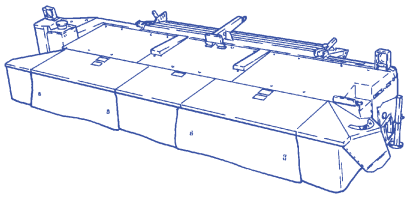


NEW HOLLAND

2355
2358

REPAIR MANUAL

NEW HOLLAND

SERVICE

2355, 2358 REPAIR MANUAL CONTENTS

The sections used through out all New Holland product Repair manuals may not be used for each product. Each Repair manual will be made up of one or several books.

The sections listed above are the sections utilized for the 2355 and 2358 Auger Header.

SECTION 00 - GENERAL INFORMATION

Chapter 1 - General Information

CONTENTS

FORWARD

Appropriate service methods and correct repair procedures are essential for the safe, reliable operation of all equipment, as well as the personal safety of the individual performing the repair.

This Repair Manual provides troubleshooting and overhaul instructions using recommended procedures and equipment. Following these instructions will ensure the safe, efficient, and timely completion of the service or repair.

The manual is divided into sections which are subdivided into chapters. Each chapter contains information on general operating principals, detailed inspection, overhaul and, where applicable, specific troubleshooting, special tools, and specifications.

Any reference in this manual to right, left, rear, front, top, or bottom is determined by standing behind the machine and looking in the direction of travel.

All data and illustrations in this manual are subject to variations in build specification. This information was correct at the time of issue, but New Holland policy is one of continuous improvement, and the right to change specifications, equipment, or design at any time, without notice, is reserved.

PRECAUTIONARY STATEMENTS

PERSONAL SAFETY

Throughout this manual and on machine decals, 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.

⚠ 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.

⚠ 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.

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.

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

INFORMATION

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

SAFETY

PRECAUTIONARY STATEMENTS

A careful operator is the best operator. Most accidents can be avoided by observing certain precautions. To help prevent accidents, read the following precautions before operating this equipment. Equipment should be operated only by those who are responsible and instructed to do so.

Carefully review the procedures given in this manual with all operators. It is important that all operators be familiar with and follow safety precautions.

1. **Do not operate the disc auger header without all the cutter bar shields down, cover skirts installed and is good condition, and cover skirts snapped together. Immediately replace any skirt that is torn or has a hole in it.**
2. **Header locks are built into the header lift system to lock the header in the raised position. Lock the header on both sides before working under a raised header.**
3. **Use the amber flashing safety lights and road lights when driving the self-propelled windrower and header on the highway. Be sure to use the road lights, not the work lights, because the rear work lights could be mistaken for an oncoming vehicle.**
4. **Instruct inexperienced operators to read the operator's manual, safety signs, and become familiar with the handling of the unit which the disc auger header is attached. Operate the unit in uncongested areas where there is no likelihood of personal injury or property damage.**
5. **Never make any adjustments or attempt to work on the unit with the engine running. Disengage the header drive, lower the header to the ground, or lock it in the transport position, shut off the engine, and engage the parking brake before attempting any adjustments or trying to work on the header.**
6. **Tilt the cutter bar back in fields where stones and foreign objects are present, to raise the cutting knives, minimize debris deflected from the knives and reduce knife damage.**
7. **STAND CLEAR! Rotating elements may cause serious bodily injury.**
8. **Do not attempt to remove material from the disc auger header while it is in operation. Shut the windrower off and allow the rotating discs to stop before leaving the windrower cab.**
9. **Always operate the disc auger header with the covers and shields in place. Do not lean against or stand on the covers or shields.**
10. **Do not attempt to adjust the lift linkage with a header attached. Header will drop suddenly if clevis pin is driven out, causing header damage and/or personal injury.**
11. **Observe the following precautions before adjusting or lubricating the header.**
    - **Disengage the header drive.**
    - **Lower the header to the ground, or raise the header and engage the header locks.**
    - **Stop the engine and engage the parking brake before leaving the cab.**
    - **Reinstall and close all shielding before operating the unit.**
12. **Do not attempt to clean, lubricate, or adjust the machine while it is running.**
13. **Replace damaged knives, knife hardware or discs immediately to prevent an accident.**
14. **The bottom leading edge of worn discs can become very sharp. Wear gloves to prevent injury.**

INTRODUCTION

The 2355 disc auger header is a disc mower-conditioner designed to be used with the HW340, HW345 and HW365 self-propelled windrowers. The 2358 disc auger header is designed to be used only with the HW365. The two operate together as an integral unit. The valves and cylinders for lifting and tilting the header are mounted on the windrower, as are all the hydraulic controls. The flotation springs, used on the HW340, are also mounted on the windrower.

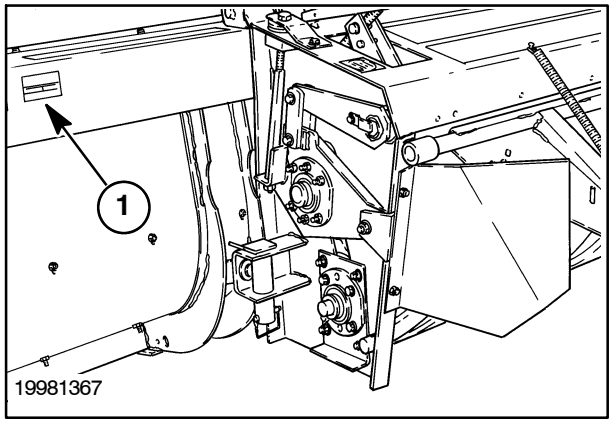
The 2355 header contains 12 disc mowing modules, while the 2358 header contains 14 disc mowing modules. An auger feeds the crop to two molded rubber inter-meshing chevron conditioner rolls. A hydraulic pump on the windrower supplies all power for the header.

The windrower controls the speed of the header in either automatic or manual mode. In the automatic mode, the speed is held constant regardless of the speed of the windrower. In the manual mode, the speed varies with the windrower engine speed. The mode is set from the windrower cab.

***NOTE**: On this equipment, left and right are determined by standing behind the unit, looking in the direction of travel.*

PRODUCT IDENTIFICATION NUMBER (PIN)

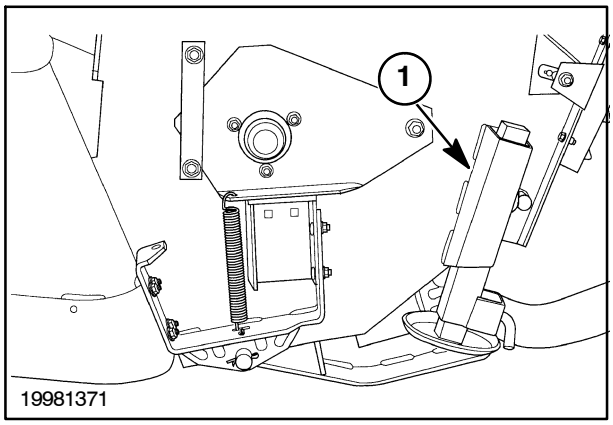
The PIN plate, 1, for the disc mower-conditioner is located at the back on the left side of the frame.



1

JACK ASSEMBLY

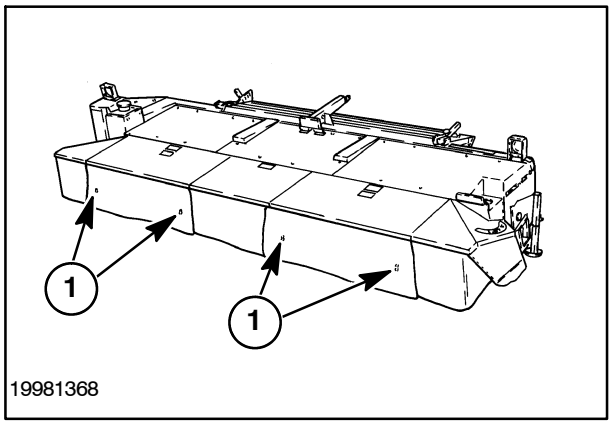
There are two jack stands built into the header, 1, one on each side of the unit.



2

SHIELDING

NOTE: *Before raising either of the front shields, unhook the cutter bar shield skirt spring snaps, 1, at the skirt overlaps. Be sure that the skirts are reattached before using the header again.*

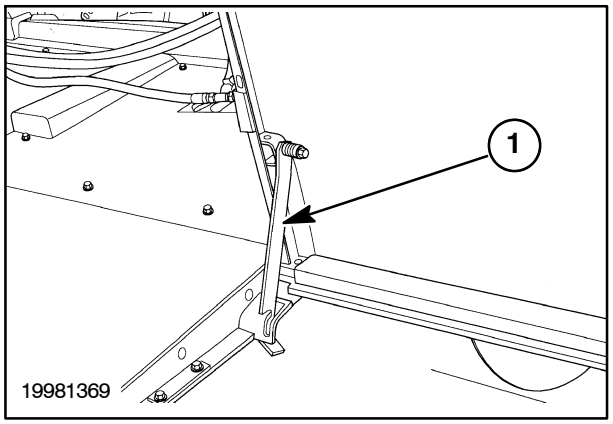


3

When raised, the front shields are held in place by a lever, 1. The lever automatically springs into the lock as the shield is raised. To lower the shield, release the lever by pushing it to the side.

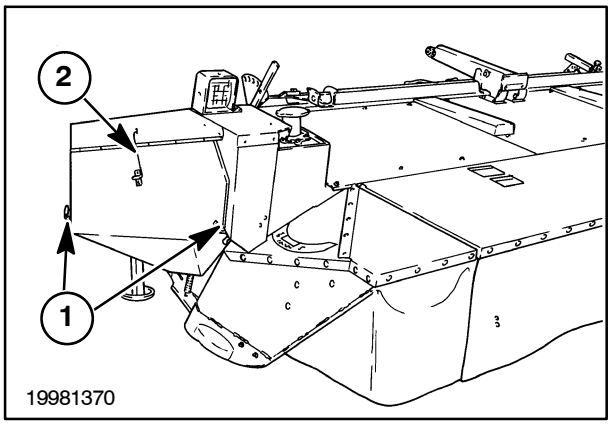
⚠ WARNING ⚠

Close shields prior to operating the machine to prevent damage to the shield. Running the header with a damaged shield may result in bodily injury from flying objects.



4

The right side shield can be lifted by releasing two rubber straps, 1, on the front and rear of the shield, and pivoting the shield upward. Lift the shield part way and remove the latch rod, 2, from the slot in the shield. Raise the shield fully and hook the rod into the slot in the top of the shield to support the shield.

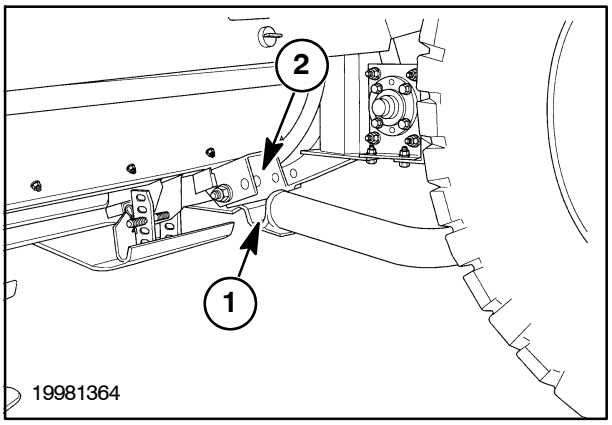


5

HEADER (HW340/2355)

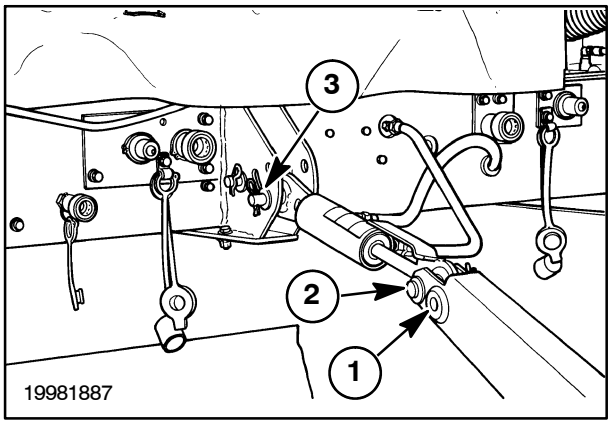
Installation

1. Lower the lift arms as much as possible. Apply a liberal coating of multi-purpose grease to the lift cups, 1.
2. Drive the tractor up to the header so the lifting cups on the lift arms are directly below the lift bushings, 2. Raise the lift arms until they are firmly in place. Raise the jack stands into the storage position.



6

3. Remove the pin holding the header tilt cylinder in the storage position and connect it to the header using a clevis pin. On the 2355 header the cylinder may be connected to the front hole, 1, on the header. This setting will provide a cutting range appropriate for most crop conditions. When operating in severely lodged crop, or difficult cutting conditions, connect the cylinder to the rear hole, 2, on the header to provide a lower cutting height.
4. Retract the tilt cylinder or raise the header to cause the sliding link to move to the operating position. Install the retaining pin, 3. Connect the wire harnesses for the header speed sensor and the flashers.

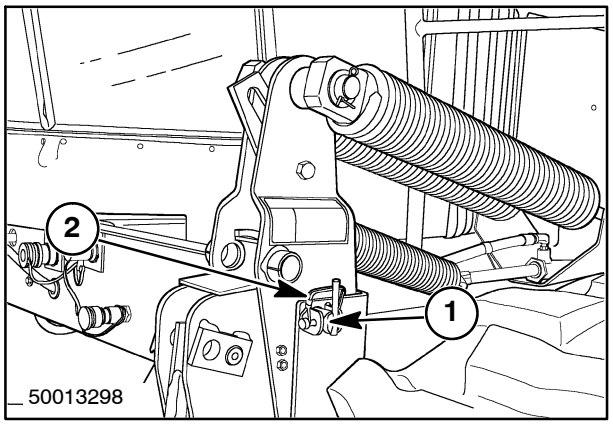


7

5. Start the tractor and raise the header. Engage the header lift locks, 1, on each side by pushing them into the holes in the windrower frame through the lower bell cranks. Install the retaining pins, 2.

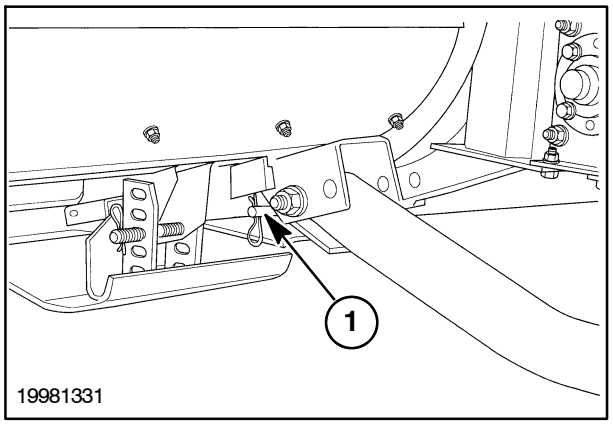
⚠ DANGER ⚠

Always install the header lock pins before working under the raised header.



8

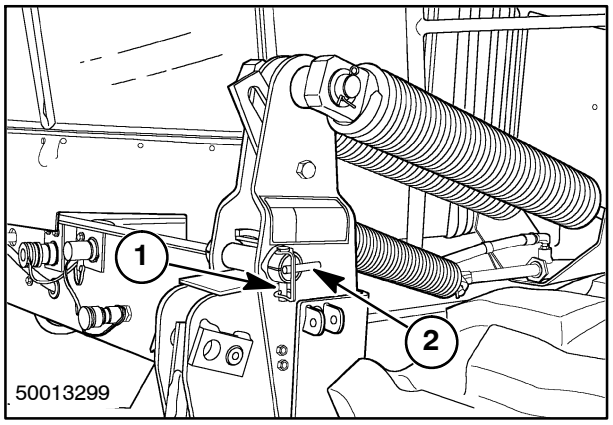
6. Install the header lift arm pins, 1.



9

7. Remove the retaining pin, 1, and remove the lockpin, 2, from the windrower frame. Install the lockpin into the bellcrank assembly to lock the bell cranks together, and install the retaining pin. This will engage the flotation system. Lock both bellcrank assemblies in the same way.

IMPORTANT: *Failure to disengage both header lockpins could damage the header frame, lift arms, or the main frame.*

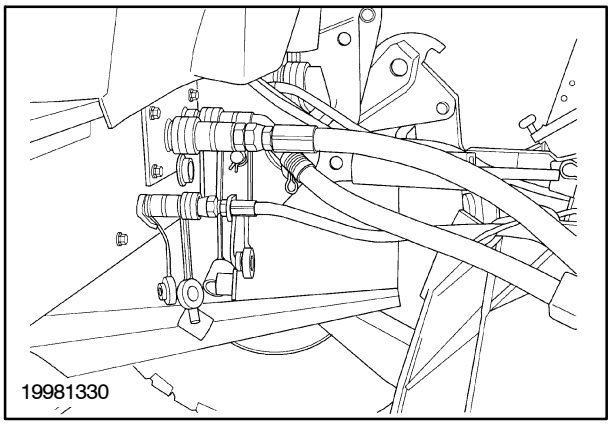


10

8. Clean the hydraulic couplers and connect the header drive motor hydraulic hoses to the quick couplers on the windrower frame.

NOTE: *The tractor engine will need to be shut off in order to connect the hydraulic hoses.*

9. Adjust the header flotation before using the header in the field.



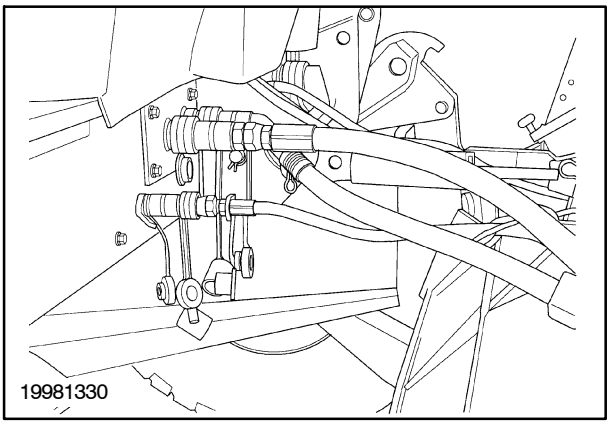
11

Removal

1. Disconnect the header drive motor hoses from the windrower at the quick couplers.
2. Connect the male connector from the left header motor to the female connector from the right header motor and connect the female connector from the left motor to the male connector from the right motor. This will ensure that the couplers remain clean and will provide a fluid path to prevent motor seal failure.

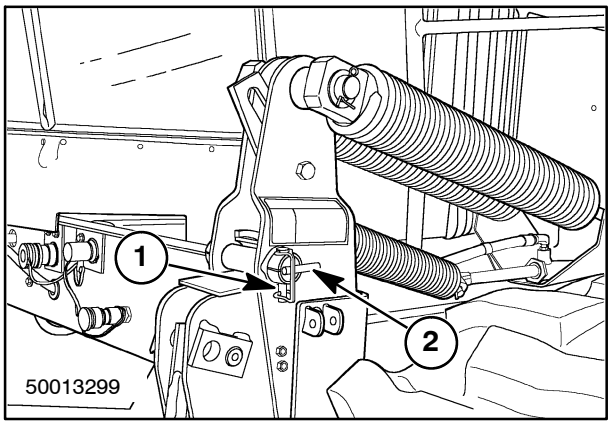
⚠ DANGER ⚠

Header locks are built into the header lift system to lock the header in the raised position. Lock the header on both sides before working on the raised header.



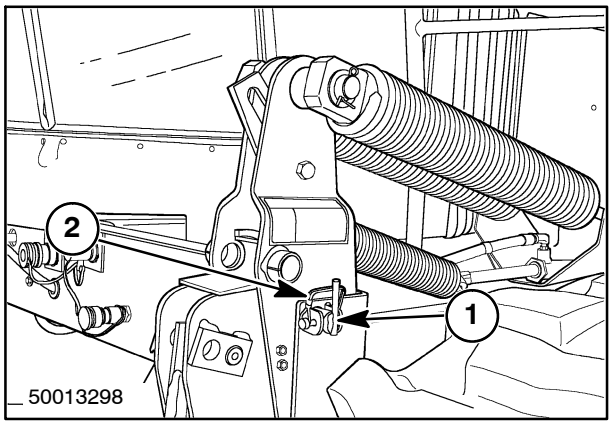
12

3. Start the windrower and raise the header all the way.
4. Remove the retaining pin, 1, and remove the lockpin, 2, from the header lift bell cranks.



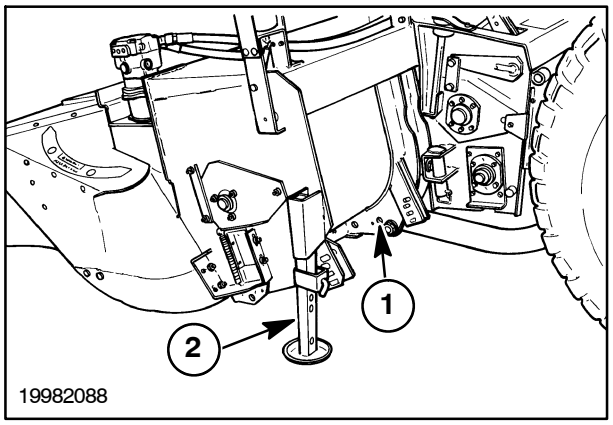
13

5. Install the lockpin, 1, in the windrower frame until the retaining pin, 2, can be reinstalled into the outer hole in the lockpin. Lock the other side in the same manner.



14

6. Remove the header lift arm pins, 1.
7. Lower the jack stands, 2.

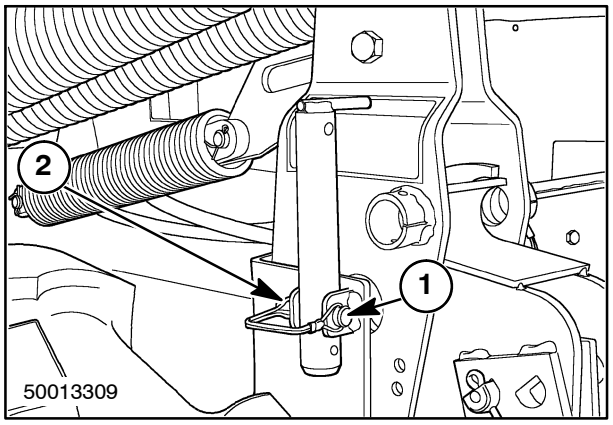


15

8. Disengage the lockpins by removing the retaining pins, 2, and sliding the lockpins outward. Secure the lockpins with the retaining pins in the inner holes so that they are disengaged from the bell cranks.

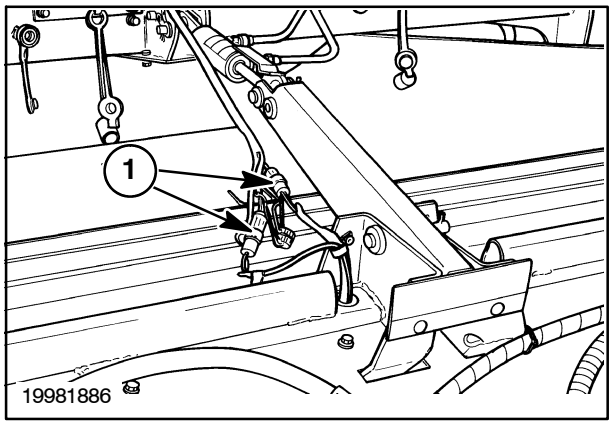
IMPORTANT: *Failure to disengage both lockpins could damage the header frame, lift arms or the main frame.*

9. Lower the header so the skid shoes and jack stands are on the ground. Adjust the jack stands so the skid shoes contact the ground while the jack stands are still several inches off the ground. This will cause the header to rock backward as it is lowered, taking force off of the header tilt cylinder.



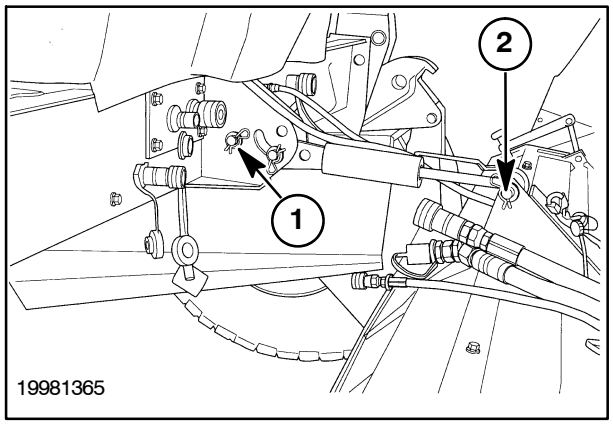
16

10. Disconnect the wire harnesses, 1, for the flashers and the header speed sensor.



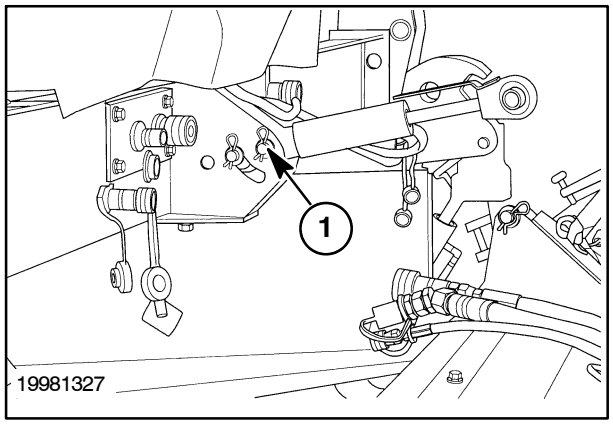
17

11. Remove the header tilt cylinder retaining pin, 1, on the windrower to allow free motion of the cylinder. Extend or retract the cylinder as required to remove force on the pin, 2, connecting the cylinder to the header.



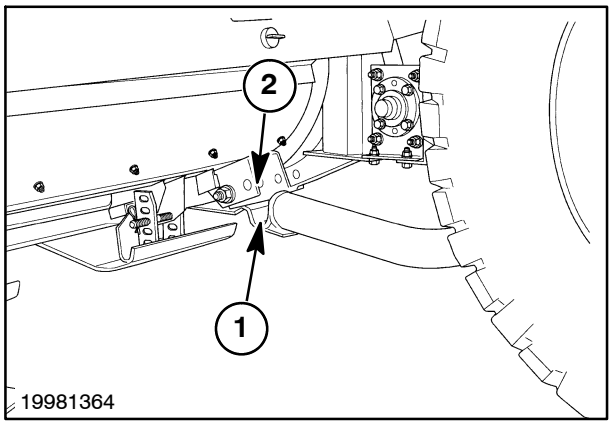
18

12. Remove the pin and secure the header tilt cylinder in the raised storage position by installing the pin, 1, through the upper mount hole and cylinder.



19

13. Lower the lift arms as much as possible.
14. Back the tractor away from the header. Be sure the lifting cups, 1, directly below the lift bushings, 2, have dropped away.



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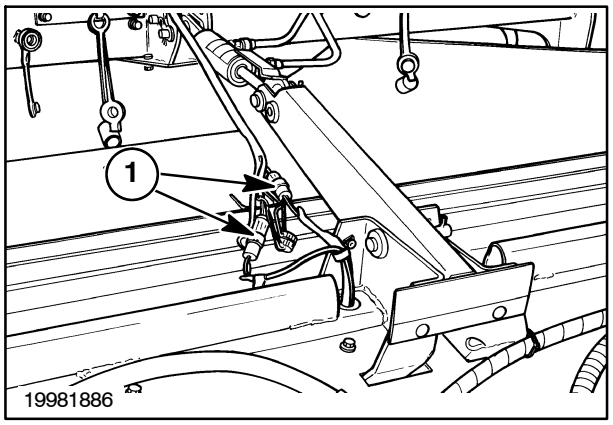
ELECTRICAL CONNECTIONS (HW340)

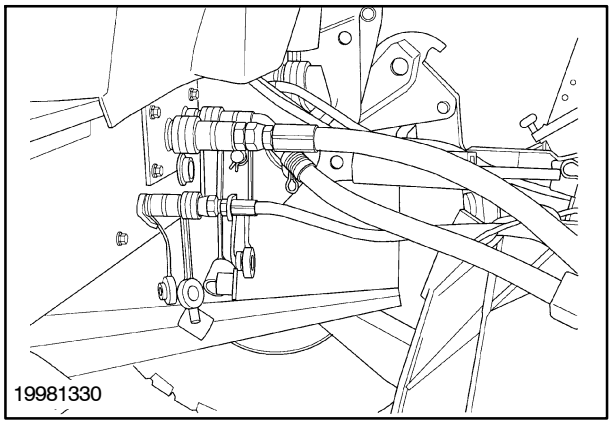
There are two electrical connectors, 1, on the header. The speed sensor connector on the header has two wires attached and joins to the connector on the windrower with two wires. The other connector has three wires and is for the lights on the header.



21

HYDRAULIC CONNECTIONS (HW340)

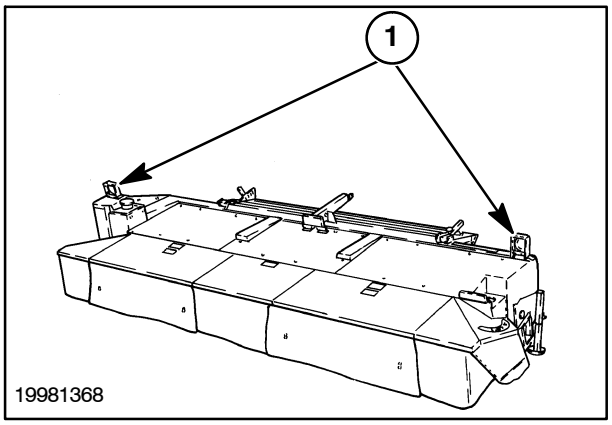
Five hydraulic hoses connect the header to the windrower. There are two supply hoses, two oil return hoses and one motor case drain hose. These hoses are connected to the windrower at the front frame.



22

LIGHTS

There are two warning lights on the header, 1; one on each outboard side. These act as hazard flashers and turn signal lights. They are operated from the cab of the windrower.



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STORING THE HEADER

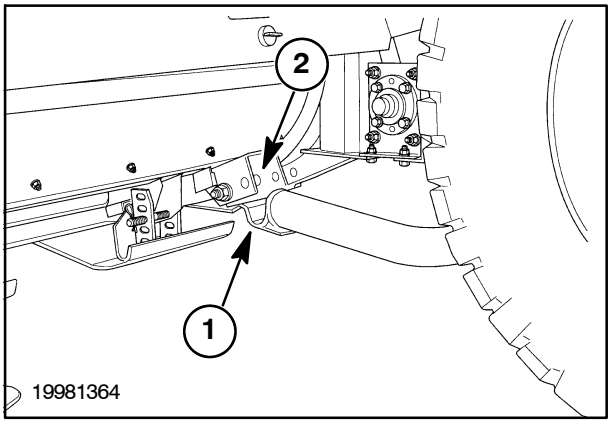
When preparing the header for storage:

1. Clean the header thoroughly. Remove any build-up of debris and any wrapped material from the cutter bar and the conditioner rolls.
2. Lubricate the header.
3. Drain the oil from all gearboxes and refill with clean oil of the correct specification to the correct level. Run the header for a few minutes.
4. Inspect for worn or broken parts. Replace with genuine factory parts.
5. Relieve roll pressure.
6. Remove tension from the roll drive belt.
7. Clean rusted or abraded areas and touch up with factory paint. Spray cans are available from your authorized dealer.
8. Store the header where it is not exposed to weather.

HEADER (HW345/2355, HW365/2355, HW365/2358)

Installation

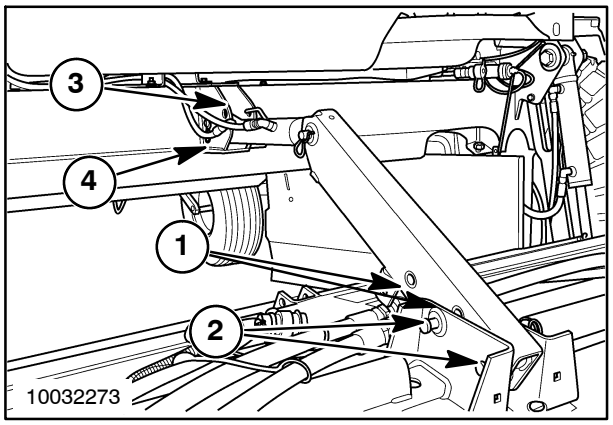
1. Lower the lift arms as much as possible. Apply a liberal coating of multi-purpose grease to the lift cups, 1.
2. Drive the tractor up to the header so the lifting cups on the lift arms are directly below the lift bushings, 2. Raise the lift arms until they are firmly in place. Raise the jack stands into the storage position.



24

3. Remove the pin holding the header tilt cylinder in the storage position and connect it to the header using a clevis pin. On the 2358 header the cylinder only has one hole to connect to on the header. When the header tilt channel is installed in the rearward holes, 1, this provides a cutting range of 1-1/2″ to 3″. When installed in the forward holes, 2, the cutting range is 1″ to 2-″1/4. The forward holes on the tilt channel should be used for most crops.

***IMPORTANT**: Do not use this hole, 3, to store a pin while the header is attached. Damage to the tilt cylinder and base unit will result.*



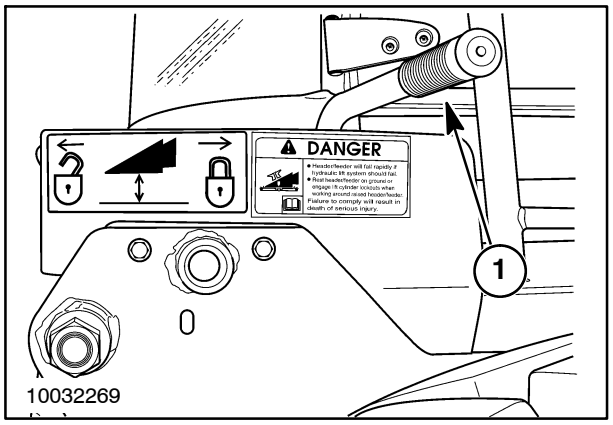
25

4. Retract the tilt cylinder or raise the header to cause the sliding link to move to the operating position. Install the retaining pin, 4. Connect the wire harness for the header speed sensor and flashers.

5. Start the tractor, raise the arms up to the maximum raised position and engage the header lock by pulling rearward on the handle. The header lock, 1, is located on the left front corner of the windrower. The handle is shown here in the locked position.

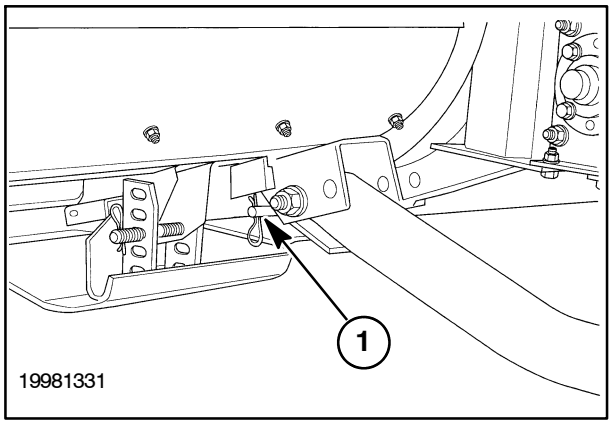
⚠ DANGER ⚠

Always engage header lock before working under the raised header.



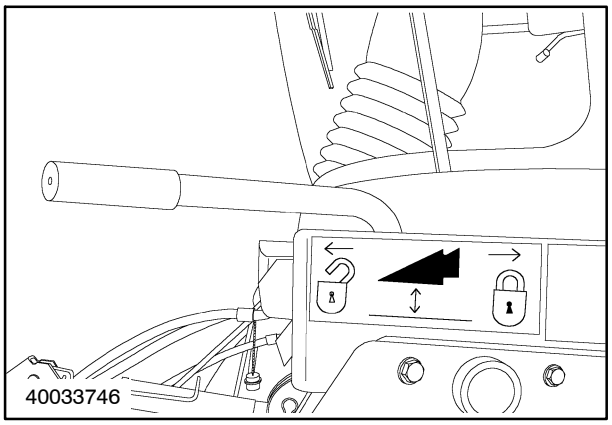
26

6. Install the header lift arm pins, 1.



27

7. Disengage the header lift lock as shown.

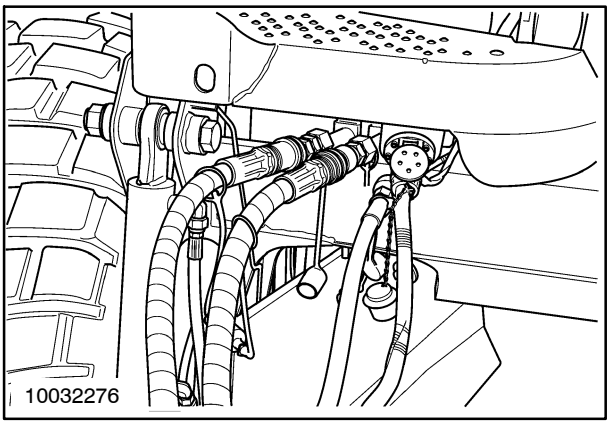


28

8. Clean the hydraulic couplers and connect the header drive motor hydraulic hoses to the quick couplers on the windrower frame.

***NOTE**: The tractor engine will need to be shut off in order to connect the hydraulic hoses.*

9. Adjust the header flotation before using the header in the field. Refer to tractor operator's manual for setting the header floatation.



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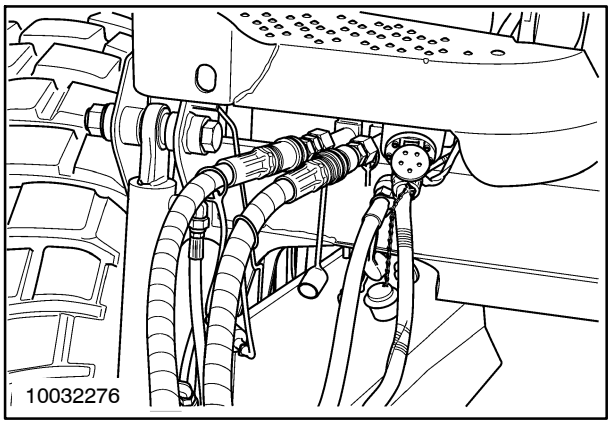
Removal

1. Disconnect the header drive motor hoses from the windrower at the quick couplers.
2. Connect the male connector from the left header motor to the female connector from the right header motor and connect the female connector from the left motor to the male connector from the right motor. This will ensure that the couplers remain clean and will provide a fluid path to prevent motor seal failure.

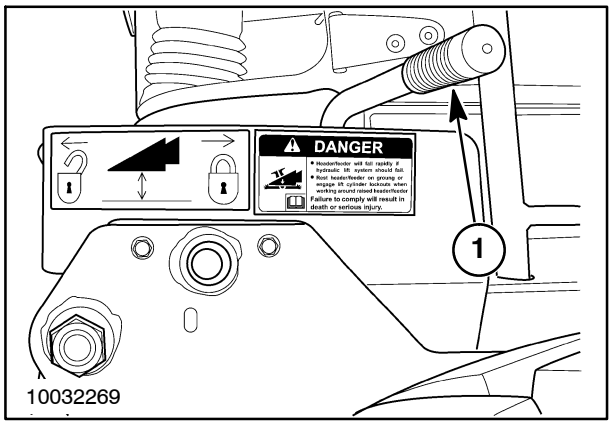
⚠ DANGER ⚠

The header lock is built into the header lift system to lock the header in the raised position. Lock the header before working on the raised header.



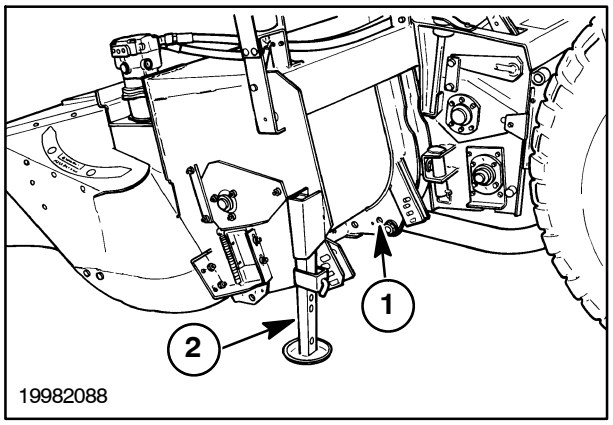
30

3. Start the windrower and raise the header all the way.
4. Engage the header lock, 1, located on the left front corner of the windrower. The handle is shown here in the locked position.



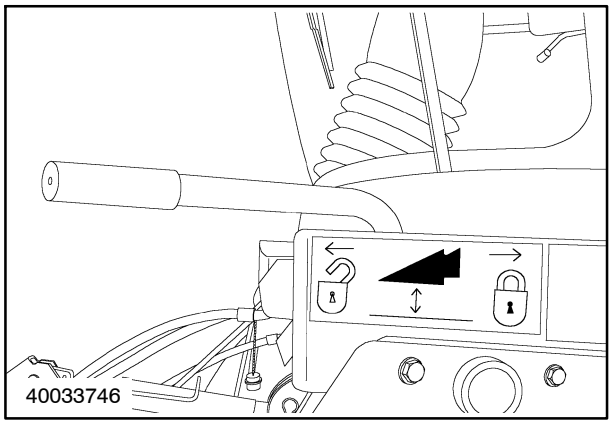
31

5. Remove the header lift arm pins, 1.
6. Lower the jack stands, 2.



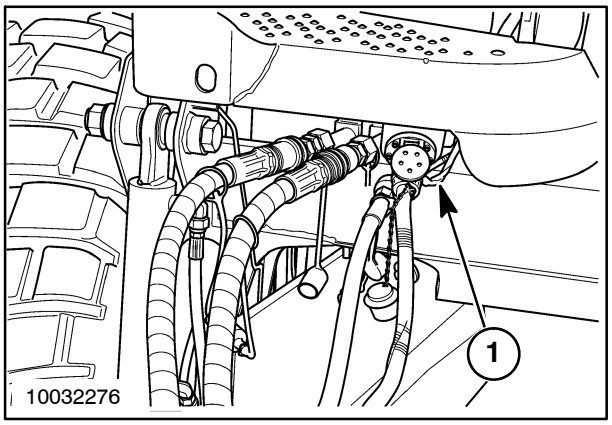
32

7. Disengage the header lift lock as shown.
8. Lower the header so the skid shoes and jack stands are on the ground. Adjust the jack stands so the skid shoes contact the ground while the jack stands are still several inches off the ground. This will cause the header to rock backward as it is lowered, taking force off of the header tilt cylinder.



33

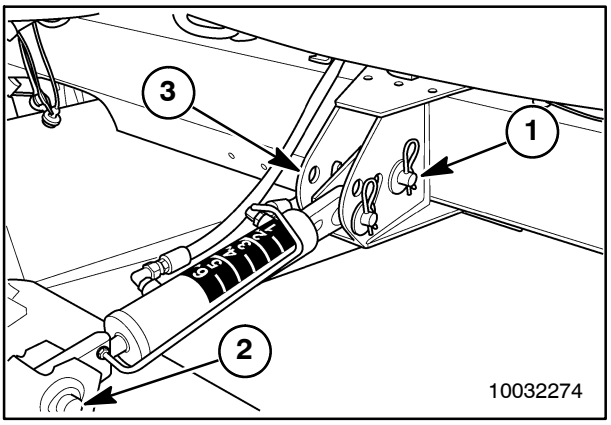
9. Disconnect the wire harness for the flashers and the header speed sensor, 1.



34

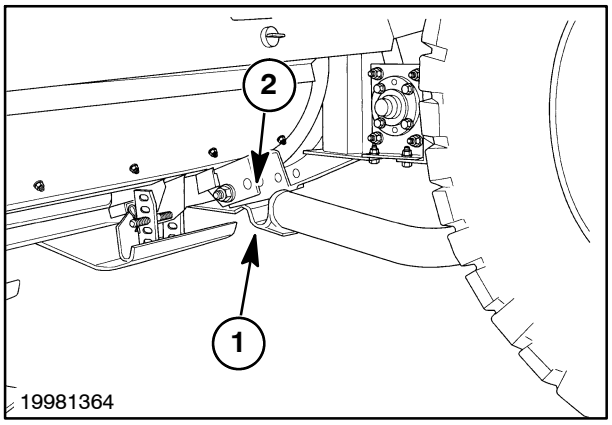
10. Remove the header tilt cylinder retaining pin, 1, on the windrower to allow free motion of the cylinder. Extend or retract the header tilt cylinder as required to relieve the pressure on pin, 2, connecting the cylinder to the header.
11. Secure the tilt cylinder in the raised position by inserting pin, 2, through the cylinder and mount at 3.

***IMPORTANT**: DO NOT USE HOLE, 3, TO STORE A PIN WHILE THE HEADER IS ATTACHED. DAMAGE TO THE TILT CYLINDER AND BASE UNIT WILL RESULT.*



35

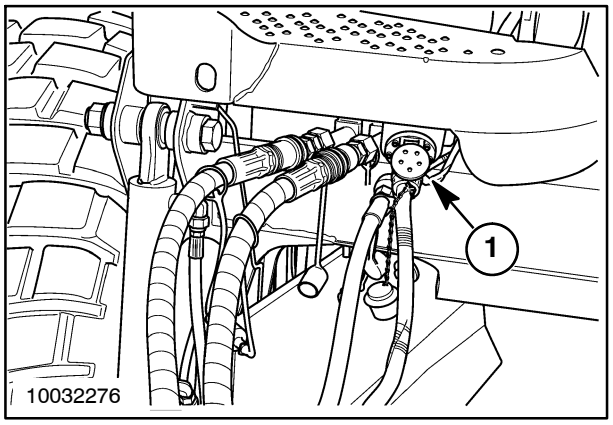
12. Lower the lift arms as much as possible.
13. Back the tractor away from the header. Be sure the lifting cups, 1, directly below the lift bushings, 2, have dropped away.



36

ELECTRICAL CONNECTIONS (HW345, HW365)

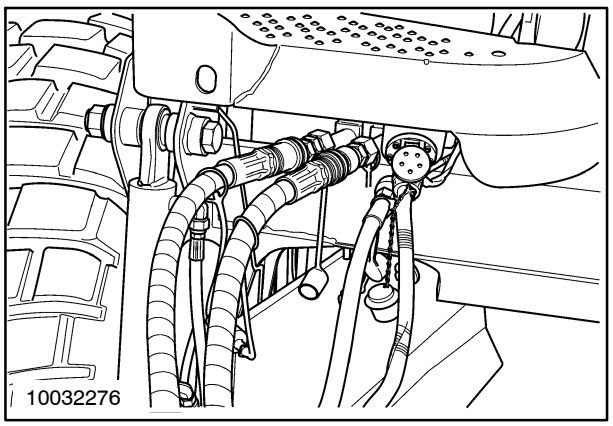
There are two electrical connectors on the header. The speed sensor connector on the header has two wires attached and joins to the connector on the windrower with two wires. The other connector has two wires and is for the lights on the header. The connector on the header is connected at location, 1.



37

HYDRAULIC CONNECTIONS (HW345, HW365)

Six hydraulic hoses connect the header to the windrower. There are two supply hoses, two oil return hoses and two motor case drain hoses. These hoses are connected to the windrower at the front frame.



38

SPECIFICATIONS

2355 DISC AUGER HEADER

Overall Width . . . . . 4836 mm (15′ 10-1/2″)

Weight . . . . . 1864 kg (4100 lbs.)

Header Drive . . . . . Hydraulic, variable flow at 272.2 bar (4000 psi)

Header
- Flotation . . . . . Vertical and radial
- Cutting width . . . . . 4680 mm (15′ 4-1/4″)

Cutter Width
- Type . . . . . Modular
- No. of Discs . . . . . 12 counter-rotating
- Knives per disc 2
- Disc Cutting Diameter . . . . . 500 mm (19.7″)
- Disc Drive . . . . . Bevel gears in sealed modules
- Disc Speed . . . . . Variable from approximately 1900 to 3000 rpm
- Cutting Height . . . . . 25 – 76 mm (1 – 3″)

Cutter Bar Angle . . . . . Adjustable from -2° to -8° or -5° to -10°, Hydraulically controlled

Auger
- Type . . . . . Undershot, full floating
- Auger diameter . . . . . 508 mm (20″)
- Auger floating range . . . . . 43.6 mm (1.7″)
- Auger flighting . . . . . 127 mm (5″)
- Auger speed . . . . . Variable, depends on header speed

Conditioner
- Type . . . . . Parallel steel slats or intermeshing rubber rolls
- Drive . . . . . 4HB V-belt, enclosed gears with U-joint drives to upper and lower rolls

Rolls
- Type . . . . . Molded rubber with meshing chevron design or parallel steel slats
- Roll length . . . . . 2591 mm (102″)
- Roll diameter . . . . . 264 mm (10-3/8″)
- Roll speed . . . . . Variable, depends on header speed
- Roll pressure . . . . . Torsion bar, single crank adjustment
- Crop discharge . . . . . Adjustable from 2438 to 965 mm (96 to 38″)

Field-Installed Options
- High stubble kit
- Header closure kit
- Rolling coulter crop dividers (available through Service Parts)
- Pushbar with tubular crop divider
- Gauge wheel kit

2358 DISC AUGER HEADER

Overall Width . . . . . 5542 mm (18′ 2″)

Weight . . . . . 2273 kg (5000 lbs.)

Header Drive . . . . . Hydraulic, variable flow – Forward – 345 bar (5000 psi)
– Reverse – 400 bar (5800 psi)

Header
- Flotation . . . . . Vertical & radial
- Cutting width . . . . . 5480 mm (18′)

Cutter Bar
- Type . . . . . Modular
- No. of discs 14
- Knives per disc 2
- Disc cutting diameter . . . . . 500 mm (19.7″)
- Disc drive . . . . . Bevel gears in sealed modules
- Disc speed . . . . . Variable from approx. 1600 to 3100 RPM
- Cutting height . . . . . 25 to 76 mm (1″ to 3″)
- Cutter bar angle . . . . . Adjustable from –2° to –8° or –5° to –10°, hydraulically controlled

Auger
- Type . . . . . Undershot, full floating
- Auger diameter . . . . . 508 mm (20″)
- Auger floating range . . . . . 43.6 mm (1.7″)
- Auger flighting . . . . . 127 mm (5″)
- Auger speed . . . . . Variable with header speed

Conditioner
- Type . . . . . Intermeshing parallel steel slats or rubber rolls
- Drive . . . . . 4HB V-belt, enclosed gears with U-joint drives to upper and lower rolls
- Roll type . . . . . Molded rubber with intermeshing chevron design
Intermeshing parallel slats
- Roll length . . . . . 2591 mm (102″)
- Roll diameter . . . . . 264 mm (10-3/8″)
- Roll speed . . . . . Variable with header speed
- Roll pressure . . . . . Torsion bar, single crank adjustment
- Crop discharge . . . . . Adjustable from 2438 to 965 mm (96 to 38″)

Field-Installed Options
- High stubble kit
- Header closure kit
- Rolling Coulter Crop Dividers (available through Service Parts)
- Pushbar with tubular crop divider
- Gauge wheel kit

HARDWARE TORQUE VALUES

Check the tightness of hardware periodically.

Use the following charts to determine the correct torque when checking, adjusting or replacing hardware on the tractor.

IMPORTANT: *DO NOT use the values listed in the charts if a different torque value or tightening procedure is specified in the is manual for a specific application. Torque values listed are for general use only.*

Install a lock washer on all bolts unless a locknut or jam nut is specified.

Install a flat washer at all slotted holes unless a carriage bolt or flanged head bolt is specified.

Make sure fastener threads are clean and not damaged.

NOTE: *A torque wrench is necessary to properly torque hardware.*

MINIMUM HARDWARE TIGHTENING TORQUES

IN NEWTON-METERS (FOOT POUNDS) FOR NORMAL ASSEMBLY APPLICATIONS

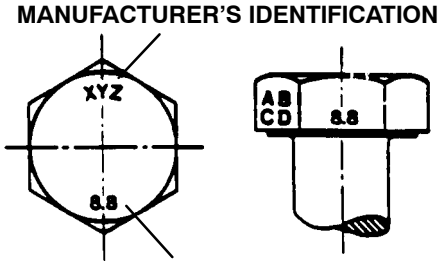
METRIC NON-FLANGED HARDWARE AND LOCKNUTS

NOMINAL SIZE	CLASS 5.8		CLASS 8.8		CLASS 10.9		LOCKNUT CL.8 W/CL8.8 BOLT
	UNPLATED	PLATED W/ZnCr	UNPLATED	PLATED W/ZnCr	UNPLATED	PLATED W/ZnCr	
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 (248)*	31 (274)*	40 (354)*	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)

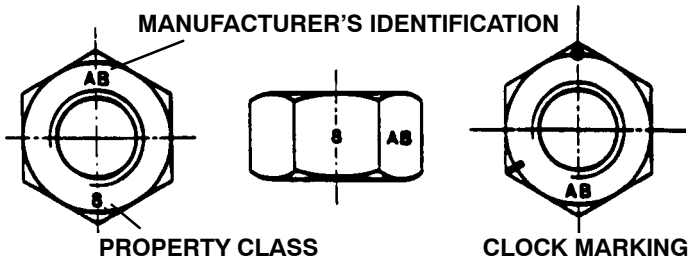
NOTE: Torque values shown with * are inch pounds.

IDENTIFICATION

HEX CAP SCREW AND CARRIAGE BOLTS CLASSES 5.6 AND UP



HEX NUTS AND LOCKNUTS CLASSES 05 AND UP



86529681 REV F 5.1

MINIMUM HARDWARE TIGHTENING TORQUES

IN NEWTON-METERS (FOOT POUNDS) FOR NORMAL ASSEMBLY APPLICATIONS

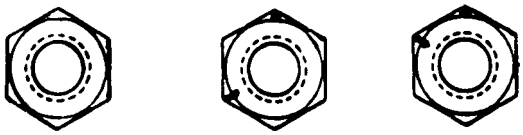
INCH NON-FLANGED HARDWARE AND LOCKNUTS

NOMINAL SIZE	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)*	1/4
5/16	13 (115)*	17 (149)*	20 (178)*	26 (229)*	28 (250)*	37 (324)*	17.5 (155)*	25 (220)*	5/16
3/8	23 (17)	30 (22)	35 (26)	46 (34)	50 (37)	65 (48)	31 (23)	44 (33)	3/8
7/16	37 (27)	47 (35)	57 (42)	73 (54)	80 (59)	104 (77)	50 (37)	71 (53)	7/16
1/2	57 (42)	73 (54)	87 (64)	113 (83)	123 (91)	159 (117)	76 (56)	108 (80)	1/2
9/16	81 (60)	104 (77)	125 (92)	163 (120)	176 (130)	229 (169)	111 (82)	156 (115)	9/16
5/8	112 (83)	145 (107)	174 (128)	224 (165)	244 (180)	316 (233)	153 (113)	215 (159)	5/8
3/4	198 (146)	256 (189)	306 (226)	397 (293)	432 (319)	560 (413)	271 (200)	383 (282)	3/4
7/8	193 (142)	248 (183)	495 (365)	641 (473)	698 (515)	904 (667)	437 (323)	617 (455)	7/8
1	289 (213)	373 (275)	742 (547)	960 (708)	1048 (773)	1356 (1000)	654 (483)	924 (681)	1

NOTE: Torque values shown with * are inch pounds.

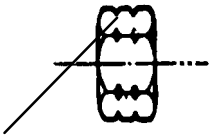
IDENTIFICATION
CAP SCREWS AND CARRIAGE BOLTS

SAE GRADE 2 SAE GRADE 5 SAE GRADE 8



REGULAR NUTS SAE GRADE 5 HEX NUTS SAE GRADE 8 HEX NUTS

LOCKNUTS



GRADE IDENTIFICATION
GRADE A NO NOTCHES
GRADE B ONE CIRCUMFERENTIAL NOTCH
GRADE C TWO CIRCUMFERENTIAL NOTCHES

GRADE IDENTIFICATION
GRADE A NO MARKS
GRADE B THREE MARKS
GRADE C SIX MARKS
MARKS NEED NOT BE LOCATED AT CORNERS

GRADE A NO MARK
GRADE B LETTER B
GRADE C LETTER C

GRADE IDENTIFICATION

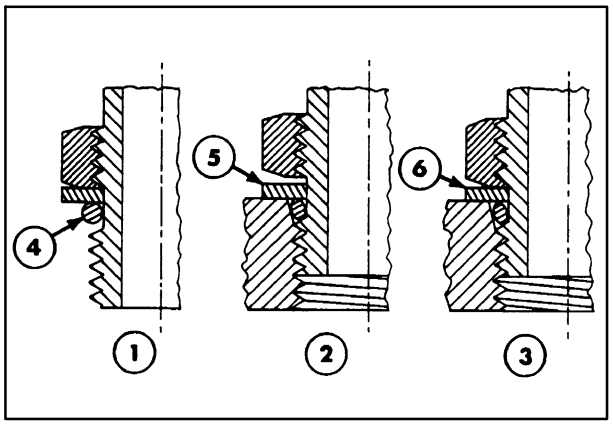
86529681 REV F 5.2

INSTALLATION OF ADJUSTABLE FITTINGS IN STRAIGHT THREAD O RING BOSSES

1. Lubricate the O ring by coating it with a light oil or petroleum. Install the O ring in the groove adjacent to the metal backup washer which is assembled at the extreme end of the groove, 4.
2. Install the fitting into the SAE straight thread boss until the metal backup washer contacts the face of the boss, 5.

NOTE: *Do not over tighten and distort the metal backup washer.*

3. Position the fitting by turning out (counterclockwise) up to a maximum of one turn. Holding the pad of the fitting with a wrench, tighten the locknut and washer against the face of the boss, 6.



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STANDARD TORQUE DATA FOR HYDRAULIC TUBES AND FITTINGS

TUBE NUTS FOR 37° FLARED FITTINGS								O RING BOSS PLUGS ADJUSTABLE FITTING LOCKNUTS, SWIVEL JIC - 37° SEATS			
				TORQUE				TORQUE			
SIZE	TUBING OD		THREAD SIZE	FOOT POUNDS		NEWTON METERS		FOOT POUNDS		NEWTON METERS	
	In.	mm		Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
4	1/4	6.4	7/16-20	9	12	12	16	6	10	8	14
5	5/16	7.9	1/2-20	12	15	16	20	10	15	14	20
6	3/8	9.5	9/16-18	21	24	29	33	15	20	20	27
8	1/2	12.7	3/4-18	35	40	47	54	25	30	34	41
10	5/8	15.9	7/8-14	53	53	72	79	35	40	47	54
12	3/4	19.1	1-1/16-12	77	82	104	111	60	70	81	95
14	7/8	22.2	1-3/16-12	90	100	122	136	70	80	95	109
16	1	25.4	1-5/16-12	110	120	149	163	80	90	108	122
20	1-1/4	31.8	1-5/8-12	140	150	190	204	95	115	129	158
24	1-1/2	38.1	1-7/8-12	160	175	217	237	120	140	163	190
32	2	50.8	2-1/2-12	225	240	305	325	250	300	339	407

These torques are not recommended for tubes of 1/2″ (12.7 mm) OD and larger with wall thickness of 0.035″ (0.889 mm) or less. The torque is specified for 0.035″ (0.889 mm) wall tubes on each application individually.

Before installing and torquing 37° flared fittings, clean the face of the flare and threads with a clean solvent or Loctite cleaner and apply hydraulic sealant Loctite no. 569 to the 37° flare and the threads.

Install fitting and torque to specified torque, loosen fitting and retorque to specifications.

PIPE THREAD FITTING TORQUE

Before installing and tightening pipe fittings, clean the threads with a clean solvent or Loctite cleaner and apply sealant Loctite no. 567 for all fittings including stainless steel or no. 565 for most metal fittings. For high filtration/zero contamination systems use no. 545.

Thread Size	Torque (Maximum)
1/8″ – 27	13 N·m (10 ft. lbs.)
1/4″ – 18	16 N·m (12 ft. lbs.)
3/8″ – 14	22 N·m (16 ft. lbs.)
1/2″ – 14	41 N·m (30 ft. lbs.)
3/4″ – 14	54 N·m (40 ft. lbs.)

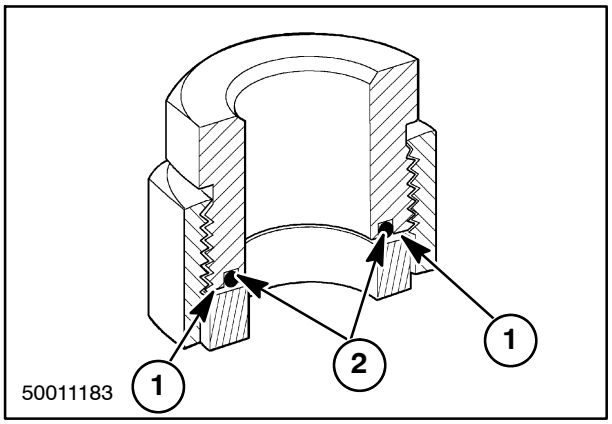
INSTALLATION OF ORFS (O RING FLAT FACED) FITTINGS

When installing ORFS fittings thoroughly clean both flat surfaces of the fittings, 1, and lubricate the O-ring, 2, with light oil. Make sure both surfaces are aligned properly. Torque the fitting to specified torque listed throughout the repair manual.

IMPORTANT: *If the fitting surfaces are not properly cleaned, the O-ring will not seal properly. If the fitting surfaces are not properly aligned, the fittings may be damaged and will not seal properly.*

IMPORTANT: *Always use genuine New Holland replacement oils and filters to ensure proper lubrication and filtration of engine and hydraulic system oils.*

The use of proper oils, grease, and keeping the hydraulic system clean will extend machine and component life.



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RECOMMENDED SEALANTS

SEALANTS

Description	Part Number	Typical Applications	Strength	Color
Thread Lock	L22200 (222)	Small screws/hardware	Low	Purple
	L24231 (242)	Small screws/hardware	Medium	Blue
	L29000 (290)	Wicking Type	Medium	Green
	L26231 (262)	Nuts & Bolts	High	Red
Thread Sealant	L54531 (545)	Hydraulic/Pneumatic	Non-fouling	
	L56531 (565)	Pipe Sealant	Controlled strength	
	L56747 (567)	Pipe Sealant	High temperature	
Silicones	L81724 (3.5 oz tube)	Ultra Blue RTV Gasket	Non-corrosive	Blue
	L58775 (10.2 oz cartridge)	Ultra Blue RTV Gasket	Non-corrosive	Blue
	L82180 (3.35 oz tube)	Ultra Blue RTV Gasket	Non-corrosive	Black
	L59875 (10.2 oz cartridge)	Ultra Blue RTV Gasket	Non-corrosive	Black
518 Gasket Eliminator	L51831DS	Mating Machined Surfaces	Flexible	Red

ECOLOGY AND THE ENVIRONMENT

Soil, air, and water are vital factors of agriculture and life in general. When legislation does not yet rule the treatment of some of the substances which are required by advanced technology, common sense should govern the use and disposal of products of a chemical and petrochemical nature.

The following are recommendations which may be of assistance:

- Become acquainted with and ensure that you understand the relative legislation applicable to your country.
- Where no legislation exists, obtain information from suppliers of oils, filters, batteries, fuels, antifreeze, cleaning agents, etc., with regard to their effect on man and nature and how to safely store, use and dispose of these substances. Agricultural consultants will, in many cases, be able to help you as well.

HELPFUL HINTS

1. Avoid filling tanks using cans or inappropriate pressurized fuel delivery systems which may cause considerable spillage.
2. In general, avoid skin contact with all fuels, oils, acids, solvents, etc. Most of them contain substances which may be harmful to your health.
3. Modern oils contain additives. Do not burn contaminated fuels and or waste oils in ordinary heating systems.
4. Avoid spillage when draining off used engine coolant mixtures, engine, gearbox and hydraulic oils, brake fluids, etc. Do not mix drained brake fluids or fuels with lubricants. Store them safely until they can be disposed of in a proper way to comply with local legislation and available resources.
5. Modern coolant mixtures, i.e. antifreeze and other additives, should be replaced every two years. They should not be allowed to get into the soil but should be collected and disposed of safely.
6. Do not open the air-conditioning system yourself. It contains gases which should not be released into the atmosphere. Your dealer or air conditioning specialist has a special extractor for this purpose and will have to recharge the system properly.
7. Repair and leaks or defects in the engine cooling or hydraulic system immediately.
8. Do not increase the pressure in a pressurized circuit as this may lead to a component failure.
9. Protect hoses during welding as penetrating weld splatter may burn a hole or weaken them, allowing the loss of oils, coolant, etc.

UNIVERSAL SYMBOLS

As a guide to the operation of your tractor, various universal symbols have been utilized on the instruments, controls, switches, and fuse box. The symbols are shown below with an indication of their meaning.


Thermostart starting aid


Alternator charge


Fuel level


Automatic Fuel shut-off


Engine speed (rev/min x 100)


Hours recorded


Engine oil pressure


Engine coolant temperature


Coolant level


Tractor lights


Headlamp main beam


Headlamp dipped beam


Work lamps


Stop lamps

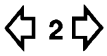

Horn


Radio

KAM
Keep alive memory


Turn signals

Turn signals –one trailer



Turn signals –two trailers


Front wind-screen wash/wipe


Rear wind-screen wash/wipe


Heater temp-erature control


Heater fan


Air conditioner


Air filter blocked


Parking brake


Brake fluid level


Trailer brake


Roof beacon


Warning! Corrosive substance


P.T.O.

N
Transmission in neutral


Creeper gears


Slow or low setting


Fast or high setting


Ground speed


Differential lock


Rear axle oil tem-perature


Transmission oil pressure


FWD engaged


FWD disengaged

Warning!

Hazard warning lights

Variable control

Pressurized! Open carefully

Position Control

Draft Control

Accessory socket

Implement socket

%age slip

Hitch raise (rear)

Hitch lower (rear)

Hitch height limit (rear)

Hitch height limit (front)

Hitch disabled

Hydraulic and transmission filters

Remote valve extend

Remote valve retract

Remote valve float

Malfunction! See Operator's Manual

Malfunction! (alternative symbol) See Operator's Manual