Livin Means

TAXA MANTIS DIY

SIMPLE OVERVIEW OF
TRAILER SYSTEMS

FOR THE MANTIS STANDARD EDITION, 2021

TIPS FOR GAINING ACCESS TO SYSTEMS

REMOVNG THE WHITE PLASTIC COUNTERTOP

Level of Difficulty: Easy

Tools needed: Phillips head screwdriver

This is the long piece of UHMW that feels like a kitchen cutting board. It's located directly outboard of the sink & stove. Removing it allows easy access to plumbing for the outdoor shower, the sink drain and city hookup. It also allows easy access to the wiring for the USB & wall power outlet chargers in that nook by the head of the bed as well as the wiring for the shore and solar power plugs.

TAKING DOWN THE KITCHEN BRACKETS

Level of Difficulty: Easy

Tools needed: Phillips head screwdriver

These are the steel brackets mounted onto the wooden backsplash of the kitchen area. Removing these just improves your access to the components beneath the white plastic countertop.

Use a screwdriver, especially for the bottom screws. The power drill, being bulkier, forces you to make contact with the screws at an angle, making it really hard to not strip the screws. So just use a thinner screwdriver.

TAKING OUT THE STOVE

Level of Difficulty: Intermediate (Danger of propane gas leaking)

Tools needed: Phillips head screwdriver

Before we start, let's make sure the gas is turned off. We don't want the tanks emptying into our living space when we unplug the gas line from the stove.

Unmounting the stove is fairly quick and easy. It's just two pan-head screws going into the Baltic Birch Wood.

In my experience using channel locks is a bad idea when it comes to unscrewing the metal fitting on the end of the stove's gas line. It tends to chew up the fitting. Using a proper wrench does the trick with no fuss. Once the gas line is detached, you can actually pull it back and tape it out of your way of where you're working.

There is usually enough slack in the dc wires going to the stove's sparker to allow the stove to rest completely on the counter space in front of the air conditioning.

Once the stove is out, you should be able to access the air ducts behind the heading vents and all of the wiring behind the breaker box. You can also easily access the back of the voltage meter, battery disconnect switch and the kitchen's AC wall power outlet.

TAKING OUT THE SINK

Level of Difficulty: Intermediate (Danger of water damage)

Tools needed: Mini star bit screwdriver (Recommend Klein 11-in-1)

Remove the rubber screw caps by prying them out with your fingernails.

Hold the black plastic clamping mechanism while unscrewing the screws from the top. Once the black plastic mechanism is free from the sink, you should reattach it with the screw to keep all of the bits together.

When you unthread the metal clamping collar to detach the sink from the U-bend in the gray water plumbing, there runs a risk of water from the sink drain splashing down onto the Truma or water pump below. So

double-check to make sure that your faucet is closed all the way and that the sink is dry before proceeding to take out the u-bend plumbing.

Once the U-bend's metal clamping collar is detached from the sink, you are free to lift the sink from the countertop. Note that the hot and cold plumbing for the faucet is still attached. It is flexible because it is Pex plumbing, but it is still liable to slip out of its fittings. It's flexible enough to allow you to rest the sink on the countertop though.

Depending on the project you're working on, you might want to take out the U-bend "trap" thing that hooked up to the sink drain.

When detaching the U-bend plumbing, make sure to not lose the little plastic gasket thing which will be just resting ontop of the pipe. You'll need that when you put it back together then.

After unscrewing the other side of the U-bend, it should just slide out. Careful not to spill the water trapped in here on your way to dumping out all of the grossness.

As I said, the Pex plumbing can easily slip out of their fittings. If you do need to take any of the pressurized plumbing apart, just make sure you drain the lines first so you don't end up making a mess like I did.

Once the sink is out, you should be able to access the water pump and the plumbing for the indoor shower.

TAKING OFF THE WOODEN PANELS

Level of Difficulty: Easy

Tools needed: Phillips head screwdriver

Truma Access Panel

The wiring for the alarm is important to get right. So take note of it when taking it apart. It goes Alarm Red to Battery Gray and Alarm Black to Battery White. Also keep in mind that the gray and white cables are connected to the battery still, so be careful not to short them.

Taking this panel out will allow access to the Truma on/off switch in case you need to reboot the Truma system. You also get access to the low point drain valve for the water system in case you need to winterize or depressurize the water lines for any reason. Lastly, there is a self-resetting dc breaker for two power sources: both the tow vehicle's alternator via the 7-pin connector and the positive wire for AC2 solar plug on the side of the trailer both come directly here before going to the battery compartment.

Battery Compartment Access Panel

The trailer's "house" batteries are located under the heating vents. The panel is conveniently held in by thumb screws. The batteries themselves are mounted on a wooden base that is meant to slide in and out. But it tends to flop out because it is up on a raised lip. Avoid the flop by sliding it out with one of those plastic leveling blocks underneath.

Heating Vents Access Panel

The air vents for the Truma heating system have a section all to themselves. Detaching the vents from the air ducts should be as easy as pulling on the duct until it pops free from the vent.

Even after the panel is removed, you might have to move the air ducts around in order to access some of the electrical components and wiring, including the ground buss bar.

LET'S PUT IT ALL BACK TOGETHER

REINSTALLING THE WOODEN PANELS

Level of Difficulty: Easy

Tools needed: Phillips head screwdriver

Heating Vents Access Panel

Now, mindful that the air ducts can get up to 150°F or higher, we want to make sure that the bare ducting is not touching any wiring or electrical elements.

Reattaching the ducting to the vents takes some finagling. I'm not quite sure the proper way to do this. If you can explain it to me in the comments, I'd love to know. Mine are just pressed in as far as I can, which has held up thus far.

Once the ducting is attached, just again, mind the electronics and wiring as you push the ducting into its final resting place.

"I'm going to put zip ties around this outer insulation on the air ducting to kind of "bind" them together & keep them from resting against the electronic boxes. I don't think this is necessary if you have sufficient ducting insulation in the right places, though.

Truma Access Panel

Wiring for the alarm is:

	Alarm	Battery
Positive	Red	Gray
Negative	Black	White

When reconnecting this panel remember to wire it correctly. It can be hard getting four colors straight. If it is wired correctly you should see lights on the alarm.

Battery Compartment Access Panel

Now, since the weight of the batteries is nothing to mess around with, you need to screw the battery tray to the cabinet frame to prevent the battery tray from sliding out during travel.

By default there is a screw going down into the frame towards the front near the panel. In my case, specifically, I had to drilled a new hole around the corner because I absolutely stuffed my battery compartment full of batteries covering the default screw location.

Make sure you get those thumbscrews threaded into their female receivers. Sometimes it can feel like it's threaded when it's really not.

REINSTALLING THE STOVE

Level of Difficulty: Intermediate (Danger of propane gas leaking)

Tools needed: Phillips head screwdriver

When plugging in the gas line, remember to use a wrench instead of channel locks, but careful not to overtighten the metal fitting.

The stove should fit nicely back into place without much fuss. Once it's back in the countertop, it's just those two Phillips pan-head screws and then you got your stove back!

REINSTALLING THE SINK

Level of Difficulty: Intermediate (Danger of water damage)

Tools needed: Mini star bit screwdriver (Recommend Klein 11-in-1)

Replacing the sink might give you a little more fuss than the stove did. Make sure you line up the little guides when inserting it back into the countertop. Watch for it to become flush with the countertop.

Take out each screw from their corresponding plastic clamps. With the screw & metal insert on top and the plastic clamp underneath, line them up and then just screw until tight. Put the rubber caps back over top of each screw, and then your sink shouldn't be going anywhere.

Now at this point, your faucets will of course work, but your drain is not hooked up yet, so whatever you do, don't turn on the water yet!

To hook up your sink drain U-bend trap, you must slide the long straight PVC insert into the fixed gray water plumbing. Tighten the coupler all the way so that the PVC is fully seated and won't leak.

Next, screw in the metal coupler into the drain of the sink. Don't forget that loose plastic gasket piece when doing this part.

Once both sides are tight, you should do a quick test by running the water and making sure there are no leaks in the PVC. If you don't see any water, then you have your sink back!

RE-INSTALLING THE KITCHEN BRACKETS

Level of Difficulty: Easy

Tools needed: Phillips head screwdriver

A trick for putting these up is to do the top screws first, one-handed with screw gun and then do the bottom screws, two-handed, with a screwdriver while the top screws hold the brackets in place for you.

RE-INSTALLING THE WHITE KITCHEN COUNTERTOP

Level of Difficulty: Easy

Tools needed: Phillips head screwdriver

Hold the indented part towards you, facing down in order to seat it correctly. Then it's just those five screws with the fancy decorative washers.