NOTE: The illustrations shown on this page are general representations of the door parts. Each specific door model may have unique variations.
1 Attaching Bottom Corner Brackets

Tools Required: Power drill, 7/16" Socket driver, 7/16" Wrench, Tape measure, Saw horses, Leather gloves, Safety glasses

Using the illustrations shown, identify the low headroom bottom corner brackets provided with your door. Starting on left hand side of the bottom section, attach the counterbalance lift cable to the left hand bottom corner bracket using clevis pin. Secure the clevis pin to bottom corner bracket using a 5/16" flat washer and cotter pin, as shown. Position the bottom corner bracket up against the edges of the bottom section. Secure the bottom corner bracket to the bottom section using 1/4" - 20 self drilling screws, as shown. Repeat the same process for the right hand side.

NOTE: Refer to the provided Installation Instructions And Owner’s Manual for information regarding track roller carrier and track roller installation.

NOTE: Specific door models may utilize a different bottom bracket design.

2 Attaching Top Fixtures To Top Section

Tools Required: Power drill, 7/16" Socket driver, Leather gloves, Safety glasses

Starting with the left hand side, push the top section of door out against the jamb until the top section is parallel with the other sections of the door. Starting with the left hand side, align the edge of the top fixture with the edge of the section, and position so that the top roller rides in the upper horizontal track.

NOTE: When installing the top fixtures, the top section must be vertically aligned with the rest of the sections from the side view. If needed reposition top fixture(s) to achieve vertical alignment.

NOTE: If your door came with two top fixtures, then one top fixture and a short stem track roller are required for each side. If your door came with four top fixtures, then two top fixtures and a long stem track roller are required for each side.

NOTE: Refer to the provided Installation Instructions And Owner’s Manual for information regarding top section strutting installation.

Secure the top fixture and strut (if applicable) to the top section using 1/4" - 20 self drilling screws through the upper and lower slots of the top fixture, as shown. If you have four top fixtures, position the second top fixture next to the first installed top fixture and secure it to the top section using 1/4" - 20 self drilling screws through the upper and lower slots of the top fixture, as shown.

WARNING
DO NOT INSTALL THE TOP FIXTURE MORE THAN 1" ABOVE THE TOP EDGE OF THE TOP SECTION.

Insert a short / long stem track roller into the top fixture, as shown. Repeat the same process for the right hand side.
### Attaching Horizontal Tracks

**Tools Required:** Ratchet wrench, 7/16" 9/16" Socket, 7/16" 9/16" Wrench, level, Step ladder, Leather gloves, Safety glasses

**NOTE:** Depending on your door, you may have Fully Adjustable Flag Angles, Riveted Vertical Track Assemblies or you may have Angle Mount Vertical Track Assemblies. Refer to Package Contents, to determine which Flag Angles / Angle Mount Vertical Track Assemblies you have. **NOTE:** Refer to the chart below “Headroom requirements”, to verify available headroom.

<table>
<thead>
<tr>
<th>Cable Drum</th>
<th>Front Mount</th>
<th>Rear Mount</th>
</tr>
</thead>
<tbody>
<tr>
<td>400-8, 400-12</td>
<td>10&quot;</td>
<td>6&quot;</td>
</tr>
<tr>
<td>5250-18 (&lt; 6&quot; Springs)</td>
<td>10-1/2&quot;</td>
<td>6-1/2&quot;</td>
</tr>
<tr>
<td>5250-18 (6&quot; Springs or Duplex Springs)</td>
<td>14&quot;</td>
<td>N/A</td>
</tr>
<tr>
<td>800-32</td>
<td>14-1/2&quot;</td>
<td>8&quot;</td>
</tr>
</tbody>
</table>

* Not applicable for 2" Rear Mount

**WARNING**

DO NOT RAISE DOOR UNTIL HORIZONTAL TRACKS ARE SECURED AT REAR, AS OUTLINED IN REAR SUPPORT INSTALLATION, OR DOOR COULD FALL FROM OVERHEAD POSITION CAUSING SEvere OR FATAL INJURY.

**IF YOU HAVE FLAG ANGLES:** To install horizontal track, place the top rail end over the top track roller of the top section. Align the bottom rail end of the horizontal track with the top of the vertical track. Tighten the bottom rail of the horizontal track to the flag angle with (2) 1/4" - 20 x 9/16" track bolts and (2) 1/4" - 20 flange hex nuts.

**IF YOU HAVE ANGLE MOUNT VERTICAL TRACK ASSEMBLIES:** To install horizontal track, place the curved end over the top roller of the top section. Align the bottom of the horizontal track with the top of the vertical track. Tighten the horizontal track to the Flag Angle / Angle Mount with (2) 1/4" - 20 x 9/16" track bolts and (2) 1/4" - 20 flange hex nuts.

### Attaching Rear Back Hangs

**Tools Required:** 13/32” Drill bit, Ratchet wrench, 1/2" 9/16” Socket, 1/2" 9/16”, (2) Vice clamps, Tape measure, Level, Step ladder, Safety glasses, Leather gloves

**FOR FRONT MOUNTED TORSION SPRINGS:** Level and square the horizontal track and secure end of the lower horizontal track to the back hanger, using (1) 5/16" - 18 x 1-1/4" bolt and (1) 5/16" - 18 nut, as shown. **NOTE:** Ensure the 5/16" - 18 x 1-1/4" hex head bolt are going through the vertical piece first, then through the rear support bracket and the 5/16" - 18 nut is in the inside of the horizontal track, as shown.
FOR REAR MOUNTED TORSION SPRINGS:

- Level and square the horizontal track and secure the end bearing bracket to the back hanger, using (2) 3/8" - 16 x 3/4" truss head bolts and (2) 3/8" - 16 nuts. Bolt the lower horizontal track to the end bearing bracket using a 5/16" - 18 x 1-1/4" bolt and (1) 5/16" - 18 nut, as shown.

**NOTE:** The Center Back Hang Assemblies are to be used for all doors over 11'0" door height and over 14'0" door width. One Center Back Hang Assembly, per side.

**IMPORTANT:** SPACING BETWEEN THE LEFT AND RIGHT HAND REAR MOUNT TORSION END BRACKET BRACKETS MUST BE DOOR WIDTH PLUS 5-3/8" (136MM).

**IMPORTANT:** LATERAL BRACE MUST ALWAYS BE USED TO PREVENT SWAYING OF THE HORIZONTAL TRACK.

---

**Counterbalance Installation Instructions**

**Note:** Refer to Breakdown of counterbalance parts, to determine what type of counterbalance you have.

**Note:** If your door has Torsion Front Mount LHR Outside Hookup, proceed to Step F1.

**Note:** If your door has Torsion Rear Mount LHR Outside Hookup, proceed to Step R1.

**Note:** If your door has Extension LHR, proceed to Step E1.

---

**Torsion Front Mount LHR Outside Hookup**

**F1 End Bearing Brackets**

- Tools Required: Power drill, Ratchet wrench, 3/16" Drill bit, 7/16" Socket driver, 9/16" Socket, 9/16" Wrench, Safety glasses, Ladder, Leather gloves

---

**Warning:**

- Install end bearing brackets to solid structural members only. Do not install over dry wall or paneling. Failure to install end bearing brackets to solid structural members can cause severe or fatal injury.

---

**Warning:**

- Failure to use proper number of fasteners can result in sudden spring tension release, causing severe or fatal injury.

---

**Warning:**

- Do not use sleeve anchors on hollow block.

---

**Note:** Spring pads must be securely anchored before proceeding, as shown. The pads must be flush with the jambs.

**Important:** Right and left hand is always determined from inside the building looking out.

**Note:** End bearing brackets are right hand and left hand.

Attach the left hand end bearing bracket through either the end bearing bracket's upper or lower slots to the left hand horizontal track angle using (2) 3/8" - 16 x 3/4" truss head bolts and (2) 3/8" - 16 nuts.

**Important:** The end bearing bracket's lower slots are used on doors with 12" radius track; the upper slots are used on doors with 15" radius track.

Secure the end bearing bracket to the jamb using one of the following scenarios listed below:

- Wood jambs, using (3) 5/16" x 1-5/8" lag screws. Drill (3) 3/16" pilot holes into the wood jamb for the lag screws.
- Steel jambs, using (3) 5/16" x 1" self drilling screws.
- Pre-cast concrete, using (3) 3/8" x 3" sleeve anchors (not supplied).

**Note:** Products being installed to pre-cast or block must use a 3/8" x 3" sleeve anchor to attach the wall angle to the building, as shown. Use the slots in the wall angle as a drill template and drill a 3/8" hole (3-1/2" deep) and secure to anchor.
NOTE: When attaching the center bracket(s) to the spring pads, it has to be at the same elevation as the bearing in the end bearing brackets.

NOTE: Additional center brackets may be required for doors with coupler assembly. Refer to Package Contents / Parts Breakdown, to determine if you have a coupler assembly.

NOTE: If your door came with (4) or more springs, each of the outer springs mounting surface will need to be a minimum of 3" wide.

NOTE: If needed, measure the diameter of your springs. If you have a one piece shaft with 3-3/4" or larger diameter springs, they do not share center brackets and do not have a coupler assembly.

NOTE: On some single spring doors, the single spring can be longer than half the opening width. If your spring is longer, then the center bracket must be mounted off center for the spring to fit properly. Measure spring length to determine appropriate center bracket location. Locate the center of the door. Mark a vertical pencil line on the mounting surface above the door, at the center. Measure from the center of the bearing, in one of the end bearing brackets, downwards, to the top the door. Using that measurement, measure that distance upwards from the top of the door to the mounting surface and mark a horizontal pencil line which intersects the vertical pencil line.

WOOD: Align the edge of the center bracket with the vertical pencil line and the center of the center bracket with the horizontal pencil line; this is to ensure the torsion shaft is level between the center and end bearing brackets. Attach the center bracket to the mounting surface, using 5/16" x 1-5/8" lag screws.

NOTE: Pre-Drill 3/16" pilot holes into the wood jamb for the lag screws.

NOTE: Depending on the construction, different fasteners must be used.

STEEL: Secure each center bracket using (4) 5/16" x 1" self-drilling and tapping screws, as shown.

PRE-CAST: Secure each center bracket using (2) 1/2" x 3" sleeve anchors (by others). This installation will require the 1/2" anchors to be secured to the building and then secure the brackets to the anchors, as shown.

NOTE: Pre-Drill 1/2" pilot holes into the Pre-Cast for the 1/2" x 3" sleeve anchors.

BLOCK CONSTRUCTION: Attach perforated angle 18" long to center bracket(s) using (2) 3/8" x 1-1/4" bolts and (2) 3/8" nuts. Chamfer angle to clear top section high arc. Secure center bracket(s) and perforated angle to block using (4) 3/8" x 2-1/2" sleeve anchors, as shown.

WARNING
DO NOT USE SLEEVE ANCHORS ON HOLLOW BLOCK.
**WARNING**

THOSE SPRING MOUNTING TECHNIQUES ARE NOT SUPPORTED FOR 800-32 CABLE DRUMS. THESE INSTRUCTIONS ARE ALSO NOT APPLICABLE FOR 5750-120 CABLE DRUMS WITH 72" OR MORE HIGH-LIFT.

**WARNING**

MAXIMUM SPACING FOR DIMENSION "Y" IS 84" (7 FT.) THESE INSTRUCTIONS ARE NOT APPLICABLE FOR A SPAN GREATER THAN 84".

---

**Maximum Door Size 9'0" x 9'0"** *(Maximum Door Weight 210 lb.)*

Cut perforated angle (1-5/8" x 2-3/8" x 11 GA.) to Dim "Y." Thru-bolt top and bottom of angle to each girt using (4) 3/8" x 1-1/4" bolts and (4) 3/8" nuts. Thru-bolt center bracket to perforated angle using (3) 3/8" x 1-1/4" bolts and (3) 3/8" nuts, as shown.

---

**Maximum Door Size 14'0" x 12'0"** *(Maximum Door Weight 400 lb.)*

Cut (2) pieces of perforated angle (1-5/8" x 2-3/8" x 11 GA.) to Dim "Y." Thru-bolt top and bottom of each angle to each girt using (4) 3/8" x 1-1/4" bolts and (4) 3/8" nuts. Thru-bolt center bracket to perforated angle using (3) 3/8" x 1-1/4" bolts and (3) 3/8" nuts, as shown.

---

**Maximum Door Size 14'-2" x 12'-1"** *(Maximum Door Weight 800 lb.)*

Cut (2) pieces of perforated angle (1-5/8" x 2-3/8" x 11 GA.) to Dim "Y." Thru-bolt top and bottom of each angle to each girt using (4) 3/8" x 1-1/4" bolts and (4) 3/8" nuts. Thru-bolt center bracket to perforated angle using (3) 3/8" x 1-1/4" bolts and (3) 3/8" nuts, as shown.

---

**NOTE:** Actual center bracket may vary, see parts breakdown.

---

**Torsion Spring Assembly**

Tools Required: Ladder, Safety glasses, Leather gloves

---

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

**NOTE:** Torsion spring assemblies can be of several configurations depending on your door size and door weight.

**NOTE:** Set collars are only used if you have a 2 piece torsion shaft. The set collars are not used for 1.25" torsion shaft.

**IMPORTANT:** ON SINGLE SPRING APPLICATIONS, ONLY A RIGHT WOUND (BLACK WINDING CONE), WHICH GOES ON THE LEFT HAND SIDE IS REQUIRED.

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

Facing the inside of the door and referencing the illustrations shown, lay the torsion shaft / torsion keyed shaft(s) on the floor.

**NOTE:** If your door came with (2) torsion keyed shafts, one torsion keyed shaft should be on the left hand side of the floor and the other torsion keyed shaft should be on the right hand side of the floor.

Lay the torsion spring(s) with the red winding cone at the right end of the torsion shaft / torsion keyed shaft(s). Lay the torsion spring(s) with the black winding cone at the left end of the torsion shaft / torsion keyed shaft(s).

Slide the center bearing / torsion springs onto the torsion shaft / torsion keyed shaft followed by the set collars.

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

**IF YOUR DOOR CAME WITH A COUPLER ASSEMBLY:** Disassemble the coupler assembly by removing the (3) 3/8" - 16 x 1-1/2" hex head screws, (6) 3/8" Washers, (3) 3/8" lock washers and the (3) 3/8" - 16 hex nuts from the coupler halves. Loosen the set screws. Slide the flat edge of the coupler half flush with the side edge of the torsion keyed shaft. Insert (1) key into the slot of both the coupler halves and the slot in the torsion keyed shaft. Tighten the (2) set screws and the locking nut to secure the coupler half to the torsion keyed shaft, as shown. Repeat the same processes for the other coupler half.

**NOTE:** Tighten the set screws to 14 - 15 ft. lbs. of torque (once set screws contact the shaft, tighten set screws one full turn).

**IMPORTANT:** THE COUPLER HALVES, CENTER BEARING(S), TORSION SPRINGS, AND CABLE DRUMS MUST BE POSITIONED, AS SHOWN IN THE ILLUSTRATIONS.

---

**Single Spring Or Double Springs Applications, 1 Piece Shaft, Up To 2-5/8" Springs**

**NOTE:** Layout counterbalance parts in proper orientation, then install onto torsion shaft, as shown.

**NOTE:** On single spring applications, only a left wound (black winding cone), is required.
With assistance and starting on the left hand side, pick up the torsion spring assembly and slide one end of the torsion shaft through the end bearing bracket. Lay the other side of the torsion shaft into the center bracket with (2) 3/8" - 16 x 1-1/2" hex head bolts and (2) 3/8" - 16 nuts. Repeat the same process for the right hand torsion spring assembly. At the middle of the two center bearing brackets, re-assemble the coupler assembly by loosely fastening the coupler halves together using the (3) 3/8" - 16 x 1-1/2" hex head screws, (6) 3/8" Washers and the (3) 3/8" - 16 nylon hex lock nuts, as shown.

**NOTE:** Ensure both torsion keyed shafts have equal amounts of the shaft extending from each end bearing bracket.

**IMPORTANT:** TORSION SPRINGS THAT SHARE CENTER BRACKETS CAN ONLY USE ONE BEARING. ATTEMPTING TO USE TWO BEARINGS WILL CREATE INTERFERENCE THAT CAN LEAD TO FAILURE.

**Attaching Torsion Spring(s)**

Tools Required: Ladder, Ratchet wrench, 9/16" Socket, 9/16" Wrench, Tape measure, Safety glasses, Leather gloves

**NOTE:** Refer to Package Contents / Parts Breakdown, to determine which Center Bracket(s) came with your door.

**NOTE:** Refer to Package Contents / Parts Breakdown, to determine if your door came with a coupler assembly.

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

**NOTE:** Measure the diameter of your springs. If your spring diameter is 3-3/4" or larger, the springs do not share center brackets. If your spring diameter is either 2" or 2-5/8", then two springs will share the same center bracket, unless a coupler assembly is provided.

**IF YOU DON'T HAVE A COUPLER ASSEMBLY:** Slide center bracket bushing into the spring. Align the stationary spring cone(s) with the holes in the center bracket bushing assembly. Secure the torsion spring(s) to the center bracket bushing assembly with (2) 3/8" - 16 x 1-1/2" hex head bolts and (2) 3/8" - 16 nuts.

**IF YOU HAVE A COUPLER ASSEMBLY:** Slide center bracket bushing into the spring. Align the stationary spring cone with the holes in the center bracket. Secure the torsion spring to the center bracket with (2) 3/8" - 16 x 1-1/2" hex head bolts and (3) 3/8" - 16 nuts. Repeat the same process for the other center bearing bracket. At the middle of the two center bearing brackets, re-assemble the coupler assembly by loosely fastening the coupler halves together using the (3) 3/8" - 16 x 1-1/2" hex head screws, (6) 3/8" Washers and the (3) 3/8" - 16 nylon hex lock nuts, as shown.

**NOTE:** Refer to Package Contents / Parts Breakdown, to determine if your door came with a coupler assembly.

**NOTE:** Refer to Package Contents / Parts Breakdown, to determine which Center Bracket(s) came with your door.
Attaching Counterbalance Lift Cables
Tools Required: Ladder, Locking pliers, 3/8” Wrench, Tape measure, Safety glasses, Leather gloves

Starting on the left hand side, thread the counterbalance lift cable up and around the front side of the left hand cable drum.

**IMPORTANT:** VERIFY THAT THERE ARE NO COUNTERBALANCE LIFT CABLE OBSTRUCTIONS.

**NOTE:** Always assemble the left hand cable and cable drum first to help maintain equal cable tension on both sides of the door.

Starting on the left hand side, slide the red cable drum onto the torsion shaft / torsion keyed shaft(s). Hook the counterbalance lift cable into the left hand cable drum. Slide the left hand cable drum up against the left hand end bearing bracket. Counterbalance lift cable should terminate at the 3 o’clock position. Tighten the (2) set screws in the drum to 14-15 ft. lbs. of torque (once set screws contact the shaft, tighten screws one full turn).

**NOTE:** If you have torsion keyed shaft(s), insert (1) key into the slot of both the cable drum and the slot in the torsion keyed shaft, as shown.

**IMPORTANT:** PRIOR TO TIGHTENING THE SET SCREWS IN THE SET COLLARS, AVOID PLACING THE SET SCREWS IN THE KEYWAYS OF TORSION KEYED SHAFT(S).

Once the counterbalance cables are set and if applicable tighten the coupler assembly together by tightening the (3) 3/8” - 16 hex nuts to secure the coupler halves together.

Securing Set Collars
Tools Required: Ladder, Safety glasses, Leather gloves, Allen wrench

**NOTE:** If your door did not come with set collars, then skip this step.

Slide each of the set collars up against the inside surface of the end bearing brackets, with the set screw facing directly away from the header. Tighten the set screw in each of the set collars to the torsion shaft to 14-15 ft. lbs. of torque (once set screw contacts the shaft, tighten set screw one full turn).

**IMPORTANT:** PRIOR TO TIGHTENING THE SET SCREWS IN THE SET COLLARS, AVOID PLACING THE SET SCREWS IN THE KEYWAYS OF TORSION KEYED SHAFT(S).

Chalking Torsion Spring(s)
Tools Required: Ladder, Chalk, Safety glasses, Leather gloves

**NOTE:** If your torsion spring(s) have stenciling, then skip this step and proceed to the next step.

Draw a chalk line horizontally along the center of the torsion spring coil(s). As the torsion spring is wound, the chalk line will create a spiral. This spiral can be used to count and determine the number of turns that are applied on the torsion spring.

Securing Door for Spring Winding
Tools Required: Vice clamps, Safety glasses, Leather gloves

With the door in the fully closed position, place vice clamps / c-clamps onto both vertical tracks just above the third track roller. This is to prevent the garage door from rising while winding springs.

**NOTE:** Check the following before attempting to wind torsion spring(s):

a. Counterbalance lift cables are secured at bottom corner brackets.
b. Counterbalance lift cables are routed unobstructed to cable drums.
c. Counterbalance lift cables are correctly installed and wound onto cable lift drums.
d. Counterbalance lift cables are taut and have equal tension on both sides.
e. Cable lift drums are against end bearing brackets and set screws are tight.
f. Torsion spring or springs are installed correctly.
g. Review the label attached to the spring warning tag, to determine number of spring turns required.

**NOTE:** Door MUST be closed and secured when winding or making any adjustments to the torsion spring(s).
WARNING
FAILURE TO ENSURE DOOR IS IN A CLOSED POSITION AND TO PLACE VICE CLAMP ONTO VERTICAL TRACK CAN ALLOW DOOR TO RAISE AND CAUSE SEVERE OR FATAL INJURY.

WINDING BARS
(Steel Rods)

<table>
<thead>
<tr>
<th>Size Of Winding Bar (Inches)</th>
<th>Spring Diameter Used On</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2&quot; dia. x 18&quot;</td>
<td>2&quot; and 2-5/8&quot;</td>
</tr>
<tr>
<td>5/8&quot; dia. x 24&quot;</td>
<td>3-3/4&quot; and 6&quot;</td>
</tr>
</tbody>
</table>

WARNING
WINDING TORSION SPRING(S) IS AN EXTREMELY DANGEROUS PROCEDURE AND SHOULD BE PERFORMED ONLY BY A TRAINED DOOR SYSTEM TECHNICIAN USING PROPER TOOLS AND INSTRUCTIONS.

WARNING
USE ONLY SPECIFIED WINDING BARS, AS STATED IN STEP SECURING DOOR FOR SPRING WINDING. DO NOT SUBSTITUTE WITH SCREWDRIVERS, PIPE, ETC. OTHER TOOLS MAY FAIL OR RELEASE FROM THE SPRING CONE AND CAUSE SERIOUS PERSONAL INJURY.

WARNING
PRIOR TO WINDING OR MAKING ADJUSTMENTS TO THE SPRINGS, ENSURE YOU'RE WINDING IN THE PROPER DIRECTION AS STATED IN THE INSTALLATION INSTRUCTIONS. OTHERWISE THE SPRING FITTINGS MAY RELEASE FROM SPRING IF NOT WOUND IN THE PROPER DIRECTION AND COULD RESULT IN SEVERE OR FATAL INJURY.

Position a ladder slightly to the side of the spring so that the winding cone is easily accessible, and so your body is not directly in 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.

Alternately inserting the winding rods into the holes of the spring winding cone, rotate the winding cone downward toward the floor, 1/4 turn at a time, until the required number of complete turns for your door is achieved. As the last 1/8 to 1/4 turn is achieved, securely hold the winding rod and carefully stretch the torsion spring 1/8" - 1/4". Next while still securely holding the winding rod, tighten both set screws in the winding cone to 1-4-1/4 ft. lbs. of torque (once set screws contact the torsion shaft, tighten screws one full turn).

Carefully remove winding rod from winding cone. Repeat for other spring(s) if needed. While holding the door down to prevent it from raising unexpectedly in the event the spring(s) were over-wound, carefully remove the locking pliers from the torsion shaft and vertical tracks.

Adjustments to the number of turns stated may be necessary. If door rises off floor under spring tension alone, reduce spring tension until door rests on the floor. If the door is hard to rise or drifts down on its own, add spring tension.

WARNING
HIGH SPRING TENSION CAN CAUSE SERIOUS INJURY OR DEATH.

NOTE: Refer to Package Contents / Parts Breakdown, to determine if your door came with a coupler assembly. If your door came with a coupler assembly, the mounting surface needs to be a minimum of 17" wide. The two center bearing brackets will need to be spaced 1/2" to 1/4" apart at the center of the door, as shown.

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

IMPORTANT: IDENTIFY THE TORSION SPRINGS PROVIDED AS EITHER RIGHT WOUND (RED WINDING CONE) OR LEFT WOUND (BLACK WINDING CONE).

NOTE: On some single spring doors, the single spring can be longer than half the opening width. If your spring is longer, then the center bracket must be mounted off center for the spring to fit properly. Measure spring length to determine appropriate center bracket location.

NOTE: If your door came with a center coupler assembly or if it utilizes 3-3/4" springs, the springs will not share a center bracket.

NOTE: If your door has (4) springs, split the distance between the center of the door and the end bracket on each side to locate the intermediate center brackets.

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

IMPORTANT: REFERENCE THE ILLUSTRATIONS FOR PROPER SPRING POSITIONING WHEN MORE THAN 2 SPRINGS ARE PROVIDED.

IMPORTANT: IN APPLICATIONS WHERE MORE THAN ONE SPRING SHARES A CENTER BRACKET, USE ONLY 1 BEARING IN THE SPRING. ATTEMPTING TO USE 2 BEARINGS CAN DAMAGE THE BEARINGS AND / OR SPRING CONES.

Facing the inside of the door, either lay the torsion shaft / torsion keyed shaft on the floor or lay the (2) torsion keyed shafts on the floor, one torsion keyed shaft on the left hand side and the other torsion keyed shaft on the right hand side.

IMPORTANT: DEPENDING ON YOUR DOOR APPLICATION, USE ONE OF THE THREE ILLUSTRATIONS, SHOWN BELOW TO ASSEMBLE YOUR TORSION COUNTERBALANCE SYSTEM.

IF YOU HAVE ONE OR TWO TORSION SPRINGS AND ONE PIECE TORSION SHAFT:

One or Two springs; One piece shaft

IMPORTANT: ON SINGLE SPRING APPLICATIONS, ONLY A RIGHT WOUND (RED WINDING CONE), WHICH GOES ON THE RIGHT HAND SIDE IS REQUIRED.

IF YOU HAVE FOUR TORSION SPRINGS AND ONE PIECE TORSION SHAFT / TORSION KEYED SHAFT:

One piece shaft

Right wound, red winding cone (right hand side)

Left wound, black winding cone (left hand side)

Oval bearing

Torsion shaft or Torsion keyed shaft
IF YOU HAVE TWO OR FOUR TORSION SPRINGS AND TWO PIECE TORSION KEYED SHAFTS:

Disassemble the coupler assembly by removing the (3) 3/8” - 16 x 1-1/2” hex head screws, (8) 3/8” Washers, (3) 3/8” lock washers and the (3) 3/8” - 16 hex nuts from the coupler halves. Loosen the set screws. Set the components aside. Next, slide the flat edge of the couple half flush with the side edge of the torsion keyed shaft. Insert (1) keyed shaft into the slot of both the coupler half and the slot in the torsion keyed shaft, as shown. Tighten the (2) set screws and the locking nut to secure the coupler half to the torsion keyed shaft.

NOTE: Tighten the set screws to 14-15 ft. lbs. of torque (once set screws contact the shaft, tighten set screws one full turn).

Repeat the same process for the other side.

Slide either the center bearing bracket or the center bearing(s) or the oval bearing(s) onto the torsion shaft / torsion keyed shaft(s) followed by the torsion spring(s).

IMPORTANT: THE CENTER BEARING BRACKET, THE CENTER BEARING(S), THE OVAL BEARING(S), THE COUPLER HALF’S AND THE TORSION SPRINGS, MUST BE POSITIONED, AS SHOWN.

WARNING
CENTER BEARING BRACKETS WITH SPRINGS MUST BE SECURELY FASTENED INTO SOLID STRUCTURAL MEMBERS ONLY AND MUST BE ADEQUATELY REINFORCED TO HOLD THE LOAD OF TORSION SPRING ASSEMBLIES. FAILURE TO DO SO CAN CAUSE SEVERE OR FATAL INJURY.

NOTE: Pilot drill all 5/16” lag screws using a 3/16” drill bit, prior to fastening.

Referring to Step, Rear Back Hangs either secure the center bearing bracket(s) to the ceiling using perforated angle at the center of the opening width using 3/8” - 16 x 3/4” hex head bolts and nuts (not supplied) or to wood blocking (adequate framing member(s)) at the center of the opening width using 5/16” x 1-5/8” Hex head lag screws.
**Attaching Torsion Spring(s)**

**Tools Required:** Ladder, Ratchet wrench, 9/16" Socket, 9/16" Wrench, Tape measure, Safety glasses, Leather gloves

**FOR DOORS WITHOUT COUPLER ASSEMBLY:** Equalize the amount that the torsion shaft / torsion keyed shaft protrudes on each side. Align the stationary cone(s) of the torsion springs with the slots in the rear support bracket and secure using (2) 3/8" - 16 x 1 1/2" hex head bolts and nuts.

**FOR DOORS WITH A COUPLER ASSEMBLY:** At the middle of the two center bearing brackets, re-assemble the coupler assembly by loosely fastening the coupler halves together re-using the (3) 3/8" - 16 x 1 1/2" hex head screws, (6) 3/8" Washers, (3) 3/8" lock washers and the (3) 3/8" - 16 hex nuts, as shown.

---

**Attaching Counterbalance Lift Cables**

**Tools Required:** Ladder, Locking pliers, 3/8" Wrench, Tape measure, Safety glasses, Leather gloves

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

Slide the black cable drum against the left hand rear support bracket. Thread the counterbalance lift cable up and over the cable sheave. Position the cable drum and counterbalance lift cable, as shown. Hook the cable into the drum.

**NOTE:** For doors with a torsion keyed shaft, insert (1) key into the slot of both the black cable drum and the slot in the torsion keyed shaft, as shown. Tighten the set screws in the black cable drum to 14-15 ft. lbs. of torque (once set screws contact the shaft, tighten screws one full turn). Slide the red cable drum against the right hand rear support bracket. Rotate the left hand drum and torsion shaft until counterbalance lift cable is taut. Now attach locking pliers to the torsion shaft and brace locking pliers against the perforated angle of the rear back hangs to keep counterbalance lift cable taut. On the right hand side, thread the counterbalance lift cable up and over the red cable drum and position the cable drum and counterbalance lift cable, as shown. Hook the cable into the drum.

**NOTE:** For doors with a torsion keyed shaft, insert (1) key into the slot of both the red cable drum and the slot in the torsion keyed shaft, as shown. Tighten the set screws in the red cable drum to 14-15 ft. lbs. of torque (once set screws contact the tube, tighten screws one full turn).

**IMPORTANT:** CHECK EACH COUNTERBALANCE LIFT CABLE, MAKING SURE BOTH ARE SEATED PROPERLY ON THE SHEAVES, CABLE DRUMS, ARE SECURELY ATTACHED TO THE BOTTOM CORNER BRACKETS AND BOTH SIDES HAVE EQUAL COUNTERBALANCE LIFT TENSION.
Now, secure the coupler assembly (if applicable) by tightening the (3) 3/8" - 16 hex nuts.

Tools Required: Step ladder, Chalk, Safety glasses, Leather gloves

NOTE: If your spring(s) have stenciling, then skip this step.

Draw a chalk line horizontally along the center of the torsion spring coil(s). As the torsion spring is wound, the chalk line will create a spiral. This spiral can be used to count and determine the number of turns that are applied on the torsion spring.

NOTE: Door MUST be closed and locked when winding or making any adjustments to the torsion spring(s).

WARNING
FAILURE TO ENSURE DOOR IS IN A CLOSED POSITION AND TO PLACE VICE CLAMP ONTO VERTICAL TRACK CAN ALLOW DOOR TO RAISE AND CAUSE SEVERE OR FATAL INJURY.

<table>
<thead>
<tr>
<th>Winding Bars (Steel Rods)</th>
<th>Size Of Winding Bar (Inches)</th>
<th>Spring Diameter Used On</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2&quot; dia. x 18&quot;</td>
<td>2&quot; and 2-5/8&quot;</td>
<td></td>
</tr>
<tr>
<td>5/8&quot; dia. x 24&quot;</td>
<td>3-3/4&quot;and 6&quot;</td>
<td></td>
</tr>
</tbody>
</table>

Tools Required: Ladder, Approved winding bars, 3/8" Wrench, Tape measure, Safety glasses, Leather gloves

WARNING
WINDING TORSION SPRING(S) IS AN EXTREMELY DANGEROUS PROCEDURE AND SHOULD BE PERFORMED ONLY BY A TRAINED DOOR SYSTEM TECHNICIAN USING PROPER TOOLS AND INSTRUCTIONS.

WARNING
USE ONLY SPECIFIED WINDING BARS, AS STATED IN STEP SECURING DOOR FOR SPRING WINDING. DO NOT SUBSTITUTE WITH SCREWDRIVERS, PIPE, ETC. OTHER TOOLS MAY FAIL OR RELEASE FROM THE SPRING CONE AND CAUSE SERIOUS PERSONAL INJURY.

WARNING
PRIOR TO WINDING OR MAKING ADJUSTMENTS TO THE SPRINGS, ENSURE YOU'RE WINDING IN THE PROPER DIRECTION AS STATED IN THE INSTALLATION INSTRUCTIONS. OTHERWISE THE SPRING FITTINGS MAY RELEASE FROM SPRING IF NOT WOUND IN THE PROPER DIRECTION AND COULD RESULT IN SEVERE OR FATAL INJURY.

Position a ladder slightly to the side of the spring so that the winding cone is easily accessible, and so your body is not directly in 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.

Alternately inserting the winding rods into the holes of the spring winding cone, rotate the winding cone in the direction as shown, 1/4 turn at a time, until the required number of complete turns for your door height is achieved. As the last 1/8 to 1/4 turn is achieved, securely hold the winding rod and carefully stretch the torsion spring 1/8" - 1/4". Next while still securely holding the winding rod, tighten both set screws in the winding cone to 14-15 ft.
lbs. of torque (once set screws contact the torsion shaft, tighten screws one full turn).

Carefully remove winding rod from winding cone. Repeat for the opposite spring(s), if applicable. While holding the door down to prevent it from raising unexpectedly in the event the spring(s) were over-wound, carefully remove the locking pliers from the torsion shaft and vertical tracks.

Adjustments to the number of turns stated may be necessary. If door rises off floor under spring tension alone, reduce spring tension until door rests on the floor. If the door is hard to rise or drifts down on its own, add spring tension.

To adjust spring tension, fully close door. Apply vice grips to track above third track roller. Insert a winding rod into the winding cone. On single spring doors, counterbalance lift cable tension must be maintained by placing vice grips on torsion shaft before loosening set screws in the winding cone. Push upward on the winding rod 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. Relighten 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 (Reference the insert “Removing The Old Door / Preparing The Opening” section on torsion spring removal) and recheck the following the items:

1.) Check the door for level.
2.) Check the torsion shaft for level.
3.) Check the track spacing.
4.) Check the counterbalance cables for equal tension and proper wrap onto the cable drums.
5.) Check the track for potential obstruction of the track rollers.
6.) Clamp locking pliers onto track and rewind springs.

IMPORTANT: IF DOOR STILL DOES NOT OPERATE PROPERLY, THEN CONTACT A TRAINED DOOR SYSTEM TECHNICIAN.

**WARNING**

KEEP HORIZONTAL TRACKS PARALLEL AND WITHIN 3/4” TO 7/8” FROM DOOR EDGE, OTHERWISE DOOR COULD FALL, RESULTING IN SEVERE OR FATAL INJURY.

**WARNING**

FAILURE TO ASSEMBLE AND ATTACH REAR BACK HANGS PROPERLY ACCORDING TO THE ABOVE INSTRUCTIONS MAY RESULT IN DOOR FALLING WHEN RAISED, CAUSING SEVERE OR FATAL INJURY.

**ATTACHING EXTENSION LHR**

**E1**

**Attaching Rear Back Hangs**

Tools Required: Ratchet wrench, Socket: 1/2" 5/8", Wrench: 1/2" 5/8", (2) Locking pliers, Tape measure, Level, Step ladder, Safety glasses, Leather gloves

**NOTE:** Temporarily support the horizontal track with rear back hangs as shown below, without lifting door and then proceed to Step E2. Adjust the rear back hangs after springs are installed.

Using the chart below, select the appropriate perforated angle (may not be supplied). Fabricate and install rear back hangs, as shown.

**Perforated Angle Gauge Weight Limitations For Extension Springs:**

<table>
<thead>
<tr>
<th>Perforated Angle Gauge</th>
<th>Door Balance Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>2&quot; x 2&quot; x 12 Gauge</td>
<td>Less Than 400 lbs.</td>
</tr>
<tr>
<td>1-1/8&quot; x 1-1/4&quot; x 13 Gauge</td>
<td>Less Than 175 lbs.</td>
</tr>
</tbody>
</table>

**WARNING**

MAKE SURE BACK HANGS ARE BRACED SUFICIENTLY TO RESIST ANY MOTION DURING SPRING APPLICATION AND DOOR TRAVEL. IF BACK HANGS PIVOT OR DEFLECT, ADD REINFORCEMENT UNTIL THEY REMAIN FIRM AND STATIONARY. ANY BACK HANG THAT HAS BENT MUST BE REPLACED.

**E2**

**Attaching Extension Springs**

Tools Required: 9/16” Wrench, Locking pliers, Tape measure, Level, Step ladder, Safety glasses, Leather gloves

**WARNING**

WITH ASSISTANCE, RAISE THE DOOR SLOWLY INTO THE OPEN POSITION MAKING SURE THE DOOR TRAVELS SMOOTHLY THROUGH THE TRACKS. CLAMP LOCKING PLIERS TO THE BACK LEG OF BOTH HORIZONTAL TRACKS, BELOW THE BOTTOM TRACK ROLLERS TO KEEP THE DOOR FROM LOWERING.

**WARNING**

FAILURE TO INSTALL SPRING RESTRAINT CABLES CAN RESULT IN SEVERE OR FATAL INJURY IN CASE OF SPRING BREAKAGE.

**NOTE:** Repeat the same process for right hand side.
Secure the eye bolt and 3 hole clip to the rear back hang using (1) 5/16", 18 hex nut. Hook one end of the extension spring onto the eye bolt. Feed the spring restraint cable through the rear extension spring loop and center of the extension spring then front spring loop, pull the spring restraint cable taut and tie the special knot around the "jamb side" of the 3 hole clip.

**ATTACH THE "JAMB SIDE" 3 HOLE CLIP TO THE JAMB NEAR THE FLAG ANGLE / WALL ANGLE USING:**

Wood jambs, using 5/16" x 1-5/8" lag screws. Drill 3/16" pilot holes into the wood jamb for the lag screws.

Steel jambs, using 5/16" x 1" self drilling screws.

Pre-cast concrete, using 3/8" x 3" sleeve anchor (not supplied).

**NOTE:** Products being installed to pre-cast or block must use a 3/8" x 3" sleeve anchor for attachment to the wall angle to the building, as shown. Use the slots in the wall angle as a drill template and drill a 3/8" hole (3-1/2" deep) and secure to anchor.

**WARNING**

DO NOT USE SLEEVE ANCHORS ON HOLLOW BLOCK.

<table>
<thead>
<tr>
<th>Door Height</th>
<th>Spring Length (Door Open) (Does Not Include Pre-stretch)</th>
<th>Spring Length Extended (Door Closed) (Does Not Include Pre-stretch)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6' 0&quot;</td>
<td>25&quot; (635 mm)</td>
<td>61&quot; (1549 mm)</td>
</tr>
<tr>
<td>6' 3&quot;</td>
<td>25&quot; (635 mm)</td>
<td>62-1/2&quot; (1588 mm)</td>
</tr>
<tr>
<td>6' 6&quot;</td>
<td>25&quot; (635 mm)</td>
<td>64&quot; (1626 mm)</td>
</tr>
<tr>
<td>7' 0&quot;</td>
<td>25&quot; (635 mm)</td>
<td>67&quot; (1702 mm)</td>
</tr>
<tr>
<td>7' 6&quot;</td>
<td>27&quot; (686 mm)</td>
<td>72&quot; (1829 mm)</td>
</tr>
<tr>
<td>7' 9&quot;</td>
<td>27&quot; (686 mm)</td>
<td>73-1/2&quot; (1867 mm)</td>
</tr>
<tr>
<td>8' 0&quot;</td>
<td>27&quot; (686 mm)</td>
<td>75&quot; (1905 mm)</td>
</tr>
</tbody>
</table>

**E3** Attaching Spring Sheaves

Tools Required: 9/16" Wrench, Tape measure, Level, Locking pliers, Step ladder, Safety glasses, Leather gloves

Hook the sheave fork through the front loop of the extension spring and attach the sheave fork to the rear cable lift sheave using (1) 3/8" - 16 x 1 -1/4" hex head bolt and (1) 3/8" - 16 hex nut. Thread the counterbalance lift cable over the front cable lift sheave and around the rear cable lift sheave and tie the special knot around the "horizontal track" using a 3 hole clip, as shown.

Insert one end of the large "S" hook into the 3 hole clip and the other end into the sheave plate of the horizontal track, as shown.

Repeat for the other side.

**WARNING**

FAILURE TO CLOSE "S" HOOKS AND EYE BOLTS CAN RESULT IN SEVER OR FATAL INJURY IF SPRINGS COME LOOSE.

| Tools Required: 9/16" Wrench, Locking pliers, Tape measure, Level, Step ladder, Safety glasses, Leather gloves |

Adjust counterbalance lift cables to create about 1" to 2" (25 mm to 50 mm) of pre-stretch on the extension spring, with the door in the fully opened position. Measure extension spring length (door open) and verify with the chart below. Spring length must be the same for both left hand and right hand extension springs to allow even door balance. Carefully remove the locking pliers from the horizontal track and lower the door into the closed position. Once the door is closed, measure the extension spring length for both sides. Using the chart, verify the spring length extended is correct for your door height.

**E4** Counterbalance Lift Cable Adjustments

<table>
<thead>
<tr>
<th>Door Height</th>
<th>Spring Length (Door Open) (Does Not Include Pre-stretch)</th>
<th>Spring Length Extended (Door Closed) (Does Not Include Pre-stretch)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6' 0&quot;</td>
<td>25&quot; (635 mm)</td>
<td>61&quot; (1549 mm)</td>
</tr>
<tr>
<td>6' 3&quot;</td>
<td>25&quot; (635 mm)</td>
<td>62-1/2&quot; (1588 mm)</td>
</tr>
<tr>
<td>6' 6&quot;</td>
<td>25&quot; (635 mm)</td>
<td>64&quot; (1626 mm)</td>
</tr>
<tr>
<td>7' 0&quot;</td>
<td>25&quot; (635 mm)</td>
<td>67&quot; (1702 mm)</td>
</tr>
<tr>
<td>7' 6&quot;</td>
<td>27&quot; (686 mm)</td>
<td>72&quot; (1829 mm)</td>
</tr>
<tr>
<td>7' 9&quot;</td>
<td>27&quot; (686 mm)</td>
<td>73-1/2&quot; (1867 mm)</td>
</tr>
<tr>
<td>8' 0&quot;</td>
<td>27&quot; (686 mm)</td>
<td>75&quot; (1905 mm)</td>
</tr>
</tbody>
</table>

**E5** Balancing Door

Tools Required: Locking pliers, Tape measure, Step ladder, Safety glasses, Leather gloves

If door raises more than 2 ft. under spring tension alone, reduce spring tension. Adjust extension spring length by loosening the special knot on the 3 hole clip and shorten the counterbalance lift cable.
between the 3 hole clip and the extension spring about 1/2”. A poorly balanced door can cause garage door operator problems.

If the door still does not operate easily, raise the door into the open position, return the locking pliers, and recheck the following items:

1.) Is the door level?

2.) Are the flag angles level and plumb?

3.) Does the distance between the flag angles equal door width plus 3-3/8” to 3-1/2”?

4.) Do the counterbalance lift cables have equal tension? Adjust by re-tying the special knot, if necessary.

5.) Make sure door is not rubbing on jamb.

**IMPORTANT:** IF DOOR STILL DOES NOT BALANCE PROPERLY, THEN CONTACT A TRAINED DOOR SYSTEM TECHNICIAN.