

PENNTEX HIGH IDLER 2000 & LATER FREIGHTLINER FB65 w/ OEM High Idler Option Installation and Testing

INSTALLATION:

NOTE: This High Idler kit is designed to work on Freightliner FB65 Chassis that were ordered with special option. This option refers to a special (non-standard) connector drop that the Idler harness plugs into. It also provides for ECM (Engine Control Module) programming to enable the idler to work with Cummins ISB and Caterpillar 3126B engines.

1. Locate the mating plug for the Idle Controller Harness and connect the harness to the chassis connector. This is a Packard Metri-Pack 150 connector with 8 pins, blue male body w/ female terminals. It is located under the dash, near the kick panel on the driver's side.
2. Using the supplied Hardware mount the Idle Controller in a location that is accessible to the driver and in plain view of the driver. Be cautious of potential injury in certain locations due to accidental impact such as when boarding the vehicle.
3. Secure harness away from sharp edges or moving parts.
4. If the ECM is not already programmed then program the ECM to the parameters for the respective engine before proceeding with the testing section. **The High Idler will NOT raise the engine RPM unless the ECM is properly programmed.**

TESTING:

1. Turn ignition switch to the *RUN* position, but **DO NOT START THE ENGINE**. The park brake should be set & the gear selector should be in the *Park* position. If the transmission does not have a *Park* position then use *Neutral* instead for the following tests. The "LOW" battery indicator (red), on the idler, should be lit. After approx. 10 seconds the "HIGH IDLE" indicator (yellow) should light up.
2. Press the main brake pedal. The "HIGH IDLE" indicator (yellow) should turn off. Release the brake and it should come back on with no delay.
3. Block the wheels to make sure that the vehicle cannot roll. Move the gear selector to the *Reverse* position. The "HIGH IDLE" indicator should turn off. Move the gear selector to each of the *Drive* positions. The "HIGH IDLE" indicator should be off in all of them. Return the gear selector to the *Park* position. The "HIGH IDLE" indicator (yellow) should light up.
4. Turn the ignition switch to the *OFF* position. All idler indicators should be off.
5. Crank the engine. Press the "MANUAL ENGAGE" button. The "HIGH IDLE" indicator (yellow) should light and the engine idle speed should increase to the pre-programmed RPM (1200 RPM recommended). Wait for the alternator to recharge the battery enough for the "LOW" indicator (red) to go off and the "OK" indicator (green) to come on. If the battery is very low then it may take a few minutes to recharge the battery before the voltage can increase high enough.
Note: The high idle RPM should be programmed high enough that the alternator's output is great enough to maintain the system voltage above 12.75 volts with all continuous vehicle loads turned on. The alternator must be capable of putting out more current than the fully loaded vehicle draws.
6. Press brake pedal to insure idle speed returns to normal and the "HIGH IDLE" indicator turns off. If the batteries are not fully recharged the idler may automatically return to high idle.
8. INSTALLATION COMPLETE.

INSITE Parameter settings required for High Idle Operation w/ Cummins ISB engines:

The following settings are required for proper high idle operation. The following Tables are for use with INSITE software. Some of the settings do not effect High Idle operation and are listed "Not Relevant". These settings may be set to the user's preference or left as the default settings. Check or "x" mark indicate enabled options.

Select "Features and Parameters" under the "Adjustments" menu.

PTO Options 1 Tab:

ISB Parameter	Setting	Importance	Notes
PTO/Remote PTO "PTO Enabled"	ON or Enabled (X-Mark)	Required	This enables PTO or High Idle operation. The default value is enabled or "X" mark.
Maximum PTO Speed	2000 rpm	Required	This must be set equal to or greater than the desired high idle RPM. Default is 3000 rpm.
Minimum PTO Speed	700 rpm (Default value)	Required	This must be set less than the desired high idle RPM.
PTO Set Speed	Min speed - Max Speed (950 is default)	Not Relevant	This is the RPM selected by the "SET" switch. This parameter does not affect the High Idler and may be set to the user's preference or left set to the default (950 rpm).
PTO Resume Speed	Min. speed - Max. Speed (900 is default)	Not Relevant	This is the RPM selected by the "RESUME" switch. This parameter does not affect the High Idler and may be set to the user's preference or left set to the default (900 rpm).
Max Engine Load in PTO	1200 ft*lb (Default value)	Required	This must be set to a value greater than the engine load when the high idle is activated. The engine torque will be limited to this value only when PTO mode is activated.
PTO Ramp Rate	200 rpm/s (Default value)	Not Relevant	Controls engine ramp up & Down rate when utilizing the Accel and Coast features in PTO Governor mode.

PTO Options 2 Tab:

ISB Parameter	Setting	Importance	Notes
Accelerator Override (PTO Throttle Override Enable)	Not selected, Off, Disabled (No "x" mark) (Default value)	Not Relevant	When Not Selected any input to the throttle is ignored during high idle. If selected the throttle can override the high idle and raise engine RPM up to the level specified below in "Throttle Override in PTO Max Engine Speed." This is a user preference option.
Deactivate with Service Brake (Brake Override in PTO)	Not selected, Off, Disabled (No "x" mark)	Required	If selected, any service brake activation will cause the engine to return to low idle. Default is enabled & must be changed!
Deactivate with Clutch (Clutch Override in PTO)	Not selected, Off, Disabled (No "x" mark)	Required	If selected, any Clutch activation will cause the engine to return to low idle. Default is enabled & must be changed!
Max Vehicle Speed in PTO	0 mph (zero)	Required	The engine will return to low idle if the vehicle speed exceeds this parameter during high idle. Default value is 6 mph & must be changed!
PTO Set/Resume Speed	Min. speed - Max. speed (from PTO Options 1 Tab) (950 is default)	Not Relevant	This is the RPM selected when the "SET" and "RESUME" switches are simultaneously pressed. This parameter does not affect the High Idler and may be set to the user's preference or left set to the default (950 rpm).
Accelerator Override Max Engine Speed (Throttle Override in PTO Max Engine Speed)	3000 rpm (Default value)	Not Relevant (May not allow option to change)	If Accelerator Override (above) is selected this parameter will limit the Max. Engine RPM from throttle input during high idle operation. This is a user preference operation.

Remote PTO Options Tab:

ISB Parameter	Setting	Importance	Notes
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Remote PTO Enable	On or Enabled (X-mark)	Required	This enables the correct PTO operation mode for High Idler interface. The default value is enabled or "X" mark.
Number of Remote PTO Set Speeds	1 (Default value)	Required	This should be set to 1 for the High Idler. Default value is 1. This may be set to a higher value for use with a manually operated Remote PTO switch that can be toggled to select additional speeds. See <i>Cummins ISB Guide for Body Builders</i> for more information on this feature.
Remote PTO Set Speed 1	1200 rpm (Suggested Value)	Required	This is the RPM that the engine will increase to when the High Idler engages. It should be selected to meet user's requirements. The alternator should be turning fast enough to maintain over 12.75V at full vehicle electrical load.
Remote PTO Set Speed 2	0	Not Relevant	This parameter may be set to a higher value for use with a manually operated Remote PTO switch that can be toggled to select additional speeds. See <i>Cummins ISB Guide for Body Builders</i> for more information on this feature.
Remote PTO Set Speed 3	0	Not Relevant	Same as above.
Remote PTO Set Speed 4	0	Not Relevant	Same as above.
Remote PTO Set Speed 5	0	Not Relevant	Same as above.

Application Setup 1 Tab:

ISB Parameter	Setting	Importance	Notes
Idle Speed (Low Idle Speed)	800 rpm (700 - 875) (800 is default)	Not Relevant	This parameter defines the Low engine idle RPM, assuming no idle adjustment features are active. This is a user preference.
Idle Shutdown (Enabled)	Not selected, Off, Disabled (No "x" mark) (Disabled is Default)	Use of this feature is NOT recommended and should be discouraged!	When selected, the engine will be shut off if <i>Time Before Shutdown</i> elapses while: <ol style="list-style-type: none"> 1. The engine remains at idle and 2. The clutch, service brake, or accelerator are not activated. <p>Use of this feature is not recommended for certain types of vehicle that have large electrical loads and could be left unattended. If the engine shuts itself down, then the alternator stops charging the battery. If the electrical loads are not shut down as well then the batteries will discharge rapidly and the vehicle may not crank when the operator returns. Busses, fire trucks, ambulances are commonly left running unattended.</p>
Override Enabled	Not selected, Off, Disabled (No "x" mark)	See notes.	When selected, changing the state of the clutch, service brake or accelerator will override a pending shutdown and reset the shutdown timer. If the Idle shutdown feature is selected then the <i>Override</i> feature is recommended.
Shutdown in PTO Enabled	Not selected, Off, Disabled (No "x" mark)	See notes.	When selected, the engine will be shutdown in PTO or High Idle if <i>Time before Shutdown</i> elapses assuming the clutch, service brake or accelerator were not activated.
Time Before Shutdown	1 - 100 Min. (60 is default)	See notes.	If the Idle shutdown feature is enabled, this is the time interval that must elapse before shutdown.

Parameter settings required for High Idle Operation w/ Caterpillar 3126B engines:

The following settings are required for proper high idle operation.

Parameter	Setting	Importance	Notes
PTO Configuration	Remote Switches	Required	This enables the correct PTO operation mode for High Idler interface.
PTO TEL (Top Engine Limit)	1200 RPM (Suggested Value)	Required	This parameter defines the maximum engine RPM when in High Idle mode and should be set to the same value as the "PTO Engine RPM Set Speed" below.
PTO Engine RPM Set Speed	1200 RPM (Suggested Value)	Required	This parameter defines the actual high idle engine RPM and should be set to meet the requirements of the application. 1200 RPM is a suggested value.
PTO to Set Speed	YES	Required	This enables the correct PTO operation mode for High Idler interface.
PTO Shutdown Time	0 minutes (This is both the default and suggested setting)	Use of this feature is NOT recommended and should be discouraged!	Use of this feature is NOT recommended for certain types of vehicle that have large electrical loads and could be left unattended. If the engine shuts itself down, then the alternator stops charging the battery. If the electrical loads are not shut down as well then the batteries will discharge rapidly and the vehicle may not crank when the operator returns. Busses fire trucks, ambulances are commonly left running unattended.
Idle Shutdown Time	0 minutes (This is both the default and suggested setting)	Use of this feature is NOT recommended and should be discouraged!	Use of this feature is NOT recommended for certain types of vehicle that have large electrical loads and could be left unattended. If the engine shuts itself down, then the alternator stops charging the battery. If the electrical loads are not shut down as well then the batteries will discharge rapidly and the vehicle may not crank when the operator returns. Busses fire trucks, ambulances are commonly left running unattended.
Torque Limit	2000 ft*lb (Default)	Required	This parameter limits the engine torque when the high idle mode is activated. It must be set to a value great enough to maintain the engine load demand at the desired RPM.