



BarrierGate® 2.0

For systems manufactured after January 2024

PRODUCT MANUAL



PN 628614

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For systems manufactured after January 2024

The BarrierGate® 2.0 system has been tested pursuant to National Cooperative Highway Research Program (NCHRP) Report 350. The BarrierGate® 2.0 system has been deemed eligible for Federal-aid reimbursement eligibility on the National Highway System to the Federal Highway Administration (FHWA).

Product Manual



15601 Dallas Parkway
Suite 525
Addison, Texas 75001



WARNING: The local highway authority, distributors, owners, contractors, lessors, and lessees are RESPONSIBLE for the assembly, maintenance, and repair of the BarrierGate® 2.0 system. Failure to fulfill these RESPONSIBILITIES with respect to the proper assembly, maintenance, and repair of the BarrierGate® 2.0 system could result in serious injury and/or death.



These instructions are for standard assembly specified by the appropriate highway authority. In the event the specified system assembly, maintenance, or repair would require a deviation from standard assembly parameters, contact a Valtir representative.

This manual must be available to the worker(s) overseeing and/or assembling the product at all times. For additional copies, contact Valtir at (888) 323-6374 or visit www.Valtir.com.

The instructions contained in the manual supersede all previous information and manuals. All information, illustrations, and specifications in this manual are based on the latest BarrierGate® 2.0 system information available to Valtir at the time of printing. Valtir reserves the right to make changes at any time. Please contact Valtir to confirm that you are referring to the most current instructions.

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Customer Service Contacts

Valtir is committed to the highest level of customer service. Feedback regarding the BarrierGate® 2.0 system assembly procedures, supporting documentation, and performance is always welcome. Additional information can be obtained from the contacts below:

Valtir

Telephone:

(888) 323-6374 (USA)

+1 312 467-6750 (International)

Internet:

www.Valtir.com/contact

Abbreviations and Definitions

AASHTO American Association of State Highway and Transportation Officials

FHWA Federal Highway Administration

MUTCD Manual on Uniform Traffic Control Devices

PPE Personal Protective Equipment

Safety Symbols

This section describes safety symbols that may appear in this product manual. Read this manual for complete safety, assembly, operating, maintenance, repair, and service information.



Indicates Danger or Warning. Failure to read and follow this warning could result in serious injury or death to the workers and/or bystanders.



Indicates Caution or High Importance. Failure to follow this warning can result in improper performance, failure of operation, to serious injury or death in the event of a vehicle impact with the system.



Indicates Notifications or Reference. These denote important items but will not cause system damage or serious injury.

Safety Rules for Assembly

This manual must be kept in a location where it is readily available to persons who are skilled and experienced in the proper assembly, maintenance, or repair of the BarrierGate 2.0® system. Additional copies of this manual are available from Valtir. Please contact Valtir if you have any questions concerning the information in this manual.



It is the responsibility of the installer to use proper safety precautions when operating power equipment and when moving heavy equipment or system components. Hand, eye, foot, and back protection is recommended.



Ensure that all of the Danger, Warning, Caution, and Important statements within this product manual are completely followed. Failure to follow this warning could result in serious injury or death in the event of a collision.

Important Introductory Notes

Proper assembly of the BarrierGate® 2.0 system is critical to achieve performance that has been evaluated and deemed eligible by the FHWA per NCHRP Report 350. These instructions should be read in their entirety and understood before assembling the system. These instructions are to be used only in conjunction with the assembly of the system specified in this manual and are for standard assemblies only as specified by the applicable highway authority. If you need additional information, or have questions about the BarrierGate® 2.0 system, please contact the highway authority that has planned and specified this assembly and, if needed, contact Valtir's Customer Service Department. This product must be assembled in the location specified by the appropriate highway authority. If there are deviations, alterations, or departures from the assembly instructions specified in this manual, the device may not perform as tested.



DO NOT use any component part that has not been specified and/or approved for this system during assembly or repair.

This product has been specified for use by the appropriate highway authority and has been provided to that user who has unique knowledge of how this system is to be assembled. No person should be permitted to assemble, maintain, or repair this system that does not possess the unique knowledge described above. These instructions are intended for an individual qualified to both read and accurately interpret them as written. These instructions are intended for only an individual experienced and skilled in the assembly of highway products that are specified and selected by the highway authority.

A manufacturer's drawing package will be supplied by Valtir upon request. Each system will be supplied with a specific drawing package unique to that system. Such drawings take precedence over information in this manual and shall be studied thoroughly by a qualified individual who is skilled in interpreting them before the start of any product assembly.

Limitations and Warnings

Valtir contracts with FHWA approved testing facilities to perform crash tests, evaluation of tests, and submission of results to the FHWA for review.

The BarrierGate® 2.0 system has been deemed eligible for reimbursement by FHWA as meeting the requirements and guidelines for NCHRP Report 350. NCHRP Report 350 tests are designed to evaluate product performance involving lightweight cars (approx. 1800 lb [820 kg]), full size pickup trucks (approx. 4400 lb [2000 kg]) and single-unit van trucks (approx. 17,600 lb [8000 kg]). A product can be certified for multiple Test Levels. The BarrierGate® 2.0 is certified to the Test Level(s) as shown below.

Test Level 3

Test Level 4

These NCHRP Report 350 tests are not intended to represent the performance of systems when impacted by every vehicle type or every impact condition existing on the roadway. This system is tested to the test matrix criteria of NCHRP 350 tests as approved by FHWA.

Valtir expressly disclaims any warranty or liability from injury or damage to persons or property resulting from any impact, collision or harmful contact with products, other vehicles, or nearby hazards or objects by any vehicle, object or person, whether or not the products were assembled in consultation with Valtir or by third parties.

The system is intended to be assembled and maintained in accordance with specific state and federal guidelines. The appropriate highway authority approved engineer should be careful to properly select, assemble, and maintain the product. Careful evaluation of site layout, traffic speed/type, direction, and visibility are some of the elements that require evaluation by the highway authority in the selection of a highway product. For example, curbs could cause an untested effect on an impacting vehicle.



Do not assemble, maintain, or repair this system until you have read this manual thoroughly and completely understand it. Ensure that all Danger, Warning, Caution, and Important statements within the manual are completely followed. Please call Valtir at (888) 323-6374 if you do not understand these instructions or have questions.



Do not modify this system in any way.



It is the sole responsibility of the project engineer and/or local highway authority and its engineer to ensure that this system and delineation used meet all federal, state, specifying agency, and local specifications.



It is the sole responsibility of the project engineer and/or local highway authority and its engineer to ensure that the assembly meets all appropriate Manual on Uniform Traffic Control Devices (MUTCD) and local standards.



If the system is involved in an impact or collision, the debris from the impact should be removed from the area immediately and the specified highway product should be evaluated and restored to its original specified condition or replaced as the highway authority determines as soon as possible. If the system is not repairable, a complete system replacement is required.

System Overview

The BarrierGate® 2.0 system is an automated gate for barrier openings that may be used to restrict unauthorized access and is designed to help eliminate barrier ends in median openings. The system can be used for a variety of applications including median crossovers, HOV lanes, and reversible lanes.

Technical Specifications

Dimensions (nominal)

- System Length 120'-0" [36.6 m]
- System Width 2'-6" [762 mm]
- System Height. 3'-7" [1.1 m]

Recommended Tools

Documentation

- Manufacturer's Instructional Manual
- Manufacturer's Drawing Package
- Applicable location, layout, orientation, and construction plans

Sockets and Wrenches

- Socket and combination wrenches: 1/2", 9/16", 3/4", 1 1/8" and 1 1/4"
- Extensions and ratchets for sockets
- 12" [305 mm] adjustable wrench
- 24" [610 mm] length pipe wrench
- Hex keys: 5/32", 3/8", 1/2"
- Torque Wrench

Electrical

- 50' [15 m] electrical fish tape
- Waterproof strain relief
- Service junction box

Miscellaneous

- Crane and/or fork lift
- CMB lifting slings
- Chains (20,000 lb [9090 kg] minimum vertical lift capacity)
- PCMB lifting pins
- Rotary hammer or similar tool for concrete, 7/8" concrete drill bit (double fluted)

- Digging or pry bar; 5' [1.5m] length
- Pliers
- Air compressor with impact wrench and concrete blowout tool
- Come along, 1000 lb [455 kg] minimum capacity
- Chalk line and concrete marking pencil
- Sledge and claw hammers
- Standard caulking gun
- Tape measures: 25' and 100' [7.6 m and 30.5 m]
- Flat and Phillips screwdrivers
- Cable cutter
- Wooden blocks (at least 4)

Site Preparation

Assemble the BarrierGate® 2.0 system in a 120' ± 2" [36.58 m ± 50 mm] long opening in existing permanent or portable Concrete Median Barrier. The BarrierGate® 2.0 must be assembled on an existing or freshly placed and cured concrete foundation conforming to the specifications contained in the Concrete Pad Drawing.

Site Considerations

- 1. Check the existing barrier shape at the site:** The BarrierGate® 2.0 system is designed to attach to concrete median barrier (CMB) with an 8" [203 mm] top width and the shape of a standard New Jersey median barrier. Other shapes require transitions to the system. Transitions are to be supplied by the customer and must be properly designed to prevent unintended vehicle interactions.
- 2. Check what type of foundation exists at the site:** The BarrierGate® 2.0 system must be anchored to a concrete foundation meeting the dimensions and construction specifications given in the concrete pad drawing.
- 3. Check the prevailing grade and cross slope at the site:** The maximum recommended foundation cross slope is 4% and the maximum grade is 8%. The area surrounding the assembly should be cleared of all debris. Drainage should be provided to avert runoff and prevent ponding on the foundation.
- 4. Make sure there is electrical power at the site:** The electrically powered BarrierGate® 2.0 system model requires a 240 VAC 50 A single phase incoming power supply (480 VAC requires optional 5 kVA 480 X 240 transformer). Electrical power, local earth ground, and grounding conductors (per local requirements) must be routed to the proper location in the concrete pad. Access to the control panel, disconnect (electrical power end), and drive system must be considered. The position of the incoming power determines the orientation of the gate and access to the controls. Position the system with the access side facing the widest shoulder.

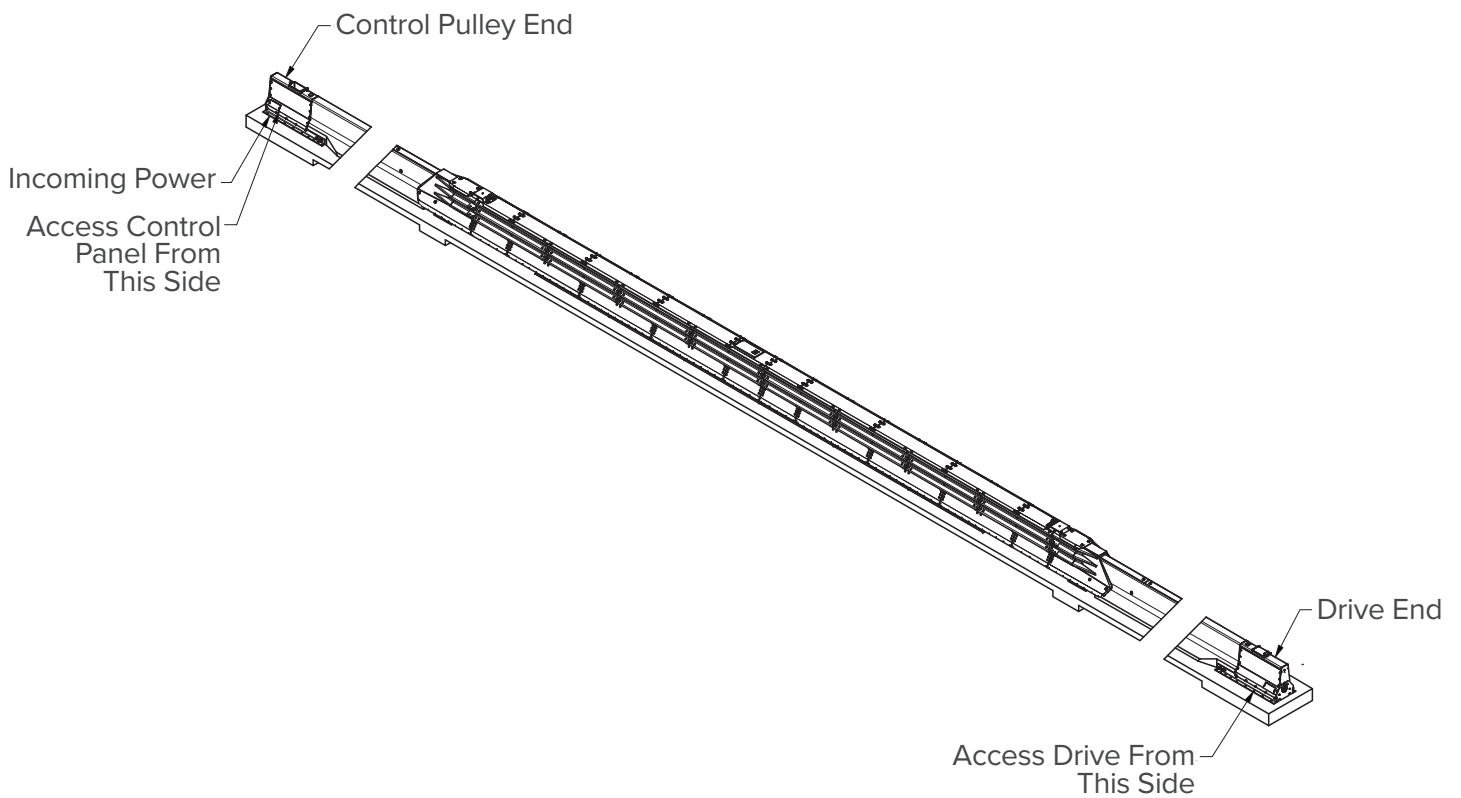


Figure 1

Valtir Approved Anchoring System

A Valtir approved adhesive system is required to securely anchor the BarrierGate® 2.0 system. Each approved adhesive kit contains adhesive, studs, nuts and washers. Both vertical and horizontal assemblies are possible using an approved anchoring system.

Foundation and Boreholes

1. The studs that anchor the BarrierGate® 2.0 system to the concrete foundation must be those shipped in the kit or of high strength steel (120,000 psi [830 MPa] min. tensile strength). These studs must be set in minimum 4000 psi [28 MPa] concrete. Allow the concrete to cure a minimum of seven days before drilling and anchoring studs.
2. Use anchoring part(s) as drilling template(s). Drill the boreholes 7/8" diameter to the recommended depth. See adhesive instructions provided with adhesive kit. Ensure each borehole is aligned with the part to be anchored per the anchoring information.

Anchoring Information				
Stud Size	Orientation	Concrete Bit Size	Minimum Depth	Recommended Torque
3/4" X 6 1/2"	Horizontal & Vertical	7/8"	5 1/4"	Manufacturer Spec
3/4" X 10"	Vertical	7/8"	9"	Manufacturer Spec

3. Blow the concrete dust from the borehole using oil-free compressed air. Thoroughly brush it with a 7/8" diameter steel bristle tube brush and then blow it out again. Use of a Valtir approved vacuum drilling equipment is authorized to replace blowing and brushing. If the borehole is wet, completely flush it with water while brushing and then blow it clean to remove all water using oil-compressed air.
4. Fill the borehole 100% full with adhesive. Follow the instructions supplied with approved adhesive kit.
5. Place a flat washer onto the stud, then thread a nut on until the end of the stud is flush with the nut (as shown in Figure 2).

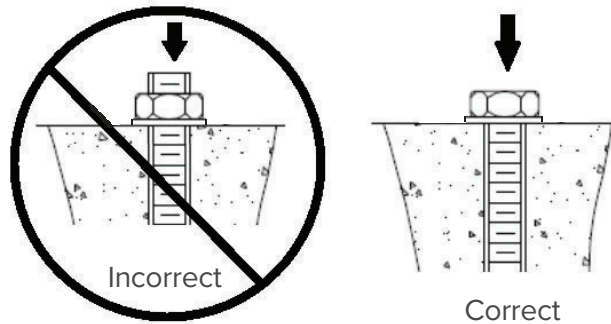


Figure 2

6. Push the stud down through the part to be anchored and into the borehole.



Do not disturb or load the stud until the adhesive has hardened (refer to instructions supplied with adhesive kit).

7. Once the adhesive has fully cured, torque the nut to the adhesive manufacturer's recommended values.

Anchoring Cautions

1. If steel rebar is encountered while drilling an anchor borehole, apply one of the following solutions.
 - A. Using a diamond core drill bit or rebar drilling tool, drill through the rebar only. Then, switch back to the concrete bit and drill into the underlying concrete until the proper borehole depth is reached.
 - B. Drill a new borehole at an angle past the rebar to the proper depth. Anchor the stud by completely filling both boreholes with adhesive.

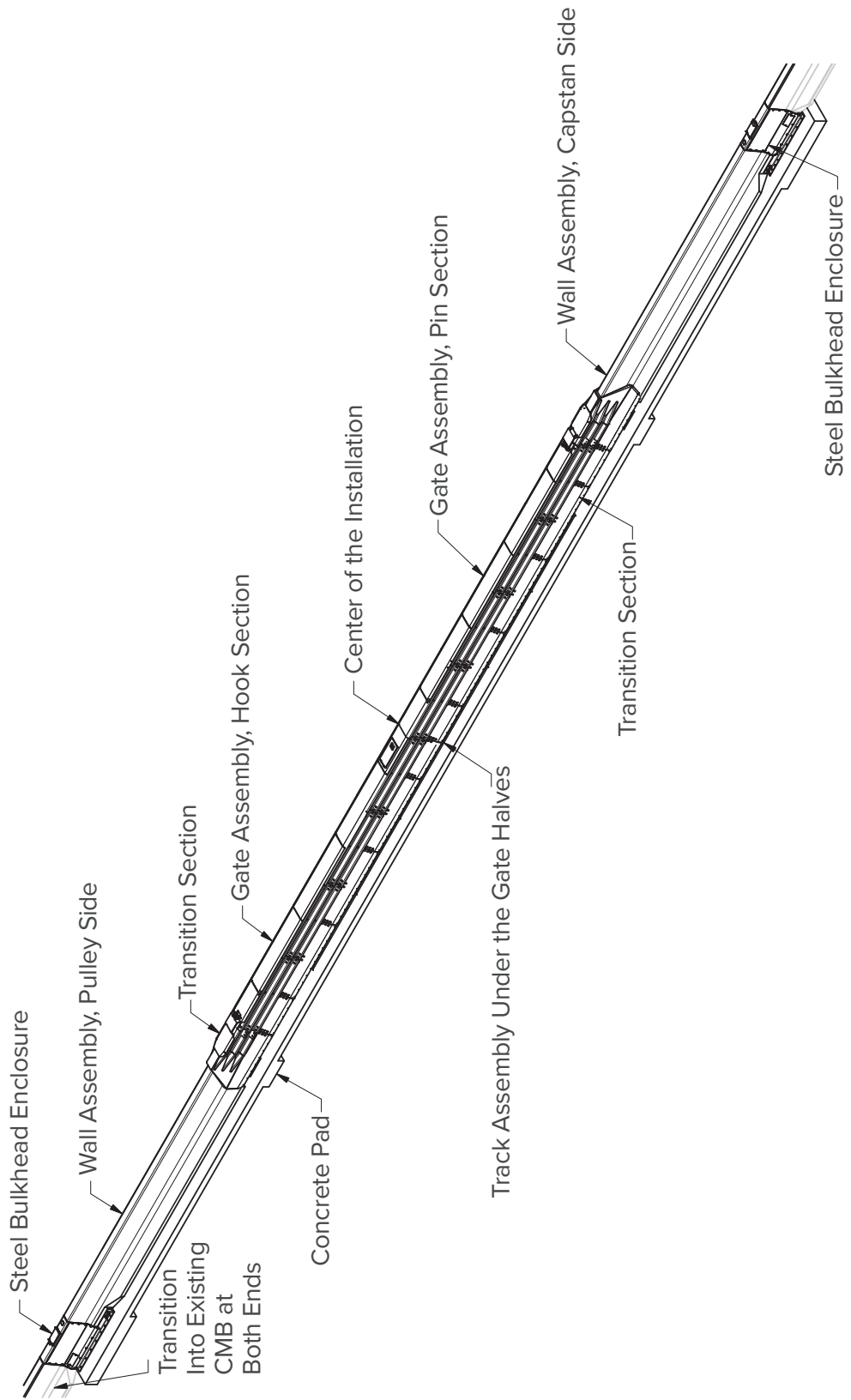


Figure 3

Installation of Wall and Track Assemblies

- 1. Mark the centerline and the mid-point of the assembly** (Figure 4). Find the center of the existing longitudinal barrier ends and place chalk marks on the foundation at these points (Figure 4). The distance between barrier or transition ends must be $120' \pm 2"$ [$36.58 \text{ m} \pm 50 \text{ mm}$]. Extend a chalk line between the center points and snap a line to mark the centerline of the assembly. Find and mark the exact midpoint of the assembly centerline. Snap two more construction lines parallel to the centerline and offset $15"$ [380 mm] to either side.
- 2. Position the wall assemblies** (Figure 5). Assemblies where the existing barrier or transitions are freestanding and unanchored must be doweled to the BarrierGate® 2.0 Steel Wall Assembly Enclosures (Figure 5). If dowels are required, use a drilling template which matches the pattern of holes in the enclosure ends to ensure the dowel rods will line up. Drill holes before positioning the Wall Assemblies. Remove the shipping tie downs that hold the gate and wall assemblies together. Lift the Gate Assemblies (refer to the checklist drawing) off the Wall Assemblies and set them down to the side of the assembly and the proper orientation. Carefully place the gate halves on wood blocks to avoid damage.

Note: The Hook Section Gate Assembly is positioned on the Pulley Wall Assembly (located on the side of the assembly with incoming power).

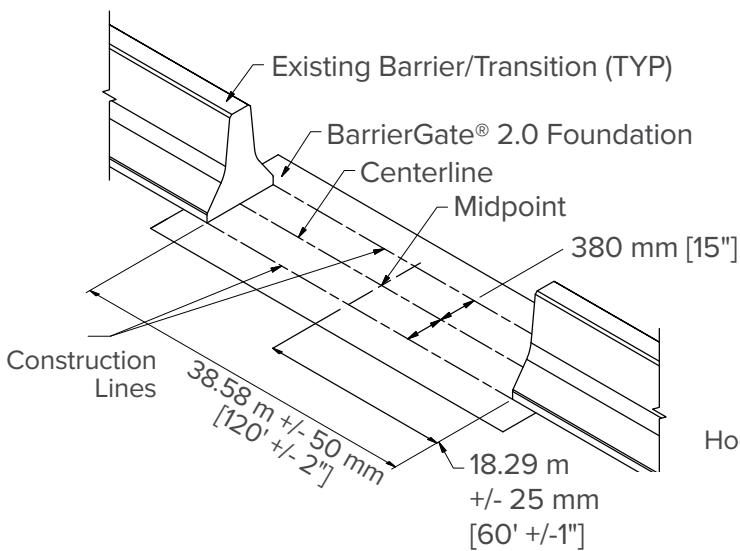


Figure 4
Layout Midpoint (not to scale)

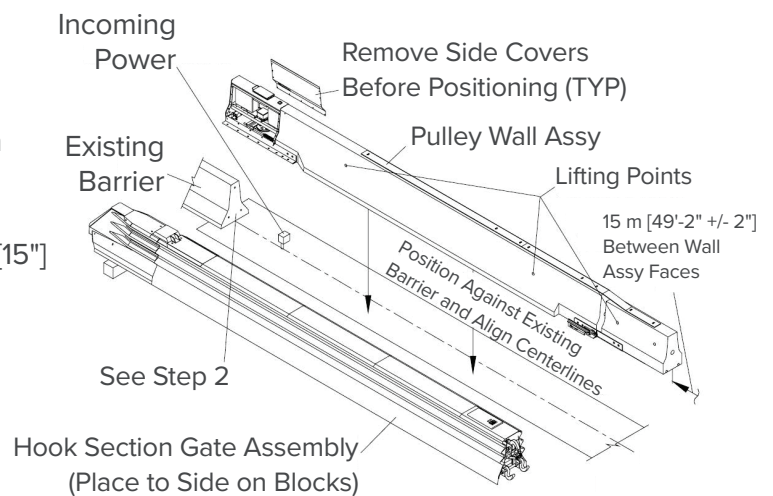


Figure 5
Position Wall and Gate Assemblies
(Pulley Side shown)

Temporarily remove the side covers from both enclosure assemblies and set them out of the way.



The Pulley Wall Assembly must be on the same side as the incoming power. Care must be taken to avoid damaging the electrical power supply when positioning the Pulley Side Wall Assembly.



Crane or forklift and lifting slings must have a minimum rated vertical lift capacity of 20,000 lb. [9090 kg] to lift each wall assembly. Lift barrier by placing chain through lifting holes in the barrier.

Align the centerline of both wall assemblies with the assembly centerline. Position the wall assemblies an equal distance apart from the assembly centerline. The distance between faces of the wall assemblies must be 49' - 2" \pm 2" [15 m \pm 50 mm] (Figure 6).

3. Anchor the wall assemblies to the foundation (Figure 7).

The ends of freestanding existing barrier or transition must either be doweled to the BarrierGate® 2.0 Wall Assembly Enclosures or anchored to the foundation. If the existing barrier ends are not anchored to the foundation the enclosure must be doweled into the barrier ends using the anchors supplied with the system.

Drill 7/8" by 9" deep concrete anchor bolt holes through the anchoring brackets in the wall assemblies (typical 26 places on each wall assembly). Follow the directions supplied with the Valtir Approved Adhesive and anchor the wall assemblies to the foundation.

15 m [49'-2" +/- 2"] Between Wall Assembly Faces

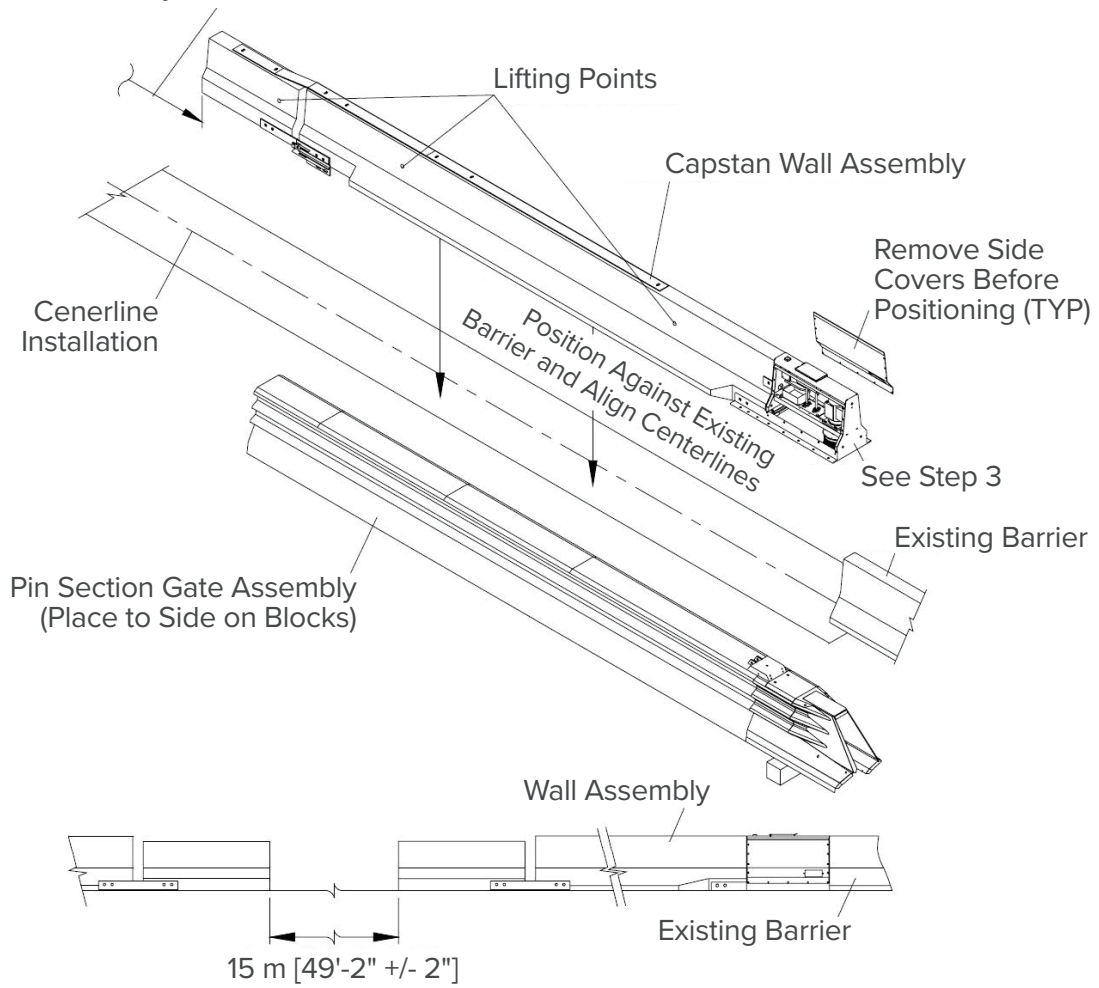


Figure 6
Position Wall and Gate
Assemblies (Capstan Side)

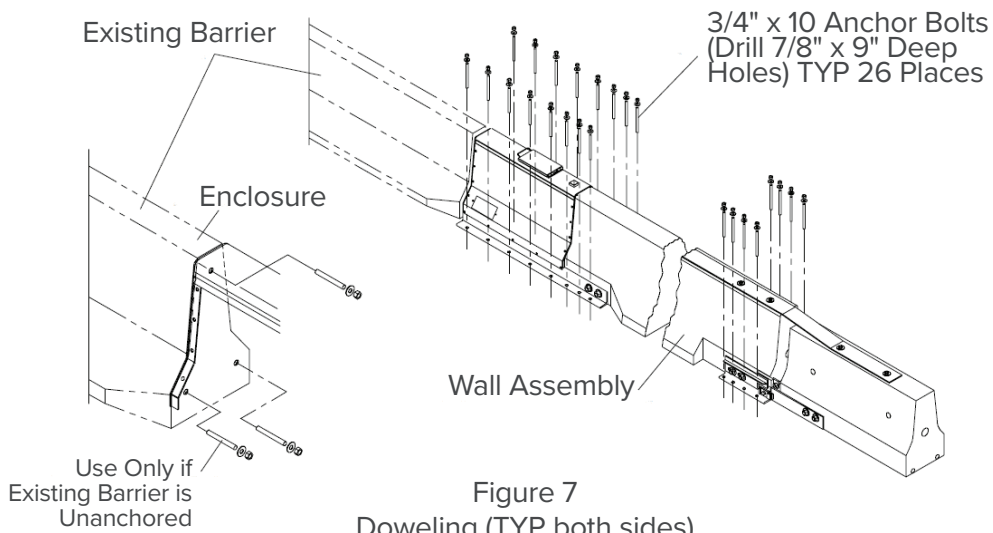


Figure 7
Doweling (TYP both sides)

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Track Assembly Placement

- 1. Position and assemble the track on the foundation** (Figure 8). Move two sections of the track to the midpoint of the assembly. Completely interlock the pins and inverted angles on the sections. Position the midpoint of the engaged sections at the exact midpoint of the assembly, taking care to align the outside of the track edges with the construction lines made earlier. Interlock the remaining track sections with those already positioned.



For proper BarrierGate® 2.0 operation the track sections must be completely engaged, aligned with the system centerline, and centered on the foundation.

- 2. Assemble the cable covers and anchor the track sections** (Figure 9). Using the holes in the tracks as a template, drill six holes 5 1/4" deep in the foundation for each track section. Align the anchor holes, and check that there is a smooth transition from section to section where the ends touch. Place the longer track covers with rubber bumpers toward the ends closest to the existing barrier. Anchor the cable cover and track sections with adhesive and consult manufacturer's instructions for cure times before tightening nuts.

Note: Do not tighten the nuts until the electrical wiring is complete.

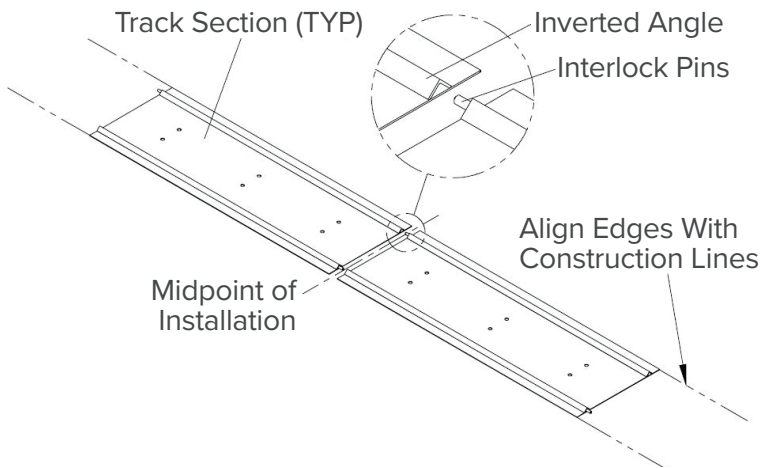


Figure 8
Position Track

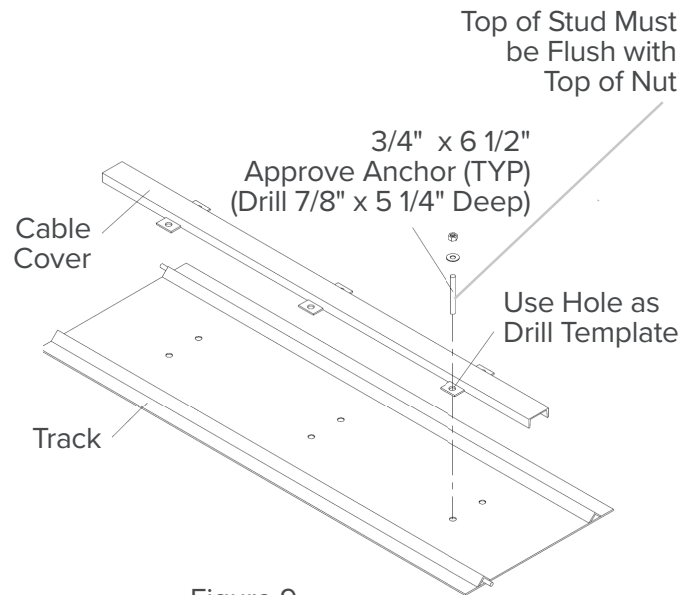


Figure 9
Assemble Cover and Anchor

Electrical Wiring



Connecting the BarrierGate® 2.0 system to incoming power involves the risk of electrical shock and should be made by a qualified electrician.

1. String the electrical control cables between the wall assemblies and connect Amphenol connectors (Figure 10).
 - A. Remove the Track Cable Covers and move them to one side once the adhesive has set up.
 - B. Untie the bundle of electrical cables at the end of the Pulley Wall Assembly and string the wires across the center of the track to the opposite side.
 - C. Use an electrical fish tape to pull the wires through the **upper** 3" conduit in the motor wall assembly and into the control enclosure. Plug the pulley and motor cables together (Figure 10).
 - D. String the keypad cable on the motor side across the track to the opposite side. Use an electrical fish tape to pull the wire through the **upper** 3" conduit in the pulley wall assembly and into the control enclosure. Depending on the optional accessories present, some electrical components may have to be temporarily removed for easier access.
 - E. Place a cable cover over each track section, align the anchor holes, and check to make sure that there is a smooth transition from section to section where the ends touch. Place the long cable covers with rubber bumpers toward the end closest to the existing barrier. Attach the washers and then torque the nuts to 100 ft-lb [135 N-m].



Use extreme care when covering cables with the track covers to prevent damage to the electrical cables and a potential fire or shock hazard.



All anchored studs must be flush with top of nuts to prevent interference with BarrierGate® 2.0 operation. If necessary, cut studs after they are torqued and touch up with cold galvanizing compound.

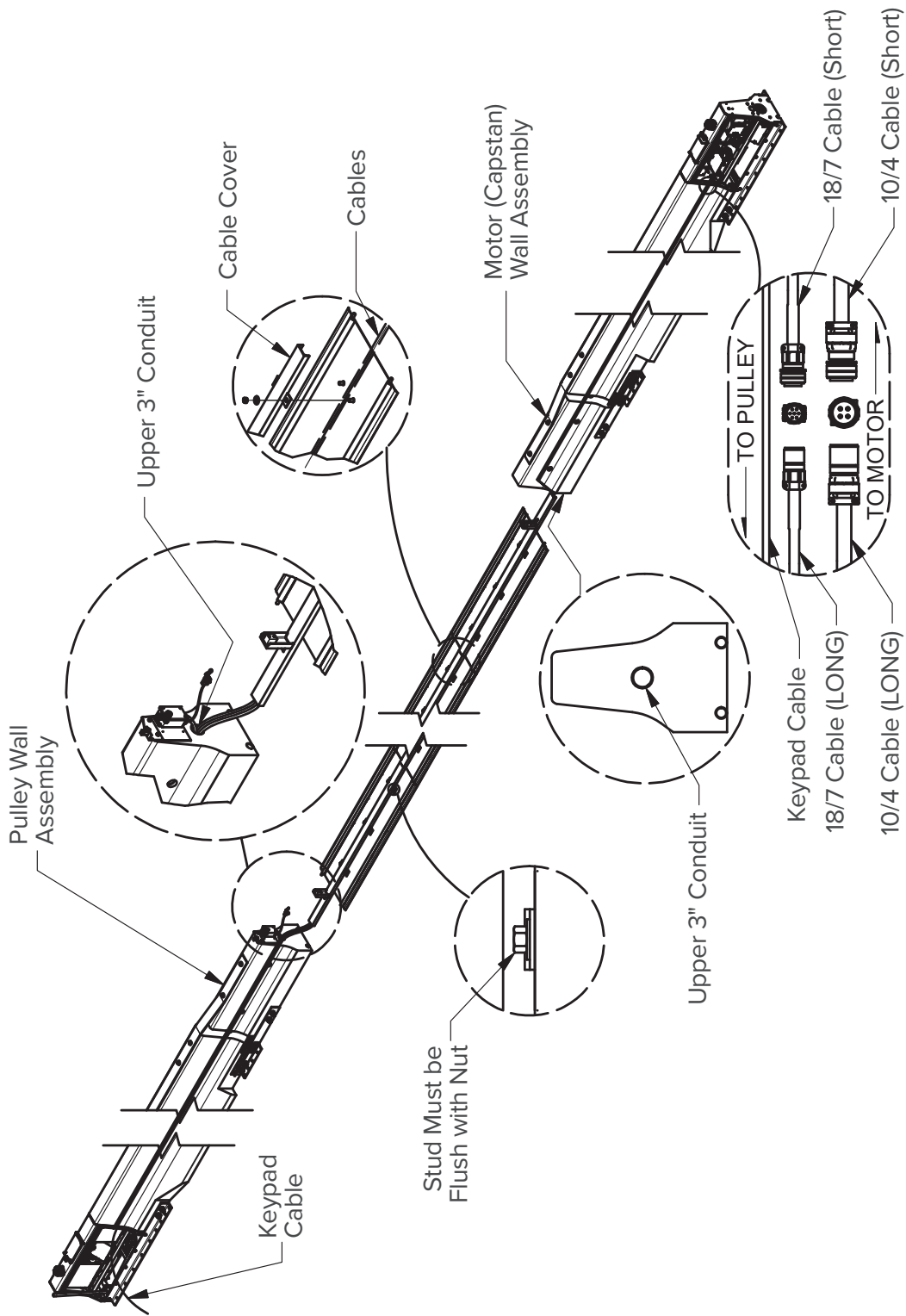


Figure 10
String Electrical Cables

2. **Connect keypad cable to main control:** Loosen retaining clips, open the main control box, push keypad cable through cord grip (Figure 11) and land the keypad wires onto the terminal blocks as indicated in Figure 11. Push the cable through the cord grip and into the enclosure. If necessary, remove cable slack then cut the cables to the appropriate length and strip the jacket down to expose the lead wires. Make the lead wire connections then tighten the cord grip nut to secure the strain reliefs tightly against the cables.

Wire Color	Connect to Terminal
BLUE	T1
GREEN	T1
RED	T2
BLACK	T3
GRAY	T4
BROWN	T5
BEIGE	T6
ORANGE	T7
PINK	T8
VIOLET	T9
WHITE	T26
YELLOW	NOT CONNECTED

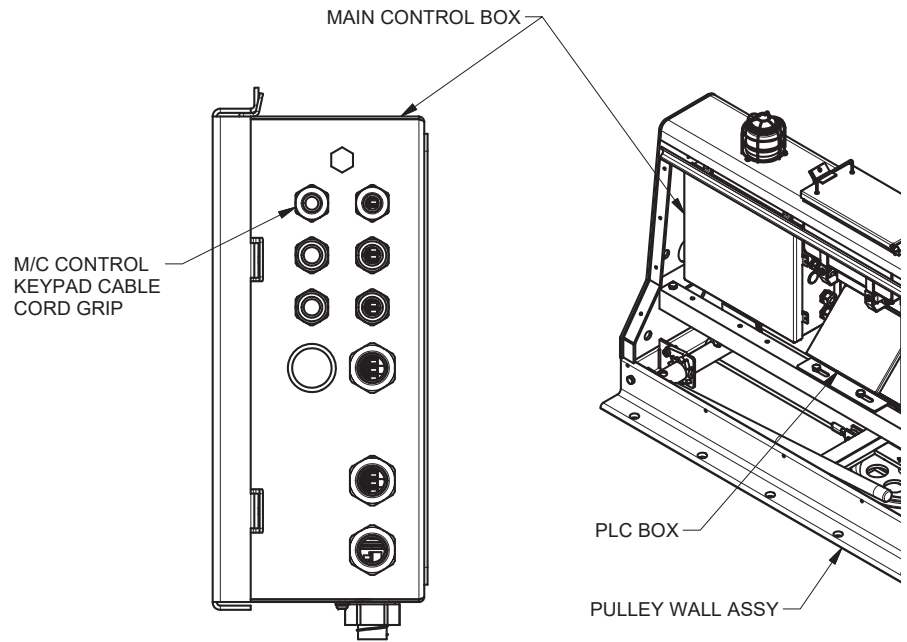


Figure 11
Connect M/C Keypad Cable
to Main Control

3. **Attach the open limit switch to the track cover:** Remove the open limit switch from its temporary mounting at the end of the Pulley Wall Assembly. Attach the limit switch to the Track Cover Mount with the screws provided. Route the cable along the center of the cover and hold it in place with a wire tie through the small hole provided. The open switch angle (see Figure 12) is set at the factory for new installations. The lever should be pointed downwards at an angle of roughly 35°. If the lever is **not at an angle**, perform A – D below. If the lever **is at an angle**, perform C – D.
- Use a hex key to loosen the bolt on the open limit switch.
 - Adjust the angle so the lever is pointed down and the alignment surfaces for the lever and padding block line up when viewed from the side. Retighten the bolt after adjusting angle.
 - Verify the alignment by pressing a flat object against the padding block and open limit switch lever until the object is resting against the padding block alignment surface.
 - During the motion a faint “click” sound should be heard coming from the limit switch (bottom-right image in Figure 12). If a click is not heard, decrease the angle slightly (repeat A and B, lever will be higher) and re-test (repeat C and D).

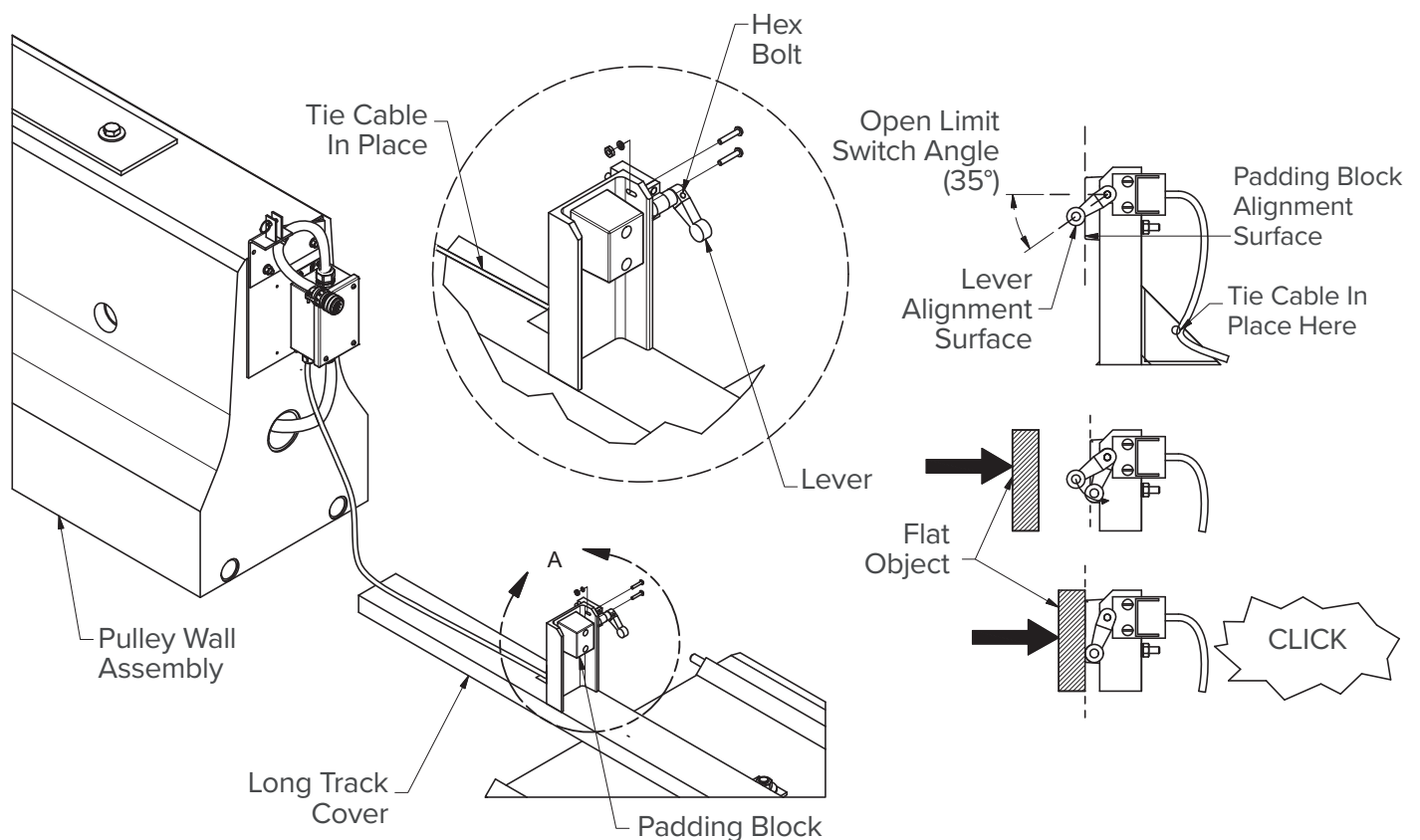


Figure 12

4. **Connect the incoming power to the disconnect** (Figure 13). Turn site power off before making the wire connections shown. Route the loose cable from the electrical disconnect to the service junction box. Use a waterproof strain relief (customer supplied) to secure cable. Ensure the supply is connected to a customer supplied local earth ground rod and disconnect is switched off before restoring site power.

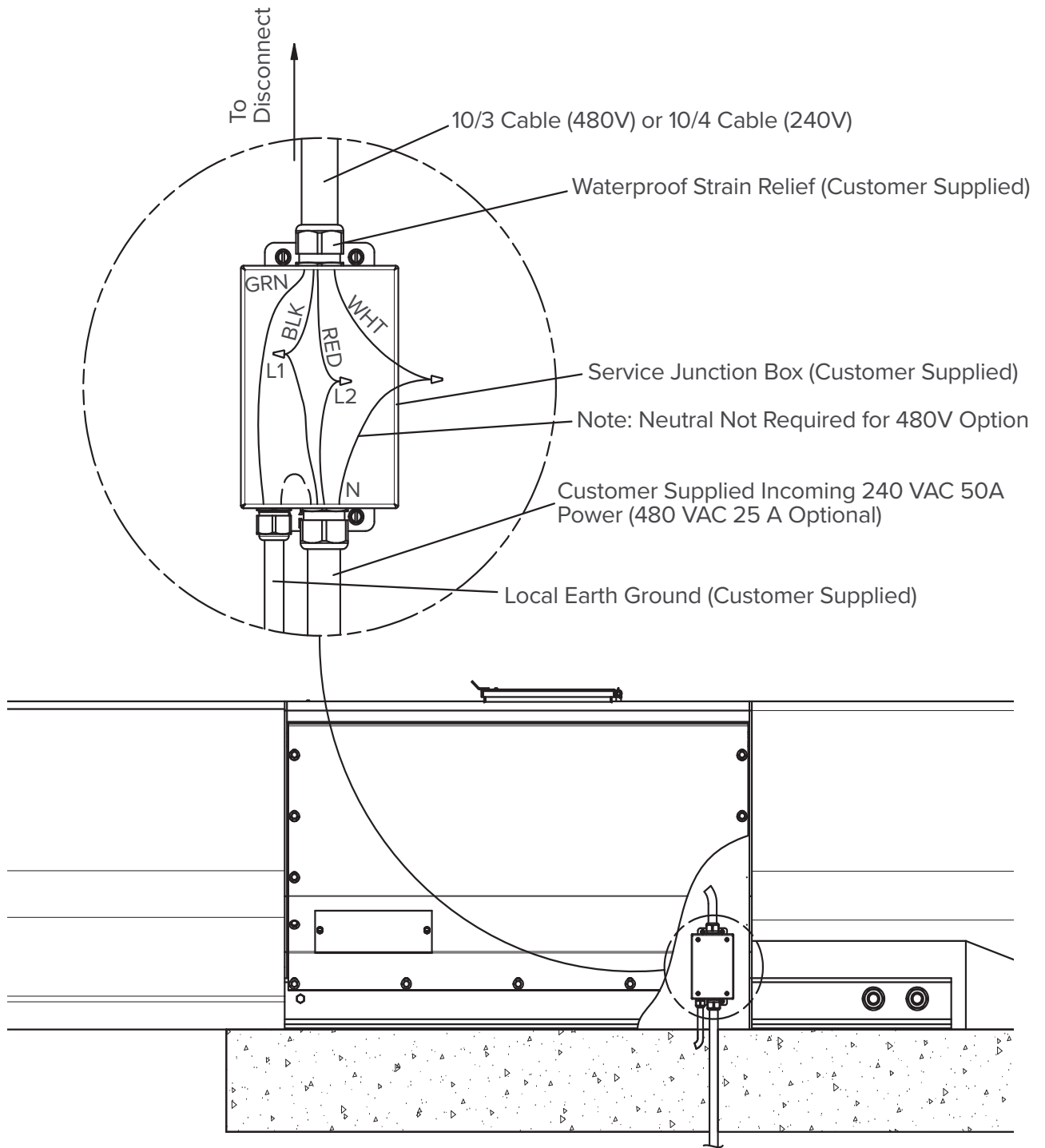


Figure 13
Connect to service power

Drive Cable Attachment

1. **Locate and attach return pulley** (Figure 14). Place return pulley inside steel bulkhead enclosure at the Pulley Wall Assembly. Attach the return pulley cable to the pulley take-up. Turn pulley take-up a partial turn as shown to hold cable in place.
2. **String the drive cable (wire rope) between the capstan drive and the return pulley** (Figures 14-15). Untie the wire rope bundle at the end of the Capstan Wall Assembly. The retainer is a cable clamp used for shipping. Standing near the drum and looking toward the pulley, the wire rope leaves the left side of the drum at the top and returns to the right side on the bottom. The drum is threaded or “grooved” and the wire rope **must** be properly positioned for proper operation. Initially, the wraps on the drum should be positioned within one groove of the bottom of the drum. Spread the wire rope coming from the left side of the drive drum through the concrete walls along the left side of the assembly to remove any twists in the wire rope. Do the same for the right side. The left side should be much longer than the right side.

Drag the longer wire rope across the track and continue feeding it through the conduit in the left side of the Pulley Wall Assembly. Wrap the cable around the return pulley and bring it back to meet the other end at the track section nearest the end of the Capstan Wall Assembly. Release the ratchet on the pulley take-up, if necessary, and move the return pulley in the enclosure as far away from the ratchet as possible.

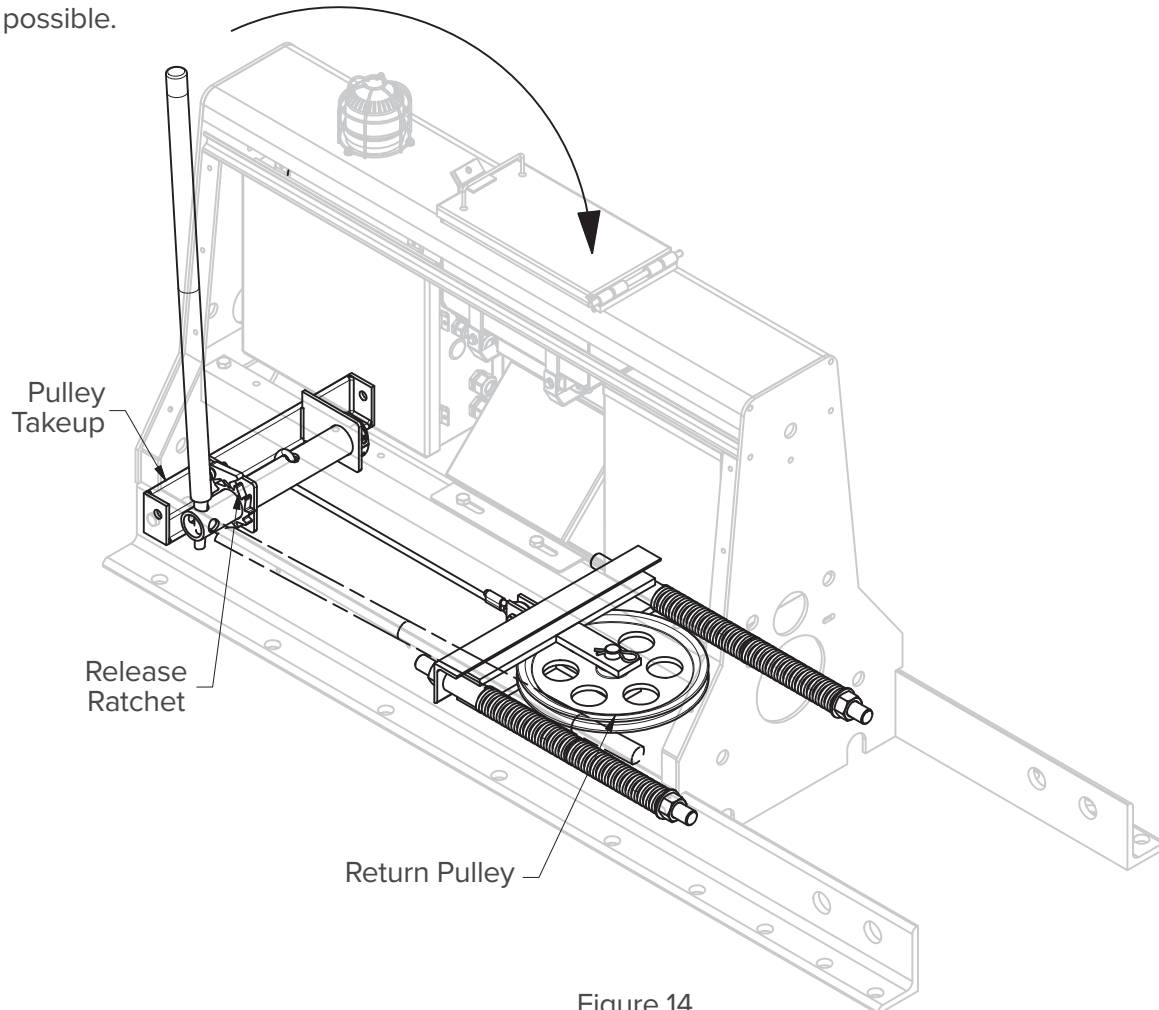


Figure 14
Release Return Pulley

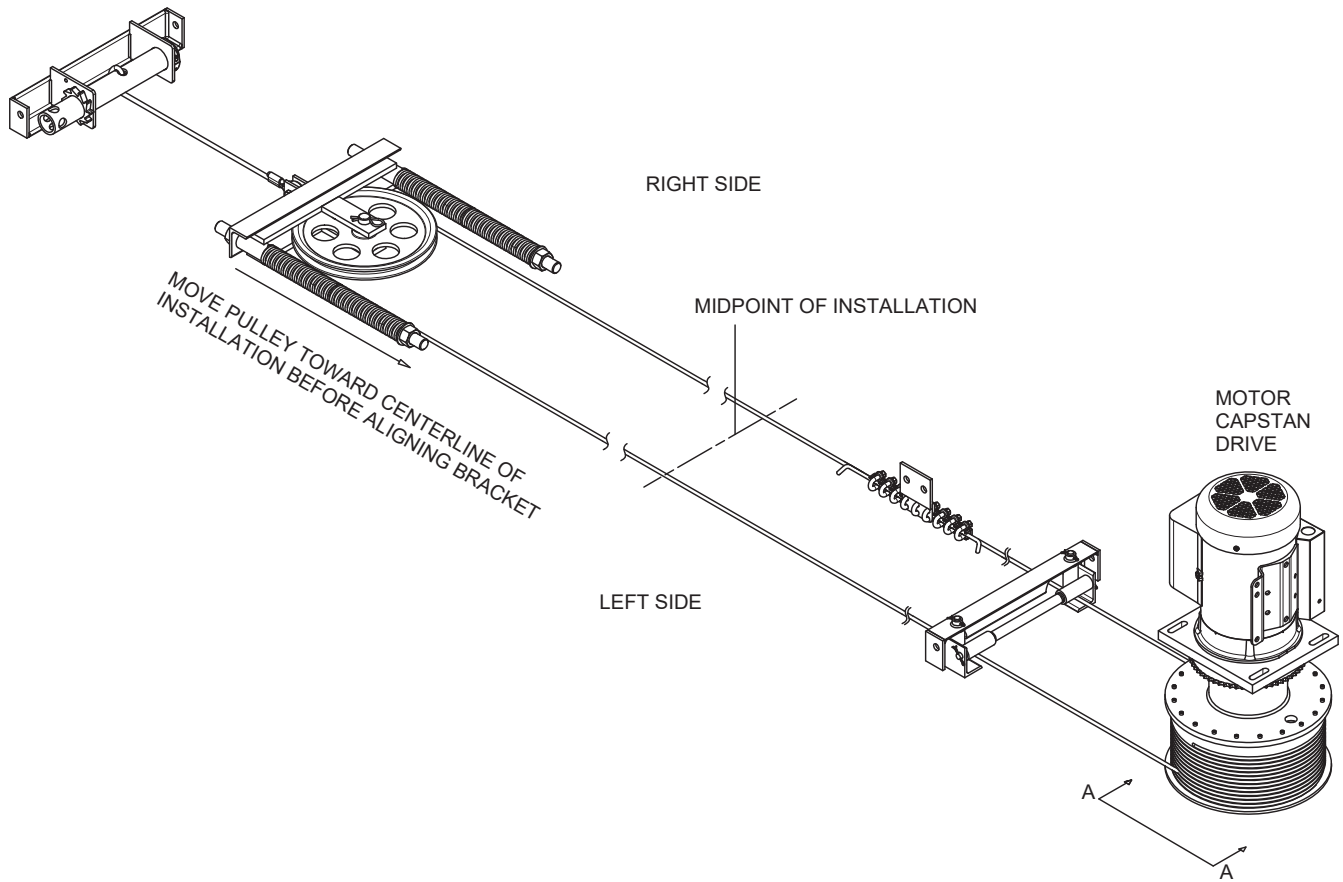
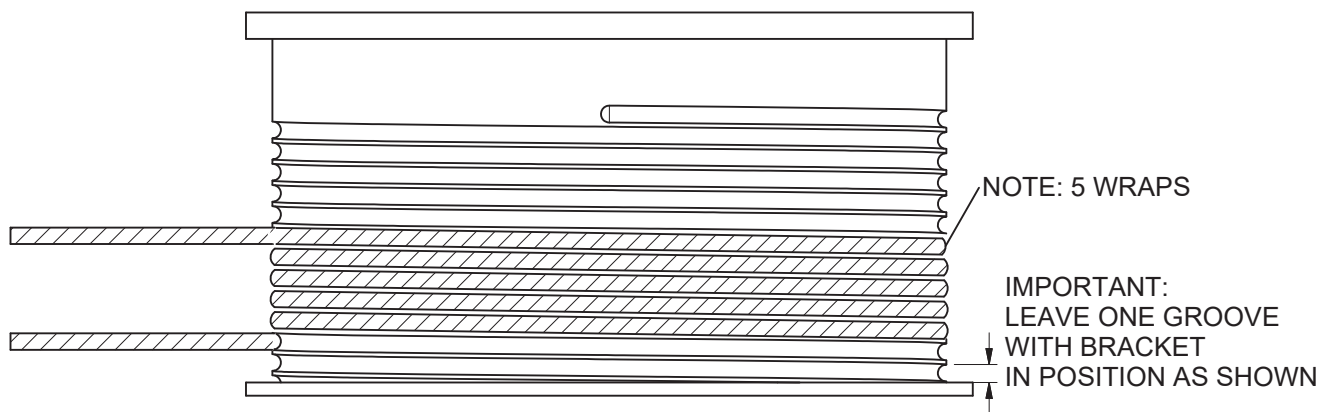


Figure 15
Drive Cable Attachment



View A-A
(Gate is fully open)

3. **Fasten the drive cable attachment brackets to the drive cable** (Figure 16). Remove the Drive Cable Attachment Brackets from the Hook and Pin Gate Assemblies. Attach one Cable Attachment Bracket 20" to 30" from end of the long cable returning from the tension pulley (step 1, Figure 16). While maintaining some tension on the loose ends of the wire rope, release the retainer at the end of the Capstan Wall Assembly. Take out as much slack as possible and splice the free ends together using the cable clips (Step 2, Figure 16).

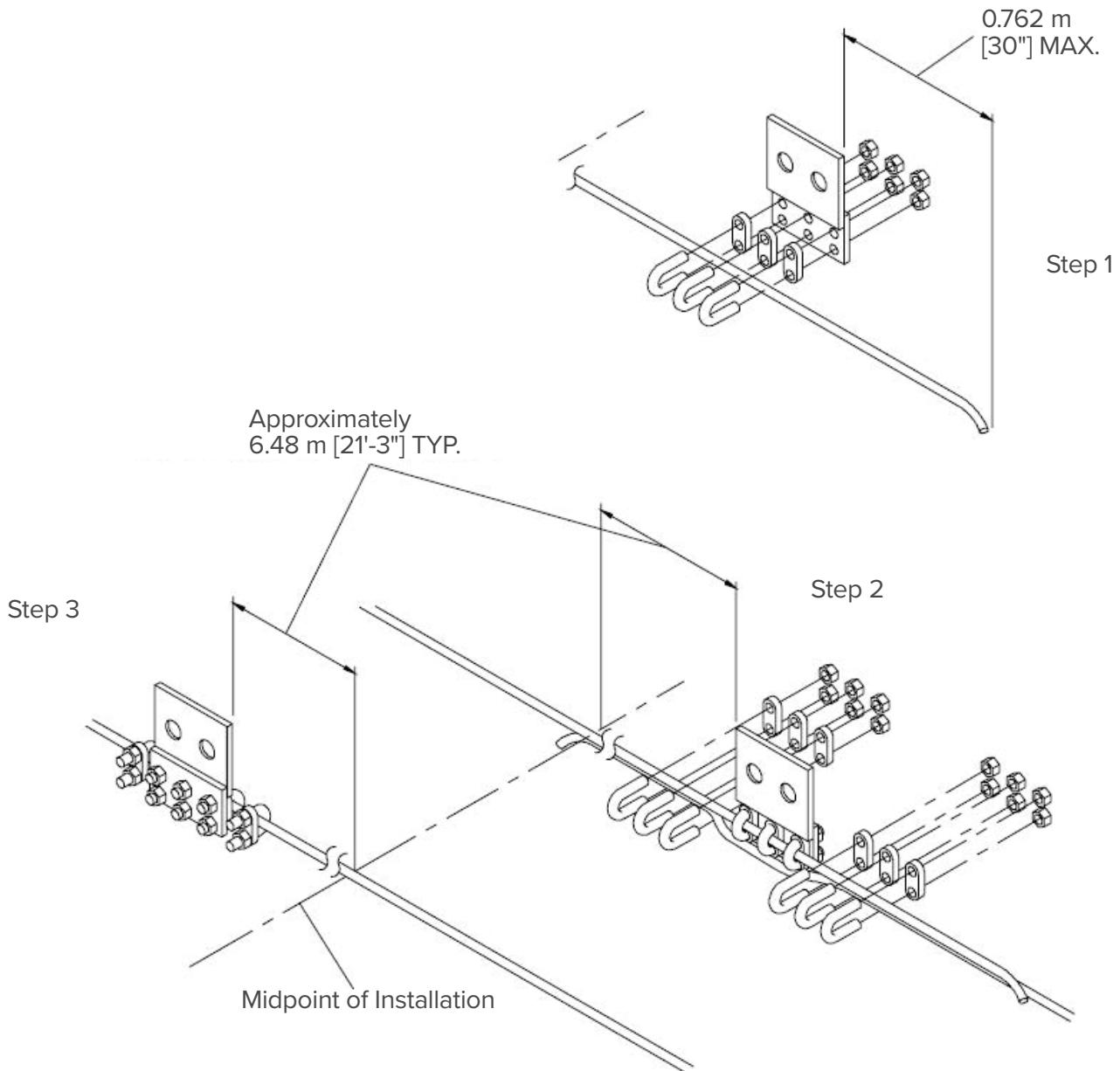


Figure 16
Fasten Drive Cable Brackets

4. **Tension the drive cable** (Figure 17). Use a pry bar or similar lever to turn the ratcheting take-up on the return pulley. Remove the slack in the drive cable and tension it until the springs on the return pulley are compressed to 13" [330 mm] or less. (Figure 17)

5. **Loosely attach the other bracket an equal distance from assembly centerline** (Step 3, Figure 16).

Note: Maintain 5 wraps on cable on drive drum and position bottom wrap 1 groove from drum bottom when attachment bracket is 21'-3" \pm 1" [6.48 m \pm 25 mm] from assembly centerline. Orient the cable clips toward the outside.

Note: For proper gate operation, the tension pulley springs must be compressed to 13" [330 mm] or less.

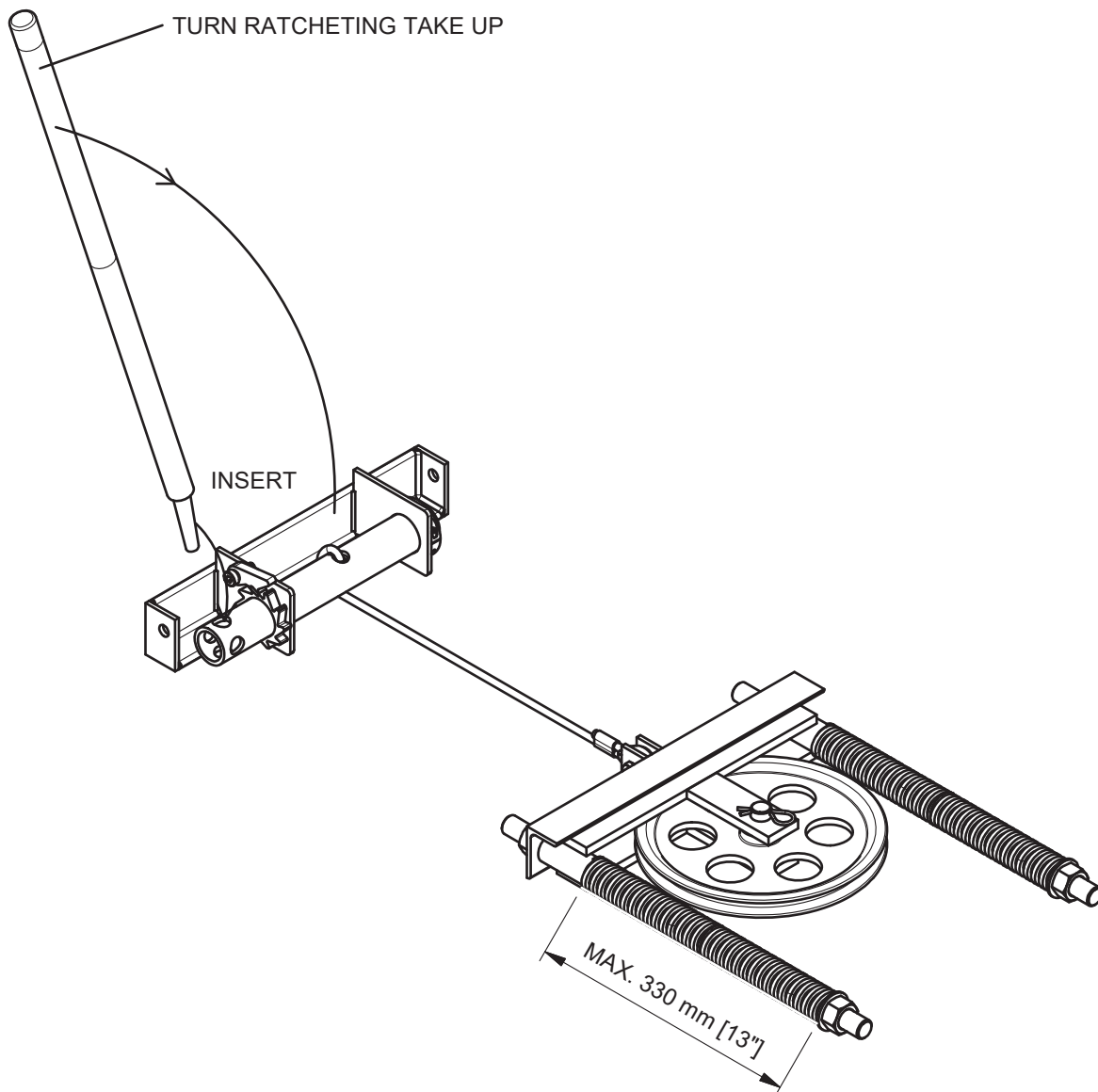


Figure 17
Tension Drive Cable

Positioning Gate Assembly

1. **Temporarily remove the transition skirts and short top covers on the transition assembly** (Figure 18). Use a 15/16" hex key to remove the 5/8" diameter bolts holding each skirt and cover in position.

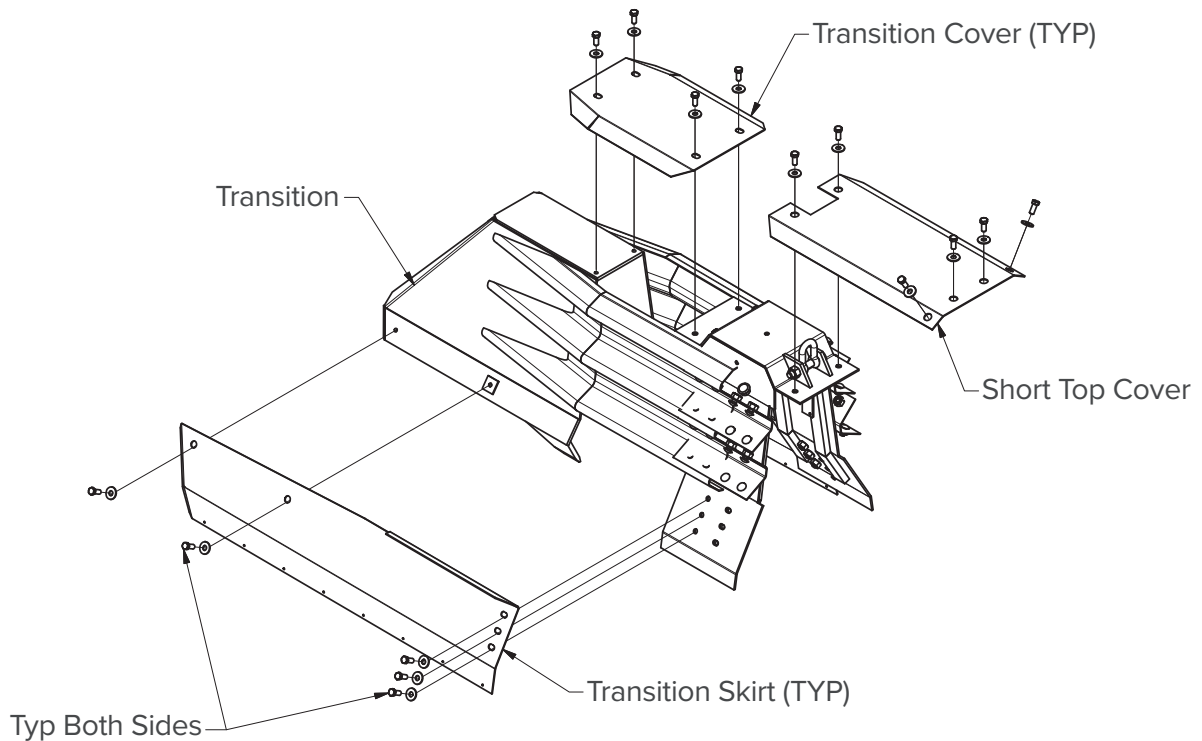


Figure 18
Remove Covers



Crane or forklift, hoist, and lifting chains/strap must have a minimum rated **vertical** lift capacity of 3000 lb [1360 kg] in order to lift the Pin and Hook Section Gate Assemblies.



To avoid risk of serious injury, block or otherwise secure the gate assemblies so they cannot roll down the ramps.



Make sure all persons and objects in gate opening are clear before proceeding with the next operation. Failure to comply could result in serious injury.

2. **Use a crane or forklift to lift the Pin Section Gate Assembly over the Capstan Wall Assembly and the Hook Section Gate Assembly over the Pulley Wall Assembly** (Figure 19). Look in through the Top Cover opening of each gate half and properly engage the Cast Iron Wheels with the Guide Rail. Look in from the front and properly engage the V-Guide Rollers with the V-Guide. Roll each Gate Assembly to the fully open position (2 people or a come-along may be helpful).

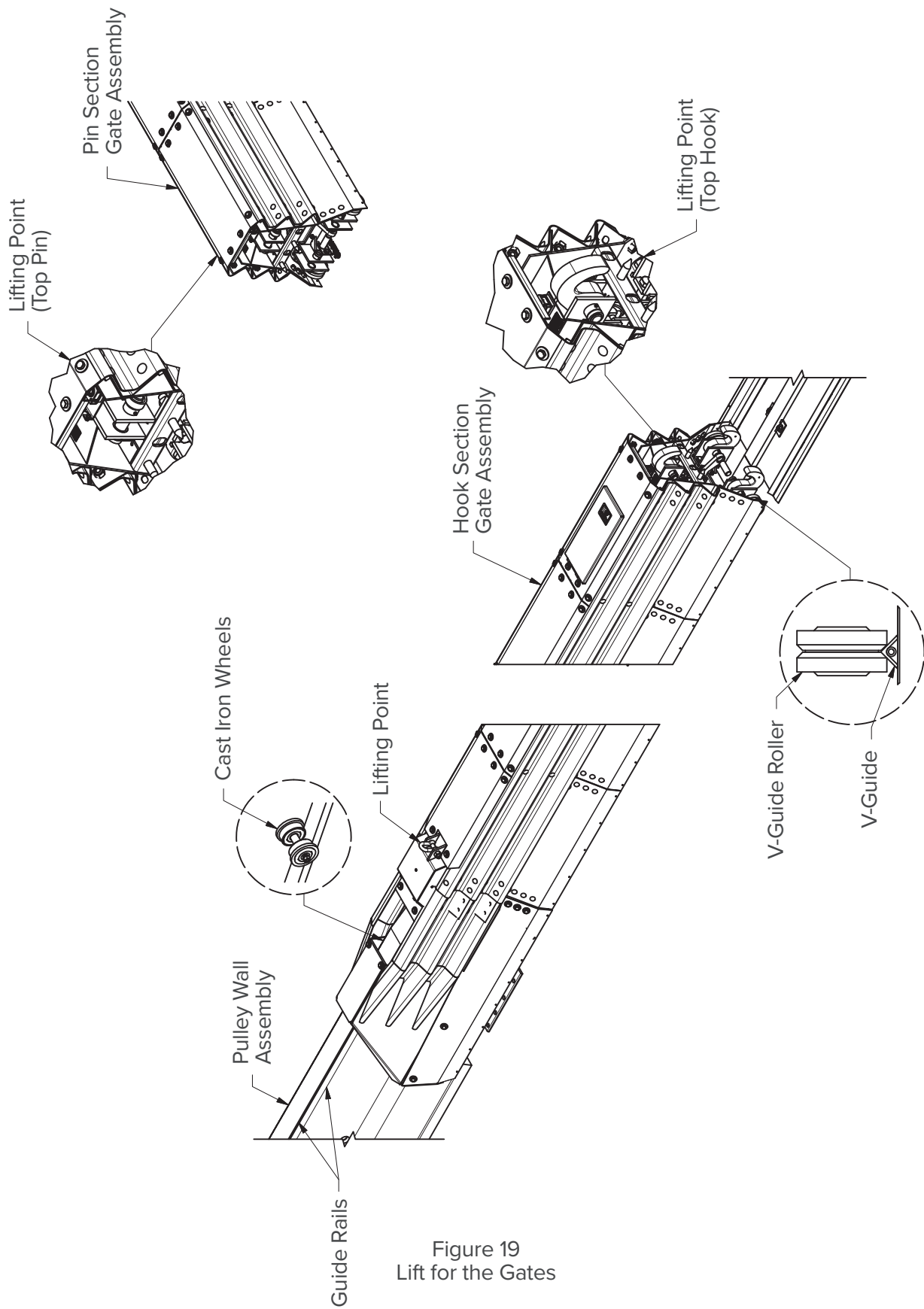


Figure 19
Lift for the Gates

3. **Fasten the Cable Attachment Brackets to the Gate Assemblies** (Figures 20 and 21). Ensure both Gate Halves are fully open and resting against rubber bump stops. Following the Manual Operation instructions (p. 29), disengage the Capstan Drive and crank the cable assembly by hand until the Cable Bracket aligns with the mounting holes on the Pin Side Gate Half, fully tighten hardware. Now, slide the loosely installed Hook Side Cable Bracket (Step 5, p. 21) to the Hook Side Gate Half mounting holes and attach. Fully tighten all hardware including wire rope clamps. If power is not available at the time of assembly, follow the manual unlock procedure before manually closing the gate.

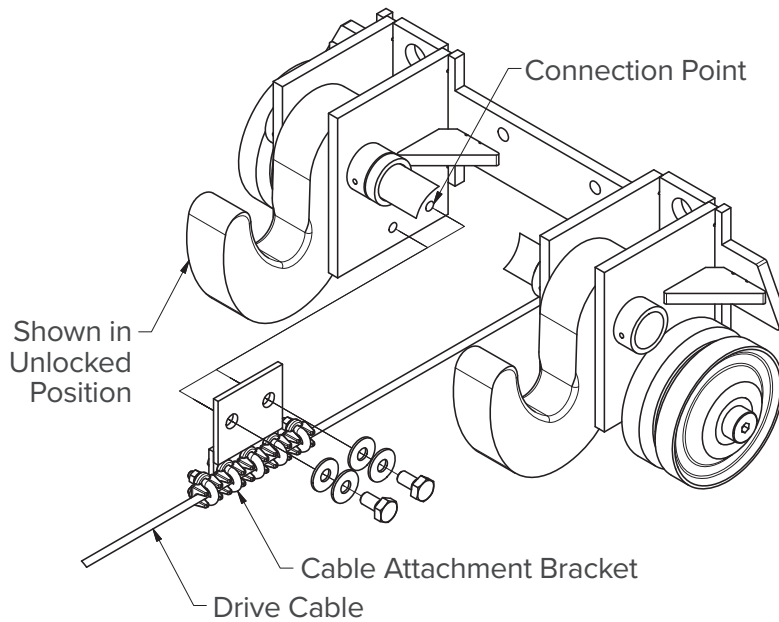


Figure 20
Attach Drive Cable (Hook Side)

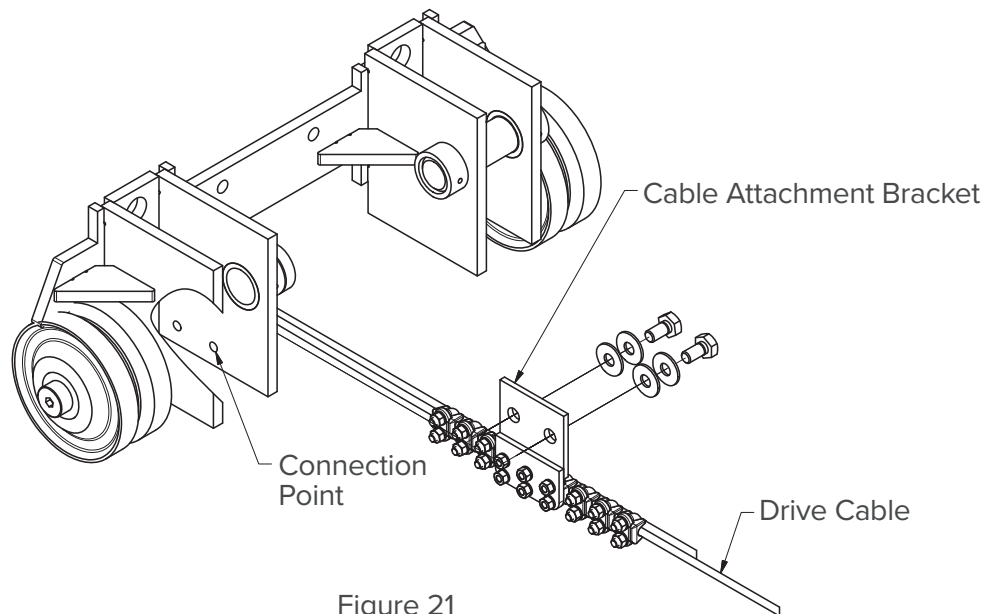


Figure 21
Attach Drive Cable (Pin Side)

4. **Connect the CMB J-box output to the Festoon Cable J-box on Hook Side Gate Half** (Figure 22). Locate and attach the CMB J-box cable with the 14-pin plug and corresponding receptacle on the Festoon Cable junction box. Ensure clamp is fully tightened. Position the 1/4" diameter wire rope in the retaining tab on the bracket and hold it in position with the Quick Release Pin provided.



Make sure the CMB J-Box Cable is not wrapped around the 1/4" diameter wire rope.

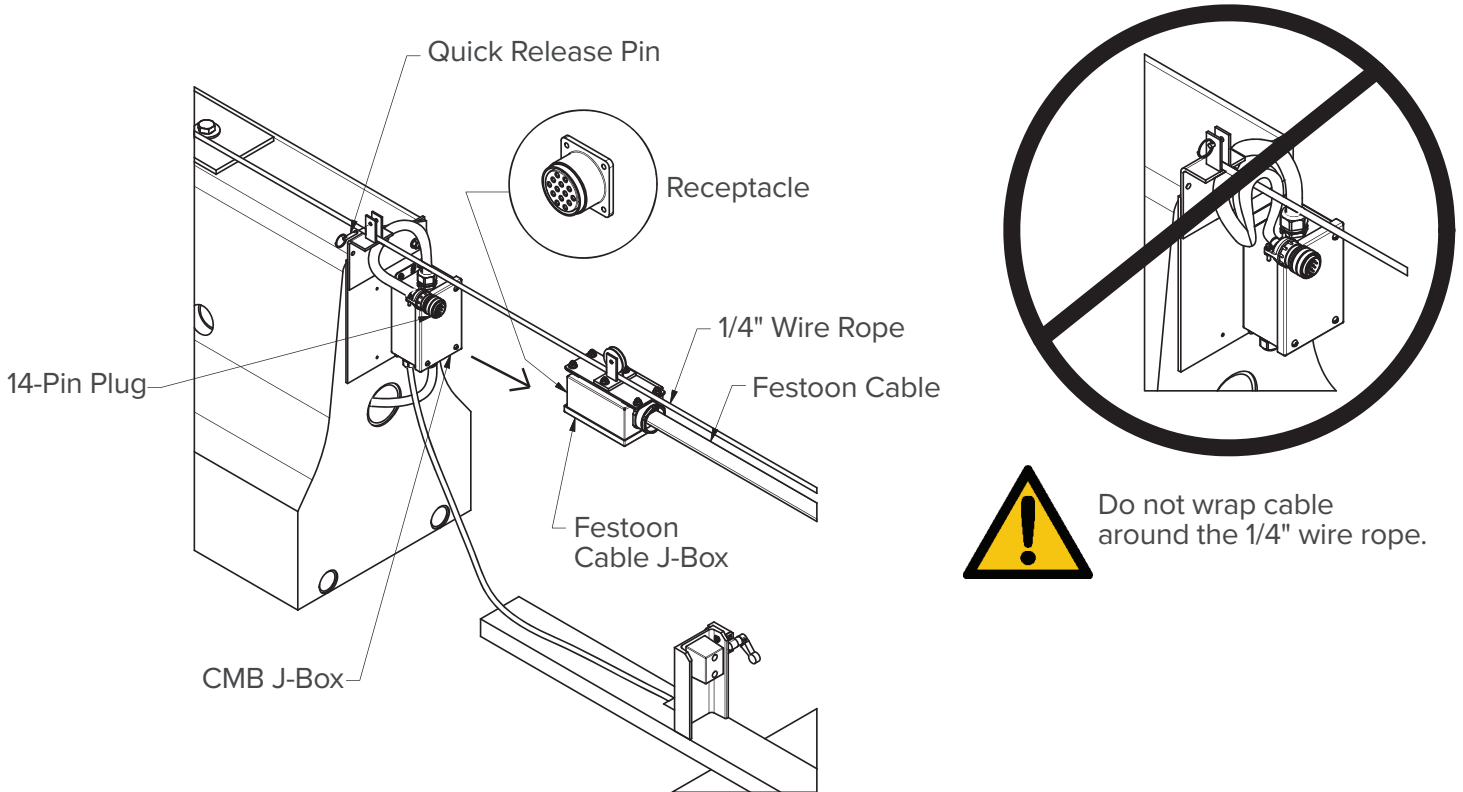


Figure 22
Connect Plug (Hook Side)
(Gate Half not shown for clarity)

Anchor Plate Adjustment

1. **Verify that the Gate Assemblies meet within 1/2" [13 mm] of the exact midpoint of the assembly.** Use the Manual Drive system (Manual Operation section, p. 29) to completely close the gate. The Gate Assemblies must be within 1/2" [13 mm] of the assembly midpoint. If not, open the gate and loosen the cable clamps on Cable Attachment Bracket. Adjust as necessary and tighten the cable clamps.



Stay clear while operating BarrierGate® 2.0 or serious injury to hands and feet could occur.

2. **Close the gate and inspect the Anchor Plate fit with the gate Transitions** (Figure 23). Inspect the fit of the four Anchor Plates where they meet the gate Transition. Proper fit is obtained when there is a 1/2" [13 mm] gap or less between the Plate and the Transition with the gate fully closed. If the gap is excessive then the Transition Adjuster must be used to decrease the gap. Loosen the bolts that retain the Anchor Plate and remove the Adjuster. Reassemble the Adjuster in the orientation that reduces the gap to 1/2" [13 mm] or less then tighten the Anchor Plate bolts to 150 ft-lb [200 N-m].

Final Attachments

1. **Replace the Top and Transition covers and then close the Bulkhead Access Covers.** Reengage Capstan Drive (Manual Operation Section, p. 29 and stow manual drive crank. Replace the top and transition covers and close the bulkhead access covers. Inspect the system to make sure all shipped components are assembled and/or accounted for. Turn on Main Electrical Disconnect Switch and open and close gate several times to ensure smooth operation.

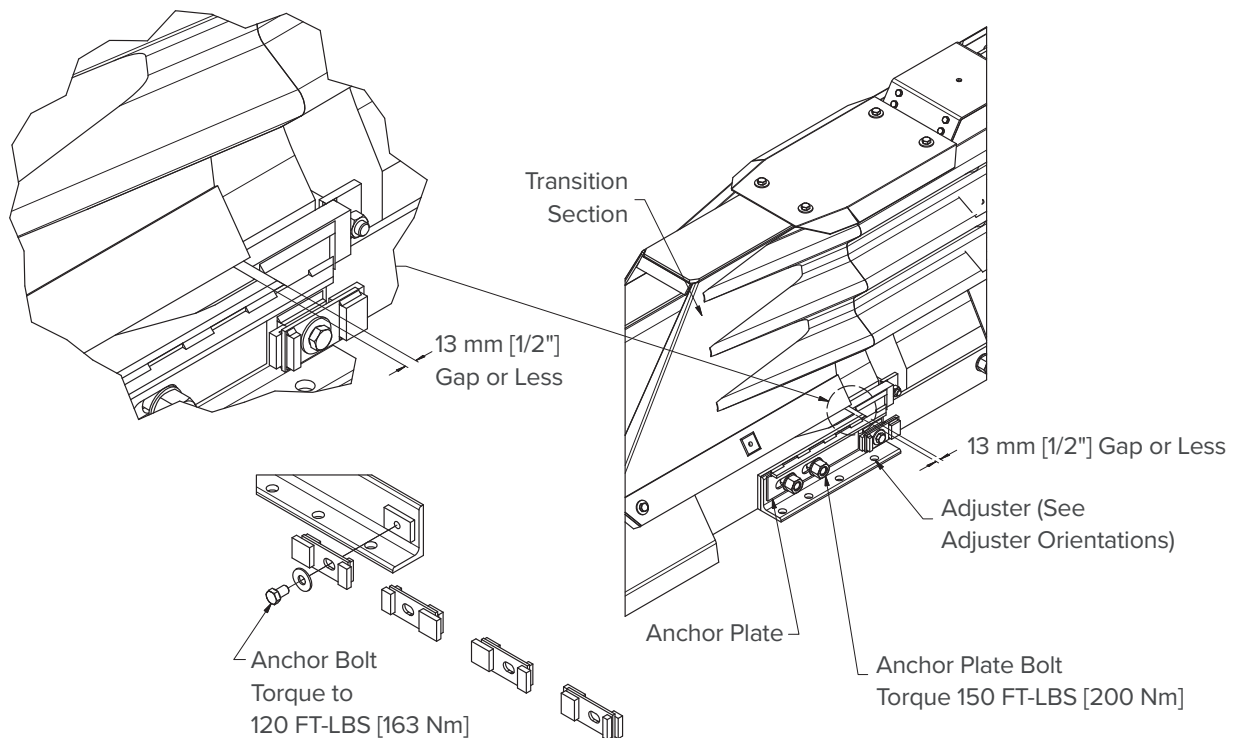


Figure 23
Adjust Anchor Plate Fit
(Transition Skirt Removed for Clarity)

Operation

Electromechanical Operation



Thoroughly check to ensure the BarrierGate® 2.0 is clear of people, debris, or obstructions before operating.

Note: If the BarrierGate® 2.0 will not operate, refer to the detailed troubleshooting guide in this manual or contact our Customer Service Department for more information (p. 1).

Note: If the BarrierGate® 2.0 must be manually opened, refer to the Manual Operation section.

Activate

Turn the Main Electrical Disconnect switch “on” (p. 33, Figure 30). Access a numeric Keypad and enter the master or user code (Figure 24). LEDs will behave as follows during the code check:

- First key press: Red LED flashes steady until 4 numbers are entered or it times out.
- Each Key press: Green LED flashes once.
- Invalid Code: LEDs turn off.
- Valid Code: Red LED turns on solid, Green is off after last number entry flash



Warning: To stop BarrierGate® 2.0 at any time or in case of emergencies press and hold the STOP button.

Open - Press #1 on the keypad

1. Horn and strobe turn on. Red LED on solid, Green LED flashes. 3 second delay.
2. Gate unlocks
3. Horn and strobe turn off. LEDs continue.
4. Gate Opens
5. Both LEDs turn off when gate is fully open

Stop - Press and hold the STOP button.

To stop the BarrierGate® 2.0 at any time or in case of emergency, press and hold the STOP button. If left unattended for more than 10 minutes, the BarrierGate® will automatically shut off and must be reactivated.

1. LEDs turn off and gate stops.
2. Press either #1 or #9 to resume operation.

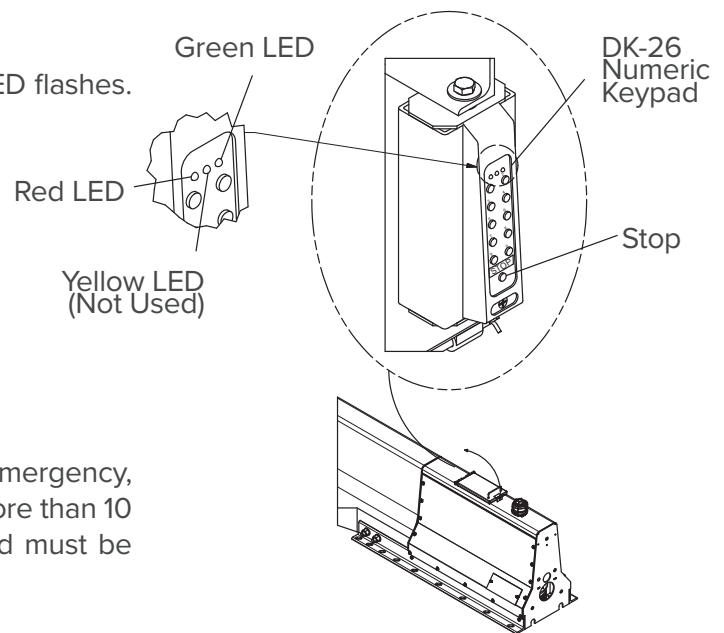


Figure 24
Numeric Keypad

Close - Press #9 on the keypad

1. Horn and strobe turn on. Red LED on solid, Green LED flashes steady. 3 second delay.
2. Horn and strobe turn off. LEDs continue.
3. Gate Closes
4. Gate Locks
5. Both LEDs turn off after the gate is fully closed and locked.

Auto-Close

Toggle Auto-close On/Off by pressing the STOP button twice within one second. A green pilot light adjacent to the disconnect switch (Figure 30) indicates the current selection. On = Auto-close is active.

Keypad Security

Two levels of keypad access codes are available on BarrierGate® 2.0: a Master code and a User code. Both types of codes can be used to activate the gate, however, only the Master code can be used to change either code. When used in this way the Master code acts like a “password” which allows the User code to be changed in the event the code has been compromised.

Note: Pressing STOP at any time during code resets cancels all Code Setup functions

To change the User Code:

1. Press STOP and another key simultaneously, then release both. (Red LED flashes 1x)
2. Enter Master Code. (Green LED flashes 1x each time a key is pressed. Red LED flashes 2x when code is validated.)
3. Enter new User Code. (Green LED flashes 1x each time a key is pressed. Red LED flashes steady for 2 seconds confirming code change)

To change the Master Code:

1. Press Reset Button inside enclosure (Red LED flashes steady until code is changed or it times out)
2. Enter new Master Code (Green LED flashes 1x for each key. Red LED stops then flashes steady for 2 seconds when code change is complete)

To reset the Master and User Codes back to default:

Turn power off to PLC (inside PLC Box, location shown in Figure 11). Hold Master Code Reset Button (inside Main Control Box, location shown in Figure 11) down while powering back on and continue to hold until Keypad Red LED flashes for 2 seconds, signaling that the codes have been reset.

Operation from C-More® Application (Mobile Phone App) or Web Server

BarrierGate® 2.0 can be operated with the C-More® mobile phone application or via a web server. Ethernet access is provided in the same compartment as the keypad, adjacent to the main disconnect. Contact Valtir (p. 1) for additional information and instructions on using these features.

Manual Operation

Note: The manually operated drive system is included with the electrically powered model.

- 1. Release the Capstan Drive (electrically powered gate only)** (Figure 26). If the gate is electrically powered then remove the small covers on both sides of the Capstan Drive Enclosure. Locate the lever on top of the Capstan Drive drum and rotate it 180 degrees to disengage the Capstan Drive. Do not force lever. Rotate manual handle until lever engages.
- 1. Unlock the gate** (Figure 25). Open the manual jack access cover located at the middle of the gate and remove the attached handle. Remove the top safety retaining pin from the rear of the manual Jack Support. Insert the handle onto the jack nut and crank the Jack (clockwise) fully open to unlock the gate.
- 2. Crank the gate open** (Figure 27). Open the keypad cover on the Capstan Drive Enclosure, release the catch on the lid, and lay the lid back. Remove the guard on the manual drive crank. Insert the manual jack handle onto the low speed (outermost) drive and crank counter-clockwise to open. The high speed (innermost) drive can be used when the gate is opened 10' [3 m] or more.
- 3. Reverse order to close and lock gate.** Reengage motor drive disconnect to its original position (Figure 26).



Gate must be closed and locked manually before reengaging electrical.



The weight of the gate while closing may cause the manual crank handle to want to spin. Hold the handle tightly to maintain control. Low speed operation is recommended at first until operator gains manual operational experience.

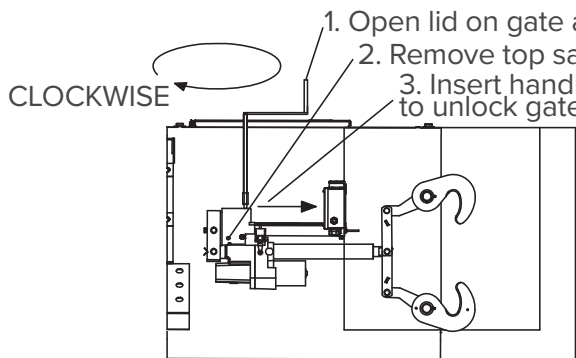


Figure 25
Unlock Gate

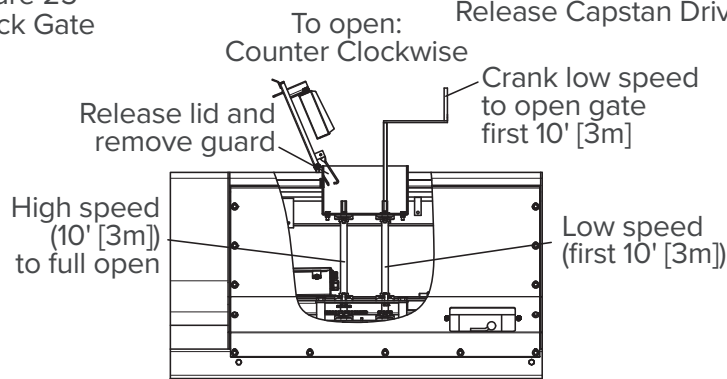
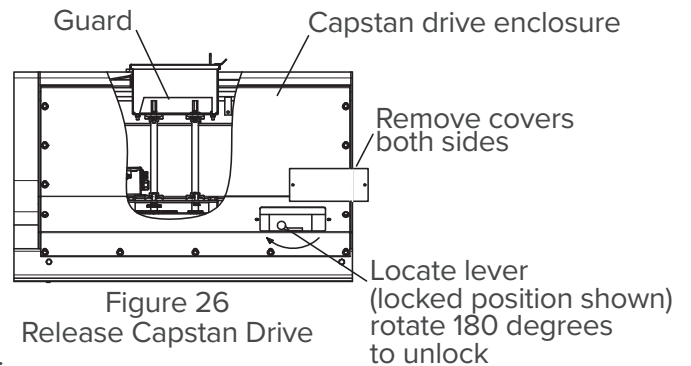


Figure 27
Crank Open Fully Part No. 628614 | Revision -, February 2024

BarrierGate® 2.0 Final Inspection Checklist

Site Location: _____

Date: _____

Inspector: _____

Refer to the BarrierGate® 2.0 manual and / or drawing package.

- System properly assembled per Product Manual
 - Wall Assemblies are properly positioned and anchored (p. 9)
 - Track Assembly is properly positioned and anchored (p. 12)
 - All field wiring properly routed and connections complete (p. 13-17)
 - Open Limit Switch is properly positioned and attached (p. 16)
 - Drive cable is properly attached and tensioned (p. 18-21)
 - Gate Half Assemblies are properly positioned (p. 22-23)
 - Cord with 14-pin plug on pulley side wall J-Box is properly connected and secured (p. 25)
 - Drive Cable properly attached to the Gate Half Assemblies (p. 24)
 - Verify proper Anchor Plate Adjustment (p. 26)

System Testing

- Manual operation successfully tested (p. 29)
- Powered operation successfully tested (p. 27-28).
 - System operated successfully from both keypads.
 - Safety Sensor functions properly
 - Timed closure set and operating properly.
 - Optional electrical accessories (if installed) are working properly.

Maintenance

Periodic and thorough maintenance is essential for dependable BarrierGate® 2.0 operation. Take a moment to review the product limitations, assembly cautions, and maintenance instructions before performing any necessary work.

Maintenance intervals between inspections depend a great deal upon specific site conditions. Valtir recommends monthly inspection until it is determined less frequent inspections are necessary.

Drive-By Inspection

A slow drive-by inspection of the BarrierGate® 2.0 is often all that is required to spot damage which requires maintenance. Some inspection considerations are:

1. If the sides are not straight or aligned then there is likely structural damage from a vehicle impact. A Walk-Up Inspection is required.
2. If there is any visible gap between the Bulkheads, then the system is not properly closed and latched. A walk-up inspection is required.
3. Clean Guide Rail and Track Sections are critical for proper operation. If dirt and debris is present, maintenance and cleaning is required.
4. Ensure the covers on the manual drive access are fully closed. If not, a walk-up inspection should be made to investigate further and secure the covers if possible.



Before attempting to perform the walk-up inspection or perform any maintenance on the BarrierGate® 2.0, disconnect the power supply (lockout/tagout) and ensure that the system is physically blocked from moving to avoid injuring maintenance personnel.

Walk-Up Inspection

If the drive-by visual inspection indicates maintenance is required then a walk-up inspection is necessary. Some of the most common maintenance concerns and their corresponding repair techniques are:

Pin and Hook Section Gate Assemblies

1. Inspect the Debris Skirt for tears and replace sections as necessary.
2. Inspect for and replace any bent or damaged Side Panels, Top Covers, Transitions, etc.
3. Inspect for and replace damaged or frayed Actuator Electrical Cables.
4. Inspect for and tighten loose wire rope on Actuator Cable Support.
5. Lubricate all Bulkhead Assembly grease fittings every 6 months, or 750 cycles, whichever comes first (Figure 28).
6. Inspect and repaint any scratched painted surfaces.
7. Inspect for any signs of animals nesting in, chewing on, or otherwise damaging the system.

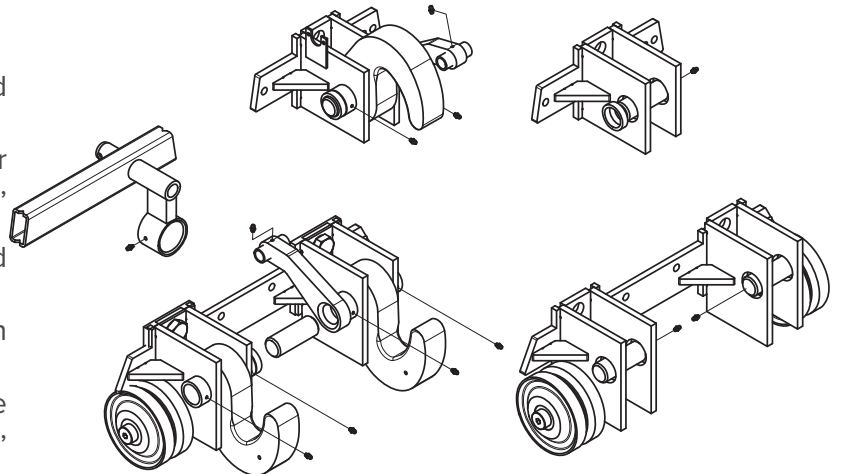


Figure 28
Grease Points

Capstan Drive Assembly

1. Inspect for and replace damaged or frayed wires.
2. Lubricate all Capstan Drive grease fittings (Figure 29) every 6 months, or 750 cycles, whichever comes first. Do not allow grease to spill on drive or driven drums.
3. Apply (spray) light oil on Capstan Drive release knob pivot point.
4. Inspect and repaint any scratched painted surfaces.
5. Clean out any debris accumulation.
6. Inspect for excessive drum or wire rope wear.

Tension Pulley Assembly

1. Inspect for and replace damaged or frayed wires.
2. Inspect and adjust for excessive Capstan Drive Cable slack.
3. Inspect and repaint any scratched painted surfaces.
4. Clean out any debris accumulation.

Track Assembly

1. Clean out any debris accumulation.
2. Inspect and tighten any loose nuts.

Anchor Plate Assembly

1. Inspect gap between Anchor Plate and Gate Transition. Clean out any debris accumulation (p. 26).
2. Inspect and tighten any loose hardware.

Misaligned Gate Assemblies

The Gate Assemblies must be properly aligned with and riding on the Guide and Track for proper operation. Open the bulkhead and Short Transition Covers and inspect to make sure the Guide Wheels and V-Guide Rollers are riding properly. If not, adjust them until they move smoothly.

Inspect and replace any Skirt, Side, and Top Cover Panels that may have been damaged from vehicle impacts.

Unlocked Gate Assemblies

If the Bulkhead Assemblies are not completely closed and locked, open the Top Covers to inspect for the cause. There may be debris under the system or packed into the anchor plate cavities (Figure 23) preventing the Gate Assemblies from completely closing and locking. The system may have been inadvertently left in this position by improper use of the Keypad Control (p. 27).

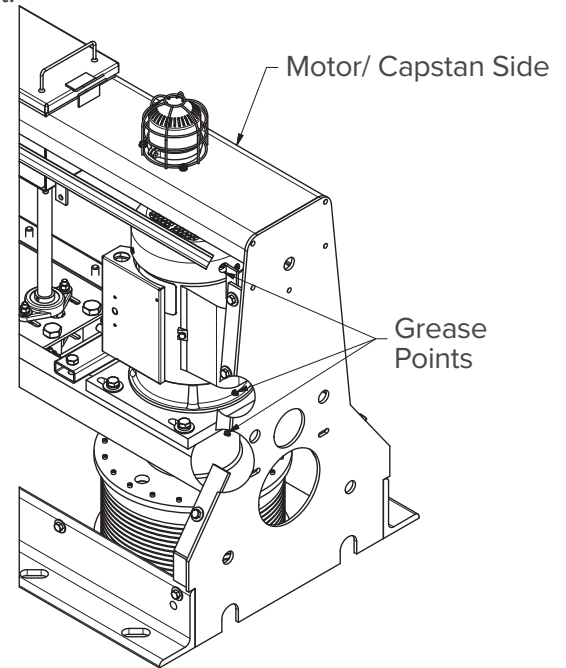


Figure 29
Grease Points



Use only Valtir parts that are specified herein for the BarrierGate® 2.0 for assembling, maintaining, or repairing the BarrierGate® 2.0. Do not utilize or otherwise comingle parts from other systems, even if systems are other Valtir systems. Such configurations have not been tested, nor have they been accepted for use.

Troubleshooting and Repair

The BarrierGate® 2.0 is designed to operate simply and reliably even in adverse highway environments. Most operational problems can usually be traced to improper assembly or maintenance. If operational problems are encountered, begin preparing for the necessary repair by thoroughly reviewing these instructions and all applicable location, layout, orientation, and construction plans.

It is critical to become familiar with BarrierGate® 2.0 construction, assembly, maintenance, and basic operating instructions before attempting any repairs. Follow the repair guidelines to help diagnose the operational problem then carry out the indicated inspection and repair step. If these suggestions do not restore operations, contact the Valtir Customer Service Department (p. 1).



A traffic control plan appropriate to the complexity of the repair project should be prepared and understood by all parties before moving to the BarrierGate® 2.0 repair site. Deploy the appropriate work zone safety devices prior to beginning the repair and keep them present through all operational phases.

The internal components can be inspected for necessary repairs without lifting and removing gate halves. Access for inspection and repair can be made through one or more Enclosure Covers, Top Covers, Transition Skirts, Half Skirts, and Bulkhead Covers (Figure 31). The Enclosure Covers can be removed to gain access to the Capstan Drive system. The Top Covers can be removed to provide a wide open area for inspection and a way of reaching or climbing down into the BarrierGate® 2.0 for repairs.



To avoid risk of serious injury, proper precautions must be taken to prevent the Gate Assemblies from rolling on slopes.



Before attempting to troubleshoot or perform any repairs on the BarrierGate® 2.0, disconnect the power supply (lockout/tagout) and ensure that the system is physically blocked from moving to avoid injuring maintenance personnel.

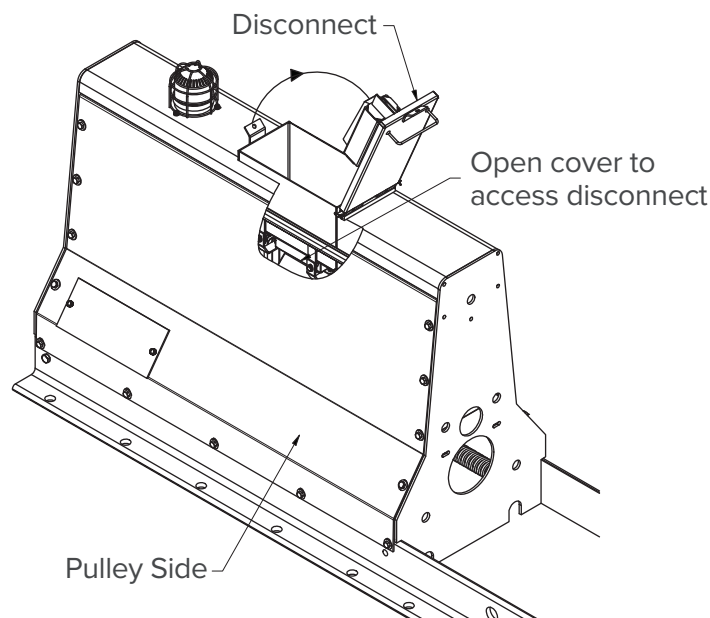


Figure 30

The Transition and Half Skirts can be removed to gain access at the extreme ends of the gate.

Some gate inspections and repairs may require the gate halves to be lifted and removed. In this case, follow the reverse of the steps in the Positioning Gate Assembly section (p. 22-23). Take special care to disconnect all necessary mechanical connections before lifting the gates.

It may not be practical to complete some repairs in the field. Some breakdowns may require components to be removed and replaced.

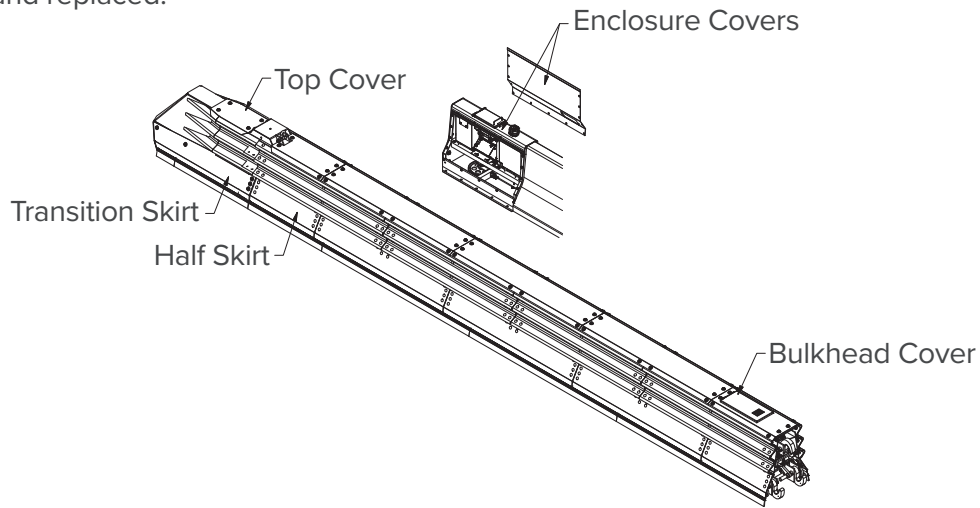


Figure 31

R1: Check for and remove obstructions to Gate movement.

Troubleshooting indicates debris or other foreign objects outside or inside are obstructing free movement. Do not operate Gate or damage to components may result. Inspect for and remove excessive buildups of debris, snow, ice, etc. along both sides of the gate, long and short CMB's, and the exposed portions of the Guide Rail. Also inspect and remove any buildups that may have occurred around the Anchor Plates, Transitions and Drive Cable system. Check for even clearance on both sides of the gate at transition.

Remove Top Covers and inspect the inside of the Gate for possible obstructions. Check for and remove excessive debris from under the Gate. Check to make sure the V-Guide Rollers in the Bulkheads are properly engaging the inverted angle iron Tracks and that the Transition Rollers are properly riding on the Guide Rail. If not, reposition the Gate to bring Rollers back on track.

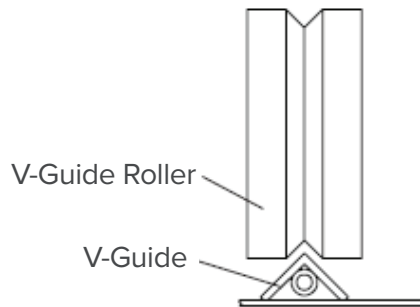


Figure 32

R2: Check that the gate has been properly restored following manual operation.

Troubleshooting indicates that the gate may not have been properly restored after manual operation. Open the Bulkhead Cover and check to make sure the Manual Jack is all the way rearward (furthest from the midpoint of the gate assembly) and that the Safety Retaining Pin is in place. Make sure the Capstan Drive Cable is attached to the bulkheads and the cable clamps tightened. The Capstan Lock Lever must be in the locked position (Figure 26).

R3: Check and re-tension the Capstan Drive Cable.

Troubleshooting indicates that the Capstan Drive Cable is not adequately tensioned. Do not operate gate or damage to components may result. Start by removing the appropriate Enclosure Cover then inspect the Tension Pulley assembly. The extended length of the springs must not exceed 13" (330 mm). If the springs exceed this length it may be due to a damaged or worn Capstan Drive Cable or loose wire rope clamps. Inspect for and correct the cause of the loose cable by tensioning the Drive Cable (p. 21).

R4: Check for and repair damaged Capstan Drive.

Troubleshooting indicates that the Capstan Drive is damaged. Only the simplest Capstan Drive repairs are likely to be made in the field. Inspect the Capstan Drive for obvious problems such as a bound Drive Cable. If no field adjustments can be made, detach the Drive Cable and remove the Capstan Drive for replacement.

R5: Check for and repair damaged motor control electrical cables or connections.

Troubleshooting indicates the drive motor control Cables or connections may be damaged. Inspect inside the Motor and Main Control Enclosures. Look for obvious damage such as cables that may have shorted out and loose or damaged connections. Replace worn or severed cables or repair with a strain and moisture resistant low profile electrical cable splice. Repair damaged connections with new parts taking care to make sound connections, provide complete wire insulation, and maintain the waterproof rating of the strain reliefs. Check the cables and connectors for end to end continuity using a digital multimeter or similar device. If damaged wires or electrical connections are found they may have caused a short circuit. In this case carry out Repair Steps R15 and R25.

R6: Check for and repair/replace Drive Motor or Motor Control.

Troubleshooting indicated the Drive Motor or motor control may be damaged. First carry out inspection and repairs in step R5 to eliminate cables and connections as the source of the problem. Remove the Capstan Enclosure Covers to gain access to the Motor, Motor Control, and cables. Remove the Motor and temporarily connect it to a 240 VAC power source following the wiring connections on the motor faceplate. The motor must properly start and turn in both directions. If the motor does not operate it must be replaced. If the motor operates properly then the problem lies in the motor control and it must be replaced.

R7: Check for and repair the locking linkage in the Bulkheads.

Troubleshooting indicates something may be wrong with the Locking Linkage in the Bulkhead. Inspect the linkage for loose components. Make sure that all clevis pins are in place and secured by retainer pins. The Hooks must fully engage the Pins in the locked position and be fully disengaged in the unlocked position. Replace damaged or excessively worn parts.

R8: Check for and adjust the Electromechanical Actuator limit switches.

Troubleshooting indicates the stroke of the Electromechanical Actuator in the Hook Side Bulkhead may need adjustment. The stroke is pre-adjusted at the factory to accommodate the recommended grade, cross slope, and levelness of the foundation and CMB sections. The stroke should not require readjustment if the assembly conforms to the recommendations and there are no other problems with the system. You must first rule out any problems with the locking linkage by following Repair Step R7.

If no problems are found with the locking linkage then begin the adjustment procedure by noting which desired movement, unlock or lock is not completing, then deactivate the controls in this position. Open the Bulkhead Cover then locate and remove the limit switch cover plate located on top of the actuator. Underneath the cover plate are two round notched plastic “nuts” that ride on a small fine threaded “shaft”. The edge of the forward nut (that closest to the midpoint of the gate assembly) engages the arm of the forward limit switch that controls the amount of gate “Unlock” movement. The edge of the rear nut engages the arm of the rear limit switch that controls the amount of gate “Lock” movement. Above the nuts is a long thin metal “nut restrainer” that engages the notches in the nuts and restrains them from turning with the shaft.

If there is no “Unlock” linkage movement then the forward nut has not fully actuated the forward limit switch in the actuator. Carefully lift the restrainer until it disengages the notches in the nuts. Rotate the forward nut until it actuates the forward limit switch (the switch will “click” when actuated).

If there is no “Lock” linkage movement then the rear nut has not fully actuated the rear limit switch in the actuator. Carefully lift the restrainer until it disengages the notches in the nuts. Rotate the rear nut until it actuates the rear limit switch. The switch will “click” when activated.

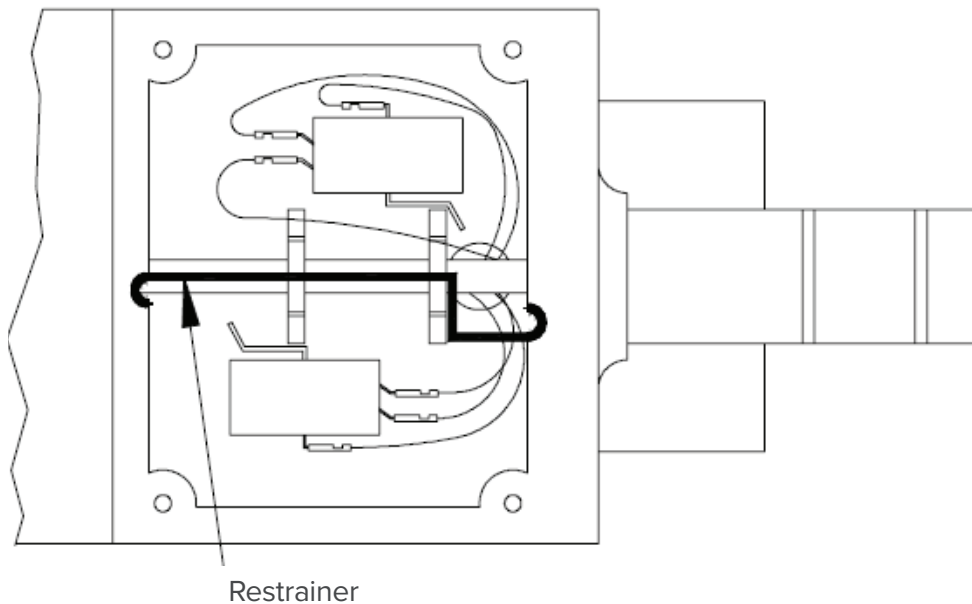


Figure 33

After adjusting the limit switch nut replace the nut restrainer. Operate the actuator and readjust the limit switch nut as necessary so that the desired movement is completed. When the limit switch adjustment is complete, replace the limit switch cover. Be sure the gasket provides a water tight seal.

R9: Check for and repair/replace the Electromechanical Actuator.

Troubleshooting indicates the Electromechanical Actuator that locks and unlocks the gate may need repair or replacement. Inspect the actuator through the Bulkhead Top Cover. Listen or feel to see if the actuator drive motor is humming or vibrating when either the 1 or 2 (for open) or 9 or 0 (for close) gate buttons are selected on the keypad. If so, it may simply be jammed or stuck in position due to ice or debris buildup, corrosion, or lack of lubrication. If the actuator seems to be stuck try turning the motor over manually to break it free. To do this, remove the plug from the front of the motor (the end closest the midpoint of the gate assembly) and use a screwdriver to rotate the tip of the motor shaft. Recheck to see if the actuator now moves freely. If the actuator will not turn freely it must be removed for shop repair or replacement. Carefully reattach the plug to achieve a water tight seal.

R10: Check for thermal overload condition on Capstan Drive Motor.

Troubleshooting indicates the Capstan Drive Motor may have overheated due to continuous operation in extremely hot weather. Wait until the motor cools sufficiently then reset the thermal overload switch on the side of the drive motor before operating the gate. Reduce the gate duty cycle as required to avoid overheating the Capstan Drive Motor again.

R11: Check for and repair/replace damaged Electromechanical Actuator control cable or connectors.

Troubleshooting indicates the Electromechanical Actuator control cable or connection may be damaged. Inspect inside the Bulkhead Top Covers for a worn or severed cable that may have shorted out or is loose, or a damaged connector that may have lost contact. Remove all the top covers and inspect the entire actuator cable length including the connections at the Main Control and Motor Control Enclosures. Replace worn or severed cables or repair with a strain and moisture resistant low profile electrical cable splice. Disassemble and repair damaged connectors with new parts taking care to make sound solder connections, provide complete wire insulation, and maintain the waterproof rating of the connector. Check the cable and connectors for end-to-end continuity using a digital multimeter or similar device. If damaged wires or electrical connections are found they may have caused a short circuit. In this case, carry out Repair Steps R15 and R25.

R12: Check and repair/replace damaged Keypad.

Troubleshooting indicates that one or more Keypads may be damaged. First carry out Repair Step R13 to check for and repair any damaged control cables or connections. If the gate still can't be operated then remove the keypad for replacement.

R13: Check for and repair damaged Keypad Control Cables or connections.

Troubleshooting indicates that one or more Keypad control cables or connections may be damaged. Try accessing both keypads to see if one will work. If the gate can be operated by one Keypad then isolate the damaged one and inspect inside the Control and Capstan enclosures for worn or severed cables that may have shorted out. Replace worn or severed cables or repair with a strain and moisture resistant low profile electrical cable splice. If damaged wires or electrical connections are found, they may have caused a short circuit. In this case it may be necessary to carry out Repair Steps R15 and R24. If the source of the cable or connection problem can't be found, carry out Repair Step R12.

R14: Check for and repair/replace Main Control.

Troubleshooting indicates the Main Control may be faulty. Only the simplest Main Control repairs are likely to be made in the field. First access the Main Control by removing the Control Enclosure cover. Inspect for and repair loose or damaged wires or connections. Inspect for moisture, condensation, or contact corrosion and correct accordingly. Although wires and connections may look good, slight and almost invisible corrosion on wire contacts may still prevent continuity. Clean all contacts with an electrical contact cleaner approved for this purpose. Check for blown fuses. If the source of the problem can't be repaired in the field, disconnect the Main Control enclosure and remove it for shop or factory repair or replacement.

R15: Check for and replace blown fuses in the Main disconnect enclosure.

Troubleshooting indicates the Main Disconnect fuses may be blown. Gain access to the Main Disconnect by removing a cover from the Main Control Enclosure. With the fuses in place and the incoming power shut off, check to see if there is continuity on both ends of the fuses by using a digital multimeter or similar device. If the fuses are blown then replace them. Blown fuses are an indication that there may have been a short circuit. In this case it will be necessary to locate and correct the source of the short (Repair Steps R5, R11, R13, R19 and R22).

R16: Check and restore site power to Main Disconnect.

Troubleshooting indicates the site power may be off to the Main Disconnect enclosure. Shut off the Main Disconnect then loosen the cover screws and remove the cover. Check to see if there is power to the supply side of the disconnect switch by using a digital multimeter or similar device. If no power is available in the enclosure then the site power is off and must be restored.

R17: Turn on the Main Disconnect.

Troubleshooting indicates the Main Disconnect is turned off. Reach in through an appropriate access cover and turn disconnect on (p. 33, Figure 30).

R18: Enter the correct four digit access code.

Troubleshooting indicates the wrong four digit access code has been entered or the correct code has been entered improperly. Contact the local or state office having jurisdiction over the gate to obtain the correct code. Refer to the "Electromechanical Operation" section for instructions on proper Keypad operation (p. 27).

R19: Check for and repair damaged Closed Limit Switch cable or connections.

Troubleshooting indicates the Closed Limit Switch cables or connections may be damaged. Inspect inside the Bulkhead Top Cover and look for obvious damage such as a worn or severed cable that may have shorted out. Remove the Bulkhead J-Box Cover and check the terminal strip for continuity using a digital multimeter or similar device. When the Close Limit Switch is depressed T 33 and T 16 in Main Control should have continuity (p. 15, Figure 11). Inspect for loose or faulty connections inside the junction box in the bulkhead. Replace worn or severed cables or repair with a strain and moisture resistant low profile electrical cable splice. If damaged wires or electrical connections are found, they may have caused a short circuit. In this case carry out Repair Steps R15 and R25. If damaged wires or electrical connection are not found then follow Repair Step R20 on the Closed Limit Switch.

R20: Check for and replace damaged Close Limit Switch.

Troubleshooting indicates the Closed Limit Switch is damaged. First carry out Repair Step R19 to eliminate cable and connections as the problem. Disconnect the limit switch solderless connections in the J-Box. Loosen the cable strain relief and remove the cable. Remove the screws that hold the closed Limit Switch to the Bulkhead and take it out. Replace the Limit Switch with a new one. The roller arm on the new switch must be adjusted to engage the alignment pin on the pin side gate assembly when the gate is closed.

R21: Check for and adjust the Closed Limit Switch setting.

Troubleshooting indicates the closed Limit Switch is not properly engaging the alignment pin on the Pin Side Bulkhead. The switch is adjusted at the factory; however, they may have been damaged or come loose. Open the gate enough to examine the switch and support bracket. If they have been bent or damaged, repair or replace them. If not, readjust them so the pin contacts the roller arm and activates the switch (switch will “click”) when the gate closes.

R22: Check for and repair damaged Open Limit Switch cable or connections.

Troubleshooting indicates the Open Limit Switch cable or connections may be damaged. Inspect the limit switch located on the Track Section nearest the Control Enclosure by removing top covers. Look for obvious damage such as worn or severed cables that may have shorted out. Remove the appropriate Access Cover and Top cover if necessary and inspect the entire cable length including the connections at the bulkhead J-Box. Remove the J-Box cover and check the terminals for continuity using a digital multimeter or similar device. When the Open Limit Switch is depressed T 33 and T 17 in Main Control should have continuity (p. 15, Figure 11). Replace worn or severed cables or repair with a strain and moisture resistant low profile electrical cable splice. Tighten all loose connectors and connections. If damaged wires or electrical connections are found, they may have caused a short circuit. In this case carry out Repair Steps R15 and R24. If damaged wires or electrical connections are not found, follow Repair Step R23 on the Open Limit Switch.

R23: Check for and replace damaged Open Limit Switch.

Troubleshooting indicates the Open Limit Switch is damaged. First carry out Repair Step R22 to eliminate the cable and connections as the problem, then disconnect the switch and take it out. Replace the limit switch with a new one. Carry out Repair Step R24 to check for and adjust the limit switch setting.

R24: Check for and adjust the Open Limit Switch setting.

Troubleshooting indicates the Open Limit Switch is not properly engaging the Hook side Bulkhead assembly. If the assembly has been completed properly, then the Bulkhead Crosstube contacts the roller arm and activates the switch before it hits the rubber bumper (switch will “click”). If not, the switch may have been incorrectly assembled, damaged or come loose. Remove the appropriate top cover then examine the switch through the opening. If the arm has been bent or damaged, repair or replace it. If not, readjust the limit switch support bracket so the cross tube contacts the roller and the switch “clicks” just before the tube comes up against the rubber bumper.

R26: Check for and repair gate structural damage.

Troubleshooting indicates the Gate has structural damage that must be replaced for proper gate operation. Assess the degree of structural damage. Minor structural damage to a small number of Side Panels, Panel Splices, Top Covers, etc. can be easily repaired by removing and replacing the damaged components. Major structural damage requires full replacement.

R27: Consult Valtir

If the Repair Guidelines did not restore BarrierGate® operations, call the Valtir Customer Service Department for additional suggestions (p. 1).



For more complete information on Valtir products and services, visit us on the web at www.valtir.com. Materials and specifications are subject to change without notice. Please contact Valtir to confirm that you are referring to the most current instructions.

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