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5150, 5155, 5200 & 5255

LIMITED WARRANTY

The Manufacturer warrants that its door and its hardware fittings will be free from defect in workmanship and material. Should any defects in workmanship or material appear within **ONE YEAR** of delivery, manufacture shall, upon notification, correct such nonconformity at its option, by repairing or replacing any defective part or parts. See maintenance and painting instructions for prepainted steel doors listed below or contact Wayne-Dalton Distributor for a copy of the maintenance and finishing instructions for prepainted steel doors.

The Manufacturer warrants the steel skin of the THERMOMARK™ Series insulated garage door for a period of 10 YEARS, from the time of delivery against cracking, splitting or deterioration due to rust-through. Other conditions and exceptions as contained herein apply.

The Manufacturer warrants the steel skin of the THERMOMARK™ Series insulated garage door for a period of 7 YEARS, from the time of delivery against separation of the polyurethane foam from the steel skin of the panel. Other conditions and exceptions as contained herein apply.

NO EMPLOYEE, DISTRIBUTOR, OR REPRESENTATIVE IS AUTHORIZED TO CHANGE THE FOREGOING WARRANTIES IN ANY WAY OR GRANT ANY OTHER WARRANTY ON BEHALF OF MANUFACTURER.

The Manufacturer shall not be responsible for any damage resulting to or caused by its products by reason of installation (the warranty becomes null and void if other than Manufacturer's specified holes are drilled), improper storage, unauthorized service, alteration of products, neglect or abuse, or attempt to use the products for other than the customary usage or for their intended purposes. The above warranty does not cover normal wear or any damage beyond Manufacturer's control or replacement labor.

THIS WARRANTY COVERS A COMMERCIAL PRODUCT. THE FORGOING WARRANTIES ARE LIEU OF ALL OTHER WARRANTIES AND NO REPRESENTATIONS, GUARANTEES, OR WARRANTIES, EXPRESSED OR IMPLIED, (INCLUDING, BUT NOT LIMITED TO, THE WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE), ARE MADE BY MANUFACTURE IN CONNECTION WITH TH MANUFACTURE OR SALE OF ITS PRODUCTS.

Claims for defects in material and workmanship covered by this warranty shall be made in writing to the dealer from whom the product was purchased within the warranty period. Manufacturer may either send a service representative or have the product returned to the Manufacturer at Buyer's expense for inspection. If judged by Manufacturer to be defective in material or workmanship, the product will be replaced or repaired at the option of Manufacturer, free from all charges except authorized transportation and replacement labor.

THE REMEDIES OF BUYER SET FORTH HEREIN ARE EXCLUSIVE AND ARE IN LIEU OF ALL OTHER REMEDIES. THE LIABILITY OF MANUFACTURER, WHETHER IN CONTRACT, TORT, UNDER ANY WARRANTY, OR OTHERWISE, SHALL NOT EXTEND BEYOND ITS OBLIGATION TO REPAIR OR REPLACE, AT ITS OPTION, ANY PRODUCT OR PART FOUND BY MANUFACTURER TO BE DEFECTIVE IN MATERIAL OR WORKMANSHIP. MANUFACTURER SHALL NOT BE LIABLE FOR COST OF REMOVAL OR INSTALLATION OR SHALL NOT BE RESPONSIBLE FOR ANY DIRECT, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES OF ANY NATURE.

This warranty gives you specific legal rights, which may vary from state to state. However, some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

Yearly maintenance as described in the Maintenance and Painting Instructions for Prepainted Steel Doors is required. Should you need an additional copy, contact your local authorized Wayne-Dalton distributor.

MAINTENANCE AND FINISHING INSTRUCTIONS

MAINTENANCE

While factory-applied finishes for steel garage doors are so durable that they will last many years longer than ordinary paints, it is desirable to clean them thoroughly on a routine basis. Apparent discoloration of the paint may occur when it has been exposed in dirt-laden atmospheres for long periods of time. Slight chalking may also cause some change in appearance in areas of strong sunlight. A good cleaning will generally restore the appearance of these coatings and render repainting unnecessary. An occasional light cleaning will also help maintain an aesthetically pleasing appearance. To maintain the original finish of the garage doors, the only regular maintenance necessary is that of annual washing. Mild solutions of detergents or household ammonia will aid in the removal of most dirt, and the following are recommended levels:

One cup of Tide™, or other common detergents, which contain less than 0.5% phosphate, dissolved into five gallons of warm water. NOTE: The use of detergents containing greater than 0.5% phosphate is not recommended for use in general cleaning of garage doors. NEVER BLEND CLEANSERS OR DETERGENTS WITH BLEACH.

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 gray (not green!) 3M ScotchBrite pad saturated with soapy water. A final wipe and rinse should be done with clean water only, to remove any loose dust or soap film.

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 (see Note No. 2). Once this exposed condition exists, the likelihood for rusting is greatly increased. See the following paragraph if the metal substrate is observed.

Exposed substrate must be treated to prevent rust from forming (see Note No. 2). Sand the exposed area lightly and paint with high quality metal primer to protect from corrosion. Follow drying time on primer can label before applying topcoat.

The surface to be recoated must not be too smooth or the repaint material will not adhere to it (see Note No. 2). It is advisable to test a representative area to evaluate adhesion. If poor adhesion is observed, the surface must be abraded by sanding or buffing using grades mentioned above. Care must be taken to not expose the substrate under the paint.

PAINTING

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

NOTES:

1. Repainting of finish painted steel doors cannot be warranted as this condition is totally beyond door manufacturer's control.
2. If the steel door surface has a finish painted textured surface representing wood grain, stucco, etc., this step should not be attempted as danger of exposing substrate is greatly increased.
3. Consult a professional coatings contractor if in doubt about any of the above directions.
4. Follow directions explicitly on the paint and solvent container labels for proper applications of coatings and disposal of containers. Pay particular attention to those directions involving acceptable conditions in which to paint.

ACRYLIC GLAZING CLEANING INSTRUCTIONS:

1. To clean acrylic glazing wash with plenty of nonabrasive soap or detergent and water. Use the bare hand to feel and dislodge any caked dirt or mud. A soft, grit-free cloth, sponge or chamois may be used to wipe the surface. Do not use hard or rough cloth that will scratch the acrylic glazing. Dry with a clean damp chamois.
2. Grease and oil may be removed with kerosene or a good grade of naphtha (No aromatic content.). Users of these solvents should become familiar with their properties to handle them safely.
3. **Do not use:** Window cleaning fluids, scouring compounds, gritty cloths, leaded or ethyl gasolines, or solvents such as alcohol, acetone, carbon tetrachloride, etc.



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ThermoMark 5150, 5155, 5200 & 5255 COMMERCIAL GARAGE DOOR INSTALLATION INSTRUCTIONS AND OWNERS MANUAL

Read these instructions carefully before attempting installation.

If in question about any of the procedures,

Do Not perform the work.

Instead have a qualified door agency do the installation or repairs.

IMPORTANT SAFETY NOTICES

An overhead door is a large heavy object that moves with the help of springs under high tension. Moving objects and springs under tension can cause injuries. For your safety and the safety of others, follow these instructions:

1. Wear protective gloves during installation to avoid possible cuts from sharp metal edges.
2. It is always recommended to wear eye protection when using tools, otherwise serious eye injury could result.
3. Operate door **ONLY** when properly adjusted and free of obstructions.
4. Keep door in full view while operating it. Watch the door open or close completely before leaving the area.
5. Should the door become hard to operate or completely inoperative, a qualified door agency should correct the problem to prevent damage to the door or serious personal injury.
6. **DO NOT PERMIT** children to play with the garage door or the electrical controls. Fatal injury could result, should the child become entrapped between the door and the floor.
7. To prevent serious injury or death, avoid standing in the open doorway or walking through the doorway while the door is moving.
8. Use lift handles/step plate when manually operating the door. **DO NOT** place fingers into section joints when operating the door.
9. Remove pull rope if door is operated by an electric opener.
10. Door is constantly under **EXTREME SPRING TENSION**. To prevent possible serious injury or death, adjustments, repairs, removal, or installation, **ESPECIALLY of SPRING ASSEMBLIES, CABLES, or BOTTOM BRACKETS**, should be performed **ONLY** by qualified door service people.
11. Check door and its hardware monthly for loose, worn, or broken parts. Have any repairs or adjustments made by a qualified door agency.
12. Have the door professionally inspected once a year.

CONTENTS

- Operating Zone
- Door Preparation
- Leveling Door
- Installing Door Sections
- Installing Track
- Torsion Springs
- Chain Hoist
- Trolley Operator
- Auxiliary Components

WARNING: It is recommended that installation, repairs, or adjustments of this product be made by a qualified door agency.

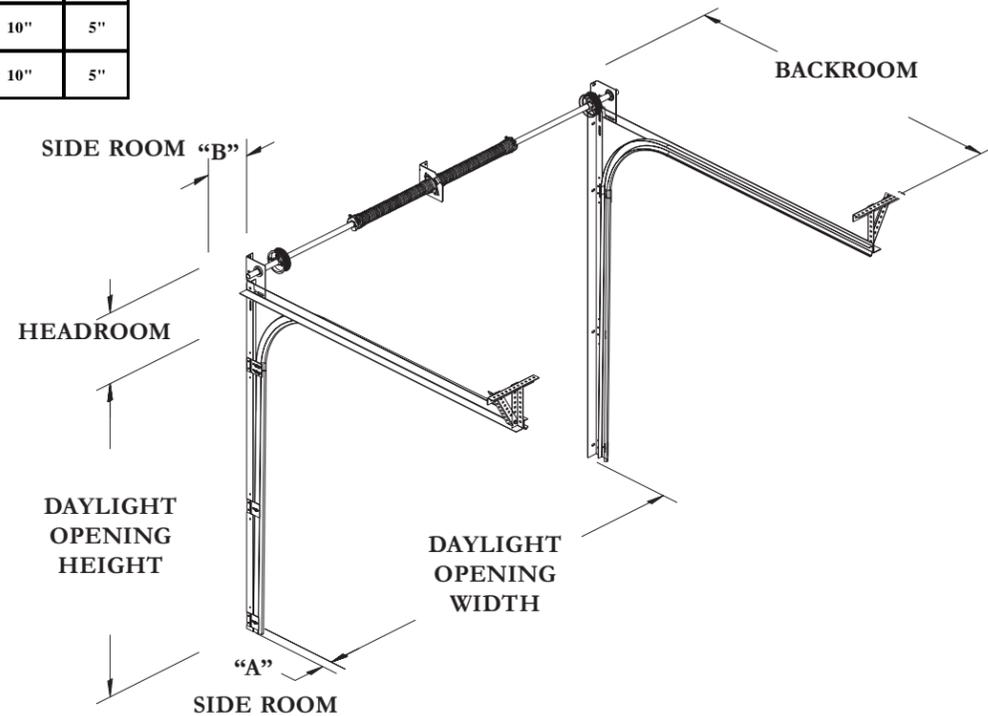
This manual **MUST** be attached to the wall in close proximity to the door.

OPERATING ZONE

You Can Save Time And Effort If You First Establish **All** The Facts About The "Operating Zone"

The "Operating Zone" is the area surrounding the door opening, extending upward and backward as far as the door will travel. We call it the Operating Zone because it is the area that the door will have to operate within and the dimensions are critical and must be known in advance of a door and operator installation.

TRACK SIZE	DEPTH INTO ROOM	DIM A SIDEROOM TRACK		DIM B SIDEROOM TORSION SHAFT	
		STEEL and MASONRY	WOOD	SOLID	TUBE
2"	DOOR HEIGHT PLUS 18"	2-1/2"	3-1/2"	10"	5"
3"	DOOR HEIGHT PLUS 24"	3"	5"	10"	5"



- Daylight Opening;** Exact size of finished opening
- Sideroom;** required distance from the door opening to a wall or any obstruction. **Refer To Sideroom Chart**
- Headroom;** required distance from top of door opening to the ceiling or underside of joists. **Refer To Headroom Chart**
- Backroom;** required distance from door opening header to the furthest back point to which the door track or operator unit, and their brackets, will extend.

HEADROOM CHART For Standard Lift Track (Minimum Distance Required)

DRUMS	DIMS	3" TRACK 15" RADIUS	2" TRACK 15" RADIUS	2" TRACK 12" RADIUS
400-8	HEADROOM	15 1/2"	15"	12"
400-12	DMY	13"	12 1/2"	9 1/2"
5250-18	HEADROOM	17 1/2"	17"	14"
	DMY	14 1/2"	14"	11"
800-32	HEADROOM	21"	20 1/2"	NA
	DMY	16 1/2"	16"	NA

Dim. Y INDICATES THE DISTANCE FROM THE HEADER TO THE CENTER LINE OF TORSION SHAFT.

NOTE: 2 1/2" OF ADDITIONAL HEADROOM IS REQUIRED FOR SINGLE TROLLEY OPERATOR INSTALLATIONS.

STEP 1. Verify The OPERATING ZONE Dimensions

- A - Exact size of finished daylight opening. Do you have the correct door size?
- B - Sideroom requirements for track and spring shaft. (Refer to sideroom chart)
- C - Headroom requirements. (Refer to headroom chart)
- D - Backroom (depth into room) Manual lift = Door height plus 18" Operators = Door height plus 48"
- E - Jamb must be plumb and solidly attached to the building. Floor must be level or exact gradeline established before you start.

STEP 2. Shipping tags show important information, door size, track size and type, spring size and hardware type.

Verify that all material is present and correct before attempting installation.

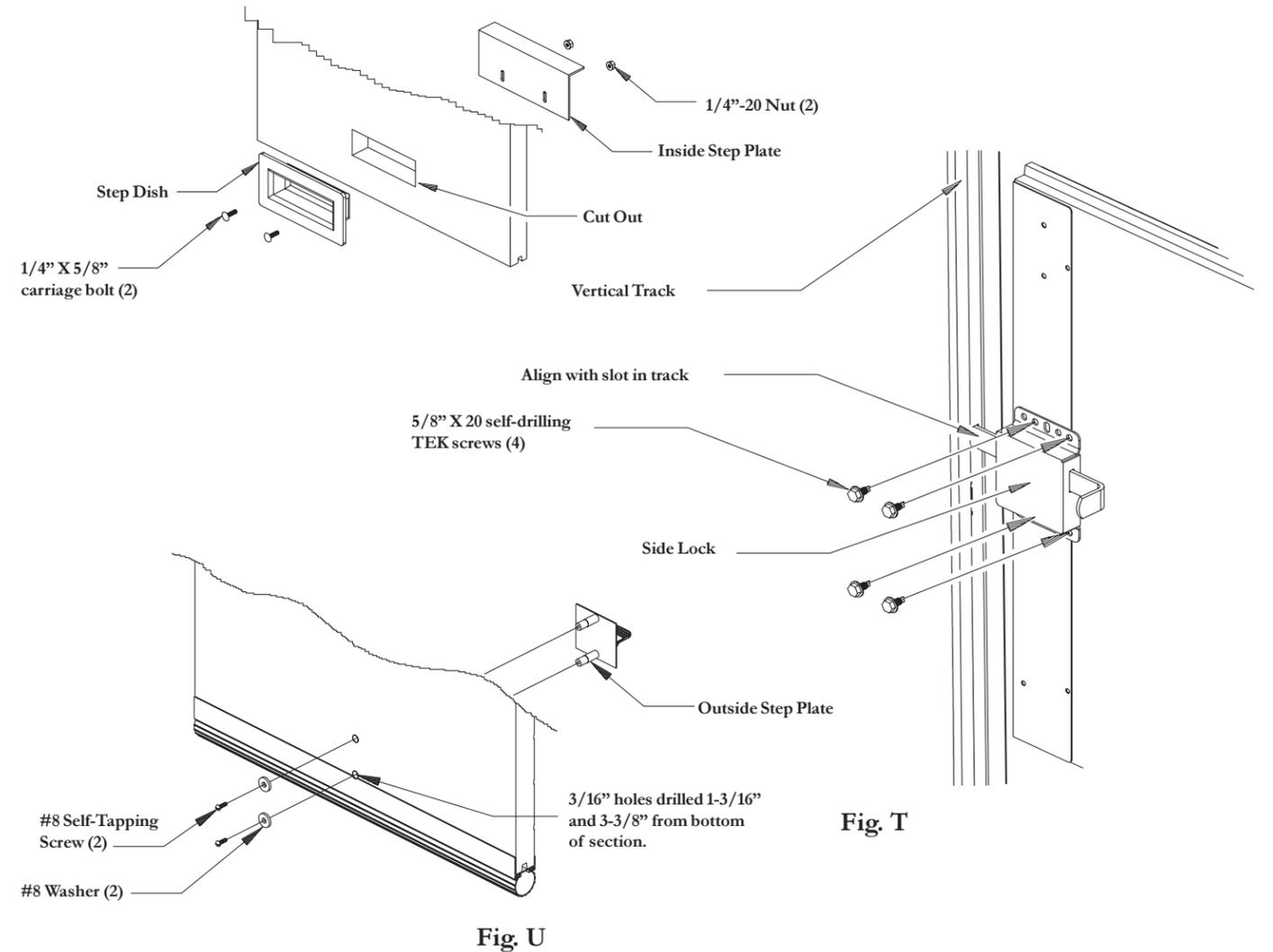


Fig. U

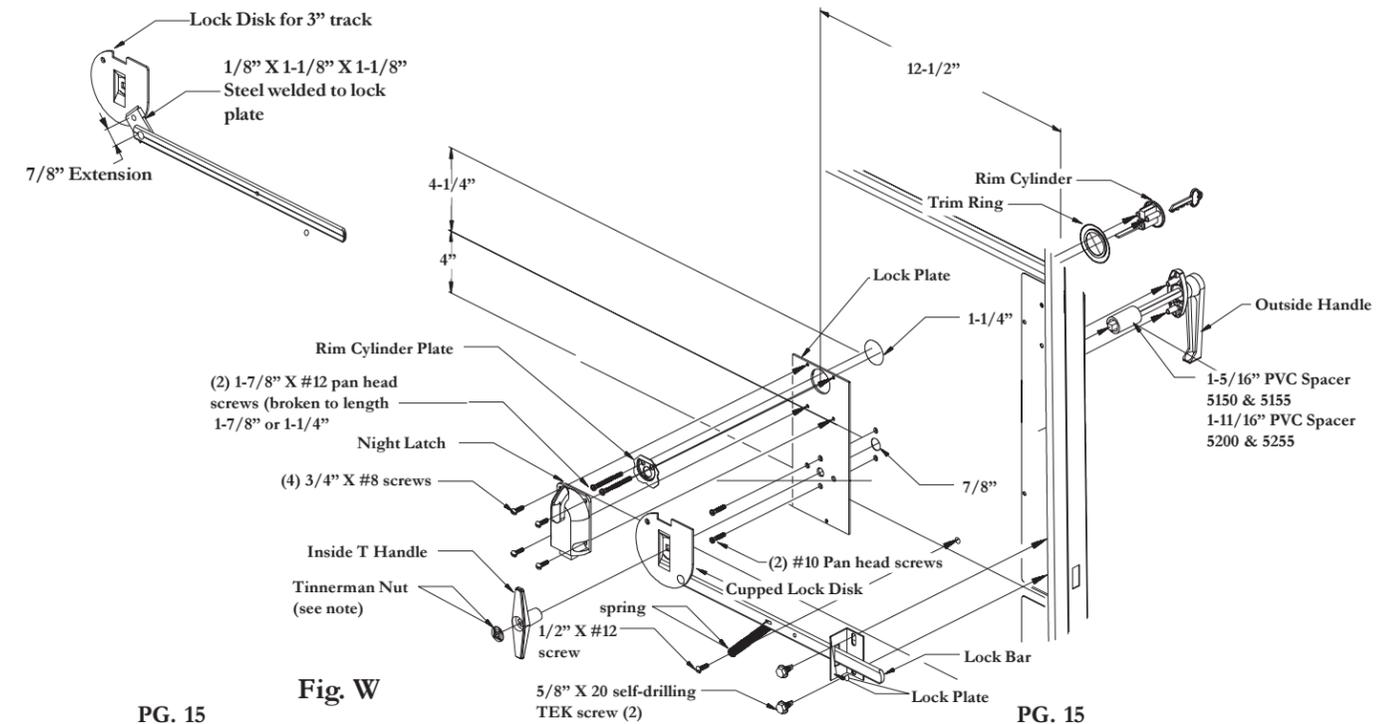
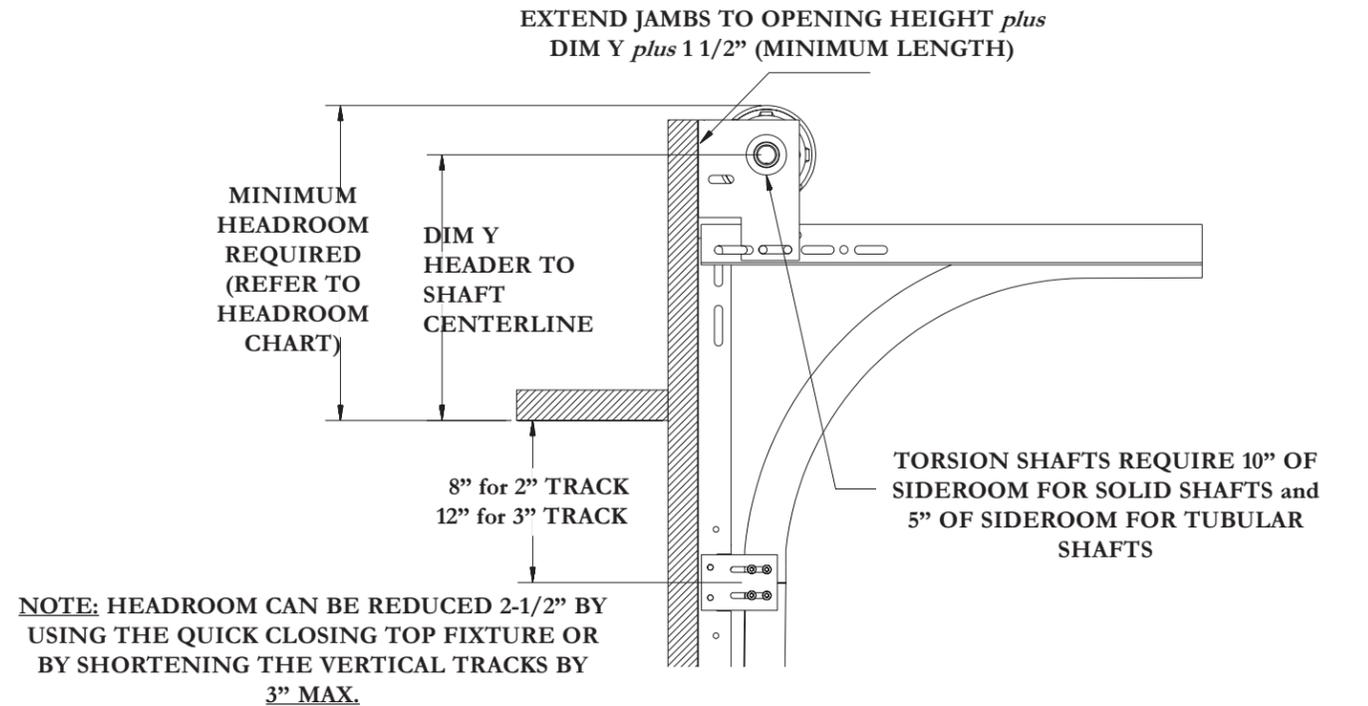
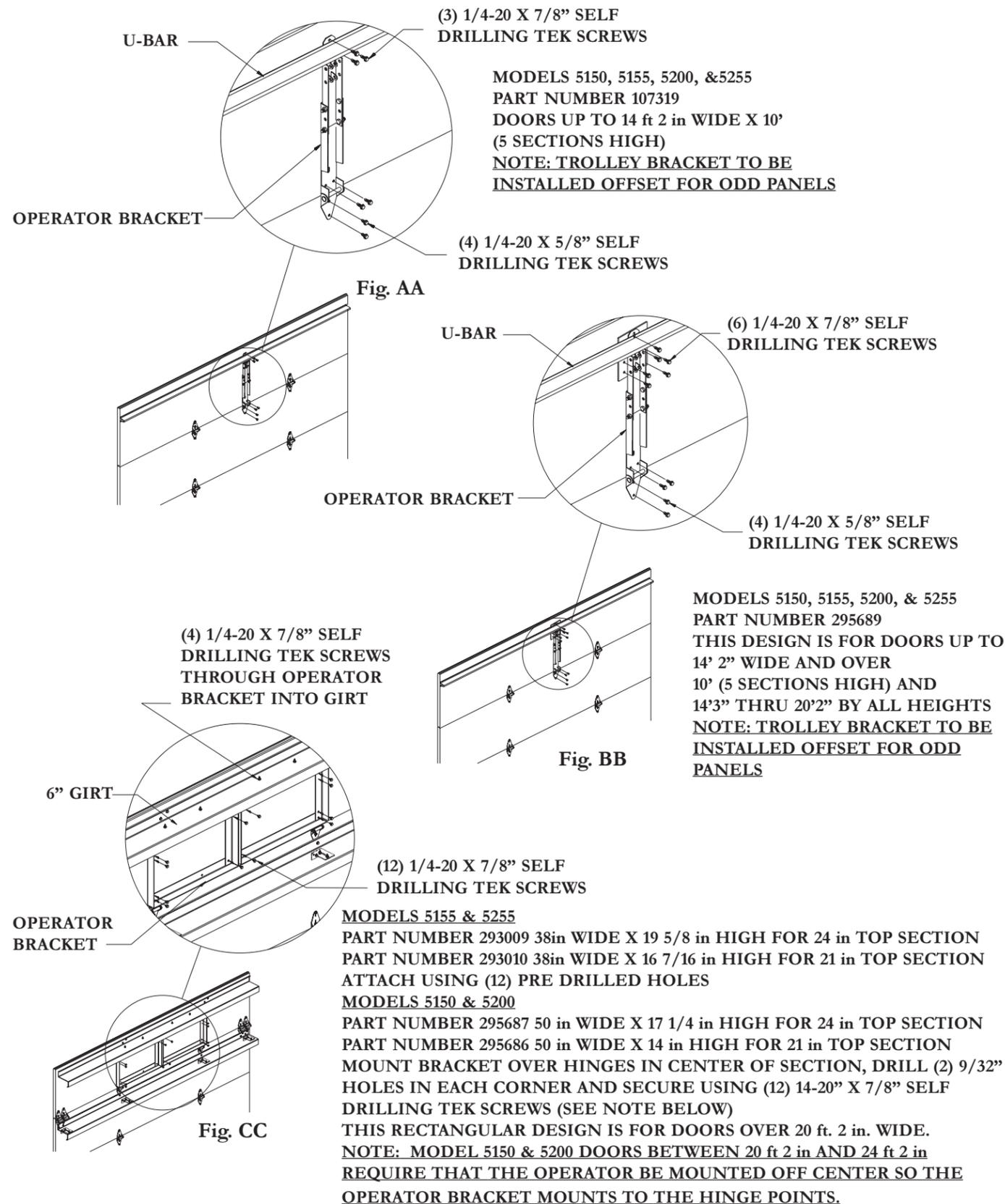


Fig. W

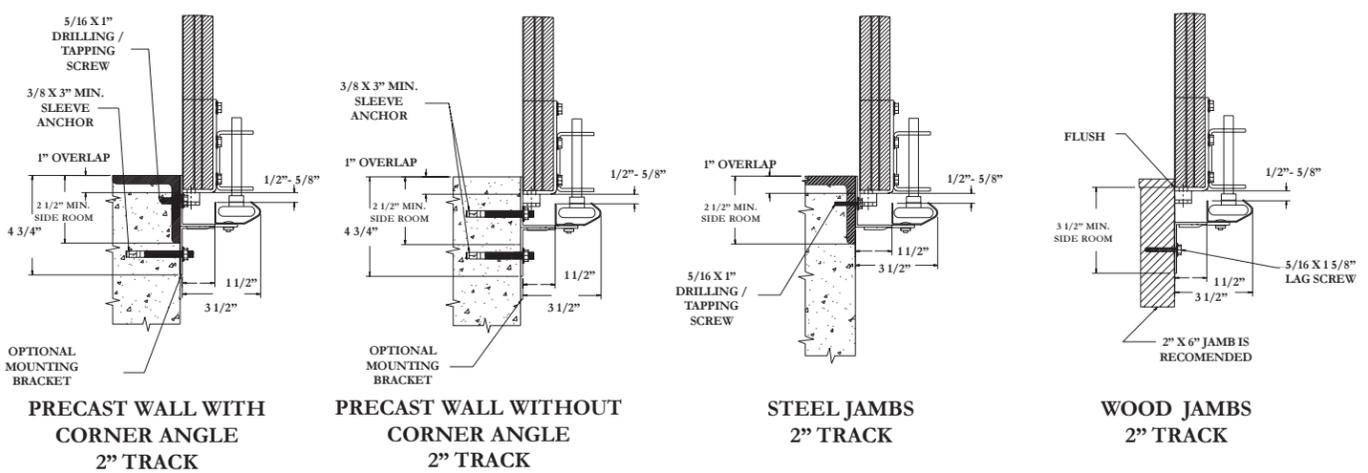
STEP 13: Operator Trolley Bracket Installation: Attach the operator trolley bracket as illustrated in Fig. AA. This trolley bracket is limited to doors 14'2" X 10' (5 Sections high and smaller).

For doors 14'2" X over 10' (5 sections) and 14'3" thru 20'2" by all heights see Fig. BB.

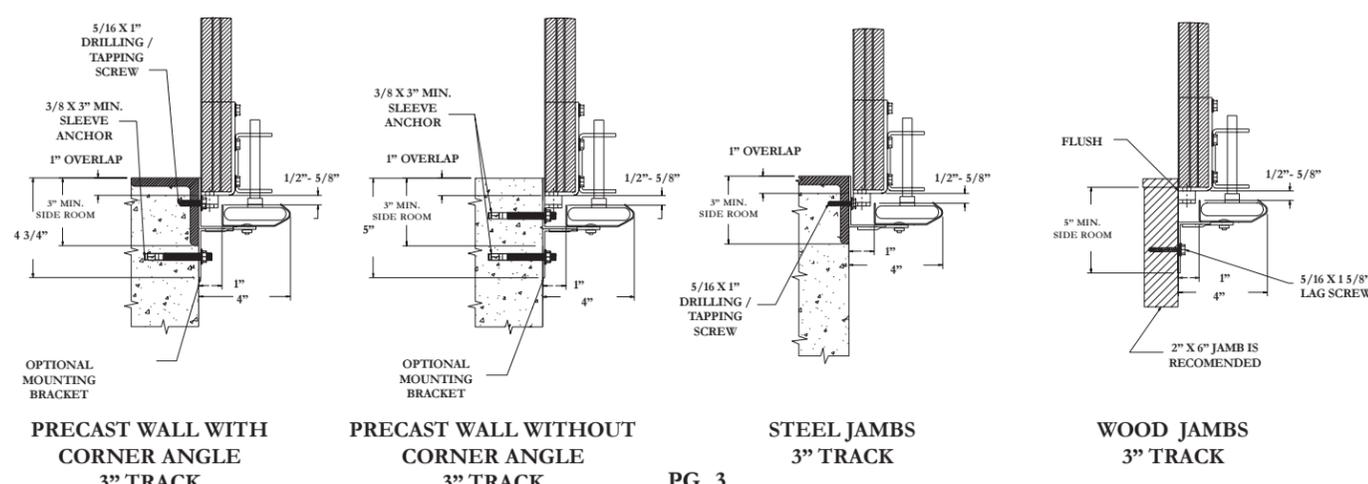
For doors over 20'2" by all heights see Fig. CC.



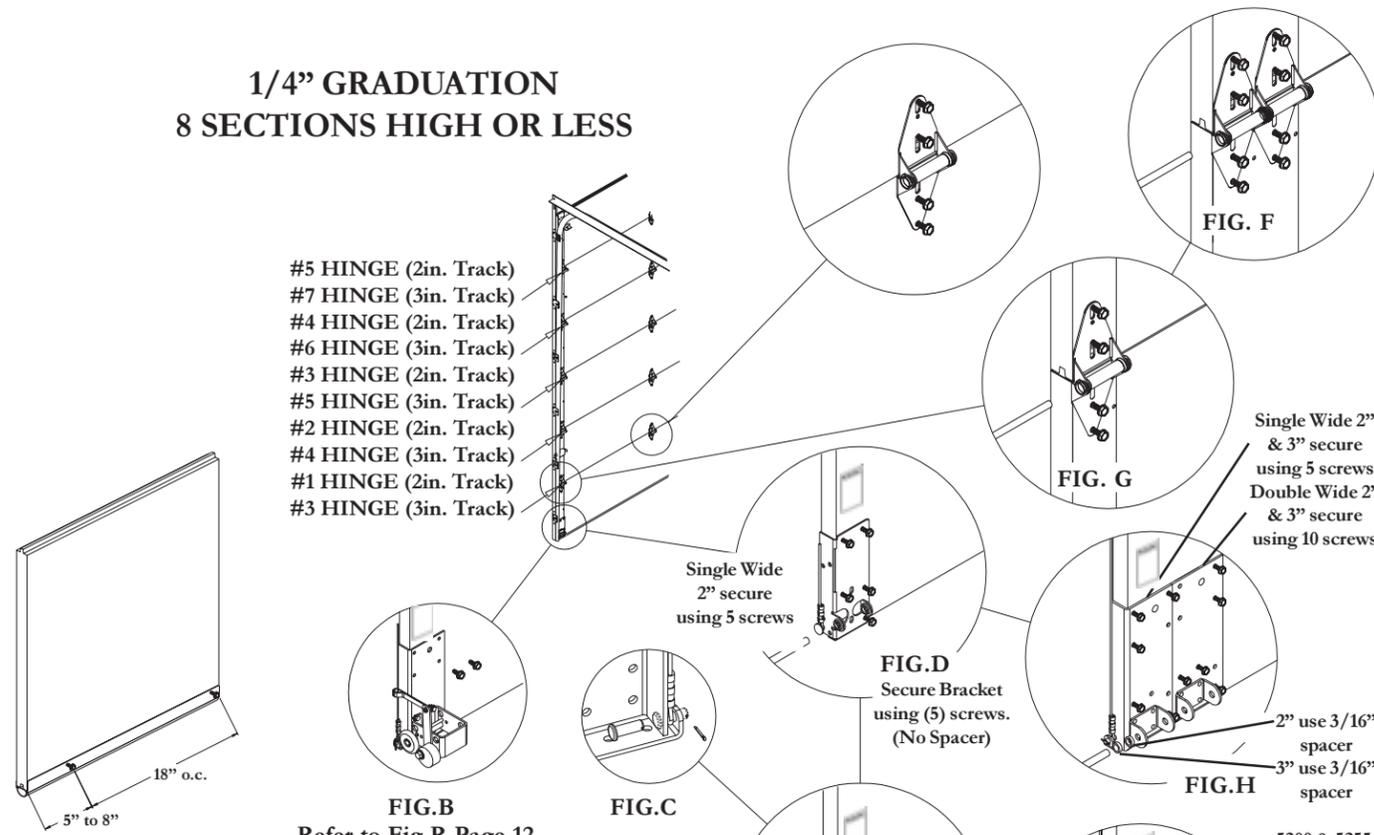
SIDEROOM REQUIREMENTS
2 inch TRACK



3 inch TRACK



**1/4" GRADUATION
8 SECTIONS HIGH OR LESS**



- #5 HINGE (2in. Track)
- #7 HINGE (3in. Track)
- #4 HINGE (2in. Track)
- #6 HINGE (3in. Track)
- #3 HINGE (2in. Track)
- #5 HINGE (3in. Track)
- #2 HINGE (2in. Track)
- #4 HINGE (3in. Track)
- #1 HINGE (2in. Track)
- #3 HINGE (3in. Track)

Single Wide 2" secure using 5 screws

Single Wide 2" & 3" secure using 5 screws
Double Wide 2" & 3" secure using 10 screws

FIG. D
Secure Bracket using (5) screws. (No Spacer)

FIG. H
2" use 3/16" spacer
3" use 3/16" spacer

5150 & 5155
Single Wide 2" secure using 5 screws

FIG. E
Secure Bracket using (5) screws.

5200 & 5255
Single Wide 2" & 3" secure using 5 screws
2" use 3/16" spacer
3" use 1/2" spacer

FIG. A

**1/8" GRADUATION
OVER 8 SECTIONS HIGH**

NOTE: For doors over 8 sections high and using 3 in. track, start with (2) # 3 hinges, (2) #4 hinges, (2) # 5 hinges, etc...

- #5 HINGE (3in. Track)
- #4 HINGE (3in. Track)
- #4 HINGE (3in. Track)
- #3 HINGE (3in. Track)
- #3 HINGE (3in. Track)

STEP 3. Locate the bottom section, attach bottom seal using 1/4" self drilling and tapping screws as shown in Fig. A .

Locate the left and right hand bottom brackets, secure the counterbalance cable using clevis pin, washer and cotter key shown in Fig. C

Locate the left and right hand bottom brackets, secure the counterbalance cable over the large milford pin shown in Fig. D

Secure bottom bracket to section using 1/4" drilling and tapping screws shown in Fig. E (for doors over 18'2" wide use doublewide bottom brackets as shown in Fig. H)

(For doors using Broken Cable Safety Device Refer to Fig. B and page 12 Fig. R.)

Align the appropriate end hinge to the pre-punched holes in the endstile and secure using (2) 1/4" x 5/8" self drilling and tapping screws per hinge leaf. Products 14'2" wide and less require (1) end hinge (Fig. G) and doors over 14'2" wide require double end hinges. (Fig. F)

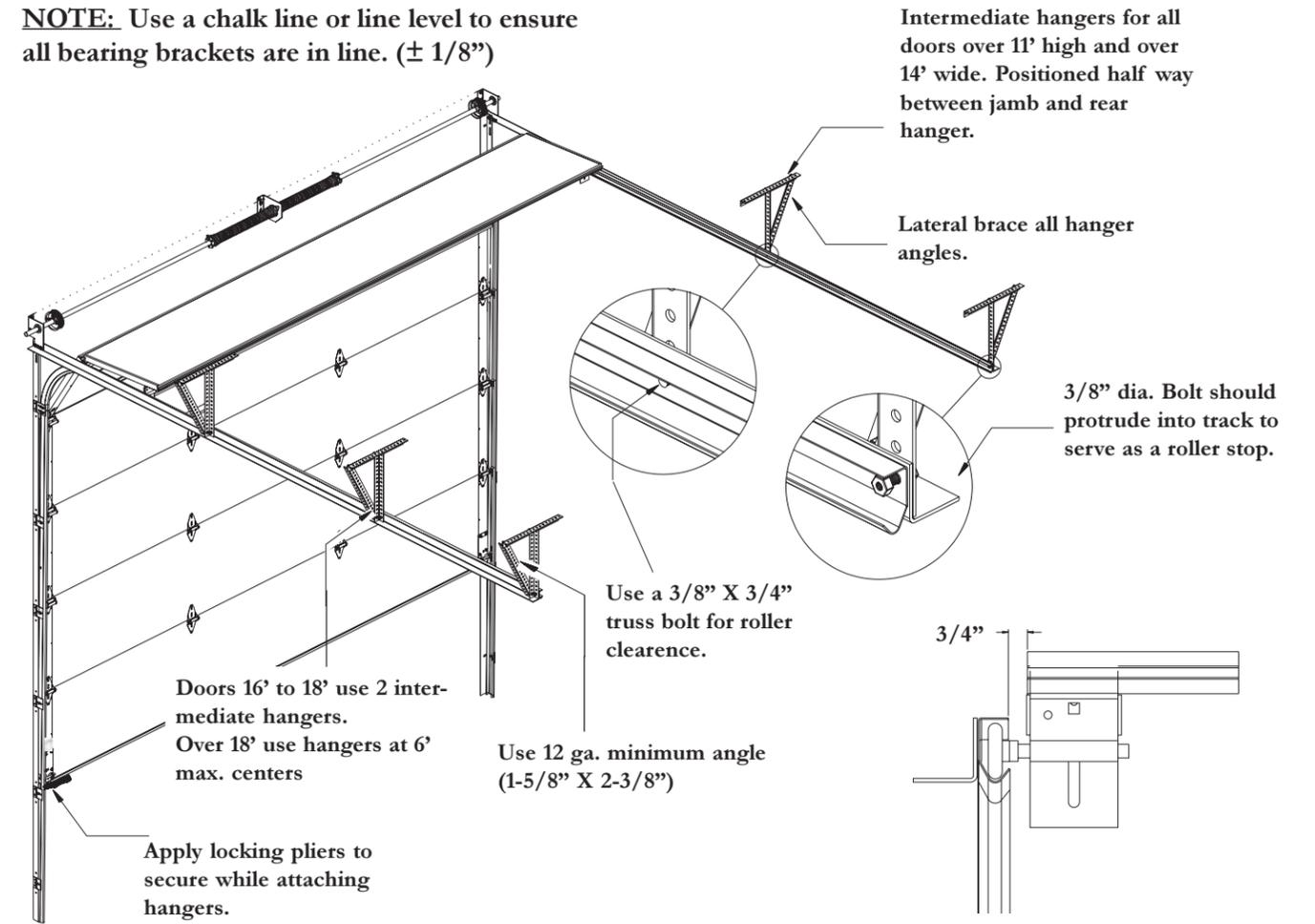
The end hinge sequence is dependent on track size (2" or 3").

2" track applications begin with a number 1 hinge attached to the top corners of the bottom section.

3" track applications begin with a number 3 hinge attached to the top corners of the bottom section.

(Refer to the illustrations matching your track size)

NOTE: Use a chalk line or line level to ensure all bearing brackets are in line. ($\pm 1/8"$)



Inside Side Lock Installation (See Fig. T Page 15)

Install lock on second section of door. Secure the lock to the section with (4) 5/8" x 20 self-drilling TEK screws. The side lock should be spaced approximately 1/8" from the section edge. Ensure that lock is square with section and lock bolt aligns with lock hole in vertical track.

Step Plate Installation 5150/5155 (See Fig. U Page 15)

At the desired location (typically below the lock) make two measurements from bottom of section and mark at 1-3/16" and 3-3/8". Drill 3/16" hole thru section at each mark. From the outside enlarge both holes to 7/16" without drilling thru the inner skin of door.

Secure to 5150/5155 section with (2) 1" x #8 self-tapping screws and (2) washers..

Step Plate Installation 5200/5255 (See Fig. V Page 15)

Install outside step in pre-cut opening and bolt together with inside step plate using (2) 1/4" x 1" carriage bolts and nuts.

If your door does not have the pre-cut opening you can cut a 7-5/8" wide by 3' high opening 3" from the bottom edge of the bottom section. This will need to be in vertical alignment with your lock.

Short Lock Bar Installation (See Fig. W Page 15)

Install lock on second section of door. Make two measurements from the bottom rib and mark at 4" and 8-1/4". These marks must be 12-1/2" from section edge. Drill 1/4" hole thru section at each mark. From the outside enlarge the bottom hole to 7/8" without drilling thru the inner skin of door. Enlarge this hole in inner skin to 7/16". Enlarge top hole to 1-1/4" all the way thru door section. Align inside lock plate with two holes in section and drill (2) 3/8" holes thru door section above and below 7/16" hole, using lock plate as template. Install outside handle to section with (2) #10 pan head screws and proper spacer. From inside secure the rim cylinder to the section with (2) #12 pan head screws, broken to correct length. Secure the night latch to the lock plate with (4) 3/4" x #8 screws. Attach spring to section with (1) 1/2" x #12 screw. Secure the inside "T" handle over square shank of outside handle with push nut. (See note)

NOTE: Use a short piece of 7/16" to 1/2" ID steel pipe to tap push nut onto square shank.

Exhaust Port Installation (See Fig. X Page 12)

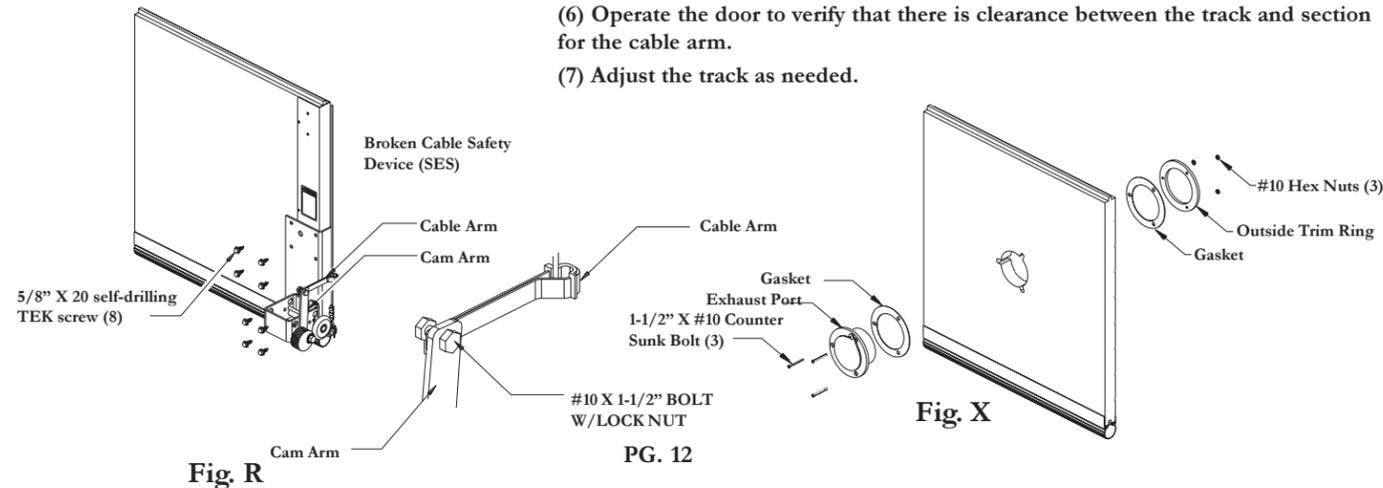
Install the exhaust port using (3) #10 x 1-1/2" counter sunk bolts and nuts. Exhaust port goes on the inside of bottom section.

SPRING TURN CHART

DOOR HEIGHT	400-8	400-12	5250-18	800-32	DOOR HEIGHT	400-8	400-12	5250-18	800-32
6'6"	7 1/2	7 1/2			13'6"			10 1/2	7
7'0"	7 7/8	7 7/8			14'0"			10 7/8	7 3/8
7'6"	8 1/2	8 1/2			14'6"			11 1/4	7 1/2
8'0"	8 7/8	8 7/8	6 3/4		15'0"			11 1/2	7 5/8
8'6"		9 1/4	7 1/8		15'6"			11 7/8	8
9'0"		9 1/2	7 3/8		16'0"			12 1/4	8 1/8
9'6"		10 1/8	7 3/4		16'6"			12 1/2	8 1/4
10'0"		10 1/2	8 1/8	5 3/8	17'0"			12 7/8	8 5/8
10'6"		11	8 3/8	5 5/8	17'6"			13 1/4	8 7/8
11'0"		11 1/2	8 7/8	5 7/8	18'0"			13 1/2	9
11'6"		12	9 1/8	6	18'6"				9 1/4
12'0"		12 1/2	9 1/2	6 1/4	19'0"				9 1/2
12'6"			9 7/8	6 1/2	19'6"				9 3/4
13'0"			10 1/4	6 3/4	20'0"				9 7/8

Broken Cable Safety Device Installation

- Attach the broken cable safety device, with cable attached, to the section using (8) 1/4"-20 X 5/8" self-drilling TEK screws (as seen in Fig. R.).
- Place the bottom section in the opening.
- Install the verticals over the rollers.
- Follow the rest of the door installation per the instruction manual.
- After the door installation is complete, rotate the cam arm up, and connect the cable arm to the cam arm with the clevis and cotter pins.
- Operate the door to verify that there is clearance between the track and section for the cable arm.
- Adjust the track as needed.



STEP 4. MODEL 5150 & 5200 U-bars & struts to be secured to the section using (2) 1/4 - 20 x 7/8" TEK screws at each end. Additional 1/4 - 20 x 7/8" TEK screws will need to be used at each hinge location.

U-bars and struts are to be mounted at the top of section under hinges and across top brackets, as seen in Fig. K. Refer to STRUTTING SCHEDULE for strut placement.

NOTE: Strut clips used at top bracket. If strutting is required for a raised panel, glazed section, place U-bar over hinge leaf and attach with 1/4" self-drilling/tapping screws and strut clips.

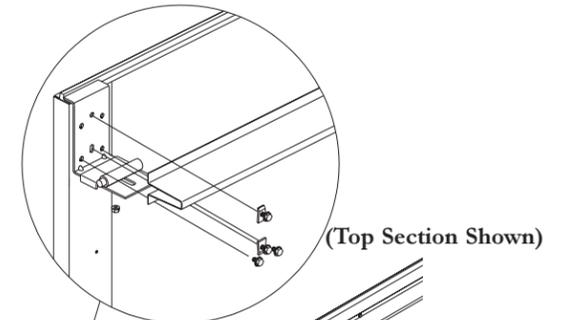
STEP 4. MODEL 5155 & 5255 U-bars are to be secured to the sections using 1/4 - 20 x 7/8" TEK screws and strut clips. Mount U-bars at top of section, across hinge leaves and top brackets.

5150 & 5155 Strutting Schedule Standard Section Reinforcement	
Non-Brown Doors	
Door Widths	Strutting
8' 0" - 10' 2"	None
10' 3" - 14' 2"	(1) 2" U-Bar
14' 3" - 16' 2"	(1) 3" U-Bar
16' 3" - 18' 2"	Every Other Section
18' 3" - 20' 2"	(1) 3" U-Bar (20 Ga.)
20' 3" - 26' 2"	Every Section Plus 1
Brown Doors	
Door Widths	Strutting
8' 0" - 10' 2"	None
10' 3" - 12' 2"	(1) 2" U-Bar
12' 3" - 16' 2"	(1) 3" U-Bar
16' 3" - 18' 2"	Every Section Plus 1
18' 3" - 20' 2"	(1) 3" U-Bar (20 Ga.)
20' 3" - 26' 2"	Every Section Plus 1

5200 & 5255 Strutting Schedule Standard Section Reinforcement	
Non-Brown Doors	
Door Widths	Strutting
8' 0" - 12' 2"	None
12' 3" - 14' 2"	(1) 2" U-Bar
14' 3" - 16' 2"	(1) 2" U-Bar
16' 3" - 18' 2"	Every Other Section
18' 3" - 20' 2"	(1) 3" U-Bar
20' 3" - 26' 2"	Every Section Plus 1
Brown Doors	
Door Widths	Strutting
8' 0" - 10' 2"	None
10' 3" - 12' 2"	(1) 2" U-Bar
12' 3" - 16' 2"	(1) 2" U-Bar
16' 3" - 18' 2"	Every Other Section Plus 1
18' 3" - 20' 2"	(1) 3" U-Bar
20' 3" - 26' 2"	Every Section Plus 1

Top bracket installation illustration.

Secure each bracket using (4) 1/4" - 20 x 7/8" self-drilling/tapping screws and (2) strut clips. Doors over 14'2" wide require double top brackets.



Place (2) 1/4 - 20 x 7/8" self-drilling/tapping screws at each hinge location.

Strut clips are required, on raised panel, glazed sections

3" U-Bar

Fasten using (2) 1/4 - 20 x 7/8" self-drilling/tapping screws at each hinge location.

Fasten using (2) 1/4 - 20 x 7/8" self-drilling/tapping screws at each hinge location.

Fasten using (4) 1/4-20 x 7/8" self-drilling/tapping screws.

Fasten using (5) 1/4 - 20 x 7/8" self-drilling/tapping screws and (1) "L" Bracket at each hinge location.

Fasten using (2) 1/4-20 x 7/8" self-drilling/tapping screws and (1) "L" Bracket at each hinge location. Install "L" Bracket over lower hinge leaf.

Attach Girt at end of section using (4) 1/4-20 x 7/8" self-drilling/tapping screws.

5150/5200 Girt Attachment

6" Girt

5155/5255 Girt Attachment

(1) 1/4-20 x 7/8" self-drilling/tapping screws.

6" Girt

Fig. K
(Top (2) Section Shown)

STEP 5. Center and level (or support to a known grade level) the bottom section in the opening, as seen in Fig. K. Temporarily attach the vertical tracks to the jambs. Allow 1/2" clearance between the section and the track as illustrated in the sideroom illustrations (page 3).

It is important that the top of each track is at the same level. (shim if necessary)

Products being installed to precast or block must use a 3/8 x 3" long sleeve anchor to attach the verticals to the building. Use the slots in the wall angle as a drill template, drill a 3/8" hole (3-1/2" deep) and secure to anchor.

STEP 6. Secure the end hinges, (one side only) center hinges, and strutting (if applicable) as previously illustrated. Locate the Lock Section (usually the second section) and insert a roller into the end hinge. Stack this section into the opening by hooking the roller in the vertical track and lowering it onto the bottom section. Insert a roller into the appropriate end hinge and insert roller into vertical track on the opposite end. Secure end hinge to the section using the self-drilling and tapping screws. Align the section edges, flip up the upper hinge leafs and secure to the lock section using the self-drilling and tapping screws. Continue to hardware and stack the remaining sections in the proper sequence. Attach the top brackets to the upper corners, of the top section, using self drilling and tapping screws as shown in Fig. J.

NOTE: Top section maybe installed now or may wait until the last step (installer preference)

STEP 7. Adjust the vertical track from 1/2" spacing at the bottom section to 3/4" at the top section. Refer to page 3. Permanently secure each vertical to the jambs using the following fasteners:

Steel Jambs: 5/16" x 1" self drilling and tapping screw.

Wood Jambs: 5/16" x 1-5/8" lag screw.

Pre-cast or Block: 3/8" x 3" sleeve anchor.

The left hand vertical track assembly indicates the standard fastener spacing (Fig. K page 7).

STEP 8: Use chain or cable to temporarily suspend the rear of the horizontal tracks. Secure the horizontal reinforcing angle to the wall angle using (1) 3/8" x 3/4" truss bolt and nut, then secure the horizontal track to the splice plate or flagangle using (2) track bolts and hex flange nuts.

STEP 9: Torsion spring assemblies can be of several configurations depending on door size and weight. Left or right hand spring(s) must be identified by the color of the winding cone. (Refer to Fig. L and pages 8-10)

Assemble torsion spring system components to applicable configuration shown on pages 8-10. Ensure that spring warning tags are securely wired to all stationary spring cones.

WARNING: Install support brackets to solid structural members only. Do not install over dry wall or paneling.

NOTE: Use a chalk line or line level to ensure all support brackets are in line.

STEP 10: Position shaft(s) with spring system components to proper elevation, level and secure each end bracket to the horizontal reinforcing angle using (2) 3/8" x 3/4" truss bolts and nuts. Anchor the wall mounting flange of the end bracket to the jamb using (2) 5/16" x 1-5/8" lags (wood), (2) 5/16" x 1" self-drilling and tapping screws (steel), or (2) 3/8" x 3" sleeve anchors (precast).

NOTE: Spring pads must be securely anchored before proceeding. The pads must be flush with the jambs.

Attach the spring support brackets to the pad(s) using the following fasteners:

Pre-Cast: Secure each spring support bracket using (2) 1/2" x 3" sleeve anchors. This installation will require the 1/2" anchors to be secured to the building, then securing the brackets to the anchors as detailed in Fig. N Page 11.

Steel: Secure each spring support bracket using (3) 5/16" x 1" self-drilling and tapping screws as detailed in Fig. N Page 11.

Block Construction: Attach perforated angle 18" long to support bracket(s) using (2) 3/8" x 1-1/4" bolts and nuts. Chamfer angle to clear top section high arc. Secure support brackets and perforated angle to block using (4) 3/8" x 2-1/2" sleeve anchors as detailed in Fig. N Page 11.

Secure the stationary cone(s) (dead end) to the spring support bracket(s) using 3/8" bolts and nuts. Keep spring warning tags clearly visible.

NOTE: The coupler support brackets only require (2) fasteners. The spring support brackets require (2) fasteners in the lower slot and hole, then (1) fastener in the top slot.

WARNING: Failure to use proper number of fasteners can result in sudden spring tension release, causing severe injury or death.

NOTE: Each 3-3/4", 6" and Duplex spring is secured to a separate center support bracket. **DO NOT** attach two springs of this size to one support bracket.

STEP 11: Feed the cable attached to the left hand bottom bracket up the vertical track, behind the roller shafts and secure to the left hand drum. Push the drum up against the end bearing bracket and secure to the shaft by tightening the set screws (solid shafts use 1/4" key(s) and set screws to secure drums).

Rotate drum and shaft until cable is taut, then apply vice grips to shaft, with end resting against header. This will hold cable taut and on drum. There must be at least 1/2 wrap of cable on the drum. If not, contact Wayne-Dalton for proper length cables.

Attach other cable to right hand drum. Push drum against end bearing bracket and rotate drum until cable is taut. Secure drum to shaft by tightening the set screws. Cable tension must be equal on both drums on single shaft applications. On split shaft applications, apply vice grips to both shafts and secure bolts in coupling after springs are fully wound.

If top section is not installed, do so now, before winding springs. Make sure hardware is securely attached to all sections.

Carefully following spring winding instructions detailed in Fig. M on Page 10, wind spring(s), using the appropriate 1/2", 5/8" or 3/4" diameter winding rods of sufficient length.

STEP 12: After spring(s) are wound, cautiously remove locking pliers from vertical tracks, while pushing downward on door to prevent it from raising unexpectedly, in case spring(s) were over wound. Carefully and slowly raise door, until one and a half sections are in the horizontal tracks. Lock door in this position using locking pliers attached to vertical tracks above bottom roller on one side and below bottom roller on other side of door.

Space the horizontal tracks 3/4" from section edge and level. Using 1-5/8" x 2-3/8" x 12 Ga. angle, fabricate back hangers and attach them to building as shown in Fig. S on Page 13 using 3/8" bolts and nuts. Laterally brace all drop angles once proper

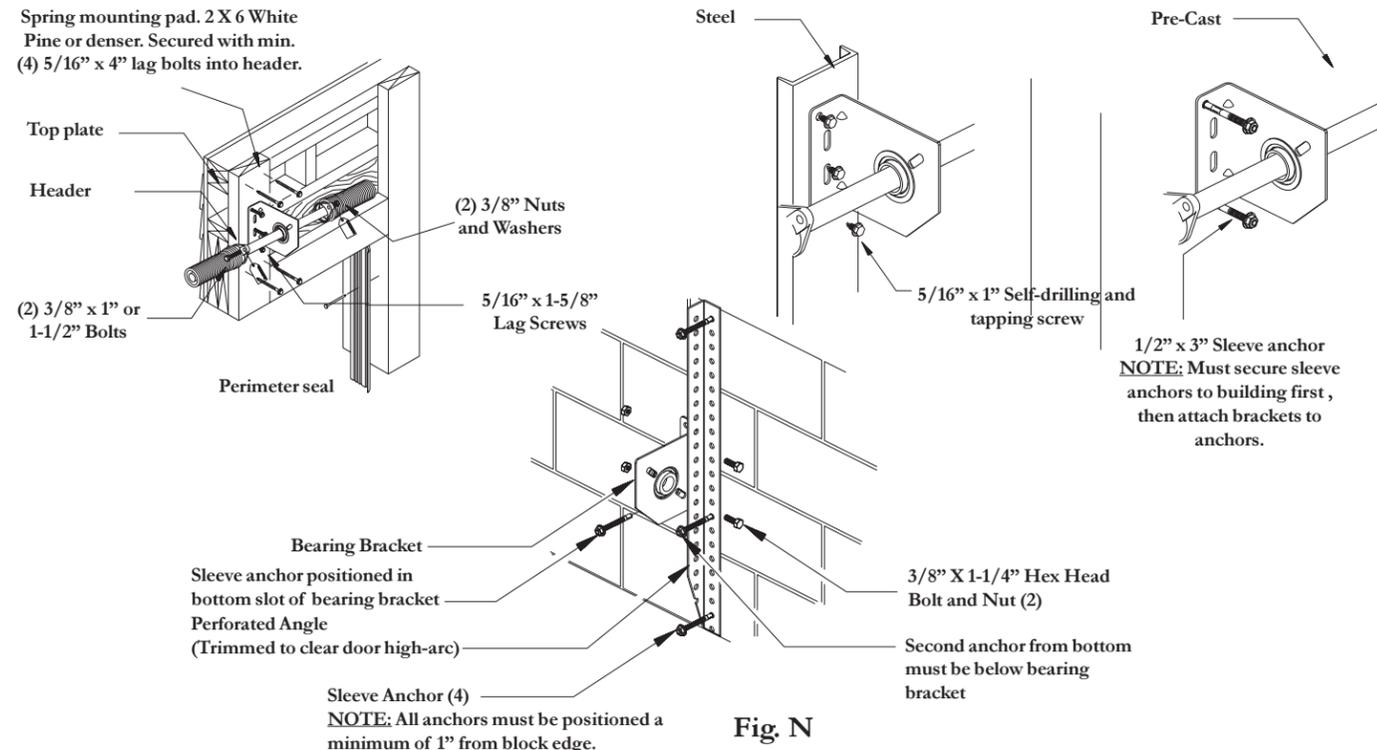
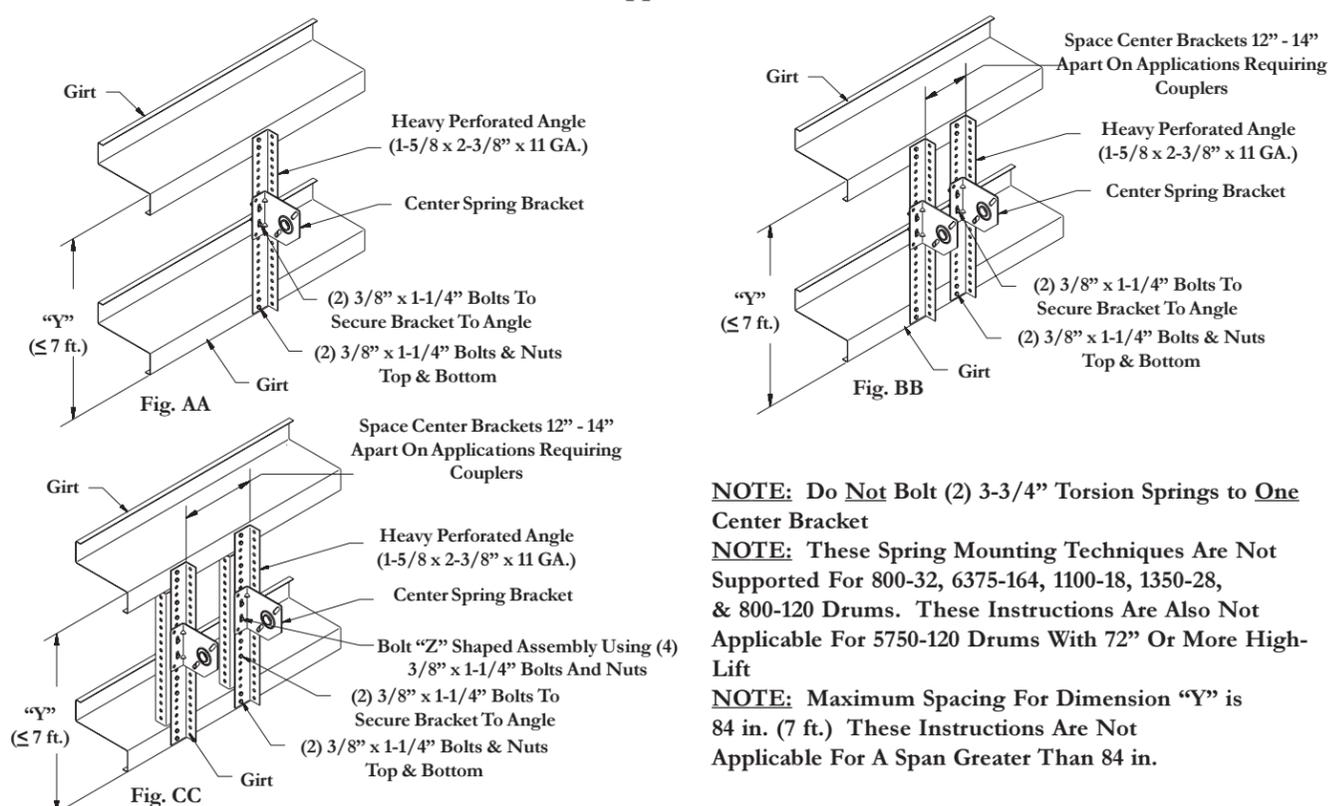


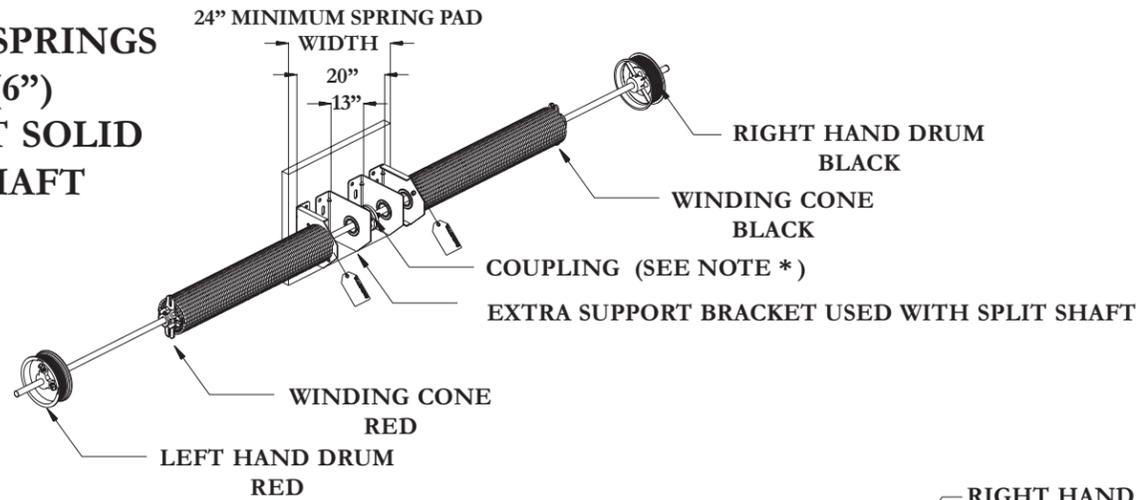
Fig. N
Alternate Steel Spring Pad Applications
 Contact Manufacturer For Applications Not Covered Below



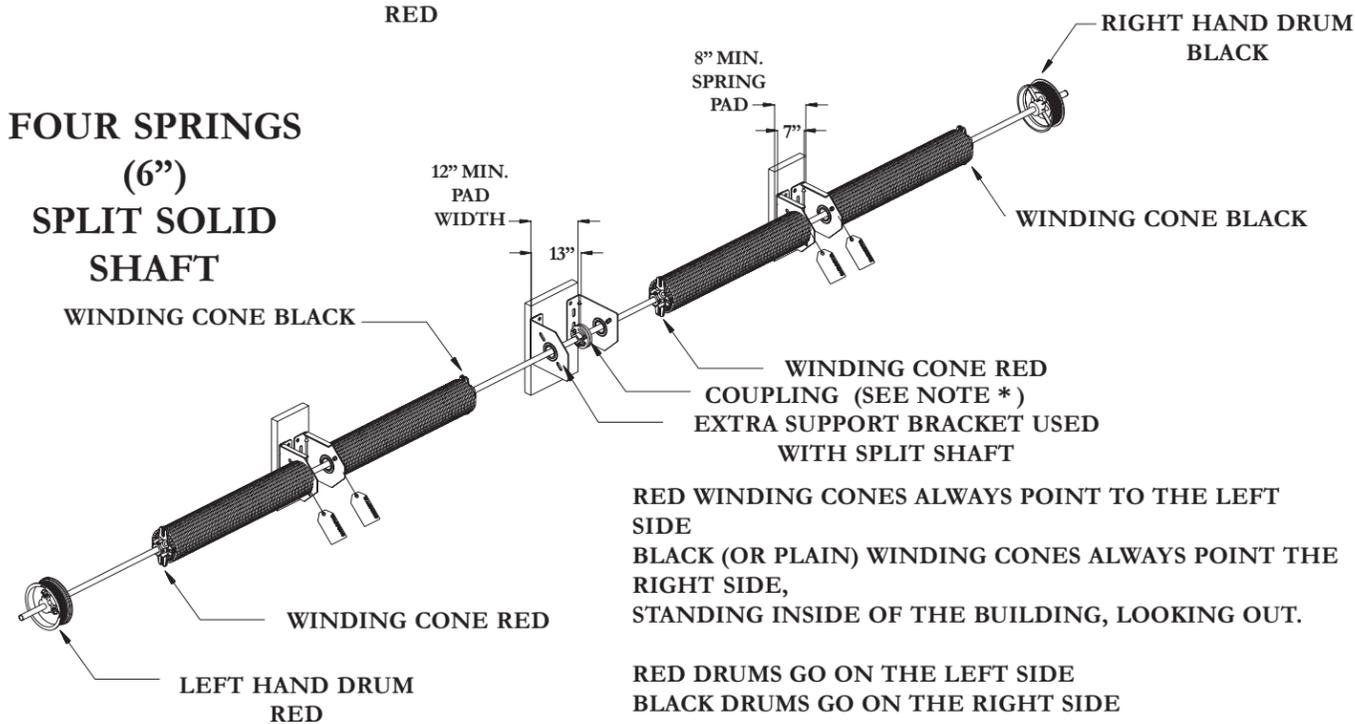
Maximum Door Size 9' x 9' (Maximum Door Weight 210 lb.) Fig AA: Cut perforated angle (1-5/8 x 2-3/8" x 11 GA.) to Dim "Y". Thru-bolt top and bottom of angle to each girt using (4) 3/8" x 1-1/4" bolts and nuts. Thru-bolt center bracket to perforated angle using (2) 3/8 x 1-1/4" bolts and nuts (See Fig. N-2).
Maximum Door Size 14' x 12' (Maximum Door Weight 400 lb.) Fig BB: Cut (2) perforated angle (1-5/8 x 2-3/8" x 11 GA.) to Dim "Y". Thru-bolt top and bottom of each angle to each girt using (4) 3/8" x 1-1/4" bolts and nuts. Thru-bolt each center bracket to perforated angle using (2) 3/8 x 1-1/4" bolts and nuts (See Fig. N-3).
Maximum Door Size 14'-2" x 12'-1" (Maximum Door Weight 800 lb.) Fig CC: Cut (2) pieces of perforated angle (1-5/8 x 2-3/8" x 11 GA.) to Dim "Y" and (2) more pieces at Dim "Y" minus 3. Bolt the angles together into a "Z" shape using (4) 3/8" x 1-1/4" bolts and nuts. Thru-bolt top and bottom of each "Z" shaped angle to each girt using (4) 3/8" x 1-1/4" bolts and nuts. Thru-bolt each center bracket to perforated angle assembly using (2) 3/8 x 1-1/4" bolts and nuts (See Fig. N-4).

NOTE: Do NOT Bolt (2) 3-3/4" Torsion Springs To ONE Center Bracket

**TWO SPRINGS
(6")
SPLIT SOLID
SHAFT**



**FOUR SPRINGS
(6")
SPLIT SOLID
SHAFT**



***NOTE:** COUPLING USED ON SOLID SHAFT ONLY. TIGHTEN CONNECTING BOLTS AFTER WINDING SPRING.

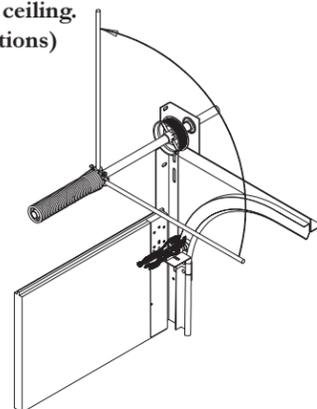
WARNING: Winding bars must fit snugly into holes in spring winding cones. Attempting to wind springs with loosely fitting rods, screwdrivers or other improper tools can result in severe injury or death.

WARNING: Apply locking pliers to the tracks ABOVE the third roller, or lock door if applicable, before winding the spring(s) to prevent door from rising unexpectedly, possibly resulting in severe injury or death.

Wind spring 1/4 turn at a time to the number of complete revolutions recommended on the spring tag. Wind up as shown Fig. M. When the proper number of turns is reached, tighten the set screws on the winding cone. Release the vice grips from the spring shaft(s). Adjust the coupler on split solid shafts until drums are in time (check door level) and tighten coupler.

Wind springs toward ceiling.
(Standard lift applications)

Fig. M



spacing is achieved.

Doors over 11 ft. high and over 14ft. wide must have (1) intermediate drop hanger as shown in Fig. S on Page 13.

Doors between 16' and 18' high must have (2) intermediate drop hangers as shown in Fig. S on Page 13.

Doors over 18' high must have intermediate drop hangers placed on 6' centers.

STEP 13: Release the locking pliers from vertical track and check the door's counterbalance.

Adjust springs if necessary.

STEP 14: Vertical tracks can now receive final adjustments. Open and close the door a few times, checking and adjusting side clearance (if necessary). Tighten jamb fasteners (lags, teks, or anchors) to permanently secure verticals. Adjust door in or out from jamb by loosening the track to obtain proper seal. Permanently tighten all track bolts. Adjust top bracket roller carrier so that the top section is sealed against header.

STEP 15: Lubricate springs, rollers, and bearing with oil.

DO NOT GREASE THE INSIDE OF THE TRACKS.

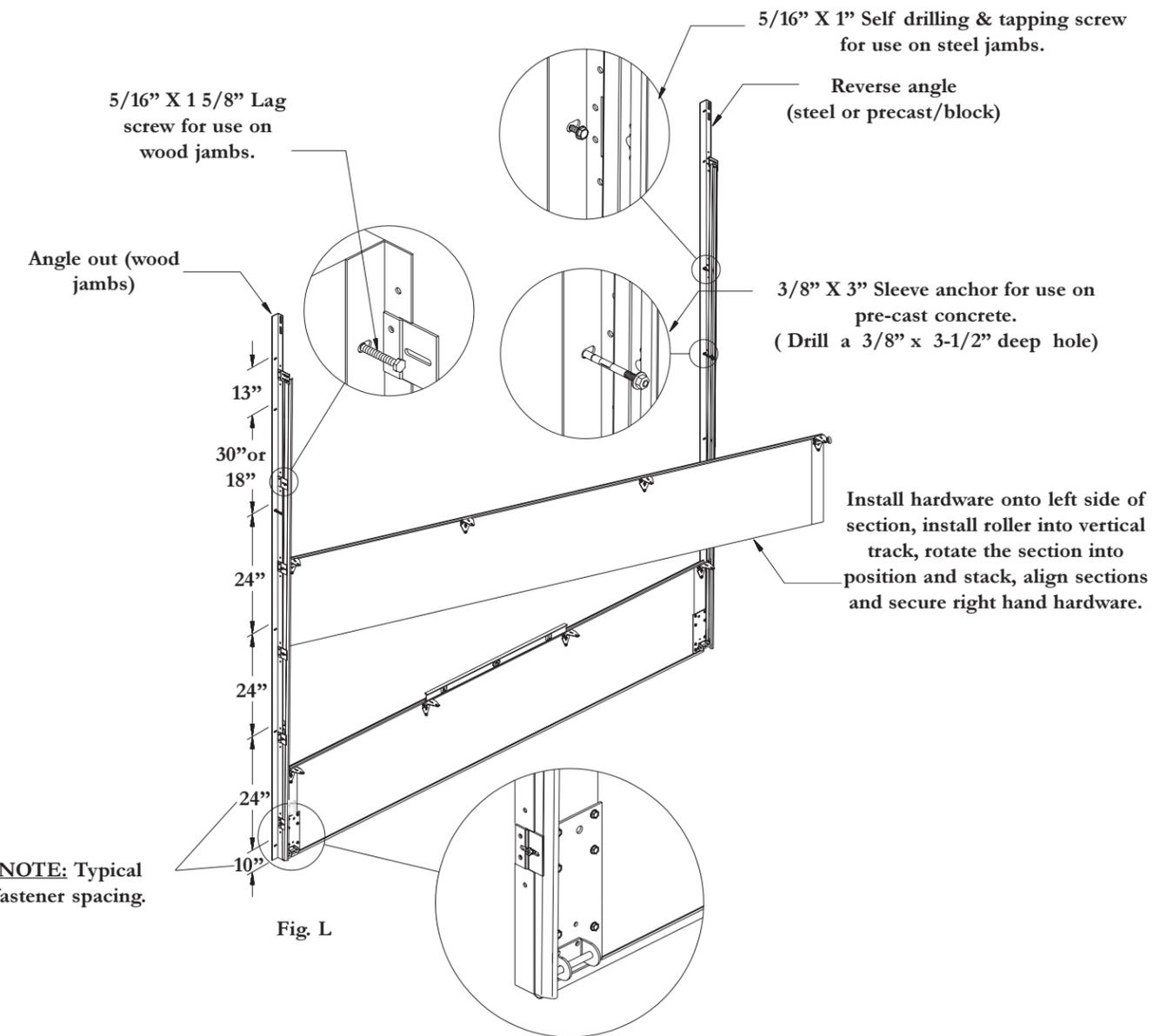
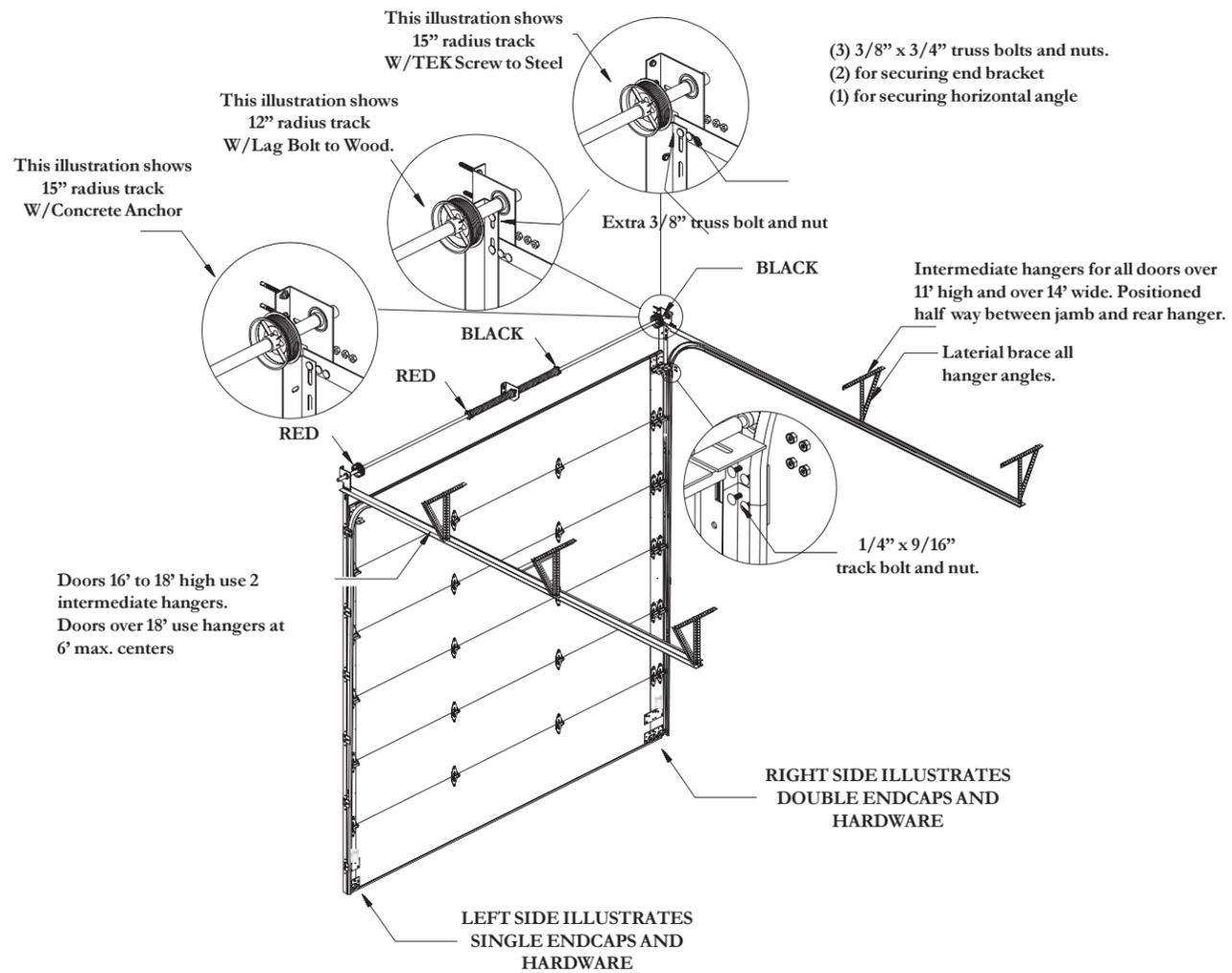
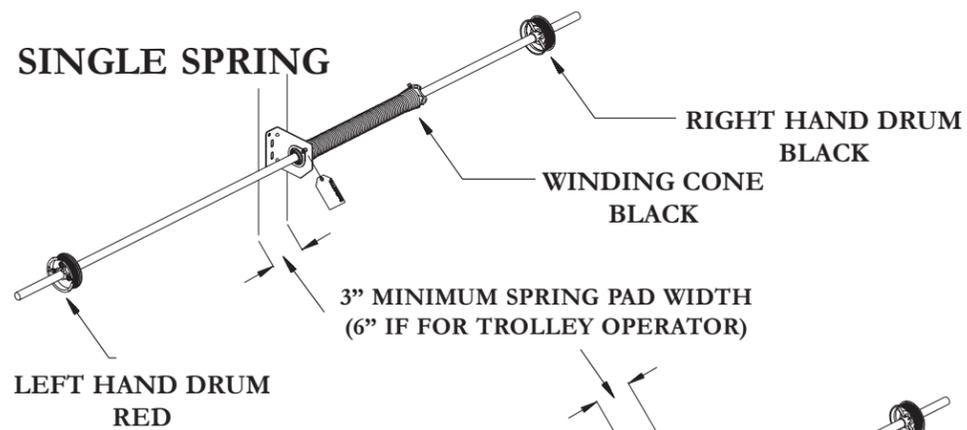


Fig. L

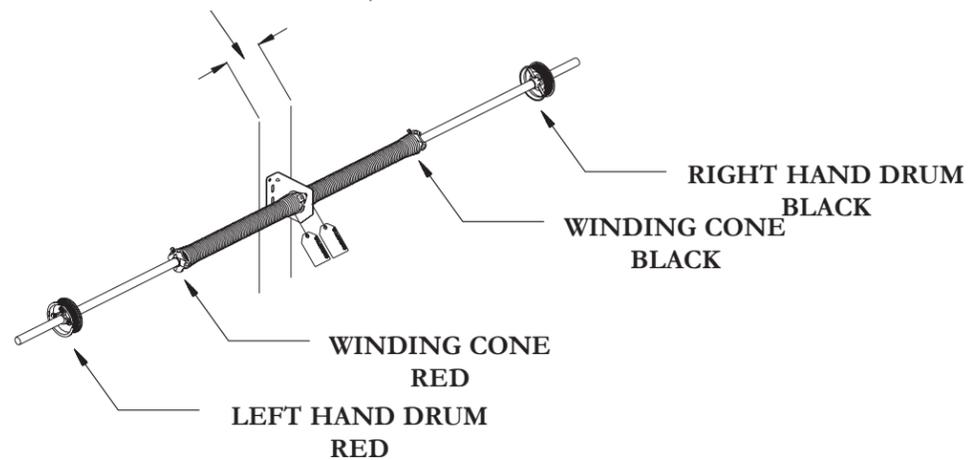


- (3) 3/8" x 3/4" truss bolts and nuts.
- (2) for securing end bracket
- (1) for securing horizontal angle

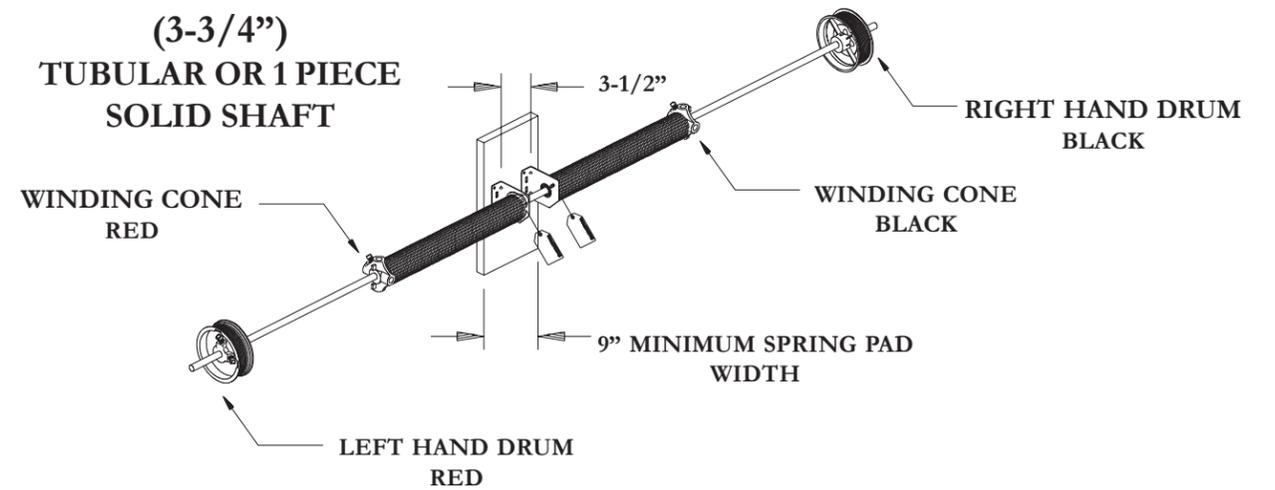
SINGLE SPRING



TWO SPRINGS (2" ONLY)

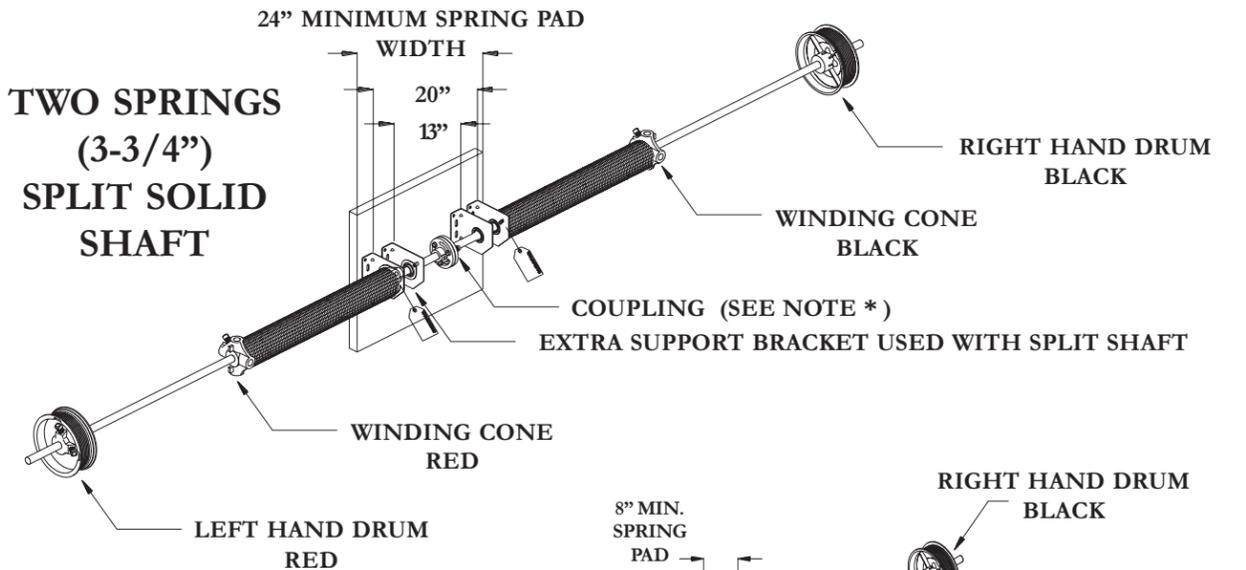


TWO SPRINGS (3-3/4") TUBULAR OR 1 PIECE SOLID SHAFT

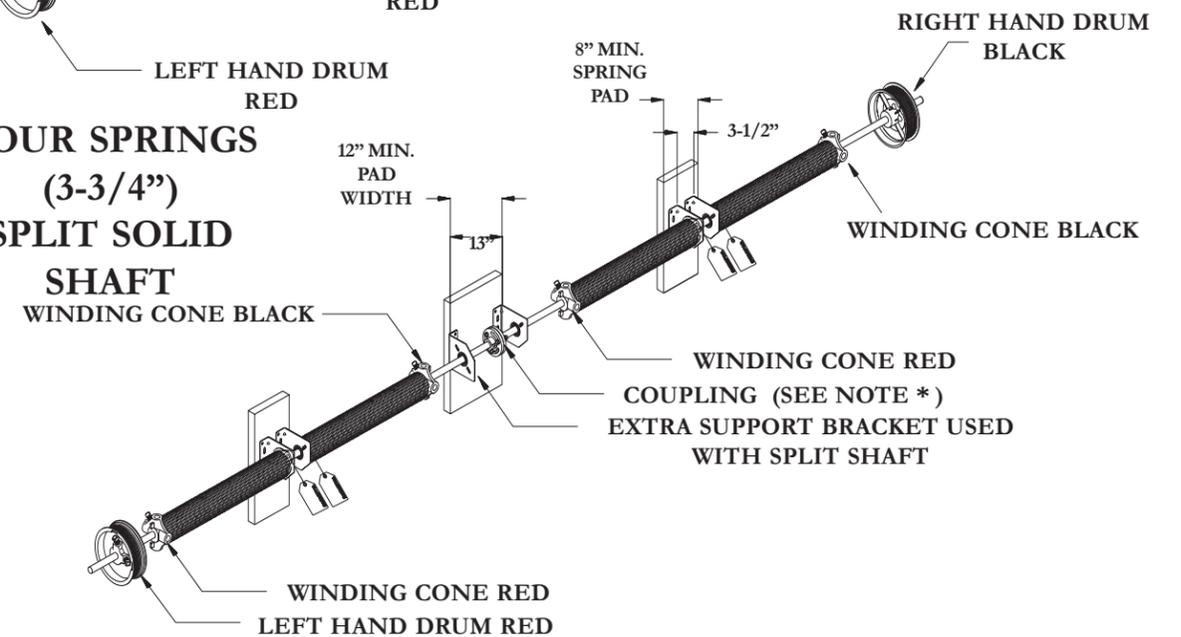


NOTE: 6" SPRINGS UTILIZE SOLID SHAFTS

TWO SPRINGS (3-3/4") SPLIT SOLID SHAFT



FOUR SPRINGS (3-3/4") SPLIT SOLID SHAFT



*** NOTE: COUPLING USED ON SOLID SHAFT ONLY. TIGHTEN CONNECTING BOLTS AFTER WINDING SPRINGS.**