

INSTALLATION & MAINTENANCE

Aluminum Full Vision Residential Garage Door Instructions

Model: _____ Serial No.: _____

(Provided on label on interior door surface)

Size: _____ Register your product online at <http://warranty.clopaydoor.com>

Homeowners Should Retain This Booklet for Future Reference

This Manual Contains Important Safety Information

Installed By: _____



Clopay® BUILDING PRODUCTS
A Griffon Company

CONSUMER HOTLINE • 1-800-2CLOPAY • 1-800-225-6729

Hours of Operation (ET): Mon. - Fri., 8:30 AM - 7 PM; Sat. 8:30 AM - 5 PM.

Clopay® Pro-Series® Limited Warranty

Avante® Door Limited Warranty Information

We will repair or replace (at our option) any garage door section or hardware that is defective in material or workmanship pursuant to the terms of this limited warranty. This warranty extends to and benefits only the original purchaser of the garage door. This warranty does not apply to commercial, industrial or any other non-residential installation.

We will provide, at no cost to you, sections/section components, hardware, springs/spring components or windows to repair or replace defective sections, hardware, springs/spring components or windows. All labor costs associated with the removal and reinstallation of any repaired section/section components, hardware or spring/spring components, and the installation of replacement sections/section components, hardware, spring/spring components, or windows will be your responsibility. We reserve the right to inspect and/or verify any claimed defect.

The applicable limited warranty periods are as follows:

Model #	Paint System	Hardware/ Springs
AV, AVI	5 yrs.	3 yrs.

Terms and limitations of the limited warranty are further detailed below:

Paint System Limited Warranty

Clopay warrants the sections of the Models listed above against paint finish cracking, checking or peeling (losing adhesion) as follows: (a) in residential single family installations for the years designated above from the date of delivery to the original purchaser; (b) in all other residential installations (including installations on facilities owned in common by condominium associations or similar organizations), for one (1) year from date of delivery to the original purchaser, pursuant to the terms of this limited warranty.

Hardware/Spring & Spring Component/Sections/Section Components Limited Warranty

We will repair or replace (at our option) any garage door hardware, spring, and/or spring component that is defective in material or workmanship for the term defined in the chart above, pursuant to the terms of this limited warranty. In addition, we will repair or replace (at our option) any garage door section/section component that is defective in material or workmanship.

WE WILL NOT PAY FOR ANY DAMAGES, INCLUDING INCIDENTAL OR CONSEQUENTIAL DAMAGES, CAUSED BY OR RESULTING FROM DEFECTIVE GARAGE DOOR SECTIONS OR HARDWARE. Some states do not allow the exclusion of incidental or consequential damages, so the above limitation may not apply to you.

Our warranty shall not extend to or cover deterioration due to damage to the garage door caused by fire, an act of God, other accident or casualty, vandalism, radiation, harmful fumes or foreign substances in the atmosphere, or occurring as a result of any physical damage or the failure of paint that is not applied per the manufacturer's specifications after the garage door left our factory, or failure to follow all installation and maintenance instructions. Nor shall our warranty extend to or cover any damages due to normal wear and tear, or claims with respect to any products that in any way or degree have been altered, processed, misused or improperly handled or installed.

If your garage door does not conform to this warranty, notify us in writing at the following address promptly after discovery of the defect. Clopay Building Products, Attn: Consumer Services Dept., 101 Miller Road, Russia, Ohio 45363. Additional copies of our installation and maintenance instructions may be obtained by calling 1-800-225-6729.

WE MAKE NO OTHER WARRANTIES, REPRESENTATIONS, OR COVENANTS, EXPRESS OR IMPLIED, WITH RESPECT TO THIS PRODUCT, INCLUDING BUT NOT LIMITED TO WARRANTIES, REPRESENTATIONS OR COVENANTS AS TO WORKMANSHIP, DESIGN, CAPACITY, QUALITY, CONDITION, MERCHANTABILITY, OR FITNESS FOR ANY PURPOSE OF THE PRODUCT, EXCEPT FOR ANY "IMPLIED WARRANTY" AS THAT TERM IS DEFINED IN THE MAGNUSON-MOSS WARRANTY-FEDERAL TRADE COMMISSION IMPROVEMENT ACT, SUCH IMPLIED WARRANTIES TO BE LIMITED IN DURATION TO A PERIOD OF ONE YEAR FROM THE DATE OF PURCHASE.

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



© Clopay Building Products Company, Inc.
A Griffon Company, Inc. 2005



America's Favorite Garage Doors®

Table of Contents

Introduction and Opening Preparation

STEP 1 – Things to Know Before You Begin	3
STEP 2 – Read Safety Information	4
STEP 3 – Check Headroom, Backroom, Sideroom	5
STEP 4 – Removing the Existing Door Springs	6
STEP 5 – Removing Door Sections and Track	7
STEP 6 – Preparing the Opening	7

Preparing the New Door

Typical Garage Door Installation Illustration	8
Hardware Components	9
Torsion Spring Hardware Components	10

Installing the New Door

STEP 7 – Preparing Bottom Section	11
STEP 8 – Outside Lift Handle Attachment	15
STEP 9 – Installing Door Sections	16
STEP 10 – Reinforcing the Top Section for Opener Attachment	18
STEP 11 – Assembling and Installing Track	19
STEP 12 – Lock Installation (if included)	21
STEP 13 – Pull Rope	21
STEP 14 – Spring Installation	22
STEP 15 – Attaching an Automatic Opener	27

Maintenance/Adjustments/Options

Painting and Windows	28
Maintenance	29
Checking and Adjusting the Door	29
Replacement Parts	29

STEP 1 – Things to Know Before You Begin

- Read the instructions completely before starting the installation of the door. Becoming familiar with the components before assembling the door will reduce the installation time.
- Be sure all hardware components for your new door are included before removing existing door (see pages 6,7). If your door is missing any parts, call the toll-free Consumer Services number listed on the front of this manual.
- Allow enough time to do the work; removing an existing door will take approximately 1-3 hours.
- An assistant may be required for lifting the unsprung door. It can weigh from 100 to 800 pounds.
- A typical installation takes between 9 and 12 hours to complete.
- Keep in mind when planning the installation that the garage will be open and unsecured when disassembling the old and assembling the new door.
- If the garage door is the only opening in the structure make sure everything you need is inside. You will have no way of leaving the garage until the track is assembled and installed. This will take approximately 5 hours.
- To avoid damage to the door, you must reinforce the top section of the door in order to provide a strengthened mounting point for attachment of an automatic opener (see page 18).
- Low Headroom doors require special instructions. Options for doors with low headroom can be found on page 5. Purchase of additional hardware may be required. Check headroom requirements in the chart on page 5 before beginning.
- To avoid installation problems which could result in personal injury or property damage, never reuse old track or hardware.
- Doors installed in high windload regions (Florida and other high wind prone areas) may require additional reinforcement beyond what is detailed in these instructions. Please refer to supplemental instructions for these areas.
- Express warranties apply only to doors installed using original, factory-supplied sections, parts, and hardware installed in strict accordance with these instructions.

Tools Needed

- "C" Clamps or Locking Pliers
- Hammer
- Screwdriver
- Tape Measure
- Level
- Socket wrench kit
- Pliers
- Drill, 9/64", 3/16", 1/4", & 3/8" drill bits, and 7/16" socket bit
- Step ladder
- Saw horses (with carpet or other soft material on top surface; 2 for doors up to and including 10'0", 3 for doors over 10'0") or other supports for placing section on while assembling
- Hacksaw
- Wood Saw
- T-Square
- 3/32" Allen (Hex) Wrench
- Two 1/2" diameter, 18" long cold rolled solid steel winding bars (NOTE: Winding bars are available at most hardware stores)
- Locking Pliers

Additional Material Required

- Light household oil
- 1-1/4" x 1-1/4" Minimum punched angle
 - 13 ga. (3/32") minimum thickness for Operator Reinforcement (see page 18)
 - 16 ga. (1/16") minimum thickness for rear track hangers on doors weighing up to 300 lbs. that use torsion springs. If your door exceeds these weight limitations, or if you do not know the weight of your door, 13 ga. angle should be used. (See page 20)
- Eight 3/8" x 1" bolts and nuts for rear track hangers
- Six 5/16" x 11/2" lag screws for rear track hangers
- Twelve 10d 3" nails
- Stop Molding
- Wood Block
- Wood Anchor Pad for Torsion Spring (See page 20 for size and material specifications)
- Rope

STEP 2 – READ THIS SAFETY INFORMATION IMPORTANT!

To Protect Yourself From Injury You Must Carefully Read The Following Safety Information and Warnings Before You Install Or Use Your New Garage Door

- You can install your new garage door yourself IF...
 - a) you have help (it may weigh up to 800 lbs.);
 - b) you have the right tools and reasonable mechanical aptitude or experience; and
 - c) you follow these instructions very carefully.
- Garage doors use springs to balance them. There are two types of springs installed — extension or torsion. Each of these is available in either a standard or EZ-Set™ assembly option. Please look at the drawings on page 8 to see which springs your old door has.
- **If your old door uses torsion springs, do not attempt to remove the door or the springs yourself.** Have a qualified door repair service remove them. Attempting to remove a torsion spring assembly without proper training or tools may result in an uncontrolled release of spring forces which can cause serious or fatal injury.
- **Only the track specified and supplied with the door should be used.**
- The brackets at the bottom corners of your garage door are under great tension. **Do not attempt to loosen any bracket fasteners except when and as directed in detail in the following instructions.** Otherwise, the bracket could spring out with dangerous force.
- **Do not permit children to play beneath or with any garage door or electric operating controls.**
- In removing a garage door that has extension springs, follow the instructions carefully, including the use of “C” clamps or locking pliers on both sides of the door in order to keep the door from moving once the springs are removed.
- When installing a door with torsion springs, always use solid steel 1/2" x 18" winding bars. Winding bars are available from many professional door installers. The use of screwdrivers or any substitutes for winding bars will risk severe injury. See page 23 for further safety instructions regarding winding bars.
- Keep hands and fingers clear of section joints, track, and other door parts when the door is opening and closing to avoid injury. The lift handles are located for safe operation as well as easy use.
- Bolts must be installed at the rear end of horizontal tracks. These act to stop the rollers and keep the door from rolling off the back of the track.
- Track installations must use sway braces on the rear track hangers to prevent sideways movement. If the tracks are not firmly stabilized they might spread, allowing the door to fall and cause severe injury and damage.
- The center torsion spring assembly uses a wooden pad that must be of good quality and firmly attached to the wall. Four 3/8" x 3" lag screws should be used to attach wood structure. The wood needs to be made of a Grade 2 or better Southern Yellow Pine (also known as Southern Pine or Yellow Pine.) Other acceptable types of wood for this application are beech, birch, hickory, and oak. The wood must be free of splits and cracks. **Do NOT use wood labeled as Spruce-Pine-Fir (or SPF).** Four 3/8" masonry anchors can be used on concrete or block walls. If the wood splits once the torsion spring is in place, it should be replaced by a professional installer. Do not try to remove or repair a torsion spring assembly or red fasteners once the spring is wound.
- Springs, cables, and bottom fixtures are under strong spring tension. **Do not attempt to loosen any fasteners on these components.** You could suddenly release spring forces and risk severe injury.
- If the garage door and/or any of the supporting track are damaged, operating the door could be hazardous.
- Call an authorized representative of the manufacturer or professional door repair service promptly.
- If repairs are ever required to your door, safety and trouble-free operation can be best assured by using original replacement parts.
- Once you have completed the installation of your new garage door, please be sure that your garage complies with all applicable ventilation requirements before you enclose any vehicles in the garage. Good ventilation avoids fire and health hazards caused by fumes accumulating within a well-sealed garage.
- Clopay Building Products Company disclaims all liability for any installation that is not in compliance with applicable state or county building codes.
- Doors equipped with automatic door operators can cause serious injury or death if not properly adjusted and operated. To ensure safety of these doors:
 - a) test the sensitivity of the operator's safety reverse mechanism monthly;
 - b) if your door has a pull down rope, you must remove the pull down rope;
 - c) make sure the door remains unlocked;
 - d) do not allow children to play with the controls.



WARNING

In the interest of safety this symbol means WARNING or CAUTION. Personal injury and/or property damage may occur unless instructions are followed carefully.

STEP 3 – Check Headroom/ Backroom/ Sideroom

Headroom is the space needed above the top of the door for the door, the overhead tracks, and the springs. Measure to check that there are no obstructions in your garage within that space. The normal headroom space requirement is shown in Table 3-A. The backroom distance is measured from the back of the door into the garage, and should be at least 18" more than the height of the garage door. A minimum sideroom of 3-3/4" should be available on each side of the door on the interior wall surface to allow for attachment of the vertical track assembly. The rough opening should be the same size as the door. (Fig. 3-A)

Track Radius: The radius of your track can be determined by measuring the dimension "R" in Fig. 3-B. If dimension "R" measures 11" to 12", then you have a 12" radius track. If "R" equals 14" to 15", then you have a 15" radius track. (Fig. 3-B)

Headroom requirements

The standard headroom space requirement is shown in Table 3-A at right.

Low Headroom? If you have restricted headroom, several remedies are available. See Table 3-B for various options.

NOTE: Installation of the various Low Headroom Options differs from the installation of a standard headroom door. Supplemental instructions are included with the hardware of each Low Headroom Option.

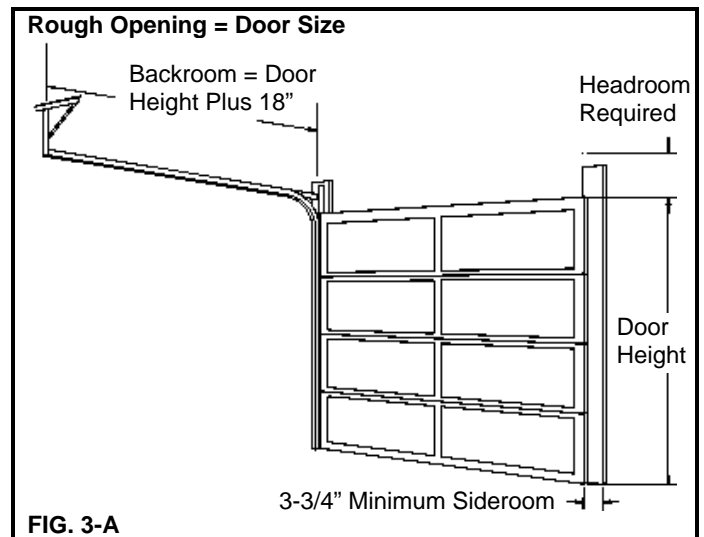


FIG. 3-A

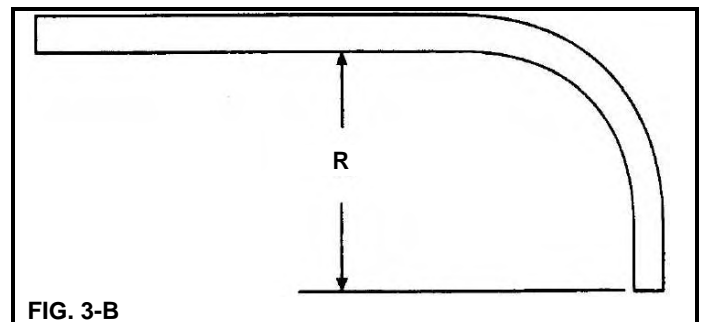


FIG. 3-B

Table 3-A: Standard Headroom Requirement Chart

Spring Type	Track Radius	Headroom Required
Torsion Spring	12"	12"
Torsion Spring	15"	14"

Table 3-B: Low Headroom Options*

Spring Type	Low Headroom Option	Reduces Required Headroom to:	How can I get this option?
Torsion	Low Headroom Track (Front Mount Spring)	9-1/2"	Available from and should be installed by professional installer only.
Torsion	Low Headroom Track (Rear Mount Spring)	4-1/2"	Available from and should be installed by professional installer only.

*About 3" of additional headroom height at the center plus additional backroom is needed to install an automatic garage door opener. Check door opener instructions.

STEP 4 – Removing the Existing Door Springs



WARNING

Garage doors use springs to balance the door weight. There are two types of springs used — extension and torsion. Each of these is available in either a standard or EZ-Set™ assembly option. **If your present door uses standard torsion springs, do not attempt to remove the door or the springs yourself.** They should be removed by a qualified door service professional. Attempting to remove a torsion spring assembly without proper training and tools may result in an uncontrolled release of spring forces which can cause serious or fatal injury.

The following instructions detail how to remove Extension springs and EZ-Set™ Springs.



WARNING

Serious injury could result if spring tension has not been released before other work begins.

Removing Extension Springs



WARNING

Use two or more helpers to assist you in lowering the door.

Step 4-1a: Raise the door to the full open position. Place “C” clamps or locking pliers tightly on both sides of the track under the door so the door is held securely in place. With the door fully open, most spring tension has been removed. (Fig. 4-A) Do not attempt to remove or adjust extension springs with door in the down position. Use “C” clamps to keep the door from moving or falling once the springs are removed.

Step 4-2: Detach the cable at both ends. Disassemble and remove the springs and cable completely from the door.

NOTE: Wood blocks should be placed underneath the door when closing to prevent fingers from being trapped.

Step 4-3: Remove the “C” clamps from the track and carefully close the door. Some large doors might weigh as much as 500 pounds when the spring tension is removed. The weight of the door will not be apparent when you first begin to close the door. The door will feel progressively heavier as it is lowered until its full weight (as much as 500 pounds) is realized about one foot from the floor. A single car door may weigh as much as 200 pounds. (FIG. 4-B)



WARNING

To avoid injury, keep hands and fingers clear of section joints, track, and other door parts while the door is opening and closing.

Removing EZ-Set™ Extension or Torsion Springs

Step 4-1b: With the door in the DOWN position, position a drill with a 7/16” socket bit over the worm drive. Using the reverse (counter-clockwise) direction on the drill, remove all the tension from the spring (repeat for each side). After spring tension has been removed, detach the lift cables at both ends. Disassemble and remove the springs and cable completely from the door. (Fig. 4-C)

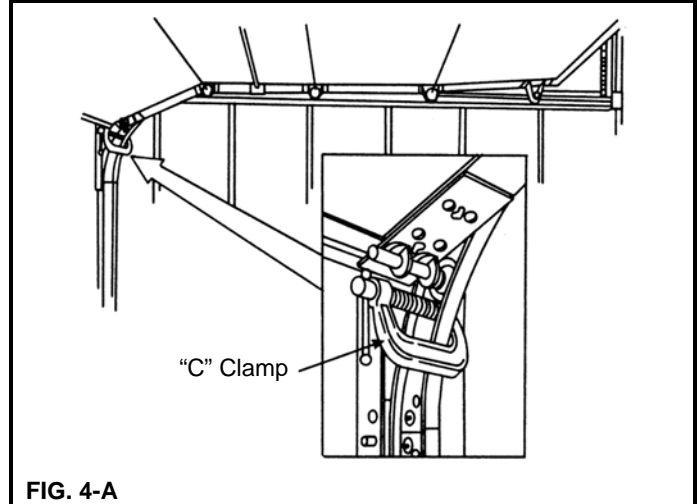


FIG. 4-A

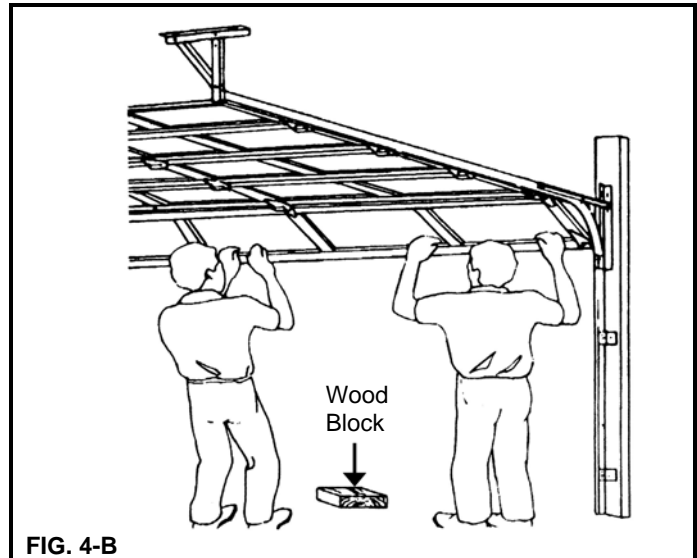


FIG. 4-B

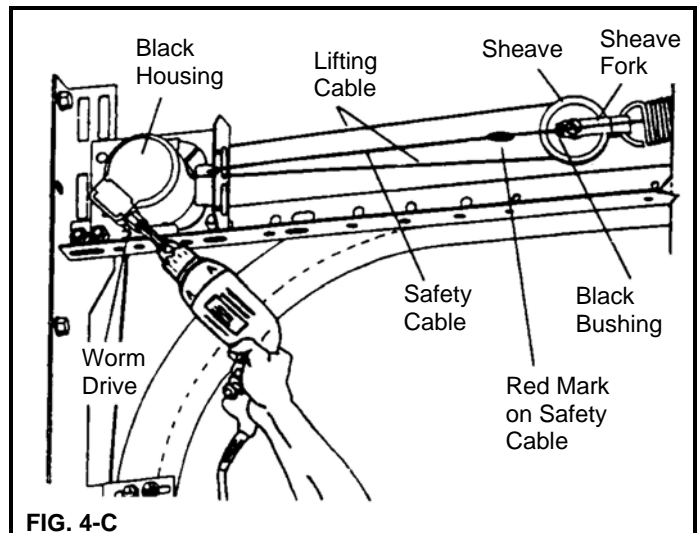


FIG. 4-C

STEP 5 – Removing Door Sections and Track

Step 5-1: The door can now be disassembled. Starting with the top section, remove the hardware and unstack the sections one at a time. (Fig. 5-A)

Step 5-2: After all sections have been removed from the opening, detach all remaining track and hardware from the jambs. The hangers that attach the rear ends of the overhead track to the ceiling (called rear track hangers) in many cases can be reused on the new door if made of 13 gauge (3/32") or heavier steel and is not loose or unstable. (Fig. 5-B)



WARNING

To avoid installation problems which could result in personal injury or property damage, use only the track specified and supplied with the door. Do not attempt to reuse old track.

STEP 6 – Preparing the Opening

Step 6-1: On the inside of the garage your opening should be framed with wood jambs, 2" x 6" if possible. The side jambs should extend to approximately the same height as the headroom required. If you have just removed an old door, the jambs should be inspected for the condition of the wood. If the wood is rotten, it should be replaced now. The jambs should be plumb and the header should be level. If there are any bolts fastening the jambs to the wall, the heads should be flush so they don't interfere with the installation of your new door. (Fig. 6-A)

NOTE: Rough Opening (without stop molding)=door size

Step 6-2: Door stop molding should be temporarily nailed to the edges of the jambs flush with the inside. (Fig. 6-B) Stop molding featuring a built-in weather seal is offered as an option.

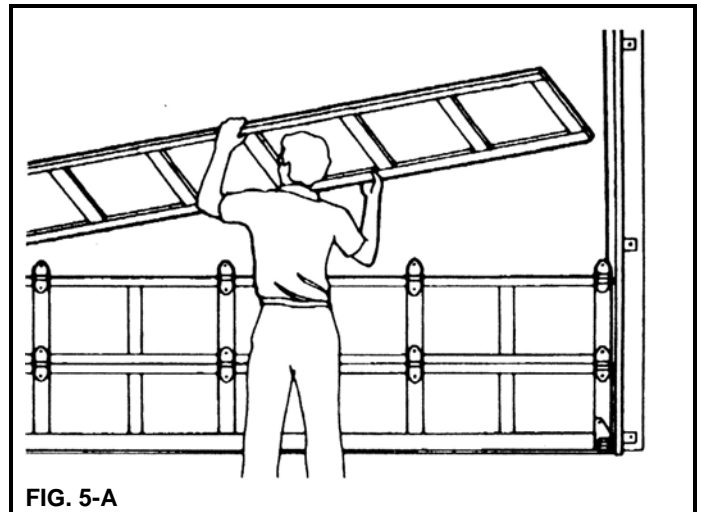


FIG. 5-A

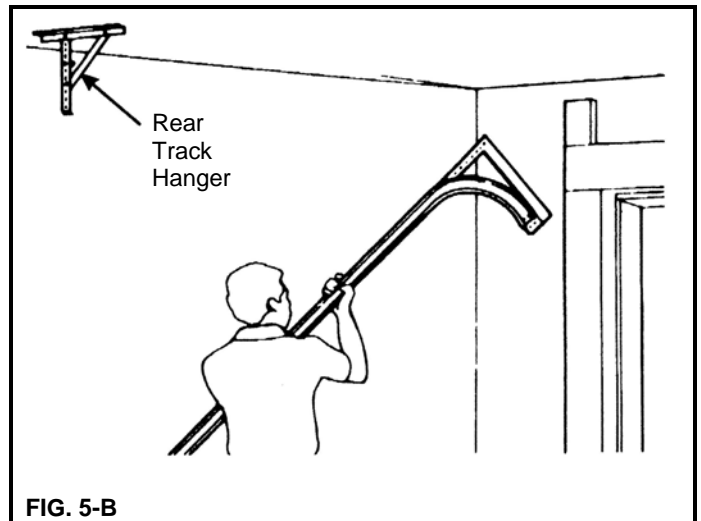


FIG. 5-B

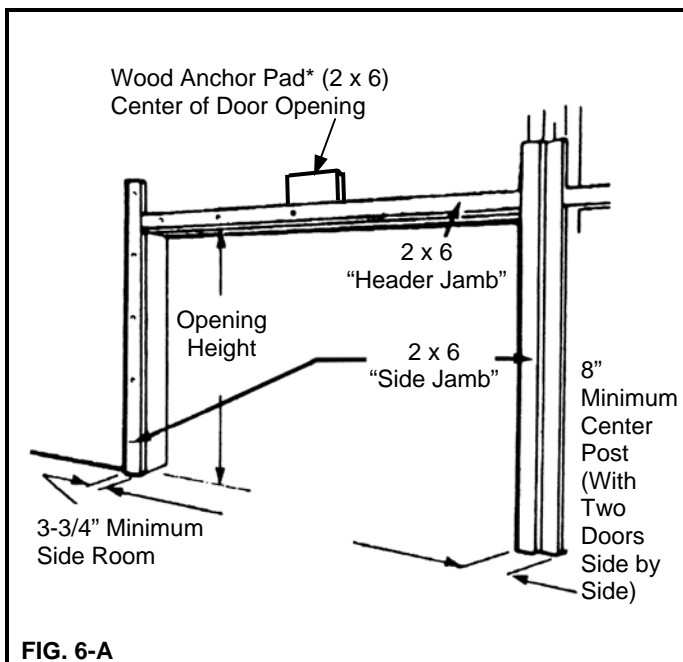


FIG. 6-A

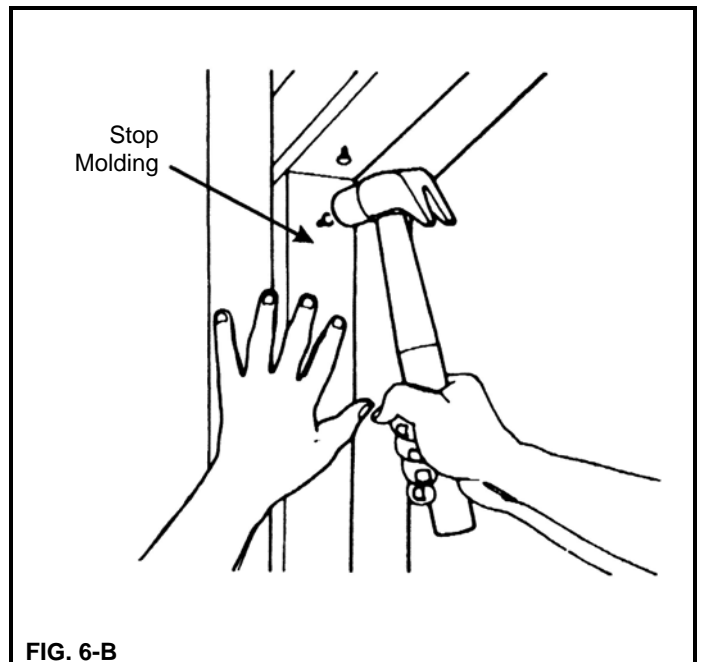
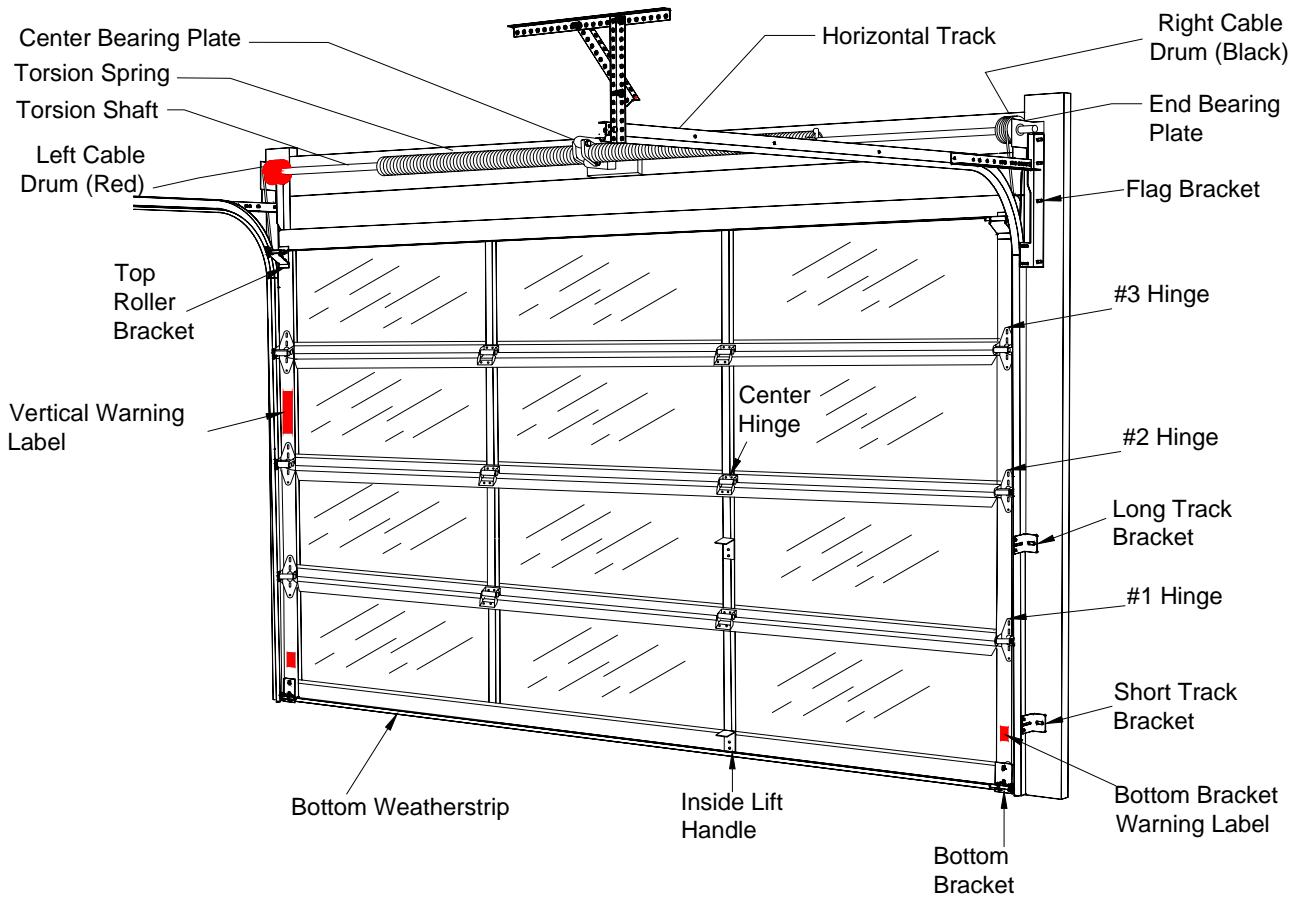


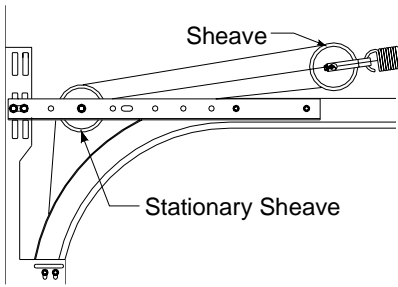
FIG. 6-B

***IMPORTANT:** The Wood Anchor Pad is used to mount the torsion spring and has specific requirements for wood quality, species, and attachment that must be met. See "Spring Installation" section on page 23 or 26 for requirements.

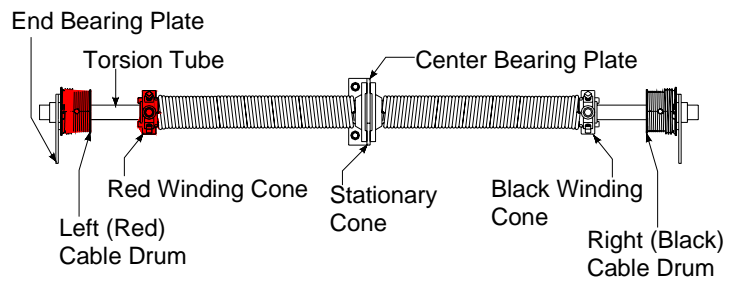
Typical Garage Door Installation Illustration



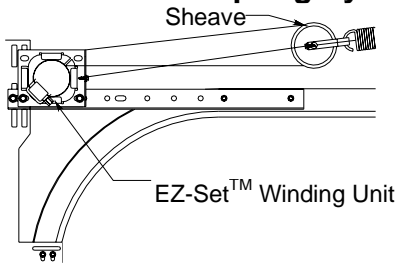
Standard Extension Spring System*



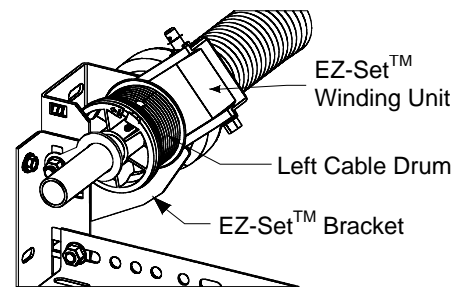
Standard Torsion Spring System



EZ-Set™ Extension Spring System*



EZ-Set™ Torsion Spring System*

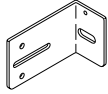



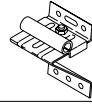


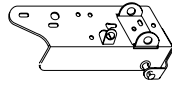
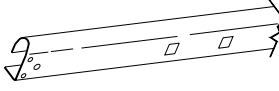

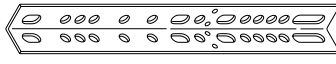
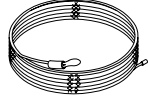
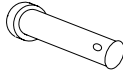
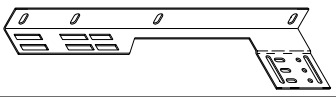

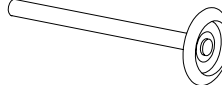



* Only torsion springs are available on the Avante door. While the other spring setups are not representative of Avante doors, they are shown here to help determine the type of spring setup on existing door.



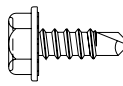

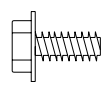

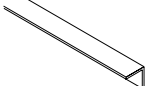
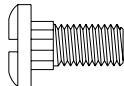
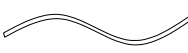
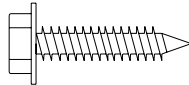
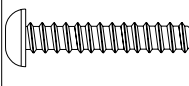
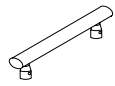

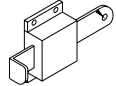


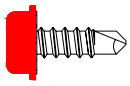
NOTE: The above illustration represents a composite of many of the features found on a variety of garage doors. While not representative of any one door, it provides a handy reference for the location of specific components

Hardware Components

All doors will receive (2) of these items:

	Track Bracket (Longer)		$\frac{3}{8}$ "-18 x $\frac{3}{4}$ " Lg. Carriage Bolt		$\frac{3}{8}$ " Washer
	Track Bracket (Shorter)		Top Bracket		Curved Horizontal Track
	#2 Hinge		Bottom Bracket (1) Pair		Vertical Track
	#3 Hinge		Horizontal Angle		Cable Assembly
	Cable pin		Flag Bracket (1) Pair		$\frac{3}{8}$ " Hex Nut
			Long Stem Rollers		Cotter pin

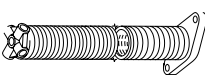
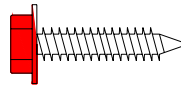

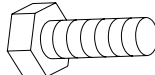


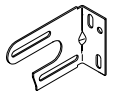
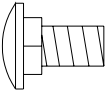

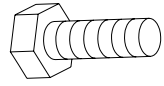

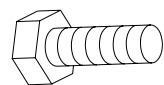
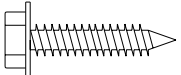
(While not representative of any one model, the quantities below can be used as a guide. In some instances, extra screws/bolts are provided in the event of strip out or loss of parts. Quantities for doors over 8'0" high may be different, see extended height supplement.)

Description:		Qty.	Description:	Door Size:	Qty.		
	1/4" Flange Nut	Single Car Doors 8' - 10'W x 6'6" - 8'0"H		4 Section Doors	8		
		Double Car Doors 16'W x 6'6" - 8'0"H		5 Section Doors	10		
	1/4" x 3/4" Hex Hd. Self-Tapping Screw	Single Car Doors 8' - 10'W x 6'6" - 8'0"H		Single Car Doors 8' - 10'W x 6'6" - 8'0"H	2		
		Double Car Doors 16'W x 6'6" - 8'0"H		Double Car Doors 16'W x 6'6" - 8'0"H	2		
	1/4" x 3/4" Hex Hd. Bolt	Single Car Doors 8' - 10'W x 6'6" - 8'0"H		All Doors	2		
		Double Car Doors 16'W x 6'6" - 8'0"H					
	Struts*	Single Car Doors 8' - 10'W x 6'6" - 8'0"H		Single Car Doors 8' - 10'W x 6'6" - 7'0"H	16		
		Double Car Doors 16'W x 6'6" - 8'0"H		Double Car Doors 16'W x 6'6" - 7'0"H	22		
	Pull Rope	All Doors		4 Section Doors	10		
				5 Section Doors	12		
	#10 x 1" Pan Hd. Sheet Metal Screw	All Doors	4		Lift Handle	All Doors	2
	Handle Spacer	All Doors	4		#2 Slide Lock	All Doors	1
	Set Screw	All Doors	4		Center Hinge	Single Car Doors 8' - 10'W x 6'6" - 8'0"H	3
						Double Car Doors 16'W x 6'6" - 8'0"H	9
	1/4" x 3/4" Hex Hd. Self-Tapping Screw (Red Head)	All Doors	10				

*More struts may be required in high windload areas.

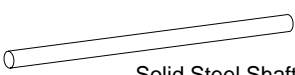

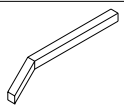
Torsion Spring Hardware Components

(While not representative of any one model, the quantities below can be used as a guide. In some instances, extra screws/bolts are provided in the event of strip out or loss of parts. Quantities for doors over 8'0" high may be different, see extended height supplement.)

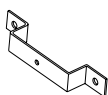
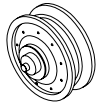
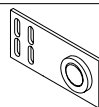
Description:		Qty.	Description:	Door Size:	Qty.
 Torsion Spring	Single Car Doors 8' - 10'W x 8'0"H	1	 5/16" x 1-5/8" Lag Screw (Red Head)	Single Car Doors 8' - 10'W x 8'0"H	2
	Double Car Doors 16'W x 8'0"H	1 or 2		Double Car Doors 16'W x 8'0"H	2 or 4
 End Bearing Plate	All Doors	2	 3/8" x 3/4" Hex Head Bolt	All Doors	4
 Torsion Tube*	All Doors	1	 3/8" Flange Nut	All Doors	10
 Center Bearing Plate	Single Car Doors 8' - 10'W x 8'0"H	1	 3/8"-16 x 3/4" Carriage Bolt	All Doors	4
	Double Car Doors 16'W x 8'0"H	1 or 2			
 Cable Drums	All Doors	2	 3/8" x 1" Hex Head Bolt	Doors With One Spring	2
				Doors With Two Springs	0
 Steel Center Bearing	All Doors	1	 3/8" x 1-5/8" Hex Head Bolt	Doors With One Spring	0
				Doors With Two Springs	2
 5/16" x 1-5/8" Lag Screw	All Doors	2 per center bearing plates			

* Some heavier doors receive a solid shaft and not a torsion tube

Solid Steel Shaft Hardware Components

Description:		Qty.	Description:	Door Size:	Qty.
 Solid Steel Shaft	All Doors	1 or 2	 Coupler	Doors With Split Solid Shaft	0 or 1
 Solid Shaft Key	Doors With Split Solid Shaft	3			

Rear Mount Low Headroom Hardware Components

Description:		Qty.	Description:	Door Size:	Qty.
 Pulley Saddle	All Doors	2	 4" or 5" Pulley	All Doors	2
 End Bearing Plate	All Doors	2			

STEP 7 - Preparing Bottom Door Section

Step 7-1: Spread the hardware on the garage floor in groups so that you can easily find the parts.

Step 7-2: Find the section with the aluminum weatherstrip retainer fastened to one edge. The aluminum weatherstrip retainer is on the bottom edge of the bottom section. Place the section on saw horses face down. (Fig. 7-A) Be sure to cover saw horses with carpet or cloth so as not to scratch section.

NOTE: Use 2 sawhorses for doors up to and including 10'0" wide and 3 sawhorses for doors over 10'0" wide

Step 7-3: Attach the lift cable to the bottom bracket by inserting the bottom bracket pin through the inside of the bottom bracket, the looped end of the lift cable, and the outside ear of the bottom bracket. Secure with cotter pin. (Fig. 7-B for standard door, Fig. 7-C for low headroom door)

Step 7-4: Attach the bottom brackets with (5) 1/4" x 3/4" red-colored self-drilling screws to the bottom corners of the section. (Fig. 7-D)



WARNING

Red fasteners must be used for attachment of the bottom roller brackets.

Step 7-5: Hinges are identified by number 1, 2, 3 (and higher for doors over 8'0" high). This number is stamped on the hinge. Attach a number 1 hinge at each end stile location along the top edge of the section using 1/4" x 3/4" self drilling screws. The number is stamped on the side of the hinge that is to be attached to the section. (Fig. 7-E)

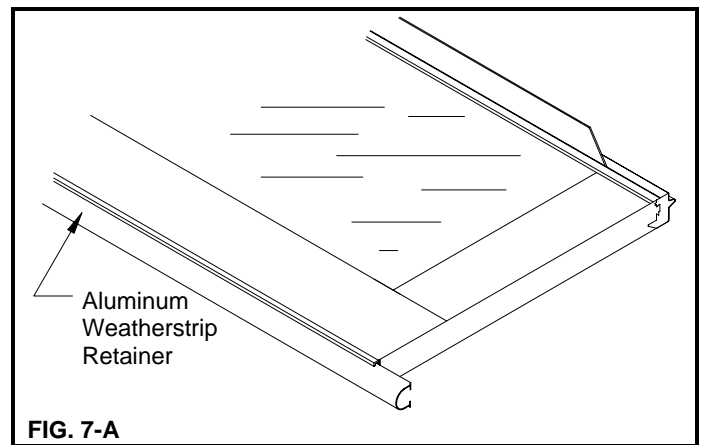


FIG. 7-A

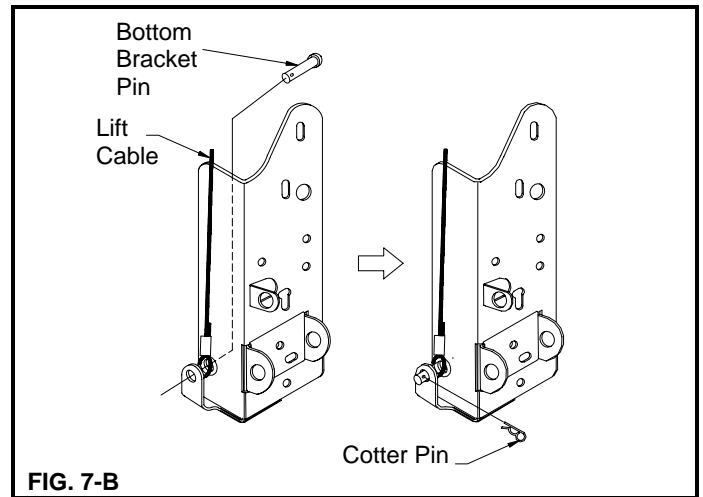


FIG. 7-B

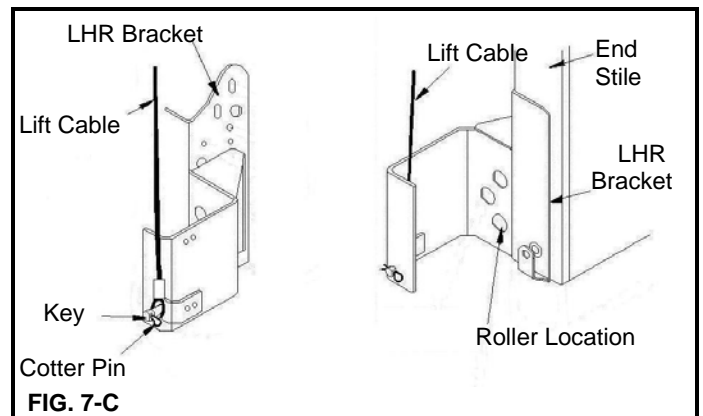


FIG. 7-C

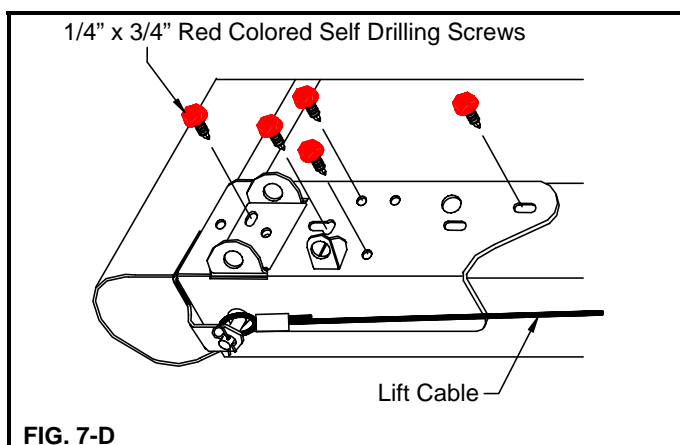


FIG. 7-D

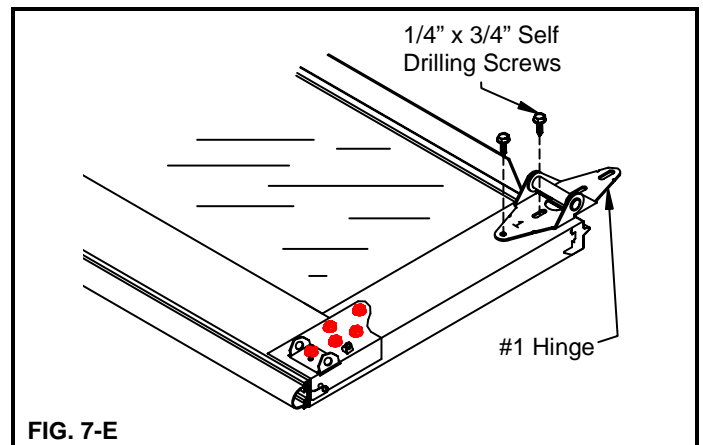


FIG. 7-E

STEP 7 - Preparing Bottom Door Section (Continued)

Step 7-6: Attach center hinges to top rail fin using (2) 1/4" x 3/4" hex head bolts and (2) 1/4" flange nuts at each center stile location. (Fig. 7-F)

NOTE: If Table 7-A below shows a need for a reinforcing aluminum angle on the bottom section, it should be attached to the top rail fin at all center hinge locations using the same 1/4" x 3/4" bolts that attach the hinge to the top rail fin. Using the pre-punched slots in the top rail fin as a guide, mark and drill 1/4" holes through the aluminum angle. Install aluminum angle at the same time as center hinges. (Fig. 7-F) The aluminum angle should also be bolted to the top rail fin at the ends of the section using 1/4" x 3/4" bolts and 1/4" flange nuts. It will be necessary to drill 1/4" holes through the top rail fin and the aluminum angle to install bolts. (Fig. 7-G)

Table 7-A –Reinforcement Schedule

Glazing Type	Door Width				
	Up to 11'-2"	11'-4" to 12'-2"	12'-4" to 14'-2"	14'-4" to 16'-2"	16'-4" to 20'-2"
Acrylic OR 1/8" Tempered	None	None	G	G	H
1/2" Insulated OR 1/4" Tempered	None	G	G	H	
G	(1) 1-1/4" x 1-1/4" Aluminum Angle per Section				
H	(1) 2" x 2" Aluminum Angle per Section				

NOTE: Doors installed in high windload regions (Florida and other high wind prone areas) may require additional reinforcement beyond what is detailed in these instructions. Please refer to approved windload drawings for these areas.

Step 7-7: Install the inside step plate to the bottom rail of the section using (2) 1/4" x 3/4" self drilling screws. The step plate should be located at the center stile closest to the horizontal center of the door width. (Fig. 7-H)

NOTE: Cut out templates on pages 13 and 14; instructions are continued on page 15.

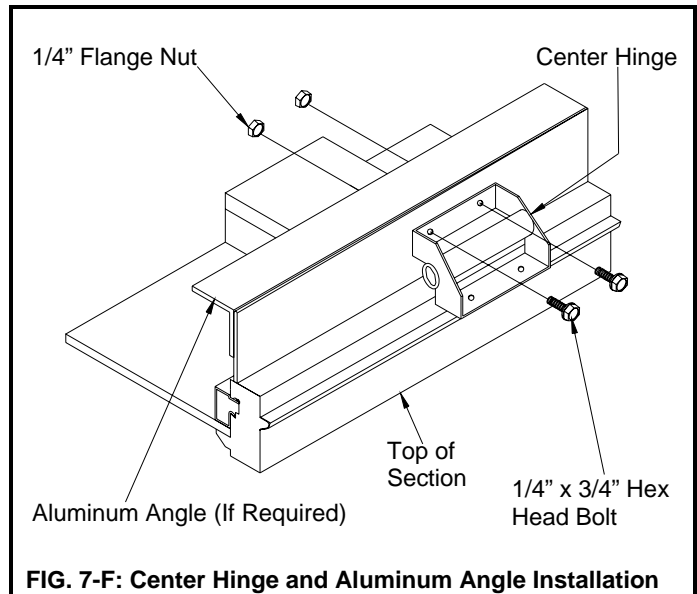


FIG. 7-F: Center Hinge and Aluminum Angle Installation

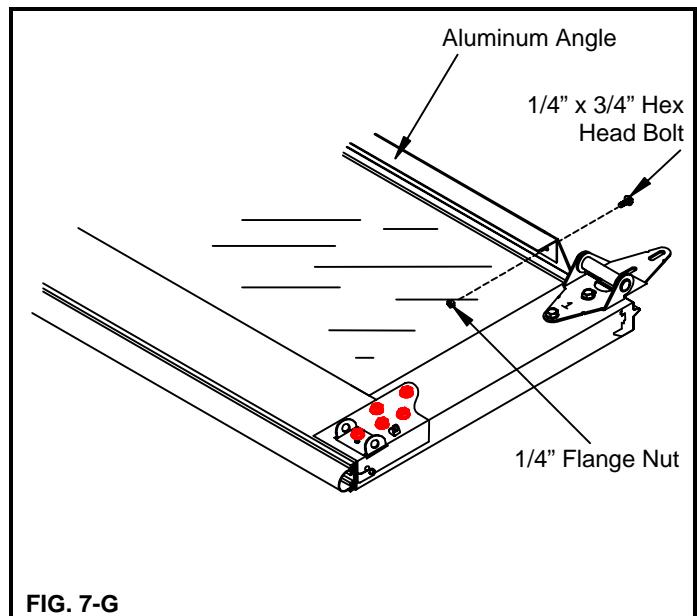


FIG. 7-G

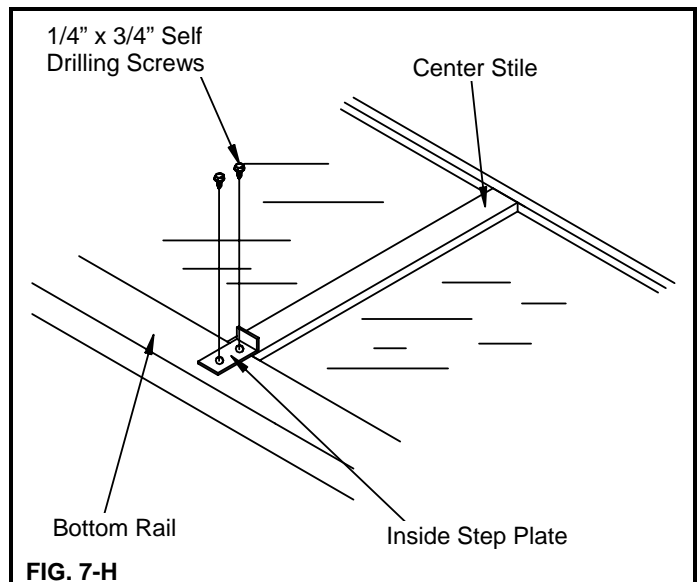
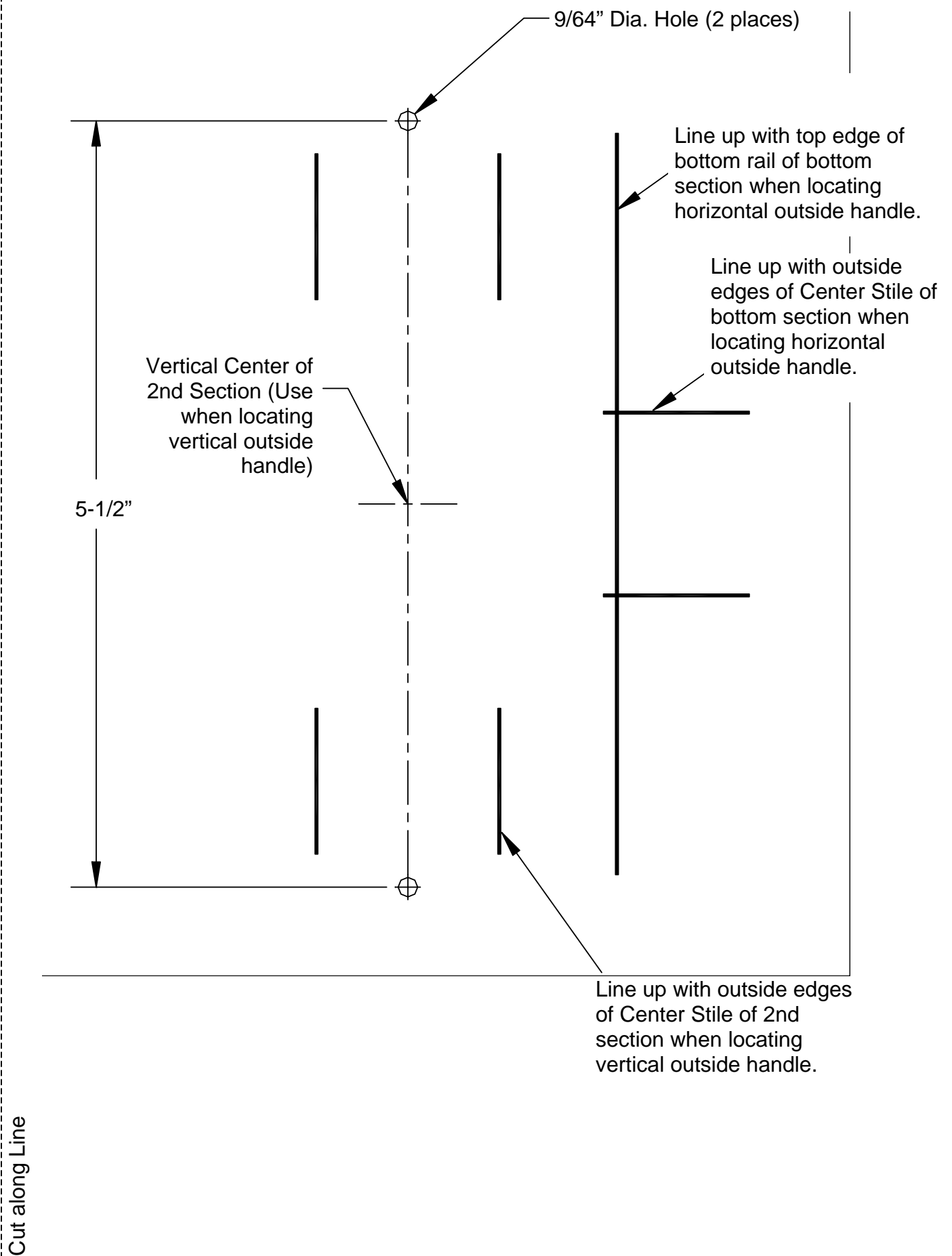


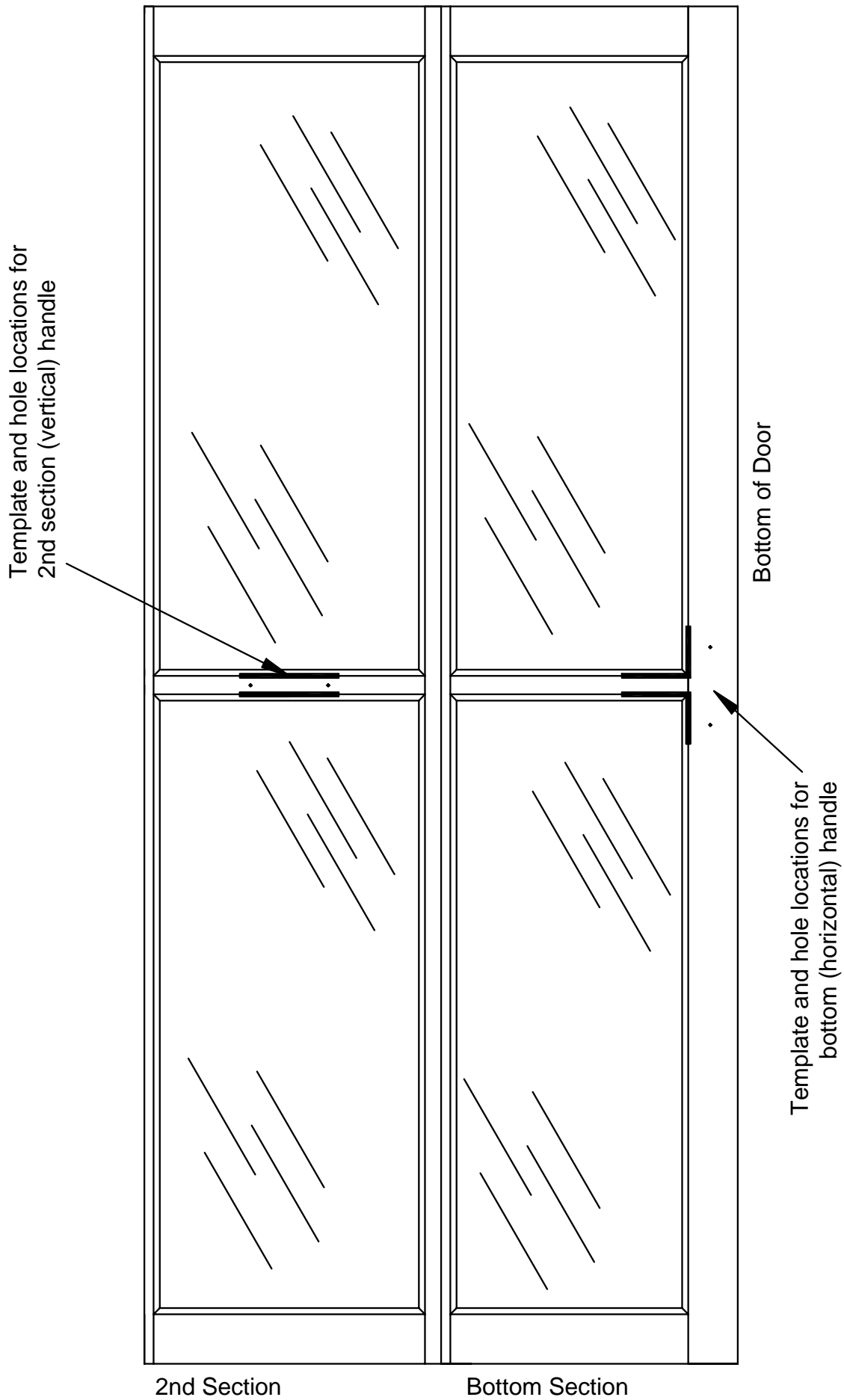
FIG. 7-H

Outside Lift Handle Template



Cut along Line

Template and Handle Hole Locations



STEP 8 – Outside Lift Handle Attachment

Bottom Section

Step 8-1: Using the template provided on page 13, mark and drill (2) 9/64" dia. holes through the front wall of bottom rail of the bottom section at the center stile closest to the horizontal center of the door. DO NOT drill all the way through the door section.

Step 8-2: Using a Phillips head screwdriver, install (2) handle studs at drilled hole locations using (2) #10 x 1" pan head sheet metal screws. (Fig. 8-A)

Step 8-3: Place outside lift handle over handle studs. (Fig. 8-B)

Step 8-4: Attach outside lift handle to studs using 3/16" set screws. Tighten set screws with 3/32" Allen wrench. (Fig. 8-C)

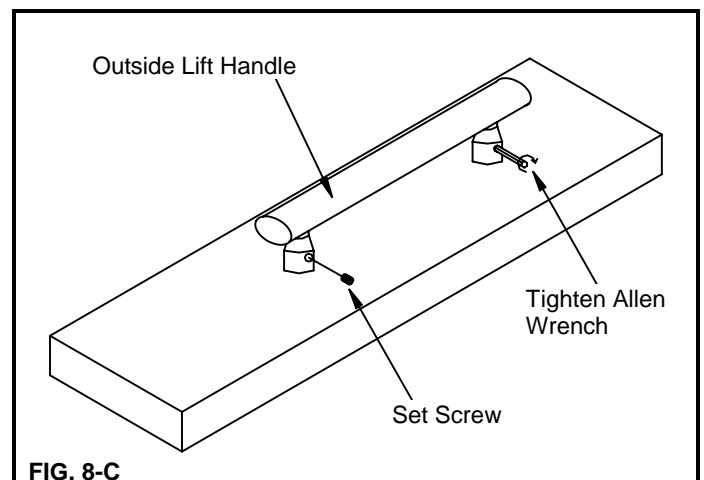
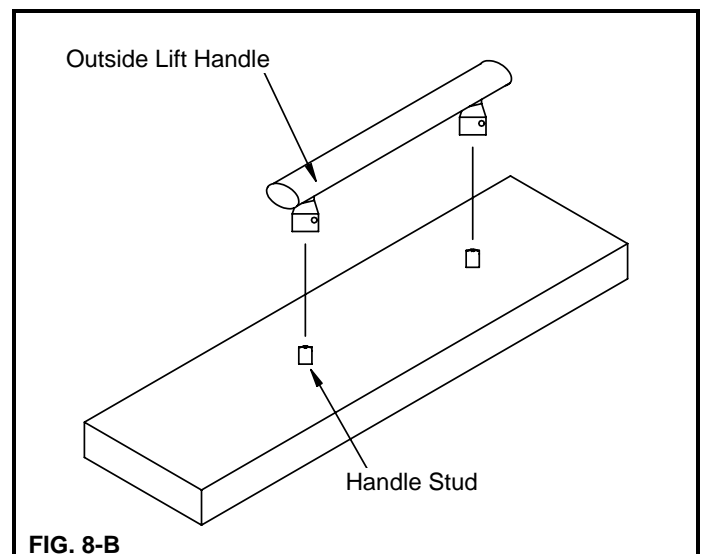
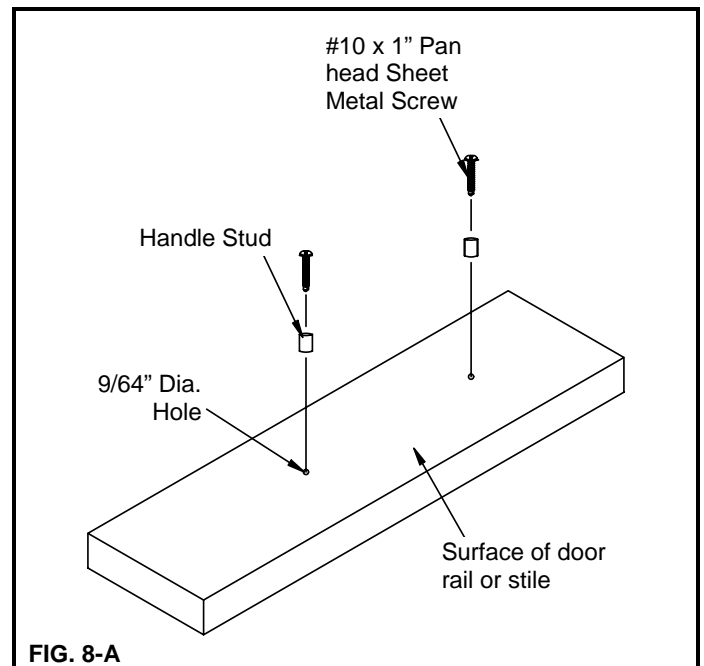
2nd Section (to be installed at the completion of step 9-5).

Step 8-5: Using the template provided on page 13, mark and drill (2) 9/64" dia. holes through the front wall of center stile closest to the horizontal center of the door. DO NOT drill all the way through the door section.

Step 8-6: Using a Phillips head screwdriver, install (2) handle studs at drilled hole locations using (2) #10 x 1" pan head sheet metal screws. (Fig. 8-A)

Step 8-7: Place outside lift handle over handle studs. (Fig. 8-B)

Step 8-8: Attach outside lift handle to studs using 3/16" set screws. Tighten set screws with 3/32" Allen wrench. (Fig. 8-C)



STEP 9 – Installing Door Sections

Step 9-1: Place the section in the opening so that it is against the stop molding and centered from side to side. Place a level on the section and use a piece of wood under one end or the other (if necessary) to make the section level. (FIG. 9-A)

Step 9-2: Remove the level and drive a 3" nail in the jambs at each end and bend it over the edge of the section to hold the section in place. (FIG. 9-B)

NOTE: These nails are all that will hold the stacked door section in place until the tracks are secured to the back jambs. Be sure the nails hold the sections firmly in position.

Step 9-3: With the Table 9-A below, determine the order in which you will attach the remaining sections.

Table 9-A - Section Order for Various Door Heights

Door Height	Section #					
	1 (BTM)	2	3*	4	5	6
6'0"	24"	24"	24"	-	-	-
6'3"	21"	18"	18"	18"	-	-
6'6"	21"	18"	18"	21"	-	-
6'6"	21"	21"	18"	21"	-	-
6'9"	21"	21"	21"	21"	-	-
7'0"	24"	21"	21"	21"	-	-
7'3"	24"	21"	21"	24"	-	-
7'6"	24"	24"	21"	24"	-	-
7'9"	24"	24"	24"	24"	-	-
8'0"	21"	21"	18"	18"	21"	-
8'3"	21"	21"	21"	18"	21"	-
8'6"	21"	21"	21"	21"	21"	-
8'9"	24"	21"	21"	21"	21"	-
9'0"	24"	21"	21"	21"	24"	-
9'3"	24"	24"	21"	21"	24"	-
9'6"	24"	24"	24"	21"	24"	-
9'9"	24"	24"	24"	24"	24"	-
10'0"	21"	21"	21"	18"	21"	21"
10'6"	21"	21"	21"	21"	21"	21"
10'9"	24"	21"	21"	21"	21"	21"
11'0"	24"	21"	21"	21"	21"	24"
11'3"	24"	24"	21"	21"	21"	24"
11'6"	24"	24"	24"	21"	21"	24"
11'9"	24"	24"	24"	24"	21"	24"
12'0"	24"	24"	24"	24"	24"	24"

* Section with general safety label.

Step 9-4: Place the next section face down on the saw horses. Identify the bottom edge as shown in the illustration. (FIG. 9-C)

Attach a number 2 hinge to each end at the top edge using 1/4" x 3/4" self-drilling screws. Remember that the number is stamped on the side of the hinge that is to be attached to the section. (FIG. 9-C)

Step 9-5: Attach center hinge(s) to top rail fin at each center stile location using 1/4" x 3/4" bolts and 1/4" flange nuts. If the section requires an aluminum angle, attach to top rail fin (FIG. 7-F & FIG. 7-G, page 12).

Step 9-6: Install lift handle as shown on previous page.

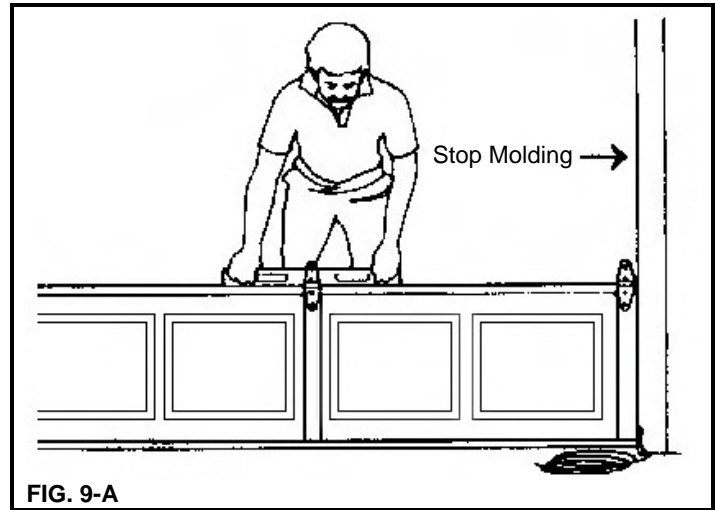


FIG. 9-A

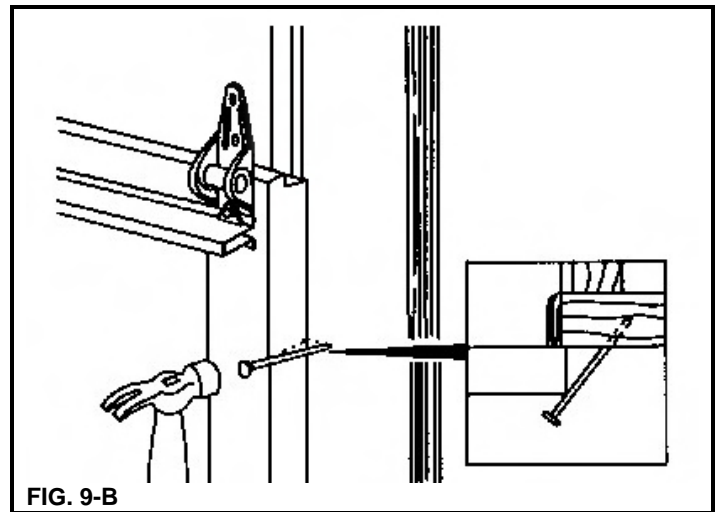


FIG. 9-B

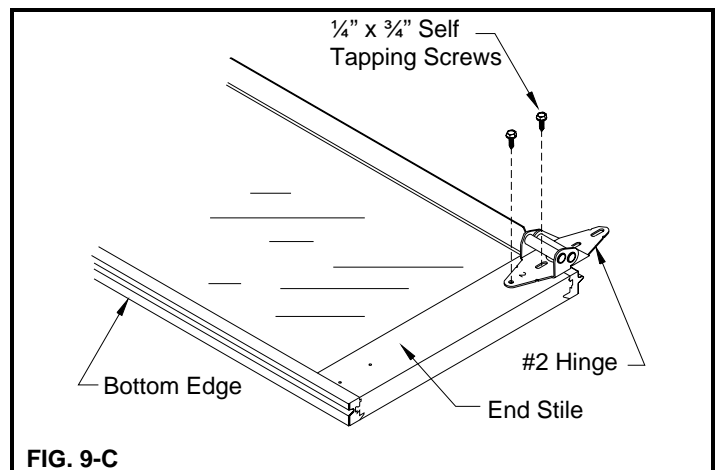


FIG. 9-C

STEP 9 - Installing Door Sections (Continued)

Step 9-7: Place the second section on top of the first section. Drive a 3" nail in the jambs at each end and bend it over the edges of the section to hold the section in place. Attach the hinges from the top of the first section to the bottom of the second. (FIG. 9-D)

Step 9-8: Place the third section face down on the saw horses. Identify the bottom edge as shown in the illustration. (FIG. 9-E)

Attach a number 3 hinge to each end at the top edge using 1/4" x 3/4" self-drilling screws. Remember that the number is stamped on the side of the hinge that is to be attached to the section. (FIG. 9-E)

Step 9-9: Attach center hinge(s) to top rail fin at each center stile location using 1/4" x 3/4" bolts and 1/4" flange nuts. If the section requires an aluminum angle, attach to top rail fin (FIG. 7-F & FIG. 7-G, page 12).

Step 9-10: Place the third section on top of the other sections and nail in place as before. Attach the hinges from the top of the previous section to the bottom of this section. (FIG. 9-D) If you have multiple sections left, repeat Steps 9-7 and 9-9 using #4 or higher number hinges on the end of the top edge and center hinges to all other stiles along the top edge.

Step 9-11: The reinforcing aluminum angle should now be attached to top rail with a 1/4" x 3/4" self-drilling screws at each center stile.

Step 9-12: Place the last section on the saw horses. Attach the top roller brackets as shown. The top roller brackets are to be attached with two (low headroom doors) or four (standard lift doors) 1/4" x 3/4" self drilling screws. The bottom of the bracket goes 6-1/4" down from top of section. (FIG. 9-F for standard doors, FIG. 9-G for low headroom doors)

NOTE: The top bracket should be fastened to the top rail and end stile as shown.

Step 9-13: Place a roller in the top and bottom brackets and in the tubes in each of the hinges at the ends of each section. The long stem roller is used in bottom bracket. Some hinges have two tubes. Place the roller in the tube that is farthest from the face of the door. (FIG 9-H)

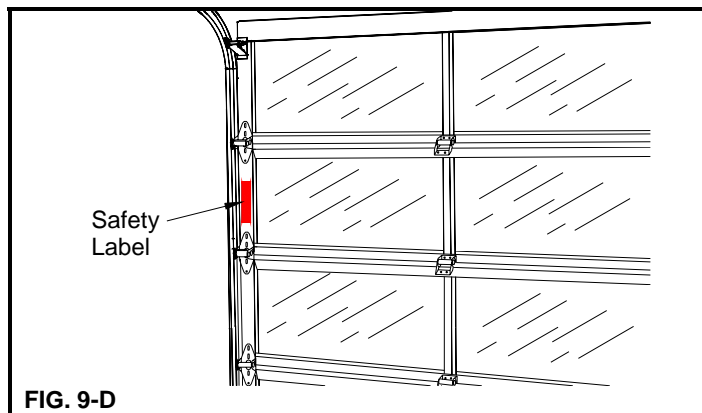


FIG. 9-D

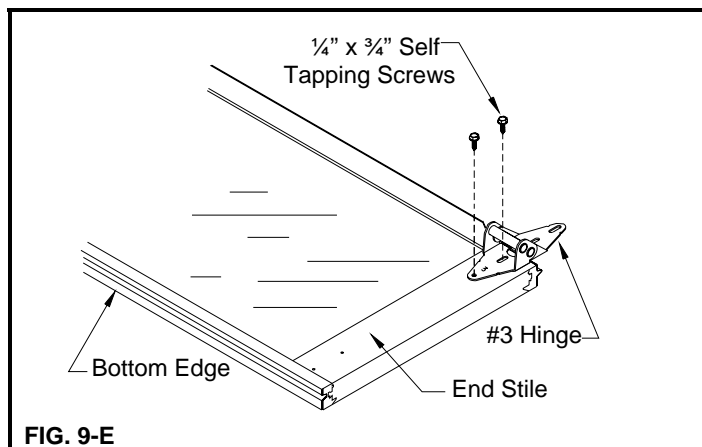


FIG. 9-E

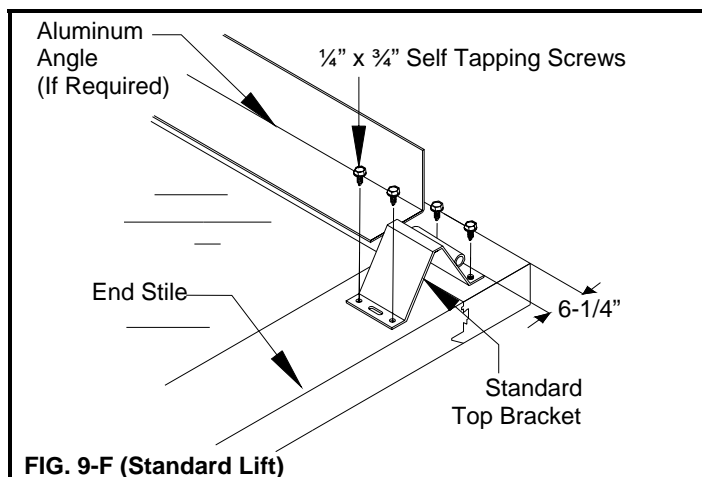


FIG. 9-F (Standard Lift)

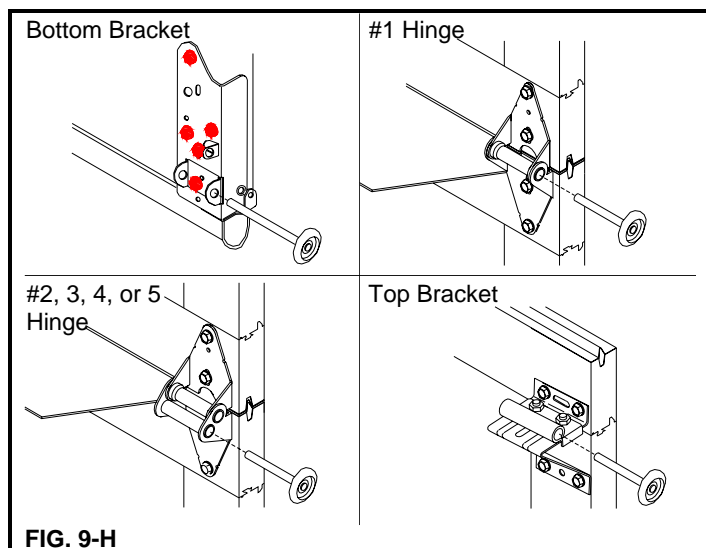


FIG. 9-H

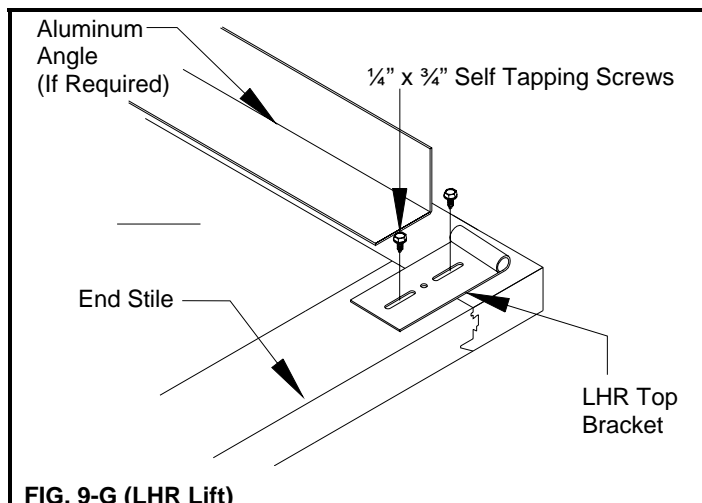


FIG. 9-G (LHR Lift)

STEP 10 - Reinforcing the Top Section for Opener

To avoid damage to your door, you must reinforce the top section of the door in order to provide a mounting point for the opener to be attached. You will need one (1), two (2), or three (3) pieces of 1-1/4" x 1-1/4" minimum punched angle at least 13 gauge or 3/32" thick from your local hardware or building supply store. Figures 10-B to 10-E show how punched angle is to be affixed to door.

Horizontal Angle Attachment

Attach the horizontal punched angle (the longer piece) to the top section as shown in Figure 10-A. Angle iron may need to be trimmed depending on door section height and distance between center stiles. Some doors with struts may not need a horizontal angle; see Figures 10-B to 10-E to identify the attachment method for your specific door.

Do NOT install the bracket supplied with the opener. Failure to reinforce the door, as illustrated, will void your warranty.

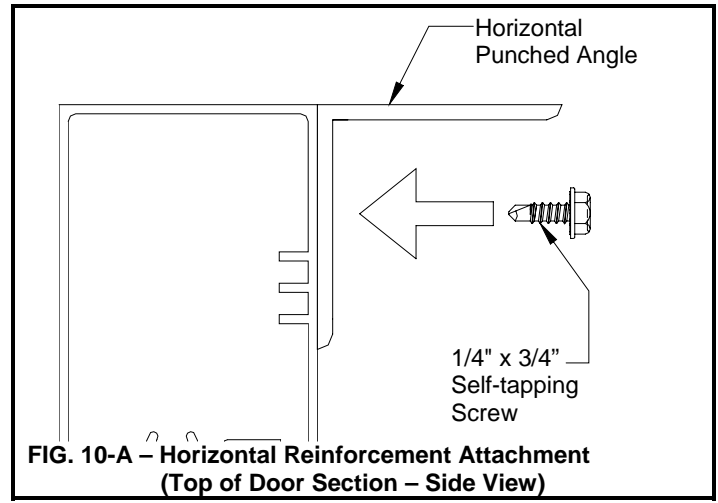


FIG. 10-A – Horizontal Reinforcement Attachment (Top of Door Section – Side View)

NOTE: Operator may be attached up to 2 feet off center. (Doors with Torsion Springs Only)

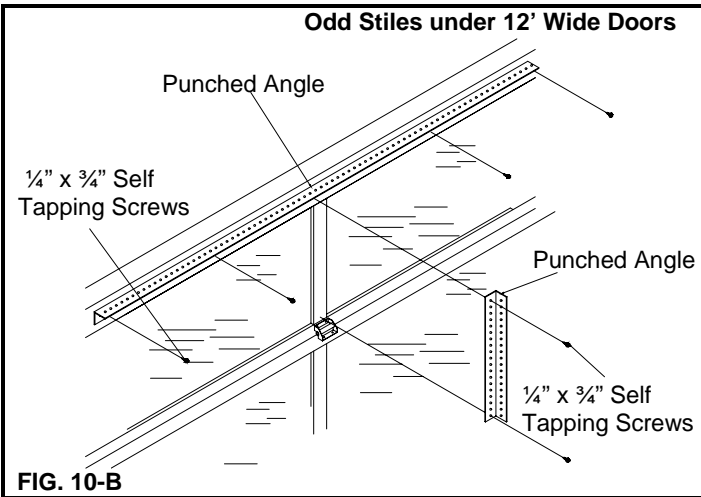


FIG. 10-B

Required materials:

- (1) 18", 21" or 24" and (1) 48" length of iron,
- (6) 1/4" x 3/4" self-tapping screws.

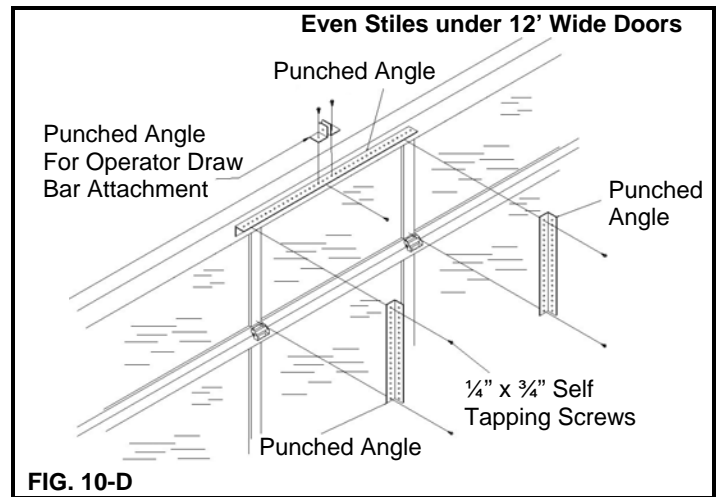


FIG. 10-D

Required materials:

- (2) 18", 21" or 24" and (1) 27" or 50" length of iron,
- (5) 1/4" x 3/4" self-tapping screws,
- (2) 1/4" x 3/4" bolts and nuts.

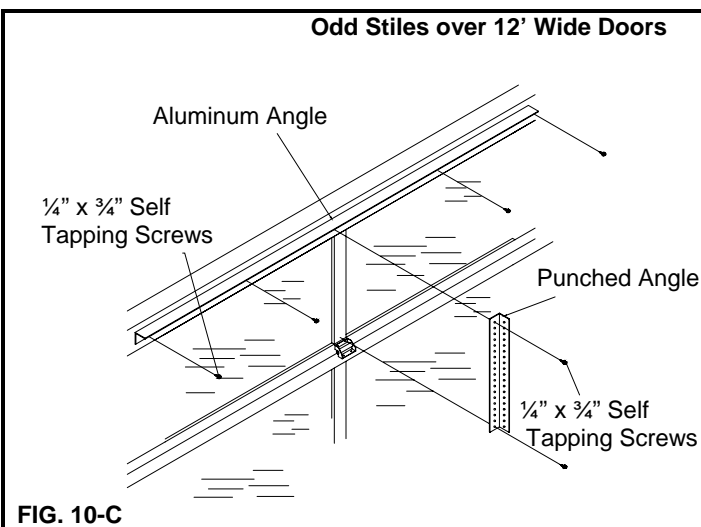


FIG. 10-C

Required materials:

- (1) 18", 21" or 24" length of iron and (1) 48" aluminum angle,
- (6) 1/4" x 3/4" self-tapping screws.

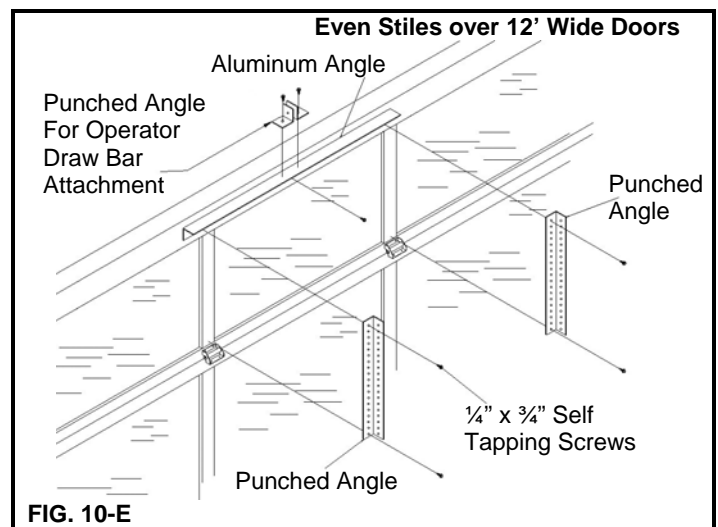


FIG. 10-E

Required materials:

- (2) 18", 21" or 24" length of iron and (1) 27" or 50" aluminum angle,
- (5) 1/4" x 3/4" self-tapping screws,
- (2) 1/4" x 3/4" bolts and nuts.

STEP 11 – Assembling and Installing the Vertical Track

Before assembling brackets to vertical track be sure to read Step 11-1 and Step 11-2. Refer to illustration for placement of brackets on track.

NOTE: Brackets may already be riveted in place. If additional adjustment is required, the rivets can be drilled out and the brackets can be reattached with track bolts and flange nuts (available through the toll-free Consumer Services number, see outside cover).



WARNING

To avoid installation problems that could result in injury or property damage, use only track provided with new door.

Step 11-1: Loosely fasten the track brackets to the vertical track using one 1/4" x 5/8" track bolt and 1/4" flange nut as shown with the head of the bolt inside the track. There are two sizes of brackets for 7' high doors, and three sizes for 8' high doors. The shortest track brackets should be installed ten inches from the bottom of the track with the flange facing the flat side of the track, one on the left and one on the right. The next larger sized pair of brackets should be installed centered on the track. If you have an 8' high door, the remaining pair of brackets should be installed ten inches from the top of the vertical track. The flat side of the track goes toward the wall. (FIG. 11-A)

Step 11-2: Loosely attach the flag bracket to the top of the track with two 1/4" x 5/8" track bolts and 1/4" flange nuts with the head of the bolts in the track. Make sure to place bolts and nuts in correct holes (FIG. 11-B, See FIG. 11-C for bracket placement).

(Refer to FIG. 11-B to determine proper bolt placement.)

NOTE: If additional adjustment is required, horizontal slots in flag brackets can be used for attachment to vertical track.

Step 11-3: Place the track over the rollers on the door. Move the track close to the door so that the rollers are all the way into the hinges. Do not force the track too tightly or the door will bind. This should leave about 1/2" between the edge of the door and the track. Pilot holes of 3/16" are required at each lag screw location before installing the lag screw. Lift track about 1/2" from the floor and fasten the flag bracket and track brackets to the jamb with 5/16" x 1-5/8" lag screws. The flag bracket requires three screws, one each in the top, middle, and bottom holes. Do this for both sides of the door. When the track brackets and flag brackets are securely fastened to the jamb, tighten the track bolts and flange nuts connecting the flag brackets to the tracks. (FIG. 11-D)

NOTE: The tops of the vertical tracks must be level with each other. Check this by measuring from the top of the door sections to the top of the track on both sides. If they are not equal, cut some material off the bottom of one track to lower it or raise the other track.

Do not raise the vertical track beyond the bottom rollers on the bottom section of door.

NOTE: Do not attach any brackets directly to drywall. All track brackets, flag brackets, and spring brackets should only be attached directly to wood jams.

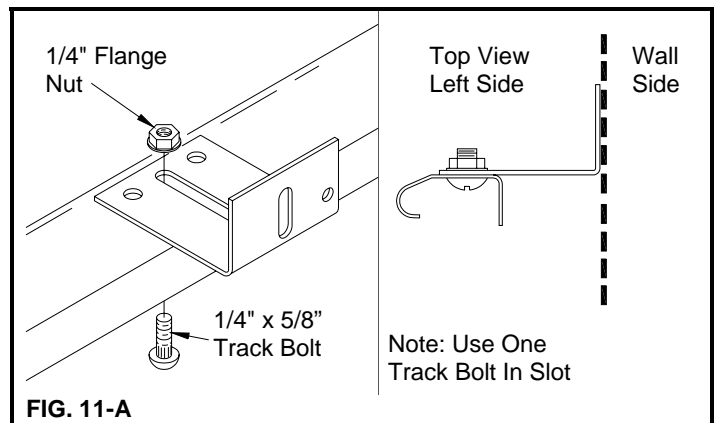


FIG. 11-A

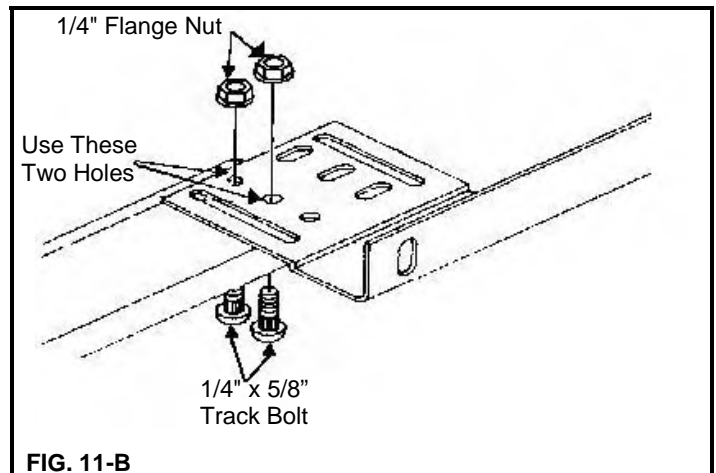


FIG. 11-B

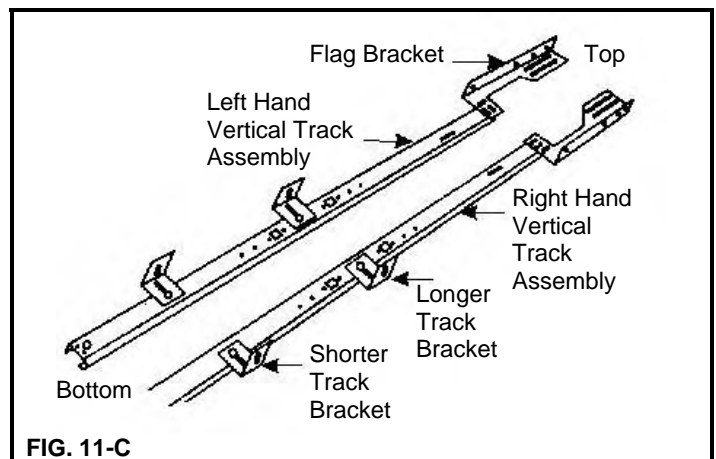


FIG. 11-C

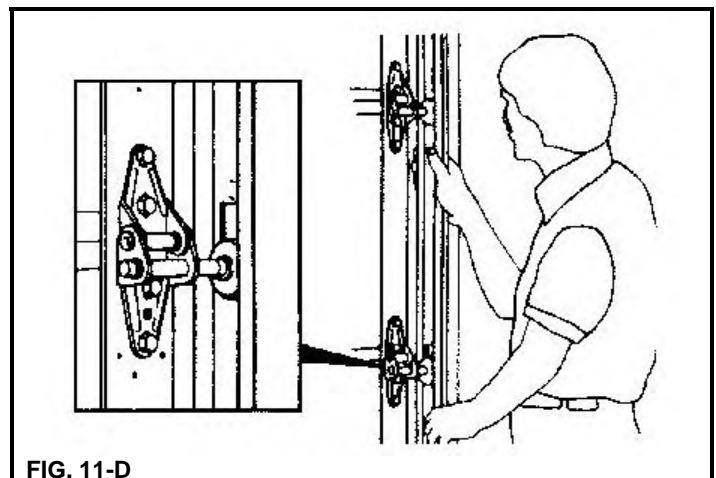


FIG. 11-D

NOTE: Pressure-treated lumber purchased after January 2004 is treated with chemicals that have highly corrosive effects on metal fasteners. The fasteners provided with your door are intended for use with standard lumber (not pressure-treated) only. If you are installing your door into an opening framed with pressure-treated lumber purchased after January 2004, two items must be changed: 1) 5/16" x 1-5/8" lag screws with a minimum galvanization equivalent to G185 must be purchased for this application, and 2) to prevent potential corrosion between lumber and track/spring components, paint either the surface of the pressure-treated lumber or those surfaces of the track and spring components that come in contact with the pressure-treated lumber.

STEP 12 - Assembling and Installing of Standard Radius Horizontal Track

Step 12- 1: Fasten the horizontal angle to the horizontal (curved) track with two 1/4" x 5/8" track bolts and 1/4" flange nuts so that the heads of the track bolts are on the inside of the track. On some doors this angle may be 82" long and will require three additional fasteners per side. If the angle has been preassembled, and proceed to Step 12-2. (FIG. 12-A)

Step 12-2: Temporarily support the rear end of the track with a rope from the trusses overhead in the garage or on a tall ladder. (FIG. 12-B)

Step 12-3: Place the track over the roller in the top bracket. Attach the curved end of the horizontal track to the flag bracket with two 1/4" x 5/8" track bolts and 1/4" flange nuts so that the heads of the screws are on the inside of the track. The horizontal and vertical track must join together to form a continuous channel for the rollers. Attach the end of the horizontal angle to the top of the flag bracket with a 3/8" x 3/4" carriage bolt and 3/8" hex nut. Use the top set of slots for 15" radius track, the middle set of slots for 12" radius track, and the bottom set of slots for Low Headroom track. (FIG. 12-C)

Step 12-4: Rear track hangers need to be made at this time. Use 1-1/4" x 1-1/4" punched angle, 13 gauge or 3/32" steel. These are not provided with the standard hardware. They are used to attach the rear of the horizontal track to the ceiling joist.

Enough angle iron or punched angle should be purchased to make two rear track hangers. These hangers must be strong enough to hold the full weight of the door. Attach a bolt at least 1" long through the end of each track to stop the door at the end of its travel. (FIG. 12-D)

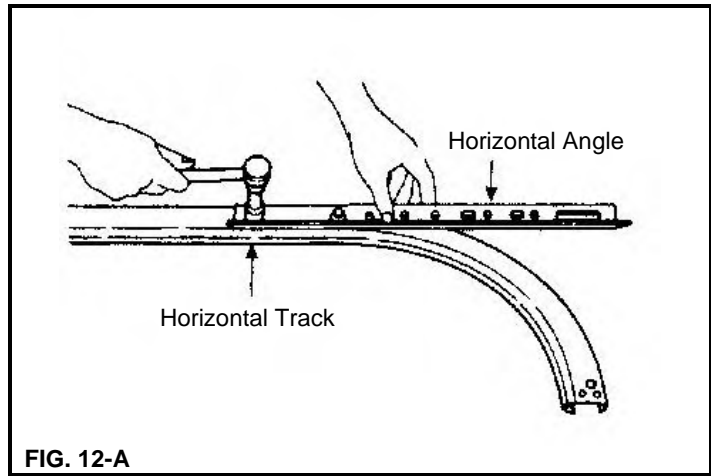


FIG. 12-A

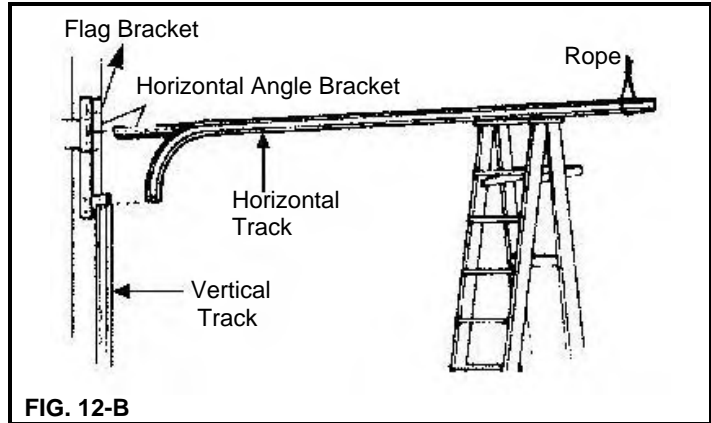


FIG. 12-B

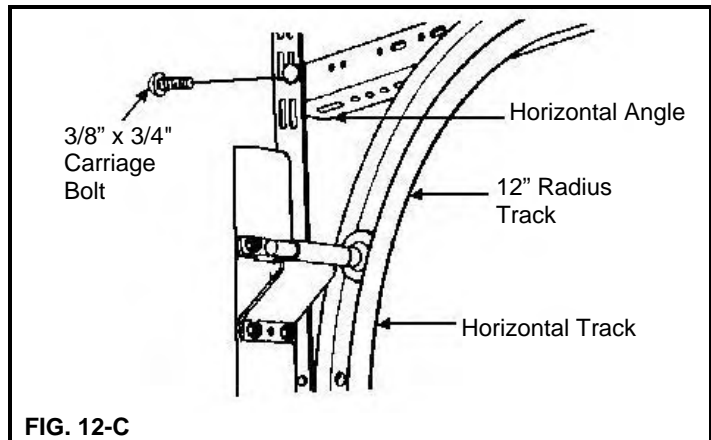


FIG. 12-C

WARNING

Sway braces must be used to prevent tracks from spreading and allowing door to fall, which could cause serious injury. Bolts placed in the end of each track (FIG. 12-D) must be at least 1" long to prevent the top section from exiting the track.

NOTE: Rear track hangers should not be mounted any farther than 6" from the end of horizontal track.

Step 12-5: Placement of rear track hangers is critical for the door to operate properly. The rear track hangers should hold the horizontal track level and square to the door. Squareness should be measured by comparing two diagonal distances: 1) the distance from the top left-hand corner of the door to the rear of the right-hand horizontal track and 2) the distance from the top right-hand corner of the door to the rear of the left-hand horizontal track. (FIG. 12-E, opposite page)

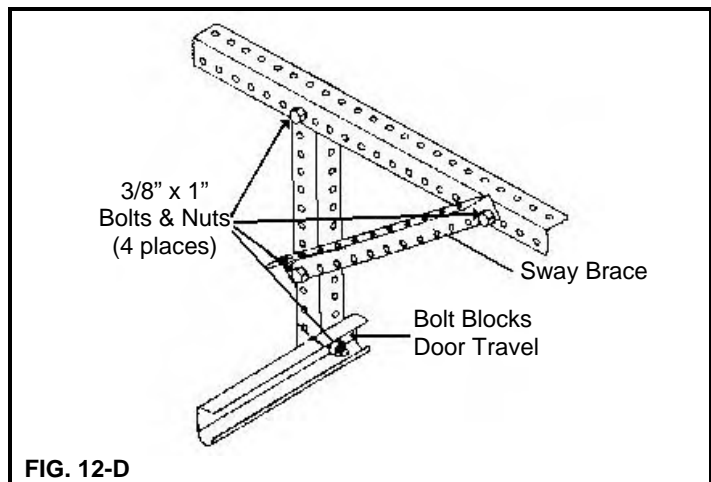


FIG. 12-D

Step 12-6: Continued: Adjust the position of the tracks if the squareness distances are not within 1/2" of each other. Horizontal track can be out of level up to 1" from front jamb to rear track hanger. (FIG. 12-E)

When the track is square and level with the opening, the track hangers can be fastened permanently to the ceiling trusses. Three 5/16" x 1-1/2" lag screws are recommended. Be sure 3/16" pilot holes are drilled before installing 5/16" lag screws. The attachment must be strong enough to hold the weight of the door.

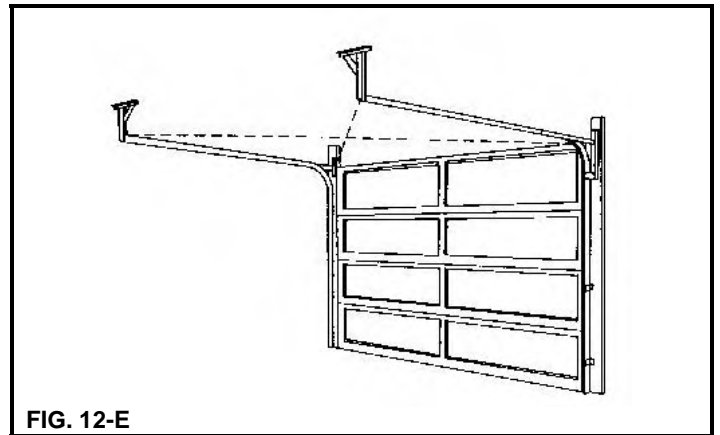


FIG. 12-E



WARNING

Use adequate length screws to fasten rear track hangers into trusses. Door may fall and cause serious injury if not properly secured.

Step 12-7: With the track installed, the top door section can now be properly adjusted. With the slide on the top bracket loose, force the top of the door against the stop molding or door jamb. Pull the roller towards you so it is tight against the groove in the track and tighten the slide bolts. (FIG. 12-F) At this time, remove the 3" nails that were used to hold sections in place prior to installation of the track assembly. (Refer back to FIG. 9-B.)

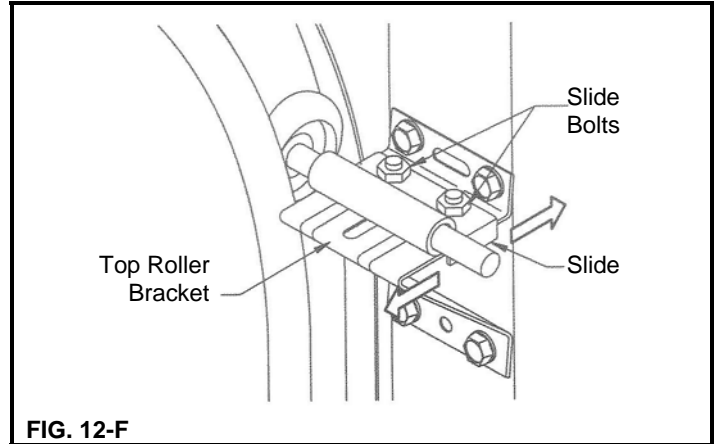


FIG. 12-F

STEP 13 – Lock Installation (If Included)
Slide Bolt:

The inside slide bolt is installed on the end stile of the second section using (4) 1/4" x 3/4" self-tapping screw (FIG. 13-A)

The slide bolt rests against the top of one of the rectangular engaging slots in the vertical track. Proper alignment is easier to achieve by using track as a guide.

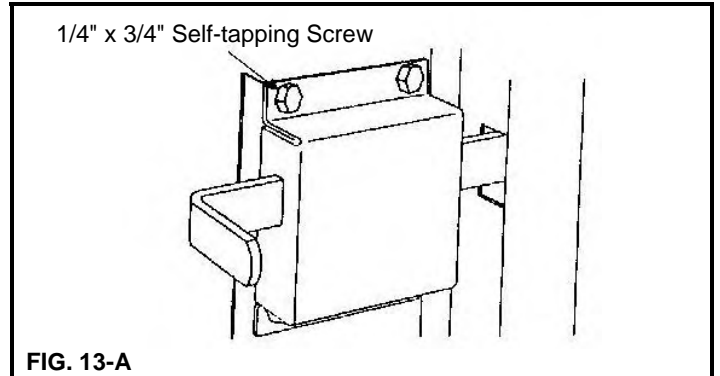


FIG. 13-A

NOTE: It may be necessary to knock out the slug in the vertical track to open the slot for lock engagement. Remove slug by striking with a hammer from the outside of the track.

IMPORTANT: If your door is going to be equipped with an automatic garage door opener, make sure that the door is always unlocked when the opener is being used. This will avoid damage to the door.

STEP 14 – Pull Rope (Manually Operated Doors Only)

To complete the door section installation, tie the pull rope provided to the bottom roller shaft. (FIG. 14-A)

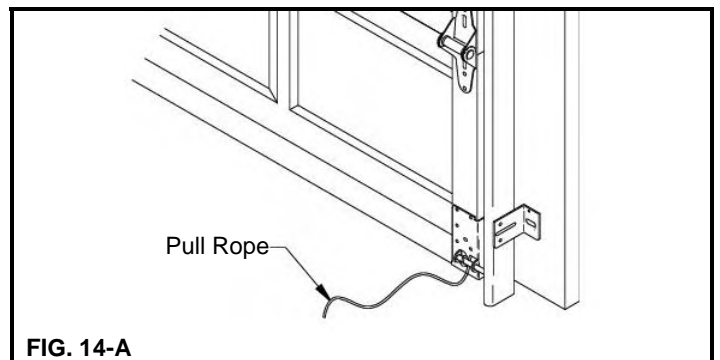


FIG. 14-A

STEP 15 – Standard Torsion Spring Installation



WARNING

Torsion springs can be very dangerous if they are improperly installed or mishandled. Do not attempt to install them yourself unless 1) you have the right tools and reasonable mechanical aptitude or experience and 2) you follow these instructions very carefully.

Materials Required for Torsion Spring Installation:

1. Two 9/16" box wrenches
2. 7/16" socket wrench
3. Two 1/2" diameter, 18" long cold rolled solid steel winding bars (NOTE: Winding bars are available at most hardware stores)
4. Locking pliers
5. Wood Anchor Pad

Step 15-1: Fasten the bottom of the end bearing plate to the horizontal angle with (2) 3/8" x 3/4" long hex head bolts and hex nuts. **Important:** The bottom of the end bearing plate is identified by two parallel rows of two slots. Make sure to use the bottom two slots for 12" radius horizontal track, and the upper two slots for 15" radius horizontal track (FIG. 15-A).

Step 15-2: Fasten the wall flange on the end bearing plate to the wood jamb with (1) 5/16" x 1-5/8" long lag screw. Drill 3/16" pilot holes where lag screws are to be installed. On 12" radius horizontal track, each end bearing plate should also be attached with 3/8" x 3/4" carriage bolts and 3/8" nuts (FIG. 15-B).

Step 15-3: If door has solid steel shaft in two sections skip to Step 18-1. Measure from top of door to center of end bearing. Use this measurement, draw a line at the same height for shaft location and mount 2"x 6" wood jambs in center of doorway. (FIG. 15-C) **Important:** The wood anchor pad must be made of a Grade 2 or better southern yellow pine (also known as southern pine or yellow pine). Other acceptable types of wood for this application are beech, birch, hickory, and oak. The wood must be free of splits and cracks. **Do not use wood labeled as spruce pine fir (or SPF).**



WARNING

It is important that the torsion spring assembly be firmly and securely attached to the frame of the garage.

NOTE: Each side jamb and the center anchor pad should extend 12" above the top of the opening for 12" radius horizontal track and 15" above the top of the opening for 15" radius horizontal track.

Step 15-4: Attach the wood anchor pad to the frame of the garage with at least four 3/8" x 4" long lag screws for wooden frames or four 3/8" x 4" long sleeve anchors for concrete frames. (one at each corner). The four fasteners must be installed no closer than 1-1/2" from the sides and the ends of the anchor pad. These fasteners must be embedded into the frame of the garage, not the drywall or sheet rock. The wood anchor pad and fasteners are not supplied. **Do not use nails.**

NOTE: The wood anchor pad can be off-center to the width of the opening by up to 10" in either direction.

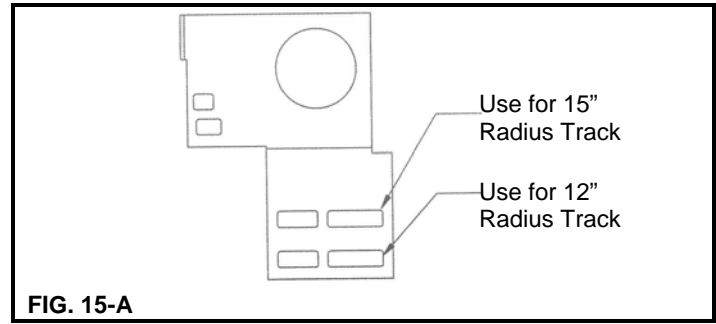


FIG. 15-A

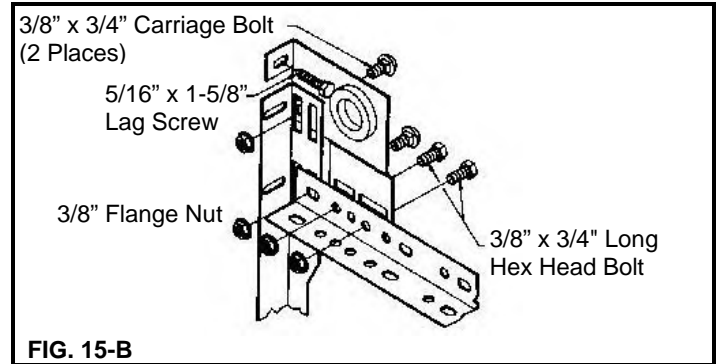


FIG. 15-B

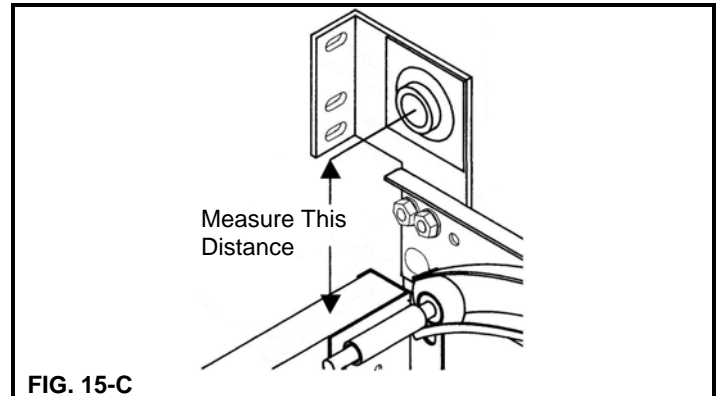


FIG. 15-C



WARNING

Lock the door in the down position securely using door lock or locking pliers. This must be done to prevent the door from prematurely opening which could cause an injury.

NOTE: You need an assistant in Step 15-6. If your garage has only one entrance, be sure you, the assistant, and the tools you need are inside before you lock the door. Your door will have either one or two torsion springs. Each torsion spring consists of spring coils, stationary cone, and a winding cone (FIG. 15-D). The spring coils are color coded depending on the spring size and the **winding cone** is color coded separately, either **red** or **black**. The color on the winding cone is to help identify on which side of the door the spring is to be used.

NOTE: Black winding cone torsion springs are used on the right side of the door and red winding cone torsion springs are used on the left side of the door when viewing the door from the inside looking out. Failure to install the torsion springs on the correct side will cause your door to function improperly and could result in serious injury.

Step 15-5: If door has low headroom front mount setup skip to Step 19-1. Slip the torsion springs onto the spring tube, the **red** winding cone on the **left** end, the steel center bearing, center bearing plate, and the **black** winding cone torsion spring on the **right** end (FIG. 15-E). Cable drums go on next, the **red** drum on the left, and **black** drum on the right. The set screws on the drums face the springs.



WARNING

Spring anchor bracket secures the springs to the wall. You must fasten securely with red-colored fasteners. Never remove spring anchor bracket when springs are wound.

Step 15-6: With an assistant, lift the complete torsion spring tube assembly and slide the ends of the tube into the bearing on the end bearing plates. With the tube level, mount the center bearing plate to the center anchor pad using (2) 5/16" x 1-5/8" red-headed lag screws. Drill 3/16" pilot hole for each lag screw. **Important:** These pilot holes must be no closer than 1-1/2" from the sides and ends of the wood anchor pad.

Step 15-7: Connect the spring(s) to the center bearing plate using (2) 3/8" x 1" hex bolts and nuts for single springs or (2) 3/8" x 1-5/8" hex bolts and nuts for double springs. (FIG. 15-F)

Step 15-8: Bring up the left cable between the wall and roller shafts to the cable drum. Attach cable by placing in the notch on the cable drum. Turning the cable drum and sliding it up tight against the end bearing plate to remove the cable slack. **Make sure the cable follows the grooves in the cable drum.** The set screws on the cable drum should be tightened with a 3/8" box wrench while holding the cable taut. (**Caution:** Set screws should be turned from 3/4 to one full turn after they have made contact with the tube.) Clamp locking pliers on to the torsion spring tube to maintain tension on the cable. Repeat this procedure on the opposite side.

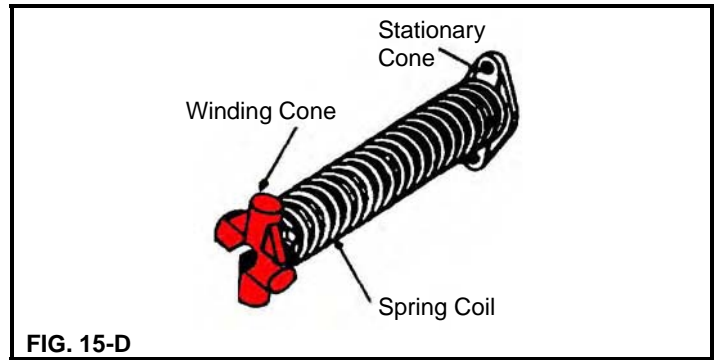


FIG. 15-D

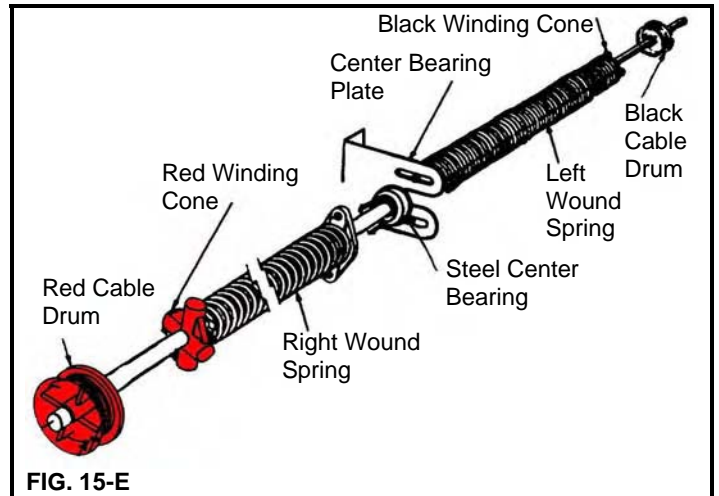


FIG. 15-E

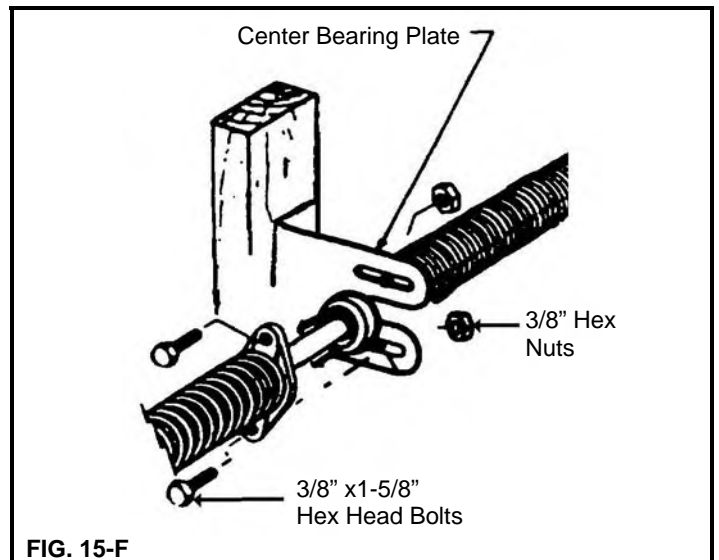


FIG. 15-F



WARNING

NEVER use screwdrivers or other substitutes for winding bars! Stand to side of bars. Be sure to insert the bars all the way into the hole.

Step 15-9: Check for a straight line drawn across the length of the spring(s). If no line is present, draw one using a piece of chalk. This will be used to indicate the number of turns on the spring(s).

Step 15-10a: If installing front mounted low headroom springs, skip to Step 15-10b. After inserting the two winding bars all the way into the winding cone, wind the springs 1/4 turn at a time in an upward direction (FIG. 15-G). The number of turns is shown in table 15-10. Secure each spring with the set screws on the winding cone. (**Caution:** Set screws should be turned from 3/4 to one full turn after they have made contact with the tube.) On doors with two springs, each spring should be wound the same number of turns. Remove the locking pliers.

Step 15-10b: After inserting the two winding bars all the way into the winding cone, wind the springs 1/4 turn at a time in a downward direction (FIG. 15-H). The number of turns is shown in table 15-10. Secure each spring with the set screws on the winding cone. (**Caution:** Set screws should be turned from 3/4 to one full turn after they have made contact with the tube.) On doors with two springs, each spring should be wound the same number of turns. Remove the locking pliers.

Door Height	Spring Turns
6'0"	6.75
6'3"	7.00
6'6"	7.25
6'9"	7.50
7'0"	7.75
7'3"	8.00
7'6"	8.25
7'9"	8.50
8'0"	8.75

*For doors over 8'0" see the spring label.

Step 15-11: Unlock the door, slowly raise the door and prop it about halfway open.



WARNING

This is the first time the new door is being opened. If the tracks are not correctly aligned or the back hangers are not strong enough, the door may fall. Proceed slowly and carefully.

Step 15-12: Check to be sure the horizontal tracks are parallel with each side of the door. Make sure all the lag screws are securely fastened. With the door about halfway open, make sure the rollers do not come out of the top brackets more than about 1/2 inch. If adjustment of the rear track hanger is necessary, the door must be locked in the closed position.

Step 15-13: To adjust torsion spring tension, it is necessary that the door be in the down and locked position. With locking pliers clamped on the torsion tube, winding bars are used to wind the springs tighter to increase tension. Tension is reduced by removing turns. When two springs are used, both sides should be adjusted the same. Adjustments should be made in 1/4 turn increments.

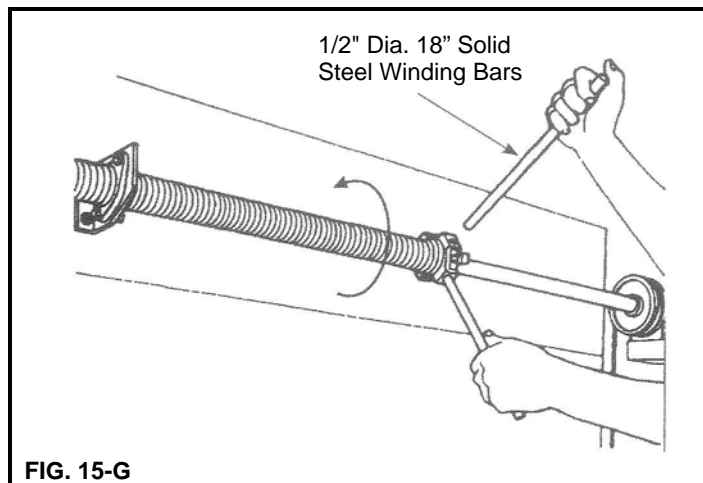


FIG. 15-G

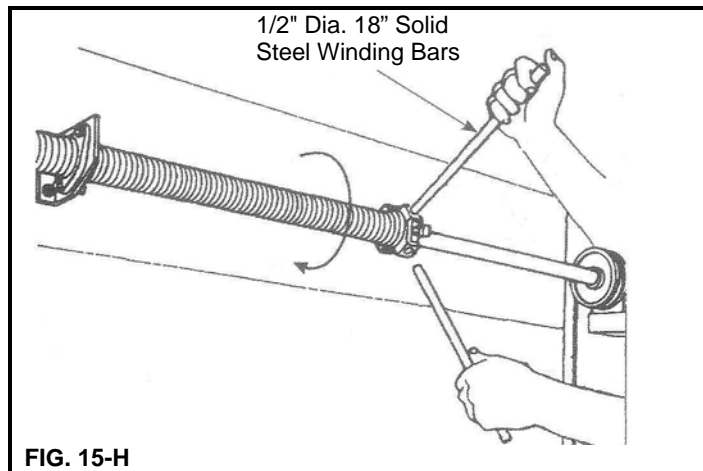


FIG. 15-H

NOTE: If the torsion springs do not increase in tension as the 1/4 turns are added to the springs, then you probably have the torsion springs reversed.



WARNING

NEVER adjust center bearing plate or red-colored fasteners after springs are wound. Be prepared to handle a strong force when reducing tension on a torsion spring. Use winding bars only, and stand to the side.

STEP 16 – Solid Steel Shaft Torsion Spring Installation

Step 16-1: Measure from top of door to center of end bearing. Use this measurement, draw a line at the same height for shaft location and mount both 2"x 6" wood jambs. (FIG. 16-A)

Important: The wood anchor pad must be made of a Grade 2 or better southern yellow pine (also known as southern pine or yellow pine). Other acceptable types of wood for this application are beech, birch, hickory, and oak. The wood must be free of splits and cracks. **Do not use wood labeled as spruce pine fir (or SPF).**



WARNING

It is important that the torsion spring assembly be firmly and securely attached to the frame of the garage.

NOTE: Each side jamb and the center anchor pad should extend 12" above the top of the opening for 12" radius horizontal track and 15" above the top of the opening for 15" radius horizontal track.

Step 16-2: Attached the wood anchor pad to the frame of the garage with at least four 3/8" x 4" long lag screws for wooden frames or four 3/8" x 4" long sleeve anchors for concrete frames. (one at each corner). The four fasteners must be installed no closer than 1-1/2" from the sides and the ends of the anchor pad. These fasteners must be embedded into the frame of the garage, not the drywall or sheet rock. The wood anchor pad and fasteners are not supplied. **Do not use nails.**

NOTE: The wood anchor pad can be off-center to the width of the opening by up to 10" in either direction.

Step 16-3: Slip onto one section of solid steel shaft the coupler, a spring anchor bracket, left winding torsion spring, **black** winding cone, and the **black** cable drum. The set screws on the drums face the springs. (FIG. 16-B)

Step 16-4: Insert solid shaft key into coupler and tighten the two set screws. (FIG. 16-C)

Step 16-5: Slip onto the other section of tubing **red** cable drum, **red** winding cone, right wound spring, and spring anchor bracket. The set screws on the drums face the springs. (FIG. 16-D)



WARNING

Spring anchor bracket secures the springs to the wall. You must fasten securely with red-colored fasteners. Never remove spring anchor bracket when springs are wound.

Step 16-6: With an assistant, slide either shaft into corresponding end bearing and, when shaft is centered on the mark made earlier for height, fasten spring anchor to wood anchor pad using (2) 5/16" x 1-5/8" red-headed lag screws. Drill 3/16" pilot hole for each lag screw. **Important:** These pilot holes must be no closer than 1-1/2" from the sides and ends of the wood anchor pad.

Step 16-7: With an assistant, slide other shaft into corresponding end bearing and into coupler, then fasten spring anchor to wood anchor pad using (2) 5/16" x 1-5/8" red-headed lag screws. Drill 3/16" pilot hole for each lag screw. **Important:** These pilot holes must be no closer than 1-1/2" from the sides and ends of the wood anchor pad.

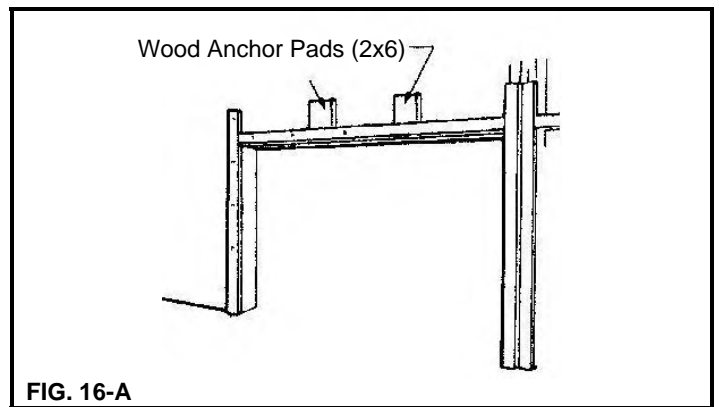


FIG. 16-A

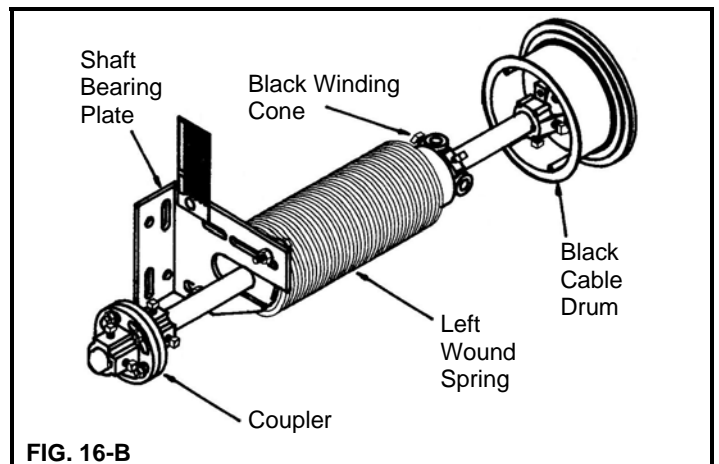


FIG. 16-B

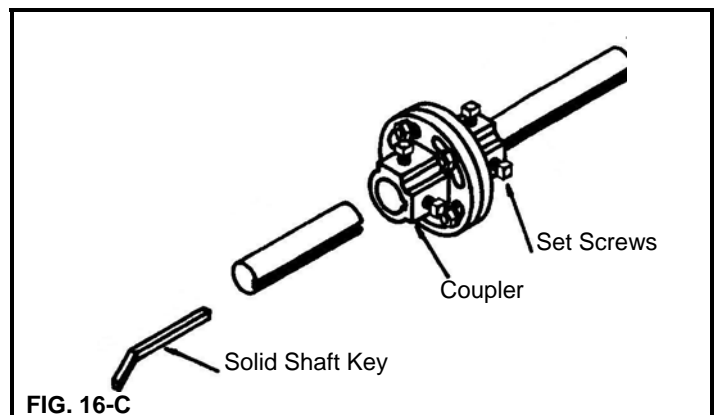


FIG. 16-C

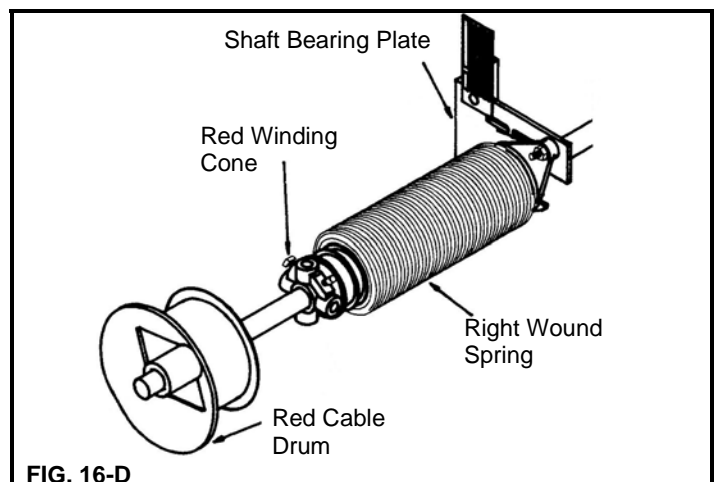


FIG. 16-D

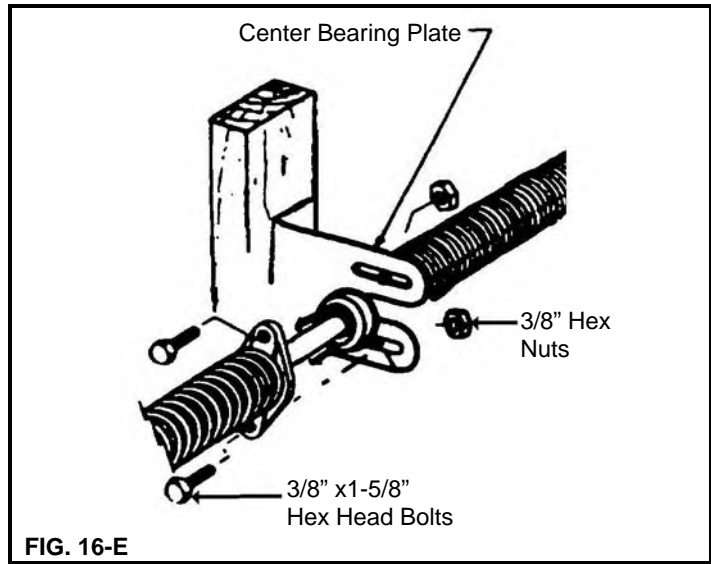
Step 16-8: Connect the spring(s) to the corresponding bearing plate by (2) 3/8" x 1" hex bolts and nuts for single springs or (2) 3/8" x 1-5/8" hex bolts and nuts for double springs. (FIG. 16-E)

Step 16-9: Slide both red and black cable drums against end bearings, insert solid shaft keys, and tighten set screws. The set screws on the cable drum should be tightened with a 3/8" box wrench.

Step 16-10: Bring up cable between the wall and roller shafts to the cable drum. Attach cable by placing in the notch on the cable drum. Turning the cable drum to remove the cable slack. **Make sure the cable follows the grooves in the cable drum.** Clamp locking pliers shaft and against header to maintain tension on the cable. This procedure should be repeated on the opposite side.

Step 16-11: Bolt shaft coupler together with the other two set screws.

Important: Return to Step 15-9 (Pg. 24) to finish installation.



STEP 17: Low Headroom Front Torsion Spring Installation

Step 17-1: Slip the torsion springs onto the spring tube, the red winding cone on the left end, the steel center bearing, center bearing plate, and the black winding cone torsion spring on the right end (FIG. 17-A).



WARNING

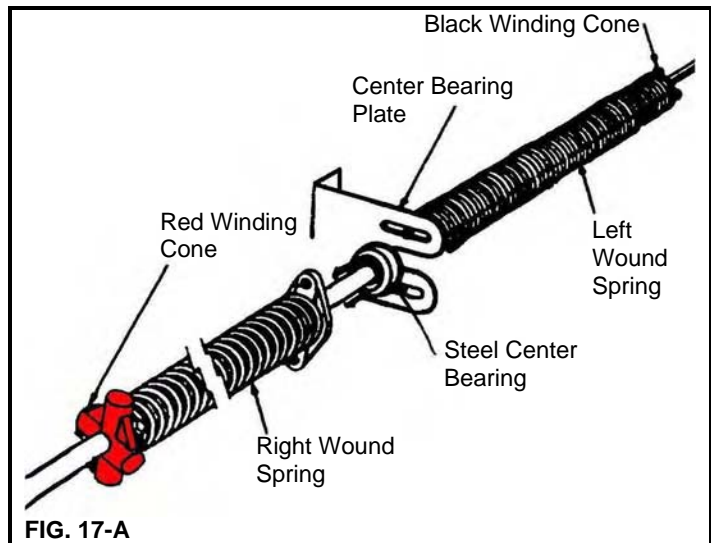
Spring anchor bracket secures the springs to the wall. You must fasten securely with red-colored fasteners. Never remove spring anchor bracket when springs are wound.

Step 17-2: With an assistant, lift the complete torsion spring tube assembly and slide the ends of the tube into the bearing on the end bearing plates. With the tube level, mount the center bearing plate to the center anchor pad using (2) 5/16" x 1-5/8" red-headed lag screws. Drill 3/16" pilot hole for each lag screw.

Important: These pilot holes must be no closer than 1-1/2" from the sides and ends of the wood anchor pad.

Step 17-3: Slide cable drums onto both ends of tube on outside of bearing plate, the red drum on the left, and black drum on the right. The set screws on the drums facing outwards.

Important: Return to Step 15-7 (pg. 23) to finish installation.



STEP 18 – Attaching an Automatic Opener

IMPORTANT: To avoid damage to your door, you must reinforce the top section of the door in order to provide a mounting point for the opener to be attached. Refer to the section of this manual titled Reinforcing the Top Section on page 18 for specific instructions. Failure to reinforce the door as illustrated will void the warranty on your door.



WARNING

To avoid risk of strangulation or personal injury to children, if your door has a pull rope, you must remove the pull down rope when you install an automatic garage door opener.

IMPORTANT: When installing an automatic garage door operator, make sure to follow manufacturer's installation and safety instructions carefully. Remove the pull down rope and unlock or remove the lock. If attaching an operator bracket to the wooden anchor pad, make sure the wood anchor pad is free of cracks and splits and is firmly attached to the wall. Always drill pilot holes before attaching lag screws.

The operator arm will usually be attached to the vertical reinforcement member at roughly the same height as the top roller of the door. Attach the opener arm to the reinforcement as shown in Figures 18-B to 18-C. To prevent the top of the door from bending, the opener rail should be mounted no less than 2" and no greater than 5" from the face of the door with the door in the open position (FIG. 18-A). Additionally, when the door is closed, the portion of the operator arm attached to the door should be at angle of approximately 60 degrees from the vertical.

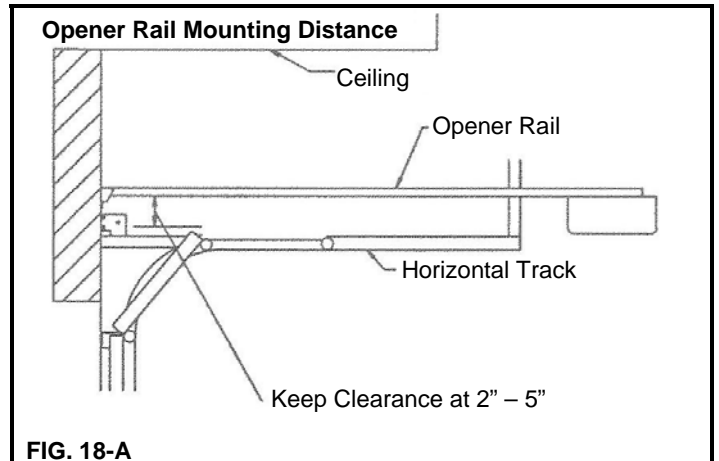


FIG. 18-A

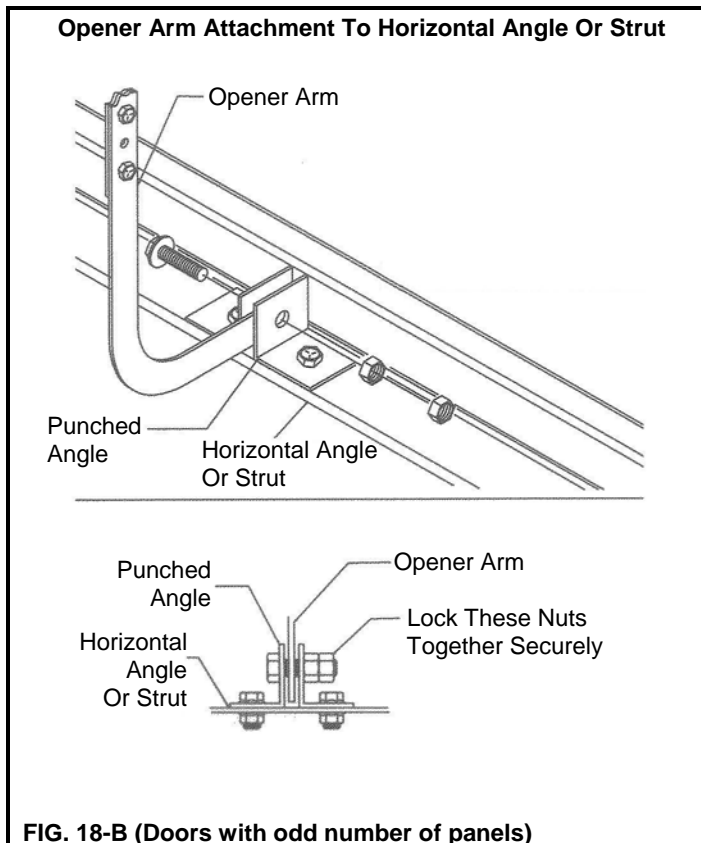


FIG. 18-B (Doors with odd number of panels)

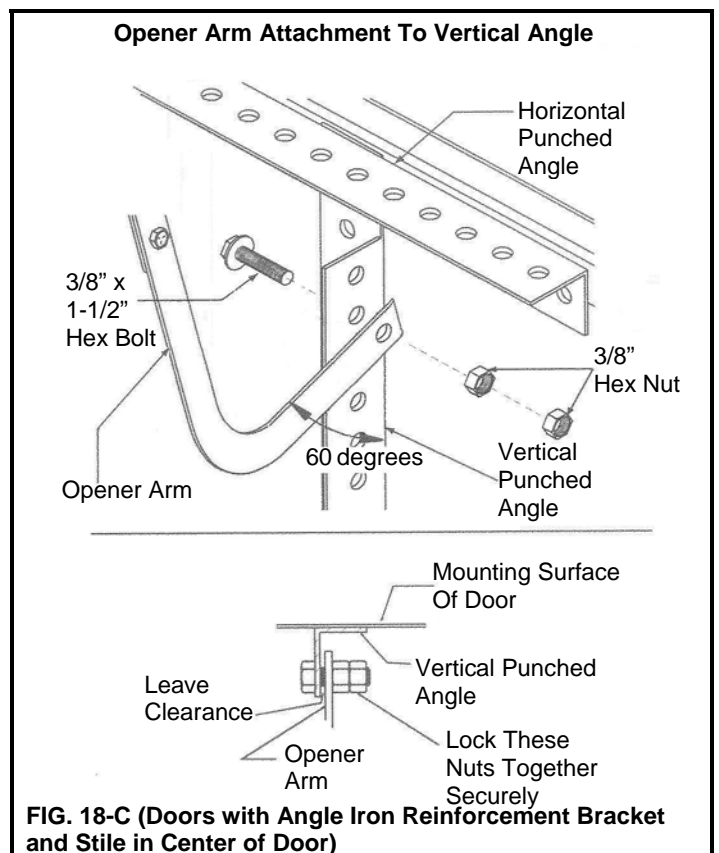


FIG. 18-C (Doors with Angle Iron Reinforcement Bracket and Stile in Center of Door)

Painting your Door

Paint: Your garage door can be painted with a high quality, 100% acrylic latex (flat, satin, or semi-gloss) exterior grade paint.

NOTE: Do not use oil-based paint. Using oil-based paint will void the warranty on the door.

Cleaning: Before painting your door, it must be free of dirt, oils, chalk, waxes and mildew. The preprinted surfaces can be cleaned of dirt, oils, chalk and mildew with a diluted solution of trisodium phosphate. Trisodium phosphate is available over the counter at most stores under the name SOILAX, in many laundry detergents without fabric softener additives, and in some general purpose content. Check the label for trisodium phosphate content. The recommended concentration is 1/3 cup of powder to 1-1/2 to 2 gallons of water. After washing the door, always rinse well with clear water and allow to dry.

If the door has ever been waxed, the wax must be removed before painting. Doors are not waxed during the manufacturing process. The wax can be removed by wiping door surface with a rag saturated with Xylene (Xylol), available at most paint or hardware stores. Wiping should be done at moderate pressure and Xylene must not be allowed to sit on the door for an extended time. Damage to your door's paint system can occur if over exposed to this or other solvents.

Caution: Safety instructions on the solvent's container must be followed. After de-waxing the door, clean with trisodium phosphate, as stated previously.

NOTE: Sanding should be done only to damaged areas where bare metal has been exposed. Refer to the "Paint Repair" section of these instructions.

Paint Repair: Should your door's paint finish become damaged, exposing the bare metal, it will become necessary to repair. The damaged area should be lightly sanded with a medium to fine sandpaper making sure to remove all visible rust. Wipe this area with a dry, clean rag. Coat the sanded area with a high quality, water-based primer labeled for use on aluminum surfaces. Once the primer is applied, wait the time specified on the primer's instructions before finish painting your door.

Paint: Your garage door can be painted with a high quality, 100% acrylic latex (flat, satin, or semi gloss) exterior grade paint. Since all paints are not created equal, the following test needs to be performed: paint should be applied on a small area of the door (following the instructions on the paint container), allowed to dry, and evaluated prior to painting the entire door. Paint defects to look for are blistering and peeling. An additional test is to apply a strip of masking tape over the painted area and peel back, checking to see that the paint adheres to the door and not to the tape.

After satisfactorily testing a paint, follow the directions on the container and apply to the door. Be sure to allow adequate drying time should you wish to apply a second coat.

NOTE: Do not apply paint when door surface temperature is different from manufacturer's suggested temperature range for application.

Glass Replacement

IMPORTANT: Do not try to replace glass yourself.

If glass should need replacement, please contact an authorized professional dealer. For the location of the authorized professional dealer, please write or call:

Clopay Building Products
Consumer Services Dept.
101 Miller Rd.
Russia, OH 45363 USA

Call Toll Free: 1-800-225-6729
Hours of Operation (ET):
Monday – Friday, 8:30 AM – 7 PM
Saturday 8:30 AM – 5 PM.

Annual Maintenance

- 1) Lubricate all moving parts of the door with light household oil, including:
 - a. Lift cables at the bottom bracket button
 - b. Bearing of the sheaves
 - c. Lock hardware where surfaces turn or slide
 - d. Full length of torsion spring to reduce friction between coils
 - e. Steel rollers.
- 2) Check for loose or bent hinges.
 - a. Tighten screws on loose hinges.
 - b. Straighten or replace bent hinges.

Caution: To replace bent hinge(s) or broken roller(s):

Door must be locked and in the down position.

No more than one hinge is to be removed from the door at any given time.

- 3) Check roller for broken wheels, bent shafts, or worn out bearings.
- 4) Check the door and track supports for loose or missing bolts, screws, etc. Be careful not to over tighten.
- 5) Check for bent track. If bent, call an authorized professional dealer.
- 6) Repairs to torsion spring hardware; including springs, cables and bottom brackets; should be made by a qualified door technician or a mechanically experienced person with proper tools and instructions.

Cleaning the Door

In order to prevent damage caused by foreign matter adhering to the door, the door should be cleaned at least twice a year (normal environments) or 4 times a year (coastal environments). The door may need to be cleaned more frequently if road salt accumulates in a winter climate. The door should be wiped down with a mild household detergent and rinsed with clean water.

NOTE: Be sure to clean behind stop molding on the side and top of door.

Waxing the Door (Coastal and Harsh Environments)

For coastal and harsh environments, it will be necessary to wax the front side of the door following installation. Select a good quality car wax and apply according to wax manufacturer's instructions. Wax should be applied at least twice a year, immediately after cleaning (see cleaning instructions above).

Glass and Acrylic Windows Cleaning and Care Instructions

Clean with a mild solution of a dishwashing detergent and a soft cloth. After, cleaning, rinse thoroughly. DO NOT use any ammoniated, abrasive, or solvent-based cleaners of any kind.

NOTE: Minor scratches or scuffs are not considered defects and will not be covered under window warranty.

Replacements Parts

Replacement parts are available from an authorized professional dealer or a building supply retailer. When ordering repair parts, always provide the following: part name, model number, and door width and door height (W x H). For the location of the authorized professional dealer or a building supply retailer nearest you, please write or call:

Clopay Building Products
Consumer Services Dept.
101 Miller Rd.
Russia, OH 45363 USA

Call Toll Free: 1-800-225-6729
Hours of Operation (ET):
Monday – Friday, 8:30 AM – 7 PM
Saturday 8:30 AM – 5