SpeedCheck®

RADAR SPEED SIGN QUICK START GUIDE

For the SPEEDCHECK-15/18

SPEEDCHECK-15/18

89157_QSG_TRA_SPEEDCHECK-15-18_RevE

This page intentionally left blank.

1.1 Safety Precautions

ELECTRICAL SHOCK HAZARD. DO NOT LET THE BATTERY TERMINALS COME INTO CONTACT WITH ANY EXPOSED METAL.

Batteries are shipped fully charged. Use extreme caution when handling the batteries as they can generate hazardous short-circuit currents. Remove all jewelry (bracelets, metal-strap watches, etc.) before handling the batteries.

Solar panels produce DC electricity when exposed to light and can therefore produce an electrical shock or burn. To render solar panels inoperative, remove them from sunlight or fully cover their front surface with an opaque material.

Before lifting any heavy or bulky equipment, ensure the load is secured so moving parts do not shift, and that it can be lifted as far as needed without back strain or loss of grip. Installation may require more than one person.

Ensure the equipment is not powered during installation and wiring of the system. Recheck all completed wiring for proper polarity prior to energizing the system.

Perform all installation, wiring, grounding and maintenance in conformance with local building and electrical codes. Adherence to the National Electrical Code (NEC) is mandatory to comply with any certification markings. Non-adherence to code may void the warranty.

Changes or modifications to Carmanah equipment not expressly approved by Carmanah could void both the user's authority to operate the equipment and the warranty.

Make sure the installation location has an unobstructed view of the sun’s path. Obstructions such as trees or buildings could significantly reduce the amount of sunlight on the solar panel. Shade analysis is highly recommended to understand how shadows will change according to the time of year. Contact Carmanah for a detailed examination and solar simulations for your site.

Product can have sharp edges. Accidental movement of hinged components can cause injury.

This quick start guide is not a replacement for the complete product user manual.

Visit support.carmanah.com to download the complete product user manual.

2.1 Typical Configurations – Overview

SPEEDCHECK-15/18 display signs are available with a variety of options:

1. **SPEEDCHECK-15 with AC power routed directly to sign**
    a. AC input wires connect in junction box, located on the sign chassis (see image on following page)
    b. Optional 12V circular LED beacons with internal driver connect in junction box (red/black two conductor cable)
    c. Optional strobes prewired to the controller

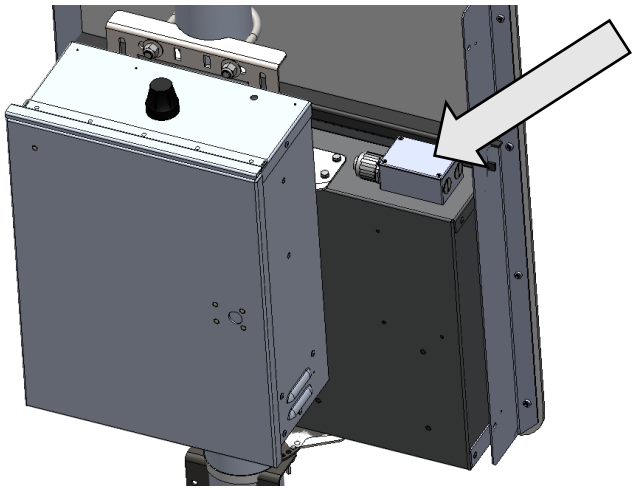
2. **SPEEDCHECK-15 or 18 with solar/DC battery power in cabinet**
    a. Two conductor red/black DC power cable coiled up as it exits the junction box conduit fitting
    b. Optional 12V circular LED beacons with internal driver connect in junction box. For SPEEDCHECK-18, optional beacon versions ship with standard load cables pre-attached to a four-position terminal block on the back panel assembly.
    c. Optional strobes prewired to the controller
    d. Optional StreetHub™ remote monitoring prewired in the cabinet

3. **SPEEDCHECK-15 or 18 with AC/DC power supply in cabinet**
    a. SPEEDCHECK-15 – two conductor red/black DC power cable coiled up as it exits the junction box conduit fitting
    b. SPEEDCHECK-18 – two conductor red/black DC power cable coiled up as it exits the back panel conduit fitting
    c. Optional 12V circular LED beacons with internal driver connect in junction box. For SPEEDCHECK-18, optional beacon versions ship with standard load cables pre-attached to a four-position terminal block on the back panel assembly.
    d. Optional strobes prewired to the controller
    e. Optional StreetHub™ remote monitoring prewired in the cabinet

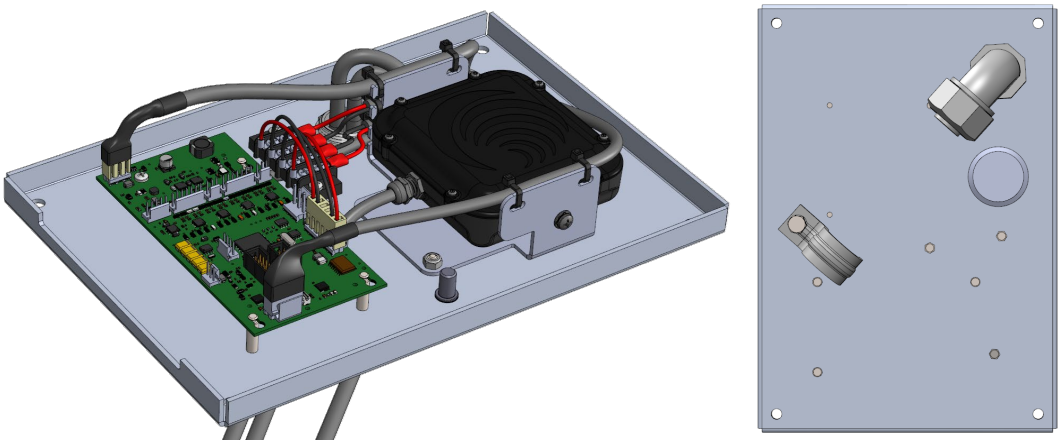
4. **SPEEDCHECK-15 or 18 with solar kit (no cabinet)**
    a. Includes solar panel, housing with charge controller, and mount
    b. Batteries housed inside the solar kit with charge controller (no external cabinet)

SPEEDCHECK-15/18 Solar Kit:

SPEEDCHECK-15 Junction Box:



SPEEDCHECK-18 Rear Panel:



3.1 Components Supplied

The components below are required to install your SpeedCheck radar speed sign.

Display system (sign assembly):

- SpeedCheck display sign (15-inch or 18-inch displays)
- Regulatory sign face and mounting brackets (specified during ordering)
- Flexible conduit: 3/4-inch liquid-tight (included with display sign, for routing from sign to pole)
- Conduit connector (included with display sign)
- Mounting bracket kit (specify during ordering)
- Installation kit (USB dongle for use with SpeedCheck Manager software, alignment kit and foam cone)
- Optional beacons and output harness
- Optional input harness
- Optional strobes (SPEEDCHECK-15 only)
- Optional serial to Ethernet converter for remote connectivity

Solar-powered cabinet-based systems include these components:

- Solar panel
- Solar panel mount (top or side of pole)
- Solar panel harness (available lengths are 8, 16, 36, and 75 ft.)
- Pole-mounted solar cabinet with charge controller, fuses and wiring
- 12V non-spillable lead acid battery

Solar kit-based systems include these components:

- Solar panel (30 W or 50 W)
- Solar panel mount (top or side of pole)
- Housing with charge controller
- Up to two 18 Ah, 12V non-spillable lead acid battery

AC-powered systems include these components:

- Pole-mounted AC cabinet (for configurations other than SPEEDCHECK-15 with internal AC power supply)

3.2 Other Components Required

NOTE **Review the following items carefully to ensure you have all components required to complete your installation. If necessary, contact Carmanah for assistance.**

The components below are readily available from electrical or traffic control equipment suppliers.

- Sign attachment banding and installation tool or heavy-duty tamper-proof band clamps
- Appropriate hose clamps for temporary positioning during the sign alignment process before permanently banding the display sign to the pole

3.3 Tools Required

The following tools may be required to mount your SpeedCheck radar speed sign, depending on the model and configuration:

a. Imperial socket set b. Crescent wrench c. Tap set d. Imperial Allen-Wrench set e. Fish tape f. Level g. Compass or pre-determined equatorial direction h. Banding installation tool	i. Drill and drill bits j. Fine tip felt marker k. Multi-bit screwdriver l. Pelco Roger-Wrench (signal head beacons) m. Hook spanner wrench, 1-1/2” trade size (some configurations) n. Ladder or lift device o. Lithium grease

4.1 Commissioning

After installing and programming the system using SpeedCheck Manager software, the following commissioning verification checklist helps ensure that everything is working as it should be and that your traffic product is ready to serve the public for many years of reliable and sustained operation.

For All Versions:

- ☐ All settings are correct using the SpeedCheck Manager software, including slow down options, external beacon options, calendar-based scheduler, and data collection settings.
- ☐ “Roll up” sequence occurs and LEDs light upon startup. External output loads such as beacons power up as expected.
- ☐ SpeedCheck enclosure is aimed properly in the correct direction toward oncoming traffic lanes.

For Solar Versions:

- ☐ Before installing battery, confirm it is in a good state of health.
- ☐ The solar panel is securely mounted with hardware fully tightened.
- ☐ Ensure there is a green charging status LED showing on the charge controller to confirm solar charging is taking place.

- ☐ System has clear sky access, and no removal of obstructions is required.
- ☐ Note the possibility for nearby foliage to eventually shade the solar panel. If so, set a reminder to inspect later.
- ☐ Solar panel pointed south (or wherever custom instructions indicate).
- ☐ Cabinet door is fully closed with an audible “click”.

For AC Versions:

- ☐ If present, cabinet door is fully closed.
- ☐ Verify all fuses are intact.

For StreetHub™ remote connectivity versions:

- ☐ Remote systems are visible in the Glance web interface.

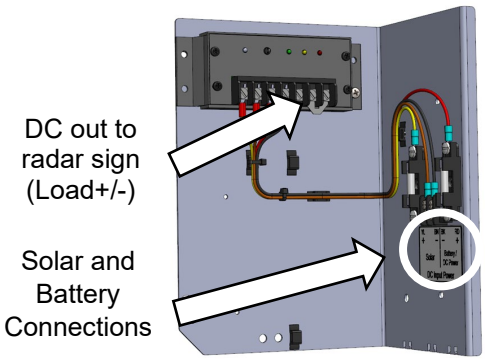
4.2 Pole Preparation

1. Mark desired positions of cabinet and pole-mounted elements on pole.
2. Drill cable exit/entry points for pole-mounted elements as needed.
3. Fish AC input cable to cabinet or sign (depending on version).
4. Fish DC harness between power supply cabinet and SpeedCheck sign (if required).
5. Fish solar harness between top of pole to cabinet nipple hole (if required).
6. Fish flashing beacon harnesses between SpeedCheck conduit fittings and flashing beacon holes (if required).

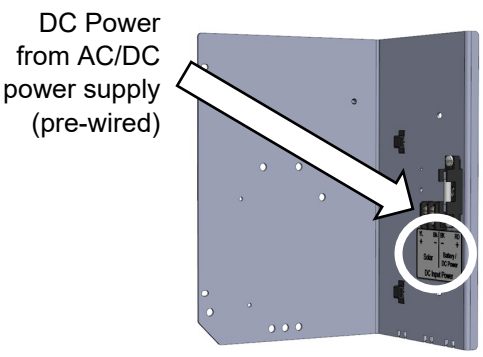
NOTE Use hose or gear clamps for the initial setup and alignment of the display sign to determine proper radar detection of oncoming vehicles. Adjust as necessary before permanently attaching the display sign to the pole with banding or U-bolts.

4.3 Overview of Cabinet Connection Terminals

Solar Version Connections

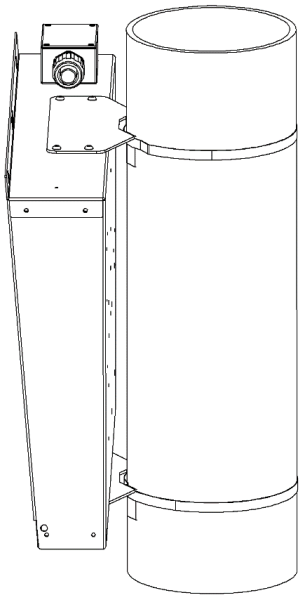


AC Version Connections

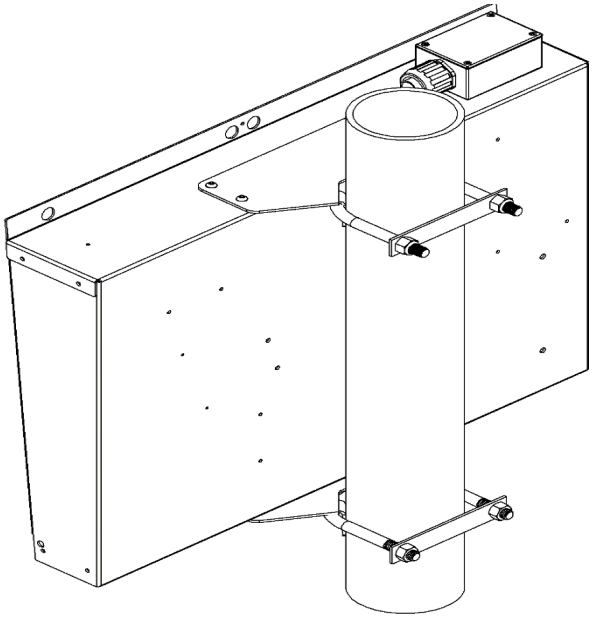


4.4 Round Pole Installation

1. Attach sign mounting brackets to top and bottom of the SpeedCheck enclosure using eight ¼”-20 X 0.5” hex head screws. Ensure both brackets have bent tabs facing downwards.
2. Loosely secure sign to pole using hose clamps while making fine adjustments for alignment and commissioning.
3. Once alignment has been finalized, secure brackets to pole in a more permanent manner using stainless steel banding (not provided) or U-bolts (an orderable option).



6+ Inch Round Pole Mount With Banding



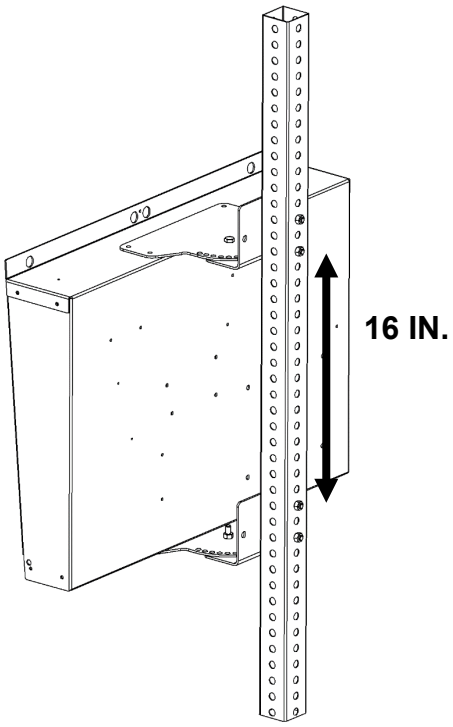
4-6 Inch Round Pole Mount With U-Bolts

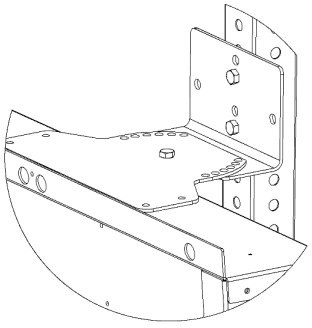
4.5 Flat Surface Mount Installation

1. Attach the two “L” shaped brackets to a suitable pole such as 2” Telespar with 1” standard spacing between holes. Ensure there is 16” between the two inner-most bolt locations. The upper “L” bracket uses the 2nd and 4th holes from the top of the bracket, and the lower “L” bracket uses the 1st and 3rd holes from the top of the bracket.
2. Attach the flat rotational plates to the top and bottom of the SpeedCheck sign using the provided eight ¼”-20 X 0.5” hex head (5/32” drive) screws.
3. Attach the rotational plates to the “L” brackets by aligning the centrally located pivot bolt holes. Rest the upper plate on top of the upper “L” bracket, and the lower plate on top of the lower “L” bracket then loosely secure them finger tight using the provided 5/16”-18 X 1” nuts and bolts in the pivot bolt holes.
4. Align the display sign to aim at the oncoming vehicles by installing two sets of nuts and bolts to both upper and lower plates.

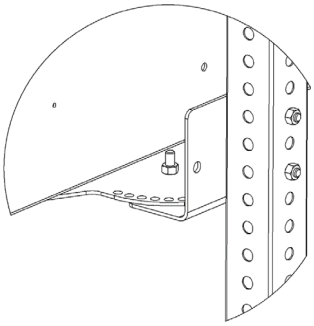
5. Tighten all fasteners in an alternating manner until they are all completely tight.

NOTE Through bolts for square pole mounting are not provided. Recommended bolt size is 3/8”-16.





Top Mount



Bottom Mount

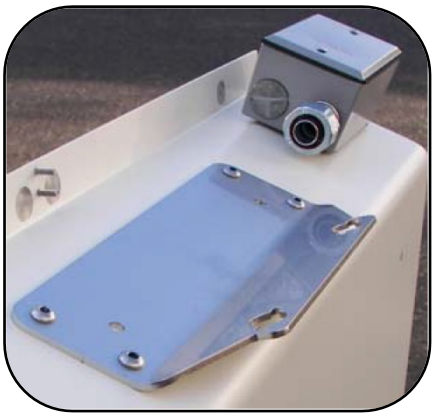
NOTE Ensure that three nuts and bolts are used between each flat bracket and pole bracket.

NOTE Legacy versions of the “L” brackets have two holes oriented vertically instead of four. Two-hole versions are used with SPEEDCHECK-15 display enclosures that have an angled top.

4.6 Quick Change Pole Mount

1. Remove sign face from main enclosure to allow for easier access.
2. Fasten the top bracket to the sign enclosure (Note: Legacy version with angled top shown pictured on the next page. New version has a flat top.)
3. Fasten bottom bracket to the sign enclosure.
4. Loosely secure the top bracket hanger to the pole using hose clamp.
5. Hang sign enclosure without sign face on top of the top bracket hanger.
6. Loosely secure the bottom bracket hanger to the pole using hose clamp.
7. Make fine adjustments for alignment and commissioning.
8. Once the alignment has been finalized, secure the brackets to the pole in a more permanent manner using stainless-steel banding (not provided) or U-bolts (an orderable option).
9. Complete installation wiring.

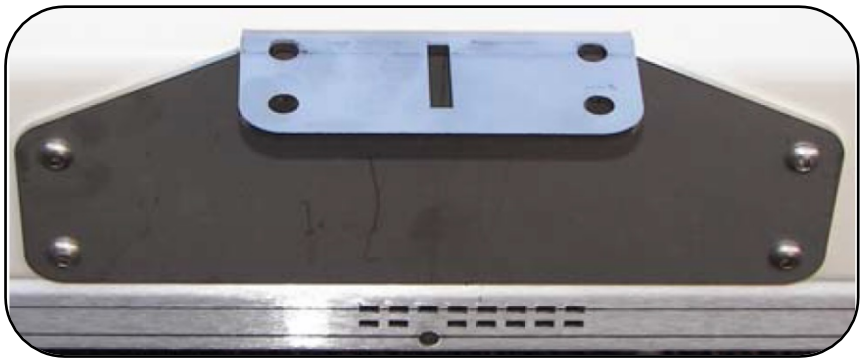
10. Attach sign face.
11. Secure cabinet in place with padlock.



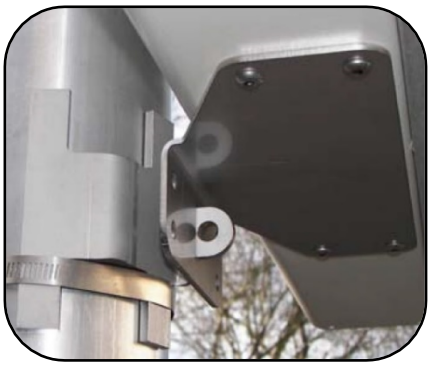
Upper Housing Mounting Bracket (note legacy angled top version shown)

Top Bracket Hanger

Installed Top Bracket



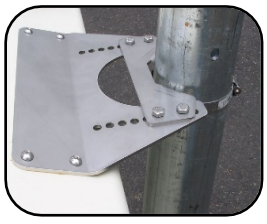
Lower Housing Mounting Bracket



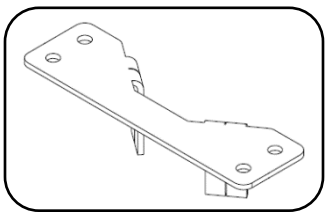
Installed Bottom Bracket

4.7 Tilt Mount

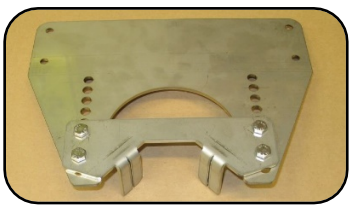
Install tilt mounts following the same process used for round mounts.



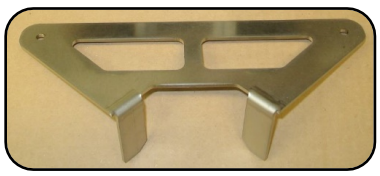
SPEEDCHECK-15 Upper Tilt Brackets (legacy angled top version shown)



SPEEDCHECK-15 Lower Tilt Bracket



SPEEDCHECK-18 Upper Tilt Brackets



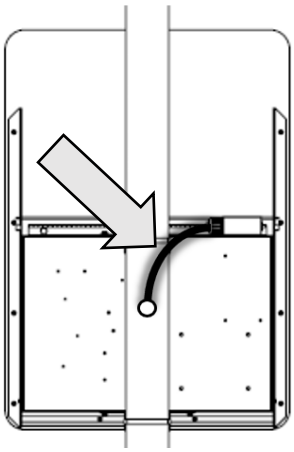
SPEEDCHECK-18 Lower Tilt Bracket

4.8 Conduit Routing

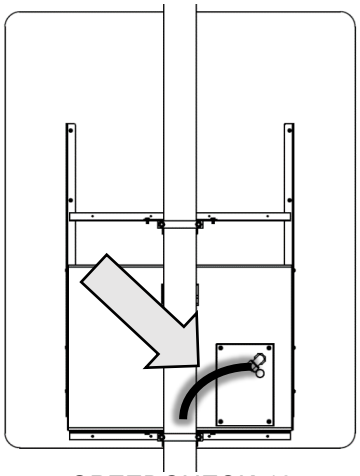
Included with each system is a short run of conduit that is intended to be installed as follows:

- SPEEDCHECK-15 junction box to the pole
- SPEEDCHECK-18 rear panel to the pole

NOTE The conduit can be fed directly into the pole without a fitting. Optional conduit kits at various lengths, including fittings, can be purchased from Carmanah. These kits or user supplied conduit are required to feed directly into the cabinet instead of the pole.

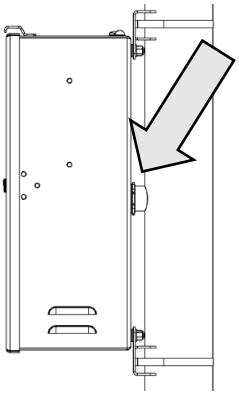


SPEEDCHECK-15

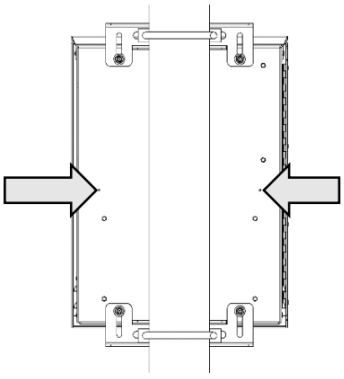


SPEEDCHECK-18

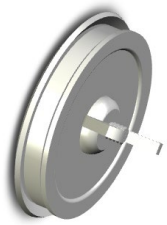
The SpeedCheck cabinet contains two externally marked drill points to choose from for terminating external conduit. In situations where external conduit routing is utilized the cabinet nipple may or may not be required. Removing the cabinet pipe nipple will allow the cabinet to sit closer to the pole or mounting surface. Contact Carmanah to obtain the optional hole plug kit that is required to seal the cabinet hole when the nipple is removed.



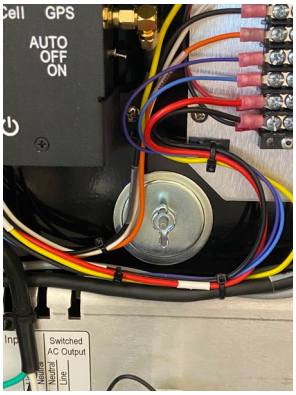
Pipe Nipple into Pole



Conduit Drill Points



Hole Plug

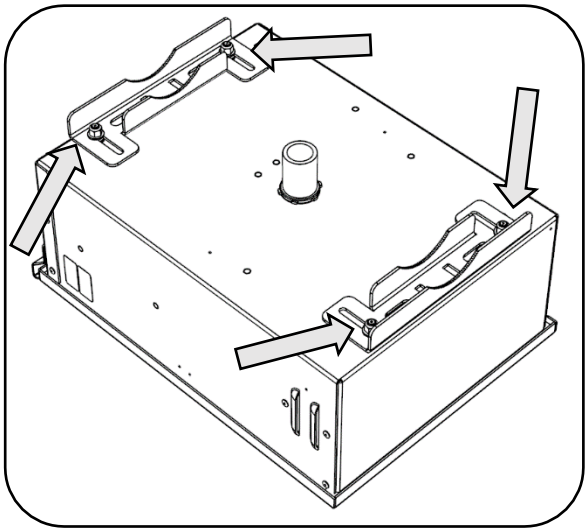


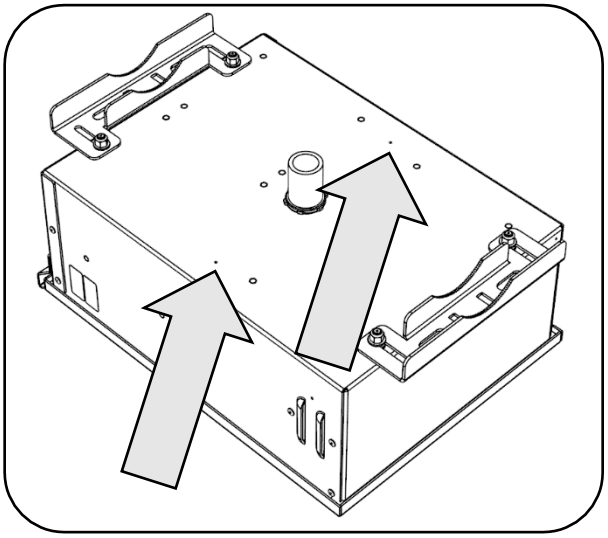
Hole Plug Installed

4.9 Cabinet Installation

NOTE **Before mounting the cabinet to the pole, all wiring internal to the pole (power, LED, optional StreetHub™ serial and ground cables) should be fished.**

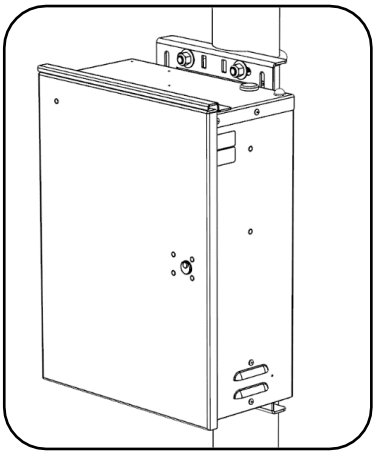
1. Loosen four nuts on back of cabinet and spread brackets outward. Tighten nuts to 20 ft-lb.

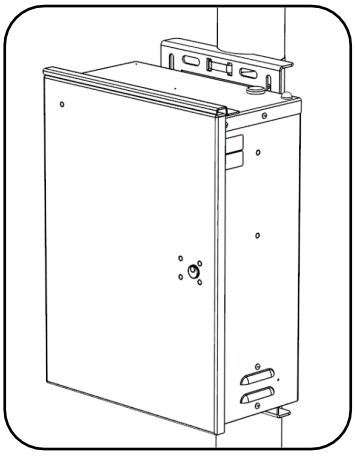




NOTE On the back of the cabinet, there are 2 drill points that may be used for routing of liquid-tight conduit external to the mounting pole. Prior to drilling the cabinet, ensure there are no components which may be damaged on the inside of the cabinet.

2. Drill a 1-3/4” diameter hole in pole for cabinet pipe nipple at desired position. An optional hole plug kit is available if the pipe nipple is removed from the cabinet.
3. Route cables from pole into cabinet and temporarily affix cabinet against the pole. For U-bolt mounting, install U-bolts, washers and nuts then torque to 30 ft-lb. For banding, install banding through openings in brackets.

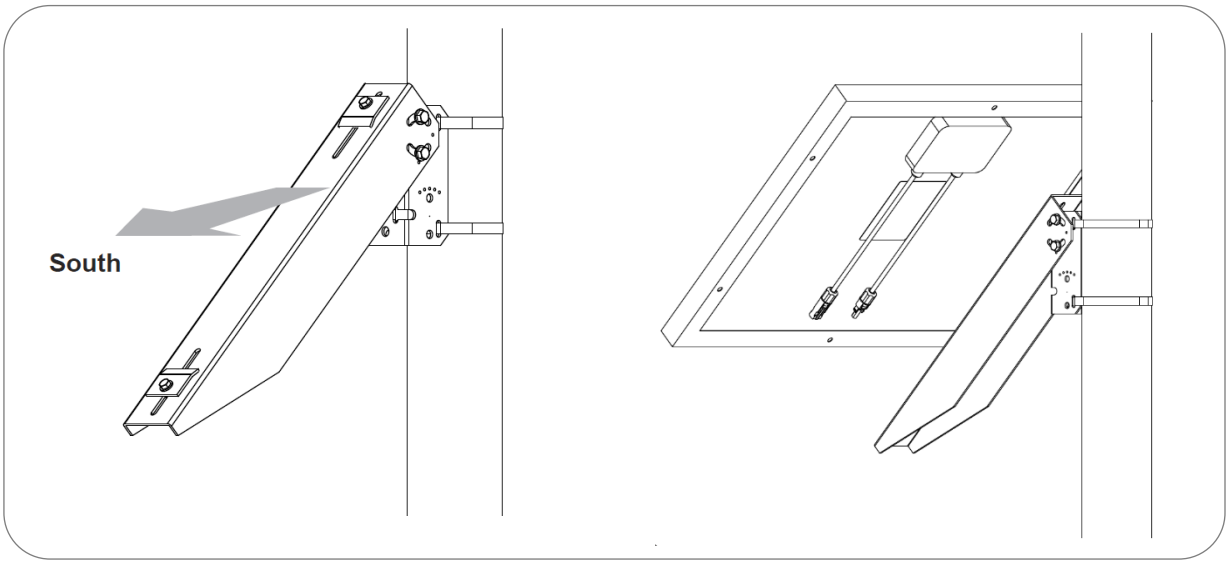




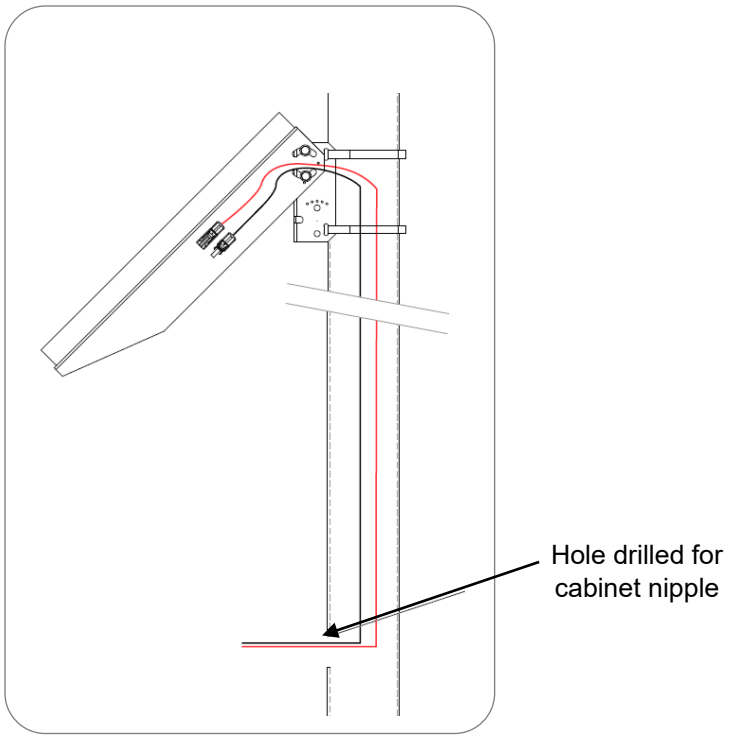
4. If desired, before tightening banding, brackets and banding can be adjusted inboard again. Tighten banding (up to ¾” wide) as per banding manufacturer’s instructions.

4.10 Solar Panel Mounting – Side of Pole

1. Mark position of solar panel mount on pole and drill a suitable hole for the solar panel wires. Follow instructions supplied with mount. Install using 45° tilt angle. Ensure solar panel is facing South (for Northern Hemisphere locations).



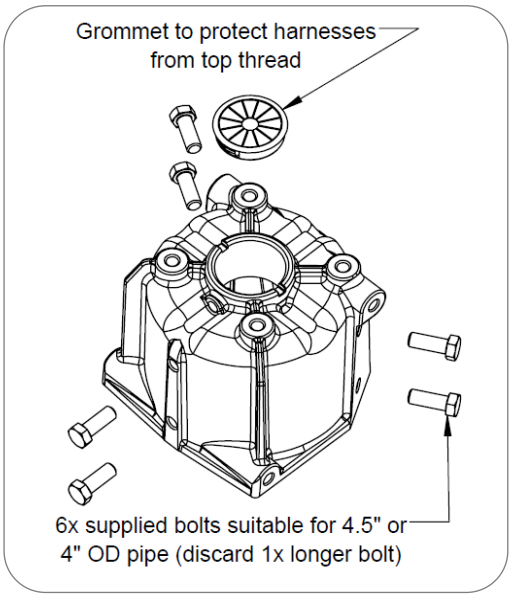
2. Route supplied solar panel wires down pole and through hole for cabinet conduit nipple.



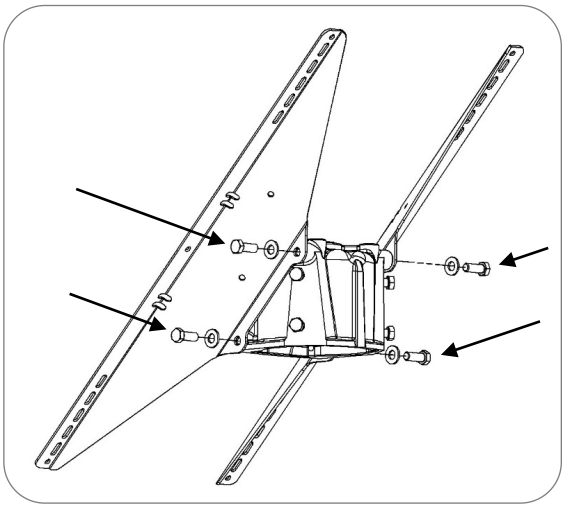
4.11 Solar Panel Mounting – Top of Pole (Cast Mount)

NOTE Contact Carmanah for additional support for legacy galvanized steel mounts not covered in this manual.

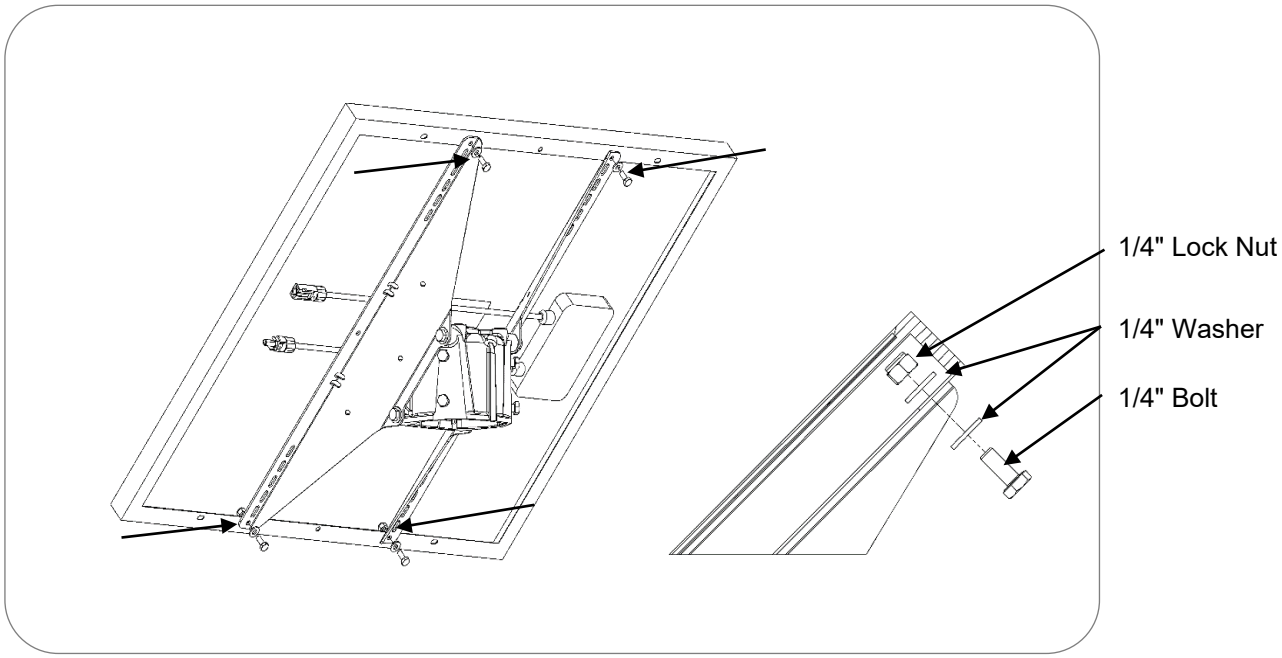
1. Install grommet and thread 6x 3/8” bolts into casting. Only thread in a couple turns so bolts do not protrude inside.



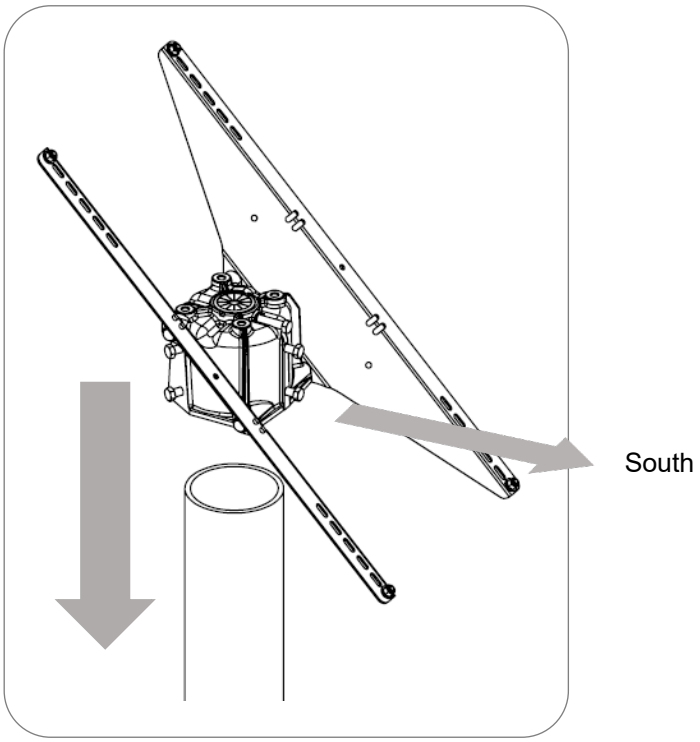
2. Attach both sheet metal brackets to solar panel using supplied ¼” bolts, washers and locknuts. Install casting between brackets with supplied 3/8” bolts and washers. Tighten 3/8” bolts first.



3. Attach solar panel to top of pole mount using supplied ¼” bolts, washers, and locknuts.



4. Slide casting over top of pole and orient so panel faces South (in Northern Hemisphere). Tighten the 6x 3/8” bolts to secure casting to pole and route solar panel wires down pole (image shows solar panel removed for illustration purposes).

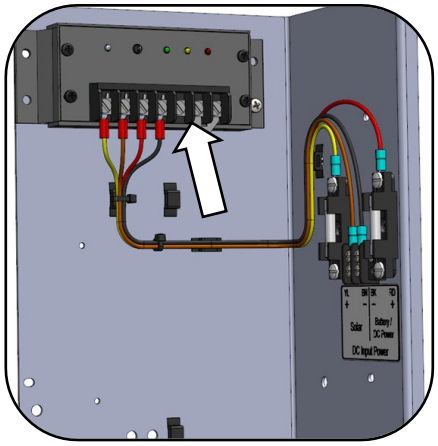


4.12 Solar Power System Wiring

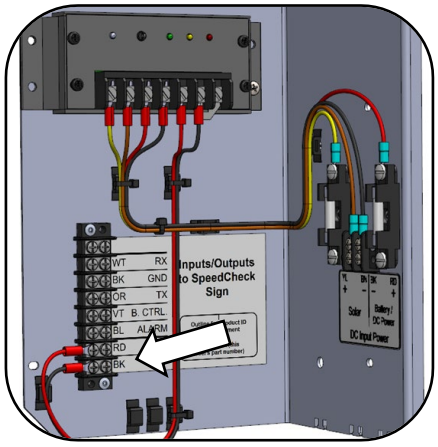
NOTE **Before mounting the cabinet to the pole, all wiring internal to the pole (power, LED, optional StreetHub™ serial and ground cables) should be fished through the pole as applicable.**

1. In-pole wiring: fish solar cable from solar panel down through hole in pole for cabinet nipple.
2. External wiring: route solar cable through a liquid tight conduit.
3. Remove battery and solar fuses from fuse holders in cabinet.
4. Connect solar positive spade terminal (red wire, yellow heat shrink) to the Solar+ fuse holder screw terminal. Connect solar negative spade terminal (black wire, brown heat shrink) to Solar− screw terminal.
5. Connect the sign DC input power wires to one of the following terminals:
    a. Load+ and Load- terminals (red is +, black is −)
    b. DC+ and DC− terminals (StreetHub™ equipped systems only, red is +, black is −)
6. Check the battery for voltage (recommended ~12.6V or greater for new installs) and polarity.
7. Connect the battery to the battery harness ring terminals.
8. Mate solar panel connectors to solar harness connectors.
9. Install battery fuse, then solar fuse.
10. Ensure green charging status LED illuminates on solar charge controller indicating proper solar charging.

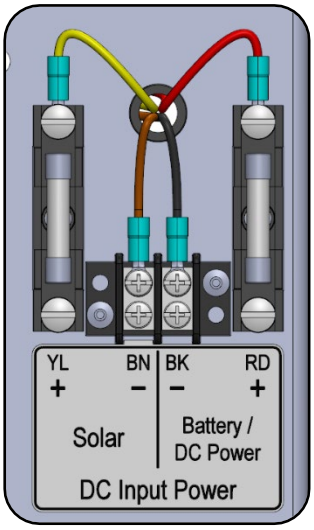
CAUTION Ensure cabinet door is fully closed and latched otherwise damage may occur.



DC out to radar sign (Load +/- terminals)



DC out to radar sign (StreetHub™ equipped only)



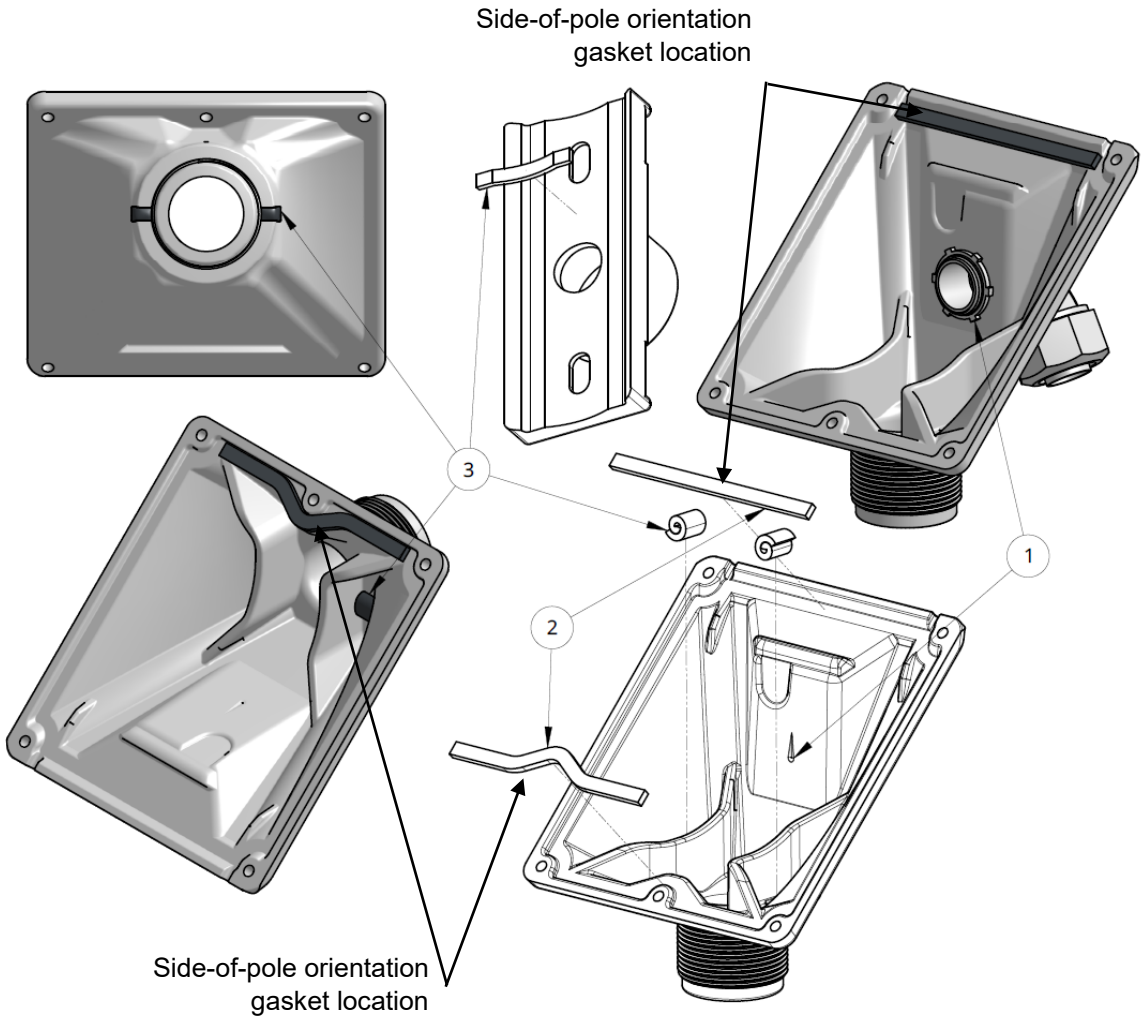
Cabinet DC input power terminals

4.13 Solar Kit – 45-degree Wedge Casting

1. If required, drill hole at marked location and install appropriate conduit fitting on casting. Remove any chips or shavings.
2. Apply supplied 4.5” long adhesive gasket strip to correct edge of 45-degree wedge casting for side of pole or top of pole mounting orientation.
3. Side of pole mounting only: roll up 2x 1” long supplied butyl rubber strips and use to plug openings of casting as shown. Also apply 2” long strip of gasket to hub plate above hole to prevent any water ingress.

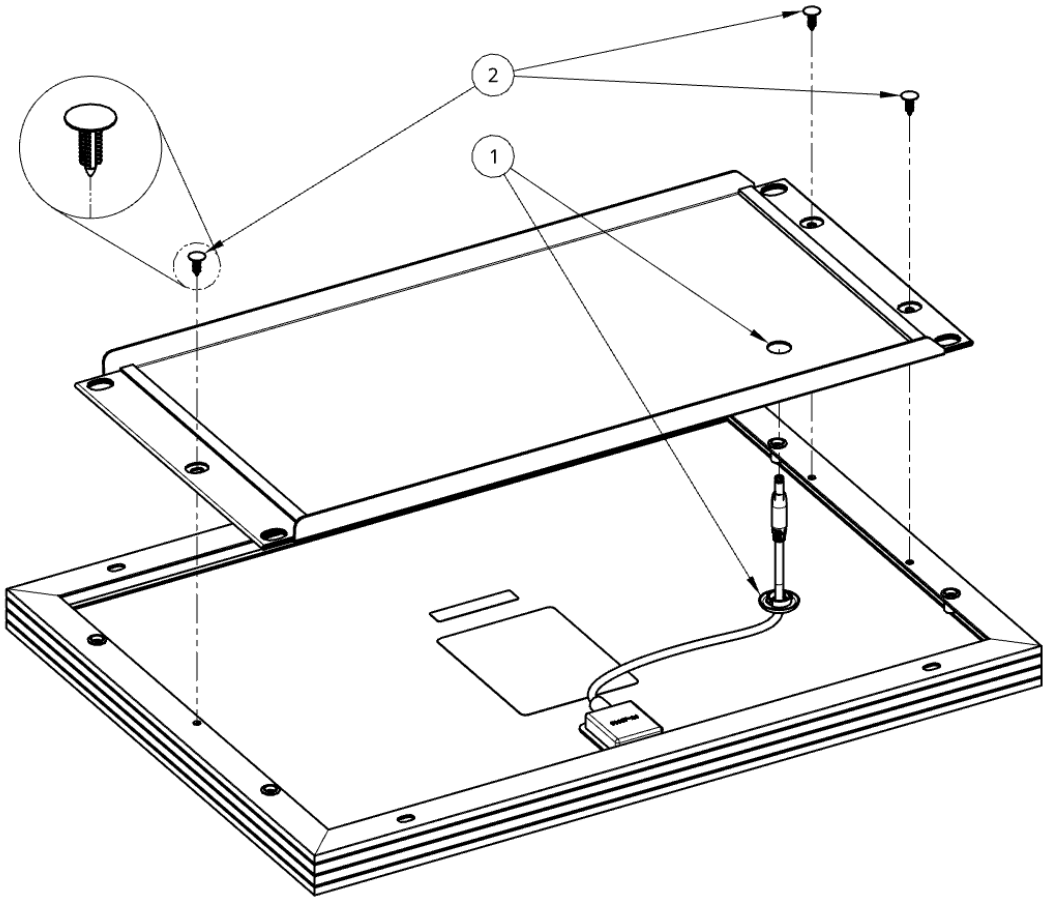
CAUTION

Failure to apply gaskets and sealant could result in water entry in the housing or conduit (if used) and cause damage to the product.



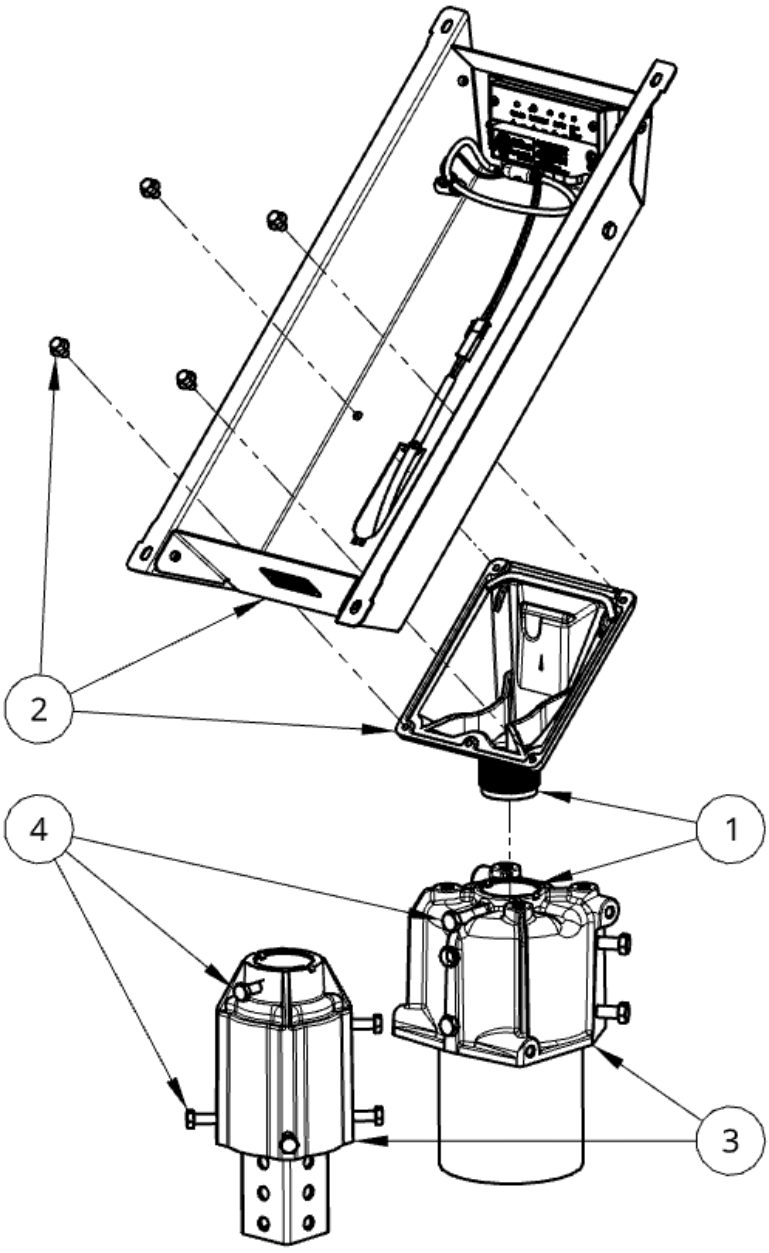
4.14 Solar Kit – Solar Panel Preparation

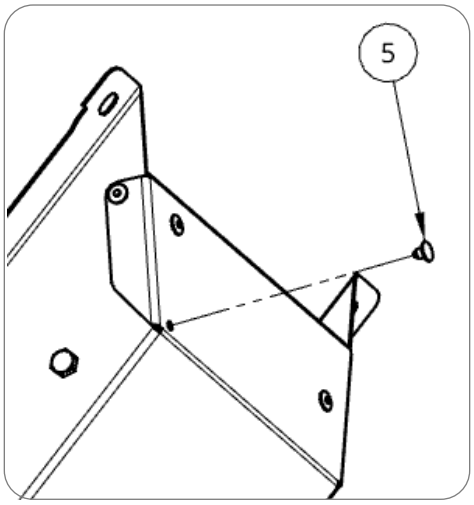
1. Install grommet in cover hole, ensuring it is fully seated against cover face.
2. Secure cover to solar panel using 3x supplied push-in rivets.



4.15 Solar Kit – Top of Pole Mounting

1. Thread 45-degree wedge casting onto mount (do not tighten yet if mounting to square post).
2. Fasten 45-degree wedge casting to housing using 4x supplied bolts.
3. Install on pole and orient solar panel to face South (or as per specific instructions provided by Carmanah) by rotating mount (round post) or 45-degree wedge casting thread (square pole).
4. Tighten set screws or bolts onto post and to lock 45-degree wedge thread.
5. Install supplied plug into top drain hole.



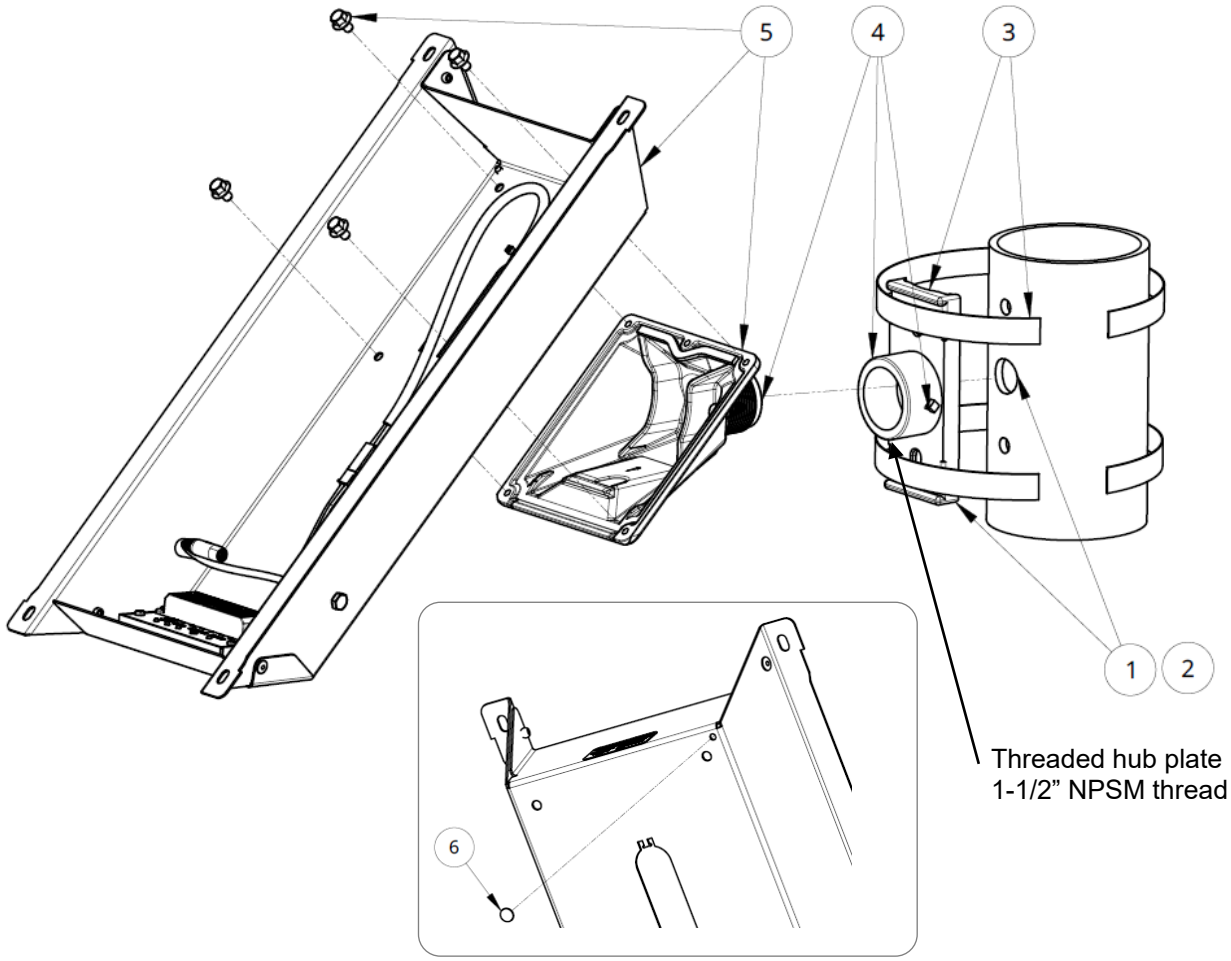


4.16 Solar Kit – Side of Pole Mounting

1. Determine mounting location and mark center of hub plate and bolt hole locations (if applicable), ensuring threaded opening faces South (or as per specific instructions provided by Carmanah).
2. If applicable, drill suitable bolt holes (for 3/8” hardware) and/or cable entry hole (1” recommended) at center of hub plate. Ensure there are no sharp edges left that could damage the cable.
3. Mount Side of Pole hub plate to post using banding (or through bolts).
4. Thread 45-degree wedge casting into hub plate as far as it will go, then back out until level and lock with set screw.
5. Fasten 45-degree wedge casting to housing using 4x supplied bolts.
6. Install supplied plug into top drain hole.

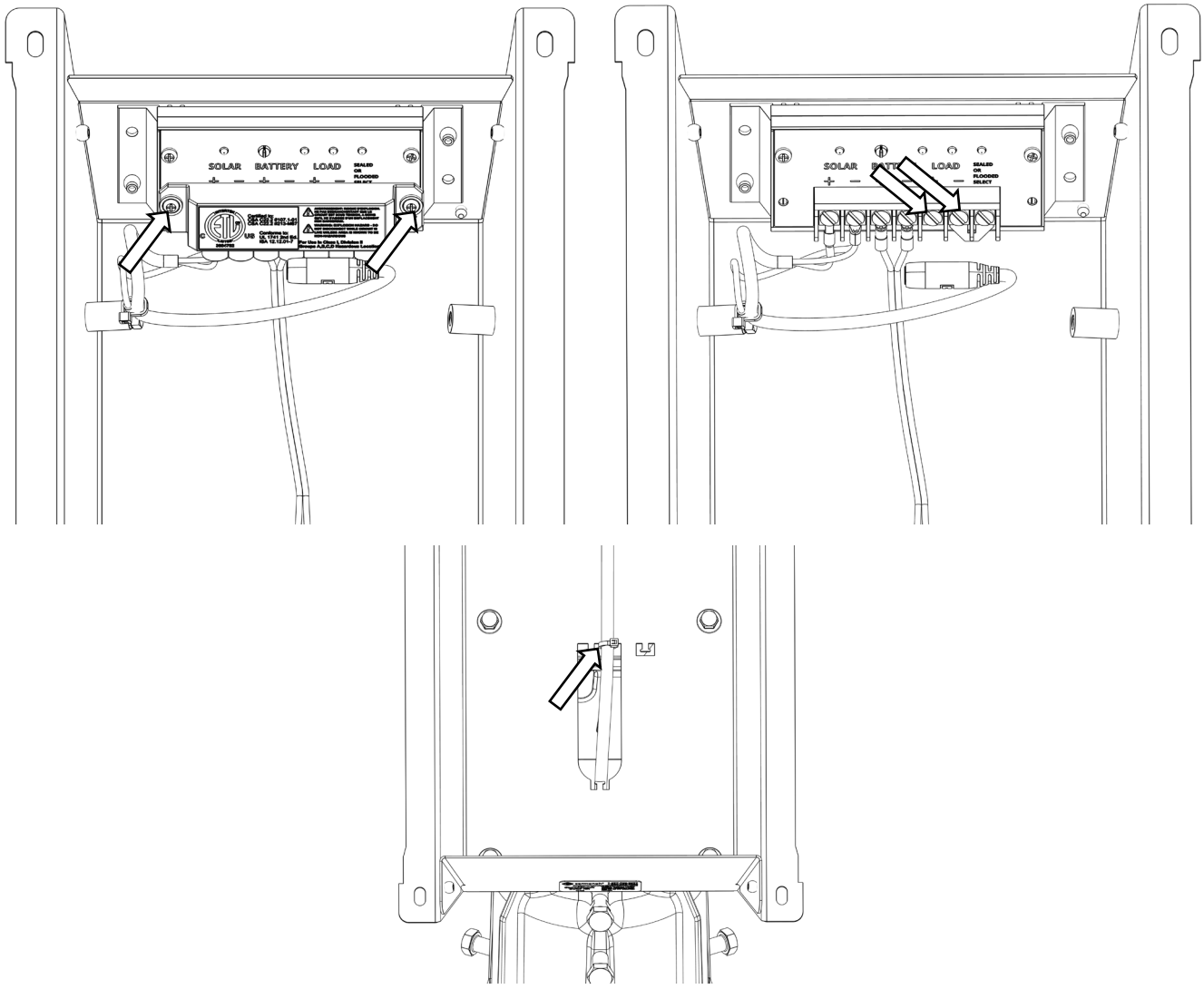
WARNING

Use only Carmanah supplied high-strength band clamp or commercial banding to secure hub plate to pole.



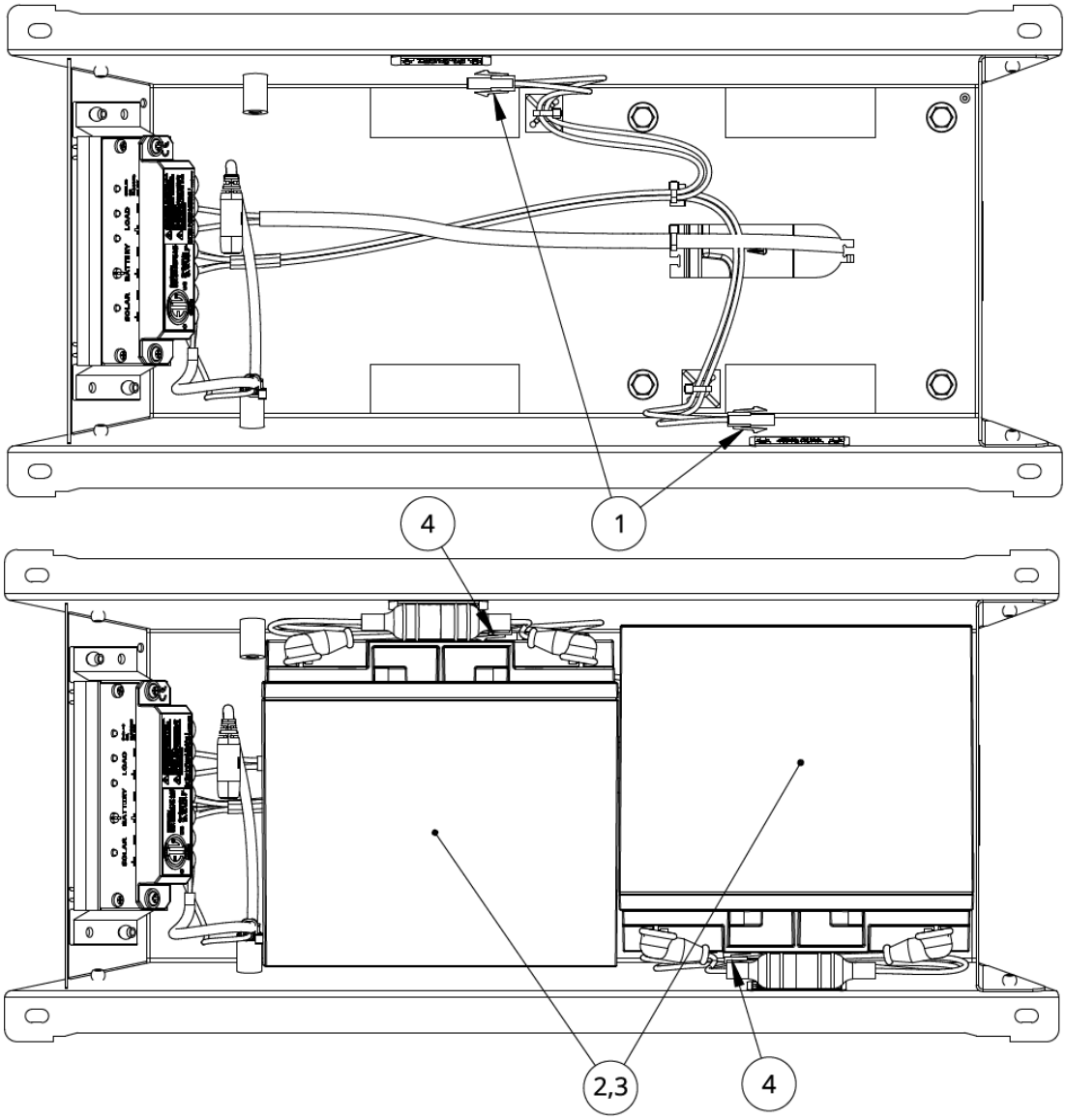
4.17 Solar Kit – Power Harness

1. Fish sign power harness up through pole or conduit to solar kit.
    a. Power harness will be coiled up coming out of the junction box (SPEEDCHECK-15) or rear panel (SPEEDCHECK-18). See Section 2.1 for more information.
2. Remove the cover to the charge controller.
3. Connect sign power harness to charge controller's Load +/- terminals with red on the positive (+) terminal and black on the negative (-) terminal. Reattach charge controller cover and secure with the included screws.
4. Use appropriate harness fastening location depending on system mounting orientation so harness enters housing facing up to prevent any drop of water from flowing into housing along jacket.
5. Secure power harness jacket to "dog-bone" feature using supplied cable tie as shown ensuring the connector is not under tension.



4.18 Solar Kit – Batteries

1. Identify battery connectors in housing.
2. Orient lower battery as indicated by label and view below and install into housing.
3. Orient upper battery as indicated by label and view below and install into housing.
4. Mate battery connectors and place harness between battery and housing side as shown, ensuring that harnessing doesn't protrude above top face of housing.

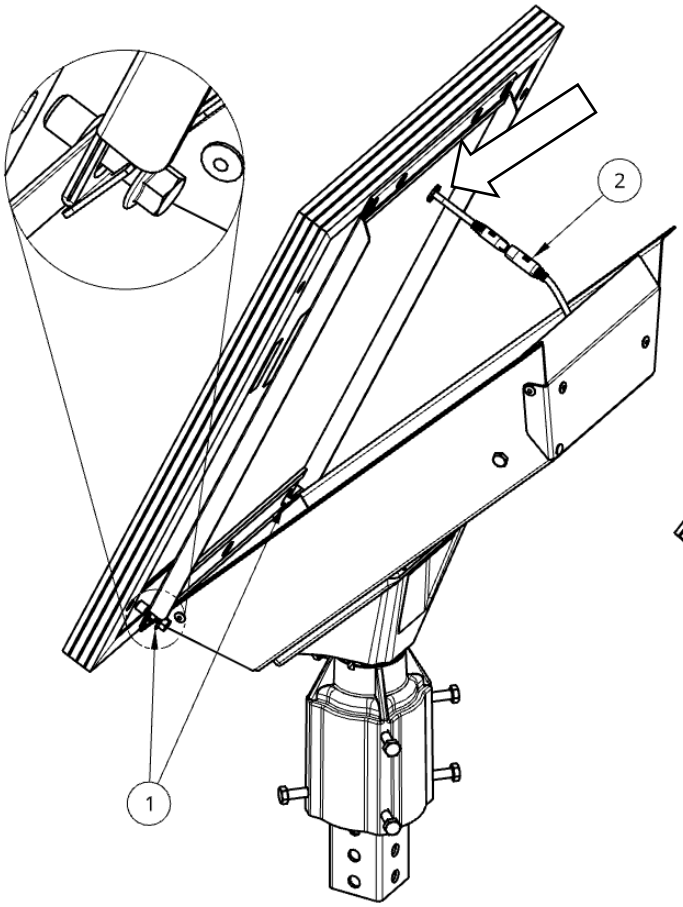


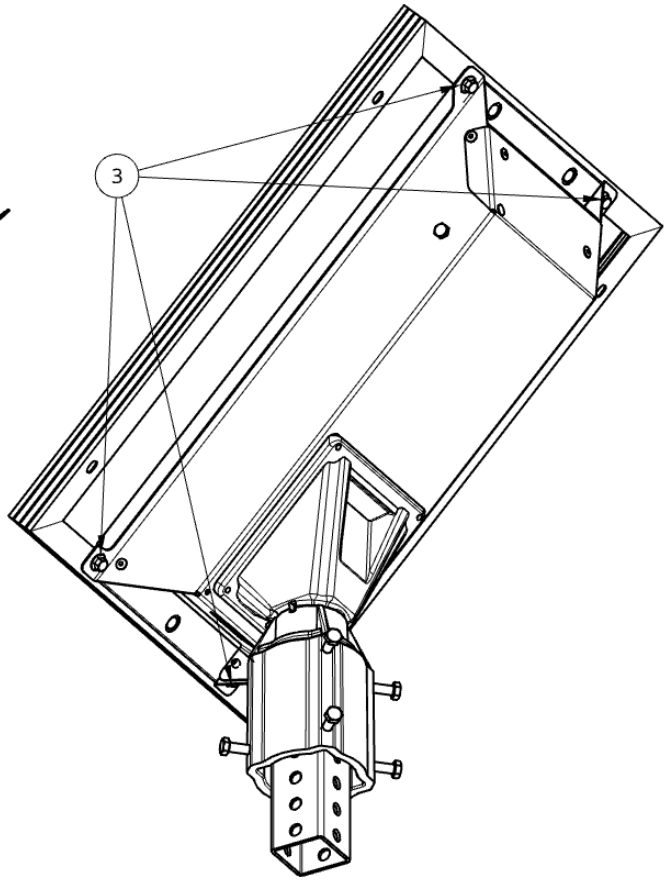
NOTE

For a top of pole mount system, the lower battery will be the one farthest from the charge controller. For a side of pole mount system, the lower battery will be the one closest to the charge controller.

4.19 Solar Kit – Solar Panel

1. Lower solar panel on housing and loosely install 2x bolts at mounted end of housing, noting location of power harness.
2. Lift other end of solar panel up and connect solar panel harness, ensuring connector is fully engaged.
3. Lower solar panel, taking care not to pinch solar panel harness, and install remaining bolts. Tighten all 4 bolts.





4.20 AC Power System Wiring

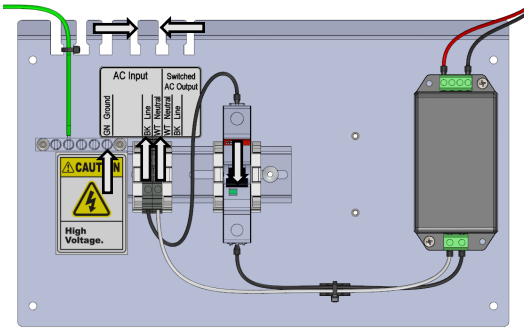
NOTE **Before mounting the cabinet to the pole, all wiring internal to the pole (power, LED, optional StreetHub™ serial and ground cables) should be fished through the pole as applicable.**

1. In-pole wiring: fish AC wiring from power source through hole in pole for cabinet nipple. For AC-in-the-sign versions of the SPEEDCHECK-15 wire to the junction box on the display sign.
    a. Optional cabinet entry points are available for external conduit runs for the power.
2. Turn breaker off and remove DC power fuse from fuse holder in cabinet.
3. Install supply line and neutral wires to AC Input terminals. Connect supply ground to the bus bar. Secure cable jacket to chassis with cable tie.
    a. Line = black, neutral = white, ground = green
4. Connect the sign DC input power wires to one of the following terminals:
    a. Load+ and Load− terminals (red is +, black is −)
    b. DC+ and DC− terminals (StreetHub™ equipped systems only, red is +, black is −)
5. Check the AC supply for voltage and polarity.
6. Install DC power fuse to the fuse holder and turn breaker on to apply power to the system.

CAUTION Ensure cabinet door is fully closed and latched otherwise damage may occur.

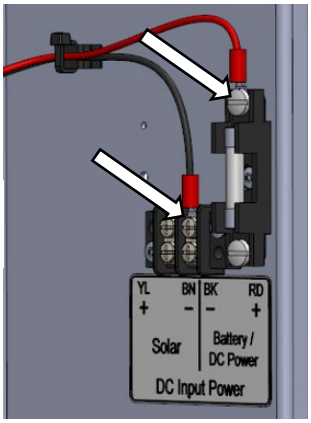
NOTE The ground bus bar accepts 4 – 14 AWG copper wire. The DIN rail terminal blocks accept 10 – 26 AWG copper wire.

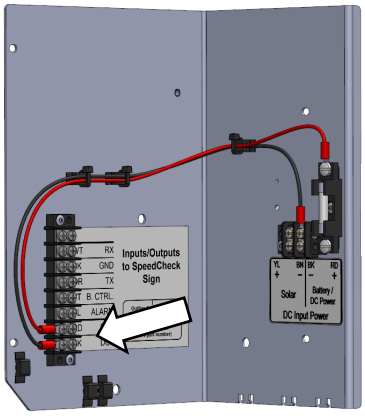
Cabinet AC input terminals



AC-in-the-sign wiring (SPEEDCHECK-15 only)

DC out to radar sign

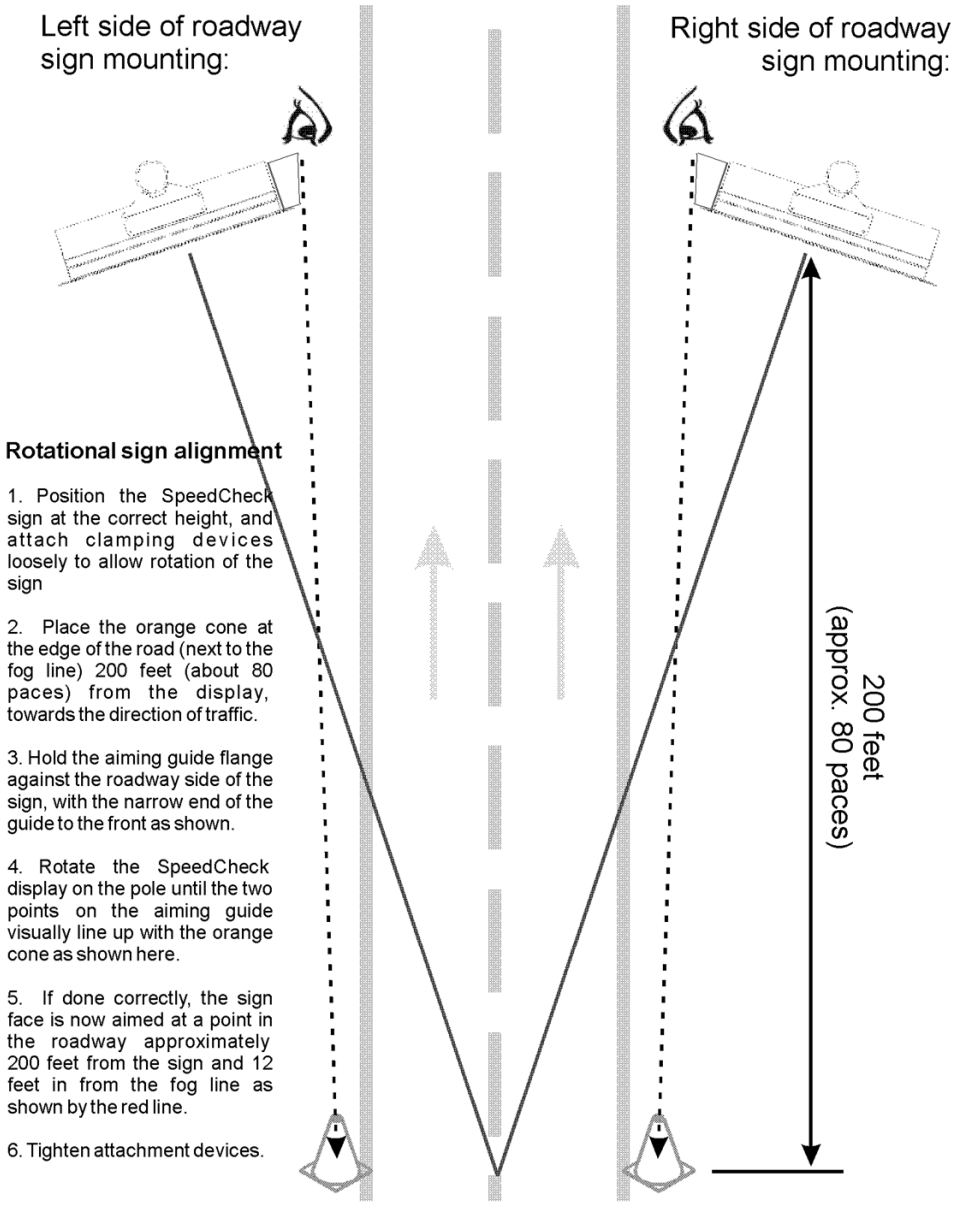




DC out to radar sign (StreetHub™ equipped only)

4.21 Display Alignment

For the full display alignment instructions refer to Section 5 of the complete product user manual at support.carmanah.com.



Rotational sign alignment

1. Position the SpeedCheck sign at the correct height, and attach clamping devices loosely to allow rotation of the sign

2. Place the orange cone at the edge of the road (next to the fog line) 200 feet (about 80 paces) from the display, towards the direction of traffic.

3. Hold the aiming guide flange against the roadway side of the sign, with the narrow end of the guide to the front as shown.

4. Rotate the SpeedCheck display on the pole until the two points on the aiming guide visually line up with the orange cone as shown here.

5. If done correctly, the sign face is now aimed at a point in the roadway approximately 200 feet from the sign and 12 feet in from the fog line as shown by the red line.

6. Tighten attachment devices.

Aiming Guide and Cone

4.22 Controllers

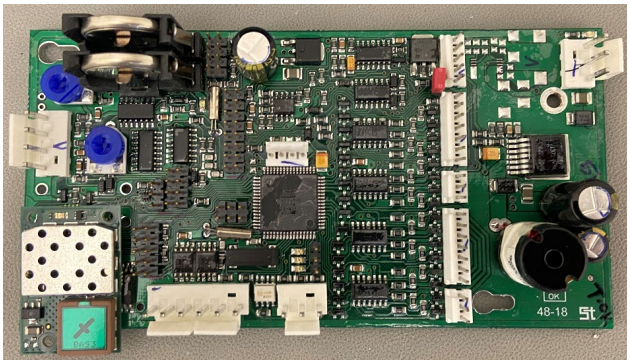
The SpeedCheck controller is factory programmed to a default set of values based on your system configuration and may require changes based on your installation requirements. Carmanah can assign custom programming (speed settings) as requested, otherwise the programming can easily be adjusted using SpeedCheck Manager.

For more information on the SpeedCheck controllers, refer to Sections 3.6 – 3.9 of the complete product user manual at support.carmanah.com. The legacy programmable controller is being phased out and replaced by the updated programmable board.

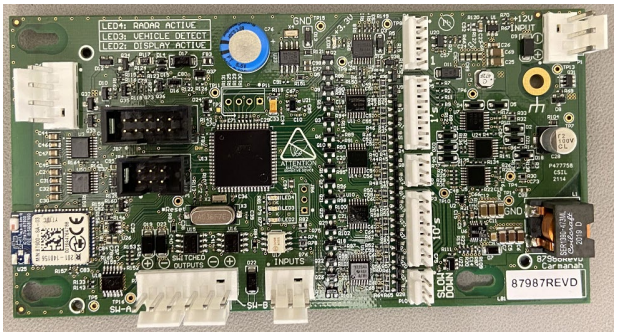
Before accessing the controller be sure power has been disconnected to the system.

1. Turn off the external source powering the display sign.
2. Open the fuse block(s) in the display sign.
3. Wire harness connectors have ramp and clip features to hold the connector in place. If inserting connectors, ensure the connector ramp engages with the corresponding mating features.

Legacy Programmable:



Updated Programmable:



NOTE The updated programmable controller requires SpeedCheck Manager version 3.0.1.16 or newer of to communicate. Download the latest version at support.carmanah.com.

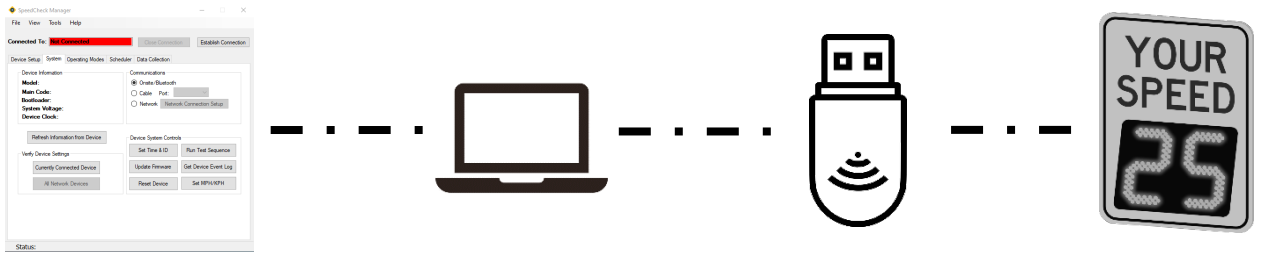
NOTE The replaceable coin cell batteries have been removed in this controller version in favor of a capacitor bank. You will have >24hrs of date/time retention with power disconnected to the controller.

4.23 System Configuration

The SpeedCheck radar speed signs are configured using the SpeedCheck Manager software. For more information on programming and to download the latest version of software please visit support.carmanah.com.

NOTE Updating firmware on legacy controllers running version 3.47 or older is **not recommended**.

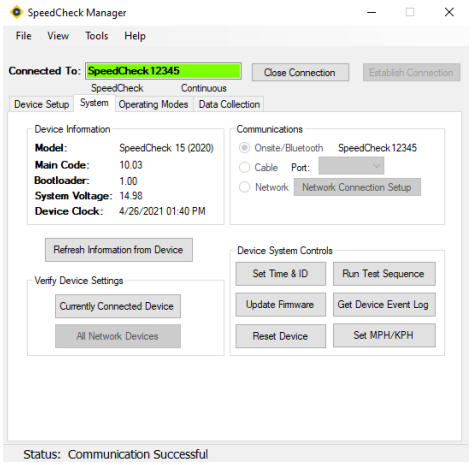
Once your system has been installed and is operational, proceed with connecting to the sign via SpeedCheck Manager. This will require a PC with Bluetooth connectivity. Carmanah assigns default programming based on your system configuration and may require additional configuration based on your installation requirements.

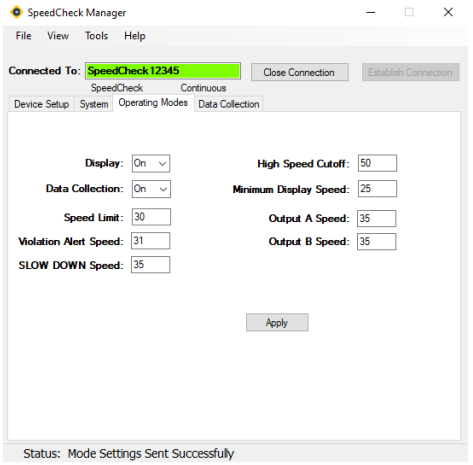


SpeedCheck Manager Software User Interface | *PC (Laptop)* | *Bluetooth Dongle (if required)* | *SpeedCheck Sign*

The following are a few of the features and programming options found within SpeedCheck Manager:

- Speed adjustments
- Radar unit of speed (MPH/KPH)
- Beacon adjustments
- Operating mode selection
- Slow Down option toggle
- System ID, date and time
- Scheduling
- Data collection
- Firmware updating

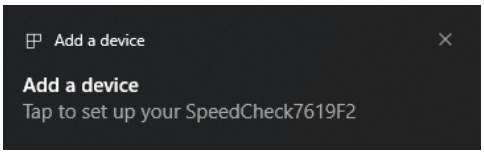




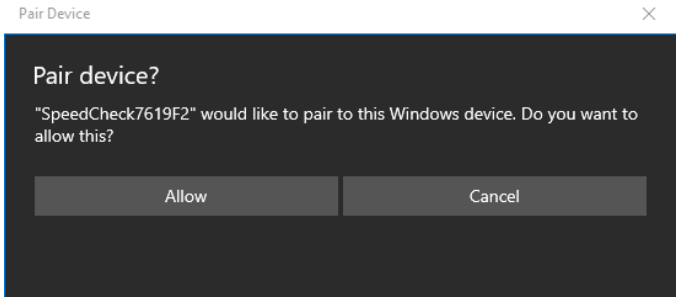
Bluetooth Pairing (updated programmable controller only)

When connecting to your SpeedCheck radar speed sign for the first time you will need to pair it via Bluetooth:

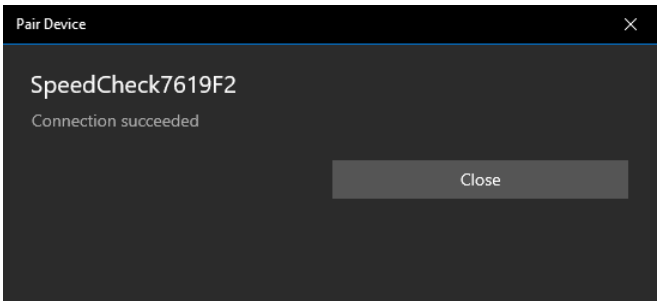
1. Open SpeedCheck Manager and click on Establish Connection.
2. Wait for the software to scan and detect nearby Bluetooth devices. Click on your radar speed sign (designated as SpeedCheckXXXXX) and click Connect.
3. Click on the dialog box in the bottom right corner to begin the pairing process.



4. Click on Allow to pair the device.



5. The sign is now paired and will be connected within SpeedCheck Manager.



This process will need to be completed if you are connecting to a system for the first time or connect via another PC.

5.1 Troubleshooting

No operation or erratic operation	1. Verify voltage supply connections are correct and tight. 2. Verify fuses in the fuse blocks and inline fuse holder are of the correct rating. • Solar input and battery fuse: **15A** • SpeedCheck DC supply fuse: **4A** • SpeedCheck AC input fuse: **0.5A** • All fuses are type (250V 3AG 1/4" x 1-1/4") 3. On programmable boards, ensure the coin cells show at least 2.7V each, if not they should be replaced.
Not all vehicle speeds displayed	1. Verify the display has correct alignment with the roadway. See Section 4.22 on Display Sign Alignment. 2. Check the High Speed Cutoff setting in SpeedCheck Manager. It may be set too low for the prevailing traffic speed. 3. Check the minimum display speed setting. It may be set too high for the prevailing traffic speed. 4. Note that the SpeedCheck display signs are designed to detect moving vehicles, including trucks and golf carts, but will ignore people or small targets. 5. The display may be angled slightly towards the center line of the road to focus on vehicles closer to the display. Detection range may vary depending on target size, such as a truck versus a compact car.
Sign displays test sequence only upon start up	1. Display may be set to “OFF” in the “Operating Modes” menu of the SpeedCheck Manager software. 2. Timer or scheduler has been set to collect data but not display speeds. Set the program as desired. 3. Radar is not sending data. Contact Carmanah for further diagnostics.
No test sequence and no speeds displayed	1. Key switch if used is in the OFF position, fully Counterclockwise (CCW). 2. Coin cell batteries are dead on programmable boards. Below the batteries is a small LED indicator that blinks continuously when the sign power is removed. If the small LED is not blinking when power is off, replace with two CR2032 batteries. Remember to reset time and date and check all sign programming. 3. Controller board may have a jumper on the power bypass pins just to the left of display cables 1 and 2 which enables operation without coin cells. Without this jumper the programmable board cannot power up if the coin cell batteries are dead or missing. 4. Power to display is OFF. 5. Test sequence is disabled. 6. Operating Modes settings set for “Display OFF”. 7. Timer or scheduler has scheduled the sign to be off.

Numbers displayed with no vehicles passing	1. “06” or “08” displayed indicates the display is picking up noise from such items as fluorescent light ballast or fan blower motors. Eliminate the source of the noise or insulate the radar head from the display cabinet. Contact Carmanah for further information. 2. “88” displayed indicates the display is programmed for the SLOW DOWN message but the SLOW DOWN message boards are not installed. Disable the SLOW DOWN message operation in the Device Setup menu using your SpeedCheck Manager computer software.
Speed readings are higher than expected	1. Display may be set to read KPH instead of MPH. Use SpeedCheck Manager to set the correct unit of speed. See support.carmanah.com for more information.
Detection range too short	1. Sign alignment is incorrect. See Section 4.22 on Display Sign Alignment. 2. Sign has metallic or plant obstructions between display and the vehicles. 3. Sign is aligned properly but road curve or grade is affecting detection zone. 4. Try aligning the sign face towards or away from center line, and/or more towards the grade of the road (up or down) as required. 5. Internal metal radar reflector bent or missing. Check inside the display enclosure. For systems with the DR500 or Decatur SI-3/SI-2 radars only. 6. The display may be angled slightly towards the center line of the road to focus on vehicles closer to the display. The factory setting is a detection range of 400 to 600 feet from the display. This range is affected by target size such as a truck versus a compact car. Contact Carmanah for more information.
Bluetooth® communications erratic or not working	1. Display not powered, or key switch set to OFF. 2. PC laptop computer not fully charged. You may get a timeout error if there is insufficient power to maintain a wireless connection. 3. PC laptop too far away. It must be located within 50 feet, in line of sight and free and clear of obstacles in front of the sign. 4. Mismatched software and firmware are loaded on the laptop or controller board. Contact Carmanah for the latest versions.
Display application not downloading data properly	1. Invalid display name. Ensure display name programmed with your laptop computer is valid and does not include special characters or punctuation. 2. PC laptop computer not fully charged. You may get a timeout error if there is insufficient power to maintain a wireless connection. 3. Make sure display date and time is set properly with the SpeedCheck Manager Device System tab setup menu.

Technical Support:

Email: customersupport@carmanah.com
Toll Free: 1.877.722.8877 (US & Canada)
Worldwide: 1.250.380.0052
Fax: 1.250.380.0062
Web: carmanah.com