



Detailed Order Guide - North America

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20/20 SeedSense Gen 2

Step 1 - 2020 SeedSense Display Kit

Display Kit

Currently Unavailable

Gen 2 or a 20|20 Gen 3 Display is required for all SRM systems.

Please make sure that the Gen 2 has the capacity to handle all the SRM Products installed on the planter using the CAN Capacity Calculation chart below.

A Gen 2 is compatible with the following products -

- Gen 1 or Gen 2 Smart Connector for seed monitoring
- AirForce
- RowFlow (also RowFlow Liquid)
- DeltaForce
- vDrive
- vDrive Insecticide
- vApply HD (2 Products only)
- AUX and CAN FlowSense (does not work with EM FlowSense)
- SmartFirmer
- SpeedTube
- vSet Select
- mSet
- YieldSense
- FieldView

Item	Part #	Price	Qty	Total
20/20 Gen 2 Display Kit (iPad Ready)	725842			
Universal Metal Cab Mounting Bracket (Displays, Controllers, Tough Trays)	725804		1 per kit	
2020 Gen 2 Display - iPad Ready (no Bracket)	725843		1 per kit	

Step 2 - Tractor Harness Kit

The 725499 Universal Tractor Cab Power Harness will work with SRM systems. The 725439 does not have the extra harnesses of channel A & B.

Note 1: All systems that are using AirForce or a smart connector must have 725499 Tractor Harness. (The 725499 has channel A & B which are necessary to connect to a smart connector and AirForce)

Note 2: Smart Connector Kits are required on all non-SRM systems and all SRM systems that the 2020 is not controlling the seeding rate. Example - If you are running DeltaForce on a planter and controlling the seeding rate through a John Deere Monitor, you still need a smart connector.

Note 3: A Gen 3 20|20 Display does not use either 725499 or a 725439. The Gen 3 20|20 cab harness comes with the Display Base Module.

Tractor Harness

Item	Part #	Price	Qty	Total
SRM Based Tractor Cab Power Harness(vDrive, DeltaForce, Speedtube, vSet Select) - (Gen 2)	725439			
Universal Tractor Cab Power Harness (vDrive, DeltaForce, RowFlow, AirForce, Smart Connector)	725499			
Case 2100 CAN harness (used to connect 2020 to Case 2100 Planter)*	729148			

Cab Power adapters

Adapters to convert to 3 pin power plugs.

- The 725254 Y splitter is a Y cable that plugs into the tractor 3 pin convince power port and splits it into 2 power ports
- If the tractor is equipped with a John Deere power strip that uses a rectangular plug with three parallel spades, the power strip adapter may be used (725270)
- If the tractor is equipped with the 3 pin European style power plug, use the European power adapter (725719)
- If the tractor does not have a compatible source of power or power adapter it is recommended to wire the 20|20 directly to the battery using the 3 pin power adapter to 48" lead wires (725292)
- The Power Port (cigarette lighter) is not a recommended power source and should not be used unless all other options are not available.

Item	Part #	Price	Qty	Total
European Power adapter (converts to 3 pin power plug)	725719			\$
JD Power Strip to 3-Pin Power Adapter	725270			\$
3-Pin Power Adapter to 48" lead wires	725292			\$
12V 3Pin Round Power Splitter	725254			\$
Power Port (cig) to 3-Pin Power Adapter	725269			\$

Step 3 - GPS

Hemisphere GPS Kit

Item	Part #	Price	Qty	Total
Hemisphere A222 Kit -- 10-13" accuracy (Replaces 727132)	727205			\$
Adapter Harness	727027		1 per kit	\$
Antenna, GPS Smart - A222	727067		1 per kit	\$

GPS Adapter Harnesses

Before selecting a GPS adapter harness, please refer to the GPS Guide located below in the Order Resources. (Appended to the end of the PDF Guide)

Item	Part #	Price	Qty	Total
John Deere StarFire Adapter Harness	727124			\$
Trimble Adapter Harness (AG262, AG252, AG162)	727131			\$
Universal GPS Adapter (DB9M-DB9Y Adapter)	725599			\$
Trimble FMX, CFX Adapter Harness	727060			\$
Trimble GFX GPS Adapter	727068			\$

Additional GPS Options

Item	Part #	Price	Qty	Total
GPS Receiver with 4-Pin Connector (Hockey Puck)	725259			\$
3 Pin Convenience Power to 2 Pin WP splitter (replaces 700242)	725925			\$

20|20 Gen 3

Step 1 - 20|20 Base Kits

20|20 Gen 3 compatibility is as follows:

Compatible Systems-

- SRM Base Systems (DeltaForce, vDrive, mSet, vSet Select, vApplyHD, SpeedTube, FlowSense)
- SmartFirmer
- SeederForce
- YieldSense
- Smart Connector (Gen 3 Smart Connector only - order under Gen 3 20|20 Sensing. Note RUM's are not compatible with Gen 3)

Non-Compatible Systems

- **AirForce**
- **RowFlow**
- **MeterMax Ultra**

The Display Base Module (DBM) can support up to (2) 20|20 displays or (1) 20|20 Display and (1) Fieldview Module for Fieldview Cab App. Any use of a third party system to connect more than this to the DBM is not supported and may void the warranty.

Display Base Module

The 20|20 Display Base Module kit includes the following

- Display Base Module
- Speed Harness (GPS/Radar)
- Cab Power Harness

It will be necessary to order a separate Implement CAN harness. If running control products or full SRM (ie. PDM is installed) products, it will be necessary to purchase the 725154 - 20|20 Gen 3 DBM - Cab CAN harness. This is required for new systems as well as systems that are upgrading from a Gen 2 2020.

Gen 3 systems allow for up to 3 CAN networks. To calculate how many networks are recommended follow these guidelines:

- a) 24 row planters and greater are recommended to install a 2nd CAN network (Cab harness 725154), 36 row planters and greater it is recommended to add a 3rd CAN network* (Cab harness 725147).**
- b) Any one network should not have a length greater than 130 ft.**
- c) 3 CAN network planters must be on 2020.1.x software or newer.**

***This is a general recommendation, current planters running with less than the recommended networks that are not experiencing CAN errors would not need to add a network.**

Item	Part #	Price	Qty	Total
20 20 Display Base Module Kit - Module, Cab Power Harness, Speed Harness (Replaces 725100)	725105			\$
20 20 Gen 3 DBM - Cab CAN Harness	725154	:		\$
20 20 Gen 3 DBM - Triple CAN Harness	725147			\$
Quick Reference Guide- Gen 3 Display (2021.X Software)	955858			\$

Step 2 - 20|20 Display Screen

Display Screen

Select the Display Screen kit. The display Screen kit includes a 10' Ethernet cable to connect to the Display Base Module and a mounting bracket.

Item	Part #	Price	Qty	Total
Gen 3 Display Screen Kit - 10.1"	725101			\$

CCM - Gen 3

For all systems that are controlling a product, the CCM Gen 3 will be necessary.
It is not necessary for monitor only systems.

Item	Part #	Price	Qty	Total
20 20 Gen 3 Cab Control Module	725103			\$

Step 3 - Fieldview Options

Fieldview Module

If the grower wants to connect Fieldview to the 2020 Gen 3 it will be necessary to purchase a Fieldview Module Kit. (728150)
A fieldview module will remove the option to run a second display screen.

Note: the Fieldview Module Kit does not include the USB cable to connect the ipad to the module. The grower will have to provide his own.

Item	Part #	Price	Qty	Total
20 20 Gen 3 FieldView Module Kit	728150			\$
Screw, Pan Head Philips #6 x 3/4"	0142860		3 per kit	\$
Mount, iPad Holder	725123		1 per kit	\$
10' PoE Cable (Ethernet) - (no Discount)	725157		1 per kit	\$
Universal Metal Cab Mounting Bracket (Displays, Controllers, Tough Trays)	725804		1 per kit	\$
Kit, FieldView Hardware	728044		1 per kit	\$
Gen 3 Fieldview Module	728151		1 per kit	\$
Dual Display Mount for Gen 3 & FieldView	728141			\$

Step 4 - Additional Harness options

Additional Harnesses

The following are different options to power the 20|20

- The 725254 Y splitter is a Y cable that plugs into the tractor 3 pin convince power port and splits it into 2 power ports
- If the tractor is equipped with a John Deere power strip that uses a rectangular plug with three parallel spades, the power strip adapter may be used (725270)
- If the tractor is equipped with the 3 pin European style power plug, use the European power adapter (725719)
- If the tractor does not have a compatible source of power or power adapter it is recommended to wire the 20|20 directly to the battery using the 3 pin power adapter to 48" lead wires (725292)
- The Power port is not recommended unless all other power options are not available.

Item	Part #	Price	Qty	Total
75' PoE (Ethernet) Cable [no discount]*	725168			\$
Gen 3 Display 110 Power Adapter (Only for Gen 3)	725192			\$
12V 3Pin Round Power Splitter	725254			\$
JD Power Strip to 3-Pin Power Adapter	725270			\$
European Power adapter (converts to 3 pin power plug)	725719			\$
3-Pin Power Adapter to 48" lead wires	725292			\$
Power Port (cig) to 3-Pin Power Adapter	725269			\$
10' PoE (Ethernet) Cable [no discount]*	725157			\$

Ethernet Cable note: Ethernet cables have been priced to competitive market prices. Because of this pricing structure, discounts are not available for these parts.

Step 5 - GPS

Hemisphere GPS Kit

Item	Part #	Price	Qty	Total
Hemisphere A222 Kit -- 10-13" accuracy (Replaces 727132)	727205			\$
Adapter Harness	727027		1 per kit	\$
Antenna, GPS Smart - A222	727067		1 per kit	\$

GPS Adapter Harnesses

Before selecting a GPS adapter harness, please refer to the GPS Guide located below in the Order Resources. (Appended to the end of the PDF Guide)

Note: if using the 725599 adapter harness with a Gen 3 display, it may be necessary to add a 5' GPS extension harness to connect to the DBM. It listed in the additional options below.

In certain configurations it will be necessary to order adapter part numbers from either Trimble or AgLeader. See the GPS Guide below for more details.

Item	Part #	Price	Qty	Total
John Deere StarFire Adapter Harness	727124			\$
Trimble Adapter Harness (AG262, AG252, AG162)	727131			\$
Universal GPS Adapter (DB9M-DB9Y Adapter)	725599			\$
Trimble FMX, CFX Adapter Harness	727060			\$
Trimble GFX GPS Adapter	727068			\$

Additional GPS Options

Item	Part #	Price	Qty	Total
GPS Receiver with 4-Pin Connector (Hockey Puck)	725259			\$
3 Pin Convenience Power to 2 Pin WP splitter (replaces 700242)	725925			\$
5' GPS Extension Harness	725185			\$

Gen 3 20|20 Sensing

Step 1 - 20|20 Gen 3 Display and Cab Options

20|20 Gen 3 sensing system allows for a simpler install of harnesses and allows for additional sensors beyond seed monitoring and downforce. This system is limited to 6 SRMs for 1 Smart Connector and 12 SRMs for planters with 2 Smart Connectors.

The Display Base Module (DBM) can support up to (2) 20|20 displays or (1) 20|20 Display and (1) Fieldview Module for Fieldview Cab App. Any use of a third party system to connect more than this to the DBM is not supported and may void the warranty.

20|20 Display

Select a Display, and the Display Base Module Kit. The Display kit include the cab power harness and the speed harness. The Fieldview Kit and Dual Mount Kit are optional.

Item	Part #	Price	Qty	Total
20 20 Display Base Module Kit - Module, Cab Power Harness, Speed Harness (Replaces 725100)	725105			\$
Gen 3 Display Screen Kit - 10.1"	725101			\$
GPS and Radar Harness for Gen 3 Display	725155			\$
Dual Display Mount for Gen 3 & FieldView	728141			\$
20 20 Gen 3 FieldView Module Kit	728150			\$

Mapping GPS option

Since FieldView and 20|20 Gen 3 map at a high resolution a 1 hz gps receiver will not provide a high quality map. Because of this, Precision Planting is offering a 5hz GPS hockey puck. This GPS is a lower quality gps (similar in accuracy to the 1hz puck) but sends data to the 20|20 at 5hz which allows for high resolution mapping, even if it has poor accuracy. It should only be used for monitor/sensing only and should never be used for control systems.

Note: the 5hz GPS hockey puck has an 8 pin connection that will plug directly into the DBM with no other GPS adapter harnesses necessary.

Item	Part #	Price	Qty	Total
5hz GPS Hockey Puck - Sensing only	725939			\$

GPS Adapter Harnesses

Before selecting a GPS adapter harness, please refer to the GPS Guide located below in the Order Resources. (Appended to the end of the PDF Guide)

Item	Part #	Price	Qty	Total
John Deere StarFire Adapter Harness	727124			\$
Trimble Adapter Harness (AG262, AG252, AG162)	727131			\$
Universal GPS Adapter (DB9M-DB9Y Adapter)	725599			\$
Trimble FMX, CFX Adapter Harness	727060			\$
Trimble GFX GPS Adapter	727068			\$

Display Power Adapters

The following are different options to power the 20|20

- The 725254 Y splitter is a Y cable that plugs into the tractor 3 pin convince power port and splits it into 2 power ports
- If the tractor is equipped with a John Deere power strip that uses a rectangular plug with three parallel spades, the power strip adapter may be used (725270)
- If the tractor is equipped with the 3 pin European style power plug, use the European power adapter (725719)
- If the tractor does not have a compatible source of power or power adapter it is recommended to wire the 20|20 directly to the battery using the 3 pin power adapter to 48" lead wires (725292)

Item	Part #	Price	Qty	Total
12V 3Pin Round Power Splitter	725254			\$
JD Power Strip to 3-Pin Power Adapter	725270			\$
European Power adapter (converts to 3 pin power plug)	725719			\$
3-Pin Power Adapter to 48" lead wires	725292			\$

Step 2 - Single Smart Connector Systems

Cab CAN Harness

Select the DBM CAN Sensing Harness for Single Smart Connector. Skip the Dual Smart Connector step and go to Step 4.

The DBM CAN Sensing Harness will provide power for the SRMs and the Smart Connector. No additional power is necessary for a single Smart Connector system.

Note: This harness includes an 8 pin Terminator to move to the end of the last sensing backbone.

Item	Part #	Price	Qty	Total
20 20 Gen 3 DBM Sensor CAN Harness	725935			\$

Step 3 - Dual Smart Connector Systems

Backbone and CAN Harness

For a Dual Smart Connector system the Smart Connectors will need to plug into a 3 row control backbone. The first 2 plugs on the backbone will plug into the smart connectors and the third plug will start the sensor backbones. This system will require the Dual CAN harness (725154) from the DBM to the hitch.

See the attached drawing for more details on the layout.

Note 1: It will be necessary to order a 4 pin dust cap to cover the 4 pin CAN out of the 3 row backbone. This cap is not a terminator since the CAN network will continue on through the 8 pin to the sensor backbones.

Note 2: it will also be necessary to order an 8 Pin CAN terminator (729688) to terminate at the end of the sensing backbone. One per planter.

Item	Part #	Price	Qty	Total
20 20 Gen 3 DBM - Cab CAN Harness	725154			\$
3 SRM Harness - 30"	729423			\$
8 Pin CAN Terminator	729688			\$
4 Pin Dust Cap	725938			\$

Power Harnesses

Power for the 3 row backbone will sourced from the tractor convenience port or from the MX power adapter on a 2009+ John Deere planter.
Use the order resource below (appended to the end of PDF) to determine what harnesses are necessary to source power.

Item	Part #	Price	Qty	Total
3 Pin Convenience Power to 2 Pin WP splitter (replaces 700242)	725925			\$
WeatherPack to APEX Power Adapter	725191			\$
2 Pin WP Power Extension - 15'	725920			\$
2 Pin WP Power Extension - 25' (replaces 727126)	725921			\$
2 Pin WP Power Extension - 35'	725922			\$
2 Pin WP Power Extension - 45'	725923			\$
2 Pin WP Power Extension - 55'	725924			\$
Power Splitter - 2 Pin MX Connector (2009 & newer SeedStar)	727153			\$

CAN Harnesses

4 Pin CAN extension harnesses will be necessary to go from the hitch back to the three row backbone harness.

Item	Part #	Price	Qty	Total
5' CAN Extension	729140			\$
10' CAN Extension	729141			\$
15' CAN Extension	729142			\$
20' CAN Extension	729143			\$
30' CAN Extension	729144			\$
40' CAN Extension	729138			\$
45' CAN Extension	729145			\$
50' CAN Extension	729139			\$
60' CAN Extension	729146			\$
65' CAN Extension	729137			\$

Step 4 - Sensing Backbones and Extensions

If doing a DeltaForce only system with a Gen 3 20|20 display, the Gen 3 Smart Connector will plug into an open plug on the existing backbone or an additional backbone harness will be added along with an Apex power harness from the PDM.

Best practice will be to size the backbone that is closest to the Smart Connector location to allow for the correct numbers of rows plus one for each Smart Connector - Example, a 1770 NT planter will want a 5 row backbone for the center section to allow for 4 rows of SRMs and one plug for the Smart Connector.

The second option of adding a backbone to the planter to connect the Smart Connector will use a 2 row backbone, an Apex power harness and a CAN extension to add this backbone to the current harnessing of backbones. For backbones and apex harnesses, add the SRM Base tab to select the correct parts.

Make sure to order the Gen 3 Smart Connector in the next step.

8 Pin Extensions

The 8 Pin Extensions will go between the hitch and the first sensing backbone as well as between any subsequent backbones. On Dual Smart Connector systems they will also be used to go from the 3 row backbone to the first sensing backbone.

Item	Part #	Price	Qty	Total
Row Harness Extension 2' - 8 Pin	729255			\$
Row Harness Extension 5' - 8 Pin	729040			\$
Row Harness Extension 12' - 8 Pin	729041			\$
8 Pin Deutsch Extension Harness - 20'	725932			\$
8 Pin Deutsch Extension Harness - 30'	725933			\$
8 Pin Deutsch Extension Harness - 40'	725934			\$

Sensing Backbones

Each SRM Sensing Backbone supports up to two SRM's. These can be placed on rows up to 90" apart. The Sensing Backbone also has a single drop for a Gen 3 Smart Connector.

Up to 3 backbones (6 rows) may be used when powered by the DBM (single Smart Connector system) and up to 6 backbones (12 rows) may be used when power from the convenience port or MX power plug (dual Smart Connector system)

Each SRM Sensing Backbone harness includes (1) row plug (725936) and Smart Connector plug (729039) already installed. No additional plugs are needed for the 725937 backbones unless no SRMs are going to be installed on the sensing backbone.

Item	Part #	Price	Qty	Total
SRM Sensing Backbone - 2 SRMs	725937			\$

Step 5 - Modules and Sensors

Smart Connector

Use the Gen 3 Smart Connector Guide below to assist in determining how many Smart Connectors are needed and if new planter harness is necessary. If a new planter harness is needed, make sure to select the correct one in the "Planter Harness" step that follows.

Item	Part #	Price	Qty	Total
Smart Connector - Gen 3	725160			\$

Smart Connector Adapters

Some planters will require adapter harnesses to adapt the Smart Connector to the OEM seed sensor harness. Use the guide below to determine which adapters may be necessary.

Item	Part #	Price	Qty	Total
Dickey-john™ Adapters	725234			\$
MetraPack Cable- Gray (-2002)	725209			\$
MetraPack Cable-White (4-16 Rows)	725282			\$
Wedge Box Adapter (2011) (17-24 Rows)	725624			\$
Wedge Box Adapter (2011) (25-32 Rows)	725626			\$
2012 DB Bulkhead Seed Harness Adapters	725701			\$
CIH Seed Sensor Module Adapter Harness	725838			\$
48 Row DB120 Receiver Harness (-2012)	725555			\$
48 Row DB120 Sender Harness (-2012)	725556			\$
54 Row DB Receiver Harness (-2012)	725454			\$
54 Row DB Sender Harness (-2012)	725455			\$

SeedSense Harness Options

Some systems will need additional adapters for different sensors and harnesses. Please review these to see if they are necessary.

ME5e (PRO Max 40 with electric drive) planters will require a new planter harness and a seed tube splitter (725062)

Item	Part #	Price	Qty	Total
3-Pin WP 18" seed tube sensor extension	725061			\$
JD ExactEmerge SeedSensor Adapter	725746			\$
Seed Sensor Gender Changer - Adapts White GTA Harness to PP (1/Row)	725717			\$
JD/DB Vacuum Sensor Voltage Regulator*	725707			\$
37-Pin Gender Changer for White GTA -Adapts from Smart Connector output to PP Harness	725718			\$
JD/DB Fertilizer Pressure Sensor Voltage Regulator*	725736			\$
Kinze Seed Sensor gender changer	725720			\$
Splitter Cable for Seed Tube Sensor	725062			\$

*-May be needed with Gen 2 & Gen 3 SmartConnector and SeedStar Systems

SRM's

SRM's are required for any on row sensors.

An expansion hub and CAN jumper will be necessary if installing more than 1 CAN device on a specific row. The Sensing backbone has a CAN receptacle on it and therefore will require a CAN Jumper to connect to the CAN Hub.

For ExactEmerge planters, it will be necessary to add the SRM/RUM Mount Kit (725747) for every SRM that will be installed on the planter.

For Monosem planters, it will be necessary to add the SRM mount kit (712120) for every SRM that will be installed on the planter.

Item	Part #	Price	Qty	Total
SRM Assembly (Replaces 729017)	729551			\$
Row CAN Expansion HUB Kit	729500			\$
Black Connector - Row Can Jumper - 20" (Inches) --- For first device	729482			\$
SRM/RUM Mount Kit for ExactEmerge Planters	725747			\$
Monosem SRM Mount Kit - 1 per row	712120			\$

Load Cells

Select the correct gauge wheel load cell based on the planter make and row unit. These will plug directly into the SRM.

Item	Part #	Price	Qty	Total
1/2" Smart Pin for JD7000/ Kinze 2000	725581			\$
5/8" Smart Pin for JD7200/17XX	725580			\$
5/8" Smart Pin for JD 17x5, ME 5 Row Unit	725866			\$
Kinze 3000/4900 Smart Link	725466			\$
Case IH Load Sensor for 12xx/12x5 Series Row Unit	725875			\$
White 6000 Smart Link	725266			\$
White 8000 Smart Link (subs from 725729)	725869			\$
White 9000 1/2" Smart Pin/Gray PP ready 1.0	725887			\$
Monosem 5/8" Smart Pin	712003			\$

SmartFimers

SmartFirmer is a CAN based sensor that will plug into a CAN port on the Sensing Backbone or a CAN Hub.

SmartFirmer requires a lift switch in order to function. If the system does not currently have a lift switch installed, it will be necessary to install a push button lift switch. Select the correct lift switch below in the Auxiliary sensors section.

Item	Part #	Price	Qty	Total
SmartFirmer Sensor and Tail	145100			\$

FlowSense

FlowSense can either be plugged into the SRM through the Aux port or using the CAN based option. If using the CAN based option, it will be required to use a CAN jumper (**729482**) to go between the CAN FlowSense and the Backbone receptacle or a Expansion Hub.

Item	Part #	Price	Qty	Total
AUX FlowSense - Low Flow Assembly - 1/4" (.07-.90 GPM)	724015			\$
AUX FlowSense - High flow Assembly - 3/8" (.20-2.5 GPM)	724016			\$
CAN FlowSense - (High, High) flow sensors	724370			\$
CAN FlowSense - (High, Low) flow sensors	724371			\$
CAN FlowSense - (Low, Low) flow sensors	724372			\$
Black Connector - Row Can Jumper - 20" (Inches) --- For first device	729482			\$

Auxiliary Sensors

Auxiliary sensor will plug directly into the AUX port on the SRM.

Make sure that a SmartFirm system has a lift switch. If no lift switch is present on the system already, add one push button switch below respective of the row unit style.

Item	Part #	Price	Qty	Total
20/20 Vacuum/Positive Air Sensor (Replaces 725235)	725905			\$
White / Great Plains Pressure Sensor (Limited Service Part)	725264			\$
JD/DB Vacuum Sensor Voltage Regulator*	725707			\$
JD/DB Fertilizer Pressure Sensor Voltage Regulator*	725736			\$
Lift Switch - JD 1700/7200/17x5/ME5 Regular	726150			\$
Lift Switch - JD 1700/7200/17x5/ME5 Long	726260			\$
Lift Switch - JD 7000 or Kinze 2000/3000	726265			\$
Lift Switch - Case IH 12xx /White 9000	726635			\$

Step 6 - Planter Harness

Select the correct planter harness as necessary.

John Deere Planter Harness

Item	Part #	Price	Qty	Total
12 row 30" Front Fold (7000/7200/1770 Cons.)	725350			\$
16 Row 30" Front Fold (8516)	725352			\$
24 row 30" Front Fold (7000/7200/1770 Cons.)	725351			\$
24 Row 30" Front Fold NT (1250)	725617			\$

Kinze Planter Harness

Item	Part #	Price	Qty	Total
4 Row 30,36,38" Rigid (2000/3000)	725300			\$
4/7 Row 30,36,38" (2000/3000)	725301			\$
6 Row 30,36,38" Rigid (2000/3000)	725302			\$
6 Row 30,36,38" 3-Pt.Mounted (2100/3110)	725303			\$
6 Row 30" L&T (2500/3500)	725304			\$
6/11 Row 30,36,38" Rigid (2000/3000)	725305			\$
6/11 & 6/12 Row 30" L&T (2500/3500)	725306			\$
8 Row 30" Rigid (2000/3000)	725307			\$
8 Row 30,36,38" 3-Pt.Mounted Rigid/Vert.Fold (2100/3110/3120)	725309			\$
8 Row 38,40" 3-Pt Stacker (2100/3140)	725310			\$
8 Row 36,38" Wing Fold/L&T (2200/2600/3200/3600)	725311			\$
8/15 Row 36,38" L&T (2600/3600)	725315			\$
10 Row 30" 3-Pt.Mounted (2100/3110)	725316			\$
12 Row 30" 3-Pt.Mounted Vert. Fold (2100/3120)	725317			\$
12 Row 30" 3-Pt.Stacker (2100/3140)	725318			\$
12 Row 36,38,40" 3-Pt.Stacker (2100/3140)	725319			\$
12 Row 30" Wing Fold (2200/3200)	725320			\$
12 Row 20,22" L&T (2400/3400)	725321			\$
12 Row 30" L&T (2600/3600/3650)	725322			\$
12 Row 36,38" L&T (2600/3600)	725323			\$
12 Row 30" Front Fold NT (1250)	725618			\$
12/23 Row 20,22" L&T (2400/3400)	725324			\$
12/23 & 12/24 Row 30" L&T (2600/3600/3650)	725325			\$
12/23 & 12/24 Row 33,38" L&T (2600/3600/3650)	725326			\$
16 Row 30" 3-Pt.Stacker(2100/3140)	725327			\$
16 Row 30" L&T (2600/3600/3650)	725328			\$
16 Row 30" Forward Fold (2700/3700)	725329			\$
16/31 & 16/32 Row 30" L&T (2600/3600/3650)	725330			\$
16 Row 38" Forward Fold (2700/3700)	725339			\$
16 Row 30" Front Fold NT (1250)	725619			\$
24 Row 20,22" Forward Fold (2700/3700)	725331			\$
24 Row 30" Forward Fold (2700/3700)	725332			\$
24 Row 30" Front Fold (3800)	725333			\$
24 Row 30" Front Fold NT (1250)	725617			\$
32 Row 30" Front Fold (3800)	725334			\$
36 Row 20" Forward Fold (2700/3700)	725335			\$
36 Row 30" Front Fold (3800)	725345			\$
8 Row 30" L&T (2500/3500)	725312			\$
8/15 Row 30" Rigid (2000/3000)	725313			\$
8/15 & 8/16 Row 30" L&T (2500/3500)	725314			\$

Case IH Planter Harness

Item	Part #	Price	Qty	Total
6 Row 30,36,38" Rigid (2000/3000)	725302			\$
6 Row 30,36,38" 3-Pt.Mounted (2100/3110)	725303			\$
8 Row 30" 3-Pt.Mounted (2100/3110)	725308			\$
8 Row 30,36,38" 3-Pt.Mounted Rigid/Vert.Fold (2100/3110/3120)	725309			\$
8 Row 30" Rigid (2000/3000)	725307			\$
8 Row 38,40" 3-Pt Stacker (2100/3140)	725310			\$
12 Row 30" 3-Pt.Stacker (2100/3140)	725318			\$
12 Row 30" L&T (2600/3600/3650)	725322			\$
12 Row 30" Front Fold NT (1250)	725618			\$
12 Row 36,38,40" 3-Pt.Stacker (2100/3140)	725319			\$
12/23 Row 30" L&T (1240)	725615			\$
16 Row 30" 3-Pt.Stacker(2100/3140)	725327			\$
16 Row 30" L&T (2600/3600/3650)	725328			\$
16 Row 30" Front Fold NT (1250)	725619			\$
16/31 Row 30" L&T (1240)	725616			\$
24 Row 20" L&T (1240)	725614			\$
24 Row 30" Front Fold NT (1250)	725617			\$
32 Row 30" Front Fold (1260)	725620			\$
36 Row 20,22" Front Fold (1260)	725610			\$
36 Row 30" Front Fold (1260)	725607			\$

White Planter Harness

Item	Part #	Price	Qty	Total
6 Row 30,36,38" Rigid (2000/3000)	725302			\$
6 Row 30,36,38" 3-Pt.Mounted (2100/3110)	725303			\$
6Row 36,38" L&T (8716)	725655			\$
6/11 Row 30" Rigid (8606)	725653			\$
8 Row 30" Rigid (2000/3000)	725307			\$
8 Row 30" 3-Pt.Mounted (2100/3110)	725308			\$
8 Row 30" L&T (2500/3500)	725312			\$
8 Row 38,40" 3-Pt Stacker (2100/3140)	725310			\$
8 Row 30,36,38" 3-Pt.Mounted Rigid/Vert.Fold (2100/3110/3120)	725309			\$
8 Row 36,38" Wing Fold/L&T (2200/2600/3200/3600)	725311			\$
8/15 Row 30" Rigid (8608)	725654			\$
8/15 Row 30" Wing Fold (8415)	725650			\$
12 Row 30" Wing Fold (2200/3200)	725320			\$
12 Row 30" Forward Fold (8182)	725567			\$
12 Row 22" 3-Pt.Mounted Rigid (8762)	725563			\$
12 Row 30" 3-Pt.Stacker (2100/3140)	725318			\$
12 Row 30" 3-Pt.Mounted Vert. Fold (2100/3120)	725317			\$
12 Row 30" L&T (2600/3600/3650)	725322			\$
12 Row 30" Front Fold NT (1250)	725618			\$
12/13 Row 30/15" Rear Fold (Black Mach,) (8342)	725561			\$
12/23 Row 30" L&T (1240)	725615			\$
12/23 Row 30" Front Fold (8523)	725651			\$
16 Row 30" Forward Fold (2700/3700)	725329			\$
16 Row 30" Front Fold NT (1250)	725619			\$
16/31 Row 30" Front Fold (8531)	725652			\$
16 Row 30" Front Fold (8516)	725352			\$
16/31 & 16/32 Row 30" Forward Fold NT (8831)	725656			\$
24 Row 20" Front Fold (8524)	725565			\$
24 Row 22" Front Fold (8524)	725564			\$
24 Row 30" Front Fold NT (1250)	725617			\$
24 Row 30" Front Fold (3800)	725333			\$
36 Row 30" Front Fold (1260)	725607			\$

Step 7 - Seed Sensor

Seed Sensors

Item	Part #	Price	Qty	Total
Seed Tube Sensor 3/4"eye (Dickey John)	300157			\$
Seed tube Sensor Case IH (Dickey John)	310077			\$

SRM Base

Step 1 - Display Additions for SRM Systems

All SRM based products (DeltaForce, vDrive, Speedtube, vSet Select, vDrive Insecticide) require a **Gen 2 SeedSense Display** with Gen 2 Cab Control Module *or* a **20|20 Display (Gen 3)** with a Gen 3 CCM. If the grower has an existing Gen 1 Display, he will need to upgrade to a newer display.

Note: make sure to use the **CAN Capacity Calculation chart** in the order resources section below and in the SRM Backbone Section of the order guide to ensure that the correct Display and CAN harnessing is ordered.

Note: The Gen 1 display has 2 usb ports on the side. A Gen 2 display has 1 usb port on the side and a 3 usb ports on the back.

Cab Control Module

All SRM Products require a Cab Control Module (CCM)

Gen 3 systems allow for up to 3 CAN networks. To calculate how many networks are recommended follow these guidelines:

- a) 24 row planters and greater are recommended to install a 2nd CAN network (Cab harness 725154), 36 row planters and greater it is recommended to add a 3rd CAN network* (Cab harness 725147).
- b) Any one network should not have a length greater than 130 ft.
- c) 3 CAN network planters must be on 2020.1.x software or newer.

*This is a general recommendation, current planters running with less than the recommended networks that are not experiencing CAN errors would not need to add a network.

Item	Part #	Price	Qty	Total
Cab Control Module 2 (CCM 2) - For Gen 2 - 2020 only	727062			\$
20 20 Gen 3 Cab Control Module	725103			\$

Additional Harness options for SRM Systems

The 725499 Universal Tractor Cab Power Harness will work with SRM systems. The 725439 does not have the extra harnesses of channel A & B.

Note 1: A Tractor Cab Power Harness is not necessary for a 20|20 Gen 3 display. It is included in the Display Base kit.

Note 2: All Gen 1 or Gen 2 systems that are using Airforce or a smart connector must have 725499 Tractor Harness. (The 725499 has channel A & B which are necessary to connect to a smart connector and AirForce)

Note 3: Smart Connector Kits are required on all non-SRM systems and all SRM systems that the 2020 is not controlling the seeding rate. Example - If you are running DeltaForce on a planter and controlling the seeding rate through a John Deere Monitor, you still need a smart connector.

Note 4: For Case 21xx Series planters, it will be necessary to purchase a 21xx CAN harness adapter (729148) to use a Gen 2 or Gen 3. If it is desired to run Dual CAN on a Gen 3 it will be necessary to also order a CAN B adapter (729698) in addition to the standard CAN harness.

Item	Part #	Price	Qty	Total
SRM Based Tractor Cab Power Harness(vDrive, DeltaForce, Speedtube, vSet Select) - (Gen 2)	725439			\$
Case 2100 CAN harness (used to connect 2020 to Case 2100 Planter)*	729148			\$
CAN B Adapter for Case IH 21xx Series Planters - Gen 3 (For Dual CAN)	729698	-----		\$

* Still requires a tractor cab harness. This only adapts our 9 pin to the Case 2100 CAN connection.

Step 2 - Radar

Radar is required to meet Precision Planting performance with vDrive motors and SpeedTube

Dickey John Radar Kit

The Dickey John Radar is only needed on tractors that are not equipped with a compatible radar

Item	Part #	Price	Qty	Total
Dickey John RVS III Radar(Includes Mounting Bracket)	727136			\$

Radar Adapter Harnesses

Item	Part #	Price	Qty	Total
Case MX & STX Adapter Harness	727139			\$
Dickey John Radar 6' Extension with splitter	727129			\$
John Deere 10 & 20 series Cab Adapter	727141			\$
John Deere 30, R, & RT series Cab Adapters	727122			\$

Step 3 - SRM Base & Row Kits

Each planter needs an SRM Base Kit

SRM Base Kit

SRM BASE KITS HAVE CHANGED!!! - 1-7-2019

The SRM Base Kit has changed to only be the PDM and the PDM Mount. It no longer includes the Tractor CAN harness, the tractor power harness or the spare SRM row harness. Starting 1-7-2019 it will be necessary to order the following -

- SRM Base Kit (5 output PDM) (729210) **or** SRM Base Kit (12 output PDM) (729810)
- Gen 2 SRM CAN harness (729149) or a 20|20 Gen 3 DBM - Cab CAN harness (725154) -- One will be required for a system running SRM Base
- Tractor power harness (729157) or the Tractor ISO harness (Tractor ISO plug can not be used for anything else (729208)). ISO harness is not a Y harness.
- If a spare SRM row harness is desired, add it under the SRM Row kits.

****725147 Triple CAN Harness is now available for 36+ row planters****

Note 1: If you are running an SRM system and the 2020 is not controlling the seeding drives, a Smart Connector is required to get seed data to the 2020. Seed tubes can not be run through SRM if vDrive or a hydraulic drive running through Row Flow is not installed.

Note 2: The 12 output PDM base kit (729810) can be used in place of the 5 output PDM for planters that will require more than 5 Apex power extensions. It is a larger PDM so it does take a larger physical space on the planter to install.

Item	Part #	Price	Qty	Total
SRM Base Kit (5 output PDM) (replaces 729100)	729210			\$
Mount Kit, PDM	729185		1 per kit	\$
Manual, DeltaForce and vDrive Wiring Harness Installation	955324		1 per kit	\$
Power Distribution Module	729180		1 per kit	\$
SRM Base Kit (12 output PDM)	729810			\$
Mount Kit, PDM	729185		1 per kit	\$
Module, Power Distribution 12 Circuit	735155		1 per kit	\$
Manual, DeltaForce and vDrive Wiring Harness Installation	955324		1 per kit	\$
20 20 Gen 3 DBM - Cab CAN Harness	725154			\$
20 20 Gen 3 DBM - Triple CAN Harness	725147			\$
Gen 2 20/20 - SRM/RF CAN Harness	729149			\$
Tractor Power Harness (40 amps)	729157			\$
ISO Tractor SRM Power Harness (40 amps)	729208			\$

SRM Row Kit

One SRM Row Kit required per row.

If a spare SRM row harness is desired, add it as desired from the kit.

Item	Part #	Price	Qty	Total
SRM Row Kit	729020			\$
SRM Row Harness	729021		1 per kit	\$
SRM Kit (Module + hardware)	729551		1 per kit	\$

Mounting options for SRM Base System

- For installing SRM systems on ExactEmerge planters, you will need one SRM Mount Kit (725747) for each row.
- Kinze Hydraulic Hose Guideway Assembly only works on Kinze 3600 planters.
- The Monosem SRM Mount Kit is required for all Monosem planters that are mounting an SRM on the row unit.
- The parallel arm mounting and hose routing kit provides a channel to route liquid lines and row unit harnesses through. It also may be used to mount vApplyHD and/or Flowsense.
- The 5X5 U-bolt kit can be used to mount the PDM on a 5X5 bar if needed. The PDM kit includes 5X7 and 7X7 u-bolts.
- Ready Row Unit 2.0 with mini hopper will need 729759 SRM mount kit

Item	Part #	Price	Qty	Total
SRM/RUM Mount Kit for ExactEmerge Planters	725747			\$
Monosem SRM Mount Kit - 1 per row	712120			\$
Tractor Power Connection Mounting Kit - Deutsch	729264			\$
Kinze 3600 Hydraulic Hose Guideway Assembly	729370			\$
Parallel Arm Harness and Hose Mounting Bracket (4 row Kit)	729212			\$
5X5 U-Bolt Kit (2 U Bolts - no nuts)	712244			\$
SRM Mount Kit - PP Ready Row Unit	729759			\$

Step 4 - SRM Backbone Harness

One backbone is required for every planter frame section

- **Note:** When selecting backbones for frame sections that are more than 11 rows, the backbones can be tied together through a CAN extension. All backbones have one row width of additional CAN length added to each end. (So you have 60 inches on a 30" backbone to connect to the next backbone)
- **Note 2:** For frame sections greater than 11 but less than 18 rows- use one backbone that is twice as large as the other (so for a 13 row frame use 9 and 4). For 18 or more, use backbones of equal size.
- **Note 3:** If you have SmartDepth and SpeedTube on a planter, you cannot power more than 5 rows per Apex output. For example, if you have a 6 row frame section, you cannot use a 6-row backbone on that frame section because it only has one spot to plug in Apex power.

For further diagrams and examples on what is required for harnessing and hydraulics on each planter, use the links below

[John Deere Diagrams](#)

[Deere Baurer Diagrams](#)

[Kinze Diagrams](#)

[Case IH Diagrams](#)

1790 Diagrams - [16/31 Electrical](#), [16/31 Hydraulic \(center PDM\)](#), [16/31 Hydraulic](#), [24R20 Electrical](#), [24R20 Hydraulic](#)

30" Row Backbones

Item	Part #	Price	Qty	Total
2 SRM Harness - 30"	729422			\$
3 SRM Harness - 30"	729423			\$
4 SRM Harness - 30"	729424			\$
5 SRM Harness - 30"	729425			\$
6 SRM Harness - 30"	729426			\$
7 SRM Harness - 30"	729427			\$
8 SRM Harness - 30"	729428			\$
9 SRM Harness - 30"	729429			\$
10 SRM Harness - 30"	729430			\$
11 SRM Harness - 30"	729431			\$

36", 38" Row Backbones

Item	Part #	Price	Qty	Total
2 SRM Harness - 36", 38"	729442			\$
3 SRM Harness - 36", 38"	729443			\$
4 SRM Harness - 36", 38"	729444			\$
5 SRM Harness - 36", 38"	729445			\$
6 SRM Harness - 36", 38"	729446			\$
7 SRM Harness - 36", 38"	729447			\$
8 SRM Harness - 36", 38"	729448			\$
9 SRM Harness - 36", 38"	729449			\$
10 SRM Harness - 36", 38"	729450			\$
11 SRM Harness - 36", 38"	729451			\$

20", 22" Row Backbones

Use the 20, 22" backbones for 15" planters (Kinze L&T will use 30 inch backbones)

Item	Part #	Price	Qty	Total
2 SRM Harness - 20", 22"	729462			\$
3 SRM Harness - 20", 22"	729463			\$
4 SRM Harness - 20", 22"	729464			\$
5 SRM Harness - 20", 22"	729465			\$
6 SRM Harness - 20", 22"	729466			\$
7 SRM Harness - 20", 22"	729467			\$
8 SRM Harness - 20", 22"	729468			\$
9 SRM Harness - 20", 22"	729469			\$
10 SRM Harness - 20", 22"	729470			\$
11 SRM Harness - 20", 22"	729471			\$

Row Extensions

The SRM backbone plug is necessary if you have any backbone drops that do not have an SRM plugged into them. Should not be necessary for a normal install.

Row Harness extensions give an option to extend the distance from the backbone row drop to the row harness. Normally only needed with 1790 or custom planters.

Item	Part #	Price	Qty	Total
SRM Backbone Row Plug	729039			\$
Row Harness Extension 2' - 8 Pin	729255			\$
Row Harness Extension 5' - 8 Pin	729040			\$
Row Harness Extension 12' - 8 Pin	729041			\$

CAN Harness Extensions

1 CAN extension is required to go from the PDM to the first backbone and 1 may be required for each fold point to connect the Backbone harnesses. All backbones have one row width of additional CAN length added to each end. (So you have 60 inches on a 30" backbone to connect to the next backbone)

If you are running a Gen 3 display with 2 CAN Networks, you will need a CAN extension to go from the hitch to the start of the second CAN network. Make sure to order extensions accordingly. Use the chart in the order resources below to determine if you need to run 2 CAN Networks.

Item	Part #	Price	Qty	Total
5' CAN Extension	729140			\$
10' CAN Extension	729141			\$
15' CAN Extension	729142			\$
20' CAN Extension	729143			\$
30' CAN Extension	729144			\$
40' CAN Extension	729138			\$
45' CAN Extension	729145			\$
50' CAN Extension	729139			\$
60' CAN Extension	729146			\$
65' CAN Extension	729137			\$

Step 5 - SRM CAN Booster

- The CAN booster will boost the CAN signal for systems that have a longer CAN distance. Any CAN Bus that is **more than 130 Ft of CAN length** will require a CAN Booster
- System CAN length = Bar Width + Power Extension + All CAN Extensions.

Examples:

1770 16 row, 30" row = 40 ft Bar			16/31 Kinze - 40 ft Bar x2 (Front and rear) = 80ft bar		
Bar Width	40 ft	40 ft of CAN	Bar Width	80 Ft	40 ft of CAN
Power Extension	35 ft	35 ft of CAN	Power Extension	45 ft	45 ft of CAN
CAN Extension	10 ft	10 ft of CAN	CAN Extension	10 ft	10 ft of CAN
CAN Extension	10 ft	10 ft of CAN	CAN Extension	40 ft	40 ft of CAN
Total CAN Length		95 ft of CAN	Total CAN Length		175 ft of CAN
- No Booster Required			- CAN Booster is Required!		

Note: Do not install a booster with a Gen 3 system. Use either Dual or Triple Can if the length is over 130 ft.

CAN Booster

Item	Part #	Price	Qty	Total
CAN Booster Kit	729250			\$

Step 6 - Power Options

Alternator Options

Optional: An alternator is required for all systems that have a total amp draw of more than 40 Amps!

Please Refer to the Alternator Power Table below to determine total current draw. (Appended to end of PDF Guide)

Item	Part #	Price	Qty	Total
160 Amp Alternator Kit	729160			\$

Tractor Power Extension

One is required to connect Tractor Power Harness to the PDM (From the hitch to PDM)

(All power extension part numbers include power harness and corresponding CAN extensions)

Item	Part #	Price	Qty	Total
5' Tractor Power Extension	729410			\$
15' Tractor Power Extension	729411			\$
25' Tractor Power Extension	729412			\$
35' Tractor Power Extension	729413			\$
45' Tractor Power Extension	729414			\$
55' Tractor Power Extension	729415			\$
65' Tractor Power Extension	729416			\$

APEX Power Extensions

One APEX power extension is required for every backbone harness (goes from PDM to center of backbone)

Note: If you are running SpeedTube, **all backbones 7 rows and greater require 2 APEX power extensions**

Note 2: A Secondary PDM is required if more than 5 APEX harnesses are used

Item	Part #	Price	Qty	Total
5' Backbone Power Extension	729150			\$
15' Backbone Power Extension	729151			\$
25' Backbone Power Extension	729152			\$
35' Backbone Power Extension	729153			\$
40' Backbone Power Extension	729294			\$
50' Backbone Power Extension	729154			\$
55' Backbone Power Extension	729156			\$
60' Backbone Power Extension	729155			\$

APEX Power Adapters

Remember that anything that is powered off the PDM needs to be accounted for in alternator requirement calculations.

Item	Part #	Price	Qty	Total
APEX - 2 Weather Pack Power Adapter(RowFlow Aux Power)	729194			\$
APEX - CleanSweep Power Adapter	729195			\$
APEX - 2 Pin Pigtail (2 Open Leads - Max 30 Amps total)	729196			\$

Secondary PDM

Only needed if more than 5 APEX power outputs are necessary

Item	Part #	Price	Qty	Total
Secondary PDM Kit	729241			\$

Step 7 - SRM Seed Repeater

The Seed Repeater is used when you are running an SRM system and want to send seed data to an OEM monitor.

Note: If you are running an SRM system and the 2020 is not controlling the seeding drives, a smart connector is required to get seed data to the 2020. Seed tubes can not be run through SRM if vDrive or a hydraulic drive running through Row Flow is not installed. Use a smart connector repeater if a smart connector is installed, not an SRM repeater.

Seed Repeater Kit

Item	Part #	Price	Qty	Total
SRM Seed Repeater Kit	729517			\$

SRM Seed Repeater Extensions

If 37 pin connection is not located next to the PDM, use the Row CAN extension harnesses to move the SRM seed repeater module from the PDM to the location of the 37 pin connection.

Item	Part #	Price	Qty	Total
10' Row CAN Extension - 6 Pin	729201			\$
20' Row CAN Extension - 6 Pin	729202			\$
30' Row CAN Extension - 6 Pin	729203			\$
2' Row CAN Extension - 6 Pin	729205			\$

SRM Seed Repeater Adapters

Used to adapt from the SRM Seed Repeater 37 pin connection to the OEM harness connection for seed data

Item	Part #	Price	Qty	Total
SRM Seed Metripack Adapter - JD 4-24 Rows	729074			\$
SRM Seed Metripack Adapter - JD 25-32 Rows	729075			\$
SRM Seed Bulkhead Adapter - 2012 + DB Planters	729079			\$

Step 8 - Lift Switch

All SRM systems will require some form of lift switch. See each option for details.

Option 1: Push Button Lift Switches

Two push button switches are required as they are row unit mounted. Additional lift switches may be added to planter to account for frame flexing

Note: If planter has DeltaForce and RowFlow, lift switches MUST be routed into the RFM

Note: The Gray Precision Planting Ready Row Unit will use the White 9000 style lift switch.

Item	Part #	Price	Qty	Total
Lift Switch - JD 1700/7200/17x5/ME5 Regular	726150	:		\$
Lift Switch - JD 1700/7200/17x5/ME5 Long	726260	:		\$
Lift Switch - JD 7000 or Kinze 2000/3000	726265	:		\$
Lift Switch - White 5000/6000/8000	726655	:		\$
Lift Switch - Case IH 12xx /White 9000	726635	:		\$
Lift Switch - KZ4000	726770	:		\$
(2014-2019) Horsch Maestro Push Button Lift Switch Kit	712254	:		\$

Option 2: Frame Mounted Lift Switches

Only one frame mounted lift switch is required. It must be connected to the PDM

Note: Lift switches must be dedicated to the 20/20 System. Y - ing lift switches with the OEM system is NOT allowed.

Item	Part #	Price	Qty	Total
9' John Deere Rotary Height Sensor Harness	727178			\$
15' Height Switch Extension (3 Pin WeatherPack)	727116			\$
Whisker Switch with cable	727123			\$

Step 9 - Down Force Sensors

Note: If you are going to quote DeltaForce, add them under the DeltaForce section of the order guide (DeltaForce will require 1/row)

1. [Dealership Tools](#)

Note: If running AirForce, 5 or more down force sensors per planter are recommended (1 /row if planter is less than 6 rows)

Note: If running just 2020/vDrive, a minimum of 3 sensors per planter is recommended.

DownForce Sensors

Item	Part #	Price	Qty	Total
5/8" Smart Pin for JD7200/17XX	725580			\$
5/8" Smart Pin for JD 17x5, ME 5 Row Unit	725866			\$
Kinze 3000/4900 Smart Link	725466			\$
Case IH Load Sensor for 12xx/12x5 Series Row Unit	725875			\$
White 6000 Smart Link	725266			\$
White 8000 Smart Link (subs from 725729)	725869			\$
White 9000 1/2" Smart Pin/Gray PP ready 1.0	725887			\$
1/2" Smart Pin for JD7000/ Kinze 2000	725581			\$
Monosem 5/8" Smart Pin	712003			\$
Vaderstad Tempo Load Sensor	712017			\$

Precision Planting Ready Row Unit 2.0

Step 1 - Base Row Unit

Base Precision Planting Ready Row Unit kits include:

- Upper and lower DeltaForce brackets pre installed
- Hopper pucks/donuts
- QA firmer bracket installed
- FurrowJet support bracket installed
- Disc openers installed
- All associated hardware to mount row unit

The difference between the seed tube ready and SpeedTube ready base row unit is the seed tube guard. A SpeedTube guard is pre-installed on the SpeedTube ready base row unit and the standard seed tube guard is pre-installed on the seed tube ready base row unit (Note: The SpeedTube ready base row unit will still need a SpeedTube Assembly and the retention spring).

Base Precision Planting Ready Row Unit Kits

Base Precision Planting Ready Row Unit kits include:

- Upper and lower DeltaForce brackets pre installed
- Hopper pucks/donuts
- QA firmer bracket installed
- FurrowJet support bracket installed
- Disc openers installed
- All associated hardware to mount row unit

The difference between the seed tube ready and SpeedTube ready base row unit is the seed tube guard. A SpeedTube guard is pre-installed on the SpeedTube ready base row unit and the standard seed tube guard is pre-installed on the seed tube ready base row unit (Note: The SpeedTube ready base row unit will still need a SpeedTube Assembly and the retention spring).

Item	Part #	Price	Qty	Total
Precision Planting Ready Row Unit - Seed Tube Ready	ACX3382740PP			\$
Precision Planting Ready Row Unit - SpeedTube Ready	ACX3382750PP			\$

Row Unit Options

Item	Part #	Price	Qty	Total
10" SetBack Bracket (For PP Ready Row Unit - Painted Gray)	726755			\$

Step 2 - Mini/1.6 Bushel Hopper Kits

Choose from the full size 1.6 bushel hoppers or mini hoppers.

Mini Hopper Options

Item	Part #	Price	Qty	Total
vSet 2/ mSet Mini Hopper	736133			\$
Lid, Mini Hopper	736031			\$
Mini Hopper Fill Tube Kit - Single Inlet	736055			\$
vSet 2 - Mini Hopper Kit - Gray PP Ready Row Unit	768700			\$

1.6 Bushel Hopper Options

Item	Part #	Price	Qty	Total
vSet 2/ mSet Harvest 1.6 Bu Hopper	736135			\$
Single 1.6 Bu Hopper Lid - Harvest International (vSet 2/ mSet hoppers only!!!)	736137			\$

Hopper Mounting

The base row unit comes with the hopper pucks already installed on the parallel arm linkage. However, if ordering the 3.0 bu, 1.6 bu, or mSet style minihoppers, you will need to order the rear support bracket assembly 736330.

Row Units with mini hopper will need 729759 SRM mount kit

Item	Part #	Price	Qty	Total
Rear Support Bracket Assembly - Agco 9000 1.6 Bu (Gray)	736330			\$
SRM Mount Kit - PP Ready Row Unit	729759			\$

Step 3 - Insecticide/3 Bushel Hopper Options

Hoppers and Brackets

If putting vDrive Insecticide on a Precision Planting Ready Row Unit 2.0 with the standard mSet hopper you will need the following:

- 736280 (1 per row)
- PP9500G (1 per row)

If putting vDrive Insecticide on a Precision Planting Ready Row Unit 2.0 with minihoppers you will need the following:

- 700184965 from Agco (1 per row)
- PP9500G (1 per row)

If putting 3.0 bushel hoppers on a Precision Planting Ready Row Unit 2.0 you will need the following:

- 736248 (1 per row)
- 736228 (1 per row)
- 736280 (1 per row)
- PP9500G (1 per row)

If converting mini hoppers to 3.0 bushel hoppers on a Precision Planting Ready Row Unit 2.0 you will need the following:

- 736246 (1 per row)
- 736228 (1 per row)
- 736280 (1 per row)
- PP9500G (1 per row)

Part PP9500G needs to be ordered from Shoup, please contact shoup for a price quote for those components.

Item	Part #	Price	Qty	Total
vSet 2/mSet Harvest International 3.0 Bu Hopper Assembly	736248	:		\$
vSet 2/mSet Lid Kit - 3.0 Bu Hopper (includes front and back lids)	736228	:		\$
vSet/mSet Harvest International 3.0 Bu Extension - (Makes mini hopper a 3.0 bu)	736246	:		\$
Insecticide/3.0 Bushel Hopper Bracket Kit - PPRU 2.0 (1 per row)	736280	:		\$
Shoup Insecticide Hopper Cradle and Hardware - PPRU 2.0 (1 per row)	PP9550	:		\$
Insecticide Hopper Kit (Gray) (1 per row)	PP1700G	:		\$

Step 4 - Row Unit Gauge Wheel Options

Gauge Wheels

Choose the desired gauge wheel width - 4.5" or 3".

- **If ordering Conceal gauge wheels under the Conceal section or 3rd party gauge wheels such as MudSmith, you will need to order the gauge wheel hardware kit below (ACX2195570)**
- **Both the 6002062PP and 6002064PP will come with all the necessary hardware.**

Item	Part #	Price	Qty	Total
4.5" Gauge Wheels (2 wheels + hardware)	6002062PP			\$
3" Gauge Wheels (2 wheels + hardware)	6002064PP			\$
Ready Row Unit Gauge Wheel Hardware Kit	ACX2195570			\$

Gauge Wheel Scrapers

Gauge wheel scrapers are optional. Each kit is a quantity for 4 row units (4 left scrapers, 4 right scrapers)

Item	Part #	Price	Qty	Total
Gauge Wheel Scrapers - 4.5" (4 Rows)	6001688PP			\$
Gauge Wheel Scrapers - 3" (4 Rows)	6002086PP			\$

Step 5 - Closing Wheel Options

Closing Wheel Kits

Select the desired closing system. The base row unit will come with no closing system installed so it will be necessary to purchase one. The closing options below all include the cast tail bracket with the down force spring and handle included. It can be ordered with no wheels (so you can source your own wheels or spike system), rubber wheels, or cast wheels.

Item	Part #	Price	Qty	Total
Closing Assembly - No wheels included (bracket only)	ACX3100710PP			\$
Closing Assembly - Rubber Wheels included	ACX3100690PP			\$
Closing Assembly - Cast Wheels included	ACX3100700PP			\$

Step 6 - Load Sensor

Load Sensor

The Precision Planting Ready Row Unit 2.0 requires a different load sensor than the original Precision Planting Ready Row Unit. Please order 1 per row below.

Item	Part #	Price	Qty	Total
Load Sensor Kit, AGCO (U.S. Momentum and Ready Row Unit 2.0)	712010			\$

Step 7 - Decal Options

Precision Planting Decals

Use the Decal kits below as desired.

Item	Part #	Price	Qty	Total
1.6 Bu Hopper Decal Kit (3 Left, 3 Rights) "Powered By Precision Planting"	957016			\$
Central Fill Tank Decal Kit (1 Left, 1 Right) "Powered By Precision Planting"	957017			\$
Precision Planting Corn Plant Decal (qty 16)	957018			\$
vSet Decal (For rear of 1.9 Bu hopper) (qty 4)	957015			\$
Row Number Decal for Hopper (Rows 1-24)	957009			\$
Row Number Decal for Hopper (Rows 25-48)	957010			\$

DeltaForce

Step 1 - DeltaForce Base Kit

SRM harnessing system is required to run DeltaForce. See the SRM Base system tab to quote all the parts necessary to run DeltaForce.

Also, if you are adding DeltaForce to an existing SRM base system, check the electrical current draw requirements to make sure an alternator is not required with the additional draw of DeltaForce.

Note 1: DeltaForce cylinders require **1/4 GPM per row** of Hydraulic flow at **2250 PSI (2500 PSI recommended, 3000 PSI Max)** and will require a **closed center hydraulic system** (DeltaForce will not work with open center tractors).

Note 2: Use the DeltaForce Hydraulic Requirements in the Order Resources located below before continuing to quote DeltaForce. It is critical that all the hydraulic requirements are met for DeltaForce to work properly. (For PDF order guide version, the order resources are appended to the end of the guide).

Note 3: If you are running an SRM system and the 2020 is not controlling the seeding drives, a 2020 Smart Connector is required to get seed data to the 2020. **Seedtubes can not be run through SRMs if vDrive or a hydraulic drive running through RowFlow is not installed.**

Note 4: If ordering DeltaForce for a **Gray Precision Planting Ready Row Unit**, order all parts as normal except for the row unit bracket. It is only necessary to order the 729314.

Note 5: Deltaforce is **not compatible with any setback bracket on a White 6/8/9000 greater than 4.5 inches** unless it moves the W plate to maintain the 14 inch parallel arm distance between the goal post and W plate.

DeltaForce Base Kit

One DeltaForce Base Kit required per planter

Item	Part #	Price	Qty	Total
DeltaForce Base Kit	729650	\$		\$

DeltaForce Base Kit Options

If your PDM is going to be mounted more than 3 feet away from the Lift Manifold, you will need the Lift Manifold Extension harness to plug the valve and pressure sensor into the PDM.

The AirForce Compressor Run kit is for a system that is running CleanSweep off an AirForce Compressor. This will allow the compressor to run without having an AirForce Module plugged in.

The Kinze Hydraulic Hose Guideway Assembly only works on Kinze 3600 planters.

Item	Part #	Price	Qty	Total
Lift Manifold Extension Harness (10 Ft)	729256			\$
AirForce Compressor Run Kit	729115			\$
Kinze 3600 Hydraulic Hose Guideway Assembly	729370			\$

Step 2 - DeltaForce Cylinders and Brackets

DeltaForce Cylinders

Order one per row.

Item	Part #	Price	Qty	Total
Hydraulic Cylinder	729602			\$

Row Unit Brackets

Case IH DeltaForce Bracket Compatibility Notes:

- DeltaForce is not compatible on **Case IH long parallel arms (only 14" Parallel arms are compatible)**
- DeltaForce is not compatible with **Case AccuDrive Cable Seed Drives**
- DeltaForce is not compatible with Case lower parallel arms with a **square cross member**. If the planter has a square cross member, you will need to source new parallel arms from Case with a round tube cross member
- **Case IH 1260/1265 ONLY** - Any Case 1260/1265 planter installing DeltaForce will need W plate stiffener brackets. On those planters there are 2 styles of welded W - Plates and one of them will required the stiffener bracket. In the row unit options below is a chart to help determine which rows on the planter will need the stiffener bracket.

For the Gray Precision Planting Ready Row Unit, only order the 729314 cylinder pin kit. The brackets will be preinstalled on the row unit.

Monosem Compatibility -

- DeltaForce is compatible on Monosem NG+3 and NG+4 row units.
- For Standard (Narrow) Parallel Arm Monosem row units use the 712105 mount kit.
- For Standard (Narrow) Parallel Arm Monosem with Monoshox Spring installed use mount kit 712106 - **There is a new rev of monoshox row units that are not compatible. Please see Monosem compatibility guide for more detail**
- For Wide Monosem Parallel Arm row units use the Monosem Wide Parallel Arm Mount Kit **729647**. Note: this bracket is painted black.

Item	Part #	Price	Qty	Total
JD 17xx/17x5/7200 Row Unit Mount Kit	729300			\$
JD Twin Row Unit Mount Kit	729396			\$
JD 7000 Row Unit Mount Kit	729393			\$
Kinze 3000 Pull Row Unit Mount Kit **	729310			\$
Kinze 3000 Push Row Unit Mount Kit	729350			\$
Kinze 4900 Row Unit Mount Kit	729395			\$
Kinze 2000 Row Unit Mount Kit	729340			\$
Case IH 1200/12xx Row Unit Mount Kit	729320			\$
White 6/8/9000 Row Unit Mount Kit (vDrive only) †§	729390			\$
White 6/8/9000 Row Unit Mount Kit (Non vDrive only) †§	729330			\$
Monosem Standard Parallel Arm (Narrow) Row Unit Mount Kit - NG+3, NG+4	712105			\$
Monosem Wide Parallel Arm (NG +4) - Row Unit Mount Kit	729647			\$
Monosem Standard Parallel Arm (Narrow) with Monoshox spring - Row Unit Mount Kit (NG+3, NG+4)	712106			\$
Vaderstad Tempo Row Unit Mount Kit	712445			\$
DeltaForce Cylinder Pin Kit (Gray Precision Planting Ready Row Unit and Harvest International Laser Pro)	729314			\$

† On some 7200 row units, it may be necessary to replace the lower parallel arms. Incompatible parallel arms will have a large cross member tube in the middle of the parallel arms instead of a small cross member near the row unit.

†† For White planters, a traditional W mount (mount is designed to hold an air bag) is required. This part should be sourced through the Agco Dealer if not currently installed on the planter. **For White large frame planters, DeltaForce is only compatible on the 8936 and 9936LF 30" row spacing models.**

§ DeltaForce is only compatible on White 6/8/9000 row units with setback brackets that move the W plate mounting bracket to maintain the same 14 inch parallel arm distance between the goal posts and the W plate.

** DeltaForce is **not** compatible with **Martin 6" parallel arm extensions**. Kinze 4" and Precision Planting 4.5" parallel arm extensions are compatible with lower bracket mounted long up

Row Unit Options - DeltaForce Only

The 729637 bracket will be necessary for the Case IH 1260/1265 planters. Order quantity based on the table below.

Stiffener Bracket table for Case IH 1260/1265 - **ONLY FOR 1260/1265**

Rows / Spacing	Total Brackets Needed	Rows that will need the stiffener bracket installed
36 Row 30"	26	1, 3-7, 9-15, 22-28, 30-34, 36
36 Row 22"	24	1, 3-13, 24-34, 36
36 Row 20"	24	1, 3-13, 24-34, 36
32 Row 30"	22	1, 3-7, 9-13, 20-24, 26-30, 32

A picture of the bracket is located in the install document with the part document below.

Note: On some John Deere planters that have a hex shaft that runs above the W plate, it may be necessary to add the 6" setback kit (72660) to provide clearance for the cylinder head around the hex shaft.

Item	Part #	Price	Qty	Total
Case IH 1260/1265 W Mount Stiffener Bracket - For DeltaForce	729637			\$
DeltaForce Stop Kit for Kinze 3000 Pusher Rows	729273			\$
SRM Offset Bracket for Smart Box *	730453			\$
Set Back Kit for JD 17xx/7200 (6" setback)	726660			\$
Set Back Kit for JD 7000 & Kinze (4.5" setback)	726480			\$

* Only use the SRM offset bracket for rows that have SmartBox installed with a mini hopper - this is not needed on 1.6 bu boxes. If installing vSet Classic with vdrive, use SmartBox Mini Hopper kit (730456) instead of the offset bracket.

Step 3 - Hydraulic Hose Kits

Inter Row Kits

One per row minus the number of frame sections

Example: a 24 row planter with 3 sections needs 21 inter-row Kits

Item	Part #	Price	Qty	Total
30" Inter-Row Kit	729610			\$
20"/22" Inter-Row Kit	729611			\$
36"/38" Inter-Row Kit	729612			\$
45" Inter-Row Kit	729613			\$

End Row Plug Kit

One required per frame section. Can use a End Row Diagnostic kit in place of the End Row Plug kit if desired.

Example: a 24 row planter with 3 sections needs 3 end row plug kits

Item	Part #	Price	Qty	Total
End Row Plug Kit	729614			\$
End Row Diagnostic Kit	729619			\$

Custom InterRow Fitting Kit

Needed if you are going to make custom inter-row hoses.

The 90 Degree fitting kit may be used in cases of tight clearances. Note that those will generally require longer hoses or custom hoses.

The Vaderstad tight clearance fitting kit is recommended for Vaderstad Tempo V and other planters with positive pressure tubes (or similar clearance issues) that force the cylinder to be mounted with the solenoid facing the rear of the planter.

Item	Part #	Price	Qty	Total
Fittings Kit for Custom Inter-Row Hose	729615			\$
90 Degree Cylinder Fitting Kit	729628			\$
Vaderstad Tempo Tight Clearance Fittings Kit	729764			\$

Frame Fitting Kits

Order 1 per planter (example: a 1770NT is a three frame planter - qty 1 of 729617 is required)

Item	Part #	Price	Qty	Total
2 Frame Hydraulic Fitting Kit	729616			\$
3 Frame Hydraulic Fitting Kit	729617			\$

Step 4 - Downforce Sensors

Downforce Sensors

DeltaForce requires a downforce sensor on each row (1/row). Order quantity and part number accordingly.

Note: Make sure that you did not double order downforce sensors (they can be quoted under SRM Base or here under DeltaForce)

Item	Part #	Price	Qty	Total
5/8" Smart Pin for JD7200/17XX	725580			\$
5/8" Smart Pin for JD 17x5, ME 5 Row Unit	725866			\$
Kinze 3000/4900 Smart Link	725466			\$
Case IH Load Sensor for 12xx/12x5 Series Row Unit	725875			\$
White 6000 Smart Link	725266			\$
White 8000 Smart Link (subs from 725729)	725869			\$
White 9000 1/2" Smart Pin/Gray PP ready 1.0	725887			\$
1/2" Smart Pin for JD7000/ Kinze 2000	725581			\$
Monosem 5/8" Smart Pin	712003			\$
Horsch Maestro Load Sensor	712009			\$
Load Sensor Kit, AGCO (U.S. Momentum and Ready Row Unit 2.0)	712010			\$
Vaderstad Tempo Load Sensor	712017			\$

Step 5 - Gen 3 Smart Connector

A Gen 3 Smart Connector is required if a Gen 3 is monitoring seeding data without vDrive! Only use if doing Gen 3 display with DeltaForce and no vDrive!!!

If DeltaForce is being installed the best way to add a Gen 3 Smart Connector is to get a backbone with an additional row drop to plug each Smart Connector into the backbone. Example - for a 1770 NT - 24 row, order a 5 row backbone for the center section. The backbone will plug into the 4 rows on the center and also the Smart Connector.

Remember that not all Smart Connectors are located in the center. Some may be located on the wing of the planter which would require more row drops on the wing backbones instead of the center section. You will need an additional row drop for each Smart Connector.

Smart Connector

Use the Gen 3 Smart Connector Guide below to assist in determining how many Smart Connectors are needed and if new planter harness is necessary. If a new planter harness is needed, make sure to select the correct one in the "Planter Harness" step that follows.

Item	Part #	Price	Qty	Total
Smart Connector - Gen 3	725160			\$

Smart Connector Adapters

Some planters will require adapter harnesses to adapt the Smart Connector to the OEM seed sensor harness. Use the guide below to determine which adapters may be necessary.

Item	Part #	Price	Qty	Total
Dickey-john™ Adapters	725234			\$
MetraPack Cable- Gray (-2002)	725209			\$
MetraPack Cable-White (4-16 Rows)	725282			\$
Wedge Box Adapter (2011) (17-24 Rows)	725624			\$
Wedge Box Adapter (2011) (25-32 Rows)	725626			\$
2012 DB Bulkhead Seed Harness Adapters	725701			\$
CIH Seed Sensor Module Adapter Harness	725838			\$
48 Row DB120 Receiver Harness (-2012)	725555			\$
48 Row DB120 Sender Harness (-2012)	725556			\$
54 Row DB Receiver Harness (-2012)	725454			\$
54 Row DB Sender Harness (-2012)	725455			\$

SeedSense Harness Options

Some systems will need additional adapters for different sensors and harnesses. Please review these to see if they are necessary.

ME5e (PRO Max 40 with electric drive) planters will require a new planter harness and a seed tube splitter (725062)

Item	Part #	Price	Qty	Total
3-Pin WP 18" seed tube sensor extension	725061			\$
JD ExactEmerge SeedSensor Adapter	725746			\$
Seed Sensor Gender Changer - Adapts White GTA Harness to PP (1/Row)	725717			\$
JD/DB Vacuum Sensor Voltage Regulator*	725707			\$
37-Pin Gender Changer for White GTA -Adapts from Smart Connector output to PP Harness	725718			\$
JD/DB Fertilizer Pressure Sensor Voltage Regulator*	725736			\$
Kinze Seed Sensor gender changer	725720			\$
Splitter Cable for Seed Tube Sensor	725062			\$

*-May be needed with Gen 2 & Gen 3 SmartConnector and SeedStar Systems

Step 6 - Planter Harness

Some planters will need a new planter harness if a Smart Connector is being installed. Select correct planter harness as necessary

John Deere Planter Harness

Item	Part #	Price	Qty	Total
12 row 30" Front Fold (7000/7200/1770 Cons.)	725350			\$
16 Row 30" Front Fold (8516)	725352			\$
24 row 30" Front Fold (7000/7200/1770 Cons.)	725351			\$
24 Row 30" Front Fold NT (1250)	725617			\$

Kinze Planter Harness

Item	Part #	Price	Qty	Total
4 Row 30,36,38" Rigid (2000/3000)	725300			\$
4/7 Row 30,36,38" (2000/3000)	725301			\$
6 Row 30,36,38" Rigid (2000/3000)	725302			\$
6 Row 30,36,38" 3-Pt.Mounted (2100/3110)	725303			\$
6 Row 30" L&T (2500/3500)	725304			\$
6/11 Row 30,36,38" Rigid (2000/3000)	725305			\$
6/11 & 6/12 Row 30" L&T (2500/3500)	725306			\$
8 Row 30" Rigid (2000/3000)	725307			\$
8 Row 30,36,38" 3-Pt.Mounted Rigid/Vert.Fold (2100/3110/3120)	725309			\$
8 Row 38,40" 3-Pt Stacker (2100/3140)	725310			\$
8 Row 36,38" Wing Fold/L&T (2200/2600/3200/3600)	725311			\$
8/15 Row 36,38" L&T (2600/3600)	725315			\$
10 Row 30" 3-Pt.Mounted (2100/3110)	725316			\$
12 Row 30" 3-Pt.Mounted Vert. Fold (2100/3120)	725317			\$
12 Row 30" 3-Pt.Stacker (2100/3140)	725318			\$
12 Row 36,38,40" 3-Pt.Stacker (2100/3140)	725319			\$
12 Row 30" Wing Fold (2200/3200)	725320			\$
12 Row 20,22" L&T (2400/3400)	725321			\$
12 Row 30" L&T (2600/3600/3650)	725322			\$
12 Row 36,38" L&T (2600/3600)	725323			\$
12 Row 30" Front Fold NT (1250)	725618			\$
12/23 Row 20,22" L&T (2400/3400)	725324			\$
12/23 & 12/24 Row 30" L&T (2600/3600/3650)	725325			\$
12/23 & 12/24 Row 33,38" L&T (2600/3600/3650)	725326			\$
16 Row 30" 3-Pt.Stacker(2100/3140)	725327			\$
16 Row 30" L&T (2600/3600/3650)	725328			\$
16 Row 30" Forward Fold (2700/3700)	725329			\$
16/31 & 16/32 Row 30" L&T (2600/3600/3650)	725330			\$
16 Row 38" Forward Fold (2700/3700)	725339			\$
16 Row 30" Front Fold NT (1250)	725619			\$
24 Row 20,22" Forward Fold (2700/3700)	725331			\$
24 Row 30" Forward Fold (2700/3700)	725332			\$
24 Row 30" Front Fold (3800)	725333			\$
24 Row 30" Front Fold NT (1250)	725617			\$
32 Row 30" Front Fold (3800)	725334			\$
36 Row 20" Forward Fold (2700/3700)	725335			\$
36 Row 30" Front Fold (3800)	725345			\$
8 Row 30" L&T (2500/3500)	725312			\$
8/15 Row 30" Rigid (2000/3000)	725313			\$
8/15 & 8/16 Row 30" L&T (2500/3500)	725314			\$

Case IH Planter Harness

Item	Part #	Price	Qty	Total
6 Row 30,36,38" Rigid (2000/3000)	725302			\$
6 Row 30,36,38" 3-Pt.Mounted (2100/3110)	725303			\$
8 Row 30" 3-Pt.Mounted (2100/3110)	725308			\$
8 Row 30,36,38" 3-Pt.Mounted Rigid/Vert.Fold (2100/3110/3120)	725309			\$
8 Row 30" Rigid (2000/3000)	725307			\$
8 Row 38,40" 3-Pt Stacker (2100/3140)	725310			\$
12 Row 30" 3-Pt.Stacker (2100/3140)	725318			\$
12 Row 30" L&T (2600/3600/3650)	725322			\$
12 Row 30" Front Fold NT (1250)	725618			\$
12 Row 36,38,40" 3-Pt.Stacker (2100/3140)	725319			\$
12/23 Row 30" L&T (1240)	725615			\$
16 Row 30" 3-Pt.Stacker(2100/3140)	725327			\$
16 Row 30" L&T (2600/3600/3650)	725328			\$
16 Row 30" Front Fold NT (1250)	725619			\$
16/31 Row 30" L&T (1240)	725616			\$
24 Row 20" L&T (1240)	725614			\$
24 Row 30" Front Fold NT (1250)	725617			\$
32 Row 30" Front Fold (1260)	725620			\$
36 Row 20,22" Front Fold (1260)	725610			\$
36 Row 30" Front Fold (1260)	725607			\$

White Planter Harness

Item	Part #	Price	Qty	Total
6 Row 30,36,38" Rigid (2000/3000)	725302			\$
6 Row 30,36,38" 3-Pt.Mounted (2100/3110)	725303			\$
6Row 36,38" L&T (8716)	725655			\$
6/11 Row 30" Rigid (8606)	725653			\$
8 Row 30" Rigid (2000/3000)	725307			\$
8 Row 30" 3-Pt.Mounted (2100/3110)	725308			\$
8 Row 30" L&T (2500/3500)	725312			\$
8 Row 38,40" 3-Pt Stacker (2100/3140)	725310			\$
8 Row 30,36,38" 3-Pt.Mounted Rigid/Vert.Fold (2100/3110/3120)	725309			\$
8 Row 36,38" Wing Fold/L&T (2200/2600/3200/3600)	725311			\$
8/15 Row 30" Rigid (8608)	725654			\$
8/15 Row 30" Wing Fold (8415)	725650			\$
12 Row 30" Wing Fold (2200/3200)	725320			\$
12 Row 30" Forward Fold (8182)	725567			\$
12 Row 22" 3-Pt.Mounted Rigid (8762)	725563			\$
12 Row 30" 3-Pt.Stacker (2100/3140)	725318			\$
12 Row 30" 3-Pt.Mounted Vert. Fold (2100/3120)	725317			\$
12 Row 30" L&T (2600/3600/3650)	725322			\$
12 Row 30" Front Fold NT (1250)	725618			\$
12/13 Row 30/15" Rear Fold (Black Mach,) (8342)	725561			\$
12/23 Row 30" L&T (1240)	725615			\$
12/23 Row 30" Front Fold (8523)	725651			\$
16 Row 30" Forward Fold (2700/3700)	725329			\$
16 Row 30" Front Fold NT (1250)	725619			\$
16/31 Row 30" Front Fold (8531)	725652			\$
16 Row 30" Front Fold (8516)	725352			\$
16/31 & 16/32 Row 30" Forward Fold NT (8831)	725656			\$
24 Row 20" Front Fold (8524)	725565			\$
24 Row 22" Front Fold (8524)	725564			\$
24 Row 30" Front Fold NT (1250)	725617			\$
24 Row 30" Front Fold (3800)	725333			\$
36 Row 30" Front Fold (1260)	725607			\$

vSet 2 - vDrive

Step 1 - vSet 2 Meters

To order vSet 2 Meters, it will be necessary to order a meter cover and meter housing that will be assembled as a complete meter on site. The meter housing half is the part of the meter that holds the seed disc, ejector, and bearing. The meter cover half is the part of the meter that will attach to the seed hopper and holds the singulator.

It will be necessary to select the desired cover and housing based on the products that will be installed or currently on the planter (ie SpeedTube, mSet, vDrive, etc). **Note that none of the meters will come with any crop kits. All crop kits will need to be selected at the crop kit step.**

Note: vSet 2 and mSet systems will only require 1 crop kit per row.

vSet 2 meters are required for the following -

- John Deere 17x5/ME5 (mini hoppers require vDrive), White 8000/9000, Monosem NG+3 & NG+4 (requires vDrive) and Gray Precision Planting Ready row units
- SpeedTube
- Peanuts and Canola crops
- mSet seed selectors

vSet 2 meters are the recommended meters for the following -

- John Deere 7200, 17xx, 17x5/ME5,
- Kinze 3000,
- Case IH 1200, 12x5 (vDrive required)
- White 8000/9000 (vDrive required)

vSet 2 meters are not compatible with the following -

- John Deere 7000
- Kinze 2000

Other Requirements for Kinze 4000 -

- vSet 2/mSet on a Kinze 4000 planter will require a WaveVision seed tube and sensor. Meter placement does not allow for the OEM seed tube to be used.

Note: If ordering for a **Gray Precision Planting Ready Row Unit**, order vSet as normal except for a hopper. Do not order the hopper since that will be ordered in the row unit section of the order guide. It will still be necessary to order the meter vacuum fittings and inlets. Pick planter make that is closest to toolbar that row units will be mounted to. Vacuum fittings will depend on the vacuum system that will be installed.

Note: Monosem planters will require new Bulleyes seed tubes (700287) or Wavevisions (700290) that will fit the vSet meter. The existing Bulleyes (700158) and Wavevision (700260) on Monosems can be modified to fit the vSet 2 meter.

SRM harnessing system is required to run vDrive or mSet. Please see the SRM Base system tab to make sure that you have all the parts necessary to run vDrive.

Meter Covers - 1/2 of the vSet meter

Select the correct vSet 2 meter cover based on what will be installed on the planter.

mSet -

****NEW 736305 and 736306 mSet seed covers include a metal rear retention post for use in rougher field conditions****

- mSet system will require vSet 2 meter housings and the vSet 2 mSet meter cover. Pick the correct mSet meter cover based on if SpeedTube or seed tube will be installed
- mSet is compatible on **John Deere 7200, 17xx, 17x5, Kinze 3000, Case 12x0, 12x5, White 8000,9000 (1.9 box only), Harvest International row units, and Gray Precision Planting Ready row unit.** mSet can not be put on DB 120 planters and will require 1.6/1.9 + Bulk fill on planters that are over 32 rows.
- mSet hoppers are **not compatible on 15" and narrower row planters unless it is a push pull Kinze frame.** The hoppers are wider than 15 inches.
- mSet hoppers are compatible on 1790 20" planters but will require some modification to the CCS ladder.
- mSet meter covers include the mSet seed level sensor.
- If the grower currently has vSet 2 installed, he will only need the correct mSet cover (either SpeedTube or seed tube).

vSet 2 -

****New 768810 and 768812 vSet 2 seed covers include a metal rear retention post for use in rougher field conditions****

- Select the correct cover based on if the meter will be running with SpeedTube or seed tube.
- All meter covers will work on mSet Hoppers and the non mSet covers will work on vSet 2 hoppers.
- If the grower is going to install SpeedTube and is going to plant crops other than just Corn and Soybeans, he will need a regular **seedtube meter cover (#768314)** for those crops that are not supported with SpeedTube.
- If the grower currently has vSet 2 with seed tubes installed, he will only need the **SpeedTube meter cover (#768643)** to convert his meters to SpeedTube ready.
- **Monosem planters have a specific meter cover that has a short seed chute - make sure that the correct cover is ordered for Monosem planters**

Item	Part #	Price	Qty	Total
vSet 2 Seed Cover seed tube Ready - (not for use with SpeedTube)	768314			\$
vSet2 Seed Cover seed tube Ready w/ Rear Retention Post (not for use with SpeedTube)	768810			\$
vSet2 Seed Cover SpeedTube Ready w/ Rear Retention Post (use with SpeedTube)	768812			\$
vSet 2 Seed Cover seed tube Ready - Short seed chute (Monosem and Gasparido only)	768748			\$
vSet 2 - mSet Seed Cover seed tube Ready w/ Rear Retention Post (not for use with SpeedTube)	736305			\$
vSet 2 - mSet Seed Cover SpeedTube Ready w/ Rear Retention Post (use with SpeedTube)	736306			\$
vSet 2 Seed Cover SpeedTube Ready - (use with SpeedTube)	768643			\$
vSet 2 - mSet Seed Cover - SpeedTube Ready (use with SpeedTube)	736204			\$
vSet 2 - mSet Seed Cover - seed tube Ready (not for use with SpeedTube)	736200			\$

Meter Housing - 1/2 of the vSet meter

The vSet 2 meter housing will work with mSet, vSet 2, and vDrive. It will not work with vSet Classic housing. The vSet 2 housing does not come with any crop kits installed. It will be necessary to order Crop kits separately.

The vSet 2 meter housing does not come any vacuum tube inlets installed on it. This is different than previous vSet 2 meters!!!!!! Vacuum inlets are listed with respective hopper styles since the hopper will dictate what inlet to use. The Vacuum inlet is the part that screws to the meter and attaches to the row unit hose fitting.

Select the correct housing based on if vDrive is desired or not.

The vSet mechanical cover with vDrive (768730) has been updated to the new vDrive 2.0

vDrive 2.0 will **not** work on the following due to interference issues:

1. CNH 2000 row units (at least until CNH updates the design)
2. vSet Classic
3. vDrive Insecticide
4. vSet Select
5. Monosem/ Gespardo
 - o The 768748 meter cover will need a 768729 vSet 2 Housing (w/out vDrive) and in addition on the vDrive step of the order guide, order a 730050 vDrive (which is the old style vDrive) and 768332 vDrive Conversion kit, the vDrive and Conversion kit will need to be assembled on the vSet 2 Housing

Item	Part #	Price	Qty	Total
vSet 2 Housing - with vDrive installed (Replaces 768723)	768730			\$
vSet 2 Housing	768729			\$

Make sure that you order the correct meter vacuum inlet under the hopper section!!!!!!!

vSet 2 Meter Accessories

- o The vDrive motor can be moved from the vSet Classic meter to the vSet 2 with no issues. Order the **vDrive Conversion Kit (#768332)** to finish the move from vSet Classic to vSet 2 (includes harness clip, hardware, and hand drive knob). Not necessary if ordering new vSet 2 meters with vDrive installed.
- o Use the Pin Punch Tool (**#730312**) with the Conversion Kit to install the hand drive knob.

Item	Part #	Price	Qty	Total
vDrive Conversion Kit (Harness clip, turn knob, hardware) (1/row)	768332			\$
Pin Punch Tool (Used with Conversion kit) (1/Planter)	730312			\$
vSet2 Cleanout Chute Retrofit Kit	768840			\$
Kit, Seed Tube Flap	768860			\$
Kit, SpeedTube Flap	768861			\$

Step 2 - Crop Kits

For all questions about what crops are available for vSet 2 meters, please see the Crop Setup Guide located [here](https://cloud.precisionplanting.com/products/) (<https://cloud.precisionplanting.com/products/>)

vSet 2 Crop Kits

Pay close attention what is included in each kit. Not all crop kits contain all the parts required to run that crop. The vSet 2 Crop Ordering Guide is located below and also appended to the end of the PDF Guide.

Note: for the 56 -hole Soybean disk, use the Soybean singulator for systems that are running SpeedTube. The Corn singulator may be used for small seed when running seed tubes. The 56 - hole disk is limited to 120 seeds/sec - i.e. 140K on 30" rows at 10 mph.

The blank seed disc can be up to a 48 hole disc and will need to be ordered separately along with the correct ejector. Singulator that will be used is based on the crop that is being ran.

768814 --The Small Grains Spacer Kit is designed to keep small seeds like canola from leaking out past the singulator, getting ground up in the vDrive, and leaking from the meter. This kit is enough to do 4 rows.

****NOTE: The canola kit (768348) has been updated to include a small grains spacer kit. If ordering the canola kit new, it is not necessary to order the 768814 separately.****

Item	Part #	Price	Qty	Total
vSet 2 Corn Crop Kit (Includes Disk, Singulator, Ejector)	768341			\$
vSet 2 Soybean Crop Kit (Includes Disk, Singulator, Ejector)	768342			\$
vSet 2 - 56 Hole Soybean Crop Kit (includes disk, ejector, {no singulator})	768690			\$
vSet 2 Medium Edible Bean Crop Kit (Includes Disk, Singulator, Ejector, Large Seed Brush Kit)	768349			\$
vSet 2 Large Edible Bean Crop Kit (Includes Disk, Ejector, Large Seed Brush Kit)	768343			\$
vSet 2 Singulated Cotton High Rate Crop Kit (includes disk, ejector)	768499			\$
vSet 2 Hill Drop Cotton Crop Kit - 2 Seed (includes ejector, disc, brush kit)	768344			\$
vSet 2 Hill Drop Cotton Crop Kit - 3 Seed (includes ejector, disc, brush kit)	768345			\$
vSet 2 Large Sugarbeet/Milo/Sorghum Crop Kit (includes ejector, disk)	768347			\$
vSet 2 Peanut Crop Kit (includes ejector, disc, brush kit)	768429			\$
vSet 2 Large Peanut Crop Kit (includes ejector, disk, brush)	768650			\$
vSet 2 Canola Crop Kit (includes ejector, disk, wiper kit)	768348			\$
vSet 2 Wheat Crop Kit (includes ejector, disk, restricting brush)	768665			\$
vSet 2 Small Grains Spacer Kit (4 pack)	768814			\$

vSet Seed Disk

All Specialty Disks are 27 hole disk and will require the specialty ejector. Normal use of the specialty disk will use corn singulator. For supported crops, please refer to the crop setup guide listed above.

The blank seed disc can be up to a 48 hole disc and will need to be ordered separately along with the correct ejector. Singulator that will be used is based on the crop that is being ran.

Item	Part #	Price	Qty	Total
Corn Disk	730079			\$
Soybean Disk	730039			\$
56 Hole Soybean Disk	768687			\$
Specialty Disk - .100"	730080			\$
Specialty Disk - .115"	730081			\$
Specialty Disk - .125"	730082			\$
Specialty Disk - .135"	730083			\$
Specialty Disk - .145"	730084			\$
Specialty Disk - .155"	730085			\$
Singulated High Rate Cotton Disk	730296			\$
Cotton 2-Hill Drop Disk	730292			\$
Cotton 3-Hill Drop Disk (replaces 730293)	730298			\$
Small Sugarbeet Disk	730290			\$
Large Sugarbeet Disk	730291			\$
Medium Edible Bean Disk	730295			\$
Large Edible Bean Disk	730294			\$
Peanut Disk - vSet 2 only	730361			\$
Large Peanut Disk - vSet 2 only	768651			\$
Canola Disk - vSet 2 only	768338			\$
Wheat Disk - vSet 2 only	768663			\$
vSet Blank Disk - up to 48 holes	730519			\$

vSet 2 Singulators

Item	Part #	Price	Qty	Total
Corn Singulator - 6 lobe (replaces 730063, vSet 2 and Classic)	768355			\$
Soybean Singulator (replaces 730065)	768360			\$
Medium Edible Bean Singulator	768430			\$

vSet 2 Ejectors

The blank seed disc can be up to a 48 hole disc and will need to be ordered separately along with the correct ejector. Singulator that will be used is based on the crop that is being ran.

Item	Part #	Price	Qty	Total
Corn Ejector Assembly - vSet 2	768291			\$
80 Hole Soybean Ejector Assembly - vSet 2	768292			\$
56 Hole Soybean Ejector Assembly - vSet 2	768689			\$
Specialty Ejector Assembly - vSet 2	768293			\$
Sugarbeet Ejector Assembly - vSet 2	768295			\$
Cotton 2-Hill Drop Ejector Assembly - vSet 2	768296			\$
Cotton 3-Hill Drop Ejector Assembly - vSet 2	768297			\$
Large Edible Bean Ejector - vSet 2	768294			\$
Canola Ejector Kit - vSet 2 (Includes Wiper and Ejector assembly)	768335			\$
Blank Disk vSet 2 Ejector	768780			\$

vSet 2 Misc Parts

If planting small seed crops with bulk fill, it may be necessary to replace the D-Tube screen with the milo screen (720253) or the Canola/Radishes/Wheat screen (720288)

If the disk needs to be shimmed out to make it tighter in the meter, use the disk shim kit (730279)

Item	Part #	Price	Qty	Total
D-Tube Screen - Milo	720253			\$
D-Tube Screen - Canola/Radishes/Wheat	720288			\$
Disk Shim Kit	730279			\$

Step 3 - John Deere

This step is for John Deere planters only. Skip this step and go on to the next if you do not have a John Deere planter.

Make sure that you go all the way through this step and select the correct vacuum fittings and inlets.

vSet 2/mSet Hoppers are mSet Compatible and will work with both mSet meter covers and seed selectors and also vSet 2 only meters. They will also work with SpeedTube. They will not work with vSet Select or vSet Classic meters. mSet compatible hoppers can be used with vSet 2 meters to start with and can add mSet components at a later date.

1790/1795 - 20 inch row spacing planters are compatible with mSet hoppers but will require a ladder setback kit (731389) and a 1790 Step Kit (720196). When installing the step kit you will need to drill new holes and set the ladder back to clear the hopper.

vSet 2 hoppers will work for vSet 2 meter systems but they will not fit with mSet seed selectors.

- All vSet 2 mini hoppers require vDrive to run the meter. Mini hoppers can not be run by cable drive or chains.
- All mechanical drive systems will require a butterfly drive (730268) - Listed in planter parts below.
- For 1.6 Bu box it will be necessary to reuse the John Deere hopper lid or source one from Shoup MFG. The Precision Planting lid does not fit the John Deere vSet 2 style box.
- **vSet 2 only hoppers do not work with mSet meter covers!**

Note: Some part numbers listed in this section are Shoup Manufacturing part numbers and must be ordered from Shoup - 1-800-627-6137 or www.shoupparts.com. Shoup parts will start with SH or PP prefixes and are not from Precision Planting. They will not qualify for any discounts that Precision Planting offers.

vSet 2 & mSet Compatible Mini Hoppers

vSet 2 / mSet

- vSet 2/mSet Mini hoppers will need a mini hopper finish kit (736034) (will include rear post, hopper pucks, lid, single bulk fill inlet)
- vSet 2/mSet hoppers (both mini and 1.6) are not compatible on 15" row John Deere planters.
- mSet style mini hoppers and 1.6 bu hoppers are compatible with JD 1790/1795 20" planters, but additional modification to the CCS ladder will be necessary.
- **Mini hoppers on rows over 32** - If installing Mini hoppers on planters that are over 32 rows, it will be necessary to add the Dual Bulk Fill Inlet kit for all rows over 32. One per row over 32.
- SmartBox brackets and vSet2/mSet mini hoppers are not compatible. It will be required to use a ME5 style insecticide bracket to hold the SmartBox. See below for details.

Note: When installing the pro series mini hoppers (768280) on a 1790/1795 20" planter with DeltaForce it is necessary to install the 45 degree seed delivery coupler 731065 or 731115 (orange or blue respectively, but which color you use does not matter) on any row that flips up with short parallel arms. Otherwise, the CCS hose can come into contact with the DeltaForce cylinder and break the coupler.

Item	Part #	Price	Qty	Total
vSet 2/mSet - John Deere Mini Hopper (replaces 736033)	736141	:		\$
vSet 2/mSet Mini Hopper Finish Kit (John Deere, Harvest)	736034	:		\$
vSet 2/mSet Mini Hopper Dual Bulk Fill Inlet (vSet 2/mSet hopper only)	736056	:		\$
vSet 2 John Deere Pro-Series Mini Hopper Kit (XP, ME5) - not for mSet	768280	:		\$

vSet 2 Hoppers & mSet Compatible 1.6Bu

vSet 2/mSet Hoppers are mSet Compatible and will work with both mSet meter covers and seed selectors and also vSet 2 only meters. They will also work with SpeedTube. They will not work with vSet Select or vSet Classic meters. mSet compatible hoppers can be used with vSet 2 meters to start with and can add mSet components at a later date.

- The 1.6 bu box is a mini hopper plus an extension that makes it a 1.6 bu hopper. It can be ordered 2 different ways -
 - The 736093 is a completed assembled mini hopper and extension to make it a 1.6 Bu hopper.
 - Order a 736141 mini hopper and 736130 1.6 Bu extension and assembly it on site.
- Original John Deere lids will not fit the vSet 2/mSet hopper. It will be necessary to order a vSet 2/mSet Lid kit to complete the 1.6 Bu hopper. Other Precision Planting lids will not fit the vSet 2/mSet hopper. Do not order a single lid if the desire is to run a 2 hybrid system.
- vSet 2/mSet hoppers (both mini and 1.6) are not compatible on 15" row John Deere planters. The vSet 2 mini hopper is required for 15" rows.
- **John Deere ME5 1.6** bushel vacuum planters that are cable driven will require a rear support post (**736150**) and the hopper donuts (**736218**) (for both vSet and mSet style boxes). These parts are listed in the John Deere Planter Parts section below.

vSet 2 hoppers will work for vSet 2 meter systems but they will not fit with mSet seed selectors.

- All mechanical drive systems will require a butterfly drive (730268) - Listed in planter parts below.
- **For 1.6 Bu box it will be necessary to reuse the John Deere hopper lid or source one from Shoup MFG. The Precision Planting lid does not fit the John Deere vSet 2 style box.**

Item	Part #	Price	Qty	Total
vSet 2/mSet Single 1.6 Bu Hopper Lid - John Deere (vSet 2/mSet boxes only!!!)	736068			\$
vSet 2 John Deere 1.6 Bu Hopper Kit (ME2/+, XP ME5 Row units) - not for mSet	768455			\$
vSet 2/mSet John Deere 1.6 Bu Hopper	736093			\$
vSet 2/mSet John Deere 1.6 Bu Extension - (makes mini hopper a 1.6 Bu Hopper)	736130			\$

All Shoup Part numbers must be ordered from Shoup Manufacturing - **1-800-627-6137** or **www.shoupparts.com**

vSet 2 & mSet Compatible 3.0 Bu Hoppers

vSet 2 / mSet Compatible 3.0 Bu Hoppers

- 3.0 Bu box for vSet 2/mSet is a mini hopper plus a 3.0 Bu extension that makes it a 3.0 Bu hopper. The fully assembled 3.0 Bu hopper is 736227. An existing mini hopper can be changed to a 3.0 Bu box by adding the 736231 extension to the mini hopper.
- All 3.0 Bu hoppers will require the Lid Kit (**736228**) in addition to the 736227 or 736231.
- All existing 3.0 Bu systems (except for ME5) do not need any additional brackets. If adding 3.0 Bu boxes to a planter that was 1.6 or mini hopper, the 3.0 Bu box requires the rear insecticide brackets.
- ME5 with 3.0 Bu hoppers do not have a rear support post in the location of a 1.6 bu box. Our vSet2/mSet box requires the 1.6 rear support. Options are listed below to add the 1.6 Bu rear support
 - Remove the John Deere existing side panel and panel support and use 736150 rear post form Precision Planting (for visual of this JD bracket look at Shoup PP2735 below) - **Only works with vDrive, mechanical drive will need to use one of the options below.**
 - OR use the existing side panel with John Deere rear post A93595. (Reference the Shoup hopper support section below for a visual of this support bracket - PP2730)
 - OR use Shoup PP2730 style rear post (Note: PP2735 style support does not work).
 - The 736150 rear post is listed in the John Deere planter parts section. If Hopper Donuts are not currently installed, they can be added in the John Deere planter parts section as well.

Note: If installing 3.0 Bu boxes on ME5 with SpeedTube it will be necessary to add the 736252 SpeedTube Dust Cover Retention Bracket

Item	Part #	Price	Qty	Total
vSet 2/mSet John Deere 3.0 Bu Hopper	736227			\$
SpeedTube Dust Cover Retention Bracket (3.0 Bu & ME5)	736252			\$
vSet 2/mSet Lid Kit - 3.0 Bu Hopper (includes front and back lids)	736228			\$
vSet2/mSet John Deere 3.0 Bu Extension - (makes mini hopper a 3.0 bu)	736231			\$

Meter Vacuum Inlet Kits

Each Meter cover half will need a vacuum inlet kit. Pick the correct inlet kit using the list below.

This is for all vSet 2 Meters regardless of if going on vSet 2 / mSet compatible hoppers or vSet 2 hoppers

- **768718 Vertical Inlet** - use this kit for vSet 2 mini hoppers (**do not use this with mSet hoppers. It does not fit**)
- **768719 Forward Inlet** - This inlet comes off the meter and points to the front of the row unit. Can be used with all 1.6 bu and 3.0 bu boxes (vSet 2 and mSet boxes mini and 1.6)
- **768721 Straight Inlet** - This inlet points directly to the side of the row unit. Can be used with all mSet boxes (mini, 1.6 and 3.0 bu). Works well to reuse John Deere 90 Degree elbow on OEM Row unit hose.

Item	Part #	Price	Qty	Total
vSet 2 Meter Vacuum Vertical Inlet Kit	768718			\$
vSet 2 Meter Vacuum Forward Inlet Kit	768719			\$
vSet 2 Meter Vacuum Straight Inlet Kit	768721			\$

Vacuum

Reusing Existing John Deere Vacuum System-

- Requires 731188 or the 730176 fitting kit to connect the row unit hose to the meter
- If using the straight inlet for vSet 2 - mSet compatible Mini hopper the JD 90° will work - no need to for additional row unit hose fitting. (or use the 768034 fitting with 1.25" hose)
- 1.25" hose does not need to be replaced
- **Additional Vacuum blowers or larger motors may be required for SpeedTube. See the Vacuum section of the order guide for details**

Installing a new Vacuum system on the planter -

- Recommendation is to use 1.5" hose
- Use the 731183 Fitting kit to connect the hose to the meter and vac manifold (1/row) [kit contains 2 - 135° fittings]
- The Saddle kit (731190) is also required for new vacuum installs (1/row)

Item	Part #	Price	Qty	Total
vSet 2 Meter Fitting for 1.25" hose	731188			\$
vSet Classic Straight Fitting for Existing Vac - 1.25" hose	730176			\$
vSet 2/SpeedTube - New PP Vac System Fitting Kit - 1.5" hose	731183			\$
vSet 2 Saddle Kit	731190			\$
vSet 90° Elbow Fitting - 1.25" hose	768034			\$

Row Unit Hose

Estimated usage is about 4 ft per row.

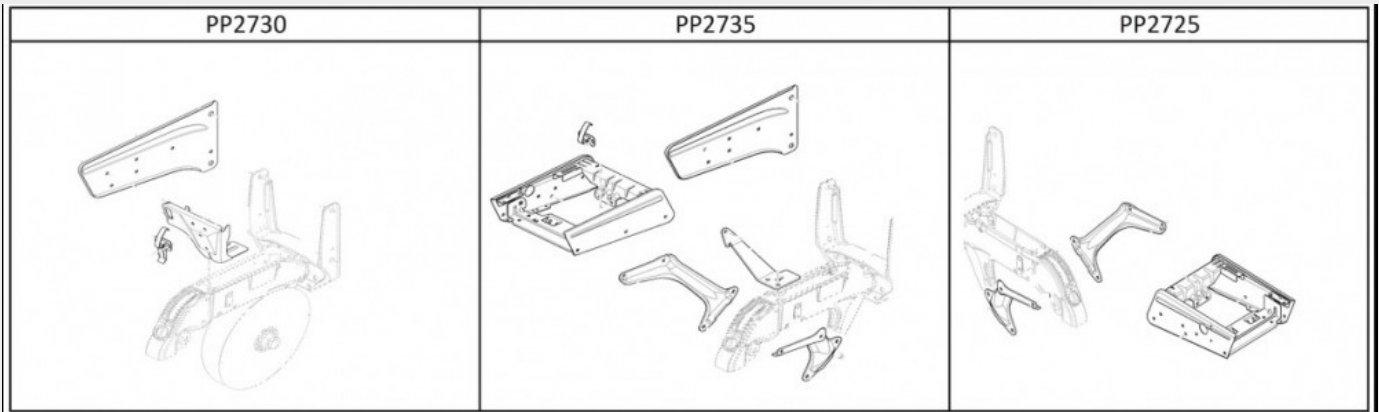
Item	Part #	Price	Qty	Total
25' Roll of 1.5" Diameter Bulk Hose	731102			\$
50' Roll of 1.5" Diameter Bulk Hose	731103			\$

Shoup Hopper support panels - ME5 Row units

Shoup is offering side panel and hopper support kits for 1.6 and 3.0 bu vSet 2 hoppers on **ME5 row units**. See list below for what is required with different configurations

- 1.6 Bu vSet 2 hopper with vDrive can use either the 731360, PP2730, or JD equivalent.
- 1.6 Bu vSet 2 hopper with Mechanical drive will require the PP2730 or JD equivalent. Also if converting from John Deere Vacuum 1.6. bu box, a panel mounted gearbox will be required as well.
- If replacing John Deere vacuum 3.0 bu box on ME 5 row unit with a vSet meter that is going to be ran with mechanical drive, it will be necessary to source from John Deere the side panel to mount the drive assembly to. John Deere part numbers are A92724 and A92725 plus the hardware.

All Shoup Part numbers must be ordered from Shoup Manufacturing - 1-800-627-6137 or www.shoupparts.com



Item	Part #	Price	Qty	Total
1.6 Bu Hopper Support - For Mechanical Drive (includes side and rear supports) (Shoup Part)	PP2730			\$
3.0 Bu Hopper Support - for vDrive (Includes the rear support - no side support) (Shoup Part)	PP2725			\$
3.0 Bu Hopper Support - for Mechanical Drive (Includes side and rear supports) (Shoup Part)	PP2735			\$

John Deere Planter Parts

- All mechanical drive systems will require the Butterfly drive (730268)
- If the grower wants to use 1.6 bu box (vSet 2 only, not mSet) with CCS, he will need to order the 1.6 bu vSet 2 box and then order the **1.6 bu CCS template (768560) (1/planter)**. This will allow him to use John Deere's 1.6 bu CCS fittings on the vSet 2 box with vSet 2 meters
- The 731360 - 1.6 Bu Rear support post only works with vDrive. Mechanical drive systems will require side panels (source either from John Deere or Shoup as explained in the section above)
- For all planters that are over 32 rows with CCS, it will be required to order the Pro Series Y Tube. 1 for every row over 32 (a 36 row planter needs 4).
- If SmartBox is installed on the planter one of the SmartBox adapters may be required. Use the 730453 for systems that are running just vSet with vDrive. For systems that are running SpeedTube or vSet Select, the 731145 kit is required.

Item	Part #	Price	Qty	Total
Butterfly Drive	730268			\$
SRM Offset Bracket for Smart Box *	730453			\$
Smart Box Adapter Kit*	731145			\$
XP/ME5 Pro Series 1.6 Bu Hopper Mount Kit - includes rear support post	731360			\$
John Deere/Harvest Hopper Support - Rear Post - Only for mSet Hoppers	736150			\$
JD Hopper Puck (need 2 per row)	736218			\$
Template - 1.6 Bu with CCS - old vSet 2 hoppers	768560			\$
John Deere Pro Series Y Tube (DB 32+ rows and more) **	730383			\$

*Note: the SmartBox adapter/bracket is only necessary on the rows that have SmartBoxes installed. Make sure that you are ordering the correct brackets based on what is installed.

** Does not work with vSet 2 - mSet Compatible hoppers. Use the Dual inlet option for the vSet 2 - mSet mini hopper.

SmartBox Mounting Bracket - (Required if using mSet mini hoppers and SmartBox)

If installing mSet mini hoppers on a planter with Pro Series SmartBox brackets, you will need to remove the SmartBox brackets and replace them with the Shoup MFG version of the ME 5 Style Insecticide support brackets.

- **This bracket must be ordered from Shoup MFG - 1-800-627-6137**

Item	Part #	Price	Qty	Total
Hopper Support Bracket Kit for John Deere (XP, ME5) - Brackets only! No hopper or Lid! (Shoup Part)	PP1605			\$

Note 1: Shoup ME 5 Style insecticide hopper supports works on John Deere Row units XP, ME5, and ExactEmerge. Does not work on 1720CCS Planters

Note 2: Bracket Kit includes Insecticide hopper support panels (PP1605) for systems that do not have insecticide installed. **No hopper or lid included!**

Note 3: **PP1605 hopper support panels will need an ME 5 style load pin (PP part # 725886)**

John Deere 1790

- All 1790 planters will require the Flap kit to keep seed from spilling out when tipping up the row units.
- The stair kit is only necessary on 20" row spacing 1790 planters. 15/30 inch planters do not need the stair kit.
- All 1790 planters will need the CCS Elbow kit. (1/planter)

Item	Part #	Price	Qty	Total
John Deere 1790 Flap Kit - vSet 2 (replaces 768411)	768763			\$
Step Kit - Stairs on 20" 1790/1795	720196			\$
CCS 90 Degree Elbow (Kit of 4)	720206			\$

Step 4 - Kinze

This step is for Kinze planters only. Skip this step and go on to the next if you do not have a Kinze planter

Make sure that you go all the way through this step.

Note 1: The auger fill system on a 3650 is not compatible with vSet 2 hoppers. our hoppers will fit the row unit but the auger fill will not attach to the vSet 2 hoppers. Converting the system over to a 1.9 Bu box will work on a 3650. A vSet classic meter will fit on finger style Kinze Box if the box is slightly modified.

Note 2: Kinze pusher airbags are not compatible with vSet 2/mSet style hoppers (both mini and 1.9 bu). If the pusher airbag is being used, those row units will require the vSet 2 hoppers

Note 3: vSet 2/mSet on a Kinze 4000 planter will require a WaveVision seed tube and sensor (700285). Meter placement does not allow for the OEM seed tube to be used. It also requires a seed tube spacer (700331) which can be found in the WaveVision section of the order guide, and the Keeton quick attach bracket (150150) which can either be found in the WaveVision section or Keeton section of the order guide.

Kinze Mini Hoppers

vSet 2/mSet Hoppers are mSet Compatible and will work with both mSet meter covers and seed selectors and also vSet 2 only meters. They will also work with SpeedTube. They will not work with vSet Select or vSet Classic meters. mSet compatible hoppers can be used with vSet 2 meters to start with and can add mSet components at a later date.

- vSet 2/mSet will not fit on Kinze 2000 row units.
- vSet 2/mSet Mini hoppers will need a mini hopper finish kit
- **Mini hoppers on rows over 32** - If installing Mini hoppers on planters that are over 32 rows, it will be necessary to add the Dual Bulk Fill Inlet kit for all rows over 32. One per row over 32.

vSet 2 hoppers -

- **vSet 2 only hoppers do not work with mSet meter covers!**
- Finger Style hopper lids can be reused with the vSet 2 box.
- OEM Vacuum box lids do not fit the vSet 2 box

Select the correct hopper for your planter. Finger style hopper lids can be reused with the vSet 2 boxes. Vacuum box lids do not fit the vSet 2 box.

The 729757 SRM Mount kit is recommended for all Kinze 4000 vSet 2/vDrive installs.

Item	Part #	Price	Qty	Total
vSet 2/mSet Kinze Mini Hopper	736156			\$
vSet 2/mSet Kinze Mini Hopper Finish Kit	736191			\$
vSet 2/mSet Kinze 4000 Mini Hopper	736310			\$
vSet2/mSet Kinze 4000 Mini Hopper Finish Kit	736334			\$
Kinze 4000 SRM Mount Kit	729757			\$
vSet 2/mSet Mini Hopper Dual Bulk Fill Inlet (vSet 2/mSet hopper only)	736056			\$
vSet 2 Kinze 3000 Mini Hopper Kit	768285			\$

Kinze 1.9 Bu Hoppers

vSet 2/**mSet** Hoppers are mSet Compatible and will work with both mSet meter covers and seed selectors and also vSet 2 only meters. They will also work with SpeedTube. They will not work with vSet Select or vSet Classic meters. mSet compatible hoppers can be used with vSet 2 meters to start with and can add mSet components at a later date.

- vSet 2/**mSet** will not fit on Kinze 2000 series row units.
- The 1.9 bu box is a mini hopper plus an extension that makes it a 1.9 bu hopper. It can be ordered 2 different ways -
 - The 736175 is a completed assembled mini hopper and extension to make it a 1.9 Bu hopper.
 - Order a 736156 mini hopper and 736172 1.9 Bu extension and assembly it on site.
- All original Kinze lids will not fit the vSet 2/**mSet** hopper. It will be necessary to order a vSet 2/**mSet** Lid kit to complete the 1.9 Bu hopper. Other Precision Planting lids will not fit the vSet 2/**mSet** hopper. Do not order a single lid if the desire is to run a 2 hybrid system.

vSet 2 hoppers -

- **vSet 2 only hoppers do not work with mSet meter covers!**
- Finger Style hopper lids can be reused with the vSet 2 box.
- OEM Vacuum box lids do not fit the vSet 2 box

Select the correct hopper for your planter. Finger style hopper lids can be reused with the vSet 2 boxes. Vacuum box lids do not fit the vSet 2 box.

Item	Part #	Price	Qty	Total
vSet2/ mSet Kinze 1.9 Bu Hopper Kit	736175			\$
Single 1.9 Bu Hopper Lid - Kinze (vSet/ mSet hopper only!!!)	736165			\$
vSet 2/ mSet Kinze 1.9 Bu Extension - (makes a mini hopper a 1.9 bu Hopper)	736172			\$
vSet 2 Kinze 3000 1.9 Bu Hopper Kit	768465			\$
vSet 2/Classic Hopper Lid for Kinze 1.9 Bu Precision Planting Hopper	730365			\$
vSet 2/ mSet Harvest 1.6 Bu Extension - (makes mini hopper a 1.6 Bu Hopper)	736134			\$
Single 1.6 Bu Hopper Lid - Harvest International (vSet 2/ mSet hoppers only!!!)	736137			\$

Kinze 4000 Full Size Hoppers

For Kinze 4900 planters, order the mini hopper 736310 from above, and the 736134 (extension) and 736137 (lid) below. It will also be necessary to order the 768843 meter boot.

Item	Part #	Price	Qty	Total
vSet 2/ mSet Harvest 1.6 Bu Extension - (makes mini hopper a 1.6 Bu Hopper)	736134			\$
Single 1.6 Bu Hopper Lid - Harvest International (vSet 2/ mSet hoppers only!!!)	736137			\$
Meter Boot- KZ4900	768843			\$

Meter Vacuum Inlet Kits

Each Meter cover half will need a vacuum inlet kit. Pick the correct inlet kit using the list below. This is for both vSet 2 / mSet compatible hoppers and all vSet 2 hoppers

- **768718 Vertical Inlet** - use this kit for vSet 2 mini hoppers (**do not use this with mSet hoppers. It does not fit**)
- **768719 Forward Inlet** - Can be used with all 1.6/1.9bu boxes (vSet 2 and mSet boxes mini and 1.6/1.9). Use this for all Kinze 4900 installs.
- **768720 1.9Bu Pusher Inlet** - used with 1.9Bu boxes on Kinze pusher rows
- **768721 Straight Inlet** - Can be used with all mSet boxes (mini and 1.6/1.9). Works well to reuse John Deere 90 Degree elbow on OEM Row unit hose.

Item	Part #	Price	Qty	Total
vSet 2 Meter Vacuum Vertical Inlet Kit	768718			\$
vSet 2 Meter Vacuum Forward Inlet Kit	768719			\$
vSet 2 Meter Vacuum Straight Inlet Kit	768721			\$
vSet 2 Meter Vacuum 1.9 Bu Pusher Inlet Kit	768720			\$

Vacuum Fittings

Installing a new vacuum system on the planter -

- Recommendation is to use 1.5" hose
- Use the 731183 Fitting kit to connect the hose to the meter and vac manifold (1/row) [kit contains 2 - 135° fittings]
- The **Saddle Kit (731190)** is also required for the new vacuum installs

If the planter is an OEM vacuum planter -

- Replace the 2" row unit hose with 1.5" row unit hose.
- The **731175** or **731176** fitting kits will be **required to connect the row unit hose to the manifold and meter**. *Inspect the planter* to determine how many of each style you will need (down facing - 731176 or back facing - 731175). Each kit contains a fitting to adapt to Kinze's manifold and a fitting to go on the meter.

If the planter already has Precision Planting Vacuum 1.25" hose installed -

- The 1.25" hose does not need to be replaced for SpeedTube or vSet 2.
- Use **731188** fitting kit to connect the 1.25" hose to the meter (1/row)

Item	Part #	Price	Qty	Total
vSet 2 Saddle Kit	731190			\$
vSet 2/SpeedTube - New PP Vac System Fitting Kit - 1.5" hose	731183			\$
vSet 2 Kinze Vacuum Straight Fitting Kit - 1.5" hose	731175			\$
vSet 2 Kinze Vacuum 90° Elbow Fitting Kit- 1.5" hose	731176			\$
vSet 2 Meter Fitting for 1.25" hose	731188			\$

Row Unit Hose

Estimated usage is about 4 ft per row.

Item	Part #	Price	Qty	Total
25' Roll of 1.5" Diameter Bulk Hose	731102			\$
50' Roll of 1.5" Diameter Bulk Hose	731103			\$

vSet 2 Options for Kinze planters

Notes on options

- The **CCS 90° Elbow kit (720206)** and the **Kinze Pusher Bulk Fill Extensions (730447)** are required for the 6 pusher rows on the center of the planter.
- Use the Ground Drive Sprocket Selection chart to determine if a new sprocket kit is necessary.
- For all pusher rows **with 1.9 bu boxes**, it will be necessary to purchase a pusher row vacuum inlet for those meters. The inlet needs to come to the back of the meter on the 1.9 bu hopper pusher row. It is **not needed on the pusher row with mini hoppers**. The row unit hose will run over the top of the meter.
- Order the 768843 if piecing together a full size box for a Kinze 4900 above.

Item	Part #	Price	Qty	Total
Kinze Pusher Bulk Fill Extensions (Kit of 4 rows)	730447			\$
CCS 90 Degree Elbow (Kit of 4)	720206			\$
Kinze Sprocket Kit - 23 Tooth*	730280			\$
Kinze Sprocket Kit - 15 Tooth*	730285			\$
Kinze Sprocket Kit (2100 direct drive planters) (48 teeth)	730282			\$

* One Kit is needed for 8 and 12 row planters. 2 kits are needed for the 16 row planters.

Step 5 - Case IH

This step is for Case IH planters only. Skip this step and go on to the next if you do not have a Case IH planter
 Make sure that you go all the way through this step.

Case IH Mini Hoppers

Note! - It is required to have vDrive to run vSet on a Case IH planter. Mechanical drive is not compatible!!!

vSet 2/mSet Hoppers are mSet Compatible and will work with both mSet meter covers and seed selectors and also vSet 2 only meters. They will also work with SpeedTube. They will not work with vSet Select or vSet Classic meters. mSet compatible hoppers can be used with vSet 2 meters to start with and can add mSet components at a later date.

- vSet 2/mSet will not fit on Case IH 2100 Series row units
- Make sure to order the correct hopper for SpeedTube or seed tube
- vSet 2/mSet Mini hoppers will need a mini hopper finish kit (736190)
- vSet 2/mSet hoppers (both mini and 1.9) are not compatible on **15" row Case IH planters.**
- **mSet hoppers (both minis and 1.9) will not fit 1260/65 - 20", 22", and 30" spacing planters.**
- **Mini hoppers on rows over 32** - If installing Mini hoppers on planters that are over 32 rows, it will be necessary to add the Dual Bulk Fill Inlet kit for all rows over 32. One per row over 32.

vSet 2 Hopper notes:

- **vSet 2 only hoppers do not work with mSet meter covers**
- make sure to order the correct hopper for SpeedTube or Seed tube.
- 1.9 Bu hoppers are not compatible with **15" row Case IH planters. It will be necessary to be a mini hopper if installing vSet 2 on a 15" planter.**

SpeedTube Notes:

- If going to install SpeedTube with vSet/vDrive - make sure that you order the SpeedTube ready hopper kits
- If customer currently has vSet 2 seed tube hoppers installed, he will need the SpeedTube Hopper upgrade kits (768645 1.9 bu or 768646 - mini). If the customer currently has vSet 2/mSet mini or 1.9 bu hoppers installed, he will need the 768645 upgrade kit when going to SpeedTube.

Multi - Hybrid Compatibility notes

- Compatible on 12x5 series row units
- Not Compatible with 12X0 series planters with mini hoppers
- Not Compatible with 1260 - 36 row 22 inch planter (mini hopper or 1.9 bu will not fit)
- Requires 1.6 Bu + Bulk fill on planters that are over 32 rows (both 12x0 and 12x5)
- Is not compatible on 2100 series planters
- is not compatible on 15 inch row spacing planters

Item	Part #	Price	Qty	Total
SpeedTube ONLY - vSet 2/mSet Case IH Mini Hopper	736180			\$
Seed tube ONLY - vSet 2/mSet Case IH Mini Hopper	736181			\$
vSet 2/mSet Case IH Mini Hopper Finish Kit	736190			\$
vSet 2/mSet Mini Hopper Dual Bulk Fill Inlet (vSet 2/mSet hopper only)	736056			\$
vSet 2 Case IH Mini Hopper Kit	768290			\$
SpeedTube ONLY - vSet 2 Case IH Mini Hopper Kit	768625			\$
Upgrade Kit - SpeedTube vSet 2 Case IH Hopper Brackets - Mini	768646			\$

Case IH 1.9 Bu Hoppers

Note! - It is required to have vDrive to run vSet on a Case IH planter. Mechanical drive is not compatible!!!

vSet 2/mSet Hoppers are mSet Compatible and will work with both mSet meter covers and seed selectors and also vSet 2 only meters. They will also work with SpeedTube. They will not work with vSet Select or vSet Classic meters. mSet compatible hoppers can be used with vSet 2 meters to start with and can add mSet components at a later date.

- vSet 2/mSet will not fit on Case IH 2100 Series row units
- Make sure to order the correct hopper for SpeedTube or seed tube
- The 1.9 bu box is a mini hopper plus an extension that makes it a 1.9 bu hopper. It can be ordered 2 different ways -
 - The 736187 or 736174 is a completed assembled mini hopper and extension to make it a 1.9 Bu hopper.
 - Order a 736180 or 736181 mini hopper and 736171 1.9 Bu extension and assembly it on site.
- All original Case IH lids will not fit the vSet 2/mSet hopper. It will be necessary to order a vSet 2/mSet Lid kit to complete the 1.9 Bu hopper. Other Precision Planting lids will not fit the vSet 2/mSet hopper. Do not order a single lid if the desire is to run a 2 hybrid system.
- vSet 2/mSet hoppers (both mini and 1.9) are not compatible on 15" row Case IH planters.

vSet 2 Hopper notes:

- **vSet 2 only hoppers do not work with mSet meter covers**
- make sure to order the correct hopper for SpeedTube or Seed tube.
- 1.9 Bu hoppers are not compatible with **15" row Case IH planters. It will be necessary to be a mini hopper if installing vSet 2 on a 15" planter.**

SpeedTube Notes:

- If going to install SpeedTube with vSet/vDrive - make sure that you order the SpeedTube ready hopper kits
- If customer currently has vSet 2 seed tube hoppers installed, he will need the SpeedTube Hopper upgrade kits (768645 1.9 bu or 768646 - mini). If the customer currently has vSet 2/mSet mini or 1.9 bu hoppers installed, he will need the 768645 upgrade kit when going to SpeedTube.

Item	Part #	Price	Qty	Total
SpeedTube ONLY - vSet 2/mSet Case IH 1.9 Bu Hopper	736187	:		\$
Seed tube ONLY - vSet 2/mSet Case IH 1.9 Bu Hopper	736174	:		\$
Single 1.9 Bu Hopper Lid - Case IH (vSet 2/mSet hoppers only!!!)	736164	:		\$
vSet 2/mSet Case IH 1.9 Bu Extension (makes a mini hopper a 1.9 Bu hopper)	736171	:		\$
vSet 2 Case IH Hopper Kit (1.9 Bu.) - Lid included	768470	:		\$
SpeedTube ONLY - vSet 2 Case IH Hopper Kit (1.9 Bu.) - Lid included	768624	:		\$
Upgrade Kit - SpeedTube vSet 2 Case IH Hopper Brackets - 1.9 Bu	768645	:		\$

Meter Vacuum Inlet Kits

Each Meter cover half will need a vacuum inlet kit. Pick the correct inlet kit using the list below. This is for both vSet 2 / mSet compatible hoppers and all vSet 2 hoppers

- **768718 Vertical Inlet** - use this kit for vSet 2 mini hoppers (**do not use this with mSet hoppers. It does not fit**)
- **768719 Forward Inlet** - Can be used with all 1.6 bu boxes (vSet 2 and mSet boxes mini and 1.6)
- **768721 Straight Inlet** - Can be used with all mSet boxes (mini and 1.6). Works well to reuse John Deere 90 Degree elbow on OEM Row unit hose.

Item	Part #	Price	Qty	Total
vSet 2 Meter Vacuum Vertical Inlet Kit	768718			\$
vSet 2 Meter Vacuum Forward Inlet Kit	768719			\$
vSet 2 Meter Vacuum Straight Inlet Kit	768721			\$

Vacuum Fittings

- All Systems installing vSet 2 on a Case Planter will require new 1.5" row unit hose.
- The **731308** or **731309** fitting kits will be **required to connect the row unit hose to the manifold and meter. *Inspect the planter*** to determine how many of each style you will need. Each kit contains a fitting to adapt to the CaseIH manifold and a fitting to go on the meter.

Item	Part #	Price	Qty	Total
vSet 2 Case IH 90° Elbow Fitting Kit - 1.5"hose	731308			\$
vSet 2 Case IH Straight Fitting Kit - 1.5" hose	731309			\$

Row Unit Hose

Estimated usage is about 4 ft per row.

Item	Part #	Price	Qty	Total
25' Roll of 1.5" Diameter Bulk Hose	731102	\$		\$
50' Roll of 1.5" Diameter Bulk Hose	731103	\$		\$

Case IH Options

If the grower is going to be using chain drive insecticide, it will be required to install the offset bracket to prevent the sprocket from contacting the meter. Order 1/row

Item	Part #	Price	Qty	Total
Case IH Offset Kit	730443			\$

Step 6 - White

This step is for Agco/White planters only. Skip this step and go on to the next if you do not have a Agco/White planter
Make sure that you go all the way through this step and select the vacuum fittings at the end.

White Mini Hoppers

Select desired hoppers

- **Note 1.** - It is required to have vDrive to run vSet on a White planter. Mechanical drive is not compatible!!!
- **Note 2.** - For vSet 2 on White 8000, replace OEM seed tubes with 700250 WaveVision or 700150 Bullseye seedtubes or modify the OEM seed tubes to fit the vSet 2 meter seed chute.
- **Note 3.** - White 9000 / Precision Planting Ready Row Unit it is recommended to use the 700285 WaveVision or 700280 Bullseye seedtubes with vSet 2. The OEM seed tubes would have to be modified to fit the vSet 2 meter seed chute.
- **Note 4.** - vSet is not compatible on White 8000 planters that have Precision Planting lift bags of AirForce
- **Note 5.** - vSet is not compatible on White 8000/9000 planters that are running chain driven insecticide
- **Note 6.** - The White Positive Air System will be replaced by a Precision Planting Vacuum system. Please refer to the Vacuum section of the order guide for more details.

Note 1: vSet only hoppers do not work with mSet meter covers. the vSet 2/mSet hopper must be used if running mSet meter covers.

Note 2: vSet 2/mSet hoppers are not compatible on 15" row White planters (includes Gray Precision Planting Ready Row unit).

Note 3: the Gray Precision Planting Ready Row Unit does not use these hopper kits. Please order those under the row unit tab.

MAKE SURE THAT YOU DO NOT DOUBLE ORDER HOPPERS FOR THE PRECISION PLANTING READY ROW UNIT!

Item	Part #	Price	Qty	Total
White 8000 Mini Hopper Kit	768340	:		\$
White 9000 Mini Hopper Kit	768593	:		\$

White 1.9 Bu Hoppers

Select desired hoppers

- **Note 1.** - It is required to have vDrive to run vSet on a White planter. Mechanical drive is not compatible!!!
- **Note 2.** - For vSet 2 on White 8000, replace OEM seed tubes with 700250 WaveVision or 700150 Bullsye seedtubes or modify the OEM seed tubes to fit the vSet 2 meter seed chute.
- **Note 3.** - White 9000 / Precision Planting Ready Row Unit will use the 700285 WaveVision or 700280 Bullseye seedtubes with vSet 2.
- **Note 4.** - vSet is not compatible on White 8000 planters that have Precision Planting lift bags of AirForce
- **Note 5.** - vSet is not compatible on White 8000/9000 planters that are running chain driven insecticide
- **Note 6.** - The White Positive Air System will be replaced by a Precision Planting Vacuum system. Please refer to the Vacuum section of the order guide for more details.

Note 1: vSet only hoppers do not work with mSet meter covers. the vSet 2/mSet hopper must be used if running mSet meter covers.

Note 2: It will be necessary to order a vSet 2/mSet Lid kit to complete the 1.6 Bu hopper. Other Precision Planting lids will not fit the vSet 2/mSet hopper. Do not order a single lid if the desire is to run a 2 hybrid system.

Note 3: vSet 2/mSet hoppers are not compatible on 15" row White planters (includes Gray Precision Planting Ready Row unit).

Note 4: the Gray Precision Planting Ready Row Unit does not use these hopper kits. Please order those under the row unit tab.

Note 5: For new Massey planters (2021+) all row units are the new style gray row unit. If you desire to order the non mSet style 1.9 bushel hopper for this planter, please order 768850 as it comes with gray brackets instead of red brackets. You will also need to order lid kit 730365.

MAKE SURE THAT YOU DO NOT DOUBLE ORDER HOPPERS FOR THE PRECISION PLANTING READY ROW UNIT!

Item	Part #	Price	Qty	Total
vSet 2/mSet White 8000 1.9 Bu Hopper Kit	736184			\$
vSet 2/mSet White 9000 1.9 Bu Hopper Kit	736176			\$
Single 1.9 Hopper Lid - White 9000/8000/PP Gray (vSet 2/mSet hoppers only!!!)	736166			\$
White 8000 1.9 Bu Hopper Kit - Lid Included	768475			\$
White 9000 1.9 Bu Hopper Kit - Lid Included	768480			\$
Agco 9000 Gray OEM Hopper Kit (Use with 2021+ row units)	768850			\$
vSet 2/Classic Hopper Lid for Kinze 1.9 Bu Precision Planting Hopper	730365			\$

Meter Vacuum Inlet Kits

Each Meter cover half will need a vacuum inlet kit. Pick the correct inlet kit using the list below. This is for both vSet 2 / mSet compatible hoppers and all vSet 2 hoppers

- **768718 Vertical Inlet** - use this kit for vSet 2 mini hoppers (**do not use this with mSet hoppers. It does not fit**)
- **768719 Forward Inlet** - Can be used with all 1.6/1.9 bu boxes (vSet 2 and mSet boxes mini and 1.6/1.9)
- **768721 Straight Inlet** - Can be used with all mSet boxes (mini and 1.6/1.9). Works well to reuse John Deere 90 Degree elbow on OEM Row unit hose.

Item	Part #	Price	Qty	Total
vSet 2 Meter Vacuum Vertical Inlet Kit	768718			\$
vSet 2 Meter Vacuum Forward Inlet Kit	768719			\$
vSet 2 Meter Vacuum Straight Inlet Kit	768721			\$

Vacuum Fittings

- All White planters will require the positive air system be replaced with a vacuum system
- Use 1.5" row unit hose for all systems
- Use the 731192 fitting kit to adapt to the White vacuum manifold and to connect to the meter. Each kit contains a manifold adapter and a 135° fitting to go to the meter (1/row)

Note: the Gray Precision Planting Ready Row Unit may need a different fitting kit other than the Agco Kit based on the planter bar/vacuum system that will be installed. The 731183 kit is listed below for the those instances.

Item	Part #	Price	Qty	Total
vSet 2 Fitting Kit for Agco/White	731192			\$
vSet 2/SpeedTube - New PP Vac System Fitting Kit - 1.5" hose	731183			\$
vSet 2 Saddle Kit	731190			\$

Row Unit Hose

Estimated usage is about 4 ft per row.

Item	Part #	Price	Qty	Total
25' Roll of 1.5" Diameter Bulk Hose	731102			\$
50' Roll of 1.5" Diameter Bulk Hose	731103			\$

Step 7 - Harvest

This step is for Harvest International planters only. Skip this step and go on to the next if you do not have a Harvest International planter

Make sure that you go all the way through this step.

Harvest Mini Hoppers

vSet 2/mSet Hoppers are mSet Compatible and will work with both mSet meter covers and seed selectors and also vSet 2 meters. They will not work with vSet Select or vSet Classic meters. mSet compatible hoppers can be used with vSet 2 meters to start with and can add mSet components at a later date.

- Mini hopper will need a mini hopper finish kit (will include rear post, hopper pucks, lid, single bulk fill inlet).
- vSet 2/mSet hoppers (both mini and 1.6) are not compatible on 15" row planters unless they are a push pull Kinze frame.
- **Mini hoppers on rows over 32** - If installing Mini hoppers on planters that are over 32 rows, it will be necessary to add the Dual Bulk Fill Inlet kit for all rows over 32. One per row over 32.
- **All vSet 2/mSet hoppers that go on a Harvest row unit will need Harvest Part number TB95227 installed on the row unit. This is the 2" hopper puck adapter that fits the Harvest 1" welded bushing. Make sure to source these from Harvest International.**
- **All Harvest narrow row units will need the TB95232 if using an vSet 2/mSet hopper.**
- **All Harvest narrow row units will need the TB95063 spanner bracket for vSet 2 traditional (non-mSet) mini hoppers.**
- **If ordering the 736034 minihopper finish kit for a Harvest International Laser Pro row unit, it will be required that the bolt that attaches the rear post to the shank be sourced locally as the one that comes in the kit fits a JD row unit.**

Item	Part #	Price	Qty	Total
vSet 2/mSet Mini Hopper	736133	\$		\$
vSet 2/mSet Mini Hopper Finish Kit (John Deere, Harvest)	736034	\$		\$
vSet 2/mSet Mini Hopper Dual Bulk Fill Inlet (vSet 2/mSet hopper only)	736056	\$		\$

vSet 2 - mSet Compatible Hoppers 1.6 Bu

vSet 2/mSet Hoppers are mSet Compatible and will work with both mSet meter covers and seed selectors and also vSet 2 meters. They will not work with vSet Select or vSet Classic meters. mSet compatible hoppers can be used with vSet 2 meters to start with and can add mSet components at a later date.

- The 1.6 bu box is a mini hopper plus an extension that makes it a 1.6 bu hopper. It can be ordered 2 different ways -
 - The 736135 is a completed assembled mini hopper and extension to make it a 1.6 Bu hopper.
 - Order a 736133 mini hopper and 736134 1.6 Bu extension and assembly it on site.
- Original John Deere lids will not fit the vSet 2 - mSet compatible hopper. It will be necessary to order a vSet 2/mSet Lid kit (736137) to complete the 1.6 Bu hopper. Other Precision Planting lids will not fit the vSet 2 - mSet compatible hopper
- vSet 2/mSet hoppers (both mini and 1.6) are not compatible on 15" row planters unless they are a push pull Kinze frame.
- 1.6 Bu hoppers may need the **736150** rear support if the row unit does not have a rear post already installed.
- **All vSet 2/mSet hoppers that go on a Harvest row unit will need Harvest Part number TB95227 installed on the row unit. This is the 2" hopper puck adapter that fits the Harvest 1" welded bushing. Make sure to source these from Harvest International.**
- **All Harvest narrow row units will need the TB95232 if using an vSet 2/mSet hopper.**

Item	Part #	Price	Qty	Total
vSet 2/mSet Harvest 1.6 Bu Hopper	736135			\$
Single 1.6 Bu Hopper Lid - Harvest International (vSet 2/mSet hoppers only!!!)	736137			\$
vSet 2/mSet Harvest 1.6 Bu Extension - (makes mini hopper a 1.6 Bu Hopper)	736134			\$
John Deere/Harvest Hopper Support - Rear Post - Only for mSet Hoppers	736150			\$

vSet 2 & mSet Compatible 3.0 Bu Hoppers

vSet 2 / mSet Compatible 3.0 Bu Hoppers

- 3.0 Bu box for vSet 2/mSet is a mini hopper plus a 3.0 Bu extension that makes it a 3.0 Bu hopper. The fully assembled 3.0 Bu hopper is **736248**. An existing mini hopper can be changed to a 3.0 Bu box by adding the **736246** extension to the mini hopper.
- All 3.0 Bu hoppers will require the Lid Kit (**736228**) in addition to the 736248 or 736246.
- All 3.0 Bu box systems will need insecticide brackets installed (the same as any other 3 bu box)
- **All vSet 2/mSet hoppers that go on a Harvest row unit will need Harvest Part number TB95227 installed on the row unit. This is the 2" hopper puck adapter that fits the Harvest 1" welded bushing. Make sure to source these from Harvest International.**

Item	Part #	Price	Qty	Total
vSet 2/mSet Harvest International 3.0 Bu Hopper Assembly	736248			\$
vSet 2/mSet Lid Kit - 3.0 Bu Hopper (includes front and back lids)	736228			\$
vSet/mSet Harvest International 3.0 Bu Extension - (Makes mini hopper a 3.0 bu)	736246			\$

Meter Vacuum Inlet Kits

Each Meter cover half will need a vacuum inlet kit. Pick the correct inlet kit using the list below

- **768718 Vertical Inlet** - use this kit for vSet 2 mini hoppers (**do not use this with mSet hoppers. It does not fit**)
- **768719 Forward Inlet** - Can be used with all 1.6 bu boxes (vSet 2 and mSet boxes mini and 1.6)
- **768721 Straight Inlet** - Can be used with all mSet boxes (mini and 1.6). Works well to reuse John Deere 90 Degree elbow on OEM Row unit hose.

Item	Part #	Price	Qty	Total
vSet 2 Meter Vacuum Vertical Inlet Kit	768718			\$
vSet 2 Meter Vacuum Forward Inlet Kit	768719			\$
vSet 2 Meter Vacuum Straight Inlet Kit	768721			\$

Vacuum

Select the correct row unit hose fitting based on your vacuum set for this planter.

Item	Part #	Price	Qty	Total
vSet 2 Meter Fitting for 1.25" hose	731188	:		\$
vSet 2/SpeedTube - New PP Vac System Fitting Kit - 1.5" hose	731183	:		\$
vSet 2 Saddle Kit	731190	:		\$
vSet 2 Fitting Kit for Agco/White	731192	:		\$
vSet 2 Kinze Vacuum Straight Fitting Kit - 1.5" hose	731175	:		\$
vSet 2 Kinze Vacuum 90° Elbow Fitting Kit- 1.5" hose	731176	:		\$

Row Unit Hose

Estimated usage is about 4 ft per row.

Item	Part #	Price	Qty	Total
25' Roll of 1.5" Diameter Bulk Hose	731102			\$
50' Roll of 1.5" Diameter Bulk Hose	731103			\$

Step 8 - Monosem

vSet 2 is only compatible on Monosem NG+3 and NG+4 row units.

Requires vDrive to work. Mechanical meter drive is not supported.

Requires SRM system to run vDrive.

Note: Monosem planters will require new Bulleyes seed tubes (700287) or Wavevisions (700290) that will fit the vSet meter. The existing Bulleyes (700158) and Wavevision (700260) on Monosems can be modified to fit the vSet 2 meter.

Note: vSet 2 is only compatible with full size Monosem OEM hoppers. It is not compatible with OEM seed deliver system style hoppers.

Note 2: If ordering the 768748 meter cover, you will need a meter housing without vDrive (730050) as well as the vDrive Conversion Kit (768332)

vSet 2 - mSet Compatible Hoppers 1.6 Bu

vSet 2/mSet Hoppers are mSet Compatible and will work with both mSet meter covers and seed selectors and also vSet 2 meters. They will not work with vSet Select or vSet Classic meters. mSet compatible hoppers can be used with vSet 2 meters to start with and can add mSet components at a later date.

- The 1.6 bu box is a mini hopper plus an extension that makes it a 1.6 bu hopper. It can be ordered 2 different ways -
 - The 736135 is a completed assembled mini hopper and extension to make it a 1.6 Bu hopper.
 - Order a 736133 mini hopper and 736134 1.6 Bu extension and assembly it on site.
- Original John Deere lids will not fit the vSet 2 - mSet compatible hopper. It will be necessary to order a vSet 2/mSet Lid kit (736137) to complete the 1.6 Bu hopper. Other Precision Planting lids will not fit the vSet 2 - mSet compatible hopper
- vSet 2/mSet hoppers (both mini and 1.6) are not compatible on 15" row planters unless they are a push pull Kinze frame.
- 1.6 Bu hoppers may need the **736150** rear support if the row unit does not have a rear post already installed.
- **All vSet 2/mSet hoppers that go on a Harvest row unit will need Harvest Part number TB95227 installed on the row unit. This is the 2" hopper puck adapter that fits the Harvest 1" welded bushing. Make sure to source these from Harvest International.**
- **All Harvest narrow row units will need the TB95232 if using an vSet 2/mSet hopper.**

Item	Part #	Price	Qty	Total
vSet 2/mSet Harvest 1.6 Bu Hopper	736135			\$
Single 1.6 Bu Hopper Lid - Harvest International (vSet 2/mSet hoppers only!!!)	736137			\$
vSet 2/mSet Harvest 1.6 Bu Extension - (makes mini hopper a 1.6 Bu Hopper)	736134			\$
John Deere/Harvest Hopper Support - Rear Post - Only for mSet Hoppers	736150			\$

Monosem Hoppers

vSet 2 will reuse the existing Monosem hoppers with a set of simple adapters. For each row, a vSet 2 gravity hopper kit (768790) and a Monosem Finish Kit (768760) will be required.

Note: the Monosem vSet meter cover is required for use with the Monosem hopper and adapters.

Note: vSet 2 is only compatible with full size Monosem OEM hoppers. It is not compatible with OEM seed deliver system style hoppers.

Item	Part #	Price	Qty	Total
vSet 2 Gravity Hopper Kit (replaces 768750)	768790			\$
vSet 2 Monosem Finishing Kit	768760			\$

Meter Vacuum Inlet Kits

Each Meter housing half will need a vacuum inlet kit. For Monosem planters, use the Vertical inlet kit.

The existing hose fitting will fit directly on to the meter inlet. No other adapters are necessary other than the vertical inlet kit.

Item	Part #	Price	Qty	Total
vSet 2 Meter Vacuum Vertical Inlet Kit	768718	:		\$

Step 9 - Horsch

Compatible Planters:

- Horsch Maestro row units sold in Europe from 2014-2019 OR
- Horsch Maestro row units sold in the US in 2015 *only*

Cutting of the shank is required for this install (refer to the 736275 installation kit).

Note: When installing vSet/vDrive on a Horsch Maestro row unit, either WaveVision 700285 or Bullseye 700280 needs to be installed in replacement of the OEM seed tube. If the original seed sensor is re-used with the Bullseye seed tube, the Horsch seed sensor adapter harness (706101) is needed per row.

Horsch Mini Hoppers

vSet 2/**mSet** Hoppers are mSet Compatible and will work with both mSet meter covers and seed selectors and also vSet 2 meters. They will not work with vSet Select or vSet Classic meters. mSet compatible hoppers can be used with vSet 2 meters to start with and can add mSet components at a later date.

- Mini hopper will need a mini hopper finish kit (will include rear post, hopper pucks, lid, single bulk fill inlet).
- vSet 2/**mSet** hoppers (both mini and 1.6) are not compatible on 15" row planters unless they are a push pull Kinze frame.
- **Mini hoppers on rows over 32** - If installing Mini hoppers on planters that are over 32 rows, it will be necessary to add the Dual Bulk Fill Inlet kit for all rows over 32. One per row over 32.

At least 1 736275 (Install Template Kit) is required per install. The template itself can be re-used indefinitely but the drill bits in the kit are considered consumables. We figure about 4 rows per drill bit set.

Item	Part #	Price	Qty	Total
vSet 2/ mSet Mini Hopper	736133			\$
Horsch vSet 2 Hopper Finish Kit	736260			\$
Lid, Mini Hopper	736031			\$
vSet 2/ mSet Mini Hopper Dual Bulk Fill Inlet (vSet 2/ mSet hopper only)	736056			\$
1.25 Bulk / CCS Fill Adapter connector (Includes 730432 and Oring)	730517			\$
Horsch vSet 2 Install Template Kit	736275			\$

vSet 2 - mSet Compatible Hoppers 1.6 Bu

vSet 2/**mSet** Hoppers are mSet Compatible and will work with both mSet meter covers and seed selectors and also vSet 2 meters. They will not work with vSet Select or vSet Classic meters. mSet compatible hoppers can be used with vSet 2 meters to start with and can add mSet components at a later date.

- The 1.6 bu box is a mini hopper plus an extension that makes it a 1.6 bu hopper. It can be ordered 2 different ways -
 - The 736135 is a completed assembled mini hopper and extension to make it a 1.6 Bu hopper.
 - Order a 736133 mini hopper and 736134 1.6 Bu extension and assembly it on site.
- Please order the sealed lid kit to use with the 1.6 bu hopper option.
- vSet 2/**mSet** hoppers (both mini and 1.6) are not compatible on 15" row planters unless they are a push pull Kinze frame.

At least 1 736275 (Install Template Kit) is required per install. The template itself can be re-used indefinitely but the drill bits in the kit are considered consumables. We figure about 4 rows per drill bit set.

Item	Part #	Price	Qty	Total
vSet 2/ mSet Harvest 1.6 Bu Hopper	736135			\$
Sealed 1.6 Bu Lid Kit	736315			\$
vSet 2/ mSet Harvest 1.6 Bu Extension - (makes mini hopper a 1.6 Bu Hopper)	736134			\$
Horsch vSet 2 Hopper Finish Kit	736260			\$
Horsch vSet 2 Install Template Kit	736275			\$

Meter Vacuum Inlet Kits

Each Meter cover half will need a vacuum inlet kit. Pick the correct inlet kit using the list below

- **768718 Vertical Inlet** - use this kit for vSet 2 mini hoppers (**do not use this with mSet hoppers. It does not fit**)
- **768719 Forward Inlet** - Can be used with all 1.6 bu boxes (vSet 2 and mSet boxes mini and 1.6)
- **768721 Straight Inlet** - Can be used with all mSet boxes (mini and 1.6). ****USE THIS FOR ALL HORSCH MAESTRO vSet 2 INSTALLS****

Item	Part #	Price	Qty	Total
vSet 2 Meter Vacuum Vertical Inlet Kit	768718	:		\$
vSet 2 Meter Vacuum Forward Inlet Kit	768719	:		\$
vSet 2 Meter Vacuum Straight Inlet Kit	768721	:		\$

Vacuum

Select the correct row unit hose fitting based on your vacuum set for this planter.

For the Horsch Maestro you will need a 731118 and a 768034 for each row.

Item	Part #	Price	Qty	Total
vSet 2 Meter Fitting for 1.25" hose	731188			\$
vSet 90° Elbow Fitting - 1.25" hose	768034			\$

Row Unit Hose

Horsch Maestro planters will require new 1.25" row unit hose. Order the appropriate amount below, sold in 25' and 50' quantities.

Item	Part #	Price	Qty	Total
25' Roll of 1.25" Diameter Bulk Hose	730226			\$
50' Roll of 1.25" Diameter Bulk Hose	730175			\$

Step 10 - 1.6/1.9/3.0 Bu + Bulk Fill Parts

1.6/1.9/3.0 Bu + Bulk Fill Hopper Parts

If putting 1.6/1.9/3.0 Bu box on a bulk fill planter the parts listed below will be required -

- **1.6Bu + Bulk Fill Template (736098) or 1.9Bu + Bulk Fill Template (736194) or 3.0Bu + Bulk Fill Template (736210)** - this is required (1/planter) to layout where to drill holes in the box for the bulk fill inlet.
- **1.6/1.9/3.0 Bu Fill Tube Kit (736094)** - This is required on 1/row basis for all rows up to 32.
- **1.6/1.9/3.0 Bu Fill Dual Tube Kit (736095 or 736096)** - This is required on 1/row basis for all rows over 32. Select the correct one based on row spacing.
 - Example - 36 row planter will have 32 - 736094 and 4 - 736095 or 736096
- If replacing John Deere mini hoppers with mSet 1.6 bu boxes, it will be necessary to add a rear hopper support to hold the back end of the 1.6 bu box. Also the front bushings will need to be replaced with 1.6 bu Hopper pucks (order 2 per row) (736218).
- **Note 1:** The bulk fill template for vSet Select or the vSet 2 only hoppers will not fit on the vSet 2/mSet hoppers
- **Note 2:** If building a planter bar with bulk fill, it may be necessary to add the bulk / CCS fill connectors to go from the seed delivery hose to the meter. Select the 1.5" (768382) or 1.25" (730517) diameter hose as needed.

Item	Part #	Price	Qty	Total
1.6Bu + Bulk Fill Template - (mSet compatible hoppers) - one per planter	736098			\$
1.9Bu + Bulk Fill Template - (mSet compatible hoppers) - one per planter	736194			\$
3.0Bu + Bulk Fill Template - (mSet compatible hoppers) - one per planter	736210			\$
1.6/1.9/3.0 Bu Fill Tube Kit - Need 1 Per Row for all rows up to 32	736094			\$
1.6/1.9/3.0 Bu Fill Tube Kit - (Dual) 30" Inter-Row - Needed 1 Per Row for all Rows over 32	736095			\$
JD Hopper Puck (need 2 per row)	736218			\$
John Deere/Harvest Hopper Support - Rear Post - Only for mSet Hoppers	736150			\$
Kit, mSet Style Rear Post Latch	736300			\$
1.5" Bulk / CCS Fill Adapter Connector (Includes 768381 and Oring)	768382			\$
1.25 Bulk / CCS Fill Adapter connector (Includes 730432 and Oring)	730517			\$
1.6/1.9/3.0 Bu Fill Tube Kit - (Dual) 20-22" Inter-Row - Needed 1 Per Row for all rows over 32	736096			\$

Step 11 - vDrive

SRM harnessing system is required to run vDrive. Please see the SRM Base system tab to make sure that you have all the parts necessary to run vDrive.

vDrive Motor

Drive motors can be installed on all vSet 2 meters.

Make sure that vDrive Motors are not double ordered! Do not order them here if they are ordered with the meters in Step 1.

Note: If using the 768748 meter cover will need a meter housing without vDrive (730050) as well as the vDrive Conversion Kit (768332)

Item	Part #	Price	Qty	Total
vDrive Motor Kit	730050			\$
vDrive Conversion Kit (Harness clip, turn knob, hardware) (1/row)	768332			\$

vDrive Swath Harnesses

With the vDrive Harnessing, it is possible to output a swath signal to operate in conjunction with the swath function of vDrive. It can be set to in the 2020 Display to function in any combination of *off when vDrive is off, on when vDrive is off, etc.*

- Note 1: no more than .75 amps of current may be drawn from the swath output harness
- Note 2: SmartBox harness only works if the SmartBox Meter has swath enabled style harnessing
- Note 3: The SmartBox harness must have a 4 pin and 2 pin weatherpack coming from the meter for the swath output to work

Item	Part #	Price	Qty	Total
vDrive Swath Output Harness - 2 Pin Deutsch (Richway Connection)	729097			\$
vDrive Swath Output Harness - 2 Pin Weatherpack (SmartBox Connection)	729117			\$

Step 12 - Decal Options

Precision Planting Decals

Use the Decal kits below as desired.

Item	Part #	Price	Qty	Total
1.6 Bu Hopper Decal Kit (3 Left, 3 Rights) "Powered By Precision Planting"	957016			\$
Central Fill Tank Decal Kit (1 Left, 1 Right) "Powered By Precision Planting"	957017			\$
Precision Planting Corn Plant Decal (qty 16)	957018			\$
vSet Decal (For rear of 1.9 Bu hopper) (qty 4)	957015			\$
Row Number Decal for Hopper (Rows 1-24)	957009			\$
Row Number Decal for Hopper (Rows 25-48)	957010			\$

vSet Classic - vDrive

Step 1 - vSet Classic Meters

Meters

- vSet Classic meters are **not compatible** with **John Deere 17X5/ME5, and White 8000/9000 planters**
- vSet Classic is **required** for **John Deere 7000, Kinze 2000, and Kinze 4900.**
- VSet Classic meters will fit on the John Deere 7000, 7200, 17XX (mini hoppers will require vDrive), Kinze 2000, 3000, 4900, Case IH 1200 and 12X5 Series (vDrive Required on Case IH)
- vSet Classic meters are compatible with **vDrive** and **DeltaForce** but are not compatible with **SpeedTube** and **vSet Select**.
- **vDrive 2.0 will not work on vSet Classic due to interference issues**

Item	Part #	Price	Qty	Total
vSet Classic - Includes Corn Crop Kit	730090			\$
vSet Classic - Includes Soybean Crop Kit	730900			\$
vSet Classic - Base Meter only, no Crop Kit	730070			\$

Step 2 - John Deere

This step is for John Deere planters only. Skip this step and go on to the next if you do not have a John Deere planter

John Deere Hoppers

- For John Deere 7000, no hopper box is required for a Classic meter. The meter will bolt right on to the bottom of the box.
- For John Deere 7200 and 1700 series planters that are finger pickups, no new box is required. Only the hopper wedge adapter is required and a butterfly drive if using mechanical drive.
- John Deere 7200 & 17XX vacuum planters need to order new JD Finger style hoppers from either John Deere or Shoup (Shoup part number below)

All Shoup Part numbers must be ordered from Shoup Manufacturing - **1-800-627-6137** or **www.shoupparts.com**

Item	Part #	Price	Qty	Total
JD Pro-Series Mini Hopper Assembly	730395			\$
JD Pro-Series Mini Hopper w/ Smartbox Assembly*	730456			\$
JD 7200/1700/17X5/ME5 Finger Style 1.6 Bu Hopper (Shoup Part Number)	SH48776			\$
John Deere 1.6 Bu Lid (Shoup Part Number)	SH63858			\$
John Deere 1.6 Bu Hopper Bushing (88-93 model years) (Shoup Part Number)	SH62360			\$
1.6 Bu Hopper Extension (Shoup Part Number)	SH3698			\$
John Deere 3.0 bushel Finger Style hopper box. Includes hopper, and Lid.* (Shoup Part Number)	SH65673			\$

John Deere Adapters & parts

- John Deere 7200 Vacuum planters need to order new JD Finger style hoppers from either John Deere or Shoup
- If a grower is converting a finger style 7200/17xx planter to vSet, he may need John Deere's reduction sprocket #AA49877 if planting below 19,000 population. (1/row)
- The **730335 Mini hopper adapter kit** is only used with a **finger meter mini hopper**. Do not attempt to use with a vacuum mini hopper

Item	Part #	Price	Qty	Total
Wedge Kit (No drive adapter or butterfly drive)	730373			\$
Butterfly Drive	730268			\$
JD 7200/1700 Adapter Kit (Standard Finger Hopper) (Includes butterfly drive and wedge)	730330			\$
JD 7200/1700 Mini Hopper Adapter Kit (Includes Drive adapter and Wedge)	730335			\$
John Deere Pro Series Y Tube (DB 32+ rows and more) **	730383			\$
John Deere 1.6 Bu Hopper Bushing (88-93 model years) (Shoup Part Number)	SH62360			\$
7000 Sprocket Kit	730230			\$

All Shoup Part numbers must be ordered from Shoup Manufacturing - **1-800-627-6137** or **www.shoupparts.com**

John Deere 1790/1795

- All 1790/1795 planters will require the Flap kit to keep seed from spilling out when tipping up the row units.
- The stair kit is only necessary on 20" row spacing 1790/1795 planters. 15/30 Inch planters do not need the stair kit.
- All 1790/1795 planters will need the CCS Elbow kit. (1/planter)

Item	Part #	Price	Qty	Total
JD Pro-Series Flap Kit(1790) - vSet Classic	730384			\$
Step Kit - Stairs on 20" 1790/1795	720196			\$
CCS 90 Degree Elbow (Kit of 4)	720206			\$

Vacuum Fittings

Installing new Vac system on the planter

- Use 1.25" hose for all systems
- Use the 730325 fitting kit to connect the row unit hose to the meter and vac manifold (Includes 2 fittings and the saddle kit)

Reusing existing John Deere vacuum system

- Reuse existing John Deere 1.25" hose.
- Use the 730176 fitting to connect the row unit hose to the meter

The 768034 90° elbow fitting is optional. Order as needed.

For each Vacuum gauge - order 1 of the 730142 to connect the vacuum gauge to the row unit hose

Item	Part #	Price	Qty	Total
vSet Classic Saddle & Hose Fitting Kit - 1.25" hose	730325			\$
vSet Classic Straight Fitting for Existing Vac - 1.25" hose	730176			\$
vSet 90° Elbow Fitting - 1.25" hose	768034			\$
vSet Classic Hose Fitting with Vac Tap (1 Per vacuum blower)	730142			\$

Row Unit Hose

Estimated usage is about 4 ft per row

Item	Part #	Price	Qty	Total
25' Roll of 1.25" Diameter Bulk Hose	730226			\$
50' Roll of 1.25" Diameter Bulk Hose	730175			\$

Step 3 - Kinze

This step is for Kinze planters only. Skip this step and go on to the next if you do not have a Kinze planter

Kinze Hoppers

- Kinze 2000 series planters do not require a new hopper. The vSet Classic meter will bolt directly to the hopper box.
- Precision Planting Kinze box does not fit Kinze 2000 row unit.
- 1.9 Bu Box does not include the lid. Reuse OEM lid or purchase Precision Planting hopper lid (730365)
- The mini hopper and 1.9 bu hopper kits are the same for both pusher and puller rows but the pusher rows will require a different vacuum inlet. For each pusher row a 730045 vacuum inlet is required. See Kinze parts below.
- If installing vSet Classic on Kinze 3650 with auger fill system, the mini hopper will not work with that system. You will need to use finger style Kinze boxes and modify the box so that the vSet Classic meter will mount to the box.
- Kinze 4900 will require the finger meter box from Kinze and will have to be modified to fit the vSet Classic meter. Click [here](#) to see modification document

Item	Part #	Price	Qty	Total
Kinze 3000 Hopper Assembly (1.9 Bu)	730106			\$
Kinze 3000 Mini Hopper Assembly	730400			\$
vSet 2/Classic Hopper Lid for Kinze 1.9 Bu Precision Planting Hopper	730365			\$

Kinze Adapters

- The CCS 90° Elbow (720206) and the pusher Bulk Fill extensions (730447) are only necessary for the center 6 rows on bulk fill planters
- For all pusher rows, it is necessary to purchase a vacuum inlet elbow for pusher rows (730045)
- Use the Ground drive sprocket selection chart to determine if a new sprocket is necessary
- The 768843 Meter Boot for Kinze 4900 is recommended for all vSet installs on Kinze 4900 planters.

Item	Part #	Price	Qty	Total
Meter Boot- KZ4900	768843			\$
vSet Classic Vacuum Elbow for Kinze Pushers	730045			\$
CCS 90 Degree Elbow (Kit of 4)	720206			\$
Kinze Pusher Bulk Fill Extensions (Kit of 4 rows)	730447			\$
Kinze Sprocket Kit - 23 Tooth*	730280			\$
Kinze Sprocket Kit - 15 Tooth*	730285			\$
Kinze Sprocket Kit (2100 direct drive planters) (48 teeth)	730282			\$

Vacuum Fittings

If installing a new vacuum system on the planter -

- For vSet Classic, use 1.25" row unit hose
- Use the **730325** fitting to connect the hose to the meter and vac Manifold (1/row)

If the planter is an EdgeVac Planter -

- Replace the 2" hose with Precision Planting 1.25" row unit hose
- The **730275** or **730340** fitting will be **required to connect** the row unit hose to the Kinze manifold. ***Inspect the planter*** to determine how many of each style you will need (down facing or back facing) (1/row).

The 768034 90° elbow fitting is optional. Order as needed.

For each Vacuum gauge - order 1 of the 730142 to connect the vacuum gauge to the row unit hose

Item	Part #	Price	Qty	Total
vSet Classic Saddle & Hose Fitting Kit - 1.25" hose	730325			\$
vSet Classic EdgeVac Straight Fitting Kit - 1.25" hose	730275			\$
vSet Classic EdgeVac 90° Elbow Fitting Kit - 1.25" hose	730340			\$
vSet 90° Elbow Fitting - 1.25" hose	768034			\$
vSet Classic Hose Fitting with Vac Tap (1 Per vacuum blower)	730142			\$

Row Unit Hose

Estimated usage is about 4 ft per row

Item	Part #	Price	Qty	Total
25' Roll of 1.25" Diameter Bulk Hose	730226			\$
50' Roll of 1.25" Diameter Bulk Hose	730175			\$

Step 4 - Case IH

This step is for Case IH planters only. Skip this step and go on to the next if you do not have a Case IH planter

Case IH Hoppers

All vSet Classics installed on Case IH planters require vDrive to be installed as well. vSet can not be ran by mechanical drive on a Case IH planter

Item	Part #	Price	Qty	Total
Case IH Hopper Assembly Kit (1.9 Bu) (Includes Lid)	730380	\$		\$
Case IH Mini Hopper Assembly	730405	\$		\$

Note 1: The Row unit hose will be reused on all vSet Classic meters on Case IH planters

Note 2: The row unit hose fitting that goes from the OEM Hose to the meter is included in both the vSet Classic hopper kits

Case IH Adapter Kits

If the grower is going to be using chain drive insecticide, it will be required to install the offset bracket to prevent the sprocket from contacting the meter. Order 1/row

Item	Part #	Price	Qty	Total
Case IH Offset Kit	730443	\$		\$

Step 5 - Crop Kits

For all questions about what crops are available for vSet Classic meters, please see the Crop Setup Guide located [here](https://cloud.precisionplanting.com/pubs) (<https://cloud.precisionplanting.com/pubs>)

vSet Classic Crop Kits

Pay close attention to what is included in each kit. Not all crop kits contain all the parts required to run that crop. The vSet Classic Crop Setup Guide is located below and also appended to the end of the PDF Guide

Note: the 56 hole Soybean bean disk can use either the corn or soybean singulator. The soybean singulator would be recommended for larger beans. The 56 - hole disk is limited to 120 seeds/sec - i.e. 140K on 30" rows at 10 mph.

The blank seed disc can be up to a 48 hole disc and will need to be ordered separately along with the correct ejector. Singulator that will be used is based on the crop that is being ran.

Item	Part #	Price	Qty	Total
vSet Classic Corn Crop Kit (includes singulator, ejector, disk)	730135	:		\$
vSet Classic Soybean Crop Kit (includes singulator, ejector, disk)	730140	:		\$
vSet Classic 56 hole Soybean Crop kit (includes ejector, disk)	768699	:		\$
vSet Classic Singulated Cotton High Rate Crop Kit (includes disk, ejector)	730505	:		\$
vSet Classic Cotton 2-Hill Drop Crop Kit (includes disk, ejector, brush kit)	730277	:		\$
vSet Classic Cotton 3-Hill Drop Crop Kit (includes Disk, ejector, brush kit)	730460	:		\$
vSet Classic Small Sugarbeet Crop Kit (includes disk, ejector, & shim)	730145	:		\$
vSet Classic Large Sugarbeet Crop Kit (includes disk, ejector, & shim)	730150	:		\$
vSet Classic Medium Edible Bean Crop Kit	730470	:		\$
vSet Classic Large Edible Bean Crop Kit	730465	:		\$
vSet Classic Wheat Crop Kit (includes disk, ejector, brush)	730530	:		\$

vSet Seed Disks

Only seed disks that are compatible with vSet Classic are listed here.

All Specialty Disks are 27 hole disk and will require the specialty ejector. Normal use of the specialty disk will use corn singulator. For supported crops, please refer to the crop setup guide listed above.

The blank seed disc can be up to a 48 hole disc and will need to be ordered separately along with the correct ejector. Singulator that will be used is based on the crop that is being ran.

Item	Part #	Price	Qty	Total
Corn Disk	730079			\$
Soybean Disk	730039			\$
56 Hole Soybean Disk	768687			\$
Specialty Disk - .100"	730080			\$
Specialty Disk - .115"	730081			\$
Specialty Disk - .125"	730082			\$
Specialty Disk - .135"	730083			\$
Specialty Disk - .145"	730084			\$
Specialty Disk - .155"	730085			\$
Singulated High Rate Cotton Disk	730296			\$
Cotton 2-Hill Drop Disk	730292			\$
Cotton 3-Hill Drop Disk (replaces 730293)	730298			\$
Small Sugarbeet Disk	730290			\$
Large Sugarbeet Disk	730291			\$
Medium Edible Bean Disk	730295			\$
Large Edible Bean Disk	730294			\$
vSet Blank Disk - up to 48 holes	730519			\$

vSet Singulators

Item	Part #	Price	Qty	Total
Corn Singulator - 6 lobe (replaces 730063, vSet 2 and Classic)	768355	:		\$
Soybean Singulator (replaces 730065)	768360	:		\$
Medium Edible Bean Singulator	768430	:		\$

vSet Classic Ejectors

The blank seed disc can be up to a 48 hole disc and will need to be ordered separately along with the correct ejector. Singulator that will be used is based on the crop that is being ran.

Item	Part #	Price	Qty	Total
Corn Ejector Assembly - vSet Classic	730101			\$
Soybean Ejector Assembly - vSet Classic	730102			\$
56 Hole Soybean Ejector Assembly - vSet Classic	768698			\$
Specialty Ejector Assembly - vSet Classic	730304			\$
Sugarbeet Ejector Assembly - vSet Classic	730103			\$
Cotton 2-Hill Drop Ejector Assembly - vSet Classic	730436			\$
Cotton 3-Hill Drop Ejector Assembly - vSet Classic	730461			\$
Large Edible Bean Ejector - vSet Classic	730463			\$
Blank Disk vSet Classic Ejector	730522			\$

vSet Classic Misc Parts

If planting small seed crops with bulk fill, it may be necessary to replace the D-Tube screen with the milo screen (720253)
 If the disk needs to be shimmed out to make it tighter in the meter, use the disk shim kit (730279)
 The Meter Shim (730307) is used to shim the meter down to better align the mechanical drives. It goes between the hopper and the meter.

Item	Part #	Price	Qty	Total
D-Tube Screen - Milo	720253			
D-Tube Screen - Canola/Radishes/Wheat	720288			
Disk Shim Kit	730279			
Meter Shim	730307			

Step 6 - vDrive

SRM harnessing system is required to run vDrive. Please see the SRM Base system tab to make sure that you have all the parts necessary to run vDrive.

vDrive Motor

vDrive Motors can be installed on vSet Classic meters that were purchased after June 2013. Meters purchased after June 2013 will have stamped on the meter "vDrive" for easy identification. If the meters don't have "vDrive" stamped on them, they will need to be replaced and/or modified before installing vDrive.
 The vSet cover will need to be replaced if the meter was purchased before June 2013. The cover will be replaced with 730375 part number. The vSet housing will need to be modified. If modifying the housing is not desired, it will be necessary to purchase a new meter.

Item	Part #	Price	Qty	Total
vDrive Motor Kit	730050			\$

vSet Cover

Item	Part #	Price	Qty	Total
vSet Classic Cover - vDrive Ready	730375			\$

vDrive Swath Output Options

With vDrive Harnessing, it is possible to output a swath signal to operate in conjunction with the swath function of vDrive. It can be set in the 2020 Display to function in any combination of **off when vDrive is on**, **on when vDrive is on**, **off when vDrive is off**, etc.

- **Note 1:** no more than .75 amps of current may be drawn from the swath output harness
- **Note 2:** SmartBox harness only works if the SmartBox Meter has swath enabled style harnessing
- **Note 3:** The SmartBox harness must have 4 pin and a 2 pin weatherpack coming from the meter for the swath output to work

Item	Part #	Price	Qty	Total
vDrive Swath Output Harness - 2 Pin Deutsch (Richway Connection)	729097			\$
vDrive Swath Output Harness - 2 Pin Weatherpack (SmartBox Connection)	729117			\$

Step 7 - Decal Options

Precision Planting Decals

Use the Decal kits below as desired.

Item	Part #	Price	Qty	Total
1.6 Bu Hopper Decal Kit (3 Left, 3 Rights) "Powered By Precision Planting"	957016	:		\$
Central Fill Tank Decal Kit (1 Left, 1 Right) "Powered By Precision Planting"	957017	:		\$
Precision Planting Corn Plant Decal (qty 16)	957018	:		\$
vSet Decal (For rear of 1.9 Bu hopper) (qty 4)	957015	:		\$
Row Number Decal for Hopper (Rows 1-24)	957009	:		\$
Row Number Decal for Hopper (Rows 25-48)	957010	:		\$

Vacuum

Step 1 - Vacuum Blowers

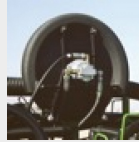
Select the correct size and number of blowers for your planter and products being installed. Please use the table below to determine the correct blower configuration.

Note 1: A single EdgeVac blower will supply up to 24 rows of **vSet Select** or **SpeedTube** or will supply 32 rows of vSet. (Example - a 16/32 3600 EdgeVac will require one additional Precision Planting blower to run vSet Select or SpeedTube)

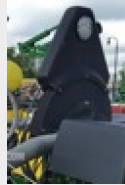
Note 2: mSet systems are the same vacuum requirement a **vSet system or SpeedTube system** (if running SpeedTube with mSet).

Fold Type	vSet	SpeedTube	vSet Select
Front	16 Rows per 4CC	12 Rows per 4CC	8 Rows per 4CC
	16 Rows per 6CC	12 Rows per 6CC	12 Rows per 6CC
L & T, Wing, Forward	24 Rows per 4CC	16 Rows per 4CC	12 Rows per 4CC
	24 Rows per 6CC	16 Rows per 6CC	16 Rows per 6CC

- **Note 2:** A John Deere Blower with a plastic shroud is equal to Precision Planting's 4CC blower. See Pictures below for details
- **Note 3:** Example of Folds - A **John Deere 1770NT** is Front Fold, a **Kinze 3600** is a Lift and Twist (L & T), a **Kinze 3700** is a Forward Fold, a **John Deere 1760** is a Wing Fold.
- **Note 4:** A Precision Planting 4CC blower can be upgraded to a 6CC blower by changing out just the hydraulic motor (part # 731152). A John Deere blower can not be upgraded.



This John Deere blower with plastic shroud is equal to a Precision Planting 4 CC blower.



This John Deere blower with Cast shroud is not equal to Precision Planting's 4CC blower. It should not be used with SpeedTube or vSet Select

Vacuum Blower Kits

Item	Part #	Price	Qty	Total
Vacuum Blower Kit - 4 CC (Includes Motor, Fan, Housing, 3" caps and couplings) (replaces 730510)	730555			\$
Vacuum Blower Kit - 6 CC (Includes Motor, Fan, Housing, 3" Cap and Couplings) (replaces 731150)	731438			\$
6 CC Vac Motor (does not include the fan and housing)	731152			\$
Flow Control Kit - 4 CC Blower	730105			\$
Flow Control Kit - 6 CC Blower	731155			\$

All Blower Kits will require a Case Drain and a Closed Center Hydraulic system.

Step 2 - Blower Mounting Brackets

Blower Mounting Bracket Options

Item	Part #	Price	Qty	Total
Bracket Kit, Blower Mount (JD 7000 Front Fold 30' Bar)	730205			\$
Bracket Kit, Blower Mount (KZ 2100 3-point, Direct Drive)	730289			\$
Bracket Kit, Blower Mount (JD 7000 Front Fold 40' & 60' Bars)	730245			\$
Bracket Kit, Blower Mount (JD 7000 Rigid & Wing Fold and KZ)	730210			\$
Bracket Kit, Agco Blower Mount *	731173			\$
Bracket Kit, Blower Mount (Offset Mount) (Single U bolt blower bracket)	731219			\$

* - For White 9812 12 row 30" Planters do not use the Precision Agco Blower Mount kit. The 9812 runs the vacuum through the frame and requires a different mounting and adapter brackets. Order the following from Agco - #700205951, #700747604, #700749244, #700205956. You will need 2 of each part number for the 9812.

Step 3 - 3" Vac Tube Assembly

3" Vac Tube - 10 ft Lengths

Item	Part #	Price	Qty	Total
10' Length of 3" black ABS	730120			\$

3" Vac Tube Mounting Brackets

Please see the Order Resources below and attached at the end of the PDF Guide for assistance with Vacuum Tube Mounting brackets.

Item	Part #	Price	Qty	Total
Bracket Kit, Main Vac Tube (1 Mount per kit)	730125	\$		\$
High Mount Bracket Kit, Main Vac Tube (1 Mount per kit)	730253	\$		\$

3" Fitting Kits for Planter Fold points, Custom Layouts

Item	Part #	Price	Qty	Total
JD Front Fold Fittings Kit (Main Vac Tube)	730240			\$
JD Wing Fold Fittings Kit (Main Vac Tube)	730250			\$
KZ Wing Flex Fittings Kit (Main Vac Tube)	730255			\$
KZ 3700 Front Fold Fittings Kit (Main Vac Tube)	730260			\$
KZ 3800 Front Fold Fittings Kit (Main Vac Tube)	730265			\$
Kinze Wing Flex w/Fertilizer	730256			\$

Build Your Own Fitting Kit

Vac Blower comes with 2 - 3" caps and couplers

Item	Part #	Price	Qty	Total
3" Rigid Coupler	730202			\$
3" Elbow	730193			\$
3.5" Dia. Flex Hose to used with 3" hard ABS tube - 10'	730198			\$
3" Tee	730194			\$
3" Cap	730161			\$
3" Flex Coupler	730192			\$
3" Hose Clamps	730182			\$

Step 4 - Vacuum Gauges

Vacuum Gauges

- We suggest the 2020 Vac sensor if you have the 2020 SeedSense system. The 725905 sensor will do both vacuum and positive air pressure. Otherwise the 30" Vac Gauge will be required.
- 1/blower required.

Item	Part #	Price	Qty	Total
20/20 Vacuum/Positive Air Sensor (Replaces 725235)	725905			\$
30" Vac Gauge with Mounting Bracket	730130			\$
30" Vac Gauge with Filter (no Bracket)	730169			\$
Vac Fitting Tap Kit - For Vac or Pressure Gauge (also included in Vac Blower)	731153			\$
vSet Classic Hose Fitting with Vac Tap (1 Per vacuum blower)	730142			\$

Step 1 - mSet Seed Selector

mSet compatibility -

Crop compatibility for multi hybrid -

- Corn
- Soybeans
- Sugarbeets (Pro 100 or larger only)

John Deere -

- **7200, 17xx, and 17x5 series planters.**
- mSet can not be put on DB 120 planters
- Requires 1.6 Bu + Bulk fill on planters that are over 32 rows.
- 1790 - 15 inch row spacing planters are not comptable.
- 1790/1795 - 20 inch row spacing planters are compatible but will require a ladder setback kit (731389) and a 1790 Step Kit (720196). When installing the step kit you will need to drill new holes and set the ladder back to clear the hopper.

Case IH Compatible on 12x5 series row units

- Not Compatible with 12X0 series planters with mini hoppers
- Not Compatible with 1260 - 36 row 22 inch planter (mini hopper or 1.9 bu will not fit)
- Requires 1.9 Bu + Bulk fill on planters that are over 32 rows (both 12x0 and 12x5)
- Is not compatible on 2100 series planters
- is not compatible on 15 inch row spacing planters.

Kinze -

- 3000 Row units
- not compatible on 4000 or 2000 series row units
- not compatible with 3000 pusher row units that have down airbags

White/Agco

- 9000 / PP Ready row units with 1.9 bu boxes
- 1.9 bu + bulk fill is compatible
- Mini hoppers will not work due to a bulk fill limitation

Additional Compatibility notes: Mini hopper mSet Multi-Hybrid is not compatible with Orthman/DR planters, DB planters larger than 60', Kinze 3700, 3800, or 4900, and Case IH 12X5 series larger than 60' and Case IH 12X0 Series planters

Harvest International row units are also compatible.

mSet does require vDrive.

mSet Essentials Kit

All mSet planters will need a mSet Essentials Kit. Order one per planter

Item	Part #	Price	Qty	Total
mSet Essentials Kit	736117			\$

Seed Selector

The mSet multi-hybrid system uses the Seed Selector to switch the seed pool in the meter. It is necessary to order one per row.

The Seed Selector Kit includes the Seed Selector Module, Seed level sensor harness, and the necessary hardware to install the seed selector.

The Seed Selector Kit will also require the CAN Expansion hub and jumper cables to connect to the SRM. Use the Row CAN expansion instructions below.

Item	Part #	Price	Qty	Total
mSet Seed Selector Kit	736077			\$
mSet Level Sensor Harness	736104		1 per kit	\$
Seed Gate	736025		1 per kit	\$
Hopper Coupling	736027		1 per kit	\$
Seed Selector Assembly - mSet	736076		1 per kit	\$
Seed Selector Hardware Kit	736078		1 per kit	\$

Row CAN Expansion

For all systems that are running more than vDrive/Select (ie. -*SpeedTube*, *Insecticide*, *vApply HD*, *mSet*) it will be necessary to add a Row CAN expansion kit and a CAN jumper cable to go from the Expansion Hub to the device.

For mSet systems it will be necessary to use a CAN Jumper to go from the Hub to the seed selector in addition to a jumper to go to the vDrive motor.

Note: All black connector jumpers are for first module of a device (1st product vApply, vDrive meter, SpeedTube, mSet Seed Selector, etc), Brown connector jumpers are for the second module of a device (2nd product vApply, vDrive Insecticide), White and Green are for third and fourth modules of a device (3rd, 4th, product vApply and CAN Based FlowSense). Make sure that the correct jumper is being used with the correct module.

Existing SpeedTube & insecticide systems using the Y harness (729288 kit) are compatible with Expansion Hub if the grower is adding vApplyHD. The Y cable will plug into the Expansion Hub using a single CAN Jumper to connect the Y to the Expansion Hub instead of the Y cable plugging into the vDrive plug.

Item	Part #	Price	Qty	Total
Row CAN Expansion HUB Kit	729500			\$
Black Connector - Row Can Jumper - 12" (Inches) --- For first device	729481			\$
Black Connector - Row Can Jumper - 20" (Inches) --- For first device	729482			\$
Black Connector - Row Can Jumper - 30" (Inches) --- For first device	729483			\$
Black Connector - Row Can Jumper - 40" (Inches) --- For first device	729489			\$
Black Connector - Row Can Jumper - 50" (Inches) --- For first device	729485			\$
Brown Connector - Row CAN Jumper - 25" (Inches) --- For second device	729484			\$
White Connector - Row CAN Jumper - 25" (Inches) --- For third device	729493			\$
Green Connector - Row CAN Jumper - 25" (Inches) --- For fourth device	729494			\$

Step 2 - Meter Covers

This Step is for systems that currently have vSet 2 meters already installed and are adding mSet to the system. If the system does not have vSet currently installed, add the mSet meter covers under the vSet 2 section of the order guide.

- mSet meters will reuse existing vSet 2 meter housing and will simply add the mSet meter covers to the housing. Similar to the process used when updating vSet 2 seed tube meters to SpeedTube meters.
- If the grower does not have vSet 2 currently, please add vSet 2 - vDrive to the quote and quote all his meter options there.
- Select either a seed tube style meter cover (736200) for growers that are going to be using a standard seed tube or a SpeedTube style meter cover (736204) for growers that are going to be using SpeedTube.
- **Note 1: The Meter cover is the part that attaches to the Hopper and the housing is the part that contains the seed disc.**
- **Note 2: If the grower is purchasing vSet in addition to mSet, he will also need vacuum fittings, crop kits, and vDrive motors. Add the vSet 2 - vDrive product to select the correct parts.**

Be careful to not double quote the meter covers since they are listed under mSet and vSet 2.

Meter Covers

All mSet meter covers include the *mSet seed level sensors*.

NEW 736305 and 736306 mSet seed covers include a metal rear retention post for use in rougher field conditions. It is not necessary to order both a standard cover and a metal rear retention post cover - only order a standard or metal rear retention.

If ordering meter covers in the vSet 2 section of the order guide, it is not necessary to add in this step.

Item	Part #	Price	Qty	Total
vSet 2 - mSet Seed Cover - seed tube Ready (not for use with SpeedTube)	736200			\$
vSet 2 - mSet Seed Cover - SpeedTube Ready (use with SpeedTube)	736204			\$
vSet 2 - mSet Seed Cover seed tube Ready w/ Rear Retention Post (not for use with SpeedTube)	736305			\$
vSet 2 - mSet Seed Cover SpeedTube Ready w/ Rear Retention Post (use with SpeedTube)	736306			\$

Step 3 - Hopper Dividers and Dual Bulk Fill Inlets

mSet Parts (Hopper dividers, dual lids, dual inlets) - Multi Hybrid

If mSet is going to be installed, it will be necessary for a couple of additional parts to make the vSet 2 mSet compatible hopper work for multi hybrid.

- For mSet 1.6/1.9 Bu systems, all that is necessary for the hopper will be the Dual Lid Kit with divider (**736065 or 736167**)
- If doing 1.6 Bu + Bulk Fill (both single and multi hybrid), it will be necessary to order the bulk fill inlets and templates for vSet 2/mSet compatible hoppers
- For 3.0 Bu systems, all that is needed is the 3.0 Bu Divider Kit (**736229**). The standard lid kit already has 2 lids in it and does not need an additional lid.
- For mSet mini hopper systems, both the Mini Hopper Divider Kits (**736109 or 736193**) and the Dual Bulk Fill Inlets (**736056**) are required. (Only good up to 32 rows)
- Also the Bulk Fill Tube Plug is required for Bulk Fill systems when not planting from the those hoses.

Item	Part #	Price	Qty	Total
Dual 1.6 Bu Lid - with mSet hopper divider	736065			\$
Dual 1.9 Bu Lid - with mSet hopper divider (Kinze, Case IH, White)	736167			\$
vSet 2/mSet Mini Hopper Dual Bulk Fill Inlet (vSet 2/mSet hopper only)	736056			\$
Mini Hopper Divider Kit - mSet (John Deere, Harvest)	736109			\$
Mini Hopper Divider Kit - mSet (Kinze 3000, Case IH, White)	736193			\$
Mini Hopper Divider Kit - mSet (Kinze 4000)	736304			\$
3.0 Bu Hopper Divider Kit - mSet (John Deere)	736229			\$
Bulk Fill Tube Plug (Seed Delivery blockoff)	736121			\$

Step 4 - 1.6/1.9 Bu with Bulk Fill

If installing mSet on a 1.6Bu + Bulk fill on a John Deere system, it will be necessary to have a CCS Blower Control kit and will also need 1.6Bu bulk fill inlet kits. Please order reselectively.

CCS Blower Control

The John Deere blower control module kit is required on systems that are running bulk fill with 1.6 bu boxes.

Note: do not use the hopper template in this kit with mSet hoppers.

Item	Part #	Price	Qty	Total
Blower Control Module Kit - One per Planter	731391	\$		\$
Hardware Kit, Blower Control Module	731404	/	1 per kit	\$
Fitting, Nylon Single-Barbed Tube Fitting Tee for 1/4" Tube ID, Black	310152	/	1 per kit	\$
CCS Blower Control Module	731121	\$	1 per kit	\$
Blower Control Module Harness	731205	\$	1 per kit	\$
Row CAN 'Y' Harness (6 Pin)	731384	\$	1 per kit	\$
Row CAN Extension (30')	729203	\$	1 per kit	\$
CAN Terminator - Seed Repeater CAN (6 Pin)	729081	\$	1 per kit	\$

Bulk Fill Inlet Kits

The bulk fill template is necessary for installing the fill tube kits. Make sure that the correct template is ordered for the 1.6 or 1.9 Bu box. Order one per planter

The total number of the fill tube kits (both single and dual) should equal the number of rows on the planter.

Note: For some systems that are running bulk fill with 1.6/1.9 across rough ground, it may be necessary to add the hopper overfill kits. This kit will keep the seed from overfilling the hopper. Order the kit (1/row) and the template for your hopper (1/planter)

Item	Part #	Price	Qty	Total
1.6Bu + Bulk Fill Template - (mSet compatible hoppers) - one per planter	736098			\$
1.9Bu + Bulk Fill Template - (mSet compatible hoppers) - one per planter	736194			\$
1.6/1.9/3.0 Bu Fill Tube Kit - Need 1 Per Row for all rows up to 32	736094			\$
1.6/1.9/3.0 Bu Fill Tube Kit - (Dual) 30" Inter-Row - Needed 1 Per Row for all Rows over 32	736095			\$
1.6/1.9/3.0 Bu Fill Tube Kit - (Dual) 20-22" Inter-Row - Needed 1 Per Row for all rows over 32	736096			\$
1.6Bu + Bulk Fill mSet Hopper Overfill Kit	736211			\$
1.9Bu + Bulk Fill mSet Hopper Overfill Kit	736213			\$
Template for 1.6Bu mSet Overfill Baffle	736219			\$
Template for 1.9Bu mSet Overfill Baffle	736220			\$

Hopper Supports

If replacing mini hoppers with mSet 1.6 bu boxes for 1.6 Bu bulk fill system, it will be necessary to add a rear hopper support to hold the back end of the 1.6 bu box. Also the front bushings will need to be replaced with 1.6 bu Hopper pucks (order 2 per row).

Item	Part #	Price	Qty	Total
JD Hopper Puck (need 2 per row)	736218			\$
John Deere/Harvest Hopper Support - Rear Post - Only for mSet Hoppers	736150			\$

CCS Ladder Set Back - John Deere Only

CCS Ladder Setbacks are needed for any planter with 24" wide ladders.

Item	Part #	Price	Qty	Total
6" CCS Ladder Set Back Bracket - For 24" wide ladder brackets	731389	\$125.00		\$
CCS Ladder Setback Bracket - Anti-slip	731395	n/a	1 per kit	\$
Hardware Kit	731388	n/a	1 per kit	\$

Step 5 - Mini Hopper Bulk Fill Upgrades

If installing mSet on a mini hopper system, a bulk fill seed delivery kit will be required and most likely will require some additional bulk fill seed hose. Please order respectively.

John Deere Bulk Fill Seed Delivery Kits (One Per Planter)

Because we are installing jumper hoses between every row when installing the mini hopper with multi-hybrid, it is necessary to order a Seed delivery finish kit. This includes any jumpers required and additional fittings, tools, and parts to complete the install.

Item	Part #	Price	Qty	Total
24R15, 24R18, 24R19, 24R20, 24R22 JD Seed Delivery Finish Kit	731341			\$
32R20 JD Seed Delivery Finish Kit	731342			\$
12R30 JD 1770NT Seed Delivery Finish Kit	731130			\$
16R30 JD 1770NT Seed Delivery Finish Kit	731131			\$
24R30 JD 1770NT Seed Delivery Finish Kit	731132			\$
12R36, 12R38, 12R40, JD Seed Delivery Finish Kit	731340			\$
36R20 JD Seed Delivery Finish Kit	731343			\$

Kinze Bulk Fill Seed Delivery Finish Kits (One Per Planter)

Because we are installing jumper hoses between every row when installing the mini hopper with multi-hybrid, it is necessary to order a Seed delivery finish kit. This includes any jumpers required and additional fittings, tools, and parts to complete the install.

Item	Part #	Price	Qty	Total
12R30 Kinze 3600/3660 Seed Delivery Finish Kit	731133	:		\$
16R30 Kinze 3600/3660 Seed Delivery Finish Kit	731134	:		\$
12/23, 12/24R15 Kinze 3600/3660 Seed Delivery Finish Kit	731135	:		\$
16/31, 16/32R15 Kinze 3600/3660 Seed Delivery Finish Kit	731136	:		\$
12R36, 12R38 Kinze 3600/3660 Seed Delivery Finish Kit	731137	:		\$

Case IH Bulk Fill Seed Delivery Finish Kits (One Per Planter)

Because we are installing jumper hoses between every row when installing the mini hopper with multi-hybrid, it is necessary to order a Seed delivery finish kit. This includes any jumpers required and additional fittings, tools, and parts to complete the install.

Item	Part #	Price	Qty	Total
12R30 Case IH Seed Delivery Finish Kit	731330	\$950.00		\$
16R30 Case IH Seed Delivery Finish Kit	731331	\$1,115.00		\$
24R30 Case IH Seed Delivery Finish Kit	731332	\$1,400.00		\$
24R20 Case IH Seed Delivery Finish Kit	731333	\$1,300.00		\$

Note: 12x5 series planters only. 1245 Interplant planters and the 1265 are not compatible.

Bulk Fill Seed Hose

Please use the Recommendation Chart below for ideas on how much Bulk Fill hose may be required to rework the exist system to a vSet 2/mSet Mini Hopper system. Please note that this table is showing what the total hose would be required if the entire bulk fill hose was replaced.

John Deere	12R 30	150 ft
	16R 30	230 ft
	24R 30	450 ft
	36R 30	600 ft
Kinze	12R 30	175 ft
	16R 30	250 ft
	12R 36-38	250 ft
	12/23, 12/24 R15	375 ft
	16/31, 16/32 R15	550 ft
	23R 18, 23R 19	375 ft

Note: Case IH 12X5 series planters require minimal to no additional seed delivery hose to install vSet Select.

Item	Part #	Price	Qty	Total
100FT Roll of 1.25" ID Hose	731073			\$

vDrive Insecticide

Step 1 - Insecticide Motor and Meters

vDrive Insecticide is compatible with the following row units:

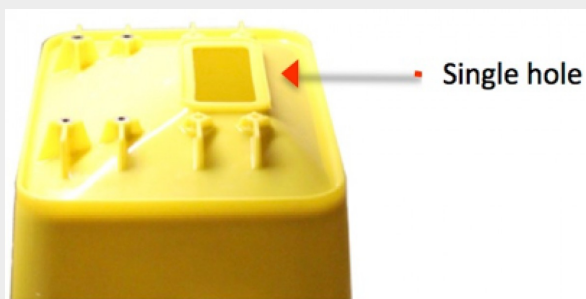
- John Deere Row Units - ME1(7000 planters) ME2, ME Plus, XP, ME 5. Note: Some will require new boxes
- Kinze Row Units - 2000, 3000, 4900 series. Note: Requires new boxes
- Case Row Units - 1200, 12xx, 21xx Series. Note: Requires new boxes
- White 9000, 8000 Row units. Requires new boxes
- Harvest International Laser Pro Row units.
- Amvac SmartBox system is also compatible.

Note 1: Gen 2 systems must have vDrive installed on the planter for vDrive Insecticide to work. Gen 3 systems may have vDrive OR Smart Connector seed monitoring in order for vDrive Insecticide to function.

Note 2: Insecticide mounting bracket will require modification to fit High Flow Funnel on XP row unit

Note 3: vDrive 2.0 will *not* work on vDrive Insecticide due to interference issues

The Insecticide Meter is compatible with single hole John Deere ME 2, Plus, XP and ME5 insecticide boxes. All other boxes will need to be replaced with a single hole box from John Deere or order a Shoup MFG. box. Part numbers from Shoup are listed below.



vDrive Insecticide Meters

vDrive Insecticide has 3 meter options based on flow rates. You will need to select the correct sized meter depending on the application rate and the ground speed of the planter. Refer to the chart and the normal application rates to determine the correct meter.

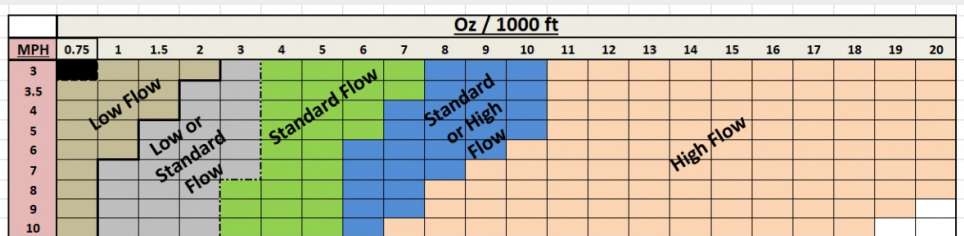
Note 1: vDrive Insecticide is designed only for products with clay based carriers.

Note 2: The High Flow Funnel is required for the High Flow Meter. It is included in the High Flow Meter Kit.

Note 3: The recommended flow meter for Force 6.5 is the Standard flow meter.

Note 4: If running a gypsum-based insecticide product, you must run either a standard flow or high flow meter depending on application rate.

Note 5: vDrive Insecticide is not compatible with Force 10g



Normal Application Rates	
Meter	Recommended rate (oz/1000 ft)
Low Flow	.75-3
Standard Flow	2-7
High Flow	6-20

Conversion formula to convert from lbs/acre to oz/1000 ft. Will have to do step 1 to convert to oz/acre first.

Note that the row spacing needs to be in feet - not inches.

- 1) $\text{Lbs/Acre} \times 16 = \text{Oz/Acre}$
- 2) $\frac{43560 \div \text{Row Spacing in Feet}}{1000} = N$
- 3) $\frac{\text{Oz/Acre}}{N} = \text{Oz/1000 Ft.}$

Item	Part #	Price	Qty	Total
vDrive Insecticide Base Kit (1 Per planter)	732060			\$
Low Flow Insecticide Meter with vDrive installed	732066			\$
Low Flow Insecticide Meter only	732065			\$
Insecticide Standard Meter with vDrive installed	732001			\$
Insecticide Standard Meter only	732054			\$
High Flow Insecticide Meter with vDrive & HighFlow Funnel**	732118			\$
High Flow Insecticide Meter only (includes High Flow Funnel kit)**	732119			\$
Insecticide Funnel Kit (installed between meter and insecticide hose - Do not use with high flow meter) (1/row) *	732102			\$
Meter Mounted Funnel Kit (High Flow Funnel)	732030			\$

*Not necessary if installing on SmartBox hopper and using 732028

**Insecticide mounting bracket will require modification to fit High Flow Funnel on John Deere XP row unit"

Step 2 - vDrive Insecticide Harnesses

Row CAN Expansion

For all systems that are running more than vDrive/Select (ie. -*SpeedTube*, *Insecticide*, *vApply HD*) it will be necessary to add a Row CAN expansion kit and a CAN jumper cable to go from the Expansion Hub to the device.

Note: All black connector jumpers are for first module of a device (1st product vApply, vDrive meter, SpeedTube, mSet Seed Selector, etc), Brown connector jumpers are for the second module of a device (2nd product vApply, vDrive Insecticide), White and Green are for third and fourth modules of a device (3rd, 4th, product vApply and CAN Based FlowSense). Make sure that the correct jumper is being used with the correct module.

Existing SpeedTube & insecticide systems using the Y harness (729288 kit) are compatible with Expansion Hub if the grower is adding vApplyHD. The Y cable will plug into the Expansion Hub using a single CAN Jumper to connect the Y to the Expansion Hub instead of the Y cable plugging into the vDrive plug.

Item	Part #	Price	Qty	Total
Row CAN Expansion HUB Kit	729500			\$
Black Connector - Row Can Jumper - 12" (Inches) --- For first device	729481			\$
Black Connector - Row Can Jumper - 20" (Inches) --- For first device	729482			\$
Black Connector - Row Can Jumper - 30" (Inches) --- For first device	729483			\$
Black Connector - Row Can Jumper - 40" (Inches) --- For first device	729489			\$
Black Connector - Row Can Jumper - 50" (Inches) --- For first device	729485			\$
Brown Connector - Row CAN Jumper - 25" (Inches) --- For second device	729484			\$
White Connector - Row CAN Jumper - 25" (Inches) --- For third device	729493			\$
Green Connector - Row CAN Jumper - 25" (Inches) --- For fourth device	729494			\$

Row CAN Extension

If the CAN Jumper does not reach the insecticide motor, it will be necessary to use a Row CAN extension between the jumper and the motor.

Item	Part #	Price	Qty	Total
10' Row CAN Extension - 6 Pin	729201			\$

10' Row CAN Extension Harness will be used extend the vDrive Insecticide motor connection. This will be used on systems where insecticide box is mounted in locations other than on the back of the row unit.

Example - 1790 with the 4 rows in the center or a 1770 with 2 rows in the center that are mounted to the catwalk

Step 3 - Shoup Insecticide Boxes

Please contact Shoup Manufacturing for availability for all Shoup parts before ordering vDrive Insecticide - 3/3/2021

All parts in this step must be ordered from Shoup Manufacturing. For Shoup orders, Please call **Shoup MFG. at 1-800-627-6137**

Precision Planting can not insure that the prices listed here for Shoup parts will always be correct.

Note Kits do **not** come with insecticide hose*

John Deere Hopper Kits

Hopper Kits for Row Units that **already have supports for Insecticide hoppers.**

Item	Part #	Price	Qty	Total
Insecticide Hopper Kit for JD 7000/ME1 (Includes Hopper, Lid, Mounting plate)	PP7000			\$
Insecticide Hopper Kit for John Deere ME2, Plus, XP, ME5 (includes Hopper, Lid, Hopper Hardware)	PP1700			\$

Kinze Hopper Kits

Hopper Kits for Row Units that **already have supports for Insecticide hoppers.**

Item	Part #	Price	Qty	Total
Insecticide Hopper Kit for Kinze 2000 Series Row units (Includes Hopper, Lid, Hardware)	PP2000			\$
Insecticide Hopper Kit for Kinze 3000 Series Row Units (Includes Hopper, Lid, Hardware)	PP3002			\$
Insecticide Hopper Kit for Kinze 4900 Series Row Units (Includes Hopper, Lid, Hardware)	PP4910			\$

Case IH Hopper Kits

Hopper Kits for Row Units that **already have supports for Insecticide hoppers.**

Item	Part #	Price	Qty	Total
Insecticide Hopper Kit for Case IH 1200/12xx Series Row Units (Includes Hopper, Lid, Hardware)	PP1230			\$
Center 2 Rows Mounting Bracket Kit (1/Planter) (Mounts Hopper Supports next to Step Assembly)	PP1240			\$

John Deere Hopper and Hopper Support Kits

For row units that don't have Insecticide hopper supports, these kits include the hopper supports in addition to the insecticide box.

- **PP1705 and PP1605 require an ME5 Style load pin (Part #725866) The XP (725580) will not work with the PP1605 bracket!!!!**
- PP1705 and PP1605 are not compatible on 1720 CCS planters
- For 1790/1795 planters, replace (4) 1705 kits with (1) PP1730 Kit. This kit mounts the 4 center rows to the frame rather than to the row unit.

Item	Part #	Price	Qty	Total
Insecticide Hopper & Bracket Kit for John Deere XP, ME5 (Includes Hopper, Lid, Hopper Hardware, Insecticide Hopper Support Panels and Hardware)	PP1705			\$
Insecticide Kit for Center Rear 4 rows on 1790/1795. (Includes 4 hoppers, 4 lids, 4 Support panels, 4 frame mounting kits, and Hardware)	PP1730			\$
Hopper Support Bracket Kit for John Deere (XP, ME5) - Brackets only! No hopper or Lid! (Shoup Part)	PP1605			\$
Hopper Support Bracket Kit for Center 4 rows on 1790/1795. Only brackets! No Hoppers!	PP1630			\$
Step Mounting Kit for 1770/1775/DB CCS Planters. (Mounts Center 2 rows to Step Assembly) *	PP1735			\$
Drilling Template for John Deere XP and XP Pro row units. (use with PP1705 and PP1605. 1/planter)	PP1725			\$

* Also needed on 1790/1795 20" planters

Kinze Hopper and Hopper Support Kits

For row units that don't have Insecticide hopper supports, these kits include the hopper supports in addition to the insecticide box.

Item	Part #	Price	Qty	Total
Insecticide Hopper and Support Bracket Kit for Kinze 3000 Series Row Unit (Includes Hopper, Lid, Support Panels, Hardware)	PP3000			\$
Insecticide Ladder Kit for Kinze 3600 ASD Ladder (1/Planter) (Includes Bracket to mount center 2 rows to Ladder assembly)	PP3005			\$
Hazard Light Mounting Bracket for 3500, 3600, 3650, 3660, 3700, 3800 (1/Planter) (Mounts Hazard light to Hopper Support panel)	PP3045			\$
Insecticide Hopper and Support Bracket Kit for Kinze 4900 Series Row Unit (Includes Hopper, Lid, Hopper Support Panels, Hardware)	PP4900			\$
Bottom Step Kit for 4900 - 24 row with Granular installed	PP4955			\$
Bottom Step Kit for 4900 - 12 & 16 Row with Granular installed	PP4960			\$

Case IH Hopper and Hopper Support Kits

For row units that don't have Insecticide hopper supports, these kits include the hopper supports in addition to the insecticide box.

Item	Part #	Price	Qty	Total
Insecticide Hopper and Support Bracket Kit for 1200/12xx Series Row Units (Includes Hopper, Lid, Support Panels, Hardware)	PP1200			\$
Insecticide Hopper and Support Bracket Kit for 2100 Series Row Unit (Includes Hopper, Lid, Support Panels, Hardware)	PP2100			\$
Ladder Bracket Kit for Central Fill - Moves 2 rows by ladder (2100 Series row unit)	PP2150			\$

White Hopper and Support Kits

All of the row unit kits below are Shoup parts and will need to be ordered from Shoup Manufacturing.

Note: The White 9000 and the Precision Ready Row Unit Kit are the same bracket with a different color hopper. The White 9000 Kit has a white box and the Precision Ready Row Unit kit has a gray box. Both have black brackets.

If putting vDrive Insecticide on a Precision Planting Ready Row Unit 2.0 with the standard mSet hopper you will need the following:

- 736280 (1 per row)
- PP9500G (1 per row)

If putting vDrive Insecticide on a Precision Planting Ready Row Unit 2.0 with minihoppers you will need the following:

- 700184965 from Agco (1 per row)
- PP9500G (1 per row)

Item	Part #	Price	Qty	Total
White 9000 Insecticide Hopper and Support Bracket Kit	PP9500			\$
Precision Ready Row Unit 1.0/2.0/ Massey 2022+ Insecticide Hopper and Support Bracket Kit	PP9500G			\$
Insecticide Hopper and Support Bracket Kit (8000)	PP8000			\$
Insecticide/3.0 Bushel Hopper Bracket Kit - PPRU 2.0 (1 per row)	736280			\$

Harvest International Hopper Kits

The Harvest International parts are from Shoup Manufacturing.

Item	Part #	Price	Qty	Total
Harvest International Insecticide Hopper	SH68799G	\$59.95		\$
Insecticide Hopper Lid	SH63856	\$41.93		\$
Hardware Kit for Harvest International Insecticide Kit	HDWPP1620	\$3.49		\$

Step 4 - Amvac SmartBox Systems

Some Parts listed in this step are Amvac Parts and can not be ordered from Precision Planting. **Precision Planting can not insure that the prices listed here for Amvac Parts will always be correct.**

SmartBox Meter Kits

For all Amvac SmartBox systems, an adapter kit will allow the Precision Planting insecticide meter to mount to the SmartBox. One SmartBox Meter Kit per row is required

SmartBox Meter Kit does not include Precision Planting Meter or vDrive. Please order those in step 1.

Item	Part #	Price	Qty	Total
SmartBox Meter Adapter Kit	732028			\$
Smart Box Adapter Kit*	731145			\$

***Only for John Deere planters:** Only needed on mini hoppers systems. Not necessary on 1.6 Bu hoppers. Use for SpeedTube or vSet Select only. If not running SpeedTube or Select use 730453 or 730456

Amvac SmartBox Adapter

The following parts are only available from Amvac. Visit Amvac's website for complete prices and order information - www.amvacsmartbox.com

For SmartBox systems that are currently installed and are upgrading to vDrive Insecticide, a SmartBox adapter bracket is required.

Item	Part #	Price	Qty	Total
Amvac SmartBox Adapter Bracket (Lifts SmartBox Hopper to allow vDrive Insecticide meter to mount) (1/Row)	SB021640			\$

New Amvac SmartBox install with vDrive Insecticide

The following parts are only available from Amvac. Visit Amvac's website for complete prices and order information - www.amvacsmartbox.com

For planters that are going to install a new SmartBox system and control it with vDrive Insecticide, the following parts are deducted kits from Amvac (no harnesses, controls, meters, etc)

- **Note 1:** The kits below do not include Precision Planting meter and vDrive motor. Order from Precision Planting a 732001 or 723054 (1/row)
- **Note 2:** The kits below do not include additional SmartBox mounting brackets. Check SmartBox bracket guide to determine if additional brackets are required for your planter.
- **Note 3:** A 732028 is still required. (1/row)

Item	Part #	Price	Qty	Total
Amvac Smart Box Kit - Precision Planting Ready (1/row) (Includes Cradle, Box, Lift Kit, Discharge Tube, Calibration Bottles)	SB022299			\$

SpeedTube

Step 1 - SpeedTube Kits

SpeedTube Compatibility:

- **Hoppers:** For 2019, SpeedTube will only work with **JD XP, JD ME2/+, JD ME5, Kinze 3000, White 9000, Harvest International, and Case IH 1200/12x5/21xx planters with mini, 1.6, and 3 bu hoppers.** - Note: Existing vSet White 9000 mini hopper systems may need new minihoppers. If the spanner bracket is part number 768396 (stamped on spanner bracket itself) then a new minihopper kit will be needed.

Meter Change Details:

- **-A vSet 2 Meter and Hopper are required for all systems running SpeedTube. Please identify if the meter is a vSet 2 before purchasing SpeedTube.**
- **- vDrive is required for SpeedTube to work!**
- **- Go to vSet 2 section of the Order guide to order the correct Meter and Hoppers.**

Additional Vacuum Requirements:

- SpeedTube has different vacuum requirements than a standard vSet meter. Please go to the Vacuum section of the order guide to select the correct parts. (both in SpeedTube and Vacuum tab)

Additional Power Requirements:

- **APEX Power Harnessing: Make sure that you have 2 APEX harnesses for all backbones 7 rows and greater.** A secondary PDM will be required if more than 5 APEX harnesses are required.
- **Alternator: Check Alternator Power Table in Power Options of SRM Base to see when alternator is required.**

Keeton Bracket Requirements:

- Keeton: Quick Attach Firmer Bracket is **required** for SpeedTube and included in the row unit kits. It holds the SpeedTube in place in the shank. If the grower desires a Keeton Tail, a new Quick Attach Keeton Tail will need to be ordered from the Keeton Section of the Order guide. Exception is the Case IH Row Unit which will require a new seed Shoe (included in the row unit kit)

Cotton and Large Sugarbeet Compatibility:

- Singulated Cotton
 - Requires Cotton feeder wheels - **768733 (large wheel) and 768734 (small wheel) - order one of each per row**
 - Requires the crop type to be set to "Cotton"
 - Only works with singulated cotton - no hill drop
- Sugarbeets
 - Only compatible with seed size **Pro 200 or larger**
 - Uses standard feeder wheels
 - Requires the crop type to be set to "Sugarbeets"

Note 1: If ordering SpeedTube for the Gray Precision Planting Ready Row Unit, order SpeedTube as normal except for the Row unit specific parts(if the row unit was ordered as a SpeedTube row unit). It will only be necessary to order the retention spring for row unit (768551) which is a part of the White 9000 row unit kit.

Note 2: If ordering SpeedTube for a Case IH 21XX series planter as a retro fit order the 768800. It includes the SpeedTube assembly, the retention spring, the shank cover, and **the SpeedTube meter cover**. The only additional piece that would be require would be CAN hub and jumper if not currently installed.

SpeedTube Kits

Order 1 Essentials + Tools Kit per planter

Order 1 SpeedTube Kit per row. Case IH 21XX will order the 768800 (1/row)

If planting singulated cotton, it will be necessary to order a 768733 and 768734 feeder wheels per row (1 of each per row)

Item	Part #	Price	Qty	Total
SpeedTube Essentials + Tools Kit (1 Per Planter Required)	768496	:		\$
SpeedTube Kit (1 Per Row)	768500	:		\$
Case IH 21XX SpeedTube Kit	768800	:		\$
Cotton - Front Feeder Wheel (large) (1/row)	768733	:		\$
Cotton - Rear Feeder Wheel (small) (1/row)	768734	:		\$

Row CAN Expansion

For all systems that are running more than vDrive/Select (ie. -*SpeedTube*, *Insecticide*, *vApply HD*) it will be necessary to add a Row CAN expansion kit and a CAN jumper cable to go from the Expansion Hub to the device.

Note: All black connector jumpers are for first module of a device (1st product vApply, vDrive meter, SpeedTube, mSet Seed Selector, etc), Brown connector jumpers are for the second module of a device (2nd product vApply, vDrive Insecticide), White and Green are for third and fourth modules of a device (3rd, 4th, product vApply and CAN Based FlowSense). Make sure that the correct jumper is being used with the correct module.

Existing SpeedTube & insecticide systems using the Y harness (729288 kit) are compatible with Expansion Hub if the grower is adding vApplyHD. The Y cable will plug into the Expansion Hub using a single CAN Jumper to connect the Y to the Expansion Hub instead of the Y cable plugging into the vDrive plug.

Item	Part #	Price	Qty	Total
Row CAN Expansion HUB Kit	729500			\$
Black Connector - Row Can Jumper - 12" (Inches) --- For first device	729481			\$
Black Connector - Row Can Jumper - 20" (Inches) --- For first device	729482			\$
Black Connector - Row Can Jumper - 30" (Inches) --- For first device	729483			\$
Black Connector - Row Can Jumper - 40" (Inches) --- For first device	729489			\$
Black Connector - Row Can Jumper - 50" (Inches) --- For first device	729485			\$
Brown Connector - Row CAN Jumper - 25" (Inches) --- For second device	729484			\$
White Connector - Row CAN Jumper - 25" (Inches) --- For third device	729493			\$
Green Connector - Row CAN Jumper - 25" (Inches) --- For fourth device	729494			\$

Step 2 - SpeedTube Row Unit Specific Kits

John Deere ME2/+ Row Unit

Item	Part #	Price	Qty	Total
John Deere ME2/+ Row Unit Kit (1 Per Row)	768501			\$
John Deere ME2/+ Retention Spring	768488		1 per kit	\$
John Deere ME2/+ Guard Kit	768427		1 per kit	\$
John Deere ME2/+ dust cover boot for shank	768518		1 per kit	\$
John Deere Quick Attach Firmer Bracket	150109		1 per kit	\$

John Deere ME2/+ with 3/8" Drilled Frog/Guard holes Row Unit

Note: This Kit is for systems that have worn or drilled out mounting holes for the seed tube guard. If the row unit has installed the Guard Kit for worn holes, this kit will be necessary for SpeedTube. If the holes are not worn or drilled out, use the normal ME2/+ Row unit Kit - Part # 768501

Item	Part #	Price	Qty	Total
John Deere ME2/+ with Drilled 3/8" Frog/Guard holes - Row Unit Kit (1 Per Row)	768502			\$
John Deere ME2/+ Retention Spring	768488		1 per kit	\$
John Deere ME2/+ Guard Kit (3/8 drilled holes)	768442		1 per kit	\$
John Deere ME2/+ dust cover boot for shank	768518		1 per kit	\$
John Deere Quick Attach Firmer Bracket	150109		1 per kit	\$

John Deere XP Row Unit

Item	Part #	Price	Qty	Total
John Deere XP Row Unit Kit (1 Per Row)	768394			\$
Kit, Guard, JD XP/ME5 Row Unit Guard	768633		1 per kit	\$
John Deere XP Retention Spring	768487		1 per kit	\$
Seed Tube Pin and Clip	700279		1 per kit	\$
John Deere XP dust cover boot for shank	768517		1 per kit	\$
John Deere Quick Attach Firmer Bracket	150109		1 per kit	\$

John Deere ME5 Row Unit

Item	Part #	Price	Qty	Total
John Deere ME5 Row Unit Kit (1 Per Row)	768503			\$
Kit, Guard, JD XP/ME5 Row Unit Guard	768633		1 per kit	\$
John Deere ME5 Retention Spring	768489		1 per kit	\$
Seed Tube Pin and Clip	700279		1 per kit	\$
John Deere ME5 dust cover boot for shank	768519		1 per kit	\$
John Deere Quick Attach Firmer Bracket	150109		1 per kit	\$
ME5 Hopper Support Shim	768535		1 per kit	\$

John Deere Liquid Row Unit Kits

If it is desired to apply liquid in front of the SeedTube guard, the Liquid SpeedTube Guard has a liquid tube built into the SpeedTube Guard. It is currently only for XP and ME5 Row units. If ordering a new SpeedTube system that will need the liquid guard, order the liquid kits below that have the the liquid guard and the tube protector included in the kit. If the system is already installed and will need the liquid guard, order the guard and the tube protector in the section below.

Item	Part #	Price	Qty	Total
John Deere XP Row Unit Kit - Liquid Guard (1 Per Row)	768738			\$
Bracket, QA JD w/Hardware	150109		1 per kit	\$
Kit, Seed Tube Pin and Clip	700279		1 per kit	\$
Spring, Retention, XP Row Unit	768487		1 per kit	\$
Cover, Shank JD XP	768517		1 per kit	\$
Kit, Guard, JD XP/ME5 Liquid Row Unit Guard	768638		1 per kit	\$
Tube, JD XP/ME5 Liquid Guard	768686		1 per kit	\$
John Deere ME5 Row Unit Kit - Liquid Guard(1 Per Row)	768739			\$
Bracket, QA JD w/Hardware	150109		1 per kit	\$
Kit, Seed Tube Pin and Clip	700279		1 per kit	\$
Spring, Retention, JD ME5	768489		1 per kit	\$
Cover, Shank (JD ME5)	768519		1 per kit	\$
Shim, Rear Post	768535		1 per kit	\$
Kit, Guard, JD XP/ME5 Liquid Row Unit Guard	768638		1 per kit	\$
Tube, JD XP/ME5 Liquid Guard	768686		1 per kit	\$

John Deere Row Unit Additional Options

If it is desired to apply liquid in front of the SeedTube guard, the Liquid SpeedTube Guard has a liquid tube built into the SpeedTube Guard. It is currently only for XP and ME5 Row units. The guard that comes with the standard SpeedTube row unit kit will not be used and the liquid guard will be installed instead. If the liquid row units were selected above, the guard and the tube protect does not need to be ordered below.

The Liquid Tube Protector for XP/ME5 row units is designed to mount in front of the disc openers and protect the liquid tube when running the Liquid SpeedTube Guard. It is a recommended option and it is already included in the liquid row unit kit.

If SmartBox is installed on the planter the 731145 SmartBox adapter kit will be required on rows with SmartBoxes when adding SpeedTube. If ordering vSet 2 meters as well make sure that the adapter is not double ordered in both SpeedTube and vSet 2.

Item	Part #	Price	Qty	Total
Liquid Tube Protector for front of row unit - XP/ME5 only	768686			\$
Liquid SpeedTube Guard (XP & ME5 row unit only!)	768638			\$
Smart Box Adapter Kit*	731145			\$

Kinze 3000 Row Unit

Item	Part #	Price	Qty	Total
Kinze 3000 Row Unit Kit (1 Per Row)	768573			\$
Kinze 3000 Guard Kit (replaces 768278)	768539		1 per kit	\$
Kinze 3000 Quick Attach Firmer Bracket	150120		1 per kit	\$
Kinze 3000 Retention Spring	768486		1 per kit	\$
Kinze 3000 dust cover boot for shank	768516		1 per kit	\$

Kinze 4000 Row Unit

Order 1 row unit kit per row

Item	Part #	Price	Qty	Total
SpeedTube Row Unit Kit - KZ4000 (1 per row)	768820			\$
Kinze 4000 Quick Attach Firmer Bracket	150150		1 per kit	\$
Kinze 4000 Retention Spring	768819		1 per kit	\$
Cover - KZ4000	768823		1 per kit	\$
Guard Kit, KZ4000	768824		1 per kit	\$

White 9000 Row Unit

If ordering for a Gray Precision Planting Ready Row Unit, only order the 768551 (Retention spring) if the row unit was ordered as a SpeedTube ready.

Item	Part #	Price	Qty	Total
White 9000 Row Unit Kit (1 Per Row)	768490			\$
Bracket, QA White w/ Hardware	150123		1 per kit	\$
White 9000 Retention Spring	768551		1 per kit	\$
Cover, White 9000 SpeedTube	768601		1 per kit	\$
White 9000 Guard Kit	768444		1 per kit	\$

Case IH 1200/12X5 Row Unit

Note 1: Current Case IH vSet hoppers will require upgrades to the brackets to make them compatible with SpeedTube. vSet 2 hopper guide will also provide details on what is needed for SpeedTube on Case IH.

Note 2: Do not order a row unit kit for a Case IH 21XX row unit. All necessary parts are included in the 768800 SpeedTube assembly.

Item	Part #	Price	Qty	Total
Case IH 1200/12x5 Row Unit Kit (1 Per Row)	768644			\$
Case IH SpeedTube Shoe	768652		1 per kit	\$
Case IH dust cover boot for shank	768599		1 per kit	\$
Case IH Retention Spring	768602		1 per kit	\$

Harvest International Row Unit

Item	Part #	Price	Qty	Total
Harvest International SpeedTube Row Unit Kit	768691			\$
Bracket, QA JD w/Hardware	150109		1 per kit	\$
Spring, Retention - Harvest International	768692		1 per kit	\$
Cover, Shank Harvest International	768693		1 per kit	\$
SpeedTube Guard - Harvest International	768735		1 per kit	\$

Horsch Maestro Row Unit

Item	Part #	Price	Qty	Total
Horsch Maestro SpeedTube Kit	768830			\$
QA Bracket Kit - Maestro w/ST	150612		1 per kit	\$
Guard Kit - Horsch Maestro - Pre 2022	768833		1 per kit	\$
Retention Spring - Horsch Maestro	768831		1 per kit	\$
Shank Cover - Horsch Maestro	768832		1 per kit	\$
Guard kit - Maestro 2022+	768845			\$

Step 3 - Vacuum

Depending on how many blowers are installed and the frame types, it may be necessary to add vacuum blowers or replace 4cc blowers with 6cc blower motors.

- **For SpeedTube a 4 CC blower will supply**
 - **12 rows** on a Front Fold Planter (1770, DB series etc)
 - **16 rows** on a Lift and Twist (Kinze 3600), Wing Fold (JD 1760) or a Forward Fold Planter (Kinze 3700)
- **For SpeedTube a 6 CC blower will supply**
 - **12 rows** on a Front Fold Planter (1770, DB series, etc)
 - **16 rows** on a Lift and Twist (Kinze 3600), Wing Fold (JD 1760), or Forward Fold (Kinze 3700)
- **John Deere Blowers**
 - A John Deere blower that has a plastic shroud is equal to a 4cc blower. It can not be upgraded to 6cc blower
 - A John Deere blower that has a cast metal shroud (normally has a vac gauge built in above it) is not equal to a 4cc blower. It will need to be replaced for a vSet Select planter.
- **Precision Planting Blowers**
 - A Precision Planting 4cc blower can be upgraded to a 6cc blower by just replacing the motor.
- **Kinze Blowers**
 - An Edgevac (Kinze vacuum system) blower will supply up to **24 rows** of SpeedTube without additional blowers.
 - Anything over 24 rows will require additional Vacuum blowers
- **Case IH planters** have sufficient vacuum for SpeedTube and no changes are required to the vacuum blowers.

Deere/Bauer 24 row planters (DB 44, DB60) experience large vacuum drop on the center 6 rows with SpeedTube. It is will be required to purchase the 731276 DB Manifold kit for SpeedTube to reduce this vacuum drop.

Vacuum Blowers

Item	Part #	Price	Qty	Total
Vacuum Blower Kit - 4 CC (Includes Motor, Fan, Housing, 3" caps and couplings) (replaces 730510)	730555			\$
Vacuum Blower Kit - 6 CC (Includes Motor, Fan, Housing, 3" Cap and Couplings) (replaces 731150)	731438			\$
6 CC Vac Motor (does not include the fan and housing)	731152			\$
Flow Control Kit - 4 CC Blower	730105			\$
Flow Control Kit - 6 CC Blower	731155			\$

Vacuum Blower Mounting Brackets

Item	Part #	Price	Qty	Total
Bracket Kit, Blower Mount (JD 7000 Front Fold 30' Bar)	730205			\$
Bracket Kit, Blower Mount (KZ 2100 3-point, Direct Drive)	730289			\$
Bracket Kit, Blower Mount (JD 7000 Front Fold 40' & 60' Bars)	730245			\$
Bracket Kit, Blower Mount (JD 7000 Rigid & Wing Fold and KZ)	730210			\$
Bracket Kit, Blower Mount (Offset Mount) (Single U bolt blower bracket)	731219			\$

Additional Vacuum Requirements for SpeedTube

Deere/Bauer 24 row planters (DB 44, DB60) experience large vacuum drop on the center 6 rows with SpeedTube. It is will be required to purchase the 731276 DB Manifold kit for SpeedTube to reduce this vacuum drop. This kit moves the vacuum tube from the center 6 rows on the steel 7x7 bar to a 3" Vacuum tube and includes 6 rows of row unit hose fittings.

Reduce other fitting kits by (6) if purchasing 731276

Item	Part #	Price	Qty	Total
DB 44/60 - Manifold Kit for SpeedTube	731276			\$

vSet Select

Step 1 - 1.6 Bu vSet Select Meters

The following planters are [not compatible with vSet Select](#)

- | | |
|--|---|
| 1: John Deere planters with Liquid Insecticide | 5: John Deere 1790/1795 planters |
| 2: Chain Drive Insecticide | 6: All Twin Row Planters |
| 3: Pro Shaft Insecticide | 7: 1245, 1240 Case IH Interplant planter (Narrow Rows are compatible) |
| 4: DB 120 Planters | 8: Case IH 1265 planters larger than 90' |

Ordering Note: 1.6 Bu planters only need to go through the 1.6 Bu vSet Select Steps. Mini hopper planters can skip the 1.6 Bu steps.

All vSet Select systems will require some level of changes to the Vacuum system. Make sure that you go to the vacuum section of the order guide for complete details.

Note: vDrive 2.0 will *not* work on the vSet Select due to interference issues

1.6 Bu vSet Select Meters and Hoppers

The 1.6 Bushel hopper is split approximately 0.6 Bu to the front meter and 1.0 bu to the rear meter.

- Compatibility: The 1.6 bu vSet Select boxes will fit all existing 1.6 bu 7200, 17X0, and 17X5 John Deere planters and Case IH 1245, 1255, 1265 (<90 ft), 1240, 1250, 1260 (<90 ft). In all cases, the exception list at the top of the page supersedes any compatibility listed here.

Item	Part #	Price	Qty	Total
John Deere 1.6 Bu Box & Meter (Order 1 Per Row)	731300	:		\$
Case IH 1.6 Bu Box and Meter (Order 1 Per Row)	731420	:		\$

- - The above meter and hopper kits contain a complete **vSet Select meter** and **(1) vDrive Motor (Crop Kits are not included!)**
- - Existing Crop Kits from vSet Classic will not work with the vSet Select Meter - **only use vSet 2 Crop Kits**
- - To fully complete vSet Select meter, an additional vDrive motor (purchase or move from existing meter) and Crop kits are required **(vSet 2 crop kits (qty 2) are required)**

Additional Meter Parts

Item	Part #	Price	Qty	Total
vSet 2 Corn Crop Kit (Includes Disk, Singulator, Ejector)	768341			\$
vSet 2 Soybean Crop Kit (Includes Disk, Singulator, Ejector)	768342			\$

Row Unit Fitting Kits - 1.6 bu vSet Select

All vSet Select systems will require 1.5" row unit hose. If it is currently John Deere hose or a 1.25" Precision Planting hose, it will need to be replaced with 1.5" hose. Also, the fitting that goes onto the vSet Select meter is 1.5". Normal vSet fittings are 1.25".

Using John Deere's / Precision Planting Vacuum system

- Replace the Row unit hose with 1.5" or install 1.5" hose
- Requires **731184** fitting kit for mini vSet Select hoppers
- Requires **731440** fitting kit for 1.6 bu vSet Select hoppers (90° fitting for meter end).
- New Precision Planting Vacuum installs will require 731190 saddle kits.

Using Case IH Vacuum System

- Replace the row unit hose with 1.5"
- Requires **731289 or 731288** fitting kit based on the outlet of the Case IH Vacuum manifold. Inspect planter to determine how many of each kit is required.

Using Kinze's Vacuum system

- Replace the row unit hose with 1.5"
- Requires **731186 or 731185** fitting kit based on the outlet of the Kinze Vacuum manifold. Inspect planter to determine how many of each kit is required.

All Fitting kits include a fitting to go on the manifold and one to go the meter. Fittings are for 1.5" hose and 1.5" meter inlet.

Item	Part #	Price	Qty	Total
vSet Select Fitting Kit - 1.5" hose	731184			\$
vSet Select 1.6 Bu Vac Fitting Kit - 1.5" Hose	731440			\$
vSet Select Case IH Straight Fitting Kit - 1.5" Hose	731289			\$
vSet Select Case IH 90° Elbow Fitting Kit - 1.5" Hose	731288			\$
vSet Select Edgevac Straight Fitting Kit - 1.5" Hose	731185			\$
vSet Select Edgevac 90° Elbow Fitting Kit - 1.5" Hose	731186			\$
vSet 2 Saddle Kit	731190			\$

Row Unit Hose

Estimated usage about 4 ft per row.

Item	Part #	Price	Qty	Total
25' Roll of 1.5" Diameter Bulk Hose	731102			\$
50' Roll of 1.5" Diameter Bulk Hose	731103			\$

vDrive Motor

Item	Part #	Price	Qty	Total
vDrive Motor Kit	730050			\$

Step 2 - 1.6 Bu vSet Select + Bulk Fill

John Deere Bulk Fill with 1.6 Bu vSet Select will require a Blower Control, possible hopper supports, bulk fill hose kits, and possible ladder setbacks. Case IH 1.6bu with bulk fill only require hopper templates and bulk fill hose kits. Please check the group heading to determine if your planter will require any parts from that group.

John Deere Blower Control for Select + CCS

Compatibility: The 1.6 bu CCS option can be added to John Deere 17X0, and 17X5 planters that are 90' and less. **The 1790/1795 and DB 47/48R15 are exceptions that are not compatible in any way with vSet Select**

Note: This kit is for planters using the 1.6 Bu vSet Select Split Hopper + their existing CCS system.

- ALL systems will require one (1) Blower Control Module per planter and one (1) Fill Tube Kit per row.
- Hopper Mounts are needed for converting XP ProSeries row units or for compatibility with SmartBox systems.
- CCS Ladder Setbacks are needed for any planter with 24" wide ladders.

Item	Part #	Price	Qty	Total
Blower Control Module Kit - One per Planter	731391			\$
Hardware Kit, Blower Control Module	731404		1 per kit	\$
Fitting, Nylon Single-Barbed Tube Fitting Tee for 1/4" Tube ID, Black	310152		1 per kit	\$
CCS Blower Control Module	731121		1 per kit	\$
Blower Control Module Harness	731205		1 per kit	\$
Row CAN 'Y' Harness (6 Pin)	731384		1 per kit	\$
Row CAN Extension (30')	729203		1 per kit	\$
CAN Terminator - Seed Repeater CAN (6 Pin)	729081		1 per kit	\$

The Blower Control Module Kit connects into the Seed Repeater port of the PDM and controls the CCS blower motor to reduce seed delivery pressure when operating on the rear meters.

Note: the Bulk Fill inlet template is no longer included in the blower control kit. It needs to be ordered separately.

John Deere Hopper Mounts

Used for converting XP Pro Series row units (mini hoppers without side panels) to 1.6 Bu row hopper

Item	Part #	Price	Qty	Total
XP/ME5 Pro Series 1.6 Bu Hopper Mount Kit - includes rear support post	731360			\$

1.6 Bu + Bulk Fill

- **Compatibility:** The 1.6 bu & Bulk Fill System can be added only to **12x5 series Case IH planters**. The 12xx series is not compatible with vSet

Select and Bulk Fill. It can be added to 1265 planters that are 90 ft bars and less, 1255 planters, and 1245 planters that are not interplant planters (narrow rows work but not 15" split row)

If putting 1.6Bu + Bulk Fill on a John Deere system, it is necessary to order the hopper template separately. This will only work with the vSet Select boxes.

Item	Part #	Price	Qty	Total
John Deere 1.6 Bu with Bulk Fill Hopper Template - vSet Select only	731402			\$
Case IH 1.6 Bu with Bulk Fill Hopper Template - vSet Select only	731435			\$

Bulk Fill Tube Kits - All 1.6 and Bulk Fill Planters (Both John Deere and Case IH need these)

Item	Part #	Price	Qty	Total
Fill Tube Kit (Single) - Needed 1 per row for all rows up to 32	731379			\$
Fill Tube Kit (Dual) 30" Inter-Row - Needed 1 per row for all rows over 32	731380			\$
Fill Tube Kit (Dual) 20-22" Inter-Row - Needed 1 per row for all rows over 32	731381			\$

CCS Ladder Set Back - John Deere Only

CCS Ladder Setbacks are needed for any planter with 24" wide ladders.

Item	Part #	Price	Qty	Total
6" CCS Ladder Set Back Bracket - For 24" wide ladder brackets	731389			\$
CCS Ladder Setback Bracket - Anti-slip	731395		1 per kit	\$
Hardware Kit	731388		1 per kit	\$

SmartBox Mounting Bracket - (Required only if using SmartBoxes with XP Pro Series)

If installing 1.6 Bu vSet Select on a planter with Pro Series SmartBox brackets, you will need to remove the SmartBox brackets and replace them with the Shoup MFG version of the ME 5 Style Insecticide support brackets.

- **This bracket must be ordered from Shoup MFG - 1-800-627-6137**

Item	Part #	Price	Qty	Total
Hopper Support Bracket Kit for John Deere (XP, ME5) - Brackets only! No hopper or Lid! (Shoup Part)	PP1605			\$

Note 1: Shoup ME 5 Style insecticide hopper supports works on John Deere Row units XP, ME5, and ExactEmerge. Does not work on 1720CCS Planters

Note 2: Bracket Kit includes Insecticide hopper support panels (PP1605) for systems that do not have insecticide installed. **No hopper or lid included!**

Note 3: **PP1605 hopper support panels will need an ME 5 style load pin (PP part # 725886)**

Step 3 - vSet Select Mini Hoppers and Meters

The following planters are **not compatible with vSet Select**

- | | |
|--|---|
| 1: John Deere planters with Liquid Insecticide | 5: John Deere 1790/1795 planters |
| 2: Chain Drive Insecticide | 6: All Twin Row Planters |
| 3: Pro Shaft Insecticide | 7: 1245, 1240 Case IH Interplant planter (Narrow Rows are compatible) |
| 4: DB 120 Planters | 8: Case IH 1265 planters larger than 90' |

- **Additional Compatibility notes:** Mini hopper vSet Select is not compatible with Orthman/DR planters, DB planters larger than 60', Kinze 3700, 3800, or 4900, and Case IH 12X5 series larger than 60' and Case IH 12X0 Series planters

vSet Select Mini Hopper and Meters

Mini Hopper Meters - A complete vSet Select meter and (1) vDrive Motor (**Crop Kits are NOT included**)

- Existing Crop Kits from vSet Classic will not work with the vSet Select Meter - only use **vSet 2 Crop Kits**

- To fully complete vSet Select meter, an additional **vDrive motor (purchase or move from existing meter)** and Crop kits are required (**vSet 2 crop kits (qty 2) are required**)

Note: All planters will require some level of upgrade to the Vacuum system. Please refer to the Vacuum Section to make complete ordering decisions.

Item	Part #	Price	Qty	Total
John Deere Mini Hopper Meter (1 Per Row)	731046			\$
Kinze Mini Hopper Meter (1 Per Row)	731051			\$
Case IH Mini Hopper Meter (1 Per Row)	731282			\$

- Only Case IH 12X5 Series Planters are compatible!

Additional Meter Parts

Item	Part #	Price	Qty	Total
vSet 2 Soybean Crop Kit (Includes Disk, Singulator, Ejector)	768342			\$
vSet 2 Corn Crop Kit (Includes Disk, Singulator, Ejector)	768341			\$

vDrive Motor

Item	Part #	Price	Qty	Total
vDrive Motor Kit	730050			\$

Row Unit Fitting Kits - Mini hoppers

Using John Deere's / Precision Planting Vacuum system

- Replace the Row unit hose with 1.5" or install 1.5" hose
- Requires **731184** Fitting Kit
- New Precision Planting Vacuum installs will require **731190** saddle kits.

Using Case IH Vacuum System

- Replace the row unit hose with 1.5"
- Requires **731289** or **731288** fitting kit based on the outlet of the Case IH Vacuum manifold. Inspect planter to determine how many of each kit is required.

Using Kinze's Vacuum system

- Replace the row unit hose with 1.5"
- Requires **731186** or **731186** fitting kit based on the outlet of the Kinze Vacuum manifold. Inspect planter to determine how many of each kit is required.

All Fitting kits include a fitting to go on the manifold and one to go the meter. Fittings are for 1.5" hose and 1.5" meter inlet.

Item	Part #	Price	Qty	Total
vSet Select Fitting Kit - 1.5" hose	731184			\$
vSet Select Case IH Straight Fitting Kit - 1.5" Hose	731289			\$
vSet Select Case IH 90° Elbow Fitting Kit - 1.5" Hose	731288			\$
vSet Select Edgevac Straight Fitting Kit - 1.5" Hose	731185			\$
vSet Select Edgevac 90° Elbow Fitting Kit - 1.5" Hose	731186			\$

Row Unit Hose

Estimated usage is about 4 ft per row

Item	Part #	Price	Qty	Total
25' Roll of 1.5" Diameter Bulk Hose	731102			\$
50' Roll of 1.5" Diameter Bulk Hose	731103			\$

Step 4 - Row Unit Options

Adapter Kits

Item	Part #	Price	Qty	Total
vSet Select Kinze Pusher Row adapter	731144			\$
Smart Box Adapter Kit*	731145			\$

Step 5 - Bulk Fill Upgrade Kits

John Deere Bulk Fill Seed Delivery Kits (One Per Planter)

If the JD CCS fan is plumbed through the steel support frame of the CCS tanks to the entrainers, it will be necessary to purchase the JD CCS Fan Relocation kit (731245) to move the plumbing around to accommodate the air flow diverter. The system will need to be inspected to know how the plumbing is routed.

Item	Part #	Price	Qty	Total
12R30 JD 1770NT Seed Delivery Finish Kit	731130			\$
16R30 JD 1770NT Seed Delivery Finish Kit	731131			\$
24R30 JD 1770NT Seed Delivery Finish Kit	731132			\$
12R36, 12R38, 12R40, JD Seed Delivery Finish Kit	731340			\$
24R15, 24R18, 24R19, 24R20, 24R22 JD Seed Delivery Finish Kit	731341			\$
32R20 JD Seed Delivery Finish Kit	731342			\$
36R20 JD Seed Delivery Finish Kit	731343			\$
JD CCS Fan Relocation Kit (required on some planters)	731245			\$

Kinze Bulk Fill Seed Delivery Finish Kits (One Per Planter)

Item	Part #	Price	Qty	Total
12R30 Kinze 3600/3660 Seed Delivery Finish Kit	731133			\$
16R30 Kinze 3600/3660 Seed Delivery Finish Kit	731134			\$
12/23, 12/24R15 Kinze 3600/3660 Seed Delivery Finish Kit	731135			\$
16/31, 16/32R15 Kinze 3600/3660 Seed Delivery Finish Kit	731136			\$
12R36, 12R38 Kinze 3600/3660 Seed Delivery Finish Kit	731137			\$

Case IH Bulk Fill Seed Delivery Finish Kits (One Per Planter)

Item	Part #	Price	Qty	Total
12R30 Case IH Seed Delivery Finish Kit	731330			\$
16R30 Case IH Seed Delivery Finish Kit	731331			\$
24R30 Case IH Seed Delivery Finish Kit	731332			\$
24R20 Case IH Seed Delivery Finish Kit	731333			\$

Note: 12x5 series planters only. 1245 Interplant planters and the 1265 are not compatible.

Step 6 - Seed Delivery Hose

Only necessary on Bulk Fill Planters. Do not order any for a 1.6 Bu Box planter or for a 1.6 BU + CCS planter.

Bulk Fill Seed Hose

Please use the Recommendation Chart below for ideas on how much Bulk Fill hose may be required to rework the exist system to a vSet Select Mini Hopper system. Please note that this table is showing what the total hose would be required if the entire bulk fill hose was replaced.

John Deere	12R 30	150 ft
	16R 30	230 ft
	24R 30	450 ft
	36R 30	600 ft
Kinze	12R 30	175 ft
	16R 30	250 ft
	12R 36-38	250 ft
	12/23, 12/24 R15	375 ft
	16/31, 16/32 R15	550 ft
	23R 18, 23R 19	375 ft

Note: Case IH 12X5 series planters require minimal to no additional seed delivery hose to install vSet Select.

Item	Part #	Price	Qty	Total
100FT Roll of 1.25" ID Hose	731073			\$

Step 7 - vSet Select Vacuum

Depending on how many blowers are installed and the frame types, it may be necessary to add vacuum blowers or replace 4cc blowers with 6cc blower motors.

- **For vSet Select a 4 CC blower will supply**
 - 8 rows on a Front Fold Planter (1770, DB series etc)
 - 12 rows on a Lift and Twist (Kinze 3600), Wing Fold (JD 1760) or a Forward Fold Planter (Kinze 3700)
- **For vSet Select a 6 CC blower will supply**
 - 12 rows on a Front Fold Planter (1770, DB series, etc)
 - 16 rows on a Lift and Twist (Kinze 3600), Wing Fold (JD 1760), or Forward Fold (Kinze 3700)
- **John Deere Blowers**
 - A John Deere blower that has a plastic shroud is equal to a 4cc blower. It can not be upgraded to 6cc blower
 - A John Deere blower that has a cast metal shroud (normally has a vac gauge built in above it) is not equal to a 4cc blower. It will need to be replaced for a vSet Select planter.
- **Precision Planting Blowers**
 - A Precision Planting 4cc blower can be upgraded to a 6cc blower by just replacing the motor.
- **Kinze Blowers**
 - An Edgevac (Kinze vacuum system) blower will supply up to 24 rows of vSet Select without additional blowers.
 - Anything over 24 rows will require additional Vacuum blowers
- **Case IH planters** have sufficient vacuum for vSet Select and no changes are required to the vacuum blowers.

Deere/Bauer 24 row planters (DB 44, DB60) experience large vacuum drop on the center 6 rows with vSet Select. It is will be required to purchase the 731275 DB Manifold kit for vSet Select to reduce this vacuum drop.

Vacuum Blowers

Item	Part #	Price	Qty	Total
Vacuum Blower Kit - 4 CC (Includes Motor, Fan, Housing, 3" caps and couplings) (replaces 730510)	730555			\$
Vacuum Blower Kit - 6 CC (Includes Motor, Fan, Housing, 3" Cap and Couplings) (replaces 731150)	731438			\$
6 CC Vac Motor (does not include the fan and housing)	731152			\$
Flow Control Kit - 4 CC Blower	730105			\$
Flow Control Kit - 6 CC Blower	731155			\$

Vacuum Blower Mounting Brackets

Item	Part #	Price	Qty	Total
Bracket Kit, Blower Mount (JD 7000 Front Fold 30' Bar)	730205			\$
Bracket Kit, Blower Mount (KZ 2100 3-point, Direct Drive)	730289			\$
Bracket Kit, Blower Mount (JD 7000 Front Fold 40' & 60' Bars)	730245			\$
Bracket Kit, Blower Mount (JD 7000 Rigid & Wing Fold and KZ)	730210			\$
Bracket Kit, Blower Mount (Offset Mount) (Single U bolt blower bracket)	731219			\$

Additional Vacuum requirements for vSet Select

Deere/Bauer 24 row planters (DB 44, DB60) experience large vacuum drop on the center 6 rows with vSet Select. It is will be required to purchase the 731275 DB Manifold kit for vSet Select to reduce this vacuum drop. This kit adds a separate 3" vacuum tube from the blower on the wing to the center section of the planter and includes 6 rows of fittings to move from the 7x7 bar to the 3" vacuum tube.

Reduce other fitting kits by (6) if purchasing 731275 (Fittings included in this kit are for mini hoppers. If doing 1.6 boxes, do not reduce the fitting kits.)

Item	Part #	Price	Qty	Total
DB 44/ 60 - Manifold Kit for vSet Select	731275			\$

Pump Stack

Step 1 - Pump Stack

Each pump stack comes pre-assembled with fixed 125 psi relief valve, adjustable bypass relief valve (required for vApply HD) and accumulator.

Maximum pump flow ratings below are achieved at a speed of 550 RPM. Actual pump flow output will depend on maximum hydraulic motor speed. A 727009 RowFlow Motor maximum speed is 400 RPM. A JD hydraulic motor maximum speed is 360 RPM.

Pump Model	Pump Rating (550 RPM)	RowFlow Motor Max GPM	John Deere Motor Max GPM
PP21	21.1 GPM	15.3 GPM	13.8 GPM
PP31	31.7 GPM	23.1 GPM	20.7 GPM
PP48	48.8 GPM	35.5 GPM	31.9 GPM
		(400 RPM MAX)	(360 RPM MAX)

The pump must be sized to deliver 110% of the maximum desired target rate:

- GPM per row = (GPA x MPH x row spacing(inches))/5940
- GPM per implement = GPM per row x # of rows

Note 1: If the pump stack is used with vApply HD, the 724288 plumbing essentials kit will not be needed. Instead order 724728 plumbing essentials kit for pumpstack kit.

Note 2: If utilizing the pump stack with vApply HD or turbine based FlowSense, you will need to order an 80 mesh filter to install after the pump stack.

Pump Stack

Item	Part #	Price	Qty	Total
PP Hyd Diaphragm Pump 21 GPM (80 LPM)	724640			\$
PP Hyd Diaphragm Pump 31 GPM (120 LPM)	724647			\$
PP Hyd Diaphragm Pump 48 GPM (185 LPM)	724692			\$

Step 2 - Pump Inlet & Outlet Connections

Pump Inlet & Outlet Connections (Required)

Two hose barbs will be needed for each pump. Order the desired size and orientation based on your unique planter configuration.

Recommendations for minimum inlet size:

- PP21 - 1.5"
- PP31 - 1.5"
- PP48 - 2"

Recommendations for minimum outlet size:

- PP21 - 1"
- PP31 - 1"
- PP48 - 1.5"

Item	Part #	Price	Qty	Total
Flange Fitting, 2" Flange, 90 Deg 2" Barb	724254			\$
1" Hose Barb - Straight	724321			\$
1" Hose Barb - 90 degree Elbow	724215			\$
1.5" Hose Barb - Straight	724214			\$
1.5" Hose Barb - 90 Degree Elbow	724716			\$
2" Hose Barb - Straight	724706			\$

Step 3 - Shaft Coupling and Speed Sensor Housing

Choose one of the shaft coupling kits below based on your motor type (RowFlow or JD seeding) and the pump stack ordered in step 1.

Shaft Coupling Kits for RowFlow Motor

These kits connect the pump stack to a 727009 RowFlow Motor. Order 1 kit for the appropriate pump stack.

Item	Part #	Price	Qty	Total
Shaft Coupling - 21 GPM (80 LPM) Pump with RowFlow Motor	724564			\$
Shaft Coupling - 31 GPM (120 LPM) Pump with RowFlow Motor	724565			\$
Shaft Coupling - 48 GPM (185 LPM) Pump with RowFlow Motor	724693			\$

Shaft Coupling and Speed Sensor Housing Kits for JD Seeding Motors

These kits connect the pump stack to a JD seeding motor and also include a flange assembly to install a shaft speed sensor when needed (ex. vApply Base systems). Order 1 kit for the appropriate pump stack.

Item	Part #	Price	Qty	Total
Shaft Coupling - 21 GPM (80 LPM) Pump with JD Motor	724566			\$
Shaft Coupling - 31 GPM (120 LPM) Pump with JD Motor	724567			\$
Shaft Coupling - 48 GPM (185 LPM) Pump with JD Motor	724695			\$

Step 4 - Pump Mounting Kits

Note: Each pump stack base plate has mounting holes for 7"x7" U-Bolts. The 7"x7" U-Bolt kit below can be used to secure the pump stack to the 7"x7" bar only. This kit will not be required if a planter specific kit is ordered, as hardware for the planter specific kits will be included. (See images below for each specific mounting bracket)

Pump Mounting Kits



Item	Part #	Price	Qty	Total
U-Bolt Kit for 7"x7" Bar	724629			\$
JD CCS Air Compressor Mounting Bracket*	724720			\$
Universal High Mount**	724750			\$
JD 1770/1775 NT Over-The-Wheel Mount Kit (24 row)	724751			\$
JD 1770/1775 NT Over-The-Wheel Mount Kit (12/16R row)	724752			\$
JD 1790 (15" Planters)	724753			\$
JD 1720/25 100 Bushel CCS (with lift assist)	724754			\$

*The 724720 (JD CCS Air Compressor Mount) attaches to the back of the CCS tank where the DJ air compressor would be mounted. NOT compatible if JD air compressor is installed on the planter. Fits most CCS planters - tabs for mount need to have 12" spacing.

**The 724750 will mount to the rear of the 7x7 bar and locate the compressor up and back of the 7x7 bar to clear the row units. Commonly used on JD DB planters (with CCS), JD 1790 20" spacing, JD1720/1725 with boxes, JD1720C/1725C (55 bushel CCS)

Step 5 - Additional Options

Additional Options

Only required for JD seeding motors where a shaft speed sensor is needed (ex. vApply Base systems).

Must have the correct Shaft coupling kit for JD seeding motors from step 3.

Item	Part #	Price	Qty	Total
Speed Sensor, PP Hydraulic Motor	727048			\$

Step 1 - Pump Control

vApplyHD compatibility -

- Requires an SRM system to be installed on the planter- Does not work with RowFlow Liquid system in the same display
- Requires a Row CAN Expansion Module (step 2)
- Requires a single vApply Module to run the pump (the vApplyHD Module is mounted at each row and controls the flow at each row).
- Gen 2 Systems are capable of running 2 liquid products - requires a vApply Module for each product and a vApplyHD for each product on each row/section. (1 per row/section per liquid product)
 - Note: Second product vApply Module will require a separate product indentifying harness - order in vApply Base Kit section
- Geb 3 Systems are capable of running up to 4 liquid products - requires a vApply Module for each product and a vApply HD for each product on each row/section. (1 per row/section per liquid product)
 - Note: Second product vApply Module will require a separate product indentifying harness - order in vApply Base Kit section

Operation Ranges -

- Max Sealing Pressure - 100 PSI
- Flow Range - .05 - 3.0 GPM (3.0-60.0 GPA application rate at 3-10 MPH on 30" row spacing) [0.19 - 11.4 Liters/Min (28.5 - 570 Liters/HA at 4.8-16 KPH on 76 cm rows)]

Wetted Materials - PolyPropylene, Viton, Stainless Steel, Nylon

Fertility Products -

- VapplyHD and EMDH are **Not compatible** with Anhydrous Ammonia
- VapplyHD is Not compatible with suspension fertilizers
- EMHD IS compatible with suspension fertilizers
 - **Note: Suspension fertilizers are fluids in which solubility of the components has been exceeded and clay has been added to keep the very fine, undissolved, fertilizer particles from settling out of the liquid.**

Useful equations

- **GPA = (GPM x 5940) ÷ (MPH x Row Spacing (inches))**
- **GPM = (GPA x MPH x Row Spacing (Inches)) ÷ (5940)**

Pump Compatibility -

- vApplyHD is compatible with centrifugal, diaphragm, and piston pumps
- Liquid pump can be a ground contact, hydraulic, or electrical driven pump (**Electric pump must have a PWM driver**)
- vApply Module can control 2 electric pumps WHEN controlled through a single input
- vApplyHD is NOT compatible with squeeze pumps
- **Pump must be sized to deliver 110% of the max desired target rate within acceptable pressure range.**

Plumbing Compatibility -

1. A 80 -Mesh or finer filter is **REQUIRED for VapplyHD** between the tank and the rows to ensure the system remains clean and free of debris -
 1. *EMHD is recommended to have a 50 mesh system filter, although 30 mesh may be acceptable*
2. 15 PSI is the maxium allowable pressure drop from the pump outlet to the rows
3. An Accumulator is **REQUIRED** for ALL vApplyHD systems
4. A pressure bypass is **REQUIRED** for ALL vApplyHD systems
5. The pump outlet pressure sensor is **REQUIRED** for ALL vApplyHD Systems

Note: Precision Planting offers plumbing kits to meet the 5 requirements listed above. The Filter Kit meets requirement 1, the Section Plumbing Kits meet requirement 2, the Plumbing Essentials Kit will meet requirements 3-5.

vApply Base Kit

vApply Base Kit - One per Product

--For **Gen 2 systems**: Gen 2 systems will only use the **724290 vApply Base Kit**. The vApply pump control module (724280) needs to be plugged into the PDM

--For **Gen 3 systems**: Gen 3 systems will only use the **724560 vApply Base Kit**. The Rate Control Module (724500) can either be plugged into a CAN Hub on any row with an appropriate length CAN jumper or it can be plugged into the PDM. This base kit does not come with a 6-pin y harness, so if you are plugging into the PDM be sure to order **two** under the 6-Pin CAN Harness options below.

The Case IH 2100 Series planters can also plug the vApply Module for Gen 2 systems (724280) or the Rate Control Module for Gen 3 systems (724500) into the PDM or a CAN Hub on any row (Gen 3 systems only). If it is going to be plugged into the PDM it is required to have the Case IH PDM Harness Adapter (**729532**). If using the 729532 harness it will also require 6 Pin CAN terminator (729081) in addition to the 729532. Otherwise, you have the option of plugging the vApply Module into a CAN Hub on a row (Gen 3 systems only) with the appropriate length jumper and/or 6 pin CAN extension; the PDM Harness Adapter would not be needed in that scenario.

A 729761 second product identifying harness adapter is required for a 2 product system that has the vApply Module connected to the PDM using the 729532 harness. A 3 product system (Gen 3 only) would require a 729761 and a 729543 third product harness. A 4 product system (Gen 3 only) would require a 729761, 729543, and 729544 (2nd, 3rd, and 4th identifying harness respectively).

Note: Each vApply Base Kit includes a liquid tool kit

- Liquid Tool Kit includes:
 - 4 Turbine rebuild kits (2 highs, 2 lows),
 - Push-to-connect fitting tools
 - Needle nose pliers
 - Deutsch Removal tool (for removing turbines)
 - Tube Cutter
 - Holding case and mount bracket.

Item	Part #	Price	Qty	Total
Gen 2 vApply Base Kit (1 per Product)	724290			\$
Gen 3 vApply Base Kit (1 per product)	724560			\$
Case IH 2100 PDM Harness Adapter - for vApply Module (See note above)	729532			\$
Second Product Identifying CAN Harness - Brown (replaces 729542)	729761			\$
Third Product Identifying CAN Harness - White	729762			\$

vApply Pump Harnessing

The vApply Pump harness is needed when the 2020 is controlling the pump. One per product

Note 1: Hydraulic pumps must have a **PWM valve** in order to be controlled. **Electric pumps** must have a **PWM driver or controller** in order to be controlled. If your pump does not have a PWM style control, you will need to source one locally. **Servo style controllers are not compatible.**

Note 2: Use the 727127 harness adapter to connect to a Deutsch style PWM valve. Use the 727128 harness adapter to change WeatherPack genders

Item	Part #	Price	Qty	Total
vApply Pump/Motor Harness (5ft)	724287			\$
Deutsch valve connector adapter	727127			\$
Weatherpack valve connector adapter	727128			\$

Row CAN Extensions

Each vApply Module will need to plug into the Seed Repeater 6 - Pin Deutsch connection at the PDM. It will be required to use the Row CAN extensions to run from the PDM to where the vApply Module will be mounted. Maximum recommended CAN extension length is 50' so make sure that the vApply Module is mounted no more than 50' from the PDM.

Item	Part #	Price	Qty	Total
10' Row CAN Extension - 6 Pin	729201			\$
20' Row CAN Extension - 6 Pin	729202			\$
30' Row CAN Extension - 6 Pin	729203			\$

6 - Pin CAN Harness Options

Optional - The 6 - Pin Row CAN communication from the PDM CAN NOT terminate within a device. Order additional Y Harnesses and Terminators as needed to prevent device Row CAN termination. Air Flow Reducer and Blower Control modules already have a Y harness installed and one Y harness comes with the vApply Module. All systems that are running a Seed Repeater will need an additional Y harness and possibly need Terminator.

- Any Gen 3 plugging into the PDM be sure to order **two** 6 pin Y harnesses

Item	Part #	Price	Qty	Total
CAN Harness Y - 6 Pin	729508			\$
CAN Terminator - 6 Pin connection (PDM CAN)	729081			\$

Step 2 - Row Control Components

vApplyHD Modules

vApplyHD

- The vApplyHD module will provide row by row high resolution flow control, rate and pressure reporting, and individual row section control.
- The vApplyHD Module uses a CAN Jumper Harness to plug into the CAN Expansion Hub on the row unit
- Order one Module per Row (CAN be a combination of HD modules and Flex modules)

vApplyHD Flex

- The vApplyHD Flex module will provide row by row high resolution flow control, rate and pressure reporting, and individual row section control.
- The vApplyHD Flex module provides the same functionality and capabilities as vApplyHD while ALSO incorporating the **FLEXibility** to be moved from the planter to additional fertility application bars (ie. Sidedress)
- vApplyHD Flex installations on **NON-planter bars** will need an simplified SRM infrastructure installed on the application bar (**PDM, backbone harnesses, APEX, but NO SRM or SRM Row harness [does not need the 729020 kit] as the Flex plugs directly into the SRM backbone**)
- Order one module per row (can be a combination of HD module and Flex Module)

Additional Options

- vApplyHD and Flex are also able to run as multiple row section control with FlowSense on each row. **A FlowSense for each row is required for multiple row section control**
- Due to row balancing and plumbing restraints, vApplyHD section control is limited to 2.5GPM per section HD (Use the equation below to determine GPM)

Useful equations

- $GPA = (GPM \times 5940) \div (MPH \times Row\ Spacing\ (inches))$
- $GPM = (GPA \times MPH \times Row\ Spacing\ (Inches)) \div (5940)$

****Note: The vApply HD Module (724350) and the HD Flex Module (724300) are now packaged with a 3/8" PTC row strainer.****

Item	Part #	Price	Qty	Total
vApplyHD Module	724350			\$
vApplyHD Flex Module	724300			\$

Module Mount Kits

Pick a Module mounting kit for your application. Applications bars will normally use the top of bar or rear of bar mount kits. Planters will use the other kits. Select kit as desired.

The parallel arm mounting and hose routing kit may be used to mount vApplyHD and/or Flowsense. It also provides a channel to route liquid lines and harnesses through.

Note: It is the dealers responsibility to ensure proper fit and freedom from interference on each specific installation.

Note: Parallel arm bracket is not compatible on Case IH 2100 series planters.

Item	Part #	Price	Qty	Total
Stand Alone Mount Kit	724161			\$
Goal Post Bracket Kit - Mounts across from SRM	724359			\$
Parallel Arm Bracket Kit	724360			\$
Forward Mounted Goal Post Bracket Kit	724361			\$
Application Tool Bar Bracket Kit - Top	724362			\$
Application Tool Bar Bracket Kit - Rear	724363			\$
Parallel Arm Harness and Hose Mounting Bracket (4 row Kit)	729212			\$

Row CAN Expansion

For all systems that are running more than vDrive/Select (ie. -*SpeedTube*, *Insecticide*, *vApply HD*) it will be necessary to add a row CAN expansion kit and a CAN jumper cable to go from the expansion hub to the device.

Note: All black connector jumpers are for first module of a device (1st product vApply, vDrive meter, SpeedTube, mSet Seed Selector, etc), Brown connector jumpers are for the second module of a device (2nd product vApply, vDrive Insecticide), White and Green are for third and fourth modules of a device (3rd, 4th, product vApply and CAN Based FlowSense). Make sure that the correct jumper is being used with the correct module.

Existing SpeedTube & Insecticide systems using the Y harness (729288 kit) are compatible with expansion hub if the grower is adding vApplyHD. The Y cable will plug into the expansion hub using a single CAN jumper to connect the Y to the expansion hub instead of the Y cable plugging into the vDrive plug.

Item	Part #	Price	Qty	Total
Row CAN Expansion HUB Kit	729500			\$
Black Connector - Row Can Jumper - 12" (Inches) --- For first device	729481			\$
Black Connector - Row Can Jumper - 20" (Inches) --- For first device	729482			\$
Black Connector - Row Can Jumper - 30" (Inches) --- For first device	729483			\$
Black Connector - Row Can Jumper - 40" (Inches) --- For first device	729489			\$
Black Connector - Row Can Jumper - 50" (Inches) --- For first device	729485			\$
Brown Connector - Row CAN Jumper - 25" (Inches) --- For second device	729484			\$
White Connector - Row CAN Jumper - 25" (Inches) --- For third device	729493			\$
Green Connector - Row CAN Jumper - 25" (Inches) --- For fourth device	729494			\$

Step 3 - EMHD Row Control

EMHD The EMHD system consists of one EMHD module and one EM FlowSense per row (or section). If a grower already owns vApplyHD1 or vApplyHD Flex 1 and desires to remove the turbines, they can do so and add an EM FlowSense before the vApplyHD module to convert the system to turbineless.

vApply Modules

Item	Part #	Price	Qty	Total
EMHD Module	724575			\$
EM FlowSense	724650			\$

EMHD Module Mount kits

Item	Part #	Price	Qty	Total
EMHD Upper Parallel Arm Bracket kit (works for EMHD and HD1 with EM FlowSense). Compatible with JD, Kinze, White 9k/8k, CIH12xx	724805			\$
EMHD Goalpost bracket (works for EMHD and HD1 with EM FlowSense) Compatible with JD (without SpeedTube), Kinze, White 9k/8k, CIH12xx	724800			\$
EMHD Lower Parallel Arm Bracket kit (EMHD only) Compatible with JD, Kinze (not left inside), White, CIH 12xx	724763			\$
EMHD Rear Application Bar Bracket kit (EMHD only). Sidedress bars.	724684			\$

Row CAN to EMHD Jumpers

There must be a row CAN jumper from the CAN hub to the EMHD module. There must ALSO be a EMHD jumper from the EMHD to the EM FlowSense that is the SAME color which you will choose in the next step

Item	Part #	Price	Qty	Total
Black Connector - Row Can Jumper - 12" (Inches) --- For first device	729481			\$
Black Connector - Row Can Jumper - 20" (Inches) --- For first device	729482			\$
Black Connector - Row Can Jumper - 30" (Inches) --- For first device	729483			\$
Black Connector - Row Can Jumper - 40" (Inches) --- For first device	729489			\$
Black Connector - Row Can Jumper - 50" (Inches) --- For first device	729485			\$
Brown Connector - Row CAN Jumper - 25" (Inches) --- For second device	729484			\$
White Connector - Row CAN Jumper - 25" (Inches) --- For third device	729493			\$
Green Connector - Row CAN Jumper - 25" (Inches) --- For fourth device	729494			\$

EMHD to Flowsense Jumper

The following are EMHD jumpers from the EMHD to the EM FlowSense. Choose the SAME color as the row CAN jumper from the CAN hub to the EMHD module, **this jumper has a rotated connector to assist in installation.**

Item	Part #	Price	Qty	Total
Black Connector - EMHD to EM FlowSense jumper (used with 724763 bracket)	724732			\$
Brown Connector - EMHD to EM FlowSense jumper (used with 724763 bracket)	724733			\$
White Connector - EMHD to EM FlowSense jumper (used with 724763 bracket)	724734			\$

Sensor Gauge

RECOMMENDED FOR ALL EMHD systems, minimum 1, recommended 1 per frame section

Item	Part #	Price	Qty	Total
Remote Pressure Sensor Gauge Kit	724067			\$

Step 4 - Plumbing Components

Note: It is NOT required to source the plumbing components from Precision Planting. The plumbing kits listed in this step are provided for convenience and to ensure that installed systems meet the requirements for optimal vApplyHD performance. If updating an existing system or sourcing plumbing components from a different supplier, additional resources for plumbing guidelines and system compatibility are available on Precision Planting's website.

Click [here](#) and go to "Diagrams" for detailed vApply Plumbing Diagrams.

Plumbing Essentials Kit

The Plumbing Essentials Kit contains the Accumulator, Bypass Valve, and Mounting Bracket pre-assembled together.

- The Essentials Kit is designed to be installed with the Manifold built by the Section Tee's from the section plumbing kits. The Essentials Kit includes adapters to go to either the High Flow or Low Flow Section Plumbing Kits.
- Order 1 per product

If using a Pump Stack from Precision Planting, it is not necessary to order the full Plumbing Essentials Kit. Instead, use the 724728 Section Manifold Bracket Kit.

Note: If your pump output will exceed 35 GPM, it will be necessary to add a second bypass valve in the additional plumbing options below.

Item	Part #	Price	Qty	Total
vApplyHD Plumbing Essentials Kit (1 Per Product)	724288			\$
Section Manifold Bracket Kit (Use with Pump Stack)	724728			\$

Filter Kit

- A 80-Mesh filter system is REQUIRED to ensure the system remains clean and free of debris
- Filter must be installed AFTER the Pump and BEFORE the manifold
- If a filter is not previously installed or sourced elsewhere - Order one kit per product
- Row filters/strainers DO NOT replace system wide filters. Row filters are to be used as a secondary safety measure.

Please note, each vApply HD (724350) or vApply HD flex (724300) ordered in the previous step will come with a 3/8" PTC Row Strainer. Order row strainers below if you need additional strainers or 1/4" PTC strainers.

Item	Part #	Price	Qty	Total
Filter Kit - Low Flow (1 - 80 Mesh Screen) - 15 GPA or less on 30" Rows	724291			\$
Filter Kit - High Flow (2 - 80 Mesh Screen) - 16 GPA or greater on 30" Rows	724289			\$
1/4" PTC Row Strainer - 100 Mesh (Qty - 10)	724432			\$
3/8" PTC Row Strainer - 100 Mesh (Qty - 10)	724433			\$
Filter Visual Gauge Kit	724294			\$

Section Plumbing Kits

- Section Plumbing Kits contain the necessary fittings and connectors to build vApplyHD sections.
 - 8 Row kits have all of the parts to create a wetboom of up to 8 HD's in the section
 - 4 Row kits have all of the parts to create a wetboom of up to 4 HD's in the section
 - Section Plumbing Kits include one Flange Tee used to construct the manifold and connect to the Plumbing Essentials Kit
 - Plumbing recommendations are sized for up to 10 vApplyHDs per supply line
- Low Flow Section Plumbing Kits is rated for **.75 GPM** per row (15 GPA or less on 30" rows) [use equation below]
- High Flow Section Plumbing Kits is rated for **3 GPM** per row (16 GPA or Greater on 30" rows) [use equation below]
 - Useful equations
 - $GPA = (GPM \times 5940) \div (MPH \times Row\ Spacing\ (inches))$
 - $GPM = (GPA \times MPH \times Row\ Spacing\ (Inches)) \div (5940)$
- Note:** For vApplyHD section control systems, use the individual row GPM needs to choose High or Low Flow Kits. the number of rows in a vApplyHD section does not factor into this decision. x

Item	Part #	Price	Qty	Total
8 Row Low Flow Section Plumbing Kit - .75GPM /row (15 GPA or less on 30" rows) (1 kit per 8 Rows)	724293			\$
4 Row Low Flow Section Plumbing Kit - .75GPM /row (15 GPA or Less 30" rows) (1 kit per 4 rows)	724430			\$
8 Row High Flow Section Plumbing Kit- 3 GPM/row (16 GPA or greater on 30" Rows) (1 kit per 8 Rows)	724292			\$
4 Row High Flow Section Plumbing Kit- 3 GPM/row (16 GPA or greater on 30" Rows) (1 kit per 4 Rows)	724431			\$

Boom Fitting Parts

vApplyHD modules are equipped with 3/8" PTC Fittings on both inlet and outlets
The plumbing mount kits are designed to hold the main liquid lines.

Item	Part #	Price	Qty	Total
3/4" Barb x 3/8 PTC TEE Kit	724241			\$
3/4" Barb x 3/8" PTC Elbow Kit	724242			\$
1/2" Barb x 3/8 PTC TEE Kit	724243			\$
1/2" Barb x 3/8" PTC Elbow Kit	724244			\$
Hex Shaft Bearing Plumbing Mount Kit (4 rows)	729215			\$
W Mount Main Liquid Line Plumbing Kit (4 rows)	729218			\$

Push-to-Connect adapters

vApplyHD modules are equipped with 3/8" PTC Fittings on both inlet and outlets
Click [here](#) for vApply Plumbing Diagrams.

Item	Part #	Price	Qty	Total
3/8" to 3/8" to 3/8" Flow Divider (Splitter) - PTC (10 Pack)	724412	:		\$
3/8" PTC Stem to 3/8" PTC Elbow Adapter (10 Pack)	724093	:		\$
3/8" PTC Stem to 3/8" Hose Barb, With Hose Clamp (10 Pack)	724045	:		\$
3/8" to 1/4" PTC Straight Union Adapter (10 Pack)	724087	:		\$
3/8" PTC Stem to 1/4" PTC Adapter (10 Pack)	724042	:		\$
3/8" to 1/4" to 1/4" Splitter PTC - (10 Pack)	724232	:		\$
1/4" to 1/4" to 1/4" Splitter PTC - (10 Pack)	724089	:		\$

Additional Plumbing Options

The Tank Port Kit and the Garden Hose Priming/Flushing Kits are optional kits.

Tank Ports - A Return line is required so if one is not installed or not sourced elsewhere, then please order a Tank Port (1 Per Tank)

- Tank Ports should be installed at or near the lowest point in the tank to minimize product foaming. If it is not possible to place the tank port at the lowest point in the tank, an internal snout should be used to direct the returning flow to the lowest point. Tank Port Kit supports a 1" return line and 1" snout

Garden Hose Priming/Flushing Kit

- Garden Hose Kit provides a convenient plumbing location for priming ground drive systems or flushing all systems.
- Garden Hose Kit is used to supply water to boom section on ground drive systems allowing for some of the vApplyHD configuration and health checks to be performed pre-season

Additional Liquid Pressure Bypass Kit

- A single liquid bypass valve can handle 35 GPM of total flow. If the pump is outputting more than this, it is necessary to add a second bypass from below.

Item	Part #	Price	Qty	Total
Tank Port Kit	724049			\$
Priming/Flushing Kit - Garden Hose	724068			\$
Additional Liquid Pressure Bypass Kit	724539			\$

Step 5 - Bulk Hose Options

Black Rubber (EPDM) Hose

Note: EPDM hose is not to be used for suction

Click [here](#) and go to "Diagrams" for detailed vApply Plumbing Diagrams.

Item	Part #	Price	Qty	Total
1/2" EPDM Black Hose - 50'	724073			\$
3/4" EPDM Black Hose - 50'	724032			\$
1" EPDM Black Hose - 50'	724033			\$
1-1/2" EPDM Black Hose - 50'	724034			\$

Plastic Tubing (Push To Connect)

For use with Push to Connect Fittings (PTC)

LDPE Material

vApplyHD modules are equipped with 3/8" PTC Fittings on both inlet and outlets

Item	Part #	Price	Qty	Total
1/4" Tubing Black, 100' Roll	724028			\$
1/4" Tubing Yellow, 100' Roll	724090			\$
3/8" Tubing Black, 100' Roll	724030			\$
3/8" Tubing Yellow, 100' Roll	724091			\$

Step 6 - Service Parts

Pump and Tank Parts

Item	Part #	Price	Qty	Total
Replacement Filter Screen - 80 Mesh	724268			\$
Replacement Filter Screen - 100 Mesh	724269			\$
Pressure Relief Valve	724064			\$
Accumulator Kit (Stand Alone Kit, 1" barb)	724296			\$
Remote Pressure Sensor Gauge Kit	724067			\$
Bracket Kit, Main Vac Tube (1 Mount per kit)	730125			\$
High Mount Bracket Kit, Main Vac Tube (1 Mount per kit)	730253			\$

vApplyHD Rebuild / Service Parts

Item	Part #	Price	Qty	Total
Flange, 2" 80 Mesh, Pressure Points	724333			\$
vApplyHD Motor Replacement Kit	724159			\$
vApplyHD Valve Replacement Kit	724149			\$
Turbine Rebuild Kit - Low Flow	724158			\$
Turbine Rebuild Kit - High Flow	724297			\$
Kit, -020 Viton O-Ring Service	724767			\$
Kit, -110 Viton O-Ring Service	724769			\$
Kit, 2x14 MM Viton O-Ring Service	724770			\$

vApply Base

Step 1 - vApply Base

vApply Base Requirements:

Requires a Gen 3 Display

- vApply Base is a pump only control system, with specific pump requirements:
 - A Fixed displacement pump
 - (Piston, Diaphragm, but NOT centrifugal)
 - Driven by a PWM controlled Hydraulic Motor
 - **With a Motor Shaft Speed Sensor installed!**
- Requires either FlowSense or a Planter wide flow meter for monitoring and mapping (see step XXX)
- Requires a single vApply Module to run the pump
- Requires a PDM
- Can be used in conjunction with other vApply Base, vApply HD, or FlowSense systems up to 4 total systems on a Gen3 display. Each product will need different identifying harnesses

Useful equations

- $GPA = (GPM \times 5940) \div (MPH \times Row\ Spacing\ (inches))$
- $GPM = (GPA \times MPH \times Row\ Spacing\ (Inches)) \div (5940)$

Plumbing Compatibility

1. vApply Base has no specific plumbing limitations. It is recommended to have an 80 Mesh filter on the system. Please refer to the individual liquid components for specific limitations
 1. FlowSense limits still apply when using FlowSense
2. An Accumulator is not required, but is recommended.
3. It is not recommended to run a pressure bypass with a vApply Base system.

vApply Base Kit

vApply Base Kit - One per Product

The vApply pump control module can either be plugged into a CAN Hub on any row with an appropriate length CAN jumper or it can be plugged into the PDM.

The Case IH 2100 Series planters can also plug the Rate Control Module (724500) into the PDM or a CAN Hub on any row. If it is going to be plugged into the PDM it is required to have the Case IH PDM Harness Adapter (**729532**). If using the 729532 harness it will also require 6 Pin CAN terminator (729081) in addition to the 729532. Otherwise, you have the option of plugging the vApply Module into a CAN Hub on a row with the appropriate length jumper and/or 6 pin CAN extension; the PDM Harness Adapter would not be needed in that scenario.

A 729761 second product identifying harness adapter is required for a 2 product system that has the vApply Module connected to the PDM using the 729532 harness. A 3 product system would require a 729761 and a 729543 third product harness. A 4 product system would require a 729761, 729543, and 729544 (2nd, 3rd, and 4th identifying harness respectively).

Note: Each vApply Base Kit includes a liquid tool kit

- Liquid Tool Kit includes:
 - 4 Turbine rebuild kits (2 highs, 2 lows),
 - Push-to-connect fitting tools
 - Needle nose pliers
 - Deutsch Removal tool (for removing turbines)
 - Tube Cutter
 - Holding case and mount bracket.

Item	Part #	Price	Qty	Total
Gen 3 vApply Base Kit (1 per product)	724560			\$
Case IH 2100 PDM Harness Adapter - for vApply Module (See note above)	729532			\$
Second Product Identifying CAN Harness - Brown (replaces 729542)	729761			\$

vApply Pump Harnessing

The vApply Pump harness is needed to control the pump. Order one per product.

Pump Requirements:

- A Fixed displacement pump
- (Piston, Diaphragm, but NOT centrifugal)
- Driven by a PWM controlled Hydraulic Motor
- With a Motor Speed Sensor installed

Note 1: Servo style controllers are not compatible.

Note 2: Use the 727127 harness adapter to connect to a Deutsch style PWM valve. Use the 727128 harness adapter to change WeatherPack genders

Item	Part #	Price	Qty	Total
vApply Pump/Motor Harness (5ft)	724287			\$
Deutsch valve connector adapter	727127			\$
Weatherpack valve connector adapter	727128			\$

6 - Pin CAN Harness Options

Optional - The 6 - Pin Row CAN communication from the PDM CAN NOT terminate within a device. Order additional Y Harnesses and Terminators as needed to prevent device Row CAN termination. Air Flow Reducer and Blower Control modules already have a Y harness installed and one Y harness comes with the vApply Module. All systems that are running a Seed Repeater will need an additional Y harness and possibly need Terminator.

Item	Part #	Price	Qty	Total
CAN Harness Y - 6 Pin	729508			\$
CAN Terminator - 6 Pin connection (PDM CAN)	729081			\$

Row CAN Extensions

Each vApply Module will need to plug into the Seed Repeater 6 - Pin Deutsch connection at the PDM. It will be required to use the Row CAN extensions to run from the PDM to where the vApply Module will be mounted. Maximum recommended CAN extension length is 50' so make sure that the vApply Module is mounted no more than 50' from the PDM.

Item	Part #	Price	Qty	Total
10' Row CAN Extension - 6 Pin	729201			\$
20' Row CAN Extension - 6 Pin	729202			\$
30' Row CAN Extension - 6 Pin	729203			\$

Step 2 - FlowSense

FlowSense Compatibility

- FlowSense is designed to monitor the liquid application rate of individual row units.

- AUX FlowSense will work with the SRM by plugging in to the AUX port
- CAN FlowSense
 - CAN FlowSense is only needed when monitoring 2 products. **One single CAN FlowSense will handle 2 products (it has two FlowSense modules)**
 - **Requires Expansion Hub with CAN Jumper Harness**

Operating Ranges:

- Max sealing pressure - **100 psi**
- Flow range (low flow sensor) = **.07 - .90 GPM**
- Flow range (high flow sensor) = **.20 - 2.5 GPM**
- **Minimum and Maximum FlowSense GPM do not match vApplyHD capabilities due to geometric efficiency differences.**

Wetted Materials - PolyPropylene, Viton, Stainless Steel, Nylon

Fertility Products -

- Not compatible with Anhydrous Ammonia
- Not compatible with suspension fertilizers
 - **Note: Suspension fertilizers are fluids in which solubility of the components has been exceeded and clay has been added to keep the very fine, undissolved, fertilizer particles from settling out of the liquid.**

Useful equations

- **$GPA = (GPM \times 5940) \div (MPH \times Row\ Spacing\ (inches))$**
- **$GPM = (GPA \times MPH \times Row\ Spacing\ (Inches)) \div (5940)$**

Note: an 80 Mesh Screen or tighter filter is required to be installed between the pump and the distribution system to ensure that the system remains clean and free of debris.

FlowSense Essentials Kit

Order 1 FlowSense Essentials Kit per product. This Essentials kit is not necessary if using vApply Base. It is included in the vApply Base Kit.

- The FlowSense Essentials Kit includes
 - 4 Turbine rebuild kits (2 highs, 2 lows),
 - Push-to-connect fitting tools
 - Needle nose pliers
 - Deutsch Removal tool (for removing turbines)
 - Tube Cutter
 - Holding case and mount bracket.

No items to display

AUX FlowSense

AUX FlowSense will work with the SRM by plugging in to the AUX port

Item	Part #	Price	Qty	Total
AUX FlowSense - Low Flow Assembly - 1/4" (.07-.90 GPM)	724015			\$
AUX FlowSense - High flow Assembly - 3/8" (.20-2.5 GPM)	724016			\$

CAN FlowSense Assemblies

CAN FlowSense

- CAN FlowSense is only needed when monitoring 2 products. **One single CAN FlowSense will handle 2 products (it has two FlowSense modules)**
- **Requires Expansion Hub with CAN Jumper Harness**

Item	Part #	Price	Qty	Total
CAN FlowSense - (High, High) flow sensors	724370			\$
CAN FlowSense - (High, Low) flow sensors	724371			\$
CAN FlowSense - (Low, Low) flow sensors	724372			\$

Row CAN Expansion

For all systems that are running more than vDrive/Select (ie. -*SpeedTube*, *Insecticide*, *vApply HD*) it will be necessary to add a Row CAN expansion kit and a CAN jumper cable to go from the Expansion Hub to the device.

Note: All black connector jumpers are for first module of a device (1st product vApply, vDrive meter, SpeedTube, mSet Seed Selector, etc), Brown connector jumpers are for the second module of a device (2nd product vApply, vDrive Insecticide), White and Green are for third and fourth modules of a device (3rd, 4th, product vApply and CAN Based FlowSense). Make sure that the correct jumper is being used with the correct module.

Exiting SpeedTube & insecticide systems using the Y harness (729288 kit) are compatible with Expansion Hub if the grower is adding vApplyHD. The Y cable will plug into the Expansion Hub using a single CAN Jumper to connect the Y to the Expansion Hub instead of the Y cable plugging into the vDrive plug.

Item	Part #	Price	Qty	Total
Row CAN Expansion HUB Kit	729500			\$
Black Connector - Row Can Jumper - 12" (Inches) --- For first device	729481			\$
Black Connector - Row Can Jumper - 20" (Inches) --- For first device	729482			\$
Black Connector - Row Can Jumper - 30" (Inches) --- For first device	729483			\$
Black Connector - Row Can Jumper - 40" (Inches) --- For first device	729489			\$
Black Connector - Row Can Jumper - 50" (Inches) --- For first device	729485			\$
Brown Connector - Row CAN Jumper - 25" (Inches) --- For second device	729484			\$
White Connector - Row CAN Jumper - 25" (Inches) --- For third device	729493			\$
Green Connector - Row CAN Jumper - 25" (Inches) --- For fourth device	729494			\$

Filter Kit

- A 80-Mesh filter system is **REQUIRED** to ensure the system remains clean and free of debris
- Filter must be installed **AFTER** the Pump and **BEFORE** the distribution system
- If a filter is not previously installed or sourced elsewhere - Order one kit per product

Item	Part #	Price	Qty	Total
Filter Kit - Low Flow (1 - 80 Mesh Screen) - 15 GPA or less on 30" Rows	724291			\$
Filter Kit - High Flow (2 - 80 Mesh Screen) - 16 GPA or greater on 30" Rows	724289			\$
Filter Visual Gauge Kit	724294			\$

Step 3 - Planter Wide Flow Meter

Planter Wide Flow Meter options

Planter wide flow meters plug into the AUX port on a single SRM and will need to monitor all the flow out of the pump.

Select a flow meter harness and the correct flow meter for the GPM of the system. Use the equation below to determine the flow rate.

Note 1: If using a flow meter harness from existing inventory on a SRM system, the 727303 harness will need to be a REV 6 or newer harness. All new harness are REV 6 or newer.

Note 2: The low flow liquid meter changed flow ranges from .5-12 gpm to 1 - 9 GPM. This change is effective for all orders placed after 3-19-21.

Useful equations

- $GPA = (GPM \times 5940) \div (MPH \times Row\ Spacing\ (inches))$
- $GPM = (GPA \times MPH \times Row\ Spacing\ (Inches)) \div (5940)$

Item	Part #	Price	Qty	Total
Flow Sensor Harness	727303			\$
Flow Meter (1-9 GPM - changed 3-19-21)	727305			\$
Flow Meter (5~40 GPM)	727306			\$

A Flow Sensor Harness (727303) is required in addition to a flow meter!!!

vApply Granular

Step 1 - vApply Module Kit

vApply Granular Requirements:

Requires a Gen 3 Display

Requires a PDM -- no pull behind carts

- vApply Granular is a control system for hydraulic motor that is running a shaft that is controlling a granular meter.
- Each motor will require a Rate Control Module to control the motor
- The Rate Control Module must control a hydraulic motor with a PWM valve control and shaft speed sensor.
- The system will require a lift switch if it has not been previously installed.
- System will require 2020.1 or newer software for the 20|20.

Note: The Rate Control Module for Granular is the same one used for vApply Base. They can be used interchangeably.

Rate Control Module

Rate Control Module -

- Order a Rate Control Module for each Hydraulic motor (if 2 motors are running the same product it will require a module for each motor)
- The Rate Control Module may be plugged into the Row CAN (a CAN Hub) or into the PDM.
- If the Rate Control Module has been plugged into the PDM, it will be necessary order a 6 Pin CAN Y harness (729508) for each vApply Module that is plugged into the PDM and Terminator.
- If plugging the Rate Control Module into the Row CAN, it will be necessary for there to be a CAN hub and jumper on that row for the module to plug in.
- If more than 1 Rate Control Module will be plugged into the same SRM or PDM, it will be necessary to add a secondary product identifying harness for the second module. If it is going into the CAN hub on the row you can use the correct jumper instead of the product identifying harness.

Item	Part #	Price	Qty	Total
Rate Control Module	724500			\$

Harnesses for PDM use

Select the correct product Identifying harness as needed. Each additional vApply Module / Motor that is plugged into the PDM will require a different product Identifying harness.

Note: a vApply module that is being used for liquid would is treated the same as a vApply module that is being used for granular.

The Case IH 2100 Series planters can also plug the Rate Control Module (724500) into the PDM or a CAN Hub on any row. If it is going to be plugged into the PDM it is required to have the Case IH PDM Harness Adapter (**729532**). If using the 729532 harness it will also require 6 Pin CAN terminator (729081) in addition to the 729532. Otherwise, you have the option of plugging the vApply Module into a CAN Hub on a row with the appropriate length jumper and/or 6 pin CAN extension; the PDM Harness Adapter would not be needed in that scenario.

Optional - The 6 - Pin Row CAN communication from the PDM CANNOT terminate within a device. Order additional Y Harnesses and Terminators as needed to prevent device Row CAN termination. Air Flow Reducer and Blower Control modules already have a Y harness installed. If ordering just the vApply Base Module and installing onto the PDM it will be necessary to order a 6-Pin Y CAN harness (729508) in addition to the module. All systems that are running a Seed Repeater will need an additional Y harness and possibly need Terminator.

Item	Part #	Price	Qty	Total
Second Product Identifying CAN Harness - Brown (replaces 729542)	729761			\$
Case IH 2100 PDM Harness Adapter - for vApply Module (See note above)	729532			\$
CAN Terminator - 6 Pin connection (PDM CAN)	729081			\$
CAN Harness Y - 6 Pin	729508			\$

Row CAN Expansion - Use if plugging into SRM CAN Hub

Remember that if more than one vApply Module is connected to the same row CAN Hub, it will be necessary to use a Brown, White, or Green jumper for the additional vApply modules.

For all systems that are running more than vDrive/Select (ie. -*SpeedTube*, *Insecticide*, *vApply HD*) it will be necessary to add a Row CAN expansion kit and a CAN jumper cable to go from the Expansion Hub to the device.

Note: All black connector jumpers are for first module of a device (1st product vApply, vDrive meter, SpeedTube, mSet Seed Selector, etc), Brown connector jumpers are for the second module of a device (2nd product vApply, vDrive Insecticide), White and Green are for third and fourth modules of a device (3rd, 4th, product vApply and CAN Based FlowSense). Make sure that the correct jumper is being used with the correct module.

Existing SpeedTube & insecticide systems using the Y harness (729288 kit) are compatible with Expansion Hub if the grower is adding vApplyHD. The Y cable will plug into the Expansion Hub using a single CAN Jumper to connect the Y to the Expansion Hub instead of the Y cable plugging into the vDrive plug.

Item	Part #	Price	Qty	Total
Row CAN Expansion HUB Kit	729500			\$
Black Connector - Row Can Jumper - 12" (Inches) --- For first device	729481			\$
Black Connector - Row Can Jumper - 20" (Inches) --- For first device	729482			\$
Black Connector - Row Can Jumper - 30" (Inches) --- For first device	729483			\$
Black Connector - Row Can Jumper - 40" (Inches) --- For first device	729489			\$
Black Connector - Row Can Jumper - 50" (Inches) --- For first device	729485			\$
Brown Connector - Row CAN Jumper - 25" (Inches) --- For second device	729484			\$
White Connector - Row CAN Jumper - 25" (Inches) --- For third device	729493			\$
Green Connector - Row CAN Jumper - 25" (Inches) --- For fourth device	729494			\$

Step 2 - Motor Control Harnesses

vApply Pump Harnessing

The vApply Pump/Motor harness is needed to control each motor. It connects the vApply Module to the Hydraulic motor valve and speed sensor. Order one for each vApply Module/Motor

Motor Requirements:

- Driven by a PWM valve
- Has a Motor Shaft Speed Sensor installed

Note 1: Use the 727127 harness adapter to connect to a Deutsch style PWM valve. Use the 727128 harness adapter to change WeatherPack genders

Item	Part #	Price	Qty	Total
vApply Pump/Motor Harness (5ft)	724287			\$
Deutsch valve connector adapter	727127			\$
Weatherpack valve connector adapter	727128			\$

6 Pin CAN extensions

If the 15' Motor harness will not reach from the motor to the vApply base module mounting location, it may be necessary to install a Row CAN extension to reach the motor. Ideal install will be to move the vApply module to a location that does not need an extension but if no option is available it is okay to install a Row CAN extension.

Item	Part #	Price	Qty	Total
2' Row CAN Extension - 6 Pin	729205			\$
5' Row CAN Extension - 6 Pin	729206			\$
10' Row CAN Extension - 6 Pin	729201			\$
20' Row CAN Extension - 6 Pin	729202			\$
30' Row CAN Extension - 6 Pin	729203			\$

Step 3 - Blockage Sensors and Harnessing

Blockage sensing is only compatible with vApply Granular motor control.

Blockage Sensors

vApply Granular is compatible with Dickey John style blockage sensors. If you don't have existing blockage sensors that are compatible and would like to monitor blockage, you can order one of the options below.

Item	Part #	Price	Qty	Total
Blockage Sensor - 25 MM	735099			\$
Blockage Sensor - 32 MM	735097			\$

Blockage Sensor Input Module

Order 1 per blockage sensor. The 724450 is compatible with Dickey John style blockage sensors. Existing sensors can be used if they are Dickey John style, or you can order blockage sensors from the previous group.

Will install into CAN Hub. The Blockage Sensor Input Module has a 36" pigtail. If this plus the harness on the blockage sensor is not enough, then add an appropriate 6-pin CAN extension from the previous step (Motor Control Harnesses).

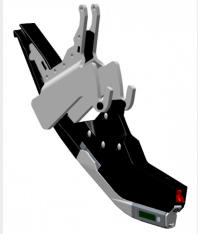
Item	Part #	Price	Qty	Total
Blockage Sensor Input Module (with 36" pigtail)	724450			\$

SmartFirmer

Step 1 - SmartFirmer Tail and Sensor

SmartFirmers are compatible with all QA Keeton Brackets with the only exception being the scraper mounted Kinze Bracket (4900, Large seedtube for 3000 series - 150110). It will require a new bracket (see below) for the SmartFirmer to fit on the scraper mounted bracket.

SmartFirmer 2 is a more rugged design to better handle a wider variety of conditions, and uses. It is recommended on all compatible row units.



All SmartFirmers will require the CAN Expansion Hub but does not require a Jumper Cable. The harness from the SmartFirmer will plug directly into the Hub.

FurrowJet Note: Existing FurrowJets may require a new FurrowJet Body Panel Update. Make sure to order the FurrowJet Body Panel Update Kit (141173) listed in the SmartFirmer options below if the current FurrowJet body was shipped prior to Jan 1, 2020. One Update Kit is needed for each FurrowJet SmartFirmer that will be installed.

SmartFirmer does not fit on Case IH 12XX Planters

Firmer Tail

Recommended number of SmartFirmer sensors per planter :

- For rate control based off organic matter -
 - 1 per every 4 rows.
 - Minimum of 3 sensors on planter
- For mapping/ monitor only
 - Recommend 1 per every 4 rows
 - No minimum number of sensors required.

SmartFirmer 2 also requires a FurrowJet stiffener bracket (see row components to order the correct bracket).

Case IH 21xx planters can only use the 145365 and the 145364. Case IH 12xx are not compatible.

Item	Part #	Price	Qty	Total
SmartFirmer Sensor and Tail	145100			\$
Low Stick SmartFirmer Sensor & Tail	145200			\$
SmartFirmer 2	145400			\$
SmartFirmer Sensor and FurrowJet Mini Tail	145300			\$
Case SmartFirmer 2 Sensor and Tail (21xx Series row units only)	145365			\$
Case SmartFirmer Sensor and FurrowJet Mini Tail	145364			\$

Step 2 - Row Components

Row CAN Expansion

For all systems that are running more than vDrive/Select (ie. -*SpeedTube*, *Insecticide*, *vApply HD*) it will be necessary to add a Row CAN expansion kit and a CAN jumper cable to go from the Expansion Hub to the device.

Note: All black connector jumpers are for first module of a device (1st product vApply, vDrive meter, SpeedTube, mSet Seed Selector, etc), Brown connector jumpers are for the second module of a device (2nd product vApply, vDrive Insecticide), White and Green are for third and fourth modules of a device (3rd, 4th, product vApply and CAN Based FlowSense). Make sure that the correct jumper is being used with the correct module.

Existing SpeedTube & insecticide systems using the Y harness (729288 kit) are compatible with Expansion Hub if the grower is adding vApplyHD. The Y cable will plug into the Expansion Hub using a single CAN Jumper to connect the Y to the Expansion Hub instead of the Y cable plugging into the vDrive plug.

Note: SmartFirmer will not require any can jumpers but does require the expansion hub. The harness from the sensor will plug directly into the hub. Depending on the expansion hub mounting location it may be necessary to add a 2 ft row can extension harness.

Item	Part #	Price	Qty	Total
Row CAN Expansion HUB Kit	729500			\$
2' Row CAN Extension - 6 Pin	729205			\$

SmartFirmer Options

If installing the SmartFirmer Sensor on a Kinze planter with large seedtubes, it will be a requirement to replace the QA bracket with a the SmartFirmer Compatible QA bracket for large seed tubes. Use either the **150130 (KZ 3000) or the 150150 (KZ 4000)**.

If installing SmartFirmer on a John Deere ExactEmerge planter, it is necessary to order a **141180 (FurrowForce compatible)**.

Case IH 21XX planters with FurrowForce will need the 756134 bracket (This may also be ordered in the FurrowForce section of the order guide)

Case IH 21XX planters with the OEM closing system will need to use the 141214 bracket.

Note: Existing FurrowJets may require a new FurrowJet Body Panel Update. Make sure to order the FurrowJet Body Panel Update Kit (141173) listed in the SmartFirmer options below if the current FurrowJet body was shipped prior to Jan 1, 2020. One Update Kit is needed for each FurrowJet SmartFirmer that will be installed.

Item	Part #	Price	Qty	Total
John Deere Quick Attach Firmer Bracket (Non ExactEmerge)	150109	:		\$
ExactEmerge Quick Attach Firmer and FurrowJet Bracket-Cast (FurrowForce Compatible)	141180	:		\$
White 8000 Quick Attach Firmer and FurrowJet Bracket (replaces 150135)	150147	:		\$
White 9000 Quick Attach Firmer Bracket (replaces 150111)	150123	:		\$
Kinze 3000, 2000 Quick Attach Firmer Bracket (non large seedtubes)	150120	:		\$
Kinze 4900/3000(Large Seedtube) Quick Attach Firmer Bracket (scraper bracket mounting) - subs from 150121, 145131	150130	:		\$
Kinze 4000 Quick Attach Firmer Bracket	150150	:		\$
Monosem Quick Attach Firmer Bracket	150605	:		\$
FurrowJet Body Panel Update Kit - for SmartFirmer	141173	:		\$
QA Bracket/FurrowJet Support Bracket -Case IH 21xx With FurrowForce ONLY!!!	756134	:		\$
FurrowJet Bracket - Case IH 21xx (OEM Closing system)	141214	:		\$

FurrowJet Support Bracket Kit

All SmartFirmer 2 installations will also need a FurrowJet support bracket. Follow the guidelines below.

This bracket installs from the closing system mount bolt to the rear of the QA Keeton Bracket to support the additional force of FurrowJet Order 1 per row.

ExactEmerge Note: do not order a FurrowJet Support bracket. It is included in the Keeton/FurrowJet bracket (141180) under SmartFirmer options above.

White 8000 Note: Do not order a FurrowJet Support bracket. It is included in the Keeton/FurrowJet bracket 150147

Monosem Note: Will need closing setback (141250) installed on planter for FurrowJet.

Item	Part #	Price	Qty	Total
FurrowJet Support Bracket (JD ME2, ME Plus, XP, ME5)	141130			\$
FurrowJet Support Bracket (JD ME - 7000/Kinze 2000)*	141135			\$
FurrowJet Support Bracket (Kinze 3000)	141131			\$
FurrowJet Support Bracket - KZ4000	141190			\$
FurrowJet Support Bracket (White 9000) (replaces 141132)	141137			\$
FurrowJet Support Bracket (Harvest International)	141134			\$
FurrowJet Support Bracket - Monosem	141245			\$
Monosem NG+4 Closing Setback	141250			\$

* The 7000 and the 2000 FurrowJet Support bracket may require modifications to the closing system (KZ) or Gauge wheel arms (JD). See Documents with assigned with part numbers above for details.

FurrowForce

Step 1 - Row Unit Bracket

FurrowForce is compatible on the following row units

- John Deere ME2, Plus, XP, ME5
- Kinze 3000 (**does not work on pusher row units!**)
- Harvest International
- White 9000/Gray Precision Planting Ready Row Unit
- Case IH 21xx, 12xx Row Units

FurrowForce requires a Gen 3 Display for **control** or **sensing**, a Gen 2 will NOT work in this configuration. A mechanical only system will not require a display but still requires an air compressor and the FurrowForce Manual Controller.

FurrowForce Essentials Kit

One FurrowForce Essentials Kit per planter is required.

Item	Part #	Price	Qty	Total
FurrowForce Essentials Kit	756130			\$

FurrowForce Row Unit Brackets

Note 1: A Case IH 2100 with FurrowJet or SmartFirmer and Furrowforce

- Will require extension bracket kit 756192
- Will also require the FurrowJet/SmartFirmer/FurrowForce Bracket Support - 756134 (can also be ordered in the FurrowJet section)

Note 2: Monosem planters will require a closing setback bracket if running the closing wheels in the extreme stagger position. FurrowJet requires the same closing setback so it is possible that is already installed on the planter.

Note 3: If ordering FurrowForce for a John Deere ExactEmerge planter already running Quick Attach Keetons/SmartFirmers and/or FurrowJets, it is necessary to also order 141180 (1 per row).

Item	Part #	Price	Qty	Total
5 Hole FurrowForce Row Unit Bracket - John Deere	756160			\$
5 Hole FurrowForce Row Unit Bracket - Kinze	756164			\$
5 Hole FurrowForce Row Unit Bracket - White 9000/ Precision Planting Ready Row Unit	756161			\$
5 Hole FurrowForce Row Unit Bracket - Harvest International	756163			\$
5 Hole FurrowForce Row Unit Bracket - Case IH 21XX	756122			\$
5 Hole FurrowForce Row Unit Bracket - Case IH 12XX	756137			\$
ExactEmerge Quick Attach Firmer and FurrowJet Bracket-Cast (FurrowForce Compatible)	141180			\$
Row Unit Extension Bracket - Case IH 2100 (only needed with FurrowJet)	756192			\$
QA Bracket/FurrowJet Support Bracket -Case IH 21xx With FurrowForce ONLY!!!	756134			\$
FurrowForce Row Unit Bracket - Monosem NG+4	756600			\$
Monosem NG+4 Closing Setback	141250			\$

Step 2 - FurrowForce Assemblies

The FurrowForce assemblies are all the same except for the color of the assembly. Use the green assembly for John Deere planters, red assembly for Case IH, and the gray assembly for other brands. If desired, either color could be used on any machine. Order one per row.

FurrowForce Assembly - with Load Sensor

Includes the FurrowForce Load Sensor - Automatic control requires a load sensor on every row.

All Case IH systems with load sensor will need the 756182 assembly. This does not need an extension unless it is being used with FurrowJet. All stagger combinations are usable on the assembly without an extension (this is only true on the Case IH!!!)

If several load sensors are desired on a manual control system to monitor performance, order the desired number of assemblies with load sensors and the rest without.

Item	Part #	Price	Qty	Total
5 Hole FurrowForce Closing Assembly - with Load Sensor -- Green (John Deere)	756181			\$
5 Hole FurrowForce Closing Assembly - with Load Sensor -- Gray (all non Deere row units)	756180			\$
5 Hole FurrowForce Closing Assembly - with Load Senosor -- Red (Case IH)	756182			\$

FurrowForce Assembly - No Load Sensor

Only the Assembly - No load sensor installed. Use with manual control

All Case IH systems with no load sensor will need the 756172 assembly. This is a 5 hole and does not need an extension unless it is being used with FurrowJet. All stagger combinations are usable on the assembly without an extension (this is only true on the Case IH!!!)

Item	Part #	Price	Qty	Total
5 Hole FurrowForce Closing Assembly - No load sensor -- Green (John Deere)	756171			\$
5 Hole FurrowForce Closing Assembly - No load sensor -- Gray (all non Deere row units)	756170			\$
5 Hole FurrowForce Closing Assembly - No load sensor -- Red (Case IH)	756172			\$

Step 3 - FurrowForce Wheel Options

Wheel Kits

There are 3 different styles of wheels for FurrowForce.

Notched Wheel - The notched wheel is the best all around wheel. It is the recommended wheel for 95% of all conditions

Smooth Wheel - The smooth wheel is best in sandy or very loose soils. It is also the best wheel for shallow planted crops

Dimpled Wheel - Only for growers where less closing may achieve better emergence. Only for extremely wet clay soils (non-fracturable) or very heavy cover crop field conditions.

For each row it will be necessary to order 2 wheels (one left and one right or 2 smooth or dimpled wheels).

The wheels do not come with the bearing and hub assembly. They will need to be ordered separately and assembled on site. Make sure to order a Wheel Hub Assembly Kit (756052) for each row.

Item	Part #	Price	Qty	Total
FurrowForce Wheel Hub Assembly Kit (contains 2 hubs and hardware) - one per row	756052			\$
Notched Wheel (Left) - one per row	756086			\$
Notched Wheel (Right) - one per row	756087			\$
Smooth Wheel (single wheel, order 2 per row)	756125			\$
Dimpled Flat Wheel (single wheel, order 2 per row)	756187			\$

Wedge Kit

The wedge kit reduces vertical camber of the first stage wheels by approximately **5 degrees**. This is not a required kit but can be used in situations where the rock guard alone is not sufficient to prevent catching rocks. You **MUST** order the following:

- 756216 (1 per planter) - **This tool is highly recommended in order to ensure proper alignment of wedge components.**
- 756211 (2 per row)
- 756212 (2 per row)

Item	Part #	Price	Qty	Total
FurrowForce Wedge Installation Tool*	756216			\$
FurrowForce Angled Nut	756211			\$
FurrowForce Angled Shim	756212			\$

***Order 1 wedge installation tool per planter. This tool is HIGHLY recommended in order to ensure proper alignment of wedge components.**

Step 4 - FurrowForce Compressor Options

FurrowForce will require an air compressor.

Compressor Kits

Please refer to the compressor sizing table below for specific operating constraints before selecting a compressor.

An existing hydraulic AirForce Compressor can be used and no additional compressor is required. Running the AirForce Compressor will require an AirForce Compressor Run Kit (729115) if it is not already install.

A Cleansweep compressor can be used for a manual control system only, that is 16 rows or less.

Row constraints remain the same with or without CleanSweep systems being supplied from the same compressor.

If it is desired to have tank pressure from the FurrowForce hydraulic compressor displayed on the 20|20 screen, it will be necessary to add the **Tank Pressure Sensor (756555)**. It plugs into the CAN expansion hub and will require a short length of 1/4" hose to connect to the compressor. (no jumper cable required)

Note: The Hydraulic FurrowForce Compressor does not need an AirForce Compressor Run Kit, but it does require 12V supply for the pressure switch and solenoid. Refer to the *FurrowForce Compressor Power Options* section below.

Compressor Style	Control Style	
	Manual	Automatic Control
CleanSweep	0-16 Rows	N/A
High Capacity Cleansweep	0-24 Rows	0-6 Rows
Hydraulic FurrowForce	0-54 Rows	0-54 Rows
Hydraulic AirForce	0-54 Rows	0-54 Rows

Item	Part #	Price	Qty	Total
FurrowForce Hydraulic Compressor - 4 gallon tank	756500			\$
High Capacity Electric CleanSweep Compressor	755290			\$
AirForce Compressor Run Kit	729115			\$
Tank Pressure Sensor (Smart Sensor)	756555			\$
Compressor Oil - Synthetic Blend (1 L)	200351			\$

FurrowForce Compressor Power Options

The FurrowForce hydraulic compressor will need to be powered to operate the pressure switch. Source power can be from either a SRM CAN hub, the PDM, or tractor battery.

- If sourcing from a SRM CAN hub you will need the **756560** and a row can extension to go from any CAN hub to the compressor.
- If sourcing from a PDM you will need the **756561** and the **729195** apex to 3 pin CleanSweep Power adapter (if removing the CleanSweep Compressor, this may already be installed).
- If sourcing from the tractor battery you will need the **756561** and the **755015** CleanSweep Compressor power harness. You may need the 755100 12' extension to reach the compressor.

Note: The current requirement for the FurrowForce hydraulic compressor is about 1.5 amps.

Item	Part #	Price	Qty	Total
FurrowForce Compressor Power Harness - 6 Pin CAN - (6" lead)	756560			\$
FurrowForce Compressor Power Harness - 3 Pin Convenience port (100" lead)	756561			\$
2' Row CAN Extension - 6 Pin	729205			\$
5' Row CAN Extension - 6 Pin	729206			\$
10' Row CAN Extension - 6 Pin	729201			\$
20' Row CAN Extension - 6 Pin	729202			\$
30' Row CAN Extension - 6 Pin	729203			\$
APEX - CleanSweep Power Adapter	729195			\$
CleanSweep Compressor Power Harness - Battery	755015			\$
12' Power Harness Extension (For CleanSweep Compressor)	755100			\$

Compressor Mounting Options - Select One

Use the Order Resources below to assist in selecting the correct compressor mounting bracket.

All compressors have the same mounting locations so all brackets are compatible with all compressors. Select the bracket based on the planter that it will be installed on.

Note: For White, the recommended mounting bracket is the Universal/Custom (726450) or the High Mount (726470)

Item	Part #	Price	Qty	Total
JD 7000 / 7200 - 20' Bar - Rigid Tongue (5 x 7 U-bolts) Mounts on tongue	726055			\$
JD 7000 / 7200 - 20' Bar- Folding Tongue (3/8 bolts) Mounts on tongue	726059			\$
JD 7000 / 7200 / 1770 Cons. 30' Bar (3 x 8 U-bolts) Mounts on draft tube	726052			\$
JD 7000 / 7200 / 1770 Cons. 40'-60' Bar (3 x 5 U-bolt) Mounts on draft tube	726050			\$
JD 7000 / 7200 / 1770 / 1770NT /1790 Mounts on cross bar of 3-pt hitch	726515			\$
JD All Front Fold Models (High Mount Brackets) Mounts to draft tube	726470			\$
JD 7100 / 7300 / 1700 / 1710 Rigid/Vert. Fold (7 x 7 w/ spacer) Mounts over bar	726056			\$
JD 7300/1720 Stack Fold (7 x 4 w/ spacer) Mounts over center bar	726500			\$
JD 7100 / 7300 / 1700 / 1710 / 1720 (7 x 7) Mounts in front of bar	726060			\$
JD 1760 (8 x 10 U-bolts) Mounts on tongue	726057			\$
JD DB ? 80' Bar (3 x 6 U-bolts) Mounts on draft tube	726051			\$
JD DB > 80' Bar (4 x 6 U-bolts) Mounts on draft tube	726053			\$
JD 1770NT / 1790 / DB Hyd Comp (8 x 12 U-bolts) Rear mount to center frame	726490			\$
Universal / Custom Mount (Fits 3 x 3 tube up to 8 x 12 tube)	726450			\$
Kinze Rear Fold (4 x 4 U-bolts)	726397			\$
Kinze 2000 / 3000 2-Tube Tongue (J-bolts) Mounts to Tongue	726398			\$
Kinze 2600 / 3600 8 & 12 Row (8 x 8 U-bolts w/ Spacer) Mounts to tongue	726058			\$
Kinze 2600 / 3600 16 Row (10 x 10 U-bolts w/ Spacer) Mounts to tongue	726455			\$
Kinze 2700 / 3700 (Side Mount Brackets) Mounts to side of hitch	726435			\$
Kinze 2500 / 3500 7x7 Tube Low Mount	726612			\$
Kinze 2600 / 3600 12 Row 8x8 Tube Low Mount	726613			\$
Kinze 2600 / 3600 16 Row 10x10 Tube Low Mount	726614			\$

Fittings and Airlines

Each system will need air line installed from the compressor to the FurrowForce assembly airbag on each row. Select the correct size and amounts of air tube as needed.

- 3/8" tubing is used for the trunk line across the planter bar for both automatic and manual control. Order enough to cover the full width of the planter bar.
- 1/4" tubing will be used to go from the trunk line down to each FurrowForce Control Module or airbag. Estimated usage is about 5 feet per row.
- Manual systems will need to run 1/4" (or 3/8" if desired) tube from the compressor to the control unit in the cab and then back to the planter bar.
- Each row will require a 3/8" to 3/8" to 1/4" Tee to be installed in the main trunk line to connect to the 1/4" row tube. Tees come in a 10 pack (**724498**)- order enough for every row minus 2 (the end rows don't need a tee - only a reducer to go from 3/8" to 1/4" - 4 reducers are included in the Essentials Kit)

Item	Part #	Price	Qty	Total
3/8" x 3/8" x 1/4" PTC Tee - (10pk)	724498	:		\$
3/8" PTC Tee (qty 1)	726116	:		\$
1/4" OD Black Air Line - 50' Roll	726321	:		\$
1/4" OD Black Air Line - 100' Roll	726322	:		\$
1/4" OD Black Air Line - 150' Roll	726323	:		\$
3/8" OD Black Air Line - 25' Roll	726331	:		\$
3/8" OD Black Air Line - 50' Roll	726332	:		\$
3/8" OD Black Air Line - 100' Roll	726333	:		\$
3/8" OD Black Air Line - 150' Roll	726474	:		\$

Step 5 - FurrowForce Control

FurrowForce Modules and Sensors

The FurrowForce Control Module will require a CAN jumper and will need to plug into an expansion hub.

The FurrowForce Load Sensor is a Row CAN device and will need to plug in to an expansion hub. It does not need a Row CAN jumper, it has an integrated harness.

Item	Part #	Price	Qty	Total
FurrowForce Control Module Kit (one per row)	756300	:		\$

Row CAN Expansion

All FurrowForce automatic control or sensing systems will require a CAN expansion hub. Automatic control systems will also require 1 CAN jumper for the FurrowForce Control Module. The FurrowForce Load Sensor DOES NOT require a CAN jumper, it has an integrated harness that will plug directly into a CAN expansion hub.

In general, if the Row CAN expansion hub is mounted on either the right or left side of the goal post, a 30 inch CAN jumper will reach the FurrowForce Module. If the Row CAN expansion hub is mounted in front of the goal post, a 40 inch or 50 inch jumper would be recommended.

For all systems that are running more than vDrive/Select (ie. -*SpeedTube*, *Insecticide*, *vApply HD*) it will be necessary to add a Row CAN expansion kit and a CAN jumper cable to go from the Expansion Hub to the device.

Note: All black connector jumpers are for first module of a device (1st product vApply, vDrive meter, SpeedTube, mSet Seed Selector, etc), Brown connector jumpers are for the second module of a device (2nd product vApply, vDrive Insecticide), White and Green are for third and fourth modules of a device (3rd, 4th, product vApply and CAN Based FlowSense). Make sure that the correct jumper is being used with the correct module.

Existing SpeedTube & insecticide systems using the Y harness (729288 kit) are compatible with Expansion Hub if the grower is adding vApplyHD. The Y cable will plug into the Expansion Hub using a single CAN Jumper to connect the Y to the Expansion Hub instead of the Y cable plugging into the vDrive plug.

Item	Part #	Price	Qty	Total
Row CAN Expansion HUB Kit	729500			\$
Black Connector - Row Can Jumper - 12" (Inches) --- For first device	729481			\$
Black Connector - Row Can Jumper - 20" (Inches) --- For first device	729482			\$
Black Connector - Row Can Jumper - 30" (Inches) --- For first device	729483			\$
Black Connector - Row Can Jumper - 40" (Inches) --- For first device	729489			\$
Black Connector - Row Can Jumper - 50" (Inches) --- For first device	729485			\$

FurrowForce Manual Control

If FurrowForce Control Modules are not being installed, a FurrowForce Manual Controller will be needed. The Manual Controller does not have a mounting bracket. If CleanSweep is installed, the FurrowForce Manual Controller can mount to the CleanSweep Controller with the 756107 mounting bracket.

If CleanSweep is not installed, the FurrowForce Manual Controller can be mounted using the universal bracket (725804) or a RAM mount.

If running manual control it will be necessary to install a 1/8" NPT to 1/4" PTC fitting on each row to connect the air line to the air bag fitting. The fittings are available in 10 count packs.

Item	Part #	Price	Qty	Total
FurrowForce Manual Controller	756100			\$
FurrowForce Manual Controller Mounting Bracket - CleanSweep installed	756107			\$
Universal Metal Cab Mounting Bracket (Displays, Controllers, Tough Trays)	725804			\$
1/8" NPT x 1/4" PTC Fitting (10 pack) - FurrowForce (one fitting per row for manual control systems)	726757			\$

Step 6 - FurrowForce Accessories

Rock Guard Option

If the grower is going to planting in an area that has a large amount of rocks it may be desirable to add the optional Rock Guard Kit. This guard kit sits over the furrow and pushes rocks down so that they will not get caught in the closing discs.

Note: this guard kit can only be used with the 5 Hole FurrowForce Closing Assemblies. Do not use with the 2 Hole FurrowForce Closing Assemblies.

Item	Part #	Price	Qty	Total
Rock Guard Kit (Dozer Blade)	756154	---		\$

Liquid Attachments

The FurrowForce liquid option is available for a grower that wants to surface apply a liquid product. It is a dribble tube type of attachment. Expect minimal product incorporation.

It will mount to the outside of the first stage wheel hub and apply product between the first and second stage wheels. The liquid tube is side specific.

The FurrowForce Dual Dribble Tube is a liquid application option that will apply product after the second stage wheels. Each kit contains a left and right dribble tube. Expect little to no product incorporation.

Item	Part #	Price	Qty	Total
FurrowForce Liquid Dribble Tube Kit - Right side	756128			\$
FurrowForce Liquid Dribble Tube Kit - Left side	756127			\$
FurrowForce Dual Dribble Tube - Application Point after second stage wheels	756140			\$

Service parts

The FurrowForce Load Sensor should not need to be ordered separately, except for field service. If ordering for control or sensing systems, order the FurrowForce assembly with the sensor pre-installed.

Item	Part #	Price	Qty	Total
FurrowForce Load Sensor Kit	756210			\$
Kit, Replacement Hyd. Compressor Pump	756590			\$

SmartDepth

Step 1 - Row Unit Kits

--Requires a Gen 3 system to operate

--Compatible Row Units:

- John Deere XP and Me5
- Kinze 3000 (pullers only)
- White 9000 and Precision Planting Ready (Gray) Row Unit
- Harvest International

--POWER CONSIDERATIONS

- If you have SmartDepth and SpeedTube, we recommend you do not power more than 5 rows per Apex output.
 - Example: If you have a 6 row planter section, you cannot use a 6 row backbone in that scenario because it only has 1 apex power input. In that example, use 2 3-row backbones instead
- If running SmartDepth only, all backbones that are 7 rows or more will require a second apex extension
- It will be necessary to consider the need for either a second PDM or use the PDM from the SeederForce kit because it has more outputs
- Check the power

--Please note: In order to use SmartDepth moisture control, we recommend installing at least 4 SmartFirmers per control section. Planters can be configured to have up to 4 control sections. SmartFirmers can be added under the SmartFirmer section of the order guide or can be added under Step 2 of the SmartDepth section of the order guide.

SmartDepth Essentials Kit

Order 1 Essentials Kit per planter

JD XP row units will require the insecticide bracket mounting holes in the shank. If the holes are not present, order the 734105 Drill Template Kit below.

Item	Part #	Price	Qty	Total
SmartDepth - Essentials Kit	734000			\$
SmartDepth - JD Drill Template Kit (XP Row Units)	734105			\$

Row Unit Kits

Item	Part #	Price	Qty	Total
SmartDepth - JD XP/ME5 Row Unit Kit	734060			\$
SmartDepth - Harvest International Row Unit Kit	734180			\$
SmartDepth - White 9000 and Precision Planting Ready Row Unit Kit	734130			\$
SmartDepth - Kinze 3000 Row Unit Kit	734120			\$
Monosem - Smartdepth Kit	734220			\$

Step 2 - Row Control Components

SmartDepth Module

Order 1 SmartDepth Module per row.

Item	Part #	Price	Qty	Total
SmartDepth Module w/Gearbox	734100			\$

SmartFirmers

In order to use SmartDepth moisture control, we recommend installing at least 4 SmartFirmers per control section. Planters can be configured to have up to 4 control sections.

Item	Part #	Price	Qty	Total
SmartFirmer Sensor and Tail	145100	\$490.00		\$
Low Stick SmartFirmer Sensor & Tail	145200	\$540.00		\$
SmartFirmer Sensor and FurrowJet Mini Tail	145300	\$515.00		\$

SmartFirmer Options

If installing the SmartFirmer Sensor on a Kinze planter with large seedtubes, it will be a requirement to replace the QA bracket with a the SmartFirmer Compatible QA bracket for large seed tubes. Use either the **145131** or the **150130**.

If installing SmartFirmer on a John Deere ExactEmerge planter, it is necessary to order a **141180 (FurrowForce compatible)**.

Also, depending on where the Expansion hub is mounted, it may be necessary to add an extension harness to plug the SmartFirmer Sensor into the expansion hub. Use the 729205 harness. Note: a jumper cable will not work as an extension harness for SmartFirmer

Note: All SmartFirmer FurrowJet Tail will require the 141173 FurrowJet Body Panel Update Kit. Order one for each FurrowJet SmartFirmer

Item	Part #	Price	Qty	Total
2' Row CAN Extension - 6 Pin	729205			\$
John Deere Quick Attach Firmer Bracket (Non ExactEmerge)	150109			\$
ExactEmerge Quick Attach Firmer and FurrowJet Bracket-Cast (FurrowForce Compatible)	141180			\$
White 9000 Quick Attach Firmer Bracket (replaces 150111)	150123			\$
Kinze 3000, 2000 Quick Attach Firmer Bracket (non large seedtubes)	150120			\$
Kinze 4900/3000(Large Seedtube) Quick Attach Firmer Bracket (scraper bracket mounting) - subs from 150121, 145131	150130			\$
FurrowJet Body Panel Update Kit - for SmartFirmer	141173			\$

Row CAN Expansion

For all systems that are running more than vDrive/Select (ie. -*SpeedTube*, *Insecticide*, *vApply HD*) it will be necessary to add a row CAN expansion kit and a CAN jumper cable to go from the expansion hub to the device. It is necessary to order a CAN expansion kit with SmartDepth.

For SmartDepth, if the CAN hub is mounted to the SRM a 30" CAN jumper is enough length in most cases to go from the hub down along the shank and to the SmartDepth module. Use a 40" jumper if you want a bit of extra length for zip tying.

--If the CAN hub is mounted to the parallel arms a 40" or 50" CAN jumper is recommended.

The 734190 SmartDepth Mounting Bracket gives the option of mounting a CAN Expansion Hub to the side of the SmartDepth module to have a hub on the back of the row unit. This would cut down on the number of CAN jumpers running to the back of the row unit when FurrowForce was also installed on the planter.

- The 729205 will be needed if plugging the SRM row harness directly into a CAN hub that is mounted using the 734190.

Item	Part #	Price	Qty	Total
SmartDepth HUB Mounting Bracket	734190			\$
2' Row CAN Extension - 6 Pin	729205			\$
Row CAN Expansion HUB Kit	729500			\$
Black Connector - Row Can Jumper - 12" (Inches) --- For first device	729481			\$
Black Connector - Row Can Jumper - 20" (Inches) --- For first device	729482			\$
Black Connector - Row Can Jumper - 30" (Inches) --- For first device	729483			\$
Black Connector - Row Can Jumper - 40" (Inches) --- For first device	729489			\$
Black Connector - Row Can Jumper - 50" (Inches) --- For first device	729485			\$

YieldSense

Step 1 - YieldSense Base Kits and Elevator Chains

Please add SeedSense 2020 Display and FieldView products to the quote if they are not already installed or owned by the grower. YieldSense requires a 2020 SeedSense Display and FieldView is strongly recommended for correct mapping and reporting. 5 HZ GPS is required so if the combine is not equipped with a 5Hz GPS receiver, please add one from the SeedSense product group.

John Deere Base Kits - Gen 1 & 2 Displays

The Base Kit will include the Flow Sensor, all harnesses to connect to the flow sensor, YieldSense Module (YSM), and display mounting brackets.

The 9x00, 9x10 Series base kits will also include a height sensor, elevator speed sensor, wheel speed sensor, and a second YieldSense Module (YSM)

Note: for 2017+ S Series John Deere Combines, the flow sensor will install on to a removable plate at the top of the clean grain elevator. In addition to the 750001 Base kit, make sure that you order the S Series Flow Sensor Mount Kit that has a replacement plate that the flow sensor will mount to. All S 600 series combines 2017 and later will use 751140. All S 700 series combines with serial number below 805001 will use the 751140 kit and S 700 Series with Serial number 805001 and greater will use 751237 kit.

Note: The base kit for S Series combines includes the 600 and the 700 Series combines. It is the same kit for both.

Item	Part #	Price	Qty	Total
YieldSense Base Kit - JD 50/60/70/S Series	750001			\$
YieldSense Base Kit - 9400, 9410, 9500, 9510, 9600, 9610	750006			\$
S 600 Series 2017+ and S 700 Series (Serial # < 805001) Flow sensor Mount Kit	751140			\$
S 700 Series Flow Sensor Mount Kit (Serial # 805001+)	751237			\$

Note: All 9X00, 9X10 Series combines will need either aftermarket or Precision Planting Moisture Sensors. John Deere style moisture sensors for these combines will not work with YieldSense.

John Deere Base Kits - Gen 3 20|20

The Base Kit will include the Flow Sensor, all harnesses to connect to the flow sensor, a Gen 3 YieldSense Module (YSM), and display mounting brackets.

The 9x00, 9x10 Series base kits will also include a height sensor, elevator speed sensor, wheel speed sensor. (Does not need a second YSM with Gen 3 YSM)

Note: for 2017+ S Series John Deere Combines, the flow sensor will install on to a removable plate at the top of the clean grain elevator. In addition to the 751001 Base kit, make sure that you order the S Series Flow Sensor Mount Kit that has a replacement plate that the flow sensor will mount to. All S 600 series combines 2017 and later will use 751140. All S 700 series combines with serial number below 805001 will use the 751140 kit and S 700 Series with Serial number 805001 and greater will use 751237 kit.

Note: The base kit for S Series combines includes the 600 and the 700 Series combines. It is the same kit for both.

Item	Part #	Price	Qty	Total
Gen 3 20 20 YieldSense Base Kit - JD 50/60/70/S Series	751001			\$
Gen 3 20 20 YieldSense Base Kit - JD 9400, 9410, 9500, 9510, 9600, 9610	751006			\$
S 600 Series 2017+ and S 700 Series (Serial # < 805001) Flow sensor Mount Kit	751140			\$
S 700 Series Flow Sensor Mount Kit (Serial # 805001+)	751237			\$

John Deere Chain Kits

Note: If current chain sprockets are showing wear, it is recommended to replace them before installing YieldSense. Refer to the Replacement Sprockets step later to order replacement sprockets for the OEM sprockets.

Item	Part #	Price	Qty	Total
Chain with Paddles for 8 Tooth - 9x50, 9x60, 9570, 9670, S550, S650, S660, & S760	750832			\$
Chain with Paddles for 10 Tooth - 9770, 9870, S670, S770, S680 & S780	750834			\$
Chain with Paddles for 11 Tooth - S690 & S790	750836			\$
Chain with Paddles for 8 Tooth - 9400, 9410, 9500, & 9510	750876			\$
Chain with Paddles for 8 Tooth - 9600, 9610	750878			\$

Elevator Adjustment Kits for 9x00, 9x10 John Deere Combines

Note: For a 00/10 Series JD combine, you need both upper and lower elevator adjustments. If it does not have both, order accordingly to ensure that both adjustments are installed on the combine.

Item	Part #	Price	Qty	Total
Lower Elevator Adjustment Kit	750996			\$
Upper Elevator Shaft Adjustment Kit (9400,9410,9500,9510)	750998			\$
Upper Elevator Shaft Adjustment Kit (9600,9610)	750999			\$

Case IH Base Kits - Gen 1 & 2 Displays

The Base Kit will include the Flow Sensor, all harnesses to connect to the flow sensor, YieldSense Module (YSM), and display mounting brackets.

The 2x77, 2x88 Series base kits will also include a height sensor, and a second YieldSense Module (YSM)

Item	Part #	Price	Qty	Total
YieldSense Base Kit - Case IH x010, x120, x230, x240 & x250 - Flagship	750003			\$
YieldSense Base Kit - Case IH x088, x130, x140 - Midrange (-2015 for x140)	750004			\$
YieldSense Base Kit - Case IH x150 (2019+), x140 - Midrange (2016+)	750008			\$
YieldSense Base Kit - 2X77, 2X88	750005			\$

Case IH Base Kits - Gen 3 20|20

The Base Kit will include the Flow Sensor, all harnesses to connect to the flow sensor, a Gen 3 YieldSense Module (YSM), and display mounting brackets.

The 2x77, 2x88 Series base kits will also include a height sensor. (does not need a second YSM with a Gen 3 YSM)

Item	Part #	Price	Qty	Total
Gen 3 20 20 YieldSense Base Kit - Case IH x010, x120, x230, x240 & x250 - Flagship	751003			\$
Gen 3 20 20 YieldSense Base Kit - Case IH 2x77, 2x88	751005			\$
Gen 3 20 20 YieldSense Base Kit - Case IH x088, x130, x140 - Midrange (-2015 for x140)	751004			\$
Gen 3 20 20 YieldSense Base Kit - Case IH x150 (2019+), x140 - Midrange (2016+)	751008			\$

Case IH Chain Kits

Note: If current chain sprockets are showing wear, it is recommended to replace them before installing YieldSense. Refer to the Replacement Sprockets step later to order replacement sprockets for the OEM sprockets.

Item	Part #	Price	Qty	Total
Chain with Paddles for Case IH 9 Tooth - x010, x120, x230, x240 & x250 - Flagship (replaces 750237, 751210, 750838)	751240			\$
Chain with Paddles for Case IH 9 Tooth - x088, x130, x140, 2x77, & 2x88 Midrange (-2015 for x140)	750750			\$
Chain with Paddles for Case IH 9 Tooth - x150 (2019+), x140 (+2016) Midrange	750261			\$

Elevator Adjustment Kits for 2x77, 2x88 combines

Note: To install YieldSense on a 2x77, 2x88, you will need a lower elevator adjustment. If the combine does not have one, you will need to install one.

Item	Part #	Price	Qty	Total
Lower Elevator Adjustment Kit	750255			\$

Lexion Base Kits - Gen 1 & 2 Displays

Lexion Base Kits are determined by the size of the elevator chain.

9" Elevator Combines -

1. all 700 Series combine
2. All 580, 585R, 590R, and 595R combines
3. 2006 and newer 570R and 575R Combines

6" Elevator Combines -

1. 2004-2005 570R Combines
2. All 560R Combines
3. All 400 Series Combines (**all 400 Series Combines will require a YSM Sensor Harness kit for Lexion - 751108, A secondary YSM - 750190, and Primary to Secondary YSM Harness - 750850**)

Not compatible with Green Claas/Lexion machines

Item	Part #	Price	Qty	Total
Lexion 9" Elevator Base Kit	750009			\$
Lexion 6"Elevator Base Kit	750010			\$
YSM Sensor Harness Kit (Head Position, Wheel Speed, Elev Speed)	751108			\$
Primary to Secondary YSM Harness	750850			\$
YieldSense Module	750190			\$

Lexion Base Kits - Gen 3 20|20

Lexion Base Kits are determined by the size of the elevator chain.

9" Elevator Combines -

1. all 700 Series combine
2. All 580, 585R, 590R, and 595R combines
3. 2006 and newer 570R and 575R Combines

6" Elevator Combines -

1. 2004-2005 570R Combines
2. All 560R Combines
3. All 400 Series Combines (All 400 Series Combines need a YSM Sensor Kit - 751108)

Item	Part #	Price	Qty	Total
Gen 3 20 20 YieldSense Base Kit - Lexion 9" Elevator	751009			\$
Gen 3 20 20 YieldSense Base Kit - Lexion 6" Elevator	751010			\$
YSM Sensor Harness Kit (Head Position, Wheel Speed, Elev Speed)	751108			\$

Lexion Adapter Harnesses -May be required!

Adapter harnesses may be required for most Lexion combines

- All 400 series combines will require the 750542 and 750584 adapters
- All **2004 - 2005** model year 560R, 570, 570R, 575R, 580R, 585R, 590R, and 595R need **750092 and (750542 - Gen 2 or 751226 - Gen 3) {If Gen 3 will also need 751208 CAN intercept}**
- All **2006 - 2010** model year 560R, 570, 570R, 575R, 580R, 585R, 590R, and 595R need **750312 and (750542 - Gen 2 or 751226 - Gen 3) {If Gen 3 will also need 751208 CAN intercept}**
- **Note: if the machine is a 9" elevator - the 751208 CAN intercept harness is included in the Gen 3 YieldSense base kit and does not need to be ordered separately.**
- The 700 Series combines need no adapters for a Gen 1 or 2 display
- For **Gen 3** displays, all 700 Series 2011+ will require a **725719 European Power Adapter!**

Item	Part #	Price	Qty	Total
400/500 Series Power Adapter	750542			\$
400 Series Battery Power Adapter	750584			\$
9-Pin CAN Adapter - Lexion Combine	750312			\$
7 Pin to 8 Pin Can Adapter - Lexion Combine	750092			\$
400/500 Series Power adapter - for Gen 3 20 20	751226			\$
Gen 3 20 20 Lexion CAN Intercept Harness	751208			\$
European Power adapter (converts to 3 pin power plug)	725719			\$

Lexion Elevator Chain Kits

9" Elevator Combines -

1. all 700 Series combine
2. All 580, 585R, 590R, and 595R combines
3. 2006 and newer 570R and 575R Combines

6" Elevator Combines -

1. 2004-2005 570R Combines
2. All 560R Combines
3. All 400 Series Combines

Note: If current chain sprockets are showing wear, it is recommended to replace them before installing YieldSense. Refer to the Replacement Sprockets step later to order replacement sprockets for the OEM sprockets.

Item	Part #	Price	Qty	Total
Lexion Chain and Paddle Kit - 9" Elevator	751230			\$
Lexion Chain and Paddle Kit - 6" Elevator	750085			\$

Elevator Adjustment Kits for Lexion

All 6 inch elevators will require a lower elevator chain adjustment. Please select the correct kit based on the sprocket bore size.

Item	Part #	Price	Qty	Total
Lexion Lower Adjustment Kit - 6 inch Elevator with 35MM shaft bore	750058			\$
Lexion Lower Adjustment Kit - 6 inch Elevator with 30MM shaft bore	750059			\$
Lexion Lower Adjustment - 6 inch Elevator for 560R 2006+	750060			\$

Step 2 - Gen 2 to Gen 3 Display Upgrades

All of these parts are included in the Gen 3 YieldSense base kit. These are only necessary if you are upgrading a currently installed system from a Gen 2 display to a Gen 3. Do not order these if the Gen 3 20|20 YieldSense base kit as been ordered for the system.

John Deere - Gen 3

For systems that are upgrading from a Gen 2 to a Gen 3 Display these are the parts that will be required.

For a 50/60/70/S series John Deere combine -

- Gen 3 BulkHead harness - 751202
- Gen 3 20|20 Cab Harness - 751200
- Gen 3 YSM - 751246
- Can Intercept - 725151

For a 9x00 or 9x10 series John Deere combine -

- Gen 3 20|20 Cab Harness - 751227
- Gen 3 20|20 BulkHead Harness - 751228
- Gen 3 YSM - 751246 (Only needs one)

Item	Part #	Price	Qty	Total
Gen 3 20 20 Bulkhead Harness - John Deere 50/60/70/S Series	751202			\$
Gen 3 20 20 Cab Harness - John Deere 50/60/70/S Series	751200			\$
Gen 3 YieldSense Module (YSM)	751246			\$
CAN Intercept - Diagnostic Port	725151			\$
Gen 3 20 20 Cab Harness - 9400, 9410, 9500, 9510, 9600, 9610	751227			\$
Gen 3 20 20 BulkHead Harness - 9400, 9410, 9500, 9510, 9600, 9610	751228			\$

Case IH - Gen 3

For systems that are upgrading from a Gen 2 to a Gen 3 Display these are the parts that will be required.

For all Midrange and Flagship series Case IH combines -

- Gen 3 20|20 Case IH/Lexion Cab Harness - 751203
- Gen 3 YSM - 751246
- Can Intercept - 725151

For a 2x77, 2x88 series Case IH combines -

- Gen 3 20|20 Case IH/Lexion Cab Harness - 751203
- Gen 3 YSM - 751246 (Only needs one)

Item	Part #	Price	Qty	Total
Gen 3 YieldSense Module (YSM)	751246			\$
Gen 3 Cab Harness - Case IH, Lexion	751203			\$
CAN Intercept - Diagnostic Port	725151			\$

Lexion - Gen 3

For systems that are upgrading from a Gen 2 to a Gen 3 Display these are the parts that will be required.

For Lexion Combines -

- Gen 3 20|20 Case IH/Lexion Cab Harness - 751203
- Gen 3 YSM for Lexion - 751247
- Gen 3 20|20 Lexion CAN Intercept Harness (for all 500 and 700 Series combines)
- 400/500 series combines will need the power adapter for Gen 3 - 751226
- All 700 Series combines 2011+ will require a 725719 European Power Adapter

Item	Part #	Price	Qty	Total
400/500 Series Power adapter - for Gen 3 20 20	751226			\$
Gen 3 Cab Harness - Case IH, Lexion	751203			\$
Gen 3 YieldSense Module (YSM) - for Lexion combines (replaces 751132)	751247			\$
Gen 3 20 20 Lexion CAN Intercept Harness	751208			\$
European Power adapter (converts to 3 pin power plug)	725719			\$

Step 3 - Moisture Sensor

- If the combine has a Factory installed moisture sensor, 2020 YieldSense will pull the moisture information off the OEM CAN network and no moisture adapter harnesses will be required. See Note 1, 2, and 3 below
- **NOTE 1: For Case 2x77,2x88, and Lexion 400 Series the moisture sensor does not come across the CAN network and a moisture adapter harness will be required (750257). See moisture sensor adapter harness section for additional harness requirements for each combine.**
- **NOTE 2: For JD 9x00 and 9x10, the *factory installed JD moisture sensor* is not compatible with the 2020 YieldSense and will need to be replaced with a Precision Planting or Ag Leader moisture sensor**
- **NOTE 3: A John Deere GreenStar display is required for 50 and 60 series combines that are using the OEM moisture sensor through the CAN network.**
- If the moisture is an aftermarket installed sensor (Ag Leader), you will need an additional adapter harness to connect to the 2020 YieldSense. Refer to the Moisture Adapter harnesses below.
- If no moisture sensor is installed on the combine, it will be necessary to purchase and install one from Precision Planting or the OEM

Precision Planting Moisture Sensor Kits

Item	Part #	Price	Qty	Total
Precision Planting Moisture Sensor Kit - John Deere	750600	:		\$
Precision Planting Moisture Sensor Kit - Case IH 2x77, 2x88 Combines	750863	:		\$

Moisture Sensor Parts & Adapters

- The 750257 will be used to adapt to all aftermarket Ag Leader Moisture sensors
- When installing YieldSense on 2x77,2x88 combine with OEM moisture sensor, a moisture sensor adapter harness is required (750857) and a Moisture sensor power harness (750628). The 750257 harness is still required
- When removing the GS1 moisture sensor and installing a Precision Planting moisture sensor, it is required to install the JD moisture sensor plug (750216) to avoid CAN errors
- The 750732 Serial Moisture cable adapter may be required to connect the 750257 to a 14 pin round connector on the AgLeader Moisture sensor module
- The 750417 will be used if the Ag Leader Monitor will be left in the cab and will still need the moisture sensor information. (does not need the 750257 but does require Ag Leader Monitor in the cab)

Note: 750417 AgLeader CAN Moisture Sensor harness will not be compatible with a Gen 3 system

Item	Part #	Price	Qty	Total
AgLeader Analog Moisture Harness	750257			\$
AgLeader Serial Moisture Adapter	750732			\$
Case IH OEM Moisture Sensor adapter harness	750857			\$
AgLeader CAN Moisture Harness	750417			\$
JD Moisture Sensor Plug Kit - (Required when unplugging GS1 moisture Sensor)	750216			\$
Power Harness - Moisture Sensor	750628			\$
JD Moisture Sensor Replacement Cover Plate (need if PP moisture sensor is removed)	750854			\$

Step 4 - GPS

YieldSense does not work with 1 Hz GPS signal, 5 Hz is required.

Hemisphere GPS Kit

Item	Part #	Price	Qty	Total
Hemisphere A222 Kit -- 10-13" accuracy (Replaces 727132)	727205			\$
Adapter Harness	727027		1 per kit	\$
Antenna, GPS Smart - A222	727067		1 per kit	\$

GPS Adapter Harnesses

Before selecting a GPS adapter harness, please refer to the GPS Guide located below in the Order Resources. (Appended to the end of the PDF Guide)

Item	Part #	Price	Qty	Total
John Deere StarFire Adapter Harness	727124			\$
Trimble Adapter Harness (AG262, AG252, AG162)	727131			\$
Universal GPS Adapter (DB9M-DB9Y Adapter)	725599			\$
Trimble FMX, CFX Adapter Harness	727060			\$
Trimble GFX GPS Adapter	727068			\$

Additional GPS Options

Item	Part #	Price	Qty	Total
3 Pin Convenience Power to 2 Pin WP splitter (replaces 700242)	725925			\$

Step 5 - Display Mounting Options

Mounting Options

Item	Part #	Price	Qty	Total
RAM Mount Triple Suction Cup	725822	\$40.00		\$
RAM U-Bolt Ball Mount	725818	\$18.00		\$
iPad Holder (Replaces Tough Tray)	725123	\$56.00		\$
Lexion 700 Series Display Mounting Kit	751122	\$70.00		\$
Lexion 400/500 Series Display Mounting Kit	751125	\$55.00		\$
RAM Mount Kit - includes (2) 1.5 ball with 10" arm (1 ball has 1/4" post	725821	\$90.00		\$
RAM Mount Kit - includes (2) 1.5 ball with 6" arm (1 ball has 1/4" post)	725708	\$85.00		\$
Vertical Mounting Bracket for 2020/Fieldview	725815	\$64.00		\$

Step 6 - YieldSense Options

Optional

Item	Part #	Price	Qty	Total
YieldSense Diagnostic Kit	750530			\$
Ferrite Cylinder Collar	750452			\$

Step 7 - Replacement Sprockets

Replacement Sprockets

Item	Part #	Price	Qty	Total
JD 9X00,9x10 Driver, 8 tooth	750941			\$
JD 00/10/50/60/70/S Idler, 8 tooth	750942			\$
Case IH x088/x130/x140 Driver and Idler, 9 tooth	750952			\$
JD 50/60/70/S Driver, 8 tooth	750943			\$
JD 50/60/70/S Driver, 10 tooth	750944			\$
JD 50/60/70/S Idler, 10 tooth	750945			\$
JD S690 Driver, 11 tooth	750946			\$
JD S690 Idler, 11 tooth	750947			\$
Case IH Flagship Driver, 9 tooth	750948			\$
Case IH Flagship Idler, 9 tooth	750949			\$
Case IH 2x77/2x88 Driver, 9 tooth	750950			\$
Case IH 2x77/2x88 Idler, 9 tooth	750951			\$
Lexion 500 & 700 11 tooth sprocket (9" Elevator) - 38.4mm bore	750041			\$
Lexion 500, 11 tooth sprocket (6" Elevator)b - 39mm bore	750042			\$
Lexion 400, 11 tooth sprocket (6" Elevator) - 26mm bore	750043			\$
Lexion 400/500, 11 tooth sprocket (6" Elevator) - 35 mm bore	750044			\$
Lexion Divider Repair Kit - for 9" Elevator only	750030			\$

Seeder/Granular Sensing

Step 1 - Blockage Expansion Module (BXM)

Blockage sensing is compatible only with Dickey John style blockage sensors with a 3-pin weather pack analog style connector.

Blockage Expansion Module (BXM)

Blockage Expansion Modules (BXMs) require one 8 pin implement CAN connector to connect to the 20|20 system, via either a row drop on an SRM backbone harness or an 8 pin module drop on a sensing harness. A Blockage Sensor Input Module is not compatible with a BXM.

Each BXM can monitor up to 12 blockage sensors.

One BXM mount kit (735315) should be ordered per BXM kit. For JD box drills, the 4"x6" U-bolt kit (735320) should also be ordered.

2022.10.x software is required

Item	Part #	Price	Qty	Total
BXM Kit (Module w/zip ties)	735300			\$
BXM Mounting Kit	735315			\$
4"x6" U-bolt Kit (for JD box drills)	735320			\$

BXM Adapter Harnesses

BXMs will require adapter harnesses in various lengths to connect a blockage sensor to the BXM.

Order 1 harness per blockage sensor, of the appropriate length to reach the location of the BXM.

Item	Part #	Price	Qty	Total
BXM Adapter Harness - 24"	735090			\$
BXM Adapter Harness - 48"	735091			\$
BXM Adapter Harness - 68"	735092			\$
BXM Adapter Harness - 96"	735093			\$
BXM Adapter Harness - 180"	735094			\$

Step 2 - Blockage Sensors

Blockage Sensors

1560/90 box drills require 32 mm blockage sensors.

Item	Part #	Price	Qty	Total
Blockage Sensor - 32 MM	735097			\$
Blockage Sensor - 25 MM	735099			\$
Blockage Sensor Decals - Numbers (1-96)	957021			\$

Step 3 - Blockage Sensor Input Module

Skip this step if using BXMs! The Blockage Sensor Input Module is used to read a blockage sensor on an SRM local can (plugged into a CAN Expansion Hub) and cannot be used with a BXM. Blockage monitoring should be used on any implement where the product is non-singulated and volumetrically metered. This includes granular fertilizer on a planter, seed or fertilizer on an air seeder or drill, a strip till bar.

Blockage Sensor Input Module

Blockage Sensor Input Modules allow for a Dickey John style blockage sensor with a 3-pin weather pack analog connector to be connected to a CAN Expansion Hub. This is commonly used on a planter when an SRM and CAN Expansion Hub already are present. The Blockage Sensor Input Module has a 36" pigtail. If this plus the harness on the blockage sensor is not enough, then add an appropriate 6-pin CAN extension.

1 required per blockage sensor.

Item	Part #	Price	Qty	Total
Blockage Sensor Input Module (with 36" pigtail)	724450			\$

Step 4 - Implement CAN Harnessing

Implement CAN Harnessing - Sensing Only

To connect a BXM to the CAN network you will need an 8 Pin CAN Y Harness or an Air Seeder Sensing Row Harness for each BXM.

SRMs are required to plug in a Lift Switch (required) or Load Sensors (optional), to connect an SRM to the BXM you will need to utilize an Air Seeder Sensing Row Harness of the appropriate length to go between the SRM and the BXM. The SRM can be mounted anywhere on the implement.

Item	Part #	Price	Qty	Total
8 Pin Can Y Harness	735299	:		\$
Air Seeder Sensing Row Harness - 48"	735365	:		\$
Air Seeder Sensing Row Harness - 60"	735366	:		\$
Air Seeder Sensing Row Harness - 84"	735367	:		\$
Air Seeder Sensing Row Harness - 108"	735368	:		\$
Air Seeder Sensing Row Harness - 132"	735369	:		\$

Implement CAN Harnessing - Sensing Only

Each CAN network (from DBM to terminator) should not exceed 130' of length. For air seeders or drills where this is not possible on a single CAN network, you should utilize the DBM Sensing Triple CAN Harness (725946). See diagrams below for specifics.

Note: The 725946 harness includes three 8-pin terminators to move to the end of each sensing CAN network.

Item	Part #	Price	Qty	Total
DBM Sensing Triple CAN Harness	725946	.		\$
20 20 Gen 3 DBM Sensor CAN Harness	725935			\$

Step 5 - CAN Extensions

8-Pin CAN Extensions

Item	Part #	Price	Qty	Total
Row Harness Extension 2' - 8 Pin	729255			\$
Row Harness Extension 5' - 8 Pin	729040			\$
Row Harness Extension 12' - 8 Pin	729041			\$
8 Pin Deutsch Extension Harness - 20'	725932			\$
8 Pin Deutsch Extension Harness - 30'	725933			\$
8 Pin Deutsch Extension Harness - 40'	725934			\$

Step 6 - Row Components

SRM

One SRM will be required for blockage monitoring, in order to plug in a lift switch.

Item	Part #	Price	Qty	Total
SRM Assembly (Replaces 729017)	729551			\$

Lift Switch

A lift switch is required for blockage monitoring.

The 725798 adapter harness can be used to connect a rotary height sensor to the auxillary plug on an SRM.

Item	Part #	Price	Qty	Total
Implement Wide Lift Switch to SRM Adapter Harness	725798	:		\$
Precision Planting Rotary Lift Switch Kit (Seeders Only)	735130	:		\$
1560/1590 Rotary Height Switch Bracket	735199	:		\$

Load Sensor

Load Sensors are optional, but require an SRM on the row they are installed on.

Item	Part #	Price	Qty	Total
JD 60/90 Series Load Sensor	735100			\$

Bracket Kits

Each row with a load sensor will require an SRM mounting bracket and load sensor shield kit. Order the correct left hand or right hand bracket based on which side the gauge wheel is installed.

Note: There are different brackets between the 60/90 series and the Pro series openers.

Item	Part #	Price	Qty	Total
JD 60/90 Right Hand Row Unit Bracket & Shield	735180			\$
JD 60/90 Left Hand Row Unit Bracket & Shield	735181			\$
JD Pro Series Right Hand Row Unit Bracket & Shield	735345			\$
JD Pro Series Left Hand Row Unit Bracket & Shield	735346			\$
JD Early 60 Series Right Hand Row Unit Bracket & Shield*	735351			\$
JD Early 60 Series Left Hand Row Unit Bracket & Shield*	735352			\$

*See the document above to distinguish between early and newer style 60 series row units.

SeederForce SRM Base

Step 1 - Blockage Expansion Module

Blockage monitoring should be used on any implement where product is non-singulated and volumetrically metered. This includes granular fertilizer on a planter, seed or fertilizer on an air seeder or drill, or a strip till bar.

Blockage Expansion Module

Compatibility:

- The Blockage Expansion Module (BXM) is compatible only with Dickey John style blockage sensors with 3-pin weatherpack analog style connectors.
- The BXM does not repeat data to an OEM monitor, therefore it is compatible with any seeder, box drill, or sidedress implement. See row unit components for load sensor compatibility.

Requirements:

- 20|20 Gen 3 software of 2022.10.x or later
- One 8-pin implement CAN connector to connect to the 20|20 system, via either a backbone row drop or a sensing harness row drop.

Note: Order 1 BXM per seeding distribution tower or 1 per 12 rows on CCS style seeder or box drill

One BXM mount kit (735315) should be ordered per BXM kit. For JD box drills, the 4"x6" U-bolt kit (735320) should also be ordered.

Item	Part #	Price	Qty	Total
BXM Kit (Module w/zip ties)	735300			\$
BXM Mounting Kit	735315			\$
4"x6" U-bolt Kit (for JD box drills)	735320			\$

Blockage Sensors

Blockage sensors are required for mapping. If there are no sensors installed currently, purchase the following as needed. If Dickey John style blockage sensors are currently installed on all rows, no additional blockage sensors are required. These sensors will plug into the BXM in the previous step.

1560/90 box drills require 32 mm blockage sensors.

Item	Part #	Price	Qty	Total
Blockage Sensor - 32 MM	735097			\$
Blockage Sensor - 25 MM	735099			\$

BXM Adapter Harnesses

BXMs will require adapter harnesses in various lengths to connect a blockage sensor to the BXM.

Order 1 harness per blockage sensor, of the appropriate length to reach the location of the BXM.

Item	Part #	Price	Qty	Total
BXM Adapter Harness - 24"	735090			\$
BXM Adapter Harness - 48"	735091			\$
BXM Adapter Harness - 68"	735092			\$
BXM Adapter Harness - 96"	735093			\$
BXM Adapter Harness - 180"	735094			\$

Step 2 - Row Unit Components

Load Sensor

For automated rockshaft down force control, 5 load sensors per rockshaft are recommended. 3 load sensors per rockshaft are required for operation.

For row x row down force control, each row will require a load sensor.

Item	Part #	Price	Qty	Total
JD 60/90 Series Load Sensor	735100			\$

Bracket Kits

Each row with a load sensor will require an SRM mounting bracket and load sensor shield kit. Order the correct left hand or right hand bracket based on which side the gauge wheel is installed.

Note: There are different brackets between the 60/90 series and the Pro series openers.

Item	Part #	Price	Qty	Total
JD 60/90 Right Hand Row Unit Bracket & Shield	735180			\$
JD 60/90 Left Hand Row Unit Bracket & Shield	735181			\$
JD Pro Series Right Hand Row Unit Bracket & Shield	735345			\$
JD Pro Series Left Hand Row Unit Bracket & Shield	735346			\$
JD Early 60 Series Right Hand Row Unit Bracket & Shield*	735351			\$
JD Early 60 Series Left Hand Row Unit Bracket & Shield*	735352			\$

*See the document above to distinguish between early and newer style 60 series row units.

SRM

Each load sensor will require an SRM. For row x row downforce control, 1 SRM will be required per row.

Item	Part #	Price	Qty	Total
SRM Assembly (Replaces 729017)	729551			\$
SRM Number Decals (1-96)	957020			\$

Step 3 - Seeder SRM Base

Order one Base Kit per seeder.

Seeder SRM Base Kit

Item	Part #	Price	Qty	Total
Seeder SRM Base Kit	735001			\$
25' Tractor Power Extension	729412		1 per kit	\$
PDM Mount Kit	735156		1 per kit	\$
Cable Ties	735250		1 per kit	\$
Instructions, Seeder Base, SRM	955680		1 per kit	\$
Decal, Blockage Sensor - Numbers (1-96)	957021		1 per kit	\$
Decal, SRM - Numbers (1-96)	957020		1 per kit	\$
Power Distribution Module - 12 output	735155		1 per kit	\$

Tractor Power Harness

Order 1 per seeder, unless the tractor pulling the seeder already has one installed from a planter SRM base kit.

Item	Part #	Price	Qty	Total
Tractor Power Harness (40 amps)	729157			\$

Step 4 - Seeder SRM Backbone Harnesses

Tower backbones will only be used on seeders that have a separate air cart and tower.

For CCS seeders you will need to lay out an SRM backbone harness based on the row spacing of the seeder. Make sure that you order the correct row spacing and number of rows for each frame. The backbone will connect in alternating sequence of front and rear rows. If the frame section is greater than 12 rows, the backbones can be joined together through the CAN connection on the backbone.

Note: BXMs plug into the SRM backbone harness, so each tower will need an additional connection for a BXM and on a CCS or Box Drill seeder each section of 12 rows will need an additional connection for the BXM.

SRM Tower Backbone Harnesses

Tower Backbones will only be used on seeders that have a separate air cart and tower (1860,1890,1895).

Each tower will require one SRM Tower Backbone Harness. Order the correct backbone harness based on the number of SRMs and BXM for each tower.

Item	Part #	Price	Qty	Total
8 SRM Tower Backbone Harness	735208			\$
9 SRM Tower Backbone Harness	735209			\$
10 SRM Tower Backbone Harness	735210			\$
11 SRM Tower Backbone Harness	735211			\$
12 SRM Tower Backbone Harness	735212			\$
13 SRM Tower Backbone Harness	735223			\$

SRM Backbone Harnesses - 15" row spacing

Item	Part #	Price	Qty	Total
10 SRM Backbone Harness - 15"	735217			\$
12 SRM Backbone Harness - 15"	735213			\$
14 SRM Backbone Harness - 15"	735214			\$

SRM Backbone Harnesses - 10" row spacing

Item	Part #	Price	Qty	Total
12 SRM Backbone Harness - 10"	735221	\$570.00		\$
13 SRM Backbone Harness - 10"	735222	\$600.00		\$
15 SRM Backbone Harness - 10"	735224	\$630.00		\$

SRM Backbone Harnesses - 7.5" row spacing

Item	Part #	Price	Qty	Total
10 SRM Backbone Harness - 7.5"	735226	\$470.00		\$
12 SRM Backbone Harness - 7.5"	735227	\$570.00		\$
14 SRM Backbone Harness - 7.5"	735228	\$620.00		\$
15 SRM Backbone Harness - 7.5"	735229	\$670.00		\$

CAN Harness Extensions

Order CAN extension as follows

- 1 to go between the PDM and the first backbone harness
- 1 to go between each tower to connect the backbones together
- Any time the CAN network goes over 130 feet it will be necessary to run a second CAN network from the Display. CAN B will be used in place of a CAN Booster on those systems that are over 130 feet. Use the diagram below to split the two networks.

Note: any time the backbones will not reach the next backbone, a CAN extension may be necessary.

Item	Part #	Price	Qty	Total
5' CAN Extension	729140	\$55.00		\$
10' CAN Extension	729141	\$65.00		\$
15' CAN Extension	729142	\$75.00		\$
20' CAN Extension	729143	\$85.00		\$
30' CAN Extension	729144	\$95.00		\$
40' CAN Extension	729138	\$125.00		\$
45' CAN Extension	729145	\$135.00		\$
50' CAN Extension	729139	\$145.00		\$
60' CAN Extension	729146	\$160.00		\$
65' CAN Extension	729137	\$170.00		\$

Step 5 - SRM Row Unit Harnesses

Each row of the seeder will require either a backbone row plug or a row harness that will connect the backbone to the SRM.

- For each row that has an SRM installed order a SRM Row Harness
- For each row that will not have an SRM installed order a Row Plug
- The number of row harnesses should add up to the same number as the load sensors
- The total number of row plugs and row harnesses should equal the number of rows on the seeder.

Row Plugs

Item	Part #	Price	Qty	Total
SRM Backbone Row Plug	729039			\$

SRM Row Unit Harnesses

SRM Row unit harnesses are routed along the seed hose from the tower to the SRM on the seeders with towers. On CCS seeders the row unit harness is routed along the seed hose from the SRM to the backbone on the frame. Order the row unit harness length according to backbone and SRM mounting locations.

Item	Part #	Price	Qty	Total
48" (4 ft)SRM Row Unit Harness	735236			\$
60" (5 ft) SRM Row Unit Harness	735237			\$
84" (7 ft) SRM Row Unit Harness	735239			\$
108" (9 ft) SRM Row Unit Harness	735241			\$
132" (11 ft) SRM Row Unit Harness	735243			\$

- For Seeders with Air Carts, if questions on what size harness is required to connect to the SRM from the backbone, it will be necessary to measure the seed hose from the exit of the tower to the top of the black boot on the row unit. Select the harness size that is equal to or less than that measurement.
- For CCS seeders you will normally use the 48" SRM Row harness.

Step 6 - Power Harnesses

Tractor Power Extension

The 35' tractor power extension harness is for a tow between cart and includes the power and CAN communication wires.

Item	Part #	Price	Qty	Total
35' Tractor Power Extension - Tow Between Cart	735249			\$

APEX Power Extensions

One APEX power extension is required for every backbone harness (goes from PDM to center of backbone)

Item	Part #	Price	Qty	Total
5' Backbone Power Extension	729150			\$
15' Backbone Power Extension	729151			\$
25' Backbone Power Extension	729152			\$
35' Backbone Power Extension	729153			\$
50' Backbone Power Extension	729154			\$
55' Backbone Power Extension	729156			\$
60' Backbone Power Extension	729155			\$

Power Options

Item	Part #	Price	Qty	Total
APEX - 2 Pin Pigtail (2 Open Leads - Max 30 Amps total)	729196			\$
Tractor Power Connection Mounting Kit - Deutsch	729264			\$

Step 7 - Lift Switch

A lift switch is required for SeederForce and for sensing.

Precision Planting Rotary Lift Switch

Precision Planting rotary lift switch must be plugged into the PDM. Only one required per seeder.

Note: 1560 and 1590 box drills will need the 1560/1590 lift switch bracket (735199) in addition to the 735130 switch kit. The bracket that is included in the 735130 will not be used. Make sure to order the switch kit and the bracket for those drills.

Note: The 725798 adapter harness can be used to connect a rotary height sensor to the auxillary plug on an SRM.

Item	Part #	Price	Qty	Total
Precision Planting Rotary Lift Switch Kit (Seeders Only)	735130	:		\$
1560/1590 Rotary Height Switch Bracket	735199	:		\$
Implement Wide Lift Switch to SRM Adapter Harness	725798	:		\$

Step 8 - Radar

Radar is required for SeederForce.

Dickey John Radar Kit

The Dickey John Radar is only needed on tractors that are not equipped with a compatible radar

Item	Part #	Price	Qty	Total
Dickey John RVS III Radar(Includes Mounting Bracket)	727136			\$

Radar Adapter Harnesses

Item	Part #	Price	Qty	Total
John Deere 30, R, & RT series Cab Adapters	727122			\$
John Deere 10 & 20 series Cab Adapter	727141			\$
Case MX & STX Adapter Harness	727139			\$
Dickey John Radar 6' Extension with splitter	727129			\$

SeederForce - Rockshaft Down Force Control

Step 1 - RockShaft Down Force Control Kits

SeederForce down force control requires the SeederForce SRM base.

Section Control Base Kits

1 per seeder required.

Select the correct one based on the number of seeder frame sections.

Note: If you have a TruSet seeder, you will need a Frame Section Base Kit *and* the TruSet Disable Kit (735424)

Item	Part #	Price	Qty	Total
3 Frame Section Base Kit	735420			\$
5 Frame Section Base Kit	735421			\$
TruSet Disable Kit	735424			\$

Rockshaft Manifold kit

1 rockshaft manifold kit is required for each rockshaft

Item	Part #	Price	Qty	Total
Rockshaft Manifold Kit	735110			\$
Rockshaft Manifold Assembly	735107		1 per kit	\$
Bracket, Manifold Mount	735108		1 per kit	\$
Hardware Kit, Manifold Mount	735109		1 per kit	\$
Solenoid Extension	735173		1 per kit	\$

Hose and Fitting Kits

1 kit required per rockshaft

Item	Part #	Price	Qty	Total
JIC Fitting Section Rockshaft Manifold Hose Kit (60/90 Series 3 Frame Sections)	735459			\$
ORFS Fitting Section Rockshaft Manifold Hose Kit (60/90 Series 5 Frame Sections and all TruSet seeders)	735422			\$

SeederForce - Row-by-Row DownForce Control

Step 1 - Row by Row Manifold Kits

SeederForce down force control requires the SeederForce SRM base.

OEM Down Force Valve Plugs

For row by row down force control it will be necessary to plug the valve cavities on the current rockshaft manifolds and install a seeder wide hydraulic block.

Order one OEM Plug kit per seeder. **If you have a TruSet seeder you will also need a TrueSet Disable Kit (735424) in addition to the OEM Plug Kit.**

Item	Part #	Price	Qty	Total
Size 10 Valve Cavity Plug - (3 Frame Sections) - 1 kit/seeders	735410			\$
Size 12 Valve Cavity Plug (5 Frame Sections) - 1 kit/seeders	735412			\$
TruSet Disable Kit	735424			\$

Row by Row Manifold

For row by row control it will be necessary to install a single hydraulic block. This hydraulic block includes -

- 4 pressure and return outlets
- System wide filter
- System pressure sensor
- Diagnostic ports

Order one per seeder

Item	Part #	Price	Qty	Total
Row-by-Row Manifold Block (includes Filter)	735401			\$
Manifold Mounting Kit	735150			\$

Step 2 - Row Cylinder and Mount Kits

Hydraulic Cylinders

Order one cylinder and mount kit per row.

Item	Part #	Price	Qty	Total
JD 60/90 Series RU Hydraulic Cylinder	735402			\$
JD 60/90 Series Cylinder Mount Kit	735405			\$

Step 3 - Hydraulic Hose Kits

Inter Row Hose kits will be used to connect the hydraulic cylinders together.

Rockshaft Cylinder Inter Row Hose

For the rows on either side of the rockshaft cylinder it will be necessary to have longer inter row hoses than the 735450. Order 1 Rockshaft Cylinder hose kit (735451) for each rockshaft to go around the rockshaft cylinder.

Item	Part #	Price	Qty	Total
Rockshaft Cylinder Inter Row Hose Kit	735451			\$

Fold Point Hose Kits

The fold point hose kits are designed to go from the rockshaft of one frame to the next rockshaft on the next frame crossing over the hinge.

Order a Fold Point Inter - Row Hose Kit for each rank that crosses a fold point or hinge. Example - a 3 frame seeder has fold points (hinges). If that seeder has 2 seeding ranks, then 4 fold point hose kits are required (2 for each rank because each rank crosses 2 fold points to reach the wing frames)

Item	Part #	Price	Qty	Total
Fold Point Inter-Row Hose Kit	735497			\$

Inter-Row Hoses

Inter-Row Hoses will be used to connect each cylinder to the next rows within one rank. For all the rows that are not across a fold point or around a rockshaft they will use the normal Inter-Row Hose Kit (735450)

The total number of Inter-Row hose kits (735450) =

(Total number of seeding rows) - (2 * # of rockshafts)

Example 52 seeding rows on a 3 frame seeder with 2 seeding ranks (each frame has 2 rockshafts because it has 2 seeding ranks so the number of rockshafts is 6)

Total Inter-Row Hose Kits ---- 52 rows - (2 * 6 rockshafts) = 40

Item	Part #	Price	Qty	Total
Inter Row Hose Kits	735450			\$

End Row Plug Kit

Order one end row plug kit for each seed rank. These will be installed on the outside cylinders of each seeding ranks.

Item	Part #	Price	Qty	Total
Seeder End Row Plug Kit	735406			\$

Seeding Rank Fitting Kits

Each seeding rank will require a set of fittings to Tee in the hoses from the Row-by-Row Manifold Block.

Order one fitting kit per seeding rank

Item	Part #	Price	Qty	Total
Seeding Rank Fitting Kit - Supply Tees	735481			\$

Step 4 - Frame Hydraulic Hose Kits

Seeder Hitch Hydraulic Hoses

Seeder Hitch to Row-by-Row Manifold Hose Kit goes from the manifold to the Tractor and includes the pioneer couplers to connect to the tractor.

Order 1 per seeder

Item	Part #	Price	Qty	Total
Seeder Hitch to Row-by-Row Manifold Hose Kit	735482	:		\$

Seed Rank Supply Hose

Each seeder will need a set of hoses to go from the row-by-row manifold block to the inter-row hoses on the seeding ranks that supply oil from the manifold to the individual cylinders

Order 1 kit per seeder

Item	Part #	Price	Qty	Total
1860/1890/1990CCS 30' & 36' Supply Hose Kit	735454	:		\$
1860/1890/1990CCS 40' & 43' Supply Hose Kit	735455	:		\$
1895 30' & 36' Supply Hose Kit	735452	:		\$
1895 40' & 43', 1890 60' Supply Hose Kit	735453	:		\$
1895 60' Supply Hose Kit	735498	:		\$
1990CCS Single Rank 30' & 36' Supply Hose Kit	735484	:		\$
1990CCS Single Rank 40' & 43' Supply Hose Kit	735485	:		\$

Load Sense Line kits

If running the downforce manifold off the tractor power beyond a load sense line might benecessary. For systems that are using a Tow Behind or Tow between air carts that are ground driven, it will be necessary to install a load sense line. 1990 CCS seeders will require a load sense line as well.

The Alternator Case Drain line will reach the alternator to the tractor.

Item	Part #	Price	Qty	Total
1890/1895 Air Cart & 1990 CCS Load Sense Kit	735457			\$
Alternator Case Drain Kit for JD Seeders	735486			\$

Tow Between Air Cart Hydraulic Hose Extension Kits

The extension hose kits will extend the manifold supply lines and also the load sense and case drain lines from the seeder hitch through the air cart to the back of the tractor.

Item	Part #	Price	Qty	Total
Load Sense Line Extension Kit for JD Tow Between Cart	735419			\$
Hydraulic Hose Extension Kit for JD Tow Between Cart	735418			\$

Note: 735418 also includes a case drain extension for the alternator to reach the tractor.

Step 5 - Alternator Power Kit

Alternator Kit

All row by row down force control system will require the 160 amp alternator kit.

Item	Part #	Price	Qty	Total
160 Amp Alternator Kit	729160			\$

FurrowJet

Step 1 - FurrowJet Essentials Kit

Requirements for FurrowJet

- A 80 MESH Filter is required and must be installed AFTER the Pump and BEFORE the Distribution system
- Compatible Row Units include -
 - John Deere - ME (7000), ME2, ME Plus, XP, ME5 (including ExactEmerge)
 - Kinze - 4900, 3000, 2000
 - White - 9000, 8000
 - Harvest International Laser Pro
 - Case IH 21xx Series - (extends closing system)
 - Monosem NG+4 - (extends closing system)
- **Rear mount insecticide or liquid application tubes that use the front closing frame bolt or are near or in furrow between the seed tube and closing system are not compatible.** Higher drop or banding style systems should be compatible but may have to be modified to work with FurrowJet. Refer to FurrowJet manual for other compatibility concerns.
- Other ground engaging fertilizer attachments that are behind the gauge wheels and within 3" of the furrow are not recommended due to the possibility of creating a section of dirt near furrow that will lift
- Any attachments that use the closing system bolt(s) may not be compatible with FurrowJet. Refer to install manual for FurrowJet to determine if the existing attachment will interfere with the FurrowJet support bracket.
- Operating ranges - See Manifold ordering section below for application ranges
- FurrowJet operating depth must have seed depth of at least 1" or greater. If seed depth is shallower than 1" use the wing lock up feature to lock the wings out of the way and prevent furrow disturbance.

FurrowJet Essentials Kit

FurrowJet Essentials Kit contains tools needed for the operator to check and maintain FurrowJet in season

Item	Part #	Price	Qty	Total
FurrowJet Essentials Kit (1 Per Planter) - No Air Freight!!	141078			\$
Wing Nozzle Cleaning Can	141076		1 per kit	\$
Liquid Measurement Pitcher (64 oz)	141073		1 per kit	\$
Wing Adjustment Gauge	141034		1 per kit	\$
Push-To-Connect Fitting Tool	724220		1 per kit	\$
Wing Tip Cleaning Brush	141072		1 per kit	\$
Nozzle Removal Tool	141071		1 per kit	\$
Torx Wrench Set	141074		1 per kit	\$
FurrowJet Essentials Kit (International and Air Freight. Same as 141078 without Wing Nozzle Cleaning aerosol Can (141076))	141070			\$

Step 2 - FurrowJet Row Components

Make sure to order each FurrowJet component for each row. If QA Keeton Bracket is already installed, it is not necessary to purchase new one if it is FurrowJet compatible.

Keeton Bracket

Order 1 Per Row.

Ordering Notes for John Deere and Harvest:

- For all John Deere row units except for systems running ExactEmerge - use the 150109 QA Bracket
- For ExactEmerge systems - use QA / FurrowJet Support Bracket 141180
 - ExactEmerge bracket moves closing system back 5.4 inches
 - This bracket is a combined Keeton and FurrowJet Support bracket - do not order a FurrowJet Support Bracket
- For all Harvest International Laser Pro row units use 150109

Ordering Note for Case IH

- FurrowJet is compatible on a Case IH 21xx series planters
- **If installing FurrowJet with FurrowForce on a Case IH 21xx row unit - Use 756134 QA/FurrowJet Support Bracket**
- **If installing FurrowJet on 21xx with the OEM closing system - Use the 141214 FurrowJet Bracket**
- The Case IH 21xx series FurrowJet Bracket does not need a QA Keeton bracket.
- **Keetons are not compatible at this time on Case IH!!!**
- The Case IH FurrowJet bracket moves the closing system back to accomdate the FurrowJet bracket

Ordering Note for White 8000 - The FurrowJet support bracket not needed for the White 8000 - the QA bracket is a combined Firmer and FurrowJet bracket. Only order the 150147.

Ordering Note for Monosem - Monosem planters will require a closing setback bracket if FurrowJet is being installed. If FurrowForce is installed on the planter the closing setback may already be installed. FurrowJet will only work with the 150605 Keeton Bracket

Pro-wheel Monosems that want to add FurrowJet but not FurrowForce you will need to order an H-bracket from Monosem: Part number 65103537.

If ordering for a Kinze planter that already has quick attach keeton brackets, FurrowJet is only compatible with the 150120 and the 150121 Kinze brackets. The 150109 and the 150110 brackets will not work for FurrowJet when mounted on a Kinze planter. The 150109 is fine when mounted on a John Deere and adding FurrowJet.

Note: Any vSet 2 equipped Kinze 4900, the 150150 QA Bracket is required. The 150130 can still be used with the OEM meter but the 150150 is the recommended QA Bracket for all Kinze 4900 planters.

Item	Part #	Price	Qty	Total
John Deere Quick Attach Firmer Bracket (Non ExactEmerge)	150109	:		\$
ExactEmerge Quick Attach Firmer and FurrowJet Bracket-Cast (FurrowForce Compatible)	141180	:		\$
Kinze 3000, 2000 Quick Attach Firmer Bracket (non large seedtubes)	150120	:		\$
Kinze 4900/3000(Large Seedtube) Quick Attach Firmer Bracket (scraper bracket mounting) - subs from 150121, 145131	150130	:		\$
White 8000 Quick Attach Firmer and FurrowJet Bracket (replaces 150135)	150147	:		\$
White 9000 Quick Attach Firmer Bracket (replaces 150111)	150123	:		\$
Monosem Quick Attach Firmer Bracket	150605	:		\$
Kinze 4000 Quick Attach Firmer Bracket	150150	:		\$

FurrowJet Support Bracket Kit

This bracket installs from the closing system mount bolt to the rear of the QA Keeton Bracket to support the additional force of FurrowJet
Order 1 per row.

ExactEmerge Note: do not order a FurrowJet Support bracket. It is included in the Keeton/FurrowJet bracket (141180).

White 8000 Note: Do not order a FurrowJet Support bracket. It is included in the Keeton/FurrowJet bracket 150147

Case IH 2100 Note:

- If installing **FurrowJet** with **FurrowForce** on a Case IH 21xx row unit - Use **756134 QA/FurrowJet Support Bracket**
- If installing **FurrowJet** on 21xx with the **OEM closing system** - Use the **141214 FurrowJet Bracket**
- **only Order the FurrowJet Bracket!! No Keeton Bracket**

Monosem Note: Will need closing setback (141250) installed on planter for FurrowJet.

Item	Part #	Price	Qty	Total
FurrowJet Support Bracket (JD ME2, ME Plus, XP, ME5)	141130			\$
FurrowJet Support Bracket (JD ME - 7000/Kinze 2000)*	141135			\$
FurrowJet Support Bracket (Kinze 3000)	141131			\$
FurrowJet Support Bracket - KZ4000	141190			\$
FurrowJet Support Bracket (White 9000) (replaces 141132)	141137			\$
FurrowJet Support Bracket (Harvest International)	141134			\$
FurrowJet Bracket - Case IH 21xx (OEM Closing system)	141214			\$
QA Bracket/FurrowJet Support Bracket -Case IH 21xx With FurrowForce ONLY!!!	756134			\$
FurrowJet Support Bracket - Monosem	141245			\$
Monosem NG+4 Closing Setback	141250			\$

* The 7000 and the 2000 FurrowJet Support bracket may require modifications to the closing system (KZ) or Gauge wheel arms (JD). Click on cloud icon next to product description for more details.

FurrowJet Body Assembly

The FurrowJet Body assembly is not row unit specific

The FurrowJet Body assembly house the Keeton Firmer and the FurrowJet wing/manifold connections

Order 1 Per Row

The FurrowJet retention pin is recommended for all FurrowJet installations. Part number 141099, below, will satisfy 10 rows.

Item	Part #	Price	Qty	Total
FurrowJet Body Assembly	141100			\$
FurrowJet Retention Pin (10-pack)	141099			\$

Keeton Mini Firmer

- Order 1 Kit per Row
- FurrowJet compatible Keeton Tail
- Mini Tail Kit includes 2 separate tails.
- The smaller Keeton Tail provides furrow tracking in addition to seed firming and is **STRONGLY** recommended in all cases of FurrowJet uses.
- Typical Conditions may require earlier in season replacement of Keeton tails.

Item	Part #	Price	Qty	Total
Keeton Mini Firmer Kit for FurrowJet	141039			\$

FurrowJet Wing Kit

The High Wear FurrowJet Wing Kit (**141037** - 1/row) includes carbide insert leading edges providing extending life in abrasive and rocky soils. The FurrowJet Wings are able to be locked up so that the planter can operate with FurrowJet installed but the wings out of the ground and fertilizer turned off. The lockup pins are included in the body assembly but it is recommended to purchase the Wing Lockup Tool (**141093** - 1/planter) to install the pins. (This lockup tool may not be compatible with the FurrowForce rock guard in all positions).

Item	Part #	Price	Qty	Total
FurrowJet Wing Kit - High Wear	141037			\$
Wing Lock Up Tool (1 per Planter)	141093			\$

FurrowJet Manifold Setup

The liquid distribution to the nozzles for FurrowJet is done through the manifold and three separate 1/4" hoses that go to a splitter. The splitters will need an orifice that is correctly sized for the application rate for each nozzle. The splitters below contain 3 outlets that have room for a separate orifice plate for each outlet. Each outlet also has a 0.5 lb check valve to prevent bleed over from between the three outlets **but** this does not replace a system check to prevent liquid from draining from upstream.

FurrowJet Ordering

- **Order 1 Manifold Assembly and 1 splitter per row**
- Normal operation is recommended to be at least 30 PSI at the orifice.
- Source the correct orifice plates for application rate of each nozzle.
- For high speed planting, it is recommended that the pump is capable of achieving at least 60 psi at desired flow rates and planter speed

Note: if all three ports on the splitter is not going to be used, it will be necessary to plug the ports that are not being used. Use the PTC plug or the 1/4" tube PTC cap to stop liquid from coming out of the ports not being used.

Item	Part #	Price	Qty	Total
Universal FurrowJet Manifold	141065			\$
Orifice body splitter - 1/4" Inlet with three 1/4" outlets	724455			\$
Orifice Body Splitter - 3/8" Inlet with three 1/4" outlets	724456			\$
Orifice Body Splitter - Dual 1/4" inlet with three 1/4" outlets	724457			\$
1/4" PTC Plug (10 pack)	724236			\$
PTC Cap 1/4" - (10 Pack)	724234			\$

Step 3 - Plumbing

- A filter system is required to ensure the system remains clean and free of debris
- MUST be a 80 Mesh filter
- The filter must be installed AFTER the pump and BEFORE the distribution system
- If a filter is not previously installed or sourced elsewhere, order 1 per product applying with FurrowJet

Note: It is not required to purchase the Filter Kit from Precision Planting

Filter Kit

- A 80-Mesh filter system is REQUIRED to ensure the system remains clean and free of debris
- Filter must be installed After the pump and BEFORE the distribution system
- If a filter is not previously installed or sourced elsewhere - Order one kit per product

Item	Part #	Price	Qty	Total
Filter Kit - Low Flow (1 - 80 Mesh Screen) - 15 GPA or less on 30" Rows	724291			\$
Filter Kit - High Flow (2 - 80 Mesh Screen) - 16 GPA or greater on 30" Rows	724289			\$
Filter Visual Gauge Kit	724294			\$

1/4" Tubing

Item	Part #	Price	Qty	Total
1/4" Tubing Black, 100' Roll	724028			\$
1/4" Tubing Yellow, 100' Roll	724090			\$

Pressure Gauge

Item	Part #	Price	Qty	Total
Remote Pressure Sensor Gauge Kit	724067			\$

FieldView

Step 1 - Fieldview Kits

Gen 3 Fieldview Module

If the grower wants to connect Fieldview to the 2020 Gen 3 it will be necessary to purchase a Fieldview Module Kit. (728150)

A fieldview module will remove the option to run a second display screen.

Note: the Fieldview Module Kit does not include the USB cable to connect the ipad to the module. The grower will have to provide his own.

Item	Part #	Price	Qty	Total
20 20 Gen 3 FieldView Module Kit	728150			\$
Screw, Pan Head Philips #6 x 3/4"	0142860		3 per kit	\$
Mount, iPad Holder	725123		1 per kit	\$
10' PoE Cable (Ethernet) - (no Discount)	725157		1 per kit	\$
Universal Metal Cab Mounting Bracket (Displays, Controllers, Tough Trays)	725804		1 per kit	\$
Kit, FieldView Hardware	728044		1 per kit	\$
Gen 3 Fieldview Module	728151		1 per kit	\$
Dual Display Mount for Gen 3 & FieldView	728141			\$

Fieldview Accessory Kits

For iPad Ready Displays

Item	Part #	Price	Qty	Total
FieldView Accessory Kit for iPad Air2/Pro 9.7	728043			\$
FieldView Accessory Kit for iPad Air	728033			\$

FieldView Base Kits

For Gen 1 2020 (Non iPad ready displays

Item	Part #	Price	Qty	Total
FieldView II Base Kit for iPad Air2	728039			\$
FieldView II Base Kit for iPad Air	728032			\$

Step 2 - Accessories

Mounting Options

Item	Part #	Price	Qty	Total
RAM Mount Kit - includes (2) 1.5 ball with 10" arm (1 ball has 1/4" post)	725821			\$
RAM Mount Kit - includes (2) 1.5 ball with 6" arm (1 ball has 1/4" post)	725708			\$
Vertical Mounting Bracket for 2020/Fieldview	725815			\$
iPad Holder (Replaces Tough Tray)	725123			\$
RAM Mount Triple Suction Cup	725822			\$
RAM U-Bolt Ball Mount	725818			\$

FieldView Harness Options

Item	Part #	Price	Qty	Total
FieldView Module Display Harness	728008			\$
Lightning USB Cable (12") for iPad4 & iPad Mini	728027			\$
30 Pin to Lightning Adapter	728019			\$
FieldView Module Harness Extension	728018			\$
110 Volt Power Supply - 4 AMP Dual Outlet	725811			\$

Smart Connector System

Step 1 - Smart Connector Kit - Gen 2

Smart Connector Kits are required on all Non SRM systems and all SRM systems that the 2020 is not controlling the seeding rate. Example - If you are running DeltaForce on a planter and controlling the seeding rate through a John Deere Monitor, you still need a Smart Connector.

Note: 20|20 Gen 3 displays will not use Gen 2 Smart Connector and finish kits. Order Gen 3 components from the Gen 3 20|20 Sensing page.

Smart Connector Kit

A Gen 2 Smart Connector is not compatible with a 20|20 Gen 3 Display. Go to Gen 3 20|20 Sensing product.

Item	Part #	Price	Qty	Total
Smart Connector Kit	725825			\$
Smart Connector - Gen 2	725712		1 per kit	\$
Row Unit Module with hardware (Rum Kit)	725271		3 per kit	\$
Universal Tractor Harness (2009+)	725499		1 per kit	\$

Recommended Accessories

Vacuum / Pressure Sensor provide the ability to monitor the vacuum or pressure gauge on the 20/20

110 Volt Power Adapter provides the ability to power up the display in your office or home

Item	Part #	Price	Qty	Total
20/20 Vacuum/Positive Air Sensor (Replaces 725235)	725905			\$
White / Great Plains Pressure Sensor (Limited Service Part)	725264			\$
110 Volt Power Supply - 4 AMP Dual Outlet	725811			\$
European Power adapter (converts to 3 pin power plug)	725719			\$
Repeater Module for Gen II Smart Connector	725714			\$

Step 2 - John Deere Finish Kits

The John Deere Finish Kits will include 3 Smart Pins and any additional adapter harnesses required.

- Note:** It will not include a planter harness if a new planter harness is necessary. Please go the planter harness step to order the correct planter harness as necessary.

John Deere 7000 Finish Kits

Item	Part #	Price	Qty	Total
JD 7000 - (4-24 Rows) - CompuTrak	725513			\$
JD 7000/Kinze 2000- (4-24 Rows) Dickey-John	725514			\$

John Deere 17xx/7200 Finish Kits

Item	Part #	Price	Qty	Total
JD 17xx/7200 - (4-32 Rows) - CompuTrak	725516			\$
JD 17xx/7200 - (4-32 Rows) - Dickey-John	725517			\$
JD (- 2002) 3-pt 1700/10/20/30/7300 - (4-15 Rows) - SeedStar	725596			\$
JD (2003-2014) 3-pt 1700/10/20/30/7300 - (4-15 Rows) - SeedStar	725597			\$
JD (-2002) Pull 1750/60/70/80/90/7200 - (4-15 Rows) - SeedStar	725518			\$
JD (2003-2014) Pull 1750/60/70/80/90/7200 - (4-15 Rows) - SeedStar	725583			\$
JD 1750/60/70/80/90/7200 - (16-32 Rows) - SeedStar	725515			\$
JD (2011-2014) 17xx - (4-16 Rows) - SeedStar	725496			\$
JD (2011-2014) 17xx - (17-24 Rows) - SeedStar	725497			\$
JD (2011-2014) 17xx - (25-32 Rows) - SeedStar	725498			\$

John Deere 17x5/ ME5 Finish Kits

Item	Part #	Price	Qty	Total
JD 17x5/ME5 - (4-32) - CompuTrak	725739			\$
JD (2015 +) 3-pt 17x5/ME5 - (4-16 Rows) - SeedStar	725740			\$
JD (2015 +) 17x5/ME5 - (4-16 Rows) - SeedStar	725741			\$
JD (2015 +) 17x5/ME5 - (17-24 Rows) - SeedStar	725742			\$
JD (2015 +) 17x5/ME5 - (25-32 Rows) - SeedStar	725743			\$
JD (2015 +) 17x5 - (12-24 Rows) - ExactEmerget	725748			\$

† - ExactEmerge Planters require harness adapter 725746 (1 Per row) and a new planter harness. If adding additional RUMs, you will need 725747 mounting bracket for each additional RUM. **Note:** If installing 2020 SeedSense on any ExactEmerge other than 1775 12-24 row planter, you will need source a custom planter harness.

Deere Bauer 17xx Finish Kits

Item	Part #	Price	Qty	Total
JD Deere Bauer - (24-32 Rows) - SeedStar	725527			\$
JD Deere Bauer - (24-36 Rows) - 57P CompuTrak 450	725520			\$
JD Deere Bauer - (33-48 Rows) - SeedStar	725519			\$
JD Deere Bauer 120 - (48 Rows) - SeedStar	725623			\$
JD Deere Bauer - (54 Rows) - SeedStar	725528			\$
JD Deere Bauer 2012-2014 (24 - 32 Rows) - SeedStar	725703			\$
JD Deere Bauer 2012-2014 (33 - 54 Rows) - SeedStar	725704			\$

Deere Bauer ME 5 Finish Kits

Item	Part #	Price	Qty	Total
JD Deere Bauer 2015+ (ME5) (24 - 32 Rows) - SeedStar	725744			\$
JD Deere Bauer 2015+ (ME5) (33 - 54 Rows) - SeedStar	725745			\$

Step 3 - Kinze Finish Kits

The Kinze Finish Kits will include 3 Smart Pins or 3 Kinze Links and any additional adapter harnesses required.

- **Note:** It will not include a planter harness if a new planter harness is necessary. Please go the planter harness step to order the correct planter harness as necessary
- **Note:** 2020 SeedSense is not compatible on a Kinze ISO planter that has third party monitors running hydraulic drives and Clutches. The ISO monitor will not run clutches or motors correctly if it does not have seed data. A Kinze ISO ground drive is compatible.

Kinze Finish Kits (All Models)

Kinze Planters may need to replace the planter harness, seedtubes, and seedtube sensors.

Item	Part #	Price	Qty	Total
JD 7000/Kinze 2000- (4-24 Rows) Dickey-John	725514			\$
Kinze (1999) 2000 - (4-32 Rows) KPM I, II, or III*	725521			\$
Kinze 3000 & 4900 - (4-32 Rows) KPM I, II, or III*†	725522			\$
Kinze 3000 - (33 - 36 Rows) KPM I, II, or III*‡	725523			\$

* All Kinze 2000 and 3000 Planters with a KPM I, II, III monitor will require new harness, seedtubes, and seedtube sensors

† All Kinze 4900 Planters will need a new planter harness and WaveVision 700250 SeedTube.

‡ Note: Kinze 3000 planters that are 2013 and newer will require a Seed Sensor Gender Changer (725720) if using OEM sensors. Order one per row.

Step 4 - Case IH Finish Kits

Note: 2020 SeedSense is not compatible on all Cyclo planters. 2020 will only work on 1200, 12x5 series planters

1200 Series Case IH Finish Kits

Item	Part #	Price	Qty	Total
Case IH 12XX - (4-32 Rows) - Early Riser II/DJ	725533			\$
Case IH 12XX - (4-32 Rows) - Universal/600/700*	725534			\$
Case IH 12XX - (36+ Rows) - Universal/600/700*	725510			\$

*Note: Case IH 1200 series planters with a Universal / Pro 600 / Pro 700 monitors as the planter monitor will require a new planter harness and seedtube sensors. The Dickey John style seedtube sensor for a Case IH planter is part number 310077.

12x5 Series Case IH Finish Kits

Case IH 12x5 Series planters do not need a new Planter harness. The Case IH adapter will adapt into their planter harness and will allow us to reuse their sensors and harness.

Item	Part #	Price	Qty	Total
Case IH 12X5 Drawn - (4-16) - Universal/600/700	725847			\$
Case IH 12X5 3 Pt - (4-12) - Universal/600/700	725848			\$
Case IH 12X5 - (24 Row) - Universal/600/700	725849			\$
Case IH 12X5 - (32-36) - Universal/600/700	725850			\$

Step 5 - White Finish Kits

White Finish Kits

Item	Part #	Price	Qty	Total
White 5000/6000 - (4-32 Rows) - Dickey-john	725524	:		\$
White 8000 - (4-32 Rows) - Dickey-john	725598	:		\$
White 8000 - (4-32 Rows) - SM400SE, GTA Console*	725529	:		\$
White 9000 - (4-32 Rows) - Dickey-John	725839	:		\$
White 9000 - (4-32 Rows) - SM400SE, GTA Console, C3000*	725840	:		\$
White 9000 - (33+ Rows) - SM400SE, GTA Console, C3000*	725841	:		\$

All SM400SE, GTA Console, C3000 planters will require a new planter harness to see seed data. The seed tubes and sensors will work with the 2020 but a new planter harness is required. If running Hydraulic motors with the GTA and the C3000, it is required to get the seed data back into the OEM Monitor. To make that work, it is necessary to purchase a second planter harness and adapters to connect back into the White OEM harnesses. See the parts in the next group for ordering details.

Adapters to send seed to GTA, C3000 Monitors

Item	Part #	Price	Qty	Total
Seed Sensor Gender Changer - Adapts White GTA Harness to PP (1/Row)	725717	:		\$
37-Pin Gender Changer for White GTA -Adapts from Smart Connector output to PP Harness	725718	:		\$

Step 6 - Great Plains Finish Kits

Great Plains Finish Kits

Item	Part #	Price	Qty	Total
Great Plains Yield Pro 30 - 40' Bar - (12-32 Rows) - Seed Manager	725526	:		\$
Great Plains Yield Pro 30 - 40' Bar - (12-32 Rows) - IntelliAg	725531	:		\$
Great Plains Yield Pro 60' Bar - (24 - 48 Rows), 40' Bar (16 - 32 Rows) - IntelliAg	725525	:		\$
Great Plains Yield Pro Rigid 5 - 10' Bar - (4-8 Rows) - DJ PM300	725584	:		\$

Step 7 - Monosem Finish Kits

Monosem Finish Kits

Item	Part #	Price	Qty	Total
Monosem with MPM (4-32 Rows)*	725574	:		\$
Monosem with MPM (33-48 Rows)*	725575	:		\$
Monosem with Dickey John (4-32 Rows)	725573	:		\$

* Requires a new planter harness. Precision Planting does not offer a harness for Monosem planters. It will be necessary to source a harness from an aftermarket company.

Step 8 - Harness Adapters

Some of these harnesses may be required and others are optional. Please refer to the finish kit guide.

SeedSense Harness Options

Item	Part #	Price	Qty	Total
JD/DB Vacuum Sensor Voltage Regulator*	725707			\$
JD/DB Fertilizer Pressure Sensor Voltage Regulator*	725736			\$
3-Pin WP 18" seed tube sensor extension	725061			\$
JD ExactEmerge SeedSensor Adapter	725746			\$
Seed Sensor Gender Changer - Adapts White GTA Harness to PP (1/Row)	725717			\$
37-Pin Gender Changer for White GTA -Adapts from Smart Connector output to PP Harness	725718			\$
Kinze Seed Sensor gender changer	725720			\$

*-May be needed with Gen 2 SmartConnector and SeedStar Systems

Step 9 - Planter Harnesses

Kinze planters require new harness

John Deere Planter Harness

Item	Part #	Price	Qty	Total
12 row 30" Front Fold (7000/7200/1770 Cons.)	725350			\$
12 Row 30" Front Fold NT (1250)	725618			\$
16 Row 30" Front Fold (8516)	725352			\$
16 Row 30" Front Fold NT (1250)	725619			\$
24 row 30" Front Fold (7000/7200/1770 Cons.)	725351			\$
24 Row 30" Front Fold NT (1250)	725617			\$

Kinze Planter Harness

Item	Part #	Price	Qty	Total
4 Row 30,36,38" Rigid (2000/3000)	725300			\$
4/7 Row 30,36,38" (2000/3000)	725301			\$
6 Row 30,36,38" Rigid (2000/3000)	725302			\$
6 Row 30,36,38" 3-Pt.Mounted (2100/3110)	725303			\$
6 Row 30" L&T (2500/3500)	725304			\$
6/11 Row 30,36,38" Rigid (2000/3000)	725305			\$
6/11 & 6/12 Row 30" L&T (2500/3500)	725306			\$
8 Row 30" Rigid (2000/3000)	725307			\$
8/15 Row 30" Rigid (2000/3000)	725313			\$
8 Row 30,36,38" 3-Pt.Mounted Rigid/Vert.Fold (2100/3110/3120)	725309			\$
8 Row 38,40" 3-Pt Stacker (2100/3140)	725310			\$
8 Row 36,38" Wing Fold/L&T (2200/2600/3200/3600)	725311			\$
8 Row 30" L&T (2500/3500)	725312			\$
8/15 & 8/16 Row 30" L&T (2500/3500)	725314			\$
8/15 Row 36,38" L&T (2600/3600)	725315			\$
10 Row 30" 3-Pt.Mounted (2100/3110)	725316			\$
12 Row 30" 3-Pt.Mounted Vert. Fold (2100/3120)	725317			\$
12 Row 30" 3-Pt.Stacker (2100/3140)	725318			\$
12 Row 36,38,40" 3-Pt.Stacker (2100/3140)	725319			\$
12 Row 30" Wing Fold (2200/3200)	725320			\$
12 Row 20,22" L&T (2400/3400)	725321			\$
12 Row 30" L&T (2600/3600/3650)	725322			\$
12 Row 36,38" L&T (2600/3600)	725323			\$
12 Row 30" Front Fold NT (1250)	725618			\$
12/23 Row 20,22" L&T (2400/3400)	725324			\$
12/23 & 12/24 Row 30" L&T (2600/3600/3650)	725325			\$
12/23 & 12/24 Row 33,38" L&T (2600/3600/3650)	725326			\$
16 Row 30" 3-Pt.Stacker(2100/3140)	725327			\$
16 Row 30" L&T (2600/3600/3650)	725328			\$
16 Row 30" Forward Fold (2700/3700)	725329			\$
16/31 & 16/32 Row 30" L&T (2600/3600/3650)	725330			\$
16 Row 38" Forward Fold (2700/3700)	725339			\$
16 Row 30" Front Fold NT (1250)	725619			\$
24 Row 20,22" Forward Fold (2700/3700)	725331			\$
24 Row 30" Forward Fold (2700/3700)	725332			\$
24 Row 30" Front Fold (3800)	725333			\$
24 Row 30" Front Fold NT (1250)	725617			\$
32 Row 30" Front Fold (3800)	725334			\$
36 Row 20" Forward Fold (2700/3700)	725335			\$
36 Row 30" Front Fold (3800)	725345			\$

Case IH Planter Harness

Item	Part #	Price	Qty	Total
6 Row 30,36,38" Rigid (2000/3000)	725302			\$
6 Row 30,36,38" 3-Pt.Mounted (2100/3110)	725303			\$
8 Row 30" 3-Pt.Mounted (2100/3110)	725308			\$
8 Row 30,36,38" 3-Pt.Mounted Rigid/Vert.Fold (2100/3110/3120)	725309			\$
8 Row 30" Rigid (2000/3000)	725307			\$
8 Row 38,40" 3-Pt Stacker (2100/3140)	725310			\$
12 Row 30" 3-Pt.Stacker (2100/3140)	725318			\$
12 Row 30" L&T (2600/3600/3650)	725322			\$
12 Row 30" Front Fold NT (1250)	725618			\$
12 Row 36,38,40" 3-Pt.Stacker (2100/3140)	725319			\$
12/23 Row 30" L&T (1240)	725615			\$
16 Row 30" 3-Pt.Stacker(2100/3140)	725327			\$
16 Row 30" L&T (2600/3600/3650)	725328			\$
16 Row 30" Front Fold NT (1250)	725619			\$
16/31 Row 30" L&T (1240)	725616			\$
24 Row 20" L&T (1240)	725614			\$
24 Row 30" Front Fold NT (1250)	725617			\$
32 Row 30" Front Fold (1260)	725620			\$
36 Row 20,22" Front Fold (1260)	725610			\$
36 Row 30" Front Fold (1260)	725607			\$

White Planter Harness

Item	Part #	Price	Qty	Total
6 Row 30,36,38" Rigid (2000/3000)	725302			\$
6 Row 30,36,38" 3-Pt.Mounted (2100/3110)	725303			\$
6Row 36,38" L&T (8716)	725655			\$
6/11 Row 30" Rigid (8606)	725653			\$
8 Row 30" Rigid (2000/3000)	725307			\$
8 Row 30" 3-Pt.Mounted (2100/3110)	725308			\$
8 Row 30" L&T (2500/3500)	725312			\$
8 Row 38,40" 3-Pt Stacker (2100/3140)	725310			\$
8 Row 30,36,38" 3-Pt.Mounted Rigid/Vert.Fold (2100/3110/3120)	725309			\$
8 Row 36,38" Wing Fold/L&T (2200/2600/3200/3600)	725311			\$
8/15 Row 30" Rigid (8608)	725654			\$
8/15 Row 30" Wing Fold (8415)	725650			\$
12 Row 30" Wing Fold (2200/3200)	725320			\$
12 Row 30" Forward Fold (8182)	725567			\$
12 Row 22" 3-Pt.Mounted Rigid (8762)	725563			\$
12 Row 30" 3-Pt.Stacker (2100/3140)	725318			\$
12 Row 30" 3-Pt.Mounted Vert. Fold (2100/3120)	725317			\$
12 Row 30" L&T (2600/3600/3650)	725322			\$
12 Row 30" Front Fold NT (1250)	725618			\$
12/13 Row 30/15" Rear Fold (Black Mach,) (8342)	725561			\$
12/23 Row 30" L&T (1240)	725615			\$
12/23 Row 30" Front Fold (8523)	725651			\$
16 Row 30" Forward Fold (2700/3700)	725329			\$
16 Row 30" Front Fold NT (1250)	725619			\$
16/31 Row 30" Front Fold (8531)	725652			\$
16 Row 30" Front Fold (8516)	725352			\$
16/31 & 16/32 Row 30" Forward Fold NT (8831)	725656			\$
24 Row 20" Front Fold (8524)	725565			\$
24 Row 22" Front Fold (8524)	725564			\$
24 Row 30" Front Fold NT (1250)	725617			\$
24 Row 30" Front Fold (3800)	725333			\$
36 Row 30" Front Fold (1260)	725607			\$

Step 10 - Row Unit Accessories

All 20/20 SeedSense finishing kits equip the planter with sensors measuring Down Force and quantifying row unit ride for three rows. Greater visibility of planter performance through the row unit is possible if additional row units are equipped with sensors. Each additional row will require one RUM kit and one Down Force sensor.

Row Unit Module (RUM) Hardware Options

Item	Part #	Price	Qty	Total
Row Unit Module with hardware (Rum Kit)	725271			\$
SRM/RUM Mount Kit for ExactEmerge Planters	725747			\$

Weigh Pins (Load Cells)

Item	Part #	Price	Qty	Total
5/8" Smart Pin for JD7200/17XX	725580			\$
5/8" Smart Pin for JD 17x5, ME 5 Row Unit	725866			\$
1/2" Smart Pin for JD7000/ Kinze 2000	725581			\$
5/8" Great Plains Smart Pin	725582			\$
Kinze 3000/4900 Smart Link	725466			\$
White 6000 Smart Link	725266			\$
White 8000 Smart Link (subs from 725729)	725869			\$
White 9000 1/2" Smart Pin/Gray PP ready 1.0	725887			\$
Case IH Load Sensor for 12xx/12x5 Series Row Unit	725875			\$
Monosem 5/8" Smart Pin	712003			\$

Weigh Pin & RUM Kits

Item	Part #	Price	Qty	Total
2- 5/8" Smart Pins & RUMs for JD7200/17XX	726375			\$
2 - 5/8" Smart Pins & RUMs for JD 17X5/ME5	726740			\$
2 - 1/2" Smart Pins & RUMs for JD 7000/Kinze 2000	726380			\$
2 - 5/8" Smart Pins & RUMs for Great Plains	726625			\$
2 - Smart Links & RUMs for Kinze 3000/ 4900	726385			\$
2 - Smart Links & RUMs for White 6000	726658			\$
2 - Smart Links & RUMs for White 8000	726390			\$
2 - 1/2" Smart Pins & RUMs for White 9000	726751			\$
2 - Load Sensors & RUMs for Case IH	726395			\$

Step 11 - Cab Accessories

Display Mounting Options

The 2020 Display Kit comes with a steel mounting bracket that has a single adjustable pivot. If more flexibility is desired, the following mounting options are available.

Item	Part #	Price	Qty	Total
RAM Mount Triple Suction Cup	725822			\$
RAM U-Bolt Ball Mount	725818			\$
RAM Mount Kit - includes (2) 1.5 ball with 10" arm (1 ball has 1/4" post)	725821			\$
RAM Mount Kit - includes (2) 1.5 ball with 6" arm (1 ball has 1/4" post)	725708			\$
Vertical Mounting Bracket for 2020/Fieldview	725815			\$

2020 Display Power Adapters

The following list explains the different options to power the 2020 Display.

- The power splitter (725254 - \$70) is a Y cable that plugs into the tractor power port and splits into two power ports.
- If the tractor is equipped with a John Deere power strip that uses a rectangular plug with three parallel spades, then order the power strip adapter (725270 - \$50).
- If the tractor has neither a rectangular or round 3-spade port, then wiring the SeedSense directly to the battery is the recommended option using the 3-pin power adapter to 48" lead wires (725292 - \$40).
- If the tractor is equipped with the 3 pin European style power plug, then use the (725719 - \$70) European power adapter
- A final option is the 3-pin power to cigarette lighter adapter (725269 - \$35). This is the least recommended option.

Item	Part #	Price	Qty	Total
12V 3Pin Round Power Splitter	725254			\$
JD Power Strip to 3-Pin Power Adapter	725270			\$
3-Pin Power Adapter to 48" lead wires	725292			\$
European Power adapter (converts to 3 pin power plug)	725719			\$
Power Port (cig) to 3-Pin Power Adapter	725269			\$

4 - Pin RS485 Power Extensions

All Finish Kits and Planter harnesses include the correct extensions needed to connect SmartConnector and Display for a normal install. If normal extensions do not complete the install, the following extensions are available.

Item	Part #	Price	Qty	Total
20' 4-Pin Power Extension Cable, RS485	725411			\$
35' 4-Pin Power Extension Cable, RS485	725403			\$
45' 4-Pin Power Extension Cable, RS485	725477			\$
60' 4-Pin Power Extension Cable, RS485	725468			\$

37-Pin Extension Harness

Item	Part #	Price	Qty	Total
37-Pin Extension Cable 24"	725272			\$
37-Pin Extension Cable 120"	725399			\$

Manual JD AirBag Controller

For John Deere Planters that are running Manual AirBags (no AirForce) for downforce control but do not want to run a GreenStar Monitor, the JD Manual AirBag Controller will allow them to control the AirBags from a separate controller in the cab.

Item	Part #	Price	Qty	Total
JD Manual Air Bag Controller (for 2011 + Planters)	725629			\$
15' 6-pin WeatherPack Extension	727133			\$
30' 6-pin WeatherPack Extension	727162			\$

Extensions may be necessary but not required. Also, additional 1/4" airline may be necessary as well. See instructions for controller for air line part numbers.

Step 12 - Seed Sensors

Dickey John Seed Tube Sensors

May be needed for planter depending on existing sensor style

Item	Part #	Price	Qty	Total
Seed tube Sensor Case IH (Dickey John)	310077	:		\$
Seed Tube Sensor 3/4"eye (Dickey John)	300157	:		\$

AirForce

Step 1 - AirForce Compressor

AirForce is not compatible with 20|20 Gen 3 display!

Air Compressor

- Hydraulic AirForce Compressor will work on any size planter
- 12V Electric AirForce Compressor will only work on 12 rows and less

Item	Part #	Price	Qty	Total
Hydraulic AirForce Compressor	726160	:		\$
12 V Electric AirForce Compressor	726000	:		\$

Compressor connections

Item	Part #	Price	Qty	Total
Hydraulic Hose Kit for DB planters - "T" into CCS Circuit at hitch	726405			\$
Hydraulic Hose and Coupler Kit for separate circuit at hitch	726410			\$
12' Compressor Power Extension Cable	726224			\$
Hydraulic Hose Kit for JD 1770NT / 1790 planters - "T" into CCS Circuit at hitch	726400			\$

Step 2 - Compressor Mounting Kits

Mounting options - Select the correct one

Use the Order Resources below to assist in selecting the correct compressor mounting bracket.

Item	Part #	Price	Qty	Total
JD 7000 / 7200 - 20' Bar - Rigid Tongue (5 x 7 U-bolts) Mounts on tongue	726055			\$
JD 7000 / 7200 - 20' Bar- Folding Tongue (3/8 bolts) Mounts on tongue	726059			\$
JD 7000 / 7200 / 1770 Cons. 30' Bar (3 x 8 U-bolts) Mounts on draft tube	726052			\$
JD 7000 / 7200 / 1770 / 1770NT /1790 Mounts on cross bar of 3-pt hitch	726515			\$
JD 7100 / 7300 / 1700 / 1710 / 1720 (7 x 7) Mounts in front of bar	726060			\$
JD 1760 (8 x 10 U-bolts) Mounts on tongue	726057			\$
JD DB ? 80' Bar (3 x 6 U-bolts) Mounts on draft tube	726051			\$
Kinze Rear Fold (4 x 4 U-bolts)	726397			\$
Kinze 2000 / 3000 2-Tube Tongue (J-bolts) Mounts to Tongue	726398			\$
Kinze 2600 / 3600 8 & 12 Row (8 x 8 U-bolts w/ Spacer) Mounts to tongue	726058			\$
Kinze 2600 / 3600 16 Row (10 x 10 U-bolts w/ Spacer) Mounts to tongue	726455			\$
Kinze 2700 / 3700 (Side Mount Brackets) Mounts to side of hitch	726435			\$
JD All Front Fold Models (High Mount Brackets) Mounts to draft tube	726470			\$
Kinze 2500 / 3500 7x7 Tube Low Mount	726612			\$
JD 7000 / 7200 / 1770 Cons. 40'-60' Bar (3 x 5 U-bolt) Mounts on draft tube	726050			\$
Kinze 2600 / 3600 12 Row 8x8 Tube Low Mount	726613			\$
Kinze 2600 / 3600 16 Row 10x10 Tube Low Mount	726614			\$
JD 7100 / 7300 / 1700 / 1710 Rigid/Vert. Fold (7 x 7 w/ spacer) Mounts over bar	726056			\$
JD 7300/1720 Stack Fold (7 x 4 w/ spacer) Mounts over center bar	726500			\$
JD DB > 80' Bar (4 x 6 U-bolts) Mounts on draft tube	726053			\$
JD 1770NT / 1790 / DB Hyd Comp (8 x 12 U-bolts) Rear mount to center frame	726490			\$
Universal / Custom Mount (Fits 3 x 3 tube up to 8 x 12 tube)	726450			\$

Note: For Case IH, White, and Great Plains, the recommended mounting bracket is the Universal/Custom (726450) or the High Mount (726470)

Step 3 - AirBag and Bracket Kits

Different downforce options exist for different planter makes and types. Some systems will have the option of both down and lift downforce control and some will only have the option of adding lift control and using existing down control.

John Deere Bag and Bracket Kits

Down & Lift Systems

- For John Deere 7200, 7300, 1700, 17x5, DB series planters, a grower will need the **726520** if he does not currently have a single airbag installed (Down and lift bags, and bracket). **Note:** if he has JD Dual down airbags, they will be replaced with a Precision Planting single airbag
- For John Deere 7200, 7300, 1700, 17x5 series planters, a grower will need the **726525** if he currently has a single airbag installed. (Lift bag and bracket)

Down Only

- For a John Deere 7200, 7300, 1700, 17x5, DB series planters, a grower will need the **726585** if he currently does not have a single airbag installed (Down bag and bracket)
- If a grower has a single airbag installed, he does not need to purchase an airbag or bracket if he is only doing down only.

Lift only

- For a John Deere 7000, a grower will need the **726540** (Kit includes a lift bag and bracket)
- For a John Deere 7200, 7300, 1700, 17x5, DB series planters, a grower will need the **726040** (High mount bracket and lift bag)

Notes:

- Precision Planting air bags and brackets are not compatible with 17x5/ME5 Cable Drive Insecticide
- 17X5 air bags are the same design as 1700 Series. AirForce will control 17x5/ME5 airbags the same as 1700 airbags
- If a grower has single airbags today and only wants down only, he does not need to purchase new airbags. He only needs the compressor, weigh pins & rums, airline and fitting kit, and lift switch.
- A Deere-Bauer and 1780 planter will require a vacuum plumbing adapter if the high mount lift bag option is installed. See additional John Deere Options for details
- All lift only options will reuse the existing downforce system. The lift bag will simply be added to the system.
- A John Deere 7000 will only have a lift only option. A controlled down bag option is not available for a John Deere 7000.

Item	Part #	Price	Qty	Total
JD 1700/7200 - Down Only	726585			\$
JD 1700/7200 - Down/Lift conversion from Down only	726525			\$
JD 7000/Kinze 2000 & 3000 - Lift	726540			\$
JD 1700/7200 - Down/Lift	726520			\$
JD 1700/7200 - Lift	726040	↕-----		\$

John Deere Options

- If installing a down bag on a long parallel arm 7200, 1700 series planter that does not currently have an airbag, it will be necessary to purchase a JD long Parallel arm spacer (**726259**)
- If a planter has a wing drive that is running a hex shaft above the row units, it may be necessary to install setback brackets on the wing rows to create enough clearance between the top of the down bag bracket and the hex shaft drive. If that clearance is needed, use the 4" setback (**726660**)
- If installing a down bag (**726525, 726585**) on a 1780 , it may be necessary to install a Vacuum tube adapter kit (**726601**). This will increase the clearance between the vacuum plumbing and the airbag bracket (one per planter)
- If installing a high mount lift bag (**726040**) on a 1780 , it may be necessary to install a Vacuum tube adapter kit (**726368**). This will increase the clearance between the vacuum plumbing and the airbag bracket (one per planter)
- If installing a high mount lift bag (**726040**) on a DB , it may be necessary to install a Vacuum tube adapter kit (**726369**). This will increase the clearance between the vacuum plumbing and the airbag bracket (one per back row + 1 for each wing)

Item	Part #	Price	Qty	Total
JD Long PA Spacer	726259			\$
Set Back Kit for JD 17xx/7200 (6" setback)	726660			\$
Vac tube adapter kit for 1780 (1 per planter)	726601			\$
Vac tube adapter kit for 1780 (1 per planter)	726368			\$
Adapter kit for DB planters with 726040 kit (1 per back row + 2)	726369			\$

Kinze AirBag and Bracket Kits

- Kinze 2000 & 3000 planters have a lift bag only option. If a grower wants a down and lift system, he will need Kinze's OEM down bag (a 3000 series option only) and then plumb the Kinze down bag into the airforce system.
- A Kinze 4900 does not have an airbag option from Precision Planting but AirForce will control the Kinze OEM down bag for a down only system. **Note: Requires RowFlow to be installed as well.**
- A setback bracket may be necessary on 2700, 3700 or 3400 depending on what all is installed.

Item	Part #	Price	Qty	Total
JD 7000/Kinze 2000 & 3000 - Lift	726540			\$
Kinze Pusher Units - Lift	726550			\$
Set Back Kit for JD 7000 & Kinze (4.5" setback)	726480			\$

Case IH Airbag and Brackets Kits

Note: All Precision Planting airbag and bracket kits for Case IH planters are designed for 14" parallel arms with 2 OEM mounting holes. If the planter does not have them, it may be necessary to purchase new parallel arms or extensions for the brackets. See the **Case IH Additional Options** for details

Down and Lift

- For Case IH 12x0, 12x5 series planters, a grower will need the **726675** if he does not currently have a single airbag installed (Down and lift bags, and bracket).
- For Case IH 12x0, 12x5 series planters, a grower will need the **726690** if he currently has a single airbag installed. (Lift bag and bracket)

Down only

- For Case IH 12x0, 12x5 series planters, a grower will need the **726695** if he currently does not have a single airbag installed (Down bag and bracket)

Lift Only

- Nothing available for a lift only on Case IH planters.

Item	Part #	Price	Qty	Total
Case IH - Mechanical Springs - Down/Lift	726675			\$
Case IH - Mechanical Springs - Down Only	726695			\$
Case IH Lift Conversion - Lift Conversion to Down/Lift	726690			\$

Case IH Parallel Arm Options

- If the OEM 14" parallel arms do not have the 2 holes in the upper arms (the airbag bracket mounting hole is 4 1/4" from the end of the arm. If it does not have 2 holes then this one is often missing), then new parallel arms are required. The 726700 contains 2 arms so purchase 1/row.
- If the parallel arms are 20" or 24", it is required to purchase the Case IH extension for the airbag bracket. Select the correct extension based on the length of the parallel arms.

Item	Part #	Price	Qty	Total
Case IH 14" Parallel Arms (Required if current Parallel arms do not have hole 4 1/4" from end)	726700	:		\$
Case IH 20" Extension	726680	:		\$
Case IH 24" Extension	726685	:		\$

White/Agco Airbag and Bracket Kits

- White/AGCO planters have a lift bag only option. If a grower wants a down and lift system, he will need White's OEM down bag and then plumb the White down bag into the airforce system.
- The Precision Planting lift bag and bracket is compatible on white 5000, 6000, & 8000. The 9000 series planter does not have a lift bag option.
- Precision Planting lift bag and bracket kits are not compatible on White 8000 planters that also run vSet.

Item	Part #	Price	Qty	Total
White - Lift bag & Bracket Kit	726640			\$

Great Plains Airbag and Bracket Kits

Great Plains only have a lift bag option. It is only compatible on the YP Series row unit.

Item	Part #	Price	Qty	Total
Great Plains - Lift	726575			\$

Step 4 - Air Lines & Fittings

Air Line and Fitting Kits

Note: In 2011 John Deere started plumbing their planters with 3/8" airline into the airbags instead of using 1/4" fittings into the airbags. Make sure that you know the year or at least look at the size of the fittings that go in the airbags that are currently on the planter before selecting a airline kit.

Item	Part #	Price	Qty	Total
Down (8 Rows)	726275			\$
Down (12-16 Rows)	726280			\$
Down (24 Rows)	726285			\$
Down (36 Rows)	726290			\$
Down (48 + Rows)	726295			\$
Down 3/8 line (8 Rows)	726707			\$
Down 3/8 line (12-16 Rows)	726708			\$
Down 3/8 line (+24 Rows)	726709			\$
Lift (8 Rows)	726300			\$
Lift (12-16 Rows)	726305			\$
Lift (24 Rows)	726310			\$
Lift (36 Rows)	726330			\$
Lift (48 + Rows)	726335			\$
Lift (54 + Rows)	726340			\$

Valves

Item	Part #	Price	Qty	Total
1/4" PTC Valve	726506			\$
3/8" PTC Valve	726507			\$

Step 5 - Lift Switch Selection

Push Button Lift Switches

- If AirForce is installed without RowFlow, then the push buttons are plugged into the RUM's.
- 1 lift switch is all that is required with AirForce

Item	Part #	Price	Qty	Total
Lift Switch - JD 1700/7200/17x5/ME5 Regular	726150			\$
Lift Switch - JD 1700/7200/17x5/ME5 Long	726260			\$
Lift Switch - JD 7000 or Kinze 2000/3000	726265			\$
Lift Switch - Case IH 12xx /White 9000	726635			\$
Great Plains	726615			\$
Lift Switch - White 5000/6000/8000	726655			\$

Step 6 - Extra RUM & Pins/Link Kits

RUM and Pin Kits

Item	Part #	Price	Qty	Total
2- 5/8" Smart Pins & RUMs for JD7200/17XX	726375			\$
2 - 5/8" Smart Pins & RUMs for JD 17X5/ME5	726740			\$
2 - 1/2" Smart Pins & RUMs for JD 7000/Kinze 2000	726380			\$
2 - Smart Links & RUMs for Kinze 3000/ 4900	726385			\$
2 - 5/8" Smart Pins & RUMs for Great Plains	726625			\$
2 - Smart Links & RUMs for White 6000	726658			\$
2 - Smart Links & RUMs for White 8000	726390			\$
2 - 1/2" Smart Pins & RUMs for White 9000	726751			\$
2 - Load Sensors & RUMs for Case IH	726395			\$

Step 7 - AirForce Options

Options

Item	Part #	Price	Qty	Total
Tru-Count Pressure Regulator Kit	726420			\$
Stop Kit for JD7200+ Row Unit height (1/4" stop)	726530			\$

AirForce Compressor upgrades

If grower has one of the first year AirForce compressors and wants to upgrade it to a down and lift system, he can purchase one of the following kits to change the solenoid/valve assembly

Item	Part #	Price	Qty	Total
Control Conversion Kit –lift to down / lift	726365			\$
Control Conversion Kit –down to down / lift	726370			\$

RowFlow

Step 1 - RowFlow Base Kit

RowFlow is not compatible with 20|20 Gen 3 display

RowFlow is designed to control Hydraulic motors and clutches (both section shut offs and row Clutches). Each Rowflow module is capable of handling up to 36 row clutches and 3 hydraulic drives. Each Module has three motor outputs and 24 swath section outputs.

5 HZ GPS quality and Radar are required to run RowFlow. The Recommended level of GPS correction is RTK. Please refer to the Seedsense Product group for GPS systems and adapters harnesses.

Note: Precision Planting does not support Graham Electric Drives being run by a RowFlow System.

RowFlow Base Kit

The Rowflow Base Kit will control

- Up to 3 hydraulic variable rate motors
- 36 Row electric row clutches
- 24 individual swath control sections/outputs

If more than 3 motors, or more than 24 individual swath outputs or more than 36 rows of clutches, a secondary RFM will be required.

Item	Part #	Price	Qty	Total
RowFlow Base Kit (currently not shipping until after May 2022 for new orders)	727202			\$
Row Flow Module (RFM)	727001		1 per kit	\$
RFM Base Harness	727011		1 per kit	\$
CAN with Power Extension 24' Harness	727107		1 per kit	\$
RFM Mounting Kit	727008		1 per kit	\$

Secondary RowFlow Module Kit (RFM)

A Secondary RowFlow Module is required if -

- More than 3 hydraulic motors are running
- More than 36 rows of clutches
- More than 24 swath outputs is desired

Item	Part #	Price	Qty	Total
Secondary RowFlow Module Kit (currently not shipping until after May 2022 for new orders)	727101			\$
Row Flow Module (RFM)	727001		1 per kit	\$
RFM Base Harness	727011		1 per kit	\$
Secondary RFM Mounting Kit	727024		1 per kit	\$

Step 2 - Cab Control Module

All RowFlow systems are required to have a Cab Control Module (CCM)

Cab Control Module

Make sure that the correct CCM is selected. A GEN 2 Display requires a GEN2 CCM and Gen 1 Display needs a GEN 1 CCM.

A GEN 2 display has 1 USB port on the side and GEN 1 Display has 2 USB ports on the side.

Item	Part #	Price	Qty	Total
Cab Control Module 1 (CCM 1)	727002			\$
Cab Control Module 2 (CCM 2) - For Gen 2 - 2020 only	727062			\$

Step 3 - CAN Extension and AUX Power

CAN Extensions

CAN extensions connect the RowFlow Module to the back of the 2020 Display. A 24' extension comes with the RowFlow base kit. If the RFM is mounted at the hitch, an extension is likely not needed. If the RFM is mounted back on the planter, measure from the hitch to the RFM to determine how long an extension you will need.

Item	Part #	Price	Qty	Total
CAN with Power Extension 24' Harness	727107			\$
CAN with Power Extension 35' Harness	727108			\$
CAN with Power Extension 45' Harness	727104			\$
CAN with Power Extension 60' Harness	727109			\$

Auxiliary Power - Tractor Battery

Auxiliary power is needed depending on what is being run by the RowFlow Module. If more than 7 amps of current is being used by the RFM, Auxiliary power is necessary.

- 0.5 Amps - per each electric clutch
- 2 Amps - per each Tru Count Valve Box
- 2 Amps - per each Hydraulic Motor

Preferred Auxiliary power source is from the battery. If using the Battery as the AUX power source, order the tractor power harness connection that goes from the battery to the hitch.

Note: On Deere Bauer 2012 and newer planters it is possible to pull AUX power for RowFlow from the Smart Connector Bulk Head Harness. No additional power harnesses are required unless the RowFlow module will not reach the bulk head. (use the 25' 2 pin weatherpack power extension (725921) if needed)

Item	Part #	Price	Qty	Total
Tractor Power Harness Cable Kit	726288			\$

Planter Power Harness extension (RowFlow)

It will be necessary to measure from the hitch to the RFM to determine which size planter power harness is necessary

Item	Part #	Price	Qty	Total
Aux Power Extension 6' Harness (Anderson to WP)	727143			\$
Aux Power Extension 35' Harness (Anderson to WP)	727114			\$
Aux Power Extension 60' Harness (Anderson to WP)	727137			\$
2 Pin WP Power Extension - 25' (replaces 727126)	725921			\$

* Only needed if the planter power extension harness does not reach the RFM and additional length is required.

MX Power Option

- If the planter is a 2009 or newer John Deere with an ISO ready tractor (and has the ISO harness connection plugged in), the RowFlow system can source Auxiliary Power through the ISO connection on the tractor and the John Deere planter harness.
- Use the 727153 harness that goes from 2 pin weather pack to John Deere's MX power connection. This MX power connection is generally located in the center of the planter and will often have "EPM" or "EPM power" tags close to the connection.
- If using this MX connection for a different clutch or electronic system, use the tractor power harness option listed above.

Item	Part #	Price	Qty	Total
Power Splitter - 2 Pin MX Connector (2009 & newer SeedStar)	727153			\$

Step 4 - Swath Control

Ag Leader Electric Clutches (SureStop & SureVac) - Existing Ag Leader harness installed

- Needed when using existing Ag Leader clutch harness with Molex connector
- Each Ag Leader harness only supports 12 sections
- One SeedCommand harness per Ag Leader Clutch Module is required

Item	Part #	Price	Qty	Total
Ag Leader SeedCommand Harness with Molex connector	727118			\$

Ag Leader, Case Cable Drive, White Cable Drive "Build Your Own" Clutch Harness

Please use the Order Resources below (Appended to the end of PDF Guide) to determine what harnesses are necessary for a Build Your Own clutch layout on the planter.

Item	Part #	Price	Qty	Total
4 Row Electric Clutch Harness - Ag Leader	727135			\$
15' 6-pin WeatherPack Extension	727133			\$
30' 6-pin WeatherPack Extension	727162			\$
15' Individual Row Clutch Extension for Ag Leader	727144			\$
2 Row Clutch Merger Harness (for planters with 25-54 rows)	727176			\$

John Deere Electric Clutches (Row Command)

Item	Part #	Price	Qty	Total
RowCommand harness with 47-pin Deutsch (2011+)	727193			\$
RowCommand harness with 35-Pin Deutsch (2009-2011)	727117			\$
JD RowCommand Row Harness*	727163			\$

*This will be needed for 2009 planters and newer that were NOT ordered with clutches from the factory. This Row harness will be needed to connect the clutches to the JD SeedCommand Harness

John Deere "Build Your Own" Clutch Harness

Please use the Order Resources below (Appended to the end of PDF Guide) to determine what harnesses are necessary for a Build Your Own clutch layout on the planter.

Item	Part #	Price	Qty	Total
4 Row Electric Clutch Harness - JD	727134			\$
15' 6-pin WeatherPack Extension	727133			\$
30' 6-pin WeatherPack Extension	727162			\$
15' Individual Row Clutch Extension for JD Row Command	727145			\$
2 Row Clutch Merger Harness (for planters with 25-54 rows)	727176			\$

Deere Bauer Clutch Harnesses (RowCommand)

- All DB planters 2012 and later use the Bulkhead Connector (Part # 725702) (row configuration does not matter)
- All of the DB clutch harness prior to 2012 connect (3) 24 pin clutch connectors from the wings and the center section to the RFM base harness (the 6-pin weatherpacks)
- Harness 727163 (JD Row Command Row Harness) may be necessary if the planter was not ordered with clutches on it from the factory.

Item	Part #	Price	Qty	Total
2012+ DB Clutch Harness (Bulkhead Connect)	725702			\$
Harness, Clutch Merger DB44 24 Row 22" (8-8-8)	727154			\$
Harness, Clutch Merger DB58 32 Row 22" (11-10-11)	727155			\$
Harness, Clutch Merger DB60 24 Row 30" (9-6-9)	727188			\$
Harness, Clutch Merger DB60 36 Row 20" (13-10-13) & DB66 36 Row 22"	727156			\$
Harness, Clutch Merger DB60 47 Row 15" (16-13-16) & 48 Row (16-13-17)	727166			\$
Harness, Clutch Merger DB80 32 row 30" (13-6-13)	727157			\$
Harness, Clutch Merger DB80 48 Row 20" (19-10-19) & DB88 48 Row 22"	727158			\$
Harness, Clutch Merger DB90 36 Row 30" (15-6-15)	727159			\$
Harness, Clutch Merger DB90 54 Row 20" & DB99 54 Row 22" (22-10-22)	727201			\$
Harness, Clutch Merger DB120 48 Row 30" (21-6-21)	727160			\$

Tru Count Pneumatic Clutches

All Tru Count Clutches need to connect to RowFlow is 6-pin weatherpack extensions to go from the valve box to the RFM base harness.

Item	Part #	Price	Qty	Total
15' 6-pin WeatherPack Extension	727133			\$
30' 6-pin WeatherPack Extension	727162			\$

1/2 Width Disconnect Solenoids

All 1/2 Width Disconnects need Auxiliary Power. **It is not optional.** The one difference is that AUX power will go directly to the Relay Module harness instead of plugging into the RowFlow Base Harness. See install instructions for further details.

Item	Part #	Price	Qty	Total
Relay Module Harness - Section Disconnects for up to 4 Disconnects	727115			\$
Relay Module Harness - Great Plains (Normally Closed)	727184			\$
Solenoid extension, 40' 2-pin WeatherPack (John Deere)	727173			\$
Solenoid extension, 40' with eyelets (KZ, Tru - Count & some JD)	727172			\$
Harness - 4-pin WeatherPack to 2-pin WeatherPack for TC 1/2 Width	727169			\$

Step 5 - Hydraulic Drives

RowFlow can control most hydraulic variable rate seeding drives on the market. It has to be a PWM controlled valve and must have a shaft speed sensor. See below for the list of motors that we currently work with. Precision Planting also sells complete hydraulic drive kits to install on ground drive planters

Precision Planting Hydraulic Drives

A single Precision Planting hydraulic drive -

- Runs up to 16 rows on a single drive
- uses about 4 GPM per drive
- Comes with a Pressure sensor mounted directly in the manifold.

Item	Part #	Price	Qty	Total
Precision Planting Hyd Motor Kit	727105			\$
Hyd Motor with Speed & Pressure Sensor	727009		1 per kit	\$
Sprocket, 18 Tooth #40 Roller Chain	727010		1 per kit	\$
Sprocket, Split 36 Tooth #40 7/8 Shaft	727013		1 per kit	\$
Universal Mounting Bracket Kit	727014		1 per kit	\$
Roller Chain and Connector Link	727018		1 per kit	\$
15' Hydraulic Motor Harness	727111		1 per kit	\$

Existing Hydraulic Drives

Order the following for existing hydraulic drives

- John Deere - 15' Motor Harness w/pressure sensor (727110)
- Kinze - 15' Motor Harness w/pressure sensor (727110) & Deutsch valve adapter (727127)
- Case IH - Case IH Hydraulic Motor Harness kit (727185)
- Great Plains, Dickey John, Agco/White - 15' Motor Harness w/pressure sensor (727110) & WeatherPack valve adapter (727128)
- White 9000 (12 rows, early year models only) - 15' Motor Harness w/pressure sensor (727110) & Metripack valve adapter (727204)
- Rawson - Serial extension (length as necessary. Not over 15')

Note: For all motors other than John Deere, it will be necessary to order diagnostic Tees to install the pressure sensor. Please order according to the hose size at the motors.

Item	Part #	Price	Qty	Total
15' Hydraulic Motor harness with Pressure Sensor	727110			\$
Case IH Hydraulic Motor Harness Kit	727185			\$
Deutsch valve connector adapter	727127			\$
Weatherpack valve connector adapter	727128			\$
Metripack Valve Adapter Harness	727204			\$

Hydraulic Diagnostic Tees - for Pressure Sensor

For all existing motors other than John Deere, a diagnostic tee is required to install the pressure sensor. Order the correct sized diagnostic Tee based on the size of the hydraulic hose connecting to the hydraulic motor drive. Preferred mounting location is in the pressure line right at the motor block.

Item	Part #	Price	Qty	Total
Diagnostic Tee - 6	726566			\$
Diagnostic Tee - 8	726567			\$
Diagnostic Tee - 10	726568			\$
Diagnostic Tee - 12	726569			\$
Reducer -6 ORB to -4 ORB	726650			\$

Miscellaneous Hydraulic Drive Requirements

Notes on Miscellaneous Drive requirements

- If the 15' Motor Harness does not reach the RFM, use the 15' Hydraulic motor harness extension. It will go between the Motor harness and the RFM motor connections.
- If installing Precision Planting motors on a White/Agco Planter, you will need the 3/4" hex Split Sprocket.
- If installing Precision Planting motors on a John Deere 7000 planter, you will need the 9/16" to 7/8" hex adapters to get the Split Sprocket to fit on the 7000 9/16" hex shaft.

Item	Part #	Price	Qty	Total
15' Hydraulic motor Harness Extension	727125			\$
Hex Adapter 9/16" to 7/8"	727138			\$
Hex Shaft Coupler (3" x 7/8")	727142			\$
Split Sprocket 3/4" Hex (White) - 36T40	727050			\$
Aux Remote Control (Moves switch to tractor console)	727148			\$
Harness, Adapter Case IH Speed Sensor	727170			\$
Resistor. Case IH Pseudo Valve	727180			\$
15' Case IH Speed Sensor Extension (3 pin deutsch)	727194			\$
Hydraulic Pressure Sensor - DeltaForce/RowFlow	727007			\$
Speed Sensor, PP Hydraulic Motor	727048			\$

Step 6 - Lift Switches

Lift Switches are required for RowFlow systems that are running Hydraulic drives. If the system is only running clutches (Swath only system), a lift switch is not required but is still recommended. If the system is running either AirForce or DeltaForce, the lift switch must be connected to the RowFlow Base harness not to an SRM, RUM, or PDM. RowFlow requires the lift switch data before the other systems will.

RowFlow has three different options for a lift switch. It can be 2 push buttons, a single whisker switch, or use a rotary height sensor that is currently installed on the planter. Please choose one of the three options.

Option 1 - Push Buttons

RowFlow will require 2 push button switches and they will be connected by the Lift Switch Harness (727112). This harness will tie 2 switches into a single 3 pin weather pack that plugs into the RowFlow Base harness. If AirForce is currently installed, the lift switch that is currently plugged into the RUM can be plugged into the Lift Switch harness (727112) and it will count as one of the 2 push buttons.

Item	Part #	Price	Qty	Total
Lift Switch Harness	727112			\$
Lift Switch - JD 1700/7200/17x5/ME5 Regular	726150			\$
Lift Switch - JD 1700/7200/17x5/ME5 Long	726260			\$
Lift Switch - JD 7000 or Kinze 2000/3000	726265			\$
Lift Switch - Case IH 12xx /White 9000	726635			\$
Great Plains	726615			\$
Lift Switch - White 5000/6000/8000	726655			\$

Option 2 - Whisker Switch

Only one Whisker switch is required for RowFlow. Please make sure that the mounting location is solid and does not move when installing the Whisker Switch.

Item	Part #	Price	Qty	Total
Whisker Switch with cable	727123			\$

Option 3 - Rotary Height Sensor

If running RowFlow without SeedStar, use the (727178) Rotary Height Sensor Harness. If SeedStar is running along side RowFlow, then use the (727168) Rotary Height Y Sensor Harness.

Item	Part #	Price	Qty	Total
9' John Deere Rotary Height Sensor Harness	727178			\$
John Deere Rotary Height Sensor Y Harness	727168			\$
Case IH Rotary Height Sensor Y Harness	727171			\$
15' Height Switch Extension (3 Pin WeatherPack)	727116			\$

Step 7 - Radar

Radar is required to meet Precision Planting Performance with RowFlow

Dickey John Radar

The Dickey John Radar is only needed on tractors that are not equipped with a compatible radar

Item	Part #	Price	Qty	Total
Dickey John RVS III Radar(Includes Mounting Bracket)	727136			\$

Radar Adapter Harnesses

Item	Part #	Price	Qty	Total
John Deere 30, R, & RT series Cab Adapters	727122			\$
John Deere 10 & 20 series Cab Adapter	727141			\$
Raven 3 pin to DJ 4 Pin	727167			\$
Case MX & STX Adapter Harness	727139			\$
Dickey John Radar 6' Extension with splitter	727129			\$

Step 8 - RowFlow Liquid

RowFlow Liquid Requires a hydraulic motor with a shaft speed sensor and lift switch information.

Also RowFlow Liquid requires a positive displacement pump in order for it to work. Examples of a positive displacement pump are piston pump, squeeze pump, roller pump, and diaphragm pump. Centrifugal pumps are not positive displacement and will not work with RowFlow Liquid.

Planter Liquid Kits

Use the equations below to determine which size flow meter to use based on GPM.

- $GPA = (GPM \times 5940) \div (MPH \times Row\ Spacing\ (inches))$
- $GPM = (GPA \times MPH \times Row\ Spacing\ (Inches)) \div (5940)$

Note: The low flow kit and flow meter (727308 and 727305) changed to a flow range of 1-9 gpm instead of the .5 - 12 gpm. Effective on all orders after 3-19-21

Item	Part #	Price	Qty	Total
Low Flow Liquid Kit (1-9 GPM - Changed 3-19-21)	727308			\$
Pressure Sensor, Liquid	727301		1 per kit	\$
Pressure Sensor Harness, Liquid	727302		1 per kit	\$
Flow Sensor Harness	727303		1 per kit	\$
Flow Meter (FM 750 LF) (1-9 GPM - Changed 3-19-21)	727305		1 per kit	\$
Standard Flow Liquid Kit (5-40 GPM)	727309			\$
Pressure Sensor, Liquid	727301		1 per kit	\$
Pressure Sensor Harness, Liquid	727302		1 per kit	\$
Flow Sensor Harness	727303		1 per kit	\$
Flow Meter (FM 750 GFN) (5~40 GPM)	727306		1 per kit	\$

Side-Dress Liquid Kits

Two options exist for Side-Dress systems.

1. Option 1 reuses the RowFlow Base harness from the planter (Seeding RowFlow Base Harness) and adds the "Sidedress Flow and Pressure sensor harness" (727307). The flow sensor and pressure sensor plug into the 727307.
2. Option 2 is to purchase a new RowFlow Liquid Base harness (727310) that has the connections for the Flow and Pressure sensors built into the Base Harness.

Note: Sidedress harnesses do not come with flow and pressure sensors. They have to be ordered separately.

Use Order Resources chart to determine which size flow meter you will need.

Item	Part #	Price	Qty	Total
Sidedress Flow and Pressure Sensor Harness	727307			\$
Sidedress Base Harness	727310			\$
Pressure Sensor, Liquid	727301			\$
Flow Meter (1-9 GPM - changed 3-19-21)	727305			\$
Flow Meter (5~40 GPM)	727306			\$

Accessories

Item	Part #	Price	Qty	Total
SRM/RUM AUX Harness Extension - 12'	727304			\$

Reveal

Step 1 - Row Cleaner and Gauge Wheel Assemblies

Row Cleaner Assembly

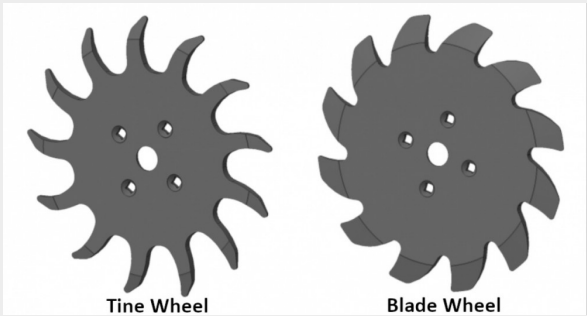
- Order 1 Reveal Row Cleaner Assembly per row.
- The Internal Gauge Wheel Assembly is considered fundamental to the reveal row cleaner system. Order 1 assembly per row.
- For specific compatibility, see step 3 (Mounting Brackets)

Item	Part #	Price	Qty	Total
Reveal Row Cleaner Assembly	757000			\$
Internal Gauge Wheel Assembly	757010			\$

Step 2 - Cleaning Wheels

Cleaning Wheels

- Tine Wheel** - The tine wheel is the best all around wheel. It is the recommended wheel for 95% of all conditions, including no-till and conventional conditions.
- Blade Wheel** - The blade wheel would be used in extreme no-till and tall cover crop situations only.



Note: Order 1 left wheel and 1 right wheel

Item	Part #	Price	Qty	Total
Tine Wheel (Right)	757020			\$
Tine Wheel (Left)	757021			\$
Blade Wheel (Right)	757028			\$
Blade Wheel (Left)	757029			\$

Treader Wheel

Optional Treader Wheel Kit

In addition to the standard internal gauge wheel, the high-wear plastic treader wheel kit provides an advantage, and is now also recommended for the following conditions:

- Heavy and/or piled-up residue:
 - Directs residue trajectory lower, limits overthrowing and bunching, prevents getting buried in residue piles.
- Conventional till:
 - Breaks up clods, provides additional flotation if desired.
- Cover crops:
 - Rolls crop forward, reducing wrapping around cleaning wheel tines

*When combined with the internal gauge wheel, the treader is not the primary limiter of cleaning wheel tine engagement.

Order 2 treader wheels per row

Item	Part #	Price	Qty	Total
Treader Wheel Kit	757039			\$

Hub Kit

Order 2 kits per row

Item	Part #	Price	Qty	Total
Cleaning Wheel Hub Kit	757038			\$

Wheel Spindle Kits

The standard wheel spindle kit mounts the cleaning wheels at the standard angle and is optimal and recommended for most applications.

The narrow wheel spindle kit includes wedge kits and mounts the cleaning wheels at a reduced angle and is only recommended for narrow row planters.

Order 1 kits per row.

Item	Part #	Price	Qty	Total
Wheel Spindle Kit - Standard	757036			\$
Wheel Spindle Kit - Narrow	757037			\$

Step 3 - Mounting Brackets

Mounting Brackets

The style of mounting/interface brackets needed is specific to planter make, model, and individual row:

- Some planter models will need a combination of bracket styles to accommodate row-specific interferences.
- Order 1 mounting bracket per row
- With the setback style interface brackets (757060 and 757063) the Reveal mount is built into the setback and will not require an additional mount.

For planter compatibility and guidance on types and quantities of mounting brackets needed, please see the compatibility guide and Reveal bracket mounting specs guide below:

- It is HIGHLY recommended that you take measurements or make visual confirmation on the planter, across all rows, to verify compatibility using the Reveal Dimensional Specifications guide below.
- For all Harvest planters, it is required that the below provided Reveal Dimensional Specifications guide is used to physically measure and confirm compatibility. This especially applies to narrow row spacings (15" and 20") where wing tire width and other interferences may provide clearance issues for specific rows. At this time Reveal is not compatible with narrow twin-row style Laser Pro parallel arm assemblies.
- Direct-mount brackets cannot be used on DB toolbars with upper structural tubes over the main toolbar that are supported by vertical gusset plates that fall between the row unit u-bolts. In this case, the parallel-arm style brackets must be used. To confirm, inspect the specific planter as many frame versions and row spacing combinations exist that affect this compatibility factor.

Item	Part #	Price	Qty	Total
Parallel Arm Style Interface Bracket - JD Narrow	757050			\$
Parallel Arm Style Interface Bracket - JD Wide	757053			\$
Parallel Arm Style Interface Bracket - Kinze, PP	757056			\$
7x7 Direct Mount Style Interface Bracket	757059			\$
Setback Style Interface Bracket - 6.25" (Kinze)	757061			\$
Setback Style Interface Bracket - 10" (JD)	757063			\$
Direct Mount Style Bracket (JD 1770NT 24 Row)	757071			\$
Mounting Kit - KZ 4000	757082			\$

Step 4 - Control Kits

Compressor Options

If AirForce is installed use 755278.

If desired to see tank pressure in the cab and are also using the Row Cleaner Control Module it is necessary to add the Tank Pressure Sensor to the system. It has to be plugged into the Can Expansion Hub.

Item	Part #	Price	Qty	Total
Row Cleaner Update Kit for AirForce Compressor	755278	\$90.00		\$
Standard Capacity Electric Compressor Kit	755279	\$1,200.00		\$
High Capacity Electric Compressor Kit	755280	\$1,750.00		\$
Tank Pressure Sensor (Smart Sensor)	756555	\$135.00		\$

Controller Options

Select the desired controller - Simple manual controller or the Row Cleaner Control module kit.

The Row Cleaner Control Module will need to plug into a CAN Expansion Hub for power and communication. The 755300 kit comes with a 40" jumper, it is not necessary to purchase a separate jumper unless you need a different length. You can use any existing CAN Expansion Hub or add one from the next group. **Requires a Gen 3 Display, a Cab Control Module, and SRMs installed on the planter.**

Note: Row Cleaner Control Module will require 2021.1.x software to run

Order 1 per planter.

Item	Part #	Price	Qty	Total
Manual Row Cleaner Controller (Controller only)	755277			\$
Row Cleaner Control Module Kit	755300			\$
20 20 Gen 3 Cab Control Module	725103			\$

Row CAN Expansion

The 755300 Row Cleaner Module Kit comes with a 40" CAN jumper which will plug into an existing CAN Expansion Hub. If you need to source a different length of CAN jumper or if you don't have a CAN Expansion Hub currently, you can order the appropriate items below.

Item	Part #	Price	Qty	Total
Row CAN Expansion HUB Kit	729500			\$
Black Connector - Row Can Jumper - 12" (Inches) --- For first device	729481			\$
Black Connector - Row Can Jumper - 20" (Inches) --- For first device	729482			\$
Black Connector - Row Can Jumper - 30" (Inches) --- For first device	729483			\$
Black Connector - Row Can Jumper - 40" (Inches) --- For first device	729489			\$
Black Connector - Row Can Jumper - 50" (Inches) --- For first device	729485			\$

Step 5 - Air Lines and Fittings Kits

Air Line Fitting Kits

1 Per Planter

Item	Part #	Price	Qty	Total
Air Lines and Fittings Kits, 8-row	755035			\$
Air Lines and Fittings Kits, 12-row	755040			\$
Air Lines and Fittings Kits, 16-row	755085			\$
Air Lines and Fittings Kits, 24-row	755045			\$
Air Lines and Fittings Kits, 36-row	755050			\$
Air Lines and Fittings Kits, 48-row	755065			\$
Air Lines and Fittings Kits, 54-row	755070			\$

CleanSweep

Step 1 - CleanSweep Control Kits

Compressor Options

If AirForce is installed use 755278.

If desired to see tank pressure in the cab and are also using the Row Cleaner Control Module it is necessary to add the Tank Pressure Sensor to the system. It has to be plugged into the Can Expansion Hub.

Item	Part #	Price	Qty	Total
Row Cleaner Update Kit for AirForce Compressor	755278			\$
Standard Capacity Electric Compressor Kit	755279			\$
High Capacity Electric Compressor Kit	755280			\$
Tank Pressure Sensor (Smart Sensor)	756555			\$

Controller Options

Select the desired controller - Simple manual controller or the Row Cleaner Control module kit.

The Row Cleaner Control Module will need to plug into a CAN Expansion Hub for power and communication. The 755300 kit comes with a 40" jumper, it is not necessary to purchase a separate jumper unless you need a different length. You can use any existing CAN Expansion Hub or add one from the next group. **Requires a Gen 3 Display, a Cab Control Module, and SRMs installed on the planter.**

Note: Row Cleaner Control Module will require 2021.1.x or later software to run

Order 1 per planter.

Item	Part #	Price	Qty	Total
Manual Row Cleaner Controller (Controller only)	755277			\$
Row Cleaner Control Module Kit	755300			\$
20 20 Gen 3 Cab Control Module	725103			\$

Row CAN Expansion

The 755300 Row Cleaner Module Kit comes with a 40" CAN jumper which will plug into an existing CAN Expansion Hub. If you need to source a different length of CAN jumper or if you don't have a CAN Expansion Hub currently, you can order the appropriate items below.

Item	Part #	Price	Qty	Total
Row CAN Expansion HUB Kit	729500			\$
Black Connector - Row Can Jumper - 12" (Inches) --- For first device	729481			\$
Black Connector - Row Can Jumper - 20" (Inches) --- For first device	729482			\$
Black Connector - Row Can Jumper - 30" (Inches) --- For first device	729483			\$
Black Connector - Row Can Jumper - 40" (Inches) --- For first device	729489			\$
Black Connector - Row Can Jumper - 50" (Inches) --- For first device	729485			\$

Step 2 - Compressor Mount Kit

Mounting Options - Select the correct one

Use the Order Resources below to assist in selecting the correct compressor mounting bracket. (only necessary if Airforce is not installed)

Item	Part #	Price	Qty	Total
JD 7000 / 7200 - 20' Bar - Rigid Tongue (5 x 7 U-bolts) Mounts on tongue	726055			\$
Kinze Rear Fold (4 x 4 U-bolts)	726397			\$
JD 7000 / 7200 - 20' Bar- Folding Tongue (3/8 bolts) Mounts on tongue	726059			\$
Kinze 2000 / 3000 2-Tube Tongue (J-bolts) Mounts to Tongue	726398			\$
JD 7000 / 7200 / 1770 Cons. 30' Bar (3 x 8 U-bolts) Mounts on draft tube	726052			\$
JD 7000 / 7200 / 1770 Cons. 40'-60' Bar (3 x 5 U-bolt) Mounts on draft tube	726050			\$
JD 7000 / 7200 / 1770 / 1770NT /1790 Mounts on cross bar of 3-pt hitch	726515			\$
JD All Front Fold Models (High Mount Brackets) Mounts to draft tube	726470			\$
JD 7100 / 7300 / 1700 / 1710 Rigid/Vert. Fold (7 x 7 w/ spacer) Mounts over bar	726056			\$
Kinze 2200 / 3200 Wing Fold (4 x 7 U-bolts) Mounts to Tongue	726054			\$
Kinze 2500 / 3500 7x7 Tube Low Mount	726612			\$
JD 7300/1720 Stack Fold (7 x 4 w/ spacer) Mounts over center bar	726500			\$
Kinze 2600 / 3600 12 Row 8x8 Tube Low Mount	726613			\$
JD 7100 / 7300 / 1700 / 1710 / 1720 (7 x 7) Mounts in front of bar	726060			\$
JD 1760 (8 x 10 U-bolts) Mounts on tongue	726057			\$
JD DB ? 80' Bar (3 x 6 U-bolts) Mounts on draft tube	726051			\$
JD DB > 80' Bar (4 x 6 U-bolts) Mounts on draft tube	726053			\$
JD 1770NT / 1790 / DB Hyd Comp (8 x 12 U-bolts) Rear mount to center frame	726490			\$
Universal / Custom Mount (Fits 3 x 3 tube up to 8 x 12 tube)	726450			\$
Kinze 2600 / 3600 8 & 12 Row (8 x 8 U-bolts w/ Spacer) Mounts to tongue	726058			\$
Kinze 2600 / 3600 16 Row (10 x 10 U-bolts w/ Spacer) Mounts to tongue	726455			\$
Kinze 2700 / 3700 (Side Mount Brackets) Mounts to side of hitch	726435			\$
Kinze 2600 / 3600 16 Row 10x10 Tube Low Mount	726614			\$

Note: For Case IH, White, and Great Plains, the commended mounting bracket is the Universal/Custom (726450) or the High Mount (726470)

Step 3 - Air Line & Fitting Kits

Air Line Fitting Kits

1 Per Planter

Item	Part #	Price	Qty	Total
Air Lines and Fittings Kits, 8-row	755035			\$
Air Lines and Fittings Kits, 12-row	755040			\$
Air Lines and Fittings Kits, 16-row	755085			\$
Air Lines and Fittings Kits, 24-row	755045			\$
Air Lines and Fittings Kits, 36-row	755050			\$
Air Lines and Fittings Kits, 48-row	755065			\$
Air Lines and Fittings Kits, 54-row	755070			\$

Step 4 - Air Cylinder & Brackets

CleanSweep Air Cylinder

1 Cylinder required per row

Item	Part #	Price	Qty	Total
CleanSweep Air Cylinder (Heavy Duty Fittings) - (replaces 755023)	755271			\$

Cylinder Bracket and Hardware

Before selecting a bracket or quoting a CleanSweep system, please use the Order Resources below for complete CleanSweep Compatibility and to help identify the specific row cleaner that is installed on the planter. DO NOT ORDER the bracket based on the Row Cleaner Identification Guide. All brackets must be ordered from the CleanSweep Compatibility Guide.

Item	Part #	Price	Qty	Total
Bracket and Hardware Kit, Martin BD,BK,BW, BCIH 1360	755200			\$
Bracket and Hardware Kit, Martin BDC 1360	755205			\$
Bracket and Hardware Kit, Martin C125 MTR-XP, MTR (JD7200, 1700, Kinze)	755195			\$
Bracket and Hardware Kit, Martin C125 MTR(JD 7000) MTR-81(White) MTR-IH	755225			\$
Bracket and Hardware Kit, Martin C125 MTS, MTS-XP, MTS-81 (White), MTS-IH	755190			\$
Bracket and Hardware Kit, Yetter 2967-007 (JD7200, 1700)	755185			\$
Bracket and Hardware Kit, Yetter 2967-042, 2967-043 (JD 7200, 1700)	755160			\$
Bracket and Hardware Kit, Yetter 2967-115 (JD 7000, 7200, 1700, Kinze)	755170			\$
Bracket and Hardware Kit, Yetter 2967-035 (JD 7200,1700,Kinze)	755180			\$
Bracket and Hardware Kit, Yetter 2967-035 (Low) JD 7000, White	755230			\$
Bracket and Hardware Kit, Yetter 2967-035 (short brkt) (JD 7000,7200,1700, KZ, WH)	755175			\$
Bracket and Hardware Kit, Yetter 2967-029 (John Deere, Kinze, White)	755265			\$
Bracket and Hardware Kit, Yetter 2967-097 (Case IH)	755245			\$
Bracket and Hardware Kit, Yetter 2967-013 (John Deere, Kinze, White)	755270			\$
Bracket and Hardware Kit, Yetter 2967-014 (Case IH)	755250			\$
Cylinder Pin Kit, Yetter 2967-029, 2967-097, 2967-013, 2967-014 (For 2016 + Models)*	755255			\$

* Cylinder mounting bracket is built into the row cleaner on year 2016 and later for 2967-029/-097/-013/-014 models. Model year is designated by the suffix "A" - Example : 2967 - 029A. Does not include any other models that contain an "A". If the model contains an "A" and is listed above, use the 755255 Cylinder Pin Kit (cylinder pins and hardware). **A 2967-042A/043A still needs the bracket kit not the pin kit!**

Step 5 - Accessory Kits

Accessories

Item	Part #	Price	Qty	Total
APEX - CleanSweep Power Adapter	729195			\$
12' Power Harness Extension (For CleanSweep Compressor)	755100			\$
Shim for Cylinder Base Mount (w/ 755180, 755195, and JD Cast Coulter)	755159			\$
Stop Kit for JD 7200/1700/17X5 (1/8" stop)	755202			\$
Stop Kit for JD7200+ Row Unit height (1/4" stop)	726530			\$
Stop Kit for Case IH (Required with DeltaForce on bracket kits 755245 & 755250)	755231			\$
Yetter 2967-042,043 Shim Kit (used when no coulter is installed)	755209			\$
3-Pin Power Adapter to 48" lead wires	725292			\$
90 Degree PTC - NPT Elbow Fitting	726111			\$
1/4" NPT to 1/4" PTC Elbow - Heavy Duty	755272			\$
1/4" NPT to 1/4" PTC Straight	726107			\$
Mud Plate (for back of 3.5" treader)	755192			\$
Single Suction Cup Base for RAM Arm	725237			\$
RAM Mount Kit - includes (2) 1.5 ball with 6" arm (1 ball has 1/4" post)	725708			\$

Step 6 - Treader Wheel & Hardware Kits

- Larger treader wheel prevents row cleaner from cutting too deep. Standard treader wheels are 1.75" wide
- May be needed in full tillage or mellow field conditions to help control depth and prevent "plowing"
- Wide Treader wheels are not compatible with Narrow Transport (NT) planters

Treader Wheels & Hardware Kits

It is necessary to order the treader wheel and the correct hardware kit. The existing hardware may not work with the new treader wheels.

Item	Part #	Price	Qty	Total
3.5" Treader Wheel Kit, Universal (Set of two treader wheels for one row)	755060			\$
Martin 4 bolt treader wheel hardware kit	755075			\$
Yetter 4 bolt Treader wheel hardware kit	755080			\$
Martin 3 Bolt treader wheel hardware kit	755110			\$

Step 1 - eSet Kits

eSet Kits - With Corn Kits

Use the eSet Crop Setup Guide below (attached at the end of PDF version) to determine if any additional parts are needed for each crop desired to be planted.

Item	Part #	Price	Qty	Total
Standard eSet (after 1990) & 17X5/ME5 (all hoppers sizes)	720370			\$
Pro Series/Mini Hopper eSet	720136			\$

Crop Options

If it is desired to plant crops with eSet technology other than Corn, please refer to the list of disks and specialty parts below. For complete recommendations and requirements on all crops, refer to the eSet Crop Setup guide.

Note: If the crop setup guide specifies a regular singulator, either the regular or the specialty singulator may be used. If a crop specifies a specialty singulator though it is required to use the specialty singulator.

Item	Part #	Price	Qty	Total
eSet Corn Disk .176"	720003			\$
Soybean Disk .155" 60 hole (Narrow row Soybeans)	720286			\$
Specialty Disk (A) .100"	7200030			\$
Specialty Disk (B) .115" (Sunflower 3 & 4)	7200031			\$
Specialty Disk (C) .125" (Sunflower 1&2, Small Sweetcorn)	7200032			\$
Specialty Disk (D) .135" (Medium Sweetcorn)	7200033			\$
Specialty Disk (E) .145" (Sunflower Confectionary, Large Sweetcorn)	7200034			\$
Specialty Disk (F) .155"	7200035			\$
Specialty Disk - Male Corn Rows	7200036			\$
Small Sugar Beet Disk (anti-static) .062" 60 hole	720284			\$
Large Sugar Beet Disk (anti-static) & (Sorghum) .088" 60 hole	720282			\$
Singulated Cotton Disk .100" 60 hole	720285			\$
Canola Disk 90 Hole	720301			\$
Blank eSet Disk Kit (up to 90 holes)	720300			\$
Specialty Singulator (replaced 720272)	720386			\$
Seed Deflector Cover Tube for Small Seed Crops	720281			\$
Canola Wiper Kit - Pro-Series eSet	720305			\$
Canola Wiper Kit - Standard eSet	720295			\$
Canola Wiper Kit - ME5/ 17X5 Series eSet Kit (use with 720370 eSet Kit)	720381			\$
Specialty Extractor	720117			\$

Step 2 - eSet Pro Series Options

eSet Pro Options

For some planters, additional parts will be necessary.

- For 1790 planters, it may be necessary to change the seed delivery elbow on the center 4 rows. Use the Elbow Kit (720206) (Normally 1/planter)
- For 1790/1795 Planters with short parallel arms on the 30" rows, it will be necessary to install the stop kits on 4 rows of the planter. Order 4 kits of (720248) per planter
- The Step Kit (720196) is necessary on 1790/1795 planters on 20" rows. For 2004+ models (serial # 705101+), no modification is necessary. For models 2003 and earlier (serial # 705100-), some modification will be necessary. It is not needed if on 20" rows and also have a rear hitch.
- The Flap Kit (720244) is necessary on rows that will tip up (i.e. 20" corn rows and 15" bean rows). The flap will stop seed from flowing back into the seed delivery hose and plugging up.
- For planters over 32 rows, a Y tube kit is required to send seed to all the rows. Order 1 (720245) per row over 32 rows.

Note: For more information on each part number, click the document icon to see more instructions on when and where each one is used.

Item	Part #	Price	Qty	Total
CCS 90 Degree Elbow (Kit of 4)	720206			\$
Stop Kit, 15" 1790 planters - 12/23, 12/24, 16/31, 16/32 for Pro Series	720248			\$
Step Kit - Stairs on 20" 1790/1795	720196			\$
Flap Kit - Wing rows on 15" and 20" 1790 for Pro Series	720244			\$
DB "Y"- Tube Kit for Pro Series	720245			\$
D-Tube Screen - Milo	720253			\$
D-Tube Screen - Canola/Radishes/Wheat	720288			\$

Step 3 - Specialty Items

eSet Specialty Crop Kits

eSet Specialty Kits are complete eSet kits but do not have a seed disk. The disk must be ordered separately.

Note: If the crop setup guide specifies a regular singulator, either the regular or the specialty singulator may be used. If a crop specifies a specialty singulator though it is required to use the specialty singulator.

Item	Part #	Price	Qty	Total
eSet - Standard / 17x5/ME 5 Series Specialty Crop (order disk separately)	720375			\$
eSet - ProSeries Specialty Crop (order disk separately)	720216			\$

eSet Conversion Kits

Item	Part #	Price	Qty	Total
eSet Conversion Kit - Proseries to Standard	720249			\$
eSet Conversion Kit - Standard to Proseries	720250			\$
eSet Conversion Kit - ProSeries or Standard to 17x5/ME5 series	720376			\$

Miscellaneous Specialty Parts

eFlow is recommended for best performance with eSet. Apply eFlow to at a rate of 1/8-1/4 cup per unit of seed. A single 8# container covers approximately 427 acres.

Item	Part #	Price	Qty	Total
eFlow 70/30 8# Drop Ship Only (order in qty of 112)	930020Y			\$
Plug Kit, Male Row Disk (Pk of 15)	720222			\$
eFlow 80/20 Talc Graphite Mix	930004			\$

Step 4 - Vacuum Options

Vacuum Options

Item	Part #	Price	Qty	Total
30" Vac Gauge with Filter (no Bracket)	730169			\$
Filter Plug For Vac Gauge	720261			\$
Lid Soft Seal - Pk of 2	720076			\$
Hub Seal - Pk of 2	720077			\$

Singulator Check Gauges

Item	Part #	Price	Qty	Total
Check Gauge for Singulator for Corn Disk	720277			\$
Check Gauge for Singulator for Sugar Beet Disks	720271			\$

WaveVision

Step 1 - WaveVision SeedTube

WaveVision SeedTube

- WaveVision Requires a WaveVision Keeton Seed Firmer Tail or Quick Attach Tail. All other Tails are incompatible.
- WaveVision is compatible with the following crops: Corn, Soybeans, Cotton, Sugar Beets (Regular Pellet, Gem 100, and Pro 100)
- WaveVision is not compatible with the following monitors: Agco GTA, C1000, C3000, KPM I, II, & III, Kinze Vision, Monosem MPM, SM4000, & SM 400SE
- WaveVision is not compatible with John Deere ExactEmerge planters
- For WaveVision to operate correctly, the **smallest diameter of any seed in any direction must be .150" or greater**
- WaveVision will accurately count supported crops up to 80 seeds/second. This is roughly 190,000 in a 30" row at 5 mph or 380,000 in 15" row at 5mph.

Note 1: Monosem planters that are running vSet 2 will require new Wavevisions (700290) that will fit the vSet meter. The Wavevision (700260) on Monosems can be modified to fit the vSet 2 meter.

Note 2: Monosem Firming wheel is not compatible with Wavevision.

Note 3: Kinze 4000 with vSet 2 will require WaveVision (700285) and the new QA Keeton bracket (150150), as well as a spacer (700331). See below under mounting accessories.

Note 4: It is recommended to use 700309 small grain sensor for crops smaller than wavevision is capable of detecting. It has shown improved performance seeing canola, small sugar beets and pickles. It is an optical sensor which still leaves it susceptible to seeing dust. While it is better for canola, it is possible to see 5% low on population.

Item	Part #	Price	Qty	Total
WaveVision SeedTube - John Deere 7000, Kinze, Great Plains, Yield Pro, White 8000 (vSet 2 only)	700250			\$
WaveVision SeedTube - John Deere 7200/1700/17X5, Kinze 3000(2012+)/4000	700200			\$
WaveVision SeedTube - White 5000, 6000, 8000, 9000 (For OEM Meter only - Not for vSet 2)	700255			\$
WaveVision SeedTube - Monosem (700260)	700290			\$
WaveVision SeedTube - Case IH*	700269			\$
WaveVision SeedTube - White 9000/PP Ready Row Unit**Kinze 4000 (vSet 2)	700285			\$
MCE Sensor kit (small grain sensor)	700309			\$

*WaveVision is only compatible on Case IH if vSet and vDrive are installed. Must have Black Seed Shoe as well (2009+ Planters). **Does not work with Case 2000 Series planters! Does not work with Case IH Totally Tubular under seed.**

**If using vSet on a White 8000, use the 700250. If using vSet on a White 9000, use the 700285. Do not use the 700250 or the 700285 with White OEM Meter

Mounting Accessories

A Seed tube pin and clip or a set of spring clips may be required depending on what row unit is the wavevision is being installed.

The seed tube spacer (700331) and QA Firmer Bracket (150150) are required when putting WaveVision on a Kinze 4000. Order 1 per row.

Item	Part #	Price	Qty	Total
Seed Tube Pin and Clip	700279			\$
Seed Tube Spring Clip (pack of 4)	700167			\$
1/2" Adapter (qty 1) - For Bullseye Seed Tubes	700152			\$
Hook Filler Tree (one per row)	700138			\$
Seed Tube Spacer - Kinze 4000 (one per row)	700331			\$
Kinze 4000 Quick Attach Firmer Bracket	150150			\$

Step 2 - WaveVision Power

WaveVision SeedTube sensors require more power than standard Dickey John SeedTube sensors. The following charts explain when additional power is needed.

- **All SRM systems running SeedTube data through the SRM will not need additional power.**
- The Smart Connector and Power Module need to be installed in the 37-pin connection that is closest to the row units
- A Power Module installed with a Smart Connector will require a 24" 37-pin extension (725272) to be installed between the Smart Connector and the Power Module

Power Module and Adapter Harness Requirements for SeedSense Systems with GEN 1 Smart Connector		
# of WV (Rows)	2020 SeedSense on a JD Planter	2020 SeedSense on KZ Planter
4	Nothing Needed	Nothing Needed
6	Nothing Needed	Nothing Needed
8	Nothing Needed	Nothing Needed
12	Nothing Needed	700266 10V Power Module Required
16	725667 Power Adapter Harness Required	700266 10V Power Module Required
24	725667 Power Adapter Harness Required	700266 10V Power Module Required
32	725667 Power Adapter Harness Required	700266 10V Power Module Required

Power Module and Adapter Harness Requirements for SeedSense Systems with GEN 2 Smart Connector		
# of WV (Rows)	2020 SeedSense on a JD Planter	2020 SeedSense on KZ Planter
4	Nothing Needed	Nothing Needed
6	Nothing Needed	Nothing Needed
8	Nothing Needed	Nothing Needed
12	Nothing Needed	Nothing Needed
16	725667 Power Adapter Harness Required	Nothing Needed
24	725667 Power Adapter Harness Required	Nothing Needed
32	725667 Power Adapter Harness Required	Nothing Needed

Power Module Requirements for Non- SeedSense Systems		
# of WV (Rows)	Dickey John & JD Computrac	JD SeedStar
4	Nothing Needed	Nothing Needed
6	Nothing Needed	700266 10V Power Module Required
8	700266 10V Power Module Required	700266 10V Power Module Required
12	700266 10V Power Module Required	700266 10V Power Module Required
16	700266 10V Power Module Required	700266 10V Power Module Required
24	700266 10V Power Module Required	700266 10V Power Module Required
32	700266 10V Power Module Required	700266 10V Power Module Required

WaveVision Power Options

Remember that if installing a WaveVision Power module on a Gen 1 Smart Connector, it will be necessary to have a 24" 37-pin extension (725272)

Item	Part #	Price	Qty	Total
WaveVision Power Module	700266			\$
WaveVision Power Adapter	725667			\$
10 ft extension Aux Power (for 2008 SeedStar systems only)	725263			\$
2 Pin WP Power Extension - 25' (replaces 727126)	725921			\$
Solenoid extension, 40' 2-pin WeatherPack (John Deere)	727173			\$
37-Pin Extension Cable 24"	725272			\$
Dickey-john™ Adapters	725234			\$

MetraPack Adapter Harnesses

Metrapack Reference Table (For SeedStar Planters without a 37-Pin Connection)		
John Deere Model Year	# Rows	Metrapack
-2002 Drawn or 3-Point	4-15	Metrapack Gray (725209)
2003 + Drawn or 3-Point	4-15	Metrapack White (725282)
2011+	Up to 16	Metrapack White (725282)
2011+	17-24	Metrapack White (725624)
2011+	25-32	Metrapack White (725626)
DB 2012+	24+	DB Bulkhead (725701)

Item	Part #	Price	Qty	Total
MetraPack Cable- Gray (-2002)	725209			\$
MetraPack Cable-White (4-16 Rows)	725282			\$
Wedge Box Adapter (2011) (17-24 Rows)	725624			\$
Wedge Box Adapter (2011) (25-32 Rows)	725626			\$
2012 DB Bulkhead Seed Harness Adapters	725701			\$

SeedTube Mounting Accessories

Item	Part #	Price	Qty	Total
Seed Tube Pin and Clip	700279			\$
Seed Tube Spring Clip (pack of 4)	700167			\$
Hook Filler Tree (one per row)	700138			\$
3 Pin Convenience Power to 2 Pin WP splitter (replaces 700242)	725925			\$

Bullseye

Step 1 - Bullseye SeedTubes

Bullseye SeedTubes

Note: Monosem planters that are running vSet 2 will require new Bullseyes seed tubes (700287) that will fit the vSet meter. The existing Bullseyes (700158) on Monosems can be modified to fit the vSet 2 meter.

Item	Part #	Price	Qty	Total
Bullseye SeedTube - John Deere 7000, Kinze, Great Plains, Yield Pro, (White 8000 with vSet 2)	700150			\$
Bullseye SeedTube - John Deere 7200/1700/17X5, Kinze 3000(Year 2012+)	700160			\$
Bullseye SeedTube - White 5000 /6000 /8000 /9000 (OEM Meter - not used with vSet)*	700155			\$
Bullseye SeedTube - Monosem (replaces 700158)	700287			\$
Bullseye SeedTube - vSet 2 on White 9000/PP Ready Row Unit*	700280			\$

*If using vSet on a White 8000, use the 700150. If using vSet on a White 9000, use the 700280. Do not use the 700150 or the 700280 with White OEM Meter

Step 2 - SeedTube Mounting clips and Accessories

Mounting Clips

Item	Part #	Price	Qty	Total
Seed Tube Pin and Clip	700279			\$
Seed Tube Spring Clip (pack of 4)	700167			\$
1/2" Adapter (qty 1) - For Bullseye Seed Tubes	700152			\$
Hook Filler Tree (one per row)	700138			\$
14" Zip Tie (Used to fasten Sensor to SeedTube) (pack of 12)	900116A			\$

Step 3 - Seed Tube Sensors

Seed Tube Sensors

Note: It is recommended to use 700309 small grain sensor for crops smaller than wavevision is capable of detecting. It has shown improved performance seeing canola, small sugar beets and pickles. It is an optical sensor which still leaves it susceptible to seeing dust. While it is better for canola, it is possible to see 5% low on population.

Item	Part #	Price	Qty	Total
Seed Tube Sensor 3/4"eye (Dickey John)	300157			\$
Seed tube Sensor Case IH (Dickey John)	310077			\$
MCE Sensor kit (small grain sensor)	700309			\$

Conceal

Step 1 - Mounting Brackets

Conceal is a nitrogen application tool. The Conceal knife is 3" to the side of the seed trench and application depth is recommended to be between 3/4" to 1 1/2" of soil depth.

Conceal may be mounted in a dual band or a single band application. A single knife is capable of handling 30 GPA in a 30" row but products may not be safe at those rates. Work with a local agronomist to determine the correct application rate for your farm and product.

Conceal is compatible with the following row units

- John Deere - ME1(7000), ME2, ME +, XP, ME5 (**not compatible on JD Twin row units**)
- Harvest International LaserPro row units (**not compatible on Laser Pro 1 Narrow row units**)
- Kinze 2000, 3000, 4000 Row units
- White 8000/9000/PP Ready Row Unit
- Case IH 12xx/21xx Row units

Some Row Cleaners will require an additional adapter bracket or modification to install with the Conceal Mounting bracket. Check the Adapter section in addition to ordering a mounting bracket. Note that some will also require a CleanSweep cylinder bracket change as detailed in the last section of this step.

Not compatible with any No-Till Coulters except for the 2940-010 Air Adjust Row coulters/Row Cleaner Combo. Note the 2940-010 will require a different mounting bracket.

Not compatible with fixed row cleaners included pin adjust or screw adjust row cleaners.

Essentials Kit

Each planter will require an Essentials Kit on a 1/planter.

For Case IH it is recommended that you use the Case IH bracket install tool. This helps align the bracket as it is installed so that the knife aligns to the slot in the gauge wheel. One per planter or one per dealership.

Item	Part #	Price	Qty	Total
Conceal Essentials Kit (1 per planter)	758130			\$
Instructions Manual - Conceal	955721		1 per kit	\$
Tool, Push-to-Connect Fitting	724220		1 per kit	\$
Plastic Tube Cutter	726279		1 per kit	\$
Brush, Cleaning - Conceal Knife	758131		1 per kit	\$
Conceal Spring Clevis Pin - Bottom (1/2" x 1 1/2")	200164		1 per kit	\$
Cotter Pin, 1/8"Diameter - 1" Long Magni 565	200165		5 per kit	\$
Conceal Spring Clevis Pin - Top (1/2" x 2 3/4")	200166		1 per kit	\$
Locking Cotter Key - Conceal Pin	200191		5 per kit	\$
PTC Fitting - 1/4" Union	724437		1 per kit	\$
Case IH Bracket Install Tool	758440			\$

Mounting Bracket

Every row will require a mounting bracket. Each mounting bracket can run a single or dual band knife setup. Select the correct mounting bracket (1/row) for specific row unit.

All Floating row cleaners for which Precision Planting sells CleanSweep brackets (See Cleansweep compatible row cleaner list below) are compatible but some may need adapters or modifications. Select the adapters in the adapter bracket section below.

--Row cleaners that are "CleanSweep compatible" with brackets made by other manufacturers are not compatible unless they are specifically listed below.

- Yetter 2967-029/013 - (does not apply to Case IH planters - see Case IH Section below)

- **Make sure to check the Row Cleaner Adapter section below. Will need an adapter from Precision Planting or from Yetter in addition to the Conceal Mounting bracket.**

- Yetter Air Adjust (2940) - Only works with a John Deere Row unit! Will not work on a Harvest International row unit

All Air Adjust row cleaners require the 758350 mounting bracket in place of the 758150 JD mounting bracket. Do not order a 758150 bracket.

- o Yetter 2940-010 Air Adjust Coulter Combo (row cleaner + no till coulter) requires the 758350 mounting bracket. It does not need any additional brackets.
- o Yetter 2940-001 Air Adjust row cleaner (no coulter) requires the 758350 mounting bracket and an adapter bracket based on the length of the parallel arms. Select the correct bracket in the adapter section below.

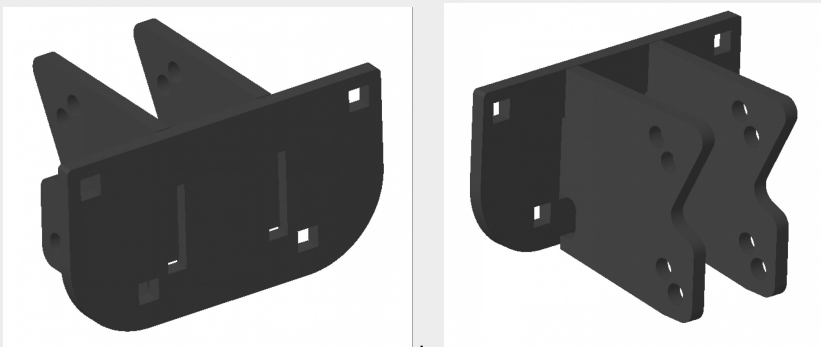
- Martin ACCR 1360 - Is compatible with Conceal.

- o **First Year ACCR row cleaners will need an updated bracket from Martin for the rear bracket.**
- o **Will work on John Deere ME2, ME+, XP, ME5, White 9000/PP Ready Row Unit, and Case IH row units.**

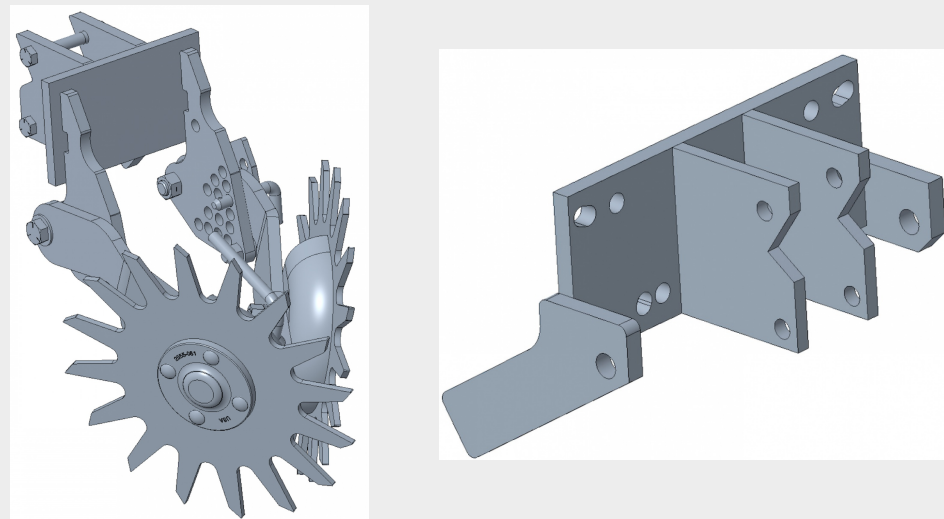
- Dawn GFX and RowTech 360 row cleaners need the 758370 Adapter bracket in addition to the Conceal Mounting Bracket. Select bracket in the adapter section below.

- Case IH -- Row cleaner compatibility with Conceal

The Conceal bracket for Case IH includes a new row cleaner/accessory mounting bracket. This new accessory bracket is required to mount the Conceal Bracket to the row unit. Because of this all row cleaners must mount to this accessory mounting bracket (see pictures below).



If the row cleaner has the Case mounting bracket (Yetter Part #2966-228 - Pictured below, left) integrated into the row cleaner like the ones pictured below, change the 2966-228 with a Yetter part #2966-200 mounting bracket. If Martin row cleaners with a rear bracket like the one below is installed, it must be changed out to one that will mount to the accessory bracket.



Item	Part #	Price	Qty	Total
Conceal Mounting Bracket Kit - John Deere ME2, ME +, XP, ME5	758150			\$
Conceal Mounting Bracket - Harvest International	758200			\$
Conceal Mounting Bracket Kit - Kinze 2000, 3000, 4000, JD 7000, White 8000	758160			\$
Conceal Mounting Bracket Kit - White 9000/Gray Row Unit	758190			\$
Conceal Mounting Bracket Kit - Case IH 12xx/21xx	758400			\$
Conceal Mounting Bracket Kit - Yetter Air Adjust (JD only)	758350			\$

Note 1: Conceal is not compatible with No-Till coulters that mount to the row unit faceplate.

Note 2: On some row units the combination of a Conceal mounting bracket/adapter bracket with a row cleaner will limit upward row unit travel similar to a row unit stop.

Note 3: On some row cleaners with CleanSweep, it is necessary to change the CleanSweep cylinder mounting brackets. Check the CleanSweep bracket section for more details.

Row Cleaner Adapters

Yetter 029/013 options

- If the row cleaner has a "PP" designation after the part number (example **2967-029A -PP**), it is Conceal compatible and does not need any adapters or modifications. The pivot has been moved forward and will clear the Conceal bracket. This model was started in the spring of 2019.

If the row cleaner does not have a "PP" designation on row cleaner select 1 of the 2 options-

- Use Precision Planting Yetter adapter bracket to shift row cleaner forward. (**758155 or 758174** - depending on row unit) **Recommended for all 029/013 row cleaners that do not have an "A" designation on the model number (indicates that the cylinder bracket is built into row cleaner)**
- Use Yetter's new faceplate bracket (Yetter part number - **2966-2002**) that shifts the pivot point forward. If CleanSweep is installed this will only work with the "A" designation row cleaners (2967-029A) that have the CleanSweep cylinder brackets built into the row cleaner. **If it is not an "A" model row cleaner, the 2966-2002 may cause incorrect CleanSweep performance or damage to the CleanSweep cylinder.**

Yetter Air Adjust (2940) -

- **Requires the 758350 mounting bracket in place of the 758150 JD mounting bracket. Do not order a 758150 bracket if installing with a Air Adjust row cleaner. Does not work on Harvest International Row unit**
 - Yetter 2940-010 Air Adjust Coulters Combo which has a row cleaner and the no till coulters requires the 758350 mounting bracket. It does not need any additional brackets.
 - Yetter 2940 Air Adjust row cleaner will require the 758350 mounting bracket and an adapter bracket based on the length of the parallel arms.
 - Short Parallel arms will use the 758355 Air Adjust adapter (shifts row cleaner forward 3")
 - Long Parallel arms will use the 758365 Air Adjust Adapter (shifts row cleaner forward 2")

Dawn GFX and RowTech 360 row cleaners will need the 758370 Adapter bracket in addition to the Conceal Mounting Bracket. One per row.

Note 1: Conceal is not compatible with No-Till coulters that mount to the row unit faceplate.

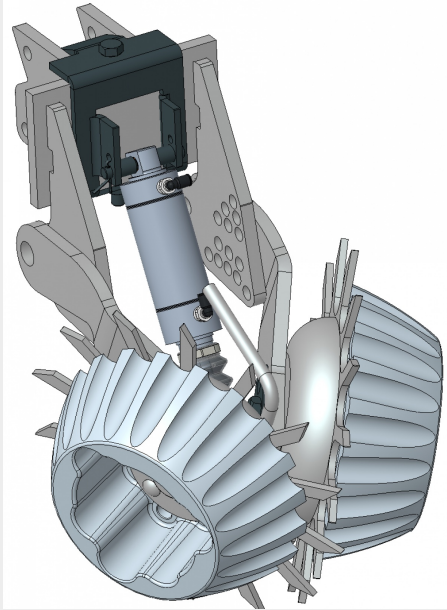
Note 2: On some row units the combination of a Conceal mounting bracket/adapter bracket with a row cleaner will limit upward row unit travel similar to a row unit stop.

Item	Part #	Price	Qty	Total
Yetter 029/013 Mounting Bracket Adapter - JD (ME2, ME+, XP, ME5), Kinze 4000, HI, White 9000/Gray Row Unit	758155			\$
Yetter 029/013 Mounting Bracket Adapter - Kinze 2000, 3000, JD 7000, White 8000	758174			\$
Yetter Air Adjust Adapter (Short Row Unit Parallel Arms)- Short version row cleaner	758355			\$
Yetter Air Adjust Adapter (Long Row Unit Parallel Arms) - Short version row cleaner	758365			\$
Dawn GFX & Rowtech Row Cleaner Adapter Bracket (moves row cleaner forward)	758370			\$

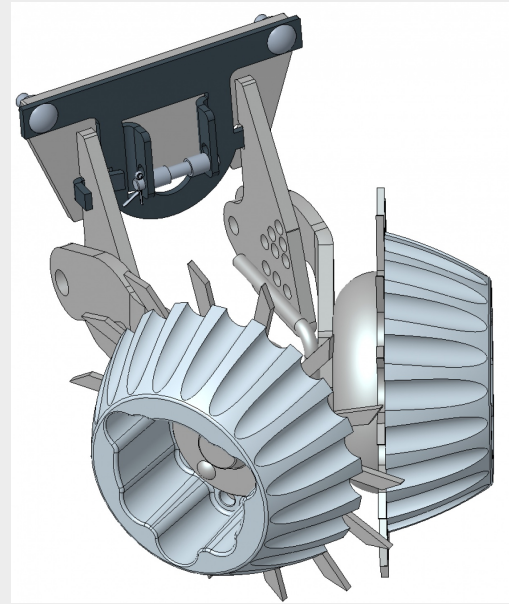
CleanSweep Brackets

CleanSweep bracket changes with Yetter 2967-029/013 and 2967-097/014.

If the system is using the CleanSweep bracket 755245, 755240, or 755215, it will be necessary to replace the CleanSweep bracket with the 755212 bracket and the 755237 hardware kit. The 755245 (left) and 755215 / 755240 (right) are pictured below.



755245



755215 / 755240

Item	Part #	Price	Qty	Total
CleanSweep Rear Mounting Plate - 2967-029/013	755212			\$
CleanSweep Hardware Kit (755265) - Yetter 2967-029/013	755237			\$

Step 2 - Knife Kits

Swingarm Assembly

Order one per row for single band or 2 per row for dual band.

The swing arm mounts to the mounting bracket and fits in the split gauge wheel.

Note: The swingarm kit no longer includes the knife tip. The knife itself will be ordered separately in the next step.

Note: **Case IH planters require a spring adapter in addition to the knife kit. Order one 758405 for each knife that is going to be mounted to a Case IH mounting bracket.**

Item	Part #	Price	Qty	Total
Conceal Swingarm kit	758280			\$
Case IH Conceal Spring Adapter (1 per knife)	758405			\$

Knife Assembly

Order one per row for single band or 2 per row for dual band.

There are 2 options available to order for a conceal knife tip.

- 1) the standard knife previously offered.
- 2) a high wear knife.

-The high wear knife should be ordered for conditions that are known to wear Conceal knives or other wear parts prematurely.
-Do not order the high wear knife option if you have not experienced premature wear on conceal knives or other wear parts. There is a risk the high wear style will not penetrate soil as well as the standard knife tip.

The knife is not side specific to the row unit. The knife kit will fit on either side of the row unit.

Note: The knife will use 1/4" tubing from the knife tip through the knife attachment and up to the goal post/ faceplate area. From here it is recommended to use 3/8" the rest of the way to the planter bar. The length of tubing to go from the knife tip to the faceplate is about 25"-30".

Item	Part #	Price	Qty	Total
Standard Conceal Knife Kit	758205			\$
High Wear Conceal Knife Kit	758207			\$

Optional Knife Mounting Parts

Some of the parts below may assist with the installation of the knife and knife alignment to the slot in the gauge wheel

- Angled Shim - This is used to change the angle slightly of the knife to improve the angle of the knife to slot in the wheel if desired.
- Shim Kit for Case IH Gauge Wheel Adjustment - When adjusting the gauge wheel distance to the disc openers on Case IH planters it may be necessary to use a slightly smaller shim next the lynch pin to make the gauge wheel arm tighter. The Shim Kit has 1/16" shims in instead of the 1/8" shims that Case IH uses. This is included in the 758405 kit.

Item	Part #	Price	Qty	Total
Angled Shim for Knife Alignment - 1.5 degree	758380			\$
Shim Kit for Case IH Gauge Wheel Adjustment	758430			\$
Conceal Alignment Tool	758295			\$

Step 3 - Gauge Wheels

Each knife kit will require a new gauge wheel assembly. OEM wheels can not be used.

Two options are available to order the Conceal wheel. Use either the Assembled Wheel Option or the Build Your Own Option with the correct bearing hub assembly.

Assembled Wheel Option

The assembled wheel option is a fully assembled gauge wheel with **bearing hub assembly included**. It is ready to bolt on to the gauge wheel arm.

The assembled wheel (**758240**) is a

- A closed inner wheel
- A wide spoked outer wheel
- Bolt through bearing hub
- Fits JD XP, ME5, Kinze 1993 and newer, White 8000, 9000, PP Ready Row Unit, Harvest International Row units and Case IH (some Case IH growers may want the RID tire option in Build Your Own).
- Ready to bolt on to planter

If different gauge wheel style is desired or a different bearing hub is needed - Use the Build Your Own wheel option below.

Item	Part #	Price	Qty	Total
Assembled Conceal Gauge Wheel - Spoked outer, closed inner, (includes bolt through bearing & hub)- replaces 758110	758240			\$

Build Your Own Wheel Option

Precision Planting offers a closed inner or a spoked inner wheel along with a wide spoked outer and narrow spoked outer wheel. The inners and outers can be mixed and matched to make the desired style of wheel. A RID (Reduced Inner Diameter) inner wheel option is available for Case IH Row units. It is available in both a spoked and a closed option. All Build Your Own Wheel options will need to be assembled on site along with the bearing hub assembly listed below.

Examples of combinations --

- Fully spoked standard wheel (spoked inner and outer) - 758251, 758255, plus a bearing assembly (758260 or 758261 or 758262)
- Narrow wheel (closed inner, spoked outer) -- 758250, 758256 plus a bearing assembly (758260 or 758261 or 758262)
- Fully spoked narrow wheel (spoked inner and outer) - 758251, 758256 plus a bearing assembly (758260 or 758261 or 758262)
- RID Standard wheel (RID closed inner, spoked outer) - 758252, 758255, plus bearing assembly (758260, 758261, or 758262)

For all build your own wheel systems you will need to have one inner wheel, one outer wheel, and a bearing hub assembly to make one wheel. Make sure that each knife kit has a completed conceal gauge wheel.

Item	Part #	Price	Qty	Total
Closed Inner Wheel - Standard - replaces 758108	758250			\$
Spoked Inner Wheel - Mud wheel	758251			\$
RID Closed Inner Wheel - only for Case IH	758252			\$
RID Spoked Inner Wheel - only for Case IH	758253			\$
Spoked Outer Wheel - Wide (standard wheel) - replaces 758109	758255			\$
Spoked Outer Wheel - Narrow	758256			\$

Bearing Options

Select the correct bearing based on planter type and year. Please note that some systems could have updated gauge wheel arms that will change what type of bearing will be needed. Check the planter to ensure that the correct bearing is ordered.

A bearing hub assembly is needed for all wheels except the Assembled Conceal Gauge Wheel (758240). Make sure that this step is not skipped!!!!

Item	Part #	Price	Qty	Total
Bearing Hub Assembly - Bolt through bearing (JD XP, ME5, Kinze 1993+, White 8000, 9000, HI, Case IH) - replaces 758016	758260			\$
Bearing Hub Assembly - Stem bearing for set screw (JD ME2 1992+, ME+) - replaces 758127	758261			\$
Bearing Hub Assembly - Stem bearing for roll pin (JD Pre 1992, Kinze Pre 1993)	758262			\$

Gauge Wheel Scraper Kits

Gauge wheel scrapers are optional equipment for Conceal Gauge wheels. Not all conditions will require them but in sticky soil it may be desirable to have scrapers to keep the gauge wheel clean. Precision Planting is offering scrapers for John Deere, Kinze and Case IH row units. The John Deere and Kinze kit includes a left and right scraper so order one per 2 wheel assemblies. The Case IH is a left and right kit so order the correct kits as needed.

Note 1: The PP Gray Row Unit/ White 9000 standard gauge wheel scraper will work on the Conceal gauge wheel for that row unit.

Note 2: The Case IH kit mounts to the gauge wheel arm and will accommodate both a RID wheel and a standard inner wheel.

Item	Part #	Price	Qty	Total
Gauge Wheel Scraper Kit (includes left and right scraper) - JD, Kinze	758185			\$
Case IH Gauge Wheel Scraper (Left)	758425			\$
Case IH Gauge Wheel Scraper (Right)	758426			\$

Misc Wheel Parts

Gauge wheel spacer - in some conditions and installations it is desired to add a gauge wheel spacer to the Conceal wheel that increases the gap by 1/8". This helps with alignment of the knife to the slot in the wheel on some systems that experience loose gauge wheel arms, bent or tweaked row units, etc.

Dust Cap - On some openers blades, the dust cap is too close to the Conceal gauge wheel. A low profile dust cap may be desired.

Wide Wheels - In some cases it may be desirable to have double wide wheel. The wide wheel adapter kits below allow for a standard OEM 4.5" gauge wheel to be bolted to a Standard or Narrow Conceal wheel. This will make the gauge wheel a 9" or 7.5" wheel respectively.

Note: White/Agco/Gray Row units have a left hand thread bolt on the left side of the row unit and a Right hand bolt on the right side of the row unit. Make sure to order the correct qty of each side of the row unit.

Item	Part #	Price	Qty	Total
Low Profile Disc Opener Dust Cap - only for Nichols 205 Bearing	758198			\$
Gauge Wheel 1/8" shim	758245			\$
7.5" Wide-Wheel Adapter - John Deere, White(Right) (4.5" OEM + Narrow Conceal Wheel)	758470			\$
7.5" Wide-Wheel Adapter - White(Left) (4.5" OEM + Narrow Conceal Wheel)	758471			\$
7.5 Wide-Wheel Adapter - Kinze (4.5" OEM + Narrow Conceal Wheel)	758472			\$
9" Wide-Wheel Adapter - John Deere, White(right) (4.5" OEM + Standard Conceal Wheel)	758480			\$
9" Wide Wheel Adapter - White (Left side) (4.5" OEM + Standard Conceal Wheel)	758481			\$
9" Wide Wheel Adapter - Kinze (OEM 4.5" + Standard Conceal wheel)	758482			\$

Step 4 - Liquid Parts

Liquid Fittings

For dual band systems, use the 3/8" to 1/4" orificed body splitter (758175). This splitter has room for 2 orifice plates and each output has a check valve. Each port on the splitter is Push To Connect style.

Recommended plumbing is to run 3/8" tube down to the area around the row unit faceplate/ goal post before reducing down to 1/4" tube to go through the knife attachment down to the knife tip (even single band is recommended to use 3/8" to the faceplate). The faceplate area is the recommended location for the splitter. The length of 1/4" tube to go from the faceplate down to the knife tip is about 25-30 inches.

Single band will use the 3/8" to 1/4" adapter on the liquid line.

Item	Part #	Price	Qty	Total
Orifice body splitter - 3/8" inlet with two 1/4" outlets	758175			\$
3/8" to 1/4" PTC Straight Union Adapter (10 Pack)	724087			\$

Liquid Tubing

The recommended plumbing is to run 3/8" tube down to the area around the row unit faceplate/ goal post before reducing down to 1/4" tube to go through the knife attachment down to the knife tip. If using the splitter it is recommended to locate the splitter in this general area. The length of 1/4" tube to go from the faceplate down to the knife tip is about 25-30 inches.

Order tubing below as needed.

Tube Protector: The Tube Protector is designed to slide over the 1/4" liquid tube and will go past the spring assembly down into the swingarm. It can extend up as far as the splitter or as far as desired on the 1/4" tube.

Item	Part #	Price	Qty	Total
1/4" Tubing Black, 100' Roll	724028			\$
1/4" Tubing Yellow, 100' Roll	724090			\$
3/8" Tubing Black, 100' Roll	724030			\$
3/8" Tubing Yellow, 100' Roll	724091			\$
1/4" Liquid Tube Protector - 50 ft roll	758390			\$

FlowSense

Step 1 - FlowSense Assemblies

FlowSense Compatibility

- FlowSense is designed to monitor the liquid application rate of individual row units.
 - FlowSense does not work with **RowFlow Liquid**.
- EM FlowSense
 - Only works with a Gen 3 Display
 - Requires 2021.1.x or later software
 - One liquid product per module
 - Operating range is **.07 - 3.5 GPM**
 - **Only requires a 50 mesh screen instead of an 80 mesh screen**
- AUX FlowSense
 - AUX FlowSense will work with SRM or RUM (AUX port on SRM or RUM)
 - **All RUM systems are limited to 1 liquid product (AUX FlowSense) and 50 Rows of FlowSense total. Any planter over 28 rows will require 2 smart connectors.**
 - Requires additional RUMs and Harnessing for FlowSense on every row with additional sensors (Lift switch, Vacuum, etc) on Smart Connector Systems
 - Requires a Gen 2 Display and Gen 2 Smart Connector if installing on RUMs
 - AUX and CAN FlowSense cannot be mixed with a single product setup.
- CAN FlowSense
 - CAN FlowSense is only needed when monitoring 2 products. **One single CAN FlowSense will handle 2 products (it has two FlowSense modules)**
 - **Requires Expansion Hub with CAN Jumper Harness**

Operating Ranges for AUX and CAN FlowSense:

- Max sealing pressure - **100 psi**
- Flow range (low flow sensor) = **.07 - .90 GPM**
- Flow range (high flow sensor) = **.20 - 2.5 GPM**
- **Minimum and Maximum FlowSense GPM do not match vApplyHD capabilities due to geometric efficiency differences.**

Wetted Materials - PolyPropylene, Viton, Stainless Steel, Nylon

Fertility Products -

- Not compatible with Anhydrous Ammonia
- Not compatible with suspension fertilizers
 - **Note: Suspension fertilizers are fluids in which solubility of the components has been exceeded and clay has been added to keep the very fine, undissolved, fertilizer particles from settling out of the liquid.**

Useful equations

- **$GPA = (GPM \times 5940) \div (MPH \times Row\ Spacing\ (inches))$**
- **$GPM = (GPA \times MPH \times Row\ Spacing\ (Inches)) \div (5940)$**

Note: For CAN and AUX FlowSense - an 80 Mesh Screen or tighter filter is required to be installed between the pump and the distribution system to ensure that the system remains clean and free of debris. EM FlowSense only requires a 50 Mesh Screen.

FlowSense Essentials Kit

Order 1 FlowSense Essentials Kit per product.

- The FlowSense Essentials Kit includes
 - 4 Turbine rebuild kits (2 highs, 2 lows),
 - Push-to-connect fitting tools
 - Needle nose pliers
 - Deutsch Removal tool (for removing turbines)
 - Tube Cutter
 - Holding case and mount bracket.

Item	Part #	Price	Qty	Total
FlowSense Essentials Kit	724408	:		\$

EM FlowSense

Requirements -

- A Gen 3 display on 2021.1.x software or newer (does not work with Gen 2)
- Requires a CAN hub and CAN jumper to be installed on the row
- Supported on both SRM and Gen 3 sensing systems (does not have to be on every row)
- 50 Mesh strainer for system is recommended
- Does not act as orifice - will need downstream orifice plate
- Requires about .25 amps per row (make sure system is capable of providing enough power)

Operating range is from **.07 - 3.5 GPM** per EM FlowSense.

Inlets and outlets are both 3/8" PTC connections.

Item	Part #	Price	Qty	Total
EM FlowSense	724650			\$

AUX FlowSense Assemblies

AUX FlowSense

- AUX FlowSense will work with SRM or RUM (AUX port on SRM or RUM)
- **All RUM systems** are limited to **1 liquid product** (AUX FlowSense) and **50 rows max of FlowSense. Any planter over 28 rows will require 2 Smart Connectors**
- Requires additional RUMs and Harnessing for FlowSense on everyrow with additional sensors (Lift switch, Vacuum, etc) on Smart Connector Systems
- Requires a Gen 2 Display and Gen 2 Smart Connector if installing on RUMs
- **Be careful to not double order RUMs!** Only order enough of the **RUM & FlowSense Kits** to cover rows that don't have RUMs installed. For all rows that have RUMs, simply order an AUX FlowSense

Item	Part #	Price	Qty	Total
AUX FlowSense - Low Flow Assembly - 1/4" (.07-.90 GPM)	724015			\$
AUX FlowSense - High flow Assembly - 3/8" (.20-2.5 GPM)	724016			\$
RUM & AUX FlowSense Kit - low flow (1 of each module in kit)	724380			\$
RUM & AUX FlowSense Kit- high flow (1 of each module in kit)	724381			\$

CAN FlowSense Assemblies

CAN FlowSense

- CAN FlowSense is only needed when monitoring 2 products. **One single CAN FlowSense will handle 2 products (it has two FlowSense modules)**
- **Requires Expansion Hub with CAN Jumper Harness**

Item	Part #	Price	Qty	Total
CAN FlowSense - (High, High) flow sensors	724370			\$
CAN FlowSense - (High, Low) flow sensors	724371			\$
CAN FlowSense - (Low, Low) flow sensors	724372			\$

Row CAN Expansion

For all systems that are running more than vDrive/Select (ie. -*SpeedTube*, *Insecticide*, *vApply HD*) it will be necessary to add a Row CAN expansion kit and a CAN jumper cable to go from the Expansion Hub to the device.

Note: All black connector jumpers are for first module of a device (1st product vApply, vDrive meter, SpeedTube, mSet Seed Selector, etc), Brown connector jumpers are for the second module of a device (2nd product vApply, vDrive Insecticide), White and Green are for third and fourth modules of a device (3rd, 4th, product vApply and CAN Based FlowSense). Make sure that the correct jumper is being used with the correct module.

Existing SpeedTube & insecticide systems using the Y harness (729288 kit) are compatible with Expansion Hub if the grower is adding vApplyHD. The Y cable will plug into the Expansion Hub using a single CAN Jumper to connect the Y to the Expansion Hub instead of the Y cable plugging into the vDrive plug.

Item	Part #	Price	Qty	Total
Row CAN Expansion HUB Kit	729500			\$
Black Connector - Row Can Jumper - 12" (Inches) --- For first device	729481			\$
Black Connector - Row Can Jumper - 20" (Inches) --- For first device	729482			\$
Black Connector - Row Can Jumper - 30" (Inches) --- For first device	729483			\$
Black Connector - Row Can Jumper - 40" (Inches) --- For first device	729489			\$
Black Connector - Row Can Jumper - 50" (Inches) --- For first device	729485			\$
Brown Connector - Row CAN Jumper - 25" (Inches) --- For second device	729484			\$
White Connector - Row CAN Jumper - 25" (Inches) --- For third device	729493			\$
Green Connector - Row CAN Jumper - 25" (Inches) --- For fourth device	729494			\$

Additional Harnesses and Mounting Options

For planters that are going to be running FlowSense on Smart Connector systems-

- It will necessary to purchase the **724369 - 4 Row RUM Expansion Harness Kit**. This will provide a location to plug in 4 extra RUMs to plug Lift Switches and Vacuum sensors into and still have RUMs on every row for FlowSense.
- If the planter is over 28 rows it will require 2 Smart Connectors.
- The SRM/RUM AUX extension harness will probably be necessary to connect the Vacuum/Lift Switch to the RUMs on the 4 row RUM Expansion Harness.

Reminder: FlowSense requires Gen 2 Smart Connectors and Gen 2 Displays.

The parallel arm mounting and hose routing kit may be used to mount vApplyHD and/or Flowsense. It also provides a channel to route liquid lines and harnesses through.

Item	Part #	Price	Qty	Total
Parallel Arm Harness and Hose Mounting Bracket (4 row Kit)	729212			\$
4 Row RUM Expansion Harness Kit for AUX FlowSense (DOES NOT include any RUMs)	724369			\$
SRM/RUM AUX Harness Extension - 12'	727304			\$

Step 2 - Plumbing Components

Note: It is not required to source the plumbing components from Precision Planting. The adapter kits listed below are provided for convenience to enable FlowSense installation. If updating an existing system or sourcing components elsewhere, additional resources for plumbing guidelines and system compatibility are available on Precision Plantings's website.

Filter Kit

- A 80-Mesh filter system is REQUIRED to ensure the system remains clean and free of debris
- Filter must be installed AFTER the Pump and BEFORE the distribution system
- If a filter is not previously installed or sourced elsewhere - Order one kit per product

Item	Part #	Price	Qty	Total
Filter Kit - Low Flow (1 - 80 Mesh Screen) - 15 GPA or less on 30" Rows	724291			\$
Filter Kit - High Flow (2 - 80 Mesh Screen) - 16 GPA or greater on 30" Rows	724289			\$
Filter Visual Gauge Kit	724294			\$
1/4" PTC Row Strainer - 100 Mesh (Qty - 10)	724432			\$
3/8" PTC Row Strainer - 100 Mesh (Qty - 10)	724433			\$

Adapter Kits

Item	Part #	Price	Qty	Total
3/8" PTC Stem to 3/8" Hose Barb, With Hose Clamp (10 Pack)	724045			\$
3/8" to 1/4" PTC Straight Union Adapter (10 Pack)	724087			\$
3/8" PTC Stem to 1/4" PTC Adapter (10 Pack)	724042			\$

Tubing

- Sold in Bulk 100' Rolls
- For use with Push to Connect (PTC) Fittings
- LDPE material

Item	Part #	Price	Qty	Total
1/4" Tubing Black, 100' Roll	724028			\$
1/4" Tubing Yellow, 100' Roll	724090			\$
3/8" Tubing Black, 100' Roll	724030			\$
3/8" Tubing Yellow, 100' Roll	724091			\$

Step 3 - Service Parts

Service Parts

Item	Part #	Price	Qty	Total
Replacement Filter Screen - 80 Mesh	724268			\$
Replacement Filter Screen - 100 Mesh	724269			\$
Turbine Rebuild Kit - Low Flow	724158			\$
Turbine Rebuild Kit - High Flow	724297			\$

Keetons

Step 1 - Planter Keeton Kits

Quick Attach Keeton Brackets

If installing Quick Attach Keeton Firmers on a John Deere ExactEmerge planter, use the **141180**. The 141180 is also compatible with FurrowForce install.

Note: The ExactEmerge Quick Attach bracket moves the closing system back 5.4 inches. It is only necessary on a planter that is using the ExactEmerge seed delivery system.

Note 2: Any vSet 2 equipped Kinze 4900, the 150150 QA Bracket is required. The 150130 can still be used with the OEM meter but the 150150 is the recommended QA Bracket for all Kinze 4900 planters.

****Standard Keeton seed firmers are not compatible with Case IH 12xx or 21xx planters. For SmartFirmer compatibility see the SmartFirmer section of the order guide.****

Item	Part #	Price	Qty	Total
John Deere Quick Attach Firmer Bracket (Non ExactEmerge)	150109			\$
ExactEmerge Quick Attach Firmer and FurrowJet Bracket-Cast (FurrowForce Compatible)	141180			\$
Kinze 3000, 2000 Quick Attach Firmer Bracket (non large seedtubes)	150120			\$
Kinze 4900/3000(Large Seedtube) Quick Attach Firmer Bracket (scraper bracket mounting) - subs from 150121, 145131	150130			\$
White 8000 Quick Attach Firmer and FurrowJet Bracket (replaces 150135)	150147			\$
White 9000 Quick Attach Firmer Bracket (replaces 150111)	150123			\$
Monosem Quick Attach Firmer Bracket	150605			\$
Kinze 4000 Quick Attach Firmer Bracket	150150			\$

Quick Attach Keetons Tails

All Quick Attach Keeton Tails are WaveVision Compatible.

Low Stick Keeton Tail will help in areas that soil tends to build up on the standard tail. The low stick tail will fit all standard QA brackets.

Item	Part #	Price	Qty	Total
Low Stick Quick Attach Keeton Tail	140100			\$
Low Stick Quick Attach Keeton Tail - Harvest International - Wide (only Laser Pro 1)	140110			\$
Quick Attach Keeton Tail - Low Profile	140044			\$
Quick Attach Keeton Tail - Standard	140045			\$

Universal and Kinze Bracket Style Keetons

Includes Tail and mounting bracket.

Note: ME5 John Deere row units will require the quick attach bracket and tail.

Note: Kinze 4900 will require the quick attach bracket and tail

Item	Part #	Price	Qty	Total
Short Low Profile Tail, Universal Bracket	126008			\$
Dual Tube Tail, Universal Bracket	115011			\$
Short Low Profile Tail, Kinze Bracket (2000/3000)	126009			\$
Dry Tail, Universal Bracket	125012			\$
Long Low Profile, Universal Bracket (Dry Tail only)	121004			\$
Dual Tube Tail, Kinze Bracket (2000/3000)	115012			\$
Dry Tail, Kinze Bracket (2000/3000)	125013			\$
Dry Seed Tube Mounted	100101			\$
Liquid Seed Tube Mounted	100104			\$

Universal Tail Replacements

Replacement tail for universal brackets and non QA brackets.

Item	Part #	Price	Qty	Total
Dual Tube Tail	115013			\$
Long Low Profile Tail (Dry Tail only)	121006			\$
Short Low Profile Tail	126010			\$
Dry Tail	125011			\$

Step 2 - Drill Keeton Kits

Drill Kits

Item	Part #	Price	Qty	Total
Great Plains Standard Drill	120103			\$
Great Plains 10/20 series Precision Drill	120101			\$
Great Plains 15/25 Series	120105			\$
Great Plains 00HD Series	120107			\$
International Drill	120121			\$
John Deere 450 /455 /1520 /8300	120125			\$
John Deere 750/1850	120133			\$
John Deere 1560 /1590 /1690 /1890 /1895 /1990	120134			\$
Crustbuster Drill All-Plant/ Min-Till 3400/4000	120122			\$
Crustbuster Drill 3700/3800	120127			\$
Sunflower Drill (not available with liquid)	120128			\$
Tye Drill	120123			\$
Krause Drill	120124			\$
Marliss Drill	120126			\$
Drill Replacement Tail - Standard	120820			\$
Drill Replacement Tail - Narrow for Great Plains newer drills	120825			\$

Step 3 - Accessories

Accessories

Item	Part #	Price	Qty	Total
Stiffening Bracket Kit of 4 (for Universal Bracket) -Totally Tubular	150057			\$
Kinze Hardware Bag (use with 126011, 126012, 126013)	160004			\$
Universal Hardware Bag	160010			\$
Shim Tree, Universal	150071			\$
Red Liquid Splitter Insert (non QA tails)	125006			\$
QA Firmer Red Splitter/Barb (4 Pack)	140049			\$
Tube Extension Metal, Low Profile	126005			\$
2" Clear Splice Tubing - Hose Connector	900107			\$
Metal Hose Clamp (Pkg of 12)	900115A			\$
Blue Tubing - 100' Roll	900111			\$
Red Tubing - 100' Roll	900114			\$
Red Tubing - 1/4"O.D. X 36"	900113			\$
Blue Tubing - 1/4"O.D. X 36"	900110			\$
Black Tubing for Drill Firmers, 1/4" Formed	129BXT814			\$

Precision Finger Meters

Step 1 - Precision Planting Finger Meters

Precision Planting Complete Meters

Item	Part #	Price	Qty	Total
Precision Meter - JD 7000/ KZ 2000	343022			\$
Precision Meter - JD 7200/ 1700	343025			\$
Precision Meter - KZ 3000/ 4900 (Includes boot)	343030			\$
Precision Meter - Great Plains 12 Finger	343050			\$
Precision Meter - Great Plains 6 Finger	343051			\$
Precision Meter - Great Plains Sunflower	343055			\$
Precision Meter - JD 7000/ KZ 2000 Sweetcorn	343063			\$
Precision Meter - JD 7200/ 1700 Sweetcorn	343101			\$
Precision Meter - KZ 3000 Sweetcorn	343109			\$
Precision Meter - KZ 3000 6 Finger	343071			\$
Precision Meter - JD 7000/ KZ 2000 - 6 Finger	343072			\$
Precision Meter - JD 7200/ 1700 - 6 Finger	343099			\$
Precision Meter - KZ 3000 - Sunflower	343105			\$
Precision Meter - JD 7000/ KZ 2000 - Sunflower	343110			\$
Precision Meter - JD 7200/ 1700 - Sunflower	343111			\$
Precision Meter - KZ 3000 - Popcorn	343112			\$
Precision Meter - JD 7000 / KZ 2000 Popcorn	343113			\$
Precision Meter - JD 7200 / 1700 Popcorn	343114			\$
Precision Meter - KZ 3000 - Pumpkin	343115			\$
Precision Meter - JD 7000 / KZ 2000 Pumpkin	343116			\$
Precision Meter - JD 7200 / 1700 Pumpkin	343117			\$

Skip Stop

Item	Part #	Price	Qty	Total
Skip Stop Kit	343024			\$
Skip Stop Replacement Cushion	343014			\$
Skip Stop- Great Plains Replacement Cushion	343073			\$

Population Max

Item	Part #	Price	Qty	Total
Population Max Backing Plate w/ A Insert & Adjustable Brush	342103			\$
PopMax,Sunflower	342111			\$
Insert A Universal	342110			\$
Insert B Specialty	342107			\$
Insert C Sunflower	342108			\$

Adjustable Brush

Item	Part #	Price	Qty	Total
Precision Brush- Adjustable	343052			\$
Precision Brush Maroon (pkg 2)	343049			\$
Brushless Block - Blank	343091			\$
T-handle & Hardware for Adjustable Brush	160011			\$

Precision Finger Set

Item	Part #	Price	Qty	Total
Precision Finger Set	343029			\$
Finger Set, 6 Finger	343053			\$
Finger Set, Pumpkin	343065			\$
Finger Set, Sunflower	343067			\$
Finger Set, Popcorn	343104			\$
Finger Set, Sweetcorn	343064			\$

SureFire Belt

Item	Part #	Price	Qty	Total
SureFire Seed Belt	343066			\$
Drive Wheel	343062			\$

Step 2 - Precision Meter Repower

Repower Parts

Order 1 per row

Item	Part #	Price	Qty	Total
Precision Finger Set	343029			\$
Population Max Backing Plate w/ A Insert & Adjustable Brush	342103			\$
T-handle & Hardware for Adjustable Brush	160011			\$
Skip Stop Kit	343024			\$
SureFire Seed Belt	343066			\$

Dealership Tools

Step 1 - Mobile Max

Mobile Max

Mobile Max does not include the Gen 3 Display, the DBM, or the CCM. They will need to be ordered separately in the group below.

Dealer discount will not apply to all Mobile Max or Liquid Max parts. All Mobile Max and Liquid Max parts will need to be ordered by an SSA and cannot be ordered from the store.

Item	Part #	Price	Qty	Total
20 20 Mobile Max	320160			\$
Gen 3 HDMI Module Mount Kit (Mobile Max only)	320200			\$

Gen 3 Parts for Mobile Max

Item	Part #	Price	Qty	Total
2020 Display Base Module (replaces 725110)	725111			\$
Gen 3 Display Screen Kit - 10.1"	725101			\$
Gen 3 HDMI Display Module (no discount)	728145			\$
20 20 Gen 3 Cab Control Module	725103			\$

Step 2 - Liquid Max

Liquid Max

There is no discount on the Liquid Max parts.

Note: The Liquid Max Remote E-Stop kit is required if the liquid workface is not being used.

Item	Part #	Price	Qty	Total
Liquid Max Kit (includes pump, tank, and workface)	320102			\$
Liquid Max Base (includes pump and tank)	320100			\$
Liquid Max Workface	320101			\$
Liquid Max Remote E-Stop Kit (Required if no workface is being used)	320205			\$
64 Oz Calibration Pitcher	141073			\$

Step 3 - Pogo Stick

Pogo Stick

The Precision Planting Research Pogo Stick is used as a scouting tool to evaluate the emergence and planting performance of row crops.

It will have to be ordered by an SSA and no dealer discount is available.

Item	Part #	Price	Qty	Total
Precision Planting Research Pogo Stick	311001			\$

Step 4 - Service Kits

Service Kits

Item	Part #	Price	Qty	Total
Air Force Fittings/Parts Kit	726097			\$
Air Force Service Kit - Pneumatic Fittings & Gage	725507			\$
Updated Electrical Repair Kit for 20/20	725861			\$

Step 5 - Diagnostic Kits

Electrical Test Kits

Item	Part #	Price	Qty	Total
Multi-Tester & Load Applicator	725700			\$
RowFlow Diagnostic Kit	727056			\$
YieldSense Diagnostic Kit	750530			\$

Hydraulic Test Kits

Item	Part #	Price	Qty	Total
Hydraulic Diagnostic Kit - vSet Vacuum	730350			\$
Hydraulic Diagnostic Kit - DeltaForce	729680			\$
Hydraulic Flow Meter Test Kit	730404			\$
Pressure Gauge Set - 3 3000 PSI gauges	729685			\$

Non North America Row Unit Parts

Step 1 - SRM Brackets

SRM Brackets

Item	Part #	Price	Qty	Total
Monosem SRM Mount Kit - 1 per row	712120			\$
Gaspardo MTR SRM Bracket	712123			\$
Kuhn Maxima 2 SRM Bracket	712126			\$
Horsch Maestro SRM Bracket (LH)	712129			\$
Horsch Maestro SRM Bracket (RH)	712136			\$
Vaderstad Tempo SRM Bracket	712133			\$
Vaderstad Tempo L SRM Bracket	712470			\$
Kit, SRM Mount - Horsch Maestro 2022+	712478			\$

Step 2 - Lift Switch

Lift Switch

Item	Part #	Price	Qty	Total
Monosem NG+4 Push Button Lift Switch Kit	712245			\$
Monosem NG+M Push Button Lift Switch	712500			\$
Monosem NX-M Push Button Lift Switch	712505			\$
Gaspardo MTR Push Button Lift Switch Kit	712248			\$
Vaderstad Tempo Push Button Lift Switch Kit	712257			\$
(2014-2019) Horsch Maestro Push Button Lift Switch Kit	712254			\$
Kuhn Maxima 2 Push Button Lift Switch	712251			\$
Kit, Lift Switch - Maestro 2020+	712475			\$

Step 3 - Seed Sensor Adapter Harnesses

Seed Sensor Y Harness

Monosem NG+4 Planters should not need any adapters. That planter should have a 37 pin connection that the Smart Connector would plug into.

2020 and older Horsch Maestro planters should have a 3 pin connector seed sensors that are compatible with the 706101 adapter harness. One 706101 harness will be required per row. 20201 Maestro planters will likely have a 4 pin-connector that we are not compatible with at this time.

Item	Part #	Price	Qty	Total
Kuhn Seed Sensor Adapter	706104			\$
Horsch Maestro Seed Sensor Adapter Harness (4 pin connector)	706102			\$
Horsch Maestro Seed Sensor Adapter Harness (3 Pin Connector)	706101			\$
Vaderstad Seed Sensor Adapter Harness (2016 and older)	706105			\$
Vaderstad Seed Sensor Adapter Harness (2017+)	706103			\$
Gaspardo Seed Sensor Adapter Harness (1 per row)	706107			\$

Step 4 - Load Cells

Load Cells

Item	Part #	Price	Qty	Total
Gaspardo MTR Smart Pin	712004			\$
Monosem 5/8" Smart Pin	712003			\$
Kuhn Maxima 2 Smart Pin	712007			\$
Vaderstad Tempo Load Sensor	712017			\$
Horsch Maestro Load Sensor	712009			\$

Step 5 - DeltaForce

DeltaForce Bracket

Item	Part #	Price	Qty	Total
Monosem Standard Parallel Arm (Narrow) Row Unit Mount Kit - NG+3, NG+4	712105			\$
Monosem NG +M Row Unit Mount Kit (5" toolbars only)	712420			\$
Gaspardo MTR DeltaForce Row Unit Mount Kit	712107			\$
Vaderstad Tempo Row Unit Mount Kit	712445			\$
DF Horsch Maestro 2014-2019	712380			\$
DF RU Kit - Horsch Maestro 2022+	712117			\$

Fitting Kits

The Vaderstad tight clearance fitting kit (729764) is recommended for Vaderstad Tempo V and other planters with positive pressure tubes (or similar clearance issues) that force the cylinder to be mounted with the solenoid facing the rear of the planter

Item	Part #	Price	Qty	Total
Vaderstad Tempo Tight Clearance Fittings Kit	729764			\$

Step 6 - Vacuum System

Vacuum Blower Exhaust

The

Item	Part #	Price	Qty	Total
Blower Dust Exhaust Kit	730585			\$
Flex Hose - Blower Dust Exhaust (10')	730584			\$

Step 7 - vDrive/vSet

Meter Parts

All Monosem and Gaspardo planters will require both the 768748 and 768790 to put vSet on the planter. Note that all other vSet parts will need to be ordered under the vSet 2 section of the order guide.

Note 1: vSet 2 on a Monosem is only compatible with full size OEM hoppers. It is not compatible with OEM seed deliver system style hoppers.

Note 2: The vSet 2 Cleanout Chute Retrofit Kit (768840) is designed mainly for use on Gaspardo and Monosem systems but can be used on any vSet 2 installation

Note 3: If ordering 768748 it is also necessary to purchase a vSet mechanical half (768729) + vDrive (730050) + connector clip (768332)

Item	Part #	Price	Qty	Total
vSet 2 Seed Cover seed tube Ready - Short seed chute (Monosem and Gaspardo only)	768748	:		\$
vSet 2 Gravity Hopper Kit (replaces 768750)	768790	:		\$
vSet2 Cleanout Chute Retrofit Kit	768840	:		\$
Minihopper Kit, Horsch Maestro 2022+	768865	:		\$

Hopper Parts

All Gaspardo planters will require the 768770. 768815 adapter will also be used in most instances that the seed sensor is mounted directly under the meter

Compatible Horsch Planters:

- Horsch Maestro row units sold in Europe from 2014-2019 OR
- Horsch Maestro row units sold in the US in 2015 *only*

Note: When installing vSet/vDrive on a Horsch Maestro row unit, either WaveVision 700285 or Bullseye 700280 needs to be installed in replacement of the OEM seed tube. If the original seed sensor is re-used with the Bullseye seed tube, the Horsch seed sensor adapter harness (706101) is needed per row.

Cutting of the shank is required for the Horsch Maestro install (refer to the 736275 installation kit).

Item	Part #	Price	Qty	Total
vSet 2 Monosem Finishing Kit	768760			\$
vSet 2 Gaspardo Finishing Kit	768770			\$
Gaspardo MTR - Seed Sensor Adapter	768815			\$
Horsch vSet 2 Hopper Finish Kit	736260			\$
Horsch vSet 2 Install Template Kit	736275			\$
Sealed 1.6 Bu Lid Kit	736315			\$

Step 8 - Keetons

Quick Attach Bracket

Gaspardo Quick Attach Bracket also includes the FurrowJet Bracket.

For Quick Attach bracket installs on a Monosem planter WITH the OEM closing system, it is required to also install a 141265.

Item	Part #	Price	Qty	Total
Gaspardo Quick Attach Firmer & FurrowJet Support Bracket Kit	150603			\$
Monosem Quick Attach Firmer Bracket	150605			\$
Monosem Spring Closing Kit*	141265			\$
Kuhn Maxima 2 Quick Attach Firmer Bracket Kit	150611			\$
Horsch Maestro Quick Attach Firmer Bracket	150612			\$
QA Bracket - Maestro 2022 Kit	150615			\$
Quick Attach Kit, Sola	150620			\$
Kverneland QA Bracket Kit	150618			\$

*All Quick Attach Keeton installs on a Monosem planter WITH the OEM closing system, will require the 141265 Monosem Spring Closing Kit.

Step 9 - FurrowJet

FurrowJet will require a Keeton Quick Attach Bracket to be installed before a FurrowJet Support Bracket can be installed.

FurrowJet Brackets

Monosem will require a closing set back bracket if FurrowJet is being installed. It is the same setback as FurrowForce so it may be installed if FurrowForce is already installed.

Note: Gaspardo FurrowJet Support bracket is included in the Keeton Bracket.

Item	Part #	Price	Qty	Total
FurrowJet Support Bracket - Monosem	141245			\$
Monosem NG+4 Closing Setback	141250			\$
FurrowJet Support Bracket - Horsch Maestro (2014-2019)	141257			\$
Monosem Spring Closing Kit*	141265			\$
Support Bracket Kit - Maestro 2022	141260			\$

*When installing FurrowJet on a Monosem planter it requires a Keeton Quick Attach bracket, which also requires a 141265 Monosem Spring Closing Kit when using the OEM closing system.

Step 10 - FurrowForce

FurrowForce Row Unit Brackets

Setback brackets -

- Monosem will require a closing setback bracket. If FurrowJet is already installed, the setback bracket will already be on the planter and an additional setback is not required.
- FurrowForce is not compatible with the Monosem Pro Wheel seed firmer.
- Horsch Maestro - will require a setback bracket if it is desired to run an extreme stagger on the closing wheels or if running FurrowJet. Setback bracket already includes the mounting bracket so only order 756615 or 756635 -- do not order both for the same row.

Item	Part #	Price	Qty	Total
FurrowForce Row Unit Bracket - Monosem NG+4	756600			\$
FurrowForce Row Unit Bracket - Gaspardo MTR	756610			\$
FurrowForce Row Unit Bracket - Vaderstad Tempo	756625			\$
FurrowForce Row Unit Bracket - Horsch Maestro (2014-2019)	756615			\$
Closing Setback Bracket for Horsch Maestro (2014-2019) - may be required for FurrowForce	756635			\$
Monosem NG+4 Closing Setback	141250			\$
Kuhn Maxima 2 FurrowForce Bracket	756620			\$
Shank AdapterKit - FF Maestro 2022+	756690			\$
Adapter Kit, FF - Gaspardo Chrono	756335			\$
Kverneland FF Adapter Kit	756320			\$
Sola FF Adapter Kit	756330			\$

Step 11 - Gray Row Unit

Horsch

If installing Gray Precision Planting Ready Row Units on Horsch bar it is necessary to install the Gray Row unit setback on every row.

Item	Part #	Price	Qty	Total
Gray Row Unit Setback - for Horsch (2014-2019)	712350			\$

Step 12 - vDrive Insecticide

Monosem - Microsem hopper

The Monosem Microsem adapter kit allows the existing Microsem hoppers installed on the planter to be controlled by 2 vDrive Insecticide motors per hopper that would deliver product for two row units

It is also possible to use one hopper per row unit, with only one vDrive Insecticide motor per hopper to deliver product to the corresponding row unit.

Note: a single SRM can only drive 1 vDrive Insecticide motor. If you are installing 2 vDrives Insecticide motors onto 1 hopper, the 2 motors will need to be connected to different SRMs.

Item	Part #	Price	Qty	Total
Microsem vDrive Insecticide Hopper Adapter Kit	732250	:		\$

Insecticide Brackets

The 736280 bracket kit is for vDrive Insecticide installs with a 1.6 bushel seed hopper on a Precision Planting Ready Row Unit. The insecticide hopper and hardware kit will need to be ordered through Shoup. Please see the Precision Planting Ready Row Unit 2.0 section of the order guide for more details.

Item	Part #	Price	Qty	Total
Insecticide/3.0 Bushel Hopper Bracket Kit - PPRU 2.0 (1 per row)	736280			\$

Step 13 - SpeedTube

Horsch

Item	Part #	Price	Qty	Total
Speedtube Kit - Maestro 2022+	768855			\$

Step 14 - SmartDepth

Monosem

Item	Part #	Price	Qty	Total
Monosem - Smartdepth Kit	734220			\$

Row CAN Expansion

For all systems that are running more than vDrive/Select (ie. -*SpeedTube*, *Insecticide*, *vApply HD*) it will be necessary to add a row CAN expansion kit and a CAN jumper cable to go from the expansion hub to the device. It is necessary to order a CAN expansion kit with SmartDepth.

For SmartDepth, if the CAN hub is mounted to the SRM a 30" CAN jumper is enough length in most cases to go from the hub down along the shank and to the SmartDepth module. Use a 40" jumper if you want a bit of extra length for zip tying.

--If the CAN hub is mounted to the parallel arms a 40" or 50" CAN jumper is recommended.

The 734190 SmartDepth Mounting Bracket gives the option of mounting a CAN Expansion Hub to the side of the SmartDepth module to have a hub on the back of the row unit. This would cut down on the number of CAN jumpers running to the back of the row unit when FurrowForce was also installed on the planter.

- The 729205 will be needed if plugging the SRM row harness directly into a CAN hub that is mounted using the 734190.

Item	Part #	Price	Qty	Total
SmartDepth HUB Mounting Bracket	734190			\$
2' Row CAN Extension - 6 Pin	729205			\$
Row CAN Expansion HUB Kit	729500			\$
Black Connector - Row Can Jumper - 12" (Inches) --- For first device	729481			\$
Black Connector - Row Can Jumper - 20" (Inches) --- For first device	729482			\$
Black Connector - Row Can Jumper - 30" (Inches) --- For first device	729483			\$
Black Connector - Row Can Jumper - 40" (Inches) --- For first device	729489			\$
Black Connector - Row Can Jumper - 50" (Inches) --- For first device	729485			\$

Row Unit Components

Step 1 - Row Unit Components

- Compatible with John Deere ME2, XP, and ME5 row unit-SHORT PARALLEL ARMS ONLY!
- Lower Parallel arm comes DeltaForce compatible

Note: The Parallel Arm Kit will require a new lift switch and mounting bracket. The lift switch is the same as current push button option but the bracket will fit the thicker parallel arm. If a system already has a push button installed, it is only necessary to purchase a new bracket (726784).

Parallel Arms

Item	Part #	Price	Qty	Total
DuraWear Parallel Arm Kit	753000			\$
Lift Switch Kit, JD XP & PP Short Arm	726785			\$
Switch, Lift	726608		1 per kit	\$
Hardware Kit, Lift Switch JD XP & PP	726786		1 per kit	\$
Tie, Cable 8" UV Black	63126		2 per kit	\$
JD XP & PP Short Arm Push Button Bracket	726784		1 per kit	\$

Step 2 - Seedtube Guard

Seed Tube Guards

Compatible with John Deere XP, ME5 row units-CONVENTIONAL SEED TUBE ONLY

Item	Part #	Price	Qty	Total
Assembly - Seed Tube Guard w/o Inserts	753070	:		\$

CAN Capacity Calculation - Planter -



	20/20 – Gen2	20 20 – Gen3
Rows (or less)	SRM Products*	Required CAN Networks**
16	>12	1
24	6.5	2
36	3.5	3
48	2.5	3
54	2	3
72	NA	3

Gen2 Product Rules:

- * Gen 2 CAN lengths exceeding 130' must utilize a CAN Booster. CAN Booster is **NOT** a benefit on shorter CAN lengths.
- * Load Pins (even without **DeltaForce**) count as 1 product.
 - **DeltaForce** cylinders DO NOT count as another product.
- * **SpeedTube** counts as 0.5 products.
- * Each **vApply** or **FlowSense** system counts as 1 product (Row by Row HD, Section HD, or FlowSense Only)
- * **vDrive** and **vDrive Insecticide** count as one product each.
 - **mSet** and **vSet Select** each count as an additional product on top of vDrive
- * **SmartFirmer** installed -
 - every 4 rows = 0.5 products
 - every 2 rows = 1 product
 - every row = 2 products

** 20|20 Gen3 does **NOT** support the CAN Booster.

**Trimble FMX 1000 & Case IH FM 1000
Trimble CFX 750 & Case IH FM 750**



GPS Selection Guide

Precision Parts

Ref Doc

		750	1000
With Hydraulic Steer - Trimble Aftermarket	725599	955443	955439
With Hydraulic Steer - Case IH Factory	727131	955444	955440
With Assisted Steer (Non-Hydraulic)	727060	955445	955441
No auto steer With 12 Pin Duetsch	727060	955446	955442

EZ Guide 500 & 250



Trimble #

	500	250		
With Assisted Steer (Non-Hydraulic)	725599	725599	64045*	955447
Without AutoSteer	725599	725599	64045*	
No auto steer With 12 Pin Duetsch	727060	725599	64045*	
With Hydraulic Steer - Trimble Aftermarket	725599			

TMX-2050

With Hydraulic Steer - Trimble Aftermarket	725599	
With Hydraulic Steer - Case IH Factory	727131	
Without AutoSteer	727060	101895*

GFX-750

With NAV II/III	725599
Without AutoSteer	Contact Product Support
With AutoSteer - No NAV II/III	727068

John Deere

*order part from Trimble



All GS Displays & StarFire Receiver	727124	955451
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Case Pro 700 & Pro 600



With Hydraulic Steer - Case IH Factory	727131	955452
With Trimble 372, 262, 252 & 162	727131	955453

**Agleader Integra, Versa, & Insight
AgLeader InCommand**

Agleader #



With a ParaDyme System	725599	4002226-15*	955454
With a Steer Command / GeoSteer System	725599	4003263-6*	955455
With Hydraulic Steer - Trimble Aftermarket	725599		
With Trimble 372, 262, 252, & 162	727131		955457
No auto steer With Serial Port	725599		955458
With Agleader GPS6000/6500	725599		
With Agleader GPS1500	727027		

*order part from Agleader

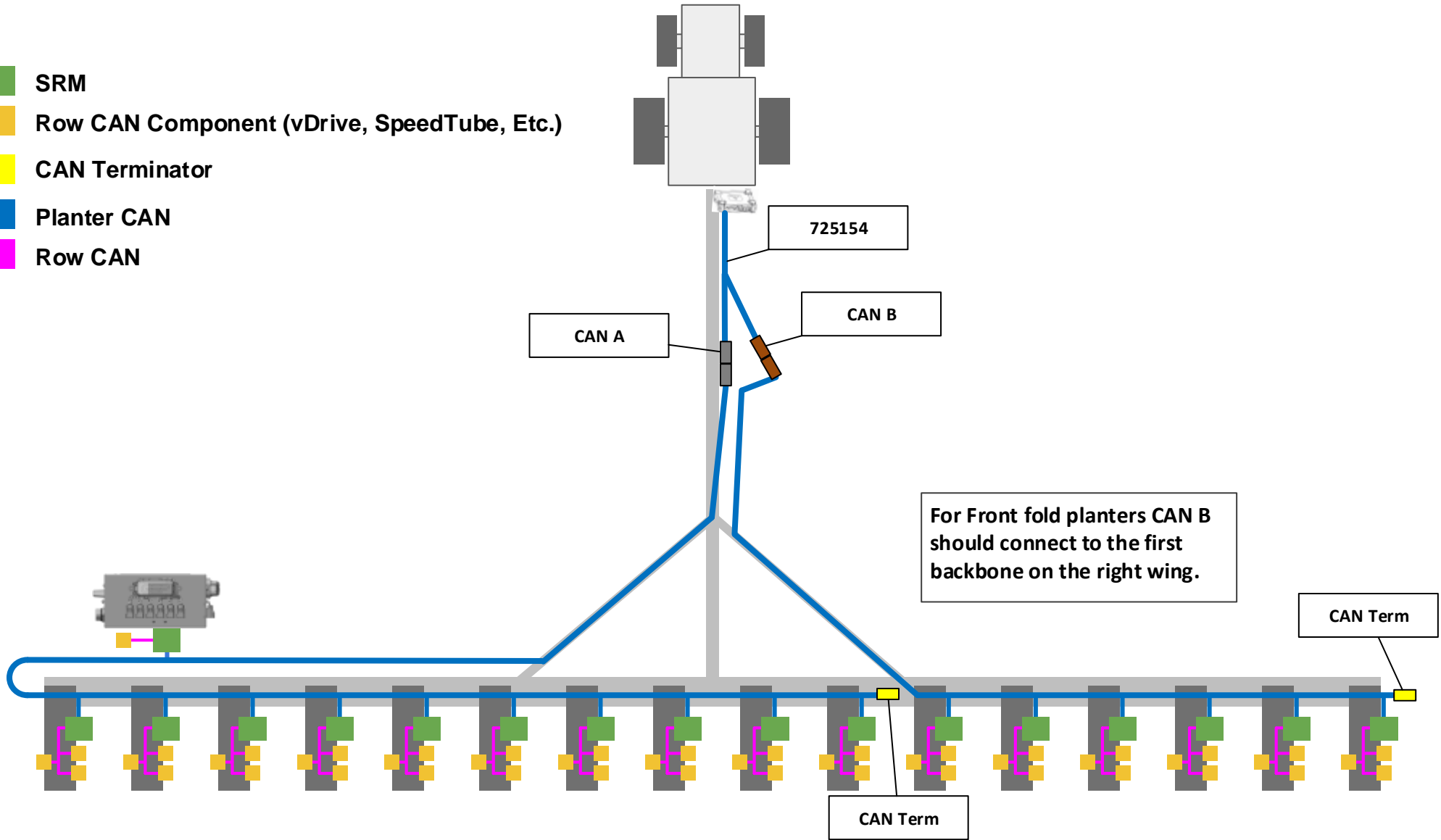
Lightbar Systems With Serial Connections



use harness	725599	
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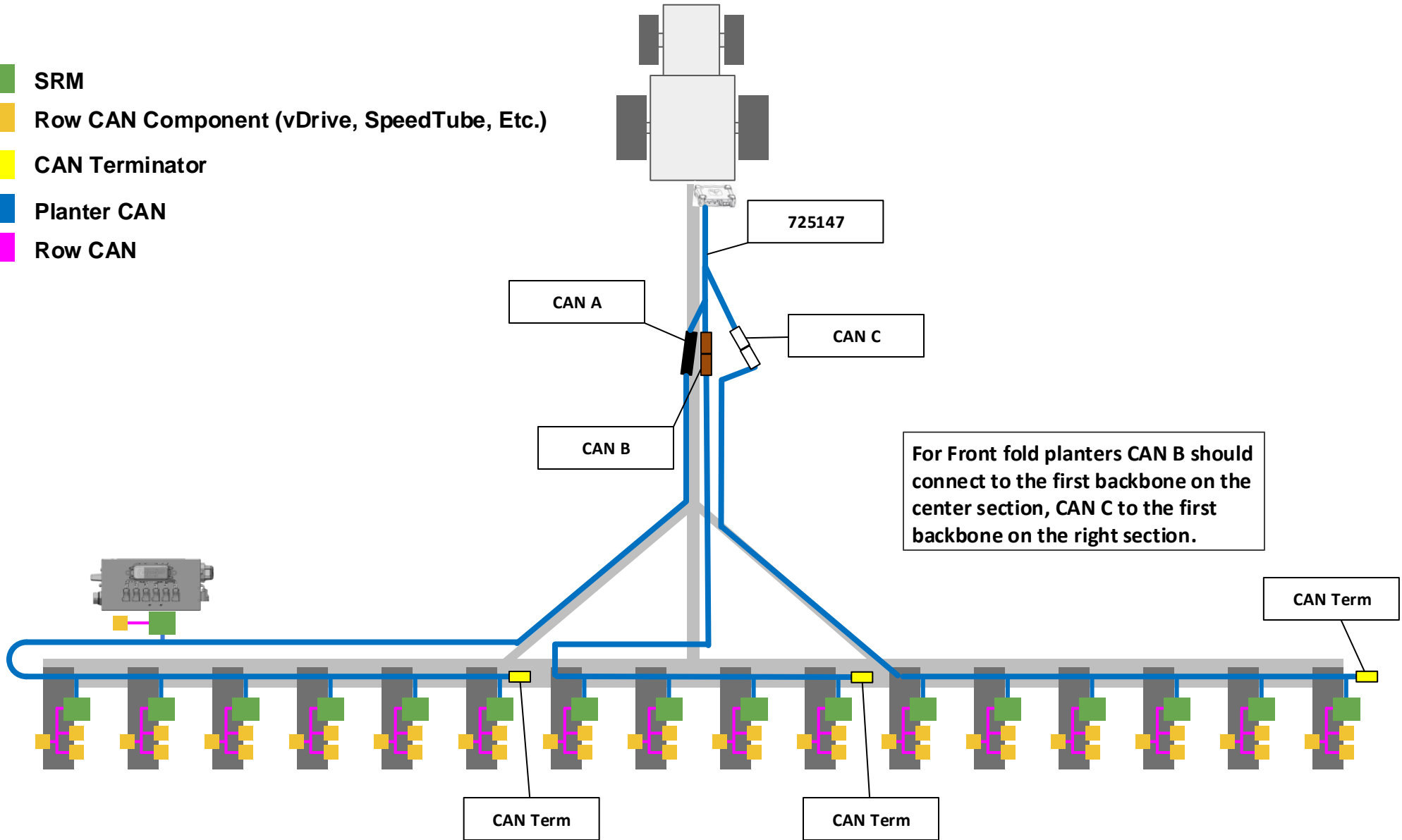
Gen 3 Dual CAN Diagram

- SRM
- Row CAN Component (vDrive, SpeedTube, Etc.)
- CAN Terminator
- Planter CAN
- Row CAN

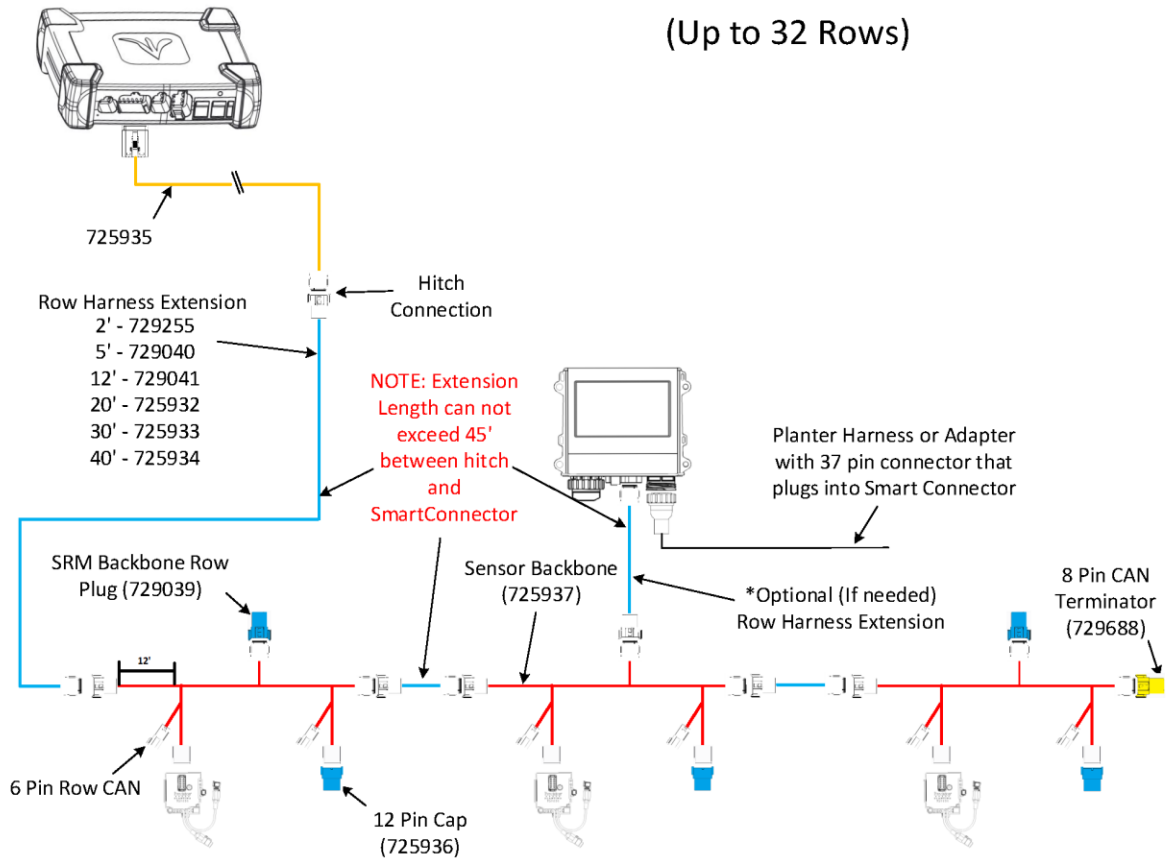


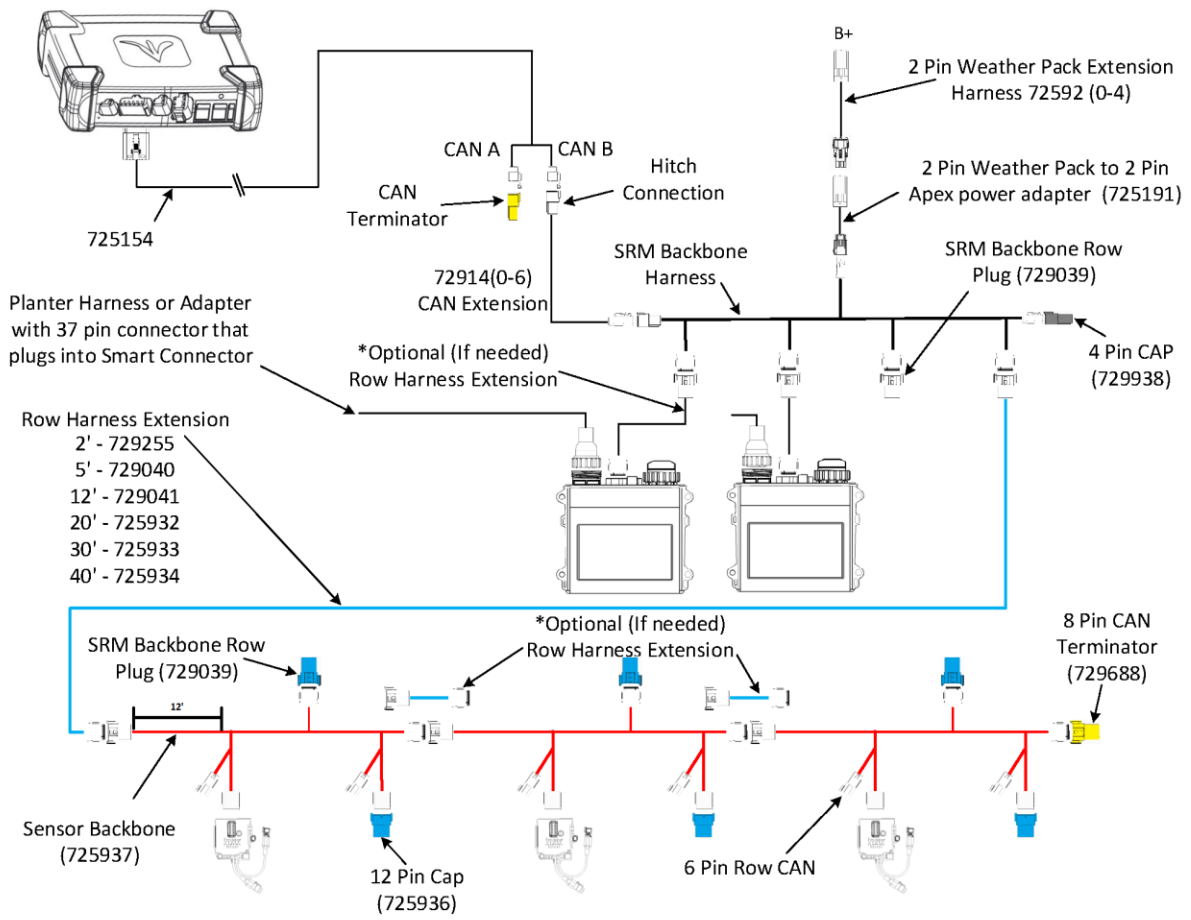
Gen 3 Triple CAN Diagram

- SRM
- Row CAN Component (vDrive, SpeedTube, Etc.)
- CAN Terminator
- Planter CAN
- Row CAN



GEN 3 Sensor Architecture (Up to 32 Rows)





20|20 Gen 3 Smart Connector Guide

Planter	Rows	Monitor	# Number of SC Required	DJ Adapter or Metra-pack Needed	DB Harness Rec.	DB Harness Sender	GP Harness	CNH Adapter	Load Cell/Pin	RUM/SRM Mount Kit
					See below	See below		725838		
JD7000										
	4-32	Compu-trak	1						(3) - 725581	
	4-32	Dickey-john	1	(1) 725234					(3) - 725581	
JD7200, 1700, 17x5										
	4-32	Compu-trak	1						(3) - 725580	
	4-32	Compu-trak	1						(3) - 725866	
	4-32	Dickey-john	1	(1) 725234					(3) - 725580	
-2002 Drawn	4-15	SeedStar	1	(1) 725209					(3) - 725580	
2003-2010 Drawn	4-15	SeedStar	1	(1) 725282					(3) - 725580	
-2010 Drawn	16-32	SeedStar	1						(3) - 725580	
3 pt -2002	4-15	SeedStar	1	(1) 725209					(3) - 725580	
3pt 2003-2014	4-15	SeedStar	1	(1) 725282					(3) - 725580	
3 pt 2015+	4-15	SeedStar	1	(1) 725282					(3) - 725866	
3 pt -2010	16	SeedStar	1						(3) - 725580	
2011-2014	4-16	SeedStar	1	(1) 725282					(3) - 725580	
2015+	4-16	SeedStar	1	(1) 725282					(3) - 725866	
2011-2014	17-24	SeedStar	1	(1) 725624					(3) - 725580	
2015+	17-24	SeedStar	1	(1) 725624					(3) - 725866	
2011-2014	25-32	SeedStar	1	(1) 725626					(3) - 725580	
2015+	25-32	SeedStar	1	(1) 725626					(3) - 725866	
2015+	12-24	ExactEmerge	1						(3) - 725866	3-725747
Deere-Bauer										
-2011	24-32	CT 350	1						(3) - 725580	
-2011	24-36	CT 450	2	(2) 725234					(3) - 725580	
-2011	24-32	SeedStar	1	(1) 725234					(3) - 725580	
-2011	33-48	SeedStar	2	(2) 725234					(3) - 725580	
-2011 DB120	48	SeedStar	2	(1) 725234	(1)725555	(1)725556			(3) - 725580	
-2011	54	SeedStar	2	(1) 725234	(1)725454	(1)725455			(3) - 725580	
2012-2014	24-32	SeedStar	1		(1)725701				(3) - 725580	
2015+	24-32	SeedStar	1		(1)725701				(3) - 725866	
2012-2014	33-54	SeedStar	2		(1)725701				(3) - 725580	
2015+	33-54	SeedStar	2		(1)725701				(3) - 725866	

20|20 Gen 3 Smart Connector Guide

Planter	Rows	Monitor	# Number of SC Required	DJ Adapter or Metra-pack Needed	DB Harness Rec.	DB Harness Sender	GP Harness	CNH Adapter	Load Cell/Pin	RUM/SRM Mount Kit	
					See below	See below		725838			
Kinze 2000											
-1998	4-32	DJ or KM	1	(1) 725234					(3) - 725581		
1999	4-32	KPM	1	Requires Planter Harness, Seedtubes, and Sensors					(3) - 725581		
Kinze 3000				**2013 & Newer 3000's require only harness and one 725720 per row							
	4-32	KPM	1	Requires Planter Harness, Seedtubes, and Sensors **					(3) - 725466		
	33+	KPM	2	Requires Planter Harness, Seedtubes, and Sensors **					(3) - 725466		
Kinze 4900				**4900 Planters will require a new planter harness and Wavevision Sensors							
2015	12-24	KPM	1	Requires Planter Harness, Seedtubes, and Sensors **					(3) - 725466		
White											
5000/6000	4-32	DJ	1	(1) 725234					(3) - 725266		
8000	4-32	DJ	1	(1) 725234					(3) - 725295		
8000	4-32	SM400SE/GTA/C3000	1	Requires Planter Harness for SM400SE, GTA, C3000					(3) - 725295		
9000	4-32	DJ	1	(1) 725234					(3) - 725887		
9000	4-32	SM400SE/GTA/C3000	1	Requires Planter Harness for SM400SE, GTA, C3000					(3) - 725887		
9000	33+	SM400SE/GTA/C3000	2	Requires Planter Harness for SM400SE, GTA, C3000					(3) - 725887		
Great Plains											
YP1225, 1625	12-32	Seed Mgr	2				(2) 725400		(3) - 725582		
2425, YP40	24-48	IntelliAg	2				(1) 725401 & (1) 725402		(3) - 725582		
YP1225, 1625	12-32	IntelliAg	2				(2) 725402		(3) - 725582		
YP Rigid	4,6,8	DJ PM300	1	(1) 725234					(3) - 725582		
Case IH											
1200/1250	4-32	Early Riser/DJ	1	(1) 725234					(3) - 725875		
1200/1250	4-32	Univ./600/700	1	Requires Planter Harness and Sensors					(3) - 725875		
1200/1250	36+	Univ./600/700	2	Requires Planter Harness and Sensors					(3) - 725875		
12x5 Drawn	4-16	Univ./600/700	1					1	(3) - 725875		
12x5 3-Pt	4-12	Univ./600/700	1					1	(3) - 725875		
12x5	24	Univ./600/700	2					2	(3) - 725875		
12x5	32-36	Univ./600/700	2					2	(3) - 725875		
Monosem											
	4-32	Dickey-john	1	(1) 725234					(3) - 725580		
	4-32	MPM	1	Requires Planter Harness and Sensors					(3) - 725580		
	36+	MPM	2	Requires Planter Harness and Sensors					(3) - 725580		

Power Calculator

Product	Power Requirement per Row (amps)	Number of Rows	Total Product Amp Draw
vDrive	1.25		
vSet Select	1.25		
mSet (including the vDrive)	1.55		
DeltaForce	1		
SpeedTube	2.25		
vDrive Insecticide	0.5		
vApplyHD	0.2		
vApplyHD Flex	0.28		
Smart Firmer	0.03		
SmartDepth	2		
EM FlowSense	0.25		
CAN FlowSense	0.03		
AUX FlowSense	0.01		
WaveVision	0.1		
DJ Sensors (optical)	0.04		
Smart Connector	0.25		
FurrowForce Sensor	0.07		
FurrowForce Valve	0.35		
SRMs	0.08		
***Clean Sweep Compressor	20		
Total Amp Draw			

***Only count Clean Sweep if it is being powered from the PDM or Alternator

Tractor Power - Gen3	
DBM	2A
10" Display	1.25A
FVM	2.4A

No Alternator Required	Alternator Required	2 Alternators Needed
< 40	40 - 200 amps	> 200 amps

NOTE: For Gen3 Sensing systems - a single Smart Connector system sourcing power directly to the implement through the DBM should be limited to 7 or less Amps. Dual Smart Connector systems or systems utilizing a 725925 Cab Power Harness Splitter should be limited to supplying 15 Amps or less to the implement. Any power needs above this should be shifted to a PDM architecture.

DeltaForce Hydraulic Requirements

Flow: ¼ Gallon per minute per row.
Closed Center Hydraulic System only

Pressures: Lift Manifold and Cylinders

Port	PSI
Supply	2250 (Minimum)
Return	Less than 100
Lift	200 to 2250 (or system pressure)

DeltaForce Hose Sizing: Tractor to Lift Manifold

Rows	Hose Size
24 rows (or less)	1/2"
25-36 rows	5/8"
Greater than 36 rows	3/4"

-Recommendations are based upon experience and opportunity for SRM
 Based component growth

Case Drain: Hose Size Recommendations

Components on Circuit	Circuit Size
Less than 4	3/8"
4 and Greater	1/2"

Hose Size Capabilities

Hose Size	Gallon per Minute
3/8"	2-6
1/2"	6-12
5/8"	12-20
3/4"	20-30

Alternator only: ½" Hose (vDrive &/or Speedtube no DeltaForce)

- Precision Planting suggests using the DeltaForce Hose Sizing chart above as a reference, this will help eliminate the scenario that DeltaForce is installed at a later time and new hoses will not need to be purchased.

DeltaForce Plumbing Locations

- 1) Power Beyond
- 2) SCV with Motor Return
- 3) Dedicated SCV
- 4) Tied in with Hydraulic Seeding Motors
- 5) PTO Pump (<http://www.commandhydraulics.com/hydraboost>)

Monosem Compatibility

Row Unit	Year(s) Produced	Parallel Arms/Down Force	Where Used	State
NG	1989-1998	Standard		Production - 712105*
NG+2	1998-2002	Standard		Production - 712105*
NG+3	2002-2008	Standard	Europe, US	Production - 712105
NG+3	2002-2008	Wide/No-Till	US only	Production - 729393
NG+4	2009-current	Standard	Europe, US	Production - 712105
NG+4	2009-current	Wide/No-Till	US only	Production - 729393
NG+4	2009-current	Monoshox	US only	Production - 712106
NG +(new)	??	NEW US Linkage	US Only	No

Compatible Row units



NG +3/4 Standard



NG +3/4 Wide / No-till



NG +3/4
Monoshox - Gen I

Incompatible Row units

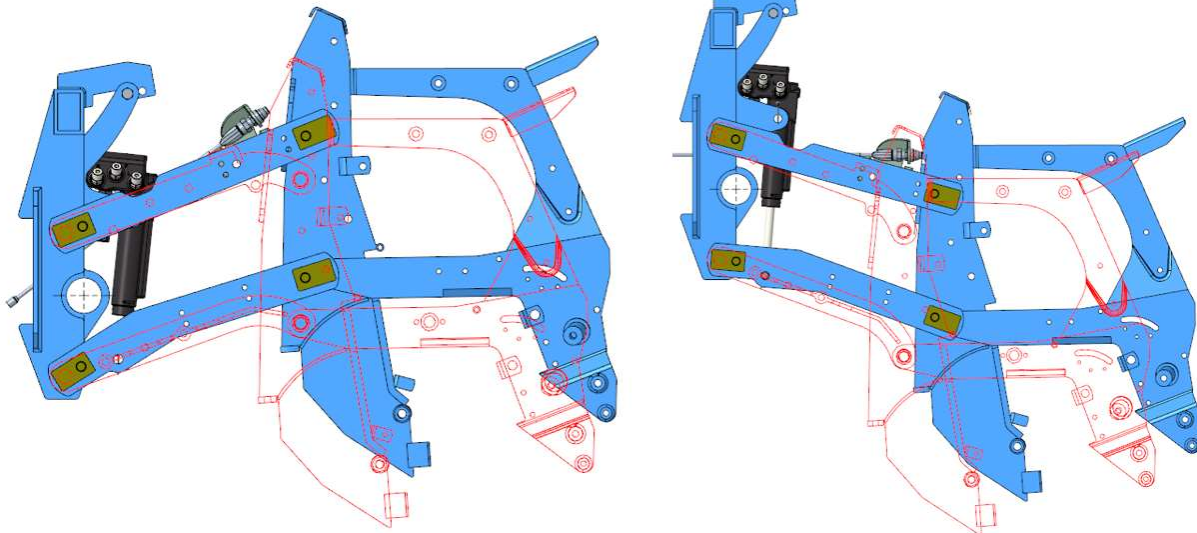


NX2



NX M

New Monoshox Linkage Comparison



The new Monoshox linkage (red outline above) is **not compatible** with deltaforce.

vSet 2

Crop	Seed Size (Seeds/lb)	Seeding rate	Seed Disk	Singulator	Ejector	Crop Kit	Additional Parts
Canola	75,000 - 180,000	NA	768338 - 80 Hole Canola Disk - [.047" Hole Size]	768355 - Corn Singulator	768680 - Canola Ejector	768348 - Includes Disk, ejector, wiper kit. NO singulator included	720288 - Canola Screen for Bulk Fill planters 768335 - Wiper Kit
Corn	1000 -2800	<32 seeds/sec	730079 - 27 Hole Corn Disk - [.176" Hole Size]	768355 - Corn Singulator	768291 - Corn Ejector	768341 - includes singulator, ejector, disk	
Cotton - 2 Seed HillDrop	4200-6300	NA	730292 - 40 Hole 2- Seed HillDrop Cotton Disk - [.115" Hole Size]	768360 - Soybean Singulator	768296 - 2-Seed HillDrop Cotton Ejector	768344 - Includes Disk, Ejector, Upper Restriction Brush. NO Singulator included	768379 - Upper Restriction Brush
Cotton - 3 Seed HillDrop	4200-6300	NA	730293 - 39 Hole 3- Seed HillDrop Cotton Disk - [.115" Hole Size]	768360 - Soybean Singulator	768297 - 3-Seed HillDrop Cotton Ejector	768345 -Includes disk, ejector, Upper Restriction Brush. NO singulator included	768379 - Upper Restriction Brush
Cotton - Singulated High Rate	4200-6300	<35 seeds/sec	730296 - 32 Hole Singulated High Rate Cotton Disk - [.115" Hole Size]	768355 - Corn Singulator	768295 - SugarBeet Ejector	768499 -Includes disk, ejector. NO singulator included	
Edible Beans - Large	<1,300		730294 - 32 Hole Large Edible Bean Disk - [.210" Hole Size]	768360 - Soybean Singulator	768294 - Large Edible Bean Ejector	768343 - Includes Disk, Ejector, large seed upper brush.	768428 - Large Seed Upper Brush
Edible Beans - Medium	1,300 - 2,000		730295 - 70 Hole Medium Hole Edible Bean Disk - [.170" Hole Size]	768430 - Medium Edible Bean Singulator	768292 - 80 Hole Soybean Ejector	768349 - Includes Disk, Singulator, ejector, large seed upper brush	768428 - Large Seed Upper Brush

Edible Beans - Small	>2,000	NA	730039 - 80 Hole Soybean Disk - [.155" Hole Size]	768360 - Soybean Singulator	768292 - 80 Hole Soybean Ejector	768342 - Includes Disk, Singulator, Ejector		
Peanuts - Large	200-600	<50	768651 - 29 Hole Large Peanut Disk - [.250" Hole Size]	NA	768294 - Large Edible Bean Ejector	768650 -Includes disk, ejector, Large seed upper brush. NO singulator included	768428 - Large Seed Upper Brush	
Peanuts - Small, Medium	500-1400	<50	730361 - 32 Hole Peanut Disk - [.230" Hole Size]	768360 - Soybean Singulator	768294 - Large Edible Bean Ejector	768429 - Includes disk, ejector, large seed upper brush. NO singulator included	768428 - Large Seed Upper Brush	
Popcorn - Large	1500-4800	NA	730082 - 27 Hole Specialty Disk - [.125" Hole Size]	768355 - Corn Singulator	768293 - Specialty Ejector	NA		
Popcorn - Medium	1500-4800	NA	730081 - 27 Hole Specialty Disk - [.115" Hole Size]	768355 - Corn Singulator	768293 - Specialty Ejector	NA		
Popcorn - Small	1500-4800	NA	730081 - 27 Hole Specialty Disk - [.115" Hole Size]	768355 - Corn Singulator	768293 - Specialty Ejector	NA		
Pumpkins - Canning	NA	NA	730082 - 27 Hole Specialty Disk - [.125" Hole Size]	768355 - Corn Singulator	768293 - Specialty Ejector	NA		
Pumpkins - Ornamental	NA	NA	730082 - 27 Hole Specialty Disk - [.125" Hole Size]	768355 - Corn Singulator	768293 - Specialty Ejector	NA		
Sorghum / Milo	12,000 - 19,000	NA	730291 - 32 Hole Large SugarBeet Disk - [.086" Hole Size]	768355 - Corn Singulator	768295 - SugarBeet Ejector	768347 -Includes disk, ejector. NO singulator included	720253 - Milo Screens for Bulk Fill planters	

Soybeans - 56 Hole Disk - SpeedTube	2000-4500	NA	768687 - 56 Hole Soybean Disk - [.155" Hole Size]	768360 - Soybean Singulator	768689 - 56 Hole Soybean Ejector	768690 - Includes disk, ejector. NO Singulator included		
Soybeans - 56 Hole Disk - Seed tube	2000-4500	NA	768687 - 56 Hole Soybean Disk - [.155" Hole Size]	768355 - Corn Singulator	768689 - 56 Hole Soybean Ejector	768690 - Includes disk, ejector. NO Singulator included		
Soybeans - 80 Hole Disk	2000-4500	NA	730039 - 80 Hole Soybean Disk - [.155" Hole Size]	768360 - Soybean Singulator	768292 - 80 Hole Soybean Ejector	768342 - Includes Disk, Singulator, Ejector		
SugarBeets/ Onions - Small (<9.5/64)	>28,000	NA	730290 - 32 Hole Small SugarBeet Disk - [.062" Hole Size]	768355 - Corn Singulator	768295 - SugarBeet Ejector	768346 -Includes disk, ejector. NO singulator included	720253 - Milo Screens for Bulk Fill planters	
SugarBeets/ Onions -Large (>9.5/64)	<28,000	NA	730291 - 32 Hole Large SugarBeet Disk - [.086" Hole Size]	768355 - Corn Singulator	768295 - SugarBeet Ejector	768347 -Includes disk, ejector. NO singulator included	720253 - Milo Screens for Bulk Fill planters	
Sunflowers - #1	3,000-10,000	NA	730085 - 27 Hole Specialty Disk - [.155" Hole Size]	768355 - Corn Singulator	768293 - Specialty Ejector	NA		
Sunflowers - #2	3,000-10,000	NA	730083 - 27 Hole Specialty Disk - [.135" Hole Size]	768355 - Corn Singulator	768293 - Specialty Ejector	NA		
Sunflowers - #3	3,000-10,000	NA	730081 - 27 Hole Specialty Disk - [.115" Hole Size]	768355 - Corn Singulator	768293 - Specialty Ejector	NA		
Sunflowers - #4	3,000-10,000	NA	730081 - 27 Hole Specialty Disk - [.115" Hole Size]	768355 - Corn Singulator	768293 - Specialty Ejector	NA		

SunFlowers - Edible Small	2000-4000	<32 seeds/sec	730079 - 27 Hole Corn Disk - [.176" Hole Size]	768355 - Corn Singulator	768291 - Corn Ejector	768341 - includes singulator, ejector, disk		
Sunflowers- Edible Large	2000-4000	<32 seeds/sec	730079 - 27 Hole Corn Disk - [.176" Hole Size]	768355 - Corn Singulator	768291 - Corn Ejector	768341 - includes singulator, ejector, disk	768428 - Large Seed Upper Brush	
Sweet Corn - Large	2000-4600	NA	730084 - 27 Hole Specialty Disk - [.145" Hole Size]	768355 - Corn Singulator	768293 - Specialty Ejector	NA		
Sweet Corn - Medium	2000-4600	NA	730083 - 27 Hole Specialty Disk - [.135" Hole Size]	768355 - Corn Singulator	768293 - Specialty Ejector	NA		
Sweet Corn - Small	2000-4600	NA	730082 - 27 Hole Specialty Disk - [.125" Hole Size]	768355 - Corn Singulator	768293 - Specialty Ejector	NA		
Sweet Corn - X Large	2000-4600	NA	730085 - 27 Hole Specialty Disk - [.155" Hole Size]	768355 - Corn Singulator	768293 - Specialty Ejector	NA		
Wheat	NA	<300	768663 - 164 Hole Wheat Disk - [.070" Hole Size]	768360 - Soybean Singulator	768666 - Wheat Ejector	768665 - Includes Disk, Ejector, Upper Restriction Brush. No Singulator included	768379 - Upper Restriction Brush	720288 - Canola Screen for Bulk Fill planters

Sprocket Selection Guide

Website for Sprocket Chart Documents -

<https://cloud.precisionplanting.com/pubs/?folder=0Bx7V2J-P2yNZRWUtV2gtQ1JpcU0>

Planter	Contact Wheel Sprocket		Rate Chart	Notes	Range of Population
	PP	Manufacturer			Corn on 30" Rows
Kinze 2100 Stacker		12	955219		31,200 - 102,900
		48	955219		15,600 - 51,500
Kinze 3000 Finger		15	955231	Use half rate sprocket on transmission	15,000 - 49,400
Kinze 3200 Finger	23 (730280)		955213		23,000 - 75,700
	15 (730285)		955212		15,000 - 49,400
Kinze 3500 Finger		15	955236	Use Half Rate Sprocket on transmission Use Standard Rate Sprocket on Beans & double pop on chart	15,000 - 49,400
Kinze 3600 Finger		15	955232		15,000 - 49,400
		30	955232	Double rate chart on beans	88,800 - 292,800
Kinze 3660 Finger	Hydraulic Drive Only				Unlimited
Kinze 3700 Finger	23 (730280)		955213		23,000 - 75,700
	15 (730285)		955212		15,000 - 49,400
Kinze 3800 Finger	23 (730280)		955233		18,200 - 59,800
	15 (730285)		955233	For planting below 18,200 on 30"	11,800 - 39,000
Kinze 3200 EdgeVac		15	955227		17,161 - 50,876
		19	955227		21,737 - 64,443
		38	955227	Soybeans - 80 hole disk	128,811 - 249,696
Kinze 3500 EdgeVac		15	955228		16,066 - 47,631
		19	955228		20,350 - 60,334
		38	955228	Soybeans - 80 hole disk	128,811 - 249,696
Kinze 3600 EdgeVac		22	955215		15,000 - 49,400
		28	955215		19,100 - 62,900
		44	955215		30,000 - 98,800
Kinze 3660 EdgeVac	Hydraulic Drive Only				Unlimited
Kinze 3700 EdgeVac		22	955234		16,067 - 47,636
		28	955234		20,350 - 60,333
		44	955234	Soybeans - 80 hole disk	95,208 - 243,200
Kinze 3800 EdgeVac		15	955229		14,245 - 39,570
		19	955229		18,044 - 50,121
		38	955229	Soybeans - 80 hole disk	106,925 - 243,867
Kinze EdgeVac w/ SureStop		Any	955242	Must switch meter drive sprockets to 19 tooth	See sprocket chart
	15		955243	If needed on 3600 or 3700 to get lower populations. (19 Tooth on meter)	See sprocket chart
JD 7000	24 (730230)		955211		18,400 - 78,800
JD 7200/1700 Vac (2 hole)		28	955226		12,601 - 85,759
JD 7200/1700 Finger		28	955230	with Finger Meter Drive Sprocket	18,571 - 126,380
		28	955226	with Vac Meter Drive Sprocket	12,601 - 85,759

Note: On all sprocket charts - If the planter does not have one of the drive or driven sprocket sizes used on the chart, that specific sprocket size may need to be acquired from the planter manufacturer or local equipment dealer.

vSet Classic

Crop	Seed Size (Seeds/lb)	Seeding rate	Seed Disk	Singulator	Ejector	Crop Kit	Additional Parts
Corn	1000 -2800	<32 seeds/sec	730079 - 27 Hole Corn Disk - [.176" Hole Size]	768355 - Corn Singulator	730101 - Corn Ejector	730135 - includes singulator, ejector, disk	
Cotton - 2 Seed HillDrop	4200-6300	NA	730292 - 40 Hole 2- Seed HillDrop Cotton Disk - [.115" Hole Size]	768360 - Soybean Singulator	730436 - 2-Seed HillDrop Cotton Ejector	730277 - Includes Disk, Ejector, Upper Restriction Brush. NO Singulator included	730452 - Upper Brush Kit
Cotton - 3 Seed HillDrop	4200-6300	NA	730293 - 39 Hole 3- Seed HillDrop Cotton Disk - [.115" Hole Size]	768360 - Soybean Singulator	730461 - 3-Seed HillDrop Cotton Ejector	730460 -Includes disk, ejector, Upper Restriction Brush. NO singulator included	730452 - Upper Brush Kit
Cotton - Singulated High Rate	4200-6300	<35 seeds/sec	730296 - 32 Hole Singulated High Rate Cotton Disk - [.115" Hole Size]	768355 - Corn Singulator	730103 - SugarBeet Ejector	730505 -Includes disk, ejector. NO singulator included	
Edible Beans - Large	<1,300		730294 - 32 Hole Large Edible Bean Disk - [.210" Hole Size]	768360 - Soybean Singulator	730463 - Large Edible Bean Ejector	730465 - Includes Disk, large seed upper brush, and Ejector	768428 - Large Seed Upper Brush
Edible Beans - Medium	1,300 - 2,000		730295 - 70 Hole Medium Hole Edible Bean Disk - [.170" Hole Size]	768430 - Medium Edible Bean Singulator	730102 - 80 Hole Soybean Ejector	730470 - Includes Disk, Singulator, ejector, large seed upper brush	768428 - Large Seed Upper Brush
Edible Beans - Small	>2,000	NA	730039 - 80 Hole Soybean Disk - [.155" Hole Size]	768360 - Soybean Singulator	730102 - 80 Hole Soybean Ejector	730140 - Includes Disk, Singulator, Ejector	

Popcorn - Large	1500-4800	NA	730082 - 27 Hole Specialty Disk - [.125" Hole Size]	768355 - Corn Singulator	730304 - Specialty Ejector	NA		
Popcorn - Medium	1500-4800	NA	730081 - 27 Hole Specialty Disk - [.115" Hole Size]	768355 - Corn Singulator	730304 - Specialty Ejector	NA		
Popcorn - Small	1500-4800	NA	730081 - 27 Hole Specialty Disk - [.115" Hole Size]	768355 - Corn Singulator	730304 - Specialty Ejector	NA		
Pumpkins - Canning	NA	NA	730082 - 27 Hole Specialty Disk - [.125" Hole Size]	768355 - Corn Singulator	730304 - Specialty Ejector	NA		
Pumpkins - Ornamental	NA	NA	730082 - 27 Hole Specialty Disk - [.125" Hole Size]	768355 - Corn Singulator	730304 - Specialty Ejector	NA		
Sorghum / Milo	12,000 - 19,000	NA	730291 - 32 Hole Large SugarBeet Disk - [.086" Hole Size]	768355 - Corn Singulator	730103 - SugarBeet Ejector	730150 -Includes disk, ejector. NO singulator included	720253 - Milo Screens for Bulk Fill planters	730279 - Disk Shim Kit
Soybeans - 56 Hole Disk - Seed tube	2000-4500	NA	768687 - 56 Hole Soybean Disk - [.155" Hole Size]	768355 - Corn Singulator	768698 - 56 Hole Soybean Ejector	768699 - Includes disk, ejector. NO Singulator included		
Soybeans - 80 Hole Disk	2000-4500	NA	730039 - 80 Hole Soybean Disk - [.155" Hole Size]	768360 - Soybean Singulator	730102 - 80 Hole Soybean Ejector	730140 - Includes Disk, Singulator, Ejector		
SugarBeets/ Onions - Small (<9.5/64)	>28,000	NA	730290 - 32 Hole Small SugarBeet Disk - [.062" Hole Size]	768355 - Corn Singulator	730103 - SugarBeet Ejector	730145 -Includes disk, ejector. NO singulator included	720253 - Milo Screens for Bulk Fill planters	730279 - Disk Shim Kit

SugarBeets/ Onions -Large (>9.5/64)	<28,000	NA	730291 - 32 Hole Large SugarBeet Disk - [.086" Hole Size]	768355 - Corn Singulator	730103 - SugarBeet Ejector	730150 -Includes disk, ejector. NO singulator included	720253 - Milo Screens for Bulk Fill planters	730279 - Disk Shim Kit
Sunflowers - #1	3,000-10,000	NA	730085 - 27 Hole Specialty Disk - [.155" Hole Size]	768355 - Corn Singulator	730304 - Specialty Ejector	NA		
Sunflowers - #2	3,000-10,000	NA	730083 - 27 Hole Specialty Disk - [.135" Hole Size]	768355 - Corn Singulator	730304 - Specialty Ejector	NA		
Sunflowers - #3	3,000-10,000	NA	730081 - 27 Hole Specialty Disk - [.115" Hole Size]	768355 - Corn Singulator	730304 - Specialty Ejector	NA		
Sunflowers - #4	3,000-10,000	NA	730081 - 27 Hole Specialty Disk - [.115" Hole Size]	768355 - Corn Singulator	730304 - Specialty Ejector	NA		
SunFlowers - Edible Small	2000-4000	<32 seeds/sec	730079 - 27 Hole Corn Disk - [.176" Hole Size]	768355 - Corn Singulator	730101 - Corn Ejector	730135 - includes singulator, ejector, disk		
Sunflowers- Edible Large	2000-4000	<32 seeds/sec	730079 - 27 Hole Corn Disk - [.176" Hole Size]	768355 - Corn Singulator	730101 - Corn Ejector	730135 - includes singulator, ejector, disk	768428 - Large Seed Upper Brush	
Sweet Corn - Large	2000-4600	NA	730084 - 27 Hole Specialty Disk - [.145" Hole Size]	768355 - Corn Singulator	730304 - Specialty Ejector	NA		
Sweet Corn - Medium	2000-4600	NA	730083 - 27 Hole Specialty Disk - [.135" Hole Size]	768355 - Corn Singulator	730304 - Specialty Ejector	NA		

Sweet Corn - Small	2000-4600	NA	730082 - 27 Hole Specialty Disk - [.125" Hole Size]	768355 - Corn Singulator	730304 - Specialty Ejector	NA		
Sweet Corn - X-Large	2000-4600	NA	730085 - 27 Hole Specialty Disk - [.155" Hole Size]	768355 - Corn Singulator	730304 - Specialty Ejector	NA		

Tube and Mounting Bracket Quantities

Planter Make	Planter Frame	Tool Bar Length	Number of Rows	Blowers Needed	Rigid Tube 3" Tube Needed (730120)	Tube Mtg Brackets 7x7 Kits Needed (1 Mount / Kit) (730125)	Fittings Kit (1 Per Planter)	Blower Mtg Kit (1 Per Blower)
John Deere	Front Fold	30'	8-12	1	6	18	730240	730205
		40'	16	1	6	18	730240	730245
		60'	24	2	8	24	730240	730245
	Rigid	10'	4	1	1	4	-	730210
		15'	4-6	1	2	6	-	730210
		20'	6-8	1	2	6	-	730210
		30'	8-12	1	3	12	-	730210
Wing Fold	30'	8-12	1	4	12	730250	730210	
Kinze	Rigid	20'	8	1	2	6	-	730210
	Wing Flex	30'	12	1	3	8**	730255*	730210
		40'	16	1	4	12**	730255*	730210
	Rigid w/pushers	20'	15-16	1	2	6**	-	730210
	Wing Flex w/pushers	30'	23-24	1	-	8**	730180*	730210
		40'	31-32	2	4	12**	730255*	730210
	Front Fold 3700	60'	24	2	6	18	730260	730210
			36	2	6	18	730260	730210
	Front Fold 3800	60'	24	2	8	24	730265	730210
90'		36	2	11	30 (730253)	730265	730210	

* May need 730256 if planter is equipped with liquid fertilizer tanks

** May need to use equivalent # of 730253 if planter is equipped with liquid fertilizer tanks

Recommended Row CAN Jumper Cable Lengths

Row CAN Expansion HUB location - on SRM	SRM Location				
	Right Hand Post	Left Hand Post	Right Side Panel	Left Side Panel	vSet Select Forward Bracket
vApply - Left parallel Arm	20	10	30	20	
vApply - Left Post	10	N/A	20	10	
vDrive	20	20	20	20	
SpeedTube	10	20	20	20	
vSet Select	30	20	30	10	20
vDrive Insecticide	25	25	25	25	
FurrowForce Control Module	30	30	30	30	

Row CAN Expansion HUB location - Opposite SRM	SRM Location				
	Right Hand Post	Left Hand Post	Right Side Panel	Left Side Panel	vSet Select Forward Bracket
vApply - Left parallel Arm	10	20	20	30	
vApply - Left Post	N/A	10	10	20	
vDrive	20	20	20	20	
SpeedTube	20	10	20	20	
vSet Select	20	30	10	30	N/A
vDrive Insecticide	25	25	25	25	
FurrowForce Control Module	30	30	30	30	

Row CAN Expansion HUB location - Parallel Arms	SRM Location				
	Right Hand Post	Left Hand Post	Right Side Panel	Left Side Panel	vSet Select Forward Bracket
vApply - Left parallel Arm	10	10	10	10	
vApply - Left Post	20	20	20	20	
vDrive	30	30	30	30	
SpeedTube	30	30	30	30	
vSet Select	30	30	30	30	30
vDrive Insecticide	25	25	25	25	
FurrowForce Control Module	40	40	40	40	

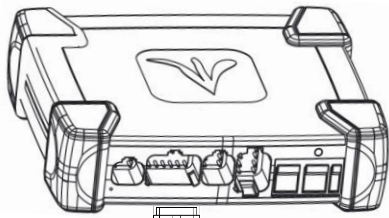
Recommended Row CAN Jumper Cable Lengths

Row CAN Expansion HUB location - on SRM	SRM Location				
	Right Hand Post	Left Hand Post	Right Side Panel	Left Side Panel	vSet Select Forward Bracket
vApply - Left parallel Arm	20	10	30	20	
vApply - Left Post	10	N/A	20	10	
vDrive	20	20	20	20	
SpeedTube	10	20	20	20	
vSet Select	30	20	30	10	20
vDrive Insecticide	25	25	25	25	
FurrowForce Control Module	30	30	30	30	

Row CAN Expansion HUB location - Opposite SRM	SRM Location				
	Right Hand Post	Left Hand Post	Right Side Panel	Left Side Panel	vSet Select Forward Bracket
vApply - Left parallel Arm	10	20	20	30	
vApply - Left Post	N/A	10	10	20	
vDrive	20	20	20	20	
SpeedTube	20	10	20	20	
vSet Select	20	30	10	30	N/A
vDrive Insecticide	25	25	25	25	
FurrowForce Control Module	30	30	30	30	

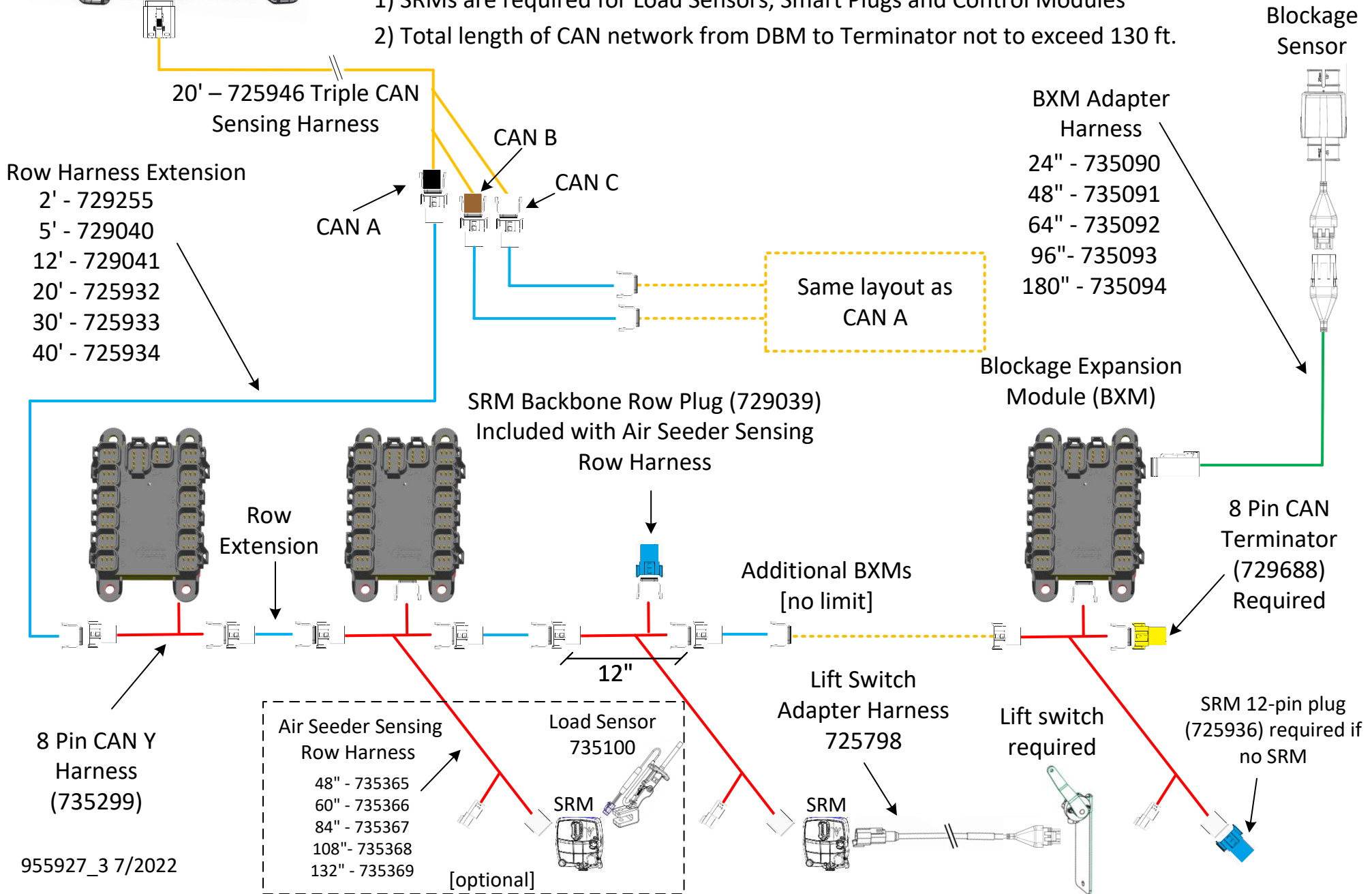
Row CAN Expansion HUB location - Parallel Arms	SRM Location				
	Right Hand Post	Left Hand Post	Right Side Panel	Left Side Panel	vSet Select Forward Bracket
vApply - Left parallel Arm	10	10	10	10	
vApply - Left Post	20	20	20	20	
vDrive	30	30	30	30	
SpeedTube	30	30	30	30	
vSet Select	30	30	30	30	30
vDrive Insecticide	25	25	25	25	
FurrowForce Control Module	40	40	40	40	

Sensing Architecture - Dual or Triple CAN Air Seeders

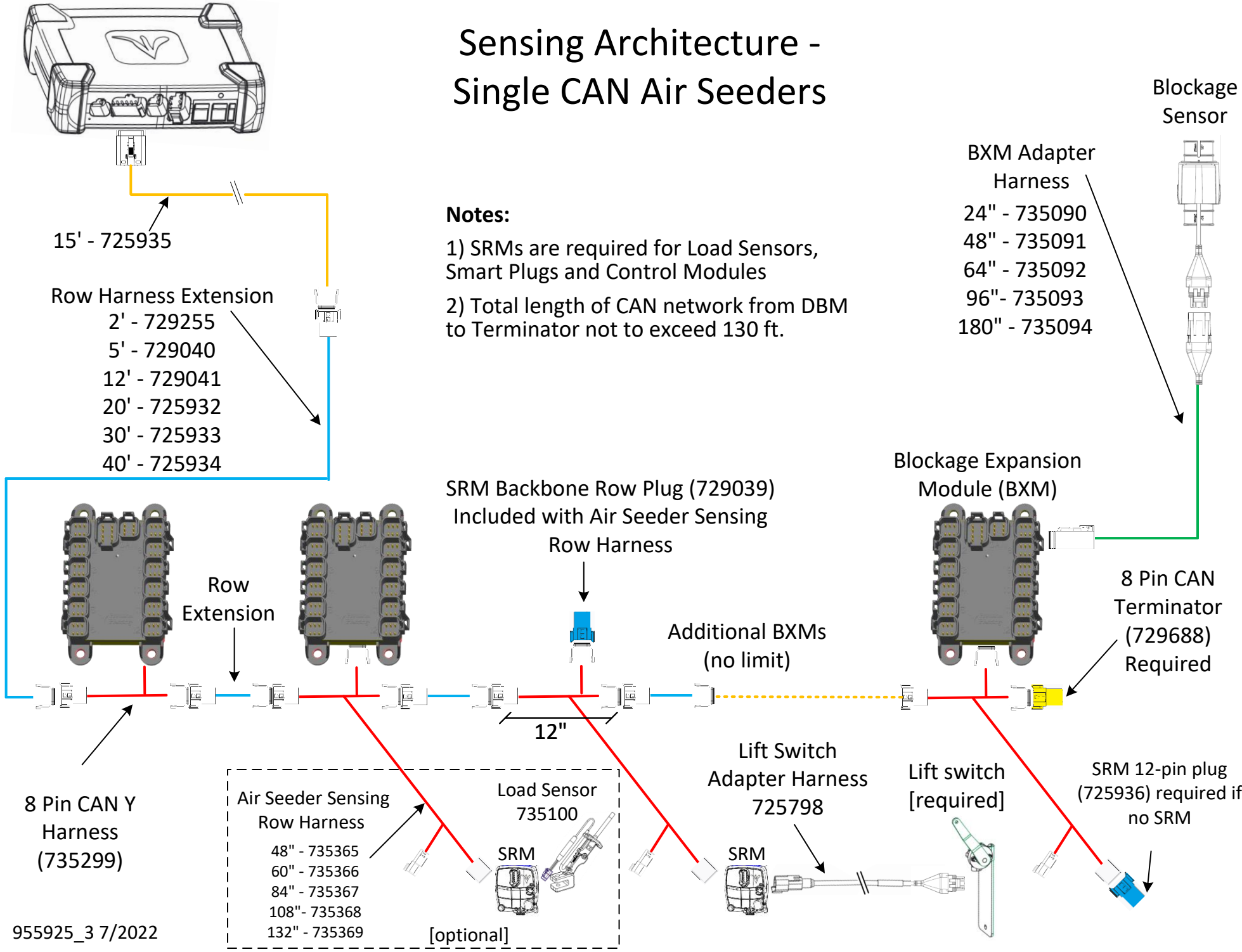


Notes:

- 1) SRMs are required for Load Sensors, Smart Plugs and Control Modules
- 2) Total length of CAN network from DBM to Terminator not to exceed 130 ft.



Sensing Architecture - Single CAN Air Seeders



15' - 725935

- Row Harness Extension
- 2' - 729255
 - 5' - 729040
 - 12' - 729041
 - 20' - 725932
 - 30' - 725933
 - 40' - 725934

- Notes:**
- 1) SRMs are required for Load Sensors, Smart Plugs and Control Modules
 - 2) Total length of CAN network from DBM to Terminator not to exceed 130 ft.

- BXM Adapter Harness
- 24" - 735090
 - 48" - 735091
 - 64" - 735092
 - 96" - 735093
 - 180" - 735094

8 Pin CAN Y Harness (735299)

- Air Seeder Sensing Row Harness
- 48" - 735365
 - 60" - 735366
 - 84" - 735367
 - 108" - 735368
 - 132" - 735369

Load Sensor 735100



Lift Switch Adapter Harness 725798

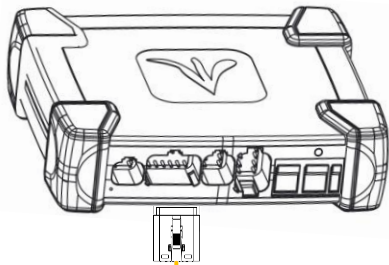


Lift switch [required]

SRM 12-pin plug (725936) required if no SRM

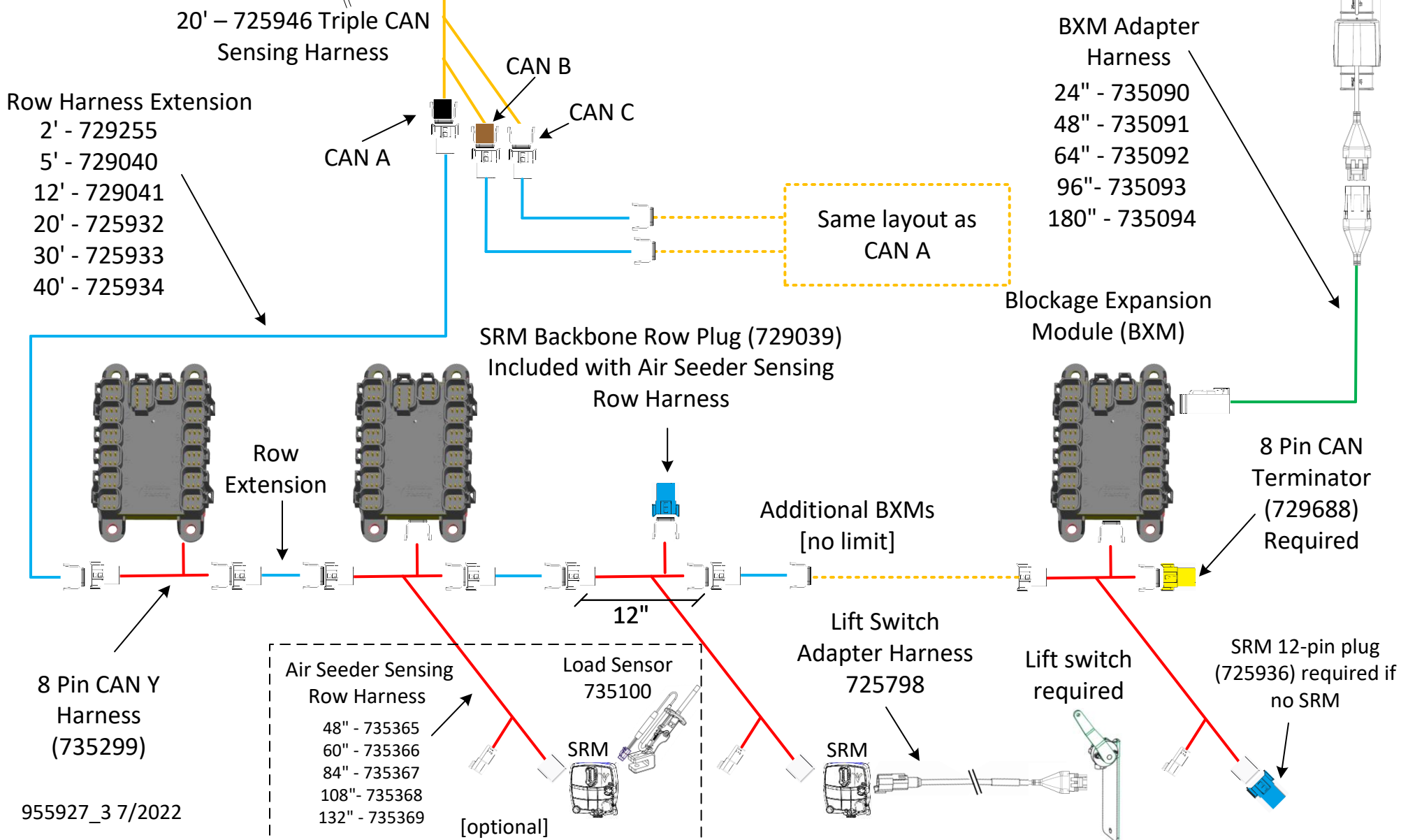
[optional]

Sensing Architecture - Dual or Triple CAN Air Seeders

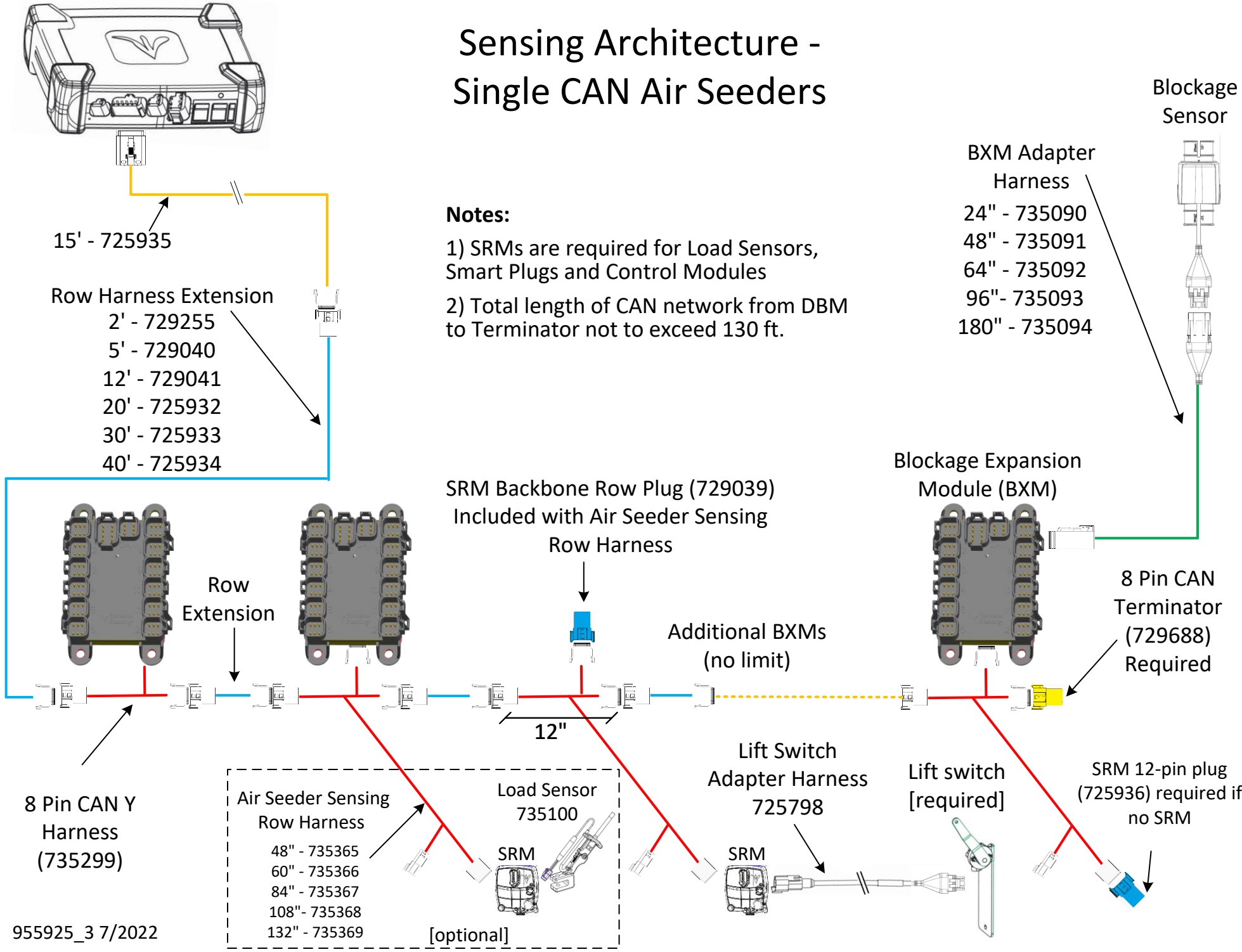


Notes:

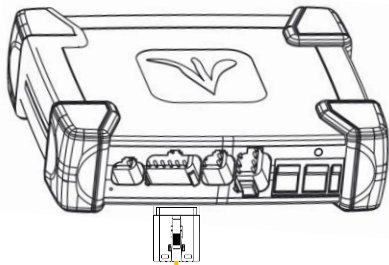
- 1) SRMs are required for Load Sensors, Smart Plugs and Control Modules
- 2) Total length of CAN network from DBM to Terminator not to exceed 130 ft.



Sensing Architecture - Single CAN Air Seeders

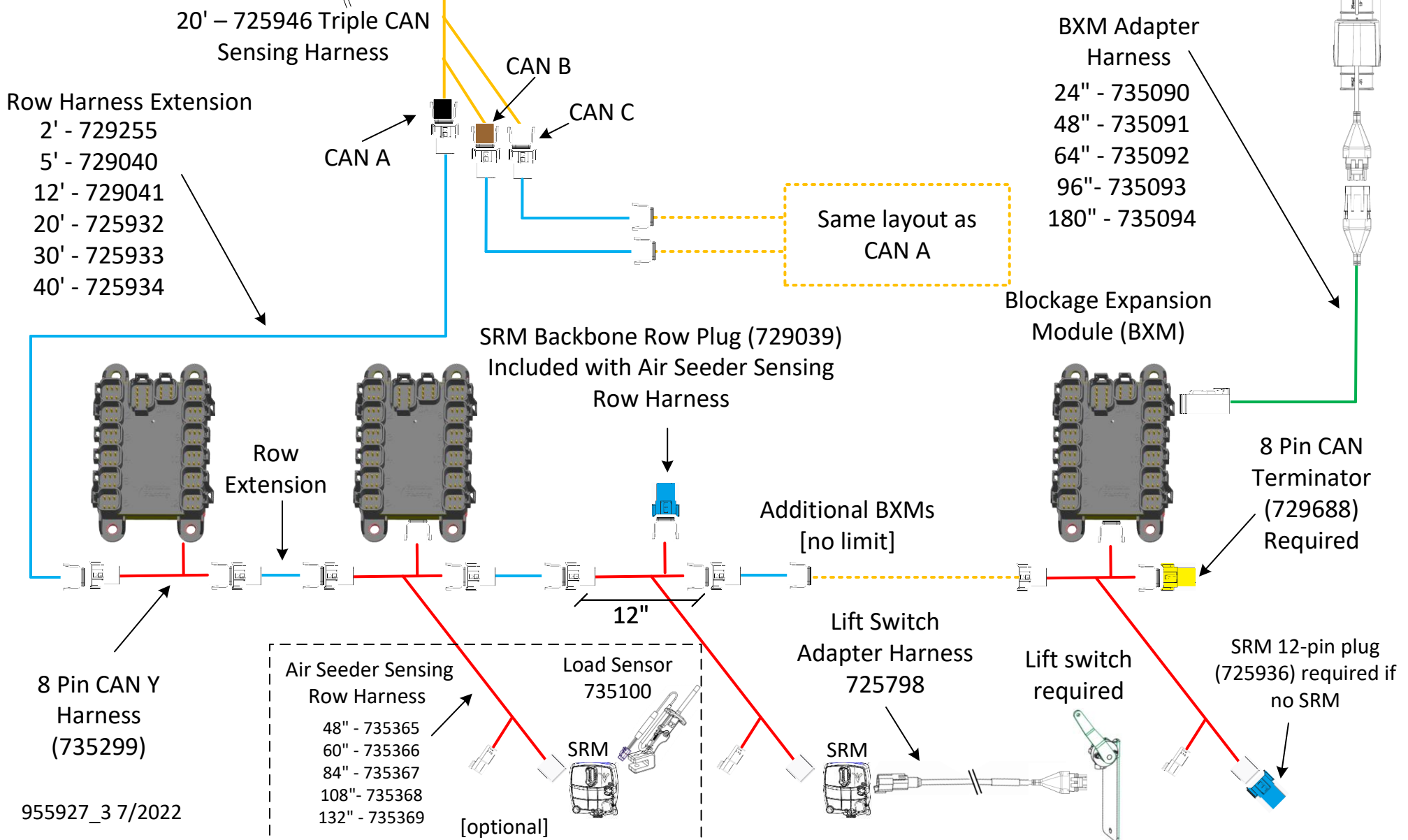


Sensing Architecture - Dual or Triple CAN Air Seeders



Notes:

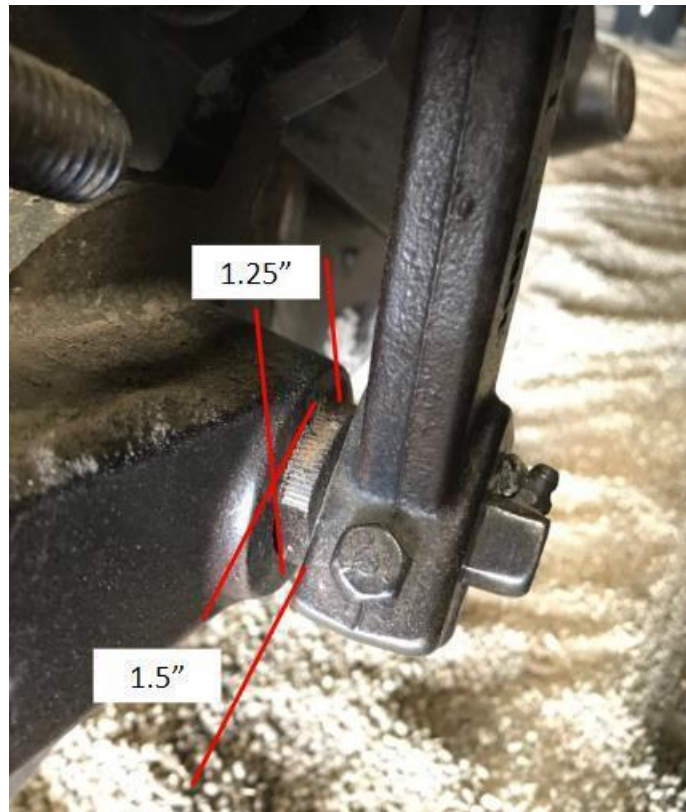
- 1) SRMs are required for Load Sensors, Smart Plugs and Control Modules
- 2) Total length of CAN network from DBM to Terminator not to exceed 130 ft.



Distinguishing Between Early and Newer Style 60 Series Row Units

Early 60 Series Row Units





- This spindle has two flats that measure 1.25" across and measures 1.5" in the other direction.
- Uses the 735351 (RH) and the 735352 (LH) row unit brackets.



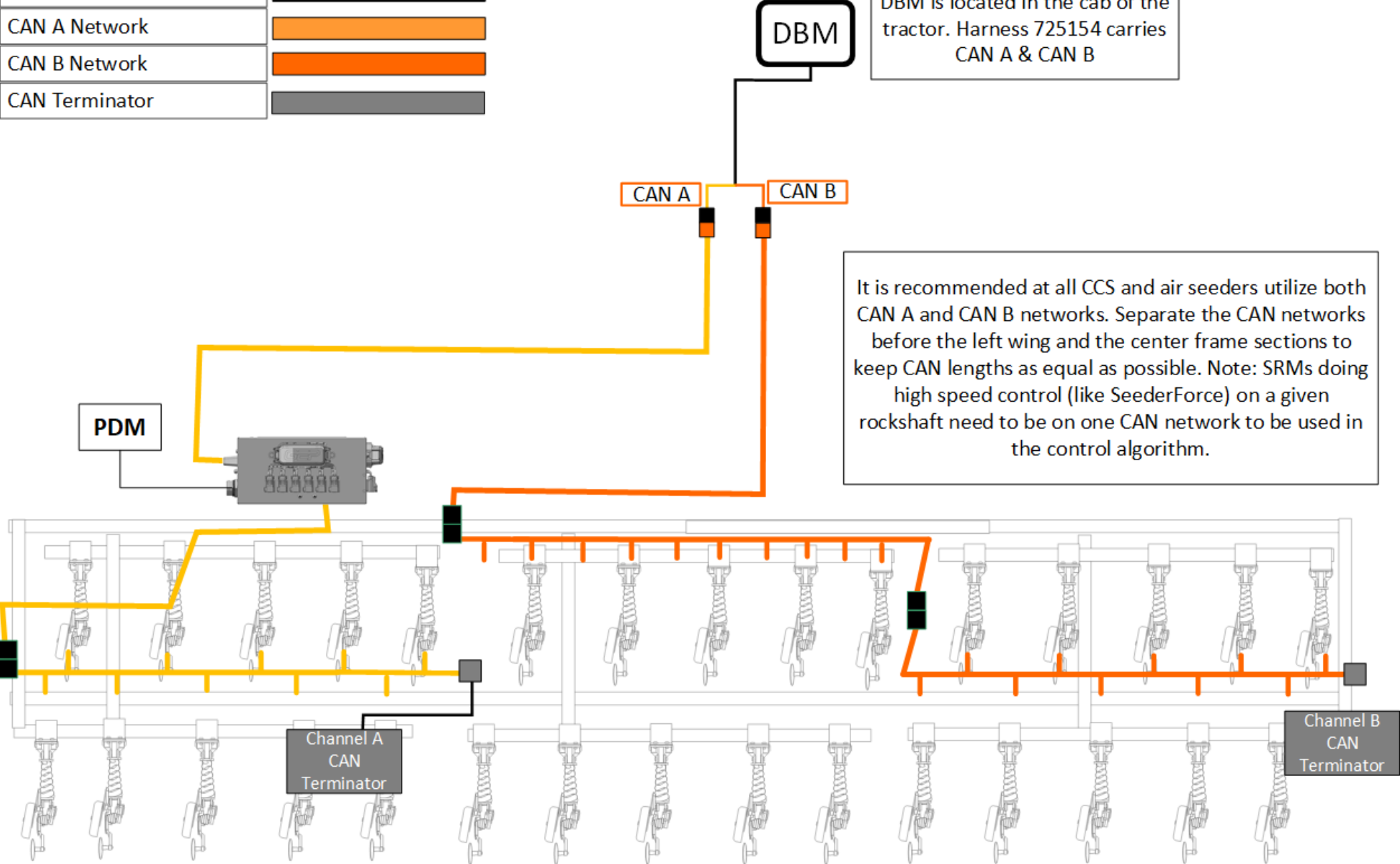
Later 60 and 90 Series Row Units

- This spindle has a diameter of $1\frac{3}{8}$ ".
- Uses the 735180 (RH) and the 735181 (LH) row unit brackets.



DBM CAN Harness	
CAN A Network	
CAN B Network	
CAN Terminator	

DBM is located in the cab of the tractor. Harness 725154 carries CAN A & CAN B



It is recommended at all CCS and air seeders utilize both CAN A and CAN B networks. Separate the CAN networks before the left wing and the center frame sections to keep CAN lengths as equal as possible. Note: SRMs doing high speed control (like SeederForce) on a given rockshaft need to be on one CAN network to be used in the control algorithm.

Channel A
CAN
Terminator

Channel B
CAN
Terminator

20/20 SeedSense® Finish Kit Guide

Planter	Rows	Monitor	Kit #	Second SC	DJ Adapter or Metra-pack	DB Harness Rec.	DB Harness Sender	Repeat-er Module	GP Harness	CNH Adapter	4 - Pin Harness	Load Cell/Pin	RUM/SRM Mount Kit
				725712		See below	See below	725714		725838			
JD7000													
	4-32	Compu-trak	725513									(3) - 725581	
	4-32	Dickey-john	725514		(1) 725234							(3) - 725581	
JD7200, 1700, 17x5													
	4-32	Compu-trak	725516					1				(3) - 725580	
	4-32	Compu-trak	725739					1				(3) - 725866	
	4-32	Dickey-john	725517		(1) 725234							(3) - 725580	
-2002 Drawn	4-15	SeedStar	725518		(1) 725209			1			35' (1) - 725403	(3) - 725580	
2003-2010 Drawn	4-15	SeedStar	725583		(1) 725282			1			35' (1) - 725403	(3) - 725580	
-2010 Drawn	16-32	SeedStar	725515					1			45' (1) - 725477	(3) - 725580	
3 pt -2002	4-15	SeedStar	725596		(1) 725209			1				(3) - 725580	
3pt 2003-2014	4-15	SeedStar	725597		(1) 725282			1				(3) - 725580	
3 pt 2015+	4-15	SeedStar	725740		(1) 725282			1				(3) - 725866	
3 pt -2010	16	SeedStar	725516					1				(3) - 725580	
2011-2014	4-16	SeedStar	725496		(1) 725282			1			35' (1) - 725403	(3) - 725580	
2015+	4-16	SeedStar	725741		(1) 725282			1			35' (1) - 725403	(3) - 725866	
2011-2014	17-24	SeedStar	725497		(1) 725624			1			45' (1) - 725477	(3) - 725580	
2015+	17-24	SeedStar	725742		(1) 725624			1			45' (1) - 725477	(3) - 725866	
2011-2014	25-32	SeedStar	725498		(1) 725626			1			45' (1) - 725477	(3) - 725580	
2015+	25-32	SeedStar	725743		(1) 725626			1			45' (1) - 725477	(3) - 725866	
2015+	12-24	ExactEmerge	725748								45' (1) - 725477	(3) - 725866	3-725747
Deere-Bauer													
-2011	24-32	CT 350	725516					1				(3) - 725580	
-2011	24-36	CT 450	725520	1	(2) 725234						20' (1) - 725411	(3) - 725580	
-2011	24-32	SeedStar	725527		(1) 725234			1			60' (1) - 725468	(3) - 725580	
-2011	33-48	SeedStar	725519	1	(2) 725234			2			20' (1) - 725411 & 60' (2) - 725468	(3) - 725580	
-2011 DB120	48	SeedStar	725623	1	(1) 725234	(1)725555	(1)725556	2			20' (1) - 725411 & 60' (2) - 725468	(3) - 725580	
-2011	54	SeedStar	725528	1	(1) 725234	(1)725454	(1)725455	2			20' (1) - 725411 & 60' (2) - 725468	(3) - 725580	
2012-2014	24-32	SeedStar	725703			(1)725701		1			35' (1) 725403	(3) - 725580	
2015+	24-32	SeedStar	725744			(1)725701		1			35' (1) 725403	(3) - 725866	
2012-2014	33-54	SeedStar	725704	1		(1)725701		2			20' (1) - 725411 & 45' (2) - 725477	(3) - 725580	
2015+	33-54	SeedStar	725745	1		(1)725701		2			20' (1) - 725411 & 45' (2) - 725477	(3) - 725866	

20/20 SeedSense® Finish Kit Guide Continued

Planter	Rows	Monitor	Kit #	Second SC	DJ Adapter or Metra-pack	DB Harness Rec.	DB Harness Sender	Repeat-er Module	GP Harness	CNH Adapter	4 - Pin Harness	Load Cell/Pin	RUM/SRM Mount Kit	
				725712		See below	See below	725714		725838				
Kinze 2000														
-1998	4-32	DJ or KM	725514		(1) 725234							(3) - 725581		
1999	4-32	KPM	725521		Requires Planter Harness, Seedtubes, and Sensors							(3) - 725581		
Kinze 3000					**2013 & Newer 3000's require only harness and one 725720 per row									
	4-32	KPM	725522		Requires Planter Harness, Seedtubes, and Sensors **								(3) - 725466	
	33+	KPM	725523	1	Requires Planter Harness, Seedtubes, and Sensors **							20' - (1) - 725411	(3) - 725466	
Kinze 4900					**4900 Planters will require a new planter harness and Wavevision Sensors									
2015	12-24	KPM	725522		Requires Planter Harness, Seedtubes, and Sensors **								(3) - 725466	
White														
5000/6000	4-32	DJ	725524		(1) 725234							(3) - 725266		
8000	4-32	DJ	725598		(1) 725234							(3) - 725295		
8000	4-32	SM400SE/GTA/C3000	725529		Requires Planter Harness for SM400SE, GTA, C3000								(3) - 725295	
9000	4-32	DJ	725839		(1) 725234							(3) - 725887		
9000	4-32	SM400SE/GTA/C3000	725840		Requires Planter Harness for SM400SE, GTA, C3000								(3) - 725887	
9000	33+	SM400SE/GTA/C3000	725841	1	Requires Planter Harness for SM400SE, GTA, C3000								(3) - 725887	
Great Plains														
YP1225, 1625	12-32	Seed Mgr	725526	1				2	(2) 725400		20' - (1) - 725411	(3) - 725582		
2425, YP40	24-48	IntelliAg	725525	1				2	(1) 725401 & (1) 725402		20' (1) - 725411 & 45' (2) - 725477	(3) - 725582		
YP1225, 1625	12-32	IntelliAg	725531	1				2	(2) 725402		20' (1) - 725411 & 35' (2) - 725403	(3) - 725582		
YP Rigid	4,6,8	DJ PM300	725584		(1) 725234							(3) - 725582		
Case IH														
1200/1250	4-32	Early Riser/DJ	725533		(1) 725234							(3) - 725875		
1200/1250	4-32	Univ./600/700	725534		Requires Planter Harness and Sensors								(3) - 725875	
1200/1250	36+	Univ./600/700	725510	1	Requires Planter Harness and Sensors							20' - (1) - 725411	(3) - 725875	
12x5 Drawn	4-16	Univ./600/700	725847					1		1	35' - (1) - 725403	(3) - 725875		
12x5 3-Pt	4-12	Univ./600/700	725848					1		1		(3) - 725875		
12x5	24	Univ./600/700	725849	1				2		2	20' (1) - 725411 & 45' (2) - 725477	(3) - 725875		
12x5	32-36	Univ./600/700	725850	1				2		2	20' (1) - 725411 & 60' (2) - 725468	(3) - 725875		
Monosem														
	4-32	Dickey-john	725573		(1) 725234							(3) - 725580		
	4-32	MPM	725574		Requires Planter Harness and Sensors								(3) - 725580	
	36+	MPM	725575	1	Requires Planter Harness and Sensors							20' - (1) - 725411	(3) - 725580	

955245

AUG 15'

John Deere

PlanterModel	Description		Comments	PartNumber
JD1780	Drawn, folding tongue < 20'			726059
	30' front fold		Preference - 1 - Above Draft Tube	726053
	40 or 60' wide front fold		Preference - 1 - Above Draft Tube	726053
			Preference - 2 - High Mount	726470
JD1790	12V 30' front fold		Preference - 1 - Above Draft Tube	726050
			Preference - 2 - Above Cross Bar	726515
			Preference - 3 - High Mount	726470
	12V 40 or 60' wide front fold		Preference - 1 - Above Draft Tube	726050
			Preference - 2 - Above Cross Bar	726515
			Preference - 3 - High Mount	726470
	HYD 30' front fold		Preference - 1 - Rear Center Mount	726490
			Preference - 2 - Above Draft Tube	726050
			Preference - 3 - Above Cross Bar	726515
	HYD 40 or 60' wide front fold		Preference - 1 - Rear Center Mount	726490
			Preference - 2 - Above Draft Tube	726050
			Preference - 3 - Above Cross Bar	726515
DB44	HYD		Preference - 1 - Above Draft Tube	726051
			Preference - 1 - Rear Center Mount	726490
			Preference - 2 - High Mount	726470
DB58	HYD		Preference - 1 - Above Draft Tube	726051
			Preference - 1 - Rear Center Mount	726490
			Preference - 2 - High Mount	726470
DB60	HYD		Preference - 1 - Above Draft Tube	726051
			Preference - 1 - Rear Center Mount	726490
			Preference - 2 - High Mount	726470
DB66	HYD		Preference - 1 - Above Draft Tube	726051
			Preference - 1 - Rear Center Mount	726490
			Preference - 2 - High Mount	726470
DB80	HYD		Preference - 1 - Above Draft Tube	726051
			Preference - 1 - Rear Center Mount	726490
			Preference - 2 - High Mount	726470
DB88	HYD		Preference - 1 - Above Draft Tube	726053
			Preference - 1 - Rear Center Mount	726490
			Preference - 2 - High Mount	726470
DB90	HYD		Preference - 1 - Above Draft Tube	726053
			Preference - 1 - Rear Center Mount	726490
			Preference - 2 - High Mount	726470
DB120	HYD		Preference - 1 - Above Draft Tube	726053
			Preference - 1 - Rear Center Mount	726490
			Preference - 2 - High Mount	726470

Kinze

Planter Model	Description		Comments	Part Number
Rear Fold	Rear Fold			726397
2000	2 tube tongue			726398
2100	Rigid			726056
2200	Wing Fold			726054
2300	Twinline		Preference - 1 - Above 7x7 bar	726056
			Preference - 2 - Offset from 7x7 bar	726612
2500	Twinline		Preference - 1 - Above 7x7 bar	726056
			Preference - 2 - Offset from 7x7 bar	726612
2600	Twinline 30' Bar		Preference - 1 - Above 8x8 bar	726058
			Preference - 2 - Offset from 8x8 bar	726613
	Twinline 40' Bar		Preference - 1 - Above 10x10 bar	726455
			Preference - 2 - Offset from 10x10 bar	726614
2700	Front Fold			726435
3000	2 tube tongue			726398
3110	Rigid			726056
3200	Wing Fold			726054
3400	Twinline		Preference - 1 - Above 7x7 bar	726056
			Preference - 2 - Offset from 7x7 bar	726612
3500	Twinline		Preference - 1 - Above 7x7 bar	726056
			Preference - 2 - Offset from 7x7 bar	726612
3600	Twinline 30' Bar		Preference - 1 - Above 8x8 bar	726058
			Preference - 2 - Offset from 8x8 bar	726613
	Twinline 40' Bar		Preference - 1 - Above 10x10 bar	726455
			Preference - 2 - Offset from 10x10 bar	726614
3700	Front Fold			726435
3800	Front Fold		See image on following pages	726060
3120	3pt Vertical Fold		Preference - 1 - Above 7x7 bar	726056
			Preference - 2 - Offset from 7x7 bar	726060
3140	3pt Stack Fold		Preference - 1 - Above 7x7 bar	726056
			Preference - 2 - Offset from 7x7 bar	726060
3650	Twinline 30' Bar		Preference - 1 - Above 8x8 bar	726058
			Preference - 2 - Offset from 8x8 bar	726613
	Twinline 40' Bar		Preference - 1 - Above 10x10 bar	726455
			Preference - 2 - Offset from 10x10 bar	726614
3660	Twinline 30' Bar		Preference - 1 - Above 8x8 bar	726058
			Preference - 2 - Offset from 8x8 bar	726613
	Twinline 40' Bar		Preference - 1 - Above 10x10 bar	726455

ROW FLOW "BUILD YOUR OWN" HARNESS GUIDE

Modular Harness Recommendations/Prices

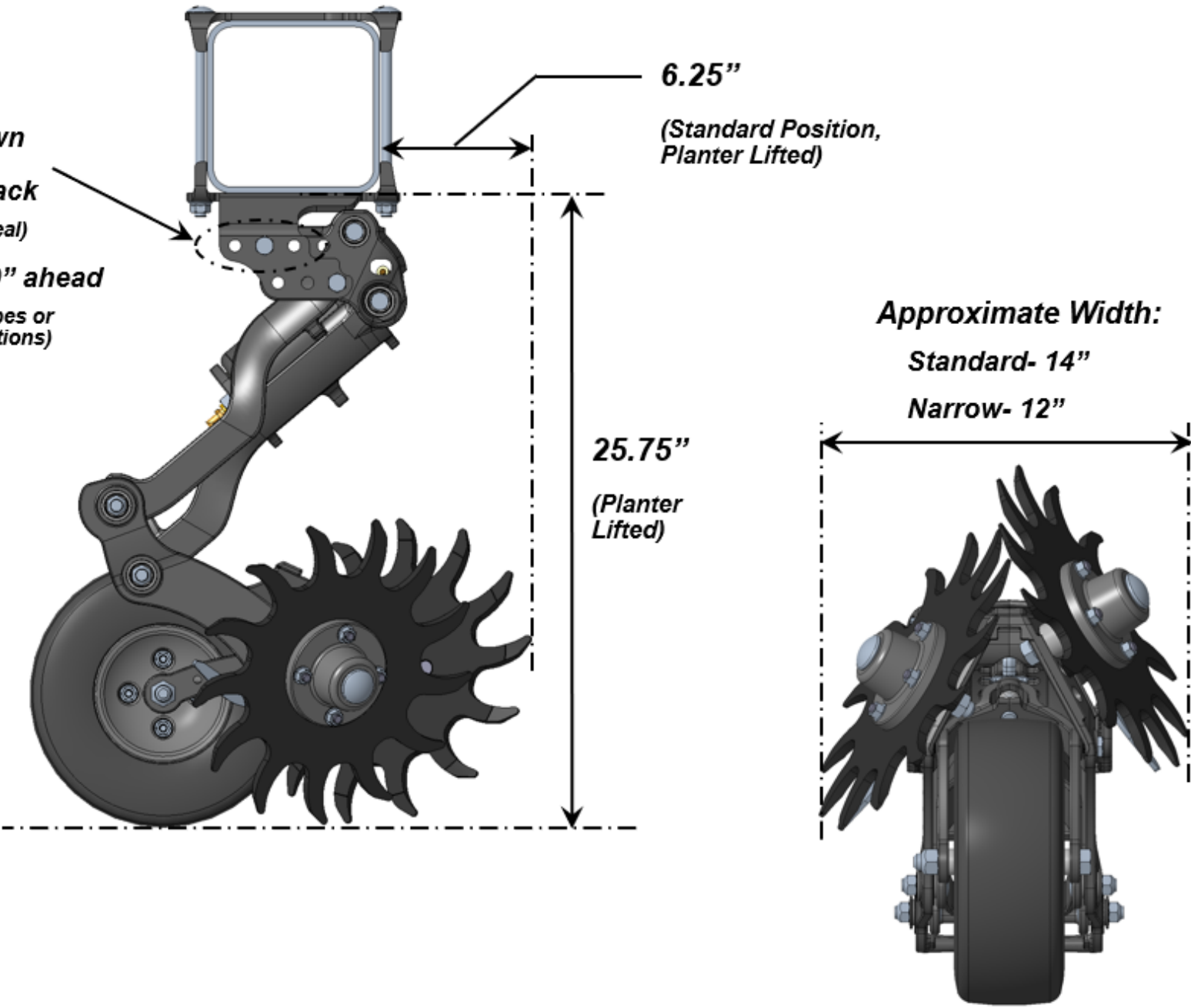
Folding pattern (row distribution)							John Deere	Ag Leader	6pin Weather Pack Extensions		John Deere Electric RowCommand		6-pin Weather Pack Extensions		Ag Leader Electric SeedCommand	
Left Wing		Center Frame		Right Wing		Planter Config			15'	30'	4 row Clutch Harness	15' Indvl Row Ext. (2-pin DT)	15'	30'	4 row Clutch Harness	15' Indvl Row Ext. (2-pin WP)
Rear	Front	Rear	Front	Rear	Front				727133	727162	727134	727145	727133	727162	727135	727144
			8				8R Rigid	\$200.00	\$180.00							
			8				8R L&T	\$200.00	\$180.00							
			8	7			8-15R L&T	\$400.00	\$360.00							
			12	11			12-23R L&T	\$600.00	\$540.00							
			12				12R L&T	\$300.00	\$270.00							
3	4	5	4	3	4		12-23R Front Fold (1790)	\$825.00	\$760.00							
3		6		3			12R 30" Stack Fold	\$390.00	\$360.00							
6				6			12R Forward Fold	\$300.00	\$270.00							
3		6		3			12R Front Fold	\$300.00	\$270.00							
4		4		4			12R Front Fold NT	\$300.00	\$270.00							
		16	15				16-31R L&T	\$980.00	\$900.00							
6	6	5	4	5	6		16-31R Front Fold	\$1,250.00	\$1,140.00							
6		4		6			16R Front Fold NT	\$670.00	\$610.00							
		16					16R L&T	\$490.00	\$450.00							
4		8		4			16R Stack Fold	\$490.00	\$450.00							
8	8			8	8		16 Twins Forward Fold (YP40)	\$980.00	\$900.00							
5		6		5			16R Front Fold (Conv. Or 3660)	\$580.00	\$530.00							
8		8		8			24R 20" Front Fold	\$690.00	\$630.00							
10		4		10			24R Front Fold (NT)	\$1,030.00	\$950.00							
12				12			24R Forward Fold (3700-3800)	\$850.00	\$790.00							
9		6		9			24R Front Fold (Conv. Or 3660)	\$940.00	\$870.00							
12	12			12	12		24 Twins Forward Fold (YP60)	\$1,700.00	\$1,580.00							
18				18			36R Forward Fold	\$1,490.00	\$1,390.00							
8		8		8			DB44 24R22"	\$690.00	\$630.00							
11		10		11			DB58 32R22"	\$1,230.00	\$1,140.00							
13		10		13			DB60 36R20" & DB66 36R22"	\$1,400.00	\$1,300.00							
16		13		16			DB60 47R15"	\$1,880.00	\$1,740.00							
13		6		13			DB80 32R30"	\$1,230.00	\$1,140.00							
19		10		19			DB80 48R20" & DB88 48R22"	\$1,790.00	\$1,660.00							
15		6		15			DB90 36R30"	\$1,490.00	\$1,390.00							

Tru Count Pneumatic - Extensions ONLY!!

Tru Count Pneumatic - Extensions ONLY!!

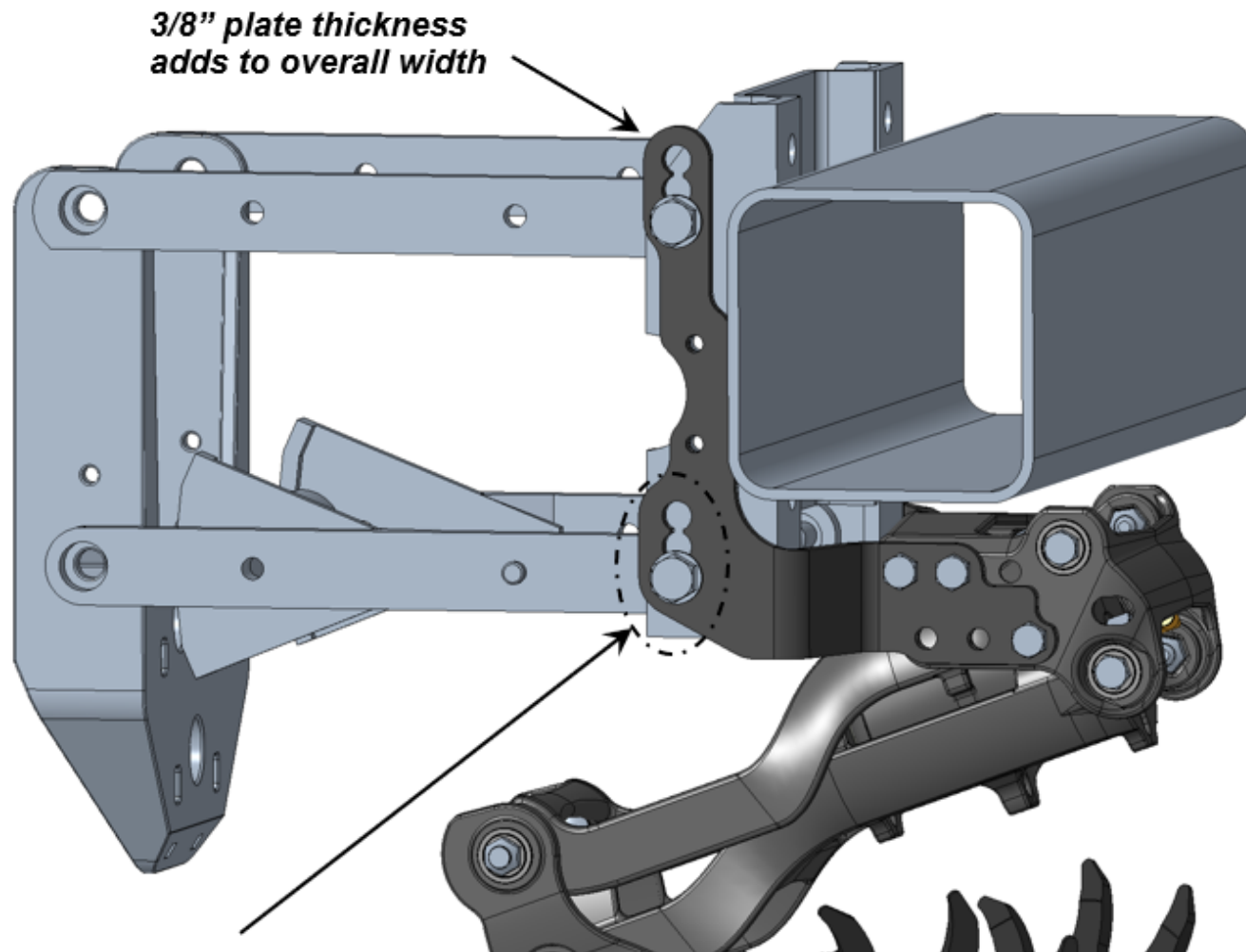
Reveal Dimensional Specifications:

- **Standard Position Shown**
- **Rear Position: 1.200" back**
(Not compatible with Conceal)
- **Forward Position: 1.200" ahead**
(May interfere with draft tubes or wing tires on some installations)



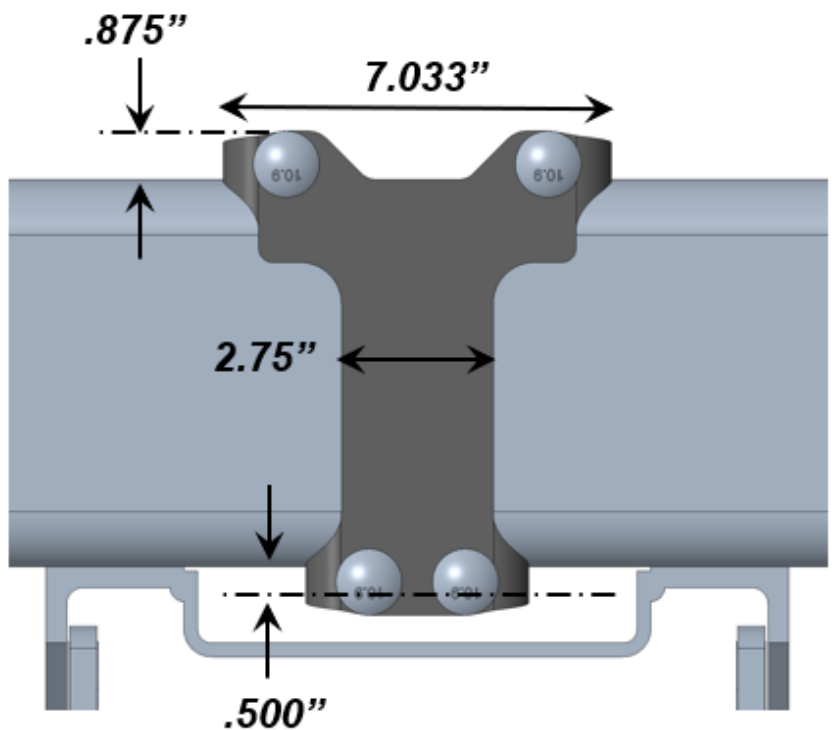
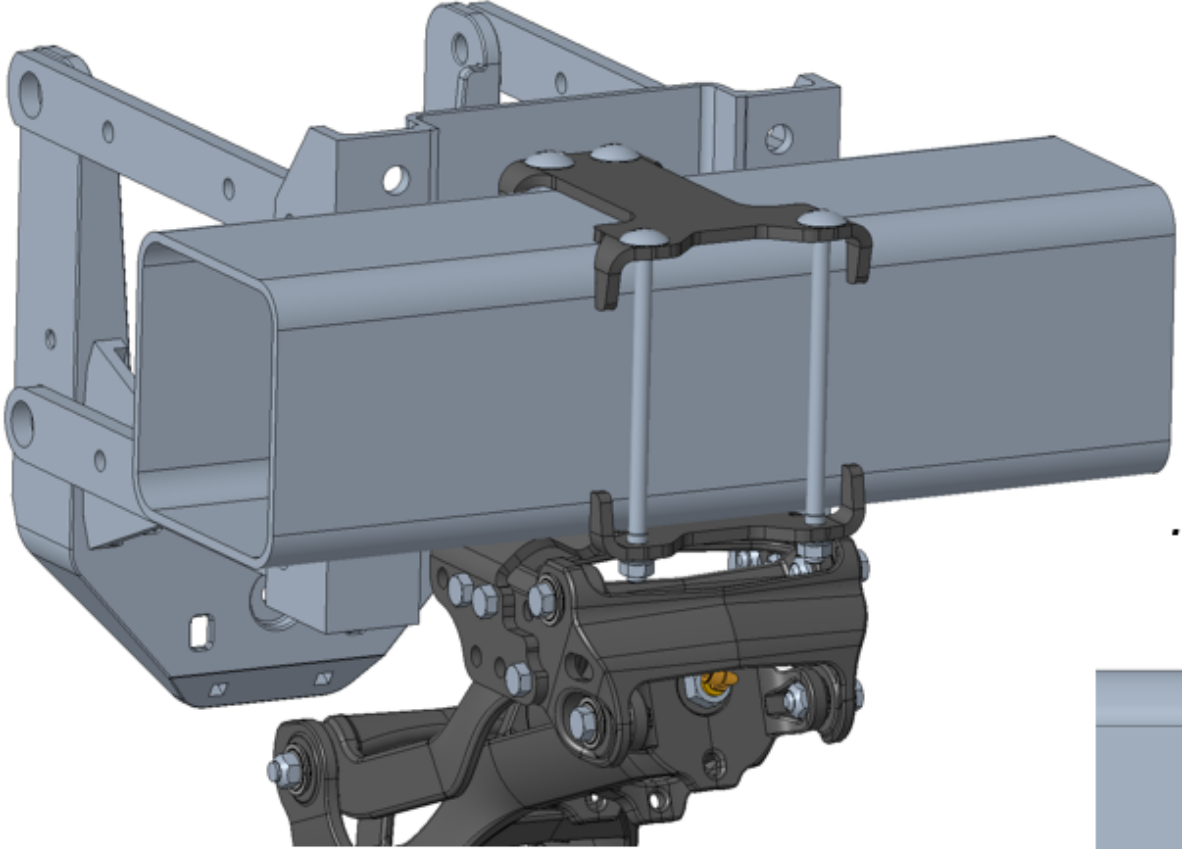
Reveal Parallel-Arm Mount Kits:

(757050, 757053, 757056, 757082)



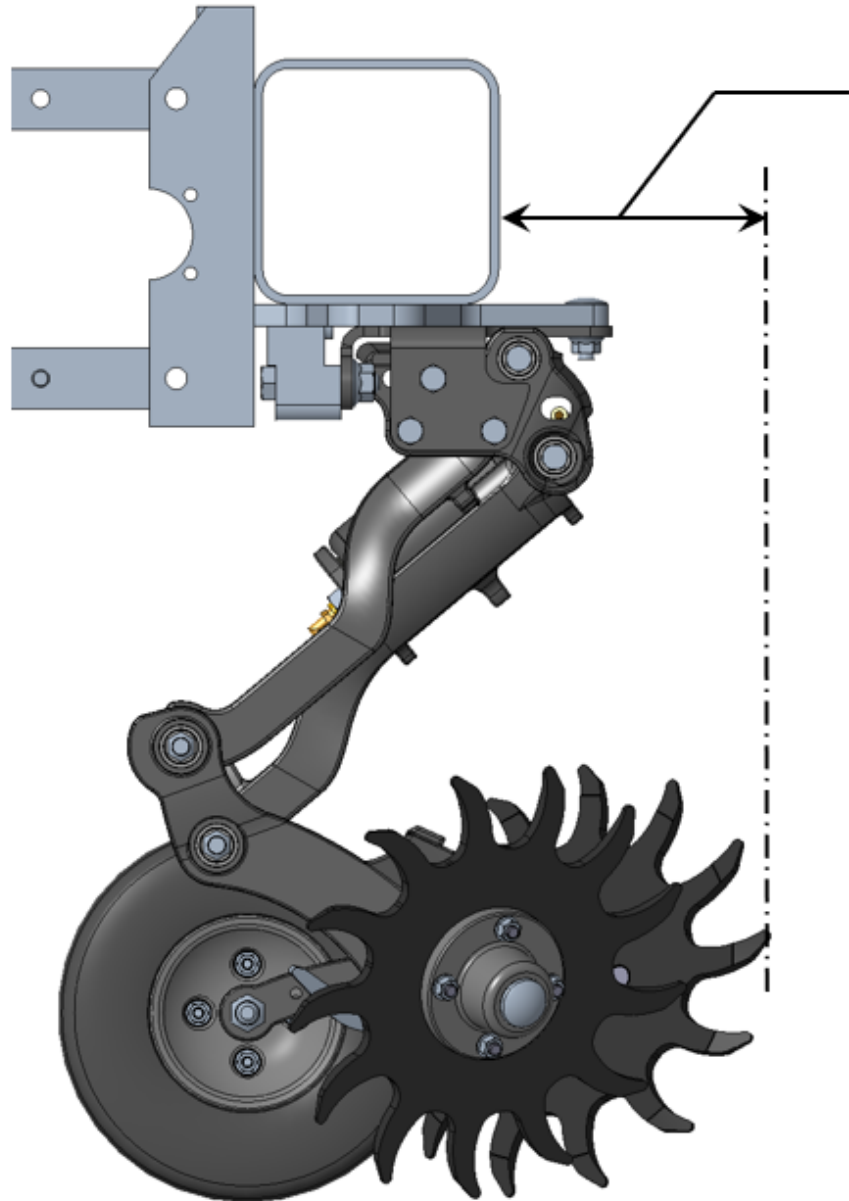
- *Standard position shown*
- *Alternate positions lower the unit by .6875" or 1.375", if required*
(May require raising toolbar operating height to achieve adequate upward travel)

Reveal Direct-Mount Mount Kit: (757059)

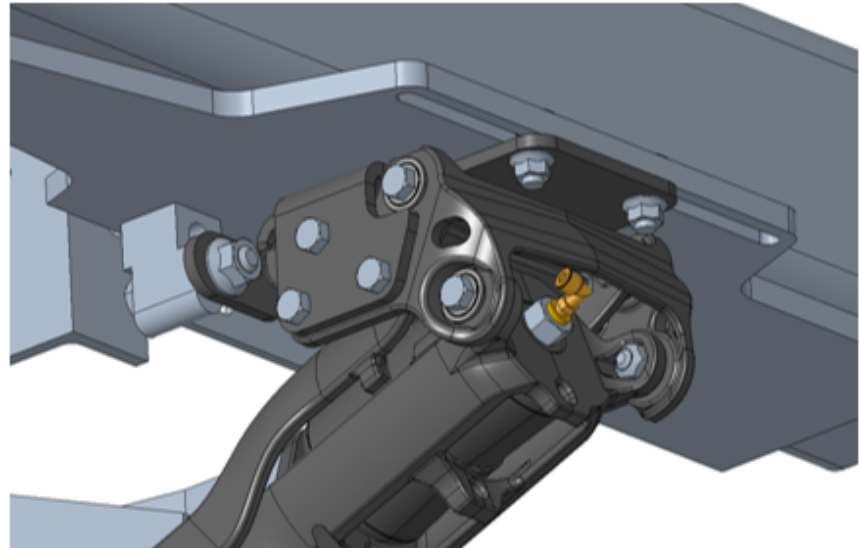


(Check downforce bracket bolt clearance)

**Reveal JD 1770NT24 Direct-Mount Mount Kit (For Pivot Rows Only):
(757071)**



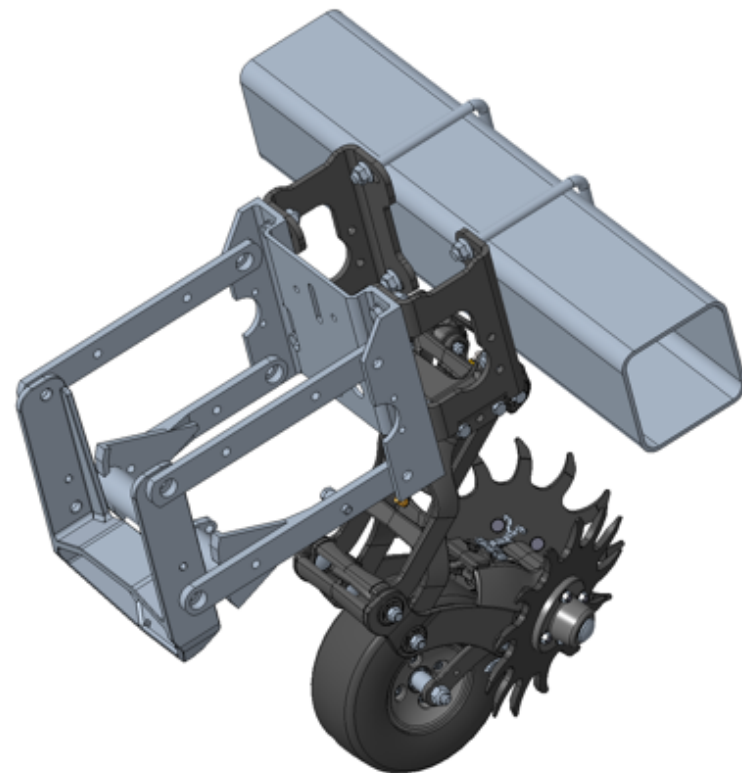
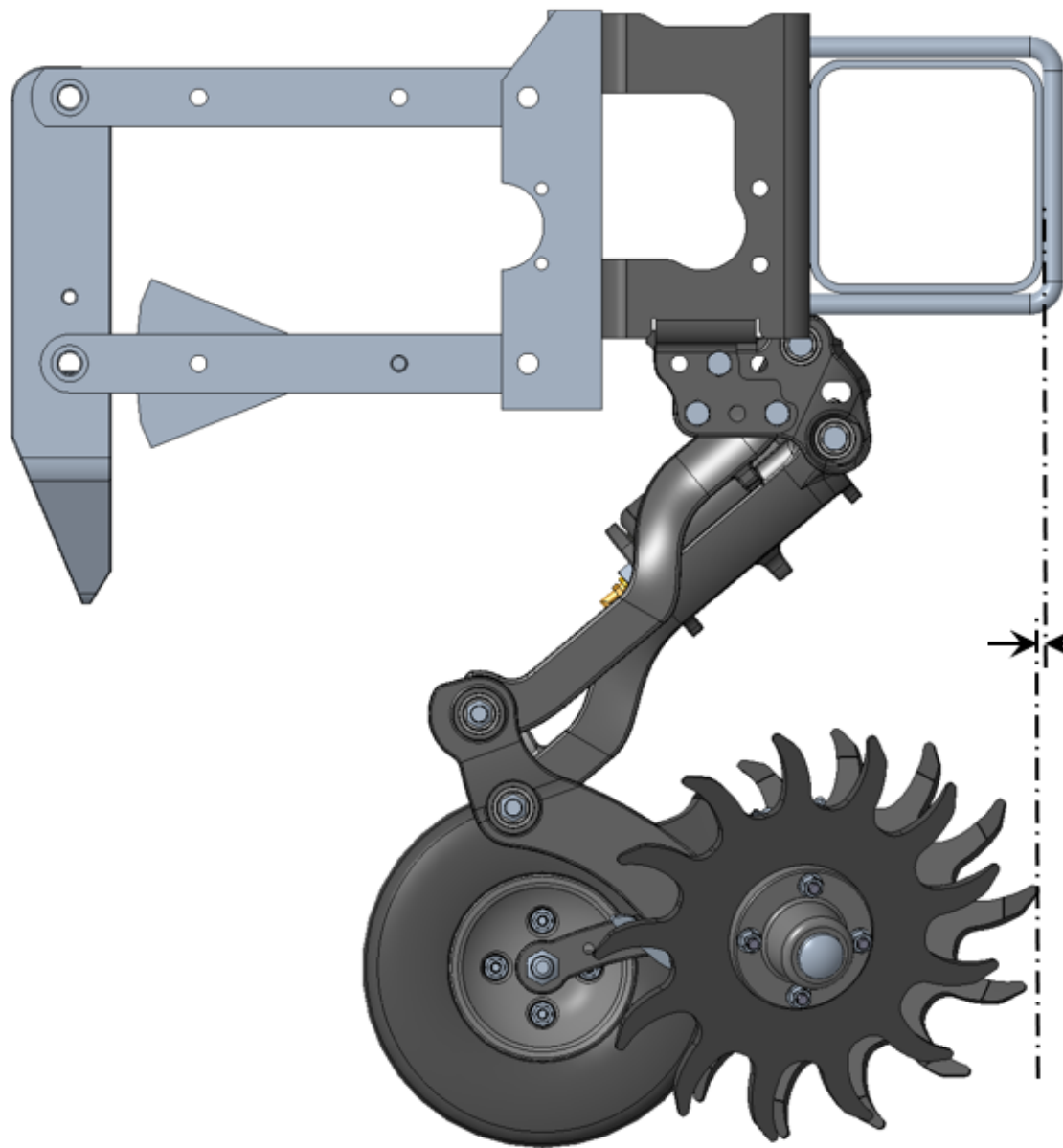
7.85"
(Planter Lifted)
(1.6" forward of "Standard Position")



Utilizes mounting provisions for JD front-mounted fertilizer opener

Reveal Universal 6.25" Setback Mount Kit:

(757061)



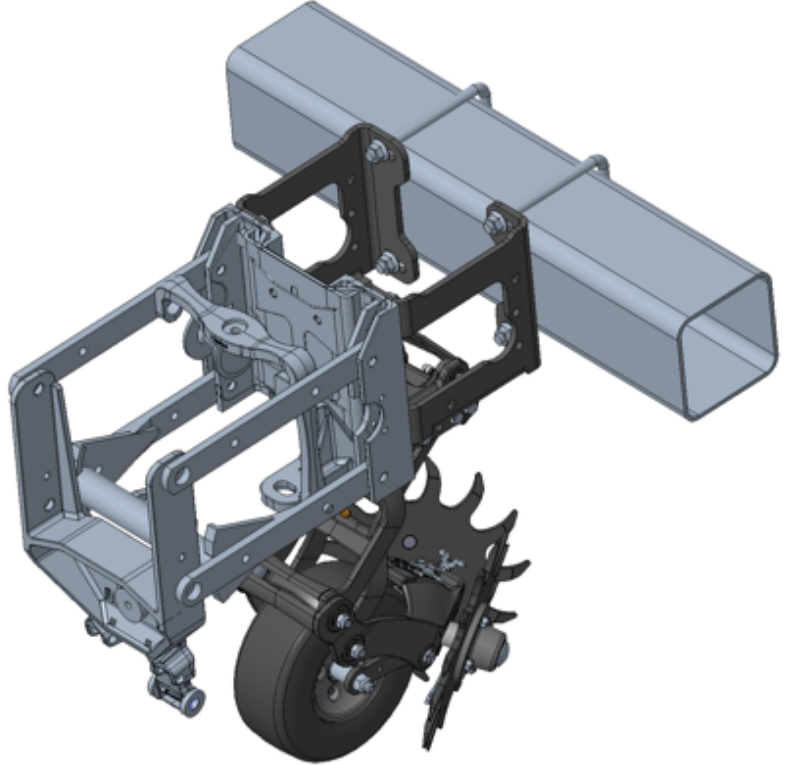
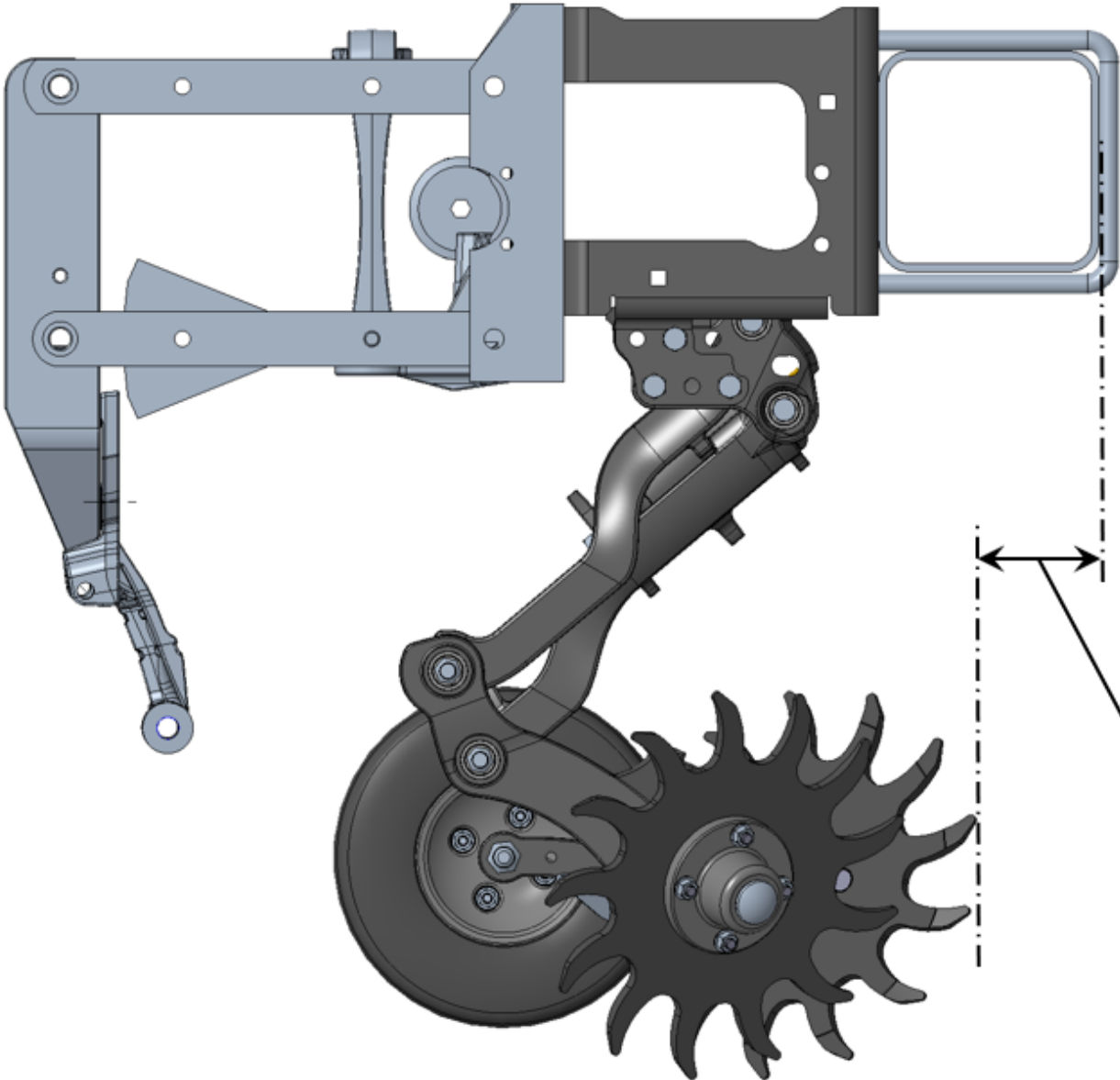
-Accommodates U-Bolt spacing of most row units

-Hex-shaft drive requires jack shaft and jumper chain installation on outside of bracket

.125"

*(Standard Position,
Planter Lifted)*

Reveal Universal 10" Setback Mount Kit: (757063)



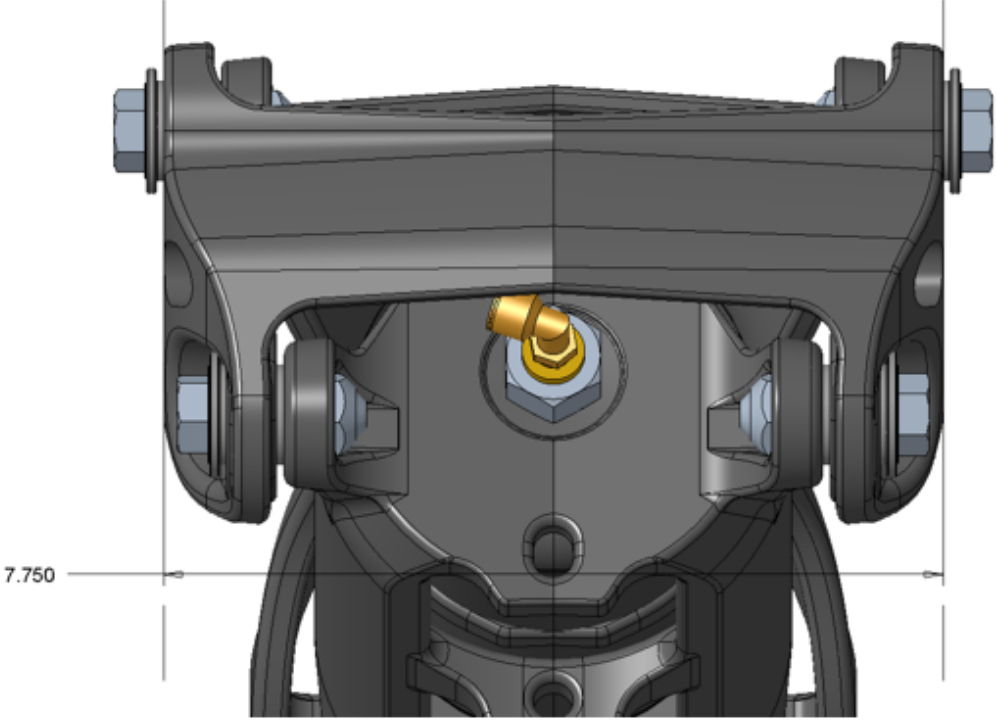
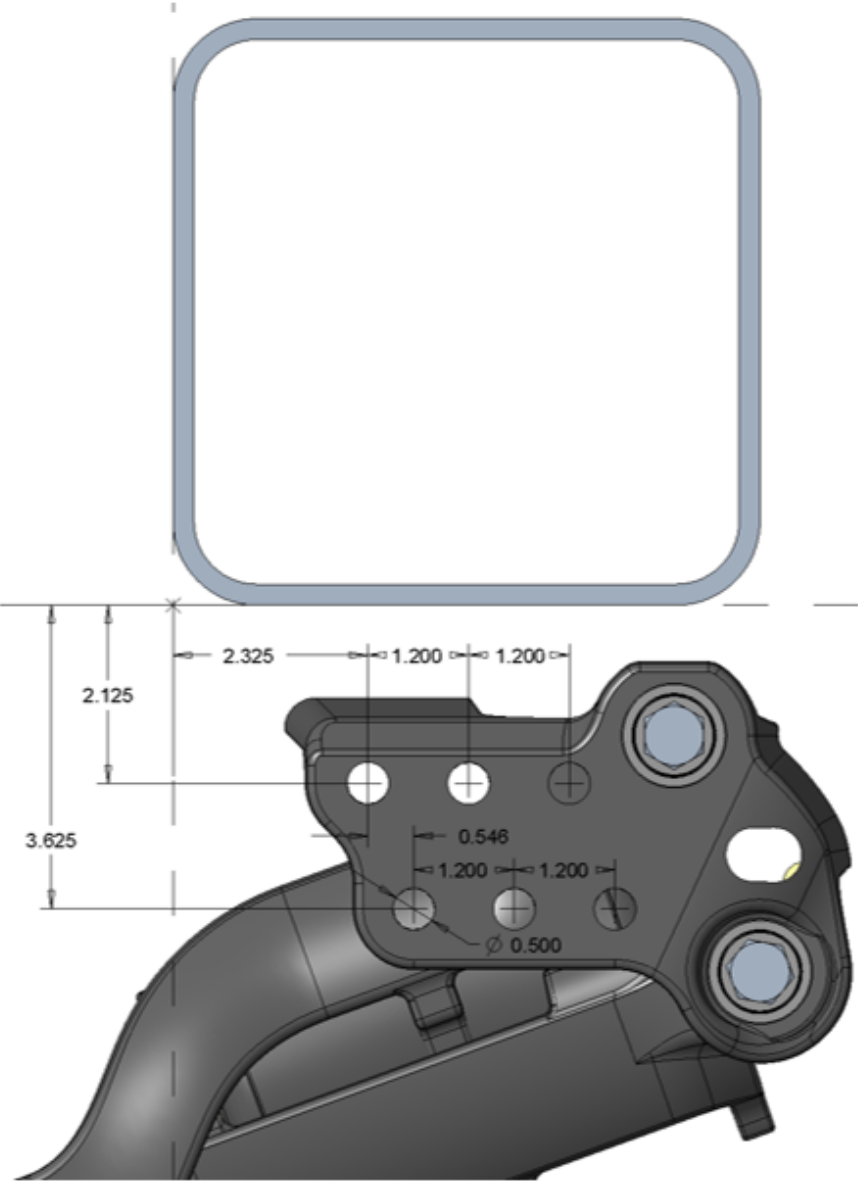
-Accommodates U-Bolt spacing of most row units

-Hex-shaft drive requires jack shaft and jumper chain installation on outside of bracket

4.00"

**(Standard Position,
Planter Lifted)**

Reveal Mounting Interface Dimensions:



Reveal Compatibility Guide

Planter				Important Notes	Reveal Row Cleaner Mounting Interface Required		
Make	Model	Size	Width	Description, Notes, and Additional Restrictions	Direct Mount Style	Parallel Arm Style*	Setback
JD	1770NT Front Fold 1775NT Front Fold	12-16	20"-30"	12 row planters may need to modify one row on the left wing if using the 757059, or order a parallel arm style mount for that row	757059 (All rows)		
JD	1770NT Front Fold 1775NT Front Fold	24	30"		757059 (Rows 1-7,10, 11, 14, 15,18-24) 757071 (Rows 8,9,16,17)	JD wide (757053) or narrow (757050) on rows 12 & 13	
JD	DB		20"-30"	Chain drive planters will require jumper chain and auxiliary hex shaft on rows using setbacks. Long parallel arms could be switched to short arms on rows that require set back. DB 66 22" planters will require modifications to the current setback on 2 of the middle rows.	757059- all rows that don't have obstructions on toolbar, or tire clearance issues	JD wide (757053) or narrow (757050) As required where 757059 won't fit	10" Setback (757063) - where required for tire clearance
JD	1760 1765	8				JD wide (757053) or narrow (757050) (All rows)	
JD	1760 1765	12				JD wide (757053) or narrow (757050) (All rows)	
JD	1790 1795		20"	15/30" 1790/1795 planters not compatible with Reveal		JD wide (757053) or narrow (757050) (All rows)	10" Setback (757063) - Rows behind center tires need setback If the planter bar is smaller than a 7x7 setbacks will be needed behind all tires
JD	1720 1725		30"-38"	Not compatible with CCS planters. Chain drive planters will require jumper chain and auxiliary hex shaft.		JD wide (757053) or narrow (757050) (All other rows)	10" Setback (757063) - rows behind the 3 point, and inner most row on the wing fold
JD	7200 1770 Conservation	12	30"	Not compatible with ground drive (hydraulic drive OK)			
JD	7200 1770 Conservation	16	30"	Not compatible with ground drive (hydraulic drive OK)	757059- Rows 1-7 and 10-16	JD Wide (757053)- Rows 8 and 9	
KZ	2600, 3600, 3660	All	30"	Pusher rows not compatible. Chain drive planters will require individual jumper chains and auxiliary hex shafts on each of the center rows using a setback.		KZ/PP (757056)- all except center 6 rows	6.25" (757061)- Center 6 Rows If planter bar is smaller than a 7x7 a 10" (757063) will be needed
KZ	3700	All	15" - 30"	Chain drive planters will require individual jumper chains and auxiliary hex shafts on each of the center rows using a setback.	757059- all rows that don't have obstructions on toolbar, or tire clearance issues	KZ/PP (757056)- rows where direct mount cant be used	10" Setback (757063) - where required for tire clearance
KZ	3800	24	30"	Chain drive planters will require individual jumper chains and auxiliary hex shafts on each of the center rows using a setback.		KZ (757056)- 1-8 and 17-24	6.25" (757061)- Rows 9-16
KZ	4900 4905	All	30"		757059- all rows that don't have obstructions on toolbar, or tire clearance issues	KZ 4000 (757082)- rows that don't use U-Bolts to attach w-plate (where direct mount cant be used)	
White	9800	All	30"		757059- all rows that don't have obstructions on toolbar	KZ/PP (757056)- rows where direct mount cant be used	
Harvest				Not compatible with "narrow" version of Harvest row unit	757059- all rows on 7x7 bar that don't have tire/frame clearance issues or obstructions on toolbar	JD Narrow (757050)+Harvest GFX Bracket -Where 757059 won't work**	10" Setback (757063) or 6.25" (757061) - Where required for tire clearance

* Wide = Parallel arms inside the w plate, Narrow = Parallel arms outside w plate

** For example, there are multiple Harvest planters with 3"x7" toolbar sections

Row Cleaner Models	Row Units										
	JD MaxEmerge 2 / MaxEmerge Plus / MaxEmerge XP / Pro Series		JD MaxEmerge (7000/7100)	Kinze 2000/ 3000	Kinze 4000	White 6000	White 8000	White 9000	Case IH 12x0	Case IH 12x5	Case IH 2000
	14" Arms	21" Arms									
Martin MTS, MTS-XP, MTS-81, MTS-IH C125 MTS	755190	755190	755190	755190		755190	755190	755190	755190	755190	755190
Martin MTR, MTR-XP, MTR-81, MTR-IH C125 MTR	755195	755195	755225	755195		755225	755225	755225	755225	755225	755225
Martin BD, BK, BW, BCH 1360 1360	755200	755200	755200	755200		755200	755200		755200	755200	755200
Martin BDC 1360 (1360 with JD cast coulter)	755205	755205						755205			
Yetter 2967-035 (short brkt)	755175	755175	755175	755175		755175	755175	755175			
Yetter 2967-035	755180	755180	755230	755180		755230	755230	755230			
Yetter 2967-042, 043	755160	755160									
Yetter 2967-115	755170	755170	755170	755170		755170		755170			
Yetter 2967-007	755185	755185	755185	755185	755185	755185	755185	755185			
Yetter 2967-029/097 (30" Row)	755265	755265	755265	755265	755265	755265	755265	755265	755245	755245	755245
Yetter 2967-013/014 (Narrow Row)	755270	755270	755270	755270	755270	755270	755270	755270	755250	755250	755250
Yetter 2967-029A/097A/013A/014A	755255	755255	755255	755255	755255	755255	755255	755255	755255	755255	755255
Sunco Floating Saber Tooth	5011241	5011241	5011241	5011241	5011241		5011241	5011241	5011242	5011242	
Sunco Nutrimate 3	5011238	5011238	5011238	5011238	5011238		5011238	5011238	5011238H	5011238H	

Legend
No Special Requirements
See Anomalies for special instructions
No CleanSweep kit available
Combination does not exist
Cylinder Only, Sunco kit needed for attachment

Incompatible Coulters and Fertilizer Openers
Yetter Double Arm Coulter
JD Double Disk Fertilizer Opener
JD Single Disk Fertilizer Opener
BD-UMO (1360/UMO combo)

CleanSweep Compatibility on C125 MTR row cleaners w/ LH mounted UMO-100				
		1" Left	2" Left	3" Left
755195	3/4" above seed	All Clear	All Clear	Top hole of CS bracket only. Can not use bottom hole. Row cleaner may not be set any deeper than 3" above seeding depth.
	Even w/ seed	All Clear	All Clear	Top hole, no interference. If using bottom hole, row cleaner may not be set any deeper than 3" above seeding depth
	3/4" below seed	All Clear	All Clear	All Clear
755225	3/4" above seed	All Clear	No Go	No Go
	Even w/ seed	All Clear	No Go	No Go
	3/4" below seed	All Clear	No Go	No Go

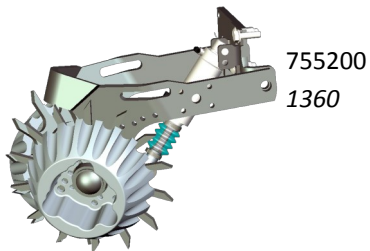
Interpretations
 If a cell in one of the configuration columns is blank, it means that particular column is irrelevant.
 If a cell in one of the special installation instruction columns is blank, it means there is no special requirement for that particular column.
 If your particular configuration is not listed, contact tech support to make sure there are no known compatibility issues.

CleanSweep Kit	Row Unit/Row Cleaner Configuration										Special Installation Instructions				
	Row Unit Model	Paralle Arms	Reader Wheels (Standard 1.75" or Wide 3.5")	Coupler/Fertilizer Attachment	Drive System	AirForce bracket 726551	Deltaforce Installed	With Pneumatic Down Force	Base Mount Hole	Rod Mount Hole	Cylinder Orientation	Stop Kit	Shim (755159)	Other	
755160	JD MaxEmerge 2 / MaxEmerge Plus / MaxEmerge XP / Pro Series	14"	None	None					Bottom	Bottom	Upside down			Install spacer block 755209 (see figure 3)	
755160	JD MaxEmerge 2 / MaxEmerge Plus / MaxEmerge XP / Pro Series	21"	None	None					Bottom	Bottom	Upside down			Install spacer block 755209 (see figure 3)	
755180	JD MaxEmerge 2 / MaxEmerge Plus / MaxEmerge XP / Pro Series	14"	JD Cast	Yetter Single Arm, Dawn Single Arm, JD Cast					Bottom	Bottom	Upside down				
755180	JD MaxEmerge 2 / MaxEmerge Plus / MaxEmerge XP / Pro Series	14"	JD Cast	JD Cast	Chain				Bottom	Bottom	Upside down			Yes	
755180	JD MaxEmerge 2 / MaxEmerge Plus / MaxEmerge XP / Pro Series	14"	JD Cast	JD Cast	Cable				Bottom	Bottom	Upside down			Yes	
755180	JD MaxEmerge 2 / MaxEmerge Plus / MaxEmerge XP / Pro Series	14"	None	None, Yetter Single Arm, Dawn Single Arm	Cable				Bottom	Bottom	Upside down				
755180	JD MaxEmerge 2 / MaxEmerge Plus / MaxEmerge XP / Pro Series	755265	755265	JD Cast			755265		Bottom	Bottom	Upside down			726530 Yes	
755180	JD MaxEmerge 2 / MaxEmerge Plus / MaxEmerge XP / Pro Series	755270	755270	JD Cast			755270		Bottom	Bottom	Upside down			755202 Yes	
755180	JD MaxEmerge 2 / MaxEmerge Plus / MaxEmerge XP / Pro Series	21"	None	None					Bottom	Bottom	Upside down			755202	
755180	JD MaxEmerge 2 / MaxEmerge Plus / MaxEmerge XP / Pro Series	21"	No	Yetter Single Arm, Dawn Single Arm					Bottom	Bottom	Upside down			726530	
755180	JD MaxEmerge 2 / MaxEmerge Plus / MaxEmerge XP / Pro Series	21"	Yes	Yetter Single Arm, Dawn Single Arm					Bottom	Bottom	Upside down			755202	
755180	Kinze 2000/3000			Kinze Double-Arm Coupler											
755180	White 9000								Bottom	Bottom	Upside down			Coupler frame must be modified. See KB article #49 for instructions.	
755185	JD MaxEmerge 2 / MaxEmerge Plus / MaxEmerge XP / Pro Series	21"	None	None					Bottom	Bottom	Upside down			755202	
755185	JD MaxEmerge 2 / MaxEmerge Plus / MaxEmerge XP / Pro Series	21"	Yetter Single Arm	Yetter Single Arm					Bottom	Bottom	Upside down			755202	
755185	White 9000						Yes		Bottom	Bottom	Upside down				
755190	Case IH 12x4		None						Bottom	Top	Right side up			Route air lines as shown in Figure 1	
755190	Case IH 12x5	DefaForce	None						CleanSweep is not compatible with Case IH lower parallel arm	Top	Right side up			Route air lines as shown in Figure 1	
755190	Case IH 12x5	DefaForce	None						Bottom	Top	Right side up			Route air lines as shown in Figure 1	
755195	JD MaxEmerge 2 / MaxEmerge Plus / MaxEmerge XP / Pro Series	14"	JD Cast	JD Cast	Chain				Bottom	Bottom	Upside down			Yes	
755195	JD MaxEmerge 2 / MaxEmerge Plus / MaxEmerge XP / Pro Series	14"	JD Cast	JD Cast	Cable				Bottom	Bottom	Upside down			Yes	
755195	JD MaxEmerge 2 / MaxEmerge Plus / MaxEmerge XP / Pro Series	14"	None	None, Yetter Single Arm, Dawn Single Arm					Bottom	Bottom	Upside down				
755195	JD MaxEmerge 2 / MaxEmerge Plus / MaxEmerge XP / Pro Series	14"	UMD 100	UMD 100	Chain				Bottom	Bottom	Upside down			Check UMO Chart for left-hand openers	
755195	JD MaxEmerge 2 / MaxEmerge Plus / MaxEmerge XP / Pro Series	14"	UMD 100	UMD 100	Cable				Bottom	Bottom	Upside down			Check UMO Chart for left-hand openers	
755195	JD MaxEmerge 2 / MaxEmerge Plus / MaxEmerge XP / Pro Series	21"	JD Cast	JD Cast					Bottom	Bottom	Upside down			726530 Yes	
755195	JD MaxEmerge 2 / MaxEmerge Plus / MaxEmerge XP / Pro Series	21"	None	None					Bottom	Bottom	Upside down			755202	
755195	JD MaxEmerge 2 / MaxEmerge Plus / MaxEmerge XP / Pro Series	21"	UMD 100	UMD 100					Bottom	Bottom	Upside down			726530	
755195	JD MaxEmerge 2 / MaxEmerge Plus / MaxEmerge XP / Pro Series	21"	Yetter Single Arm	Yetter Single Arm, Dawn Single Arm					Bottom	Bottom	Upside down			726530	
755195	Kinze 2000/3000			Kinze Double-Arm Coupler										Coupler frame must be modified. See KB article #49 for instructions.	
755200	Case IH 12x4		None						Bottom	Top	Right side up			Route air lines as shown in Figure 1	
755200	Case IH 12x5	DefaForce	None						CleanSweep is not compatible with Case IH lower parallel arm	Top	Right side up			Route air lines as shown in Figure 1	
755200	JD MaxEmerge 2 / MaxEmerge Plus / MaxEmerge XP / Pro Series	21"	None				Yes		Bottom	Bottom	Upside down			Route air lines as shown in Figure 1	
755205	JD MaxEmerge 2 / MaxEmerge Plus / MaxEmerge XP / Pro Series	21"	JD Cast	JD Cast					Bottom	Bottom	Upside down			726530	
755205	White 9000								Bottom	Bottom	Upside down			Confirm clearance around cylinder through full range of motion before use	
755225	Case IH 12x4		None											Row Cleaner must be installed in the rear pivot holes (see Figure 2)	
755225	Case IH 12x5	DefaForce	None						CleanSweep is not compatible with Case IH lower parallel arm					Row Cleaner must be installed in the rear pivot holes (see Figure 2)	
755225	Case IH 12x5	DefaForce	None						Bottom	Bottom	Upside down			Row Cleaner must be installed in the rear pivot holes (see Figure 2)	
755225	Case IH 2000													Row Cleaner must be installed in the rear pivot holes (see Figure 2)	
755225	JD MaxEmerge (1000/1100)			None, Yetter Single Arm, Dawn Single Arm										Row Cleaner must be installed in the rear pivot holes (see Figure 2)	
755225	JD MaxEmerge (1000/1100)			UMD 100										Row Cleaner must be installed in the rear pivot holes (see Figure 2). Check UMO Chart for left-hand openers.	
755225	White 6000													Row Cleaner must be installed in the rear pivot holes (see Figure 2)	
755225	White 8000													Row Cleaner must be installed in the rear pivot holes (see Figure 2)	
755225	White 9000													Row Cleaner must be installed in the rear pivot holes (see Figure 2)	
755240	White 9000						Yes		Bottom	Bottom	Upside down			Row Cleaner must be installed in the rear pivot holes (see Figure 2)	
755240	All													trash wheels cannot be configured in the interlocking position	
755245	Case IH 12x4	Case IH							Bottom	Top	Right side up			Route air lines as shown in Figure 1	
755245	Case IH 12x5	Case IH							Bottom	Top	Right side up			Route air lines as shown in Figure 1	
755245	Case IH 12x5	DefaForce							Bottom	Top	Right side up			755231 or Case P/N: 129621A1	
755245	Case IH 12x5	DefaForce							Bottom	Top	Right side up			Route air lines as shown in Figure 1	
755245	Case IH 12x5	Case IH							Bottom	Top	Right side up			Route air lines as shown in Figure 1, trash wheels cannot be configured in the interlocking position	
755250	Case IH 12x4	Case IH							Bottom	Top	Right side up			Route air lines as shown in Figure 1, trash wheels cannot be configured in the interlocking position	
755250	Case IH 12x5	Case IH							Bottom	Top	Right side up			Route air lines as shown in Figure 1, trash wheels cannot be configured in the interlocking position	
755250	Case IH 12x5	DefaForce							Bottom	Top	Right side up			755231 or Case P/N: 129621A1	
755250	Case IH 12x5	Case IH							Bottom	Top	Right side up			Route air lines as shown in Figure 1, trash wheels cannot be configured in the interlocking position	
755270	All													trash wheels cannot be configured in the interlocking position	

CleanSweep®

Row Cleaner Identification Guide
 Must use CleanSweep Compatibility Guide to determine if additional components are needed.
Martin/Yetter part numbers in italics

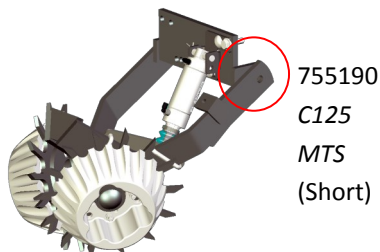
Martin Industries, LLC



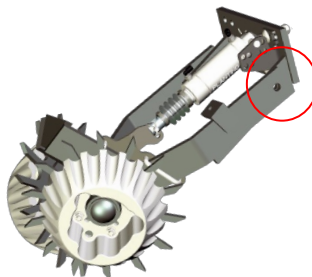
755200
1360



755205
BDC 1360
(1360 w/ JD cast
coupler, White
9K)



755190
C125
MTS
(Short)



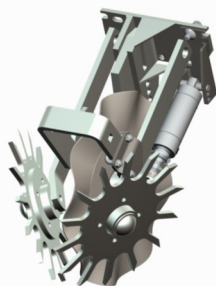
755195
C125
MTR



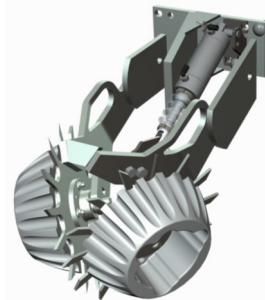
755225
C125 MTR
Low Mount
(White 6/8/9K, CIH)



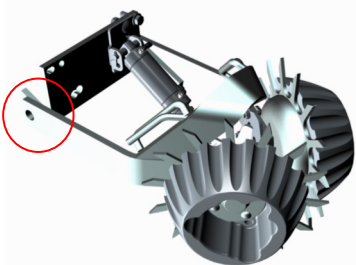
755160
2967-042 &
2967-043
(JD Coupler)



755170
2967-115
(Yetter
Coupler)



755185
2967-007
(Yetter Coupler)



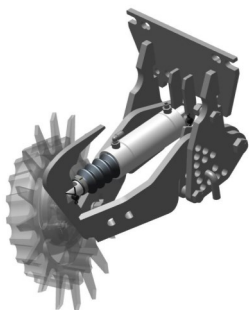
755175
2967-035
(Short Yetter)



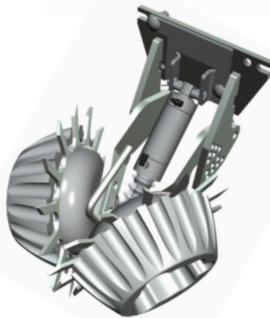
755180
2967-035
(Standard)



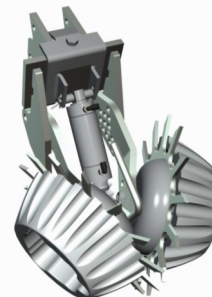
755230
2967-035
(Standard Low Mount)
(JD 7000/7100,
White 6/8/9K)



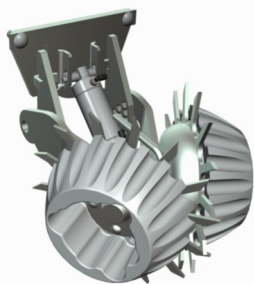
755255
2967-013A
2967-014A
2967-029A
2967-097A
(CleanSweep
ready)



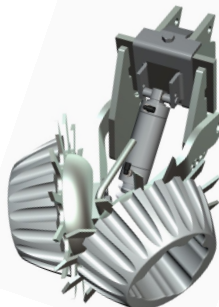
755235 or
755270
2967-013



755250
2967-014
(narrow row
CIH)



755210 or
755265
2967-029
(30" row)



755245
2967-097
(30" row CIH)

Yetter Manufacturing, Inc.

Crop	Size & Seeds Per Lb.	Row Spacing	Vac Setting	Disk Used	Disk Part #	Singulator Position	Singulator Regular: 720372 Specialty: 720386	Lower Brush Position	Deflector Position "Paperclip"	Extractor Regular: 720185 Specialty: 720117	JD Wiper Used
Canola	60,000 - 100,000 seeds/lb		18"-20"	Canola Disk .047"	720301	Floating	Specialty	Angled	Up w/ Hose†	‡	No
Chili	12 seeds/ft - 30" Row		15"	Small Sugar Beet Disk .062	720284	Floating	Specialty	Angled	Up w/ Hose†	Specialty	No
Cotton	50,000-60,000 pop.		18"-20"	Singulated Cotton Disk .100	720285	Floating	Regular	Angled	Up	Specialty	No
Cucumbers			10"	Small Sugar Beet Disk .062	720284	Floating	Specialty	Angled	Up w/ Hose†	Specialty	No
Field Corn		All	18"-20"	eSet Corn Disk .176" 30 Hole	720003	Floating	Regular	Angled	Up	Regular	No
Gourds			10"	Specialty "B" Disk .115	7200031	Floating	Regular	Angled	Up	Specialty	No
Peanuts	Medium (Spanish or Runner)		10"	JD Large Edible Bean	H136092	Remove	NA	Straight	Down	NA	Yes*
Popcorn	Small		18"	Specialty "B" Disk .115	7200031	Floating	Regular	Angled	Up	Specialty	No
	Medium		18"	Specialty "C" Disk .125	7200032	Floating	Regular	Angled	Up	Specialty	No
	Large		18"	Specialty "D" Disk .135	7200033	Floating	Regular	Angled	Up	Specialty	No
Pumpkins	DelMonte/Libby	60"	13"	Specialty "B" Disk .115	7200031	Floating	Regular	Angled	Up	Specialty	No
	Ornamental	60"	14"	Specialty "C" Disk .125	7200032	Floating	Regular	Angled	Up	Specialty	No
Small Indian Corn			18"	Specialty "B" Disk .115	7200031	Floating	Regular	Angled	Up	Specialty	No
Snap Beans	100,000 Pop/30" Rows		18"-20"	eSet Soybean Disk .155" 60 Hole	720286	Floating	Specialty	Angled	Up	Specialty	No
Sorghum	13,000-16,000 seeds/lb		11"-12"	Large Sugar Beet Disk .088"	720282	Floating	Regular	Angled	Up w/ Hose†	Specialty	No
	Pop: 40,000 Non-Irrigated		11"-12"	Large Sugar Beet Disk .088"	720282	Floating	Regular	Angled	Up w/ Hose†	Specialty	No
	Pop: 80,000 Irrigated		11"-12"	Large Sugar Beet Disk .088"	720282	Floating	Regular	Angled	Up w/ Hose†	Specialty	No
Soybeans		15-20"	18"-20"	eSet Soybean Disk .155" 60 Hole	720286	Floating	Specialty	Angled	Up	Either	No
		30"	8"- 10"	JD Soybean 3 row cell disk	A42586	Locked Down	NA	Straight	Down	NA	Yes*
Squash			15"	Specialty "C" Disk .125	7200032	Floating	Regular	Angled	Up	Specialty	No
Sugar Beets	15,000-18,000 seeds/lb		18"	Small Sugar Beet Disk .062	720284	Floating	Specialty	Angled	Up w/ Hose†	Specialty	No
	13,000-15,000 seeds/lb		20"	Large Sugar Beet Disk .088"	720282	Floating	Specialty	Angled	Up w/ Hose†	Specialty	No
Sunflowers	Confectionary/Edible	30"	12"	eSet Corn Disk .176" 30 Hole	720003	Floating	Regular	Angled	Up	Regular	No
	#1	30"	13"-14"	Specialty "C" Disk .125	7200032	Floating	Regular	Angled	Up	Specialty	No
	#2	30"	12"-13"	Specialty "C" Disk .125	7200032	Floating	Regular	Angled	Up	Specialty	No
	#3	30"	7"-8"	Specialty "B" Disk .115	7200031	Floating	Regular	Angled	Up	Specialty	No
	#4	30"	7"-8"	Specialty "B" Disk .115	7200031	Floating	Regular	Angled	Up	Specialty	No
Sweet Corn	Small	30"	15"-18"	Specialty "C" Disk .125	7200032	Floating	Specialty	Angled	Up	Specialty	No
	Medium	30"	15"-18"	Specialty "D" Disk .135	7200033	Floating	Specialty	Angled	Up	Specialty	No
	Large	30"	15"-18"	Specialty "E" Disk .145	7200034	Floating	Specialty	Angled	Up	Specialty	No

eFlow Lubricant: Use on all seeds at 1/8 - 1/4 cup per bag of seed depending on seed size. Do not over apply

***JD Wiper:** This is used with JD disks. Located in plastic meter cover. Can be left in for e-Set disks, but not necessary.

†1/4" ID x 1" Long Hose - Part Number: 720281

‡Pro-Series use 720305 and Standard Use 720295



955312_04 revised 2/8/16