

INSTALLATION INSTRUCTION

CPB-522
2P-0065

TRAILED TRACK SYSTEM

Trailed Track System (TTS)

For John Deere DB 60 47R15" Split Row Planters



Table of Contents

Introduction.....	3
Track Terminology	4
General Tooling Requirements	4
Time Estimates - Removal, Installation and Alignment.....	4
Additional OEM Parts Requirements: (Suggested for Mechanical Driven Row Units Only)	5
Preparation of the Planter.....	6
Axle Removal	7
Removal of work switch & cylinder pins	8
New Axle Installation	9
New Axle Pin Installation.....	17
Speed Sensor Reinstallation.....	Error! Bookmark not defined.
Undercarriage Installation onto Axle.....	19
Camso Split Row Bracket Installation.....	20
Row Unit Modification (all row units)	20
Row Unit Mechanical Drive Configuration.....	23
Installation of Hydraulic Dump Valve and Adjustable orifice	29
Hydraulic Valve Preparation.....	32
Dump Valve control switch, switch bracket, and wiring harness installation.	35
Safety Pins/Row Unit Locks	40
Final Operational Checks.....	40
System Checkout	40
Track Alignment	41
Warranty Information	41
Appendix:.....	42
DB60 Standard Kit 2A-1153-100 (Note not all parts will be used for the Split Row application)	42
DB60 Split Row Kit 2A-1179-100 (used with 2A-1153-100 for split rows)	43
Hydraulic Schematic	44
Hydraulic drawing for 2A-0971-100 (Part of 2A-1153-100)	45
Speed Sensor Kit for JD DB Planters	46

Introduction

This installation guide is intended for use by distributors and dealers, providing basic information needed for installation of DB planter axle, undercarriage and row lifts. After final installation of the kit, alignment of the tracks/undercarriage is also required.

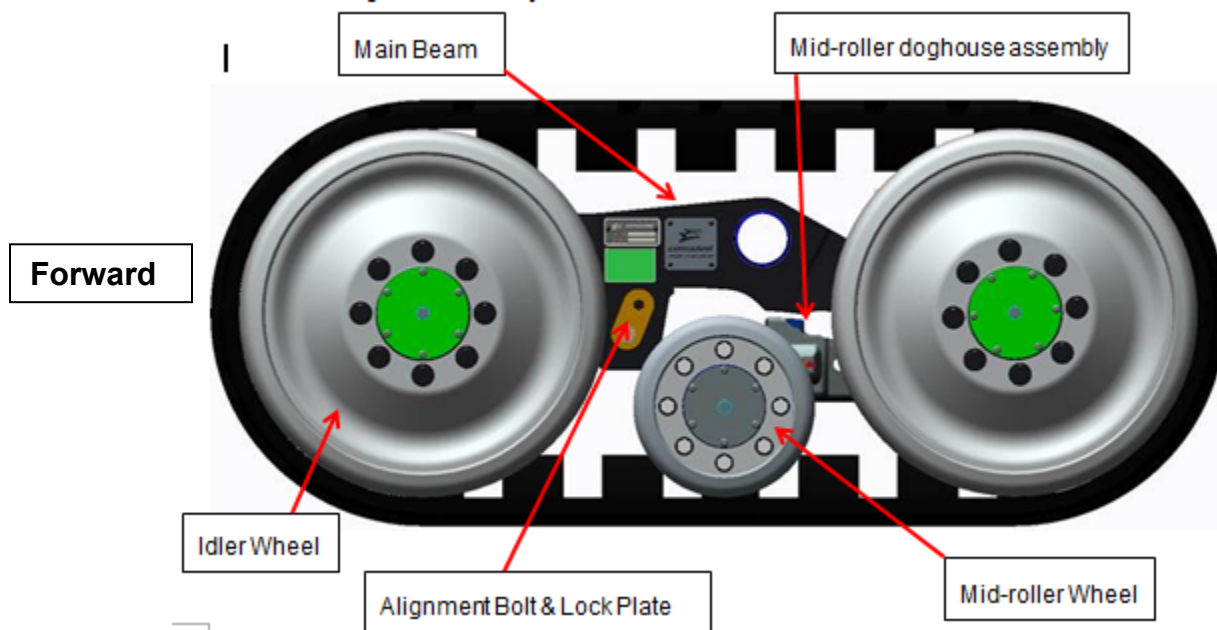
Notice:

When servicing track machines, follow all manufacturers recommended safety precautions.

Failure to follow safe procedures can result in injury or death.

Track Terminology

For reference with the rest of the following document, the terms used are referenced below. Familiarize yourself with these terms before reading further instructions or working on any tracked machine.



General Tooling Requirements

Table 1 lists both the standard and specialized tools required for the removal, installation and alignment of the TTS kits for DB planters.

Safety Glasses Steel Toed Shoes Overhead hoist Fork Truck, engine hoist or pallet jack General hand tools, SAE/ Metric Air Impact Socket Set 42 mm Deep Well Socket	1" Air Impact Wrench(450ft-lb cap) Several large wood blocks (2) Lifting Eyes Long lifting bars or rods Assorted chains Fabric sling Torque Wrench (300 ft-lb cap.) (2) 15 Ton Min. Support Stands
--	---

Table 1. Suggested Equipment and Tool List

Time Estimates - Removal, Installation and Alignment

The time required to install the TTS undercarriages and row lifts w/split rows depends to a great degree on the skill of the technician and the tools available. Table 2 lists average times for removal, installation, and alignment. This estimate is based on a service technician of average skills with the basic tools, working on a suitable floor. Working in

adverse conditions can take longer and jeopardize safety. Two technicians are required to properly and safely install these kits.

	Axle/UC Remove and Install		Row Unit (per unit)	Hydraulics	Track Alignment		Total (varies)
	Axle (hrs)	UC (hrs)	Install lifts/offsets, update drives (hrs)	Install valve and hoses (hrs)	Single Track (hrs)	Machine (hrs)	Total Time (hrs)
DB60 (M)	4.0	2.0	18.0	4.0	0.5	1.0	30+
DB60 (E)	4.0	2.0	2.0	4.0	0.5	1.0	13+

(M) Mechanical drive utilizing all parts referenced in supplemental parts list in this manual

(E) Electric drives provided by Precision Planting. No time referenced for installation of these parts

Table 2. Estimated man hours required for average track/undercarriage installation and alignment

Important:
Record undercarriage, axle, and track serial numbers in the operators guide, on the warranty certificate and for your records.

Additional OEM Parts Requirements: (Suggested for Mechanical Driven Row Units Only)

Some additional parts are required to complete the installation. These are available from your local John Deere dealer and are listed below, depending on the planter series.

Note that most but not all of the listed parts are needed. Final configuration of the planter determines what specific parts are needed to complete an installation. These parts should be available at installation in order to be sure the installation can be completed.

Planter vacuum and seed delivery lines may need the length adjusted to accommodate routing over/around the additional drive brackets installed on this DB Planter kit. Material and fittings can be sourced from your Deere Parts department as needed.

Some wiring may also need lengthening with jumpers wires.

NOTE: Electric Drive planters do not need any of the parts referenced below.

DB60 (47R15" spacing) Mechanical Drive Only

Qty	Description	Camso	Deere	Dawn	Other
4	Support, Upper Drive	2C-1298			
8	Support, Upper Drive, Row Unit	2C-1311			
18	Bolt, M12X1.75X35	2F-0035			
18	Nut, Prevailing torque M12	2F-0168			
2	Drive Shaft	2C-1422			
4	Bolt, M16X2X60	2F-0064			
2	Bolt, M12X1.75X70	2F-0135			
16	Clamp, Hex		A53746		
16	Cap Screw		19M7295		
28	Nut		14M7273		
4	Fitting, Lubrication/press-in		JD7844		
12	Bolt		03M7185		
4	Bearing		AA22097		
8	Housing, Pressed flange		H103264		
4	Drive Cable		AA57544		
4	Drive Sprocket, 21T40		AA39180		
2	U-Joint Yoke, short		AA36095		
2	U-Joint Yoke, long		AA46771		
6	Cotter pin		11M7032		
2	Chain sprocket 14T40		AA32729		
10	Washer		24H1247		
2	21 inches hexagonal drive shaft		Ask JD parts		
15'	#40 roller chain		Deere or local		local
4	#40 connecting link		Deere or local		local
4	3" Rigid Extension (Dawn Mfg)			300394	
-	Cable Ties 8" or longer				local
4	90 deg elbow x 37 deg flare JIC				Parker (4C6X-S)

Preparation of the Planter

1. Clean the planter prior to working on it. Dirt and debris makes access to bolts difficult.
2. Perform the installation on a flat, firm concrete indoor surface. The planter can be supported and elevated much easier and will be more stable if track removal and installation is performed on a concrete surface. A hard surface also makes it easier to slide the axle and undercarriage assemblies from under the machine. This will allow for use of a forklift or overhead crane. Pallet jacks also make removal and installation of the axle assembly possible in tight quarters.
3. A tractor hydraulic system is required for installation, so make sure the planter remains hooked to the tractor and hydraulic circuits remain connected. This will assist in aligning lift eyes and raising the main planter beam if needed. It also provides stability to the front of the planter during installation of the TTS kit.

Axle Removal

1. Two row units on each side will be modified, one to accept the split row bracket and row lift hinge assembly. The Camso supplied bracket provides a secondary planter tube extending past the hinge point of the bar. This allows for row lift hinge installations and sets the row back, clearing the hinge pin.
2. Begin by loosening the locking collars on the hex shaft driven by the hydraulic motor on the wing. Pull the drive shaft forward (towards tractor) until it is free of the first 2 row units on the back of the wing.



3. Remove vacuum lines, bulk fill lines and disconnect the electrical harness connected to each of the 2 rows being removed.
4. Locate the U-bolts connecting the row units to the planter bar. Secure the row unit with an engine hoist or similar.

5. Remove the nuts on the U-bolt which attaches the Deere row unit to the planter tube. The row unit should now be free and able to be removed from the planter.
6. Using a suitable lifting device slide the row unit off the the planter tube and lower to the ground. The second row unit is removed in the same manner.
7. One set of U-bolts removed will be used to attach the Camso Split Row bracket to the planter frame. Retain all hardware for re-use as required.



Removal of work switch & cylinder pins

1. Disconnect speed sensor harness near the connection on the wheeled rockshaft (axle).
2. Disconnect work switch linkage and cylinder transport stops for use on new axle assembly (if equipped).
3. Remove flag pins from lift ears on rod end of hydraulic cylinders.
4. With axle assembly properly supported, remove lower axle mount castings on both sides. (See illustration below)



Illustration for Step 6

5. Lower assembly to the floor with proper restraint or lifting/lowering device.
6. Axle assembly can now be removed from underneath the planter. A fork truck with forks spaced to carry the outside tire works well for sliding the assembly out from underneath the planter.

New Axle Installation

1. Place axle assembly on wood pallet to aid sliding underneath the planter. Various methods such as lifting and pushing with hand trucks, pallet jacks, fork lifts etc will aid in positioning the axle assembly.
2. Begin installation of tracked axle assembly in reverse order of disassembly.
3. Raise front mounting beam into position using suitable lifting method and device.



4. Align side to side to be sure lift cylinders line up with mounting tabs on axle assembly.



5. Install cast axle pivot mounts (removed earlier) on both sides. Do not tighten pivot mounts until lift cylinders are aligned with mounting tabs on new axle assembly.



6. Insert flag pin through cylinder lift eyes and fasten retaining bolt and washer on flag.

Note: Utilizing tractor hydraulics or a floor lift may aid in re-alignment of the cylinder rod to axle ears.

7. **NOTE:** Some planters are equipped with longer pins on the original DB planter axle and require installation of a cylinder pin spacer on each rod end. Insert the spacer frame ear and fasten with longer hardware supplied in the DB installation kit. See pictures below for units requiring this update.



8. Re-installation of the height (position) sensor.

For planters made before 2018.

If John Deere supplier height (position) sensor is on the wing of the planter, leave it there and move to the next numbered step.

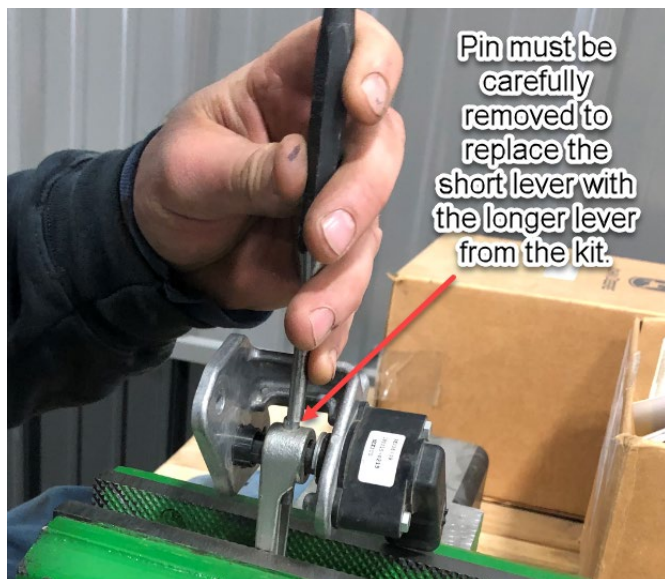
If it's on the center axle, as seen below, it will need to be reconnected using the Camso supplied linkage and hardware (as needed to lengthen link). Check operation of switch and adjust length as needed to allow full travel of the switch arm with no binding.



For planters 2018 and newer planters.

- **DB60 47R 15"** will use kit 2A-2629-100 and will be assembled as shown below. Please note the kit comes with a longer lever arm that is timed and must be assembled with the rib facing the LH side of the planter only.

a.) Remove current sensor and replace the short lever with the longer lever from the kit.



b.) Reassembly the sensor with the longer lever as shown.



c.) Assembly of the revised sensor to the new mounting plate.



d.) Axle connecting plate installation



e.) Installed 2A-2629-100 kit on a 2018 or newer DB60-DB66 Planter

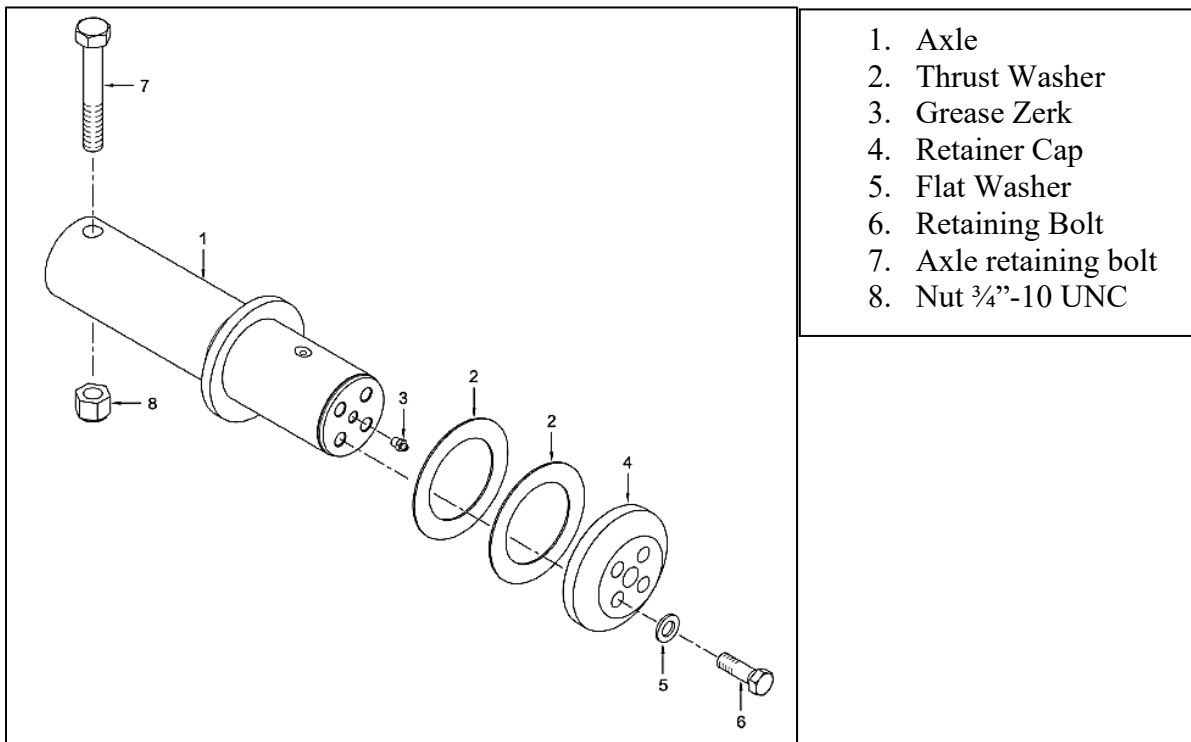


Connect the
new 10" rod
from the kit
and calibrate
the planter.

9. Tighten the 4 nuts on each lower clam casting on the rock shaft portion of the new Camso axle.
10. Check all fasteners, installed links etc. for proper installation and torque.
11. Grease the axle saddle mounts with recommended Deere grease.
12. TTS DB Axle assembly installation is now complete.

New Axle Pin Installation

1. TTS undercarriages utilize a center pivot mount consisting of sintered bushings and lip seals allowing for ease of maintenance and smooth operation. Installing the axle pin into the undercarriage prior to undercarriage installation on the axle minimizes possible damage to the lip seals.
2. Refer to the drawing below for a pictorial representation of the pin to undercarriage mount configuration.



3. Slide 1 inner thrust washer (#2) onto the axle pin (#1) against the machined shoulder.
4. Insert the grease zerk (#3) onto the end of the axle shaft and tighten.



5. Lightly grease the outer surface of the axle pin and slide into the center mounting hole of the TTS undercarriage from the inside. **Note: Always position the undercarriage tension mechanism to the rear when installing u/c's. Serial # plates are located on the outside of each undercarriage for ease of identification. Track treads are in a non-traction application condition and mounted backwards by design.**



6. Install the second thrust washer (#2) on the outside of the pin and mount the retaining cap (#4) using bolts and washers (#'s 5,6). Tighten to 320 N-m +/- 64 N-m (236 ft-lbs +/- 64 ft-lbs). Grease the center pin zerk with Camso recommended grease, initially 8 pumps and 2 pumps weekly during field operation.
7. Repeat this procedure on the second undercarriage.
8. Be sure to connect the speed sensor harness with the RH undercarriage integrated speed sensor in the RF idler wheel.
9. Installation of the main pivot pin in the TTS undercarriages is complete.

Undercarriage Installation onto Axle

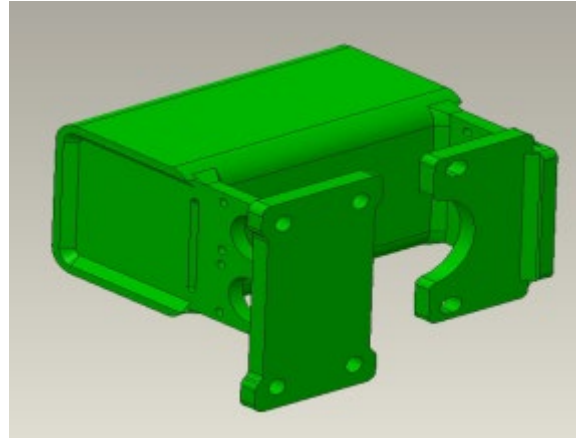
1. Prepare the inner pin surface for installation into the receiver tube on the TTS/DB axle. Apply Camso recommended grease to the surface allowing for smoother removal if needed in the future.
2. Slide the main pivot pin into the machined receiver tube of the planter axle.
3. Align the retaining bolt hole and insert the $\frac{3}{4}$ " x 6" bolt. Install and torque nut to 266 ft-lb +/- 50 ft-lb.



4. Repeat this procedure for the opposite side.
5. Assembly of undercarriage to new tracked axle is now complete.
6. Grease pivot points on planter rock shaft axle with Deere approved grease. Attach the wheel speed sensor harness to the Deere lead and fasten to the planter upright. Recheck all hardware.
7. Remove any lifting devices used to install the undercarriages. Tractor hydraulics may be used to raise/lower the undercarriage assemblies to check operation.

Camso Split Row Bracket Installation

1. Mount the Camso split row bracket in the second row location. The U-bolts removed earlier are used to secure this bracket to the planter bar. Tighten all hardware.
2. The circular cut-out in the split row bracket will nest around the hinge pin of the joint allowing for wing movement and set-back to accept the Camso hinge row lift.



NOTE: The left picture above shows the split row bracket installed on the planter bar in the second position from the rear of the planter wing. The Camso row lift hinge is installed in this photograph.

Row Unit Modification (all row units)

1. Replace Deere row unit backbones on each row unit assembly, installing Camso hinge assemblies supplied with the row lift kit for both sides of the planter. Reinstall all mounting hardware for drives, bags and/or fertilizer distribution systems.

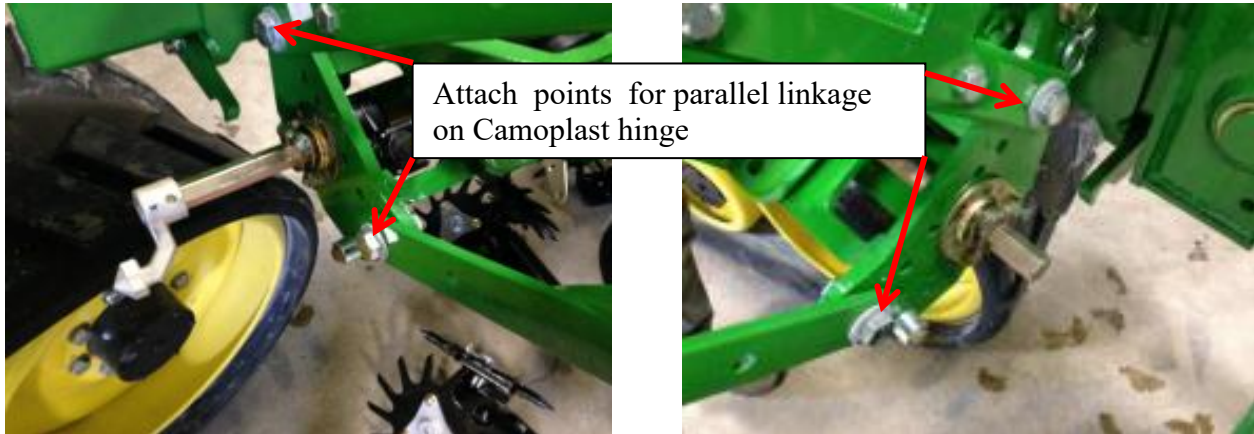
Note: It is usually easier and safer to dis-mount and reassembly the parallel links to the Camso hinge assembly on the ground. Once the backbones are replaced the unit(s) can be hung from an engine hoist for installation on the planter bar.

NOTE: Planters equipped with various row cleaners, fertilizer attachments, downpressure kits etc may experience mounting and clearance issues with row units on the planter. Camso is not responsible for additional parts or labor to accommodate these unique situations. The Camso DB Row Lift kits are generic in nature and do not fit all planters without some modification and revisions of Deere factory or short-line add-on systems. All efforts are made by Camso engineering to minimize these issues but Camso is not responsible for the possible added costs associated with installation of these kits.



2. Ensure all factory linkage/hardware is reassembled on the completed row lift assembly. The original airbag (if equipped) yoke moves with the original parallel arm assembly to the Camso Row Lift hinge assembly.
3. Remove the bolts holding the parallel arms to the Deere backbone. Attach these points to the 4 pivot points on the Camso hinge row lift bracket. Assemble all hardware, bushings and tighten.
4. The first row unit installed on the planter wing will have Camso upper drive support plates installed to accept the drive shaft powering the row. **NOTE: Due to space considerations it may be beneficial to install these brackets prior to lifting the #1 row unit back onto the planter bar after replacing the Deere backbone with a Camso hinge assembly. A mounted row lift with the upper drive bracket installed is pictured below.**





5. Lift row units converted from JD backing plate to Camso hinge assembly into place using proper lifting device. The first row unit on the planter attaches directly to the original 7" planter wing tube. Row lift # 2 (split row) attaches to the Camso split row bracket. Slide the throat of each row lift hinge into position on the planter.
6. Check for proper spacing of the 2 row lifts installed for your machine. Adjust as necessary by sliding along the planter bar or split row hinge tube.

CAUTION: The row unit is not secured to the bar at this point and care must be exercised to prevent row units from sliding off the tube.

7. Remove latch mechanism at the base of the hinge throat, install rear backing plate and reinstall latch/lock assembly. Recheck row spacing and tighten hardware.





Row Unit Mechanical Drive Configuration

Power for the planter row units is provided by the addition of fixed drive brackets located above two row units forward of the Camso lifted row units on each wing. Drives also extend shafts in the hinge, allowing for power transmission and disconnect as needed. This power is transferred through a drive shaft using Deere Flex Drive power units and flex shafts installed on 7/8" hex drive shafts. Chains transmit power from the original planter hex drive shafts which are driven by the variable drive motors for each wing of the planter.

A finished picture of the drive mechanism described in this installation manual is shown below for representation on a completed planter wing. This planter was equipped with 3 hydraulic motors powering the row units. One motor supplied power on the fixed rear bar and one on each wing. No power transmission from the wings to rear bar or vice versa was needed. If your planter is configured to send power from the wing to the first row unit on the fixed rear bar additional elevated drives and power fingers will be needed.

NOTE: If the planter is equipped with Precision Planting electric meter drives no drive modification will be needed. Electric drives will power the 4 lifted rows. Parts described in the beginning of this manual are not needed.



Forward elevated drives/drive shaft

Row Lifts with driven power and jack shafts

Note: Installing the upper drives and drive shafts first simplifies the installation. The lower chain sprockets are installed on the hex drive shaft pulled forward at the beginning of the row unit removals. Installation space and clearance is limited on the planter with the narrow spacing.

1. Install elevated drive brackets (p/n 2C-1298) on row units ahead of the Camso row lift hinges. Brackets fasten inside the backbone with the recess/relief of the bracket providing clearance with the nuts of the U-bolts holding the row unit to the planter tube. Fasten with supplied hard ware but do not tighten fully. Pictures below show drive brackets on row # 3 spanning to row # 4.



2. Elevated drive brackets (above) straddle 2 rows allowing positioning of the drive shaft u-joint knuckle close to the hinge point of the wing. This allows free movement of the sliding u-joint and suitable engagement.
3. Install 2 pressed flange housings (Deere p/n H103264) and 1 bearing (Deere p/n AA22097) into each elevated drive bracket (shown at right above). Attach with hardware and tighten housings.
4. Install (2) Upper Drive Support Plates (p/n 2C-1311) to the side holes of the Camso row lift hinge in the #1 position. These brackets may have been installed prior to lifting of the row unit onto the planter bar due to space limitations. Fasten with supplied hardware but don't tighten fully. Alignment of bracket hangers and drive shafts may be needed at the end of the drive install.
5. Bearing hangers removed for relocating the original drive shaft are installed in the upper drive support plates. Stud bolts which hold the hex shaft drive mechanism for the Deere Flex drives are used on the left side of the brackets.

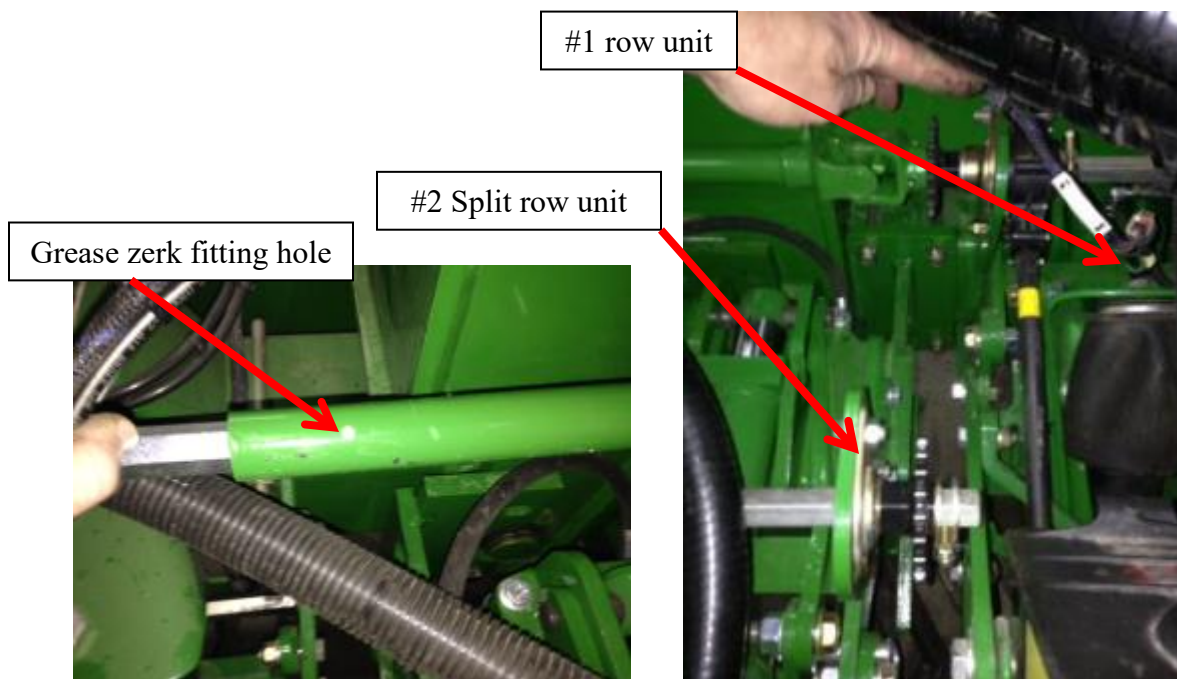


6. Upper drive shafts and u-joints are now be added to the elevated drive brackets. Install short u-joint yoke to one end of the drive shaft and attach with a cotter pin.
7. Slide appropriate bearing locks and chain drive sprocket (Deere p/n AA39180) onto the shaft, inserting it from the inside towards the front of the wing. Refer to the picture below for representative location of bearing and sprocket clamps. The shafts must not move during operation, maintaining chain alignment.
8. Add Idler sprocket (Deere p/n AA32729) to the bracket. Spacer can be cut from stock material provided in the kit to desired distance to align with upper and lower drive sprocket (referenced later in this document). A dimension of 1-7/8" is used in the installation pictured below.

NOTE: Chain and sprocket location must clear all hardware, brackets and hose routings.



9. Install long U-joint yoke onto appropriate length 7/8" hex drive shaft as shown in the right picture above. Insert the drive shaft into the short yoke and fasten with a cotter pin.
10. Install a press in lubrication fitting into long drive shaft yoke tube.



11. Insert 7/8" hex drive shaft onto the first row unit's upper drive support plate. A driven sprocket is placed between the u-joint and the bearing hanger as shown in the right picture above. The mechanical flex drive coupler is also inserted on the drive shaft as it is inserted into the bearing hangers. **NOTE: The driven sprocket referenced above provides power to the jack shaft on the split row unit directly ahead.**
12. Install (2) upper drive support plates onto the split row unit as done previously. Bearing hangers and mechanical drive studs are installed to carry the drive shaft and mount the Deere mechanical drive coupler as before.
13. Position drive sprocket and bearing clamps as needed to lock shaft, aligning chain for free and true operation.



14. Attach appropriate length of #40 roller chain from the upper drive shaft on row unit # 1 to the upper drive shaft on split row unit.
15. Insert Deere Flex drive cable AA57544 into the mechanical drive and attach with plastic rivet. Add 3" Dawn rigid cable extension (p/n 300394) onto the Flex Drive cable and lock in place with bolt. The extension is now inserted into the Deere meter drive and lock tab engaged. Verify the cable is not binding and the meter drives rotate as the shaft is moved. The same process for attaching the Flex drive is used on the first row unit.



- 16.** The planter drive shaft pulled at the beginning of this installation is now returned to its original location. A driven sprocket is added as the drive shaft is pushed rearward and through the bearing hangers. Bearing locks will need placement to lock this sprocket from moving on the shaft. One technician will guide the shaft through the lower bearing hangers while another taps the shaft from the front. A wood block should be used when striking the shaft to avoid damage.

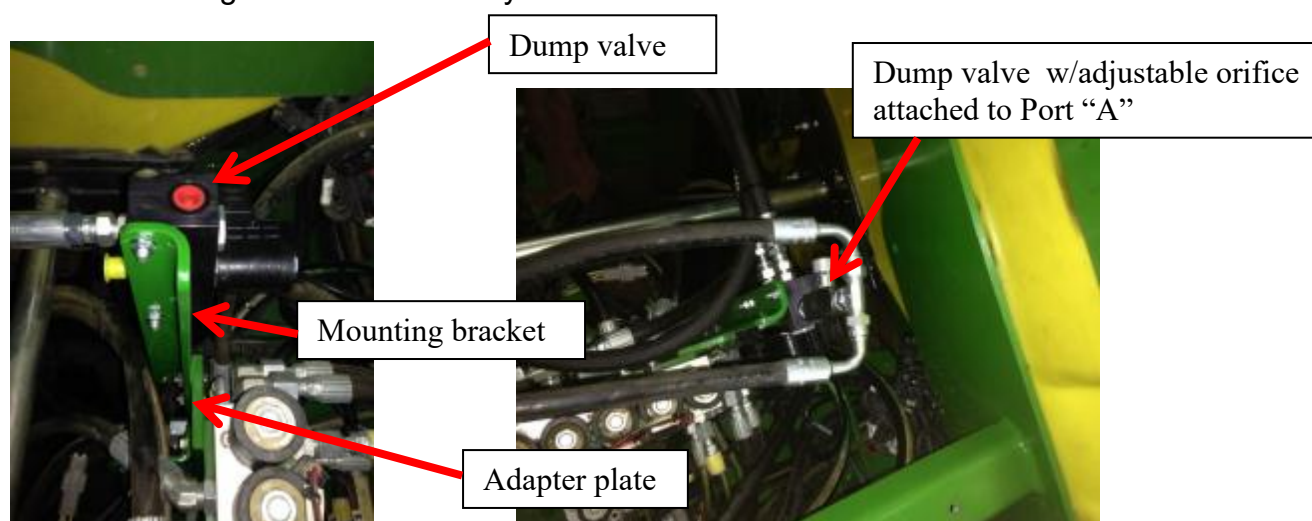


- 17.** Install an appropriate length of #40 roller chain between the sprocket added to the original drive shaft and the upper shaft brackets on the forward row. Check alignment and clearance to row units. Sprockets can be aligned slightly by loosening the shaft locks and repositioning if needed.
- 18.** Check all added brackets for proper alignment, adjust as needed. Tighten all bearing hangers, brackets, bearing and shaft locks on the upper, lower and jack shafts. Manually turn the meters using a large adjustable wrench positioned on the hex shaft. After final alignments, adjustments and checks of the drives the drive installation is complete. This process is followed on the opposite wing of the planter.

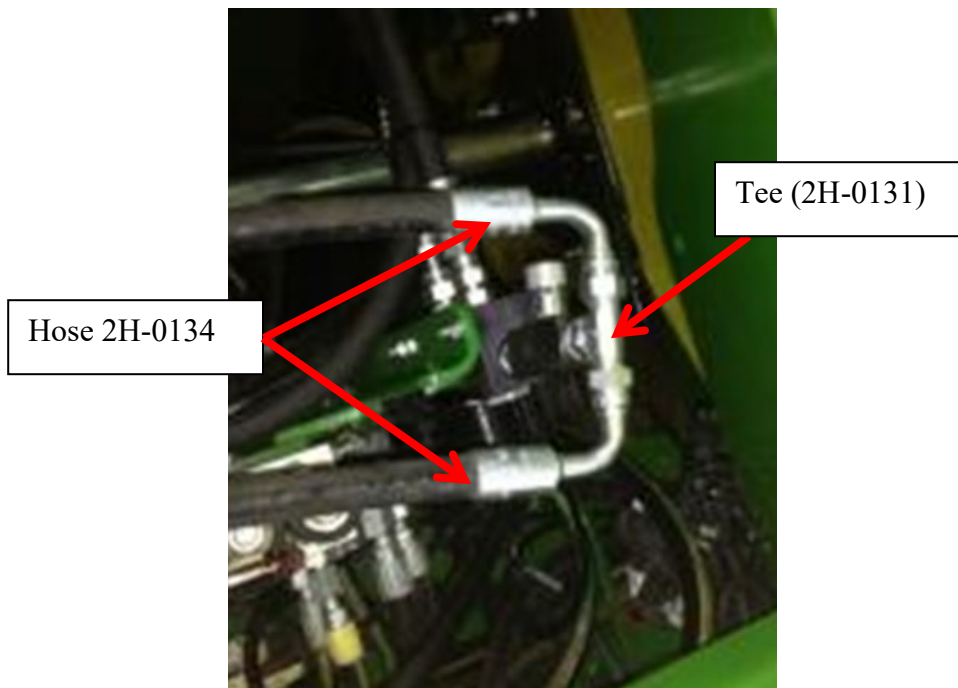
19. Replace all pneumatic air lines, seed and vacuum lines removed earlier. Lines may need lengthening to position them properly on the row units. Wire harnesses for the row units may need lengthening and re-routing depending on the location of the connections and brackets used for fastening them to the meter and/or parallel arms.

Installation of Hydraulic Dump Valve and Adjustable orifice

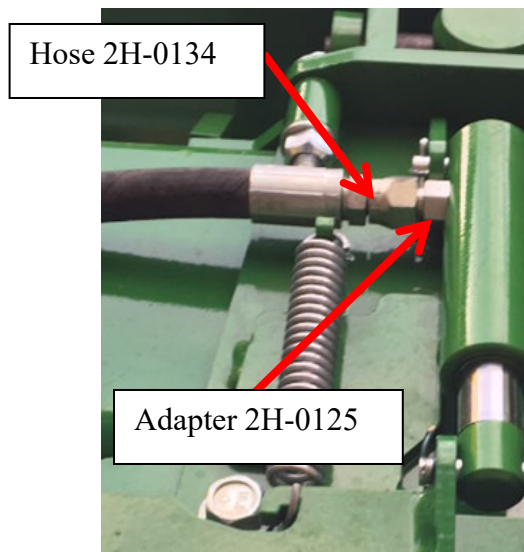
1. Position the dump valve on the left side of the main hydraulic block using the 90 degree mounting bracket, hardware and spacer plate supplied. The plate can be bolted to the valve body hole locations to space the mounting bracket away from the wire harness bulkhead if desired. There may be several locations or variations of mounting the valve assembly.



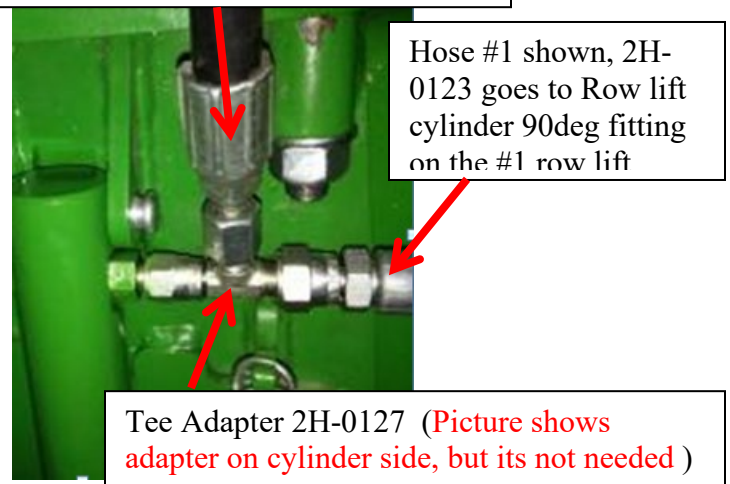
2. Install the adjustable orifice into port "A" on the top of the dump valve using straight fitting (p/n 2H-0158) and tighten. **NOTE: Access to the adjustable orifice should be clear so operators may adjust the raise/lower speed of the row lifts from underneath the planter platform.**
3. Tee fitting (2H-0131) is now installed on the top of the adjustable orifice as noted in the picture above. Position the tee to the desired orientation allowing attachment of the hydraulic supply lines (2H-0134) which will route to each latch cylinder on the #1 lifted row of each wing.



4. Install straight adapter (p/n 2H-0125) into one side of the latch cylinder on the back of the rear mounting plate of the first row lift on the wing. Connect the supply hose 2H-0134 from the adjustable orifice to this fitting. (Front side of LH wing shown below.)

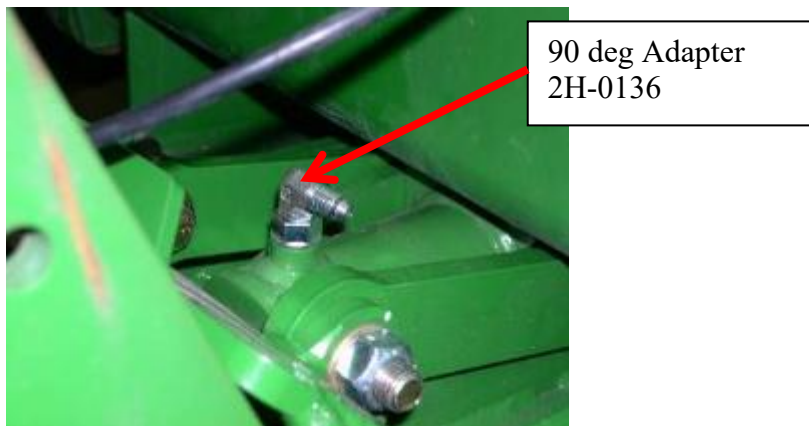


Hose #2, 2H-0123, goes to the second Row lift latch cylinder Tee

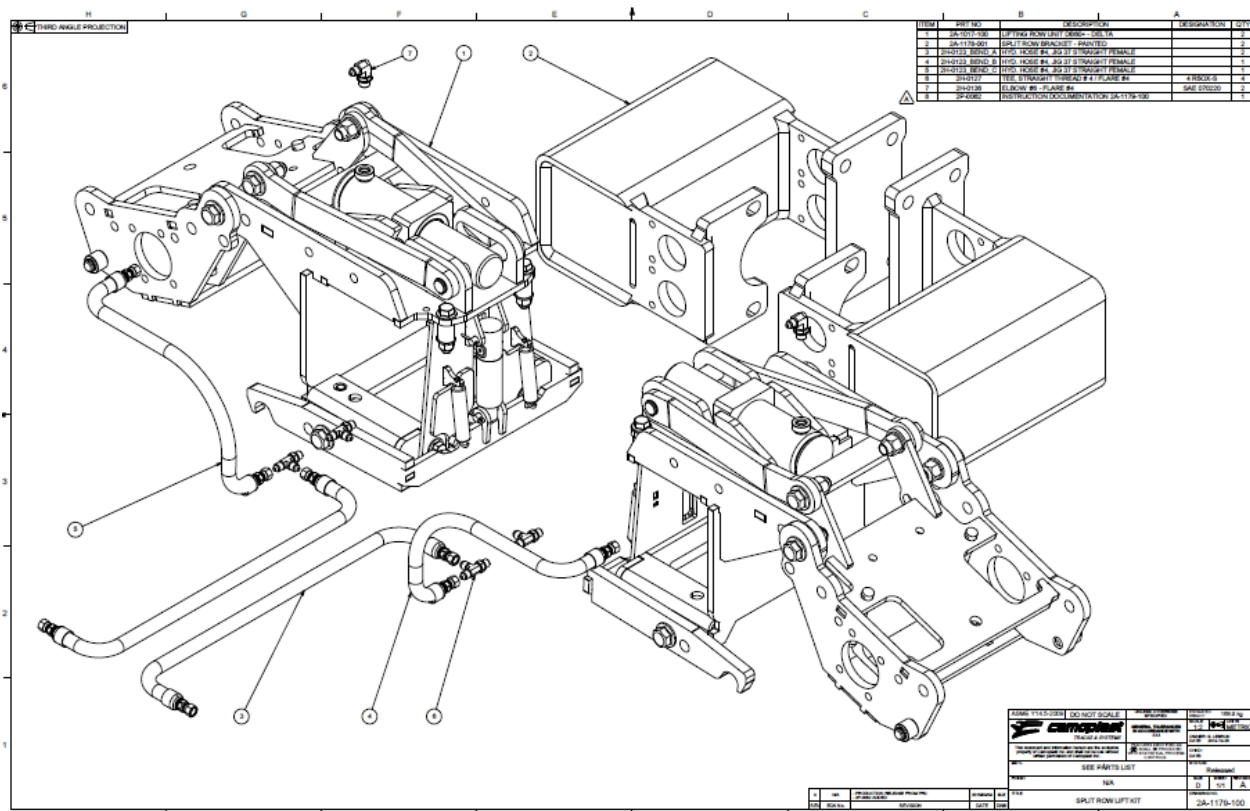


5. On the opposite side of the latch cylinder install fitting (p/n 2H-0127). **Please note Picture above shows an adapter on the cylinder side, but the correct fitting is supplied to correct this.**
6. Install 90 degree hydraulic fitting (2H-0136) into the top port of the lift cylinder located on the top of the row lift. Connect jumper hose (2H-0123) from the Tee fitting

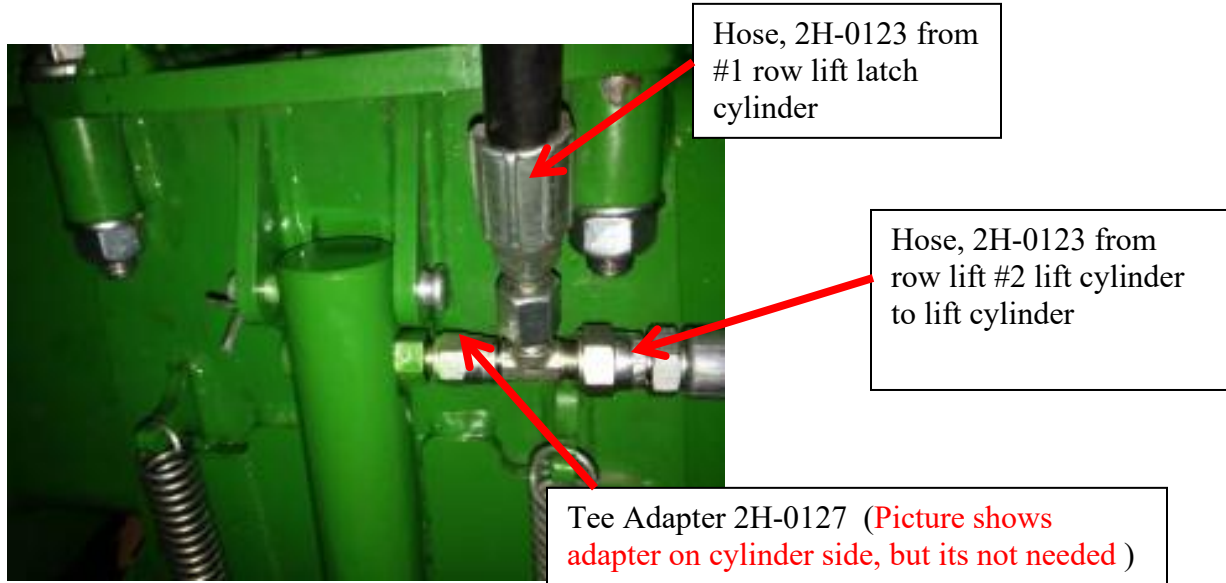
installed earlier on the output side of the latch cylinder to the lift cylinder. See pictures below for representative view of these connections. Note: fittings must be positioned to clear beams and mechanisms without kinks or chaffing.



7. Install the latch plate springs onto the top and bottom hooks of the rear latch plate. Using a spring hook install on the large bottom hook and stretch to the small top hook. Check all fittings, alignment and tighten.
8. Prepare the second row lift (split row) on the wing for the hydraulic connections. A pictorial of the split row is shown below for reference and aid.



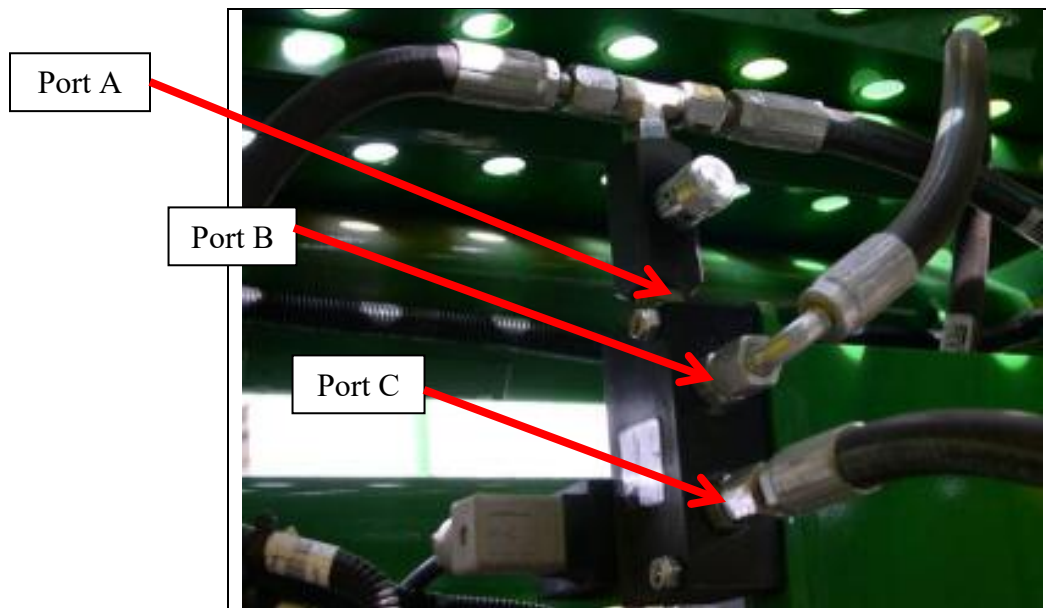
9. Install Tee fitting (p/n 2H-0127) to the forward side of the latch cylinder on the backing plate of the split row unit. Jumper hose (p/n 2H-0123) is now connected between the #1 row unit Tee and split row Tee.



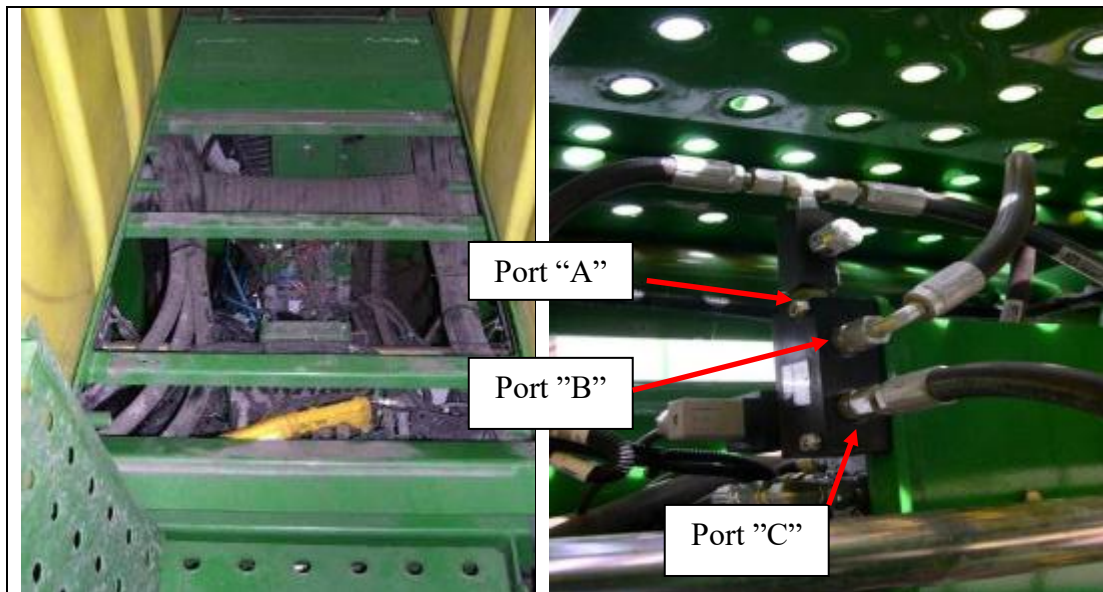
10. Connect the remaining port on this Tee connector to the lift cylinder port using the 90 degree fitting (p/n 2H-0136) and hose (p/n 2H-0123). There is no fitting on the output port of the latch cylinder on the split row latch cylinder. Refer to the drawing above for reference as needed. Check all fittings, connections and routings for kinks and chaffing. The hydraulic connections for the two row lifts on the wing are now complete.
11. The opposite wing connections are completed in the same manner. Once complete the split row hydraulic connections are finished.

Hydraulic Valve Preparation

1. Install straight fitting (2H-0130) into port B of the hydraulic dump valve.
2. Install M6 orb x 6 orfs fitting (2H-0196) into port C of the hydraulic valve. This line will route the case drain (0 pressure/low flow) line back to the coupler at the tractor.

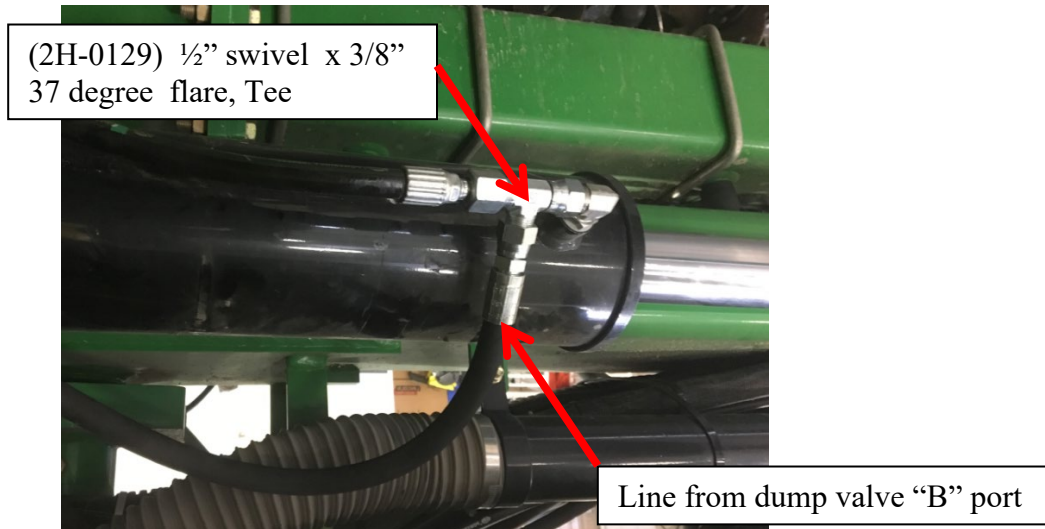


3. Remove the perforated platform above the main valve stack at the rear of the planter.

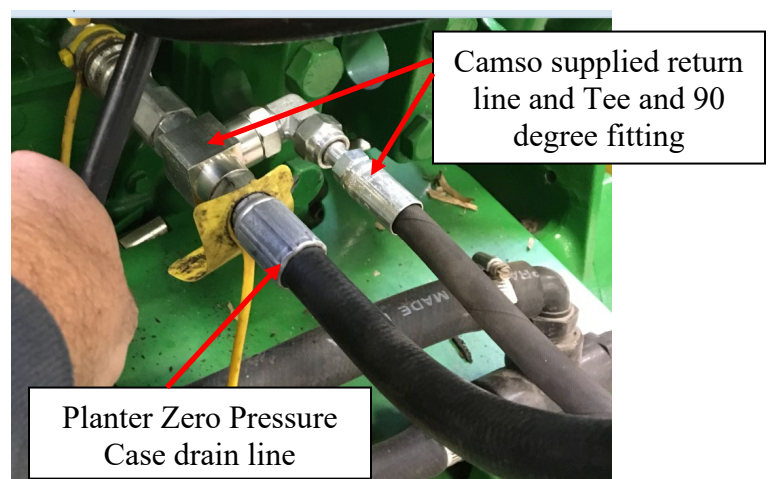
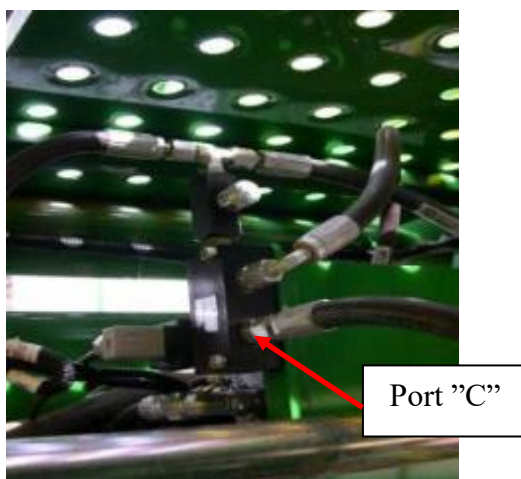


4. Refer to drawing in appendix (included in kit package) for hydraulic valve schematic as needed.
5. Route hydraulic line from "B" port on Camso dump valve to the rod end side of the fold cylinder, shown below. You may also Tee in at the common point on the bulkhead where both rod end cylinder hoses connect at a Tee before going into the main valve block.

6. **CAUTION: This line may be under pressure, remove slowly releasing pressure and oil.** It may be convenient to relieve the pressure at one of the lines on the rod end of the fold cylinder. Oil released may drop directly below the cylinder and collect in a suitable container. Bleeding the pressure initially at the multifunction block leaves little room for containers to collect oil.



7. Route the drain line from Port "C" on the hydraulic dump valve to the case drain (Zero Pressure) on the tractor port and tie into the port using the tee fitting supplied. The picture below show details of the connections. Routing the long case drain hose in a safe location across one side of the planter and up a wing support is very important. Zip tie the line as needed and take up any extra hose in a safe/nonpinching location.

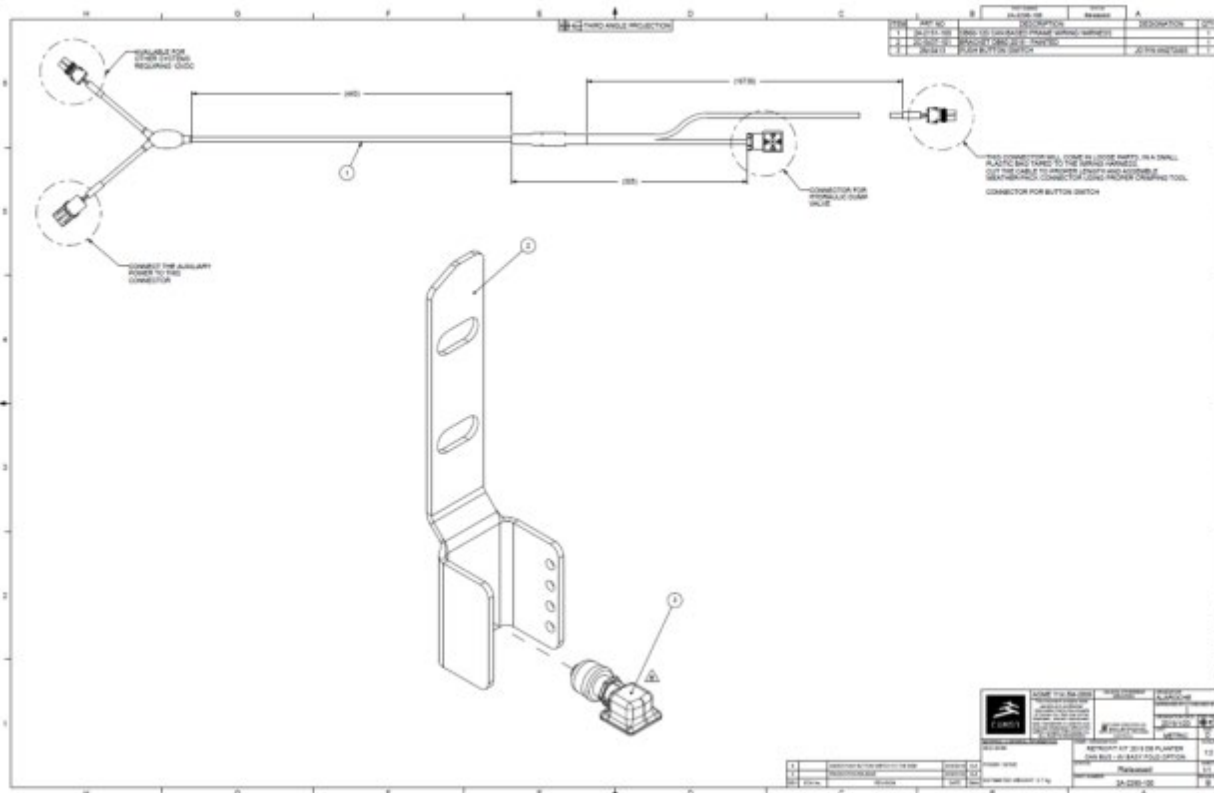




8. Tighten all hydraulic fittings and check for binding and kinks.

Dump Valve control switch, switch bracket, and wiring harness installation.

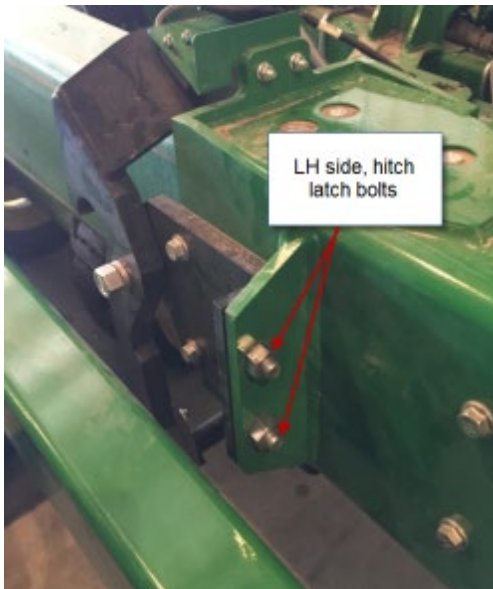
1. Drawing of the switch, wiring harness and switch bracket are shown below. Locate these parts and the tools required on the list below before proceeding. Also verify the tractor is off, so no power is going to the planter.



Tools Required for this installation:

- 2A-2290-100 kit
- 24mm socket and ratchet
- 24mm open end wrench
- 22mm or 7/8" for the switch lock nut.
- Torque tool (320 Nm torque or 236 ft-lbs)
- 25' or longer fish tape
- Weather pack crimping tool
- About 25-30, 6" or longer zip ties
- Side cutter for the zip tie ends
- Small Philips screw driver
- A roll of electrical tape
- A flash light or head lamp
- Weather pack extractor tool may be needed, (Napa # 725153) Not included in kit.

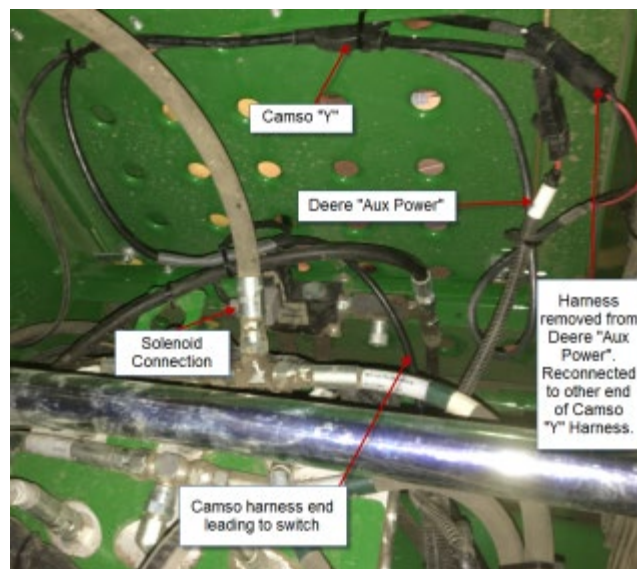
2. Installation of this whole kit is much easy if the planter is unfolded, but can be installed with it folded also. Pictures below show the planter folded. Remove LH hitch fasteners and install switch bracket as shown below. Add M16 washers and use existing M16 nuts to torque fasteners to 320 Nm (236 ft-lbs).



3. Remove the switch end cover. This will allow the switch to be inserted through the hole in the switch bracket. The lock washer stays between the back of the switch bracket and the lock nut., as shown in the LH picture below. Please note the switch depth is adjustable and will need to be adjusted so it stays engaged while the hitch latch is locked. After the proper distance is defined, tighten the lock nut to secure the switch.



4. Start with installing the Solenoid valve harness connection using a small Phillips screw driver, as shown in the LH picture below. Then find the Deere harness connection marked "Aux Power". If it connected to another harness, disconnect it. Then connect one end to the "Aux Power" to one end of the Camso "Y" lead and the other Deere end to the other Camso "Y" lead. See RH picture below for details. Please note to zip tie the harness to the top bracing as shown



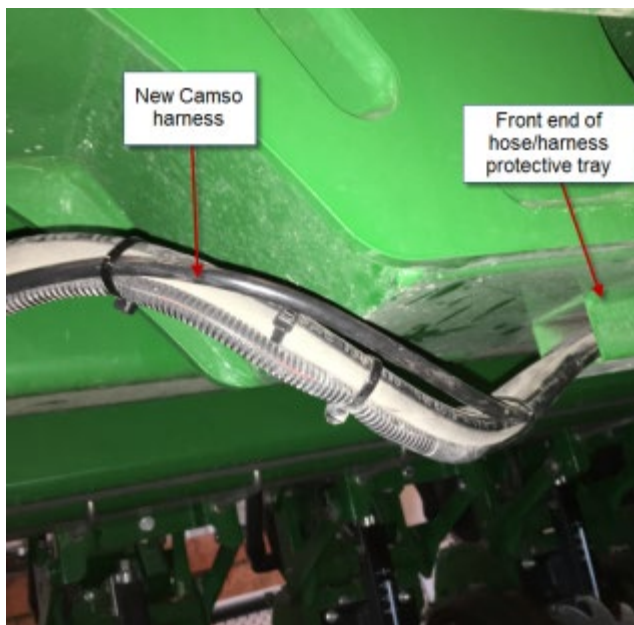
5. Route the new Camso harness down along the hydraulic hoses, zip tying as needed. See picture below for details



6. Route the new Camso harness through the opening, as shown in the LH picture. Zip tying as needed. Once through the opening use fish tape to pull the harness through the protective hose/harness tray under the main beam, as shown in the RH picture.



7. Pull all excess of the new Camso harness through protective hose/harness tray under the main beam and secure the harness to the hydraulic hoses and other harnesses as shown below.



8. The harness is designed to be longer than required and will need to be cut before the weather pack plug is installed. Connect the weather pack plug, as shown in the LH picture below. Verify the plug are pushed in properly, before snapping the end piece over rear of the plug. Once the weather pack plug installed, connect the harness to the switch, as shown in the RH picture below. Remember to zip tie the wire and connection to the holes provided on the switch bracket.



9. Once all the connections are complete, the switch bracket and switch depth may need to be adjusted. You will need lock and unlock the hitch latch to validate both. After both have been validated, the installation will be complete.
10. Replace planter platform removed earlier

Safety Pins/Row Unit Locks

1. Pins are provided to lock Row Units in the raised position. When transporting the planter insert the pins on both sides of the hinge bracket through the holes provided.
2. **NOTE: Always pin the rows in the upright, locked position when transporting the planter.**
3. **Caution: Pins must be removed prior to beginning a fold or plant cycle for the planter. Damage may result if pins are not removed. Damage caused by failure to remove the lock pins is not a warrantable.**



Final Operational Checks

System Checkout

1. Remove all lifting devices and supports. Recheck all hardware, hydraulic lines (if applicable), air bag lines, seed and vacuum lines. Move planter to suitable surface to test fold and unfold the main bars.
2. Perform operational check of planter by cycling the fold, unfold and plant cycles.
3. DB Planter row lifts will begin to raise when the hydraulic remote which folds the wings forward is engaged. **NOTE: Adjust the orifice at the top of the dump valve to desired raise/lower speed for row lifts. Row Lift raise speed should be**

sufficient to raise the lifted rows to clear the tracks before planter wings begin folding forward.

4. Row Lift units will lower when wings are fully extended to the plant position and the planter monitor in the cab has “plant” engaged. This relieves the pressure of the one way lift cylinders and allows oil to flow to the case drain circuit of the tractor
5. Instruct owner in proper procedure for break in, alignment and maintenance of undercarriages. It is critical to pre-condition/season the tracks prior to any road transport of the track system.

Track Alignment

On planters receiving this modification kit, it is very important to check the alignment after an installation. Tracks must always be aligned in order to maximize track and wheel life and reduce overall rolling resistance. Refer to the operator's manual provided with this kit for proper track alignment procedures.

Warranty Information

After alignment and installation is completed, make sure to provide customer with the following documents, which are included with your track system:

- Warranty certificate
- Track Operational Guidelines brochure
- Product registration card
- Operator's manual
- Parts Manual
- Installation Guide

Take a few minutes to review the information in the brochure, and to discuss the warranty period. Also make sure to record track serial numbers on the warranty certificate for future reference.

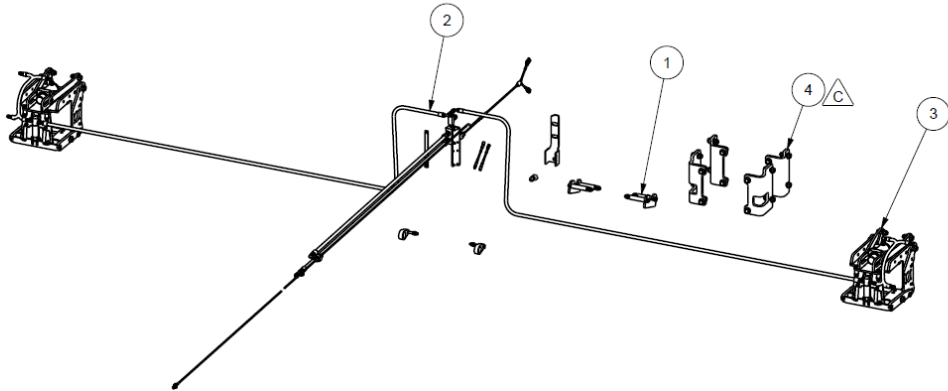
If any of these documents are missing, please contact your Camoplast track system dealer.

Appendix:

DB60 Standard Kit 2A-1153-100 (Note not all parts will be used for the Split Row application)

 THIRD ANGLE PROJECTION

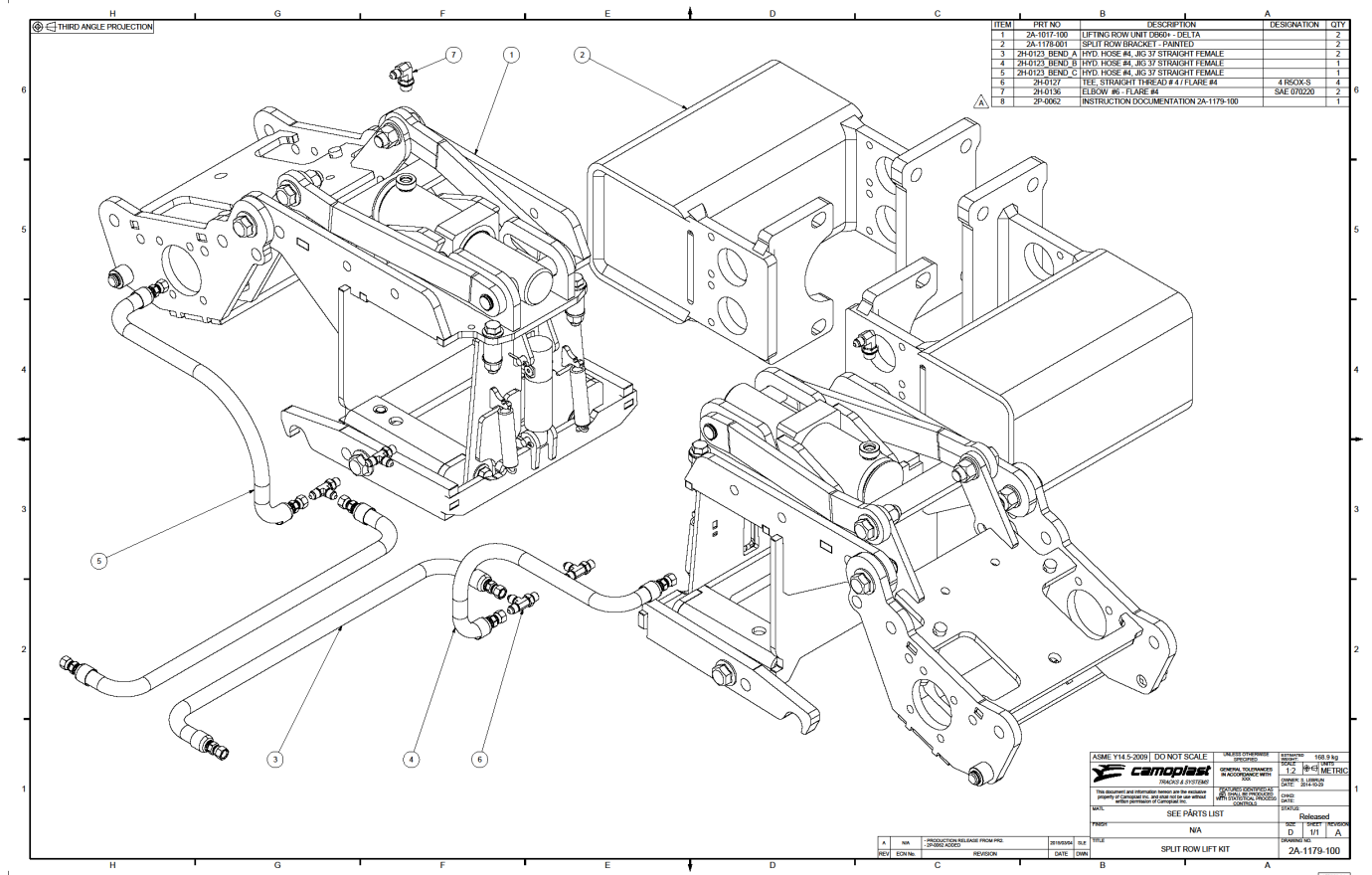
ITEM	PRT NO	DESCRIPTION	DESIGNATION	QTY
1	2A-0652	OFFSET DRIVE BEARING KIT DB60+		1
2	2A-0971	ACCESSORIES KIT FOR 2 UNITS		1
3	2A-1017-100	LIFTING ROW UNIT DB60+ - DELTA		2
4	2A-2206-100	DB OFFSET BRACKET KIT		1
5	2P-0057	MOUNTING INSTRUCTION 2A-1153-100		1



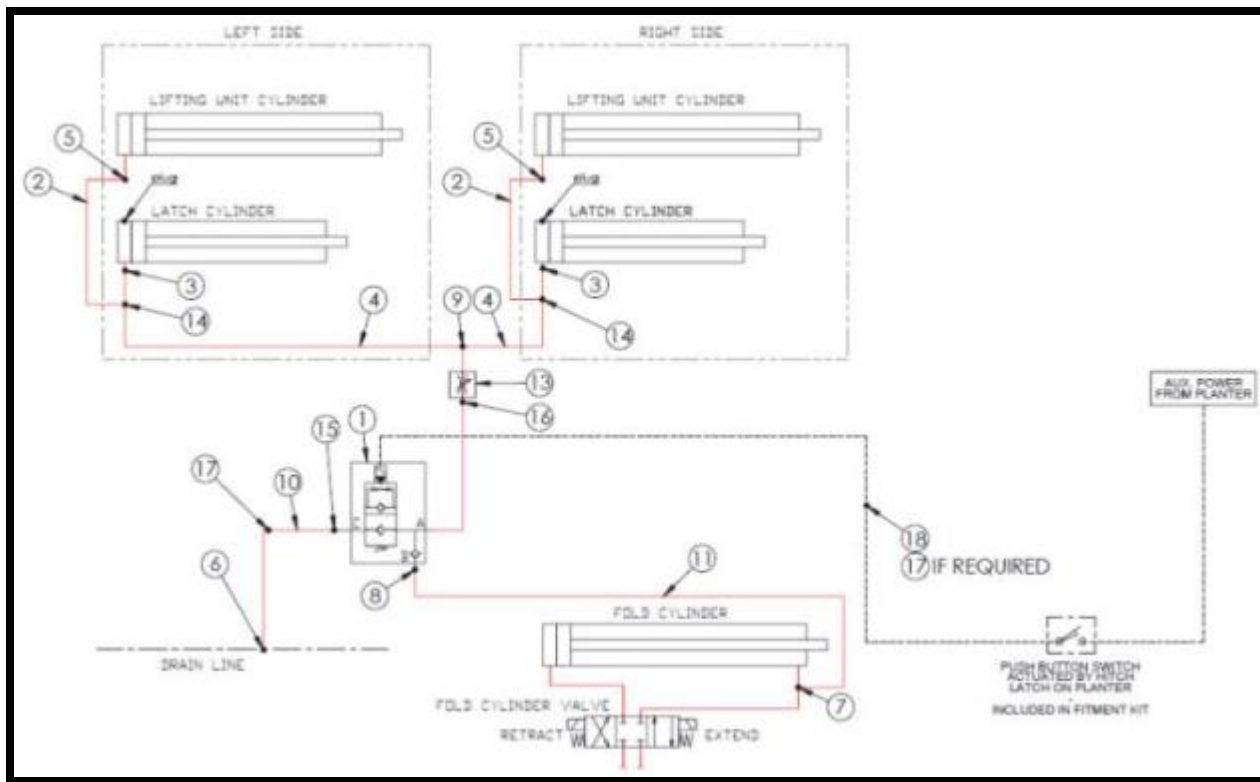
REV	ECN No.	REVISION	DATE	DWN
C	03733	-REFLECT 2A-0971 CHANGE. -ROLLER KIT MODIFICATION 2A-0650 REMOVED AND DB OFFSET BRACKET KIT 2A-2206-100 ADDED.	2019/03/08	JCSTP
B	TT1076	2A-1017-100 UPDATED	2015/01/05	SLE
A	N/A	PRODUCTION RELEASED	2014/09/22	SLE

ASME Y14.5-2009 DO NOT SCALE		UNLESS OTHERWISE SPECIFIED	ESTIMATED WEIGHT: 144.3 kg
 This document and information hereon are the exclusive property of Camoplast Inc. and shall not be used without written permission of Camoplast Inc.		SCALE: 1:20	UNITS: METRIC
		OWNER: S. LEBRUN DATE: 2014/09/19	
MATERIAL: SEE BOM		FEATURES IDENTIFIED AS (C) SHALL BE PRODUCED WITH STATISTICAL PROCESS CONTROLS	
FINISH: N/A		STATUS: Released	
TITLE: ROW LIFT KIT DB58/60/66/80/90/120 - 2 UNITS		SIZE: B	SHEET: 1/1
		DRAWING NO: 2A-1153-100	

DB60 Split Row Kit 2A-1179-100 (used with 2A-1153-100 for split rows)

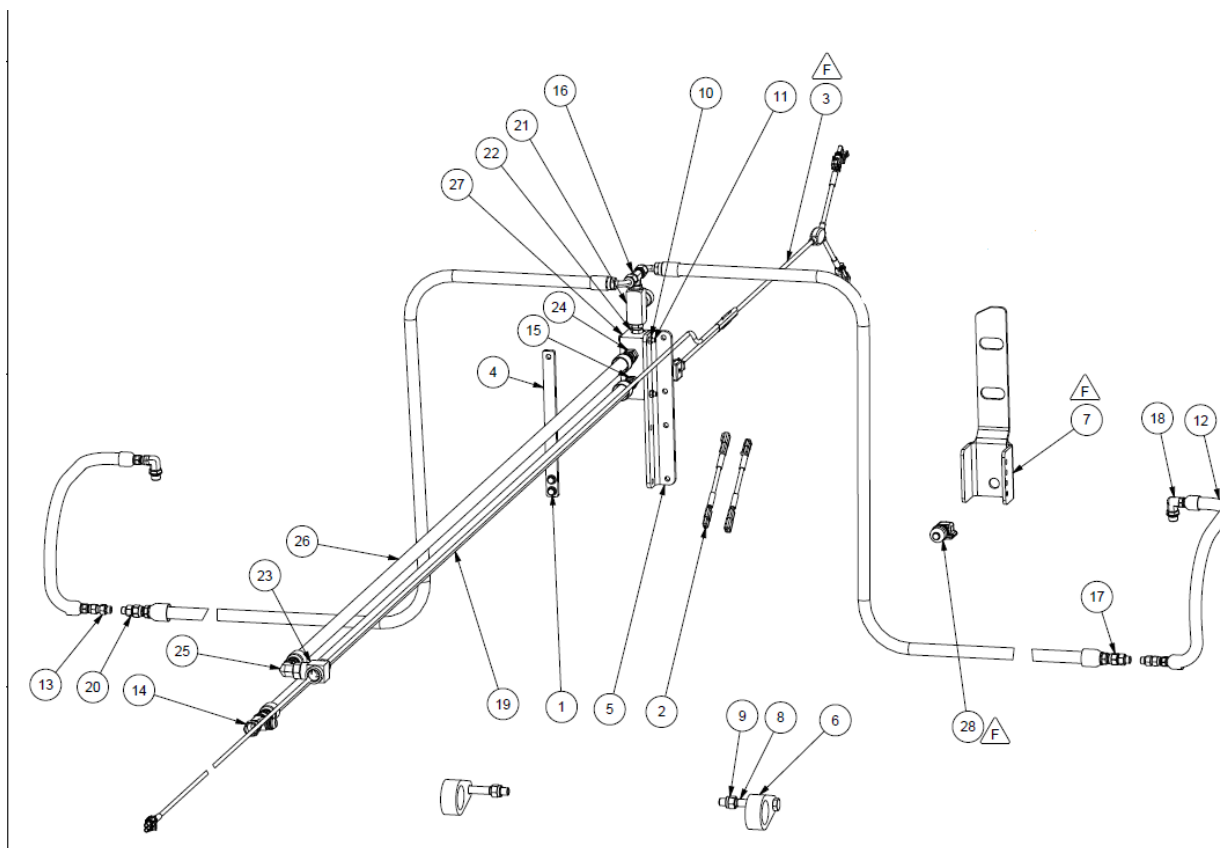


Hydraulic Schematic



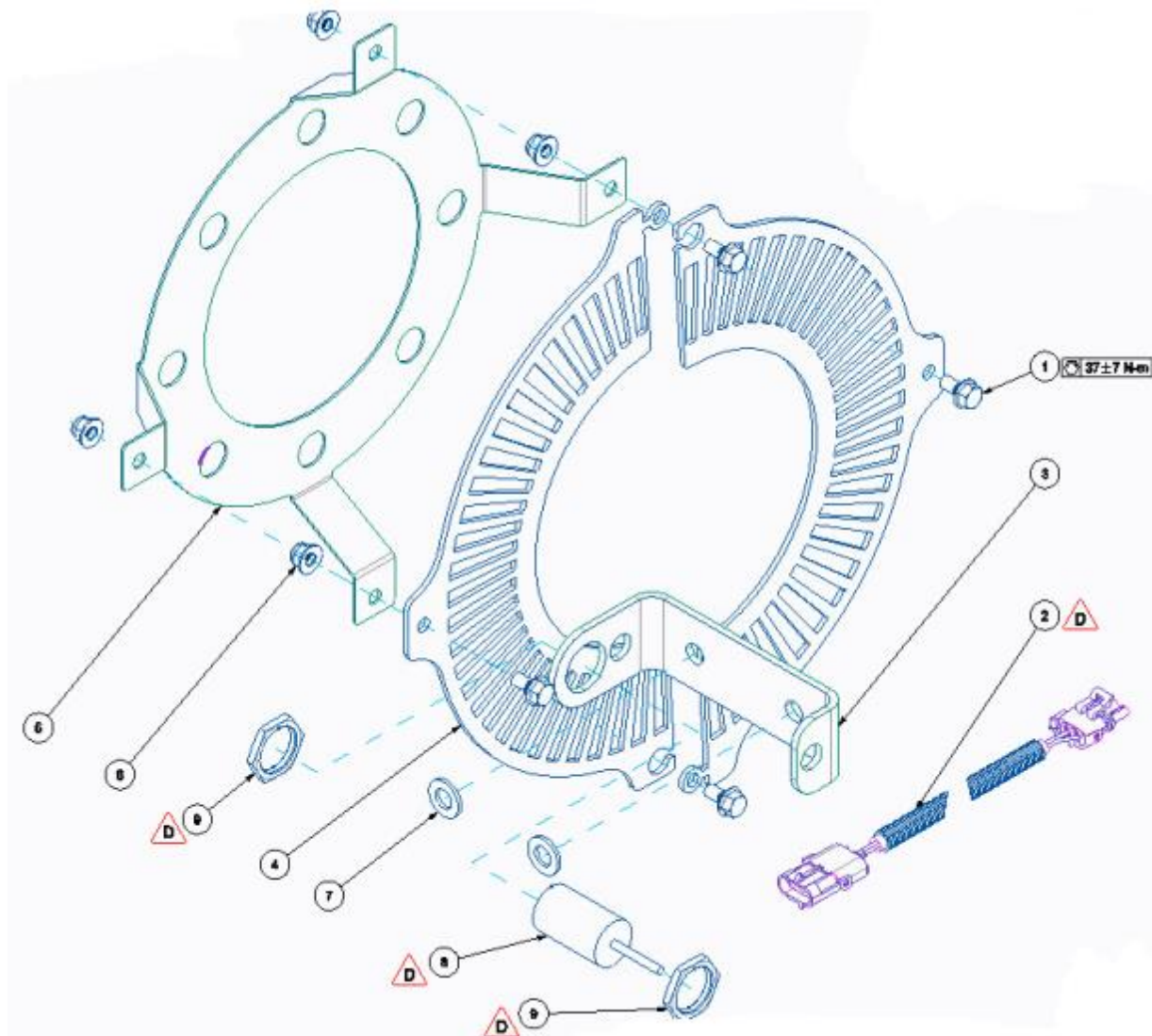
ITEM	PRT NO	DESCRIPTION	QTY
1	2H-0324	Hydraulic Lift, check and dump valve	1
2	2H-0123	HYD HOSE ASS ROW UNIT LINK #4 FLARE #4	2
3	2H-0125	STRAIGHT CONNECTOR JIC37/SAE-ORB #4	2
4	2H-0204	HYD HOSE ASS ROW UNIT SUPPLY #6 FLARE #6	2
5	2H-0138	ELBOW #6 - FLARE #4	2
6	2H-0164	FITING RUN TEE - 8 MALE ORB	1
7	2H-0129	Swivel Nut Run Tee	1
8	2H-0130	Straight Thread Connector JIC 37o / SAE-ORB #6	1
9	2H-0131	Straight Thread Tee 37 Flare / 37 Flare SAE-ORB	1
10	2H-0199	HYD. HOSE #6, 65' LENGTH , #6 ORFS FITING FEMALE	1
11	2H-0137	Hyd hose ass. Return pressure, #6 FLARE #6-#8	1
12	2H-0153	Flow control N6205	1
13	2H-0205	FITTING TEE - JIC 37 #4 , SAE 070432	2
14	2H-0198	FITING, #6 MORB X 6 MORFS	1
15	2H-0158	Fitting 8F50HA0-S	1
16	2H-0197	FITING 90 DEGRES, #8 MORB X 6 MORFS	1
17	2A-1036-100	ADAPTER CABLE DEUTSCH / WEATHERPACK	1
18	2A-2151-100	DB80-120 CAN BASED FRAME WIRING HARNESS	1

Hydraulic drawing for 2A-0971-100 (Part of 2A-1153-100)



ITEM	PRT NO	DESCRIPTION	DESIGNATION	QTY
1	761301665	HHFS,ASME B18.2.3.9M,10.9,Zn-T	M6 x 1,00 x 16	2
2	2A-1039-100	ADAPTER CABLE - DEUTSCH - WEATHERPACK		1
3	2A-2151-100	DB60-120 CAN BASED FRAME WIRING HARNESS		1
4	2C-1256	BRACKET SWITCH		1
5	2C-1421	VALVE BRACKET		1
6	2C-1666	SPACER, CYLINDER PIN		2
7	2C-5437-101	BRACKET DB60 2018 - PAINTED		1
8	2F-0071	HHCS ISO 4014,10.9,Zn-T	M12 x 1,75 x 90	2
9	2F-0094	PT-NUT,ISO 7040,CL 10,Zn-T	M12 x 1,75	2
10	2F-0170	NUT,ISO 4032,CL 10,Zn-T	M6 x 1,00	4
11	2F-0448	HHCS ISO 4014,10.9,Zn-T	M6 x 1,00 x 55	2
12	2H-0123	HYD. HOSE #4, JIG 37 STRAIGHT FEMALE		2
13	2H-0125	STRAIGHT CONNECTOR JIC37/SAE-ORB #4	SAE 070120	2
14	2H-0129	1/2 , SWIVEL NUT RUN TEE MALE 37° FLARE	SAE 070432	1
15	2H-0130	STRAIGHT CONNECTOR 3/8 JIC37/SAE-ORB#6	SAE 071720	1
16	2H-0131	TEE-M3/8_37 Flare-M3/8_37 Flare-SAE-ORB#6	6 S5OX-S	1
17	2H-0134	HYD. HOSE #6, JIG 37 STRAIGHT FEMALE		2
18	2H-0136	ELBOW #6 - FLARE #4	SAE 070220	2
19	2H-0137	HYD. HOSE #6, JIG 37 STRAIGHT FEMALE		1
20	2H-0140	STRAIGHT CONNECTOR JIC37 #6/SAE-ORB #4	SAE 071720	2
21	2H-0153	FLOW CONTROL # N620S		1
22	2H-0158	STRAIGHT UNION ORB-6 - 6F50HA0-S		1
23	2H-0164	FITTING, RUN TEE, -8 ORB		1
24	2H-0196	FITING, #6 MORB X 6 MORFS		1
25	2H-0197	FITING 90 DEGRES, #8 MORB X 6 MORFS		1
26	2H-0198	HYD. HOSE #6, 57' LENGTH , #6 ORFS FITING FEMALE		1
27	2H-0324	HYDRAULIC LIFT, CHECK AND DUMP VALVE	ID00HC12 + DE-CVA + DE-S2A	1
28	2M-0413	PUSH BUTTON SWITCH	JD P/N AN272493	1

Speed Sensor Kit for JD DB Planters



ITEM	PRT NO	DESCRIPTION	DESIGNATION	QTY
1	761401665	HHFS,ASME B18.2.3.9M,10.9,Zn-T	M8 x 1,25 x 16	4
2	2A-1294-100	CABLE - SPEED SENSOR		1
3	2C-2543-100	BRACKET - SPEED SENSOR		1
4	2C-2544-101	SPEED RING - PAINTED		2
5	2C-2545-101	SUPPORT - MOUNTING - SPEED RING - PAINTED		1
6	2F-0220	PREVAIL TORQ HEX FLANGE NUT, ISO 7043, 10, A2C	M8x1.25	4
7	2F-0265	WASHER ,ISO 7089,300 HV,Zn-T	M12	2
8	2M-0147	DEERE SPEED SENSOR #AA47936	AA47936	1
9	2M-0148	DEERE NUT FOR SPEED SENSOR #A61237		2

