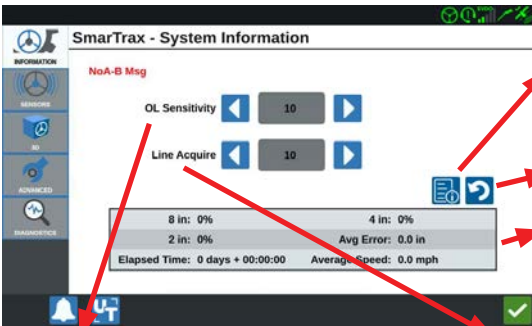


STEERING SETTINGS (SMARTRAX™, SMARTRAX™ MD)

You can configure your steering system by selecting the **Settings** button and then the **SmarTrax Settings** button.



INFORMATION



Device Information: displays the Machine Type, Control Device, Sensor Type, machine measurements and antenna position, and Machine Database and Software Version.

Reset: clears all performance statistics to 0.

Performance Statistics: displays the past performance of the steering system.

On-Line Sensitivity: adjusts how the steering system stays on the guidance line. It should keep the machine on the line without needing to make any major corrections and few minor corrections.

If On-Line Sensitivity is too low, your machine will slowly weave along the line, slightly to the left and then slightly to the right while crossing the guidance line as it weaves. Can be adjusted while in a job as well.



If On-Line Sensitivity is too high, it will aggressively jerk back and forth along the line. Your machine will most likely turn constantly as it tries to stay on the line.



Line Acquire: adjusts how the steering system approaches the guidance line. It should approach the line smoothly without over-shooting or steering too sharply.

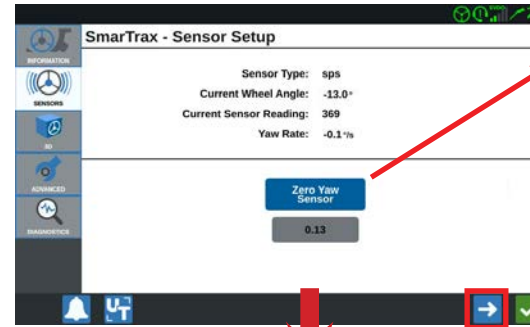
If Line Acquire is too low, your machine will be lazy in acquiring the line, which can often cause it to over-shoot or drive past the line. If it over-shoots, it can take longer to get back onto the line. Can be adjusted while in a job as well.



If Line Acquire is too high, your machine will try to get to the line quickly, often causing over-steering. It could possibly even "wobble" meaning the machine may turn back and forth as it continues to move closer to the line. Can be adjusted while in a job as well.

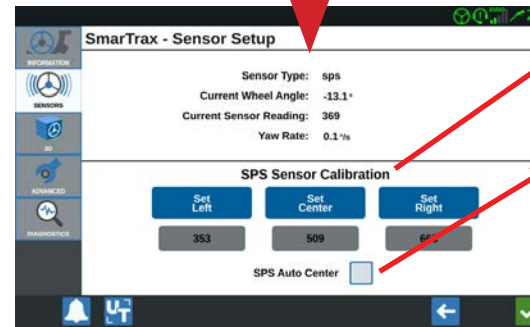


SENSORS (WHEEL ANGLE SENSOR INSTALLED)



Zero Yaw Sensor: will clear the yaw reading to indicate no turning motion while sitting still. Normal range of the yaw sensor range is -2.0 to 2.0. Outside this range indicates a bad sensor in the steering node.

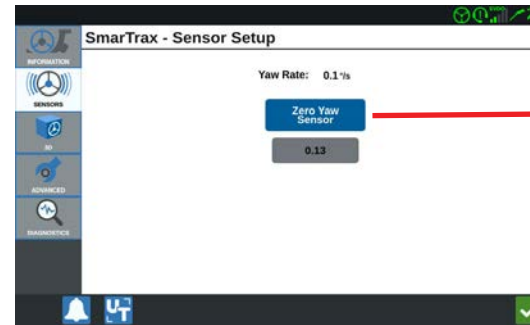
*Select the **Next** button to see additional settings.



SPS Sensor Calibration: view and set your calibration points for your left, center, and right wheel positions.

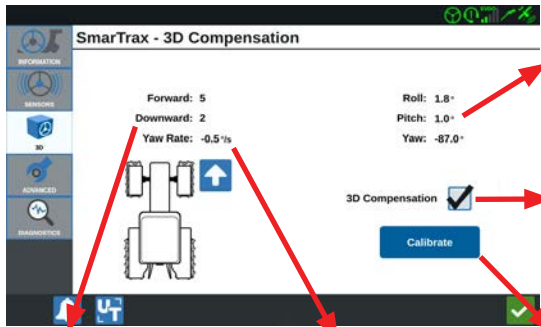
Select the **SPS Auto Center** box if you want the steering system to auto calculate your center position based on your left and right positions.

SENSORS (WHEEL ANGLE SENSOR NOT INSTALLED)



Zero Yaw Sensor: will clear the yaw reading to indicate no turning motion while sitting still. Normal range of the yaw sensor range is -2.0 to 2.0. Outside this range indicates a bad sensor in the steering node.

3D



Roll, Pitch, and Yaw: displays the feedback from the sensors located inside the steering node. These values should be fairly stable when sitting still. If the values fluctuate widely then the sensors could be bad.

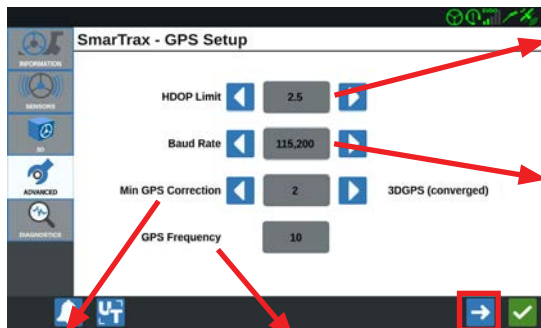
3D Compensation: enables or disables the 3D terrain compensation. Typically used if a problem is suspected with one of the sensors causing erratic steering performance.

Calibrate (3D): selecting this button will take you through the 3D calibration process to zero out the sensors.

Forward/Downward: displays the number of the orientation arrows on the steering node. The correct arrows of orientation are needed for accurate 3D compensation.

Yaw Rate: displays the current degrees per second that the yaw sensor is reading. When sitting still, it should be fairly close to 0.

ADVANCED (PAGE 1)



HDOP Limit: highest GPS Horizontal Dilution of Precision allowed before steering disengages. A high HDOP means the GPS satellites have less variance in their locations which can lead to poorer performance.

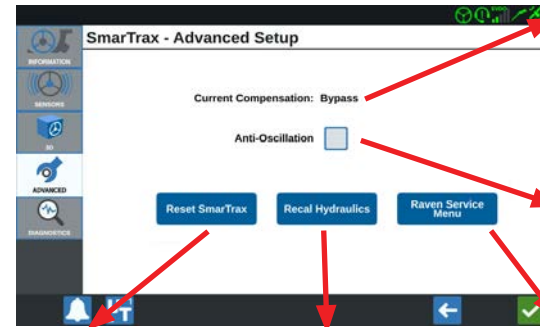
Baud Rate: the rate of the GPS messaging the steering node is expecting from the GPS receiver. 115,200 is standard for the Raven 500S™/600S™ receivers. All other receivers should be 19,200.

*Select the **Next** button to see additional settings.

Minimum GPS Correction: sets the minimum GPS correction source (mode allowed for steering operation. For example, selecting RTK (mode 4 for this feature will disengage the steering system if RTK corrections are lost.

GPS Frequency: displays the frequency of the GGA message coming from the GPS receiver into the steering system. 10 Hz is recommended for GGA as well as VTG. ZDA should be set to .3 Hz.

ADVANCED (PAGE 2)



Current Compensation: displays if the steering system is monitoring the electrical current through the proportional valves. Bypass means it is not monitoring and Active means it is monitoring. This setting is set based on the machine type.

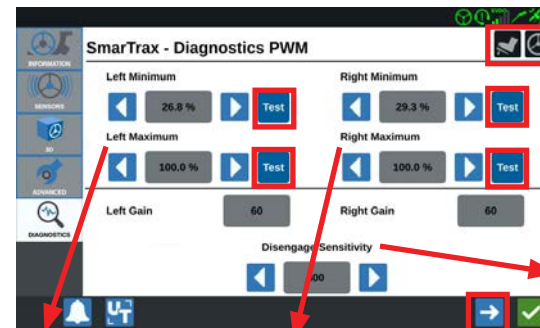
Anti-Oscillation: prevents the PWM Min values from needlessly rising on articulated machines. Should be unchecked for all other machines.

Raven Service Menu: menu used by engineering to adjust higher level functions.

Reset SmarTrax: resets all settings to factory defaults. Best used when an initial setting has been incorrectly entered and must be changed. Recalibration of the hydraulics will need to be completed as well.

Recal Hydraulics: restarts the hydraulic calibration process where your steering system will need to "learn" your machine's turning capabilities. Best used when changing tires or if a hydraulic component has changed on your machine.

DIAGNOSTICS (PAGE 1)



Steering wheel/footswitch: each of these will turn white when the respective signal is detected by your steering system.

Test: while moving, pressing either **Test** button will turn your machine based on the minimum or maximum values. These buttons can be used to validate your values are set correctly.

Disengage Sensitivity: sets the amount of effort needed to disengage your steering system while manually turning your steering wheel. Rough field conditions can affect this setting too.

*Select the **Next** button to see additional settings.

Left Minimum/Maximum: the minimum/maximum left signal outputs to steer your machine.

Right Minimum/Maximum: the minimum/maximum right signal outputs to steer your machine.

Too high of a minimum will cause your machine to over-steer during small corrections.

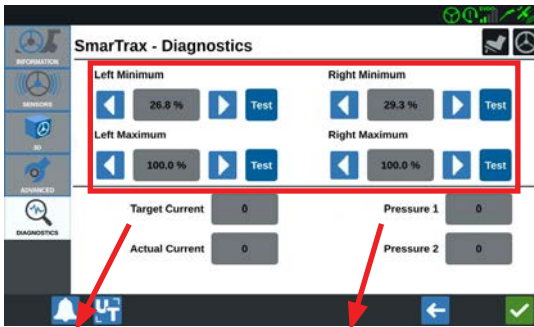
Too high of a minimum will cause your machine to over-steer during small corrections.

Too low of a maximum setting will cause your machine to steer lazily during big corrections.

Too low of a maximum setting will cause your machine to steer lazily during big corrections.

(See next page for illustration examples)

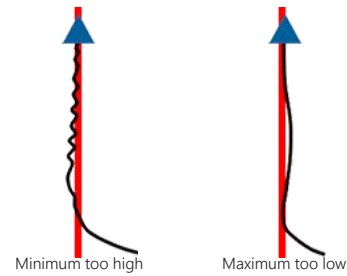
DIAGNOSTICS (PAGE 2)



Target/Actual Current: displays the expected current draw and the actual current draw for the proportional cartridges on your steering hydraulic valve when *Current Compensation* is Active.

Pressure 1/2: displays the left and right pressure readings for the pressure transducers on your steering hydraulic valve.

Minimum/Maximum revisited



Minimum and Maximum values will affect both your On-Line Sensitivity and Line Acquire.

IN JOB ADJUSTMENTS

You can adjust your steering system by long pressing the **SmarTrax Status** widget and then making your adjustments. You can see other steering information as well.

