

BELL SYSTEM PRACTICES
Station Installation and Maintenance

SECTION C55.151
Issue 1, 8-8-33
Standard

NO. 629A SUBSCRIBER SET
FOR EXPLOSIVE ATMOSPHERES

1. GENERAL

1.01 This section gives general information relative to the No. 629A subscriber sets such as description, installation, connections and maintenance.

1.02 The No. 629A subscriber set is intended for use only in special cases where explosive gases may be present.

Caution: Under no circumstances are installers authorized to install a No. 629A subscriber set without having a service order or definite instructions from their supervisor specifically ordering its installation.

2. DESCRIPTION

2.01 The No. 629A subscriber set is an anti-sidetone manual wall set which in appearance is somewhat similar to the 653 type subscriber sets. It differs from the 653 type in that it contains apparatus specifically designed to prevent the ignition of explosive gases. The switchhook has the most important protective feature. It consists of a metal chamber which encloses the switchhook spring assembly in a manner that prevents sparks inside of the chamber from igniting explosive gases outside of the chamber. The induction coil is sealed in a wooden box and the ringer coils are covered with metal shields in order to protect the windings against injuries which might constitute a source of electrical sparks. The terminal blocks are equipped with wooden covers to guard against accidental crosses which might produce sparks. The cords and set wiring are provided with closed end cord tips and as a further precaution against sparking due to loose connections they are secured with lock washers. The receiver cord is of a special heavy duty type and it is securely clamped at both ends. A lock is provided to prevent unauthorized entry or tampering with the set.

2.02 The apparatus used in the No. 629A subscriber set is listed in Table 1 below and the arrangement of the apparatus in the set is shown in Figs. 1 and 2.

TABLE 1

Condenser:	No. 199A Condenser.
Induction Coil:	No. 103A Induction Coil.
Leads:	P-242211 Leads for transmitter.
Receiver:	No. 558 Receiver. Includes R2AD cord.
Ringer:	No. 68LD Ringer.
Switchhook:	No. 152A Switchhook.
Transmitter Unit:	No. 323, 329 or 337 Transmitter Unit. Use in accordance with the approved transmission zoning practices.

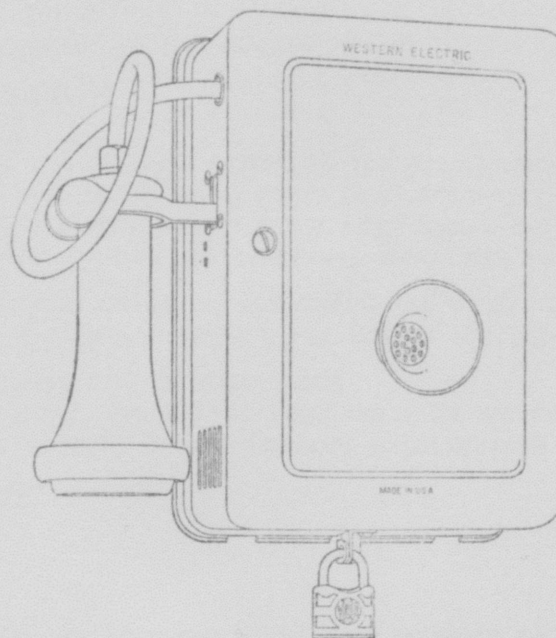


Fig. 1—Exterior View of No. 629A Subscriber Set.

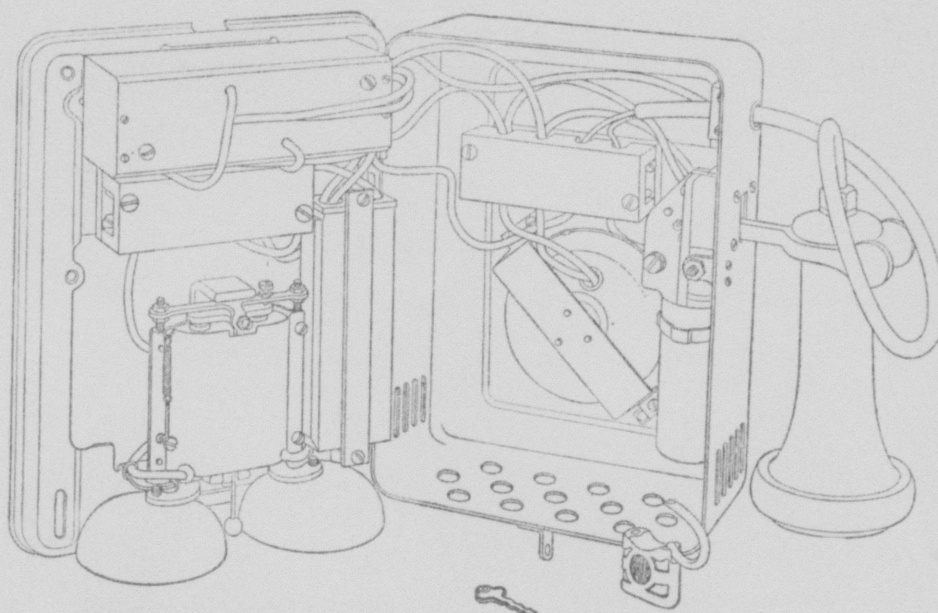


Fig. 2—Interior View of No. 629A Subscriber Set.

3. INSTALLATION

3.01 In general the No. 629A subscriber set can be installed in accordance with the section in Division C30 covering the installation of subscriber sets for indoor locations. There are, however, a number of additional precautions that must be taken in the wiring and testing of the set to guard against the possibility of producing electrical sparks in atmospheres containing explosive gases.

3.02 If possible the set should be installed at a time when the location is free of explosive gases. Provide as much ventilation as is permissible remembering that prevailing restrictions posted or otherwise made known at the subscriber's premises must be carefully obeyed.

Caution: In no case shall testing equipment or other apparatus capable of producing electrical sparks be used in the explosive atmosphere. All apparatus having electrical contacts is prohibited.

3.03 Complete all connections to the subscriber set and associated apparatus and lock the set before connecting the station wiring to the protector or cable terminal. If trouble is encountered follow the maintenance instructions given in Part 5 of this section.

3.04 All station wiring passing through the explosive atmosphere must be rubber insulated and weather-proof, such as duct wire and must be protected from mechanical injury by conduit or other suitable means.

3.05 If a protector or cable terminal is installed it must not be located in the explosive atmosphere but the wiring between the terminal point and the set shall be as short as possible to give adequate protection.

3.06 If a loud ringing bell is needed a No. 392L subscriber set may be used but it must **not** be located in the explosive atmosphere. Connections to the loud ringing bell shall be made outside of the explosive atmosphere, preferably at the protector or cable terminal. No connecting blocks are permitted in the explosive atmosphere for this or any other purpose.

3.07 If keys or other telephone apparatus having contacts are required they must be located outside of the atmosphere containing explosive gases.

4. CONNECTIONS

4.01 The connections for the No. 629A subscriber set are shown in Fig. 3.

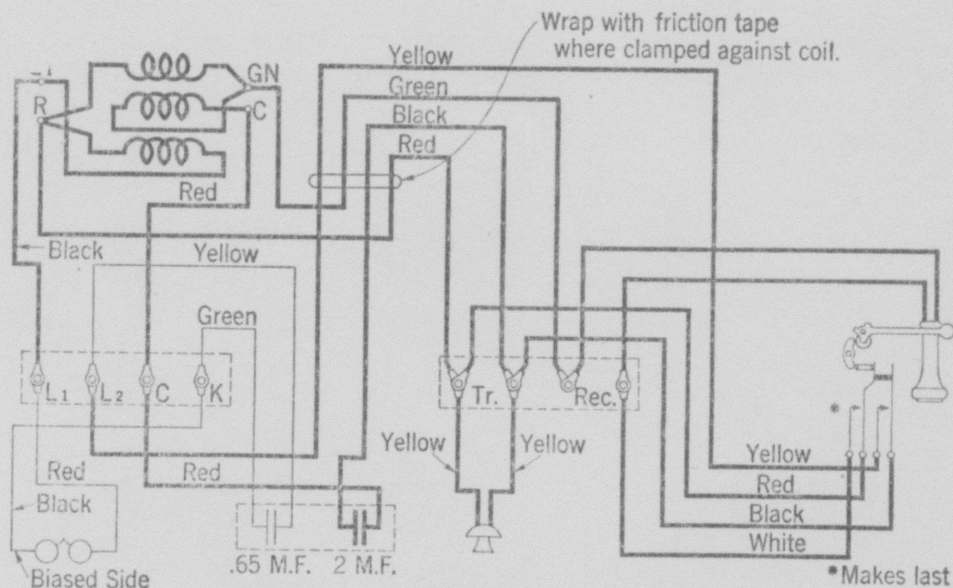


Fig. 3.

5. MAINTENANCE

5.01 Before unlocking the No. 629A subscriber set to make inspections or adjustments always make sure that the tip and ring conductors of the station wiring have been disconnected at the protector or cable terminal, connected together

momentarily to discharge the condensers in the subscriber set (and loud ringing bell if provided). If a grounding point is conveniently accessible, as on a protector, connect the tip and ring conductors of the station wiring to ground while working on the set. Otherwise make sure these conductors will not come in contact with other wires, terminals, etc. Tape the bare ends of the station wiring if in doubt.

5.02 All tests involving the station wiring and subscriber set except ringing, talking and bell tapping tests shall be made from the protector or cable terminal. If such tests indicate trouble in the subscriber set or station wiring, repairs shall be made with the station wiring disconnected as covered above in 5.01. If this is impracticable the set must be removed from the explosive atmosphere for tests and repairs.

5.03 While a number of the parts of the No. 629A set such as the receiver and cord, transmitter unit and transmitter leads P-242211 can be easily replaced with the set in place, it may for safety reasons be desirable to replace the set when more extensive repairs such as a replacement of the induction coil, condenser, ringer, switchhook fulcrum pin P-218066 or switchhook assembly is necessary.

5.04 Whenever a visit is made to a station where a No. 629A subscriber set is installed an inspection shall be made to see that all parts of the set are in good condition and that the set is working properly. This inspection is in addition to the regular routine inspections. Check as follows:

- (1) See that the metal parts of the set particularly the switchhook assembly, ringer, and condenser are not corroded and that the lead seal on the switchhook chamber is not broken.
- (2) See that the switchhook moves freely throughout the entire travel without binding or squeaking and that the switchhook plunger operates freely in its bearing.
- (3) Check the insulation on all leads in the set and see that none is frayed, broken or otherwise damaged. Also make sure that the four leads between the cover and base of the set are wrapped with friction tape and clamped against the induction coil to prevent injury to the leads when closing the cover.
- (4) See that all leads entering the terminal blocks do so only through the holes provided in long sides of the wooden covers. Do not remove wooden covers unless absolutely necessary.
- (5) See that the receiver cord is securely clamped at both ends.

(6) Make sure that the ringer leads are tied to the bracket behind the ringer posts and that the sealing compound at the coil end of the leads is not loose. Be careful not to break the sealing compound.

(7) When ringer adjustments are necessary adjust the ringer before locking the set and reconnecting the station wiring. If any parts of the set are defective replace the part or the set as covered in 5.03.

5.05 Test for bell tapping by operating the switchhook with the set locked and the station wiring connected to the line. If the bell taps disconnect the station wiring as covered in 5.01 and increase the biasing spring tension $1/16$ of a turn. Repeat procedure as outlined above until the bell does not tap.

5.06 When the foregoing checks and all adjustments have been made call the test desk and cooperate in making a test of the station in accordance with the section in Division C60 covering tests with test desk.

Caution: Warn the test deskman not to apply a breakdown test while the subscriber set and station wiring are connected to the line. Disconnect the station wiring as covered in 5.01 whenever a breakdown test is necessary.