

MaxxForce[®] 11 and 13 (2007-2009)

Overview: *Remote Engine Speed
Control*

TABLE OF CONTENTS

- General Overview: Remote Engine Speed Control..... 1**
- Description and Operation..... 1**
 - OPERATION.....1
 - FEATURE INTERACTION.....2
- Programmable Parameters..... 2**
- Parameter Setup..... 5**
- Frequently Asked Questions 14**
- Definitions/Acronyms 15**

General Overview: Remote Engine Speed Control

The Remote Engine Speed Control (RESC) feature allows the operator to set and maintain a constant engine speed from outside the vehicle cab. This feature may also be known as Remote Accelerator Pedal Position (RAPP). Control over engine speed is accomplished by using remote mounted switches to turn on the RESC and select the desired engine speed.

The RESC feature includes two additional switches (remote preset & remote variable) which allow the operator to choose the mode of engine speed control operation.

This document will address unique remote engine speed control functionality for the MaxxForce® 11 and 13.

Description and Operation

The RESC feature remotely provides the operator engine speed control to any installed auxiliary devices. This remote control panel is located outside of the cab by the installer of the auxiliary device.

Operation

The operational control of the RESC feature consists of 4 switches located on a control panel outside the cab of the vehicle:

- **“Remote Preset”** switch allows the driver to enable or disable the remote preset PTO functionality.
- **“Remote Variable”** switch allows the driver to enable or disable the remote variable PTO functionality.
- **“Resume/Accel”** switch allows the operator to ramp up the engine or cycle through the presets.
- **“Set/Coast”** switch allows the operator to ramp down the engine or cycle through the presets.

The following visual indications may also be remotely mounted and are used in conjunction with RESC:

- Amber Warning Lamp (AWL)
- Red Stop Lamp (RSL)
- Engine Running Output

Remote Preset Switch

Remote preset engine speed control allows the operator to select up to 6 preset engine speeds from outside the cab while the vehicle is stationary.

Remote Variable Switch

Remote variable allows the operator to select any engine speed within the PTO boundaries using controls and a physical switch located outside the cab.

Remote Pedal

This optional feature gives the operator control of the engine speed outside the cab similar to that of the in-cab accelerator pedal.

Split-Shaft PTO

This optional feature is used in conjunction with RESC and is targeted for applications that use a transfer case or auxiliary driveshaft.

Feature Interaction

The RESC feature interacts with the following engine features:

- In-Cab Engine Speed Control
- Engine Cooling Fan
- Idle Shutdown Timer (IST)
- Cold Ambient Protection (CAP)

Programmable Parameters

The following programmable parameters are required for RESC and PTO operation. These parameters should be programmed to the engine speed control operation which will best suit the vehicle conditions expected.

Parameters indicated as “Customer Programmable” can be adjusted differently than the production assembly plant setting to meet the customer’s needs. If the parameter is indicated as non-customer programmable, the parameter setting is preset from the factory and can’t be changed without authorization.

NOTE: There are multiple available RESC configurations. Please see the Parameter Setup section for a few examples and specific setup instructions.

Parameter for Remote Pedal Configurations:

Parameter Value	Description	Possible Values	Cust Pgm?	Recommended Settings
Aux Throttle Control - Remote Pedal Enable (7504)	This parameter sets the driveline mode for PTO operation: Note: Must be set to 1 if engine speed is desired to be controlled by a remote throttle pedal.	0: Disable 1: Enable	YES	Customer Chosen

Parameter for Split Shaft PTO Configurations:

Parameter Value	Description	Possible Values	Cust Pgm?	Recommended Settings
Driveline Status for Hydraulic Pressure Governor Operation (9301)	This parameter sets the split shaft mode for PTO operation. <ul style="list-style-type: none"> • If set to (0) - Split shaft is disengaged - The ECM receives vehicle speed via SAE J1939 or hardwired from the transmission output shaft vehicle speed sensor input. NOTE: The driveline must be disengaged at all times for operation of the split shaft feature. • If set to (1) - Split shaft is engaged - The ECM receives wheel-based vehicle speed via SAE J1939 from the anti-lock brake system (ABS). NOTE: A transition in driveline status will cause the split shaft feature to be deactivated. 	0: Neutral Operation 1: Split Shaft enabled		Customer Chosen NOTE: Must be set to 1 if Split Shaft operation is desired.

Parameters for PTO Remote Configurations:

Parameter Value	Description	Possible Values	Cust Pgrm?	Recommended Settings
Aux Throttle Control - Mode (7500)	<p>This parameter determines the conditions that the Engine Speed Control (PTO) feature will be functional. Set this parameter to enable PTO operation and to choose which inputs are used for control.</p> <ul style="list-style-type: none"> If set to (0) – The PTO functionality is disabled. If set to (2) – Only the in-cab inputs will be able to control PTO. If set to (3) – Both remote and in-cab inputs will be able to control PTO (See Note 1 & 2). If set to (1) – Only the remote PTO inputs will be able to control PTO (See Note 2). <p>Note 1: The last input received will take priority when Mode 3 is selected. Note 2: Mode 1 and the remote portion of Mode 3 are discussed in the Remote Engine Speed Control document.</p>	<p>0: Disabled All PTO Operation 2: Enabled In Cab Operation Only 3: Enabled Remote and In Cab Operation 1: Enabled Remote Operation Only</p>	YES	Customer Chosen
Aux Throttle Control - In Cab PTO Mode (7502)	<p>Set this parameter after selecting In-Cab Or Remote and In-Cab Operation to determine which PTO mode is active.</p> <ul style="list-style-type: none"> If set to (0) – The switches will not be used. Refer to the Remote Engine Speed Control document. If set to (1) – The switches will be used to select up to 6 preset engine speeds. Refer to the Stationary Preset section for more information. If set to (2) – The switches will be used to adjust the engine speed variably. Refer to the Stationary Variable section for more information. If set to (3) – The switches will be used to adjust the engine speed to a desired set point to allow for vehicle movement. Refer to the Mobile Variable section for more information. 	<p>0: None 1: Stationary Preset 2: Stationary Variable 3: Mobile Variable</p>	YES	Customer Chosen
Aux Throttle Control - In Cab Operator Interface (7503)	<p>Select this parameter when accelerator, brake or clutch is desired to be ignored during engine speed control operation.</p> <ul style="list-style-type: none"> If set to (0) – The accelerator, brake, and clutch are inputs used for PTO operation. If set to (1) – The accelerator, brake, and clutch will be ignored during PTO operation. <p>Note: Use parameters (7510), (7511) and (7513) to provide the specific input options.</p>	<p>0: Enabled 1: Disabled</p>	YES	Customer Chosen
Aux Throttle Control - Remote Pedal Enable (7504)	<p>This parameter sets the driveline mode for PTO operation: Note: Must be set to 1 if engine speed is desired to be controlled by a remote throttle pedal.</p>	<p>0: Disable 1: Enable</p>	YES	Customer Chosen
Aux Throttle Control - Engine Speed 1 (SET/COAST) (7505)	<p>This parameter sets the running engine speed set point that will be maintained when the first PTO preset speed is selected OR when SET/COAST is pressed.</p> <p>Note 1: Presets speeds that will not be used can be set to 0 rpm. Upon activation (Remote Preset Power take Off and Speed Control Switch), allow customer to enter preset 1 and then ramp up/down using Resume/Accel Switch and Speed Control Switch inputs. Refer to the Stationary Preset section for more information.</p>	<p>Range must be between the following settings:</p> <ul style="list-style-type: none"> PTO Preset Engine Speed Activation (CRUISE ON) (7522) PTO Maximum Engine Speed (7508) 	YES	Customer Chosen (See Note 1)

Parameter Value	Description	Possible Values	Cust Pgrm?	Recommended Settings
Aux Throttle Control - Engine Speed 2 (RESUME/ACCEL) (7506)	This parameter sets the running engine speed set point that will be maintained when the first PTO preset speed is selected OR when RESUME/ACCEL is pressed. Note 1: Presets speeds that will not be used can be set to 0 rpm. Upon activation (Remote Preset Power take Off and Speed Control Switch), allow customer to enter preset 2 and then ramp up/down using Resume/Accel Switch and Speed Control Switch inputs. Refer to the Stationary Preset section for more information.	Range must be between the following settings: <ul style="list-style-type: none"> PTO Preset Engine Speed Activation (CRUISE ON) (7522) PTO Maximum Engine Speed (7508) 	YES	Customer Chosen (See Note 1)
Aux Throttle Control - Maximum Engine Speed (7508)	The maximum engine speed that can be reached using any PTO controls. Note 1: This parameter must be set properly to protect PTO related equipment.	Low Idle - High Idle (rpm)	YES	Customer Chosen (See Note 1)
Aux Throttle Control - Preset Engine Speed 3 (7514)	This parameter sets the running engine speed set point that will be maintained when the third PTO preset speed is selected. Note 1: Presets speeds that will not be used can be set to 0 rpm. Upon activation (Remote Preset Power take Off and Speed Control Switch), allow customer to enter preset 3 and then ramp up/down using Resume/Accel Switch and Speed Control Switch inputs. Refer to the Stationary Preset section for more information.	Range must be between the following settings: <ul style="list-style-type: none"> PTO Preset Engine Speed Activation (CRUISE ON) (7522) PTO Maximum Engine Speed (7508) 	YES	Customer Chosen (See Note 1)
Aux Throttle Control - Preset Engine Speed 4 (7515)	This parameter sets the running engine speed set point that will be maintained when the third PTO preset speed is selected. Note 1: Presets speeds that will not be used can be set to 0 rpm. Upon activation (Remote Preset Power take Off and Speed Control Switch), allow customer to enter preset 4 and then ramp up/down using Resume/Accel Switch and Speed Control Switch inputs. Refer to the Stationary Preset section for more information.	Range must be between the following settings: <ul style="list-style-type: none"> PTO Preset Engine Speed Activation (CRUISE ON) (7522) PTO Maximum Engine Speed (7508) 	YES	Customer Chosen (See Note 1)
Aux Throttle Control - Preset Engine Speed 5 (7516)	This parameter sets the running engine speed set point that will be maintained when the third PTO preset speed is selected. Note 1: Presets speeds that will not be used can be set to 0 rpm. Upon activation (Remote Preset Power take Off and Speed Control Switch), allow customer to enter preset 4 and then ramp up/down using Resume/Accel Switch and Speed Control Switch inputs. Refer to the Stationary Preset section for more information.	Range must be between the following settings: <ul style="list-style-type: none"> PTO Preset Engine Speed Activation (CRUISE ON) (7522) PTO Maximum Engine Speed (7508) 	YES	Customer Chosen (See Note 1)

Parameter Value	Description	Possible Values	Cust Pgrm?	Recommended Settings
Aux Throttle Control - Preset Engine Speed 6 (7517)	This parameter sets the running engine speed set point that will be maintained when the third PTO preset speed is selected. Note 1: Presets speeds that will not be used can be set to 0 rpm. Upon activation (Remote Preset Power take Off and Speed Control Switch), allow customer to enter preset 4 and then ramp up/down using Resume/Accel Switch and Speed Control Switch inputs. Refer to the Stationary Preset section for more information.	Range must be between the following settings: <ul style="list-style-type: none"> PTO Preset Engine Speed Activation (CRUISE ON) (7522) PTO Maximum Engine Speed (7508) 	YES	Customer Chosen (See Note 1)
Aux Throttle Control - Engine Speed Limit with VSS Fault (7518)	This parameter sets the maximum engine speed allowed when an active vehicle speed sensor (VSS) fault exits and PTO engine speed control is active. Above this engine speed, PTO cannot be activated, however; if this engine speed is exceeded while in PTO then PTO will be deactivated. This parameter might be useful in preventing the operator from over speeding or over loading the equipment.	Low Idle - High Idle (rpm)	YES	Customer Chosen
Aux Throttle Control - Maximum Engine Load (7519)	The engine speed control will be limited or deactivated if this parameter value is reached. Note 1: The functionality of this parameter is dependent on the Engine Load Limit Select (7530) parameter setting.	Set between 30 and 100% based on the recommendations for the PTO equipment.	YES	A setting of 100% is recommended.
Aux Throttle Control - Maximum Engine Load Time (7527)	This parameter sets the time that the PTO will remain active while the engine load is at a maximum threshold.	Set between 0 and 32 seconds.	YES	A setting of 5 seconds is recommended.
Aux Throttle Control - Preset Engine Speed Select (7528)	This parameter sets the first selected preset level (1, 2, 3, 4, 5, or 6) when remote Preset PTO is activated. Note 1: This parameter can only have six valid preset values as 1, 2, 3, 4, 5 or 6.	Off 0 Preset Speed 1 Preset Speed 2 Preset Speed 3 Preset Speed 4 Preset Speed 5 Preset Speed 6	YES	Customer Chosen
Aux Throttle Control - Engine Load Limit Select (7530)	This parameter selects whether the PTO engine speed control is limited or deactivated if an engine load threshold is reached. <ul style="list-style-type: none"> If set to (0) – Engine speed control will be deactivated if the engine speed reaches the Maximum Engine Load (7519) parameter setting. If set to (1) – Engine speed will be limited if the engine speed reaches the Maximum Engine Load (7519) parameter setting. 	0: Off 1: On	YES	A setting of 1 is recommended.

Parameter Setup

Possible RESC Applications:

The RESC feature is application specific. This section briefly describes a few examples of RESC configuration and operation. This configuration will likely need to be modified to meet the needs of the actual application that the owner/operator requires.

Please review the description and operation section and the programmable parameters for a better understanding of how the various RESC parameters might be best configured for your vehicle.

EXAMPLE A - Typical Split - Shaft Scenario

Typical split-shaft applications may include fire pump, sewer evacuation, etc.

This example is applicable for general split-shaft operation using stationary PTO mode and with preset (s) for elevated engine speed. The presets are activated remotely OR via the cruise control switches.

Adjust parameters as follows:

Parameter Name	Action Required
Aux Throttle Control - Mode (7500)	Select 3: Enabled - Remote and In Cab Operation
Aux Throttle Control - In Cab PTO Mode (7502)	Select one of the following: 0: None 1: Stationary Preset 2: Stationary Variable 3: Mobile Variable
Driveline Status for Hydraulic Pressure Governor Operation (9301)	Select 1: Split Shaft Operation
Aux Throttle Control - Remote Pedal Enable (7504)	Select 0: Disable 1: Enable
(Optional) - Aux Throttle Control - Preset Engine Speed 1 (SEI/COAST) (7505)	Set this to 900
(Optional) - Aux Throttle Control - Preset Engine Speed 2 (RESUME/ACCEL) (7506)	Set this to 1100
(Optional) - Aux Throttle Control - Preset Engine Speed 3 (7514)	Set this to 0
(Optional) - Aux Throttle Control - Preset Engine Speed 4 (7515)	Set this to 0
(Optional) - Aux Throttle Control - Preset Engine Speed 5 (7516)	Set this to 0
(Optional) - Aux Throttle Control - Preset Engine Speed 6 (7517)	Set this to 0
(Optional) - Aux Throttle Control - In Cab Operator Interface (7503)	Select 1: Disable NOTE: The accelerator, brake, and clutch will be ignored during PTO operation.
(Optional) - Aux Throttle Control - Maximum Engine Speed (7508)	Check the recommendations for the PTO equipment.
Aux Throttle Control - Engine Speed Limit with VSS Fault (7518)	Set this to the value of the PTO Maximum Engine Speed (7508) parameter setting referenced in the In-Cab PTO document

Parameter Name	Action Required
<p>Aux Throttle Control - Engine Load Limit Select (7530)</p> <p>This parameter selects whether the PTO engine speed control is limited or deactivated if an engine load threshold is reached.</p> <p>If set to 0: Engine speed control will be deactivated if the engine speed reaches the Maximum Engine Load (7519) parameter setting.</p> <p>If set to 1: Engine speed will be limited if the engine speed reaches the Maximum Engine Load (7519) parameter setting.</p>	<p>A setting of 1 is recommended.</p>
<p>Aux Throttle Control - Maximum Engine Load (7519)</p> <p>The engine speed control will be limited or deactivated if this parameter value is reached.</p> <p>Note :</p> <p>The functionality of this parameter is dependent on the Engine Load Limit Select (7530) parameter setting.</p>	<p>Set between 30 and 100% based on the recommendations for the PTO equipment.</p> <p>NOTE: A setting of 100% is recommended.</p>
<p>Aux Throttle Control - Maximum Engine Load Time (7527)</p> <p>This parameter sets the time that the PTO will remain active while the engine load is at a maximum threshold.</p>	<p>A setting of 5 (seconds) is recommended.</p>
<p>Aux Throttle Control - Preset Engine Speed Select (7528)</p> <p>If enabled, the engine speed will be ramped immediately after the remote preset switch is enabled. Normal engine speed control PTO conditions apply.</p> <p>If set to 0: Remote preset functions work as described in the Remote Preset section. This is considered normal operation.</p> <p>If set from 1 - 6: When the remote preset switch is enabled, the engine will ramp up (from idle speed) to the engine speed value set for the respective preset.</p>	<p>Set to any of the following values:</p> <p>0: Off 1: Preset Speed 1 2: Preset Speed 2 3: Preset Speed 3 4: Preset Speed 4 5: Preset Speed 5 6: Preset Speed 6</p>

Operation:

1. Ensure that the vehicle is completely stopped and that the parking brake is set.
2. Place the transmission in neutral.
3. Engage the split-shaft mechanism.
4. Place the transmission into the appropriate drive gear. Refer to the appropriate transmission documentation for specific instructions (Eaton, Allison, etc.).
5. Continue with desired engine speed control operation.

EXAMPLE B - Typical Utility Bucket Truck

Typical utility bucket applications may include tree trimmers, lineman bucket trucks, lamp repair trucks, etc.

This example is applicable for general utility bucket operation using a mechanical PTO with preset(s) for elevated engine speed for a stabilizing outrigger. The presets are activated remotely OR via the cruise control switches.

NOTE: Propane trucks and tow trucks may use similar settings.

Adjust parameters as follows:

Parameter Name	Action Required
Aux Throttle Control - Mode (7500)	Select 3: Enabled - Remote and In Cab Operation
Aux Throttle Control - In Cab PTO Mode (7502)	Select one of the following: 0: None 1: Stationary Preset 2: Stationary Variable
Driveline Status for Hydraulic Pressure Governor Operation (9301)	Select 0: Neutral Operation
Aux Throttle Control - Remote Pedal Enable (7504)	Select 0: Disable
(Optional) Aux Throttle Control - Preset Engine Speed 1 (SET/COAST) (7505)	Set this to 900
(Optional) Aux Throttle Control - Preset Engine Speed 2 (RESUME/ACCEL) (7506)	Set this to 1100
(Optional) Aux Throttle Control - Preset Engine Speed 3 (7514)	Set this to 0
(Optional) Aux Throttle Control - Preset Engine Speed 4 (7515)	Set this to 0
(Optional) Aux Throttle Control - Preset Engine Speed 5 (7516)	Set this to 0
(Optional) Aux Throttle Control - Preset Engine Speed 6 (7517)	Set this to 0
(Optional) Aux Throttle Control - In Cab Operator Interface (7503)	Select 1: Disable NOTE: The accelerator, brake, and clutch will be ignored during PTO operation.
(Optional) Aux Throttle Control - Maximum Engine Speed (7508)	Check the recommendations for the PTO equipment.
Aux Throttle Control - Engine Speed Limit with VSS Fault (7518)	Set this to the value of the PTO Maximum Engine speed. (7508) parameter setting.

Parameter Name	Action Required
<p>Aux Throttle Control - Engine Load Limit Select (7530)</p> <p>This parameter selects whether the PTO engine speed control is limited or deactivated if an engine load threshold is reached.</p> <p>If set to 0: Engine speed control will be deactivated if the engine speed reaches the Maximum Engine Load (7519) parameter setting.</p> <p>If set to 1: Engine speed will be limited if the engine speed reaches the Maximum Engine Load (7519) parameter setting.</p>	<p>A setting of 1 is recommended.</p>
<p>Aux Throttle Control - Maximum Engine Load (7519)</p> <p>The engine speed control will be limited or deactivated if this parameter value is reached.</p> <p>Note 1: The functionality of this parameter is dependent on the Engine Load Limit Select (7530) parameter setting.</p>	<p>Set between 30 and 100% based on the recommendations for the PTO equipment.</p> <p>NOTE: A setting of 100% is recommended.</p>
<p>Aux Throttle Control - Maximum Engine Load Time (7527)</p> <p>This parameter sets the time that the PTO will remain active while the engine load is at a maximum threshold.</p>	<p>A setting of 5 (seconds) is recommended.</p>
<p>Aux Throttle Control - Vehicle Speed Limit Select (7531)</p> <p>This parameter selects whether the PTO engine speed control is limited or deactivated if a vehicle speed threshold is reached.</p> <p>If set to 0: Engine speed control will be deactivated if the vehicle speed reaches the PTO Vehicle Speed Kick Out (7521) parameter setting.</p> <p>If set to 1: Engine speed will be limited if the vehicle speed reaches the PTO Vehicle Speed Limit (7501) parameter setting.</p>	<p>A setting of 0 is recommended for utility bucket vehicles.</p>
<p>Aux Throttle Control - Preset Engine Speed Select (7528)</p> <p>If enabled, the engine speed will be ramped immediately after the remote preset switch is enabled. Normal engine speed control PTO conditions apply.</p> <p>If set to 0: Remote preset functions work as described in the Remote Preset section. This is considered normal operation.</p> <p>If set from 1 - 6: When the remote preset switch is enabled, the engine will ramp up (from idle speed) to the engine speed value set for the respective preset.</p>	<p>Set to any of the following values:</p> <ul style="list-style-type: none"> 0: Off 1: Preset Speed 1 2: Preset Speed 2 3: Preset Speed 3 4: Preset Speed 4 5: Preset Speed 5 6: Preset Speed 6

Operation:

1. Engage the mechanical PTO device.
2. Ramp the engine to the desired preset speed according to the equipment.
3. Continue with desired utility bucket operation.

EXAMPLE C - Typical Utility Derrick Digger

Derrick diggers are commonly used for digging holes for utility poles, ditches, etc.

This example is applicable for general utility derrick digger operation using a mechanical PTO with preset (s) for elevated engine speed for a stabilizing outrigger, variable engine speed control and remote pedal for digging from the perch. The presets are activated remotely OR via the cruise control switches.

NOTE: Oil field trucks may use similar settings.

Adjust parameters as follows:

Parameter Name	Action Required
Aux Throttle Control - Mode (7500)	Select 3: Enabled - Remote and In Cab Operation
Aux Throttle Control - In Cab PTO Mode (7502)	Select one of the following: 0: None 1: Stationary Preset 2: Stationary Variable
Driveline Status for Hydraulic Pressure Governor Operation (9301)	Select 0: Neutral Operation
Aux Throttle Control - Remote Pedal Enable (7504)	Select 1: Enable
(Optional) Aux Throttle Control - Preset Engine Speed 1 (SEI/COAST) (7505)	Set this to 620
(Optional) Aux Throttle Control - Preset Engine Speed 2 (RESUME/ACCEL) (7506)	Set this to 1200
(Optional) Aux Throttle Control - Preset Engine Speed 3 (7514)	Set this to 0
(Optional) Aux Throttle Control - Preset Engine Speed 4 (7515)	Set this to 0
(Optional) Aux Throttle Control - Preset Engine Speed 5 (7516)	Set this to 0
(Optional) Aux Throttle Control - Preset Engine Speed 6 (7517)	Set this to 0

Parameter Name	Action Required
<p>(Optional) Aux Throttle Control - In-Cab Operator Interface (7503)</p> <p>Select this parameter when accelerator, brake or clutch is desired to be ignored during engine speed control operation.</p> <p>If set to 0 : The accelerator, brake, and clutch are inputs used for PTO operation.</p> <p>If set to 1 : The accelerator, brake, and clutch will be ignored during PTO operation.</p> <p>Note: Use parameters (7510), (7511) and (7513) to provide the specific input options.</p>	<p>Select 0: ON or 1: OFF</p>
<p>(Optional) Aux Throttle Control - Maximum Engine Speed (7508)</p>	<p>Check the recommendations for the PTO equipment.</p>
<p>Aux Throttle Control - Engine Speed Limit with VSS Fault (7518)</p>	<p>Set this to the value of the PTO Maximum Engine Speed. (7508) parameter setting.</p>
<p>Aux Throttle Control - Engine Load Limit Select (7530)</p> <p>This parameter selects whether the PTO engine speed control is limited or deactivated if an engine load threshold is reached.</p> <p>If set to 0: Engine speed control will be deactivated if the engine speed reaches the Maximum Engine Load (7519) parameter setting.</p> <p>If set to 1: Engine speed will be limited if the engine speed reaches the Maximum Engine Load (7519) parameter setting.</p>	<p>A setting of 1 is recommended.</p>
<p>Aux Throttle Control - Maximum Engine Load (7519)</p> <p>The engine speed control will be limited or deactivated if this parameter value is reached.</p> <p>Note 1: The functionality of this parameter is dependent on the Engine Load Limit Select (7530) parameter setting.</p>	<p>Set between 30 and 100% based on the recommendations for the PTO equipment.</p> <p>NOTE: A setting of 100% is recommended.</p>
<p>Aux Throttle Control - Maximum Engine Load Time (7527)</p> <p>This parameter sets the time that the PTO will remain active while the engine load is at a maximum threshold.</p>	<p>A setting of 5 (seconds) is recommended.</p>

Parameter Name	Action Required
<p>Aux Throttle Control - Preset Engine Speed Select (7528)</p> <p>If enabled, the engine speed will be ramped immediately after the remote preset switch is enabled. Normal engine speed control PTO conditions apply.</p> <p>If set to 0: Remote preset functions work as described in the Remote Preset section. This is considered normal operation.</p> <p>If set from 1 - 6: When the remote preset switch is enabled, the engine will ramp up (from idle speed) to the engine speed value set for the respective preset.</p>	<p>Set to any of the following values:</p> <p>0: Off 1: Preset Speed 1 2: Preset Speed 2 3: Preset Speed 3 4: Preset Speed 4 5: Preset Speed 5 6: Preset Speed 6</p>

Operation:

1. Engage the mechanical PTO device.
 2. Activate remote preset engine speed.
 3. Operate outriggers.
 4. REMOTE CONTROL: a. Activate remote variable, b. Operate digger (adjusting engine speed variably as required)
- OR -
5. PEDESTAL: a. Activate remote pedal, b. Operate digger

EXAMPLE D - Typical Construction Dump Scenario

Typical construction dump applications may include dump bodies, landscape dumps, etc.

This example is applicable for general construction dump operation using a mechanical PTO with preset (s) for elevated engine speed for raising and lowering the dump body. The presets are activated remotely OR via the cruise control switches.

Adjust parameters as follows:

Parameter Name	Action Required
<p>Aux Throttle Control - Mode (7500)</p>	<p>Select 3: Enabled - Remote and In Cab Operation.</p>
<p>Aux Throttle Control - In Cab PTO Mode (7502)</p>	<p>Select one of the following:</p> <p>0: None 1: Stationary Preset 2: Stationary Variable 3: Mobile Variable</p>

Parameter Name	Action Required
Driveline Status for Hydraulic Pressure Governor Operation (9301)	Select 0: Neutral Operation
Aux Throttle Control - Remote Pedal Enable (7504)	Select 0: Disable
(Optional) Aux Throttle Control - Preset Engine Speed 1 (SET/COAST) (7505)	Set this to 1100
(Optional) Aux Throttle Control - Preset Engine Speed 2 (RESUME/ACCEL) (7506)	Set this to 0
(Optional) Aux Throttle Control - Preset Engine Speed 3 (7514)	Set this to 0
(Optional) Aux Throttle Control - Preset Engine Speed 4 (7515)	Set this to 0
(Optional) Aux Throttle Control - Preset Engine Speed 5 (7516)	Set this to 0
(Optional) Aux Throttle Control - Preset Engine Speed 6 (7517)	Set this to 0
(Optional) Aux Throttle Control - In Cab Operator Interface (7503) Select this parameter when accelerator, brake or clutch is desired to be ignored during engine speed control operation. If set to 0: The accelerator, brake, and clutch are inputs used for PTO operation. If set to 1: The accelerator, brake, and clutch will be ignored during PTO operation. Note: Use parameters (7510), (7511) and (7513) to provide the specific input options.	Select 0: ON or 1: OFF
(Optional) Aux Throttle Control - Maximum Engine Speed (7508)	Check the recommendations for the PTO equipment.
Aux Throttle Control - Engine Speed Limit with VSS Fault (7518)	Set this to the value of the PTO Maximum Engine Speed (7508) parameter setting.
Aux Throttle Control - Engine Load Limit Select (7530) This parameter selects whether the PTO engine speed control is limited or deactivated if an engine load threshold is reached. If set to 0: Engine speed control will be deactivated if the engine speed reaches the Maximum Engine Load (7519) parameter setting. If set to 1: Engine speed will be limited if the engine speed reaches the Maximum Engine Load (7519) parameter setting.	A setting of 1 is recommended.

Parameter Name	Action Required
<p>Aux Throttle Control - Maximum Engine Load (7519) The engine speed control will be limited or deactivated if this parameter value is reached.</p> <p>Note 1: The functionality of this parameter is dependent on the Engine Load Limit Select (7530) parameter setting.</p>	<p>Set between 30 and 100% based on the recommendations for the PTO equipment.</p> <p>NOTE: A setting of 100% is recommended.</p>
<p>Aux Throttle Control - Maximum Engine Load Time (7527)</p> <p>This parameter sets the time that the PTO will remain active while the engine load is at a maximum threshold.</p>	<p>A setting of 5 (seconds) is recommended.</p>
<p>Aux Throttle Control - Vehicle Speed Limit Select (7531) This parameter selects whether the PTO engine speed control is limited or deactivated if a vehicle speed threshold is reached.</p> <p>If set to 0: Engine speed control will be deactivated if the vehicle speed reaches the PTO Vehicle Speed Kick Out (7521) parameter setting.</p> <p>If set to 1: Engine speed will be limited if the vehicle speed reaches the PTO Vehicle Speed Limit (7501) parameter setting.</p>	<p>A setting of 1 is recommended.</p>
<p>Aux Throttle Control - Preset Engine Speed Select (7528)</p> <p>If enabled, the engine speed will be ramped immediately after the remote preset switch is enabled. Normal engine speed control PTO conditions apply.</p> <p>If set to 0: Remote preset functions work as described in the Remote Preset section. This is considered normal operation.</p> <p>If set from 1 - 6: When the remote preset switch is enabled, the engine will ramp up (from idle speed) to the engine speed value set for the respective preset.</p>	<p>Set to any of the following values:</p> <p>0: Off 1: Preset Speed 1 2: Preset Speed 2 3: Preset Speed 3 4: Preset Speed 4 5: Preset Speed 5 6: Preset Speed 6</p>

Operation:

1. Engage the mechanical PTO device.
2. Ramp the engine to the desired preset speed according to the equipment.
3. Continue with desired construction dump body operation.

Frequently Asked Questions

Can the RESC feature be used for split-shaft operation, such as a fire pump application?

Yes, refer to the Split-Shaft PTO section and Example A in the Parameter Setup section for more information.

How do I configure my engine parameters for utility derrick digger operation?

Refer to “Example C” in the Parameter Setup section for more information.

Definitions/Acronyms

The following terms are referenced in this document:

Acronym	Definition
CAP	Cold Ambient Protection
ECM	Engine Control Module
IST	Idle Shutdown Timer
PTO	Power Take Off
RAS	Resume/ Accel Switch
RESC	Remote Engine Speed Control
SCS	Speed Control Switch
VSS	Vehicle Speed Sensor