OWNERS MANUAL

Installation and Maintenance Instructions

northcentral
DOOR COMPANY

Commercial Garage Door

Installed By:

Date:

Door Serial #

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North Central Door Company, Inc. makes the following warranties regarding its products:

1. ***Rust-through Warranty***

Residential Doors

25ga, RP-25, CT-24, AR-25

All door sections of our steel garage doors are warranted against rust-through due to the paint finish cracking, checking or peeling (losing adhesion) for a period of twenty (20) years.

TR-138, TF-138, TR-2000, TFII, AR-138, AR-2000, SR-138, SR-II, LP-138, LP-II

All door sections of our steel garage doors are warranted against rust-through due to the paint finish cracking, checking or peeling (losing adhesion) for lifetime to the original owner of the building.

Commercial Doors

25 Gauge, 24 Gauge, TF-138, TF-II, TAS III

All door sections of our steel garage doors are warranted against rust-through due to the paint finish cracking, checking or peeling (losing adhesion) for a period of ten (10) years.

2. ***Delamination***

Residential/Commercial

TR-138, TF-138, TR-2000, TFII, AR-138, AR-2000, SR-138, SR-II, LP-138, LP-II, TAS III

Thermal door products are warranted from delaminating for a period of ten (10) years.

3. ***Product defects***

All our garage doors are warranted against defects in workmanship or materials for a period of one (1) year.

The term of the warranty begins on the date of delivery to the original consumer purchaser. To be covered by our warranty, all products must be installed in accordance with instructions from the manufacturer. If within the term of the warranty, the sections are determined to be defective, as verified upon inspection by persons authorized by us, we will replace or otherwise restore (at our option) any such defective garage door sections. We will pay for all material costs associated with any repair work described above, however, labor costs associated with the removal and reinstallation of repaired sections and the installation of replacement sections will be your responsibility.

This warranty extends to and benefits only the original consumer purchaser of the garage door. This warranty is not transferable. If materials are to be returned to us for repair or replacement under this warranty, such return must be made with freight charges prepaid.

Our warranty does not cover these items:

WE WILL NOT PAY FOR ANY DAMAGES, INCLUDING INCIDENTAL OR CONSEQUENTIAL DAMAGES, CAUSED BY OR RESULTING FROM DEFECTIVE GARAGE DOOR SECTIONS, PARTS OR HARDWARE. Some states do not allow the exclusion of incidental or consequential damages. If you live in a state that does not allow said exclusions, the above limitation may not apply to you. Our warranty shall not extend to or cover deterioration due to damage or rust to the garage door section finish caused by fire, other accident or casualty, acts of God, vandalism, radiation, harmful fumes or foreign substances in the atmosphere, or occurring as a result of any physical damage or the failure of paint applied after the garage door left our factory, or failure to provide reasonable, necessary and proper maintenance. Nor shall our warranty extend to or cover any damages or claims with respect to any products that in any way or degree have been altered, processed, misused or improperly handled or installed.

WE MAKE NO OTHER WARRANTIES, REPRESENTATIONS, OR COVENANTS, EXPRESSED OR IMPLIED WITH RESPECT TO THIS PRODUCT, AS TO ANY MATTER WHATSOEVER, INCLUDING BUT NOT LIMITED TO WARRANTIES, REPRESENTATIONS OR COVENANTS AS TO WORKMANSHIP, DESIGN, CAPACITY, QUALITY, CONDITON, 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, which vary form state to state.

25 Year Limited Warranty for Premium Painted Doors

1) North Central Door Company warrants to the original purchaser:
   - For twenty (25) years from the date of installation our Premium painted sections **will not**, under normal atmospheric conditions, chalk in excess of a numerical rating of eight when measured in accordance with the standard procedures specified in ASTM D-659 and NCCA 111-8 for thirty years
   - For twenty (25) years from the date of installation our Premium painted sections **will not** will not, under normal atmospheric conditions, fade or change in color in excess of five (5) NBS units when measured on any colorimeter in accordance with the procedures set forth in ASTM D-2244 The color change shall be determined by measuring the difference between the exposed painted surface which has been cleaned of external deposits of dirt and/or chalk and the original or corresponding unexposed painted surface. It is understood that fading or color changes may not be uniform if the surfaces-are not equally exposed to the sun and elements. The color change shall be calculated according to ASTM D-2244.
   - For twenty (25) years from the date of installation our Premium painted sections **will not,** under normal atmospheric conditions, to any material degree crack (except for such crazing or slight cracking as may occur on tightly roll-formed edges or brake bends at the time of forming pre-painted metal and which is accepted as standard), chip, peel, blister, flake, check or split of the Product to the Metal, whichever first occurs.
2) In case of a complaint, North Central Door Co. must have access and assistance as necessary in determining the exact cause of the failure. ASTM and NCCA testing procedures will be used.
3) If the Premium coil coating fails to comply with the limited warranty, North Central Door Company will pay for reasonable labor and material necessary to repaint, repair or replace, at North Central Door Company's discretion, the building part showing the failure. Notification of any warranty claim must be received in writing by North Central Door Company within thirty (30) days of the discovery of the problem. Required documentation must be provided with said claim. If repainting is done, normal painting practices using 381Z315 white fluropon coil coating or other suitable alternatives will be used. This warranty also applies to the part repainted, repaired or replaced, but only for the unexpired portion of the warranty period applicable to the original part.
4) Our **LIMITED WARRANTY DOES NOT APPLY** to circumstances which North Central Door Company has no control of, including but not limited to:
   - Fire or other casualty or physical damage;
   - Unusual harmful fumes or foreign substances in the atmosphere;
   - Improper treatment of or defects in the metal or in the fabrication;
   - Mishandled products, e.g., any product which has been abused, altered, modified, used in a manner not originally intended, or stored contrary to instructions;
   - Failure due to corrosion of the substrate.
   - Modifications made to product, including but not limited to sections and components, not in accordance with North Central Door standards and specifications.

Seven (7) Year Hardware Warranty

North Central Door Company will repair or replace any garage door hardware that is defective in material or workmanship for the period defined above and extends to and benefits only the original consumer purchaser pursuant to the terms of this limited warranty.

Three (3) Year Torsion Spring Warranty

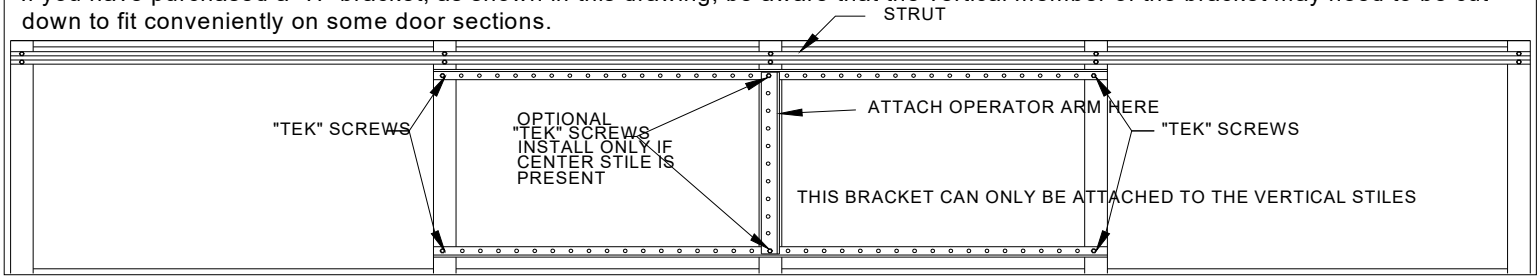
North Central Door Company will repair or replace springs or spring components that are defective in material or workmanship for the period defined above. This warranty extends to and benefits only the original consumer purchaser.

IMPORTANT

PLEASE CAREFULLY READ THE FOLLOWING INFORMATION AND WARNINGS BEFORE YOU INSTALL OR USE YOUR NEW GARAGE DOOR.

IMPORTANT

If an electric operator is to be installed on this door, the factory recommends that a reinforcing bracket or strut be applied to the top section of any single car garage door. For a two-car garage door, the factory recommends applying one strut which is provided with the door, and either a reinforcing bracket or a second strut, which are options available from your dealer. These reinforcements add support to the top section and prevents damage in the event the door is accidentally locked or frozen down. Unless this bracket or extra strut is in place, North Central Door Company will not warrant the door against possible operator damage.
This picture shows a section with three center stiles, different sizes may not have a center stile directly in the middle of the section. On some door types the center stiles are concealed beneath the inside steel skin, these stiles are located where the hinges are attached. All reinforcing must be attached directly above or below the hinges only.
If you have purchased a "H" bracket, as shown in this drawing, be aware that the vertical member of the bracket may need to be cut down to fit conveniently on some door sections.



It is recommended by the manufacture that your overhead door be installed by a professional, qualified door installer. You can install your new garage door yourself IF (1) you have help (it's heavy); (2) you have the right tools and reasonable mechanical aptitude or experience; and (3) you follow these instructions very carefully. In particular, please note that:

Do not install a commercial jackshaft operator with a standard lift door. North Central Door Company is not liable for damages and will not warranty a standard lift door or a door with less than 21" of high lift that has been installed with a commercial jackshaft operator.

- Wear protective gloves to avoid lacerations from sharp metal edges.
- Always wear eye protection to avoid potential serious eye injuries.
- Avoid installing a new door on windy days. The door could fall during installation causing severe injury or death.
- Doors 12'0" wide and over should be installed by two persons to avoid possible injury.
- Operate door ONLY when properly adjusted and free of obstructions.
- Keep door in full view while operating it. Watch the door open or close completely before leaving the area.
- Should the door become hard to operate or completely inoperative, a qualified door agency should correct the problem to prevent damage to the door or serious personal injury.
- DO NOT PERMIT children to play with the garage door or the electrical controls. Fatal injury could result, should the child become entrapped between the door and the floor.

- To prevent serious injury or death, avoid standing in the open doorway or walking through the doorway while the door is moving.
- Use lift handles/step plate when manually operating the door. DO NOT place fingers into section joints when operating the door.
- Pull rope must be removed and locks must be removed or interlocked if door is operated by an electric opener.
- Door is constantly under EXTREME SPRING TENSION. To prevent possible serious injury or death, adjustments, repairs, removal, or installation, ESPECIALLY of SPRING ASSEMBLIES, CABLES, or BOTTOM BRACKETS, should be performed ONLY by qualified door service people.
- Check door and its hardware monthly for loose, worn, or broken parts. Have any repairs or adjustments made by a qualified door agency.
- Test electric operator's safety features monthly.
- Have the door professionally inspected once a year.
- Garage doors use springs to balance them. Generally, there are two types of springs used – "extension springs" and "torsion springs." IF YOU'RE PRESENT 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.
- 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.
- When installing a door with torsion springs, always use solid steel ½" x 18" or longer winding bars. Winding bars are available at any steel supply company or from a professional installer. T***HE USE OF SCREWDRIVERS OR ANY SUBSTITUTES FOR WINDING BARS WILL RISK SEVERE INJURY.***
- 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 handle and pull down rope location are placed for safe operation as well as easy use.
- EXTENSION SPRING DOORS SHOULD NEVER BE OPERATED WITHOUT A PROPERLY INSTALLED SPRING CONTAINMENT CABLE.
- 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.
- ONLY THE TRACK SPECIFIED AND SUPPLIED WITH THE DOOR SHOULD BE USED.
- Track installations must use sway braces on the rear track hangers to prevent sideway movement. If the tracks are not firmly stabilized they might spread, allowing the door to fall and cause severe injury and damage.
- If your new door has a torsion spring, the center torsion spring assembly requires a wooden pad that MUST BE FIRMLY ATTACHED TO THE WALL. Four $^{3}/_{8}$" x 3" lag screws should be used for a wood structure. Four $^{3}/_{8}$" masonry anchors can be used on concrete or block walls. If the wood splits, it should be replaced by a professional installer. DO NOT TRY TO REMOVE TORSION SPRING ASSEMBLY ONCE IT IS WOUND.
- Springs, cables, and bottom fixtures are under strong tension. DO NOT ATTMEPT TO LOOSEN ANY FASTNERS ON THESE COMPONENTS. You could suddenly release spring forces and risk severe injury.
- If the garage door and/or any of the supporting tracks 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 assured by using original North Central Door Company 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, in order to avoid fire and health hazards caused by fumes accumulating within a well-sealed garage. Check with your local building codes for applicable requirements.

SPECIAL INSTRUCTIONS:

Some fasteners have been intentionally painted red to be used in certain applications. These red fasteners signify danger areas once the garage door springs have been finally installed and loaded. Red fasteners should NEVER be tampered with once the door is installed. Please follow these instructions closely to insure proper use of these red fasteners and only install them where directed.

TOOLS NEEDED

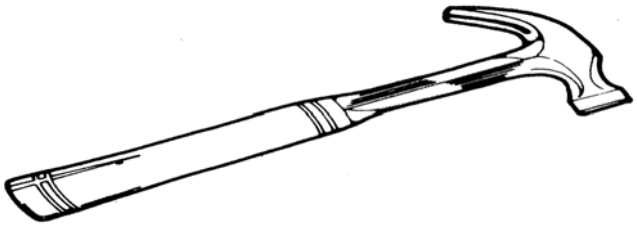
The following tools are typically used in the installation of sectional door

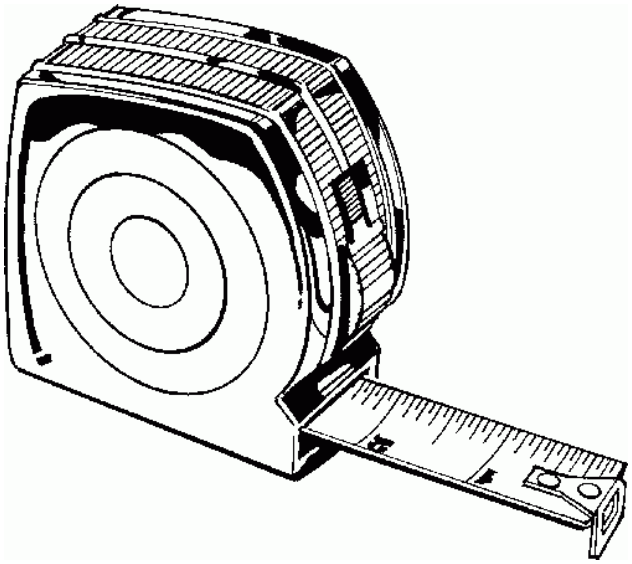
Tool List:

- claw hammer
- carpenter's level
- water level
- pliers
- ratchet wrench and sockets (5/16" - 7/8")
- impact sockets (3/8" - 9/16")
- extensions for ratchets
- measuring tape
- screwdrivers
- winding bars
- Locking pliers
- wrenches (5/16" - 7/8")
- drill bits for steel (1/8", 3/16", 1/4", 15/64", 9/32", 5/16", 3/8", 7/16", 1/2", 3/4")
- drill bits for masonry (3/16", 1/4", 5/16", 3/8", 1/2")
- tin snips
- adjustable wrenches
- nut drivers (¼" - 7/16")
- cable cutters
- tool pouch
- pry bar
- speed wrench
- uni-bit
- work gloves and welding gloves
- hearing protection
- safety glasses

Power Tools:

- 3/8" electric drill motor
- ½" electrical drill motor
- ½" masonry drill motor
- ½" rotary hammer
- Impact wrench
- Circular saw
- Impact Driver with a $^{7}/_{16}$" Socket (optional
- 4 ½" grinder
- Reciprocating saw
- Extension cords
- Step Ladders
- Saw horses or other supports for placing section on while assembling





ADDITIONAL MATERIALS REQUIRED:

- Light household oil
- Punched Angle – For rear track hangers 1.25" x 1.25" angle (residential doors) or 2" x 2" angle (commercial doors); this is not provided due to ceiling height differences
- Lag screws for back hangs
- $^{3}/_{8}$" x ¾" bolts and nuts – for back hangs
- 10d 3" nails – two per section
- Stop molding
- Wood or steel for Spring Mounting Pads

THINGS TO KNOW BEFORE YOU BEGIN

The instructions should be read completely before starting the installation of the door. Becoming familiar with the components before assembling the door will reduce the installation time.

- These standard instructions are designed for all our steel overhead doors. Supplemental instructions are supplied for related information not contained within the standard instructions.
- Allow enough time to do the work; dependent upon door size, removing an existing door will take approximately 1-3 hours. A typical installation will take between 2-8 hours to complete dependent on size.
- An assistant may be required for lifting the un-sprung door, it can be very heavy.
- 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 overhead 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.
- You must reinforce the top section of the door in order to provide a strengthened mounting point for attachment of an automatic opener. See your supplier.
- Low headroom, Hi-Lift, Vertical lift doors require special instructions which are on a separate page(s) than this instruction booklet. Purchase of additional hardware may be required.
- The track and hardware provided with the new door should always be used. Never reuse old.

HEADROOM REQUIREMENTS:

○ Standard Torsion 2”- 12”	Requires - 13”
○ Standard Torsion 2”- 15”	Requires - 16”
○ Standard Torsion 3”-	Requires – 17”
○ Low Headroom Torsion 2” –Rear Mount	Requires – 7”
○ Low Headroom Torsion 3” –Rear Mount	Requires – 7”
○ Low Headroom Torsion 2” x 2”- Drums **outside** Front Mount	Requires – 10”
○ Low Headroom Torsion 2”x 2”– Drums inside Front Mount	Requires – 12”
○ Low Headroom Torsion 3”x 2”– Drums inside Front Mount	Requires – 12”
○ Low Headroom Torsion 3”x 3”– Drums inside Front Mount	Requires – 12”
○ Vertical Lift	Double door height plus12”
○ Hi-Lift	Top of door to ceiling less 12”
○ Operator	Additional 4”
○ Pitched Track 2”	19”
○ Pitched Track 3”	21”

****Large doors may take additional Headroom. Please contact Customer service.**

Preparing the Opening

Removal of the existing door

Generally there are two types of springs used, Extension springs and torsion springs. If your present door uses torsion springs, have a qualified door service professional remove them. 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.

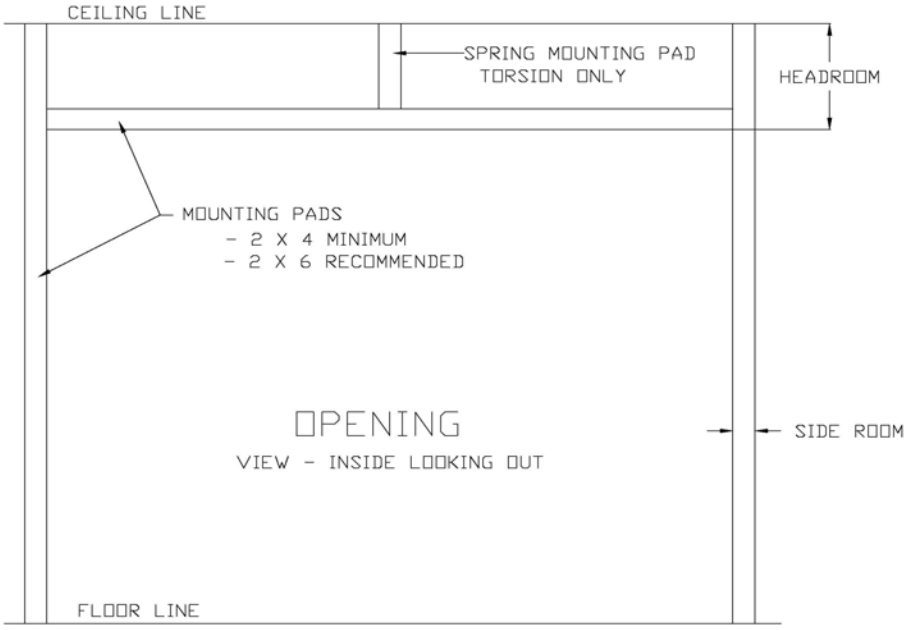
Wood Jamb Application

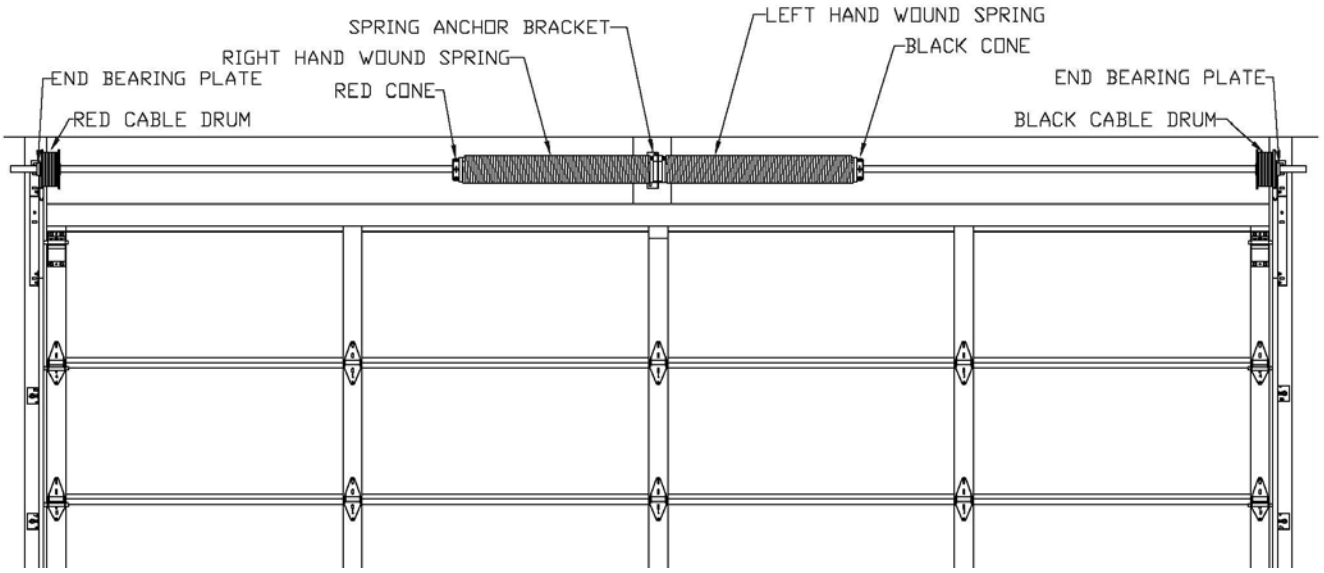
The opening should be square, plumb, and the same size as the door.
The side room requirement is 3 ½".
Headroom requirements are located on previous page.
The mounting pads (2" x6" recommended) must be securely installed to jamb and header. The side mounting pads should extend at least 12" above the header for standard installation.

Spring mounting pads are also required and should be securely mounted and made of good quality material not subject to splitting. The installer must furnish stop molding (Weather stripping) for making a complete weather seal.

Steel Jamb Application

The door must be 2" wider than the opening in order to allow for a 1" overlap on the sides.





Standard Instructions

For North Central Door Company steel sectional overhead doors

Installing Sections

Step1: Temporarily attach the door stop to the header and jambs. The door stop should be flush with the inside face of the jamb. See figure 1.

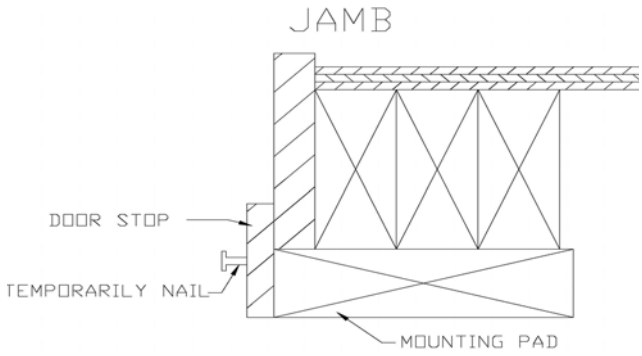


Figure 1

Step 2. Select the bottom section and place it face down on saw horses. Attach the lower leaf of the #1 hinges to the top of the center stiles using two ¼" x ¾" silver drilling "tek" screws. If the door has a 2" track- attach #1 hinges to the top of the end stiles, if your door has a 3" track-attach #3 hinges to the top of the end stiles. Hinges should always be placed with the hinge number on the lower leaf and the slotted holes on the upper leaf so the number can be read once the section is placed in the door opening. See notes below and figure 3.

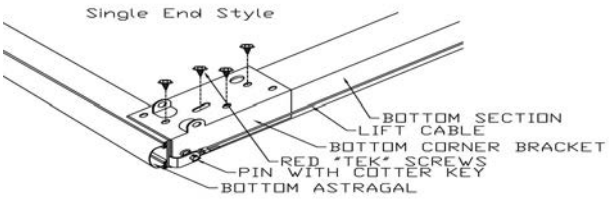


Figure 2

Note: Some doors are manufactured with the double-end styles and require double-end hinges and long stem (7") rollers. See figure 3.

Note: END HINGE STAGING
2" Track- End hinge staging always starts with #1 hinges.
3" Track- End hinge staging always starts with #3 hinges.

Step 3: Attach the loop on the lift cables to the pin on the bottom corner bracket. See figure 2 & 3.

Step 4: Attach bottom corner brackets to the bottom section with at least four ¼" x ¾" RED self-drilling TEK screws. See figure 2 &3.

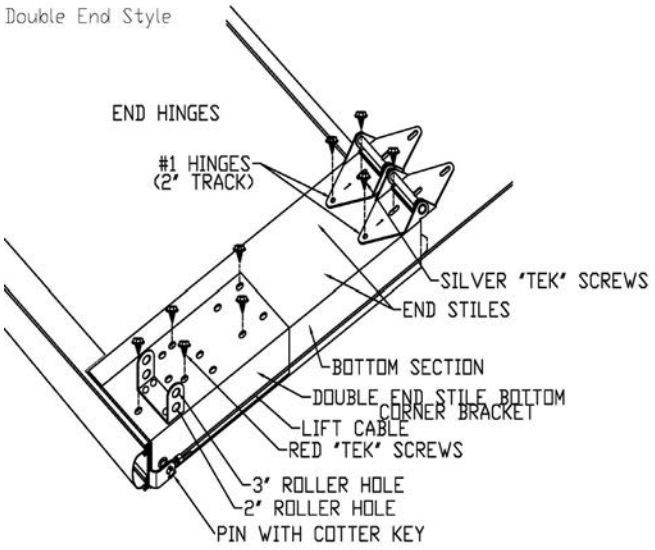


Figure 3

Step 5: At this time struts, if supplied with your door, should be installed. Doors 12' to 14'2" wide are supplied with one strut which must go on the top of the top section. Doors 14'3" wide and over are supplied with a strut for each section. Doors less than 12' do not require any struts. If struts are not supplied with your door, go to step 6.

Step 5: (continued) With the section laying face down, position the strut just below the lower leaf of the hinges. Place a small 1 x 4 block in the center of the section between the strut and the section. See figure 4.

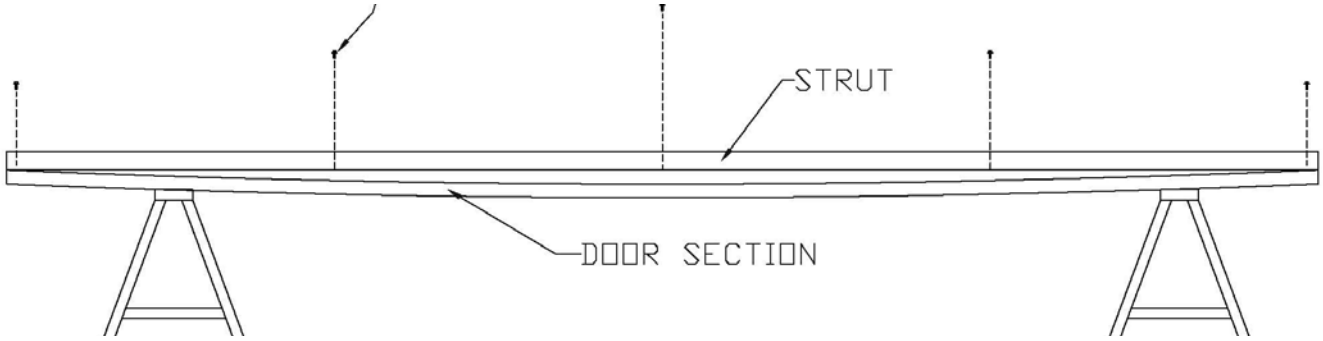


Figure 4

Fasten the strut with ¼" x ¾" tek screws starting at the ends. Remove the wood block and continue to attach the strut, working toward the center. This will stress the section and prevent it from bowing when the door is open. Repeat this procedure for each section. See figure 5.

Note: Pre-drilled holes on the struts may not align with the section stiles. "TEK" screws are equipped with self drilling tips so no pre-drilling is required.

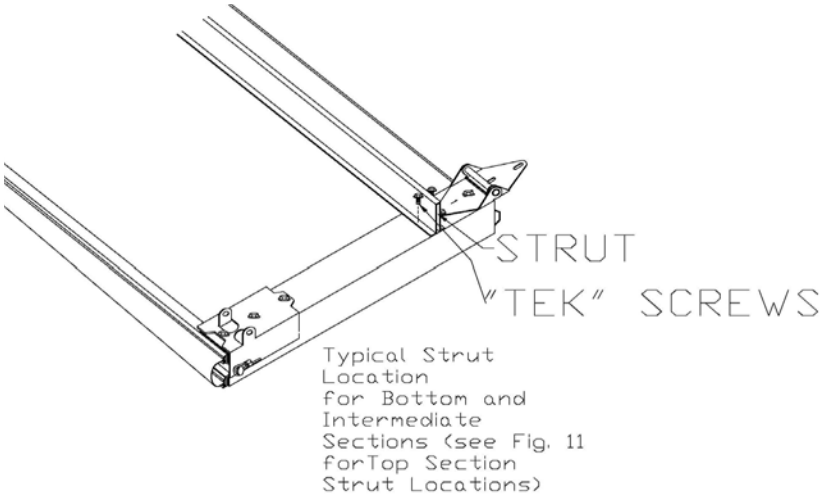


Figure 5

Step 6: Place the bottom section in the opening. Level and hold in place with nails driven into the jamb and bent over the edge of the section. Shim if necessary to level section. See figure 6.

Roller hinges are numbered. All center hinges are #1 hinges. If your door has 2" track #1 hinges are also used as the end hinges between the bottom and #2 section. #2 hinges are used only as end hinges between the #2 and #3 section. #3 hinges are used only as end hinges between #3 and #4 section and so on. If your door has 3" track #3 hinges are used as the end hinges between the bottom and #2 section. #4 hinges are used between the #2 and #3 section. #5 hinges are used between the #3 and #4 section, and so on. See figure 7.

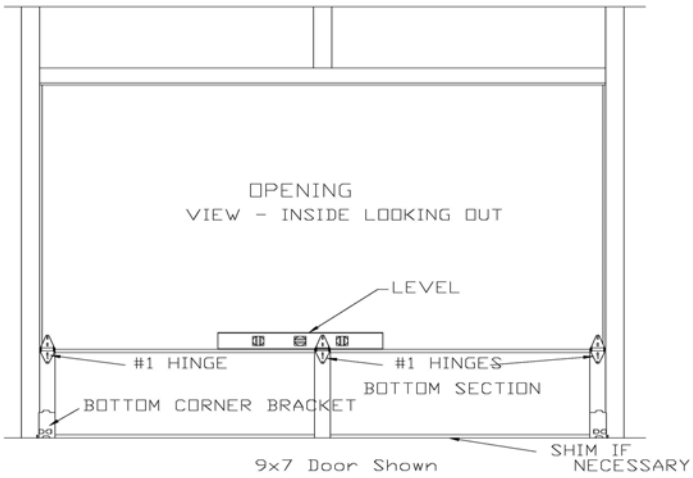


Figure 6

Note: END HINGE STAGING
2” track-End hinge always starts with #1 hinges.
3” Track-End hinge staging always starts with #3 hinges.

Step 7: Continue attaching the hinges and struts, if supplied, to the remaining intermediate sections and stack them in the opening See figure 7, and secure with nails driven into the jamb and bent around the edge of the section as seen in figure 8.

Note: Attach the upper leaf of the hinges to each intermediate section as you stack them in the opening. (Do not tighten them so the sections will seat tightly.)

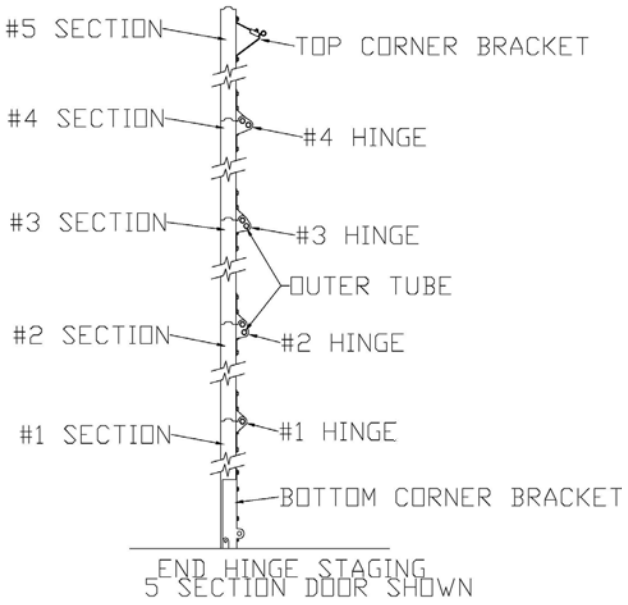


Figure 7

Step 8: Attach the top corner brackets and strut, if supplied, to the top section and stack in the opening. Remember, double end stile doors require two top corner brackets per side. Attach each top corner bracket with four ¼” x 3/8” silver TEK screws.

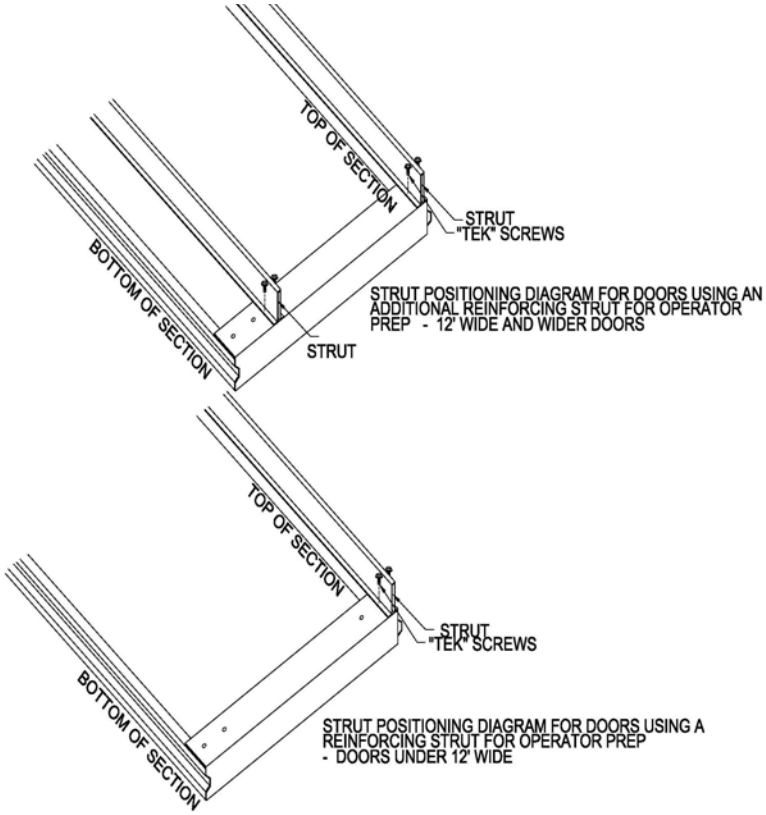


Figure 9

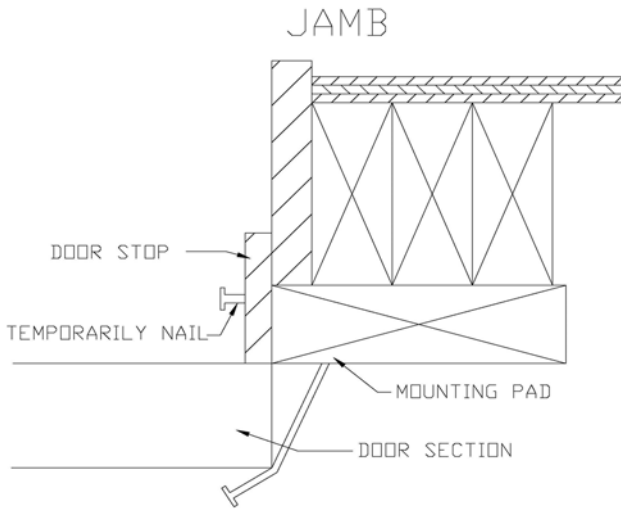


Figure 8

Step 9: Check to make sure the door is level.

Step 10: Go back and tighten all hinge screws securely. place long stem (7") rollers in the bottom corner brackets, and Short stem (3 ½") rollers in all other end hinges if using single end style, if double end style all hinges will get long stem rollers.

Vertical track Installation

Step 11: Select the vertical (straight) tracks (approximately 8" less than the door height in standard headroom) and loosely bolt the jamb brackets and flag to each using 1/4" x 5/8" track bolts and nuts. Use only one track bolt per jamb bracket and place it in the center slotted hole. Make sure the heads of the track bolts are on the inside of the track. See figure 10. (If Angle mount track is ordered track will already be assembled.)

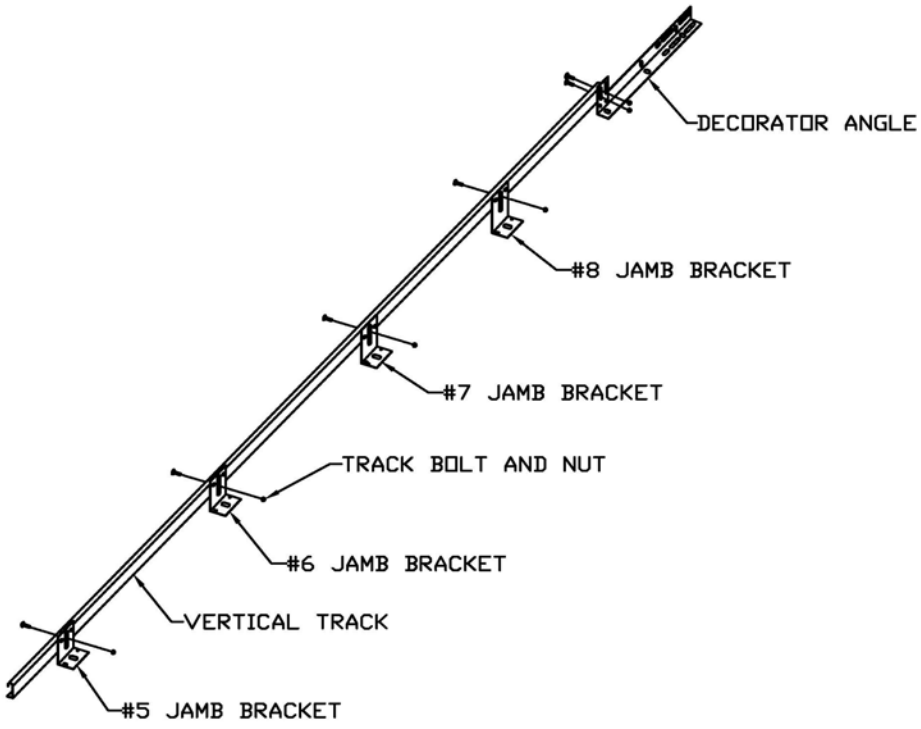


Figure 10

Note: Jamb brackets are numbered by size, with the smaller numbers near the bottom and increasing as you work up the track.

Step 12: Slip the vertical track over the rollers. Maintain 1/2" - 3/4" clearance between the edge of the door and the inside edge of the vertical track. See figure 11.
The top of each vertical track must be equal distance from the top of the leveled door.

Step 13: Attach the jamb brackets and the flag (or vertical angle if angle mount track) to the jamb using 5/16" x 1 5/8" lag screws maintaining 1/2" - 3/4" clearance between the track and door. Tighten all track bolts.

Special note: it is imperative that the vertical tracks are plumb and level with each other for proper operation of your overhead door.

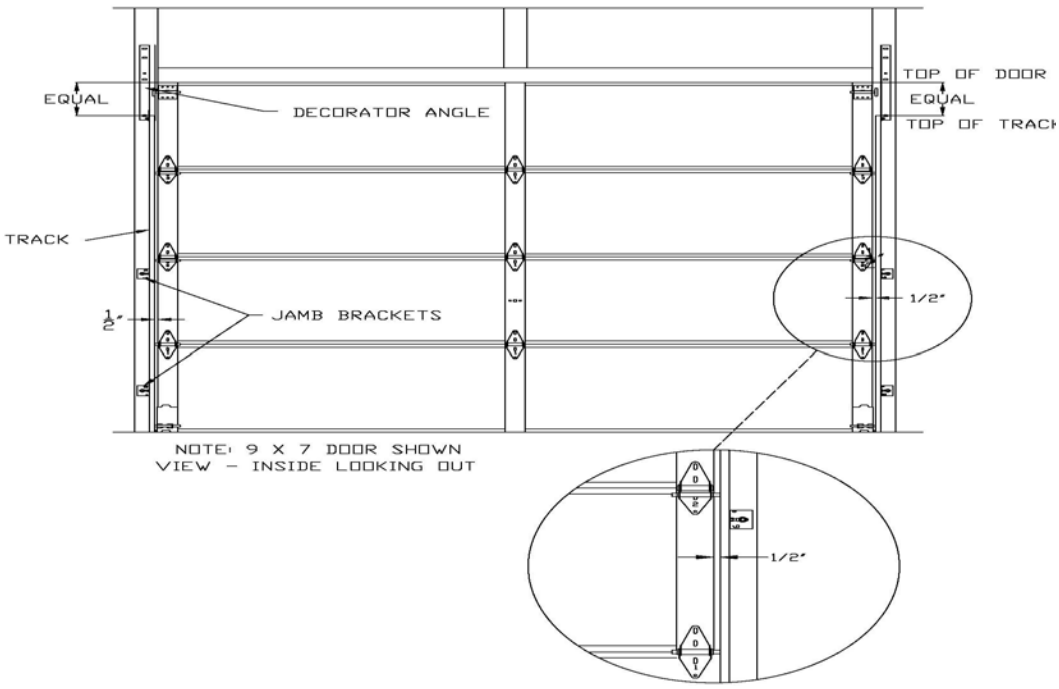


Figure 11

Installation of horizontal track

Step 14: Select the horizontal (curved) track. Tie a rope through the hole in the rear of the horizontal track. Raise the rear of the track to the approximate finished position and tie it off. See figure 12.

Step 15: Raise the front of the horizontal track and slip the radius over the top roller until the horizontal track butts up to the vertical track. See figure 12.

Step 16: Fasten the horizontal angle to the flag using 3/8" X 3/4" carriage bolt and flange nut. See figure 12.

Step 17: Attach the radius of the horizontal track to the flag with two 1/4" x 5/8" track bolts and flange nuts so the heads of the bolts are on the inside of the track. See figure 12.

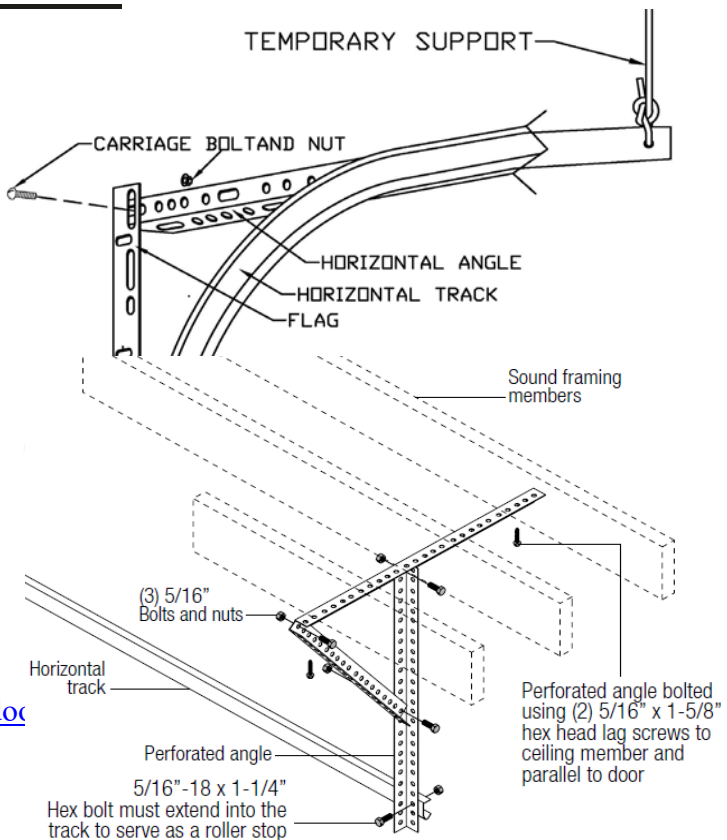


Figure 12

Step 18: The rear track hanger and sway braces need to be installed at this point. They are used to attach the rear of the horizontal track to the ceiling joist and to prevent the tracks from spreading. These hangers must be strong enough to hold the full weight of the door. See figure 13.

If door is taller then 8 feet follow chart below for recommended center hangs. See figure 14.

Note: The placement of rear track hangers is critical to the proper operation of the door. The horizontal track must be level and square to the door. How square the track is can be checked by taking similar diagonal measurements. The measurements from corner to corner should be the same. Adjust the position of the horizontal track if they are not within ½" of each other. When the track is square and level the rear track hangers can be fastened permanently to the ceiling. See figure 15.

Figure 13

IN ADDITION TO THE BACK HANGER
CENTER HANGERS ARE REQUIRED
AS FOLLOWS:
8'3" - 12' HIGH - 1 CTR HANGER
12'3" - 16' HIGH - 2 CTR HANGERS
16'3" - 18' HIGH - 3 CTR HANGERS
18'3" - 20' HIGH - 4 CTR HANGERS

Figure 14

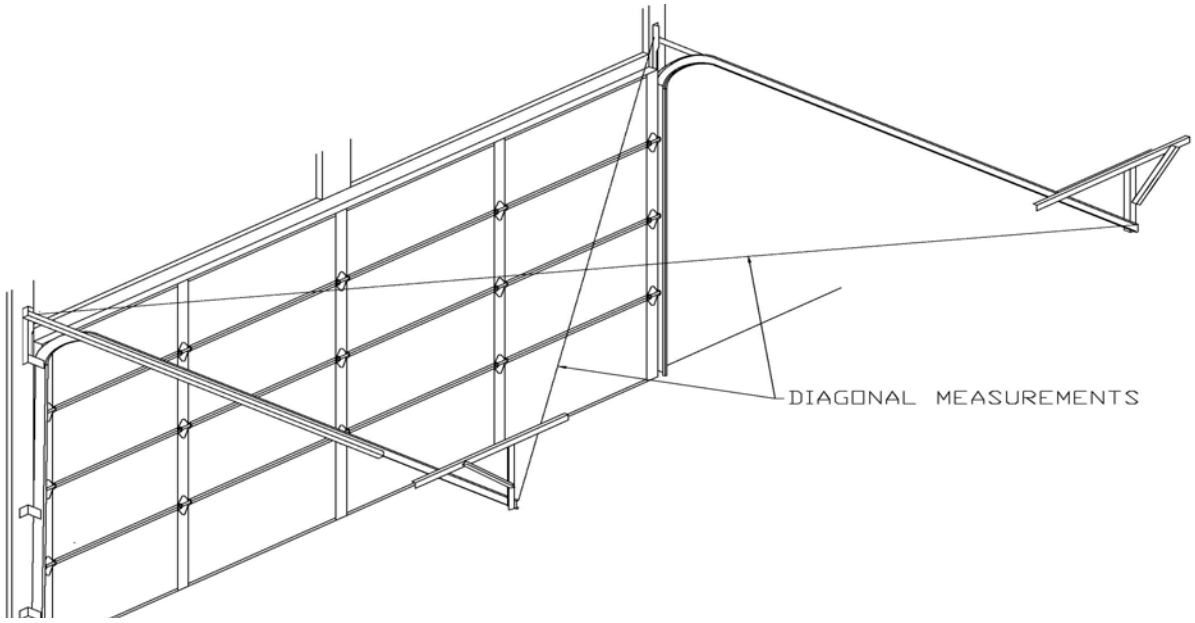


Figure 15

▼ WARNING ▼

Rear track hangers must be strong enough to support the entire weight of the door.

Step 17: With the track installed, aligned, and secured the top section can now be properly adjusted. Loosen the bolts holding the slide on the top corner brackets on the top section. With the slide loose, pull the roller and the slide on the top corner bracket toward you and push the section toward the jamb. Holding these parts in this position tighten the slide bolt. See figure 16.

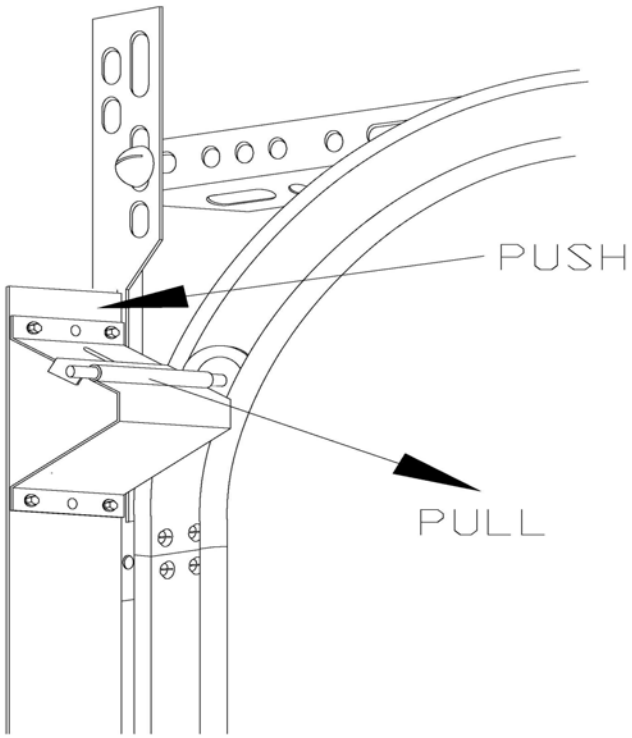


Figure 16

Step 18: The remainder of the lock components should be installed at this point, if applicable.

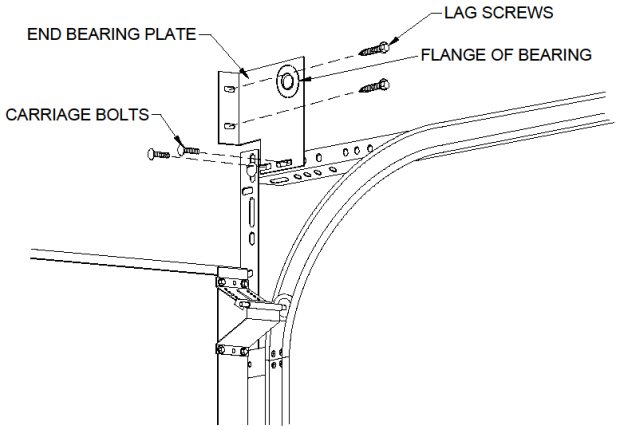


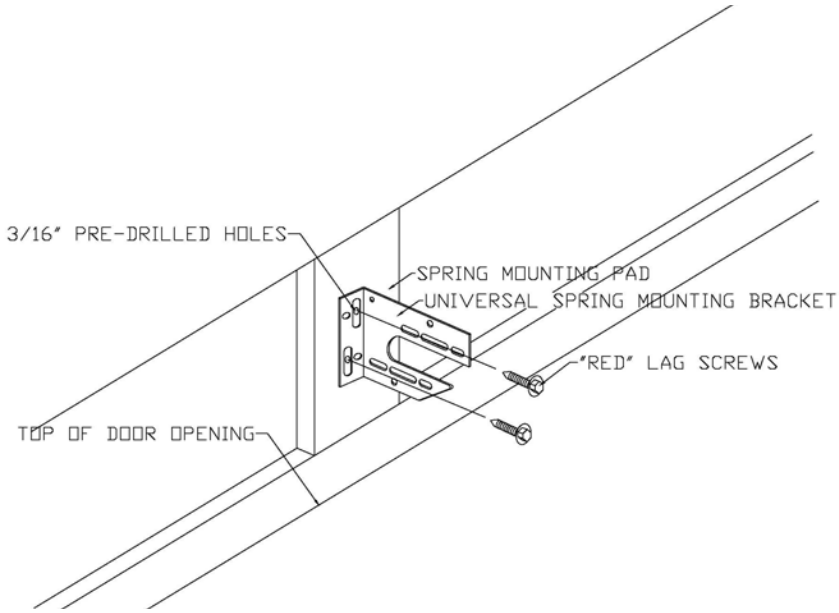
Figure 17

Torsion Spring Assembly

Step 19: Lock the door in the down position securely.
Step 20: Fasten the end bearing plates to the horizontal angle with two 5/16" carriage bolts and flange nuts. Be certain the flange of the bearing is to the inside (door side) of the track. Fasten the end bearing plates to the jambs with one 5/16" x 1 5/8" lag screw. See figure 17.

Note: The end bearing plates may have two sets of slotted holes. Use the bottom most holes with a 12" radius horizontal track and use the upper holes with a 15" radius track.

Step 21: Mount the universal spring anchor (USA) bracket to the spring mounting pad. Make sure the universal spring anchor bracket is mounted in-line, vertically, with the end bearing plates. Attach the universal spring anchor bracket with two RED 5/16" x 1 5/8" lag bolts. See figure 20. 3/16" pilot holes should be drilled to avoid splitting the wooden mounting pad(s). If the mounting pad(s) are steel use 5/16" self-drilling screws for surface mounting, 5/16" bolts for through-bolt mounting or weld the universal spring anchor bracket(s) directly to the structure.

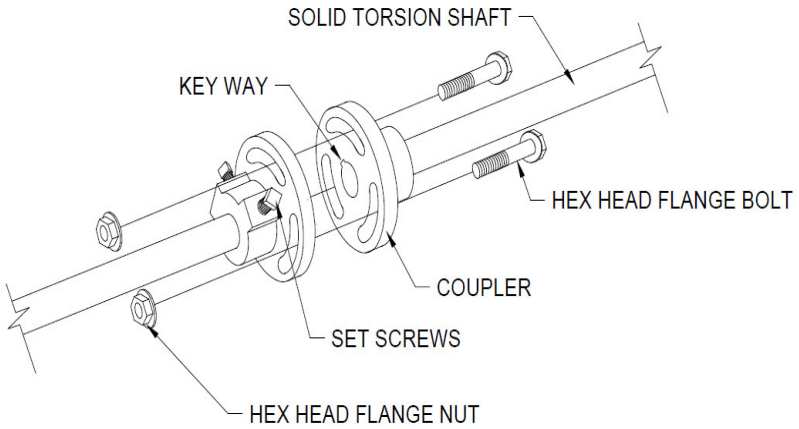


▼WARNING ▼
The universal spring anchor bracket must be securely fastened before springs can be wound. If the mounting splits or cracks it MUST be replaced. Failure to adequately secure the universal mounting spring anchor bracket could result in serious or fatal injuries.

Figure 20

Note: Larger overhead doors are supplied with a two piece solid torsion shaft. This shaft must be coupled together. Figure 21 illustrates how the coupler is installed.

Note: Larger door will also have more then one USA (one for each spring). Also on doors over 18'3" in width there will be two extra support brackets used for extra spring support.



Step 22: Slide the 1” shaft bearing on the shaft. Slide the torsion spring(s) on the shaft. **The springs with the red winding cone should go on the left side and the spring with the black winding cone should go on the right side. See figure 21.**

Note: Be sure to slide the shaft bearing on the shaft so that the bearing body will slide inside the spring mounting cone of the torsion spring and set flush with the outside of the spring mounting cone.

Step 23: Finally, the cable drums should be slid on the shaft. The red drum should go on the left and the black drum on the right. Make sure the set screws are facing toward the center of the door. See figure 21 or 21a.

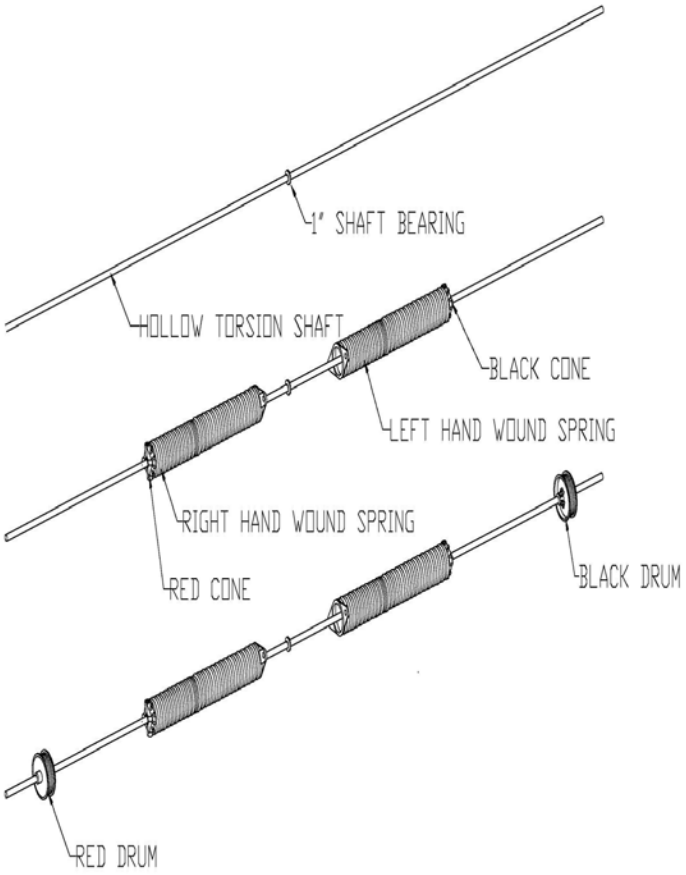


Figure 21

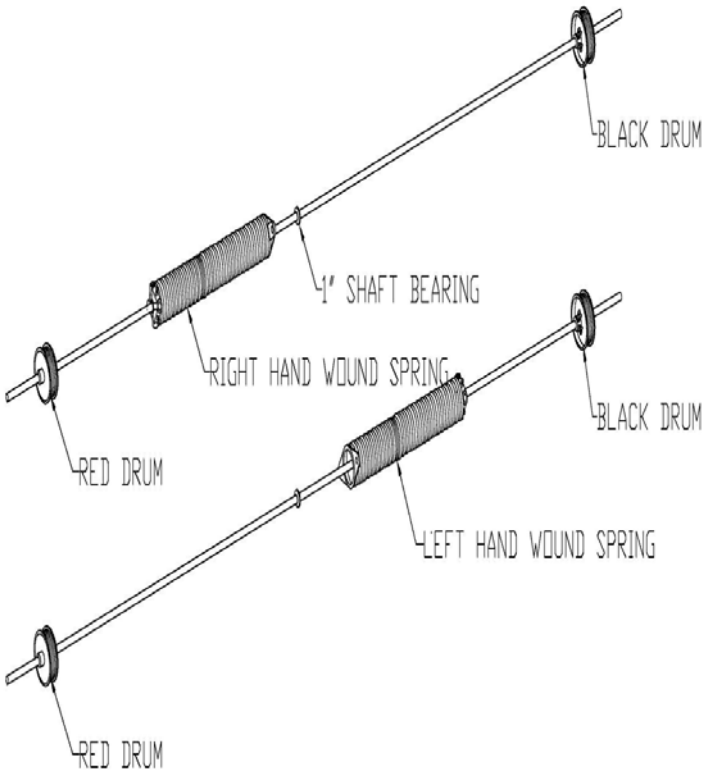
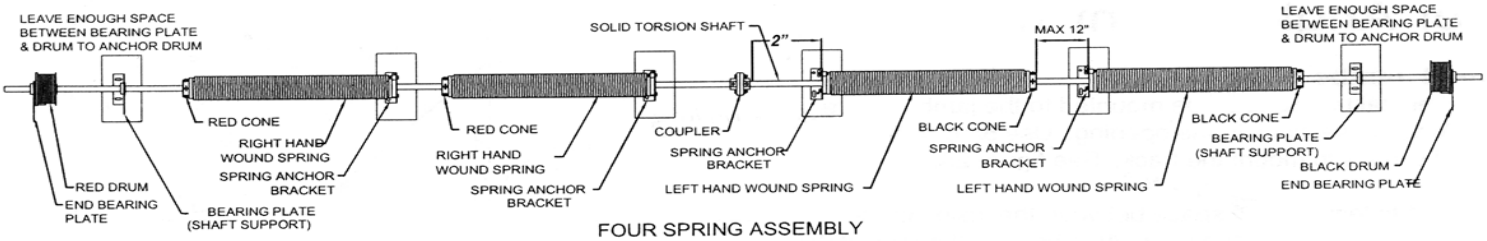
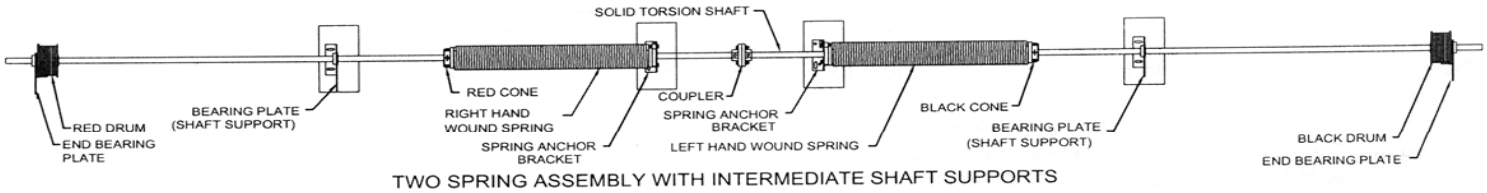


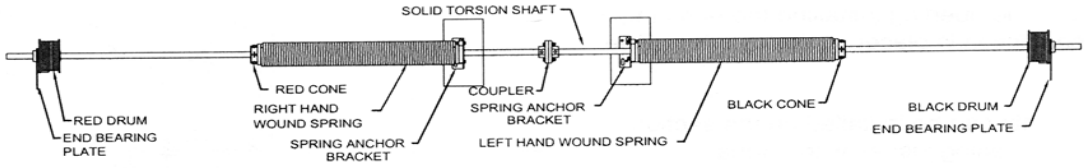
Figure 21a



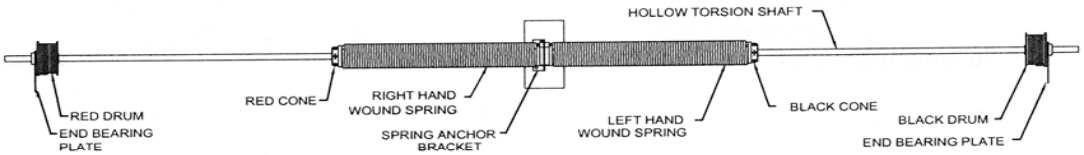
FOUR SPRING ASSEMBLY



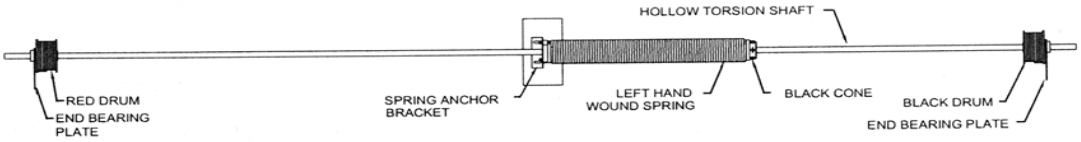
TWO SPRING ASSEMBLY WITH INTERMEDIATE SHAFT SUPPORTS



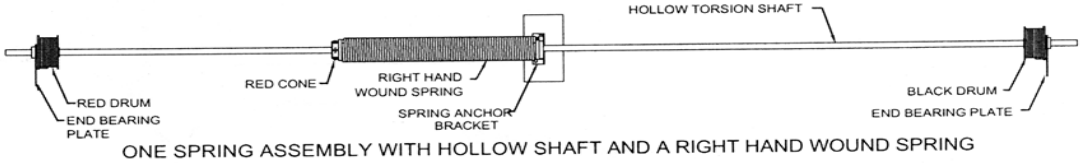
TWO SPRING ASSEMBLY WITH SOLID SHAFT



TWO SPRING ASSEMBLY WITH HOLLOW SHAFT



ONE SPRING ASSEMBLY WITH HOLLOW SHAFT AND A LEFT HAND WOUND SPRING

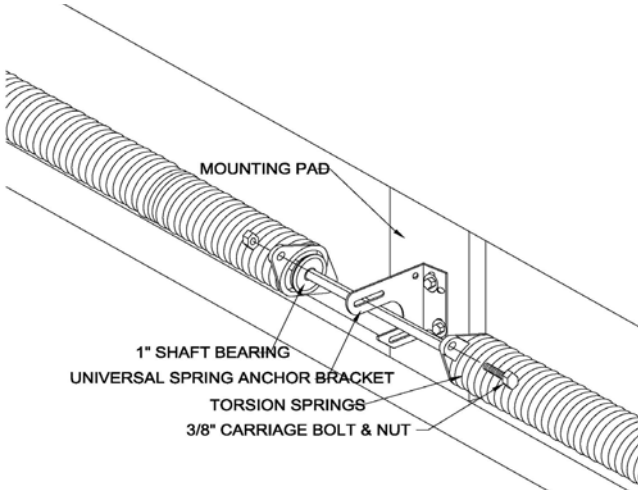


ONE SPRING ASSEMBLY WITH HOLLOW SHAFT AND A RIGHT HAND WOUND SPRING

Figure 28

Step 24: Place the torsion assembly in the over-head position by slipping first one end of the shaft in one of the end bearing plates, then slip the other end in the other end bearing plate, making sure you have equal amounts of extra shaft on both sides.

Step 25: Slip the center of the shaft into the large slot in the universal spring anchor bracket to support the center of the shaft.



▼ WARNING ▼
The universal spring anchor bracket must be securely fastened before springs can be wound. If the mounting splits or cracks it **MUST** be replaced. Failure to adequately secure the universal mounting spring anchor bracket could result in serious or fatal injuries.

Figure 22

Step 26: Slip the torsion spring(s) against the universal spring anchor bracket and align the holes in the spring cone(s) with the holes in the universal spring anchor bracket.
Fasten the torsion spring(s) to the universal spring anchor bracket with two 3/8" x 1 ½" hex head bolts and hex nuts. See figure 22.

Note: Make sure the shaft bearing position is in the end of the torsion spring correctly. The shaft bearing should be placed so that the bearing body is inside the spring mounting cone and the flange of the bearing is flush with the outside of the spring mounting cone. The bearing should nest neatly inside the spring mounting cone, with the race of the bearing resting on the Universal Spring Anchor Bracket.

Note: If two (or more) springs have been supplied with your door, all springs should be aligned so that the bolts attach to the USA.

Step 27: Inside looking out, feed the loose end of the left hand lift cable up and over the back side of the cable drum and hook the cable stop through the notch on the drums. See figure 23

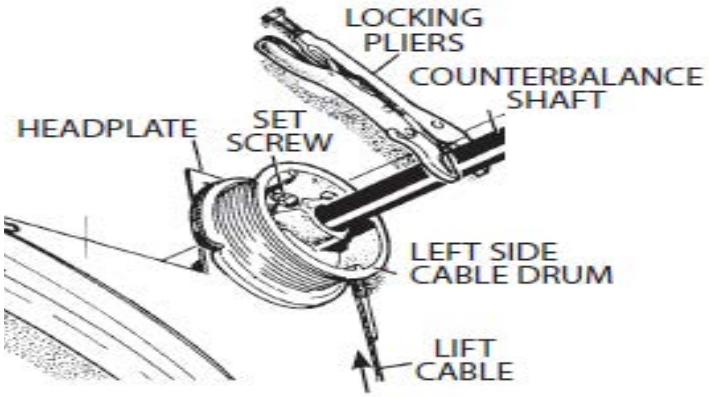


Figure 23

Step 28: Slide the red drum (left hand) out until it butts up against the bearing on the end bearing plates. Turn the drum until all the slack is out of the cable, making sure cable follows in the grooves of the drum and tighten the set screw until it dimples the torsion shaft. Using a vise grip securely clamp the torsion shaft so the cable on the left side is taut and the vise grip is braced against the header. See figure 23. **Do not over tighten the set screws as drum damage may occur. There should be at least 1/2 pre-wrap of cable on the cable drums.**

Step 29: Repeat step 28 for the black drum (right hand).

Step 30: At this point you are ready to wind the torsion spring(s). Putting tension on springs must be done with safety in mind first. Place a straight line on the springs with soap stone, chalk, paint, etc which can be used to count the number of turns on the spring as they are applied. See figure 24. Make sure the door is level and place a pair of locking pliers above one roller on each side of the door to prevent it from rising once the springs are wound.

Note: Reference the packing slip in the hardware box to determine the required number of spring turns.

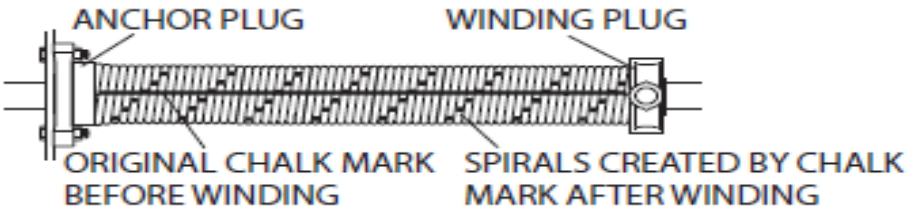


Figure 24

Warning!

Never use screwdrivers or incorrectly sized winding bars. Winding bars must fit snuggly into holes in spring winding cones. Attempting to wind springs with loosely fitting rods, screwdrivers or other improper tools can result in severe injury or death.

Step 31: Determine the proper direction for winding the springs. Turns will be applied to the spring by winding the end in the direction the cable drums will turn as the door is closing. This direction should correspond to the direction the end coil of the spring is pointing. For standard lift doors, the springs will wind **upwards**.

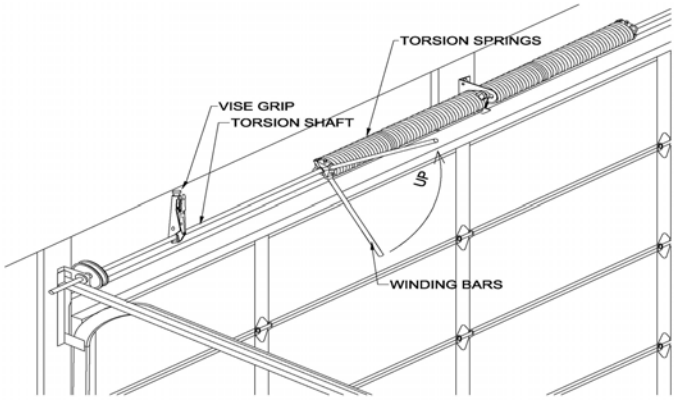
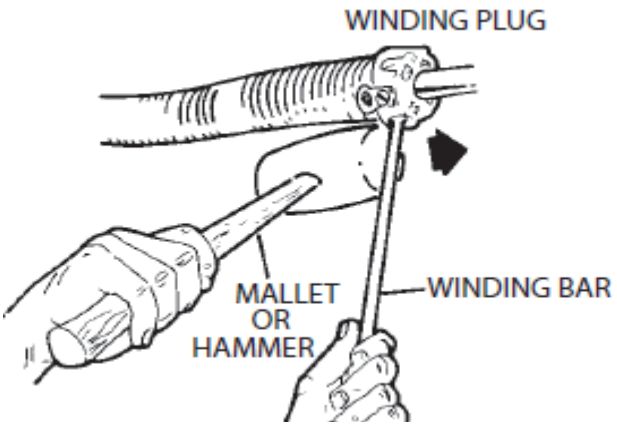


Figure 25

Step 31a: Stand to the side of the winding bars and be sure to insert the bars all the way into the hole. Utilizing the proper sized winding bars, insert one winding bar into the winding cone and rotate the spring upwards 1/4 turn until the next winding hole is accessible. Insert the second winding bar into this hole. Once the second winding bar is inserted and holding the spring tension, remove the first winding bar this applies one ¼ turn using the second winding bar. Continue applying turns using this 1/4 turn alternating pattern until the required turns are applied. See figure 25

Step 31 b: While holding spring tension, stretch the spring by lightly tapping on the winding bar to prevent to spring coils from binding. Tighten the set screws in the spring winding cones to secure the spring tension to the shaft. **Do not over tighten the set screws as this could damage the spring cone. Once the set screws contact the shaft, tighten the screws one full additional turn.**

With set screws tightened, apply pressure in the opposite direction with the winding bar to verify the sets screws are secure. Repeat spring winding for the remaining springs if applicable.



Step 32: After winding all of the springs, be sure all ladders, scaffolding, etc. have been cleared from the travel area of the door. Remove the locking pliers from the spring shaft(s).

▼ WARNING ▼

Before unlocking your door be sure you have the correct number of turns on each spring and that the door is not going to "rocket" out of the opening. Be sure to open the door slowly and watch to see that the rollers are not coming out of the track or hinge tubes. Before opening your door for the first time be certain all track supports, brackets and supporting bolts are secure and tightened.

Step 33: Unlock the door and slowly raise it to about the half open position. Adjust and secure the horizontal tracks, maintaining ½" clearance between the track and the door.

Final Adjustments

** WARNING **

Use extreme care when readjusting torsion springs. The springs and mounting hardware are under **EXTREME** tension and are potentially dangerous. Never adjust the center bearing plate after springs are wound.

CHECK AND ADJUST DOOR

- The door should open and close easily.
- With proper adjustment the door will hang into the opening 2" to 4". An electric opener can be adjusted so the door is pulled completely even with the opening.
- If the door is difficult to open but falls closed, more spring tension is required. If the door opens by itself and is difficult to close, less spring tension is required.
- To adjust extension spring tension, clamp the door in the open position. Tension can be changed by moving the "S" hooks to different holes in the horizontal track angles or adjusting the cable in the three hole clip. Both sides must be adjusted equally. Moving the hooks closer to the door opening increases tension.
- Tension can also be adjusted slightly by releasing spring tension and relocating the eye bolts higher on the track hanger. When reinstalling, the higher the eye bolt, the greater the tension.
- If you have an irregularity in your floor that creates a gap that the bottom astragal cannot fill, sometimes inserting an old piece of garden hose in the astragal loop will help keep the void filled.
- To adjust torsion spring tension, the door should be locked in the down position. With vise grips 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 ¼ turn increments.
- Binding of the door near closed and/or open position requires the track positioning to be checked. The track can be moved away from the door by adjusting the jamb brackets or flags. Care must be taken that the rollers remain in the hinges and do not come out of top roller brackets. Binding can also occur if the molding is attached too tightly against the door. The door stop molding should be repositioned lightly against the door. Allow the thickness of a dime between the door stop molding and the door.

MAINTENANCE AND REPLACEMENT PARTS

Annually do the following:

Lubrication

Lubricate all moving parts of the door with light household oil.

- Roller bearing and roller shafts.
- Lift cables at the studs and bottom bracket.
- Bearing of the sheaves.
- Lock hardware where surfaces turn or slide.
- Full length of torsion spring to reduce friction between coils.

Note: Never grease or lubricate track.

Check door hardware

- Check for loose or bent hinges.
- Tighten loose fasteners.
- Straighten or replace bent hinges.
- Check roller for broken wheels, bent shafts, or worn out bearings.
- Check the door and track supports for loose or missing bolts, screws, etc. and tighten.

PARTS:

Replacement parts are available from North Central Door authorized dealers.

When ordering parts, always include the following:

- Part Name
- Serial Number
- Door Size
  (Width and height of door)

For the location of the North Central Door dealer nearest to you, or if you need additional assistance, please visit our website, email, or call North Central Door at:

North Central Door Company
1-800-677-8431
www.northcentraldoor.com

Email:
ncdsales@northcentraldoor.com

NOTES