



LIPPERT 3000 SERIES
PATIO RAIL KIT
OEM INSTALLATION MANUAL

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Introduction

The Lippert 3000 Series Patio Rail Kit has been designed for easy installation and use. The Lippert 3000 Series Patio Rail Kit is pre-installed onto the ramp door, it can be used in a 90 degree angle as a patio, or fold the front of the patio rail kit to the sides and lower the ramp door to the ground to load toy vehicles into the trailer. The overall capacity is 3000 lbs. for doors with five or more bumper contacts or lower hinge leaves, 1600 lbs. for doors with less than five bumper contact or lower hinge leaves.

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.



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 the parameters set forth in this manual. 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

Do not exceed maximum capacity or weight ratings. Exceeding the maximum capacity or weight ratings can cause death, serious personal injury, product or property damage.

WARNING

- **Do not operate the ramp door on uneven ground.**
- **Always lower ramp door onto level ground.**
- **Do not lower ramp door into a ditch or gully.**
- **Do not release the ramp door until it rests completely on the ground.**
- **Do not stand behind the ramp door while operating.**
- **Keep all body parts clear of the ramp door while closing.**
- **Failure to heed WARNING may result in serious bodily injury or component and/or property damage.**

NOTE: Although the product is water resistant, LCI recommends storing the door in the closed position during periods of rain to reduce the risk of water intrusion, which may result in delamination.

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. 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.

Weight Ratings

Ramp Door

- A. Overall Capacity - 3000 lbs. for doors with five or more bumper contacts or lower hinge leaves.
- 1600 lbs. for doors with less than five bumper contacts or lower hinge leaves.
- B. Maximum per wheel contact - 1000 lbs.
- C. Speed Rating - The vehicle should not exceed 5 MPH while driving up the ramp.

NOTE: Stabilizer jacks must be used when the door is in the patio position.

Resources Required

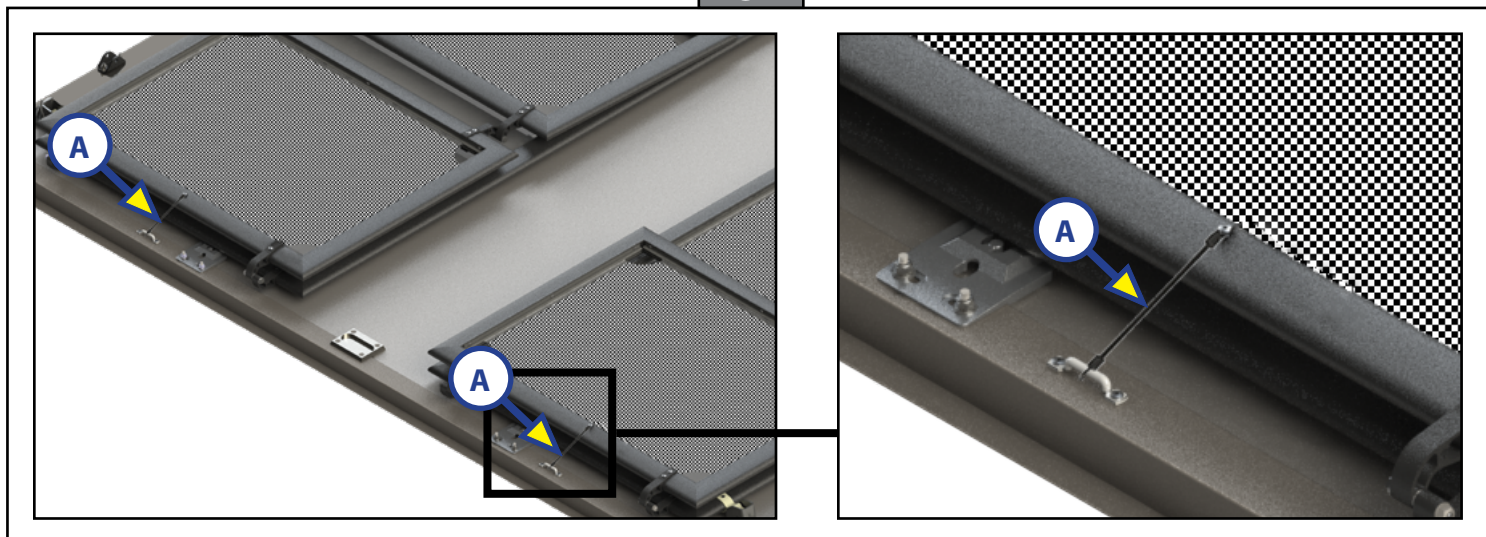
- 1-3 People depending on task
- Impact wrench
- Cordless or electric drill or screw gun
- Appropriate drive bits
- 3/4" Deep well socket
- 9/16" Box end wrench
- Pan head, 3/8" thread diameter, case hardened trilobular bolts
- Flat washers
- Locking nuts
- OEM supplied self-tapping screws (optional)
- Measuring tape
- Non-permanent method of marking

Prior to Installation

1. Chassis subfloor must be installed.
2. Sidewalls must be installed.
3. Door Jamb installed

NOTE: On alternate versions of the Lippert 3000 Series Patio Rail Kit, there will **NOT** be two front (Fig. 1) and rear (Fig. 2) bungees. An alternate version of the Lippert 3000 Series will have a J-lock (Fig. 3A) located at both sides of the patio railing front bases (Fig. 4A). Pull the yellow lanyard (Fig. 3B) and turn the J-Lock a quarter turn (Fig. 3C). Raise the side patio rails into a 90 degree position (Fig. 4B) until it clicks into the J-lock, locking the patio rail into position. The J-lock also holds the side rail panel down and in place when the yellow lanyard is pulled out, turned a quarter turn and the patio railing is folded down into the stowed position. The bungee cords (Figs. 1A and 2A) located at the front and rear of the patio rails now serve the same purpose.

Fig. 1



NOTE: Bungee locations on the outside rear of the patio railing (Fig. 2A), can be located at different positions (Figs. 2B or 2C). Length of bungee and location of the bungee bracket on the doorjamb will vary due to OEM specifications.

Fig. 2

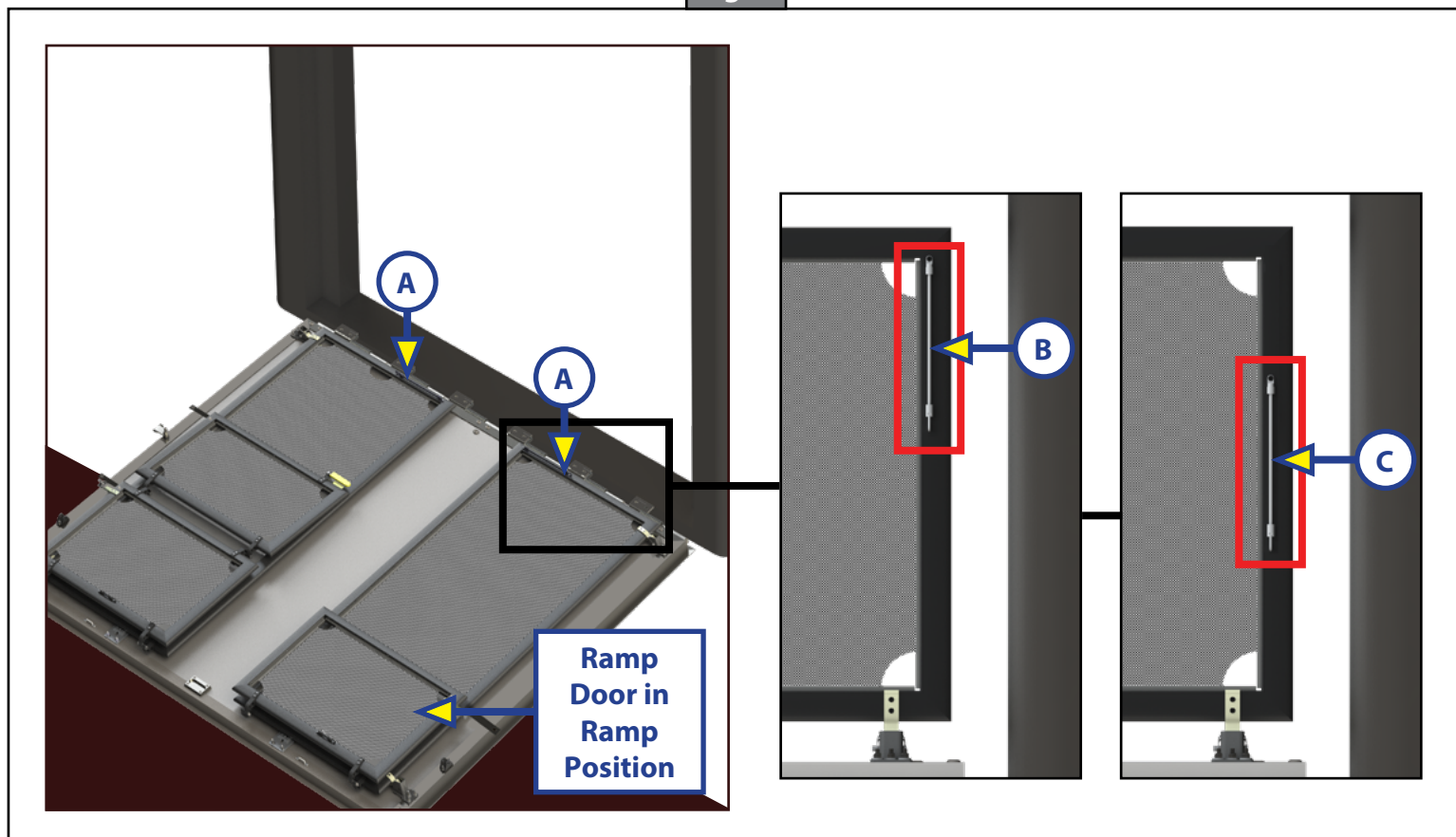


Fig. 3

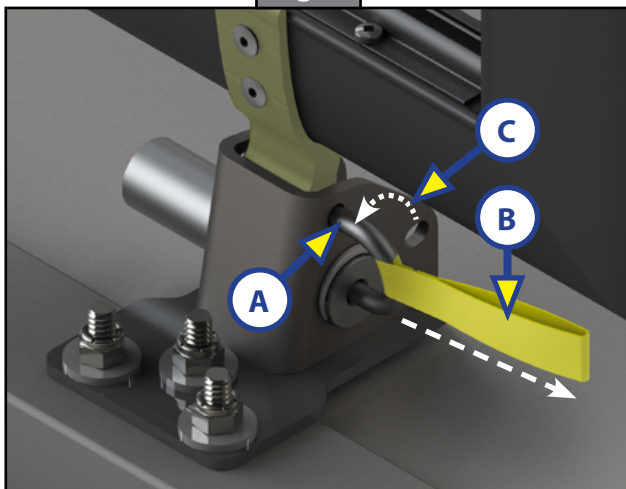
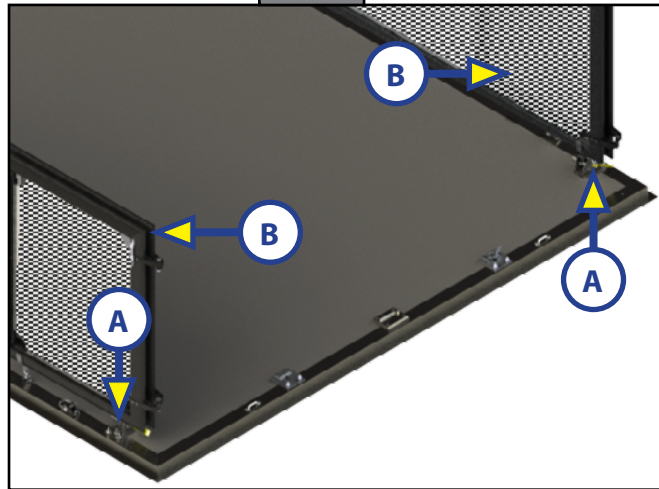


Fig. 4



NOTE: On alternate versions of the Lippert 3000 Series Patio Rail Kit will have either a spring plunger lever (Fig. 5A) or a compression lever (Fig. 6A). Turn the lever towards the coach, insert and secure the patio rail leg (Fig. 6B).

Fig. 5

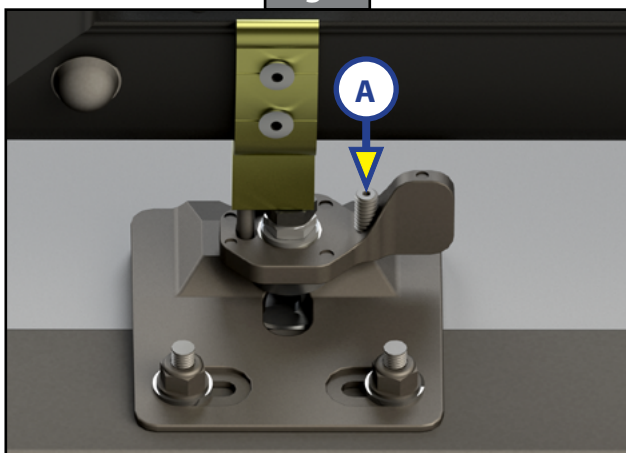
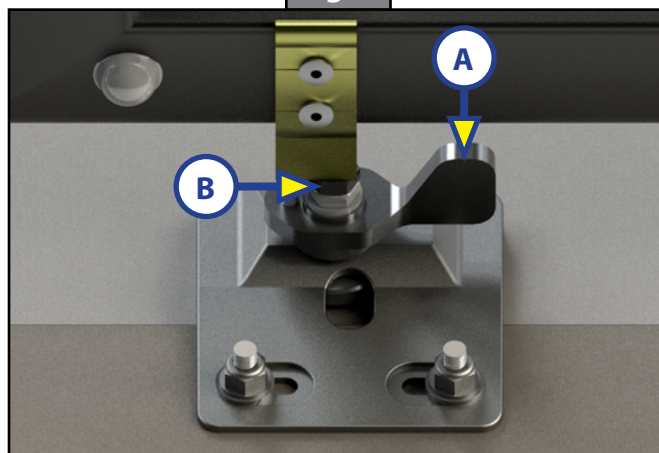


Fig. 6



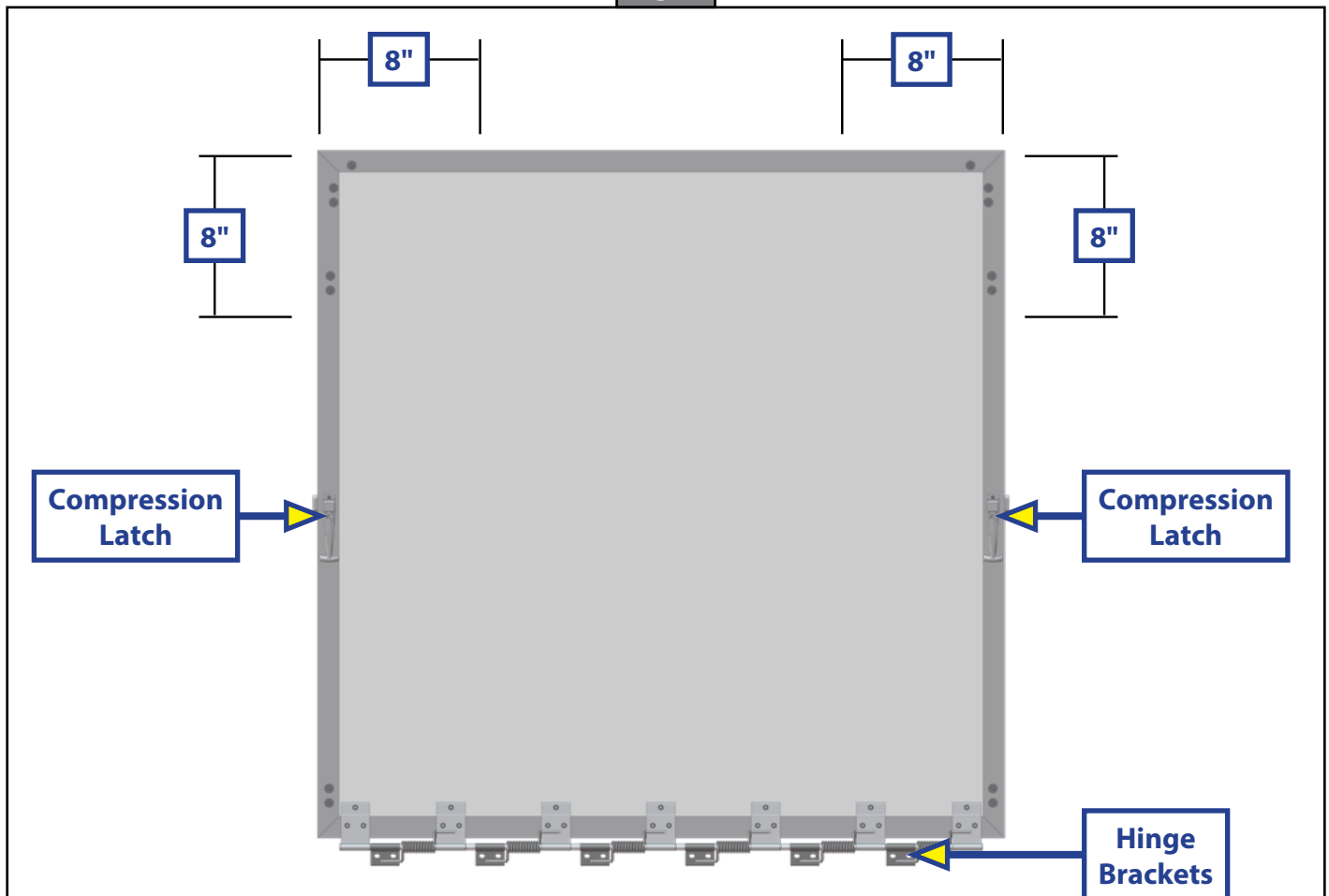
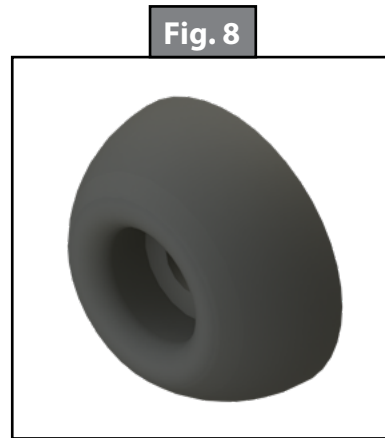
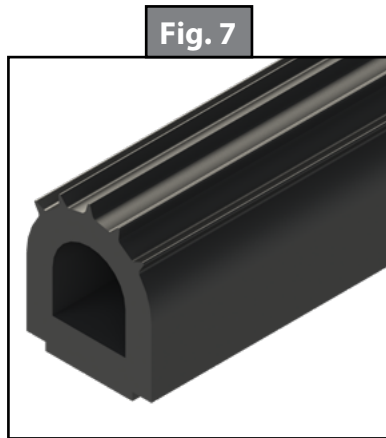
Rear Ramp Door Installation

NOTE: Refer to the diagram in Fig. 9 while reading these instructions.

Seal Installation

1. Verify the size of the door. Door "call" size is the measurement of the inner H-channel. The "call" size is based off of the rough opening size of the inner frame measurements less than $\frac{1}{2}$ " to $\frac{3}{4}$ " in width and height. For example: An 88" x 76" rough opening size will require a "call" size of 87 $\frac{1}{4}$ " x 75 $\frac{3}{8}$ " door.
2. Install bulb sealant tape around back side of the H-channel. LCI recommends bulb ramp seal (Fig. 7). On the corners of the door, cut and shape the seal corner to the product for a better seal rather than creating a rounded edge.
3. Install the bumpers/stops (Fig. 8) on the top of the door. Ensure the bumper/stop/stabilizer jack is not within 8" of the corner (Fig. 9), as this will degrade the integrity of the door.

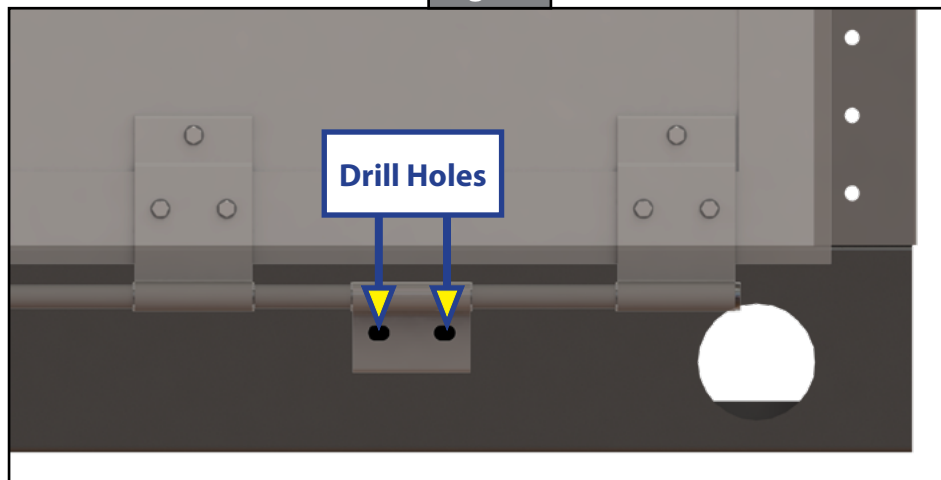
NOTE: Do **NOT** install any mechanism within 8" of the top corners of the door (Fig. 9).



Leaf Hinges

1. Set the door in the wall opening so that the bottom edge sets flat on the frame and center the door in the opening. Should the door require a shim to get the desired height, ensure that the door is shimmed on both sides and the center.
2. Set the compression latch or latching mechanism for the door to hold it in place while the hinge is installed (Fig. 9).
3. Measure the hinge location on the door to the frame and ensure that it is even.
4. Using a $\frac{3}{16}$ " drill bit, drill a pilot hole for the bolts in the furthest hole of the left lower hinge bracket and the furthest hole of the right lower hinge bracket (Fig. 10).
5. Using a $\frac{3}{8}$ " drill bit, drill out the pilot holes (Fig. 10).
6. Installing from the outside of the frame inward, place a $\frac{3}{8}$ " thread diameter, case hardened trilobular bolt (Fig. 11A) through each of the holes drilled in Step 5 (Fig. 10).

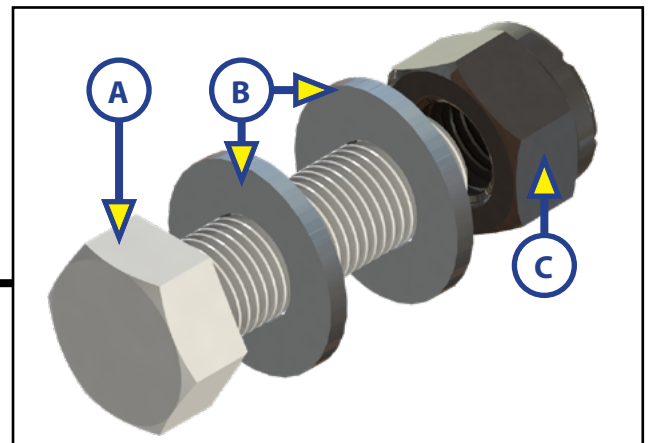
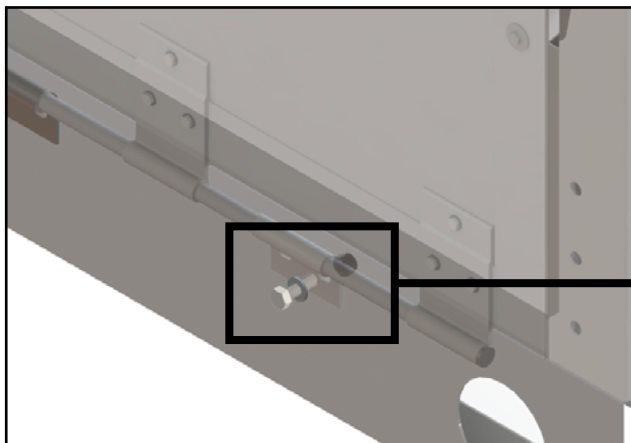
Fig. 10



7. Install one flat washer (Fig. 11B) between the bolt head and the hinge bracket, and one flat washer (Fig. 11B) between the frame and the locking nut (Fig. 11C).
8. Stabilize the locking nut (Fig. 11C) with a $\frac{9}{16}$ " box-end wrench and use an impact wrench with a $\frac{3}{4}$ " deep well socket to tighten the bolts (Fig. 11A).
9. Working from the outside of the frame inward, repeat Steps 7-10 for all midsection hinge brackets.

NOTE: LCI recommends the use of a pan head, $\frac{3}{8}$ " thread diameter, case hardened trilobular bolt with a flat washer and locking nut for securing the hinge brackets of the ramp door. If self-tapping screws are used, LCI recommends at least the far left and far right lower hinge brackets be bolted.

Fig. 11



10. Release the compression latches or latching mechanisms to open the ramp door and ensure functionality of the hinge. See the Compression Latch Mechanism section.

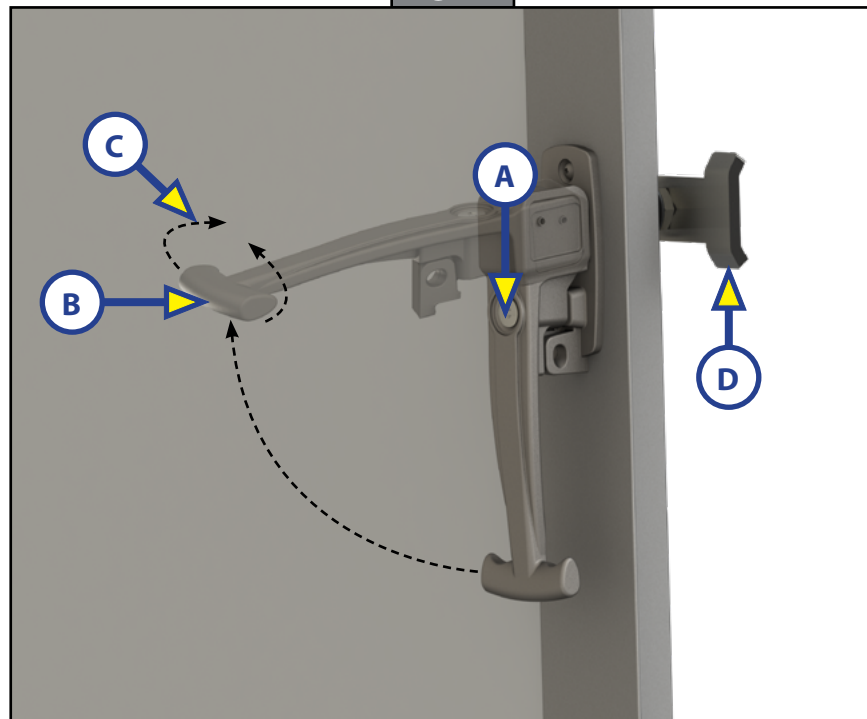
NOTE: If a bar lock hasp is chosen, use two T-nuts in order to secure each hasp. This will maintain the structural integrity of the lock. Failure to comply may result in damage to the core when weight is applied.

Compression Latch Mechanism

1. To release tension on the compression latch mechanism or to open the ramp door, first verify the latch is unlocked (Fig. 12A).
2. Raise the handle of the compression latch (Fig. 12B) so that it is parallel with the ground.
3. Twist the latch handle 90° in either direction (Fig. 12C). This will release the locking tab (Fig. 12D) from the door jamb.
4. Repeat steps 1- 3 for the opposite side, allowing the ramp door to be carefully lowered into the ramp position.

NOTE: Twisting the latch handle will also adjust the amount of tension on the compression latch mechanism.

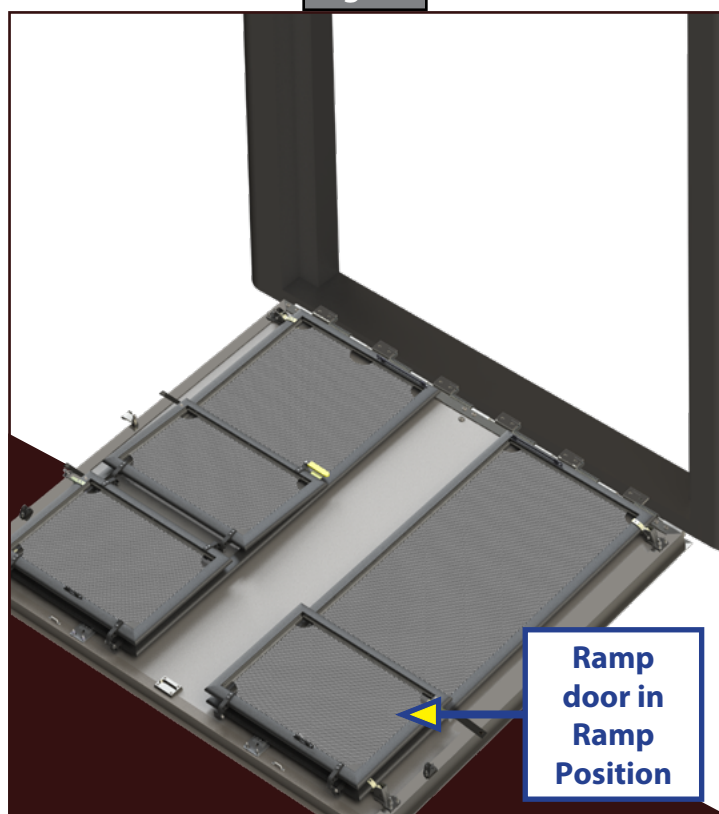
Fig. 12



Door Jamb Bungee Stabilization Brackets

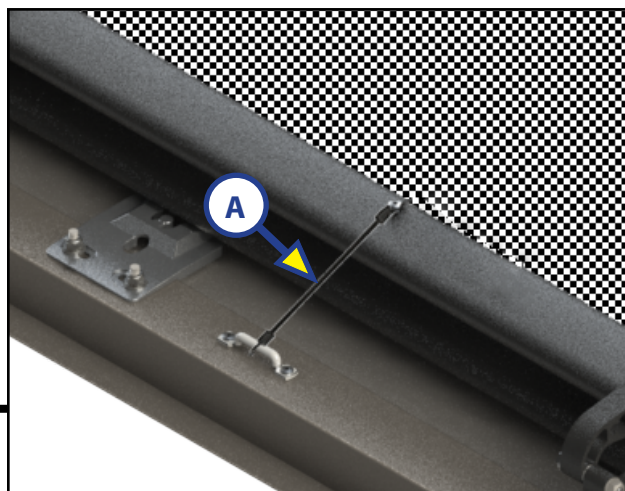
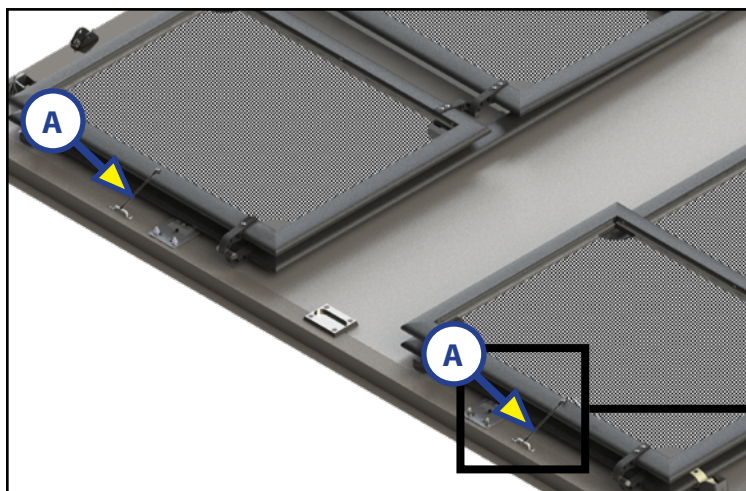
The ramp door will need to be in the ramp position (Fig. 13) and the side patio rail kit panels will need to be raised to install the footman loops to the door jamb.

Fig. 13

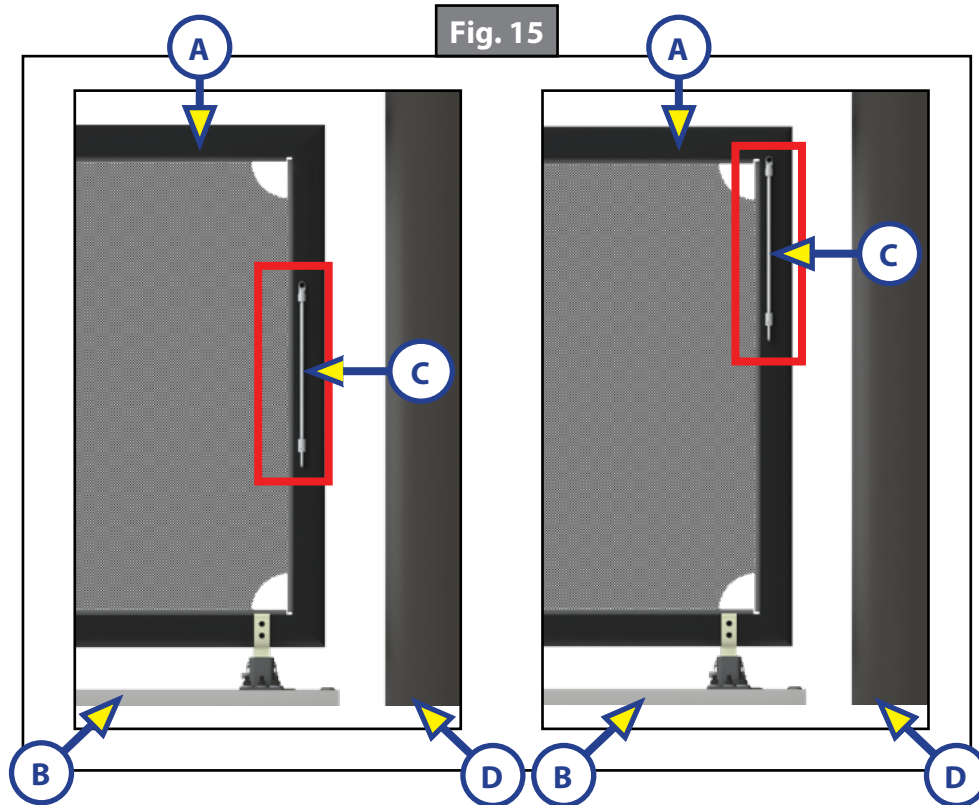


1. Release the two front bungees (Fig.14A) from the brackets holding the patio railings to the ramp door.

Fig. 14

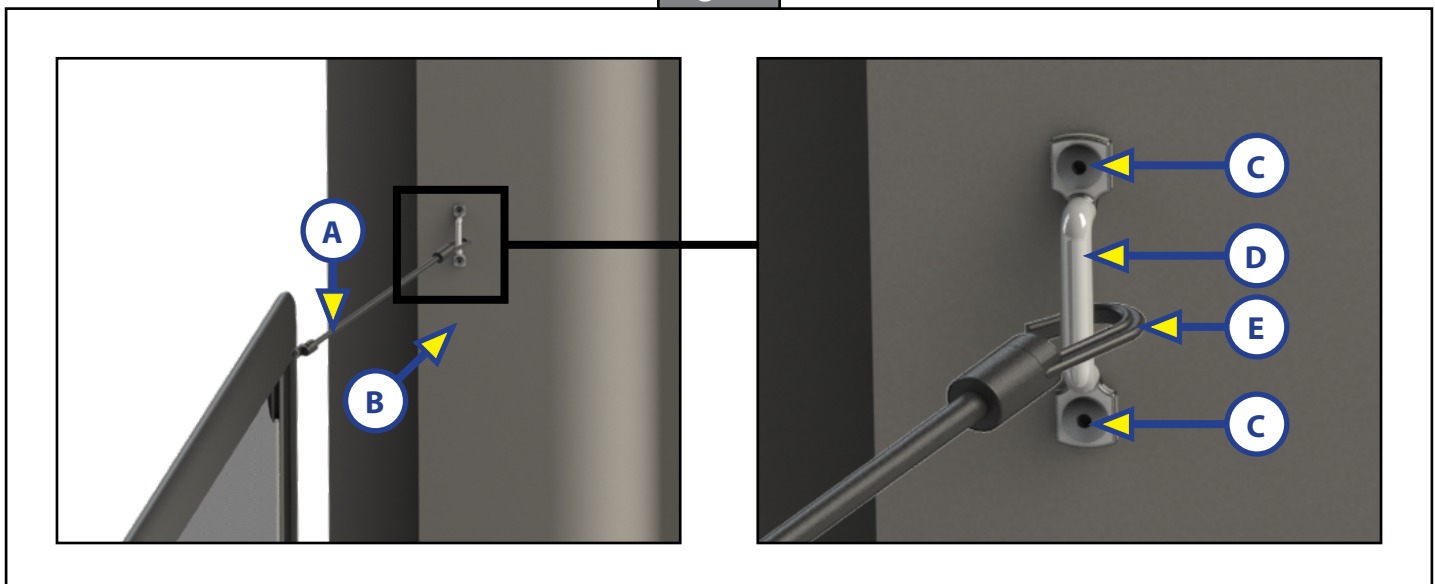


2. Raise a side patio panel assembly up into a 90 degree position (Fig. 15A) from the ramp door (Fig. 15B).
3. Locate the bungee on either side of the patio railing (Fig. 15C), which can be located higher or lower on the outside rear of the patio railing closest to the door jamb (Fig. 15D).



4. Place the hook of the bungee (Fig. 16E) onto the footman loop (Fig. 16D). Place the bungee and footman loop onto the front of the door jamb (Fig. 16B) where a light tension can be felt in the bungee.
5. Mark the location of the bracket holes with a non permanent method of marking.
6. Install the footman loop onto the front of the door jamb with two OEM supplied self-drilling screws (Fig. 16C).
7. Repeat steps 2-6 for the footman loop on the opposite side of the door jamb at the approximate same location and height.

Fig. 16



Door Cable Installation

1. For both door cables (Fig. 17B), attach a 5/16" quick link carabiner (Fig. 17A) onto the closest end of the door cable opposite of the cable adjusters (Fig. 18A).
2. Attach the 5/16" quick link carabiner (Fig. 17A) into the pre-mounted anchor point (Fig. 17C), located on the top front corner of the doorjamb. Repeat for the opposite side of the door jamb.
3. With the aid of another person, raise the ramp door up into a 90 degree position, parallel with the ground.
4. Attach the opposite ends of the door cables (Fig. 18B) with retainer pins (Fig. 18C) to the cable door brackets (Fig. 18D).

NOTE: Both of the cable adjusters (Fig. 18A) on the door cables should be at the bottom, towards the ramp door.

5. Gently allow the Lippert 3000 series rear door patio to fully extend to its open position. Installation is now complete and the ramp door should be in patio mode with the patio railing fully extended.

Fig. 17

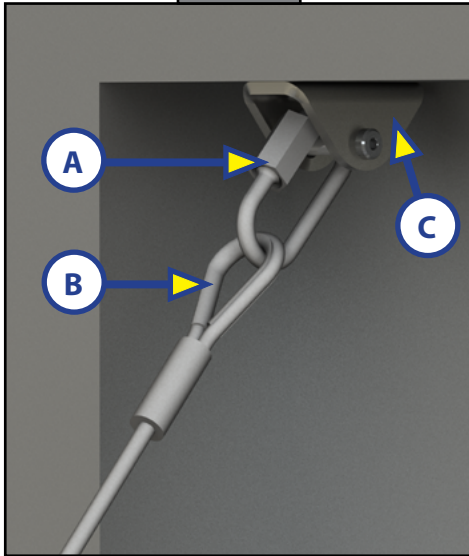
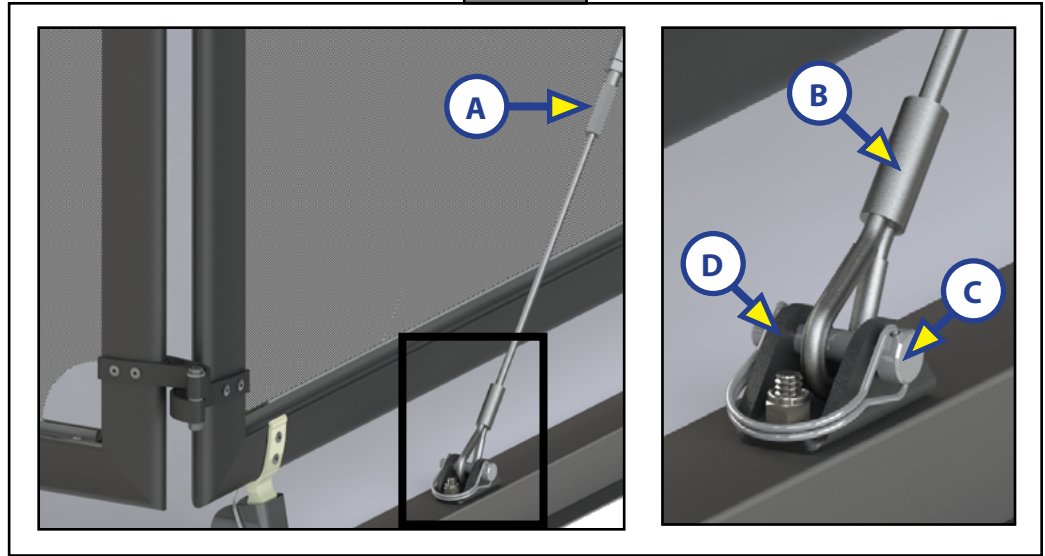


Fig. 18



Operation

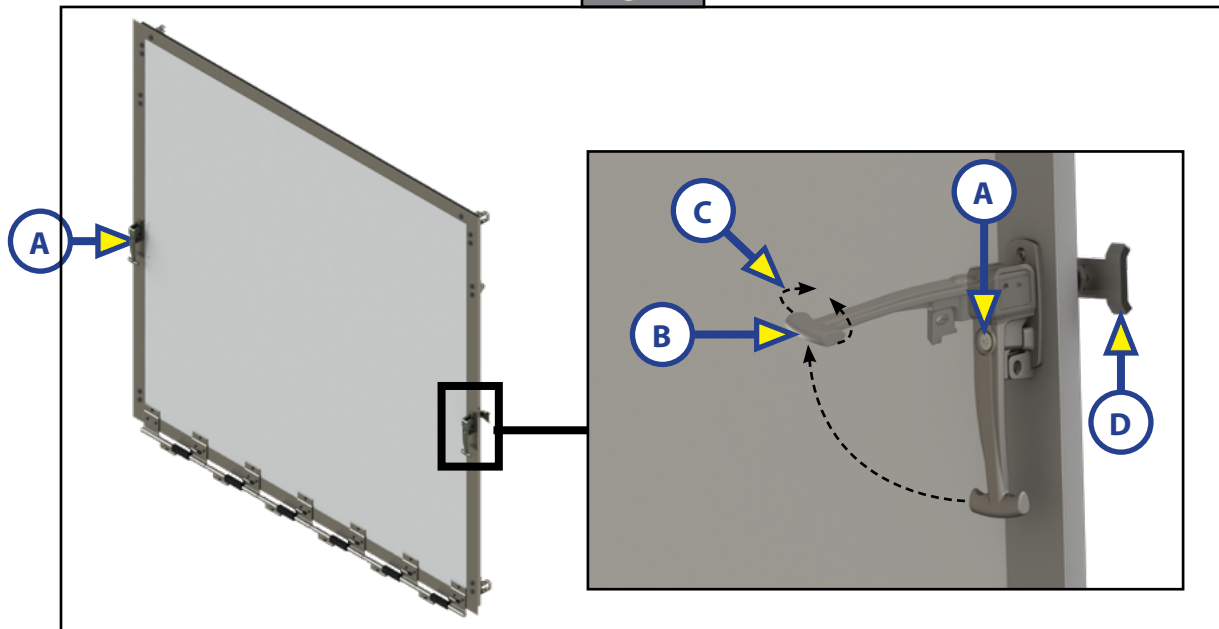
Extended Patio Position

If the Lippert 3000 series ramp door is in the stowed position and the extended patio position is desired, use the following procedure.

NOTE: Ensure door cables are attached before starting the following steps.

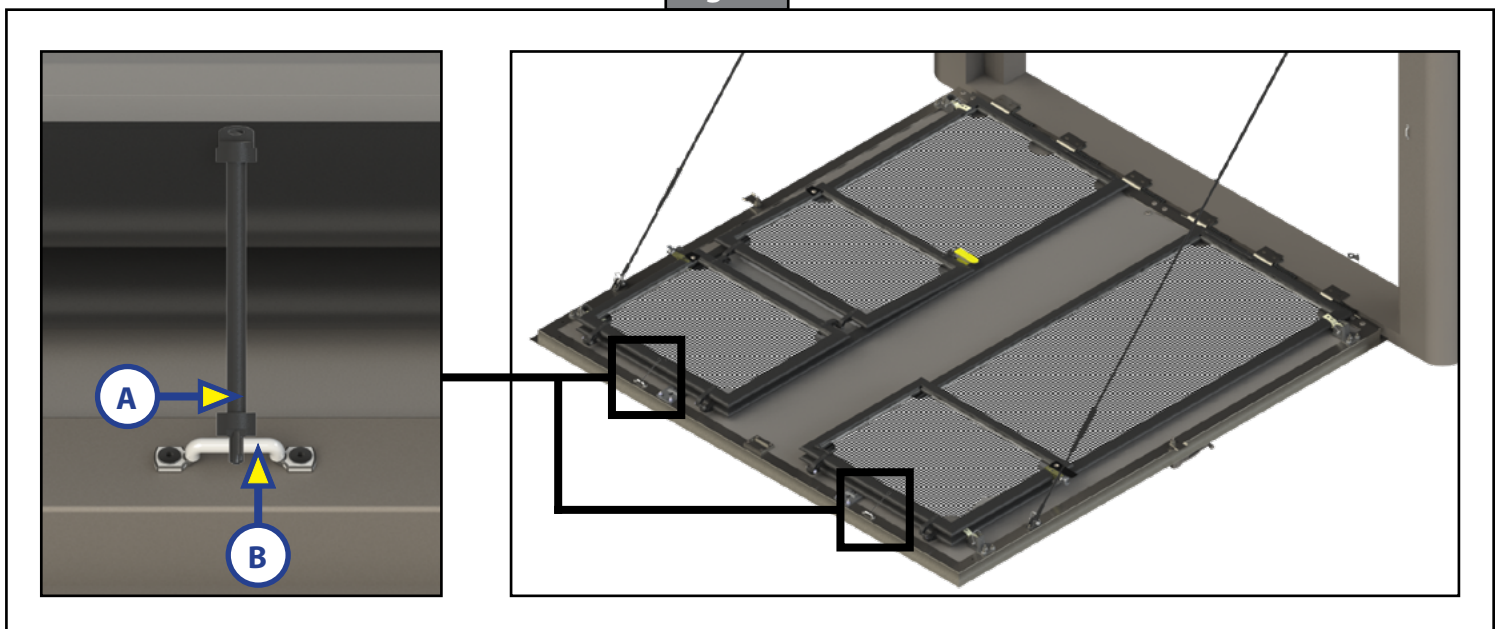
1. To open the ramp door, first verify the compression latch is unlocked (Fig. 19A).
2. Raise the handle of the compression latch (Fig. 19B) so that it is parallel with the ground.
3. Twist the compression latch handle 90° in either direction (Fig. 19C). This will release the locking tab (Fig. 19D) from the door jamb, allowing the ramp door to be lowered.
4. Slowly lower the patio ramp door until it rests at the 90 degree position, parallel to the ground.

Fig. 19



5. Unhook the bungee (Fig. 20A) from the front driver's side and curbside brackets (Fig. 20B), holding the patio railings to the ramp door.

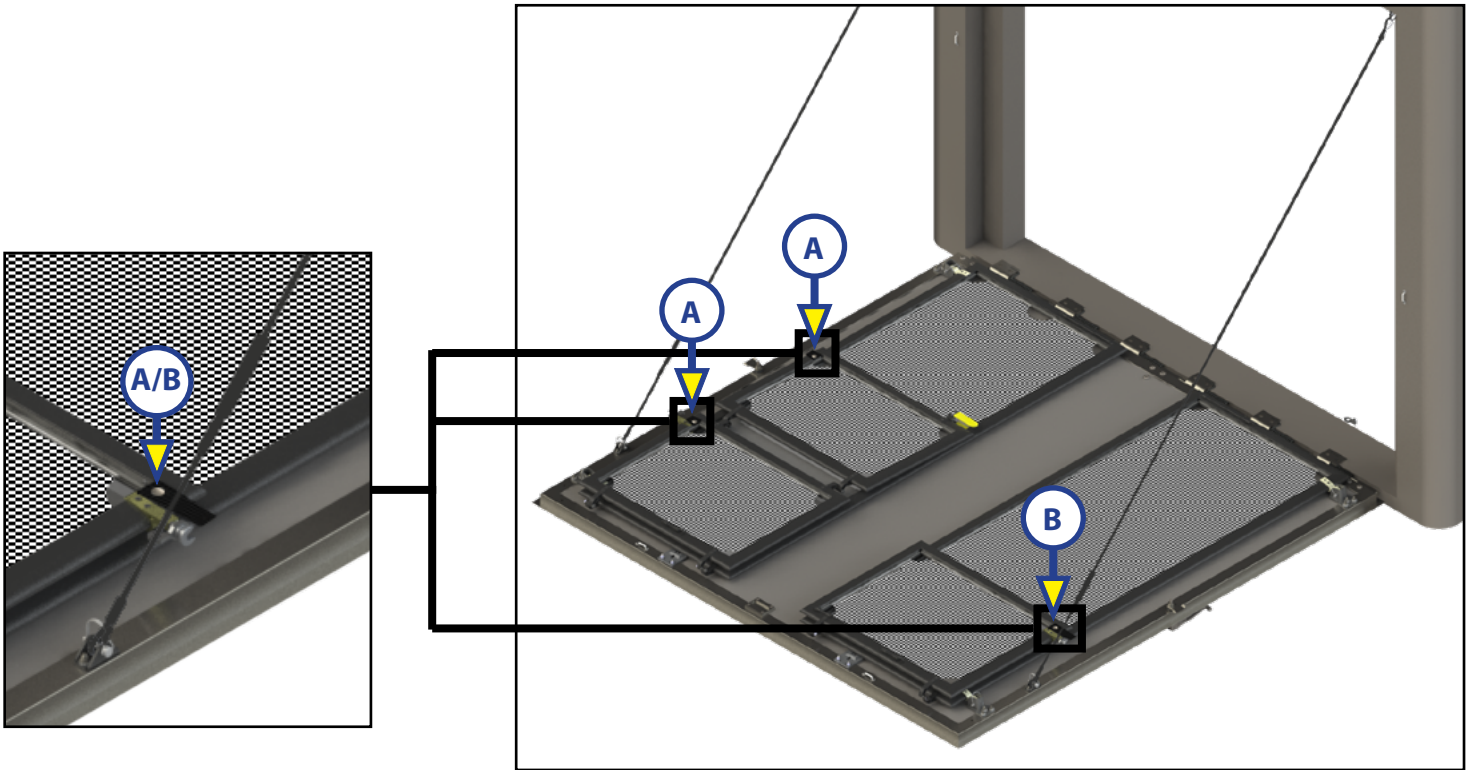
Fig. 20



6. Release the two snaps holding the front panel and gate to the driver's side railing (Fig. 21A) and one snap on the curbside railing (Fig. 21B).

NOTE: An alternate version of the patio rail kit has a, "no-gate" option with only one snap on each side holding the two front panels to the side panels.

Fig. 21



7. If applicable, engage the J-Bolt (Fig. 3) on the curbside of the patio railing.
8. For the curbside patio railing, fold the front panel (Fig. 22A) over towards the top of the ramp door.
9. Lift the curbside patio railing up into a 90 degree position (Fig. 23A).
10. Swing the front panel in towards the center of the ramp door (Fig. 24A).

Fig. 22

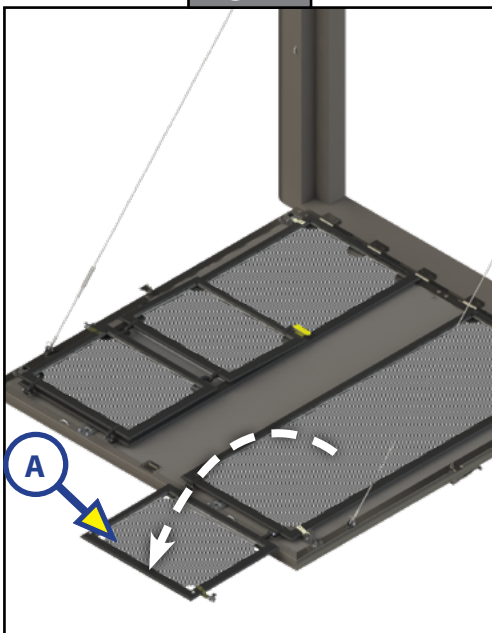


Fig. 23

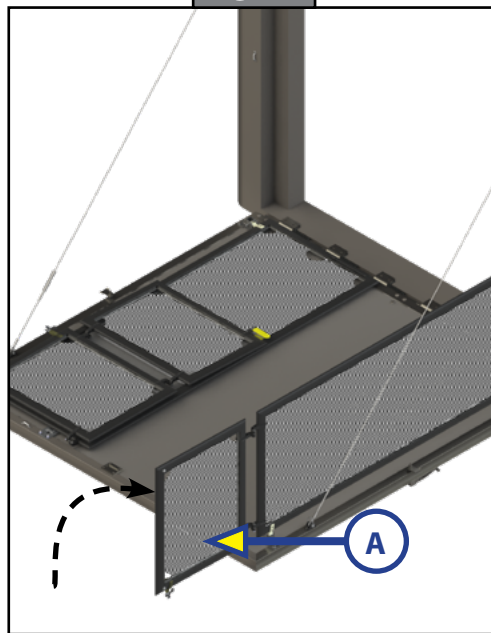
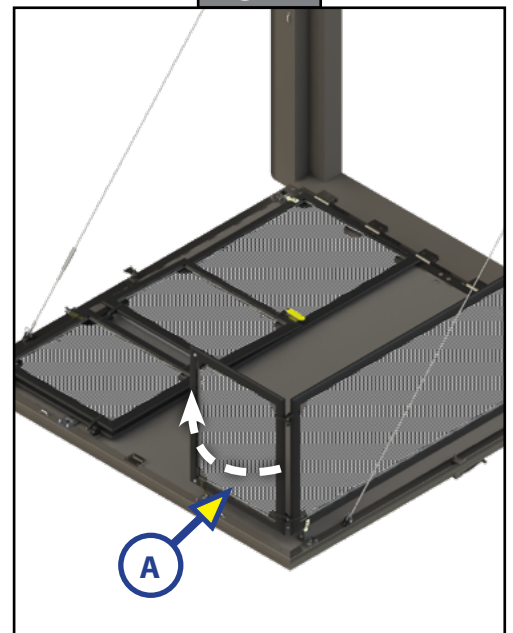
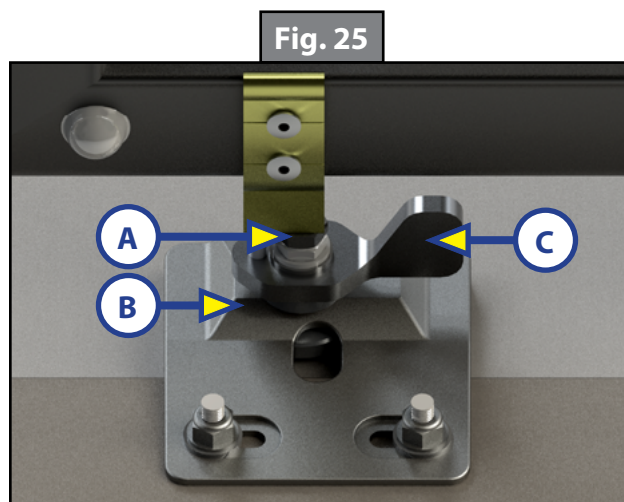


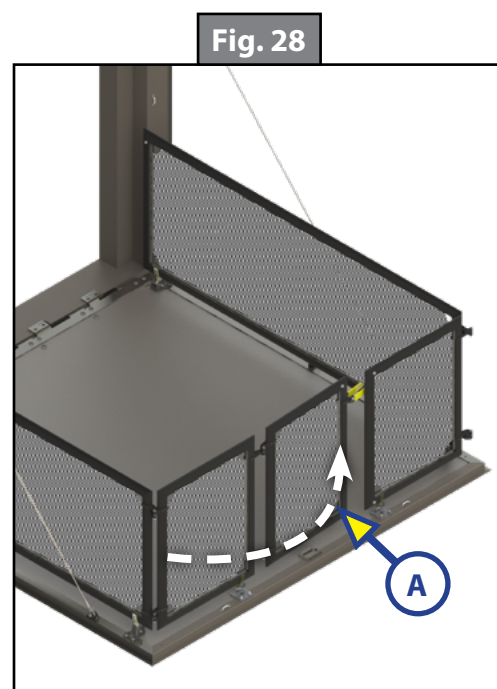
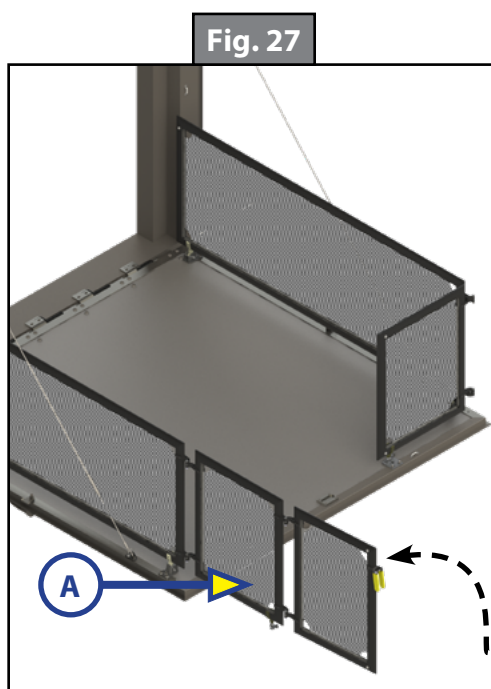
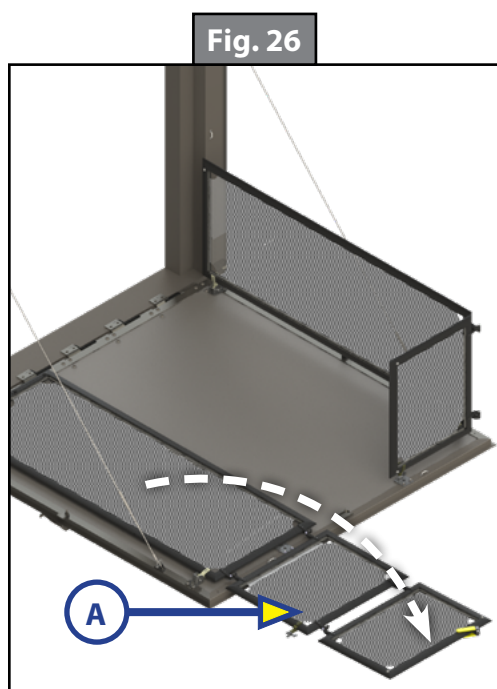
Fig. 24



11. Located towards the top of the ramp door, secure the curbside front panel bottom leg (Fig. 25A) into the keeper (Fig. 25B) by pushing the compression latch lever (Fig. 25C) towards the coach, slide the leg into place and release the lever.



12. If applicable, engage the J-Bolt (Fig. 3) on the driver's side of the patio railing.
13. For the driver's side patio railing, fold the front panel and gate (Fig. 26A) over towards the top of the ramp door.
14. Lift the patio railing up into a 90 degree position (Fig. 27A).
15. Swing the driver's side front panel and gate in towards the center of the ramp door (Fig. 28A).
16. Located towards the top of the ramp door, secure the driver's side front panel bottom leg (Fig. 25A) into the keeper (Fig. 25B) by pushing the compression latch lever (Fig. 25C) towards the coach, slide the leg into place and release the lever.



17. Secure the middle front gate (Fig. 29A) by rotating the U-shaped latch (Fig. 29B) over the curbside front patio panel (Fig. 30A).

Fig. 29

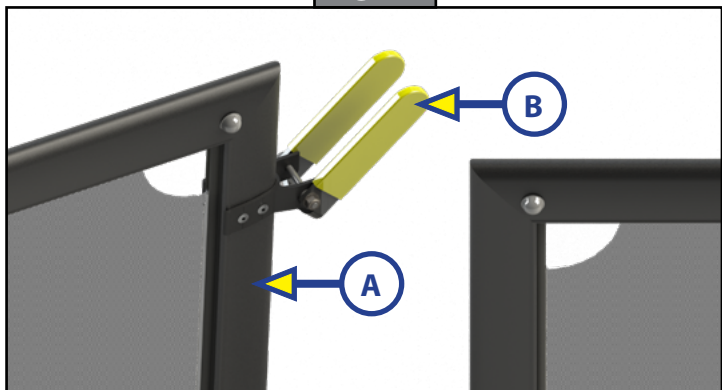
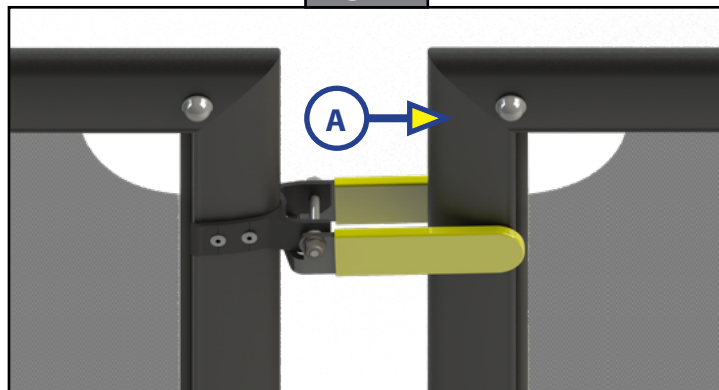


Fig. 30



18. The Lippert 3000 Series Ramp Door Patio Rail Kit is now open and fully deployed, with a gate (Fig. 31) or without a gate (Fig. 32).

Fig. 31

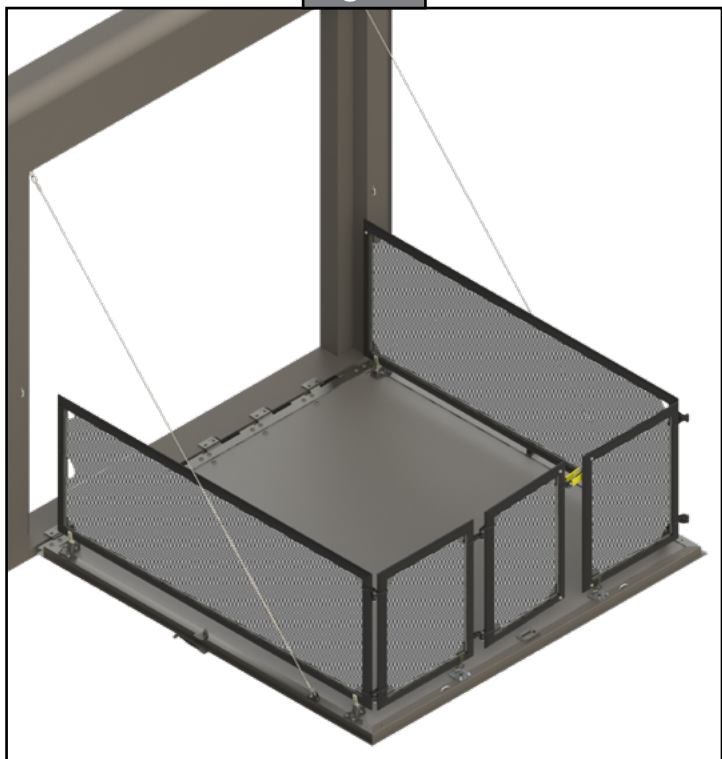
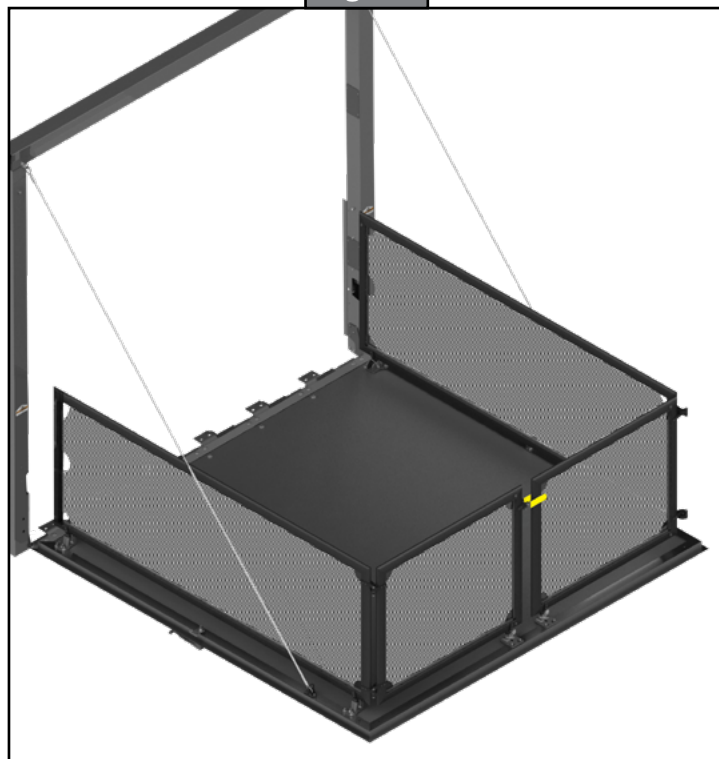


Fig. 32



Extended Patio to Ramp Position

If the Lippert 3000 Series Ramp Door Patio Rail Kit is in the extended patio position, steps 1-17 in the Extended Patio Position section have been completed and the patio ramp door is desired, use the following procedure.

1. Located on the middle front gate panel or the driver's side front panel for the no-gate option, unlatch the U-shaped latch (Fig. 33A) by flipping the latch over towards the driver's side front patio railing (Fig. 34A).

Fig. 33

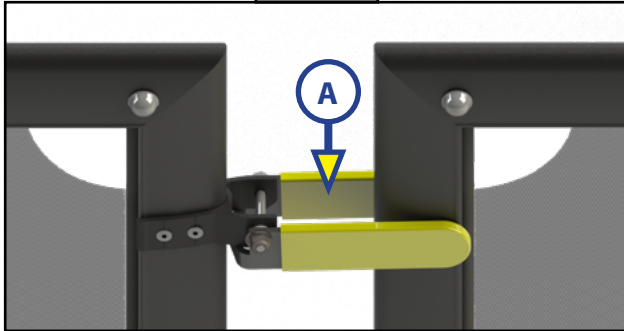
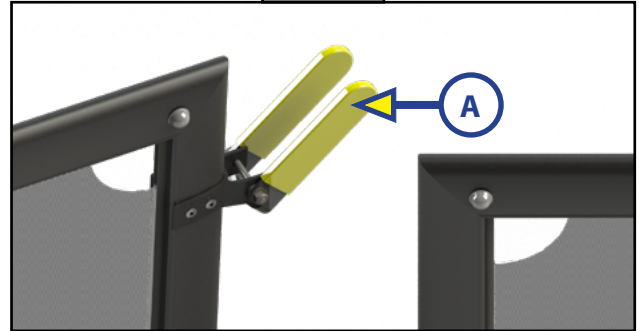
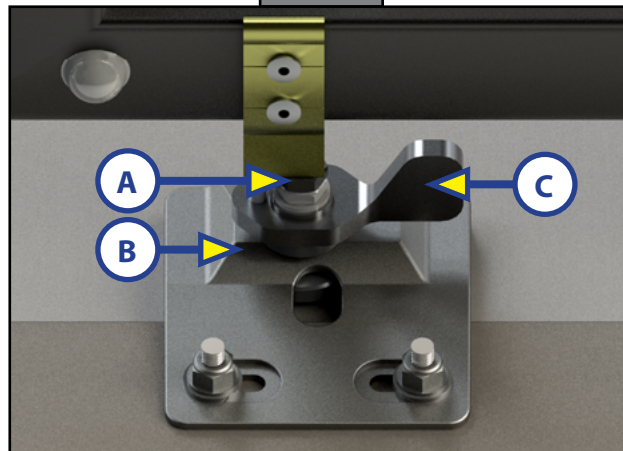


Fig. 34



2. Located towards the top of the ramp door, release the driver's side front panel bottom leg (Fig. 35A) from the keeper (Fig. 35B) by pushing the compression latch lever (Fig. 35C) towards the coach and slide the leg out from the keeper.

Fig. 35



3. For the driver's side patio railing, swing the front panel and gate (Fig. 36A) out in-line with the side patio railing (Fig. 37A).
4. If applicable, disengage the J-lock (Fig. 3) on the driver's side of the patio railing.

Fig. 36

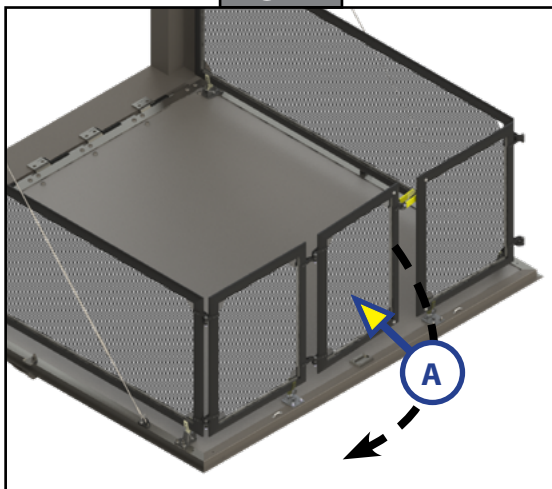
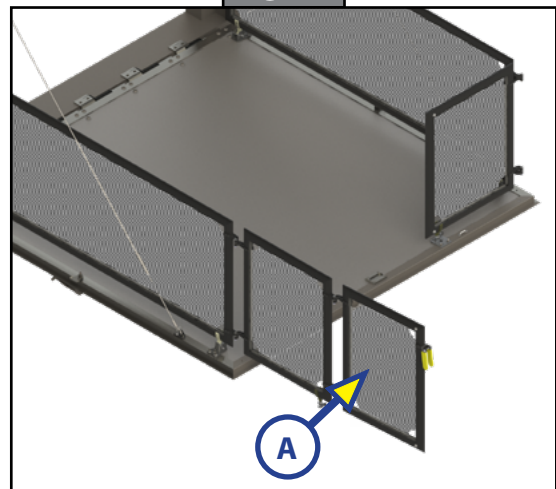
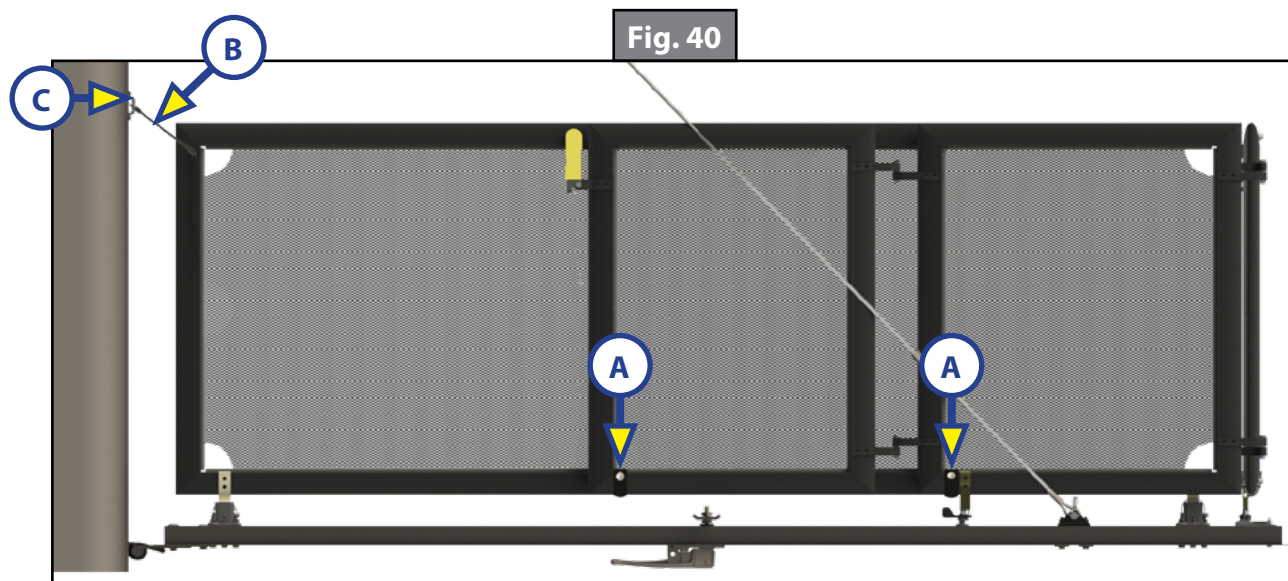
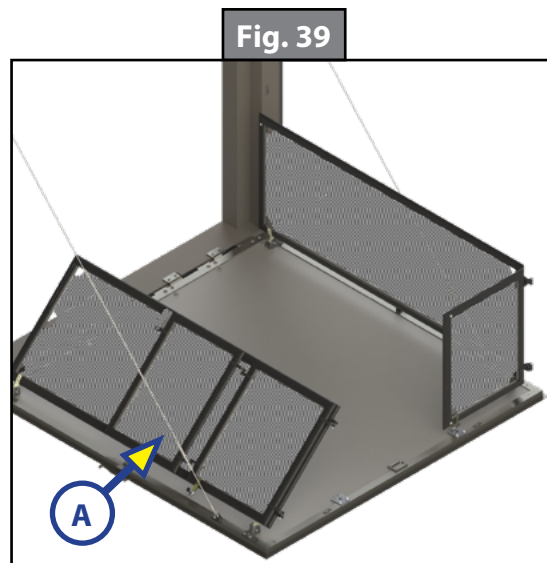
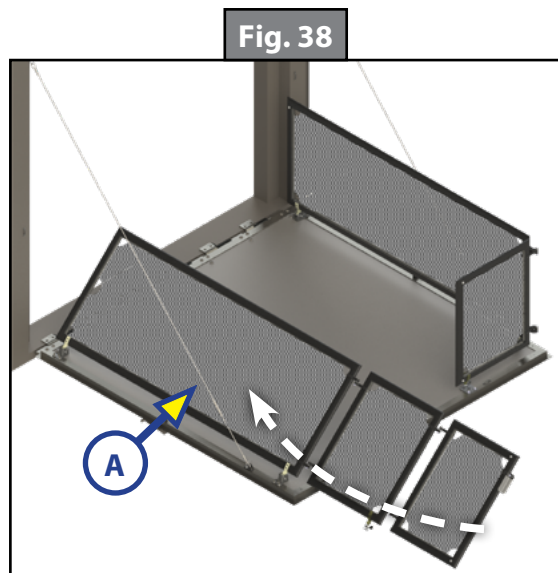


Fig. 37

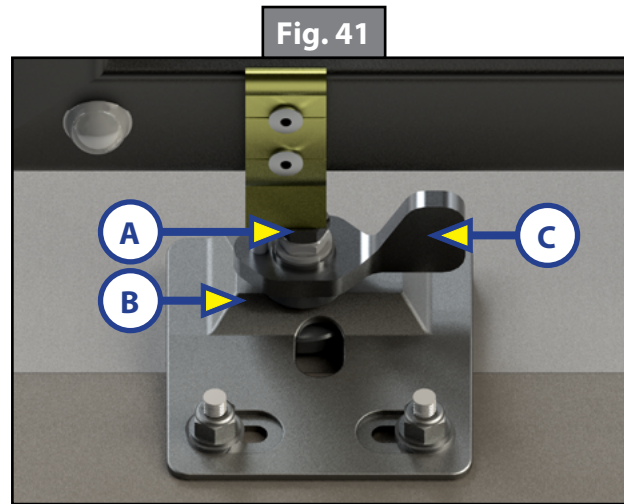


5. Lower the driver's side patio railing assembly (Fig. 38A) approximately 45 degrees down towards the center of the ramp door.
6. Fold the front panel and gate (Fig. 39A) over the top of the side patio railing, then raise the patio railing to the 90 degree position (Fig. 40).

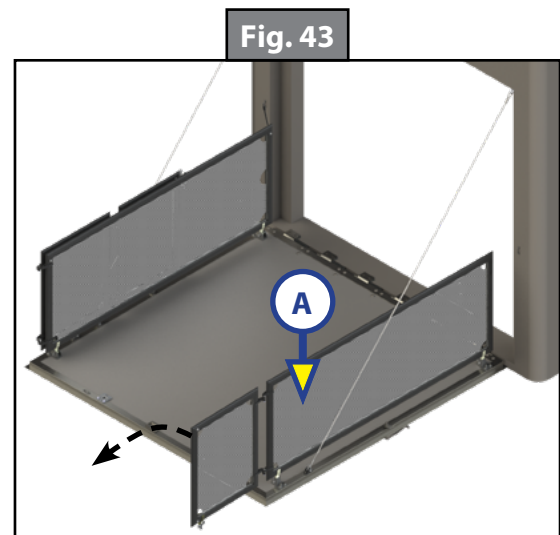
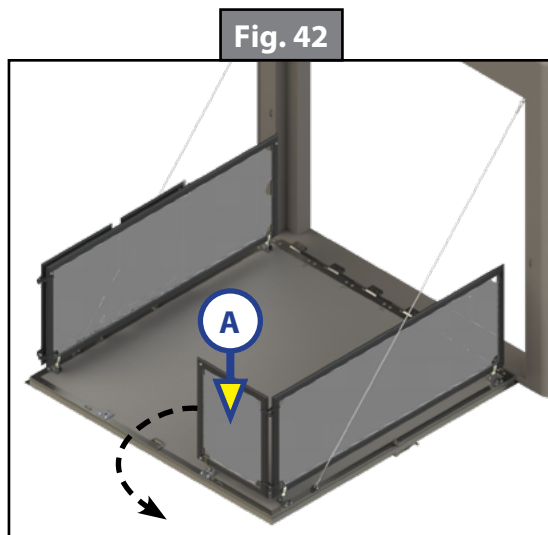


7. Attach the two snaps holding the front panel and gate to the driver's side railing (Fig. 40A) or for the no-gate option, one snap holding the front panel to the side panel.
8. Attach the rear driver's side bungee cable (Fig. 40B) to the footman loop (Fig. 40C) located on the door jamb.

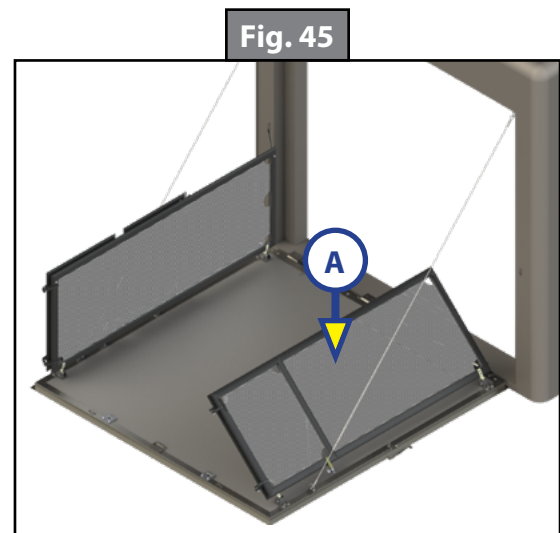
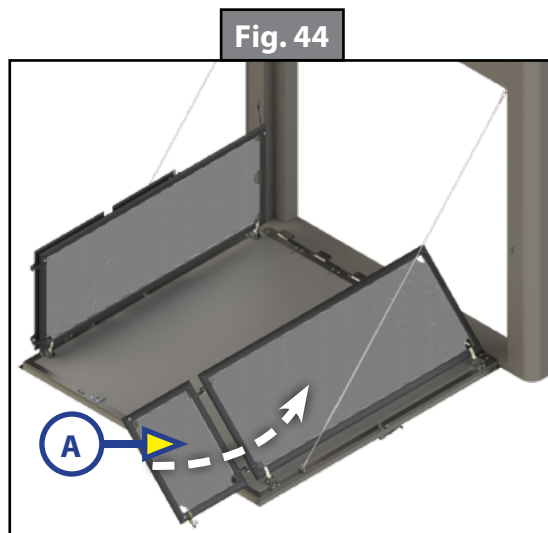
9. Located towards the top of the ramp door, release the curbside front panel bottom leg (Fig. 41A) from the keeper (Fig. 41B) by pushing the compression latch lever (Fig. 41C) towards the coach and slide the leg out from the keeper.



10. For the curbside patio railing, swing the front panel (Fig. 42A) out in-line with the side patio railing (Fig. 43A).
11. If applicable, disengage the J-lock (Fig. 3) on the curbside of the patio railing.

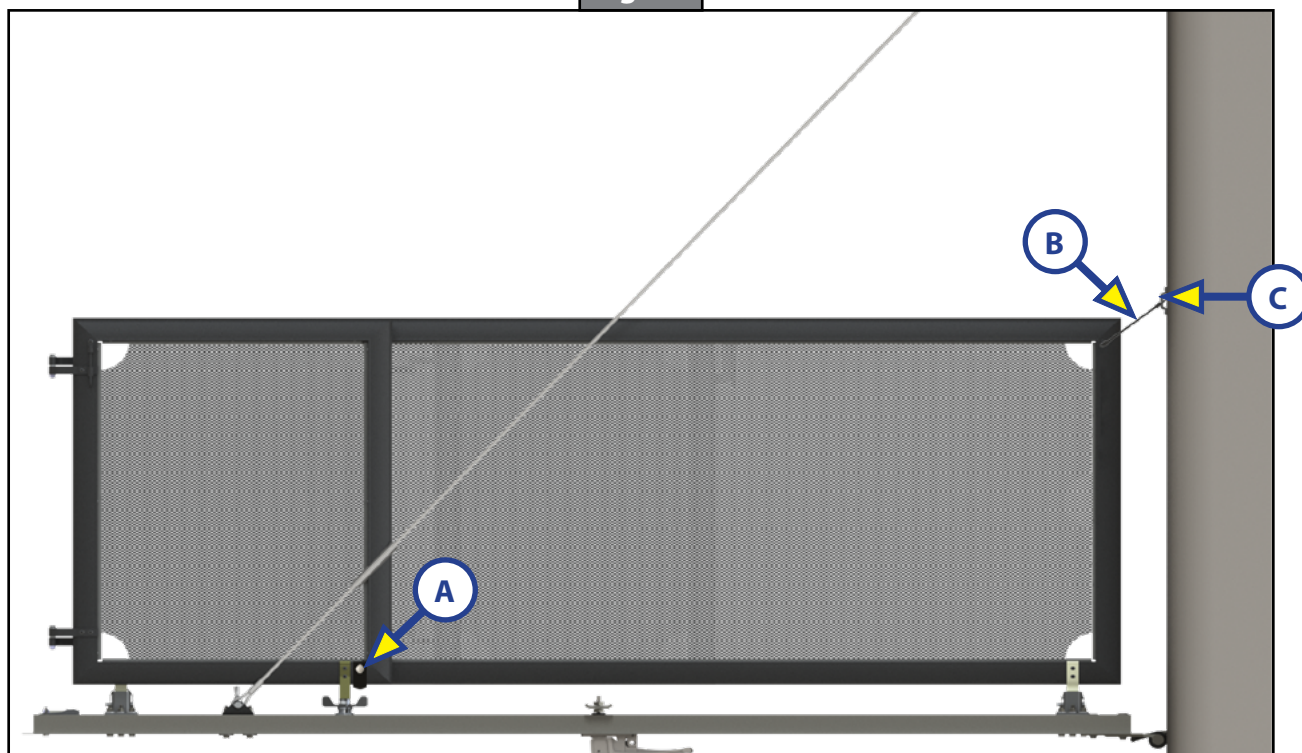


12. Lower the curbside patio railing assembly (Fig. 44A) approximately 45 degrees down towards the center of the ramp door.
13. Fold the front panel (Fig. 45A) over the top of the side patio railing, then raise the patio railing to the 90 degree position (Fig. 46).



14. Attach the snap (Fig. 46A) that holds the front panel to the curbside railing.
15. Attach the curbside rear bungee cable (Fig. 46B) to the footman loop (Fig. 46C) located on the door jamb.

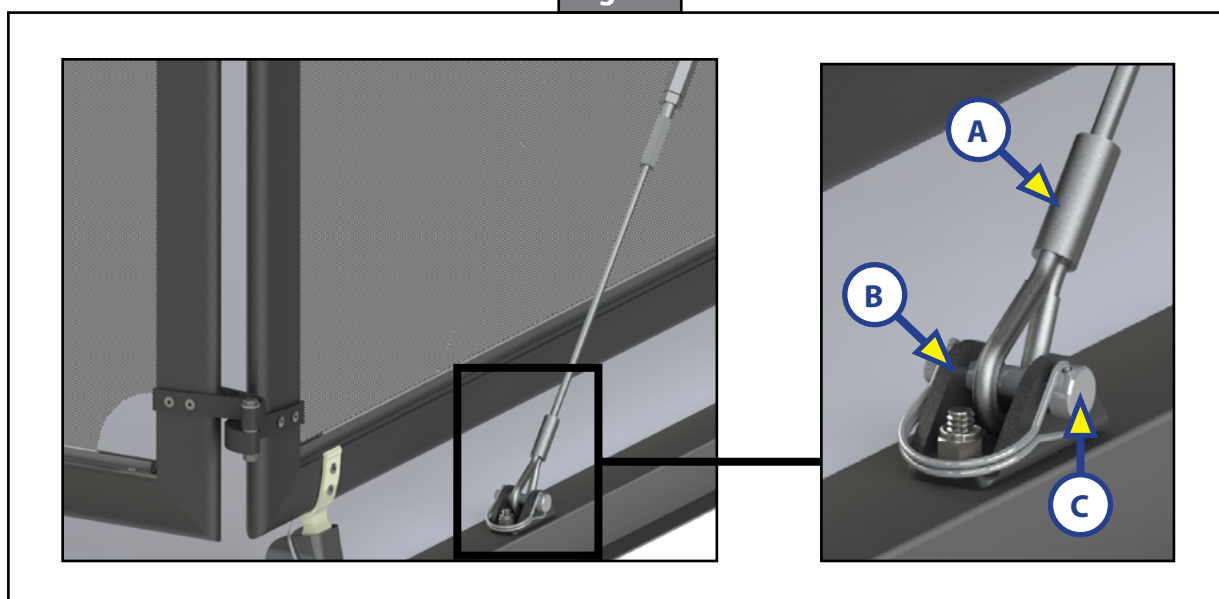
Fig. 46



16. Utilize a person to support the ramp door while another person releases the door cables (Fig. 47A) from the retainer pins (Fig. 47C) from the door cable brackets (Fig. 47B), on both sides of the ramp door.

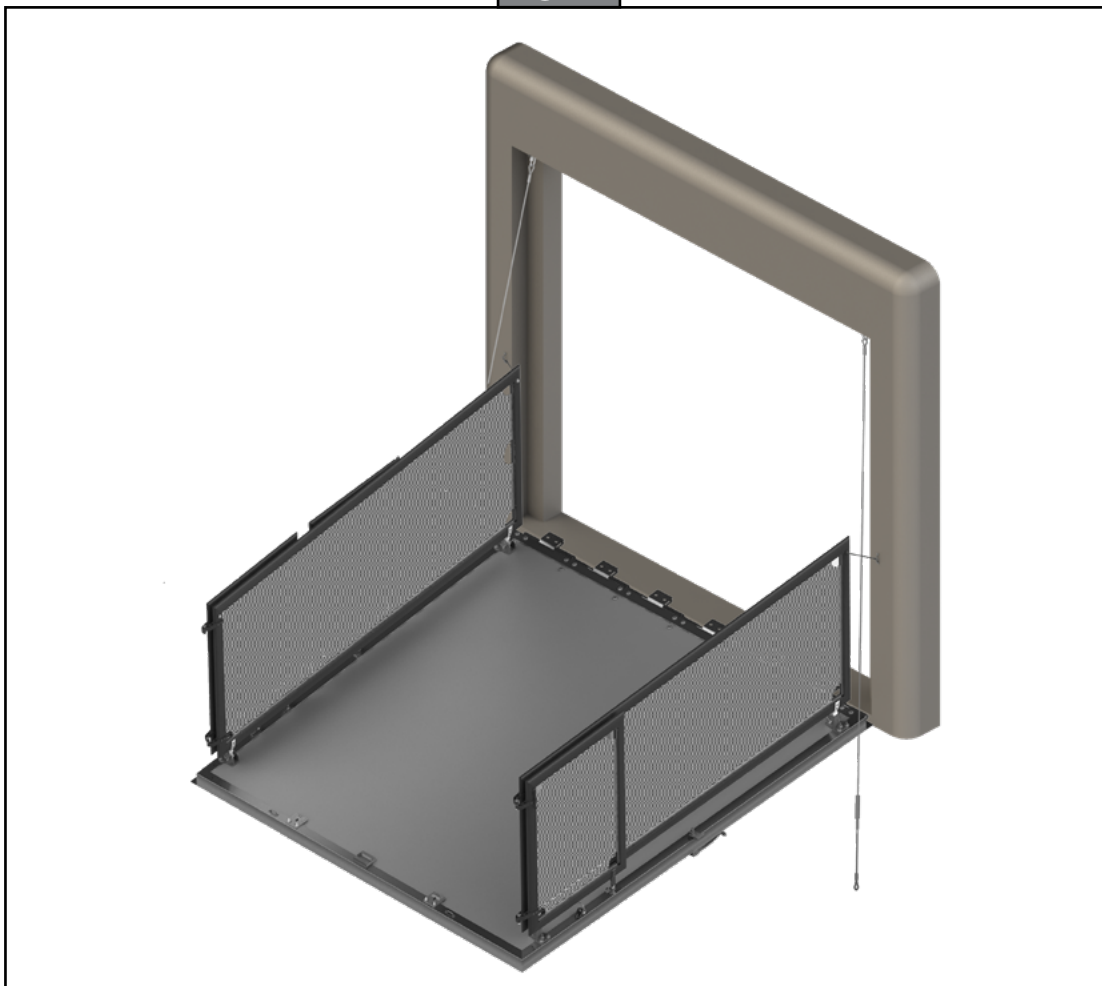
NOTE: Leave the retainer pin (Fig. 47C) on the door cable or in the door cable bracket on the door so the retainer pin does not get lost.

Fig. 47



17. Gently lower the ramp door to the ground. The Lippert 3000 Series Patio Rail Kit and ramp door are now open, fully extended in the ramp position (Fig. 48).

Fig. 48

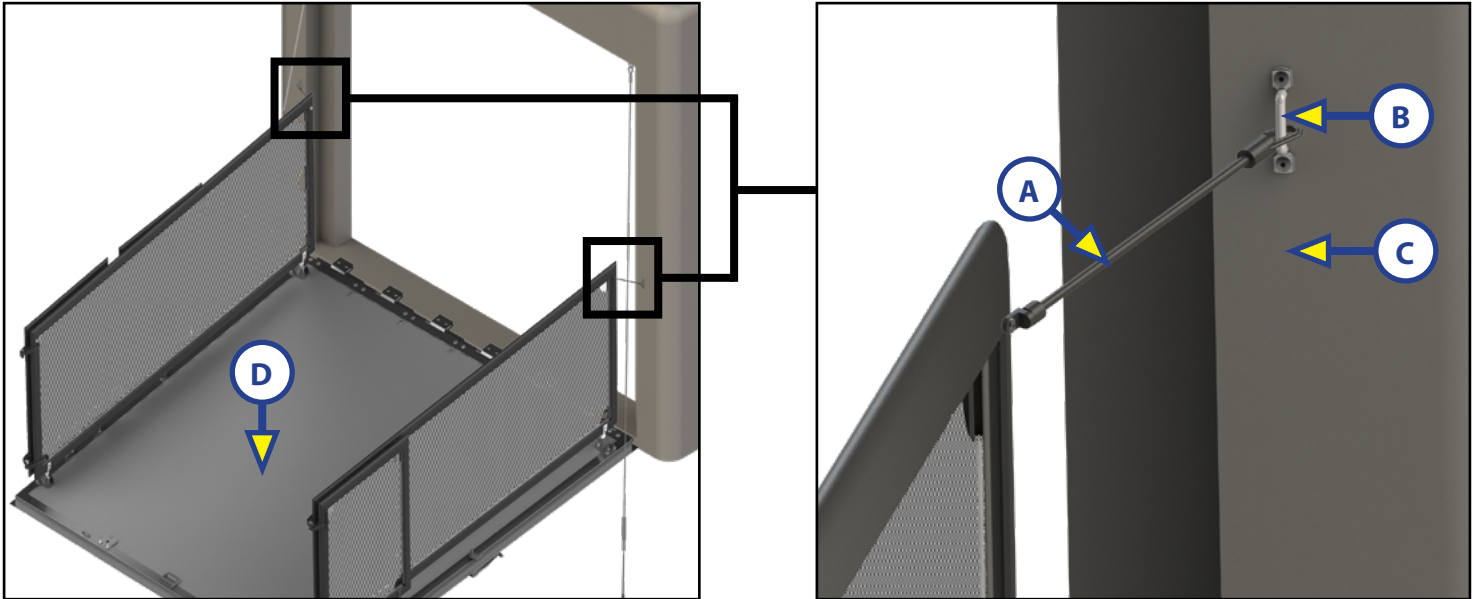


Stowed Ramp Position

If the Lippert 3000 Series ramp door is in the ramp position and the ramp door needs to be stowed, use the following procedure.

1. Release the rear bungee (Fig. 49A) attached to the bracket (Fig. 49B) on the door jamb (Fig. 49C) for both sides of the patio rail kit and gently lower the patio railings to the surface of the door (Fig. 49D).

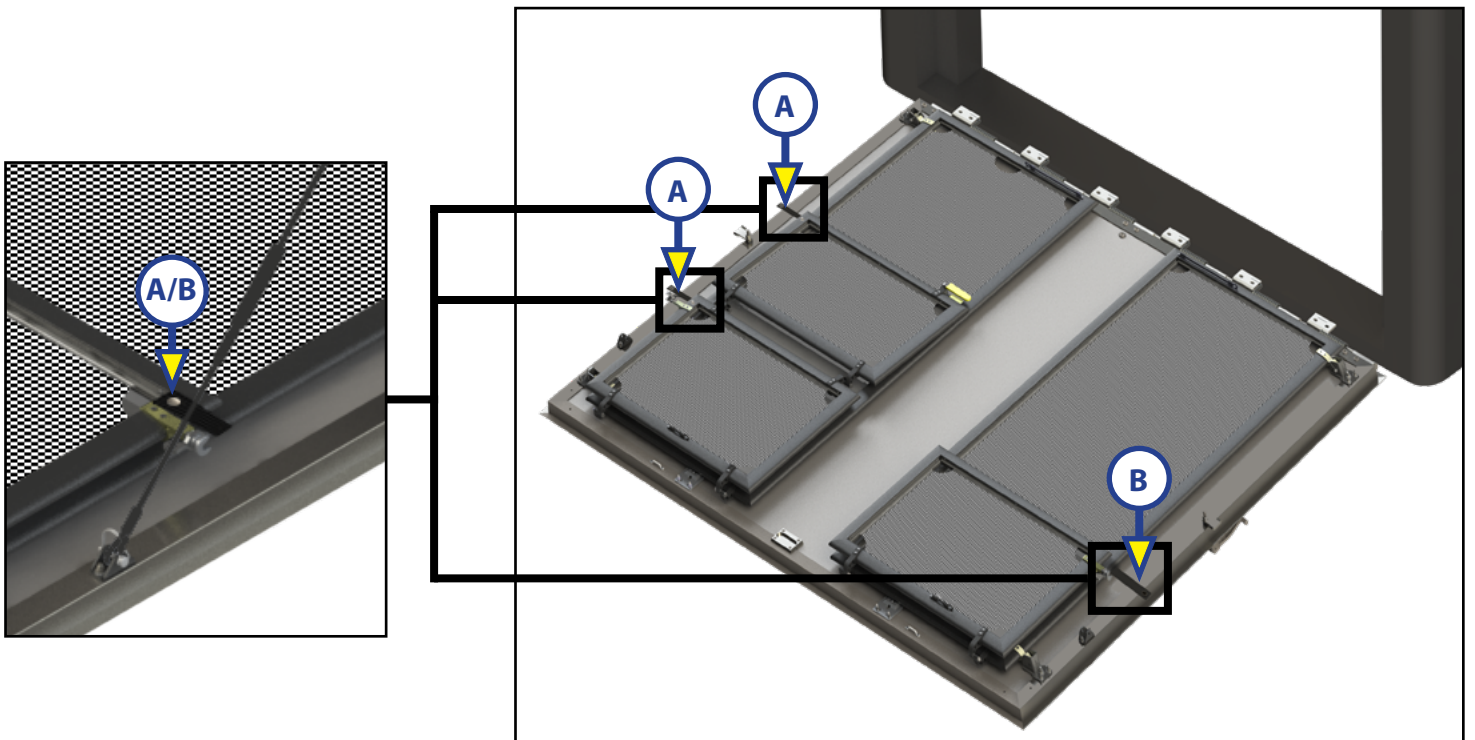
Fig. 49



2. Attach the two snaps holding the front panel and gate to the driver's side railing (Fig. 50A) and the one snap holding the front panel to the curbside railing (Fig. 50B).

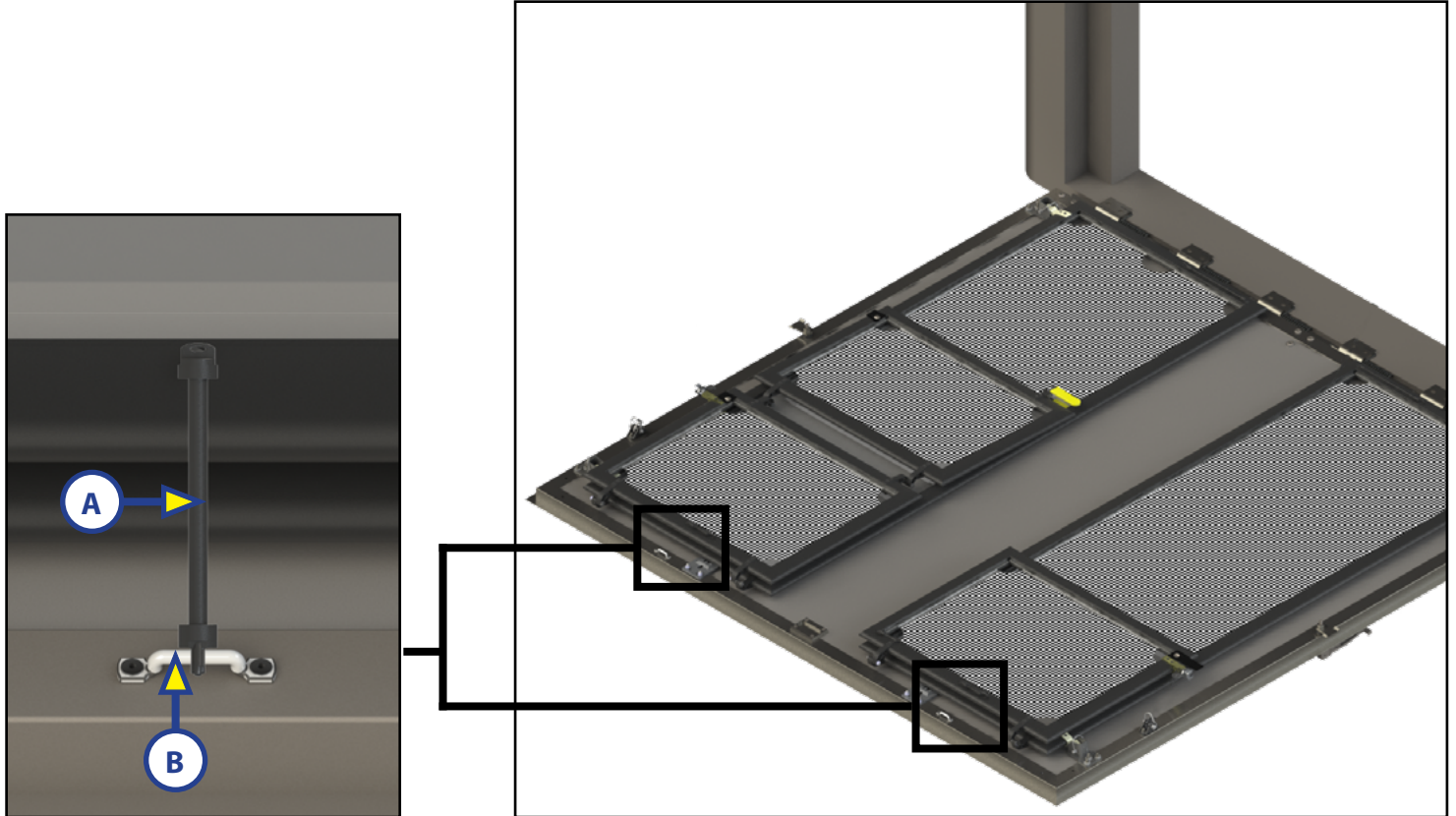
NOTE: An alternate version of the patio rail kit has a, "no-gate" option, which there will only be one snap on each side holding the two front panels to the side panels.

Fig. 50



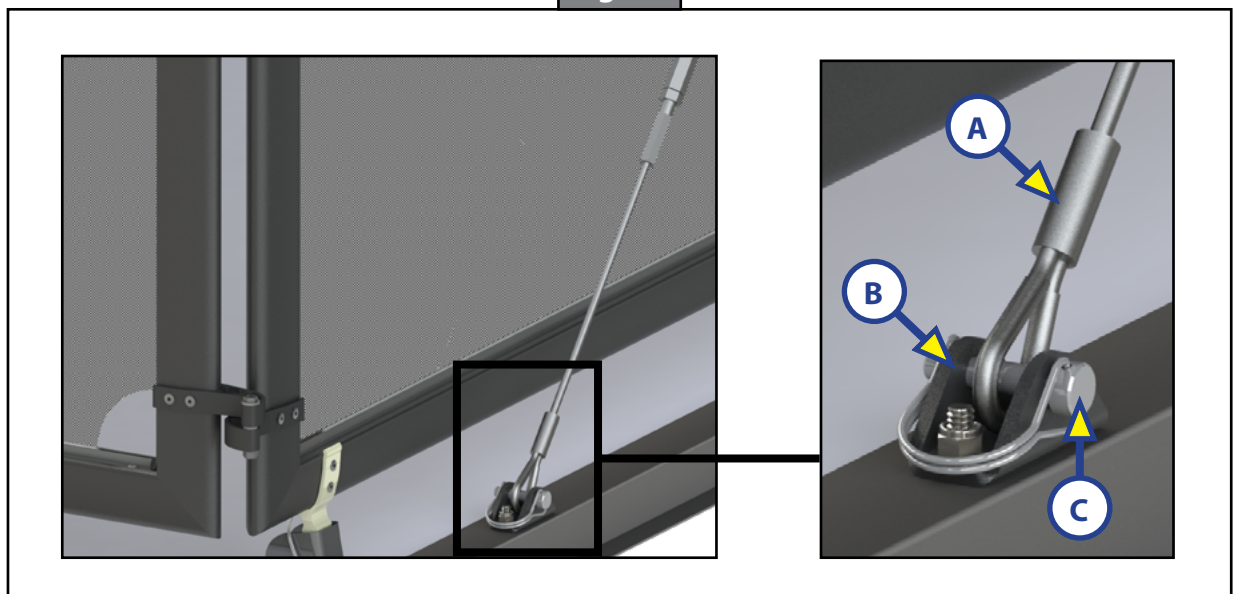
3. Attach the bungee (Fig. 51A) onto the front driver's side and curbside brackets (Fig. 51B), holding the patio railings to the ramp door.

Fig. 51



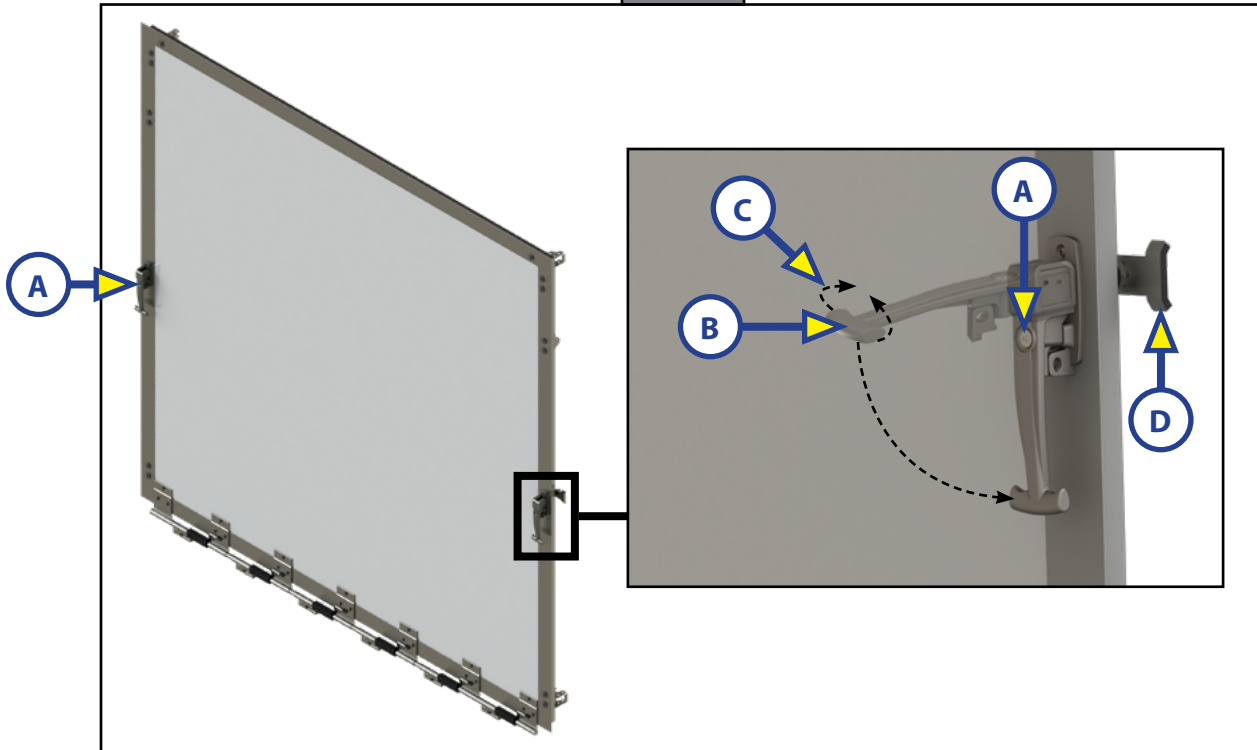
4. Utilize one person to raise the ramp door from the ramp position to parallel with the ground at a 90 degree patio position.
5. Utilize a person to support the ramp door while another person attaches the door cables (Fig. 52A) to the door cable brackets (Fig. 52B) with the retainer pins (Fig. 52C), on both sides of the ramp door.

Fig. 52



6. Make sure the ramp door and support wire cables on both sides of the door are clear of any obstructions.
7. For both sides of the ramp door, raise the handle of the compression latch (Fig. 53B) so that it is parallel with the ground.
8. For both sides of the ramp door, twist the compression latch handle 90° in either direction (Fig. 53C) to align the latch (Fig. 53D) in an open position to allow the ramp door to completely close in the door jamb.
9. Gently raise the ramp door into the doorjamb.
10. For both sides of the ramp door, lower the handle (Fig. 53B) and lock the compression latch (Fig. 53A).

Fig. 53



Stowed Patio Position

If the Lippert 3000 Series ramp door is in the patio position and needs to be stowed, use the following procedure.

1. Located on the middle front gate panel or the driver's side front panel for the no-gate option, unlatch the U-shaped latch (Fig. 54A) by flipping the latch over towards the driver's side front patio railing (Fig. 55A).

Fig. 54

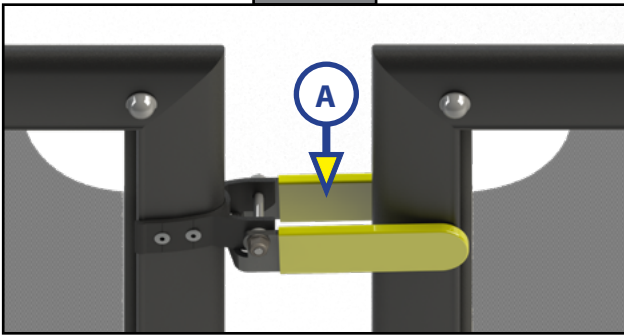
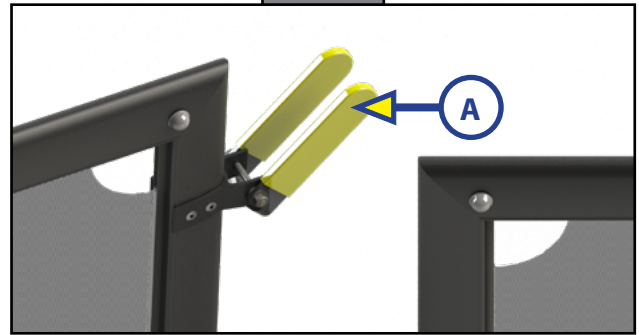
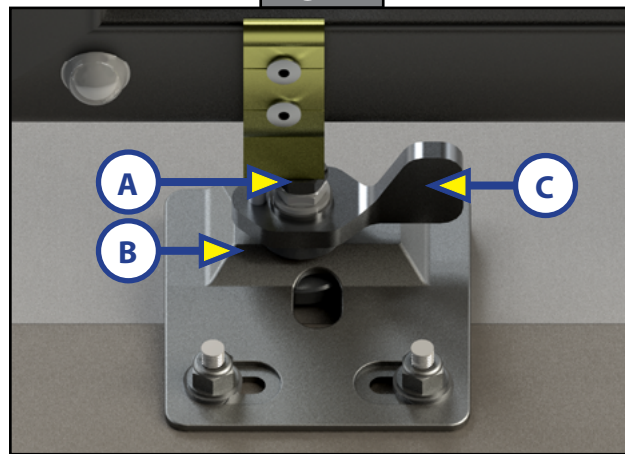


Fig. 55



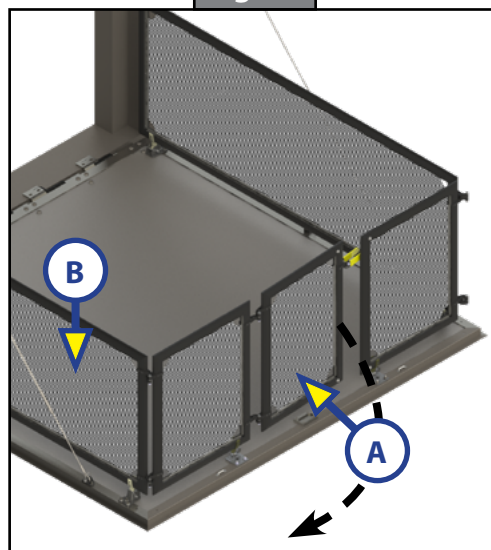
2. Located towards the top of the ramp door, release the driver's side front panel bottom leg (Fig. 56A) from the keeper (Fig. 56B) by pushing the compression latch lever (Fig. 56C) towards the coach and slide the leg out from the keeper.

Fig. 56

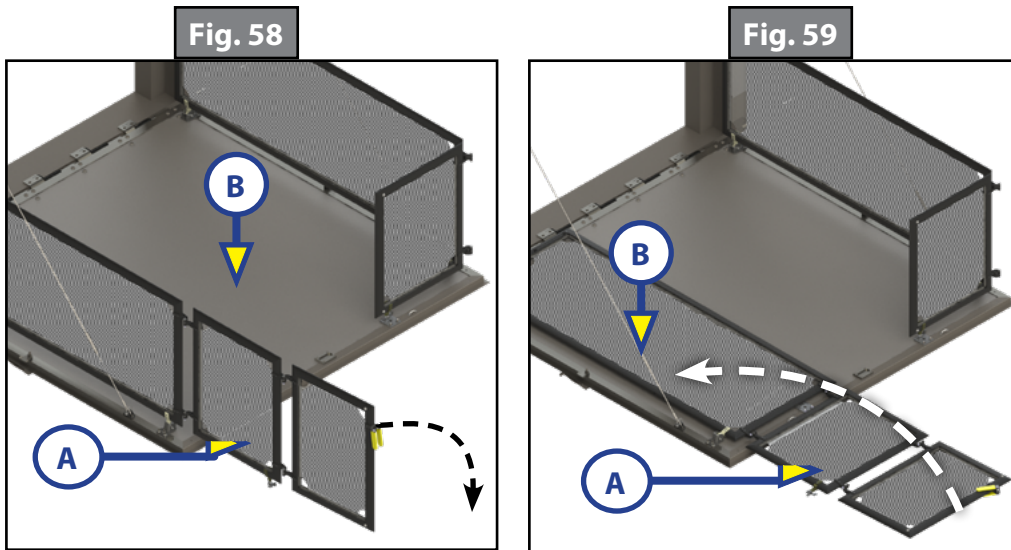


3. For the driver's side patio railing, swing the front panel and gate (Fig. 57A) or with the no-gate option the driver's side front panel, out in-line with the side patio railing (Fig. 57B).
4. If applicable, disengage the J-lock (Fig. 3) on the driver's side of the patio railing.

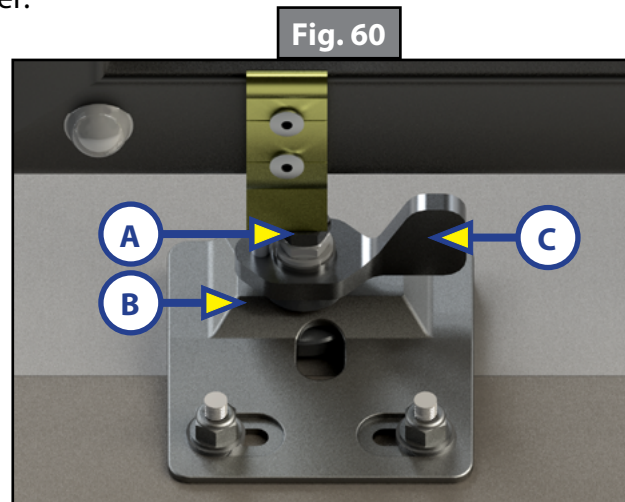
Fig. 57



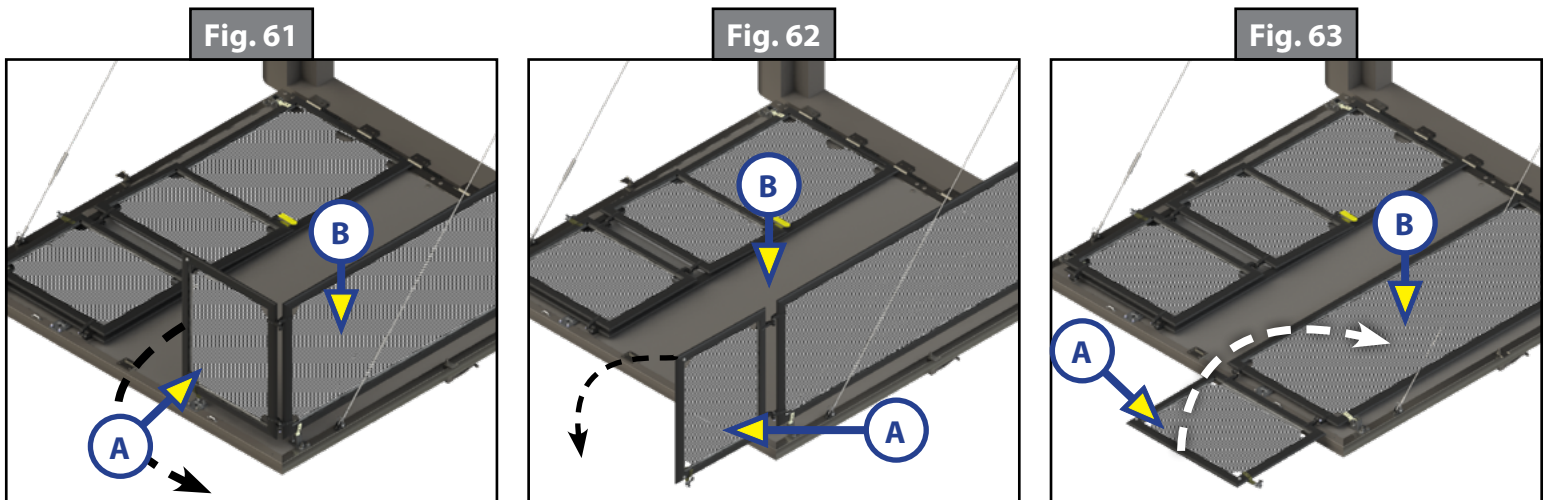
5. Lower the side and front gate patio panels (Fig. 58A) down towards the surface of the ramp door (Fig. 58B) and flip the front and gate patio panels (Fig. 59A) over the top of the side panel (Fig. 59B).



6. Located towards the top of the ramp door, release the curbside front panel bottom leg (Fig. 60A) from the keeper (Fig. 60B) by pushing the compression latch lever (Fig. 60C) towards the coach and slide the leg out from the keeper.



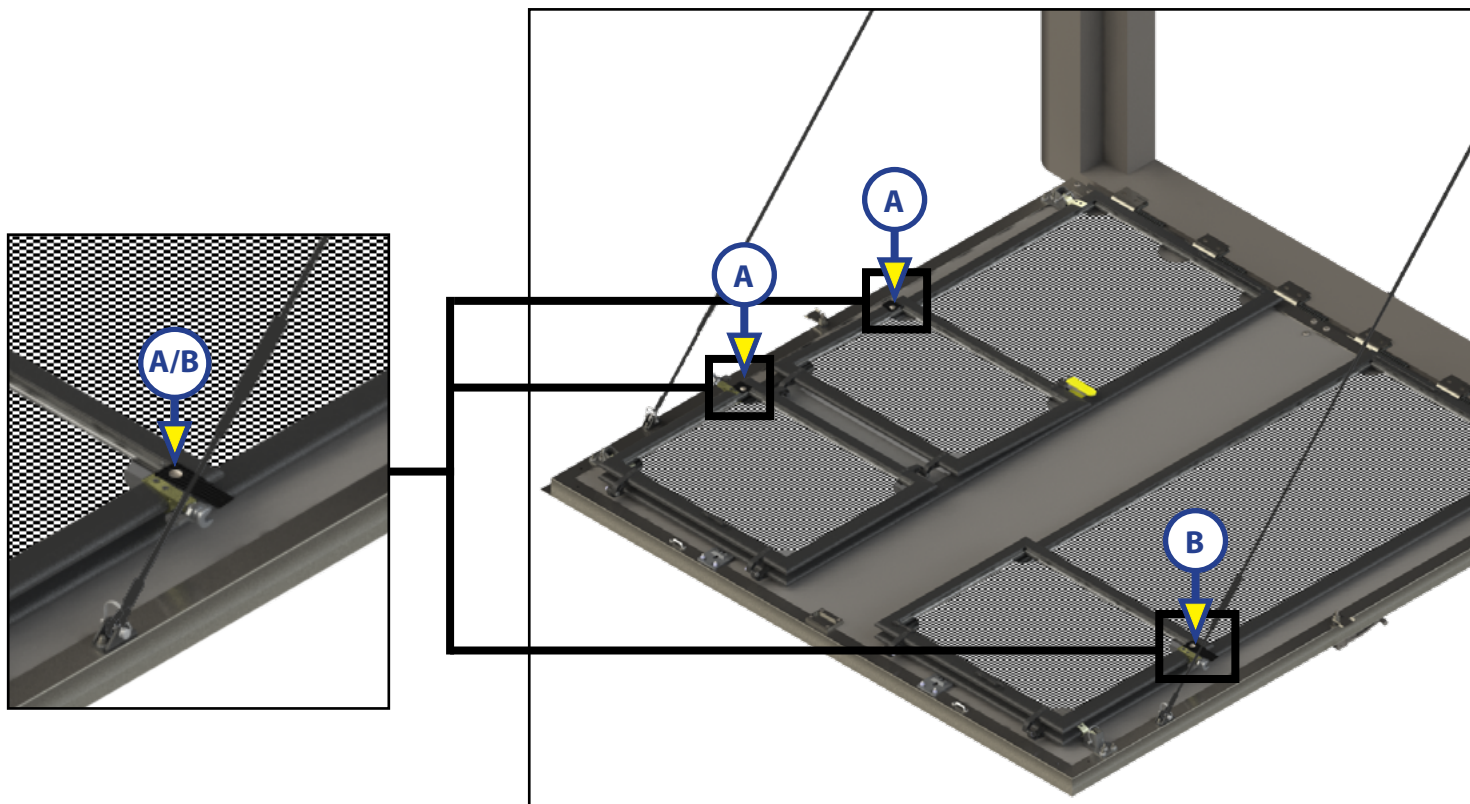
7. If applicable, disengage the J-Bolt (Fig. 3) on the curbside of the patio railing.
8. For the curbside patio railing (Fig. 61B), swing the front panel (Fig. 61A) out in-line with the side patio railing (Fig. 61B).
9. Drop the side and front patio panels (Fig. 62A) down towards the surface of the ramp door (Fig. 62B), then flip the front patio panel (Fig. 63A) over the top of the side panel (Fig. 63B).



10. Attach the two snaps holding the front panel and gate to the driver's side railing (Fig. 64A) and the one snap holding the front panel to the curbside railing (Fig. 64B).

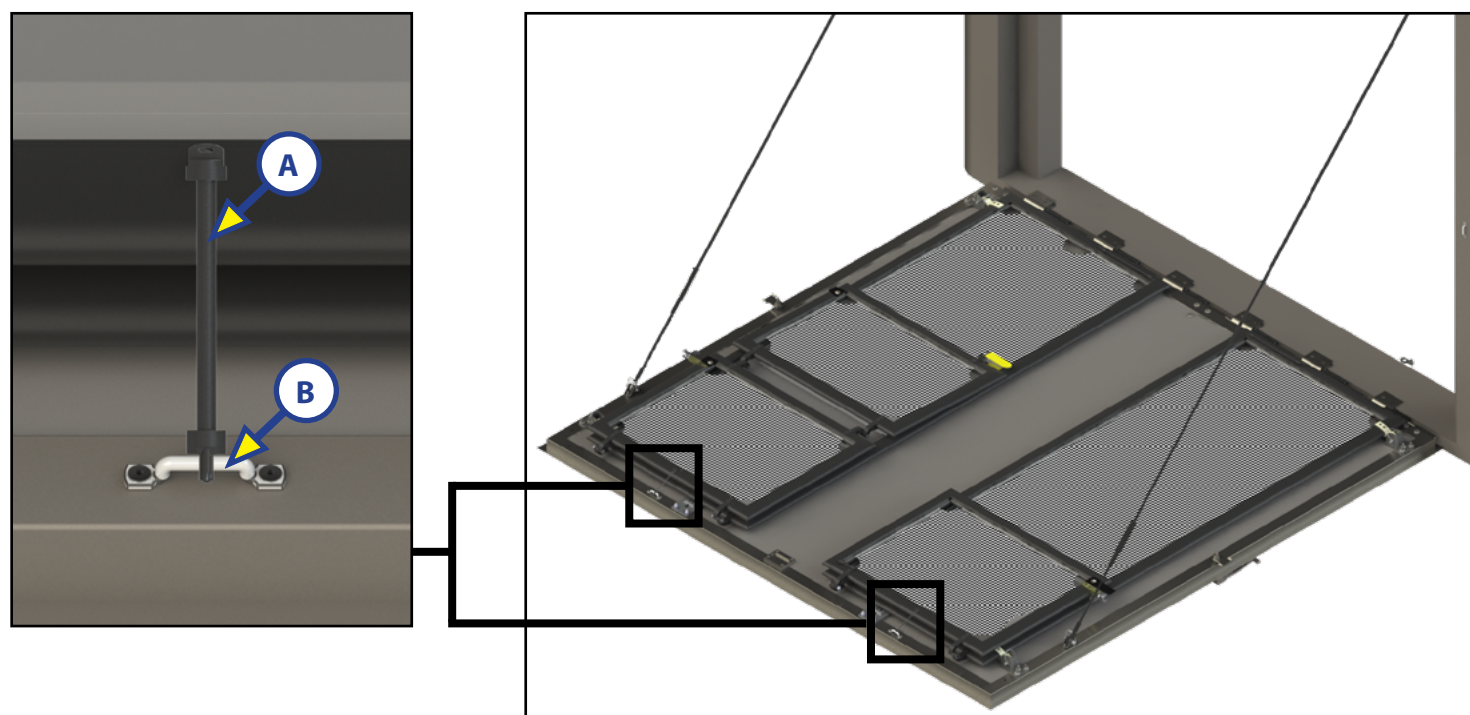
NOTE: An alternate version of the patio rail kit has a, "no-gate" option, which there will only a one snap on each side holding the two front panels to the side panels.

Fig. 64



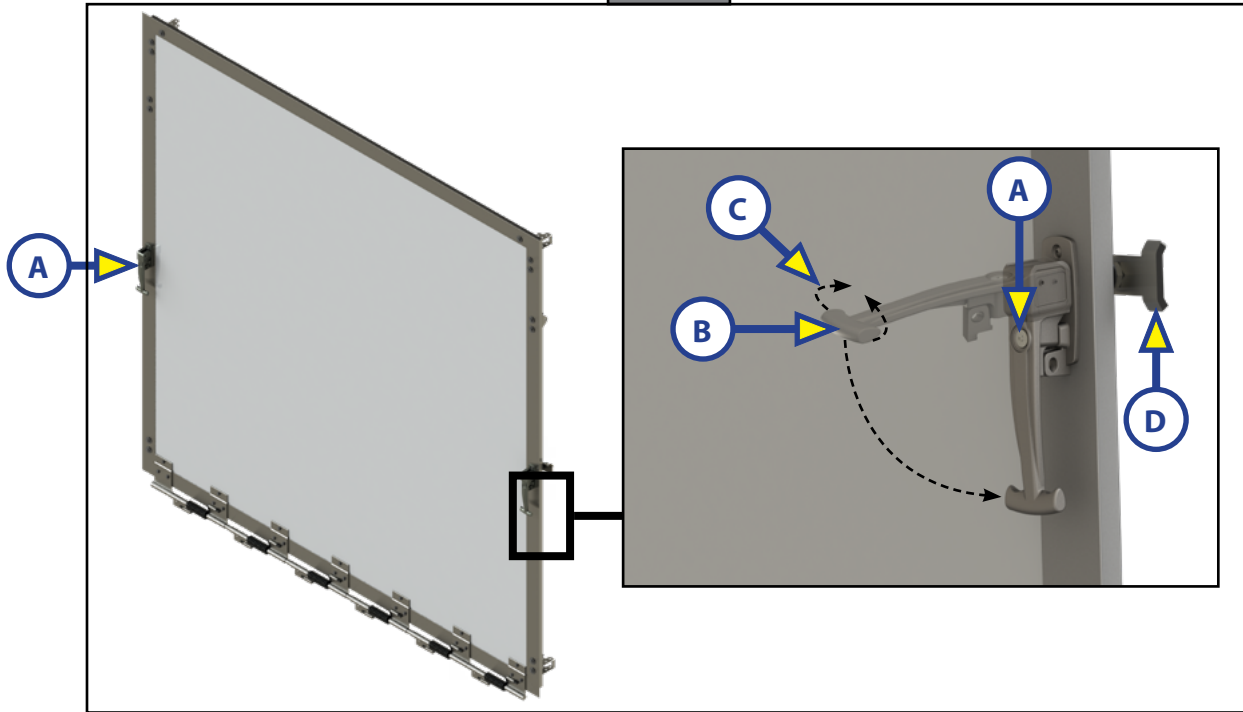
11. Attach the bungee (Fig. 65A) onto the front driver's side and curbside brackets (Fig. 65B), holding the patio railings to the ramp door.

Fig. 65



12. Make sure the ramp door and support wire cables on both sides of the door are clear of any obstructions.
13. For both sides of the ramp door, raise the handle of the compression latch (Fig. 66B) so that it is parallel with the ground.
14. For both sides of the ramp door, twist the compression latch handle 90° in either direction (Fig. 66C) to align the latch (Fig. 66D) in an open position to allow the ramp door to completely close in the door jamb.
15. Gently raise the ramp door into the doorjamb.
16. For both sides of the ramp door, lower the handle (Fig. 66B) and lock the compression latch (Fig. 66A).

Fig. 66



Maintenance

In order to clean the ramp door, use only an alcohol-based cleaner. Other chemicals and cleaners may result in the degradation of the seal and cause delamination to the door.



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