



# TORSION SPRINGS

## Installation Instructions and Owner's Manual Supplement for Models 5120/5145/9100/9405

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**NOTE:** Use this supplement in conjunction with the main Installation Instructions and Owner's Manual. These instructions replace the corresponding pages/ steps of the main Installation Instructions and Owner's Manual. The instructions included in this document are ONLY those which deviate from the standard installation. All WARNINGS and CAUTIONS listed in the main Installation Instructions and Owner's Manual are applicable to these instruction.

### 9100/ 9405 Windload Installation Instructions and Owner's Manual (PN: 323293)

- (1) Replace Step 7 with Step 1 of this supplement.
- (2) Replace Step 9 with Step 2 of this supplement.
- (3) Replace Steps 17-32 with Steps 3-10 of this supplement.

### 5120/ 5145 Windload Installation Instructions and Owner's Manual (PN: 327721)

- (1) Replace Step 7 with Steps 1 of this supplement.
- (2) Replace Step 9 with Step 2 of this supplement.
- (3) Replace Steps 17-32 with Steps 3-10 of this supplement.

<h1>1</h1>	<h2>Counterbalance Cables</h2>	
<p><b>Tools Needed:</b> None</p>	<p><b>IMPORTANT:</b> RIGHT AND LEFT HAND IS ALWAYS DETERMINED FROM INSIDE THE GARAGE LOOKING OUT.</p> <p><b>NOTE:</b> For door section identification see page 4 of the main Installation Instructions and Owner's Manual.</p> <p>Uncoil the counterbalance cables and slip the loop at the ends of the cables over the milford pins on the bottom section. Insert a roller in the bottom bracket on the bottom section and another roller in the #1 end hinge at the top of the bottom section. Repeat for other side.</p> <p><b>NOTE:</b> Verify astragal (bottom seal) is aligned with door section. If there is more than 1/2" excess astragal on either side, trim astragal even with door section.</p>	

<h1>2</h1>	<h2>Vertical Track</h2>	
<p><b>Tools Needed:</b> 3/16" Drill Bit Power Drill 7/16" Socket Driver Tape Measure Level Vice Grips</p>	<p><b>IMPORTANT:</b> THE TOPS OF THE VERTICAL TRACKS MUST BE LEVEL FROM SIDE TO SIDE. IF THE BOTTOM SECTION WAS SHIMMED TO LEVEL IT. THE VERTICAL TRACK ON THE SHIMMED SIDE, MUST BE RAISED THE HEIGHT OF THE SHIM.</p> <p>Position the left hand vertical track assembly over the rollers of the bottom section. Make sure the counterbalance cable is located between the rollers and the door jamb. Drill 3/16" pilot holes for the lag screws. Secure jamb brackets and flagangles to the jamb, using 5/16" x 1-5/8" lag screws. Attach vice grips to the end of the counterbalance cable and hang over flagangle. Repeat for the right side.</p>	

# 3

## End Bearing Brackets

### Tools Needed:

- Power Drill
- 7/16" Socket Driver
- 9/16" Socket Ratchet Wrench
- 9/16" Wrench

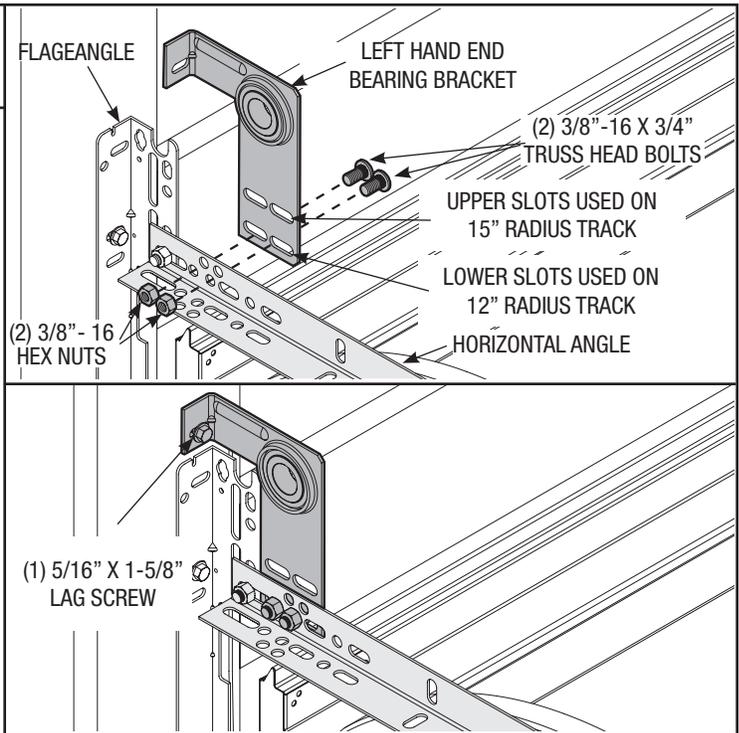
**IMPORTANT:** RIGHT AND LEFT HAND IS ALWAYS DETERMINED FROM INSIDE THE GARAGE LOOKING OUT.

End bearing brackets are right and left. Using appropriate slots in the end bearing bracket, position above the flagangle and secure the end bearing bracket to the horizontal angle using (2) 3/8"-16 x 3/4" truss head bolts and (2) 3/8"-16 nuts.

**IMPORTANT:** END BEARING BRACKETS MUST BE ATTACHED THROUGH THE LOWER SLOTS ON 12" RADIUS TRACK AND UPPER SLOTS ON 15" RADIUS TRACK.

Once the bracket is secured to the horizontal angle, secure the top of the end bearing bracket to the jamb using (1) 5/16" x 1-5/8" lag screw.

Repeat for other side.



# 4

## Center Bearing Bracket

### Tools Needed:

- Power Drill
- 7/16" Socket Driver
- Level
- Tape Measure
- Pencil
- 1/4" Torx Bit

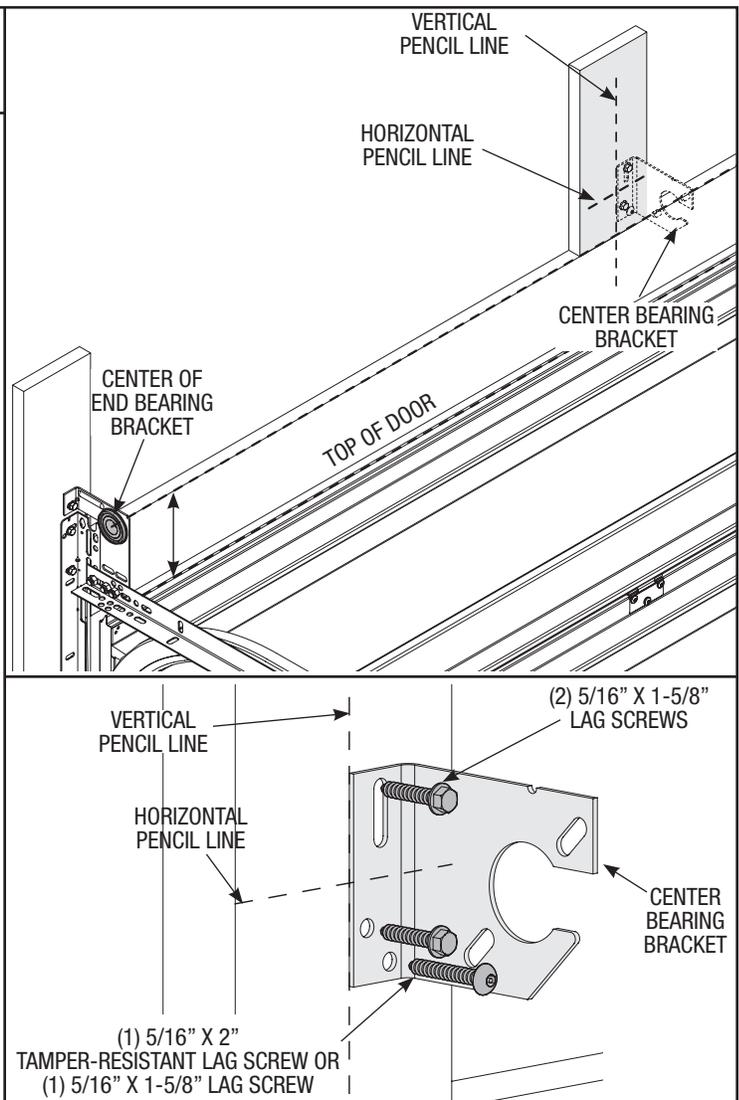
Measure to locate the center of the door and mark a vertical pencil line on the mounting surface above the door, to indicate the center line of the door.

Then, measure from the center of the bearing, in one of the end bearing brackets, DOWN to the top of the door. Using that dimension, measure UP from the top of the door and mark a horizontal pencil line on the mounting surface, intersecting the vertical pencil line.

Now align the edge of the center bearing bracket along the vertical pencil line on the mounting surface. Center the bearing bracket on the horizontal line. This will ensure the torsion tube is level between the center and end bearing brackets.

Attach the center bearing bracket, in this location, to the mounting surface, using (2) 5/16" x 1-5/8" lag screws and (1) 5/16" x 2" tamper-resistant lag screw.

**IMPORTANT:** USE THE 5/16" X 2" TAMPER-RESISTANT LAG SCREW ONLY IF MOUNTING SURFACE IS MOUNTED OVER MASONRY. TAMPER-RESISTANT LAG SCREW MUST BE ATTACHED THROUGH THE BOTTOM HOLE OF THE CENTER BEARING BRACKET.



# 5

## Torsion Spring Assembly

### Tools Needed:

None

**IMPORTANT:** RIGHT AND LEFT HAND IS ALWAYS DETERMINED FROM INSIDE THE GARAGE LOOKING OUT.

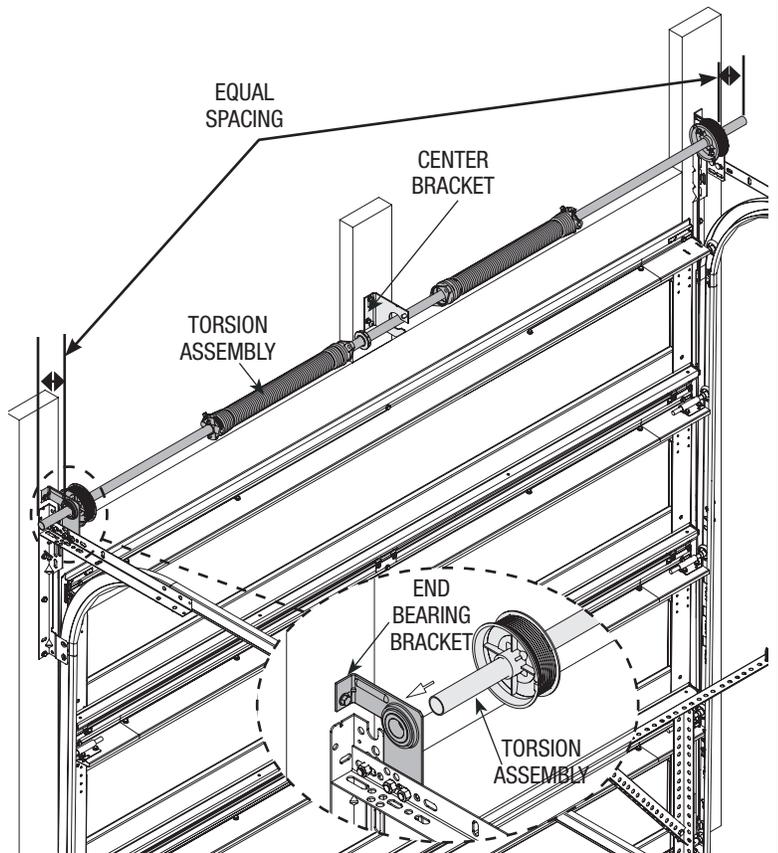
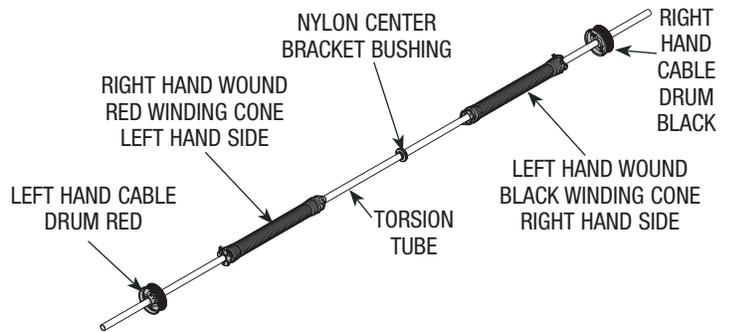
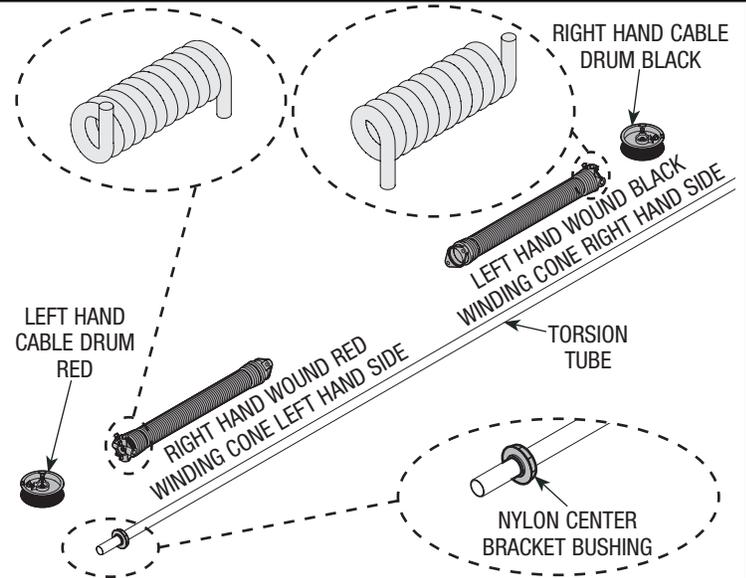
**NOTE:** Identify the springs provided as either right hand wound (red winding cone), which goes on the LEFT HAND SIDE or left hand wound (black winding cone), which goes on the RIGHT HAND SIDE.

Facing the inside of the door, lay the torsion tube on the floor. Lay the spring with the black color coded winding cone and the black color coded cable drum, at the right hand end of the tube. Lay the spring with the red color coded winding cone and the red color coded cable drum, at the left hand end of the tube.

**NOTE:** The set screws used on all torsion counterbalance winding cones and cable drums, are now colored red. DO NOT identify right and left hand by the set screw color.

Slide the nylon center bushing onto the torsion tube followed by the springs and cable drums. The nylon center bushing, springs and cable drums must be positioned, as shown.

With assistance, pick up the torsion assembly and slide one end of the tube through one end bearing bracket. Lay the torsion tube into the center bearing bracket and slide the other end of the tube into the opposite end bearing bracket. Position the torsion tube so that equal amounts of the tube extend from each end bearing bracket.



# 6

## Nylon Center Bushing

**Tools Needed:**

9/16" Socket

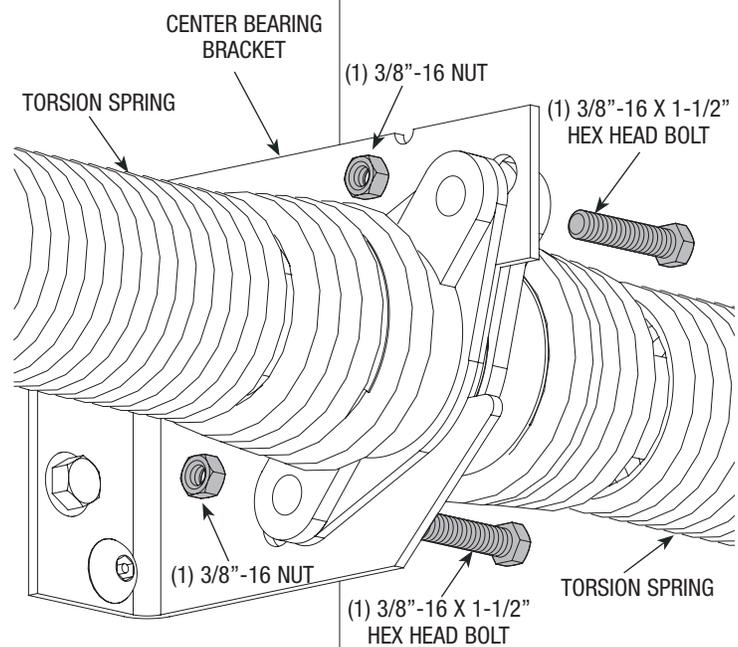
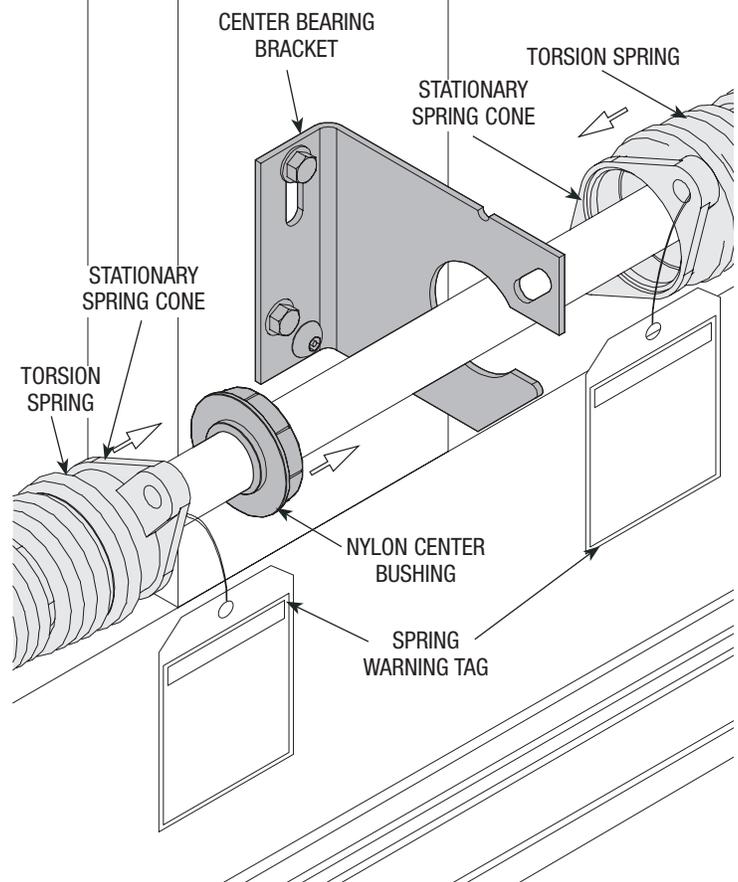
Ratchet Wrench

9/16" Wrench

Slide the nylon center bushing into the stationary spring cone at the end of the spring and align the stationary spring cone(s) with the holes in the center bearing bracket. Secure the spring(s) to the center bearing bracket with (2) 3/8" - 16 x 1-1/2" hex head bolts and (2) 3/8" - 16 nuts.

**IMPORTANT:** SPRINGS UNDER TENSION CAN BE DANGEROUS.

**IMPORTANT:** THE SPRING WARNING TAG(S) SUPPLIED MUST BE SECURELY ATTACHED TO THE STATIONARY SPRING CONE IN PLAIN VIEW. SHOULD A REPLACEMENT SPRING WARNING TAG BE REQUIRED, CONTACT WAYNE-DALTON FOR FREE REPLACEMENTS.



# 7

## Counterbalance Cables

### Tools Needed:

- Vice Grips
- 3/8" Wrench

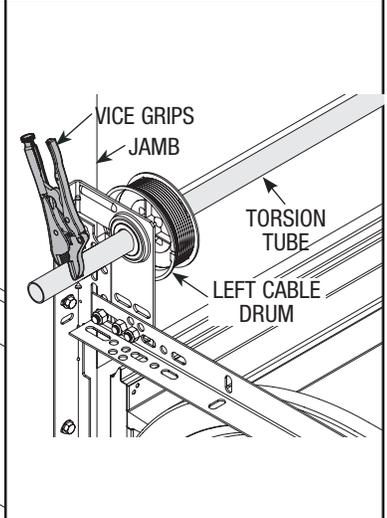
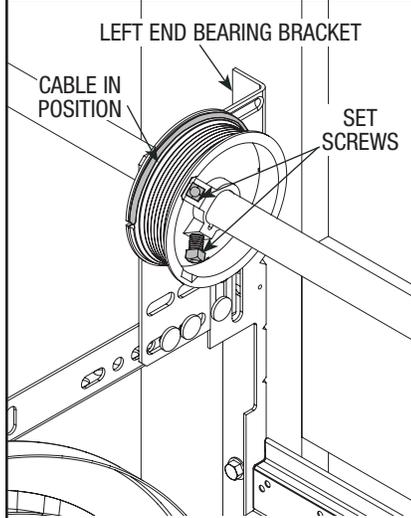
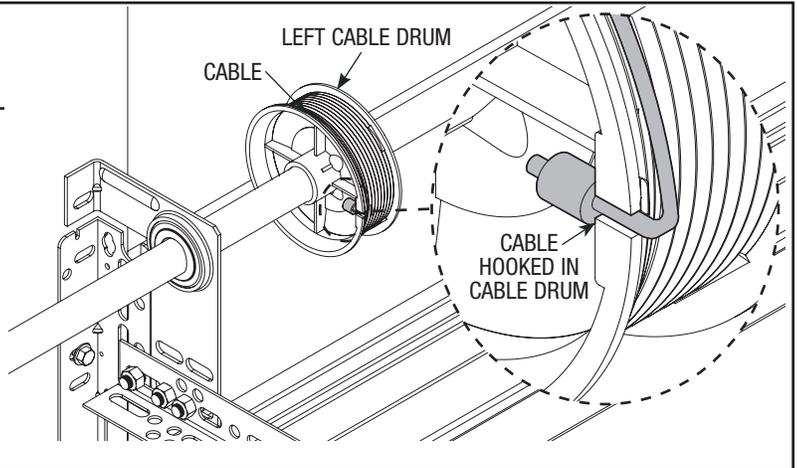
Release the vice grips from the end of the left hand counterbalance cable.

Thread the left hand counterbalance cable around the back side of the left hand cable drum and verify that there are no cable obstructions. Hook the cable into the left hand cable drum against the left hand end bearing bracket and tighten the set screws in the drum to 14-15 ft. lbs. of torque (Once set screws contact the tube, tighten screws one full turn).

Rotate the left hand cable drum and torsion tube until cable is taut. Attach vice grips to torsion tube and brace vice grips against jamb to keep cable taut.

Release the vice grips from the end of the right hand counterbalance cable. Thread the right hand counterbalance cable around the back side of the right hand cable drum and verify that there are no cable obstructions. Hook the cable into the right hand cable drum against the right hand end bearing bracket and rotate the right hand cable drum until cable is taut. Tighten set screws in right hand cable drum to 14-15 ft. lbs. of torque (Once set screws contact the tube, tighten screws one full turn).

**IMPORTANT:** CHECK EACH CABLE, MAKING SURE BOTH ARE SEATED PROPERLY ON THE CABLE DRUMS AND HAVE EQUAL CABLE TENSION.



# 8

## Securing Door for Spring Winding

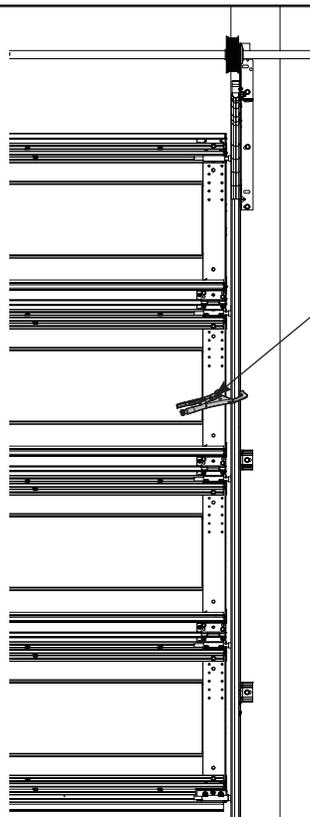
### Tools Needed:

- (2) Vice Clamps

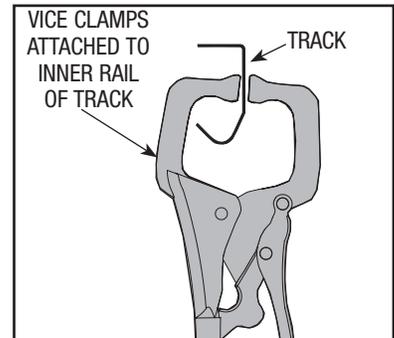
Place vice clamps onto both vertical tracks just above the third roller. This is to prevent the garage door from raising while winding torsion springs.

### **⚠ WARNING**

FAILURE TO PLACE VICE CLAMPS ONTO VERTICAL TRACK CAN ALLOW DOOR TO RAISE AND CAUSE SEVERE OR FATAL INJURY



PLACE VICE CLAMPS ABOVE 3RD ROLLER ON BOTH VERTICAL TRACKS



# 9

## Winding Torsion Spring(s)

### Tools Needed:

Approved Winding Bars

3/8" Wrench

Position a ladder slightly to the side of spring so that the winding cone is easily accessible, yet your body is not in direct line with the winding bars. Check the label attached to the spring warning tag for the required number of complete turns to balance your door.

6'-0" Door Height = Approx. 6-7/8 Turns

6'-5" Door Height = Approx. 7-1/4 Turns

6'-8" Door Height = Approx. 7-1/2 Turns

7'-0" Door Height = Approx. 7-7/8 Turns

7'-3" Door Height = Approx. 8 Turns

7'-6" Door Height = Approx. 8-1/4 Turns

7'-9" Door Height = Approx. 8-1/2 Turns

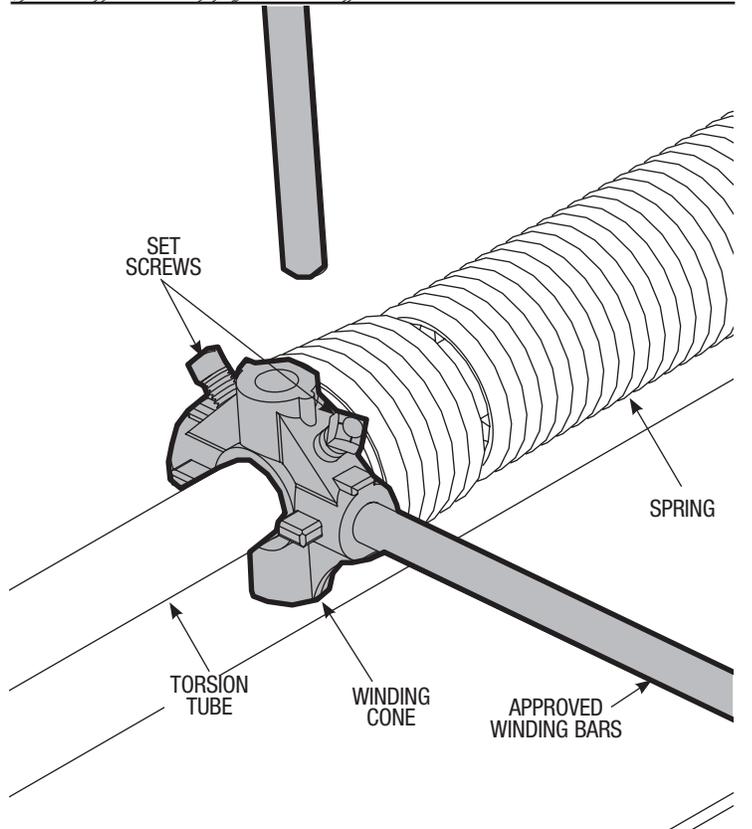
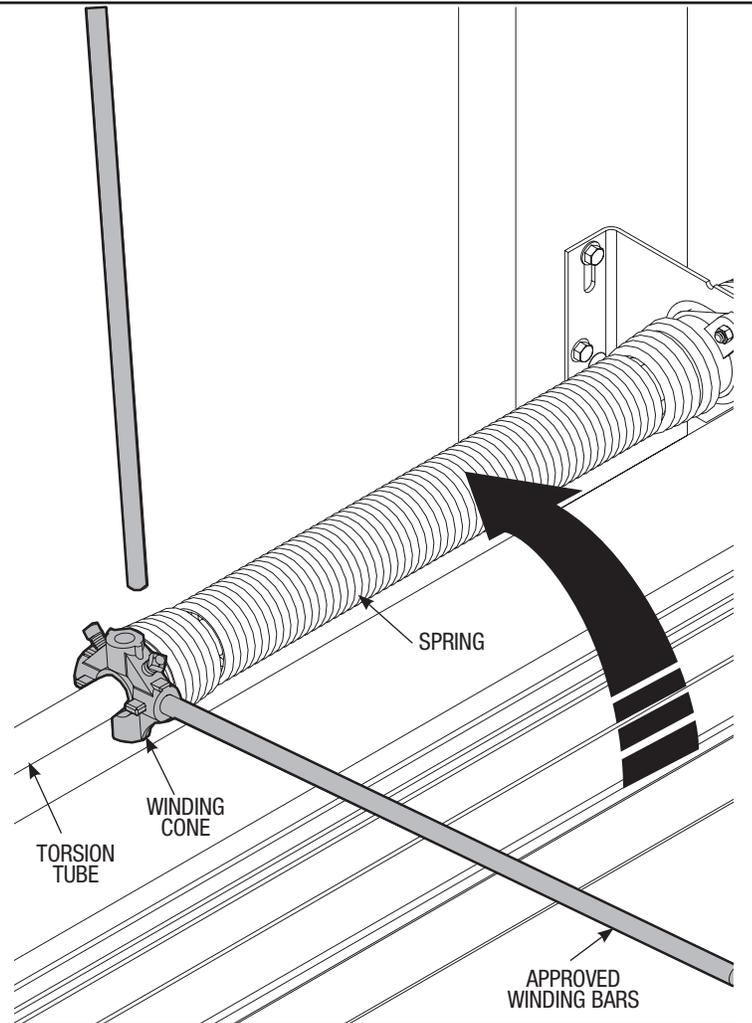
8'-0" Door Height = Approx. 8-3/4 Turns

Alternate inserting the winding bars into the holes of the spring's winding cone, rotate the winding cone upward toward the ceiling, a 1/4 turn at a time, until the required number of turns for your door height is achieved. As the last 1/4 turn is completed, hold winding bar securely while tightening both set screws in winding cone to 14-15 ft. lbs. of torque (Once set screws contact the tube, tighten screws one full turn).

Carefully remove the winding bar from first winding cone. Proceed to wind the second spring in the same manner. While holding the door down; to prevent it from rising unexpectedly in the event the spring(s) were overwound, carefully remove the locking clamps from the torsion tube and the vertical tracks.

**IMPORTANT:** CAUTIOUSLY REMOVE LOCKING PLIERS FROM THE TORSION TUBE AND VICE CLAMPS FROM THE VERTICAL TRACKS.

Adjustments to the required number of turns stated may be necessary. If door raises off floor under spring tension alone, reduce spring tension until door rests on the floor. If the door is hard to raise or drifts down on its own, add spring tension. An unbalanced door such as this can cause garage door opener operation problems.



# 10

## Rear Support

### Tools Needed:

Ratchet Wrench

1/2" Socket

1/2" Wrench

(2) Vice Clamps

### **⚠ WARNING**

KEEP HORIZONTAL TRACK PARALLEL AND WITHIN 3/4" MAXIMUM OF DOOR EDGE, OTHERWISE DOOR COULD FALL, RESULTING IN SEVERE OR FATAL INJURY.

Raise the door until the top section and half of the next section are in a horizontal position. Do not raise door any further since rear of horizontal track is not yet supported. Do not space the track more than 3/4" from door edge.

### **⚠ WARNING**

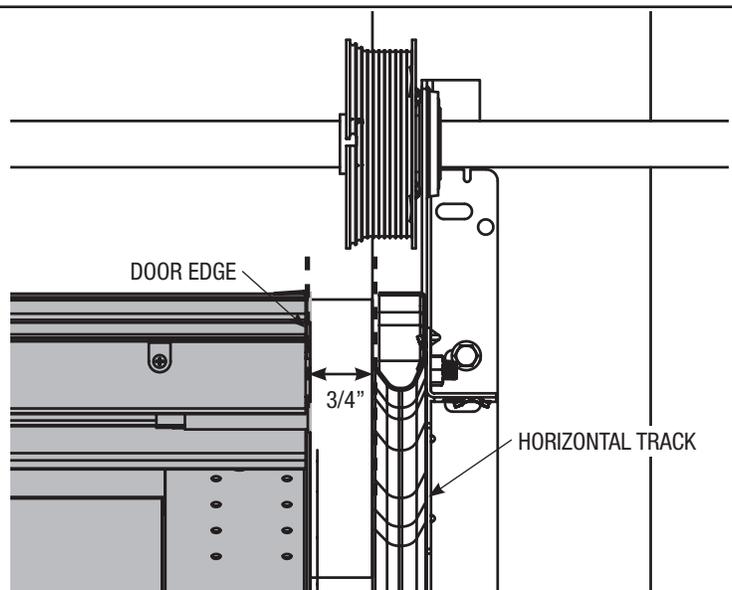
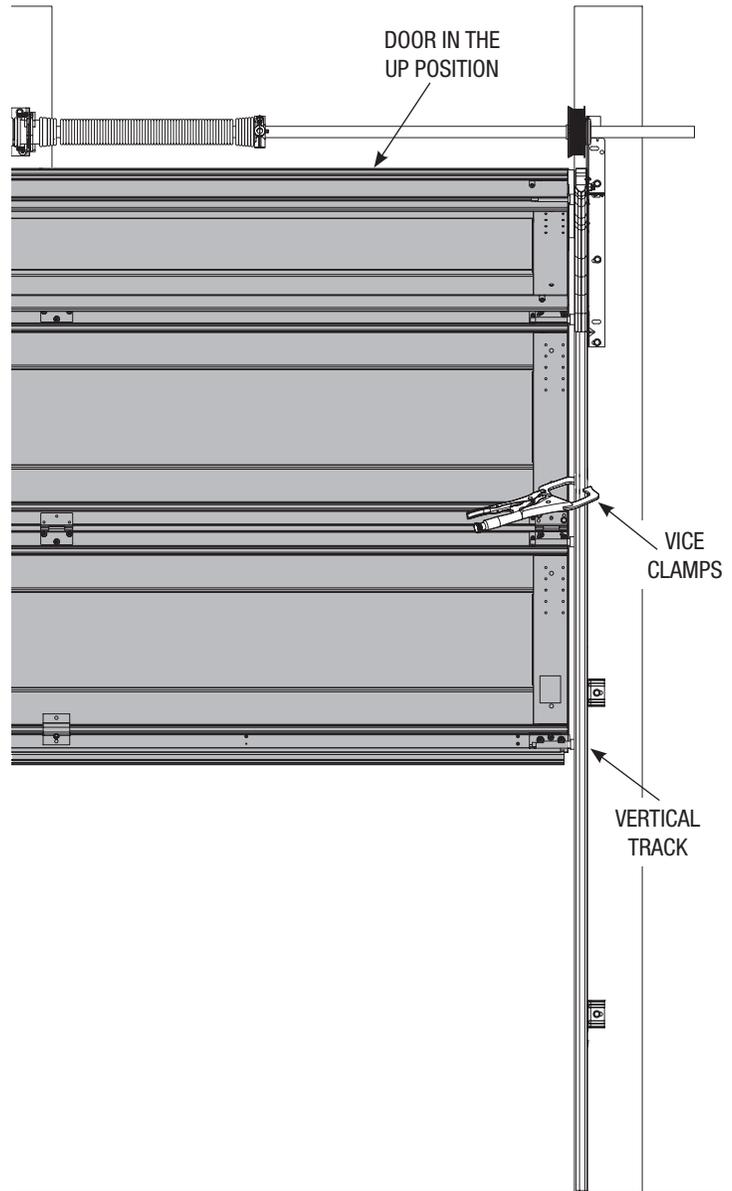
RAISING DOOR FURTHER CAN RESULT IN DOOR FALLING AND CAUSE SEVERE OR FATAL INJURY.

Clamp a pair of vice clamps on the vertical tracks just above the second roller on one side, just below the second roller on the other side. This will prevent the door from raising or lowering while installing the rear support.

Using perforated angle, 5/16" x 1-5/8" hex head lag screws and 5/16" bolts with nuts (may not be supplied), fabricate rear support for horizontal tracks. Attach horizontal tracks to the rear supports with 5/16" - 18 x 1-1/4" hex bolts and nuts (may not be supplied). Horizontal tracks must be level and parallel with door.

**NOTE:** If rear supports are to be installed over drywall, use 5/16" x 2" hex head lag screws.

Adjust weather seal (if necessary). Now permanently attach the weather seal to both door jambs and header (Temporarily attached in PREPARING THE OPENING on page 10 of the main Installation Instructions and Owner's Manual). Avoid pushing weather seal stop too tightly against face of door.



## Rear Support Continued...

To adjust spring tension, fully close door. Apply locking pliers to track above third roller. Insert a winding bar into the winding cone. Push upward on the winding bar while carefully loosening the set screws in the winding cone. BE PREPARED TO SUPPORT THE FULL FORCE OF THE TORSION SPRING ONCE THE SET SCREWS ARE LOOSE.

Carefully adjust spring tension 1/4 turn. Retighten both set screws in the winding cone and repeat for the other side. Recheck door balance. DO NOT ADJUST MORE THAN 1/2 TURN FROM THE RECOMMENDED NUMBER OF TURNS.

If the door still does not operate easily, lower the door into the closed position, UNWIND THE SPRING(S) FULLY (Refer to "P1" on page 6 "Torsion Spring Removal For Standard Lift" of the main Installation Instructions and Owner's manual) and recheck the following the items:

- 1.) Check the door for level.
- 2.) Check the torsion tube for level.
- 3.) Check the track spacing.
- 4.) Check the counterbalance cables for equal tension.
- 5.) Check the track for potential obstruction of the rollers.
- 6.) Clamp vice clamps onto track and rewind springs.

**IMPORTANT:** IF DOOR STILL DOES NOT OPERATE PROPERLY, THEN CONTACT A QUALIFIED DOOR AGENCY.

