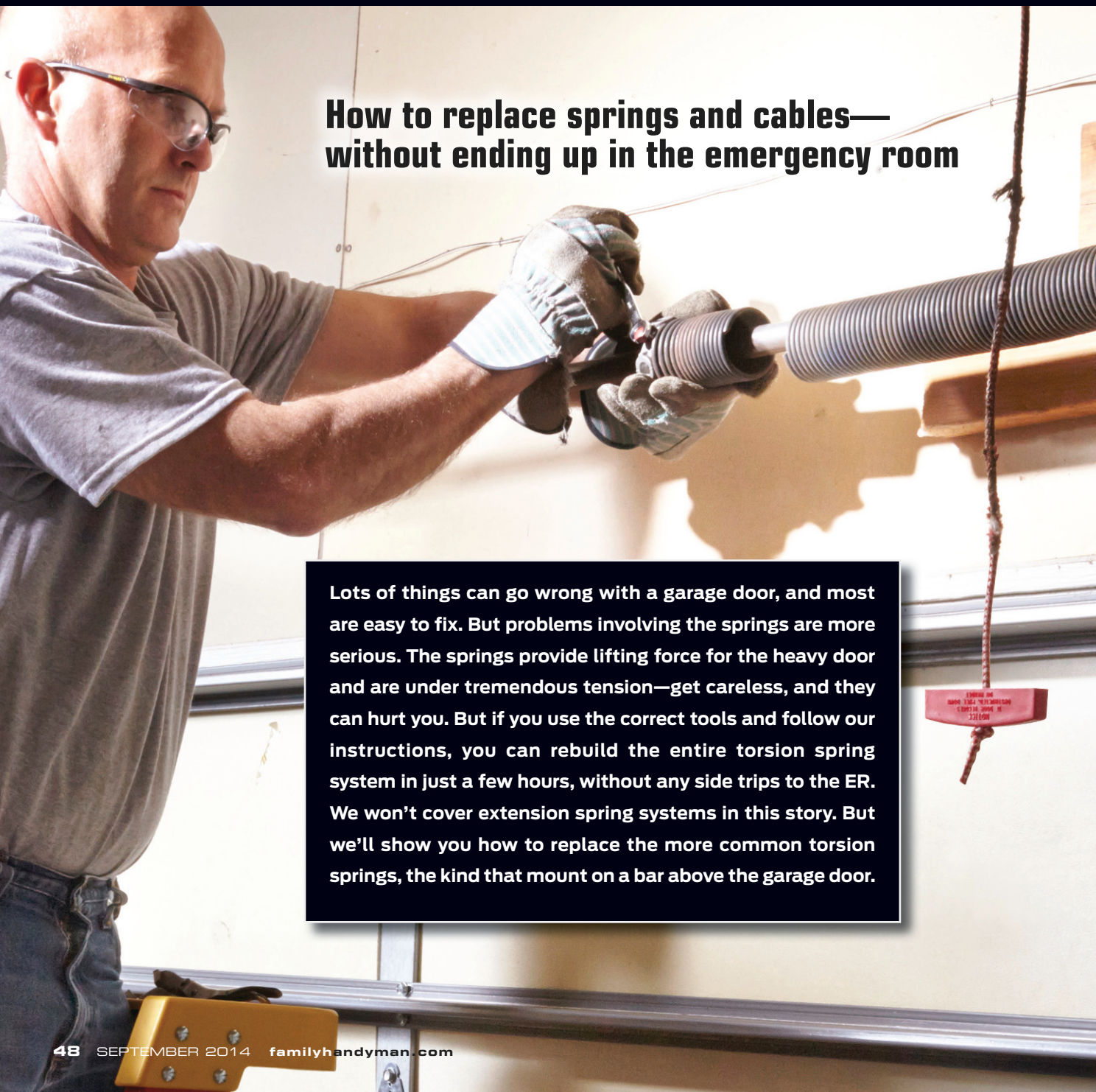
HOME CARE & REPAIR SPECIAL

ADVANCED GARAGE DOOR REPAIRS

by Rick Muscoplat
editors@thefamilyhandyman.com



How to replace springs and cables—without ending up in the emergency room

Lots of things can go wrong with a garage door, and most are easy to fix. But problems involving the springs are more serious. The springs provide lifting force for the heavy door and are under tremendous tension—get careless, and they can hurt you. But if you use the correct tools and follow our instructions, you can rebuild the entire torsion spring system in just a few hours, without any side trips to the ER. We won't cover extension spring systems in this story. But we'll show you how to replace the more common torsion springs, the kind that mount on a bar above the garage door.

Before you do this yourself...

Depending on where you live, doing this job yourself might save you $200 or more. Then again, it might save you less than $50. So before you spend several hours fixing your garage door, it's a good idea to gather a few professional estimates.

Start by getting a rough measurement of your springs (length and diameter). Then measure the width and height of your door. Make sure the quote includes the trip charge, parts and labor. Then ask for a price based on 7x19 lift cables and double-life springs. Those items will give you more years of service and should only add $65 to the price.

WHAT IT TAKES

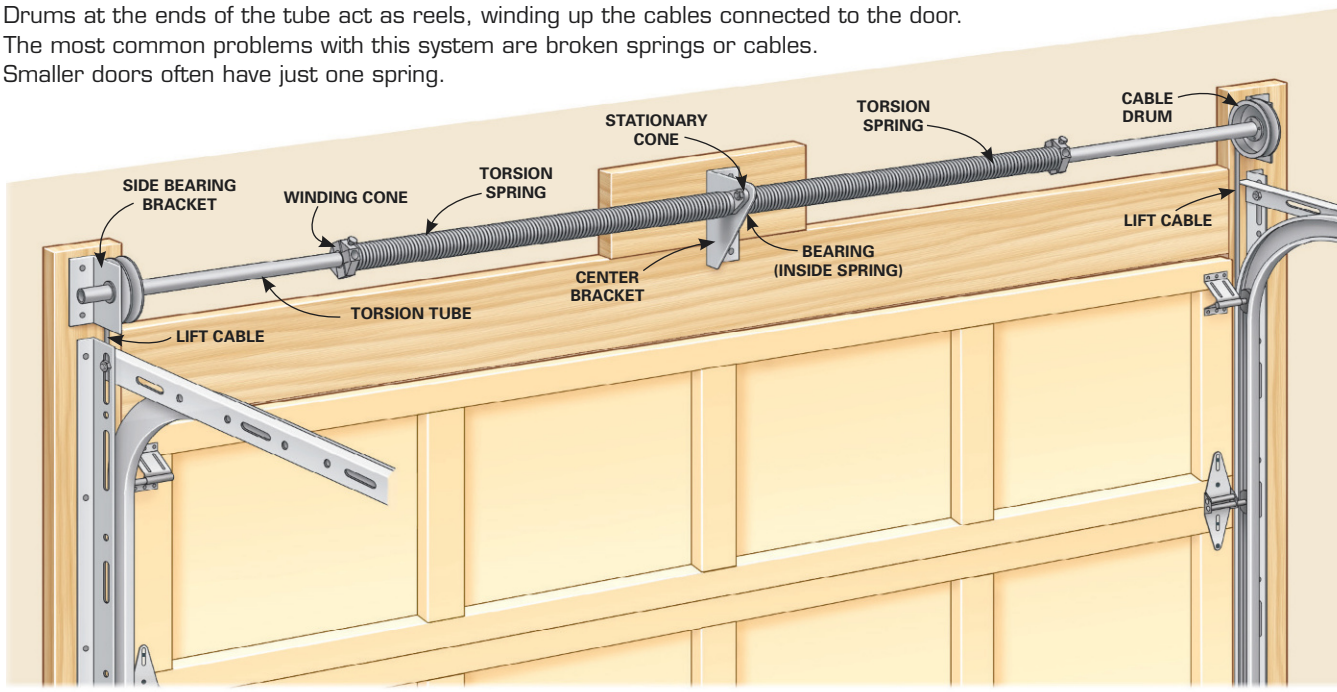
TIME: 4 hours
COST: $125 for two springs and new lift cables
TOOLS: Winding bars ($25), C-clamps and locking pliers, wrenches, eye protection and leather gloves
SKILL LEVEL: Advanced

MEET THE PRO

Tim Sweeney, owner of TB Sweeney Repair, has 22 years of experience installing and repairing residential and commercial garage doors.

Figure A
Garage door lift system

To help lift a heavy garage door, the springs apply twisting force to the torsion tube. Drums at the ends of the tube act as reels, winding up the cables connected to the door. The most common problems with this system are broken springs or cables. Smaller doors often have just one spring.



PLAY IT SUPER SAFE!

■ NEVER use screwdrivers, pin punches or pliers handles to wind or unwind a torsion spring. Trust us: This is the best way to wind up in the hospital. Don't even think about doing this job without a proper set of winding bars. You can buy a set of professional hardened-steel winding bars for about $25 (from either of the online sources provided on p. 52). Professional winding bars work with 1/2-in. and 7/16-in. winding cones. If your winding cones have 1/2-in. openings, you can make your own winding bars for about $10 by cutting a 36-in. length of 1/2-in.-diameter round bar stock in half (buy round bar stock from any hardware or home center). Just file a smooth bevel on each end so it slides into the winding cone holes easier.

■ Position your ladder to the side of the spring ends so you're never directly in front of the spring cones when they're winding or unwinding.

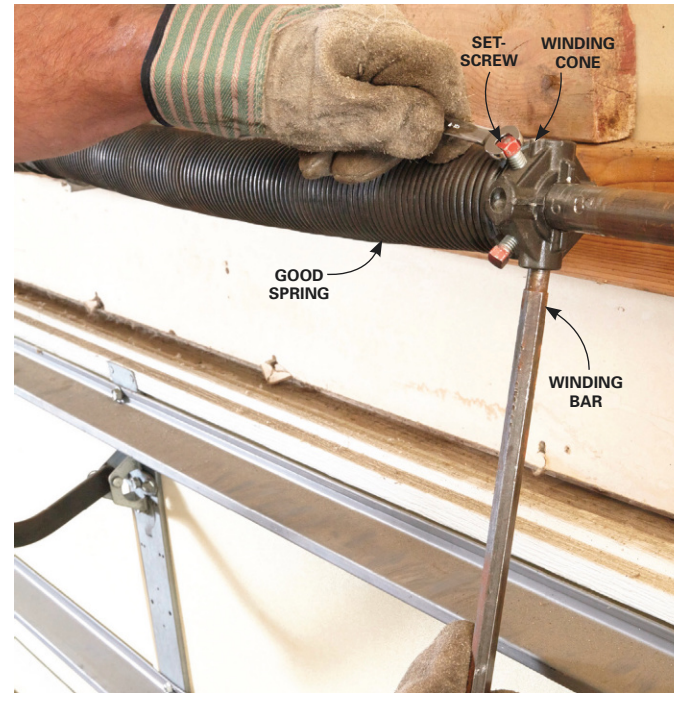
■ Keep the garage door opener disconnected from power at all times, and lock the door in the lowered position, especially when you're winding the springs.

■ Wear eye protection and leather gloves throughout the project.

■ Step off the ladder and move it off to the side before unclamping the door and testing the balance. Never test a door while you're standing on the ladder.

ART DIRECTION **MARCIA ROEPKE** • PHOTOGRAPHY **TOM FENENGA** • TECHNICAL ILLUSTRATION **FRANK ROHRBACH III** • CONSULTANT **TB SWEENEY REPAIR**

1 LOCK DOWN THE DOOR
Clamp a locking pliers or a C-clamp to the track just above one of the rollers. This will prevent the door from shooting up and breaking your nose when you wind the new springs. Also yank the cord and unplug the garage door opener.



2 LOOSEN THE UNBROKEN SPRING
Shove a winding bar into a bottom hole of the winding cone of the good spring. Hold the bar in place while you loosen the two setscrews. Hang on tight; the spring will push with powerful torque as the screws release.

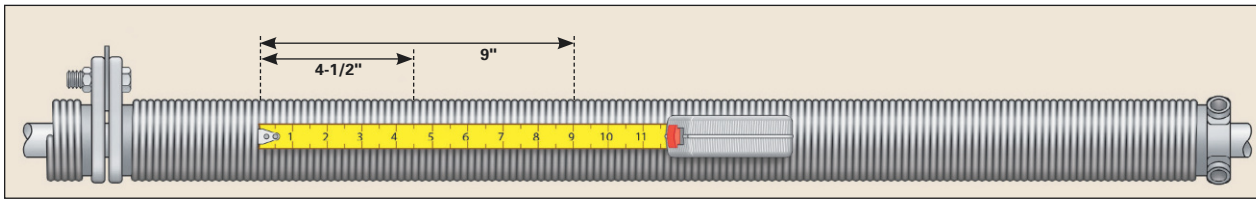
3 UNWIND THE UNBROKEN SPRING
Insert the second winding bar into the hole at the 9:00 position. Remove the bottom bar and unwind the spring a quarter turn at a time, leapfrogging the winding bars with each turn.

4 DISCONNECT THE SPRINGS FROM THE CENTER BRACKET
Remove the two nuts and bolts that fasten the stationary spring cones to the center bracket. Then slide the springs toward the end brackets.

BUYING REPLACEMENT PARTS

Most home centers don't carry all the replacement parts you'll need, and most garage door service companies won't sell you springs. So you may have to order the parts online and wait for the shipment to arrive. Garagedoorpartsusa.com and stardoorparts.com are two online sources. First, inspect the condition of your cables and brackets. If you see any frayed strands on the cables or rust on the bottom brackets, replace them now before they fail. Bottom brackets cost about $15 per set. Premium-quality cables (listed as "7x19") last much longer than economy cables and cost only about $4 more. So it's smart to buy the better cables for about $12 per set.

Standard torsion springs (about $40 each) have a service life of 7,000 to 10,000 open/close cycles. However, you can buy double-life (25,000 cycles) replacement springs for about $65 per spring. If you have a two-spring setup and one spring breaks, the second spring will break soon. So replace them both at the same time. To get the right springs for your door, you'll have to provide the supplier some details. Here's how:

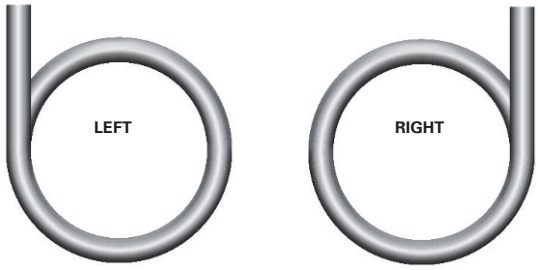


Calculate the wire diameter

Grab a tape measure and press the hook between two spring coils and note the length of 20 coils. Then measure 40 coils. Convert the measurements to a decimal (4-1/2 in. to 4.5 in., or 4-1/8 to 4.125, for example). Divide the two measurements by 20 and 40 to obtain the spring's wire diameter. Here's an example:
4.50 divided by 20 = .225-in. wire diameter
9.0 divided by 40 = .225-in. wire diameter
If the two results match, you've measured correctly.

Determine the "hand" of the springs

View the end of each spring to determine its wind direction, or "hand." If the end of the spring is pointing up on the right, it's a right-hand wind. If the end is pointing up on the left, it's a left-hand wind. Doors with two springs will always have a left- and a right-hand spring.



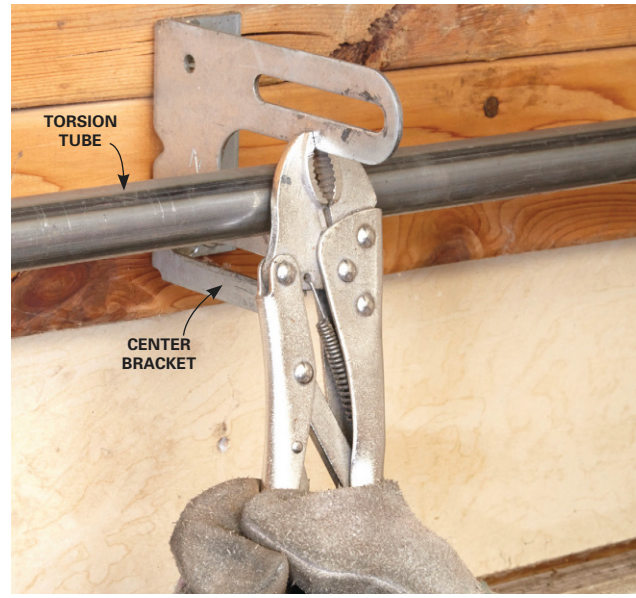
Measure the inner diameter and length

Measure the inner diameter of the broken spring as shown. Loosen the setscrews on the broken spring and slide the broken portion over to meet the stationary section. Measure the overall length of the springs (not including the cones).

IF YOUR CAR IS TRAPPED...

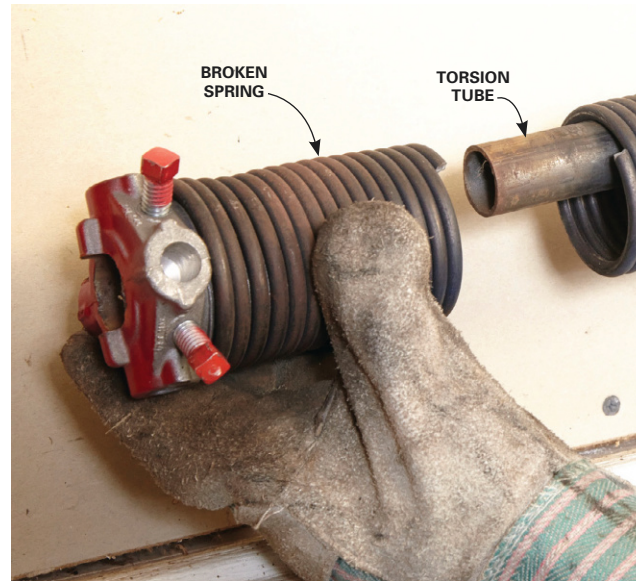
If a spring or cable breaks while your cars are parked inside, the garage door won't open and you'll be stranded. Getting emergency evening or weekend service from a garage door professional can easily cost $400. However, if you can get your vehicles out of the garage, you can postpone the repair to get normal weekday repair rates.

If you want to do the repair yourself, get several phone estimates first, because rates vary widely among service companies (see "Before You Do This Yourself..."). Most garage doors are heavy (200 to 300 lbs.), so call in three strong friends to help you lift the door and hold it open while you lock it in the full raised position with a locking pliers. Then move your vehicles and have your friends help you lower the door.



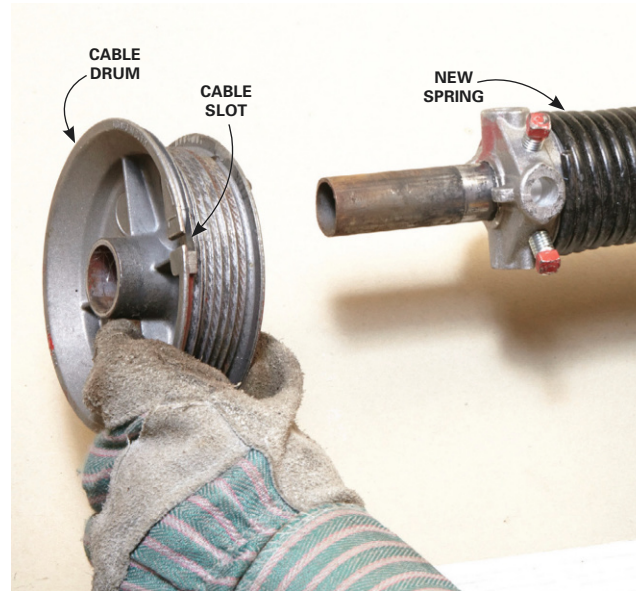
5 SECURE THE TORSION TUBE

Snap a locking pliers or a C-clamp onto the center bracket to hold the torsion tube in the bracket. Then loosen the setscrews on the left and right lift cable drums and disconnect the lift cables.



6 REMOVE THE OLD SPRING

Starting on the left side of the door, slide the torsion tube to the right so you can remove the cable drum. Then slide the old spring off the tube.

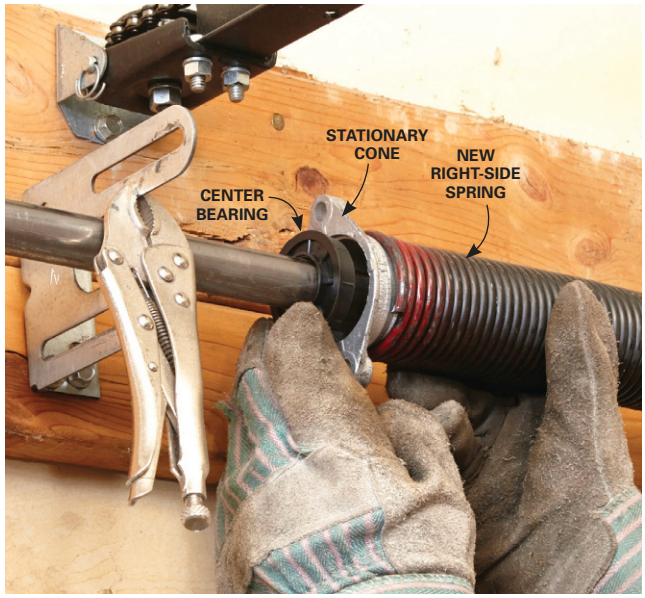


7 INSTALL THE LEFT SPRING

Slide the new spring onto the torsion tube with the stationary cone facing the center bracket. Then reinstall the cable drum. Reinsert the torsion bar into the left-side bearing bracket.

8 INSTALL A NEW CENTER BEARING

Shove the torsion bar to the left, then slide on the center bearing. Install the right spring and push the bearing into the stationary cone. Reinstall the drum as shown in Photo 7. Connect both stationary cones to the center bracket.

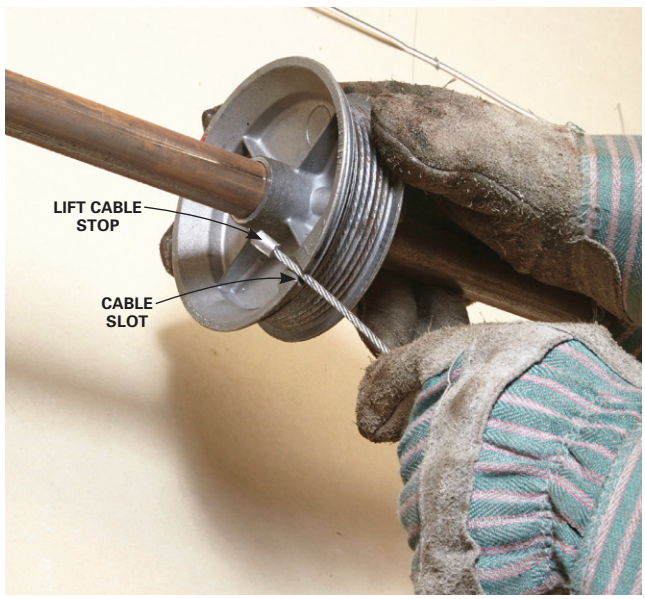


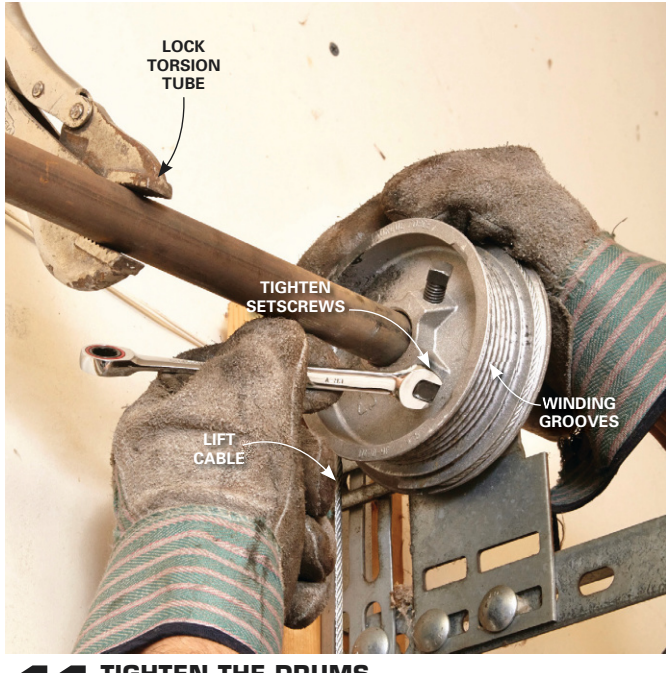
9 REPLACE THE BOTTOM BRACKETS, ROLLERS AND LIFT CABLES

Snap the lift cable loop over the pin on the new bottom bracket. Insert the new roller. Then swap in the new bottom brackets and cables.

10 THREAD THE LIFT CABLES

Run the lift cables straight up between the rollers and the doorjamb. Slide the lift cable stop through the slot on the drum.



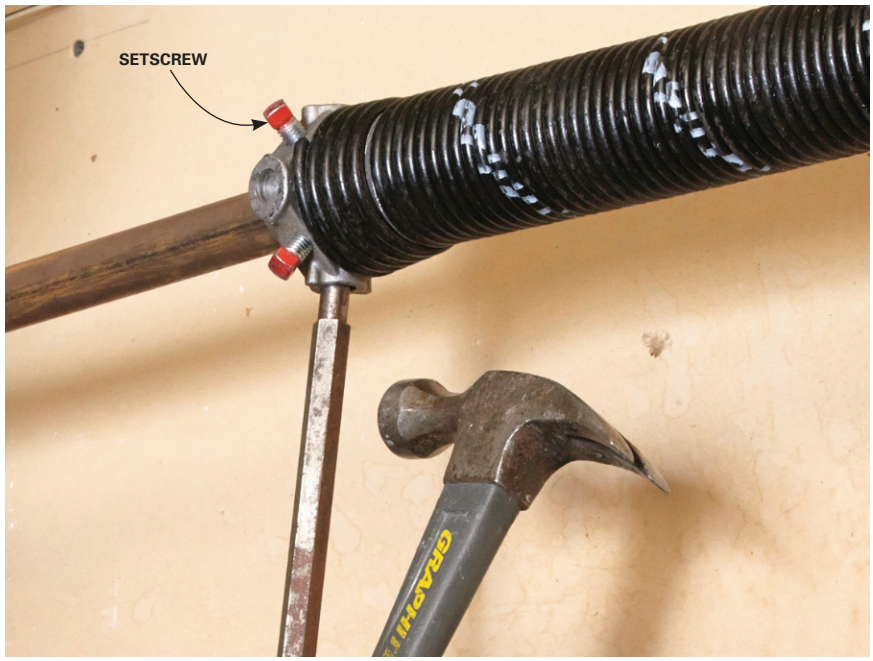


11 TIGHTEN THE DRUMS

Snap a locking pliers onto the torsion tube to lock it into place while you tighten the drums. Rotate the drum to wind the cable into the winding grooves. Pull the cable as tight as possible before tightening the setscrews. Leave the locking pliers in place and repeat the tightening procedure on the other side. You want equal tension on both sides. Otherwise, the door will open unevenly.

12 WIND THE SPRINGS

Slide a winding bar into the cone and wind toward the ceiling. Turn the spring a quarter turn at a time, leapfrogging the winding bars as you go. Follow the spring supplier's recommendations for the total number of turns. If you didn't get a recommendation, perform 30 quarter turns for a 7-ft.-tall door and 36 quarter turns for an 8-ft.-tall door.



13 STRETCH THE SPRINGS
With the spring fully wound, tap the winding bar to stretch the spring out from the center about 1/4 in. before tightening the setscrews. Rotate the setscrews until they contact the torsion tube. Then tighten the screws a one-half to three-quarters turn. Tightening the screws beyond that point can puncture or distort the torsion tube.

14 LUBRICATE THE SPRING
Slide a piece of cardboard or paper grocery bag between the spring and the wall. Then saturate the spring with garage door lube spray. Wipe off the excess.

Finish with a test

Remove the clamps and pliers from the torsion tube and track, and lift the door about 3 ft. by hand. If the door springs are properly adjusted, the door should stay in place when you let go. If the door falls when you let go, add a quarter turn to each spring. Repeat if necessary. If the door continues to open on its own, release spring tension in quarter-turn increments until the door stays in place when you let go. Then reconnect the opener.