VERTICAL LEVELER DOCK DOOR

User’s Manual - Installation, Operations, Maintenance and Parts Listing
This manual applies to VertiCool Vertical Leveler Dock Doors manufactured beginning February 2017

⚠️ WARNING

DO NOT install, operate or service this product unless you have read and understand the safety practices, warnings, installation and operation instructions contained in this manual. Failure to do so could result in death or serious injury.

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LIMITED WARRANTY

THIS LIMITED WARRANTY IS TKO DOCK DOORS SOLE AND EXCLUSIVE WARRANTY WITH RESPECT TO THE DOCK DOOR AND IS IN LIEU OF ANY OTHER GUARANTEES OR WARRANTIES, EXPRESS OR IMPLIED.

TKO DOCK DOORS warrants that this DOCK DOOR will be free from flaws in material and workmanship under normal use for a period of ONE (1) year from the earlier of 1) 60 days after the date of initial shipment by TKO DOCK DOORS, or 2) the date of installation of the DOCK DOOR by the original purchaser, provided that the owner maintains and operates the DOCK DOOR in accordance with this User’s Manual. This limited warranty does not include modifications, and damage beyond the manufacturer’s control, replacement labor or implied cycle life of counterbalance systems (cables, spring assembly, drums, shaft cones, shaft bearings or center bearing bracket).

EXTENDED LIMITED WARRANTY

In the event that this DOCK DOOR proves deficient in material or workmanship within the applicable limited warranty period, TKO DOCK DOORS will, at its option:

1. Replace the DOCK DOOR, or the deficient portion of either, without charge to the owner; or
2. Alter or repair the DOCK DOOR on site or elsewhere, without charge to the owner.

This limited warranty does not cover any failure caused by improper installation, abuse, negligence, or failure to maintain and adjust the DOCK DOOR properly. Parts requiring replacement due to damage resulting from abuse or improper operation are not covered by this warranty. TKO DOCK DOORS DISCLAIMS ANY RESPONSIBILITY OR LIABILITY FOR ANY LOSS OR DAMAGE OF ANY KIND (INCLUDING WITHOUT LIMITATION, DIRECT, CONSEQUENTIAL OR PUNITIVE DAMAGES, OR LOST PROFITS OR LOST PRODUCTION) arising out of or related to the use, installation or maintenance of the DOCK DOOR (including premature product wear, product failure, property damage or bodily injury resulting from use of unauthorized replacement parts or modification of the DOCK DOOR). TKO DOCK DOORS’s sole obligation with regard to a DOCK DOOR that is claimed to be deficient in material or workmanship shall be as set forth in this Limited Warranty. This Limited Warranty will be null and void if the original purchaser does not notify TKO DOCK DOORS’s warranty department within ninety (90) days after the product deficiency is discovered.

THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF, INCLUDING, BUT NOT LIMITED TO, A WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE, ALL OF WHICH TKO DOCK DOORS HEREBY DISCLAIMS.

For questions regarding this warranty, services, or parts contact: TKO Customer Service at 1-800-575-3366.
OWNER’S RESPONSIBILITIES

THE OWNER’S RESPONSIBILITIES INCLUDE THE FOLLOWING:

- The owners should recognize the inherent danger of the interface between the dock and transport vehicle. The owner should, therefore, train and instruct operators in the safe use of the TKO Dock Door as well as all dock equipment devices.

- Nameplates, cautions, instructions and posted warnings shall not be obscured from the view of operating or maintenance personnel for whom such warnings are intended.

- Manufacturer’s recommended periodic maintenance and inspection (procedures in effect at date of shipment) shall be followed, and written records of the performance of these procedures should be kept.

- Loading dock doors that are structurally damaged or have experienced failure shall be removed from service, inspected by the manufacturer’s authorized representative and repaired as needed before being placed back in service.

- The owner shall see that all nameplates, caution and instruction markings or labels are in place and legible and that the appropriate operating and maintenance manuals are provided to users.

- Modifications or alterations of loading dock doors shall be made ONLY with the written permission of the original manufacturer.

- When industrial trucks are driven on and off transport vehicles during the loading and unloading operation, the brakes on the transport vehicle shall be applied and wheel chocks or positive restraints that provide the equivalent protection of wheel chocks engaged.

- If your door has been equipped with optional Windload Parts, you MUST perform the steps shown below in anticipation of High Windload event to prepare each door for that event.
  1. Install Center Brace Assembly as shown on page 49.
  2. Engage and pin all the slide locks (3 per each side of each door panel except Top panel) as shown on page 49.
  3. After the Wind load event, reverse steps 1 and 2 above to prepare the door for normal use.

⚠️ WARNING

DO NOT install, operate or service this product unless you have read and understand the safety practices, warnings, installation and operation instructions contained in this manual. Failure to do so could result in death or serious injury.
TOOLS & MATERIALS

THE FOLLOWING TOOLS & MATERIALS ARE NECESSARY FOR PROPER INSTALLATION OF ANY TKO DOOR(S) AND ARE NOT PROVIDED BY TKO:

- Two Spring Winding Bars, approximately 24" (minimum) long for winding springs.
  - 1/2" diameter bars for 2-5/8" diameter springs.
  - 5/8" diameter bars for 3-3/4" and 6" diameter springs.

- Tools to mount track to wall using any of the recommend track anchoring methods:
  - Hammer Drill or Impact Wrench.

- Tools to mount track to wall using any of the alternate track anchoring methods:
  - Hammer Drill or Impact Wrench.
  - Welder with welding rods. Include grinder if door to be removed is welded to jambs.

- Aerial equipment: Ladders, scaffolding, scissors lift or boom lift.

- Hand tools: socket wrench set: 7/16", 1/2", 9/16", 4’ long level, bar clamps or C-clamps, locking pliers/vice grips, hammer, screwdrivers, and tape measure (contractor grade).

- Lubricants: Light Weight Oil for lubing Torsion/Counterbalance Springs and cables.

- Steel angle (minimum 12 gauge) for Backhangs and Sway Braces. Size will vary with different applications.

- Anchors/Fasteners used to mount tracks, center and end bearing plates, etc.

- Spring Mounting Pad(s) MUST BE structurally sound to support weight of Spring(s) and the torque put on them.

TKO Dock Doors DOES NOT supply Spring Mounting Pads or Wall Mounting Hardware.

RECOMMENDED ANCHORS FOR HOLLOW BLOCK WALL

TKO recommends the following:

- 3/8”-16 Concrete Single or Double Expansion Shield Anchors and 3/8” Flat Washers (one per each anchor used in install).

- 3/8” Short Lag Shields and 3/8” Flat Washers (one per each anchor used in install).

- NOTE: Anchors must be those suitable per the manufacturer for use in hollow block wall, and installed per the manufacturer’s instructions.
SAFETY

SAFETY SIGNAL WORDS

You may find safety signal words such as DANGER, WARNING, or CAUTION throughout this owner’s manual. Their use is explained below.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible death or injury.

⚠️ DANGER

Indicates an imminently hazardous situation which if not avoided, will result in death or serious injury.

⚠️ WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠️ CAUTION

Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury.

Notice is used to address practices not related to personal injury.

SAFETY PRACTICES

⚠️ WARNING

Read and follow these Safety Practices before installing, operating or servicing the door. Failure to follow the Safety Practices could result in death or serious injury.

If you do not understand the instructions, ask your supervisor to explain them to you, or call TKO at 1-800-575-3366, or ask a trained door systems technician to assist.

Installation, Maintenance and Service

1. ONLY experienced and trained door systems technicians should install or repair doors. Springs, cable brackets, cables, drums, plungers, supports and their hardware are under high tension and can cause injuries if not properly handled.
2. Use the proper type and capacity ladders, lifting equipment and safety straps or harnesses.
3. Safe and efficient installation requires a two-person crew.
4. Observe OSHA requirements for “LOCKOUT” or “TAGOUT” when performing work on doors.
5. Observe any/all overhead hazards such as electrical, air, process piping or HVAC ducting when working.
6. Move any dock leveler to the dock level storage position before using as a platform for ladders, lift trucks or other equipment used in the installation of the door.
7. Place barricades on the dock floor around the dock door and in the driveway in front of the door while installing, maintaining, or repairing the dock door.
8. If door is operated with any type of motor or automatic system, pull rope MUST BE removed and a safety reversing edge MUST BE installed.
SAFETY PRACTICES (continued)

Operation

1. Personnel using the dock doors MUST BE properly trained.
2. Operate door ONLY when it is free of obstructions and properly balanced. Should the door become difficult to operate or lower on its own from waist level position or higher, it need adjustment by a trained door systems technician. Immediately report to supervisor.
3. DO NOT stand or walk under moving door. Keep door in full view and free of obstructions while operating.
4. DO NOT allow children to operate the door or controls.
5. DO NOT throw door up violently. Using excessive force to open the door may cause the door cables to jump off the drums or door panels to disengage from tracks.
6. DO NOT close door onto obstructions. Obstructions in the opening may stop the doors movement and cause the door cables to jump or door panels to disengage from tracks.
7. To avoid injury, keep hands free of door parts while operating. Panels and door parts may create pinch points when in operation.
8. NEVER use damaged or malfunctioning dock door.

WARNING

All TKO Dock Doors [except Straight Verticals (SV)] require Safety Spreader Bar cross bracing and Safety Cable Assemblies to be installed in the area from the header to the top end of panel travel per the installation instructions on pages 12 through 23. If the Spreader Bars are not installed, the Tracks may spread, if impacted, and allow the door to fall. Failure to follow these instructions could result in death or serious injury.
SITE PREPARATION

⚠️ WARNING
Before installing the door, read and follow the Safety Practices on pages 4 and 5. Failure to follow the Safety Practices could result in death or serious injury.

DOOR OPENING
1. Measure DOOR OPENING WIDTH (DOW). The finished DOW MUST match the designed TRACK SPACING dimension as shown on the panel. The door panels may fall out of the tracks if the track spacing is not kept to these exact specifications. Measure width at floor, mid jamb, and header to identify and correct any width variations.
2. Measure DOOR OPENING HEIGHT (DOH). Verify finished DOH matches the door height listed on the door spec sheet. Stacked door panels are designed for additional panel height above header for proper sealing. If the finished DOH exceeds the specified door height more than (3"), contact TKO Doors for assistance.
3. Check jambs with a level to ensure the jambs are square to door opening. Any compromise will affect the door panel’s ability to properly seal against the tracks. If jamb repair, replacement or adjustment is required, it is critical that the original door opening dimensions are maintained as listed in the original door specification sheet.
4. Check jambs with a level to ensure the jambs are plumb and straight. The tracks MUST BE installed level while maintaining the specified track spacing.

TRACK MOUNTING SURFACE
1. Measure available TRACK MOUNTING HEIGHT (TMH). Verify that the required TMH will fit in the available space. See job specific documents shipped with your order. If the required TMH exceeded what is available, contact TKO Doors for assistance.
2. Check door specification sheet for track mounting style and track print for TRACK MOUNTING WIDTH (TMW). Verify that the width of the mounting surface on jamb is equal or greater than the mounting width of the track.
3. Check TRACK MOUNTING DEPTH (TMD) for any obstructions such as a bollard or curb that would interfere with mounting the track to the jamb. Verify track depth on track print for track dimension. If track depth exceeds available space, contact TKO Doors for assistance.
4. Make sure all track-mounting surfaces, header beam and center bearing bracket pads are flush in relation to one another. The tracks, header seal, and center bearing bracket are designed to be installed on the same plane. Adjusting of end bearing plates may be necessary to keep upper tracks an equal distance away from the wall (see track specific drawing and instructions for your application). All mounting surfaces MUST BE smooth and free of any weld beads or bolt heads etc.
5. Check available DEPTH INTO BUILDING (WTC) and verify that the upper track assembly will fit within the given space. Refer to the track print for required track depth.
6. Check for potential obstructions that may impede the door’s normal upward and downward travel such as an electrical box, sprinkler head, pipe etc. If adjustment or modification is necessary please contact TKO DOORS for assistance.
7. Check that the floor mounting area is level from right to left side within 1/4”. Be prepared to level or shim under one side of track if necessary.

Contact TKO Doors for assistance at 1-800-575-3366.
SITE PREPARATION (continued)

DOOR OPENING/TRACK MOUNTING SURFACE

- TRACK MOUNTING HEIGHT (TMH)
- CENTER LINE OF SHAFT (CL)
- DOOR OPENING HEIGHT (DOH)
- TRACK MOUNTING WIDTH (TMW)
- TRACK MOUNTING DEPTH (TMD)
- DEPTH INTO BUILDING (WTC)
- CENTER BRG ANCHOR PAD MOUNTING AREAS [MIN SIZE 2"W X 6"H]
- SPLIT SHAFT
- SINGLE SHAFT
- MIN 3" MAX 6"
- OPERATOR MTG AREA LH OR RH
  (SEE OPERATOR MANUAL FOR MTG SIZE & LOCATIONS)
- MIN 3" MAX 6"
- COUNTERWEIGHT BRG ANCHOR PAD LH &/OR RH MOUNTING AREAS
  [MIN SIZE 2"W X 6"H]
- DOOR OPENING WIDTH (DOW)
- BRUSH SEAL
- JAMB WALL
- 1/2 DOOR OPENING WIDTH
- HEADER
- TRACK MOUNTING SURFACE
- * OR 6" DUAL SPRING SINGLE SHAFT
TRACK ANCHORING APPROVED METHODS

STRUCTURE

1. All anchors/fasteners shall be placed in the second from the bottom anchor hole of the track and then at 18 inch intervals (or every 3rd hole). Please, refer to the Guide below for specific applications and instructions.

   NOTE: For Doors equipped with a Windload option, all anchors/fasteners for VC-4 doors are placed in the first from the bottom anchor hole and then at 12 inch maximum intervals (or every other hole thereafter). For VC-2 doors spacing varies with door height. See illustrations and notes on pg.11 and install instructions on pg.48.

2. Anchors MUST BE centered in the slotted holes of the steel tracks to provide the ability to adjust in or out if necessary. It is installers responsibility to make final adjustments to tracks to eliminate any light gaps between seals and jambs.

3. If mounting the track to wood it is not recommended that the tracks be mounted solely to a single 2” x 4”, 2” x 6”, 2” x etc. wood face jamb. Anchor through wood jamb and into structural member using a minimum 3/8” x 3” anchor backed with a 3/8” flat washer. Position anchors as listed in item 1 above. Fasteners must be appropriate for the material of the structural member.

4. If mounting the track to steel, position welds or anchors as listed in item 1 above.

5. If mounting the track to solid concrete, anchor tracks using a minimum 3/8” x 1-7/8” concrete sleeve anchor backed with a 3/8” flat washer. Position anchors as listed in item 1 above. If a wood face jamb exists, anchor through wood jamb and into concrete structure. Follow manufacturer’s recommendations for installation.

6. If mounting to hollow block, it is important to use 3/8” expansion type anchors specifically designed for this use and backed with a 3/8” flat washer. 3/8”-16 Concrete Single or Double Expansion Shield Anchors are recommended. Follow manufacturer’s recommendations for installation.

⚠️ WARNING

Failure to securely position and anchor door tracks per the TRACK SPACING dimension and tolerance (engraved on the door mounted Safety Decal) may allow the tracks to become too wide and allow the door to fall out of its tracks which could result in death or serious injury. Shims may be required between the track and wall surface to ensure the TRACK SPACING is maintained and that the tracks are anchored securely.

NOTE: ALL METHODS OF LOWER TRACK, UPPER TRACK AND BEARING BRACKET ANCHORING REQUIRE THAT THE TRACK SPACING DIMENSION TOLERANCE OF +1/4” OF NOMINAL NOT TO BE EXCEEDED.

RECOMMENDED

- MOUNTING STEEL TRACK TO C-90 HOLLOW CONCRETE BLOCK
- MOUNTING STEEL TRACK TO FILLED BLOCK OR SOLID CONCRETE
- MOUNTING STEEL TRACK TO WOOD BACKED BY A SOLID MATERIAL
- MOUNTING STEEL TRACK TO STRUCTURAL STEEL
- MOUNTING STEEL TRACK TO IMP BACKED BY FILLED BLOCK OR SOLID CONCRETE
- MOUNTING STEEL TRACK TO STEEL WRAPPED WOOD AND IMP BACKED BY A SOLID MATERIAL

* TYPE OF ANCHOR USED WILL BE SUITABLE FOR TYPE OF SOLID SURFACE BEHIND WOOD.
** TYPE OF ANCHOR USED WILL BE SUITABLE FOR TYPE OF SOLID SURFACE BEHIND INSULATED PANEL.
TRACK INSTALLATION

LOWER TRACK INSTALLATION

1. Locate the TRACK PRINT PDS (Production Detail Sheet). It illustrates the assembly of the track component parts.

2. Inspect track pieces and line up so that they match job specific track drawing that was supplied with door. If track drawing is missing, call a TKO Doors customer service representative for assistance. Locate the rubber foam in the Parts box. Remove the adhesive cover and apply it along the entire length on the back and bottom of the plastic track liner as shown on the illustration below. Repeat for the opposite side track and then continue with the lower track installation.

3. Check the floor pad for level. Tops of tracks MUST BE level with one another to within 1/4", or door will not operate smoothly. Shimming of tracks off the floor may be necessary.

4. While holding the lower left hand (LH) track against the jamb and flush to the opening, carefully level it. Use one of the approved fastening methods shown on pg. 8. Anchors/bolts with flat washers should be placed in the middle of the slotted holes of the steel tracks so tracks can be adjusted later if necessary. If steel tracks are to be welded in place, track MUST BE correctly placed.
5. The track spacing tool can now be used to set the right hand (RH) track. While holding the track against the jamb, place measuring tool on floor, then adjust track until tool ends are touching the inside faces of both tracks (see diagram below). Fasten track near floor.

6. Move track spacing tool to upper portion of track and repeat procedure described in step 5.

7. Verify TRACK SPACING: Measure track width starting at 3" from floor and every 3' on up. Track MUST BE kept at proper spacing while being centered in opening. TRACK SPACING tolerance is \( +\frac{1}{4}" \). Track fasteners must be installed at the correct spacing as described on pg.10.

8. Solidify attachments to wall: Once TRACK SPACING is correct, be certain to tighten down all anchors/bolts and finish all welds that may have been left incomplete to allow for moving of track.

9. Floor to track bracket installation: See page 11 for complete installation instructions.

**NOTE:** Track spacing tool is intended to be used for all track sections - lower, upper, and radius sections.

**WARNING**

Failure to securely position and anchor door tracks per the TRACK SPACING dimension and tolerance (engraved on the door mounted Safety Decal) may allow the door to fall out of its tracks which could result in death or serious injury. Shims may be required between the track and wall surface to ensure the TRACK SPACING is maintained and that the tracks are anchored securely.
NOTES:
* Windload application requires anchors to be placed in the bottom anchor slot of the track for VC-4 doors, then at maximum of 12" intervals (or every other slot on the track).

VC-2 WINDLOAD DOOR

** For VC-2 Doors equipped with a Windload option, anchor spacing varies with door height (see Detail A below).
FLOOR TO TRACK BRACKET INSTALLATION

1. Mount floor to track brackets to both sides of track with the hardware supplied.
2. Check and maintain proper track spacing.
3. Mount brackets to floor with appropriate hardware for floor material (NOT supplied).
4. Proceed to upper track installation: Once lower tracks are securely mounted and spaced, prepare to install upper tracks. See pages 12 through 23 for upper track installation instructions.

FLOOR TO TRACK BRACKET INSTALLATION

NOTES:
1. MOUNT FLOOR TO TRACK BRACKETS TO BOTTOM SIDE OF TRACK WITH HARDWARE SUPPLIED.
2. CHECK AND MAINTAIN PROPER TRACK SPACING.
3. MOUNT BRACKETS TO FLOOR WITH APPROPRIATE HARDWARE FOR FLOOR MATERIAL (NOT SUPPLIED).

* INCLUDED IN HARDWARE BAG 30-00574-HRDW. FLOOR TO TRACK BRACKET.
** INCLUDED IN KIT PART NO. 30-00085-FLOOR TO TRACK BRKT KIT.
TRACK INSTALLATION (continued)

UPPER STEEL TRACK INSTALLATION

The location of the INSTALLATION INSTRUCTIONS for the various UPPER TRACK STYLES are listed in the table below.

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<th>TRACK STYLE</th>
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<td>Tilt T1 Upper Track Installation</td>
<td>Pages 16 through 19</td>
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<tr>
<td>Tilt T2 Upper Track Installation</td>
<td>Pages 20 through 23</td>
</tr>
</tbody>
</table>

**WARNING**

All TKO Dock Doors [except Straight Verticals (SV)] require Safety Spreader Bar cross bracing and Safety Cable Assemblies to be installed in the area from the header to the top end of panel travel per the installation instructions on pages 13 to 23. If the Safety Spreader Bars are not installed properly, the Tracks may spread, if impacted, and allow the door to fall. Failure to follow these instructions could result in death or serious injury.

**UPPER STEEL TRACK INSTALLATION**

![Diagram of Upper Steel Track Installation](image-url)
UPPER TRACK INSTALLATION (continued)

STRAIGHT VERTICAL UPPER TRACK INSTALLATION

1. Locate the TRACK PRINT PDS (Production Detail Sheet). It illustrates the assembly of the track component parts.

2. Check how track is assembled: Upper tracks will have bearing plates mounted to them. See job specific track drawing to determine how parts fit together.

3. Attach upper tracks to lowers: Attach pieces with 1/4-20x3/4” carriage bolts and flange nuts. Pieces MUST fit together to give a smooth transition. Any sharp edges may cause plunger damage or cable failure.

NOTE: ALL METHODS OF LOWER TRACK, UPPER TRACK AND BEARING BRACKET ANCHORING REQUIRE THAT THE TRACK SPACING DIMENSION TOLERANCE OF +1/4” OF NOMINAL NOT TO BE EXCEEDED.

MOUNTING STEEL TRACK TO C-90 HOLLOW CONCRETE BLOCK

MOUNTING STEEL TRACK TO FILLED BLOCK OR SOLID CONCRETE

MOUNTING STEEL TRACK TO WOOD BACKED BY A SOLID MATERIAL

MOUNTING STEEL TRACK TO STRUCTURAL STEEL

MOUNTING STEEL TRACK TO IMP BACKED BY FILLED BLOCK OR SOLID CONCRETE

MOUNTING STEEL TRACK TO STEEL WRAPPED WOOD AND IMP BACKED BY A SOLID MATERIAL

Before mounting End Bearing Plates to wall, level track and also verify upper track is plumb with lower track. Shims may be required between the Bearing Plate Mounting Bracket and mounting surface.

4. Level left hand track then mount bearing plate mounting bracket to wall (minimum of 2 anchors per bracket) with one of the Recommended Anchoring Methods illustrated above. Follow manufacturer’s recommendations for anchor installation.

NOTE: End Bearing Plate mounting bracket is slotted for adjustment to wall. Loosen bracket bolts and adjust as necessary to obtain plumb condition with lower track.

5. Secure upper track to wall with 4” track mounting brackets (2 per side) at equal spacing (See pg. 15). Attach to track with 1/4-20 x 3/4” carriage bolts and flange nuts. Mount track mounting brackets to the wall with one of the Recommended Anchoring Methods illustrated above. Follow manufacturer’s recommendations for anchor installation.

6. Measure over to the opposite track and position it at the track spacing dimension engraved on the Safety Decal located on the 3rd panel of the door. Repeat steps 4 and 5 above. Follow manufacturer’s recommendations for anchor installation.

* TYPE OF ANCHOR USED WILL BE SUITABLE FOR TYPE OF SOLID SURFACE BEHIND WOOD.

** TYPE OF ANCHOR USED WILL BE SUITABLE FOR TYPE OF SOLID SURFACE BEHIND INSULATED PANEL.

Failure to securely position and anchor door tracks per the TRACK SPACING dimension and tolerance (engraved on the door mounted Safety Decal) may allow the door to fall out of its tracks which could result in death or serious injury. Tracks must be mounted straight, level, and on the same plane as lower tracks.
STRAIGHT VERTICAL UPPER TRACK INSTALLATION

- SV DRUM LEFT (RED)
- SV DRUM RIGHT (BLACK)
- SPRING/SHAFT ASSEMBLY
- RUBBER BUMPER
- CENTER TWO (2) BRACKETS ON UPPER TRACK SECTION

CRG BOLT, 1/4-20 X 3/4”
1/4-20 FLNG NUT

TRACK SPACING +1/4”
TILT T1 UPPER TRACK INSTALLATION

1. Locate the TRACK PRINT PDS (Production Detail Sheet). It illustrates the assembly of the track component parts.

2. Attach upper tracks to lowers: Use provided splice angles. Attach pieces with 1/4-20 x 3/4” carriage bolts and flange nuts. Pieces MUST fit together to give a smooth transition. Any sharp edges may cause plunger damage. Track will angle away from wall at approximately a 5° angle. (Rise 12”, Run 1”)

   NOTE: ALL METHODS OF LOWER TRACK, UPPER TRACK AND BEARING BRACKET ANCHORING REQUIRE THAT THE TRACK SPACING DIMENSION TOLERANCE OF +1/4” OF NOMINAL NOT TO BE EXCEEDED.

3. Attach top track mounting bracket (normally the longest one provided) to upper track section with 1/4-20 x 3/4” carriage bolts and flange nuts. This bracket should be placed 2” to 6” below bearing plate mounting bracket (See detail D on page 17). Next, level the track then anchor bracket to mounting surface using one of the Approved Anchoring Methods illustrated above. Follow manufacturer’s recommendations for anchor installation. Verify the track is level before continuing.

   * TYPE OF ANCHOR USED WILL BE SUITABLE FOR TYPE OF SOLID SURFACE BEHIND WOOD.
   ** TYPE OF ANCHOR USED WILL BE SUITABLE FOR TYPE OF SOLID SURFACE BEHIND INSULATED PANEL.

   Failure to securely position and anchor door tracks per the TRACK SPACING dimension and tolerance (engraved on the door mounted Safety Decal) may allow the door to fallout of its tracks which could result in death or serious injury.

4. Measure over to the opposite track and position at the track spacing dimension engraved on the Safety Decal located on the panel of the door. Mark top track mounting bracket anchor location on wall. Secure it using one of the Approved Anchoring Methods illustrated above.

   (Note: Verify the distance between the mounting surface and the top edge of the track is the same on both sides.)

5. Fill in the rest of the track mounting brackets (both sides) every 22” to 26” from top track mounting bracket down. (See page 17)

6. Attach C-channel to bearing plate mounting brackets to run from the backside of one bearing bracket to the other. Attach C-channel to top set of holes on bearing plate mounting bracket with 3/8-16 x 1” carriage bolts, flange nuts and flat washers. Verify that track spacing is still correct and tracks are level.

7. Attach hardware to C-channel: Attach adjustable track mounting brackets to top and bottom of C-channel in the center of the assembly with 1/4-20 x 3/4” carriage bolts and flange nuts (See detail C, page 17). Anchor adjustable track mounting brackets to wall- minimum of two (2) anchors and two (2) 3/8” flat washers per bracket. These prevents C-channel from twisting and stabilizes the upper track section (See Detail C, page 17). Mount center bearing brackets to C-channel with 3/8-16 x 1” carriage bolts and flange nuts.
Failure to securely position and anchor door tracks per the TRACK SPACING dimension and tolerance (engraved on the door mounted Safety Decal) may allow the door to fallout of its tracks which could result in death or serious injury.
TILT T1 UPPER TRACK INSTALLATION (continued)

8. Install safety spreader bar assemblies: Mount upper and lower safety spreader bar brackets to upper track with 1/4-20 x 3/4” carriage bolts and flange nuts. Brackets need to be attached 12” to 24” above header and 12” to 24” below top of tracks (See page 19). Run two (2) safety spreader bars horizontally from brackets and attach to brackets with 5/16-18 x 3/4” carriage bolts and flange nuts. Repeat for the other side of the door opening.

9. Install two (2) Safety Cables: Bolt two safety cable spool ends to the top horizontal safety spreader bar approximately 30” from each end. Attach two cable grip devices to the bottom safety spreader bar approximately 30” from each end. Feed each cable through the top and bottom cable grip devices and pull tight. Trim excess wire.

⚠️ WARNING

All TKO Dock Doors [except Straight Verticals (SV)] require Safety Spreader Bar cross bracing and Safety Cable Assemblies to be installed in the area from the header to the top end of panel travel per the installation instructions on pages 13 to 23. If the Safety Spreader Bars are not installed, the Tracks may spread, if impacted, and allow the door to fall. Failure to follow these instructions could result in death or serious injury.
UPPER TRACK INSTALLATION (continued)

TILT T1 SAFETY SPREADER BAR INSTALLATION

- C-CHANNEL ASSEMBLY
- TOP SAFETY SPREADER BAR
- CABLE SAFETY SHIELD
- HEADER SAFETY SPREADER BAR
- UPPER TRACK SECTION
- DOOR HEADER
- TRACK SPACING
- SAFETY SPREADER BAR MTG BRACKET
- TRACK MOUNTING BRACKET
- SAFETY CABLE
- CABLE GRIP

DETAIL A

DETAIL B

DETAIL C

DETAIL E
UPPER TRACK INSTALLATION (continued)

TILT T2 UPPER TRACK INSTALLATION

1. Locate the TRACK PRINT PDS (Production Detail Sheet). It illustrates the assembly of the track component parts.

2. Attach upper tracks to lowers: Use provided splice angles. Attach pieces with 1/4-20 x 3/4” carriage bolts and flange nuts. Pieces MUST fit together to give a smooth transition. Any sharp edges may cause plunger damage or cable failure. Track will angle away from wall at approximately a 5° angle (Rise 12”, Run 1”).

3. Attach end bearing plate to track: Attach End Bearing Plate to offset bearing bracket at factory established center line (C/L) of shaft with 3/8-16 x 1” carriage bolts and flange nuts (offset bearing bracket is factory attached to upper track section). Level Track then mount End Bearing Plate to the wall (minimum of 2 anchors per plate) with one of the Recommended Anchoring Methods illustrated below. Follow manufacturer’s recommendations for anchor installation.

4. Repeat for opposite side, measuring to verify track spacing is correct before securing end bearing plate. End Bearing Plate MUST BE mounted in the same position as opposite side before tightening bolts.

5. Attach track mounting brackets: Attach long leg of track mounting brackets to upper track section with 1/4-20 x 3/4” carriage bolts and flange nuts. Fill in the rest of the track mounting brackets (both sides) every 22” to 26” above the door header. (See page 21) Mount brackets to the wall with one of the Recommended Anchoring Methods illustrated below. Follow manufacturer’s recommendations for anchor installation.

NOTE: ALL METHODS OF LOWER TRACK, UPPER TRACK AND BEARING BRACKET ANCHORING REQUIRE THAT THE TRACK SPACING DIMENSION TOLERANCE OF +1/4” OF NOMINAL NOT TO BE EXCEEDED.

**WARNING**

Failure to securely position and anchor door tracks per the TRACK SPACING dimension and tolerance (engraved on the door mounted Safety Decal) may allow the door to fallout of its tracks which could result in death or serious injury.
UPPER TRACK INSTALLATION (continued)

TILT T2 UPPER TRACK INSTALLATION

DETAIL A

DETAIL B

DETAIL C

END BUMPER SPREADER BAR

TOP SAFETY SPREADER BAR

CABLE SAFETY SHIELD

HEADER SAFETY SPREADER BAR

SAFETY CABLE

CABLE GRIP

SAFETY SPREADER BAR

SAFETY SPREADER BAR MOUNTING BRACKET

UPPER TRACK SECTION

EVERY 22” TO 26” ABOVE DOOR HEADER

12” - 24” ABOVE DOOR HEADER

TRACK MOUNTING BRACKET

TRACK SPACING +1/4”

30” +/- 3” (TYP.)

6” - 12”

148” +/- 3” (TYP.)
6. Install safety spreader bar assemblies: Mount upper and lower safety spreader bar brackets to front face of track using 1/4-20 x 3/4” carriage bolts and flange nuts. Brackets need to be placed 12” to 24” above door header and 6” to 12” below top of tracks. (See page 23)
   Run two (2) safety spreader bars horizontally from brackets using 5/16-18 x 3/4” carriage bolts and flange nuts. Repeat for the other side of the door opening.

7. Install two (2) Safety Cables: Bolt two safety cable spool ends to the top horizontal safety spreader bar approximately 30” from each end. Attach two cable grip devices to the bottom safety spreader bar approximately 30” from each end. Feed each cable through the top and bottom cable grip devices and pull tight. Trim excess wire.

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**WARNING**

All TKO Dock Doors [except Straight Verticals (SV)] require Safety Spreader Bar cross bracing and Safety Cable Assemblies to be installed in the area from the header to the top end of panel travel per the installation instructions on pages 13 to 23. If the Safety Spreader Bars are not installed, the Tracks may spread, if impacted, and allow the door to fall. Failure to follow these instructions could result in death or serious injury.
UPPER TRACK INSTALLATION (continued)

TILT T2 SAFETY SPREADER BAR INSTALLATION

- **Detail C**
  - END BUMPER SPREADER BAR
  - 6” - 12”
  - 30” +/- 3” (TYP.)

- **Header Safety Spreader Bar**
- **Top Safety Spreader Bar**
- **Cable Safety Shield**
- **Upper Track Section**
- **Every 22” to 26” Above Door Header**
- **Track Spacing +1/4”**
- **Safety Cable**
- **Cable Grip**
- **Safety Spreader Bar**

**Detail B**
- **Cable Safety Shield**

**Detail A**
- **Safety Spreader Bar Mounting Bracket**
- **Track Mounting Bracket**

**Every 22” to 26” Above Door Header**

**Track Spacing +1/4”**

**Cable Grip**

**Safety Spreader Bar**
**PANEL INSTALLATION**

**WARNING**
DO NOT allow side seals to compress in any way before panels are actually stacked in opening.

**COMPONENT IDENTIFICATION**

1. Identify panels:
   - Inspect panels for any missing or damaged panels. Call TKO doors or local distributor/dealer if assistance is required.

2. Bottom panel:
   - The bottom panels have a horizontal (dual bulb) seal on the top of the panel and a loop seal on the bottom.
   - This panel is 48” high.

3. Second panel:
   - The Second panel has a horizontal (dual bulb) seal on the top and bottom of the panel (except for 8FT high door where this is also the top panel—see top panel identification below).
   - This panel could be 48” or 36” high depending on door height.
   - If a window panel was supplied, it is typically placed in the 2nd panel from bottom position.

**WARNING**
Fixed plungers are required on all panels.

4. Top panel:
   - The top panels have a T-Slot seal on the top of the panel and a horizontal (dual bulb) seal on the bottom.
   - This panel could be 12”, 18”, 24”, 30”, 36”, 42” or 48” high depending on door height.

NOTE: For top panel pickup cable attachment brackets the cable must be attached to the center location on the bracket. (See illustration on pg. 25)

**PLUNGER DESCRIPTION**

![Optional Cover for Fixed Plungers in Windload Package](image1)

Fixed Plunger Assy, WW RFPG2 PART NO. 30-01087
Fixed plungers are required on all panels.

FULL DOOR PANEL ASSEMBLY

*CABLES MAY ATTACH TO HIGHER PANELS IN T2 APPLICATIONS. FOR CABLE ATTACHMENT BRACKET POSITIONS SEE INSTALLER DETAIL SHEET (IDS).
PANEL STACKING - OVERVIEW

1. Assembling panels:
   - Identify any specific door order specifications including any/all panel accessory options before stacking Panels. See Panel PDS (Production Detail Sheet) and Panel Hardware PDS (Production Detail Sheet) in the Owner’s Parts Book.
   - Identify the proper cable attachment bracket mounting location.
   - Identify the # of door panels per door, and their stacking sequence.
   - Lube plunger rods with Silicone Spray prior to stacking panels. With covers off, spray plunger rods thoroughly so that contact points of housing/rods are covered.
   - For top-pickup styles (SV and T1), install cables to the middle hole of the cable leveling brackets (See Detail D on pg. 27).

**WARNING**

*Fixed plungers are required on all panels.*
PANEL INSTALLATION (continued)

PANEL STACKING

TOP PANEL PICKUP CABLE LEVELING BRACKETS SHOWN. FOR EXACT LOCATION OF PICKUP CABLE BRACKETS SEE IDS (INSTALLER DETAIL SHEET) IN THE OWNER’S PARTS BOOK.

CABLE ASSEMBLY CENTER HOLE POSITION

DETAIL D

DETAIL B

DETAIL C

LEG OF RUE RING*

* LEG OF RUE RING MUST POINT DOWN TO PREVENT RING FROM TEARING SEALS.
SLIDE LOCK INSTALLATION

1. Identify quantity of slide lock assemblies to be installed and customer desired location(s).
2. Position slide lock assembly so that slide lock bar is level and in-line with slide lock hole on track when door is fully closed and creating proper seal at bottom.
3. Install slide lock assembly to panel plate using (4) TEK screws. Slide lock bar MUST extend through the track allowing proper clearance of lock hole when bar is engaged.

LINTEL SEAL INSTALLATION

A. Top Panel Blade Seal (Factory Installed)
1. Cycle then level door.
2. Loosen RH and LH blade seal extension screws.
3. Slide extensions outward to obtain a positive seal to tracks (See pg.46).

B. Header Blade Seal (2" blade on 1" straight retainer-included for installation on header)

   Header Installation:
   1. Measure each individual jamb width at the header, then cut retainer and blade to these exact measurements.
   2. Install blade on to retainer.
   3. Hold retainer (flat side up) to header and adjust in towards the panel just enough to create a good seal across panel width.
   4. Install assembly to header using appropriate fasteners (not included) at each end, then every 15” to 20”.

C. Brush Seal (Single 2" brush on 1" straight retainer are sent as standard.)
1. Brush seals may be mounted to header or panel top. Choice determined by best sealing result.
2. Follow same installation instructions outlined for the Header Blade Seal above.

   Top Panel Installation (recommended install method):
   1. Measure width of top panel (less side seals) then cut aluminum retainer to this length.
   2. Measure track width just above top of door then cut brush to this measurement.
   3. Install brush on to retainer (position so brush ends are equal distance away from retainer ends).
   4. Position retainer (flat side down) so it is even with panel ends, then adjust in towards header/wall just enough to create a uniform seal across the opening width.
   5. Install assembly to top panel using provided fasteners at each end, then every 15” to 20”.

**NOTICE**

DO NOT mount the Blade/Brush Seal with Retainer between the Door Panel and the Header. Forcing the Blade/Brush Seal too far into Panel and/or header/wall will result in excessive drag and poor door operation.
DECALS & PLACARD INSTALLATION

The Safety Decal (Part Number 15-00085) is factory installed to the second panel on the left side as shown in the illustration below. Product Identification Decal is factory installed to the second panel on the right side as shown in the illustration below.

Cable Pickup Safety labels (Part No. 15-00102) are factory installed on the panel with the cable attachment point. Cable attachment brackets are fastened to the door panel with carriage bolts and painted red flange nuts. If the painted red fasteners are to be ever replaced, it is important that only red fasteners be used.

The installer must post the Warning Placard (Part No. 15-00086) next to the door in a viewable location for the operators of the door.

DECALS & PLACARD INSTALLATION

PAINTED RED FASTENERS
PNO. 10-00312

SAFETY LABEL CABLE PICKUP
PART NO. 15-00102

SAFETY DECAL
TRACK SPACING
PNO. 15-00085

WARNING PLACARD
PNO. 15-00086

PRODUCT IDENTIFICATION
**PANEL INSTALLATION**

**DECALS & PLACARD INSTALLATION**

The Safety Decal contains the Track Spacing Dimension, Serial Number, and Model Name. Inspect each door every 30 days to ensure that this decal is still fastened to the door and is legible. If the Safety Decal is not present, contact the factory to obtain a replacement Safety Decal.

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Cable Pickup Safety Labels (Part No. 15-00102) are factory installed on the panel with the cable attachment point. Safety labels are attached to both right hand and left hand sides of the panel next to the cable attachment point. Inspect each door every 30 days to ensure that these safety labels are still attached to the door and are legible. If the Safety Labels are not present, contact the factory to obtain replacement Safety Labels.
PANEL INSTALLATION (continued)

The Warning Placard (Part Number 15-00086) illustrated below must be posted by the installer next to the door visible to the users of the door. Inspect each door every 30 days to ensure that this placard is still posted near the door and is legible. Replace as necessary.

POST NEAR DOCK DOOR

WARNING

Read and follow all warnings and instructions in the Owner’s Manual, door mounted Safety Decal, and this wall mounted Placard.
Personnel using the dock doors must be properly trained.
NEVER use damaged or malfunctioning dock doors. Report problems immediately to supervisor.
Operate door only when it is free of obstructions and properly balanced. Should the door become difficult to operate or lower on its own from waist level position or higher, it needs adjustment by a trained door systems technician. Immediately report to supervisor.
DO NOT throw door up violently. Using excessive force to open the door may cause the door cables to jump or door panels to disengage from tracks.
DO NOT close door onto obstructions. Obstructions in the opening may stop the door’s movement and cause the door cables to jump or door panels to disengage from tracks.
TRACK SPACING tolerances MUST always be maintained with track securely mounted before door is operated. Operating door with improper TRACK SPACING or mounting could cause panels to disengage from the track, which could crush you and result in death or serious injury. Refer to Owner’s Manual and Safety Decal mounted on door for proper TRACK SPACING and mounting requirements.
Impacting this door can create a hazardous situation. ALWAYS use caution and carefully follow instructions listed on this Placard and the door mounted Safety Decal.
ALWAYS follow maintenance schedule to ensure all components are in good working condition. Damaged or worn parts must be replaced immediately for proper and safe operation. It is recommended that door be made inoperative until the damaged or worn parts have been replaced.
The cable attachment bracket is under extreme spring tension. DO NOT try to adjust or repair. Repairs or adjustments must be made by a trained door systems technician using proper tools and instructions. The cable attachment bracket can spring out and hit someone, which could result in death or serious injury.

DOOR OPERATION
To operate, keep door in full view, slowly raise door using manufacturer supplied handle(s) and lower door by slowly pulling on supplied pull down rope. NEVER apply force in a manner which would cause the panels to disengage from the track. If door has an automatic opener, remove pull rope from door and follow instructions supplied with opener.

Failure to follow these and other provided warnings could result in death or serious injury.
The Spring Warning Tag (TKO Part Number 15-00005) must be fastened to the center bearing bracket for the counter balance springs as illustrated on the adjacent page. Inspect each door every 30 days to ensure that this tag is still fastened to shaft/spring assembly and is legible. Replace as necessary.

DO NOT adjust, repair or remove springs or parts to which springs are connected, such as steel brackets, cables, wood blocks, red colored fasteners or other parts of counterbalance system.

Adjustments or repairs must ONLY be made by a trained door systems technician using proper tools and instructions.

DO NOT remove, cover or paint over this tag. Product user should inspect this tag periodically for legibility and should order a replacement tag from the door manufacturer, as needed.
SPRING/SHAFT INSTALLATION

⚠️ WARNING ⚠️

Failure to properly secure the Anchor Pad could allow the Springs to violently disengage from the wall and could result in death or serious injury. NEVER use nails! It is important that the Torsion Spring Assembly is securely mounted to the wall structure.

CENTER SPRING PAD/
CENTER BEARING BRACKET INSTALLATION

1. Measure CENTER LINE OF SHAFT (C/L) and verify area for proper spring pad mounting.
2. Identify style of spring/shaft assembly supplied with door.
3. Center anchor pad(s) MUST BE at least 2” wide by 6” high to properly support center bearing bracket(s). Single shafts will require a single pad/bracket centered in the door opening. Dual shafts with couplers will require two pads/brackets centered in opening and spaced approximately 12 inches apart. Single shafts with Dual 6” Springs will also require two (2) pads/brackets.
4. Center anchor pad(s) MUST adequately support the center bearing bracket(s) and torsion spring assembly.
5. If center anchor pad is wood, pad MUST BE free of cracks and splits in the wood. If wood is cracked or split, it MUST BE replaced. DO NOT use wood of less than grade 2 yellow pine or wood labeled as spruce-pine-fur (SPF). Pilot drill all holes to prevent splitting of wood.
6. TKO recommends that the Center Bearing Bracket(s) not be welded. This Alternate Anchoring Method will not allow for adjustment if the spring shaft needs leveling. See illustration below for Recommended Anchoring Methods.

RECOMMENDED ANCHORING METHODS

1. MOUNTING BRACKET TO C-90 HOLLOW CONCRETE BLOCK
   - 3/8” FLAT WASHER
   - 3/8-16 SINGLE OR DOUBLE EXPANSION SHIELD ANCHOR OR 3/8” X 1-3/4” SHORT LAG SHIELD

2. MOUNTING BRACKET TO FILLED BLOCK OR SOLID CONCRETE
   - 3/8” FLAT WASHER
   - MINIMUM 3/8” X 1-7/8” SLEEVE ANCHOR

3. MOUNTING BRACKET TO WOOD BACKED BY A SOLID MATERIAL
   - 3/8” FLAT WASHER
   - 3/8” X 3” ANCHOR

4. MOUNTING BRACKET TO STRUCTURAL STEEL
   - 3/8” FLAT WASHER
   - 3/8” X 1-1/2” SELF-TAPING SCREWS

*: TYPE OF ANCHOR USED WILL BE OF SUITABLE LENGTH AND APPROPRIATE FOR TYPE OF SOLID BACKING BEHIND WOOD.
SPRING/SHAFT INSTALLATION (continued)

CENTER SPRING PAD INSTALLATION

OPERATOR
MTG AREA LH OR RH
(SEE OPERATOR MANUAL
FOR MTG SIZE & LOCATIONS)

SPLIT SHAFT*

COUNTERWEIGHT BRG
ANCHOR PAD LH &/OR RH
MOUNTING AREAS
[MIN SIZE 2"W X 6"H]

1/2 DOOR OPENING WIDTH

CENTER SPRING PAD
MOUNTING AREAS
[MIN SIZE 2"W X 6"H]

MIN 3" MAX 6"

CENTER BRG ANCHOR PAD
MOUNTING AREAS
[MIN SIZE 2"W X 6"H]

MIN 3"

12" MAX

HEADER

TRACK MOUNTING SURFACE

DEPTH INTO
BUILDING (WTC)

JAMB WALL

BRUSH SEAL

CENTER LINE OF SHAFT
(CL)

TRACK MOUNTING HEIGHT
(TMH)

DOOR OPENING HEIGHT
(DOH)

TRACK MTG WIDTH (TMW)

TRACK MTG DEPTH
(TMD)

* MIN 3" MAX 6"

* OR 6" DUAL SPRING SINGLE SHAFT
SPRING/SHAFT INSTALLATION

⚠️ WARNING ⚠️

Failure to assemble the Torsion Springs and Counterbalance System correctly will cause the door to function improperly and could result in death or serious injury.

COMPONENT IDENTIFICATION

1. Identify specific spring, shaft, and bearing kit required for selected door. See the Counter Balance PDS (Production Detail Sheet) from the Owner’s Parts Book.
2. Inspect spring/shaft components for any missing or damaged items.
3. When viewing the door from the inside of the building, looking out, RED winding cone torsion springs/drums are installed on the left side of the door and BLACK winding cone torsion springs and drums are installed on the right side of the door.
4. Failure to install the torsion springs correctly will cause the door to function improperly and could result in serious injury. If door is to be equipped with a chain hoist or motor operator, a solid keyed shaft MUST BE used for shaft assembly.

SINGLE SPRING/SINGLE SHAFT ASSEMBLY

1. Layout counterbalance parts on floor
2. Identify if spring is left hand (red) or right hand (black)
3. Slide center bearing(s) to the center of the shaft with the bearing race facing away from the selected spring.
4. Slide the left spring (red) on to shaft with the stationary spring cone facing the center of shaft and the winding cone to the outer.
5. Slide the right spring (black) on to shaft with the stationary spring cone facing the center of shaft and the winding cone to the outer.
6. Bolt spring stationary cone, center bearing, and center bearing bracket together. DO NOT tighten completely, this will allow for adjustments with installation.
7. Slide the left drum (red) on the left side of shaft with the setscrews facing the center of the shaft.
8. Slide the right drum (black) on the right side of shaft with the setscrews facing the center of the shaft.
9. Slide on specified end bearings on to both ends of shaft with correct orientation. The bearing race has an outside diameter of 1-1/4” and projects from the flange 1/8”. The bearing housing has an outside diameter of 2” and projects from the flange 3/8”. The bearing race needs to be facing the cable drums.
10. Lift counterbalance assembly onto end bearing plates, making sure end bearing are positioned inside of plates with races facing inward.
12. Slide drums against end bearing races. Insert the shaft key for each drum when a solid shaft with a keyway is being used.
**WARNING**

*Failure to assemble the Torsion Springs and Counterbalance System correctly will cause the door to function improperly and could result in death or serious injury.*

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**SINGLE SPRING WITH SINGLE SHAFT**

**DETAI A**
- SHORT LEG MUST BE DOWN
- 3/8-16 X 1 1/2” HEX BOLT (2X)
- FULL THREAD
- STATIONARY CONE
- CENTER SHAFT BEARING
- 3/8-16 FLNG NUT (2X)
- SPRING WARNING TAG

**DETAI B**
- BEARING RACE TO FACE AWAY FROM DRUM
- MOUNT TO OUTSIDE FACE OF BEARING PLATE
- RED WINDING CONE
- RED LEFT SIDE
- 6” MIN CLEARANCE BEFORE WINDING

**CENTR BRG BRKT, STD, 3-6, UNIV**
- BEARING RACE TO FACE DRUM
- MOUNT TO INSIDE FACE OF BEARING PLATE
- LEFT DRUM (RED)
  (HIGH LIFT SHOWN)
- 7/4” X 3” SHAFT KEY
  (SOLID KEYED SHAFT ONLY)
- SPRING WARNING TAG

**BLACK RIGHT SIDE**
- BEARING OPTION
- BLACK WINDING CONE
- 1” TUBE SHAFT
  OR
- 1 SOLID KEYED SHAFT (SHOWN)
  OR
- 1-1/4” SOLID KEYED SHAFT

**NOTE:**
* INCLUDED IN CBAL KIT.

**FLANGE BEARING (STANDARD)**
- BEARING RACE TO FACE DRUM
- MOUNT TO INSIDE FACE OF BEARING PLATE

**FLANGE BEARING (STANDARD)**
- BEARING RACE TO FACE DRUM
- MOUNT TO INSIDE FACE OF BEARING PLATE

**FLANGE BEARING (STANDARD)**
- BEARING RACE TO FACE DRUM
- MOUNT TO INSIDE FACE OF BEARING PLATE

**FLANGE BEARING (STANDARD)**
- BEARING RACE TO FACE DRUM
- MOUNT TO INSIDE FACE OF BEARING PLATE

**FLANGE BEARING (STANDARD)**
- BEARING RACE TO FACE DRUM
- MOUNT TO INSIDE FACE OF BEARING PLATE

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**SPRING WARNING TAG**
* INCLUDED IN CBAL KIT.
SPRING/SHAFT INSTALLATION (continued)

⚠️ WARNING ⚠️

Failure to assemble the Torsion Springs and Counterbalance System correctly will cause the door to function improperly and could result in death or serious injury.

DOUBLE SPRING/SINGLE SHAFT ASSEMBLY
1. Layout counter balance parts on floor
2. For 6” Springs - Slide the two center bearings to the center of the shaft with the bearing races facing each other.
3. For 2 5/8” or 3 3/4” dia Springs - Slide center bearing to the center of the shaft with the bearing race facing away from the selected spring.
4. Slide the left spring (red) on to shaft with the stationary spring cone facing the center of shaft and the winding cone to the outer.
5. Slide the right spring (black) on to shaft with the stationary spring cone facing the center of shaft and the winding cone to the outer.
6. Bolt spring stationary cones, center bearing, and center bearing bracket together. DO NOT tighten completely, this will allow for adjustments with installation.
7. Slide the left drum (red) on the left side of shaft with the setscrews facing the center of the shaft.
8. Slide the right drum (black) on the right side of shaft with the setscrews facing the center of the shaft.
9. Slide on specified end bearings on to both ends of shaft with correct orientation. The bearing race has an outside diameter of 1-1/4” and projects from the flange 1/8”. The bearing housing has an outside diameter of 2” and projects from the flange 3/8”. The bearing race needs to be facing the cable drums.
10. Lift counterbalance assembly onto end bearing plates, making sure bearings are positioned inside of the plates with races facing inward.
11. Secure shaft and bearing to plate using carriage bolts supplied.
12. Slide drums against end bearing races. Insert the shaft key for each drum when a solid shaft with a keyway is being used.
13. Prior to final tightening center bearing bracket, bolts and anchors, adjust the shaft to ensure it is running straight and level.
**WARNING**

Failure to assemble the Torsion Springs and Counterbalance System correctly will cause the door to function improperly and could result in death or serious injury.

**DOUBLE SPRING WITH SINGLE SHAFT**

- **BEARING RACE TO FACE AWAY FROM DRUM**
- **MOUNT TO OUTSIDE FACE OF BEARING PLATE**

![Diagram of assembly](image)

- **FLANGE BEARING (STANDARD)**
- **BEARING RACE TO FACE DRUM**
- **MOUNT TO INSIDE FACE OF BEARING PLATE**

- **LEFT DRUM (RED)**
  - **HIGH LIFT SHOWN**
  - **1/4" X 3" SHAFT KEY**
  - **SOLID KEYED SHAFT ONLY**

- **RED WINDING CONE**
- **RED LEFT SIDE**
- **6" MIN CLEARANCE BEFORE WINDING**
- **SHORT LEG MUST BE DOWN**

- **BLACK WINDING CONE**
- **BLACK RIGHT SIDE**

- **CENTER BRG BRKT, STD, 3-6, UNIV**

- **STATIONARY CONE**
- **3/8-16 FLNG NUT (2X)**
- **3/8-16 X 1-1/2" HEX BOLT (2X) FULL THREAD**
- **STATIONARY CONE CENTER SHAFT BEARING**

- **RIGHT DRUM (BLACK)**
  - **(VERTICAL SHOWN)**
  - **1" SOLID KEYED SHAFT (SHOWN)**
  - **1-1/4" SOLID KEYED SHAFT**

- **FLANGE BEARING (STANDARD)**
- **BEARING RACE TO FACE DRUM**
- **MOUNT TO INSIDE FACE OF BEARING PLATE**

- **NOTE:**
  - ** INCLUDED IN CBAL KIT.**
  - **3/8-16 FLNG NUT (2X)**
  - **FULL THREAD**
  - **STATIONARY CONE CENTER SHAFT BEARING**

- **SPRING WARNING TAG**
- **3/8-16 FLNG NUT (2X)**
- **BEARING RACE TO FACE AWAY FROM DRUM**
- **MOUNT TO OUTSIDE FACE OF BEARING PLATE**
### SPRING/SHAFT INSTALLATION (continued)

---

**WARNING**

*Failure to assemble the Torsion Springs and Counterbalance System correctly will cause the door to function improperly and could result in death or serious injury.*

---

### DOUBLE SPRING/SPLIT SHAFT ASSEMBLY

1. Layout counter balance parts on floor
2. Slide each 1/2 of the coupler flush to the ends of the both shafts that will be mounted together in the center.
3. Install keys into shaft/coupler and tighten setscrews and locking nuts.
4. Coupler, shaft and key MUST BE flush. Both ends will be bolted together when installing spring assembly.
5. Slide center bearing on to each shaft with the race facing the coupler.
6. Slide the left spring (red) on to left shaft with the stationary spring cone facing the coupler. Slide the right spring (black) on to right shaft with the stationary spring cone facing the coupler.
7. Bolt spring stationary cones, center bearing, and center bearing bracket together. **DO NOT** tighten completely, this will allow for adjustments with installation.
8. Slide the left drum (red) on the left side of shaft with the setscrews facing the coupler.
9. Slide the right drum (black) on the right side of shaft with the setscrews facing the coupler.
10. Slide on specified end bearings on to both ends of shaft with correct orientation. The bearing race has an outside diameter of 1-1/4" and projects from the flange 1/8". The bearing housing has an outside diameter of 2" and projects from the flange 3/8". The bearing race needs to be facing the cable drums.
11. Lift counterbalance assembly onto end bearing plates, making sure bearings are positioned inside of the plates with races facing inward.
12. Secure shaft and bearing to plate using carriage bolts supplied.
13. Slide drums against end bearing races. Insert the shaft key for each drum when a solid shaft with a keyway is being used.
14. Prior to final tightening center bearing bracket, bolts and anchors, adjust the shaft to ensure its running straight and level.
15. Tighten the set screws as follows:
   - **Solid Shaft:** Do not exceed 1/2 turn after coming in contact with the shaft.
   - **Hollow Shaft:** Tighten set screws enough to dimple shaft, about 1-1/4 turns after set screws first hit shaft.
**WARNING**

Failure to assemble the Torsion Springs and Counterbalance System correctly will cause the door to function improperly and could result in death or serious injury.

---

**DOUBLE SPRING WITH SPLIT SHAFT**

<table>
<thead>
<tr>
<th>Component</th>
<th>Details</th>
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</thead>
<tbody>
<tr>
<td>BEARING RACE</td>
<td>FACE AWAY FROM DRUM</td>
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<tr>
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<tr>
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<tr>
<td>RIGHT DRUM (BLACK) (VERTICAL SHOWN)</td>
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<tr>
<td>FLANGE BEARING (STANDARD)</td>
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</tr>
<tr>
<td>BEARING RACE</td>
<td>FACE DRUM</td>
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<tr>
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<tr>
<td>LEFT DRUM (RED) (HIGH LIFT SHOWN)</td>
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<tr>
<td>1/4&quot; X 3&quot; SHAFT KEY (SOLID KEYED SHAFT ONLY)</td>
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<tr>
<td>RED WINDING CONE</td>
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<tr>
<td>1&quot; HIGH CYCLE BEARING</td>
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<td>OR</td>
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<tr>
<td>BLACK RIGHT SIDE</td>
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<tr>
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<tr>
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<td>OR</td>
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<td>LEFT HAND SPLIT SHAFT</td>
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WINDING SPRINGS

⚠️ WARNING

The Spring Assembly, which includes the Springs, Spring Anchor Brackets, Cables, Cable Drums and Bearing Brackets, is under extreme tension and if handled improperly, could result in death or serious injury. Spring Assemblies should ONLY be installed, adjusted or repaired by a trained door systems technician.

SECURE DOOR
1. Verify that the cable attachment bracket is installed on the correct panel (see Installer Detail Sheet).
2. Securely lock door in down position to prevent door from opening while winding springs.

INSTALL CABLES
1. Position Left-Hand (red) drum to shaft, making sure that the drum is tight against the bearing race. Tighten drum to the shaft. If shaft is solid keyed, properly align drum/shaft and install shaft key prior to tightening.
2. Obtain cable that is attached to the left cable bracket on panel and run it up to the shaft between the wall and the drum.
3. Place cable stops in the notch in the backside of drum and turn the drum/shaft until all slack in cable is removed. Make sure cable is seated properly in the grooves of the drum.
4. Fasten locking pliers to the shaft with the handle braced against the wall to keep cables taut.
5. Position Right-Hand (black) drum tight against bearing race.
6. Obtain cable that is attached to the right cable bracket on panel and run it up to the shaft between the wall and the drum.
7. Place cable stops in the notch in the backside of drum and turn the drum until all slack in cable is removed. **NOTE:** If shaft is solid keyed cable will need to be turned on drum before key is inserted. Make sure cable is seated properly in the grooves of the drum.
8. Tighten drum to shaft. If shaft is solid keyed, properly align drum/shaft and install shaft key prior to tightening. Each cable MUST have the same amount of pre-tension.
9. If split shaft is supplied, securely tighten shaft coupler bolts, set screws and locking nuts.

WIND SPRINGS
See parts book (Installer IDS sheet) for spring turns.
1. Clear the area of personnel and keep yourself out of the direct path of the winding bars while winding the torsion springs.
2. Use a sturdy ladder or platform to stand on and keep slightly to the side of the winding bars.
3. Mark horizontal chalk line across the entire length of spring(s). This will help indicate the number of turns placed on the torsion spring(s).
4. Insert the winding bars into the full depth of hole in the winding cone.

⚠️ WARNING

The spring assembly, which includes the springs, spring anchor brackets, cables, cable drums and bearing brackets, is under extreme tension. Spring assemblies should ONLY be installed, adjusted or repaired by a trained door systems technician. Winding bars MUST fit snugly into the holes in the winding cone. NEVER use smaller rods or screwdrivers as winding bars. Failure to use proper winding bars could result in death or serious injury.
WIND SPRINGS (continued)

5. Wind springs in an upward direction 1/4 turn and hold the tension.

6. Insert the second winding bar fully into the next available hole in the winding cone. Take the load on the second winding bar and remove the first winding bar.

7. Wind the second winding bar upward 1/4 turn. Always wind springs in 1/4 turn increments. Four 1/4 turns are required to obtain one full turn. The number of turns can be obtained by counting the turns of the chalk line.

8. Continue this procedure until the specified number of turns per spring is obtained. If tension in the torsion spring DOES NOT increase when adding 1/4 turn, the springs may be reversed. As the torsion springs are wound, the spring will grow longer. Allow winding cone to move outward as turns are applied to prevent “kinking” of spring wire.

9. When the last 1/4 turn has been completed, insert a second winding bar into the bottom hole of the winding cone and stretch springs outward 1/2". This will eliminate the possibility of spring coils binding during operation.

10. Tighten setscrews on the winding cone with oiled threads to 15-16 ft-lbs. Follow the recommendations listed below to avoid exceeding the specified torque:
   - Solid Shaft: Do not exceed 1/2 turn after coming in contact with the shaft.
   - Hollow Shaft: Tighten set screws enough to dimple shaft, about 1-1/4 turns after set screws first hit shaft.

11. Make sure all springs and cables are thoroughly oiled (around the entire circumference of the spring) with LightWeight oil or equivalent.

12. Repeat this procedure for other spring. On doors with two springs, both springs should be wound the same amount of turns.

**WARNING**

*If any adjustment to the Upper Tracks has to be made, the door MUST BE locked in the closed position. If it is required to add or reduce the tension of the Torsion Springs, always use Winding Bars and stay clear to the side. Be prepared to handle the force of the Springs. NEVER adjust the Center Bearing Bracket after the Springs are wound.*

*Use caution when opening the door for the first time. If the Tracks are incorrectly mounted too wide, the door may fall out of the Tracks.*

13. Install SPRING WARNING TAG as shown in the illustrations below.

14. It is recommended that only Silicone Spray is applied to entire track system (lower, upper, radius, and horizontal tracks where plunger tips and side seals contact).

15. While securely holding down the door, unlock the door and slowly raise the door. It is recommended that ONLY Silicone Spray is applied to entire track system (lower, upper, radius and horizontal tracks where side seals contact).
16. Remove locking pliers from shaft.

17. While securely holding down the door, unlock the door and slowly raise the door. The door MUST BE balanced. Customer should be able to raise the door to waist level, slowly release, and have the door stay in place. Adjustment to the required number of turns stated may be necessary. If door rises off the floor under spring tension alone, reduce spring tension until door rests on floor. If the door is hard to raise or drifts down on its own, add spring tension.

18. When door is closed make sure that there is positive sealing around side and bottom seals. Track adjustment and/or leveling may be necessary to accomplish this. If the door is manually operated, track widening may also be necessary to reduce drag. It is the installer’s responsibility to make these adjustments to the customer’s satisfaction before leaving the job site. It is the customer’s responsibility to maintain this going forward.

**WARNING**

The Spring Assembly, which includes the Springs, Spring Anchor Brackets, Cables, Cable Drums and Bearing Brackets, is under extreme tension and if handled improperly, could result in death or serious injury. Spring assemblies should ONLY be installed, adjusted or repaired by a trained door systems technician.

SINGLE SHAFT (SHOWN WITH DUAL SPRING)
**WARNING**

The Spring Assembly, which includes the Springs, Spring Anchor Brackets, Cables, Cable Drums and Bearing Brackets, is under extreme tension and if handled improperly, could result in death or serious injury. Spring assemblies should ONLY be installed, adjusted or repaired by a trained door systems technician.

**SPLIT SHAFT (SHOWN WITH DUAL SPRING)**

- **LEFT DRUM (RED)** (HIGH LIFT SHOWN)
- **1/4” X 3” SHAFT KEY** (SOLID KEYED SHAFT ONLY)
- **LOCKING PLIERS**
- **RED WINDING CONE**
- **CHALK LINE**
- **RED LEFT SIDE**
- **NOTE: SPRING CONES MOVE OUTWARD WHEN WINDING.**
- **SPRING WARNING TAGS**
- **BLACK WINDING CONE**
- **RIGHT DRUM (BLACK)** (VERTICAL SHOWN)
- **CENTER BRG BRKT, STD, 3-6, UNIV**
- **SHAFT COUPLER**
- **CENTER BRG BRKT, STD, 3-6, UNIV**
- **BLACK RIGHT SIDE**
- **CRIMPED CABLE STOP**
- **FLOATING CABLE STOP**
- **NOTE: CABLE MUST BE 1/2 TURN MINIMUM ON DRUM.**

**SPLIT SHAFT (SHOWN WITH DUAL SPRING)**
DOOR OPERATION

⚠️ WARNING

Before operating the door, read and follow the Safety Practices on pages 4-5. Stand back. Moving door can crush you. Keep people clear while door is moving. Failure to follow these instructions could result in death or serious injury.

1. Operate door only when it is free of obstructions and properly balanced. Should the door become difficult to operate or lower on its own from waist level position or higher, it needs adjustment by a trained door systems technician. Immediately report to supervisor.
2. NEVER operate door until the entire opening and track guides are free of obstructions, equipment, material and people.
3. Keep hands clear of the tracks, hinges, springs and plungers at all times.
4. Lift and lower door with proper ergonomic methods by using supplied pull rope and door handles/step plates.
5. Raise and lower door slowly and maintain an even door travel speed. Keep door in full view. NEVER throw door up or pull door down at high speed.
6. DO NOT use the loading dock door if it looks broken or DOES NOT seem to work right. Tell your supervisor it needs repair right away.
7. Chock truck wheels or lock truck in place with a truck restraining device and set brakes before loading or unloading.
8. Keep door closed when not in use.
9. Move all equipment, material and people away from loading dock door and close dock door before allowing the truck to pull out.
10. DO NOT use a fork truck or other material handling equipment to raise or lower the loading dock door.
**OPTIONS INSTALLATION**

- Blade/Brush Weather Seal Kit for Header/Top of Top Panel

### BLADE/BRUSH WEATHER SEAL KIT FOR HEADER

**DETAIL A SIDE VIEW**

**DETAIL A ISOMETRIC VIEW**

### BLADE WEATHER SEAL KIT FOR TOP OF TOP PANEL

**NOTES:**
1. CYCLE THEN LEVEL DOOR.
2. LOOSEN RH AND LH BLADE SEAL EXTENSION SCREWS.
3. SLIDE EXTENSIONS OUTWARD TO OBTAIN POSITIVE SEAL TO TRACKS (SEE DETAIL A ABOVE).

**ITEM** | **PART NUMBER** | **DESCRIPTION** | **QTY**
---|---|---|---
1 | 20-02027 | RETAINER, ALUM, BLADE SEAL, 8'2" | 2
2 | 20-02025 | SEAL, BLADE, VINYL, BLK, 2" | 2
3 | 30-00300 | HRDW, K-LATH #8X3/4", 10 PACK | 1
4 | 20-02028 | RETAINER, ALUM, BLADE SEAL, 10'2" | 2
5* | 20-00260 | BRUSH, 2" BLACK, 8'2" | 2
6* | 20-00261 | BRUSH, 2" BLACK, 10'2" | 2

*ITEM 5* IS PART OF BR KIT, 2"B/1"STR, 8'2" PART NO. 30-00033.
*ITEM 6* IS PART OF BR KIT, 2"B/1"STR, 8'2" PART NO. 30-00034.

**PARTS ARE FACTORY INSTALLED.**

**ITEM** | **PART NO.** | **DESCRIPTION**
---|---|---
1 | 20-02027 | RETAINER, ALUM, BLADE SEAL, 8'2"
2 | 30-00891 | BLADE SEAL EXT., TOP PANEL, TW/VC-4, RH
3 | 30-00892 | BLADE SEAL EXT., TOP PANEL, TW/VC-4, LH
4 | 10-00350 | WASHER, FLAT, 3/16" T.D.
5 | 10-00349 | SCREW, SHT METAL PH, #10 X 1"
6 | 20-00640 | BLADE SEAL, EPDM BLACK 2-1/2"
7 | 20-02026 | RETAINER, ALUM, BLADE SEAL, 10'2"
8 | 30-00030 | HRDW, K-LATH #8X3/4", 10 PACK
OPTIONS INSTALLATION (continued)

- Track Protector- VC
- Anti-Drift Down Brush Kits- STL Track and UW Track (FH I-A-T)

**TRACK PROTECTOR- VC**

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<th>DESCRIPTION</th>
<th>QTY REQD</th>
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**DETAIL A**

FIELD INSTALLATION INSTRUCTIONS:
1. REMOVE EXISTING 1/4-20 X 1" CARRIAGE BOLTS AND FLANGE NUTS AS SHOWN ON DETAIL A.
2. ATTACH THE TRACK PROTECTOR BRACKET TO STEEL TRACK AT 12" TO 18" BELOW THE HEADER OR AS NOTED ON THE DRAWING*.
3. REATTACH THE CARRIAGE BOLTS AND THEN TIGHTEN FLANGE NUTS.
4. REPEAT STEPS 1 THRU 3 FOR THE OPPOSITE SIDE TRACK.

* NOTE: ADJUST AS NEEDED BASED ON TRUCK DOOR STYLE.

**ANTI-DRIFT DOWN BRUSH KITS- STL TRACK AND UW TRACK (FH I-A-T)**

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NOTES:
1. ITEM NO'S 1, 3, 5, 6, AND 7 ARE INCLUDED IN TKO PNO. 30-00876- ANTI-DRIFT DOWN BRUSH KIT STL TRACK.
2. ITEM NO'S 2, 3, 4, AND 7 ARE INCLUDED IN TKO PNO. 30-00877- ANTI-DRIFT DOWN BRUSH KIT FH I-A-T.
OPTIONS INSTALLATION (continued)

- Blade Weather Seal Kit for Header/Top of Top Panel

BOTTOM BRUSH KIT 3"

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QTY</th>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>30-00300</td>
<td>HRDW,K-L #8X3/4&quot; 10-PACK</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>20-01106</td>
<td>BRUSH, STD, 3&quot; BLACK, 10'-2&quot;</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>20-00389</td>
<td>RETAINER, STD, 1&quot;-45D, ML, 10'-2&quot;</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>RF-00388DWG</td>
<td>BRUSH KIT,BTM, INSTALL INSTRUCTIONS</td>
</tr>
</tbody>
</table>

NOTE:
1. WW PANEL, INTERIOR INSTALLATION SHOWN.
2. SEE INSTRUCTIONS FOR SPECIFIC DOOR STYLE.

INSTALL INSTRUCTIONS:

**WW, TW, VC-2, VC-4, CWNI DOOR STYLES**

1. MEASURE THE LENGTH OF THE DOOR BOTTOM RETAINER.
2. CUT RETAINER ITEM NO.3 TO THE MEASURED DIMENSION.
3. INSTALL RETAINER ITEM NO.3 USING TEK SCREWS PROVIDED IN HRDW PACKAGE ITEM NO.1.
4. INSERT BRUSH THROUGH ENTIRE LENGTH OF RETAINER. ALLOW ENOUGH BRUSH TO EXTEND BEYOND RETAINER AND COVER ENTIRE DOOR OPENING.
5. CRIMP BOTH ENDS OF ALUMINUM RETAINER AFTER BRUSH HAS BEEN PROPERLY INSTALLED.

**CW DOOR STYLE**

1. RETAINER WILL COME FACTORY INSTALLED TO BOTTOM PANEL.
2. INSERT BRUSH THROUGH ENTIRE LENGTH OF RETAINER. ALLOW ENOUGH BRUSH TO EXTEND BEYOND RETAINER AND COVER ENTIRE DOOR OPENING.
3. CRIMP BOTH ENDS OF ALUMINUM RETAINER AFTER BRUSH HAS BEEN PROPERLY INSTALLED.
OPTIONS INSTALLATION (continued)

- Windload Option

For Doors equipped with Windload option, additional Slide Lock Assemblies and Locking Pins on lanyards MUST BE installed (3 on each side of all panels except Top panel). See below for Install Instructions.

**NOTE:**
Windload option for VC-4 Doors requires anchors to be placed in the bottom anchor slot of the track and then at maximum of 12” intervals (or every other slot on the track).
For VC-2 Doors with a Windload option anchor spacing varies with door height.

### FIELD INSTALLATION INSTRUCTIONS:

#### SLIDE LOCK AND LOCKING PIN INSTALLATION:
1. Check stacked panels for level and wind springs following the installation instructions in the Owner’s book.
2. Identify quantity of slide lock assemblies to be installed- each panel has six (6) slide lock assemblies (three on each side of panel).
3. Position slide lock assembly so that slide lock bar is level and centered in the slide lock slots on track when door is fully closed and creating proper seal at the bottom.
4. Verify clearance between steel track and pin. Slide lock bar must extend through the track allowing proper clearance of lock hole when bar is engaged.
5. Install slide lock assembly to panel plate using (4) TEK screws or 1/4-20 carriage bolts and flange nuts. Repeat steps 3 through 5 for each of the remaining slide locks.
6. Insert quick-release pin into the hole on the slide lock. make sure ball detent pin is completely through hole of slide lock.
7. Insert 1/4-20 carriage bolt into the nearest corresponding slot on the front edge of the steel track (See Detail A above). Slip open end of lanyard over exposed bolt, then properly tighten 1/4-20 flange nut to fully capture lanyard.
8. Repeat steps 6 and 7 for each of the remaining slide locks provided.

**NOTE:**
Remove pins from slide locks after installation. Latch only in the anticipation of high wind pressure event.

**WALL BRACKET/ CENTER BRACE ASSEMBLIES INSTALLATION:**
1. Position wall bracket above door header at 18.000” MAX O.C. and centered in the door opening. Secure wall bracket to the mounting surface using appropriate type and size anchors.
2. Position center post assembly centered in the door opening. Follow installation instructions in the Installation Instructions Manual TKO Part No. 15-00115 provided with the assembly kit TKO Part No. 30-00907.

**NOTE:**
Remove Center Brace Assembly after installation. Use only in the anticipation of high wind pressure event.
PLANNED MAINTENANCE

**WARNING**

Before servicing the door, read and follow the Safety Practices on pages 4-5 and the operations section of this manual. **DO NOT** attempt to repair or adjust door components unless you are a trained door systems technician. Springs, Cable Brackets, Cables, Drums, Plungers, Supports and their hardware are under extreme tension and can cause injuries if not properly handled. Always follow the maintenance schedule to ensure all components are in good working condition. Damaged or worn parts **MUST BE replaced immediately for proper and safe operation**. It is recommended that the door be made inoperative until the damaged or worn parts have been replaced. **Observe OSHA requirements for “LOCKOUT” or “TAGOUT” when performing work on the door.** Disconnect power before performing maintenance or repair of electrical devices. **Use proper tag or lockout procedures per OSHA regulations.**

<table>
<thead>
<tr>
<th>ITEM</th>
<th>PROCEDURE</th>
<th>INSPECT INTERVALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation</td>
<td>The door MUST BE balanced. Customer should be able to raise the door to waist level, slowly release, and have the door stay in place. Adjustment to the spring tension or counterweights may be necessary (See Trouble Shooting Guide on pg. 74 of this manual). If the door has an automatic opener, disconnect it before this inspection.</td>
<td>Monthly</td>
</tr>
<tr>
<td>Powered Operator Safety Device</td>
<td>Test per manufacturer’s recommendations if equipped.</td>
<td>●</td>
</tr>
<tr>
<td>Backhangs/ Sway Braces</td>
<td>Check for signs of abnormal wear or damage and properly secure all fasteners.</td>
<td>●</td>
</tr>
<tr>
<td>Bearings</td>
<td>Check for signs of abnormal wear or damage.</td>
<td>●</td>
</tr>
<tr>
<td>Cables</td>
<td>Check for signs of abnormal wear, fraying or damage. Lubricate with lightweight oil.</td>
<td>●</td>
</tr>
<tr>
<td>Cable Attachments</td>
<td>Check for signs of abnormal wear or damage and properly secure all fasteners.</td>
<td>●</td>
</tr>
<tr>
<td>Counterweights</td>
<td>Check cables for signs of abnormal wear, fraying or damage. Lubricate cables with Lightweight oil.</td>
<td>●</td>
</tr>
<tr>
<td>Drums, Couplers, Sprockets</td>
<td>Check all set screws and shaft keys and securely tighten. Level door in opening if necessary.</td>
<td>●</td>
</tr>
<tr>
<td>Fasteners</td>
<td>Check and properly secure all fasteners.</td>
<td>●</td>
</tr>
<tr>
<td>Hinges</td>
<td>Check for signs of abnormal wear or damage.</td>
<td>●</td>
</tr>
<tr>
<td>Labels</td>
<td>Inspect all safety/warning/product labels, placards, decals, tags. Replace if damaged or missing (See Decal and Placard Installation in the User’s Manual).</td>
<td>●</td>
</tr>
<tr>
<td>Panels</td>
<td>Check for signs of abnormal wear or damage.</td>
<td>●</td>
</tr>
<tr>
<td>Panels Clean with soap ONLY. Call TKO for approved cleaners. As Needed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plunger shafts and bearings</td>
<td>Lubricate Spring Plungers by removing cover, lubricate shaft and bearings with lightweight oil. Check for signs of abnormal wear or damage. Verify shafts on Spring Plungers retract inside bearings by pulling on handles. <strong>NOTE: If shaft does not retract replace Plungers.</strong></td>
<td>Monthly</td>
</tr>
<tr>
<td>Safety Spreader Bar</td>
<td>Check Safety Spreader Bar Assemblies (for High Lift and Tilt doors) are installed and undamaged.</td>
<td>●</td>
</tr>
<tr>
<td>Seals</td>
<td>Check for signs of abnormal wear or damage.</td>
<td>●</td>
</tr>
<tr>
<td>Shaft</td>
<td>Check for signs of abnormal wear or damage.</td>
<td>●</td>
</tr>
<tr>
<td>Springs</td>
<td>Check for signs of abnormal wear or damage. Lubricate with Lightweight oil, remove excess with shop rag.</td>
<td>●</td>
</tr>
<tr>
<td>Spring Anchors</td>
<td>Check for signs of abnormal wear or damage and properly secure all fasteners.</td>
<td>●</td>
</tr>
<tr>
<td>Track</td>
<td>Check for proper track spacing and alignment.</td>
<td>●</td>
</tr>
<tr>
<td>Track</td>
<td>Check and properly secure all track anchors.</td>
<td>●</td>
</tr>
<tr>
<td>Track</td>
<td>Check for signs of abnormal wear or damage.</td>
<td>●</td>
</tr>
</tbody>
</table>

* Use Light Weight Oil.

**Caution:** Solvents may damage the panels and void manufacturers warranty.
## TROUBLE SHOOTING

**WARNING**

*Before servicing the door, read and follow the Safety Practices on pages 4-5 and the Door Operation section on page 45 of this manual.*

### TROUBLE SHOOTING GUIDE

<table>
<thead>
<tr>
<th>TROUBLE</th>
<th>PROBABLE CAUSE</th>
<th>REMEDY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Door raises hard, closes easily</td>
<td>Insufficient counterbalance</td>
<td>Increase spring tension.</td>
</tr>
<tr>
<td></td>
<td>Springs need lubrication</td>
<td>Lubricate springs.</td>
</tr>
<tr>
<td>Door closes hard, raises easily</td>
<td>Too much counterbalance</td>
<td>Decrease spring tension.</td>
</tr>
<tr>
<td>Door jumps from floor</td>
<td>Too much counterbalance</td>
<td>Decrease spring tension.</td>
</tr>
<tr>
<td>Door lifts unevenly, light shows on one side of track</td>
<td>Door improperly leveled/ sitting crooked</td>
<td>Slip drums/shaft coupler or use cable leveling assemblies (top pickup doors) to level door.</td>
</tr>
<tr>
<td>Door will not stay open</td>
<td>Broken spring</td>
<td>Replace Spring.</td>
</tr>
<tr>
<td></td>
<td>Insufficient counterbalance</td>
<td>Increase spring tension.</td>
</tr>
<tr>
<td>Door operates with too much resistance</td>
<td>Springs need lubrication</td>
<td>Lubricate springs.</td>
</tr>
<tr>
<td></td>
<td>Broken spring</td>
<td>Replace Spring.</td>
</tr>
<tr>
<td></td>
<td>Tracks are too tight</td>
<td>Adjust tracks to correct width.</td>
</tr>
<tr>
<td></td>
<td>Grease/ Residue on tracks</td>
<td>Wipe residue off seals/ tracks, Lubricate all track running surfaces with a light coat of Silicone Spray. (DO NOT use oil or grease)</td>
</tr>
</tbody>
</table>
PARTS LISTING

WARNING

Fixed plungers are required on all panels.
Fixed plungers are required on all panels.

*ALL DOOR PANELS VARY PER SIZE. A SERIAL NUMBER MUST BE KNOWN AS WELL AS DOOR MODEL WHEN ORDERING BOTTOM T-SLOT SEAL RETAINER.

**NOTE: VERIFY PANEL POSITION, PANEL WIDTH AND DOOR MODEL WHEN ORDERING REPLACEMENT SIDE LOOP SEAL OR T-SLOT SEAL RETAINER.**
PARTS LISTING

STEEL TRACK ASSEMBLY PARTS (STRAIGHT VERTICAL TRACK SHOWN)

NOTE:
DIFFERENT TRACK CONFIGURATIONS EXIST WITHIN EACH DOOR MODEL LINE. A SERIAL NUMBER AND DOOR MODEL IS REQUIRED WHEN ORDERING TRACK COMPONENTS. CONSULT FACTORY FOR SPECIFIC TRACK CONFIGURATION AND PARTS IDENTIFICATION FOR YOUR SPECIFIC COMPONENT NEED.

STEEL STRT TRACK
PART NO.S WILL VARY
(LEFT HAND SIDE)

STEEL STRT TRACK
PART NO.S WILL VARY
(RIGHT HAND SIDE)

TRACK LINER EXT., TW*
PART NO.S WILL VARY
WITH DOOR HEIGHT)
OR
TRACK LINER EXT, VC*
PART NO.S WILL VARY
WITH DOOR HEIGHT)

TRACK LINER, TW*
PART NO. 20-01815
OR
TRACK LINER, VC*
PART NO. 20-01942

RADIANT BARRIER
PART NO. 20-01863
(LENGTH VARIES
WITH DOOR HEIGHT)

RUBBER FOAM, VINYL
PART NO. 20-01862
(LENGTH VARIES WITH
DOOR HEIGHT)

STEEL TRACK VC BTM
PART NO. 20-02033
(RIGHT HAND SIDE)

* TRACK LINER AND TRACK LINER EXT. PARTS VARY IN LENGTH AND WIDTH WITHIN THE VERTICOOL MODEL LINE AND WITH DOOR PANEL THICKNESS- 4 INCH OR 2 INCH.