with designation, as specified, molded into cover. Inner panel, Monophone hook, and generator crank are heavily black japanned.

*Dimensions*—Height, 12"; width, 8⅝"; depth, 8½".

*Net Weight*—28 lbs.

*Shipping Weight*—45 lbs.

Cat. No.	Description
AM-14	Outdoor Monophone—2500-ohm Ringer, 5-bar Gen.
AM-15	Outdoor Monophone—1600-ohm Ringer, 5-bar Gen.
AM-16	Outdoor Monophone—1000-ohm Ringer, 3-bar Gen.
PA-13	Compact Dry Battery—3-volt

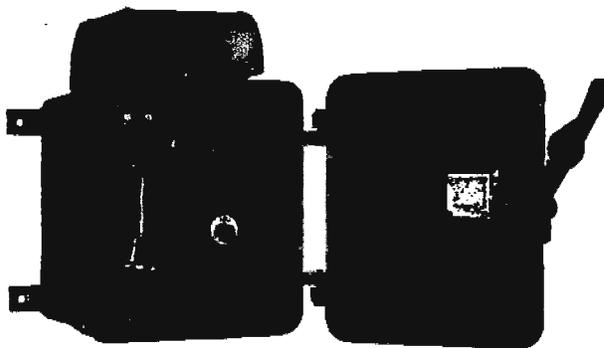
### Principal Replacement Parts

AF-14	"Tropical" Hand Unit, with Cord—Polarized Rec.
AS-41	Local-Battery Ringer—2500-ohm
AS-42	Local-Battery Ringer—1600-ohm
AS-43	Local-Battery Ringer—1000-ohm
AU-20	Local-Battery Anti-Sidetone Induction Coil

### When Ordering

- 1 Give catalog number and description as above.
- 2 Above replacement parts are furnished *without* mounting material. If mounting screws, etc., are required, please specify, and give catalog number of telephone.

### The Magneto Mine-Type Telephone



Magneto Mine-Type Telephone  
Cat. Nos. AM-32 and AM-33

This telephone is similar, in general design and rugged, moistureproof construction, to the central-battery Mine-Type Telephone, described on page 23, but is equipped with a 5-bar generator and a 1600- or 2500-ohm ringer, and is wired for local-battery operation.

*Circuit*—Regular booster.

*Equipment*—Includes transmitter, receiver and hook-switch, induction coil, generator, and ringer.

*Finish*—Case is finished, inside and out, with black rust-resisting paint. Receiver, and transmitter mouthpiece, are black Bakelite, receiver hook heavily black japanned.

**Magneto Mine Telephone—Continued**

*Dimensions*—Height, 15"; width, 11½"; depth, 12¼".

*Net Weight*—80 lbs.

*Shipping Weight*—95 lbs.

<i>Cat. No.</i>	<i>Description</i>
AM-32	Magneto Mine Telephone—2500-ohm Ringer
AM-33	Magneto Mine Telephone—1600-ohm Ringer

**Principal Replacement Parts**

AF-21	Local-Battery Transmitter
AF-31	Polarized Receiver, with Monotype Cord
AS-44	Local-Battery Ringer—2500-ohm
AS-45	Local-Battery Ringer—1600-ohm
AU-24	Local-Battery Induction Coil

**When Ordering**

- 1 Give catalog number and description as above.
- 2 Above replacement parts are furnished *without* mounting material. If mounting screws, etc., are required, please specify, and give catalog number of telephone.

**Central-Battery Telephones for Use on Magneto Lines**

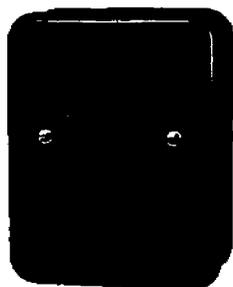
In addition to these modern magneto telephones, companies operating magneto exchanges can now offer their subscribers the beauty and convenience of the newest central-battery Monophones, such as the Type 34A3 Self-Contained Desk Monophone and the Type 35A5 Wall-Mounting Monophone. These instruments,

and the convenience of central-battery service, can be made available at very small cost, and *without making any change in the switchboard or lines*, through the use of the Automatic Electric Central-Battery Line Adapter.

Telephone companies can thus provide central-battery service at a reasonable additional charge. They can confine all their instrument purchases to the modern central-battery types, and thus have these instruments available when the system is cut over to central-battery service. And those companies who have been postponing purchase of telephones until the time of conversion can avail themselves—at once—of the opportunity for increased income and reduced maintenance offered by these modern instruments.

Automatic Electric Central-Battery Line Adapters and central-battery telephones can be used on lines with loop resistance as high as 750 ohms and insulation resistance as low as 25000 ohms. No modifications are necessary in the telephones, except that a 2 mf. instead of 1 mf. condenser should be provided in the ringing circuit. Most of the central-battery instruments in this catalog can be furnished thus modified.

Complete information regarding the Automatic Electric Central-Battery Line Adapter and its application will be gladly furnished on request.

**Central-Battery Ringer Boxes****Bakelite Ringer Boxes****Compact Type 32**

Compact Type 32 Ringer Box

In these ringer boxes, new compactness and beauty have been achieved through ingenious design and the use of modern materials. All of the apparatus provided in older types of boxes has here been placed in about half the space, without reducing the size and efficiency of the various units, and without sacrificing accessibility in the slightest. And this compact assembly has been

cased in black Bakelite—sturdy, highly dielectric, and with a lustrous finish it will not lose.

Compact Type 32 ringer boxes are available with equipment and wiring for use with almost all types and makes of central-battery telephones. Space is provided for ringer, induction coil, and two condensers. Ringer gongs are mounted directly above sound holes in bottom of box, which are lined with fine-mesh brass screen, to keep out insects.

*Special Equipment*—A turn key, extending through the middle of the cover, can be furnished to cut off the ringer in the box, or the ringer at an extension telephone. If desired, please specify.

Ringer boxes listed are equipped with polarized ringer for straight-line, biased-bell or code ringing. For harmonic ringer, in any of the standard multiple or non-multiple frequencies, specify frequency desired.

*Dimensions*—Height, 7¼"; width, 5½"; depth, 2⅝".

*Net Weight*—4 lbs.

*Shipping Weight*—7 lbs.

### Bakelite Ringer Boxes—Continued

Cat. No.	Description
	Compact Type 32 Ringer Boxes For Type 1A Monophones and Type 21 Telephones with Anti-Sidetone Booster Circuit
AO-11	With 3-winding Ind. Coil—for Met. Ring.
AO-12	With 3-winding Ind. Coil—for Grd. Ring. For Type 21 and other Telephones with Standard Booster Circuit
AO-13	With 2-winding Ind. Coil. and 1 (1 mf.) Cond.*
AO-14	With 2-winding Ind. Coil. and 2 (1 mf.) Conds.† For Type 1A Monophones having induction-coil receivers, Types 4, 4A and 7 Monophones, and Type 21 Telephones using the Series Circuit.
AO-15	No Induction Coil, 1 (1 mf.) Condenser**
AO-16	No Induction Coil, 2 (1 mf.) Condensers‡

\*For metallic ringing with automatic or manual convertible telephones, and for either metallic or ground ringing with manual telephones.  
†For ground ringing with automatic or manual convertible telephones.  
\*\*For metallic ringing with Types 1A and 4A Monophones, and for either metallic or ground ringing with others.  
‡For ground ringing with Types 1A and 4A Monophones.

### Principal Replacement Parts

Cat. No.	Description
AU-11	3-winding Induction Coil
AU-15	2-winding Induction Coil
AT-12	Condenser (1 mf.)
AS-59	Ringer Gong

#### When Ordering

- 1 Give catalog number and description as above.
- 2 Ringer boxes are supplied with straight-line ringers unless otherwise ordered. If harmonic ringers are desired, specify frequency.
- 3 Above replacement parts are furnished *without* mounting material. If mounting screws, etc., are required, please specify, and give catalog number of ringer box.
- 4 When ordering condenser to convert from metallic to ground ringing, please specify "for conversion," giving catalog number of ringer box, and necessary mounting bracket and connecting cord will be furnished.

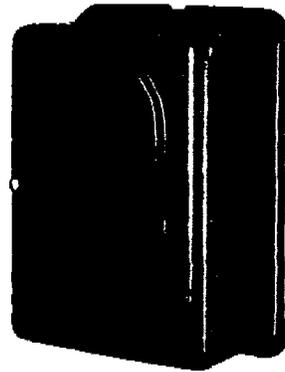
### Metal Ringer Boxes

These ringer boxes are of conventional size and design, and are available for use with almost any type or make of central-battery telephone. The base and cover of the box are of steel and are interchangeable with the same parts of the Type 21 wall telephone, so the ringer box can be readily changed to a wall telephone, or vice versa.

**Equipment**—Polarized ringer for straight-line, biased-bell, or code ringing; 2- or 3-winding induction coil for booster circuits; one or two condensers; terminal strip.

**Special Equipment**—For harmonic ringer, in any of the standard multiple or non-multiple frequencies, specify frequency desired.

An adapter is available for mounting the telephone on a standard (U.S.A.) 4" outlet box if the telephone wiring is run in conduit.



Metal Ringer Box

Ringer box cover and base can be furnished of brass instead of steel, when specified.

**Finish**—Heavily black japanned.

**Dimensions**—Height, 9 $\frac{3}{4}$ " ; width, 7 $\frac{1}{4}$ " ; depth, 4".

**Net Weight**—5 lbs.

**Shipping Weight**—7 lbs.

Cat. No.	Description
	Metal Ringer Boxes For Type 1A Monophones and Type 21 Telephones with Anti-Sidetone Booster Circuit.
AO-17	With 3-wdg. Ind. Coil—for Met. Ring.
AO-18	With 3-wdg. Ind. Coil—for Grd. Ring. For Type 21 and other Telephones with Standard Booster Circuit
AO-19	With 2-wdg. Ind. Coil. and 1 (1 mf.) Cond.*
AO-20	With 2-wdg. Ind. Coil. and 2 (1 mf.) Conds.† For Type 1A Monophones having induction-coil receivers, and Types 4, 4A and 7 Monophones.
AO-21	No Induction Coil, 1 (1 mf.) Condenser**
AO-22	No Induction Coil, 2 (1 mf.) Condensers‡ For Type 21 Telephones with Series Circuit—Met. or Grd. Ring.
AO-23	No Induction Coil, 1 (1 mf.) Condenser
AW-11	Outlet Mounting Adapter

\*For metallic ringing with automatic or manual convertible telephones, and for either metallic or ground ringing with manual telephones.  
†For ground ringing with automatic or manual convertible telephones.  
\*\*For metallic ringing with Types 1A and 4A Monophones, and for either metallic or ground ringing with others.  
‡For ground ringing with Types 1A and 4A Monophones.

### Principal Replacement Parts

Cat. No.	Description
AU-13	3-Winding Induction Coil
AU-14	2-Winding Induction Coil
AT-25	Condenser (1 mf.)
AS-59	Ringer Gong

#### When Ordering

- 1 Give catalog number and description as above.
- 2 Ringer boxes are supplied with straight-line ringers unless otherwise ordered. If harmonic ringers are desired, specify frequency.
- 3 Above replacement parts are furnished *without* mounting material. If mounting screws, etc., are required, please specify, and give catalog number of ringer box.
- 4 When ordering condenser to convert from metallic to ground ringing, please specify "for conversion," giving catalog number of ringer box, and necessary mounting screws and connecting cord will be furnished.

**Magneto Ringer Boxes**



Magneto Ringer Box

These ringer boxes are available equipped and wired for use with almost any type or make of magneto telephone. Assembled in oak cases, handsomely finished in golden oak, and with all exposed metal parts heavily black japanned.

*Equipment*—Ringer, magneto generator, terminal strip, and induction coil where required.

*Special Equipment*—A condenser can be provided, wired into the receiver circuit, or the ringer circuit, or both. If desired, please specify.

A pushbutton can be provided, either to cut in the transmitter battery, to produce code-ringing signals, or to make the ringing semi-selective by putting the ringing current on one or the other side of the line. If desired, please specify.

If box is desired without ringer, give catalog number as shown, and specify "without ringer."

*Dimensions*—Height, 9<sup>3</sup>/<sub>16</sub>" : width, 7<sup>3</sup>/<sub>4</sub>" : depth, 5<sup>1</sup>/<sub>2</sub>".

*Net Weight*—14 lbs.

*Shipping Weight*—18 lbs.

<i>Cat. No.</i>	<i>Description</i>
	Magneto Ringer Box With 3-winding Induction Coil, for use with Type 1A Magneto Monophone, or Bracket Monophone.
AO-31	2500-ohm Ringer, 5-bar Generator
AO-32	1600-ohm Ringer, 5-bar Generator
AO-33	1000-ohm Ringer, 3-bar Generator
	With 2-winding Induction Coil, for use with Type 200 and similar telephones.
AO-34	2500-ohm Ringer, 5-bar Generator
AO-35	1600-ohm Ringer, 5-bar Generator
AO-36	1000-ohm Ringer, 3-bar Generator
	Without Induction Coil, for use with Type 19 Monophone.
AO-10	1600-ohm Ringer, 5-bar Generator
AO-38	1000-ohm Ringer, 3-bar Generator

**Principal Replacement Parts**

<i>Cat. No.</i>	<i>Description</i>
AU-18	3-winding Local-Battery Induction Coil
AU-19	2-winding Local-Battery Induction Coil
AQ-12	5-bar Generator
AQ-11	3-bar Generator
AS-46	2500-ohm Local-Battery Ringer
AS-47	1600-ohm Local-Battery Ringer
AS-48	1000-ohm Local-Battery Ringer

**When Ordering**

- 1 Give catalog number and description as above.
- 2 Above replacement parts are furnished *without* mounting material. If mounting screws, etc., are required, please specify, and give catalog number of ringer box.

**Extension Ringer Boxes**



Extension Ringer Box

For use at answering extensions on magneto lines. Contain ringer and terminal strip only—no magneto or induction coil. Assembled in metal wall box, heavily black japanned. Dimensions: height, 9<sup>3</sup>/<sub>4</sub>" : width, 7<sup>1</sup>/<sub>4</sub>" : depth, 4".

<i>Cat. No.</i>	<i>Description</i>
AO-39	Extension Ringer Box—2500-ohm Ringer
AO-40	Extension Ringer Box—1600-ohm Ringer
AO-41	Extension Ringer Box—1000-ohm Ringer

**Battery Boxes**



Battery Box  
Cat. No. AW-19

For mounting standard (U.S.A.) No. 6 dry cells at magneto telephones in which battery space is not provided, or for local buzzer-signaling circuits. Made of metal, black japanned, and with insulating lining.

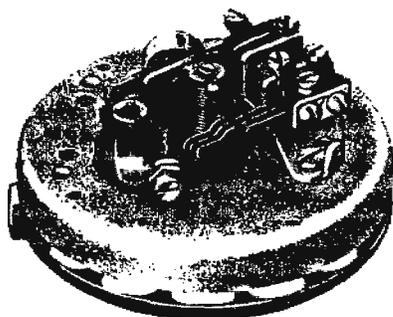
<i>Cat. No.</i>	<i>Description</i>
AW-19	Battery Box for 2 No. 6 Dry Cells
AW-20	Battery Box for 3 No. 6 Dry Cells

**When ordering,** give catalog number and description as above.

# Telephone Parts

## The Type 24A36 Dial

With the New Quiet Pawl Action



Rear View of Type 24A36 Dial  
Cat. No. AK-11

When the Automatic Electric Type 24 Dial was introduced, more than ten years ago, its advanced design placed it immediately in a position of leadership, from the standpoint of simplicity, light weight, and utmost reliability of operation. Made with the accuracy of a good watch, it was almost as quiet in operation, except for the slight click of the pawl in sliding over the ratchet.

Now, Automatic Electric engineers have seized upon that click, and removed it. In the new Type 24A36 Dial, they have provided a quiet pawl, so that its only sound, when operating, is a soft whir, all but inaudible in even a quiet room.

In other respects, this dial is identical with the Type 24 dial. It employs the same number plates, dial cards, and spring assemblies, and is interchangeable with it on any mounting.

The complete Type 24A36 Dial consists of five parts:

- 1—Sub-Assembly
- 2—Spring Assembly
- 3—Number Plate
- 4—Finger Plate
- 5—Dial Card and Cover

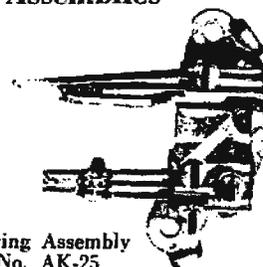
### 1—The Sub-Assembly

The sub-assembly includes the working parts of the dial, assembled in a brass cup, 3" in diameter and  $\frac{3}{8}$ " deep. The phenol-fibre impulse cam is driven through gears, by a coil spring on the main shaft of the dial, the impulse speed being controlled within very close limits, by a fly-ball-type governor. Even if the finger plate is forced on its return motion, it is impossible to speed it up beyond safe limits.

A lever arm is provided on the main shaft, to operate a group of "shunt" springs which cut the transmitter and receiver from the line circuit during dialing, to remove these resistances from the dialing circuit, and to prevent the dial impulses from clicking in the receiver.

The sub-assembly is provided also with a nickel-silver spring which holds the number-plate.

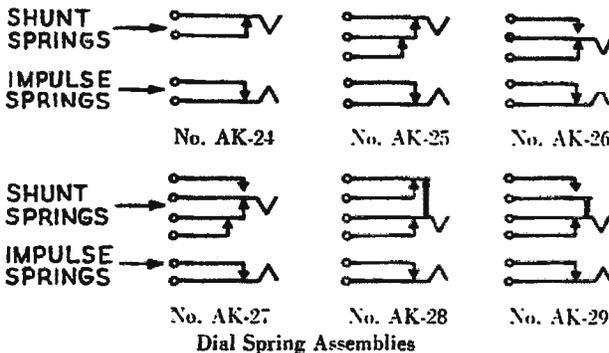
### 2—Spring Assemblies



Dial Spring Assembly  
Cat. No. AK-25

The dial springs are assembled on a bracket which can be mounted with two screws on the rear of the dial sub-assembly, so that the shunt and impulse springs are brought into position for operation by the shunt lever and impulse cam.

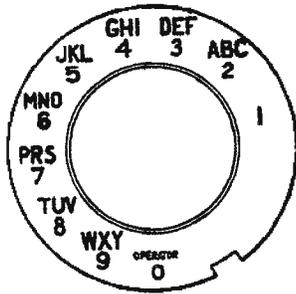
Two different arrangements of shunt springs are used on the instruments listed in this catalog. Spring assembly AK-24, providing two shunt springs, is used on Type 21 telephones with the series circuit. Spring assembly AK-25 is used on all other automatic telephones shown in this catalog, and provides three shunt springs, which place separate shunts around the transmitter and receiver during dialing. Where other shunt spring groups are required, special spring assemblies can be provided, some of which are shown below.



When ordering, give catalog number and description.

Type 24A36 Dial—Continued

3—Number Plates



Dial Number Plate  
Cat. No. AK-32

The number plate of the Type 24A36 dial is a formed copper disc, coated with white porcelain enamel, baked on, and suitably lettered. It can be easily cleaned with a damp cloth. The plate is mounted in the spring clip provided in the dial sub-assembly. Plate AK-30 is normally provided on any of the telephones in this catalog (except the Weatherproof Monophone). If either of the other styles shown is desired, please specify when ordering telephone.

- | <i>Cat. No.</i> | <i>Description</i>   |
|-----------------|--|
| AK-30           | Number Plate—Numbered 1 to 0 in black  |
| AK-31           | Number Plate—Same as above, with addition of word "Operator" in the "0" space. Letters and figures in black. |
| AK-32           | Number Plate, as shown. Black letters and red figures.   |

4—Finger Plates



Dial with "Cutaway" Finger Plate  
Cat. No. AK-34

Two styles of finger plates are offered for the Type 24A36 dial. The regular round plate, shown on all of the automatic telephones in this catalog, is standard, and is provided unless otherwise specified.

The "cutaway" plate is a new design, developed to increase the visibility of the dial number plate. It differs from the "full-circle" plate in that the portion between finger hole "1" and finger hole "0" is cut away, and the underside of the finger plate is finished in white enamel. In this way, a greater amount of light is admitted to the dial number plate. The cutaway portion of the finger plate also makes it easier to keep the number plate perfectly clean.

Finger plates are finished in black japan. They can be furnished with gold- or chromium-plate finish, if specified.

- | <i>Cat. No.</i> | <i>Description</i>     |
|-----------------|------------------------|
| AK-33           | Round Finger Plate     |
| AK-34           | "Cutaway" Finger Plate |

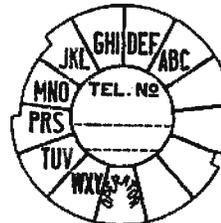
5—Dial Cards and Cover



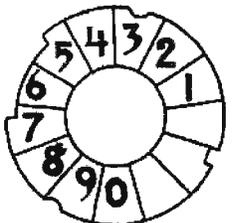
Cat. No. AK-35



Cat. No. AK-36



Cat. No. AK-37



Cat. No. AK-38

Dial Cards

Space for the insertion of the telephone number is provided on a round dial card in the center of the dial finger plate. The card is held in place by an escutcheon ring, with an invisible lock which can be opened only with a special tool, thus preventing tampering.

Standard dial cards are printed on white bristol board, in styles as shown, and die cut. Card AK-35 is normally supplied on all automatic telephones (except the Weatherproof Monophone) shown in this catalog, but any of the other styles illustrated can be provided if specified. Cards AK-35 and AK-36 are available in Black, Blue, Brown, Jade Green, Nile Green, or Chinese Red, but Black is supplied unless color is specified. Card AK-37 is available only in Black.

A special dial card (Cat. No. AK-38) is furnished in the Weatherproof Monophone. This card is of brass, finished in black, with figures and lines luminous-painted, so the dial can be easily operated in the dark.

The dial card is protected by a clear celluloid cover, die cut to fit the escutcheon ring.

- | <i>Cat. No.</i> | <i>Description</i>                             |
|-----------------|--|
| AK-35           | Dial Card—For Tel. No. only—Black              |
| AK-36           | Dial Card—With "Long Distance" Indicated—Black |
| AK-37           | Dial Card—As shown—Black                       |
| AK-38           | Dial Card—Luminous                             |
| AK-39           | Celluloid Cover for Dial Card                  |

When ordering, give catalog number and description.

### Complete Type 24A36 Dial Assemblies

The sub-assembly of the Type 24A36 dial can be combined with the other parts listed above, to make up a great number of different dial assemblies. Of these, the most commonly used are listed below. Dial assembly AK-10 is used on Type 21 telephones with the series circuit, and dial AK-11 is used on all other automatic telephones shown in this catalog (except the Weatherproof Monophone—see at right).

All dial assemblies listed below are supplied with round finger plate, and Cat. No. AK-35 dial card (in black), unless otherwise specified.

For other dial assemblies, not shown, give catalog number and description of sub-assembly, spring assembly, number plate, finger plate, and dial card.

Type 24A36 dials are furnished with black japanned finger plate and polished nickel-plated finger stop. Can be furnished with gold- or chromium-plate finish, if specified.

#### Standard Type 24A36 Dials

Cat. No.	Spring Assembly	Number Plate
AK-10	AK-24	AK-30
AK-11	AK-25	AK-30
AK-12	AK-26	AK-30
AK-13	AK-28	AK-30
AK-40	AK-25	AK-31
AK-41	AK-25	AK-32
AK-42	AK-26	AK-32
AK-43	AK-27	AK-30
AK-44	AK-27	AK-32
AK-45	AK-29	AK-30
AK-46	AK-29	AK-32

When ordering, give catalog number and description.

### “Splashproof” Dial

The dial used in the Weatherproof Monophone is of special design, and may be installed in any telephone where a splashproof or dustproof dial is desired. The Cat. No. AK-25 spring assembly can be used in any telephone shown in this catalog (or other spring combinations can be supplied). The dial number plate is black Bakelite, and the luminous dial card, Cat. No. AK-38, is used on this dial. “Full-circle” finger plate is provided, unless otherwise specified.

Cat. No. Description

AK-22 “Splashproof” Dial

When ordering, give catalog number and description as above.

### “Radio Suppressor” Dial

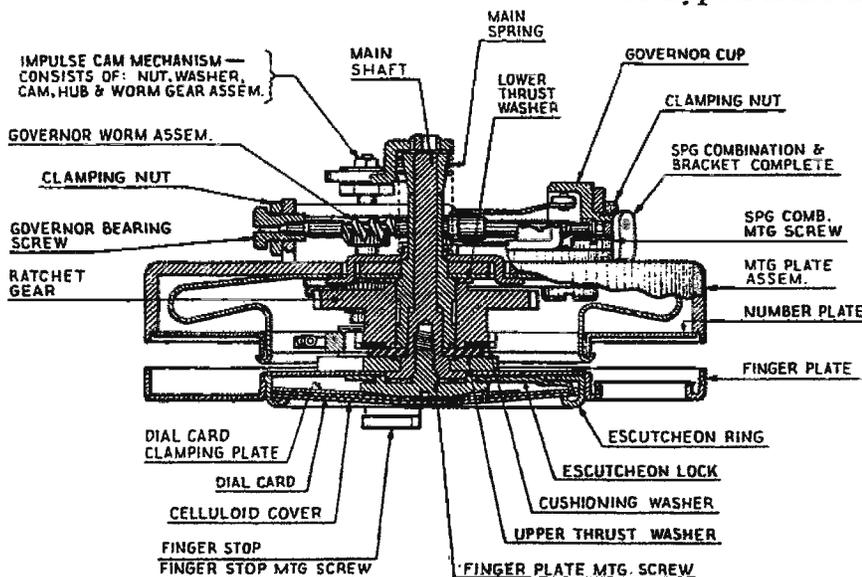
This dial is used to prevent the broadcasting of dial impulses to a radio receiving set, which may otherwise occur when an aerial is located near an open-wire telephone line. It is provided with a .1 mf. condenser and a two-winding radio frequency choke coil, mounted in the dial cup, and wired to the springs. The Cat. No. AK-25 spring assembly can be used in any telephone shown in this catalog (or other spring combinations can be supplied). Cat. No. AK-30 number plate, Cat. No. AK-35 dial card (in black), and “full-circle” finger plate are provided unless otherwise specified.

Cat. No. Description

AK-47 “Radio Suppressor” Dial

When ordering, give catalog number and description as above.

### Construction of the Type 24A36 Dial



Sectional View of the Type 24A36 Dial, showing the Cushioning Washer which provides Silent Pawl Action

### Replacement Parts

Except for the Cushioning Washer, the Ratchet Gear, and the Upper and Lower Thrust Washers, all of the parts of the Type 24A36 Dial are identical and interchangeable with the parts of the Type 24 Dial. Principal replacement parts, as listed on the preceding pages, should be ordered by catalog number and description. Other parts should be ordered by name, as shown in this sectional view (when ordering Upper or Lower Thrust Washers, or Ratchet Gear, be sure to specify also whether for Type 24A36 or for Type 24 dials).

**"Radio Suppressor" for Dials**



Dial "Radio Suppressor"  
Cat. No. AK-48

This unit can be connected to any dial, and serves the same purpose as the "Radio Suppressor" dial. It is only 1 1/4" x 3/4" x 7/16" in size, and mounts within the telephone, three cords and a screw terminal being provided for connection to the dial.

Cat. No.	Description
AK-48	"Radio Suppressor" for Dials

**Dial Mounting Cups**



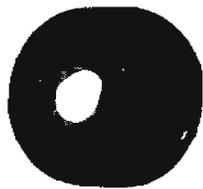
Cat. No. AK-16



Cat. No. AK-49



Cat. No. AK-50



Cat. No. AK-51

Dial Mounting Cups

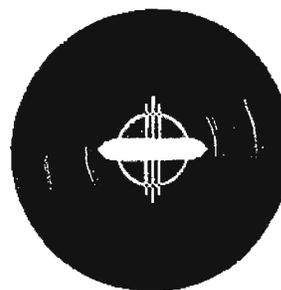
When manual lines are converted to automatic operation, the advantages of automatic operation can be obtained by mounting dials on the present wall and desk telephones (provided they are in good condition).

Cups for this purpose are listed below. They are of steel, finished in black japan, and mount with two wood screws or machine screws (not furnished). Cups are furnished complete with four nickel-plated screws for mounting dial.

Cat. No.	Description
AK-16	For mounting dial on face of wall set
AK-49	Mounts dial below box of wall set
AK-50	Similar to above, but used on telephones on which only the front of the box opens
AK-51	For desk telephones—mounts on base

**Number-Card Holders**

For Manual Convertible Telephones



Typical Number-Card Holder

Number-card holders as shown on manual convertible telephones in this catalog, are furnished complete with number card and celluloid cover, and with necessary mounting parts. Cat. Nos. AK-17 and AK-18 and number card AK-21 can be furnished in art shades, but black is furnished if color is not specified.

Cat. No.	Description
AK-17	For Type 34A3, Type 1A, or Two-Line Monophones, or Type 21 Desk Telephone—Black
AK-18	For Type 35A5 Monophone—Black
AK-20	For Type 21 Wall Set, Weatherproof Monophone, Outdoor Tel., or Mine Tel.
AK-21	Number Card—Black
AK-52	Celluloid Cover for Number Card

**Dial and Monophone Tools**



Tool for Dial Escutcheon Lock  
Cat. No. AW-13



Monophone Tool  
Cat. No. AW-17

Cat. No.	Description
AW-13	Tool for Dial Escutcheon Lock
AW-14	Wrench for Dial Governor Nut and Large Impulse Cam Nut
AW-15	Socket Wrench for Small Impulse Cam Nut
AW-16	Pliers for Adjusting Dial Springs and Governor
AW-17	Tool for Removing Monophone Switch Cover and Monophone Receiver Cap, and for Checking Adjustment of Monophone Switch Springs with Collapsible Plunger
AW-18	Spanner Wrench for Removing Monophone Cradle
AW-21	Tool for Removing Monophone Switch Cover and Monophone Receiver Cap, and for Checking Adjustment of Monophone Switch Springs with One-Piece Plunger
AW-22	Tool for Small Impulse Cam Nut, for Removing Monophone Switch Cover and Monophone Receiver Cap, and for Checking Adjustment of Monophone Switch Springs with either Collapsible or One-Piece Plunger

When ordering, give catalog number and description as above.

## Monophone Hand Units, Transmitters and Receivers



Monophone Hand Unit—Furnished Complete with Monotype Cord

The Monophone hand unit is made of molded Bakelite, with a brass tube through the center of the handle which serves both to reinforce it and to carry the wires from the receiver. The unit is shaped and balanced so that it can be held comfortably, and so that it will always fall into the correct position to operate the Monophone switch, even if it is carelessly placed in the cradle.

The transmitter and receiver caps are also molded of Bakelite, and are mounted in metal bands. The transmitter cap is designed to guide sound waves to the diaphragm without distortion, and the receiver cap is shaped to fit the ear to exclude outside noises.

All standard and "tropical" Monophone hand units are equipped with the "all-positions" transmitter, which can be used at any point on lines of any length, and for either central-battery or local-battery service. The polarized receiver also can be used for either central- or local-battery service, in Monophone circuits employing a three-winding induction coil. The induction-coil-type receiver employed in Cat. No. AF-11 hand unit is designed for use in our special central-battery anti-sidetone circuit only.

Hand units are furnished complete with 3-conductor Monotype cord, fifty-three inches long.

Monophone hand units are furnished in black Bakelite, with transmitter and receiver bands heavily black japanned. They can also be furnished in Black, Walnut, Mahogany, Chinese Red, Old Ivory, Jade Green, Nile Green, Royal Blue, Orchid or Maroon, with metal trim gold- or chromium-plated. If art shade hand unit is desired, specify color and trim.

Cat. No.	Description
AF-10	Monophone Hand Unit—Polarized Rec.—Black
AF-11	Monophone Hand Unit—Ind.-Coil Rec.—Black

When ordering, give catalog number and description as above.

### "Anti-Noise" Hand Units

For use in noisy locations, such as shops, engine rooms, trading floors, etc. This unit contains a special transmitter, and a special mouthpiece. The transmitter

diaphragm is especially shielded, acoustically, and the mouthpiece is formed with only a small tapered hole.

These hand units may be used instead of the standard hand unit in any type of Monophone. They are furnished standard in black Bakelite only, with black-japanned metal trim. Can also be furnished with trim gold- or chromium-plated, if specified. Furnished complete with 3-conductor Monotype cord, fifty-three inches long.

The "Anti-Noise" transmitter and mouthpiece can also be supplied separately, for use in any existing Monophone hand unit.

Cat. No.	Description
AF-12	"Anti-Noise" Hand Unit—Polarized Rec.—Black
AF-13	"Anti-Noise" Hand Unit—Ind.-Coil Rec.—Black
AF-30	"Anti-Noise" Transmitter, only
AF-37	"Anti-Noise" Monophone Mouthpiece, only

When ordering, give catalog number and description as above.

### "Tropical" Hand Units

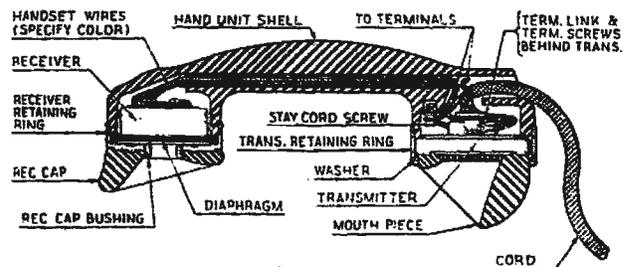
With special rubber-insulated cord and wiring, for tropical or outdoor use. May be used instead of the standard hand unit in any type of Monophone.

"Tropical" hand units are furnished in black Bakelite, with transmitter and receiver bands heavily black-japanned. Can also be furnished in art shades, as listed at left, if specified.

Cat. No.	Description
AF-14	"Tropical" Hand Unit—Polarized Rec.—Black
AF-15	"Tropical" Hand Unit—Ind.-Coil Rec.—Black

When ordering, give catalog number and description as above.

### Monophone Hand Unit Parts

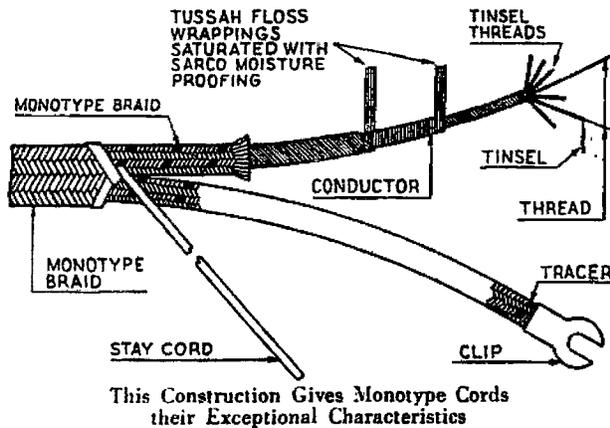


Cat. No.	Description
AF-16	Monophone "All-Positions" Transmitter
AF-17	Monophone Polarized Receiver, only
AF-18	Monophone Induction-Coil Receiver, only
AF-19	Monophone Receiver Diaphragm
AH-11	Monophone Hand Unit Cord—Brown braid covered

### When Ordering

- Principal replacement parts should be ordered by catalog number and description as listed above. Other parts should be ordered by name, as shown in above drawing, together with catalog number of hand unit for which they are ordered.
- Standard Monophones are black Bakelite, and parts will be furnished for black hand units, unless otherwise ordered.

## Monotype Telephone Cords



In designing Monotype cords, the engineers went back to fundamentals and conquered, one by one, the faults which caused most cord failures.

Monotype cords resist kinking, because the conductors are laid straight, not twisted. The conductors do not separate, and permanent kinks cannot form.

Monotype outer braid resists fraying—by actual tests, more than any other cord covering material. It is made of special cotton braid, very tightly woven to form a close, smooth covering.

Monotype cords have high insulation resistance—and retain it. They are not injured by accidental immersion or the most humid climatic conditions.

Monotype cords do not become noisy, because the tinsel conductors are wound on cotton thread in such a manner that the cotton takes all strain. And as the cords do not kink, the conductors do not separate and break, and do not develop noises.

Cords for the telephones shown in this catalog are listed below. In addition, Monotype cords of the proper length, trim, and number of conductors for telephones of other makes are also available. Merely send an old cord as a sample, or a sketch showing trim, tracer colors, and length, and tell us where it is to be used, giving other manufacturer's number, if known.

Monotype cords are regularly furnished with brown outer braid.

The insulation of standard Monotype cords, as described above, is better than the insulation generally known as moistureproof, and will be found to meet all but the most severe climatic conditions. However, for replacing rubber-covered cords on telephone instru-

ments which are to be used out-of-doors, cords with rubber insulation may be required, and are listed herein. Any other cords can also be furnished with rubber insulation, if desired.

### Monophone Hand Unit Cords

Fifty-three inches long—three conductors.

Cat. No.	Description
AH-11	Hand Unit Cord
AH-17	Hand Unit Cord—Rubber-Covered

### Receiver Cords

Thirty-three inches long—two conductors.

Cat. No.	Description
AR-14	Receiver Cord
AR-30	Receiver Cord—Rub. Cov.

### Desk Set Cords

Six feet long.

Cat. No.	Description
AD-12	Desk Set Cord—2-conductor—for Type 34A3 Monophone, Met. Rg.; Type 7 Monophone
AD-13	Desk Set Cord—4-conductor—for Type 1A Monophone, Anti-Sidetone Booster Ckt. (C.B.) or Magneto; Type 21 Desk Sets, Anti-Sidetone Booster Ckt.; Bracket Monophone; Types 8 and 19 Monophones
AD-10	Desk Set Cord—3-conductor—for Type 34A3 Monophone, Grd. Rg.; Type 1A Monophone, Ind.-Coil-Rec. Ckt.; Type 21 Desk Sets, Reg. Booster and Series Ckts.; Type 200 Desk Sets
AD-24	Desk Set Cord—9-conductor—for Two-Line Monophones AA-24 and AA-25
AD-14	Desk Set Cord—11-conductor—for Two-Line Monophones AA-22, AA-23, AA-26 and AA-27

### Hand Test Telephone Cords

For Automatic Electric hand test telephones. Thirty-six inches long—two conductors.

Cat. No.	Description
AH-18	For Test Tel. with Auto. Test Plug or Test Clips
AH-19	For Test Telephone with Manual Plug

### Breastplate Set Cord

For Automatic Electric breastplate sets. Sixty-four inches long—four conductors.

Cat. No.	Description
DB-19	Breastplate Set Cord

### Operators' Receiver Cord

For operators' receiver used in Automatic Electric suspended transmitter sets. Seventy-two inches long—two conductors.

Cat. No.	Description
DA-20	Operators' Receiver Cord

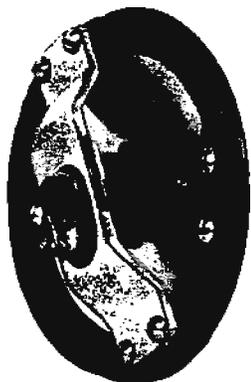
### Suspended Transmitter Cords

For Automatic Electric suspended transmitters. Sixty-seven inches long—one conductor.

Cat. No.	Description
DT-14	Suspended Transmitter Cord—C.B.
DT-15	Suspended Transmitter Cord—L.B.

When ordering, give catalog number and description as above.

### Transmitters For Conventional Telephones



Typical Transmitter

Automatic Electric transmitters are simple in construction and unsurpassed in transmission quality. They are provided with a large flat diaphragm of aluminum, supported on a sharp bend at the extreme edge, so that the entire area is effective. The front carbon electrode is mounted on an auxiliary metal diaphragm which vibrates in unison with the main diaphragm, and which also conducts current to this electrode, thus obviating the necessity for flexible conductors.

The framework of the transmitter is heavily black japanned, and has four equally spaced tapped holes for mounting screws. Screws are not furnished unless specified.

Cat. No. AF-20 transmitter is regularly furnished in Automatic Electric C.B. telephones, and is designed to operate satisfactorily under all ordinary conditions of central-battery service. Where a line is known to be of such high resistance as to cause unsatisfactory transmission, a special transmitter with proper characteristics can be supplied, upon receipt of complete details.

Automatic Electric transmitters can be used for replacement purposes on conventional telephones of the following makes: Monarch, Kellogg, Western Electric, and Dean.

Transmitter mouthpieces must be ordered separately—see at right.

Cat. No.	Description
AF-20	Central-Battery Transmitter
AF-21	Local-Battery Transmitter
AF-22	L. B. Transmitter, complete with arm for Type 200 Wall Telephone

### Receivers For Conventional Telephones



Polarized Receiver  
Cat. No. AF-31

Automatic Electric receivers can be used in almost all conventional types of telephones. Polarized receivers are of 75 ohms resistance. Direct-current receivers are for use only in Type 21 telephones with the Series circuit.

Receiver shell and cap are molded of black Bakelite. Monotype cords, thirty-three inches long, covered with brown braid and equipped with spade tips, are provided (or rubber-covered cord can be supplied, if specified).

Cat. No.	Description
AF-31	Polarized Receiver, with Monotype Cord
AF-32	Direct-Current Receiver, with Monotype Cord

#### Principal Replacement Parts

AF-33	Receiver Diaphragm
AR-14	Monotype Receiver Cord
AF-34	Bakelite Shell—for Polarized Receiver
AF-35	Bakelite Shell—for Direct-Current Receiver
AF-36	Bakelite Receiver Cap

#### Transmitter Mouthpieces

In addition to the regular black Bakelite mouthpiece, Automatic Electric Company offers mouthpieces in colors as shown below, and also in clear plastic or glass. Mouthpieces can thus be installed to harmonize with surroundings and can be used to differentiate between two adjacent telephones, etc. Can be used on Automatic Electric and Western Electric telephones. The glass mouthpiece is a "sanitary" type, with metal insert which can be removed and disinfected.

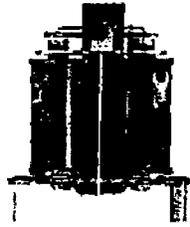
Cat. No.	Description	Cat. No.	Description
	Transmitter Mouthpiece		Transmitter Mouthpiece
AF-23	Black	AF-27	Nile Green
AF-24	Chinese Red	AF-28	Orchid
AF-25	Royal Blue	AF-29	Clear Plastic
AF-26	Jade Green	ZA-10	"Sanitary" Glass Type

For Monophone Transmitters and Receivers, see Page 36

When ordering, give catalog number and description as above.

## Ringers

Automatic Electric ringers are simple and sturdy in construction, so they are easily adjusted, and hold their adjustments through years of service. They are made in "straight-line" and harmonic types for central-battery service, and in the three standard resistances used for magneto service.



Typical Central-Battery Ringer  
"Straight-Line" (less Gongs)

"Straight-line" central-battery ringers are used for single-party metallic, or two-party divided ground ringing, and are provided with a "biasing" spring, permitting the use of pulsating ringing current to provide two-party selective metallic, or four-party selective grounded ringing. Harmonic central-battery ringers are made in all the standard multiple and non-multiple frequencies, the multiple frequencies being normally used when rotary ringing machines are employed, and the non-multiple frequencies when ringing current is supplied by harmonic converters.

If mounting parts (screws, washers, etc.) are desired with ringer, please specify, and give catalog number of telephone or ringer box in which it is to be installed.

### Central-Battery Ringers

#### Catalog Numbers

Freq., Cycles	Resis., Ohms	For 34.43 Monophone	For 35.45 Monophone	For Rgr. Boxes and Type 21 Wall Tel.
Srt. Line	1400	AS-10	AS-20	AS-30
16.6	2760	AS-11	AS-21	AS-31
20	2110	AS-12	AS-22	AS-32
25	2080	AS-13	AS-23	AS-33
30	1224	AS-14	AS-24	AS-34
33.3	528	AS-15	AS-25	AS-35
42	528	AS-16	AS-26	AS-36
50	476	AS-17	AS-27	AS-37
54	476	AS-18	AS-28	AS-38
66.6	476	AS-19	AS-29	AS-39

Ringers are supplied complete with gongs, unless otherwise specified.

Cat. No.	Description
AS-59	Gong for above Ringers
AS-60	Slotted Gong (used where a different sound is desirable because two or more ringers are close together)

### High-Impedance Ringers

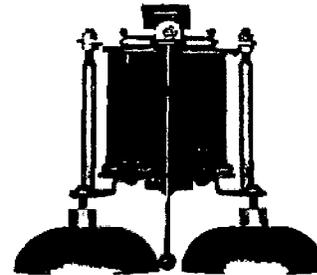
Standard central-battery ringers are recommended for use on all lines having not more than five metallic ringing, or ten ground-ringing stations. For lines requiring as many as ten ringers, with metallic ringing (or twenty with ground ringing), special high-impedance ringers can be furnished, in straight-line or any of the standard harmonic frequencies.

These ringers are interchangeable with standard central-battery ringers but require special condensers of low capacitance. Separate ringing and talking condensers are therefore required in all telephones and ringer boxes (metallic as well as ground ringing) using high-impedance ringers.

When ordering a high-impedance ringer, give catalog number of corresponding standard ringer; or specify type of telephone in which it is to be used. Ringing condenser of proper capacitance is furnished with each ringer.

Any central-battery telephone or ringer box listed in this catalog can be furnished with high-impedance ringer and proper ringing condenser, if specified. When ordering, give catalog number, description, and all other information required for standard instrument, and then specify "with high-impedance ringer."

### Local-Battery Ringers

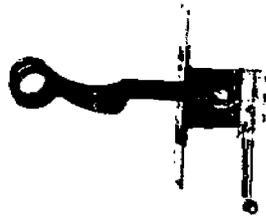


Typical Local-Battery Ringer

Cat. No.	Description
AS-40	1000-ohm—for Type 8 Monophone
AS-41	2500-ohm—for Magneto Outdoor Monophone Set
AS-42	1600-ohm—for Magneto Outdoor Monophone Set
AS-43	1000-ohm—for Magneto Outdoor Monophone Set
AS-44	2500-ohm—for Magneto Mine-Type Telephone
AS-45	1600-ohm—for Magneto Mine-Type Telephone
AS-46	2500-ohm—for Type 200 Wall Set, and Magneto Ringer Box
AS-47	1600-ohm—for Type 18 Monophone, Type 200 Wall Set and Magneto Ringer Box
AS-48	1000-ohm—for Type 18 Monophone, Type 200 Wall Set and Magneto Ringer Box
AS-49	1000-ohm—for Type 10 Monophone
AS-56	2500-ohm—for Extension Ringer Box
AS-57	1600-ohm—for Extension Ringer Box
AS-58	1000-ohm—for Extension Ringer Box

When ordering, give catalog number and description.

## Hookswitches



Above—  
Hookswitch AX-17 with  
Receiver Hook  
Cat. No. AX-27

At Left—  
Desk Stand Hookswitch  
Cat. No. AX-12

The springs of these hookswitches are stiff phosphor bronze, to assure ample contact pressures, and are insulated with phenol fibre. Assemblies are furnished *without* mounting screws, unless specifically ordered.

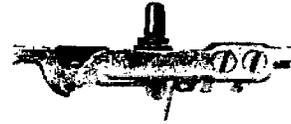
Receiver hooks should be ordered separately, if desired—see below.

Cat. No.	Description	No. of Springs
	Hookswitches for Type 21 Desk Stands—	
AX-10	Anti-Sidetone Booster Circuit	5
AX-11	Regular Booster Circuit	4
AX-12	Series Circuit	3
	Hookswitches for Type 21 Wall Telephones—	
AX-13	Anti-Sidetone Booster Circuit	5
AX-14	Reg. Booster or Series Circuit	4
AX-15	Hookswitch for Outdoor Monophone Set	5
AX-16	Hookswitch for Mine-Type Telephone (C.B.)	5
AX-11	Hookswitch for Type 200 Desk Stand	4
AX-17	Hookswitch for Type 200 Wall Set	3
AX-18	Hookswitch for Magneto Mine-Type Telephone	3

## Receiver Hooks

AX-25	For Type 21 Tels., Type 200 Desk Stands, and Mine-Type Tels.
AX-26	For Outdoor Monophone Sets
AX-27	For Type 200 Wall Set

## Monophone Switches



Typical Monophone Switch

These switches serve the same purpose as the hookswitch in conventional telephones. When the hand unit is placed on the cradle it pushes down on a plunger rod which, through a lever arm, operates the springs. The springs are of phosphor bronze—stiff enough to create ample contact pressure.

Connecting cords are furnished on each Monophone switch, as required, to fit the instruments in which it is used.

Cat. No.	Description	No. of Springs
	Monophone Switch	
AX-19	For Types 34A3 and 35A5 Monophones	5
AX-20	For Type 1A and Two-Line Monophones, with Anti-Sidetone Booster Circuit, Type 7, and Types 1A and 19 Magneto Monophones	5
AX-21	For Type 1A Monophone—Ind.-Coil-Rec. Ckt.	4
AX-22	For Types 4 and 4A Monophones—Anti-Sidetone Booster Circuit	6
AX-23	For Types 4 and 4A Monophones, with Ind.-Coil-Rec. Ckt., Type 17 and Weatherproof Monophones	4
AX-24	For Types 8, 10 and 18 Monophones	4

## Terminal Strips



Terminal Strip  
Cat. No. AV-11

The terminal strips listed below are made of phenol fibre—mechanically strong and a fine insulator—with terminals of brass, finished in white nickel. Each terminal has a tip tinned for soldering, and screws under which cord tips or wires may be fastened.

Cat. No.	Description
AV-11	Terminal Strip—7 terminals—for Types 4 and 4A Monophones (also in Weatherproof Monophone), Type 21 Wall Telephone, Outdoor Monophone Sets, Mine-Type Telephones, Types 10, 17 and 18 Magneto Monophones, Metal Ringer Boxes (C.B.) and Extension Ringer Boxes (Magneto)
AV-12	Same as AV-11, but 8 terminals.
AV-13	Strip AV-11 on steel bracket for mounting on a flat surface, such as the cover of Type 21 Wall Telephone.
AV-14	Terminal Strip—6 terminals—for Types 7 and 19 Monophones
AV-15	Same as AV-14, but 8 terminals
AV-16	Terminal Strip—4 terminals—for Type 8 Monophone
AV-17	Terminal Strip—8 terminals—for Type 8 Monophone

When ordering, give catalog number and description.

## Magneto Generators



Five-Bar Generator  
Cat. Nos. AQ-12 and AQ-13

These generators are constructed for high output and long life. Three springs shunt the armature winding out of the circuit when the generator is idle. Turning the crank automatically breaks this short-circuit.

In addition to the standard 3- and 5-bar types, Automatic Electric generators are made in a special 2-bar type, for use in compact instruments, such as the Type 8 and Type 10 Monophones. A specially-wound 5-bar type is also offered, having an output approximately equal to that of other 6-bar generators.

Crank is not furnished with generator, but must be ordered separately, if desired.

Cat. No.	Description
AQ-10	2-bar Generator
AQ-11	Standard 3-bar Generator
AQ-12	Standard 5-bar Generator
AQ-13	5-bar Generator—High Output
AQ-14	Generator Crank, only

## Induction Coils

From core to terminals, Automatic Electric induction coils are designed to assure maximum transmission volume and fidelity. Cores are silicon-iron strips, coils are well insulated and are ended on sturdy terminal lugs on the spoolheads.

### Compact Induction Coil



Compact Induction Coil

Especially designed for use in Type 34A3 and Type 35A5 Monophones, and Compact Type 32 Bakelite ringer boxes and extension boxes. Spoolheads are made of molded plastic.

Cat. No.	Description
	Compact Induction Coil
AU-11	Three-Winding—for Type 34A3 Monophone and Compact Ringer Box for Anti-Sidetone Booster Tels.
AU-12	Three-winding—for Type 35A5 Monophone
AU-15	Two-winding—for Compact Ringer Box for Reg. Booster Tels.

## Regular Booster Induction Coil



Regular Booster Induction Coil  
Cat. No. AU-14

Two windings—for use in regular central-battery booster circuits, including Type 21 wall telephones and metal ringer boxes, as well as other makes. Dimensions: length, 4"; width,  $1\frac{1}{8}$ "; height,  $1\frac{1}{4}$ ". The inner winding has 1400 turns with a resistance of 27 ohms—the outer winding, 1700 turns with a resistance of 14 ohms.

Cat. No.	Description
AU-14	Regular Booster Induction Coil
AU-22	Induction Coil, Term. Strip, and Mounting (as used in Type 21 Wall Tel. and Metal Ringer Box)

## Anti-Sidetone Booster Induction Coil

Three windings—designed especially for the anti-sidetone booster circuits of Monophones and Type 21 telephones. Identical in size and general appearance with above 2-winding coil.

Cat. No.	Description
	Anti-Sidetone Booster Induction Coil
AU-13	For Types 4, 4A, and 7 Monophones, Type 21 Wall Tel., Metal Ringer Boxes and Mine-Type Tel. (C.B.)
AU-23	Above Induction Coil, with Terminal Strip and Mounting (as used in Type 21 Wall Tel. and Metal Ringer Box)
AU-17	For Outdoor Monophone Set (C.B.)

## Local-Battery Induction Coil

This coil is a standard short-core induction coil, and may be used in practically any standard magneto telephone, including Type 200 wall telephones, and in magneto ringer boxes. Dimensions: length,  $2\frac{3}{4}$ "; width,  $1\frac{1}{8}$ "; height,  $1\frac{1}{8}$ ". The primary winding consists of 380 turns, and has a resistance of 1.8 ohms. The secondary winding has 1520 turns, and a resistance of 14 ohms. Can be furnished with either three or four terminals.

Cat. No.	Description
AU-19	Local-Battery Induction Coil—3 terms.
AU-21	Local-Battery Induction Coil—4 terms.
AU-24	Special Ind. Coil. for Magneto Mine-Type Tel.

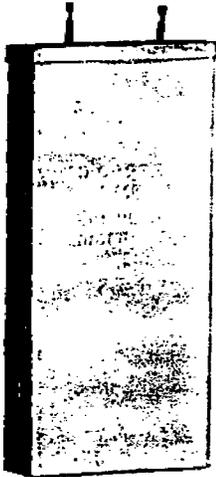
## Magneto Monophone Induction Coil

A 3-winding anti-sidetone coil especially designed for Types 8, 10, 17, 18, and 19 Monophones. Dimensions: length, 4"; width,  $1\frac{1}{8}$ "; height,  $1\frac{1}{4}$ ".

Cat. No.	Description
AU-18	Magneto Monophone Induction Coil
AU-20	Special, for Magneto Outdoor Monophone Set

When ordering, give catalog number and description.

## Condensers



Typical Condenser

These moistureproof condensers are of the tinfoil-and-paper type, and are available in sizes and capacitances for use in almost all makes of telephones. They are individually tested at 500 volts or more, and every condenser shipped has successfully passed this test. Capacitance is guaranteed to be not below, nor more than 25% above the rated value. Condensers are aluminum finished, with capacitance rating stamped or printed on the can.

<i>Cat. No.</i>	<i>Description</i>
	Condenser
	3 $\frac{3}{8}$ " long, 1 $\frac{1}{8}$ " wide—For use in Types 34A3 and 35A5 Monophones, Outdoor Monophone Set, and Compact Ringer Boxes.
AT-10	.2 mf. Capacitance— $\frac{5}{8}$ " thickness
AT-11	.5 mf. Capacitance— $\frac{5}{8}$ " thickness
AT-12	1 mf. Capacitance— $\frac{5}{8}$ " thickness
AT-14	2 mf. Capacitance—1" thickness
	4 $\frac{1}{2}$ " long, 2" wide, $\frac{1}{8}$ " thick—For use in Types 4, 4A and Weatherproof Monophones, Type 21 Wall Set, Mine-Type Tel., and Metal Ringer Boxes
AT-22	.2 mf. Capacitance
AT-23	.4 mf. Capacitance
AT-24	.7 mf. Capacitance
AT-25	1 mf. Capacitance
AT-26	2 mf. Capacitance

## Monophone Resistance Coil

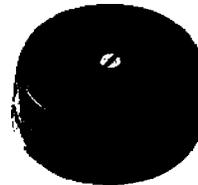


Monophone  
Resistance Coil  
Cat. No. AU-16

This small resistance coil is used in all Monophones employing the induction-coil receiver circuit. It is wound on a micarta form  $\frac{5}{8}$ " square, to a resistance of 205 ohms, the winding ending on tinned terminals to which exterior connections can be soldered.

<i>Cat. No.</i>	<i>Description</i>
AU-16	Monophone Resistance Coil

## Line and Cord Terminal Block



Line and Cord  
Terminal Block

This block is made of Bakelite, with four connecting screws and a stay-cord fastener molded into the base. Two nickle-silver straps (removable) connect the screws in pairs. The base is drilled for two mounting screws, and the cover, fastened with one screw, protects the terminals and wiring. The block is 2 $\frac{1}{4}$ " in diameter and 1" high.

<i>Cat. No.</i>	<i>Description</i>
AV-10	Line and Cord Terminal Block

## Offset Base

### For W. E. Co. Desk Stand

Used where manual desk stands of Western Electric Co. manufacture are to be converted to dial operation. A telephone so converted is similar in appearance to the Type 21 desk stand.

The offset base is made of black Bakelite, with eight terminals molded in. It is clamped to the post of the desk stand by means of a large spanner nut, which is furnished. A special wrench for this nut is listed below.

Base is furnished without dial, which should be ordered separately.

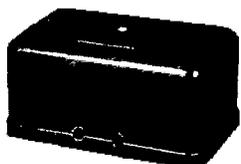
<i>Cat. No.</i>	<i>Description</i>
AK-53	Offset Base for W. E. Co. Desk Stand
AK-54	Spanner Wrench for Mounting Offset Base

When ordering, give catalog number and description.

# Telephone Accessories

## Extension Boxes

### Type 32—Central-Battery



Type 32 Extension Box

Extension boxes provide all of the equipment contained in a ringer box, except the ringer. They are used with desk stands, such as the Type 1A Monophone, when they are used as extension telephones, or when some special type of signaling equipment is provided.

Type 32 Extension Boxes are assembled in a compact case of Bakelite molded, only 5½" long, 3" wide, and 2½" high. In addition to the condenser, terminal strip, and induction coil (when required), these boxes can be provided complete with a 3-volt D. C. buzzer, for use on a local signaling circuit—as, between the main and extension telephones.

<i>Cat. No.</i>	<i>Description</i>
	Type 32 Extension Boxes
AP-10	For use with Type 1A Monophone or Type 21 Desk Set, Anti-Sidetone Booster Ckt. or Bracket Monophone—Without Buzzer
AP-13	Same as above, but with 3-volt D.C. Buzzer
AP-11	For use with Type 1-A Monophone, Induction-Coil Receiver Ckt., or Type 21 Desk Set, Series Ckt.—Without Buzzer
AP-14	Same as above, but with 3-volt D.C. Buzzer
AP-12	For use with Type 21 Desk Set, Reg. Booster Circuit—Without Buzzer
AP-15	Same as above, but with 3-volt D.C. Buzzer

## Telephone Relay Boxes

Used for operating lamp signals. These boxes are identical in appearance with Type 32 Extension Boxes.

Cat. No. AP-16 contains an A.C. relay which will respond to regular straight-line (central-battery) or magneto ringing current and close a local circuit, to flash a lamp signal. Can be used with a ringer box to provide a supplementary signal; or can be used alone, if lamp signal only is desired, and no induction coil is needed (for relay box with induction coil, see Lamp-Signaling "Ringer" Box, below). Relay box is equipped complete with condenser, as required on central-battery lines.

Cat. No. AP-17 is used to operate visual busy signals on lines having extension stations. It contains a D.C. relay, which is connected in series with one side of the line, operates when the hand unit is removed at any station, and closes a local circuit to light the "busy" lamps at all stations on the line.

Lamp signals for use with these relays are shown on page 45.

<i>Cat. No.</i>	<i>Description</i>
AP-16	Telephone Relay Box—A.C.
AP-17	Telephone Relay Box—D.C.

## Lamp-Signaling "Ringer" Box

This box is assembled in the same case as is used for our standard metal ringer boxes, and provides the same equipment, except that the ringer is replaced by an A.C. relay, for operating a desk lamp signal. It can be used, instead of the regular ringer box, with Type 1A Monophones or Type 21 desk sets having the anti-sidetone booster circuit, using straight-line metallic ringing only.

Lamp-signaling "ringer" boxes for ground ringing with these instruments, or for metallic or ground ringing (straight-line only) with any other types of telephones, can also be furnished. If desired, specify type of telephone, and whether metallic or ground ringing.

Relay contacts will carry ½ amp. non-inductive load. Lamp signals for use with these "ringer" boxes are shown on page 45.

<i>Cat. No.</i>	<i>Description</i>
AO-30	Lamp-Signaling "Ringer" Box—Anti-Sidetone

## Continuous Telephone Signaling Unit

Consists of an A.C. relay which operates on straight line central-battery or magneto ringing current, and closes a local circuit to a signal which then operates continually until the relay is released by pushing a button in the bottom of the case. Relay contacts will carry up to 5 amperes, and the unit can be used with any type of signal. A 2 mf. condenser is included, for use on central-battery lines.

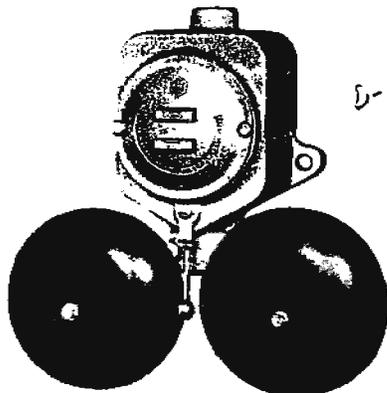
Unit can be supplied in a case either for indoor or for outdoor installation.

<i>Cat. No.</i>	<i>Description</i>
AP-18	Continuous Signaling Unit—Indoor Type
AP-19	Continuous Signaling Unit—Outdoor Type

When ordering, give catalog number and description.

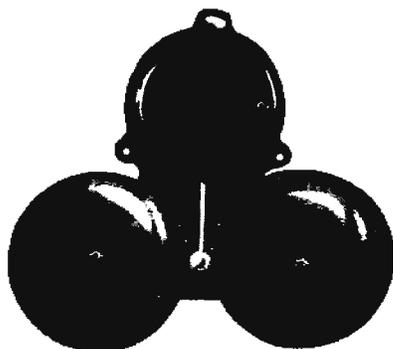
### Loud-Ringing Bells

These bells, of the two-gong vibrating type, operate from straight-line (central-battery or magneto) ringing current. May be used with an extension box, or with a ringer box with ringer disconnected, if desired. They have 6" gongs, and a very powerful ringing mechanism. Dimensions are: width, 1'3": height, 1'0".



Waterproof Loud-Ringing Bell  
Cat. No. AS-51

Cat. No. AS-51 is waterproof, and is recommended for service in exposed locations. All working parts are enclosed in a case of cast aluminum alloy, with  $\frac{3}{4}$ " conduit connections at top and bottom. A condenser is provided in the assembly, for use on central-battery lines.

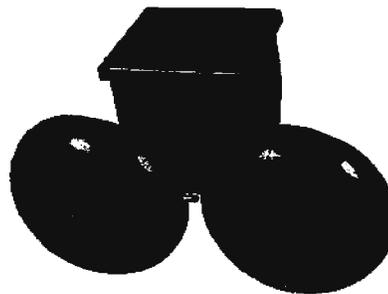


Splashproof Loud-Ringing Bell

Splashproof bells can be used outdoors as well as indoors. They are finished throughout in black japan. Furnished in 1000, 1600 or 2500 ohms resistance, and with or without condenser.

Cat. No.	Description
AS-51	Waterproof Bell—1600-ohm—2 mf. Condenser
AS-52	Splashproof Bell—1600-ohm—2 mf. Condenser
AS-62	Splashproof Bell—1600-ohm—No Condenser
AS-63	Splashproof Bell—1000-ohm—2 mf. Condenser
AS-64	Splashproof Bell—1000-ohm—No Condenser
AS-65	Splashproof Bell—2500-ohm—.7 mf. Condenser
AS-66	Splashproof Bell—2500-ohm—No Condenser

### Loud-Ringing Harmonic Bells



Loud-Ringing Harmonic Bell

Automatic Electric loud-ringing harmonic bells were designed to operate directly from standard harmonic ringing current, replacing costly and unreliable arrangements of "tuned" relays, separate current supply, and non-tuned bells. They are connected into the circuit in the same manner as the conventional harmonic ringer, and are just as selective. And as they are of the high-impedance type, they consume less current, and have less effect on dialing circuits than ordinary tuned ringers of low impedance.

The loud-ringing bell consists of a harmonic ringer movement and a condenser, mounted in a cast aluminum box, with the clapper striking two six-inch gongs below the box. The volume of signals is amplified and directed by placing the gongs at an angle, so that when the bell is mounted on a wall, the sound from the back of the gongs is not absorbed by the wall, but is thrown back and up to the wall and ceiling, and thence reflected out into the space.

Dimensions of the Automatic Electric Loud-Ringing Harmonic Bell are: height,  $8\frac{3}{4}$ "; width,  $12\frac{3}{4}$ "; it projects  $4\frac{1}{4}$ " from the surface on which it is mounted. It is finished throughout in glossy black enamel.

Bells can be furnished with regular ringer coils and wiring, for indoor use, or with impregnated coils and rubber-covered wiring, for outdoor installations.

Freq., Cycles	Impedance, Ohms	Condenser Capacitance	Catalog Numbers	
			Indoor	Outdoor
16.6	2800	0.7 mf.	AO-42	AO-51
20	2300	0.7 mf.	AO-43	AO-52
25	2080	0.7 mf.	AO-44	AO-53
30	2080	0.7 mf.	AO-45	AO-54
33.3	1350	0.4 mf.	AO-46	AO-55
42	1350	0.4 mf.	AO-47	AO-56
50	750	0.4 mf.	AO-48	AO-57
54	900	0.4 mf.	AO-49	AO-58
66.6	700	0.4 mf.	AO-50	AO-59

When ordering, give catalog number and description

**Desk Lamp Signal**



Desk Lamp Signal  
Cat. No. AS-55

The desk lamp signal may be used with the A.C. or D.C. relay boxes, or with the lamp-signaling "ringer" box, as a call signal or busy visual. It consists of a bronze-lacquered metal base 2 $\frac{3}{4}$ " in diameter and 1 $\frac{1}{2}$ " high, containing a 12-, 24-, or 48-volt lamp, under a dome of white, green, or red glass. Lamp operates from a battery or transformer.

Furnished complete with six-foot brown two-conductor cord. Red glass dome, and 48-volt lamp, furnished unless otherwise ordered.

<i>Cat. No.</i>	<i>Description</i>
AS-55	Desk Lamp Signal—48-volt lamp, red dome

**Trunk Lamp Signal Unit**



Trunk Lamp Signal Unit  
Cat. No. AS-61

This unit provides three lamp signals, colored respectively white, red, and green, which can be used as visual signals on two or three lines incoming to a telephone provided with a switching key, or for other purposes. The lamps operate on 12-volt current supplied by batteries or a transformer, and can be controlled by a telephone relay box or lamp-signaling "ringer" box.

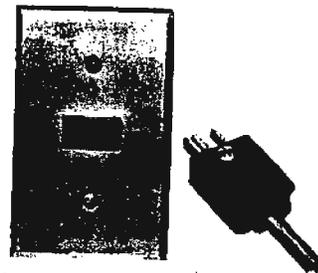
The unit is designed for wall or ceiling mounting.

<i>Cat. No.</i>	<i>Description</i>
AS-61	Trunk Lamp Signal Unit

**Portable Telephone Plugs and Jacks**

By offering portable telephones equipped with plugs, and wall jacks for installation at points where permanent telephones would not be desired, telephone companies can often secure increased revenues in clubs, motels, large residences, etc. The plugs and jacks listed below are recommended for this purpose.

When ordering, give catalog number and description as above.



Plug AZ-10 (Cord is not furnished)  
Jack and Flush Plate AZ-11

Because of its convenience and beauty, the Type 34A3 Self-Contained Desk Monophone is ideally adapted for use as a portable telephone. It requires only a two-conductor cord, plug, and jack. Four-conductor plugs and jacks for use with other types of telephones are also available.

Portable telephone jacks are designed to mount in a standard (U.S.A.) electric switch box (not furnished) and are provided complete with a flush plate, finished in brushed brass.

<i>Cat. No.</i>	<i>Description</i>
AZ-10	Portable Telephone Plug—2-conductor
AZ-11	Jack and Flush Plate—2-conductor
AZ-12	Portable Telephone Plug—4-conductor
AZ-13	Jack and Flush Plate—4-conductor

**Waterproof Bell**



Waterproof Bell  
Cat. No. AS-54

This bell was designed for marine service, and is ideal for outdoor use in any location exposed to extreme moisture. Can be used on magneto lines, or on central-battery lines (straight-line ringing) with any telephone which provides the necessary ringing condenser. The case is of cast alloy and is fitted with a tightly-gasketed cover of similar material. Conduit connections at top and bottom are fitted with pipe plugs. Case is finished in battleship gray. Dimensions: height, 7"; width, 6 $\frac{1}{2}$ "; depth, 4 $\frac{1}{2}$ ".

<i>Cat. No.</i>	<i>Description</i>
AS-54	Waterproof Bell

## Telephone Switching Keys

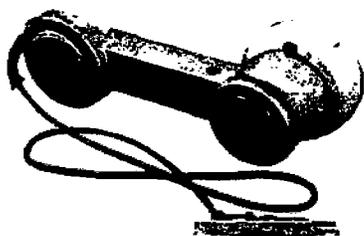


Telephone Switching Key

Used for connecting one telephone to two or more lines, connecting a number of telephones to one line, etc. Consists of a locking type lever key, assembled on a steel base and protected by a pressed steel cover, finished in black japan. Dimensions: length, 5 $\frac{3}{4}$ " (including key handle); width, 3 $\frac{3}{8}$ "; height, 1 $\frac{1}{2}$ ".

Cat. No.	Description
AY-10	Telephone Switching Key—2-conductor, 2-way
AY-11	Telephone Switching Key—2-conductor, 3-way
AY-12	Telephone Switching Key—3-conductor, 2-way
AY-13	Telephone Switching Key—3-conductor, 3-way
AY-14	Telephone Switching Key—4-conductor, 2-way
AY-15	Telephone Switching Key—4-conductor, 3-way

## Hand Test Telephones



Hand Test Telephone  
Cat. No. TA-10

Used for general supervisory purposes in automatic exchanges. Consist of a light but strong hand unit, containing a transmitter in series with an impedance coil, a receiver with condenser in series, a Cat. No. AK-10 dial, a 1200-ohm resistor, and two pushbuttons. Complete with cord, and test plug or clips.

One button is pushed before connecting to a busy line, and opens the transmitter circuit to prevent the flow of direct current, so that neither a "click" nor a loss of sound volume is caused in the telephones being used (the condenser prevents flow of direct current through the receiver). The other pushbutton places the 1200-ohm resistance in series with the line, for testing automatic switches over a maximum resistance loop.

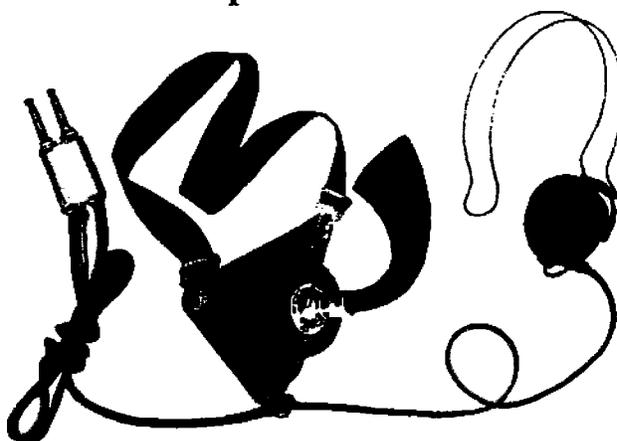
When ordering, give catalog number and description as above.

A guard is provided, to protect the dial finger plate from damage (this guard can also be supplied separately, for use with existing hand test telephones having Type 24 dials).

For keeping the hand test telephone out of the way, yet easily accessible, a cup bracket is available. This bracket can be mounted on a wall, on a switchboard upright, etc.

Cat. No.	Description
TA-10	Test Telephone, with Automatic Test Plug
TA-11	Test Telephone, with Test Clips
TA-12	Test Telephone, with Manual Plug
TA-13	Dial Guard for Hand Test Telephone
TA-14	Mounting Bracket for Hand Test Telephone

## Operators' Sets



Operators' Breastplate Set  
Cat. Nos. DA-16 and DA-17

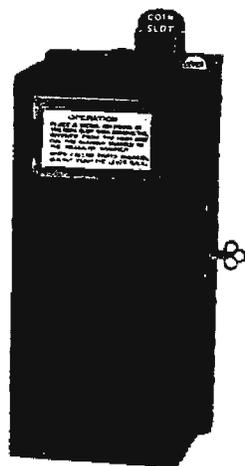
Automatic Electric Company manufactures breastplate and suspended-transmitter type operators' sets, for use with magneto or central-battery manual switchboards of almost any make.

Breastplate sets consist of a breastplate transmitter with web strap, a receiver and headband, and connecting cord with Bakelite-shell twin plug to fit Monotype, or Western Electric switchboards.

Suspended-transmitter type operators' sets consist of the suspended transmitter with cords, operator's receiver with cord and Bakelite-shell twin plug to fit Monotype or Western Electric switchboards, and an adjustable transmitter arm, finished in highly polished nickel plate. Transmitter is standard central- or local-battery type.

Cat. No.	Description
DA-16	Operators' Breastplate Set—Central-Battery
DA-17	Operators' Breastplate Set—Magneto
DA-18	Suspended Transmitter Set—Central-Battery
DA-19	Suspended Transmitter Set—Magneto

## The Type 29 Coin Collector For Automatic Lines



Type 29 Coin Collector  
Cat. Nos. AJ-11 and AJ-12

This coin collector requires no special central-office equipment, and may be used on any automatic line where "reverse-battery" supervision is given (except two-party "jack-per-station" lines). The coin is placed in the top of the coin slot, and held by a lever while the call is dialed. When the called station answers, the lever must be operated, collecting the coin, before conversation can take place.

Cat. No. AJ-11 is intended for use with Monophones having induction-coil receivers, and Type 21 telephones having the series circuit. Cat. No. AJ-12 may be used with Monophones and Type 21 telephones having regular booster or anti-sidetone booster circuits.

As the coin-collector short-circuits the telephone transmitter and shunts the receiver, it may be necessary to change the interior wiring of the telephone, and, in the case of desk-stand instruments, to provide an additional conductor in the cord between desk stand and ringer box. Or special instruments arranged for this service can be supplied.

Two keys are required to open the coin collector and cash box. The key for the mechanism cover is common to all Type 29 Coin Collectors. The cash box key may be different for each coin collector, or may be

common to any group of coin collectors, as desired by the customer. Different keys are furnished, unless otherwise specified.

<i>Cat. No.</i>	<i>Description</i>
AJ-11	Type 29 Coin Collector—for Series Telephones
AJ-12	Type 29 Coin Collector—for Booster Telephones

## The Tel-O-Timer



The Tel-O-Timer  
Cat. No. AJ-10

The Tel-O-Timer was designed to reduce "takeout" orders by permitting the telephone company to offer any subscriber a limited "pay-as-you-talk" service until he can resume regular full-time service. It is a clockwork device which is set by the telephone company to provide service for periods of 3, 6, 9, 12, 15, 18, 21 or 24 hours, upon the deposit of a five-cent piece. If desired, the telephone ringer can be connected so as to signal all incoming calls, but conversation cannot take place unless a coin has been deposited.

The Tel-O-Timer can be installed at any telephone—automatic or manual, central-battery or magneto. It operates entirely independently of the central-office equipment, and does not affect other instruments on party lines.

The Tel-O-Timer is 8" high, 4½" wide and 2¾" deep. It is finished in black japan, with nickel trim, and is provided with a celluloid-covered instruction card. Furnished with two keys for cash box. Can be supplied only for operation on U.S. five-cent pieces.

<i>Cat. No.</i>	<i>Description</i>
AJ-10	Tel-O-Timer (for U.S. five-cent pieces)

When ordering, give catalog number and description as above.

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(Supersedes Catalog 4055 and all Preceding Catalogs)

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