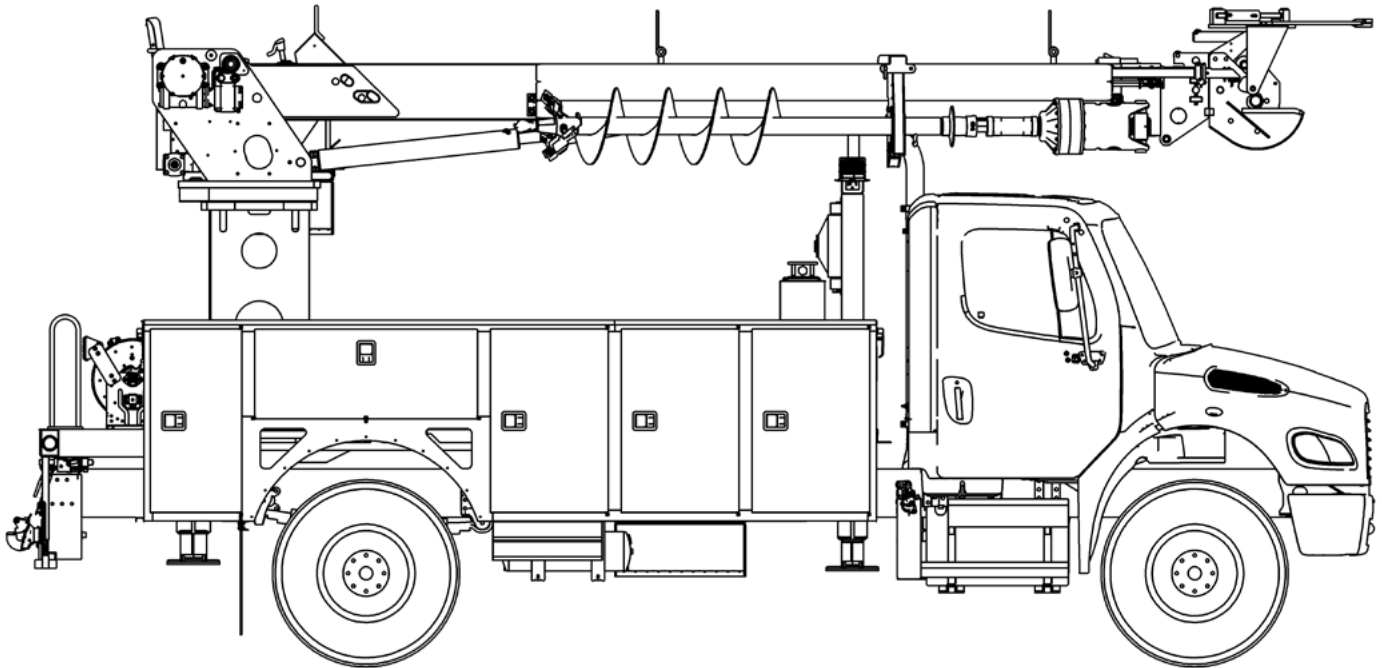




# TECH TIPS

SETTING CUMMINS ECM

NO. 193



**SERVICE CALL:**  
SETTING CUMMINS ECM



**MODEL(S):**  
ALL TEREX UTILITIES  
EQUIPMENT USING GEN 2 AND 3  
CONTROLLERS



**TOOLS NEEDED:**  
LAPTOP  
CUMMINS INSITE SOFTWARE  
NEXIQ CABLE

TEREX UTILITIES TECHNICAL SUPPORT TEAM

PHONE: 1-844-TEREX4U (1-844-837-3948) | EMAIL: [UTILITIES.SERVICE@TEREX.COM](mailto:UTILITIES.SERVICE@TEREX.COM)



## **DANGER**

Failure to obey the instructions and safety rules in the appropriate Operator's Manual and Service Manual for your machine will result in death or serious injury.

Many of the hazards identified in the Operator's Manual are also safety hazards when maintenance and repair procedures are performed.

## **DO NOT PERFORM MAINTENANCE UNLESS:**

- ✓ You are trained and qualified to perform maintenance on this machine.
- ✓ You read, understand and obey:
  - manufacturer's instructions and safety rules
  - employer's safety rules and worksite regulations
  - applicable governmental regulations
- ✓ You have the appropriate tools, lifting equipment and a suitable workshop.

The information contained in this Tech Tip is a supplement to the Service Manual. Consult the appropriate Service Manual of your machine for safety rules and hazards.



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# INTRODUCTION

Nexiq can be purchased through distributors like Snap-On. Cummins insite is available through the Cummins website.

**Note:** Adjusting the throttle to make the unit run faster than the setting specified by the manufacturer is not allowed and can cause damage to the machine or harm to the operator. Always refer to the unit folder for proper RPM and flow settings and confirm that the unit has proper flow by performing a flow test or by timing the unit functions.

**Note:** RPM information is in the unit folder under Installation and Final Documentation.

**Note:** If RPM information is not available contact Terex Technical support at 1-844-837-3948 or email at [utilities.service@terex.com](mailto:utilities.service@terex.com) to get RPM settings that were set at the factory.

Unit specific manuals call out the flow requirements needed. Use a flow gauge to determine what RPM is correct for flow. Most aerials units require 1800 PSI back pressure when determining proper flow for the unit.

**Note:** This is only utilized for IFM and the Terex Combo Controller. This Tech Tip does not apply to Canview 4. Reference **Tech Tip 39** to identify the controller on your unit.

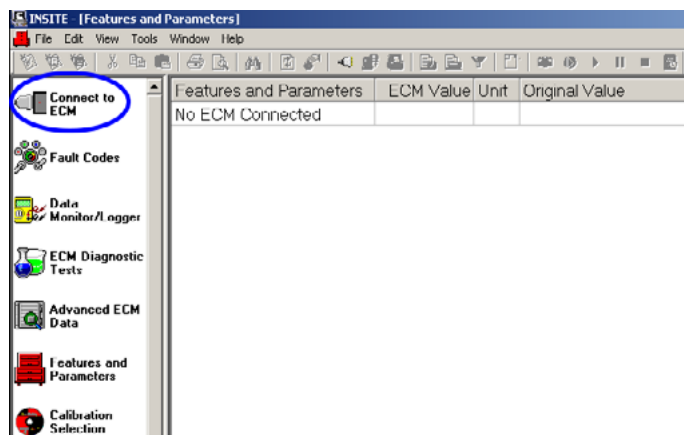
Reference **Tech Tip 50** for information on requesting access to the customer portal.

## STEP 1

Turn the key ON, but do not start the engine. Connect a laptop to the chassis diagnostic port using the Nexiq cable, then start the Cummins insite software.

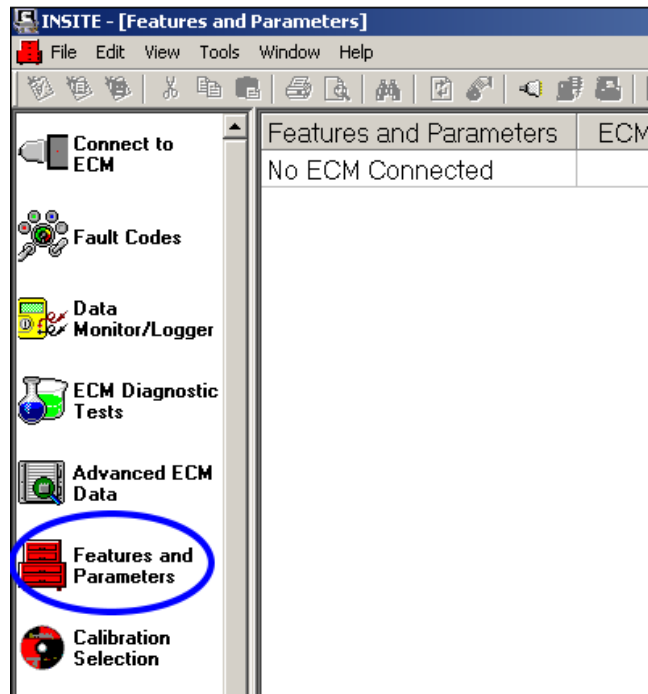
## STEP 2

Connect to the Engine Control Module (ECM) and then follow the steps to login.



### STEP 3

Go to features and parameters. Once loaded the screen should display a list of labeled folders.



The screenshot shows the INSITE software window titled 'INSITE - ISM - CM876 - Engine Serial Number - 35237547 - [Features and Parameters]'. The left sidebar contains several menu items: 'Disconnect from ECM', 'Fault Codes', 'Data Monitor/Logger', 'ECM Diagnostic Tests', 'Advanced ECM Data', 'Features and Parameters', 'Calibration Selection', 'OBD Fault Codes', and 'Work Orders'. The main window area shows a table with two columns: 'Features and Parameters' and 'ECM Value'. The table contains a list of features and parameters for the ISM - CM876 engine.

Features and Parameters	ECM Value
ISM - CM876	
CM876	
System ID and Dataplate	
Accelerator Interlock	Disable
Accelerator Options	
Adjustable Low Idle Speed	Enable
Aftertreatment	
Alternator Failure Warning	Disable
Clutch Pedal Position Switch	Not Installed
Cruise Control	Enable
Cruise Control and Engine Brake Interaction	Disable
Cruise Control Switch Setup	
Driver Reward	Disable
Electrical System Voltage	Enable
Engine Brake Control	Enable
Engine Coolant Level Sensor	Installed
Engine Protection	Enable
Engine Warmup Protection	Enable
Ether Injection	Disable
Fan Control	Enable

## STEP 4




First open the PTO folder. If it is disabled, change to enabled and click on the + to expand the folder.

⊕  Powertrain Protection	Disable
⊕  PTO ←	→ Enable
⊕  Road Speed Governor	Enable

## STEP 5

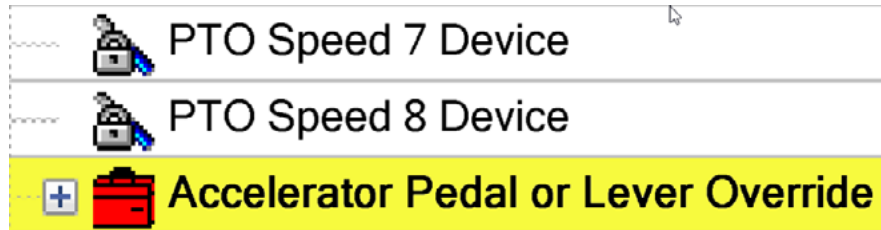
Maximum Speed will match the Maximum Engine Speed without Vehicle Speed Source. This value is the maximum throttle speed (full flow).

Ramp rate should be set to 300 RPM.

⊖  PTO	Enable
 Additional Switch Speed	1000 RPM
 Maximum Engine Load	800 ft*lb
 Maximum Speed	2100 RPM
 Maximum Vehicle Speed	6 mph
 Minimum Speed	500 RPM
 Ramp Rate	300 rp...

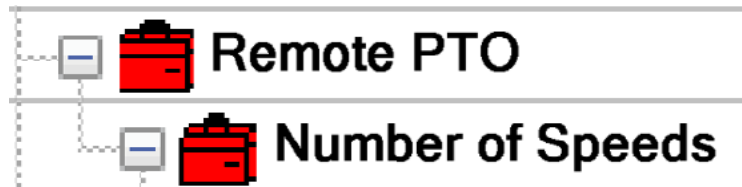
## STEP 6

Look for sub folder Accelerator Pedal or Level Override and set the ECM value to Disable. This disables the in-cab throttle if the PTO is ON.



## STEP 7

Find the subfolder Remote PTO and verify that the ECM value is enabled. Once the folder is enabled expand it.

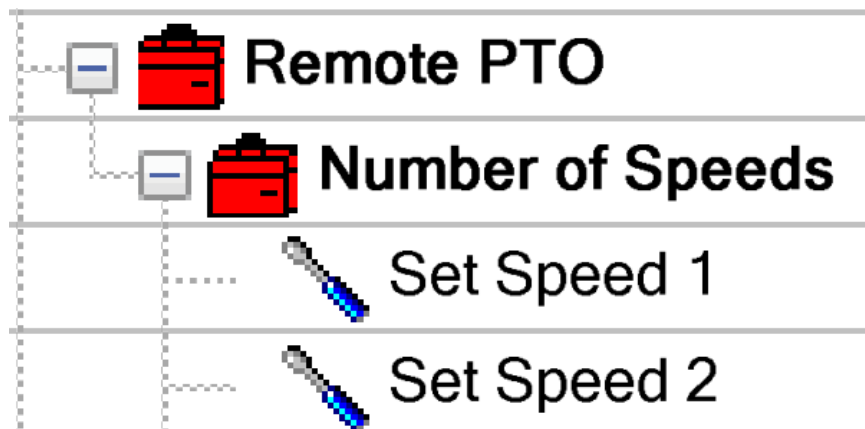


## STEP 8

If the unit does not have 2-speed or demand throttle, Set Speed 1 to required RPM.

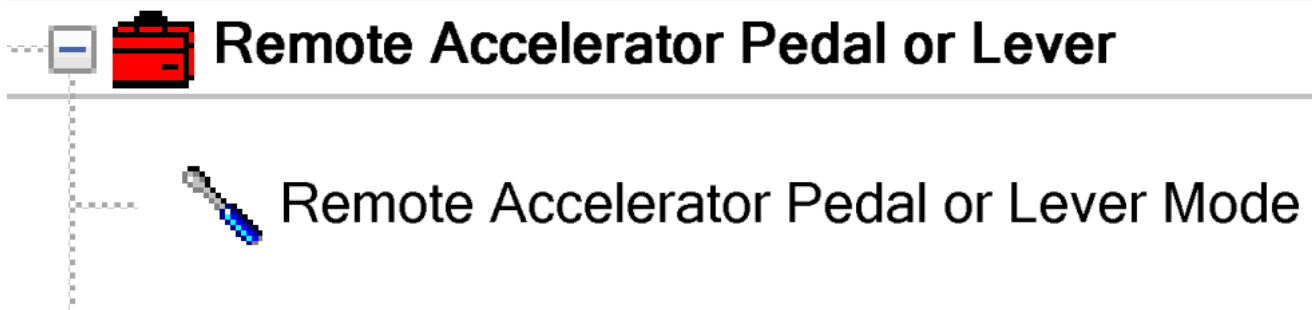
If using 2-speed or demand throttle, Speed 1 will be set to 800 RPM. Speed 2 will be set to the required RPM for full flow.

If throttle information is not available, set the RPM according to the flow requirements of the unit. Flow requirements can be found in the unit manual.



## STEP 9

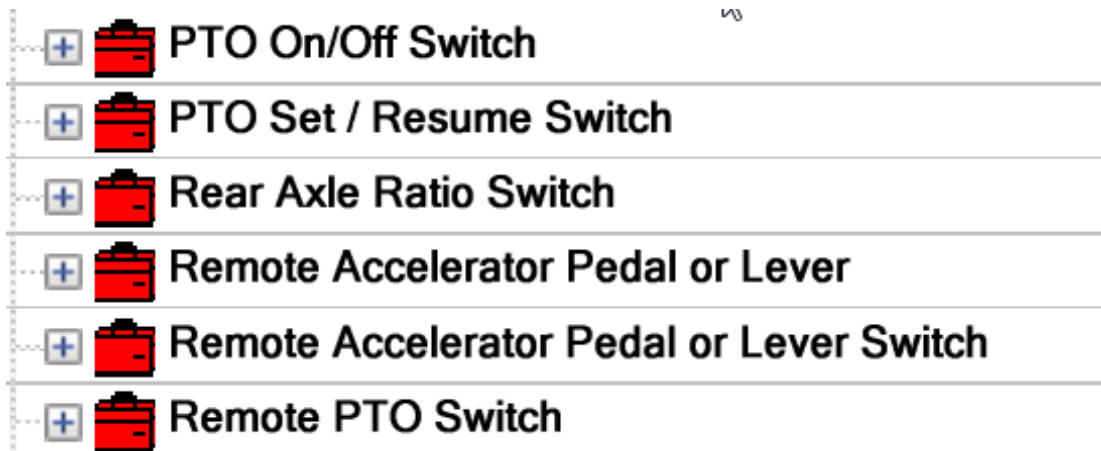
If unit is a Digger Derrick using a remote foot throttle, scroll down till you see folder Remote Accelerator Pedal or Lever. Verify the ECM value is enabled. Expand the folder, Mode should be set to Remote Accelerator Pedal or Lever.



## STEP 10

In the SAE J1939 Multiplexing folder, look for the set of folders below.

**Note:** For International chassis utilizing Diamond Logic, Steps 10-12 can be skipped.





## STEP 11







For all diggers and aerials, should have Remote PTO switch enabled and source address set to 121.

**Note:** IFM (Gen 2) controllers the value is set to 71.

 <b>Remote PTO Switch</b>	<b>Enable</b>
 Source Address	121 - Future Use


















## STEP 12

If unit is a digger derrick without radio controls, set the values to the example shown below.

 <b>Remote Accelerator Pedal or Lever</b>	<b>Enable</b>
 Source Address	121 - Future Use
 <b>Remote Accelerator Pedal or Lever Switch</b>	<b>Enable</b>
 Source Address	121 - Future Use
 <b>Remote PTO Switch</b>	<b>Enable</b>
 Source Address	121 - Future Use

## STEP 13

If unit is a digger with radio controls installed, set the values as shown here.




  <b>PTO On/Off Switch</b>	<b>Enable</b>
 Source Address	121 - Future Use
  <b>PTO Set / Resume Switch</b>	<b>Enable</b>
 Source Address	121 - Future Use
  <b>Rear Axle Ratio Switch</b>	<b>Disable</b>
  <b>Remote Accelerator Pedal or Lever</b>	<b>Enable</b>
 Source Address	121 - Future Use
  <b>Remote Accelerator Pedal or Lever Switch</b>	<b>Enable</b>
 Source Address	121 - Future Use
  <b>Remote PTO Switch</b>	<b>Enable</b>
 Source Address	121 - Future Use

## STEP 14

Look for the subfolder Vehicle Speed Source. The ECM value for Max Engine Speed without Speed Source needs to be adjusted.

For an aerial, the value will either be 300 RPM above the full flow called out in the installation sheet shown in the example or 1500 RPM, whichever is lower.

If the unit is a Digger Derrick, this value will be what is needed for the full flow.

  <b>Vehicle Speed Source</b>	<b>Enable</b>
 Maximum Engine Speed without Vehicle Speed Source	1750 RPM

## STEP 15

Click the Send to ECM button at the top of the software to upload the settings. Follow the instructions shown on the screen.

**Note:** No changes will be saved unless you complete this step.



## STEP 16

Once the ECM parameters are saved, start the chassis and PTO and confirm that all throttles are working correctly.

## STEP 17

If the engine speed and/or pump flow vary widely from the original documentation, then further troubleshooting is required to determine if there is an issue with the PTO, Pump, or converter.

If you have any questions about this procedure or values for the unit, please contact Terex Utilities Technical Support at: (844) 837-3948, or [utilities.service@terex.com](mailto:utilities.service@terex.com).



FOR FURTHER ASSISTANCE,  
CONTACT THE TEREX UTILITIES TECHNICAL SUPPORT TEAM  
PHONE: **1-844-TEREX4U (1-844-837-3948)** | EMAIL: [UTILITIES.SERVICE@TEREX.COM](mailto:UTILITIES.SERVICE@TEREX.COM)

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