# RAYNOR GARAGE DOORS FLITESTAR

GARAGE DOOR OPENER

**MODELS**
FliteStar - 7
FliteStar - 8
FliteStar - 10

# RESIDENTIAL OPENER INSTALLATION INSTRUCTIONS

## for 7', 8' or 10' High Doors




# WARNING

## GARAGE DOOR SAFETY

Please read these instructions before starting installation. It is important that this opener be installed properly and in accordance with all safety precautions in order to provide years of dependable operation.

The garage door is the largest, heaviest piece of moving equipment in most homes. Improper operation can result in trapping persons or animals under the door, causing serious injury or death. Become familiar with these instructions and directions for periodic testing. If a problem is suspected, discontinue use and contact only a trained service technician for diagnosis and repairs.

**INSTALLER NOTE:** Attach instruction sheet to wall next to push button for future reference. Mount all warning tags and labels per instructions in this manual.

**MANUFACTURED BY RAYNOR GARAGE DOORS DIXON, ILLINOIS 61021**

12/97
5970661

# INSTALLATION GUIDELINES

**DOOR SIZE** - Use seven foot model for doors up to and including 7' 0" (2.13 m) high. Use eight foot model for doors over 7' 0" (2.13m) high up to and including 8' 0" (2.44m) high. Use ten foot model for doors over 8' 0" (2.44m) up to and including 10' 0" (3.05m) high with a maximum door width of 18' (5.49m) and a maximum door weight of 400 lbs (181.82 kg). Door opener use should not exceed a maximum of 5 cycles per hour.

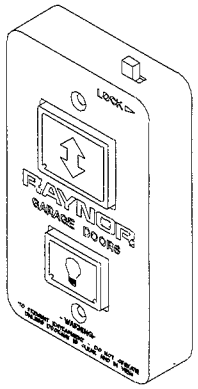
**HEADROOM** - (Typical installation) Minimum of 1-1/2" (3.81cm) over high point of door travel or spring hardware, whichever is greater.

**BACKROOM** - 10' 3" (3.15m) from front wall to back of opener powerhead on seven foot models, 11' 6" (3.54m) on eight foot models, and a minimum of 13' 6" (4.15m) required for ten foot models.

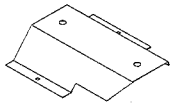
**POWER** - These units require a 115 volt AC, 60 Hertz, grounded power source, 1/2 horsepower openers are rated at 5.0 amps. THE USE OF GAS POWERED GENERATORS MAY DAMAGE SOLID STATE COMPONENTS.

## OPEN CARTONS AND CHECK CONTENTS FOR ITEMS SHOWN BELOW BEFORE ATTEMPTING INSTALLATION

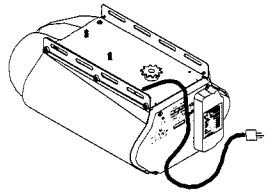
## POWERHEAD CARTON



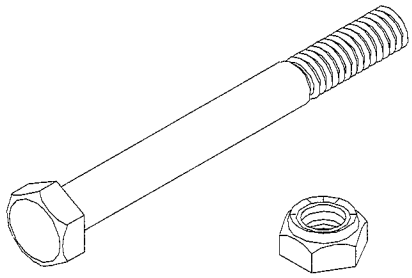

1-ILLUMINATED WALL-MOUNTED PUSH BUTTON



1-CHAIN GUARD



1-POWERHEAD ASSEMBLY



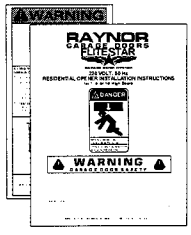
1- 5/16" X 3" CAP SCREW



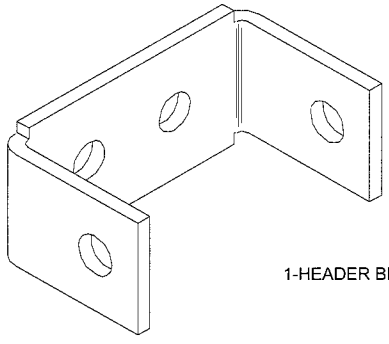
2- 5/16" NYLON INSERT LOCK NUT



1- TROLLEY ARM ASSEMBLY



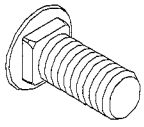

HOMEOWNER INFORMATION AND WARNING DECALS



1-HEADER BRACKET



2- 5/16" WHIZ LOCK NUT



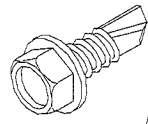
2- 5/16" X 3/4" CARRIAGE BOLT



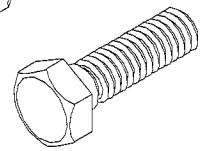
1-CUP WASHER



1- #8 x 3/8" METAL SCREW



2- #14 x 3/4" SELF-DRILLING SCREW



1- 5/16" X 1" CAP SCREW

## TROLLEY RAIL CARTON

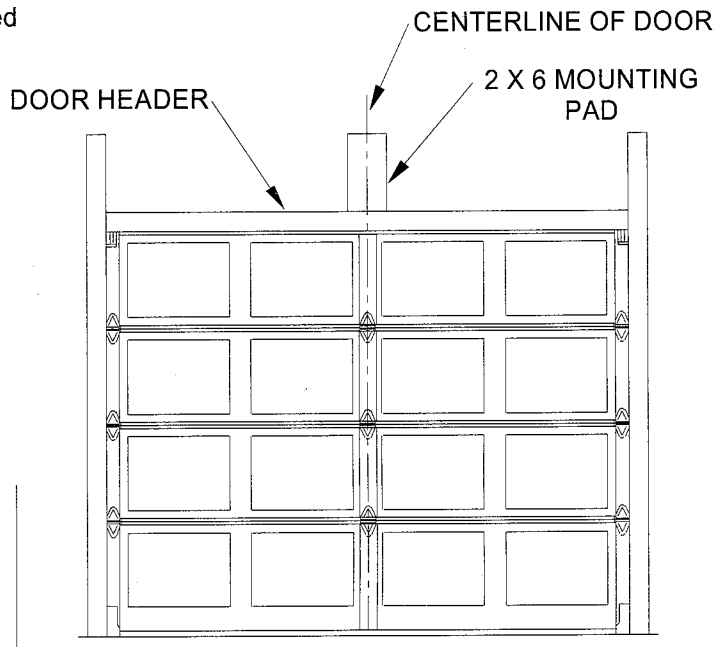


1-TROLLEY ASSEMBLY

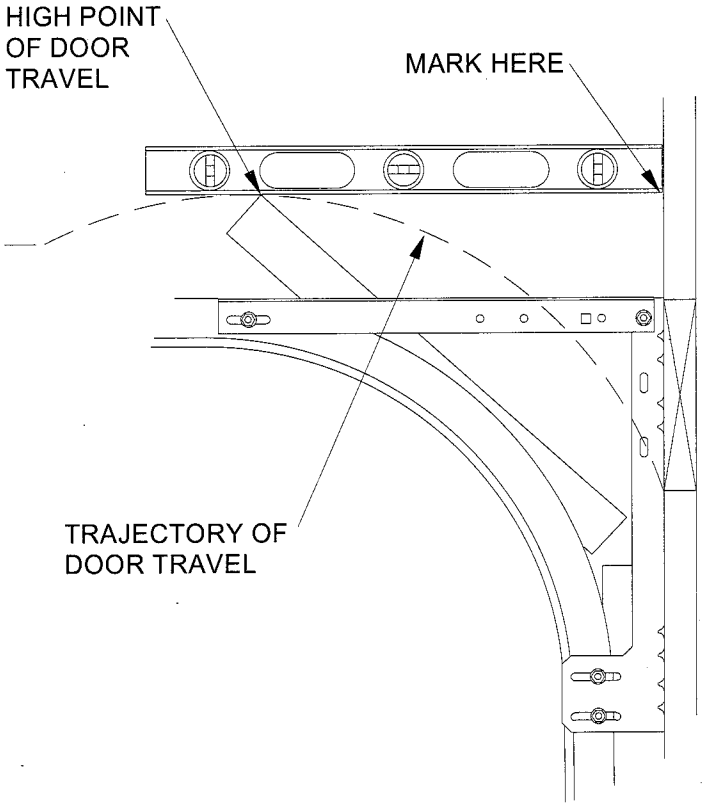
# STEP 1 INSTALL HEADER BRACKET

The header bracket must be securely fastened to the wall framing. If necessary, reinforce the front wall with a 2" x 6" mounting pad.

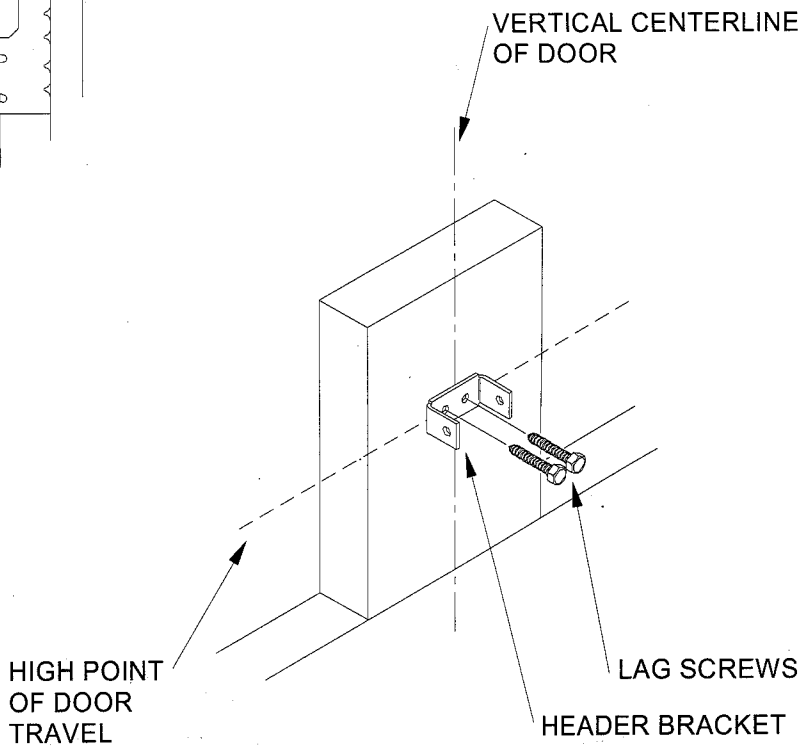
Measure the width of the door to determine the center. Using a pencil, mark the centerline on the door header above the door.




TYPICAL SECTIONAL DOOR
INSIDE LOOKING OUT



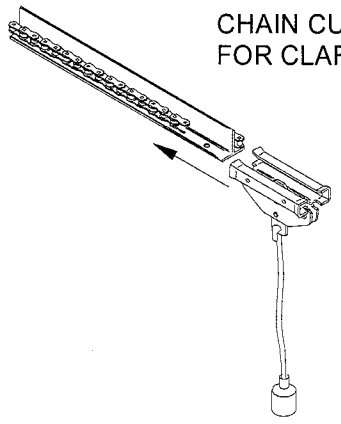

Raise door and locate the highest point of the door travel. Place level across the top of the door section and up against the door header. Using a pencil, mark the door header where the bottom of the level crosses the centerline of the door.




Locate the header bracket mounting holes directly centered over the horizontal mark for the high point of travel and the vertical centerline of the door. Attach the header bracket to the header using two (2) 3/16" x 1 3/4" lag screws. Pre-drill pilot holes for lag screws to prevent mounting pad from splitting. Be sure bracket is level.

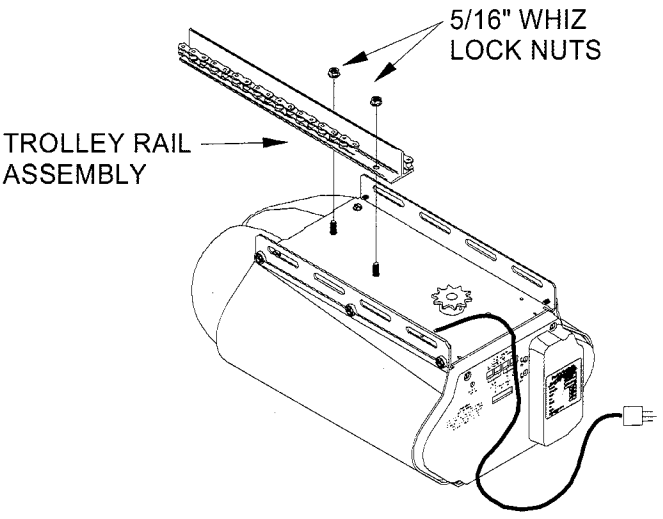
# STEP 2 ATTACH POWERHEAD TO TROLLEY RAIL

**FIGURE 1**




Install outer carriage.

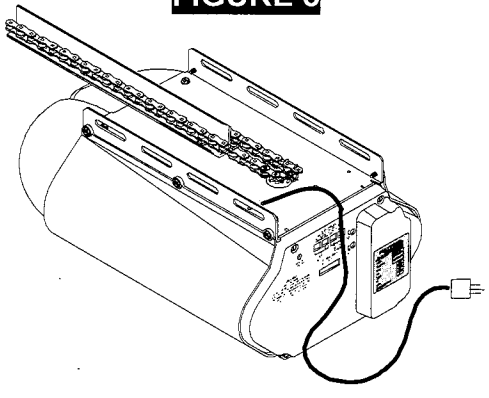
**FIGURE 2**




Attach powerhead to trolley rail with (2) 5/16" whiz lock nuts.

Remove tape from trolley rail (NOTE: keep inner carriage attached to t-rail until chain is tightened this will keep the down limit in the correct position.)

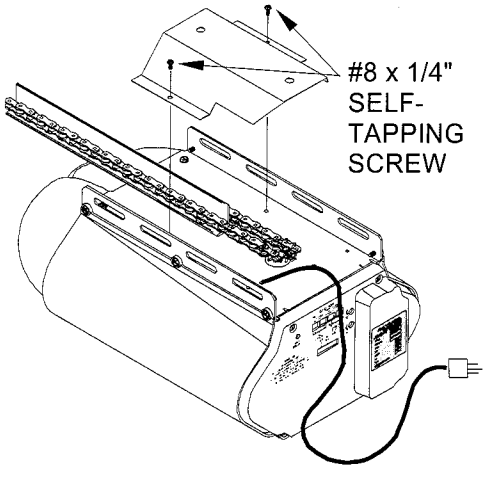
**FIGURE 3**



Attach roller chain to drive sprocket.

Tighten chain adjuster to achieve proper chain tension. (Chain should not drag on rail, or be excessively tight.)

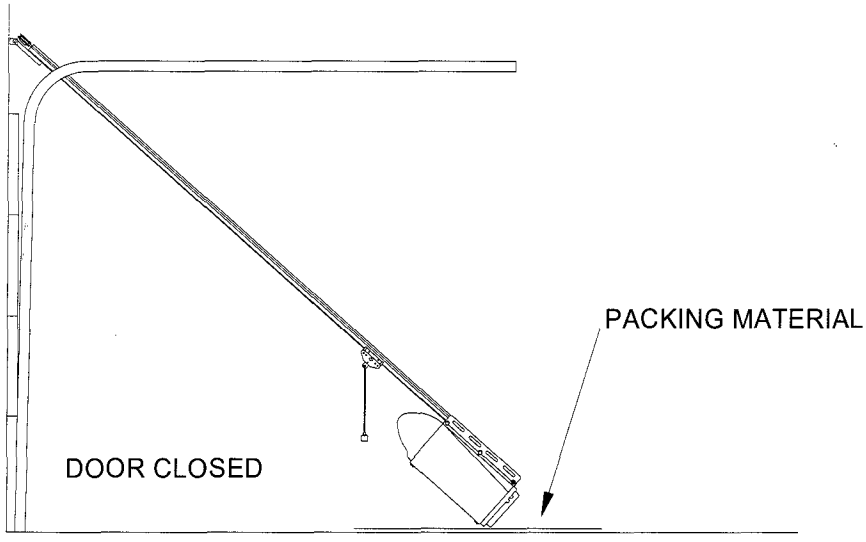
**FIGURE 4**

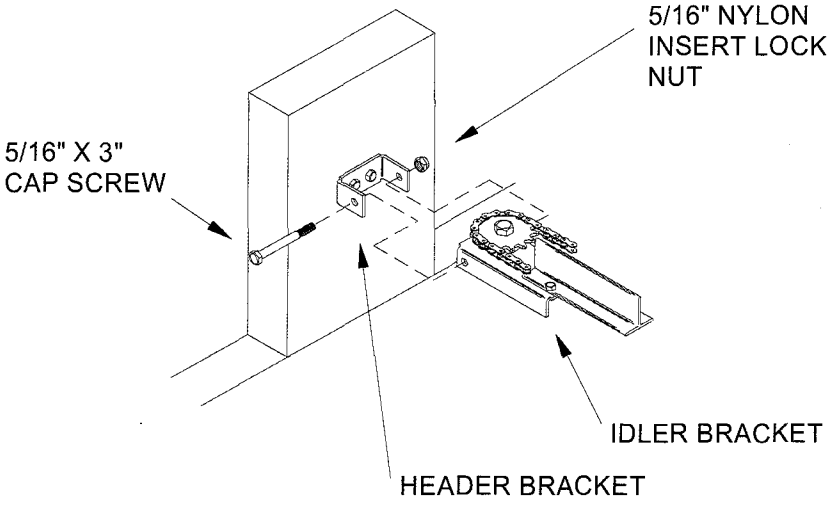



Attach chain guard using two #8 x 1/4" self-tapping screws.

# STEP 3 ATTACH OPERATOR TO HEADER BRACKET

Place operator powerhead on packing material. With the door in the closed position, raise the front end of the operator up to the header bracket.

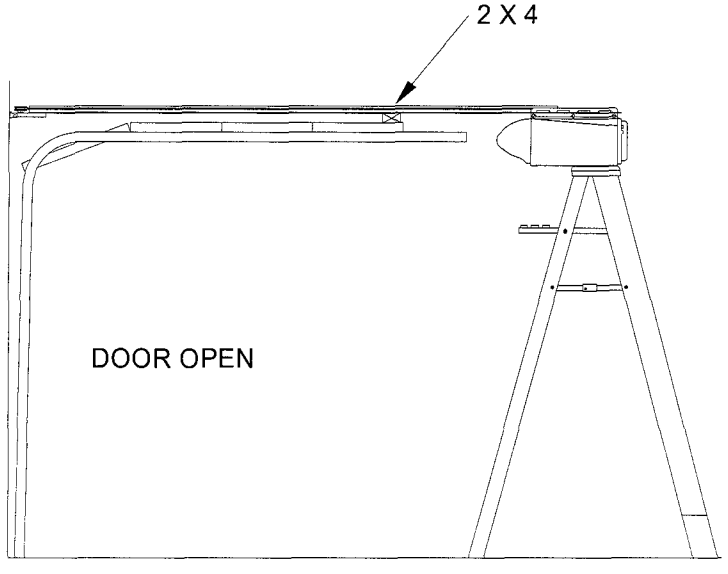



Insert the 5/16" x 3" hex head cap screw through the header bracket and front idler bracket. Screw one (1) 5/16" nylon insert locking nut to the screw.

Carefully place the powerhead of the garage door operator up onto a stepladder. Slowly open the door to avoid hitting the trolley rail with the top section of the door. Space the height of the powerhead such that a short 2 x 4 placed on the top section of the door will clear the trolley rail by 1/8".

Do not allow the weight of the opener to rest on the top section of the door or 2 x 4. Doing so may cause permanent damage to the door.

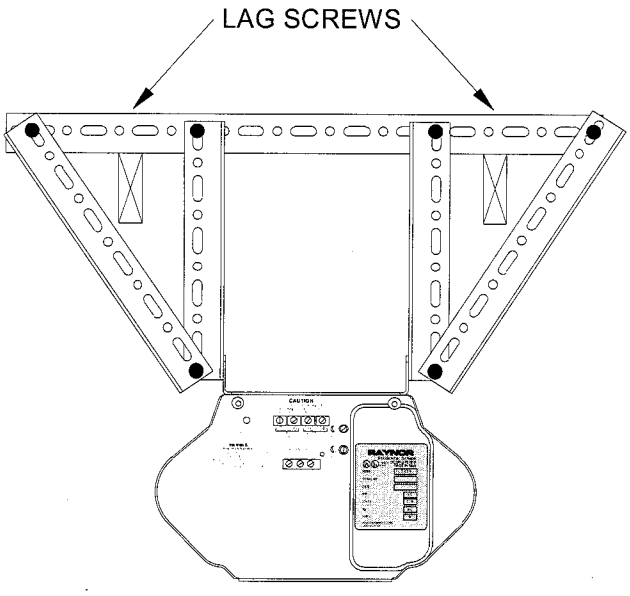


# STEP 4 INSTALL POWERHEAD SUPPORTS

Do not allow entire weight of opener to rest on the top section of the door while securing the powerhead. The weight may cause the door to bend, causing damage to the door or improper operator clearance.

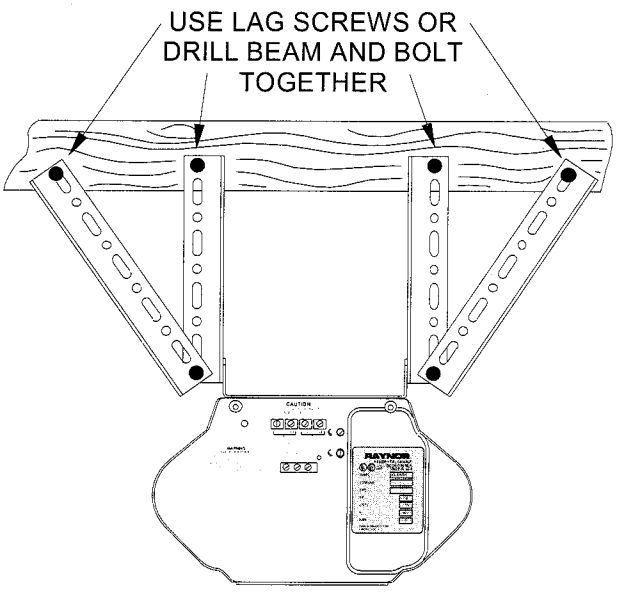
With trolley rail centered on the door, use pre-punched hanger angle or other suitable material (not supplied), to mount the operator to the ceiling or a beam as shown in the illustrations below. Using diagonal bracing will prevent side sway. Make sure the powerhead is level and tighten all fasteners used for supports. Make sure operator is mounted solid. Close the door and tighten header bracket bolt and nut. Be careful not to overtighten.

Do not mount directly to drywall or plaster ceiling. Mount only to structural framing.




**CEILING MOUNT**

Mounting options are not limited to only these shown here; other situations may exist.

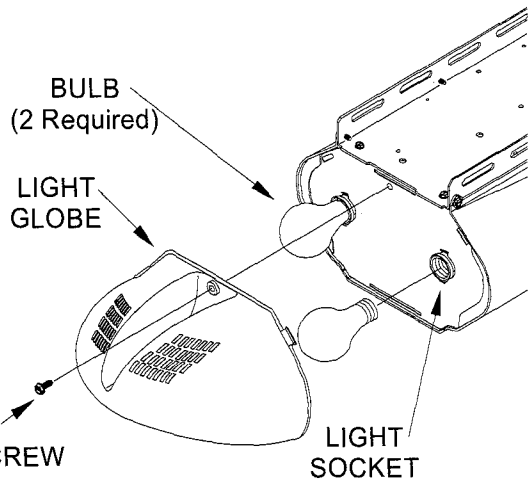



**BEAM MOUNT**

# STEP 5 INSTALL LIGHT BULBS AND COVER

Light bulbs must not exceed 60 watts.
Excessive heat may cause damage.

Screw standard incandescent light bulbs rated 60 watts or less (NOT INCLUDED) into the light sockets. Install light globe by aligning the bottom slot and snapping the snap clips into the upper slots. Secure light globe with a #8-15 x 3/8" sheet metal screw from the hardware bag.




# STEP 6 INSTALL PUSH BUTTON, RADIO CONTROL AND AUXILIARY ENTRAPMENT PROTECTION SYSTEM

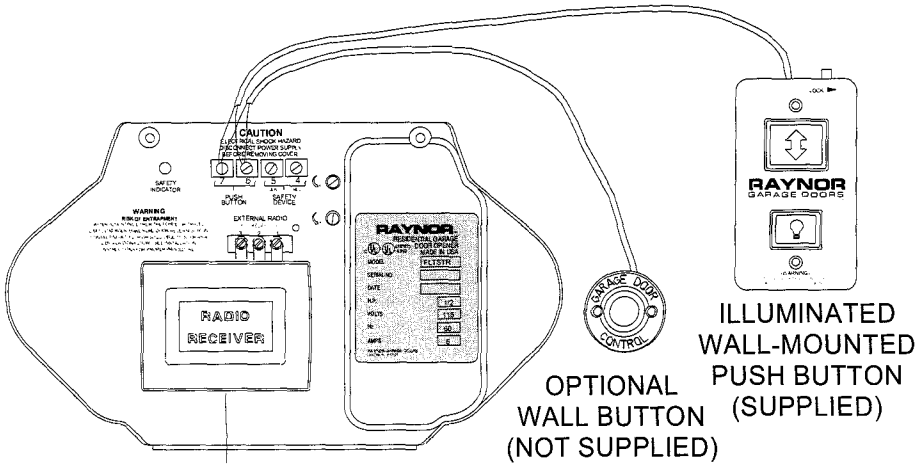
All connections to terminal strip MUST be performed prior to connecting the operator to power to prevent accidental operation and damage to the microprocessor control board.

Push button wiring is a 24 volt NEC class 2 circuit. Attach 2 conductor copper bell wire, 22AWG or larger, to terminals 6 and 7 on the back of the opener. Attach the other end of the bell wire to terminals 6 and 7 on the back of the wall button housing. **Terminals 6 and 7 must match or the wall button will not function.**

The wall button may be mounted directly to a wall stud or to a standard electrical box. The button must be at least 5 feet above the floor or nearby step and in clear view of the door. Avoid mounting directly to any electrically conductive wall covering such as foil faced building insulation.

Although this operator is equipped with a built-in safety reverse feature, an auxiliary entrapment protection device must be installed before the operator will function properly. If it is not connected, the operator will require constant pressure on the wall button in order to close the door. Release of the button before the door is closed will reverse the door to the open position. The radio transmitter will only function to open the door, it will not allow the door to close.

Use only Raynor "Safety Sentinel" photo electric sensor or Raynor "Safety Sure" electric bottom edge sensor systems labeled for use with this operator model. Install according to installation instructions packaged with entrapment protection system.




NOTE: *USE COPPER CONDUCTORS ONLY*

OPTIONAL
WALL BUTTON
(NOT SUPPLIED)

ILLUMINATED
WALL-MOUNTED
PUSH BUTTON
(SUPPLIED)

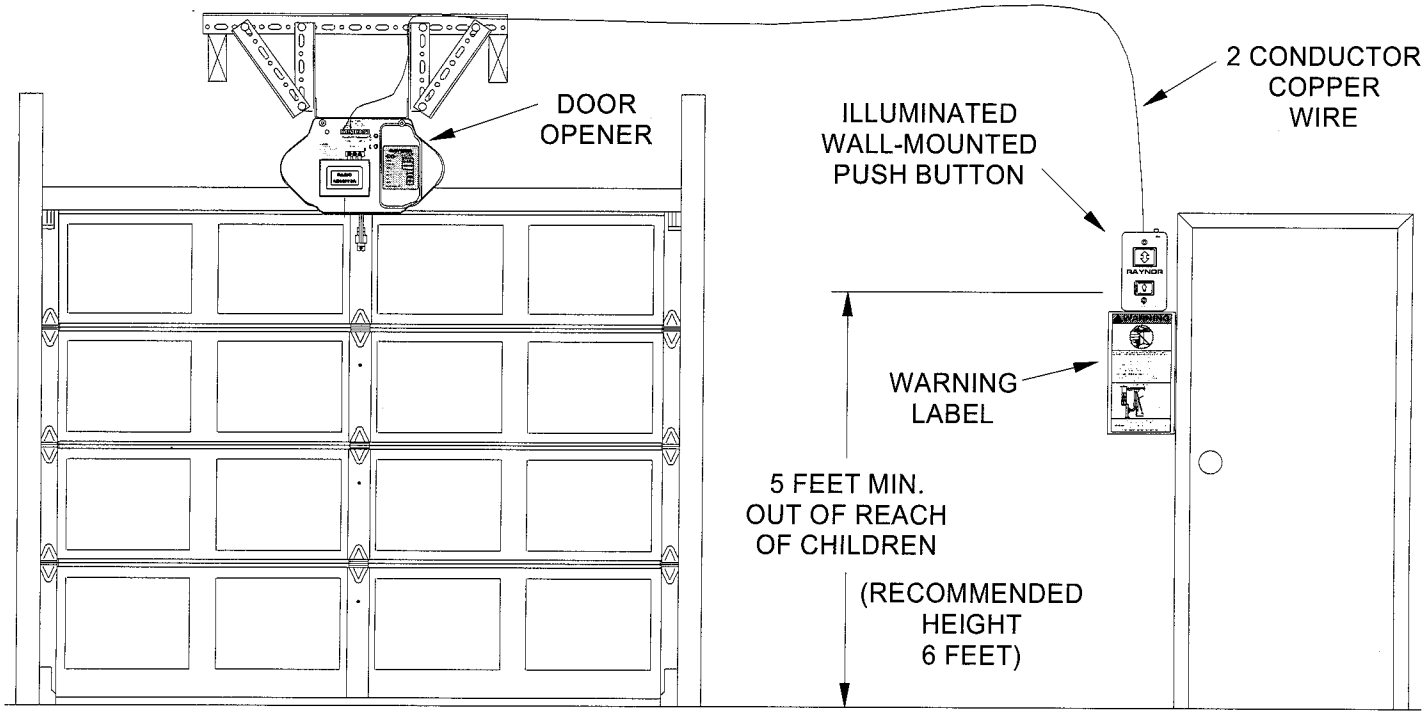
# STEP 6 INSTALL PUSH BUTTON, RADIO CONTROL AND AUXILIARY ENTRAPMENT PROTECTION SYSTEM (CONTINUED)

**MULTIPLE WALL BUTTONS** - additional 2 wire NON-LIGHTED doorbell type push buttons may be wired to terminals 6 and 7 for controlling the opener from different locations. Only one illuminated wall-mounted push button can be used on each opener. All push buttons must be mounted a minimum of 5 feet from the floor and in clear view of the door.

**RADIO CONTROL RECEIVER** - is mounted to terminals 1, 2, and 3 on the rear of the operator either with clips provided with the radio control or by three conductor wire.

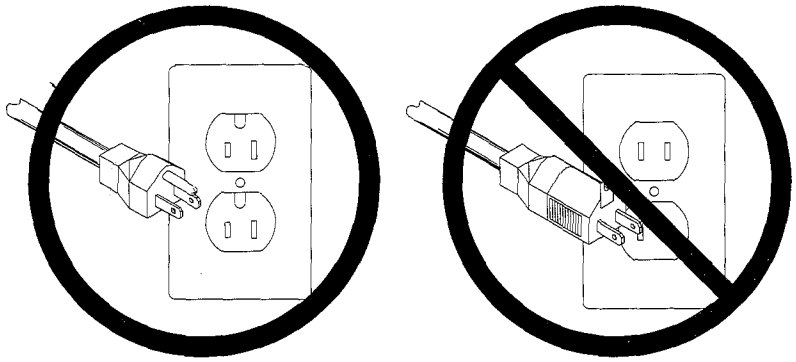
Mount Warning Label, found in homeowners package, to wall next to push button.

**COURTESY LIGHT** - First push of the courtesy light push button turns the light on. The second push of the button will turn the light off. If the light is on and in the timing mode, pushing the courtesy light button will turn the light off. If the light has been turned on by the courtesy light button and door button or radio control is activated, the light will then time out and turn off automatically.



# STEP 7 CONNECT POWER

To reduce the risk of electrical shock, this equipment has a grounding type plug that has a third pin (grounding pin). This plug will only fit a grounding type outlet. If the plug does not fit into the outlet provided, contact a qualified electrician to install the proper outlet. Do not change the plug in any way. DO NOT USE AN ADAPTER.

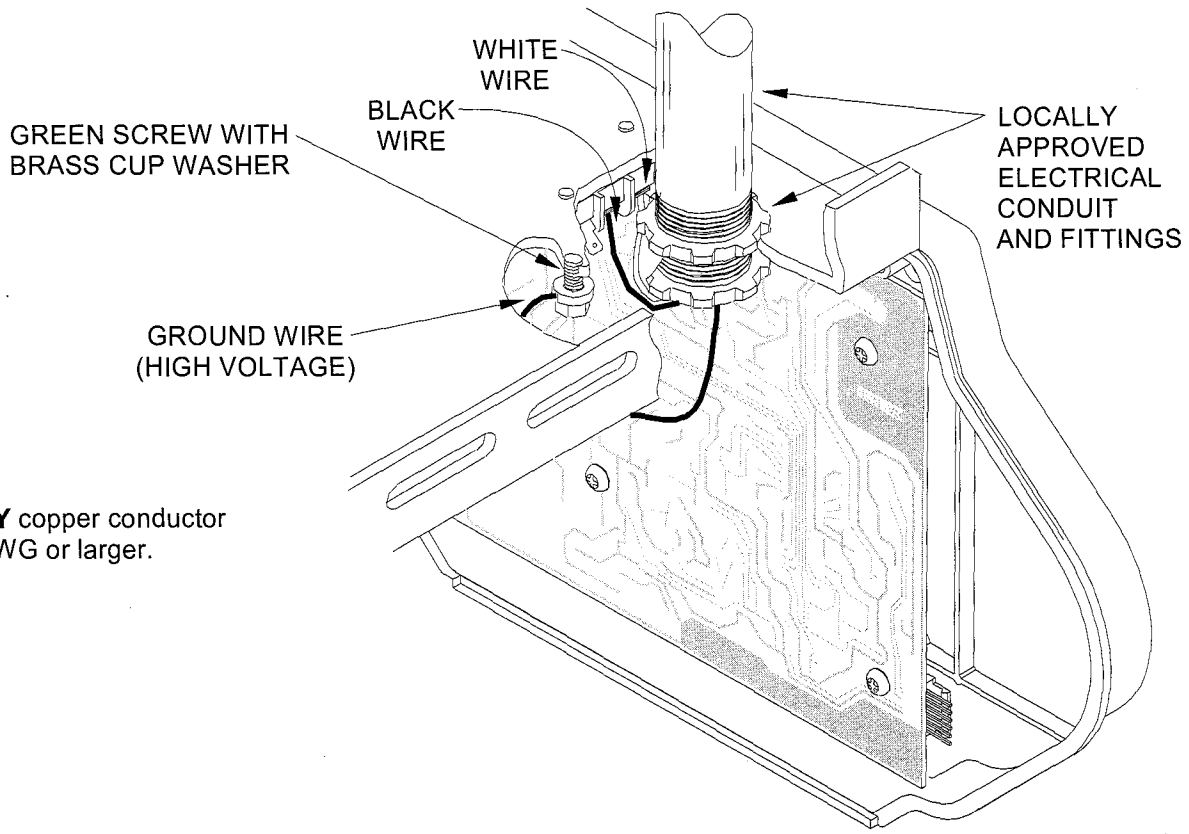


IF LOCAL CODES REQUIRE PERMANENT WIRING, PROCEED AS FOLLOWS:

## PERMANENT WIRING INSTRUCTIONS

1. Turn power off at electrical panel or breaker box.
2. Remove cover from powerhead by removing the eight (8) cover screws.
3. Remove green ground lead by removing green ground screw.
4. Remove strain relief bushing and line cord.
5. Install permanent connections through the same hole that contained the strain relief bushing and cord.
6. Break off tabs where the black and white wires of the power cord were attached.
7. Using the screws of the terminal block, connect the hot wire to terminal containing black wire. Connect the neutral wire to the terminal containing the white wire.
8. Remove brass cup washer from hardware package and install in green ground screw with cup side toward screw head. Install green ground wire and screw and tighten.
9. Replace powerhead cover.

ALL WIRING, CONDUIT, AND CONNECTIONS MUST BE IN ACCORDANCE WITH LOCAL CODES.




Use **ONLY** copper conductor wire 16 AWG or larger.

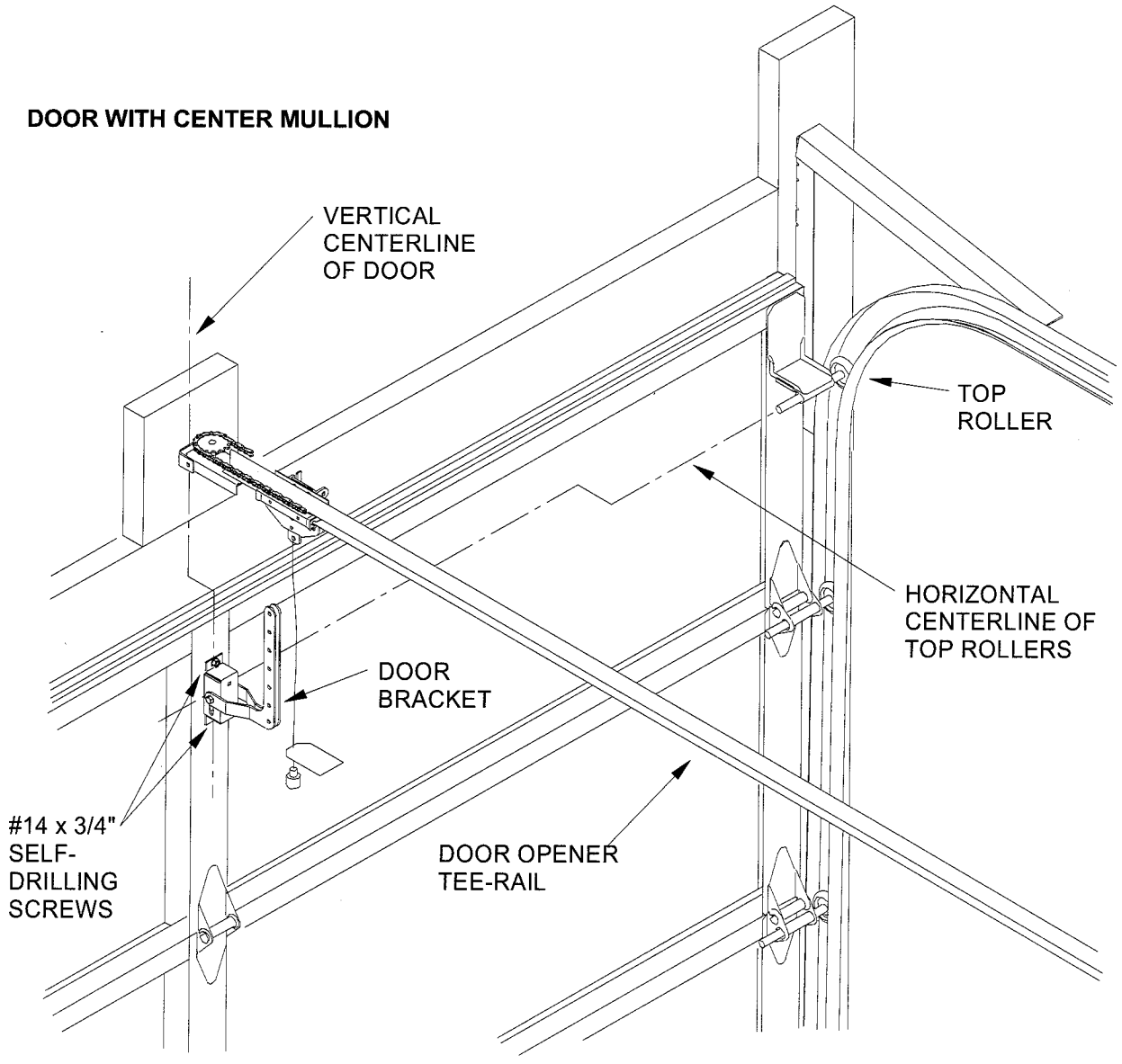
# STEP 8 ATTACH PICK UP ARM TO DOOR

All lightweight garage doors and doors over 10 feet wide require additional horizontal reinforcement along the top edge of the top section to prevent top section damage.

The trolley arm for this opener is packaged with the upper and lower arms assembled. It is necessary to remove the two (2) 5/16" x 1" screws and whiz nuts at this time. Do not discard screws or nuts, they will be required for Step 9.

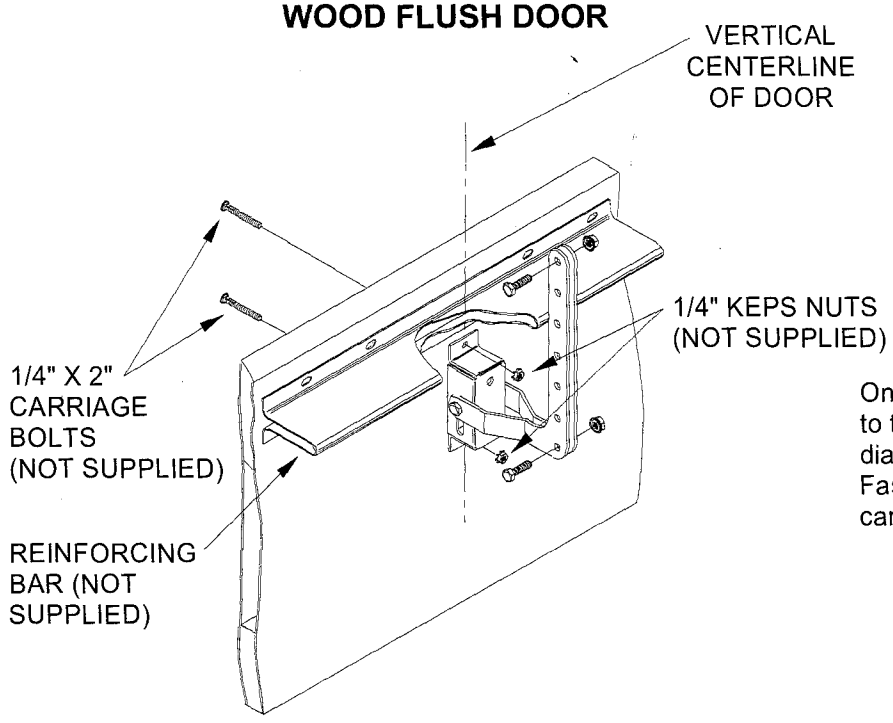
With the door in the fully closed position and the trolley carriage at the front of the trolley rail, locate the vertical centerline of the door and the horizontal centerline of the top rollers and mark this spot on the door. Center the door bracket of the lower trolley arm on the vertical centerline of the door and the horizontal centerline of the top rollers. Attach the door bracket to steel doors using (2) #14 x 3/4" self-drilling screws.

**DOOR WITH CENTER MULLION**



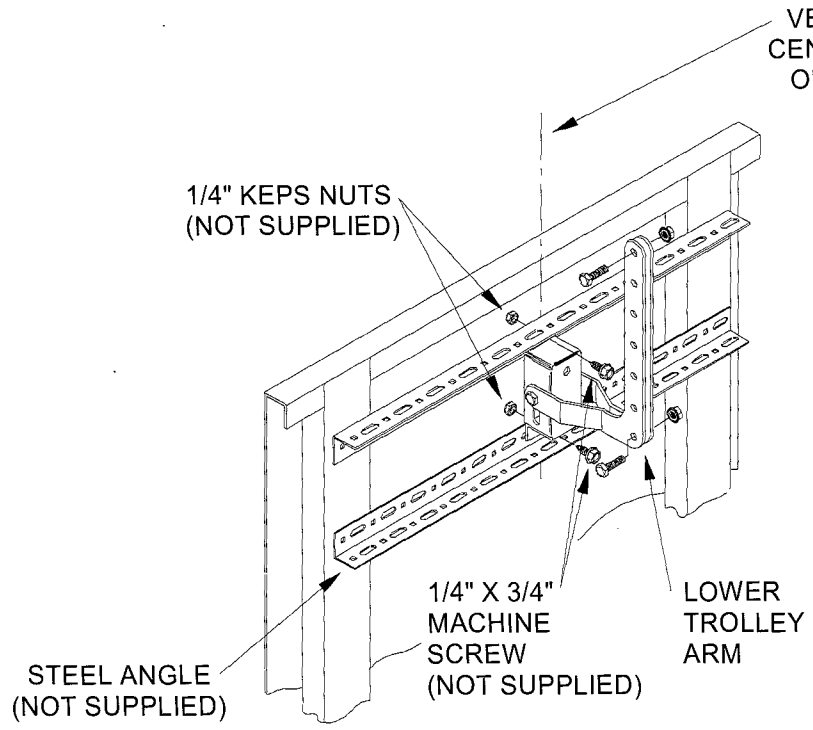
# STEP 8 ATTACH PICK UP ARM TO DOOR (CONTINUED)

## WOOD FLUSH DOOR



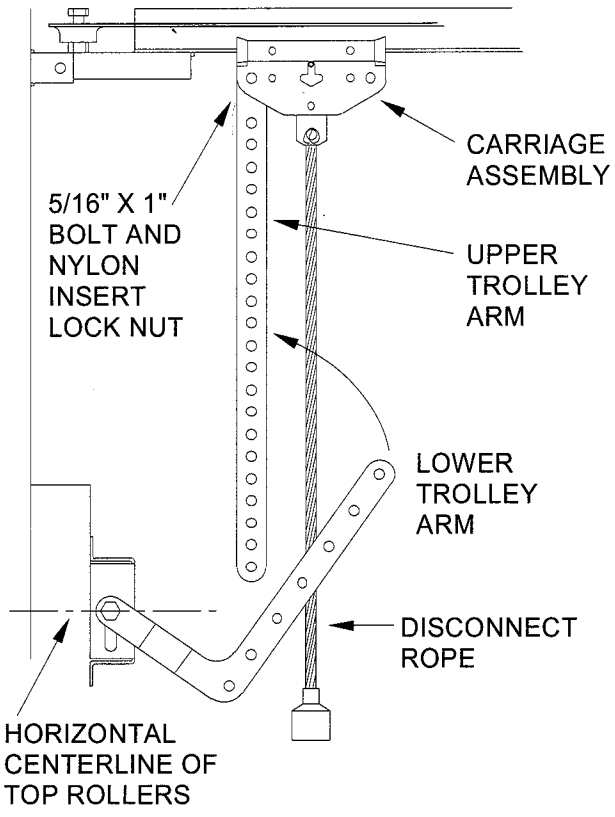

On wood doors, attach the door bracket to the top section by drilling two (2) 1/4" diameter holes through the top section. Fasten with two (2) 1/4" x 2" round head carriage bolts and 1/4" keps nuts (not included).

## DOOR WITHOUT CENTER MULLION




On doors without center mullion, attach horizontal braceing between the two mullions spanning the center of the door. Then fasten the door bracket to horizontal braceing by using two (2) 1/4" x 3/4" machine screws and 1/4" keps nuts (not included).

# STEP 9 ATTACH PICK UP ARM TO OPENER



# STEP 10 LIMIT TRAVEL ADJUSTMENT

The open and close limits are preset at the factory for a typical 7 foot installation. Other operator lengths will require adjustment of the open limit.

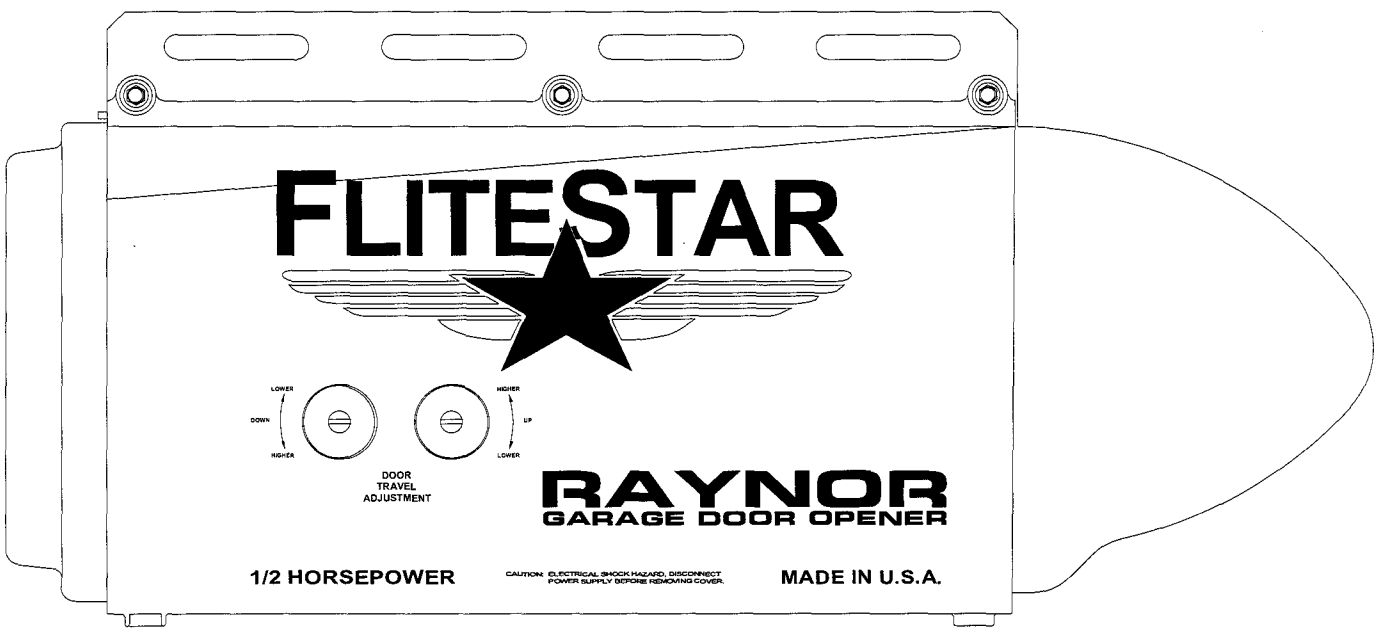
**WARNING!** After each adjustment is made, test limit travel as well as the SAFETY REVERSE SYSTEM.

To check open limit adjustment, disconnect outer trolley carriage as shown in Step 13, **DOOR DISCONNECT FOR MANUAL OPERATION.** Activate opener from the push button or radio control. The inner carriage should travel in the open direction and stop when the open limit switch is activated. Raise the door to the desired open position. The inner and outer carriages should be in approximate alignment for reconnection. If carriages do not line up, adjust open limit as follows:

**OPEN LIMIT ADJUSTMENT** - The door limit adjustment screws can be found on the right side of the door opener and adjusted by using a straight bladed screwdriver. To allow the door to travel open farther, turn the "UP" adjustment screw counter-clockwise. Turning the screw clockwise will stop the door further down the opening. The door should be adjusted to stop just as the bottom edge of the door clears the top of the door opening. One complete turn of the adjustment screw equals 4 inches of door travel.

When the desired alignment is achieved, reconnect inner and outer carriage. Test open and close limit adjustment by activating the push button or radio control to run the door to the full open and full closed position. If the door does not fully open or close, force adjustments may be required as shown in Step 11 or the close limit may require adjusting as follows:

**CLOSE LIMIT ADJUSTMENT** - To adjust the door travel for the close cycle, turn the "DOWN" door limit adjustment screw on the side of the opener counter-clockwise to stop the door higher or clockwise the stop the door lower.



# STEP 11 FORCE ADJUSTMENT

Force adjustment is an important factor in the safe operation of the garage door operator. **DO NOT USE FORCE ADJUSTMENTS TO COMPENSATE FOR A BINDING, STICKING, OR IMPROPERLY BALANCED GARAGE DOOR.**

Except for the first 12 inches (30.48 cm) of the door's downward travel, the obstruction sensitivity mechanism will cause the door to reverse if the door contacts an obstruction while closing. The door will stop if contacting an obstruction while opening.

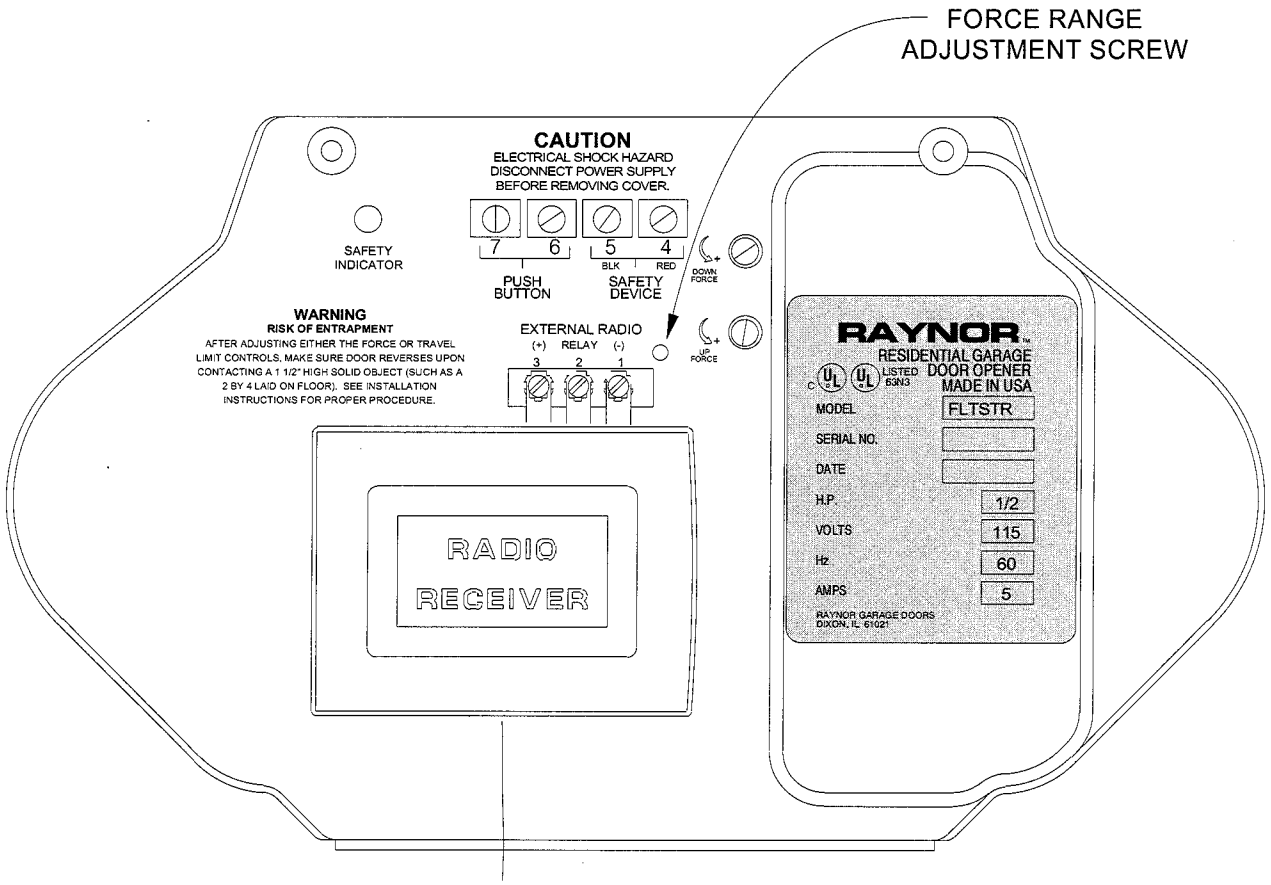
The force sensitivity adjustment screws are located at the rear of the opener. The close sensitivity screw is on the top, open sensitivity is on the bottom. See illustration below.

Turning the screw counter-clockwise will allow more force to be applied to the door before it reverses or stops. Adjust the screws so that a properly working door will open and close completely but reverse or stop when meeting an obstruction.

The opener also has a force range adjustment screw which is accessible through a hole near the open and close adjustment screws. See illustration. This single screw moves the range of BOTH the up and down force adjustment, and operates in the same direction (Clockwise - Lower Force). The setting should only be changed if not enough adjustment can be obtained from the open and/or close adjustment screws, i.e., force is still too strong even with up and down adjustment screws at the lowest force setting. The force range is changed by using a small phillips screwdriver through the hole.

Always use the minimum force setting that still allows for proper door operation. Difficulty in maintaining consistent operation may indicate an improperly operating door.

ALWAYS PERFORM THE SAFETY REVERSE TEST, AS SHOWN IN STEP 12, AFTER MAKING ANY ADJUSTMENTS.

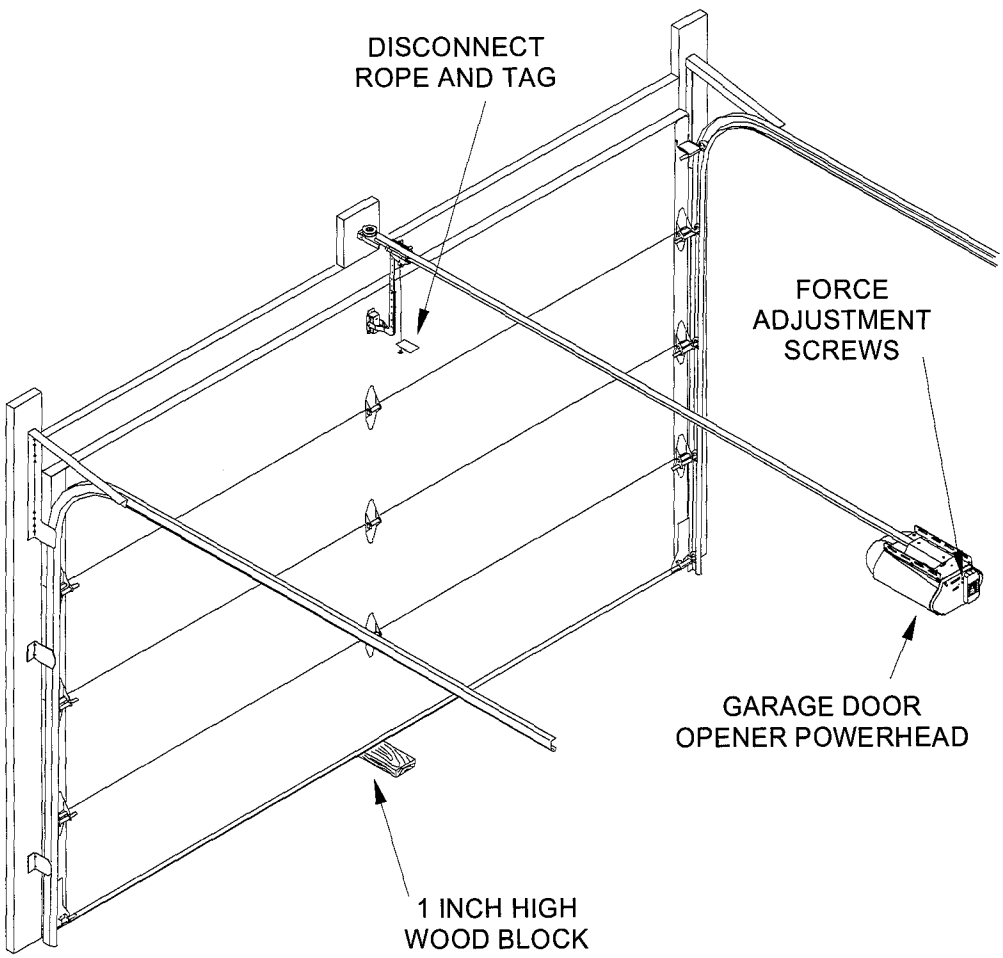


# STEP 12 SAFETY REVERSE SYSTEM TEST

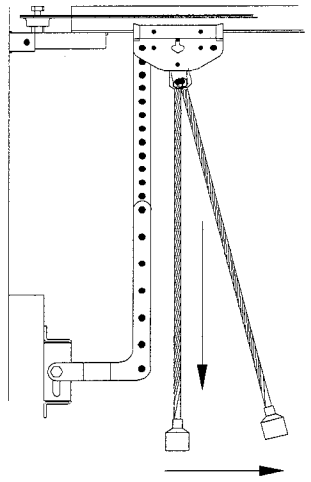
Never use any part of your body to test the reversing system of any garage door opener.

The following test of the safety reverse system should be conducted monthly:

1. With the door in the fully closed position, carefully disconnect the door from the opener as described in Step 13 on page 17.
2. Lift the door manually. If door is hard to open or close, contact an experienced door installer for repairs. Safety features will not function properly if the door is in need of adjustment. DAMAGE TO THE DOOR OR OPENER MAY RESULT FROM TESTING AN IMPROPERLY ADJUSTED DOOR.
3. With the door properly adjusted, reconnect to opener and proceed with test.
4. Open and close force adjustment screws should only be tightened enough to raise and lower the door. Use lowest setting possible. See Step 11 on page 15.
5. Open the door and place a 1 inch high block of wood on the garage floor located in line with the opener attachment.
6. Stand clear of the door and activate the opener from the wall button. The door should reverse within 2 seconds of contacting the wood block and then return to the full open position.
7. If the door does not reverse, review all installation instructions to be sure installation and adjustments have been performed properly.



# STEP 13 DOOR OPENER DISCONNECT FOR MANUAL OPERATION



### MANUAL OPERATION

If possible, use the manual disconnect only when the door is in the closed position. Caution should be taken whenever the disconnect cord is pulled with the door open. Weak or broken springs may cause the door to fall rapidly causing injury.

To permit manual operation of the door, pull the red cord down and back, releasing trolley arm from drive mechanism. To reconnect trolley arm to drive mechanism, pull red cord straight down, bring the door to the half open position and press the wall button. The door will reconnect automatically.

# USING YOUR FLITESTAR OPENER

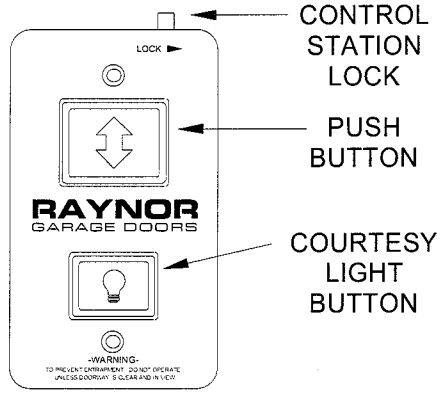
## OPERATION FROM THE ILLUMINATED WALL-MOUNTED PUSH BUTTON

**DOOR CLOSED** - Pressing the push button will open the door. The door will stop automatically when it reaches the full open position.

**DOOR OPEN** - Pressing the push button or radio control will close the door. The door will stop automatically when it reaches the full down position.

**DOOR IN MOTION** - When the door is in motion, pressing the push button or radio control will stop the door. Next push the button, the door will reverse its direction and travel to the full open or closed position.

**CONTROL STATION LOCK** - The Illuminated wall-mounted push button, included with the opener, is equipped with a switch to lock out all of the opener controls when activated. Slide the switch on top of the control station to the "LOCK" position ONLY when the door is stopped in the closed position.



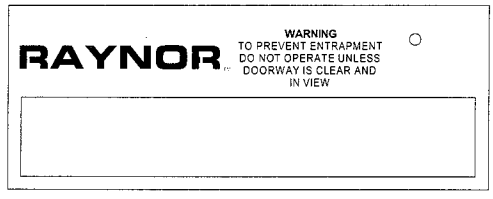

ILLUMINATED WALL-MOUNTED PUSH BUTTON

## OPERATION FROM THE RADIO CONTROL TRANSMITTER

**DOOR CLOSED** - Pressing the push button will open the door. The door will stop automatically when it reaches the full open position.

**DOOR OPEN** - Pressing the push button or radio control will close the door. The door will stop automatically when it reaches the full down position.

**DOOR IN MOTION** - When the door is in motion, pressing the push button or radio control will stop the door. Next push the button, the door will reverse its direction and travel to the full open or closed position.




RADIO CONTROL TRANSMITTER

# FLITESTAR

## GARAGE DOOR OPENER

## SPECIAL FEATURES

**SAFETY SYSTEM** - When the door is opening, if an obstruction is encountered, the door will stop. Next push of the button will close the door. When the door is closing, if an obstruction is encountered, the door will reverse and travel to the full open position.

**LIGHT DELAY** - Light will turn on when the door is operated by the push button or radio control, and will remain on for approximately 5 minutes and then turn off.

**POWER FAILURE** - When power is restored, door travel will not occur until the push button or radio control is used.

**SAFETY SHUTOFF** - If the door is closing and the limit switch or obstruction switch is not activated within 25 seconds, the operator will stop, reverse and travel to the full open position. When the door is opening and the limit switch or obstruction switch is not activated within 25 seconds, the operator will stop.

**COURTESY LIGHT** - The lower button on the Illuminated wall-mounted push button turns the courtesy light on and off. First press of button turns light on with no delay. Light will go off when buttom is pressed a second time. Opening or closing the door starts the time delay.

**SAFETY INDICATOR** - A small red light on the back of the opener lights up if a fault occurs in the external safety device connected to the opener. When the light is on, the wall button must be held in the entire time the door is closing.

**WARNING LIGHT** - If the external safety device fails, the door can be closed with constant pressure on the push button. Door closing will be delayed 2 seconds and courtesy light will start flashing as a warning. After the door is closed, light will stop flashing and 5 minute time delay will turn courtesy light off automatically.

# TROUBLESHOOTING CHECKLIST

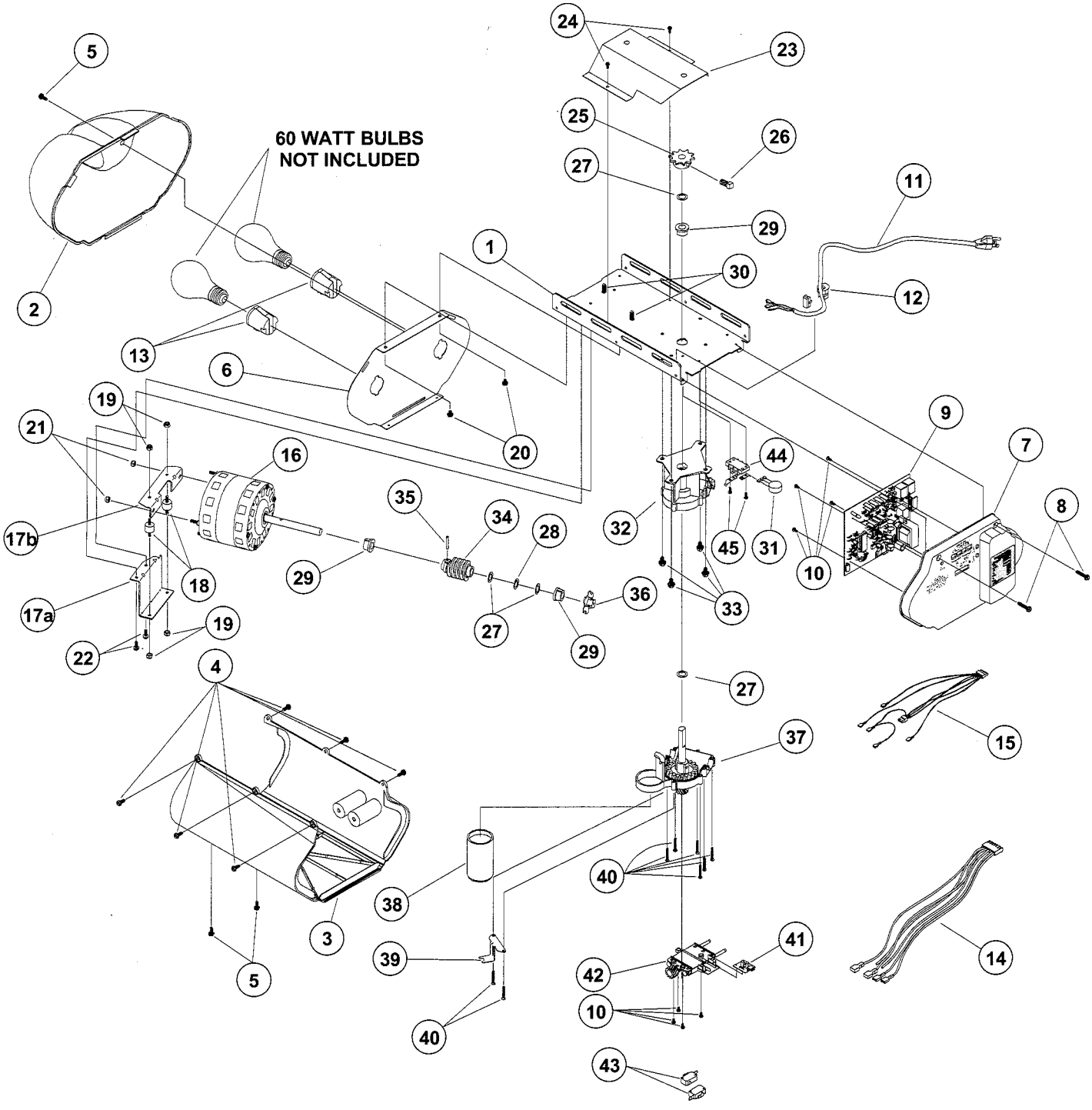
| SYMPTOM | PROBABLE SOLUTIONS |
|---|---|
| OPERATOR RUNS FROM RADIO CONTROLS BUT NOT FROM PUSH BUTTON | Check connections at push button and operator terminals. Wire may be broken under staples or at terminals.<br>Reverse wires at terminals 6 and 7 on the back of the opener.<br>Remove wires from terminals 6 and 7, momentarily short across terminals 6 and 7, if operator runs then replace wall button. |
| OPERATOR RUNS FROM PUSH BUTTON BUT NOT FROM RADIO CONTROL | Check battery in transmitter.<br>Check receiver and transmitter code setting.<br>Measure the voltage at terminals 1 and 3 on the 3 position terminal strip at the rear of the operator. With terminal 1 being negative and terminal 3 being positive, voltage should read between 20-28 VDC.<br>If it is necessary to return radio controls for repair, both transmitter and receiver must be returned. |
| OPERATOR DOES NOT RUN FROM PUSH BUTTON OR RADIO CONTROL | Illuminated wall-mounted push button lock switch is activated.<br>Operator plugged into outlet.<br>Burned out fuse or open breaker.<br>Pull power plug and plug back in.<br>Replace microprocessor control board. |
| OPERATOR STOPS FUNCTIONING AFTER REPEATED CYCLING | Motor may be overheated. Wait 20 minutes and try again.<br>Replace microprocessor control board. |
| LESS THAN 25 FEET OPERATING RANGE FROM RADIO CONTROL | Change battery in transmitter.<br>Change location of transmitter in auto.<br>Mount receiver to wall and wire to operator.<br>If two or more operators are located within the same building, unplug all other operators and then test range.<br>Faulty radio - return to distributor to repair or replace |
| MOTOR HUMS BUT WILL NOT OPEN OR CLOSE THE DOOR | Jammed or hard moving door. Disconnect door from operator and check door for correct balance and operating condition.<br>CAUTION - Do not disconnect an opened door, if door spring is broken the door may fall at a high speed and cause injury or property damage.<br>CAUTION - Repairs and adjustments, especially to cable and spring assembly, can be hazardous and should be performed by qualified door installers only.<br>Bad capacitor - Visually inspect capacitor<br>Motor - Disconnect motor leads and test motor windings and thermal protector with ohmmeter. Replace motor if windings or thermal protector are open. (Motor must be cool to test.)<br>Check for proper electrical connections.<br>NOTE: If operator is activated but does not open or close door, motor will shut off after approximately 25 seconds. |

# TROUBLESHOOTING CHECKLIST

| SYMPTOM | PROBABLE SOLUTIONS |
|---|---|
| UNWANTED (PHANTOM) OPERATIONS | Short in push button circuit.<br>Check where stapled to wall or ceiling.<br>Check connections at both ends of the wire.<br>Can be caused by signal from another radio control in the area.<br>Change frequency of radio control. |
| DOOR STOPS WHILE IT IS OPENING<br><br>DOOR REVERSES WHILE IT IS CLOSING | Make sure there is no obstruction keeping the door from opening or closing, either during door travel or photo eye obstruction.<br>Disconnect door arm and check door operation by hand.<br>Adjust force adjustment sensitivity. Turning the screw counter-clockwise will require more force to stop or reverse the door. After making adjustments the safety reverse test on page 13 must be performed. |
| LIGHT WILL NOT COME ON | Check light bulbs and replace if burnt out.<br>Check electrical connections.<br>Faulty microprocessor board.<br>Illuminated wall-mounted push button locked. |
| LIGHT WILL NOT GO OFF | Press wall button or radio control to reactivate timer.<br>Wait 5 minutes before initiating another signal. Light should go off.<br>Faulty microprocessor board. |
| DOOR DOES NOT FULLY OPEN OR CLOSE | Make sure there is no obstruction keeping the door from opening or closing.<br>Operator limit switch settings need adjustment.<br>Refer to Step 10 under installation instructions. |
| OPERATOR WILL NOT REVERSE WHEN DOOR HITS AN OBSTRUCTION WHILE CLOSING | CAUTION - Do not use a door operator that does not reverse when coming in contact with a solid object 1 inch from the floor. If the operator cannot be made to function properly, disconnect and disable it until a qualified door installer can make repairs.<br>Readjust force adjustment sensitivity. Turning the screw clockwise will require less force to reverse the door.<br>Close limit not set properly - Refer to Step 10 under installation instructions. Adjust close limit for more travel. |
| RADIO CONTROL WILL ONLY OPERATE TO OPEN THE DOOR<br><br>WALL BUTTON MUST BE HELD IN TO CLOSE THE DOOR | External entrapment safety device malfunction check instructions for device used. Red light on back of operator will be on to indicate this.<br>External entrapment safety device is not installed. This is normal operation without device installed. |
| BURNED OUT FUSE OR OPEN BREAKER | MOV on terminal strip blown. Remove cover and visually inspect MOV. (Refer to page 16, Powerhead Assembly, for location.) If discolored, deformed, or cracked, replace MOV. |

Contact the nearest authorized Raynor distributor
for replacement parts, or service.
When requesting replacement parts, please provide the following information:
Serial Number
Model Number

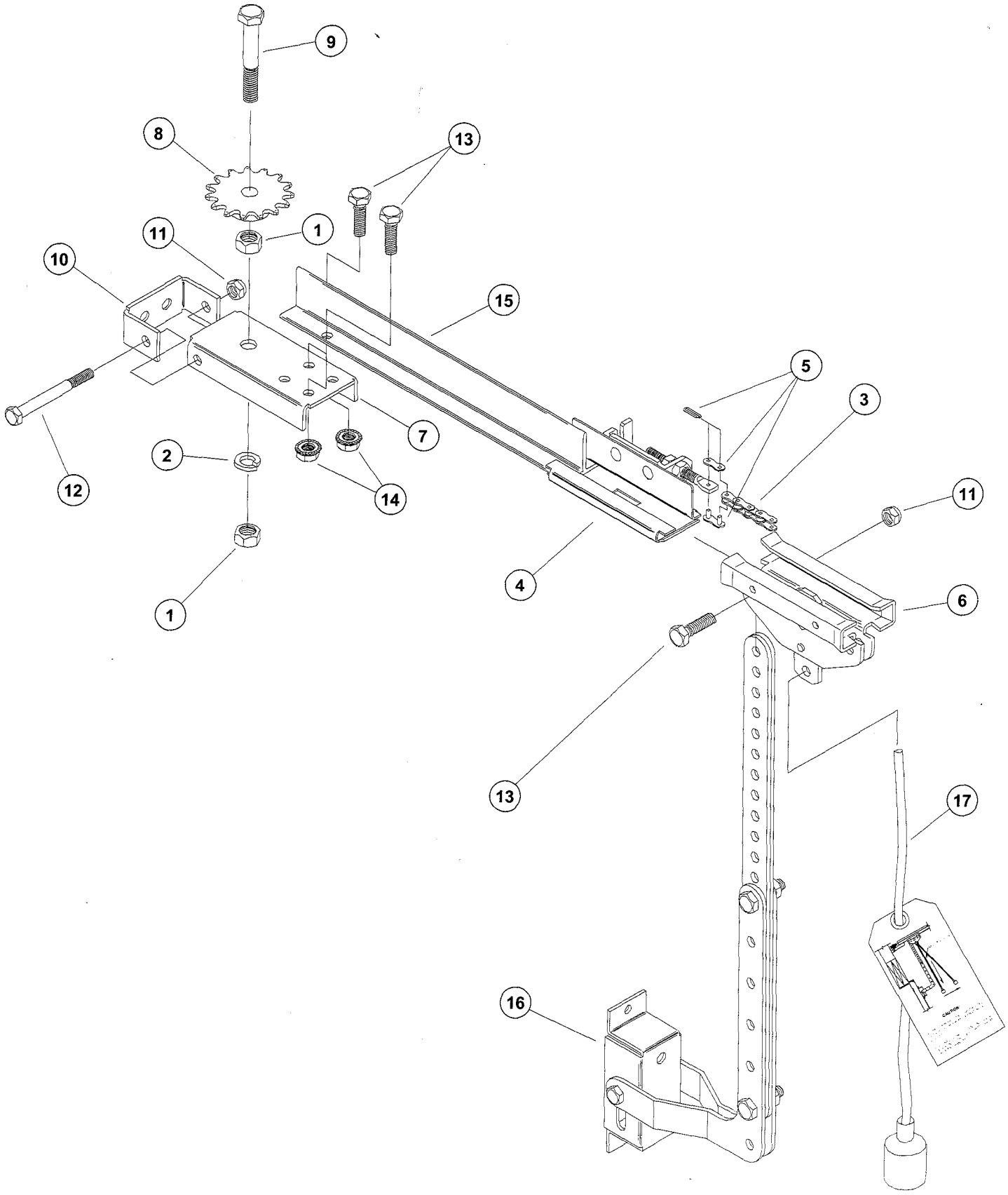
# POWERHEAD ASSEMBLY



# POWERHEAD PARTS LIST

| REF. NO. | QUANTITY | PART # | PART DESCRIPTION |
|---|---|---|---|
| 1 | 1 | 6130265 | CHASSIS |
| 2 | 1 | 6200002 | GLOBE |
| 3 | 1 | 6200017 | COVER |
| 4 | 6 | 6010088 | #10 x 1/2" SCREW |
| 5 | 3 | 12075 | #8 x 3/8" SCREW |
| 6 | 1 | 6130041 | LIGHT PANEL |
| 7 | 1 | 6200016 | END PANEL |
| 8 | 2 | 6010021 | #8 x 1" SCREW |
| 9 | 1 | 6080011 | RESIDENTIAL LOGIC BOARD (REPLACEMENT BOARD IN BOX) |
| 10 | 8 | 6010008 | #6 x .375 PAN PHILLIPS |
| 11 | 1 | 6080111 | POWER CORD |
| 12 | 1 | 6030012 | POWER CORD BUSHING |
| 13 | 2 | 6080015 | LIGHT SOCKET |
| 14 | 1 | 4100342 | HIGH VOLTAGE WIRING HARNESS |
| 15 | 1 | 4100343 | LOW VOLTAGE WIRING HARNESS |
| 16 | 1 | 6070054 | 1/2 H.P. MOTOR |
| 17A | 1 | 6130221 | MOTOR BRACKET-BOTTOM |
| 17B | 1 | 6130222 | MOTOR BRACKET-TOP |
| 18 | 2 | 6080371 | VIBRO-INSULATOR |
| 19 | 4 | 12068 | 8-32 HEX KEPS NUT |
| 20 | 2 | 6010045 | #10 X 1/4" SCREW |
| 21 | 2 | 6010023 | 10-32 NYLON INSERT LOCK NUT |
| 22 | 2 | 6010036 | #10 x 1/2" SCREW |
| 23 | 1 | 6130251 | CHAIN GUARD |
| 24 | 2 | 6010033 | #8 x 1/4" SELF TAPPING SCREW |
| 25 | 1 | 6100015 | SPROCKET |
| 26 | 1 | 6010044 | 5/16" X 1/2" SET SCREW |
| 27 | 4 | 6010030 | FLAT WASHER .03 THICK |
| 28 | 1 | 6010179 | WAVE WASHER |
| 29 | 3 | 6040005 | FLANGE BEARING |
| 30 | 2 | 6010011 | STUD |
| 31 | 1 | 6080379 | 3 LEGGED MOV |
| 32 | 1 | 6200004 | GEAR BOX SHAFT SUPPORT |
| 33 | 4 | 6010042 | 1/4" x 1/2" TAPPING SCREW |
| 34 | 1 | 6200011 | WORM |
| 35 | 1 | 6010035 | ROLL PIN .156 DIAMETER x .75 |
| 36 | 1 | 6200014 | PHOTO INTERRUPTER DISK |
| 37 | 1 | 4050098 | REPLACEMENT GEAR KIT |
| 38 | 1 | 6080124 | CAPACITOR 64-67 MFD |
| 39 | 1 | 6130039 | CAPACITOR CLAMP |
| 40 | 8 | 6010003 | #6 x 1" SCREW |
| 41 | 1 | 6080367 | PHOTO INTERRUPTER PC BOARD |
| 42 | 1 | 4050099 | LIMIT ASSEMBLY |
| 43 | 2 | 6080001 | LIMIT SWITCH |
| 44 | 1 | 6080380 | TERMINAL STRIP |
| 45 | 2 | 6080087 | SCREW #6-32 X .50 (TERMINAL STRIP) |
| NOT SHOWN | | | |
| 46 | 2 | 22053 | WIRE NUTS |
| 47 | 2 | 6010012 | WIRE SADDLE |
| 48 | 4 | 22137 | WIRE TIES |
| 49 | 1 | 6030194 | NAME PLATE |
| 50 | 1 | 6030343 | ENTRAP LABEL |
| 51 | 1 | 6030443 | 60 WATT LABEL |
| 52 | 1 | 6010029 | GROUNDING SCREW (POWER CORD) |
| 53 | 1 | 5970187 | WIRING DIAGRAM (COVER) |

# TROLLEY ASSEMBLY



# TROLLEY PARTS LIST

| REF. NO | QUANTITY | PART# | PART DESCRIPTION |
|---|---|---|---|
| 1 | 2 | 5507 | 1/2" NUT |
| 2 | 1 | 5960 | 1/2" LOCK WASHER |
| 3A | 1 | 5190001 | ROLLER CHAIN 19 FT 7-1/2 IN |
| 3B | 1 | 5190002 | ROLLER CHAIN 22 FT 1-1/2 IN |
| 3C | 1 | 5190006 | ROLLER CHAIN 26 FT 1-1/2 IN |
| 4 | 1 | 4050053 | INNER CARRIAGE ASSEMBLY |
| 5 | 1 | 12079 | MASTER LINK #65 CHAIN |
| 6 | 1 | 4050070 | OUTER CARRIAGE ASSEMBLY |
| 7 | 1 | 5180015 | FRONT IDLER BRACKET |
| 8 | 1 | 6100002 | SPROCKET (15 TOOTH) |
| 9 | 1 | 6010024 | FRONT IDLER BOLT |
| * 10 | 1 | 5180016 | HEADER BRACKET |
| * 11 | 2 | 6010015 | 5/16" NYLON INSERT NUT |
| * 12 | 1 | 6010016 | 5/16" X 3" HEX HEAD CAP SCREW |
| * 13 | 3 | 5730 | 5/16" X 3/4" HEX HEAD CAP SCREW |
| * 14 | 2 | 5509 | 5/16" WHIZ LOCK NUT |
| 15A | 1 | 7110003 | TROLLEY RAIL (7 FOOT DOOR) |
| 15B | 1 | 7110004 | TROLLEY RAIL (8 FOOT DOOR) |
| 15C | 1 | 7110005 | TROLLEY RAIL (10 FOOT DOOR) |
| 16 | 1 | 4050066 | TROLLEY ARM ASSEMBLY |
| 17 | 1 | 1200007 | ROPE, DISCONNECT ASSEMBLY |
| NOT SHOWN | | | |
| * 18 | 2 | 5718 | 5/16" X 1 3/4" HEX HEAD LAG SCREW |
| * 19 | 2 | 5421 | 5/16"-18 X 3/4" TRACK BOLT |
| 20 | 2 | 6030229 | WIRE RETAINING CLIP |

* Nut and Bolt Package

# CARE AND MAINTENANCE

When correctly installed on a properly operating door, your electric opener will require a minimum of care. The following items should be checked periodically to insure safe, dependable operation. Poor garage door maintenance can result in safety reverse system malfunction.

**MONTHLY** - Peform safety reverse system test. If the opener does not reverse properly, disconnect the opener and operate the door manually until repairs can be made by a qualified door serviceman.

Perform emergency disconnect procedure. If door binds, sticks, or is difficult to lift, consult a qualified door serviceman for repairs.

**EVERY 3 MONTHS** - Visually inspect door and electric opener hardware for worn or loose components. Look for things such as frayed cables, broken springs, or loose hardware fasteners.

**CAUTION** - DOOR HARDWARE COMPONENTS ARE UNDER EXTREME SPRING TENSION. DO NOT ATTEMPT REPAIRS WITHOUT THE PROPER TOOLS AND COMPLETE KNOWLEDGE OF THE MECHANISM.

Lubricate door rollers, roller stems, bearings and hinges. See door manufacturer's installation and maintenance manual for additional maintenance recommendations.

**EVERY 6 MONTHS** - Review user safety instruction label next to push button with children.

DO NOT ATTEMPT TO DEFEAT ANY SAFETY REVERSE FEATURE IN ORDER TO COMPENSATE FOR AN IMPROPERLY OPERATING DOOR.

## CHANGING LIGHT BULBS

DISCONNECT POWER BEFORE SERVICING OPERATOR. Light bulbs must not exceed 60 watts. Excessive heat can cause damage.

Remove #8-15 x 3/8" sheet metal screw from light globe. Gently squeeze top and bottom of light globe together while pulling away from powerhead to reveal light bulb sockets. Screw standard incandescent light bulbs rated 60 watts or less (NOT INCLUDED) into the light sockets. Replace light globe.

If bulb life seems extremely short, some stores offer light bulbs packaged for use in garage door openers and rough service applications.

