

TI10C Hybrid GPU

The Tesla™ TI10C Hybrid Ground Power Unit is the perfect combination of ultra-high current output with power generation. The TI10C incorporates a 10 horsepower engine and 6000 watt generator with a Tesla™ custom GPU. The result is a hybrid that will handle all of your power needs including 12, 24, and 48 Vdc and 110-240 Vac Single Phase. Water-tight gaskets and extensive weatherproofing (sand separator, exhaust fans, etc.) allow the TI10C Hybrid to withstand the harshest battlefield conditions and other extreme environments. With state-of-the-art electronic control and monitoring circuitry, the TI10C Hybrid provides safe and efficient power transfer of up to 6000 peak amps and 150 continuous amps – plus 20 amps at 240 Vac.



Power Anytime, Anywhere



Tesla™ Industries, Inc.
www.teslaind.com ♦ www.tesla1.com
Email: tesla1@teslaind.com
Headquarters: (302) 324-8910
101 Centerpoint Blvd. New Castle, DE 19720
Western Regional Office: (775) 622-8801
9475 Double R Blvd. Suite 2, Reno, NV 89521



**The POWER
Of RED™**



Technical Specifications

Features

- 10 horsepower, air-cooled, OHV engine
- Plug-in power anytime, anywhere
- Heavy duty, tubular stainless steel frame
- Low oil shut off control
- Isolated motor mounts to minimize noise and vibration
- Optional wheel base with handle for easy transport
- Two GFCI protected 120 Vac outlets
- Two 240 Vac twist lock outlets
- One 120 Vac accessory outlet
- Electric starter with dual 12 V / 10 Ah batteries
- Two internal Battery Chargers/Conditioners
- Utilizes NSN stocked fuel, oil and air filters
- 2-year warranty (3 years optional)

Mechanical

- **Engine Displacement:** 26.5 cu. in (0.435 L)
- **Engine Oil Capacity:** 2.6 qt (2.5 L)
- **Fuel Tank Capacity:** 8 gallons (30 L)
- **Fuel Type:** JP-4, JP-5, JP-8
- **Run time (at 75% max. output):** 18 hours
- **Maximum RPM:** 3800

Electrical

- **Continuous AC Output Power:** 4,950 watts
- **Peak AC Output Power:** 6,000 watts
- **DC Voltage Output:**
 - 28.6 Vdc @ 150 A continuous (6000 A surge @ 15 s)
 - 48.2 Vdc @ 75 A continuous (3000 A surge @ 15 s)
 - 26 Vdc @ 250 A intermittent for 1 hr (60% duty cycle)
 - 24 Vdc @ 96 A for 1 hr non-engine silent operation
 - 12 Vdc regulated / isolated @ 10 A continuous
- **AC Voltage Output:** 240 Vac @ 20 A, 120 Vac @ 40 A, 120 Vac @ 1 A
- **Recharge Time:** 38 minutes

Mechanical (cont.)

- **Decibel:** 81 dBA
- **Storage Temperature:** -40°C - 75°C (-40°F - 167°F)
- **Operating Temperature:** -31°C - 60°C (-25°F - 140°F)
- **Shock / Vibration:** Exceeds MIL-STD-810F
- **Weight (with fluids):** 702 lbs (318.42 kg)
- **Weight of Tow Cart:** 198 lbs (89.81 kg)



Easy Start Engine Control

Starting the TI10C Hybrid is as easy as a flick of the wrist. Simply push the Compression Release button and turn the starter clockwise (see Figure 1). That's all you need to start generating 5 kW of continuous power. LEDs on the right side of the Starter switch indicate engine status conditions. The Engine Control panel also includes an Oil Pump Prime switch and an Engine Hours meter for easier maintenance and servicing.



Figure 1
Engine Control Panel - Starter and Indicator LEDs

Selectable AC Power

Flip the Main Circuit Breaker to “ON” and select your power (see Figure 2). Set the Output Selector switch to “GPU Power” and energize the forward loaded GPU for up to 150 amps of continuous current at 28.5 Vdc. In addition, a 120 Vac 1 amp ac outlet is available for accessories (laptops, test equipment, etc.). Alternatively, set the Output Selector switch to AC Outlet Power, and both 120 Vac and 240 Vac are available through four standard outlet receptacles as shown in Figures 3 and 4.

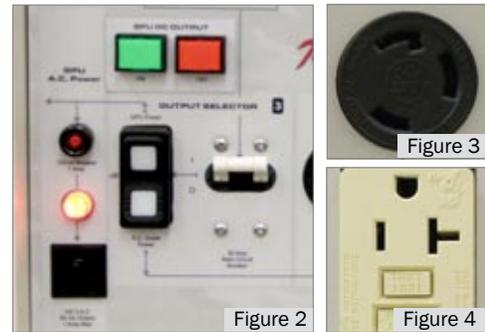


Figure 2
Figure 3
Figure 4
Output Selector Control Panel and Receptacles

Selectable DC Power

The TI10C Hybrid has been designed with versatility in mind. Besides having selectable ac voltage on the back panel, the TI10C can be used to series-parallel start aircraft. Due to independent, isolated dc output receptacles, the GPU can provide both 28.6 Vdc and 48.2 Vdc in virtually any configuration (see figure 5).



Figure 5
TI3950 GPU with DC Outputs

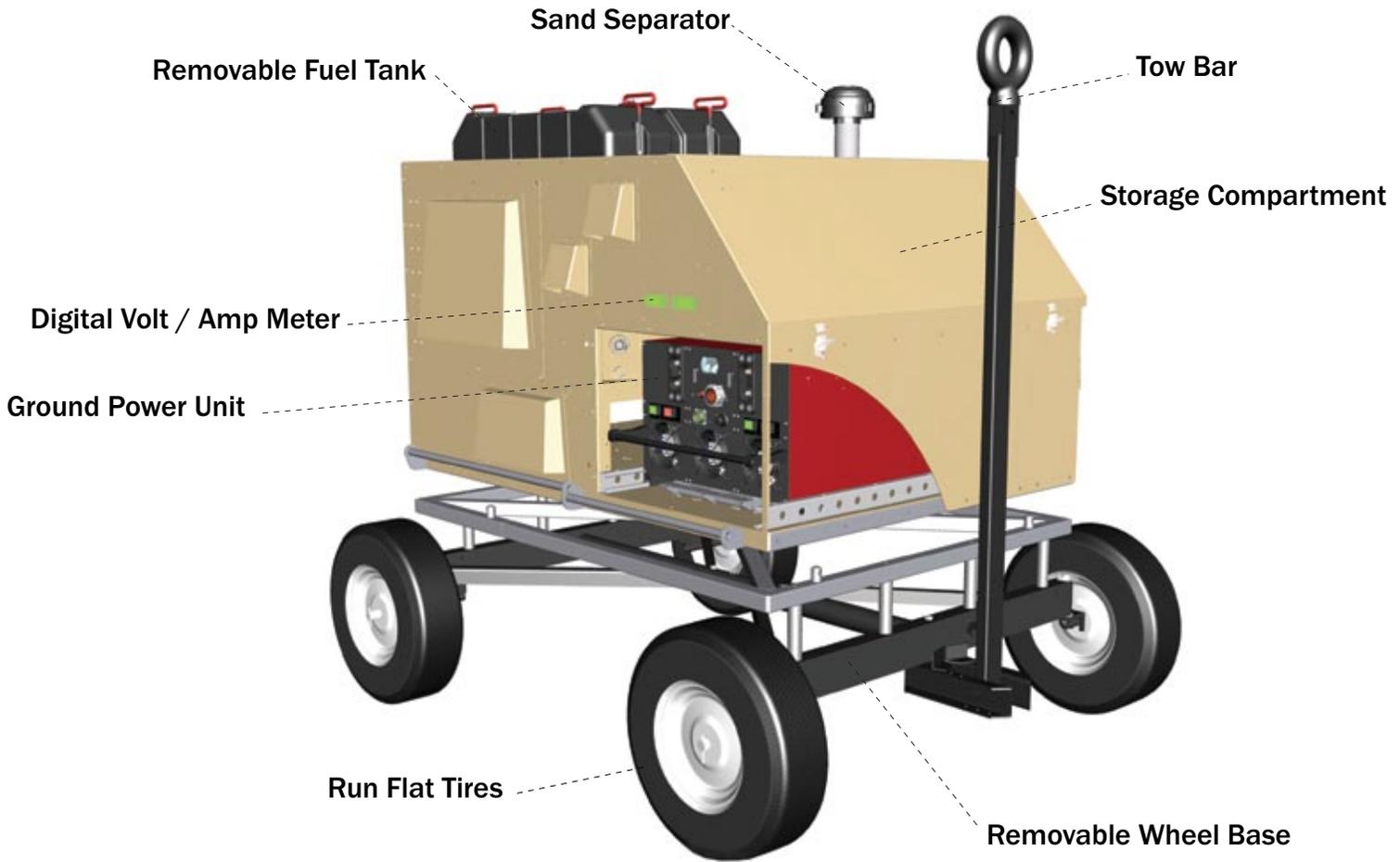
Power Monitoring

The TI10C Hybrid is equipped with power monitoring for both ac and dc outputs. As shown in Figure 5, the generator voltage and current are displayed in an easy to read analog format. The dual current meters display both legs of the AC generator with multi-color bar graphs, while the ac volt meter reads RMS voltage up to 300 V. On the side of the unit, two backlit LCD displays register the output dc voltage and current up to 2000 A (see Figure 6).



Figure 5
Figure 6
Power Metering for AC and DC Outputs

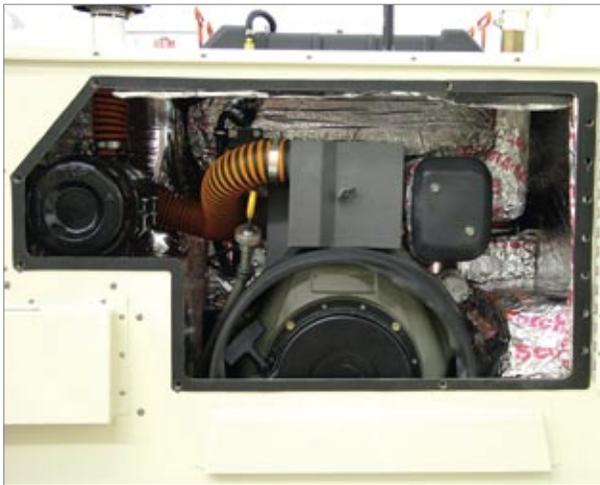
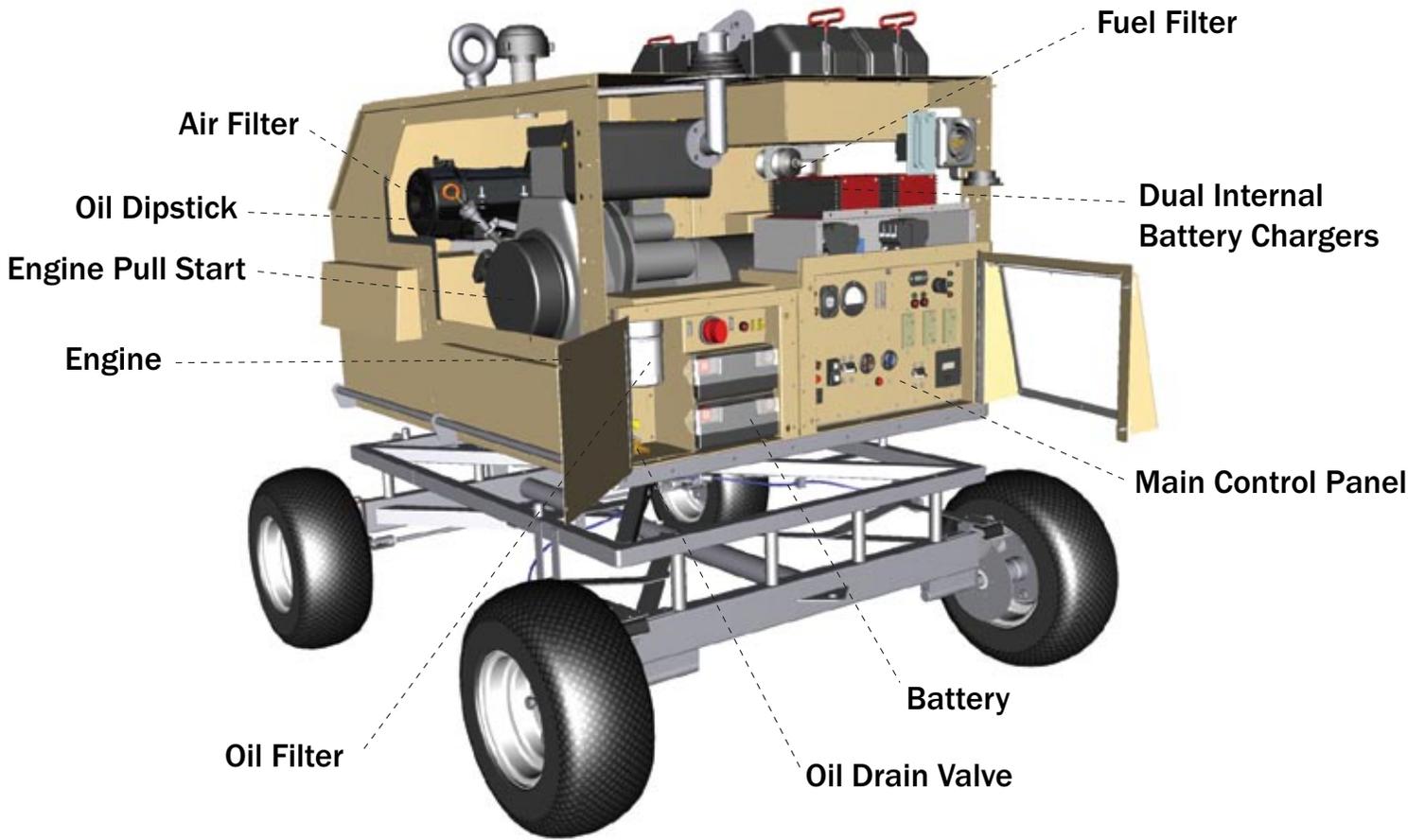
Components - Cutaway View



Main Electrical Control Panel



Dual DC Output Receptacles and D.V.A.M.



Right Engine Access Panel - Oil Dipstick, Air Filter, Pull Start



Left Engine Access Panel - Fuel Filter, Generator, Oil Cooler, and 2 internal Battery Chargers

Features and Benefits



Figure 7



Figure 8



Figure 9

Military Stocked Parts

All of the serviceable components have been chosen directly from NSN stocked parts. That means no more waiting for the parts to arrive from the manufacturer— a critical factor when deployed in the field. The fuel and oil filters (see Figures 7 and 8) can be ordered with NSN # 2910-01-376-5666 and 2940-01-154-5127 respectively, and the Air Filter with NSN # 2940-01-235-3676.

Ease of Maintenance

Maintenance and servicing are a snap with the TI10C Hybrid. Featuring multiple access points to the engine compartment, the layout of the TI10C allows the user to quickly and efficiently check all the major service items. A specially designed oil dipstick has been positioned for easy access (see Figure 9), and the oil filter and battery are located in a separate compartment (see Figure 13). In addition, all the access compartments are secured with butterfly fasteners—no special tools required.

Manual Starting

In the unlikely event that the TI10C's starting batteries becomes discharged, a manual pull cord (shown in Figure 9) can be used to start the unit. An easily accessible compression release lever is available to make manual starting easier.

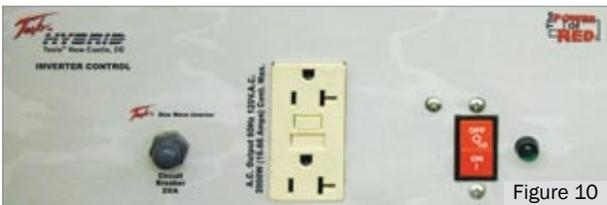


Figure 10

Inverter Control Panel

One 60 Hz 120 Vac Power Outlet is located in the Storage Compartment of the TI10C (see figure 10). When the inverter is active it will provide 120 Vac 16.66 amps max. The other 60 Hz 120 Vac Power Outlet is located on the far right hand side of the rear control panel. This also becomes active when the inverter is on.

To the left of the outlet is the Sine Wave Inverter Circuit Breaker that will trip if the load on the ac circuit exceeds 20 amps.

To the right of the outlet is a 120 amp Circuit Breaker for the dc outputs also located in the storage compartment. If the load on the dc outputs exceeds 120 amps, the breaker will trip into the "OFF" position.



Figure 11

Sine Wave Inverter

The Inverter Display Panel, located on the lower right of main control panel (see figures 11 and 14), provides information about the dc input voltage and current levels as well as the amount of ac power going out.



Figure 13: Oil Filter, 12 Volt Batteries, and Battery Selector Control Panel



Figure 14: Storage Compartment, DC Output and Inverter Control Panel



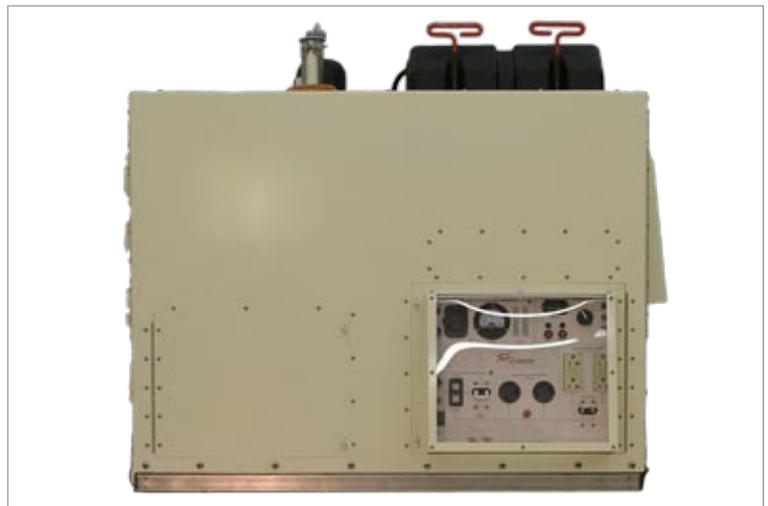
Removable Fuel Tank



Dual DC Receptacles and Tesla™ Ground Power Unit

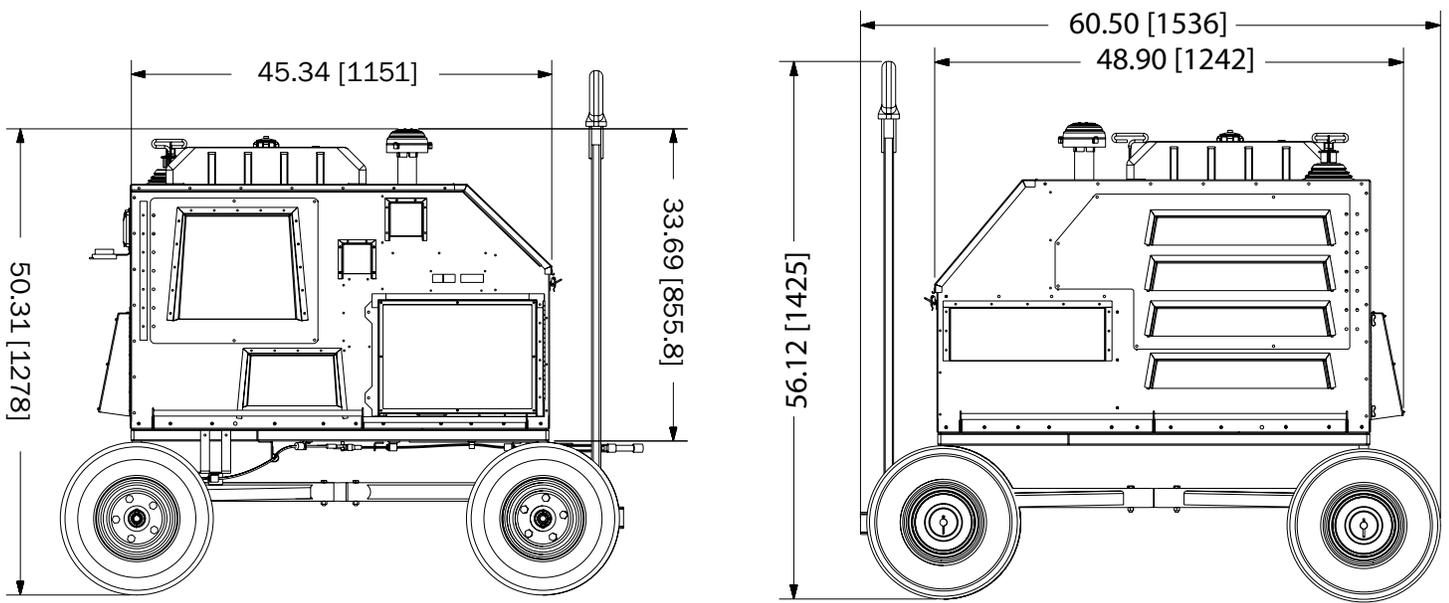


Optional Tow Cart

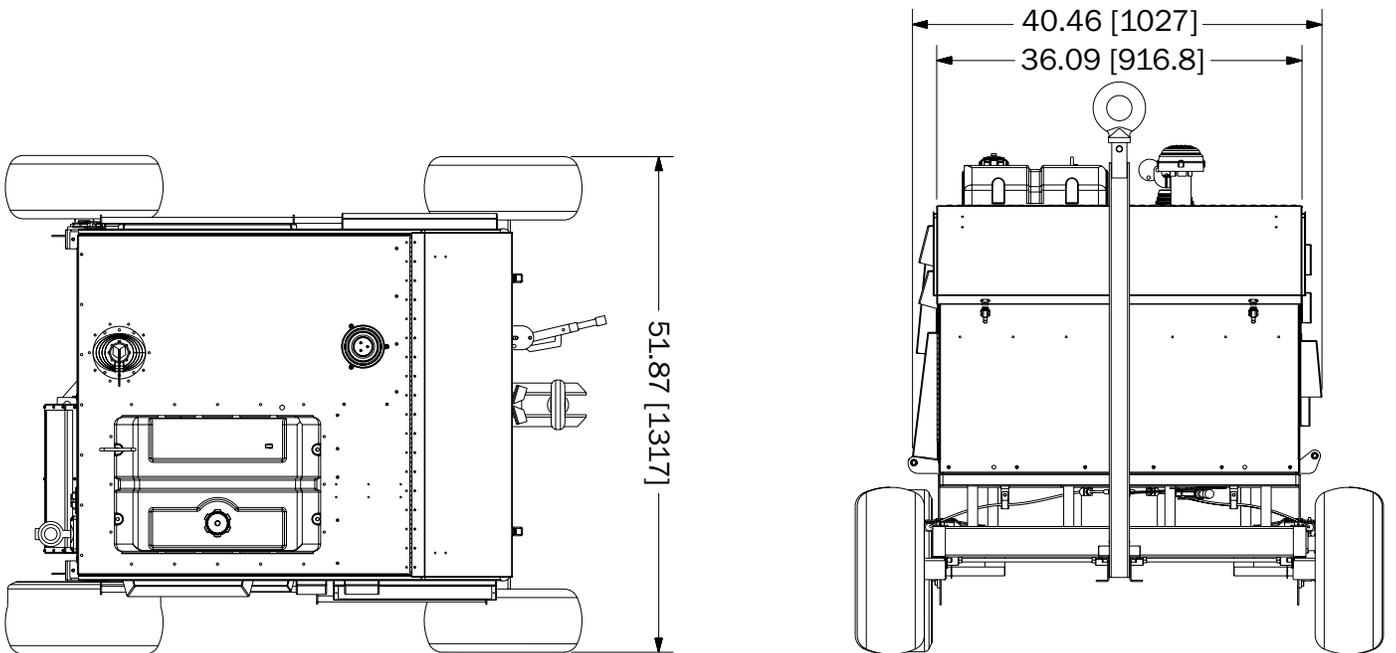


T110C HGPU Rear Control Panel

Dimensions and Technical Specifications



Shown with optional wheel base



* All dimensions are in inches [millimeters]