

## OWNER'S MANUAL CONTENTS

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## 1. INTRODUCTION

Congratulations on your new purchase of the Broten Signature Series Residential Garage Door Operator System, specifically designed for use on Carriage House Doors. This stylishly designed digital opener engineered to provide the smoothest, quietest and safest operation and being capable of easily moving almost any properly balanced residential garage door.

This opener includes numerous state-of-the-art features to provide you, the user, with years of trouble-free, convenient, and safe use of your automatic garage door opener.

- **Precision Controlled DC Motor, Complete with Automatic Soft Start and Soft Stop Feature:** During start-up, the door starts moving slowly and gradually ramps up to full speed for the full travel of your door. The opener automatically detects when your door is almost fully closed or fully opened, and gradually slows the door down before it reaches its fully closed or opened position. This reduces the possible damaging effects of the sudden starts and stops associated with some other openers, and results in the smooth operation and increased life of your door and hardware.
- **Built-In Safety Features:** Including patented drive system that delivers only the optimum power needed to move your door safely—*Every time!*
- **Modular Receiver Concept:** (patent applied for) Plug-in your choice of 315 or 390MHz frequency module.
- **Automatic Force Learning:** Based on optimum power requirements.
- **Photo Eye (Infrared) Safety System:** State-of-the-art infrared beam system helps detect obstructions in the path of your door and automatically reverses closing door travel, helping to protect persons and property near the door.
- **Convenient Status Display:** To indicate the status of your door opener at any time. Especially useful if troubleshooting is necessary.
- **Quiet, Smooth Operation:** Precision engineering and carefully selected materials result in extremely smooth and quiet operation, unmatched by conventional garage door openers.

## 2. IMPORTANT SAFETY INFORMATION

This manual is essential to the safe and proper installation, operation, and maintenance of your opener. Read and follow all guidelines and operating instructions before the first use of this product. Store the manual in a safe, easily accessible location.

### **WARNING**

**Operate the garage door opener at 120V, 60MHz to avoid opener damage. Garage doors are heavy, moving objects. When coupled with an automatic opener, electrical power is also present. If not properly installed, balanced, operated, and maintained, an automatic door can become dangerous and cause serious injury or death. Please pay close attention to the WARNING and CAUTION notices that appear throughout this manual. Failure to follow certain instructions may result in damage to the door or door opener, or may result in severe injury or death to yourself or others.**

### **WARNING**

**WARNING means that severe injury or death could result from failure to follow instructions.**

### **CAUTION**

**CAUTION means that property damage or injury could result from failure to follow instructions.**

### 3. GARAGE AND DOOR

#### ⚠ WARNING ⚠

**A garage door is a heavy moving object and can cause serious injury or death. An unbalanced door might not reverse when required, and can increase the risk of injury. If your garage door is out of balance, or if it binds or sticks, call for professional garage door service. Garage doors, springs, pulleys, cables, and hardware are under extreme tension and can cause serious injury or death. Do not try to adjust them yourself. Ropes left on a garage door could cause someone to become entangled and could kill them. Remove all ropes connected to the door before installing your opener.**

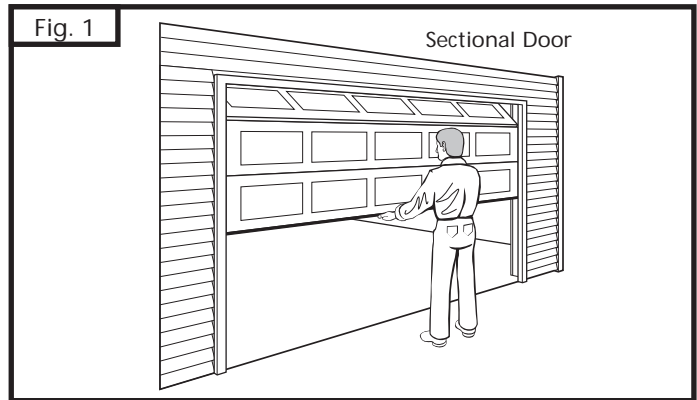
Take a moment to survey your garage and garage door.

- Is there an access door besides the garage door? If not, you should install an emergency key release kit.
- With the garage door closed, check alignment of door and garage floor. The gap, if any, should be no more than 1/4". If the gap is larger than this, repair floor or door before installing opener.
- The opener is intended for installation on a properly balanced and adjusted garage door. **DO NOT INSTALL IF DOOR IS UNBALANCED OR BROKEN.**
- Check balance of door in mid travel and during full range of opening and closing. Lift the door about half way, as shown in Fig 1. Release the door. It should remain in place, supported by its springs. Raise and lower the door fully to check for binding or sticking.

If door is out of balance or needs repair, **DO NOT ADJUST IT YOURSELF. CALL A QUALIFIED GARAGE DOOR SERVICE PROFESSIONAL** to adjust your door.

- See section 15 on p. 22 of this manual for availability of rails.

Fig. 1



#### ⚠ CAUTION ⚠

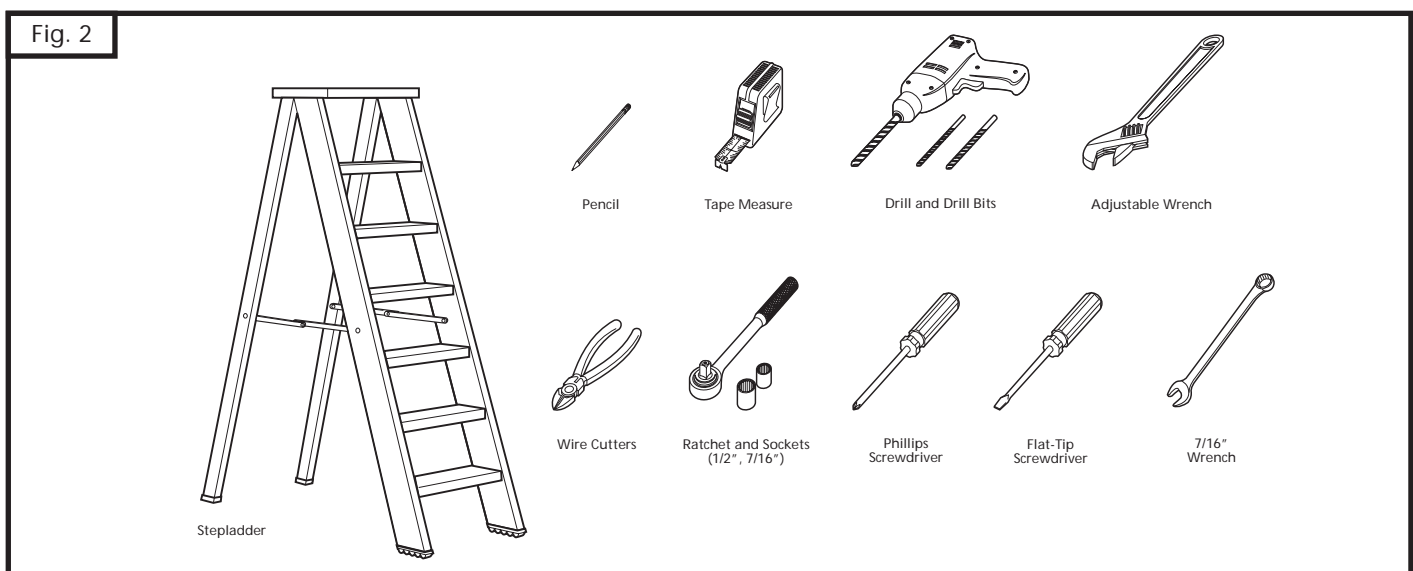
**To prevent damage to steel, aluminum, fiberglass or glass panel doors, always reinforce the inside of the door both vertically and horizontally with steel or angle iron bracing.**

*The best solution is to follow the instructions for your particular garage door or contact the garage door manufacturer for proper reinforcement instructions.*

### 4. TOOLS

The instructions will refer to the tools shown below for proper installation, adjustment, and maintenance of the garage door opener. Additional tools may be required depending on your particular installation.

Fig. 2



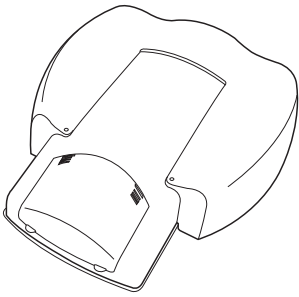
## 5. OPENER PACKAGE CONTENTS

The following items are included with your Garage Door Opener. All hardware components should be located in one of the two main cartons (opener carton or rail carton). The accessories are packaged with their respective hardware in separate packs for ease of identification and use.

Items shown not actual size.

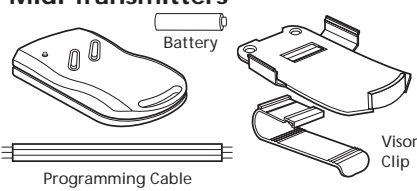
Fig. 3

### POWER HEAD



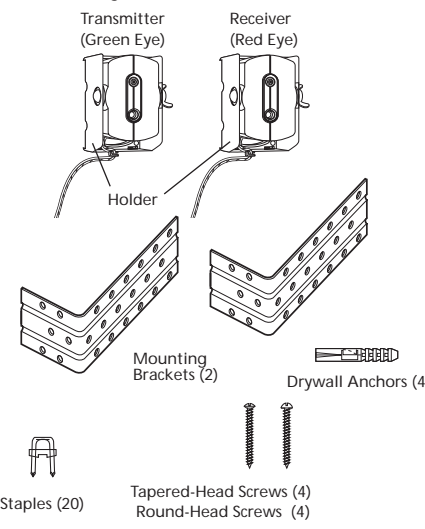
#### ACCESSORIES

##### Two 2-Channel Midi Transmitters



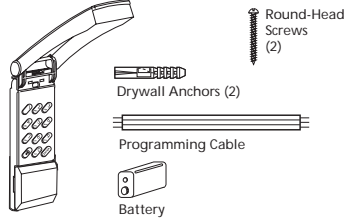
#### Photo Eye Safety System

(with Mounting Kit)



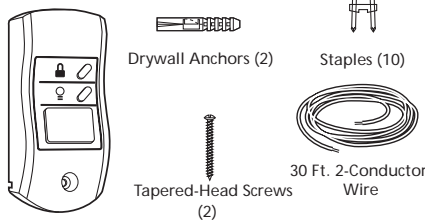
#### Wireless Keyless Entry System

(with Hardware Kit)

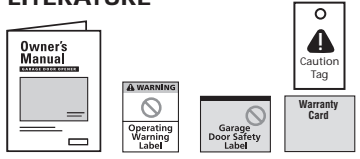


#### Wall Control Panel

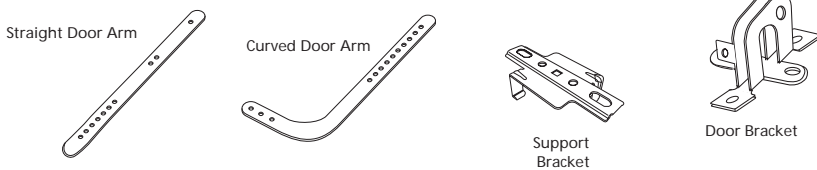
(with Hardware Kit)



#### GARAGE DOOR OPENER SAFETY LABELS AND LITERATURE



#### HARDWARE KIT












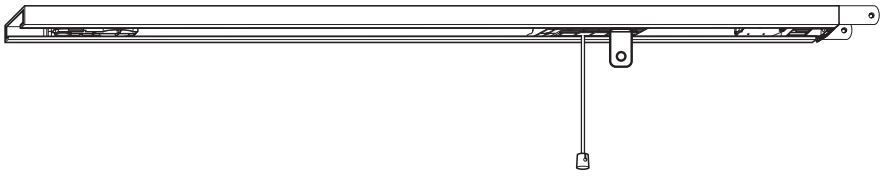
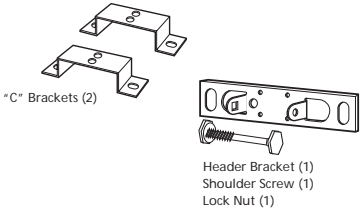
-  Plastite Screw (4): 6 x 14
-  Clevis Pin (1)
-  Locking Clip (1)
-  Carriage Bolt (2): 1/4" -20 x 2-1/2"
-  Lock Washer (2): 1/4"
-  Hex Nut (2): 1/4" -20
-  Lag Screw (2): 5/16" x 1-5/8"
-  Hex Bolt (2): 5/16" -18 x 3/4"
-  Lock Nut (2): 5/16" -18

Fig. 4

### RAIL ASSEMBLY





5

## 6. IMPORTANT INSTALLATION INSTRUCTIONS

# ! WARNING !

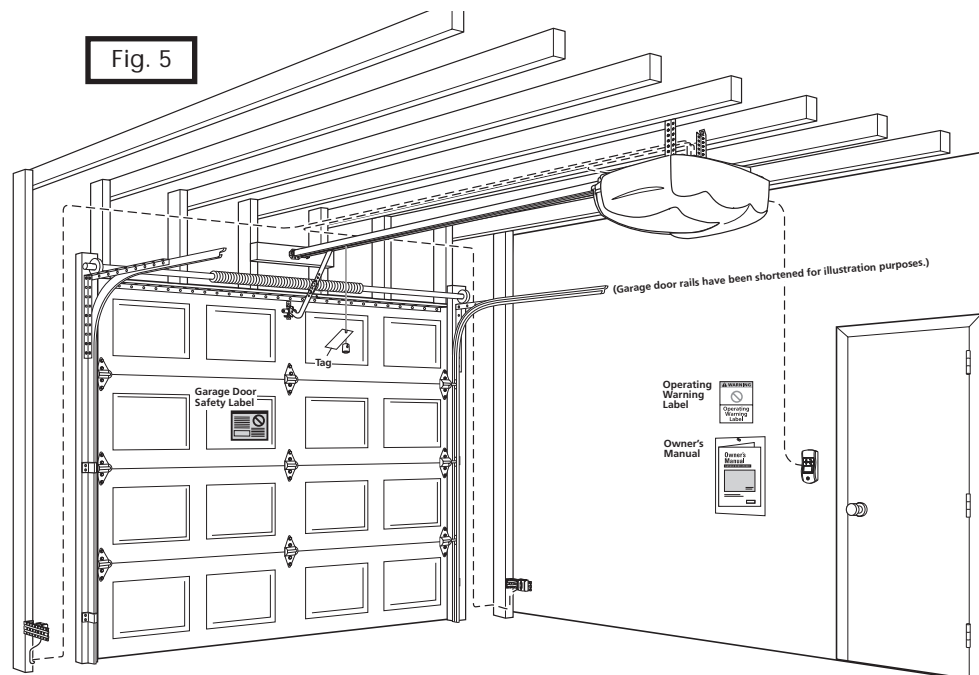
### TO REDUCE THE RISK OF SEVERE INJURY OR DEATH:

1. READ AND FOLLOW ALL INSTALLATION INSTRUCTIONS.
2. Check with the door manufacturer to determine if additional reinforcement is required to support the door prior to installation of the garage door opener.
3. Install garage door opener only on a properly balanced garage door. An improperly balanced door could cause serious injury. Have a qualified service person make repairs to garage door cables, spring assemblies, and other hardware before installing the opener.
4. Remove all ropes and remove or make inoperative all locks connected to the garage door before installing opener.
5. If possible, install the door opener 7 feet or more above the floor. Adjust the emergency release cord so that knob hangs 6 feet above the floor.
6. Do not connect the opener to source of power until this manual instructs you to do so.
7. Locate the wall control panel or wall button: (a) within sight of door, (b) at a minimum height of 5 feet above the ground so small children cannot reach it, and (c) away from all moving parts of the door.
8. Place the Operating Warning Label next to the wall control panel or wall button in a prominent location. Affix Safety Label on inside of garage door. The Emergency Release Tag must remain on the emergency release cord.
9. After installing the opener, test Safety Reversal System. Door MUST reverse when it contacts a 1-1/2 inch high object (or a 2x4 laid flat) on the floor.

*For Important Safety Instructions see page 18.*

Fig. 5

Shown on the right is an overall view of a completed garage door opener system installed on a sectional door.



## 7. INSTALLATION STEPS

Unpack opener and one-piece preassembled rail and prepare hardware components for installation. Identify a sound structural support on header wall above garage door for header bracket mounting. See Fig. 7. If appropriate header does not exist, replace or install a new support using a 2x4 or 2x6 board. Fasten it securely using lag screws (not provided) to structural supports of garage.

### 7-1. ATTACH RAIL TO OPENER HEAD



**When fastening the rail to the opener, use only the screws provided. Use of any other screws may result in opener falling from ceiling and causing damage to persons or property in the garage.**

- Position door opener head with control panel facing front of garage. Rest opener head on cardboard or protective surface on floor so opener does not get scratched. Chassis side of opener (with motor shaft sticking out) facing up.
- Position rail onto opener chassis by lining up rail sprocket opening with motor head shaft (Fig. 6A). Make sure shaft engages teeth inside rail sprocket. Press rail down firmly onto shaft and opener chassis. **DO NOT HAMMER.**
- Position 2 "C" brackets over rail and onto chassis. Flanges on "C" brackets must fit into cutout area on chassis (Fig. 6B).
- Insert screws (6 x 14) through bracket holes and into chassis holes, and tighten screws firmly to hold rail to head (Fig. 6C).

### 7-2. MEASURE AND MARK DOOR AREA

Before starting your installation, the door and the header above the door must be measured and marked. This way, the appropriate brackets can be mounted at the correct locations avoiding installation and operating difficulties later.

#### MARK VERTICAL CENTER LINE:

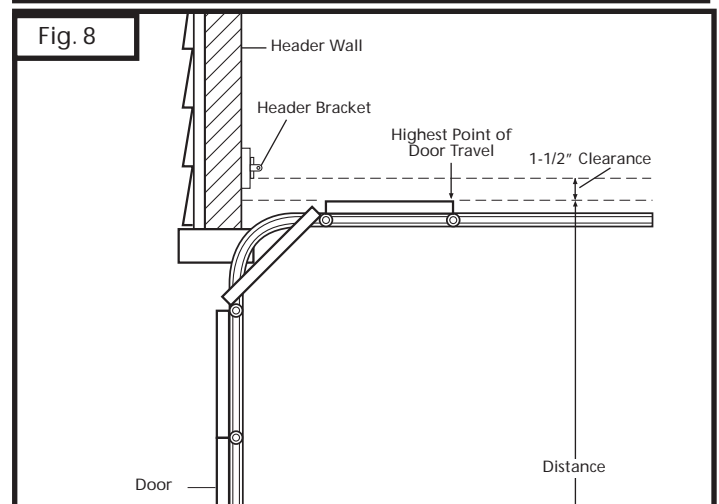
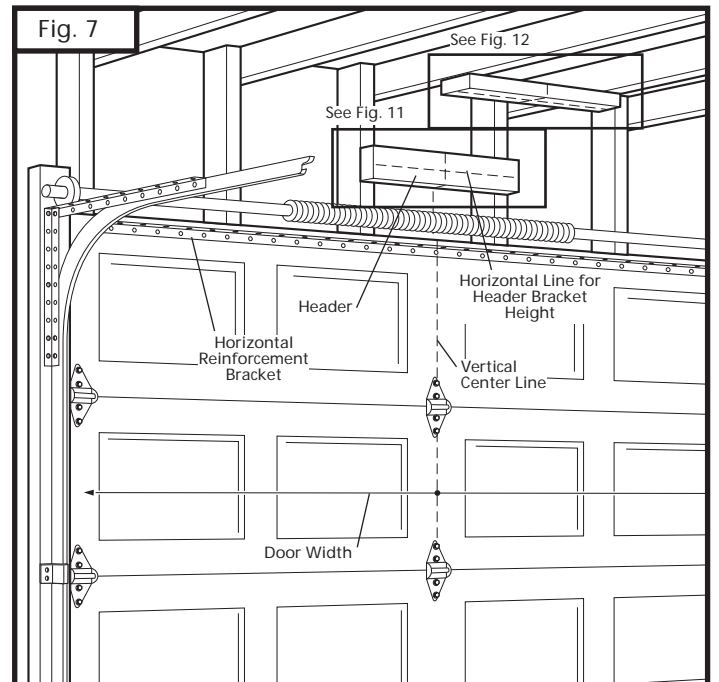
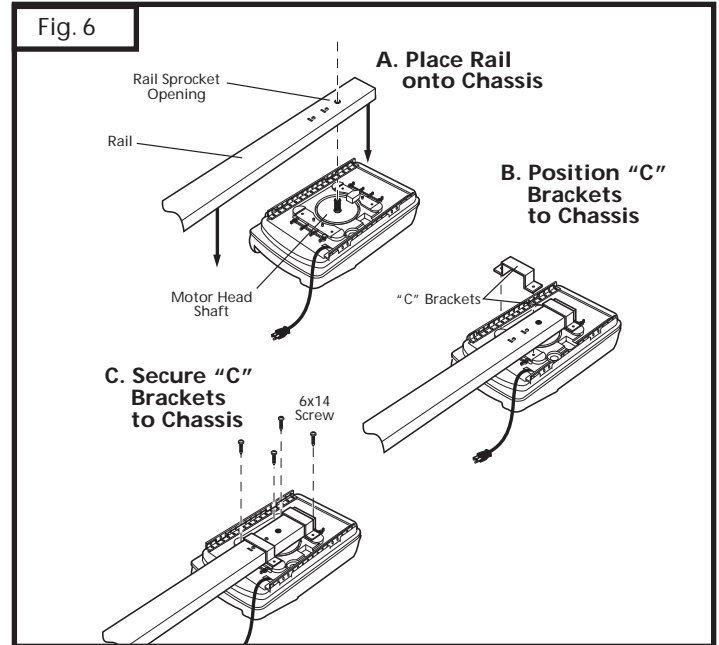
- Measure door width, then locate the center point (Fig. 7).
- Mark a vertical line on the upper half of your door, on the top edge of your door, and on the header, through the center point.

#### MEASURE DOOR'S HIGHEST TRAVEL POINT:

- Open door to its highest travel point and measure from the garage floor to the top of door. (Fig 8)
- Write down this distance.
- Add 1-1/2" to the door travel height (measured above).

#### MARK HORIZONTAL LINE FOR HEADER BRACKET LOCATION:

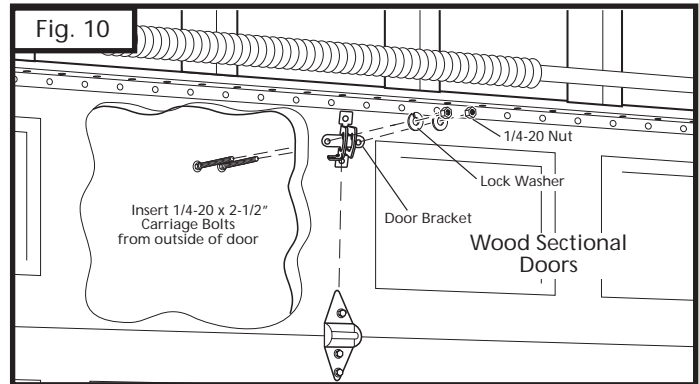
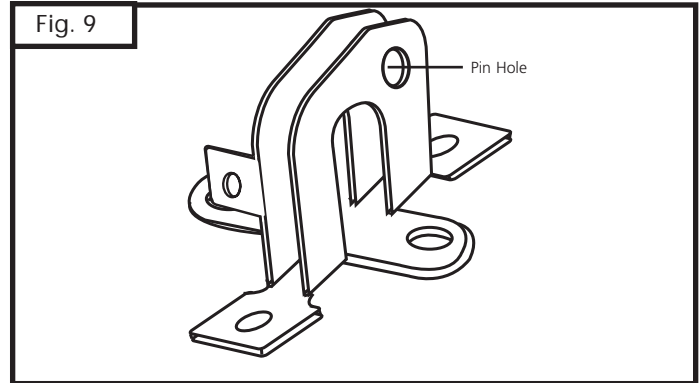
- Close door and measure the required distance (determined above) from the garage floor to the header.
- Mark a horizontal line, intersecting the vertical center line, on header. This is the position at which the bottom of the header bracket should be installed.
- In case of minimal clearance above the door, the header bracket may be mounted to the ceiling. In this case, extend the vertical center line onto the ceiling, and mark a horizontal line on the ceiling no further than 4" from the header wall. The header bracket should be mounted no farther than this distance from the header wall.



### 7-3. INSTALL DOOR BRACKET TO DOOR

#### Wood Sectional Doors (Fig. 10)

- Position door bracket (Fig. 9) along vertical center line of door with pin hole facing top of the door and top edge of the bracket 4" to 5" below top edge of the door, or roughly at the same height as top rollers on the door.
- Mark locations of securement holes through door bracket.
- Drill two 1/4" holes through door for securement of door bracket.
- Insert carriage bolts (1/4" x 2-1/2") from the outside through door and bracket, then secure with lock washers and nuts from the inside.
- Tighten nuts firmly.



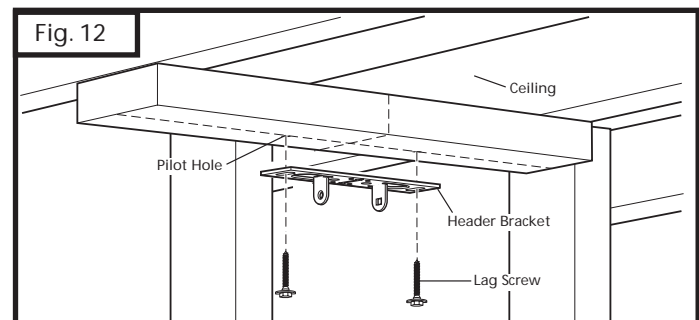
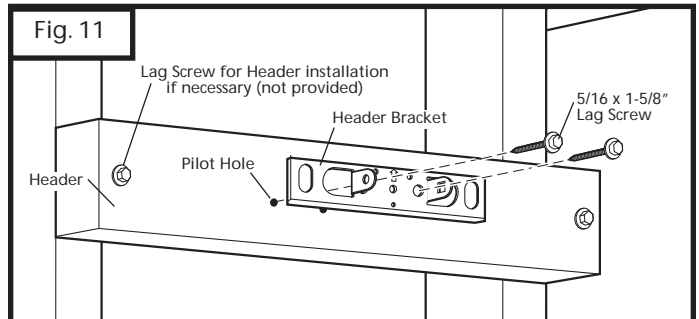
### 7-4. INSTALL HEADER BRACKET

#### ⚠ WARNING ⚠

**If the header bracket is not rigidly fastened to a sound structural support on the header wall or ceiling, the safety reverse system may not work and could cause serious injury or death. DO NOT move or adjust springs or garage door hardware, as these parts are under extreme tension and could cause injury or death.**

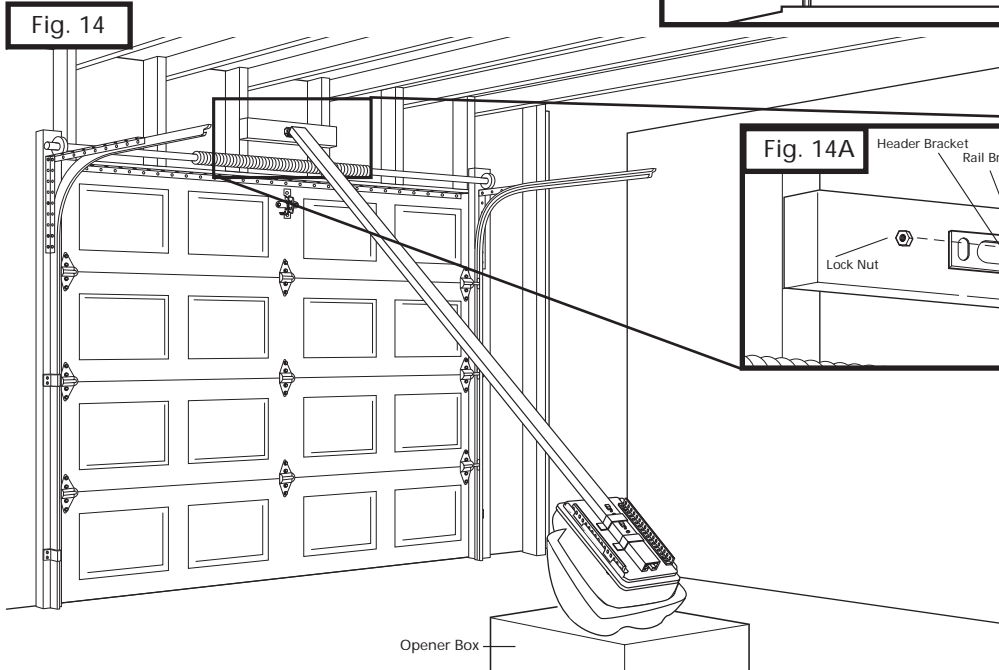
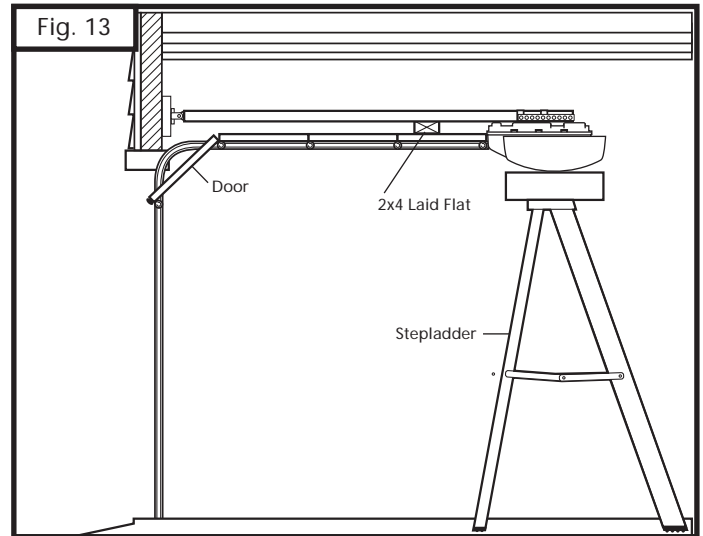
- Remove and save shoulder screw from header bracket assembly.
- Mark pilot holes location on header through bracket holes where lag screws will be inserted. (Fig. 11)
- Drill 3/16" pilot holes into header.
- Install bracket with lag screws (5/16 x 1-5/8") provided.
- Tighten lag screws firmly.

**NOTE:** Follow the same procedure if header (shown in Fig. 7) runs vertically instead of horizontally and is the only option for mounting header bracket to header wall. In case of minimal clearance above the garage door, the header bracket may be mounted to the ceiling. Follow the same steps above to ensure a sound surface for mounting.



## 7-5. ATTACH RAIL TO HEADER BRACKET

- Support opener head slightly off the floor.
- Lift the opposite end of the rail up to the header bracket.
- Position rail bracket over header bracket. Insert shoulder screw through brackets and secure with lock nut. (Fig. 14A)
- Once rail is attached to header bracket, support opener powerhead on ladder, or use the assistance of another person to support opener powerhead high enough so door can open without hitting the rail.
- Open garage door to fully opened position, and place a 2x4 laid flat between the door and the rail. See Fig.13. The 2x4 provides an easy method of ensuring the correct mounting height of the opener.



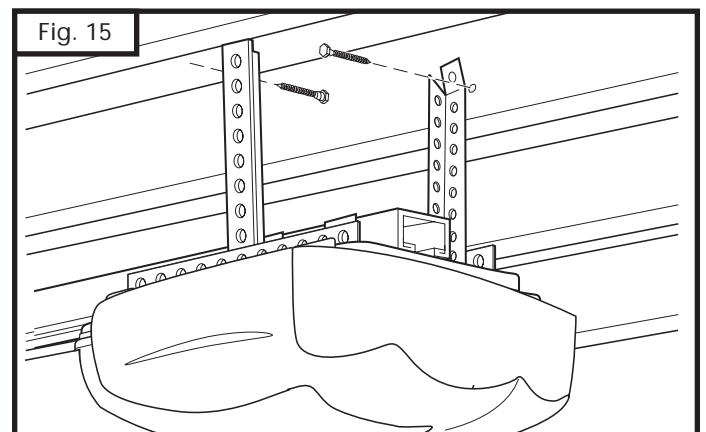
## 7-6. MOUNT OPENER TO CEILING

### ⚠ WARNING ⚠

*If not properly secured, the opener could fall and injure someone. Secure opener to structural supports or framing. Do not mount to drywall, plaster, or other such material.*

### A. Fasten Opener to ceiling

- Position opener head so that rail is lined up with center line of open door.
- Line up hanger brackets (not provided) with ceiling joists or framing to locate where brackets are to be fastened. See Fig. 15.
- Mark location for 5/16" lag screws (not provided), and drill two 3/16" pilot holes.
- Fasten hanger brackets to joists using lag screws.



## 7-6. MOUNT OPENER TO CEILING (cont'd)

- If garage framing supports are not visible, attach a length of perforated angle or a 2x4 to the ceiling, securing it to the hidden joists with lag screws long enough to fasten firmly to garage framing (extra hardware items not provided). Then, attach one end of hanger brackets to the angle or 2x4 mounted to ceiling. Attach other end of hanger brackets to opener's perforated angles. See Fig. 16 for an alternate mounting method.
- Once opener is securely fastened in position, remove wood blocks and temporary supports and lower door. Check door for proper operation and clearance by manually moving door to full open and closed position. If door hits rail at any point, raise opener head slightly higher and re-mount in position.

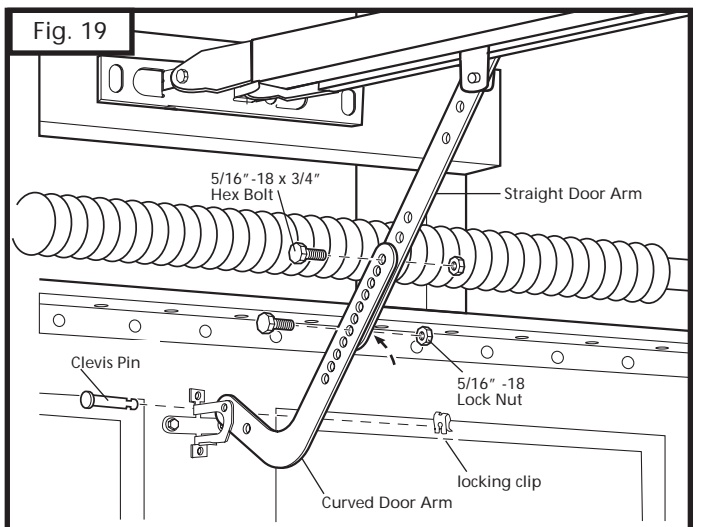
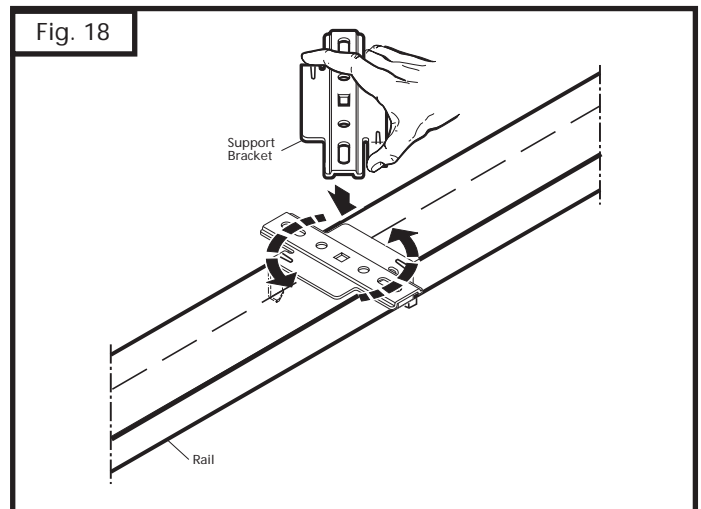
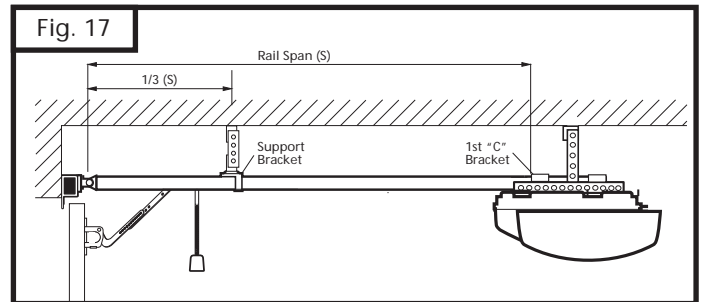
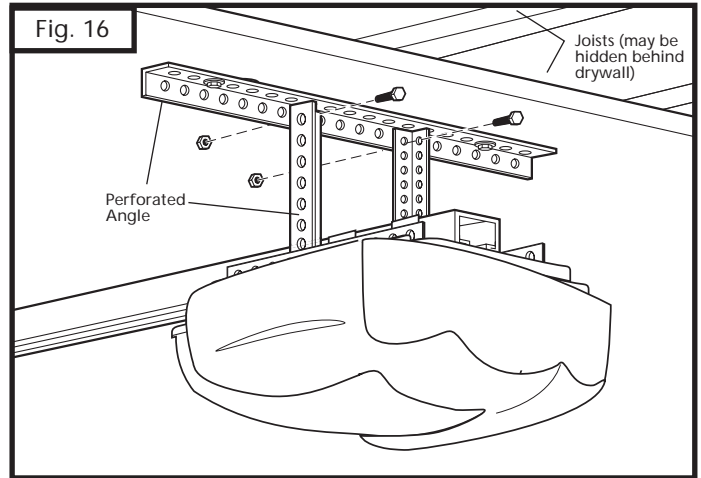
### B. Attach support bracket

- Measure the rail's overall span. Bracket is located on 1/3rd of the overall rail span from the door header bracket end. See Fig. 17
- Place support bracket over rail (close side) on a diagonal. Make sure support securement clamps clear rail sides.
- Secure bracket onto rail by twisting support bracket as indicated in Fig. 18.
- Attach perforated angle (not provided) to support bracket and secure it. Follow the same steps above to fasten rail to joists or ceiling.

## 7-7. CONNECT ARMS TO DOOR AND TROLLEY

- Make sure door is fully closed.
- Remove clevis pin from the trolley.
- Insert single hole side of straight door arm into trolley channel.
- Align straight door arm and trolley holes, then insert clevis pin through holes, and attach locking clip to hold pin in place.
- Pull the emergency release cord toward the door at a 45 degree angle to disconnect trolley from belt connector. Slide trolley to position it about 4" away from the door.
- Position curved door arm into door bracket channel so that short end of arm will be attached to door bracket. See Fig. 19.
- Align curved door arm and bracket holes, then insert clevis pin through holes. Attach locking clip to hold pin in place.
- Align straight arm and curved arm. Position arms so that at least two sets of holes line up. Select two overlapping holes as far apart as possible and secure arms together with hex bolts (5/16"-18) and lock nuts.

**PULL EMERGENCY RELEASE KNOB TOWARD THE OPENER AT 45 DEGREE ANGLE TO LOCK TROLLEY, THEN MOVE DOOR MANUALLY UNTIL TROLLEY LOCKS WITH CONNECTOR INSIDE RAIL.**



## 7-8. CHECK EMERGENCY RELEASE

### ATTACH EMERGENCY RELEASE "CAUTION" LABEL TO THE CORD.

The release cord with knob should be adjusted to hang 6 ft. above garage floor.

To adjust:

- Slide knob up on cord.
- Tie new knot at correct height.
- Cut excess cord, leaving approximately 1" after knot.
- Heatseal end of cord with match or lighter to prevent fraying.
- Slide knob back into place.

### ⚠ WARNING ⚠

**Use extreme care when pulling release knob. DO NOT use knob to pull door open or closed. Except for emergency situations, use knob only when door is closed.**

**If the door is in the open position, use extreme care when using the release.**

Use emergency release to disconnect the door if the power is out. This allows the door to be moved manually up and down independent of the opener motor. It should also be used if for some unforeseen reason the door strikes a person or object during its travel and does not automatically reverse off the obstruction.

**To release door—pull emergency release knob toward the door at approximately 45 degrees. (Fig. 20)**

Prior to re-engaging door, ensure that all obstructions are removed and door is operating properly manually. Before re-engaging trolley with a belt connector, pull knob toward the opener at approximately a 45 degree angle. Now the door can be reconnected by moving it manually and bringing it into position when the connector is inside of the trolley.

Fig. 20

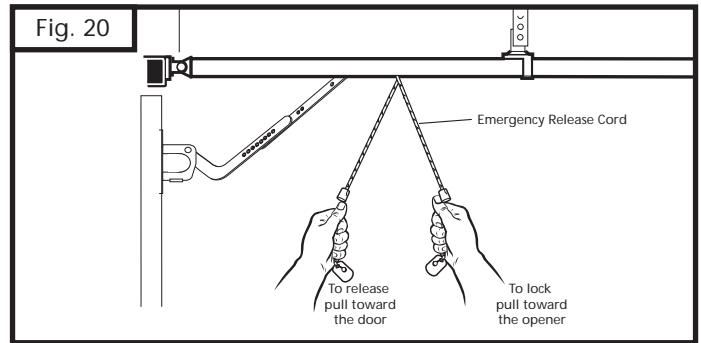
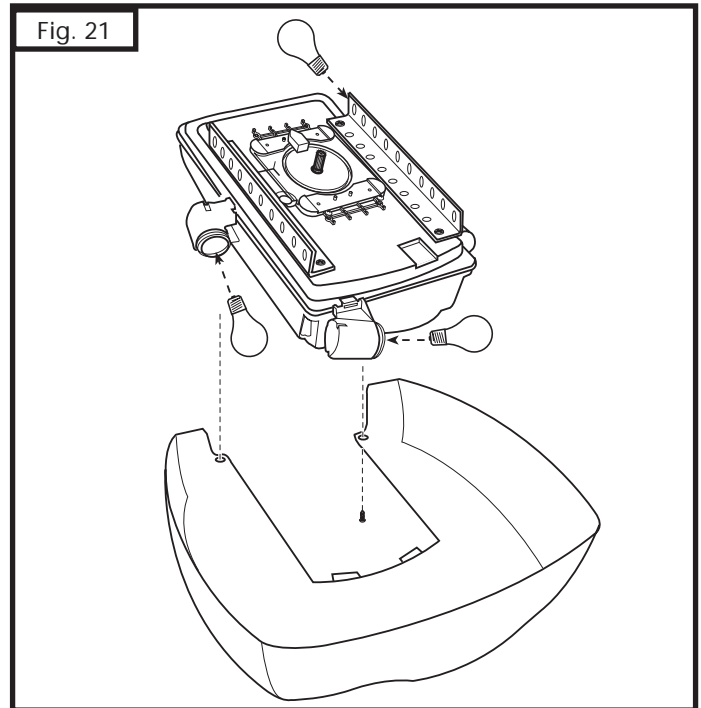


Fig. 21



## 7-9. INSTALL LIGHT BULBS AND LENSE

### ⚠ CAUTION ⚠

**DO NOT use a bulb with a rating higher than 60 Watts (W), or larger than a Standard size bulb. A stronger or larger bulb may result in fire or damage to the opener.**

- Install up to three (3) bulbs maximum 60W each (not provided) into lamp sockets.
- Remove and save two (2) screws from top of housing. Line up lamp lens tabs with slots in housing. Snap lens onto housing and secure with two (2) screws which were removed from housing. See Fig. 21.

## 7-10. INSTALL PHOTO EYE SAFETY SYSTEM

To provide the maximum amount of protection, the photo eye must be mounted between 3" and 5" above the floor. See Figs. 22 and 23.

### MOUNTING PHOTO EYE DIRECTLY TO WALL:

- Locate installation position. See Fig. 22.
- Mark and drill 1/16" pilot hole into wall. (If mounting to drywall instead of wood, drill 3/16" pilot hole and use anchors provided).
- Insert tapered-head screw provided for the top holder hole into wall. Do not tighten screw so head is flush with wall, allow screw head to protrude (approximately 3/8") from wall.
- Position the top slot hole on the back of the holder onto screw and push down to lock in place.
- Mark hole location through the curved channel slot. Swing photo eye assembly and drill second pilot hole.
- Insert second screw through the curved channel slot at the bottom of the holder. Adjust photo eye assembly for straightness before tightening screw.
- Repeat process for other photo eye and holder.

### MOUNTING PHOTO EYE TO BRACKET:

- Locate mounting position for brackets (brackets can be mounted in any position as long as photo eye beam will have a clear path from one side of door to the other side after mounting). See Fig. 23.
- Mark and drill two 1/16" pilot holes into wall. (If mounting to drywall instead of wood, use anchors provided and drill two 3/16" pilot holes).
- Using round-head screws provided, secure bracket to wall.
- Attach photo eye assembly to bracket by aligning tabs and center pin and snapping into place (orient assembly so that wiring exits downward from the bottom).
- Repeat process for other bracket.

### FOR BOTH TYPES OF MOUNTING:

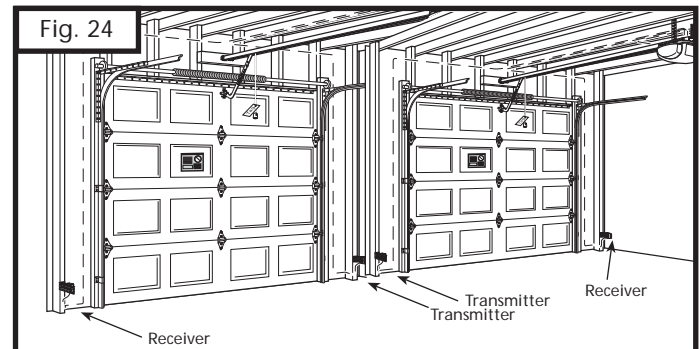
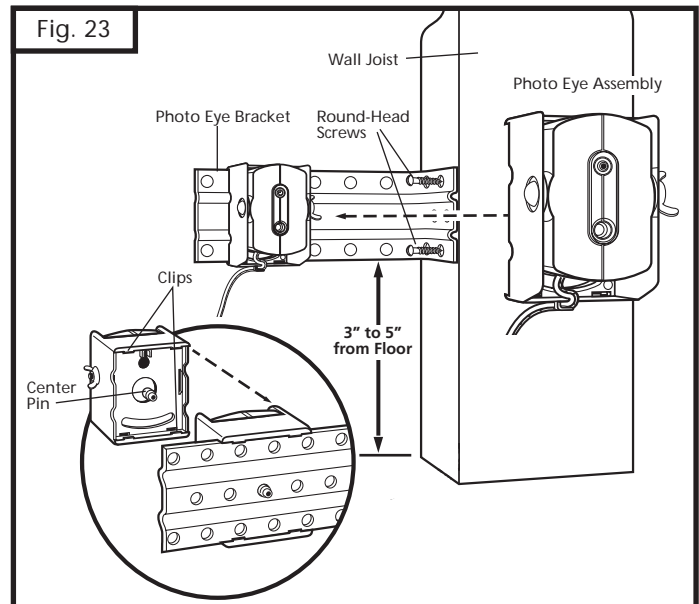
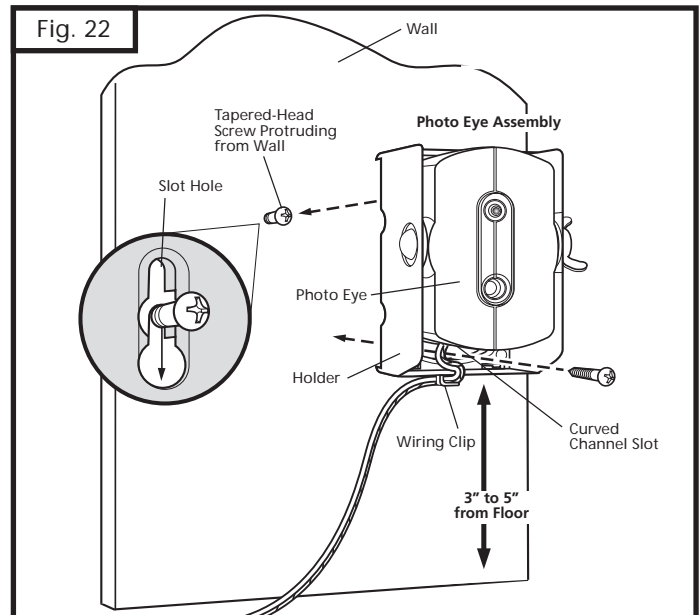
- Align photo eyes so they face each other. See Fig. 38 on p. 18. Later in this manual you will be instructed to check the operation of the photo eyes, and will be able to readjust the alignment if needed.
- Tighten wing nut on each photo eye assembly by hand. Photo eyes will now be secured in position inside holder.

**NOTE:** In dual door installations, the "Transmitter" and "Receiver" (as marked on each of the photo eye components) should be mounted as indicated in Fig. 24.

## 7-11. INSTALL WALL CONTROL PANEL

The control panel must be mounted inside the garage with-in sight of the garage door, clear of all moving garage door parts or any associated parts—and at least 5 feet above the floor to prevent the use of these controls by children. The device should only be used when the door is in clear sight of the user and the door area is free of people or any obstructions.

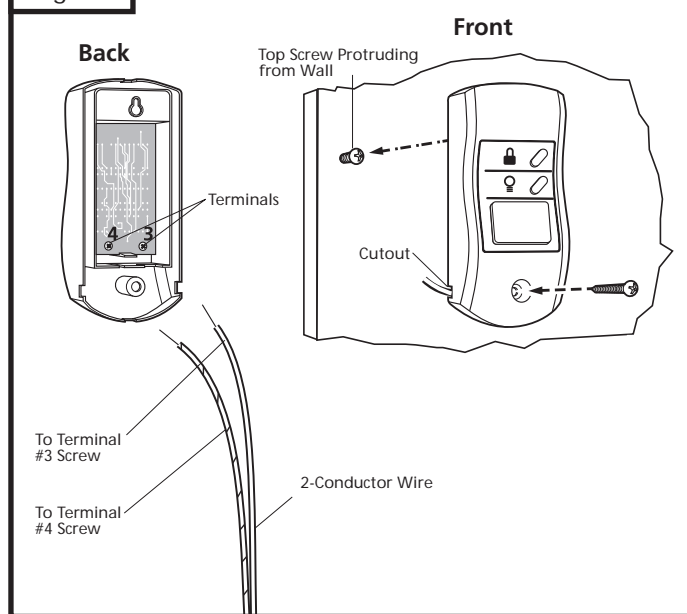
- Attach 2-conductor wire to the screw terminal on back of control panel. See Fig. 25 (Back). White wire attaches to terminal #3 screw, white wire with color stripes attaches to terminal #4 screw.



## 7-11. INSTALL WALL CONTROL PANEL (cont'd)

- Locate position where top mounting screw will go. Mark location on wall.
- Drill 1/16" pilot hole into wall. (If mounting to drywall, drill 3/16" pilot hole and use anchors provided).
- Insert top screw into wall. **DO NOT TIGHTEN FLUSH WITH WALL.** Leave screw head out approximately 1/8" from wall. See Fig. 25 (Front).
- Position wall control panel onto screw, and push down to lock into place.
- Mark hole location through bottom screw hole. Swing wall control and drill second pilot hole.
- Insert screw through bottom hole from the front, and tighten screw to secure control to wall.
- Make sure wiring is routed out from behind control through one of the recessed cutouts to avoid pinching the wires.

Fig. 25



## 7-12. CONNECTING WIRES TO POWERHEAD

- Run wires from wall control panel and photo eye system along wall and ceiling to opener powerhead. Use the staples that are provided to secure wiring to wall, joists and ceiling. Do not pinch wiring. Drive staples with only enough force to hold wiring in place. Refer to Fig. 5 on p.6 for an example of typical wiring routing.

**NOTE:** As an alternative for photo eye system, the wiring can be routed along the top of the rail, or along the outside of the door track. Be sure the wiring is routed away from all moving parts of the door and rail.

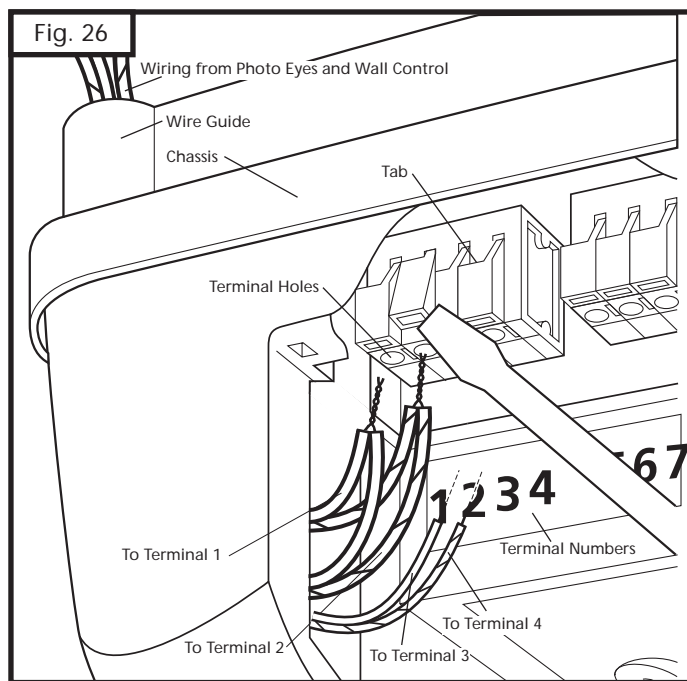
- Separate 2" of double wire from each photo eye into two single wires. Strip about 1/2" of insulation from the end of each of the four single wires. Combine the white wires from each photo eye and twist stripped ends together tightly. Do the same with color striped wires.
- Open the control panel by slightly pulling on the panel cover tabs.
- Feed wall control and photo eye system wires through wire guide from the top of the chassis into terminal area of control panel.
- Firmly insert white wire combination into terminal hole #1 by pushing directly into hole. Insert color striped wire combination into terminal #2.

**NOTE:** If wires are difficult to insert, a screwdriver may be used to depress the terminal "tab" while inserting the wires. To remove wires, depress tab again and pull wires out.

- Insert white single wire from wall control into terminal #3 and single color striped wire into terminal #4.

**NOTE:** Multiple wall controls may be installed in parallel with wires connected to terminals #3 and #4.

Fig. 26



## 7-13. CONNECT TO POWER

To reduce the risk of electric shock, your opener is provided with an insulated power cord with a 3-prong grounding plug. The cord must be connected to a standard grounding outlet. If there is no outlet available at the location, you must have a qualified electrician install an approved grounded outlet in this area.

### **⚠ WARNING ⚠**

**To prevent electrocution or fire, installation and wiring must be done in accordance with local electrical and building codes. DO NOT use an extension cord. DO NOT use a 3 to 2 plug adapter. DO NOT modify or cut off the grounding pin on the plug.**

- Plug the opener into a properly grounded outlet (Fig. 27).
- Opener will run a self-test. All four LED's will illuminate for approximately 2 seconds. Then only the LED #4 will be "On" and the opener is ready to set the adjustments.
- DO NOT operate or run the opener at this time.

### **PERMANENT WIRING CONNECTION:**

(If required by your local electrical code)

If local codes require your opener to be connected via permanent wiring instead of a cord and plug, your opener must be converted, as shown in Fig. 28. Contact a qualified electrician to run the necessary wiring to your opener and to perform the electrical connections.

### **⚠ WARNING ⚠**

**To prevent electrocution, disconnect the opener from power and turn off power at circuit breaker for the circuit you will be using to connect to the opener.**

- Remove opener housing by removing screw underneath the control panel cover and two screws from back of housing, then pulling the housing away from the chassis.
- Remove screw and unsnap the power cord strain relief cover by disengaging the tabs, and remove this part (save for reattachment later).
- Cut the power cord leads close to where the cord enters opener, so that after cut, there is at least 6" of wiring remaining (white-neutral, black-hot, and green-ground) inside the opener connected to the varistor and transformer.
- Remove the cut power cord and plug and discard. Replace the strain relief cover by snapping tabs back into place.
- Using a hammer and screwdriver or punch, knock out conduit hole, and bring in the permanent wiring and conduit.

Fig. 27

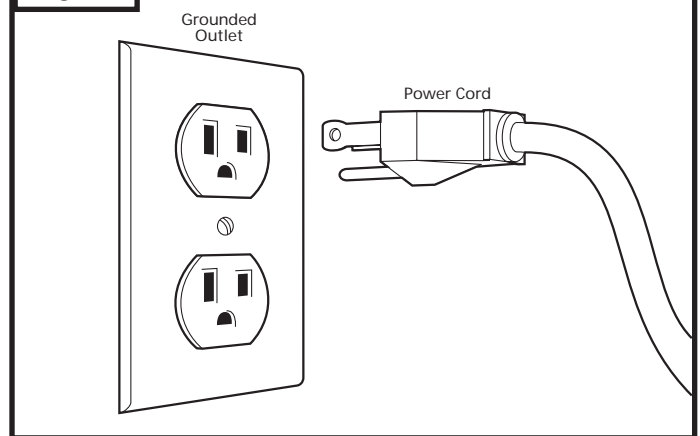
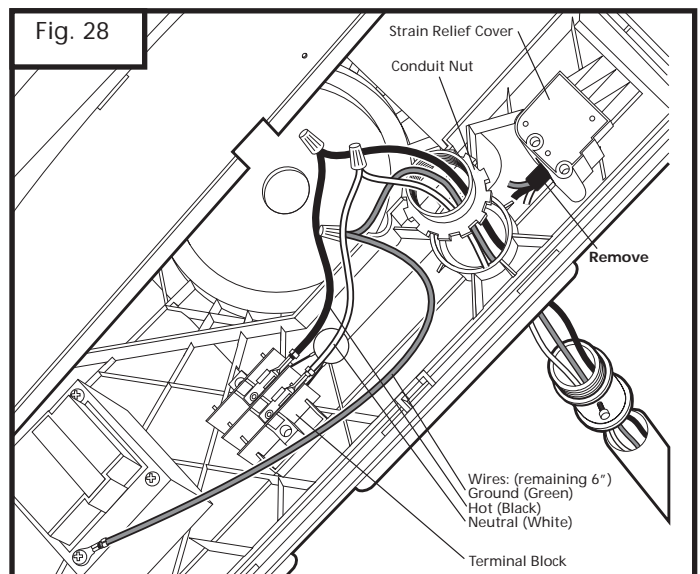


Fig. 28



- Secure conduit to chassis (method varies depending on type of conduit used).
- Attach the incoming power leads (hot, neutral, and ground) to the remaining internal wires using suitable wire nuts (not provided).
- Reinstall opener housing and secure housing with screws. Make sure that when reinstalling opener housing, no wires will be pinched between the housing and the chassis.
- Complete the remaining installation.
- Turn on power at breaker.



## 7-15. SET THE ADJUSTMENTS (cont'd)

### CLOSE TRAVEL LIMIT (Fig. 32):

LED #2 should now be blinking after pressing "P" at the end of the previous step. Press and hold the "-" button until the door is fully closed. You can quickly press and release the "-" button to move the door in small increments. You can also use the "+" key to move the door slightly in the up direction. Door is fully closed when the door bottom edge presses firmly onto the ground. Once the door is in the desired position, press and release the "P" button. This stores the closed position in memory. It also advances to the next setting.

### TRANSMITTER CODING (Fig. 33):

LED #3 should be blinking after pressing "P" at the end of the previous step. The opener can now learn the code of the hand-held transmitter. While LED #3 is blinking, press and hold the button on the transmitter. When you see LED #3 flashing rapidly, you can release the transmitter button. The opener has now learned the particular code of this transmitter.

Once the opener has successfully received the code from the transmitter, press and release the "P" button. This stores the code in memory. It also completes the adjustment setting sequence, and completes the program process. The LEDs will automatically fade out in a circular pattern, which indicates that the program mode is complete.

LED #4 should now be illuminated, and the opener is ready for operation.

After setting the adjustments, run the opener two (2) complete cycles. Two (2) open and close cycles are required to "Learn" and set the minimal required lifting (up) and push (down) force for your particular door.

## WARNING

**For Professional Installers Only.**  
**Programming the advanced settings of this opener must be undertaken only by a professional installer fully familiar with this type of opener system.**

## 7-16. ADVANCED SETTINGS

Your new opener has automatic force learning and maximum force setting. It may be required to change force settings. If the force needs to be increased or decreased, it should be changed by one (1) increment at a time. The force should be set as low as possible, just enough to allow your unobstructed door to travel freely without reversing or stopping.

### UP FORCE (Fig. 34):

Press and hold "P" button approximately 20 seconds. LED #1 and #3 start blinking. There are eight (8) settings. (Blinking LED represents 1/8 and illuminated LED 2/8 of maximum total force). By pressing "+" or "-" button set the desired lifting force. The current force setting will be displayed by illuminating a certain number of LEDs around the circular display. The more LEDs that are illuminated, the higher the force limit. It is possible to have different settings. For

Fig. 32

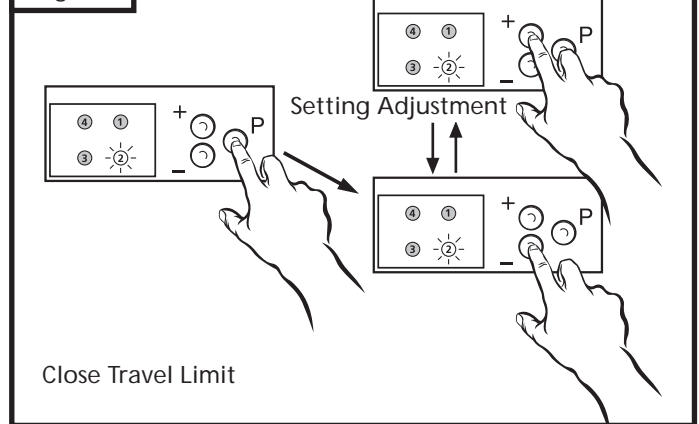


Fig. 33

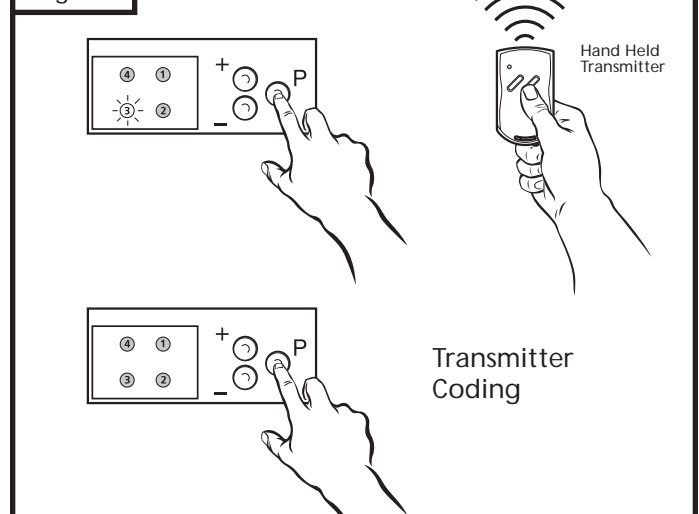
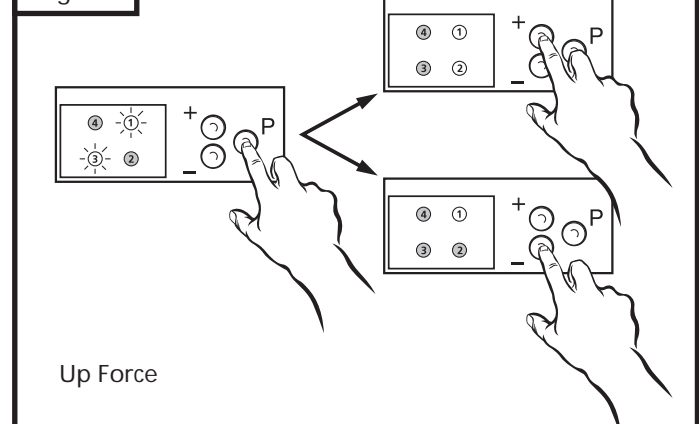


Fig. 34



example, level 1 (least amount of force) is set when only LED #1 is illuminated. Level 2 is set when LED #1 and LED #2 are illuminated. Level 4 is set when LEDs #1, #2, #3, and #4 are illuminated. By repeatedly pressing the "+" or "-" key, the force can be increased (+) or decreased (-). Once the desired level is selected, press and release the "P" button. This stores the maximum force level in memory. If you need to change only this setting press "P" button two (2) more times to exit out of the program and return the opener to operational mode

## 7-16. ADVANCED SETTINGS (cont'd)

### DOWN FORCE (Fig. 35):

Press and hold "P" button approximately 20 seconds. LED #1 and #3 should start blinking. Release "P" button and press again. LED #2 and #3 should start to blink. There are 8 settings (blinking LED represents 1/8 and illuminated LED 2/8 of maximum total force.) By pressing the "+" or "-" button set the desired closing force. It is possible to have different settings (same as described in "Up Force" setting). By repeatedly pressing the "+" or "-" key, the force can be increased (+) or decreased (-).

Once the desired level is selected, press and release the "P" button. This stores the maximum force level in memory.

Press "P" button one (1) more time to exit out of the program and return the opener to operational mode.

After setting the adjustments, run the opener two (2) complete cycles. Two (2) open and two (2) close cycles are required to "learn" and set the minimal required lifting (up) and push (down) force for your particular door.

## 7-17. TEST SAFETY REVERSAL

The safety reversal function of your opener is an extremely important feature of your opener. Testing this function ensures the correct operation of your opener and door. The reversal system test should be performed:

- Once per month.
  - Anytime the travel or force limits are reset or changed.
- Once the adjustments have been set and the door has been run up and down twice to "learn" the new settings, you must test the reversal system for proper operation.
- Place a 1-1/2" high rigid object (or a 2x4 board laid flat) on the floor directly in the path of the door. See Fig. 36.
  - Start the door in the downward direction and watch what happens.
  - When door contacts the object (or 2x4), it should stop, reverse, and automatically return to the fully opened position.
  - If the door does not reverse, reset the down travel limit so that the door travels slightly further down in the closed direction. Then, retest the unit as described above.
  - If the door still does not reverse, disconnect your opener and call a service person.

## 7-18. ALIGN AND TEST PHOTO EYES

### ALIGNMENT:

Photo eyes maintain an invisible, unbroken beam between each unit. The eyes must be properly aligned for the system to function and provide the protection it was designed for. Follow these steps to insure proper alignment:

- When photo eyes are connected to the powerhead and the power is on, the green light on the transmitter photo eye will illuminate. When the eyes are aligned, the red light on the receiver eye will illuminate.
- Loosen the wing nut on each photo eye and rotate eye in holder as needed until eyes are aligned and the light on each photo eye is illuminated. See Figs. 37.
- Tighten the wing nut firmly by hand on each assembly to secure each photo eye in position

Fig. 35

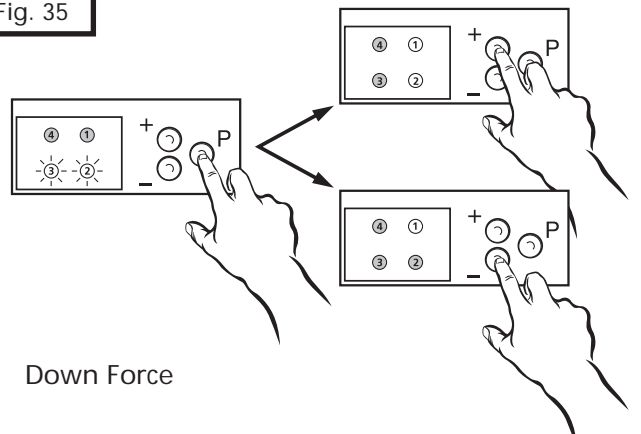


Fig. 36

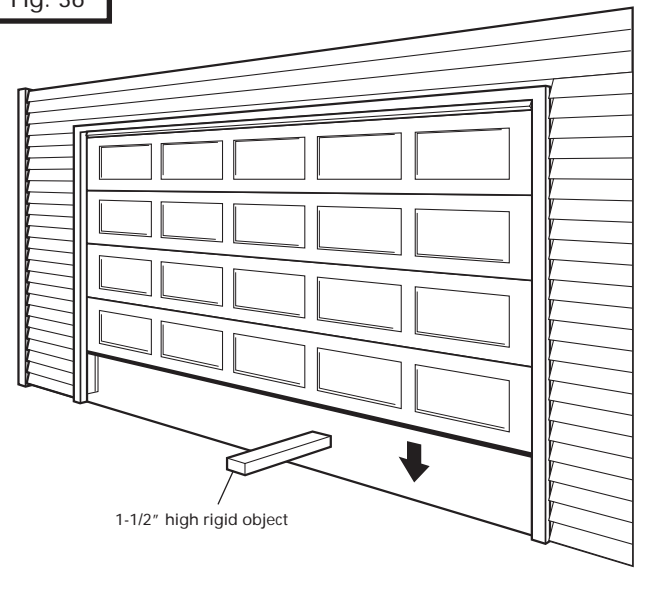
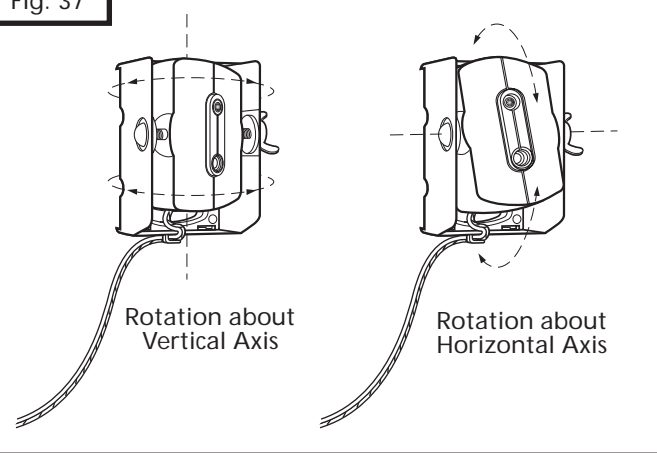


Fig. 37



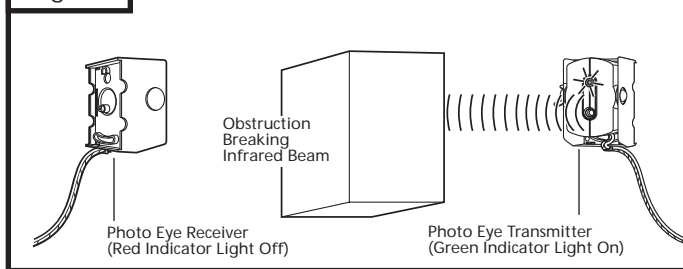
## 7-18. ALIGN AND TEST PHOTO EYES (cont'd)

### SAFETY TEST:

Photo eyes installed on opposite sides of your door opening are intended to detect a person or object in the path of the door and prevent the door from moving downward. The following steps will determine if the system is functioning properly:

- Open door using the opener's transmitter or wall control.
- Place a box or other object in the path of the door so it breaks the photo eye beam. See Fig. 38. Red indicator light on receiver should go out.
- Press and release the wall control button. The door should not move in the down direction. LED# 3 on the opener will flash. If this does not happen, disconnect opener and call for service.
- To reset opener, remove the obstruction and operate the door normally.
- If photo eyes are not aligned or are damaged, door can only be closed by pressing and holding wall control button until door is fully closed.

Fig. 38 Object directly in Path between Photo Eyes



## 7-19. APPLY LABELS TO INSIDE OF GARAGE

Several important safety and instruction labels are included with your opener package. These labels must be posted inside your garage where they can be easily seen by all. We recommend installing them in the location shown in Fig. 5 on page 6. To affix the labels, peel off the protective backing, and stick onto smooth, clean surface. If labels don't adhere well to surface, use tacks (wood door only) or additional adhesive to securely affix in place. **DO NOT PAINT OVER ANY LABELS.**

## 7-20. ATTACH OWNER'S MANUAL TO WALL

It is important that the manual be stored where it can be referred to later in case adjustments need to be made, and/or new controls or accessories added. Store the manual in a safe, easily accessible location. We recommend you use an envelope with an eyelet to store the manual in the garage on a nail or hook on the wall near the wall control.

## 8. IMPORTANT SAFETY INSTRUCTIONS

# ! WARNING !

### TO REDUCE THE RISK OF SEVERE INJURY OR DEATH:

1. **READ AND FOLLOW ALL INSTRUCTIONS CAREFULLY.**
2. Never let children operate or play with door controls. Keep the remote control away from children.
3. Always keep the moving door in sight and away from people and objects until it is completely closed. **NO ONE SHOULD CROSS THE PATH OF THE MOVING DOOR.**
4. **NEVER GO UNDER A STOPPED, PARTIALLY OPEN DOOR.**
5. Test door opener monthly. The garage door **MUST** reverse on contact with a 1-1/2" high object (or a 2x4 laid flat) on the floor. After adjusting either the force or the limit of travel, retest the door opener. Failure to adjust the opener properly may cause severe injury or death.
6. If possible, use the emergency release only when the door is closed. Use caution when using this release with the door open. Weak or broken springs may allow the door to fall rapidly, causing severe injury or death.
7. **KEEP GARAGE DOORS PROPERLY BALANCED.** See Garage Door *Owner's Manual*. An improperly balanced door could cause severe injury or death. Have a qualified service person make repairs to cables, spring assemblies, and other hardware.
8. Disconnect the electrical power to the garage door opener before making any repairs or removing the housing cover.
9. **SAVE THESE INSTRUCTIONS** for future safety, adjustment, and maintenance purposes.

## 9. TRANSMITTERS

### INSTALLING THE BATTERY (Fig. 39):

- Remove battery compartment cover (back of transmitter) by using small screwdriver.
- Insert the provided 12V battery (type 23A) as shown.
- Replace battery compartment cover.

### TRANSMITTER MOUNTING:

The transmitters can be conveniently mounted inside your car using the mounting plate, or visor clip.

#### A. Mounting Plate (Fig. 40)

- Secure the mounting plate to area of preference using velcro (not provided) or other means.
- Snap the transmitter into the mounting plate, which will hold it firmly in place.

#### B. Visor Clip (Fig. 40)

The visor clip permits easy mounting of transmitter to a visor.

- Attach visor clip to mounting plate.
- Snap transmitter into mounting plate.
- Affix complete assembly to visor.

### MULTIPLE TRANSMITTERS:

Each transmitter comes factory programmed with random codes. 2-channel transmitters have 2 different random codes, one per button. Transmitters that are purchased separately as accessories have random codes that must be changed in order to match the code of the "active" transmitter you are already using. Below are instructions for transferring an active code.

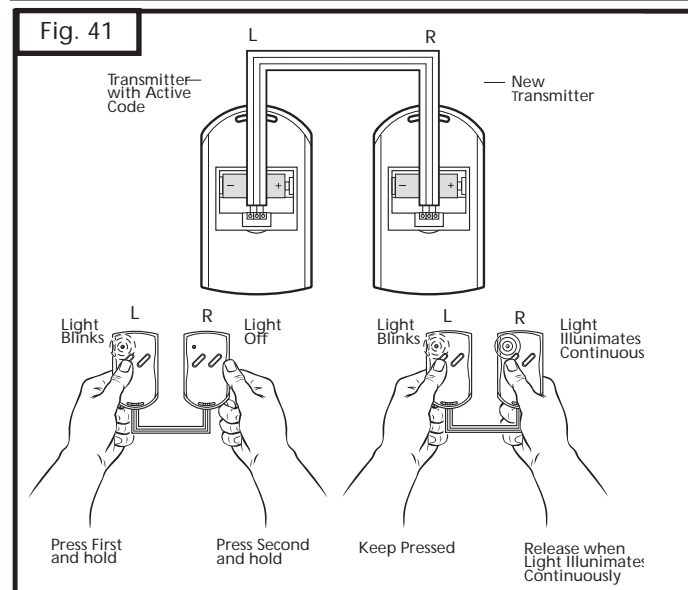
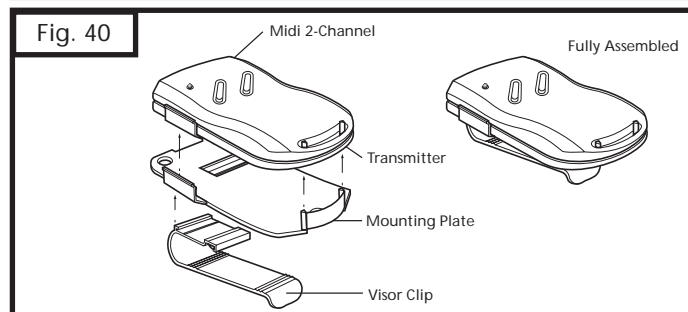
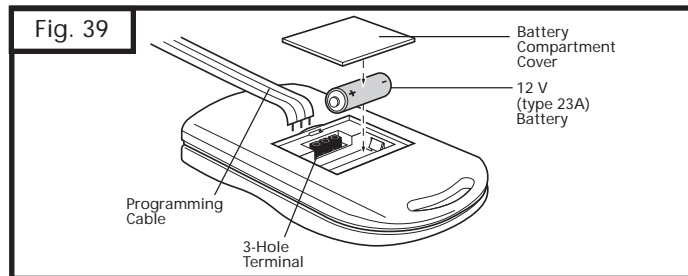
- Remove battery compartment covers of both transmitters, the one with the active code and the new transmitter that needs to receive the active code. (Fig. 39)
- Connect the programming cable to both transmitters. Line up either end of stripped cable so 3 wires align with 3-hole terminal, then firmly insert cable. (Fig. 41)
- Press and hold button on transmitter with the active code ((L) in Fig. 41). Midi transmitters have indicator lights that will blink to show that code transfer is ready.
- While keeping the transmitter (L) button pressed, press and hold the button on the new transmitter (R) that you want to transfer the active code to.
- Code transfer will occur in approximately 2 seconds. The indicator light will illuminate continuously to show that transfer is complete.
- All buttons can be released. Cable can be removed and the covers replaced.
- Both transmitters can now be used to operate the same door.

**NOTE:** For multi-button transmitters, be sure to carry out this procedure for all the buttons you desire to use.

### CODE CHANGE:

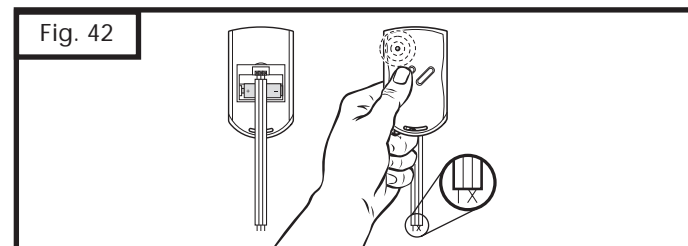
The transmitter factory preset code can be changed as follows:

- Remove battery cover from compartment.
- Connect the programming 3-prong cable to programming terminal in transmitter. (Fig. 42).
- Cross any two wires of programming cable, one of them must be the center wire.
- Press and hold button on the transmitter.
- Code will change in approximately 2 seconds.
- Release button after the light illuminates continuously, then remove the cable and replace the cover.



FCC Certified: This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.



**NOTE:** For multi-button transmitters, be sure to carry out this procedure for all the buttons you desire to use.

## 10. WIRELESS KEYLESS ENTRY SYSTEM

### A. SETTING UP YOUR PERSONAL IDENTIFICATION NUMBER (PIN) AND TRANSFERRING THE CODE

#### Transferring the Code to the Keyless Entry System from a Transmitter

- Open Keyless Entry System hinged cover and remove battery compartment cover of the Keyless Entry System using a small screwdriver or a coin.
- Connect the programming cable to the 3-hole terminal inside top of Keyless Entry System battery compartment. (Fig. 43) Line up either end of the stripped cable so that each wire aligns with each of the terminal holes, then firmly insert cable.
- Insert provided 9V battery (to match indicated polarity) into Keyless Entry System battery compartment.
- Remove battery compartment cover of transmitter.
- Connect other end of programming cable to 3-hole terminal in transmitter.
- Press and hold the transmitter button (make sure you press the "active" button you already choose to open and close your garage door).
- On the Keyless Entry System keypad, press the ENTER button. Input 4-digit PIN of your choice. Press the ENTER button again.
- Keep the transmitter button pressed until the keypad buttons blink rapidly.
- The Keyless Entry System has now learned the code of the transmitter, and stored it under the PIN that you entered.
- Disconnect the programming cable from the transmitter and replace its battery compartment cover.
- Remove the programming cable from the Keyless Entry System terminal (The programming cable may be stored inside the battery compartment just below the battery or in another safe location for future use).

### B. KEYLESS ENTRY SYSTEM MOUNTING

- Choose location for mounting your Keyless Entry System.
- Using mounting holes at top and bottom of Keyless Entry System as a guide, mark hole locations and then drill two 1/16" pilot holes.
- Secure keyless entry to the mounting surface with the (2) screws provided. For mounting surfaces that are not made of wood, alternate anchoring means may be needed.
- Replace battery compartment cover and close hinged cover.

### C. USING THE KEYPAD

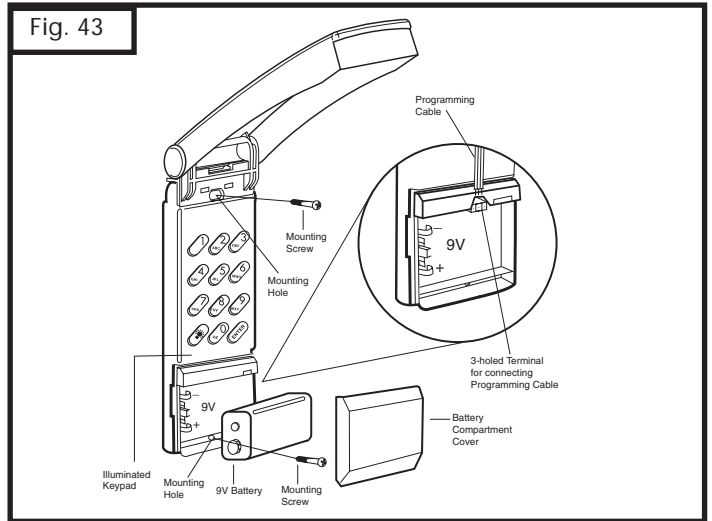
#### Storing more than 1 Code for Control of more than 1 Garage Door Opener

- The Keyless Entry System may be used to control up to 3 different garage door openers, each with a different code.
- For each of the 3 codes, follow the same steps with one exception: you must enter in a different PIN for each code. Each code requires a unique PIN.
- To use the Keyless Entry System to open or close a specific door, simply enter the corresponding PIN for that door followed by pressing the ENTER button.
- The Keyless Entry System has now learned the code of the transmitter, and stored it under the PIN that you entered.

#### Storing more than 1 PIN for Same Code

- It is possible to store up to 3 different PINs for the same code for use by different individuals.

Fig. 43



- For each separate PIN, follow the same steps. Repeat the procedure for each PIN, using the same transmitter each time. This will store the same code under 3 different PINs.

### Storing a Temporary PIN

- A temporary PIN can be stored which will permit operation for 3 times only.
- Press and hold "button1" on the keypad for 3 seconds until buttons on keypad blink rapidly.
- Buttons on keypad will blink rapidly for 5 seconds. During this blinking period, enter your original PIN followed by the ENTER button
- Enter a temporary 4-digit PIN of your choice followed by the ENTER button.
- The buttons on the keypad will illuminate for 2 seconds, then the Keyless Entry System will shut off and the keypad lights will go out.
- Keyless Entry System is now ready for use again.
- To use Keyless Entry System with the newly stored temporary PIN, enter the 4-digit temporary PIN followed by pressing the ENTER button. This can be done 3 times, after which the temporary PIN will be automatically erased.

### Changing the PIN

- Press and hold "button 0" on the keypad for 3 seconds until buttons on the keypad blink rapidly.
- Buttons on keypad will blink rapidly for 5 seconds. During this time, enter the PIN which is to be changed followed by pressing the ENTER button.
- Enter the new 4-digit PIN followed by pressing the ENTER button.
- The buttons on the keypad will illuminate for 2 seconds, then the Keyless Entry System will shut off and the keypad lights will go out.
- The Keyless Entry System is now ready for use again with new pin (Old PIN is no longer valid).

### Clearing the Memory

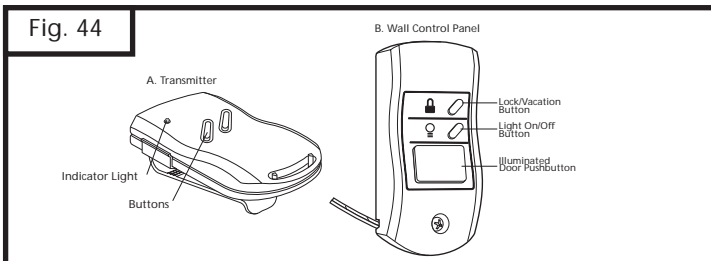
- Press and hold the "Light" button on the keypad for 3 seconds until buttons on the keypad blink rapidly.
- Buttons on the keypad will blink rapidly for 5 seconds. During this time, enter code 9-9-9-9.
- Release "Light" button.
- The buttons on the keypad will illuminate for 2 seconds, then the Keyless Entry System will shut off and the keypad lights will go out.
- All codes will be erased.

## 10. WIRELESS KEYLESS ENTRY SYSTEM (cont'd)

### Replacing the Battery

- Remove battery compartment cover.
  - Remove old battery.
  - Replace with new "Procell" 9V battery. Match polarity designation.
  - Replace battery compartment cover.
- For protection of keypad, keep cover closed when not in use.**

## 11. OPERATION OF YOUR OPENER



### REMOTE CONTROL TRANSMITTER:

- To open or close garage door, press and hold button (Transmitter has an indicator light that will start blinking). See Fig. 44A. When garage door begins to move, release button.
- To stop garage door during travel, press and hold button until door stops, then release button.
- To resume garage door travel after stopping, press button again. Door begins to move in the opposite direction.

### WIRELESS KEYLESS ENTRY SYSTEM

- To open or close garage door, enter 4-digit PIN followed by pressing the ENTER button. Garage door will begin moving.
- Keyless Entry System will remain active and keypad numbers will flash for approximately 18 seconds after pressing the ENTER button. During this time, the garage door can be stopped by pressing any button (except the LIGHT button).
- To illuminate keypad when necessary press "Light" button. No radio signal will be sent. Light will stay "On" during code entry.
- Under certain conditions, your garage door may require constant pressing of a button to operate. In this case, enter your 4 digit PIN then press and hold the ENTER button. Garage door will run as long as the ENTER button is held.

**Note:** If an invalid PIN is entered 3 times in a row, the Keyless Entry System automatically shuts off to prevent tampering or unauthorized use. After 2 minutes, the Keyless Entry System can be used again.

### WALL CONTROL PANEL:

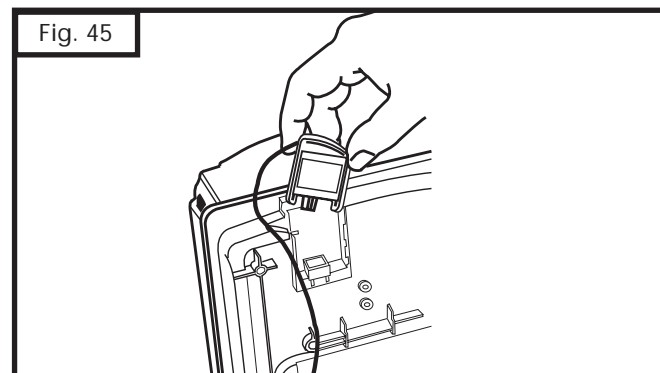
- The Door Pushbutton will light when Wall Control properly connected (if it does not light up, review section 8-11. "Install Wall Control" on page 12).  
To open or close garage door, press and hold Illuminated Door Pushbutton. (Fig. 44B). When garage door begins to move, release button.  
To stop garage door during travel, press and hold button until door stops, then release button.  
To resume garage door travel after stopping it, press button again. Door begins to move in the opposite direction.
- The Light On/Off button can be used to turn lights on or off. When using the light On/Off button, the automatic timer is ignored, and the lights will remain On until the button is pressed again, or until the opener is activated and the automatic timer begins again.

- The Lock/Vacation button can be used to lock out all remote control transmitters. The door can still be activated by wall control panel or keyless entry system. Press and hold Lock/Vacation button for 2-3 seconds. Release button. Illuminated Door Pushbutton will flash continuously while lock mode is active. To unlock opener, press and hold Lock/Vacation button for 2-3 seconds.

### OPENER LIGHTS:

- Lights will come on whenever opener is activated. Lights will stay on for 4 minutes and 15 seconds, or until the Light On/Off button on the wall control panel is pressed, whichever is sooner.
- Lights can be turned On and Off manually as described under operation of wall control panel.
- Lights will flash when the opener senses an obstruction either detected by the internal safety system or the photo eye. To stop lights from flashing, remove obstruction and operate door normally.

## 12. MODULAR RECEIVER

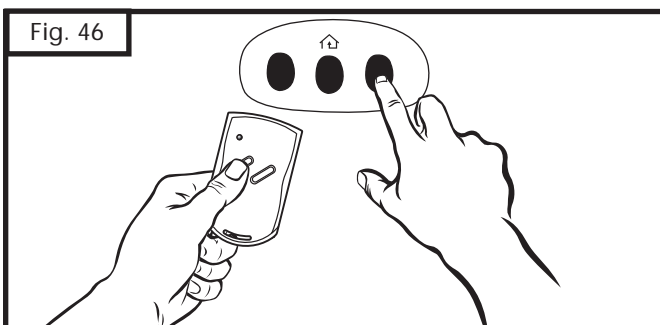


Operating range between transmitter and opener may be reduced by electrical interference or radio signals in the area, concrete, steel or lead in and around the garage. To improve operating range you can select the best frequency for each particular installation. Plugging-in receiver module will help you to make changes simpler and faster. To replace receiver simply pull out existing module located on the top of the chassis, and slide in the new one. (Fig. 45) It will make a clicking sound when the receiver module is locked into place.

**Note:** Each frequency receiver is supposed to have a matching transmitter. Reprogram the opener after you change the receiver module. (See section 7-15, p. 16).

## 13. HOMELINK® TRANSCIVER

Before you can use your car's HomeLink® device to open a garage door you must transfer an active code from the transmitter to the HomeLink® Universal transceiver. (Reference - HomeLink® Manual) (Fig. 46)



## 14. TENSION ADJUSTMENT

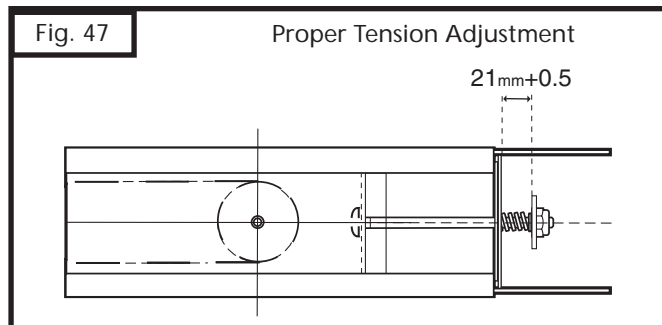
Your preassembled rail comes with the tension adjusted to factory specifications. There should be no need for further adjustment. However, if exposed or subjected to unusually harsh operating conditions, the tension may need to be readjusted during the life of the opener.

### CHECK PROPER TENSION:

- Release trolley from belt connector, then examine the setting of the tension adjustment at the header end of the rail.
- Proper tension is set when the tension nut is tightened just enough so that the washer will be spaced approximately 21mm or 13/16" from the rail end-plate. See Fig. 47
- If the gap between the washer and the rail end-plate is too big or too small, the tension needs to be adjusted.

### ADJUST THE TENSION:

- To increase the tension and tighten the belt or chain, turn the tension nut clockwise with 13mm or adjustable wrench until the washer is spaced properly from the rail end-plate. See Fig. 47.
- Once the washer is spaced correctly, any additional tightening will overtighten the belt and may cause damage to the system.
- To loosen the tension, turn nut counterclockwise.
- Reattach trolley.

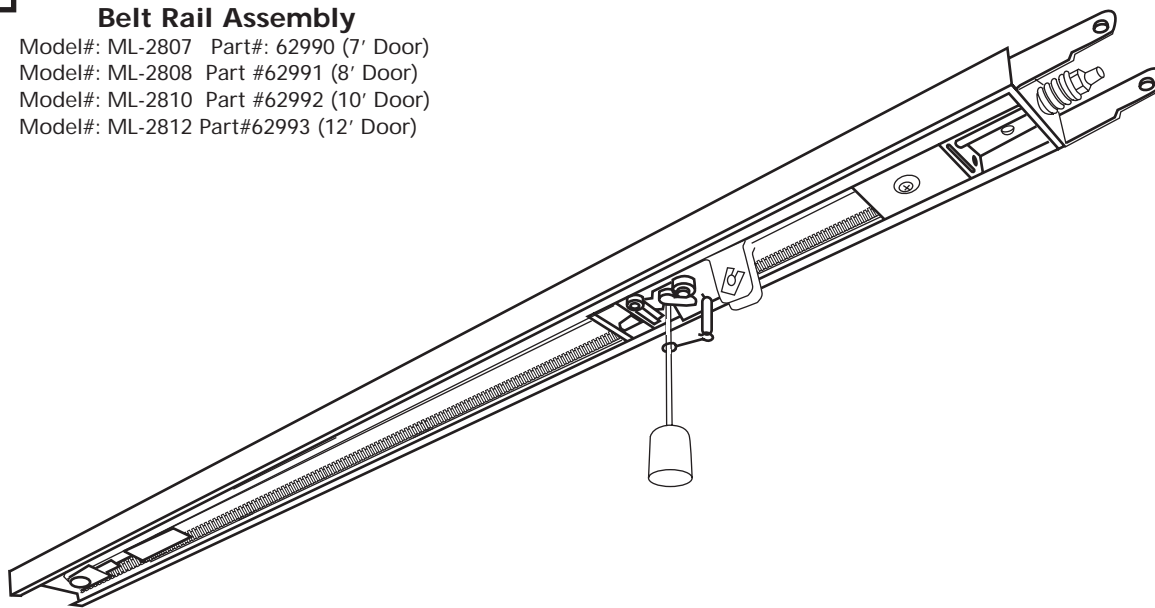


## 15. BELT DRIVE ASSEMBLY

Fig. 48

### Belt Rail Assembly

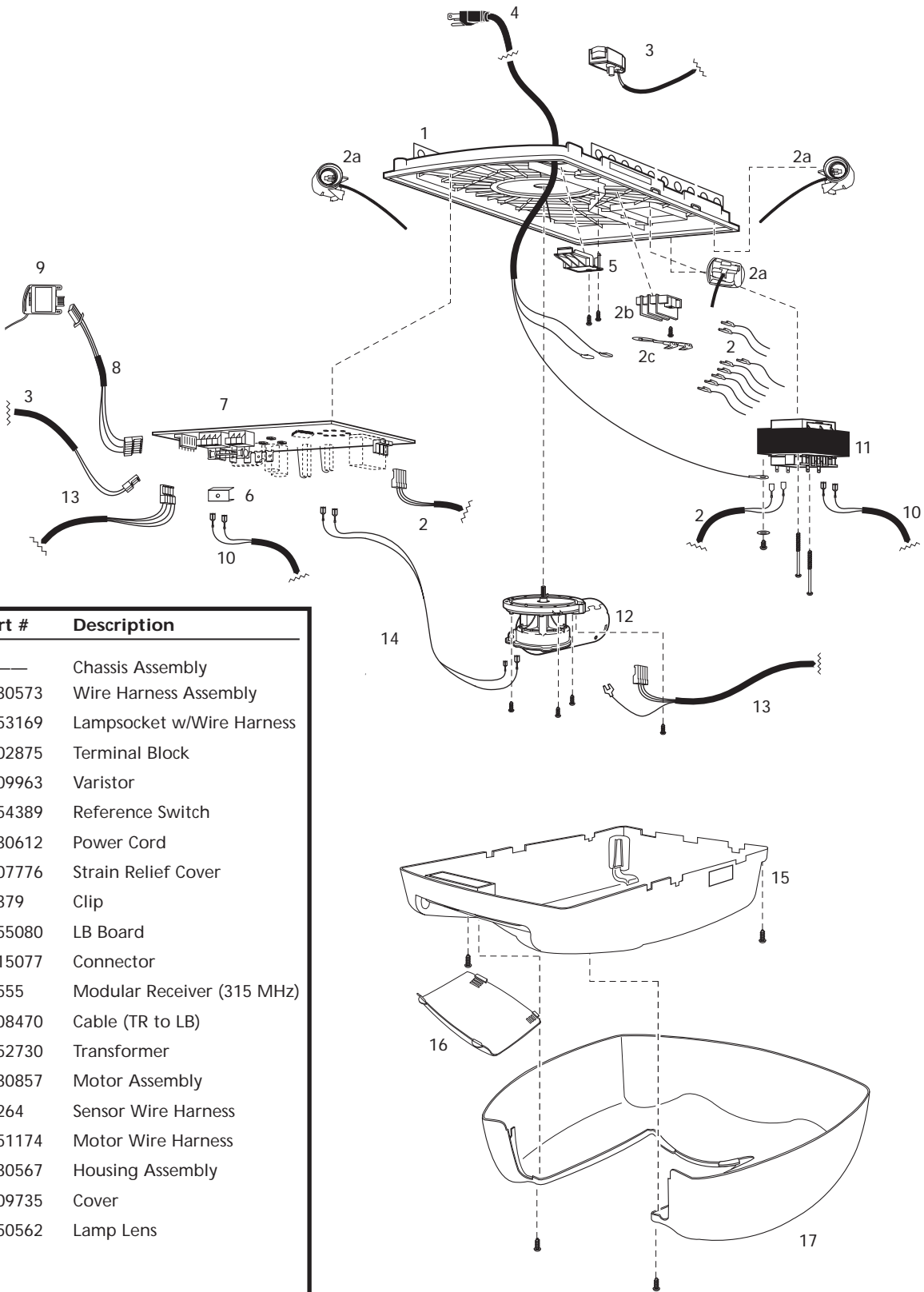
Model#: ML-2807 Part#: 62990 (7' Door)  
Model#: ML-2808 Part #62991 (8' Door)  
Model#: ML-2810 Part #62992 (10' Door)  
Model#: ML-2812 Part#62993 (12' Door)



# 16. POWER HEAD ASSEMBLY

Fig. 49

## Power Head Assembly

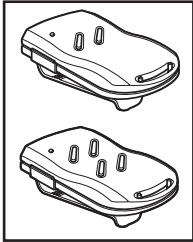


Item	Part #	Description
1	—	Chassis Assembly
2	8030573	Wire Harness Assembly
2a	8053169	Lampsocket w/Wire Harness
2b	8002875	Terminal Block
2c	8009963	Varistor
3	8054389	Reference Switch
4	8030612	Power Cord
5	8007776	Strain Relief Cover
6	60379	Clip
7	8055080	LB Board
8	8015077	Connector
9	62555	Modular Receiver (315 MHz)
10	8008470	Cable (TR to LB)
11	8052730	Transformer
12	8030857	Motor Assembly
13	61264	Sensor Wire Harness
14	8051174	Motor Wire Harness
15	8030567	Housing Assembly
16	8009735	Cover
17	8050562	Lamp Lens

## 17. ACCESSORIES

The following accessories are designed to provide added convenience, satisfaction and value to your door opener system. Accessories are available from your dealer. If you have difficulty locating available accessories, please contact us directly at the number listed on page 28 of this manual.

Fig. 50



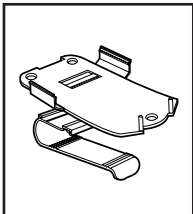
### MIDI & MINI TRANSMITTERS

- Advanced multibit technology for better, more secure signal transmission.
- Slim design  
MIDI-(2" W x 3-1/2" L).  
MINI-(1-1/2" W x 2-3/8" L).
- Complete with mounting bracket and visor clip.
- Permits control up to 4 separate openers or devices.
- Battery included.

MIDI TRANSMITTER		
Frequency	315MHz	
Description	Model #	Part #
2-Channel	ML-1312V	62674
4-Channel	ML-1314V	62678

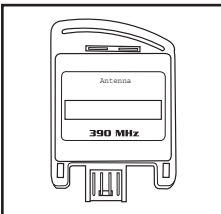
  

MINI TRANSMITTER		
Frequency	315MHz	
Description	Model #	Part #
2-Channel	ML-2312V	62768
4-Channel	ML-2314V	63428



### MIDI & MINI VISOR CLIP AND MOUNTING PLATE

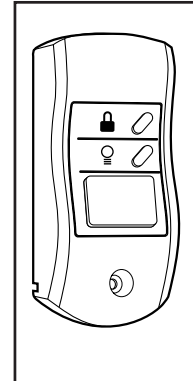
- Securely mounts transmitter to different surfaces and locations.
  - Leave your transmitter or take it with you.
- MIDI Model#: ML-900  
Prt#: 0047918
- MINI Model#: ML-910  
Prt#: 8030462



### MODULAR RECEIVER

- Plug in your choice of frequency which allows frequency changes to be simpler and faster.

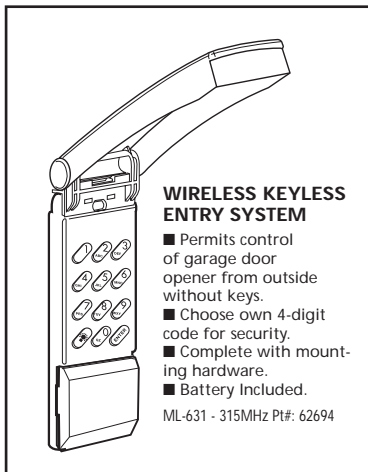
ML-831 315MHz Pt#: 62555



### WALL CONTROL PANEL

- Provides control buttons for Light and Vacation/Lock function.
- Illuminated door Pushbutton for easy locating in dark.
- Mounting hardware and wire included.

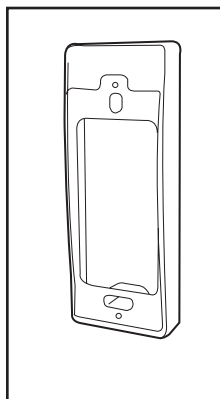
Model#: ML-543  
Part#: 0047304



### WIRELESS KEYLESS ENTRY SYSTEM

- Permits control of garage door opener from outside without keys.
- Choose own 4-digit code for security.
- Complete with mounting hardware.
- Battery Included.

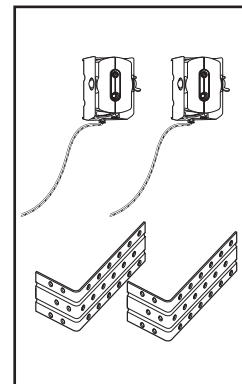
ML-631 - 315MHz Pt#: 62694



### WIRELESS KEYLESS SPACER PLATE

- Provides Wireless Keyless Isolation from metal surfaces.
- Complete with hardware kit.

Model#: ML-600  
Part#: 8030541



### PHOTO EYE SAFETY SYSTEM

- Provides a system of protection for you and your family.
- Designed to suit your particular garage environment.
- Mounting hardware and wiring included.
- Easy to Install.









Model#: ML-705  
Part#: 8014506

## 18. HAVING A PROBLEM?

SITUATION:	LIKELY CAUSE AND SOLUTION
<b>Opener does not operate from either wall control or transmitter:</b>	<ul style="list-style-type: none"> <li>■ Does opener have electric power? Plug a lamp into the electric outlet to see if lamp turns on. If not, check fuse box or circuit breaker (some outlets are controlled by wall switch).</li> <li>■ Have you disengaged all locks on door? If not, do so.</li> <li>■ The garage door spring may be broken. Have it replaced by a professional garage door technician.</li> <li>■ Has snow or ice built up under door? Door may be frozen to ground. Remove any restrictions.</li> </ul>
<b>Opener operates from transmitter but not from wall control:</b>	<ul style="list-style-type: none"> <li>■ Are wiring connections correct? Check wall control wiring on page 12.</li> <li>■ Is wall control door's Pushbutton lit? If not, disconnect low voltage wires to wall control and momentarily touch them together. If opener runs, replace wall control. If opener does not run, check wiring connections at opener, and check wire for shorts or breaks under staples.</li> </ul>
<b>Opener operates from wall control but not transmitter:</b>	<ul style="list-style-type: none"> <li>■ Is the wall control button light flashing? If so, your opener is in the vacation/lock mode. Turn off vacation/lock mode. Refer to "Wall Control Panel" on page 21.</li> <li>■ Does the transmitter indicator light glow when the transmitter button is pressed? If not, replace battery. Refer to "Installing the Battery" on page 19</li> <li>■ Has the opener learned the code of the transmitter? Repeat transmitter programming steps. Refer to "Transmitter Coding" on page 16.</li> <li>■ Have all transmitters been set with the same code? Repeat code learning procedure for all remote devices. Refer to "Multiple Transmitters" on page 19.</li> <li>■ Is photo eye obstructed? If so, door will only close while wall control door Pushbutton is pressed and held. Refer to "Align and Test Photo Eyes" on page 18.</li> </ul>
<b>Opener does not work from HomeLink®:</b>	<ul style="list-style-type: none"> <li>■ Has the HomeLink® Transceiver learned the code of the transmitter? Repeat programming steps (refer to HomeLink® Manual)</li> </ul>
<b>Door does not open completely:</b>	<ul style="list-style-type: none"> <li>■ Is something obstructing the door? Remove obstructions only after ensuring door area is free of persons, pets, and any other objects.</li> <li>■ If door has been working properly but now doesn't open all the way, reset the open travel limit or/and increase the up force (page 17). REPEAT "TEST SAFETY REVERSAL" (page 17) AFTER ADJUSTMENT IS COMPLETE.</li> </ul>
<b>Door does not close completely:</b>	<ul style="list-style-type: none"> <li>■ Is something obstructing the door or in the path of the photo eye? Remove obstructions only after ensuring door area is free of persons, pets, and any other objects.</li> <li>■ If door has been working properly but now doesn't close all the way, reset the close travel limit or/and increase the down force (page 17). REPEAT "TEST SAFETY REVERSAL" (page 17) AFTER ADJUSTMENT IS COMPLETE.</li> </ul>
<b>Door opens but will not close at all:</b>	<ul style="list-style-type: none"> <li>■ Check the photo eyes for proper connection and alignment (page 13 and 17).</li> <li>■ Increase force in down direction. REPEAT "TEST SAFETY REVERSAL" (page 17) AFTER ADJUSTMENT IS COMPLETE.</li> </ul>
<b>Door reverses for no apparent reason:</b>	<ul style="list-style-type: none"> <li>■ Is something obstructing the door? Pull emergency release knob and open door manually. If it is unbalanced or broken, call for professional garage door service.</li> <li>■ Clear ice or snow from garage floor area where garage door closes.</li> <li>■ Review and increase force adjustment setting for down travel (page 17).</li> <li>■ If door reverses from fully closed position, decrease travel limits (page 16).</li> <li>■ REPEAT "TEST SAFETY REVERSAL" (page 17) AFTER ADJUSTMENT IS COMPLETE.</li> </ul>
<b>Opener light does not turn on:</b>	<ul style="list-style-type: none"> <li>■ Replace the light bulb(s)—maximum 60 watts each. Use a "garage door opener light bulb" if regular type bulb burns out prematurely. Refer to page 11.</li> </ul>
<b>Opener strains or maximum force is needed to operate door:</b>	<ul style="list-style-type: none"> <li>■ Door may be out of balance or springs are broken. To check balance, close the door and use emergency release knob to disconnect trolley. Open and close door manually. A properly balanced door will hold itself halfway open while being supported entirely by its springs. If it does not or the spring is broken, call for professional garage door service. DO NOT increase the force to the opener to compensate for unbalanced or damaged door.</li> </ul>
<b>Opener won't work due to power failure:</b>	<ul style="list-style-type: none"> <li>■ Use the emergency release knob to disconnect trolley. Door can be opened and closed manually. When power is restored, reconnect trolley and resume automatic operation of door. Refer to "Check Emergency Release" on page 11.</li> </ul>

## 19. TROUBLESHOOTING —FOR PROFESSIONAL INSTALLER ONLY

The following information is intended for use by professional installers and service persons. When LED #3 is flashing during normal operation, more information can be found about the status of the GDO by pressing and releasing the “P” button once. This will display certain LEDs which will help diagnose the fault.

LED DISPLAY AFTER PRESSING “P”	CODE	PROBLEM	SOLUTION
#1 Flashes 	1	<ul style="list-style-type: none"> <li>Adjustments setting interrupted before completion.</li> </ul>	<ul style="list-style-type: none"> <li>Door can be operated normally. Recheck adjustments if adjustment settings were not completed. Refer to page 15.</li> </ul>
#2 Flashes 	2	<ul style="list-style-type: none"> <li>Defective Limit Switch.</li> </ul>	<ul style="list-style-type: none"> <li>Have opener serviced.</li> </ul>
#3 Flashes 	3	<ul style="list-style-type: none"> <li>Photo eye became obstructed during downward door travel.</li> </ul>	<ul style="list-style-type: none"> <li>Remove obstruction from path of door or align photo eyes. Refer to page 17.</li> </ul>
#4 Flash 	4	<ul style="list-style-type: none"> <li>Defective RPM sensor.</li> </ul>	<ul style="list-style-type: none"> <li>Have opener serviced.</li> </ul>
#1 + #4 Flashes 	5	<ul style="list-style-type: none"> <li>Force required to move door exceeded set force level.</li> </ul>	<ul style="list-style-type: none"> <li>Check door for obstructions, proper manual operation, proper balance, or broken springs. Clear obstructions or have door serviced.</li> <li>If door is OK, increase force setting. Refer to page 16. REPEAT THE “SAFETY REVERSAL TEST” (page 17) AFTER ADJUSTMENT IS COMPLETE.</li> </ul>
#3 + #4 Flashes 	7	<ul style="list-style-type: none"> <li>Opener exceeded maximum run time limit (30 seconds).</li> <li>Photo eye not connected properly.</li> <li>Photo eyes not aligned.</li> <li>Other photo eye fault.</li> </ul>	<ul style="list-style-type: none"> <li>Make sure rail is connected to opener head and belt or chain is moving.</li> <li>Check photo eye wiring and connections. Refer to page 13.</li> <li>Realign photo eyes. Refer to page 17.</li> <li>Replace photo eye.</li> </ul>
#1 + #3 + #4 Flashes 	8	<ul style="list-style-type: none"> <li>Force watchdog circuit found error.</li> <li>Power limit sensitivity exceeded.</li> <li>Self learned force limit exceeded.</li> </ul>	<ul style="list-style-type: none"> <li>Check door for obstructions, proper manual operation, proper balance, or broken springs. Clear obstructions.</li> <li>Readjust force (refer to page 16) and run opener up and down twice. REPEAT THE “SAFETY REVERSAL TEST” (page 17) AFTER ADJUSTMENT IS COMPLETE.</li> <li>Have opener serviced.</li> </ul>
All Flash 	10	<ul style="list-style-type: none"> <li>Internal control error.</li> </ul>	<ul style="list-style-type: none"> <li>Have opener serviced.</li> </ul>



