

Torsion Spring

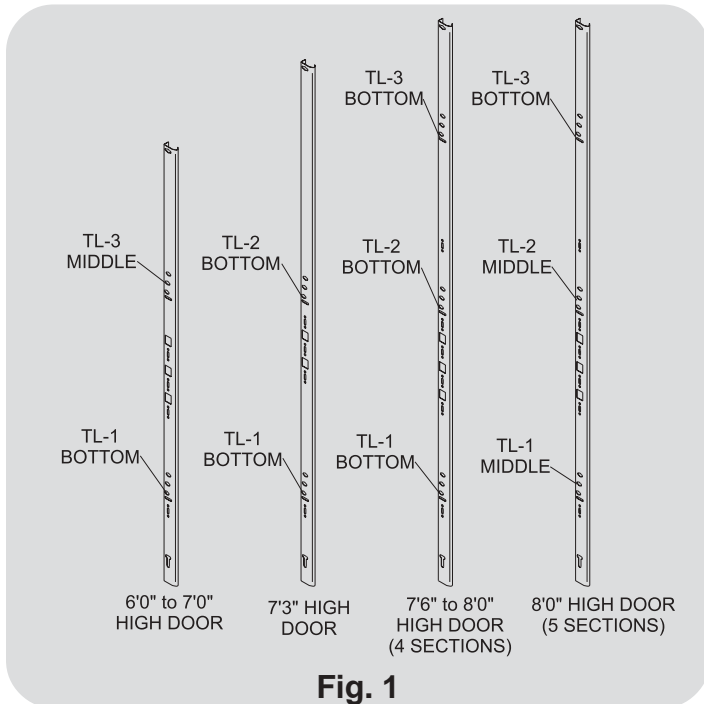
Front Mount & Rear Mount Low-Headroom Installation Instruction Supplement

This installation instruction is to be used as a supplement to the manual provided with the door. The figures and instructions included in this document are **ONLY** those which deviate from the standard installation. All **WARNINGS** and **CAUTIONS** listed in the manual are applicable to this low-headroom instruction as well.

Quick Install Jamb Brackets

For 9200/9600/9900 doors use the illustrations in **Fig. 1** to determine the placement of the jamb brackets for the door. Locate the proper jamb brackets by the corresponding holes in the vertical track.

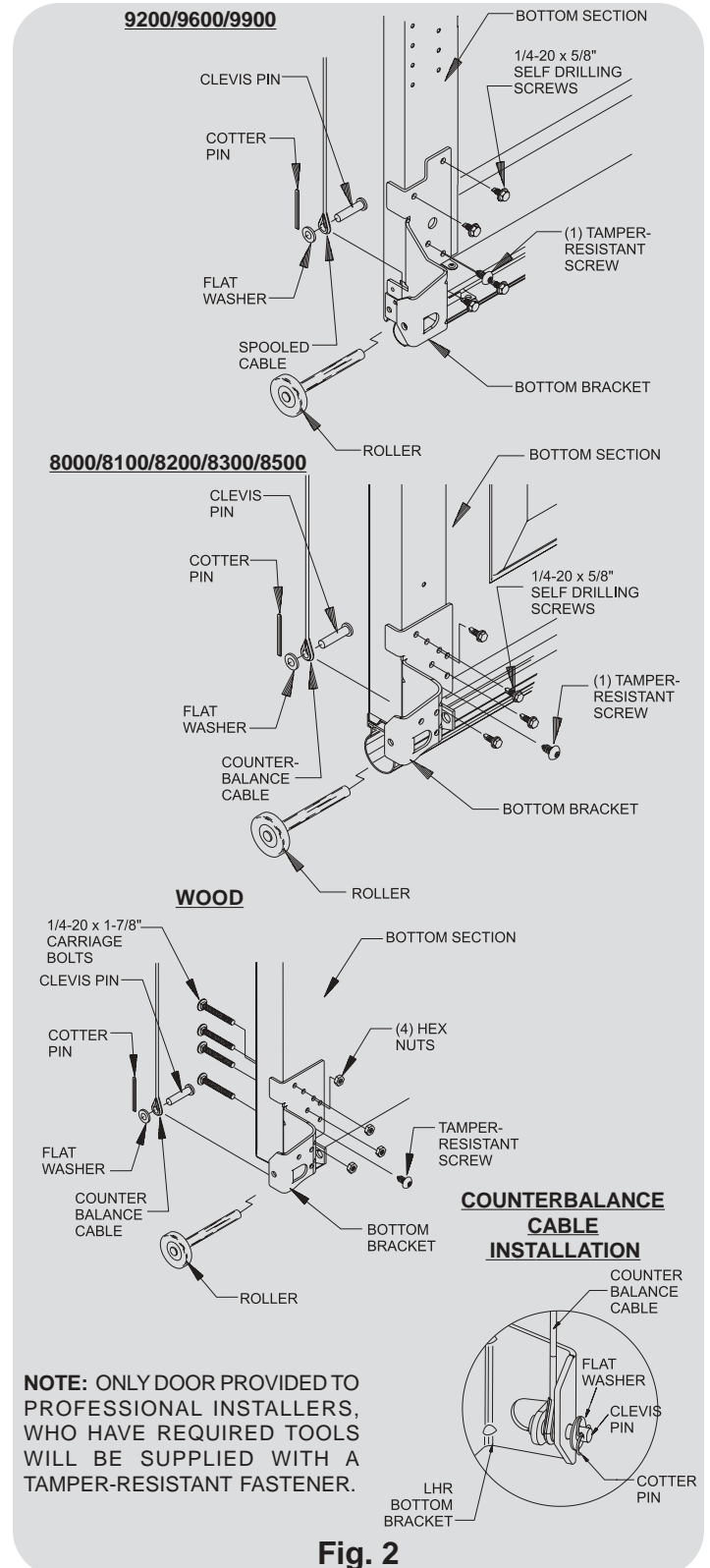
NOTE: Jamb brackets are stamped for identification.



Bottom Bracket Installation

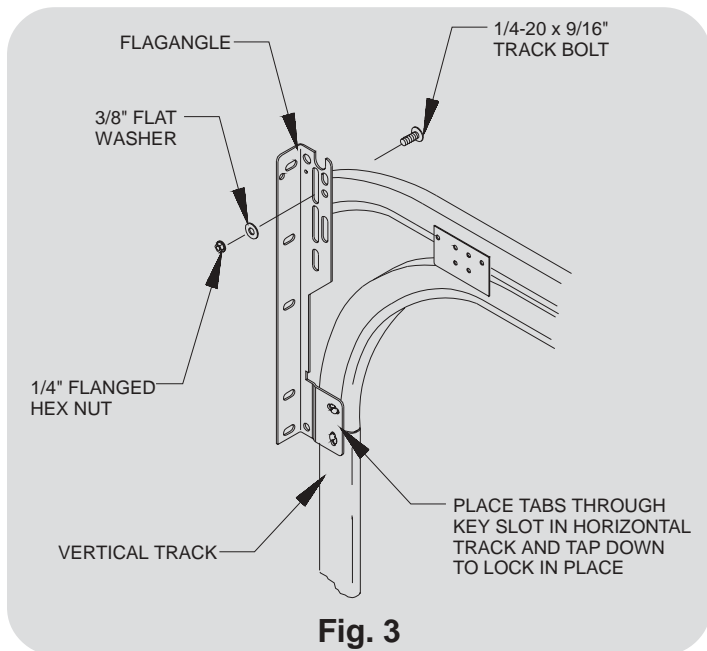
Locate the low-headroom bottom brackets provided for your door (shown in **Fig. 2**) and place them, left and right over the bottom corners of the section. Seat the brackets against the edge of the section. Secure the bottom brackets to the section using (4) 1/4-20 x 5/8" self drilling screws and (1) tamper-resistant screw. Wood doors require (4) 1/4-20 x 1-7/8" carriage bolts and hex nuts plus (1) tamper-resistant screw in each bottom bracket. Using the bracket as a template, mark the location of the bolts. Drill a 9/32" dia (7mm) hole through the section at each bolt location, and secure the brackets to the section with the bolts. The tamper-resistant screw needs to be pilot drilled.

Attach the counter balance cable to the low-headroom bottom brackets using clevis pins. Slide a 3/8" flat washer onto clevis pin and secure with a cotter pin. Place roller through holes or rolled tube in each bottom bracket.

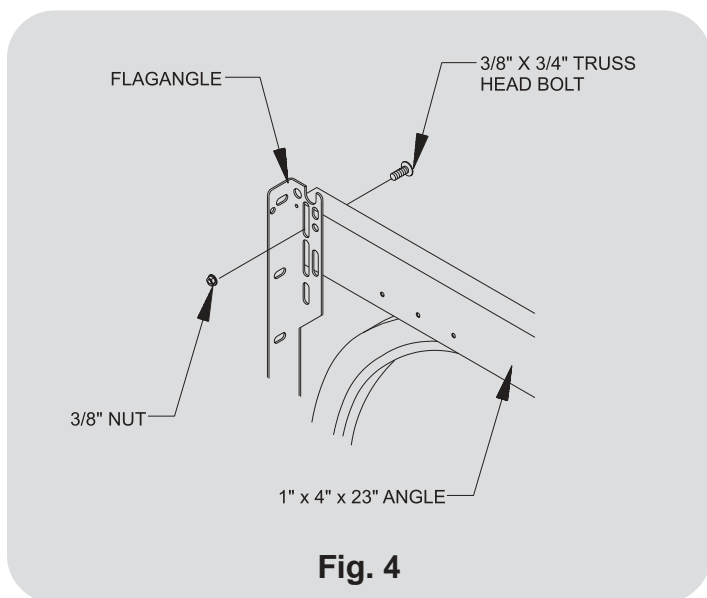


Quick Install Horizontal Track Installation

Place the horizontal tracks over the top of the previously installed vertical tracks as shown in **Fig. 3**. Locate the keyslot in the track over the Twistlock™ tabs on the flagangles. Hold the parts together and tap down on the track to lock into place. Place (1) 1/4-20 x 9/16" track bolt through the slot in the end of the top curve and the appropriate slot in the flagangle, then secure with a 3/8" flat washer and flanged hex nut (do not fully tighten). Level the horizontal track, then tighten the bolt in the top curve. For 1" x 4" x 23" angles see **Fig. 4**.



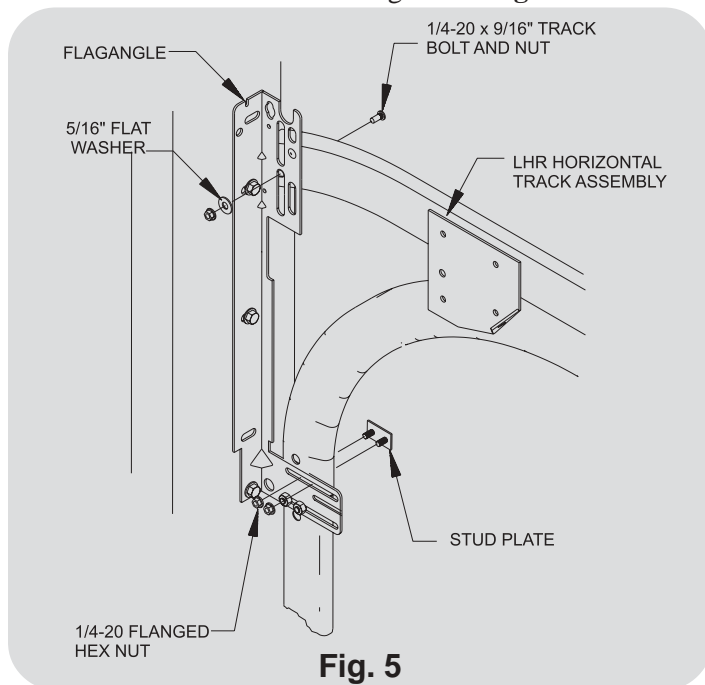
1" x 4" x 23" Angle Installation



Secure 1" x 4" x 23" horizontal angle to the flag angle with (1) 3/8 x 3/4" truss head bolt and nut.

Universal Horizontal Track Installation

Place the horizontal tracks over the top of the previously installed vertical tracks as shown in **Fig. 5**. Attach the bottom of the lower curve to the flagangle using (1) stud plate and nuts. Secure the upper curve to the flagangle using (1) 1/4-20 x 9/16" track bolt, 3/8" flat washer and flanged hex nut as illustrated. For 1" x 4" x 23" angles see **Fig. 4**.



Top Bracket Installation

Identify the top bracket supplied with your door. Place a roller into the top bracket as shown in **Fig. 6**. Push the top section of the door out against the jamb until the section is parallel with the other sections of the door. Twist the roller into the upper track and locate the top brackets against the section. Align the edge of the top bracket with the edge of the section.

For **9200/9600/9900** door models, secure the brackets using (4) 1/4-20 x 5/8" self-tapping screws each.

The space between the inside edge of the track and the section should be between 1/2" to 5/8", so that the roller stud head does not rub against the track as shown in **Fig. 7**.

For **wood doors**, drill a 9/32" dia (7mm) hole into the lower slot of the top bracket and through the section. Secure using (1) 1/4-20 x 1-7/8" carriage bolt and nut. Adjust the brackets if necessary, drill and secure with (2) more carriage bolts and nuts through the top holes as shown in **Fig. 8**.

For **other** door models, secure the top brackets to the section by placing (1) 1/4-20 x 5/8" self drilling screw through the lower slot in each bracket. Adjust the brackets if necessary and place (2) more screws through the top holes as shown in **Fig. 6**.

Front Mount Torsion Spring ONLY

Torsion Shaft Assembly

Place the torsion shaft on the floor in front of the door. Facing the door, slide the nylon center bearing over the end of the tube until it is centered on the shaft. Slide the spring with the black winding cone over the left hand end of the tube (**Fig. 9**). Slide the spring with the red winding cone (if applicable) over the right hand end of the shaft as shown.

NOTE: Front mount torsion shaft assembly for LHR doors are opposite from standard lift doors.

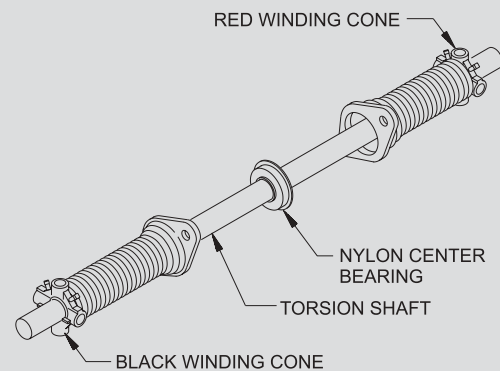


Fig. 9

End Bearing Fixture Installation

NOTE: It may be necessary to cut off the top of the flagangle for minimum headroom applications.

Place the left and right end bearing fixtures above the flagangles as shown in **Fig. 10**. Attach the fixtures to the jamb using (3) 5/16" x 1-5/8" lag bolts.

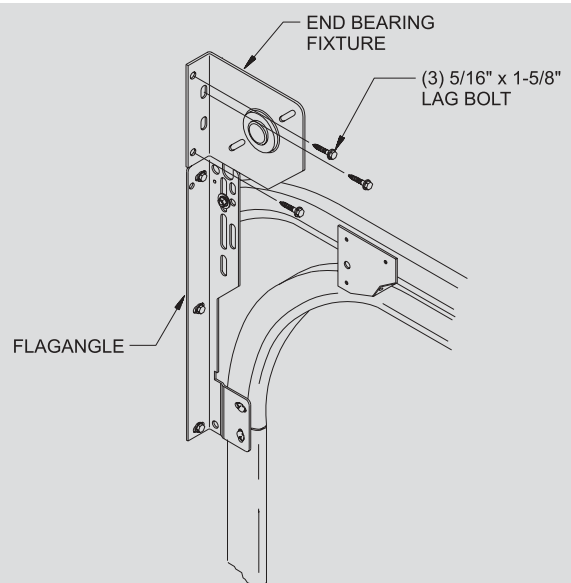


Fig. 10

8000/8100/8200/8300/8500

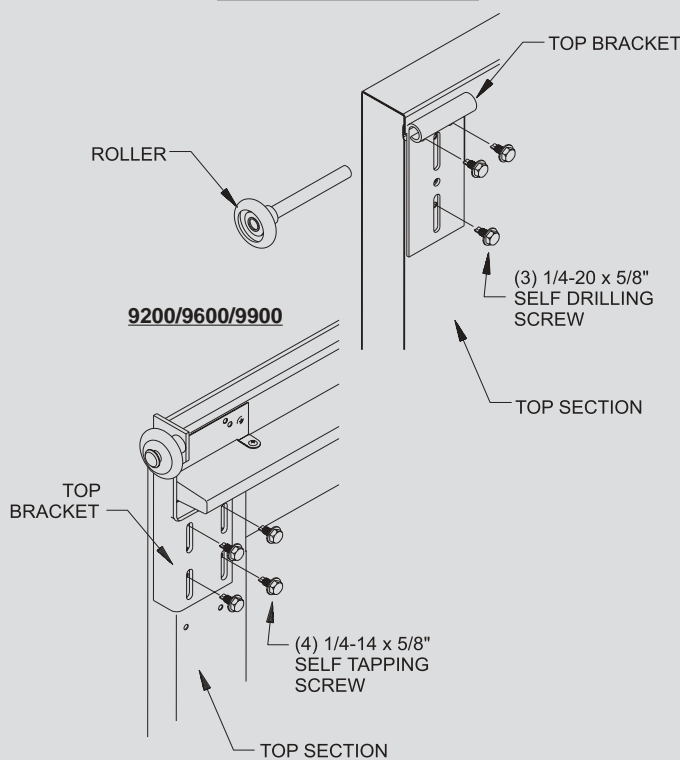


Fig. 6

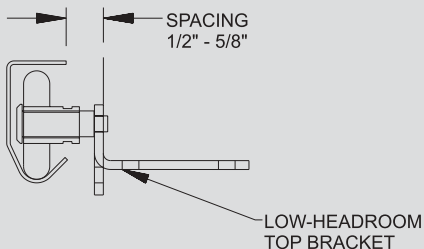


Fig. 7

Wood Doors

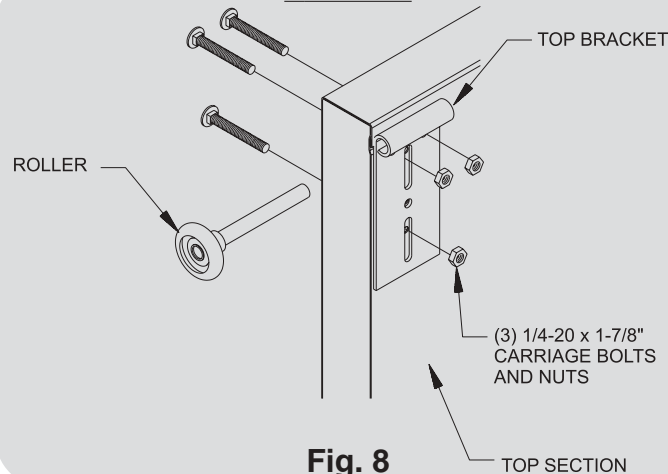


Fig. 8

NOTE: FOR FRONT MOUNT TORSION SPRING APPLICATIONS PROCEED TO NEXT STEP.

NOTE: FOR REAR MOUNT TORSION SPRING APPLICATIONS SKIP TO REAR MOUNT TORSION SPRING SECTION IN THIS INSTRUCTIONS INSERT.

Torsion Shaft Assembly

Place the torsion shaft on the floor at the end of the horizontal track. Facing the door, slide the center bearing bracket over the end of the tube until it is centered on the shaft. Slide the spring with the black winding cone over the left hand end of the tube (**Fig. 17**). Slide the red spring (if applicable) over the right end of the shaft as shown.

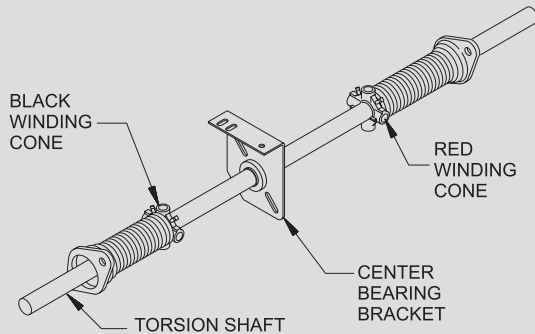


Fig. 17

Torsion Shaft Installation

Lift the torsion shaft off the floor. Slide one end of the shaft through the end bearing bracket (**Fig. 18**). Extend the shaft through the bearing until the opposite end of the shaft can be inserted into the other bracket. Equalize the amount that the shaft protrudes on each side. Slide the center bearing bracket to the center of the torsion shaft. Secure the bracket to the ceiling using perforated angle or wood blocking. Place the stationary cone(s) of the torsion springs in line with the slots in the end bearing brackets and secure using (2) 3/8-16 x 1-1/2" hex head bolts and nuts (each) as shown. Place the black drum over the left end of the torsion shaft (inside looking out) and the red drum over the right end.

Apply locking pliers to the track above a roller before winding springs. Ensure that counterbalance cables are over the steel sheaves and wrap the counterbalance cables over the tops of the drums. Hook the cable stops behind the notches in the drums. Rotate the drums to add tension to the cables, clamp locking pliers onto the torsion shaft so that cables maintain tension. Tighten the set screws for each drum. Cables should terminate at 6 O'clock position minimum (as shown), and cable tension should be equal for both sides. Check the spring warning tag for number of turns required. Using approved winding bars, wind the springs upward the required number of turns.

NOTE: SEE PROVIDED INSTALLATION MANUAL FOR INFORMATION REGARDING ADJUSTING SPRING TENSION.

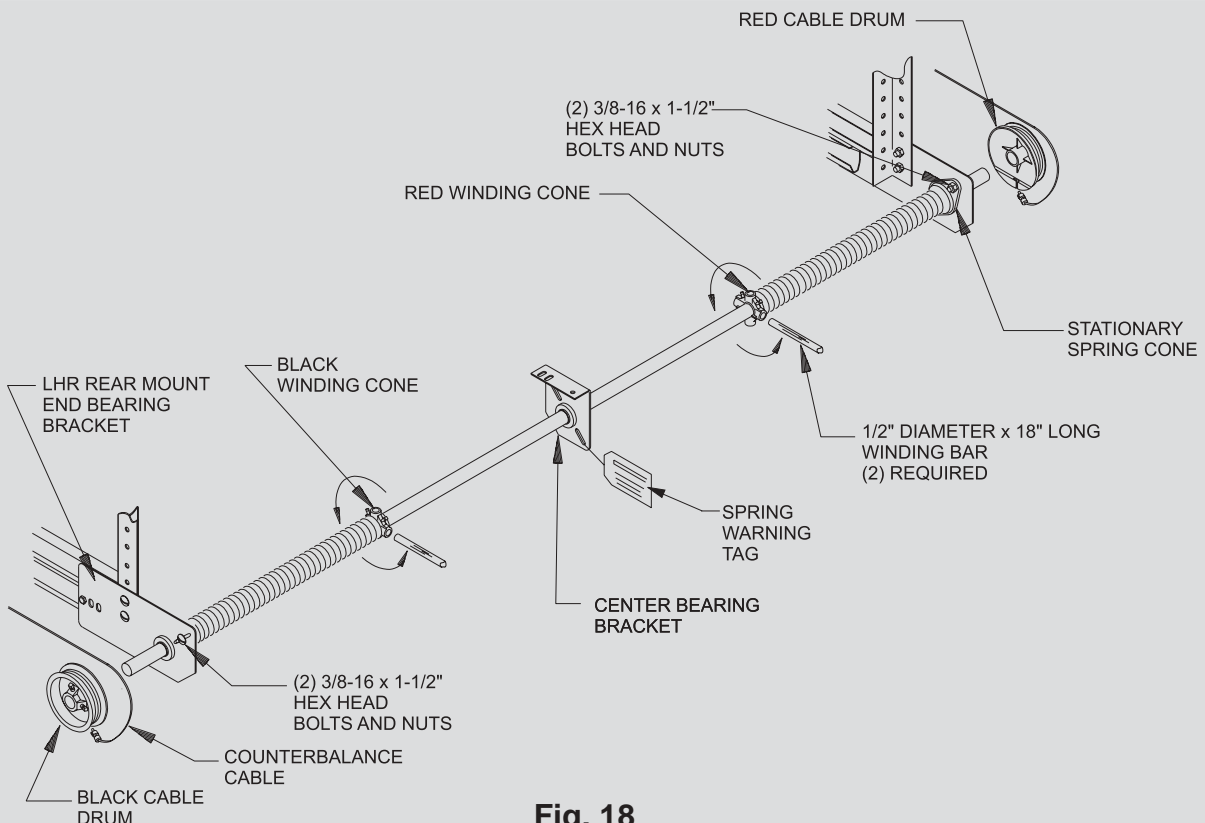


Fig. 18

Center Bearing Bracket Installation

Locate the center of the door and mark a vertical pencil line on the spring mounting pad. Then measure the distance from the top of the door to the center of the bearing on the end bearing fixture. Mark a horizontal line on the spring mounting pad the measured distance up from the top of the door. Offset the center bearing bracket 1-1/2" off center on the spring mounting pad and center the bearing hole in the bracket over the horizontal line so that the torsion shaft will lay level through the brackets when installed. Attach the bracket to the spring pad using (2) 5/16" x 1-5/8" lag bolts and (1) tamper resistant lag screw as illustrated in **Fig. 11**.

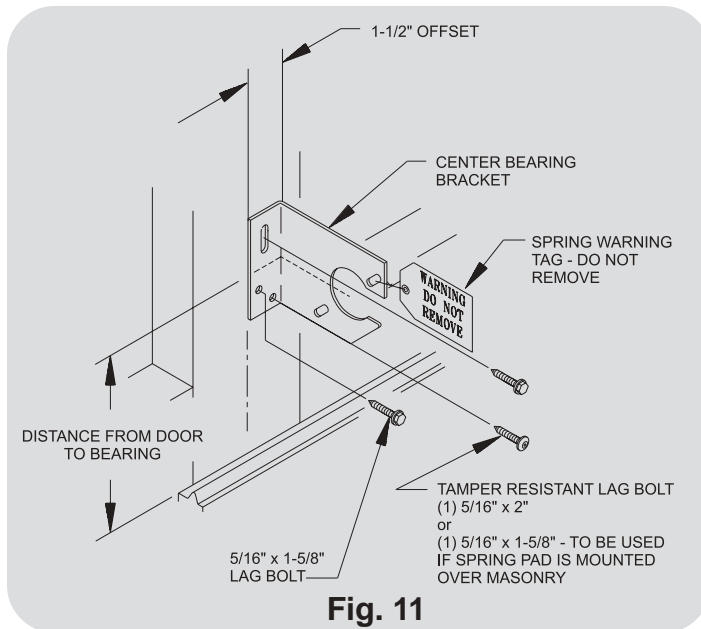


Fig. 11

Torsion Shaft Installation

Lift the torsion shaft off the floor. Slide one end of the shaft through the end bearing fixture (**Fig. 12**). Extend the shaft through the bearing until the opposite end of the shaft can be inserted into the other fixture. Equalize the amount that the

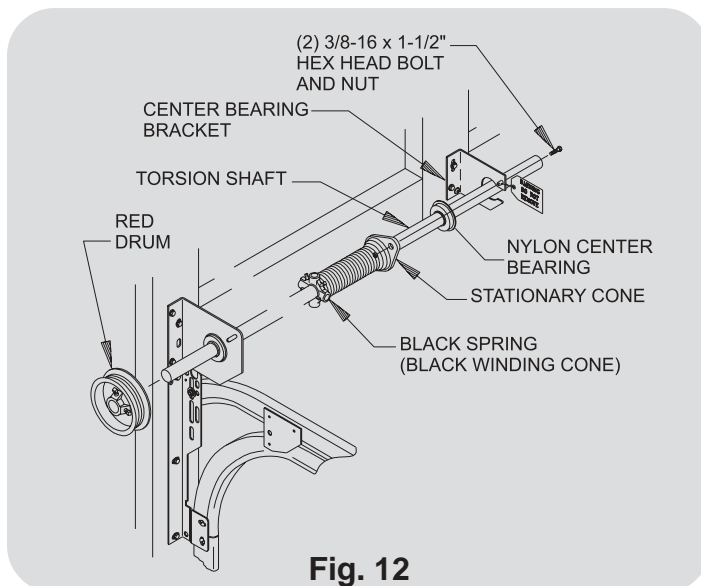


Fig. 12

shaft protrudes on each side. Slide the nylon center bearing into the end of (1) 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 using (2) 3/8-16 x 1-1/2" bolts and nuts. Slide the red drum over the left end of the shaft as shown (inside looking out) and the black drum over the right end of the shaft.

Counterbalance Cable Installation and Winding Instructions

Wrap the counterbalance cables around the front of the drums. Hook the cable stops behind the slots of the drums. (Cables should terminate at 9 O'clock as shown in **Fig. 13**.) Secure the cable drums to the torsion shaft by tightening the set screws. Clamp locking pliers onto the vertical track just above one of the rollers and wind the torsion springs downward the required number of turns. See warning tag on spring(s).

NOTE: The torsion spring counter-balance system for front mount low headroom is wound in the opposite direction of standard lift.

NOTE: Refer to provided installation manual for information regarding spring adjustment.

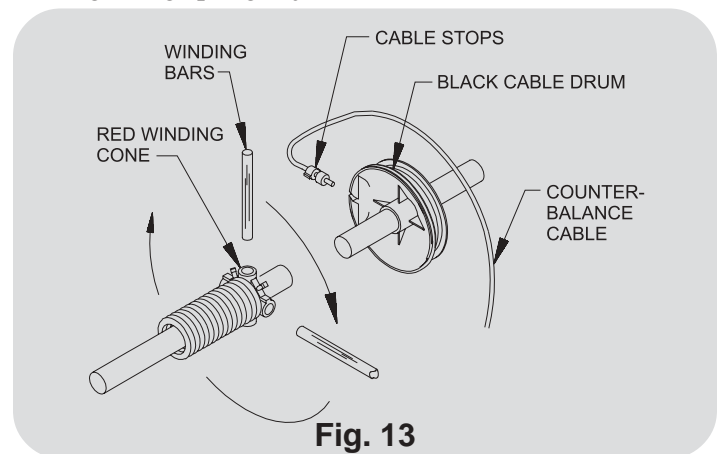


Fig. 13

Rear Support Installation

Clamp a pair of locking pliers onto the straight leg of each horizontal track 30-35" from the jamb. Raise the door until the top roller hits the locking pliers previously installed and clamp a pair of locking pliers, below the bottom rollers, onto the straight leg of both vertical tracks to prevent the door from falling. Move the horizontal track until it is parallel with the edge of the door and level, then secure the lower horizontal track to the rear support drop angle using a 5/16-18 x 1-1/4" bolt and nut. Drill a 5/16" hole through the top horizontal track and secure with a 5/16-18 x 1-1/4" bolt and nut to be used as a roller stop (see **Fig. 14**). Lower the door into the opening to finish the installation.

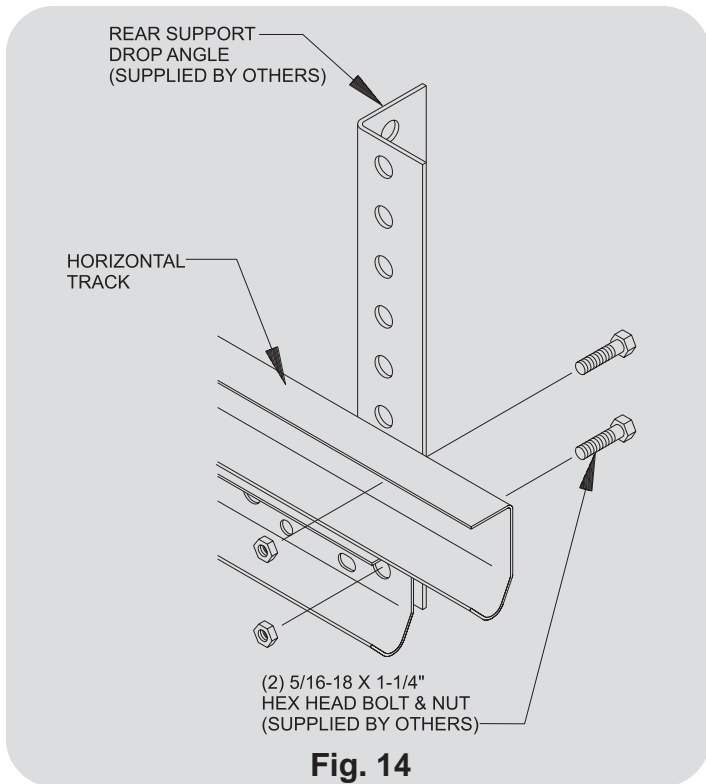


Fig. 14

REAR SUPPORT MATERIAL SUPPLIED BY OTHERS
 (NOTE: LATERAL BRACE MUST ALWAYS BE USED TO PREVENT SWAYING OF HORIZONTAL TRACK.)

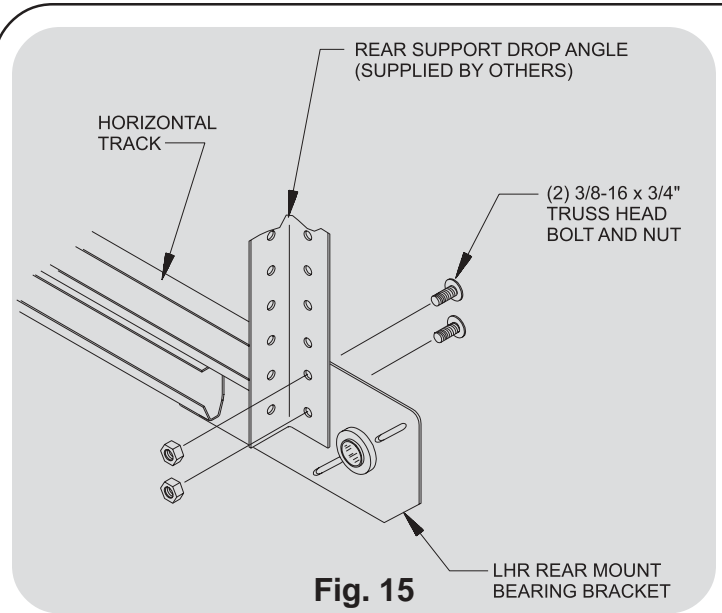


Fig. 15

Cable Sheave Installation

Place a 3/8-16 x 1-1/2" hex head bolt through the hole in the sheave plate and slide a steel sheave over the end of the bolt as shown in **Fig. 16**. Secure the sheave using (1) 3/8" hex nut. For 1" x 4" x 23" angle applications, secure the steel sheave using the sheave saddle and (2) 5/16" x 3/4" square neck carriage bolts and nuts.

Repeat for the other side, then loop the counterbalance cables over each sheave.

Rear Mount Torsion Spring ONLY

Rear Support Installation

With assistance, raise the door until 1-1/2 sections are in the horizontal track. Clamp a pair of locking pliers, below the bottom rollers, onto the straight leg of both vertical tracks to prevent the door from falling. Move the horizontal track until it is parallel with the edge of the door, then secure the horizontal track to the rear support drop angle using (2) 3/8-16 x 3/4" truss head bolts and nuts each as shown in **Fig. 15**. With assistance lower the door back into the opening.

REAR SUPPORT MATERIAL SUPPLIED BY OTHERS
 (NOTE: LATERAL BRACE MUST ALWAYS BE USED TO PREVENT SWAYING OF HORIZONTAL TRACK.)

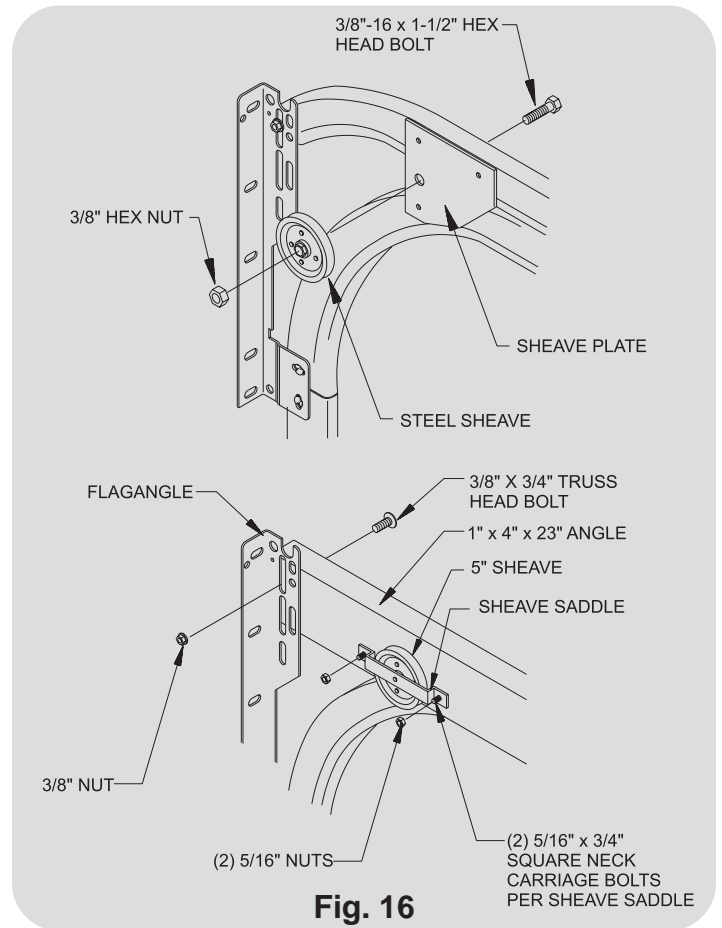


Fig. 16