We have a POWERTAC PT180 with an undependable Robin Suburu 18khp engine. We suffered with this engine for almost 15 years before we converted to a DC electric motor.

Tyler had posted on tractorbytenet.com Aug 7, 2020, the story of his successful conversion of a PT422.

We ordered the same kit he had used for converting our PT180.

We ordered from ELECTRICMOTORSPORT.

ME1004 Drive Kit with Motor, Controller, Throttle, Contactor, Wire Kit, and Fuse Block

Motor

Motenergy ME1004 (ME1910) PMDC Motor, 24-48V, 11 hp cont, 23 hp pk

Controller

Alltrax SR-48400 12-48V / 400A

Throttle

Curtis PB8 Pot Box

Contactor

TE Tyco Kilovac LEV200 48V 500A Sealed Contactor

Wire Kit

Wire Kit Alltrax SR ≤ 400A 4AWG 36/48V

Fuse Block

Fuse Block for Motor Drive Kit

Switching

OFF-ON Key Switch

ED400 Emergency Disconnect Switch

We disconnected the gas engine and lifted it free with a come-along. The hydraulic pump is only supported by the connector shield that is bolted to both the pump and to the engine. As we lifted the engine free from the connector housing the lovejoy connectors separated as well.

Lovejoy connectors

The gas engine had been supported by 4 bolts thru pipe stands about 4 inches high. These were removed. To support the electric motor a steel cradle was fabricated and with a steel shelf and foam liner to support the motor.

The lovejoy on the gas engine shaft was secured with an allan screw, this was removed.

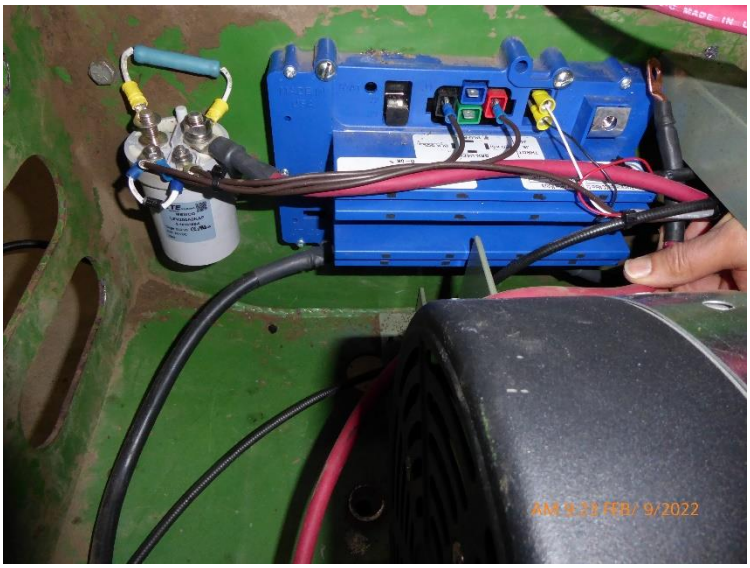
The aluminum shield that connected the pump to the engine was cleaned. The aluminum shield almost fit the hole patterns on the electric motor. We had to enlarge the holes slightly to get them to fit.

The shaft on the electric engine was too long. We measured the distance from the face of the electric engine to the lovejoy when coupled on the pump. We then cut the excess shaft from the electric motor. The lovejoy connector was very tight on the engine shaft, so we heated it with a heat gun and it slid on and was secured with shaft key and the allen screw.

The motor, lovejoy connector and pump were aligned and joined, with the connector cover. Then position marked on the floor of the engine compartment so we could bolt the motor cradle in place.

A second support was fabricated from 1.5” angle. It was cut to reach across the engine compartment. Two of the bolts that attach the motor to the shield were drilled through the angle iron to support the front of the motor. A metal band from a hot water tank hold down was used to secure the back of the motor to the cradle.

We mounted the (throttle , Alltrax and solenoid on the port side of the engine compartment .



The original throttle cable was connected to the throttle and secured with a clip .

We used the ALLTRAX GENERIC WIRING PERMANENT MAGNET W/NO REVERSE schematic to connect the wiring. The only change was to connect the black wire from the main contactor to M- instead of J1, this improved the ground.

A flat sheet of ¼ steel was cut to fit over the engine compartment, this was to support the batteries.

A hole was cut to allow the cables from the battery pack to reach the engine compartment.

A split piece of plastic tubing was used to protect the edge of the hole from chaffing the wires.

The black hood had to be extended 2” to accommodate the battery pack.

The 48 volt charger was bolted to the rear of the black hood and connected to the battery pack.

The tractor performs beautifully. It is powerful, always starts, quiet, no dragging fuel tanks around. We love it. An unexpected benefit is the precise control of power now. Set the throttle and it holds that setting. Before the gas engine was always surging up or down .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