

23. WARRANTY INFORMATION

MARANTEC AMERICA CORPORATION
PROFESSIONAL SERIES GARAGE DOOR OPENER SYSTEM PRODUCT WARRANTY

M-4700 — Parts Lifetime Warranty* - Opener and Rail only (Labor not included)

M-4500 — Parts (15) Year Warranty* - Opener and Rail only (Labor not included)

COVERAGE: Any defect in material and or workmanship from personal, normal household use in accordance with the Owner's Manual.

WARRANTY OWNERSHIP: The warranty is limited to the consumer who originally purchased and/or registered the product.

MARANTEC AMERICA CORPORATION COMMITMENT: If the Marantec® product is found to be defective, we will repair or, at our option, replace it at no charge to the customer. We may elect to use new or reconditioned replacement parts or product of the same or similar design at that given time.

LIMITATIONS: This warranty becomes effective only upon proper registration of the product within 90 days of purchase of product. Marantec® will not be liable for loss or damage to property or any incidental or consequential loss or expense from property damage due directly or indirectly from the use of this product other than in the States that do not allow such exclusion of limitation. Marantec® will not cover batteries, light bulbs, unauthorized repair parts, installations, commercial use, damage while in transit, defects resulting from accidents, or resulting from alterations, lack of proper maintenance, unauthorized repair or modification of product, misuse or abuse of product, fire, flood, or acts of God, or other failures due to not properly following the *M-Line® Owner's Manual*. No labor costs are covered. This warranty applies only to Marantec®'s 120 Volt Garage Door Openers purchased and used in the United States, Canada, or Mexico. Marantec® under no circumstances will be liable for consequential, incidental or special damages arising in connection with the use, or inability to use, this product. In no event shall Marantec®'s liability for breach of warranty, breach of contract, negligence or strict liability exceed the cost of the product covered hereby. No person is authorized to assume for Marantec America Corporation any other liability in connection with the sale of this product.

WARRANTY SERVICE:

- Service From Authorized Dealers: Contact the source that sold you and/or installed your Garage Door Opener unit.
- Self Service: Call Marantec®'s Toll Free Helpline at: 1-888-622-2489 where a trained Marantec® representative will assist you in diagnosing and providing you with directions and parts to repair it yourself if possible.

This warranty is the only one Marantec® will give on a Marantec® Garage Door Opener and it sets forth all our responsibilities regarding the Marantec® product. There are no other expressed warranties.

Installation of the Marantec garage door opener system with unauthorized factory parts or accessories could cause improper operation of the opener and would void the warranty. This would also render the system not to comply with U.L. safety approval requirements hence constituting a safety hazard.

This warranty gives you specific legal rights, and you may also have other rights, which vary, from State to State.

*Lifetime warranty — Warranted for as long as the original purchaser of the GDO owns his/her home.

**Accessories — 1 year Warranty

24. NEED HELP OR SERVICE?

Need Help or Service?

For professional installation, service, or operating assistance, please contact your dealer or installer. They are available to answer your questions.

If for any reason you are having difficulty with the installation or operation of your garage door opener system, please dial our toll free number.

1-888-622-2489

How to Order Parts

Repair parts or accessories can be ordered by contacting your dealer or installer. When ordering parts or accessories, always provide the following information:

- Opener Model
- Part Number
- Part Name

If you have difficulty locating your dealer/installer or difficulty locating available parts or accessories, please call us directly at:

1-888-622-2489



M-4700
M-4500

Owner's Manual contains:

Installation, operating, maintenance & warranty instructions.

For residential use only.



Marantec America Corporation
 5705 Centerpoint Court, Gurnee, IL 60031 U.S.A.
 Phone 1-888-622-2489 • Fax 847-478-0348



Access Systems ➤ Automatically The Best Choice

www.marantecamerica.com

20. TROUBLESHOOTING — FOR PROFESSIONAL INSTALLER ONLY

The following information is intended for use by professional installers and service persons. When fault indicator LED #6 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
#6 Flashes 	6	<ul style="list-style-type: none"> Photo eye system became obstructed during downward door travel. 	<ul style="list-style-type: none"> Remove obstruction from path of door, or realign photo eye sensors. Refer to page 20.
#7 Flashes 	7	<ul style="list-style-type: none"> Adjustments setting interrupted before completion. 	<ul style="list-style-type: none"> Door can be operated normally. Recheck adjustments if adjustment settings were not completed. Refer to page 19.
#1 + #8 Flash 	9	<ul style="list-style-type: none"> Defective RPM sensor. 	<ul style="list-style-type: none"> Have opener serviced.
#2 + #8 Flash 	10	<ul style="list-style-type: none"> Force required to move door exceeded set force level. 	<ul style="list-style-type: none"> Check door for obstructions, proper manual operation, proper balance, or broken springs. Clear obstructions or have door serviced. If door is OK, increase force setting. REPEAT THE "SAFETY REVERSAL TEST" (page 19) AFTER ADJUSTMENT IS COMPLETE.
#3 + #8 Flash 	11	<ul style="list-style-type: none"> Opener exceeded maximum run time limit (30 seconds). 	<ul style="list-style-type: none"> Make sure rail is connected to opener head and belt or chain is moving.
#7 + #8 Flash 	15	<ul style="list-style-type: none"> Photo eye system not connected properly. Photo eye sensors not aligned. Other photo eye system faults. 	<ul style="list-style-type: none"> Check photo eye sensors wiring and connections. Refer to page 15. Realign photo eye sensors. Refer to page 20. Replace photo eye sensors.
#1 + #7 + #8 Flash 	16	<ul style="list-style-type: none"> Force watchdog circuit found error. 	<ul style="list-style-type: none"> Readjust force and run opener up and down twice. REPEAT THE "SAFETY REVERSAL TEST" (page 19) AFTER ADJUSTMENT IS COMPLETE. Have opener serviced.
#1 + #5 + #6 + #7 + #8 Flash 	27	<ul style="list-style-type: none"> Power limit sensitivity exceeded. 	<ul style="list-style-type: none"> Check door for obstructions, proper manual operation, proper balance, or broken springs. Clear obstructions or have door serviced. If needed.
#2 + #5 + #6 + #7 + #8 Flash 	28	<ul style="list-style-type: none"> Self learned force limit exceeded. 	<ul style="list-style-type: none"> Check door for obstructions, proper manual operation, proper balance, or broken springs. Clear obstructions or have door serviced. If needed.
All Flash	36	<ul style="list-style-type: none"> Internal control error. 	<ul style="list-style-type: none"> Have opener serviced.

1. INTRODUCTION

Congratulations on purchasing your Marantec® Professional Series Garage Door Opener System, the most innovative opener available today. This stylishly designed digital opener with a wide range of accessories is engineered to provide the smoothest, quietest and safest operation to compliment any home. Advanced technology results in the opener being capable of easily moving almost any properly balanced residential garage door, and at the same time providing state-of-the-art safety features to detect obstructions and to stop and reverse the door, thus helping to protect persons and property near the door.

2. ADVANCED FEATURES

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:** 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. During start-up, the door starts moving slowly and gradually ramps up to full speed for the full travel of your door. 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(patented):** Plug-in your choice of frequency module.
- 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.

3. 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, 60Hz 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

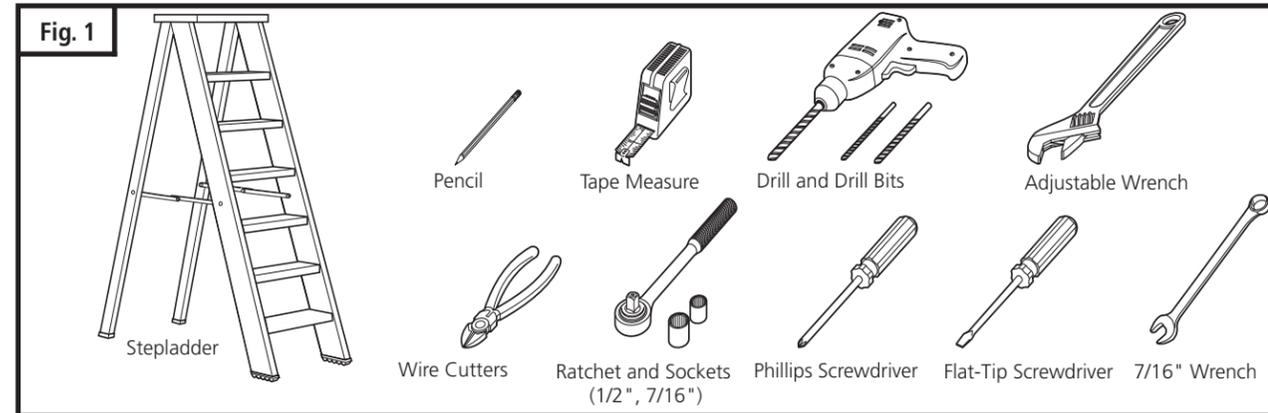
WARNING means that severe injury or death could result from failure to follow instructions.

CAUTION

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

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.



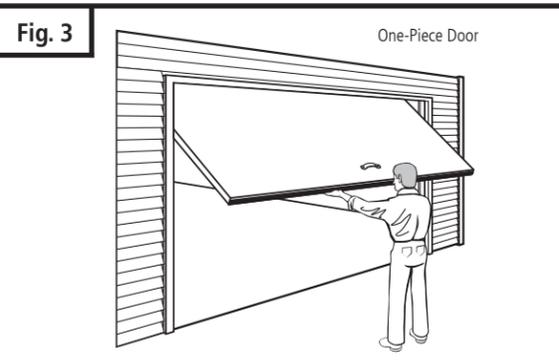
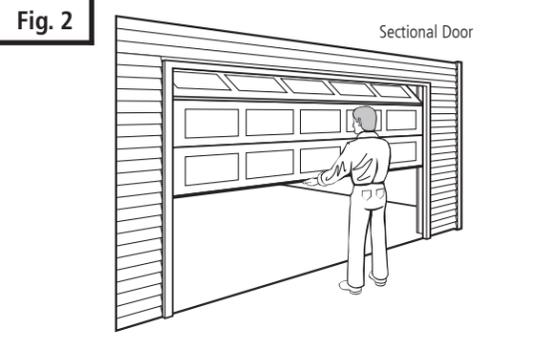
5. GARAGE

⚠ 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. 2 & 3. 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.
- If your door is over 7 ft. high, you will need a longer rail. See section "6. Rail Assembly" on p. 6 of this manual for availability of longer rails.



⚠ 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.

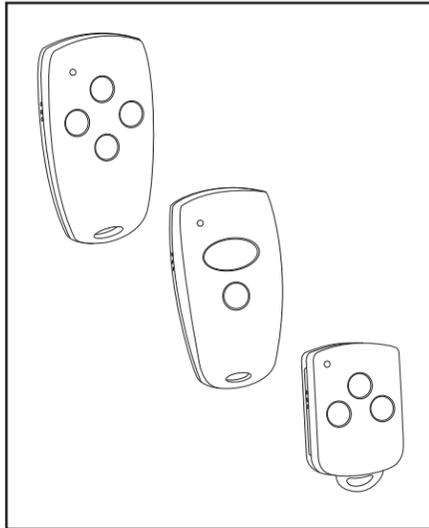
19. HAVING A PROBLEM?

SITUATION	LIKELY CAUSE AND SOLUTION
Opener does not operate from either wall control or transmitter:	<ul style="list-style-type: none"> ■ 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). ■ Have you disengaged all locks on door? If not, do so. ■ The garage door spring may be broken. Have it replaced by a professional garage door technician. ■ Has snow or ice built up under door? Door may be frozen to ground. Remove any restrictions.
Opener operates from transmitter but not from wall control:	<ul style="list-style-type: none"> ■ Are wiring connections correct? Check wall control wiring on page 15. ■ 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.
Opener operates from wall control but not transmitter:	<ul style="list-style-type: none"> ■ 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 23. ■ Does the transmitter indicator light glow when the transmitter button is pressed? If not, replace battery. Refer to "Battery Replacement" on page 22. ■ Has the opener learned the code of the transmitter? Repeat transmitter programming steps. Refer to "Transmitter Coding" on page 19. ■ Have all transmitters been set with the same code? Repeat code learning procedure for all remote devices. Refer to "Multiple Transmitters" on page 22. ■ Is photo eye system obstructed? If so, door will only close while wall control door Pushbutton is pressed and held. Refer to "Align and Test Photo Eye Sensors" on page 20.
Opener does not work from HomeLink®	<ul style="list-style-type: none"> ■ Has the HomeLink® Transceiver learned the code of the transmitter? Repeat programming steps (refer to HomeLink® Manual)
Door does not open completely:	<ul style="list-style-type: none"> ■ Is something obstructing the door? Remove obstructions only after ensuring door area is free of persons, pets, and any other objects. ■ 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 18). REPEAT "TEST SAFETY REVERSAL" (page 19) AFTER ADJUSTMENT IS COMPLETE.
Door does not close completely:	<ul style="list-style-type: none"> ■ Is something obstructing the door or in the path of the photo eye sensors? Remove obstructions only after ensuring door area is free of persons, pets, and any other objects. ■ 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 18 and 19). REPEAT "TEST SAFETY REVERSAL" (page 19) AFTER ADJUSTMENT IS COMPLETE.
Door opens but will not close at all:	<ul style="list-style-type: none"> ■ Check the photo eye sensors for proper connection and alignment (page 15 and 20). ■ Increase force in down direction. REPEAT "TEST SAFETY REVERSAL" (page 19) AFTER ADJUSTMENT IS COMPLETE.
Door reverses for no apparent reason:	<ul style="list-style-type: none"> ■ 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. ■ Clear ice or snow from garage floor area where garage door closes. ■ If door reverses from fully closed position, decrease travel limits (page 18). ■ Review and increase force adjustment setting for down travel (page 19). ■ REPEAT "TEST SAFETY REVERSAL" (page 19) AFTER ADJUSTMENT IS COMPLETE.
Opener light does not turn on	<ul style="list-style-type: none"> ■ Replace the light bulb(s) with a standard incandescent 60 watts maximum each. If the standard incandescent light bulb burns out prematurely, replace it with a garage door opener 60 watts incandescent light bulb. Refer to page 16 for replacement instruction.
Opener light does not turn off	<ul style="list-style-type: none"> ■ Is the wall control Light Feature on? Press Light Button to turn off. Refer to page 23.
Opener strains or maximum force is needed to operate door	<ul style="list-style-type: none"> ■ 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.
Opener does not move door at all:	<ul style="list-style-type: none"> ■ Door may be locked with a manual door lock. Remove any manual door locks. ■ Springs are broken or door is out of balance. (See "Situation" immediately preceding this one).
Opener won't work due to power failure	<ul style="list-style-type: none"> ■ 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 13.

18. 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 32 of this manual.

Fig. 61



Mine & Micro Transmitters

- Advanced multibit technology for better, more secure signal transmission.
- Battery included.
- Complete with visor clip.

- Battery included.
- Complete with visor clip.

- Complete with visor clip.

MINI

2 Channel Model#: M3-2312

4 Channel Model#: M3-2314

MICRO

3 Channel Model#: M3-3313

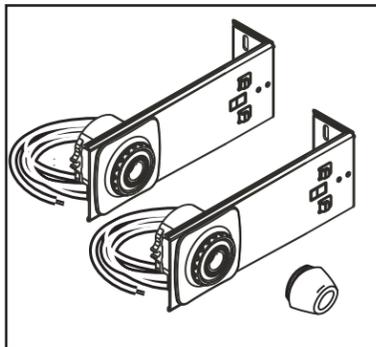
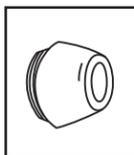


Photo Eye Safety System

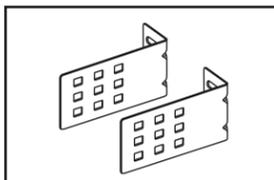
- Provides a system of protection for you and your family.
- Designed to suit your particular garage. Model#: M4-705

- Designed to suit your particular garage. Model#: M4-705



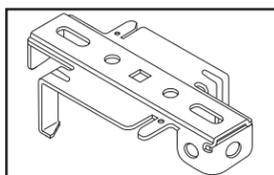
Lens Sunshield Extension

Part#: 73536



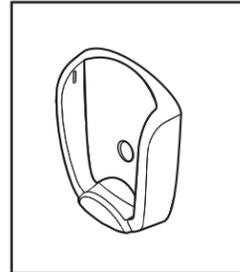
Extension Bracket Kit

- Hardware included Part#: 72802



Support Bracket

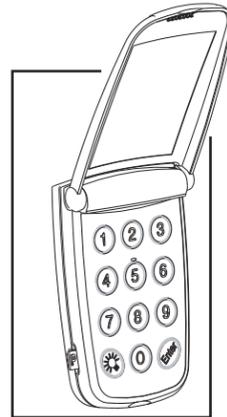
- Helps support rail 13' and longer. Part#: 71865



Mounting Plate

MINI

Model#: ML-920

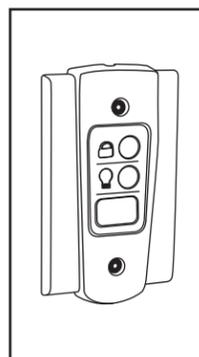


Wireless Keyless Entry System

- Permits control of garage door opener from outside without keys.
- 4-digit security PIN.
- Battery Included.
- Complete with mounting hardware. Model#: M3-631

- 4-digit security PIN.
- Battery Included.

- Battery Included.
- Complete with mounting hardware. Model#: M3-631



Wall Control Panel

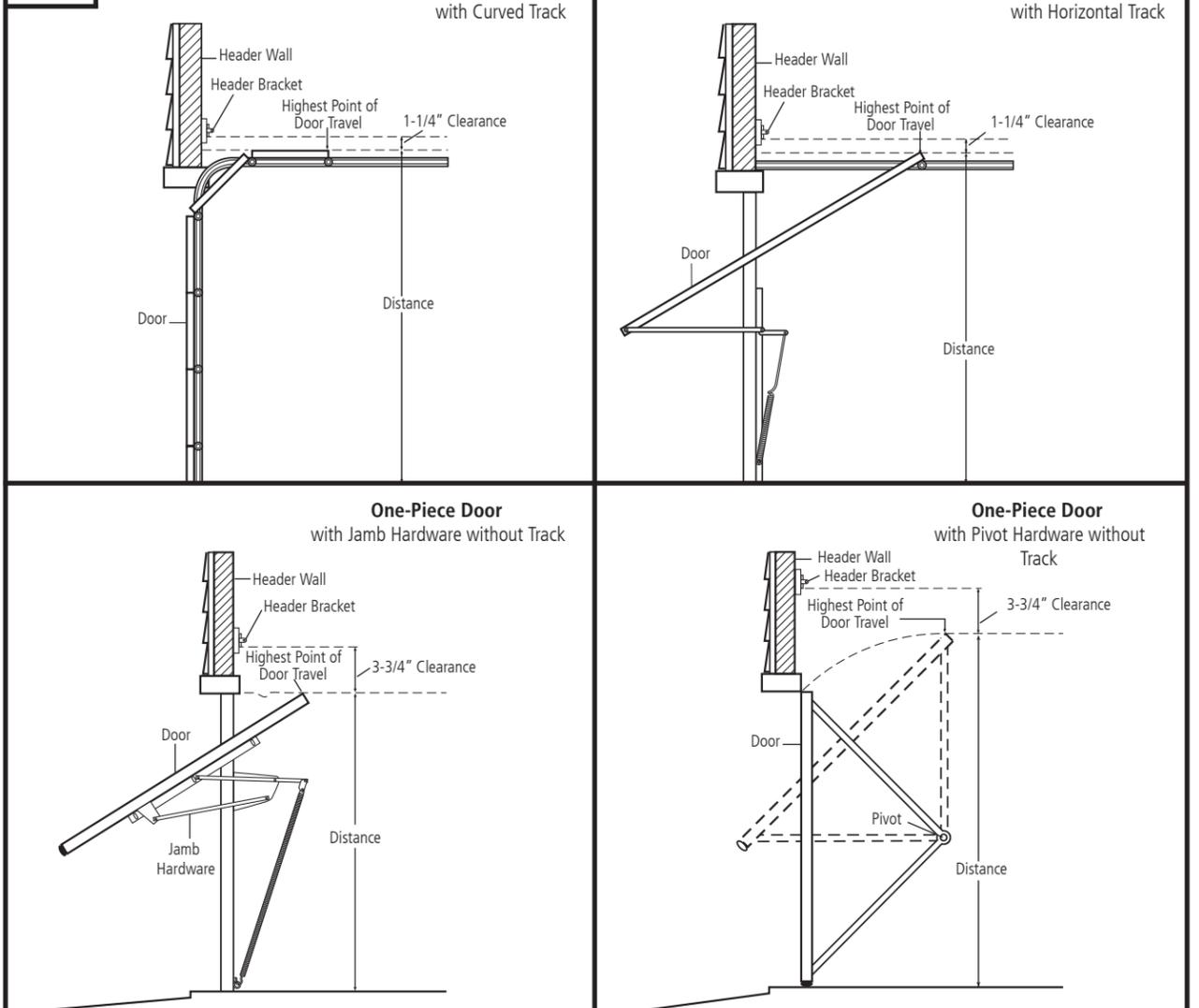
- Provides control buttons for Light and Vacation/Lock function.
- Illuminated door Pushbutton for easy locating in dark.
- Mounting hardware and wire included. Model#: M3-543

- Illuminated door Pushbutton for easy locating in dark.
- Mounting hardware and wire included. Model#: M3-543

5. GARAGE (cont'd)

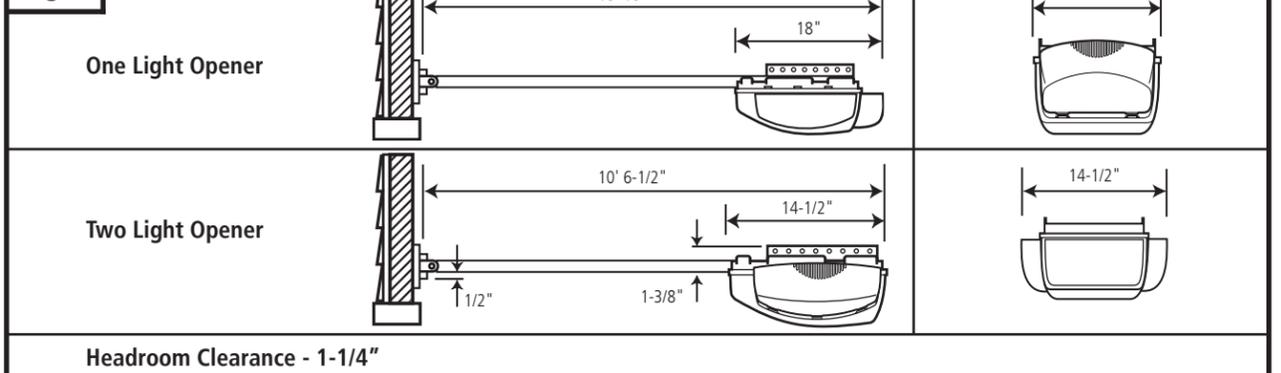
Check the type of door construction you have. The information contained in the figures below will be referred to later in the manual for proper installation on the different door types.

Fig. 4



GARAGE DOOR OPENER SYSTEM OVERALL DIMENSIONS (7' DOOR)

Fig. 5



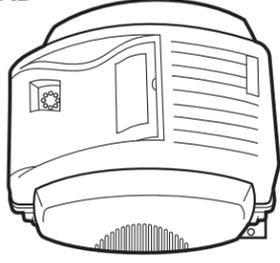
6. OPENER PACKAGE CONTENTS

The following items are included with your Garage Door Opener. All hardware components are located in the GDO carton. The accessories are packaged with their respective hardware in separate packs for ease of identification and use.

Items shown not actual size.

Fig. 6 POWER HEAD

M-4700
(Two Light Opener)



M-4500
(One Light Opener)

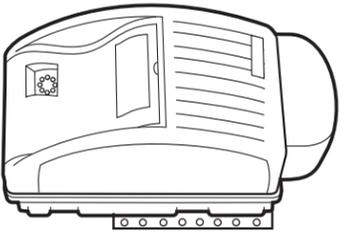
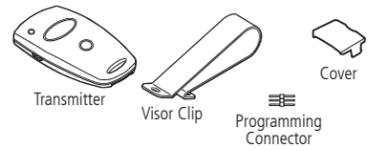


Fig. 7 ACCESSORIES

2-Channel Mini Transmitter



Wall Control Panel (with Hardware Kit)

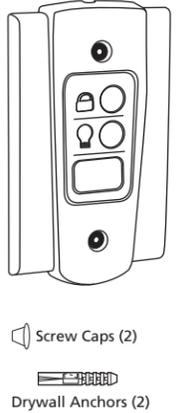
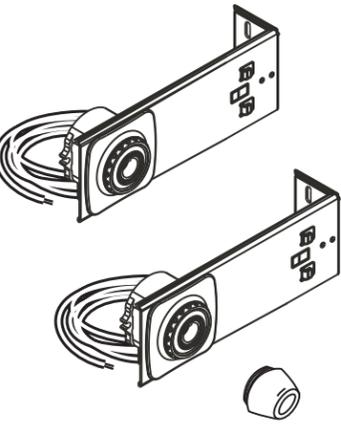
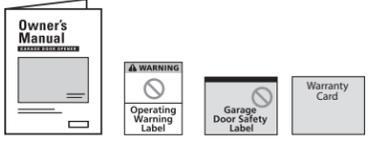


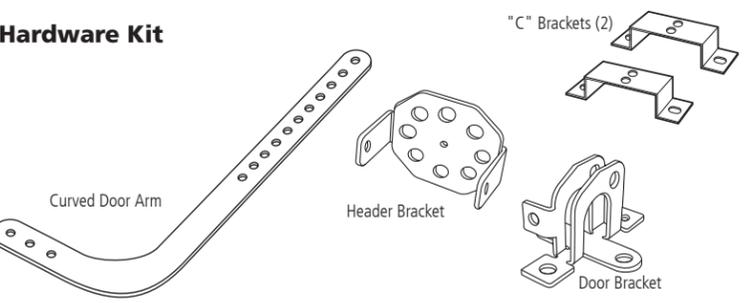
Photo Eye Safety System



Garage Door Opener Manual and Safety Labels



Hardware Kit



- Plastite Screw (4): 6 X 14
- Clevis Pin (1): 5/16" x 7/8" Cotter Ring (1)
- Clevis Pin (1): 1/4" x 3-1/4" Cotter Ring (1)
- Carriage Bolt (2): 1/4" - 20 x 2"
- Lock Washer (2): 1/4"
- Hex Nut (2): 1/4" - 20
- Lag Screw (2): 5/16" x 1-5/8"
- Lag Screw (4): 1/4" x 1-1/2"
- Hex Bolt (2): 5/16" - 18 x 3/4"
- Lock Nut (2): 5/16" - 18
- Hex Head Tek Screw (2): 1/4 x 3/4"

Fig. 8 RAIL ASSEMBLY
(packaged in separate carton)

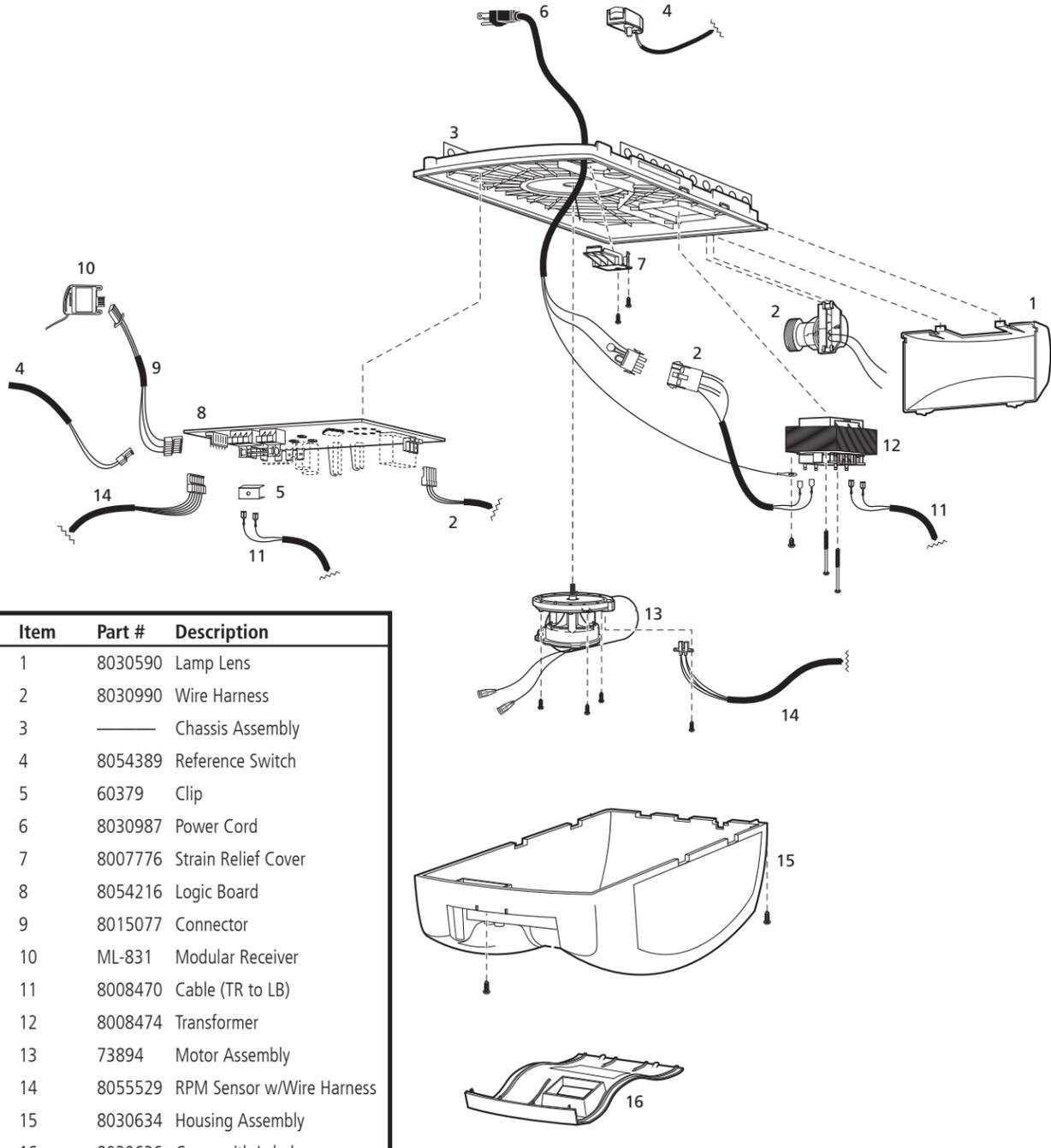


Models (per application)	Belt	Chain
7' Door	ML-807B	ML-807C
8' Door	ML-808B	ML-808C
10' Door	ML-810B	ML-810C

17. POWER HEAD ASSEMBLY (cont'd)

Fig. 60

M-4500 Power Head



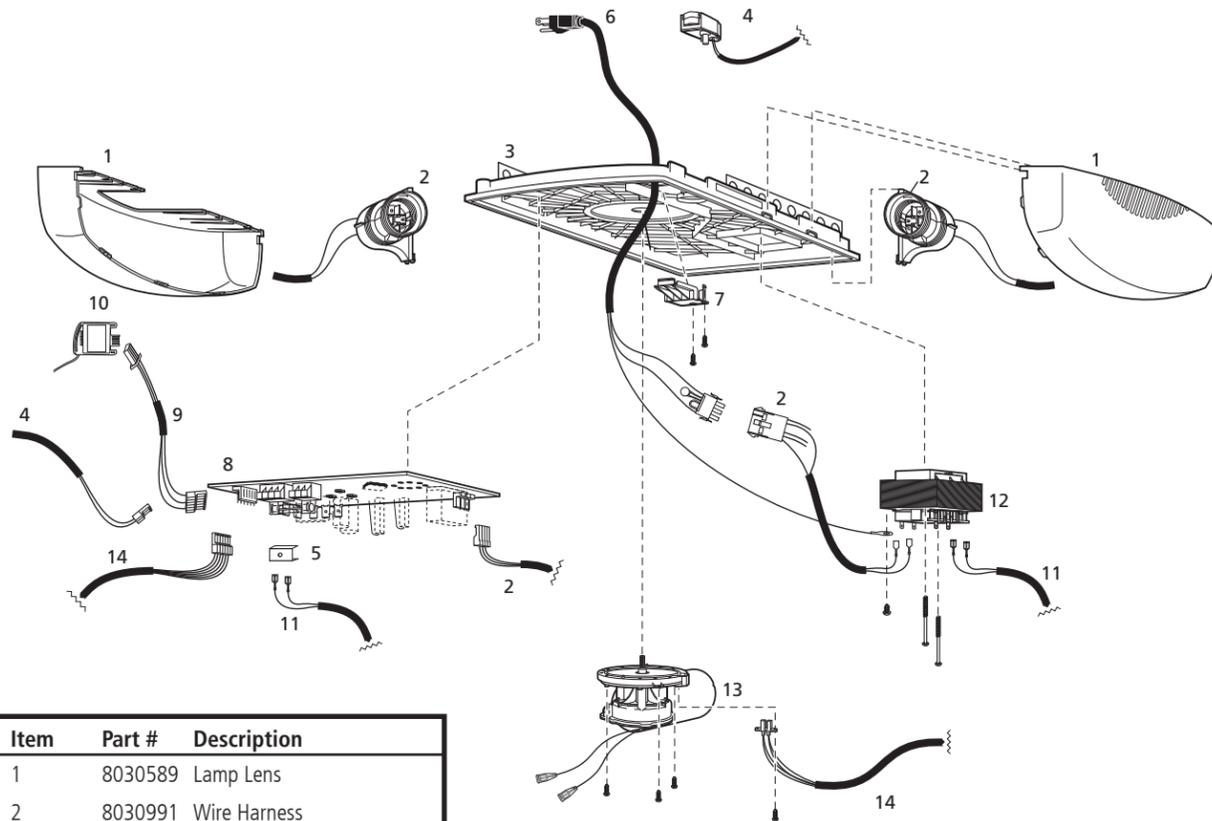
The diagram shows the assembly of the M-4500 Power Head. It includes a logic board (8) with various components like a lamp lens (1), wire harness (2), chassis assembly (3), reference switch (4), clip (5), power cord (6), strain relief cover (7), modular receiver (10), connector (9), transformer (12), motor assembly (13), RPM sensor (14), housing assembly (15), and cover with label (16). The diagram shows the internal wiring and the placement of these components within the housing.

Item	Part #	Description
1	8030590	Lamp Lens
2	8030990	Wire Harness
3	—	Chassis Assembly
4	8054389	Reference Switch
5	60379	Clip
6	8030987	Power Cord
7	8007776	Strain Relief Cover
8	8054216	Logic Board
9	8015077	Connector
10	ML-831	Modular Receiver
11	8008470	Cable (TR to LB)
12	8008474	Transformer
13	73894	Motor Assembly
14	8055529	RPM Sensor w/Wire Harness
15	8030634	Housing Assembly
16	8030636	Cover with Label

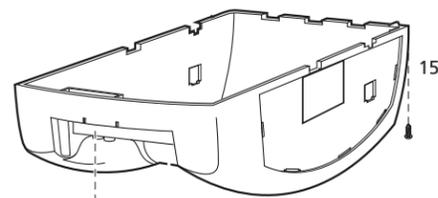
17. POWER HEAD ASSEMBLY

Fig. 59

M-4700 Power Head



Item	Part #	Description
1	8030589	Lamp Lens
2	8030991	Wire Harness
3	—	Chassis Assembly
4	8054389	Reference Switch
5	60379	Clip
6	8030987	Power Cord
7	8007776	Strain Relief Cover
8	8054216	Logic Board
9	8015077	Connector
10	ML-831	Modular Receiver
11	8008470	Cable (TR to LB)
12	8003273	Transformer
13	73894	Motor Assembly
14	8055529	RPM Sensor w/Wire Harness
15	8030635	Housing Assembly
16	8030637	Cover with Label



7. IMPORTANT INSTALLATION INSTRUCTIONS

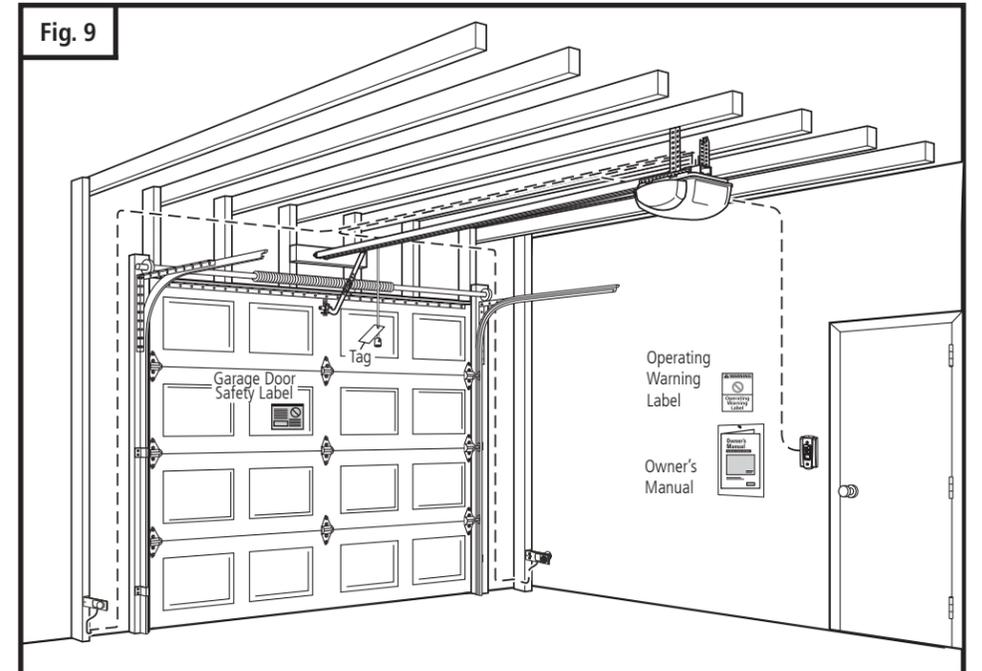


IMPORTANT INSTALLATION INSTRUCTIONS TO REDUCE THE RISK OF SEVERE INJURY OR DEATH:

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 disable 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: (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 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 21.

Fig. 9



Shown on the right is an overall view of a completed garage door opener system installed on a sectional door. The arrangement is similar for a one-piece door (except for differences described later in this manual).

8. INSTALLATION STEPS

Identify a sound structural support on header wall above garage door for header bracket mounting. See Fig. 11. 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.

8-1. 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. 10).
- 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:

(Review Figs. on p. 5 for details)

- Open door to its highest travel point and measure from the garage floor to the top of door.
- Write down this distance.

FOR SECTIONAL DOORS AND ONE-PIECE DOORS WITH HORIZONTAL TRACK:

Add 1-1/4" to the door travel height (measured above).

FOR ONE-PIECE DOORS WITHOUT TRACK:

Add 3-3/4" to the door travel height (measured above).

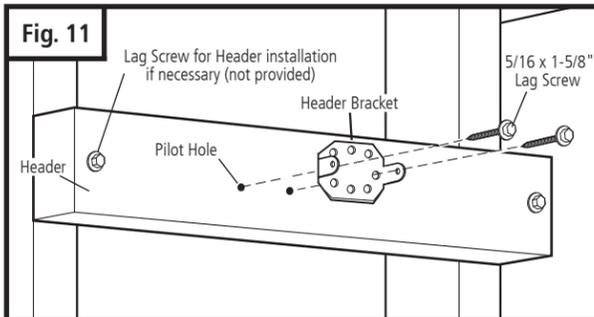
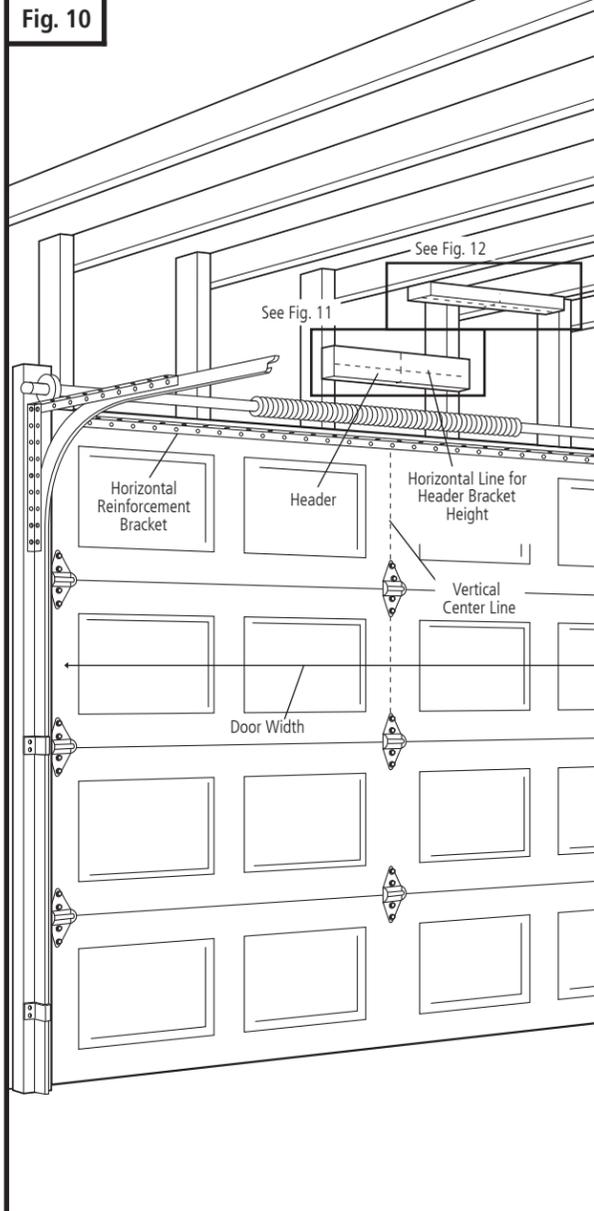
MARK HORIZONTAL LINE FOR HEADER BRACKET LOCATION:

- 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.

8-2. 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.



16. RAIL ASSEMBLY

Fig. 57

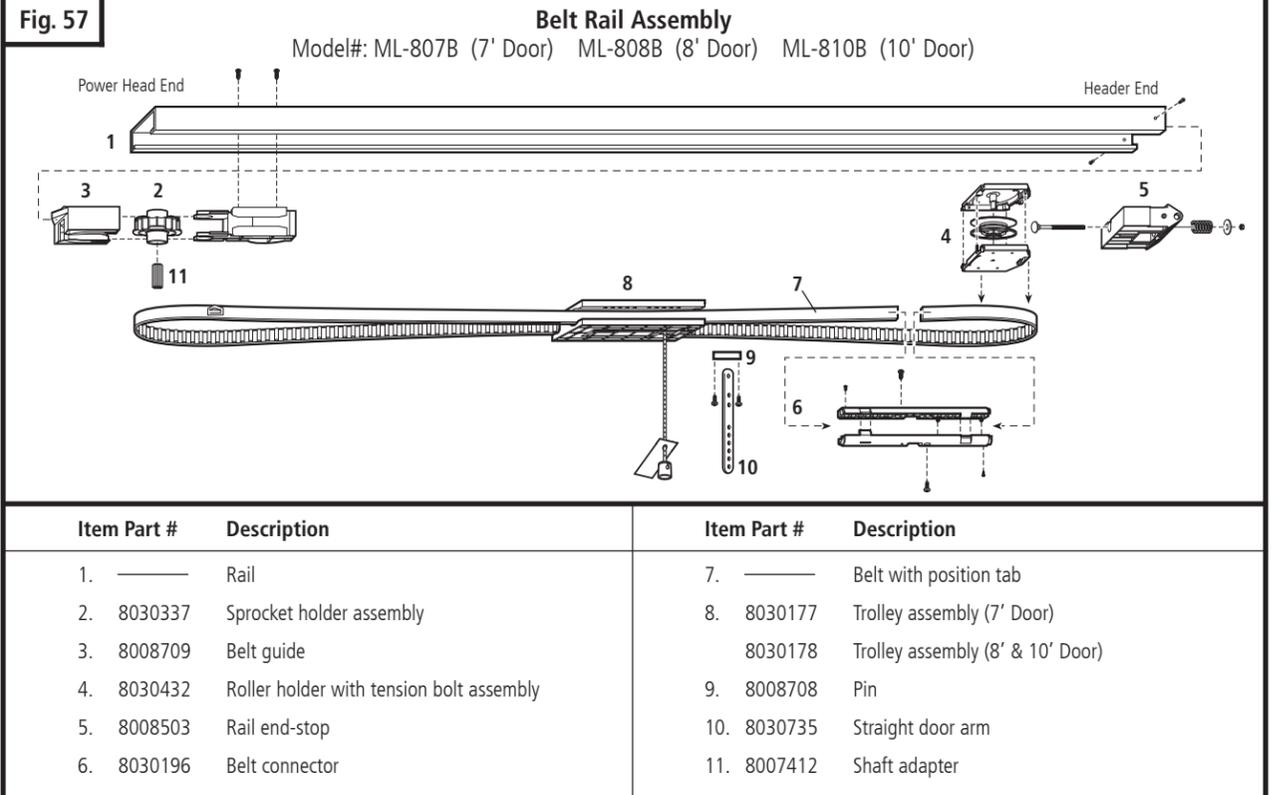
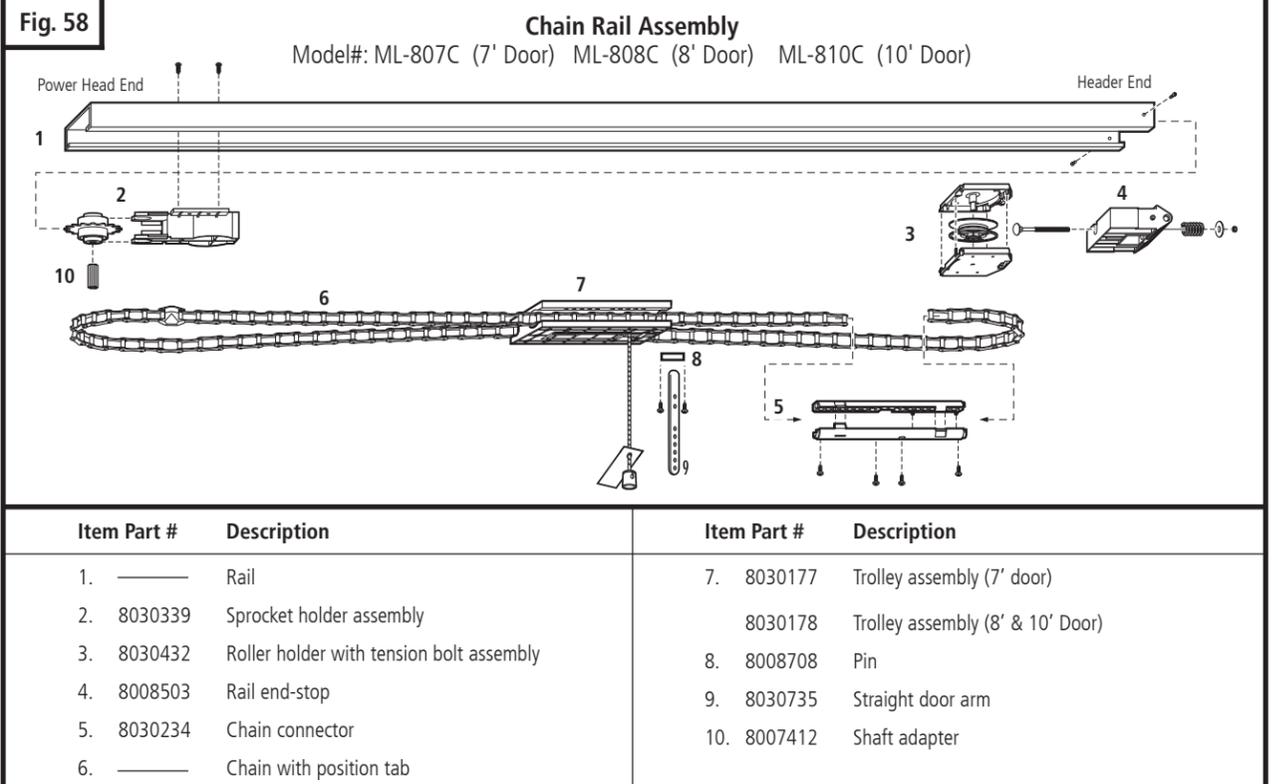


Fig. 58



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 (Fig. 55):

- Release trolley from belt or chain, 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 1mm or 3/64" from the stationary rail end-stop arch.
- If the gap between the washer and the rail end-stop arch 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 7/16" wrench until the washer is spaced properly from the rail end-stop arch. See Fig. 55.
- Once the washer is spaced correctly, any additional tightening will overtighten the belt or chain and may cause damage to the system.
- To loosen the tension, turn nut counterclockwise.
- Reattach trolley.

15. RAIL LENGTH ADJUSTMENT

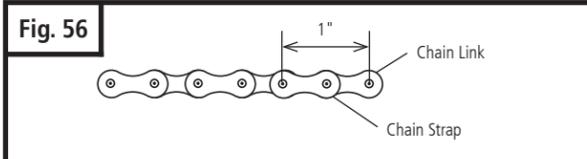
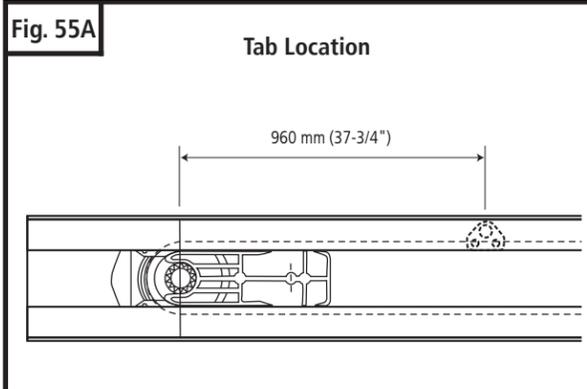
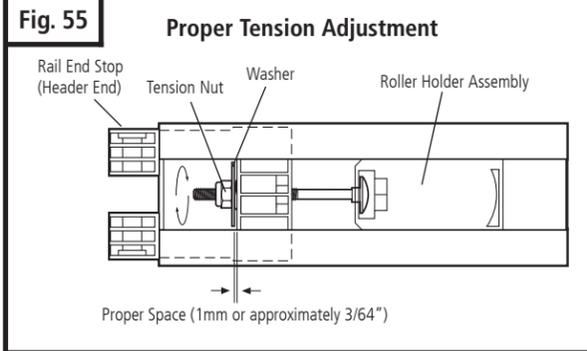
FOR PROFESSIONAL INSTALLERS ONLY

If your particular installation calls for a shorter rail than the standard length provided, it is possible to shorten the rail.

NOTE: Shortening rail too much may result in door travel length reduction and door not opening fully. This depends on door size and configuration. Carefully plan all such modifications before proceeding. THIS PROCEDURE SHOULD BE PERFORMED ONLY BY A PROFESSIONAL INSTALLER FULLY FAMILIAR WITH THIS TYPE OF OPENER SYSTEM.

TO SHORTEN BELT RAIL LENGTH:

- Loosen belt tension as much as possible.
- Remove screws from sprocket holder and rail end-stop.
- Slide belt and all rail parts out of rail from header end. See rail exploded view, Fig. 57 on p. 25, for disassembly details.
- Measure and cut off excess rail from header end.
- Using rail end-stop as a guide, mark and drill two 3/16" holes on rail sides for rail end-stop screws.
- Disassemble connector to expose free ends of belt.
- Using the same measurement as the excess rail length, cut the same amount off BOTH free ends of the belt.
- Reassemble belt connector, and slide all rail parts into rail from header end according to original assembly (Fig. 55 and Fig. 55A).
- Tension belt properly (Fig. 55).
- Check rail for proper assembly and operation by manually moving trolley from end to end and back to position per Fig. 55A, with trolley connected to belt.



TO SHORTEN CHAIN RIAL LENGTH:

- Loosen chain tension as much as possible.
- Remove screws from sprocket holder and rail end-stop.
- Slide chain and all rail parts out of rail from header end. See rail exploded view, Fig. 58 on p. 25, for disassembly details.
- Measure and cut off excess rail from header end by 1" increment only.
- Using rail end-stop as a guide, mark and drill two 3/16" holes on rail sides for rail end-stop screws.
- Disassemble connector to expose free ends of chain.
- Using the same measurement as the excess rail length, remove the same amount off chain links and chain straps from BOTH free ends of the chain (Fig. 56).
- Reassemble two piece connector and slide chain and all rail parts into rail from header end according to original assembly (Fig. 55 and Fig. 55A).
- Tension chain properly (Fig. 55).
- Check rail for proper assembly and operation by manually moving trolley from end to end and back to position per Fig. 55A, with trolley connected to chain.

8-2. INSTALL HEADER BRACKET (cont'd)

- Mark pilot holes location on header through header bracket holes where lag screws will be inserted.
- IMPORTANT:** See Fig. 11 for which header bracket holes to use.
- Drill 3/16" pilot holes into header, and 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. 11) 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.

8-3. INSTALL DOOR BRACKET TO DOOR

A. FOR SECTIONAL DOORS:

Wood Sectional Doors (Fig. 14)

- Position door bracket (Fig. 13) 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") from the outside through door and bracket, then secure with lock washers and nuts from the inside.
- Tighten nuts firmly.

Metal Sectional Doors

- Attach door bracket with two teck screws (provided) per Door manufacturer recommendations.

B. FOR ONE-PIECE DOORS:

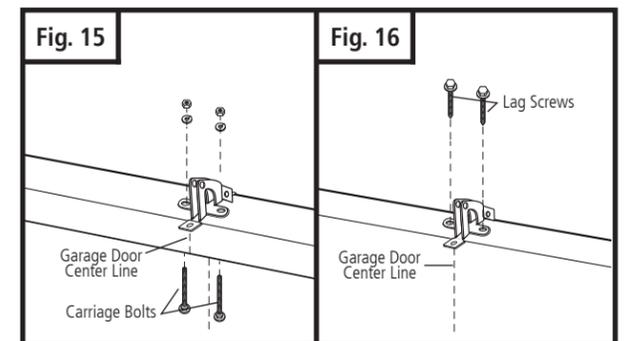
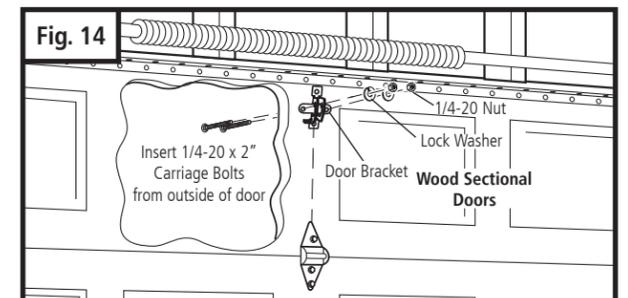
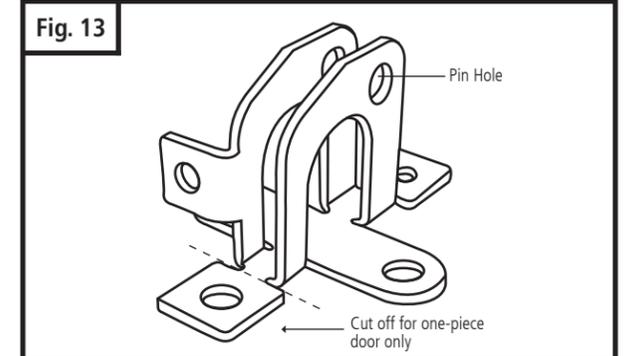
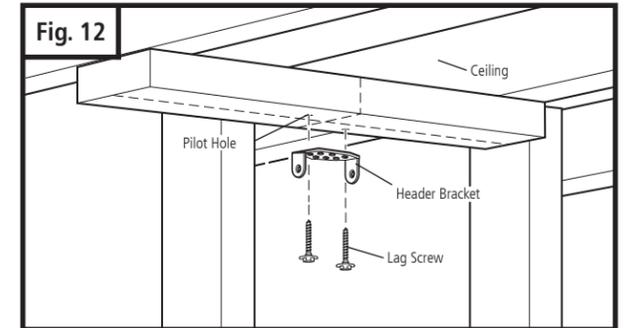
Before starting the installation of the door bracket, cut off mounting leg from opposite side of pin hole.

One-Piece Doors with Exposed Frames (Fig. 15)

- Position center of door bracket on the center line on the top edge of door.
- Mark the position where carriage bolts will go through bracket, and drill two 1/4" holes through top frame of door.
- Install carriage bolts from the bottom, through door frame and bracket, and secure with lock washer and nut from top.
- Tighten nuts firmly.

One-Piece Doors without Exposed Frames (Fig. 16)

- For doors without exposed frames, use alternate method of mounting door bracket.
- Mark and drill two 3/16" pilot holes into top of frame, then secure bracket with 5/16" x 1-5/8" lag screws (not provided).



One-Piece Door with Exposed Frame: Install with Carriage Bolts

One-Piece Door without Exposed Frame: Install with Lag Screws(not provided)

8-4. ATTACH RAIL TO OPENER HEAD

WARNING

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.

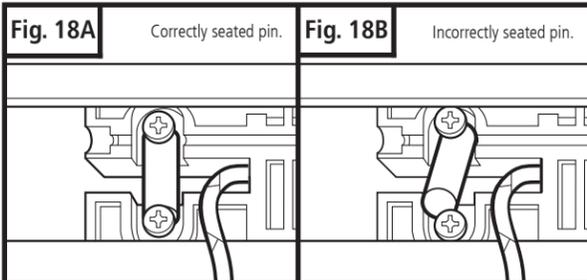
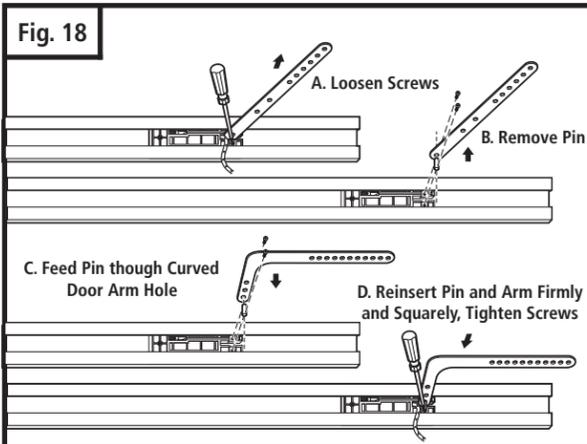
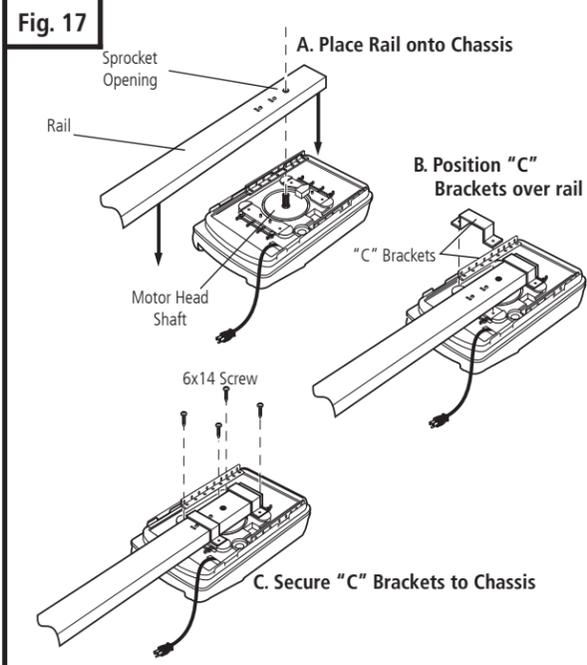
NOTE: Rail comes fully preassembled with straight door arm already attached.

- Unpack one-piece preassembled rail.
- Leave straight door arm taped inside rail for safe and convenient installation—it will be untaped and used later.
- 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. 17A). 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. 17B).
- Insert screws (6 x 14) through bracket holes and into chassis holes, and tighten screws firmly to hold rail to head (Fig. 17C).
- For sectional doors, proceed to step 8-5.

ADDITIONAL STEP FOR ONE-PIECE DOORS ONLY:

IMPORTANT NOTE: For installation on One-Piece Doors only, the straight door arm that is factory installed onto the rail must be replaced by the curved door arm supplied as part of hardware in powerhead box. This must be done after attaching rail to powerhead, before moving to step 8-5.

- Turn rail and opener head over so that open channel in rail faces up.
- Untape straight door arm that is secured inside rail.
- Remove and save the two phillips head screws that are securing the door arm pin and straight door arm (Fig. 18).
- Lift arm and pin straight out of slot in trolley, and remove pin from straight door arm.
- Insert pin into short side of curved door arm as shown.
- Orient arm so that long side extends away from trolley.
- Carefully insert pin and door arm into slot in trolley. Push pin into slot with door arm so pin is fully seated into trolley slot. **IMPORTANT:** Pin must be straight and seated properly into recessed area in trolley. See Figs. 18A and 18B.
- Secure pin and curved arm with the two phillips screws which were removed from trolley—DO NOT use any other screws. Tighten screws firmly.
- Turn rail and powerhead over so that open channel in rail faces down. Now proceed to Step 8-5.



11. OPERATION OF YOUR OPENER

Your opener can be activated via any of the following, depending on which accessories your opener system has:

- Remote Control Transmitter
- Wall Control Panel
- Keyless Entry (optional accessory)

REMOTE CONTROL TRANSMITTER:

- To open or close garage door, press and hold button (Transmitter has an indicator light that will illuminate). See Fig. 52A. 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.

WALL CONTROL PANEL:

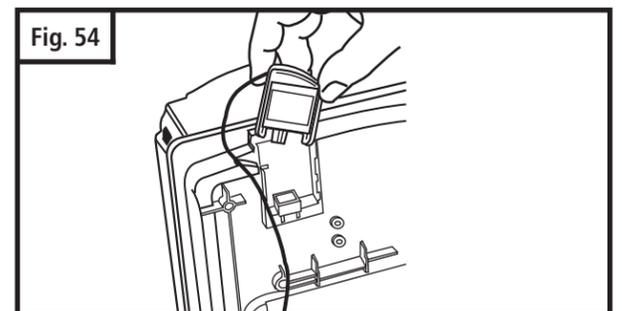
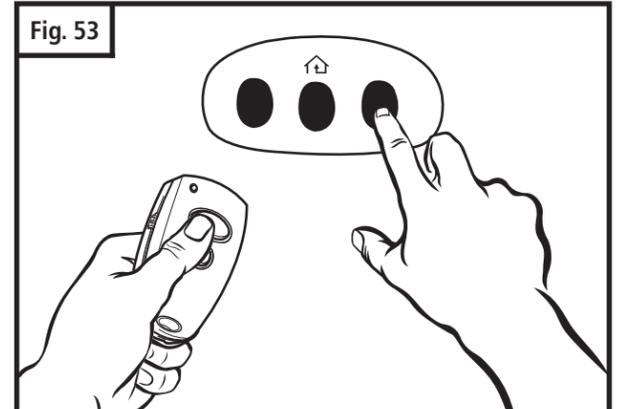
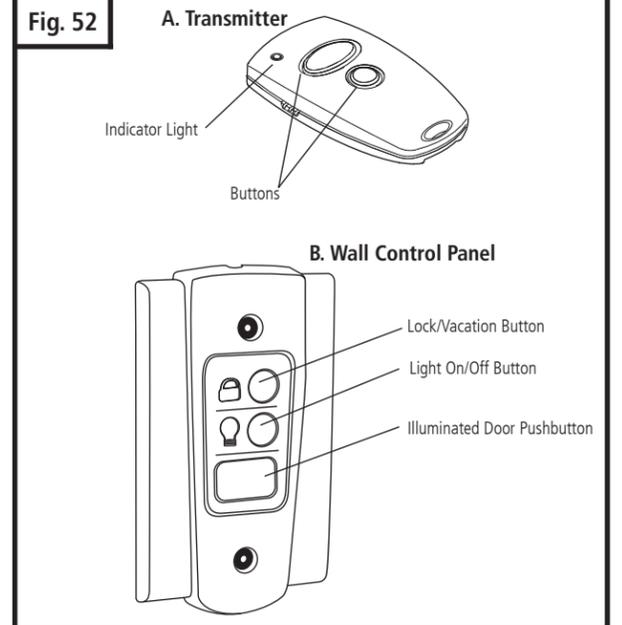
- The Door Pushbutton will light when Wall Control properly connected (if it does not light up, review section 8-11. "Install Wall Control" on page 15 or refer to "Having a Problem" on page 29). To open or close garage door, press and hold Illuminated Door Pushbutton. See Fig. 52B. When garage door begins 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. 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) (See Fig. 53)



13. MODULAR RECEIVER

To replace modular receiver simply pull out existing module located on the top of the chassis, and slide in the new one. It will make a clicking sound when the receiver module is locked into place. (See Fig. 54)

10. TRANSMITTERS

TRANSMITTERS (Fig. 46):

A family of state-of-the-art transmitters, each transmitter is custom encoded with installed battery. Offered in two styles to suit your personal preference.

- Mini (2-or 4-channel)
- Micro (3-channel) with keyring attachment.

TRANSMITTER MOUNTING:

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

Visor Clip (Fig. 47)

- Snap visor clip into transmitter.
- Affix assembly to visor.

NOTE: If you do not need the visor clip, install the visor compartment cover.

Mounting Plate (Fig. 48)

- Secure the mounting plate to area of preference using screw and anchor.
- Snap the visor compartment cover.
- Slide the transmitter into the mounting plate, which will hold it firmly in place.

MULTIPLE TRANSMITTERS (Fig. 49):

Each transmitter comes factory programmed with random codes. 2-channel transmitters have 2 different random codes, one per button, 3-channel transmitters have 3 different random codes and 4-channel transmitters have 4 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, which you are already using. Below are instructions for transferring an active code from a button on one transmitter to a button of your choice on another transmitter.

- Connect the transmitter with active code to the new transmitter using the programming connector. (Fig 49)
- Press and hold the selected channel button on the transmitter with the active code.
- Press and hold the respective channel button on the new transmitter. The light in the transmitter initially starts blinking and then illuminates continuously after 1-2 sec. Code transfer is completed.
- Programming connector can be removed and both transmitters can now be used to operate the same opener.

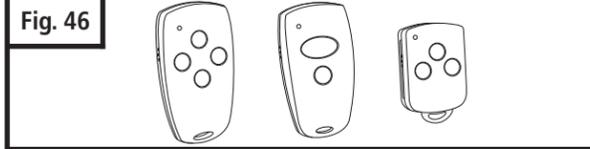
NOTE: For multi-button transmitters, be sure to carry out this procedure for all the buttons you desire to use.

CHANGING THE CODE (Fig. 50):

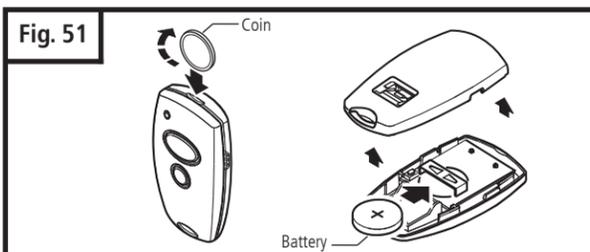
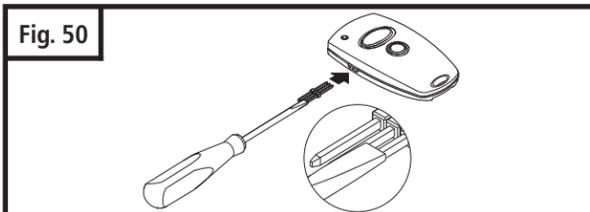
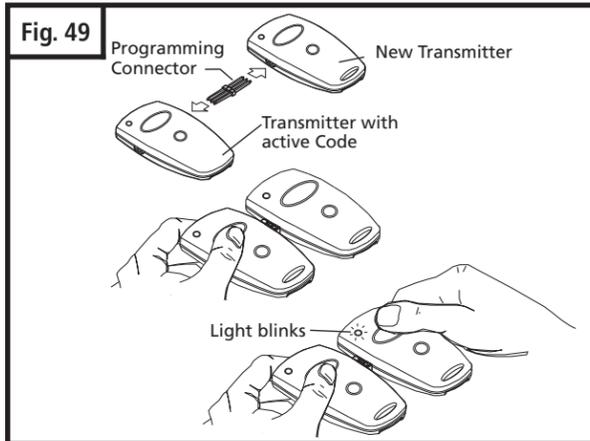
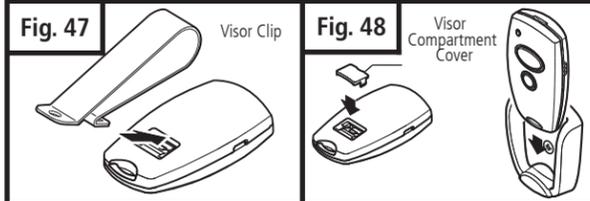
The transmitter factory preset code can be changed as follows:

- Insert the programming connector into transmitter terminal.
- Short one of the outer pins of the programming connector with the middle pin.
- Press and hold the respective channel button. The light will blink rapidly for approximately 5 sec. Release the button after the light illuminates continuously. Code will change in approximately 2 seconds.
- Remove the programming connector.

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



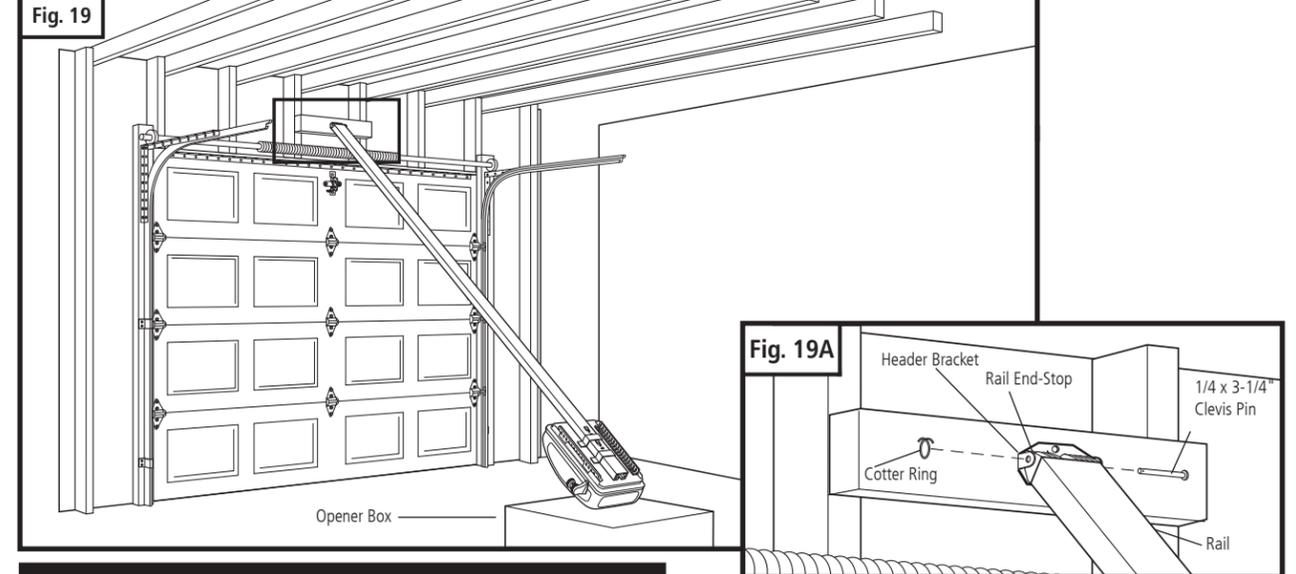
FCC Certified: This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.



BATTERY REPLACEMENT (Fig. 51):

- Open the transmitter by using small coin.
- Insert a 3V battery (type CR2032) as shown.
- Close the transmitter.

NOTE: Replace batteries with same type only.



8-5. 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 end-stop within the openings in the header bracket. Insert header clevis pin (1/4" dia.) through header bracket and rail end-stop, then attach cotter ring to end of pin. (See Fig. 19A)

8-6. POSITION OPENER FOR MOUNTING

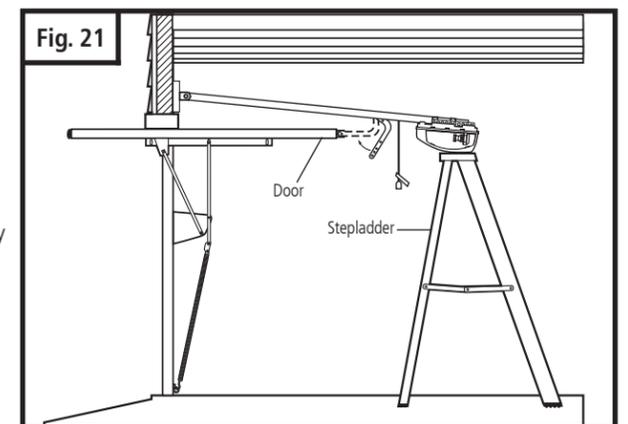
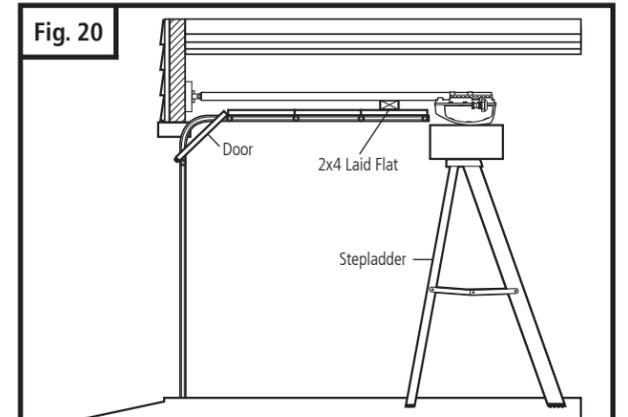
Once rail is attached to header bracket, support opener power head on ladder, or use the assistance of another person to support opener powerhead high enough so door can open without hitting the rail.

A. SECTIONAL DOORS AND ONE-PIECE DOORS WITH TRACK:

- Open garage door to fully opened position, and place a 2x4 laid flat between the door and the rail. See Fig.20.
- The 2x4 provides an easy method of ensuring the correct mounting height of the opener.

B. ONE-PIECE DOORS WITHOUT TRACK:

- Disconnect trolley by pulling down on emergency release knob. Move trolley toward opener head.
- Open door all the way so that it is parallel to the floor, or slightly tilted toward the front of the garage. DOOR SHOULD NOT BE TILTED TOWARD THE BACK OF GARAGE.
- Position opener so that top of opener head is level with top of opened door.
- To check for correct mounting height, temporarily position curved door arm as if connecting to door bracket. See Fig. 21. The long side of the arm should be parallel to the floor when door is fully opened. Raise or lower powerhead so that arm will be parallel to floor.
- Temporarily support head at this height, and prepare to mount the opener to ceiling.



8-7. 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.

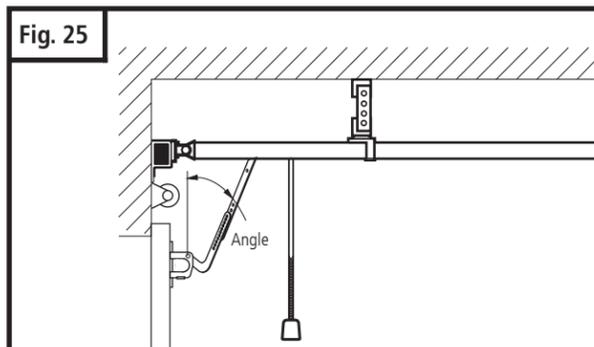
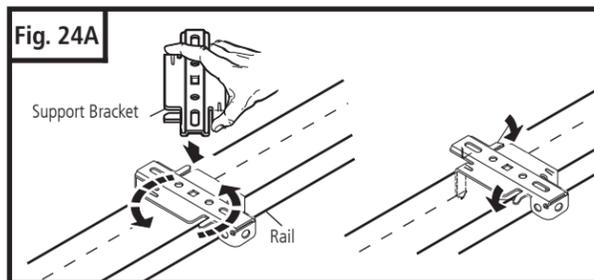
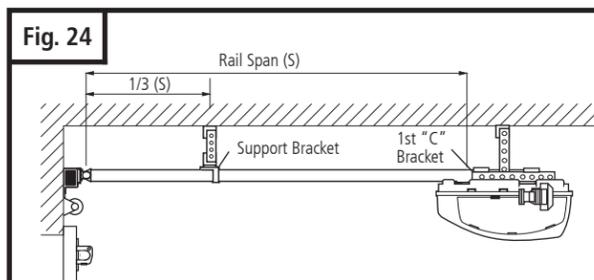
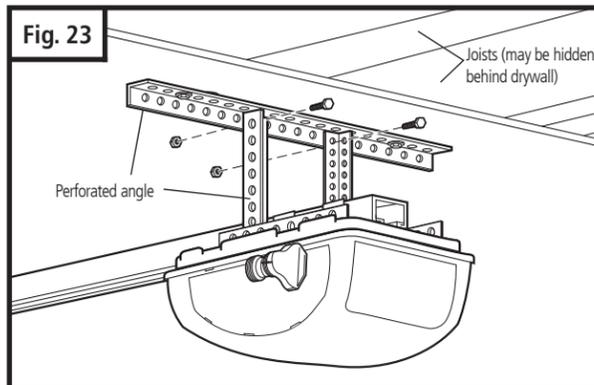
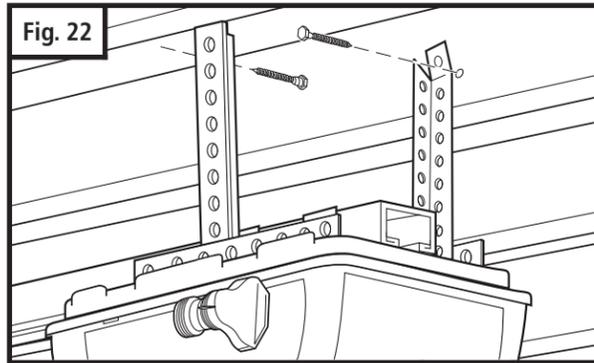
- Position opener head so that rail is lined up with center line of open door.
- Line up hanger brackets (not provided) with ceiling joists or framing to locate where brackets are to be fastened. See Fig. 22.
- Mark location for 5/16" lag screws (not provided), and drill two 3/16" pilot holes.
- Fasten hanger brackets to joists using lag screws.
- 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. 23 for an alternate mounting methods.
- 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.

NOTE: To provide additional support for rails 13' length and longer, use optional support bracket. (Accessories p.28)

- 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. 24
- 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. 24A.
- Attach mounting strap (not provided) to support bracket and secure by fastening it to the ceiling.

8-8. CONNECT ARM TO DOOR AND TROLLEY

- Make sure door is fully closed.
- Remove tape from rail holding straight door arm (sectional door only) and allow door arm to hang freely.
- Pull the manual release cord on the trolley to disconnect trolley from chain or belt connector. Slide trolley to position it about 4" away from the door.



8-19. 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. 9 on page 7. 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.

8-20. 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.

9. IMPORTANT SAFETY INSTRUCTIONS

⚠ WARNING ⚠

IMPORTANT SAFETY INSTRUCTIONS 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.

8-18. ALIGN AND TEST PHOTO EYE SENSORS

PHOTO EYE SENSORS ALIGNMENT:

Photo eye sensors maintain an invisible, unbroken beam between each other. When the photo eye sensors are connected to the power head and the power is on, the green light on the transmitter sensor will illuminate. When the sensors are aligned, the red light on the receiver sensor will illuminate.

NOTE: Sensor alignment must be done with the door in the closed position in order to ensure proper visibility of the sensor indicator LED.

- When photo eye system are connected to the powerhead and the power is on, the green light on the transmitter sensor will illuminate. When the sensors are aligned, the red light on the receiver eye will illuminate.
- If necessary loosen the fastening wheel on each photo eye sensor. Rotate the eye sensor in the sensor cap or slide it inside the adjustment area of the bracket until eyes are aligned and the red light on the receiver eye illuminates. See Fig. 44.
- Tighten the fastening wheels firmly by hand to secure each photo eye sensor in position.
- If further protection against severe sun light exposure is required, place the lens sunshield extension on the Receiver Sensor ONLY. As shown in Fig. 44A.

NOTE: Identify which side of the garage door opening is exposed to the most sunlight. Mount the transmitter (TX) sensor on the side which is exposed to the most sun. Sunlight may affect the Safety Sensors, and this orientation will help reduce the effect.

SAFETY TEST:

Photo eye sensors 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. 45A. 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# 6 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 eye sensors are not aligned or are damaged, door can only be closed by pressing and holding wall control button until door is fully closed.

Fig. 44

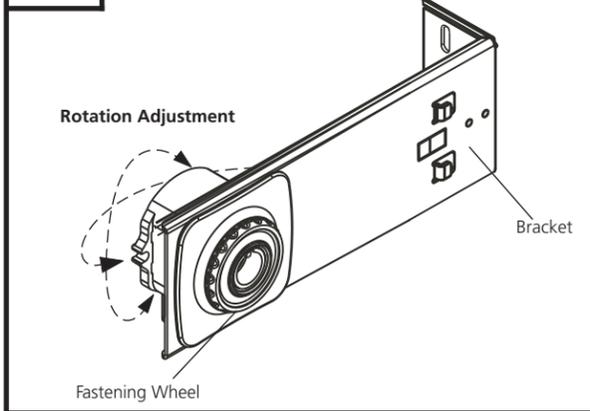


Fig. 44A

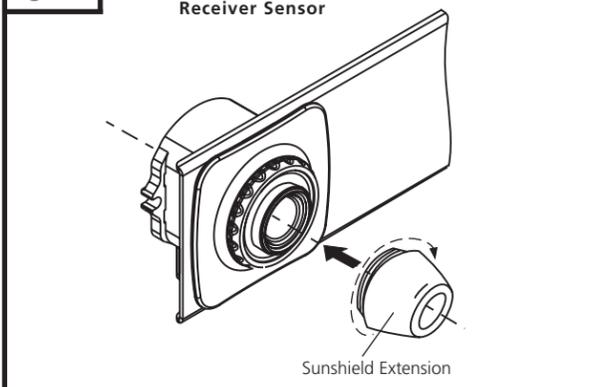


Fig. 45

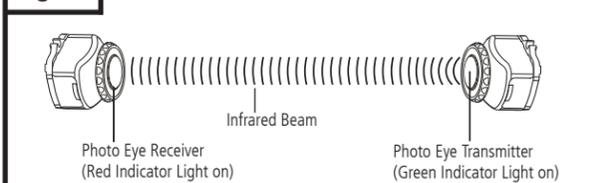
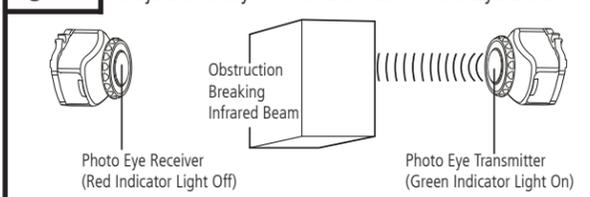


Fig. 45A



8-8. CONNECT ARM TO DOOR AND TROLLEY (cont'd)

A. SECTIONAL DOORS:

- Position curved door arm into door bracket channel so that short end of arm will be attached to door bracket. See Fig. 25A. Curved door arm should be attached roughly at the same height as the top rollers of the door.
- Align curved door arm and bracket holes, then insert clevis pin through holes. Attach cotter ring to hold pin in place.
- Position straight arm and curved arm to form an angle with the door (Fig. 25) and 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.

B. ALL ONE-PIECE DOORS:

- Curved door arm should already be attached to trolley in place of straight door arm. See Fig. 18, p. 10.
- Position free end of curved arm into door bracket slot. Align curved door arm and bracket holes, then insert clevis pin (5/16" dia.) through holes. Attach cotter ring to pin to hold in place. See Fig. 26.

C. SECTIONAL AND ONE-PIECE DOORS:

- After connecting appropriate door arm, ensure trolley is disengaged. Check for proper door operation by manually lifting then lowering to fully opened and closed positions.
- Readjust door arm if needed.

PULL DOWN ON RELEASE KNOB TO LOCK TROLLEY, THEN MOVE DOOR MANUALLY UNTIL TROLLEY LOCKS WITH CHAIN OR BELT CONNECTOR.

8-9. CHECK EMERGENCY RELEASE

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.

The emergency release cord with red knob, which is already attached to the trolley, are extremely important parts of the opener system Fig. 27. Pulling the release cord disengages the door from the opener. This allows the door to be moved manually up and down independent of the opener motor.

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. 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 firmly down on red knob. (Fig. 27)

Prior to re-engaging door, ensure that all obstructions are removed and door is operating properly manually. Before re-engaging trolley with a chain or belt connector, pull down knob again, then release. The red catch will stop in the "lock" position and will open indicator window (see Fig. 27A). Now the door can be reconnected by moving it manually and bringing it into position when the connector is inside of the trolley.

Fig. 25A

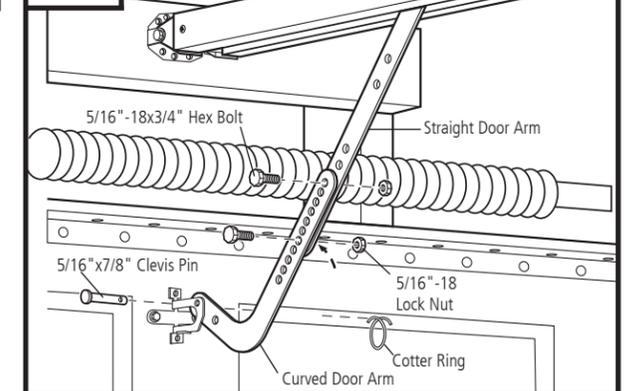


Fig. 26

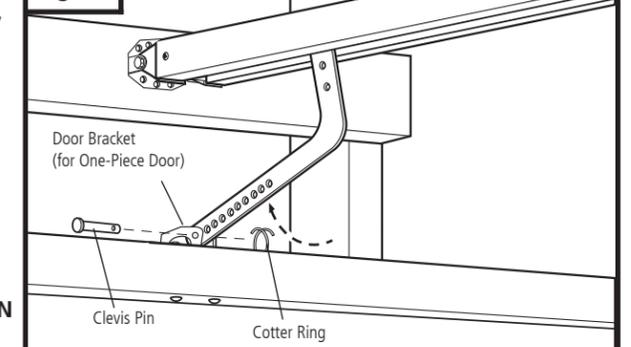


Fig. 27

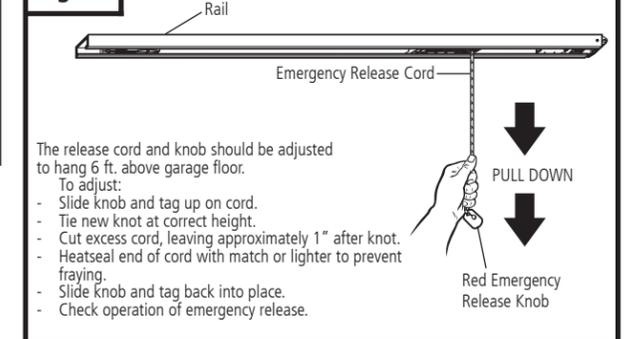
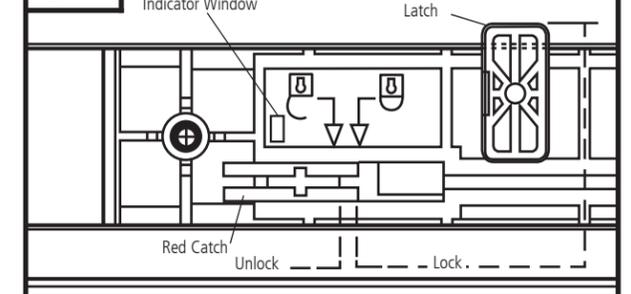


Fig. 27A



8-10. INSTALL PHOTO EYE SAFETY SYSTEM

To provide the maximum amount of protection, the photo eye sensors must be mounted between 3" and 4-1/2" above the floor. See Fig. 29.

CONNECTING WIRES TO THE PHOTO EYE SENSORS (if required). Fig. 28

- Open the black cover flap.
- Insert stripped end of wires into terminal holes by pushing directly into hole (white wire in terminal #1 and wire with stripes into terminal #2).
- After inserting the wire in the proper terminal, pull on the wire to ensure proper connection has been made. If the wire pulls out repeat the above steps.
- Place the wires in the slot from the right side of the cover and close cover.

MOUNTING THE PHOTO EYE SENSORS TO BRACKET (if required). Fig. 28

- Attach the sensor cap and the sensor cap fastener to the bracket.
- Secure the photo eye sensor to the bracket with fastening wheel.
- Repeat process for the other sensor.

MOUNTING THE PHOTO EYE SENSOR BRACKETS TO WALL:

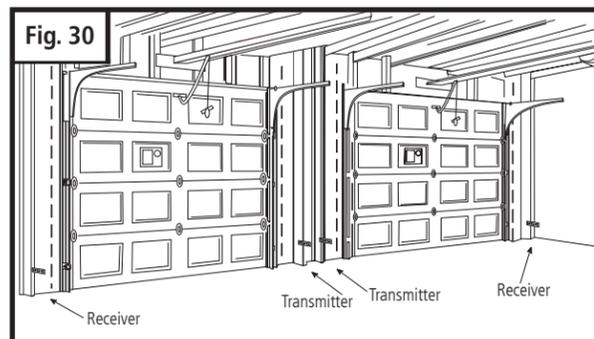
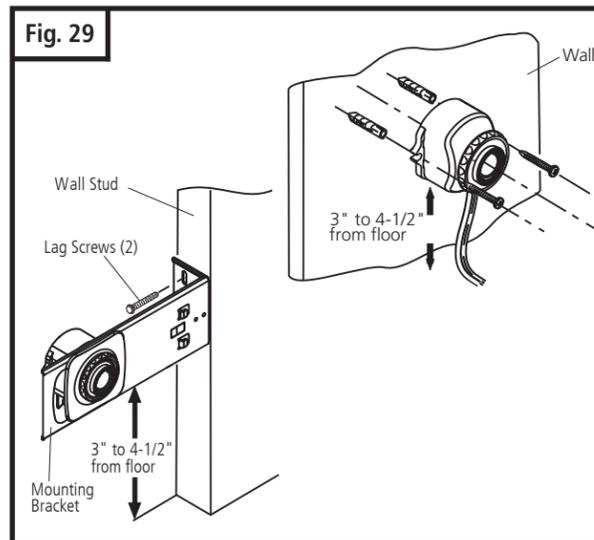
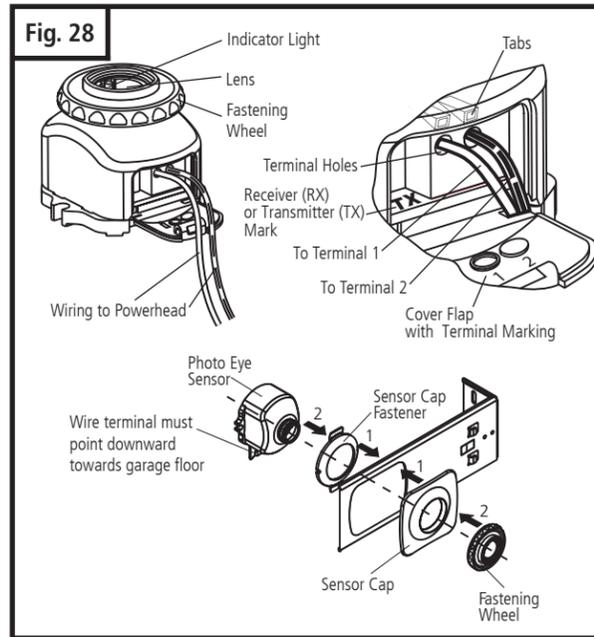
- Locate the mounting position for brackets (bracket can be mounted in any position as long as photo eye beam will have a clear path from one side of door to the other side after mounting).
- Use the bracket mounting holes as a template to locate and drill (2) 3/16" diameter pilot holes on both sides of the garage door 3" to 4-1/2" above the floor.
- Secure the bracket assemblies with 1/4" x 1-1/2" lag screws as shown in Fig. 29.
- Align photo eye sensors, so they face each other.

MOUNTING THE PHOTO EYE SENSORS DIRECTLY TO WALL (optional):

- Locate the installation position. See Fig. 29.
- Remove sensors from brackets.
- Use the photo eye sensor mounting holes as a template to locate and drill two 1/6" pilot holes into wall (if mounting to drywall instead of wood, drill two 3/16" pilot holes).
- Secure the photo eye sensor assemblies with #6 screws and anchors (not provided).
- Repeat process for the other photo eye sensor.

DUAL DOOR INSTALLATION:

- In dual door installations, the transmitter (TX) and the receiver (RX) photo eye sensors (as marked on each of the photo eye components) should be mounted as indicated in Fig. 30.
- TX and RX marks located on the top side of the PCB, near the terminal area. See Fig. 28.



8-16. SET THE ADJUSTMENTS (Cont'd)

DOWN FORCE(Fig. 41):

LED #4 and #6 should now be blinking. **If the force needs to be increased or decreased after factory initial set-up, the force 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 down freely without reversing.** Press and release the "+" or "-" button once. 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 (same as described in "Up Force" setting). By repeatedly pressing the "+" or "-" button, 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. It also advances to the next setting.

TRANSMITTER CODING (FIG. 42):

LED #7 should be blinking. The opener can now learn the code of the hand-held transmitter. While LED#7 is blinking, press and hold the button on the transmitter. When you see LED #7 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 #8 should now be illuminated, and the opener is ready for operation.

After setting the adjustments, run the opener two (2) complete cycles. This will set all the parameters and allow the opener to "learn" its proper operating level for your particular door.

8-17. TEST SAFETY REVERSAL

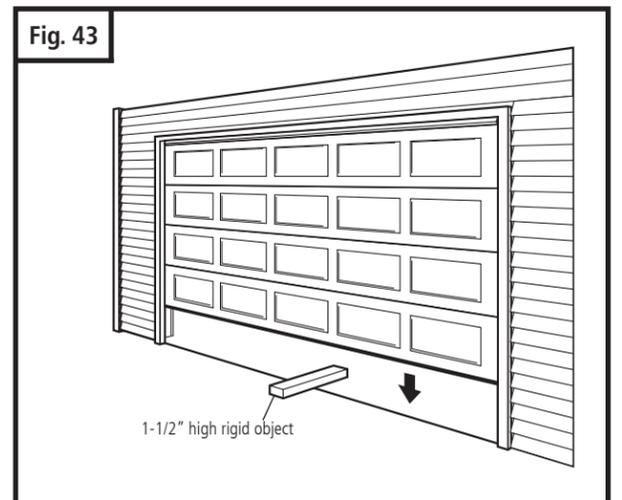
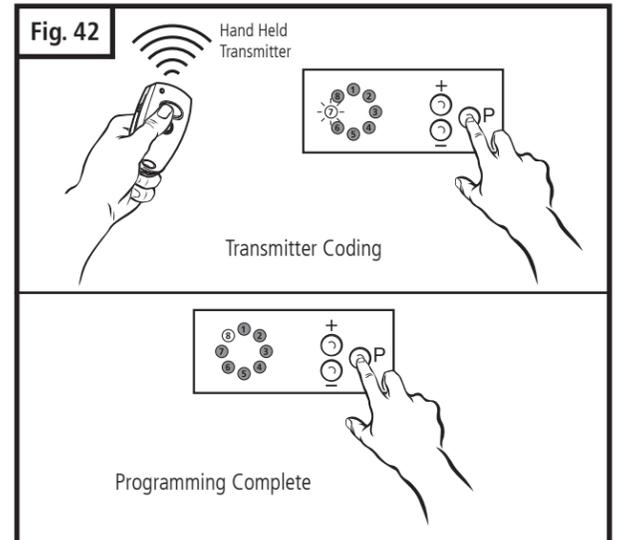
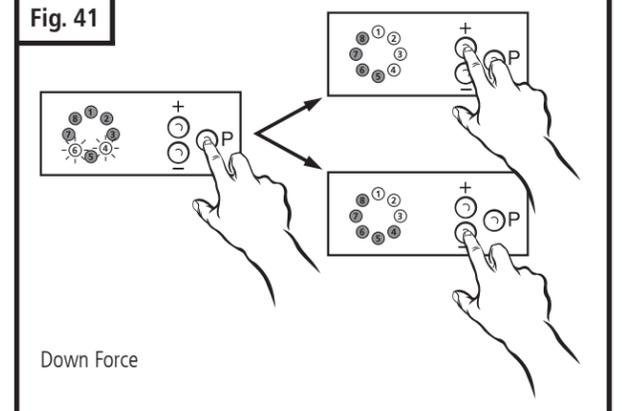
The safety reversal function of your opener is an extremely important feature of your opener. Testing this function ensures the correct operation of your opener and door.

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. 43.
- 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.



8-16. SET THE ADJUSTMENTS

Any adjustment can be made at any time using these 3 buttons: "+", "-", and "P". However, it is easiest during initial installation to follow the order shown below.

The adjustments that can be made are: Open Travel Limit, Close Travel Limit, Maximum Opening Force, Maximum Closing Force, and Transmitter Coding.

HANDY NOTE: If you follow the following steps, you will notice that when making the adjustments, and if no changes are needed at any particular stage, you can keep the current information and "skip" over a specific adjustment by pressing the "P" button once. This is useful to know if you want to change only one setting, without changing any of the other adjustments. Simply enter the adjustment mode by pressing and holding the "P" button for approximately 2 seconds, then press and release "P" repeatedly until your particular adjustment is reached. This bypasses the unneeded adjustments, and takes you right to the adjustment you want. When your adjustment or setting is complete, simply press "P" as many times as needed to bypass the remaining steps and exit out of the program, returning the opener to normal mode.

TO MAKE OR CHANGE ANY ADJUSTMENT:

Press and hold the "P" button for approximately 2 seconds. When all LEDs illuminate and LED #1 begins to blink, release the button. You are now ready to set or change the desired adjustment.

OPEN TRAVEL LIMIT (Fig. 38):

LED #2 should be blinking. You can now set the open travel limit. To move the door to its fully opened position, press and hold the "+" button until the door is in position that you desire. Then release this button. If the door is not in the desired position, you can press the "+" button to move it further upward, or the "-" button to move it slightly downward. If the door is already in its fully opened position, the "+" or "-" buttons do not need to be pressed. Once the door is in the desired position, press and release the "P" button. This stores the open position in memory. It also advances to the next setting.

CLOSE TRAVEL LIMIT (Fig. 39):

LED #4 should now be blinking. 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 floor. 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.

UP FORCE (Fig. 40):

LED #2 and #6 should now be blinking. **If the force needs to be increased or decreased after initial factory set-up, the force should be changed by one (1) increment at a time. The force should be set as low as possible, just enough to allow your door to travel up freely without stopping during its travel.** Press and release the "+" or "-" button once. The current force setting will be displayed by illuminating a certain number of LEDs around the circular display.

Fig. 38

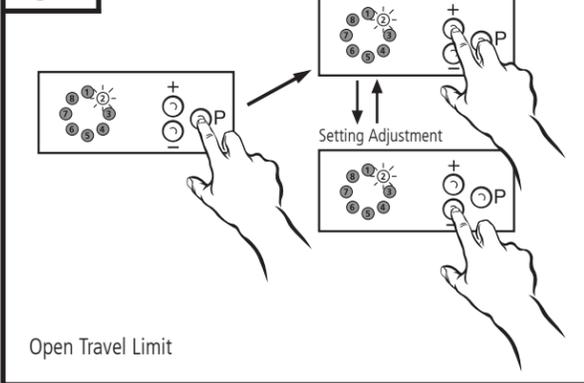


Fig. 39

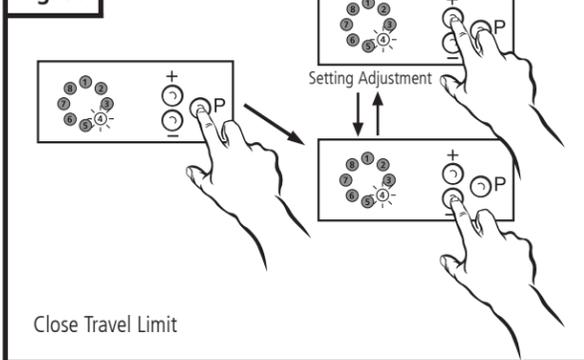
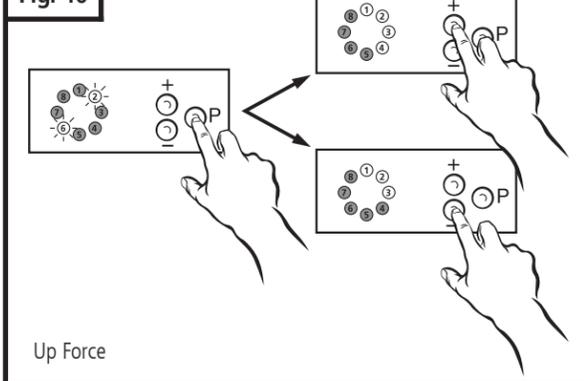


Fig. 40



The more LEDs that are illuminated, the higher the force limit. For example, level 1 (least amount of force) is set when only LED #1 is illuminated. Level 2 is set when LED #1 and #2 are illuminated. Level 4 is set when LEDs #1, #2, #3, and #4 are illuminated. By repeatedly pressing the "+" or "-" button, 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 for the up direction in memory. It also advances to the next setting.

8-11. INSTALL WALL CONTROL PANEL

The control panel must be mounted inside the garage within 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. 31 (Back). White wire attaches to terminal #3 screw, white wire with color stripes attaches to terminal #4 screw.
- Position wall control panel onto wall in desired location.
- Mark hole location on wall.
- Drill 1/16" pilot holes into wall.
- Insert and tighten screws to secure control panel to wall.
- Make sure wiring is routed out from behind control through one of the cutouts to avoid pinching the wires.

If mounting to drywall instead of wood, drill 3/16" pilot holes and use anchors provided.

If mounting to electrical box that is prewired for this purpose, mount directly to box with proper screws provided.

8-12. CONNECTING WIRES TO POWERHEAD

- Run wires from wall control panel and photo eye system along wall and ceiling to opener powerhead. Use the staples 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. 9 on p.7 for an example of typical wiring routing, and Fig. 32 for terminal assignment.

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 sensor 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 sensor 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.

- Detach right side panel from one of the wall controls. (Fig.31)
- Attach wiring to back of both wall controls (White wires to terminal #3 screws, wires with stripes to terminal #4 screws.)
- Follow the same steps as above to mount additional wall control panels and wire connections.

Fig. 31

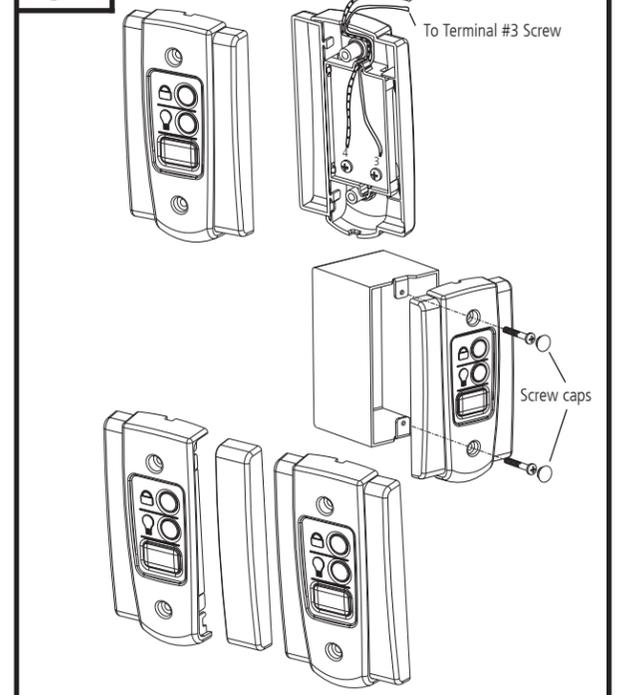


Fig. 32

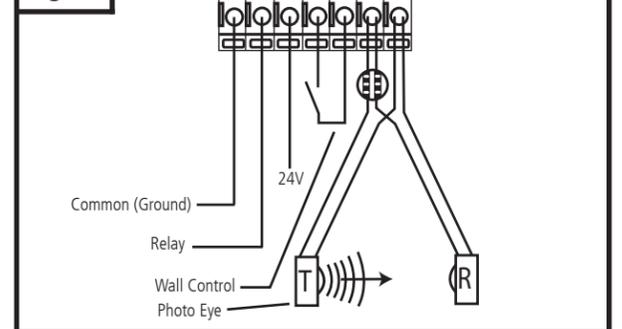
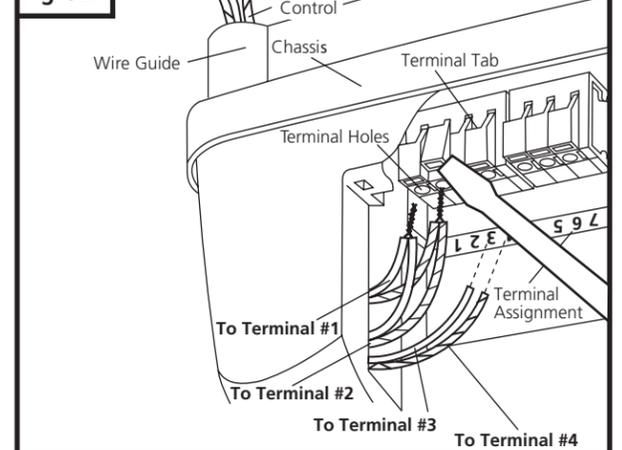


Fig. 32A



8-13. INSTALL LIGHT BULBS AND LENSES

CAUTION

To prevent possible **OVERHEATING** of the end panel or light socket:

- Use **ONLY** standard incandescent light bulb(s).
- **DO NOT** use a bulb with a rating higher than 60 Watts (W). A stronger or larger bulb may result in fire or damage to the opener.

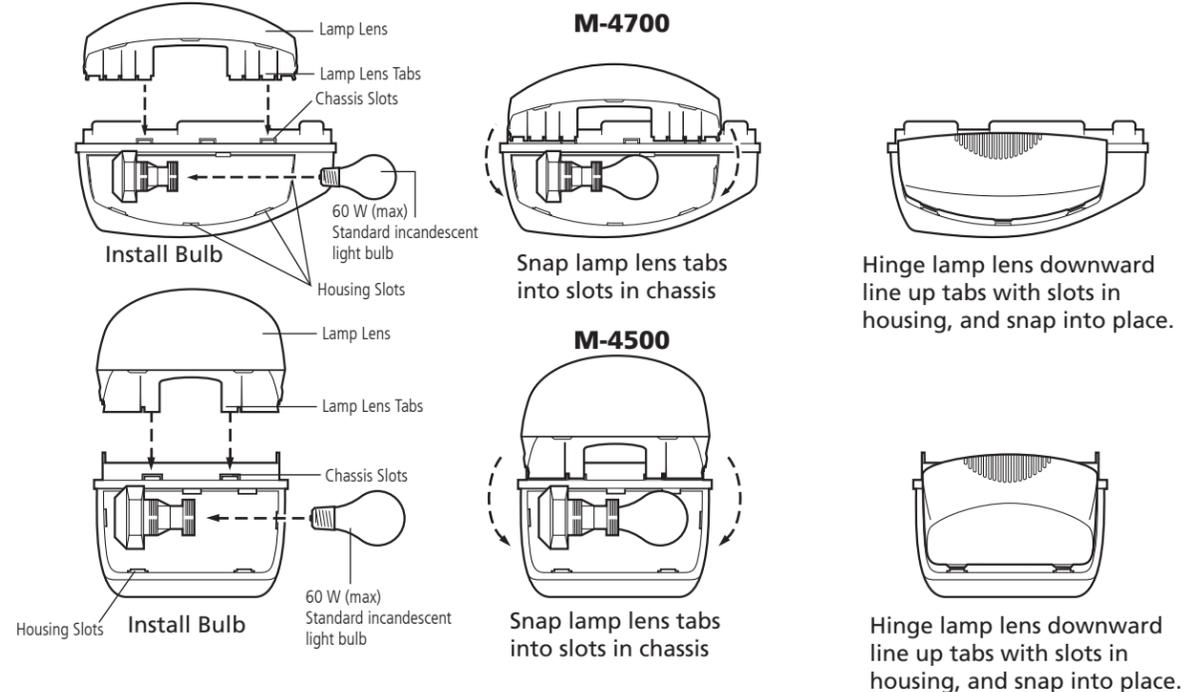
To prevent possible radio frequency (RF) signal interference:

- Do not use compact fluorescent lighting (CFL).

- Install a maximum 60 W incandescent bulb (not provided) into lamp socket(s).
- Install lamp lens(es). Two lenses for a M-4700 model, one lens for a M-4500 model.
- Line up lamp lens tabs with slots in housing and snap securely into place. Repeat same procedure with second lamp lens on the opposite side, if you have an M-4700 power head.
- Line up lamp lens tabs with corresponding slots in chassis. Snap lens onto chassis for M-4500 model.
- To remove lamp lens, pull lamp lens to unsnap from housing and chassis.

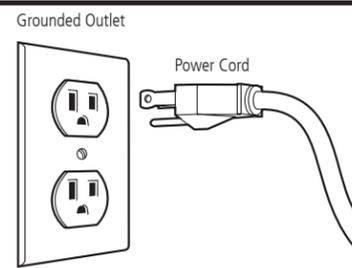
Fig. 33

NOTE: Use only standard light bulbs. The use of short neck or speciality light bulbs may overheat the endpanel or light socket.



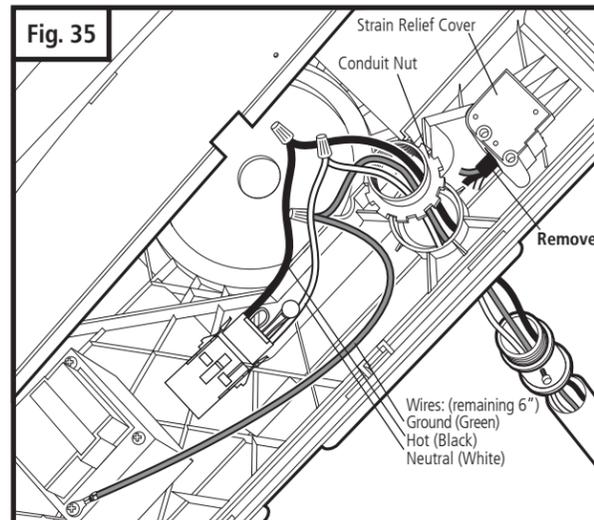
8-14. CONNECT TO POWER

Fig. 34



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.

Fig. 35



8-14. CONNECT TO POWER (Cont'd)

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. 34).
- An indicator light (LED #8) on the opener control panel will turn on showing that the power is "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. 35. 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.
- 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.

8-15. CONTROL PANEL

The control panel is located under the control panel cover. Open the control panel by slightly pulling on the cover cutout, then allowing the cover to drop open. The hinges enable the cover to remain in place while you set the adjustments.

Fig. 36

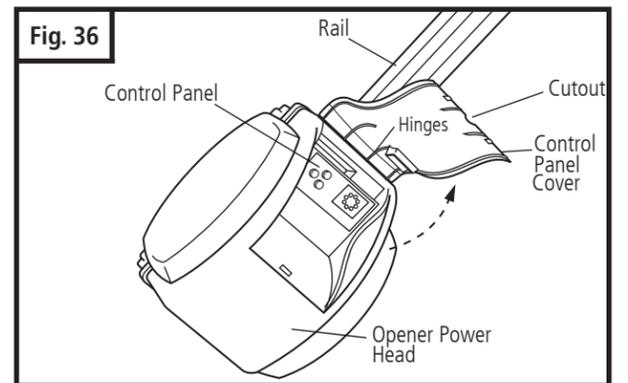


Fig. 37

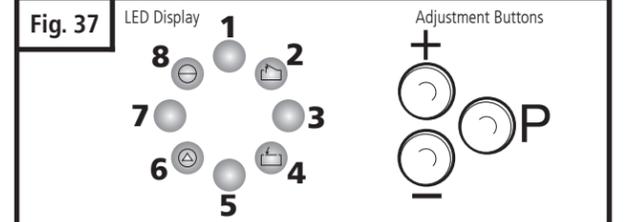


Fig. 37A

Key to Icons and Corresponding LEDs:

- LED #2 ■ Lights up when door is in fully opened position.
- LED #4 ■ Lights up when door is in fully closed position.
- LED #6 ■ Flashes when a system fault is detected by opener. See section "20. Troubleshooting" on p.30 for more information.
- LED #7 ■ Lights up when opener is receiving a signal from wall control or pushbutton.
 - Flashes rapidly when opener is receiving a signal from remote transmitter or keyless entry system.
- LED #8 ■ Lights up when power is on.

On control panel you will find 3 buttons labeled "P", "+", and "-" which allows you to set all the adjustments of your opener and a circular LED display with 8 numbered icons which shows useful status information regarding the opener and its function. See Fig. 37, 37A.

LEDs #1, #3, and #5 are used when setting the adjustments or for troubleshooting, should a problem ever occur with your opener. See section "8-16. Setting The Adjustments" on p.18, and section "20. Troubleshooting" on p.30 for more information.

NOTE: When viewing control panel and setting the adjustments, stand below the opener and face the garage door. Then look up at the display. This way you will easily be able to see both the display and the door. Make sure door is in the down position before system set-up start.