CBI, A Terex Brand
Machine Optimization Cheat Sheet
2018

Load Sense Trip, Recover, and Reverse
To set the Load Sense Trip, Load Sense Recover, and Feed Reverse setpoints start with setting where you want your feeds to stop (Load Sense Trip). Then adjust the other 2 accordingly

FWD RPM	REV RPM	REV RPM
1550	1800	1520

Up Cancel Height, and Down Cancel
To set these parameters, start with the Down Cancel setpoint, then change the Up Cancel Height

Color Scheme
Red indicates the function is fully disabled
White indicates the function is enabled, but not currently active
Green indicates that the function is enabled and is currently active

Top Roll Hold Automatic Adjustments
If Top Roll Hold is enabled, the Up Cancel Height, and the Down Cancel parameters will automatically add the Top Roll Hold value to them

INCH 6	INCH 20	INCH 1
INCH 6	INCH 26	INCH 7

Load Sense Recover
If the engine RPM goes below the Load Sense Trip Setpoint, the feeds will stop until they recover above this engine RPM

Load Sense Trip
Stop the feeds at this RPM

Feed Reverse
Reverse Feeds at this RPM
*the feeds reverse for a set amount of time, then they stop and wait until the Load Sense Recover RPM

Top Roll Lock
At this RPM the top feed roll is prevented from falling further to mitigate unwanted RPM loss by accidental pushing of more material into the rotor

Top Roll Hold
Under normal running conditions this is the lowest the top feed roll will fall

User Adjustable Title

1

Top Feed Roll Speed
Command   Actual

Feed Conveyor Speed
Command   Actual

FWD RPM 1800		PSI 400
RPM 1550	% CMD 47 / FPM ACT 0	INCH 11
REV RPM 1500	% CMD 115 / FPM ACT 0	RPM 2025
RPM 1600		INCH 1
INCH 0	ig RPM 1866 / 100 RPM	PSI 125

Intelligrind Enable / Intelligrind Start RPM   **Intelligrind Aggression**

Up Pressure
The amount of pressure that is applied to the top feed roll up/down cylinder to reduce its weight so it can more easily climb onto material

Up Cancel Height
The height where Up Pressure is no longer applied, and Down Pressure is commanded until the Down Cancel setpoint

Up Cancel RPM
The RPM where Up Pressure is no longer applied, and Down Pressure is commanded until the Down Cancel setpoint

Down Cancel
The height where Down Pressure is no longer applied, and Up Pressure is commanded until either the Up Cancel RPM or Up Cancel Height setpoint is reached

Down Pressure
The amount of pressure that is applied to the top feed roll up/down cylinder to assist in driving material into the rotor

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Functions That Can Be Disabled
Feed Reverse, Top Roll Lock, Top Roll Hold, and Intelligrind all can be disabled by pressing the desired function, and when the additional menu displays on the bottom of the screen, pressing the newly displayed button

*See "Color Scheme" for a more in-depth explanation of what the different colors mean

Top Feed Roll Height Tare
On the right side of the screen by the top feed roll height indicator press the top feed roll picture for 3 seconds. This will open a dialog box allowing the user to tare the height of the feed roll
*This should only be done while the top feed roll is all the way down

3 INCH   0 INCH
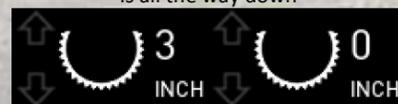
*The up and down arrows represent the actual command output to the up and down solenoids of the top feed roll

Better Control
For more finite control on the sliders on the bottom of the screen, press the center of the button and roll your finger in the desired direction
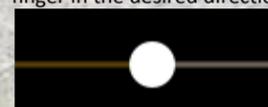
*Tapping the slider to the right or left of the button will also incrementally change the value

User Adjustable Titles
Touch the number at the top of the screen and it will open a dialog box allowing the user to create a custom name for that run group. The user is allowed 2 lines of text up to 22 characters long

FWD RPM 1800	2	PSI 0
RPM 1550	% CMD 15 / FPM ACT 0	INCH 16
Run Group 2 Name Top	2 ...
Run Group 2 Name Bottom	...
FWD RPM 1800	Bills brush settings DO NOT CHANGE!!	PSI 0
RPM 1550	% CMD 15 / FPM ACT 0	INCH 16

What is Intelligrind?

Intelligrind is a variable speed infeed system that is used to maximize material throughput by reducing, or negating, the amount of time the infeed system stops and starts. When used correctly, it can be a powerful tool to improve machine performance. Incorrect use can drastically reduce it. Until all of the parameters and their relationships are fully understood, Intelligrind should remain disabled.

Default Machine Settings

Grinder Model	Run Mode	Load Sense Recover	Load Sense Trip	Feed Reverse	Top Roll Lock	Top Roll Hold	Top Roll Speed	Feed Conv. Speed	Up Pressure	Up Cancel	Up Cancel RPM	Down Cancel	Down Pressure
6800 C Tier 4	1	1800	1550	1500	1600	OFF	30 FPM	25 FPM	400	20	2025	1	125
	2		1600	1550	1600		50 FPM	50 FPM					725
	3		1650	1600	1650		70 FPM	65 FPM					500
	4		1600	1550	1600		90 FPM	85 FPM					600
6800 B Tier 2	1	2050	1850	1800	1900	OFF	20%	23%	400	10	n/a	1	125
	2		1900	1850	1900		30%	41%					125
	3		1950	1900	1950		30%	41%					500
	4		1900	1850	1900		38%	55%					600
5800 B Tier 2	1	2050	1850	1800	1900	OFF	20%	30%	600	10	n/a	1	125
	2		1900	1850	1900		30%	45%					1200
	3		1950	1900	1950		38%	56%					700
	4		1900	1850	1900		30%	45%					900

Intelligrind Enable and Intelligrind Start RPM

iG RPM 1866

Press this button to activate an additional menu at the bottom of the screen. Press the new button that appeared to enable or disable Intelligrind. If the iG symbol is red, it is disabled; white or green indicates it is enabled. Moving the small round dot left to right will adjust the Intelligrind Start RPM. The Intelligrind start RPM setpoint represents the RPM in which the feeds will begin to slow down.

Intelligrind Aggression

400 RPM

The Intelligrind Aggression RPM setting is the span of engine RPMs that the feeds will go from commanded to 0, once the Intelligrind start RPM is reached. There are 4 options that are selectable by pressing the button, 100 RPM, 200 RPM, 300 RPM, and 400 RPM.

Commanded Feed Speeds

% CMD 15 | FPM ACT 0

% CMD 29 | FPM ACT 0

The "% CMD" is the adjustable parameter that changes the feeds speed command output, in percentage, that the feeds will run at. The "FPM ACT" is the actual speed feedback, in feet per minute, that the feeds are running at.
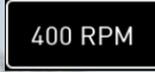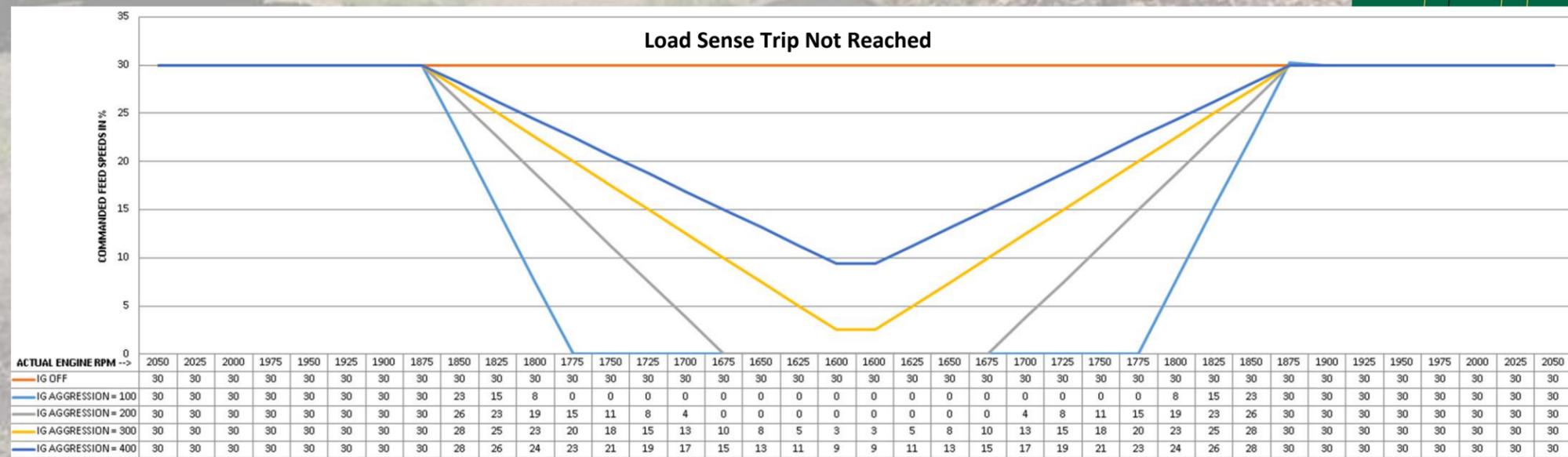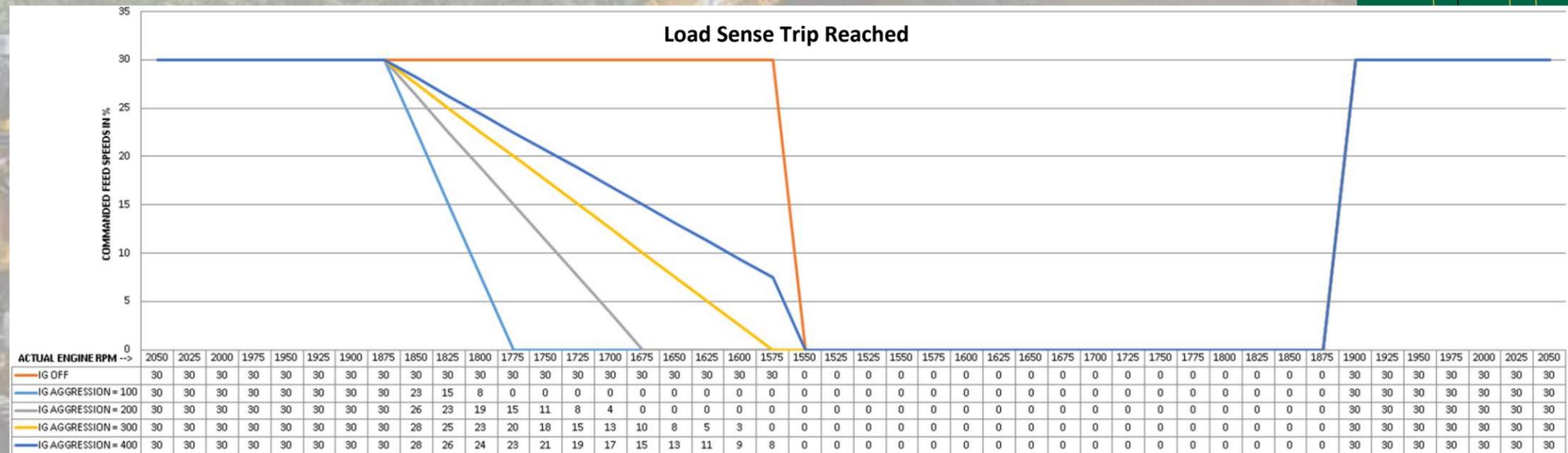
Tips and Tricks to setting up Intelligrind:

The best way to start utilizing Intelligrind is to take very small steps making setpoint changes, monitor, and then adjust. A well setup Intelligrind maximizes the range of the setpoints and maintains an engine RPM a couple hundred RPM above the Load Sense Trip setpoint.

Dialing in Intelligrind for the first time:

1- Enable Intelligrind and set the Intelligrind Start RPM to roughly 100 RPM above the Load Sense Trip setpoint and set the Intelligrind Aggression to 400 RPM.
2- Begin to process material. You should notice that the feeds will slightly slow down right before they stop. The feeds will be slowing down approximately 25% before Load Sense Trip is reached.
3- If the byproduct is still acceptable, adjust the Intelligrind Start RPM up an additional 100 RPM and monitor. The feeds will be slowing down approximately 50% before Load Sense Trip is reached.
4- If the byproduct is still acceptable, adjust the Intelligrind Aggression to 300 RPM. The feeds will be slowing down approximately 66% before Load Sense Trip is reached.
5- If the byproduct is still acceptable, lower the Load Sense Trip setpoint down 100 RPM, and bring the Intelligrind Aggression back up to 400 RPM. The feeds will be slowing down approximately 75% before Load Sense Trip is reached.
6- Depending on the initial feed speeds, the feeds may almost stop prior to Load Sense Trip is reached. If this is the case, the rotor will be shaving the material to an almost dust like state. To solve this problem the next best next step is to increase the Commanded Feed Speeds up 20%.
7- Due to the inherent differences in material, at this point making small incremental adjustments between all of the settings above will aid in trying to get the feeds to be constantly moving.

Intelligrind and Load Sense Trip:
If the engine RPM reaches the Load Sense Trip setpoint, the feeds will stop irrespective of any Intelligrind settings.

Load Sense Trip Reached

ACTUAL ENGINE RPM -->	2050	2025	2000	1975	1950	1925	1900	1875	1850	1825	1800	1775	1750	1725	1700	1675	1650	1625	1600	1575	1550	1525	1525	1550	1575	1600	1625	1650	1675	1700	1725	1750	1775	1800	1825	1850	1875	1900	1925	1950	1975	2000	2025	2050
IG OFF	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IG AGGRESSION = 100	30	30	30	30	30	30	30	30	23	15	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IG AGGRESSION = 200	30	30	30	30	30	30	30	30	26	23	19	15	11	8	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IG AGGRESSION = 300	30	30	30	30	30	30	30	30	28	25	23	20	18	15	13	10	8	5	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IG AGGRESSION = 400	30	30	30	30	30	30	30	30	28	26	24	23	21	19	17	15	13	11	9	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Load Sense Trip Not Reached

ACTUAL ENGINE RPM -->	2050	2025	2000	1975	1950	1925	1900	1875	1850	1825	1800	1775	1750	1725	1700	1675	1650	1625	1600	1600	1625	1650	1675	1700	1725	1750	1775	1800	1825	1850	1875	1900	1925	1950	1975	2000	2025	2050
IG OFF	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
IG AGGRESSION = 100	30	30	30	30	30	30	30	30	23	15	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	15	23	30	30	30	30	30	30	30	30	30
IG AGGRESSION = 200	30	30	30	30	30	30	30	30	26	23	19	15	11	8	4	0	0	0	0	0	0	0	0	0	4	8	11	15	19	23	26	30	30	30	30	30	30	30
IG AGGRESSION = 300	30	30	30	30	30	30	30	30	28	25	23	20	18	15	13	10	8	5	3	3	5	8	10	13	15	18	20	23	25	28	30	30	30	30	30	30	30	30
IG AGGRESSION = 400	30	30	30	30	30	30	30	30	28	26	24	23	21	19	17	15	13	11	9	9	11	13	15	17	19	21	23	24	26	28	30	30	30	30	30	30	30	30

*Other mechanical considerations should be taken into account when trying to maximize production. Tip size, Tip wear, screen size, and maintenance schedules are a few to consider.