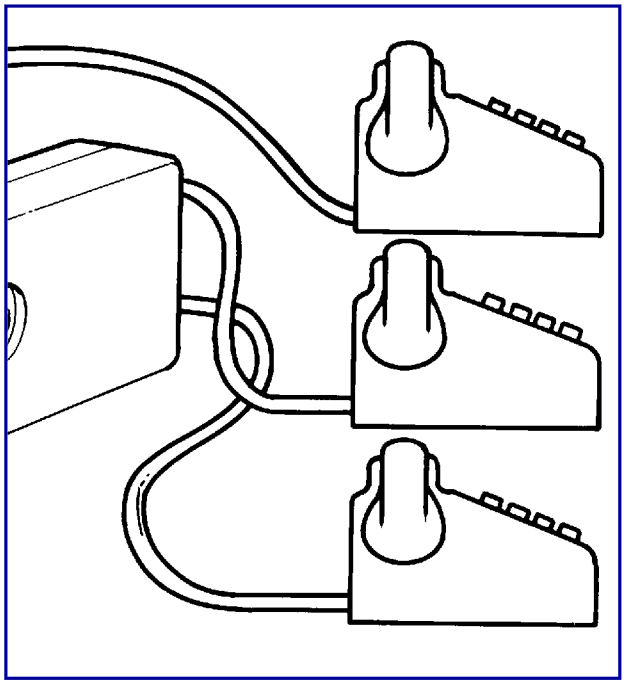
HOW-TO BOOKLET #3107
PHONE HOOK-UPS



TOOL & MATERIAL CHECKLIST

- ❑ Necessary Phone Components
- ❑ Needlenose Pliers
- ❑ Screwdriver (Phillips/Standard)
- ❑ Marking Pencil
- ❑ Phone Wire Stripper
- ❑ Fish Tape
- ❑ Bell Hanger Bit
- ❑ Tape Measure

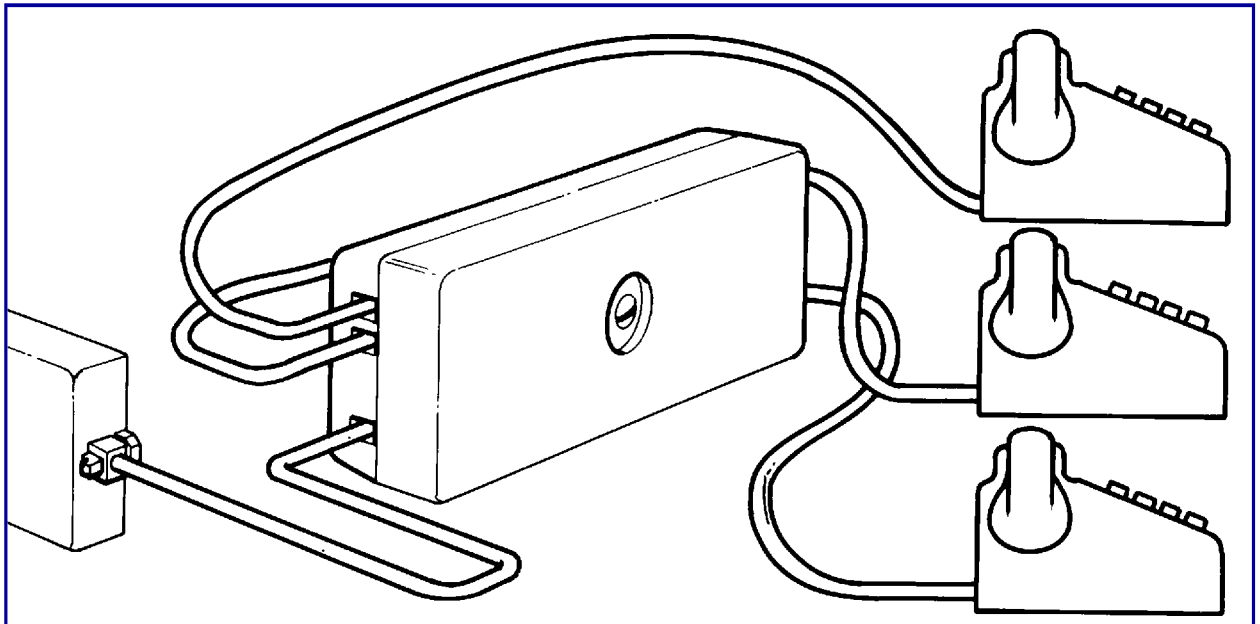
Read This Entire How-To Booklet for Specific Tools and Materials Not Noted in The Basics Listed Above

With do-it-yourself telephone wiring and accessory products now available at many home center stores and most telephone center outlets, you can add more phones in your home, modernize the present system, and change existing phone locations to other, more convenient areas in just an hour or two. The cost of the necessary supplies is moderate; the skill needed amounts to little more than measuring, marking and plugging in the necessary wires.

REQUIRED TELEPHONE EQUIPMENT

The key to a satisfactory phone system is to install quality telephones. Always, without fail, test the tone quality of the telephone equipment that you are considering. Many stores that sell phone equipment have jack plug-ins so that you can dial a number to check the tone. If the jack is not apparent, ask a salesperson about this service. Sometimes stores keep the jacks out of sight to avoid misuse.

The tools and accessories that you need include telephone wire, which is 22 gauge, four-conductor, solid copper, designed to attach quickly and easily to all do-it-yourself modular outlets and wire junctions. Buy a telephone wire stripper. The stripper is also a staple holder and ruler, and it has a slot for removing tabs from converters which you might need.



Wire junction is used to connect and route wiring to modular jacks. Three of the wires can be used to connect the outlets for phone extensions. A fourth wire usually connects to another wire junction or a modular outlet.

Depending on your phone additions and as a general rule of thumb, you will need a modular jack converter with or without a dust cover, a wire junction with a modular plug that will handle four phone connections, or a wire junction box that will handle three phone connections. The tools that you will need are listed above; be sure to include the standard-slot screwdriver and needlenose or electrical pliers that can be used to cut fine wire.

PLAN THE PROJECT FIRST

To save time and money, make a rough sketch of the floor plan of your home, marking in room dimensions. Then mark on the sketch where you want the phones located. Take this plan to the store so you can buy the right amount of wire and the connection boxes for the telephone extensions.

Measure or estimate the connections from the central phone wire entrance. If the wire has to travel along a baseboard, through a wall, around corners, up into the attic, or down into the basement, the extra footage must be included in your measuring estimates.

PRODUCT SELECTION

Do-it-yourself telephone products usually are very carefully labeled as to what they are and do. Heed the labels on the packages as you shop for products.

To update the system, if it is not already modular with a network interface (a demarcation point for modular phone wiring systems; a silver label identifies it where the phone lines enter your home), you need only a modular jack.

A straight modular jack is designed to permit installation of a table-model telephone anywhere you want a phone to be. The jack is connected to an existing jack or to a wired junction box, if several new extensions outlets are required.

A modular jack with a protective cover is the same as a straight modular jack, but with a cover to protect the connection from dust, paint and moisture.

A flush-mounted modular jack may or may not have a dust cover; it is used generally for wall-mounted telephones, as in a kitchen.

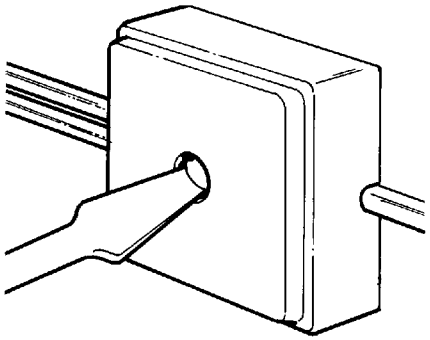
Wire junction boxes have modular plugs that let you connect up to four phone wires to different parts of your home. The modular plug is designed to connect the junction to a network interface or to another existing modular outlet.

A plain wire junction can be used to connect wiring to modular jacks. It accommodates three wires to phones; a fourth wire connects to a wire junction or modular outlet. Junctions, as defined for telephone companies, are central connecting points for phone wiring—in short "takeoff" points.

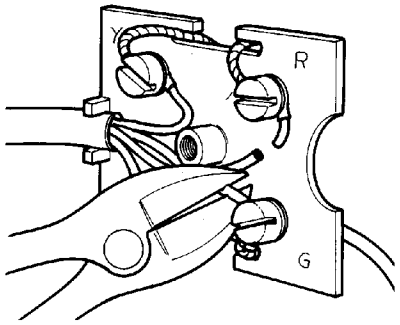
If your home is equipped with four-hole outlets into which a plug with four prongs is inserted (similar to a European electrical plug), the system can be quickly converted to a modular system with a permanent plug-in converter, that is, from four-prong to modular. The converter prongs snap into position and cannot be removed, making this a permanent conversion. However, you can buy a similar portable four-prong converter that can be removed, which permits you to use a phone with either a modular plug or a four-prong one.

If your home has been prewired for a modular system, buy prewired jacks in appropriate models. Installation is just a matter of connecting color-coded wires in the jacks to the same color wires in the system. Instructions for installation are included in every package. Two typical conversions are illustrated in this Booklet.

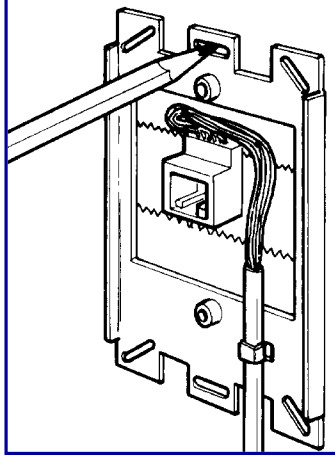
Running phone wire may be confusing. You do not have to bore holes in the walls of your home and fish the wire through the framing members to the point where you want the telephones. Instead, the wire can be stapled along the baseboard of



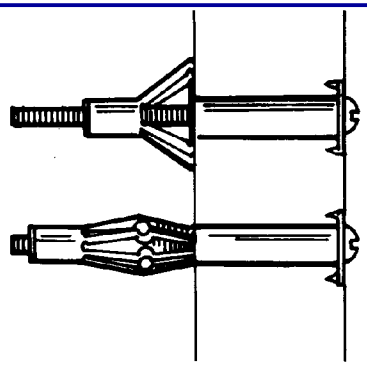
Does your outlet look like this one? If so, remove the cover with a screwdriver and be sure to note the color of the insulation on the wires inside. Or, note the color labels or code of wires. You are "exchanging" the old outlet for a new modular jack converter for table model phones.



Cut the wires from the telephone. Do not loosen the terminals and remove the wires. Then, with the modular jack converter, snap on the colored caps to the terminals—green-to-green, red-to-red, etc. Screw on the cover and insert the modular plug in place in the converter.



To mount a wall phone modular jack, first hold the wall plate to the wall, then locate and drill the holes for the back wall plate. This installation is for gypsumboard wall (hollow) construction. If lath and plaster, mount plate with wood screws.



Insert hollow wall fasteners into the holes and expand them. Remove the screws. If the wall is lath-and-plaster construction, you can use fiber, lead, or plastic anchors for the job. Drill the holes for these anchors, which are "push" fits.

rooms, up and over door casings. Some wire has a "transparent" insulation covering and it blends in with any wall or trim color so it is nearly invisible—unless you are searching for it. To go from one room to another, you can bore a small hole through the baseboard to run the wire. There is no special technique involved here. Just bore the hole through the wall in a spot that won't be noticeable.

ANSWERING DEVICES

These are the desk-top machines that answer the phone for you when you are away. You know: "This is Bill. I can't get to the phone right now. At the tone, leave your name and number and I'll get right back to you."

The recording system is simply plugged into the phone jack with a modular type plug and the plug on the end of the phone receiving equipment is connected into the recorder.

The recorder usually has a small microphone (mike) into which you record your message by pressing a button labeled "MIKE." Another separate tape is activated when the phone rings to record the caller's message. When you leave the area, you punch a button that turns on the recorder. When you return, you rewind the calling tape and play it back. The system is little more than a fancy tape recorder.

The tapes available for your message vary as to length—10, 20, 30 seconds or so. The tapes for the callers' messages are longer; the machine automatically shuts off the message tape according to a pre-set time.

Experience recommends that you keep your message very short and non-committal. Leave the impression on the tape that you are in the house or apartment, but can't get to the phone immediately. This will help deter thugs. A good message might be simply: "You have reached 555-6666. We're unable to answer the phone now. But please leave your name and number and we'll be back to you in a few minutes."

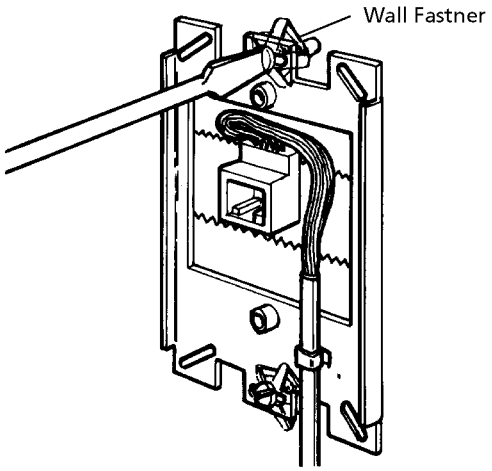
This type of message does not identify anyone by name and leaves the impression that more than one person resides in the house or apartment. The number given only corresponds with the number dialed.

CODES AND PRECAUTIONS

When you install a new system you must comply with local building codes, as well as the National Electrical Code (Article 800, Communications Circuits).

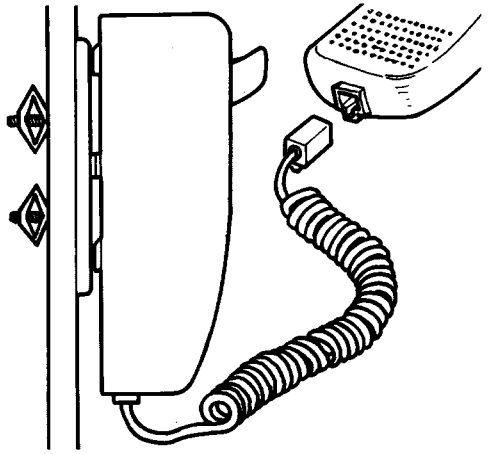
Follow these safety recommendations:

- Don't put phone wires in pipe or conduit with other wiring–such as electrical power wires.
- Never place phone wires near bare power wires or lightening rods, TV antennas, transformers, steam and hot water pipes, or heating/air-conditioning pipes and duct work.
- Do not splice phonewires.
- Keep wire runs as short as you can. Do not connect more than five phones to one service line.

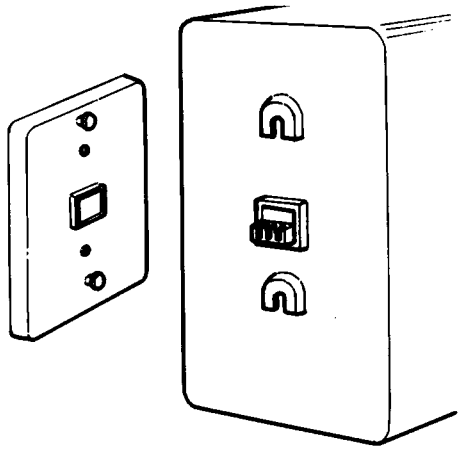


Insert the screws from the wall fasteners through the holes in the wall plate. Then drive the screws into the fasteners expanded in the wall. Tighten the screws so the plate fits snugly.

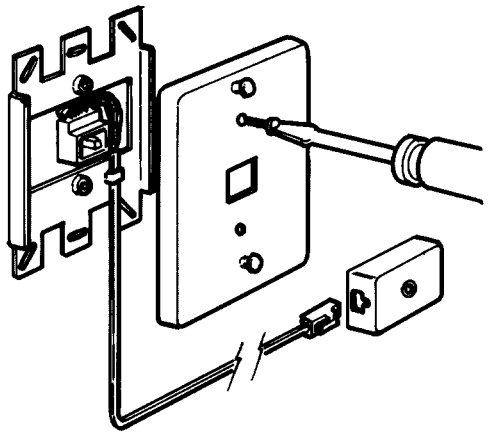
- Don't put wire in damp locations. Never, under any circumstances, use a phone while in a bathtub or swimming pool, even though you may see this done in the movies and on television.
- If you must drill holes in walls and house framing to run wires, make sure the drill doesn't bump into electrical wiring or water pipes.
- Don't use phone wire to support other wires or objects, such as laundry. Although strong, phone wire won't take a lot of stress.
- If you live in a home covered with metal siding, or if you live in a mobile home or RV, do not fasten phone wire to these metal surfaces.
- FCC regulations require that you inform the telephone company when you connect additional equipment to the lines.
- Never use telephone wire as electrical power wire.



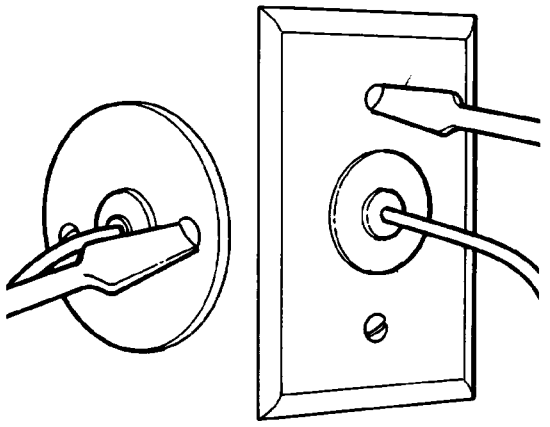
The wall telephone "hangs" on the wall phone modular jack over tiny lugs, as this illustration shows. There are slots in the phone for the lugs. Just insert the phone over the lugs; push down.



After installation, the wall phone modular jack should look like this on the wall. If it is not tight against the wall, remove the face plate and tighten the screws in the hollow wall anchors.



Attach the face plate to the wall phone modular jack with the screws provided. The phone wire from this jack connects to the junction in another location; it simply "plugs in."



If your current permanent outlet looks like this one (round or rectangular), it may be replaced with a flush-mounted modular jack converter. Simply remove the face plate. Cut the wires at the terminal screws, noting wire insulation color or codes. Then insert the jack converter, putting the color caps over the terminal screws.