

# CAMPWORKS MANUAL

## TONGUE

- The trailer comes standard with a 2" Lock N' Roll that connects the coupler to the open receiver. Additionally, you can opt to add an anti-rattle tightener to your setup to ensure a secure and quiet tow. For optimal maintenance, wipe any debris off your hitch and grease the hitch ball before every trip.
- Chains are attached to the tongue of the trailer. For increased security, you may opt for a locking hitch pin: CURT 23518 Black Trailer Hitch Lock, Master Lock 377KA Trailer Hitch Lock.
- The trailer comes standard with an Offroad Trailer Tongue Swivel Jack. This has a 2,000 lb lift capacity and a 3,000 lb support capacity. It provides 15" of total lift. You can add blocks underneath the foot of the jack if necessary, based on the terrain of your campsite, or to get a higher lift for higher lifted towing vehicles.
- VIN & info plates are on the A-frame arms of the tongue for reference. The plate lists the gross vehicle weight rating (GVWR), rim size, tire size, and suggested cold PSI for your tires in addition to the VIN and date of manufacture.
- The tongue storage deck is firmly bolted to the frame with galvanized hardware, lock washers, and Loctite. It sits atop an A-frame tongue construction made out of a 3/16" square steel tube.
- Our frames are powder-coated and reinforced which you can touch up with a two-part aerosol as needed.

## BATTERIES & ELECTRICAL

- The NS-1 is built with a robust and intuitive electrical system. Through your included touch display and iPad you can control and monitor your whole system.

- If any errors arise, your NS-1 will read an error code and recommend a fix. There is NO user service of your electrical system. Opening electrical compartment MAY void your Manufacturer's Warranty.
- Contact Navico Support for any issues related to your NS-1 Electrical Kit or email [info@campworkscs.com](mailto:info@campworkscs.com).
- Avoid storing the battery at a low charge (re-charge after each trip)
- Preferred to leave plugged into shore power if accessible while storing.
- If can not leave plugged into shore power, charge fully at least every two months
- Charge fully a few days prior to a trip in case you need a replacement battery
- Charge the battery until full whenever possible.
- Take the battery off charge for at least half an hour, then check the voltage before any trip.

## **AIR COMPRESSOR**

- Our Air compressor is a low-maintenance unit that comes with a simple on/off switch and a ½ gallon tank (used for things that require a blast of air, like seating tubeless mountain bike tires). Max pressure on the unit is 150 PSI, and when in the on position the compressor will shut off once fully pressurized. The fuse for this unit is an on-wire fuse located under the black cap on the rope wire. If the unit isn't working, check for a blown fuse, and replace if necessary.

## **EXTERIOR ELEMENTS**

- Keys: Doors - Purple keys for both the handle lock (on the handle) and the deadbolt (on the handle frame)
- Keys: Tongue box - the number varies & should match the lock face
- Keys: Galley T-Handle - the number varies & should match the lock face
- Keys: Rhino-Rack crossbars - the number varies & should match the lock face
- Fenders are coated with Gardit, which is a more durable coating than powder for areas like this that experience high exposure to road debris.

- Regularly inspect your tires for damage, uneven wear, and adequate tire pressure. Check the sidewall of your tire for the manufacturer-recommended PSI, and use this setting as the max pressure. With the lighter weight of the trailer, you can choose to run the tires at a lower PSI if desired. The Original TOPO comes stock with a 6/5.5 bolt pattern. This means there are 6 bolts on the hub, and the measurement from the center of the bolt at 12 o'clock to the bolt at 6 o'clock measures 5.5". stock tires are a General Tire Grabber APT all-terrain tire 265/75R/16 (31.6"). Both our standard axle and Freeride Suspension can accommodate sizes up to 285/70R/17, or 33s in common terms if you want to make any after-market changes to your setup.
- Tires are recommended BFGoodrich KO2 A/T all-terrain tire 265/75R/16 (31.6")
- Grease wheel bearings once a season.
- It is important to tighten the lug nuts in a star pattern (12 o'clock then 6 o'clock, 2 o'clock then 8 o'clock, 10 o'clock then 4 o'clock) with a 19 mm, thin-walled socket and a torque wrench set to 100 ft. lbs. after the first 200 miles and/or the first drive, and then at least every 2,000 miles and at least once per season.

## **SUSPENSION**

- Steel Timbren Axle-less Suspension manages compression & rebound.
- Damped travel of up to 4.5" of independent movement on each wheel.
- See below for the maintenance schedule required for suspension. This suspension system performs incredibly well when maintained, but neglect can lead to performance and safety issues.

## MAINTENANCE SCHEDULE

|                           |   |   |   |   |
|---------------------------|---|---|---|---|
| Pressure                  |   |   |   |   |
| Tire Condition            | Inspect for cuts, wear, bulging, screws/nails, etc                    | X |   |   |
| Wheel Nuts and Bolts      | Tighten to specified torque values*                                   |   | X |   |
| Suspension Parts          | Inspect for bending and wear  |   | X |   |
| Suspension Bolts          | Inspect for loose fasteners   |   | X |   |
| Extreme Duty Bushings     | Pump grease into zerk fitting   |   |   | X |
| Brake Magnets             | Inspect for wear and current draw                                     |   |   | X |
| Brake Linings             | Inspect for wear or contamination                                     |   |   | X |
| Hub / Drum                | Inspect for abnormal wear or scoring                                  |   |   | X |
| Wheel Bearings and Cups** | Inspect for corrosion or wear. Clean and repack bearings with grease. |   |   | X |
| Seals                     | Inspect for leakage. Replace if removed.                              |   |   | X |
| Springs                   | Inspect for wear, loss of ride height (measure distance to bump stop) |   |   | X |
| Hangers                   | Inspect welds   |   |   | X |
| Wheels                    | Inspect for cracks, dents, or distortion                              |   |   | X |

## TORQUE SPECIFICATIONS

- Axle Bolts (Torsion) 180 foot-pounds
- Upper Shock Bolt 60 foot-pounds
- Lower Shock Bolt 60 foot-pounds
- Control Arm Hanger Bolt 60 foot-pounds
- Spindle Bolt 180 foot-pounds
- Wheel Lug Nuts 100 foot-pounds

## **CABIN INTERIOR**

- Always have the exhaust fan open for ventilation when inside even when it's cold or the weather is bad; leaving the fan on a low exhaust setting will help manage condensation as well. After use, the fan can also get a bit dusty and dirty. It helps to use pressurized air to relieve the fan of dirt and dust. This will ensure a smoother functioning fan.
- Error alerts - check for a broken fuse if there are electrical issues
- 12V/USB are the most common to blow if overloaded
- Interior lighting is controlled by touch display, iPad, and physical in-cabin buttons.
- Wall-mounted light switch controls both porch lights in a single on/off position.
- When storing items in the cabin interior It's best to pack your gear tightly in one place at a time to reduce rattling in transit. Then, utilize your tie down locations for gear securement.
- Make sure cabinet door knobs are pressed in (to the "locked" position) before travel.

## **COMPONENTS & ADD-ONS**

- Breaker switches are installed to the left of the unit, and can always be left in the ON position, even when the unit is off. If you see one of the breakers in the OFF position, check your system for errors, reset, and try again.
- To charge your trailer through the shore power port, the master power switch must be in the "on" position. Breakers should be in the "on" position at all times.
- Turn off components when not in use. This is useful for power conservation as well as to limit the noise inside of the unit when its function is not needed.

## **CLIMATE CONTROL**

- Control of your AC and Heat are simple through the control panel. Automated circuits will keep internal temperature, battery compartment, and water at regulated temperatures.
- For manual control of any HVAC, simply go to corresponding circuit control.

## **GALLEY**

- Check that cam latches are parallel to trim prior to closing, and that there are no items on the counter too tall or long for the hatch to clear. This protects your locks, trim, personal items, and the body exterior.
- 90-pound gas struts assist with opening the kitchen and provide a soft close (after a few years grease may need to be replaced).

## **TABLE**

- The large cabinet face in the galley doubles as an adjustable table, easily removed from the galley and set up on either side of the trailer.
- The table mounts at a 45-degree angle into the mounted channel and is then lowered into position (do not attempt to mount the table into the channel by sliding in any direction).
- The mounting channel is made of aluminum, which won't rust, but is a soft metal, and if anything is forced in the mounting process you may bend it. As a general rule, if it doesn't mount easily then it's not properly aligned. Abort, and try again.

## **CABINET CONSTRUCTION**

- All cabinet dividers feature a mortise & tenon construction, using additional fasteners only as reinforcements. This makes for an incredibly durable structure.

## **STOVE**

- One 6,000 BTU (British Thermal Unit) burner & one 8,500 BTU burner
- To ignite, make sure the propane tank is fully open. Press & hold the knob down, turn to the flame icon on the left, then click the ignitor button until the flame ignites (may need to hold the knob down for a few seconds to ensure the flame holds)

- Always turn the propane tank off when not in use. If you smell propane gas when the tank is closed and the stove is off, check for leaks and discontinue use until the leak is resolved.
- The ignitor is powered by a AA battery which is located behind the drawers and will need to be replaced if you do not hear an audible \*click, click, click\* upon pressing the button (see 'Drawers' below to access this area).

## **DOMETIC CFX3 75L DZ**

- Drain on the right side should be hand tightened before loading.
- If meltwater accumulates, the cooler should be removed from the galley temporarily and be drained.

## **DRAWERS**

- To remove drawers, and access the ignitor battery for the stove you'll need to locate a small black lever on the middle exterior of each slide. Pull up on the left side and push the right side down to unlock and remove the drawer.
- The ignitor battery will either be mounted to the floorboard or on top of the heating unit (if you have one). If the ignition switch on your stove is not \*clicking\* when pressed you'll need to replace this battery with a new AA.

## **PACKING THE GALLEY**

- It's best to pack your gear tightly in one place at a time to reduce rattling in transit. Then you can always reorganize at base camp! Also, consider purchasing some bins for galley storage or surface protectors to limit scuffing or scratching from harder materials.

## **SOLAR PANEL**

- Lightleaf panel mounts onto the back hatch of your TOPO Series trailer.
- Make sure the mounting knobs are turned to hold the panel in place while driving.
- You can add a mini padlock to the center toggle latch for security
- 12' extension cord allows you to park in the shade and use the kickstand to set the solar panel up in the sun
- Daisy-chaining additional panels is not recommended because it can overwhelm the solar controllers, which are designed for 10 amps.

## **SOLAR CONTROLLER**

- A Zamp Solar Controller is included with your solar panel.
- Zamp Solar Controller Manual will be provided
- Unit is mounted in the rear galley cutting board compartment

## **WATER SYSTEM**

- How to Use Fill/Use the Water Tank:
  - L side is water in (fill); R side is water out (use)
- Valves:
  - Perpendicular to the PEX pipe is the OFF position
  - Parallel to the PEX pipe is the ON position
  - Be sure these are closed when not in use, especially before travel
- Water Pump Switch - this is only needed when using water output (left side), and not when filling up. Be sure you know where the water will come out (left side nozzle) before flipping this on!
- A BPA-free hose comes with the trailer and will be found in your large galley drawer.
  - Use this hose to both fill your tank & extract water from your tank when at camp.
  - Quick connects on both sides
  - Can remove the quick connect on the end with the thicker collar to connect to the standard hose bib on house/building/campground to fill your tank



- You'll know the tank is full when water begins to flow out of this tube. The overflow tube is located under the fender. It is possible to "overfill" the tank, so as soon as the water starts coming out of the overflow, simply turn off the flow, close the valve, and remove the hose.
- If cold water is needed, connect the hose to the output (left) side, open the valve, and turn on the pump. Hose will pressurize and then you can use the spray nozzle.
- If hot water is needed connect the hose to the output (left) side and then the other quick connect end to the water heater 'elbow' quick connect fitting.
- Troubleshooting: If water is not flowing, first ensure that the left-side valve is parallel with Pex. If it is and water is still not flowing, check your battery's charge. If they're charged, then check the fuse. The fuse should be 10 amps (if your trailer has a 7.5 amp, you will want to replace it with a 10 amp fuse)

## **WATER HEATER**

- If you have the Gasland 6L Water Heater you will have a printed manual in the drawer in your galley. You can view additional product information by clicking [here](#).
- There is no ON/OFF switch on the unit. The ignitor kicks on with pressurized water into the system.
- Propane tank needs to be open to utilize hot water function
- Flame knob adjusts water temperature
- Water drop knob adjust water pressure
- For hottest setting turn flame all the way up, and keep pressure low
- Snowflake/sun knob indicates a seasonal-use setting. The snowflake will give hotter water as this is the "cold-weather" setting. The sun will give less warm water as this is the "summer" setting. Takeaway: If you want hotter water, keep it set to the snowflake.
- Digital temperature reading at the bottom - water gets hot quickly, stay safe!

- The door Handle is a compression latch. To loosen, press the handle in & turn counterclockwise, then release. When closing, align the inner latch with the handle so that they're parallel and the inner latch is at the end of the screw. Push in while rotating the handle 90 degrees clockwise. Once the handle has latched the door closed, release pressure & continue to rotate the handle clockwise to compress the door against the gasket, firmly sealing the compartment. If you're having issues getting the door to latch, rotate the handle counterclockwise until the latch is all the way to the end of the screw.
- Don't forget to fully empty the hose before storing it by holding it vertically and letting gravity drain the contents.
- Always empty the water on cold nights to prevent freezing, which can expand and crack the housing of your pump. You can use the passenger-side rear stabilizer to jack up the trailer to get all of the water out. This also works in warmer weather to get full use of the 21-gallon tank by pushing the water towards the output pipes!
- You can fill the tank more fully by jacking up the trailer with the driver's side stabilizer as well, making full use of the tank capacity that exists above the fill pipe.

## **WINTERIZATION**

- If you live in a 4-season climate, you'll want to prepare your trailer for winter annually, and de-winterize it for seasonal use in the spring, summer, and fall. In Utah, we keep our trailers winterized from October through April.
- It is recommended that you take your NS-1 to a local RV Service shop for this work.

## **AWNING**

- When zipping up, place your index finger behind the zipper (with your non-zipping hand) to prevent the fabric from catching in the zipper.
- Use zipper lube a few times per season to ensure smooth movement
- WD40 can be used to clean the zipper when debris builds up
- Setting up:
  - This is best done as a two-person job

- Unroll the awning with one person holding each end
- Unfold the poles tucked into the end of the awning for vertical support. Extend to the desired height and give them a twist to lock in place (twist the bars themselves, not the connection piece where the bars join).
- Unfold the horizontal poles on the trailer side and insert them into the hole near the outside hinge. Extend until the awning is pulled tight, then twist to lock. (be sure to support the poles while extending into place, and don't let them hang unsupported. This could risk a break at the hinge point)
- Secure the upper arms to the awning with velcro straps.
- Stake down the awning to the ground using integrated guy-lines.
- Packing away the awning:
  - Position one person to support the awning while poles are collapsed and folded into the awning housing
  - Once poles are packed away, have one person at each side to roll the awning backup and into the vinyl case. Straps hold the awning in place while you zip the case closed.
  - Note: when rolling, be sure to keep consistent speed so as to maintain alignment of the fabric with the awning ends, and keep black plastic pieces at the end of the guy lines parallel with the end to avoid straining the fabric when rolling up

## **ANNEX ROOM**

- Remove the zippered front top portion of the annex and install onto the awning housing (into the circular channel).
- Install the rear top insert into the circular channel on the trailer side housing of the awning
- Extend annex towards the front of the awning and attach via zipper component, then use the integrated straps to secure to the awning poles
- A separate rubberized floor attachment can be attached to the base of the annex room via a zipper on all sides

- When mounting additional aftermarket products to the roof bars, simply pop off the end caps and slide mounting hardware into the channel of the bar. Once the new product is securely mounted (be sure to keep clearance for the fan to open!) simply pop the cap of the bar back on and you're good to go.

## TENT

- If you have either the 55" or 63" FSR High Country tent you will have a printed manual inside the shoe storage of your tent. You can view a digital version by clicking [here](#).
- Setup:
  - Unbuckle and remove the tent cover. Fold and store away from the tent area
  - Grab the feet of the ladder and extend fully out and away from the tent (standing on the fender step for the first part of this step is helpful)
  - Pull down on the ladder, swinging it 90 degrees in towards the trailer door, so the tent is now ½ unfolded
  - Bring your hands up a couple of rungs, and then walk backward until the ladder feet hit the ground, and the tent is fully unfolded
  - Press the black buttons toward each other to drop the ladder rungs down until the tent base is parallel with the ground, and micro-adjust as needed
  - Climb the ladder and hinge outward the tent awning and secure it by raising the side extender arm(s), and locking in with the top tension pole
- To close, simply reverse the steps:
  - Close the awning, and stow away the tension pole
  - Lift the ladder and walk toward the trailer until the ladder is vertical and pressed onto the tent base
  - Then allow ladder to raise parallel to the ground as you slowly fold the tent back into the collapsed position
  - Shorten the ladder and secure it with the red rubber strap
  - Add the cover and secure - reflectors should point forward and backward for travel safety

## HOOKING UP

- Standard Suspension: 24" to top of ball (vehicle side)
- With each tow vehicle being a bit different in terms of squat, and the trailer weight and tongue weight varying so much, it's impossible to get an exact measurement in advance. We recommend adjustable options for this reason, and here are a couple of examples that will be compatible with your fully articulating hitch since they have a removable ball:
  - MaxxHaul 70067 8-Position Adjustable Ball Mount
  - CURT 45901 Adjustable Trailer Hitch Ball Mount
- Please note that it's also fine to be within an inch or two in either direction - you'll still get a great tow!
- After setting up, step back and eyeball it: the bottom trim should be parallel to the ground
- Grease the hitch ball to ensure a smooth ride. Use a thin film of wheel bearing grease to prevent wear. Doing this each time you tow will keep things running smoothly.
- Lower the coupler onto the ball hitch by cranking the jack. Check to ensure proper fit to your hitch ball. You want to make sure it's latching securely on the underside of the ball (not sitting on top) and that there isn't too much play.
- Ensure a few inches of clearance, then pull the jack stand pin, rotate the jack stand 90 degrees forward, then drop pin all the way through the top and bottom holes
- Clamp down the latch on top of the coupler (pull up first if it resists), and secure with ¼" safety pin through the latch handle
- Cross the chains under the hitch (twist to shorten if needed - aim for about 6" clearance)
- Connect the wiring: 4 flat / 7 blade – wrap cable if necessary (you want some wiggle room but no drag) and put it through the ¼" pin for added security
- Triple check pins
- Vehicle hitch receiver to the ball hitch
  - On top of the coupler latch
  - Coupler to the trailer tongue
  - Jack stand pin - be sure it's through the bottom as well

- Check the left & right turn signals, brakes, running lights, and hazards. If something isn't working, check the connection between the trailer and tow vehicle for corrosion.

## **ELECTRIC BRAKES**

- These are self-adjusting brakes with the following process (which varies a bit depending on which controller you have):
  - Go in reverse at 5 mph
  - Hit the brakes firmly
  - The mechanism inside self-adjusts
  - Do this once per season
- The controller will check on its own and give alerts for any wiring issues

## **PRE-TRAVEL CHECKLIST**

- Do a 360° around the trailer to ensure everything is secure & ready
- Lock:
  - Doors
  - Hatch
  - Tongue box
  - Optional: Solar panel, Roam box, Propane
- Close:
  - Windows
  - Fan
  - Propane
- Water system is off & red valves are perpendicular to PEX pipe (closed position)
- Rear stabilizers are up
- Torque: It is important to tighten the lug nuts in a star pattern (12 o'clock then 6 o'clock, 2 o'clock then 8 o'clock, 10 o'clock then 4 o'clock) with a 19 mm thin-walled socket and torque wrench set to 100 foot-pounds after the first 200 miles and/or the first drive, and then at least every 2,000 miles and at least once per season.
- Visual check for wheel/tire alignment, adequate air pressure, and damage

- Secure gear in:
  - The cabin
  - The galley
  - The tongue box
  - The Roam box
- Connect: check running lights, brakes, blinkers, and hazards. If something isn't working, check the connection between the trailer and tow vehicle for corrosion.
- For optimal maintenance, wipe any debris off your hitch ball and grease the hitch ball before every trip to ensure a smooth ride. Use a thin film of wheel bearing grease to prevent wear. Doing this each time you tow will keep things running smoothly.
- The jack is up and the pin is all the way through
- Chains are crossed underneath the tongue, secured to the tow vehicle, and about 6 inches above the ground
- Check Pins: there are three main pin connections between the tow vehicle and the trailer. Make sure all are fully engaged.
  - Vehicle hitch receiver to the ball hitch
  - On top of the coupler latch
  - Coupler through the trailer tongue

## **KEY TAKEAWAYS**

- Always go through the pre-travel checklist before a trip
- Torque lug nuts regularly (after the first 200 miles, every 2,000 miles, and before every trip)
- Suspension maintenance - Visual check for wheel/tire alignment and see "Suspension Maintenance Schedule" for recommended frequency of additional checks
- Ventilation - always have the fan and/or windows open when inside the pod
- Winterize & de-winterize annually
- Check ahead for low temperatures during shoulder months and empty the tank if necessary
- Battery care - Do not store at a low charge or cold temperatures for extended periods
- Always unplug the solar panel before removing batteries

- Purchase additional security options - mini padlocks for Roam & solar panel, wheel lock, hitch lock, anti-rattle hitch lock, locking  $\frac{5}{8}$  hitch pin
- Check all locks, pins and electrical when hitching up