REAR PATIO RAIL KIT 3.0 WTIH F.A.S.T. RAMP

OEM INSTALLATION MANUAL

LIPPERT COMPONENTS®

TABLE OF CONTENTS

Introduction

After extending the rear door horizontal to the ground, the patio rails manually roll into place from the doorjamb, attaching into the keeper bases on the rear door to create a patio deck attached to the trailer. When closing the door, the Force Assisted Spring Tension or F.A.S.T. rear door incorporates a cinch latch for a tight seal. The maximum weight rating for the rear door patio is 1,500 pounds.
For information on the assembly or individual components of this product, please visit: https://support.lci1.com/doors-support-patio-rail-kits.

NOTE: Images used in this document are for reference only when assembling, installing and/or operating this product. Actual appearance of provided and/or purchased parts and assemblies may differ.

Safety

Read and understand all instructions before installing or operating this product. Adhere to all safety labels. This manual provides general instructions. Many variables can change the circumstances of the instructions, i.e., the degree of difficulty, operation and ability of the individual performing the instructions. This manual cannot begin to plot out instructions for every possibility, but provides the general instructions, as necessary, for effectively interfacing with the device, product or system. Failure to correctly follow the provided instructions may result in death, serious personal injury, severe product and/or property damage, including voiding of the LCI limited warranty.

⚠WARNING

The "WARNING" symbol above is a sign that a procedure has a safety risk involved and may cause death or serious personal injury if not performed safely and within parameters set forth in manual.

⚠WARNING

Failure to follow instructions provided in this manual may result in death, serious personal injury and/or severe product and property damage, including voiding of the component warranty.

⚠WARNING

The maximum weight rating for the rear door patio is 1,500 pounds. Exceeding the maximum weight ratings can cause death, serious personal injury or severe damage to the trailer. DO NOT allow the rear door to fall while lowering into level position, this could cause serious personal injury or severe damage to the trailer or door.

⚠WARNING

Do not remove the rear door tension bolts out of the vertical columns of the doorjamb until the instructions advise doing so. Failure to follow this warning may result in death, serious personal injury and/or severe property damage.

⚠CAUTION

The "CAUTION" symbol above is a sign that a safety risk is involved and may cause personal injury and/or product or property damage if not safely adhered to and within the parameters set forth in this manual.

⚠CAUTION

Always wear eye protection when performing service, maintenance or installation procedures. Other safety equipment to consider would be hearing protection, gloves and possibly a full face shield, depending on the nature of the task.

⚠CAUTION

Moving parts can pinch, crush or cut. Keep clear and use caution.

NOTE: Cables are not shown in the images for clarity purposes.

NOTE: Some trailers are equipped with an optional adjustable cable system for the rear door. Follow applicable set screw warning for use of the adjustable cable, in the Adjustable Cable System section. The adjustable cable system allows for up to +/- 2.5" of adjustment in order to achieve a 90-degree angle for the rear door while in patio mode.

Resources Required

- 1 to 2 people depending on task
- Cordless or electric drill or screw gun
- Appropriate drive bits
- Impact wrench (optional)
- Torque wrench
- Four C-clamps
- 1/4" drill bit
- 7/32" hex wrench
- 9/16" wrench
- 9/16" socket
- Tape measure
- Grease pencil/frame marker

Door Installation

Hidden Hinge Bracket

⚠ CAUTION

Use appropriate supports, lifting equipment and proper personal protective equipment to guide the rear door onto the doorjamb.

NOTE: The hidden hinge brackets come assembled to the door jamb.

1. Remove the roadside hidden hinge bracket (Fig. 1A) from the doorjamb (Fig. 1B) by removing the three 5⁄16" - 18 x 3/4" button head fasteners (Fig. 1C) installed into the bracket and doorjamb. Set screws aside to be re-installed later.
2. Mount the rear door (Fig. 2C) onto the curbside hidden hinge bracket pin (Fig. 2B), by sliding the curbside cylindrical pocket on the rear door (Fig. 2A) onto the hidden hinge bracket pin (Fig. 2B).
3. Slide the rear door, along with the roadside hidden hinge (Fig. 2D), into the roadside/left vertical hoop column (Fig. 2E).
4. Secure the roadside hidden hinge (Fig. 3A) onto the vertical column of the doorjamb (Fig. 3B), reusing the previously removed three 5/16" - 18 x 3/4" button head fasteners (Fig. 3C).
5. Installation of the hidden hinge is now complete. See Door Cable System section for completing the rear door installation.

Fig. 1

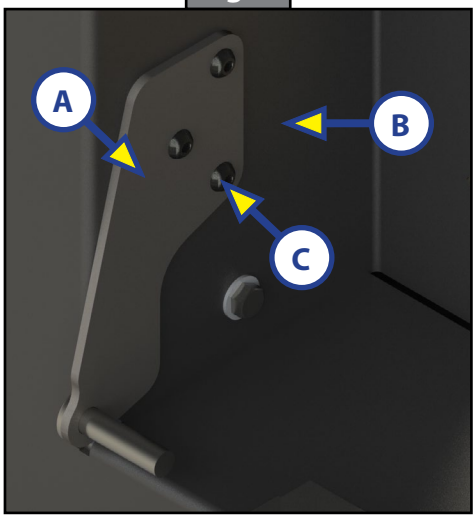


Fig. 2

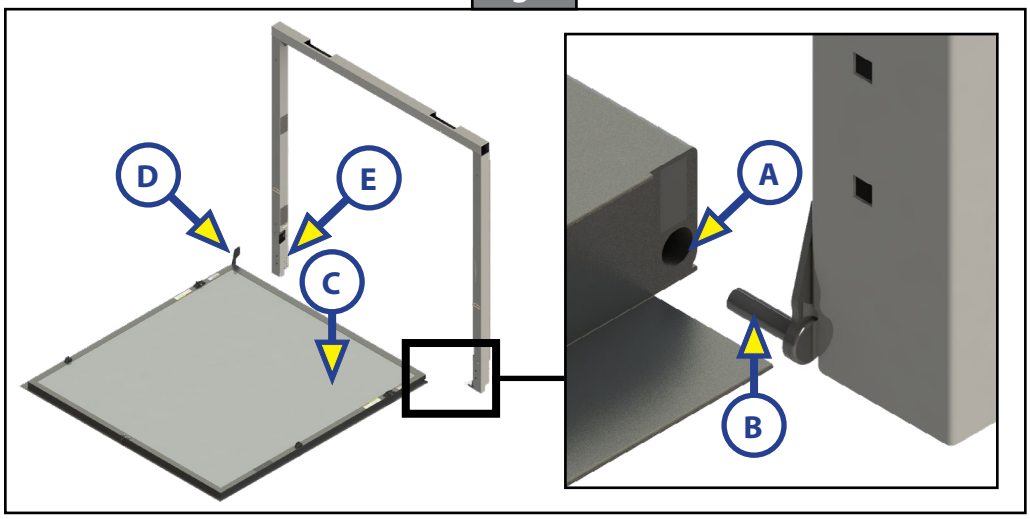
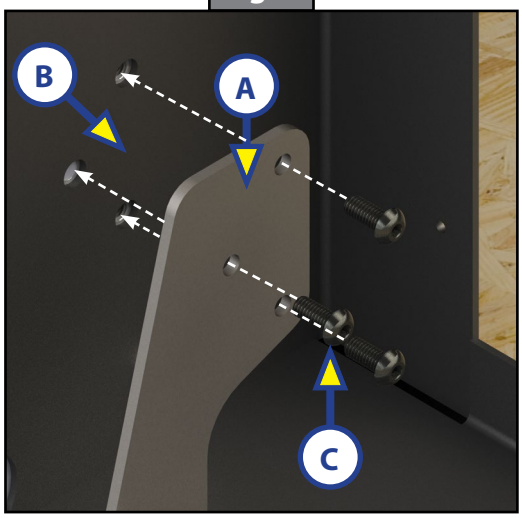


Fig. 3



Adjustable Cable System

⚠WARNING

Failure to properly secure both tension cables and anchors can result in catastrophic failure of the F.A.S.T. Rear Rear Door System, serious personal injury, and or damage to the trailer.

⚠WARNING

Do not remove the tensioning bolt. Failure to follow this warning may result in death, serious personal injury and/or property damage. See the sections Setting the Rear Door Tension and Cable System Adjustment instructions on use of the adjustable cable.

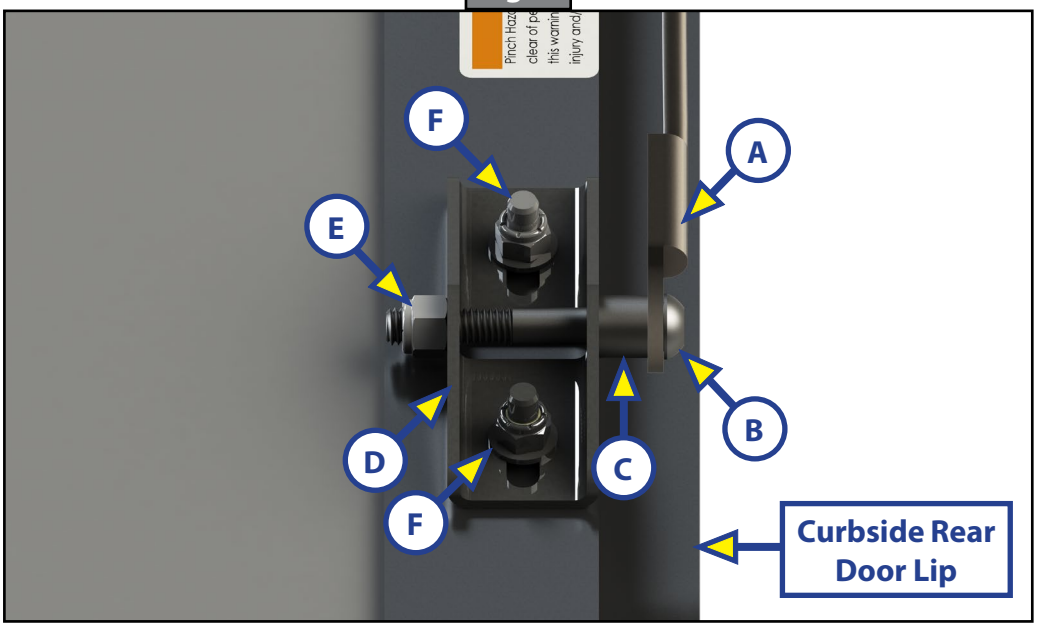
NOTE: Cables are not always shown in the images for clarity purposes.

NOTE: Some trailers are equipped with an optional adjustable cable system for the rear door. Follow applicable set screw warning for use of the adjustable cable. The adjustable cable system allows for up to +/- 2.5" of adjustment in order to achieve a 90 degree angle for the rear door while in patio mode.

⚠ WARNING	⚠ CAUTION
• Failure to follow these instructions may result in death, serious injury or property damage. • Always secure the ramp door in either the closed, ramp or party deck position. • Never use the ramp door while anything is obstructing operation. • Keep hands away from all openings, rollers and cables when operating the ramp door.	• Failure to follow these instructions may result in serious injury or property damage. • Read the instructions before installation or operation. • Never force the ramp door in any direction. • Always make sure the cables are pulling out straight, staying in the grooved portion of the rollers and not coming in contact with any obstructions. • Do not operate the ramp door if the cable is frayed or damaged.

1. Insert cable eyelet, seam side out (Fig. 4A), onto the 3/8" - 16 x 2 3/4" socket button head bolt (Fig. 4B).
2. Insert the metal bushing onto the exposed socket button head bolt (Fig. 4C). The small step of the metal bushing should seat into the inside of the eyelet.
3. Insert the bolt through the rear door cable anchor bracket (Fig. 4D) mounted to the surface of the rear door.
4. Thread a 3/8" nylon insert lock nut (Fig. 4E) onto the exposed button head bolt.

Fig. 4



5. Use a 7/32" hex wrench and a 9/16" wrench, to secure the cable assembly to the anchor bracket.
6. Repeat steps 1-5 on the opposite side of the rear door.

Setting Rear Door Tension

1. With the F.A.S.T. rear door parallel to the ground (Fig. 5), use a 9/16" socket on either a ratcheting wrench or impact wrench and remove the 3/8" - 16 x 4 1/2" tensioning bolt (Fig. 6A) from the vertical columns of the F.A.S.T. rear door jamb.
2. As the two bolts (Fig. 6A) are drawn out of the vertical columns of the doorjamb, tension will be transferred to the F.A.S.T. rear door cable assembly.
3. Tensioning bolt holes on the vertical columns of the doorjamb should be plugged with the hole plugs (Fig. 7) that are provided with the F.A.S.T. rear door kit.

Cable System Adjustment

The F.A.S.T. rear door cable system was designed to be ready for use without adjustment, after installation has been completed. However, if there is more than a ½" of cable sag on an installed cable system with rear door tension applied, cable tension adjustments can still be made.

1. Extend the rear door, remove the hole plugs (Fig. 7), reinsert the two rear door tension bolts (Fig. 6A).
2. Once pressure has been released from the rear door cable system, loosen the two anchor mounting bolts (Fig. 4F).
3. With the bolts loosened, slide the cable anchor bracket (Fig. 4D) along the channel to achieve maximum tension.
4. Tighten anchor bolts to reset rear door tension.
5. Remove the two rear door tension bolts (Fig. 6A) and insert the two hole plugs (Fig. 7).

Fig. 5

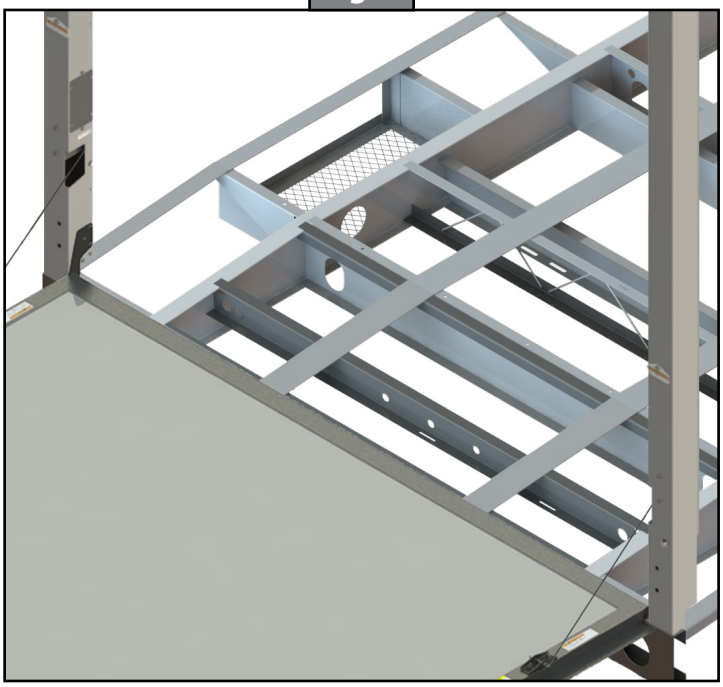


Fig. 6

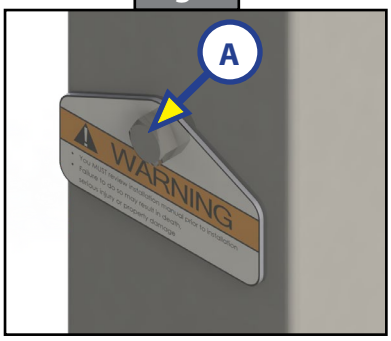


Fig. 7

Cinch Latch Installation

Cinch Latch Motor

1. Locate the cinch latch motor assembly and align the three holes in the cinch latch base (Fig. 8A) with the three pre-drilled holes in the top of the door jamb.
2. Attach the cinch latch motor assembly to the door jamb using three 5/16" - 18 x 3/4" button head stainless steel bolts (Figs. 9A and 10A).

Fig. 8

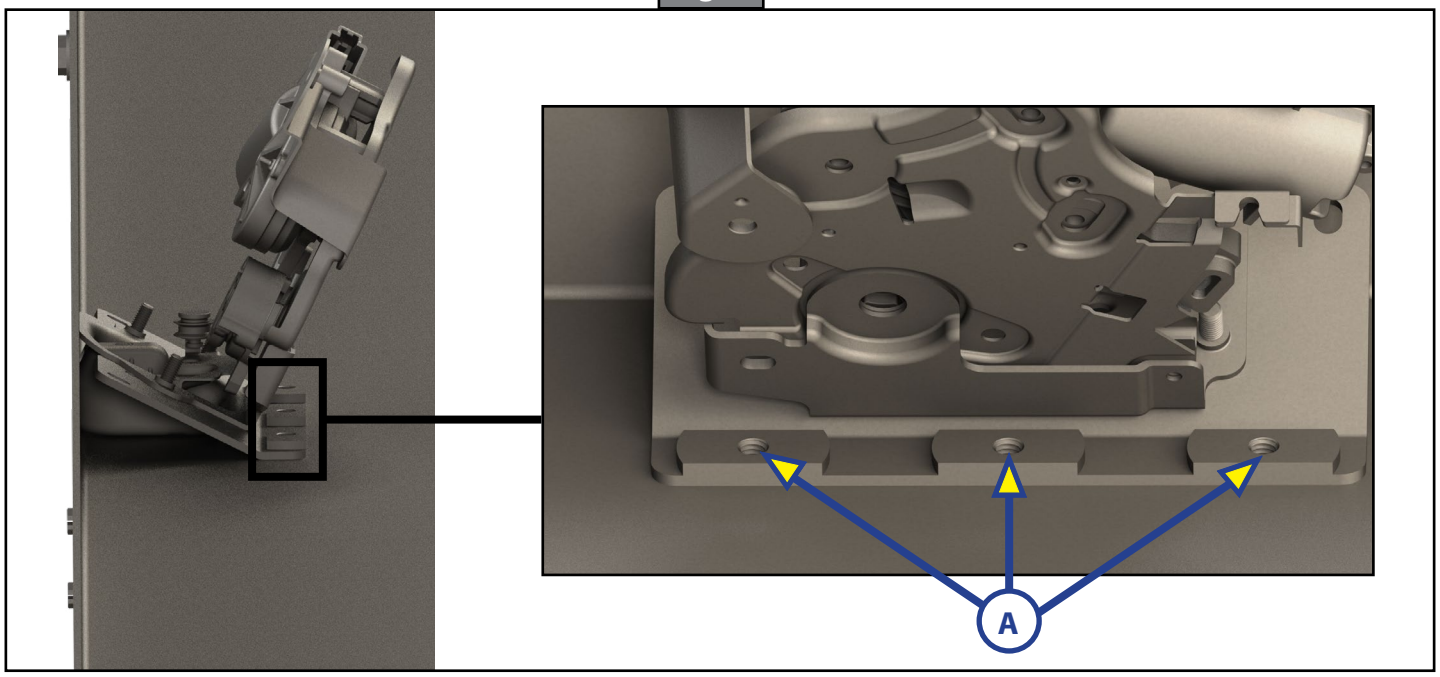


Fig. 9

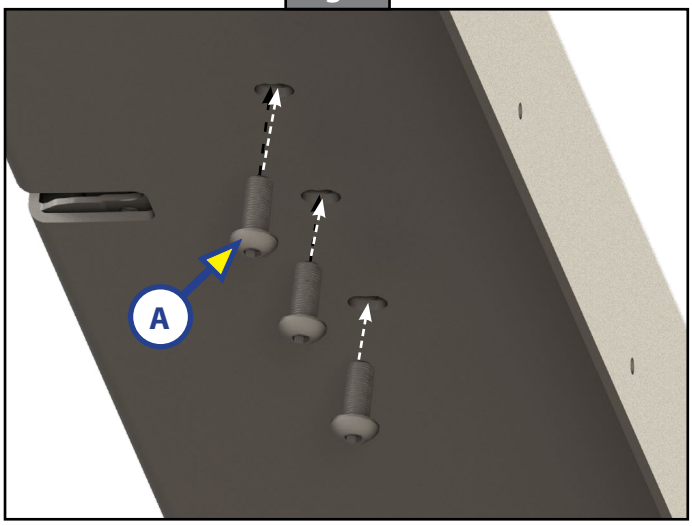
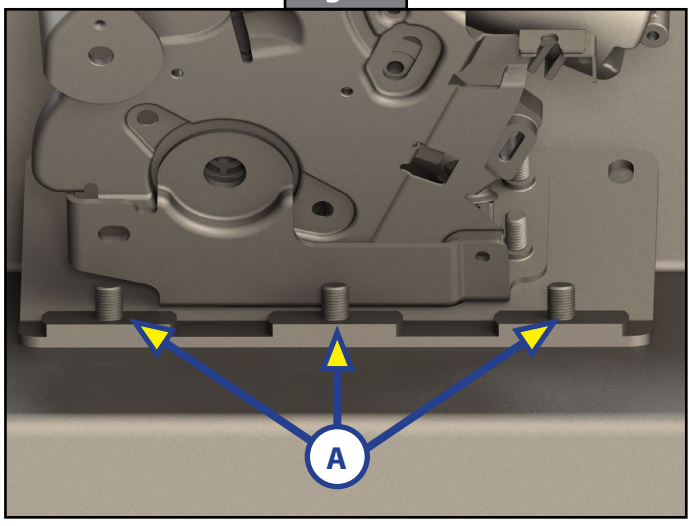


Fig. 10



3. From inside the trailer, install the cinch latch cover. Locate the two holes in the top front face of the door jamb located near the cinch latch (Fig. 11A).
4. Place the cinch latch cover (Fig. 11B) on the lip of the door jamb (Fig. 11C).
5. Align the holes in the cinch latch cover (Fig. 11D) with the holes in the door jamb (Fig. 11A).
6. Install the two push pin fasteners (Fig. 11E) through the cover and into the door jamb.

NOTE: Figure 12 shows the cinch latch cover (Fig. 12A) completed.

Fig. 11

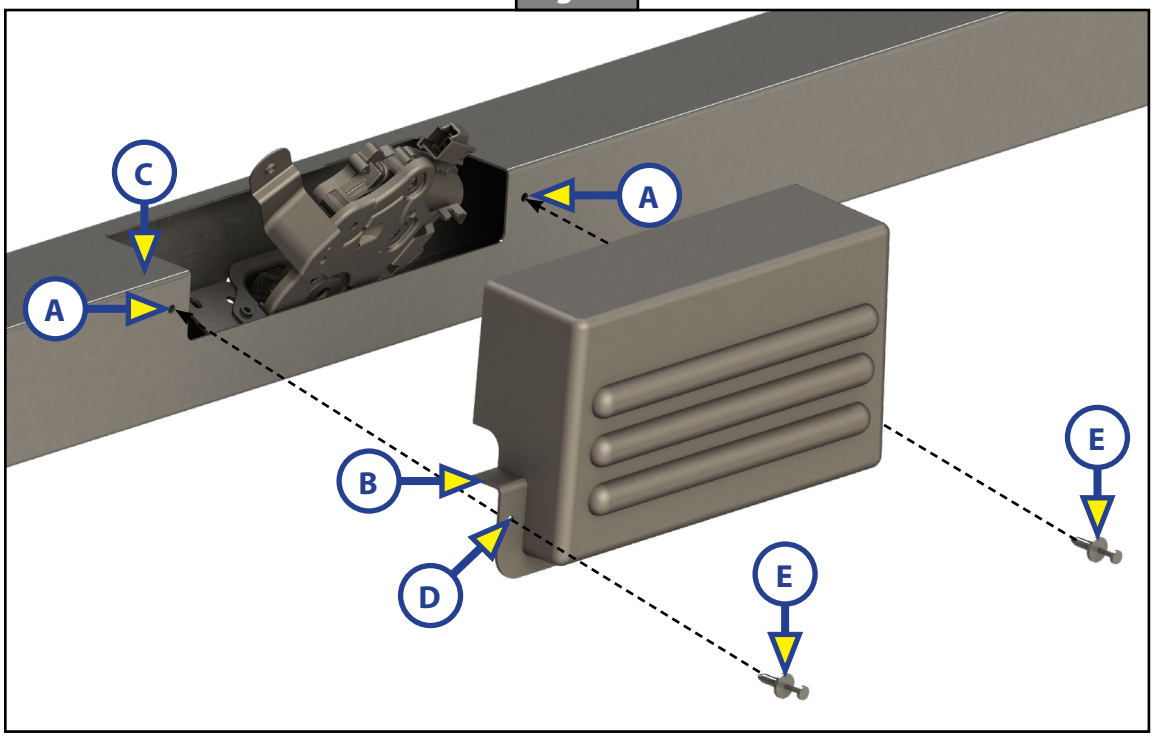
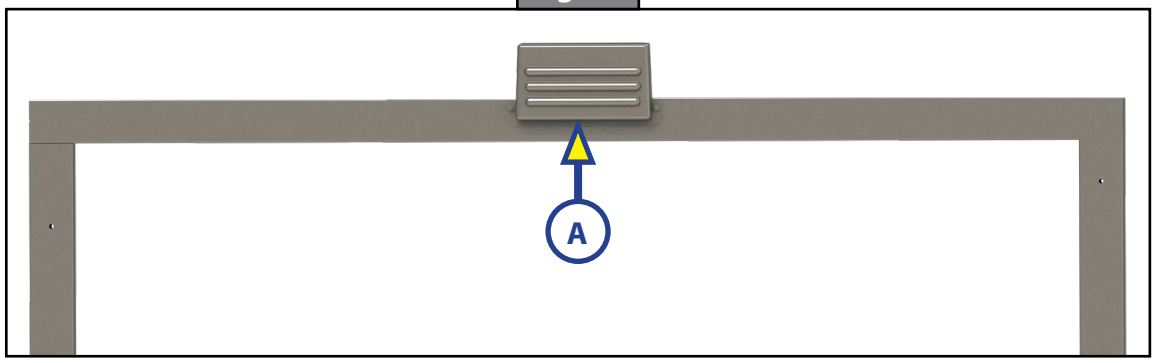


Fig. 12



Controller

1. Mount the controller (Fig. 13A) in a clean and dry, weather-tight location that will keep it from being damaged, but is easily accessible for service. The controllers are NOT waterproof. The controller MUST be mounted with the face visible.

NOTE: The controller can be mounted anywhere inside the trailer. The controller should be hidden, accessible, and the wires need to reach the motor.

2. Route and attach the switch harness (Fig. 13B) from the controller to where the key switch and the LED are located on the door jamb. One red wire and one purple wire go to the key switch and one red wire and one green wire go to the LED.

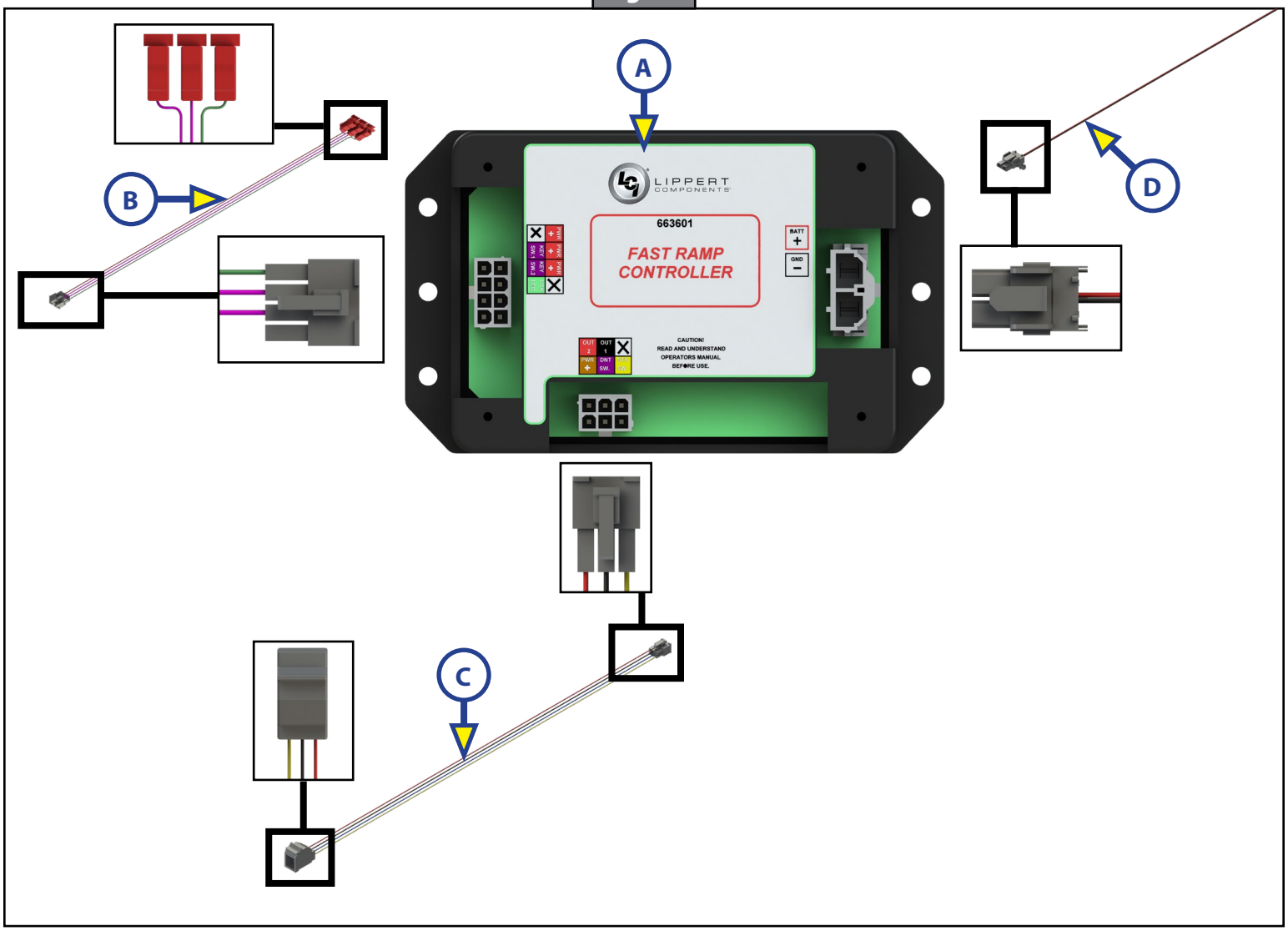
NOTE: Located on the switch harness, there is also an additional red wire and purple wire for an internal switch to open the door from the inside of the trailer (determined by OEM). This is an optional attachment but the wires are provided on the harness.

3. Route and attach the motor 1 harness (Fig. 13C) from the controller to the motor.

NOTE: It Is recommended by LCI that this system be wired using a 10 gauge wire minimum and to wire all wires independently.

4. Route and attach the power wiring harness (Fig. 13D) to the controller. Use the proper gauge wire to support the 12V DC battery when connecting to the power source.

Fig. 13



Patio Railing Installation

Preparation

Make sure the rear door support cables are securely attached and the door is in the patio position prior to starting the installation. Installation will not be possible otherwise.

Patio and Quick Disconnect Hinge Bracket

NOTE: For trailers equipped with the F.A.S.T. rear door system, the door jamb baseplate (Fig. 14E) is already welded to the rear door jamb at the factory.

1. Start with curbside door jamb baseplate (Fig. 14E). Locate one of the patio hinge brackets (Fig. 14D).
2. Align the patio hinge bracket door jamb holes with the holes in the door jamb baseplate. Make sure to use the holes in the door jamb baseplate closest to the door jamb (Fig. 14A).

NOTE: Make sure the hole for the quick disconnect hinge bracket is properly oriented with the larger part of the hole at the top of the bracket (Fig. 14B).

3. Insert six 5/16" - 18 x 1" carriage bolts (Fig. 14A) through the channeled slots of the door jamb baseplate closest to the door jamb and into the patio hinge bracket slots.
4. Install six 5/16" - 18 nylon locking flange nuts (Fig. 14C) onto the carriage bolts, fastening together the door jamb baseplate (Fig. 14E) and the patio hinge bracket (Fig. 14D).

Fig. 14

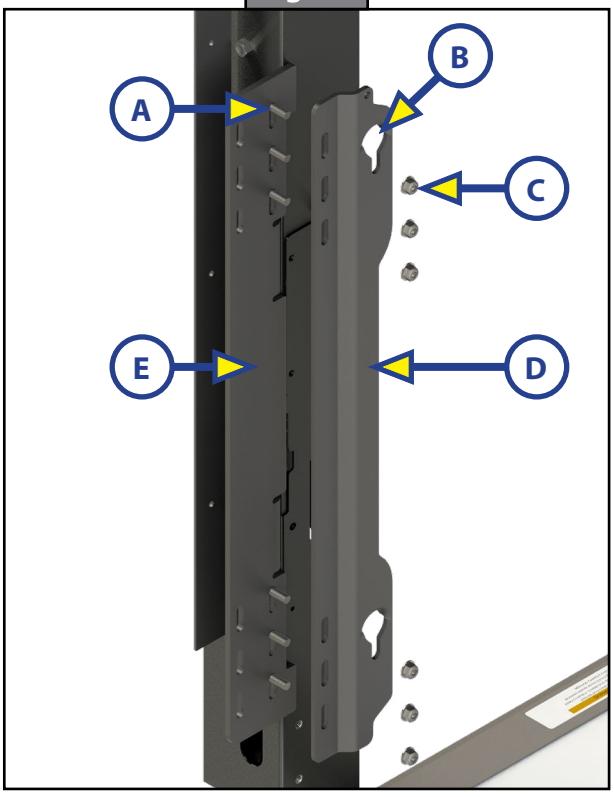
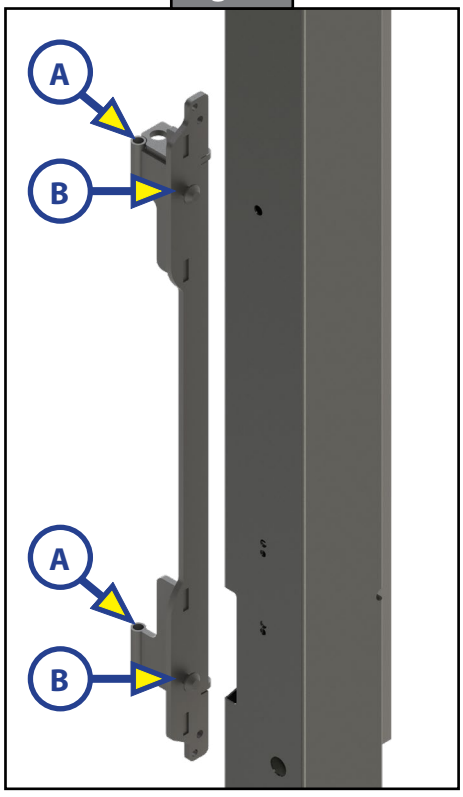


Fig. 15



5. On the back side of the quick disconnect hinge bracket are two alignment pins (Fig. 15B). Align the pins with the alignment hole openings of the hinge bracket (Fig. 14B), insert alignment pins then push down so that the pins rest inside at the lower portion of the hole. Make sure the quick disconnect hinge bracket barrel (Fig. 15A) is closest to the door jamb opening.

6. Install the snapper pin (Fig. 16A) through the snapper pin alignment hole of the quick disconnect hinge bracket and door jamb baseplate.
7. At the top of the quick disconnect hinge bracket is a set screw hole just below the snapper pin hole. Thread the provided 3/8" - 16 x 1/2" set screw (Fig. 16B) into the hole. This is used to force the hinge bracket from the hinge rail apart, locking them together to prevent rattling.
8. Place the curbside patio rail hinge (Fig. 17A) into the hinge bracket barrels (Fig. 17B).

Fig. 16

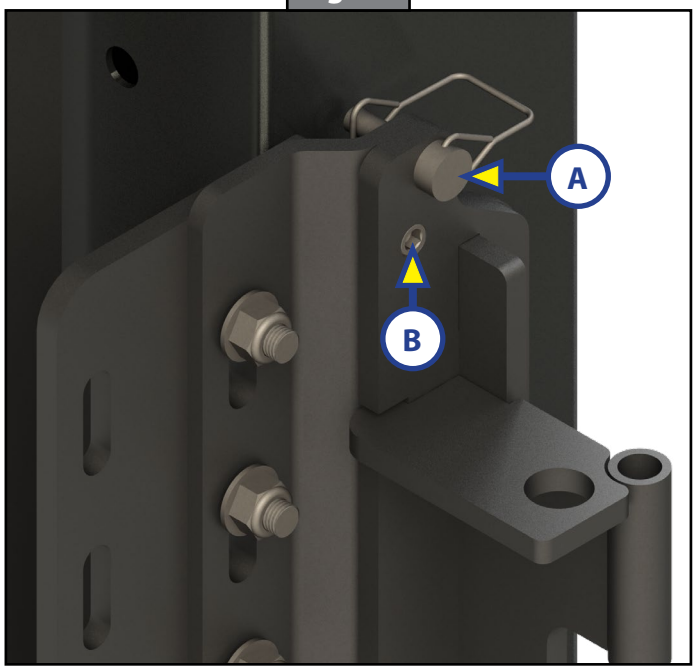
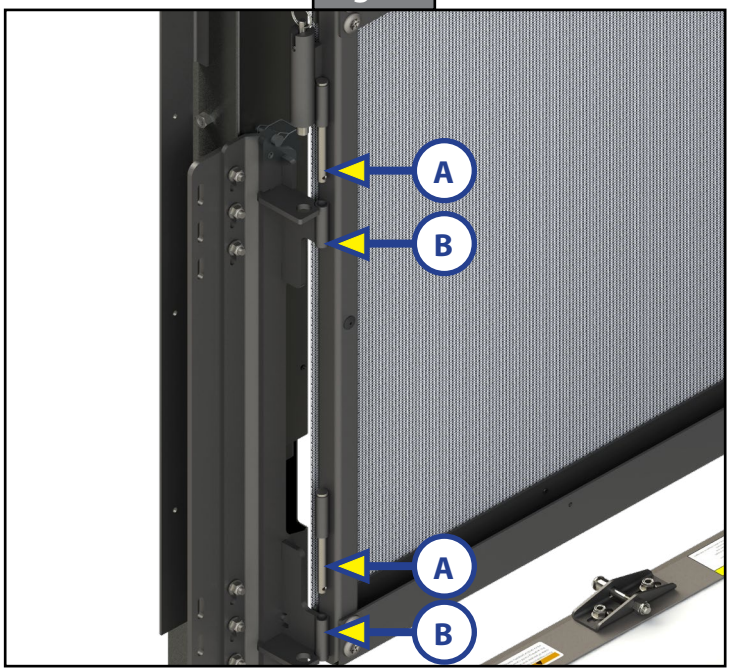


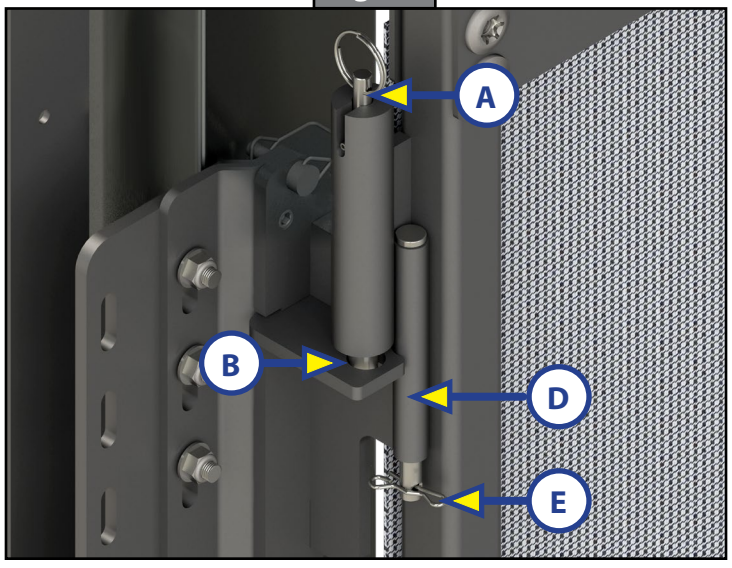
Fig. 17



9. Secure the end of the patio rail hinge pin with the provided cotter pin (Fig. 18E)
10. Adjust the height of the hinge bracket (Fig. 18D) so that the patio panel is aligned level with the door in the patio position.
11. Torque the nuts to 80 ft-lbs.

NOTE: The rail kit spring loaded lockout mechanism for the roadside and curbside patio railings (Fig. 18A), rests inside the hole (Fig. 18B) next to the hinge bracket barrel (Fig. 18D). To pivot the rail assembly in or out, pull up on the ring, twist the ring pin and let it rest on top of the spring loaded lockout barrel. To keep the rail assembly stationary pull up on the ring pin, twist and let the ring pin slide into the hole. Do not force the rail assembly open or closed.

Fig. 18



12. After the curbside rail kit has been completed, repeat steps 1-5 on the roadside rail kit. The roadside rail kit uses the holes (Fig. 19C) farthest away from the door jamb (Fig. 19A) in the door jamb baseplate (Fig. 19B) so when the rail kit is closed the two sides of the rail kit are stacked.

13. Place the roadside patio rail hinge (Fig. 20A) into the hinge bracket barrels (Fig. 20B).

14. Torque the nuts to 80 ft-lbs.

NOTE: When stowing the patio rail kit, the roadside rail assembly **MUST** be collapsed first, followed by the curbside rail assembly. When extending the patio rail kit, the curbside rail assembly **MUST** be extended first, followed by the roadside rail assembly.

Fig. 19

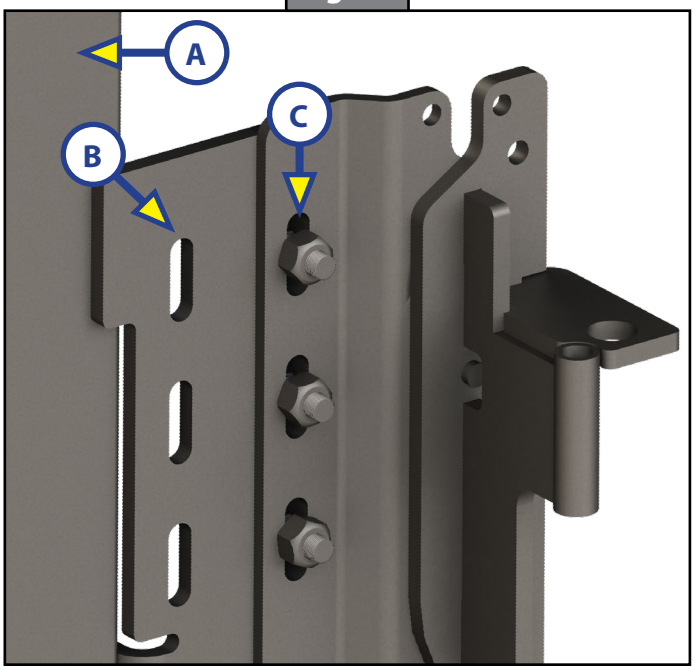
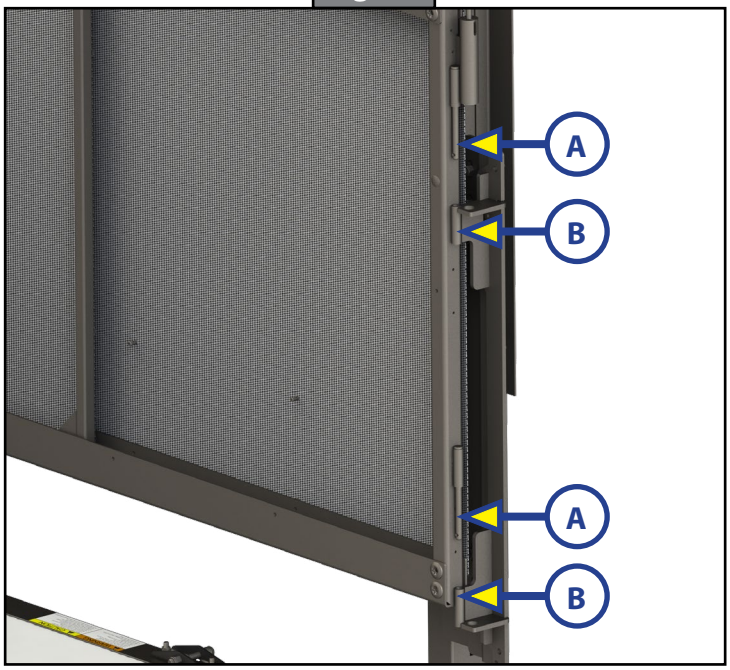


Fig. 20



Keeper Bases

1. Insert the four shoulder bolts in the bottom of the patio railings (Fig. 21A) into the four keeper bases (Fig. 21B) by sliding the shoulder bolt's into the bases until they snap into place.
2. Align the keeper bases to the frame of the rear door so that the notched bottom of the keeper base sets flush against the inside edge of the rear door frame (Fig. 22A).

NOTE: Some adjustment of the keeper bases may be needed to align the railing properly. Do not secure the keeper bases to the rear door until the railing is aligned. The keeper bases will be aligned correctly when the gate on the railing functions correctly.

3. Clamp the keeper bases into place on the door fame.

NOTE: The front two panels of the railing kit on either side of the gate must be parallel to the rear door's edge for the gate to function properly.

4. Once the keeper bases are aligned properly and securely clamped to the rear door, attach them to the rear door with the provided Tek® screws (Fig. 23A).

Fig. 21

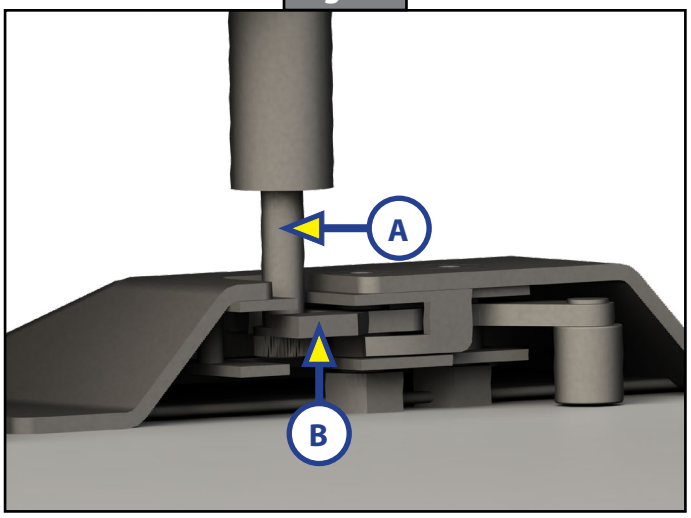


Fig. 22

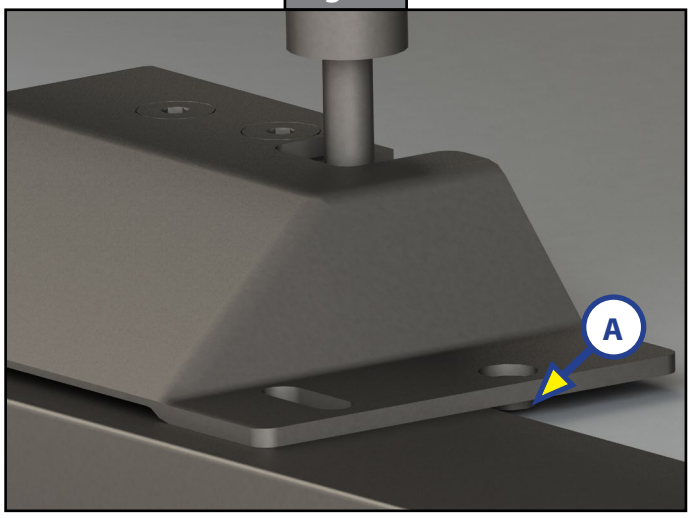
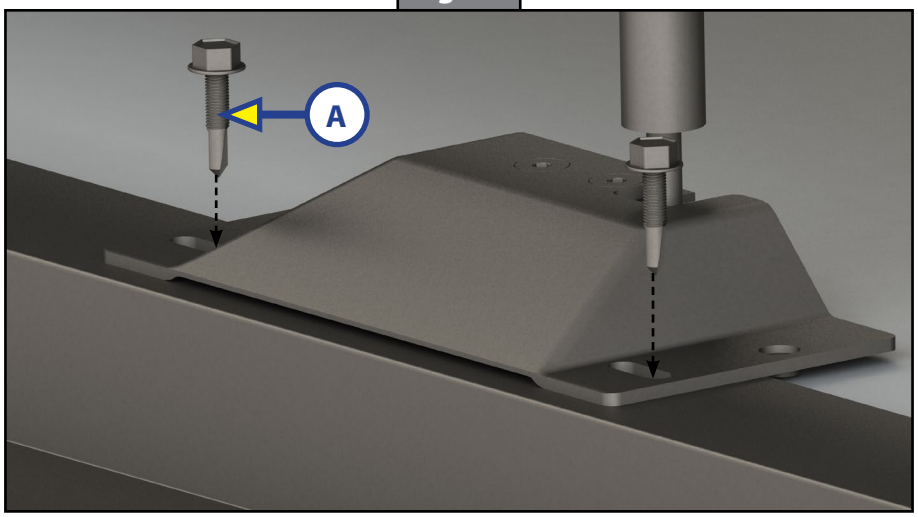


Fig. 23



Rear Patio Support Options

The LCI F.A.S.T. rear door system is equipped with two support leg options, depending on how the rear door system is installed.

Drop Leg Option Installation

The first support option, drop leg, is used when the rear door is installed with just the Patio Rear Rail Kit 3.0 system, or "party deck" configuration. LCI supplies a drop leg that clips onto the corner of the curbside door that works with the support cables carrying the weight of the rear door.

1. Center the drop leg keeper base approximately 6" from the edge of the top flange lip (Fig. 24).
2. Fasten the drop leg keeper base to the rear door flange with two self-tapping screws (Fig, 24A).
3. The drop leg (Fig. 25A) is inserted over the side lip of the rear door (Fig. 25B), with an attached drop leg keeper base (Fig. 25C).

Fig. 24

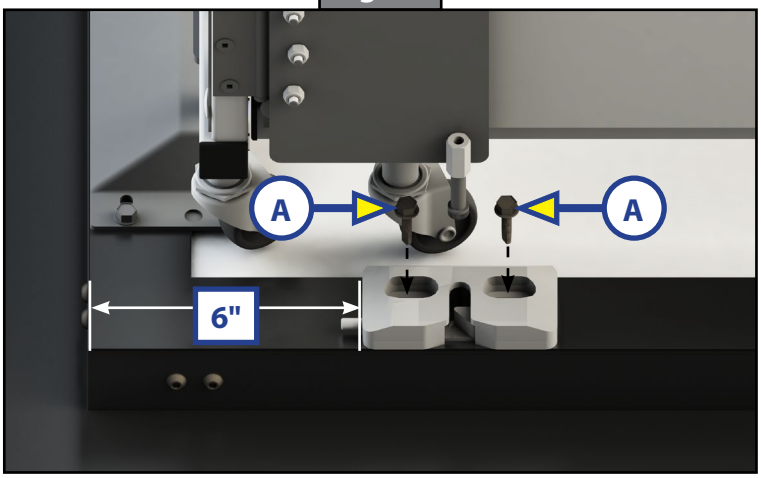
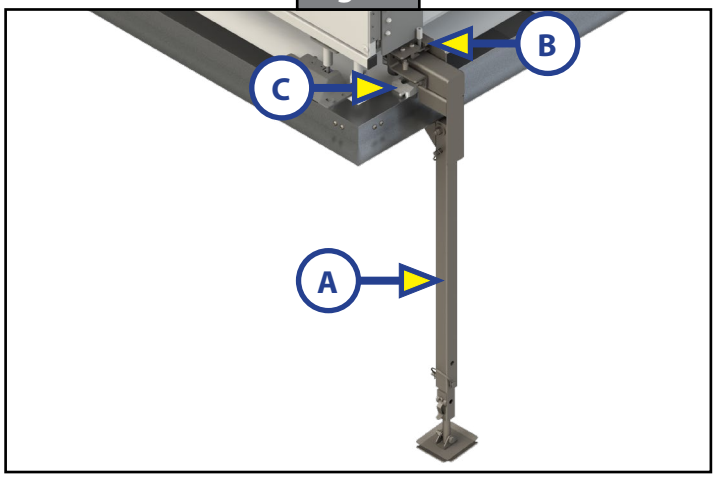


Fig. 25



Victory Entry Step™ Option

The Victory Step™ has latching mechanisms that attach onto two footman loops that are installed to the aluminum frame of the ramp door. There is an angle bracket (Fig. 26A) under each footman loop (Fig. 26B) to keep the Victory Step from shifting when latched. The angle brackets are offset, leaving more space on the right side of each footman loop (Fig. 27) to accommodate the latching mechanisms.

Fig. 26

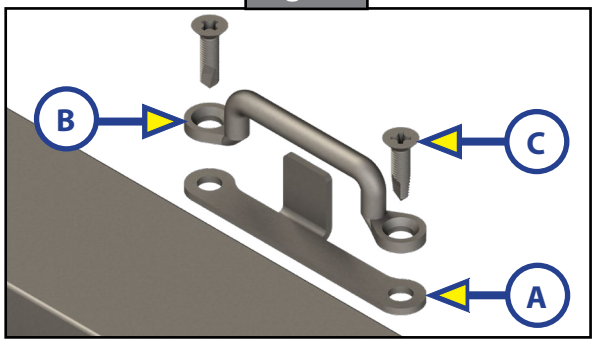
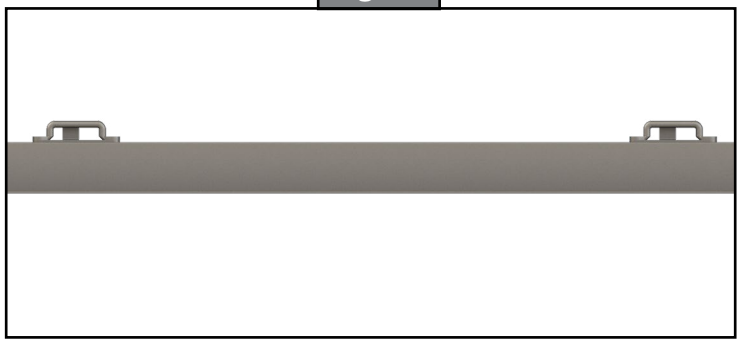


Fig. 27



Installation

1. Place the Victory Step in the desired location in patio opening, making sure there is enough space to accommodate the installation of footman loops and the handrail, if equipped.
2. Attach a footman loop to each of the latching mechanisms on the step (Fig. 28) and position the step in the desired mounting location according to the ½" offset shown in Figure 29.
3. Without releasing the footman loops from the latching mechanisms on the step, position an angle bracket (Fig. 26A) underneath each footman loop and line up both holes.
4. Mark the holes in the footman loop. Repeat for the other side.

Fig. 28

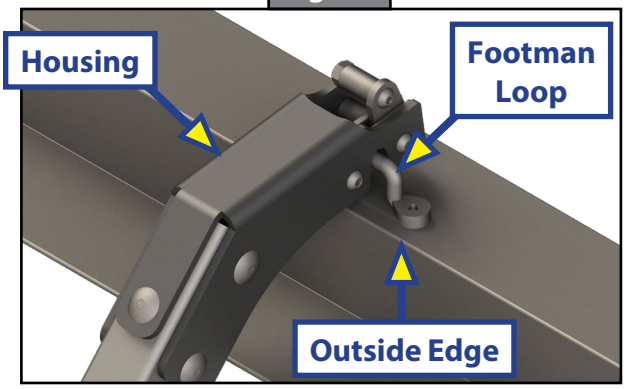
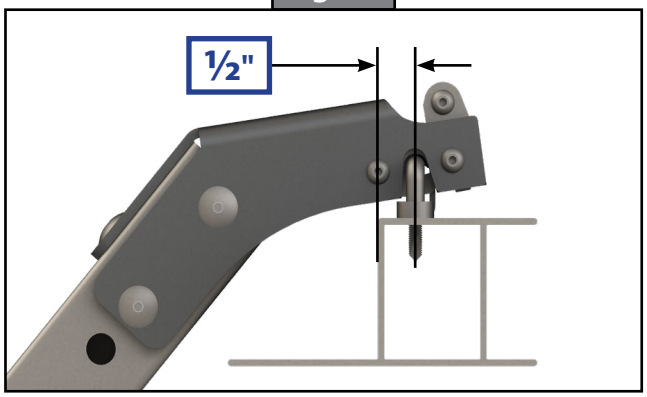


Fig. 29



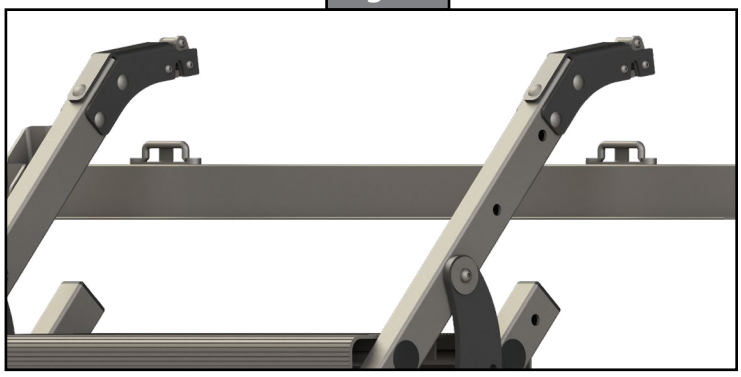
5. Fasten footman loops and angle brackets to the trailer with the supplied screws (Fig. 26C), making sure the angle bracket tabs are behind the footman loops.

Step Deployment

1. Align the step latches at the top of the Victory Step with the installed footman loops (Fig. 30), then lower until both step latches click into place around the footman loops.

2. Lower the Victory Step to the ground.

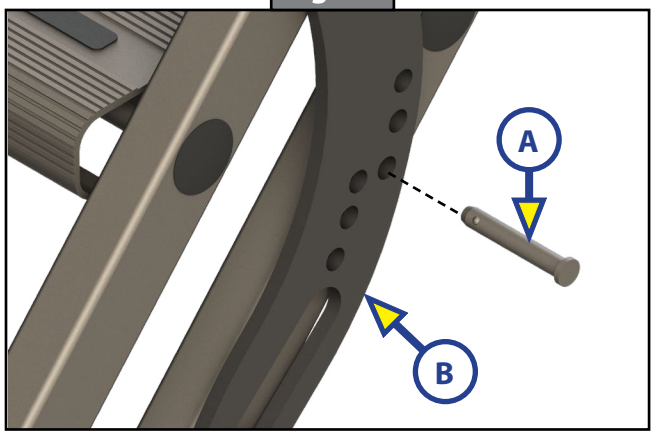
Fig. 30



3. Remove and retain the 5⁄16" quick release lockpin (Fig. 31A) that extends through the bottom hole in the adjustment plate (Fig. 31B) and both rails of the Victory Step. Repeat for the other side.

NOTE: After the 5⁄16" quick release lockpins are both removed, the lower support tubes will drop down, causing the angle of the step treads to change.

Fig. 31

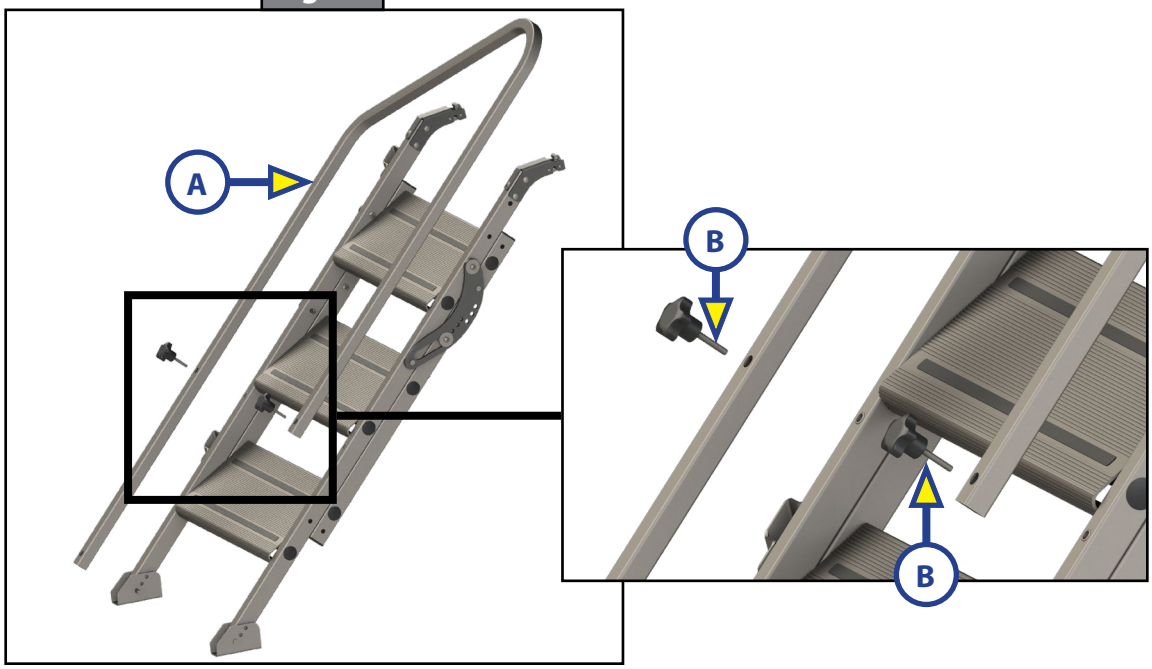


4. Grasp the back of any of the step treads and lift until the treads are all level with the ground. Continue holding the steps level and replace one of the 5⁄16" quick release lockpins into the nearest adjustment hole. This will lock the step treads at the specified angle. Install the remaining 5⁄16" quick release lockpin in the identical hole in the other adjustment plate.

Handrail Installation

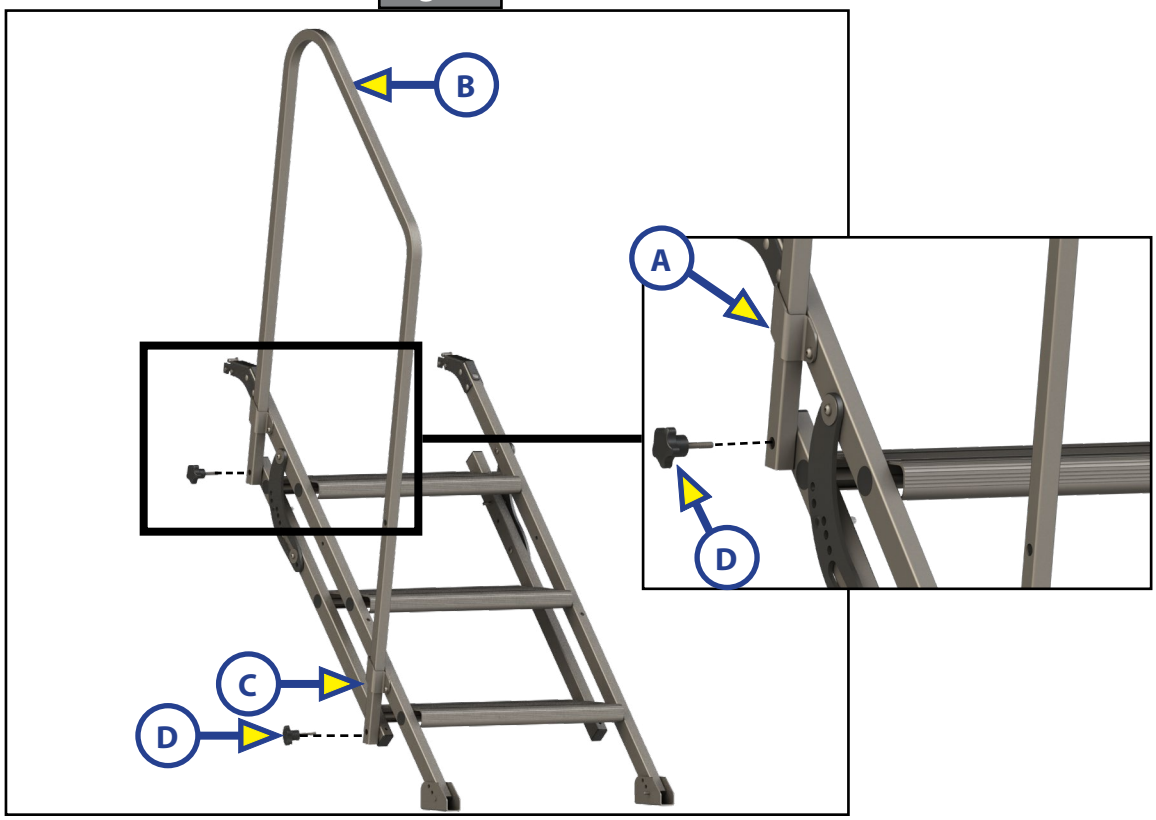
NOTE: To remove the handrail (Fig. 32A) for installation, unscrew the fastening knobs (Fig. 32B). The knobs will be used for installation of the handrail.

Fig. 32



1. To install the handrail (if equipped), align the short end of the handrail tube with the top bracket (Fig. 33A) on the left side of the Victory Step and the long end of the handrail tube (Fig. 33B) with the bottom bracket (Fig. 33C).
2. Slide both ends of the handrail tube through the brackets and align with the holes in the back tube. Screw the fastening knob (Fig. 33D) through the top hole in the handrail and into the back tube. Repeat for the bottom hole. Hand tighten both knobs.

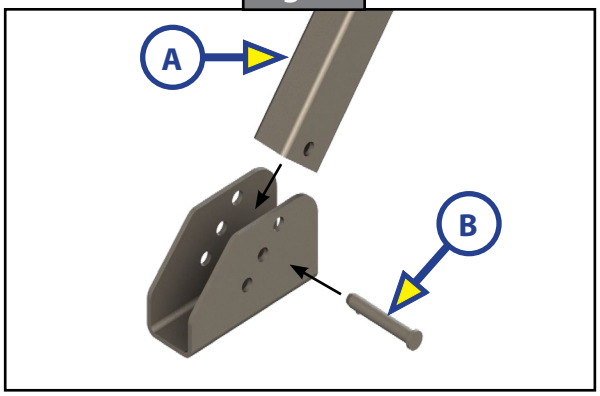
Fig. 33



Adjustment

1. To adjust the foot height, lift step and remove the fastening pin that secures the foot to the step tube.
2. Align the tube (Fig. 34A) to the desired holes then reinsert the fastening pin (Fig. 34B). Repeat on the other side, if necessary.

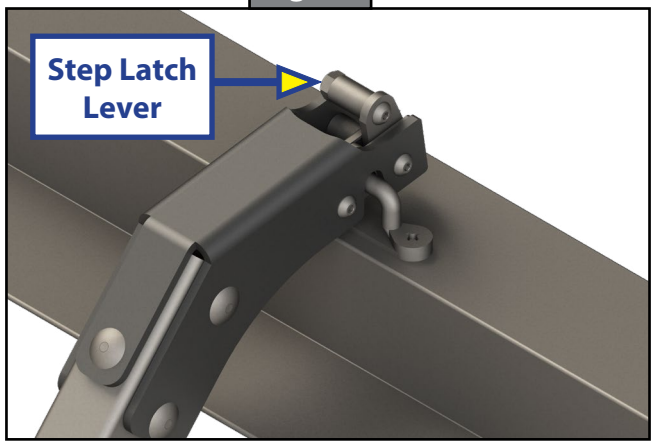
Fig. 34



Removal

1. Remove the fastening pins from both of the adjustment plates. Retain the pins for later use.
2. Collapse the Victory Step by pulling up on the back of the top step.
3. Insert the 5/16" quick release lockpin through the bottom hole in the adjustment plate and both rails. Repeat on the other side.
4. Remove the handrail (if installed) by removing the top and bottom fastening knobs (Fig. 32B), then sliding the handrail tube out of the brackets.
5. Secure the handrail (if equipped) to the front of the Victory Step by aligning the holes in the handrail with the holes in the Victory Step then secure with the fastening knobs.
6. Release both of the step latches from the footman loops by pushing forward on the levers (Fig. 35).
7. Lift the Victory Step evenly away from the footman loops.

Fig. 35



Operation

Door Stowed to Extended Position

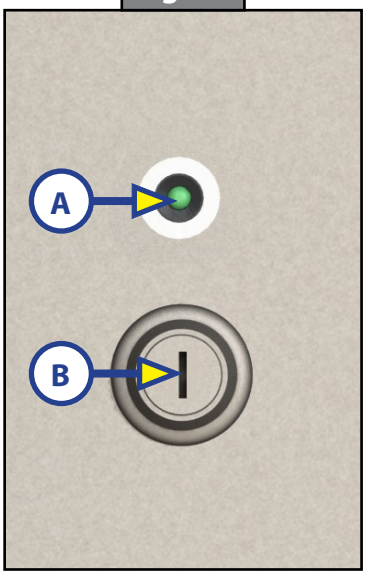
NOTE: Make sure the unit is connected to a power source.

1. Insert the key into the keyed access point located in the door jamb of the rear door (Fig. 36B).
2. Turn the lock mechanism to the right. The door will visibly pop open slightly, releasing pressure on the seals.
3. Once the lock mechanism has been released, the rear door is ready to extend. Slowly extend the patio door. The F.A.S.T. technology actively counter balances the weight of the door, allowing for one handed operation of the rear door.

NOTE: If the door does not visibly open try the key again. If the door still does not open refer to the manual override on the latch itself inside the trailer. If applicable, the controller is designed in such a way that if one latch is cinched and the other is not it will automatically release the cinched latch. The only way this will not happen is in the event that power is failing to reach the system properly.

4. The key can now be removed.

Fig. 36



Extending Patio Rail

1. Remove the hook and loop fabric strap securing the railing in the closed position.
2. The curbside will be the first patio rail side to extend, then the roadside patio rail.
3. Unfold the railings so that the shoulder bolts at the bottom of the patio railing (Fig. 37A) slide into the keeper bases (Fig. 37B) and lock in place.
4. To keep the rail assembly stationary, pull up on the spring loaded lockout mechanisms for the roadside and curbside patio railings (Fig. 18A), twist and let the ring pin slide into the hole. Do not force the rail assembly open or closed.
5. Close and secure the patio rail gate with the latch (Fig. 38A).
6. Attach the drop leg and/or the optional steps.

Fig. 37

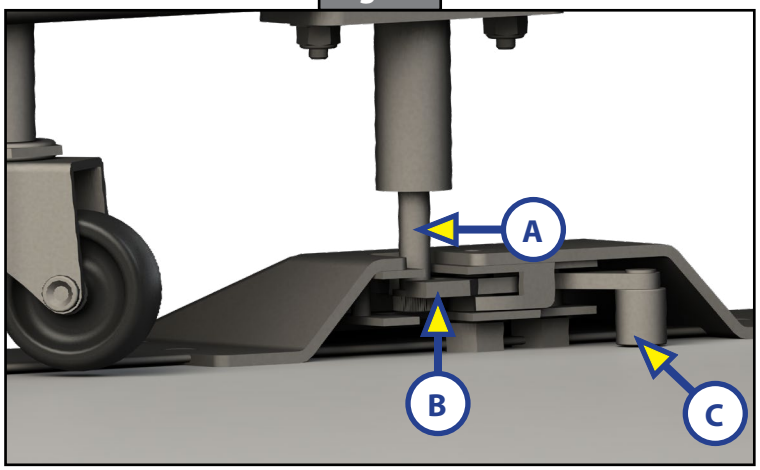
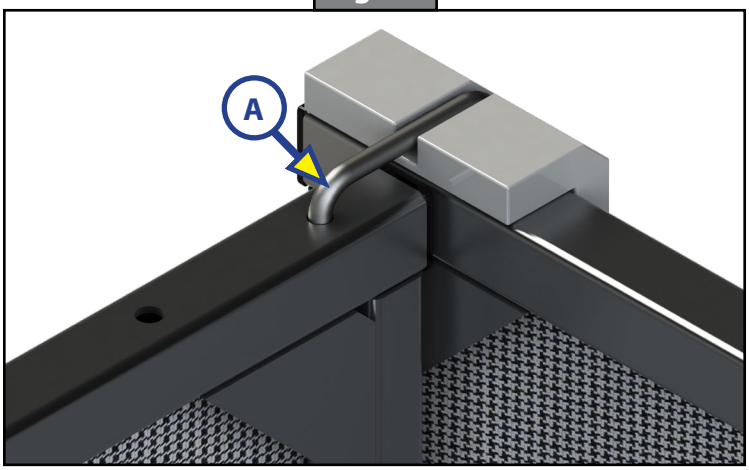


Fig. 38



Retracting Patio Rail

1. Remove and stow the drop leg and/or steps.
2. Open the latch on the gate.
3. To pivot the rail assembly in, pull up on the ring of the spring loaded lockout mechanism (Fig. 18A), twist the ring pin and let it rest on top of the spring loaded lockout barrel.
4. Depress the foot release (Fig. 37C) and move the patio railings out from the keeper bases (Fig. 37B).
5. While facing the patio door opening, fold the roadside railing back onto itself so it rests flush inside the doorjamb opening. The roadside patio railing **MUST** be collapsed first to stack correctly into the door opening.
6. Make sure no caster wheels are in the hinge space between the patio door and the doorjamb.

⚠ CAUTION

Properly stow rails to make sure that patio door closure does not compromise caster wheels. If patio railing is not properly stowed, caster wheels may get caught and be damaged by the hinge of the patio door when door is closed. Damage to caster wheels due to improper stowage of the patio rail kit is not covered under warranty.

7. Fold the curbside railing back onto itself so it rests flush inside the door opening.
8. Make sure no caster wheels are in the hinge space between the patio door and the doorjamb.
9. When caster wheels are clear of the hinge area and the railings are folded inside the door opening, secure with attached hook-and-loop fabric strap to prevent shifting when railing is in the closed position.

Extended Door to Stowed Position

NOTE: After the patio rail kit is properly stowed and the patio is cleared of any debris, the keyed access does **NOT** need the key inserted into the lock to close the door.

When closing the door, do not slam or force the door closed. Slowly close the door, allowing the cinch latch to function as intended. If the door is forced closed too quickly, the door will "bounce" away from the header and the cinch latch will not latch.

1. Slowly retract the rear door, when the cinch latch pin (Fig. 39A) comes in contact with the cinch latch (Fig. 40A), positive pressure must be maintained until the cinch latch has cycled and engaged the locking mechanism.
2. If the cinch latch pin properly engages into the cinch latch, the LED light (Fig. 36A) will turn green.

NOTE: If the cinch latch does not actuate, the controller will automatically reset the closed latch and will open the door slightly. Close the door again to get the latch to engage. If the latch engages, the LED light (Fig. 36A) next to the key access (Fig. 36B) will turn green.

Fig. 39

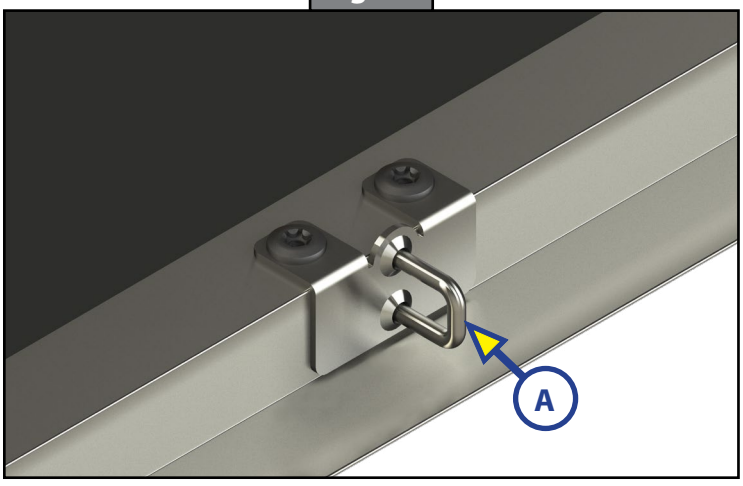
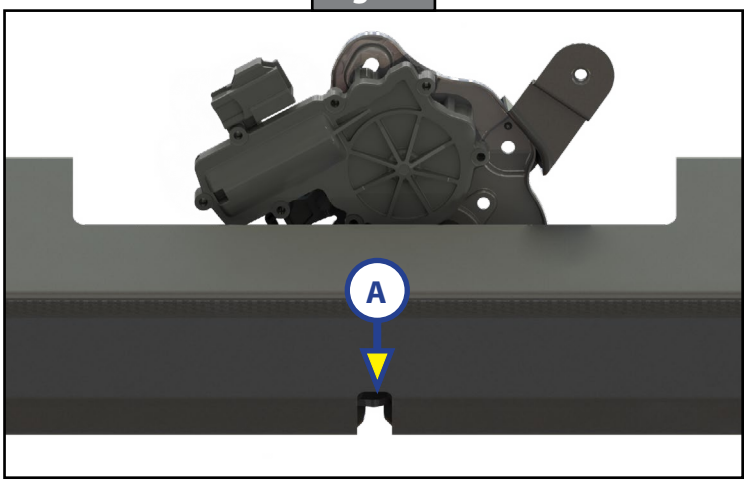


Fig. 40



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