Technical Bulletin

Number: 2050014

RPM and Frequency Adjustment Procedure

This bulletin covers the following Champion Power Equipment models:

All Models Covered

Note: Read instructions completely before performing service.

1. The adjustment for the RPM (Engine speed) and Frequency (Hz – Hertz or Cycle) are directly related. Our proper engine speed is between 3600 RPM and 3720 RPM in order to maintain the best frequency setting for your appliances that have timing devices internally. A perfect frequency would be 60 Hz or cycles and is what our utility distribution is designed to deliver through the power grid. When using a generator, it is nearly impossible to guarantee an accurate 60 Hz delivery due to variations on engine speed that can be caused by a variety of items. Such as a plugged air filter might change the engines ability to run at 3600 RPM or maybe poor fuel delivery taking power from the engine. When setting the Hz to the optimum setting, the best way is to use a tachometer for small engines and set the governor throttle adjustment screw to a minimum of 3600 RPM or better yet, a Hz meter which is usually found on most mid to high end multimeters.

   Note: The governor throttle adjustment screw can be identified with yellow marking paint and a spring around the screw threads to keep it from changing adjustment.

2. Using the Hz meter you can adjust the governor throttle screw to raise or lower the engine speed to get an optimum 60-62 Hz setting. You may want to load your generator with the most common load you will be using and then adjust the screw to give you an adjustment within the 60-62 Hz range. If you set it too high, then it means you are running the engine faster than need be and will add to premature or serious engine damage to the internal parts. It is mechanically governed to maintain the proper engine speed once it has the standard setting in place. Do not attempt to adjust this governor throttle adjustment screw without the proper tools available. You can not do it by ear! If you do not have a Hz meter or tachometer available, then you can use a conventional electric clock with a sweep hand for seconds. If you plug the clock into the generator, a proper engine speed would make the clock do a minute in exactly 60 seconds against any other timing device. If the clock takes longer to do a timed minute, then the engine speed is too slow and you need to raise the engine speed; turn the governor throttle screw clockwise. On the other hand, if your clock does a minute in less than a normal clock minute, then you need to lower the engine speed, turn the governor throttle screw counter clockwise. Now you should have a good setting for your generators frequency setting. It is best to do a frequency setting before doing any voltage adjustment.

3. Refer to CPETB2050012, voltage adjustment technical bulletin for proper adjustment procedure.

If you have any questions, please contact Champion Power Equipment:

Champion Power Equipment, Inc.
10006 Santa Fe Springs Rd.
Santa Fe Springs, CA 90670

Phone: 1-877-338-0999

Email: tech@championpowerequipment.com