Trailed Track System (TTS)
For John Deere DB 60 47R15” Split Row Planters
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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.

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

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.

<table>
<thead>
<tr>
<th>Axle/UC Remove and Install</th>
<th>Row Unit (per unit)</th>
<th>Hydraulics</th>
<th>Track Alignment</th>
<th>Total (varies)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Axle (hrs)</td>
<td>UC (hrs)</td>
<td>Install lifts/offsets, update drives (hrs)</td>
<td>Install valve and hoses (hrs)</td>
<td>Single Track (hrs)</td>
</tr>
<tr>
<td>DB60 (M)</td>
<td>4.0</td>
<td>2.0</td>
<td>18.0</td>
<td>4.0</td>
</tr>
<tr>
<td>DB60 (E)</td>
<td>4.0</td>
<td>2.0</td>
<td>2.0</td>
<td>4.0</td>
</tr>
</tbody>
</table>

(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)**

Additional parts are required to complete this installation. These are available from Camoplast, your John Deere dealer and local sources.

Note: 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. Since there are multiple ways to provide power to the row units for a specific planter, the list presented below provides an economic solution at the time of publication. The dealer may wish to configure differently based on planter add-ons, planter model year or other factors.

**NOTE:** Electric Drive planters do not need any of the parts referenced below.
DB60 (47R15” spacing) Mechanical Drive Only

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

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 Camoplast 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 is 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 Camoplast Split Row bracket to the planter frame. Retain all hardware for re-use as required.
Removal of work switch & cylinder pins

1. Remove speed sensor (if equipped) from existing axle assembly. Sensor will be installed in new tone wheel assembly on the right front idler wheel of the TTS undercarriage.

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)
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 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. Fasten planter work switch (if equipped) to axle linkage using existing or provided link arm (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.
9. Tighten the 4 nuts on each lower clam casting on the rock shaft portion of the new Camoplast 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 Camoplast recommended grease, initially 8 pumps and 2 pumps weekly during field operation.

7. Repeat this procedure on the second undercarriage.

8. Installation of the main pivot pin in the TTS undercarriages is complete.
Speed Sensor Reinstallation

The speed sensor removed from wheeled axle assembly earlier will need to be installed in the outer RH front TTS undercarriage assembly. Before this can be done, tension on the system must be removed so the outside idler can be removed.

1. Locate the track detensioning bolt and lock nut. This mechanism is at the top of the rear tension link assembly between the idler wheels.

2. Loosen the lock nut using a 42mm deep well socket (or similar). Compress the spring to detension the track by tightening screw (clockwise). Tighten the screw only far enough to loosen the track and allow for removal of the outside idler wheel. Do not overtighten.

3. Remove the (8) M20 x 60 bolts and washers holding the RH front outer idler wheel to the hub. Then remove the idler.
4. Install the original speed sensor removed from the tire assembly into the saddle bracket and tighten with jamb nuts. Gap sensor to tone wheel per JD planter specs (normally 1-1.5 mm).

5. Attach wiring harness and route wires out of undercarriage assembly to the inside, allowing attachment to the original planter sensor harness wire from the planter upright. **This will be done after installation of the u/c to the axle.**

6. Reinstall the idler wheel to the front idler hub. Torque the (8) hub bolts to 620 N-m +/- 124 N-m (457 ft lb +/- 91 ft lb).

7. Retension the track assembly by retracting the jack screw on the tension link assembly. Rotate the screw counterclockwise, extending the spring until there is no load on the screw. The spring is now fully extended and the track has maximum tension. Turn the screw in/clockwise until it touches the screw seat and back off ¼ turn. Secure the jamb nut.

8. The speed sensor is now installed and the RH track assembly is properly tensioned. Refer to Operators manual provided with this installation kit for further details if needed.
Undercarriage Installation onto Axle

1. Prepare the inner pin surface for installation into the receiver tube on the TTS/DB axle. Apply Camoplast 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 ¾” 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.
Camoplast Split Row Bracket Installation

9  Mount the Camoplast 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.

10 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 Camoplast 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 Camoplast 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 Camoplast 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 Camoplast 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 genaric 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 Camoplast 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 Camoplast hinge row lift bracket. Assemble all hardware, bushings and tighten.

4. The first row unit installed on the planter wing will have Camoplast 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 Camoplast hinge assembly. A mounted row lift with the upper drive bracket installed is pictured below.**
11 Lift row units converted from JD backing plate to Camoplast 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 Camoplast split row bracket. Slide the throat of each row lift hinge into position on the planter.

12 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.**

13 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 Camoplast 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.
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 Camoplast 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 Camoplast 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 it’s 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-0204) 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 from the adjustable orifice to this fitting.

5. On the opposite side of the latch cylinder install fitting (p/n 2H-0127).

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. Locate the wiring harness feeding the main valve stack, **separate wire marked #14 FIELD from the loom**. Disconnect the original Deere connector and install jumper wire harness provided between these connections. Attach this Y splice wire to the solenoid on the hydraulic valve. Make sure connections are free from dirt and debris and securely fastened. Tie wire harness back into loom or secure to prevent unnecessary movement and chafing.

**NOTE:** Late model 2013 planters and on may have Deutsch connectors on the planter wiring harness. This requires using the 2 splice harness (2A-1039) to convert from Weatherpack to Deutsch ends allowing the electric dump valve to connect into the planter. Some planters may not have the “#14 field” wire labeled with a plastic tag. Some are marked as “field” only. Disconnect this wire connector and insert the jumper wire splice see right picture below). Adapters to convert from Weatherpak to Duetsch connectors are included in the kit if needed.
5. Refer to drawing in appendix (included in kit package) for hydraulic valve schematic as needed.

6. Route 2 hydraulic lines provided (2H-0204) from the adjustable orifice T fitting (“A” port) along the top of the planter bar, through hose mounting straps and connect to the forward hydraulic fitting on the latch cylinder of the #1 row lift unit. **NOTE:** These lines may have been attached to the lock cylinders in an earlier step when the row unit hydraulics were installed. Tighten all hardware and check for kinks and potential chafing locations.

7. Locate the case drain line quick coupler at the tractor. The drain line from port “C” on the dump valve will be routed to the front of the tractor and attached to this line by inserting a “T” fitting (p/n 2H-0164) in-line with the current quick connect fitting (see figure below). The drain hose (57”) is now connected to the 90 degree fitting supplied in the kit (p/n 2H-0197) at the “T” fitting previously installed. **Note:** The drain line may also be connected at the hydraulic bulkhead behind the planter hitch if desired. Locate the case drain and T into this 0 pressure/low flow line if desired.

8. Route hydraulic line (p/n 2H-0137) from “B” port on Camoplast dump valve to the rod end(s) common connection point of the fold cylinder(s). Connect at a common point on the bulkhead with swivel nut run T. This “T” fitting can usually be installed at a common point using a T fitting and connecting in line with the existing T.
connector from the fold cylinder rod ends. See representative photos below.

**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 will drop directly below the cylinder for collection in a suitable container.

<table>
<thead>
<tr>
<th>Line from dump valve “B” port</th>
</tr>
</thead>
<tbody>
<tr>
<td>(2H-0129) ½” swivel x 3/8” 37 degree flare</td>
</tr>
</tbody>
</table>

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

10. Replace planter platform removed earlier.

**NOTE:** Some 2013 and later units may have a T-fitting forward of the main valve stack (see left picture below).

**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
- 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:

DB 60 Split Row Kit Drawing
**Speed Sensor Kit**

**SPEED SENSOR KIT**
John Deere DB Planter Products

(2A-1125)

<table>
<thead>
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<th>Ref.</th>
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<th>Qty.</th>
<th>Description</th>
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<td></td>
<td>1</td>
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<tr>
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**NOTE:** To replace the Speed Sensor electronics see your planter equipment dealer.