Clutch Installation – White 9000 row unit

NOTE: Indented items indicate parts included in an assembly listed above		**Quantities**	
Part Name/Description	**Part Number**	**Standard Rows**	**Interplant Rows**
4 row clutch installation kit – White 9000	**4101252**	**1**	
4 row clutch installation kit – White 9000 Interplant	**4101253**		1
Hex head bolt – 1/2 x 2-3/4 in.	2002001-50275	4	4
Hex head bolt – 1/2 x 5 in.	2002001-50500	4	4
Hex head bolt – 1/2 x 1-1/2 in.	2002003-50150	4	4
Carriage bolt – 1/4 x 1 in.	2002021-25100	12	12
Carriage bolt – 5/16 x 1 in.	2002021-31100	12	12
Hex nut – 1/4 in.	2002051-25	12	12
Hex serrated flange nut – 5/16 in.	2002057-31	12	12
Split lock washer – 1/4 in.	2002061-25	12	12
Flat washer – 1/4 in.	2002071-25	12	12
Flat washer – 1/2 in.	2002071-50	8	8
Hex serrated flange nut – 1/2 in.	2002225-50	16	16
Hex head bolt – 1/2 x 1-1/4	2002401-50125	4	4
Flat washer – 5/8 in.	2002487-62	12	12
Cable tie – 6 in.	2002817-6	8	8
Installation instructions	2006228	1	1
Output chain – 62 links (4 chains per package)	4002834	1	1
Input chain – 72 links (4 chains per package)	4002835	1	
Input chain – 95 links (4 chains per package)	4003691		1
Sprocket spacer	4004082	4	4
Clutch mounting bracket	4004105	4	4
Round spacer – 1/2 ID x 1 OD x 3-9/16 in. long	4004118	4	4
Chain tensioner bracket	4004168	4	4
Round spacer – 1/2 ID x 1 OD x 5/8 in. long	4004170	4	4

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Important Notices

Please carefully follow these step-by-step instructions. If you have questions, contact ***Ag Leader Technology*** at 515-232-5363 x 1.

Direction words (LEFT and RIGHT) are commonly used when describing an installation procedure. Interpret direction words as if standing behind equipment facing forward.

Signal words (**DANGER, WARNING, CAUTION** and *NOTE*) are provided to draw attention to information that is important for the safe/correct installation and operation of this product.

- **DANGER** – Indicates an imminently hazardous situation that, if not avoided, is likely to result in serious injury or death.
- **WARNING** – Indicates a potentially hazardous situation that, if not avoided, may result in serious injury or death.
- **CAUTION** – Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury.
- **CAUTION** – Indicates practices that may result in property damage, but do not involve personal injury.
- *NOTE* – The preferred signal word to address practices not involving property damage, or personal injury.

Section Contents

Preliminary Installation Requirements

WARNING

- **Implement must be lowered to ground or resting on hydraulic safety stops before beginning installation. Do not rely on hydraulic system alone to support implement. Hydraulics can fail – resulting in serious injury or death.**

- **Read these instructions completely before beginning installation. Pay particular attention to Figures 1, 2 & 3. They may help to clarify any questions that arise about the installation.**

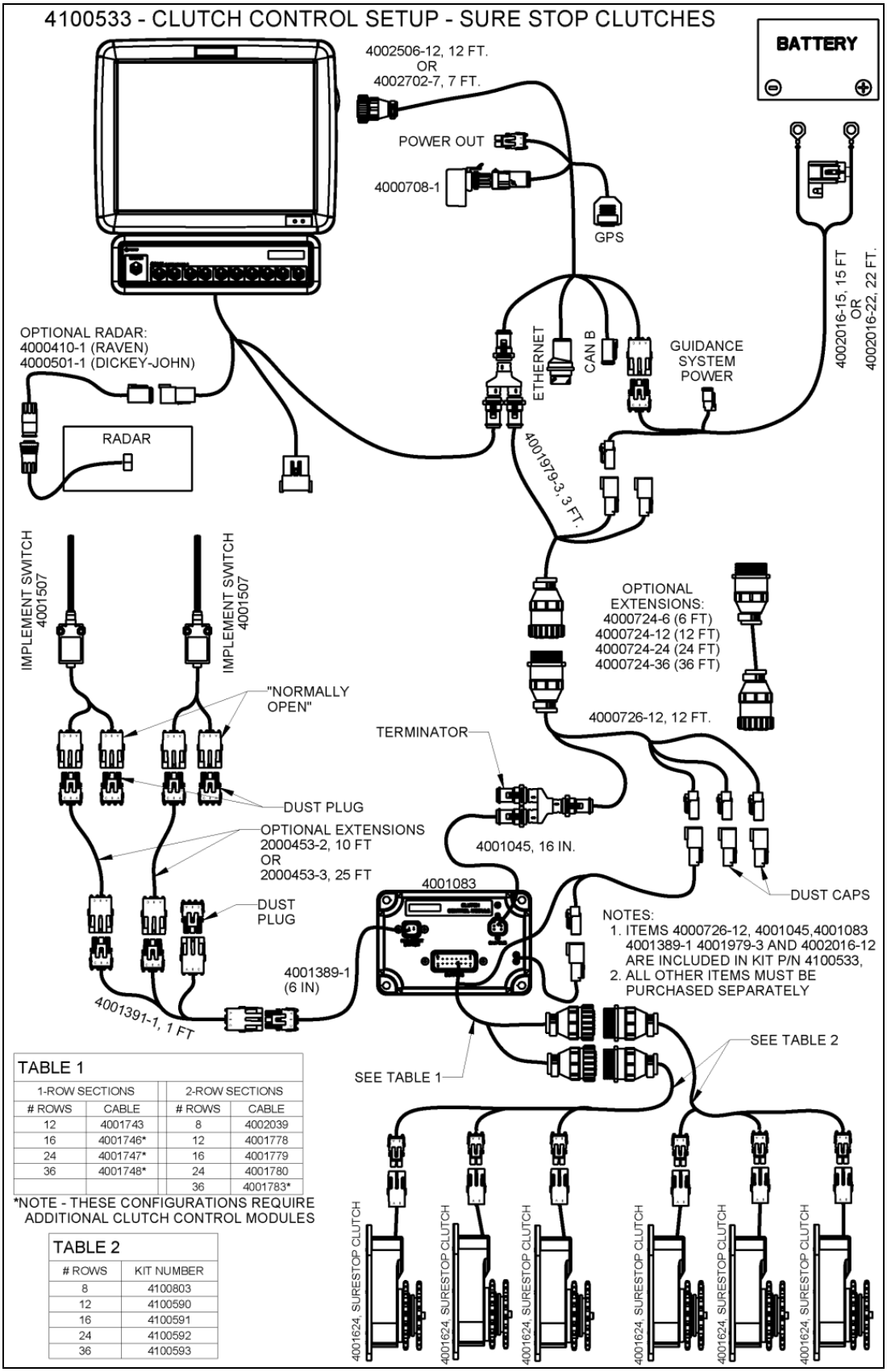

TABLE 1

1-ROW SECTIONS		2-ROW SECTIONS	
# ROWS	CABLE	# ROWS	CABLE
12	4001743	8	4002039
16	4001746*	12	4001778
24	4001747*	16	4001779
36	4001748*	24	4001780
		36	4001783*

*NOTE - THESE CONFIGURATIONS REQUIRE ADDITIONAL CLUTCH CONTROL MODULES

TABLE 2

# ROWS	KIT NUMBER
8	4100803
12	4100590
16	4100591
24	4100592
36	4100593

Figure 1. Single Module SureStop Clutch Layout

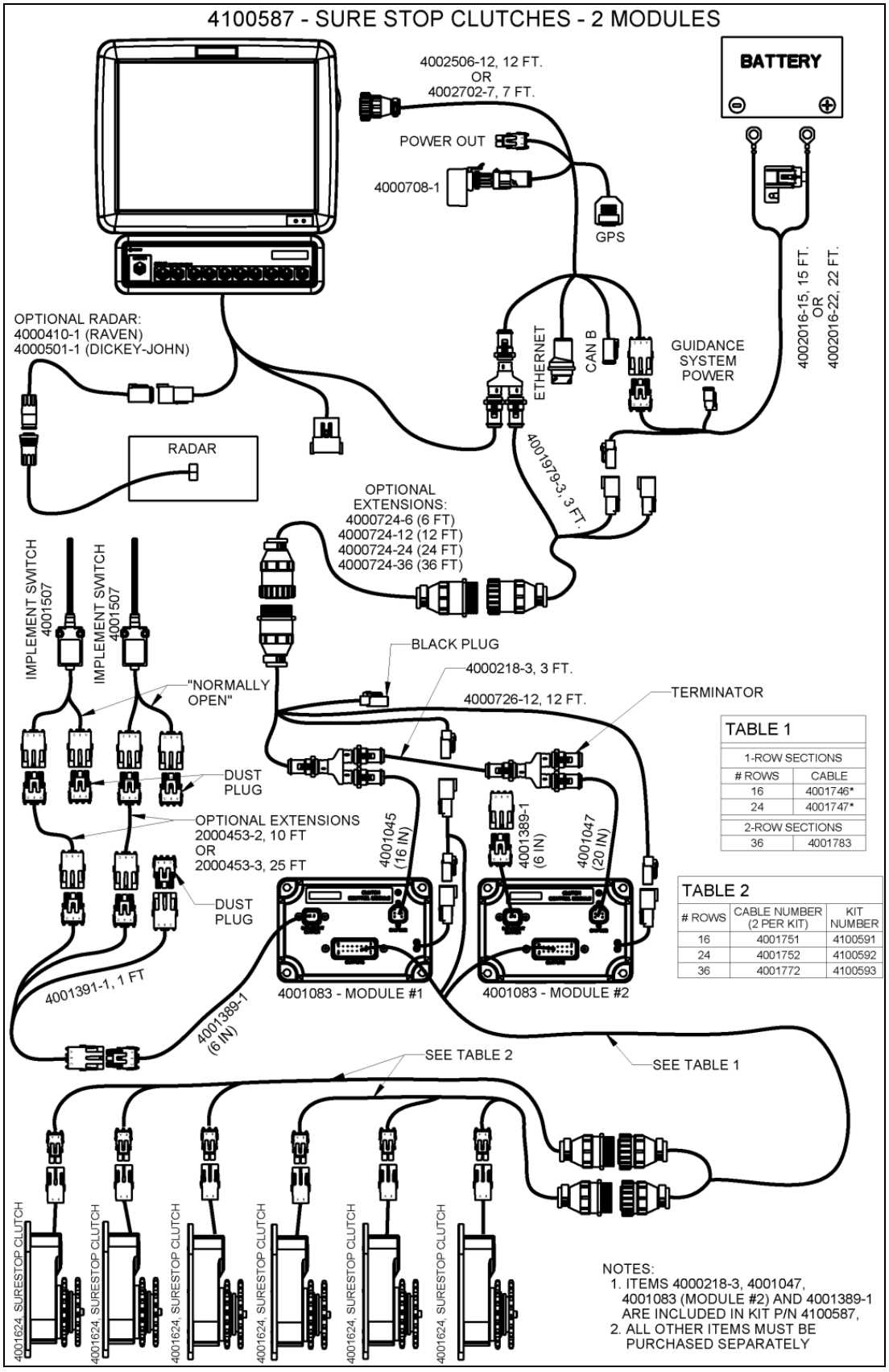

TABLE 1

1-ROW SECTIONS	
# ROWS	CABLE
16	4001746*
24	4001747*
2-ROW SECTIONS	
36	4001783

TABLE 2

# ROWS	CABLE NUMBER (2 PER KIT)	KIT NUMBER
16	4001751	4100591
24	4001752	4100592
36	4001772	4100593

Figure 2. Double Module SureStop Clutch Layout

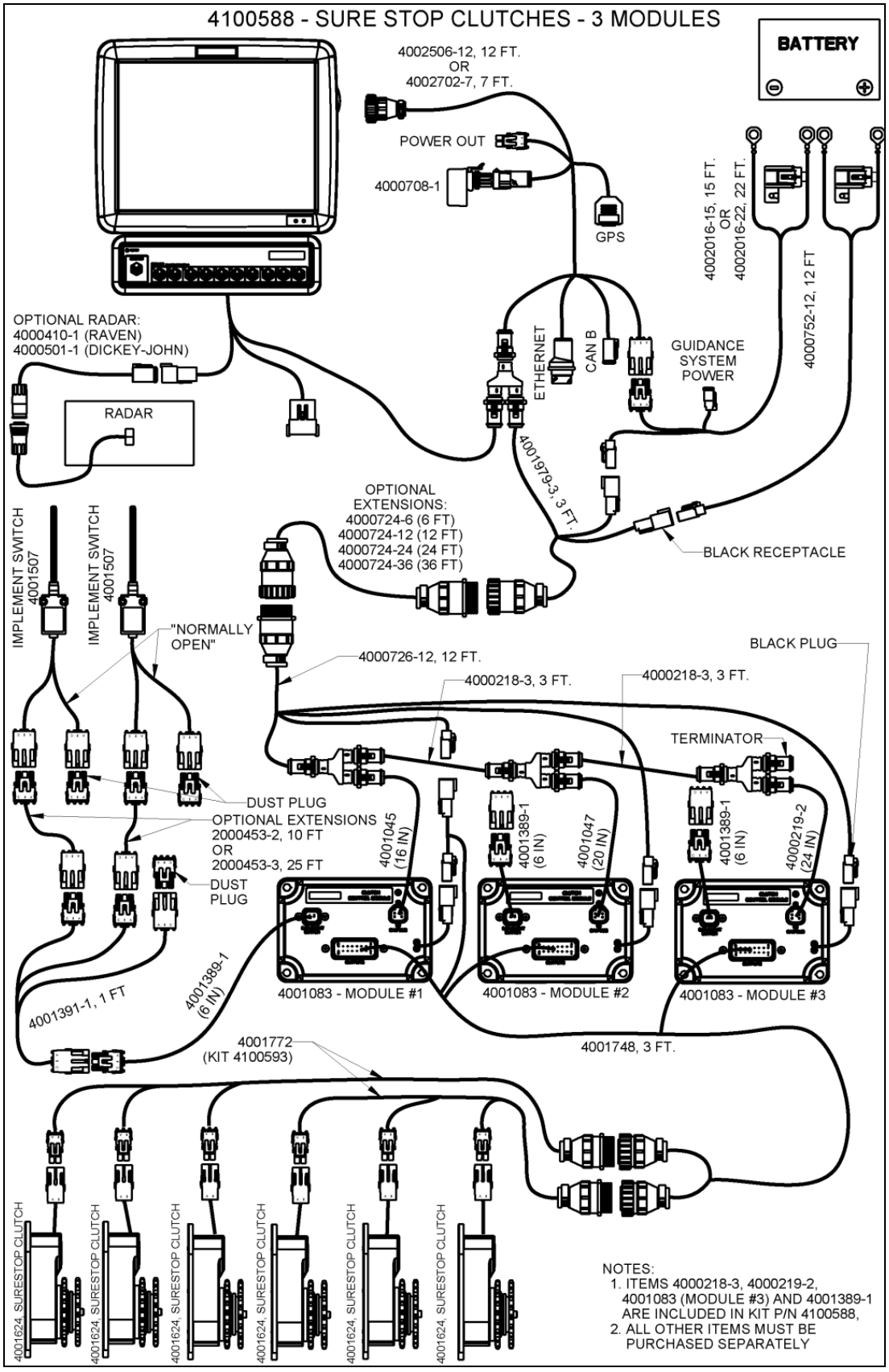

Figure 3. Triple Module SureStop Clutch Layout

Removal of Original Chain, Tensioner & Idler	Required Parts (quantities listed are per row):	Part Number:
	(1) Hex head bolt – 1/2 x 1-1/2 in.	2002003-50150
	(1) Flat washer – 1/2 in.	2002071-50
	(1) Hex serrated flange nut – 1/2 in.	2002225-50

1. Remove seed meter from row unit.

2. Locate serviceable connecting link of drive chain. Disconnect serviceable link and then remove chain from row unit.

3. Remove molded plastic chain tensioner and idler from row unit as shown in Figure 4. Chain tensioner and torsion spring will be reinstalled in a following section. Idler will not be reused.

4. With original tensioner and idler bolts removed, side plate with seed meter sprocket drive will also be free from row unit. Install provided 1/2 x 1-1/2 in. hex head bolt with a flat washer through upper mounting hole of side plate (where idler bolt was previously installed) with a serrated flange nut on the outside. Do not fully tighten upper mounting bolt until lower mounting bolt is installed in the following section.

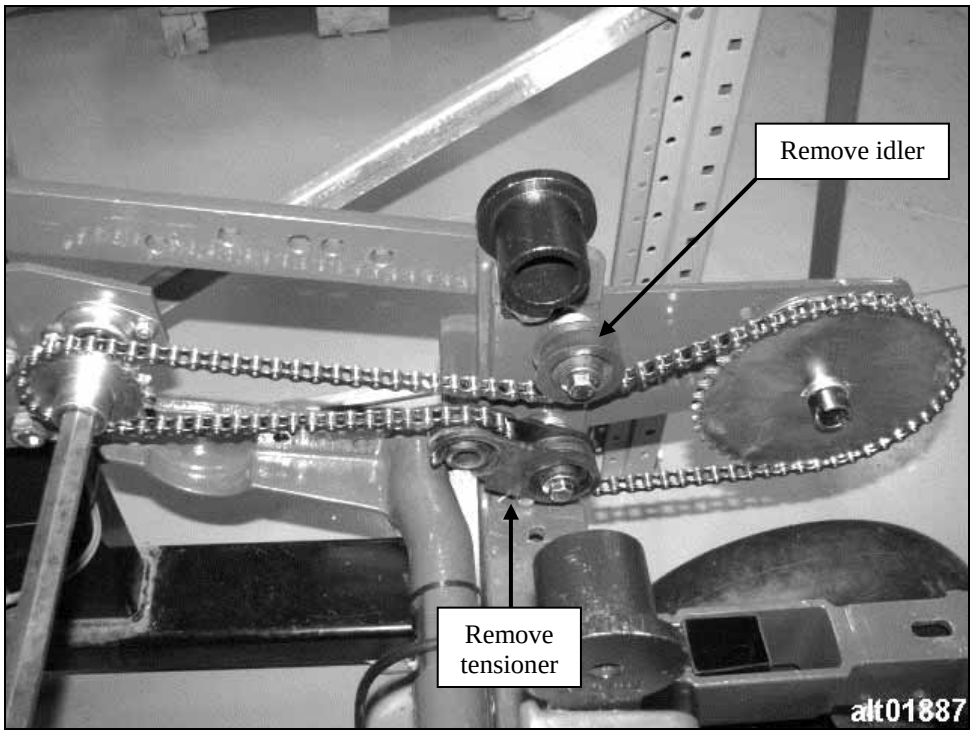

Figure 4. White chain tensioner and idler

Reconfiguring Drive Chain Tensioner	**Required Parts (quantities listed are per row):**	**Part Number:**
	(1) Chain tensioning bracket	4004168
	(1) Hex head bolt – 1/2 x 1-1/4 in.	2002401-50125
	(1) Flat washer – 1/2 in.	2002071-50
	(2) Hex serrated flange nut – 1/2 in.	2002225-50
	(1) Hex head bolt – 1/2 x 2-3/4 in.	2002001-50275
	(1) Spacer – 1/2 I.D. x 1 O.D. x 5/8 long	4004170

1. Position chain tensioning bracket on right side of lower parallel arm as shown in Figure 5. Secure using provided 1/2 x 1-1/4 in. bolt with a serrated flange nut.

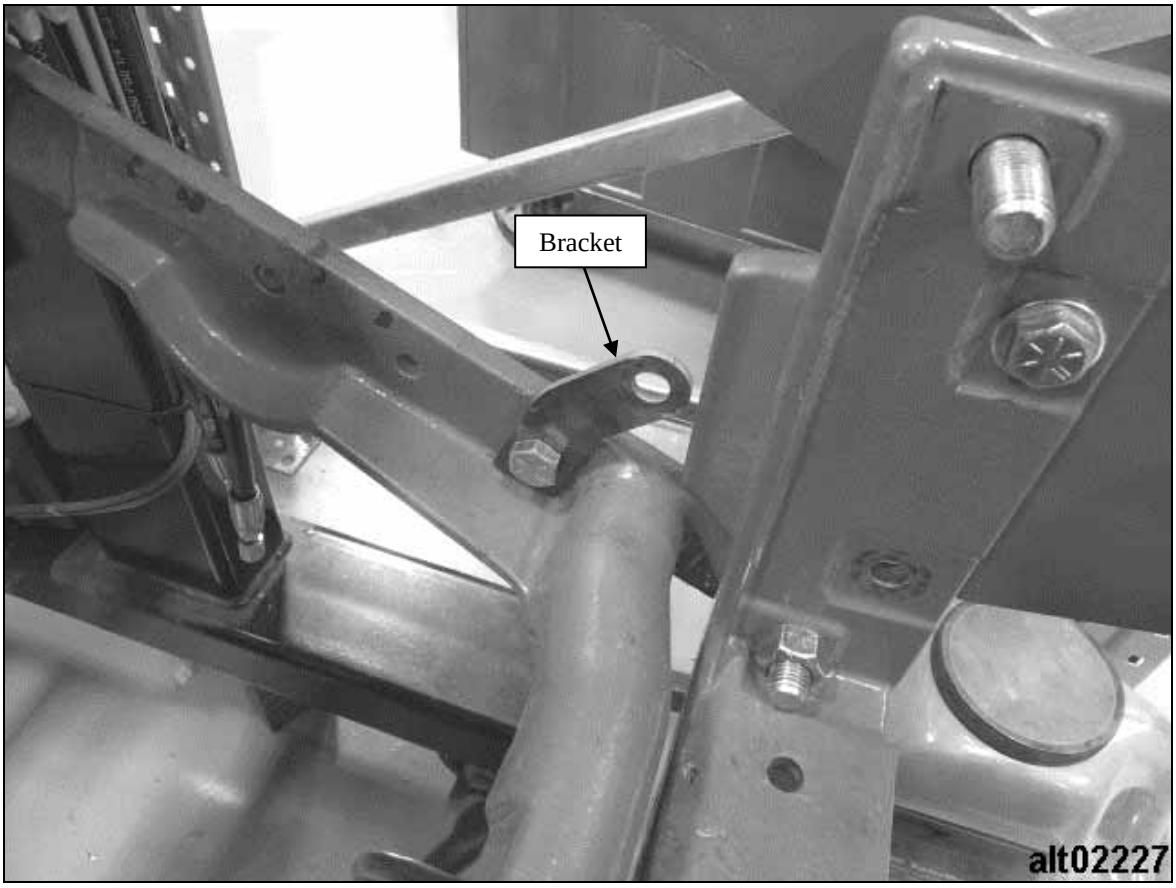

Figure 5. Bracket installed on lower parallel arm for mounting chain tensioner

2. Configure original chain tensioner with a 1/2 x 2-3/4 in. bolt, flat washer, bushing and spacer as shown in Figures 6 & 7. Bushing came with original tensioner. Bolt, washer and spacer are provided in kit.

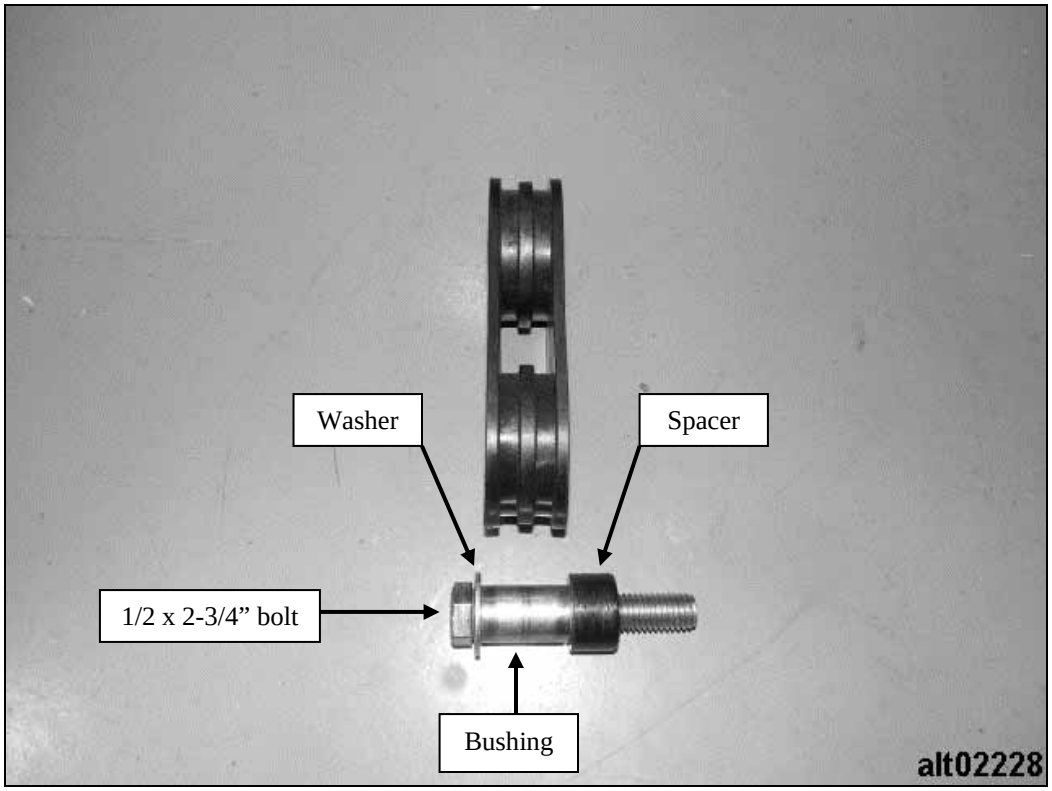

Figure 6. Proper orientation of washer, bushing and spacer on tensioner bolt

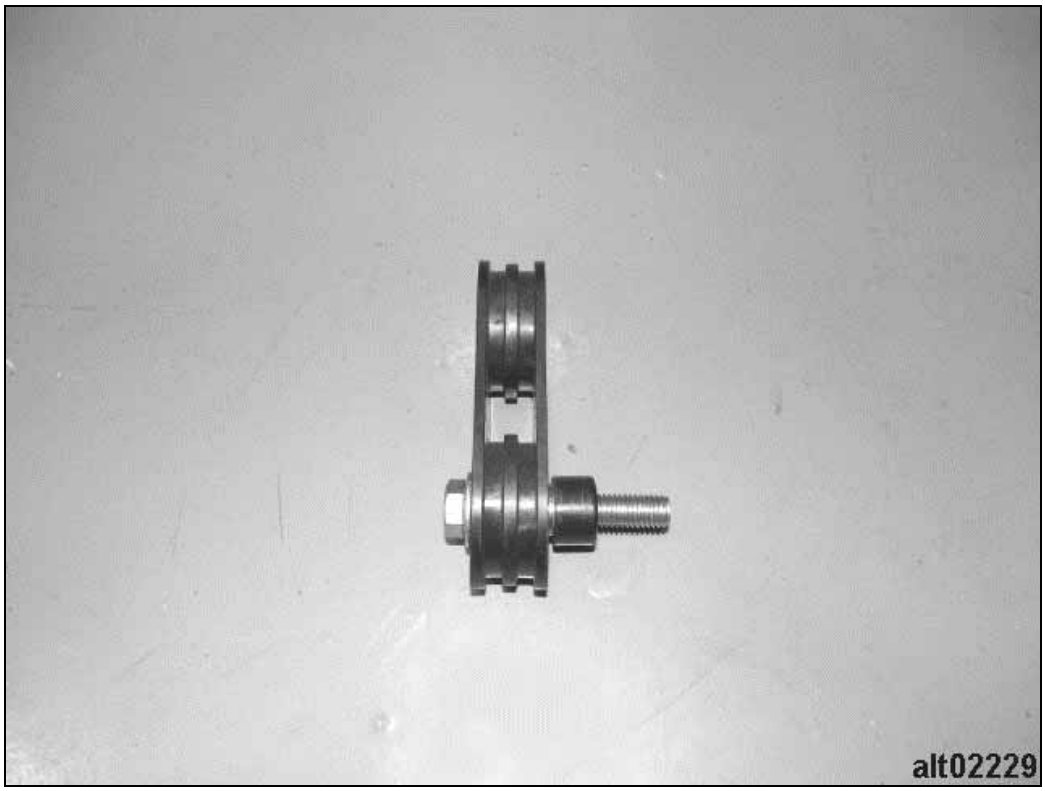

Figure 7. Tensioner prepped for torsion spring installation and mounting to bracket

3. Measure length of hook on torsion spring as shown in Figure 8. Trim length to ≤ 1/2 in. to prevent hook from interfering with input chain. This step is not necessary if hook length is already 1/2 in. or less.

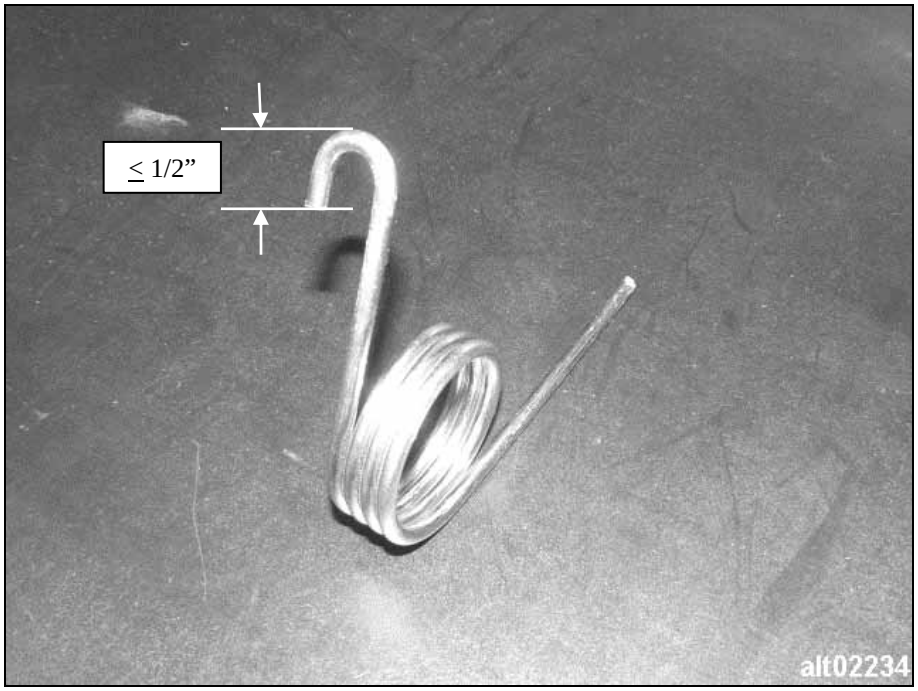

Figure 8. Torsion spring

4. Install original torsion spring over tensioner bolt and secure bolt to mounting bracket with a serrated flange nut as shown in Figure 9. Spring tine must rest against cross pipe of lower parallel arm bracket.

Figure 9. Tensioner installed

Installing Clutch Bracket	Required Parts (quantities listed are per row):	Part Number:
	(1) Clutch bracket	4004105
	(3) Flat washer – 5/8 in.	2002487-62
	(1) Hex head bolt – 1/2 x 5 in.	2002001-50500
	(1) Spacer – 1/2 ID x 1 OD x 3-9/16 in. long	4004118
	(1) Hex serrated flange nut – 1/2 in.	2002225-50

1. Locate clutch mounting bracket as shown in Figure 10.

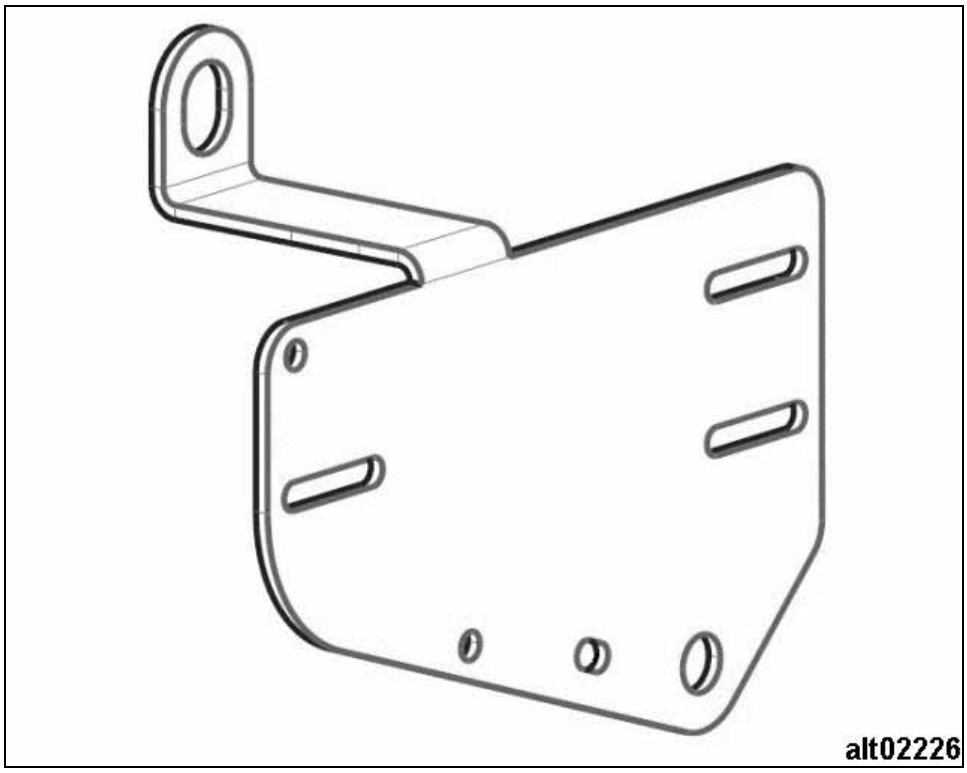

Figure 10. Clutch mounting bracket

2. Secure upper mounting tab of bracket as follows depending on row unit configuration:

   a. For row units with seed boxes, loosen and remove nut that secures upper right parallel arm to row unit as shown in Figure 11. Install clutch bracket over top of pivot bracket and reinstall nut (finger tight only for now). 5/8 in. flat washers are not used in this configuration.

   b. For row units without seed boxes (bulk-fill), loosen and remove nut that secures upper right parallel arm to row unit. Install (3) 5/8 in. flat washers to account for thickness of pivot bracket, then install clutch bracket and hex nut (finger tight only for now).

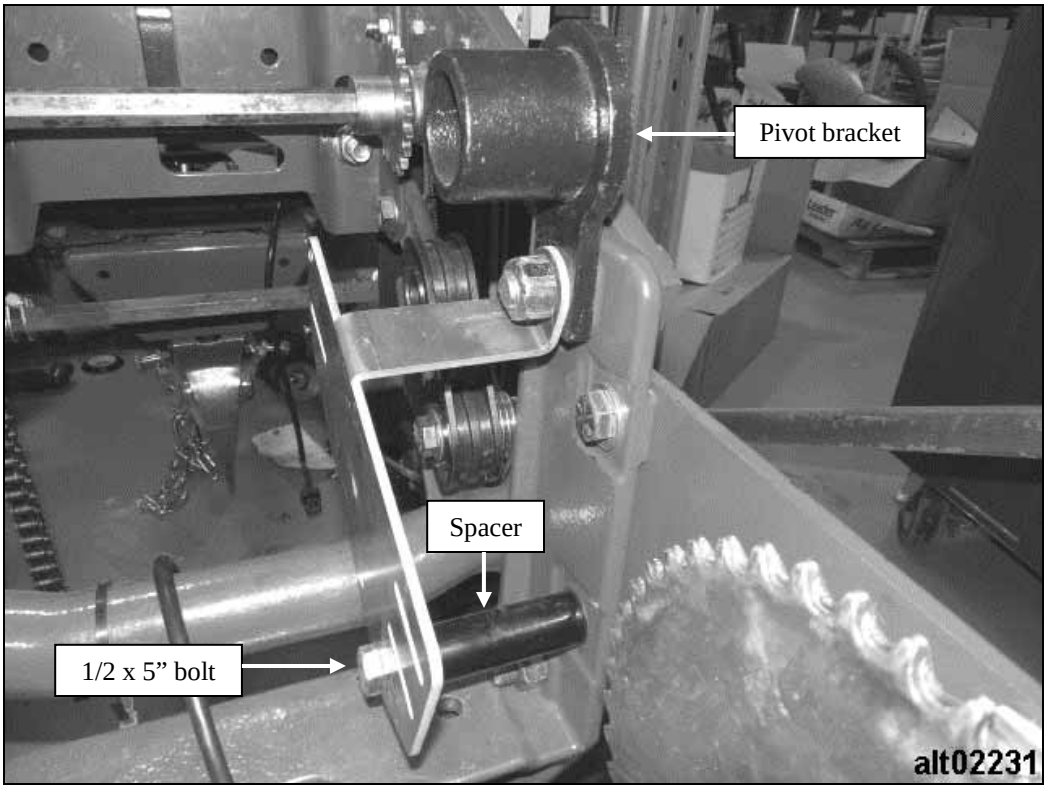

Figure 11. Clutch bracket installed

3. Secure lower end of clutch bracket using a 1/2 x 5 in. bolt with a 3-9/16 in. spacer between bracket and row unit and then a serrated flange nut on the outside.

4. Tighten upper 1/2 in. side plate bolt that was left loose in an earlier step, and also tighten upper clutch bracket bolt.

Installing Seed Meter Drive Sprocket Spacer	Required Parts (quantities listed are per row):	Part Number:
	(1) Drive sprocket spacer	4004082
	(3) Carriage bolt – 5/16 x 1 in.	2002021-31100
	(3) Hex serrated flange nut – 5/16 in.	2002057-31

1. Remove (3) bolts securing seed meter drive sprocket assembly from row unit as shown in Figure 12. Original bolts and nuts will not be reused for this application.

2. Install provided 3/16 in. thick, triangular shaped spacer between drive sprocket assembly and row unit side plate as shown in Figure 13.

3. Secure drive sprocket assembly to row unit side plate using provided 5/16 x 1 in. carriage bolts with hex serrated flange nuts on the outside. **Do <u>NOT</u> fully tighten nuts yet.** They will be tightened in a later step after proper drive sprocket position has been verified.

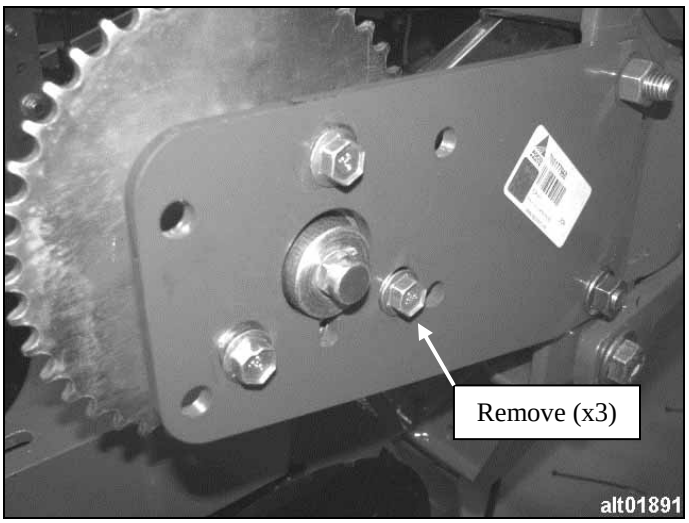

Figure 12. Original drive sprocket fasteners to remove

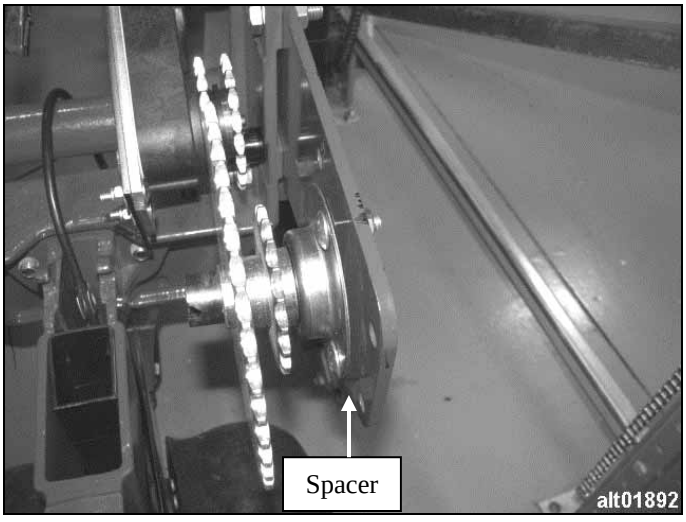

Figure 13. 3/16 in. thick spacer installed between drive assembly and side plate

Installing Input Chain, Output Chain & Clutch	**Required Parts (quantities listed are per row):**	**Part Number:**
	(1) SureStop clutch	4001624
	(1) Output chain – White 9000	4002834
	(1) Input chain – White 9000 Standard	4002835
	(1) Input chain – White 9000 Interplant (if applicable)	4003691
	(3) Carriage bolt – 1/4 x 1 in.	2002021-25100
	(3) Flat washer – 1/4 in.	2002071-25
	(3) Split lock washer – 1/4 in.	2002061-25
	(3) Hex nut – 1/4 in.	2002051-25

1. Install output chain on seed meter sprocket and let it hang loosely in preparation for clutch installation (To differentiate chains, output chain is shorter than input chain and does not have serviceable links).

2. Position output chain (hanging on seed meter sprocket) onto inner sprocket of clutch and then begin securing clutch to bracket using provided 1/4 x 1 in. carriage bolts with flat washers, lock washers and hex nuts. Do not fully tighten clutch yet. See Figure 14 for reference.

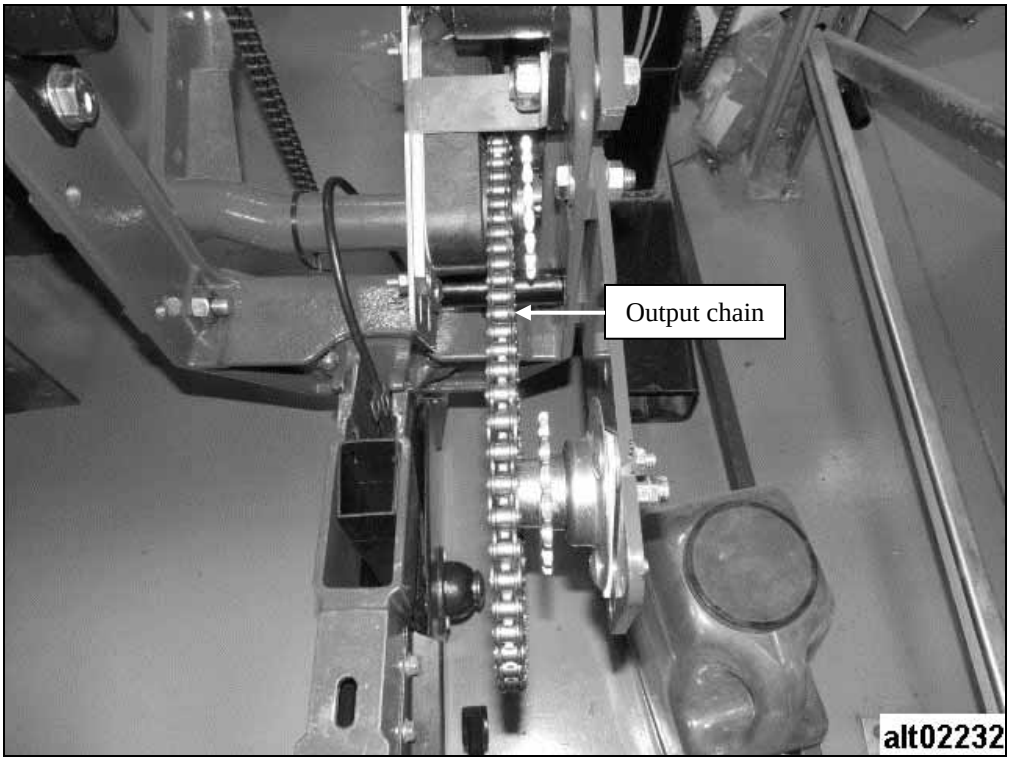

Figure 14. Clutch and output chain installed

3. Install input chain from drill shaft sprocket to input (outer) sprocket on clutch through tensioner as shown in Figure 15.

NOTE: *If planter is equipped with interplant row units, make sure to choose the proper input chain because the lengths are different between standard and interplant units.*

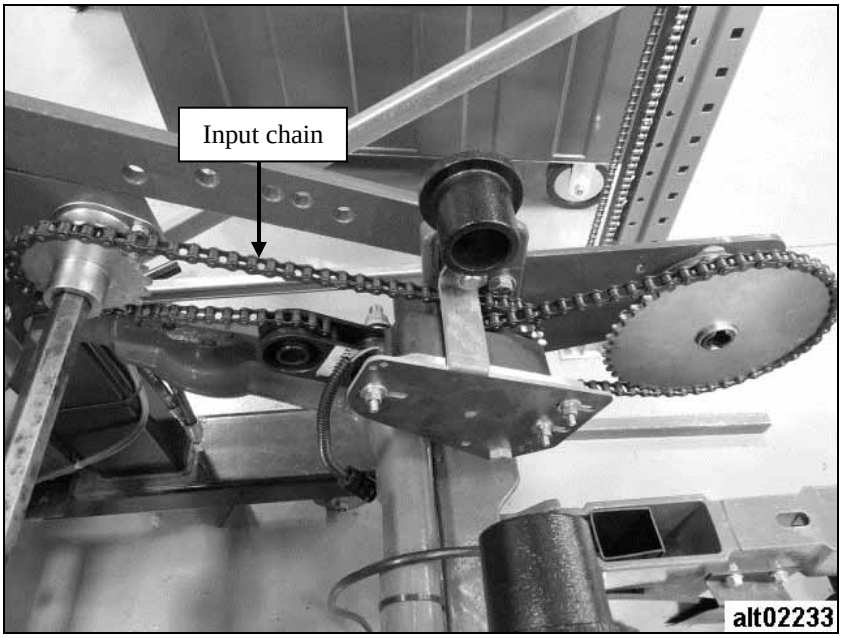

Figure 15. Input chain configuration

4. Adjust position of drill shaft sprocket as necessary to line up properly with clutch. In some cases, it may be necessary to move bearing hanger to other side of bracket. In that case, make sure new position of bearing hanger does not interfere with parallel arms in any position of row unit. If interference does exist, grind bearing hanger until interference is gone.

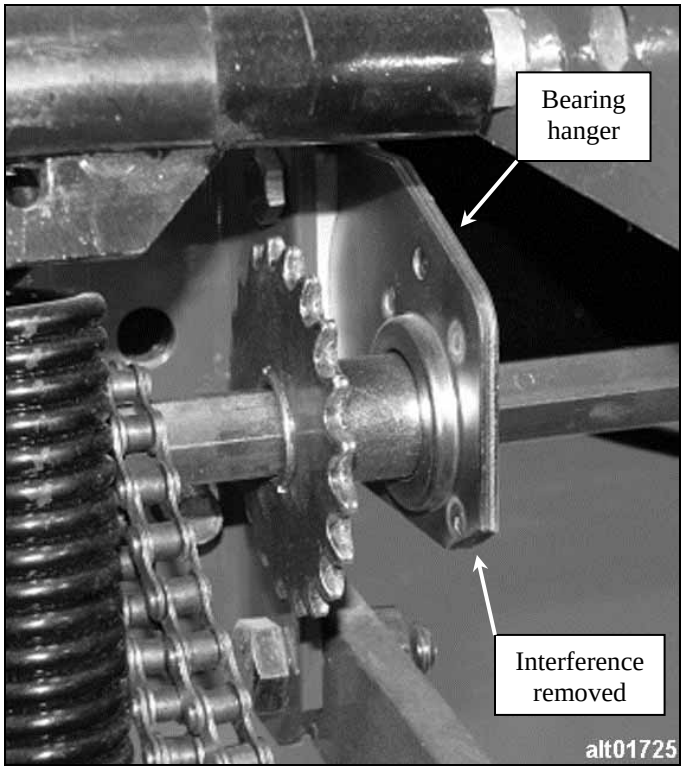

Figure 16. Bearing hanger moved to outside of bracket

Final Adjustments and Fine Tuning	Required Parts (quantities listed are per row):	Part Number:
	(2) Cable tie – 6 in.	2002817-6

NOTE: At this point, all components are installed. This section is for verifying everything is positioned properly before fully tightening fasteners that were previously left loose.

1. Reinstall seed meter onto row unit. Engage drive sprocket with seed meter. If necessary, adjust position of drive sprocket assembly on side plate until drive is properly engaged with meter. With drive sprocket properly engaged to meter, fully tighten serrated flange nuts to secure drive assembly to side plate.

2. Remove seed meter to continue fine tuning adjustments.

3. Adjust position of clutch so that top edge of clutch is aligned with top edge of clutch bracket as shown in Figure 17. Then adjust clutch forward, or backward using slots in bracket to achieve 1/8 – 1/4 in. of slack in output chain midway between clutch and seed meter sprockets. Fully tighten bolts to secure clutch after output chain is properly adjusted.

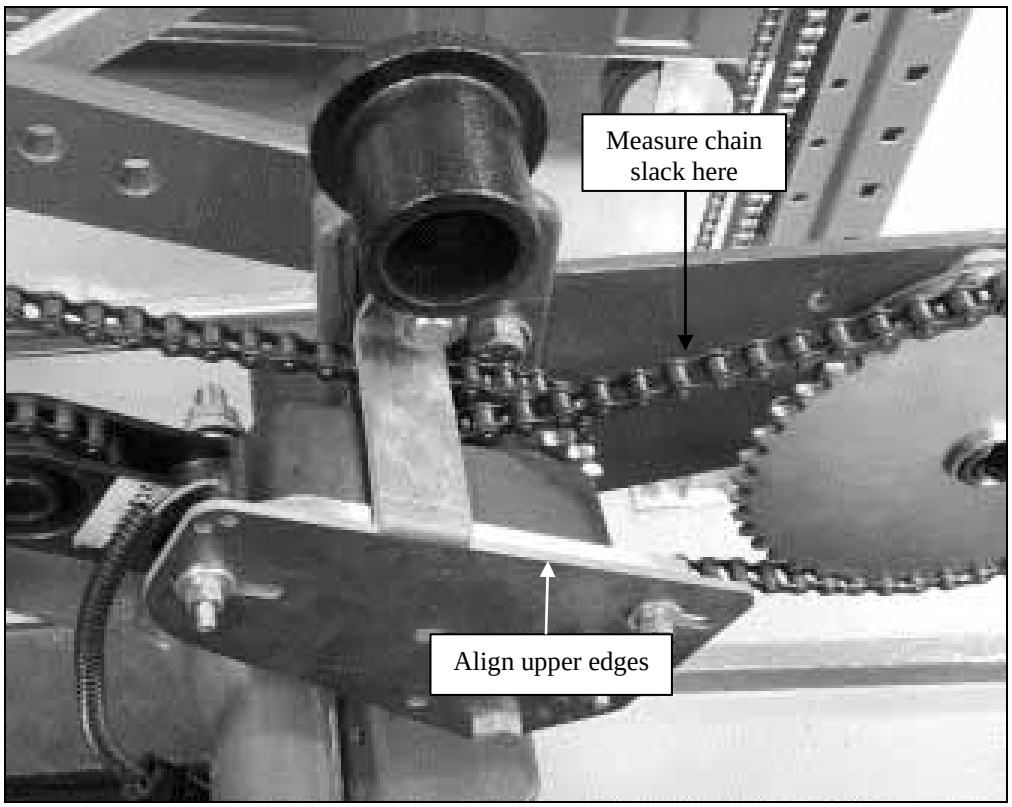

Figure 17. Clutch and bracket alignment

4. Reinstall seed meter.

5. Secure clutch cable with zip ties. Installation is complete.

Revision History			
Date	**Revision**	**Initials**	**Changes**
Mar 2014	A	SLH	- Initial release
Aug 2014	B	SLH	- Clutch bracket and chain tensioner redesign
Dec 2016	C	SLH	- Added comments about adjusting drill shaft sprocket position when necessary