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3406
3408
3412
3416
3418
Corn Header

SERVICE MANUAL

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CASE IH AGRICULTURE

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Safety rules

PRECAUTIONARY STATEMENTS

Personal Safety

Throughout this manual and on machine signs, you will find precautionary statements ("DANGER", "WARNING", and "CAUTION") followed by specific instructions. These precautions are intended for the personal safety of you and those working with you. Please take the time to read them.

⚠ DANGER ⚠

This word "DANGER" indicates an immediate hazardous situation that, if not avoided, will result in death or serious injury. The color associated with Danger is RED.

M1169

⚠ WARNING ⚠

This word "WARNING" indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury. The color associated with Warning is ORANGE.

M1170

⚠ CAUTION ⚠

This word "CAUTION" indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices. The color associated with Caution is YELLOW .

M1171

FAILURE TO FOLLOW THE "DANGER", "WARNING", AND "CAUTION" INSTRUCTIONS MAY RESULT IN SERIOUS BODILY INJURY OR DEATH.

Machine Safety

The precautionary statement ("IMPORTANT") is followed by specific instructions. This statement is intended for machine safety.

NOTICE: *The word "IMPORTANT" is used to inform the reader of something they need to know to prevent minor machine damage if a certain procedure is not followed.*

Information

NOTE: *Instructions used to identify and present supplementary information.*

LEGAL OBLIGATIONS

This machine may be equipped with special guarding or other devices in compliance with local legislation. Some of these require active use by the operator. Therefore, check local legislation on the usage of this machine.

ACCIDENT PREVENTION

Most accidents or injuries that occur in workshops are the result of a non compliance to simple and fundamental safety regulations. For this reason, IN MOST CASES THESE ACCIDENTS CAN BE AVOIDED by foreseeing possible causes and consequently acting with the necessary caution and care.

Accidents may occur with all types of machines, regardless of how well the machine in question was designed and built.

A careful and informed service technician is the best guarantee against accidents.

Decisive awareness of the most basic safety rule is normally sufficient to avoid many serious accident.

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General specification

Model	Row Spacing	Weight	Width	Total Number Lube Fittings
3406R30	**762 mm (30 in)**	**1893 kg (4173 lb)**	**4824 mm (190 in)**	18
3406R36	**914 mm (36 in)**	**2155 kg (4751 lb)**	**5645 mm (222 in)**	18
3406R38	**965 mm (38 in)**	**2155 kg (4751 lb)**	**5848 mm (230 in)**	18
3408R22	**559 mm (22 in)**	**2209 kg (4870 lb)**	**4724 mm (186 in)**	27
3408R30	**762 mm (30 in)**	**2585 kg (5699 lb)**	**6356 mm (250 in)**	27
3408R36	**914 mm (36 in)**	**2828 kg (6235 lb)**	**7511 mm (296 in)**	28
3408R38	**965 mm (38 in)**	**2828 kg (6235 lb)**	**7780 mm (306 in)**	28
3408R70	**700 mm (28 in)**	**2528 kg (5573 lb)**	**5848 mm (230 in)**	22
3412R20	**508 mm (20 in)**	**3196 kg (7046 lb)**	**6350 mm (250 in)**	35
3412R22	**559 mm (22 in)**	**3298 kg (7271 lb)**	**6960 mm (274 in)**	36
3412R30	**762 mm (30 in)**	**3742 kg (8250 lb)**	**9404 mm (370 in)**	36
3416R30	**762 mm (30 in)**	**5035 kg (11100 lb)**	**11989 mm (472 in)**	40
3418R20	**508 mm (20 in)**	**4881 kg (10760 lb)**	**9652 mm (380 in)**	42

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Torque Specification Tables

Standard Bolt Hardware & Hydraulic Connector Torques, Specifications and Information

This specification establishes general torque values to be used in bolted joints for metric and inch hardware. This specification is assumed to apply unless another specification (standard or specified requirement) is indicated in the repair manual.

NOTE: These Standards do not include electrical or hydraulic components, they are referred to in their specific charts or tables.

INCH 'NON-FLANGED' HARDWARE AND LOCKNUTS {MINIMUM HARDWARE TIGHTENING TORQUES}

IN NEWTON-METERS (FOOT-POUNDS) FOR NORMAL ASSEMBLY APPLICATIONS								
	SAE GRADE 2		SAE GRADE 5		SAE GRADE 8		LOCKNUTS	
Nominal Size	Unplated or Plated Silver	Plated w/ZnCr Gold	Unplated or Plated Silver	Plated w/ZnCr Gold	Unplated or Plated Silver	Plated w/ZnCr Gold	Gr.B w/Gr5 Bolt	Gr.C w/Gr8 Bolt
1/4	6.2 (55)*	8.1 (72)*	9.7 (86)*	13 (112)*	14 (121)*	18 (157)*	8.5 (75)*	12.2 (109)*
5/16	13 (115)*	17 (149)*	20 (178)*	26 (229)*	28 (21)	37 (27)	17.5 (155)*	25 (220)*
3/8	23 (17)	30 (22)	35 (26)	46 (34)	50 (37)	65 (48)	31 (23)	44 (33)
7/16	37 (27)	47 (35)	57 (42)	73 (54)	80 (59)	104 (77)	50 (37)	71 (53)
1/2	57 (42)	73 (54)	87 (64)	113 (83)	123 (91)	159 (117)	76 (56)	108 (80)
9/16	81 (60)	104 (77)	125 (92)	163 (120)	176 (130)	229 (169)	111 (82)	156 (115)
5/8	112 (83)	145 (107)	174 (128)	224 (165)	244 (180)	316 (233)	153 (113)	215 (159)
3/4	198 (146)	256 (189)	306 (226)	397 (293)	432 (319)	560 (413)	271 (200)	383 (282)
7/8	193 (142)	248 (183)	495 (365)	641 (473)	698 (515)	904 (667)	437 (323)	617 (455)
1	289 (213)	373 (275)	742 (547)	960 (708)	1048 (773)	1356 (1000)	654 (483)	924 (681)

NOTE: Torque values shown with * are inch pounds.

NOTICE: *Values shown on these charts are minimum hardware tightening torques unless otherwise stated.*

METRIC 'NON-FLANGED' HARDWARE AND LOCKNUTS {MINIMUM HARDWARE TIGHTENING TORQUES}

IN NEWTON-METERS (FOOT-POUNDS) FOR NORMAL ASSEMBLY APPLICATIONS							
	CLASS 5.8		CLASS 8.8		CLASS 10.9		LOCK-NUTS
Nominal Size	Unplated	Plated w/ZnCr	Unplated	Plated w/ZnCr	Unplated	Plated w/ZnCr	Cl.8 w/Cl8.8 Bolt
M4	1.7 (15)*	2.2 (19)*	2.6 (23)*	3.4 (30)*	3.7 (33)*	4.8 (42)*	2.3 (20)*
M6	5.8 (51)*	7.6 (67)*	8.9 (79)*	12 (102)*	13 (115)*	17 (150)*	7.8 (69)*
M8	14 (124)*	18 (159)*	22 (195)*	28 (21)	31 (23)	40 (30)	19 (169)*
M10	28 (21)	36 (27)	43 (32)	56 (41)	61 (45)	79 (58)	38 (28)
M12	49 (36)	63 (46)	75 (55)	97 (72)	107 (79)	138 (102)	66 (49)
M16	121 (89)	158 (117)	186 (137)	240 (177)	266 (196)	344 (254)	164 (121)
M20	237 (175)	307 (226)	375 (277)	485 (358)	519 (383)	671 (495)	330 (243)
M24	411 (303)	531 (392)	648 (478)	839 (619)	897 (662)	1160 (855)	572 (422)

NOTE: Torque values shown with * are inch pounds.

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Basic instructions - Troubleshooting Chart

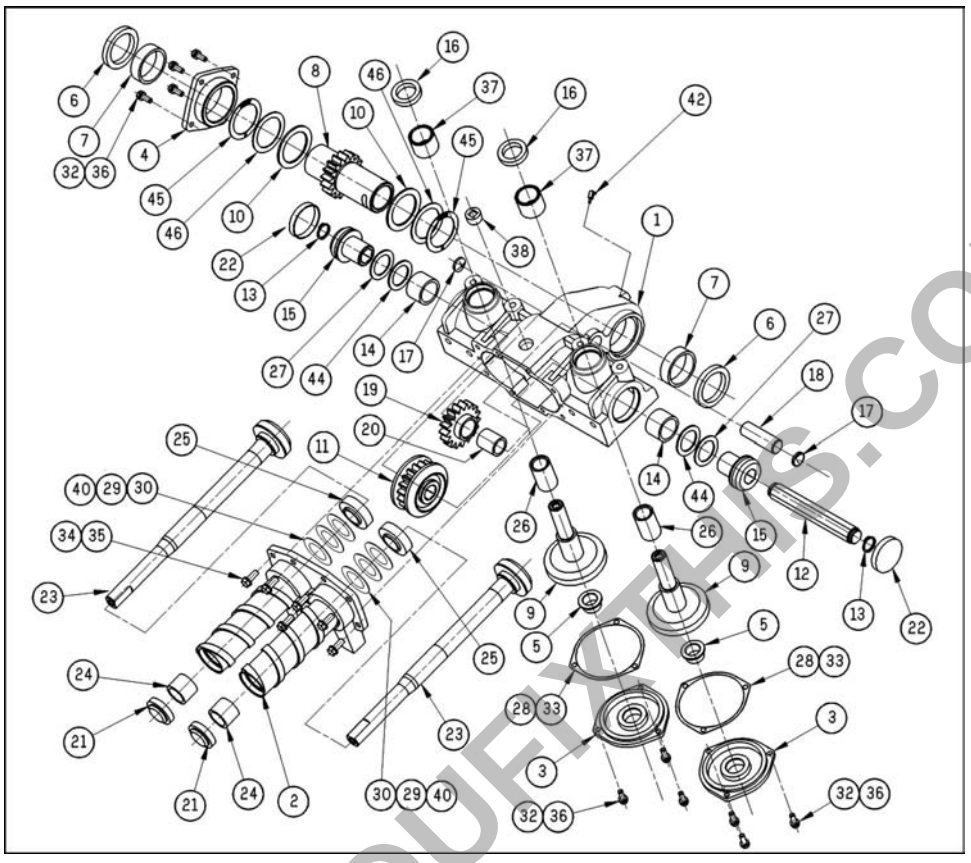
3400 Series Corn Header

PROBLEM	POSSIBLE CAUSE	CORRECTION
Loss of ear corn in field.	Not picking planter rows.	Follow rows as they were planted.
	Ground speed too fast or too slow.	Operate at a speed to match the yield and ground conditions. Ground speed is correct when the gathering chains merely help guide the stalks into the rolls.
	Gathering points set incorrectly.	Adjust gathering points as required. Operate skid shoes close to the ground when picking low hanging ears.
	Deck plates not adjusted properly.	Adjust deck plates.
	Row units not centered on rows.	Adjust corn head row spacing to equal row spacing of corn in field being harvested.
	Ears sliding out over gathering chains.	Use ear savers.
	Gathering chain speed too fast or too slow.	Obtain the correct chain speed by changing the feeder variable speed or change row unit speed.
Pulling up corn stalks.	Deck plates set too close together.	Spread deck plates until the stalks feed through freely.
	Deck plates set in wedge front to rear.	Set deck plates wider at rear.
	Traveling too fast for gathering chain speed.	Slow down to meet crop conditions or install the optional speed change kit.
	Gathering chain digging into corn stalk roots.	Lower the divider points. Operate with head higher.
	Corn head operated too low.	If conditions permit, lower dividers and raise corn head for free flow of stalks.

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Gearbox - Exploded view - Intermeshing



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ITEM	QTY	DESCRIPTION	ITEM	QTY	DESCRIPTION
(1)	1	Housing	**(24)**	2	Needle Bearing
(2)	1	Housing, Roll Shaft	**(25)**	2	Bearing
(3)	2	Cap	**(26)**	2	Sleeve
(4)	1	Bearing Housing	**(27)**	2	Bearing, Thrust
(5)	2	Flange Bearing	**(28)**	±2	Shim, 0.1778 mm
(6)	2	Seal	**(29)**	±2	Shim, 0.1 mm
(7)	2	Needle Bearing	**(30)**	±1	Shim, 0.3 mm
(8)	1	Gear, Input	31		
(9)	2	Bevel Gear, 30T	**(32)**	10	Screw, Cap, .31 x .875
(10)	2	Washer	**(33)**	±4	Shim, 0.508 mm
(11)	1	Gear, Roll Drive	**(34)**	8	Screw, Cap, .375 x 1.25
(12)	1	Hex Shaft	**(35)**	8	Washer, Lock, .38
(13)	2	Retaining Ring, External	**(36)**	10	Washer, Lock, .31
(14)	2	Needle Bearing	**(37)**	2	Bushing
(15)	2	Bevel Gear, 17T	**(38)**	1	Pipe Plug, 3/4 NPT
(16)	2	Seal	39		
(17)	2	Plug	**(40)**	±2	Shim, 0.5 mm
(18)	1	Shaft, Idler Gear	41		
(19)	1	Gear, Idler, 17T	**(42)**	1	Lube Fitting, 1/8 NPT x 90°
(20)	2	Bearing	43		
(21)	2	Seal	**(44)**	2	Washer, Thrust, 0.76 mm
(22)	2	Cover Plug	**(45)**	2	Washer, Thrust, 1.6 mm
(23)	2	Roll Shaft	**(46)**	2	Bearing, Thrust

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PTO POWER IN - Remove

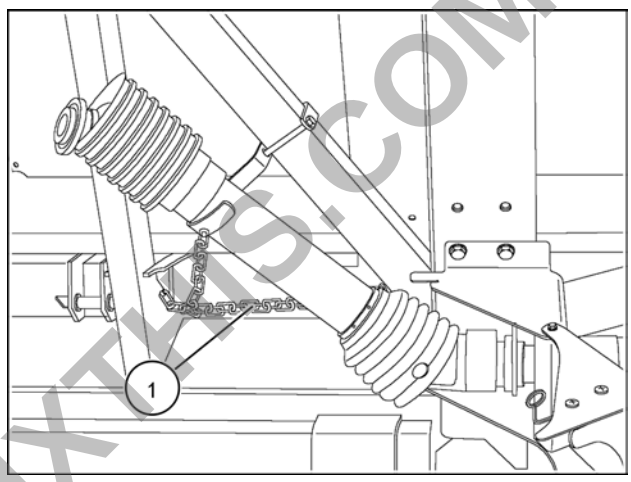
ATTENTION: *The left side and the right side are determined by standing behind the unit facing the direction of travel.*

NOTE: *Right side removal is shown. Left side removal for the 6 row, 8 row and 12 row rigid corn heads are similar*

NOTICE: *When installing a PTO on a 8 row rigid or a 12 row rigid, make sure you are installing the correct PTO to the correct side. Always label the PTO shaft when removing from the header.*

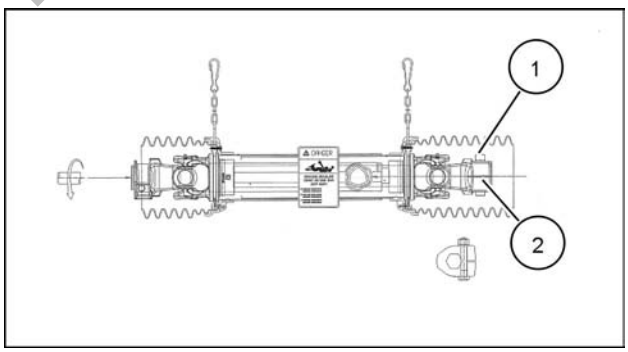
DRIVESHAFT REMOVAL

1. Disconnect the shield anti-rotation chain **(1)**.



40032037 1

2. Pull the shield back and loosen the nut and remove the nut and bolt **(1)** from the yoke **(2)** on the header shaft so it disengages from the groove on the shaft and pull to remove the PTO driveshaft off of the driveshaft.



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Next operation:
Drive system PTO shaft - Disassemble (B.90.A)

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Sensing system Header type module - Overview

NOTE: *Header component and conductor naming and numbering conventions are representative - used only for combine schematic referencing.*

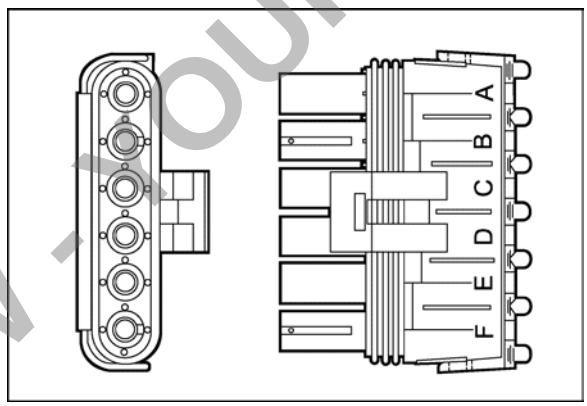
Headers used on combines may be equipped with a Header type module **R-20**, which is used to identify the header type to the combine. This allows the operator to store configuration information in memory that may be recalled when a header is attached. The Header type module **R-20** contains three different resistors that are connected between four of the six pins on the module connector.

Three wires connect between the combine and Header type module **R-20**; a **5 volts** reference power wire (1223 pink), a reference ground wire (750 blue), and a signal wire (1116 yellow). By changing how the wires are connected to the module, the voltage on the signal wire to the combine control module will vary.

The combine operator display can be used to check the voltage range. The voltage will vary between **0.3 - 4.72 volts** depending on the header type that is currently attached to the combine.

Header Type	Sensor Voltage
Corn header	**3.72 - 4.72 volts**
Grain header	**2.93 - 3.72 volts**
Draper header	**2.02 - 2.93 volts**
Pick up header	**1.22 - 2.02 volts**
Programmable header	**0.3 - 1.22 volts**
No header installed	**0 - 0.3 volts**

If the voltage reading is not correct for the style of header that is attached to the combine, the wire connections should be checked at the Header type module **R-20** on the header to ensure they are correct.



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Header Type Module - Pinouts

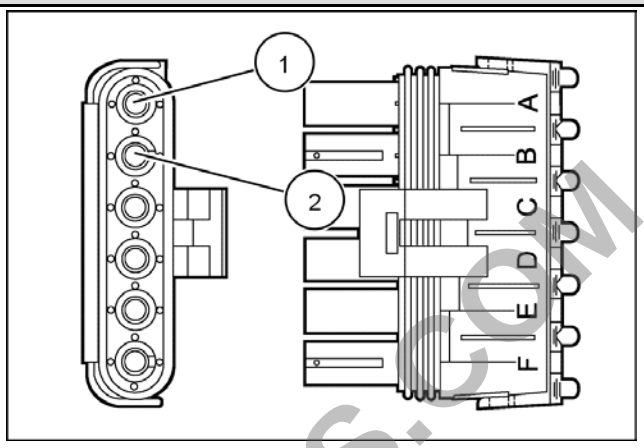
Header Type	5 volts reference power wire (1223 pink)	reference ground wire (750 blue)	signal wire (1116 yellow)
Corn header	Pin A	Pin F	Pin B
Grain header	Pin A	Pin F	Pin E
Draper header	Pin A	Pin E	Pin B
Pick up header	Pin F	Pin A	Pin E
Programmable header	Pin F	Pin A	Pin B

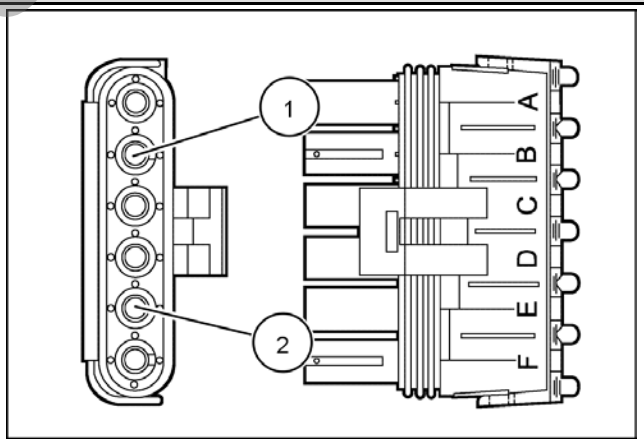
The header type module may be tested with a multi-meter to determine if there is an internal failure.

- testing between pins A and B should indicate **75 ohms**
- testing between pins B and E should indicate **75 ohms**
- testing between pins E and F should indicate **300 ohms**
- testing between pin C and any other pin, or pin D and any other pin should indicate infinite resistance.

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Sensing system Header type module - Testing

Test N°1		
Test Point	**Condition** The combine is not recognizing or incorrectly recognizing the Header type module. Remove the Header type module from its connector and **Check** use a multi-meter to measure the resistance between pin A **(1)** and pin B **(2)**, on the module.	 PAC_12015799 1
Expected Result	**Result** The measured resistance should be **75 Ω +/- 5%** **Action** Leave the module out of its connector and Go to test **2**	
Other Result (Possible Cause)	**Result** If the measured resistance is other than **75 Ω +/- 5%** **Action** The Header type module has failed internally, replace the module and retest the system for proper operation.	

Test N°2		
Test Point	**Condition** With the Header type module removed from its connector, **Check** use a multi-meter to measure the resistance between pin B **(1)** and pin E **(2)**, on the module.	 PAC_12015799 2
Expected Result	**Result** The measured resistance should be **75 Ω +/- 5%** **Action** Leave the module out of its connector and Go to test **3**	
Other Result (Possible Cause)	**Result** If the measured resistance is other than **75 Ω +/- 5%** **Action** The Header type module has failed internally, replace the module and retest the system for proper operation.	

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Slip clutch - Check Torque - Field Method

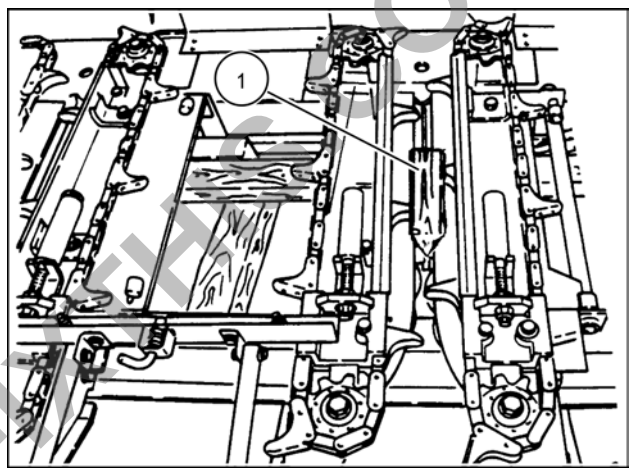
⚠ WARNING ⚠

Disengage the PTO, turn off the engine and remove the key. Wait for all movement to stop before leaving the operator's position. Never adjust, lubricate, clean or unplug machine with the engine running. Failure to comply could result in death or serious injury.

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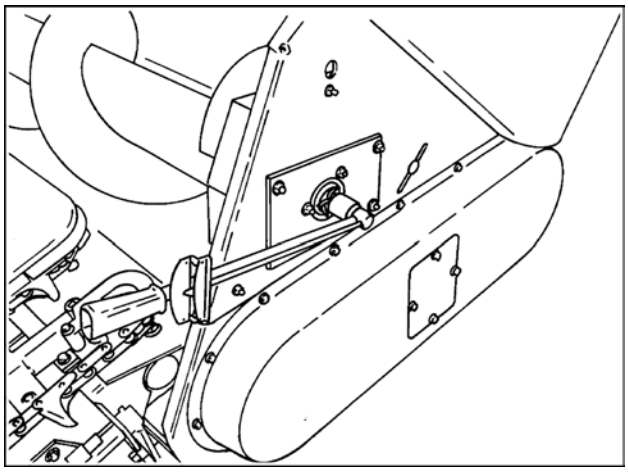
This procedure is to be used to check the clutch slip torque installed on the corn head, and to make adjustments as necessary to obtain the proper slip torque to eliminate damage to the auger and its drives.

1. Using a wooden wedge **(1)** block the stalk rows of the row unit closest to the auger slip clutch as shown.



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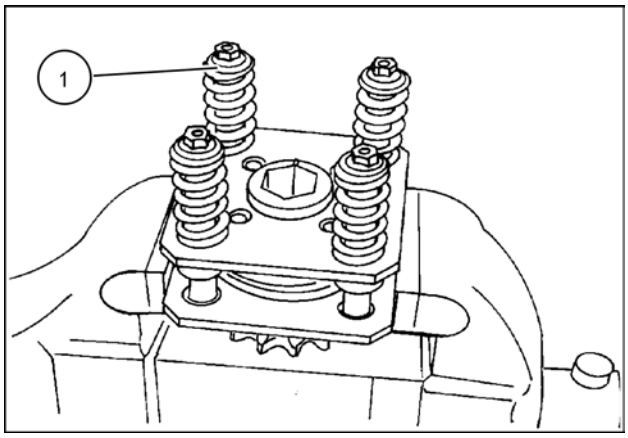
2. Using a torque wrench and **28.6 mm** (**1.125 in**) socket, check the torque at which the auger slip clutch slips. The clutch should slip between **753 - 846 Nm** (**555.4 - 624.0 lb ft**).



4-15 2

3. If the clutch does not slip at the specified torque, adjust by adding or removing shims **(1)** EQUALLY from each bolt.

NOTE: *Adding shims will REDUCE the amount of torque required, removing shims will INCREASE the torque.*



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