

DEICING DEPOT

ELECTRIC CONVERSION OWNERS MANUAL



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TECHNICAL SUPPORT 954-781-9200

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GETTING STARTED

Congratulations on your new electric conversion sprayer kit. This system is designed to replace your gas powered deicing sprayer with a high performance 12v pump. Before installing the pump and GPS control system, make sure that all plumbing connections are compatible with the electric pump and that the pump will have flooded suction at all times. This pump is not self priming so the suction line must be plumbed so that liquid will fill the pump housing at all times. Failure to supply a flooded suction line will void the warranty of the pump and conversion kit.

The 12V pump will draw up to 115 amps at full speed. Due to the high amperage, you have been provided with a 2AWG tinned copper power cable assembly with a 120 amp circuit breaker. This power cable must be used with the conversion system or the warranty on the pump will be voided.

The MTS PRO gps system is specifically engineered to operate the 12v pump. All settings and calibration has been set from the factory for this conversion kit. Once the inside unit has been installed inside the truck and the outside receiving unit has been installed on the sprayer, you will not need to program or sync the units. All sprayer conversion kits are wired to match the existing flowmeter and valves that are on the sprayer. No splicing or rewiring will need to be done to mate the valves or flowmeter to the conversion kit. Splicing or rewiring of the unit may void the warranty.

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INSTALLATION GUIDELINES

1.) Install the power cable to the trucks main battery using the eyelets. Place the red cable on positive and the black cable on the negative side of the battery. Attached to the cable is a 120 amp breaker. Place this inside the firewall. Run the power cable along the chassis of the truck to the back and leave the Anderson style plug accessible at the rear end of the truck.

NOTE: KEEP ANDERSON PLUG FILLED WITH DIELECTRIC GREASE AT ALL TIMES. DO NOT ALLOW CORROSION TO BUILD UP INSIDE OF THE PLUG



2.) The electric conversion kit comes with a polycarbonate enclosure that houses the MTS PRO receiver unit. **If you bought the base option, this will not be in your kit.** Mount the outside box vertically so that the cable clam and cables are at the bottom of the box facing the bottom of the skid of the sprayer. The receiver unit will come with a trailer plug to power the unit. Plug that into the vehicles trailer wire harness. If you do not wish to use the trailer plug, you must wire the power to this box via an ignition switch. The outside box is meant to automatically shut off when the vehicle is off. If the power for the outside box is wired directly to the battery it will void the warranty of the electric pump and the receiver unit.



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INSTALLATION GUIDELINES

3.) The pump comes with a mounting bracket with 4 pre-drilled mounting holes and 5/16—18 stainless steel mounting bolts with washers, lock washers, and nylon threaded nuts. Once the pump is aligned properly on the sprayer so that the suction and discharge of the pump line up with the plumbing, drill holes for the 5/16" bolts. Once the holes are drilled, mount the pump using the bolts that are provided.



Once the pump is securely bolted to the skid, connect suction and discharge plumbing with either threaded or manifold style connections.

NOTE: Using full port connection will give the pump the best performance.



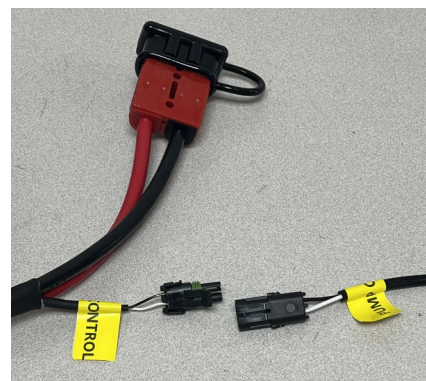
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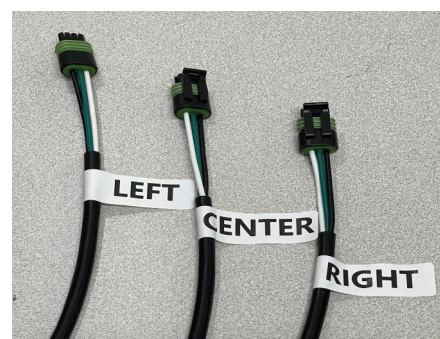
INSTALLATION GUIDELINES

4.) Once pump is bolted to the skid and plumbed correctly, plug the grey pump control wire into the matching receptacle that is connected to the MTS PRO receiver box. The cable will be labeled "Pump Control."

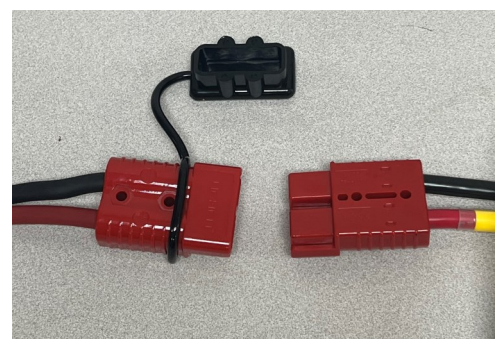
NOTE: Do not plug pump power cable in until the control cable has been connected.



5.) Connect the remaining 4 cables into their respective locations. The boom cables will be labeled "LEFT, CENTER, RIGHT" and the flowmeter plug will be labeled "FLOWMETER"



6.) Once all cables have been connected, push the Anderson style red connectors together to power up the pump. The pump will audibly chirp to signal that it has been powered up.



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OPERATING PROCEDURES

Now that all electrical connections have been made and all plumbing connections have been made, you are now ready to test and spray. Make sure that the tank on the skid is filled with the product that is being sprayed. The GPS console will only operate the system when the vehicle is in motion or if the console is placed in manual mode. To test the unit without driving, press the "A/M" button to engage manual mode and simulated speed. Once this is done, turn on all booms and the master switch and the pump will start moving liquid through the system. Once this test is satisfactory, place the GPS console back into auto mode and begin spraying.

END OF DAY PROCEDURES:

Disconnect the red Anderson style connectors or flip the switch on the circuit breaker to prevent power from reaching the pump overnight while the pump is unsupervised.

The electric pump is designed to spray continuously and it is submersible. There is no need to rinse or wash the pump out at the end of a spraying event.

KEEP ALL ELECTRICAL CONNECTIONS CLEAN AND COVERED IN DIELECTRIC GREASE OR A CORROSION PREVENTING SUBSTANCE. GREEN CORROSION BUILDUP CAN CAUSE AN ELECTRICAL FIRE.

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MTS PRO CONTROLLER SETUP

MTS Pro

Liquid Rate Controller Setup and Operators guide

Under normal operation, the operator only needs to consider the following

- Power on controller using (1). The wireless control unit should connect automatically turning the icon at the top left from red to green.
- Set the desired rate using (2) and (3)
- Wait for the GPS to obtain a fix and display speed in green
- Use (A) (B) (C) and (D) switches to operate booms while spraying
- Use (4) to switch unit to manual mode. Useful when spraying at very slow speeds
- Use (5) to set current tank volume
- Use Aux 1 to turn on/off auxiliary light etc
- Use Aux 2 and 3 to start/stop and control gas engine



Buttons and Switches

- 1- Short press to power on/off. Long press to reset. Use the auto power on/off parameter in settings to automatically turn the unit on upon receiving power
- 2- Short press to increase target rate
- 3- Short press to decrease target rate
- 4- Short press to select Auto/Manual mode. Manual mode simulates a set ground speed and is useful for testing and when high volume of liquid needs to be dispensed at low speeds like spraying decks and loading bays
- 5- Short press to open tank fill menu. Allows to set current tank volume
- 6- Aux 1. Short press to turn on/off device connected to Aux1.
- 7- Aux 2 – See gas engine control manual
- 8- Aux 3 – See gas engine control manual
- A- Left boom control. Toggle up to turn on
- B- Left boom control. Toggle up to turn on
- C- Left boom control. Toggle up to turn on
- D- Main override. Can be used to turn off all booms without having to individually turn each boom on/off. Typically used to stop spraying momentarily as a convenient alternative to turning individual switches off.

If speed is 0 and auto boom close option is enabled the booms may not open. Refer to control settings for more details

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MTS PRO CONTROLLER SETUP

MTS Pro

Home Screen

1- Outside control unit communication status. Red indicates no connection. Green indicates a control unit is connected.

TAP to open general info screen

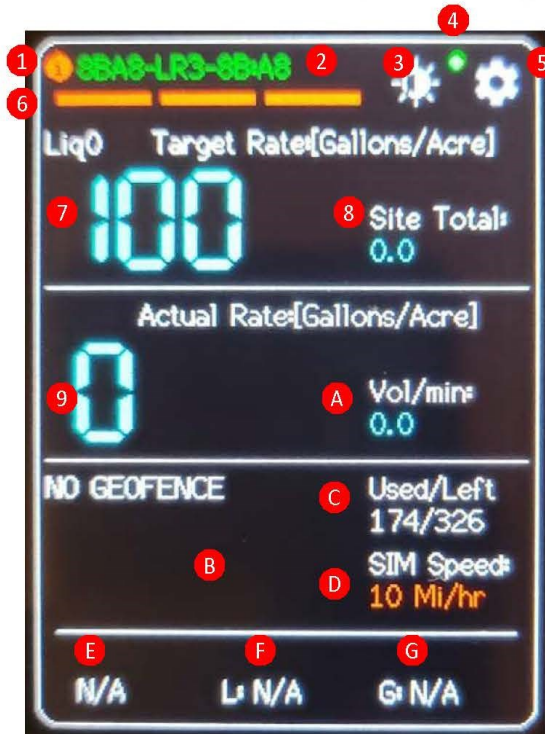
2- Device followed by the 4 digit device ID that can be used to claim/add this device to your online account.

Green indicates the device firmware is connected to the online portal. White indicates a firmware update is required to use web features for this device.

3- Brightness adjustment. TAP to adjust brightness. This setting will be saved for future.

4- Cellular communication status. Green indicates the device is connected to the internet via onboard modem. Red indicates an internet connection is not currently present

5- Setup. TAP to enter device setup menu. If enabled, a PIN code will have to be entered to access settings



6- Status of Left, Center and Right booms. Red indicates off. White indicates on

7- Current target rate. Use up and down key to adjust. TAP to change current liquid material selection

8- Display alternating between total material dispensed at the current site (based on geofence) or current shift (since powerup)

9- Actual rate. May fluctuate slightly but in most cases should be close to desired rate.

A- Current flow (gallons/liters per minute) useful for diagnostics and when running in manual mode

B- Information about current site (geofence) with name and notes if enabled via web portal

C- Readout of Used/Remaining liquid in tank. Can be reset using the tank fill option.

D- Current Speed/Sim speed indicator. TAP to open manual override menu

In Sim speed mode, color is always red.

In normal mode Green indicates a good GPS fix. Orange or Red indicate a poor GPS fix and may require the unit to be re-mounted in a more suitable position for a better fix.

E- Current Event (Low, Medium, High) if enabled via web portal

F- Target rate for liquid for current site (if enabled via portal)*

G- Target rate for granular (if enabled via portal) *

* Also alternates between Air and Pavement temperature if a compatible wireless sensor is present and enabled in settings.

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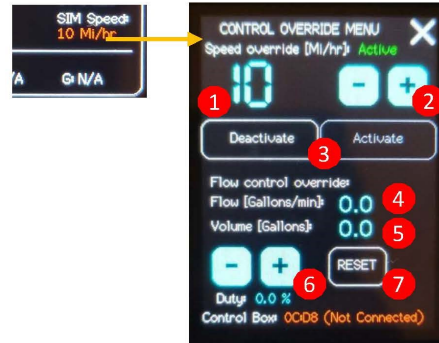
MTS PRO CONTROLLER SETUP

MTS Pro

Control Override Menu

The control override menu can be accessed by tapping on the sim speed area on the home screen. It offers various controls that can prove handy during operation. For example, the override screen can be used to test system performance while testing the sprayer. The menu can also be used when using the system to dispense liquid to fill other tanks.

- 1- Display of current manual speed setting. This is the speed simulated by the unit when in manual mode.
- 2- +/- buttons to increase or decrease the manual speed setting
- 3- Option to activate/deactivate manual mode
- 4- Current flow as calculated by the flow meter
- 5- Volume dispensed from the time the override menu is opened
- 6- Manually adjust liquid flow. Overrides all systems and lets the operator operate the valve manually. Control on how these buttons function can be found in the liquid control menu.
- 7- Reset current volume total



Setup

All MTS PRO controllers are set from the factory to your specifications. It is recommended that users do not alter the settings. If the settings are changed in anyway it could cause damage to the electric pump and void the warranty.

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