



## Rover Deployment Process

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### Required tools:

- 9/16" Wrench
- 1/2" Wrench
- 3/4 Wrench, Socket & Ratchet, or Impact
- 8+ ft A-frame Ladder
- Hammer/Mallet

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***Follow all state, federal, and company guidelines regarding Personal Protective Equipment.***

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### Trailer placement:

1. Find a level location to park trailer.
2. Park the trailer in a low traffic area.
3. Consider line of site in trailer placement decisions for solar, cellular, and satellite antennas.
4. Park the trailer with the solar panels facing south, or as close to south as possible.

### Trailer Set-up:

1. Extend the right and left rear jack arms.
  - a. Remove the two 3/4" bolts in the outer frame rail, extend the inner frame rail until the second set of bolt holes are aligned, then re-install the bolts.

*Note: It may be easier to align the inner and outer frame rails to re-install the bolts if the rear jacks are removed.*
  - b. Repeat on the other side.
2. Rotate all jacks to the down position and jack down until contact is made with the ground.

*Note: Remove the lower locking pin to quickly extend the inner jack leg.*
3. Unplug lights, remove safety chains, remove hitch ball pin, and unlatch hitch.
4. Alternate or simultaneously raise the right and left front jacks to raise the tongue until it is clear from the ball.
5. Pull vehicle clear of the trailer
6. Remove the trailer's tongue by removing the retaining pin and removing the tongue from the trailer.
7. Remove trailer lights extension cable, or tidy cable underneath trailer.
8. Using all four jacks, level the trailer while maintaining ground contact with the trailer wheels if possible.

# STEP

## Solar Deployment

1. Rotate the solar panel assembly by removing the two retaining pins on the front of the trailer and tilt the assembly to 35 degrees, then insert the retaining pins into the lower brackets on the rear of the trailer to lock in place.
2. Extend the two side panels.
  - a. Simultaneously depress both drawer slide levers on the top and bottom of the panel, then extend to full width. The drawer slides will lock in place once fully opened.
  - b. Repeat for the second solar panel.

## Radio & Mast deployment

1. Remove front door panel.
2. Simultaneously depress both drawer slide levers to open the lower drawer and fully extend.
3. Using a 9/16" wrench, remove the mast head bolts from the storage cradle.

*Note: Do not lose bolts*

  - a. Locate the square end of the mast head and note the orientation of the bracket dog ears. This is the bottom of the mast extension.
4. Remove the mast extension from the drawer cradle, then simultaneously depress both drawer slide levers and close the trailer drawer.
5. Position the ladder to the front of the trailer for mounting the mast extension – do not place the ladder along the side of the trailer.
6. Mount the mast extension onto the mast.
  - a. Use two people to mount the mast extension
  - b. Person 1 on the ground hands the mast extension to person 2 on the ladder
  - c. Person 2 holds the mast extension horizontally with the dog ears facing down.
  - d. Slide the two dog ears into the holes on the mast mounting bracket, then rotate the mast extension to a vertical position. Do not let the mast extension hang by the two dog ears as this may damage the mast extension.
  - e. Maintain control of the mast extension while installing the bolts – the extension may tip forward during installation before the bolts are installed.
  - f. Using a 9/16" wrench, install the first bolt in the hole farthest from the dog ears
  - g. Once that bolt is installed, the extension should be secured from tipping forward.
  - h. Install the second bolt in the front bolt hole.
  - i. Ensure both bolts are fully tightened.
7. Locate the mast cable and connect the cannon plug and the two ethernet cables to the corresponding ports on the NEMA enclosure.

# STEP

8. Aim the private cellular antennas as needed.
  - a. Using a ½” wrench, loosen one nut on both the upper and lower antenna brackets, rotate around the mast until desired position is reached, and retighten the mounting bracket nuts.

*Note: When rotating the antennas on the mast extension, be sure to manage the cables between the radio and NEMA enclosure, making sure they do not snag on the antenna bracket or mounting bolts.*
  - b. The GPS antenna on the radio may need to be removed in order to rotate the antennas, depending on the position.
    - i. Using a #2 Phillips screwdriver, remove both the central and locking screws for the radio’s GPS antenna bracket.
    - ii. Rotate the private cellular antennas to their desired position

*Note: If the lower antenna is preventing you from re-installing the GPS antenna, swap the location of the two private cellular antennas to gain the clearance needed.*
    - iii. Reinstall the GPS antenna using the two Phillips screws.
9. Check to ensure all brackets and bolts are tight and all cables are clear of catch points.
10. Locate the three guy wires and attach to the mast attachment points using the included carabiners.
11. Locate and remove the mast pin from the storage bracket on the mast.
12. Raise the mast to the top position where the mast pin hole is aligned and insert the mast pin.
  - a. When raising the mast, watch the mast pin hole. There are two pin holes on the inner section for various heights. The first hole is used for mounting the mast at the halfway point, this mount cannot be used due to FCC height regulations for private cellular antennas.
  - b. Continue raising the mast, you will see a stripe of red paint through the pin hole, continue until you see the second inner hole for the mast pin. If the red paint rises above the first mast section, it has been raised too high. Stop and lower the mast.
  - c. When the second inner pin hole is aligned with the outer, you will see the first inner pin hole above the outside section of the mast.
13. Back the winch down to allow the pin to take the weight of the mast while maintaining light tension on the winch cable. Do not back the winch off too far and leave slack in the cable.
14. Tighten the two thumb screws on the mast to stabilize the inner mast section.
15. Once the mast height has been set, extend the three guy wires and drive the stakes in the ground using a hammer/mallet. If you are unable to drive the stakes into the ground (if parked on asphalt, for example), attach to a suitable anchor.
  - a. If you choose not to use the guywires, attach at least one to the mast during deployment. It can assist with lowering the mast if debris gets inside the mast sections and causes issues with lowering.
16. Any additional customer supplied hardware should be mounted to the square channel mast, Do not modify the mounting equipment mounting on the mast extension.
  - a. POE power is available via ethernet ports on the bottom of the NEMA enclosure.



17. Once the mast has been deployed, re-install and close the front door panel.

#### Powering on devices

1. Remove the side door panel.
2. Locate the four breakers in the top left corner.
3. The first two breakers may already be on. If they are not, turn on breaker 1 then breaker 2. Do not turn breaker 2 on before breaker 1.

*Note: Breakers 1 & 2 can be left on during transport to continue charging the batteries during transit.*

4. Turn on breaker 3 for DC power.
5. Turn on breaker 4 to power on the inverter for AC power.
6. All devices on the Rover will automatically boot up once power is turned on.
7. Re-install and close the side door panel.



## Rover Tear-Down Process

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### Required tools:

- 9/16" Wrench
- 1/2" Wrench
- 3/4 Wrench, Socket & Ratchet, or Impact
- 8+ ft A-frame Ladder
- Hammer/Mallet

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### Power Off Devices:

1. Remove the side door panel.
2. Turn off breaker 4 (AC inverter).
3. Turn off breaker 3 (DC power).
4. Breakers 1 & 2 can be left on during transport to continue charging the batteries. However, if you do decide to turn them off, turn off breaker 2 first, then breaker 1.
5. Re-install and close the side door panel.

### Lower Mast & Remove Mast Extension:

1. Remove the front door panel.
2. Remove the guy wire ground stakes and allow the guy wires to hang along side the mast.
3. Loosen the two thumb screws on the outer mast section.
4. Raise the mast slightly to take pressure off the mast pin.
5. Remove the mast pin from the mast and attach to the storage bracket.
6. Lower the mast using the winch.  
*Note: If debris has entered the mast sections and is preventing the mast from lowering, you can apply pressure to the guy wires to overcome the friction preventing it from lowering.*
7. Disconnect the cannon plug and two ethernet cables on the mast cable from the NEMA enclosure.
  - a. Secure the cables to the mast and wrap to protect the connectors.
8. Remove the three guy wires and stow in the trailer.
9. Remove the mast extension from the mast.
  - a. Use two people to remove the mast extension.
  - b. Position the ladder in front of the trailer, do attempt to place the ladder along the side of the trailer.
  - c. Using a 9/16" wrench, remove the mast head bolt next to the bracket dog ears.
  - d. Maintain control of the mast extension and remove the second mast head bolt.
  - e. Tilt the mast extension towards the front of the trailer until it is horizontal and you can slide the two dog ears out of the bracket on the mast.

# STEP

- f. Hand the mast extension to the second person standing on the ground.
10. Store the mast extension in the lower drawer inside the trailer.
  - a. Simultaneously depress both drawer slide levers to open the lower drawer and fully extend.
  - b. Place the mast extension in the cradle on the lower drawer with the radio facing down.
  - c. Align the mast extension bottom bracket bolt hole with the bolt hole on the cradle and secure with one mast head bolt.
  - d. Secure the bracket on the top of the mast extension to the cradle with the second mast head bolt.
  - e. Using a ½" wrench, loosen the private cellular antenna mounting bracket nuts and rotate the two antennas to fit in the drawer. Re-tighten the brackets to prevent movement during transport.
  - f. Simultaneously depress both drawer slide levers and close the lower drawer, ensuring it locks in place when closed.
11. Re-install and close the front door panel.

## Collapsing Solar Panels:

1. Simultaneously depress both drawer slide levers on the side solar panel, and slide closed, ensuring it locks in place when fully closed.
2. Repeat for the second solar panel.
3. Rotate the solar panel assembly by removing the two retaining pins on the rear of the trailer, tilt the assembly to lay flat, then insert the retaining pins into the brackets on the front of the trailer to lock in place.

## Preparing the Trailer for Transport:

1. Attach the trailer tongue by inserting into the bracket and securing with the locking pin.
2. Re-attach the trailer lights cable if needed.
3. Position the towing vehicle with the ball underneath the trailer's tongue.
4. Attach the trailer to the towing vehicle by alternating or simultaneously lowering the front two jacks until the tongue is fully seated on the hitch ball. Secure with the hitch pin.
5. Attach the trailer chains and electrical cable to the towing vehicle.
6. Collapse the right and left rear jack arms.
  - a. Remove the two ¾" bolts from the outer frame rail, slide the inner frame rail into the trailer until the second set of bolt holes are aligned, then reinstall the two bolts.
  - b. Repeat for the other side.
7. Fully collapse all four jacks.
8. Rotate all four jacks horizontally by removing the locking pin, rotating, and re-installing the locking pin.