



TKO

MIDDLEWEIGHT[®] THERMALWEIGHT[™] JR.MIDDLEWEIGHT[®] DOCK DOOR



User's Manual - Installation, Operations, Maintenance and Parts Listing

This manual applies to MiddleWeight, ThermalWeight, and Jr.MiddleWeight Dock Doors manufactured beginning January 2006.

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

TKO DOCK DOORS warrants that this DOCK DOOR will be free from defects in material and workmanship under normal use for a period of ONE (1) year from the date of initial shipment by TKO DOCK DOORS, provided that the owner maintains and operates the DOCK DOOR in accordance with this Owner's Manual.

EXTENDED PANEL LIMITED WARRANTY

MIDDLEWEIGHT: Door will remain operational after resetting from impact under normal use, service and maintenance for ONE (1) year (excluding any window portion thereof) from date of shipment. Does not cover punctures, cracks or slices in panel(s). UHMW track is standard. Optional Super Panel: TWO (2) year performance limited warranty from date of shipment.

THERMALWEIGHT: Door will remain operational after resetting from impact under normal use, service and maintenance for ONE (1) year (excluding any window portion thereof) from date of shipment. Does not cover punctures, cracks or slices in panel(s). UHMW track is standard. Optional Super Panel: TWO (2) year performance limited warranty from date of shipment.

Jr. MIDDLEWEIGHT: Door will remain operational after resetting from impact under normal use, service and maintenance for SIX (6) months (excluding any window portion thereof) from date of shipment. Does not cover punctures, cracks or slices in panel(s). UHMW track is standard. Optional Super Panel: TWO (2) year performance limited warranty from date of shipment.

EXTENDED TRACK LIMITED WARRANTY

TKO DOCK DOORS warrants its UHMW track for FIVE (5) years from date of purchase. This is for the UHMW track portion only. Cuts, gouges, and abrasions are not considered warrantable conditions.

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

1. Replace the DOCK DOOR, or the defective 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.

The limited warranty stated in the preceding paragraph IS EXCLUSIVE AND IT IS IN LIEU OF ANY OTHER GUARANTEES AND WARRANTIES, EXPRESS OR IMPLIED. The limited warranty does not cover any failure caused by improper installation, abuse, negligence, or failure to maintain and adjust the DOCK DOOR properly. This limited warranty does not include normal wear, modifications, and damage beyond the manufacture's control, replacement labor or implied cycle life of counter balance systems (cables, spring assembly, drums, shaft, cones, shaft bearings or center bearing bracket). 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 (including, without limitation, direct, indirect or consequential damages, or lost profits or production time) that results from the use of unauthorized replacement parts or modification of the DOCK DOOR. TKO DOCK DOORS sole obligation will regard to a DOCK DOOR that proves to be defective in material or workmanship shall be as set forth in its standard warranty above (i.e., TKO DOCK DOORS will, at its option, repair or replace the DOCK DOOR or portion thereof, with charge to the purchaser.).

This limited warranty does not cover any failure caused by improper installation, abuse, negligence, or failure to properly maintain and adjust the DOCK DOOR. This limited warranty will be void or of no effect if the original purchaser does not notify TKO DOCK DOORS warranty department within NINETY (90) days after the product defect is discovered. 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 that results from the use of unauthorized replacement parts or modifications of the DOCK DOOR.

THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF, AND THERE IS NO WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE. TKO DOCK DOORS warranties extend only to the DOCK DOOR itself.

TKO DOCK DOORS DISCLAIMS all warranties, express or implied, responsibility or liability for loss or damage of any kind associated with the installation or maintenance of the DOCK DOOR, including any liability for premature product wear, product failure, property damage or bodily injury arising from improper installation or maintenance of the DOCK DOOR.

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.

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.
- Sawhorses — for assembling sections.
- 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: Spray-on lithium grease (or food grade equivalent) for lubing Plunger Springs. Chain lube or motor oil for lubing Torsion/Counterbalance Springs.
- Steel angle (minimum 12 gauge) for Backhangs and Sway Braces. Size will vary with different applications.
- Spring Mounting Pad(s). MUST BE structurally sound to support weight of Spring(s) and the torque put on them.

TKO Doors DOES NOT supply Backhang Material, Spring Mounting Pads or
Wall Mounting Hardware.

RECOMMENDED ANCHOR SYSTEM FOR HOLLOW BLOCK WALL

TKO recommends the following anchor system components manufactured by Powers-Rawl:

- 3/8" x 1-3/4" Wedge Bolt Anchor (#07220) with 3/8" Block Plug (#07191). Anchor holes must be made by using a SDS-PLUS Wedge Bit (#01316) or HD Straight Shank Bit (#01380).
- 3/8" x 1-1/2" Hollow Set Drop In Anchor (#9340) with 3/8-16 machine bolt. Anchor holes must be made by using an ANSI drill bit size 5/8".

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.

CAUTION

Caution used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, could result in property damage.

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 qualified TKO door technician to assist.

Installation, Maintenance and Service

1. ONLY experienced and qualified door 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. 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.
8. Follow all local and state codes regarding attachment of back-hang to structural components of the building.

SAFETY (continued)

SAFETY PRACTICES (continued)

Operation

1. Personnel using the dock doors MUST BE properly trained.
2. Operate door ONLY when properly adjusted and free of obstructions. Should the door become difficult to operate or completely inoperative, 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 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.

Resetting Impacted Panels

1. In the event of a panel KNOCK-OUT or track impact situation, step away from the door a safe distance.
2. Inspect the door system BEFORE resetting panels.
 - Plungers of the top panel MUST BE engaged in track.
 - Cables MUST BE properly tensioned and seated in the grooves of the cable drums.
 - Panels MUST BE sitting level with hardware intact.
 - Tracks MUST BE square to jamb face and securely mounted.If the above conditions are met, continue with resetting door (see steps 3-6 below). If any of these conditions are not met, DO NOT use door. Stay clear of door and immediately report incident to supervisor and have a trained door systems technician inspect and reset door.
3. Clear fork truck and/or all products from dock door area.
4. Grab manufacturer-supplied handle(s) and pull door panels back into tracks. If the spring plunger tips are obstructed at any point of the return travel, the plunger rods may be manually retracted while pulling panels back into tracks. Depending on conditions, this operation may require 2 people to safely reset the door.
 - NEVER try to open or close door until all panel plungers are reset back into track and door has been inspected.
 - NEVER climb under impacted panels to reset door.
5. Check panels, track, hardware and fasteners for any damage, looseness, misalignment, and verify track spacing BEFORE operating door.
6. After panels have been engaged back into the tracks, carefully cycle the door to its fully open and closed position several times making sure operation is smooth throughout its entire travel cycle.

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 20 to 29. If the tracks are not firmly stabilized with the Spreader Bars, the Tracks may spread 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.

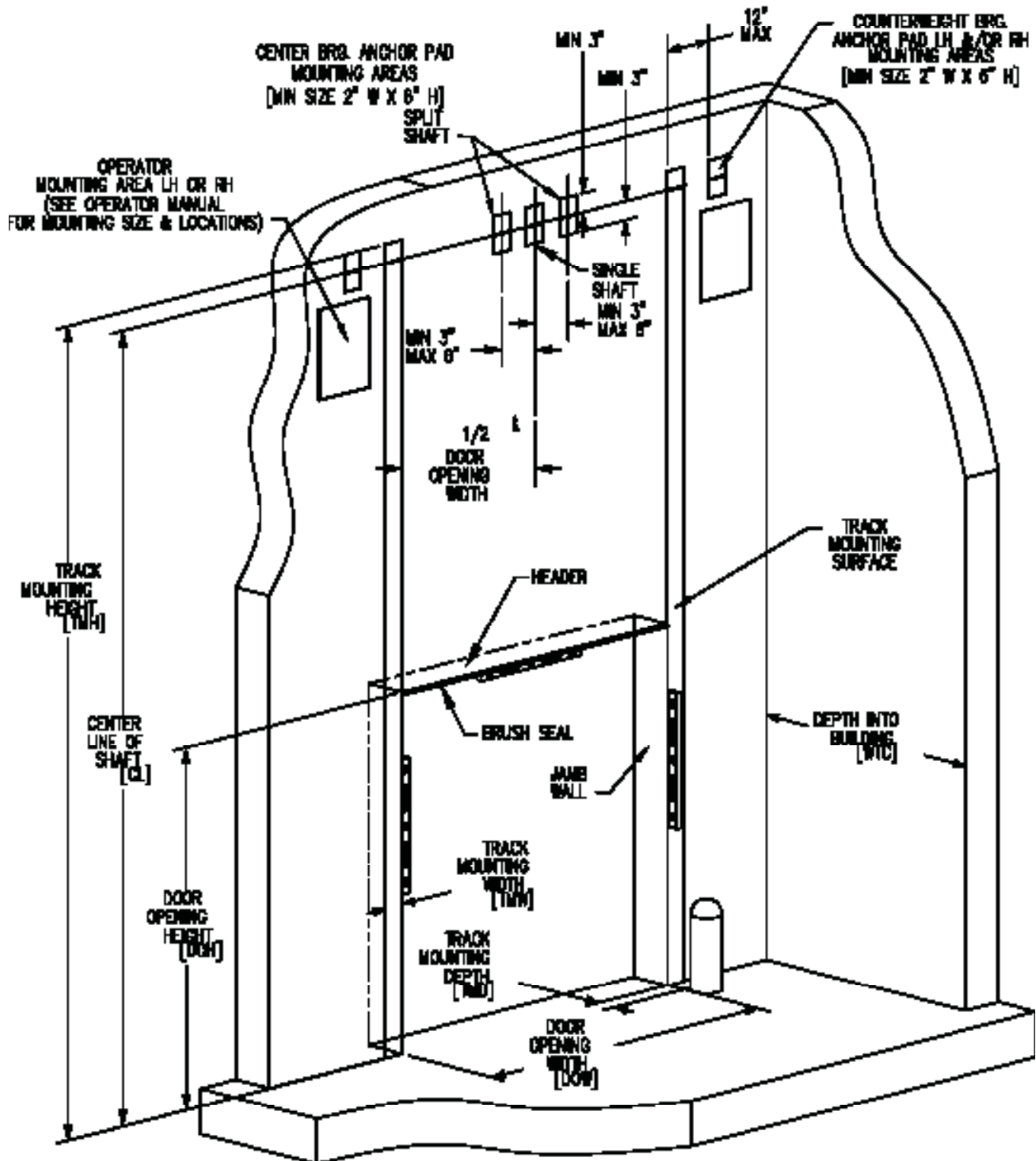
DOOR OPENING

1. For the TKO Knock-out Dock Door system to function properly, the door opening **MUST BE** 'true', 'square', 'plumb' and 'flush'. Any compromise of the door opening characteristics may affect the function and performance of the door. 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.
2. Measure DOOR OPENING WIDTH (DOW). The finished DOW **MUST** match the designed TRACK SPACING dimension as shown on the third panel. The door panels will not easily break away and reset properly when impacted, or 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.
3. 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.
4. 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.
5. 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. If the jambs are not level and straight, a portion of the jamb may be exposed (in relation to the track), restricting the panels to properly knock-out.
6. Inspect jamb walls for any obstructions. Ensure that nothing will impede the door's outward movement when impacted. Any sharp edges **MUST BE** eliminated to prevent possible seal damage as panels' swing into the opening when impacted.

Contact TKO Doors for assistance at 1-800-575-3366.

SITE PREPARATION (continued)

DOOR OPENING



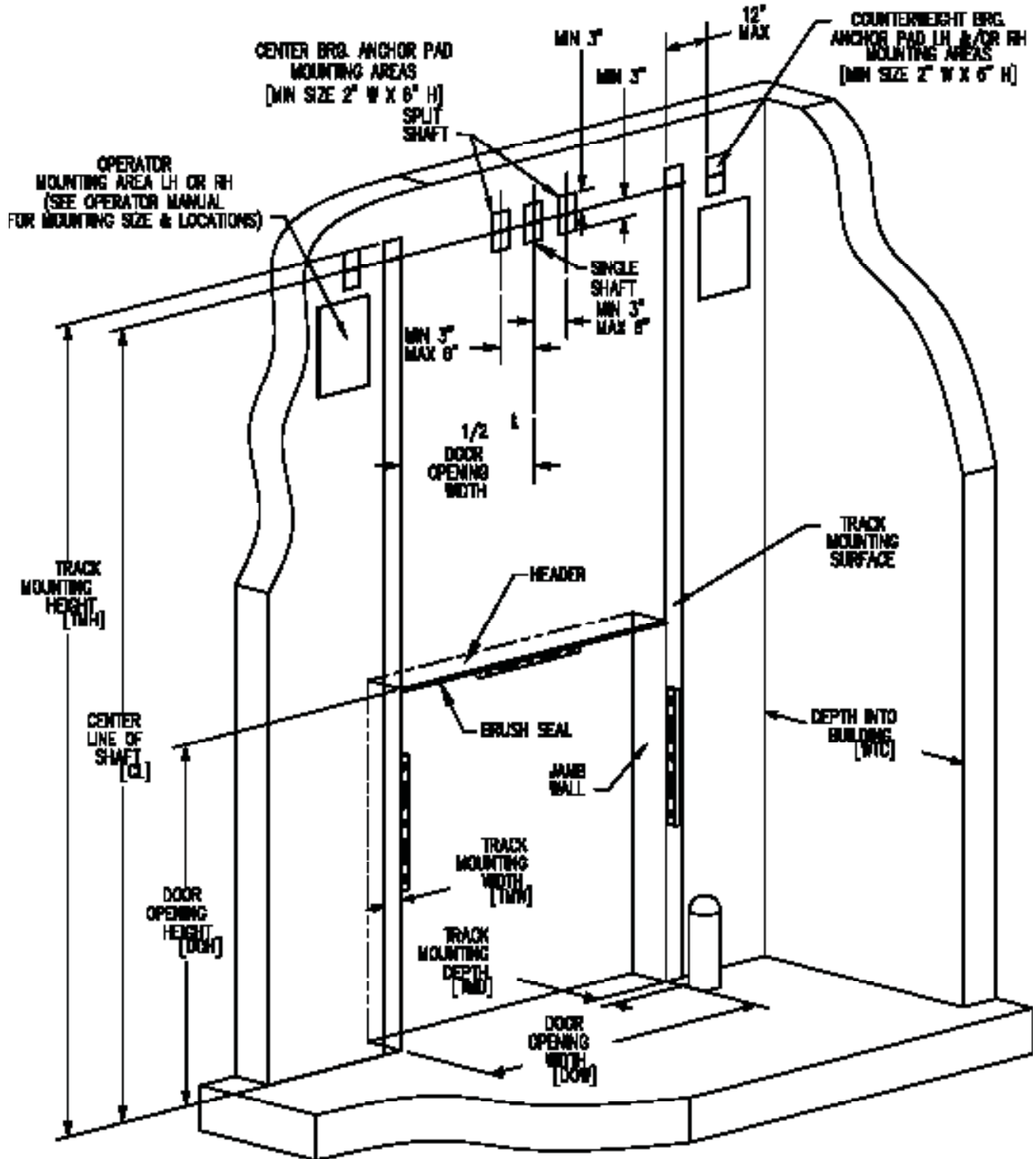
SITE PREPARATION (continued)

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. 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. No obstruction may extend beyond the surface plane of the track-mounting surface. All obstructions **MUST BE** moved or eliminated.
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.

SITE PREPARATION (continued)

TRACK MOUNTING SURFACE



TRACK ANCHORING APPROVED METHODS

STRUCTURE

1. All track anchoring, including plug welding should be in the bottom two anchor holes of the track and then at 18 inch intervals. The alternate method of fillet welding requires 1-1/2 inch long welds to be placed every 18 inches on both sides of the track. Additional welds need to be place 1 inch above the floor and 1 inch below the header.

CAUTION

The Alternate Track Anchoring method of welding requires the tracks to be positioned $\pm 1/4$ " within the TRACK SPACING dimension (engraved on the door mounted Safety Decal) at the time the welds are performed. If the tracks are not positioned correctly, removal of the welds to relocate tracks may destroy the tracks.

2. Anchors MUST BE centered in the slotted track holes to provide the ability to adjust in or out if necessary. Shims may be required between the track and wall surface to ensure the TRACK SPACING dimension (engraved on the door mounted Safety Decal) is maintained and that the tracks are anchored securely.
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 structural member using a minimum 3/8" x 3" anchor backed with a 3/8" washer. Position anchors as listed in item 1 above.
4. If mounting the track to solid concrete, anchor tracks using a minimum 3/8" x 2" concrete anchor backed with a 3/8" washer. Position anchors as listed in item 1 above.
5. If mounting the track to insulated panels the jamb MUST BE capped with steel and structurally secure for welding or anchoring tracks (see method for mounting to steel). A sound structure MUST BE provided for upper tracks as well. Position welds or anchors as listed in item 1 above.
6. If mounting to hollow block, it is important to use 3/8" expansion type anchors specifically designed for this use.
7. If mounting the track to insulated panels the jamb MUST BE capped with steel and structurally secure for welding or anchoring tracks (see method for mounting to steel). A sound structure MUST BE provided for upper tracks as well. Position welds or anchors as listed in item 1 above.

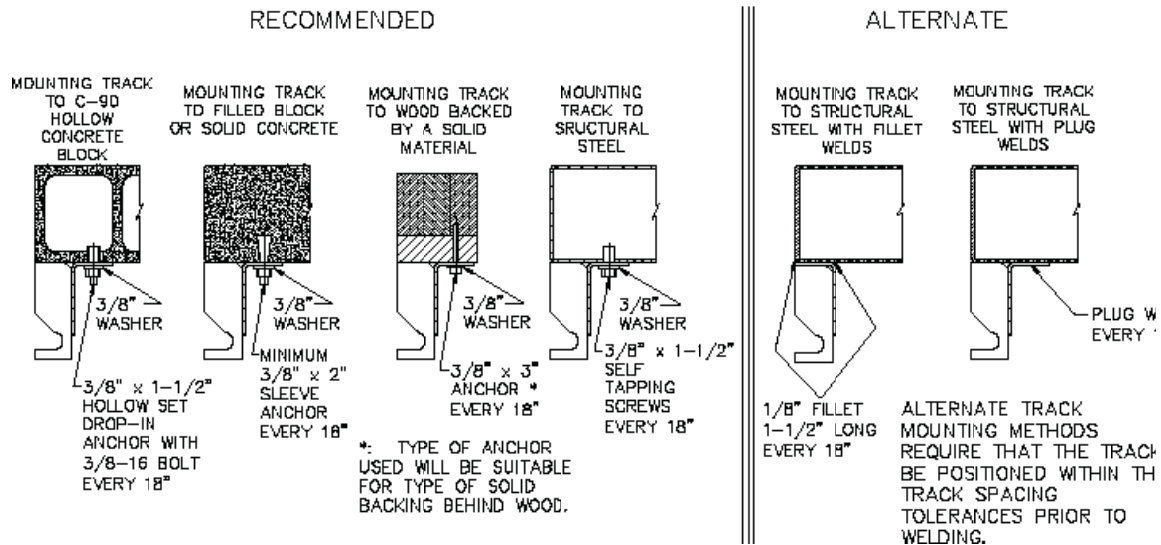
RECOMMENDED ANCHOR SYSTEM FOR HOLLOW BLOCK WALL

TKO recommends the following anchor system components manufactured by Powers-Rawl:

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- 3/8" x 1-1/2" Hollow Set Drop In Anchor (#9340) with 3/8-16 machine bolt. Anchor holes must be made by using an ANSI drill bit size 5/8".

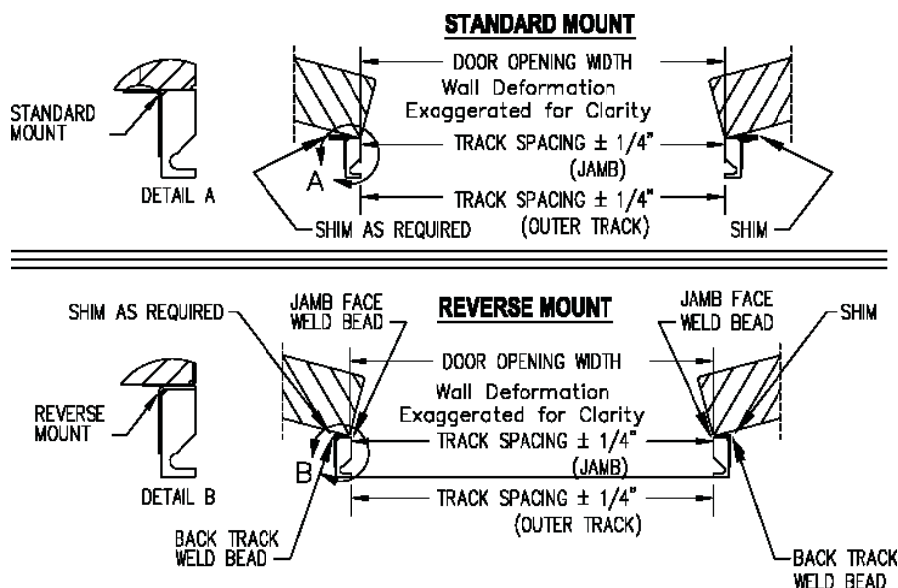
TRACK ANCHORING APPROVED METHODS (continued)

NOTE: ALL METHODS OF TRACK ANCHORING REQUIRE THAT THE TRACK SPACING DIMENSION TOLERANCES OF $\pm 1/4"$ 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 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.



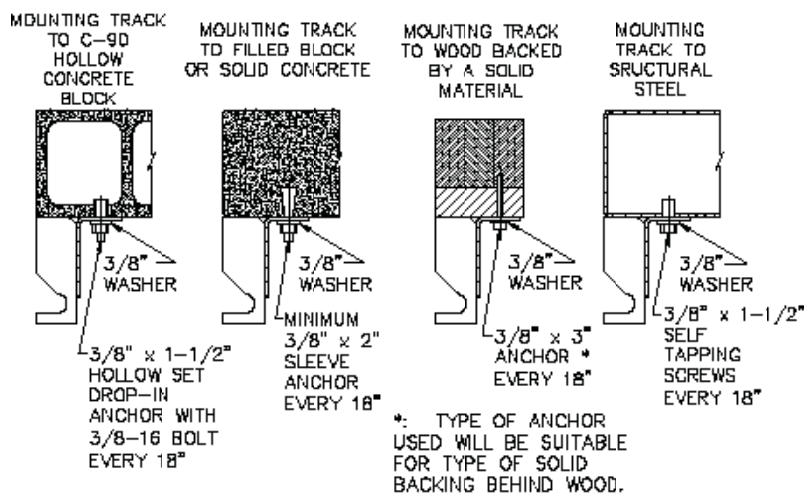
TRACK INSTALLATION

LOWER TRACK INSTALLATION

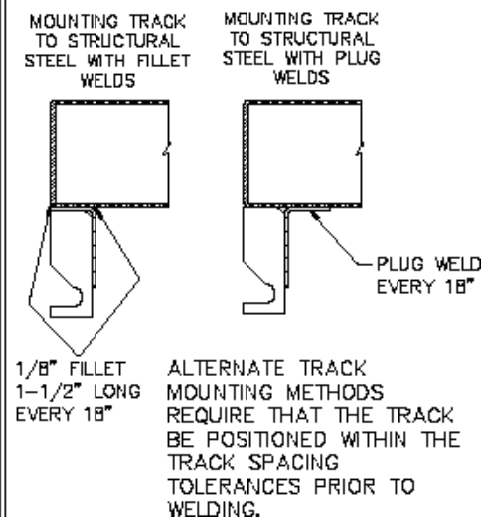
1. Locate the TRACK PRINT IDS (Installer Detail Sheet) contained in the Owner's Parts Book. It illustrates the assembly of the track component parts.
2. Inspect track pieces and line up so that they match job specific track drawing that was supplied with door. If track drawing is missing, call a TKO Doors customer service representative for assistance.
3. Initially, clamp or mount lower tracks to wall loosely, so they may be moved to keep door centered and track at proper spacing. Ideally, clamp both track sides to wall and verify spacing before anchoring. If this is not possible or desired, anchors and bolts should be inserted in middle of mounting holes so that track can be moved in or out if necessary. If welding, clamp track down or spot weld until assured that track has proper spacing. 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 if floor pad is not level.
4. Mount tracks to wall with one of the Recommended Anchoring Methods illustrated below. Ensure that track is level/straight and plumb with jamb. Check that track is plumb and level several times during mounting. If jamb condition DOES NOT permit track to be plumb, it MUST at least be level and centered in opening for door to run smoothly. Shims may be required between the track and wall surface to ensure the TRACK SPACING dimension (engraved on the door mounted Safety Decal) is maintained and that the tracks are anchored securely.

NOTE: ALL METHODS OF TRACK ANCHORING REQUIRE THAT THE TRACK SPACING DIMENSION TOLERANCES OF $\pm 1/4"$ NOT TO BE EXCEEDED.

RECOMMENDED



ALTERNATE



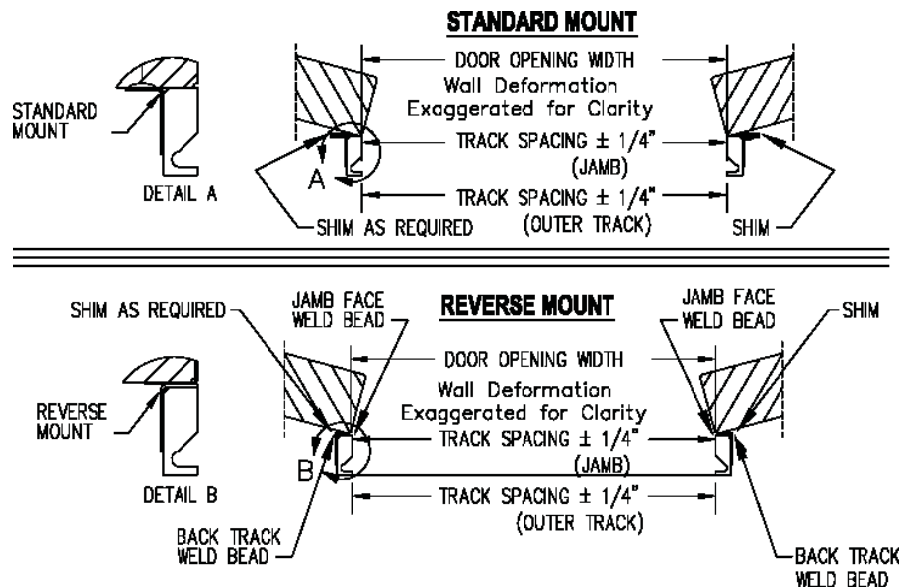
5. Verify TRACK SPACING: Measure track width starting 3" from floor and every 3' on up. Track MUST BE kept level/straight and at proper spacing. TRACK SPACING tolerance is $\pm 1/4"$
6. Solidify attachments to wall: Once TRACK SPACING is correct, be certain to tighten down all anchors/bolts and solidify all welds that may have been left loose to allow for moving of track.
7. Proceed to upper track installation: Once lower tracks are securely mounted and spaced, prepare to install upper tracks.

TRACK INSTALLATION (continued)

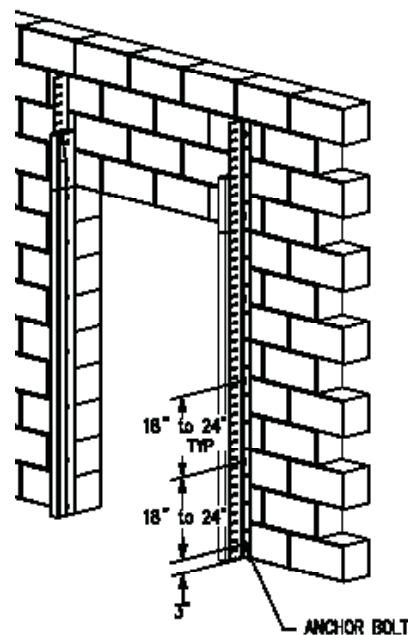
WARNING

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.

LOWER TRACK INSTALLATION



STANDARD MOUNTING SHOWN

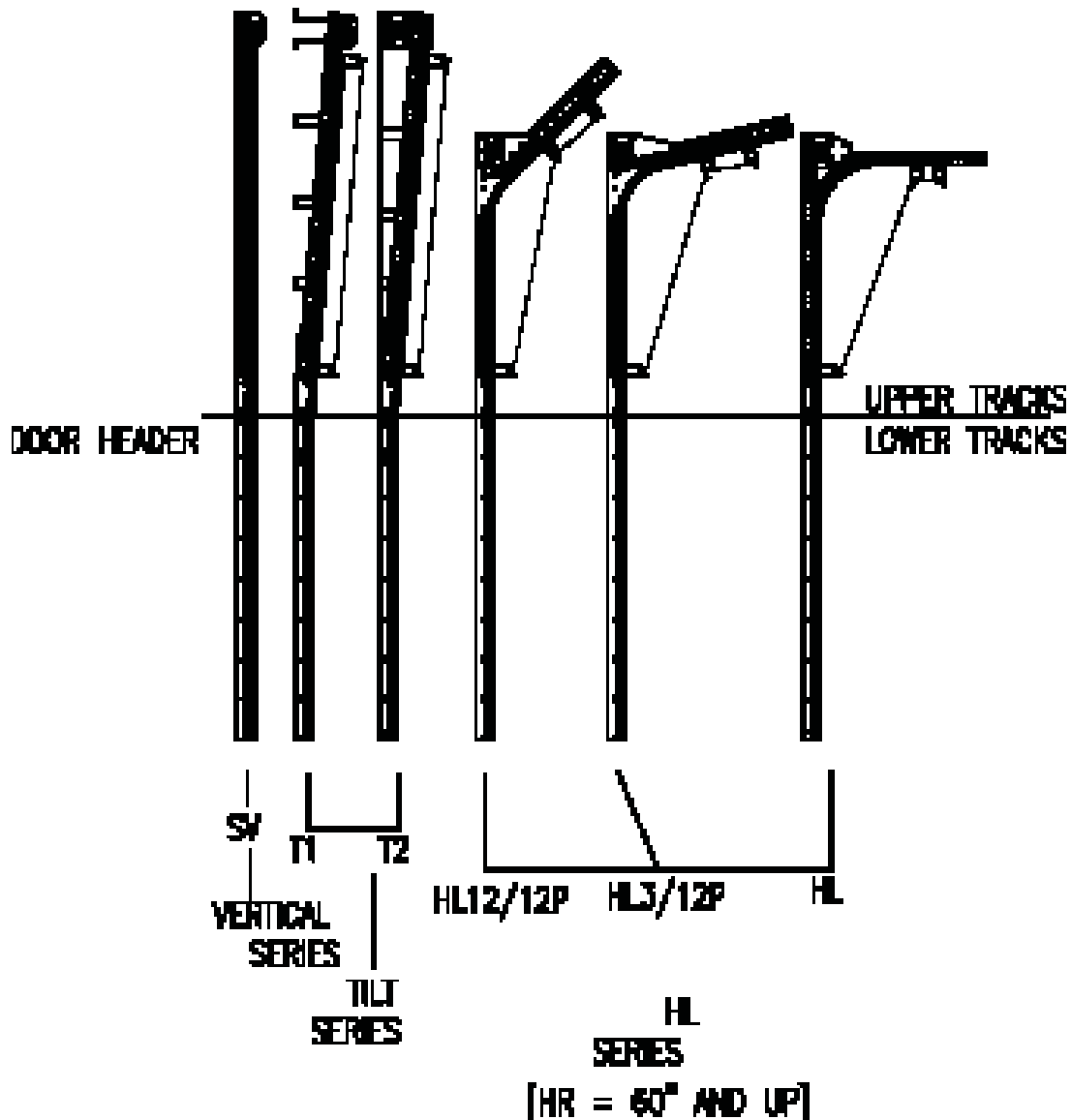


TRACK INSTALLATION (continued)

UPPER TRACK INSTALLATION

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

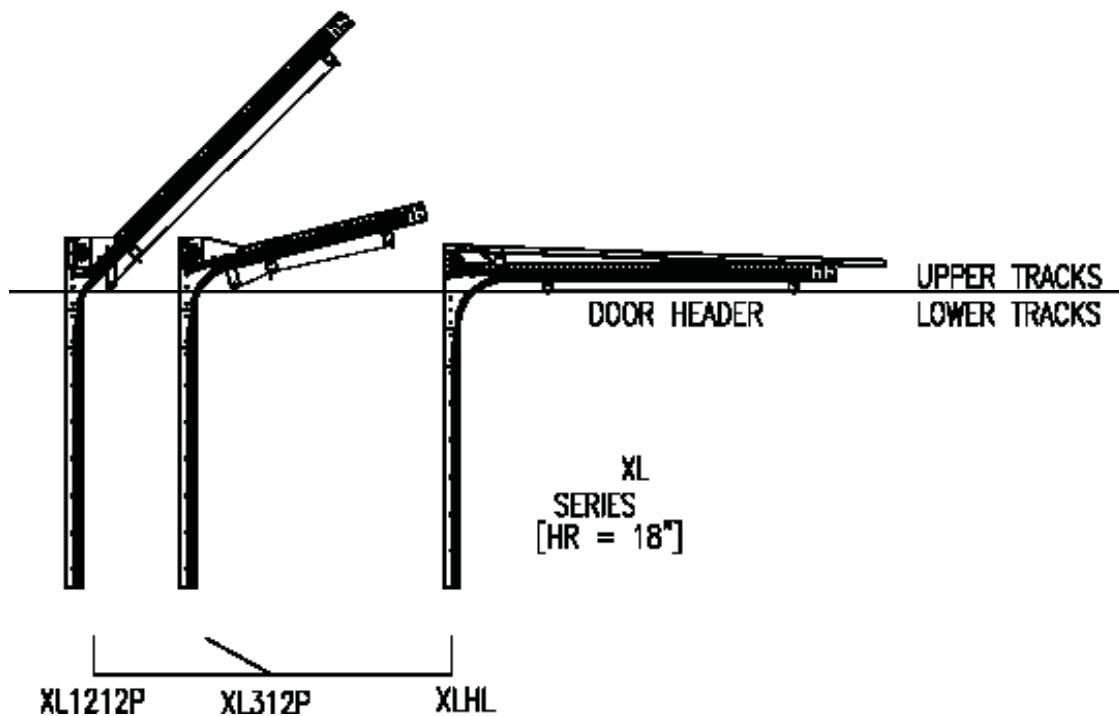
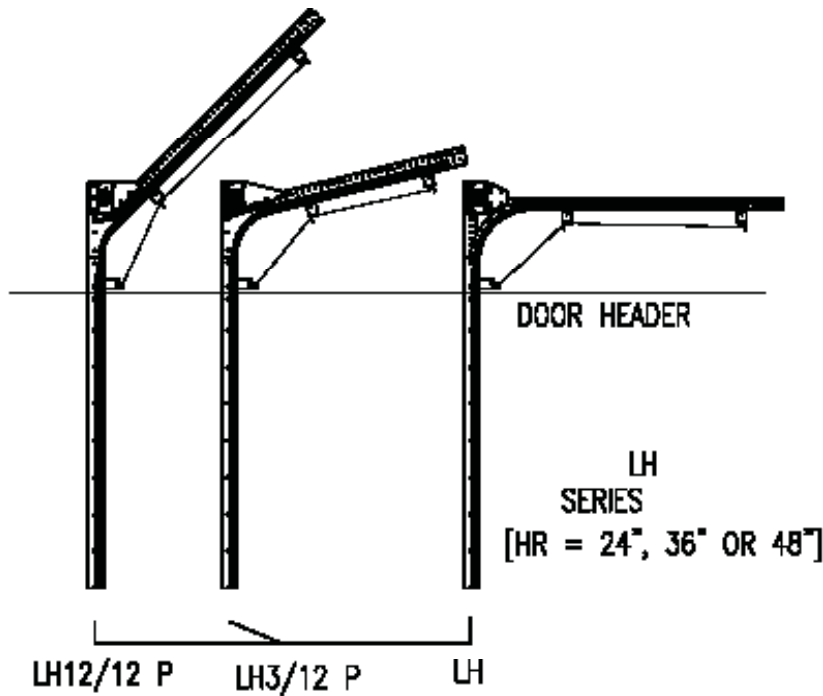
TRACK STYLE	INSTALLATION INSTRUCTIONS
Straight Vertical Track Installation	Pages 16 to 17
Tilt T1 Track Installation	Pages 18 to 21
Tilt T2 Track Installation	Pages 22 to 25
Roof Pitch Track Installation	Pages 26 to 27
High-Lift Track Installation	Pages 28 to 29
Center Spring Pad Installation	Pages 30 to 31



TRACK INSTALLATION (continued)

⚠ 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 20 to 29. If the tracks are not firmly stabilized with the Spreader Bars, the Tracks may spread and allow the door to fall. Failure to follow these instructions could result in death or serious injury.



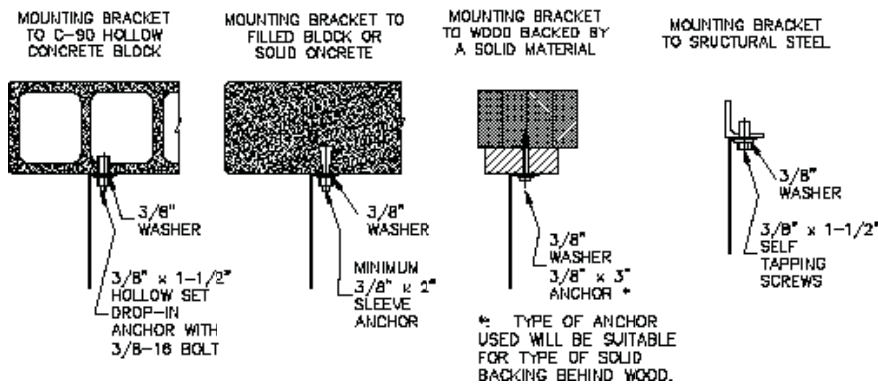
TRACK INSTALLATION (continued)

STRAIGHT VERTICAL TRACK INSTALLATION

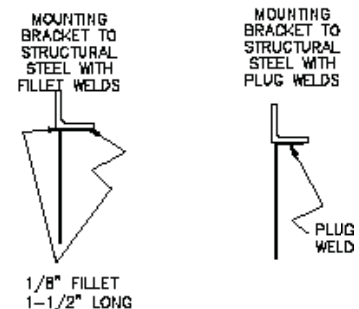
1. Locate the TRACK PRINT IDS (Installer Detail Sheet) contained in the Owner's Parts Book. It illustrates the assembly of the track component parts.
2. Check how track is assembled: The track will come assembled in one of three ways:
 - A. Lower tracks with extended steel.
 - B. Upper tracks with extended steel.
 - C. Upper and lower tracks have steel and plastic track same length.
 Track splice bracket will hold upper and lower tracks together for any combination below.
3. Attach upper tracks to lowers:
 - A. If tracks have extra length of steel on the uppers or lower tracks, bolt protruding portion of either lower or upper plastic track to the extra length of steel angle track on the opposite track assembly (track splice will have to be temporarily removed from lower tracks). Bolt plastic track through steel track to the track splice with flat head, Phillips drive, 5/16-18 x 3" machine screws. Parts should fit together to create a smooth transition.
 - B. If tracks have plastic and steel the same length, stack track on top of one another to create smooth, level transition and splice together with track splice plate. Bolt plastic track through steel angle track to the track splice with flat head, Phillips drive, 5/16-18 x 3" machine screws.
 - C. Tracks are factory attached to the steel angle with flat head, Phillips drive, 5/16-18 x 2-1/2" machine screws. 3" machine screws are required when bolting through the track splice plated.
4. Mount bearing plate to wall with one of the Recommended Anchoring Methods illustrated below. Make sure upper tracks are plumb, level, and straight with lower tracks. Shimming of the upper tracks/bearing plate may be necessary to accomplish this.

NOTE: ALL METHODS OF UPPER TRACK AND BEARING BRACKET ANCHORING REQUIRE THAT THE TRACK SPACING DIMENSION TOLERANCES OF $\pm 1/4"$ NOT TO BE EXCEEDED.

RECOMMENDED



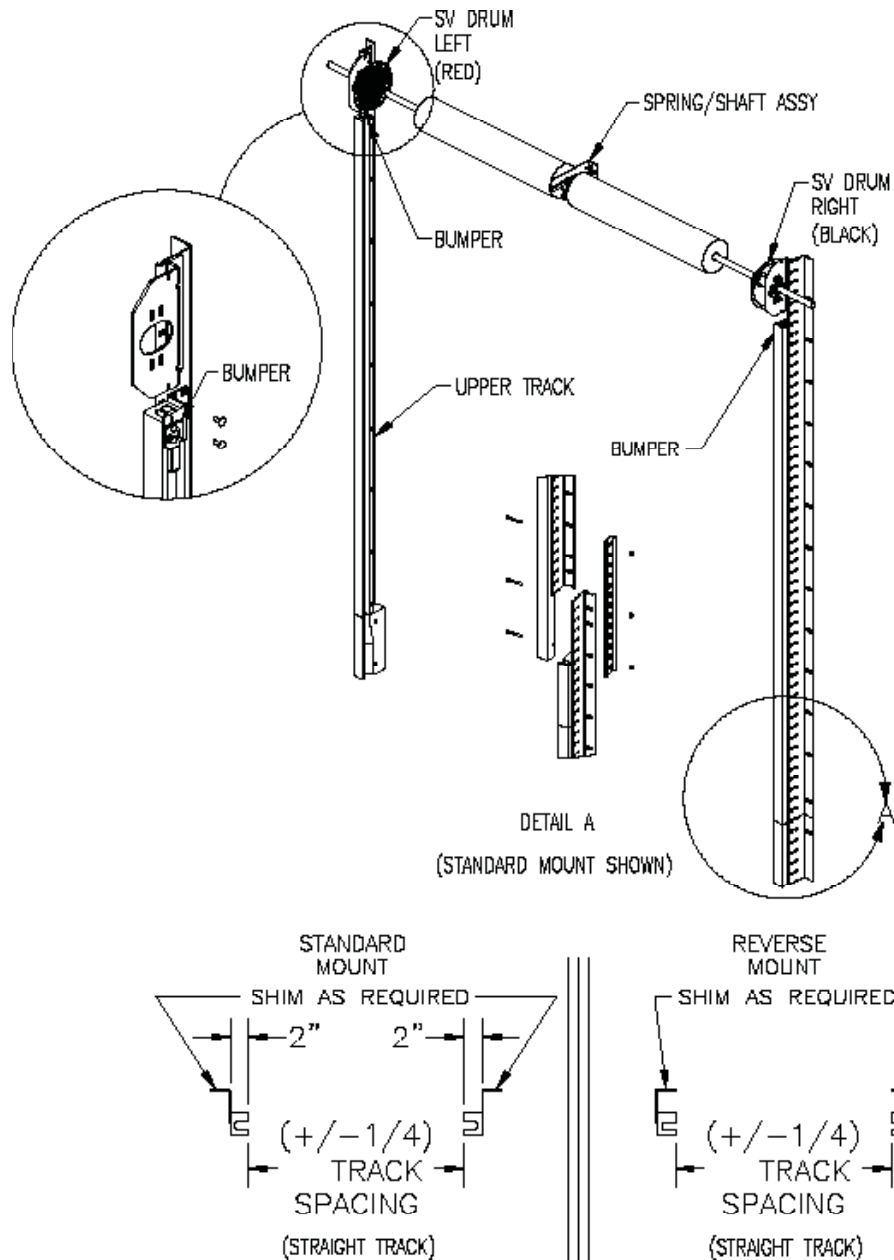
ALTERNATE



5. Mount upper tracks securely to wall with one of the Recommended Anchoring Methods illustrated above. Shimming may be required to ensure that the upper tracks are anchored securely and inline with the lower tracks.
6. Repeat steps 4 and 5 for the other side of door opening. Position the tracks at the TRACK SPACING dimension engraved on the Safety Decal that is attached to the third panel of each door. Anchor the tracks securely using one of the Recommended Anchoring Methods.
7. Verify the TRACK SPACING dimension and properly torque (23 ft-lb) the fasteners that attach brackets to the track. Tighten the track anchors to the proper torque specified by the anchor manufacturer.

TRACK INSTALLATION (continued)

STRAIGHT VERTICAL TRACK INSTALLATION



WARNING

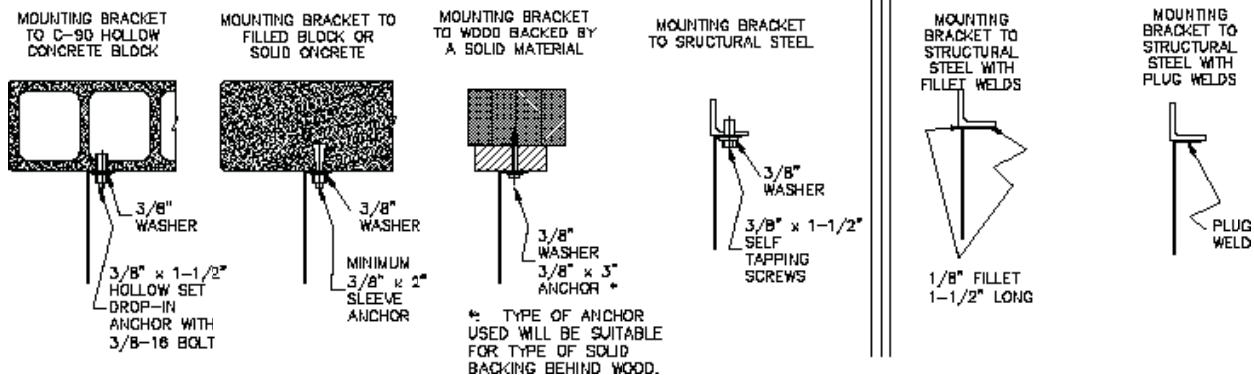
Failure to securely position and anchor door tracks per the TRACK SPACING dimension and tolerance (engraved on the door mounted Safety Decal) may allow the tracks to become too wide and allow the door to fall out of its tracks which could result in death or serious injury. Shims may be required between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

TRACK INSTALLATION (continued)

TILT T1 TRACK INSTALLATION

1. Locate the TRACK PRINT IDS (Installer Detail Sheet) contained in the Owner's Parts Book. It illustrates the assembly of the track component parts.
2. Stack track on top of one another to create smooth, level transition and splice together with track splice plate. Bolt plastic track through steel angle track to the track splice with flat head, Phillips drive, 5/16-18 x 3" machine screws. Tracks are factory attached to the steel angle with flat head, Phillips drive, 5/16-18 x 2-1/2" machine screws. 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 the Top Tilt Bracket within 12" to 24" from the highest point of the track. Do not apply full torque to the fasteners at this time. The bracket may need to be adjusted to ensure proper track alignment. The tracks need to be equally spaced from the wall surface and must maintain the correct TRACK SPACING dimension (engraved on the door mounted Safety Decal).
4. Anchor the top Tilt Bracket to the building structure using one of the Recommended Anchoring Methods illustrated below.

NOTE: ALL METHODS OF UPPER TRACK AND BEARING BRACKET ANCHORING REQUIRE THAT THE TRACK SPACING DIMENSION TOLERANCES OF $\pm 1/4"$ NOT TO BE EXCEEDED.



5. Repeat steps 2 through 4 above for the other side of the door opening. Position the tracks at the TRACK SPACING dimension engraved on the Serial Number tag that is attached to the third panel of each door. The tracks need to be equally spaced from the wall surface and must maintain the correct TRACK SPACING dimension.

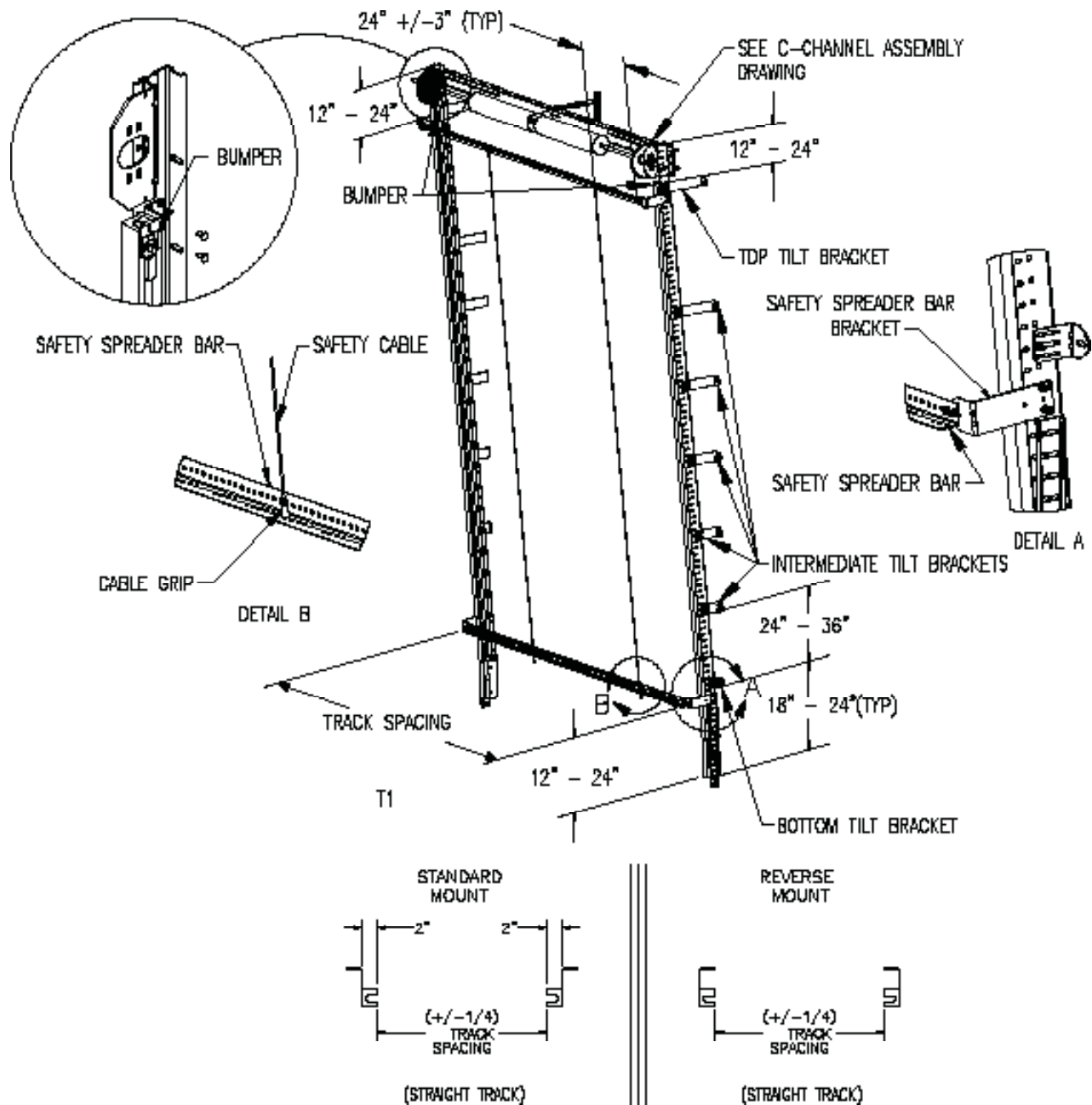
WARNING

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.

6. Mount the Bottom Tilt Bracket 18" to 24" from the header. Mount the Intermediate Tilt Brackets every 24" to 36". Verify the TRACK SPACING dimension and properly torque (23 ft-lb) the fasteners that attach brackets to the track. Tighten the track anchors to the proper torque specified by the anchor manufacturer.
7. Attach C-channel to bearing plates to run from the backside of one bearing plate to the other. Attach C-channel to top set of holes on bearing plate with 3/8-16 x 1" carriage bolts, flange nuts and flat washers. Verify that track spacing is still correct and tracks are level.

TRACK INSTALLATION (continued)

TILT T1 TRACK 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 fallout 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.

TRACK INSTALLATION (continued)

TILT T1 TRACK INSTALLATION (continued)

8. Attach hardware to C-channel: Attach adjustable angle brackets to top and bottom of C-channel in the center of the assembly with 3/8-16 x 1" carriage bolts and flange nuts and anchor onto wall. These keep tracks from swaying side to side. Mount center spring support to C-channel with 3/8-16 x 1" carriage bolts and flange nuts. Location may vary according to quantity and length of springs.
9. Install Safety Spreader Bar assembly: Mount spreader bar brackets to straight track with 5/16-18 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. Mount two (2) spreader bars horizontally from brackets and attach to brackets with 5/16-18 x 3/4" carriage bolts and flange nuts. Repeat for both sides.

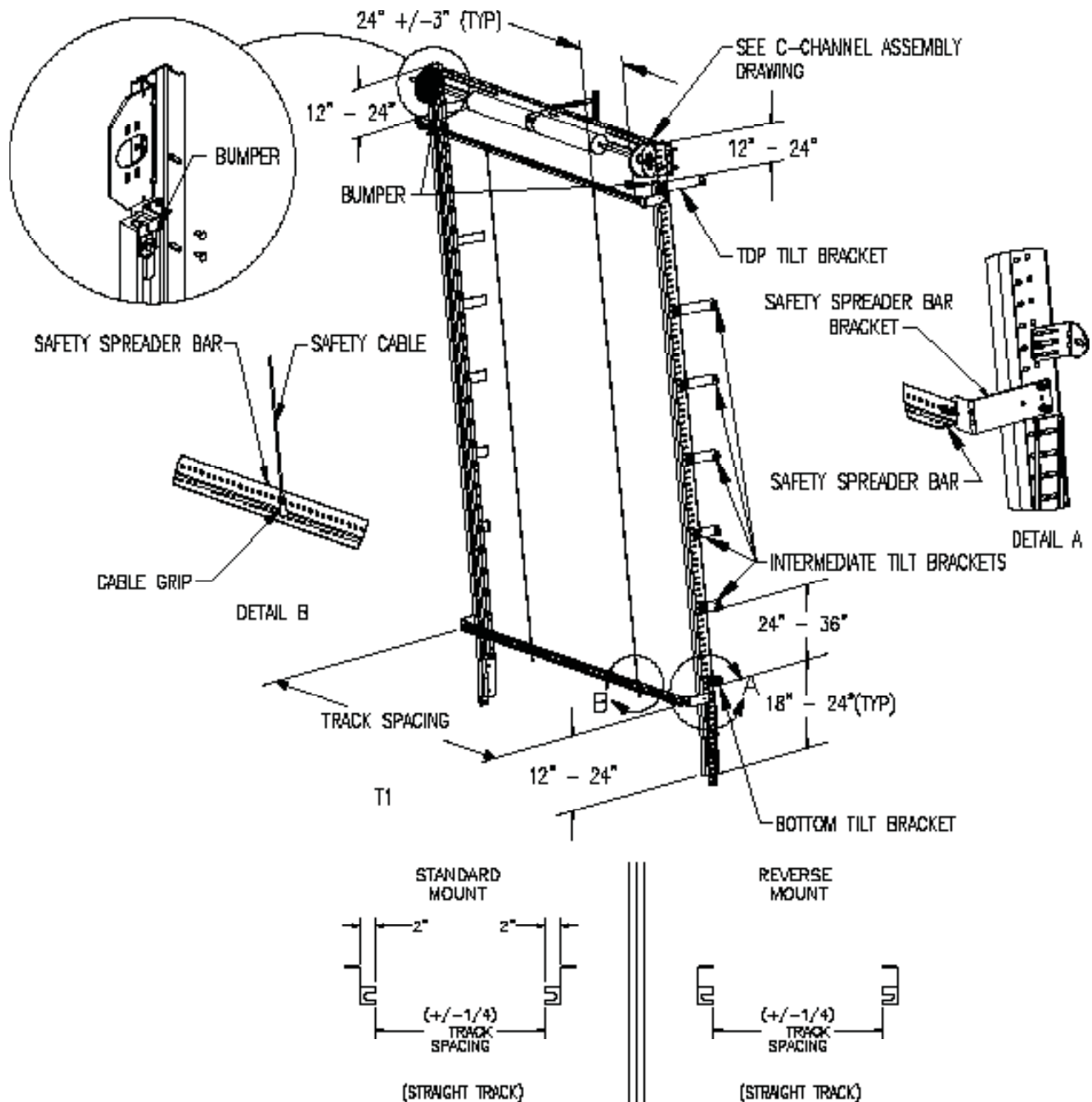
WARNING

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. If the tracks are not firmly stabilized with the Spreader Bars, the Tracks may spread and allow the door to fall. Failure to follow these instructions could result in death or serious injury.

10. Install two (2) Safety Cables: Bolt each safety cable spool end to the top horizontal spreader bar 24" ± 3" from each end. Attach cable grip device to bottom spreader bar 24" ± 3" from each end. Feed cable through the cable grip device and pull tight. Trim excess wire.

TRACK INSTALLATION (continued)

TILT T1 TRACK INSTALLATION



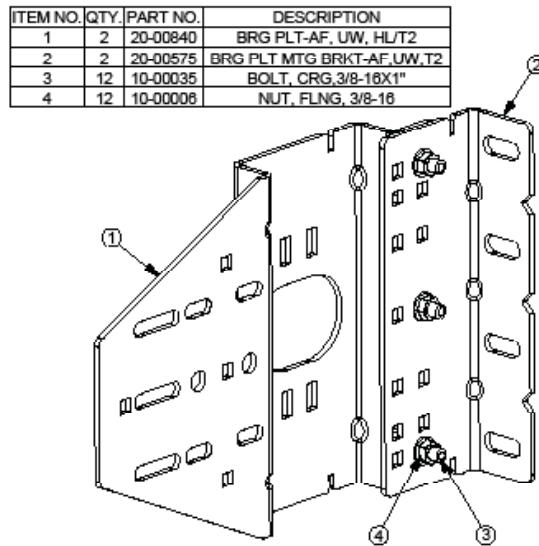
⚠ WARNING

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. If the tracks are not firmly stabilized with the Spreader Bars, the Tracks may spread and allow the door to fall. Failure to follow these instructions could result in death or serious injury.

TRACK INSTALLATION (continued)

TILT T2 TRACK INSTALLATION

1. Locate the TRACK PRINT IDS (Installer Detail Sheet) contained in the Owner's Parts Book. It illustrates the assembly of the track component parts.
2. Stack track on top of one another to create smooth, level transition and splice together with track splice plate. Bolt plastic track through steel angle track to the track splice with flat head, Phillips drive, 5/16-18 x 3" machine screws. Tracks are factory attached to the steel angle with flat head, Phillips drive, 5/16-18 x 2-1/2" machine screws. 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. Assemble the Bearing Plate to the Bearing Plate Mounting Bracket as illustrated below.

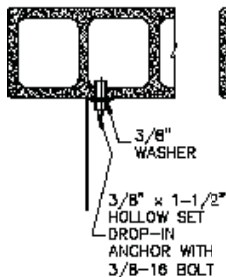


4. Attach the Bearing Plate Assembly shown above to the Bearing Plate Offset Bracket. Do not apply full torque to the fasteners at this time. The bracket may need to be adjusted to ensure proper track alignment. The tracks need to be equally spaced from the wall surface and must maintain the correct TRACK SPACING dimension (engraved on the door mounted Safety Decal).
5. Anchor the Bearing Plate Assembly to the building structure using one of the Recommended Anchoring Methods illustrated below.

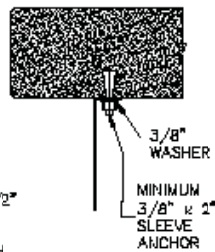
NOTE: ALL METHODS OF UPPER TRACK AND BEARING BRACKET ANCHORING REQUIRE THAT THE TRACK SPACING DIMENSION TOLERANCES OF $\pm 1/4"$ NOT TO BE EXCEEDED.

RECOMMENDED

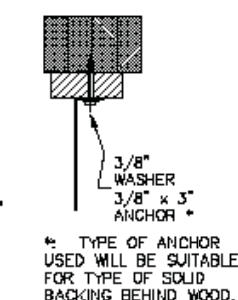
MOUNTING BRACKET TO C-90 HOLLOW CONCRETE BLOCK



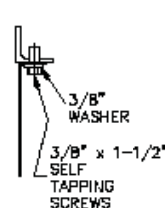
MOUNTING BRACKET TO FILLED BLOCK OR SOLID CONCRETE



MOUNTING BRACKET TO WOOD BACKED BY A SOLID MATERIAL

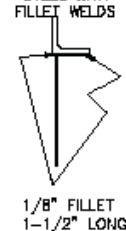


MOUNTING BRACKET TO STRUCTURAL STEEL



ALTERNATE

MOUNTING BRACKET TO STRUCTURAL STEEL WITH FILLET WELDS

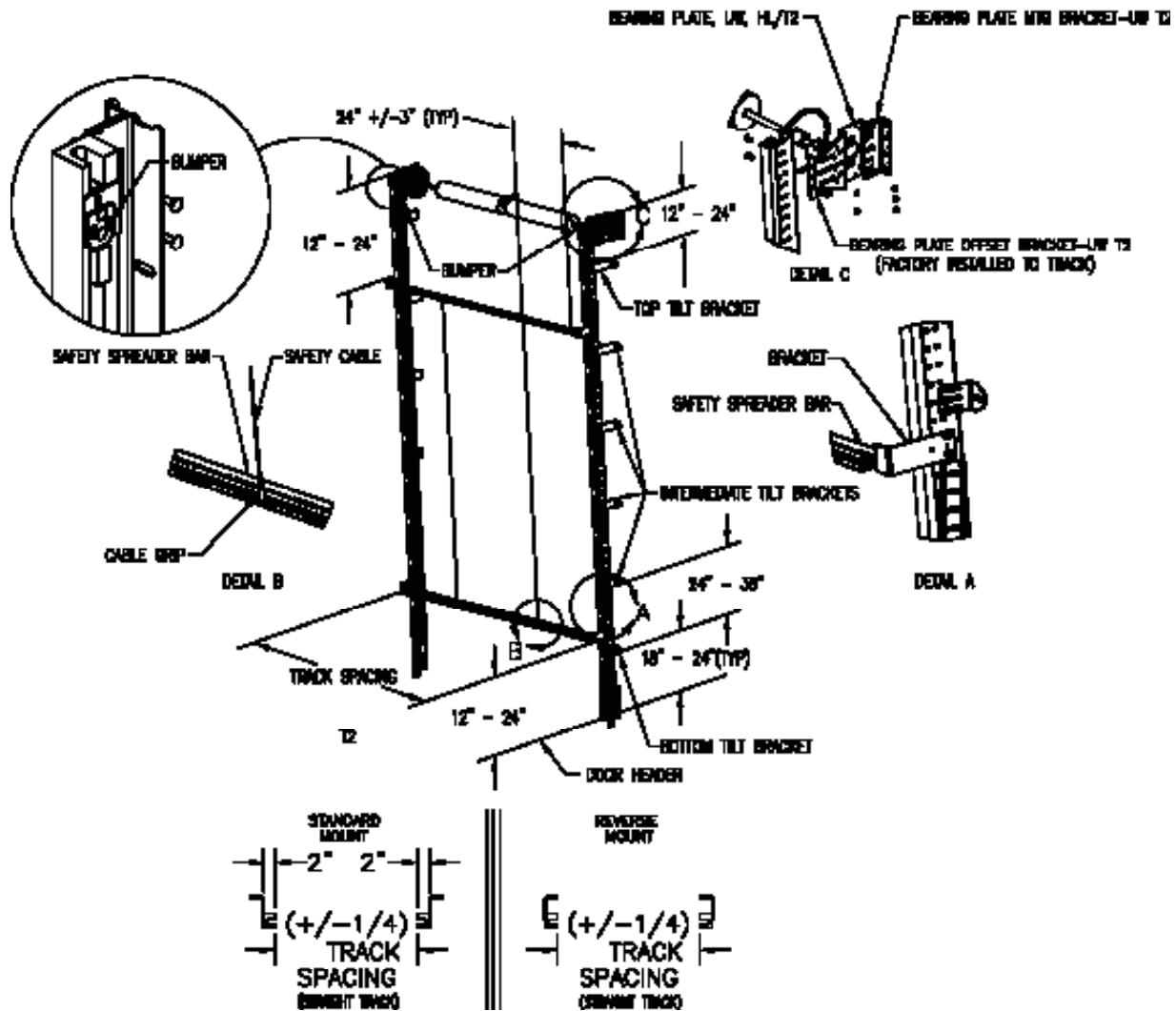


MOUNTING BRACKET TO STRUCTURAL STEEL WITH PLUG WELDS



TRACK INSTALLATION (continued)

TILT T2 TRACK 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.

TRACK INSTALLATION (continued)

TILT T2 TRACK INSTALLATION (continued)

6. Repeat steps 2 through 5 above for the other side of the door opening. Position the tracks at the TRACK SPACING dimension engraved on the Serial Number tag that is attached to the third panel of each door.
7. Mount the Bottom Tilt Bracket 18" to 24" from the header. Mount the Intermediate Tilt Brackets every 24" to 36". Verify the TRACK SPACING dimension and properly torque (23 ft-lb) the fasteners that attach brackets to the track. Tighten the track anchors to the proper torque specified by the anchor manufacturer.
8. Install Safety Spreader Bar assembly: Mount spreader bar brackets to straight track with 5/16-18 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. Mount two (2) spreader bars horizontally from brackets and attach to brackets with 5/16-18 x 3/4" carriage bolts and flange nuts. Repeat for both sides.

WARNING

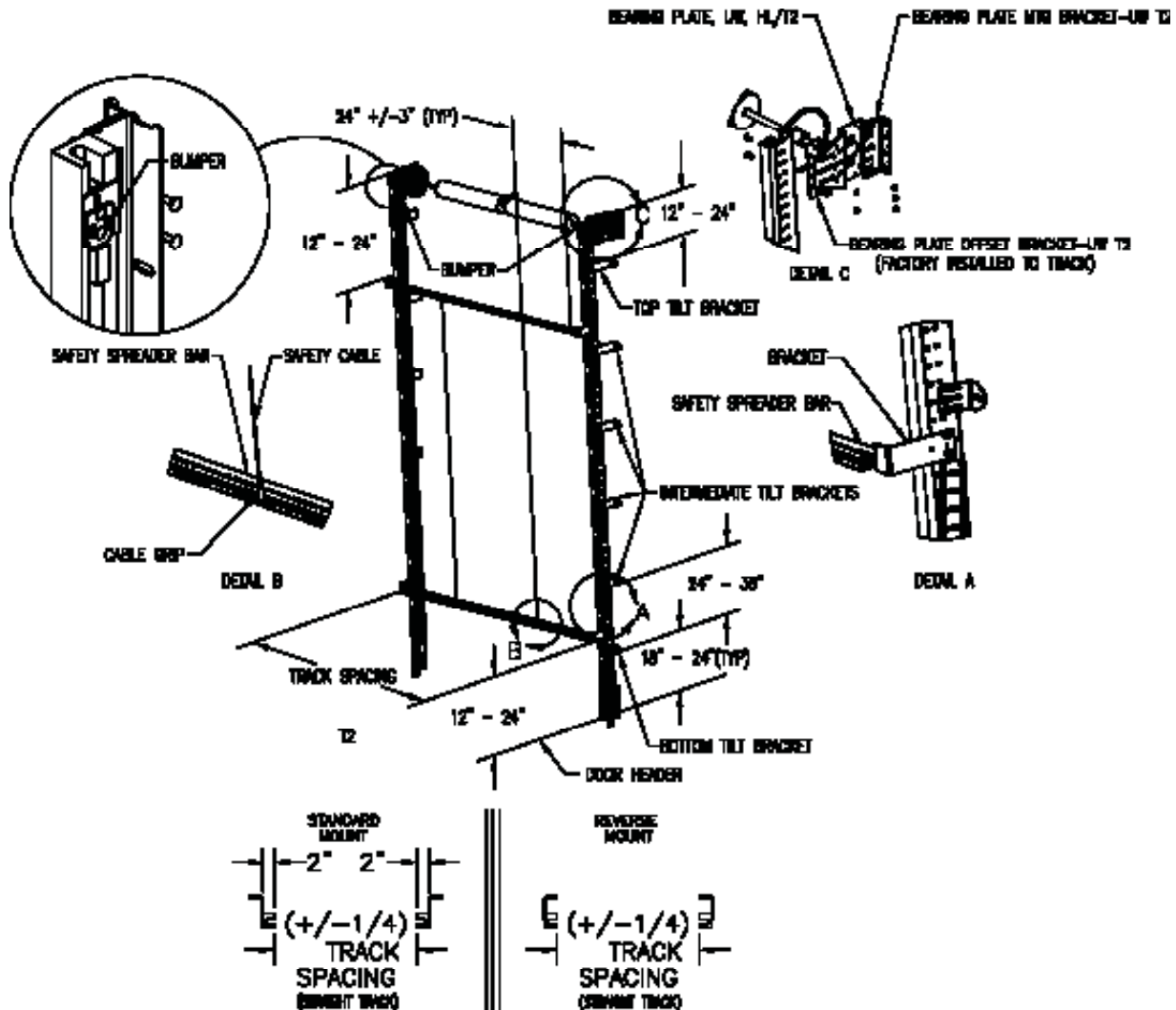
All TKO Dock Doors [except Straight Verticals (SV)] require Safety Spreader Bar cross bracing and Safety Cable Assemblies to be installed in the area from the header to the top end of panel travel per the installation instructions. If the tracks are not firmly stabilized with the Spreader Bars, the Tracks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

9. Install two (2) Safety Cables: Bolt each safety cable spool end to the top horizontal spreader bar 24" ± 3" from each end. Attach cable grip device to bottom spreader bar 24" ± 3" from each end. Feed cable through the cable grip device and pull tight. Trim excess wire.

TRACK INSTALLATION (continued)

TILT T2 TRACK INSTALLATION (continued)

TILT T2 TRACK INSTALLATION



⚠ WARNING

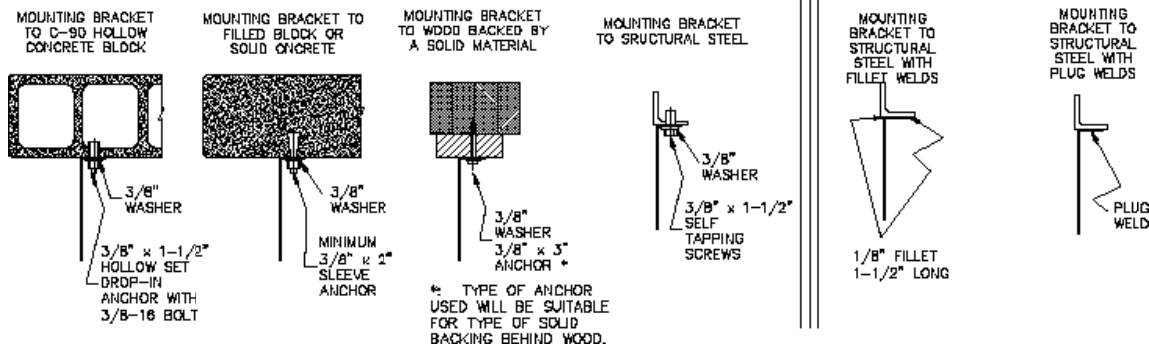
Failure to securely position and anchor door tracks per the **TRACK SPACING** dimension and tolerance (engraved on the door mounted Safety Decal) may allow the tracks to become too wide and allow the door to fall out of its tracks which could result in death or serious injury. Shims may be required between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

TRACK INSTALLATION (continued)

ROOF PITCH TRACK INSTALLATION

1. Locate the TRACK PRINT IDS (Installer Detail Sheet) contained in the Owner's Parts Book. It illustrates the assembly of the track component parts.
2. Identify upper supports: Identify a beam or structure to attach the end of the horizontal tracks. You will need to run back-hangs from this structure to the ends of the horizontal tracks once they are up. DO NOT use safety spreader angle for this purpose.
3. Attach upper tracks to lowers: Attach pieces with 5/16-18 x 3" machine screws and flange nuts. Pieces MUST fit together to give a smooth transition. Any sharp edges may cause plunger damage or cable failure. Low and Extralow headroom roof pitch tracks mount transition to radius assembly. Shimming may be required to ensure that the upper tracks are anchored securely and inline with the lower tracks.
4. Mount bearing plate to wall with one of the Recommended Anchoring Methods illustrated below.

NOTE: ALL METHODS OF UPPER TRACK AND BEARING BRACKET ANCHORING REQUIRE THAT THE TRACK SPACING DIMENSION TOLERANCES OF $\pm 1/4"$ NOT TO BE EXCEEDED.



5. Mount horizontal tracks: Horizontal tracks are factory attached to the radius. Using proper lifting techniques, have helper hold up horizontal track assembly while mounting radius to vertical tracks. Secure radius to vertical tracks with track splice angle. Attach with 5/16-18 x 3/4" carriage bolts and flange nuts. Mount horizontal mounting angle to wall with chosen method. Tracks MUST BE level and at proper spacing or door will not work correctly.
6. Repeat for the opposite side: Verify that the TRACK SPACING dimension (engraved on the door mounted Safety Decal) is still correct.

⚠ 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.

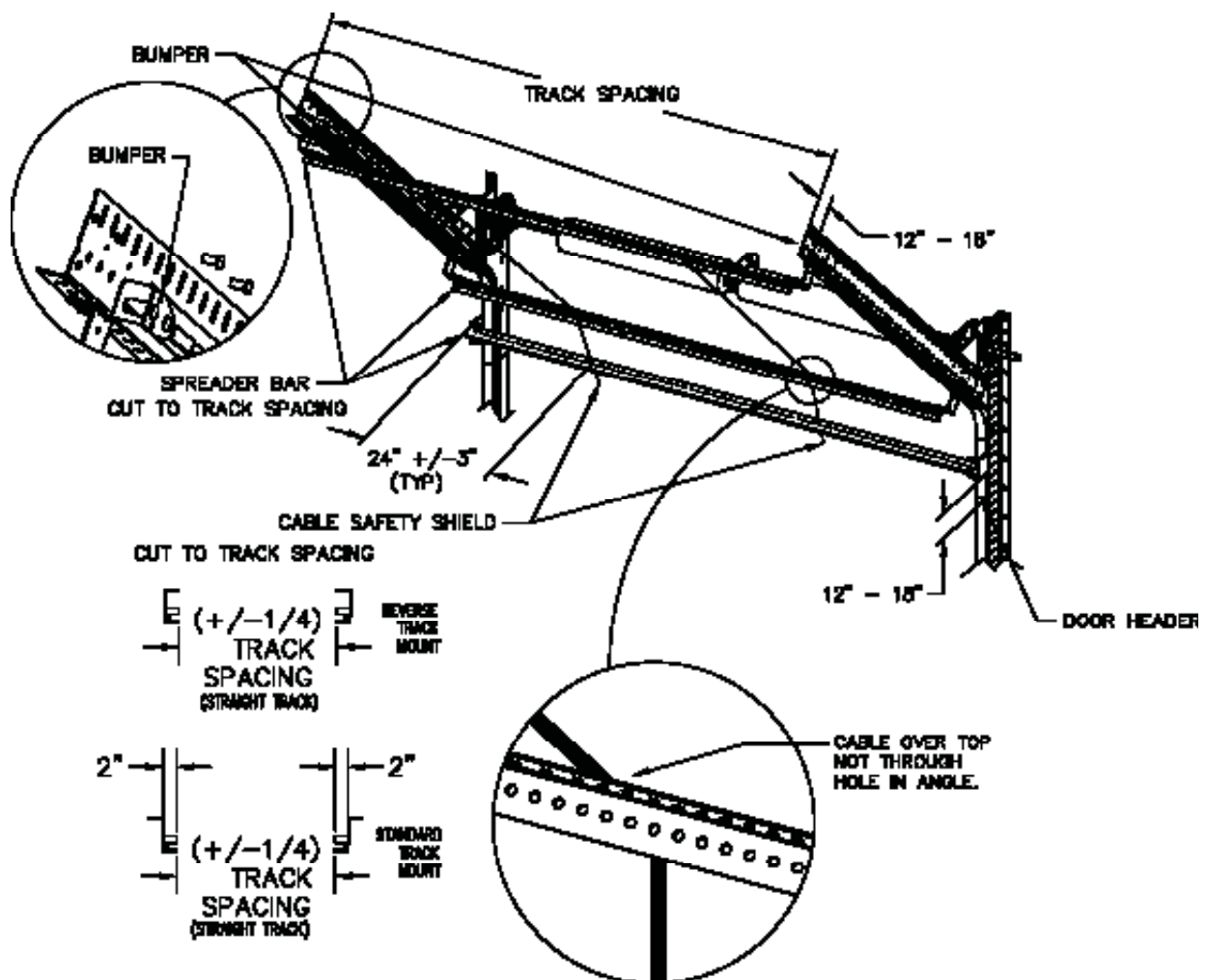
All TKO Dock Doors [except Straight Verticals (SV)] require Safety Spreader Bar cross bracing and Safety Cable Assemblies to be installed in the area from the header to the top end of panel travel per installation instructions. If the tracks are not firmly stabilized with the Spreader Bars, the Tracks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

TRACK INSTALLATION (continued)

ROOF PITCH TRACK INSTALLATION (continued)

7. Install spreader bar assembly: Attach spreader bar brackets 12" to 18" before radius, 12" to 18" from end of horizontal track and 12" to 18" from the header. Mount brackets to track using 5/16-18 x 3/4" carriage bolts and flange nuts. Attach a total of 3 spreader bars to the brackets using 5/16-18 x 3/4" carriage bolts and flange nuts. Repeat for both sides. Spreader bars should run from one track side to the other to keep track from separating. Center and bolt safety cable spool end to back horizontal spreader bar. Attach cable grip device to bottom spreader bar at the header. Wrap cable over the middle spreader bar and fasten with cable tie. Feed cable through the cable grip device and pull tight. Trim excess wire.
8. Attach back-hangs: Verify that tracks retain proper spacing. Move tracks to necessary width and tie into structure or ceiling with 12 gauge minimum steel angle/back-hang. Bracing **MUST** keep tracks from swaying. Attachment of back-hang material to the surrounding structure must be in compliance with all local and state building codes for the specific location.

ROOF PITCH TRACK INSTALLATION

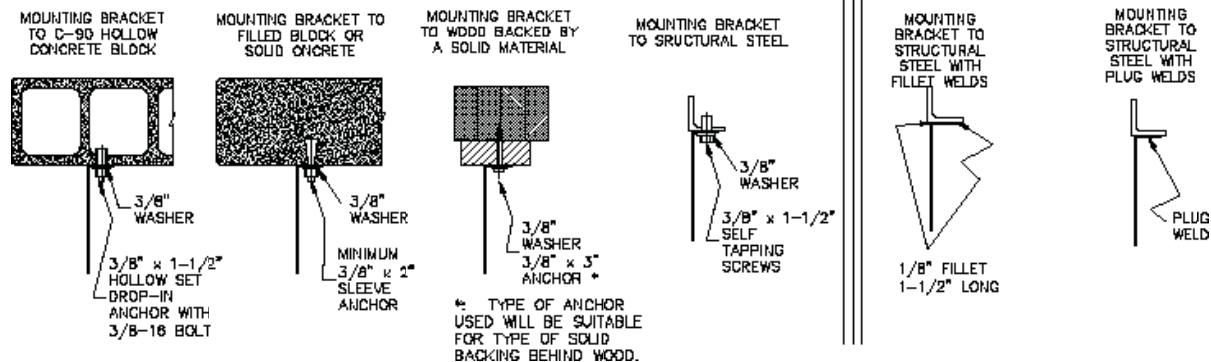


TRACK INSTALLATION (continued)

HIGH-LIFT TRACK INSTALLATION

1. Locate the TRACK PRINT IDS (Installer Detail Sheet) contained in the Owner's Parts Book. It illustrates the assembly of the track component parts.
2. Identify upper supports: Identify a beam or structure to attach the end of the horizontal tracks. You will need to run back-hangs from this structure to the ends of the horizontal tracks once they are up. DO NOT use safety spreader angle for this purpose.
3. Attach upper tracks to lowers: Attach pieces with 5/16-18 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. (Low and Extralow headroom roof pitch tracks mount transition to radius assembly.) Shimming may be required to ensure that the upper tracks are anchored securely and inline with the lower tracks.
4. Mount bearing plate to wall with one of the Recommended Anchoring Methods illustrated below.

NOTE: ALL METHODS OF UPPER TRACK AND BEARING BRACKET ANCHORING REQUIRE THAT THE TRACK SPACING DIMENSION TOLERANCES OF $\pm 1/4"$ NOT TO BE EXCEEDED.



5. Mount horizontal tracks: Horizontal tracks are factory attached to the radius. Using proper lifting techniques, have helper hold up horizontal track assembly while mounting radius to vertical tracks. Secure radius to vertical tracks with track splice angle. Attach with 5/16-18 x 3/4" carriage bolts and flange nuts. Mount horizontal mounting angle to wall with chosen method. Tracks MUST BE level and at proper spacing or door will not work correctly.
6. Repeat for the opposite side: Verify that the TRACK SPACING dimension (engraved on the door mounted Safety Decal) is still correct.

⚠ 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.

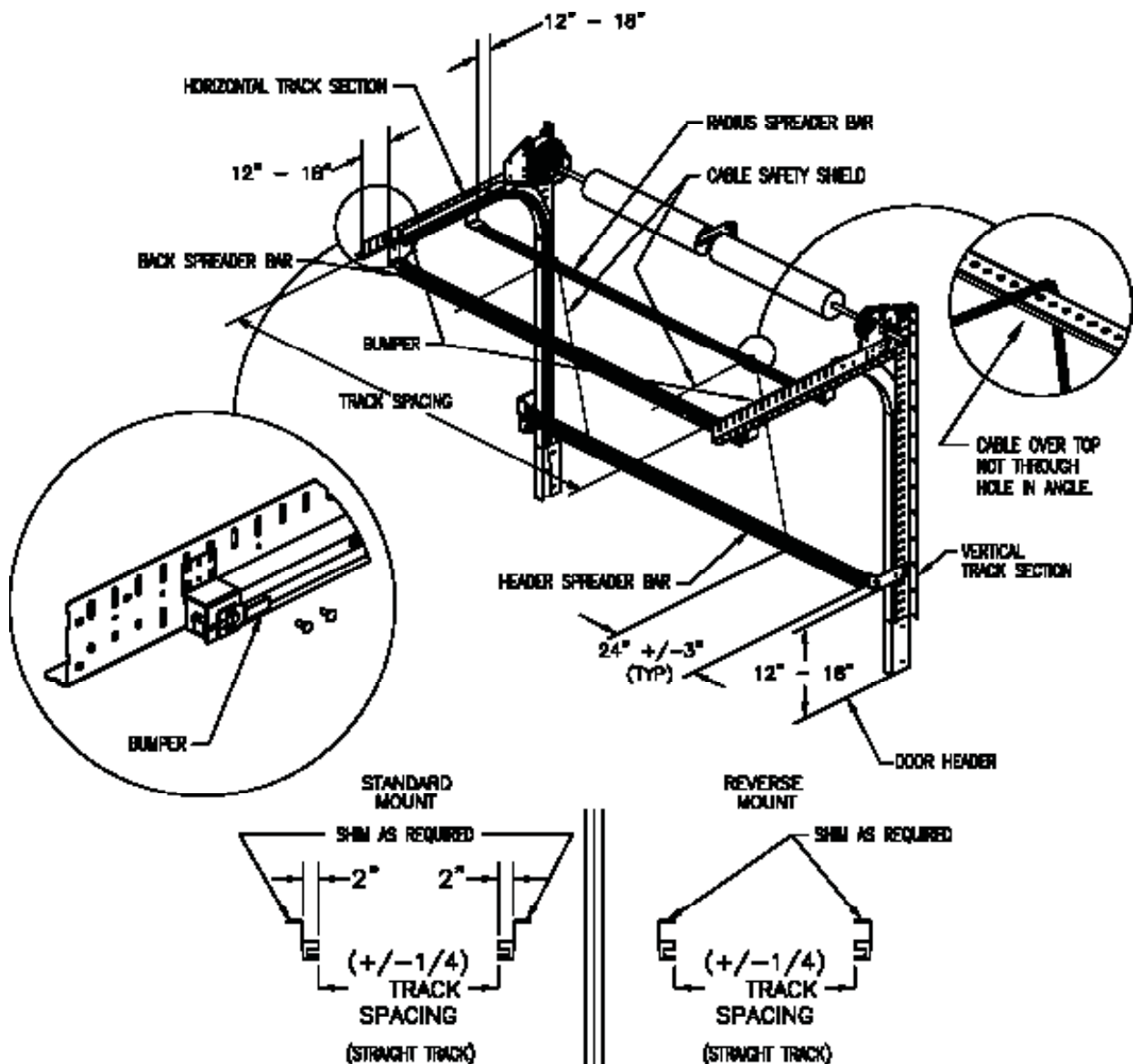
All TKO Dock Doors [except Straight Verticals (SV)] require Safety Spreader Bar cross bracing and Safety Cable Assemblies to be installed in the area from the header to the top end of panel travel per installation instructions. If the tracks are not firmly stabilized with the Spreader Bars, the Tracks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

TRACK INSTALLATION (continued)

HIGH-LIFT TRACK INSTALLATION (continued)

7. Install spreader bar assembly: Attach spreader bar brackets 12" to 18" before radius, 12" to 18" from end of horizontal track and 12" to 18" from the header. Mount brackets to track using 1/4-20 x 3/4" carriage bolts and flange nuts. Attach a total of 3 spreader bars to the brackets using 5/16-18 x 3/4" carriage bolts and flange nuts. Repeat for both sides. Spreader bars should run from one track side to the other to keep track from separating. Center and bolt safety cable spool end to back horizontal spreader bar. Attach cable grip device to bottom spreader bar at the header. Wrap cable over the middle spreader bar and fasten with cable tie. Feed cable through the cable grip device and pull tight. Trim excess wire.
8. Attach back-hangs: Verify that tracks retain proper spacing. Move tracks to necessary width and tie into structure or ceiling with 12 gauge minimum steel angle/back-hang. Bracing **MUST** keep tracks from swaying. Attachment of back-hang material to the surrounding structure must be in compliance with all local and state building codes for the specific location.

HIGH-LIFT TRACK INSTALLATION



TRACK INSTALLATION (continued)

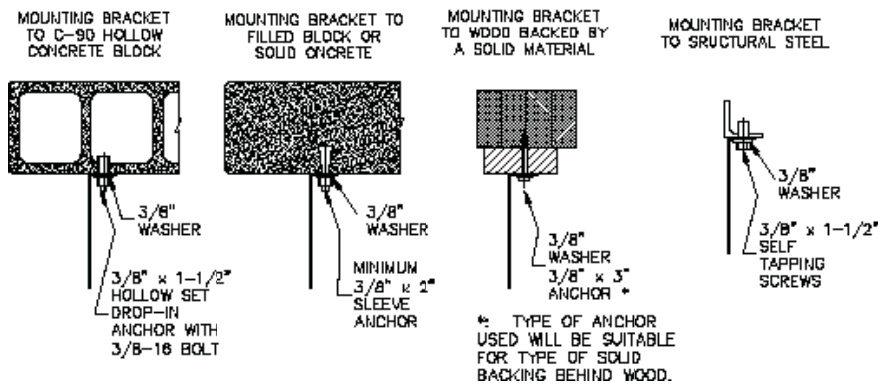
⚠ WARNING

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.

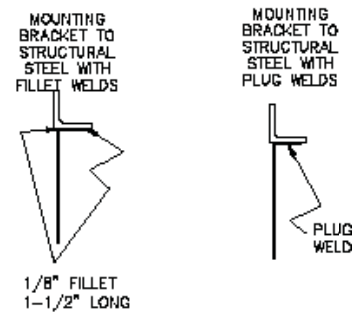
CENTER SPRING PAD INSTALLATION

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.
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.

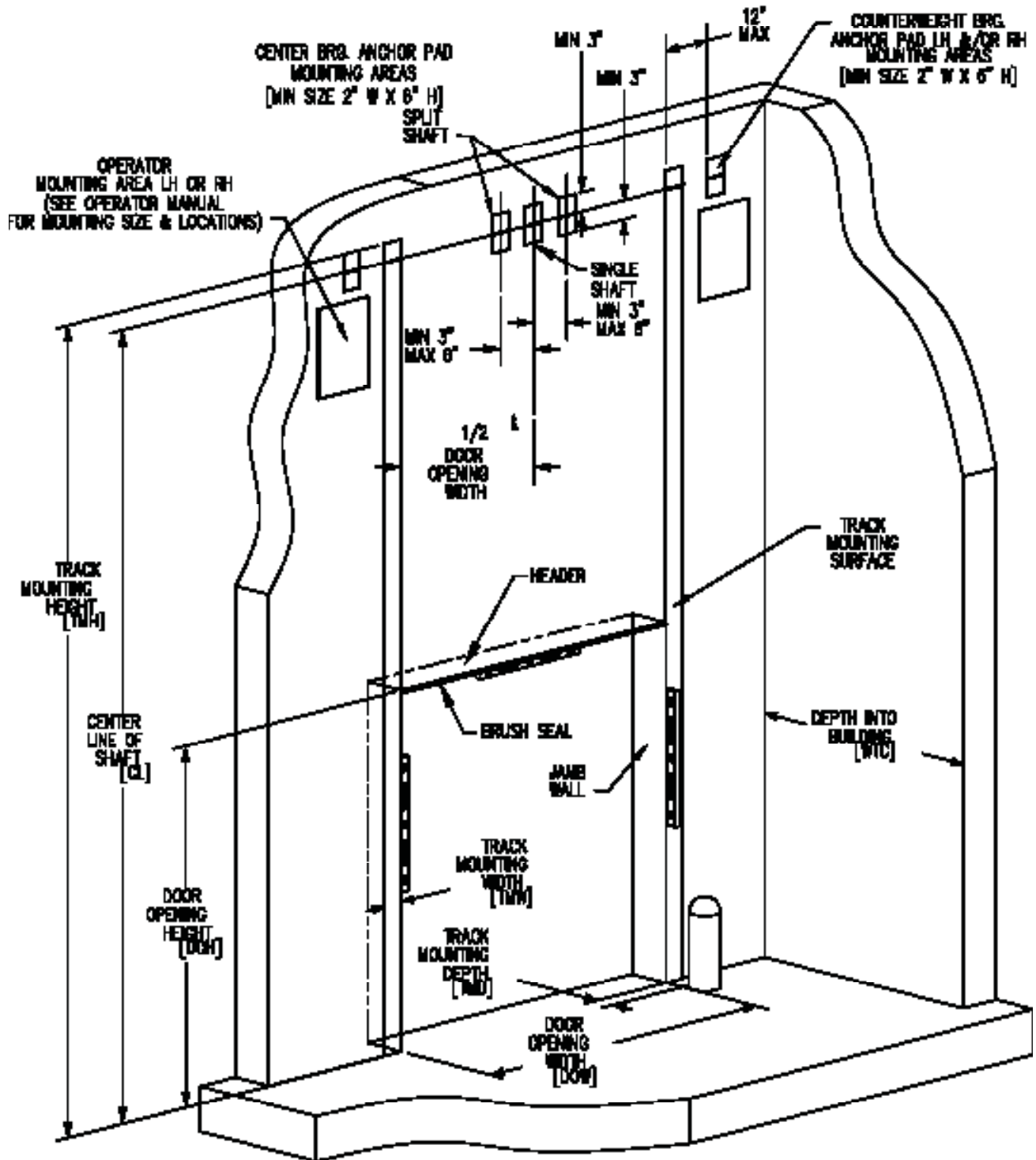
NOTE: ALL METHODS OF UPPER TRACK AND BEARING BRACKET ANCHORING REQUIRE THAT THE TRACK SPACING DIMENSION TOLERANCES OF $\pm 1/4"$ NOT TO BE EXCEEDED.
RECOMMENDED



ALTERNATE



TRACK INSTALLATION (continued)



PANEL INSTALLATION

COMPONENT IDENTIFICATION

1. Set up area:
 - Obtain and set up saw horses or work table for assembling door hardware to panels.
 - Make sure there is nothing on the work surface, which could scratch or damage panel surfaces while assembling hardware to panels.
2. Identify panels:
 - Inspect panels for any missing or damaged panels. Call TKO doors or local distributor/dealer if assistance is required.
 - Determine which panel the cable bracket will be attached to (see Installer Detail Sheet).
3. Bottom panel:
 - The bottom panels have a horizontal (dual bulb) seal on the top of the panel and a loop seal on the bottom.
4. Second and Third panels:
 - The Second and Third panels have a horizontal (dual bulb) seal on the top and bottom of the panel.
 - This panel could be 12", 18" or 24" high depending on door height. Smaller panels are always installed above larger panels.
 - If a window panel was supplied, it is typically placed in the 3rd panel from bottom position.

WARNING

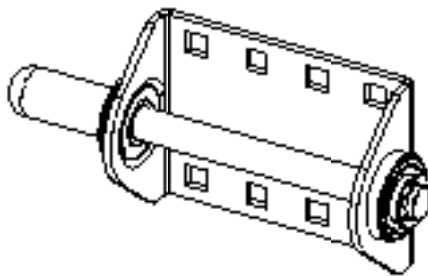
Fixed plungers are required on the Fourth and Higher panels when the counterbalance cable attachment is NOT at the top of the door.

5. Fourth and Higher panels:
 - The Fourth and Higher panels have a horizontal (dual bulb) seal on the top and bottom of the panel.
 - This panel could be 12", 18" or 24" high depending on door height.
6. Top panels:
 - 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" or 24" high depending on door height.

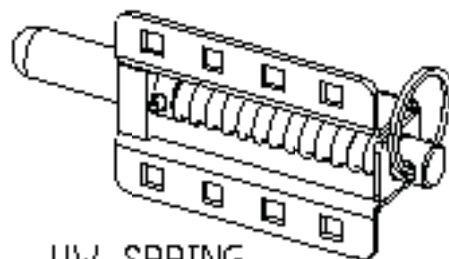
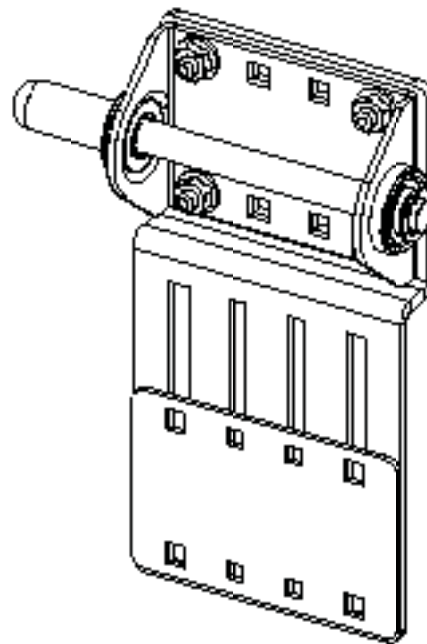
PANEL INSTALLATION (continued)

PLUNGER DESCRIPTION

UW FIXED ROLLER
PLUNGER ASSY
30-00495

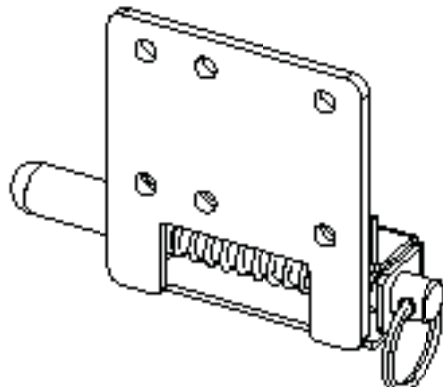


UW XL PLUNGER
BRACKET ASSY
30-00299

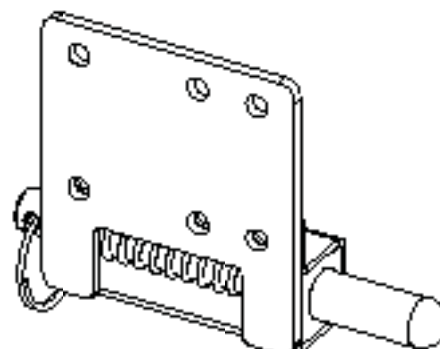


UW SPRING
PLUNGER ASSY
30-00575

UW LOW HEADROOM
PLUNGER ASSY, RH
30-00054



UW LOW HEADROOM
PLUNGER ASSY, LH
30-00041



PANEL INSTALLATION (continued)

COMPONENT ASSEMBLY - OVERVIEW

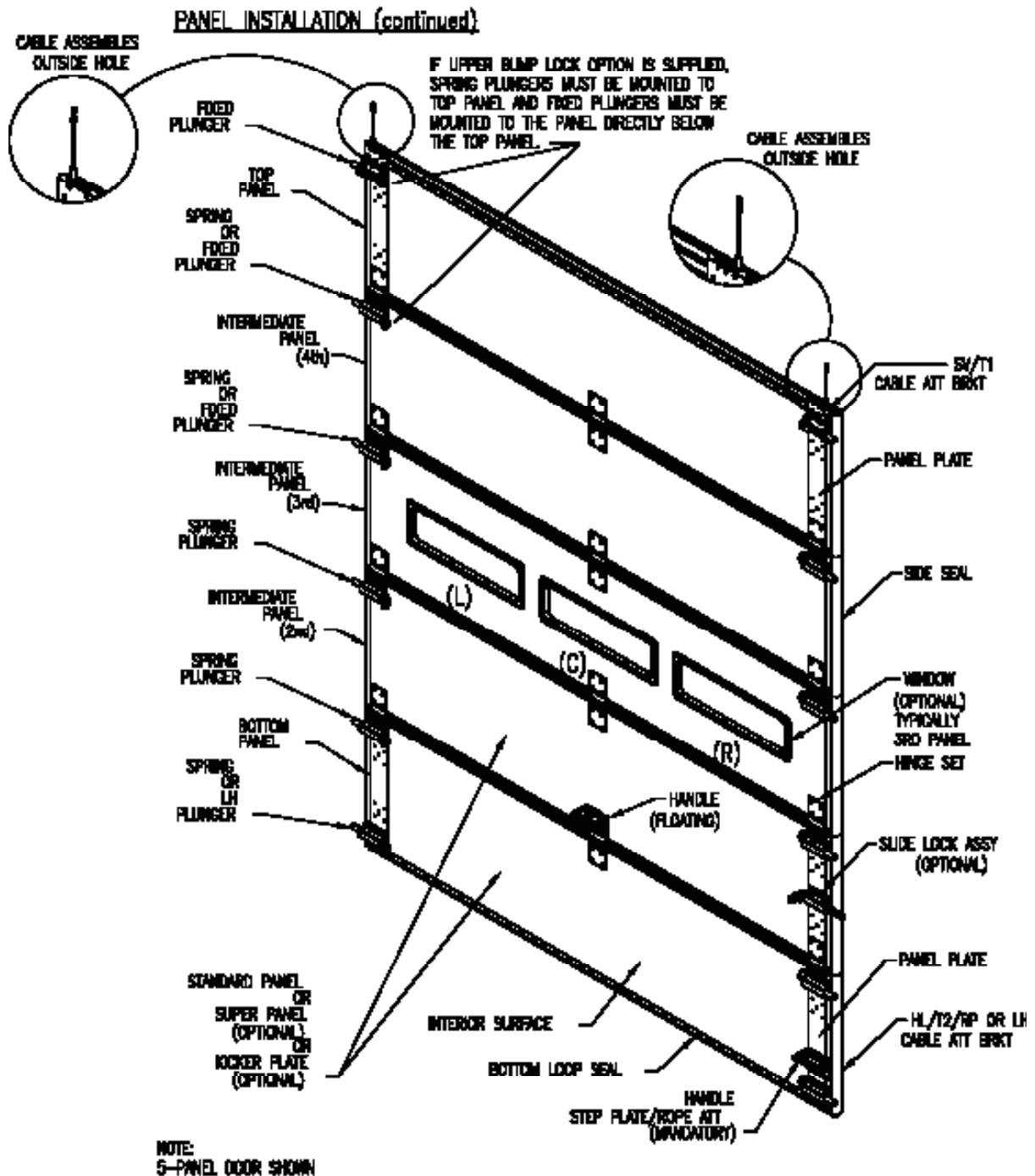
1. Assembling panels:
 - All panels have a Fiberglass, Super Panel, or Kicker Plate for an interior skin and an aluminum exterior skin.
 - Instructions indicating left or right are based on facing the door opening from inside the building.
 - Identify specific door order specifications before assembling hardware to panels. (See Job Specific documents)
 - Identify the track style before assembling hardware to panels to determine proper cable bracket mounting.
 - Identify the # of door panels per door and identify plunger configuration for style and quantity.
 - Fixed plungers are to be mounted to the top panel(s) and spring plungers to the lower panel(s) unless upper bump lock option is supplied .
 - Identify any/all panel accessory options before assembling hardware to panels.
 - Certain accessory options may change standard panel hardware and plunger configuration.
 - Lube plunger springs and rods with white lithium grease prior to stacking panels. With covers off, spray plunger rods thoroughly so that contact points of housing/rods are covered.
 - When installing handles, bolts supplied for accessory hardware MUST BE used.
 - Install cables to the outside holes of the lift brackets while assembling hardware to panels.

WARNING

Fixed plungers are required on the Fourth and Higher panels when the counterbalance cable attachment is NOT at the top of the door.

PANEL INSTALLATION (continued)

FULL DOOR PANEL ASSEMBLY



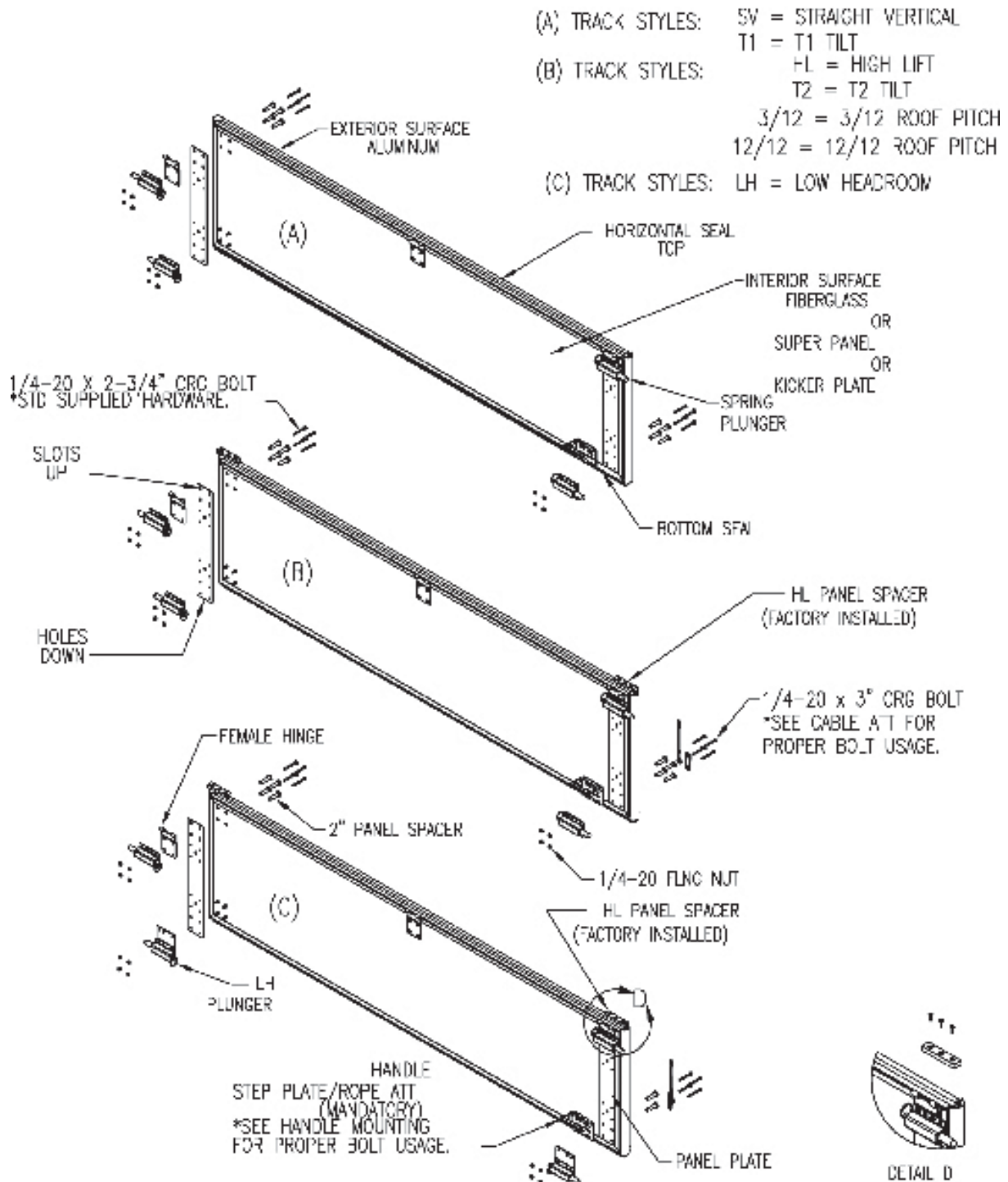
PANEL INSTALLATION (continued)

COMPONENT ASSEMBLY - BOTTOM PANEL

1. Bottom panel:
 - Identify the track style of the door and refer to panel drawing (A), (B), or (C) for instructions.
 - If assembling (A): install panel plates, handle/step plate(s), female hinges, and spring plungers.
 - If assembling (B): install panel plates, cable brackets (HL/T2), cables, handles/step plates, female hinges, and spring plungers.
 - If assembling (C): install panel plates, cable brackets (LH), cables, handles/step plates, female hinges, and low headroom spring plungers.

PANEL INSTALLATION (continued)

BOTTOM PANEL ASSEMBLY



NOTE:

1. HANDLE SET PLATE/ROPE ATT MUST BE MOUNTED ON BOTTOM PANEL ON LEFT OR RIGHT SIDE.

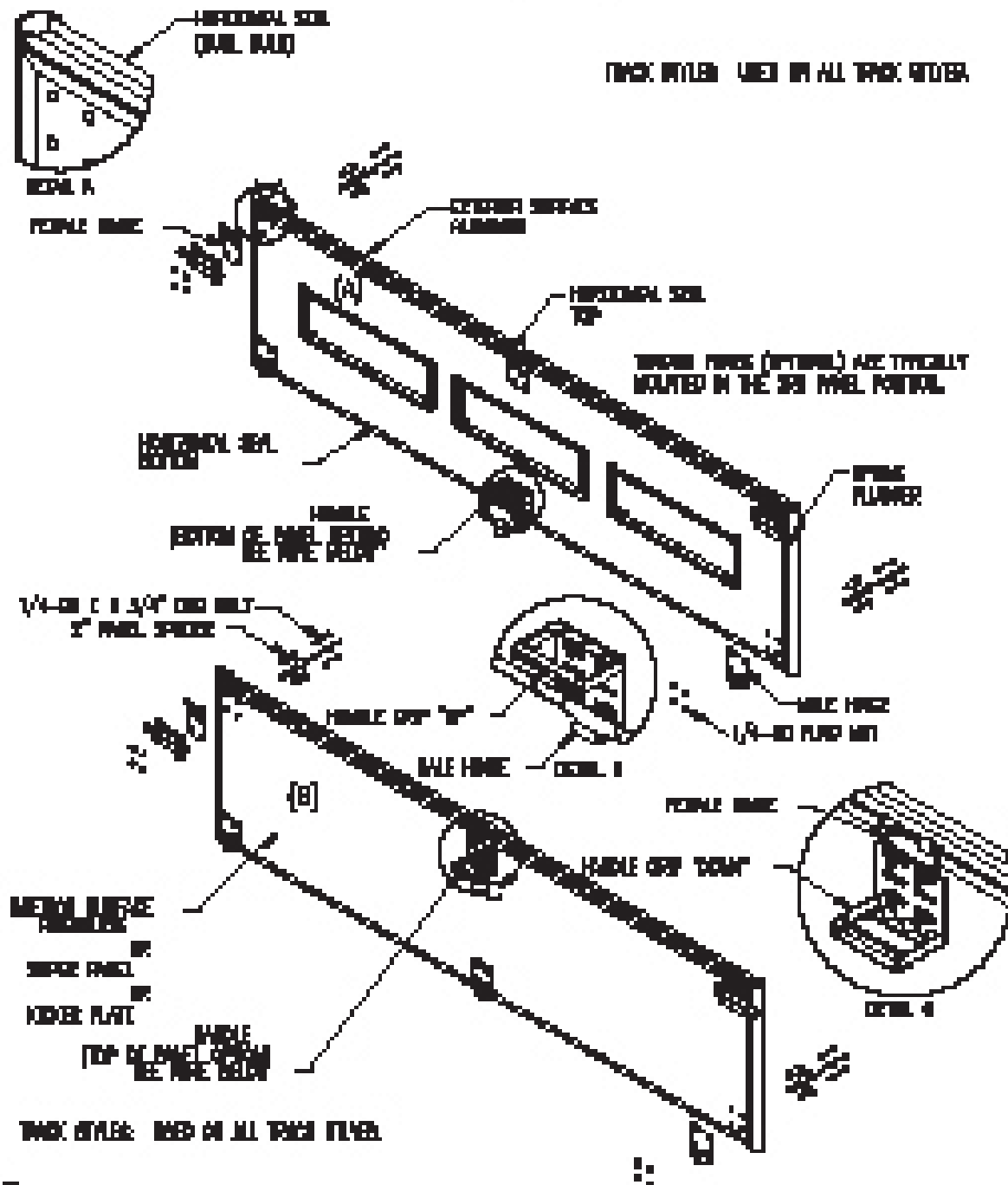
PANEL INSTALLATION (continued)

COMPONENT ASSEMBLY - SECOND AND THIRD PANELS

2. Second and third panels:
 - Identify the track style of the door and refer to panel drawing (A) or (B) for instructions.
 - If assembling (A): install female hinges, male hinges, spring plungers and/or fixed plungers.
 - If assembling (B): install female hinges, male hinges, spring plungers and/or fixed plungers.
 - If slide lock(s) are supplied, panel plate(s) MUST BE installed at customer's desired location.

PANEL INSTALLATION (continued)

SECOND AND THIRD PANEL ASSEMBLY



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2. HANDLE MUST BE INSTALLED AS SHOWN IN DETAIL B AND C
MOUNTED TO THE BOTTOM OF A PANEL & IN DETAIL C THEN MOUNTED IN THE TOP OF A PANEL.

PANEL INSTALLATION (continued)

COMPONENT ASSEMBLY - FOURTH AND HIGHER PANELS

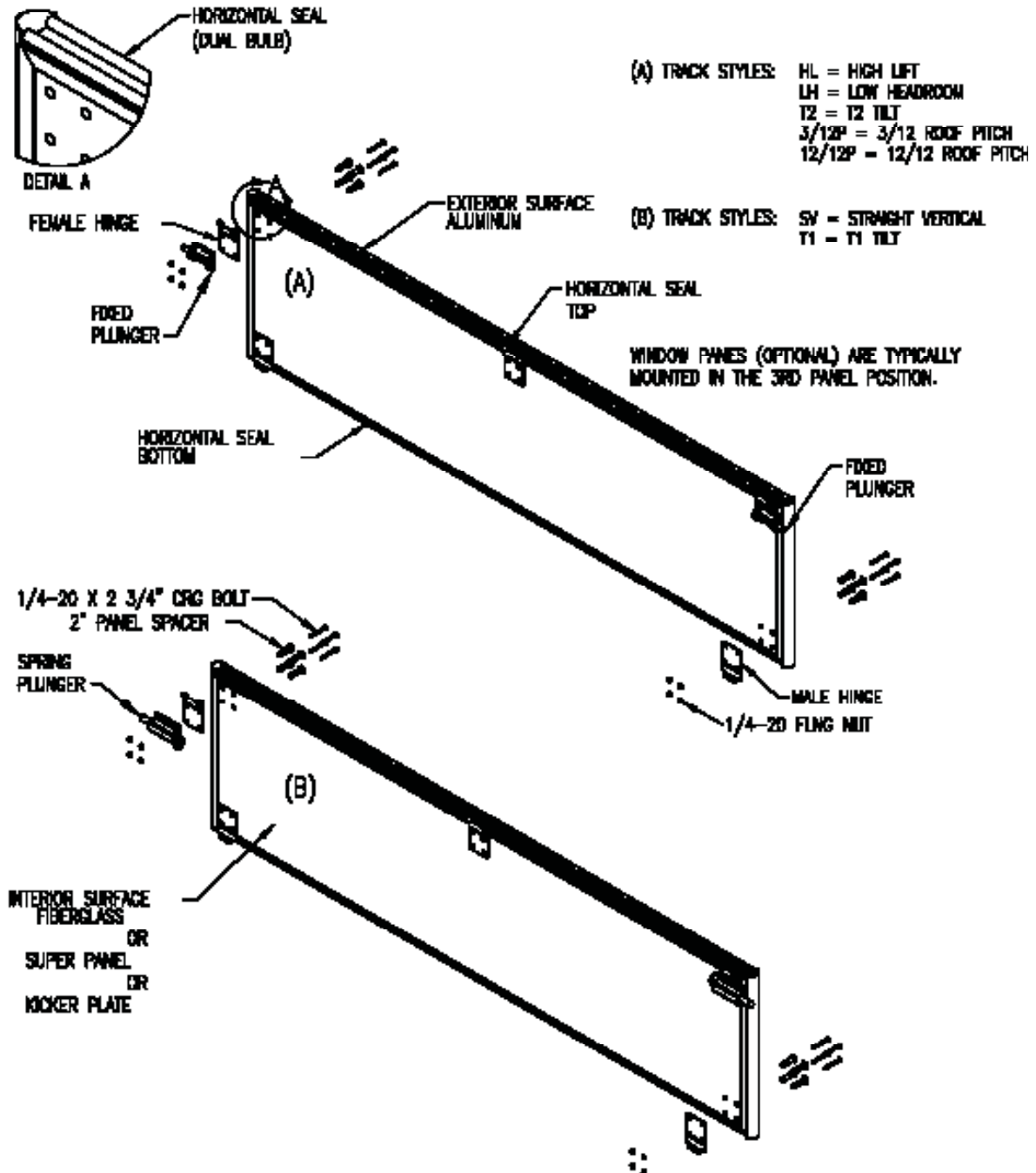
3. Fourth and Higher panels :
 - Identify the track style of the door and refer to panel drawing (A) or (B) for instructions.
 - If assembling (A): install female hinges, male hinges, and fixed plungers.
 - If assembling (B): install female hinges, male hinges, and spring plungers.

WARNING

Fixed plungers are required on the Fourth and Higher panels when the counterbalance cable attachment is NOT at the top of the door.

PANEL INSTALLATION (continued)

FOURTH AND HIGHER PANEL ASSEMBLY

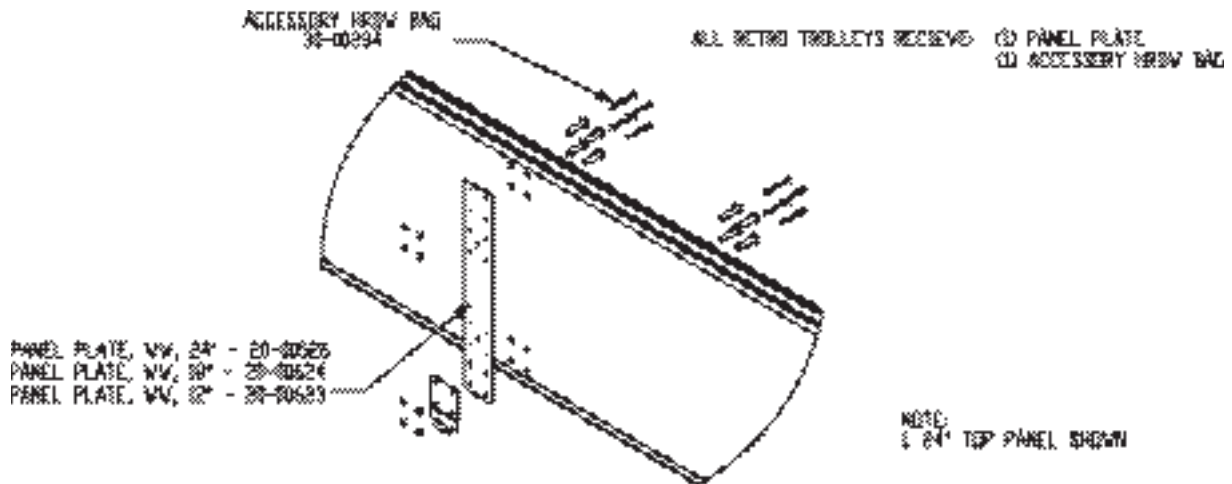


PANEL INSTALLATION (continued)

COMPONENT ASSEMBLY - TOP PANEL

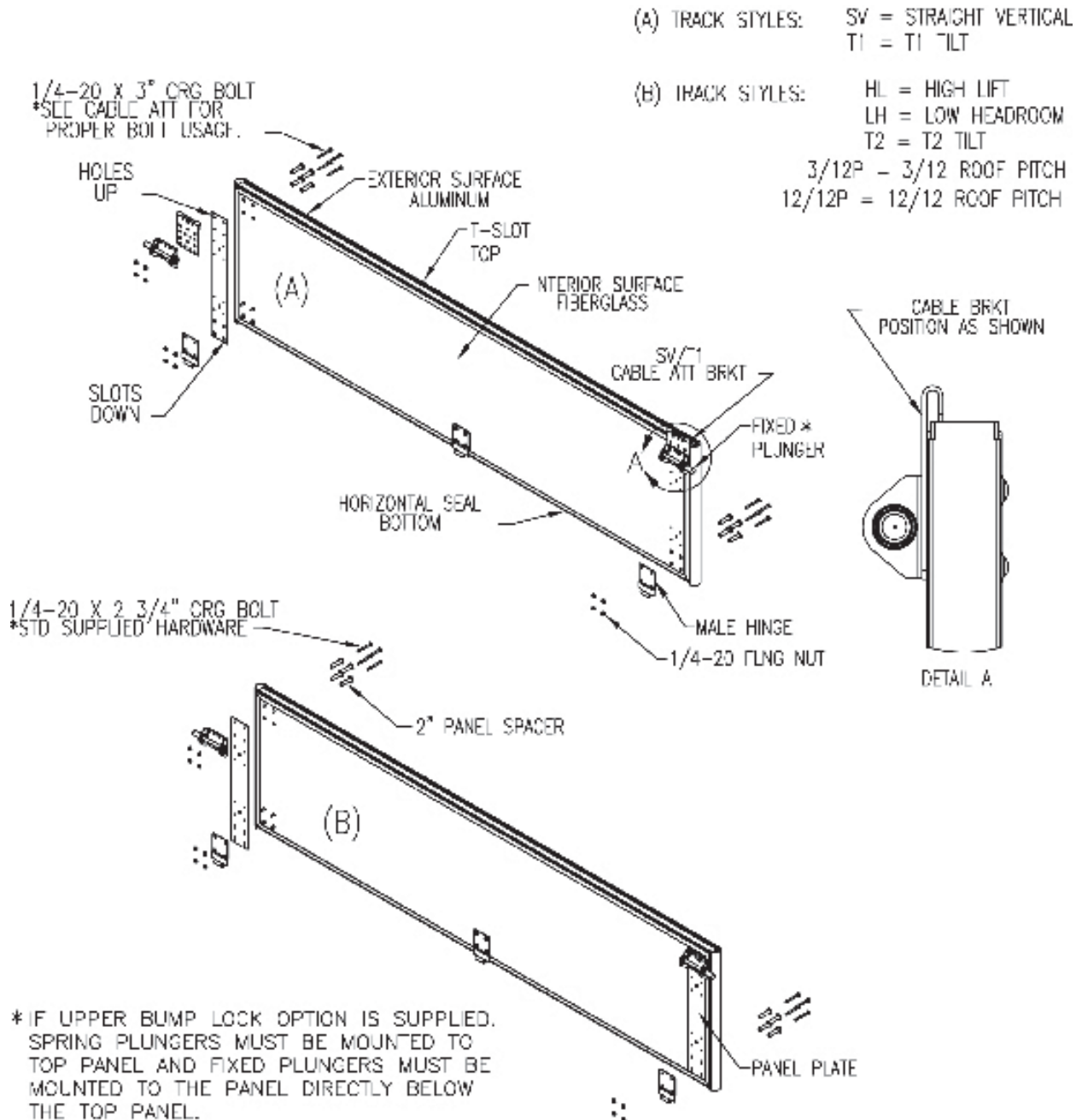
4. Top panel:
 - Identify the track style of the door and refer to panel drawing (A) or (B) for instructions.
 - If assembling (A): install panel plates, cable brackets (SV/T1), cables, hinges, and fixed plungers.
 - If assembling (B): install panel plates, male hinges, and fixed plungers.
 - If trolley option is supplied, panel plate MUST BE installed on center of top panel. (See below)
 - If upper bump lock option is supplied, spring plungers MUST BE mounted to the top panel.
 - If posi-lock option is supplied, install posi-lock hardware to top panel at indicated location.
 - Do not install plunger covers until after panels are stacked in door opening.
 - Do not completely tighten down flange nuts. By leaving these bolts loose, the hinges can be moved slightly to line up the male and female hinges for easier insertion of hinge pins. After panels are stacked, tighten all nuts (1/4-20 thread) to a torque of 6 foot-pound.

TROLLEY PANEL PLATE MOUNTING



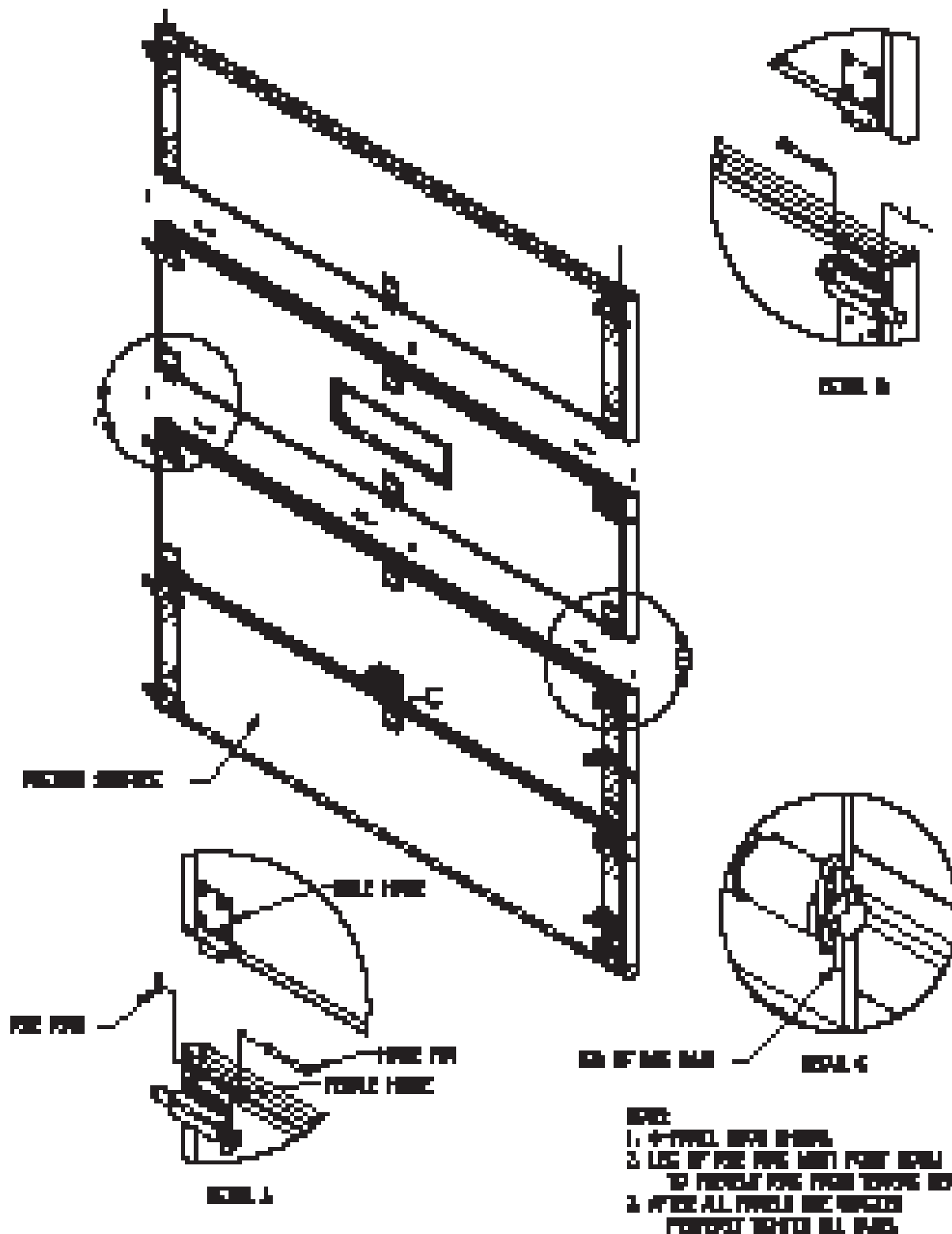
PANEL INSTALLATION (continued)

TOP PANEL ASSEMBLY



PANEL INSTALLATION (continued)

PANEL STACKING

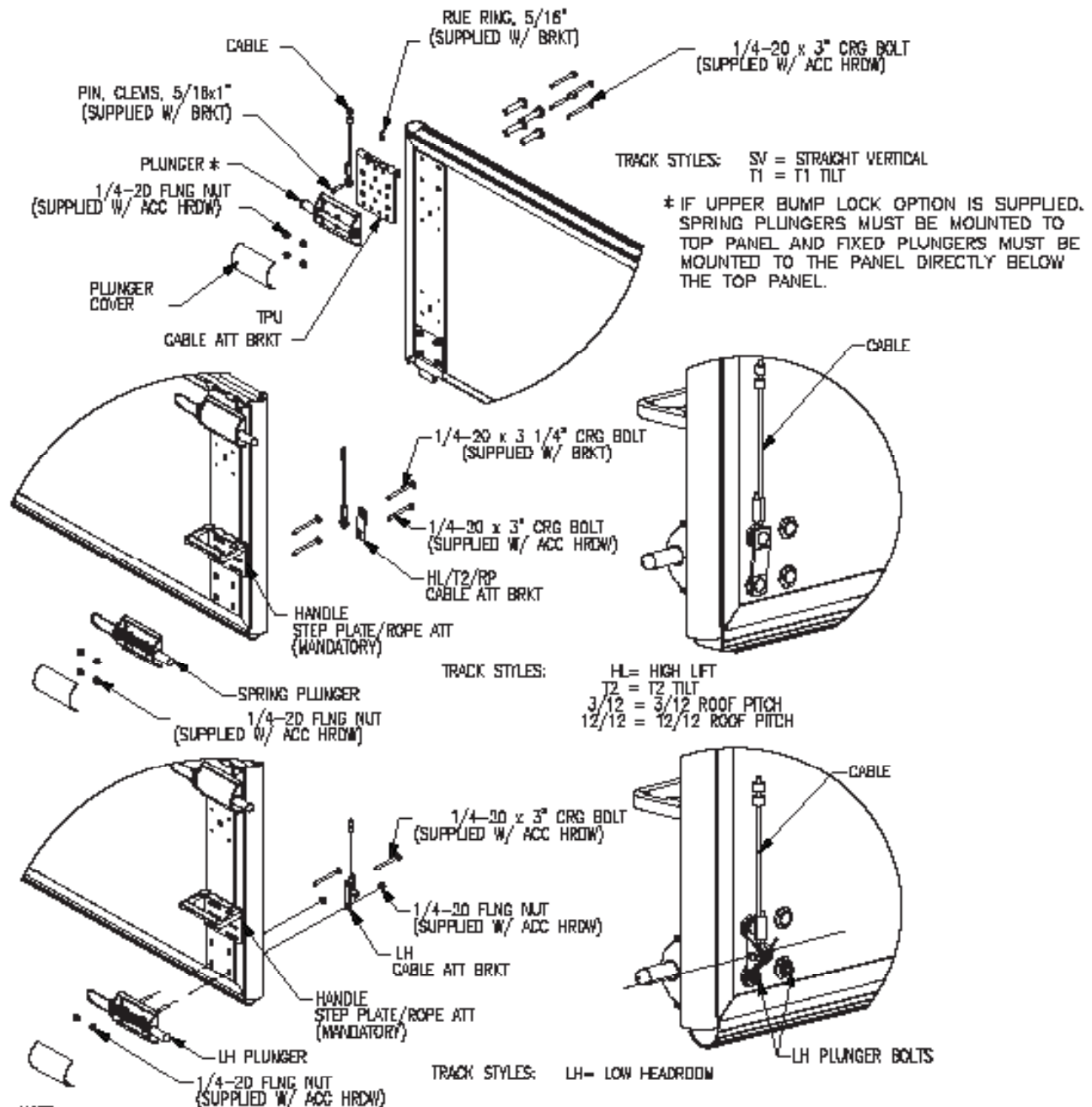


PANEL INSTALLATION (continued)

WARNING

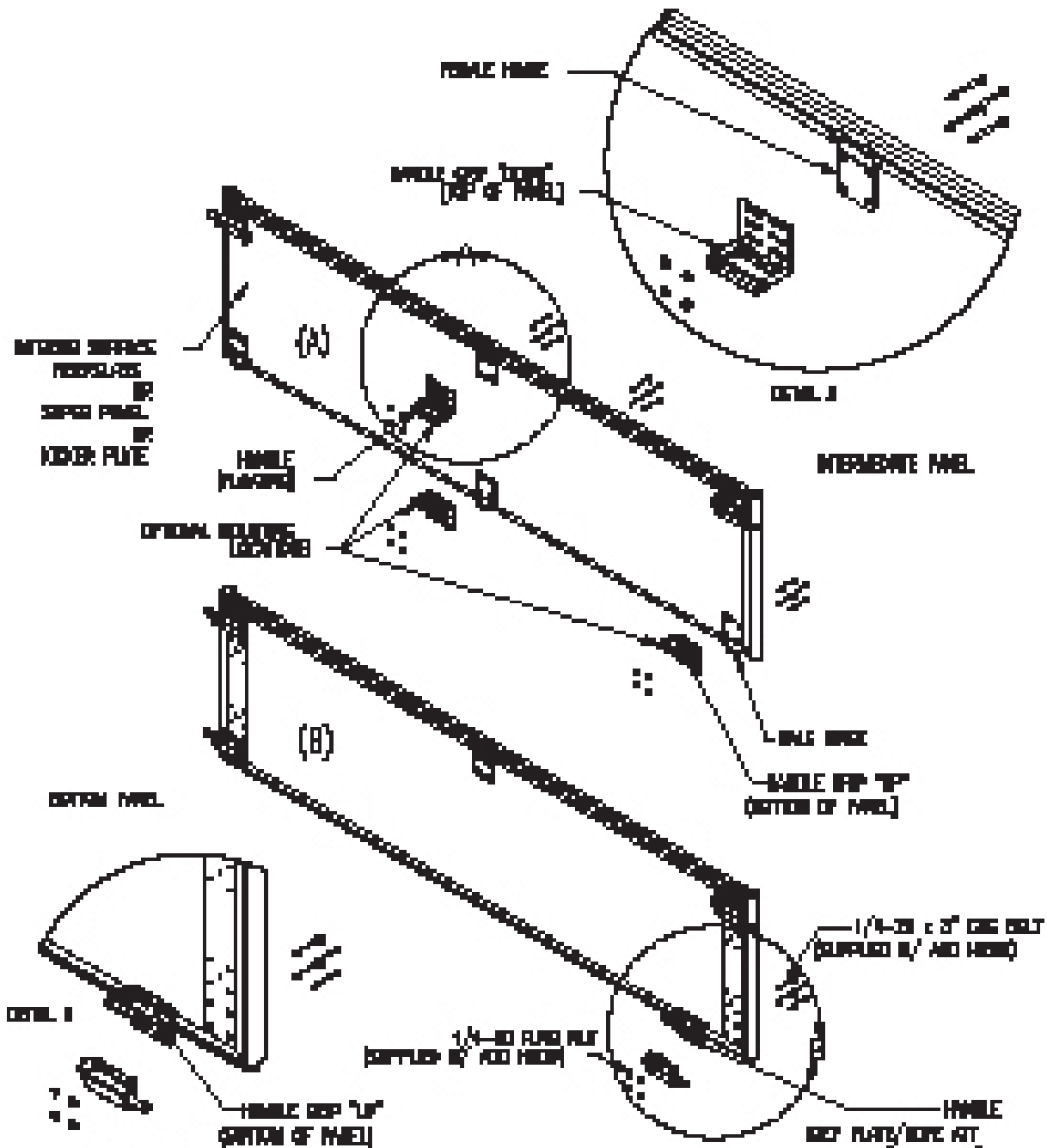
Cable Attachments **MUST BE** installed as shown for door to operate safely and correctly. Failure to do so could allow door to fall and could result in death or serious injury.

CABLE ATTACHMENT



PANEL INSTALLATION (continued)

HANDLE INSTALLATION



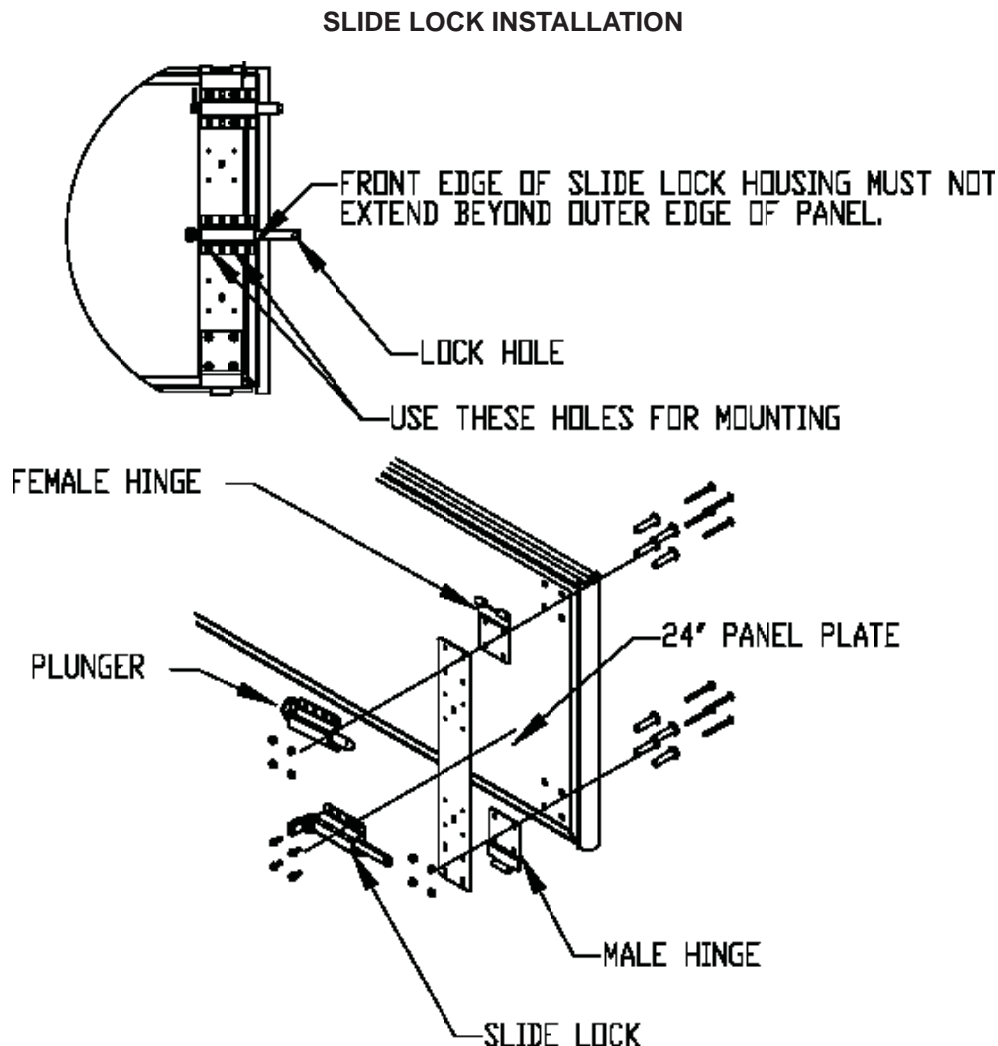
NOTES

1. HANDLE (FLUTING) MAY BE POSITIONED AT ANY POINTED HANDLE LOCATION ON INTERMEDIATE PANELS.
2. HANDLE STOP PLATE/ROPE KIT MUST BE MOUNTED ON BOTTOM PANEL ON LEFT OR RIGHT SIDE.
3. 1/4\"
4. SET OF HANDLES MAY VARY WITH ORDER.

PANEL INSTALLATION (continued)

SLIDE LOCK INSTALLATION

1. Identify quantity of slide lock assemblies to be installed and customer desired location(s).
2. Mount plate, hinges and plungers as shown.
3. 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.
4. 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

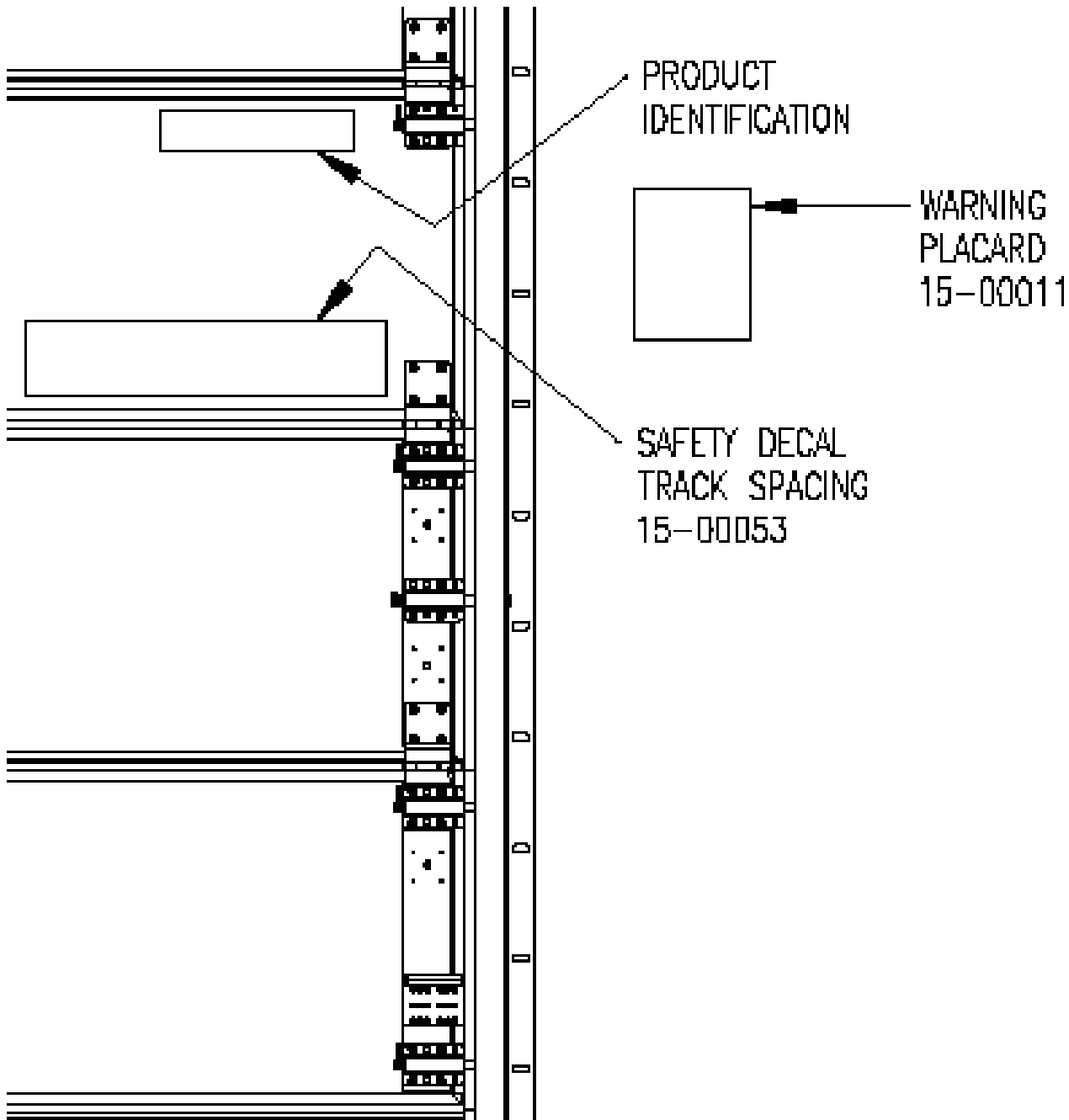
1. Brush seal: Hold brush seal up to door jamb header so that brush creates a seal between door panel and door jamb. Mount seal to header with preferred mounting method. Ensure that the brush is not too tight against door panel that it creates drag against the door.
2. Blade seal: TKO supplies two sizes of black EPDM seal and retainer with each door requiring a blade seal application. This seal DOES NOT come factory mounted on the door. There are three different assembly applications that you can use with this seal. However, the ONLY constant is that the panel will always get the 2-1/2" seal with the 45D retainer and the header will always get the 1-3/8" seal with the 90D retainer.

PANEL INSTALLATION (continued)

DECALS & PLACARD INSTALLATION

The Safety Decal (Part Number 15-00053) and Model Identification Decal are factory installed to the third panel on the right side as shown in the illustration below. The Warning Placard must be posted next to the door in a viewable location for the operators of the door.

DECALS & PLACARD INSTALLATION



DECALS & PLACARD INSTALLATION (continued)

[illegible]

POST NEAR DOCK DOOR



- Read and follow all warnings and instructions in the Owner's Manual, door mounted Safety Decal, and this wall mounted Placard.
- Personnel using the door doors must be properly trained.
- NEVER use damaged or malfunctioning door doors. Report problems immediately to supervisor.
- Operate door only when it is properly adjusted and free of obstructions. Should the door become difficult to operate or completely inoperative, 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 tracks 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 cause 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 the 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.

TO OPERATE: 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.

1. In the event of a panel KNOCKOUT or track impact situation, step away from the door a safe distance.
2. Inspect the door system **BEFORE** resetting panels.
 - > Plungers of the top panel must be engaged in track.
 - > Cables must be properly tensioned and seated in the grooves of the cable drums.
 - > Panels must be sitting level with hardware intact.
 - > Tracks must be square to jamb face and securely mounted.

If the above conditions are met, continue with resetting door (see steps 3-6 below). If any of these conditions are not met, **DO NOT** use door. Stay clear of door and immediately report incident to supervisor and have a trained door systems technician inspect and reset door.
3. Clear fork truck and/or all product from dock door area.
4. Grab manufacturer supplied handle(s) and pull door panels back into tracks. If the spring plunger tips are obstructed at any point of the return travel, the plunger rods may be manually retracted while pulling panels back into tracks. Depending on conditions, this operation may require 2 people to safely reset the door.
 - ***NEVER try to open or close door until all panel plungers are reset back into track and door has been inspected.***
 - ***NEVER climb under impacted panels to reset door.***
5. Check panels, track, hardware and fasteners for any damage, looseness, misalignment and verify **TRACK SPACING** **BEFORE** operating door.
6. After panels have been engaged back into the tracks, carefully cycle the door to its fully open and closed position several times making sure operation is smooth throughout its entire travel cycle.

Failure to follow these and other provided warnings could result in death or serious injury.



Call for additional placards, manuals or with questions regarding proper use, maintenance and repair of dock doors.

N56 W24701 N. Corporate Circle • Sussex, WI 53089
Phone: (262) 820-1217 • Fax: (262) 820-1273

P/N: 15-00011 REV: E 12/05

PANEL INSTALLATION (continued)

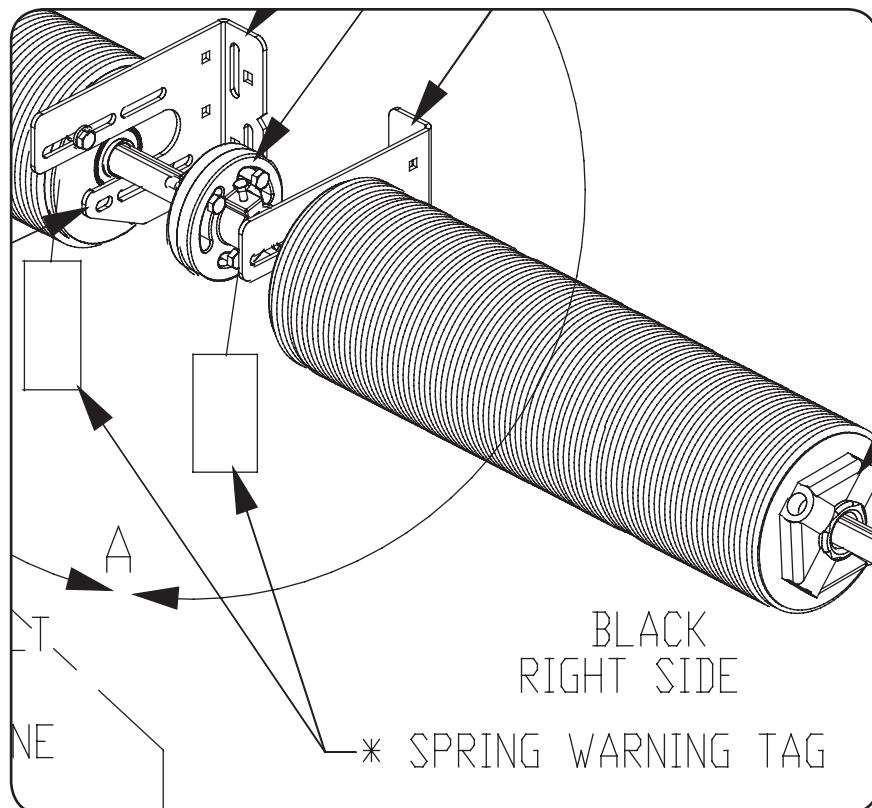
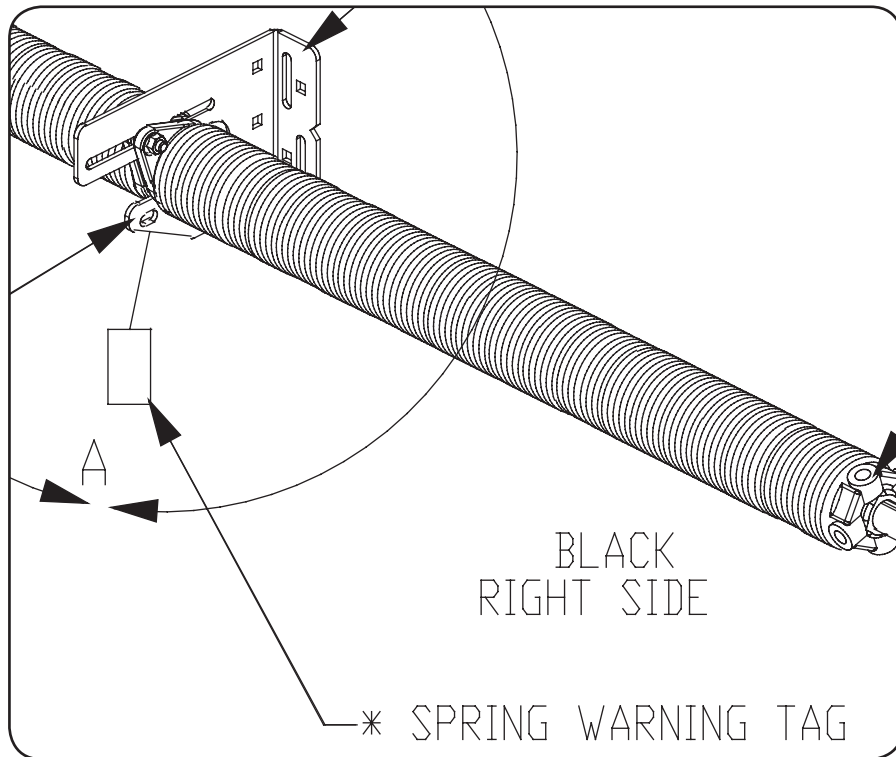
DECALS & PLACARD INSTALLATION (continued)

The Spring Warning Tag 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.



PANEL INSTALLATION (continued)

DECALS & PLACARD INSTALLATION (continued)



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 Job Specific documents)
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

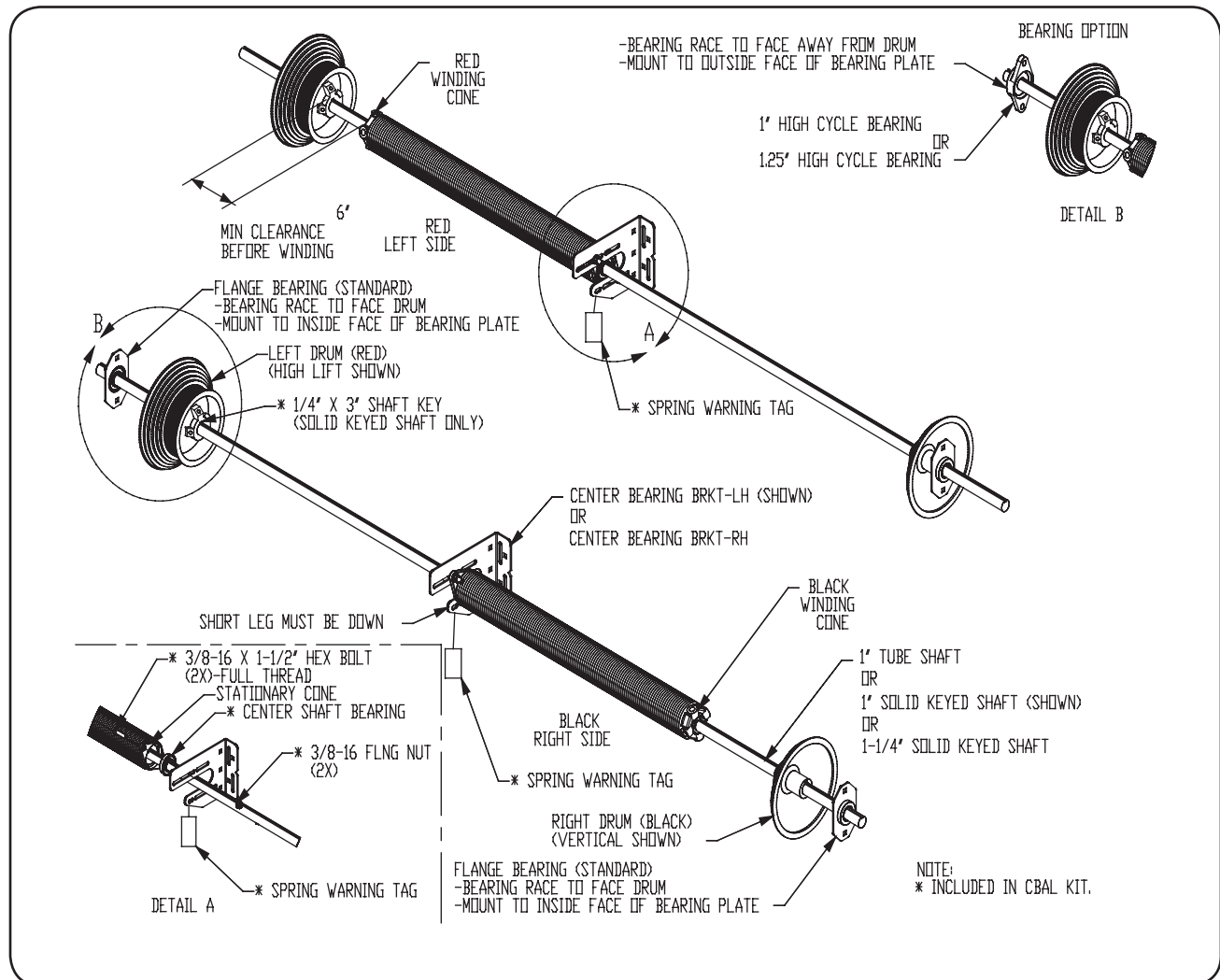
1. Layout counter balance parts on floor
2. Identify if spring is left hand (red) or right hand (black)
3. Slide center bearing to the center of the shaft with the bearing race facing away from the selected spring.
4. Slide the left spring (red) on to shaft with the stationary spring cone facing the 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 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 assemble onto end bearing plates, making sure end bearing are positioned inside of 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. 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.

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.

SINGLE SPRING WITH SINGLE SHAFT



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

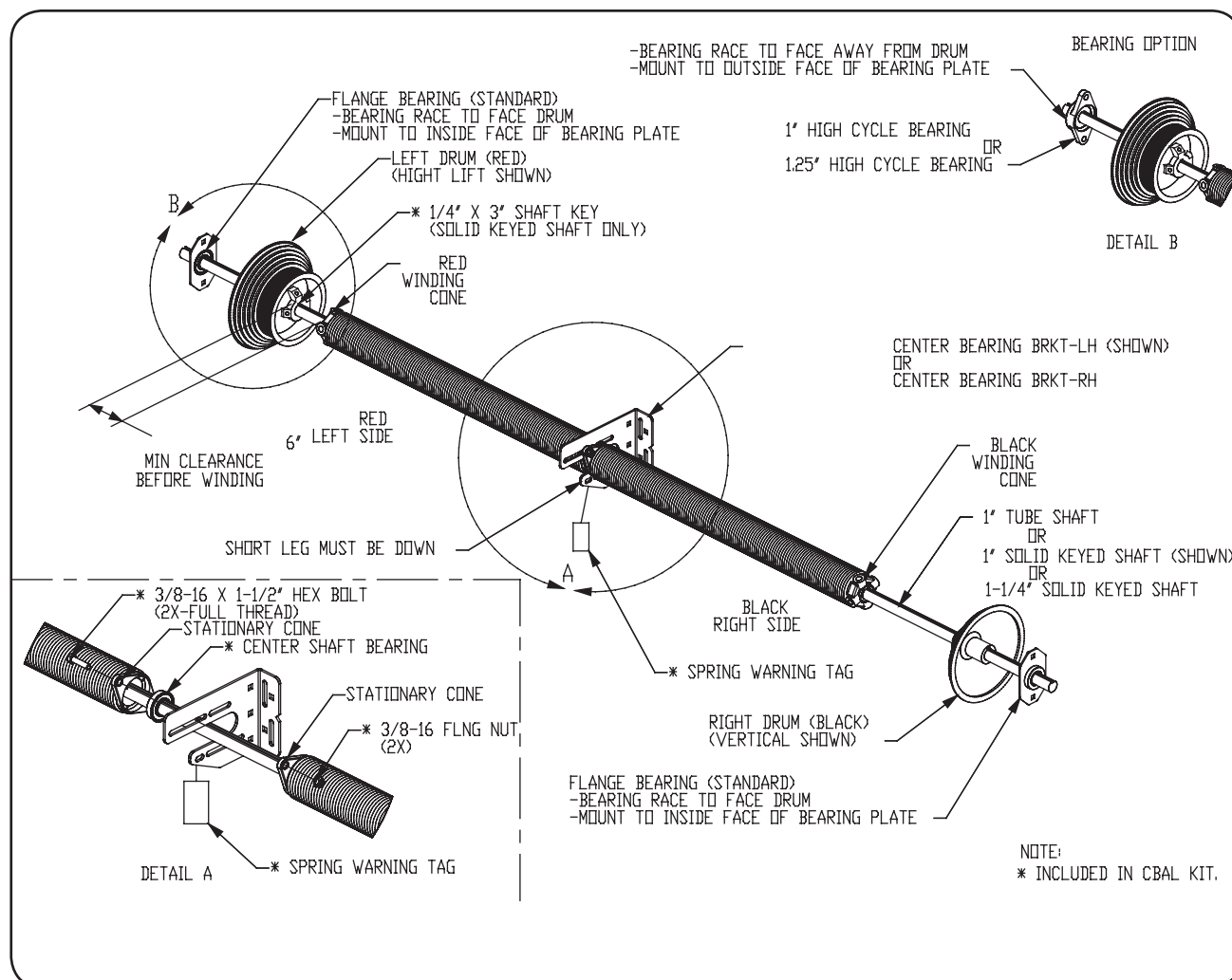
1. Layout counter balance parts on floor
2. Slide the two center bearings to the center of the shaft with the bearing races facing each other.
3. Slide the left spring (red) on to shaft with the stationary spring cone facing the center of shaft and the winding cone to the outer.
4. Slide the right spring (black) on to shaft with the stationary spring cone facing the center of shaft and the winding cone to the outer.
5. Bolt spring stationary cones, center bearing, and center bearing bracket together.
DO NOT tighten completely, this will allow for adjustments with installation.
6. Slide the left drum (red) on the left side of shaft with the setscrews facing the center of the shaft.
7. Slide the right drum (black) on the right side of shaft with the setscrews facing the center of the shaft.
8. 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.
9. Lift counterbalance assembly onto end bearing plates, making sure bearings are positioned inside of the plates with races facing inward.
10. Secure shaft and bearing to plate using carriage bolts supplied.
11. Slide drums against end bearing races. Insert the shaft key for each drum when a solid shaft with a keyway is being used.
12. 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.

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 WITH SINGLE SHAFT



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

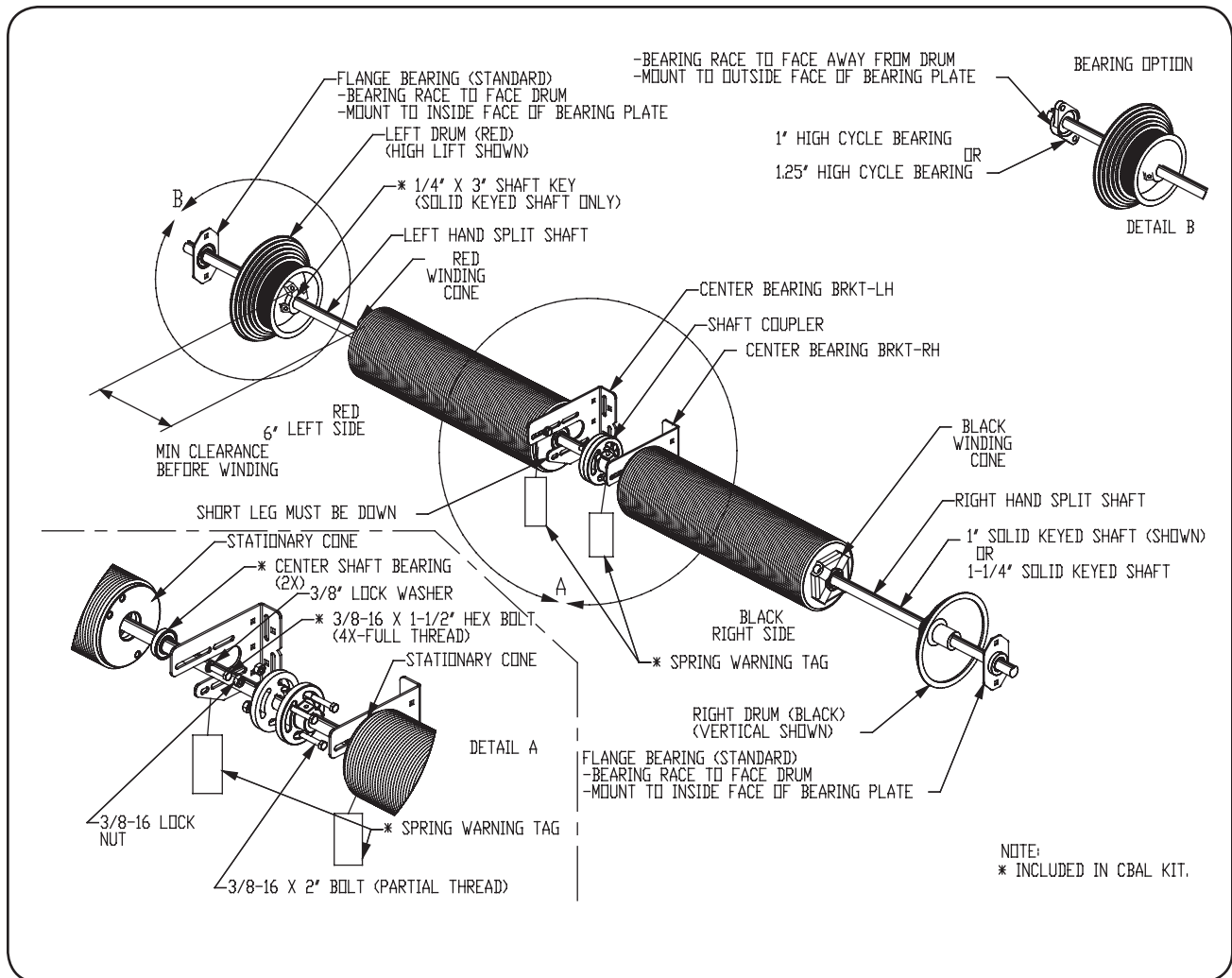
1. Layout counter balance parts on floor
2. Slide each 1/2 of the coupler flush to the ends of the both shafts that will be mounted together in the center.
3. Install keys into shaft/coupler and tighten setscrews.
4. Coupler, shaft and key MUST BE flush. Both ends will be bolted together when installing 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. 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.

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 WITH SPLIT SHAFT



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. Check stacked panels for level.
2. Verify that the cable attachment bracket is installed on the correct panel (see Installer Detail Sheet).
3. 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. On straight vertical doors, attach cable to the outside hole of the cable attachment bracket.
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. On straight vertical doors, attach cable to the outside hole of the cable attachment bracket.
7. Place cable stops in the notch in the backside of drum and turn the drum until all slack in cable is removed. 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.

WIND SPRINGS

See parts book IDS (Installer Detail 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).

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.

WINDING SPRINGS (continued)

WIND SPRINGS (continued)

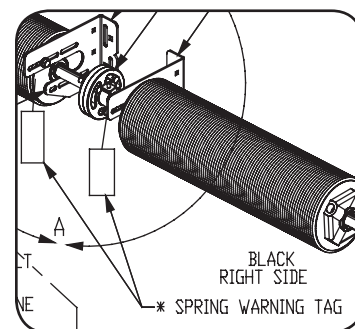
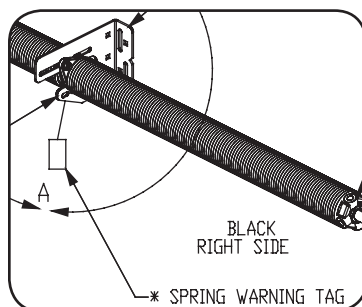
4. It is not recommended to use paint to mark a line. This may alter the performance of the spring.
5. Insert the winding bars into the full depth of hole in the winding cone.
6. Wind springs in an upward direction 1/4 turn and hold the tension.
7. Insert the second winding bar fully into the next available hole in the winding cone. Take the load on the second winding bar and remove the first winding bar.
8. 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.
9. 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.
10. 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 1/4". This will eliminate the possibility of spring coils binding during operation.
11. 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 the shaft.
12. Make sure all springs are thoroughly oiled (around the entire circumference of the spring) with 10W-30 motor oil or food grade equivalent.
13. 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.

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



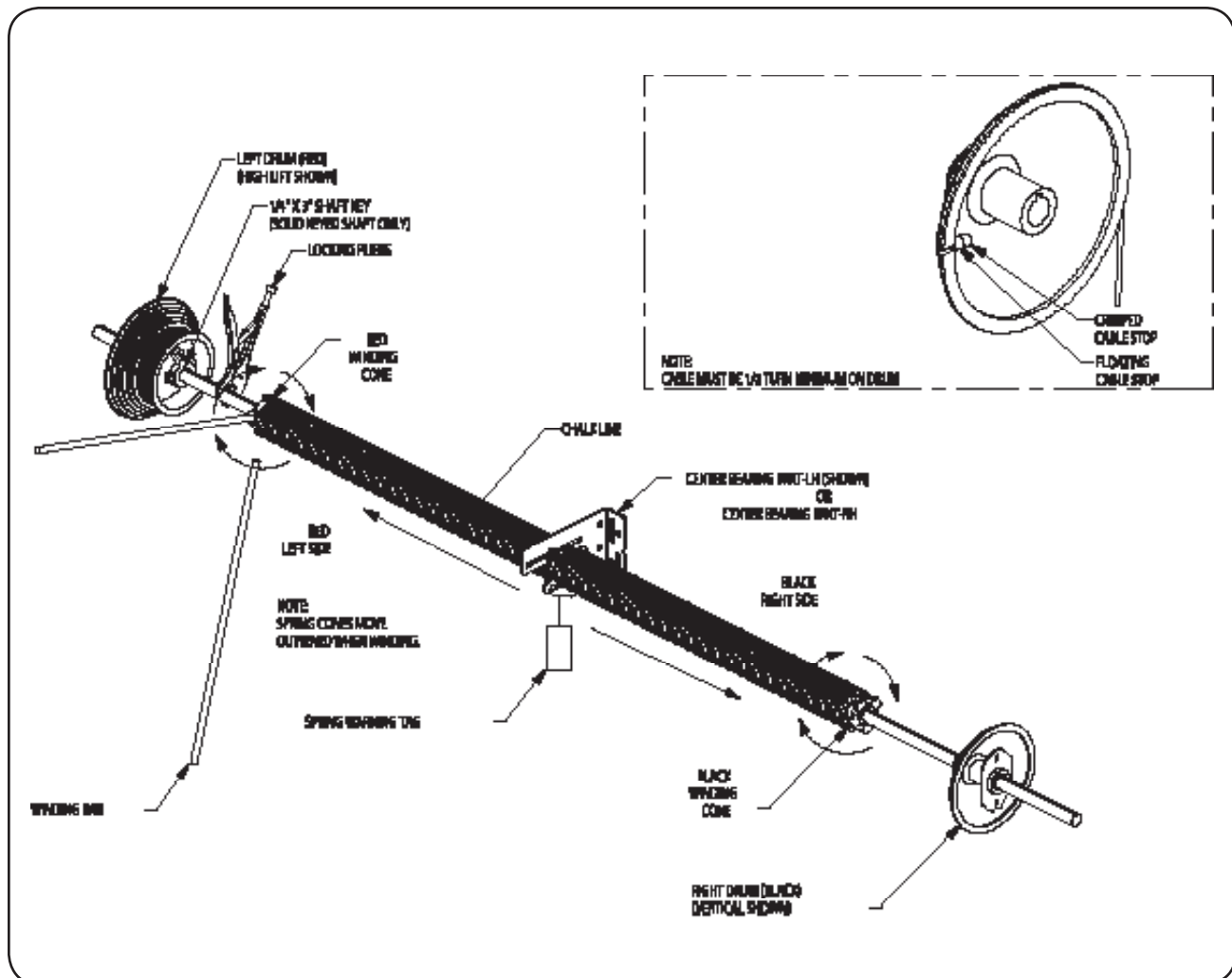
15. Remove locking pliers from shaft.
16. While securely holding down the door, unlock the door and slowly raise the door.

WINDING SPRINGS (continued)

⚠ 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

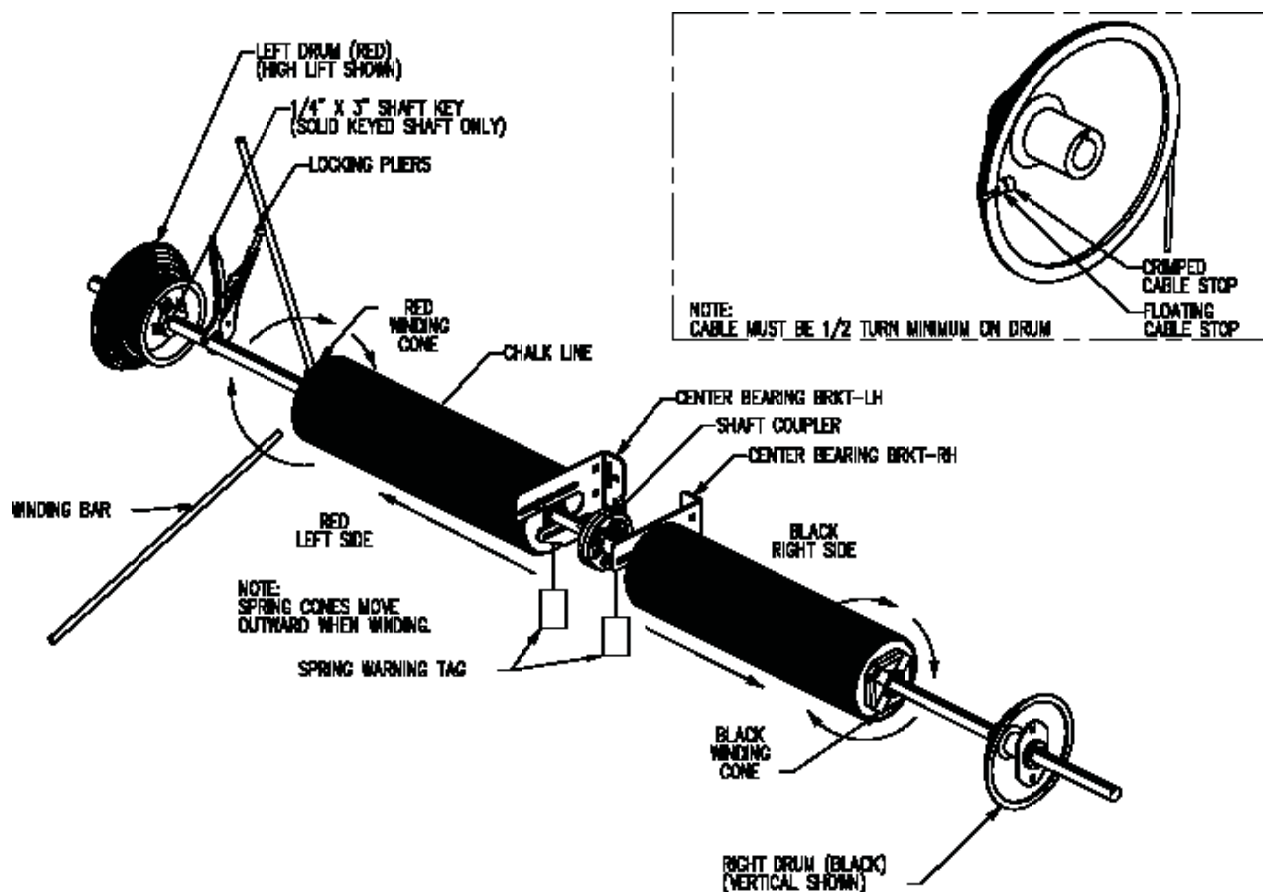


WINDING SPRINGS (continued)

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



DOOR OPERATION

WARNING

Before operating the door, read and follow the Safety Practices on pages 4 and 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. NEVER try to open or close door until all Panel Plungers are reset back into Track and door has been inspected. NEVER climb under impacted Panels to reset door.

1. DO NOT operate door if it is not properly adjusted or free of obstructions.
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.

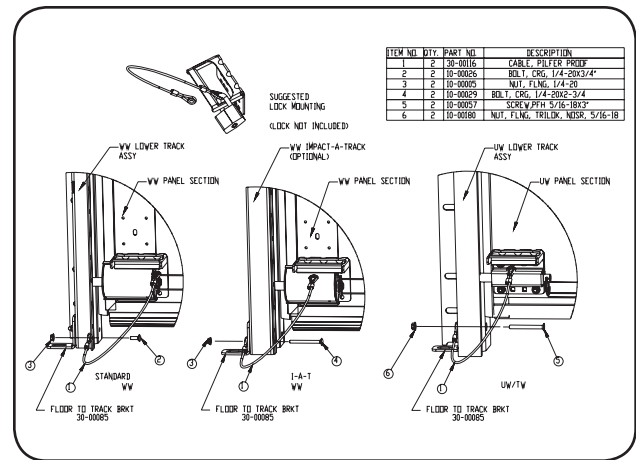
RESETTING IMPACTED PANELS

1. In the event of a panel KNOCK-OUT or track impact situation, step away from the door a safe distance.
2. Inspect the door system BEFORE resetting panels.
 - Plungers of the top panel **MUST BE** engaged in track.
 - Cables **MUST BE** properly tensioned and seated in the grooves of the cable drums.
 - Panels **MUST BE** sitting level with hardware intact.
 - Tracks **MUST BE** square to jamb face and securely mounted.If the above conditions are met, continue with resetting door (see steps 3-6 below). If any of these conditions are not met, DO NOT use door. Stay clear of door and immediately report incident to supervisor and have a trained door systems technician inspect and reset door.
3. Clear fork truck and/or all products from dock door area.
4. Grab manufacturer-supplied handle(s) and pull door panels back into tracks. If the spring plunger tips are obstructed at any point of the return travel, the plunger rods may be manually retracted while pulling panels back into tracks. Depending on conditions, this operation may require 2 people to safely reset the door.
 - NEVER try to open or close door until all panel plungers are reset back into track and door has been inspected.
 - NEVER climb under impacted panels to reset door.
5. Check panels, track, hardware and fasteners for any damage, looseness, misalignment, and verify track spacing BEFORE operating door.
6. After panels have been engaged back into the tracks, carefully cycle the door to its fully open and closed position several times making sure operation is smooth throughout its entire travel cycle.

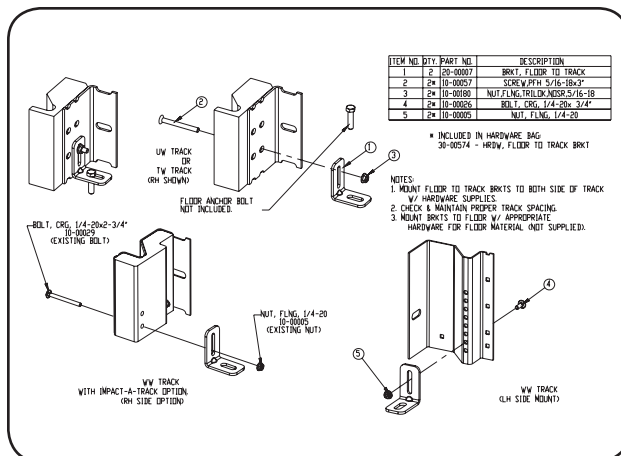
AVAILABLE OPTIONS

- Pilfer Proof Cable Lock Kit
- Floor-to-Track Bracket Kit
- Anti-Drift Up Lock Kit for Single Knockout Track
- Knockout Lock Kit
- Blade Weather Seal Kit for Header

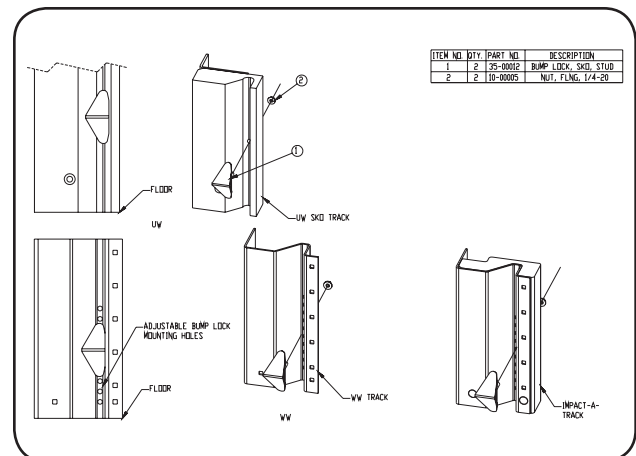
PILFER PROOF CABLE LOCK KIT



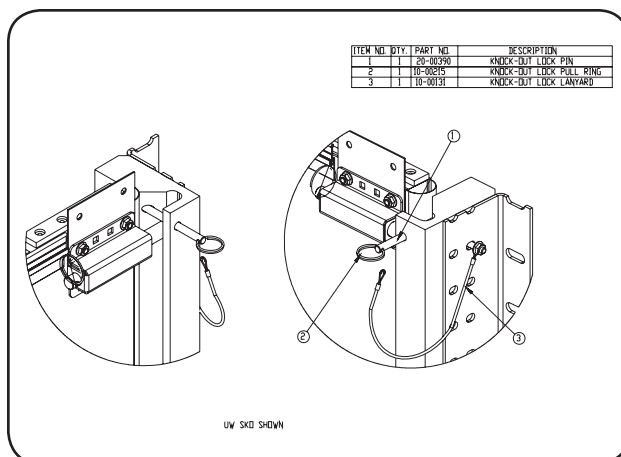
FLOOR-TO-TRACK BRACKET KIT



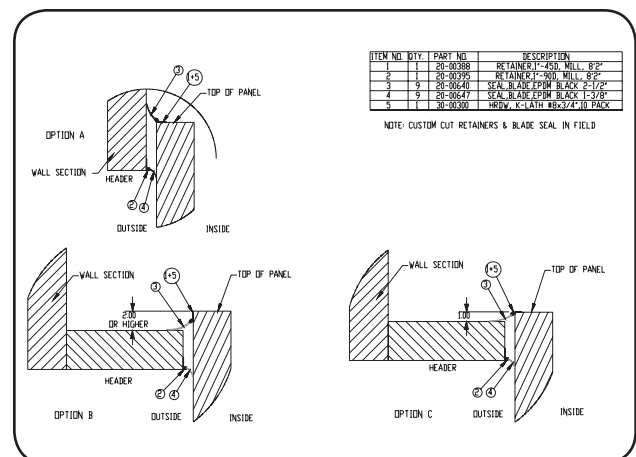
ANTI-DRIFT UP LOCK KIT FOR SINGLE KNOCKOUT TRACK



KNOCKOUT LOCK KIT



BLADE WEATHER SEAL KIT FOR HEADER



PREVENTATIVE MAINTENANCE

⚠ WARNING

Before servicing the door, read and follow the Safety Practices on pages 4 and 5 and the operations section of this manual. DO NOT attempt to repair or adjust door components unless you are a qualified door 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.**

MAINTENANCE SCHEDULE

ITEM	PROCEDURE	INSPECT INTERVALS		
		Daily	Monthly	Every 3 Months
Operation	Manually operate the door. Check for smooth operation and proper balance. If this door has an automatic opener, disconnect it before this inspection.	•		
Labels	Inspect all safety/warning/product labels, placards, decals, tags. Replace if damaged or missing.		•	
Drums, Couplers	Check all set screws and shaft keys and securely tighten.			•
Cables	Check for signs of abnormal wear, fraying or damage.			•
Bearings	Check for signs of abnormal wear or damage.			•
Cable Attachments	Check for signs of abnormal wear or damage and properly secure all fasteners.			•
Springs	Check for signs of abnormal wear or damage. Lubricate ♣.			•
Spring Anchors	Check for signs of abnormal wear or damage and properly secure all fasteners.			•
Shaft	Check for signs of abnormal wear or damage.			•
Track	Check for proper track spacing and alignment.		•	
Track	Check and properly secure all track anchors.			•
Track	Check for signs of abnormal wear or damage.	•		
Backhangs/ Sway Braces	Check for signs of abnormal wear or damage and properly secure all fasteners.			•
Plungers	Check for signs of abnormal wear or damage. Lubricate ♦.			•
Hinges	Check for signs of abnormal wear or damage.			•
Fasteners	Check and properly secure all fasteners.			•
Panels	Check for signs of abnormal wear or damage.	•		
Panels	Clean with soap ONLY. Call TKO for approved cleaners ♠.	As Needed		
Seals	Check for signs of abnormal wear or damage.			•

♣ Use 10W-30 Motor Oil (or food grade equivalent). Wipe an oiled rag over entire circumference of springs to lubricate.

♦ Use white lithium spray grease or food grade equivalent.

♠ 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 and 5 and the Door Operation section on page 62 of this manual.

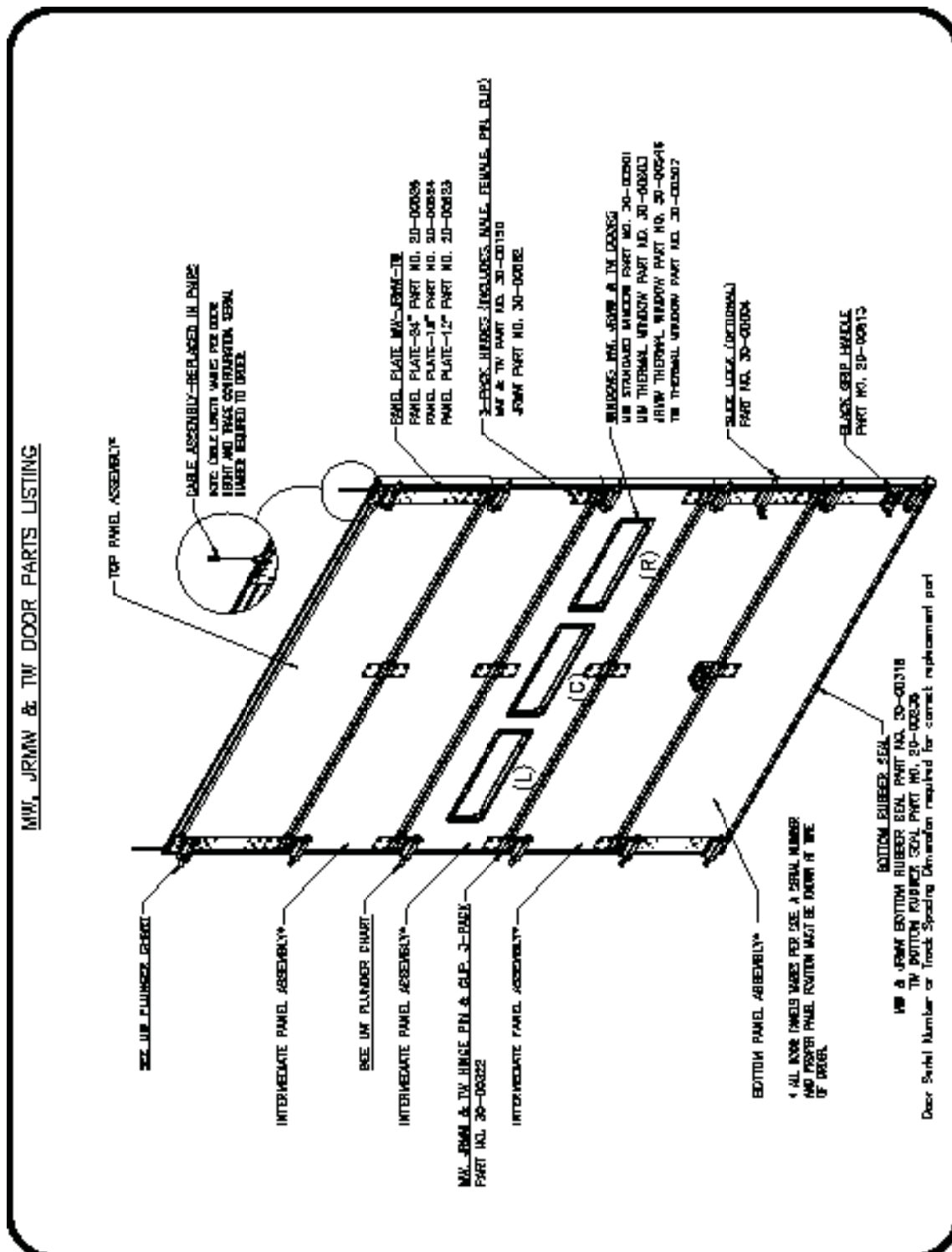
TROUBLE SHOOTING GUIDE

TROUBLE	PROBABLE CAUSE	REMEDY
Door raises hard, closes easily	Insufficient counterbalance	Increase spring tension
Door closes hard, raises easily	Too much counterbalance	Decrease spring tension
Door jumps from floor	Too much counterbalance	Decrease spring tension
Door lifts unevenly, light shows on one side of track	Door improperly leveled/ sitting crooked	Adjust drums to level door
Door is difficult to raise, will not stay open	Broken spring or Tracks are too tight	Replace Spring or Adjust tracks to specifications
Door operates with too much resistance	Broken spring or Tracks are too tight or Weatherseal creating friction	Replace Spring or Adjust tracks to specifications or Wipe residue off seals and lube with a light coat of powdered graphite. (DO NOT use oil or grease)

PARTS LISTING

WARNING

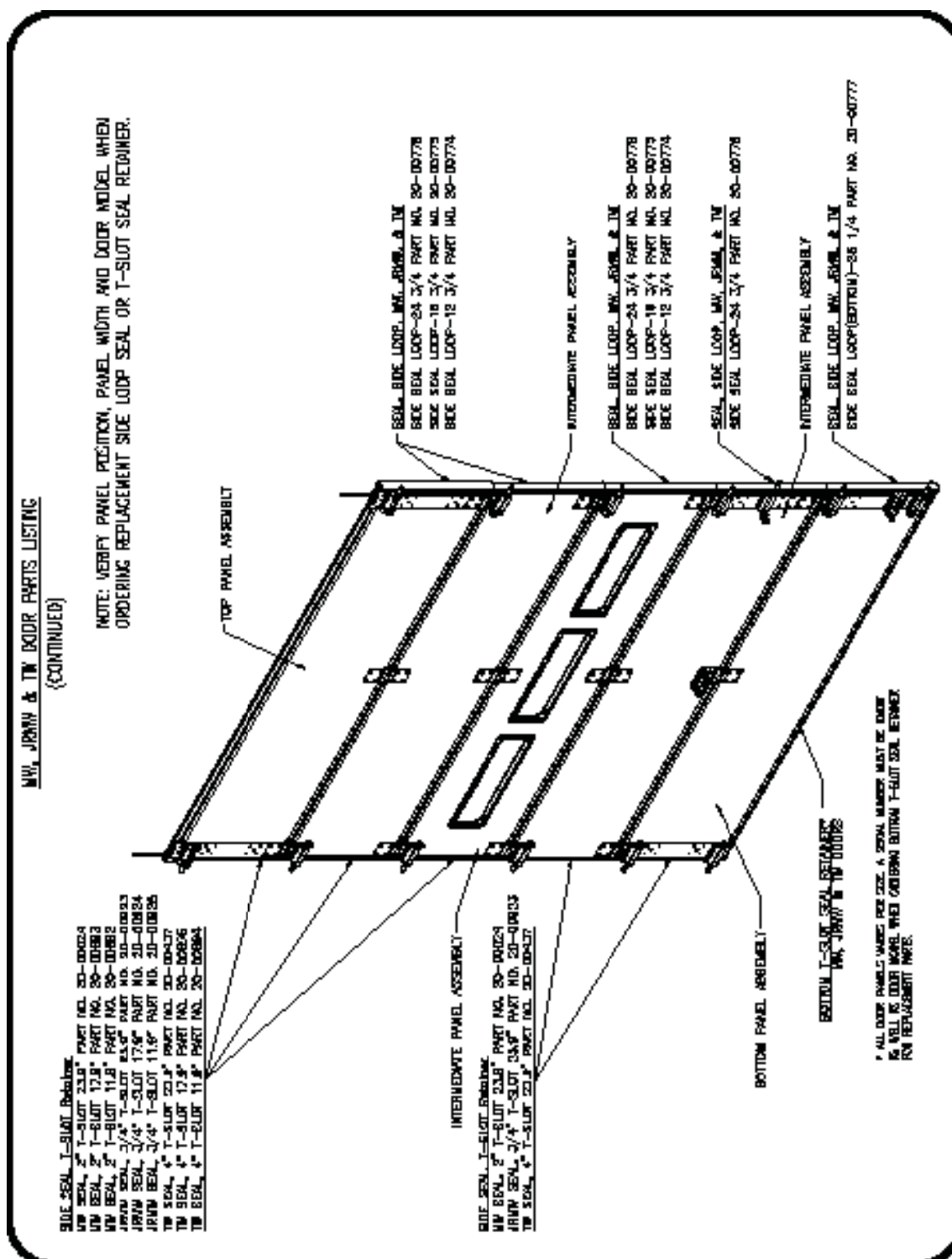
Fixed plungers are required on the Fourth and Higher panels when the counterbalance cable attachment is NOT at the top of the door.



PARTS LISTING

WARNING

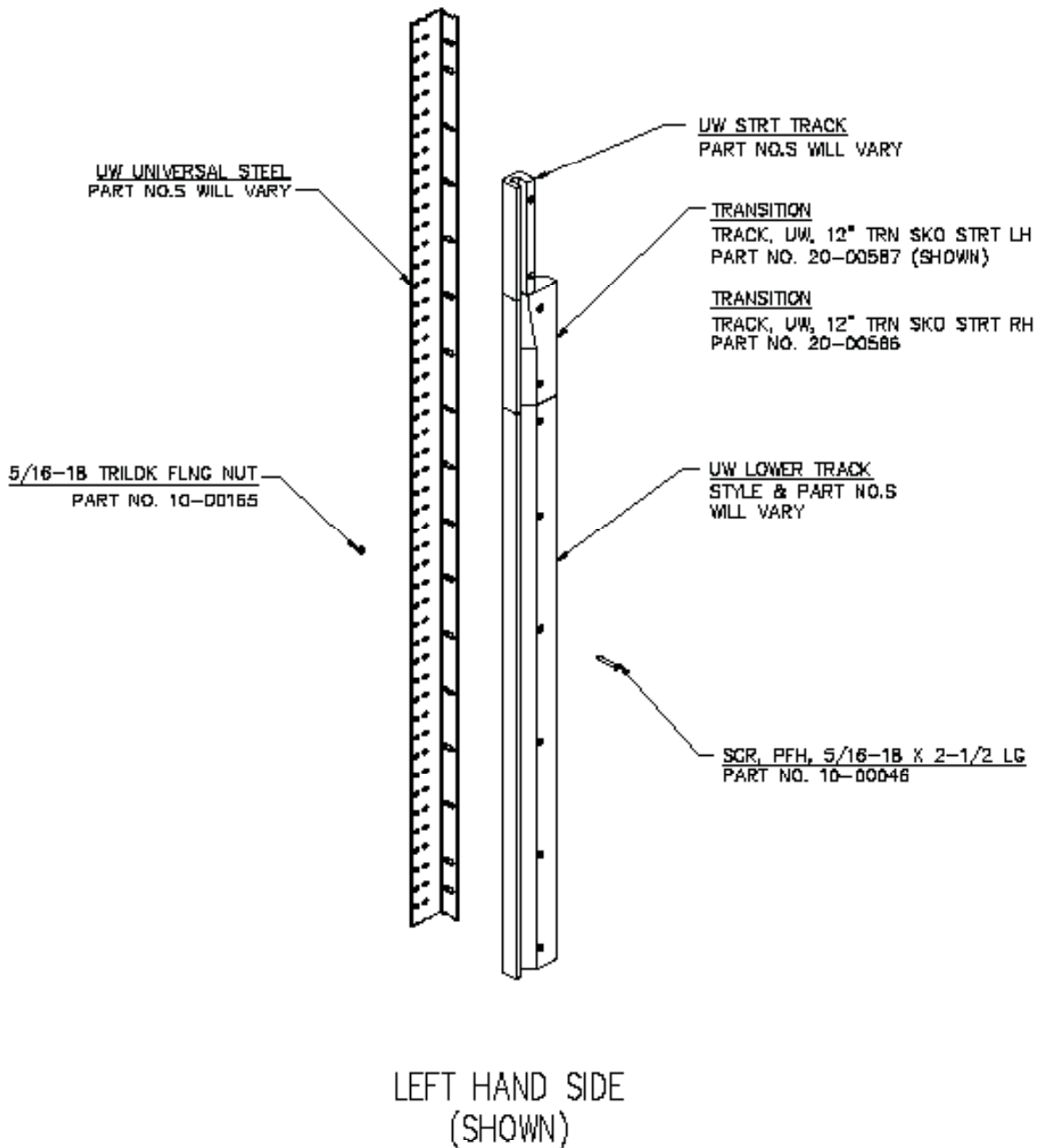
Fixed plungers are required on the Fourth and Higher panels when the counterbalance cable attachment is NOT at the top of the door.



PARTS LISTING

MW, JRMW & TW TRACK ASSEMBLY PARTS (STRAIGHT VERTICAL TRACK SHOWN)

NOTE: MANY TRACK CONFIGURATION EXIST WITHIN EACH DOOR MODEL LINE. A SERIAL NO. AND DOOR MODEL IS REQUIRED WHEN ORDERING TRACK COMPONENTS. CONSULT FACTORY FOR SPECIFIC TRACK CONFIGURATION AND PARTS IDENTIFICATION FOR YOUR SPECIFIC COMPONENT NEED.



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