

STROMBERG-CARLSON

A DIVISION OF GENERAL DYNAMICS CORPORATION

FIELD HANDBOOK

1573 TWO-LINE TELEPHONE



Figure 1. 1573 Two-Line Telephone.

The Stromberg-Carlson 1573 Two-Line Telephones provide two-line terminations, holding features, and a third line for inter-communication or local PX service. The application of the instrument to two lines, with or without the use of the third line, enables the telephone user to originate, answer, or hold one line, while maintaining connection on another line. The 1573 Telephone has the same physical appearance as the other 1500 Series Telephones, with the exception of the two line hold keys and line switching lever on the lower front. In the lower center of the housing, a silver button provides access to the inter-com line. On the upper right, near the hookswitch, is a red button, which provides for Operator Recall, or entrance into the central office equipment, when one line is in the hold condition. The telephones are furnished with the plungers used for desk installation. However, plungers for wall mounting are available in a package assembly (S-C No. 211445-000). Dial blanks and adapters are standard equipment on the instruments, unless dial mounting is specified in the order. The 1573 Telephone is available in grey or in black.

1573 TWO-LINE TELEPHONE

TABLE OF CONTENTS

	<i>Par.</i>	<i>Page</i>
	<i>No.</i>	<i>No.</i>
Section I. DESCRIPTION, USE and OPERATION		
The 1573 Two-Line Telephone.....	1	5
Use and Type of Service.....	2	10
Operation.....	3	11
Section II. INSTALLATION		
Installation of 1573 Two-Line Telephone...	4	13
Manual to Dial Conversion.....	5	14
Reduced Side Tone on Short Loops.....	6	17
Line and Hold Key Contact Sequence.....	7	17
Desk to Wall Conversion.....	8	18
Section III. MAINTENANCE		
Removal of Housing.....	9	21
Removal of Dial or Dial Blank.....	10	21
Spring Pileups.....	11	21
Replacement of Hold Keys.....	12	22
Replacement of Line Switching Lever.....	13	22
Replacement of Spring on Hold Key Return Lever.....	14	22
Replacement of Hookswitch Assembly.....	15	24
Lubrication.....	16	24

1. THE 1573 TWO-LINE TELEPHONE.

The 1573 Telephone consists of a base assembly, housing assembly, and handset assembly.

a. Base Assembly (fig. 2). This assembly is comprised of a dial, or dial blank assembly, a coil-capacitor assembly, a hookswitch assembly, a line selector key assembly, a holding key assembly, an inter-com switching assembly, a varistor, and a terminal board. These components are mounted on the metal baseplate.

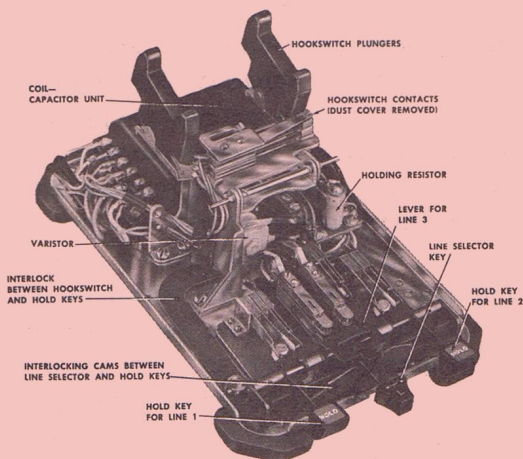


Figure 2. Base Assembly, 1573 Telephone.

(1) *Dial and dial blank assembly.* The dial is equipped with an extended number plate on which the letters and digits (colored white) are located outside the periphery of the finger wheel. A dial mounting bracket attached to the dial is hooked onto the pivot shaft of the hookswitch mounting bracket and fastened by means of the two prongs of the dial mounting bracket that are inserted into the baseplate. A dust cover protects the working mechanism of the dial. The dial blank closes the the opening reserved for the dial when the telephone is used at a manual station. The same station card fits both the blank and the dial.

(2) *Coil-capacitor assembly.* The coil-capacitor unit in the 1573 or any of the 1500 Series Telephones consists of an induction coil, resistor, and talking capacitors housed in a plastic case and held in place on the baseplate by three screws. Screw terminals on either side of the case are clearly marked, showing proper connections for the line and handset cords as well as the hookswitch, ringer, and dial.

(3) *Hookswitch assembly.* The hookswitch assembly in the 1573 or any of the 1500 Series Telephones operates without any complicated linkage and is completely independent of the housing. A metal bracket fastened to the baseplate with four screws provides a mounting for the hookswitch assembly.

A transparent cover protects the hookswitch contacts from dust or other foreign matter. A coil spring attached to the hookswitch lever assures proper operation of the hookswitch contacts.

(4) *Line selector key assembly.* The switching of the telephone instrument between lines is accomplished by the line selector key, marked "L" in the center front of the instrument. Depressing either "Hold" keys returns the line selector key to the center position. The selector lever position indicates the line to which the instrument is connected. By pressing the line selector lever firmly toward a line with a depressed "Hold" key, it will release the "Hold" key and re-connect the instrument to that line.

(5) *Holding key assembly.* On the right and left front of the telephone are the holding levers. Depressing the lever puts the associated line in a "Hold" condition. The key will remain depressed until the handset is replaced on the cradle, or the line selector lever is used to reconnect the instrument to that line.

(6) *Inter-com switching assembly.* Depressing the silver button in the front center of the instrument

returns the line selector key to the center position and connects the instrument to the inter-com, or PX equipment. To release the inter-com switch, it is necessary only to move the line selector key to right or left.

(7) *Varistor* (fig. 2). The varistor is located directly beneath the hookswitch assembly. The noise of line switching is reduced to a minimum with this device.

(8) *Terminal board*. Located on the right side of the baseplate is the terminal board. It provides for all necessary cable connections to the instrument. The terminal board is secured to the baseplate by two screws.

b. Housing Assembly. The housing of the 1573 Telephone differs from the standard 1500 Series Telephone housing only by three rectangular slots in the metal plate on the front of the instrument, and the two buttons (inter-com and recall). A lucite holder on the front of the housing identifies the lines by number and compliments the appearance of the telephone. The metal plate is secured to the Tenite II housing by Phillips-head screws. Two self-retaining screws, plus a single screw in the rear of the housing, secure the housing to the baseplate.

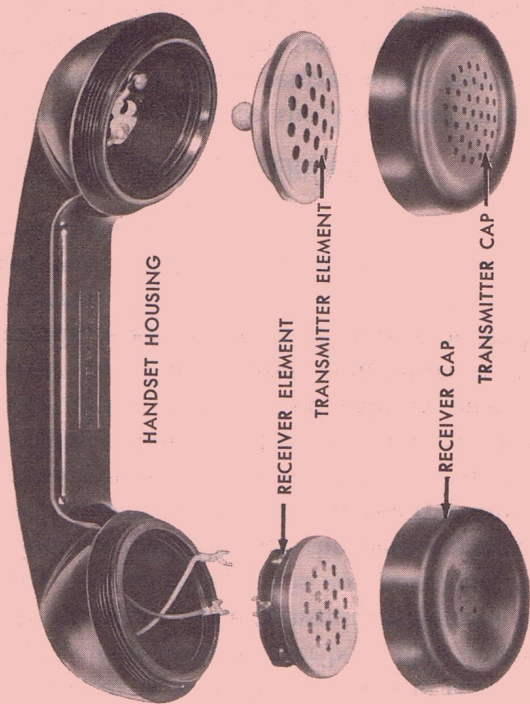


Figure 3. Handset Assembly.

c. *Handset Assembly.* The handset assembly of the 1573 or any of the 1500 Series Telephones consists of the handset, transmitter and receiver elements, the transmitter and receiver caps, and handset cord. The handset is so designed that the transmitter is brought closer to the subscriber's lips, thus improving transmission. The transmitter element is of the carbon-capsule type and is non-positional. Its connections are made through the metal spring contacts in the handset and secured by the transmitter cap. The receiver element is connected by two screws to the spade terminals of the wires running through the handle of the handset and held in place by the receiver cap. The handset cord, either standard or retractile, is secured to the stay-post of the handset by a screw. The three wires of the cord are terminated with spade terminals and secured to their correct positions by screws.

2. USE AND TYPE OF SERVICE.

The two main lines to the 1573 may originate in either dial or manual central office equipment or PBX systems. The third line may be connected to the Stromberg-Carlson 2-10 or 4-20 Dial System for selective signalling and secret conversation on the inter-com line. There are no ringers in the telephone itself, signalling being done with the No. 1561 Bell

Box, chimes, or other signalling equipment.

3. OPERATION.

a. *Incoming Call, Line 1.* The audible signal indicates an incoming call on line 1. The answering party moves the line selector knob to the line 1 position and answers the call. Depressing line 1 "Hold" button disconnects the answering telephone, but retains the incoming call. The handset is not replaced on the cradle.

b. *Incoming Call, Line 2.* Moving the line selector lever to line 2 connects the instrument to that line. Depressing the "Hold" key retains the incoming call. The handset is not replaced on the cradle.

c. *Receiving Call, Inter-com.* Exterior equipment indicates that the inter-com requires answering. Depressing the silver button connects the telephone to the inter-com circuit.

d. *Re-connect to Held Line.* Moving the line selector to the held line re-connects the telephone and releases the "Hold" button.

e. *Disconnect From One Line.* Moving the line selector key to the center disconnects the phone

from the line if the "Hold" key is not depressed. The handset is off the cradle, and the second line is in "Hold" condition, or not in use.

f. *Disconnect From Inter-com.* Moving the line selector to right or left disconnects the inter-com circuit and connects the instrument to line 1 or 2.

g. *Originating Call, Both Lines Idle.* Move the line selector lever to the line desired and use standard procedure for originating call.

h. *Originating Call, One Line On "Hold".* Move the line selector lever to the idle line. Depress red "Recall" button to signal central office. Hookswitch must be depressed, otherwise held line will be disconnected.

i. *Originating Call, Inter-com.* Depress silver button and signal with inter-com equipment. To disconnect, move line selector lever to left or right.

j. *Disconnect From Both Lines.* Returning the handset to the cradle completely disconnects the telephone from lines 1 and 2 regardless of the "Hold" key position.

4. INSTALLATION OF 1573 TWO-LINE TELEPHONE.

When instruments are received from the factory, they should be unpacked and prepared for installation in the standard manner. The No. 1561 Extension Bell Box may use either a straight line or tuned frequency ringer, or a buzzer. Many components in the No. 1561 Bell Box are identical with those used on the 1543 Telephone. The extension bell box may be equipped with high and low gongs to readily identify the calling line. All terminals mentioned in the following subparagraphs are in the 1561 Bell Box.

a. Bridged Ringing. Connect the red lead from the ringer assembly to terminal LI, the black lead to terminal L2, the line tip to terminal L2, and the ring lead to terminal L1.

b. Divided Ringing.

(1) Connect the black lead to terminal C1.

(2) Connect the ring lead of the line to terminal L1 and the tip lead of the line to terminal L2 for all stations on the ring side of the line.

(3) Connect the ring lead of the line to terminal L2 and the tip of line to terminal L1 for all stations on the tip side of the line.

(4) Connect the ground lead to terminal G.

c. *Tapping of Gongs.* In bridged ringing where it is necessary to prevent the tapping of gongs on the biased ringers while dialing, positive battery should be connected to terminal L2 and the bias spring tension adjusted as required.

5. MANUAL TO DIAL CONVERSION.

a. *Manual to Dial Conversion.* The conversion of the 1573 Telephone is accomplished in the following manner:

(1) Remove the housing by loosening the lock screw in the rear clip of the housing and lifting up and forward.

(2) Remove the dial bracket by disengaging the twin prongs of the bracket from the baseplate and by lifting the assembly up and back.

(3) Remove the dial blank cover from the bracket by removing the self tapping screws.

(4) Place the dial bracket, with the prongs downward on the back of the dial (being sure to line the holes up). Place a No. 203052-000 cable clamp on one mounting screw and insert it into the right mounting hole. The second screw is then inserted into the other mounting hole, securing the bracket to the dial assembly.

(5) Remove strap B from the coil-capacitor

assembly terminals 1 and 3 and connect the dial cable leads as follows:

- (a) White wire, one end to terminal W on dial, other end to terminal 1 of the coil-capacitor assembly.
- (b) Brown wire, one end to terminal B on dial, other end to terminal 3 of the coil-capacitor assembly.
- (c) Green wire, one end to terminal GN on dial, other end to terminal 8 of the coil-capacitor assembly.
- (d) Red wire, one end to terminal R on dial, other end to terminal 6 of the coil-capacitor assembly.

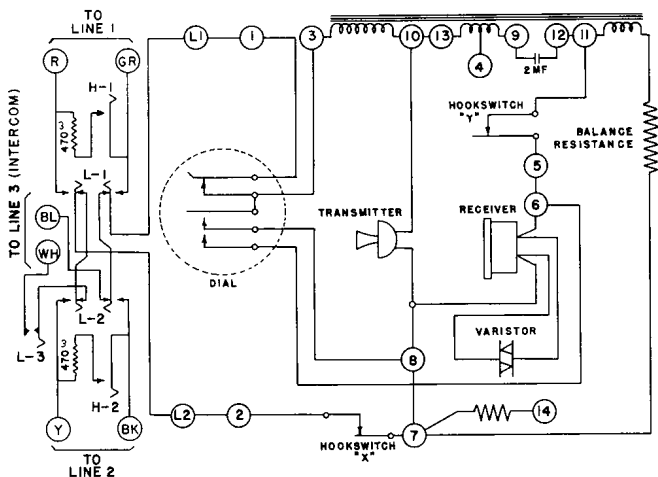
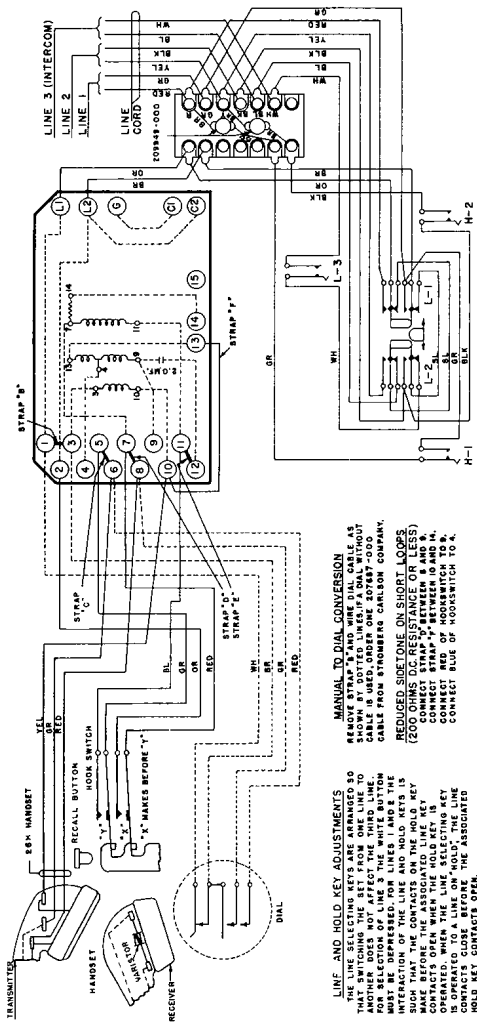


Figure 4. Schematic Diagram of 1573 Telephone.



MANUAL TO DIAL CONVERSION

REMOVE STRAP 'S' AND WIRE DIAL CABLE AS SHOWN. THE RED WIRE FROM THE DIAL CABLE IS USED TO CONNECT THE DIAL CABLE FROM STROMBERG CARLSON COMPANY.

REDUCED SIDETONE ON SHORT LOOPS (200 OHMS DC RESISTANCE OR LESS)

CONNECT STRAP 'D' BETWEEN 8 AND 9.
CONNECT STRAP 'E' BETWEEN 10 AND 11.
CONNECT STRAP 'F' BETWEEN 11 AND 12.
CONNECT BLUE OF HOOKSWITCH TO A.

LINE AND HOLD KEY ADJUSTMENTS

THE LINE SELECTING KEYS ARE ARRANGED SO THAT SWITCHING THE SELECT FROM ONE LINE TO ANOTHER WILL SELECT THE NEXT LINE IN ORDER FOR SELECTION OF LINE 3. THE WHITE BUTTON MUST BE DEPRESSED. FOR LINES 1 AND 2 THE INTERACTION OF THE LINE AND HOLD KEYS IS SUCH THAT THE CONTACTS ON THE HOLD KEY MAKE BEFORE THE ASSOCIATED LINE KEY CONTACTS OPEN WHEN THE HOLD KEY IS DEPRESSED. THE LINE SELECTING AND HOLD KEY IS OPERATED TO A LINE ON "HOLD" THE LINE CONTACTS CLOSE BEFORE THE ASSOCIATED HOLD KEY CONTACTS OPEN.

THE HOLD KEYS ARE LOCKED OUT WHEN THE HANDSET IS ON THE CRADLE BUT ARE NOT AFFECTED BY OPERATION OF THE RED RECALL BUTTON.

Figure 5. Wiring Diagram of 1573 Telephone.

6. REDUCED SIDE TONE ON SHORT LOOPS.

To reduce side tone on short loops (200 ohms D.C. resistance or less), proceed as follows:

- a. Connect strap "D" between terminals 8 and 9.
- b. Connect strap "F" between terminals 10 and 14.
- c. Connect the red lead of the hookswitch to terminal 9.
- d. Connect the blue lead of the hookswitch to terminal 4.

7. LINE AND HOLD KEY CONTACT SEQUENCE.

The line selecting keys are arranged so that switching the instrument from one line to another does not affect the third line. For selection of line 3, the silver button must be depressed. For lines 1 and 2, the interaction of the line and hold keys is such that the contacts on the hold key make before the associated line key contacts open when the hold key is operated. When the line selecting key is operated to a line on "Hold", the line contacts close before the associated hold key contacts open. The hold keys are released when the hand set is placed on the cradle.

8. DESK TO WALL CONVERSION.

Desk to wall conversion of the 1573 Telephone is accomplished in the following manner, using the No. 211445-000 conversion kit:

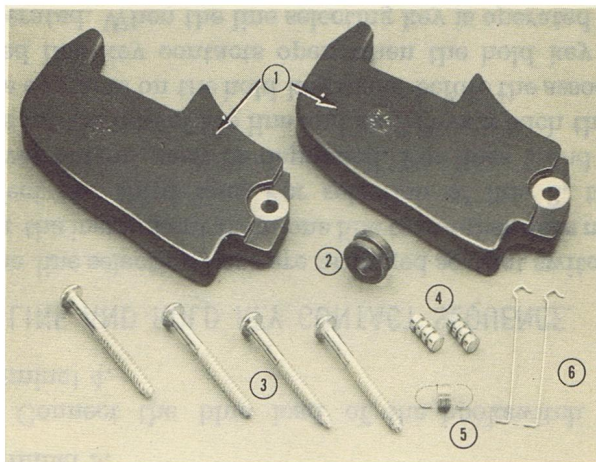


Figure 6. Conversion Kit, Wall Mounting.

LEGEND FOR FIGURE 6

No.	Part Name	No.	Part Name
1	Wall Type Plungers	4	Locking Pins
2	Rubber Grommet	5	Tension Spring
3	Mounting Screws	6	Retaining Springs

a. Remove the line and the two hold knobs by firmly grasping each knob between the thumb and forefinger; a slight outward pull releases the knob. Release the two self-retaining screws on the front of the housing, then the single screw in the rear. Lift the housing over the hookswitch and then forward off line selecting levers.

b. To remove the plunger, depress the retaining spring and push out the locking pin. Position the wall type plunger, aligning the hole of the plunger with the holes in the lever. Depress the retaining spring and insert the locking pins. Release the spring and check to see that the pins are locked.

c. Remove the dial bracket mounting screws, rotate the dial 180 degrees, and replace the dial mounting bracket on the dial assembly.

d. Insert the rubber grommet into the $\frac{3}{8}$ -inch hole in the right side of the baseplate. Remove the line cord from terminals L1, L2, and G of the coil-capacitor assembly and insert the line cord through the $\frac{3}{8}$ -inch hole. Reconnect the line cord to terminals L1, L2, and G. *NOTE: This step in the conversion is not necessary, but makes for a neater installation.*

- e.** Secure the baseplate to the wall with the four wood screws provided.
- f.** Replace the housing, tighten the locking screws, and reposition the line and hold knobs.

9. REMOVAL OF HOUSING.

Remove the line and the two hold knobs by firmly grasping each knob between the thumb and forefinger; a slight outward pull releases the knob. Release the two self-retaining screws on the front of the housing, then the single screw in the rear. Lift the housing over the hookswitch and then forward off the line selecting levers.

10. REMOVAL OF DIAL OR DIAL BLANK.

Disengage the twin prong bracket from the baseplate and lift the assembly up and back. All components are now accessible.

11. SPRING PILEUPS.

The hold pileups for all three lines are mounted on the baseplate with two screws in each assembly. By removing the screws, the entire hold pileup may be removed from the baseplate. The line selector level pileups are permanently secured to the baseplate; under *no* circumstances should these pileups be loosened or disassembled in the field. The bifurcated spring contacts on all springs should make and break in unison. Adjustment and cleaning should be

done with standard relay adjusting tools. All contacts should break by at least .015.

12. REPLACEMENT OF HOLD KEYS.

Loosen the collars at each end of the shaft. Note the position of the spacers and keys on the shaft. Slide the shaft out and remove the levers as they become free. When replacements have been made, replace the shaft and keys in the proper sequence.

13. REPLACEMENT OF LINE SWITCHING LEVER.

With all the hold keys removed, loosen the shoulder screw and spacer, and carefully slide the selector lever out from under the spring combinations. When replacing the lever, raise the lowest spring on the pileup with a screwdriver blade. Then carefully position the lever and remount the pivot screw and spacer.

14. REPLACEMENT OF SPRING ON HOLD KEY RETURN LEVER.

Use a needle-nose pliers to remove the spring from the lever and the hookswitch bracket (the large end of the spring hooks on the bracket). Replace the spring and tension as necessary for positive return of the lever to the maximum rear position. The weight of the handset should return the lever to the normal position.

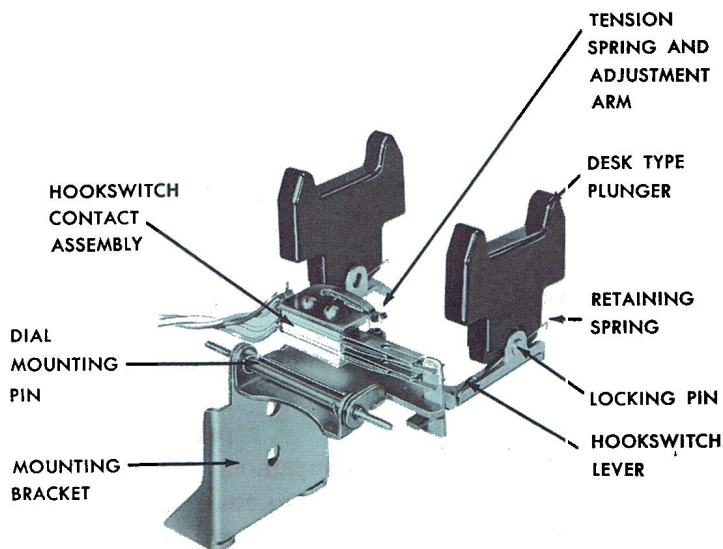


Figure 7. Hookswitch Assembly.

15. REPLACEMENT OF HOOKSWITCH ASSEMBLY.

Replacement of the hookswitch assembly is the same on all 1500 Series telephones, and is accomplished as follows:

- a. Disconnect and tag all leads on the hookswitch.
- b. Remove the four mounting screws from the baseplate.
- c. Remove the hookswitch assembly and replace it with a new assembly.

Replace the mounting screws and reconnect the leads as tagged.

16. LUBRICATION.

All moving levers and shafts should receive lubrication with XY brand switch oil, being careful not to get oil on the spring contacts. *NOTE: Do not use excessive lubricant.*