

Purpose:

The purpose of this document is to provide work instructions for the standard set-up of Tier 3 JDEC governors found on 4045 and 6068 John Deere engine models.

Scope:

The scope of this document covers configuration of the trimmable options during the JDEC governor programming process.

Records:

No record is required to be made at Katolight. When the engine payload is downloaded from the John Deere server, a record is then created which corresponds to the engine's serial number.

Hardware/Equipment:

- CPU
- Tier 3 JDEC governor
- Nexiq USB Link
- USB 2.0A cable

Software:

- DST
- Custom Performance ECU Loader Program (ECULP)
- ECU Custom Performance Programmer (ECUCPP)
- ECULP INI Configurator Utility (ECULPINIConfig)
- MPSI(MagiKey) Drivers
- Nexiq USB Link Drivers

Warning:

- **NEVER ADJUST WIRES OR CABLES ON A LIVE GENERATOR. SERIOUS INJURY OR DEATH COULD OCCUR!**
- Program the JDEC governor before initial startup to avoid any errors, trouble codes and engine speed issues.

Trimmable Options Configuration for 4045 & 6068 John Deere Engines

1. Make sure that the a jumper has been placed between the #32 wire and a #1 wire to provide power to the JDEC governor for programming.
2. **REMOVE** the check from 'Disable All Throttles.'
3. **PLACE** a check in 'Enable Digital Throttle.'
4. Make sure that '3-State Throttle' has been selected.
5. **REMOVE** the check in 'Enable' under 'Primary Analog Throttles.' If the gen-set has speed adjust, **LEAVE** the check.
6. **ENTER** '3' for the 'Maximum Throttle Offset,' and **SELECT** 'Increase' from the dropdown box.

JOHN DEERE

4.5L and 6.8L PowerTech Plus™ - Genset

Custom Performance™

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<p>Throttle</p> <p>Help</p> <p><input type="checkbox"/> Disable All Throttles</p> <p>Read ONLY if Oil Temp is enabled: Enabling Digital Throttle while Oil Temp is enabled via this input, will disable the Oil Temperature</p>		
<p>Digital Throttle</p> <p><input checked="" type="checkbox"/> Enable Digital Throttle</p> <p><input type="radio"/> 2-State Throttle</p> <p><input checked="" type="radio"/> 3-State Throttle</p>	<p>Primary Analog Throttle</p> <p><input type="checkbox"/> Enable</p> <p><input type="checkbox"/> Self-Calibration Enable</p>	<p>Secondary Analog Throttle</p> <p><input type="checkbox"/> Enable</p> <p><input type="checkbox"/> Self-Calibration Enable</p>
<p>Throttle Adjustments</p> <p>Multiple Throttle Default During Failure Condition: Default to Valid Throttle Position</p> <p>Throttle Out-of-Range Recovery: Rated Recovery</p> <p>Minimum Throttle Offset: 0 rpm increase</p> <p>Maximum Throttle Offset: 3 rpm Increase</p> <p>Envelope Calculation</p>		

7. **REMOVE** the check from 'Enable TSC Source 1.'

Torque Speed Control

<input type="checkbox"/> Enable TSC Source 1	<input type="checkbox"/> TSC1 Timeout Fault Enable	<input type="text" value="17"/> Source Address 1
<input type="checkbox"/> Enable TSC Source 2	<input type="checkbox"/> TSC2 Timeout Fault Enable	<input type="text" value="4"/> Source Address 2

Governor Droop

RPM of Droop

8. The Derates & Shutdowns section should be configured as shown in the figure on the right.

Derates & Shutdowns

Standard (Level 1) Derates

Enable Standard (Level 1) Derates

Level 2 Derates

WARNING: By checking this box, the user certifies that this engine will only be used in emergency applications as defined by the U.S. EPA. Emergency internal combustion engine (ICE) applications are defined as any ICE whose operation is limited to emergency situations and required testing and maintenance. Examples include ICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or ICE is used to pump water in the case of fire or flood, etc.. An ICE used to supply power to an electric grid or that supply power as part of a financial arrangement with another entity are not considered emergency engines. If you are unsure or not able to certify emergency usage of this engine, you should not check this box. Failure to comply could adversely impact engine emissions and be a violation of the applicable emission regulations. Questions should be directed to your JDPS Sales Engineer.

I CERTIFY THAT THIS ENGINE IS BEING USED IN AN EMERGENCY APPLICATION AS DEFINED ABOVE. I understand that by checking this box I need to keep accurate records of final customer installation to ensure it meets the emergency application criteria. These records may be subject to audit and provided to EPA.

<h4>Standard Shutdowns</h4> <ul style="list-style-type: none"><input checked="" type="checkbox"/> Enable Coolant Temperature Shutdown<input checked="" type="checkbox"/> Enable Fuel Temperature Shutdown<input checked="" type="checkbox"/> Enable Intake Manifold Air Temperature Shutdown<input checked="" type="checkbox"/> Enable Oil Pressure Shutdown<input checked="" type="checkbox"/> Enable Water-in-Fuel Shutdown<input checked="" type="checkbox"/> Enable Coolant Level Shutdown (refer to the Loss of Coolant Switch section to enable or disable this shutdown) <p>Shutdown Timer <input type="text" value="Immediate"/></p>	<h4>J1939 Enable/Disable Shutdowns</h4> <p><input type="checkbox"/> Allow Enable/Disable of Shutdowns by J1939 CAN Message</p> <p><input type="text" value="5"/> Shutdown Message Source Address</p>
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- 9. **REMOVE** the check from 'External Shutdown Enable.'
- 10. **REMOVE** the check from 'Enable Tachometer Output.'

<h3>External Shutdown</h3> <p>Help</p> <p><input type="checkbox"/> External Shutdown Enable</p> <p>External Shutdown Switch Input Type <input type="text" value="Normally Open"/></p> <p>External Shutdown Timer <input type="text" value="Immediate"/></p> <p><input type="checkbox"/> Override External Shutdown at Engine Start</p> <p>Override External Shutdown Time <input type="text" value="5 seconds"/></p>
<h3>Fuel Filter Pressure Sensor</h3> <p>Help</p> <p><input type="checkbox"/> Fuel Filter Pressure Sensor Enable</p>
<h3>Tachometer Output</h3> <p>Help</p> <p><input type="checkbox"/> Enable Tachometer Output</p> <p><input type="text" value="30"/> Pulses per Revolution</p>

- 11. **REMOVE** the check from 'Air Filter Restriction Switch Enable.'

<h3>Air Filter Restriction Switch</h3> <p>Help</p> <p>Read ONLY if Oil Temp is enabled: Enabling Air Filter Restriction Switch while Oil Temp is enabled via this input, will disable the Oil Temperature</p> <p><input type="checkbox"/> Air Filter Restriction Switch Enable</p> <p>Air Filter Restriction Switch Type <input type="text" value="Normally Open"/></p>
<h3>Loss of Coolant Switch</h3> <p>Help</p> <p><input type="checkbox"/> Coolant Level Switch Enable</p> <p>Coolant Level Switch Type <input type="text" value="Normally Open"/></p> <p><input type="checkbox"/> Enable Coolant Level Shutdown</p>

12. **REMOVE** the check from 'Enable Glow Plugs/Intake Air Heaters.'

Start Aids

Help

Electric Start Aid Control

Enable Glow Plugs/Intake Air Heaters

Warning: Disabling glow plugs may result in poor starting and cool running. Disabling the glow plugs is NOT recommended.

Oil Temperature Sensor

Help

Enable Oil Temperature Sensor using Digital Throttle input (The Digital Throttle input must be disabled to select this option)

Enable Oil Temperature Sensor using Air Filter Restriction Switch input (The Air Filter Restriction Switch input must be disabled to select this option)

13. **SELECT** 'Use Selected Alternate Gain' from the 'Maximum Speed Governor Gain' dropdown box.
14. **SELECT** 'Alternate Gainset #1' from the 'Selected Alternate Gain' dropdown box.
15. Click the 'Program' button and follow the onscreen instructions.

The programming process may take several minutes, so be patient.

16. Configuration and programming of Trimmable Options is complete. Resume Standard Commercial Testing.

Governor Gains

Help

Information: The factory settings for the engine speed control (governor) parameters have been optimized for the majority of applications to provide the best combination of stability and response characteristics.

DO NOT change these settings from the defaults unless there is a significant problem with engine speed stability or response to load changes. Changing the governor gains from the defaults can aggravate instabilities in the system or lead to unacceptable response. Any changes must be evaluated to determine if the final performance is acceptable.

Low Speed Governor Gain Use Default Governor Gain

All Speed Governor Gain Use Default Governor Gain

Maximum Speed Governor Gain Use Selected Alternate Gain

Selected Alternate Gain Alternate Gainset #1

Gain Adjustment Percentage 100 % (Valid range is 25% to 200%)

Print... Program... Cancel



Quality Management System

JDEC-T3 4045 & 6068 Trimmable Options Work Instructions

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