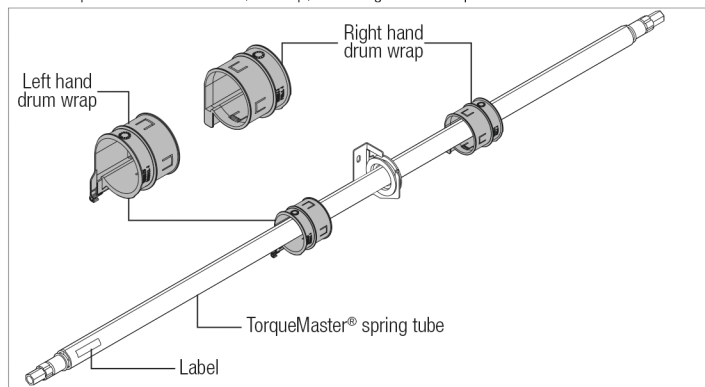


Drum wraps are marked right and left hand. Beginning with the left hand side, slide the left hand drum wrap onto the TorqueMaster® spring tube. Repeat for the right hand side. The drum wrap will be secured later, in Step, Securing Drum Wraps.



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## Cable Drum Assemblies

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

Shake the TorqueMaster® spring tube assembly gently to extend the winding shafts out about 5" on each side. For **single spring applications**, there will be no left hand spring in the TorqueMaster® spring tube assembly. Lift the TorqueMaster® spring tube assembly and rest it on top of the flag angles.

**NOTE:** Cable drum assemblies are marked right and left hand. Cable drums and TorqueMaster® spring tube assembly are cam shaped to fit together only one way.

Starting on the right hand side, pre-wrap the cable drum with the counterbalance lift cable 1-1/2 wraps, as shown. Position the TorqueMaster® spring tube assembly so the cam peak is pointing straight up. Slide the cable drum over the winding shaft until the cable drum seats against the TorqueMaster® spring tube assembly. The winding shaft must extend past the cable drum far enough to expose the splines and the grooves. Align the winding shaft grooves with the round notch in the flag angle.

**FOR DOUBLE SPRING APPLICATIONS:** Repeat for left hand side.

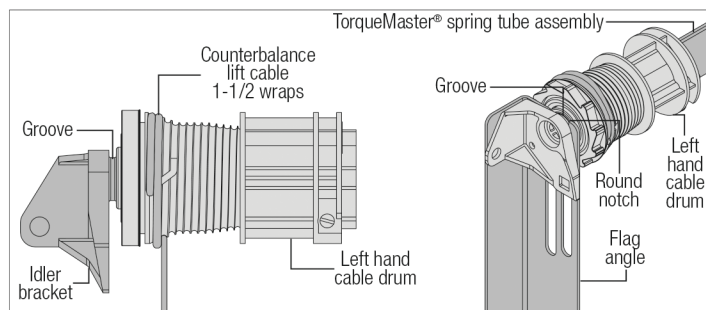
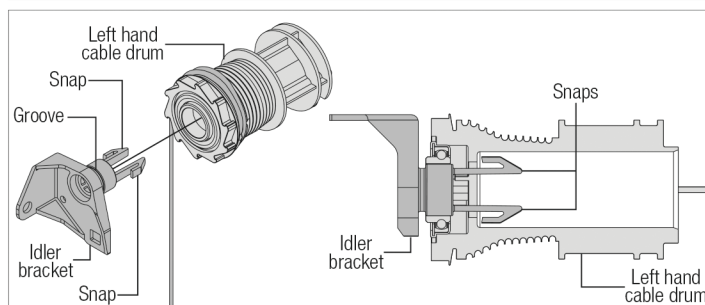
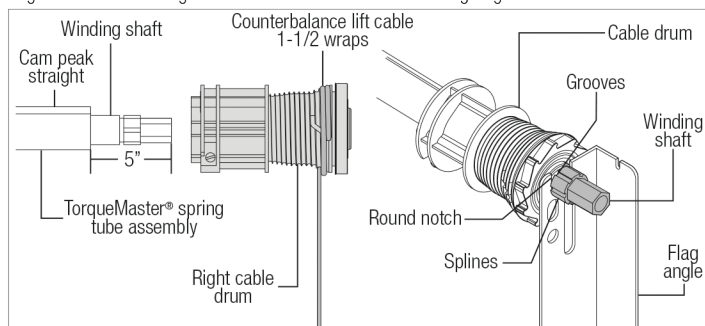
**FOR SINGLE SPRING APPLICATIONS:** Insert the idler bracket into the left hand cable drum. Lightly press the idler bracket into the cable drum until two distinct clicks are heard, or the bracket is inserted all the way.

**IMPORTANT:** ENSURE THE SNAPS ON THE IDLER BRACKET (LEFT HAND SIDE) ARE ENGAGED INTO THE LEFT HAND CABLE DRUM, SO THAT IT DOES NOT COME BACK OUT.

**NOTE:** The idler bracket is designed for permanent assembly. Do not attempt to remove idler bracket once inserted into the cable drum.

Pre-wrap the left hand cable drum with the counterbalance lift cable 1-1/2 wraps and slide the cable drum over the TorqueMaster® spring tube assembly. Slide the TorqueMaster® spring tube assembly into the cable drum until the cable drum seats up against the TorqueMaster® spring tube assembly.

**NOTE:** The idler bracket must extend past the cable drum far enough to expose the groove. Align the idler bracket groove with the round notch in the flag angle.



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## End Brackets

Tools Required: Power drill, 3/16" Drill bit, 7/16" Socket driver, 1/2" Wrench, Tape measure, Step ladder, Safety glasses, Leather gloves

**IMPORTANT:** WARNING TAGS MUST BE SECURELY ATTACHED TO END BRACKET(S).

**NOTE:** On single spring applications, the idler end bracket was positioned in a previous step, but must be fastened in this step.

**NOTE:** Prior to fastening the end bracket(s) / idler end bracket into the door jamb, pilot drill using a 3/16" drill bit.

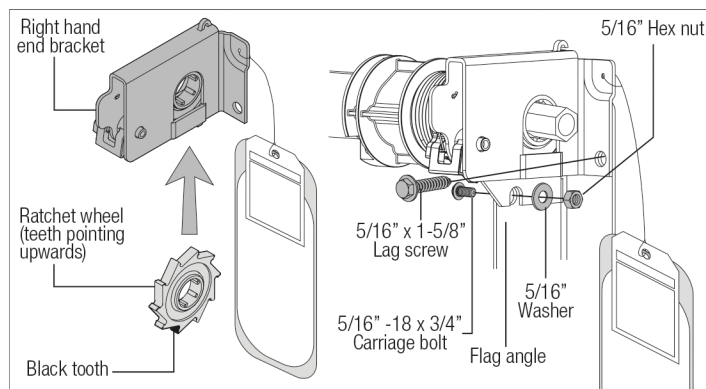
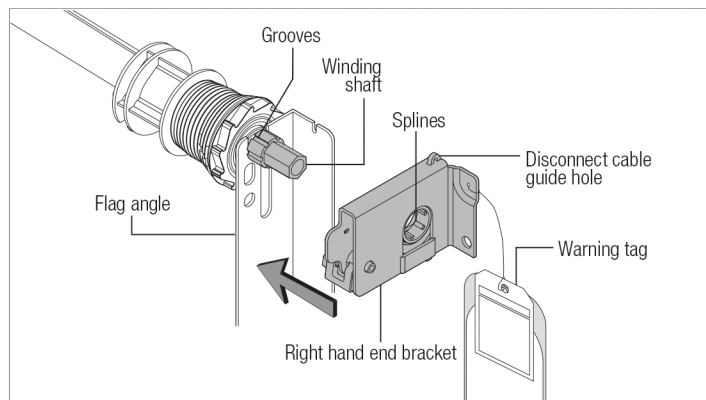
Beginning with the right hand side, slide the end bracket onto the winding shaft so that the splines in the ratchet wheel fit onto the winding shaft grooves. Attach the end bracket to the flag angle using (1) 5/16" - 18 x 3/4" carriage bolt, (1) 5/16" washer and (1) 5/16" - 18 hex nut. Then secure the end bracket to the jamb using (1) 5/16" x 1-5/8" lag screw.

**NOTE:** If ratchet wheel falls out of end bracket, refer to illustration for proper insertion orientation.

**FOR DOUBLE SPRING APPLICATIONS:** Repeat same process for left hand end bracket.

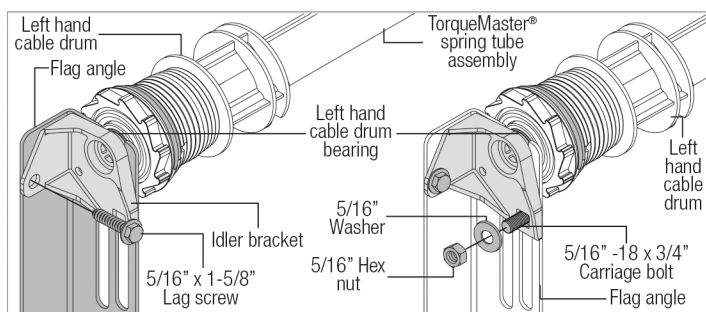
**FOR SINGLE SPRING APPLICATIONS:** Secure the idler bracket to the flag angle using (1) 5/16" - 18 x 3/4" carriage bolt, (1) 5/16" washer and (1) 5/16" - 18 hex nut. Then secure the idler bracket to the jamb using (1) 5/16" x 1-5/8" lag screw.

**IMPORTANT:** FOR SINGLE SPRING DOORS, ENSURE THE LEFT HAND CABLE DRUM BEARING IS ALL THE WAY TO THE LEFT AND UP AGAINST THE FLAG ANGLE. IF THE CABLE DRUM IS PULLED AWAY FROM THE FLAG ANGLE, THEN THE IDLER BRACKET CAN RUB AGAINST THE CABLE DRUM CAUSING NOISE.



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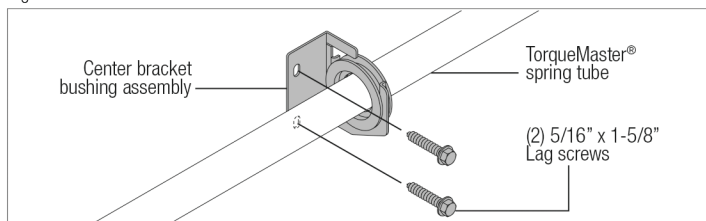
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## Securing Center Bracket Bushing Assembly

Tools Required: Power drill, 3/16" Drill bit, 7/16" Socket driver, 1/2" Wrench, Level, Tape measure, Step ladder, Safety glasses, Leather gloves

**IMPORTANT:** TORQUEMASTER® SPRING TUBE MUST BE LEVEL BEFORE SECURING CENTER BRACKET BUSHING ASSEMBLY TO HEADER.

To locate the center bracket bushing assembly, mark the header halfway between the flag angles and level the TorqueMaster® spring tube. Drill 3/16" pilot holes into header for the lag screws. Fasten the center bracket bushing assembly to the header using (2) 5/16" x 1-5/8" lag screws.



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## Securing Door For Winding Spring(s)

Tools Required: Vice Clamps, Step ladder, Safety glasses, Leather gloves

With the door in the fully closed position, place vice clamps onto both vertical tracks just above the third track roller. This is to prevent the garage door from rising while winding spring(s).

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

- Counterbalance lift cables are secured at bottom corner brackets.
- Counterbalance lift cables are routed unobstructed to cable drums.
- Counterbalance lift cables are correctly installed and wound onto cable lift drums.
- TorqueMaster® spring tube is installed correctly.
- Review the label attached to the spring warning tag, to determine number of spring turns required.

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

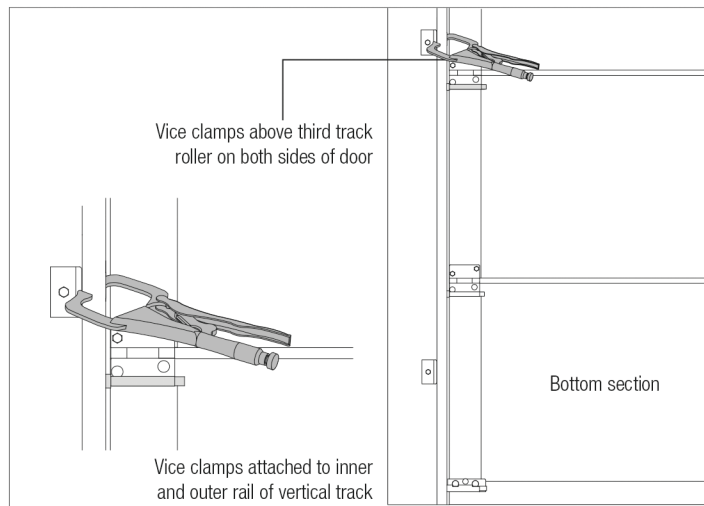
## WARNING

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



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## Lift Cable Adjustments

Tools Required: Locking pliers, Flat tip screwdriver, Step ladder, Tape measure, Pliers / Wire cutters, Safety glasses, Leather gloves

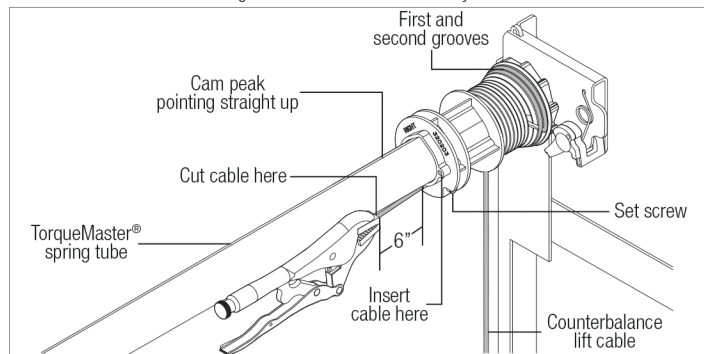
Starting on the right side, adjust the cable drum assembly by rotating the drum until the set screw faces directly away from the header. The position of the cam peak on the TorqueMaster® spring tube should be pointing straight up.

Loosen the set screw no more than 1/2 turn. Ensure counterbalance lift cable is aligned and seated in the first and second grooves of the cable drum. Pull on the end of the cable to remove all cable slack.

Snug the set screw and then tighten an additional 1-1/2 turns. Measure approximately 6" of cable and cut off excess cable. Insert end of the cable into the hole of cable drum. Repeat for left hand cable drum assembly.

**IMPORTANT:** ENSURE THE COUNTERBALANCE LIFT CABLE IS ALIGNED AND SEATED IN THE FIRST AND SECOND GROOVES OF THE CABLE DRUM PRIOR TO WINDING SPRINGS.

**NOTE:** Illustration shows the right hand cable drum assembly.



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## Winding Spring(s)

Tools Required: Ratchet wrench, 5/8" Socket, 3" Socket extension, Pliers / Wire cutters, Flat tip screwdriver, Step ladder, 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

## WARNING

IT IS RECOMMENDED THAT LEATHER GLOVES BE WORN WHILE WINDING SPRINGS. FAILURE TO WEAR GLOVES MAY CAUSE INJURY TO HANDS.

Double check to ensure the counterbalance lift cable is aligned in the first and second grooves of the cable drum, see step Lift Cable Adjustments. There are two methods for counting the spring turns as you wind. One method is to identify the black tooth on the ratchet wheel inside of the end bracket. When the wheel makes one revolution and the tooth returns to its starting point, one turn has been made. The other method is to make a mark on the winding shaft (or socket) and end bracket, and count your turns in this manner.

Starting on the right hand side, turn the pawl knob on the end bracket to the upper position. Using a ratchet wrench with a 5/8" socket and a 3" extension, wind the spring by rotating the winding shaft counter clockwise, while watching either the black tooth on the ratchet wheel or the mark on the winding shaft.

**NOTE:** A 3" extension is recommended for added clearance from the horizontal track angle.



**IMPORTANT:** PAWL KNOB MUST BE IN UPPER POSITION TO ADD / REMOVE REQUIRED NUMBER OF SPRING TURNS.

After 2 to 3 turns, remove the ratchet wrench and adjust the counterbalance lift cable on the left side. Ensure counterbalance lift cables are in the first and second grooves of the cable drums, as shown in step Lift Cable Adjustments.

**NOTE:** Single spring applications require no spring winding on the left hand side, but lift cable tension needs to be adjusted.

**IMPORTANT:** COUNTERBALANCE LIFT CABLE TENSION MUST BE EQUAL ON BOTH SIDES PRIOR TO FULLY WINDING SPRINGS.

**See the Winding Spring Turn Chart for the required number of winding turns:**

#### FOR SINGLE SPRING APPLICATIONS:

Return to the right hand end bracket and continue winding the spring to the required number of turns for your door following the double spring instructions below. Place pawl knob in lower position.

#### FOR DOUBLE SPRING APPLICATIONS:

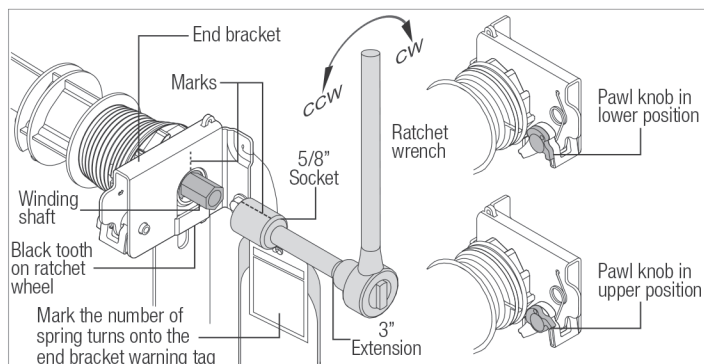
Either use the black tooth on the ratchet wheel for winding reference or place a mark on the winding shaft and end bracket. Place the ratchet wrench with 5/8" socket and a 3" extension onto the left hand winding shaft end. To wind the spring, rotate the winding shaft clockwise, while watching the black tooth on the ratchet wheel or the mark on the winding shaft. Rotate the winding shaft to the required number of winding turns for your door. Then return to the right hand side and wind the right hand spring to the required number of turns. Place pawl knob in lower position on both sides.

**IMPORTANT:** MARK THE NUMBER OF SPRING TURNS ONTO THE END BRACKET WARNING TAG.

**NOTE:** Since total turns to balance door can deviate from winding spring turn chart values by  $\pm 1/2$  turn, adjustments to the recommended number of turns may be required after rear back hangs are installed.

**WINDING SPRING TURN CHART**

DOOR HEIGHT	SPRING TURNS
6'-0"	14
6'-3"	14-1/2
6'-5"	15
6'-6"	15
6'-8"	15-1/2
6'-9"	15-1/2
7'-0"	16
7'-3"	16-1/2
7'-6"	17
7'-9"	17-1/2
8'-0"	18



### 24 Securing Drum Wraps (Optional)

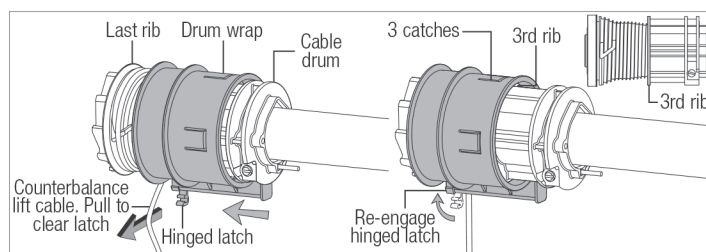
Tools Required: Step ladder, Safety glasses, Leather gloves

**NOTE:** If you don't have drum wraps (optional), then skip this step. Refer to Package Contents / Parts Breakdown, to determine if you have drum wraps.

Starting on the left hand side, position the left hand drum wrap, as shown. Slide the left hand drum wrap over the cable drum assembly.

**IMPORTANT:** PULL THE COUNTERBALANCE LIFT CABLE AWAY FROM THE HEADER TO CLEAR THE LATCH, WHILE SIMULTANEOUSLY SLIDING THE DRUM WRAP AGAINST THE LAST RIB UNTIL THE THREE CATCHES ENGAGE THE 3RD RIB.

Secure the hinge latch by rotating upward until a distinct snap is felt. Confirm the catch is fully engaged by lightly tugging on it. Repeat the same process for right hand side.



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### Rear Back Hangs

Tools Required: Ratchet wrench, Socket: 1/2" 5/8", Wrench: 1/2" 5/8", 3" Socket extension, (2) Vice clamps, Step ladder, Tape measure, Safety glasses, Leather gloves

**IMPORTANT:** HOLD THE DOOR DOWN TO PREVENT IT FROM RISING UNEXPECTEDLY IN THE EVENT THE SPRING(S) WAS OVER-WOUND AND CAUTIOUSLY REMOVE VICE CLAMPS FROM VERTICAL TRACKS.

Raise the door until the top section and half of the next section are in the horizontal track radius. Do not raise door any further since rear of horizontal tracks are not yet supported.

## WARNING

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

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

Using the chart (Perforated Angle Gauge Weight Limitations) below, use the appropriate perforated angle (may not be supplied), (2) 5/16" x 1-5/8" hex head lag screws and (3) 5/16" bolts with nuts (may not be supplied), fabricate rear back hangs for the horizontal tracks. Attach the horizontal tracks to the rear back hangs with 5/16" - 18 x 1" hex bolts and nuts (may not be supplied). Horizontal tracks must be level and parallel with door within 3/4" to 7/8" maximum of door edge.

## WARNING

**EXCEEDING THE RECOMMENDED LISTED DOOR WEIGHT LIMITATIONS OF SPECIFIC GAUGE PERFORATED ANGLES MAY RESULT IN DOOR FALLING WHEN RAISED, CAUSING SEVERE OR FATAL INJURY.**

## WARNING

**VERIFY PERFORATED BACK HANG ANGLE LOAD RATINGS WITH BACK HANG ANGLE SUPPLIER.**

**Perforated Angle Gauge Weight Limitations:**

Perforated Angle Gauge	Door Weight
1-1/4" x 1-1/4" x 13 Gauge	Door Weight Less Than 305 lbs.
1-1/4" x 1-1/4" x 15 Gauge	Door Weight Less Than 220 lbs.
1-1/4" x 1-1/4" x 16 Gauge	Door Weight Less Than 175 lbs.

**NOTE:** If an opener is installed, position horizontal tracks one hole above level when securing it to the rear back hangs.

## WARNING

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

**IMPORTANT:** DO NOT SUPPORT THE WEIGHT OF THE DOOR ON ANY PART OF THE REAR BACK HANGS THAT CANTILEVERS 4" OR MORE BEYOND A SOUND FRAMING MEMBER.

**NOTE:** If rear back hangs are to be installed over drywall, use (2) 5/16" x 2" hex head lag screws and make sure lag screws engage into solid structural lumber.

**NOTE:** 26" angle must be attached to sound framing members and **nails should not be used.**

Now, permanently attach the weatherstrips on both door jambs and header. The weatherstrips were temporarily attached in Preparing the Opening, in the pre-installation section of this manual.

**NOTE:** When permanently attaching the weatherstrips to the jambs, avoid pushing the weatherstrips too tightly against the face of door.