

CIRCUIT DESCRIPTION  
STATION APPARATUS DEVELOPMENT DEPARTMENT  
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STATION SYSTEMS  
KEY TELEPHONE SYSTEM NO. 1A  
KEY AND TELEPHONE CIRCUIT  
WITH SEPARATELY MOUNTED KEYS  
ARRANGED FOR PICKUP, HOLDING,  
CUT-OFF AND SIGNALING

CHANGES

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 The rating has been changed from AT&TCo. Standard to "Mfr. Disc."

D.2 "Replaced by SD-69207-01" was added.

All other headings under "Changes", no change.

1. PURPOSE OF CIRCUIT

1.1 This circuit provides a means for associating the talking and dialing circuit of a station with a number of central office, PBX, private or intercommunicating lines of a No. 1A key telephone system by means of a pickup key mounted separately from the telephone. It also provides for holding a bridge on one or more lines, excluding other stations, cutting off other stations, extension ringers or a listening-in set and for signaling intercommunicating stations.

2. WORKING LIMITS

2.1 None.

3. FUNCTIONS

3.1 On central office or PBX lines.

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- 3.11 Provides for picking up any one of a maximum five central office or PBX lines.
- 3.12 Provides for holding any of a maximum of five central office or PBX lines.
- 3.13 Provides for an audible signal on incoming calls.
- 3.14 Provides for a cut-off key which may be used for disconnecting an extension station or an extension ringer from a given line and when desired connects the ringer in the set to the line. It is also used to disconnect a listening-in set.
- 3.2 Provides for picking up an intercommunicating line.
- 3.3 Provides for signaling an intercommunicating station.
- 3.4 Provides for picking up a private line.
- 3.5 Provides for signaling a private line station.

#### 4. CONNECTING CIRCUITS

- 4.1 Line and Signaling Circuit of the No. 1A key telephone system.
- 4.2 Key Telephone Circuits of the No. 1A key telephone system.

#### DESCRIPTION OF OPERATION

#### 5. ANSWERING OR ORIGINATING A CALL

To answer or originate a call the pickup key associated with the desired line must be operated. With the pickup key operated and the hand set removed from the mounting the station is connected to the central office, PBX, private or intercommunicating line in the usual manner. When originating a call on an intercommunicating or private line, it will be necessary to operate the signaling key to signal the called party except when the intercommunicating automatic signaling circuit is used.

#### 6. RINGER IN SUBSCRIBER SET

The ringer in the set may be used as a line ringer or a common ringer. When it is used as a line ringer it will operate on all incoming calls on the line with which the ringer is associated when

ringing current is applied to the line at the central office or PBX. When it is used as a common ringer, it will operate when ringing current is applied to any line at the central office or PBX with which the common ringer is associated.

## 7. HOLDING

The line may be held by the operation of the hold key. The hold key when operated, opens the operating path for the (L) relay, shown on the line and signaling circuit of the No. 1A key telephone system, releasing it, and closes a circuit for operating the (H) relay, also shown on the line and signaling circuit, through its primary winding in series with the central office or PBX loop and station telephone set. When the (H) relay operates, its holding tertiary winding will be connecting across the line in series with its noninductive quaternary winding and in parallel with its primary winding. When the hold key is released, the operated pickup key will release, the operating primary winding circuit of the (H) relay will be opened, the (H) relay will be held operated by its tertiary winding and the set will be disconnected from the line.

## 8. TRANSFERRING CALLS

If the call is to be transferred to another station and the intercommunicating line is provided, the line is held as described in paragraph 7. The pickup key associated with the intercommunicating line is then operated and the desired station is reached over the intercommunicating line described in paragraph 9. The transferred call is picked up at the second station by operating the pickup key associated with the desired line. In case the call is to be transferred to a station which does not have intercommunicating service it is necessary to employ some other means of communication with the desired station.

## 9. INTERCOMMUNICATING SIGNALING

The intercommunicating signaling arrangement of the No. 1A key telephone system provides for both code and selective signaling. When code signaling alone is employed the operation of the signal key will operate all the buzzers of the system directly. When selective signaling alone is employed a separately mounted 5A9A key or equivalent is required and the operation of any signal key will operate the desired buzzer. When both code and

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selective signaling are required at any station it will be necessary to provide a relay shown on the line and signaling circuit which will operate whenever a signaling key is operated to operate the buzzers on a code signaling basis. The operation of a signaling key to signal on a selective basis is provided for by connecting the signaling leads directly to the buzzer leads without operating the relay. When the intercommunicating automatic signaling circuit is used in connection with an intercommunicating line the buzzer at the called station operates when the hand set at the calling station is removed from the mounting.

#### 10. FUNCTION OF CUT-OFF KEY

The cut-off key can only be associated with one line but provision is made to wire it to any desired line. It is used for disconnecting extension stations or extension ringers from a given line and when desired connects the ringer in the set to the line. It is also used to disconnect a listening-in set.

#### 11. PURPOSE OF THE TABLE UNDER NOTE 101

The table provides the information necessary for selecting the proper key required for a given type of service. It also provides the information required to make the necessary connections to secure certain optional features.

The table shows the key top diagram of all the different types of keys and their code numbers.

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