

GARAGE DOOR OPENER SYSTEMS

MODEL 456

AND

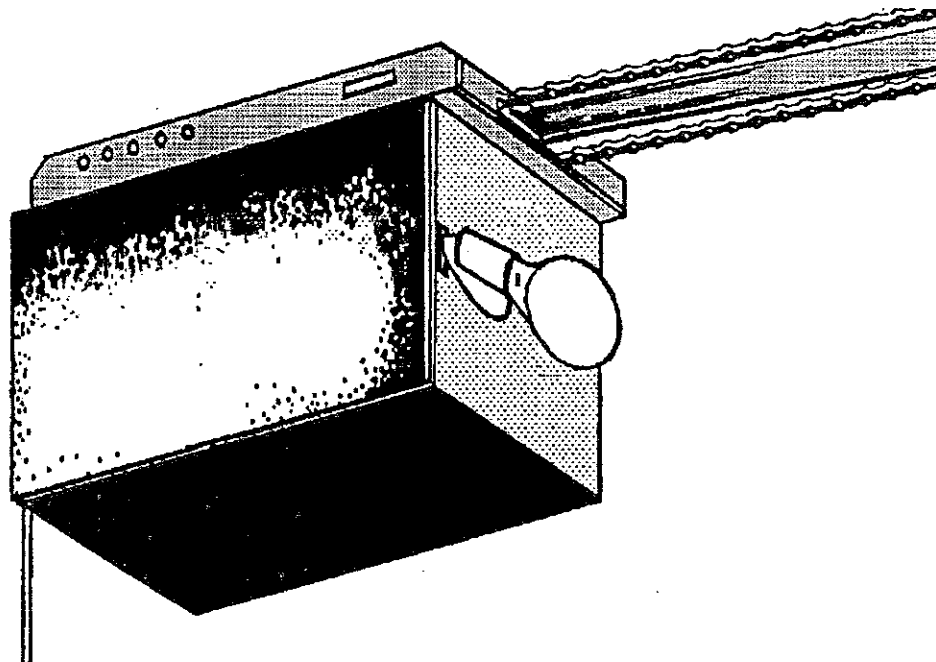
MODEL 551



the original since 1921

INSTALLATION INSTRUCTIONS AND OWNERS MANUAL

**READ THESE INSTRUCTIONS AND SAFETY
BROCHURE CAREFULLY BEFORE INSTALLING
OR USING THIS OPENER.**



After installation is completed, place instructions in close proximity to garage door.

WARNING:

DO NOT allow children to play in the area of the door or with radio control transmitter or with pushbutton.

WARNING:

Door is under extreme spring tension. Repairs and adjustments, especially to cables and spring assembly, can be hazardous and can result in severe personal injury. Repairs and adjustments should be performed **ONLY** by Qualified Door Service People.

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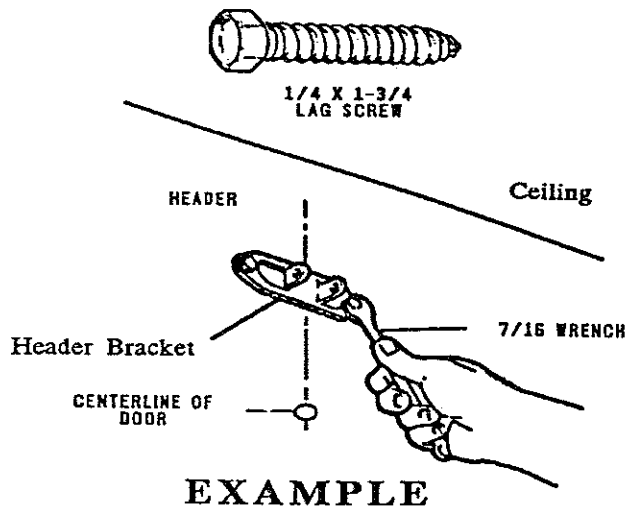
READ THROUGH MANUAL BEFORE BEGINNING ASSEMBLY.

HOW TO USE THIS BOOK

1. Use tools indicated by silhouettes at top of instruction.
2. Perform the instruction according to the words and illustration.
3. Proceed to next step.

4.  **7/16**










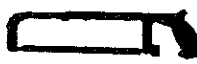






SECURE HEADER BRACKET TO HEADER.



EXAMPLE

TOOLS NEEDED

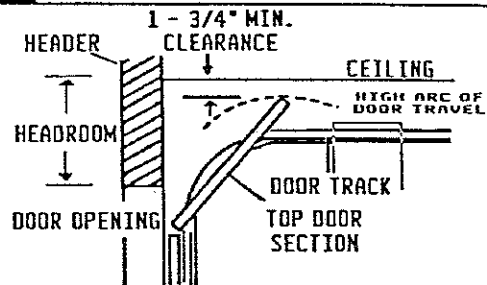
YOU WILL NEED THE FOLLOWING TOOLS SHOWN BELOW TO ASSEMBLE AND INSTALL THIS OPENER.

- | | | | | | |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------|---------------------------------------------------------------------------------------|--------------------------------------|
|  | ELECTRIC DRILL
5/32 BIT
1/4 BIT
1/8 BIT (METAL DOORS) |  | END WRENCH
7/16 & 9/16 |  | TAPE MEASURE |
|  | CARPENTER LEVEL |  | SLOTTED SCREWDRIVER |  | STRAIGHT EDGE |
|  | STEPLADDER
8'-0" |  | WIRE CUTTERS |  | PENCIL |
|  | HACK SAW |  | NUTDRIVER 1/4" |  | POCKET KNIFE
OR
WIRE STRIPPERS |
|  | ADJUSTABLE
END WRENCH |  | PHILLIPS
SCREWDRIVER |  | BELL WIRE |
|  | NEEDLE NOSE
PLIERS | | | | |

GENERAL INSTALLATION NOTES

CAUTION

This opener cannot be installed on a garage door where the clearance is less than 1-3/4".



WARNING

To reduce the risk of injury to persons use this operator only with a residential type garage door.

AVERTISSEMENT

Pour reduire les risques de blessures cet ouvre-porte ne doit etre relie qu' a une porte de garage residentielle.

CAUTION

DO NOT USE lighted-type pushbutton. See troubleshooting chart, page 17.

Preparing Door for Opener

The following procedures must be performed before opener can be installed. Failure to complete the following procedures can cause opener failure and/or hazardous conditions which could cause personal injury.

1. Check working condition of door. Door should operate freely without sticking or binding, and should not have to be held up or down. Lubricate door rollers and hinges with SAE 30 wt. oil.
2. If any part of the door is worn or broken, call a qualified door service person to repair it before opener is installed.

WARNING

Door is under extreme spring tension. Repairs and adjustments, especially to cables and spring assembly, can be hazardous and can result in severe personal injury. Repairs and adjustments should be performed only by qualified door service people.

3. If door is equipped with a locking device, make it inoperative by permanently securing the locking bar in an unlocked position or remove.

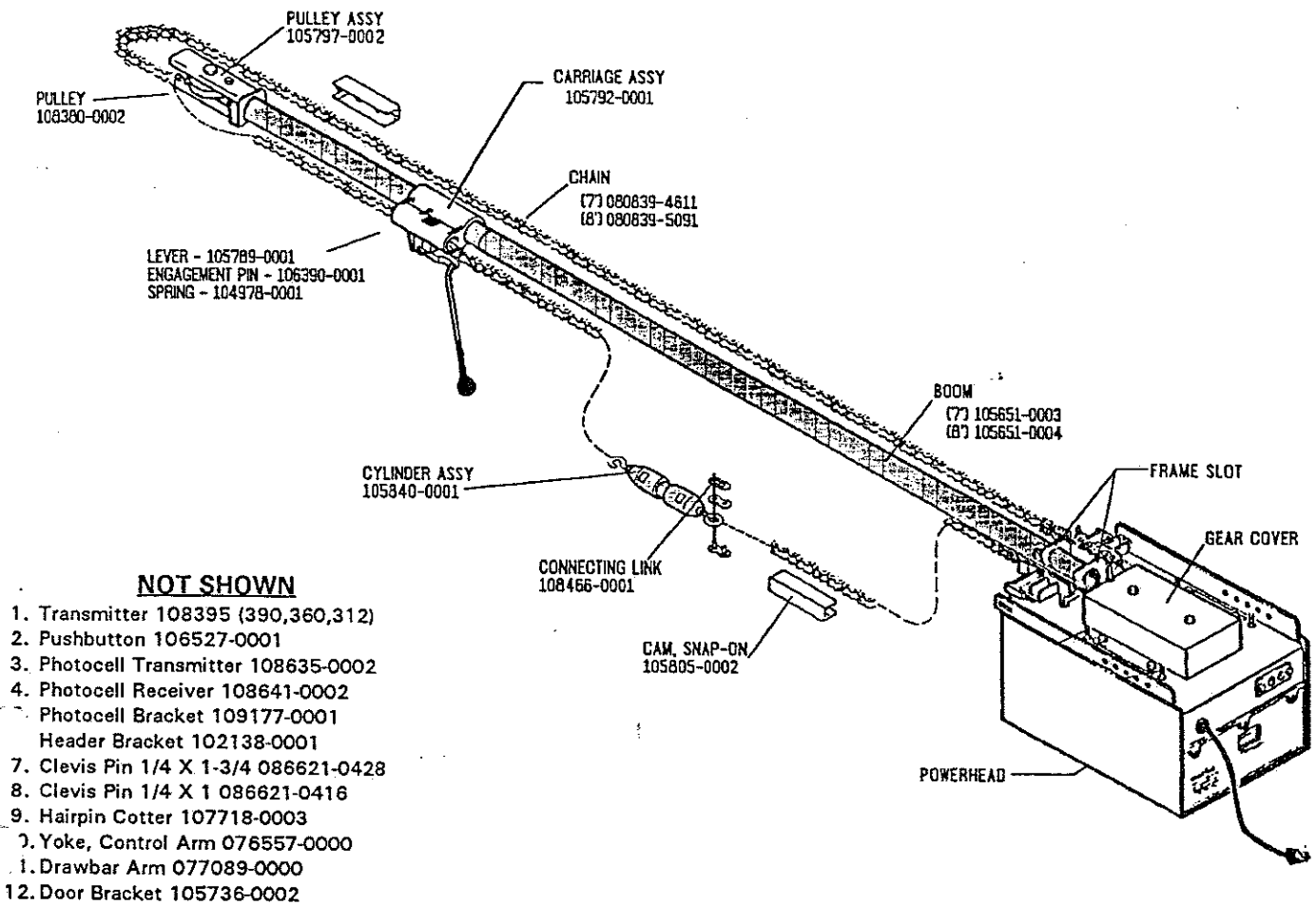
CAUTION

Remove any lift or pull rope to avoid entrapment by rope when the door is opened.

CAUTION

It is recommended that the top section of door be strutted or reinforced on doors 16 feet wide or larger.

ASSEMBLY DRAWING



To complete assembly of your Overhead Door Operator:

1. Slide the boom into the frame slot until it contacts the stop.
2. Place the chain around the drive sprocket and make sure that the chain passes through the limit switch assembly and around the outside of the guide pulley.
3. Connect chain to turnbuckle, with connecting link.
4. Tension chain until droop is 3/4 inch (lowest part of chain is just below lower edge of boom). Tighten jam nuts to cylinder.
5. Install the gear cover using the four #6 screws provided in the hardware kit.

IMPORTANT INSTALLATION INSTRUCTIONS

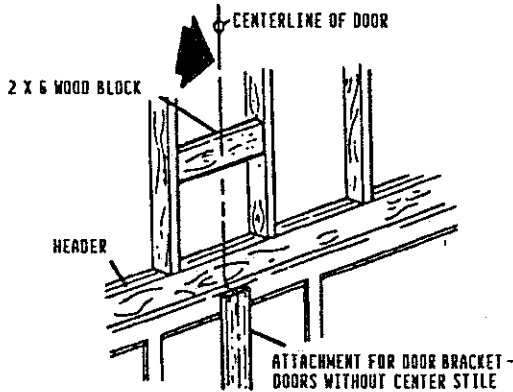
WARNING- To reduce the risk of severe injury or death:

1. READ AND FOLLOW ALL INSTALLATION INSTRUCTIONS.
2. Install only on a properly balanced garage door. An improperly balanced door could cause severe injury. Have a qualified service person make repairs to cables, spring assemblies, and other hardware before installing the opener.
3. Remove all ropes and remove or make inoperative all locks connected to the garage door before installing opener.
4. If possible, install the door opener 7 feet or more above the floor. Mount the emergency release 6 feet above the floor.
5. Do not connect the opener to source of power until instructed to do so.
6. Locate the control button: (a) within sight of door, (b) at a minimum height of 5 feet so small children cannot reach it, and (c) away from all moving parts of the door.
7. Install the Entrapment Warning Label next to the control button in a prominent location. Install the Emergency Release Marking. Attach the marking on or next to the emergency release.
8. After installing the opener, the door must reverse when it contacts a 1-1/2 inch high object (or a 2 by 4 board laid flat) on the floor.

NOTE: IF DOOR IS OF ONE PIECE CONSTRUCTION, FOLLOW INSTRUCTIONS BEGINNING ON PAGE 13. IF DOOR IS SECTIONAL TYPE, FOLLOW INSTRUCTIONS BELOW.

INSTALLATION SECTIONAL DOORS

- 1.**
Measure width of door to determine center. Mark center line on door and header.



If header does not have suitable woodwork where header bracket will be installed, then such will have to be made. It is suggested that a wood 2"x6" be secured to nearby woodwork.

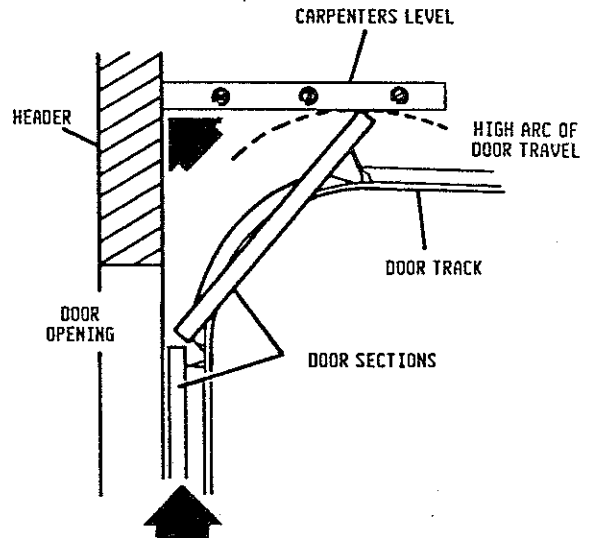
If door does not have a center stile or suitable material for attaching door bracket then door must be reinforced with wood or steel at this mounting point. This reinforcing member must attach to both top and bottom rail of the top section. This must be used on fiberglass and thin metal doors.

NOTE

1 3/4" minimum headroom required above high arc of door.

- 2.**
Raise door until top section reaches its highest arc of travel. Mark header on center line at point where level touches header.

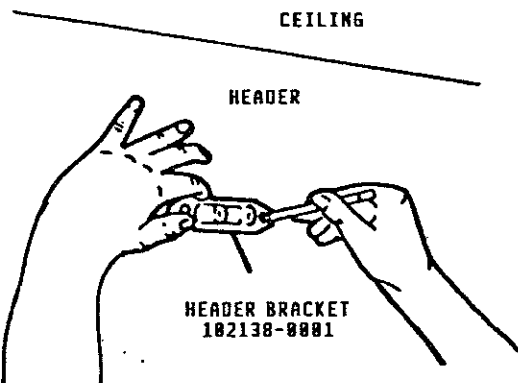
Mark horizontal center line of header bracket 1-5/8" minimum to 3-1/4" maximum above high arc of door travel. Use lowest figure permitted by door counterbalance.



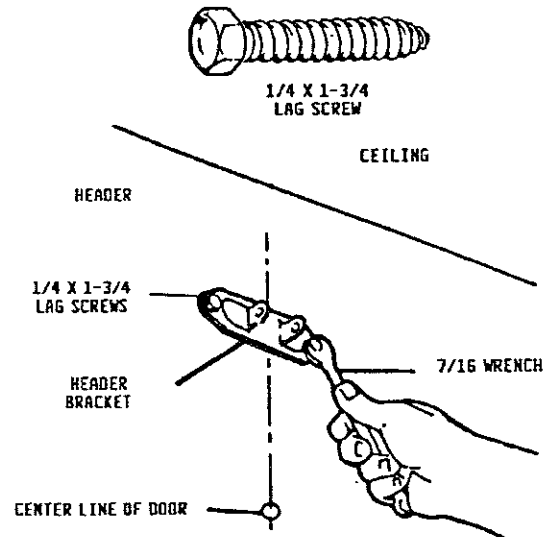
NOTE

IT IS RECOMMENDED THAT OPENER BE MOUNTED A MINIMUM OF 7 FEET ABOVE FLOOR

- 3.**
Position header bracket on center line and mark mounting hole locations on center line.
Drill 5/32" diameter holes at marked locations.

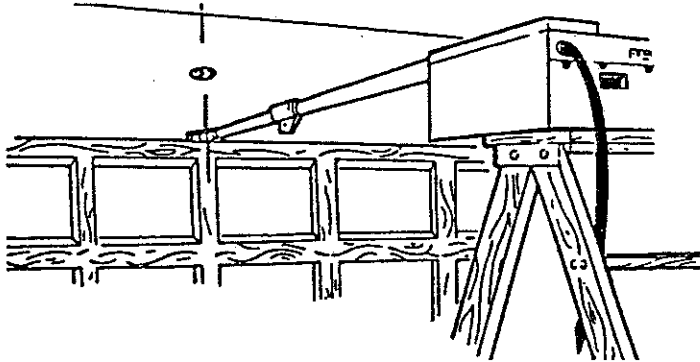


- 4.**
Secure header bracket to header.



5. A

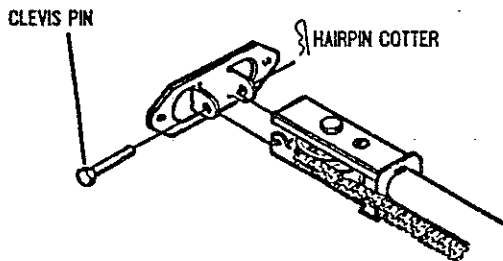
Rest header end of boom on top edge of top door section (extension spring door) or on torsion spring (torsion spring door) and powerhead on top of step ladder. Note: use protective pad, such as cardboard between ladder and opener.



6.



Attach header pulley assembly to header bracket.



NOTE

In order to obtain best performance it is important that the opener be installed as close to the door as possible. If the distance between the high arc of the door and the opener boom is one inch or less then the opener may be installed in a level position. If the distance between the high arc of the door is in excess of one inch, the rear of the opener should be lowered so that the distance between the opener boom and the door (in a fully opened position) is approximately 1/2 to 1 inch. If necessary, relocate the header bracket to maintain clearance at high arc of door.

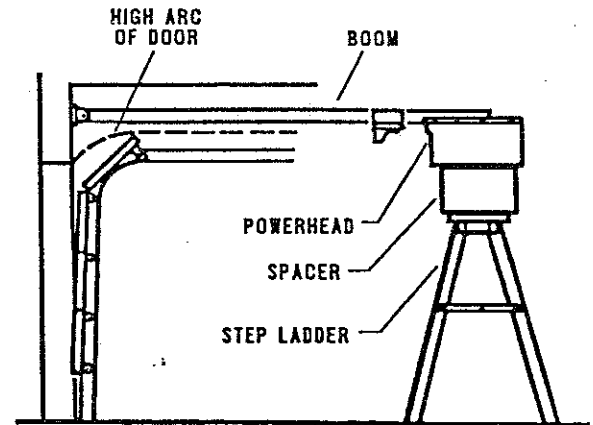
9.



1. Shown on next page are examples of various installation configurations. Determine the configuration which best suits your requirements.
2. If necessary, span ceiling joists with wood 2x4's or prepunched angle sufficient enough to support opener.
3. Hold ceiling mounting angle in mounting position. Using holes in angle as a guide, drill 3/16" diameter pilot holes in ceiling joists or 2x4 framing.
4. Using 1/4"x1-3/4" lag screws, secure ceiling mounting angle to ceiling joists or 2x4 framing.
5. Notch opener end of vertical angles (Detail A).
6. Using 1/4"-20x1/2" hex head bolts and lock nuts, secure angle brackets to opener.
7. Using 1/4"-20x1/2" hex head bolts and lock nuts, secure vertical mounting to ceiling angle. Vertical angles may be bent at notch if necessary (Detail B).

7.

Manually raise door to a fully opened position. If necessary, use spacers between ladder and opener to obtain clearance between door and opener boom.



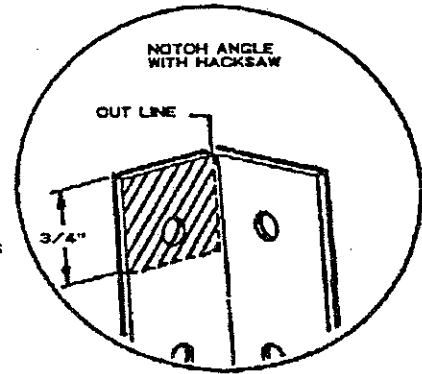
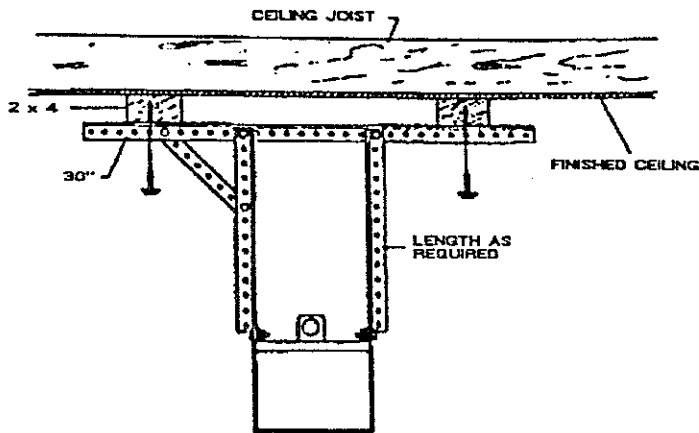
NOTE

Carriage must be positioned near powerhead to prevent interference between door and carriage.

8.

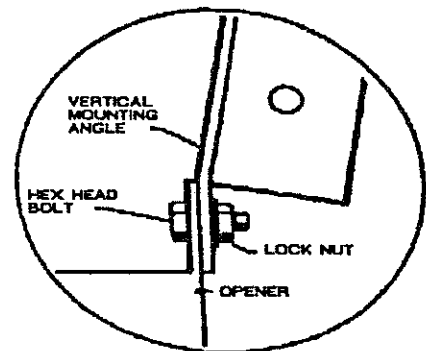
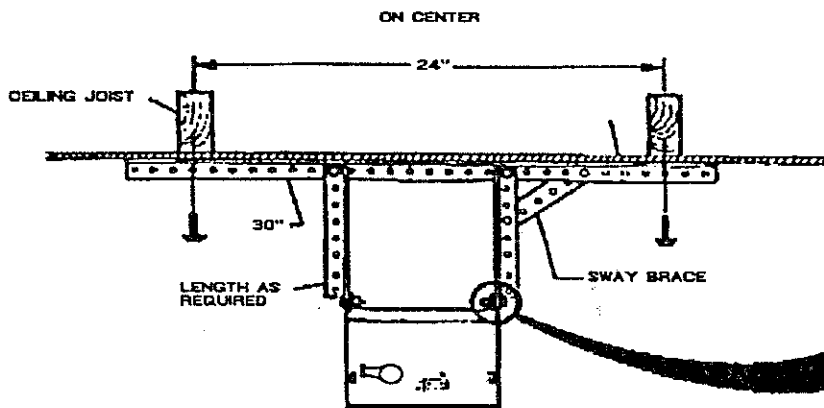
Position opener so that the boom is aligned (left and right) with the center of the door. Then attach rear of opener to ceiling joists as illustrated in step 9. (See Notes).

CROSSWISE CEILING JOISTS



DETAIL A

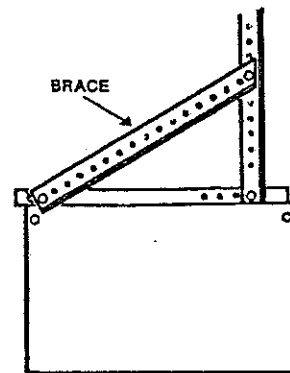
LENGTHWISE CEILING JOISTS



DETAIL B

IMPORTANT

Powerhead must be braced as shown in order for safety reverse system to function properly.



10.

Attach pushbutton wire to terminals on Pushbutton. Mount Pushbutton approximately 6 feet from floor (out of reach of children) on a wall next to garage access door. Attach the other end of pushbutton wire to terminals "Pushbutton" and "Common" on the rear of the opener. Remove backing from self-adhesive "ENTRAPMENT WARNING" decal and attach to wall near pushbutton. Use mechanical means (i.e. screws or tacks) to attach decal if adhesive does not adhere to surface.

NOTE

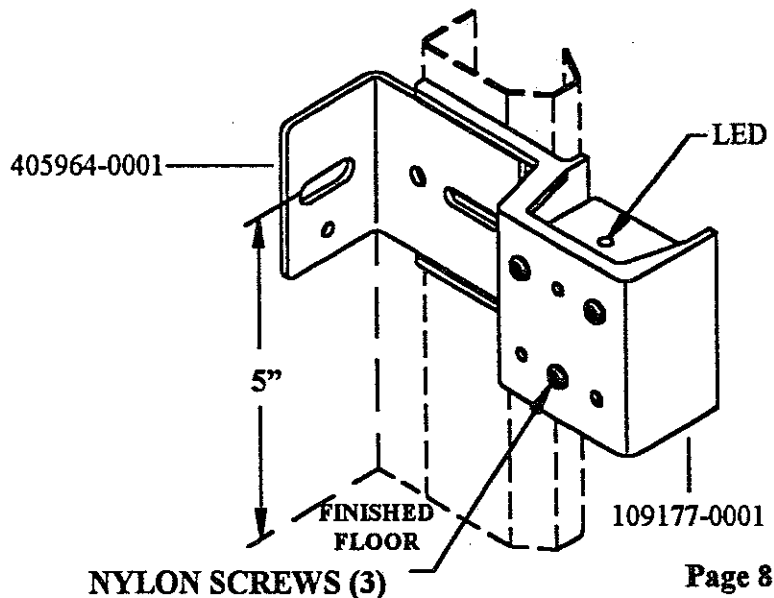
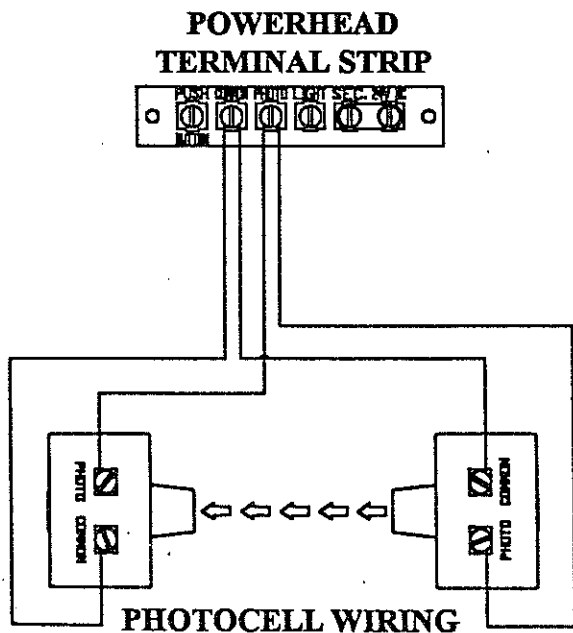
PUSHBUTTON MUST BE INSTALLED OUT OF REACH OF CHILDREN.

11.

PHOTOCELL INSTALLATION PROCEDURE

NOTE: Overhead Door Corporation Photocell System is a safety device which operates by transmitting an invisible beam near the floor of the garage door opening. When the beam is uninterrupted, the automatic garage door opener will function normally. However, an obstruction in the path of the beam will cause the door to open fully when closing, or prevent an open door from closing. The Photocell system must be operating properly and be unobstructed for the door to close.

1. The photocell mounting brackets included were designed to install between the bottom door track bracket and the door track. Mount the brackets (109177-0001) to the door track centered 5" above the floor such that the photocell transmitter and receiver will face each other. The invisible beam must not be obstructed by moving door parts and must be broken by a 6" tall obstruction placed on the floor. Some installations may require these brackets to be mounted to the door jamb or to the floor.
2. Route a pair of wires from the photocell receiver (the one with the LED) up to the powerhead. Connect the **BLACK STRIPED** wire to the "photo" terminal on the receiver and the "photo" terminal on the powerhead. Connect the **PLAIN WHITE** wire to the "common" terminals. See wiring diagram below. **NOTE: Polarity must be maintained.** Overhead Door two conductor wire is P/N 108763-0001.
3. Secure the photocell receiver to bracket (using the nylon screws provided) on the side of the door which receives the least amount of light.
4. Connect the photocell transmitter to the powerhead following the same procedure as in Step 2 above.
5. Mount the photocell transmitter to the bracket using the nylon screws provided.
6. Apply power to the photocell system by reconnecting the operator to AC power. The LED on the photocell receiver should be constantly illuminated. If the LED is blinking, realign the units until the LED is constant. The photocell is adjustable in all planes. Adjustment is made by tightening the nylon screws holding the photocell to the bracket. The photocell will move in the direction of the screw being tightened. A beam obstruction will cause the LED to blink.



12. 7/16

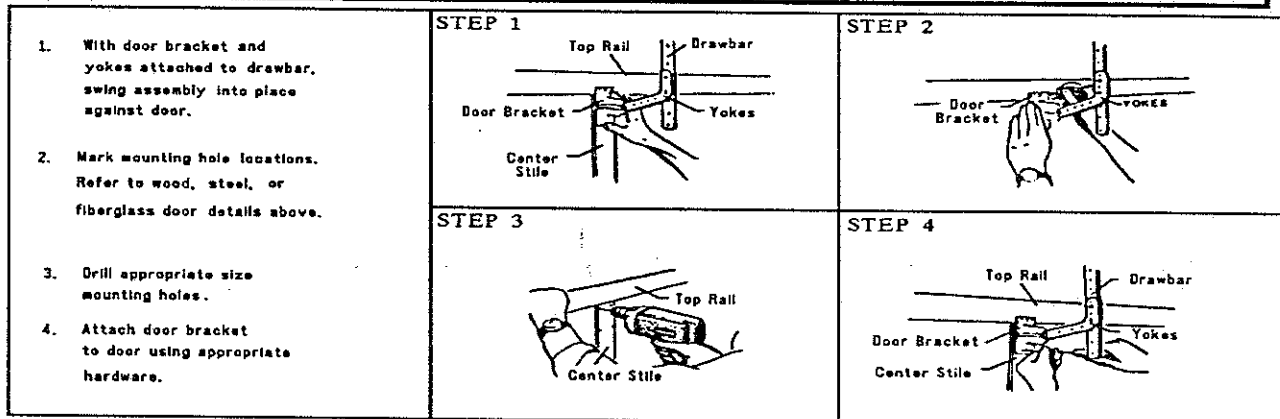
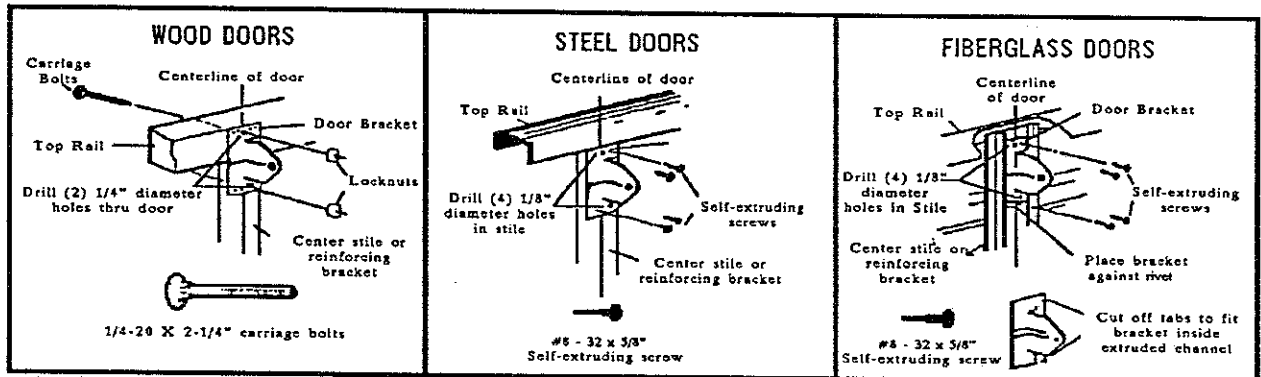
Install door bracket on centerline of door as shown in step 13. The pivot hole in door bracket should be in line, as close as possible, with the top rollers of the door.

NOTE

If door strut interferes with mounting of door bracket, move bracket below strut. Do not cut or modify door strut.

13. 7/16

The illustrations below depict installation of door bracket, P/N 105736-0002, on 3 types of doors. Install bracket in the appropriate manner according to door type.



14. 9/16

Attach yoke pieces to door bracket with 3/8" bolt and locknut. Tighten locknut but do not compress yoke against door bracket - yoke must move freely.

15.

Route pull cord through manual release lever and adjust so that release handle is approximately 6 feet from floor. Pull release handle and position carriage approximately 12" from front wall.

16. 7/16

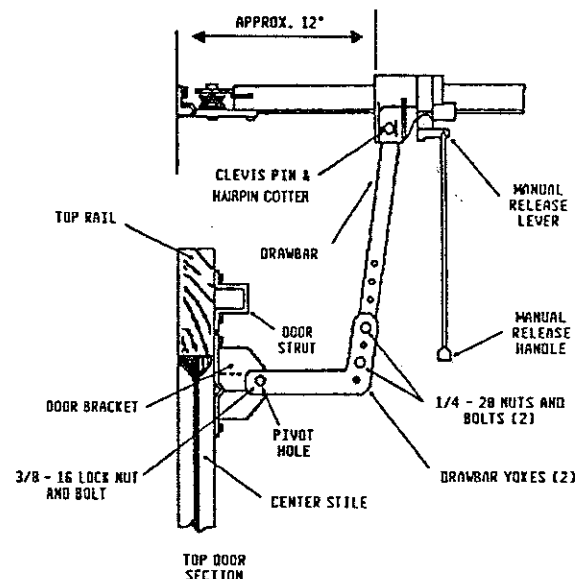
Attach door arm to carriage with clevis and hairpin cotter. Make sure door is fully closed and attach door arm to yokes with two 1/4" bolts and nuts. Select holes in the arm and yokes that will allow carriage to remain in the approximate position called for in step 15.

17.

Remove backing from Emergency Release Decal and install on door near Door Bracket. Use mechanical means (i.e screws or tacks) to attach decal if adhesive does not adhere to surface.

18.

Install 60-watt (MAX) rough service light bulb, ODC #108069-0001.



WIRING

19.

WARNING

It is important that electrical power to operator be off when powerhead cover is removed. Electrical power must remain disconnected while making electrical connections and limit switch adjustments. Keep hand and objects clear of powerhead if electrical power is reconnected with cover off.

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

If a convenient electrical outlet has to be installed it is recommended that such work be performed by a licensed electrician. USE OF EXTENSION CORDS IS NOT RECOMMENDED.

When installing a convenient electrical outlet, it is suggested that an electrical switch be installed to facilitate emergency power cutoff.

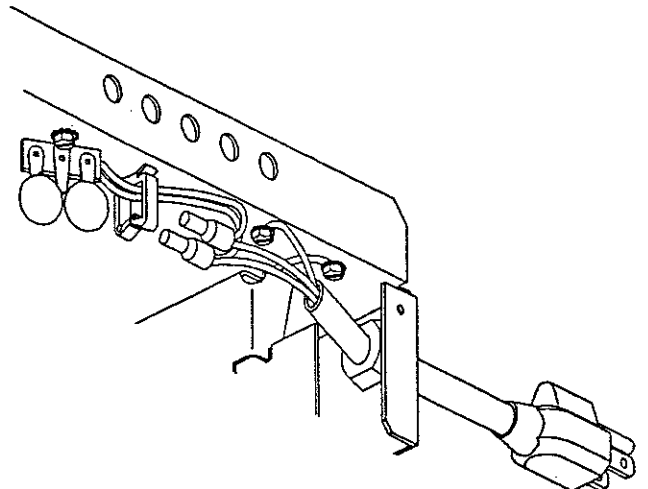
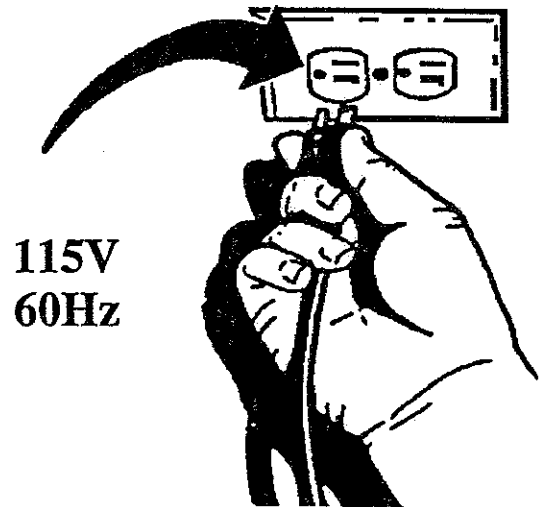
NOTE

If extension cord is required for temporary testing and adjustment, use only 3 wire (grounded) with a minimum 10 amp rating. This will assure proper operation of electronic system.

If local electrical codes require permanent wiring, proceed as follows:

Disconnect opener from any power source.

1. Remove opener cover (6 screws), two (2) wire connectors and disconnect green ground wire.
2. Remove power cord, strain relief bushing, and knockout.
3. Connect conduit to opener frame through the 7/8" diameter hole.
4. Use appropriate wire connectors and connect black power wire to the two (2) black wires (in opener) and white power wire to the three (3) white wires. CONNECT GREEN GROUND WIRE TO GREEN GROUND SCREW IN OPENER USING CUP WASHER (provided in hardware bag). MAKE SURE CONNECTION IS SECURE.
5. Reinstall opener cover.



OPERATION AND ADJUSTMENTS

20.

Plug opener power cord into electrical outlet. Using wall button, run opener and allow chain cylinder to engage the opener carriage. **NOTE:** The release lever must be in a horizontal position in order to obtain engagement.

21.

Using pushbutton, run opener and adjust up and down limit switch cams (step 22) to stop door in a fully opened and a fully closed position.

22.

CHAIN CAM ADJUSTMENT

Door travel is controlled by the placement of the chain limit cams on the opener drive chain. The design of the snap-on cams dictate that they can be relocated only in one inch increments and thus affect carriage travel proportionately. The carriage travel can be adjusted in 1/2 inch increments by alternately turning the cams 180 degrees and relocating as required for desired carriage control.

NOTE

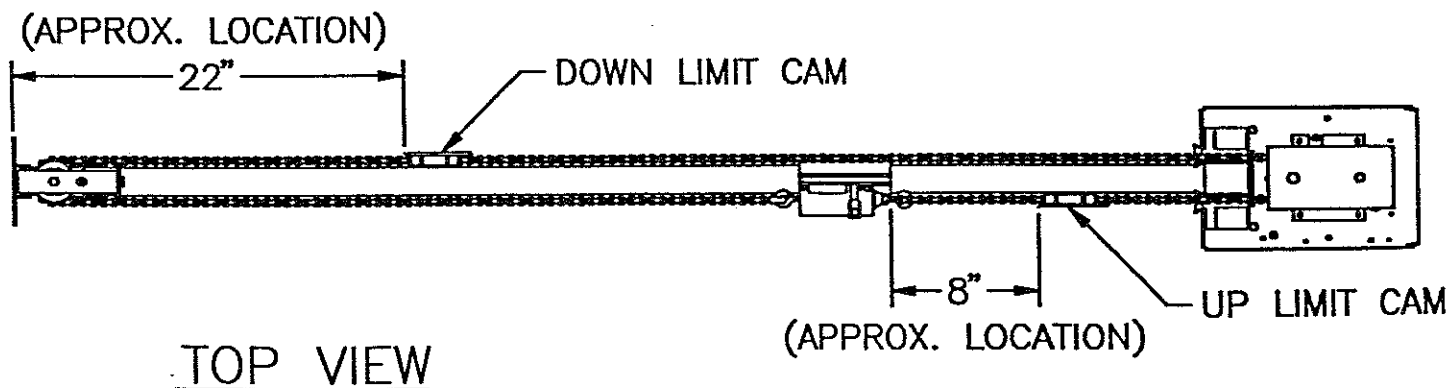
In order for the safety reverse system to function properly, the down limit switch must be adjusted so that the door is closed tightly against the floor.

NOTE

Adjusting the length of the door arm assembly and the down limit switch cam may have to be repeated until satisfactory operation is obtained.

IMPORTANT

After making adjustments to the down limit switch cam and/or changing the length of the door arm, always recheck the opener safety reverse system for correct operation. See step 23.

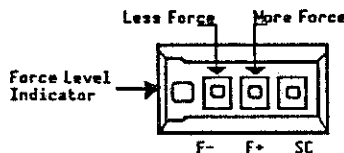


23. Adjustment and Testing of the Reversing System

The proper adjustment and testing of the Reversing System is important for the safety of everyone who uses your door and opener. Failure to properly adjust and test may result in serious personal injury from a closing garage door. The System consists of an electronic device that senses motor slowdown due to increased load.

WARNING

The Reversing System is a safety feature that reverses the door's travel and returns it to the fully open position if the door encounters an obstruction or resistance while closing.



The force level is indicated by the small green light located next to the less force button as shown. One flash followed by a pause indicates that it is set for the least force that the door will exert on an obstruction. Two to seven flashes indicate six more increased force levels. The final maximum force level displays a continuous light. **CONTINUOUS DISPLAY**

Operate the door and set the level to the lowest force that guarantees proper door operation. Each push of the "F+" more or "F-" less force buttons will set the level accordingly. Do not increase force level to compensate for a binding or sticking door. If the force level indicator is on continuously read warning below.

WARNING

If satisfactory operation of the door/opener cannot be achieved by following the instructions above, disconnect the opener from the door by pulling the emergency release rope, then check operation of the door alone. If door balance, rollers, and hinges operate smoothly, without striking or binding in the jambs, reconnect the opener and repeat the sensitivity adjustment procedure. If door/opener operation is still unsatisfactory, contact an Overhead Door Distributor.

As a final check, place a 1-1/2" thick board on the floor in the center of the door. When the door strikes this board it should reverse within 2 seconds and fully open. If it does not, go to step 24.

For your safety, it is recommended that the reversing mechanism be adjusted to perform properly. Check it every six months or call a professional door service person to check it for you. If, for any reason, the opener is not functioning properly, immediately disconnect the opener from the door (Emergency Release Operation) and do not reconnect until the problem is corrected.

24.

If opener fails to reverse on the 1-1/2" inch obstruction (as outlined in step 23) with force adjustment set at maximum, then the following steps should be performed.

- A. Readjust the down limit switch cam so that the door is being driven more tightly against the floor or;
- B. Increase the length of the door arm assembly by moving the yokes to a lower set of holes in the door arm. This may require that the down limit switch cam be readjusted to prevent door reversing at the floor.

25. PHOTOCELL TEST PROCEDURE

1. With the garage door fully open, place an object such as an empty box in the path of the sensor to break the invisible beam. (The red LED on the photocell receiver will go off.)
2. Depress the wall pushbutton. The door should move down for one second, stop and reverse.
3. Remove the object blocking the sensor beam and test the safety function as follows: With the pushbutton or transmitter, start the door closing, then interrupt the photocell beam. The door should stop, pause, and reverse to the full open position.

IMPORTANT SAFETY INSTRUCTIONS

WARNING - TO REDUCE THE RISK OF SEVERE INJURY OR DEATH:

1. READ AND FOLLOW ALL INSTRUCTIONS.
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. Test door opener monthly. The garage door **MUST** reverse on contact with a 1-1/2" inch high object (or a 2 by 4 board laid flat) on the floor. After adjusting either the force or the limit of travel, retest the door opener. Failure to adjust the opener properly may cause severe injury or death.
5. 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.
6. **KEEP GARAGE DOOR PROPERLY BALANCED.** See 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.

7. SAVE THESE INSTRUCTIONS.

INSTALLATION - ONE PIECE DOORS

TYPES OF ONE PIECE DOORS

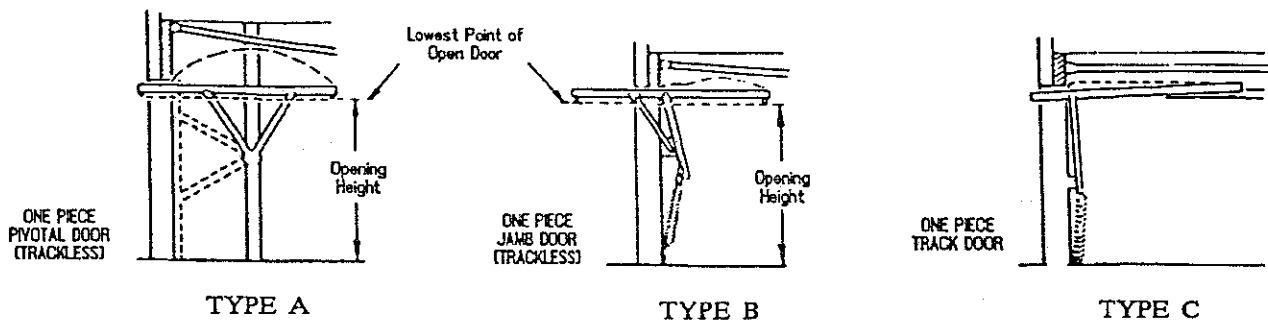


FIGURE 1

1.

Measure width of door to determine center and make a vertical line at the top of the door and on the header. (See Figure 3).

2.

For TYPE A (One Piece Pivotal) and TYPE B (One Piece Jamb) doors.

Temporarily attach header bracket to boom assembly. Open door to fullest extent. Determine the maximum opening height of door and support power unit end of opener (a stepladder is recommended) at this elevation. Rest header bracket on vertical centerline above door. Keep power unit at same elevation and move toward or away from opening. This will move the header bracket up or down the vertical centerline. Open and close door while adjusting opener to achieve the necessary 2" clearance between boom and door. Mark mounting hole locations for header bracket using holes in bracket as a guide. (See Figure 2).

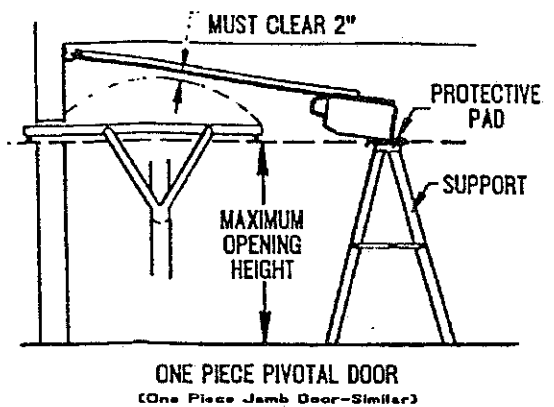


FIGURE 2

For TYPE C (One Piece Track) doors.

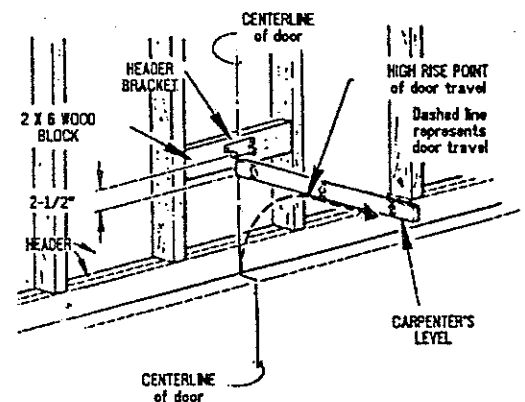
Using a carpenter's level, determine the high rise point of the door (highest point from floor, reached by door in its upward travel, See Figure 3). Place level at top of its highest point. Butt end of level against header. Level bubble and mark the point on the vertical centerline on header. Mark a point 2-1/2" above this point. Header bracket will be installed here.

3.

If header does not have suitable woodwork at attaching point for header bracket, such must be made. It is suggested that a wooden 2 X 6 be secured to existing frame near this point. Transfer vertical centerline and header bracket mounting point to 2 X 6. Drill pilot holes 1-3/4" deep for lag screws to secure header bracket.

4.

With door closed, attach header bracket in predrilled holes. Attach end of boom assembly to header bracket with 1/4" X 1-3/4" clevis pin and "hairpin" cotter.



Example of a door without a center stile and a header without suitable woodwork for attachment of header bracket.

FIGURE 3

5.

Manually close the door and attach the manual release handle and cord to the carriage release lever. Pull down on manual release carriage toward header end of boom assembly. NOTE: Return manual release lever to engaged position. The carriage and cylinder will automatically reconnect when opener is activated.

6.

Connect the straight drawbar arm and two yokes together with both yokes on the same side of the arm. Use the holes that allow the maximum length. (Two 1/4-20 bolts and nuts provided). Drill out the 1/4" diameter hole in the opposite end of the drawbar to 3/8" diameter.

7.

Attach door bracket on the centerline and top of door using lag screws or carriage bolts. If top of door is too narrow for bracket, bend excess part of bracket down out of the way or cut off, as desired.

8.

Attach straight end of drawbar assembly to door bracket using 3/8" bolt and lock nut provided. DO NOT overtighten. Attach the yoke end of drawbar assembly to the carriage using 1/4" X 1" clevis pin and cotter pin.

Refer to installation instructions beginning on page 6, step 7, for remainder of installation. (Omit steps 13, 14, 15, & 16.)

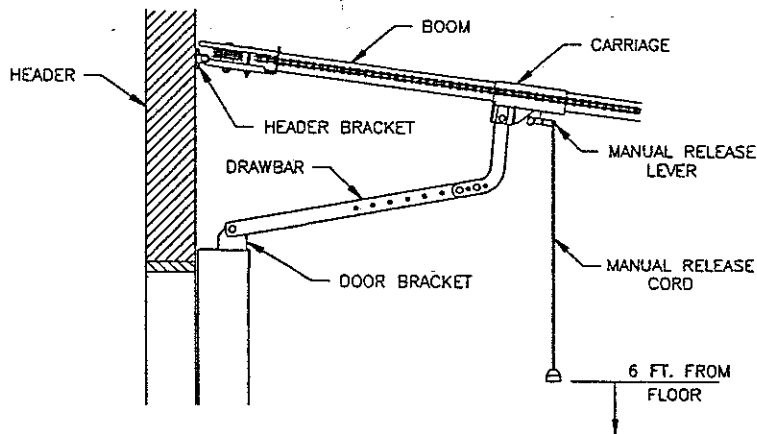


FIGURE 4

OPERATION

On initial power application or after a power failure, the motor will always run first in the open direction when signaled from either the transmitter or wall pushbutton. Thereafter opener always restarts in the direction opposite its last run.

TO START OPENER: Press transmitter pushbutton or wall pushbutton 1 time.

TO PARK DOOR: Press transmitter pushbutton or wall pushbutton while door is opening.

FOR YOUR SAFETY DOOR CANNOT BE PARKED WHILE CLOSING.

1. When "Emergency" or "Manual" operation of door is required, pull red release cord suspended from carriage (trolley).
2. To reconnect the opener, place the manual release lever (Figure 4, Page 14) in the horizontal position and run the opener. It will automatically reconnect.
3. If light does not work when opener is in use, replace light bulb. Use 60 watt rough service Overhead Door bulb, P/N 108069-0001. To remove the lens, push in on sides and remove. Replace lens by inserting retainer tabs into their holes and pushing lens to snap tabs into place.
4. If photocell system is inoperable, the door can still be closed by constant push on the wall pushbutton. Door can be opened with wall pushbutton or transmitter.
5. Oil door hinges, rollers and springs once each year with 30 weight oil. Wipe off any excess oil.
6. Transmitter is equipped with a 12 volt battery. Do not substitute with any other voltage battery.
7. Opener motor is protected against burnout by an internal protector which will stop motor if door is opened and closed too many times in succession, or if some other overload condition exists. If motor stops, allow it to cool 10-15 minutes, then press wall pushbutton to resume operation.

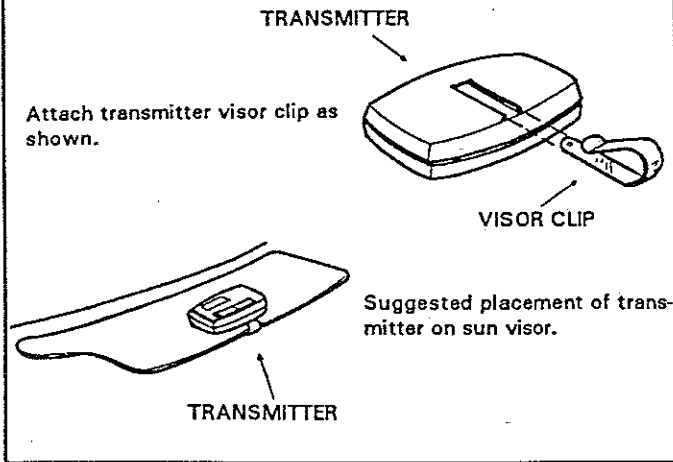
WARNING

Door is under extreme spring tension. Repairs and adjustments, especially to cables and spring assembly, can be hazardous and can result in severe personal injury. Repairs and adjustments should be performed **ONLY BY QUALIFIED OVERHEAD DOOR DISTRIBUTORS.**

8. It is suggested that every 6 months door be disconnected from opener and manually operated. Door should open and close freely. If door does not operate freely, contact an authorized Overhead Door Distributor.
9. In normal applications, lubrication of opener rotating and sliding parts is not required. Motor is permanently lubricated.
10. **DO NOT** lubricate boom. It is possible a film may develop inside the nylon carriage. This film may cause binding in freezing weather. To correct, spray boom, or either side of carriage, with a spray lubricant (WD 40, LIQUID WRENCH, etc.). Run opener open and closed, then wipe boom clean.

OWNERS INFORMATION

Transmitter Visor Clip Mounting



Your Radio Control System

Your Trinary Digital Control is designed to give years of trouble-free service. The concept of Digital Control allows you to easily change the coding of your control should you experience interference from other transmitters.

WARNING

- DO NOT perform any of the following steps until the garage door opener has been properly installed and tested as outlined in the installation instructions.
- BE SURE ALL PERSONS AND OBJECTS ARE CLEAR OF THE DOOR BEFORE PERFORMING THE FOLLOWING STEPS.

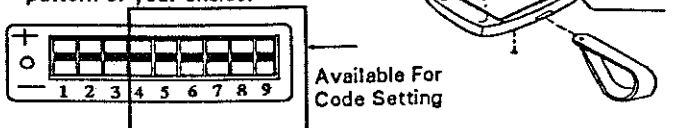
How To Set Transmitter Security Code

1. OPENING THE CASE

Remove visor clip by pulling it back out of the groove. Remove the exposed screw. Squeeze the upper housing half at the grooved area to separate from the lower housing.

2. SETTING THE CODE SWITCH

The code switch is located on the end opposite the battery. Note that each of the nine switches has THREE positions. The first three code switch positions are reserved for multi-button transmitter coding. These first three positions MUST be set to "0-0-0". The last six positions can be set to the pattern of your choice. On single button transmitters, all 9 positions can be set to the pattern of your choice.



NOTE:

This device complies with FCC rules part 15. Operation of this device is subject to the following two conditions:

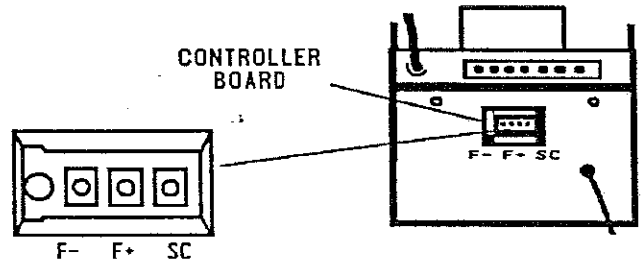
- This device may not cause harmful interference.
- This device must accept any interference that may be received, including interference that may cause undesired operation.

How To Set Operator Security Code

NOTE:

Five different transmitter codes may be programmed that will control the same operator. This feature is provided to allow you to use the Digital Access Control (Wireless Keyless Entry), temporary authorization of another transmitter (service personnel) and future product offerings. It must be remembered that "ANY" of the five codes programmed will control the operator.

- Check the operator for proper operation from the wall pushbutton.
- Momentarily push the security code (SC) button located on the garage door opener back panel as illustrated. The operator's light bulb will flash once.



- Push the Transmitter button for approximately one second and release. The operator light bulb will flash twice, indicating that the code was accepted.
- Repeat step 3 waiting for the bulb to flash three, four, and five times. After the fifth code entry, the operator light bulb will remain on for approximately five seconds, indicating the programming is complete.
- The operator will now respond to the transmitter pushbutton.

Multiple Security Code Entry Instructions

- If a particular code is to be removed or changed, the location may be accessed by pressing the SC (code entry) button. The first press will cause the operator light bulb to flash once. This is position 1 and a new code or another existing code may be entered using the desired coded transmitter. To access another position, "DO NOT" enter a code but push the security code (SC) button until the desired location is accessed by the number of flashes of the operator light bulb.
- The following table is provided for the convenience of recording the programmed security code.

MULTIPLE SECURITY CODE ENTRY TABLE

Code Position	Transmitter Identification	
Code Position 1	Transmitter Identification	
Code Position 2	Transmitter Identification	
Code Position 3	Transmitter Identification	
Code Position 4	Transmitter Identification	
Code Position 5	Transmitter Identification	

NOTE:

Identical codes may be entered in any of the locations. This allows easy removal of a code with a transmitter that you wish to remain authorized.

TRANSMITTER SERVICE HINTS

NOTE:

If you have two transmitters, and one does not work, it is reasonable to assume the problem is in the transmitter. However, when you have one transmitter and it does not work the problem may be in the receiver. When returning the controls to the factory for service, it is always recommended that you send the receiver and all the transmitters so they can be tested as a set.

When writing to the factory for assistance or when returning a control for repair be sure to include the following information:

1. Number of Transmitters
2. Door opener Model No. and Manufacturer's Name
3. Date Unit was Installed
4. Nature of Difficulty

If you have purchased only one transmitter and you wish to purchase a second one, specify the frequency found on the white sticker on the back of the transmitter.

REPLACING THE BATTERY:

1. Remove the visor clip by sliding it out of the groove.
2. Remove the exposed screw.
3. Squeeze the upper housing half at the grooved area and separate from the lower half.
4. Gently pry the battery up until it separates from the clips.
5. Replace only with Overhead Door A23 or equivalent 12 volt battery. Any other voltage may damage the transmitter and void the warranty.

TROUBLESHOOTING GUIDE

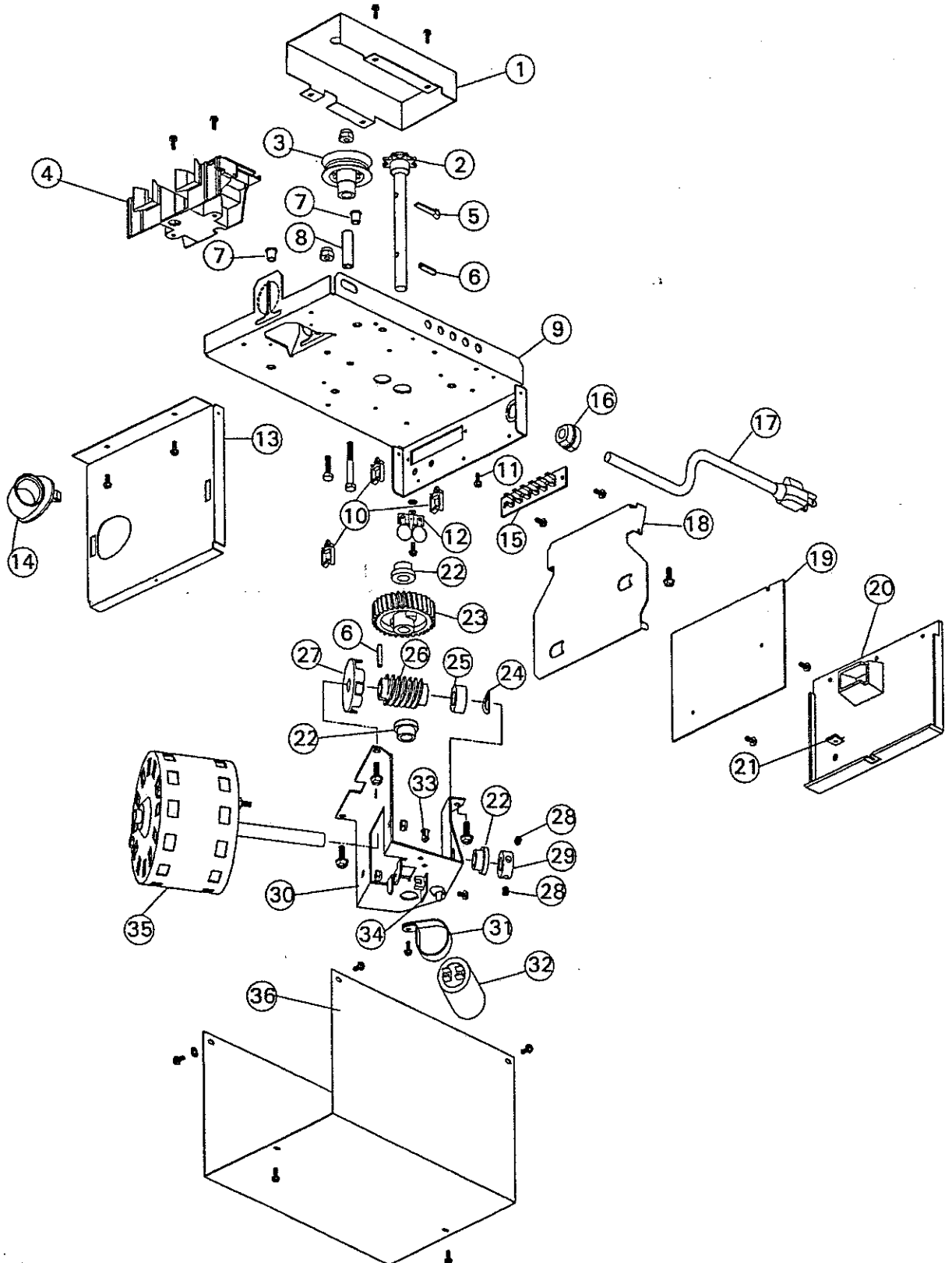
This troubleshooting guide shows malfunction symptoms and their possible causes. Use it to help determine the cause of a problem. Disconnect power to the opener before opening the cover.

The microprocessor does a self test when power is connected to the opener, when the pushbutton or transmitter button is pushed, and at the end of the light timing cycle. The self test shows a system problem by flashing the opener light.

SYMPTOM	POSSIBLE CAUSE
Opener light flashes at 1 second intervals for 7 flashes. (When activated by the transmitter.)	Photocell misaligned. Photocell wiring defective. Photocell defective.
Opener light flashes at 1-1/2 second intervals for 5 flashes.	Short in wall pushbutton. Short in wall pushbutton wiring. Using lighted pushbutton. Transmitter stuck on and/or interference. Defective radio circuit board.
Opener inoperative from both transmitter and pushbutton.	Loss of primary power (outlet). Defective circuit board.
Door will NOT open (using transmitter or pushbutton) AND Opener light flashes at 1/2 second intervals for 15 flashes.	Jumper missing between 24V and SEC (does not apply to Model 456) and unit is NOT using an optional Master-switch. Defective up limit switch or up limit switch wires.
Opener (green) LED does not light up or flash.	Defective circuit board. Loss of primary power (outlet).
Door will NOT close (using transmitter or pushbutton) AND Opener light flashes at 1/2 second intervals for 15 flashes.	Defective down limit switch or down limit switch wires.
Door will not open or close using the transmitter, but will open and close with the pushbutton. Unable to reprogram transmitter. (See programming steps)	Defective transmitter battery. Defective transmitter. Defective radio receiver.
Door starts down, runs 1 second and reverses. Constant pressure on the pushbutton allows the door to close. The transmitter will open the door but will not close it.	Photocell misaligned. Defective Photocell wiring. Defective Photocell.
Door starts down, runs 1 second, and reverses. Constant pressure on the pushbutton will NOT close the door. The transmitter will not open the door.	Defective Internal Reversing system.
Door runs down, hits the floor and reverses within 1/2 second	Improperly adjusted down limit switch.
Door starts down, runs longer than 1 second, then reverses.	An obstruction has entered the doorway path. Photocell partially misaligned. Force level is set too light.

POWER UNIT ASSEMBLY

ILLUSTRATED PARTS BREAKDOWN

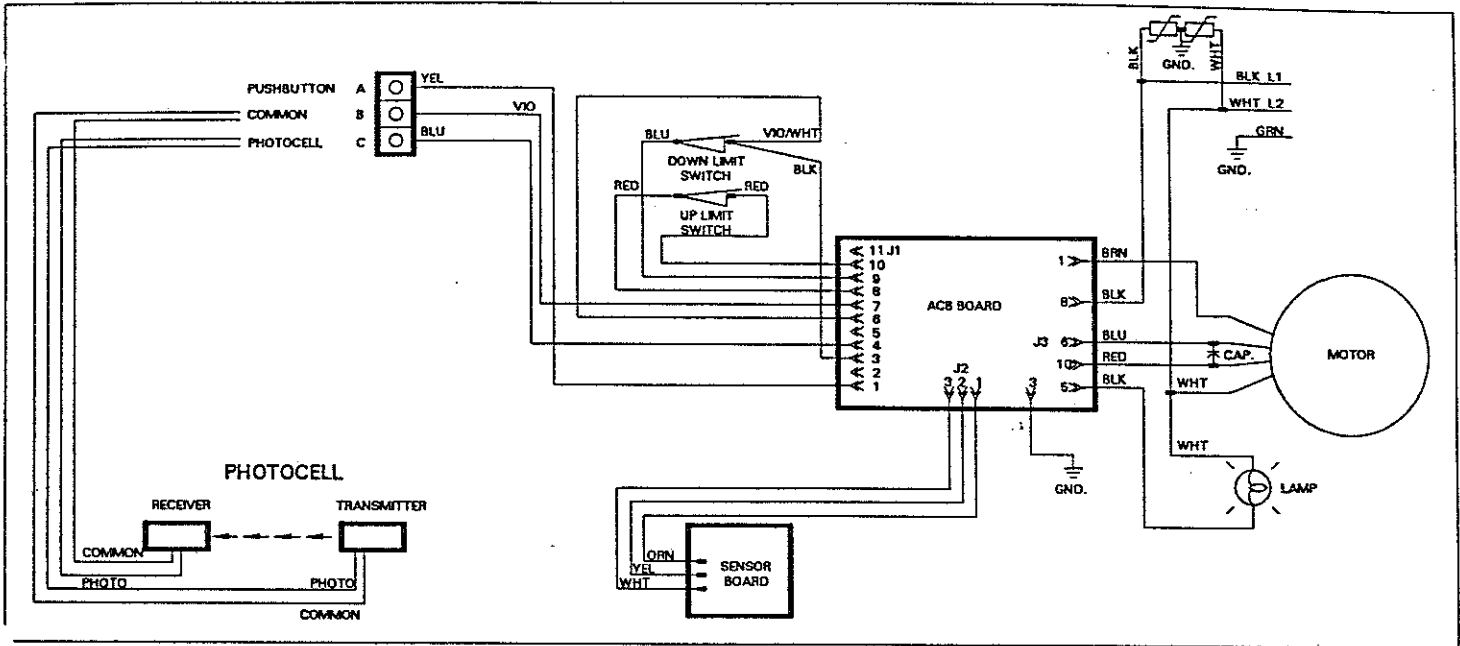


LIST OF ILLUSTRATED PARTS

ITEM	PART NUMBER	DESCRIPTION			
1	107519-0001	Cover, Sprocket/Idler	21	080380-0008	Nut, Tinnerman #6 - 18
2	108659-0001	Shaft Assembly, Output	22	072018-0000	Bushing, 1/2 I.D.
3	108380-0003	Idler, Chain	23	108609-0001	Gear, Helical
4	106484-0001	Limit Switch Assembly	24	107847-0002	Washer, Spring
5	080401-0616	Pin, Cotter 3/16 X 1	25	108596-0001	Bushing, Thrust
6	080412-1214	Pin, Slotted 3/16 X 7/8	26	108608-0001	Gear, Worm
7	080168-0003	Bushing, Snap-Nylon	27	108452-0001	Rotor/Ring Assembly
8	108736-0001	Pin, Idler	28	080300-1604	Screw, Set 1/4-20 X 1/4
9	108601-0001	Frame, Main 456/551	29	108597-0001	Collar, Set
10	605476-0002	Clip, Wire Mount	30	108599-0001	Bracket, Drive System
11	107442-0002	Screw, Green Ground 8-32 X 3/8	31	107854-0001	Clamp, Capacitor Mounting
12	106453-0002	Surge Protector Assembly	32	107871-0001	Capacitor, 54 MFD, 220 VAC-551
13	107514-0001	Plate, Lamp End		107871-0005	Capacitor, 40 MFD, 220 VAC-456
14	107593-0001	Lamp Holder	33	107870-0001	Clip, Arrow
15	107530-0001	Terminal Strip, 6 Lug - 551	34	108692-0001	Board Assembly, Optic Sensor
	107530-0003	Terminal Strip, 3 Lug - 456	35	108562-0001	Motor, 1/4 HP -456
16	076877-0012	Bushing, Strain Relief		108563-0001	Motor, 1/2 HP -551
17	107443-0001	Cord Assembly, Power	36	107770-0003	Cover, Powerhead - 551
18	108598-0001	Bracket, ACB		107770-0004	Cover, Powerhead - 456
19	108589-3901	Controller, ACB 93, FREQ 390	37	108099-0001	Harness,Control 24V 551 NS
	108589-3121	Controller, ACB 93, FREQ 312		108735-0001	Harness,Control 24V 456 NS
	108589-3601	Controller, ACB 93, FREQ 360	38	108096-0001	Harness, Power 115 Volt NS
20	107612-0002	Cover, ACB Access 456/551	39	104059-0002	Light Shield NS
			40		Grease, Gear NS

NS - NOT SHOWN

456 WIRING SCHEMATIC



551 WIRING SCHEMATIC

