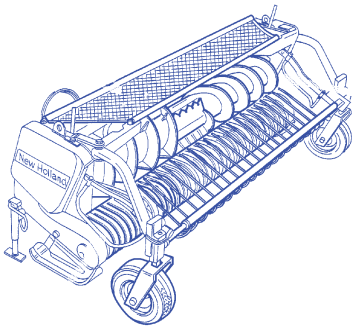

NEW HOLLAND

346W
356W
366W

REPAIR MANUAL

NEW HOLLAND

SERVICE

87576103 7/06
Replaces 87051565

346W, 356W, 366W 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 346W, 356W and 366W Headers.

COMPLETE CONTENTS

SECTION 00 - GENERAL INFORMATION

Chapter 1 – General Information

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SECTION 00 - GENERAL INFORMATION

Chapter 2 – Specifications

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SECTION 21 - TRANSMISSION

Chapter 1 - Drive Gearbox

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SECTION 39 - FRAMES

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SECTION 60 - PRODUCT FEEDING

Chapter 4 – Clutches

CONTENTS

SECTION 00 - GENERAL INFORMATION

Chapter 1 – General Information

CONTENTS

GENERAL INFORMATION

References to the RIGHT and LEFT sides of the header are determined by facing the direction of forward travel.

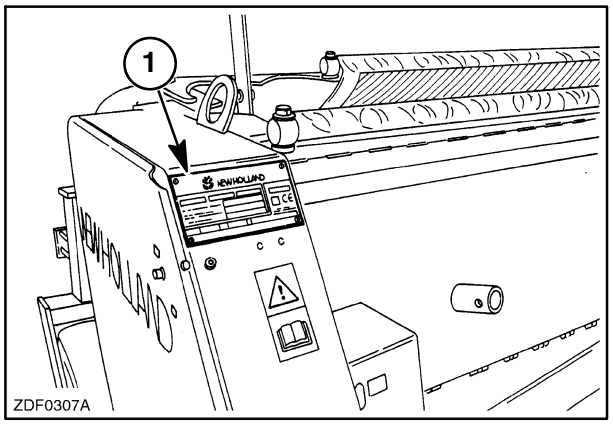
All data given in this manual are subject to production variations. Dimensions and weights are approximate. Illustrations do not necessarily show headers in standard condition. For exact information, please ask your authorized New Holland dealer.

The pictures in this manual may not be of your windrow pickup. This manual covers three models of windrow pickups sold in different areas and with different options. The decals shown may be different than on your unit due to requirements in different countries. Check the operator's manual to determine the correct decals for your windrow pickup.

PRODUCT IDENTIFICATION NUMBER

The product identification number plate, 1, is located on the rear of the header.

The pickup is assembled using metric hardware wherever possible. English hardware is used as required to use New Holland standard parts. Most of the English hardware is in the reel.



1

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.

You can help to avoid farm accidents by following these precautions:

1. **Do not attempt to lubricate or make any adjustments on the harvester or attachment while it is in motion or if the engine is running.**
2. **Do not permit anyone to ride on the harvester or attachment.**
3. **Keep all shields in place while the harvester or attachment is in operation.**
4. **If the feeding area of the harvester or attachment becomes plugged, do not attempt to unplug or remove any material while the machine is in operation or if the engine is running.**
5. **Do not attempt to force material into the harvester or attachment with your feet or hands while it is in operation.**
6. **After making adjustments, be sure all tools are removed from the attachment and check the attachment thoroughly for loose parts or bolts.**
7. **Do not work under the attachment when it is in the raised position unless it is properly blocked.**
8. **Be sure that the brakes are locked before leaving the cab.**
9. **Use flashing lights or reflectorized signs to help prevent highway accidents.**

MINIMUM HARDWARE TIGHTENING TORQUES

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

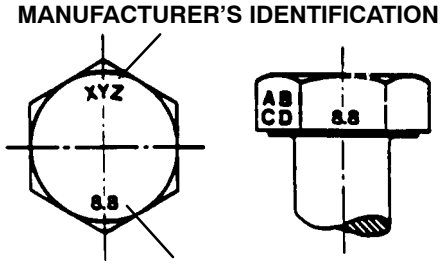
METRIC HARDWARE AND LOCKNUTS

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	15* (1.7)	19* (2.2)	23* (2.6)	30* (3.4)	33* (3.7)	42* (4.8)	16* (1.8)
M6	51* (5.8)	67* (7.6)	79* (8.9)	102* (12)	115* (13)	150* (17)	56* (6.3)
M8	124* (14)	159* (18)	195* (22)	248* (28)	274* (31)	354* (40)	133* (15)
M10	21 (28)	27 (36)	32 (43)	41 (56)	45 (61)	58 (79)	22 (30)
M12	36 (49)	46 (63)	55 (75)	72 (97)	79 (107)	102 (138)	39 (53)
M16	89 (121)	117 (158)	137 (186)	177 (240)	196 (266)	254 (344)	97 (131)
M20	175 (237)	226 (307)	277 (375)	358 (485)	383 (519)	495 (671)	195 (265)
M24	303 (411)	392 (531)	478 (648)	619 (839)	662 (897)	855 (1160)	338 (458)

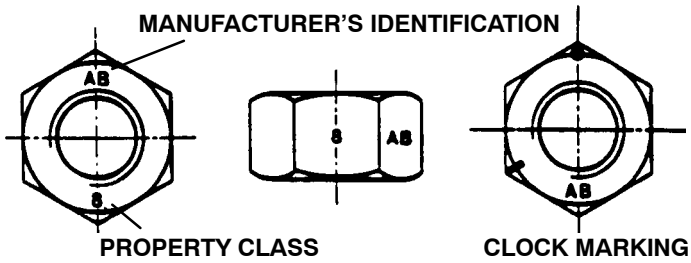
NOTE: Torque values shown with * are inch pounds.

IDENTIFICATION

HEX CAP SCREW AND CARRIAGE BOLTS CLASSES 5.6 AND UP



HEX NUTS AND LOCKNUTS CLASSES 05 AND UP



MINIMUM HARDWARE TIGHTENING TORQUES

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

INCH HARDWARE AND LOCKNUTS

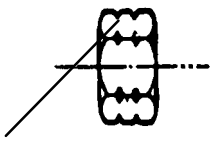
NOMINAL SIZE	SAE GRADE 2		SAE GRADE 5		SAE GRADE 8		LOCKNUTS		NOMINAL SIZE
	UNPLATED or PLATED SILVER	PLATED W/ZnCr GOLD	UNPLATED or PLATED SILVER	PLATED W/ZnCr GOLD	UNPLATED or PLATED SILVER	PLATED W/ZnCr GOLD	GR.B w/GR5 BOLT	GR.C w/GR8 BOLT	
1/4	55* (6.2)	72* (8.1)	86* (9.7)	112* (13)	121* (14)	157* (18)	61* (6.9)	86* (9.8)	1/4
5/16	115* (13)	149* (17)	178* (20)	229* (26)	250* (28)	324* (37)	125* (14)	176* (20)	5/16
3/8	17 (23)	22 (30)	26 (35)	34 (46)	37 (50)	48 (65)	19 (26)	26 (35)	3/8
7/16	27 (37)	35 (47)	42 (57)	54 (73)	59 (80)	77 (104)	30 (41)	42 (57)	7/16
1/2	42 (57)	54 (73)	64 (87)	83 (113)	91 (123)	117 (159)	45 (61)	64 (88)	1/2
9/16	60 (81)	77 (104)	92 (125)	120 (163)	130 (176)	169 (229)	65 (88)	92 (125)	9/16
5/8	83 (112)	107 (145)	128 (174)	165 (224)	180 (244)	233 (316)	90 (122)	127 (172)	5/8
3/4	146 (198)	189 (256)	226 (306)	293 (397)	319 (432)	413 (560)	160 (217)	226 (306)	3/4
7/8	142 (193)	183 (248)	365 (495)	473 (641)	515 (698)	667 (904)	258 (350)	364 (494)	7/8
1	213 (289)	275 (373)	547 (742)	708 (960)	773 (1048)	1000 (1356)	386 (523)	545 (739)	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

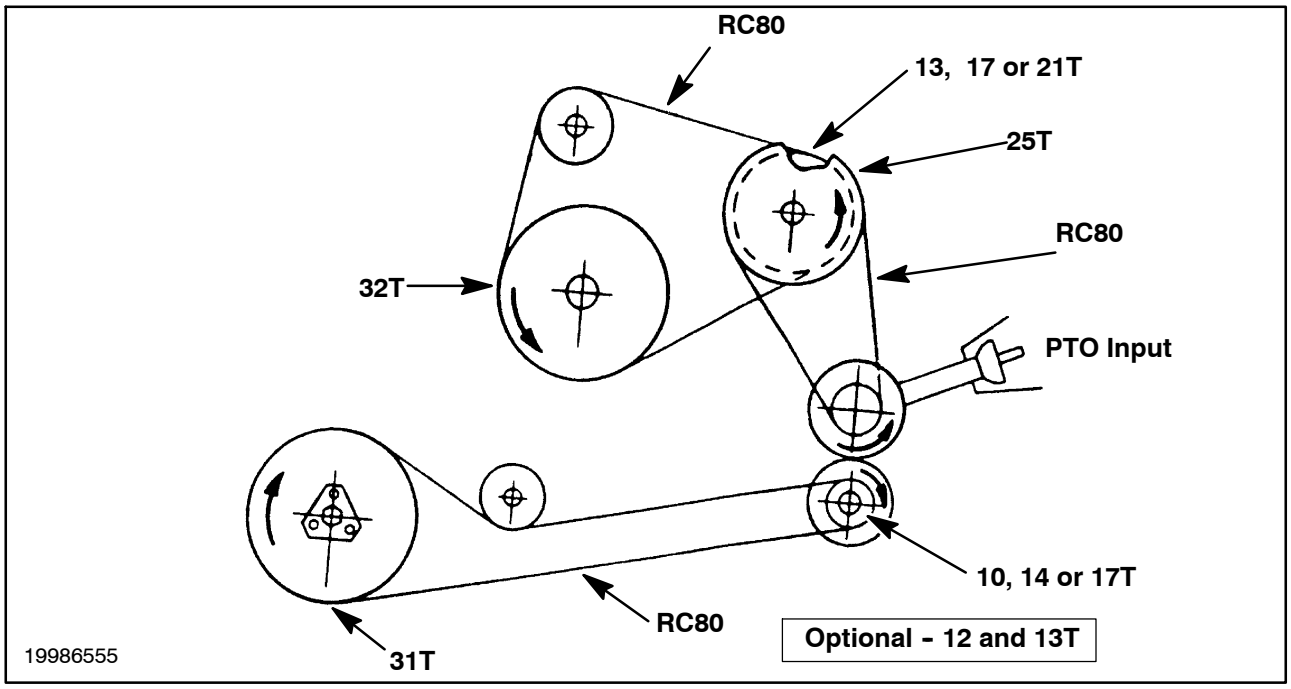
SECTION 00 - GENERAL INFORMATION

Chapter 2 – Specifications

CONTENTS

SPECIFICATIONS

Model	346W	356W	366W
Dimensions			
Overal width	297 cm (117 in)	351 cm (138 in)	478 cm (188 in)
Operating width (tine to tine)	246 cm (97 in)	300 cm (118 in)	418 cm (165 in)
Overal length	179 cm (70 in)		
Overall Height	155 cm (61 in)	155 cm (61 in)	161 cm (63 in)
Weight (kg)	1020	1220	1492
Auger			
Auger diameter	56 cm (22 in)		
Retractable fingers	20		
Drive protection	Radial pin clutch		
Reel			
Number of tines	152	184	256
Drive protection	Friction disc clutch and Overrunning clutch		
Gauge wheels	20.5 x 8.0 – 10		
Tire pressure	2.48 bar (36 psi)		


RC80
13, 17 or 21T
25T
RC80
32T
PTO Input
10, 14 or 17T
RC80
31T
Optional - 12 and 13T
19986555

1

SECTION 14 - LIVE PTO

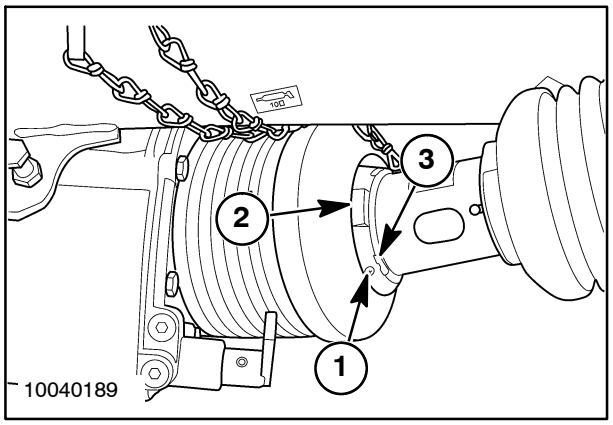
Chapter 1 – PTO

CONTENTS

PTO

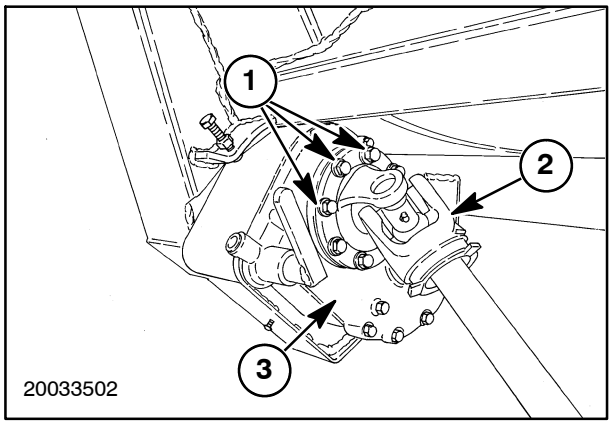
Removal

Remove the screw, 1. Rotate the accordion shield to align the notches, 2, with the bearing tabs, 3, and slide the shield back.



1

Remove the bolts and washers, 1, and remove the PTO, 2, from the gearbox, 3.

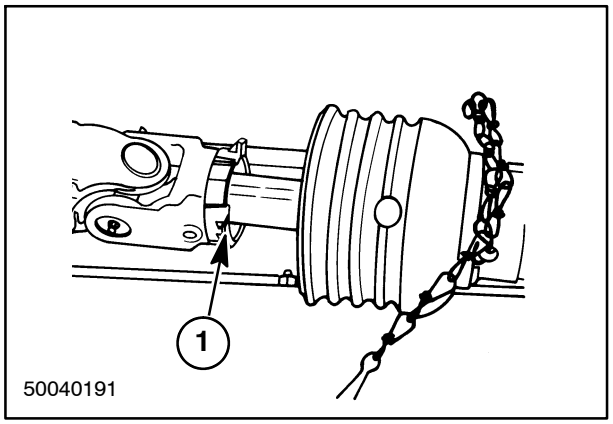


2

Shaft Replacement

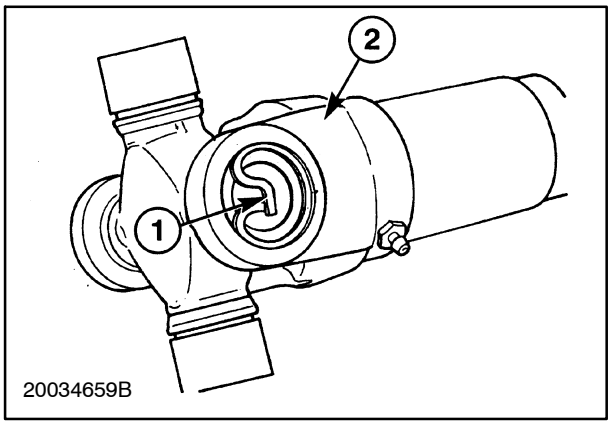
Spread the plastic bearing, 1, and pop it out of the groove.

Slide the shield off of the PTO.



3

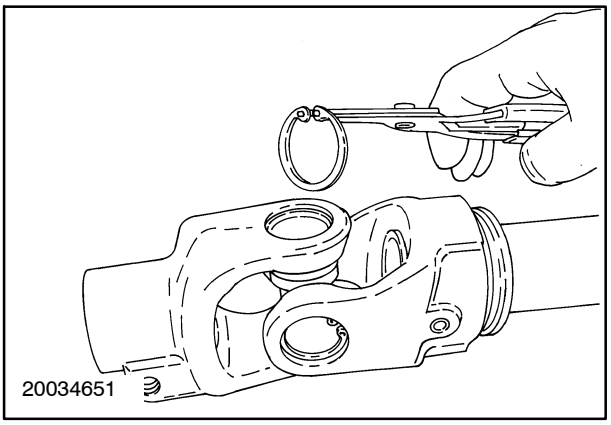
To replace the cross and bearing, clamp the tube in a vise, being careful not to distort the tube. Using a soft drift, tap the outside of the bearing assembly to loosen the snap ring, 1. Remove the snap ring from the yoke, 2.



4

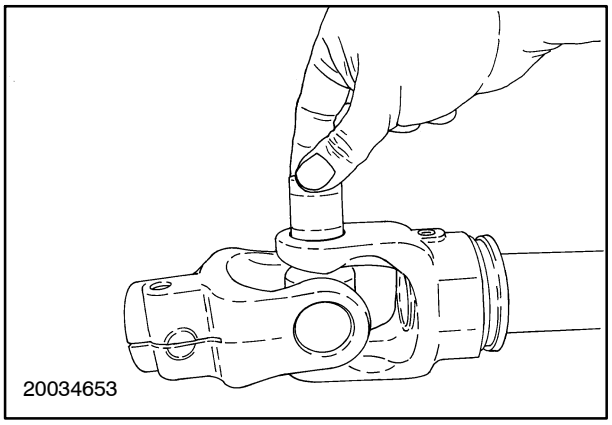
Remove the opposite snap ring in the same manner.

NOTE: *There are various types of retaining rings Some require special tools such as snap-ring pliers to be removed, others can he removed by basic pliers.*



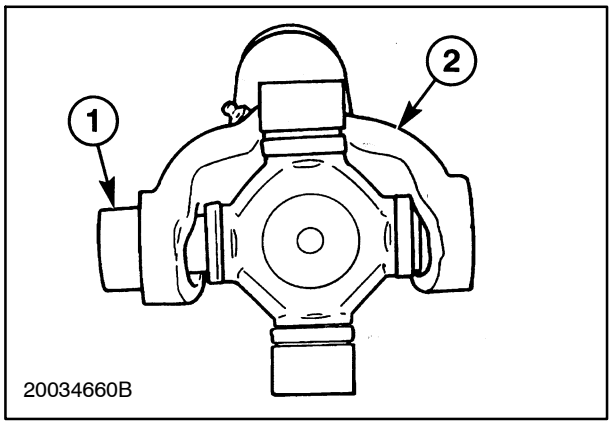
5

Set the yoke in a press with a piece of tube stock against one side of the yoke so that the bearing cap can slide inside the tube stock Place a solid plug on the opposite bearing cap assembly. Press on the solid plug to drive the opposite bearing cap out of the yoke and into the hollow center of the tube stock Remove the cap from the yoke.



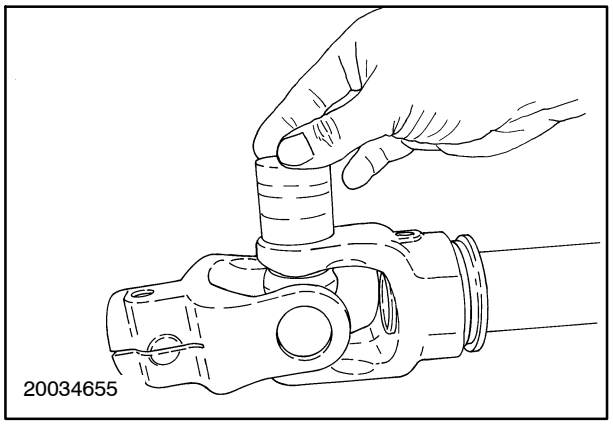
6

Continue to press until the body of the universal joint contacts the inside of the yoke Grip the protruding bearing cap assembly, 1, and tap the yoke, 2, with a hammer Remove the cap from the yoke.



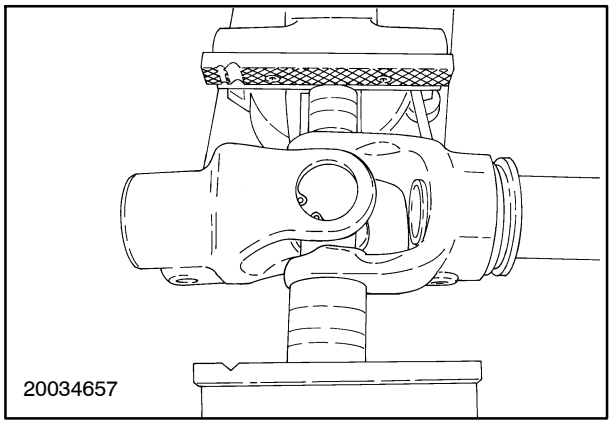
7

To remove the opposite cap, place the tube stock over the top of the cap in the yoke and place the spacer on the journal end of the universal joint. Press on the solid plug to drive the opposite bearing cap out of the yoke and into the hollow center of the tube stock. Continue to press until the body of the universal joint contacts the inside of the yoke. Grip the protruding bearing cap assembly in a vise and tap the yoke with a hammer. Remove the cap from the yoke.



8

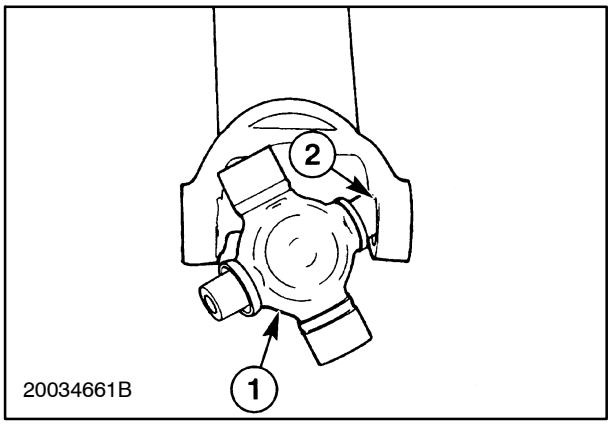
Be sure your setup in the vise is square. and aligned properly.



9

With both bearing caps removed tilt the universal joint, 1, on end and remove it from the yoke.

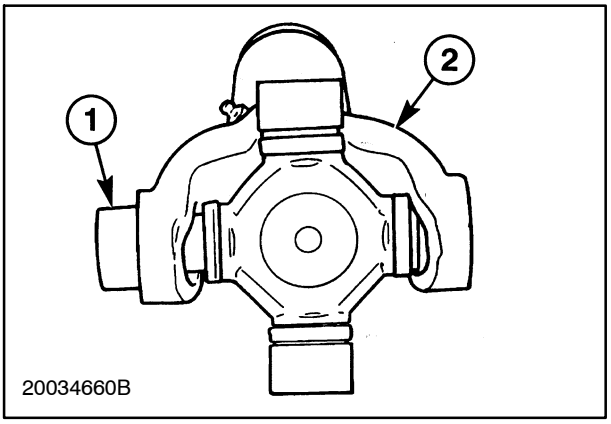
NOTE: *During manufacture of the yoke. excess material may have been added to the inside of the bearing cap bore, 2. This material con make removal of the universal joint difficult. It is acceptable to file this material away from the yoke to improve the removal of the universal joint.*



10

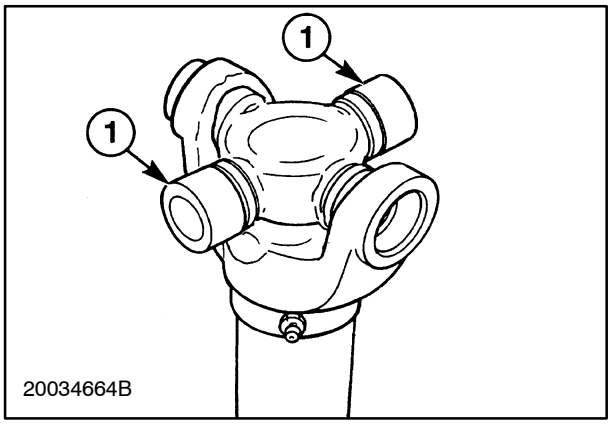
Check to see if the universal joint bearing caps have adequate grease. If grease is needed use an extreme temperature, extreme pressure lithium base grease.

Be sure the OD of the bearing caps are clean and free of rust. Lightly lubricate the bores of the yoke with grease. Use a press and a solid plug to install a bearing cap, 1, into the yoke bore, 2, about halfway. Install the cross into the yoke and fit the cross trunnion into the partially installed cap. Make sure that all the needles of the bearing cap are aligned by rotating the cross in the cap.



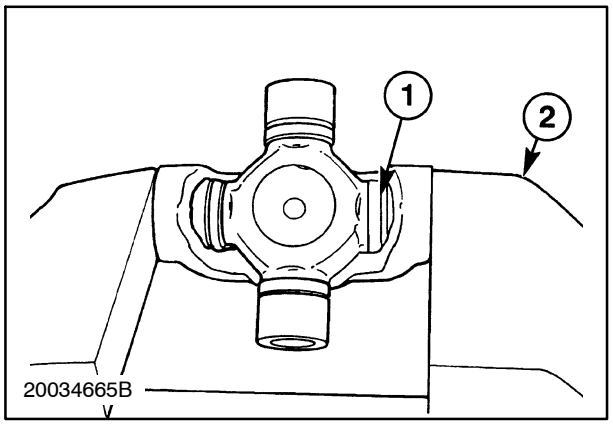
11

Install the bearing caps, 1, onto the open trunnions that fit into the mating yoke. This will protect the trunnions from accidental damage during assembly of the universal joint.



12

Install the opposite bearing cap, 1, into the yoke bore. Place the assembly into a vise, 2, so that the bearing caps can be squeezed inward. Apply steady pressure on the vise and press the caps onto the trunnion until the caps are flush with yoke bores on each side.



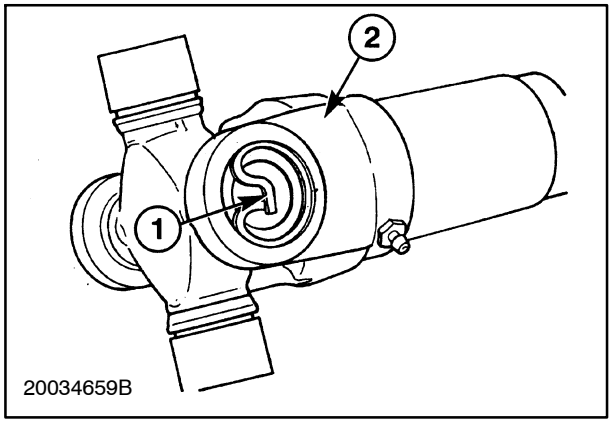
13

IMPORTANT: *The bearing caps must be properly aligned in the yoke bores or they will bind. The caps should slide into the yoke with only moderate force. If excessive force is needed to move the caps, they are misaligned - remove from the vise and realign the caps in the bores.*

IMPORTANT: *While the bearing caps are moving into the yoke, rotate the cross to maintain alignment of the needles in the cap. At no point should the cross bind in the caps. If it does bind, this indicates that a needle is out of alignment or the cap is crooked in the yoke bore. Remove from the vise and check the cap and needle alignment. On occasion, the caps may stick in the bores even though they are aligned properly. It is acceptable to tap the yoke with a soft face hammer to ease the caps into the bores as pressure is applied by the vise.*

Loosen the vise and install a solid plug over one bearing cap. Place the yoke and plug back into the vise and tighten to push one cap in far enough to expose the retaining ring groove in the yoke bore.

Remove the yoke from the vise and install the retaining ring, 1, into the yoke bore, 2. Be sure that the ring is fully seated in the groove.



14

Put a solid plug over the opposite bearing cap end and place the yoke and plug into a vise. Apply pressure to the vise to push the cap in far enough to expose the retaining ring groove in the yoke bore.

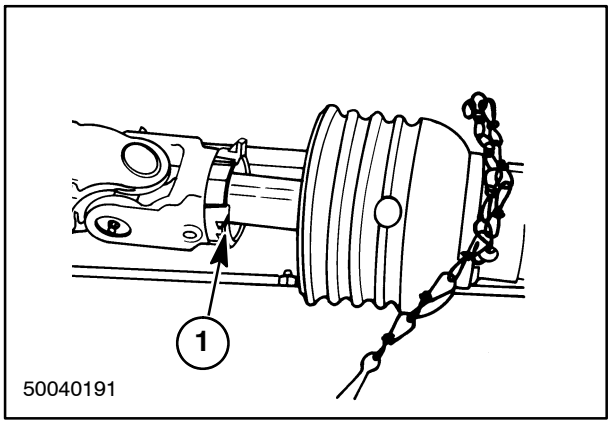
IMPORTANT: *While the bearing cap is moving into the yoke, rotate the cross to maintain alignment of the needles in the cap. At no point should the cross bind in the caps. If it does bind, this indicates that a needle is out of alignment or the cap is crooked in the yoke bore. Remove from the vise and check the cap and needle alignment.*

Remove the yoke from the vise and install the retaining ring into the yoke bore. Be sure that the ring is fully seated in the groove.

Check the operation of the assembled universal joint by rotating it in the bearing caps; it should move freely with no binding. An acceptable practice is to strike the sides of the yoke with a soft face hammer to “set” the yoke on the bearing caps (the yoke may have tension on it from being compressed in the vise).

Slide the shielding onto the PTO.

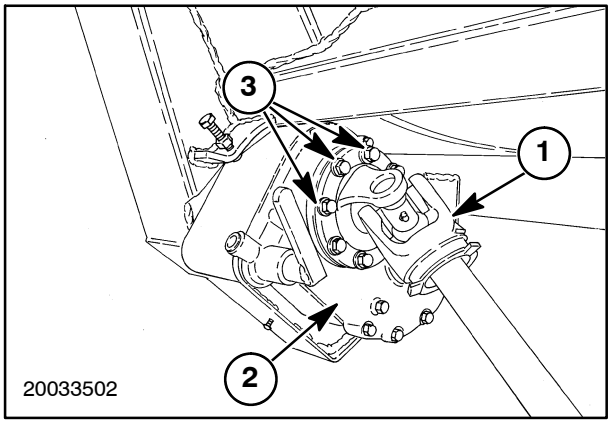
Install the plastic bearing, 1, in the groove.



15

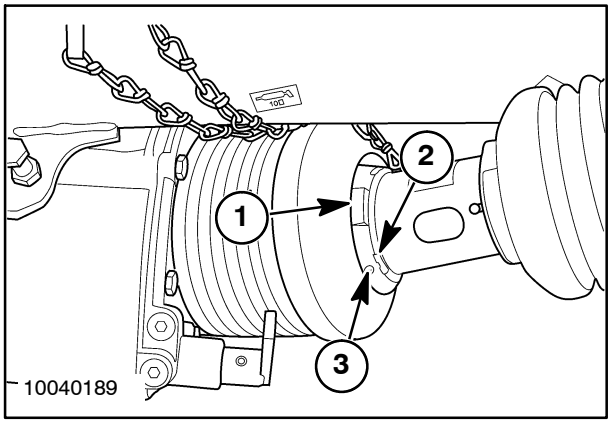
Installation

Attach the PTO, 1, to the gearbox, 2, using the screws and washers, 3.



16

Slide the accordion shield over the PTO coupling and align the notches, 1, over the bearing tabs, 2, then rotate the accordion shield to lock it in place. Secure with screw, 3.



17

SECTION 21 - TRANSMISSION

Chapter 1 - Drive Gearbox

CONTENTS

DRIVE GEARBOX

Removal

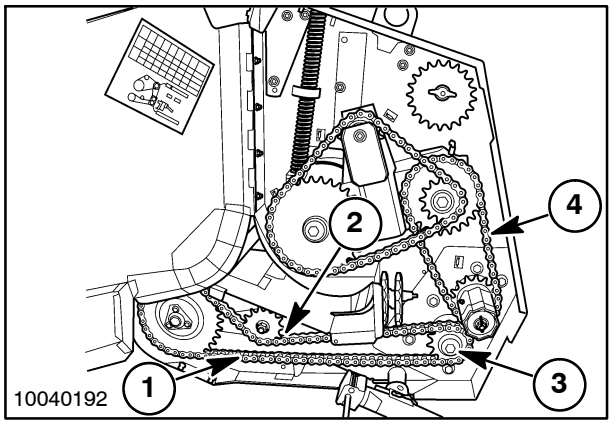
Remove the PTO as described in Section 14 of this manual.

Insert a bolt or alignment punch between the pickup drive chain, 1, and the idler sprocket at, 2, to prevent counterclockwise rotation of the chain, 1.

Use a breaker bar to break the torque and loosen the pickup drive sprocket bolt, 3.

Remove the chain tension on the pickup drive chain 1, and then follow the procedures to remove the pick-up drive chain, 1, and the intermediate drive chain, 4. (Refer to DRIVE CHAINS – Chain Tension, Pickup, and Intermediate Drive Chain – Removal in Chapter 1 of Section 60).

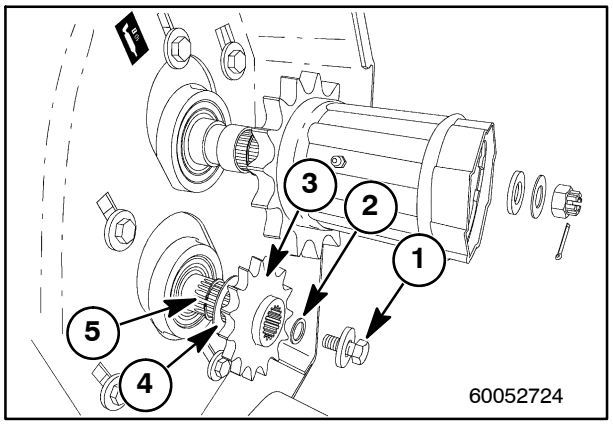
NOTE: *The intermediate drive chain does not have to be fully removed from the unit. When chain tension is released, lift the chain of the sprocket teeth.*



1

Remove the sprocket cap screw with large washer, 1, and shim washer(s) (if installed), 2.

Remove the sprocket, 3, large shim washer, 4, and retaining ring, 5, from the shaft.



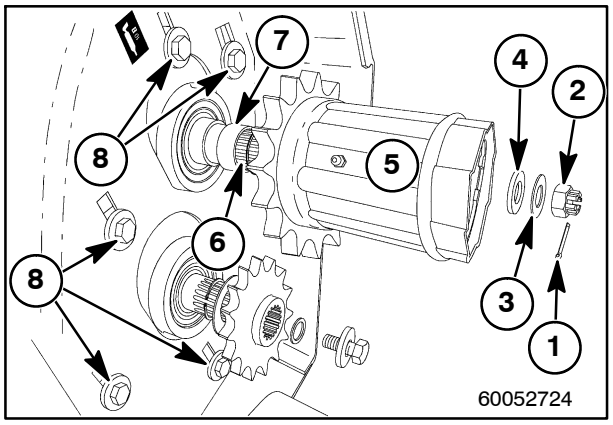
2

Remove the cotter pin, 1, castle nut, 2, shim washer (if installed), 3, and hardened washer, 4.

Pull the auger slip clutch, 5, washer, 6, and spacer, 7, from the shaft.

Securely support the gearbox weight of 49 kg (108 lb).

Remove the six cap screws with large washers, 8, and remove the gearbox from the frame.



3