

2/6/2019

# **Twin Row Conversion Kit**

## **EzOffset - TRC Installation Instructions**

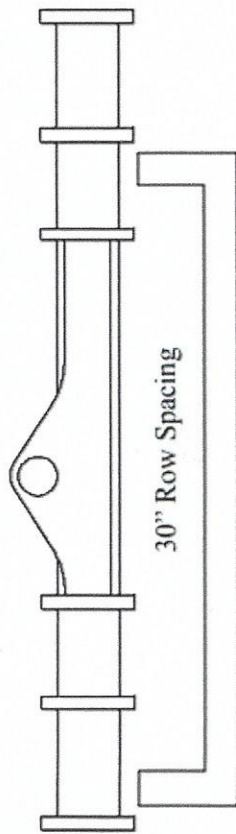


**Phone: 701-375-6330**

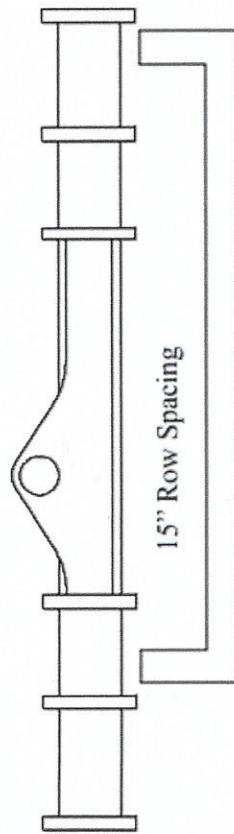
**Fullerton, ND**

**[www.gramlowltd.com](http://www.gramlowltd.com)**

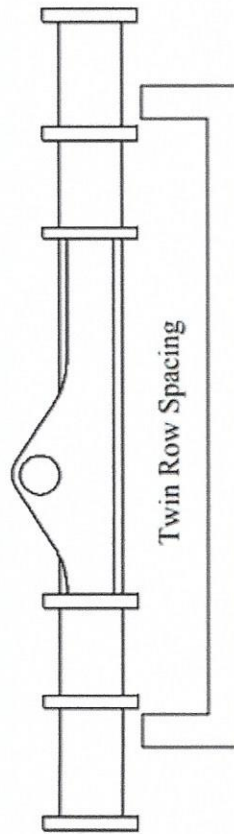
### Category 3 Quick Hitch



30" Row Spacing

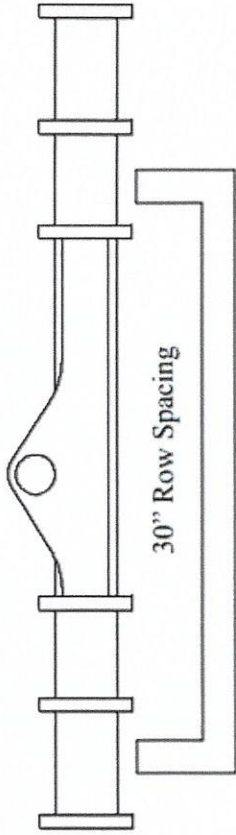


15" Row Spacing

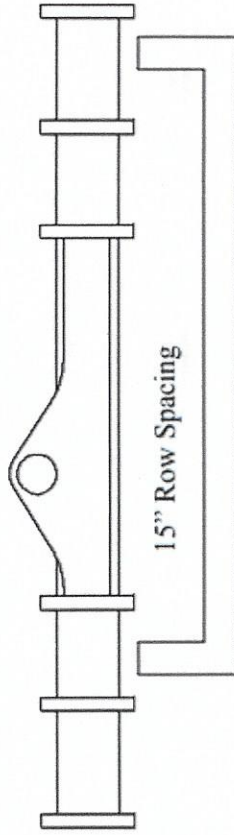


Twin Row Spacing

### Category 4N Quick Hitch



30" Row Spacing



15" Row Spacing

- ☆ Replaces existing crossbar on 1790 Planter
- ☆ Works on 15", 30", and Twin Row spacing
- ☆ Simply lower hitch on parking stand, move the tractor from one setting to the next
- ☆ Cat 3 works on 15", 30", and Twin Row spacing
- ☆ Cat 4N works on 15" & 30" only



## Introduction

Thank you for choosing the TRC kit to convert your 1790 or 1795 split row planter to Twin-Row planting. This conversion usually can be accomplished in a day or two, depending on your level of experience and the number of hands available. The planter must be attached to the tractor and may be folded or unfolded for installation. It is best to work on level concrete.

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- Visit [www.ezoffset.com](http://www.ezoffset.com) for latest information

### STEP 1- Marking Layout

Begin by relieving all down pressure (spring or air) from the row units. Lower entire planter (including wing rockshafts and hitch stands) to the floor, in a level position. It's usually helpful to measure all row unit spacings to get a general idea if any row units are improperly spaced. Incorrect spacing can be corrected later if desired. Generally they run pretty true. All rear row units will be moved 7 ½" to the right as viewed from the rear. IMPORTANT- Before detaching any row units, use a permanent marker to mark on top of wing mounting plates the original position of bolts that attach rear row units. Also mark a vertical line on the frame tubing to the right side of the 5 center section rear row units mounting brackets. These lines will be used later to reference where to reattach moved row units and to make it easier to return planter to original configuration if ever desired.

### STEP 2 - Detaching Rear Row Units

Remove meter units from rear row units. To do this, remove all flexible cable drives and set these aside. Disconnect other vacuum hoses, seed delivery hoses, electrical connectors for monitor and clutches, and air lines (push in ring on fitting while pulling on line) as necessary. (Some plastic tie straps may need to be cut.)

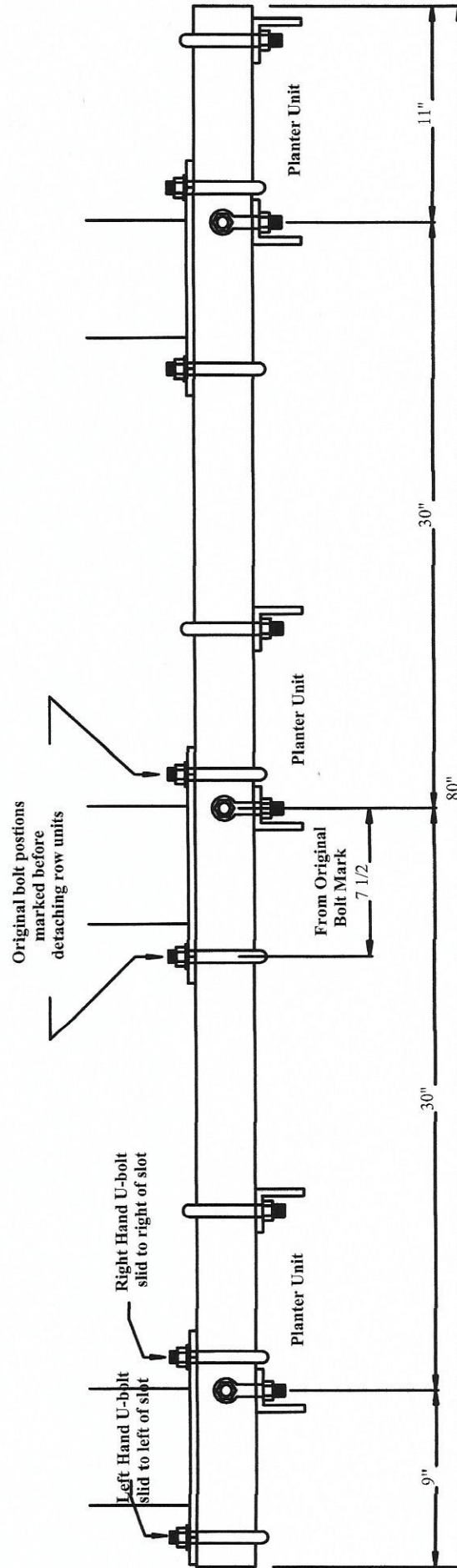
Unbolt units and carefully roll them rearward, taking care to avoid pinch points especially around parallel linkages. On newer planters, electrical harness connector at front- top of unit will need to be disconnected. Bolts on wings should be set aside and saved. Nuts, washers, and U-bolts will be reused. At this time also, unbolt center section lower step assembly, attached hand rail, and upper left handrail. Lower handrail on step will be relocated in place of upper handrail later.

### STEP 3 - Reattach Wing Section Row Units

Referring to Fig. A, attach 3"x7" rectangular tubes with holes to wing rockshaft mounting plates using M16 x110mm (shorter)U-bolts, heavy washers, and nuts previously removed from row units. Slide right hand U-bolts to the far right of slots and left hand U-bolt to the far left of slots. Position tubing with hole centers 7 ½" to the right of left-hand marks made previously. Attach upper and lower 5/8" Eye-bolts with 5/8" x 9 ½" bolts and flange nuts positioned on top. Snug tighten Eye-bolts and 9 ½" bolts and nuts. Eye-bolts should be square with tubing face and upper and lower Eye-bolts should also be vertically square with tubing top. Repeat this procedure for all wing sections. 12/24 planters have 2-80" wing sections, 16/32 planters have 2-80" sections on the outer wings and 2-50" sections on the inner wings.

# Wing Section Layout Fig. A

Top View





Roll row units back up to installed Eye-bolts on unit left-hand and secure unit right-hand with a M16 x 110mm U-bolt and 5/8 nuts on the eye bolts as in Fig. A. Hand tighten nuts without washers. Fine tune twin row spacing to 7½" as needed. Some variation is normal. Row units should remain relatively square to tubing and 30" center to center. Tighten all hardware to this point. Torque 5/8" and 16mm bolts to 150 ft.-lbs.

#### STEP 4 - Reattach Center Section Row Units

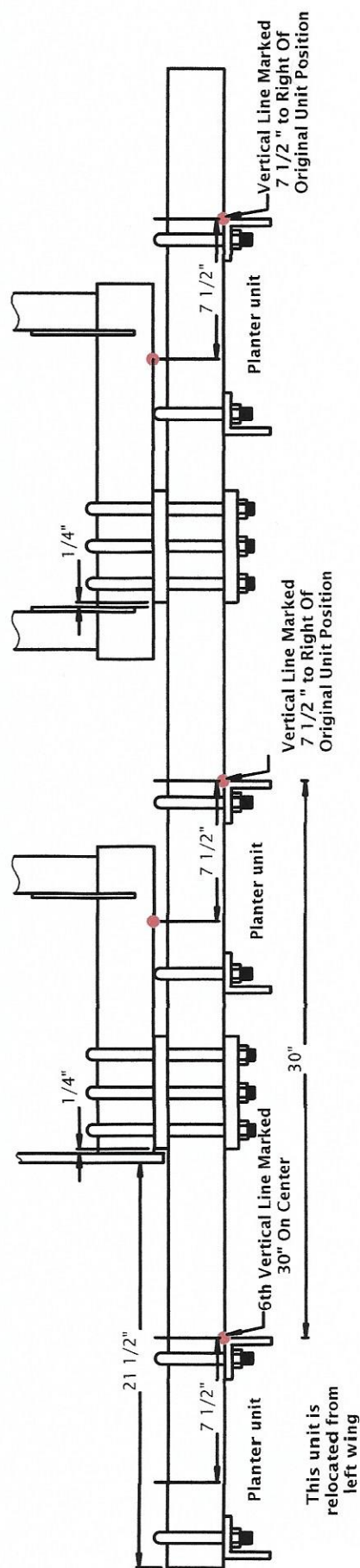
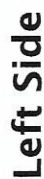
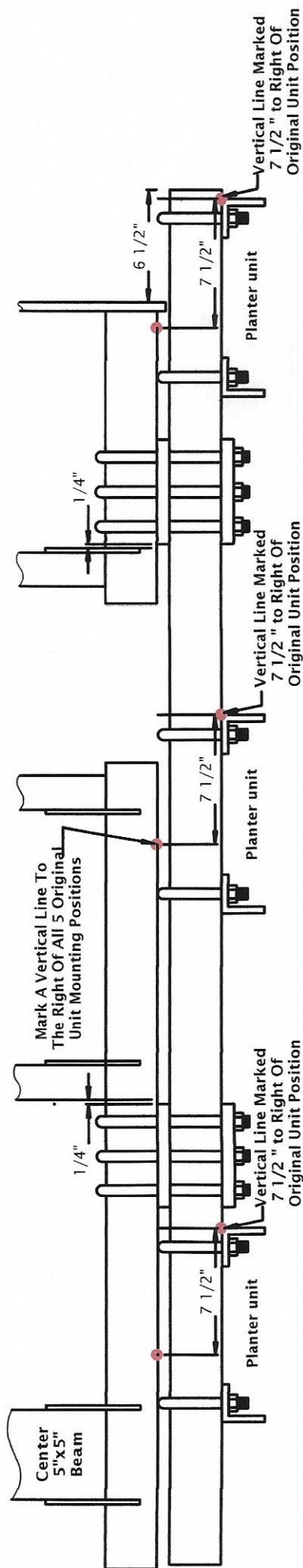
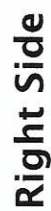
Referring to Fig. B, assemble right side 3"x7" rectangular tubes without holes, using ¾" thick mounting plates, 5/8" x7" (longer) U-bolts, and 5/8" nuts (no washers) as shown. Slide mounting plates to dimensions shown with tubing extending 6 ½" beyond the right side of planter frame. Repeat this for left side, sliding mounting plates to dimensions shown and extending 21 ½" to left of planter frame. Check that mounting plates are square to planter mounting tubes. Tighten U-bolts making sure top of left and right tubes are even with planter mounting tubing and with each other. (5/8" - 150 ft.-lbs.)

Using a square, transfer vertical lines (previously marked on frame tubing) 7 ½ "to the right onto newly installed tubing. These vertical lines should be 30" on center. Mark one additional vertical line 30" from leftmost line for a total of 6 lines. Roll center row units back up to installed tubing. Attach units to the left of vertical lines using original U-bolts as shown. As on wings, fine tune twin row spacing, keeping units square to frame and on 30" spacing. Mount unit relocated from left wing to left center section tubing referencing leftmost vertical line. Attach with M16 x 110mm U-bolts. Tighten hardware to this point. (M16 - 150 ft.-lbs.) Replace meter units back on row units.

#### STEP 5 - Reattach Ladder Step and Handrail

Reattach center step assembly to center section left and right side tubing, evenly spaced between row units in center of planter. Smaller handrail is reattached to left side of step assembly as shown on picture page. On ExactEmerge models, relocate seed cup bracket as needed. Longer leg of handrail is vertical. Bottom hole of longer leg is bolted to existing hole in step assembly using original hardware. Position rail leg vertically and drill hole to accept second bolt. Remove bolt from bottom step as shown and position second hole from end of shorter leg in line with this hole. Use original handrail bolt, curved washer and nut.

### Top View

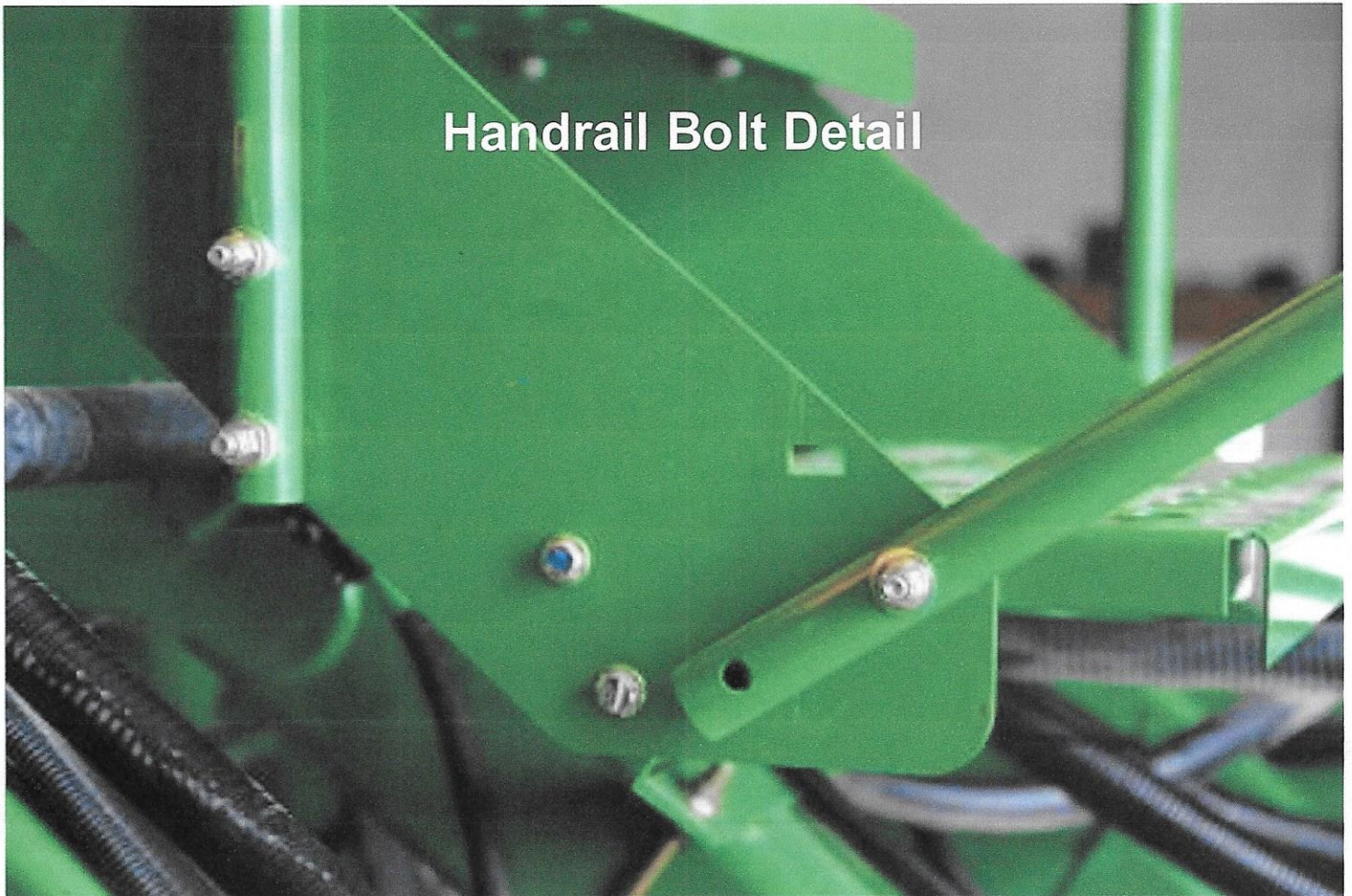




Handrail Mounting



Handrail Bolt Detail





## STEP 6 - Connecting Relocated Row Unit

Remove left vacuum access cover from center frame and replace with provided plate with vacuum hose fitting. Cut a hole in the cover gasket just large enough for the vacuum fitting. Do not over tighten 4 plate bolts. Remove relocated row unit vacuum hose from fitting on left wing frame. Use this hose to connect new fitting just installed to relocated row meter. Plug unused fitting on frame with yellow rubber vacuum plug supplied with planter for rear units.

Pull seed supply hose for this row out of bundle of hoses going to left wing and re-route it back to center frame next to stair steps and along 3"x7" tubing to relocated row. Make sure to maintain clearances for folding.

Locate electrical harness connector and reroute it back to wing frame. Connect supplied extension cable to this connector and route it back to relocated row following path of seed supply hose. Make connection at row unit.

For planters equipped with pneumatic down pressure, locate pair of air line tees on wing as shown on Fig. C. Relocate right-hand tee, 7" line and 36" line (Green) to supply relocated row. Reconnect 60" line (Blue) to tee left on wing (Black). Do not cut lines.

Remove flex-shaft gearbox drive from wing hex jackshaft by pulling safety pin and sliding off of mounting pins. Then rotate and slide off of hex shaft. On hydraulic driven models, this gearbox will be relocated to center section hex shaft next to gearbox which is at far left end of center frame. On ground driven models it will be next to the second gearbox from the left, to the right of transmission. (See photo page) Slide gearboxes side by side onto hex shaft and insert two provided 3/8"x 4 1/2" bolts with threads toward right side. Install new longer flex-shafts into these two gearboxes before bolting in place. Thread a flange nut on each bolt with flange facing outward leaving about 3/4" of thread exposed. Slide this assembly on hex shaft into place and bolt to mounting. If necessary, loosen clamps holding hex shaft and slide hex shaft to the left enough to support double gearboxes, and then retighten.

## STEP 7 - Reconnecting Row Units

Continue by reconnecting vacuum hoses, seed delivery hoses, air lines with provided extensions, and electrical connections. Finding the best routing is somewhat more art than science and requires some trial and error. Original retaining loops may not always be used. Obviously try to avoid stretching hoses, lines, and cables and avoid pinch points and moving parts. Hoses that lightly rub against hex shafts don't seem to be a problem. Take your time and use plenty of plastic tie straps.

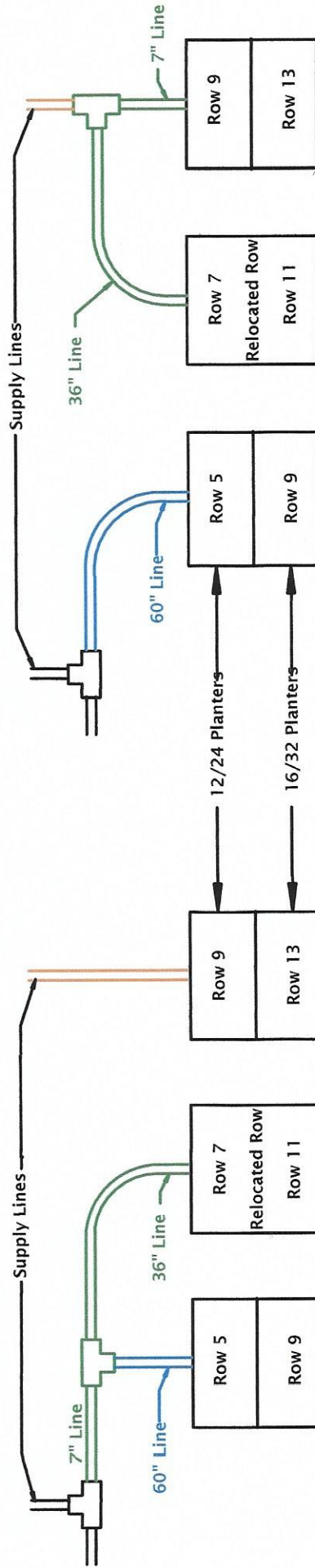
Install new flexible drive cables. 6 longer cables go to center rows and remaining shorter cables go to wing units. End with single groove goes forward and double groove goes to back by meter. IMPORTANT - Carefully insert cable end into sockets - DO NOT FORCE. Flex drive cables may be ruined if square cable ends unwind when forced or rotated backwards. Most original cable retaining loops will not be used. Cables need the most length when planter is raised. Route cables as shown on picture page.



## Pneumatic Air Lines - Fig. C

Note: Line lengths may vary from planter to planter

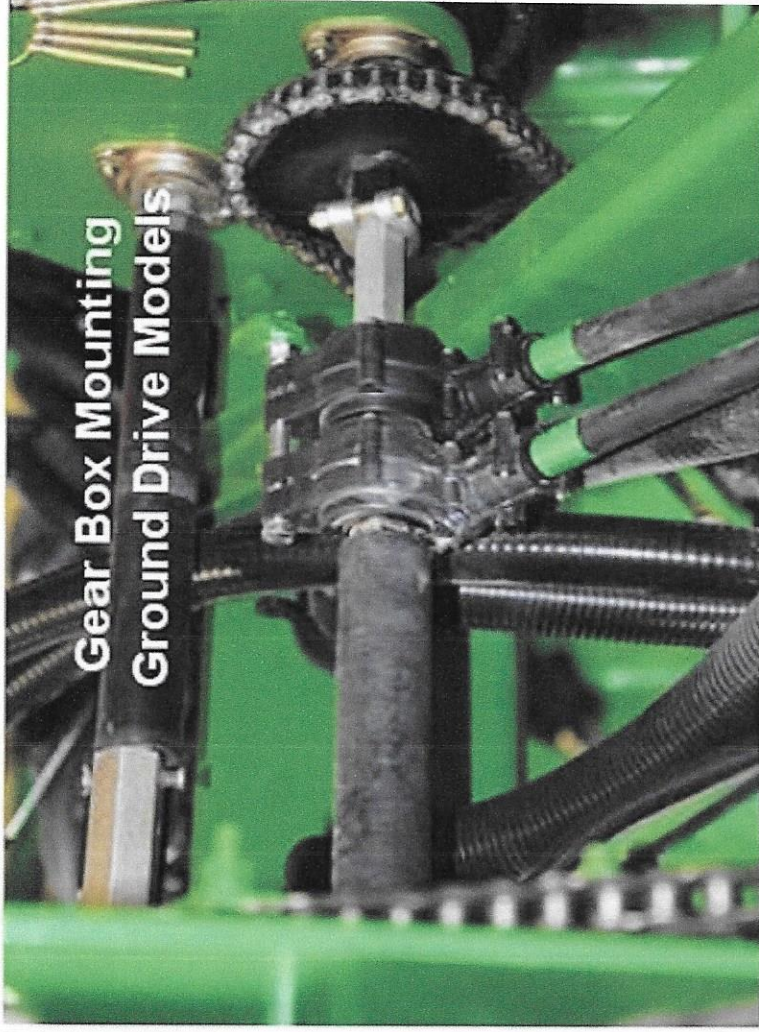
### Original Routing



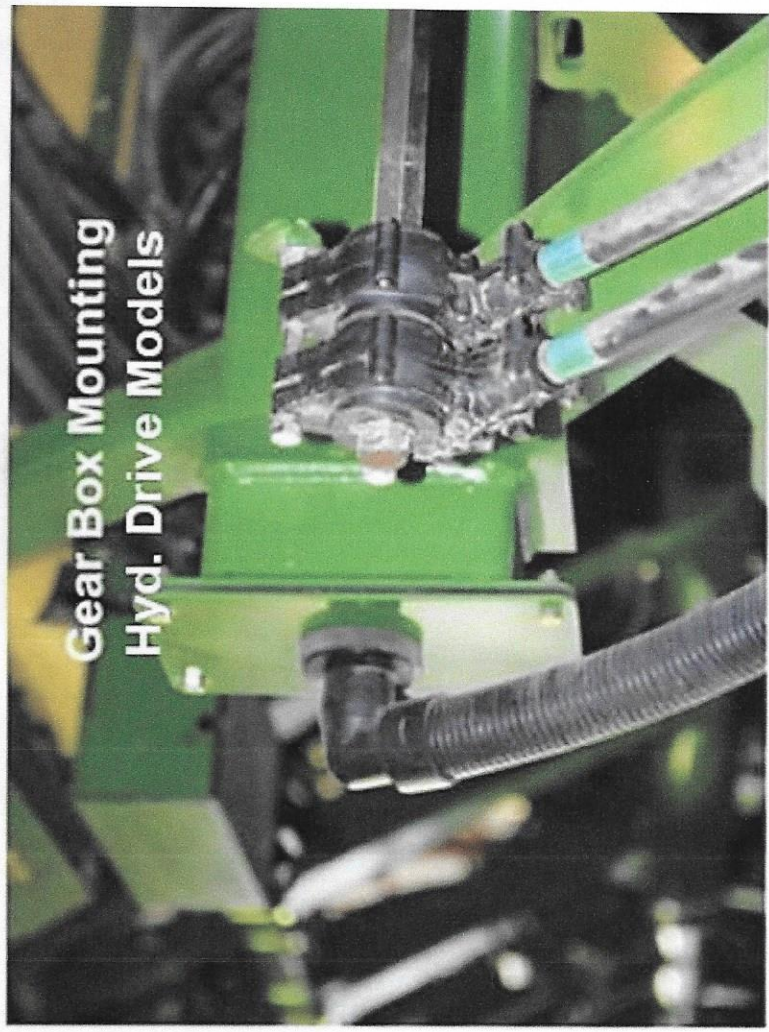
### New Routing



**Gear Box Mounting  
Ground Drive Models**



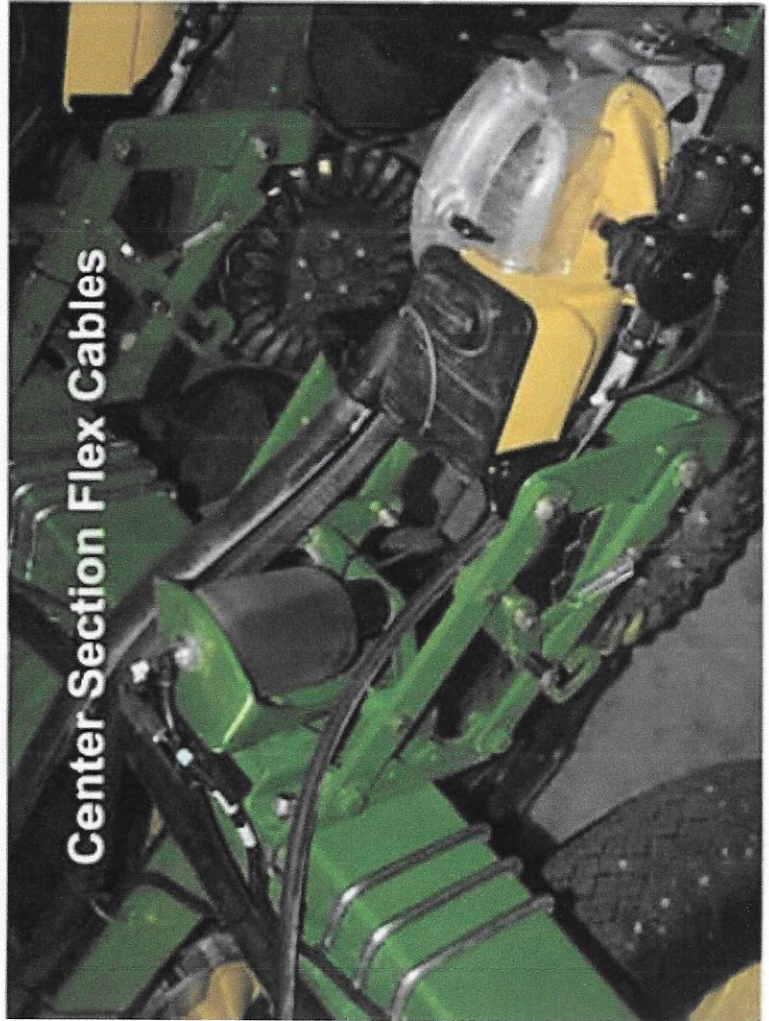
**Gear Box Mounting  
Hyd. Drive Models**



**Wing Flex Cables**



**Center Section Flex Cables**





### STEP 8- Installing Drive Sprocket - Ground Drive Models

This step may be skipped for hydraulic driven models. Replace 19 tooth drive sprocket on transmission drive wheel shaft with 14 tooth sprocket (JD part number. Shorten chain to appropriate length. Typically use population chart for 15" rows and 40 cell meter disk. Population will be 79% of rates shown on chart.

### STEP 9 - Installing EzOffset 3P Hitch Crossbar

For this step, it is usually best to unfold and raise planter to reduce weight on hitch. If you need to leave it folded, lower wing wheels to take weight off of hitch. Be careful hitch is heavy and awkward! Lower main hitch onto stable stand or lift with other means. Unhook tractor quick hitch and roll forward slightly. Remove original crossbar and replace with EzOffset 3P.

### STEP 10 - Check Setup

Installation is complete. When configuring planter in screen, select the Split Row box, not the Twin Row box. Check hoses, lines, and cables etc. when folding and unfolding and in field after use. Note of Caution: Because of increased torque on rear center section, we do not recommend row unit down pressure of more than 250 lbs.