



## HOW-TO BOOKLET #3129

# GARAGE DOOR OPENERS



### TOOL & MATERIAL CHECKLIST

- Complete Kit Including Safety Mechanism
- Screwdriver
- Tape Measure
- Hammer
- Blocking
- Drill
- Wrench
- Level

*Read This Entire How-To Booklet For Specific Tools and Materials Not Noted in the Basics Listed Above.*

Garage door openers are both a convenience and a safety factor. Most light up the garage until you can get to the light switch. This allows you to stay safe and secure in your car until the door is shut.

**NOTE:** This booklet is not intended to replace the installation instructions in the owner's manual. Earlier openers were troubled by stray radio interference from airplanes, radios, and other transmitters. Modern units have a wide array of frequencies to prevent random signals opening up your door.

The first step is to determine the type of door you have. There are four basic styles of garage doors: curved track, straight track, one-piece jamb, and one-piece pivot (**Fig. 1**).

There are two basic door opener drive systems: chain or plastic belt driven, and screw driven (**Fig. 2**). In a chain driven system, a chain fits around a sprocket and is connected to a cable to make a loop. A carriage mechanism attaches to the chain and the rotation of the sprocket opens and closes the door. Some of the newer systems of this type use a plastic belt drive, rather than a metal chain. Since there is no metal-to-metal contact, there is never any need to lubricate the opener.

With the screw-driven opener, there are no gears to wear out or chain to stretch, so it requires little maintenance while offering improved reliability and quiet operation over chain drives. However, screw-driven openers are more expensive.

### BEFORE INSTALLATION

Most building departments do not require permits for accessory items like garage door openers. If you need to add, change, or remove any structures to accommodate the installation, you may need a permit for that. Always check with your local codes before proceeding.

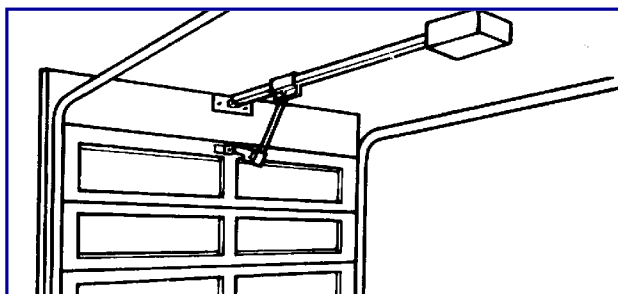
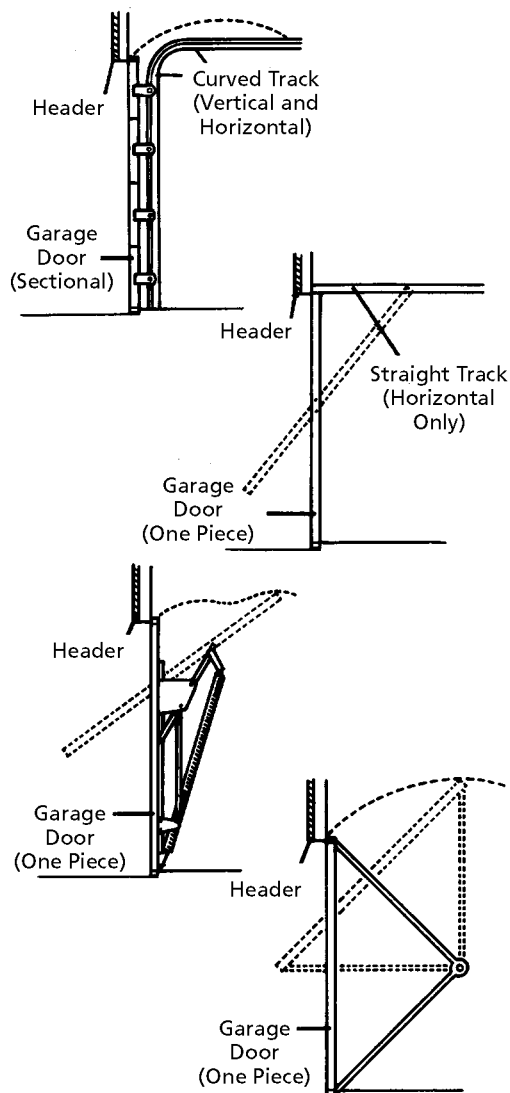
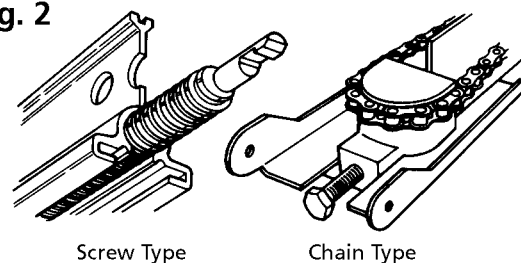


Fig. 1



Four basic styles of garage doors: (A) curved track, (B) straight track, (C) one-piece jamb, and (D) one-piece pivot

Fig. 2



Two types of drives

Before beginning the opener's installation, it is important that you note the following:

- 🏠 Make sure the door counterbalance system is properly adjusted and that the door travels freely. It is important that the door can be opened by hand. To check balance, raise the door approximately 3' and release. The door should remain in this position—moving neither up nor down.

**WARNING:** Under no condition should you tamper with or attempt to loosen or remove the garage door main spring. This spring is installed under tension and any attempt to remove it may result in it being released and causing personal injury. Adjustment or replacement of door springs must be done by a professional door installer.

- 🏠 Remove or make the door lock bar inoperative. The operator door arm and trolley assembly lock the door in the closed position making the locking device unnecessary.
- 🏠 Remove any rope that may be attached to the door.
- 🏠 Have a grounded outlet installed within 6' of the opener, if one is already not installed. Some building codes require a dedicated circuit and do not allow extension cords to power the unit.
- 🏠 Locate the safety beam on the door jambs with a clear visual access across the door

opening. Some safety beams are optional to door opener kits. Other kits have safety-stop or reverse mechanisms built-in. It is highly recommended to have a safety-stop or reverse mechanism of some kind with every kit.

- 🏠 Carefully read the instructions in the owner's manual before starting the installation.

## ASSEMBLING THE OPENER

Remove all items from the packing carton and check against the parts list given in the owner's manual. If no parts are missing, assemble the opener on the garage floor and then lift it into place for the easiest installation. You need a helper and a sturdy 6' to 7' stepladder to rest the assembly on, while attaching the rail and opener unit overhead.

While following these general instructions will give you an idea how the opener is assembled, follow the owner's manual to the letter.

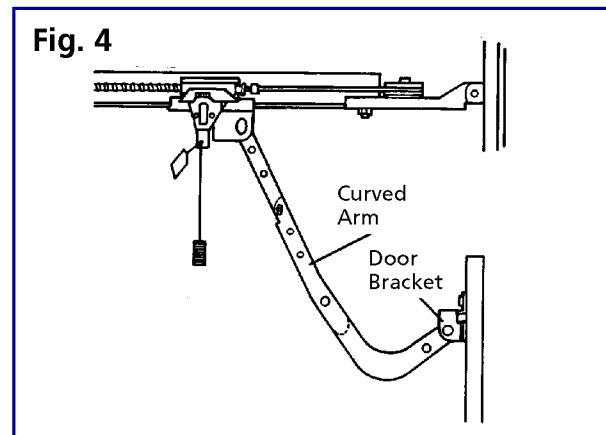
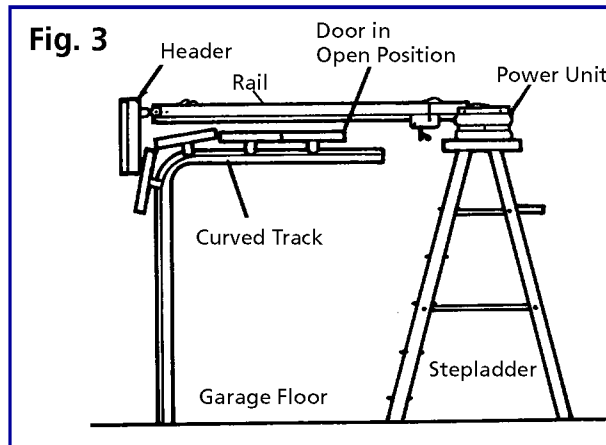
- 1 Assemble the rail guide by bolting the sections together.
- 2 Plug the safety beam/reverse mechanism into the opener unit if it is not already installed. Do not plug the unit into the outlet. Some units have built-in safety beam/reverse mechanism, see your manual.
- 3 Attach the assembled rail to the power unit.
- 4 Attach the carriage release cord, knob, and emergency release tag to the carriage.
- 5 Slide the carriage onto the door end of the rail. Be certain the side of the carriage with the red cord and release lever is on the left side of the rail viewing from the door end of the rail.
- 6 Bolt the chain guide support to the door end of the rail.
- 7 Slide the chain guide onto the chain guide support and insert the chain race into the chain guide. Use an open end wrench and thread the adjusting bolt into the chain guide.

- 8 Stretch the chain to its full length and place it over the sprocket on top of the power unit. While keeping the chain taut and straight, loop the chain over and onto the chain race at the door end of the rail.
- 9 Allow the power unit to be suspended. Position the sprocket cover so the center hole of the cover fits over the shaft protruding from the power unit. Be certain the bolts are tightened securely.
- 10 Set the chain tension by tightening the adjusting bolt on the chain guide. (The chain must not be twisted and must be parallel to the rail). A slight chain sag is normal, however, the chain should not sag below the bottom of the rail.

## OPENER UNIT MOUNTING

There are several methods to mount the opener unit in a track door system. The assumption is that you have enough overhead room for the opener unit to be installed with at least 7' of clearance. If you do not have this amount of clearance, refer to the manual. You may also need to have a contractor provide the clearance and/or call your local building department before making any structural changes. Have someone assist you in this part of the installation.

- 1 Find the center of the door and mark the door and header.
- 2 Raise the door to find the highest point of travel and secure it in this open position.
- 3 Level from this highest point back to the center of the header and place a pencil mark there. This is your minimum clearance between the door and the guide rail.
- 4 Measure at least 1" or more up from the high point on the header to locate your supporting bracket position on the header centerline. This bracket holds up the end of the guide rail. Some openers require greater clearances. Refer to your owner's manual for specific clearances for the bracket or for special instructions if the door spring is in the way of the header bracket.



- 5 Lift the assembled unit and rail onto the stepladder and connect the end of the rail to the header bracket (Fig. 3). The assembled unit should be close to being level. A slight downward slope to the opener unit may be allowed.
- 6 Center on the opener unit in the garage. Check the location by measuring from the center on the opener unit back to each side of the door. When the measurements are the same, the unit is centered.
- 7 After making sure the door does not touch the guide rail, attach the power unit overhead to the truss cords or ceiling joists.

- 8 Close the door and locate the door bracket on the centerline at about the same height as the top door roller. Use the door bracket as a template to drill through the door and fasten the bracket to the door with the enclosed carriage bolts or other enclosed hardware.
- 9 Attach the curved arm to the door bracket (Fig. 4), then to the straight arm attached to the carriage.
- 10 Keep the opener unit centered and supported level with the attached end at the header. Measure the distance from the rail guide to the nearest overhead support. If the opener unit is situated between overhead joists, install blocking so that the centered unit may be attached.
- 11 Measure the diagonal distance from the mounting holes on the unit to the overhead support, and cut the enclosed straps to fit. Cut the straps one hole past the measured distance to allow for enough material.
- 12 Attach the straps to the unit and then to the overhead support in a criss-cross fashion. Use the enclosed fastening hardware specified by your owner's manual.
- 13 Remove the support stepladder and test the sturdiness of the mounting. You may need to add other supports to prevent the unit from excessive movement during operations.

## OPENER INSTALLATION FOR TRACKLESS DOOR

Doors that are one piece without tracks are either pivot or jamb hardware style doors. The principle of installing the guide rail clear of the door is the same. The major difference is that the opener unit and track are probably sloped upward toward the door.

- 1 Assemble the opener unit, track, chain and cable as in "Assembling the Opener" described earlier.
- 2 Find the center of the door and place a pencil mark on both the door and header.

- 3 Open the door to the highest point of travel and perform the following calculations:

$$\text{Height at Highest Point} - \text{Door Height} = \text{Door Rise}$$

1. If the rise equals 4" to 8" then locate header bracket 10" to 15" above the top edge of the closed garage door.
  2. If the rise equals 8" to 12", then locate header bracket 15" to 20" above the top edge of the closed garage door.
- 4 Use a level to draw a line through the center-line on the header at the height above the door determined in Step 3.
- 5 Drill holes and fasten the header bracket into the header with the hardware specified in the owner's manual. Have someone assist you in lifting the pulley end of the guide rail and fasten it to the header bracket. Leave the opener unit on the floor or slightly elevated during this step.
- 6 Raise the opener unit onto a support platform, such as a stepladder allowing at least 1" clearance from the highest point of the door travel to the guide rail. The door itself should not be allowed to swing downhill or past level (horizontal). Adjust the height to prevent this and/or use stops on the header to prevent this (Fig. 5).
- 7 Assemble the curved arm to the straight release lever attached to the carriage.
- 8 With the door closed, attach the door bracket to the top of the door itself. Add an additional piece of wood if needed, or you can attach it as with a tracked door if the top mounting will not work.
- 9 With the door still closed, attach the inner slide to the first link of the chain before the cable.

## COMPLETING INSTALLATION

Locate the opener wall switch high enough to prevent children from playing with the door. Also

choose an area that is clear from someone brushing against it, accidentally causing the door to open or close. Mount the button with the screws provided. Try to find a wood backing, such as on a stud or use drywall anchors in wallboard to secure the button.

Strip 1/2" insulation from the end of the wires and attach them to the terminals on the button. Mount the operating instructions and provide warnings on the wall near the push button.

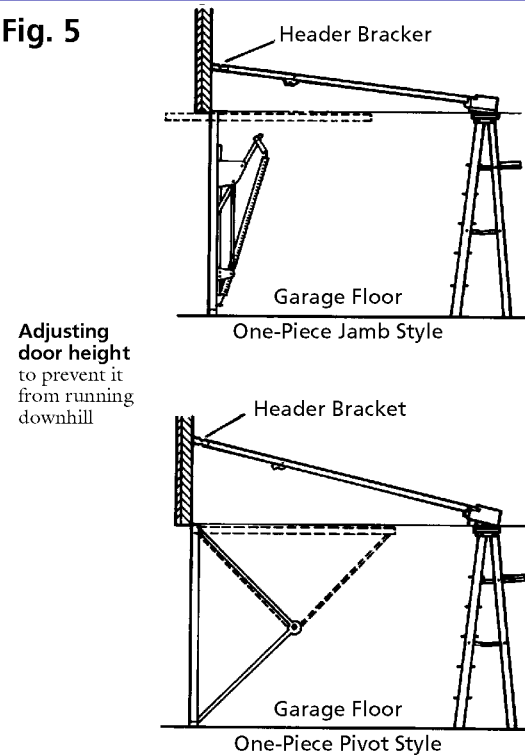
- 1 With the door open and the carriage disconnected, measure the distance from the center of the carriage to the "up" actuator.
- 2 Close the door by hand. Fasten a limit clip on the chain the same distance from the inner slide that you measured from the carriage to the "up" actuator, when the door was opened.
- 3 Attach a third clip to the chain two rollers away from the first "up" clip. Place this clip toward the inner slide. This clip is called the safety clip.

You can adjust the limit clips or adjust the door with the control knobs on the opener unit, both "up" and "down" by the following test.

- 1 Attach the carriage to the inner slide or the chain. It is assumed that the opener unit is plugged into a powered and grounded outlet.
- 2 Press the wall button to open/close the door. If the clip does not stop the door at the proper location, move the clip(s). If your opener does not use clips, make the adjustment at the control knob on the opener housing.
- 3 Push the button again after any adjustments or to check the opposite action. Move the clips if they do not allow the door to properly open or close. Or, use the control knobs on the housing provided. Moving an "up" clip also required moving the safety clips.

The safety reverse adjustment is done by testing the pressure that the door exerts on someone caught in the door closing. Stand

Fig. 5



Adjusting door height to prevent it from running downhill

clear from the door and let the closing door push against your hands.

If the pressure is too great, make the adjustment at the opener unit as per your owner's manual instructions. Or, adjust the safety beam location, whichever safety mechanism is used.

Set the transmitter codes according to the owner's manual instructions. Locate the transmitter in an accessible position in your car(s), such as on the sun visor. Most transmitters come with a visor clip.

Replace the batteries each year or as specified by your owner's manual. You can usually get replacement transmitters quite easily in case they are lost or stolen. Always change the code settings when replacing a transmitter.