

LV710 Freight Camera - Dry Van Swing Door Installation

Required Tools & Supplies:

Safety Glasses	Loctite Threadlocker Blue 242
Cordless Drill with Battery	Phillips Screwdriver #2
Spring-loaded Punch	Sikaflex 252
Tape Measure	Caulk Gun
Permanent Marker	#25 Drill Bit (.1495")
2 5/8" Hole Saw	Deburr Tool
3/4" Hole Saw	External Caliper Gauge (digital)
12" Groove Lock Plier	3/16" Drill Bit (countersink only)
Flat Blade Screwdriver (countersink only)	Router (countersink only)
5/16" Rabbet Router Bit (countersink only)	3 3/8" Hole Saw (countersink only)
10-24 Tap	Cutting Oil

Installation Requirements:

1. Device must be installed on rear curbside door next to inner locking rod.
2. Overall door thickness must be $\leq 1.125"$. Overall door thickness measurement must include any interior and/or exterior sheathing in addition to the door core. **Do not include any weather-stripping around door edges in the thickness measurement.**
 - a. Device will be installed by using **Standard Installation** procedure (pgs. 4-20) on doors with thickness $\leq .75"$.
 - b. Device will be installed by using **Countersink Installation** procedure (pgs. 21- 39) on doors with thickness $> .75"$ and $\leq 1.125"$.
 - c. Doors with overall thickness $> 1.125"$ cannot be installed.



Measure overall door thickness with external caliper

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Device Activation:

1. Record 12-character device MAC address. MAC address is printed on the device label.
2. Record the asset's unique identification number and VIN
3. Remove the tape covering the device activation magnet. **Note: Do not remove clear protective film from lens at this time.**
4. Remove the activation magnet from the device. Retain the magnet.
5. Observe that the LED on the device lens flashes red three times. This confirms activation.

Device Pairing:

1. Contact I.D. Systems Customer Support.
 - a. Phone: 888-855-0913
 - b. Email: aisupport@id-systems.com
2. Provide serial number from LV300 or LV500 tracking device that has been installed on trailer. (refer to LV300 or LV500 for specific installation instructions)
3. Provide MAC address from LV710 device.
4. Request that LV710 device be paired with installed LV300 or LV500 device.



MAC Address

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Removing tape over activation magnet

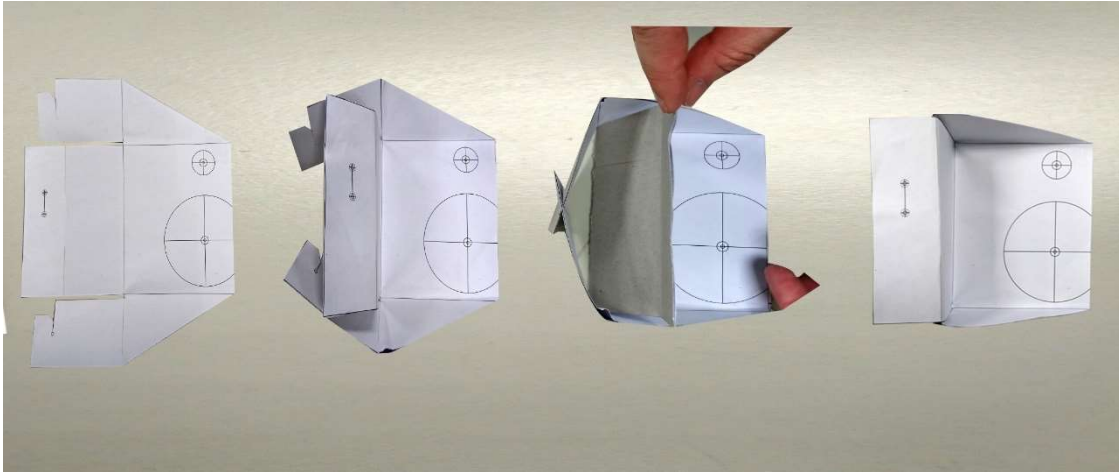


Activation magnet removal and LED flash

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Standard Installation:

1. Confirm curbside door thickness is $\leq .75"$.
2. Assemble installation hole template.



3. On the exterior of the curbside door, next to inner locking rod, mark a location 50" up from the trailer floor.



Measure and mark location 50" up from trailer floor

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4. With curbside door closed and latched, align the center of lens hole on the template with the marked location on the door. Press the vertical edge of the template against the inner locking rod.



Align template with locking rod and 50" mark

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5. Using a spring-loaded punch and template, mark the location of 2 holes on the door.
 - a. Lens hole (1) - Door
 - b. Positioning dowel hole (1) – Door



Mark hole locations with spring-loaded punch

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6. Drill 2 5/8" hole for lens at marked location on door.



2 5/8" lens hole

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7. Drill $\frac{3}{4}$ " hole for positioning dowel at marked location on door.



$\frac{3}{4}$ " hole for positioning dowel

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8. Remove any drill shavings and debris from exterior and interior door surfaces.
9. Deburr any metal edges on exterior and interior door surfaces.
10. Apply a ¼" bead of Sikaflex 252 to exterior door surface around the lens and positioning dowel holes.



Apply Sikaflex 252

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11. Install external shock mount hardware onto device.
 - a. Slide thick black rubber washer over lens assembly with flat side against device body.
 - b. Slide white plastic washer over lens assembly with flat side against thick black washer.
 - c. Place black rubber plug over positioning dowel.



External shock mount hardware

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12. With trailer door slightly open, install device into holes previously drilled in steps #6 and #7.
 - a. Carefully slide lens assembly and positioning dowel into holes
 - b. Hold device in place.
 - c. Ensure lens is centered in 2 5/8" hole.
 - d. Slide thin black rubber washer over lens assembly.
 - e. Install plastic nut onto lens assembly by turning clockwise.
 - f. Tighten nut by hand until snug.
 - g. Using 12" groove lock plier turn nut clockwise ½ turn past hand tight.
 - h. Remove protective plastic film from lens.



Place device in mounting position and hold in place

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Lens centered in hole

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Install thin black rubber washer

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Hand tighten black plastic nut

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Tighten nut ½ turn past hand tight

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Remove clear protective film from lens

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13. Mark location for door trigger magnet.
 - a. Close and latch curbside door.
 - b. Place magnet bracket on locking rod parallel to the device.
 - c. Slide magnet bracket up or down so that center of magnet is aligned 1/16" above top of notch on device.
 - d. Unlatch curbside door and rotate locking 90 degrees
 - e. Using the magnet bracket as a guide, mark locations of two mounting screws.



Proper alignment with device

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14.



Install thread forming screws

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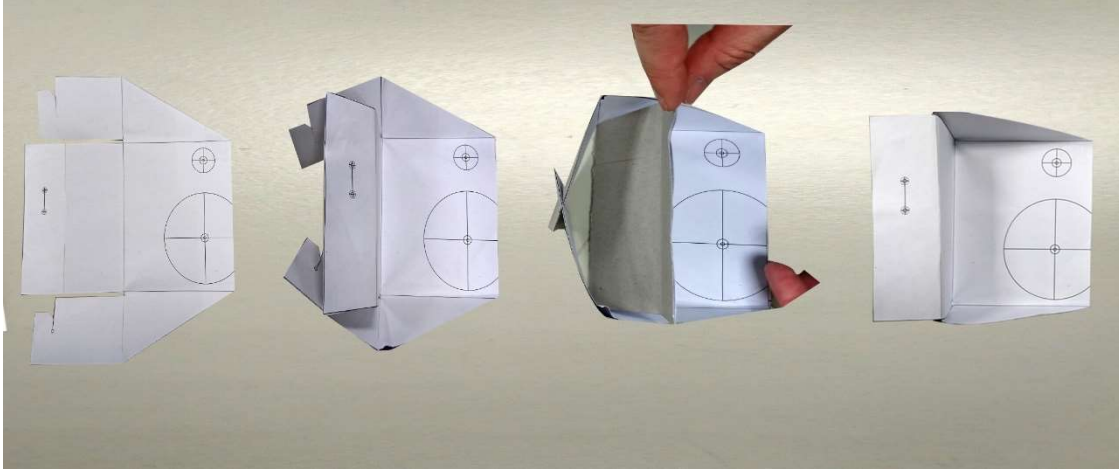
Completed installation

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Countersink Installation:

15. Measure and record overall curbside door thickness, using an external caliper gauge. Confirm overall curbside door thickness is $> .75''$ and $\leq 1.125''$.
16. Assemble installation hole template.



17. On the exterior of the curbside door, next to inner locking rod, mark a location 50" up from the trailer floor.



Measure and mark location 50" up from trailer floor

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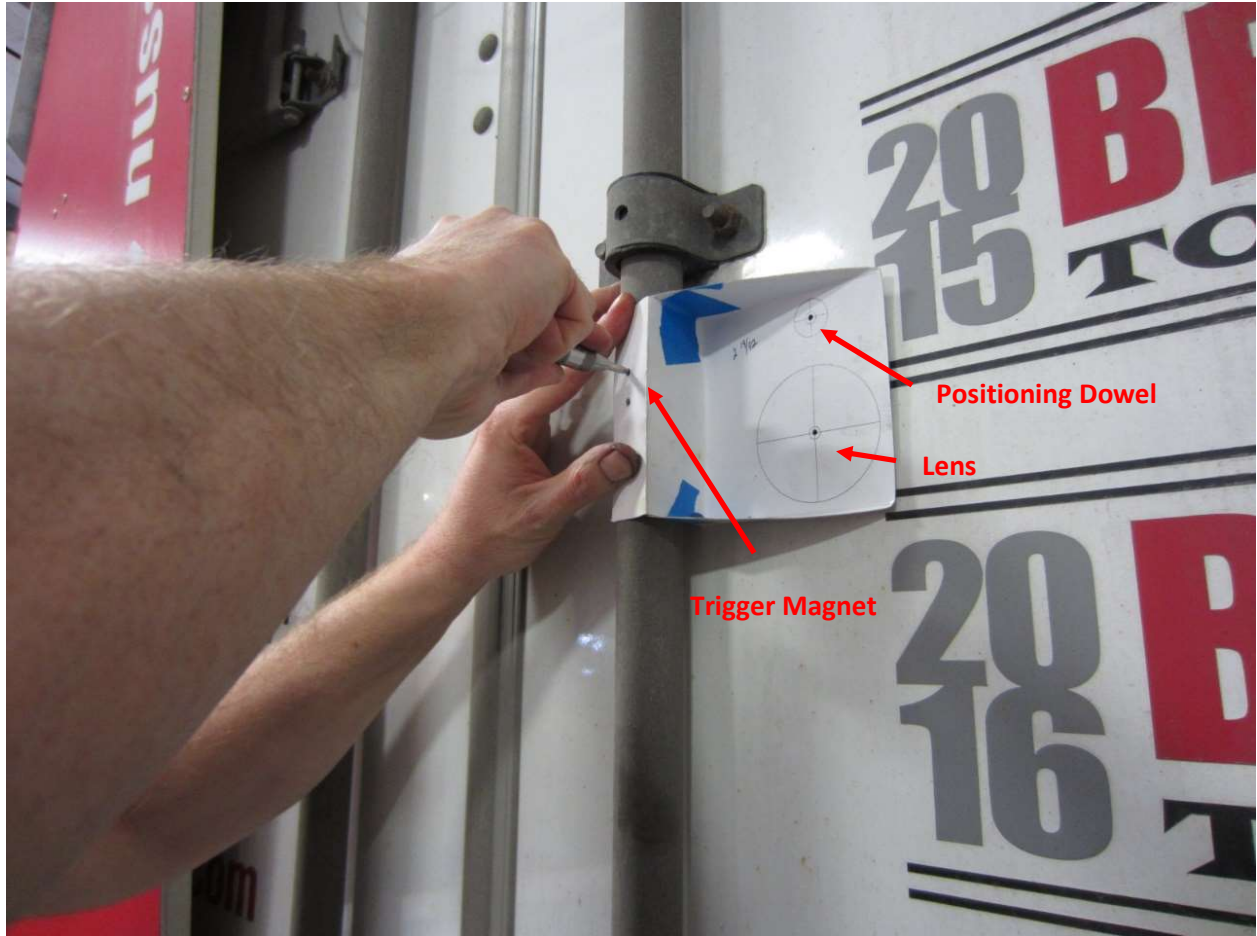
18. With curbside door closed and latched, align the lens hole on the template with the marked location on the door. Press the vertical edge of the template against the inner locking rod.



Align template with locking rod and 50" mark

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19. Using a spring-loaded punch, mark the locations of 4 holes in template.
- c. Lens hole (1) - Door
 - d. Positioning dowel hole (1) - Door
 - e. Trigger magnet mounting screw holes (2) – Inner locking rod



Mark locations with spring-loaded punch

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20. Drill a 3/16" hole through the door at location marked for lens in step #5.
21. Remove any sheathing disc from interior door surface.
 - f. Using a 3 3/8 hole saw drill through inner door sheathing at location of 3/16" hole drilled in step #6.
 - g. Avoid letting hole saw teeth to cut into door core.
 - h. Remove sheathing disc by prying off with flat blade screwdriver.



Drill 3 3/8" hole through interior door sheathing

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Remove sheathing disc

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22. Drill 2 5/8" hole for lens at marked location on door.



2 5/8" lens hole

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23. Drill $\frac{3}{4}$ " hole for positioning dowel at marked location on door.



$\frac{3}{4}$ " hole for positioning dowel

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24. Drill a #17 (.173) hole at each (2) marked location on inner locking rod.



Drill #17 holes in inner locking rod

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25. Using router, create countersink feature around lens hole on the door interior.
 - i. Verify router has 5/16" rabbet bit installed.
 - j. Subtract 3/4" from overall door thickness. This is the depth of the countersink. Set the router depth to this depth.
 - i. Example: If overall door thickness is 1", set the router depth to 1/4"
 - k. Slowly, move the router around the lens hole to create the countersink.



Create countersink with router

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Countersink around lens hole

26. Remove any drill shavings and debris from exterior and interior door surfaces.
27. Deburr any metal edges on exterior and interior door surfaces.

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28. Apply a ¼" bead of Sikaflex 252 to exterior door surface around the lens and positioning dowel holes.



Apply Sikaflex 252

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29. Install external shock mount hardware onto device.
- l. Slide thick black rubber washer over lens assembly.
 - m. Slide white plastic washer over lens assembly.
 - n. Place black rubber plug over positioning dowel.



External shock mount hardware

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30. With trailer door open, install device into holes previously drilled in steps #8 and #9.
 - o. Carefully slide lens assembly and positioning dowel into holes
 - p. Hold device in place.
 - q. Ensure lens is centered in 2 5/8" hole.
 - r. Slide thin black rubber washer over lens assembly.
 - s. Install plastic nut onto lens assembly by turning clockwise.
 - t. Tighten nut by hand until snug.
 - u. Using 12" groove lock plier turn nut clockwise ¼ turn past hand tight.
 - v. Remove protective plastic film from lens.



Place device in mounting position and hold in place

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Interior washer and nut installed in countersink

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Tighten nut $\frac{1}{4}$ turn past hand tight

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Remove clear protective film from lens

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31. Install door trigger magnet.

- w. Close and latch curbside door.
- x. Apply Loctite to the two 10-32 thread forming screws in kit.
- y. Install screws through door trigger magnet flange holes and into holes drilled in locking rod.
- z. Using a Torx T25 driver, tighten screws until snug.



Loctite applied to thread forming screws

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Install thread forming screws

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Completed installation

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Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

ISED

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

L' émetteur/r écepteur exempt de licence contenu dans le pr é sent appareil est conforme aux CNR d' Innovation, Sciences et D é veloppement é conomique Canada applicables aux appareils radio exempts de licence. L' exploitation est autoris é e aux deux conditions suivantes :

1. L' appareil ne doit pas produire de brouillage;
2. L' appareil doit accepter tout brouillage radio é lectrique subi, m ê me si le brouillage est susceptible d' en compromettre le fonctionnement.

IC Radiation Exposure Statement:

This equipment complies with IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Cet é quipement est conforme aux limites d' exposition aux rayonnements IC é tablées pour un environnement non contr l é . Cet é quipement doit ê tre install é et utilis é avec un minimum de 20cm de distance entre la source de rayonnement et votre corps

The transmitter module may not be co-located with any other transmitter or antenna.

Le module émetteur peut ne pas ê tre co plant é avec un autre émetteur ou antenne.