



TSB062512

TECHNICAL SERVICE BULLETIN

Models: AR and SRA Harvesters

SUBJECT: Rotary Position Sensor (RPS) Initial Setup

All rotary position sensors operate on a 5-volt reference supplied by the DVC module. The RPS returns the value of the reference voltage as a percentage of the voltage range represented by a ten-bit value (0 = 0% and 1023 = 100%). The resolution is to the nearest tenth of a percent and is represented by the analog input values contained in the system troubleshooting menus. Although the sensor is supplied with 5 volts, its effective usable range is 0.5-4.5 volts. The best performance results if the sensor is setup to operate within or near the center of its usable electrical range.

When installing and setting up an RPS, it is important to know where its values are located in relation to its movement during operation. If the sensor is installed at the wrong side of its travel, it will be over-ranged and destroyed. The following chart represents the correct sensor orientation during setup.

Axle Sensor
Left—low
Right—high
Reset—high

Sod Shoe Sensors
Left—low
Right—high

Conveyor 2
Down (feed net position)—high
Up (dump position)—low

Platform
Left—low
Right—high

Tipper
Down (load position)—high
Up (dump position)—low

Tube Feeder
Load—low

When setting up an axle sensor, position the steering axle straight forward and the sensor in the center of its resolution (500). Same goes for the sod shoe sensors and platform sensor—position the shoe or platform in the center of its travel and the sensor in the center of its resolution (500).

The tipper, tube feed and rear conveyor sensors can be installed and adjusted at either end of its resolution as long as it matches the correct orientation described in the chart above. Then secure the sensor mounting plate in the center of its adjustment slots to accommodate adjustment in both directions.

Although they look identical, the steering axle and shoe sensors have 45 degrees of electrical resolution. The tube feed, rear conveyor and tipper sensors have 90 degree resolution. The sensors can be identified by the part number etched into the top face:

45 degree—part number 99020**45**CW

90 degree—part number 99020**90**CW

The platform sensor is unique in appearance and has 210 degrees of electrical resolution. Because the sensor couples directly to the tipper spindle, the spindle bearings must not have any play (most models have double nuts).