

TorqueMaster® Plus Replacement Spring(s)



Installation Instructions

These installation instructions are to be used as a supplement to the main Installation Instruction and Owner's Manual provided with the door. The instructions included in this document are only those which deviate from the standard installation. All warnings and cautions listed in the main manual are applicable to this supplemental instruction as well.

www.Wayne-Dalton.com

PRE-INSTALLATION

Important Safety Instructions

DEFINITION OF KEY WORDS USED IN THIS MANUAL:

WARNING
INDICATES A POTENTIALLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, COULD RESULT IN SEVERE OR FATAL INJURY.

CAUTION: PROPERTY DAMAGE OR INJURY CAN RESULT FROM FAILURE TO FOLLOW INSTRUCTIONS.

IMPORTANT: REQUIRED STEP FOR SAFE AND PROPER DOOR OPERATION.

NOTE: Information assuring proper installation of the TorqueMaster® Plus Spring(s).

READ THESE INSTRUCTIONS CAREFULLY BEFORE ATTEMPTING INSTALLATION. IF IN QUESTION ABOUT ANY OF THE PROCEDURES, DO NOT PERFORM THE WORK. INSTEAD, HAVE A TRAINED DOOR SYSTEMS TECHNICIAN DO THE INSTALLATION OR REPAIRS.

1. READ AND FOLLOW ALL INSTALLATION INSTRUCTIONS.
2. Wear protective gloves during installation to avoid possible cuts from sharp metal edges.
3. It is always recommended to wear eye protection when using tools, otherwise eye injury could result.
4. Doors 12'-0" wide and over should be installed by two persons, to avoid possible injury.
5. Operate door only when it is properly adjusted and free from obstructions.
6. If a door becomes hard to operate, inoperative or is damaged, immediately have necessary adjustments and/ or repairs made by a trained door system technician using proper tools and instructions.
7. DO NOT stand or walk under a moving door, or permit anybody to stand or walk under an electrically operated door.
8. DO NOT place fingers or hands into open section joints when closing a door. Use lift handles/ gripping points when operating door manually.
9. DO NOT permit children to operate garage door or door controls. Severe or fatal injury could result should the child become entrapped between the door and the floor.
10. Due to constant extreme spring tension, do not attempt any adjustment, repair or alteration to any part of the door, especially to springs, spring brackets, bottom corner brackets, fasteners, counterbalance lift cables or supports. To avoid possible severe or fatal injury, have any such work performed by a trained door systems technician using proper tools and instructions.
11. On electrically operated doors, pull down ropes must be removed and locks must be removed or made inoperative in the open (unlocked) position.
12. Top section of door may need to be reinforced when attaching an electric opener. Check door and/ or opener manufacturer's instructions.
13. Visually inspect door and hardware monthly for worn and or broken parts. Check to ensure door operates freely.
14. Test electric opener's safety features monthly, following opener manufacturer's instructions.

After installation is complete, fasten this manual near the garage door.

IMPORTANT: STAINLESS STEEL OR PT2000 COATED LAG SCREWS MUST BE USED WHEN INSTALLING CENTER BEARING BRACKETS, END BRACKETS, JAMB BRACKETS, DRAWBAR OPERATOR MOUNTING/ SUPPORT BRACKETS AND DISCONNECT BRACKETS ON TREATED LUMBER (PRESERVATIVE-TREATED). STAINLESS STEEL OR PT2000 LAG SCREWS ARE NOT NECESSARY WHEN INSTALLING PRODUCTS ON UN-TREATED LUMBER.

NOTE: It is recommended that 5/16" lag screws are pilot drilled using a 3/16" drill bit, prior to fastening.

IMPORTANT: WHEN INSTALLING 5/16" LAG SCREWS USING AN ELECTRIC DRILL/ DRIVER, THE DRILL/ DRIVERS CLUTCH MUST BE SET TO DELIVER NO MORE THAN 200 IN-LBS OF TORQUE. FASTENER FAILURE COULD OCCUR AT HIGHER SETTINGS.

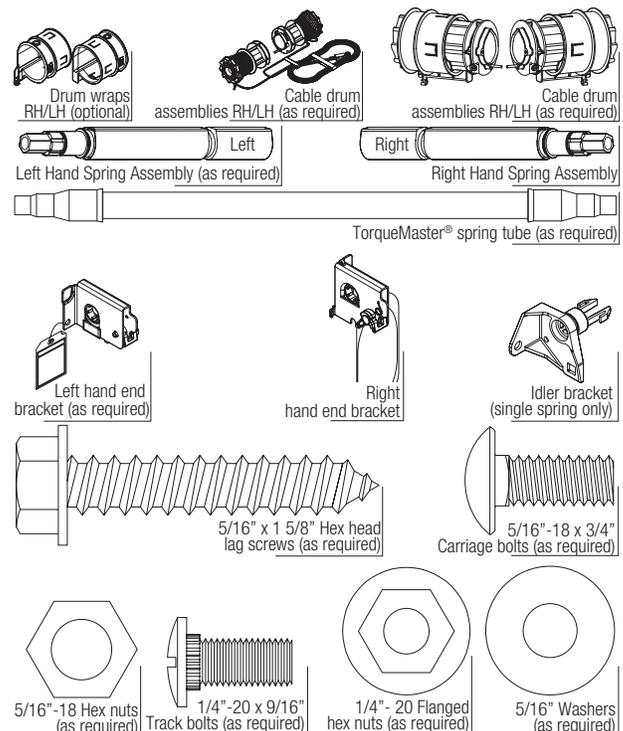
WARNING
PRIOR TO WINDING OR MAKING ADJUSTMENTS TO THE SPRINGS, ENSURE YOU'RE WINDING IN THE PROPER DIRECTION AS STATED IN THE INSTALLATION INSTRUCTIONS. OTHERWISE, THE SPRING FITTINGS MAY RELEASE FROM SPRING IF NOT WOUND IN THE PROPER DIRECTION AND COULD RESULT IN SEVERE OR FATAL INJURY.

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

Tools Required

Power drill	Flat tip screwdriver	Tape measure
Drill bits: 1/8", 3/16", 9/32", 7/16", 1/2"	Pliers / Wire cutters	Step ladder
Ratchet wrench	Needle nose pliers	Level
Socket driver: 7/16"	Locking pliers	Pencil
Sockets: 7/16", 1/2", 9/16", 5/8"	(2) Vice clamps	Saw horses
Socket extension: 3"	Wrenches: 7/16", 1/2", 9/16", 5/8"	Leather gloves
Phillips head screwdriver	Hammer	Safety glasses

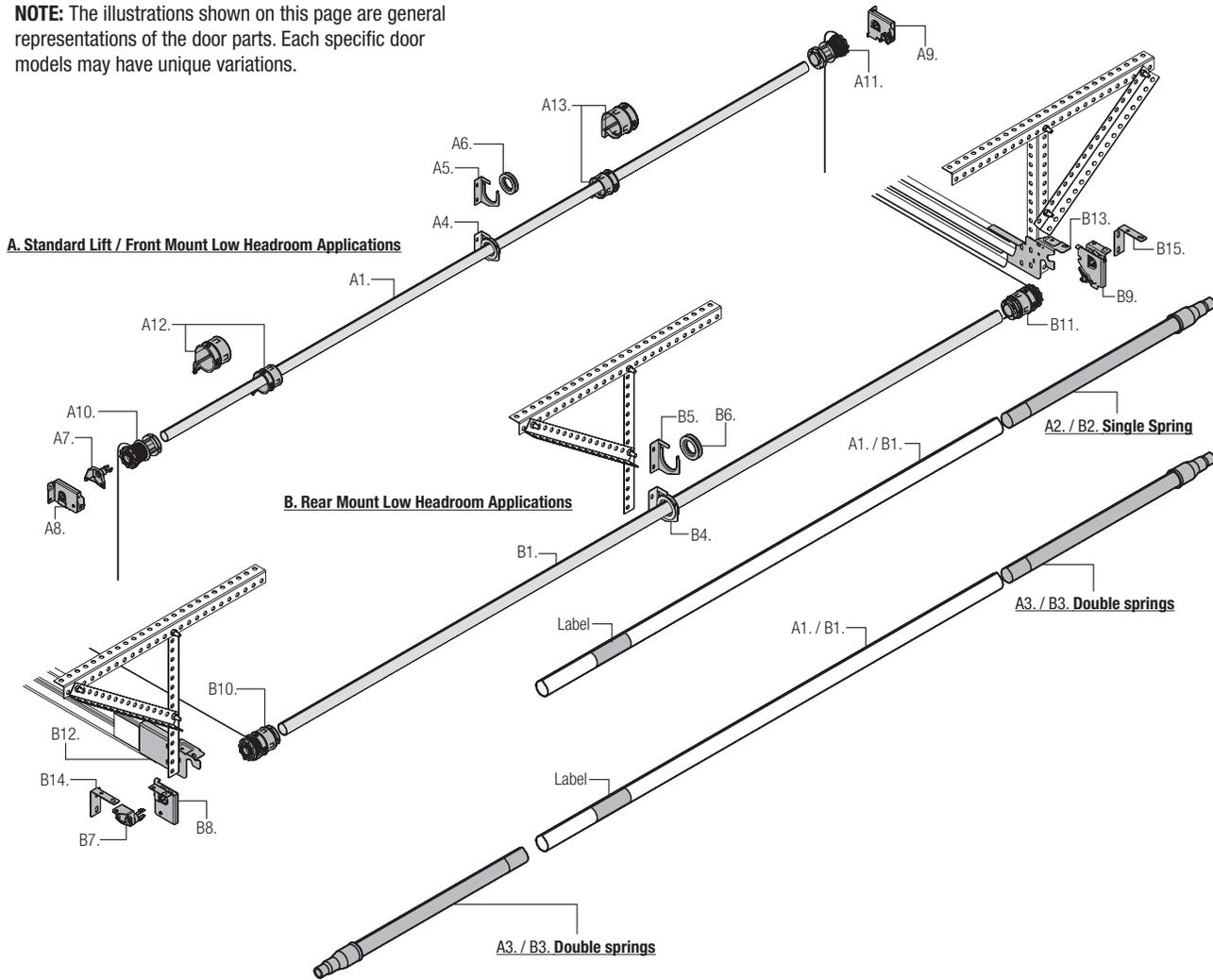
TorqueMaster® Plus Replacement Spring Components



NOTE: A TorqueMaster® Plus single spring system can be identified by the end brackets.

PARTS BREAKDOWN

NOTE: The illustrations shown on this page are general representations of the door parts. Each specific door models may have unique variations.



A. STANDARD LIFT / FRONT MOUNT LOW HEADROOM APPLICATIONS:

- A1. TorqueMaster® Spring Tube
- A2. TorqueMaster® Single Spring (Purchased separately)
- A3. TorqueMaster® Double Springs (Purchased separately)
- A4. Center Bracket Bushing Assembly
- A5. Center Bracket
- A6. Center Bracket Bushing
- A7. Idler bracket (Single Spring Only)
- A8. Left Hand End Bracket (Double Springs Only)
- A9. Right Hand End Bracket (Disconnect Cable Guide)
- A10. Left Hand Cable Drum Assembly
- A11. Right Hand Cable Drum Assembly
- A12. Left Hand Drum Wrap (Optional)
- A13. Right Hand Hand Drum Wrap (Optional)

B. REAR MOUNT LOW HEADROOM APPLICATIONS:

- B1. TorqueMaster® Spring Tube
- B2. TorqueMaster® Single Spring (Purchased separately)
- B3. TorqueMaster® Double Springs (Purchased separately)
- B4. Center Bracket Bushing Assembly
- B5. Center Bracket
- B6. Center Bracket Bushing
- B7. Idler bracket (Single Spring Only)
- B8. Left Hand End Bracket (Double Springs Only)
- B9. Right Hand End Bracket (Disconnect Cable Guide)

- B10. Left Hand Cable Drum Assembly (With Drum Wrap Installed)
- B11. Right Hand Cable Drum Assembly (With Drum Wrap Installed)
- B12. Left Hand Rear Support Bracket
- B13. Right Hand Rear Support Bracket
- B14. Left Hand Reinforcing Bracket
- B15. Right Hand Reinforcing Bracket

REMOVING SPRING(S)

Before replacing your TorqueMaster® spring(s), be certain that you have read and followed all of the instructions covered in the pre-installation section of this manual. Failure to do so may result in an improperly installed TorqueMaster® counterbalance.

NOTE: Reference TDS 160 for general garage door terminology at www.dasma.com.

1 Checking for spring tension

Tools Required: Ratchet wrench, 5/8" Socket, 3" Socket extension, Step ladder, Tape measure, Safety glasses, Leather gloves

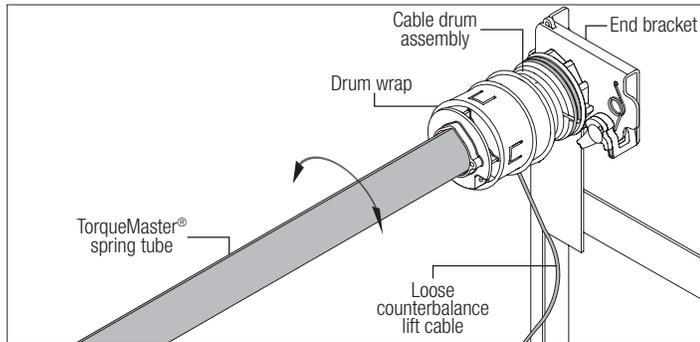
⚠ WARNING

COUNTERBALANCE SPRING TENSION MUST BE RELIEVED BEFORE REMOVING ANY HARDWARE. A POWERFUL SPRING RELEASING ITS ENERGY SUDDENLY CAN CAUSE SEVERE INJURY.

Verify there is no spring tension by checking the TorqueMaster® tube is not difficult to rotate and by pulling the counterbalance lift cables on both the left hand and the right hand cable drum away from the header, as shown.

NOTE: If the counterbalance lift cable is still taut and the torque tube is difficult to rotate, that is an indication that spring tension still exists.

NOTE: If there is no spring tension, the counterbalance lift cable will be loose. In addition, the torque tube should be free to rotate in either direction.



2 Unwinding Spring(s)

Tools Required: Ratchet wrench, 5/8" Socket, 3" Socket extension, Step ladder, Tape measure, Safety glasses, Leather gloves

⚠ WARNING

COUNTERBALANCE SPRING TENSION MUST BE RELIEVED BEFORE REMOVING ANY HARDWARE. A POWERFUL SPRING RELEASING ITS ENERGY SUDDENLY CAN CAUSE SEVERE INJURY.

⚠ WARNING

UNWINDING 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 UNWINDING SPRINGS. FAILURE TO WEAR GLOVES MAY CAUSE INJURY TO HANDS.

If there is spring tension and starting with the right hand side, ensure ratchet pawl knob is in upper position, as shown.

IMPORTANT: PAWL KNOB MUST BE IN UPPER POSITION TO REMOVE SPRING TENSION, AS SHOWN.

Place a ratchet with a 5/8" socket on the winding shaft, as shown.

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

To remove spring tension, ensure the ratchet and socket is set so that it will add tension (counter clockwise) on the right hand side and (clockwise) on the left hand side. Rotate ratchet to relieve pressure between the pawl and the ratchet wheel. Push in on the pawl to allow the ratchet wheel teeth to pass by.



CAUTION: BE PREPARED TO HOLD THE FULL TENSION OF THE SPRING.

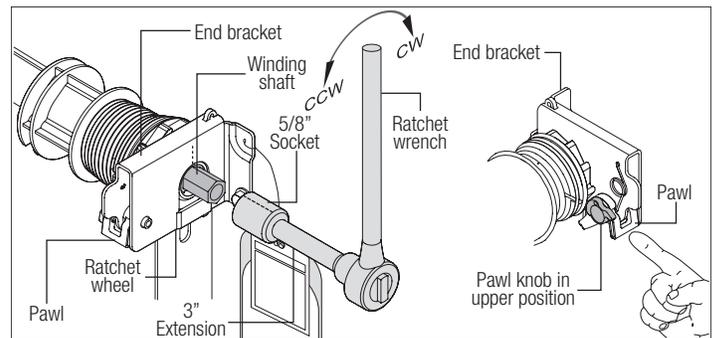
Gently let the ratchet rotate upward, while watching the number of teeth on the ratchet wheel pass by the pawl. Remove 3/10 of a turn (watch the 3 teeth of the ratchet wheel pass the pawl) at a time. Release the pawl to allow it to engage with the ratchet wheel. Repeat this process until all spring tension has been removed from spring.

For Double Springs, repeat the same process for the left hand side. Cables should be loose and the torque tube should be free to rotate in either direction.

NOTE: Spring(s) are fully unwound when counterbalance cables have no tension.

RECOMMENDED 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



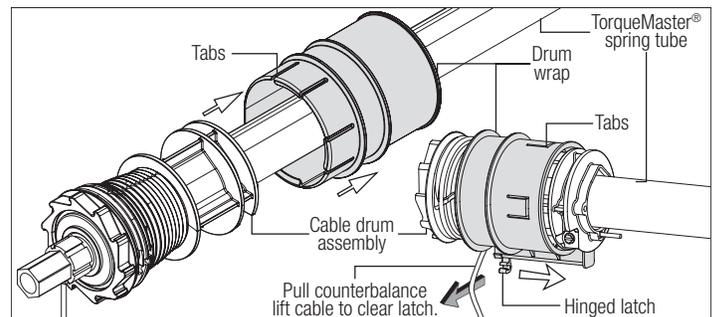
3

Removing Drum Wraps

Tools Required: Step ladder, Safety glasses, Leather gloves

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

Starting on the left hand side, remove the drum wrap from the cable drum (if installed) by prying the tabs up to remove it from the cable drum. Repeat the same process for right hand side.



4

Removing End Bracket(s)

Tools Required: Power drill, 7/16" Socket driver, 7/16", 5/8" Wrench, Step ladder, Safety glasses, Leather gloves

FOR STANDARD LIFT / FRONT MOUNT LOW HEADROOM APPLICATIONS: Starting on the right hand end bracket, first remove the 5/16" - 18 x 3/4" carriage bolt and the 5/16" - 18 hex nut, then remove the 5/16" x 1-5/8" lag screw from the end bracket.

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

FOR SINGLE SPRING APPLICATIONS: Starting with the left hand side, first remove the 5/16" - 18 x 3/4" carriage bolt, the 5/16" washer and the 5/16" - 18 hex nut. Next, remove the 5/16" x 1-5/8" lag screw from the idler bracket.

Remove the end bracket(s) from the winding shaft.

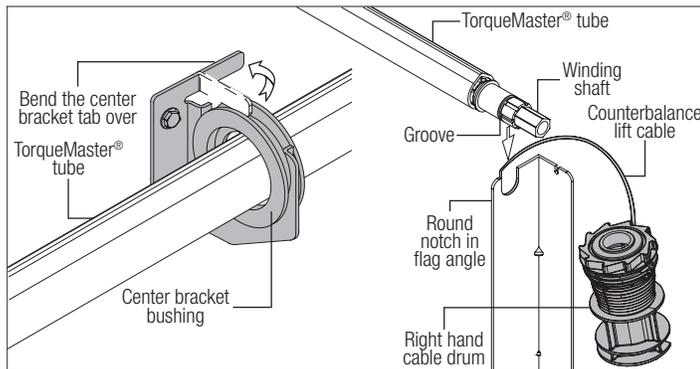
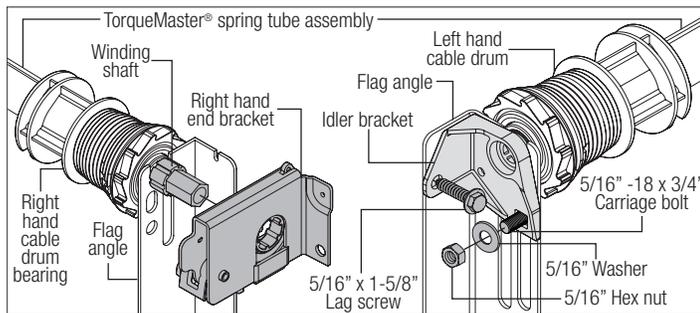
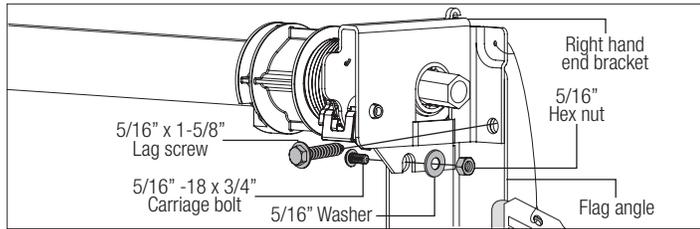
CAUTION: THE WINDING SHAFT MAY ROTATE WHEN REMOVING THE END BRACKET.

Bend the center bracket tab over. Lift the right hand side of the TorqueMaster® tube and slide the cable drum off the tube.

NOTE: The cable drums and springs may be difficult to remove. If so, twist the cable drum and TorqueMaster® tube to aid removal.

Realign the groove in the winding shaft with the round notch in the flag angle and drape the counterbalance lift cable with drum over the flag angle. Repeat for the other side.

IMPORTANT: FOR SINGLE SPRING APPLICATIONS, THE IDLER BRACKET CANNOT BE REMOVED FROM THE LEFT HAND CABLE DRUM. ATTEMPTING TO REMOVE THE BRACKET MAY RESULT IN DAMAGE TO THE IDLER BRACKET.



FOR REAR MOUNT LOW HEADROOM APPLICATIONS: Starting with the right hand end bracket, first remove the 1/4" - 20 x 9/16" track bolt, flat washer (if applicable) and the 1/4" - 20 flange hex nut. Then remove the 5/16" - 18 x 1" hex head screw and the 5/16" - 18 nut from the end bracket.

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

FOR SINGLE SPRING APPLICATIONS: Starting with the left hand side, first remove the 1/4" - 20 x 9/16" track bolt, flat washer (if applicable) and the 1/4" - 20 flange hex nut. Next, remove the 5/16" - 18 x 1" hex head screw and the 5/16" - 18 nut from the idler bracket.

Remove the end bracket(s) from the winding shaft.

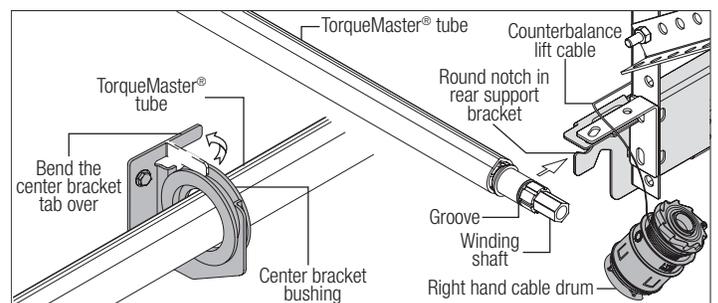
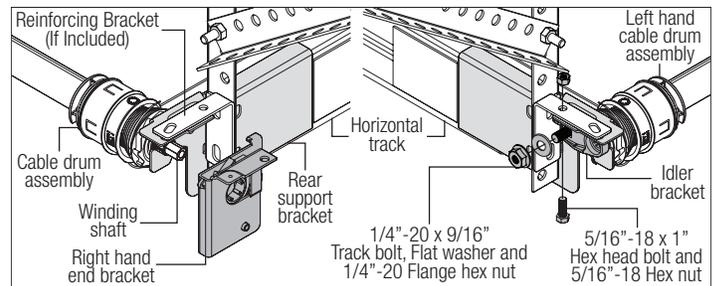
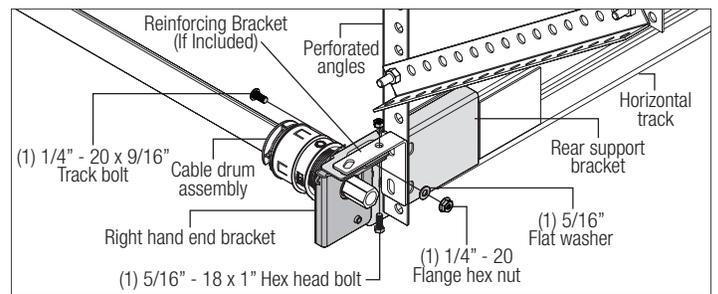
CAUTION: THE WINDING SHAFT MAY ROTATE WHEN REMOVING THE END BRACKET.

Bend the center bracket tab over. Lift the right hand side of the TorqueMaster® tube and slide the cable drum off the tube.

NOTE: The cable drums and springs may be difficult to remove. If so, twist the cable drum and TorqueMaster® tube to aid removal.

Realign the groove in the winding shaft with the round notch in the rear support bracket and drape the counterbalance lift cable with drum over the rear support bracket. Repeat for the other side.

IMPORTANT: FOR SINGLE SPRING APPLICATIONS, THE IDLER BRACKET CANNOT BE REMOVED FROM THE LEFT HAND CABLE DRUM. ATTEMPTING TO REMOVE THE BRACKET MAY RESULT IN DAMAGE TO THE IDLER BRACKET.



5

Removing TorqueMaster® tube

Tools Required: Step ladder, Safety glasses, Leather gloves

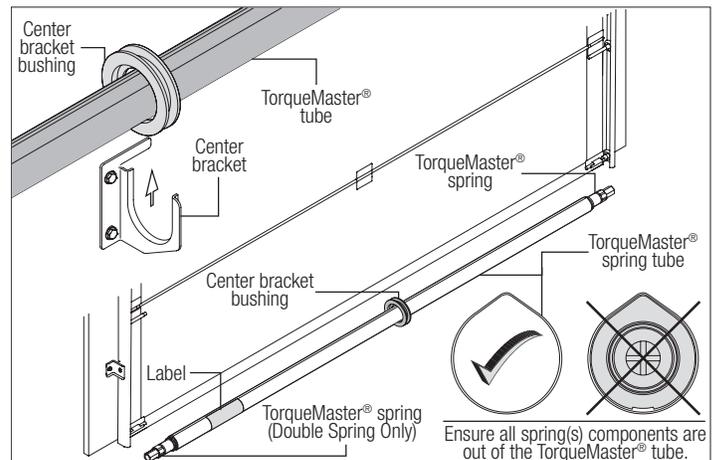
NOTE: Removing the TorqueMaster® spring(s) is only needed if the tube is not being replaced.

Lift up the TorqueMaster® tube from the center bracket and gently lay it on the floor. Remove the left and right hand spring(s) from the torque tube.

NOTE: Single spring application will have no spring on the left hand side.

NOTE: Double spring application will have a spring on the left hand side.

CAUTION: BEFORE PROCEEDING TO THE NEXT STEP, VERIFY THAT YOU HAVE ALL OF THE SPRING(S) AND IT'S COMPONENTS OUT OF THE TORQUEMASTER® TUBE.



RE-INSTALLING SPRING(S)

6

TorqueMaster® Plus Spring(s) Replacement

Tools Required: Safety glasses, Leather gloves

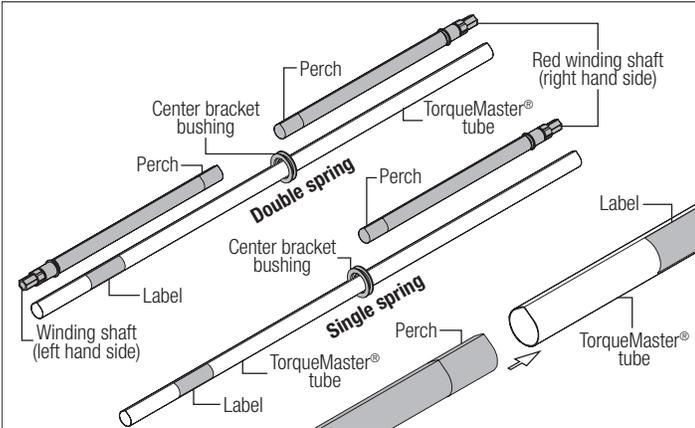
NOTE: Replacing the TorqueMaster® spring(s) is only needed if the tube is not being replaced.

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

IMPORTANT: TORQUEMASTER® SPRING(S) ARE COLOR CODED. RED WINDING SHAFT INSTALLS ON THE LEFT HAND SIDE.

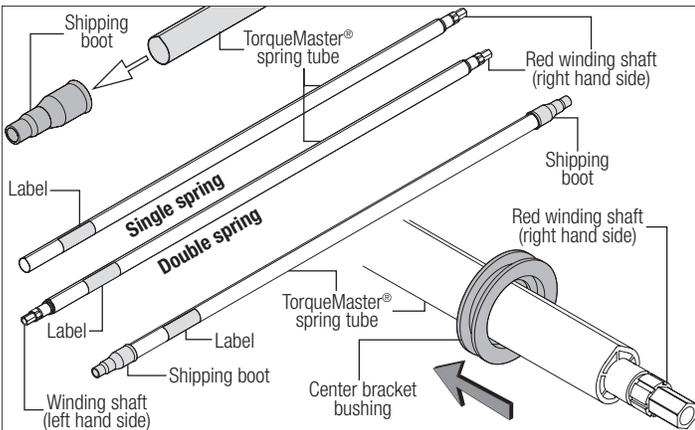
IF YOU'RE NOT REPLACING THE TORQUEMASTER® TUBE: Facing the inside of the door, ensure the label on the TorqueMaster® tube is on the left hand side. Using the illustration, slide the new spring(s), perch end first, into the TorqueMaster® tube, as shown.

NOTE: The perch and the TorqueMaster® spring tube are cam shaped to fit together only one way.



IF YOU'RE REPLACING THE TORQUEMASTER® TUBE: Slide the center bracket bushing off the TorqueMaster® spring tube and set aside. TorqueMaster® springs come lubricated and pre-assembled inside the TorqueMaster® spring tube. To prepare for install, lay the spring tube assembly on the floor, inside garage, in front of the door, and with the labeled end to the left. Next, remove the shipping boots from the ends of the TorqueMaster® spring tube. Re-install the center bracket bushing by sliding the center bracket bushing towards the center of the TorqueMaster® spring tube, from the right side, as shown.

NOTE: Being cam shaped, the center bushing only fits one way onto the TorqueMaster® spring tube.



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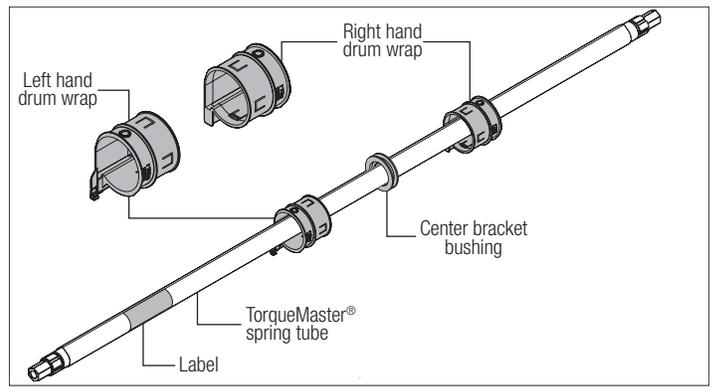
Drum Wraps (Optional)

Tools Required: Safety glasses, Leather gloves

FOR STANDARD LIFT / FRONT MOUNT LOW HEADROOM APPLICATIONS: If you don't have drum wraps (optional), then skip this step. Refer to Package Contents / Parts Break-down, to determine if you have drum wraps.

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.

FOR REAR MOUNT LOW HEADROOM APPLICATIONS: Skip this step since drum wraps are already installed onto the cable drums.



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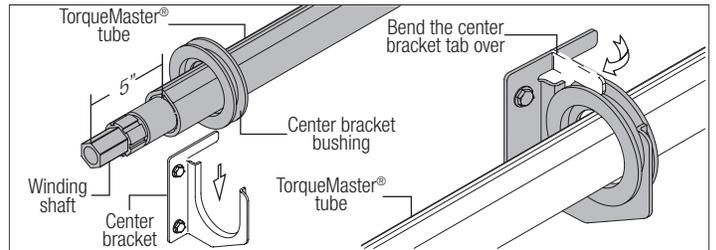
Cable Drum Assemblies

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

IMPORTANT: FOR SINGLE SPRING APPLICATIONS, THERE WILL ONLY BE A RIGHT HAND SPRING INSIDE THE TORQUEMASTER® SPRING TUBE.

IMPORTANT: FOR DOUBLE SPRING APPLICATIONS, THERE WILL BE BOTH A LEFT HAND SPRING AND A RIGHT HAND SPRING INSIDE THE TORQUEMASTER® SPRING TUBE.

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 torque tube assembly up and align the center bushing into the center bracket. Check torque tube for level and adjust if necessary. Bend the center bracket tab back over the center bushing, as shown.



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

Adjust the cable drum assembly by rotating the cable drum to the same amount of cable drum wraps that was previously made.

NOTE: Prewrap cable drums to 1-1/2 turns wraps.

STANDARD LIFT / FRONT MOUNT LOW HEADROOM APPLICATIONS: Starting on the right hand side, position the TorqueMaster® spring tube assembly so that 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.

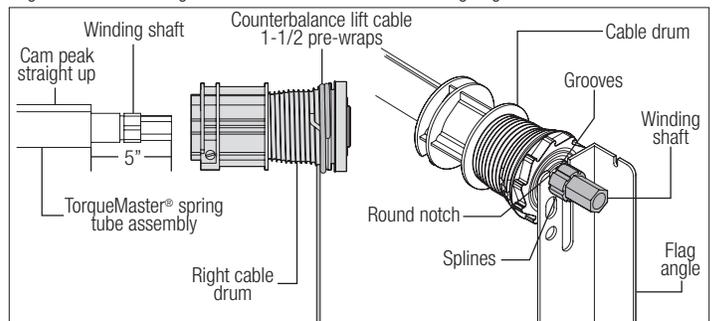
FOR SINGLE SPRING APPLICATIONS: Insert the idler bracket into the left hand cable drum. Lightly press the idler bracket into the cable drum until two distinct clicks are heard, or the bracket is inserted all the way.

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.

Slide the TorqueMaster® spring tube assembly into the cable drum until the cable drum seats up against the TorqueMaster® spring tube assembly.

Align the idler bracket groove with the round notch in the flag angle.



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 rear support bracket and the reinforcing bracket (if included) using (1) 5/16" - 18 x 1" hex head bolt and (1) 5/16" - 18 hex nut, as shown.

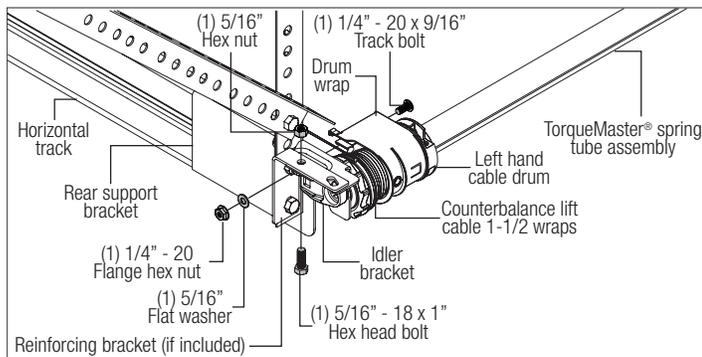
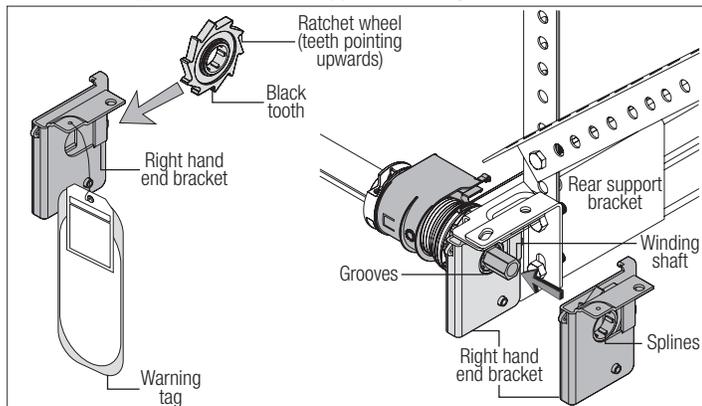
NOTE: Ensure the 5/16" - 18 x 1" hex head bolt is going through the end bracket first and the 5/16" - 18 nut is on top of the rear support bracket or the reinforcing bracket (if included).

Now secure the end bracket to the rear support bracket using (1) 1/4" - 20 x 9/16" track bolt, (1) 5/16" flat washer and (1) 1/4" - 20 flange hex nut.

NOTE: Ensure the 1/4" - 20 x 9/16" track bolt is going through the inside of rear support bracket first, then the 5/16" flat washer and the 1/4" - 20 flange hex nut is on the outside of the rear support bracket.

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

FOR SINGLE SPRING APPLICATIONS: Secure the idler bracket to the rear support bracket and the reinforcing bracket (if included) using (1) 5/16" - 18 x 1" hex head bolt and (1) 5/16" - 18 hex nut. Next secure the end bracket to the rear support bracket using (1) 1/4" - 20 x 9/16" track bolt, (1) 5/16" flat washer and (1) 1/4" - 20 flange hex nut, as shown.



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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

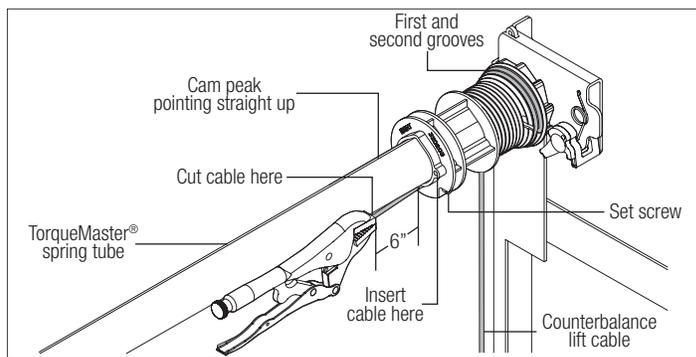
STANDARD LIFT / FRONT MOUNT LOW HEADROOM APPLICATIONS: Starting on the right side, adjust the cable drum assembly by rotating the drum until the set screw faces directly away from the header. The position of the cam peak on the TorqueMaster® spring tube should be pointing straight up.

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 and ensure cable tension is equal on the left and right sides of the door.

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.



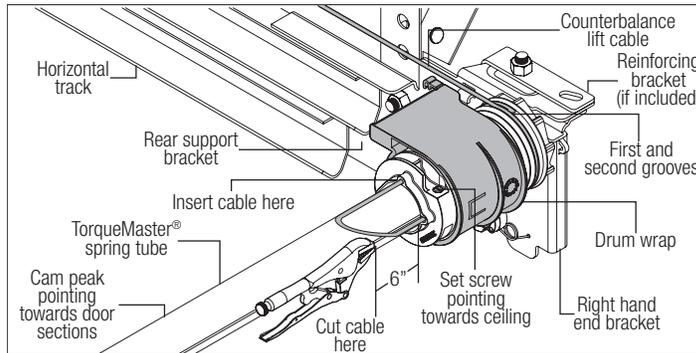
REAR MOUNT LOW HEADROOM APPLICATIONS: Starting on the right side, route the cable over the sheave / pulley, adjust the cable drum assembly by rotating the drum until the set screw is pointing towards the ceiling. The position of the cam peak on the TorqueMaster® spring tube should be pointing towards the door sections.

Loosen the set screw no more than 1/2 turn. Ensure counterbalance lift cable is aligned and seated in the appropriate grooves of the cable drum and the cable sheave / pulley. Pull on the end of the cable to remove all cable slack and ensure cable tension is equal on the left and right sides of the door.

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 APPROPRIATE GROOVES OF THE CABLE DRUM AND THE CABLE SHEAVE PRIOR TO WINDING SPRINGS.

NOTE: Illustration shows the right hand cable drum assembly, left hand cable drum assembly is symmetrically opposite.



11

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).

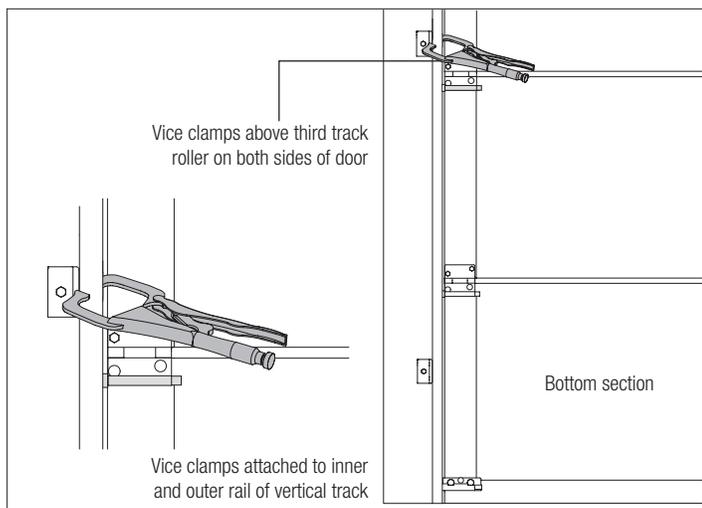
NOTE: Check the following before attempting to wind spring(s):

- 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.
- Cable drum set screws are tight.
- 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.



12

Securing Drum Wraps (Optional)

Tools Required: Step ladder, Safety glasses, Leather gloves

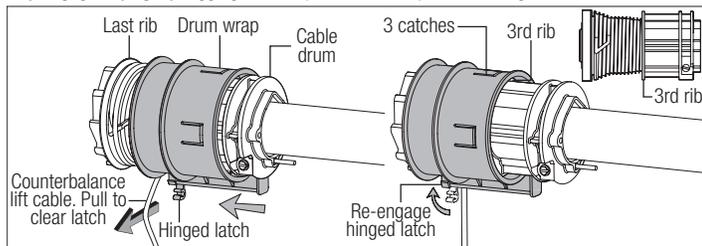
NOTE: If you don't have drum wraps (optional), then skip this step. Refer to Package Contents / Parts Breakdown, to determine if you have drum wraps.

NOTE: Drum wraps are required on Rear Mount Low Headroom applications. Drum wraps are not required on standard lift / front mount low headroom applications.

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.



13

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.

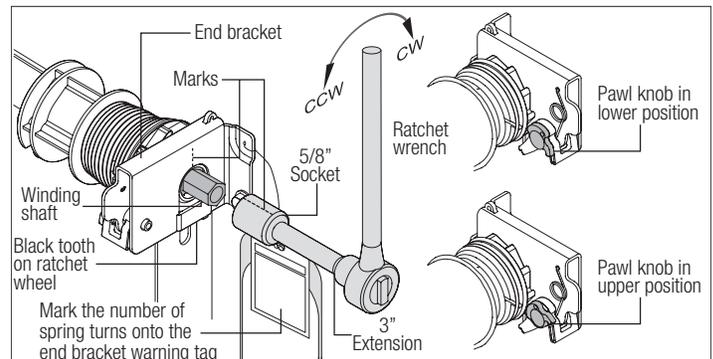
FOR DOUBLE SPRING APPLICATIONS: Either use the black tooth on the ratchet wheel for winding reference or place a mark on the winding shaft and end bracket. Place the ratchet wrench with 5/8" socket and a 3" extension onto the left hand winding shaft end. To wind the spring, rotate the winding shaft clockwise, 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



14

Balancing Door

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

NOTE: Windows will cause the top section to be significantly heavier than the remaining sections. Wayne Dalton attempts to balance the door at the top and bottom. To prevent any sudden door acceleration between the top and bottom, we recommend motor operating all doors with windows. Doors with windows in the top section should not be manually operated.

Remove any vice clamps. Lift the door and check its balance. Adjust spring(s) if door lifts by itself (hard to pull down) or if door is difficult to lift (easy to pull down). Anytime spring adjustments are made, ratchet pawl knob must be in the upper position. An unbalanced door can cause TorqueMaster® Plus operation problems.

Close the door and place vice clamps onto both vertical tracks just above the third track roller. This is to prevent the garage door from rising while adjusting the counterbalance spring(s).

IMPORTANT: TO ADJUST SPRINGS, ONLY ADD OR REMOVE A MAXIMUM OF 3/10 OF A TURN (THREE TEETH ON THE RATCHET WHEEL) AT A TIME.

IMPORTANT: BOTH SIDES NEED TO BE ADJUSTED EQUALLY ON DOUBLE SPRING DOORS.

Add spring tension: The ratchet wheel is made of 10 teeth. To add spring tension, ensure the ratchet and socket is set so that it will tighten counter clockwise on the right hand side and clockwise on the left hand side. Place pawl knob in upper position. Place the ratchet wrench with 5/8" socket and 3" socket extension onto the winding shaft, pull down to add 3/10 of a turn. Watch as three teeth of the ratchet wheel pass over the pawl, creating three "clicks". Place pawl knob in lower position. Repeat for opposite side if double spring door.

Remove spring tension: To remove spring tension, place a regular 5/8" wrench onto the winding shaft. Place pawl knob in upper position. Pull down on the wrench to relieve pressure between the pawl and the ratchet wheel. Push in on the pawl to allow the three ratchet wheel teeth to pass by the pawl, as you carefully allow the wrench to be rotated upward by the spring tension, release the pawl to allow it to engage with the ratchet wheel. Place pawl knob in lower position. Repeat for opposite side if double spring door.

IMPORTANT: BE PREPARED TO HOLD THE FULL TENSION OF THE SPRING.

IMPORTANT: DO NOT ADD OR REMOVE MORE THAN 1 SPRING TURN (1 SPRING TURN EQUALS 10 TEETH ON RATCHET WHEEL) FROM THE RECOMMENDED NUMBER OF TURNS SHOWN ON THE WINDING SPRING TURN CHART.

If the door still does not operate easily, lower the door into the closed position, unwind spring(s) completely, and recheck the following items:

- 1.) Check the door for level.
- 2.) Check the TorqueMaster® spring tube and flag angles for level and plumb.
- 3.) Check the distance between the flag angles, which must be door width plus 3-3/8" to 3-1/2".
- 4.) Check the counterbalance lift cables for equal tension, adjust if necessary.
- 5.) Rewind the spring(s).
- 6.) Make sure door isn't rubbing on jambs.

