

Precision Planting
Glossary of Terms and Definitions



20/20 Gen1 SeedSense

20/20 SeedSense monitor Gen1 was introduced in 2008. Can be identified by two USB ports on the left hand side and a toggle switch for power on/off.



20/20 Gen2 SeedSense

20/20 SeedSense monitor Gen2 was introduced in 2014. Can be identified by one USB port on the left hand side and 3 USB ports on the back, with a push button switch for power.



20/20 MultiTester and Load applicator

Service tool for testing various components including down force load cells, seed tubes, YieldSense flow sensor and other components.



20/20 Gen3

20/20 Gen3 monitor was introduced in 2018. The system consists of a display and a separate module called the DBM (display base module).



4 Pin

Generic term for a connector with up to four wires. Examples are "4 pin CAN", and "4 pin Channel A".



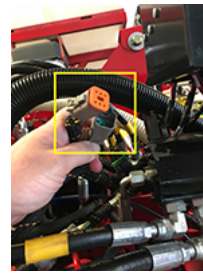
4 Pin CAN

Used to describe the CAN network used in the SRM network. This starts at the 20/20 monitor, goes to the PDM, then to each row. Consists of CAN high and CAN low wires.



6 pin CAN

Also called PDM CAN or Seed Repeater connection. This is located on the PDM harness and is used to connect implement components. Examples are vApply rate module, seed repeater, blower control module, ect.



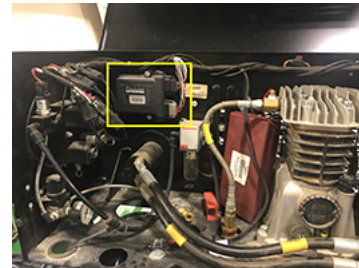
80/20 mix

Mixture of 80% talc, 20% graphite used for lubrication of seed and reduction of static when using a vacuum meter.



AFM

"AirForce Module" Component is located in the AirForce compressor housing. Module is used for control of the AirForce system and communication with the 20/20 SeedSense monitor.



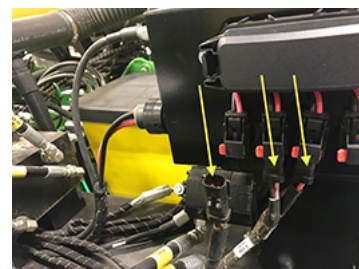
AirForce

Precision Planting Product. Automated system for planter row unit airbag down force control, consists of an air compressor and control system, down force sensors and the 20/20 SeedSense monitor. AirForce will change the pressure in the airbags on the planter to get the average gauge wheel weight correct. The pressure in the air bags on each row is the same.



APEX power extension (or APEX)

Power and ground harness that is needed from the PDM to carry power to each backbone of the SRM system. APEX refers to the connector type.

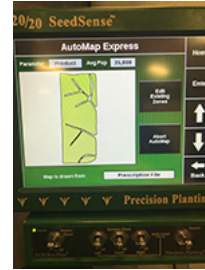


Applied Force map

The Applied Force Map is mapping what the cylinder (for DeltaForce) is being commanded to do on a row by row basis. For AirForce this is the planter wide command for airbag pressure. This map will show the applied force in pounds (or kg). This map can be very helpful for diagnosing potential issues. For example, if a row unit is constantly applying the maximum amount of applied force to achieve ground contact and surrounding rows are not, there may be a mechanical problem causing the row unit to have ground engagement issues.

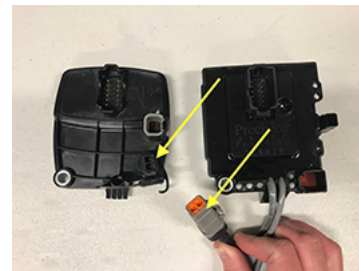
AutoMap Express

Tool in a 20/20 Gen2 monitor with RowFlow or vDrive to create a new prescription or edit an existing prescription.



AUX connection

Connection on the SRM or RUM to connect various sensors such as a vacuum sensor, push button lift switch or other available sensors. This is a 6 pin connector.



AUX FlowSense

Precision Planting Product. A sensor to measure single liquid fertilizer product flow on a single row. Connects to the AUX connector of the SRM or RUM. Available as a "high" or "low" flow version.



Backbone (or SRM Backbone)

Wiring harness that is placed on the planter bar to carry power, communication and daisy chain ID wires across a section of the planter. Available in two rows up to 11 rows, the harness is commonly sized for the number of rows on that frame section of the planter. On the left end is a connection for "CAN in", across the harness is connections for the row harness on each row, and on the right end a connection for "CAN out". In the middle is a connection for power.



Blower Control

Module used with mSet or vSetSelect systems on bulk fill planters to control the fan speed of the CCS tank.



Boom (wet boom)

Term used to describe a plumbing system for liquid application in which a single line is placed across a section of the planter. Used in the vApplyHD system to deliver fluid across the planter and then has an exit point for each vApplyHD module.



Bullseye

Precision Planting product. A seedtube that improves spacing by recessing the sensor eye out of the path of the seed, and having a tungsten wear insert at the exit of the tube to prevent the disk openers from wearing on the tube.



CAN

"Controller Area Network" This is the communication system used in the SRM system for the 20| 20 display and modules or components to communicate.

CAN booster

Component used to "boost" the CAN signal for a CAN bus more than 130' (39.6 m) in length. It is preferred to use Dual CAN when possible rather than a CAN booster.



CAN communication

"Controller Area Network" The modules such as the display and the SRMs communicate via two dedicated wires called CAN high and CAN low. When in idle mode these lines both carry 2.5V. When data is transmitted, the high line goes to 3.75V and the low to 1.25V creating a differential between the wires.

CAN expansion hub (CAN hub)

Component used in the SRM system. The CAN expansion hub allows for multiple CAN devices to be connected to the "Row CAN" network on a single row. The row harness connection will connect to the hub and provide power and communication from the SRM. Other components connect by various length "CAN jumpers".



CAN extension

Component used in the SRM system. The CAN extension is available in lengths from 5-65' (1.5-19.8m), has 4 pin connectors on each end. Commonly used to connect the backbone from one frame section around the fold point of the planter bar to the next frame section.



CAN FlowSense

Precision Planting Product. A sensor to measure two liquid fertilizers' product flow on a single row. Connects to the CAN Expansion Hub on the row. Available as high/high flow, high/low flow, or low/low flow versions.



CAN Jumper

Harness used to connect a row CAN component to the CAN expansion hub. Examples of devices using CAN jumpers are vApplyHD modules, vDrive, Speedtube and others.



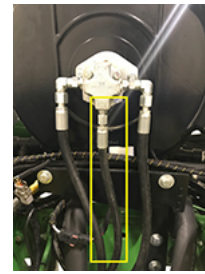
CAN Terminator

Component installed at the end of the CAN network, consisting of a 120 ohm resistor that connects the CAN high and CAN low wires.



Case Drain

Hose from hydraulic motors and pumps used to drain excess internal oil leakage from the motor. The return to the tractor must be below 30 psi (2 bar) to prevent damage to the motor shaft seal.



CCM (CCM1)

"Cab Control Module". The CCM1 must be used with a Gen1 20/20 SeedSense monitor when using the RowFlow product. CCM1 cannot be used with Gen2 or Gen3 monitors.



CCM (CCM2)

"Cab Control Module". The CCM2 must be used with a Gen2 20/20 SeedSense monitor when using the RowFlow or vDrive or other SRM control products. CCM2 cannot be used with Gen1 or Gen3 monitors.



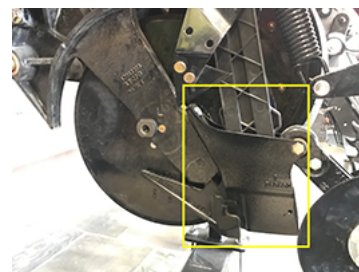
CCM (CCM3)

"Cab Control Module". The CCM3 must be used with a Gen3 20/20 monitor when using control products such as vDrive, vApplyHD and others. CCM3 cannot be used with Gen1 or Gen2 monitors.



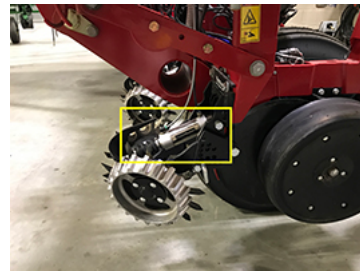
CIH shoe (SpeedTube shoe)

Component of the CIH planter row unit that is located between the opener disks and provides the function of holding the soil open so the seed can reach the bottom of the furrow. This is a wear component on the planter that should be inspected and replaced when worn. Speedtube system requires a SpeedTube specific shoe be installed on the row unit.



CleanSweep

Precision Planting product. A system using air (pneumatic) cylinders connected to row cleaners manufactured by other companies. The system allows pressure to be added or removed from the row cleaners easily by the operator in the cab. The goal is to remove residue from the area ahead of the planter disk openers to reduce residue in furrow and improve warming of the furrow.



Compaction

Compressing macro pore to micro pore soils which restricts root development from VE to V6. Can result in lost rows around in PORTIONS of the field. Generally refers to a furrow with excess force.



Conceal

Precision Planting product. Designed to place nitrogen with the planter in a single or dual band configuration. System consists of gauge wheel and a knife integrated with the gauge wheel.



Crop Kit

This refers to a single part number that gives some or all of the components needed for the vSet or eSet meter to plant a particular crop.



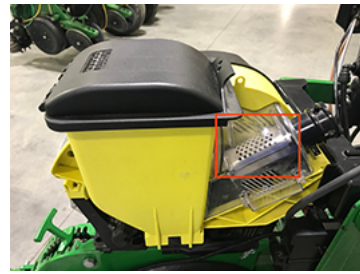
Crud Brush

Component of the YieldSense system. The crud brush is installed on the clean grain elevator chain and makes contact with the flow sensor to remove any buildup of material to assist in keeping the flow sensor clean.



D-tube screen

This is a component of the vSet or eSet mini hopper system used with bulk fill planters. This component vents the air used to blow the seed to the mini hopper and different screens are needed depending on the crop.

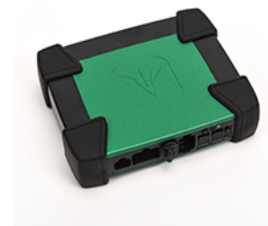


Daisy Chain

Term used by Precision Planting to describe the identification wire used to automatically identify SRM locations. This wire is grounded in the PDM, and connects in series through the harnessing to each SRM and to the next.

DBM

Display Base Module. Component of the 20|20 Gen3 monitor system. This component is the primary computer responsible for communication with the SRM modules on the planter.



DBM Implement CAN harness

Harness that connects to the DBM and is routed to the back of the tractor. At the hitch are connections for "CAN A" and "CAN B".



DeltaForce

Precision Planting product. Automated system for planter row unit down force control, consisting of a hydraulic cylinder on each row, down force sensors and the 20|20 monitor. Each row of the planter is adjusted independent of the other rows, happening multiple times per second. Capable of adding down force or removing weight from the row unit to achieve the operator set weight that is desired to be carried on the gauge wheels.



Deutsch Connector

Environmentally sealed connector commonly used in Precision Planting electrical harnesses. Various sizes are used.



Dickey John (DJ) adapter

Harness used to connect a planter harness wired "Dickey John" to the Smart Connector or power module. This harness moves the pins used for power and ground to the correct locations for the Smart Connector.



DMC (dashboard mini chart)

"DashBoard Mini Chart" Located at the bottom of the Standard and Metric Home Screens by default. The Mini Chart shows a bar chart for one of the measurements of the 20|20 for each row. Rows that exceed alarm values will turn yellow while rows that exceed alert values will turn red.



Double (multiple)

Two seeds planted when only 1 seed should have been planted. Loss of 0.4 corn ear due to the competition of the plants for sunlight, water and nutrients.



Down Force

Metric on the 20|20 homescreen, indicates the force acting on the gauge wheels. This is achieved by measuring the pressure against the depth stop created when the gauge wheels push against and converting that pressure into pounds of pressure. This is accomplished with a load cell installed on the row unit. Down force can also refer generically to the amount of pressure being applied to the row unit. The 20|20 Down Force map will map the minimum weight measured from the load cell on that row within a fifth of a second.

Down Force			
Margin	59.0 lbs		
Ground Contact	95 %		
↓ 1	9.00	209	6 ↑

Down Force map

Down Force map plots load cell readings on a row by row basis and should be used to set system and monitor performance. A blue dot on the Down Force map signifies a loss of ground contact which can lead to shallow planted seeds. Blue dots should be avoided and may indicate a higher target is needed, although care should be taken to not over apply down force.

Dual CAN

20|20 Gen3 has two communication networks that can be used with the SRM system. Dual CAN is used for every planter 24 rows and larger with the 20|20 Gen3 to ensure that sufficient capacity of the network and to avoid the need for CAN boosters when possible.

eFlow

Precision Planting product. A mixture of 80% talc, 20% graphite used as a seed lubricant and for reduction of static buildup in vacuum meters.



Ejector

Component in vSet or eSet to remove seed fragments from the hole of the seed disk.



eSet

Precision Planting product. The eSet meter is a retrofit system that goes inside of a John Deere vacuum meter and uses a flat disk without cells that are sensitive to seed size and shape, paired with a floating singulator that doesn't need adjustments other than vacuum level. Various crop kits are available for different crops.



Finger Meter

Seed meter that uses "fingers" or "flags" to mechanically trap the seed and deliver it to the seed tube. No vacuum or air pressure is needed - completely mechanical meter.



Flap Kit

Component used for vSet or eSet meters on any rows that "tip" or are oriented vertically when transporting the planter. Prevents seed from leaving the meter or hopper and exiting the seed tube or plugging the bulk fill lines.

Flow Reducer

Component used for mSet for vSet Select with bulk fill to divert the flow of air depending on the hybrid currently being planted.



Flow Sensor

Generally refers on a planter to a device used to measure liquid product flow.



Flow Sensor (YieldSense)

Component of the YieldSense system. Installed at the top of the clean grain elevator and measures the rate of grain flow.



Frame mount lift switch (PDM lift switch) (whisker switch) (rotary height switch)

When the 20|20 is controlling systems on a planter, lift signal is needed. This can be accomplished by multiple push button switches on row units, or a single frame lift switch. Examples are rotary height or whisker switches. These will connect directly to the PDM harness or the RowFlow base harness.



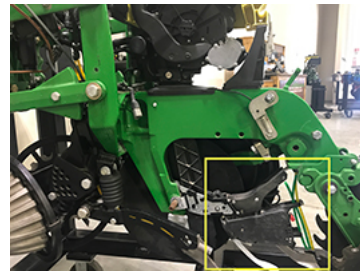
FurrowForce

Precision Planting product. FurrowForce is an automated two stage closing system with integrated sensing, controlled by the 20|20 monitor.



FurrowJet

Precision Planting product. FurrowJet is a planter mounted device that places three bands of phosphorus starter fertilizer near the furrow; one in furrow, and two about 3/4" away from the seed on either side. These three bands are placed right where the seedling roots and crown roots will grow.



FVM

"FieldView Module" Component used to communicate from the 20|20 Gen3 or 20|20 Gen1 to an iPad with Climate Fieldview for high definition mapping of planting data.



Gauge Wheel

Component of the row unit that interacts with the depth system to contact the ground and the depth stop, effectively allowing the opener disks to only achieve the depth set on the row unit.

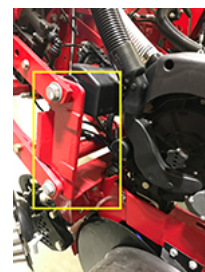


Gen3 Sensing system

Term to describe when a Gen3 monitor is not controlling any products on the planter, but providing information to the planter performance and sensing. This system is lower cost than the full SRM system. Ability to monitor meter performance, down force, SmartFirmers, and liquid flow monitoring. Similar to the Gen1 or 2 Smart Connector systems.

GoalPost

Term used to describe the part of the row unit that connects the row unit shank to the parallel arms.



Good Ride

Metric available on the 20|20. Displays the percent of time when ride quality is sufficient not to interfere with seed spacing. This measurement provides assistance in diagnosing spacing errors caused by rough row unit ride. It is primarily used to help maximize speed while maintaining good SRI performance. When SRI is high and good ride is high, slowing down may improve SRI performance.

GPA

"Gallons per acre"

GPM

"Gallons per minute"

Ground Contact

Shown in the Down Force metric on the 20|20. The percentage of time the system can confirm that the gauge wheels have met the depth stop, which generally indicates that the row unit is planting at the depth to which it has been set. This is calculated by the percentage of time that the load cell is measuring 20 pounds or more. Loss of ground contact is indicated by a blue dot on the down force map and is a result of having less than 20 pounds of weight on the gauge wheels

Gyro

Component located in the PDM used to measure the turn rate of the planter, used for turn compensation.



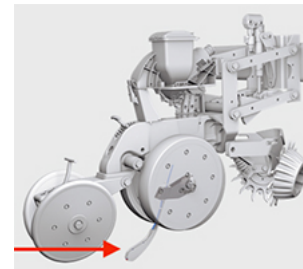
Hatchet Roots

Description of when the roots of a corn plant experience compaction in the furrow and are unable to form a good root structure. When the plant is removed from the ground the roots have a "hatchet" appearance.



Keeton

Precision Planting product. Gently presses every seed into the bottom of the trench to tuck it firmly in the soil, ready to take in the moisture and heat it needs. Also can act as an in-furrow liquid application tool.



LE1

"Late Emerger 1". Corn plant that is behind the surrounding plants by one leaf collar. 50% of the ear is lost. This is caused by inconsistent furrow moisture and temperature.



LE2

"Late Emerger 2". Corn plant that is behind the surrounding plants by 2 leaf collars. 100% of the ear is lost. This is caused by inconsistency furrow moisture and temperature.



Lift Manifold

Component of the DeltaForce system. Normally located on the left side of the planter near the PDM. Source hydraulic flow comes to this component and then goes to the individual cylinders on the rows. The valve for controlling lift pressure is located on the lift manifold.



Lift Switch

When the 20|20 is controlling systems on a planter, lift signal is needed to ensure that control systems are not active when the planter is lifted. This can be accomplished by two or more push button switches on row units, or a single frame lift switch.

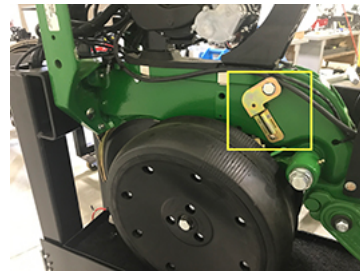
Lift valve

Component of the DeltaForce system, located on the "Lift Manifold". The lift valve is automatically adjusted to ensure proper lift force is achieved.



Load Pin (weigh pin) (load cell) (smart pin) (smart link) (down force sensor) (pancake sensor)

Component of the 20|20 system on a planter or air seeder. Used to measure the weight or pressure on the gauge wheels of the row unit. The force on the gauge wheels is a result of the force applied downward (weight of row unit components plus the added pressure from the down force system), minus the force placed upward on the row unit components from the ground (opener disks pressing into the soil, closing system pressure, row cleaners, coulters, ect). This information is reported to the 20|20 monitor and displayed on the "Down Force" metric. It can be used as a part of the DeltaForce, AirForce, or SeederForce control systems.

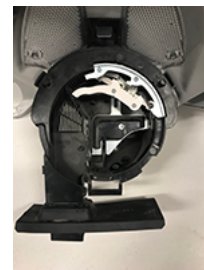


Margin

Shown in the Down Force metric on the 20|20. The lowest measured load cell reading in a given period of time on each row (varies with down force system installed). The Margin value displayed on the home screen Down Force button is an average of this value across all load cell equipped rows on the planter.

Meter cover (Seedtube ready)

Component of the vSet2 or vSet (classic) meter. The cover is 1/2 of the meter and attaches to the hopper or mini-hopper. This portion of the meter houses the singulator and holds the seeds. The seedtube ready version is for use with a conventional seed tube or WaveVision.



Meter cover (SpeedTube ready)

Component of the vSet2 or vSet (classic) meter. The cover is 1/2 of the meter and attaches to the hopper or mini-hopper. This portion of the meter houses the singulator and holds the seeds. The SpeedTube ready version is for use with a the SpeedTube delivery system only.



Meter Housing

Component of the vSet2 or vSet (classic) meter. The housing is 1/2 of the meter and attaches to the meter cover. This component contains the vacuum seal, ejector and seed disk. When vDrive is used it connects to the meter housing.



MeterMax Ultra

Precision Planting product available only to Precision Planting dealers. Used with the 20/20 monitor to evaluate meter performance of OEM seed meters and Precision Planting meters.



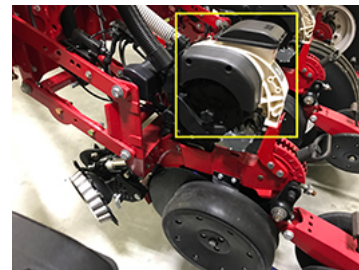
Metripack connector

Electrical connector commonly used in planter systems.



Mini-hopper

A component of a planter with bulk tanks for seed. The mini-hopper receives and holds a small amount of seed, funneling that seed into the seed meter.



MobileMax

Precision Planting product, a dealer tool. This is a case that houses a 20|20 Gen3 monitor and contains the equipment for 2 rows of SRMs. Used as a marketing or service tool.

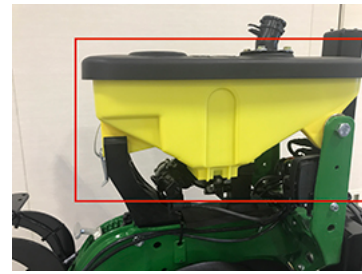


mSet

Precision Planting product. mSet pairs with Precision Planting's 20|20, vSet meter and vDrive electric drive to accomplish multi-variety planting on the same row unit. Also compatible with SpeedTube to enable high speed multi-variety planting.

mSet compatible hopper

Component of the vSet or mSet system. Available as mini-hopper or full size hopper, it can be used with vSet2 for single hybrid planting, or later converted to mSet for multi-variety planting.



Multiple (double)

Two seeds planted when only 1 seed should have been planted. Loss of 0.4 corn ear due to the competition of the plants for sunlight, water and nutrients.

OEM CAN

Term used to describe the Original Equipment Manufacturer (OEM) system of communication when using controller area network (CAN). Commonly the YieldSense system will connect to the OEM CAN of the combine when available to receive information about the machine used by YieldSense.

Orifice plate

A restriction device commonly used in planter liquid application systems. Available in different sizes and used to assist in balancing of flow between multiple application points or rows.



Parallel arm bushings

Component on a planter row unit between the parallel arm and the bolts to allow for rotation of the arms.

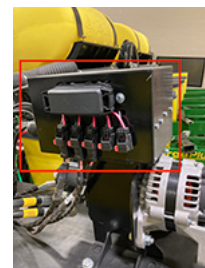
Parallel arms

Component on a planter row unit used to connect the toolbar and planter row unit and allow for movement.



PDM

"Power Distribution Module". Component of the SRM system that receives 12v power and CAN communication, and then distributes those to the harnesses to the row units. Commonly mounted on the left side of the planter toolbar, but can also be located in the center of the planter.



PDM solenoid

Component inside of the PDM that is activated by key switch power from the tractor and outputs battery power to the row components.



Pitch

The distance of roller chain between links. Commonly used in YieldSense to refer to the number of roller chain sections between components installed on the chain. An example is a 4 pitch section of chain and a 5 pitch section of chain.



Planter harness

Component used on the planter to connect the seed tube sensors to the module or component that will send the data to the planter monitor. Commonly has a 3 pin weatherpack connection to each seed tube sensor and a 37 pin connection to the Smart Connector module. NOT used in the Precision Planting system when vDrive is installed.



Population

Metric on the 20|20 that indicates the planter average population in thousands of seeds.

Power Module (WaveVision)

Component used in some installations when WaveVision seed sensors are installed and additional power is needed for the sensor operation.



Precision Meter (finger meter)

Precision Planting product of a complete mechanical seed meter. Built to have better performance than OEM meters in singulation and spacing.



Prescription

Also referred to as "RX". This is a variable rate file that is created for variable rate application of product, generally seeding or fertilizer on the planter.

Property Bucket (grain property kit)

Component of the YieldSense system installed on the clean grain elevator chain. Assists the system in keeping the system accurate as the properties of the grain change when harvesting without having to re-calibrate the system.



Push button lift switch

When the 20|20 is controlling systems on a planter, lift signal is needed. This can be accomplished by two or more push button switches on row units, or a single frame lift switch. Push button lift switches connect to the SRM or RUM aux connector.

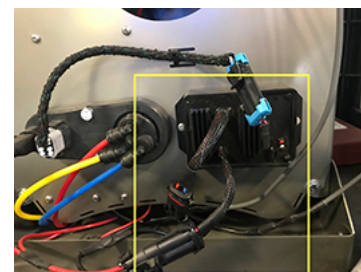


PWM

"Pulse Width Modulation" A method of controlling an analog device with a digital output. Therefore a PWM signal is expressed in the duty cycle or amount of time the voltage is turned on vs turned off. The percentage of PWM is the amount of time that voltage is applied, therefore a 20% PWM signal will control the device to a slower speed or lesser amount than a 95% PWM signal.

PWM Driver

PWM Driver refers to an electrical component that receives a PWM control signal with low amperage and an input of high current constant power, and then outputs that high current power in accordance to the PWM signal that is received. This is used with the vApply rate control module to control the current sent to an electric fertilizer pump.



Repeater module

Component of the Smart Connector Gen2 system. Connects to the smart connector and sends seed data back to the OEM monitor when compatible.



Research Pogo

Precision Planting dealer tool. Used with an iPad and the Research Pogo app to measure spacing of plants in the field and categorize emergence. Outputs a report on the planter performance.



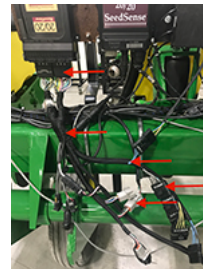
RFM

"RowFlow Module". Component of the RowFlow system. This is a module that communicates with the 20/20 monitor and can control hydraulic motors for swath control, variable rate seeding and liquid application.



RFM Base harness

RowFlow Module Base harness. Component of the RowFlow system that connects to the RFM and provides connections to the clutches, motors, and 20/20 monitor.



Row CAN

Term to describe the CAN network for components on the row in a SRM system. Each row will have it's own row CAN network. The SRM, and components on the row such as the vDrive, vApplyHD, Speedtube module or others will communicate on the row CAN network of the row.

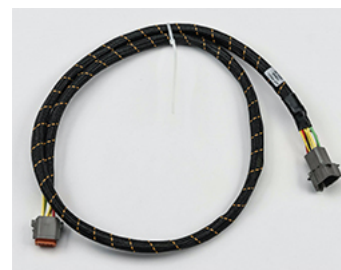
Row Harness

Component of the SRM system. Connects the backbone harness to the SRM. Also has connections for the DeltaForce cylinder solenoid and seed tube sensor.



Row Harness Extension

Component of the SRM system. Extends the length of the row harness on row units with long parallel arms. Also used on Gen3 sensing systems in the harnessing from the tractor to the rows.



RowFlow

Precision Planting product. System using a 20/20 SeedSense Gen1 or Gen2 to control hydraulic motors for variable rate seeding and motors or row clutches for swath control. Can control OEM systems or retrofit a planter without these options.

RowFlow liquid

Refers to the ability for the RowFlow system to control a hydraulic motor with shaft speed sensor controlling a positive displacement liquid pump. This can be on the planter or sidedress bar. Only compatible with Gen1 or Gen2 20/20 SeedSense

RS485

Communication style used with Gen1 and Gen2 systems for the Smart Connector and AirForce module.

RUM

"Row Unit Module". Component used with Gen1 and Gen2 smart connector systems. This module is installed on the row unit and gives connections for the seed tube sensor, load pin and auxiliary input for things like vac sensors, lift switch, liquid sensors.

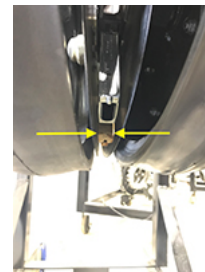


SeederForce

Precision Planting product. Using the 20|20 Gen3 monitor down force can be controlled on a air seeder. Available as section control or individual row control.

Seed tube guard (frog)

Component on the row unit that is attached to the bottom of the shank, in between the disk openers. This component helps to keep the disk openers from flexing and wearing on the seed tube. This is a wear component that must be inspected and replaced when worn to ensure proper furrow formation.

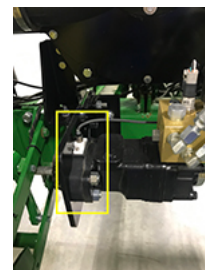


Severely misplaced seed

Severely misplaced is 2.8" or closer to its neighboring seed. Loss of 0.2 corn ear

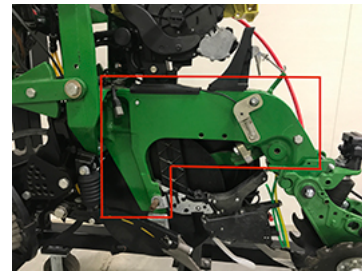
Shaft speed sensor

Component that senses the speed a shaft is spinning, normally displayed in RPM (revolutions per minute). The sensor will output a set number of pulses per revolution of the component. Commonly used for control of hydraulic motors, ie the RowFlow, vApply Base and vApply Granular systems all use shaft speed sensors in their control loop.



Shank

Component of the planter row unit. This is the structure or frame that the components attach to such as the disk openers, gauge wheels and closing system.



Singulation

Singulation is a measure of meter performance showing the percentage of seeds that are properly singulated - where the meter releases one seed rather than a skip or multiple.

Singulator (floating singulator)

Component in the vSet or eSet meters. Used to remove any extra seeds that load onto the disk so that only 1 seed is released at a time.



Skip

Seed missing when it should have been planted.
Loss of 0.8 corn ears (plants either side flex).



Slightly misplaced seed

Slightly misplaced says a seed is within 4" of its neighboring seed. Loss of 0.1 corn ear.

Smart Connector Gen1

Component used with the Gen1 or Gen2 20/20 monitor system to gather information from the seed tube sensors, RUMs and other sensors and send this information to the monitor. Not used with vDrive. Gen1 smart connector is compatible with either Gen1 or Gen2 20/20, but NOT a 20|20 Gen3.



Smart Connector Gen2

Component used with the Gen1 or Gen2 20/20 monitor system to gather information from the seed tube sensors, RUMs and other sensors and send this information to the monitor. Not used with vDrive. Gen2 smart connector is compatible with either Gen1 or Gen2 20/20, but NOT a 20|20 Gen3.



Smart Connector Gen3

Component used with the 20|20 Gen3 monitor to gather information when vDrive is not used, primarily the seeding information. Also used with SeederForce.



Solenoid

Term used to refer to different types of electrical components. One example is the PDM solenoid for controlling battery output to components. Another example is a control element used to actuate hydraulic components, such as the DeltaForce valves.

Soybean clip

Component used in the bulk fill system of a planter to limit the amount of seed going to some rows of the planter when planting soybeans.



Soybean deflector

Component used in the SpeedTube when planting soybeans with the 80 cell vSet2 disk. NOT used with the 56 cell soybean disk.



SpeedTube

Precision Planting Product. Allows planting speed to increase to 10mph (16 kph) without negatively affecting spacing of the seed in compatible crops. Used with the 20|20 monitor, SRM system, vSet2 and vDrive. Recommended to always install DeltaForce before installing SpeedTube.



SRI

"Seed Release Index" SRI measures the consistency of seed spacing. It only takes into account properly singulated seeds so that skips and multiples are factored out of this measurement. The lower the number, the more consistent the seed spacing is. A theoretically perfect SRI score would be zero (0) and would indicate that every seed was placed in the exact correct position relative to its neighbors. Seed Release Index values over 32 mean that consistency of seed spacing is so erratic that it is considered to be random. SRI commonly begins to have agronomic implications when it rises to 20 or higher.

SRM

"Single Row Module". Component used with the 20|20 monitor and SRM system. This system provides a module on every row of the planter to provide control and information gathering of the components on the row and send this information to the 20|20 display monitor.



SRM base system

Refers to the components that allow for the 20|20 monitor to communicate with the rows of the planter when vDrive, DeltaForce, vApplyHD or other single row control systems are installed. Generally refers to the electrical harnessing and minimum components that are needed such as the PDM, SRMs, backbones, APEX harnesses, ect.

SRM base tractor cab power harness

Component that connects to the 20/20 Gen2 monitor and has connections for power and GPS.



SRM Bootloader

Term used to describe the firmware in the SRM used on startup of the system for component location identification. The bootloader can be updated on systems with SRM serial numbers below 60,000 to assist if bootup issues are experienced.

SRM seed repeater

Component used in the SRM system to send seeding data to compatible OEM monitors.



SRM system

System used with 20/20 Gen3 or 20/20 Gen2 monitor to control products that are able to control rows of the implement on an individual row basis. Examples are DeltaForce, vDrive, Speedtube, mSet, vSetSelect, vDrive Insecticide, vApplyHD, FurrowForce.

Tractor power extension

Component of the SRM system installed on the planter. Kit consists of a CAN extension and power extension harness to carry power and communication from the hitch to the PDM.

Available in lengths from 5' to 65' depending on planter size.



Tractor Power harness

Component that connects to the tractor battery and extends to the hitch of the tractor. Connects to the tractor power extension on the planter to provide 12v battery power.



Turbine (low flow turbine) (total flow turbine)

Term used to describe a component measuring liquid flow. The low flow and total flow turbines are used in vApplyHD and in FlowSense. A turbine is also used in the available MicroTrak total flow meter.

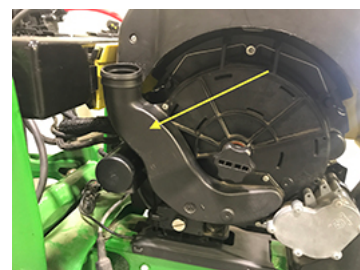
Universal tractor harness

Harness for the 20/20 Gen1 or Gen2 monitor with connections for power, GPS, channel A and channel B communication to the planter Smart Connector and/or AirForce system.



Vacuum inlet

Component of the vSet meter that attaches to the meter cover and gives an attachment point for the vacuum hose. Different shapes are available depending on the hopper type and application.

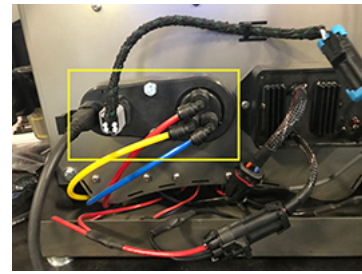


vApply Granular

Precision Planting product. Control system using the 20/20 monitor and vApply rate control module to adjust the speed of a hydraulic motor running a granular fertilizer metering system.

vApply Rate Control Module

Component that allows for PWM control of hydraulic motors or PWM drivers for electric pumps. Commonly used in the vApply Base, vApply Granular and vApplyHD systems.



vApplyHD

Precision Planting product for liquid product control, normally fertilizer on a planter or sidedress bar. vApplyHD system uses the 20|20 monitor, a pump control module and then control modules on the toolbar. The modules on the toolbar control flow, measure flow, and swath, turn compensate and execute variable rate prescriptions, all in a single device. These same modules can be configured in either section control or row by row control.



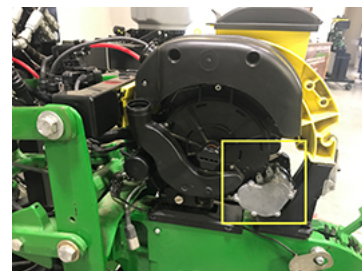
vApplyHD Flex

Precision Planting product. It is a vApplyHD module with an additional electronic board inside the vApplyHD module so that the device can be utilized on a toolbar without the SRM module for liquid fertilizer application.



vDrive

Precision Planting product. vDrive replaces the mechanical drive system, using a vDrive motor mounted to each vSet meter and makes that row a single row planter, because that row is controlled individually. Controls the seeding rate and provides row shut off individually.



vDrive Insecticide

Precision Planting product. The vDrive insecticide meter takes all the features of vDrive and does them for your insecticide; proper rate regardless of speed, swath control, and variable rate capabilities.



vSet Classic

Precision Planting product. Complete vacuum meter using a flat disk combined with a singulator to achieve over 99% accuracy in corn and soybeans. Able to plant many other crops as well. Compatible with vDrive.



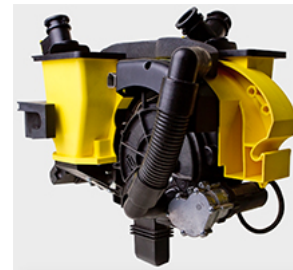
vSet2

Precision Planting product. Complete vacuum meter using a flat disk combined with a singulator to achieve over 99% accuracy in corn and soybeans. Able to plant many other crops as well. vSet2 can also be paired with SpeedTube for high speed planting and/or mSet for multihybrid planting. Compatible with vDrive.



vSet Select

Precision Planting product. Using the 20|20 monitor it combines two vSet meters and two vDrive motors into one metering package on the row to accomplish multi-variety planting.



W mount

Component of a planter that is somewhat the shape of the letter W. Connects the row unit parallel arms to the planter toolbar.



WaveVision

Product from Precision Planting that counts seed and does not count dust as a traditional optical sensor can report dust as seed. Has a smooth interior to prevent seed bounce in the seed tube.



Weatherpack connector

Environmentally sealed connector commonly used on planters and the Precision Planting system. Common uses are a 3 pin connection for the seed tube sensor and a 2 pin connection for the PWM controlled solenoid on a hydraulic motor.



Wedgebox

Module on a John Deere planter. This is on many SeedStar planters and requires an adapter to get seed data out of or into the John Deere system.



Wedgebox adapter (or metra-pack adapter)

Adapter harness from Precision Planting to get seed data out of or into the John Deere system. Different part number harnesses are available depending on use case, the planter year and number of rows.



YSM

YieldSense Module. Module is located to the right of the cab or the right side of the machine. Used to process information from the components of the YieldSense system and communicates with the 20/20. Gen1 or 2 YSM must be used with a Gen 1 or 2 monitor in the combine.



YSM3 (Gen3 YieldSense Module)

YieldSense Module, required for a Gen3 monitor with YieldSense in the combine. NOT compatible with Gen1 or 2 monitor.

