Wayne Dalton

Installation Instructions And Owner's Manual

Model 8650

Residential
Standard Lift Windload

Torsion

DEFINITION OF LIGHT COMMERCIAL:

1. Door heights less than or equal to 8'0" (< = 8'0") are considered Residential applications.
2. Door heights greater than 8'0" (> 8'0") are considered Light Commercial applications.

PLEASE DO NOT RETURN THIS PRODUCT TO THE STORE

If you need assistance, please call 1-866-569-3799 (press Option 1) and follow the prompts to contact a customer service representative. They will be happy to handle any questions that you may have.

IMPORTANT NOTICES!

Carefully read and fully understand the enclosed instructions before installing and operating the garage door.

Pay close attention to all warnings and notes.

After installation is complete, fasten this manual near garage door for easy reference.

This Installation document is available at no charge from:

- Your local Wayne Dalton Sales Center
- Online at **www.Wayne-Dalton.com**
- By mailing a request to: Wayne Dalton, a division of Overhead Door Corporation, P.O. Box 67, Mt. Hope, OH., 44660

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Part Number 365019 REV3_10/31/2025

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Important Safety Instructions

DEFINITION OF KEY WORDS USED IN THIS MANUAL:

DANGER

INDICATES A HAZARDOUS SITUATION THAT, IF NOT AVOIDED, WILL RESULT IN DEATH OR SERIOUS INJURY.

WARNING

INDICATES A HAZARDOUS SITUATION THAT, IF NOT AVOIDED, COULD RESULT IN DEATH OR SERIOUS INJURY.

CAUTION

INDICATES A HAZARDOUS SITUATION THAT, IF NOT AVOIDED, COULD RESULT IN MINOR OR MODERATE INJURY.

NOTICE

INDICATES INFORMATION CONSIDERED IMPORTANT, THAT IT IS NOT RELATED TO INJURY, BUT MAY RESULT IN PROPERTY DAMAGE.

IMPORTANT: Required key step for proper door operation.

NOTE: Information only.

Installation:

WARNING

INSTALLING THIS DOOR PROPERLY REQUIRES THE USE OF SPECIAL TOOLS AND TECHNIQUES. ALWAYS USE THE CORRECT TOOLS OR TECHNIQUES WHEN PERFORMING INSTALLATION. FAILURE TO USE PROPER TOOLS OR TECHNIQUES OR ADHERE TO SAFETY MESSAGES, COULD RESULT IN SEVERE OR FATAL INJURY.

DANGER

EXTREME CAUTION SHOULD BE USED WHEN WINDING SPRINGS AS FAILURE TO FOLLOW THE INSTRUCTIONS OR USE THE PROPER TOOLS CAN LEAD TO SERIOUS INJURY TO PERSONS AND PROPERTY. BEFORE ATTEMPTING TO WIND THE SPRING, MAKE SURE YOU HAVE READ AND UNDERSTAND THE INSTRUCTIONS. IF YOU ARE UNCLEAR ON ANY ASPECT OF THE INSTALLATION PROCEDURES, YOU SHOULD CONSULT A TRAINED DOOR SYSTEMS TECHNICIAN.

- **READ THESE INSTRUCTIONS CAREFULLY BEFORE ATTEMPTING INSTALLATION. IF YOU ARE IN QUESTION ABOUT ANY OF THE PROCEDURES, DO NOT PERFORM THE WORK. INSTEAD, HAVE A TRAINED DOOR SYSTEMS TECHNICIAN DO THE INSTALLATION OR REPAIRS.**
- Wear protective gloves and eye protection during installation, to avoid possible injury.
- **DO NOT** install door in windy conditions. Door could fall during the installation, causing severe or fatal injury.
- Doors 12'-0" wide and larger should be installed by two persons, to avoid possible injury.
- On electrically operated doors, pull down ropes must be removed and locks must be removed or made inoperative in the open (unlocked) position, unless electrical interlocks are installed.
- Impact guns are not recommended. 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.
- Check with your local building official for wind load code requirements and building permit information.
- For windloaded doors, the wind performance is achieved via the entire door system and component substitution is not authorized without express permission by the manufacturer.

CAUTION

IF ANY PART OF THE DOOR IS TO BE INSTALLED ONTO PRESERVATIVE-TREATED WOOD, PTFE-COATED OR STAINLESS STEEL FASTENERS MUST BE OBTAINED AND USED. REPLACEMENT FASTENERS MUST BE OF AT LEAST EQUAL STRENGTH AND SIZE AS ORIGINAL FASTENERS. IF THE ORIGINAL FASTENER WAS RED-HEAD, THE REPLACEMENT FASTENER MUST BE RED-HEAD ALSO. CONTACT WAYNE DALTON FOR FASTENER STRENGTH VALUES IF NEEDED.

Operation:

⚠ WARNING

TO PREVENT DEATH OR SERIOUS INJURY WHILE OPERATING THE DOOR, ENSURE THE PATH OF THE DOOR IS NOT OBSTRUCTED BY ANY PERSON OR OBJECT AND ADHERE TO THE FOLLOWING SAFETY MEASURES.

- Operate door only when it is properly adjusted and free from obstructions.
- 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.
- **DO NOT** stand or walk under a moving door, or permit anybody to stand or walk under an electrically operated door.
- **DO NOT** place fingers or hands into open section joints when closing a door. Use lift handles/ gripping points when operating door manually.
- **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.
- Visually inspect door and hardware monthly for worn and or broken parts. Check to ensure door operates freely. Test electric opener's safety features monthly, following opener manufacturer's instructions.
- **NEVER** hang tools, bicycles, hoses, clothing or anything else from horizontal tracks. Track systems are not intended or designed to support extra weight.

Potential Hazard	Effect	Prevention
 Moving door	**⚠ WARNING** Could result in Death or Serious Injury	Keep people clear of opening while Door is moving. Do **NOT** allow children to play with the Door Opener. Do **NOT** operate a Door that jams or one that has a broken spring.
 High tension spring	**⚠ DANGER** Will result in Death or Serious Injury	Do **NOT** try to remove, install, repair or adjust springs or anything to which door spring parts are fastened, such as, wood blocks, steel brackets, cables or other like items. Installations, repairs and adjustments must be done by a trained door system technician using proper tools and instructions.

IMPORTANT: RIGHT and LEFT hand is determined inside the building looking out.

REMOVING AN EXISTING DOOR AND PREPARING THE OPENING

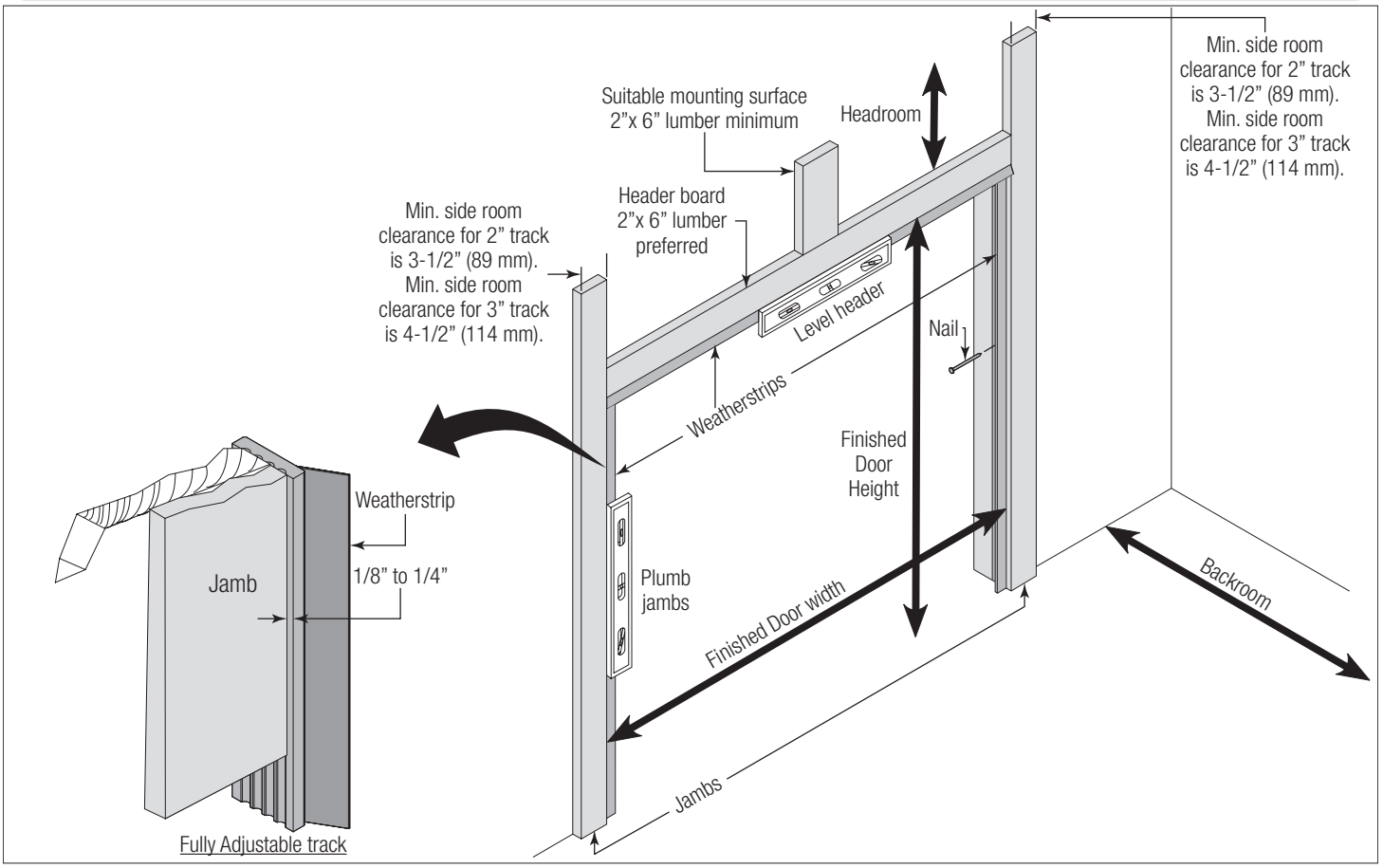


Figure 1

DANGER

AVOID INJURY! A POWERFUL SPRING RELEASING ITS ENERGY SUDDENLY CAN CAUSE SEVERE OR FATAL INJURY. ALWAYS HAVE A TRAINED DOOR SYSTEMS TECHNICIAN, USING PROPER TOOLS AND INSTRUCTIONS, RELEASE THE SPRING TENSION.

WARNING

TO AVOID POSSIBLE INJURY AND TO ENSURE PROPER INSTALLATION, IT'S HIGHLY RECOMMENDED THAT YOU READ AND FULLY UNDERSTAND THE COMPLETE INSTRUCTIONS ON REMOVING AN EXISTING DOOR & PREPARING THE OPENING. THESE ARE AVAILABLE FOR DOWNLOAD AT WWW.WAYNE-DALTON.COM OR AT YOUR LOCAL WAYNE DALTON SALES CENTER.

DANGER

COUNTERBALANCE SPRING TENSION MUST ALWAYS BE RELEASED BEFORE ANY ATTEMPT IS MADE TO START REMOVING AN EXISTING DOOR. EXTREME CAUTION SHOULD BE USED WHEN UNWINDING SPRINGS AS FAILURE TO FOLLOW THE INSTRUCTIONS OR USE PROPER TOOLS CAN LEAD TO SERIOUS INJURY.

See Figure 1 for the following steps.

To ensure secure mounting of track brackets, side and center brackets, or steel angles to new or retro-fit construction, it is recommended to follow the procedures outlined in DASMA technical data sheets #156, #161 and #164 at **www.dasma.com**.

- The inside perimeter of your garage door opening should be framed with wood jamb and header material.
- The jambs and header must be securely fastened to sound framing members. It is recommended that 2" x 6" lumber be used. The jambs must be plumb and the header level.
- The jambs should extend a minimum of 12" (305 mm) above the top of the opening for Torsion counterbalance systems.
- For low headroom applications, the jambs should extend to the ceiling height. Minimum side clearance required, from the opening to the wall, is 3-1/2" (89 mm).

NOTICE

CLOSELY INSPECT JAMBS, HEADER AND MOUNTING SURFACE. ANY WOOD FOUND NOT TO BE SOUND, MUST BE REPLACED.

For Torsion counterbalance systems, a suitable mounting surface (2" x 6") must be firmly attached to the wall, above the header at the center of the opening.

NOTICE

DRILL A SUITABLE PILOT HOLE IN THE MOUNTING SURFACE TO AVOID SPLITTING THE LUMBER. DO NOT ATTACH THE MOUNTING SURFACE WITH NAILS.

Weatherstrips (Not Included):

Depending on the size of your door, you may have to cut or trim the weatherstrips to properly fit into the header and jambs.

NOTICE

IF NAILING PRODUCT AT 40°F, (4.4°C) OR BELOW, PRE-DRILLING IS REQUIRED.

1. For the header, align the weatherstrip with the inside edge of the header and temporarily secure it to the header with equally spaced nails, approximately 12" to 18" (305 mm - 457 mm) apart.

2. Starting at either side of the jamb, fit the weatherstrip up tight against the temporarily attached weatherstrip in the header and flush with the inside edge of the jamb.

3. Temporarily secure the weatherstrip with equally spaced nails. Repeat for other side. This will keep the bottom door section from falling out of the opening during installation.

Headroom requirement:

Headroom required is defined as the space needed above the top of the door for tracks, springs, etc. to allow the door to open properly.

NOTE: 6" low headroom conversion kit is available for 12" radius only. Contact your local Wayne Dalton dealer.

If the door is to be motor operated, 2-1/2" (64 mm) of additional headroom is required.

TRACK TYPE	SPACE NEEDED
12" Radius	12-1/2" (318 mm)
15" Radius	14-1/2" (368 mm)

Backroom requirement:

Backroom required is defined as the distance needed from the opening back into the garage to allow the door to open fully.

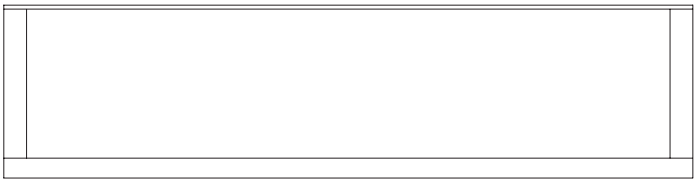
***NOTE:** For door heights from 10'1" to 14'0", refer to your operator manufacture installation instructions for appropriate depth into room.

DOOR HEIGHT	TRACK	MANUAL LIFT	MOTOR OPERATED
6'0" to 7'0"	12",15" Radius	102.5" (2601 mm)	125" (3175 mm)
7'1" to 8'0"	12",15" Radius	114.5" (2908 mm)	137" (3480 mm)
8'1" to 9'0"	12",15" Radius	127" (3226 mm)	168" (4267 mm)
9'1" to 10'0"	12",15" Radius	139" (3531 mm)	168" (4267 mm)

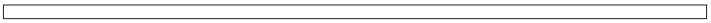
Package Contents

NOTE: Depending on the door model, some parts listed may not be required, and will not be supplied.

Components and Hardware



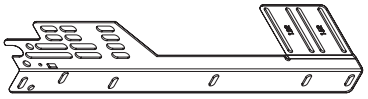
(E1. - E4.) Door sections (as required)



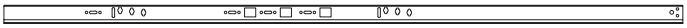
(M9.) Torsion shaft / Torsion keyed shaft (as required)



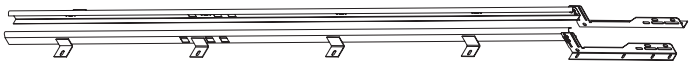
(M10.) Torsion keyed shafts (as required)



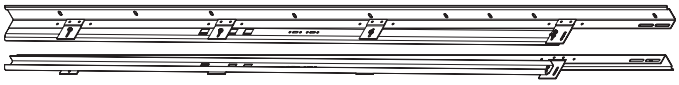
(A1.) Fully Adjustable flag angles RH/LH (as required)



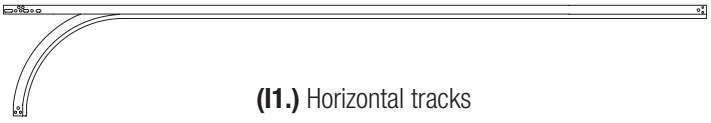
(I2.) Vertical tracks RH/LH (as required)



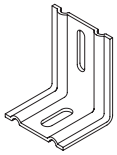
(I3.) Riveted vertical track assemblies RH/LH (as required)



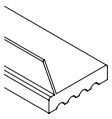
(I4.) Angle mount vertical track assemblies RH/LH (as required)



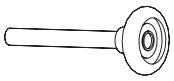
(I1.) Horizontal tracks



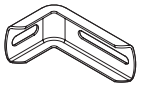
(B1.) F.A. jamb brackets (as required)



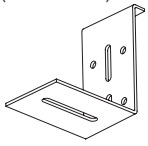
Weather seals & nails (If included)



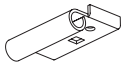
(C1.) (C2.) Track rollers (as required)



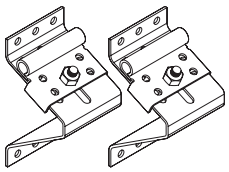
(B2.) Winload jamb brackets (as required)



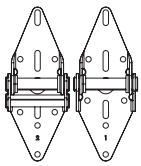
(F2.) Top fixture bases (as required)



(F3.) Top fixture slides (as required)



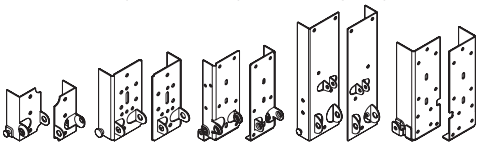
(F1.) Top Fixture Assemblies (as required)



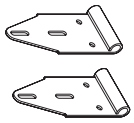
(D1.) (D2.) Graduated hinges (as required)



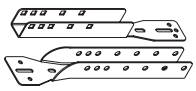
Pull Down rope (if included)



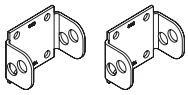
(J1.) Left hand and and right hand bottom corner brackets (as required)



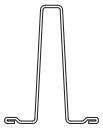
(J2.) Extension brackets (as required)



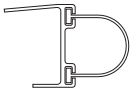
(H1.) (H2.) Drawbar operator bracket



(K1.) Track roller carriers (If included)



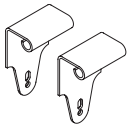
(G1.) Strut (U-shaped) (if included)



(L1.) Bottom Weather Seal



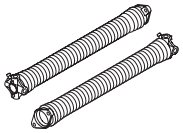
Pull handles



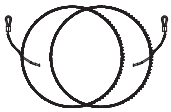
Inside lift handles



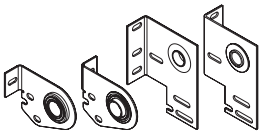
Lift handles



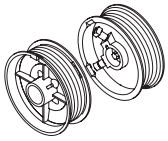
(M1.) Torsion springs RH/LH



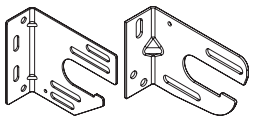
(M2.) Counterbalance lift cables



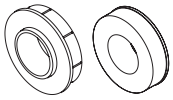
(M3.) (M4.) End bearing bracket RH/LH (as required)



(M5.) (M6.) Cable drums RH/LH



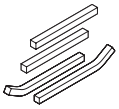
(M7.) Center bracket (as required)



(M8.) Center bracket bearing (as required)



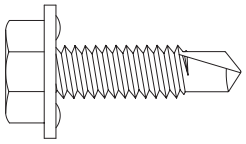
(M12.) Center coupler assembly



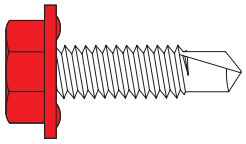
(M11.) Keys (as required)

Figure 2

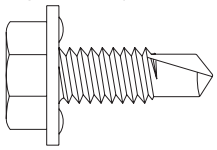
Fasteners



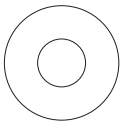
1/4”-14 x 7/8” Self drilling screws (as required)



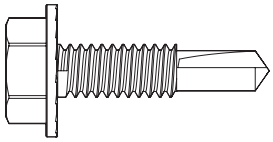
1/4”-14 x 7/8” Self drilling screws (RED HEAD) (as required)



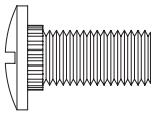
1/4”-20 x 11/16” Self drilling screws (as required)



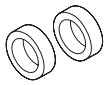
3/8” Washers (as required)



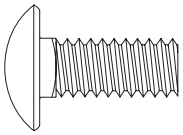
1/4”-20 x 1” Self drilling screws (as required)



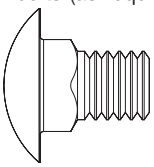
1/4”-20 x 9/16” Track bolts (as required)



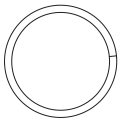
Roller spacers (as required)



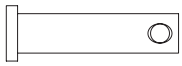
5/16”-18 x 3/4” Carriage bolts (as required)



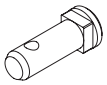
5/16”-18 x 1/2” Carriage bolts (as required)



Cotter ring (as required)



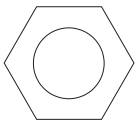
5/16” x 1-1/4” Clevis pin (as required)



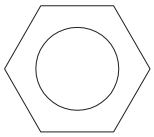
Clevis pin (as required)



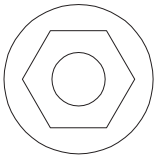
Cotter pin (as required)



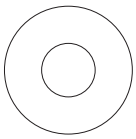
5/16”-18 Hex nuts (as required)



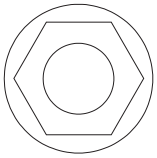
3/8”- 16 Hex nuts (as required)



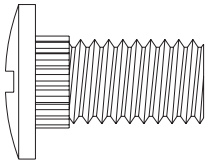
1/4”- 20 Flanged hex nuts (as required)



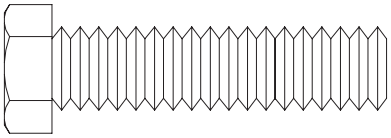
1/4” x 1” Washers (as required)



5/16”-18 Flange hex nuts (as required)



(2) 3/8”-16 x 3/4” Truss head bolts



3/8” - 16 x 1-1/2” Hex head bolts (as required)

Pushnuts (as required)

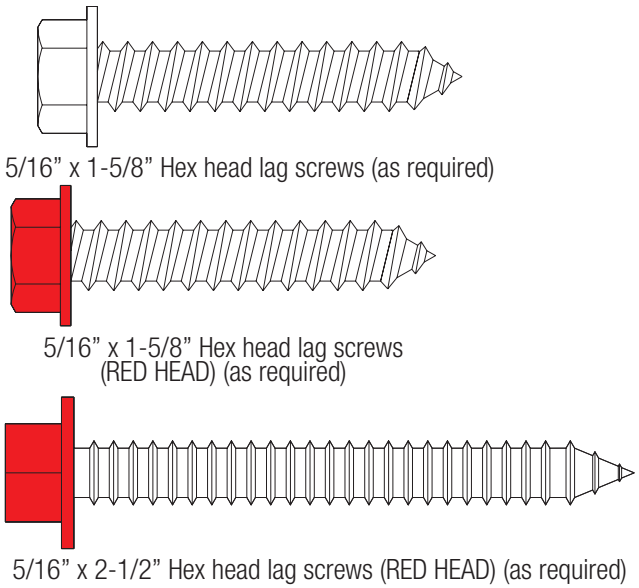


Figure 3

Door Section Identification

Door Height	Type Of sections				
	Bot tom	Lock	Intermediate Section(s)		Top
			I	II	
6’6”	21”	18”	18”	N/A	21”
6’9”	21”	21”	18”		21”
7’0”	21”	21”	21”		21”
7’3”	21”	21”	21”		24”
7’6”	24”	21”	21”		24”
7’9”	24”	24”	21”		24”
8’0”	24”	24”	24”		24”
9’0”	21”	21”	21”	21”	24”
10’0”	24”	24”	24”	24”	24”

When installing your door you must use sections of the appropriate height in the right stacking order. What sections heights you need to use in what order depends on the height of your door.

Unless your door is three sections in height, you will not receive an Intermediate section.

The **BOTTOM SECTION** can be identified by the bottom bracket warning labels on each end stile.

The **INTERMEDIATE I SECTION** may have a warning label attached to either right or left hand end stile of the section. This section is always the 3rd section from the bottom of the door.

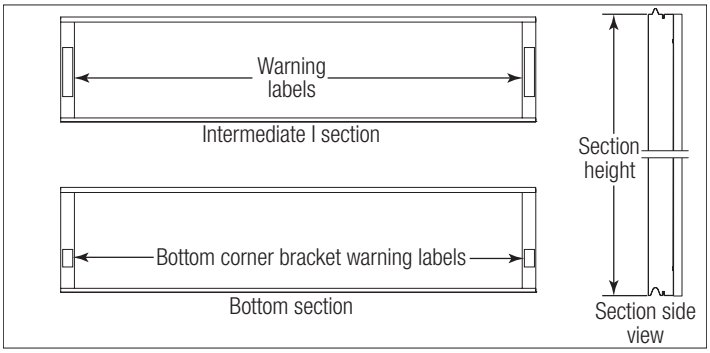


Figure 4

Tools Required

Personal Protection Equipment (PPE)



Figure 5

Hand Tools

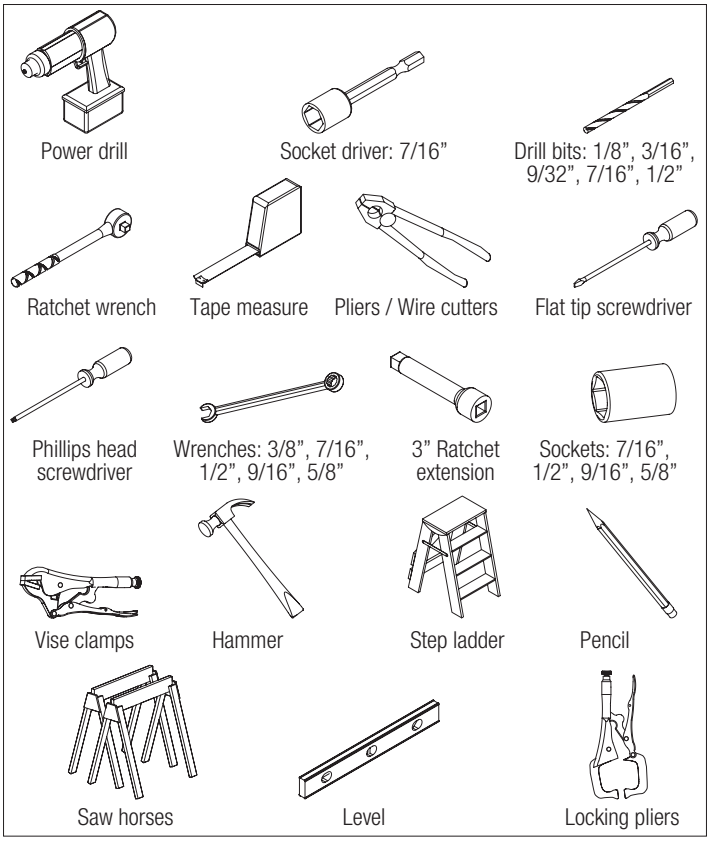


Figure 6

BREAKDOWN OF DOOR COMPONENTS

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

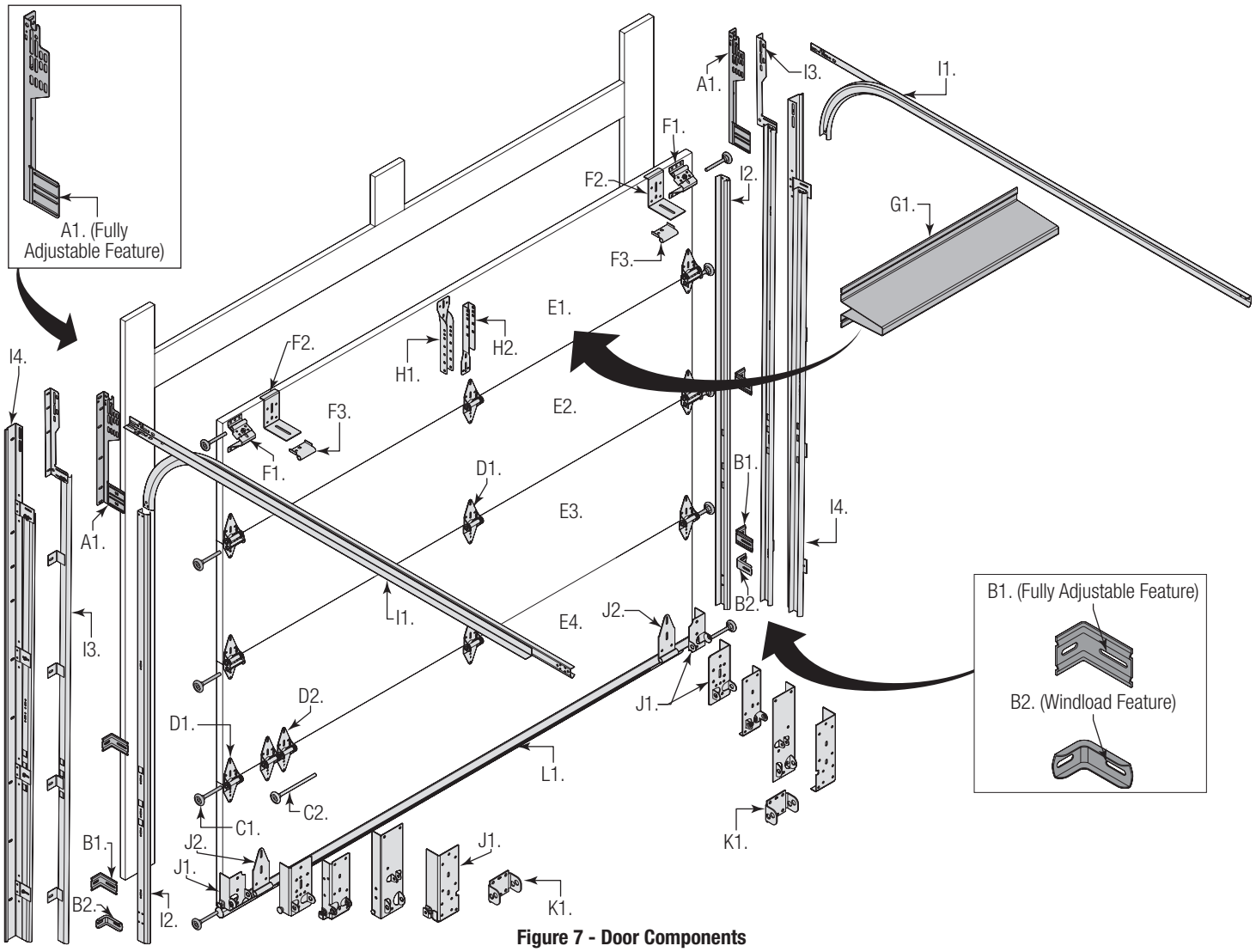


Figure 7 - Door Components

A. FLAG ANGLES (AS REQUIRED):

- A1. Fully Adjustable (F.A.) Flag Angles

B. JAMB BRACKETS (AS REQUIRED):

- B1. Fully Adjustable (F.A.) Jamb Brackets
- B2. Windload Jamb Brackets

C. TRACK ROLLERS (AS REQUIRED):

- C1. Short Stem Track Rollers
- C2. Long Stem Track Rollers

D. GRADUATED END HINGES:

- D1. Single Graduated End Hinges (S.E.H.), Industry Standard
- D2. Double Graduated End Hinges (D.E.H.), Industry Standard

E. STACKED SECTIONS:

- E1. Top Section
- E2. Intermediate(s) Section
- E3. Lock Section
- E4. Bottom Section

F. TOP FIXTURES (AS REQUIRED):

- F1. Top Fixture Assemblies
- F2. Top Fixture Bases - (L-Shaped)
- F3. Top Fixture Slides

G. STRUT(S) (AS REQUIRED):

- G1. Strut (U - shaped)

H. DRAWBAR OPERATOR BRACKET (FOR TROLLEY OPERATED DOORS):

- H1. Top Half Drawbar Operator Bracket
- H2. Bottom Half Drawbar Operator Bracket

I. TRACKS (AS REQUIRED):

- I1. Left Hand And Right Hand Horizontal Track Assemblies
- I2. Left Hand And Right Hand Vertical Tracks
- I3. Left Hand And Right Hand Vertical Track Assemblies
- I4. Left Hand And Right Hand Angle Mount Vertical Track Assemblies

J. BOTTOM CORNER BRACKETS (AS REQUIRED):

- J1. Left Hand and Right Hand Bottom Corner Brackets
- J2. Left Hand And Right Hand Extension Brackets

K. TRACK ROLLER CARRIER'S (AS REQUIRED):

- K1. Track Roller Carrier's

L. BOTTOM WEATHER SEAL:

- L1. Bottom Weather Seal (Door Width)

BREAKDOWN OF COUNTERBALANCE COMPONENTS

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

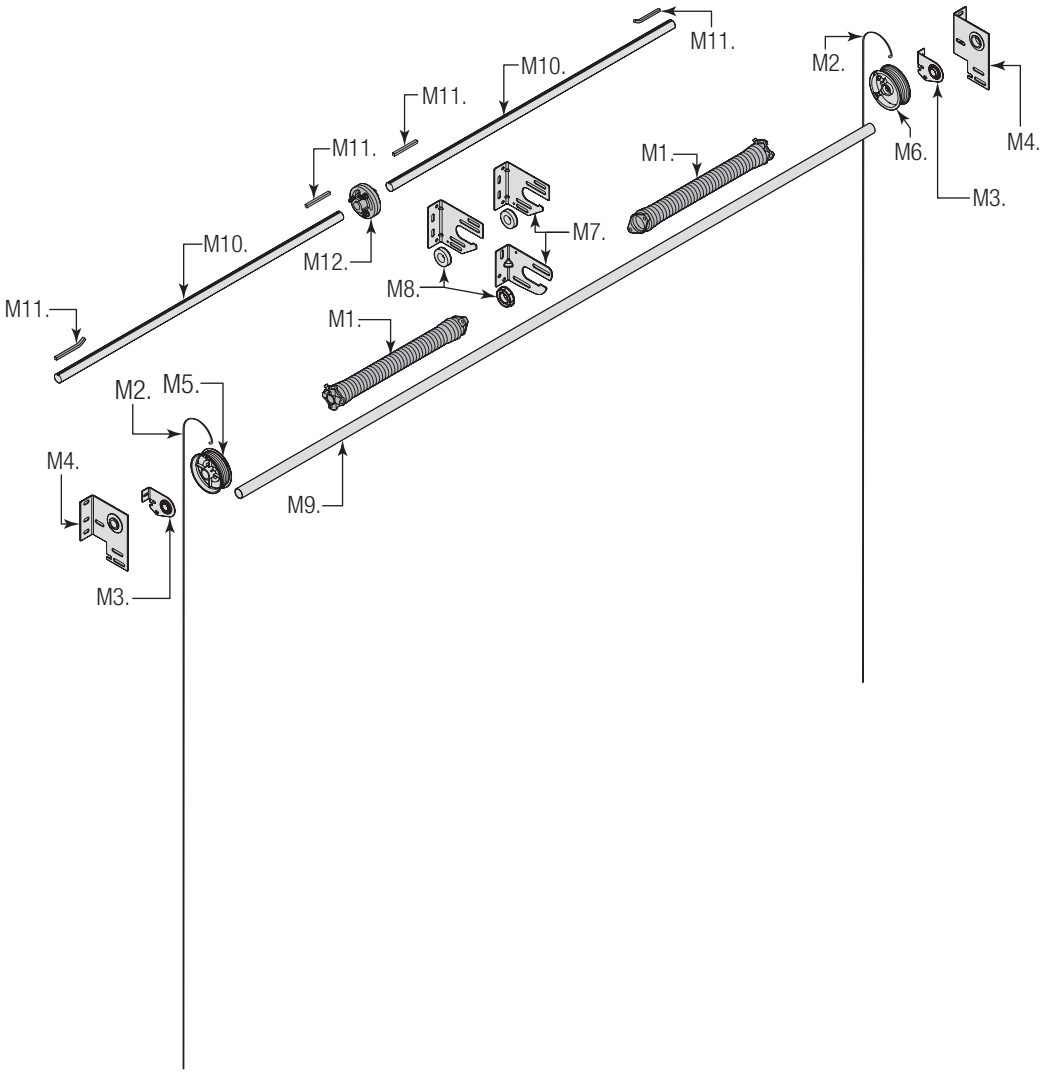


Figure 7 - Counterbalance Components

M. TORSION SPRING ASSEMBLY (AS REQUIRED):

- M1. Left Hand and Right Hand Torsion Springs (As Required)
- M2. Counterbalance Lift Cables
- M3. Left Hand And Right Hand End Bearing Brackets (As Required)
- M4. Left Hand And Right Hand End Bearing Brackets (As Required)
- M5. Left Hand Cable Drum
- M6. Right Hand Cable Drum
- M7. Center Bracket(s) (As Required)
- M8. Center Bracket Bearing(s) (As Required)
- M9. Torsion Shaft / Torsion Keyed Shaft (As Required)
- M10. Torsion Keyed Shafts (As Required)
- M11. Keys (As Required)
- M12. Center Coupler Assembly (As Required)

INSTALLATION INSTRUCTIONS

Door Installation Instructions

BEFORE INSTALLING YOUR DOOR, 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 DOOR.

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

NOTICE

IF THE DOOR WILL BE EXPOSED TO A SIGNIFICANT AMOUNT OF ROAD SALT, PAINT THE BOTTOM GALVANIZED STEEL WEATHER RETAINER TO INHIBIT RUSTING.

1 VERTICAL TRACK ASSEMBLY

IMPORTANT: If you have Riveted Track or Angle Mount Vertical Track, skip this step.

NOTE: For clarity, all graphics shown are of the left side, right side will be the same.

IMPORTANT: The bottom jamb bracket is always the shortest bracket, while the center jamb bracket is the next tallest. If three jamb brackets per side are included with your door, you will have received a top jamb bracket, which is the tallest.

See Figure 8 and Figure 9 for the following steps.

IMPORTANT: Each flag angle will have a unique ID "12R or 15R". Measure the radius of your horizontal track to determine if your horizontal track is 12" or 15" Radius.

1a. Hand tighten the flag angle 1 to the vertical track 2 using two 1/4" - 20 x 9/16" track bolts 3 and two 1/4" - 20 flange hex nuts 4.

1b. attach the shortest jamb bracket 5 by aligning the slot in the shortest jamb bracket with the lower hole of the hole/ slot pattern of the vertical track. Hand tighten the jamb bracket using (1) 1/4" - 20 x 9/16" track bolt and (1) 1/4" - 20 flange hex nut.

1c. Place the tallest jamb bracket 6 over the lower hole of the hole/ slot pattern that is centered between the bottom jamb bracket and flag angle of the 2nd hole set. Hand tighten the jamb bracket using (1) 1/4" - 20 x 9/16" track bolt and (1) 1/4" - 20 flange hex nut.

1d. Repeat this process for the right hand side.

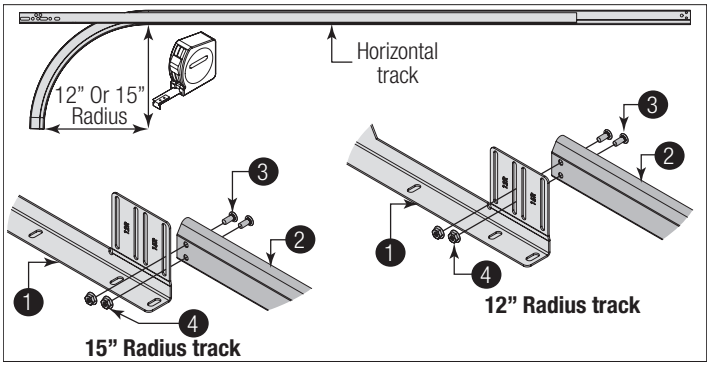


Figure 8, Left Side Shown

IMPORTANT: In Figure 8, observe the slot location in reference to the 12" or 15" radius.

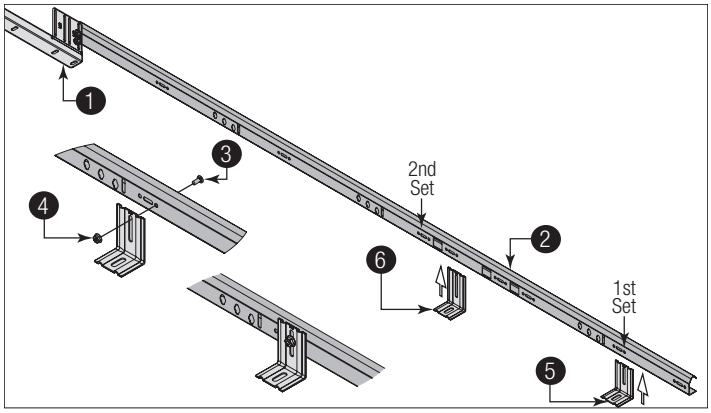


Figure 9, Left Side Shown

1	Flag Angle	4	1/4" - 20 Flange Hex Nut
2	Vertical Track	5	Shortest Jamb Bracket
3	1/4" - 20 x 9/16" Track Bolt	6	Tallest Jamb Bracket

2 ATTACHING (WL) JAMB BRACKETS TO VERTICAL TRACKS

See Figure 10 for the following steps.

2a. Measure the length of the vertical tracks 1.

2b. Using the Jamb Bracket Schedule (shown on the Windload Specification Sheet), determine the placement of the windload jamb brackets 2 for your door height.

2c. Loosely fasten the jamb bracket to the vertical track with one 1/4" - 20 x 9/16" track bolt 3 and one 1/4" - 20 flange hex nut 4.

2d. Repeat same process for other side.

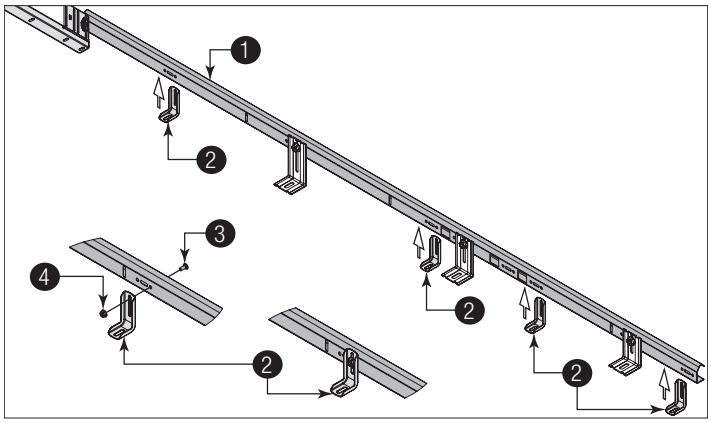


Figure 10, Left Side Shown

1	Vertical Tracks	3	1/4" - 20 x 9/16" Track Bolt
2	Windload Jamb Brackets	4	1/4" - 20 Flange Hex Nut

3 ATTACHING BOTTOM WEATHER SEAL

NOTE: Refer to door section identification, located in the pre-installation section of this manual or refer to Breakdown Of Parts.

NOTE: Verify that the bottom weather seal is aligned with bottom section. If needed, trim the bottom weather seal even with bottom section length.

See Figure 11 for the following steps.

3a. Position the bottom weather seal (1) up against the bottom of the bottom section (2) with the long lip (3) on the inside surface of the bottom section (4).

3b. From inside the door, attach the bottom weather seal to the bottom section with 1/4" - 20 x 1" self drilling screws (5), placing one 6" (6) in from each end of the bottom section and one every 18" (maximum) in between (7), as shown.

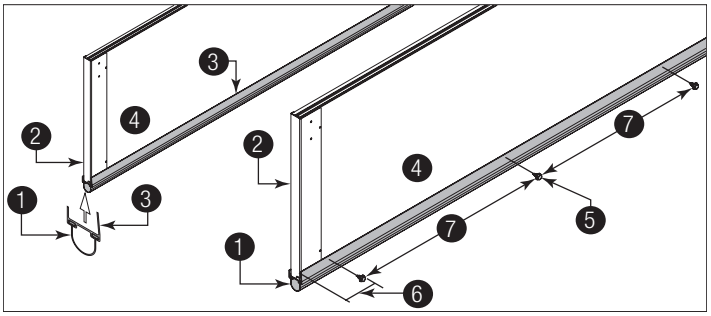


Figure 11, Left Side Shown

1	Bottom Weather Seal	5	1/4" - 20 x 1" Self Drilling Screws
2	Bottom Section	6	6"
3	Long Lip	7	18"
4	Inside Surface Of Bottom Section		

4 ATTACHING HINGES TO SECTIONS

NOTE: Refer to door section identification, located in the pre-installation section of this manual to determine what size sections you need to use as your lock (second) section, intermediate (third) section, intermediate (fourth) section, intermediate (fifth) section, intermediate (sixth) section, and top section. Measure your sections to make sure they are the correct height as indicated on the chart.

NOTE: The graduated end hinges can be identified by the number stamped on the lower hinge leaf. The #1 graduated end hinges serves as end hinges on the bottom section. The #1 graduated end hinges also serves as center hinges on all sections, except for the top section.

NOTE: The #2 graduated end hinges serves as end hinges on the Lock section.

NOTE: The #3 graduated end hinges serves as end hinges on the Intermediate I section.

NOTE: The #4 graduated end hinges serves as end hinges on the Intermediate II section.

NOTE: The #5 graduated end hinges serves as end hinges on the Intermediate III section.

NOTE: The #6 graduated end hinges serves as end hinges on the Intermediate IV section.

See Figure 12 through Figure 14 for the following steps.

4a. Starting with the bottom section and using sawhorses, lay the section on a flat smooth surface.

4b. On the left hand side of the section (1), align the lower hinge leafs (2) of the #1 graduated end hinges (3) over the holes at the top of the end caps (4) located at the top of the section.

4c. Align the lower hinge leafs of the #1 center hinges (5) with the dimples (6) at the center location(s) located at the top of the section.

4d. Secure the graduated end and center hinges to the section using (2) 1/4" - 14 x 7/8" self drilling screws (7).

IMPORTANT: Once the 1/4" - 14 x 7/8" self drilling screws are snug against the lower hinge leafs, tighten an additional 1/4 to 1/2 turn to receive maximum design holding power.

NOTE: Prior to installing the track rollers, refer to the Windload Specification Sheet to determine if an additional 1/4" - 14 x 7/8" self drilling screw (8) is required to be installed in the appropriate graduated end hinge and or installing pushnuts (9) onto the track rollers.

4e. Insert the appropriate short (10) / long (11) stem track roller into the hinge tube of the #1 graduated end hinges.

4f. Repeat graduated hinge attachment using the appropriate graduated end hinges for all remaining sections, except the top section.

IMPORTANT: When placing short stem / long stem track rollers into the #2 graduated end hinges and higher, the short stem / long stem track roller goes into hinge tube (12) furthest away from section.

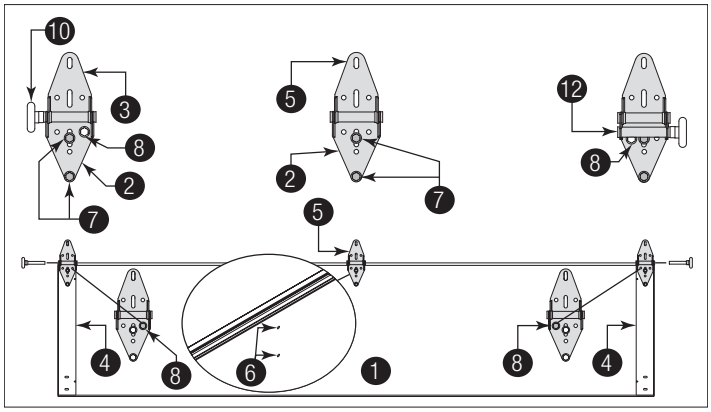


Figure 12

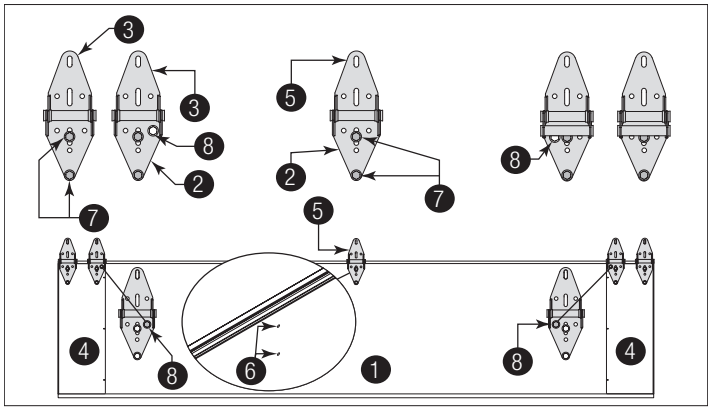


Figure 13

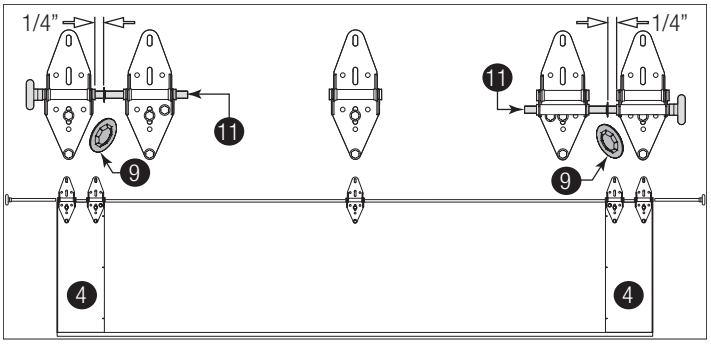


Figure 14

1	Section	7	1/4" - 14 x 7/8" Self Drilling Screw
2	Lower Hinge Leaf	8	Additional 1/4" - 14 x 7/8" Self Drilling Screw
3	Graduated End Hinge	9	Pushnuts
4	End Cap	10	Short Stem Track Roller
5	#1 Center Hinge	11	Long Stem Track Roller
6	Dimples	12	Hinge Tube

5 ATTACHING BOTTOM CORNER BRACKETS

IMPORTANT: Refer to door section identification, located in the pre-installation section of this manual or refer to Breakdown of Parts.

⚠ WARNING

ENSURE TIGHT FIT OF CABLE LOOP OVER PIN TO PREVENT COUNTERBALANCE LIFT CABLE FROM COMING OFF THE PIN, WHICH COULD ALLOW THE DOOR TO FALL AND RESULT IN DEATH OR SERIOUS INJURY.

IMPORTANT: Refer to Package Contents / Breakdown of Parts, to determine which bottom corner brackets you have.

See Figure 15 through Figure 24 for the following steps.

5a. Uncoil the counterbalance lift cables 1.

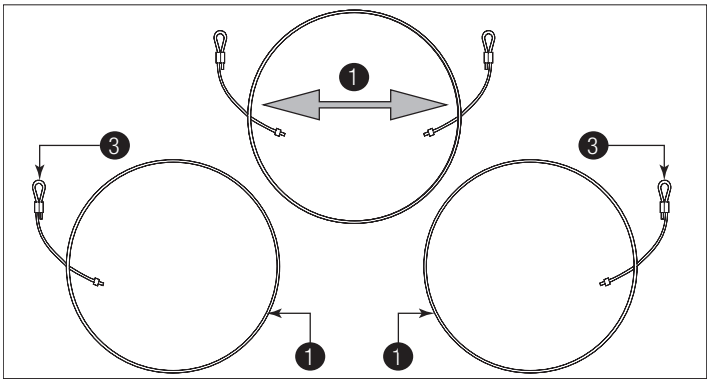


Figure 15

5b. Depending on which bottom corner brackets 2 you have, slip the cable loop 3 at the ends of the counterbalance lift cable over the milford pin 4 of the bottom corner bracket or secure the cable loop 3 to the clevis pin 5 and bottom corner bracket 2 using a flat washer 6 and a cotter pin 7. Repeat this process for the other bottom corner bracket.

5c. Using sawhorses, lay bottom section 8 on a flat smooth surface. Refer to the Windload Specification Sheet for the strutting schedule.

NOTE: Refer to the Windload Specification Sheet to determine if a strut 9 is required to be installed **on top of your bottom corner brackets** or **onto the bottom corner brackets**.

IMPORTANT: The 1/4" - 14 x 7/8" red head self drilling screws must be installed through the holes of the bottom corner brackets, as shown.

5d. Starting on the left hand side, position the left hand bottom corner bracket up against the left corner of the bottom section, making sure it is seated to the edges of the end cap 10.

5e. Secure the left hand bottom corner bracket to the bottom section using (3) 1/4" - 14 x 7/8" RED HEAD self drilling screws 11. Repeat same process for the right hand side.

5f. Center the strut (if applicable) onto the bottom section surface along the top edge of the bottom corner brackets. Center the strut side to side on the section.

5g. Secure strut to the section using (2) 1/4" - 14 x 7/8" self drilling screws 12 at each end 13 and at each center hinge(s) / dimple location(s).

5h.Insert a short stem track roller 14 with roller spacer 15 into each of the bottom corner brackets.

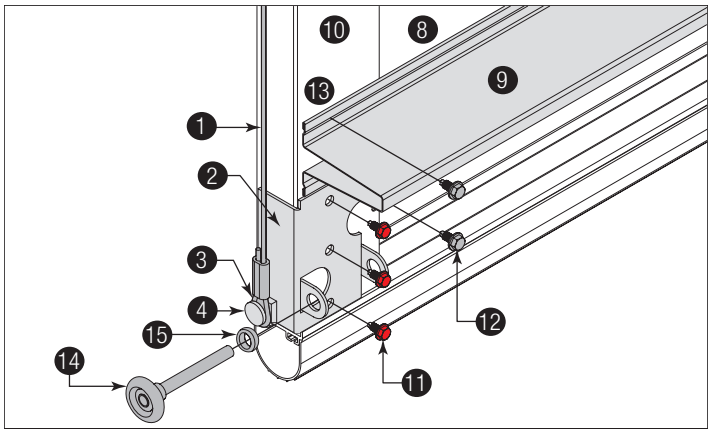


Figure 16, Left Side Shown

1	Counterbalance Lift Cables	10	End Cap
2	Bottom Corner Brackets	11	1/4" - 14 x 7/8" Red Head Self Drilling Screws
3	Cable Loop	12	1/4" - 14 x 7/8" Self Drilling Screws
4	Milford Pin	13	End Locations
8	Bottom Section	14	Short Stem Track Roller
9	Strut	15	Roller Spacer

5d. Starting on the left hand side, position the left hand bottom corner bracket 2 to the left corner of the bottom section 8, making sure it is seated to the edges of the end cap 10. Repeat for other side. Position and center the strut 9 onto the bottom corner brackets surface.

5e. Secure the strut and the left hand bottom corner bracket to the bottom section using (3) 1/4" - 14 x 7/8" RED HEAD self drilling screws 11. Repeat for other side.

5f. Secure strut to the section using 1/4" - 14 x 7/8" self drilling screws 12 at each end 13 and at each center hinge(s) / dimple location(s).

5g. Insert a short stem track roller 14 with roller spacer 15 into each of the bottom corner brackets.

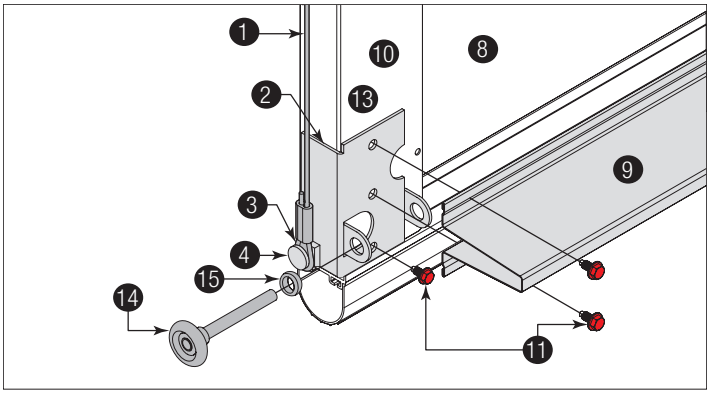


Figure 17, Left Side Shown

1	Counterbalance Lift Cables	10	End Cap
2	Bottom Corner Brackets	11	1/4" - 14 x 7/8" Red Head Self Drilling Screws
3	Cable Loop	13	End Locations
4	Milford Pin	14	Short Stem Track Roller
8	Bottom Section	15	Roller Spacer
9	Strut		

5d. Starting on the left hand side, position the left hand bottom corner bracket 2 to the left corner of the bottom section 8, making sure it is seated to the edges of the end cap 10. Repeat for other side. Position and center the strut 9 onto the bottom corner brackets surface.

5e. Secure the strut and the left hand bottom corner bracket to the bottom section using (3) 1/4" - 14 x 7/8" RED HEAD self drilling screws 11. Repeat for other side.

5f. Secure strut to the section using 1/4" - 14 x 7/8" self drilling screws 12 at each end 13 and at each center hinge(s) / dimple location(s).

5g. Position the extension bracket 16 flush against the end stile and slide it underneath the strut. Align the extension bracket with the bottom corner bracket by temporally inserting a long stem shaft roller 17 with a roller spacer 15 through the bottom corner bracket and extension bracket. Set the long stem shaft rollers aside.

5h. Attach the strut and the extension bracket to the endstile using (3) 1/4" - 14 x 7/8" self drilling screw. Repeat for other side.

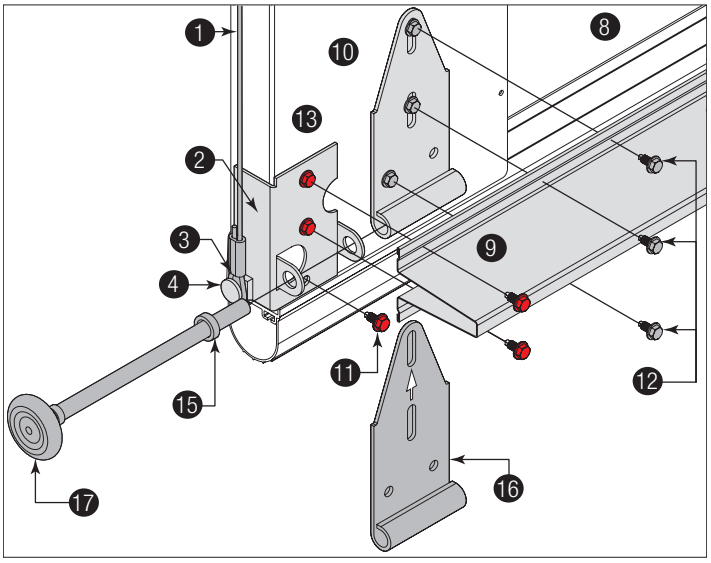


Figure 18, Left Side Shown

1	Counterbalance Lift Cables	11	1/4" - 14 x 7/8" Red Head Self Drilling Screws
2	Bottom Corner Brackets	12	1/4" - 14 x 7/8" Self Drilling Screws
3	Cable Loop	13	End Locations
4	Milford Pin	15	Roller Spacer
8	Bottom Section	16	Extension Bracket
9	Strut	17	Long Stem Track Roller
10	End Cap		

NOTE: Refer to the Windload Specification Sheet to determine if a pushnut 18 is required to be installed onto the long shaft track rollers 17.

NOTE: When positioning the pushnut onto roller stem, ensure the tabs on the pushnut are pointing away from roller stem.

IMPORTANT: Accurately positioning the pushnut onto the roller stem is critical. Once the pushnut is pushed onto the roller stem, the tabs making contact with the steel surface will make it difficult to reposition the pushnut.

5i. Starting at either side, re-insert the long stem track roller with spacer into the bottom corner bracket. Position a pushnut onto the end of the roller stem and slide it towards the bottom corner bracket while pushing it through the extension bracket. Leave at least 1/4" of space 19 between push nut and bottom corner bracket. Repeat same process for the other side.

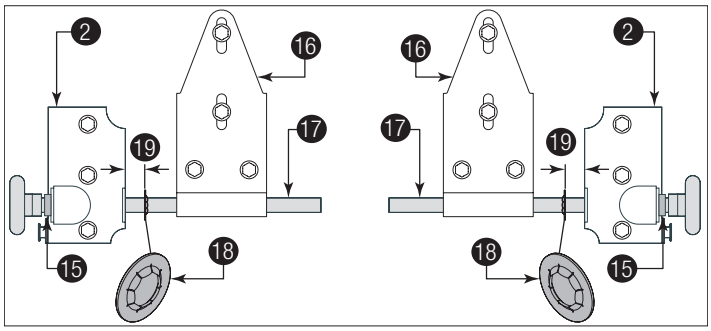


Figure 19, Left Side Shown

2	Bottom Corner Brackets	17	Long Stem Track Roller
15	Roller Spacer	18	Pushnuts
16	Extension Bracket	19	1/4"

5d. Starting on the left hand side, position the left hand bottom corner bracket 2 to the left corner of the bottom section 8, making sure it is seated to the edges of the end cap 10.

5e. Secure the left hand bottom corner bracket to the bottom section using (3) 1/4" - 14 x 7/8" RED HEAD self drilling screws 11. Repeat for other side.

5f. Position the extension bracket 16 flush against the end stile and align the extension bracket with the bottom corner bracket by temporally inserting a long shaft roller 17 with a roller spacer 15 through the bottom corner bracket and extension bracket.

5g. Attach the extension bracket to the endstile using (4) 1/4" - 14 x 7/8" self drilling screw 12. Repeat for other side.

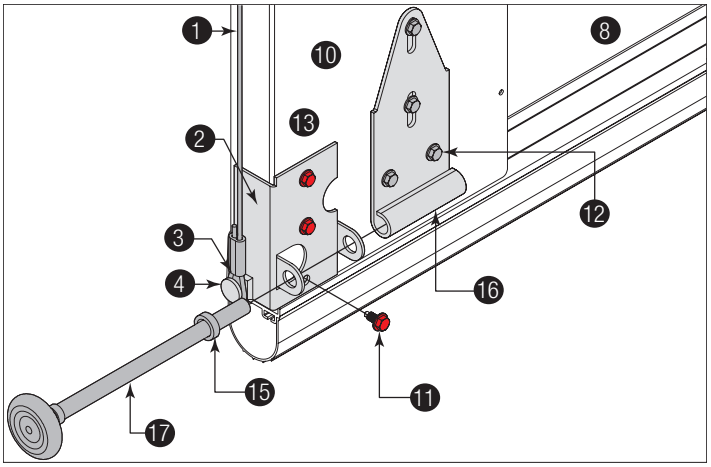


Figure 20, Left Side Shown

1	Counterbalance Lift Cables	11	1/4" - 14 x 7/8" Red Head Self Drilling Screws
2	Bottom Corner Brackets	12	1/4" - 14 x 7/8" Self Drilling Screws
3	Cable Loop	15	Roller Spacer
4	Milford Pin	16	Extension Bracket
8	Bottom Section	17	Long Stem Track Roller
10	End Cap		

NOTE: Refer to the Windload Specification Sheet to determine if a pushnut 18 is required to be installed onto the long shaft track rollers 17.

NOTE: When positioning the pushnut onto roller stem, ensure the tabs on the pushnut are pointing away from roller stem.

IMPORTANT: Accurately positioning the pushnut onto the roller stem is critical. Once the pushnut is pushed onto the roller stem, the tabs making contact with the steel surface will make it difficult to reposition the pushnut.

5h. Starting at either side, re-insert the long stem track roller with spacer into the bottom corner bracket. Position a pushnut onto the end of the roller stem and slide it towards the bottom corner bracket while pushing it through the extension bracket. Leave at least 1/4" of space 19 between push nut and bottom corner bracket. Repeat same process for the other side.

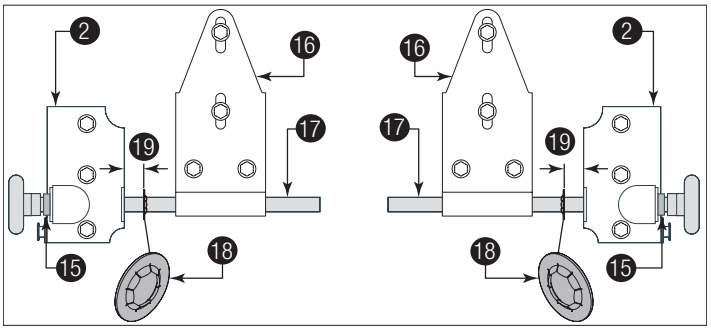


Figure 21, Left Side Shown

2	Bottom Corner Brackets	17	Long Stem Track Roller
15	Roller Spacer	18	Pushnuts
16	Extension Bracket	19	1/4"

5d. Starting on the left hand side, position the left hand bottom corner bracket 2 to the left corner of the bottom section 8, making sure it is seated to the edges of the end cap 10. Repeat for other side.

5e. Position and center the strut 9 onto the bottom corner brackets surface.

5f. Secure the strut and the left hand bottom corner bracket to the bottom section using (3) 1/4" - 14 x 7/8" RED HEAD self drilling screws 11 and (2) 1/4" - 14 x 7/8" self drilling screws 12. Repeat for other side.

5g. Finish securing strut to the section using (2) 1/4" - 14 x 7/8" self drilling screws at each end 13 and at each center hinge(s) / dimple location(s).

5h. Insert a short stem track roller 14 with a roller spacer 15 into each of the bottom corner brackets.

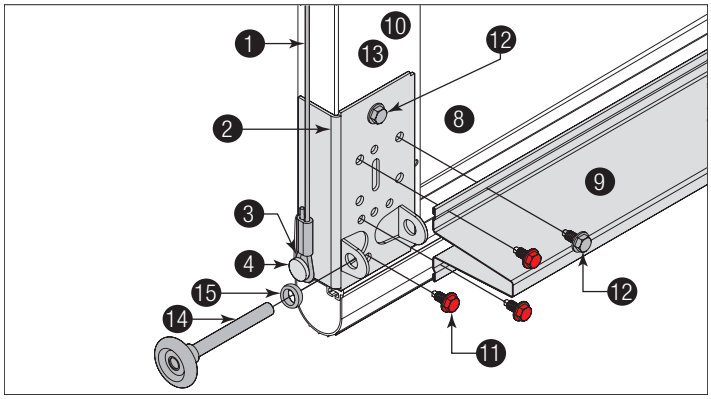


Figure 22, Left Side Shown

1	Counterbalance Lift Cables	10	End Cap
2	Bottom Corner Brackets	11	1/4" - 14 x 7/8" Red Head Self Drilling Screws
3	Cable Loop	12	1/4" - 14 x 7/8" Self Drilling Screws
4	Milford Pin	13	End Locations
8	Bottom Section	14	Short Stem Track Roller
9	Strut	15	Roller Spacer

5d. Starting on the left hand side, position the left hand bottom corner bracket 2 to the left corner of the bottom section 8, making sure it is seated to the edges of the end cap 10. Repeat for other side.

5e. Position and center the strut 9 onto the bottom corner brackets surface.

5f. Secure the strut and the left hand bottom corner bracket to the bottom section using (3) 1/4" - 14 x 7/8" RED HEAD self drilling screws 11 and (2) 1/4" - 14 x 7/8" self drilling screws 12. Repeat for other side.

5g. Finish securing strut to the section using (2) 1/4" - 14 x 7/8" self drilling screws at each end 13 and at each center hinge(s) / dimple location(s).

5h. Insert a short stem track roller 14 with roller spacer 15 into each of the bottom corner brackets.

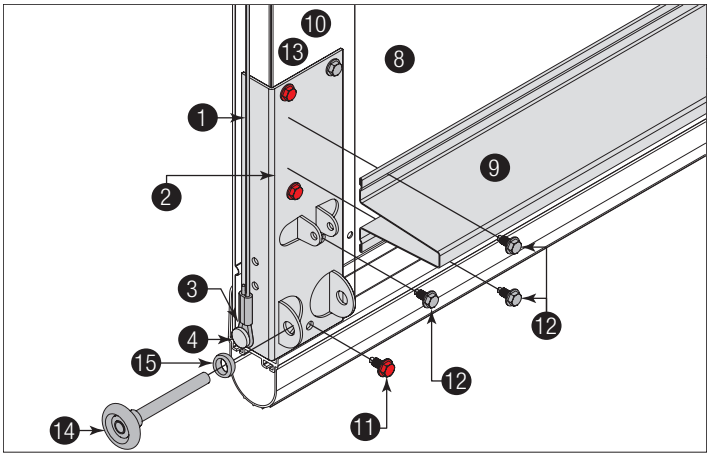


Figure 23, Left Side Shown

1	Counterbalance Lift Cables	10	End Cap
2	Bottom Corner Brackets	11	1/4" - 14 x 7/8" Red Head Self Drilling Screws
3	Cable Loop	12	1/4" - 14 x 7/8" Self Drilling Screws
4	Milford Pin	13	End Locations
8	Bottom Section	14	Short Stem Track Roller
9	Strut	15	Roller Spacer

5d. Starting on the left hand side, position the left hand bottom corner bracket 2 to the left corner of the bottom section 8, making sure it is seated to the edges of the end cap 10. Repeat for other side.

5e. Position and center the strut 9 onto the bottom corner brackets surface.

5f. Secure the strut and the left hand bottom corner bracket to the bottom section using (3) 1/4" - 14 x 7/8" RED HEAD self drilling screws 11 and (2) 1/4" - 14 x 7/8" self drilling screws 12. Repeat for other side.

5g. Finish securing strut to the section using (2) 1/4" - 14 x 7/8" self drilling screws at each end 13 and at each center hinge(s) / dimple location(s).

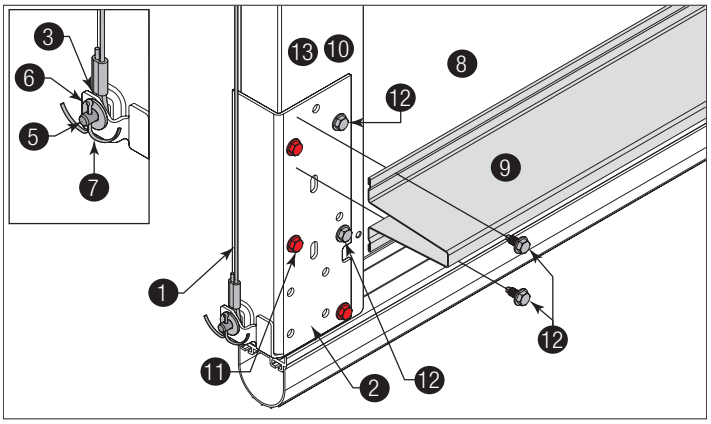


Figure 24, Left Side Shown

1	Counterbalance Lift Cables	8	Bottom Section
2	Bottom Corner Brackets	9	Strut
3	Cable Loop	10	End Cap
5	Clevis Pin	11	1/4" - 14 x 7/8" Red Head Self Drilling Screws
6	Flat Washer	12	1/4" - 14 x 7/8" Self Drilling Screws
7	Cotter Pin	13	End Locations

6 ATTACHING TRACK ROLLER CARRIERS

NOTE: If you don't have track roller carriers, then skip this step. Refer to Package Contents / Breakdown of Parts, to determine if a track roller carrier was supplied with your door.

NOTE: The track roller carrier's inner holes are used on doors with 2" track applications 1 with a short stem track roller 7.

See Figure 25 for the following steps.

6a. Starting on left hand side of the bottom section 2, attach the track roller carrier 3 with the stamp "STD" facing UP 4 to the bottom corner bracket 5 by aligning the four holes of the track roller carrier with the four holes in the bottom corner bracket.

6b. Secure the track roller carrier to the bottom corner bracket using 1/4" - 20 x 1" self drilling screws 6.

6c. If applicable, repeat for the other track roller carrier.

6d. Insert the short stem track roller and roller spacer 8 into the inner holes of the track roller carrier.

6e. Repeat the same process for the right hand side.

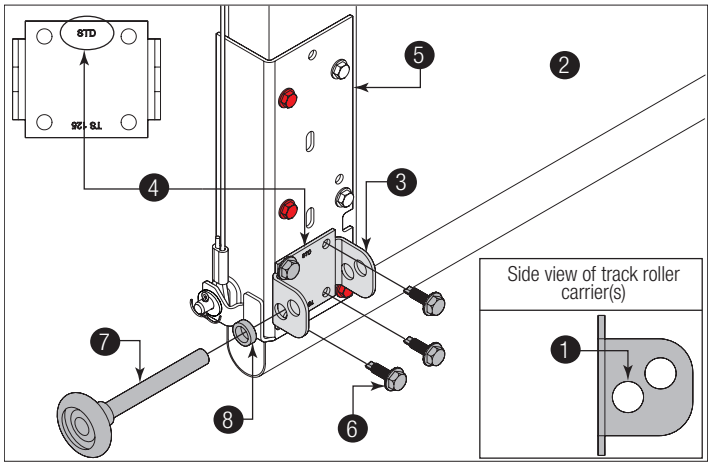


Figure 25, Left Side Shown

1	2" Track Applications	5	Bottom Corner Bracket
2	Bottom Section	6	1/4" - 20 x 1" Self Drilling Screws
3	Track Roller Carrier	7	Short Stem Track Roller
4	"Std" Facing Up	8	Roller Spacer

7 ATTACHING TOP FIXTURES TO TOP SECTION

NOTE: Depending on your door, you may have Top Fixture Bases and Top Fixture Slides or you may have Top Fixture Assemblies. Refer to Package Contents / Breakdown of Parts, to determine which Top Fixtures you have

NOTE: The top fixture slide will be tightened and adjusted later, in step, Adjusting Top Fixture.

IMPORTANT: Ensure the top fixture slide is able to slide along the top fixture base. If needed, loosen the 5/16" - 18 hex nut (10).

NOTE: Refer to the Windload Specification Sheet to determine if a strut is required to be installed on your top section.

See Figure 26 through Figure 28 for the following steps.

7a. Using sawhorses, lay the top section (1) on a flat smooth surface.

If You Have Top Fixture Assemblies:

7b. If applicable, place and center the strut (2) onto the top section surface along the top of edge of the top section. Center the strut side to side on the section.

7c. Secure strut to the section using 1/4" - 14 x 7/8" self drilling screws (3) at each end and at each center hinge(s) / dimple location(s).

7d. Without Strutting:

Align the top fixture base (4) 3" (5) down from the top edge of the top section.

7d. With Strutting:

Align the top fixture base (4) below the strut and even with the edge of the section. The slotted half (6) of the top fixture base should be facing upwards.

7e. Secure the top fixture to the top section through the end cap (7) using (4) 1/4" - 14 x 7/8" self drilling screws.

7f. Insert short stem track roller (8) into top fixture slide (9).

7g. Repeat for other side.

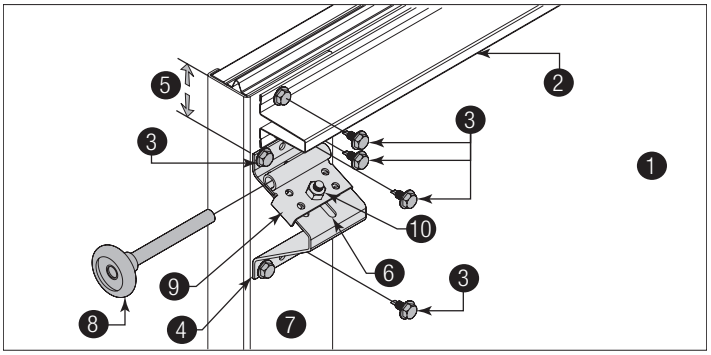


Figure 26, Left Side Shown

1	Top Section	6	Slotted Half
2	Strut	7	End Cap
3	1/4" - 14 x 7/8" Self Drilling Screws	8	Short Stem Track Roller
4	Top Fixture Base	9	Top Fixture Slide
5	3"	10	5/16" - 18 Hex Nut

If You Have Top Fixture Bases And Top Fixture Slides:

7b. Loosely secure each of the top fixture slides (9) and top fixture bases (4) using one 5/16" - 18 x 3/4" carriage bolt (11) and 5/16" - 18 hex nut (10).

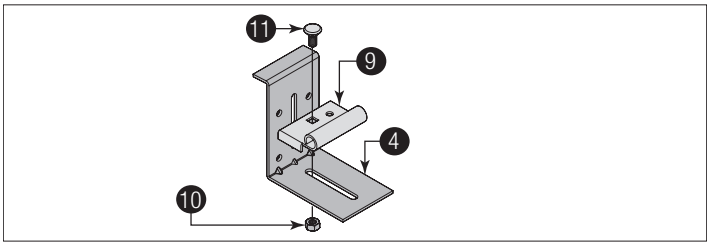


Figure 27, Left Side Shown

9	Top Fixture Slide	11	5/16" - 18 x 3/4" Carriage Bolt
4	Top Fixture Base	10	5/16" - 18 Hex Nut

7c. Starting on the left hand side of the top section, align the lip (12) of the top fixture base on top of the corner of the top section and even with the edge of the section. Position another top fixture assembly onto the endcap (7).

7d. For each top fixture assembly, install (2) 1/4" - 14 x 7/8" self drilling screws (3) through the bottom two holes in the top fixture base (4).

7e. Place the strut (2) on the top edge of the top section and on top of the top fixture bases. Center the strut side to side on the section.

7f. Secure strut to the top section using (4) 1/4" - 14 x 7/8" self drilling screws at each end and (2) 1/4" - 14 x 7/8" self drilling screws at each center hinge(s) / dimple location(s).

7g. Insert long stem track roller (13) into top fixture slides (9).

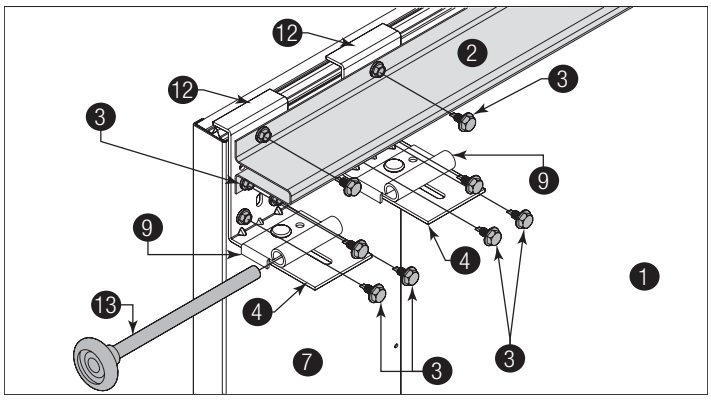


Figure 28, Left Side Shown

12	Lip	2	Strut
7	End Cap	7	End Cap
3	1/4" - 14 x 7/8" Self Drilling Screws	13	Long Stem Track Roller
4	Top Fixture Base	9	Top Fixture Slide

8 ATTACHING STRUTS TO SECTIONS

NOTE: Refer to the Windload Specification Sheet to determine the placement of the struts and their position on each section.

See Figure 29 for the following steps.

8a. Using sawhorses, lay the appropriate sections (1) on a flat smooth surface.

8b. Flip up the hinges and butt the sections together in the proper stack sequence.

8c. Place the strut (2) on the appropriate section, either up against the bottom of the hinges (3), down against the top of the hinges (4) or at the middle of the section (5). Center the strut side to side on the section.

8d. Secure the strut to the section using (2) 1/4" - 14 x 7/8" self drilling screws (6) at each end hinge location (7) and (2) 1/4" - 14 x 7/8" self drilling screws at each center hinge(s) / dimple location(s) (8).

8e. Refer to the Windload Specification Sheet to determine if all the strut requires additional fasteners to be installed. If the strut does require more fasteners, then secure it to the section using (2) 1/4" - 14 x 7/8" self drilling screws in between each hinge locations (9).

8f. Repeat same process for the other sections.

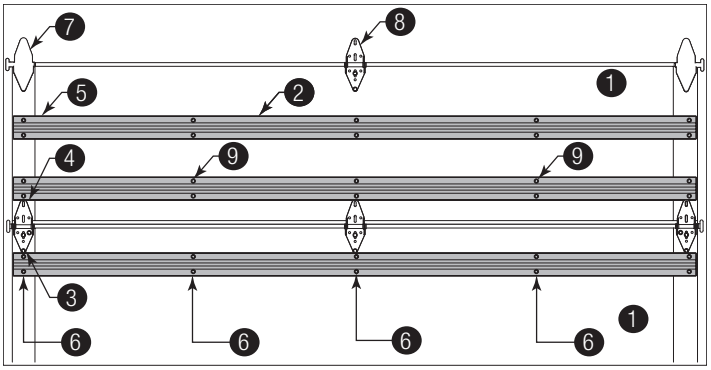


Figure 29, Left Side Shown

1	Section	6	1/4" - 14 x 7/8" Self Drilling Screws
2	Strut	7	End Hinge Location
3	Bottom Of The Hinges	8	Center Hinge(S) / Dimple Location(S)
4	Top Of The Hinges	9	In Between Each Hinge Locations
5	Middle Of The Section		

9 ATTACHING INSIDE LIFT HANDLES

NOTE: Refer to door section identification, located in the pre-installation section of this manual to determine what size sections you need to use as your bottom section and lock (second) section.

IMPORTANT: The inside lift handles need to be vertically aligned with each other.

See Figure 30 for the following steps.

9a. Starting on the left hand side and on the inside portion of bottom section 1, position the inside lift handle 2 on top of the end cap 3.

9b. Keeping the inside lift handle vertically aligned and centered on the end cap, secure the lift handle to the end cap using (2) 1/4" - 20 x 11/16" self-drilling screws 4.

9c. Next, install the second inside lift handle in the same manner as the first onto the lock section (second section) 5.

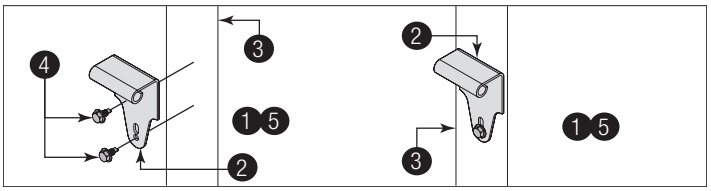


Figure 30

1	Bottom Section	4	1/4" - 20 x 11/16" Self-Drilling Screws
2	Inside Lift Handle	5	Lock Section (Second Section)
3	End Cap		

10 ATTACHING OUTSIDE PULL HANDLES

NOTE: Refer to door section identification, located in the pre-installation section of this manual to determine what size sections you need to use as your bottom section.

See Figure 31 and Figure 32 for the following steps.

10a. On the outside of bottom section 1, locate the bottom horizontal rail 2.

10b. Position and center the pull handle 3 on the bottom section.

IMPORTANT: The pull handle(s) need to be horizontally aligned with the bottom section rail.

10c. Using the holes in the pull handle as a template, mark the hole locations onto the section surface.

10d. Drill 1/4" diameter holes straight through the entire section at each marked location.

⚠ CAUTION

BE CAREFUL TO KEEP DRILL STRAIGHT WHEN PRE-DRILLING. SECTION DAMAGE CAN RESULT FROM FAILURE TO KEEPING THE DRILL STRAIGHT.

10e. Assemble the pull handle to the bottom section using (2) 1/4" - 20 x 2-1/2" carriage bolts 4, (2) 1/4" x 1" washers 5 and (2) 1/4" - 20 flange hex nuts 6.

10f. If applicable, repeat the same process for other pull handle.

NOTE: Prior to securing the pull handles to the section, caulk 7 the top flat edges of the pull handle, but leave the bottom un-caulked.

NOTE: Ensure the 1/4" - 20 x 2-1/2" carriage bolts is going through the pull handle first, the 1/4" x 1" washers and the 1/4" - 20 flange hex nuts is on the inside surface of bottom section.

NOTE: You may need to cut off the protruding ends of the carriage bolts after securing the pull handle(s) to the section. If the carriage bolts are cut off, use a file to smooth rough edges.

⚠ CAUTION

FAILURE TO SMOOTH CARRIAGE BOLT ENDS MAY RESULT IN POSSIBLE INJURY.

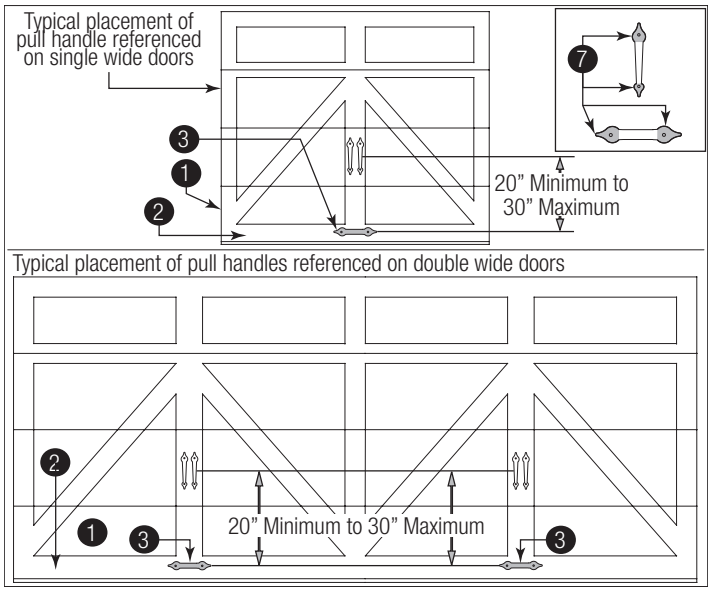


Figure 31

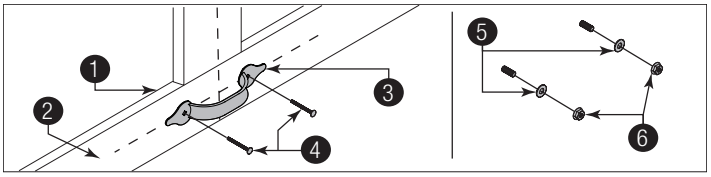


Figure 32

1	Bottom Section	5	1/4" x 1" Washers
2	Bottom Horizontal Rail	6	1/4" - 20 Flange Hex Nuts
3	Pull Handle	7	Caulk
4	1/4" - 20 x 2-1/2" Carriage Bolts		

11 ATTACHING OUTSIDE LIFT HANDLES

NOTE: Refer to door section identification, located in the pre-installation section of this manual to determine what size sections you need to use as your lock (second) section.

See Figure 33 and Figure 34 for the following steps.

11a. On the outside of the lock (second) section 1, locate the vertical center stile.

11b. Position and center the lift handle 2 on the lock (second) section.

IMPORTANT: The lift handle(s) needs to be vertically aligned with the center stile.

IMPORTANT: The distance between the lift handle(s) and the middle of the pull handle(s) must be 20" minimum to 30" maximum 3. If necessary, reposition the upper lift handle(s) to stay within the required dimension.

11c. Using the holes in the lift handle as a template, mark the hole locations onto the section surface.

11d. Drill 1/4" diameter holes straight through the entire section at each marked location.

⚠ CAUTION

BE CAREFUL TO KEEP DRILL STRAIGHT WHEN PRE-DRILLING. SECTION DAMAGE CAN RESULT FROM FAILURE TO KEEPING THE DRILL STRAIGHT.

11e. Assemble the lift handle to the lock (second) section using (2) 1/4" - 20 x 2-1/2" carriage bolts 4, (2) 1/4" x 1" washers 5 and (2) 1/4" - 20 flange hex nuts 6.

11f. If applicable, repeat the same process for other lift handle.

NOTE: Prior to securing the lift handles to the section, caulk 7 the flat edges of the lift handle.

NOTE: Ensure the 1/4" - 20 x 2-1/2" carriage bolts is going through the lift handle first, the 1/4" x 1" washers and the 1/4" - 20 flange hex nuts are on the inside surface of lock (second) section.

IMPORTANT: The lift handle(s) and the pull handle(s) need to be vertically aligned.

⚠ WARNING

TO AVOID POSSIBLE INJURY, LIFT HANDLES THAT ARE INSTALLED WITHIN 4 INCHES (102MM) OF A SECTION INTERFACE SHALL PROMOTE VERTICAL ORIENTATION OF THE HAND.

NOTE: You may need to cut off the protruding ends of the carriage bolts after securing the lift handle(s) to the section. If the carriage bolts are cut off, use a file to smooth rough edges.

⚠ CAUTION

FAILURE TO SMOOTH CARRIAGE BOLT ENDS MAY RESULT IN POSSIBLE INJURY.

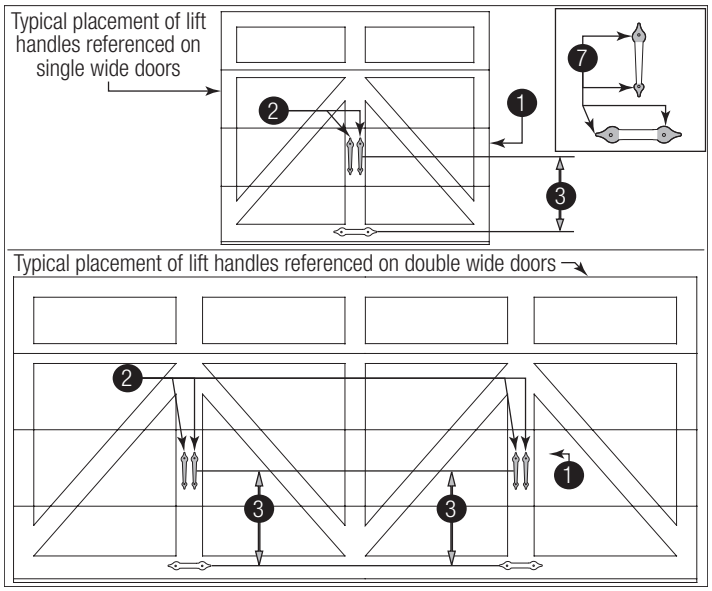


Figure 33

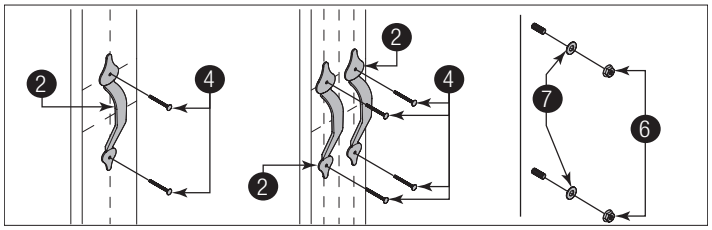


Figure 34

1	Lock (Second) Section	5	1/4" x 1" Washers
2	Lift Handle	6	1/4" - 20 Flange Hex Nuts
3	20" Minimum To 30" Maximum	7	Caulk
4	1/4" - 20 x 2-1/2" Carriage Bolts		

12 POSITIONING BOTTOM SECTION

See Figure 35 for the following steps.

12a. Center the bottom section 1 in the door opening.

12b. Use a level 2 and wood shims 3 (if necessary) to level the bottom section. When the bottom section is leveled, temporarily hold it in place by driving a nail into the jamb and bending it over the edge of the bottom section on both sides.

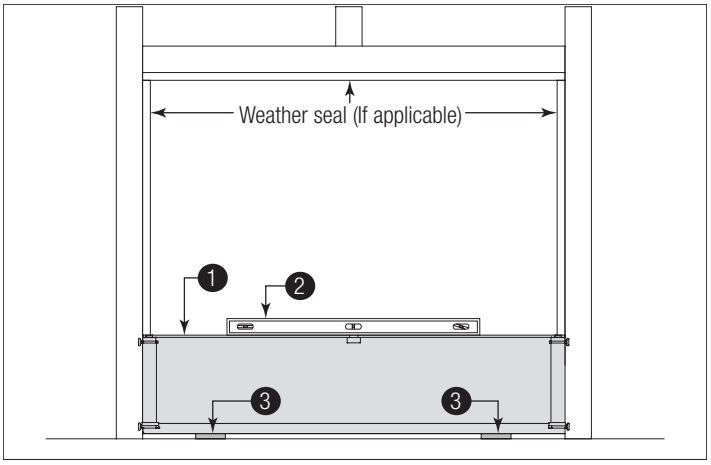


Figure 35

1	Bottom Section	3	Wood Shims
2	Level		

13 ATTACHING VERTICAL TRACKS TO JAMBS

IMPORTANT: 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 / Breakdown of Parts, to determine which Flag Angles / Vertical Track Assemblies you have.

IMPORTANT: If this door is to be installed prior to a finishing construction of the building's floor, the vertical tracks and the door bottom section assembly should be installed such that when the floor is constructed, no door or track parts are trapped in the floor construction.

IMPORTANT: If the bottom section was leveled with shims, the vertical track on the shimmed side must be raised the same height as the shim. Recheck the top of the vertical tracks to be level from side to side.

IMPORTANT: Make sure the counterbalance lift cable is located between the track rollers and the door jamb.

See Figure 36 through Figure 38 for the following steps.

13a. Starting on the left hand side of the bottom section 1, remove the nail. Position the left hand vertical track assembly 2 over the track rollers of the bottom section and install, as shown. Drill 3/16" pilot holes into the door jamb for the lag screws.

IMPORTANT: For proper flag angle lag screw location, note the flag angle styles 3.

For Doors With Fully Adjustable Flag Angles:

13b. Loosely fasten jamb brackets 4 and flag angle 5 to the jamb using 5/16" x 1-5/8" lag screws 6.

13c. Tighten lag screws, securing the bottom jamb bracket to jamb, maintain 3/8" to 5/8" spacing for 2" Track or 1/2" to 3/4" spacing for 3" Track 7, between the bottom section and vertical track.

13d. Hang counterbalance lift cable over flag angle. Repeat same process for other side.

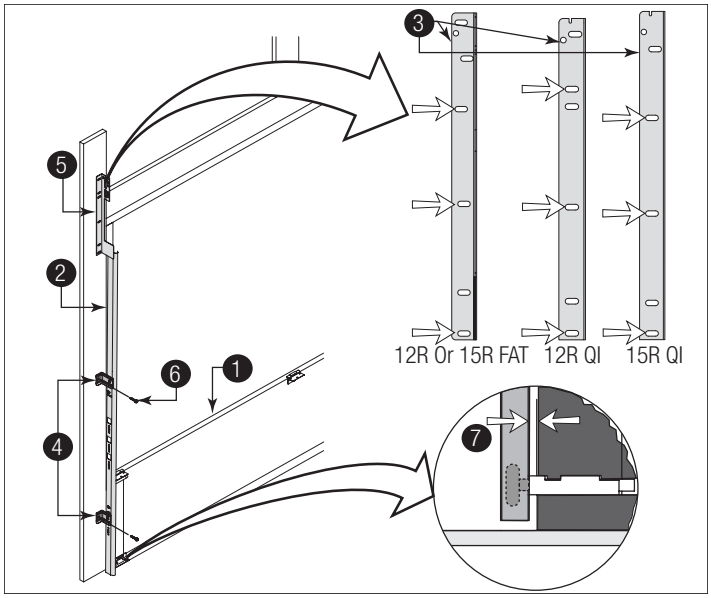


Figure 36, Left Side Shown

For Doors With Riveted Vertical Track Assemblies:

13b. Loosely fasten jamb brackets 4 and flag angle 5 to the jamb using 5/16" x 1-5/8" lag screws 6.

13c. Tighten lag screws, securing the bottom jamb bracket to jamb, maintain 3/8" to 5/8" spacing for 2" Track or 1/2" to 3/4" spacing for 3" Track 7, between the bottom section and vertical track.

13d. Hang counterbalance lift cable over flag angle. Repeat same process for other side.

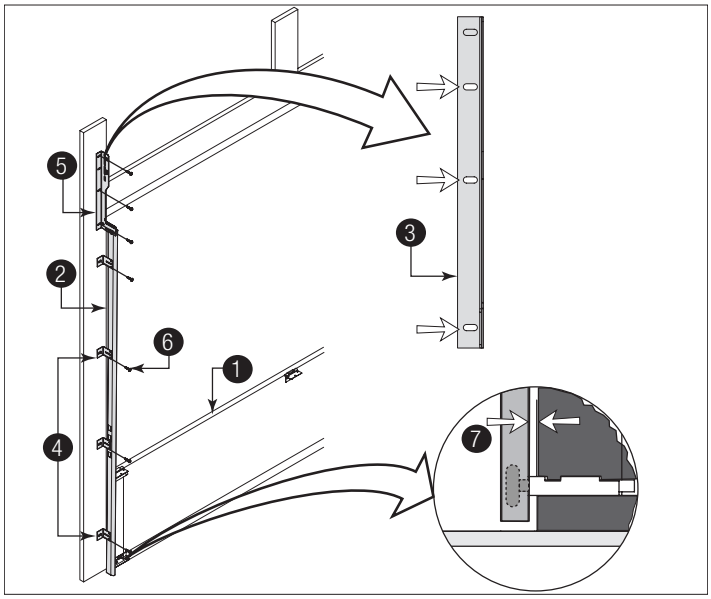


Figure 37, Left Side Shown

1	Bottom Section	5	Flag Angle
2	Vertical Track Assembly	6	5/16" x 1-5/8" Lag Screws
3	Flag Angle Styles	7	3/8" to 5/8" (For 2" Track) / 1/2" to 3/4" (For 3" Track) Spacing
4	Jamb Brackets		

For Doors With Angle Mount Vertical Track Assemblies:

IMPORTANT: Prior to installing your angle mount vertical track assemblies, measure the radius of your horizontal tracks. If you have 12" Radius horizontal tracks, locate the top portion of the angle mounts 8 and cut off 3" 9 from the top of each angle mount.

13b. Loosely fasten the slots 10 in the angle mount 11 to the jamb using 5/16" x 1-5/8" lag screws 6.

13c. Tighten lag screws, securing the bottom slot 12 in the angle mount, maintain 3/8" to 5/8" spacing for 2" Track or 1/2" to 3/4" spacing for 3" Track 7, between the bottom section and vertical track.

13d. Hang counterbalance lift cable over angle mount. Repeat same process for other side.

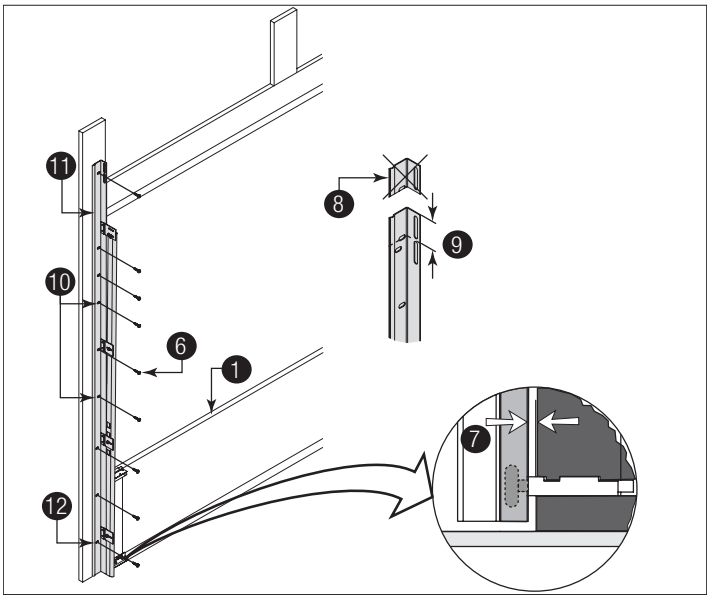


Figure 38, Left Side Shown

1	Bottom Section	9	3"
6	5/16" x 1-5/8" Lag Screws	10	Slots
7	3/8" to 5/8" (For 2" Track) / 1/2" to 3/4" (For 3" Track) Spacing	11	Angle Mount
8	Top Portion Of Angle Mount	12	Bottom Slot

14 STACKING SECTIONS

NOTE: Refer to door section identification, located in the pre-installation section of this manual to determine what size sections you need to use as your lock (second) section, intermediate (third) section, intermediate (fourth) section, intermediate (fifth) section and intermediate (sixth) section. Measure your sections to make sure they are the correct height as indicated on the chart.

NOTICE

BEFORE STACKING SECTIONS, MAKE SURE GRADUATED END 1 AND CENTER HINGES 2 ARE FLIPPED DOWN 3 TO AVOID POSSIBLE DAMAGE TO YOUR DOOR, WHEN STACKING ANOTHER SECTION ON TOP.

See Figure 39 through Figure 41 for the following steps.

14a. With assistance, lift second section 4 and guide the track rollers 5 into the vertical tracks 6.

14b. Lower section until it is seated against bottom section 7.

14c. Flip hinges up 8. Fasten center hinge(s) first; then end hinges last using 1/4" - 14 x 7/8" self drilling screws 9.

14d. Repeat same process for other sections, except top section.

NOTE: Prior to stacking the sections, refer to the Windload Specification Sheet to determine if an additional 1/4" - 14 x 7/8" self drilling screw 10 is required to be installed in the appropriate graduated end hinge.

IMPORTANT: Push & hold the hinge leafs securely against the sections while securing with 1/4" - 14 x 7/8" self drilling screws. There should be no gap between the hinge leafs and the sections.

NOTE: Install lock at this time (sold separately). See optional installation step, Side Lock.

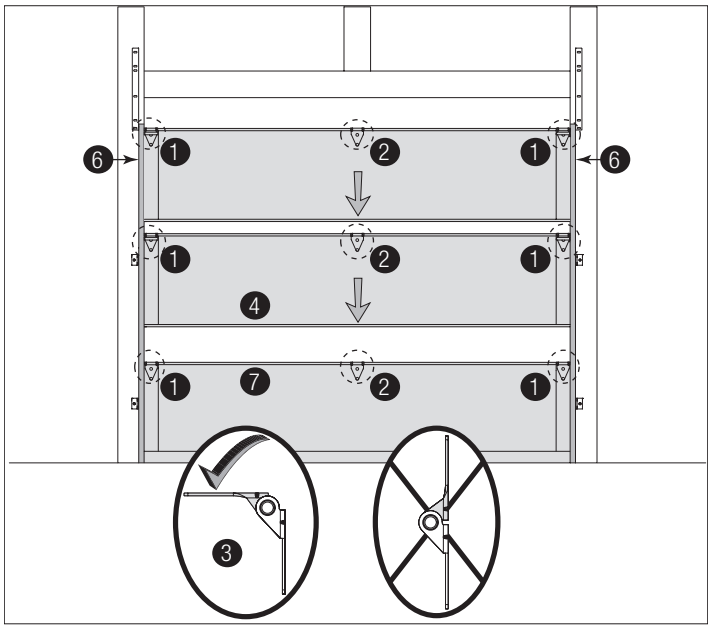


Figure 39, Left Side Shown

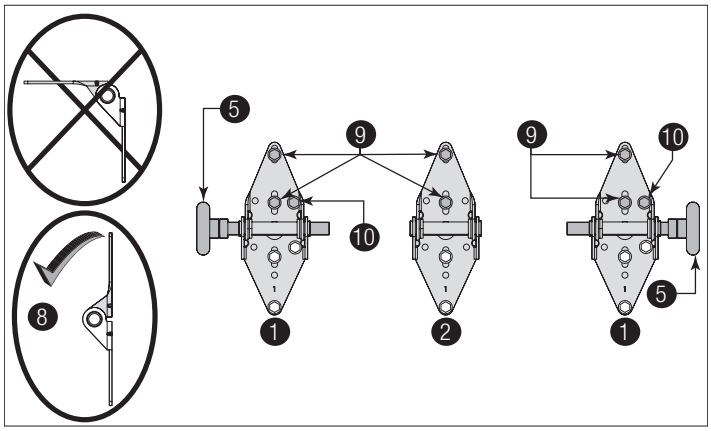


Figure 40, Left Side Shown

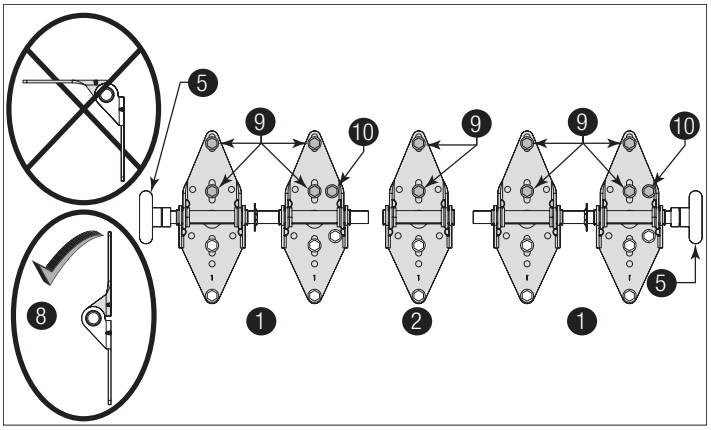


Figure 41, Left Side Shown

1	Graduated End Hinges	6	Vertical Tracks
2	Center Hinge(s)	7	Bottom Section
3	Hinges Flipped Down	8	Hinges flipped up
4	Second Section	9	1/4" - 14 x 7/8" Self Drilling Screw
5	Track Rollers	10	Additional 1/4" - 14 x 7/8" Self Drilling Screw

15 STACKING TOP SECTION

IMPORTANT: The dimension between the flag angles or angle mounts 1 must be door width plus 3-3/8" - 3-1/2" (86 mm- 89 mm).

See Figure 42 for the following steps.

15a. Place the top section 2 in the opening, on top of the section stacked.

15b. Install a nail 3 to temporarily hold the top section.

15c. Flip up the hinge leaves, hold tight against section, and fasten center hinges first and end hinges last (see Stacking Sections).

15d. Position flag angle or angle mount 4 between 1-11/16" to 1-3/4" (43 mm - 44 mm) from the edge of the door 5, then tighten the bottom lag screw. Flag angles or angle mount must be parallel to the door sections. Repeat for other side.

15e. Complete the vertical track 6 installation.

If you have fully adjustable track or riveted track: Secure the jamb bracket(s) and tightening the other lag screws. Push the vertical track against the track rollers so that the track rollers are touching the deepest part of the curved side of the track; tighten all the track bolts and nuts. Repeat for other side.

If you have Angle Mount Track: Complete the vertical track installation by tightening the other lag screws. Push the vertical track against the track rollers so that the track rollers are touching the deepest part of the curved side of the vertical track. Repeat for other side.

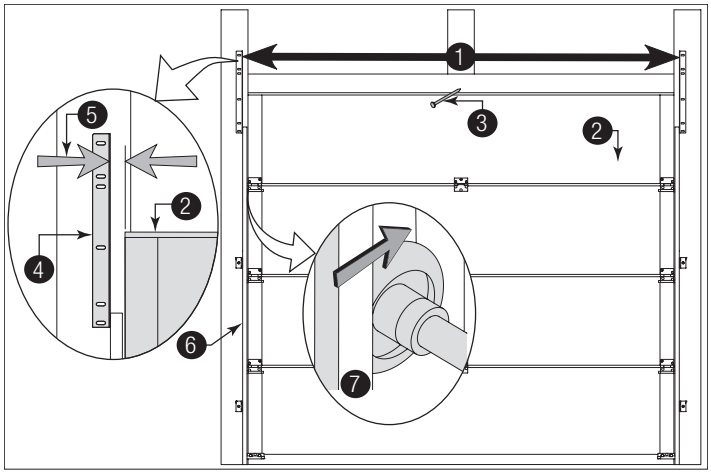


Figure 42

1	Clearance Measurement Between Both Flag Angles	4	Flag Angle Or Angle Mount
2	Top Section	5	Clearance Measurement Between Flag Angle and Door Edge
3	Nail	6	Vertical Track Against Track Rollers

16 ATTACHING DRAWBAR OPERATOR BRACKET

NOTICE

TO AVOID POSSIBLE DAMAGE TO YOUR DOOR, THE TOP SECTION SHOULD BE REINFORCED WITH A STRUT.

NOTICE

WHEN CONNECTING A DRAWBAR OPERATOR TYPE GARAGE DOOR OPENER TO THIS DOOR, A WAYNE DALTON DRAWBAR OPERATOR BRACKET MUST BE SECURELY ATTACHED TO THE TOP SECTION OF THE DOOR, ALONG WITH ANY STRUT PROVIDED WITH THE DOOR.

NOTE: For retro fit applications, the drawbar operator bracket must be aligned with an existing operator.

NOTE: Refer to illustrations to determine which drawbar operator bracket were supplied with your door. Follow the corresponding step below:

NOTE: Install the 5/16" - 18 x 1/2" carriage bolts and the 5/16" - 18 flange hex nuts as far apart as possible, prior to securing both top and bottom halves together.

IMPORTANT: When attaching drawbar operator bracket to top section with strut 2, apply additional pressure to thread into the strut.

See Figure 43 through Figure 46 for the following steps.

16a. Place the bottom half 1 inside the top half 2 and flush against the inside surface of the top section 3. Adjust both the top and bottom halves out as far apart as possible on the section surface.

16b. Secure the drawbar operator bracket bottom half and the top half together using (4) 5/16" - 18 x 1/2" carriage bolts 4 and (4) 5/16" - 18 flange hex nuts 5.

16c. Now, locate the center of the top section and align the center of the holes in the drawbar operator bracket assembly with the top section center line. Align the drawbar operator bracket assembly vertically.

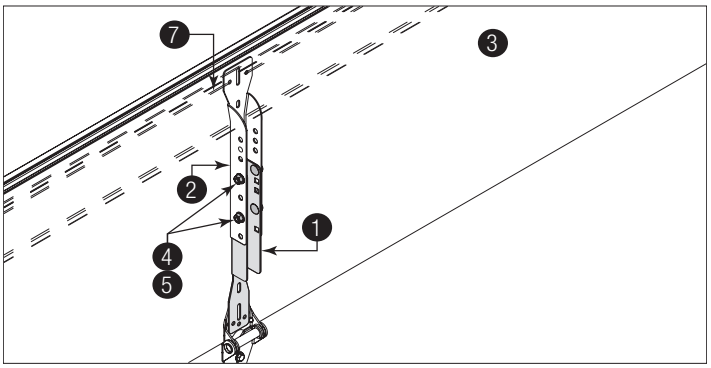


Figure 43

1	Bottom Half	4	5/16" - 18 x 1/2" Carriage Bolts
2	Top Half	5	5/16" - 18 Flange Hex Nuts
3	Top Section		

For Standard Installation:

16d. Slide the top halve of the drawbar operator bracket assembly 6 under the strut 7, keeping the drawbar operator bracket assembly aligned with the center line. Remove the strut's screws, if necessary and attach to the top section (through strut if necessary) using (3) 1/4" - 20 x 1" self drilling screws 8.

NOTE: If your door lacks a strut on the top section, ignore the previous paragraph.

16e. Attach the bottom halve of the drawbar operator bracket to the section surface using (3) 1/4" - 20 x 1" self drilling screws 8.

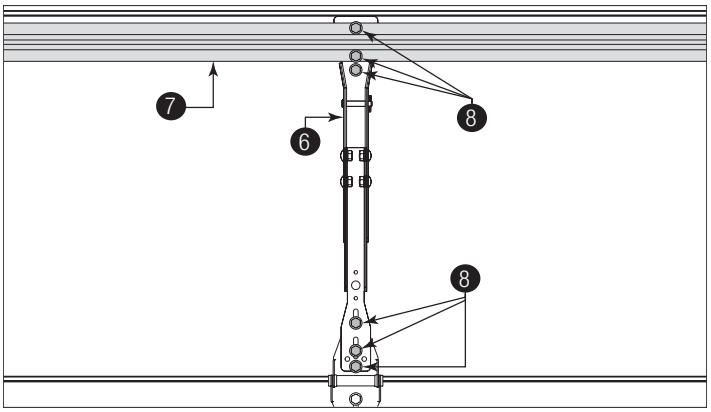


Figure 44

6	Drawbar Operator Bracket Assembly	8	1/4" - 20 x 1" Self Drilling Screws
7	Strut		

For Door Sections With All Windows Installation:

16d. Slide the top halve of the drawbar operator bracket assembly 6 under the strut 7 Slide the bottom halve of the drawbar operator bracket assembly under the strut and over the center hinge 10, keeping the drawbar operator bracket assembly aligned with the center line.

16e. Attach the drawbar operator bracket assembly to the top section using 1/4" - 20 x 1" self drilling screws 8 and strut clips 9.

NOTE: If needed, temporarily remove the strut and the upper hinge leaf of the center hinge screws to properly position the drawbar operator bracket assembly onto the top section.

NOTE: Depending on your door, the bottom strut may not be required.

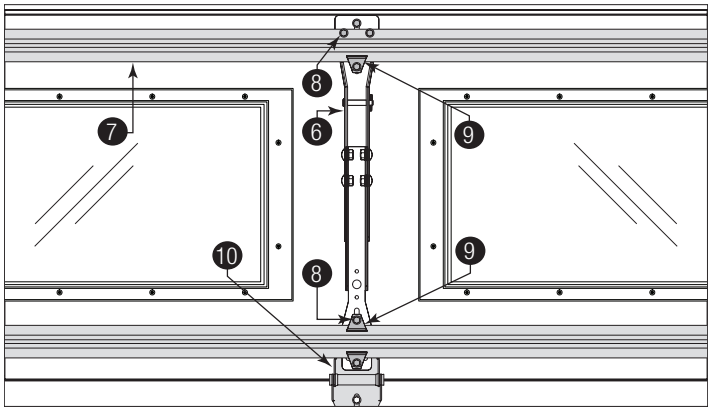


Figure 45

6	Drawbar Operator Bracket Assembly	9	Strut Clips
7	Strut	10	Center Hinge
8	1/4" - 20 x 1" Self Drilling Screws		

For Drawbar Operator Bracket (Supplied By Others)

16a. Locate the center of the top section 1.

16b. Position the drawbar operator bracket 2 under the strut 3 (if applicable) or align the drawbar operator bracket top edge with the top edge of the top section.

16c. Attach the drawbar operator bracket using (3) 1/4" - 20 x 1" self-drilling screws 4.

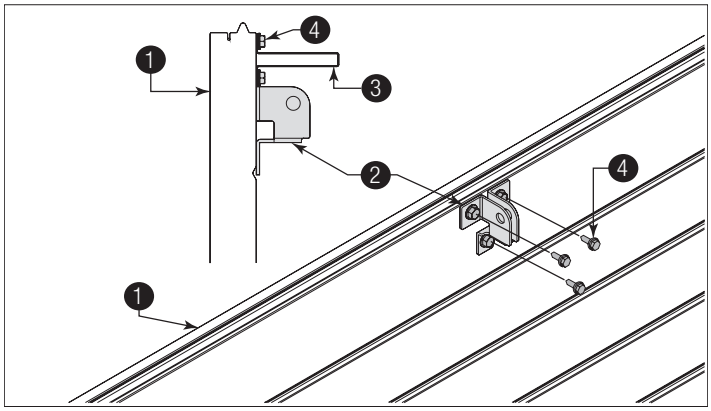


Figure 46

1	Top Section	3	Strut
2	Drawbar Operator Bracket	4	1/4" - 20 x 1" Self-Drilling Screws

17 ATTACHING HORIZONTAL TRACKS

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 / Breakdown of Parts, to determine which Flag Angles / Vertical Track Assemblies you have.

⚠ WARNING

DO NOT RAISE DOOR UNTIL HORIZONTAL TRACKS ARE SECURED AT REAR, AS OUTLINED IN STEP 27, ATTACHING REAR BACK HANGS. THE REAR BACK HANGS OR DOOR COULD FALL FROM OVERHEAD POSITION CAUSING DEATH OR SERIOUS INJURY.

For Flag Angles:

See Figure 47 for the following steps.

17a. Place the curved end of the horizontal track 1 over the top track roller of the top section.

17b. Attach the horizontal track to the flag angle 2 with two 1/4" - 20 x 9/16" track bolts 3 and two 1/4" - 20 flange hex nuts 4.

17c. Level 7 the horizontal track assembly and bolt the horizontal track angle 8 to the first encountered slot in the flag angle using one 3/8" - 16 x 3/4" truss-head bolt 5 and one 3/8" - 16 hex nut 6. Repeat for right side.

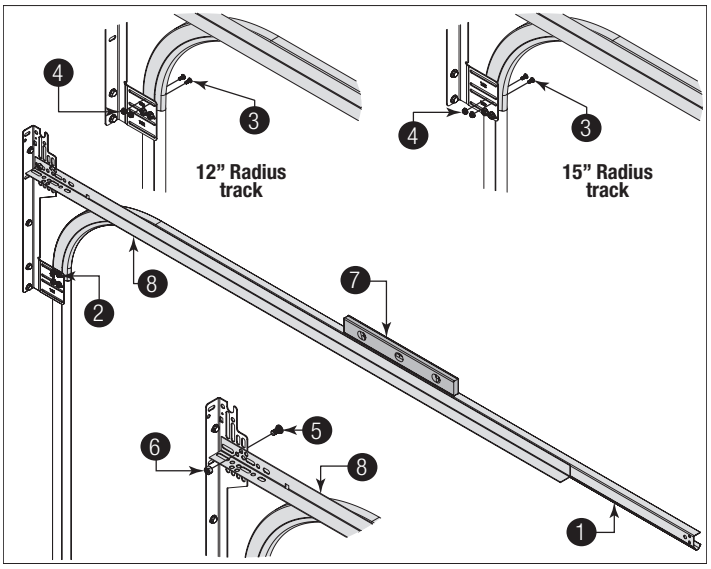


Figure 47, Left Side Shown

1	Horizontal Track	5	3/8" - 16 x 3/4" Truss-Head Bolt
2	Flag Angle Upper Slot	6	3/8" - 16 Hex Nut
3	1/4" - 20 x 9/16" Track Bolts	7	Level
4	1/4" - 20 Flange Hex Nuts	8	Horizontal Track Angle

If you have Angle Mount Track:

See Figure 48 for the following steps.

17a. Place the curved end of the horizontal track 1 over the top track roller of the top section.

17b. Attach the horizontal track to the angle mount 2 with two 1/4" - 20 x 9/16" track bolts 3 and two 1/4" - 20 flange hex nuts 4.

17c. Level 7 the horizontal track assembly and bolt the horizontal track angle 8 to the first encountered slot in the angle mount using one 3/8" - 16 x 3/4" truss-head bolt 5 and one 3/8" - 16 hex nut 6. Repeat for right side.

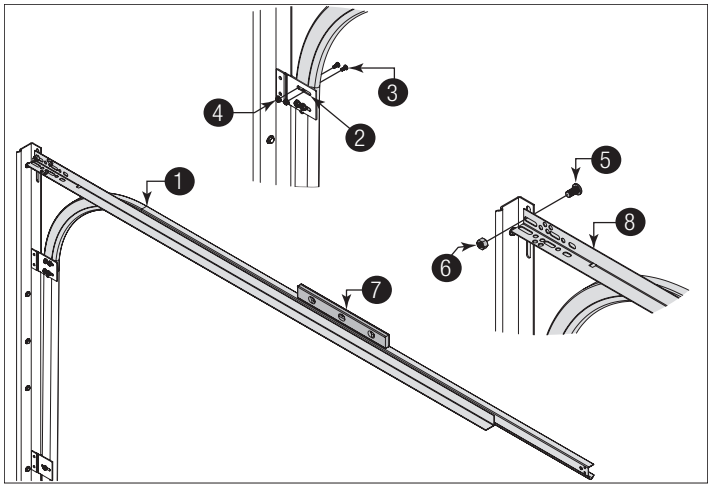


Figure 48, Left Side Shown

1	Horizontal Track	5	3/8" - 16 x 3/4" Truss-Head Bolt
2	Angle Mount	6	3/8" - 16 Hex Nut
3	1/4" - 20 x 9/16" Track Bolts	7	Level
4	1/4" - 20 Flange Hex Nuts	8	Horizontal Track Angle

17d. When complete, remove the nail that was holding the top section in position.

NOTICE

FAILURE TO REMOVE NAIL BEFORE ATTEMPTING TO RAISE DOOR COULD CAUSE PERMANENT DAMAGE TO TOP SECTION.

18 ADJUSTING TOP FIXTURES

NOTE: Depending on your door, you may have Top Fixture Bases and Top Fixture Slides or you may have Top Fixture Assemblies. Refer to Package Contents / Breakdown of Parts, to determine which Top Fixtures you have.

See Figure 49 and Figure 50 for the following steps.

18a. Vertically align the top section 1 of the door with the lower sections. Position the top fixture slide 2 with a track roller 5 against the horizontal track 6.

18b. Maintaining the position of the slide, tighten the 5/16" - 18 nut 3 to secure the top fixture slide to the top fixture base 4.

18c. Repeat for the right side.

18d. Depending on which top fixture was supplied with your door, lock each of the top fixture slides into place using one 1/4" - 20 x 9/16" track bolt 7 and one 1/4" - 20 hex nut 8 through any two aligning holes.

NOTE: Refer to your windload specification sheet to determine if pushnuts 9 are required. If they are required, install them according to the instructions listed below.

18e. Place the pushnut onto the end of each track roller stem 10 and sliding it toward the graduated end hinge or top fixture.

18f. Leave at least 1/4" 11 of space between the pushnut and bottom corner brackets / graduated end hinge / top fixture.

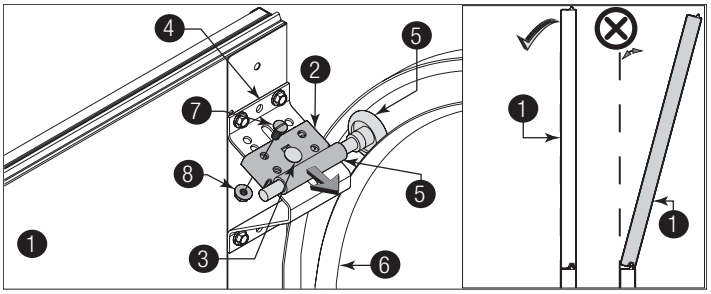


Figure 49, Left Side Shown

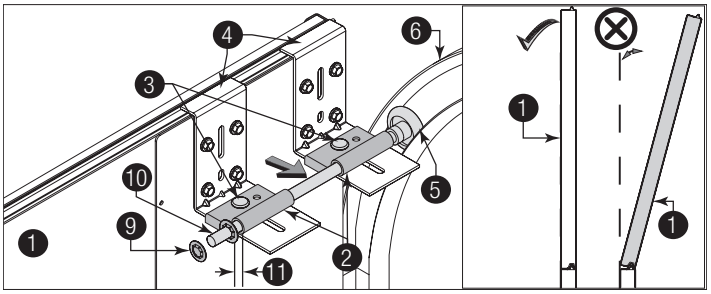


Figure 50, Left Side Shown

1	Door Top Section	7	1/4" - 20 x 9/16" Track Bolt
2	Top Fixture Slide	8	1/4" - 20 Hex Nut
3	5/16" - 18 Nut	9	Pushnuts
4	Top Fixture Base	10	Track Roller Stem
5	Track Roller	11	1/4"
6	Horizontal Track		

COUNTERBALANCE INSTALLATION INSTRUCTIONS

19 ATTACHING END BEARING BRACKETS

NOTE: Refer to Package Contents or Breakdown Of Parts, to determine which type of end bearing bracket 1 you received.

IMPORTANT: Measure the radius of your horizontal track to determine if your horizontal track 3 is 12" or 15" Radius. The end bearing bracket's lower slots 4 are used on doors with 12" radius track, the upper slots 5 are used on doors with 15" radius track.

IMPORTANT: Drill 3/16" pilot holes into the door jamb for the lag screws.

NOTE: End bearing brackets are right and left hand.

See Figure 51 through Figure 53 for the following steps.

19a. Attach the left hand end bearing bracket to the left hand flag angle 2 (For M3. Bracket) or through the end bearing bracket's upper / lower slots to the left hand horizontal track angle 6 (For M4. Bracket) using two 3/8" - 16 x 3/4" truss head bolts 7 and two 3/8" - 16 hex nuts 8.

19b. Secure the top of the end bearing bracket to the jamb 9 using 5/16" x 1-5/8" lag screw(s) 10.

19c. Repeat the same process for right hand side.

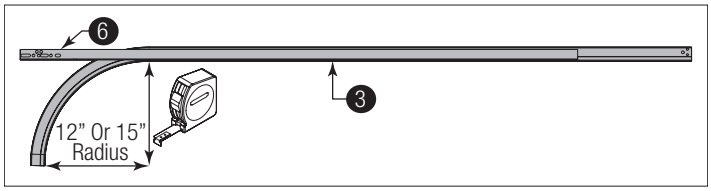


Figure 51

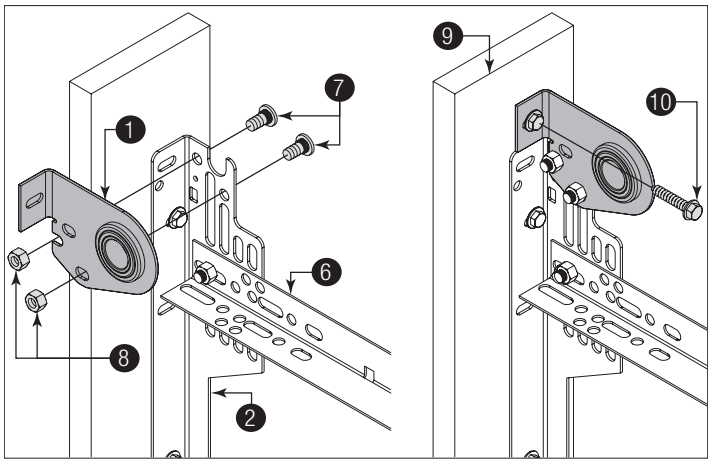


Figure 52, Left Side Shown (For M3. Bracket)

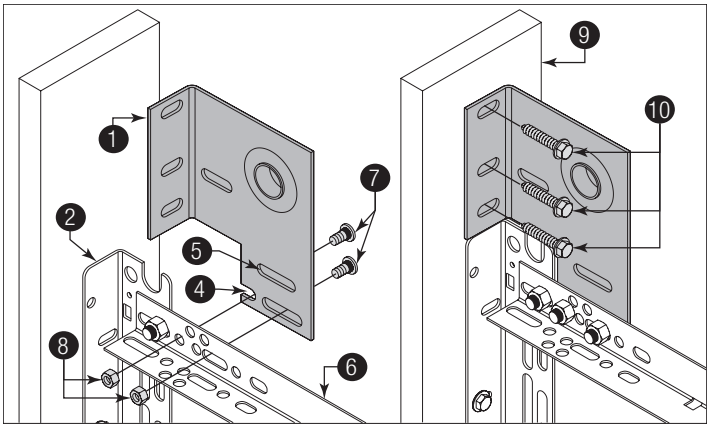


Figure 53, Left Side Shown (For M4. Bracket)

1	End Bearing Bracket	6	Horizontal Track Angle
2	Flag Angle	7	3/8" - 16 x 3/4" Truss Head Bolts
3	Horizontal Track	8	3/8" - 16 Hex Nuts
4	Lower Slots	9	Jamb
5	Upper Slots	10	5/16" x 1-5/8" Lag Screw(s)

20 ATTACHING CENTER BRACKET TO WALL

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

⚠ WARNING

MAKE SURE THE CENTER BRACKET IS SECURELY INSTALLED ONTO THE HEADER. FAILURE TO DO SO, COULD RESULT IN DEATH OR SERIOUS INJURY.

IMPORTANT: Drill 3/16" pilot holes into header for the lag screws.

NOTE: Refer to Package Contents / Breakdown of Parts, 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 12" to 14" apart at the center of the door, as shown.

NOTE: If your door came with (4) 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" diameter springs, they do not share center brackets and do not have a coupler assembly.

See Figure 54 for the following steps.

20a. First, locate the center of the door 1.

20b. Mark a vertical pencil line 2 on the mounting surface above the door, at the center.

20c. Measure from the center of the bearing, in one of the end bearing brackets 3, downwards, to the top of door 4.

20d. Using that measurement, measure that distance upwards from the top of the door to the mounting surface and mark a horizontal pencil line 5 which intersects the vertical pencil line.

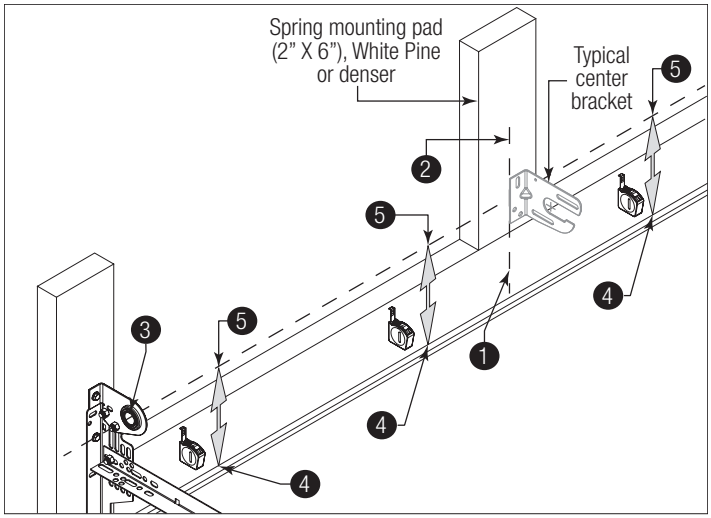


Figure 54, Left Side Shown

1	Center Of The Door	4	Top Of Door
2	Vertical Line	5	Horizontal Line
3	End Bearing Brackets		

See Figure 55 for the following steps.

<u>If your door did not come with a center coupler assembly or Torsion Springs less than 3-3/4" ID:</u>

20e. Mark a vertical pencil line 1 on the mounting surface above the door, at the center.

20f. Align the edge of the center bracket 2 with the vertical pencil line and the center of the center bracket with the horizontal pencil line 3; this is to ensure the torsion shaft is level between the center and end bearing brackets.

NOTE: On some single spring doors, the 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 adding room for spring growth during winding, to determine appropriate center bracket location.

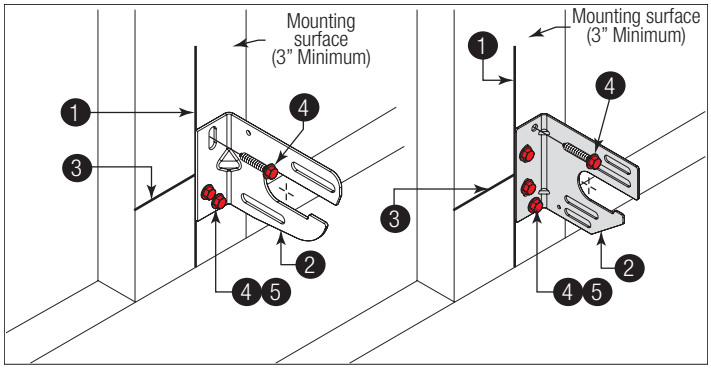


Figure 55

1	Vertical Line	3	Horizontal Line
2	Center Bracket		

See Figure 56 for the following steps.

<u>If your door did come with a center coupler assembly or 3-3/4" ID Torsion Springs:</u>

20e. Mark a vertical pencil line 1 on the mounting surface above the door, at the center.

20f. Split the difference up and position the (2) center bearing brackets 2 apart from each other.

20g. Mark two vertical pencil lines, one for each center bearing bracket onto the mounting surface above the door.

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.

20h. Attach each of the center bracket(s) to the mounting surface, using 5/16" RED HEAD lag screws 3, as shown.

IMPORTANT: Use a 5/16" x 2-1/2" RED HEAD lag screw 4 instead of the 5/16" x 1-5/8" RED HEAD lag screw if mounting surface is covered by drywall. The lag screw must be attached through the bottom hole 5 of the center bracket(s). If mounting surface is a 2" x 6" board installed on top of masonry, drill a clearance hole in masonry for the 5/16" x 2-1/2" RED HEAD lag screws.

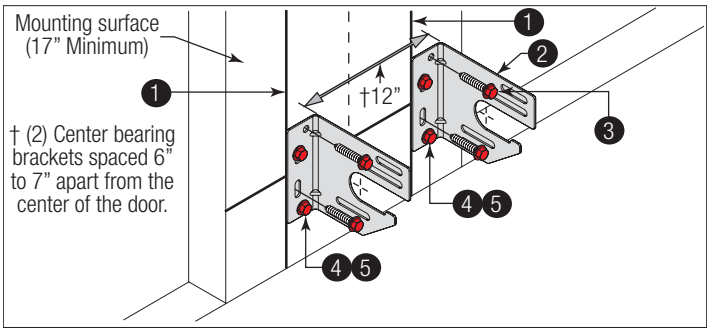


Figure 56

1	Vertical Line	4	5/16" x 2-1/2" RED HEAD lag screw
2	Center Bearing Brackets	5	Bottom Hole
3	5/16" RED HEAD Lag Screws		

21 TORSION SPRING ASSEMBLY

NOTE: Refer to the Package Contents and or Breakdown of Parts to determine if your door came with a coupler assembly.

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) 1, which goes on the LEFT HAND SIDE or left wound (black winding cone) 2, which goes on the RIGHT HAND SIDE.

IMPORTANT: On single spring applications, only a left wound (black winding cone), is required.

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

See Figure 57 and Figure 58 for the following steps.

IF YOU DON'T HAVE A COUPLER ASSEMBLY:

21a. Facing the inside of the door, lay the torsion shaft / torsion keyed shaft 3 on the floor. Lay the torsion spring with the black winding cone and the black cable drum 4 at the right end of the torsion shaft / torsion keyed shaft. Lay the torsion spring with the red winding cone and the red cable drum 5 at the left end of the torsion shaft / torsion keyed shaft. Slide the center bracket bearing 6 onto the torsion shaft / torsion keyed shaft followed by the torsion springs and cable drums.

IMPORTANT: The center bracket bearing, torsion springs, and cable drums must be positioned, as shown.

21b. With assistance, pick up the torsion spring assembly and slide one end of the torsion shaft / torsion keyed shaft through one end bearing bracket 7.

21c. Lay the middle of the torsion shaft / torsion keyed shaft into the center bracket 8.

21d. Slide the other end of the torsion shaft / torsion keyed shaft into the other end bearing bracket 9.

21e. Position the torsion shaft so that equal amounts 10 of the shaft extend from each end bearing bracket.

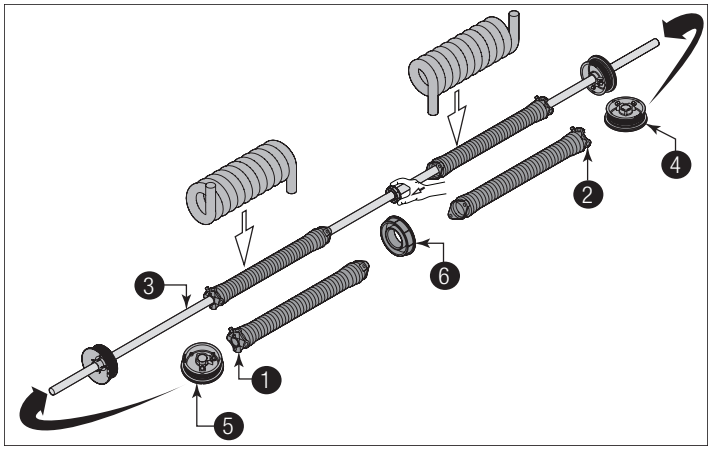


Figure 57

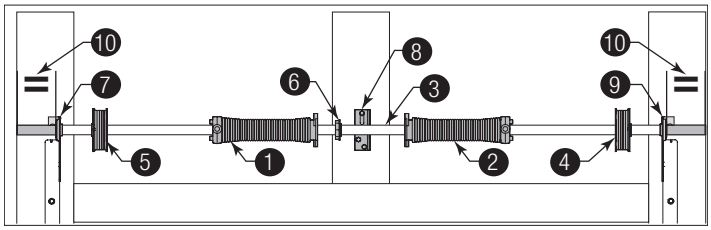


Figure 58

1	Red Winding Cone	6	Center Bracket Bearing
2	Black Winding Cone	7	End Bearing Bracket
3	Torsion Shaft / Torsion Keyed Shaft	8	Center Bracket
4	Black Cable Drum	9	End Bearing Bracket
5	Red Cable Drum	10	Equal Amounts

See Figure 59 through Figure 63 for the following steps.

IF YOU HAVE A COUPLER ASSEMBLY:

21a. Disassemble the coupler assembly 11 by removing the (3) 3/8" - 16 x 1-1/2" hex head screws 12, (6) 3/8" washers 13, (3) 3/8" lock washers 14 and the (3) 3/8" - 16 hex nuts 15 from the coupler halves 16.

21b. Loosen the set screws 17.

21c. Set the components aside.

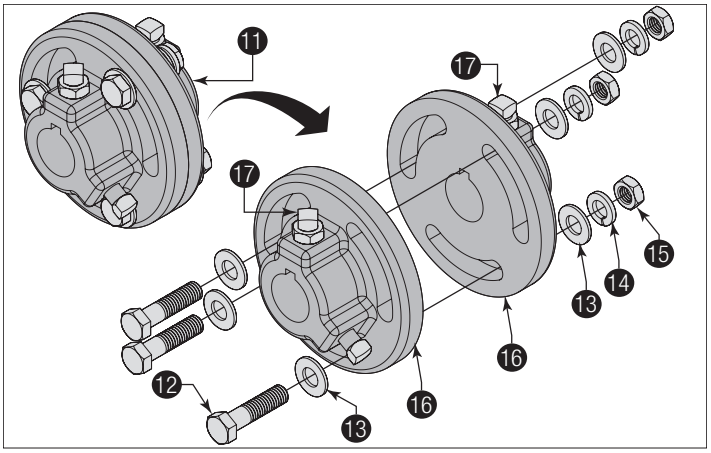


Figure 59

11	Coupler Assembly	15	3/8" - 16 Hex Nuts
12	3/8" - 16 x 1-1/2" Hex Head Screws	16	Coupler Halves
13	3/8" Washers	17	Set Screws
14	3/8" Lock Washers		

21d. Facing the inside of the door, lay the (2) torsion keyed shafts 3 on the floor. One torsion keyed shaft on the left hand side and the other torsion keyed shaft on the right hand side. Starting on the left hand side, lay one of the coupler halves, the center bracket bearing 6, torsion spring with the red winding cone 1 and the red cable drum 5 at the left end of the torsion keyed shaft. Next on the right hand side, lay the other coupler half, center bracket bearing, the torsion spring with the black winding cone 2, and the black cable drum 4 at the right end of the torsion keyed shaft. Slide the coupler halves 16, center bracket bearings onto the torsion keyed shafts followed by the torsion springs and the cable drums, as shown.

IMPORTANT: The coupler halves, center bracket bearings, torsion springs, cable drums must be positioned, as shown.

21e. Slide the flat edge of the couple half flush with the side edge of the torsion keyed shaft. Insert (1) key 18 into the slot of both the coupler half and the slot in the torsion keyed shaft. Tighten the (2) set screws 17 and the locking nut 19 to secure the coupler half to the torsion keyed shaft, as shown.

NOTE: Tighten the set screws to 14-15 ft-lbs (Once set screws contact the shaft, tighten screws an additional 1/2 turn).

21f. Repeat the same process for the other coupler half.

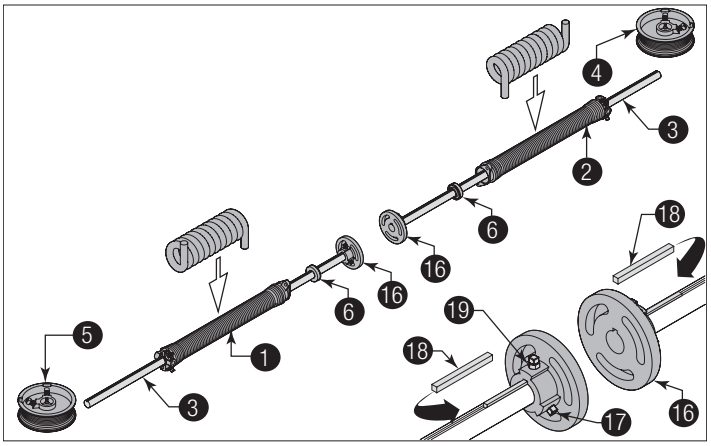


Figure 60

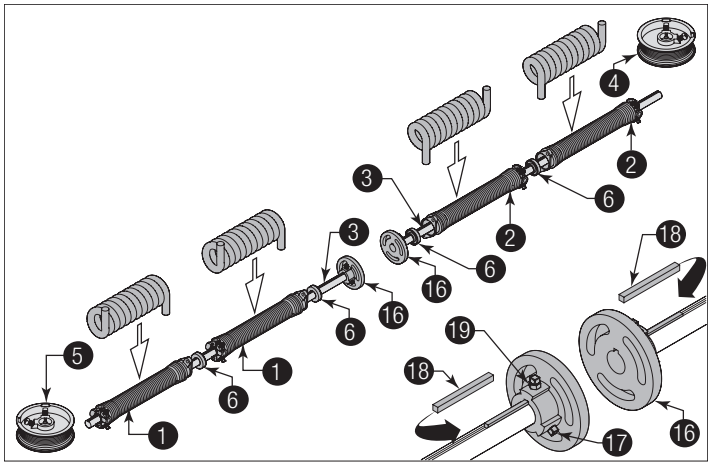


Figure 61

1	Red Winding Cone	6	Center Bracket Bearing
2	Black Winding Cone	16	Coupler Halves
3	Torsion Keyed Shafts	18	Key
4	Black Cable Drum	17	Set Screws
5	Red Cable Drum	19	Locking Nut

21g. With assistance and starting on the left hand side of door, pick up the left hand torsion spring assembly 20 and slide one end of the torsion keyed shaft through the end bearing bracket 7.

21h. Lay the other side of the torsion keyed shaft into the center bracket 8.

21i. Repeat the same process for the right hand torsion spring assembly 21.

21j. Position both torsion keyed shafts so that equal amounts 22 of the shafts extend from each end bearing brackets.

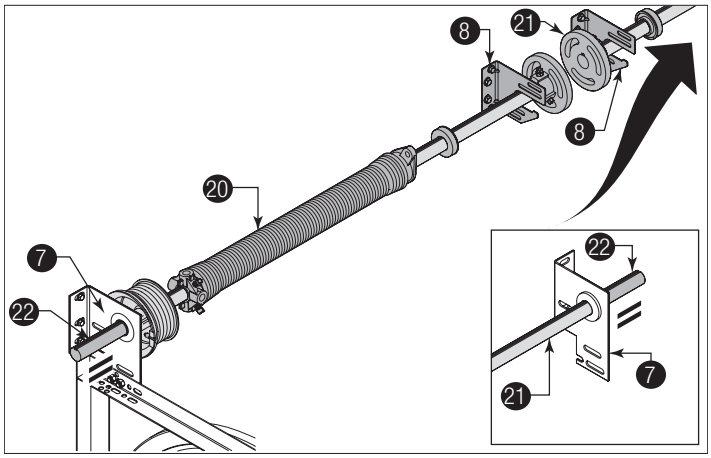


Figure 62, Left Side Shown

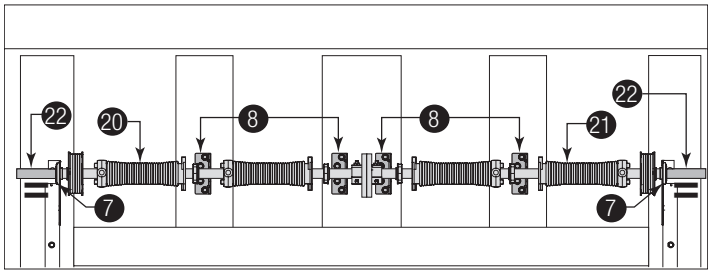


Figure 63

20	Left Hand Torsion Spring Assembly	21	Right Hand Torsion Spring Assembly
7	End Bearing Bracket	22	Equal Amounts
8	Center Bracket		

22 ATTACHING SPRINGS TO CENTER BRACKET

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

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

IMPORTANT: The spring warning tag(s) (1) 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 free replacements.

NOTE: Measure the diameter of your springs. If your spring diameter is 3-3/4", 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.

See Figure 64 and Figure 65 for the following steps.

If you don't have a Coupler Assembly:

22a. Slide center bracket bearing (2) into the spring (3).

22b. Align the stationary spring cone(s) (4) with the holes in the center bracket (5).

22c. Secure the torsion spring(s) to the center bracket with (2) 3/8" - 16 x 1-1/2" hex head bolts (6) and (2) 3/8" - 16 nuts (7).

IMPORTANT: Never use more than one bearing when attaching two springs to one center bracket.

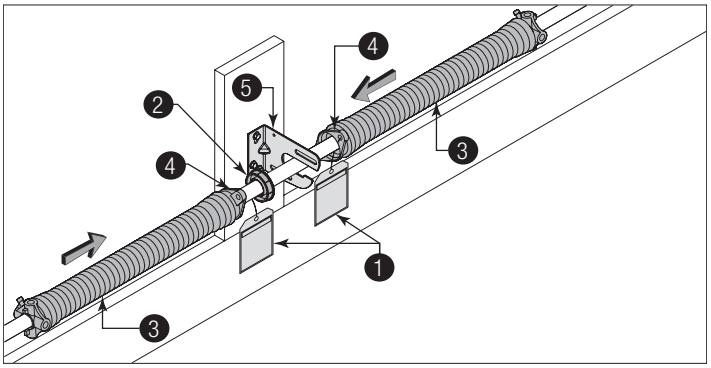


Figure 64

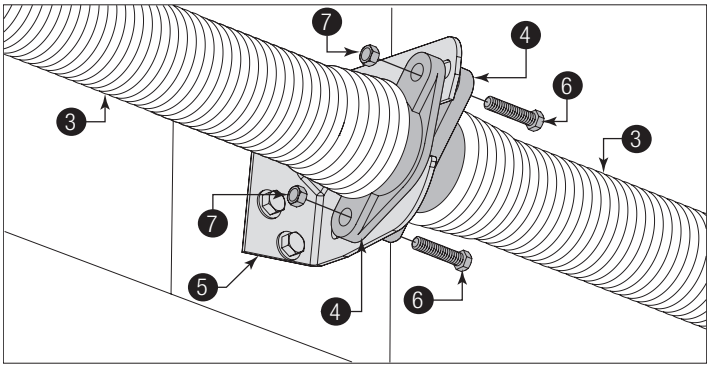


Figure 65

1	Spring Warning Tag(s)	5	Center Bracket
2	Center Bracket Bearing	6	3/8" - 16 x 1-1/2" Hex Head Bolts
3	Spring	7	3/8" - 16 Nuts
4	Stationary Spring Cone(s)		

See Figure 66 for the following steps.

If you have a Coupler Assembly:

22a. Slide center bracket bearing (2) into the spring (3).

22b. Align the stationary spring cone (4) with the holes in the center bracket (5).

22c. Secure the torsion spring to the center bracket with (2) 3/8" - 16 x 1-1/2" hex head bolts (6) and (2) 3/8" - 16 nuts (7).

22d. Repeat the same process for the other center bearing bracket.

22e. At the middle of the two center bearing brackets, re-assemble the coupler assembly (8) by loosely fastening the coupler halves (9) together using the (3) 3/8" - 16 x 1-1/2" hex head screws (10), (6) 3/8" washers (11), (3) 3/8" lock washers (12) and the (3) 3/8" - 16 hex nuts (13), previously removed.

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

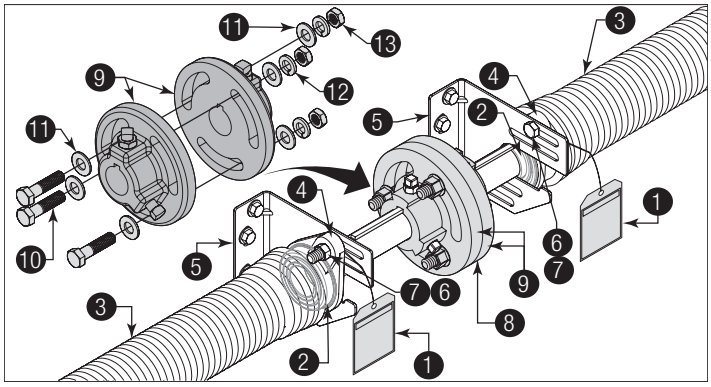


Figure 66

1	Spring Warning Tag(s)	8	Coupler Assembly
2	Center Bracket Bearing	9	Coupler Halves
3	Spring	10	3/8" - 16 x 1-1/2" Hex Head Screws
4	Stationary Spring Cone(s)	11	3/8" Washers
5	Center Bracket	12	3/8" Lock Washers
6	3/8" - 16 x 1-1/2" Hex Head Bolts	13	3/8" - 16 Hex Nuts
7	3/8" - 16 Nuts		

23 ATTACHING COUNTERBALANCE LIFT CABLES

See Figure 67 through Figure 69 for the following steps.

23a. Starting on the left hand side, thread the counterbalance lift cable (1) up and around the front side of the left hand cable drum (2).

IMPORTANT: Verify that there are no obstructions in the travel path of the door sections or counterbalance lift cables.

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

NOTICE

FAILURE TO REMOVE ALL SLACK OUT OF THE COUNTERBALANCE LIFT CABLES, WILL CAUSE DOOR OPERATIONAL PROBLEMS.

23b. Hook 3 the counterbalance lift cable into the left hand cable drum. Slide the left hand cable drum up against the left hand end bearing bracket 4. Counterbalance lift cable should terminate at the 3 o'clock position 10 - 6 o'clock position 11.

⚠ WARNING

TO AVOID RISK OF COUNTERBALANCE FAILURE CAUSING DEATH OR SERIOUS INJURY, THE COUNTERBALANCE LIFT CABLE MUST TERMINATE BETWEEN THE 3 O'CLOCK AND 6 O'CLOCK POSITION. IF THE COUNTERBALANCE CABLE DOES NOT TERMINATE IN THE CORRECT POSITION, THE CABLE LENGTH MUST BE CORRECTED BY A TRAINED DOOR SYSTEMS TECHNICIAN BEFORE CONTINUING INSTALLATION.

NOTE: If you have torsion keyed shaft(s) 6, insert (1) key 5 into the slot of both the cable drum and the slot in the torsion keyed shaft, as shown.

23c. Rotate the left hand drum and torsion shaft until counterbalance lift cable is taut. Now attach locking pliers 7 to the torsion shaft 6 and brace locking pliers up against jamb 8 to keep counterbalance lift cable taut.

23d. Tighten the set screws 9 in the drum to 14-15 ft-lbs of torque (once set screws contact the torsion shaft, tighten screws an additional 1/2 turn for solid shaft and one full turn for tubular shaft).

23e. Repeat for right hand side.

IMPORTANT: Inspect each counterbalance lift cable making sure it is seated properly onto the cable drum and that both counterbalance lift cables have equal tension.

23f. **Check Counterbalance Lift Cables for Equal Tension:**

1. Attach locking pliers to track above top roller.

2. Grasp cable at approximate mid-door height location.

3. Draw cable toward you about 1/2" to 1" and release, noting the response of the cable.

4. Repeat above steps for other cable.

5. Adjust cable tension as needed until right and left cables both respond the same.

23g. Once the counterbalance cables are set and if applicable tighten the coupler assembly together by tightening the (3) 3/8" - 16 nylon hex nuts to secure the coupler halves together.

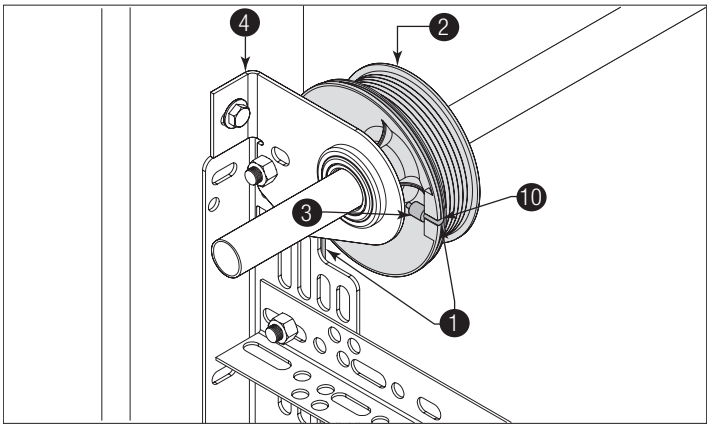


Figure 67, Left Side Shown

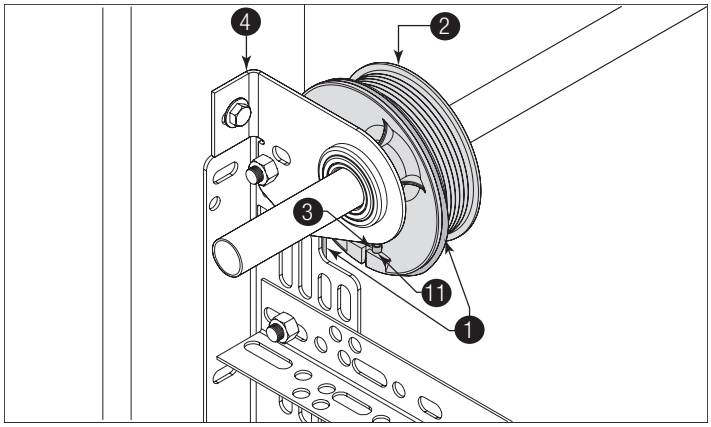


Figure 68, Left Side Shown

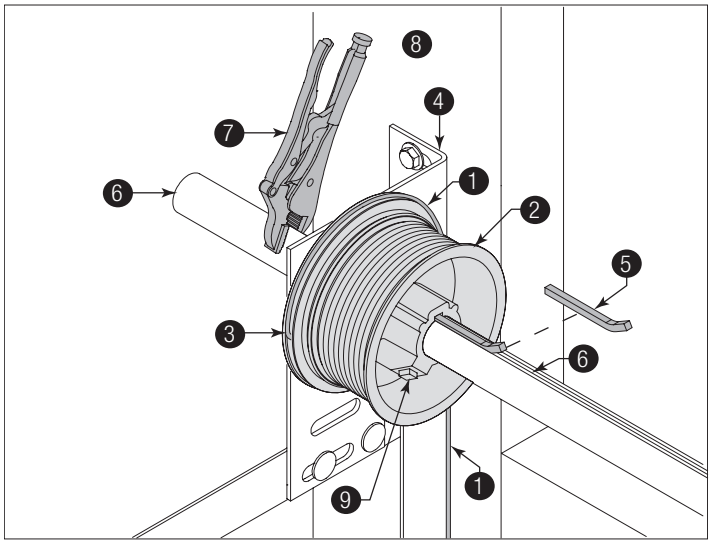


Figure 69, Left Side Shown

1	Counterbalance Lift Cable	7	Locking Pliers
2	Cable Drum	8	Jamb
3	Hook	9	Set Screws
4	End Bearing Bracket	10	3 O'Clock Position
5	Key	11	6 O'Clock Position
6	Torsion Shaft / Torsion Keyed Shaft		

24 CHALKING TORSION SPRING(S)

NOTE: If your springs have stenciling, then skip this step.

See Figure 70 for the following steps.

24a. Draw a chalk line horizontally along the center of the torsion spring coils 1. As the torsion spring is wound, the chalk line will create a spiral 2. This spiral can be used to count and determine the number of turns that are applied on the torsion spring 3.

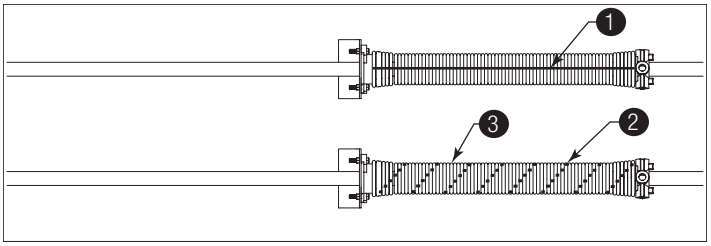


Figure 70

1	Draw horizontal chalk line prior to winding	3	Spirals created after winding
2	Spiral		

25 SECURING DOOR FOR SPRING WINDING

See Figure 71 for the following steps.

25a. With the door in the fully closed position, place locking pliers 4 onto both vertical tracks 1 and 2 just above the third track roller 3. This is to prevent the garage door from rising while winding spring(s). Ensure that:

25b. **Check the following before attempting to wind torsion spring(s):**

- Counterbalance lift cables are secured at bottom corner brackets, See Figure 16 through Figure 24.
- Counterbalance lift cables are unobstructed in their route to cable drums.
- Counterbalance lift cables are correctly installed and wound onto cable lift drums.
- Counterbalance lift cables are taut and have equal tension on both sides.
- Cable lift drums are against end bearing brackets and set screws are tight.
- Torsion spring or springs are installed correctly.
- Review the label attached to the spring warning tag, to determine number of spring turns required.

⚠ WARNING

FAILURE TO PLACE LOCKING PLIERS ONTO VERTICAL TRACKS CAN ALLOW DOOR TO RAISE DURING SPRING WINDING AND CAUSE SEVERE OR FATAL INJURY.

⚠ CAUTION

TO AVOID POSSIBLE DAMAGE TO YOUR DOOR, THE DOOR MUST BE CLOSED AND LOCKED WHEN WINDING OR MAKING ANY ADJUSTMENTS TO THE SPRING(S).

Winding Bars (Steel Rods)	Size Of Winding Bar (Inches)	Spring Inner Diameter Used On
▬	1/2" dia. x 18"	2" and 2-5/8"
	5/8" dia. x 24"	3-3/4"

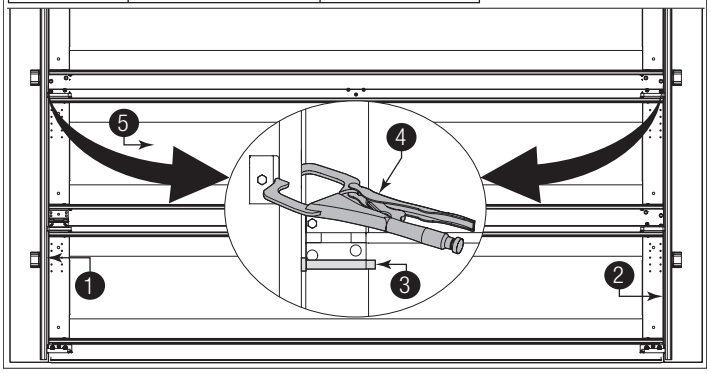


Figure 71

1	Left Side Vertical Track	5	Bottom Section
2	Right Side Vertical Track	6	Second Section
3	Track Roller	7	Intermediate Section
4	Locking Pliers		

26 WINDING SPRING(S)

⚠ DANGER

WINDING SPRING 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 SEVERE OR FATAL INJURY.

⚠ DANGER

PRIOR TO WINDING THE SPRING, ENSURE YOU'RE WINDING IN THE PROPER DIRECTION AS SHOWN IN FIGURE 72. OTHERWISE THE SPRING FITTING MAY RELEASE FROM SPRING AND RESULT IN SEVERE OR FATAL INJURY.

26a. 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 1.

26b. Check the label attached to the spring warning tag 2 for the required number of complete turns to balance your door.

How to Wind Torsion Springs:

1. Insert one winding rod snugly into winding cone 3, to full socket depth.

2. Maintaining a tight grip on the winding rod rotate it slowly in the proper direction 4, as shown below.

3. If there is any slippage of the winding rod in the winding cone socket, reverse the direction of winding and return the cone to its original position. Remove the winding rod from the winding cone socket. Reseat the winding rod in the socket. Start over at Step #1.

4. When the winding rod is vertical above the winding cone, insert another winding rod into one of the other sockets, being careful to seat it snugly and at full socket depth.

5. Hold the spring with the second winding bar, and remove the first.

6. Repeat Steps #2 through #5 until the complete turns have been applied.

IMPORTANT: Check the warning tag(s) attached to the spring(s) for the required number of complete turns, to balance your door.

IMPORTANT: After winding the spring(s), tighten the set screws 5 in the winding cone to 14-15 ft-lbs of torque (once set screws contact the torsion shaft 6, tighten screws an additional 1/2 turn for solid shaft and one full turn for tubular shaft).

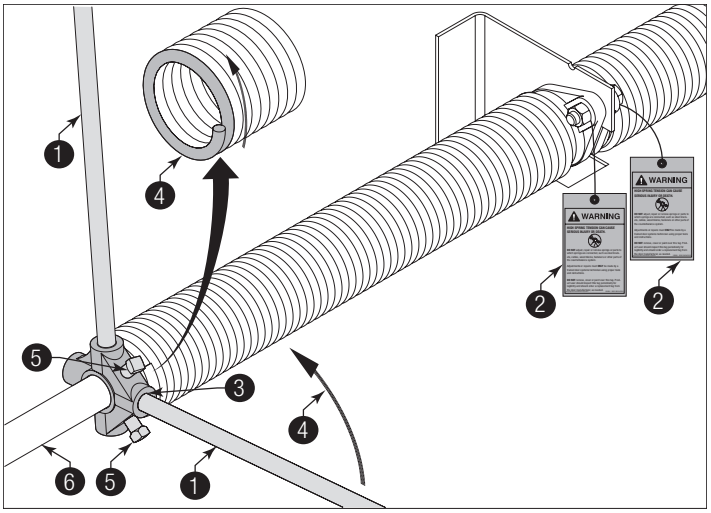


Figure 72

1	Approved Winding Rods	4	Proper Direction
2	Spring Warning Tag	5	Set Screws
3	Winding Cone	6	Torsion Shaft

27 ATTACHING REAR BACK HANGS (NOT INCLUDED)

⚠ WARNING

IN THE EVENT THE SPRING(S) WERE OVER-WOUND, HOLD THE DOOR DOWN FIRMLY AND CAUTIOUSLY REMOVE LOCKING PLIERS FROM VERTICAL TRACKS TO PREVENT IT FROM RISING UNEXPECTEDLY.

See Figures 73, 74, and 75 for the following steps.

27a. 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 THE DOOR FURTHER INTO THE LOOSE HORIZONTAL TRACKS CAN RESULT IN DOOR FALLING CAUSING DEATH OR SERIOUS INJURY.

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

27b. Using the chart below, select the appropriate perforated angle. Fabricate and install rear back hangs, as shown.

Perforated Angle Gauge Weight Limitations:	
Perforated Angle Gauge	**Door Balance Weight**
2" x 2" x 12 Gauge	800 lbs. to 1600 lbs.
1-1/4" x 1-1/4" x 13 Gauge	305 lb. to 610 lb.
1-1/4" x 1-1/4" x 15 Gauge	220 lb. to 440 lb.
1-1/4" x 1-1/4" x 16 Gauge	175 lb. to 350 lb.

⚠ WARNING

KEEP HORIZONTAL TRACKS PARALLEL AND WITHIN 3/4" TO 7/8" (19 MM - 22 MM) MAXIMUM OF DOOR EDGE. OTHERWISE THE TRACK ROLLERS CAN COME OUT AND DOOR WILL FALL, RESULTING IN DEATH OR SERIOUS INJURY.

⚠ WARNING

MAKE SURE BACK HANGS ARE BRACED SUFFICIENTLY 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 BEEN BENT MUST BE REPLACED. FAILURE TO SECURELY BRACE THE HORIZONTAL TRACK CAN RESULT IN DOOR FALLING CAUSING DEATH OR SERIOUS INJURY.

NOTICE

DO NOT SUPPORT THE WEIGHT OF THE DOOR ON ANY PART OF THE REAR BACK HANGS THAT IS 4" (102 MM) OR MORE BEYOND A SOUND FRAMING MEMBER.

NOTICE

IF REAR BACK HANGS ARE TO BE INSTALLED OVER DRYWALL, USE TWO 5/16" X 2" HEX-HEAD LAG SCREWS AND MAKE SURE LAG SCREWS ENGAGE INTO SOLID STRUCTURAL LUMBER.

⚠ DANGER

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

NOTICE

PERFORATED ANGLE MUST BE ATTACHED TO SOUND FRAMING MEMBERS AND NAILS SHOULD NOT BE USED.

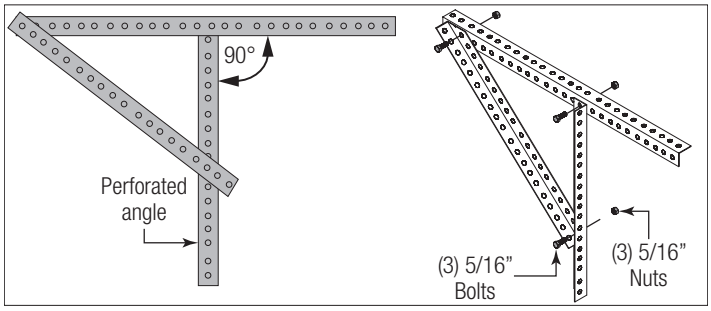


Figure 73

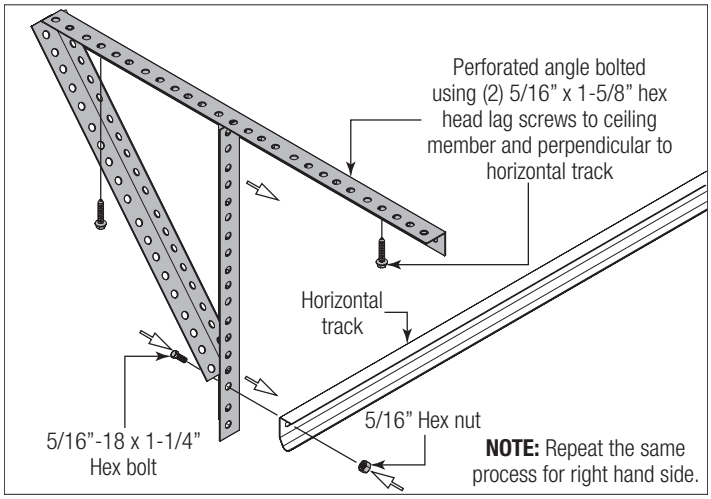


Figure 74

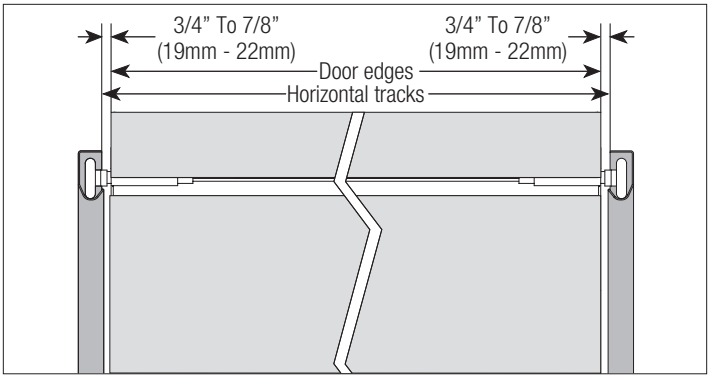


Figure 75

28 ATTACHING WEATHERSTRIPS (NOT INCLUDED)

NOTICE

WHEN PERMANENTLY ATTACHING THE WEATHERSTRIPS TO THE JAMBS, AVOID PUSHING THE WEATHER-STRIPS TOO TIGHTLY AGAINST THE FACE OF DOOR.

See Figure 76 for the following steps.

28a. Permanently attach the nails to the weatherstrips on both door jambs 1 and the header 2. The weatherstrips were temporarily attached in Preparing the Opening, in the pre-installation section of this manual.

NOTE: For clarity, door isn't shown.

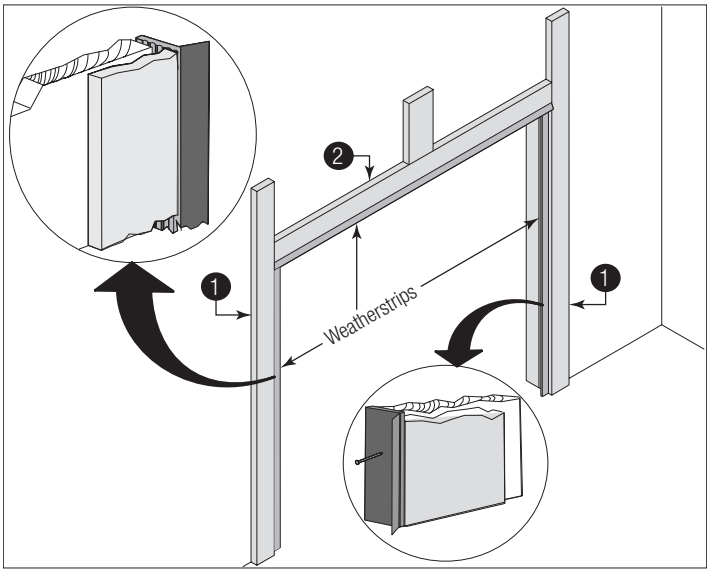


Figure 76, Weatherstrips

1	Door Jambs	2	Header

29 BALANCING DOOR

CAUTION

WINDOWS MAY CAUSE THE TOP SECTION TO BE SIGNIFICANTLY HEAVIER THAN THE REMAINING SECTIONS. TO PREVENT ANY SUDDEN DOOR ACCELERATION BETWEEN THE TOP AND BOTTOM, MOTOR OPERATE ALL DOORS WITH WINDOWS.

DANGER

EXTREME CAUTION SHOULD BE USED WHEN MAKING ADJUSTMENTS TO THE SPRINGS AS FAILURE TO FOLLOW THE INSTRUCTIONS OR USE APPROVED WINDING BARS CAN LEAD TO DEATH OR SERIOUS INJURY TO PERSONS OR PROPERTY. BEFORE ATTEMPTING TO MAKE ADJUSTMENTS TO THE SPRING, MAKE SURE YOU HAVE READ AND UNDERSTAND THE INSTRUCTIONS. IF YOU ARE UNCLEAR ON ANY ASPECT OF THE INSTALLATION PROCEDURES, YOU SHOULD CONSULT A TRAINED DOOR SYSTEMS TECHNICIAN.

See Figure 77 for the following steps.

29a. Remove locking pliers. Lift door and check its balance. Adjustments to the required number of spring turns stated may be necessary. If door rises off floor more than 2 ft. under spring tension alone, reduce spring tension. If the door is hard to rise or drifts down on its own, add spring tension. A poorly balanced door can cause garage door operator problems.

29b. To adjust spring tension, fully close door. Apply locking pliers to track above third track roller. Place locking pliers on torsion shaft, as shown in Step Attaching Counterbalance Lift Cables. Insert a winding rod 1 into the winding cone. Push upward on the winding rod slightly while carefully loosening the set screws 2 in the winding cone 3.

WARNING

BE PREPARED TO SUPPORT THE FULL FORCE OF THE TORSION SPRING ONCE THE SET SCREWS ARE LOOSE. IF NOT PREPARED, THEN THE WINDING BAR CAN MOVE SUDDENLY AND COME OUT OF THE WINDING CONE AND CAUSE SEVERE OR FATAL INJURY.

Carefully adjust spring tension 1/4 turn. Retighten both set screws to 14-15 ft. lbs. of torque in the winding cone and repeat for the other side. Recheck door balance and re-adjust spring tension if needed.

IMPORTANT: Do not adjust more than 1 turn from the recommended number of turns.

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

29c. Is the door level?

29d. Are the torsion shaft and flag angles / angle mount level and plumb?

29e. Does the distance between the flag angles / angle mount equal door width plus 3-3/8" to 3-1/2"?

29f. Do the counterbalance lift cables have equal tension? Adjust if necessary.

29g. Rewind the spring(s).

29h. Make sure door is not rubbing on jambs.

IMPORTANT: If door still does not balance properly, then contact a trained door system technician.

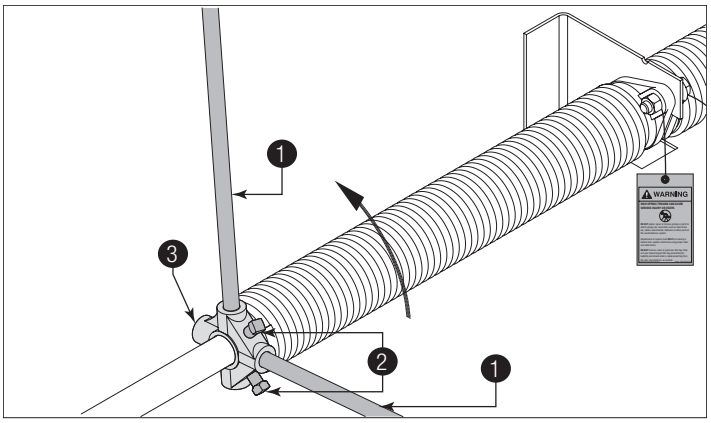


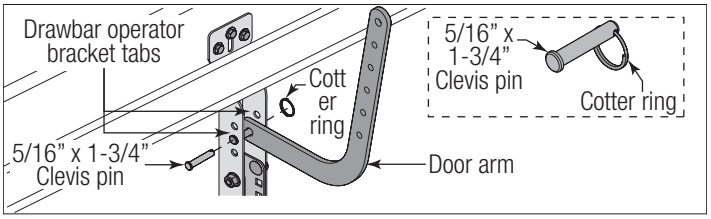
Figure 77

1	Winding Rod	3	Winding Cone
2	Set Screws		

Trolley Arm Hookup

NOTE: If Wayne Dalton operator / trolley bracket was installed, follow these directions.

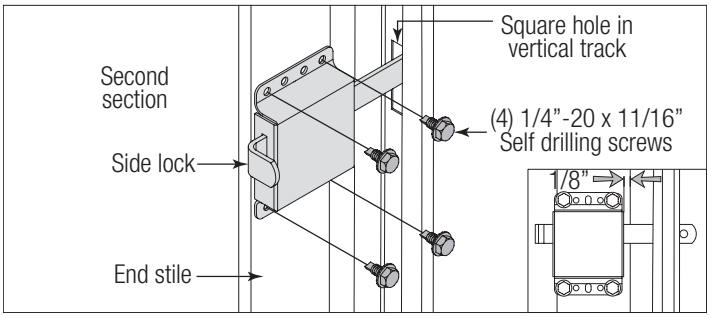
Align hole in the door arm with holes in operator bracket tabs, as shown. Attach with 5/16" x 1-3/4" cotter pin and cotter ring.



Inside Lock

Install the inside lock on the second section of the door. Secure the lock to the section with (4) 1/4" - 20 x 11/16" self drilling screws. Square the lock assembly with the door section, and align with the square hole in the vertical track. The inside lock should be spaced approximately 1/8" away from the section edge.

IMPORTANT: Inside lock(s) must be removed or made inoperative in the unlocked position if an operator is installed on this door.

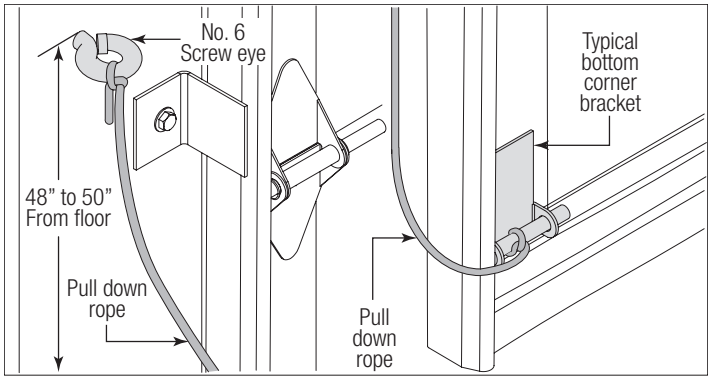


Pull Down Rope

⚠ WARNING

DO NOT INSTALL PULL DOWN ROPE ON DOORS WITH OPERATORS. CHILDREN MAY BECOME ENTANGLED IN THE ROPE CAUSING SEVERE OR FATAL INJURY.

Measure and mark the jamb approximately 48" to 50" (1220 to 1270 mm) from floor on the right or left side of jamb. Drill 1/8" pilot hole for no. 6 screw eye. Tie the pull down rope to the no. 6 screw eye and to the bottom corner bracket, as shown.

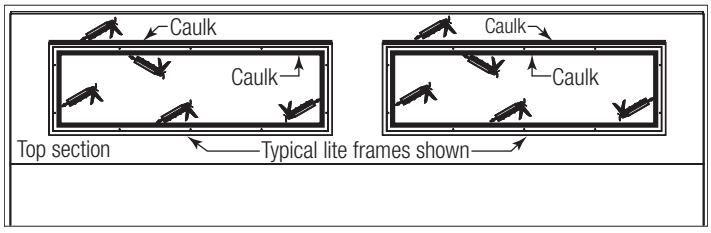


Interior Lite Caulking

NOTE: After your door is installed, field caulking is required for lited sections in applications subjected to heavy frost and or condensation forming on the inside of the windows. Not caulking the inside of the lite frames in these applications can subject the door to high amounts of moisture on the interior and may damage the door. Use acrylic latex plus silicone caulk.

IMPORTANT: Not caulking your door may void the warranty.

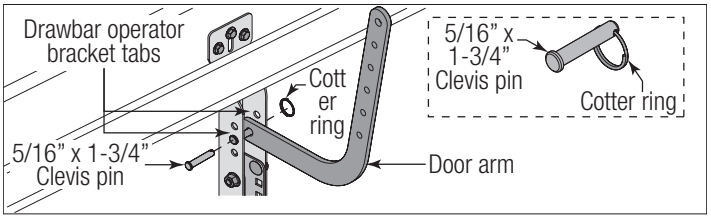
First, caulk the perimeter of the inside of the lite frames to the glass located in the top section. Next, caulk the lite frames to the top section surface at the horizontal top edge only.



Trolley Arm Hookup

NOTE: If Wayne Dalton operator / trolley bracket was installed, follow these directions.

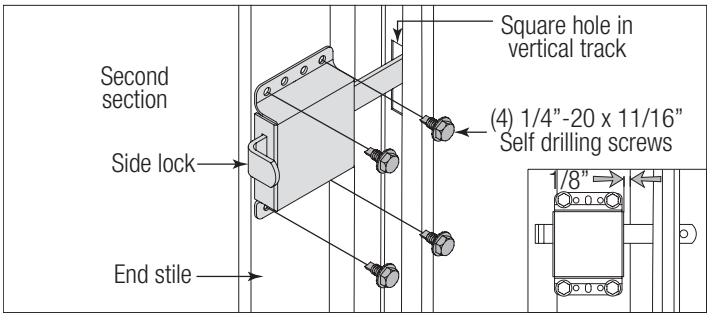
Align hole in the door arm with holes in operator bracket tabs, as shown. Attach with 5/16" x 1-3/4" cotter pin and cotter ring.



Inside Lock

Install the inside lock on the second section of the door. Secure the lock to the section with (4) 1/4" - 20 x 11/16" self drilling screws. Square the lock assembly with the door section, and align with the square hole in the vertical track. The inside lock should be spaced approximately 1/8" away from the section edge.

IMPORTANT: Inside lock(s) must be removed or made inoperative in the unlocked position if an operator is installed on this door.

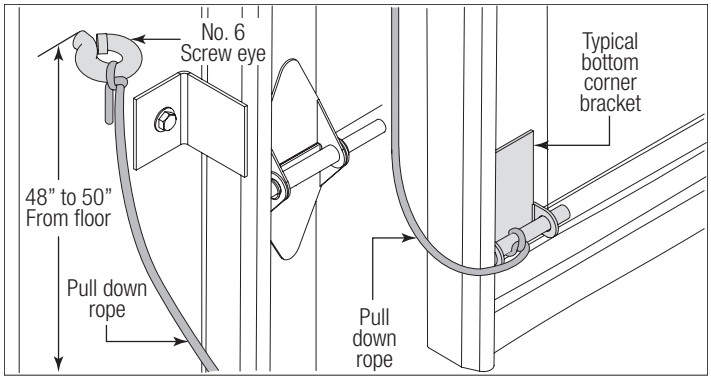


Pull Down Rope

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Measure and mark the jamb approximately 48" to 50" (1220 to 1270 mm) from floor on the right or left side of jamb. Drill 1/8" pilot hole for no. 6 screw eye. Tie the pull down rope to the no. 6 screw eye and to the bottom corner bracket, as shown.

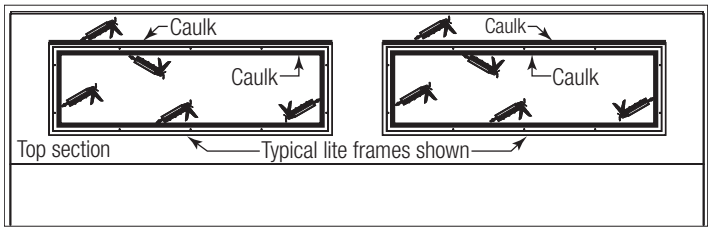


Interior Lite Caulking

NOTE: After your door is installed, field caulking is required for lited sections in applications subjected to heavy frost and or condensation forming on the inside of the windows. Not caulking the inside of the lite frames in these applications can subject the door to high amounts of moisture on the interior and may damage the door. Use acrylic latex plus silicone caulk.

IMPORTANT: Not caulking your door may void the warranty.

First, caulk the perimeter of the inside of the lite frames to the glass located in the top section. Next, caulk the lite frames to the top section surface at the horizontal top edge only.



Cleaning Your Garage Door

NOTICE

DO NOT USE A PRESSURE WASHER ON YOUR GARAGE DOOR!

While factory-applied finishes on garage doors are durable, it is desirable to clean them on a routine basis. Some discoloration of the finish may occur when a door has been exposed to dirt-laden atmosphere for a period of time. Slight chalking may also occur as a result of direct exposure to sunlight. Cleaning the door will generally restore the appearance of the finish. To maintain an aesthetically pleasing finish of the garage door, a periodic washing of the garage door is recommended.

THE FOLLOWING CLEANING SOLUTION IS RECOMMENDED:

A mild detergent solution consisting of one cup detergent (with less than 0.5% phosphate) dissolved into five gallons of warm water will aid in the removal of most dirt.

NOTICE

THE USE OF DETERGENTS CONTAINING GREATER THAN 0.5% PHOSPHATE IS NOT RECOMMENDED FOR USE IN GENERAL CLEANING OF GARAGE DOORS. BE SURE TO CLEAN BEHIND WEATHER-STRIPS ON BOTH SIDES AND TOP OF DOOR.

NOTICE

NEVER MIX CLEANSERS OR DETERGENTS WITH BLEACH.

NOTICE

DO NOT USE ANY WINDOW CLEANING FLUIDS, SCOURING COMPOUNDS, GRITTY CLOTHS OR SOLVENT-BASED CLEANERS OF ANY KIND.

To clean polycarbonate windows, see **www.Wayne-Dalton.com**.

Painting Your Garage Door

Surface preparation for painting

Wax on the surface must be removed or paint peeling/ flaking will result. To remove this wax, it will be necessary to lightly scuff the surface with a fine steel wool pad saturated with soapy water. A final wipe and rinse should be done with clean water only to remove any loose particles and any soapy film residue.

Surface scratches, which have not exposed the metal substrate, can be lightly buffed or sanded with 0000 steel wool or no. 400 sand paper to create a smoother surface. Care must be taken to not expose the substrate under the paint. Once the substrate is exposed, the likelihood for rusting is greatly increased.

If substrate is exposed, it must be treated to prevent rust from forming. Sand the exposed area lightly and paint with a high quality metal primer specifically intended for galvanized surfaces to protect the area from corrosion. Allow for drying time on primer can label before applying topcoat.

The surface of the factory-applied finish, that is being painted, must not be too smooth, or the paint will not adhere to it. It is advisable to test in an inconspicuous area, to evaluate adhesion. If poor adhesion is observed, surface preparation for painting the factory-applied finish must be repeated until desired results are achieved. Again, care must be taken to not expose the substrate under the paint.

IMPORTANT: If a factory seal is compromised or damaged, repair the factory seal with field caulk.

Painting:

NOTE: When painting the section, the paint must not seal the bottom edge of any stiles to the section surface.

After surface has been properly prepared, it must be allowed to dry thoroughly, and then coated immediately with premium quality latex house paint. Follow paint label directions explicitly. Oil base or solvent base paints are not recommended. Please note that if substrate is exposed and not properly primed, painting with latex paint may cause accelerated rusting of the steel in the exposed area.

Notes:

1. Re-painting of finish painted steel doors cannot be warranted, as this condition is totally beyond the door manufacturer's control.

2. Consult a professional coatings contractor if in doubt about any of the above directions.

3. Follow directions explicitly on the paint container labels for proper applications of coatings and disposal of containers. Pay particular attention to acceptable weather and temperature conditions in which to paint.

Wood (Preparation And Painting)

These instructions apply to all Wood Doors produced and sold by Wayne Dalton. The exterior surfaces, as well as all edges must be properly painted and maintained if satisfactory performance is to be achieved. The purpose for painting is to both protect and beautify the substrates. These requirements for finishing are intended to achieve both functions for reasonable service life of wood doors. Wood doors must be completely finished prior to installation, to ensure that the interior and exterior surfaces, as well as all edges of the doors are properly protected against moisture or other contaminants. Wood doors, in a non-finished condition, must not be transported or stored where the wood surfaces can be exposed to moisture or other contaminants.

Wood (Surface Preparation)

All surfaces must be clean, free of dust and dirt and any other contamination.

Wood (Painting)

Using painter's tape, tape off all metal surfaces. A premium quality latex house based finish paint is recommended for use over the factory latex based primer

Painting the wood surfaces with at least 2 coats of finish paint over the primer. Follow paint manufacture's label directions completely for all coatings. Once finished, remove painter's tape and touch up where necessary.

Wood (Maintenance And Refinishing)

Yearly inspection of all the wood surfaces of the garage door(s) will reveal the extent of weathering and the need for refinishing. When the finish becomes eroded or thin, clean and prime the areas of deterioration. Follow up with a complete refinishing of the door(s), according to the above directions, as well as the manufacturer's label directions. Protecting the door(s) from prolonged exposure to moisture and sunlight is vital in extending the service life of your garage door(s).

Operation And Maintenance

Operating Your Garage Door:

Before you begin, read all warning labels affixed to the door and the installation instructions and owner's manual. When correctly installed, your Wayne Dalton door will operate smoothly. Always operate your door with controlled movements. Do not slam your door or throw your door into the open position, this may cause damage to the door or its components. If your door has an electric opener, refer to the owner's manual to disconnect the opener before performing manual door operation below.

Manual Door Operation:

For additional information on manual garage door operation go to **www.dasma.com** and reference TDS 165.

⚠ CAUTION

DO NOT PLACE FINGERS OR HANDS INTO SECTION JOINTS WHEN OPENING AND/OR CLOSING A DOOR. ALWAYS USE LIFT HANDLES/SUITABLE GRIPPING POINTS WHEN OPERATING THE DOOR MANUALLY.

OPENING A DOOR: Make sure the lock (if present) are in the unlocked position. Lift the door by using the lift handles / suitable gripping points only. Door should open with little resistance.

CLOSING A DOOR: From inside the garage, pull door downward using lift handles/ gripping points only. If you are unable to reach the lift handles / suitable gripping points only, use pull-down rope (if present) affixed to the side of door. Door should close completely with little resistance.

Using An Electric Operator:

IMPORTANT: If present, Pull-down rope must be removed and locks must be removed or made inoperative in the unlocked position.

When connecting a drawbar (trolley-type) garage door operator to this door, a drawbar operator bracket must be securely attached to the top section of the door, along with any struts provided with the door. Always use the drawbar operator bracket supplied with the door. To avoid possible damage to your door, reinforce the top section with a strut (may or may not be supplied). The installation of the drawbar operator must be according to manufacturer's instructions and force settings must be adjusted properly. Refer to the owner's manual supplied with your drawbar operator for complete details on installation, operation, maintenance and testing of the operator.

Maintaining Your Garage Door:

Before you begin, read all warning labels affixed to the door and the installation instructions and owner's manual. Perform routine maintenance steps once a month, and have the door professionally inspected once a year. Review your Installation Instructions and Owner's Manual for the garage door. These instructions are available at no charge from Wayne Dalton, a division of Overhead Door Corporation, P.O. Box 67, Mt. Hope, OH, 44660, or at **www.Wayne-Dalton.com**. For additional information on garage door/operator maintenance go to **www.dasma.com** and reference TDS 151, 167 and 179.

Monthly Inspections:

1. Visual Inspection:

Closely inspect jambs, header and mounting surface. Any material found not to be structurally sound must be replaced. It may be necessary to uninstall part or all of the door assembly in order to replace defective material. Refer to the supplemental instructions "Removing an Existing Door/Preparing the Opening" at **www.Wayne-Dalton.com**. Inspect the spring(s), counterbalance lift cables, track rollers, pulleys, rear back hangs and other door hardware for signs of worn or broken parts. Tighten any loose screws and/or bolts, except on bottom corner brackets or on the counterbalance assembly. Check exterior surface of the door sections for any minor cracks. Verify door has not shifted right or left in the opening. If you suspect problems, contact a trained door system technician.

⚠ DANGER

GARAGE DOOR SPRINGS, COUNTERBALANCE LIFT CABLES, BRACKETS, AND OTHER HARDWARE ATTACHED TO THE SPRINGS ARE UNDER EXTREME TENSION, AND IF HANDLED IMPROPERLY, CAN CAUSE DEATH OR SERIOUS INJURY. ONLY A TRAINED DOOR SYSTEMS TECHNICIAN SHOULD ADJUST THEM, BY CAREFULLY FOLLOWING THE MANUFACTURER'S INSTRUCTIONS.

⚠ WARNING

NEVER REMOVE, ADJUST, OR LOOSEN THE BOLTS, SCREWS AND/OR LAG SCREWS ON THE COUNTERBALANCE (END BEARING BRACKETS, DRUMS OR SPRING SYSTEM) OR BOTTOM CORNER BRACKETS OF THE DOOR. THESE BRACKETS ARE CONNECTED TO THE SPRING(S) AND ARE UNDER EXTREME TENSION. TO AVOID POSSIBLE DEATH OR SERIOUS INJURY, HAVE ANY SUCH WORK PERFORMED BY A TRAINED DOOR SYSTEMS TECHNICIAN USING PROPER TOOLS AND INSTRUCTIONS.

Torsion Springs:

The torsion springs (located above the door) should only be adjusted by a trained door systems technician. **DO NOT** attempt to repair or adjust torsion springs yourself.

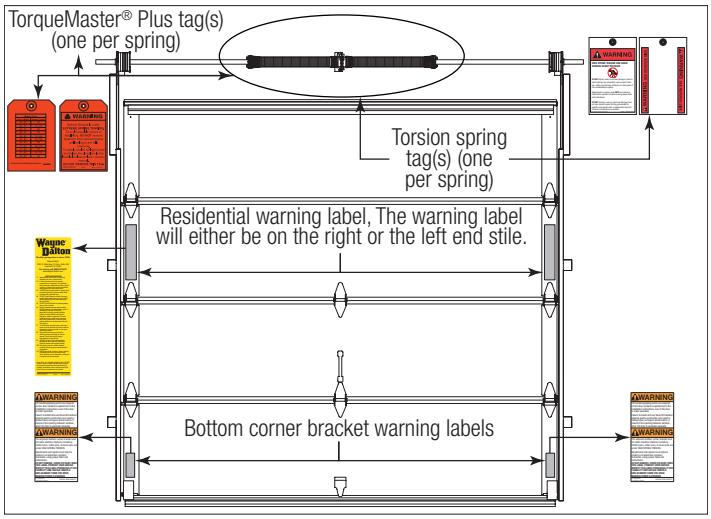
2. Door Balance:

Periodically test the balance of your door. If you have a garage door drawbar operator, use the release mechanism so you can operate the door by hand when doing this test. Start with the door in the fully closed position. Using handles or suitable gripping points, lift the door to check its balance. If door lifts by itself (hard to pull down) or if door is difficult to lift (easy to pull down), have it adjusted by a trained door systems technician. **DO NOT** attempt to repair or adjust Torsion Springs yourself.

3. Lubrication:

The door should open and close smoothly. Ensure the door track rollers are rotating freely when opening and closing the door. If track rollers do not rotate freely, clean the door tracks, removing dirt and any foreign substances. Clean and lubricate (use a non-silicon based lubricant) graduated end hinges, center hinges, steel track rollers, bearings and torsion springs (torsion spring coil surfaces). DO NOT lubricate plastic idler bearings, nylon track rollers, or the door track. DO NOT oil a cylinder lock. If actuation is difficult, use a graphite dust to lubricate.

Check for Presence of Safety Labels:



Wayne Dalton GARAGE DOORS

Model 8650

Limited Warranty

Wayne Dalton, a division of Overhead Door Corporation ("Seller") warrants to the original purchaser of the **Model 8650** ("Product"), subject to all of the terms and conditions hereof, that the Product and all components thereof will be free from defects in materials and workmanship for the following period(s) of time, measured from the date of installation:

Limited Lifetime Warranty* on the Product sections against:

- The Product becoming inoperable due to rust-through of the steel skin from the core of the Product section, due to cracking, splitting, or other deterioration of the steel skin, or due to structural failure caused by separation or degradation of the foam insulation.
- Peeling of the original paint as a result of a defect in the original paint or in the application of the original paint coating.
- The Product hardware and tracks (except springs).

TWO (2) YEARS on factory attached overlay material against peeling, cracking, chalking, or delamination.

FIVE (5) YEARS against excessive color fade, which materially alters the color of the Product more than five (5) Delta E units (as measured on a cleaned surface and measured per ASTM D2244) and cannot be remedied by the recommended solution.

ONE (1) YEAR on those component parts of the Product not covered by the preceding provisions of this Warranty.

*Limited Lifetime shall mean as long as the original purchaser owns the house in which the Product is originally installed.

Seller's obligation under this warranty is specifically limited to repairing or replacing, at its option, any part which is determined by Seller to be defective during the applicable warranty period. Any labor charges are excluded and will be the responsibility of the purchaser.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. This warranty is made to the original purchaser of the Product only, and is not transferable or assignable. This warranty applies only to Product installed in a residential or other non-commercial application. It does not cover any Product installed in commercial or industrial building applications. This warranty does not apply to any unauthorized alteration or repair of the Product, or to any Product or component which has been damaged or deteriorated due to misuse, neglect, accident, failure to provide necessary maintenance, normal wear and tear, acts of God or as a result of having been exposed to toxic or abrasive environments, including blowing sand, salt water, salt spray and toxic chemicals and fumes.

Color and Delta E calculation is by ASTM D2244 method using Seller's spectrometer or other industry standard method approved by Seller. Perceived differences due to sheen or type of material are not included in Seller's warranty. This warranty specifically excludes any damage resulting from scratching, abrasion or impact by any hard object, and any fading or color change which may not be uniform due to unequal exposure of the sections to sunlight or other elements. Any replacement sections will be provided as close as possible in color and design to the original installation, but an exact match is not guaranteed and not included in this warranty

ALL EXPRESS AND IMPLIED WARRANTIES FOR THE PRODUCT, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN TIME TO THE APPLICABLE WARRANTY PERIOD REFLECTED ABOVE. NO WARRANTIES, WHETHER EXPRESS OR IMPLIED, WILL APPLY AFTER THE LIMITED WARRANTY PERIOD HAS EXPIRED. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

IN NO EVENT SHALL SELLER BE RESPONSIBLE FOR, OR LIABLE TO ANYONE FOR, SPECIAL, INDIRECT, COLLATERAL, PUNITIVE, INCIDENTAL OR CONSEQUENTIAL DAMAGES, even if Seller has been advised of the possibility of such damages. Such excluded damages include, but are not limited to, loss of use, cost of any substitute product, or other similar indirect financial loss. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

Rev. 05.2013

Thank you for your purchase.

PLEASE DO NOT RETURN THIS PRODUCT TO THE STORE

If you need assistance, please call 1-866-569-3799 (press Option 1) and follow the prompts to contact a customer service representative. They will be happy to handle any questions that you may have.

After installation is complete, leave this Installation Instructions And Owner's Manual with the homeowner, or fasten it near garage door for easy reference.

Product may be covered by one or more patents.
See **www.wayne-dalton.com/patents** for details.