

How to Install the **DEMON Series Jack**

This booklet is provided for the benefit of qualified installers only.

The Series Jack should not be installed without permission of the owner of the equipment.

To use the DEMON DIALER with a single-line plug-in phone, like one normally found in a home, you don't need the Series Jack. Just read the installation section of the DEMON DIALER instructions.

Series Jack Overview

The Series Jack always goes somewhere between the central telephone office and any phone(s) using the DEMON DIALER. The precise location depends on whether the DEMON is dedicated to one phone set, or to a phone line used by many phone sets.

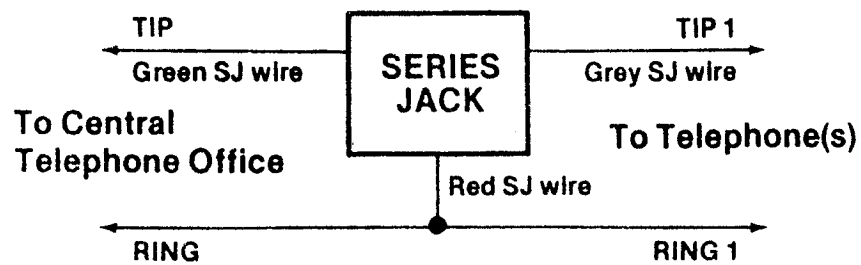


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Check below to find the appropriate type of installation for your situation.

To use the DEMON DIALER with a single-line phone that doesn't plug in, such as a wall phone, install the Series Jack as if it's for all the phones in the home.

After the Series Jack is installed, refer to the section **Checking the Installation** to be sure that the jack is installed correctly.

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Using the DEMON with all the phones in the home

Here we assume that you are working with only one telephone number. If there are more than one, put the DEMON on *one* line using the instructions in this section.

Finding where to attach the Jack

There are two common ways in which the phones in a house may be installed. The first is all phones in series as in Fig. 1 below. The second is all phones in parallel as in Fig. 2. Review the two approaches, and decide which one is best for your situation.

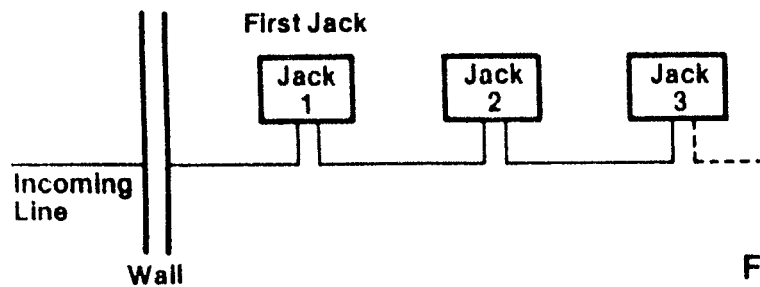


Fig. 1

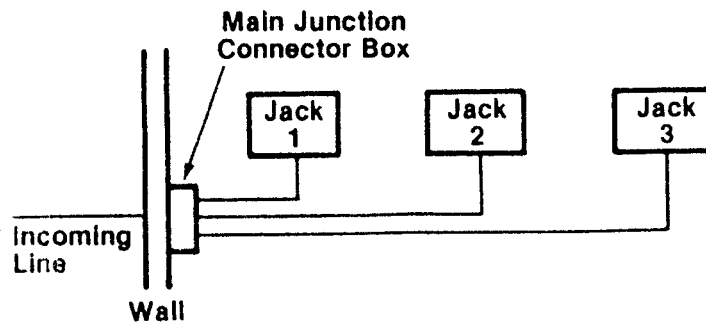


Fig. 2

Attaching to the First Jack, not the Main Junction (Series Installation)

It's usually easy to find this jack. Here are some hints:

First try to find where the phone line enters the house. It usually enters from the back of the house or apartment, but it may enter through a closet or storage space. If you can't find it, trace it by starting at one of the phone jacks near the back of the house. The phone jack is mounted on the wall, and a phone line connects to it. The phone line usually travels along the floor or baseboard, and sometimes goes around a door frame or through a hole drilled in the wall. Follow it until you find a jack that connects to a line that goes out of the house. (Remember that sometimes two lines come out of one jack. You may have to follow one first, then the other.) When you find this jack, take the cover off the jack. Then skip ahead to the section, "Installing the Series Jack" on page 6.

If you couldn't find any phone lines, they are either concealed in the wall or come into the house via underground cable. Start with your best guess in the following way:

- 1** First, be sure that 2 lines go into jack. If only one line goes in, it is not the right jack. Sometimes you can tell by looking carefully at the jack. Sometimes you need to take the cover off the jack with a screwdriver, and then see how many lines go into the jack. (A "line" has several skinny wires inside, as you'll see when you open the jack.)

- 2** If 2 lines go into the jack, take the cover off the jack (if you haven't already) and find the "terminal" (which is usually a screw) where the red wire attaches. This terminal is usually marked 'R' or 'G'. Disconnect all wires from that one terminal. Now go to each phone in the house, pick it up, and see if you get a dial tone. If no phone has a dial tone, you found the right jack. Replace the wires you removed for the test, and then skip ahead to the section "Installing the Series Jack" on page 6.
- 3** If the jack wasn't the right one, you've still accomplished a lot. The only possible correct jack is one that's connected to a phone that had a dial tone. Put the wires back in place on the jack you were testing, and try the same test on one of the jacks where you heard a dial tone, until you find the jack that turns off the dial tone on all the phones. When you find it, replace the wires you removed for the test and continue on to "Installing the Series Jack."
- 4** If there is no jack that will knock out the dial tone for all phones, go on to the next section "Attaching to the Main Junction."

Attaching to the Main Junction (Parallel Installation)


This installation is very easy and may be used for series or parallel installations:

First locate where the phone line enters your home as described under "Attaching to the First Jack" on page 4. At this point there should be a terminal

block with at least two screws. The incoming line will split and be clamped to these screws along with the wires leading to the phones. When you find this terminal, see "Installing the Series Jack" below.

Installing the Series Jack

This section covers both types of situations. The procedure is basically the same for both. The Series Jack connects to screws or push-on terminals inside the jack or junction box you found.

- 1 Disconnect the incoming phone wire on the green side of the line (The line that enters the home from outside.)** If the incoming line does not have a spade lug , be sure that enough of the wire's metal is exposed to make a good connection. Connect that wire to the Series Jack green wire by putting it under the plastic screw in the special plastic holder.
- 2 Take the Series Jack grey wire,** and put it back in place of the wire that you just removed.
- 3 Now take the Series Jack red wire,** and put it under the screw attached to the incoming line's red wire.

The Series Jack is Installed!

Replace the cover of the phone jack. The Series Jack stays outside, so run its wire out neatly.

Attach the Series Jack to any flat surface using the sticky back tape; or if you prefer, two small nails.

Using the DEMON DIALER with all lines of one multi-line phone

The DEMON DIALER can be dedicated to one multi-line phone, so that the DEMON is automatically on whatever line you select.

The procedure for installing the Series Jack is basically the same for any multi-line phone. Determine the phone style, find two target screws (the common Tip and Ring connections), and install the Series Jack at these two screws.

Finding the Target Screws for your phone style.

The easiest way to find the target screws for your phone is to refer to the model number charts on the following pages. The model numbers are usually, but not always found on the bottom of the phone.

After you've found the target screws, skip ahead to "Installing the Series Jack" on page 14.

Target Screw Tables

Target Screws for 6 Button Sets

Target Screw 1 should be located on a row of screws between the first and second lights from the right of the phone, behind the 6 Buttons as in Fig. 3, below. Target Screw 2 will be in a different location for rotary and tone phones, as in Fig. 4, on the next page.

MODEL #	Target Screw 1	Target Screw 2
563 HB, HBM	9	F
565GK, GKM, GKMS	N	F
565HK, LK	9	F
2563	9	L1
2564	9	F
2565 GK	N	L2
2565 HK	9	L2
851BT, B, BM	13	F
851CM	13	2
2851 BT, B, BM	13	20
2851 CM	13	2

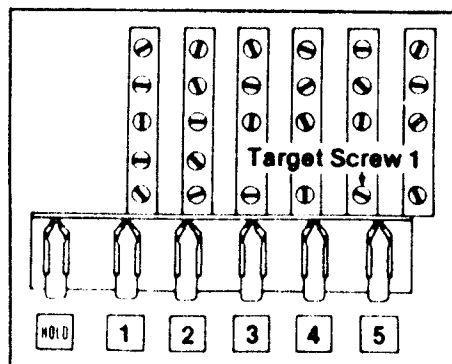


Fig. 3

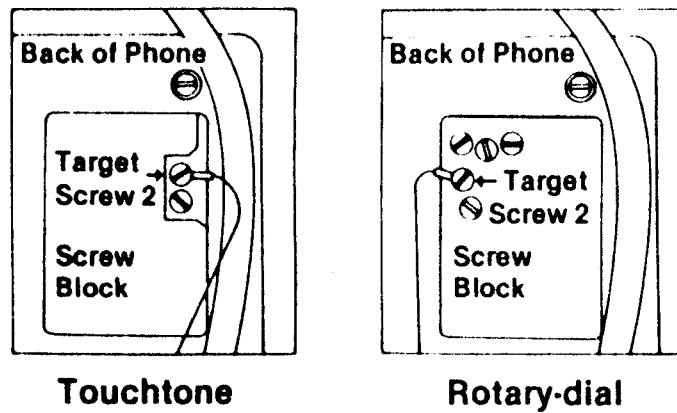


Fig. 4

Target Screws for 10-20 Button Sets

For 10 and 20 button sets both target screws are located on a terminal board under the dial. This terminal board should have 30 to 40 pairs of screws with a number above each one.

MODEL #	Target Screw 1	Target Screw 2
830, A1M, C, CT, CM	6	F
831A1M, B1M, C, CT	6	F
331 DM, FM	6	8
2830	6	8
2831	6	8
2832	4	22
2833	4	22
852A	1	F
2852	1	4
2842	21	F

Target Screws for Call Director Telephones

MODEL #	Target Screw 1	Target Screw 2
630D/631D/632A, C	2	F
630DAM/631DAM	13	F
630DAMS/631DAMS	13	G
2630D/2631D/2632C	2	4
2630DAM, A/2631DA, DAM	13	12
2630 DAMS/2631 DAMS	13	1
634D/635D	2	F
634 DAMS/635DAMS	13	G
2634 D/2635D	2	4
2634DA. DAM/2635 DA, DAM	13	L2
2634 DAMS/2635 DAMS	13	1
636 C/637D	2	F
636CA, CAM/637DA, DAM	9	F
636CAMS/637DAMS	9	G
2636 C/2637D	2	4
2636CA, CAM/2637DA, DAM	9	12
2636CAMS/2637DAMS	9	1

Target Screws for Miscellaneous Telephone Sets

MODEL#	Target Screw 1	Target Screw 2
GTE 186D/186W*	R	A
GTE 882A	B	G
GTE 102A	45	5
ITT 575	L2	L1
ITT 2870	28	8
ITT 2871	L2	8
NEC Patrician	19	18
TIE E100C*	R1	F
TIE E300C*	R1	F

* Switch Grey and Green Series Jack wires.

Electronic Key Telephones

Many of the Electronic Key telephones send codes to central processing units that then generate the tones or rotary digits that you hear as you make a call. The DEMON may not be used for an individual phone in these systems. If you have an Electronic Key system, you should refer to the list below for the kind of installations that will work for you.

Manufacturer	Model	RJ31X	RJ35X	Comments
Executone	Charter	yes	yes	Demon will not work with Privacy Options
	Equity	yes	no	DTMF Generated on Line card—Demon won't work with Privacy Option
	Gateway	yes	unknown	Demon will not work with Privacy Option
Western Electric	Horizon	yes	no	
	Centrex	yes	yes	Code Restrictions—short hook click Jumper works better
	Com Key 416	yes	no	Common Tip and Ring are unknown
	Com Key 718	yes	yes	
	Com Key 1434	yes	unknown	
	Dimension (100)	yes	yes	
	Dimension (400)	yes	unknown	
	Dimension (2000)	yes	unknown	

Manufacturer	Model	RJ31X	RJ35X	Comments
Stromberg-Carlson	Refer to Western Electric phone models	unknown	yes	Instruments with model numbers that corresponds to Western Electric phones have the same common Tip and Ring target screws
TIE	EK308	yes	no	Does not work when Privacy feature installed
ITT	516	yes	unknown	See EK308 note
	Model numbers same as Western Electric	unknown	yes	Instruments with model numbers that correspond to Western Electric phones have the same common Tip and Ring target screws
Mitel	"Super Switch"	yes	unknown	
Nippon	Electra 28	yes	unknown	
	Patrician	yes	yes	Common Tip is 18 Common Ring is 19
Toshiba	EKT102	yes	unknown	
	'Stratta 3'	yes	unknown	
Iwatsu	Omega III	yes	no	Remove system's Last-number-dialed feature, and DEMON's T12
IPC		no	no	These are ground start systems

Com Key Systems

Many Com Key systems are "smart" switches with standard Bell phones attached to them. The notable exception is the Com Key 416. The Series Jack or any U.S.O.C. jack mentioned in the instructions should work. For the Com Key 416, you need the AT&T 2990 Business Jack in areas where this is supported. Otherwise you are restricted to the single-line installation for the 416.

Installing the Series Jack

- 1 Find Target Screw 1.** Refer to the Target Screw Table for your phone set. On most phones, target screw 1 may be more readily accessible if the dial is removed. The dial rests on 2 posts, and attaches to each post with a screw. Loosen the screw on each post, and remove the dial.
- 2 Put the Series Jack Red wire under this screw.**
- 3 Find Target Screw 2.** Once again refer to the target screw table for your set.
- 4 Find the correct wire under target screw 2,** which is normally solid green, but may be red (or another color.) This wire will connect the Line-select buttons to target screw 2. Disconnect this wire from the target screw and attach it to the Series Jack green wire by putting it under the screw in the special plastic holder.
- 5 Now take the Series Jack grey wire** and attach it in place of the wire you just removed from target screw 2.

The Series Jack is Installed!

Using one DEMON on one line shared by many multi-line phones

This is the most complicated installation, and should not be attempted if the phone system does not seem compatible with the instructions.

Most multi-line installations will be connected through thick cords to a box called a KTU. This plugs into a power outlet. Unplug the KTU from the power outlet. This will temporarily disable the phone system.

After unplugging the KTU, locate the "connecting block" that your phone wires are attached to. There may be more than one of these blocks. Fig. 5 shows a typical connecting block

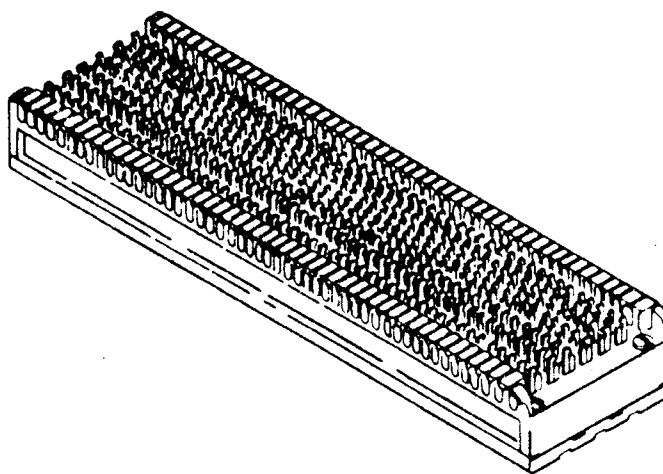



Fig. 5

Normally the connecting block is marked with the lines that are associated with that block. If not, then look for spots on the block marked "T" and "R". Each T-R pair corresponds to one line. The first T-R pair usually corresponds to your first line, the second T-R pair to your second line, etc.

Deciding on the right T-R pair.

If your block is marked with the line numbers, your T-R selection is as easy as deciding which number you want the DEMON DIALER on. If the line numbers are not marked, you will need to make the selection by a process of elimination. Disconnect the wire on 'T' for one of your T-R pairs, plug your KTU back in, and check your phone lines. One of the lines should have no dial tone. This is the line that the disconnected T-R pair corresponds to. If this is the line you want, continue on with installing the Series Jack. If this is not the correct line, unplug the KTU, reconnect the disconnected 'T' wire and continue the process with the next T-R pair.

Installing the Series Jack

- 1 Disconnect the wire from the "T" Terminal.** You will probably need pliers. Attach this wire to the Series Jack green wire by putting it under the plastic screw in the special plastic holder. (If the green wire does not have a spade lug , be sure that enough of the wire's metal is exposed to make a good connection.)

- 2 Attach the Series Jack grey wire to terminal "T"** where the telephone wire was removed. If the terminal is a "press-on" type, (as in Fig. 5) first remove the grey wires lug before pressing the wire on with pliers.
- 3 Attach the Series Jack red wire to terminal "R"** of the selected T-R pair.

The Series Jack is Installed!

Checking the Installation

Once the jack is installed, plug the DEMON Power Supply unit into the nearest power outlet. (If the outlet is too far away, use an extension cord.) Then plug the Power Supply into the round DEMON DIALER hole marked "Power Supply."

Now select the DEMON DIALER cord that has a big plug on one end, and put the big plug into the new Series Jack.

Plug the other end of the cord into the DEMON jack marked "Wall," whether the new jack is installed on the wall or on a phone.

If at this point your DEMON DIALER will not work, check to see that the Series Jack is installed correctly by following these steps:

- 1) Unplug all cords from the DEMON DIALER and the new Series Jack. Your phones should work normally.
- 2) Now plug the big plug of the DEMON's short cord into the jack, and leave the other end dangling. This should cut off the dial tone on the line(s) handled by the jack.
- 3) Plug the dangling end of the cord into the DEMON DIALER jack marked "Wall," even if the new Series Jack is attached to a phone. Plug in the DEMON's Power Supply. Hang up the phone, and then take it off-hook. The

DEMON's red light inside the case should stay on as long as you can hear a tone in the receiver.

- 4) Hang up, come off-hook, and immediately press the * button. Then press the "1" button and hold it down. If you don't hear a tone, Tip and Ring are reversed, either at the jack or at the phone. The installer should exchange the jack's TIP and RING, and also exchange TIP 1 and RING 1. The two middle jack leads should go to the Central Office side of Tip and Ring, not the Customer side.
- 5) If the DEMON still doesn't work, the Series Jack's green and grey wires may be reversed. Switch them, and try your DEMON again. Look for Tip and Ring reversal as in step 4.

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