

STANLEY EPB and BPB Programing Guide



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Industrial

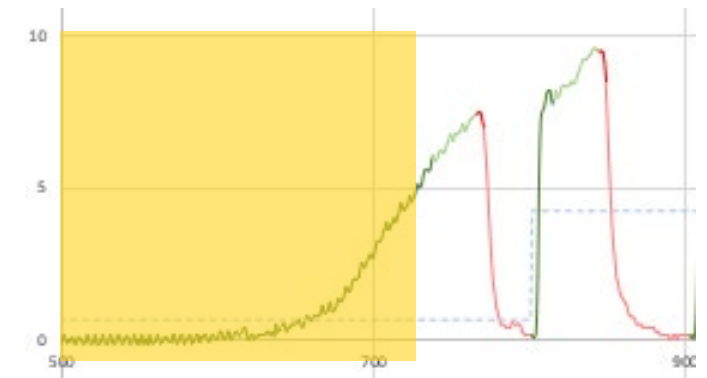
Low Reaction Parameters

- STANLEY low reaction tools have several programming differences from our traditional direct drive tools
 - Not all step types are compatible
 - 4 parameters specific to low reaction are introduced
- STANLEY low reaction is compatible with software versions from 5.3.3 forward

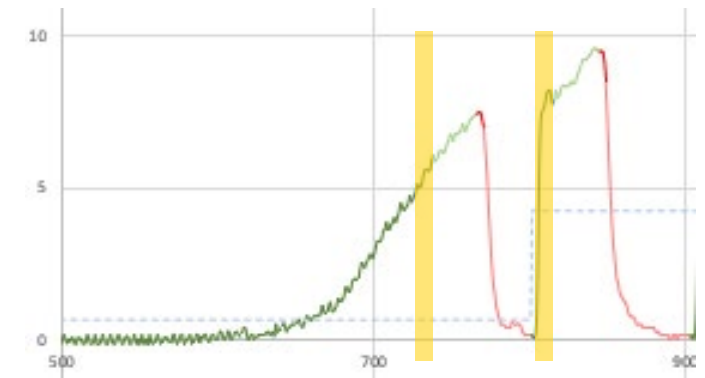
The screenshot shows a software interface for configuring a 'Low Reaction' tool. At the top, there is a black header bar with a yellow arrow pointing left and the text '< Job 1'. Below this, the title 'Low Reaction' is displayed in bold. The interface contains four rows of settings, each with a label on the left and a value in a text box on the right. The settings are: 'Threshold' with a value of '5 NM', 'On Time' with a value of '10 ms', 'Coast Time' with a value of '30 ms', and 'Average' with a value of '4 NM'. The text boxes have a light gray border and a small vertical line on the right side.

Parameter	Value	Unit
Threshold	5	NM
On Time	10	ms
Coast Time	30	ms
Average	4	NM

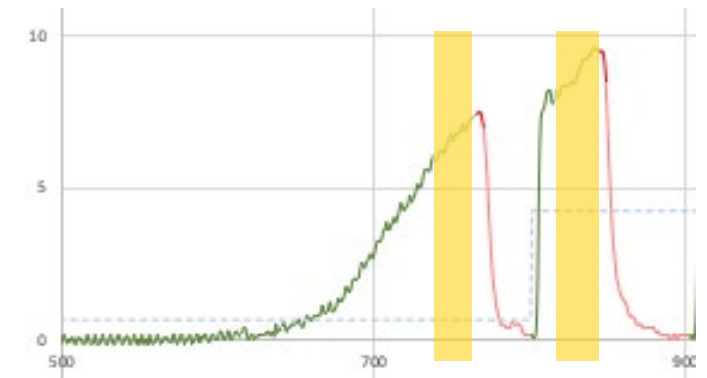
- This parameter sets the point at which a tool begins pulsing
 - Generally limited to 15NM or less
 - Unit: Torque
- **Increasing** this parameter begins pulsing later, and with it reduces vibration
 - Higher values improve tact time
- **Decreasing** this parameter results in more pulses, but also improves control on harder joints
 - Lower values decrease felt torque
- **Suggested Default:** 10% of the target torque



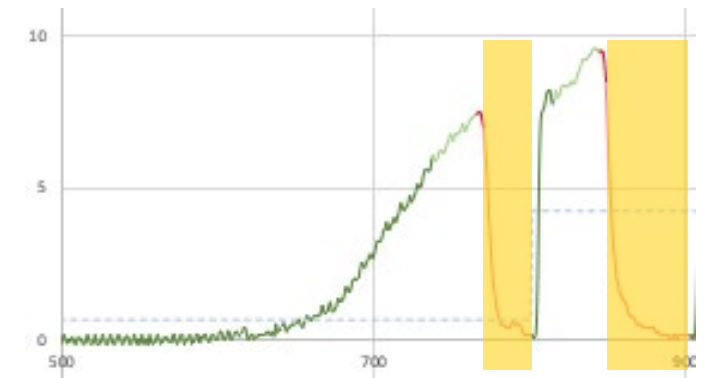
- This parameter specifies the amount of time the tool spends in the power phase of a pulse cycle in milliseconds.
- **Increasing** this parameter results in harder pulses, but fewer of them
 - Setting this value too high can cause torque overshoot, especially on hard joints
- **Decreasing** this parameter results in softer pulses, but more of them
 - Improves control on hard joints
- **Suggested Defaults:**
 - < 30 Nm: Start at 1ms
 - 30 Nm – 80 Nm: Start at 3 ms
 - > 80 Nm: Start at 5 ms



- This parameter specifies the amount of time the tool spends in the coasting phase of a pulse cycle in milliseconds prior to the active breaking phase.
- **Increasing** this parameter increases coast time in the pulse valley
 - Improves duty cycle
 - Decreases motor heat
- **Decreasing** this parameter reduces the width of the pulse valley
 - Reduces perceived reaction
- **Suggested Default:** 30 milliseconds



- This parameter dynamically adjusts the dwell time between pulses based on peak height and duration, calculated as the average of torque across peak and valley
- **Increasing** raises average pulse rate
 - Increases rate of vibration
 - Reduces tact time
- **Decreasing** reduces the width of the pulse valley
 - Slows vibration
 - May reduce heat generation
 - Note: An excessively low value decreases felt pulse continuity
- **Suggested Default:** 20% of the target torque





Related Parameters

- Tool speed effects energy of early pulses
- **Increasing** speed generally reduces pulse count
 - Reduced vibration, especially on soft joints
 - Can contribute to torque overshoot
- **Decreasing** generally increases pulse count
 - Improved control, especially on hard joints

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Speed	250 RPM
Acceleration	3000 RPM/s
Downshift Mode	Disabled
Abort Timer	10 s

- Downshift is generally not required for soft to medium joints
- **Manual downshift:** Can improve capability on joints with prevailing torque and other non-linear properties
- **ATC:** Can improve overshoot on hard or non-linear joints

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Speed	250 RPM
Acceleration	3000 RPM/s
Downshift Mode	Disabled
Abort Timer	10 s

- Is an important tool to prevent excessive rundowns
 - Used to keep a tool from pulsing when it is not increasing angle
 - Improves tool longevity

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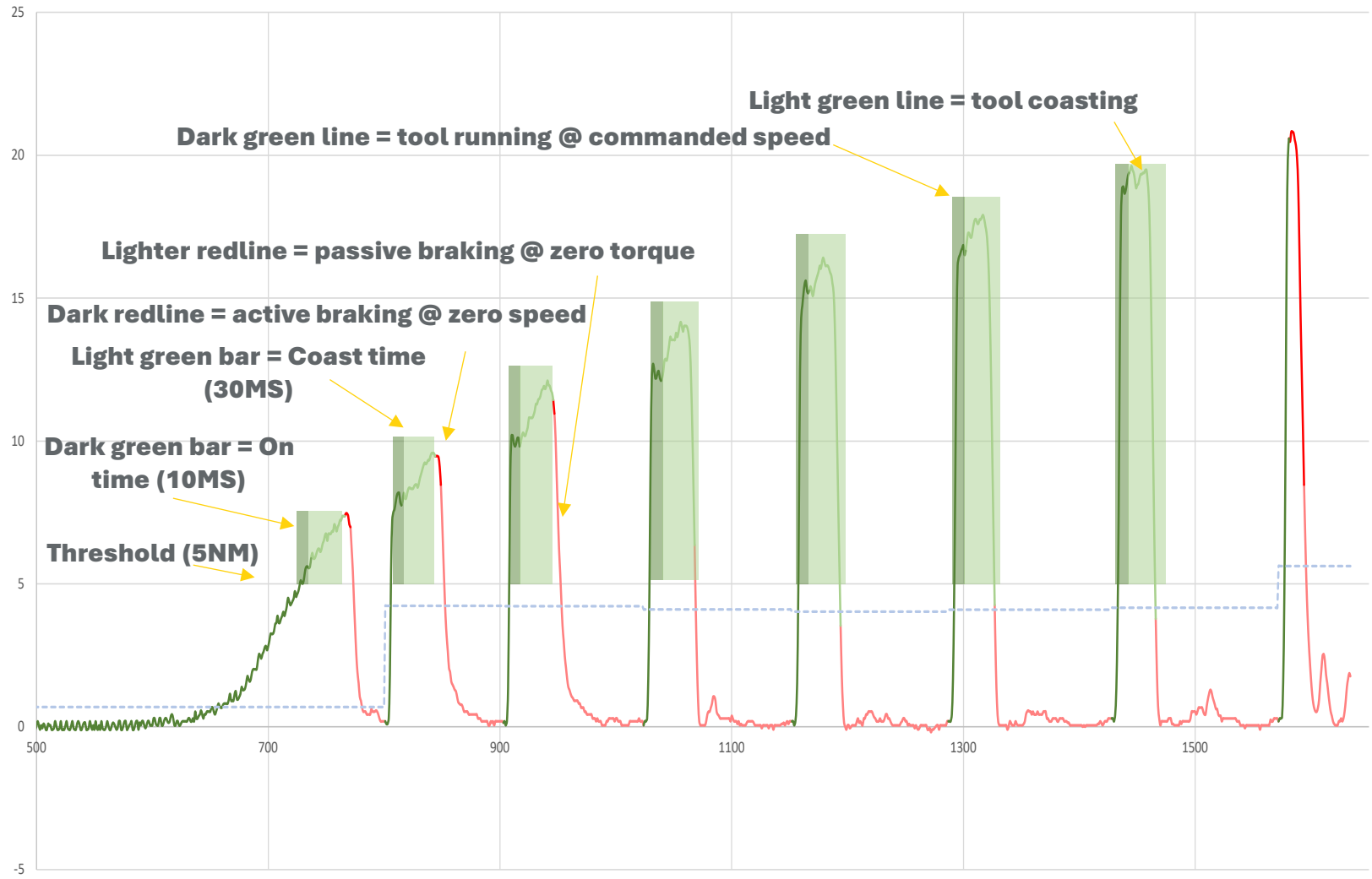
Speed	250 RPM
Acceleration	3000 RPM/s
Downshift Mode	Disabled
Abort Timer	10 s



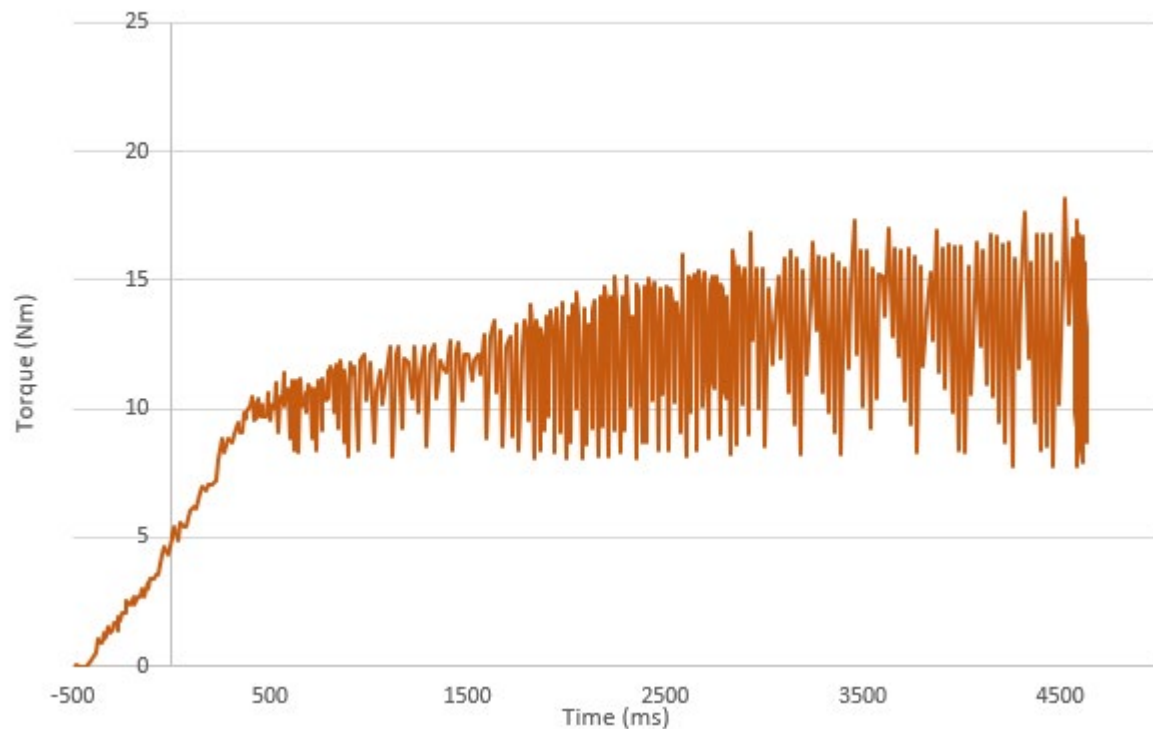
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Illustrations

Low Reaction Parameters

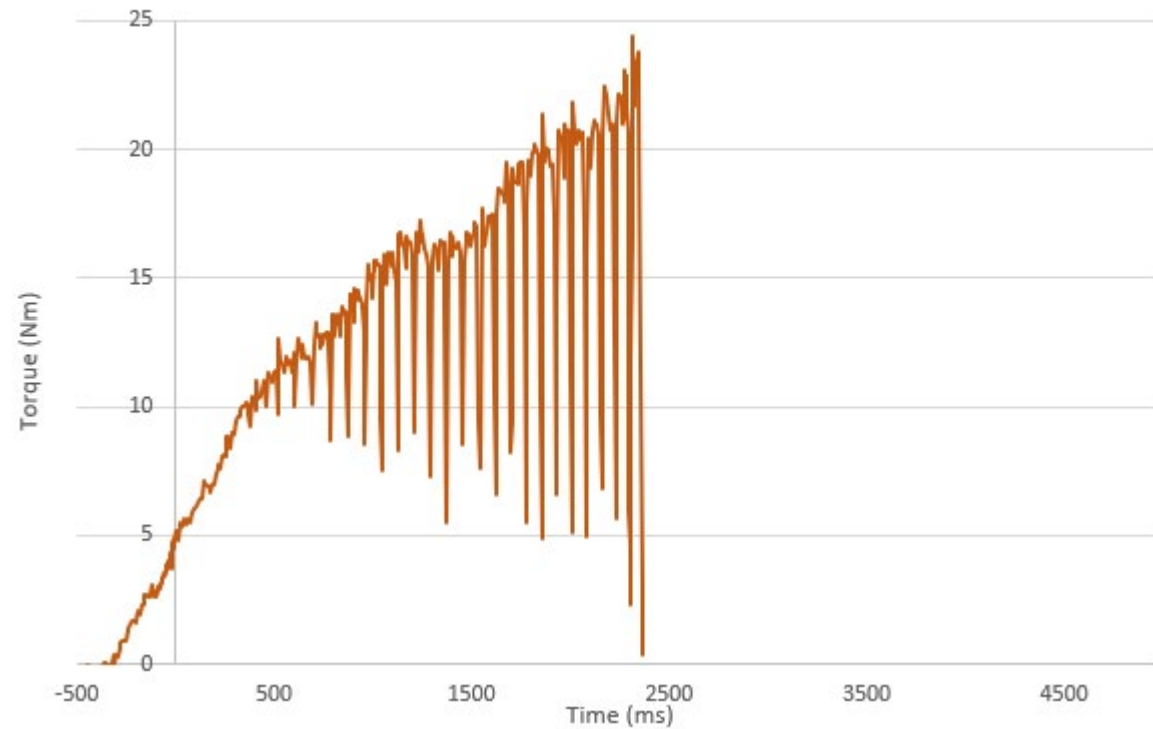


Low On Time - Soft Joint



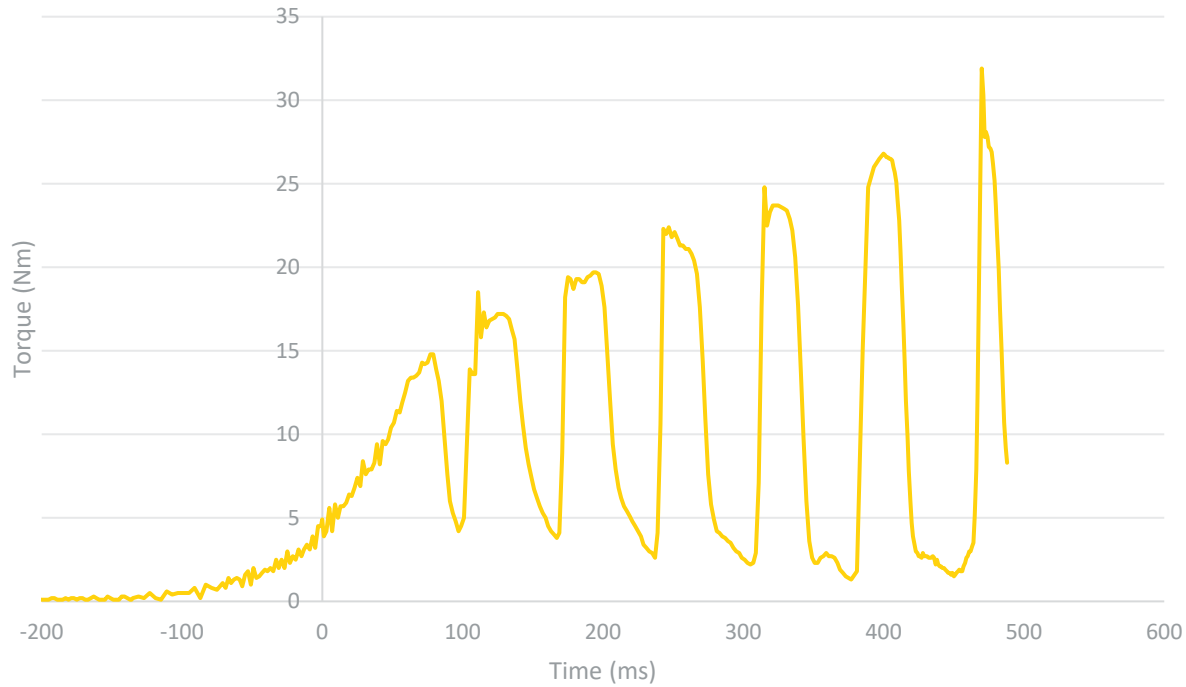
On Time too low
(Tool unable to reach 24Nm Target)

High On Time - Soft Joint



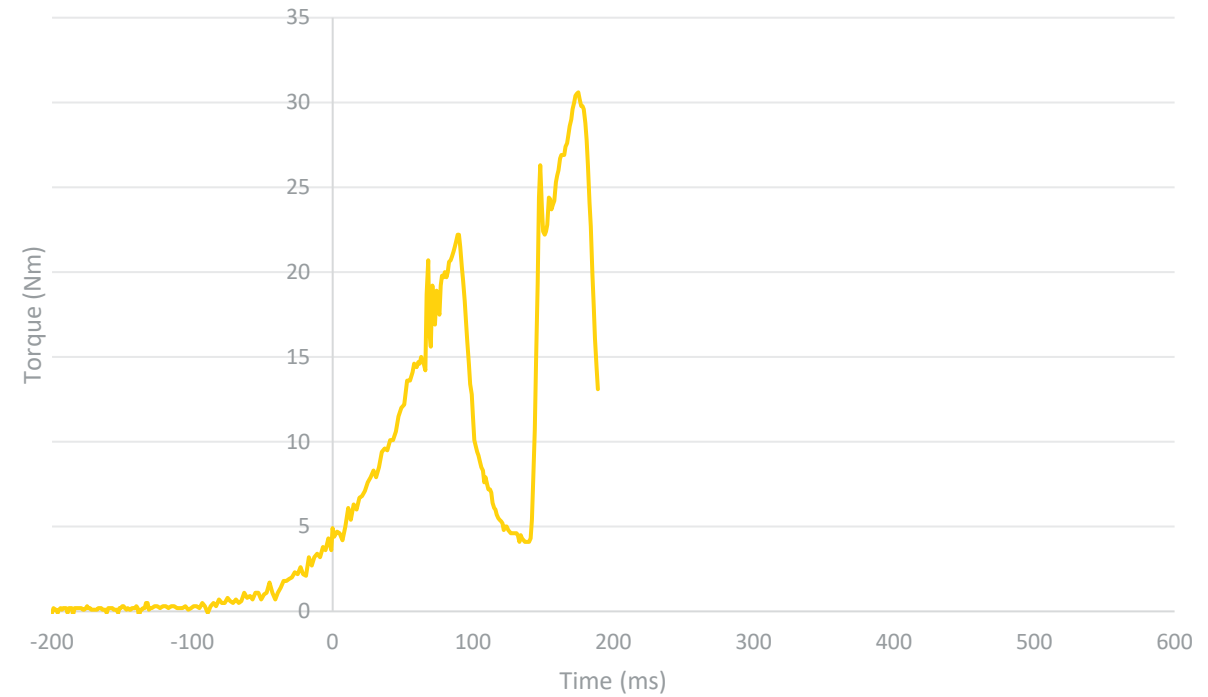
On Time set properly

Low On Time - Hard Joint



On Time set properly

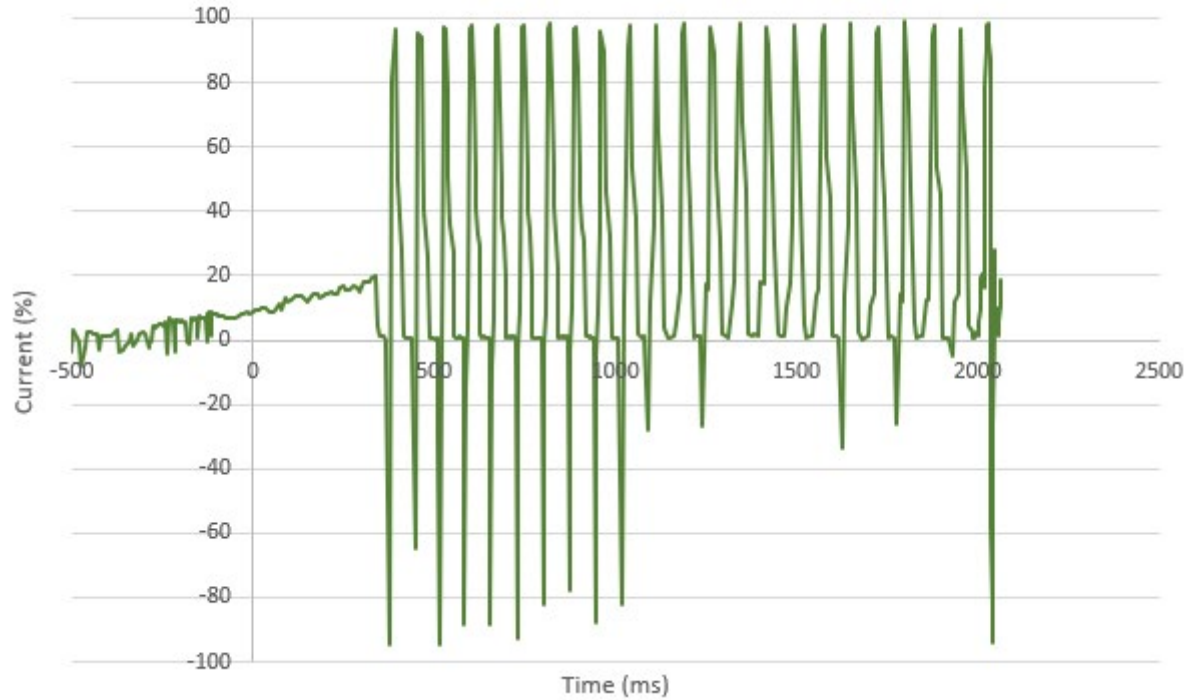
High On Time - Hard Joint



On Time set too high
(Poor control)

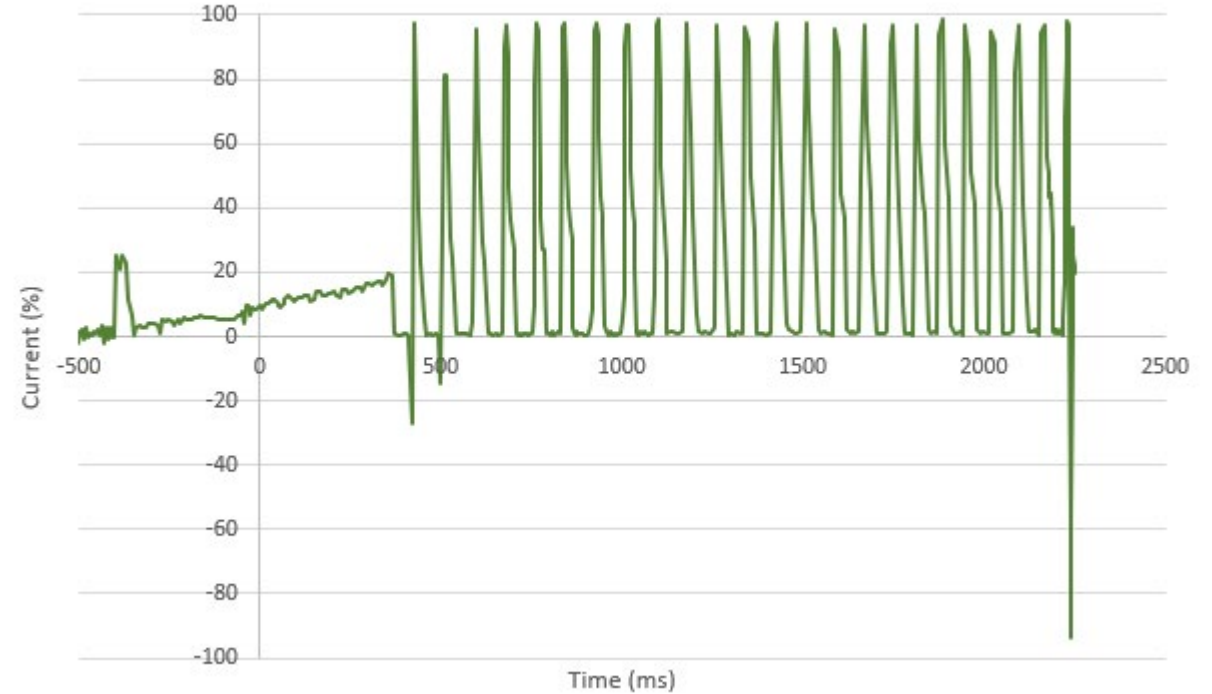
Setup Tips: Coast Time

Short Coast Time



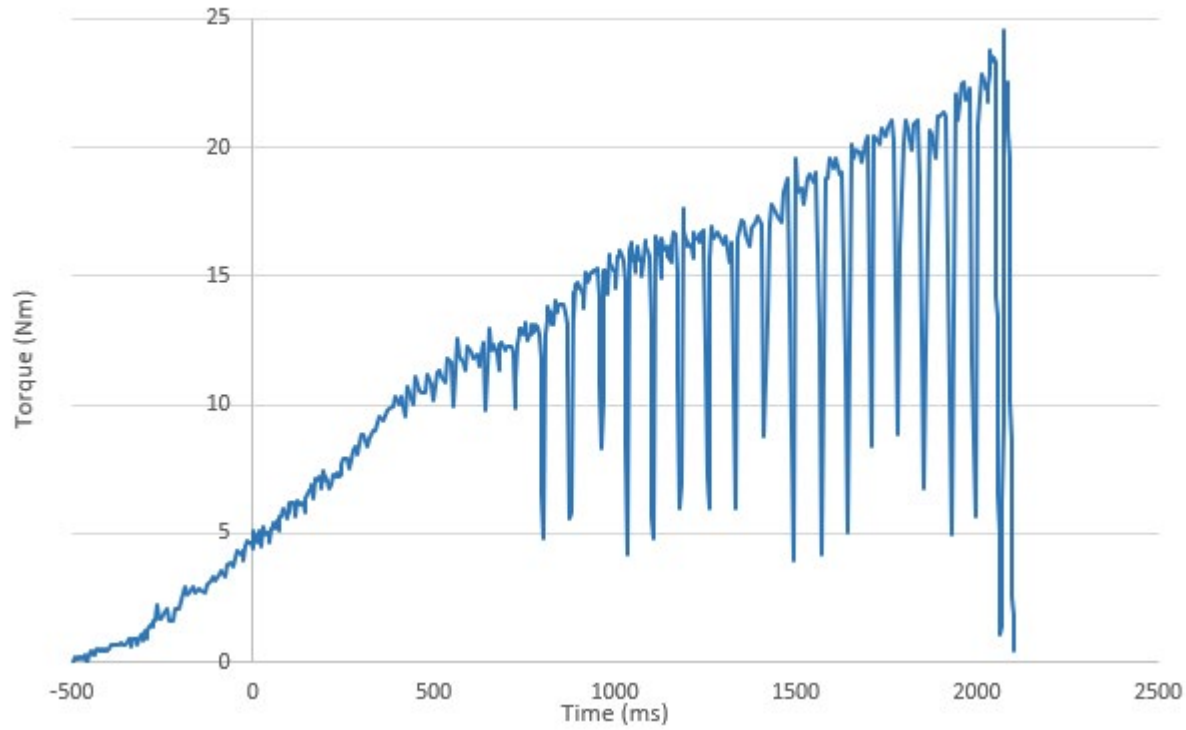
Coast Time too short
Excessive negative current spikes
(First 1-3 pulses OK)

Proper Coast Time



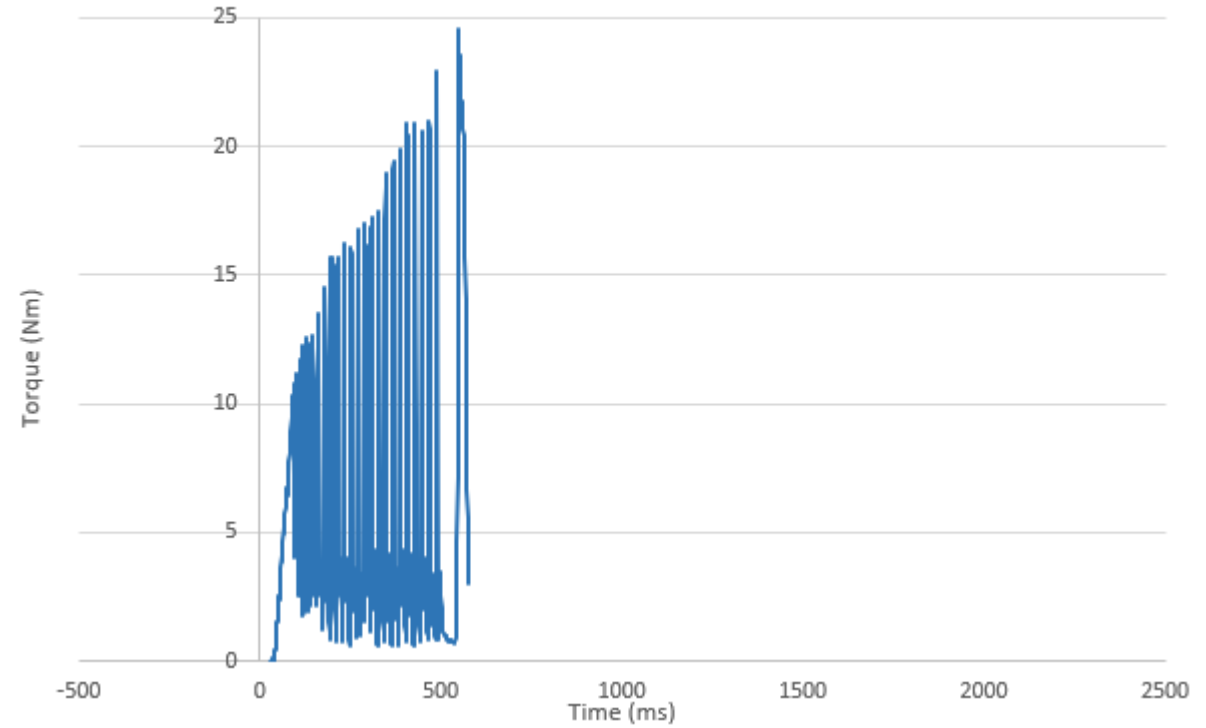
Coast Time set properly

Low Average



Average set low
(Low pulse rate)

High Average



Average set high
(High pulse rate)

