24. WARRANTY LIMITATIONS, CLAIMS AND SERVICE:

Contact your professional installer for all service. Service by anyone other than a professional installer voids this warranty. If you cannot locate your installer, please contact a Marantec Customer Service Representative at 1-888-622-2489.

Marantec accessories include such items as transmitters, wall controls, photo eye systems, and wireless/keyless entry systems. These are warranted to be free from defects and workmanship for 1 year from the date of purchase. At Marantec's sole option, Marantec may elect to replace the accessory with new or reconditioned parts, components or units utilizing product of the same or similar design available at that given time. **WITH RESPECT TO ACCESSORIES, ALL OTHER WARRANTIES, INCLUDING FITNESS FOR PARTICULAR PURPOSE AND MERCHANTABILITY ARE SPECIFICALLY DISCLAIMED AND THE LIMITED WARRANTY SET FORTH BELOW IN BOLD TYPE IS HEREIN INCORPORATED BY REFERENCE. ALL OF THE DISCLAIMERS AND LIMITATIONS WITH RESPECT TO THE DOOR OPENER SYSTEM ABOVE ARE HEREIN INCORPORATED BY REFERENCE.**

MARANTEC AMERICA CORPORATION'S LIABILITY IS EXPRESSLY LIMITED TO THE RETAIL COST OF THE PARTICULAR ACCESSORY UNDER WARRANTY

Marantec does not warrant batteries, light bulbs, LED lighting and sensors, unauthorized repairs or repair parts, installations, commercial use, damage while in transit, defects or damage resulting from power washing, water or moisture exposure, or accidents, resulting from alterations, lack of proper maintenance, unauthorized repair or modification of the product, misuse or abuse of the product, fire, flood, acts of God, or other failures due to failure to follow the recommendations of the Owner's Manual. This warranty applies only to Marantec systems purchased and used in the United States, Canada or Mexico.

This limited warranty is the one which Marantec gives on this product and sets forth all of its responsibilities regarding the Marantec product. There are no other express or implied warranties. Installation by unauthorized personnel or use of unauthorized parts or accessories could cause improper operation and even created dangerous conditions and void all warranties. This would violate the UL Safety Approval of the product and constitute a safety hazard.

This Limited Warranty contains the entire warranty on the product. All discussions, representations or negotiations between the consumer and the retail seller are merged into this Limited Warranty, and there are no understandings or warranties other than those herein. None of the terms of the Limited Warranty shall be waived or modified to any extent, except by a written instrument signed and delivered by Marantec's Corporate Officer.

This Limited Warranty is being delivered at the place of manufacture, Gurnee, Illinois, is intended to be performed in the State of Illinois and shall be construed and enforced in accord with the laws and statutes of the State of Illinois with the proper venue for any disputes being hat of Marantec's registered office in Chicago, Illinois or its corporate offices in Gurnee, Illinois, whichever Marantec elects. In the event any action or proceeding or claim is asserted or brought against Marantec, if Marantec prevails, then Marantec shall be entitled to recover all costs and expenses, including the actual fees of its attorneys and expert or professional witnesses incurred in connection with such action or proceeding or claim.

Whenever possible, each provision of this Limited Warranty shall be interpreted in such a manner as to be effective and valid under applicable Illinois law. If any provisions of this Limited Warranty are prohibited or invalidated under applicable law, then such provisions shall only be ineffective to the extent of such prohibition or invalidity, without invalidating the remaining provisions of this Limited Warranty.

Some jurisdictions do not allow the exclusion or limitation of consequential, incidental or special damages, so the above limitations or exclusions may not apply to you. This Limited Warranty gives you specific legal rights and you may also have other rights which vary from state to state.

25. REGISTRATION:

After installation by your professional installer, this Warranty becomes effective upon registration at the Marantec web site: www.marantecamerica.com. If you do not have access to the internet, please complete and mail in the registration card enclosed with instruction manual.

Part#: 80400   Printed in the U.S.A.   Version: November 19, 2008

M Line ®

M4500e
M4700e

Digital Intelligence for the Garage

Driven by

[**E**] EASY
[**O**] OPERATING
[**S**] SYSTEM

Owner's Manual contains:
Installation, operating, maintenance & warranty instructions.
For residential use only.

BELT DRIVE   CHAIN DRIVE

c(UL)us This product complies with the 325 regulations effective january 1,1993

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

Marantec M

Access Systems ➤ Automatically The Best Choice

www.marantecamerica.com

OWNER'S MANUAL CONTENTS

22. MAINTENANCE AND ADJUSTMENTS

To ensure continued safe operation and extended life of your operator system, periodic checking for proper operation is necessary. Occasional maintenance and readjustment of your system may also be needed.

MONTHY:
- Check reversal system by performing "safety reversal test" described in this manual.
- Check proper operation of door by manually moving door open and closed. If door binds or sticks, or is out of balance call for garage door service.
- Check and test photo eye safety system as described in this manual.

ONCE EVERY YEAR
- Keep door rollers, hinges, and bearings properly lubricated by following recommended door instructions or contacting a door service company in your area.

AS NEEDED:
- Readjust operator travel limits and force settings as necessary — due to cold weather, normal wear of door, etc. The convenient adjustment instruction label on the operator can be used for any periodic adjustments needed.
- Check and readjust belt tension, if necessary, in the unlikely event that it loses its proper tension during the life of the operator. Always check the reversal system after any adjustment of travel limits or forces. A door operator that is not checked could possibly be out of adjustment and be dangerous.

23. LIMITED PARTS WARRANTY

MARANTEC AMERICA CORPORATION
PROFESSIONAL SERIES GARAGE DOOR OPERATOR SYSTEM
M4700e Product Warranty — Parts Limited Lifetime on Operator & Rail
M4500e Product Warranty — Parts 15 Year Warranty on Operator & Rail
Labor Not Included in Warranties

THIS LIMITED WARRANTY IS FOR THE ORIGINAL PURCHASER OF THE MARANTEC RESIDENTIAL GARAGE DOOR OPERATOR

Coverage: THIS LIMITED WARRANTY IS FOR THE ORIGINAL PURCHASER OF THE MARANTEC RESIDENTIAL GARAGE DOOR OPERATOR. This Warranty applies, upon purchase from an authorized Marantec reseller and installation by a professional installer and registration of the product within 14 days (or within 30 days of closing on a new home purchase from a developer) of the date of installation of the product, to any defect in materials or workmanship in the Marantec product parts or components from personal, normal household use in compliance with the Owner's Manual. Marantec warrants this garage door opener system to its first retail, consumer purchaser. This is not a commercial product. Marantec disclaims any and all warranties in the event that the product is obtained from a source which is not a Marantec authorized reseller or if the product is not installed by a professional installer. "Grey market" and counterfeit purchases are not warranted or recognized in any manner whatsoever. This is not a "do it yourself" product. No "aftermarket" installation, alteration, modification or repairs are recognized or warranted. Any of the foregoing conduct voids all warranty provisions. This warranty is for parts only and is not for any service call(s) or labor in connection with the repair or replacement of the unit or its parts. Parts will only be shipped to your Marantec authorized reseller.

Marantec Commitment: If Marantec determines the product parts to be defective in materials or workmanship, then Marantec will supply parts for the repair or replacement of the defect to the Marantec authorized professional installer at no cost to you. You must pay for the service call and labor for installation of the part(s) determined to be defective by Marantec. At Marantec's sole option, Marantec may elect to replace the part(s) with new or reconditioned parts, components or units utilizing product of the same or similar design available at that given time.
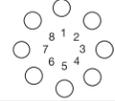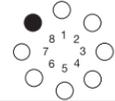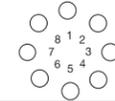
THIS LIMITED WARRANTY IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR OTHER WARRANTIES IMPLIED BY STATUTE, AND OF ANY OTHER OBLIGATIONS OR LIABILITY ON THE PART OF MARANTEC AMERICA CORPORATION. THIS LIMITED WARRANTY DOES NOT COVER NON-DEFECT DAMAGE CAUSED BY IMPROPER INSTALLATION, OPERATION OR CARE AND MAINTENANCE, INCLUDING BUT NOT LIMITED TO ABUSE, MISUSE, POWER SURGE, FAILURE TO PROVIDE REASONABLE AND NECESSARY MAINTENANCE OR ANY ALTERATIONS TO THIS PRODUCT, INCLUDING ACCESSORIES. LABOR CHARGES FOR DISMANTLING OR REINSTALLING A REPAIRED OR REPLACED UNIT ARE EXCLUDED.
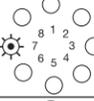
MARANTEC AMERICA CORPORATION'S LIABILITY IS EXPRESSLY LIMITED TO THE RETAIL COST OF THE PARTICULAR UNIT UNDER WARRANTY.

UNDER NO CIRCUMSTANCES SHALL MARANTEC AMERICA CORPORATION BE LIABLE FOR CONSEQUENTIAL, INCIDENTAL OR SPECIAL DAMAGES ARISING IN CONNECTION WITH THE USE OR INABILITY TO USE THIS PRODUCT OR THE PREMISES IN WHICH IT IS UTILIZED. IN NO EVENT SHALL MARANTEC AMERICA CORPORATION INCUR LIABILITY FOR BREACH OF WARRANTY, BREACH OF CONTRACT, NEGLIGENCE OR STRICT LIABILITY IN EXCESS OF THE COST OF THE PRODUCT, INCLUDING ACCESSORIES, COVERED HEREBY. NO PERSON IS AUTHORIZED TO ASSUME, FOR MARANTEC AMERICA CORPORATION, ANY OTHER LIABILITY OR MAKE ANY MODIFICATIONS OR EXTENSIONS TO THE WARRANTY OF THIS PRODUCT. THIS LIMITED WARRANTY MAY NOT BE TRANSFERRED OR ASSIGNED.

21. TROUBLESHOOTING — FOR PROFESSIONAL INSTALLER ONLY

The operator displays the system fault(s) automatically one at a time as follows:

System Fault Sequence Display: (Example - Error Code 15)

Step 1	Step 2	Step 3	Step 4
The fault code is displayed for approximately 3 seconds.	Pause between messages for approximately 1 second.	Operating mode is displayed for approximately 3 seconds (example: Operating voltage).	Pause between messages for approximately 1 second.

Step 5 : Steps 1 to 4 are repeated until all system fault(s) are cleared.

FAULT DISPLAY	CODE	PROBLEM	SOLUTION
#7 Flashes	7	**NOTICE:** ■ If no buttons are pressed within 120 seconds, the programming mode terminates automatically. ■ OPEN and CLOSED door positions programmed without passing the reference point.	
#8 Flashes	8	■ Adjustments setting interrupted before completion. ■ Detective reference switch.	■ Door can be operated normally. Recheck adjustments if adjustment settings were not completed. Refer to page 19. ■ Have operator serviced.
#1 + #8 Flash	9	■ Defective RPM sensor/ operator system blocked.	■ Have operator serviced.
#2 + #8 Flash	10	■ Door movement too stiff. ■ Force required to move door exceeded set force level. ■ Operator working force setting is too low.	■ 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. Readjust force and run the operator for two (2) uninterrupted complete cycles. Refer to "Advanced settings" on page 22 – Level 2 (Menu 1 and Menu 2). REPEAT THE "SAFETY REVERSAL TEST" (page 23) AFTER ADJUSTMENT IS COMPLETE.
#3 + #8 Flash	11	■ Operator exceeded maximum run time limit.	■ Make sure rail is connected to operator head and belt or chain is moving.
#7 + #8 Flash	15	■ Photo eye sensors not connected properly. ■ Photo eye sensors not aligned. ■ Obstruction in the door path (photo eye beam broken).	■ Check photo eye sensors wiring and connections. Refer to pages 14 and 15. ■ Realign photo eye sensors. Refer to page 24. ■ Remove obstruction from door path.
#1 + #7 + #8 Flash	16	■ Force watchdog circuit found error. ■ The sensor which monitors the operator sensitivity has failed.	■ Readjust the operator force(s) and run the operator for two (2) uninterrupted complete cycles. Refer to "Advanced settings" on page 22 – Level 2 (Menu 1 and Menu 2). REPEAT THE "SAFETY REVERSAL TEST" (page 23) AFTER ADJUSTMENTS ARE COMPLETE. ■ Have the operator checked.
#5 + #6 + #7 + #8 Flash	26	■ Undervoltage, operator system overloaded at maximum force setting (16). ■ Operator system overloaded.	■ Have the outlet assigned for the operator and/or supplied power checked.
#2 + #5 + #6 + #7 + #8 Flash	28	■ Door movement too stiff or irregular. ■ Door blocked. ■ Operator operating sensitivity set too sensitive (low).	■ Check door for obstructions, proper manual operation, proper balance, or broken springs. Clear obstructions or have door serviced, If needed. ■ Have the operating sensitivity settings checked by an authorized dealer/installer (Refer to "Advanced settings" on page 22 - Level 2 (Menu 3 and Menu 4). Run the operator for two (2) uninterrupted complete cycles after adjustment are completed.
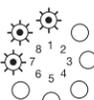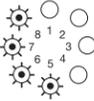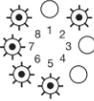
1. INTRODUCTION

Congratulations on purchasing your Marantec® Professional Series Garage Door Operator System (GDO), the most innovative operator available today. This stylishly designed digital operator 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 operator 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 operator 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 operator.

■ **Advanced Digital Operating System EOS (Easy Operating System):** The EOS digital system provides an user friendly system set up. The system set up comprises of two programing levels, an "Initial Level" and an "Advanced Level". The EOS system requires only the initial set up parameters. All other operating parameters are learned and set automatically by the system. In addition, the system optimizes all parameters with every cycle for a more efficient operation by the GDO. This shorter parameter set up provides a quicker and more efficient installation.

■ **Precision Controlled DC Motor, Complete with Automatic Soft Start and Soft Stop Feature:** The operator 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 operators, and results in the smooth operation and increased service life of your door and hardward.

■ **Built-In Safety Features:** Including patented drive system that delivers only the optimum power needed to move your door safely - Every time!

■ **Modular Antenna 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 operator 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 operators.

■ **The EOS platform unifies all Marantec Products by design.**

3. IMPORTANT SAFETY INFORMATION

This manual is essential to the safe and proper installation, operation, and maintenance of your operator. 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 operator at 120V, 60Hz to avoid operator damage.
Garage doors are heavy, moving objects. When coupled with an automatic operator, 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.
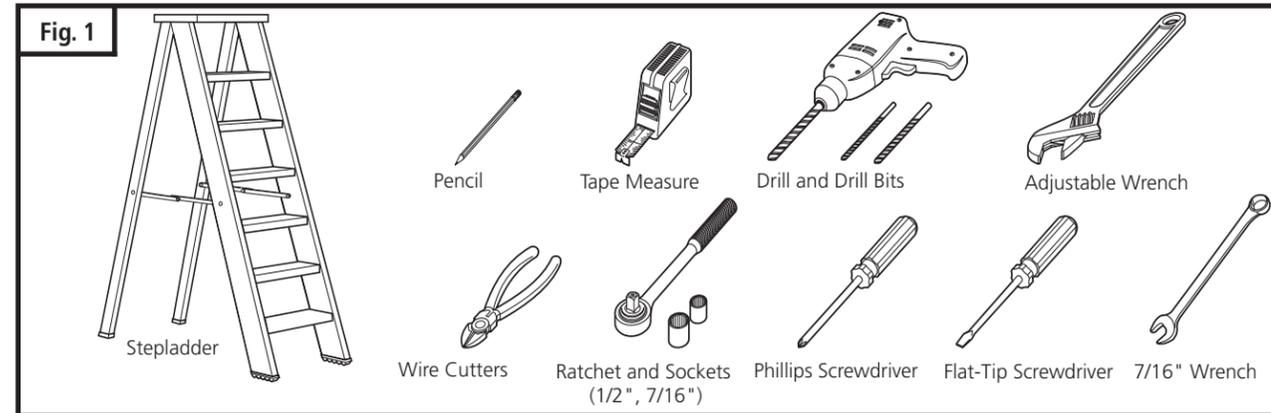
⚠ **WARNING** ⚠

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 operator. Additional tools may be required depending on your particular installation.

Fig. 1

Stepladder Pencil Tape Measure Drill and Drill Bits Adjustable Wrench Wire Cutters Ratchet and Sockets (1/2", 7/16") Phillips Screwdriver Flat-Tip Screwdriver 7/16" Wrench

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 operator.

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 operator.

- The operator 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.

Fig. 2

Sectional Door

Fig. 3

One-Piece Door
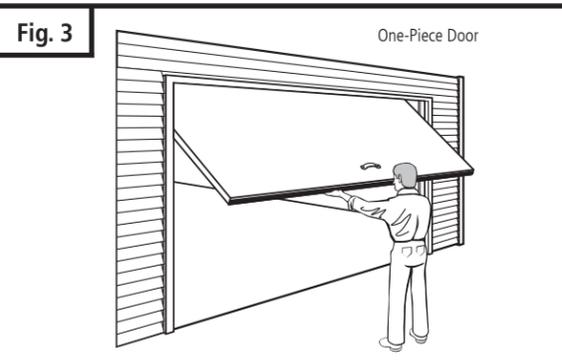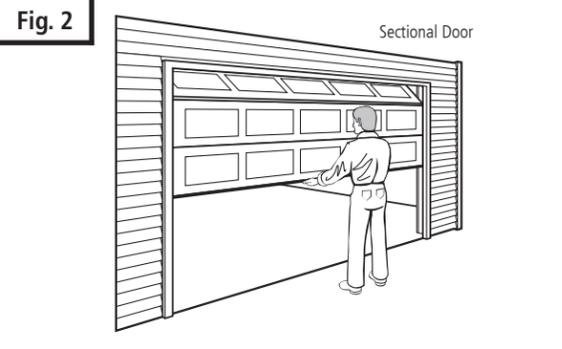
⚠ CAUTION

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.

20. HAVING A PROBLEM?

SITUATION	LIKELY CAUSE AND SOLUTION
Operator does not operate from either wall control or transmitter:	■ Does operator 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.
Operator operates from transmitter but not from wall control:	■ 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 operator runs, replace wall control. If operator does not run, check wiring connections at operator, and check wire for shorts or breaks under staples.
Operator operates from wall control but not transmitter:	■ 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 27. ■ Does the transmitter indicator light glow when the transmitter button is pressed? If not, replace battery. Refer to "Battery Replacement" on page 26. ■ Has the operator 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 26. ■ Is the 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 24.
Operator does not work from HomeLink®	■ Has the HomeLink® Transceiver learned the code of the transmitter? Repeat programming steps (refer to HomeLink® Manual)
Door does not open completely:	■ 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 22). REPEAT "TEST SAFETY REVERSAL" (page 23) AFTER ADJUSTMENT IS COMPLETE.
Door does not close completely:	■ LED #1 "ON" Check photo eye sensor wires, connections to the operator terminals. Refer to pages 14 and 15. ■ LED #1 "Blinks" Check sensor alignment and sensor connections to the operator terminals 1 and 2. Refer to pages 14, 15 and 24. ■ 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 22). REPEAT "TEST SAFETY REVERSAL" (page 23) AFTER ADJUSTMENT IS COMPLETE.
Door opens but will not close at all:	■ LED #1 "ON" Check photo eye sensor wires, connections to the operator terminals. Refer to pages 14 and 15. ■ LED #1 "Blinks" Check sensor alignment and sensor connections to the operator terminals 1 and 2. Refer to pages 14, 15 and 24. ■ Increase force in down direction. REPEAT "TEST SAFETY REVERSAL" (page 23) AFTER ADJUSTMENT IS COMPLETE.
Door reverses for no apparent reason:	■ LED #1 "ON" Check photo eye sensor wires, connections to the operator terminals. Refer to pages 14 and 15. ■ LED #1 "Blinks" Check sensor alignment and sensor connections to the operator terminals 1 and 2. Refer to pages 14, 15 and 24. ■ 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 19). ■ Review and increase force adjustment setting for down travel (page 22). ■ REPEAT "TEST SAFETY REVERSAL" (page 23) AFTER ADJUSTMENT IS COMPLETE.
Operator light does not turn on	■ Replace the light bulb(s) with a standard incandescent maximum 60 Watts each. If the standard incandescent light bulb burns out prematurely, replace it with 60 Watts maximum a **garage door operator incandescent light bulb**. Refer to page 16 for replacement instruction.
Operator light does not turn off	■ Is the wall control Light Feature on? Press Light Button to turn off. Refer to page 27.
Operator strains or maximum force is needed to operate door	■ 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 operator to compensate for unbalanced or damaged door.
Operator does not move door at all:	■ 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).
Operator won't work due to power failure	■ 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.

The following accessories are designed to provide added convenience, satisfaction and value to your door operator system. Accessories are available from your dealer. If you have difficulty locating available accessories, please contact us directly at 1-888-622-2489 or visit our website at www.marantecamerica.com.

Fig. 56
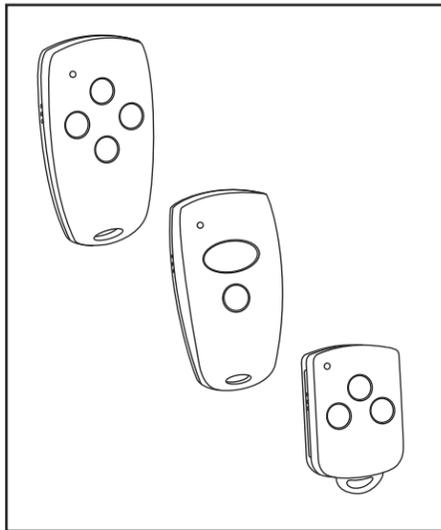
Mini & Micro Transmitters
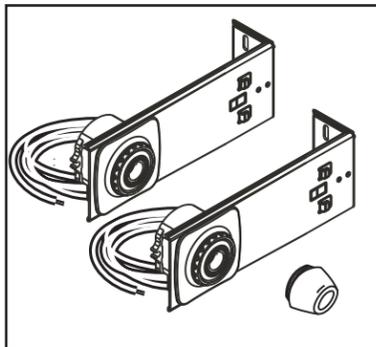**MINI**
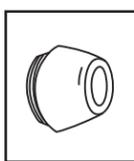2 Channel Model # **M3-2312**
4 Channel Model # **M3-2314**
MICRO
3 Channel Model # **M3-3313**
- Advanced multibit technology for better, more secure signal transmission.
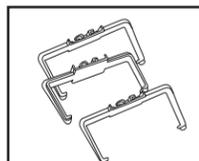- Battery included.
- Complete with visor clip.

MINI Transmitter Mounting Plate
Model # ML-920

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

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

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

Lens Sunshield Extension Part # 73536

Wire Holder Kit Part # 86141
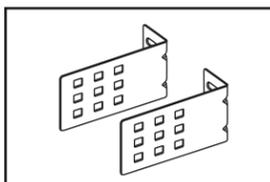
Extension Bracket Kit Part # 72802
- Hardware included
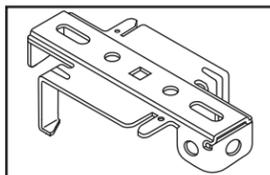
Support Bracket Part # 71865
- Helps support rails for 10' doors and higher.
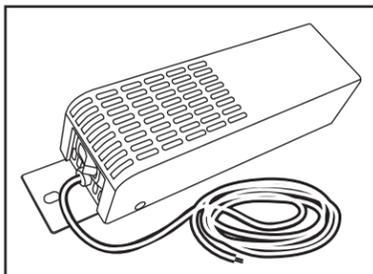
Door Lock – Locmatic G20 Part # 82783
- The Locmatic G20 is an automatic deadbolt locking system that provides additional security every time the garage door closes

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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

Sectional Door with Curved Track
Header Wall
Header Bracket
Highest Point of Door Travel
1-1/4" Clearance
Door
Distance

One-Piece Door with Horizontal Track
Header Wall
Header Bracket
Highest Point of Door Travel
1-1/4" Clearance
Door
Distance

One-Piece Door with Jamb Hardware without Track
Header Wall
Header Bracket
Highest Point of Door Travel
3-3/4" Clearance
Door
Jamb Hardware
Distance

One-Piece Door with Pivot Hardware without Track
Header Wall
Header Bracket
Highest Point of Door Travel
3-3/4" Clearance
Door
Pivot
Distance

GARAGE DOOR OPERATOR SYSTEM OVERALL DIMENSIONS (7' DOOR)

Fig. 5

One Light Operator	10' 10-1/4" / 18-1/4" / 1/2" / 8-1/2"
Two Light Operator	10' 6-1/2" / 14-1/2" / 1/2" / 1-3/8" / 14-5/8"

Headroom Clearance - 1-1/4"
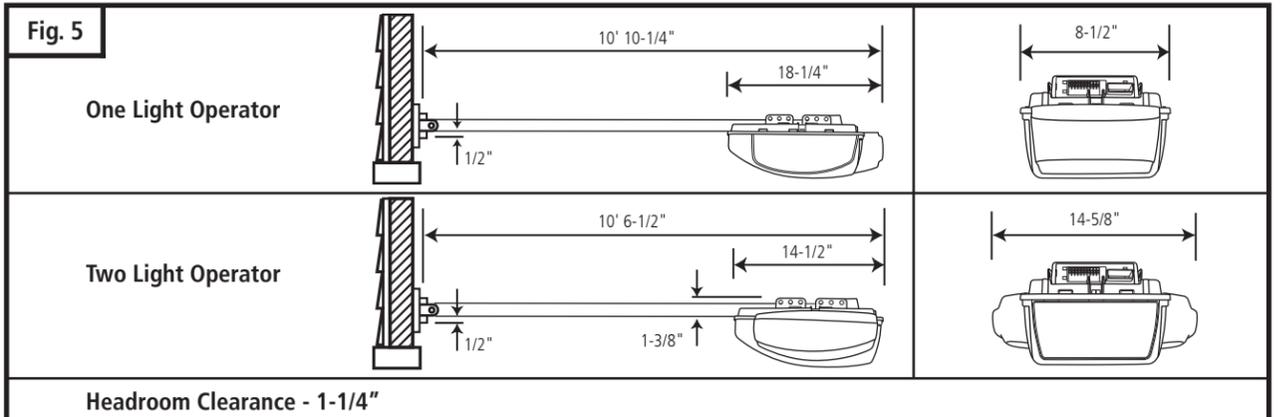
6. OPERATOR PACKAGE CONTENTS

The following items are included with your Garage Door Operator (GDO). 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 **OPERATORS**

M4700e (Two Light Operator)
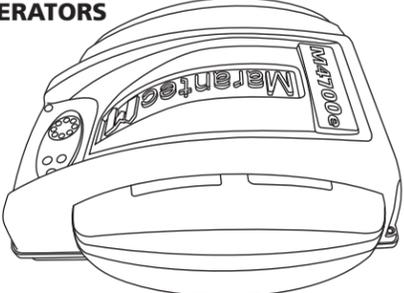
M4500e (One Light Operator)
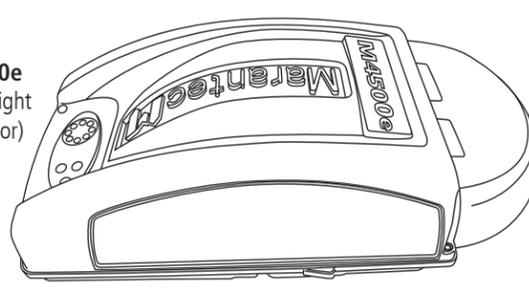
Fig. 7 **ACCESSORIES**

2-Channel Mini Transmitter

Transmitter Visor Clip Cover Programming Connector

Garage Door Operator Manual and Safety Labels

Owner's Manual

WARNING Operating Warning Label Garage Door Safety Label Warranty Card
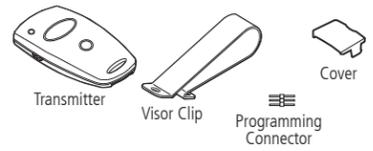
Wall Control Panel (with Hardware Kit)
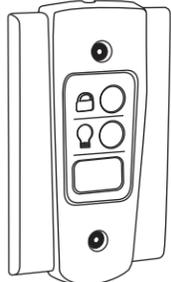
Tapered-Head Screws (2)
Machine screws (2)

Screw Caps (2)
30 Ft. 2-Conductor Wire
Drywall Anchors (2)
Staples (10)

Photo Eye Safety System

Wire Holder Kit

Hardware Kit

Rail Clip (2) #74744

Curved Door Arm #8009466

Header Bracket #8030742

Door Bracket #8030743
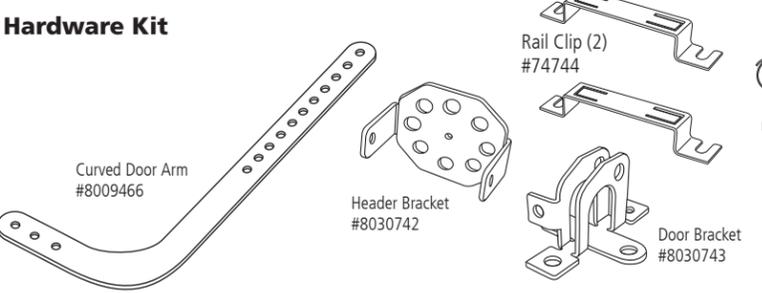
Plastite Screw (4): 6 X 14
Clevis Pin (1): 5/16" x 7/8" Cotter Ring (1)
Clevis Pin (1): 1/4" x 3-1/4" Cotter Ring (1)
Carriage Bolt (2): 1/4" - 20 x 2" Lock Washer (2): 1/4" Hex Nut (2): 1/4" - 20
Lag Screw (2): 5/16" x 1-3/4"
Lag Screw (4): 1/4" x 1-1/2"
Hex Bolt (2): 5/16" - 18 x 3/4" Lock Nut (2): 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

18. OPERATOR ASSEMBLY PARTS (cont'd)

Fig. 55 **M4500e Operator**
Guide for part replacement only
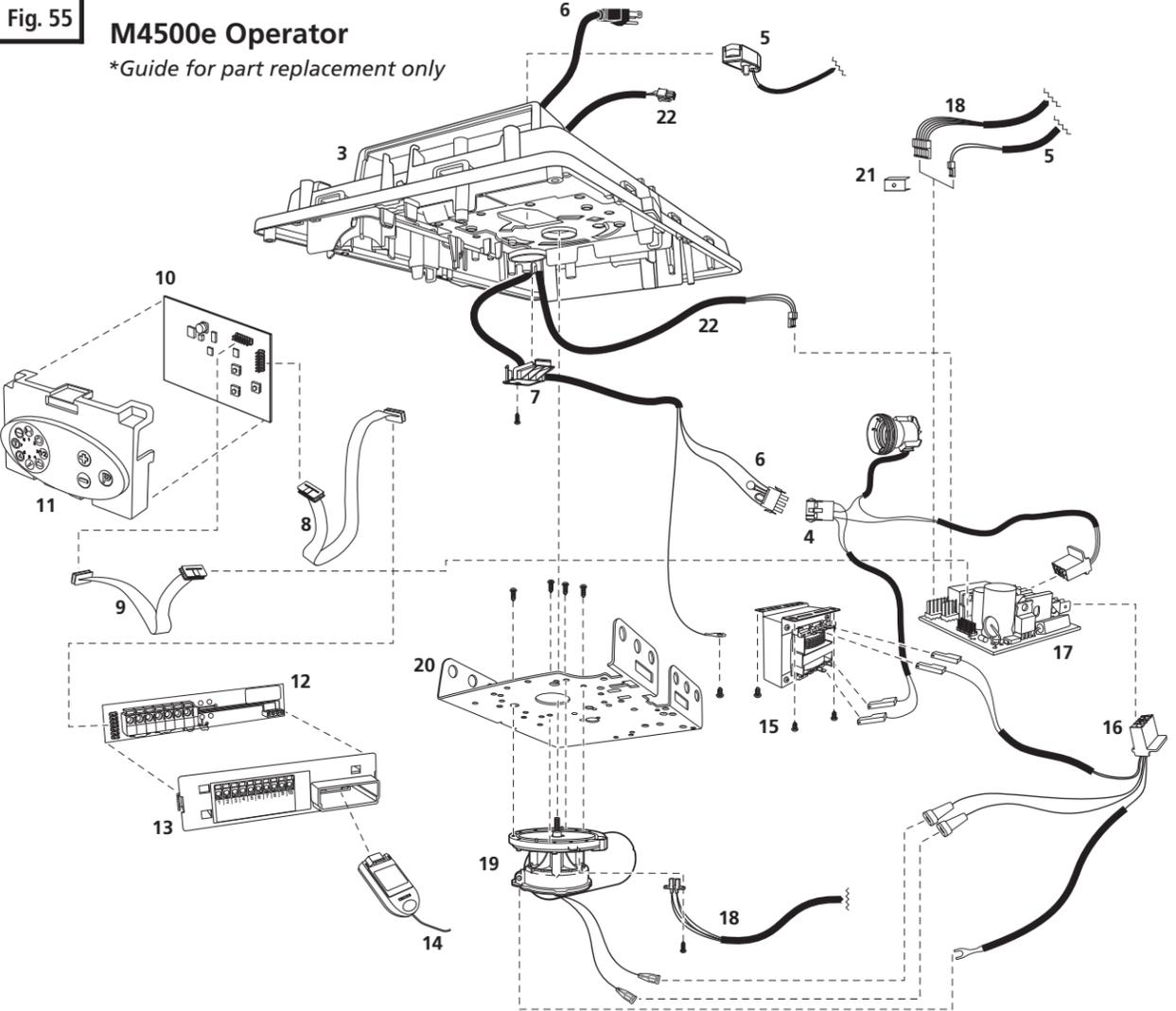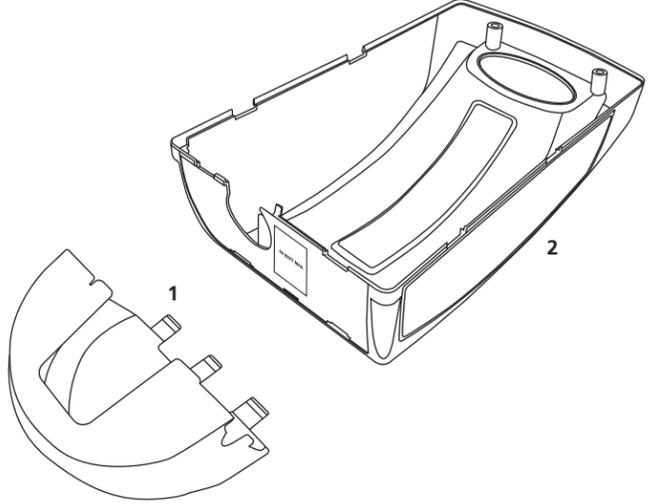
| Item	Part #	Description
1	80350	Lamp Lens
2	83889	Housing with Labels
3	——	Chassis
4	78724	Wire Harness
5	8054389	Reference Switch
6	8030987	Power Cord
7	8007776	Strain Relief Cover
8	73557	Ribon Cable
9	73109	Ribon Cable
10	78914	Logic Board
11	79011	Control Panel
12	78938	Terminal Board
13	70014	Terminal Board Housing
14	78236	Modular Receiver
15	78156	Transformer
16	73699	Wire Harness (Motor / Transformer)
17	72784	Power Board
18	8055529	RPM Sensor w/Wire Harness
19	73894	Motor Assembly
20	——	Mounting Plate
21	60379	Clip
22*	83388	Harness (Locmatic ready operator)

Fig. 54

M4700e Operator
Guide for part replacement only
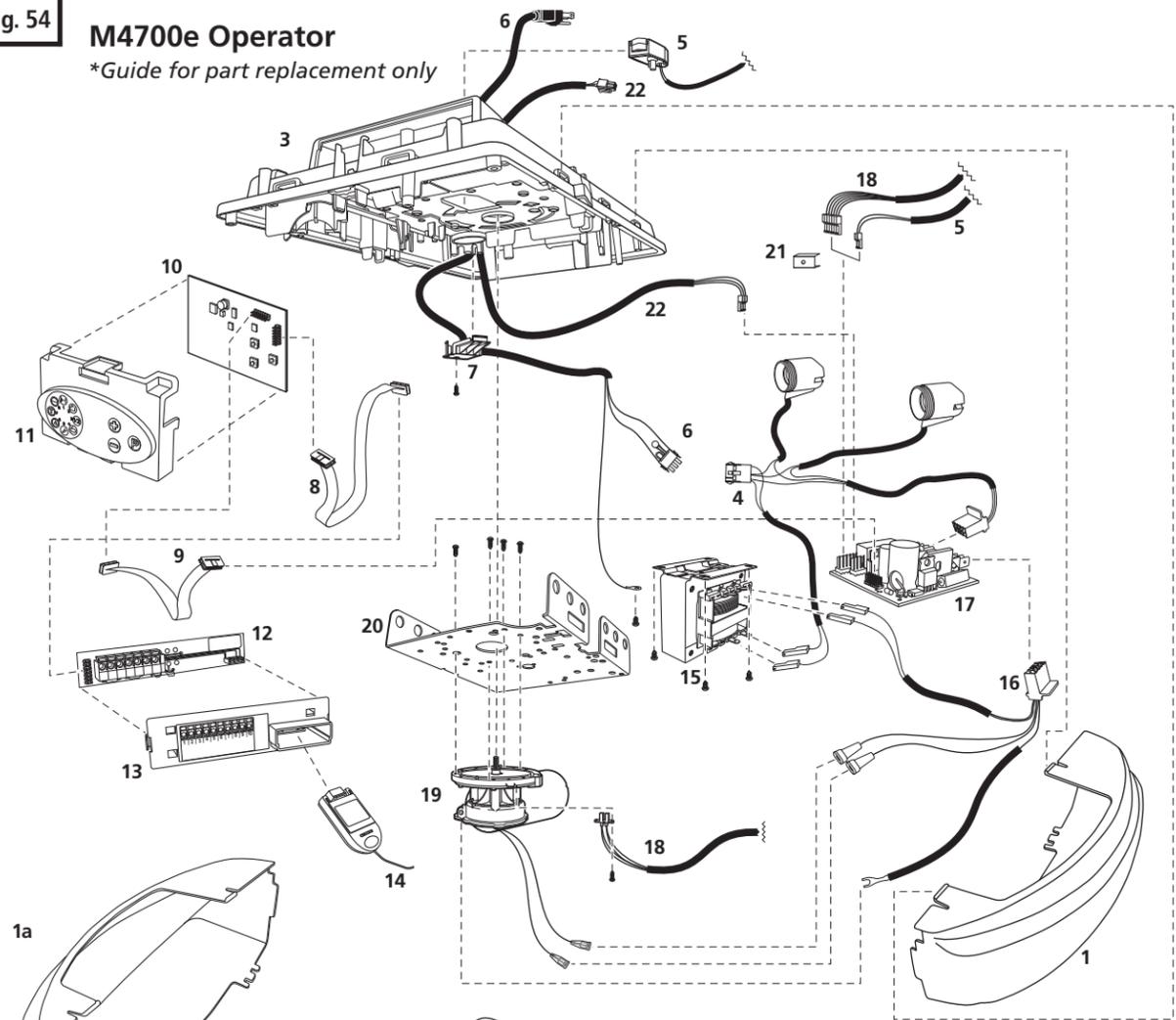
Item	Part #	Description
1	80349	Lamp Lens
1a	80348	Lamp Lens
2	83890	Housing with Labels
3	——	Chassis
4	78936	Wire Harness
5	8054389	Reference Switch
6	8030987	Power Cord
7	8007776	Strain Relief Cover
8	73557	Ribon Cable
9	73109	Ribon Cable
10	78914	Logic Board
11	79011	Control Panel
12	78938	Terminal Board
13	70014	Terminal Board Housing
14	78236	Modular Receiver
15	78157	Transformer
16	73699	Wire Harness (Motor / Transformer)
17	72784	Power Board
18	8055529	RPM Sensor w/Wire Harness
19	73894	Motor Assembly
20	——	Mounting Plate
21	60379	Clip
22*	83388	Harness (Locmatic ready operator)

⚠ WARNING ⚠

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 operator.

3. Install garage door operator 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 operator.

5. If possible, install the door operator 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 operator 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 operator, 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 25.

Fig. 9
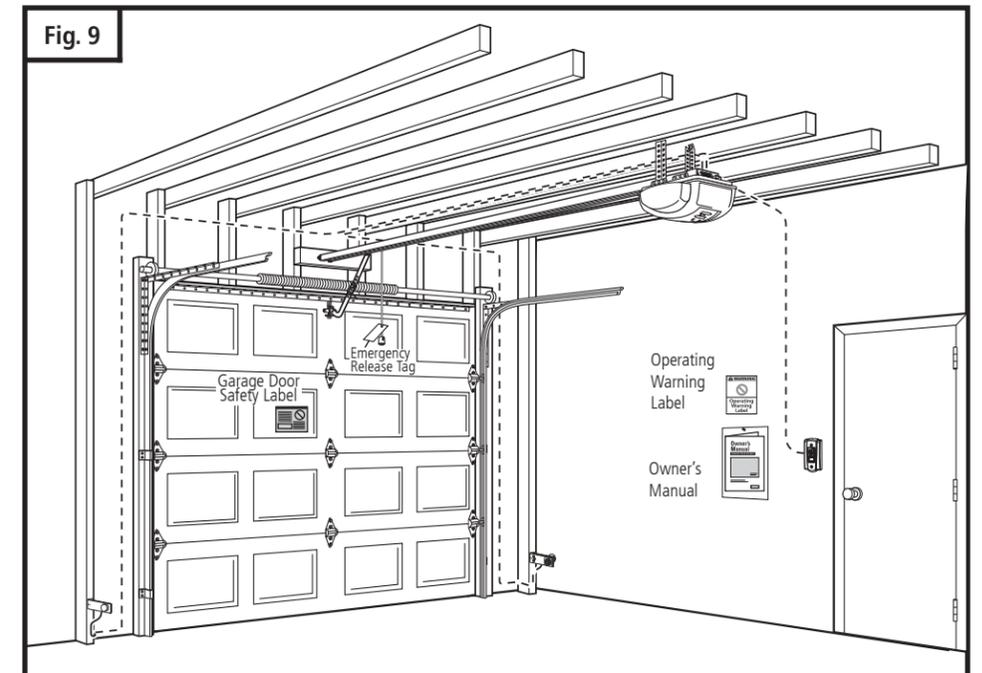
Shown on the right is an overall view of a completed garage door operator system installed on a sectional door. The arrangement is similar for a one-piece door (except for differences described later in this manual).

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.

Fig. 10

Horizontal Reinforcement Bracket
Header
Horizontal Line for Header Bracket Height
See Fig. 11
See Fig. 12
Vertical Center Line
Door Width

Fig. 11

Lag Screw for Header installation if necessary (not provided)
Header Bracket
5/16 x 1-3/4" Lag Screw
Header
Pilot Holes
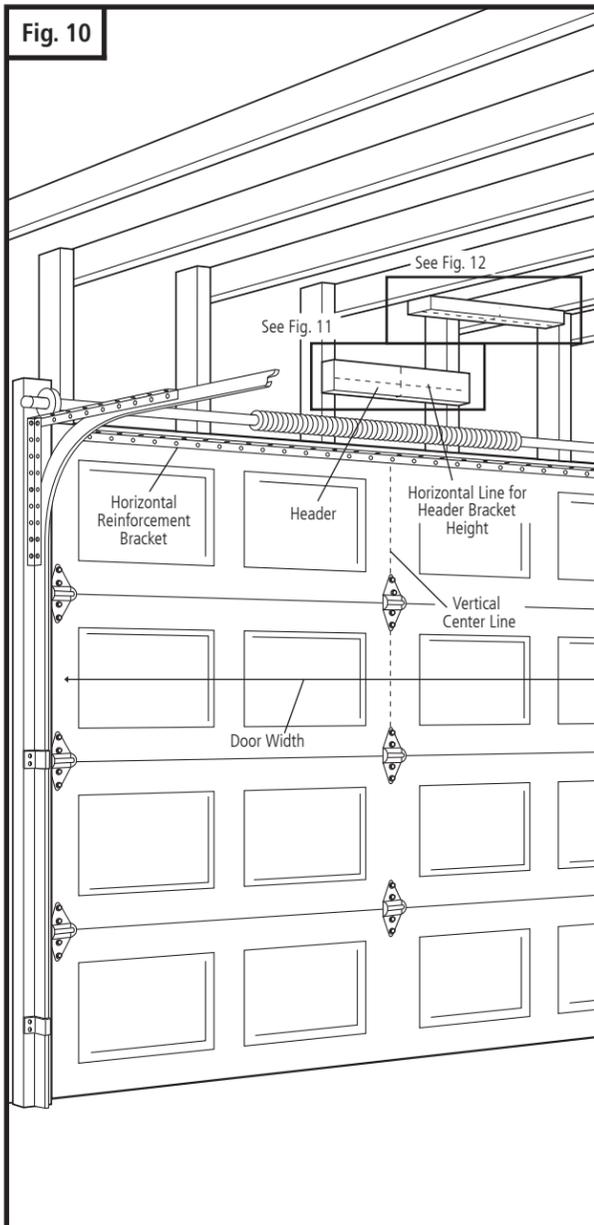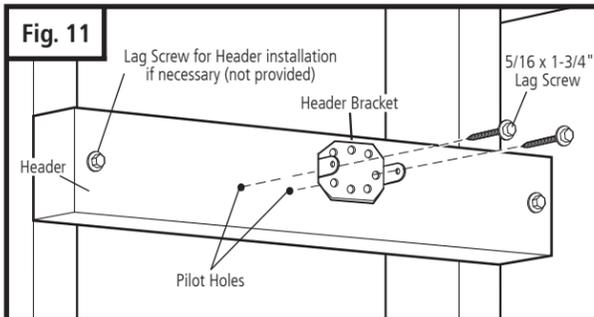
17. RAIL ASSEMBLY PARTS

Fig. 52

Belt Rail Assembly
Model#: ML-807B (7' Door)   ML-808B (8' Door)   ML-810B (10' Door)

Power Head End
Header End

Item	Part #	Description	Item	Part #	Description
1.	————	Rail	7.	————	Belt with position tab
2.	8030337	Sprocket holder assembly	8.	8030177	Trolley assembly (7' Door)
3.	8008709	Belt guide		8030178	Trolley assembly (8' & 10' Door)
4.	8030432	Roller holder with tension bolt assembly	9.	8008708	Pin
5.	8008503	Rail end-stop	10.	8030735	Straight door arm
6.	8030196	Belt connector	11.	8007412	Shaft adapter

Fig. 53

Chain Rail Assembly
Model#: ML-807C (7' Door)   ML-808C (8' Door)   ML-810C (10' Door)

Power Head End
Header End

Item	Part #	Description	Item	Part #	Description
1.	————	Rail	7.	8030177	Trolley assembly (7' door)
2.	8030339	Sprocket holder assembly		8030178	Trolley assembly (8' & 10' Door)
3.	8030432	Roller holder with tension bolt assembly	8.	8008708	Pin
4.	8008503	Rail end-stop	9.	8030735	Straight door arm
5.	8030234	Chain connector	10.	8007412	Shaft adapter
6.	————	Chain with position tab			

15. 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. 50):
- 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. 50.
- 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.
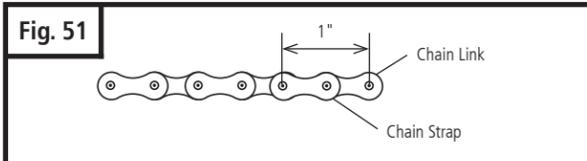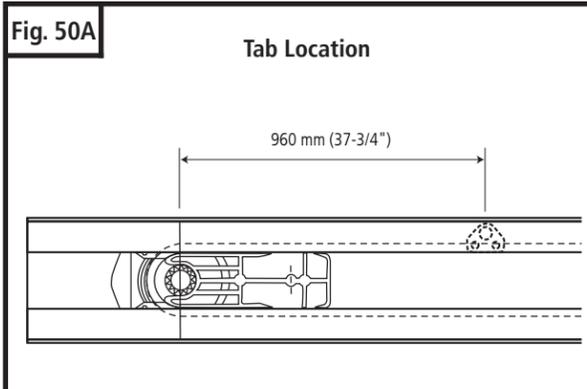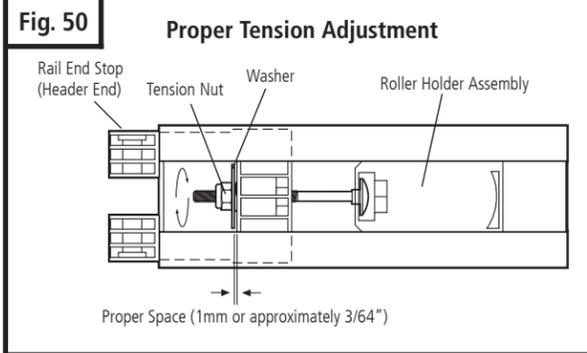
16. RAIL LENGTH ADJUSTMENT

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. 52 on p. 29, 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. 50 and Fig. 50A).
- Tension belt properly (Fig. 50).
- Check rail for proper assembly and operation by manually moving trolley from end to end and back to position per Fig. 50A, with trolley connected to belt.

Fig. 50 — Proper Tension Adjustment

Rail End Stop (Header End) — Tension Nut — Washer — Roller Holder Assembly

Proper Space (1mm or approximately 3/64")

Fig. 50A — Tab Location

960 mm (37-3/4")

Fig. 51

1"

Chain Link

Chain Strap

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. 53 on p. 29, 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. 51).
- Reassemble two piece connector and slide chain and all rail parts into rail from header end according to original assembly (Fig. 50 and Fig. 50A).
- Tension chain properly (Fig. 50).
- Check rail for proper assembly and operation by manually moving trolley from end to end and back to position per Fig. 50A, 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 1-3/4") 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).

Fig. 12

Ceiling

Pilot Hole

Header Bracket

Lag Screw

Fig. 13

Pin Hole

Cut off for one-piece door only

Fig. 14

Insert 1/4 x 2" Carriage Bolts from outside of door

1/4-20 Nut

Lock Washer

Door Bracket

Wood Sectional Doors

Fig. 15

Garage Door Center Line
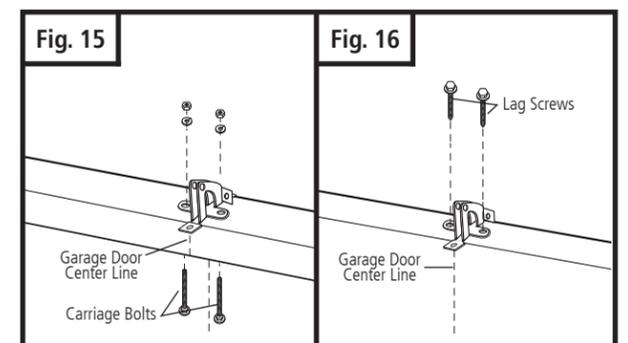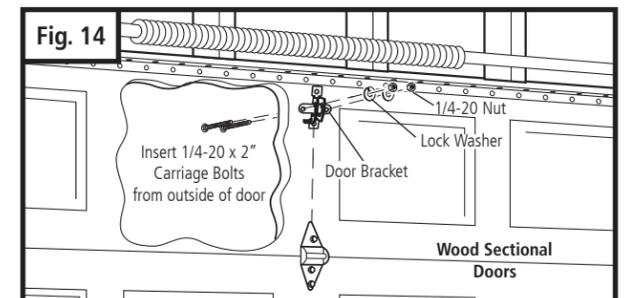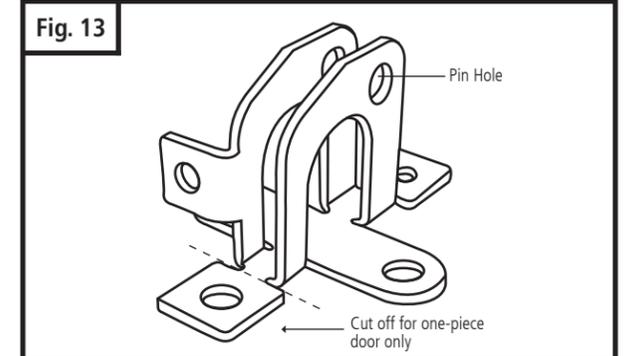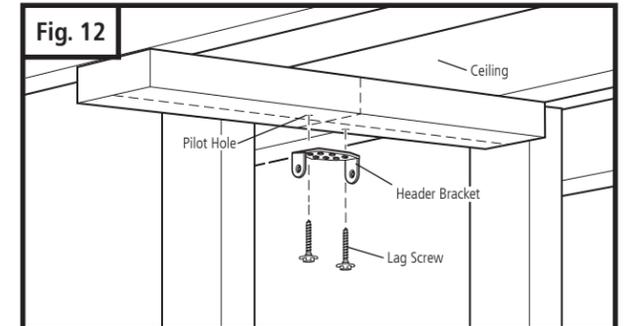
Carriage Bolts

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

Fig. 16

Lag Screws

Garage Door Center Line

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

8-4. ATTACH RAIL TO OPERATOR HEAD

⚠️ **WARNING** ⚠️

When fastening the rail to the operator, use only the screws provided. Use of any other screws may result in operator 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 operator with control panel facing front of garage. Rest operator 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 operator 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.
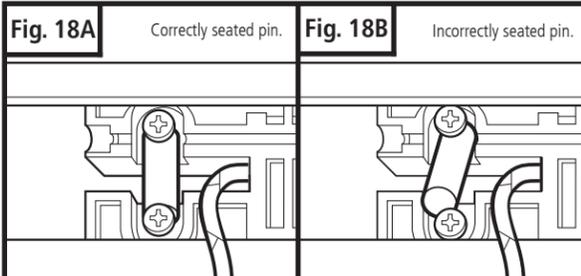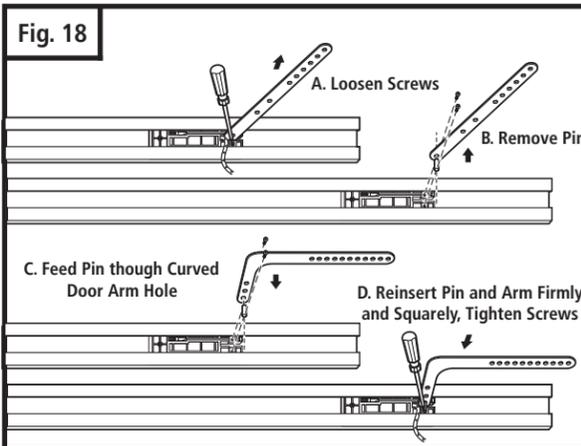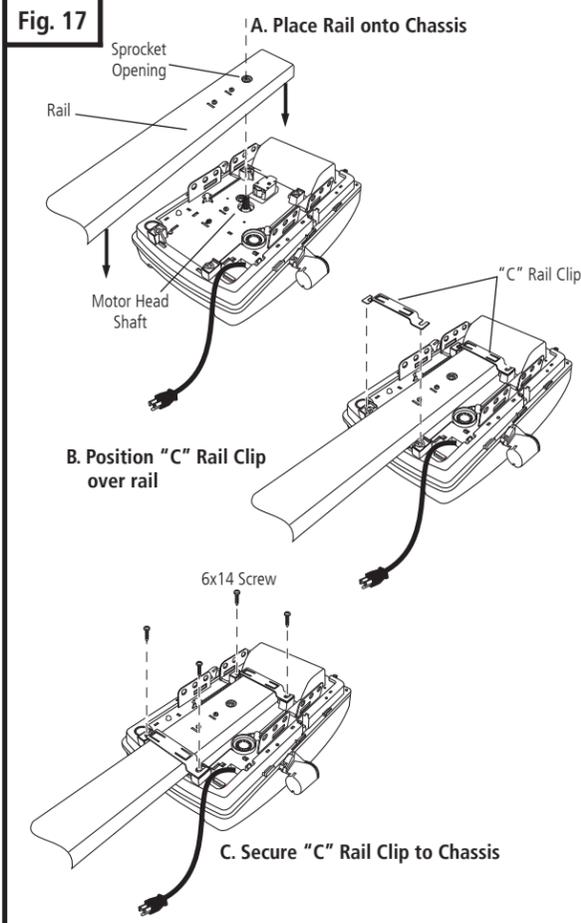- Position 2 "C" rail clips over rail and onto chassis. Flanges on "C" rail clips **MUST** fit into guide posts recesses (Fig. 17B).
- Insert screws (6 x 14) through bracket holes and into chassis holes, and tighten screws firmly to hold rail to head (Fig. 17C).
- For sectional doors, proceed to step 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 operator 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.

Fig. 17

A. Place Rail onto Chassis
Sprocket Opening
Rail
Motor Head Shaft
"C" Rail Clip

B. Position "C" Rail Clip over rail

6x14 Screw

C. Secure "C" Rail Clip to Chassis

Fig. 18

A. Loosen Screws
B. Remove Pin
C. Feed Pin though Curved Door Arm Hole
D. Reinsert Pin and Arm Firmly and Squarely, Tighten Screws

Fig. 18A Correctly seated pin. | **Fig. 18B** Incorrectly seated pin.

---

11. OPERATION OF YOUR OPERATOR

Your operator 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. 47A. 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 33). To open or close garage door, press and hold Illuminated Door Pushbutton. See Fig. 48. 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.

NOTE: The Light On / Off button must be pressed twice, in order to turn the operator light(s) off after a door cycle (activation).

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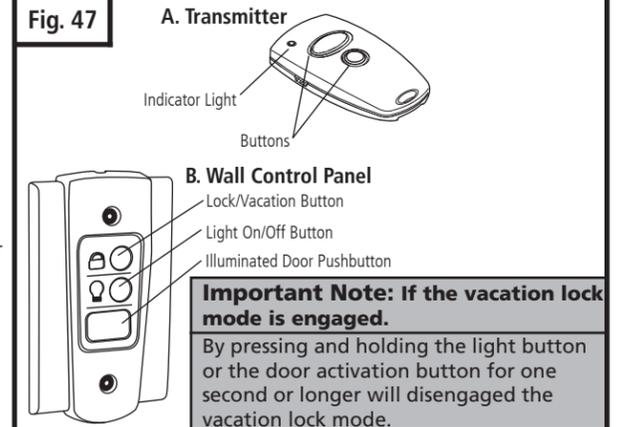- The Lock/Vacation button can be used to lock out all remote control transmitters. The door can still be activated by wall control panel or keyless entry system. Press and hold Lock/Vacation button for 2-3 seconds. Release button. Illuminated Door Pushbutton will flash continuously while lock mode is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

OPERATOR LIGHTS:

- The amount of time that the operator light(s) are "on" can be adjusted. Please refer to level 5 menu 4 in the "Advanced Settings"
- Lights will come on whenever operator is activated. The default factory setting for the light to stay "on" is 4 minutes and 15 sec., 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 operator senses an obstruction either detected by the internal safety system or the photo eye sensors. To stop lights from flashing, remove obstruction and operate door normally. The fault light indicator will flash for the set light time "on" factory default setting of 3 minutes maximum.

12. MODULAR ANTENNA

To replace modular antenna 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. 48)

Fig. 47

A. Transmitter
Indicator Light
Buttons

B. Wall Control Panel
Lock/Vacation Button
Light On/Off Button
Illuminated Door Pushbutton

Important Note: If the vacation lock mode is engaged.
By pressing and holding the light button or the door activation button for one second or longer will disengaged the vacation lock mode.

Fig. 48

Fig. 48A

Door Lock Connection Leads — Control Module

Fig. 49
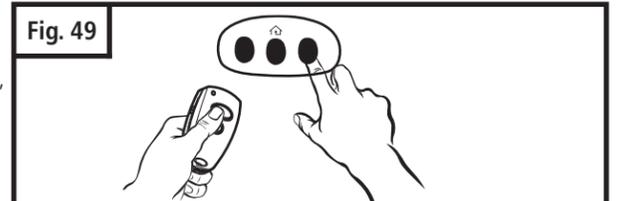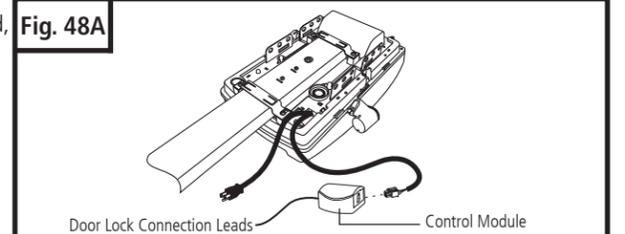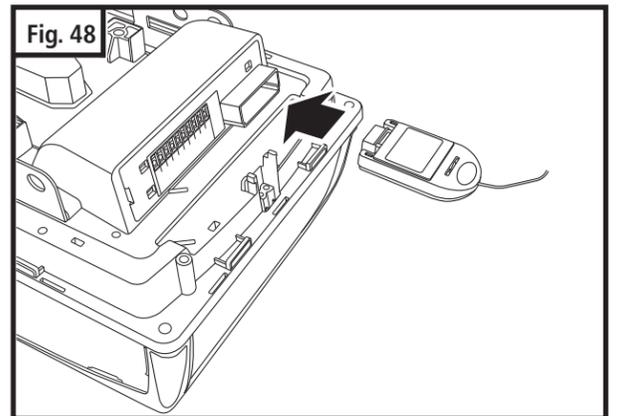
13*. LOCMATIC READY
Applicable for Locmatic Ready Operator

The control module harness on the same side as the operator power cord shown on figure 48A is provided for connectivity with the Locmatic System control module. **The Locmatic door lock system is an optional accessory sold separately.**

14. HOMELINK® TRANSCEIVER

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. 49)

10. TRANSMITTERS

TRANSMITTERS (Fig. 41):
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. 42)
- 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. 43)
- 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. 44):
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 44)
- 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.
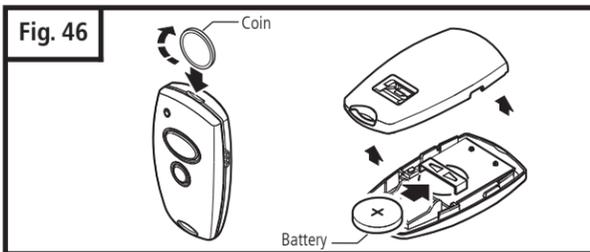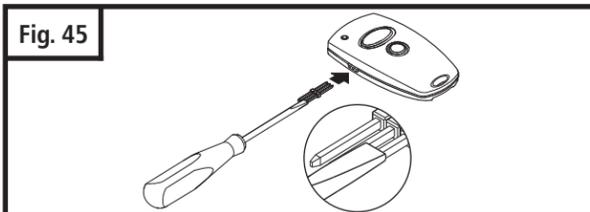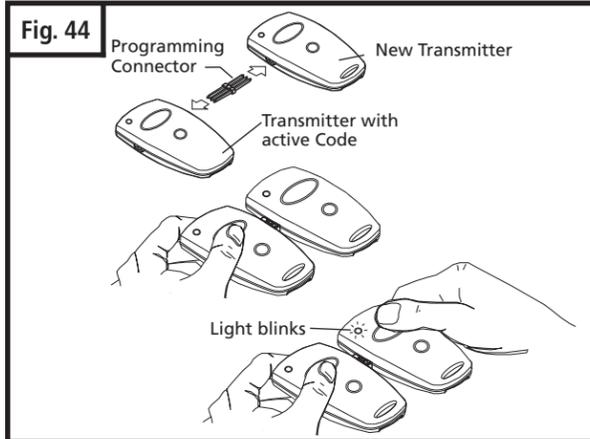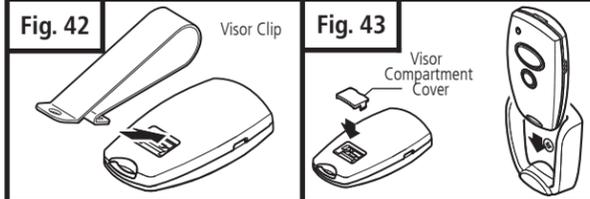
CHANGING THE CODE (Fig. 45):
The transmitter factory preset code can be changed as follows:
- Insert the programming connector into transmitter terminal.
- Short one of the outer pins of the programming connector with the middle pin.
- Press and hold the respective channel button. The light will blink rapidly for approximately 5 sec. Release the button after the light illuminates continuously. Code will change in approximately 2 seconds.
- Remove the programming connector.
- Once the transmitter code is changed, the operator must be recoded with the new transmitter code as described on the initial system set up page 19.

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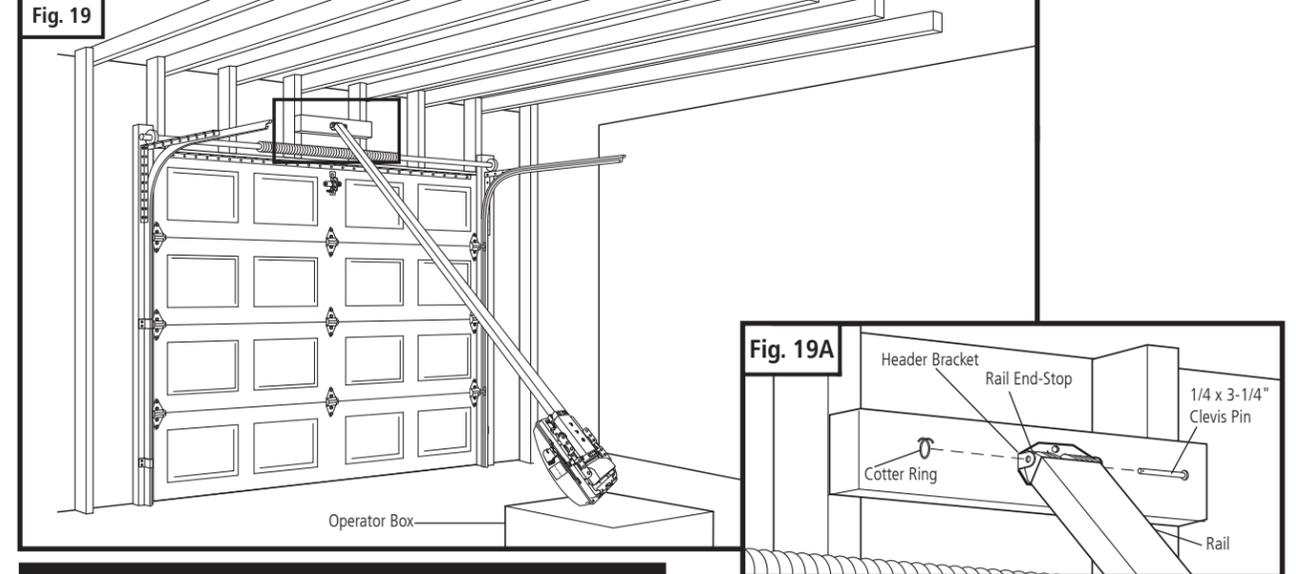

Fig. 41
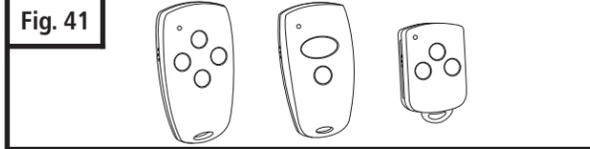
FCC Certified: This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Fig. 42   Visor Clip

Fig. 43   Visor Compartment Cover

Fig. 44
Programming Connector   New Transmitter
Transmitter with active Code
Light blinks

Fig. 45

Fig. 46   Coin
Battery

BATTERY REPLACEMENT (Fig. 46):
- 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.

Fig. 19
Operator Box

Fig. 19A   Header Bracket   Rail End-Stop
1/4 x 3-1/4" Clevis Pin
Cotter Ring
Rail

8-5. ATTACH RAIL TO HEADER BRACKET

- Support operator 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 OPERATOR FOR MOUNTING

Once rail is attached to header bracket, support operator on ladder, or use the assistance of another person to support operator 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. This 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 operator so that top of operator 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 operator to ceiling.

Fig. 20   Door   2x4 Laid Flat   Stepladder

Fig. 21   Door   Stepladder
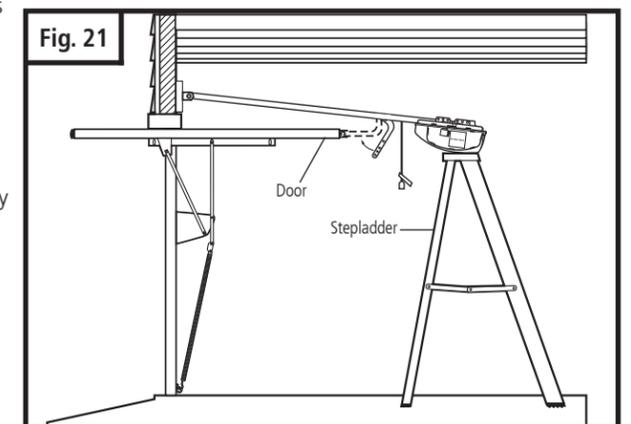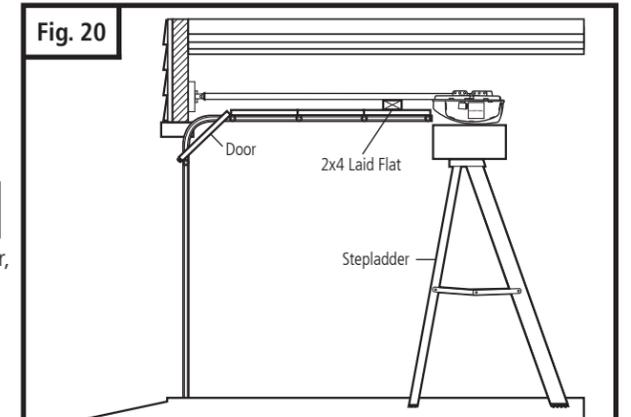
8-7. MOUNT OPERATOR TO CEILING

⚠ WARNING ⚠

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

- Position operator 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 operator's perforated angles. See Fig. 23 for an alternate mounting methods.
- Once operator 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 operator head slightly higher and re-mount in position.

NOTE: To provide additional support for 10 ft. Doors and higher, use the optional support bracket. (Accessories p.32)

- 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.
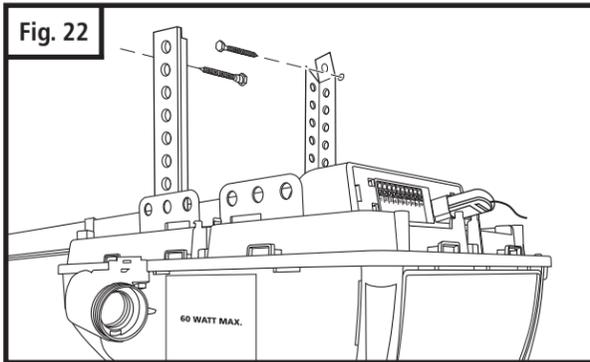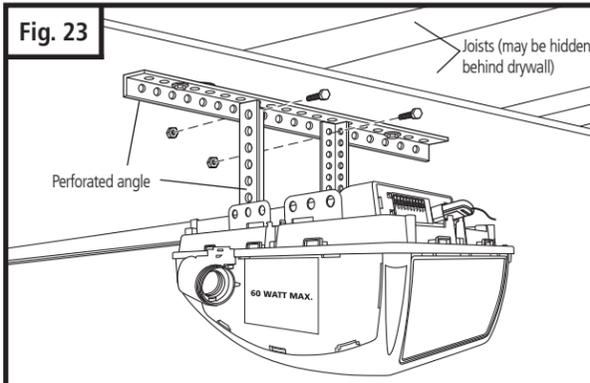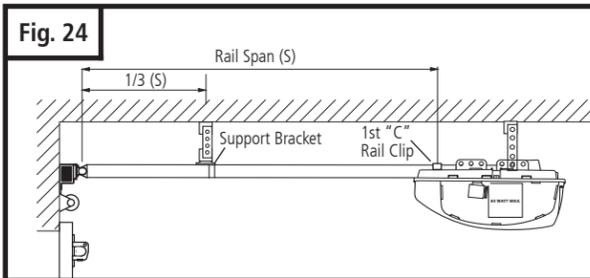
Fig. 22

Fig. 23

Joists (may be hidden behind drywall)

Perforated angle

Fig. 24

Rail Span (S)

1/3 (S)

Support Bracket

1st "C" Rail Clip
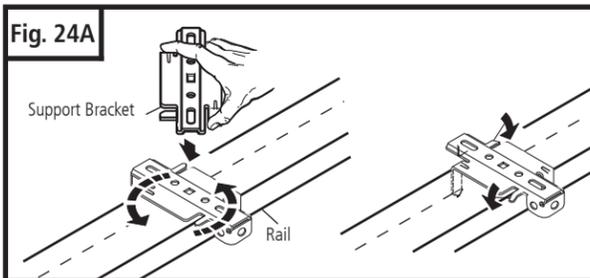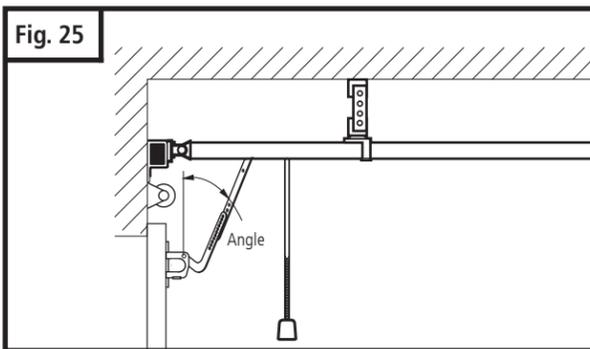
Fig. 24A

Support Bracket

Rail

Fig. 25

Angle

8-20. APPLY LABELS TO INSIDE OF GARAGE

Several important safety and instruction labels are included with your operator 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.

8-21. 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 operator 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 operator 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 operator before making any repairs or removing the housing cover.

9. SAVE THESE INSTRUCTIONS for future safety, adjustment, and maintenance purposes.

PHOTO EYE SENSORS ALIGNMENT:

Photo eye sensors maintain an invisible, unbroken beam between each other. When the photo eye sensors are connected to the operator 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.
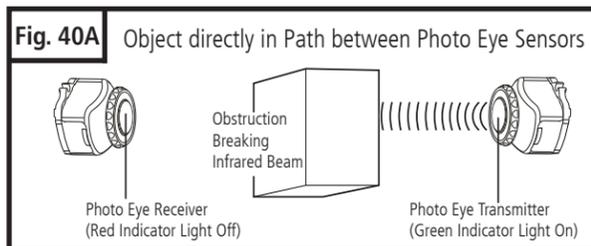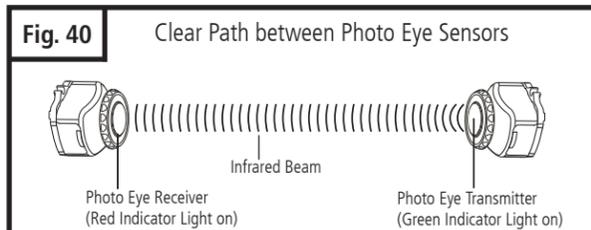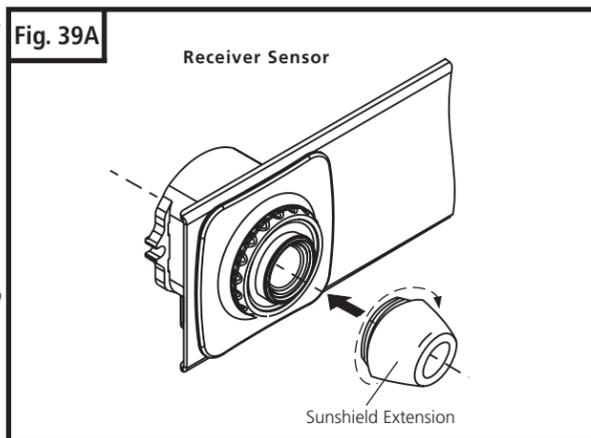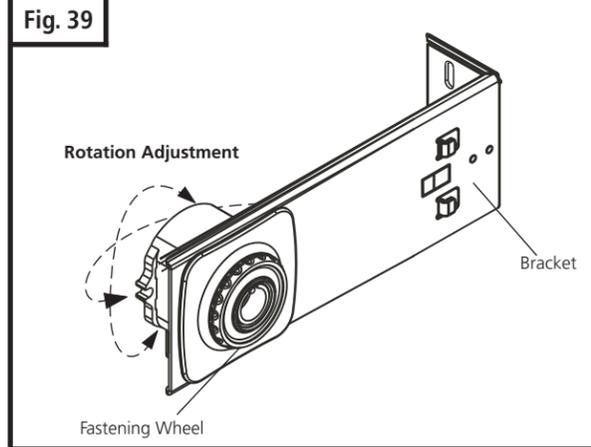
- When photo eye system is connected to the operator and the power is on, the green light on the transmitter sensor will illuminate. When the sensors are aligned, the red light on the receiver eye will illuminate.
- If necessary loosen the fastening wheel on each photo eye sensor. Rotate the eye sensor 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. 39.
- 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. 39A.

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. 40A. Red indicator light on receiver sensor should go out.
- Press and release the wall control button. The door should not move in the down direction. LED's # 7 & #8 on the operator will flash. If this does not happen, disconnect operator and call for service.
- To reset operator, 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. 39

Rotation Adjustment

Bracket

Fastening Wheel

Fig. 39A

Receiver Sensor

Sunshield Extension

Fig. 40   Clear Path between Photo Eye Sensors

Infrared Beam

Photo Eye Receiver
(Red Indicator Light on)

Photo Eye Transmitter
(Green Indicator Light on)

Fig. 40A   Object directly in Path between Photo Eye Sensors

Obstruction
Breaking
Infrared Beam

Photo Eye Receiver
(Red Indicator Light Off)

Photo Eye Transmitter
(Green Indicator Light On)

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.
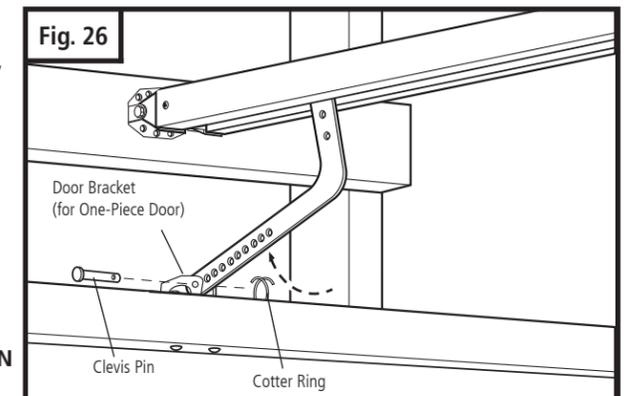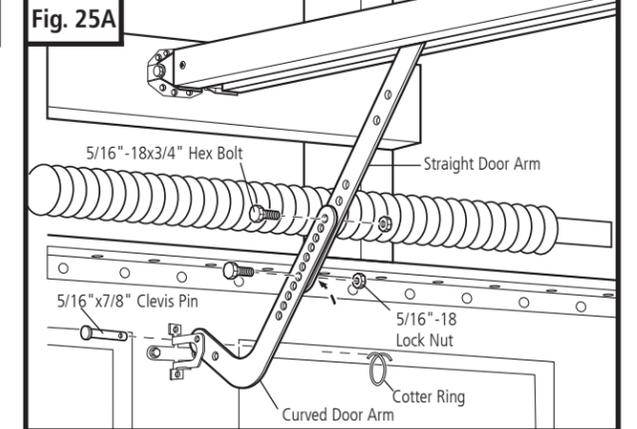
⚠ **WARNING** ⚠

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 operator 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

5/16"-18x3/4" Hex Bolt

Straight Door Arm

5/16"x7/8" Clevis Pin

5/16"-18
Lock Nut

Cotter Ring

Curved Door Arm

Fig. 26

Door Bracket
(for One-Piece Door)

Clevis Pin   Cotter Ring

Fig. 27

Rail

Emergency Release Cord

The release cord and knob should be adjusted to hang 6 ft. above garage floor.
To adjust:
- Slide knob and tag 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 and tag back into place.
- Check operation of emergency release.

PULL DOWN

Red Emergency
Release Knob

Fig. 27A

Indicator Window   Latch

Red Catch
Unlock   Lock

8-10. INSTALL THE PHOTO EYE SENSOR 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.
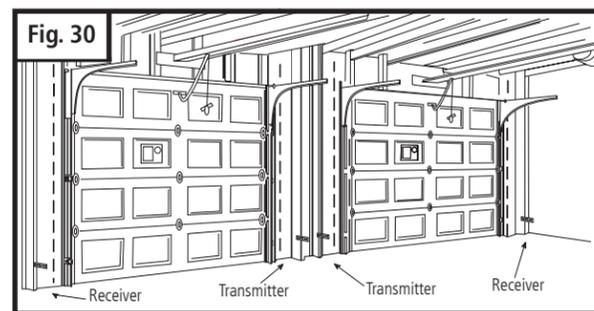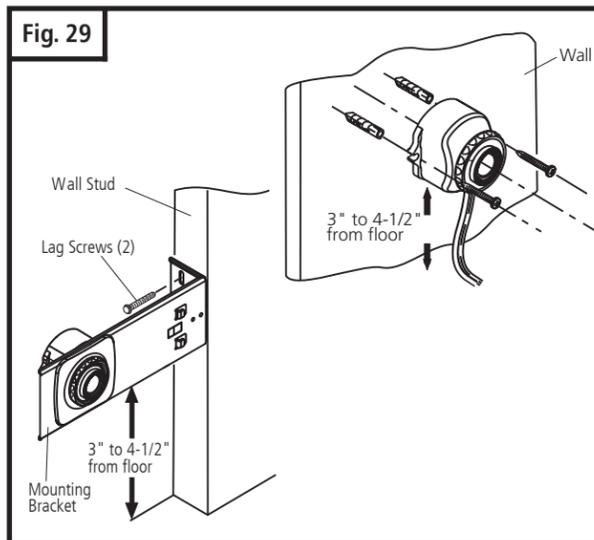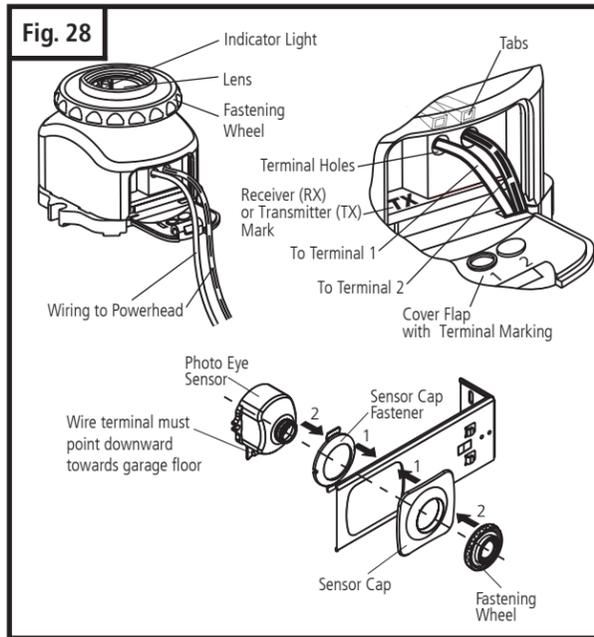
MOUNTING THE PHOTO EYE SENSOR BRACKETS TO WALL:

- 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.

Fig. 28

Labels: Indicator Light; Lens; Fastening Wheel; Terminal Holes; Tabs; Receiver (RX) or Transmitter (TX) Mark; To Terminal 1; To Terminal 2; Wiring to Powerhead; Cover Flap with Terminal Marking; Photo Eye Sensor; Sensor Cap Fastener; Wire terminal must point downward towards garage floor; Sensor Cap; Fastening Wheel

Fig. 29

Labels: Wall; Wall Stud; Lag Screws (2); 3" to 4-1/2" from floor; 3" to 4-1/2" from floor; Mounting Bracket

Fig. 30

Labels: Receiver; Transmitter; Transmitter; Receiver

Level 5: Functions overview

Level 5 - Special Function

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Menu 4:   Operator Light "ON" Timer (in seconds)

	2	5	10	15	20	25	30	35	40	50	80	100	120	150	180	255

Legend:	
LED off	○
LED on	●
LED flashes slowly	☀
LED pulses	☼
LED flashes quickly	☀
Factory default setting	
Not possible	−

8-18. TEST SAFETY REVERSAL

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

- Once per month.
- Anytime the travel or force limits are reset or changed.

> ⚠ **CAUTION**
>
> *Once the adjustments have been set and the door has been run up and down twice uninterrupted for the operator 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. 38.
- Start the door in the downward direction and watch what happens.
- When door contacts the object, 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 operator and call a service person.

Fig. 38

1-1/2" high rigid object
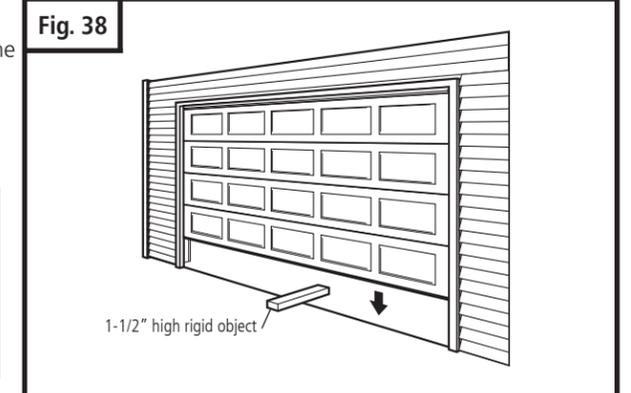
Level 2: Functions overview

NOTE: Menus 5-7 are disabled
Press "+" or "-" button to scroll or navigate through menus.

⚠ CAUTION

The higher the sensitivity setting in menu 3 and 4, the higher the operator force capabilities or less sensitive operation.

Level 2 – Opener settings

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Menu 1: "OPEN" position operator (system) operating force (scale from 1 to 16)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Menu 2: "CLOSED" position operator (system) operating force (scale from 1 to 16)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Menu 3: "OPEN" position operator sensitivity (sensitivity scale from 1 to 16)

OFF	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Menu 4: "CLOSE" position operator sensitivity (sensitivity scale from 1 to 16)

OFF	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Level 4 – Transmitter code programming

Menu 1: Impulse

Not available

Menu 2: Intermediate position

LED 7 flashes slowly -> use transmitter button other than those designated for garage doors -> LED 7 flashes quickly

---

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. See Fig. 31A.

Fig. 31 — To Terminal #4 Screw, To Terminal #3 Screw
Fig. 31A — Screw caps
Fig. 31B

- Run wires from the wall control panel along the wall and ceiling to the operator quick-connect terminals, locate on the rear. 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. 32A for terminal assignment.
- Insert white single wire from wall control into quick-connect terminal #3 and single color striped wire into quick-connect terminal #4.
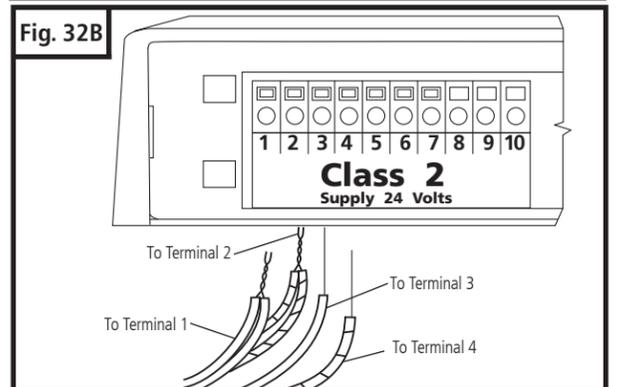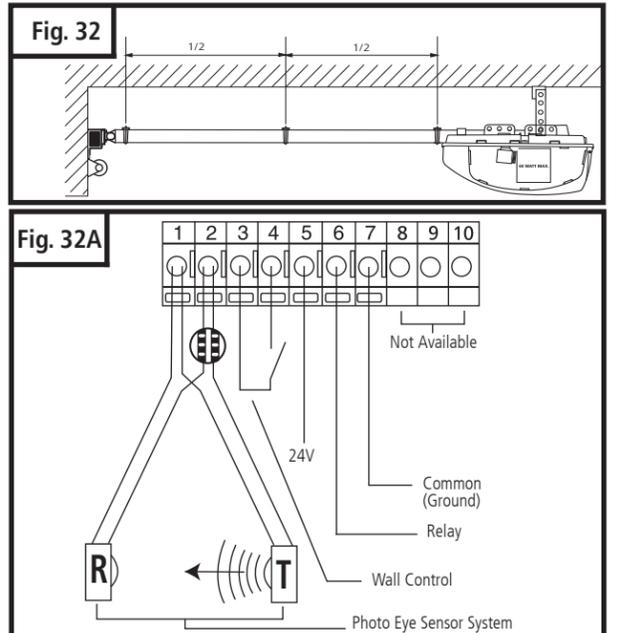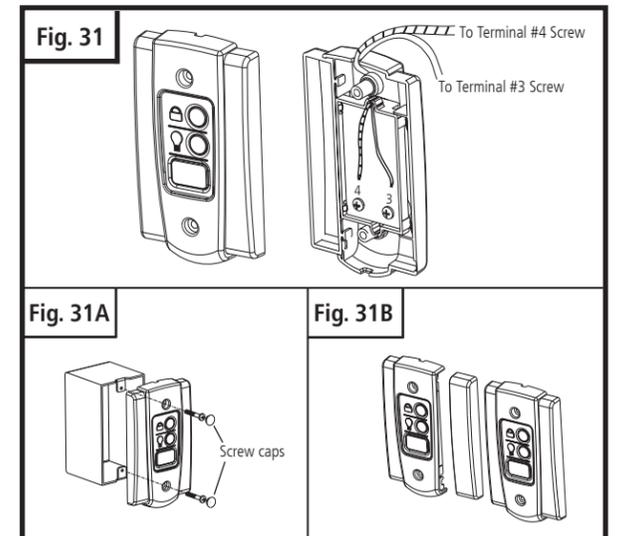
NOTE: Individual wall control stations can be combined into one solid panel.

- Detach right side panel from one of the wall controls. (Fig.31B)
- Attach wiring to each wall control.
- Combine single panels into one block.
- Follow the same steps as above to mount additional wall control panels and wire connections, **only connect one wall control per operator.**

- Run photo eye system wires along the wall and the top of the rail assembly to the operator. Use the three wire holders to secure wires. See Fig. 32.
- Insert the stripped end of the white wire combination firmly into quick-connect terminal #1 by pushing the wires directly in the terminal hole. If the wires are difficult to insert, a screwdriver may be used to depress the terminal "tab" while inserting the wires. To remove wires, depress the tab again and pull wires out.
- Repeat procedure for the stripe wires (white/black stripe), insert them into quick-connect terminal #2.

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

Fig. 32

Fig. 32A — 1 2 3 4 5 6 7 8 9 10; Not Available; 24V; Common (Ground); Relay; Wall Control; Photo Eye Sensor System; R; T

Fig. 32B — 1 2 3 4 5 6 7 8 9 10; **Class 2** Supply 24 Volts; To Terminal 2; To Terminal 3; To Terminal 1; To Terminal 4

8-13. INSTALL LIGHT BULBS AND LENSES

- Install a maximum 60W standard neck A19 size incandescent bulb (not provided) into lamp socket(s).
- Install lamp lens(es). Two lenses for a M4700e model, see Fig. 33A. Lenses are not interchangeable, the design is left / right orientation dependent. One lens for a M4500e 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 M4700e operator.
- Line up lamp lens tabs with corresponding slots in chassis. Snap lens onto chassis for M4500e model.
- To remove lamp lens, pull lamp lens to unsnap from housing and chassis.
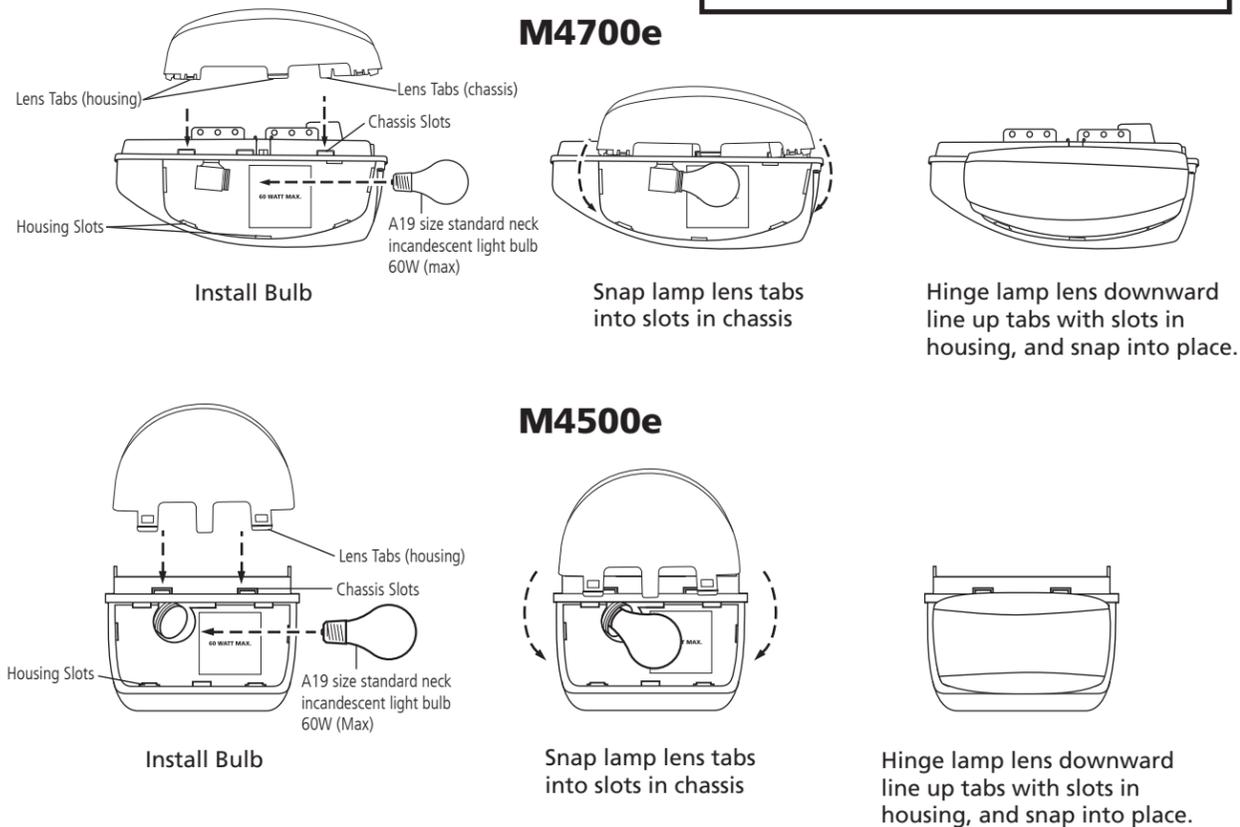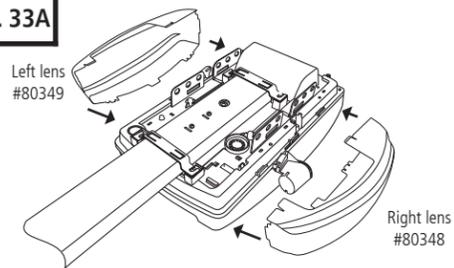
Fig. 33

NOTE: Use only A19 size standard neck incandescent light bulbs. The use of short neck or specialty light bulbs may overheat the endpanel or light socket.

Fig. 33A

Left lens #80349

Right lens #80348

M4700e

Lens Tabs (housing) — Lens Tabs (chassis) — Chassis Slots

Housing Slots — A19 size standard neck incandescent light bulb 60W (max)

Install Bulb

Snap lamp lens tabs into slots in chassis

Hinge lamp lens downward line up tabs with slots in housing, and snap into place.

M4500e

Lens Tabs (housing) — Chassis Slots

Housing Slots — A19 size standard neck incandescent light bulb 60W (Max)

Install Bulb

Snap lamp lens tabs into slots in chassis

Hinge lamp lens downward line up tabs with slots in housing, and snap into place.

8-17. ADVANCED SETTINGS (cont'd)

General overview of the programmable functions

Level	Menu	Factory default setting
Level 1 – Basic function system reset	Menu 3: Intermediate position OPEN	–
	Menu 4: Not available	–
	Menu 5: Soft run position OPEN	–
	Menu 6: Soft run position CLOSE	–
	Menu 8: RESET	
Level 2 – Opener settings	Menu 1: "OPEN" position – operating (System) force	Setting 8
	Menu 2: "CLOSE" position – operating (System) force	Setting 8
	Menu 3: "OPEN" position – operating sensitivity	Setting 15
	Menu 4: "CLOSE" position – operating sensitivity	Setting 15
Level 4 – Transmitter code programming	Menu 1: Not available	–
	Menu 2: Intermediate position	–
Level 5	Menu 4: Light timer	Setting 16

Level 1: Functions overview

NOTE: Menus 1, 2 and 7 are disabled. Press "+" or "-" button to scroll or navigate through menus.

Level 1

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Menu 3: Intermediate position OPEN

Set using the (+ / OPEN) and (- / CLOSE) buttons

Menu 4: Intermediate position CLOSE

not available

Menu 5: Soft run position OPEN

Set using the (+ / OPEN) and (- / CLOSE) buttons

Menu 6: Soft run position CLOSE

Set using the (+ / OPEN) and (- / CLOSE) buttons

Menu 8: RESET

	No	Yes	–	–	–	–	–	–	–	–	–	–	–	–	–	–

8-17. ADVANCED SETTINGS

Advanced settings programming flow chart (Diagram illustrates: Level 2, Menu 2)

⚠ **CAUTION**

*Additional operator functions can be set using the advanced operator functions. Parameters factory default settings can be restored. This programming may only be carried out by a professional installer.*

Levels

(Continue to levels 5, 6, 7)

Menu

Parameter

Operating mode

Level 4

Level 3

Level 2   > 10 sec.

Level 1

Levels Exit

Level 8

Menu 3

Menu 2

Menu 1

Menu Exit (Level 2)

Menu 8

Increase value

Parameter   > 5 sec.

Reduce value

End programming

> 5 sec.

> 5 sec.

Levels 3, 6, 7 are disable
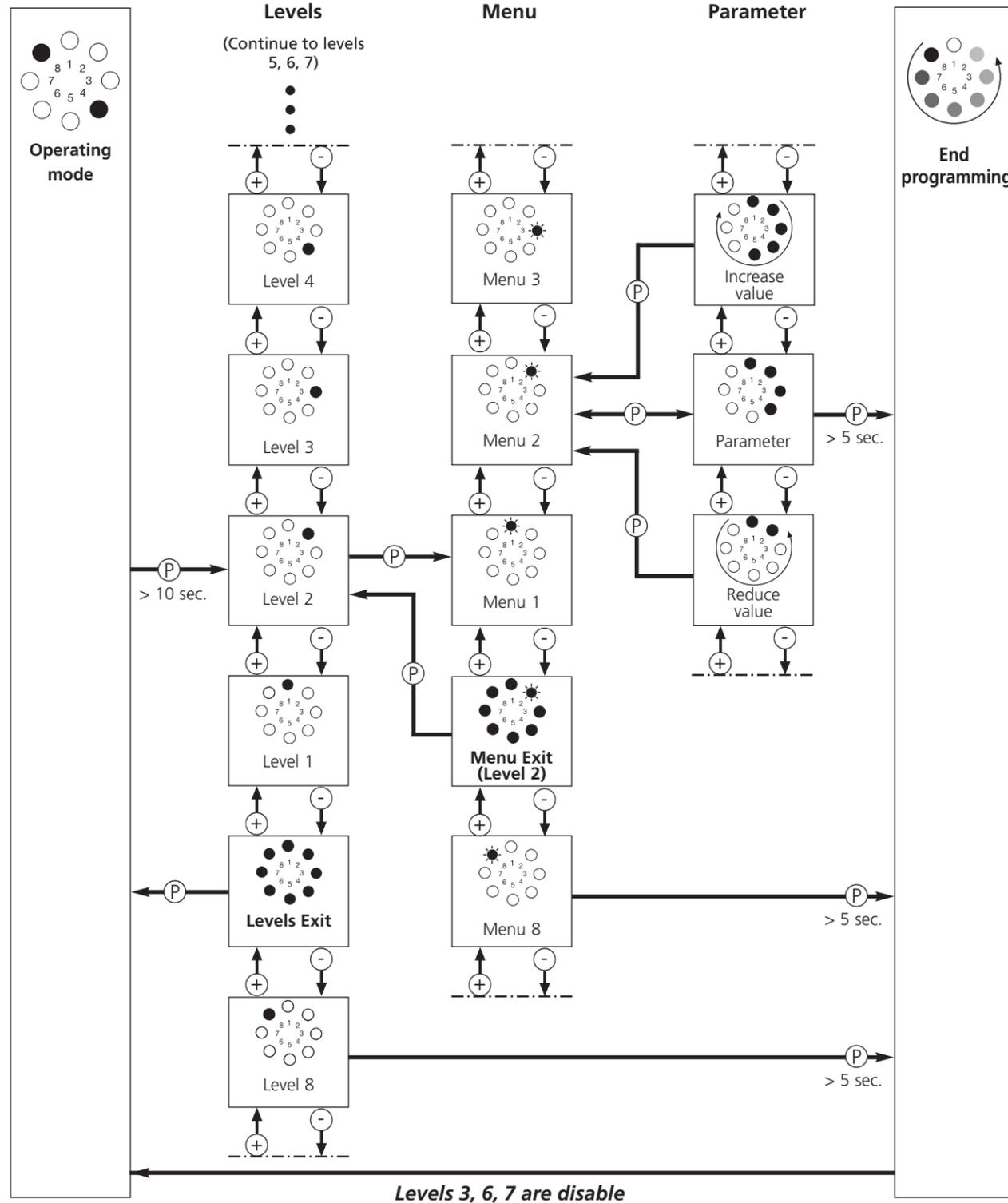
8-14. CONNECT TO POWER

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.
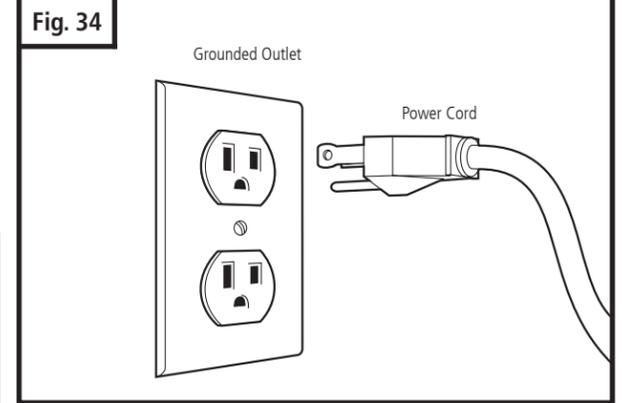
⚠ **WARNING** ⚠

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.
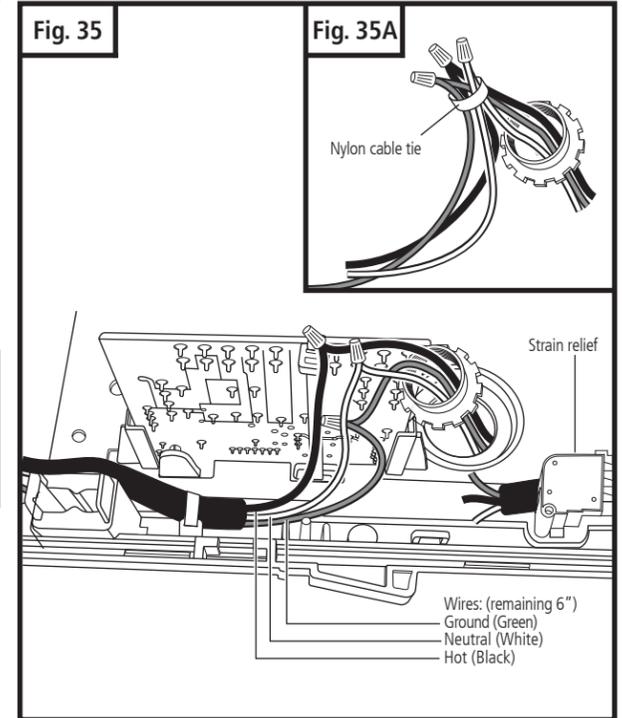
- Plug the operator into a properly grounded outlet (Fig. 34).
- An indicator lights (LED's #4 and #8) on the operator control panel will turn on showing that the power is "On" and the opener is ready to set the adjustments.
- DO NOT operate or run the opener at this time.

PERMANENT WIRING CONNECTION:
(If required by your local electrical code)
If local codes require your operator to be connected via permanent wiring instead of a cord and plug, your operator must be converted, as shown in Fig. 35. Contact a qualified electrician to run the necessary wiring to your operator and to perform the electrical connections.

⚠ **WARNING** ⚠

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

- Remove operator housing by removing the four screws, two screws located at the front by the control panel area, and two screws located on the back of the unit, then pulling the housing away from the chassis.
- Cut the power cord close to strain relief cover, so that after cut, there is at least 6" of wiring remaining. Remove approx. 1 ½" of black insulation left on the cable to expose the three conductor leads (white-neutral, black-hot, and green-ground).
- Remove screw and unsnap the power cord strain relief cover by disengaging the tabs, and remove this part (save for reattachment later).
- Remove the cut power cord 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). Tight wire leads together with a nylon cable tie to avoid the leads from coming in contact with the relay circuit board, see Fig. 35A.
- Reinstall operator housing and secure housing with screws. Make sure that when reinstalling operator housing, no wires will be pinched between the housing and the chassis.
- Complete the remaining installation.
- Turn on power at breaker.

Fig. 34

Grounded Outlet

Power Cord

Fig. 35

Fig. 35A

Nylon cable tie

Strain relief

Wires: (remaining 6")
Ground (Green)
Neutral (White)
Hot (Black)

8-15. CONTROL PANEL

On the control panel (See Fig. 36) you will find circular LED display with 8 numbered icons which shows useful status information regarding the operator and its function and 3 buttons labeled "+", "-" and "P" which allows you to set all the adjustments of your operator.

8-16. INITIAL SYSTEM SET UP

⚠ WARNING ⚠

In order to guarantee a trouble-free programming:
• *The door must be in the "CLOSED" position and engaged to the drive system (rail) before programming the operator or a system reset is performed.*

IMPORTANT: Align the photo eye sensors before starting the initial system set up as outlined in section 8-19, page 24.

For proper initial operation of the operator, three basic functions must be set using express programming:

■ Open Door Position
■ Close Door Position
■ Transmitter Coding

Press and hold the "P" button for approximately 2 seconds. When LED's 8, 1 and 2 illuminate, release the button. You are now ready to set or change the desired adjustment. If no buttons are pressed within 120 seconds while in programming mode, the control unit reverts back to operating mode.

TO MAKE OR CHANGE ANY ADJUSTMENT:

HANDY NOTE: 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 operator to normal mode.

Your new operator 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.

NOTE: You may exit the System Set Up at any time by pressing the button "P" for more then 5 sec. The set up programming can be terminated at any time and from any stage. To do so, press the "P" button for longer than 5 seconds. When programming is terminated, all LED's light up once and then turn off, one after the other.
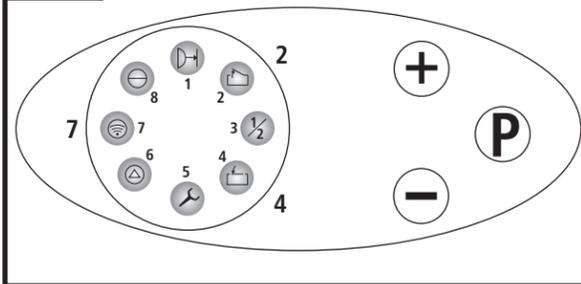
Fig. 36

Fig. 37

Icons Description and LED's Assignment

▷┤	LED #1	Photo Eye Sensors Connectivity/Alignment Indicator
⌂	LED #2	"OPEN Door Position"
½	LED #3	"Intermediate, OPEN Door Position"
⌂	LED #4	"CLOSED Door Position"
🔧	LED #5	"Reference Point"
△	LED #6	-----
📶	LED #7	"Impulse (Remote Control)"
⊖	LED #8	"Power"

8-16. INITIAL SYSTEM SET UP (cont'd)

Power on

1	1x >2s< 10s ℗	**Start initial system setup by programming the door OPEN position.**	
2	⌂ (+)	Bring the door to the desired OPEN postion	
3	⌂ (+) / ⌂ (−)	Fine adjustment if necessary. Adjust the OPEN door position using (+) and (-)	
4	1x <1s ℗	**Save the OPEN door position. Start programming the CLOSED door position.**	
5	⌂ (−)	Bring the door to the desired CLOSED position	
6	⌂ (+) / ⌂ (−)	Fine adjustment if necessary. Adjust the CLOSED door position using (+) and (-)	
7	1x <1s ℗	**Save the CLOSED door position. Program the transmitter code to GDO**	
8	📱	Press the transmitter button. LED #7 flashes rapidly	
9	📱	Release the transmitter button	
10	1x <1s ℗	**Save the transmitter code settings. End the system setup (programming) procedure** *IMPORTANT: SEE NOTE BELOW*	

mode Operating
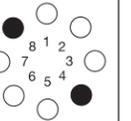
IMPORTANT:

Upon completion of the initial set up, the operator must be cycled for two complete cycles (complete cycle comprises of one uninterrupted up activation of the system and one uninterrupted down activation of the system).

Legend:	
LED off	○
LED on	●
LED flashes slowly	☀
LED pulses	☼
LED flashes quickly	☀
Factory default setting	▨
Not possible	−