

DC132 Disc Mower-Conditioner

Service Manual

84207370 3/09
1st Printing



COMPLETE CONTENTS

SECTION 00 - GENERAL INFORMATION

Chapter 1 - General Information

CONTENTS

Section	Description	Page
	Special Tools	2
	Specifications	4
	Center-Pull Disc Mower Conditioner	4
	Lubrication	5
	General Information	5
	Grease Fittings	5
	Chains	5
	Recommended Lubricants and Coolants	6
	Minimum Hardware Tightening Torques	7
	Installation of Adjustable Fittings in Straight Thread O-Ring Bosses	9
	Standard Torque Data for Hydraulic Tubes and Fittings	9
	Pipe Thread Fitting Torque	10
	Installation of ORFS (O-ring Flat Faced) Fittings	10

SPECIFICATIONS

CENTER-PULL DISC MOWER CONDITIONER

MODEL	DC132	DC132 with Flails
Cutter Bar		
Cutting width	4.0 mm (13 ft 0 in)	4.0 mm (13 ft 0 in)
Cutting height	24 – 81 mm (0.95 – 3.2 in)	
Cutting height w/opt. high-stubble shoes	58 – 115 mm (2.25 – 4.5 in)	
Cutter bar tilt angle, degrees	2 – 10	
Type cutterbar	Modular	
Number of discs/Knives per disc	10/2	10/2
Disc speed @ rated PTO speed	3000 rpm	
Cutter bar shear protection	Std. – Frangible splines in disc drive hub	
Cutter bar flotation	Vertical and lateral, adjustable springs	
Conditioner		
Type	Spiral intermeshing molded rubber rolls	Flail Rotor w/100 tapered flails
Length	2591 mm (102 in)	2591 mm (102 in)
Diameter	264 mm (2 x 10.4 in) rolls	560 mm (1 x 22 in) flail rotor
Drive	4 HB v-belt & enclosed gears	4 HB v-belt
Speed, rpm	740	1011 std. or 726 opt.
Conditioning Roll Tension Adjustment	Single crank	NA
Conditioner gap adjustment	Drawbolt stop, each end	Single crank adjustment of rotor hood
Swath width	2.4 m (8 ft)	2.4 m (8 ft)
Windrow width	.9 – 2.4 m (3 – 8 ft)	.9 – 2.4 m (3 – 8 ft)
Driveline		
Input speed, rpm	1000	
Driveline protection	Slip Clutch and Overrunning Clutch Assembly @ rear of PTO shaft	
Tractor Requirements		
Minimum PTO power required	67 kW (90 Hp)	67 kW (90 Hp)
PTO shaft spline/size requirements	21-spline/1-3/8 inch	21-spline/1-3/8 inch
Hydraulic circuits required	2	
Minimum relief pressure required	103 bar (1500 psi)	
Electrical	7-pin electrical connector for transport lights	
Drawbar/3-pt Hitch	ASAE Cat. II or III drawbar or Cat. III 3-pt hitch	

MINIMUM HARDWARE TIGHTENING TORQUES

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

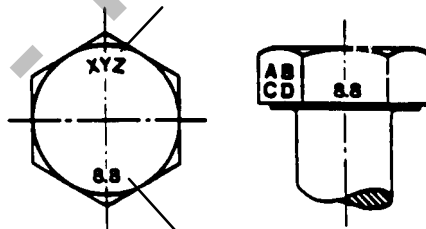
METRIC NON-FLANGED HARDWARE AND LOCKNUTS

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

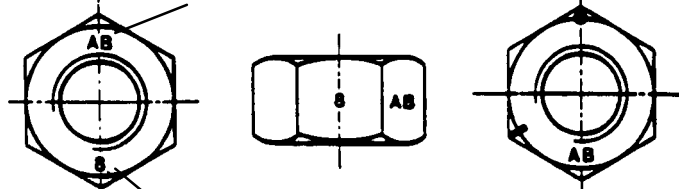
MANUFACTURER'S IDENTIFICATION



PROPERTY CLASS

HEX NUTS AND LOCKNUTS CLASSES 05 AND UP

MANUFACTURER'S IDENTIFICATION

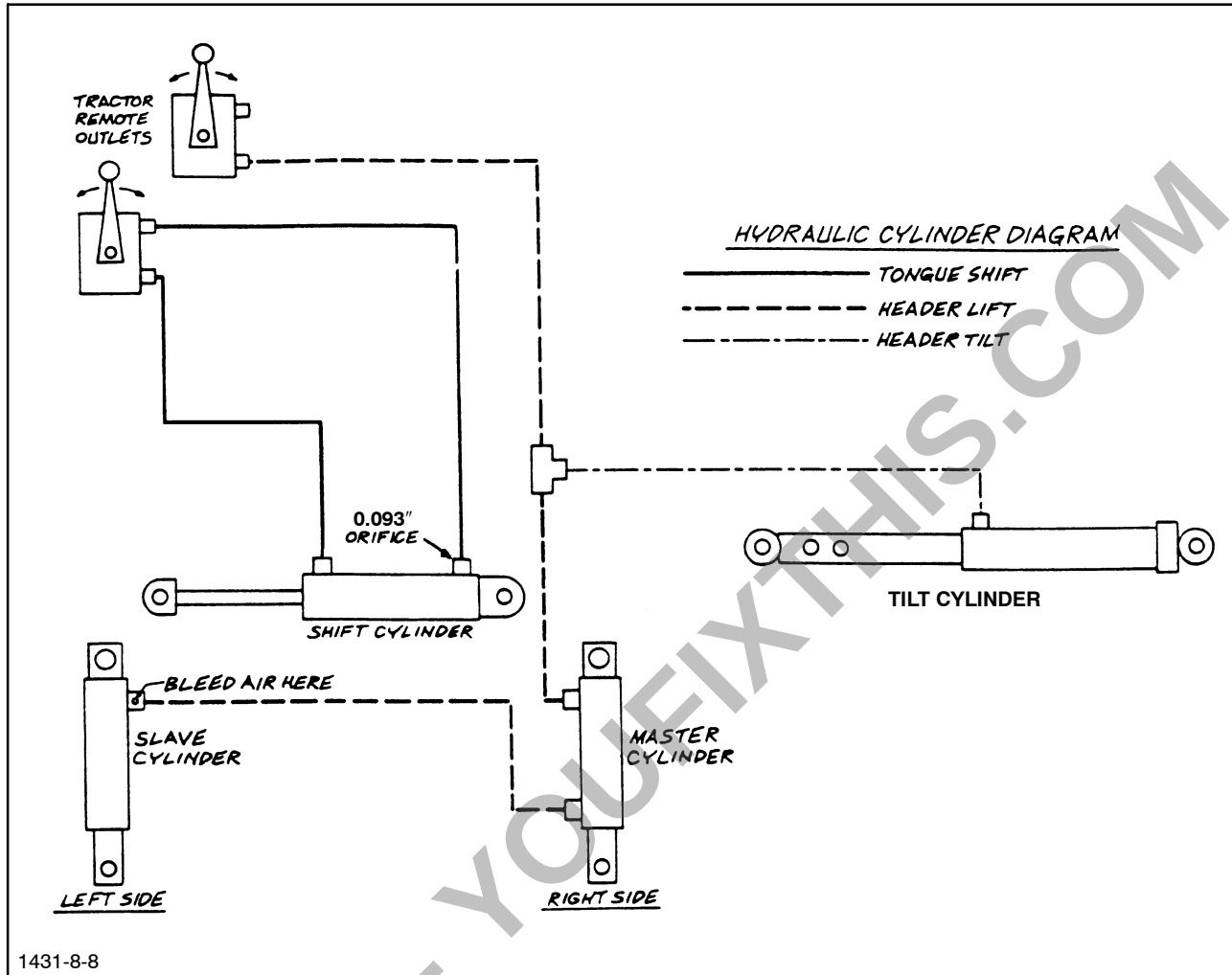


PROPERTY CLASS

CLOCK MARKING

86529681 REV F 5.1

HYDRAULIC DIAGRAM



5

⚠ **WARNING** ⚠

Fluid under pressure can have sufficient force to penetrate the skin, causing serious personal injury. Always protect the skin and eyes from escaping fluid under pressure.

Before disconnecting lines or fittings, be sure to release all pressure by operating the tractor control valves. Before applying pressure to the system, be sure all connections are tight and that hoses and connections are not damaged.

If injured by escaping fluid, obtain medical assistance at once. Serious infection or reaction can develop if medical treatment is not administered immediately.

Failure to comply could result in death or serious injury.

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MODEL DC132 WIRING SCHEMATIC



OVERHAUL

SWIVEL HITCH GEARBOXES

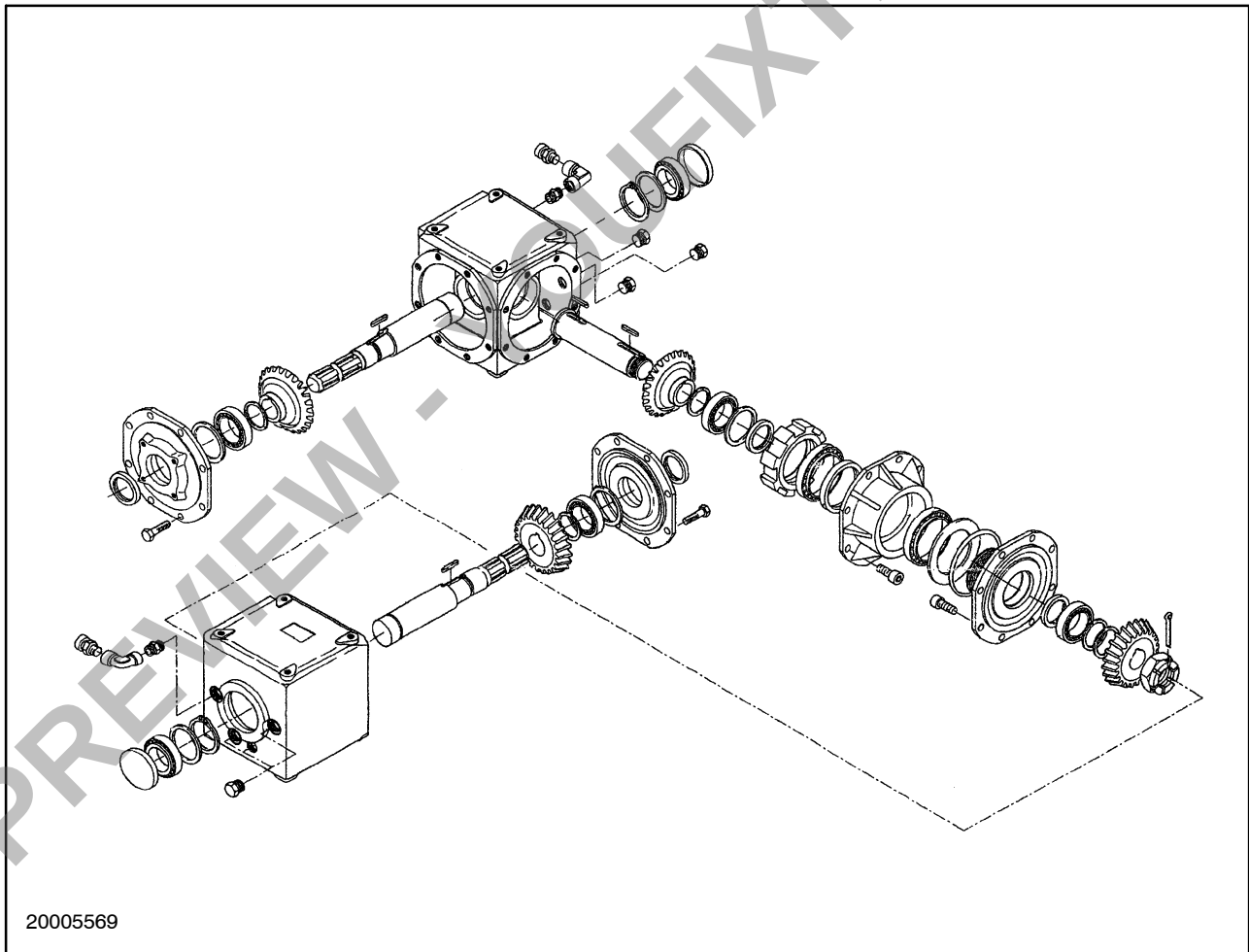
Description

The Swivel Hitch Gearbox on DC132 Pivot Tongue Disc Mower Conditioner, allows a smaller angle between the tractor and mower without damaging either the tractor PTO or mower PTO shaft.

The lower gearbox directs the torque from the tractor PTO, through the swivel neck gear, into the upper gearbox, to the disc mower PTO shaft, and pivot tongue gearbox. The upper and lower gearboxes are nearly identical. Four beveled gears are used in the construction of the swivel hitch gearbox, and are interchangeable. The lower PTO input gearbox is coupled to the tractor using a six-spline shaft. The upper PTO output gearbox contains a twenty-one spline shaft.

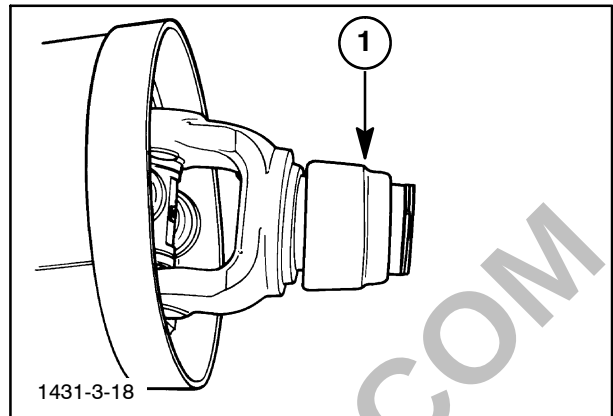
The inner neck casing is held to the outer neck casing by the use of a center joint lock nut. Motion between the two gearboxes occurs when the tractor initiates a turn. Bearings installed in the neck permit unrestricted horizontal movement between the upper and lower gearboxes. The neck shaft rotates within the assembly maintaining a constant PTO speed without regard to the direction each gearbox is facing. An O ring is installed between the inner and outer neck casings to prevent leakage from the swivel hitch gearbox at the point of relative motion.

To maintain a visible oil level in the lower gearbox, a set of two seals is installed on the neck shaft. Oil leaking out the lower gearbox breather is a possible indication of worn neck shaft seals, and should be investigated to prevent damage to either assembly.



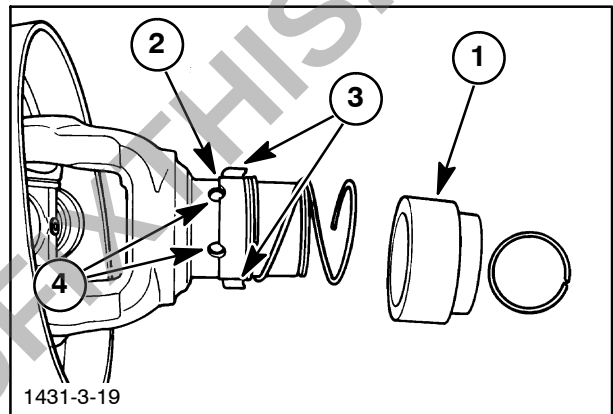
AUTO-LOK SLIDE LOCK

The DC132 is equipped with an Auto-Lok slide lock, 1, which automatically latches in the rearward position when pulled back. The primary PTO shaft may then be held with both hands to guide it onto the tractor shaft; as the yoke slides onto the tractor shaft, the slide lock collar springs forward to latch the PTO shaft to the tractor shaft.



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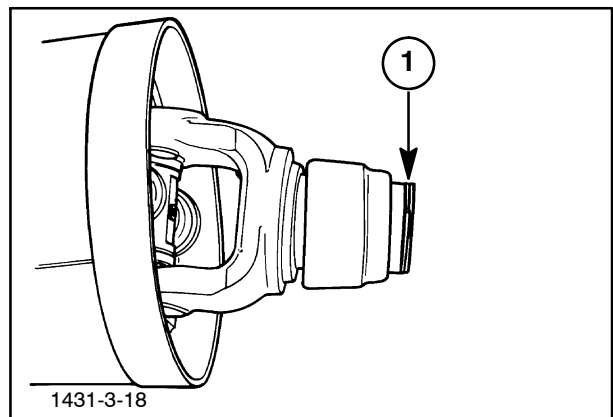
The Auto-Lok slide lock works as follows; as the collar is slid rearward, it tends to twist or cock slightly sideways, allowing a shoulder in the collar, 1, to catch on a ridge on the yoke, 2. As the yoke is slid onto the tractor shaft, and the pawls, 3, line up with the groove on the tractor shaft, four balls, 4, in the yoke are pushed outward by the end of the shaft. These four balls center the collar, causing the shoulder to disengage from the ridge, and the collar springs forward to lock the pawls in the tractor PTO shaft groove.



6

Disassembly

1. Pull the slide lock collar rearward until it latches in place. Use a screwdriver or spring pick to remove the retaining ring, 1, from the end of the yoke.



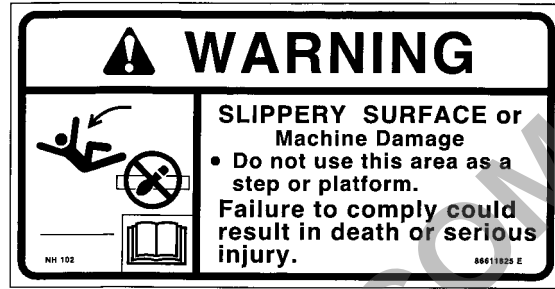
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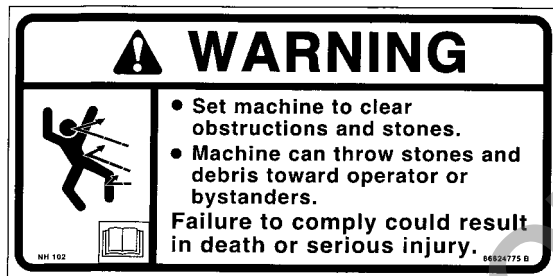
Part #86624774 (2)

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Part #86611825 (3)

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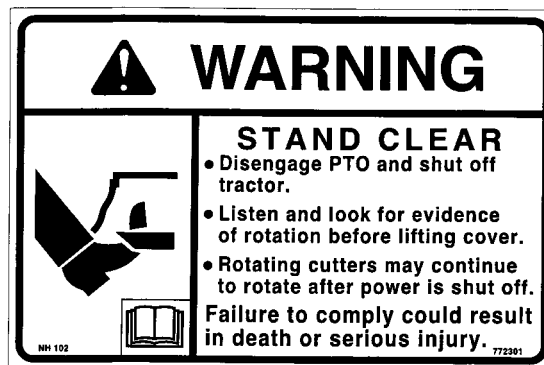
Part #86624775 (2)

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Part #86622073

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Part #86628571 (3)

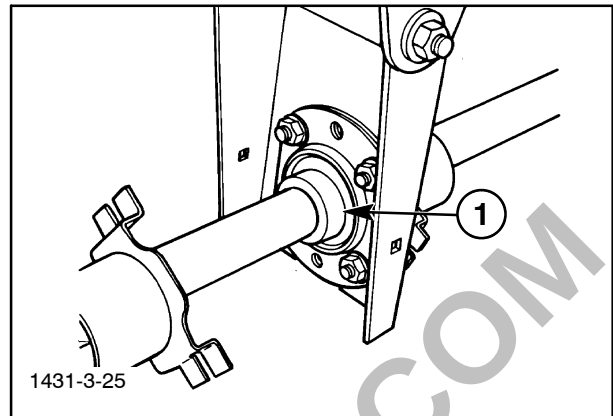
SECTION 31 - IMPLEMENT POWER TAKE OFF (PTO)

Chapter 1 - Drive Lines (Standard Tongue)

CONTENTS

Section	Description	Page
	DC132 Standard Tongue	2
	Introduction	2
	Auto-Lok Slide Lock	3
	Disassembly	3
	Assembly	5
	Drive Shaft Removal and Installation	6
	Standard Driveline Guards - Disassembly	9
	Primary Driveline Guards - Disassembly	10
	Driveline Guards - Inspection	11
	Secondary Driveline Guards - Assembly	11
	80° CV Front Guard Assembly	12
	CV/U-Joints	13
	Disassembly	13
	Inspection	14
	Assembly	15
	Tongue Jackshaft	16
	Disassembly	16
	Assembly	18

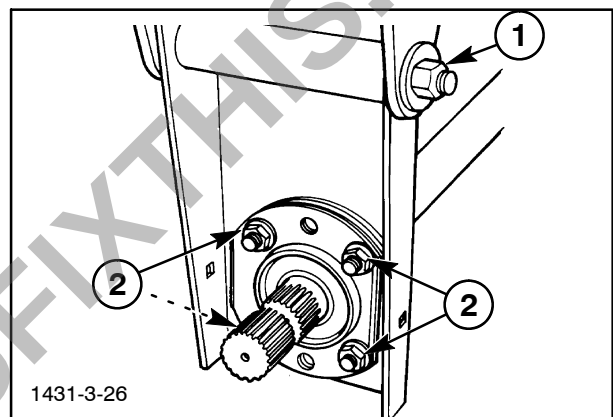
4. Remove the bearing lock collars, 1, by loosening the setscrews. Use a hammer and punch to drive the lock collar in the direction opposite shaft rotation until it becomes loose. Slide the lock collar off the bearing flange. Repeat for the other bearing assembly.



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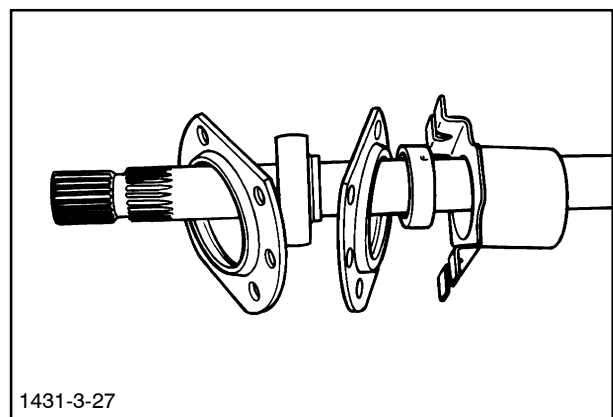
5. Loosen the bearing hanger pivot bolt and nut, 1, so that the hanger bracket is loose. Remove the four carriage bolts and flange nuts, 2, securing the bearing flangettes to the hanger bracket. Repeat for the remaining bearing hanger.

Lower the shaft down through the slots in the bearing hangers, and slide the shaft rearward out of the front bearing.



39

6. Clean the shaft using emery cloth, so that the bearings and other components may be slid off the shaft.



40

SECTION 31 - IMPLEMENT POWER TAKE OFF (PTO)

Chapter 5 - Gearbox (Swivel Hitch)

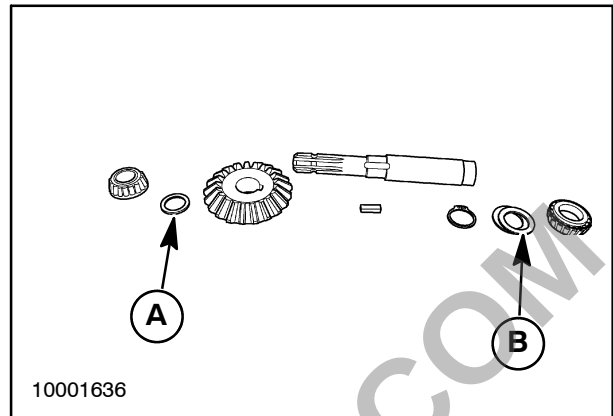
CONTENTS

Section	Description	Page
	Introduction	2
	Special Tools	2
	Overhaul	6
	Swivel Hitch Gearboxes	6
	Description	6
	Removal	7
	Disassembly	10
	Neck Disassembly	12
	Neck Assembly	16
	Upper Gear Box	21
	Disassembly	21
	Inspection	22
	Assembly	22
	Upper Gearbox and Neck Assembly	24
	Assembly	24
	Backlash Adjustment	25
	Gear Contact Pattern	28
	Lower Gear Box	33
	Disassembly	33
	Inspection	34
	Assembly	34
	Lower Gearbox and Neck Assembly	36
	Assembly	36
	Backlash Adjustment	37
	Gear Contact Pattern	40
	Lower Gearbox, Neck Assembly, and Upper Gearbox	45
	Assembly	45
	Swivel Hitch Gearbox Installation	46

7. Move the shims from A, between the outer bearing and gear, to B, between the inner bearing and the snap ring.
8. Assemble the shaft as described earlier in this section.
9. Install the shaft and gear assembly in the housing.

NOTE: Do not apply RTV silicone sealant or Loctite® 270 to the gearbox at this time.

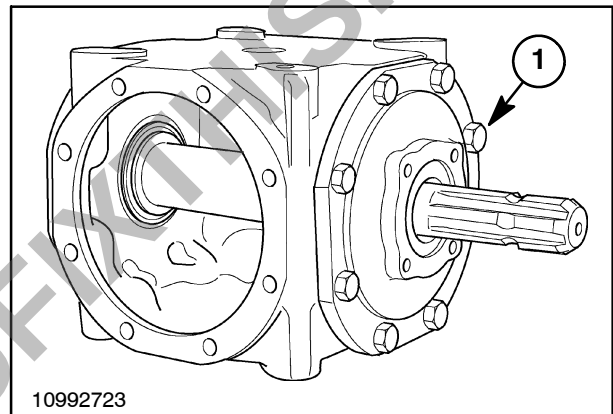
10. Install the cover on the housing.



92

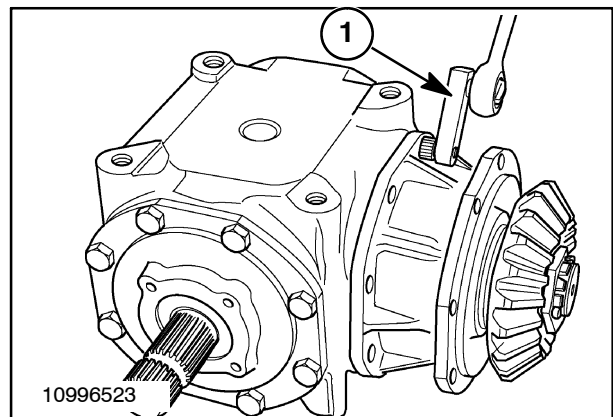
11. Install the eight M10 x 22 cap screws, 1, securing the cover to the housing. Torque the bolts to 78 N·m (58 lb ft).

NOTE: Do not apply RTV silicone sealant or Loctite® 270 to the gearbox at this time.



93

12. Install the neck assembly on the lower gearbox.
13. Install the eight M10 x 22 hex bolts to attach the neck to the upper gear box. Torque the bolts to 78 N·m (58 lb ft) using special tool, 1.
14. Check for proper backlash reading at the input shaft as described earlier in this section.



94

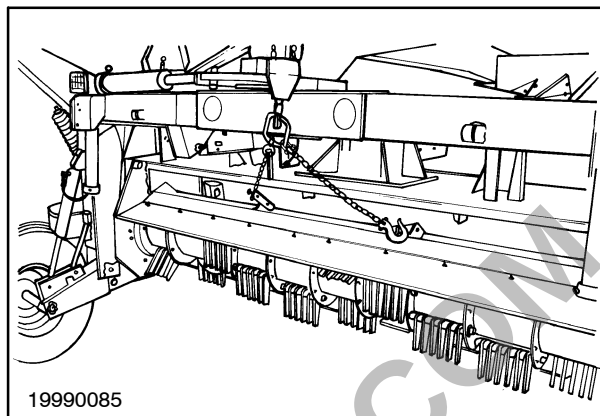
Installation

1. With the liners installed, lift the hood into the disc mower from the rear. The pivot end of the hood goes toward the front of the header.



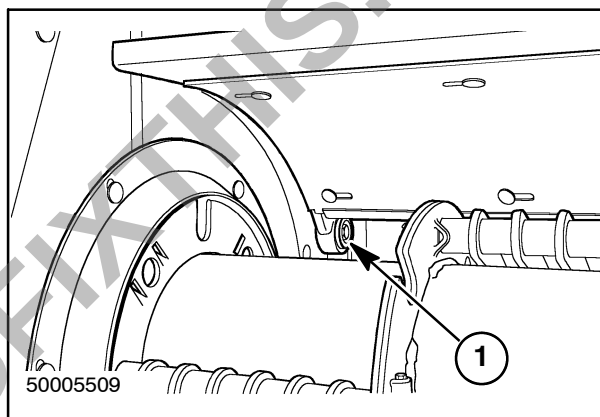
The hood is heavy. Use caution when installing, removing or handling. Failure to comply may result in minor or moderate injury.

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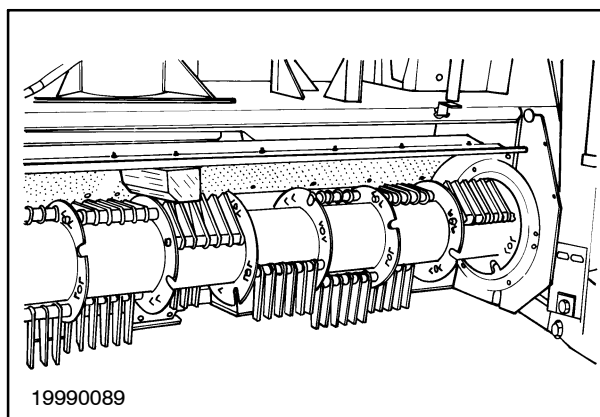
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2. Line up the pivot bolt holes in the hood and frame, and install the pivot bolts, 1, with nuts and washers.



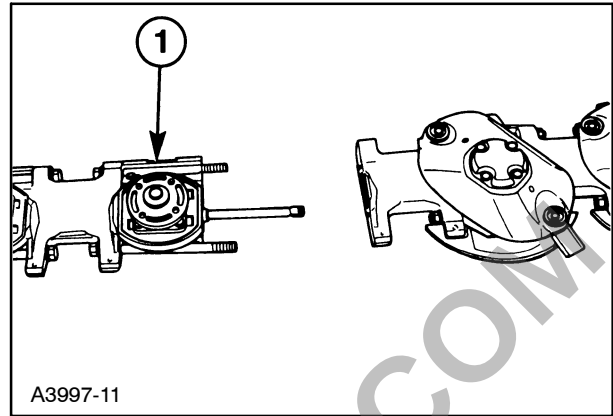
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3. Block up the rear of the hood to line up the down stop bolt holes.



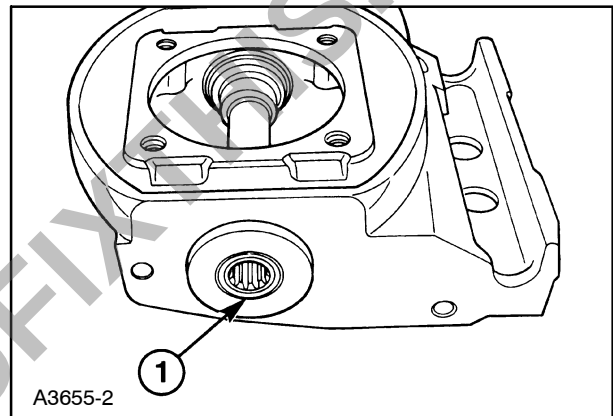
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3. Install the replacement module, 1, on one end of the cutter bar so that the connecting shaft splines into the pinion shaft, the tie bolts are properly positioned and the module housing fits onto the aligning dowels on the spacer.



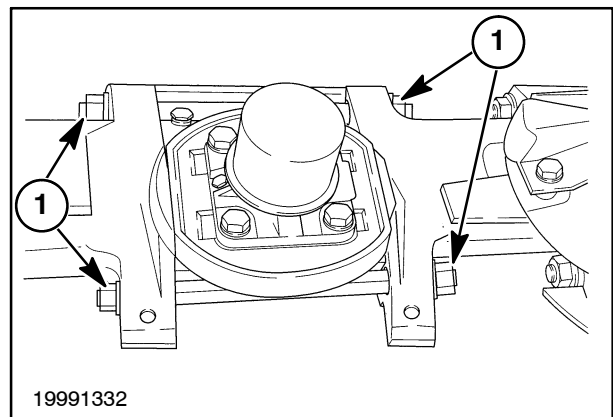
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It may be necessary to determine the direction of rotation of a replacement module prior to installing it in the cutter bar. Note that the pinion end of the lower module shaft has a groove, 1, in it to indicate which side of the module the pinion gear is on, which indicates the direction of rotation. If the groove (pinion) is on the right side of assembled module, module will rotate clockwise, while a module with the groove (pinion) on the left will rotate counter-clockwise.



55

4. Slide the cutter bar together so that the other connecting shaft splines into the pinion shaft, and the spacer aligning dowels engage the holes in the disc module. Ensure that the discs on either side of the replacement module remain timed to each other.
5. Install the nuts, 1, onto the tie bolts, and tighten finger tight, ensuring that the tie bolt threads protrude out of the nuts on both ends for full thread engagement in the nuts.

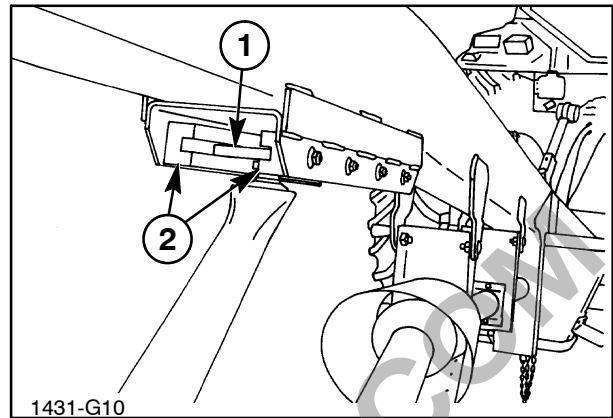


56

GUIDANCE LINK SHIMMING

Slide the front of the guidance link, 1, in the plastic slides, 2. There should be no more than 1.5 mm (0.060 in) clearance between the plate and the slides at any point, but the plate should not bind in the slides. Add or remove shims between the slides and the frame on both sides to achieve the appropriate clearance. Tighten the 1/4 inch cap screws and locknuts to remove all play between the plastic slides and the mount, and then turn each locknut one full turn.

NOTE: Do not overtighten, or plastic slides will be damaged.



GEARBOX SPECIFICATIONS

Pivot Gearbox

Input shaft gear cap screw torque	60 to 70 N·m (45 to 50 lb ft)
Bearing cap retaining bolts	60 to 70 N·m (45 to 50 lb ft)
Output pulley retaining nut	205 N·m (150 lb ft)
Input shaft rolling torque	6 to 9 kg/cm (5 to 8 lb in)
Output shaft end play	0 to 0.05 mm (0 to 0.002 in)
Lubricant	80W-90 GL5

Right-Hand Gearbox

Input pulley retaining nut	205 N·m (150 lb ft)
Cutter bar output shaft end cap cap screws	28 N·m (248 lb in)
Conditioner roll drive shaft end cap cap screws	56 N·m (41 lb ft)
Input shaft rolling torque	2 to 5.5 kg/cm (2 to 5 lb in)
Cutter bar drive shaft rolling torque	0 to 3.5 kg/cm (0 to 3 lb in)
Conditioner drive shaft rolling torque	0 to 3.5 kg/cm (0 to 3 lb in)
Lubricant	80W-90 GL5

Conditioner Drive Gearbox

Input shaft drive pulley cap screw	174 N·m (128 lb ft)
Gearbox mounting cap screws	113 N·m (83 lb ft)
Conditioning roll drive shaft clamp bolts	113 N·m (83 lb ft)
Input shaft rolling torque	0 to 5.5 kg/cm (0 to 5 lb in)
Intermediate shaft rolling torque	2 x torque on input shaft plus 5.5 to 11 kg/cm (5 to 10 lb in)
Lower output shaft rolling torque	Torque on intermediate shaft plus 4.5 to 11 kg/cm (4 to 10 lb in)
Sealant for bolt threads and covers	RTV Silicone sealer
Lubricant	80W-90 GL5

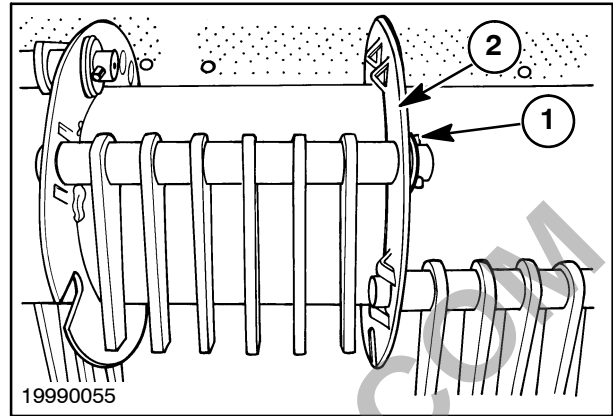
4. Drive the roll pin into the right side, 1.
5. The flails should pivot freely. If they do not, inspect the rotor for a bent or damaged disc, 2, or flail shaft and repair or replace as needed.

ROTOR

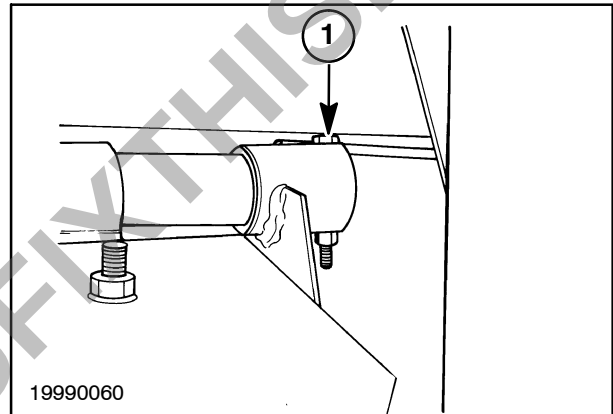
Removal

NOTE: The rotor can be removed and reinstalled without removing the conditioner hood.

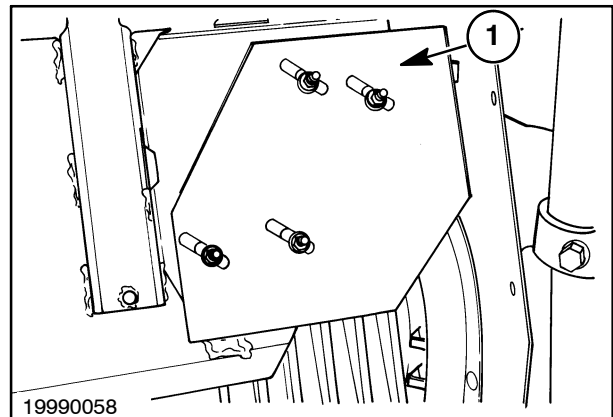
1. Raise or remove the rear curtain and remove the side windrow shields.
2. Remove the two retaining bolts, 1, from both ends of the swathgate.
3. Remove the right extender plate from the swathgate, 1.



14



15



16

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