

vSet®
SpeedTube™
vSet® Select

**Vacuum System Install Guide for 4cc (730555) and 6cc
(731438) Blowers**

Precision Planting®

Contents

Pre-Installation Equipment Check.....	3
Vacuum System Planter Configuration Layouts.....	6
John Deere Vacuum Configurations.....	6
Kinze Vacuum Configurations	7
Planter Diagrams	9
Vacuum Unit Installation.....	14
Vacuum Mounting Brackets	14
Specific Model.....	18
Hydraulic Plumbing and Hose Sizing	18
Replacing 4cc with 6cc Motor.....	21
Main Vacuum Tube Installation	22
Row Unit Fitting Installation.....	23
Vacuum Saddles	23
Row Unit Hose	27
Vacuum Sensor and Taps.....	29
Vacuum System Troubleshooting.....	30

Pre-Installation Equipment Check

Before you begin installing the meter or the vacuum system, it is imperative that you understand a few things about the pulling tractor's hydraulic system.

Step 1:

Tractor Hydraulic Pump Type

Hydraulic motors such as those used to power the vacuum blowers work best on either **closed-center variable displacement pumps or pressure-flow compensated pumps**.

Open-center fixed displacement pumps on the other hand, are not well suited for running motors and are NOT recommended. Check to make sure your hydraulic pump is not an open-center system. If your tractor is equipped with an open-center pump, you will need to find an alternative hydraulic power supply such as a PTO pump.

Several PTO pump options are available if your tractor lacks the hydraulic power to handle your vacuum system:

1. John Deere – this is a fixed displacement pump with a maximum pressure of 2000 psi. This pump will only be adequate on a planter with **8 or fewer rows**. Contact your John Deere dealer to order.
2. Command Hydraulics – these are pressure compensating pumps which are capable of handling larger planters. Pumps can be ordered at 12GPM and 16GPM. The 12 GPM pump will be adequate for a single blower. The 16 GPM pump would be recommended if you plan on powering other hydraulic applications from this unit (e.g. variable rate motors, CCS fans, multiple vacuum motors, etc.). To order, visit <https://www.commandhydraulics.com/hydraboost>

Step 2:

Evaluate your tractor's ability to supply the proper amount of hydraulic pressure and flow for the planter's overall system requirements.

Finding tractor specs for available hydraulic power (pressure and flow):

1. <http://www.tractordata.com>
2. <http://tractortestlab.unl.edu>
3. Contact your equipment dealer
4. Physically measure pressure and flow (see Hydraulic Test Kit Instructions - 730350)
 - Newer tractors (post-mid '90s) generally have plenty of power available, but take into consideration all the other hydraulic demands you'll have on your system.
 - Older tractors (generally pre-mid '90s) can often be marginal on power; especially if you plan to use other hydraulic functions. Furthermore, older equipment will probably not, in actuality, meet published specs due to wear and tear on the pump.

Step 3:

Evaluate the planter's overall system requirements for hydraulics

- Raise/Lower - 10 GPM
- Markers – 4 GPM
- Hydraulic Drive – 4 GPM
- CCS – 8 GPM
- Hydraulic AirForce Compressor – 4 GPM
- DeltaForce - .25 GPM per row

Sum up all of the flow requirements from the total available flow from the tractor to get an idea of how much will be available for the additional blower(s).

The exact pressure and flow requirements of newly added vacuum blowers can vary greatly and are commonly dependant on:

- Total number of planter rows
- Type of metering system (vSet, SpeedTube, vSet Select)
- Total number and types of vacuum blowers (John Deere 3.5cc, Precision Planting 4cc & 6cc)
- Overall frame fold and flex points
- Vacuum ductwork layout
- Crop types and ranging seed sizes
- Ground speed and general seed bed condition

More recent tractor models (with system pressure >2700 psi) are required for most SpeedTube, vSet Select, and larger vSet systems. Use the following table to quote oil consumption per vacuum blower:

Motor Displacement	GPM
John Deere 3.5cc	5
Precision Planting 4cc	7
Precision Planting 6cc	10

The flow requirements listed in the table are **Maximum** case options. Please contact Product Support if you wish to estimate your system requirements more precisely.

Using the estimates given for the hydraulic demand of the planter with the additional worst case system flow requirements, determine if your tractor is capable of handling the upgrade.

Step 4:

Case Drain

A case drain is essential to operating the vacuum blower motors. Each vacuum blower will require a case drain. If your tractor is not equipped, contact your equipment dealer to find out how to install one. You may also tee case drain lines if you size your hydraulic lines large enough to handle the additional flow. These case drain details are specific to both 4cc and 6cc motors.

Step 5:

Motor Return

High back pressure on the motor return line will hinder the performance of the vacuum blower. While a motor return port is not always necessary, it may be beneficial if the back pressure is high on the SCV return circuit. You may want to check the SCV valve to make sure the back pressure is not excessive (200 psi or greater). In the event of excessive back pressure, consider adding a motor return port if your tractor is not already equipped. Contact your equipment dealer to find out how to install a motor return port.

Vacuum System Planter Configuration Layouts

vSet Classic, vSet 2, SpeedTube, and vSet Select, will have varying scenarios to cover new vacuum installation, modification to existing vacuum system, and adding vacuum to the planter.

Each product platform may require 4cc or 6cc vacuum fans. The 6cc vacuum has a larger motor displacement and will provide a higher volume of air movement. The 6cc vacuum will also require a higher GPM flow from the tractor.

Refer to the matrix listed below to ensure you have the correct number of vacuums.

John Deere Vacuum Configurations

The tables below provide blower requirements for planting soybeans. The OEM JD vacuum is 3.5cc which is interchangeable in the tables below for 4cc.

Note: A John Deere Blower with a plastic shroud is equal to Precision Planting's 4CC blower. A John Deere blower with Cast shroud is not equal to Precision Plantings' 4CC blower. It should not be used with SpeedTube or vSet Select.

If a 4cc Precision Planting vacuum is already installed and you want to upgrade to a 6cc blower, you may replace just the motor (**731152** kit). The motor upgrade is not compatible with original John Deere vacuums.

vSet Classic/vSet 2*			
Planter Make	Number of Rows	Number of Vacuum Units	Blower Size
JD	4-16	1	4CC
JD	24	2	4CC

*vSet 2 with seed tube delivery. Refer to the Detailed Order Guide for tube and mounting bracket quantities.

SpeedTube			
Planter Make	Number of Rows	Number of Vacuum Units*	Blower Size
JD	12	1	4CC
JD	16-24	2	4CC
JD	12/24	2	4CC
JD	16/32	2	6CC
DB	36	3	4CC

vSet Select			
Planter Make	Number of Rows	Number of Vacuum Units*	Blower Size
JD	<8	1	4CC
JD	12	1	6CC
JD	16	2	4CC
JD	24	2	6CC

Note: For both SpeedTube and vSet Select, you must replace all JD vacuums without case drain. Newer JD vacuums are compatible with SpeedTube.

Kinze Vacuum Configurations

vSet Classic/vSet 2*			
Planter Make	Number of Rows	Number of Vacuum Units	Blower Size
KZ	8-16	1	4CC
KZ	8/15, 8/16	1	4CC
KZ	12/23, 12/24	1	4CC
KZ	16/31, 16/32	2	4CC
KZ	24	2	4CC
KZ	36	2	4CC

*Planters with Kinze/EdgeVac vacuums being installed with vSet 2 (seed tube) or vSet Classic can use the OEM vacuum. If needed refer to the Detailed Order Guide for tube and mounting bracket quantities.

SpeedTube				
Planter Make	Number of Rows	Number of Kinze Blowers	Number of Precision Blowers	PP Blower Size Required
KZ	12	1	0	N/A
		0	1	4CC
KZ	16	1	0	N/A
		0	2	4CC
KZ	12/24*	1	1	6CC
		0	2	6CC
KZ	16/32*	1	1	6CC
		0	2	6CC

*Planters installed with EdgeVac/Kinze vacuums must utilize a second Precision Planting vacuum. You will need one of each vacuum blower.

vSet Select				
Planter Make	Number of Rows	Number of Kinze Blowers	Number of Precision Blowers	PP Blower Size Required
KZ	12	1	0	N/A
		0	1	6CC
KZ	16	1	0	N/A
		0	2	4CC
KZ	12/24*	1	1	6CC
		0	2	6CC
KZ	16/32*	1	1	6CC
		0	2	6CC

*Planters installed with EdgeVac/Kinze vacuums must utilize a second Precision Planting vacuum. You will need one of each vacuum blower.

Planter Diagrams

1. General Guidelines

- Positioning of the vacuum tube and blower will vary by planter size, row layout, and folding arrangement.
- In general, stock ABS pipe is to be cut to length and used to feed the rows on rigid sections of the planter.
- Hinge and flex points will require flexible tubing, also to be cut to length.
- Tees and elbows are provided for front fold planters.
- If it is not possible to mount the blower such that the inlet manifold aligns with the rigid vacuum tubing, flexible tubing can be used to connect the two.
- Vacuum systems for Kinze Twinline planters are best mounted on the front tool bar.
- Use rigid pipe wherever possible because air flows through it more efficiently than it does through flexible hose.

2. Layout

- For the vast majority of planters, the vacuum blower should be centered from left to right so that an equal number of rows feed into each half of the inlet manifold.
- Exceptions to this include:
 - a. Front folding planters (JD and Kinze) with 24 rows or greater for vSet Classic and vSet 2 (seed tube) – these planters require one blower mounted on each wing with an equal number of rows feeding into each blower. Do your best to center each blower such that $\frac{1}{2}$ the rows going to each blower feed into each side of the inlet manifold. SeedTube and vSet Select will have two blowers.
 - b. Kinze 36-row Twinline planters – center the first blower on the bar for the left 16 rows and the second blower on the bar for the right 16 rows.
- The following images offer some suggestions for positioning the blower and routing the tube.

Symbol Table	
	90 Degree Elbow
	3" Solid Tubing
	Flex Hose
	3" T-Fitting
	Vac Blower (4CC)

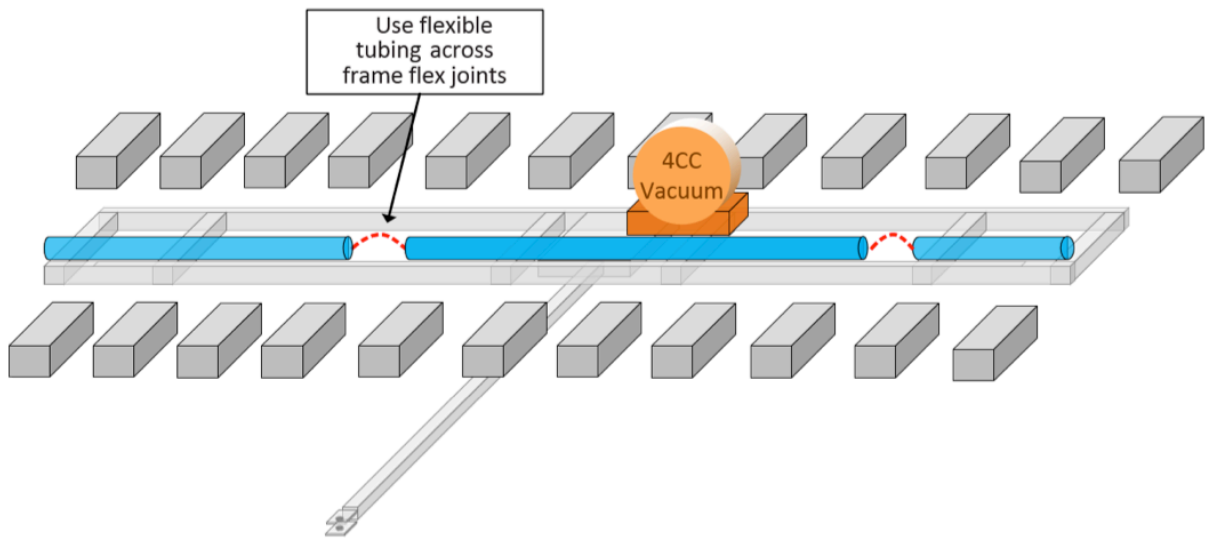


Figure 1.
Kinze 12/23 Twinline Layout 30'

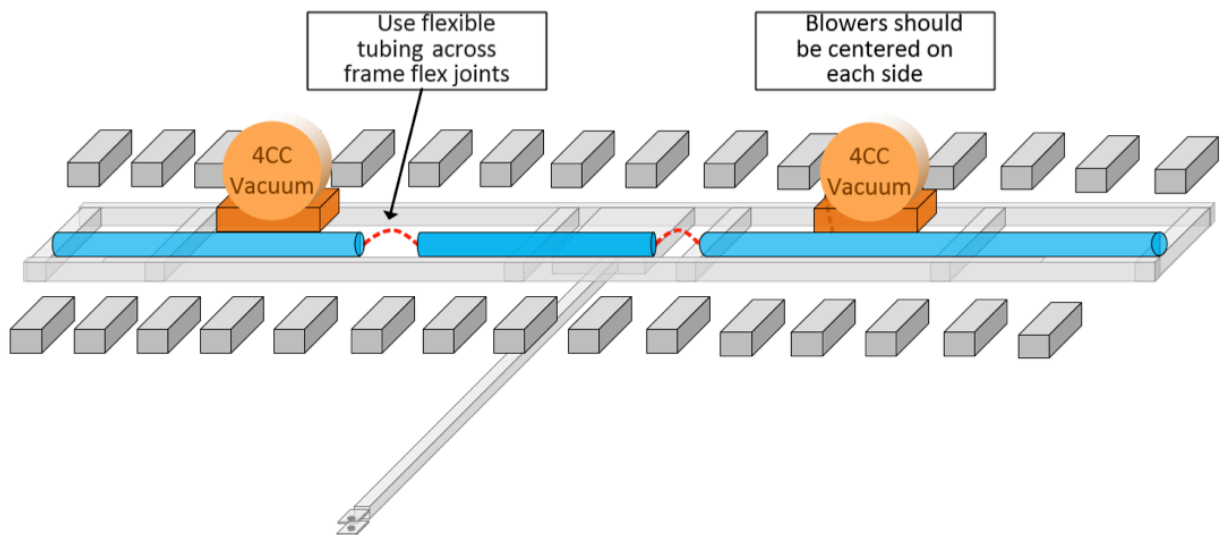


Figure 2.
Kinze 16/31 Twinline Layout 40'

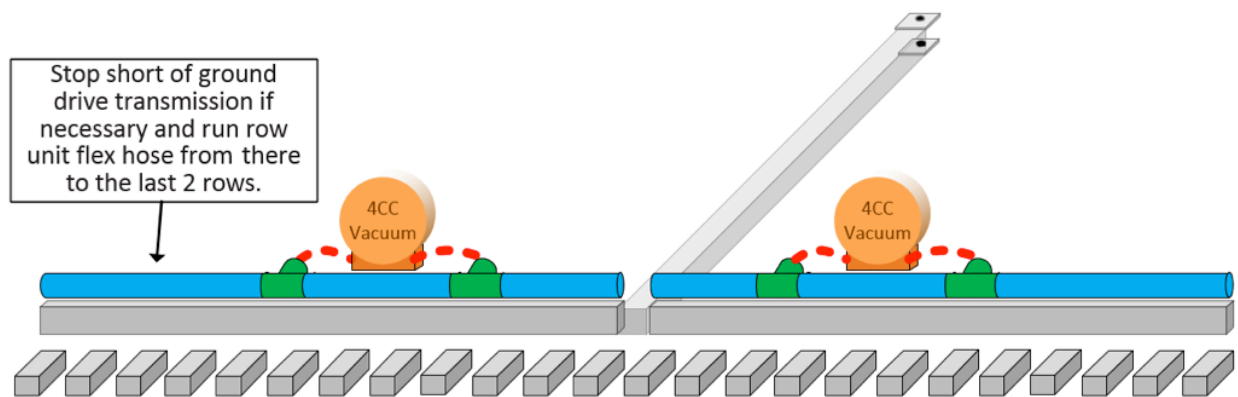


Figure 3.
Kinze 24R 3700

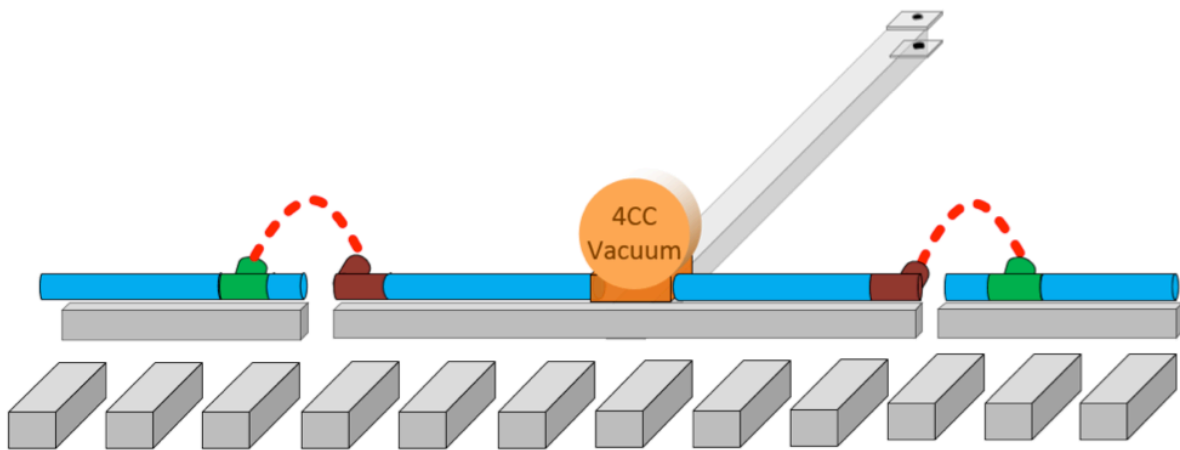


Figure 4.
12R Wing Fold

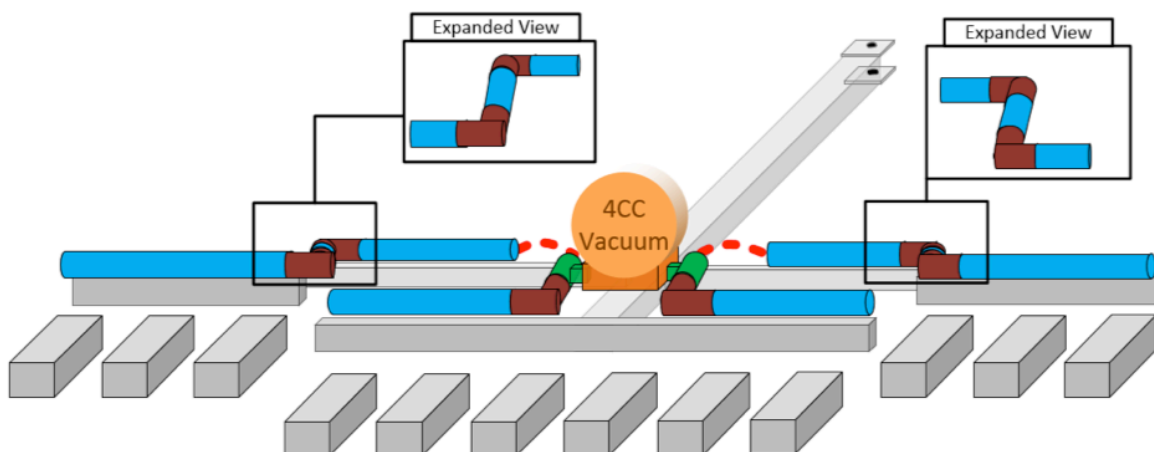


Figure 5.
Kinze 12R Front Fold

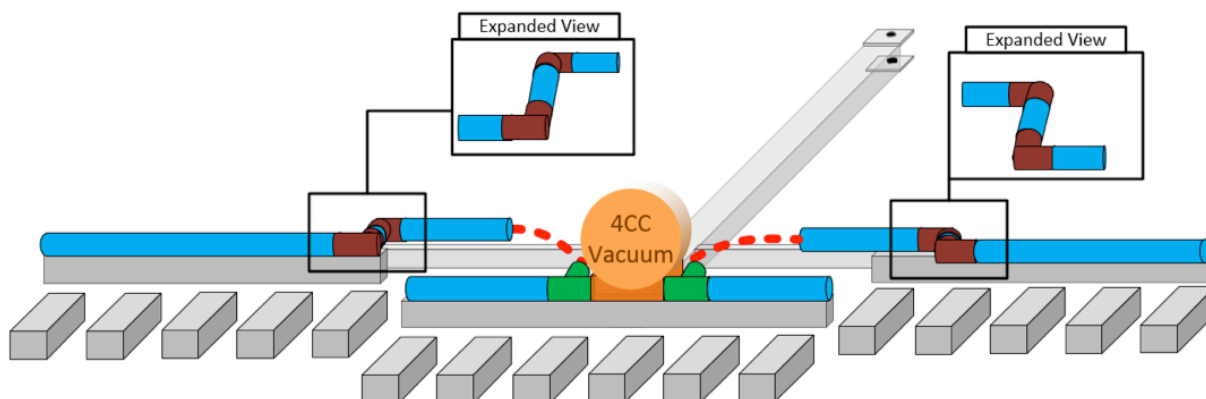


Figure 6.
16R Front Fold

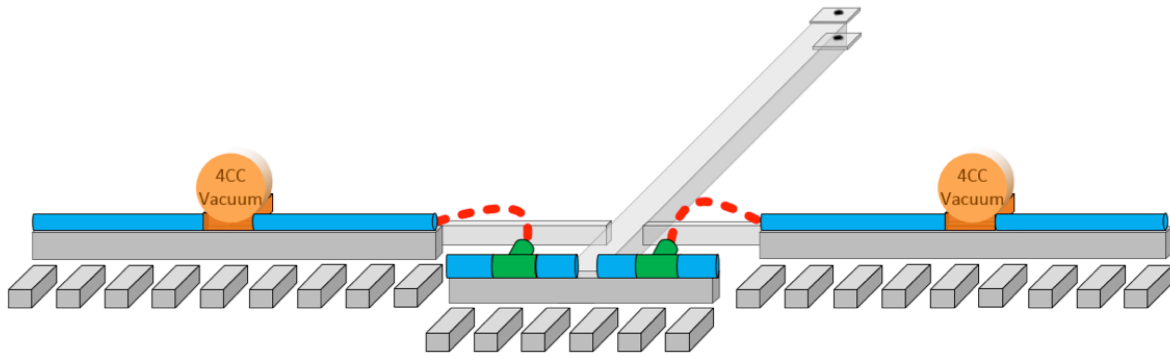


Figure 7.
24R Front Fold

Vacuum Unit Installation

Vacuum Mounting Brackets

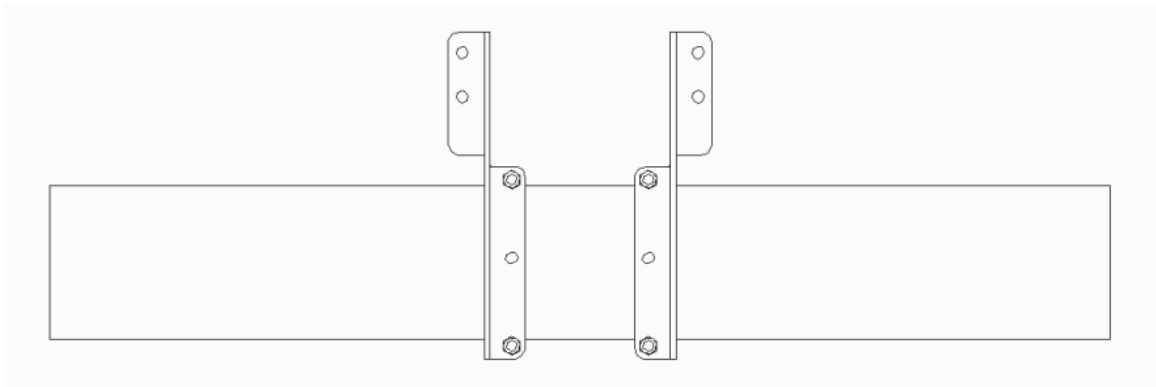
The following brackets are available for mounting the blower to the tool bar. Use the images as reference to mounting orientation. If you are working with a specific bracket not listed, reference the kit instructions.

1. 730210

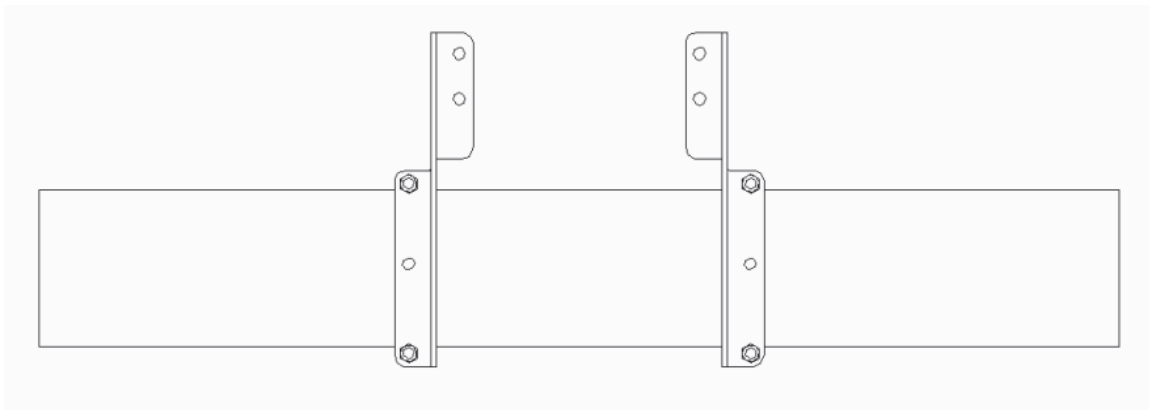
The 730210 brackets are compatible with 7x7 and 5x7 toolbars and is the standard mounting kit for the vacuum. The brackets can be arranged in a variety of ways to fit on various makes and models of planters with wide or narrow mounting positions. Use ½” u-bolts to secure the brackets to the planter tool bar. The blower housing is then fastened to the brackets by the two slotted holes running through near the bottom.

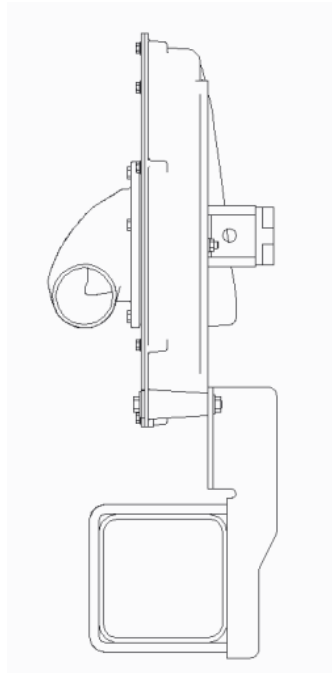
Note Use on Kinze 3700 planters may require the slots to be enlarged for the u-bolts to fit.

Narrow Configuration



Wide Configuration

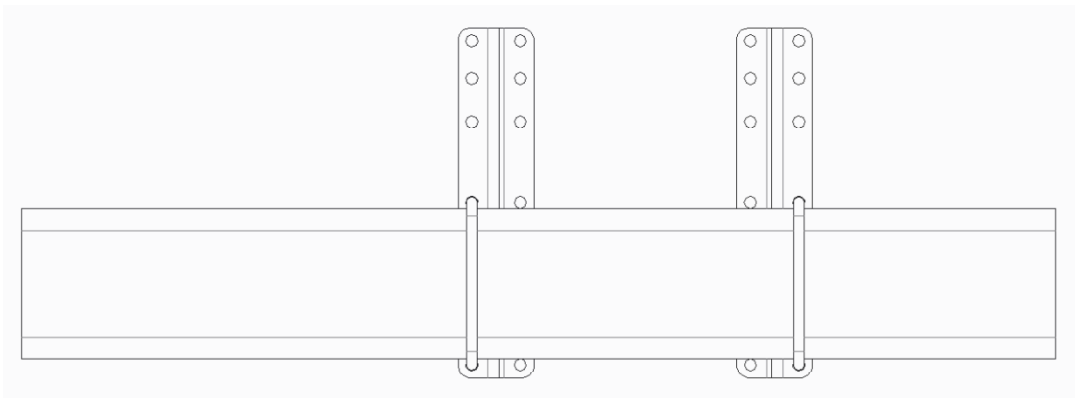


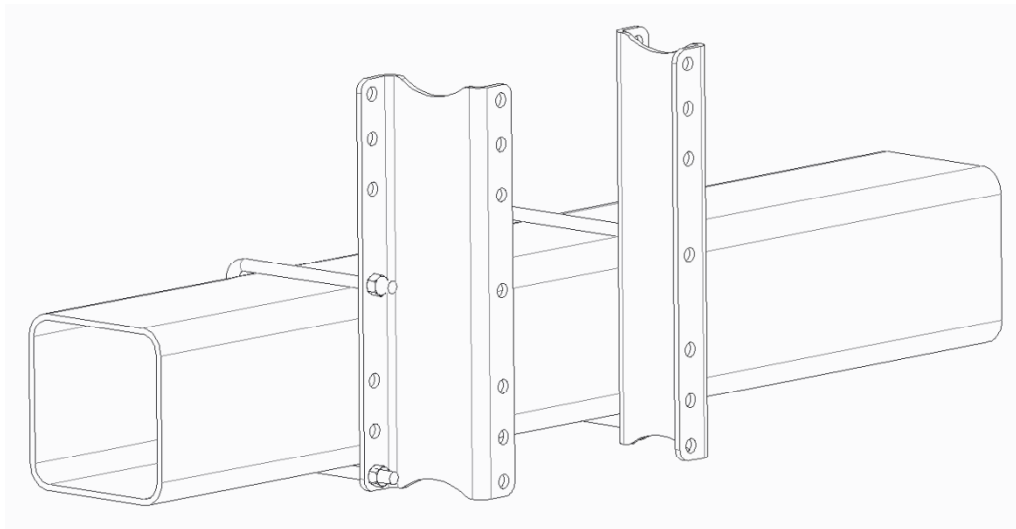


2. **730205**

The brackets are compatible with 7x7 toolbars, but would also work with 7x5 toolbars using different u-bolts that aren't included. The brackets can be arranged in a variety of ways to fit on various makes and models of planters with **wide** or **narrow** mounting positions. Use ½" u-bolts to secure the brackets to the planter tool bar. The blower housing is then fastened to the brackets by the two holes running through near the bottom.

Note This kit is specifically designed for JD 7000 12-row front fold planters, but may be used in other applications needed.

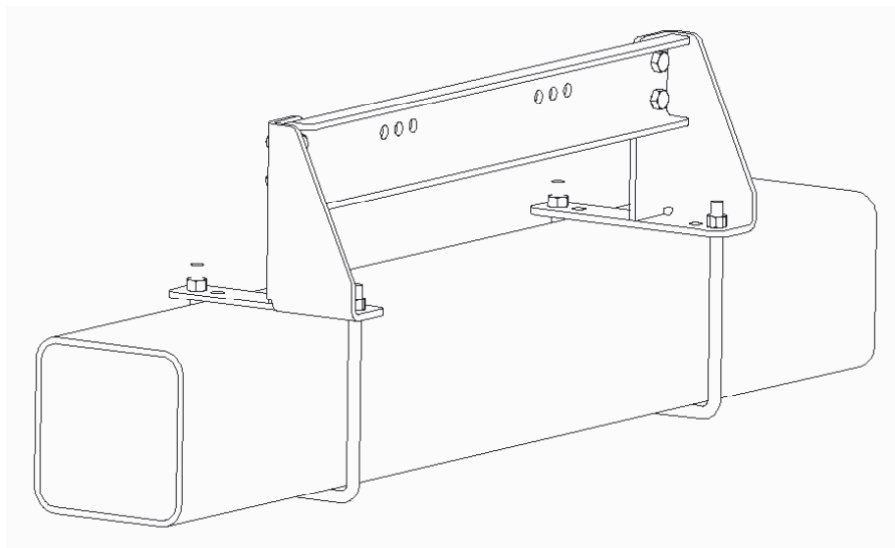




3. 730245

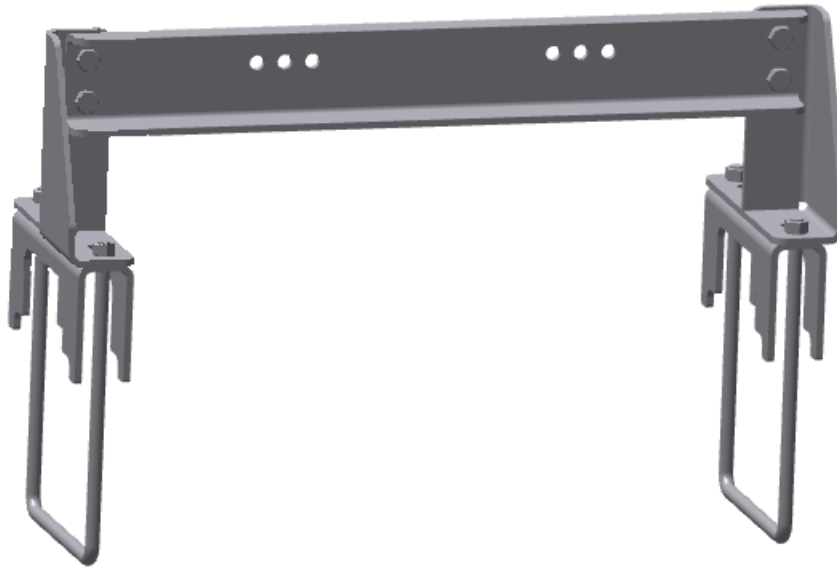
The brackets are compatible with 7x7 toolbars, but would also work with 7x5 toolbars using different u-bolts that aren't included. The brackets can be arranged in a variety of ways to fit on various makes and models of planters. Use ½" u-bolts to secure the brackets to the planter tool bar. Fasten the cross channel to the brackets with 4 ½" bolts and nuts. The blower housing is then fastened to the brackets by the two holes running through near the bottom.

Note This kit is specifically designed for JD 7000 16-row front fold planters, but may be used in other applications as necessary.



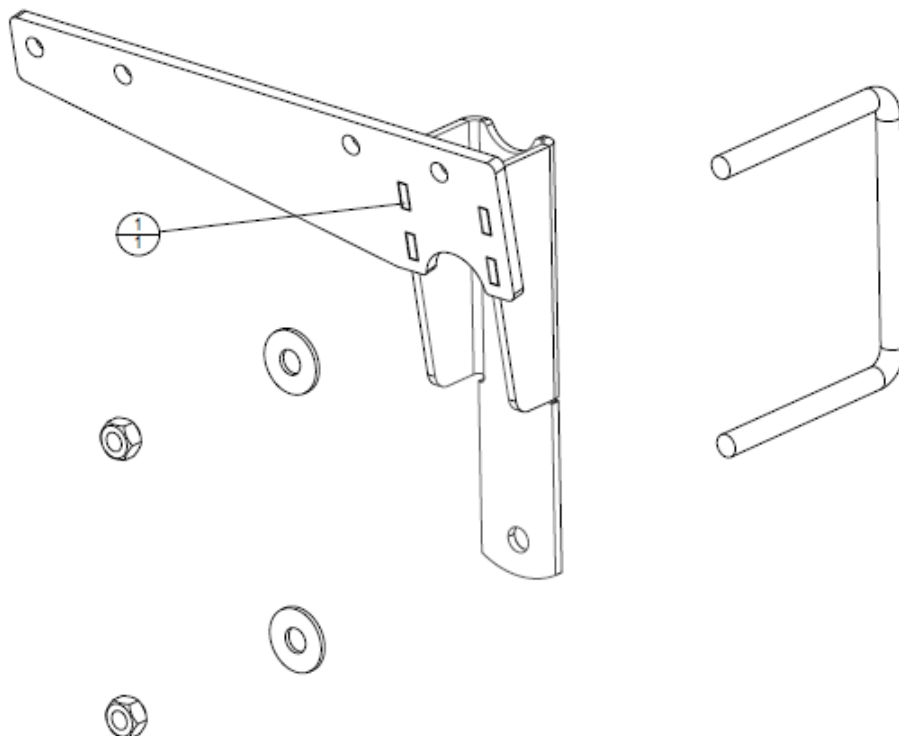
4. **730289**

The brackets are compatible on a 7x7 toolbar. This kit is designed to fit on 3-PT mounted KZ 2100 with direct ground drive, but may be useful for other models too.



5. **731219**

The brackets are compatible with 7x7 and 7x5 toolbars with both sizes of u-bolts provided in the kit. Single u-bolt mounting bracket.



Specific Model

John Deere:

John Deere 1770NT 16 row planters with a single vacuum unit will require a second unit to be installed from Precision Planting. You will need to order two JD bracket kits a (**AA62913**).

Locate these blowers in the middle of each wing section to split the planter with four rows on each side of the motor. You will also need to modify ductwork into each planter section.

Note: This detail is for SpeedTube and vSet Select only.

Deere Bauer:

DB44 and DB60 planters (2 blowers) will require a manifold upgrade kit. The upgrade kit for vSet Select is part number **731275**. The upgrade kit for SpeedTube is part number **731276**.

Instructions are included with the appropriate kit.

White:

All White planters will require plumbing modifications to include a vacuum and row unit fittings upgrade for vSet compatibility. Refer to the instructions included in the **731173** AGCO Blower Adapter Bracket Kit.

Kinze EdgeVac:

Kinze EdgeVac 3600 planters will require a second blower installation. Refer to the instructions included in the **731189** kit for more information.

Hydraulic Plumbing and Hose Sizing

You will need to provide the hydraulic hose to connect the motor to the tractor hydraulic system.

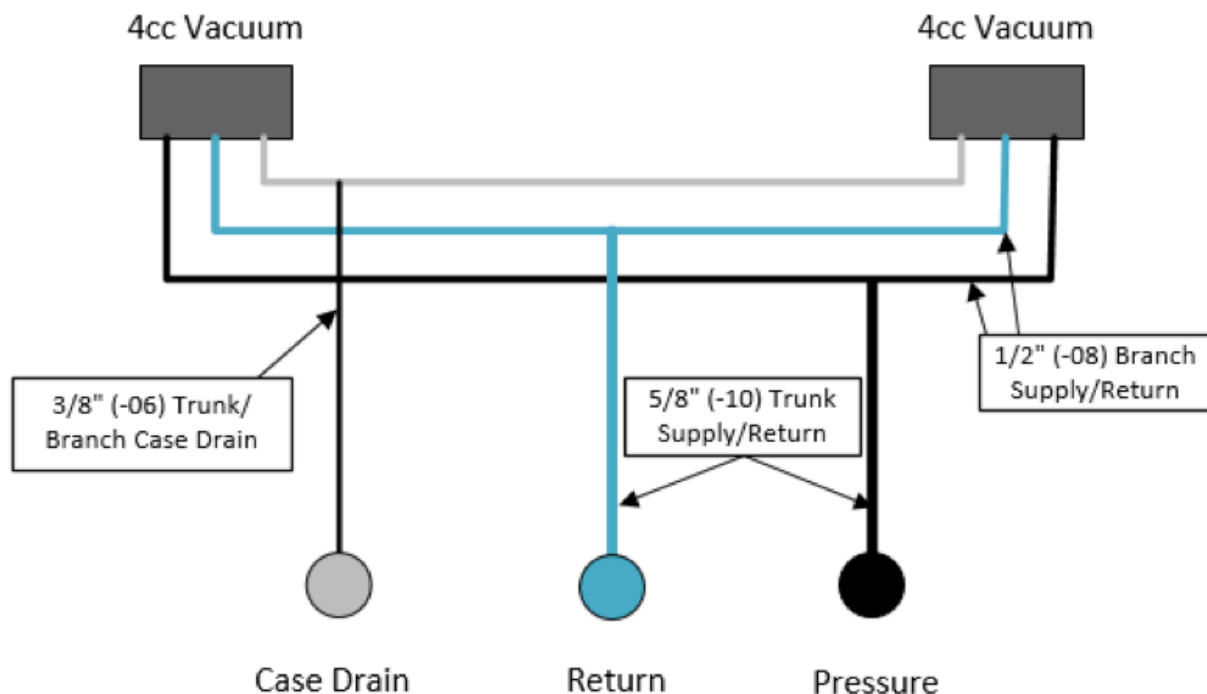
-8 JIC fittings are provided with the motor for the supply and return lines. -6 JIC fitting is supplied for the case drain connection. Select the correct hose size from the chart below:

Motor Size	Supply/ Return	Case Drain
4cc (1)	1/2" (-08)	3/8" (-06)
6cc (1)	5/8" (-10)	3/8" (-06)
4cc (2)*	5/8" (-10) for trunk, 1/2" (-08) for branches	3/8" (-06)
4cc (2)**	1/2" (-08)	3/8" (-06)
6cc (2)*	3/4" (-12) for trunk, 5/8" (-10) for branches	3/8" (-06)
6cc (2)**	5/8" (-10)	3/8" (-06)

***Supply to both vacuums are T'd in a parallel circuit**

****Each vacuum installed with dedicated lines from the SCV.**

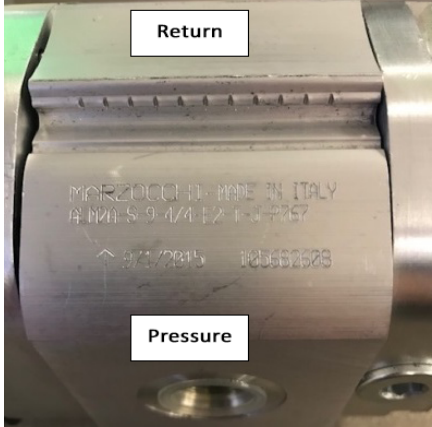
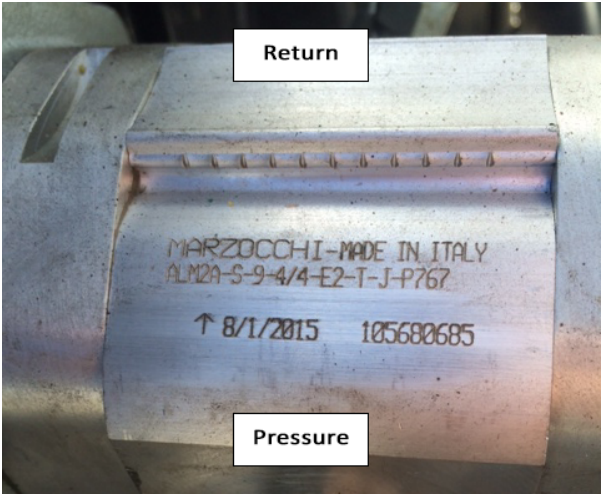
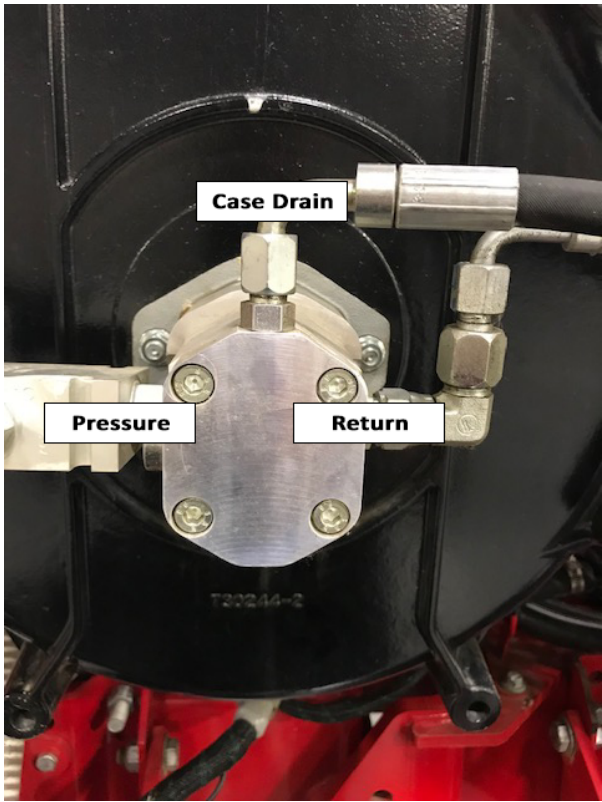
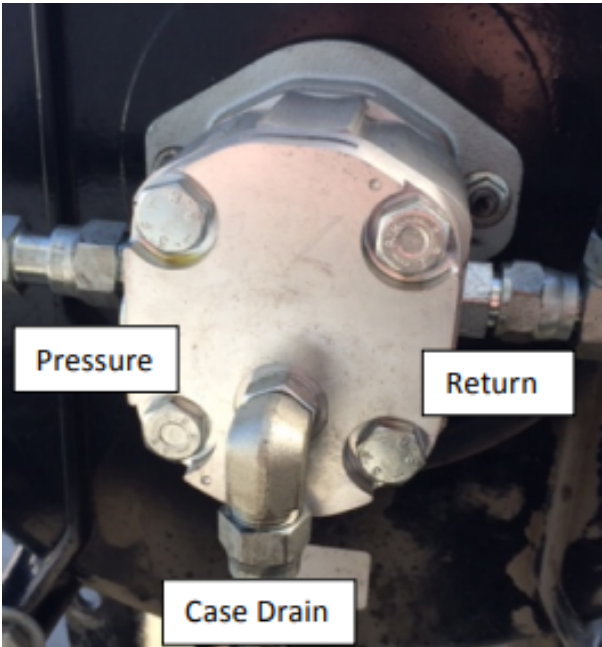
Note: The entire case drain line can be sized to -06. You can also T to existing case drains. If four or more components are tied together into the case drain, size hose up to 1/2" or -8.



It is always best to connect vacuum motor hydraulics to the tractor SCV independently from other hydraulic function. While it may work to tee into the other function's hydraulic lines, be aware that this may result in inconsistent vacuum pressure. Avoid sharing SCV ports whenever possible

It is a good practice to clearly mark each hose so you know where to make the connection. Contact your equipment dealer learn how to install a case drain if your tractor is not equipped with a case drain port.

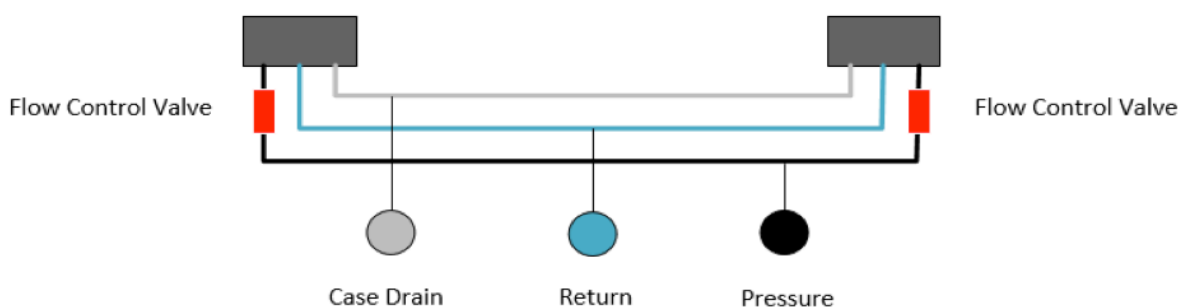
Note: ALWAYS MAKE SURE THE CASE DRAIN LINE IS SECURELY CONNECTED BEFORE SUPPLYING PRESSURE TO THE MOTOR. FAILURE TO DO SO WILL RESULT IN BLOWN MOTOR SEALS.

730555 4cc Vacuum Kit	731438 6cc Vacuum Kit
	
4cc Pressure/Return Label stamped on the motor.	6cc Pressure Label stamped on the motor. The arrow points to the return of the motor.
	

If your tractor does not have built-in flow controls on the SCV valves (or if you're connecting to a power beyond), you will need to install a flow control valve in line with the pressure hose. The best location for the valve is immediately after the quick disconnect fitting. Installing this valve will allow you to regulate the vacuum pressure by turning a manual dial on the valve.

Systems with multiple vacuum blowers can be plumbed in one of the following ways:

1. The recommended method in most cases is to power both blowers off of a single SCV. Doing so will require a flow control valve (**730105**) for each 4cc blower to be plumbed in line with the pressure hose going to each blower (see illustration below). If you're installing a 6cc blower you will need a (**731155**). Note that the inlet ports are located on the bottom side of each valve.
2. If you have enough available SCV circuits, you can power each blower independently.



4cc Flow Control Valve – 730105 6cc Flow Control Valve - 731155
*Both flow control kits will use the same inlet/outlet locations. The diagram shows a top-down view of a flow control valve. It has a central vertical port at the top labeled 'Outlet' and a central vertical port at the bottom labeled 'Inlet'. There are also two side ports on the left side of the valve body.

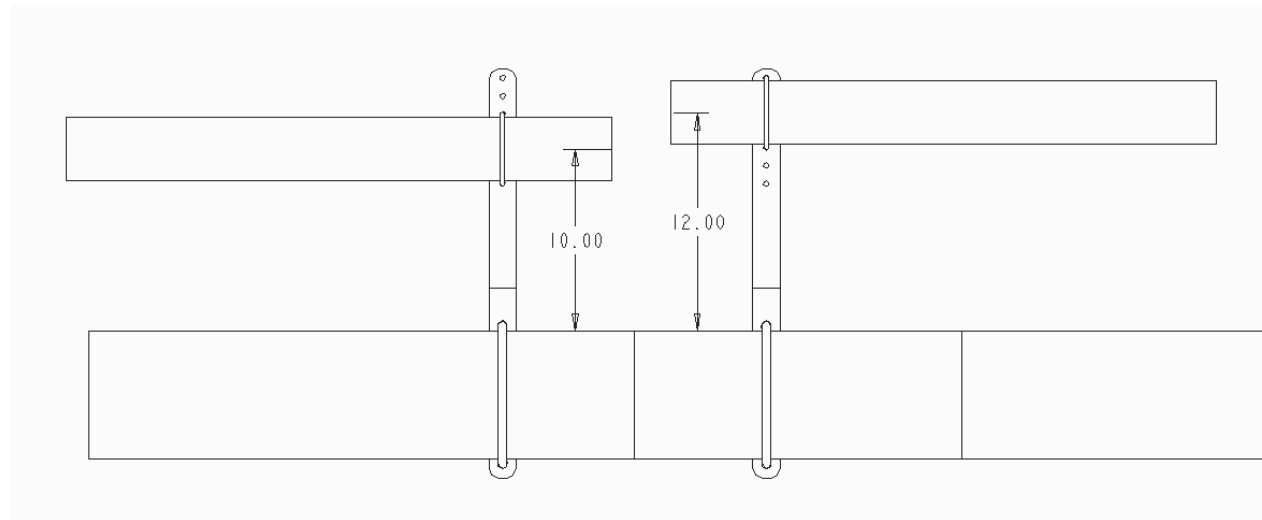
Replacing 4cc with 6cc Motor

Customers that have purchased vSet and use a 4cc Precision Planting vacuum blower may need to upgrade the motor when going to vSet Select or SpeedTube. The entire vacuum assembly will not need to be replaced, however the motor will need to be upgraded. Refer to instructions detailed in the **731152** kit.

Main Vacuum Tube Installation

Bracket Assembly Instructions

The rigid pipe can be mounted to the toolbar using the 730125 (or 730253 High Mount) support bracket kits. Two or three support bracket kits are recommended for each 10' section of rigid pipe. These support bracket kits allow for a lot of versatility since they can be mounted with a rear offset, front offset, or offset over the tool bar. Additionally, the vacuum tube may be positioned on either side of the bracket or at different heights.



Notes:

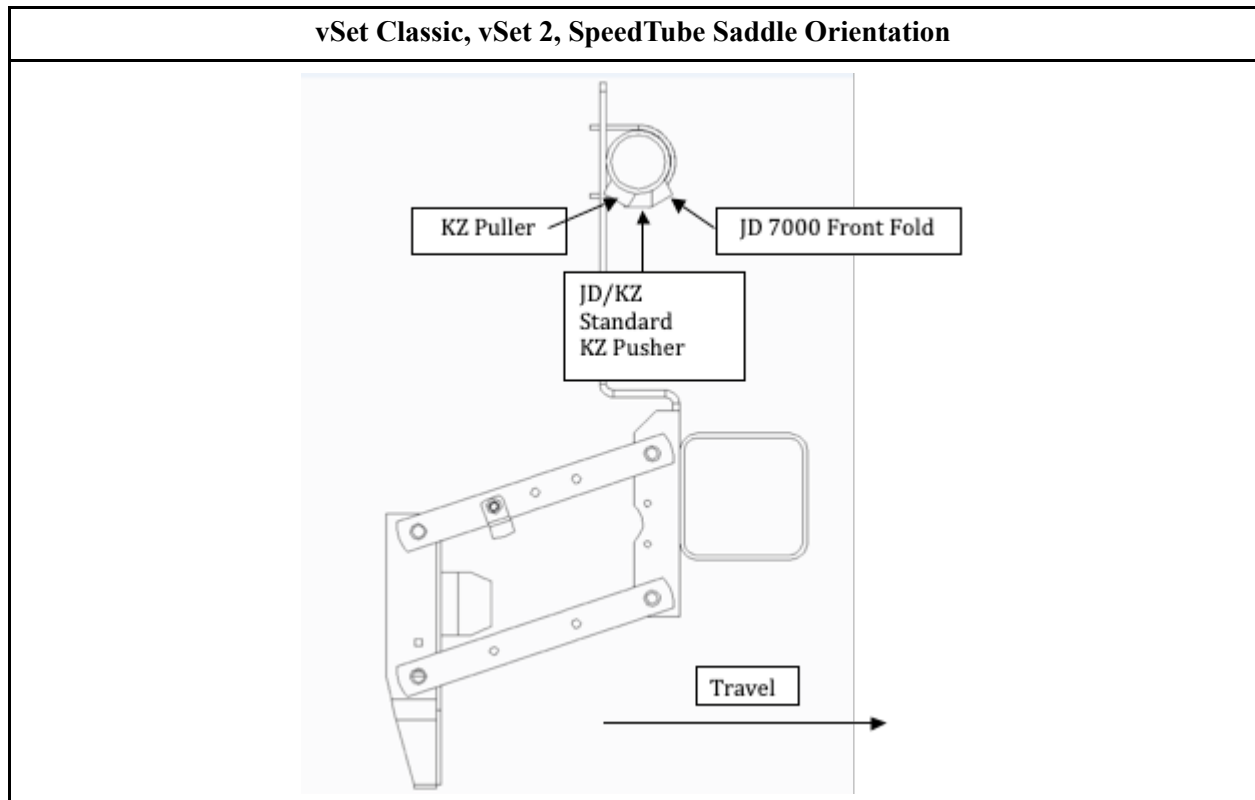
- The drive shafts on JD 7000 front fold planters prevent the vacuum tube on the rear toolbar section from being mounted in any position other than the rear offset. Be cautious as you fold and unfold the planter for the first time to make sure everything clears.
- The standard flexible row unit hose pre-cut lengths assume the 12" height of the vacuum tube. It is recommended that you mount the tube in the 12" high position unless there are clearance issues which require a different position.
- For rigid fitting connections, use an all purpose plastic pipe cement.

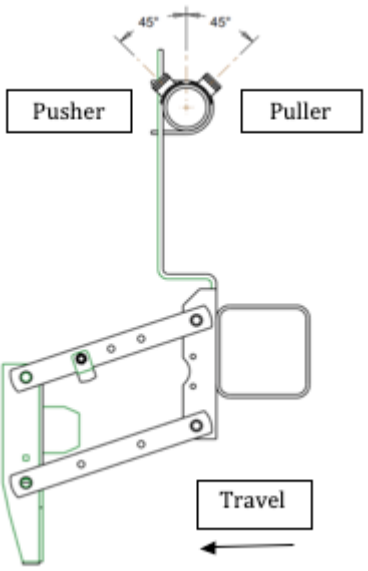
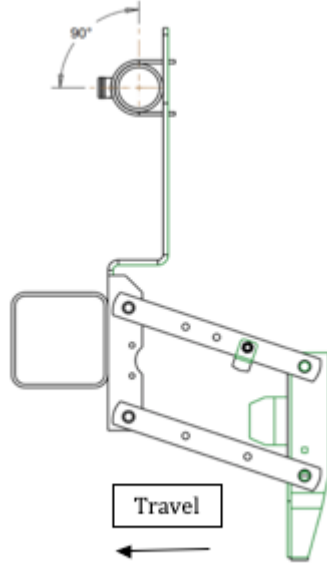
Row Unit Fitting Installation

Vacuum Saddles

For customers installing the Precision Planting 3" ABS piping vacuum saddles must be used to supply air into the row unit. Each row unit hose is connected to the trunk pipe using a saddle for new vacuum system installs. Follow these instructions for assembling the connection:

1. Use a hole saw to drill a 1.5" hole in the rigid ABS tube. (Orient the saddles based on your planter style)
2. Install the foam O-ring seal in the saddle O-ring groove.
3. Place the saddle over the hole created in step 1.
4. Secure the saddle to the rigid tube using the self-tapping screws provided. (Alternatively, the saddle can be glued to the pipe.)
5. Connect the row unit hose to the saddle by slipping the hose end around the outside of the saddle. (See Table for hose length recommendations)
6. Connect the row unit hose to the meter by slipping the other hose end around the outside of the inlet tube on the meter.
7. Repeat 1-6 for each row unit.



vSet Select Saddle Orientation	
Kinze	John Deere
	

Notes:

- Edgevac will require different lengths of hose depending on the planter. Use your best judgment to determine the appropriate length. Make sure the hose is free as you move the row unit up and down.
- Especially for JD 7000 front fold planters, be aware of the location of the wing drive shaft when the planter is unfolded. Orient the saddles on the rigid tube so there are no clearance issues. This will be down and to the rear, or roughly in the “5 o-clock” position.
- For CIH planters, the adapter fitting (730408) is packed within the (730380) 1.9bu and mini hopper kits. The chart below describes the saddle and fittings kits needed for each product platform and when they’re used. Reference the original order to be sure you have the correct saddles and fittings. For more detail on row unit house routing, refer to the instructions packed in each kit.

	Kit	Description	Qty	P/N	Name	Row Unit Location
vSet Classic	730325	Use with new vacuum install, 1.25" row unit hose is used	1	730073	1.25" Saddle	Manifold
			1	730146	Seal	
			4	730147	Screws	
			2	730176	1.25" Meter Fitting	Meter
			1	730224	Hose Cap	
	730275	Required for all EdgeVac planters with straight vacuum outlet, 1.25" row unit hose is used	1	730223	Flex Coupling	Manifold
			1	730176	1.25" Meter Fitting	
			1	730224	Hose Cap	Meter
	730340	Use with EdgeVac planters with main vacuum outlet directly under the tube, 1.25" row unit hose is used.	1	730308	1.5" Flexible Elbow	EdgeVac Manifold
			1	730309	Adapter Bushing	
			2	730176	1.25" Meter Fitting	Meter
			1	730224	Hose Cap	
vSet 2	731188	Use existing vacuum, 1.25" hose is used	1	731181	1.25" Meter Fitting	Meter
			1	730224	Hose Cap	
	731192	Required for all White planters	1	731182	1.5" Meter Fitting	Meter
			1	731177	Hose Cap	
			1	731101	1.5" Flexible Coupler	Manifold
			1	731193	AGCO Row Hose Adapter	
			2	730147	Screws	
SpeedTube	731183	Use with new vacuum install, 1.5" row unit hose is used	2	731104	1.5" Meter Fitting	Meter
			1	730224	Hose Cap	
	731175	EdgeVac adapter with Fernco coupler, 1.5" row unit hose is used	1	731101	1.5" Flexible Coupler	EdgeVac Manifold

			1	731104	1.5" Meter Fitting	Meter
			1	730224	Hose Cap	
	731176	Use with EdgeVac planters with main vacuum outlet directly under the tube, 1.5" row unit hose is used	1	730308	1.5" Flexible Elbow	EdgeVac Manifold
			1	731104	1.5" Meter Fitting	Meter
			1	730224	Hose Cap	
	731190	Saddle and hardware for 3" supply	1	730073	1.25" Saddle	Manifold
			1	730146	Seal	
			4	730147	Screws	
vSet Select	731184	Adapts to 1.25" manifold barb on trunk, 1.5" row unit hose is used	1	731104	1.5" Meter Fitting	Manifold
			1	731182	1.5" Meter Fitting	
			1	731177	Hose Cap	
	731185	EdgeVac adapter with Fernco coupler, 1.5" row unit hose is used	1	731101	1.5" Flexible Coupler	EdgeVac Manifold
			1	731182	1.5" Meter Fitting	Meter
			1	731177	Hose Cap	
	731186	Use with EdgeVac planters with main vacuum outlet directly under the tube, 1.5" row unit hose is used	1	730308	1.5" Flexible Elbow	EdgeVac Manifold
			1	731182	1.5" Meter Fitting	Meter
			1	731177	Hose Cap	

Row Unit Hose

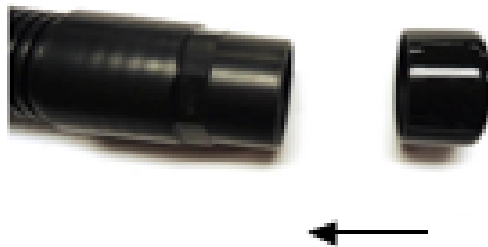
It is common for a few rows on every planter to require slightly different hose lengths due to their nearness to a vacuum blower, elbow, tee or flexible joint. Before cutting all rows, assemble a single row and be aware of any obstructions as you move the row unit all the way up and all the way down. Be sure to route the row unit hose in such a way that there is not a lot of force on the elbows, to prevent the meter core housing from pulling away from the seed cover.

To assemble your own hose, simply cut the hose to length and thread the fittings on each end until they are snug.

Note: The threads on the end fittings are left-handed.



For inactive planting rows (Pusher Row Units), make sure you cap the row unit hose on the end of the meter using a 730224 (1.25" hose) or a 731104 (1.5" hose). These are located in the saddle and fittings kits.



A



B



C

(A) Kinze pusher units on Twinline – 1.25” Hose

Route the tube straight down underneath the top parallel arm cross tube and then forward above the hex drive shaft. The tube may be “pinched” between the cross tube and the hex shaft while the row unit is hanging down, but at normal planting height it will have clearance around the hex shaft.

(B) Kinze puller units on Twinline – 1.25” Hose

Route the hose down and rearward across the frame section. It may be beneficial to tie strap the hose to the bar near the rear row unit.

(C) Kinze 3000 – 1.5” Hose

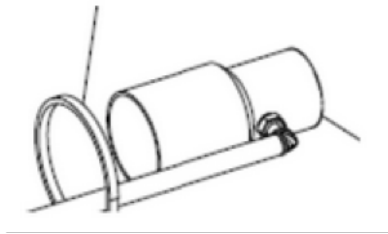
Route the hose towards the upper left hand side of the row unit. Attach securely to the Fernco flexible adapter. You will want to clock the meter fitting leftwards to help alleviate pressure on the hose.

Vacuum Sensor and Taps

There are two different vacuum tap styles offered from Precision Planting. The first is specific to vSet Classic which includes a fitting to run ¼" ID line to a gauge or digital readout (730142).

The second is specific to vSet 2, SpeedTube, and vSet Select. Reference the instructions packed with the **731153** Vac Fittings Tap Kit for installation details.

1. Vacuum sensors must be installed on the furthest row from the vacuum.
2. For each row to be tapped, replace the hose end near the meter with the one provided in the blower kit (one row worth of pressure taps are included). This end should already be equipped with an elbow. The standard ends can be removed and replaced by threading the hose ends off and on. Notice the thread orientation is left handed.



3. Use the black ¼" ID flexible PVC tubing to connect the tap elbow to your vacuum sensor (**725905**) for 20/20 or analog gauge (**730130**). Sensors and gauges are available through Precision Planting.

Vacuum System Troubleshooting

Meters will achieve optimum performance when vacuum is set to the levels recommended on the Crop Setup Guide as measured by the sensor taps. With vSet Classic this value was near 20". However, most seed types and seeding rates will perform just as well with less pressure. If your vacuum system is limited, you may be forced to run at a lower vacuum level. Excessive skips are usually the best way to detect if your vacuum pressure is too low. If you experience excessive skipping, try increasing your vacuum level.

The vacuum level will be a function of hydraulic flow. To increase the vacuum, open the flow control valve more. To decrease the vacuum, close the flow control valve more. If your flow control is wide open and the vacuum level is still insufficient, your hydraulic system may be pressure limited.

- Check to make sure all row unit hose ends are connected on both ends, to the saddle and to the meter inlet.
- Make sure all row drive clutches are engaged, both the mechanical clutches and swath control clutches (if equipped). If you have some rows intentionally disengaged (e.g. interplant rows), make sure the hose ends on these rows are capped (see Figure on page 12).
- Make sure your seed disks are loaded with seed. If using RowFlow or vDrive, this can be accomplished with the Autoload feature. Other systems may require having the planter in the ground and driving forward. Make sure that adequate seed is in each hopper.
- By feel and sound, check for major leaks in the vacuum tubing system. Leaks are commonly found at the connections between the wings and the center section.
- Use compressed air to clean excess residue/buildup in the main vacuum duct work. Check to make sure your hydraulic flow control valve is not limiting your vacuum blower motor speed. Some configurations will use a manual flow control in addition to the flow control built into the tractor SCV. In this case, check both. If the vacuum pressure is too low, start by opening the flow control valve(s) wide open. After you get the disks loaded and determine that you have plenty of vacuum pressure, reduce the hydraulic flow until the vacuum pressure is satisfactory.
- Make sure your tractor is throttled up and the hydraulic oil is warm. You may want to try powering the vacuum through a different SCV also.
- If your tractor has manual valve levers (as opposed to electrical solenoid valves), make sure the valve is fully open. Try wiggling the lever and see if it has any effect on the vacuum. Sometimes there is a fine line between the fully open position and the float position.

Note: When shutting down the vacuum blower, it is a good practice to disengage the blower motor by switching the SCV to “float” instead of switching it to “closed”. The motors are equipped with a reverse flow check valve, but switching the SCV to “float” is still a gentler way to stop the motor.