



“GENERAL” INSTALLATION INSTRUCTIONS

FOR COMMERCIAL GARAGE DOORS

Read The Enclosed Instructions Carefully BEFORE Attempting Installation...

If In Question About ANY Of The Procedures, Contact a Qualified Door Agency.

“Specific Product Sheets” (Steel, Thermospan, etc.) MUST accompany this “General Installation Manual”.

If there is none, contact Wayne-Dalton for a copy BEFORE attempting installation.

IMPORTANT SAFETY NOTICE

1. Never place hands/fingers between section joints when operating door or serious injury could result.
2. Operate door only when properly adjusted and free of obstructions.
3. Door is constantly under extreme spring tension. Repairs and adjustments, especially to cables and spring assembly, can be hazardous and should be performed by quality door service people only.
4. Do not permit children to play with the garage door or electric controls.
5. If door is now or later becomes electrically operated, pull down rope MUST be removed.
6. Avoid standing in open doorway or walking thru doorway while electrically operated door is moving.
7. Should the door become hard to operate or completely inoperative, it is recommended that a qualified door agency be contacted.

The foregoing safety directions have been approved and recommended by the National Association of Garage Door Manufacturers (NAGDM).

This Manual **MUST** be Attached To Wall In Close Proximity To Door.

CONTENTS

- Door Preparation
- Leveling Door
- Installing Door Sections
- Installing Track
- Torsion Spring
- Vertical Lift
- High Lift
- Double Track Low-Headroom
- Chain Hoist
- Maintenance
- Limited Warranty

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

IMPORTANT SAFETY NOTICE

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2. Door is constantly under extreme spring tension. Repairs and adjustments, especially to cables and spring assembly, can be hazardous and should be performed by qualified door service people only.
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6. Should door become hard to operate or completely inoperative, it is recommended that a qualified door agency be contacted. The foregoing safety notice has been approved and recommended by the National Association of Garage Door Manufacturers (NAGDM).

Step 1

BEFORE STARTING INSTALLATION, READ THE FOLLOWING INSTRUCTIONS

- A** Shipping tags show door size. Do you have the right door? Also, check to make sure you have received the correct number of bundles, boxes, etc.
- B** Is the door opening framed to the correct size?
- C** Check Chart No. 1, and Figure 1 below, to determine amount of headroom, sideroom, and depth into room required for this particular door. Make sure **NOW** that all of these clearances are available.

Chart No. 1

	Clear Headroom		Sideroom*		Depth Into Room	Centerline of Springs	
	2" Track	3" Track	2" Track	3" Track	2" & 3" Track	2" Track	3" Track
Regular Lift Manual	16½"	**20"	4½"	5½"	Door Height + 18"	Door Height + 13½"	Door Height + 14½"
Regular Lift Motor Operated	19"	22½"			Door Height + 66"		
High Lift Manual	Highlift + 12"		4½"	5½"	Door Height Less Lift + 30"	Door Height + Lift + 6½"	Door Height + Lift + 7½"
High Lift Motor Operated	Highlift + 12"		24" One Side		Same as Above		
Vertical Lift Manual	Double Door Height + 8"		4½"	5½"	18"	Double Door Height + 2"	
Vertical Lift Motor Operated			24" One Side		18"		
Low-Headroom Manual	6½"	11"	6"	9"	Door Height + 30"	Does Not Apply	
Low-Headroom Motor Operated	9"	13½"			Door Height + 78"		

*NOTE: 8" sideroom required, one side for doors having chain hoists.
 **NOTE: TS-200 doors with the 800-32 drum require 21½" of headroom.

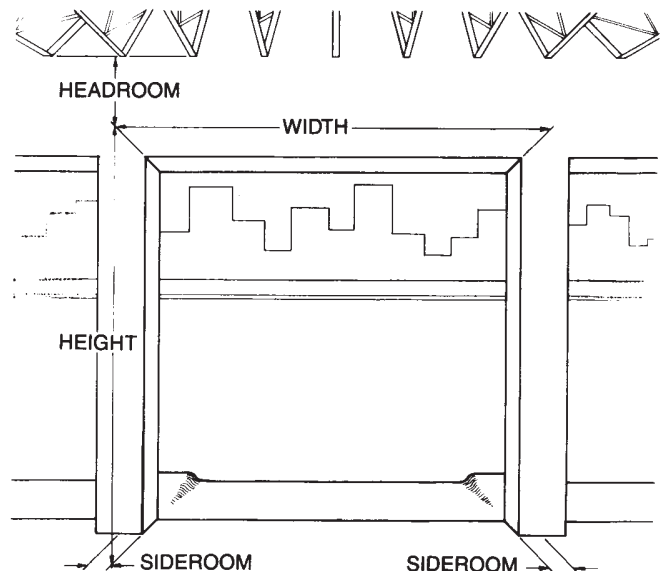


Fig. 1

- D** Suitable spring pads or other anchorage for shaft bearings must be provided. Chart No. 1 indicates the approximate height of the center of the spring shaft for the various types of doors. All spring or bearing pads must be flush with and not extend into the room any further than the jambs. Are pads now in place, or can be provided for as you progress?
- E** Jamb must be plumb and solidly attached to the building. Floor must be level, or exact grade line established before you start!

Step 2

At this point, remove wrappers from door sections and visually identify which sections are the Bottom, Lock and Top.

Step 3

See “**Specific Product Sheet**” for mounting of bottom brackets, rollers, hinges, etc.

Step 4

Set right and left vertical tracks in place temporarily using bottom section, set in place on floor, as a guide. Bottom section should be level (or supported to known grade level). Center section in opening. Allow approximately $\frac{3}{8}$ " minimum clearance between end of bottom section and edge of track. (See Figure 2a & 2b). Making sure that the tracks are relatively plumb, temporarily attach vertical tracks at a couple of points using lags (wood jambs) (steel jambs). NOTE: It will be necessary at a later time (after door is hanging freely on cables) to go back and realign racks and permanently attach the remainder of the lags or bolts. **It is critically important that the bottom of both tracks are the same level. Place a shim under one track if necessary!**

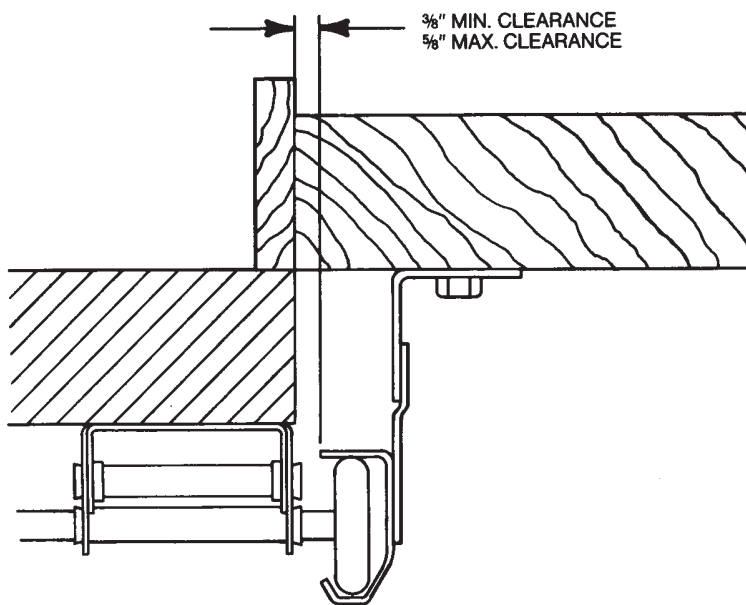


Fig. 2a

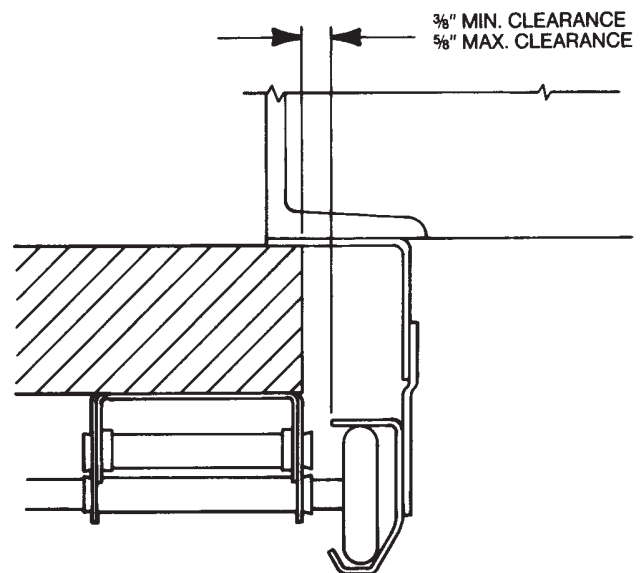


Fig. 2b

Step 5

At this point, attach hinges to remainder of sections in sequence shown in Figure 3a for 2" track and Figure 3b for 3" track. Edge hinges and vertical track on doors over 16'1", or more than 8 sections, must have $\frac{1}{8}$ " graduation. This is accomplished by doubling up hinges. See Figure 4a and 4b.

2" TRACK

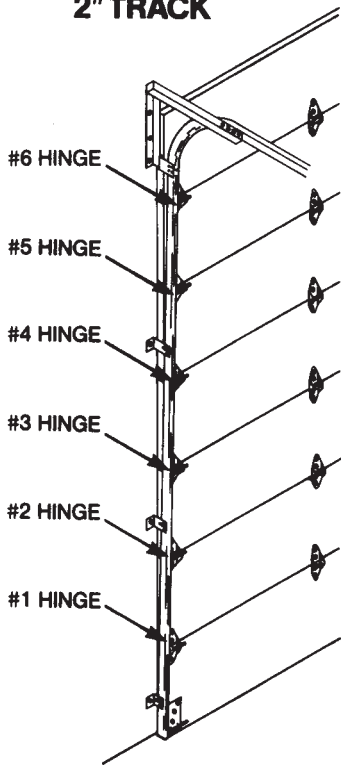


Fig. 3a

3" TRACK

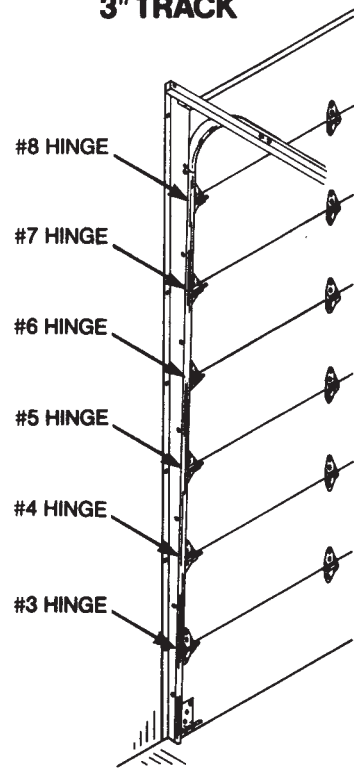


Fig. 3b

2" TRACK

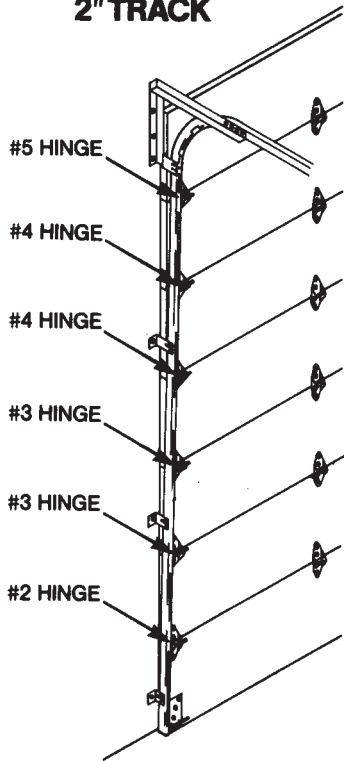


Fig. 4a

3" TRACK

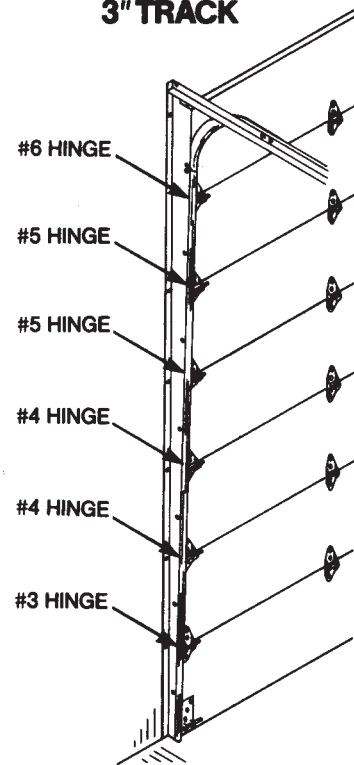


Fig. 4b

Step 6

See "Specific Product Sheet" for mounting of top brackets.

Step 7

See "Specific Product Sheet" for proper strutting and attaching.

NOTE: Some installers prefer to omit stacking the top section until the VERY LAST STEP in installation. During installation of horizontal tracks, springs, etc.; this method allows better visibility and ventilation; and also prevents top section from falling inward if inadvertently hit or blown by wind.

WHEN STACKING SECTIONS, IF FLOOR HAS NOT BEEN POURED, BE SURE YOU HAVE SOLID BLOCKING UNDER DOOR AT EXACT GRADE LEVEL OF FINISHED FLOOR.

Step 8

Horizontal (curved) tracks can be positioned, using $\frac{3}{8}$ " "truss" head bolts and nuts to attach horizontal reinforcing angles to top of vertical mounting angles; and $\frac{1}{4}$ " "pan" head track bolts and nuts joining bottom of track curves to splice slots immediately above vertical tracks. (See Figure 5.) Use cable or chains to temporarily suspend rear of horizontal tracks.

WARNING: Do not use ropes, since edges of horizontal tracks and angles are very sharp! (See Figure 6.)

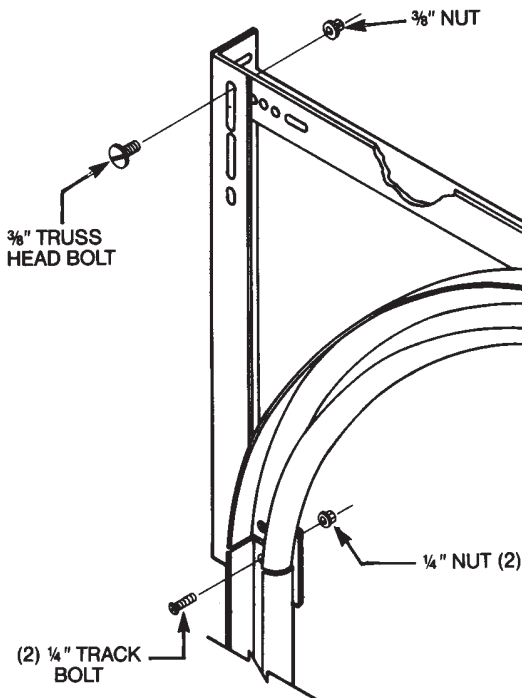


Fig. 5

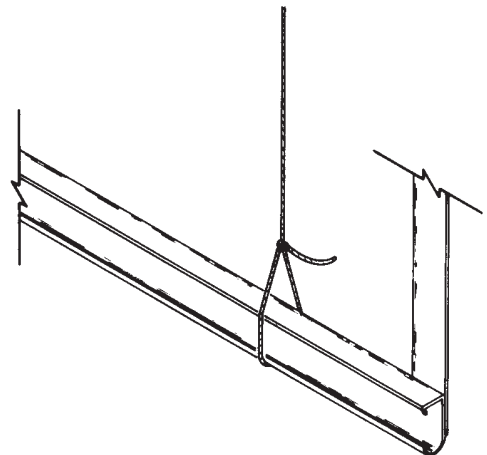


Fig. 6

WARNING
 Spring Mechanism under extreme tension. It is recommended that a qualified door agency be contacted for installation or adjustments.

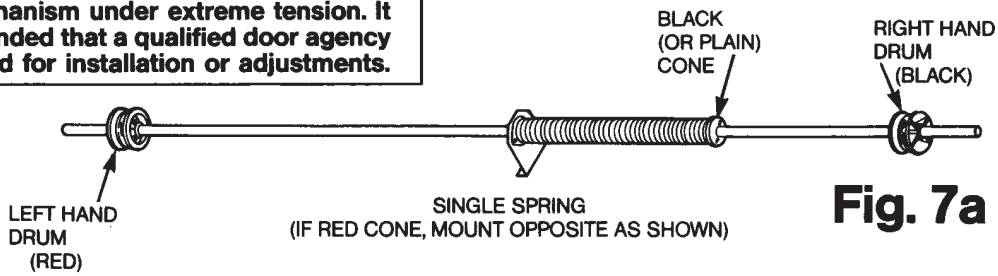


Fig. 7a

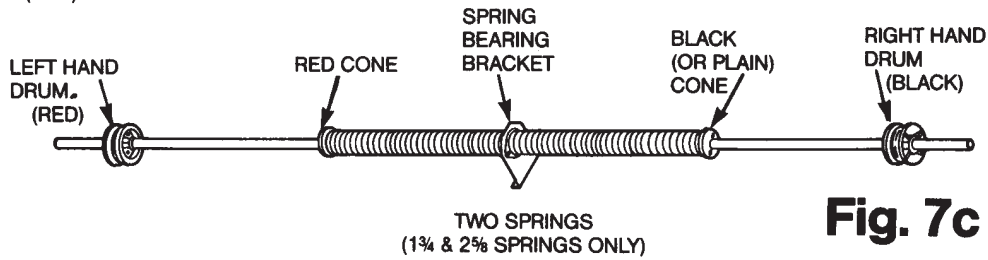


Fig. 7c

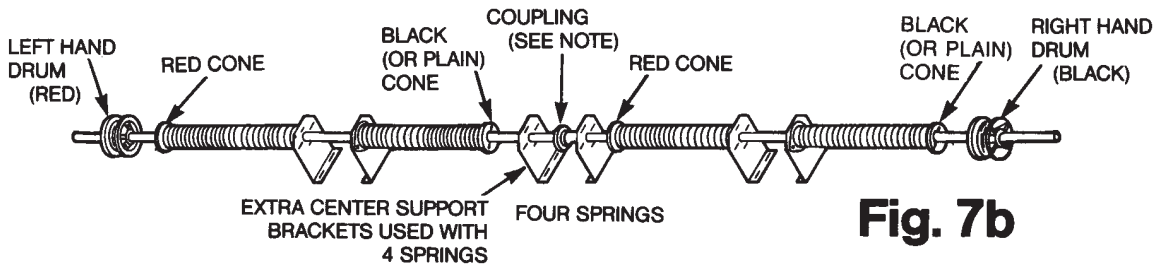


Fig. 7b

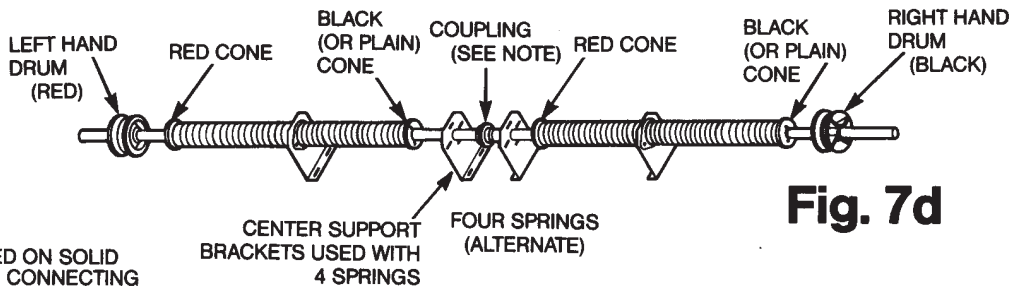


Fig. 7d

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

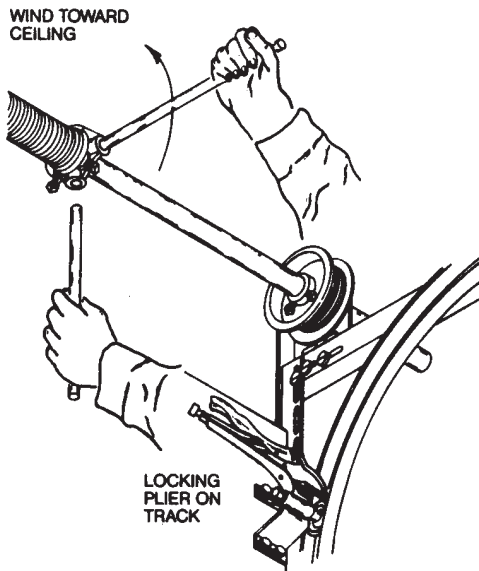


Fig. 8

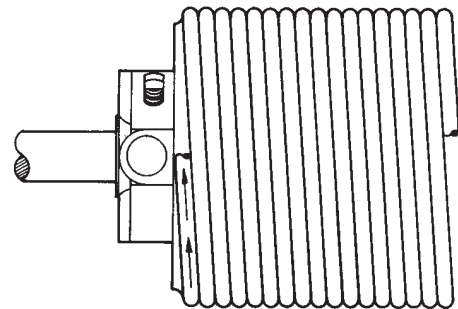


Fig. 9

NOTE: THE SET SCREWS MAY BE COLOR CODED RED OR BLACK TO DISTINGUISH LEFT HAND AND RIGHT HAND.

Step 9

TORSION SPRING ASSEMBLIES can be of several types, depending on size and weight of door. If single spring (Fig. 7A), can be righthand or lefthand, depending on color code on winding cone or set screws. CHECK CAREFULLY! Springs can be double (Fig. 7B), one RH and one LH; or, four springs (Fig. 7C and 7D.)

Where shaft length requires, spring can be one, two, or four "Duplex" type (spring inside of a spring). These are treated exactly like the above "singular" springs.

In all cases, color code is followed, and winding is done by pushing UP (See Fig. 8).

NOTE: If you want to double-check yourself and the factory, make sure springs are always wound in direction end of spring is pointing. (Fig. 9).

Step 10

Bolt spring bearing bracket on the "dead-end" cone of each torsion spring. (If the door has two springs mounted on a tube, it may be necessary to remove one spring from the shaft, slide on bearing brackets, and then replace spring.) Slide cable drums on ends of spring shaft; RH (or black) on righthand end; LH (or red) on lefthand end, see Figure 10. Now slide end bearing brackets on both ends of shaft. Lift spring shaft into position above horizontal track angles and bolt into place using $\frac{3}{8}$ " "truss" head bolts and nuts. (Use correct holes or slots so that bearing plates are same spacing from jambs as are the spring bearing brackets.) (See Figure 11).

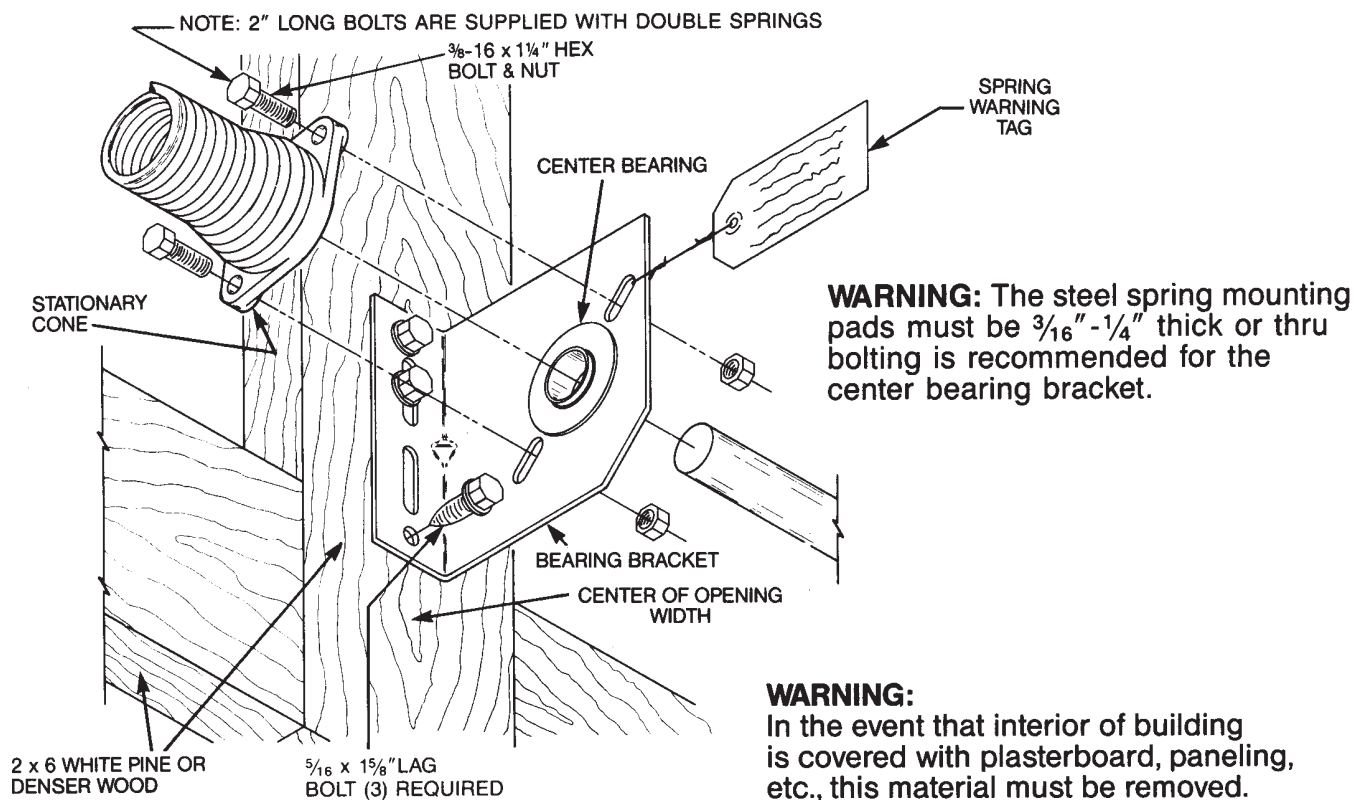


Fig. 10

DO NOT install center bearing bracket directly onto paneling, plasterboard, etc.

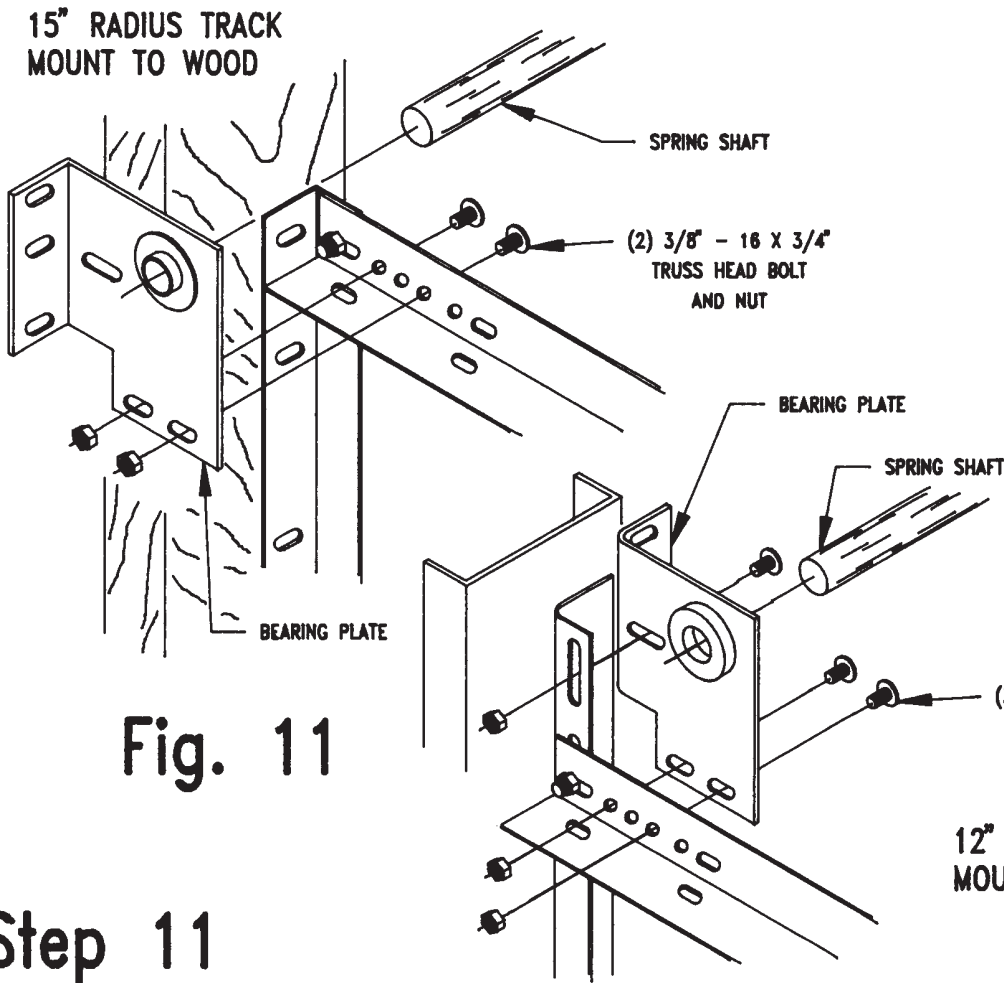


Fig. 11

DRUM	BEARING PLATE PART NUMBER
400-8	11 GA. 3 3/8" 103415-WD
400-12	8 GA. 3 3/8" 103836-WD
5290-18	8 GA. 3 3/8" 109973-WD
800-32	8 GA. 5" 114204-WD
850-11	8 GA. 5" 103088-WD
1100-18	8 GA. 6" 102434-WD
1350-28	8 GA. 7.5" 103857-WD
400-54	8 GA. 4 3/8" 102088-WD
5250-54	8 GA. 4 3/8" 102088-WD
5750-120	8 GA. 5" 103088-WD
6375-164	8 GA. 6" 102434-WD

Step 11

Spring pads must be securely anchored now before proceeding. The pads must be flush with jambs. Locate and attach spring bearing plates to pad(s) so that spring shaft is level along its entire length. When mounting springs on pad(s), keep in mind that springs grow in length up to 5" when wound. Therefore, allow a gap of at least 5" between winding cone of spring and drums (or coupling). If insufficient space is allowed, spring (or drum) may fracture in a short time.

All fasteners are supplied to jamb conditions of each door ordered. The mounting conditions of the spring bearing plates may be different from the jamb conditions of each door ordered. We do recommend the following attachments for mounting conditions as listed below:

Wood: Three (3) 5/16" X 1 5/8" lag bolt attachments per spring bearing plate that must provide a minimum 1 1/4" lag depth set into solid wood framing.

Steel: Three (3) 5/16" X 1" long Tek screws are provided to attach each spring bearing bracket to the spring pads.

CAUTION: These fasteners are only recommended if spring pads are 3/16" - 1/4" thick. In the event that pads are less than 3/16" thick, thru bolting is recommended (supplied by others).

Masonry: Minimum two (2) 5/16" thru wall bolt attachments per spring bearing plate (supplied by others).

NOTE: Reference Figure 10 for mounting of spring bearing plates.

Step 12

Feed cables (attached to bottom bracket) up through the vertical tracks and attach to drums. Tighten set screws on one drum, then rotate drum and shaft until cable is tight. Attach vise grip to shaft, with end resting against wall. This will keep cable from unwinding. Now, turn other drum until cable is taut and tighten set screws. NOTE: If door is provided with die-cast aluminum drums, use caution in tightening set screws so that you don't strip threads in drums!

Step 13

See "Specific Product Sheet" for mounting of lock.

Step 14

If you did not mount top section of door, do so now. Also, make sure you remembered to attach struts to sections, if they were required (Step 7).

WARNING: Apply locking pliers to track **ABOVE** roller before winding springs. This is done so door will not fly up track and knock person off ladder as springs are wound. (See Fig. "12").

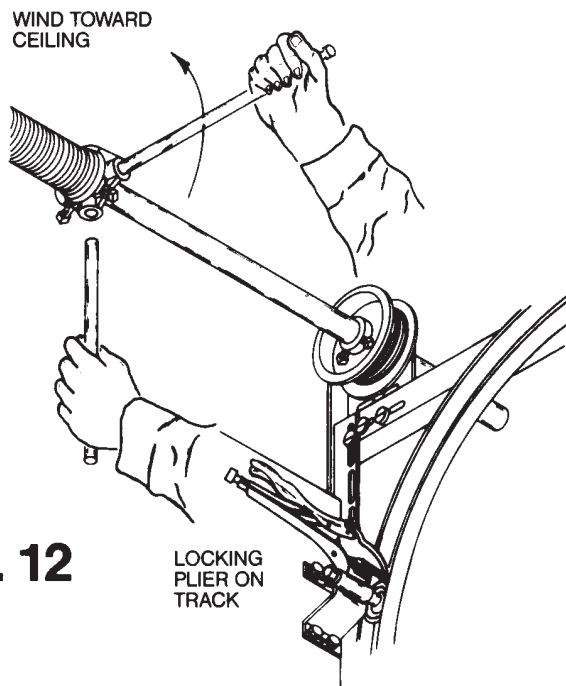


Fig. 12

400-8 Drums
7' high door 8 turns
8' high door 8 $\frac{7}{8}$ turns

400-12 Drums
7' high doors 8 turns
8' high doors 8 $\frac{7}{8}$ turns
9' high doors 9 $\frac{5}{8}$ turns
10' high doors 10 $\frac{1}{2}$ turns
11' high doors 11 $\frac{1}{2}$ turns
12' high doors 12 $\frac{1}{2}$ turns

800-32
10' high doors 5 $\frac{1}{2}$ turns
12' high doors 6 $\frac{3}{8}$ turns
14' high doors 7 $\frac{1}{4}$ turns
16' high doors 8 $\frac{1}{8}$ turns
18' high doors 9 turns
20' high doors 10 turns

5250-18
8' high doors 6 $\frac{3}{4}$ turns
9' high doors 7 $\frac{1}{2}$ turns
10' high doors 8 $\frac{1}{8}$ turns
11' high doors 8 $\frac{7}{8}$ turns
12' high doors 9 $\frac{1}{2}$ turns
13' high doors 10 $\frac{1}{4}$ turns
14' high doors 11 turns
15' high doors 11 $\frac{1}{2}$ turns
16' high doors 12 $\frac{1}{4}$ turns
17' high doors 13 turns
18' high doors 13 $\frac{5}{8}$ turns

Step 15

Use appropriate diameter winding rods on the following winding cones. 1 $\frac{3}{4}$ " and 2 $\frac{5}{8}$ " cones use $\frac{1}{2}$ " dia. rods, 3 $\frac{3}{4}$ " and 6" cones use $\frac{5}{8}$ " dia. rods, 5 $\frac{1}{4}$ " cones use $\frac{3}{4}$ " dia. rods. Wind springs $\frac{1}{4}$ " turn at a time, to number of complete revolutions recommended on spring tag; winding UP as shown in Figure 12.

CAUTION: (a) Use only good quality, snug fitting, winding rods (NOT screwdrivers, etc.). These can be obtained from the door factory. (b) Be sure you are secure on ladder, and keep slightly to side of winding rods.

When proper number of turns is reached, rest winding rod against top of door or header and tighten set screws on winding cone. Do not rest winding rod on your shoulder! Release vise grip from spring shaft.

Step 16

Release locking pliers from vertical track and check the door's counterbalance. If door does not balance properly (jumps off floor or feels heavy), it will be necessary to remove or add winds to springs. Do step 15 in reverse, adjusting $\frac{1}{4}$ wind at a time. If door has more than one spring, adjust ALL springs the SAME amount. If one spring has more winds than another, overstress can occur.

Step 17

Vertical tracks can now receive final adjustment. Run door up and down a few feet, checking and (if necessary) adjusting for side clearances between door and track. Permanently tighten lags or tek screws into jambs. Loosen the track bolts and push track IN, so the door is tightly seated against jambs. Permanently tighten track bolts. Adjust top roller carriers so that top section is sealed against header. Oil track rollers. **DO NOT GREASE INSIDE OF TRACK.**

Step 18

Mount permanent drop hangers at rear of horizontal tracks, using steel angles or other rigid support (supplied by you.) See that tracks rise at approximately $\frac{1}{4}$ " per foot, come back **DEAD SQUARE** from opening, and allow for clearance ($\frac{3}{8}$ " minimum, $\frac{5}{8}$ " maximum) between track and door. Some erectors make this final adjustment, and add their lateral bracing, with door in fully open position (after spring tension has been applied.)

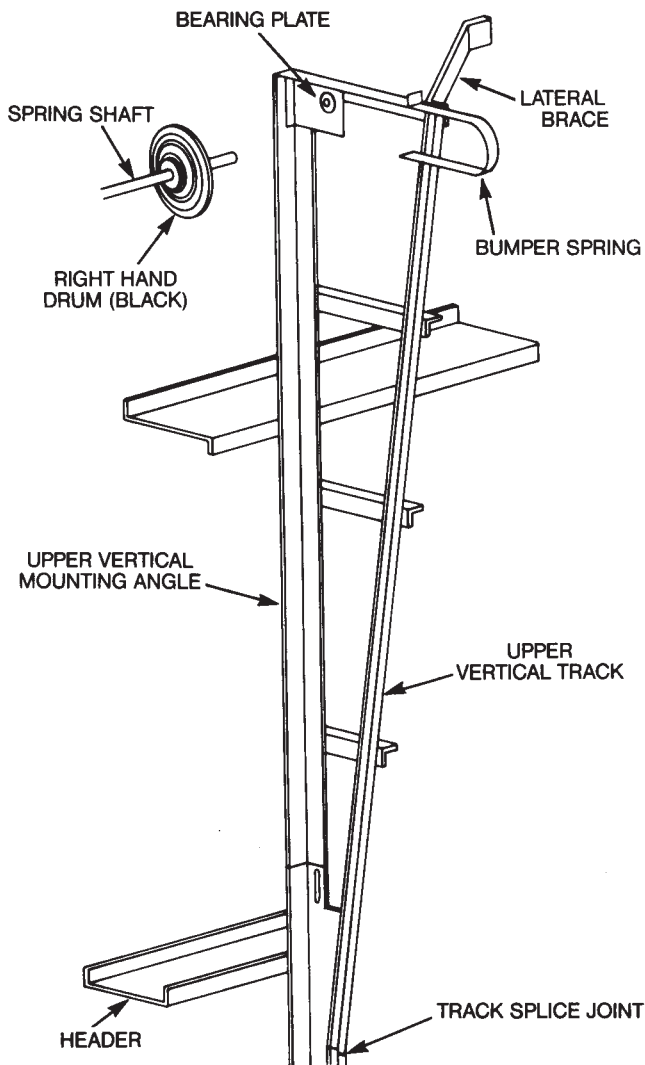
On doors 12 feet or more in height, or over 14 feet wide, intermediate drop hangers are recommended (halfway between rear hanger and jamb) to prevent sag. A sagging horizontal track may make for sluggish and/or unsafe operation.

If the torsion springs have been stored for a while and have become dry or rusty, add light oil to spring coils for smoother operation and longer life.

Vertical Lift (Refer to Figure 13)

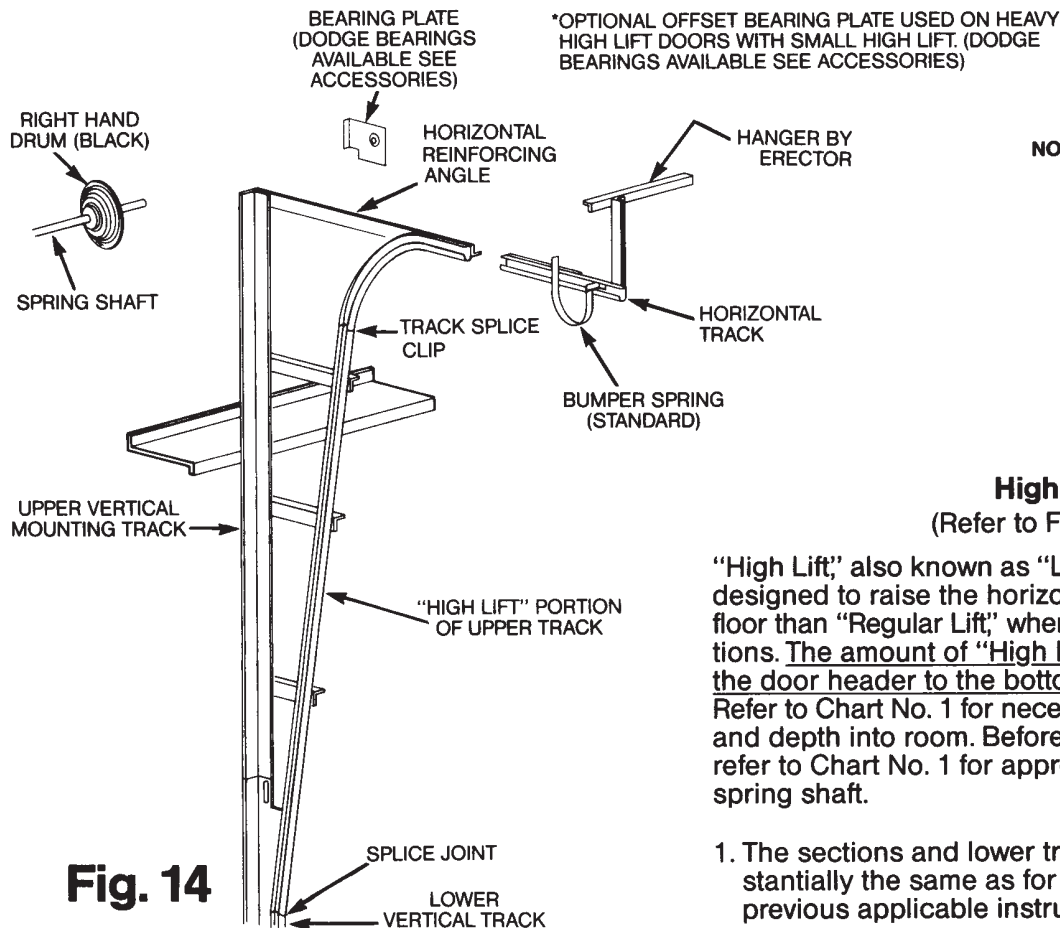
Check Chart No. 1 for required headroom, depth into room, and sideroom. Also, refer to this chart for centerline of spring shaft before mounting spring pad(s).

1. Mount lower vertical tracks and stack and hardware sections the same as you would for "Regular Lift" doors. Refer to previous applicable instructions.
2. Attach "Bumper Springs" at top of upper vertical tracks to prevent over-travel of door.
3. The "Upper Vertical Track" leans into the room at a greater angle than the lower track, tapering to approximately 18" at its highest point. This permits the top door section to by-pass the drums and springs, allowing for installation in the least amount of headroom. The "Upper" track joined to the lower track by two 1/4" track bolts and nuts at the splice joint. The upper vertical track angle is fastened to the jamb with 5/16" x 15/8" lags for wood jambs and 5/16" x 1" tek screws for steel jambs.
4. It is advisable to laterally brace the top of the tracks to the wall in order to maintain proper distance between tracks. These braces are to be provided by YOU and can be as light as 1" x 1" steel angle. Don't PERMANENTLY fasten brace until you have run the door up and down and checked the proper clearances.



5. Lift spring shaft into place and bolt bearing plates as shown (Figure 13) using 3/8" "truss" head bolts and nuts. Make sure proper drums have been provided. Vertical Lift drums are not "flat" like regular lift drums, but instead are tapered; spiralling from a small diameter at one side to a very large diameter at side nearest bearing plate. Remember to follow rules previously outlined with regards to placement of drums, cables, springs, and winding of springs. CAUTION: Don't forget to lock door sections in place with "C" clamps before attempting to wind springs. To quickly determine if cables are proper length, visually check drums to see if they are COMPLETELY filled with cable when door is in FULL OPEN position.
6. Springs should be wound so that the door has a tendency to SLIGHTLY over-travel the full open position. This will keep the door from wanting to settle below the header, or act "heavy" in a few weeks after the springs have taken their customary "set."
7. If by chance you are not able to get the door to balance properly, DO NOT let anyone alter the cable length, etc., without consulting the factory by phone. Make sure the tracks are plumb; door sections are not dragging on tracks or hitting any obstructions; and rollers, springs, and bearings are lightly lubricated with oil.

Fig. 13



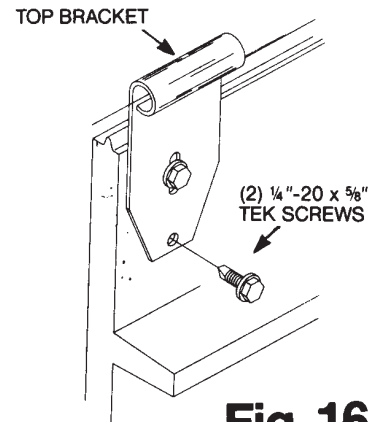
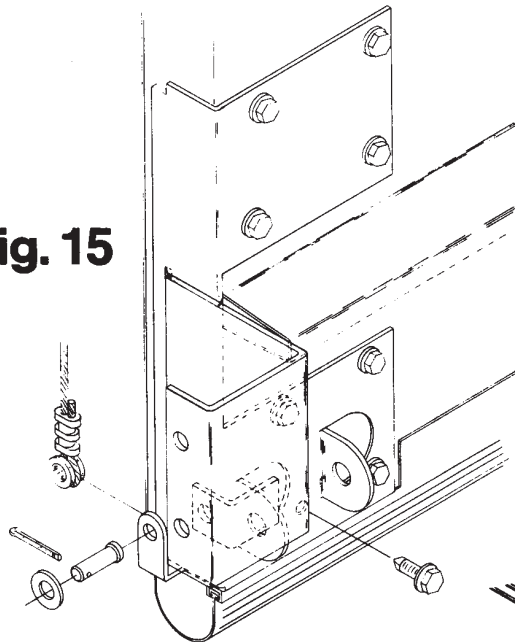
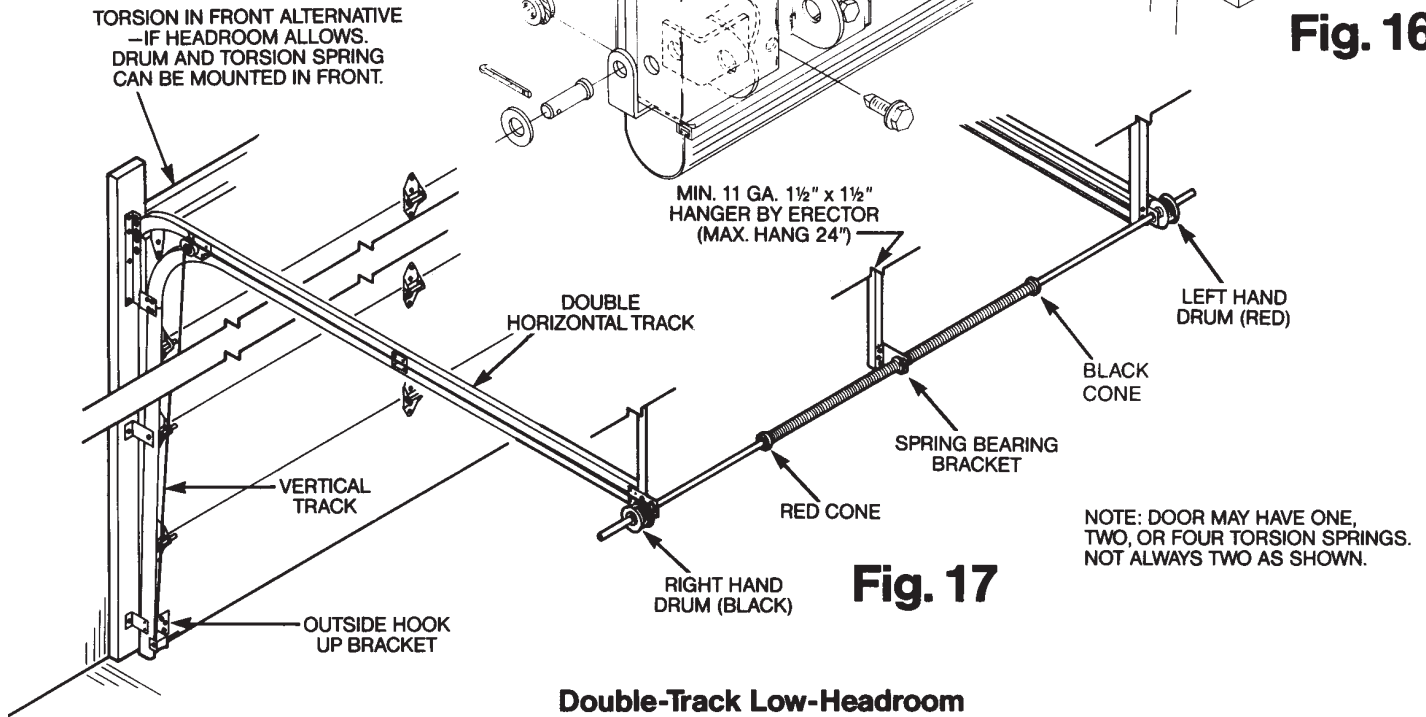
NOTE: Offset bearing plates are used with the 6375-164 hi-lift drum for doors with less than 72" hi-lift.

High Lift (Refer to Figure 14).

"High Lift," also known as "Lift Clearance" hardware, is designed to raise the horizontal tracks higher off the floor than "Regular Lift," where needed to clear obstructions. The amount of "High Lift" is the distance from the door header to the bottom of the horizontal track. Refer to Chart No. 1 for necessary headroom, sideroom, and depth into room. Before locating spring pad(s), refer to Chart No. 1 for approximate centerline of the spring shaft.

Fig. 14

1. The sections and lower track are installed substantially the same as for "Regular Lift." Refer to previous applicable instructions.
2. The "High Lift" portion of the track mounts directly above the lower vertical track, joined to lower track by two 1/4" track bolts and nuts at splice joint. This portion of the track tapers away from the jamb at a greater angle than the lower track, to permit upper sections of door to clear drums and springs as it passes them in its upward travel. **NOTE:** On doors having 21" or less of High Lift, the "High Lift" portion of the track is attached to the vertical track at the factory. Doors having more than 48" of High Lift are provided with "intermediate" angle braces on the "High Lift" portion of the track at approximately 2 feet intervals. The hi-lift breakaway wall angle is fastened to jamb with 5/16" x 1 5/8" lags for wood jambs and 5/16" x 1" tek screws for steel jambs.
3. The horizontal track is fastened to "High Lift" portion of track with a 3/8" "truss" head bolt and nut at top of vertical mounting angle, and two 1/4" track bolts and nuts at "track splice clip." The horizontals are suspended from the ceiling much the same as for a "Regular Lift" door, taking care that tracks are **AT LEAST** horizontal and level (or preferably with a **SLIGHT** upward tilt).
4. Lift spring shaft assembly into place and bolt bearing plates to horizontal reinforcing angles at 4 3/8", 5" or 6" centerline, to match centerline on spring bearing brackets provided. Follow rules previously outlined for "Regular Lift" doors with regards to placement of drums, cables, and springs; and winding of springs. You will note that the "High Lift" drums are kind of a combination of "Regular Lift" and "Vertical Lift" drums, being "flat" on one end and "tapered" on the end nearest the bearing plates. Springs for "High Lift" doors take substantially **MORE** turns to balance than a "Regular Lift" door. We have indicated the number of complete winds of springs on spring tag. Wind the springs just **SLIGHTLY** more than is needed to hold door definitely in **OPEN** position.
5. Attach "Bumper Springs" at rear of horizontal tracks to prevent over-travel of door. (See Figure 14).
6. Should field conditions require any revision in **AMOUNT** of High Lift, such change may materially affect proper length of cable and even alter the spring specifications. Call the factory for advice before engaging in time-consuming experimentation that might only result in a poorly working door.
7. Finalize the installation by making sure all bolts and/or lags are tight; tracks are running plumb; and horizontal tracks are coming back at true right angles from wall, permit the door sections to rest dead level between tracks in open position. Confirm that door is not dragging on tracks, that adequate clearances are provided between door sections and tracks in its entire length of travel. Lightly oil rollers, bearings, and torsion spring coils.

Fig. 15**Fig. 16****Fig. 17**

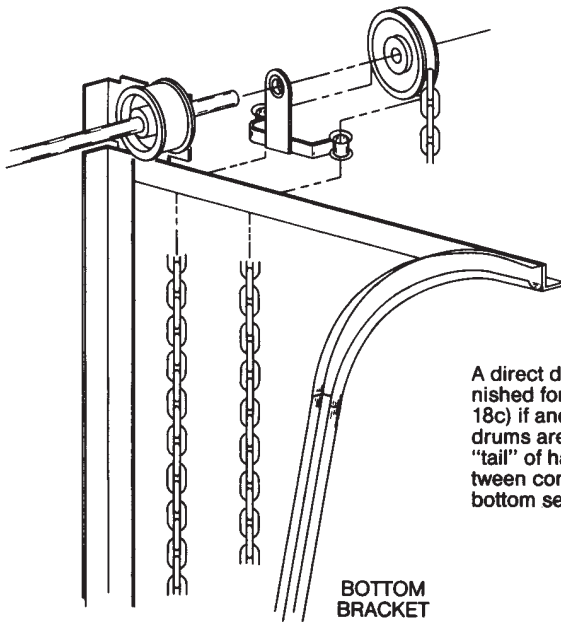
Double-Track Low-Headroom
(Refer to Figure 15, 16)

DOUBLE-TRACK, LOW HEADROOM hardware will permit installation of a door in minimum amount of headroom. See Chart No. 1 for headroom, sideroom, and room depth requirements. Refer to previous applicable instructions in this manual. However, this type of door has several installation procedures not found on "Regular Lift" doors.

1. The bottom section requires "outside hook-up" bottom corner brackets. (See Figure 15). See specific product sheet for the appropriate outside hook-up bottom bracket.
2. Vertical tracks are approximately 13½" shorter than the opening height for 2" & 3" track applications. Double-curve assembly attaches to this track, with the bottom curved track joined to top of vertical track with two ¼" track bolts and nuts at splice joint. Upper (short) curved track is bolted to top of vertical mounting angle using ¾" truss head bolts.
3. The rollers and hinges are mounted in the customary positions (as for "Regular Lift") except that the TOP rollers are in a special fixture, and fit into the UPPER horizontal track (short curve.) When the door opens, the rollers at the top of the door are in the UPPER track, and the remainder in the LOWER track. (See Figure 16).
4. Mount springs and drums as indicated in Figure 17; with the cables coming off the TOP of the drums, over the "Idler Pulleys," and down to the "Outside Hook-up" brackets. You must provide a center support hanger sufficiently strong to withstand the torque of the springs. Standing at the door, looking back into the room, you wind the springs DOWN for the proper number of turns. (See spring tag).
5. Be sure horizontal tracks are AT LEAST level... never running "down-hill" at the rear.

6. It may take some up-and-down adjusting at the top roller carrier fixtures to get the door top to seal properly at the header. When the door is open, the bottom rail of the door is substantially back from the header, and you have to, more or less, pull forward to start the door down.
7. There is virtually no practical way to operate this type of door with either a chain hoist or a side mount jackshaft type motor operator. If you have such a problem, contact the factory. The only exception would be if you have torsion springs in front and have "roof pitch" (minimum 1:12) in horizontal track, or use pusher springs.
8. Finalize your installation by making sure all bolts and/or lags are tight, vertical tracks are plumb, and horizontal tracks are level. Confirm that door is not dragging on tracks, that adequate clearances are provided between door sections and tracks in its entire length of travel. Lightly oil rollers, Idler Sheaves, all bearings, and torsion spring coils.

Fig. 18c Direct Drive Chain Hoist



A direct drive chain hoist can be furnished for standard lift doors (Fig. 18c) if and only when 5¼" cable drums are used. Please note that a "tail" of hand chain is fastened between continuous hand chain and bottom section of the door.

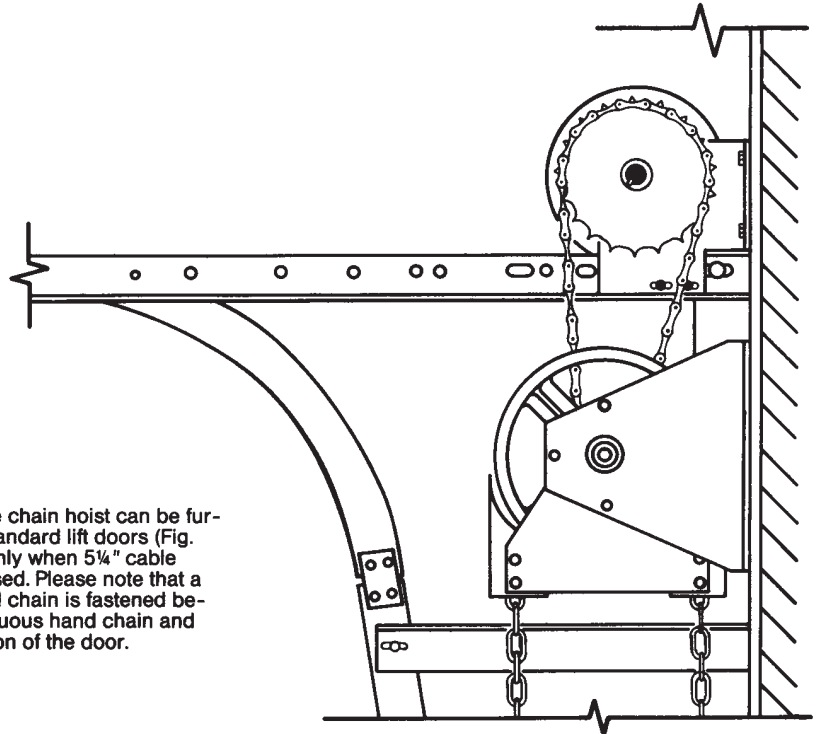


Fig. 18a Showing Typical Installation 3:1 Chain Hoist

Chain hoists are primarily used as an economical method of raising HIGH or exceptionally LARGE doors.

Manufacturer does not recommend the use of reduced drive chain hoists or jackshaft operators on regular lift doors, unless roof pitch track or pusher springs are used.

Hand chain should be pulled SLOW and STEADY. Quick "yanks" can cause the cables to jump off drums and door to fall!

Hand chain should always be engaged in "keeper" after door has been opened. This will prevent door from "drifting" down, and bottom section being struck by truck or other vehicle.

If it is not practical to mount chain hoist on jambs, as shown, it may be bolted to underside of horizontal track reinforcing angle.

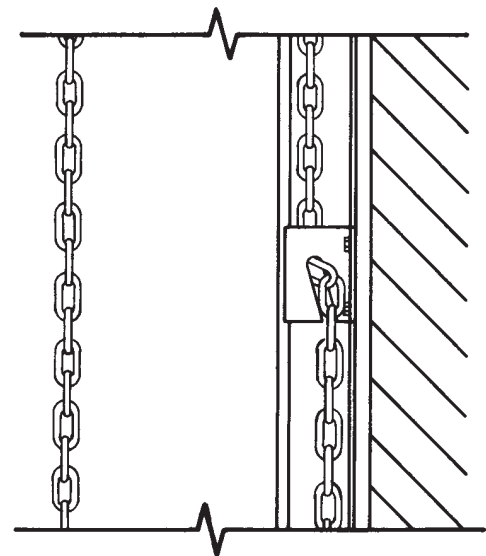


Fig. 18b Showing Hand Chain Keeper Mounted on Jamb at about 5 feet above floor.



INSTALLATION

For efficient and safe operation the garage door must be installed in strict accordance with the manufacturer's instructions. If the door is installed by an authorized representative of the manufacturer, the manufacturer's installation instructions must be followed explicitly. If the door is to be installed by other than the manufacturer's representative it is essential that the installation instructions be followed explicitly. If an upward acting garage door should become damaged in any way, its operation could become hazardous; therefore, when damage occurs, call a qualified door repair service immediately; preferably the representative of the door manufacturer.

When opening or closing a manually operated door, caution must be exercised to keep hands and fingers clear of section joints, track, etc., while the door is operating.

MAINTENANCE AND REPAIR

Like any piece of mechanical equipment, garage doors do require some maintenance and periodic service. Unless the user is experienced in the maintenance and repair of garage doors, the maximum amount of maintenance undertaken at that level should be the lubrication of moving parts such as hinges, rollers, pulleys, movable lock parts, springs and bearings. As an example, repairing cables and springs should be left to the professionals.

Professional service will insure a job done correctly, and more important, it will take the personal exposure of danger away from the user.

The best place to obtain knowledgeable and professional service for a garage door is from an authorized representative of the manufacturer of that door. The name of the door manufacturer will normally be found on the lock handle, hinges, or nameplate. In addition, the installing company's nameplate will be on the door or immediately adjacent to it.

DO-IT-YOURSELF INSTALLATIONS

A significant number of smaller doors are installed by handymen, contractors, or "do-it-yourselfers" who can make minor adjustments to the door. In all cases, the original manufacturer's instructions and precautions must be observed. If in doubt about what is required to properly install a door, stop and contact a professional door installer or service company to do the job for reasons pointed out in the paragraph headed Maintenance and Repair.

ELECTRIC OPERATION

If you are among the growing number of people now enjoying the convenience of an electrically operated garage door, you should be aware of a few simple points regarding the continued trouble-free operation of this equipment.

1. Electrically operated doors must be properly counterbalanced, as recommended in the door manufacturer's installation instructions, for smooth easy manual operation before applying the electric opener. The opener is a convenience; if it works hard to open the door, its life expectancy will be reduced. A garage door opener is designed to control the motion of a door already properly counterbalanced.
2. Remove pull down ropes, normally used for manual operation, when the door is electrically operated. Locks should be made inoperative in the open position.
3. When maintenance is required, consult your Owner's Manual prior to attempting repairs. If the problem is not covered in the manual, contact the installing dealer or the manufacturer, giving them the symptom of the problem, and request the best manner in which to proceed.
4. The portable electronic radio transmitters should receive the care shown any similar piece of delicate electronic gear.
5. If for any reason the clutch, safety stop, or reversing device gives indications of being inoperative: 1. Check the Owner's Manual; 2. If simple checks do not resolve the failure, call a qualified service man at once!

The foregoing instructions have been approved and recommended by the National Association of Garage Door Manufacturers (NAGDM).

EXHIBIT #2

PAINTING INSTRUCTIONS OF WOOD FLUSH DOORS

Hardboard Flush Door Skins and Panels are available with a surface either unprimed (uncoated) or factory primed.

The surface of hardboard skins is ideal for field applied coatings, since hardboard does not have any knots, grain raise, or other defects that typically shorten the coating's life. Hardboard Door Skins and Panels are made from wood. As such, they must be properly coated initially and maintained if satisfactory performance is to be achieved.

The purpose of exterior and interior finishing is both to protect and to beautify the substrate. These recommendations are intended as a guide to achieve both functions for a reasonable service life for Overhead Garage Doors. Finishing practices which do not meet the following criteria will result in less than satisfactory results.

FINISH SELECTIONS

Quality: Select a paint or stain intended for exterior use on Hardboard Skins or Panels from a reputable coating manufacturer. Make certain that it is a top quality finish with a list of ingredients on the label. A finish performance warranty is desirable.

Finish Type: Select finishing systems intended for exterior use on hardboard as follows:

- A) **Primer:** Use on oil/alkyd or latex base exterior primer which will seal the face and edges and is compatible with the top coat to be used.
- B) **Top Coat Paint:** Use one of the following exterior top coat paints: acrylic latex (flat, stain or gloss); oil base (stain or gloss); alkyd base (satin or gloss).

The following top coats are not recommended:

Shake and shingle paints, flat oil or alkyd paints, vinyl acetate (PVA), vinyl acrylic or vinyl acetate acrylic co-polymer paints. Many of these non-recommended top coats have short service lives, require frequent refinishing, inadequately protect the Hardboard, or are directly detrimental to the Hardboard.

SURFACE PREPARATION

Both surfaces of the Hardboard Skins or Panels must be clean, free of dust and dirt, mildew and other contamination. Unprimed skins should be finished as soon as possible.

Exposure should never exceed 30 days.

Primed Hardboard material should be finished within 30 days after installation.

APPLICATION

Method of Application: follow the directions on the paint manufacturer's finish label paying particular attention to special primer requirements, panel surface temperatures, rate of spread, and recommended application procedures. In general, the finish can be applied by either pad, spray, roll or brush as long as the resultant film the recommended thickness, is uniform in coverage and properly cured.

Avoid application of finishes when rain or dew is expected.

Number of Coats/Coating Thickness: A total film thickness of 4 dry mils (.004) minimum to all surfaces and edges is recommended.

This is best achieved by a uniform application of unthinned finishes at the spread rate recommended on the label. Therefore, apply the following number of coats:

Unprimed Hardboard Skins or Panels: Primer followed by two unthinned finish coats (paint or stain).

Primed Hardboard Material: Spot prime any areas of damage to the factory primer using an oil/alkyd primer. After the primer has dried, apply two coats; follow the coating manufacturer's recommendations relative to the use of primer and a finish coat (paint or stain) or two finish coats (paint or stain).

MAINTENANCE AND REFINISHING

Yearly inspection of the exterior of the garage will pay dividends when refinishing eventually becomes necessary. If the finish appears in good condition, cleaning and touch up is often adequate. When the finish becomes badly eroded and thin, clean and prime the areas where the substrate is showing through, followed by complete priming and finish coating. If there is no substrate showing through, finish coating only may be adequate.

The selection of the finish and method of application is equally as important in refinishing as in the initial finishing. Selection of improper finishes can actually be detrimental to the Hardboard. Also, be sure to select a new finish which is compatible with the old finish.

Limited Warranty

Subject to the terms and conditions contained in this Lifetime Warranty, Wayne-Dalton (“Manufacturer”) warrants the sections of the door, which is described at the top of this page, against:

- (i) If this is a THERMOMARK™ 5150-5200 insulated garage door, the manufacture shall warrant the door for a period of **FIVE YEARS** from the time of delivery against the door becoming inoperable due to rust-through of the steel skin from the core of the door 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.
- (ii) If this is a steel skin of MODELS 2411, 2415 & 220 Gage garage door, the manufacture warrants for a period of **FIVE YEARS** from date of delivery against the door becoming inoperable due to rust-through of the steel skin from the core of the door section, due to cracking, splitting, or other deterioration of the steel skin.
- (iii) If this is a THERMOSPAN™ 150 & 200 insulated garage door, the manufacture warrants for a period of **SEVEN YEARS** from date of delivery the door becoming inoperable due to rust-through of the steel skin from the core of the door 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. For Model 216 gage door, the manufacture warrants for a period of **SEVEN YEARS** from date of delivery the door becoming inoperable due to rust-through of the steel skin from the core of the door section, due to cracking, splitting, or other deterioration of the steel skin.
- (iv) If this is a COMMERCIAL WOOD PANEL garage door, manufacture warrants for a period of **TWO YEARS** from date of delivery against “Dry Rot” of the wood rails and stiles. Other conditions and exceptions as contained herein apply.
- (v) Peeling of the original paint on the door as a result of a defect in the original paint or in the application of the original paint coating, in cases where the door sections and the original paint: (a) have not been subjected to adverse atmospheric conditions or contaminants (such as salt water or other marine environment, or to toxic or abrasive substances, including those in the air); (b) have been maintained in compliance with Manufacturer’s recommendations; and (c) have not been subject to physical abrasion, impacted by a hard object, or punctured (including without limitation “paint rub” occurring in metal to metal contact and movement). If the door is “Primed Only” product and is not painted within a **10 DAY** period, this warranty shall only extend to defects in workmanship and materials that appear with **1 MONTH**. The painting of hardboard double flush doors any dark color voids this warranty.

The Manufacturer warrants the garage door hardware (except springs) and the tracks of the above-described door, **ONE (1) YEAR**, against defects in material and workmanship, subject to all the terms and conditions below.

The Manufacturer warrants those component parts of the door not covered by the preceding provisions of this Lifetime Limited Warranty against defects in material and workmanship for a period of **ONE (1) YEAR** from the date of installation.

This Limited Warranty is extended only to the person who purchased the product and continues to own the premises (where the door is installed) as his/her primary residence (“Buyer”). This Limited Warranty does not apply to residences other than primary, or to commercial or industrial installations, or to installations on rental property (even when used by a tenant as a residence). This Limited Warranty is not transferable to any other person (even when the premises is sold), nor does it extend benefits to any other person. As a result this warranty does NOT apply to any person who purchases this product from someone other than an authorized Wayne-Dalton dealer or distributor.

The Manufacturer will not be responsible for any damage attributable to improper storage, improper installation, or any alteration of the door or its components, abuse, damage from corrosive fumes or substances, salt spray or saltwater air, fire, Acts of God, failure to properly maintain the door, or attempt to use the door, its components or related products for other than its intended purpose and its customary usage. This Limited Warranty does not cover ordinary wear. This Limited Warranty will be voided if the original finish is painted over, unless Manufacturer’s preparation and painting instructions are followed explicitly. This Limited Warranty will be voided if any holes are drilled into the door, other than those specified by the Manufacturer. If this is a THERMOSPAN™ insulated garage door, the warranty becomes null and void if other than manufacturer’s specified holes are drilled.

THIS LIMITED WARRANTY COVERS A CONSUMER PRODUCT AS DEFINED BY THE MAGNUSON-MOSS ACT. NO WARRANTIES, EXPRESS OR IMPLIED (INCLUDING BUT NOT LIMITED TO THE WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE) WILL EXTEND BEYOND THE TIME PERIOD SET FORTH IN UNDERScoreD BOLD FACE TYPE IN THIS LIMITED WARRANTY, ABOVE.

- Some States do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you.

Any claim under this Limited Warranty must be made in writing, within the applicable warranty period, to the dealer from which the product was purchased. Unless the dealer is no longer in business, a written claim to the Manufacturer will be the same as if no claim had been made at all.

At the Manufacturer’s option, a service representative may inspect the product on site, or Buyer may be required to return the product to the Manufacturer at Buyer’s expense. Buyer agrees to cooperate with any representative of the Manufacturer and to give such representative full access to the product with the claimed defect and full access to the location of its installation.

If the Manufacturer determines that the claim is valid under the terms of this Limited Warranty, the Manufacturer will repair or replace the defective product. The decision about the manner in which the defect will be remedied will be at the discretion of the Manufacturer, subject to applicable law. **THE REMEDY WILL COVER ONLY MATERIAL. THIS LIMITED WARRANTY DOES NOT COVER OTHER CHARGES, SUCH AS FIELD SERVICE LABOR FOR REMOVAL, INSTALLATION, PAINTING, SHIPPING, ETC.**

Any repairs or replacements arranged by Manufacturer will be covered by (and subject to) the terms, conditions, limitations and exceptions of this Limited Warranty; provided, however, that the installation date for the repaired or replaced product will be deemed to be the date the original product was installed, and this Limited Warranty will expire at the same time as if there had been no defect. If a claim under this Limited Warranty is resolved in a manner other than described in the immediately preceding paragraph, then neither this Limited Warranty nor any other warranty from the Manufacturer will cover the repaired or replaced portion of the product.

THE REMEDIES FOR THE BUYER DESCRIBED IN THIS LIMITED WARRANTY ARE EXCLUSIVE and take the place of any other remedy. The liability of the Manufacturer, whether in contract or tort, under warranty, product liability, or otherwise, will not go beyond the Manufacturer’s obligation to repair or replace, at its option, as described above. **THE MANUFACTURER WILL NOT UNDER ANY CIRCUMSTANCES BE LIABLE FOR SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES**, including (but not limited to) damage or loss of other property or equipment, personal injury, loss of profits or revenues, business or service interruptions, cost of capital, cost of purchase or replacement of other goods, or claims of third parties for any of the foregoing.

- 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.

No employee, distributor, dealer, representative, or other person has the authority to modify any term or condition contained in this Limited Warranty or to grant any other warranty on behalf of or binding on the Manufacturer, and anyone’s attempt to do so will be null and void.

Buyer should be prepared to verify the date of installation to the satisfaction of the Manufacturer.

The rights and obligations of the Manufacturer and Buyer under this Limited Warranty will be governed by the laws of the State of Ohio, USA, to the extent permitted by law.

- This Limited Warranty gives you specific legal rights and you may also have other rights, which may vary from State to State.