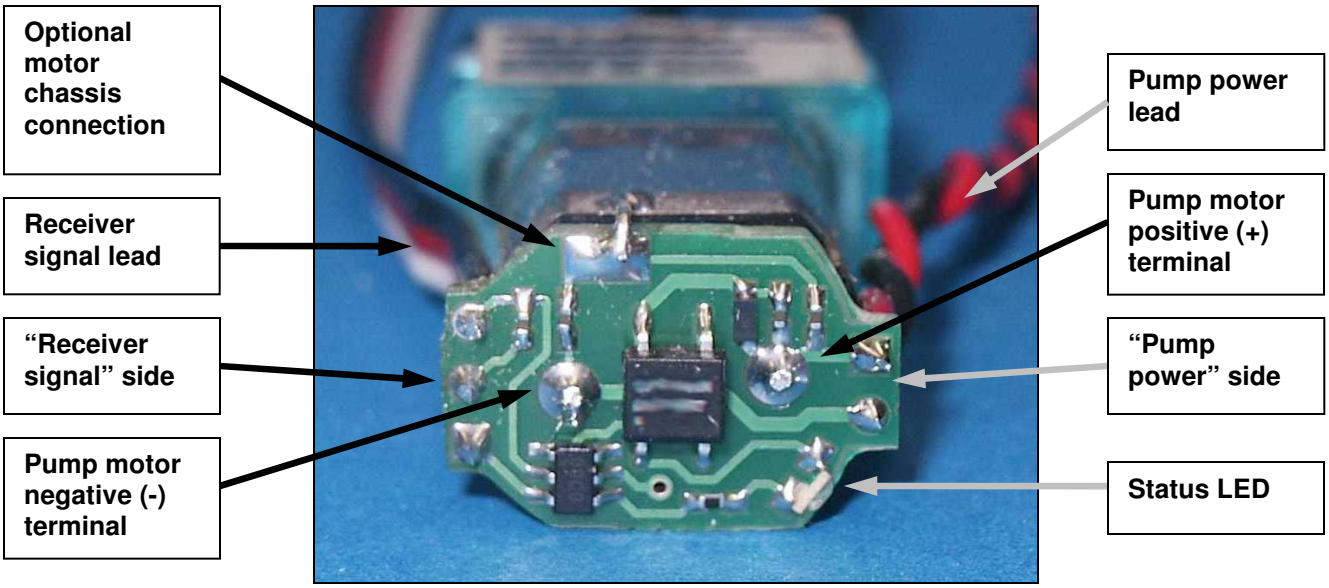
Mini Pump Controller

General layout



Quick Setup Guide

1. Solder the Mini Pump Controller (MPC) to a Caswell Micro Air Pump (PN GSV1412N6V). The pump should be oriented so that the pump motor's positive terminal is next to the MPC's **Pump power lead** and the pump motor's negative terminal is adjacent to the **Receiver signal lead**. See **Detailed MPC to Pump Installation Instructions** section for details on this operation.
2. Solder the MPC's **Pump power leads** to your power bus taking note of the correct polarity. (Red = positive, Black = negative)
3. Plug the MPC's **Receiver signal lead** into your receiver taking note of the correct polarity.

Features

- Switches 6V and 12V pump motors (up to 0.5A) while maintaining electrical isolation between "pump" and "control" circuits.
- Status LED: A green LED will illuminate when the pump is being commanded ON. (Note- The status LED is powered by Receiver power so it will illuminate even if pump power is not provided.)
- Failsafe to OFF on signal loss: In the event of signal loss the MPC will automatically remove power from the connected pump.

Radio Setup

- The MPC is designed to activate the pump when it sees a signal between 20% and 120% of throw in one direction and not respond to commands in the other direction. The MPC can be used "standalone" on its own channel or connected through a Y-connector with a servo-operated valve.

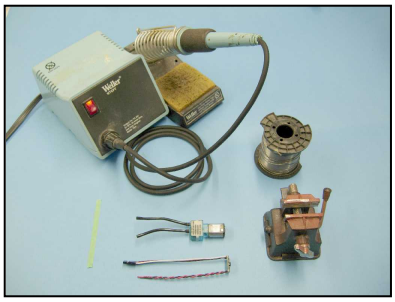
General Notes

- The MPC is not recommended for use with 6V or 5 cell receiver systems, use a 5V BEC or 4 cell receiver packs. (Note that this restriction applies only to "receiver power", not "pump power". You may safely apply up to 16V or the safe limit of your pump to the pump power lead.)

Questions?

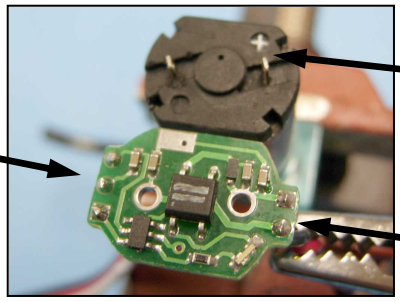
If you have questions or concerns about your Throttle Jockey please contact Kevin McLeod by email at KevinMc.Electronics@gmail.com

Detailed MPC to Pump Installation Instructions

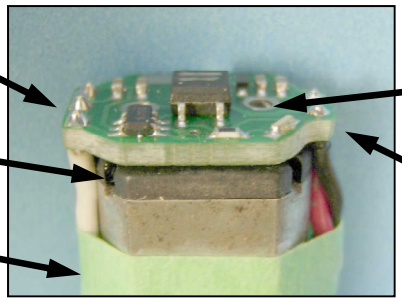


1.) To install your Mini Pump Controller you'll need a good 25W soldering iron, some solder, a clamp to support your pump while you work, some maksing tape, and a Caswell Micro Air Pump (PN GSV1412N6V). Follow the photos below taking note of the orientation of the MPC, identified using the convention of "Pump power" side and "Receiver signal" side.

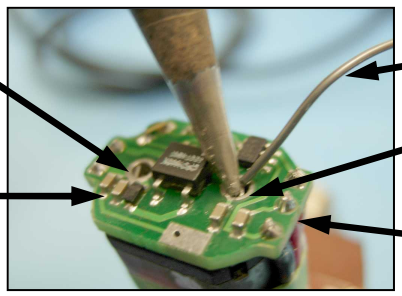
2.) The first step is to securely clamp the pump and identify its positive terminal. (The recommended Caswell Micro Air Pump has its positive terminal identified with a small "**+**" symbol next to one of the terminals, painted white for clarity in the adjacent photo.) The MPC should be oriented so that the "**Pump power**" side is next to the positive motor terminal, as shown right.



3.) Push the MPC all the way over the motor terminals, seating it firmly against the **pump motor end cap**. It may be necessary to spread the power and receiver signal leads on the MPC to get it to slide nicely over the end of the pump motor. Once in place, wrap a piece of masking tape (or heat shrink tubing) around the pump motor can, motor power lead and receiver lead to secure the MPC to the pump for installation and provide strain relief for the wire leads once the MPC/pump has been installed in your WTC.



4.) Use the tip of the soldering iron to apply heat to the motor terminal and the pad of the MPC at the same time as shown right. Solder the "receiver side" motor terminal first, then the "power side". When soldering the "power side" terminal, take extra care not to hold the soldering iron against the motor terminal any longer than necessary so as to not accidentally overheat the filter components.



5.) The last step is not required for your MPC to operate, although it will provide the best possible noise filtering setup for your installation. In this step a connection is made between the pump motor can and the chassis connection pad on the MPC. *Note: to achieve a good solder joint on the motor can you will need to use a higher wattage soldering iron (35 – 50W).*

First bend a short piece of wire into an "L" shape and place against the motor can and chassis pad on the MPC, temporarily securing it to the motor can with another piece of masking tape. Solder the wire to the MPC chassis pad as shown, then remove the tape. Next, using plenty of flux, solder the wire to the motor can end adjacent to the pump motor end cap. Clean any residual flux away with alcohol.