200 and 900 Series Cutting Platforms
40 and 90 Series Corn Heads
50 and 50A Series Row Crop Heads

John Deere Harvester Works
TM1581 (03OCT94)
LITHO IN U.S.A.
ENGLISH

FOREWORD

This manual is written for an experienced technician. Essential tools required in performing certain service work are identified in this manual and are recommended for use.

Live with safety: Read the safety messages in the introduction of this manual and the cautions presented throughout the text of the manual.

This is the safety-alert symbol. When you see this symbol on the machine or in this manual, be alert to the potential for personal injury.

Technical manuals are divided in two parts: repair and operation and tests. Repair sections tell how to repair the components. Operation and tests sections help you identify the majority of routine failures quickly.

Information is organized in groups for the various components requiring service instruction. At the beginning of each group are summary listings of all applicable essential tools, service equipment and tools, other materials needed to do the job, service parts kits, specifications, wear tolerances, and torque values.

Technical Manuals are concise guides for specific machines. They are on-the-job guides containing only the vital information needed for diagnosis, analysis, testing, and repair.

Fundamental service information is available from other sources covering basic theory of operation, fundamentals of troubleshooting, general maintenance, and basic type of failures and their causes.

DX,TMIFC -19-22MAY92

HANDLE FLUIDS SAFELY—AVOID FIRES

When you work around fuel, do not smoke or work near heaters or other fire hazards.

Store flammable fluids away from fire hazards. Do not incinerate or puncture pressurized containers.

Make sure machine is clean of trash, grease, and debris.

Do not store oily rags; they can ignite and burn spontaneously.

TS227 -UN-23AUG88

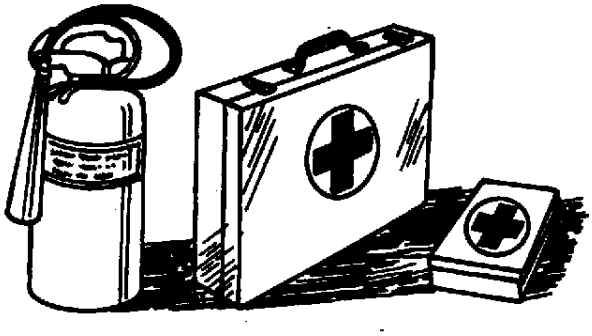
DX,FLAME -19-04JUN90

PREPARE FOR EMERGENCIES

Be prepared if a fire starts.

Keep a first aid kit and fire extinguisher handy.

Keep emergency numbers for doctors, ambulance service, hospital, and fire department near your telephone.



TS291 -UN-23AUG88

DX,FIRE2 -19-03MAR93

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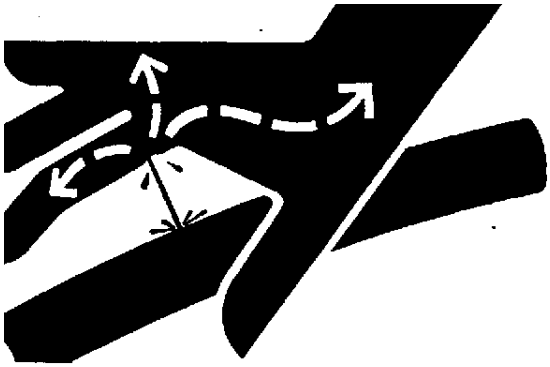
AVOID HIGH-PRESSURE FLUIDS

Escaping fluid under pressure can penetrate the skin causing serious injury.

Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure.

Search for leaks with a piece of cardboard. Protect hands and body from high pressure fluids.

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result. Doctors unfamiliar with this type of injury should reference a knowledgeable medical source. Such information is available from Deere & Company Medical Department in Moline, Illinois, U.S.A.

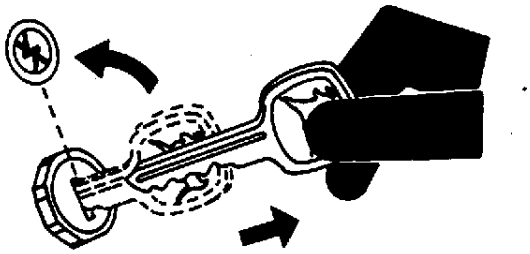


X9811 -UN-23AUG88

DX,FLUID -19-03MAR93

PARK MACHINE SAFELY

Before working on the machine:
- Lower all equipment to the ground.
- Stop the engine and remove the key.
- Disconnect the battery ground strap.
- Hang a “DO NOT OPERATE” tag in operator station.



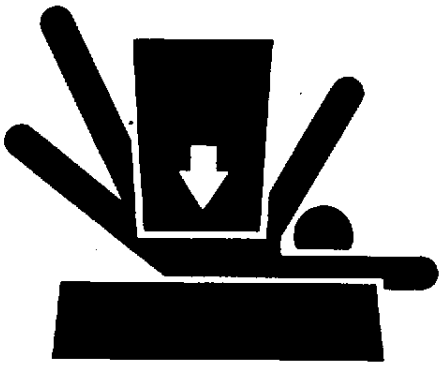
TS230 -UN-24MAY89

DX,PARK -19-04JUN90

SUPPORT MACHINE PROPERLY

Always lower the attachment or implement to the ground before you work on the machine. If you must work on a lifted machine or attachment, securely support the machine or attachment.

Do not support the machine on cinder blocks, hollow tiles, or props that may crumble under continuous load. Do not work under a machine that is supported solely by a jack. Follow recommended procedures in this manual.



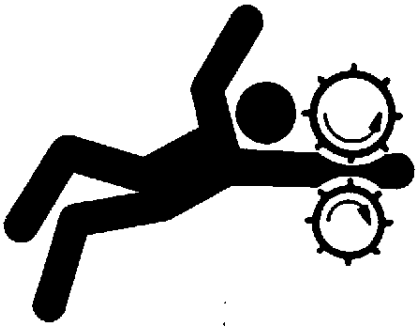
TS229 -UN-23AUG88

DX,LOWER -19-04JUN90

SERVICE MACHINES SAFELY

Tie long hair behind your head. Do not wear a necktie, scarf, loose clothing, or necklace when you work near machine tools or moving parts. If these items were to get caught, severe injury could result.

Remove rings and other jewelry to prevent electrical shorts and entanglement in moving parts.



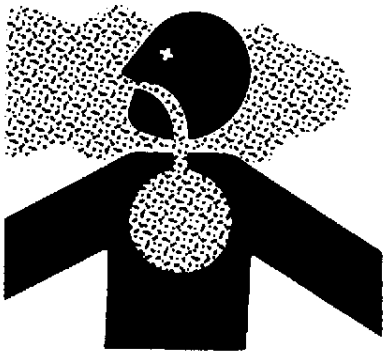
TS228 -UN-23AUG88

DX,LOOSE -19-04JUN90

WORK IN VENTILATED AREA

Engine exhaust fumes can cause sickness or death. If it is necessary to run an engine in an enclosed area, remove the exhaust fumes from the area with an exhaust pipe extension.

If you do not have an exhaust pipe extension, open the doors and get outside air into the area.

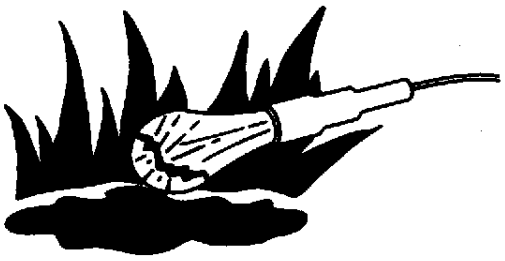


TS220 -UN-23AUG88

DX,AIR -19-04JUN90

ILLUMINATE WORK AREA SAFELY

Illuminate your work area adequately but safely. Use a portable safety light for working inside or under the machine. Make sure the bulb is enclosed by a wire cage. The hot filament of an accidentally broken bulb can ignite spilled fuel or oil.



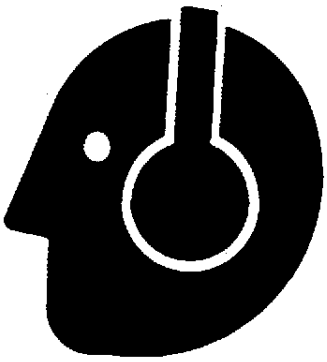
TS223 -UN-23AUG88

DX,LIGHT -19-04JUN90

PROTECT AGAINST NOISE

Prolonged exposure to loud noise can cause impairment or loss of hearing.

Wear a suitable hearing protective device such as earmuffs or earplugs to protect against objectionable or uncomfortable loud noises.

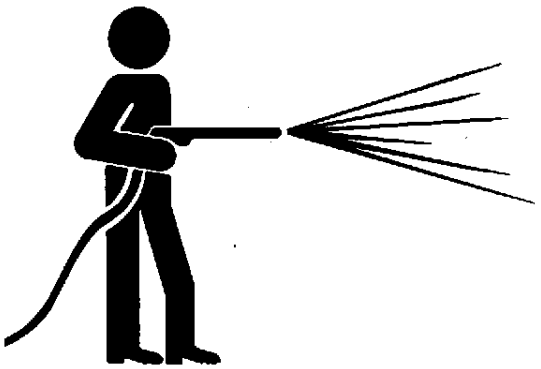


TS207 -UN-23AUG88

DX,NOISE -19-03MAR93

WORK IN CLEAN AREA

Before starting a job:
- Clean work area and machine.
- Make sure you have all necessary tools to do your job.
- Have the right parts on hand.
- Read all instructions thoroughly; do not attempt shortcuts.



T6642EJ -UN-18OCT88

DX,CLEAN -19-04JUN90

USE PROPER TOOLS

Use tools appropriate to the work. Makeshift tools and procedures can create safety hazards.

Use power tools only to loosen threaded parts and fasteners.

For loosening and tightening hardware, use the correct size tools. DO NOT use U.S. measurement tools on metric fasteners. Avoid bodily injury caused by slipping wrenches.

Use only service parts meeting John Deere specifications.

TS779 -UN-08NOV89

DX,REPAIR -19-04JUN90

DISPOSE OF WASTE PROPERLY

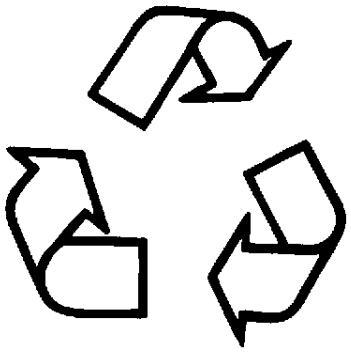
Improperly disposing of waste can threaten the environment and ecology. Potentially harmful waste used with John Deere equipment include such items as oil, fuel, coolant, brake fluid, filters, and batteries.

Use leakproof containers when draining fluids. Do not use food or beverage containers that may mislead someone into drinking from them.

Do not pour waste onto the ground, down a drain, or into any water source.

Air conditioning refrigerants escaping into the air can damage the Earth's atmosphere. Government regulations may require a certified air conditioning service center to recover and recycle used air conditioning refrigerants.

Inquire on the proper way to recycle or dispose of waste from your local environmental or recycling center, or from your John Deere dealer.



TS1133 -UN-26NOV90

DX,DRAIN -19-03MAR93

LIVE WITH SAFETY

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Before returning machine to customer, make sure machine is functioning properly, especially the safety systems. Install all guards and shields.

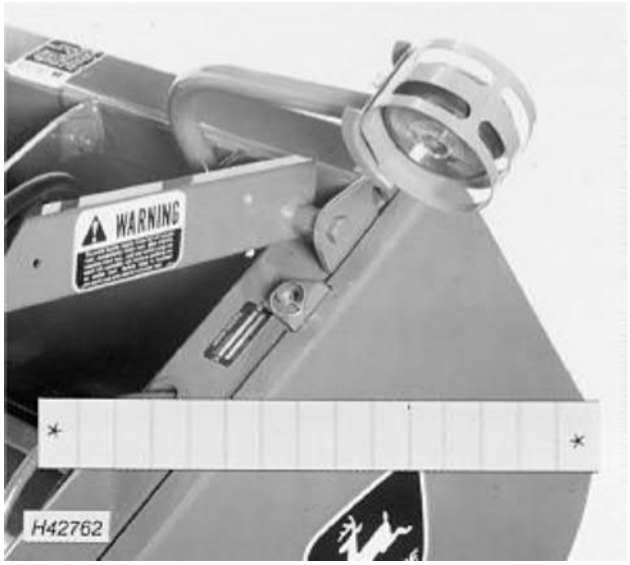
TS231 -19-07OCT88

DX,LIVE -19-25SEP92

SERIAL NUMBER

The serial number is on a plate located on the top left-hand end of the cutting platform.

When ordering parts, always bring the serial number from the serial number plate. This will help your John Deere dealer in giving you fast service.



-UN-09NOV90
H42762

TM1581,10A -19-03OCT94

The serial number is on a plate located on the right-hand end of the row-crop head.

Record your row-crop head serial number in the space provided on the illustration. Provide this serial number to your dealer when ordering parts.

-UN-12JAN91
H42466

TM1581,10B -19-03OCT94

The serial number is on a plate located on the right-hand end of the corn head.

Record your corn head serial number in the space above. Give this serial number to your dealer when ordering parts.

-UN-29NOV90
H42848

TM1581,10C -19-03OCT94

200 SERIES PLATFORMS

Specifications given in this manual are intended for service ONLY and do not include normal factory manufacturing tolerances.

(Specifications and design subject to change without notice)

Rigid Cutterbar Platform Model	Cutting Width	Combine Model
213	3 812 mm (12 ft. 6 in.)	4420, 4425, 6600, 6620, 7700, 7720
215	4 422 mm (14 ft. 6 in.)	4420, 4425, 6600, 6620, 7700, 7720, 8820
216	4 727 mm (15 ft. 6 in.)	4420, 4425, 6600, 6620, SideHill, 6620, 7700, 7720, 8820
218	5 336 mm (17 ft. 6 in.)	4420, 4425, 6600, 6620, 7700, 7720, 8820
220	5 846 mm (19 ft. 6 in.)	4420, 6600, 6620, 7700, 7720, 8820
222	6 556 mm (21 ft. 6 in.)	6600, 6620, 7700, 7720, 8820
224	7 165 mm (23 ft. 6 in.)	6600, 6620, 7700, 7720, 8820
230	8 994 mm (29 ft. 6 in.)	7700, 7720, 8820
Flex Cutterbar Platform Model		
213	3 812 mm (12 ft. 6 in.)	4420, 4425, 6600, 6620, 7700, 7720
215	4 422 mm (14 ft. 6 in.)	4420, 4425, 6620, SideHill, 6620, 7720, 8820
216	4 727 mm (15 ft. 6 in.)	4420, 4425, 6620, SideHill, 6620, 7720, 8820
218	5 336 mm (17 ft. 6 in.)	4420, 4425, 6620, 7720, 8820
220	5 846 mm (19 ft. 6 in.)	4420, 6620, 7720, 8820
222	6 556 mm (21 ft. 6 in.)	6620, 7720, 8820
224	7 165 mm (23 ft. 6 in.)	6620, 7720, 8820

NOTE: Conversion parts are available to convert 213, 215, 216, 220 and 222 Model platforms for use with the SideHill 6600 and 6620 Combines. The 215 flex and 216 flex and rigid platforms are also available with factory installed parts as noted above.

HX1581,1015,AA -19-03OCT94

Cutterbar

Type	Enclosed wobble drive
Extension (rigid)	102 mm (4 in.) forward and 102 mm (4 in.) rearward 203 mm, (8 in.) max.
Tilt range	9 degrees
Flexible cutterbar float range	102 mm (4 in.)
Cutterbar length	152 mm (6 in.) less than platform width
Knife sections	Heavy-duty, overserrated
Guards	Forged steel heat-treated
Knife speeds: (measured at sheave rpm)	
4420, 6620, 7720	502 rpm (Std.) 439 rpm (Opt. Slow) 565 rpm (Opt. Fast) 6620 (—610727), 7720 (—611386)
8820	529 rpm (Std.) 462 rpm (Opt. Slow) 596 rpm (Opt. Fast) 6620 (610728—), 7720 (611387—)
Backshaft speeds	
4420, 6620, 7720	460—470 rpm 6620 (—610727) 490 rpm 6620 (610728—) 7720 (—611386)
4425	500 rpm 7720 (611387—)
8820	490 rpm

Reel (Pickup)

Number of slats	6 (with spring steel fingers)
Diameter	1 067 mm (42 in.)

Reel (Slat)

Number of slats	5
Diameter	1 016 mm (40 in.)

Reel Controls

Height control	Hydraulic
Speed control	Hydraulic
Operating speeds	(Pickup 5—44 rpm) (Slat 8—66 rpm)

Platform Auger

Diameter	610 mm (24 in.)
Operating speed:	
4420, 6600, 6620, 7720, 7700	151 rpm std., 121 opt. 6620 (—610727), 7720 (—611386)
8820	159 rpm std. 127 rpm opt. 6620 (610728—), 7720 (611387—)

NOTE: A special 121 rpm for 4420, 6600, 6620, 7700, 7720 and 127 rpm for 8820 slow speed sprockets is available.

Retractable auger fingers Number of fingers	**Platform Size**
12	13 and 15 ft.
18	16, 18, 20, 22, 24, 30 ft.
Diameter	16 mm (5/8 in.) with breakaway notch
Reach	152 mm (6 in.)

HX1581,1015,AB -19-03OCT94

900 SERIES PLATFORMS

Specifications given in this manual are intended for service only and do not include normal factory manufacturing tolerances.

Rigid Cutterbar Platform Model	Cutting Width	Gathering Width	Combine Model
918	5334 mm (17 ft. 6 in.)	5.5 m (18 ft.)	4435, 6620, 7720, 8820, 9400, 9500, 9600, SideHill 9500, CTS
920 and 920 Rice	5944 mm (19 ft. 6 in.)	6.1 m (20 ft.)	6620, 7720, 8820, 9400, 9500, 9600, SideHill 9500, CTS
922 and 922 Rice	6556 mm (21 ft. 6 in.)	6.7 m (22 ft.)	6620, 7720, 8820, 9400, 9500, 9600, SideHill 9500, CTS
925 and 925 Rice	7620 mm (25 ft.)	7.8 m (25 ft. 6 in.)	6620, 7720, 7722, 8820, 9400, 9500, 9600, SideHill 9500, CTS
930 and 930 Rice	8992 mm (29 ft. 6 in.)	9.1 m (30 ft.)	7720, 8820, 9500, 9600, SideHill 9500, CTS

Flex Cutterbar Platform Model	Cutting Width	Gathering Width	Combine Model
913	3810 mm (12 ft. 6 in.)	3.8 m (12 ft. 5 in.)	4435, 6620, 7720, 9400, 9500, 9600, SideHill 9500, CTS
915	4572 mm (15 ft.)	4.5 m (14 ft. 11 in.)	4435, 6620 SideHill, 6620, 7720, 8820, 9400, 9500, 9600, SideHill 9500, CTS
918	5334 mm (17 ft. 6 in.)	5.3 m (17 ft. 5 in.)	4435, 6620, 7720, 8820, 9400, 9500, 9600, SideHill 9500, CTS
920	5944 mm (19 ft. 6 in.)	5.9 m (19 ft. 5 in.)	6620, 7720, 8820, 9400, 9500, 9600, SideHill 9500, CTS
922	6554 mm (21 ft. 6 in.)	6.6 m (21 ft. 5 in.)	6620, 7720, 8820, 9400, 9500, 9600 SideHill 9500, CTS
925	7620 mm (25 ft.)	7.6 m (24 ft. 11 in.)	6620, 7720, 8820, 9400, 9500, 9600, SideHill 9500, CTS
930	8992 mm (29 ft. 6 in.)	9.0 m (29 ft. 5 in.)	7720, 8820, 9500, 9600 SideHill 9500, CTS

(Specifications and design subject to change without notice.)

HX1581,1015,AC -19-03OCT94

Cutterbar:

Type	Enclosed wobble drive
Extension (rigid)	102 mm (4 in.) forward and 102 mm (4 in.) rearward 203 mm (8 in.) max.
Tilt range	9 degrees
Flexible cutterbar float range	90 mm (3-1/2 in.)
Cutterbar length	152 mm (6 in.) less than platform width, except for 915 and 925 models
Knife sections	Heavy-duty, overserrated
Guards	Forged steel, heat-treated

Knife Speed: (measured at sheave rpm)

539 cpm on Flexible Platforms
562 cpm on Rigid Platforms

Reel: (pickup)

Number of slats	6 (with DURA-FLO fingers)
Diameter	1067 mm (42 in.)

Reel: (slat)

Number of slats	5
Diameter	1016 mm (40 in.)

Reel Controls:

Height control	Hydraulic
Speed control	Hydraulic
Operating speeds	(Pickup 5—44 rpm) (Slat 8—66 rpm)

Platform Auger:

Diameter	610 mm (24 in.)
Operating speed	169 rpm std. 135 rpm opt.

HX1581,1015,AD -19-03OCT94

918 DRAPER PLATFORM

"Specifications given in this manual are intended for service only and do not include normal factory manufacturing tolerances."

Combine Models	**9500, 9600, 7720 and 8820**
Platform Drive Shaft	**521 rpm**

Cutter Bar

Type	Enclosed wobble drive
Cutterbar length	5.33 m (17.5 ft.)
Knife sections	Chrome plated, heavy-duty, overserrated
Guards	Forged steel heat-treated
Knife Speed (measured with 521 rpm backshaft speed)	491 cpm

Pickup Reel

Number of slats	6 (with spring steel fingers)
Diameter	1320 mm (52 in.)

Reel Controls

Height control	Hydraulic
Speed control	Hydraulic
Operating speeds	3-30 rpm

Auger

Diameter	610 mm (24 in.)
Operating speed	169 rpm
Retractable auger fingers	
Number of fingers	12
Diameter	16 mm (5/8 in.)
With break-a-way notch	
Reach	152 mm (6 in.)
Torque required to seat new finger	70 N·m (50 lb-ft) (maximum)
Platform weight	1696 kg (3740 lb)

TM1581,HX15,C -19-03OCT94

40 SERIES CORN HEAD

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Specifications given in the manual are intended for service only and do not include normal factory manufacturing tolerances.

CORN HEAD MODEL	MACHINE MODEL	NUMBER OF ROWS
443	Forage Harvester 4420 Combine 4425 Combine 4435 Combine 6620 Combine	4
444	Forage Harvester 4420 Combine 4425 Combine 6620 Combine SideHill 6620 Combine 7720 Combine 9400 Combine 9500 Combine SideHill 9500 Combine	4
546	6620 Combine SideHill 6620 Combine 7720 Combine 8820 Combine 9400 Combine 9500 Combine SideHill 9500 Combine 9600 Combine CTS Combine	5
643	6620 Combine SideHill 6620 Combine 7720 Combine 8820 Combine 9400 Combine 9500 Combine SideHill 9500 Combine 9600 Combine CTS Combine	6
644	6620 Combine 7720 Combine 8820 Combine 9400 Combine 9500 Combine 9600 Combine CTS Combine	6
645	6620 Combine 7720 Combine 8820 Combine 9400 Combine 9500 Combine 9600 Combine CTS Combine	6
843	7720 Combine 8820 Combine 9500 Combine 9600 Combine CTS Combine	8
844	8820 Combine 9600 Combine CTS Combine	8
1243	8820 Combine 9600 Combine	12

TM1581,HX15,D -19-03OCT94

Gatherer Points	Low profile floating type hinged above gatherer chains
Center and Outer Gatherer Sheets	hinged, quick-removable
Type of Gatherer Chains	Heavy-duty 555 endless steel roller chain (no master connecting link)
Minimum Clearance Between Gatherer Chains and Ground	32 mm (1-1/4 in.)
Row Unit Drive	Enclosed gear box with gears submerged in lubricant; driven by single input hex. shaft
Gatherer Chain Adjustment	Spring loaded-self-adjusting
Stalk Rolls	Spiral-pointed, flute-type (2 per row unit)
Deck Plate Adjustment	Bolt adjusted
Slip Clutch	One per row unit plus auger drive
Trash Knives	Full length one piece heat-treated steel

HX1581,1015,AE -19-03OCT94

Approximate Overall Width for Storage—
- 443 . . . . . 3454 mm (11 ft. 4 in.)
- 444 . . . . . 3708 mm (13 ft. 6 in.)
- 546 . . . . . 4928 mm (16 ft. 2 in.)
- 643 . . . . . 4928 mm (16 ft. 2 in.)
- 644 . . . . . 5791 mm (19 ft.)
- 645 . . . . . 6096 mm (20 ft.)
- 843 . . . . . 6299 mm (20 ft. 8 in.)
- 844 . . . . . 7820 mm (25 ft. 8 in.)
- 1243 . . . . . 9347 mm (30 ft. 8 in.)

Approximate Overall Length for Storage—All Corn Heads . . . . . 3048 mm (10 ft.)

Approximate Shipping Weight of Corn Head—(Includes Shipping Skid)
- 443 . . . . . 1129 kg (2488 lb.)
- 444 . . . . . 1184 kg (2610 lb.)
- 546 . . . . . 1472 kg (3245 lb.)
- 643 . . . . . 1590 kg (3505 lb.)
- 644 . . . . . 1855 kg (4090 lb.)
- 645 . . . . . 1901 kg (4190 lb.)
- 843 . . . . . 2243 kg (4944 lb.)
- 844 . . . . . 2470 kg (5466 lb.)
- 1243 . . . . . 3332 kg (7340 lb.)

(Specifications and design subject to change without notice.)

HX1581,1015,AF -19-03OCT94

90 SERIES CORN HEAD

Specifications given in the manual are intended for service only and do not include normal factory manufacturing tolerances.

CORN HEAD MODEL	MACHINE MODEL	NUMBER OF ROWS
493	Forage Harvester 4420 Combine 4425 Combine 4435 Combine 6620 Combine	4
494	Forage Harvester 4420 Combine 4425 Combine 6620 Combine SideHill 6620 Combine 7720 Combine 9400 Combine 9500 Combine SideHill 9500 Combine	4
594	6620 Combine SideHill 6620 Combine 7720 Combine 8820 Combine 9400 Combine 9500 Combine SideHill 9500 Combine 9600 Combine CTS Combine	5
693	6620 Combine 7720 Combine 8820 Combine 9400 Combine 9500 Combine 9600 Combine CTS Combine	6
693 SH	SideHill 6620 Combine SideHill 9500 Combine	6
694	6620 Combine 7720 Combine 8820 Combine 9400 Combine 9500 Combine 9600 Combine CTS Combine	6
893	7720 Combine 8820 Combine 9500 Combine 9600 Combine CTS Combine	8
894	8820 Combine 9600 Combine CTS Combine	8
1293	8820 Combine 9600 Combine	12

TM1581,HX15,E -19-03OCT94

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Gatherer Points	Low profile floating type hinged above gatherer chains
Center and Outer Gatherers	hinged, quick-removable
Type of Gatherer Chains	Heavy-duty 555 endless steel roller chain with chromed pins (no master connecting link)
Minimum Clearance Between Gatherer Chains and Ground	32 mm (1-1/4-in.)
Row Unit Drive	Enclosed gear box with gears submerged in lubricant; driven by single input hex. shaft
Gatherer Chain Adjustment	Spring-loaded self-adjusting
Stalk Rolls	Spiral-pointed, flute-type (2 per row unit)
Deck Plate Adjustment	Bolt adjusted (Optional) Hydraulic adjusted
Slip Clutch	One per row unit plus auger drive
Trash Knives	Full length one piece heat-treated steel

HX1581,1015,AG -19-03OCT94

Approximate Overall Width for Storage—
- 493 . . . . . 3454 mm (11 ft. 4 in.)
- 494 . . . . . 3708 mm (13 ft. 6 in.)
- 594 . . . . . 4928 mm (16 ft. 2 in.)
- 693 . . . . . 4928 mm (16 ft. 2 in.)
- 693 SH . . . . . 4928 mm (16 ft. 2 in.)
- 694 . . . . . 5791 mm (19 ft.)
- 695 . . . . . 6096 mm (20 ft.)
- 893 . . . . . 6299 mm (20 ft. 2 in.)
- 894 . . . . . 7820 mm (25 ft. 8 in.)
- 1293 . . . . . 9347 mm (30 ft. 8 in.)

Approximate Overall Length
for Storage—All Corn
- Heads . . . . . 3000 mm (9 ft. 10-in.)
- Points folded up (service position) . . . . . 2400 mm (7 ft. 11-in.)

Approximate Shipping Weight
of Corn Head—(Includes Shipping Skid)
- 493 . . . . . 1129 kg (2488 lb.)
- 494 . . . . . 1184 kg (2610 lb.)
- 594 . . . . . 1472 kg (3245 lb.)
- 693 . . . . . 1590 kg (3505 lb.)
- 693 SH . . . . . 1590 kg (3505 lb.)
- 694 . . . . . 1855 kg (4090 lb.)
- 695 . . . . . 1901 kg (1855 lb.)
- 893 . . . . . 2243 kg (4944 lb.)
- 894 . . . . . 2470 kg (5466 lb.)
- 1293 . . . . . 3332 kg (7340 lb.)

(Specifications and design subject to change without notice.)

CRNHD,90SP,C -19-14SEP93

50 AND 50A SERIES ROW CROP

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(Specifications and design subject to change without notice.)

Specifications given in this manual are intended for service only and do not include normal factory manufacturing tolerances.

ROW-CROP HEAD MODEL	COMBINE MODEL	NUMBER OF ROWS
454 and 454A	4420, 4425, 4435, 6620, SideHill 6620, 7720, 7721 9400, 9500	4
653 and 653A	4420, 6220, SideHill 6620, 7720, 8820, 9400, 9500, 9600	6
654 and 654A	6620, 7720, 8820 9400, 9500, 9600	6
655 and 655A	7720, 8820, 9500, 9600	6
853 and 853A	7720, 8820, 9500, 9600	8

Auger

(Retractable Finger Feeding)
Diameter . . . . . 24 in. (610 mm)
Speed . . . . . 100 to 165 rpm
Torque to seat fingers . . . . . 20 lb-ft (27 N·m)

Crop Gatherer

Type . . . . . Belted chains
Gatherer belt speed . . . . . 215 to 352 rpm
Drive . . . . . Chain
Gatherer points . . . . . Adjustable and floating
Row unit sheets . . . . . Swing-out

Rotary Knives

Type . . . . . Rotary 6 blade with adjustable shear
Speed . . . . . 202 to 331 rpm
Cuts per minute . . . . . 1212 to 1986
Blade material . . . . . High-carbon steel, heat treated cutting edge

Stationary Knives

Type . . . . . Fixed
Knife material . . . . . Heat-treated cutting edge

Skid Shoes

Type . . . . . Self-aligning, adjustable to three positions
Float range . . . . . 6 in. (152 mm)

1581,1015,AAG -19-03OCT94

Approximate Overall Width

454 and 454A	4 m	(13 ft.)
653 and 653A	4.7 m	(15 ft. 6 in.)
654 and 654A	6.3 m	(20 ft. 8 in.)
655 and 655A	6.4 m	(21 ft.)
853 and 853A	6.5 m	(21 ft. 2 in.)

Approximate Overall Length

(All row-crop heads) . . . . . 3.3 m (11 ft.)

Approximate Shipping Weight

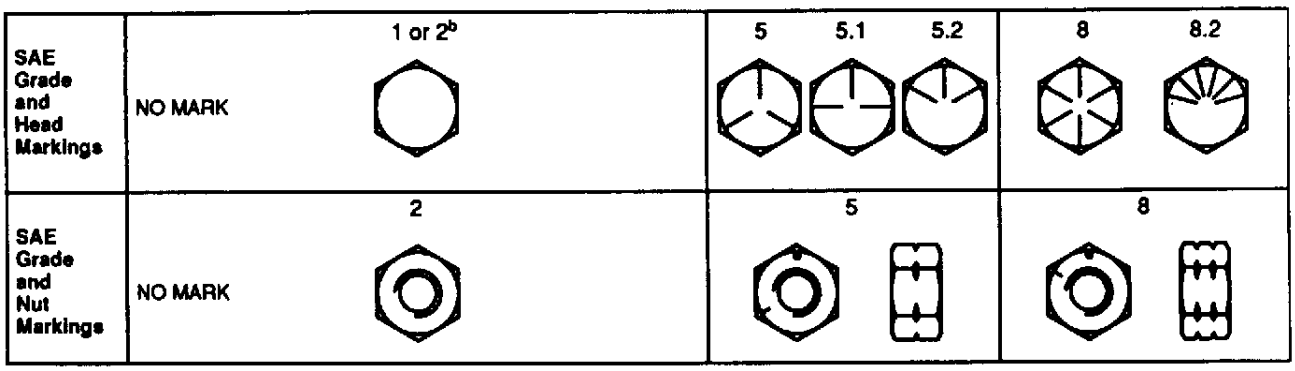
454 and 454A	1 220 kg (2880 lbs.)
653 and 653A	1 530 kg (3570 lbs.)
654 and 654A	1 905 kg (4420 lbs.)
655 and 655A	2 063 kg (4550 lbs.)
853 and 853A	2 155 kg (5000 lbs.)

(Specifications and design subject to change without notice.)

HX1581,1015,AI -19-03OCT94

UNIFIED INCH BOLT AND CAP SCREW TORQUE VALUES

10
15
14



TS1162 -19-04MAR91

Size	Grade 1				Grade 2[b]				Grade 5, 5.1, or 5.2				Grade 8 or 8.2			
	Lubricated[a]		Dry[a]		Lubricated[a]		Dry[a]		Lubricated[a]		Dry[a]		Lubricated[a]		Dry[a]	
	N·m	lb-ft	N·m	lb-ft	N·m	lb-ft	N·m	lb-ft	N·m	lb-ft	N·m	lb-ft	N·m	lb-ft	N·m	lb-ft
1/4	3.7	2.8	4.7	3.5	6	4.5	7.5	5.5	9.5	7	12	9	13.5	10	17	12.5
5/16	7.7	5.5	10	7	12	9	15	11	20	15	25	18	28	21	35	26
3/8	14	10	17	13	22	16	27	20	35	26	44	33	50	36	63	46
7/16	22	16	28	20	35	26	44	32	55	41	70	52	80	58	100	75
1/2	33	25	42	31	53	39	67	50	85	63	110	80	120	90	150	115
9/16	48	36	60	45	75	56	95	70	125	90	155	115	175	130	225	160
5/8	67	50	85	62	105	78	135	100	170	125	215	160	240	175	300	225
3/4	120	87	150	110	190	140	240	175	300	225	375	280	425	310	550	400
7/8	190	140	240	175	190	140	240	175	490	360	625	450	700	500	875	650
1	290	210	360	270	290	210	360	270	725	540	925	675	1050	750	1300	975
1-1/8	400	300	510	375	400	300	510	375	900	675	1150	850	1450	1075	1850	1350
1-1/4	570	425	725	530	570	425	725	530	1300	950	1650	1200	2050	1500	2600	1950
1-3/8	750	550	950	700	750	550	950	700	1700	1250	2150	1550	2700	2000	3400	2550
1-1/2	1000	725	1250	925	990	725	1250	930	2250	1650	2850	2100	3600	2650	4550	3350

DO NOT use these values if a different torque value or tightening procedure is given for a specific application. Torque values listed are for general use only. Check tightness of fasteners periodically.

Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical grade.

Fasteners should be replaced with the same or higher grade. If higher grade fasteners are used, these should only be tightened to the strength of the original.

Make sure fasteners threads are clean and that you properly start thread engagement. This will prevent them from failing when tightening.

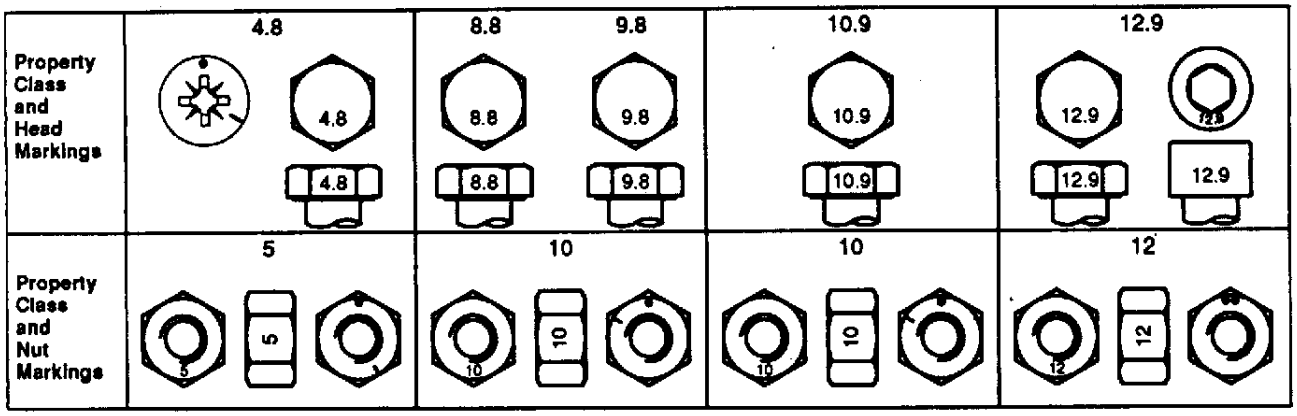
Tighten plastic insert or crimped steel-type lock nuts to approximately 50 percent of the dry torque shown in the chart, applied to the nut, not to the bolt head. Tighten toothed or serrated-type lock nuts to the full torque value.

[a] "Lubricated" means coated with a lubricant such as engine oil, or fasteners with phosphate and oil coatings. "Dry" means plain or zinc plated without any lubrication.

[b] Grade 2 applies for hex cap screws (not hex bolts) up to 152 mm (6-in.) long. Grade 1 applies for hex cap screws over 152 mm (6-in.) long, and for all other types of bolts and screws of any length.

DX,TORQ1 -19-20JUL94

METRIC BOLT AND CAP SCREW TORQUE VALUES



TS1163 -19-04MAR91

Size	Class 4.8				Class 8.8 or 9.8				Class 10.9				Class 12.9			
	Lubricated[a]		Dry[a]		Lubricated[a]		Dry[a]		Lubricated[a]		Dry[a]		Lubricated[a]		Dry[a]	
	N·m	lb-ft	N·m	lb-ft	N·m	lb-ft	N·m	lb-ft	N·m	lb-ft	N·m	lb-ft	N·m	lb-ft	N·m	lb-ft
M6	4.8	3.5	6	4.5	9	6.5	11	8.5	13	9.5	17	12	15	11.5	19	14.5
M8	12	8.5	15	11	22	16	28	20	32	24	40	30	37	28	47	35
M10	23	17	29	21	43	32	55	40	63	47	80	60	75	55	95	70
M12	40	29	50	37	75	55	95	70	110	80	140	105	130	95	165	120
M14	63	47	80	60	120	88	150	110	175	130	225	165	205	150	260	190
M16	100	73	125	92	190	140	240	175	275	200	350	255	320	240	400	300
M18	135	100	175	125	260	195	330	250	375	275	475	350	440	325	560	410
M20	190	140	240	180	375	275	475	350	530	400	675	500	625	460	800	580
M22	260	190	330	250	510	375	650	475	725	540	925	675	850	625	1075	800
M24	330	250	425	310	650	475	825	600	925	675	1150	850	1075	800	1350	1000
M27	490	360	625	450	950	700	1200	875	1350	1000	1700	1250	1600	1150	2000	1500
M30	675	490	850	625	1300	950	1650	1200	1850	1350	2300	1700	2150	1600	2700	2000
M33	900	675	1150	850	1750	1300	2200	1650	2500	1850	3150	2350	2900	2150	3700	2750
M36	1150	850	1450	1075	2250	1650	2850	2100	3200	2350	4050	3000	3750	2750	4750	3500

DO NOT use these values if a different torque value or tightening procedure is given for a specific application. Torque values listed are for general use only. Check tightness of fasteners periodically.

Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical property class.

Fasteners should be replaced with the same or higher property class. If higher property class fasteners are used, these should only be tightened to the strength of the original.

Make sure fasteners threads are clean and that you properly start thread engagement. This will prevent them from failing when tightening.

Tighten plastic insert or crimped steel-type lock nuts to approximately 50 percent of the dry torque shown in the chart, applied to the nut, not to the bolt head. Tighten toothed or serrated-type lock nuts to the full torque value.

[a] "Lubricated" means coated with a lubricant such as engine oil, or fasteners with phosphate and oil coatings. "Dry" means plain or zinc plated without any lubrication.

DX,TORQ2 -19-20JUL94

TORQUE VALUES

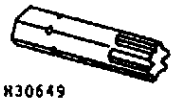
	Torque N·m (Lb-Ft.)
Auger finger crank cap screws	70 N·m (50)
Auger fingers in plastic bearings	16 N·m (12)
Slip Clutch nuts	70 N·m (50)
Knife head holder slotted nut	160 N·m (120)
Knife head holder cap screws	115 N·m (85)
Cutterbar drive case wobble shaft bearings (rolling torque)	0.34 to 0.56 N·m (3 to 5 lb-in.)
Cutterbar drive case cover cap screws	48 N·m (30)
Cutterbar drive case sheave lock nut	150 N·m (110)
Cutterbar drive case to mounting cap screws	270 N·m (200)
Cutterbar drive arm to yoke shaft slotted nut	270 N·m (200)
Cutterbar angle to drive case mounting round head bolts	45 N·m (35)
Left-hand stabilizer socket nut (flex platforms only)	135 N·m (100)

1581,10005,AAA -19-03OCT94

SPECIAL TOOLS

Number	Use
*JDC3 Fluted Driver	To remove and install the special six-point 5/16 in. screws in the auger finger guides. NOTE: To use JDC3 driver with a 1/4 in. socket, a common 1/4 to 3/8 in. adapter is required for use with a 3/8 in. ratchet.
*JDO1 Puller	To remove cutterbar drive arm.

H30649 -UN-23FEB89



JDC3 Fluted Driver

HX1581,10005,B -19-03OCT94

GENERAL INFORMATION

After the crop is cut by the cutterbar, the reel lays the material back into the floor of the platform. Flights on the platform auger move the material to the center of the platform. Retracting fingers in the auger feed the material to the feeder house conveyor chain.

The platform auger is chain driven from a sprocket on the right-hand side.

A slip clutch, located on the right-hand drive shaft, protects the auger from damage.

1401,10005,A -19-12SEP91

AUGER REMOVAL

1. Start engine, raise reel and lower platform to ground. Shut off engine and lower both reel lift safety stops (A).

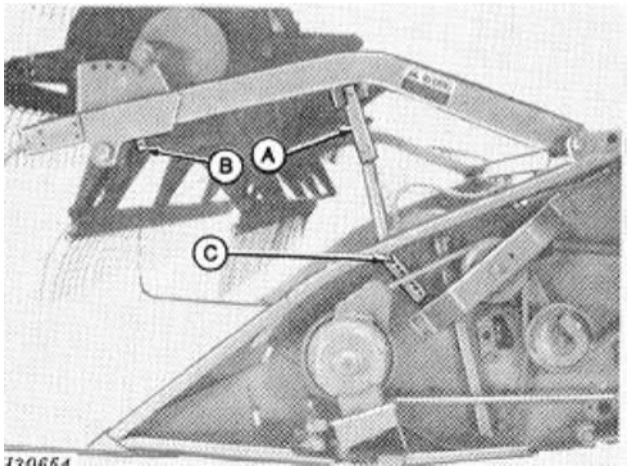
2. Loosen adjusting screw (both sides) and slide reel to its extreme forward position on support arms (B). Tighten adjusting screws. Place a bolt in the front cross hole of each reel arm to prevent the reel from slipping off the arms.

CAUTION: The reel is heavy. Attach a suitable hoist or lift to it when positioning the lift cylinders.

3. Remove cotter pin and drilled pin (both sides) and raise reel to its highest position (C). Replace drilled pins and cotter pins. Remove hoist.

4. Loosen tightener, remove connecting link and remove chain (D).

5. Support auger with a wood block and remove nut, washer and sprocket (E).



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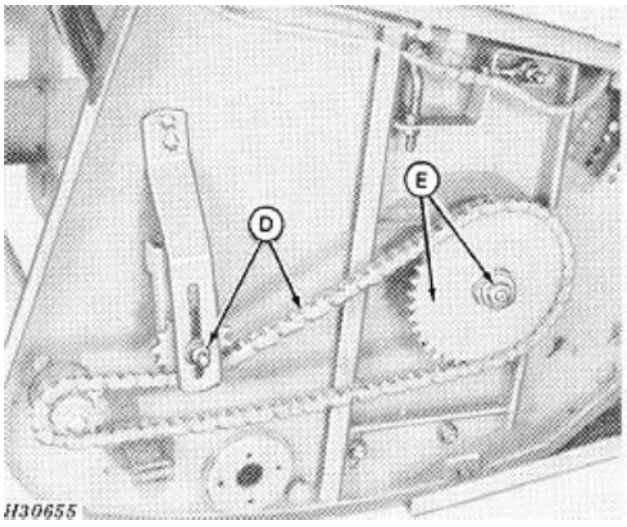

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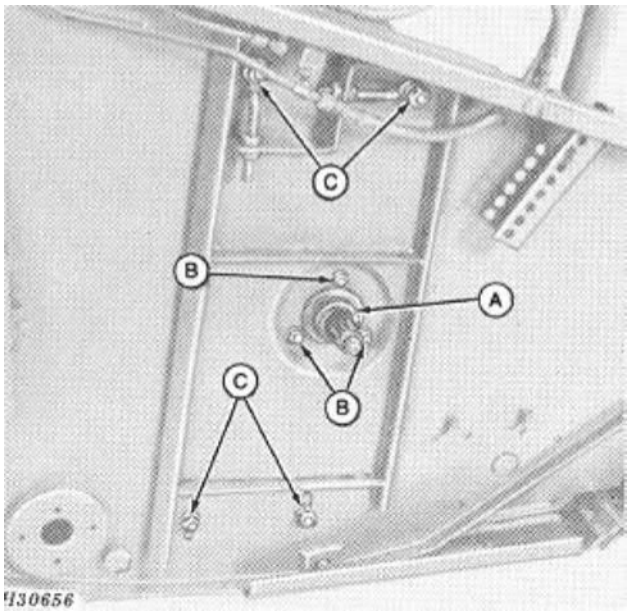
TM1581,HX100,CA-19-18AUG94

6. Support auger with a wood block under flighting. Loosen set screw and remove locking collar (A).

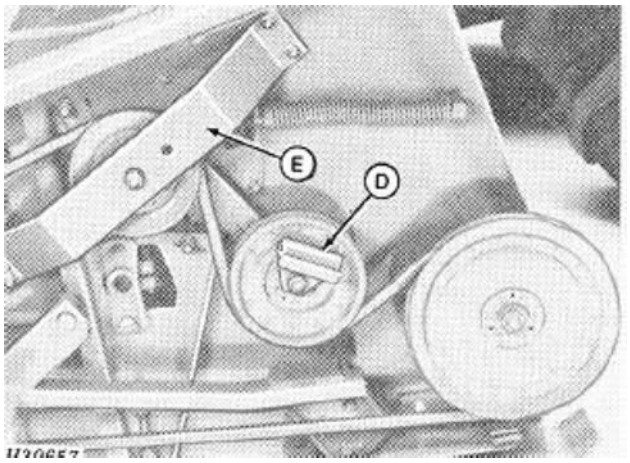
7. Loosen, but do not remove, the three round head bolts in the bearing retainers (B).

8. Remove four round head bolts and pull plate, with eyebolts and bearing attached, off shaft (C).



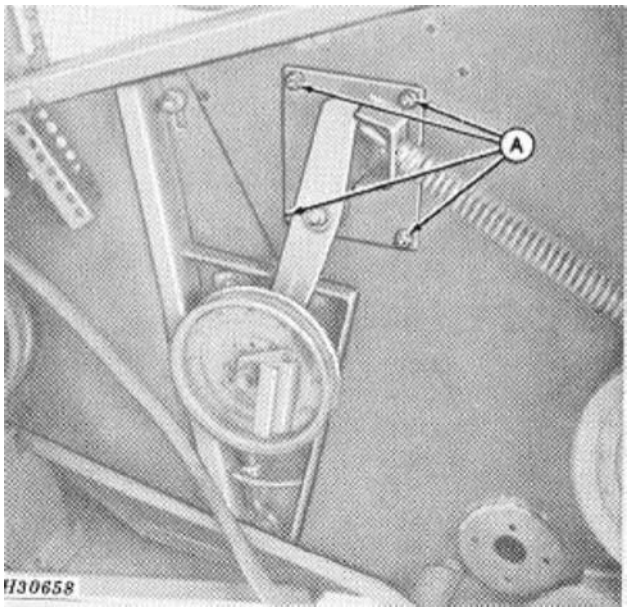
9. Pull up on tightener and remove belt from sheaves (D).

10. Remove four round head bolts and remove sheave with support (E).



1401,10005,C -19-12SEP91

11. Remove four round head bolts and remove tightener assembly with spring and mounting plate (A).

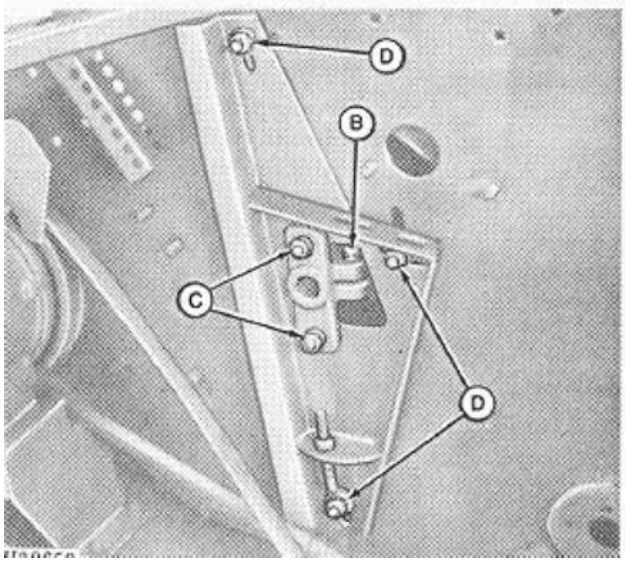


H30658 -UN-05DEC91

12. Loosen clamping cap screw in auger support (B).

13. Support auger with a wood block under auger flighting. Remove two round head bolts and pull auger support from shaft (C).

14. Remove three round head bolts and remove plate with eyebolt (D).

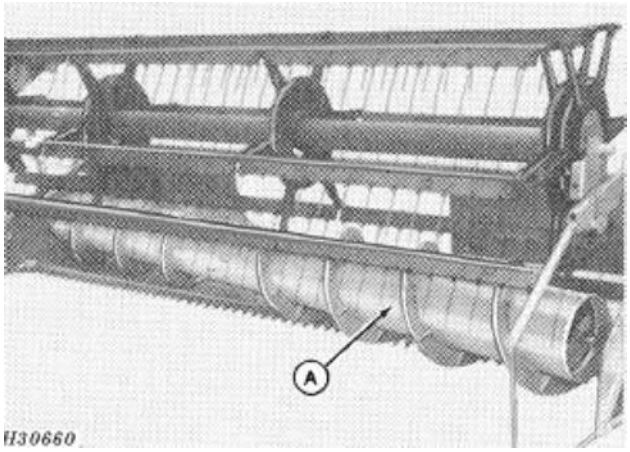


H30659 -UN-05DEC91

HX,1401,1005,AA-19-16DEC92

15. Slide auger all the way to the right. Pull left-hand end of auger out and under reel. Continue to pull auger out of platform.

CAUTION: Pickup reel fingers are sharp. Be careful when working under reel.



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H30660

1401,10005,E -19-12SEP91

INSPECTION AND REPAIR

Inspect all parts of the auger for damage or excessive wear. Replace parts as necessary.

See “Auger Shafts, Cranks and Fingers” for additional information concerning the platform auger.

1401,10005,B8 -19-12SEP91

AUGER SHAFTS, CRANKS AND FINGERS

Removal

The auger does not have to be removed from the platform to repair shafts, cranks and fingers.

To provide adequate working space in which to repair platform auger shafts, cranks and fingers:

1. Raise reel to its highest position.

2. Position reel to its extreme forward position. Place a bolt in the front cross hole of each reel arm to prevent the reel from slipping off the arms.

CAUTION: Always lower the safety stops when working under the reel.

3. Use JDC3 fluted driver for removal of finger guide screws (2). See “Special Tools”.

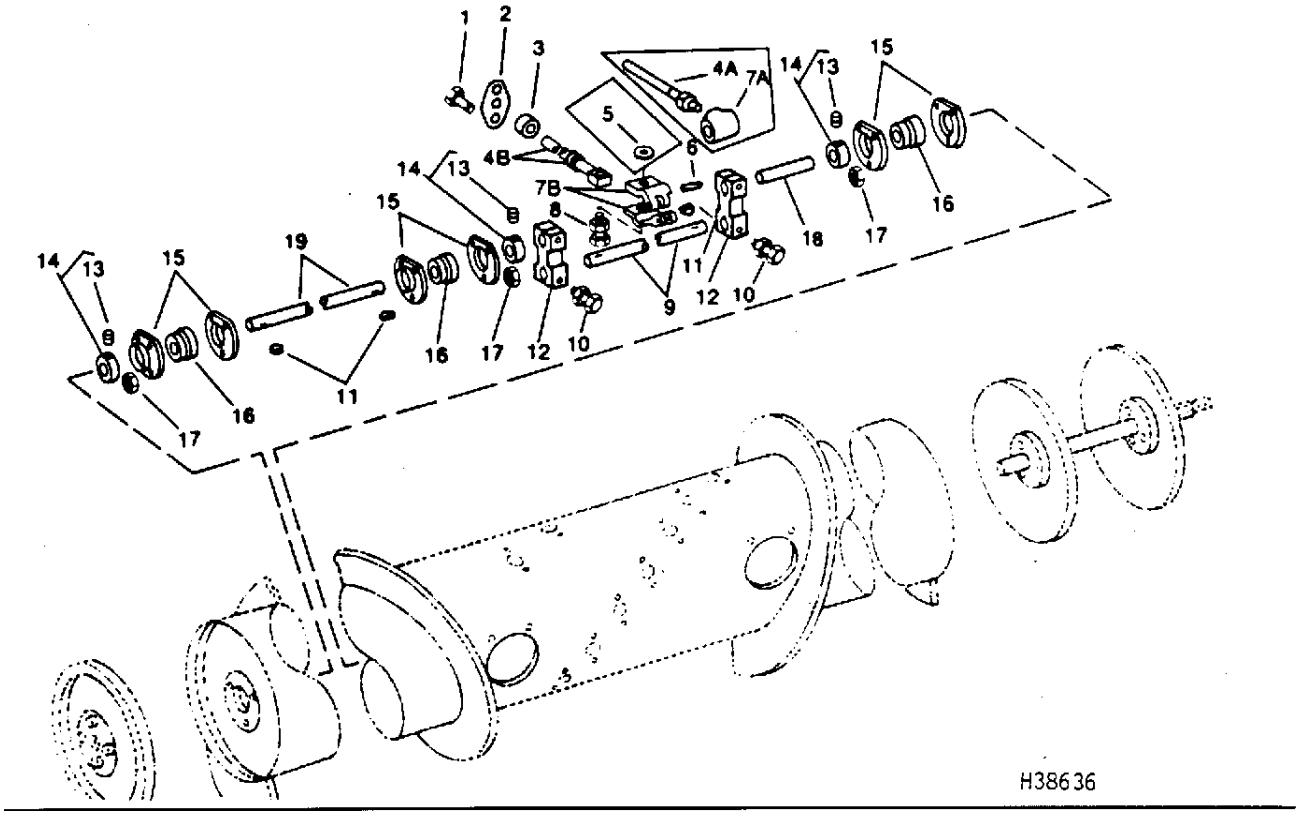
TM1581,HX100,B -19-03OCT94

REPAIR AND ASSEMBLY

When assembling parts in the auger, tighten parts to the following specifications:

Cap screws in cranks	70 N·m (7 kg) (50 lb-ft.)

1401,10005,B9 -19-12SEP91



1—Screw
2—Guide Cap
3—Guide
4A—Finger (—Early)
4B—Finger (Late—)
5—Washer, 11/32 x 3/4 x 0.075 in. (42635-535210)
6—Spring Pin
7A—Bearing (—Early)
7B—Bearing (Late—)
8—Screw, 5/16 x 1-3/4 in.
9—Shaft
10—Cap Screw, 3/8 x 2-1/4 in.
11—Shaft Key, 3/16 x 3/4 in.
12—Crank
13—Set Screw, 1/4 x 1/4 in.
14—Locking Collar
15—Bearing Flange
16—Ball Bearing
17—Lock Nut
18—Pin
19—Shaft

1. The auger does not have to be removed to repair shafts, cranks and fingers.

2. Use JDC3 fluted driver for removal of finger guide screws (1). See “Special Tools”.

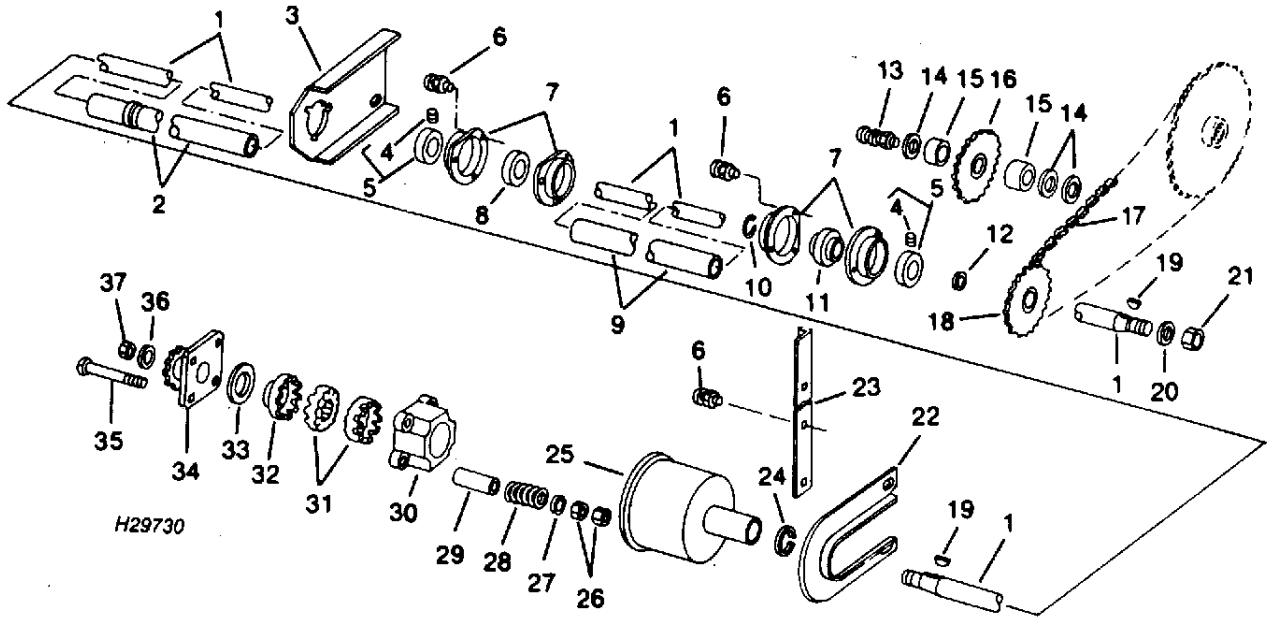
3. When assembling parts in the auger, tighten parts to the following specifications:

Cap Screws (10) in cranks (12) 70 N·m (50 lb-ft.)

Auger fingers in plastic bearings 16 N·m (12 lb-ft.)

1581,10005,AAC -19-03OCT94

AUGER DRIVE

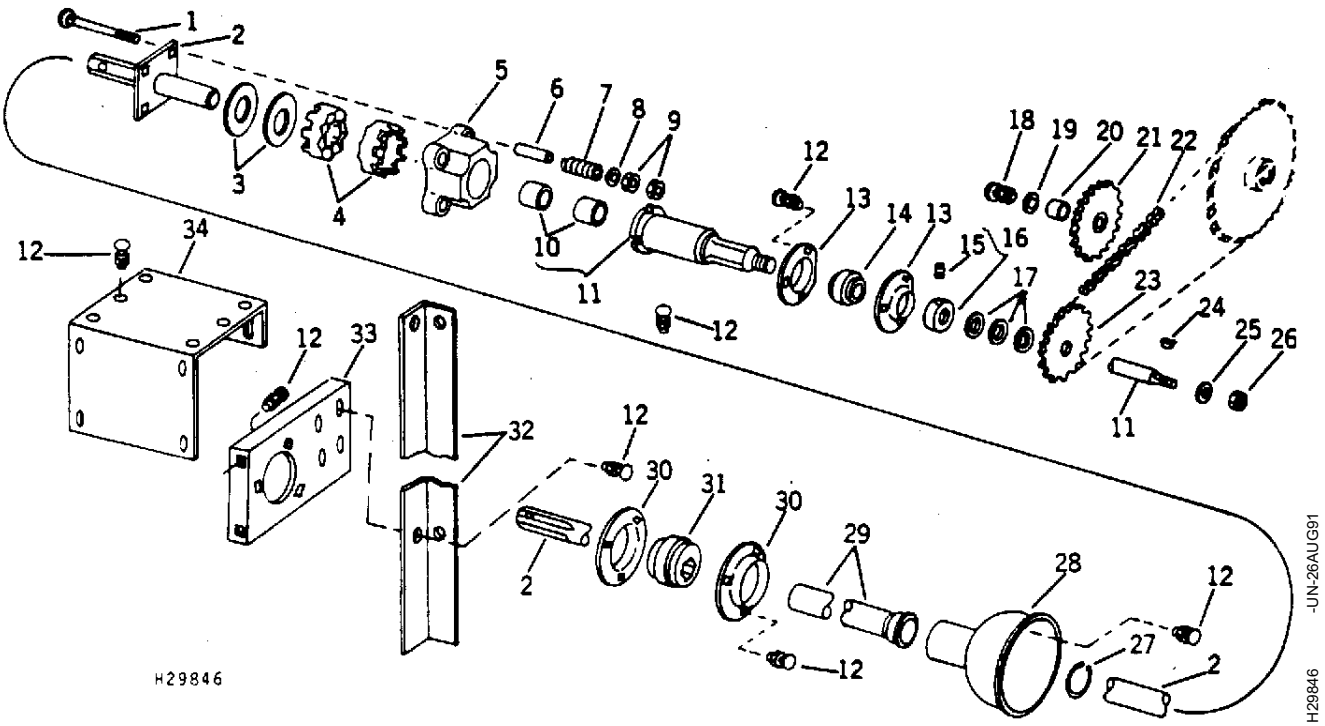


1—Drive Shaft
2—Drive Shaft Shield
3—Support (220, 222 and 224 Models)
4—Set Screw (2 Used)
5—Locking Collar (2 Used)
6—Round Head Bolt, 3/8 x 3/4 In.
7—Bearing Flange (4 Used)
8—Ball Bearing
9—Drive Shaft Shield
10—Snap Ring
11—Ball Bearing
12—Washer, 1-9/32 x 1-11/16 x 0.060 In.
13—Round Head Bolt, 1/2 x 2-3/4 In.
14—Washer, 17/32 x 1-1/16 x 0.090 In. (3 Used)
15—Spacer (2 Used)
16—Tightener Sprocket
17—Chain
18—Drive Sprockets
19—Woodruff Key, 1/4 x 7/8 In. (2 Used)
20—Washer, 25/32 x 1-5/8 x 0.180 In.
21—Nut, 3/4 In.
22—Support Bracket (213, 215, 216 and 218 Models)
23—Angle Support
24—Snap Ring
25—Slip Clutch Shield
26—Nut, 3/8 In. (8 Used)
27—Washer, 17/32 x 1-1/4 x 0.180 In. (4 Used)
28—Spring
29—Spacer
30—Slip Clutch Retainer
31—Slip Clutch Jaw (2 Used)
32—Slip Clutch Collar
33—Thrust Washer
34—Slip Clutch Driver
35—Round Head Bolt, 3/8 x 4-1/4 In. (4 Used)
36—Washer
37—Nut, 3/4 In.

Exploded View of Cross Auger Drive

TM1581,HX100,C -19-03OCT94

SIDEHILL AUGER DRIVES



1—Round Head Bolt, 3/8 x 4-1/4 In. (4 Used)
2—Drive Shaft
3—Washer (2 Used)
4—Slip Clutch Jaws (2 Used)
5—Slip Clutch Retainer
6—Spacer (2 Used)
7—Spring
8—Washer, 17/32 x 1-1/4 x 0.180 In. (4 Used)
9—Nut, 3/8 In. (8 Used)
10—Bushing (2 Used)
11—Drive Shaft
12—Round Head Bolt, 3/8 x 3/4 In. (12 Used)
13—Bearing Flange (2 Used)
14—Ball Bearing
15—Set Screw
16—Locking Collar
17—Washer, 1-9/32 x 1-11/16 x 0.060 In. (3 Used)
18—Round Head Bolt, 1/2 x 2 In.
19—Washer, 17/32 x 1-1/16 x 0.090 In.
20—Spacer
21—Tightener Sprocket
22—Chain
23—Drive Sprocket
24—Woodruff Key, 1/4 x 7/8 In.
25—Washer, 25/32 x 1-5/8 x 0.180 In.
26—Nut, 3/4 In.
27—Snap Ring
28—Slip Clutch Shield
29—Drive Shaft Shield
30—Bearing Flange (2 Used)
31—Ball Bearing
32—Support Angle
33—Bracket
34—Shield

TM1581,HX100,D -19-03OCT94

AUGER DRIVE SLIP CLUTCH

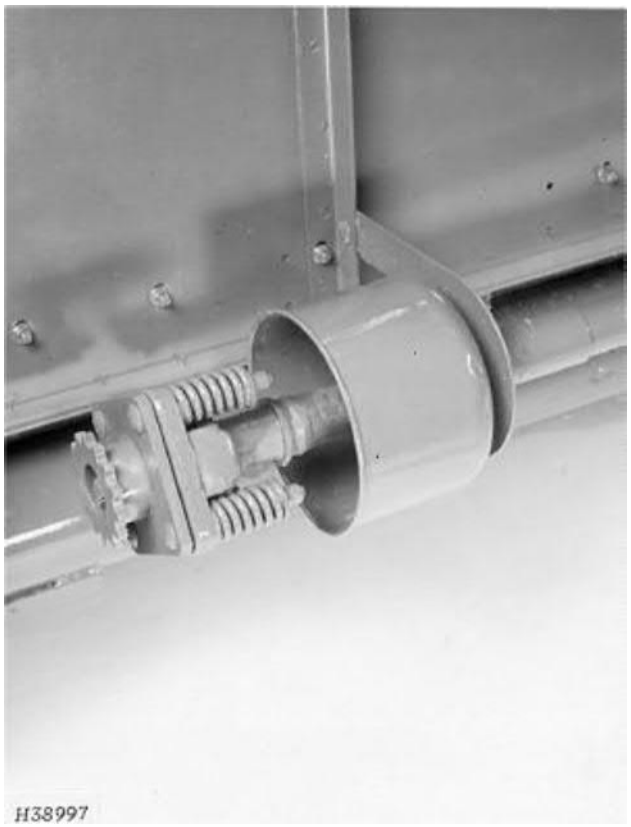
The auger is protected by a slip clutch located next to the quick-coupler on the right-hand drive shaft.

Operate the platform with all four springs in the slip clutch.

100
05
10

When installing the slip clutch springs, the two nuts used to compress the spring must be tight against the spacer and are jammed together. Tighten nuts to 70 N·m (7 kg) (50 lb-ft) torque. Thrust washer surfaces should be periodically greased.

IMPORTANT: Check retaining nuts on slip clutch in severe crop conditions. Frequent slipping of the slip clutch jaws will tend to loosen these nuts.



TM1581,HX100,E -19-03OCT94

GUARDS AND KNIVES

General Information

The knife is basically a multiple series of shears. To cut properly, the knife must run smoothly in the cutterbar and every knife section must rest on the guard in position to make a shear cut. This means the guards, wearing plate and knife clips must be in good condition and set correctly. If these parts are loose or worn, the knife will chew and tear the crop instead of cutting it.

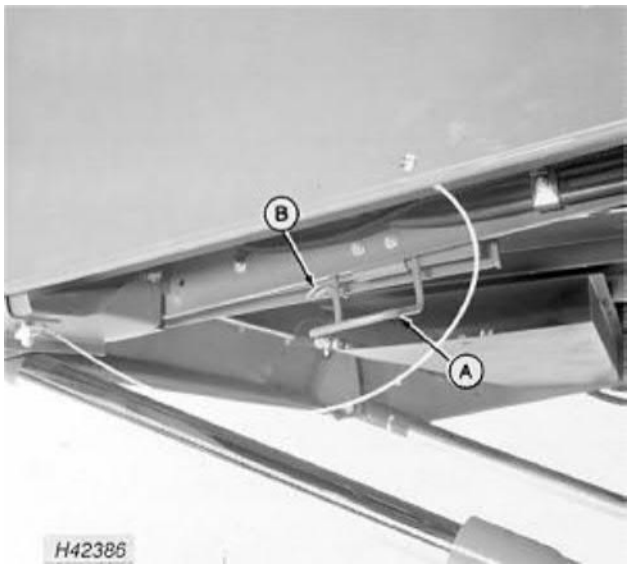
1401,10005,K -19-12SEP91

HYDRAULIC CYLINDER SAFETY STOP

CAUTION: Engine must be off and key removed.

CAUTION: Cracking of hydraulic line fittings to lower feeder house results in an immediate dropping of feeder house and header.

Hold handle (A) and release safety stop by removing spring locking pin (B). Lift stop off of latch and lower it down onto cylinder. Insert spring locking pin in handle.



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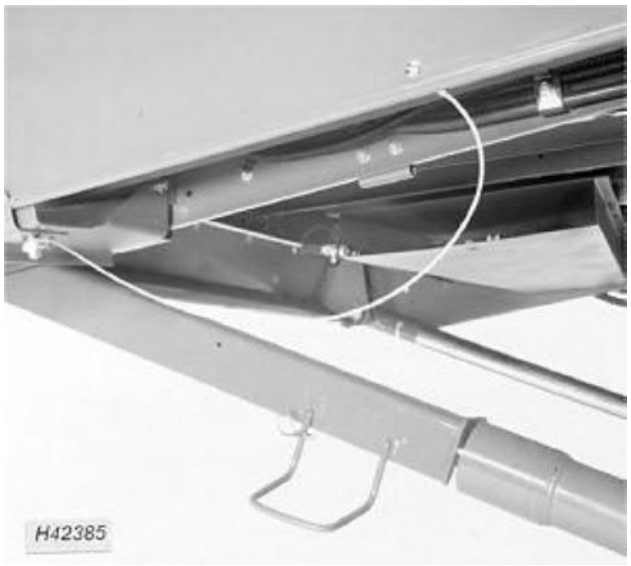
H42386



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H42385

HX,1401,10005AA-19-03OCT94

REMOVAL AND INSTALLATION OF GUARDS AND KNIVES

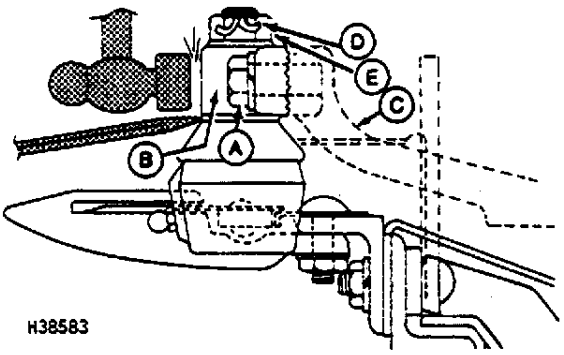
1. Loosen cap screws (A), remove cotter pin (D) and loosen slotted nut (E).

2. Strike a blow in from the front while prying up on adjusting block (B) until it breaks free.

3. Remove two cap screws (A) securing the adjusting block (B) to arm (C), then remove knife.

4. If a new knife is to be installed, remove adjusting block (B) from old knife by removing slotted nut (E).

5. To install knife, replace but do not tighten cap screws (A). Torque slotted nut (E) to 230 N·m (170 lb-ft).



-UN-13OCT88
H38583

A—Cap Screws
B—Adjusting Block
C—Drive Arm
D—Cotter Pin
E—Slotted Nut

TM1581,HX100,F -19-03OCT94

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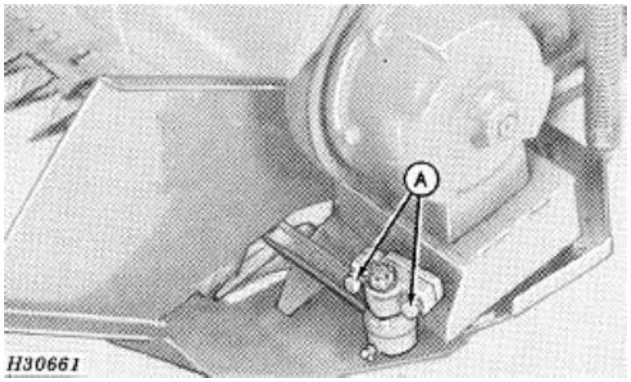
12

KNIFE DRIVE ARM CLAMP ADJUSTMENT

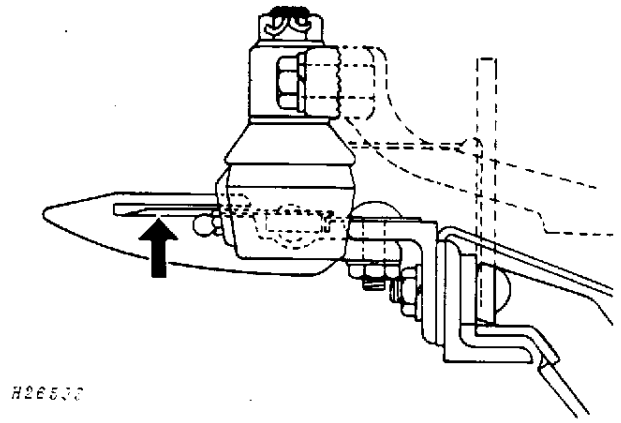
If the drive arm clamp is incorrectly adjusted, the outer left-hand knife half section will rub on the upper or lower lip of the left-hand outer guard. Adjust this clamp as follows:

1. Loosen cap screws (A) and slide knife head up or down until outer left-hand section rests lightly on the outer left-hand guard upper lip without binding, as shown at the arrow. Tighten cap screws (A) to 115 N·m (85 lb-ft.).

2. If binding cannot be eliminated by this adjustment, replace the arc-welded knife drive case mounting frame.



-UN-05DEC91 H30661



-UN-26AUG91 H26593

TM1581,HX100,G -19-03OCT94

SETTING KNIFE REGISTER

The knife is registered at the factory and does NOT need to be registered unless drive arm (A) is removed from yoke shaft (B).

With yoke shaft (B) at maximum clockwise rotation (C), the first full knife section must be centered (D) on the inner prong of the first knife guard.

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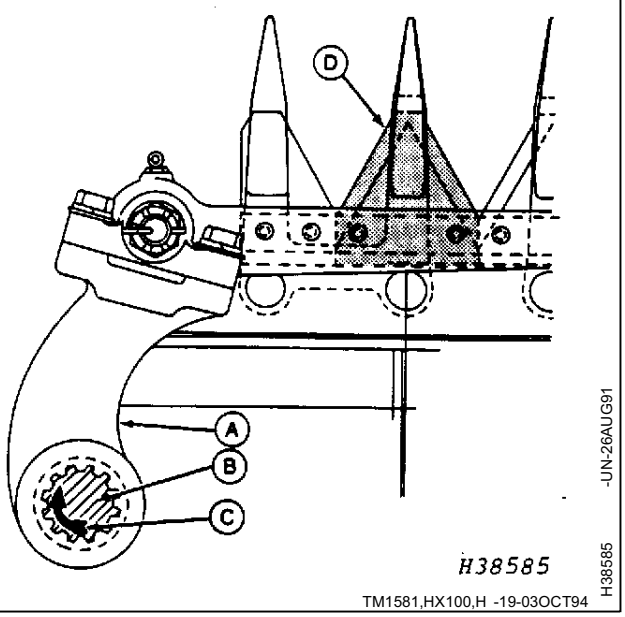
14

A—Drive Arm
B—Yoke Shaft
C—Maximum Clockwise Rotation
D—Knife Section



TM1581,HX100,H -19-03OCT94

GUARD ALIGNMENT

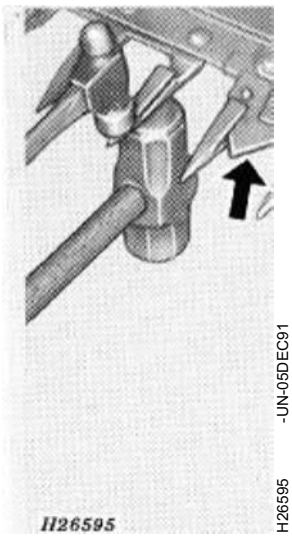
1. Cutterbar must be straight before aligning guards.

CAUTION: Always lower both reel cylinder stops when working under the reel.

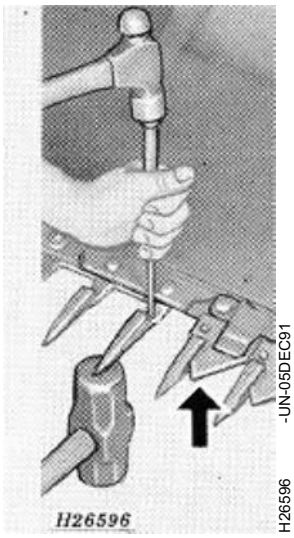
2. Use a hammer and tap end of guard up or down to get a shear cut between section and guard. Tighten bolt as each guard is aligned.

NOTE: Guard lip must be parallel with shear edge of guard. Note location of knife as indicated by arrow.

3. If replacing guards, align new guards to insure a shear cut.



Setting Guard Down



Setting Guard Up

TM1581,HX100,I -19-03OCT94

ADJUSTING HOLD DOWN CLIPS

CAUTION: Always lower reel lift safety stops when working under reel.

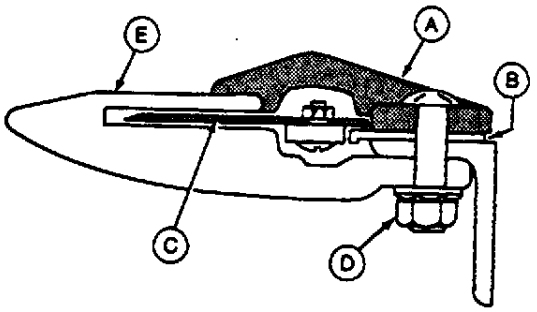
Knife hold down clips (A) must keep sections from lifting off guards (E) and permit knife (C) to slide without binding.

1. Set clips (A) after guards (E) are aligned.

2. Tap clips (A) up or down until knife (C) will slide under clips without binding.

3. After setting clips (A), see that knife (C) works freely.

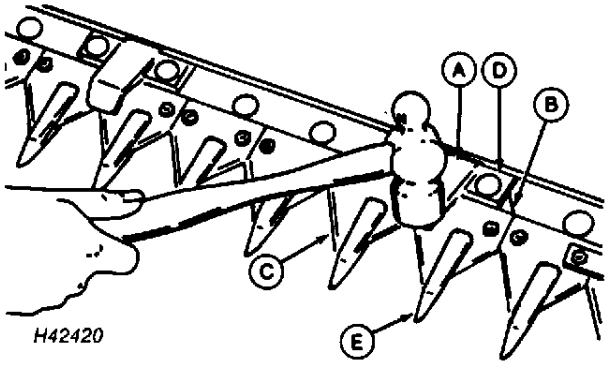
A—Knife Hold-Down Clip
B—Wearing Plate
C—Knife
D—Round Head Bolt and Nut
E—Knife Guard



H38849

-UN-13OCT88

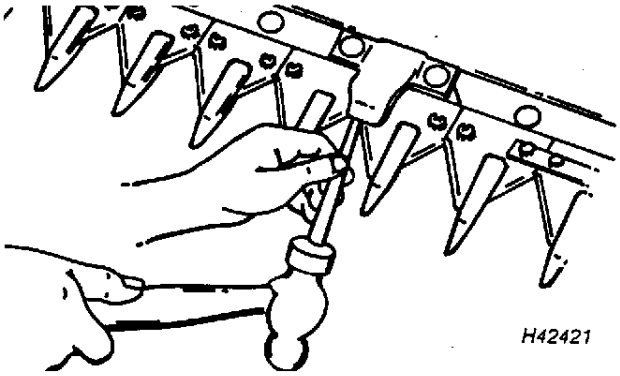
H38849



-UN-14DEC90

H42420

Adjusting Clips Downward



-UN-14DEC90

H42421

Adjusting Clips Upward

TM1581,HX100,J -19-03OCT94

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ADJUSTING WEARING PLATES

Wear plates (B) are located along entire length of knife back (E) and are adjustable for wear on knife back. Edges of wearing plates must line up with knife back along its entire length.

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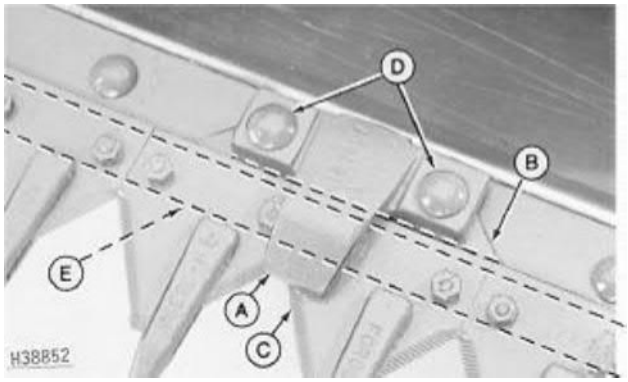
1. Hold knife (C) forward with fingers and adjust wearing plates forward in the slots and parallel against knife back except for the left-hand wear plate closest to the knife head which should be pushed rearward.

IMPORTANT: Do not drive with a hammer or pry up with a screwdriver.

2. After moving wearing plates (B) forward, or after replacing them, secure bolts (D) to 62 N·m (45 lb-ft).



A—Hold Down Clip
B—Wear Plate
C—Knife
D—Bolt
E—Knife Back

TM1581,HX100,K -19-03OCT94

KNIFE SECTION SERVICE KIT

A service kit is available from your John Deere dealer to replace the sections in 1.8 m (6 ft.) of cutterbar at one time.

This kit contains all of the necessary hardware, sections and instructions.

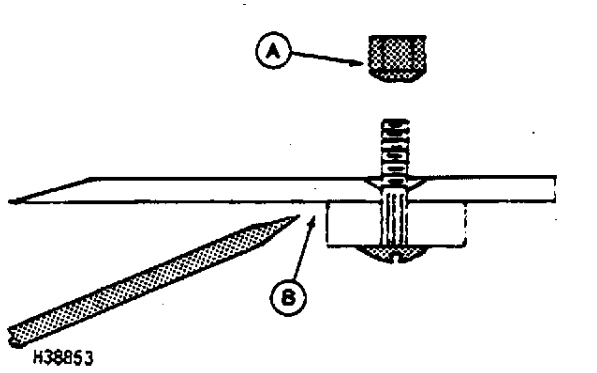
900CP,SE,H -19-24JAN91

REPLACING KNIFE SECTIONS

1. Remove guards if needed.

2. Remove nuts (A) on section.

3. Tap or pry up section (B) and discard.



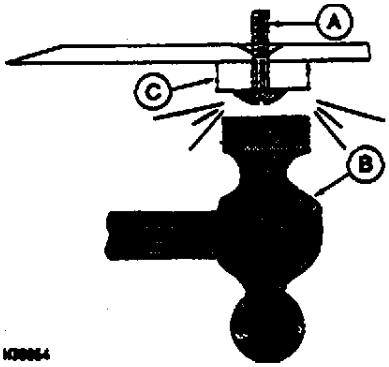
TM1581,HX100,L -19-03OCT94

4. Drive out any damaged bolts (A) with punch.

5. Replace bolts (A), if needed, by driving in from below with a hammer (B). Do not use nut to draw bolt up. Bolt must be driven in flush to knife back (C).

6. Install new section. Torque nuts to 12 N·m (9 lb-ft). Nuts must have taper going down into section.

7. Install guard if needed.



-UN-13OCT88
H38854

1581,10005,ZA -19-03OCT94

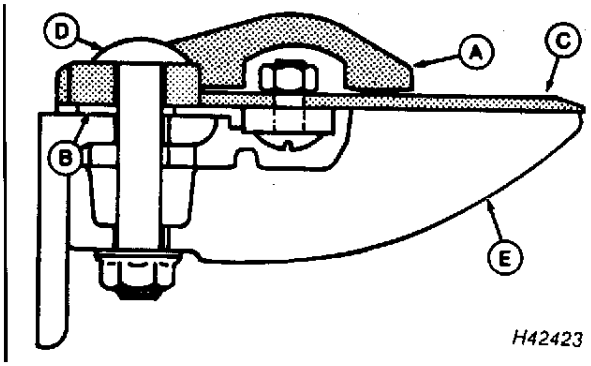
ADJUSTING NON-CLOG CUTTERBAR GUARDS (ATTACHMENT)

1. Tap clips (A) up or down until knife (C) will slide under clips without binding.

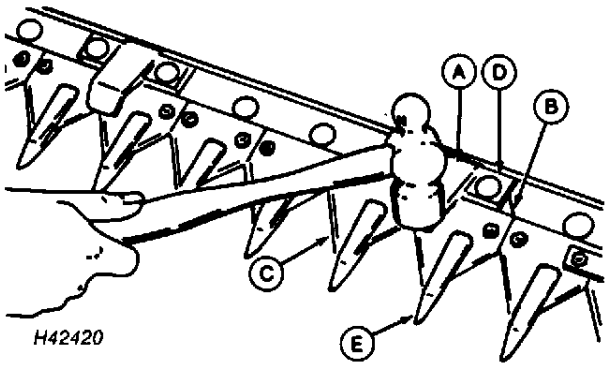
2. After setting clips (A), be certain knife (C) works freely.

NOTE: (Flex platforms only) Remove outer clip on outer right-hand skid show when installing non-clog guards.

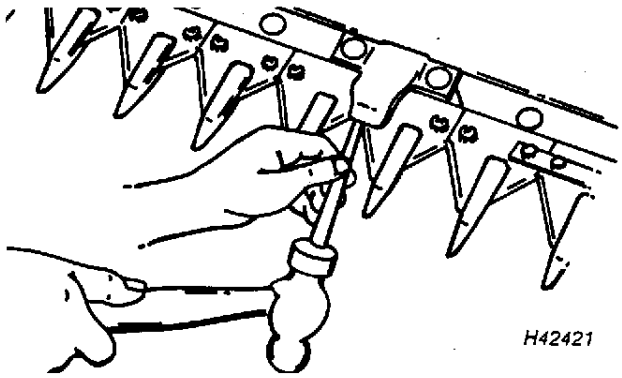
A—Knife Hold Down Clip
B—Wearing Plate
C—Knife
D—Round Head Bolt
E—Knife Guard



-UN-14DEC90
H42423



-UN-14DEC90
H42420

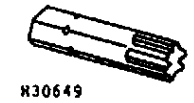


-UN-14DEC90
H42421

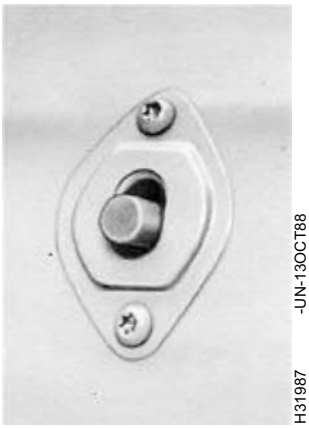
TM1581,HX100,M -19-03OCT94

AUGER FINGERS

H30649 -UN-23FEB89



H30649



H31987 -UN-13OCT88

1. Use JDC3 driver to remove two finger guide screws and remove guide.

NOTE: Use driver with 1/4 to 3/8 in. adapter.

100 05 18

2. Remove access hole covers in auger.

3. Use 1/2 in. socket on a ratchet and 1/2 in. wrench. Reach through two access holes and remove cap screw with lock nut. Remove broken parts.

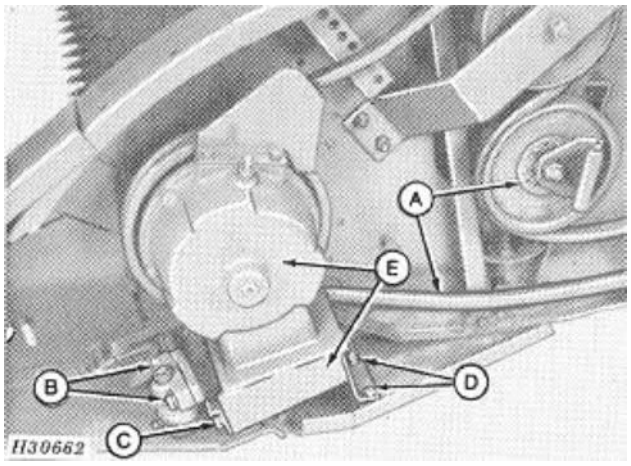
4. Install new parts and torque cap screw to 16 N·m (12 lb-ft). Install guide.

TM1581,HX100,N -19-03OCT94

CUTTERBAR DRIVE CASE

General Information

The knife is driven by an enclosed “wobble joint” drive. All moving parts in the drive are enclosed and operate in 0.95 L (one quart) of John Deere API GL-5 Gear Lubricant.



H30662 -UN-05DEC91

1. Loosen belt and slip it off drive case sheave (A).

2. Remove two cap screws attaching knife head to drive arm (B).

3. Remove five round-head bolts (three on 213, 215 and 216 platforms) attaching mounting to cutterbar angle (C).

4. Remove two round head bolts attaching mounting to skid plate (D).

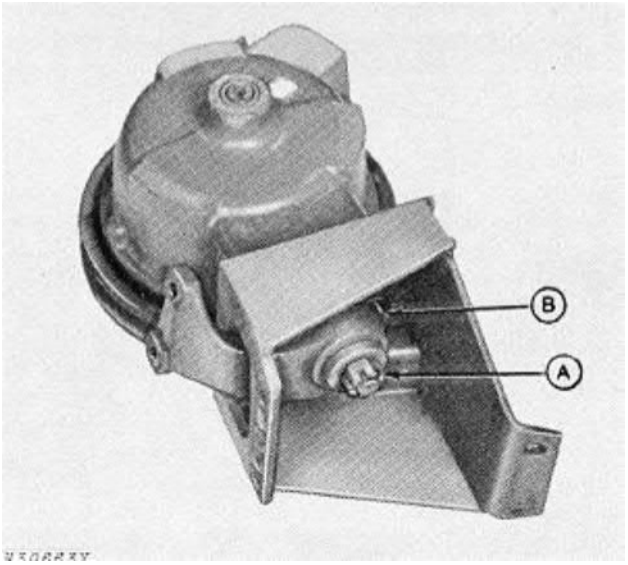
5. Lift drive case with mounting off platform (E).

TM1581,HX100,O -19-03OCT94

6. Remove cotter pin, slotted nut and washer (A) and use a puller to pull drive arm from shaft.

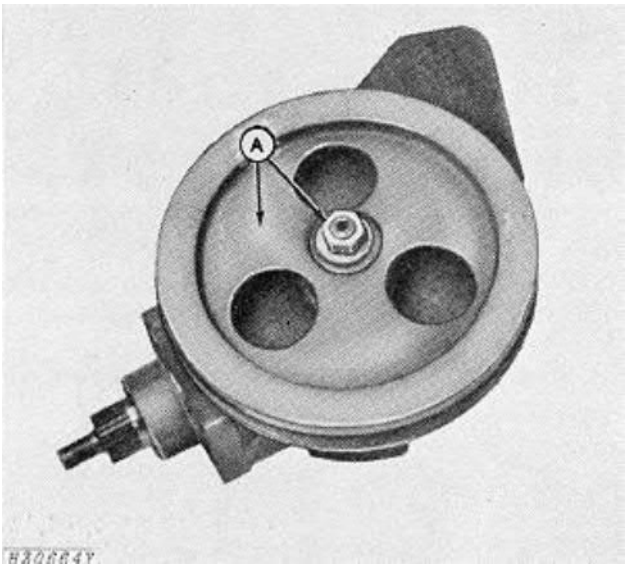
7. Remove four cap screws and remove mounting from drive case (B).

NOTE: Procedure is same for counterbalance knife drive arm.



HX1581,10005,DA-19-03OCT94

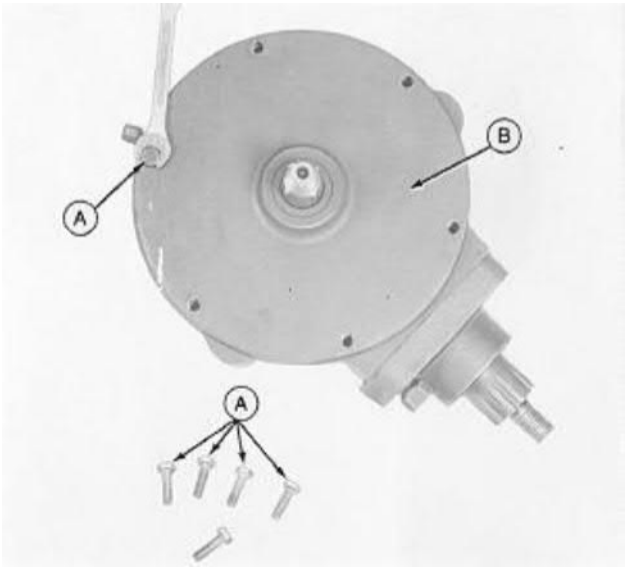
8. Remove lock nut and washer (A) and use a puller to pull sheave from wobble shaft.



1401,10005,S -19-12SEP91

DISASSEMBLY

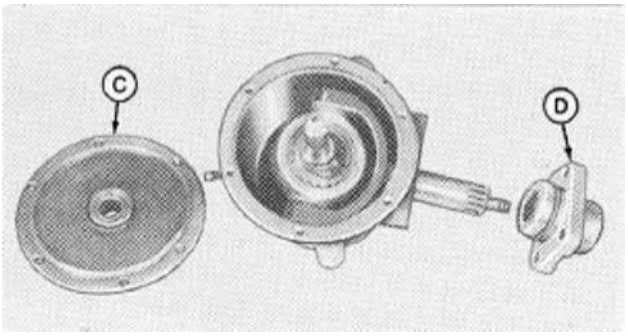
1. Remove six cap screws (A) from housing cover (B).



E13174 -UN-07JUN89

1401,10005,T -19-12SEP91

2. Remove housing cover (C) and yoke cap (D).

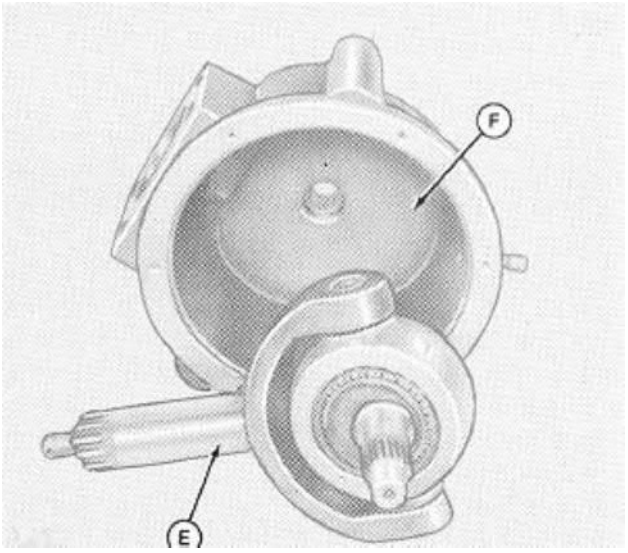


H45118 -UN-10SEP92

3. Remove yoke and wobble shaft assembly (E) by tilting yoke and sliding from housing (F).

4. Replace yoke and wobble shaft assembly from parts if needed.

NOTE: Yoke and spindles are not available in service parts.



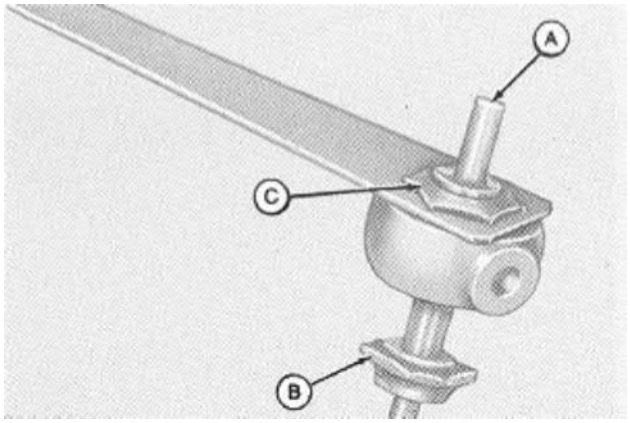
H45119 -UN-10SEP92

1581,10005,ZB -19-03OCT94

5. Place wobble shaft (A) in vise. Do not clamp vise onto shaft. Place drive sheave onto shaft or make a special holding tool (B). To make holding tool, use old drive sheave and remove the center of the sheave.

6. Loosen old stake and remove nut (C) from the wobble shaft.

Yoke Removed for Clarity

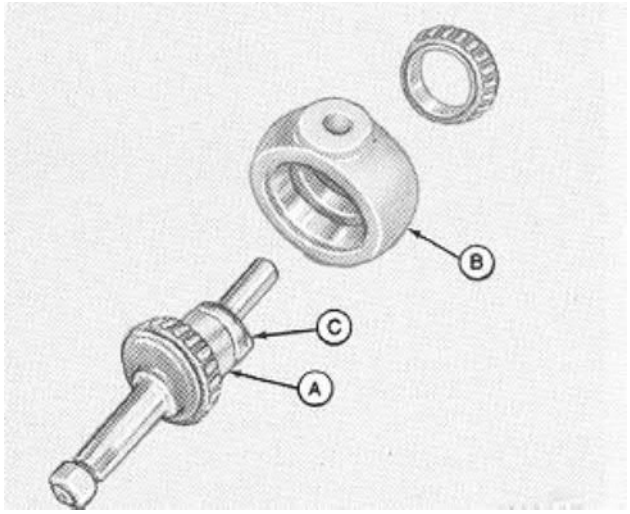


-UN-10SEP92
H45120

TM1581,HX100,CE-19-18AUG94

7. Press wobble shaft (A) from housing (B). Be certain to press on unfinished surface (C) of shaft.

Yoke Removed for Clarity



-UN-10SEP92
H45121

TM1581,HX100,CF-19-18AUG94

INSPECTING DRIVE CASE COMPONENTS

1. Wash all parts thoroughly in a clean solvent and dry. Clean all oil out of knife drive case.

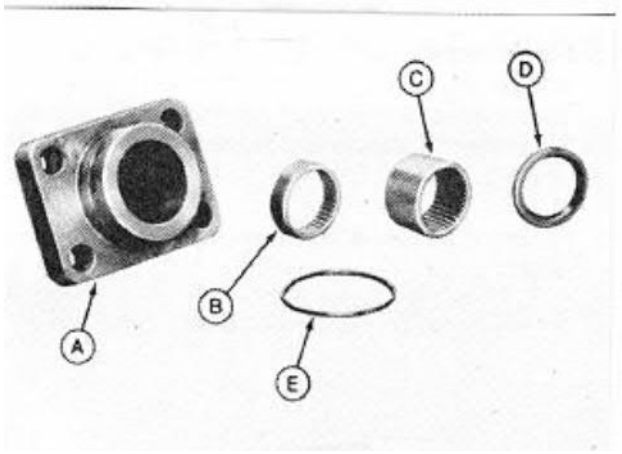
2. Inspect all parts for wear or damage. Replace, if necessary.

3. Check for irregular wear patterns, nicks, etc.

4. Check bearings for roughness. Be certain bearings rotate freely and all rollers are in place.

5. Inspect housing cover and yoke cap for wear. Inspect all bearings and threads on wobble shaft. Inspect splines on yoke shaft.

6. Check bearings (B) and (C) in cap assembly (A). Press out and replace if necessary.



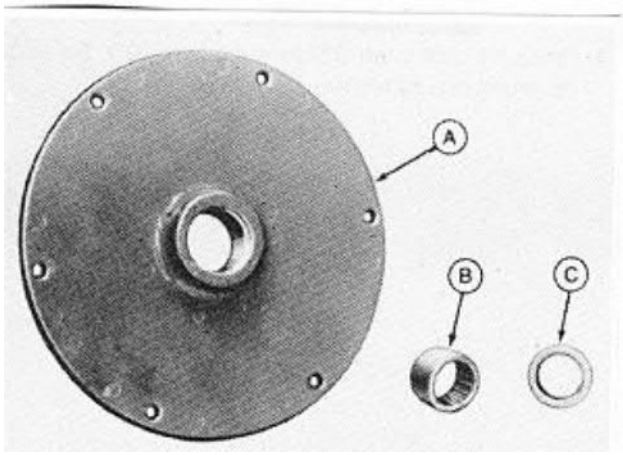
H45122 -UN-10SEP92

A—Cap
B—Inner Bearing
C—Outer Bearing
D—Oil Seal
E—O-Ring

HX,1401,1005,AK-19-16DEC92

7. Check cover assembly (A) including bearing (B) and seal (C). Replace if necessary.

A—Cover
B—Bearing
C—Oil Seal



H45123 -UN-10SEP92

HX,1401,1005,AL-19-16DEC92

INSTALL DRIVE CASE BEARINGS

1. Since a drawn cup (DC) bearing has a press-fit in its housing, an installation tool similar to the one illustrated must be used.

2. A standard arbor press, used with the correct tool, makes an adequate assembly machine. The press fit eliminates the need for snap rings or shoulders to hold the bearings in place axially.

3. Always assemble bearing with stamped end (end with identification markings) against angled should of pressing tool.

4. Never drive bearing into housing with a hammer or other impact tool, even in conjunction with proper assembly mandrel.

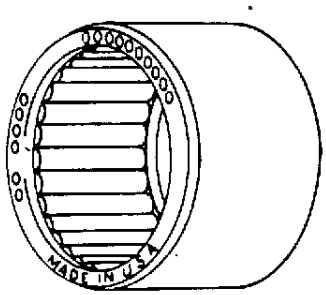
5. Never press bearing tightly against a shoulder in housing. If it is necessary to use a shouldered housing, the depth of housing bore must be sufficient to make certain that housing shoulder fillet, as well as shoulder face, clears the bearing.

6. Use a positive stop on press tool to locate bearing properly in housing. The assembly tool should have a leader or pilot to aid in starting bearing true in housing, as shown.

7. The ball detent on the drawing is used to assist in aligning rollers during installation and to hold bearing on the installation tool.

8. If a DC bearing has to be removed from a through bored housing, a tool similar to the installation tool shown, without the stop, may be used.

9. The outside shell of a drawn cup (DC) bearing is precision drawn from strip steel. In heat-treating operation, the shell may go out of round. When DC bearing is pressed into a true round housing of proper size and wall thickness, it becomes round and is sized properly for satisfactory bearing performance. For this reason, it is impossible to inspect an unmounted drawn cup bearing by measuring its outside diameter.



-UN-10SEP92
H45116

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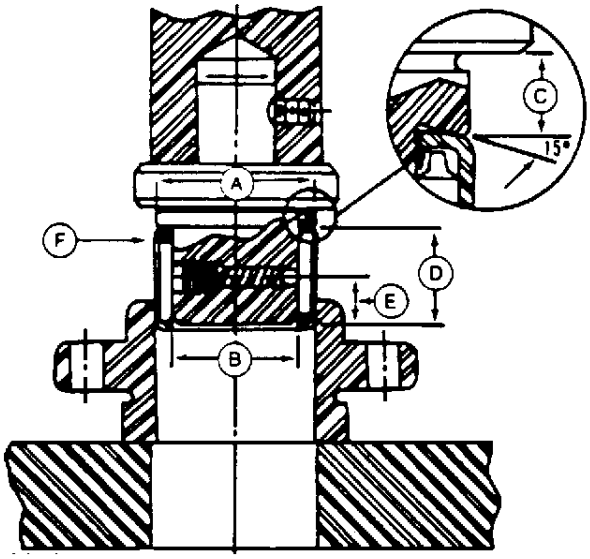


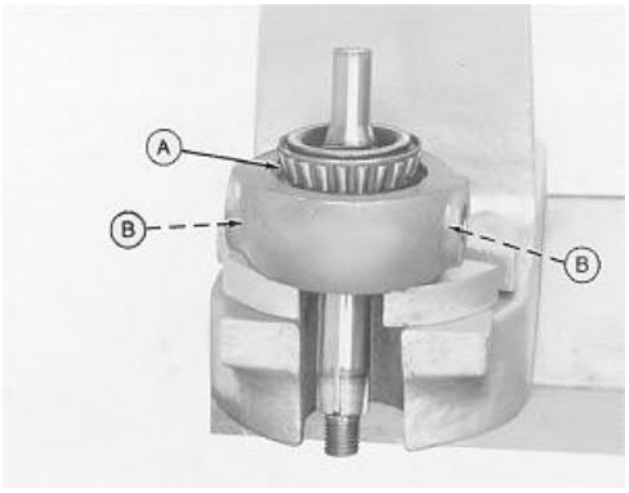
-UN-10SEP92
H45117

A—0.38 mm (1/64 in.) less than housing bore
B—0.08 mm (0.003 in.) less than shaft diameter
C—Distance bearing will be inset into housing 0.25 mm (0.010 in. min.)
D—Pilot length should be bearing width less 8 mm (11/32 in.)
E—Approx. 1/2 dimension D
F—Stamped end of bearing

TM1581,HX100,CG-19-18AUG94

ASSEMBLE KNIFE DRIVE CASE

1. Press bearing cups and cones (A) in housing.



E15729 -UN-07JUN89

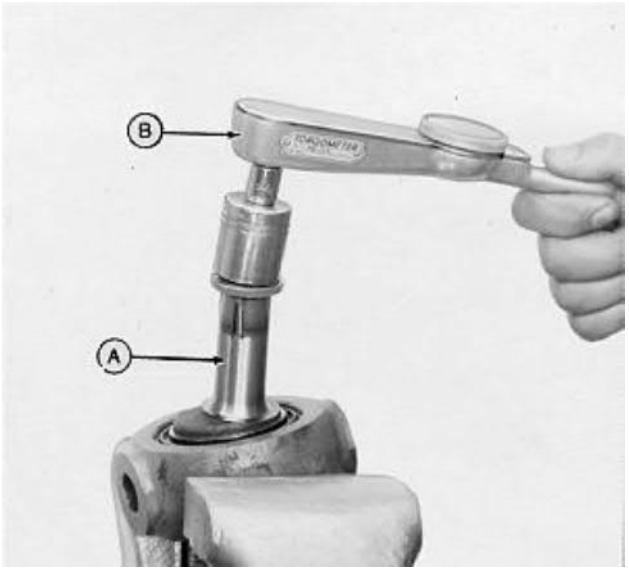
Yoke Removed for Clarity

TM1581,HX100,CH-19-18AUG94

2. Tighten stake nut until the bearings have a rolling torque of 0.34 to 0.56 N·m (3 to 5 lb-ft.).

3. To check, place a 3/4 in. nut (B) on wobble shaft (A) and check as shown.

4. Stake nut to wobble shaft using punch.

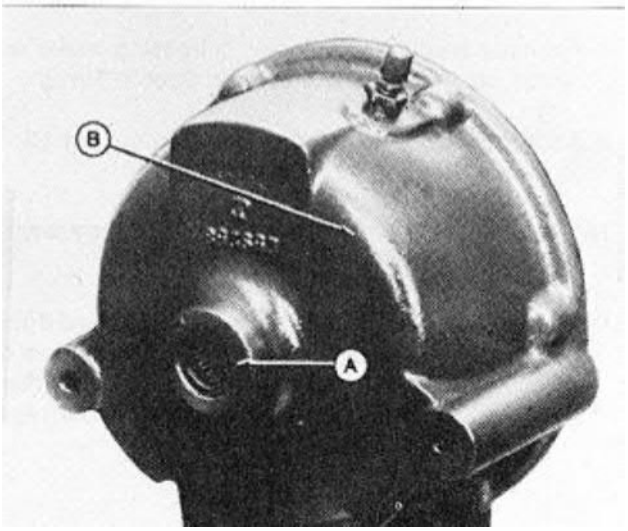


E15732 -UN-03OCT88

Yoke Removed for Clarity

TM1581,HX100,CI-19-18AUG94

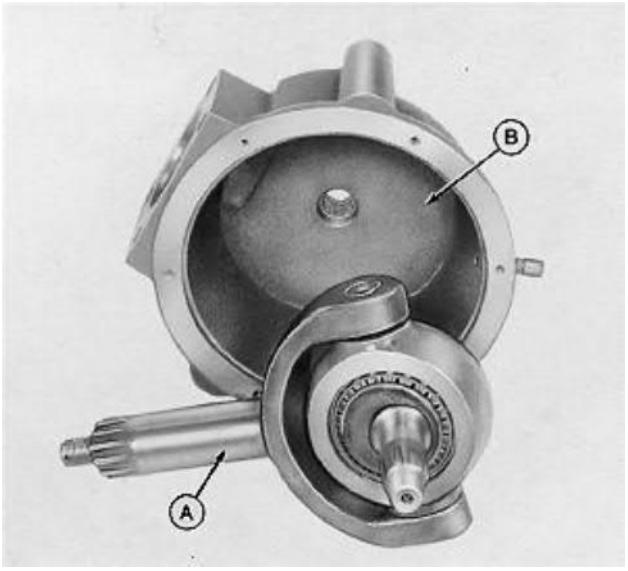
5. Check oil seal and bearing (A). Press and replace if necessary.



H45124 -UN-10SEP92

TM1581,HX100,CJ-19-18AUG94

6. Install yoke and shaft assembly (A) by tilting yoke and sliding into housing (B).



E15734 -UN-07JUN89

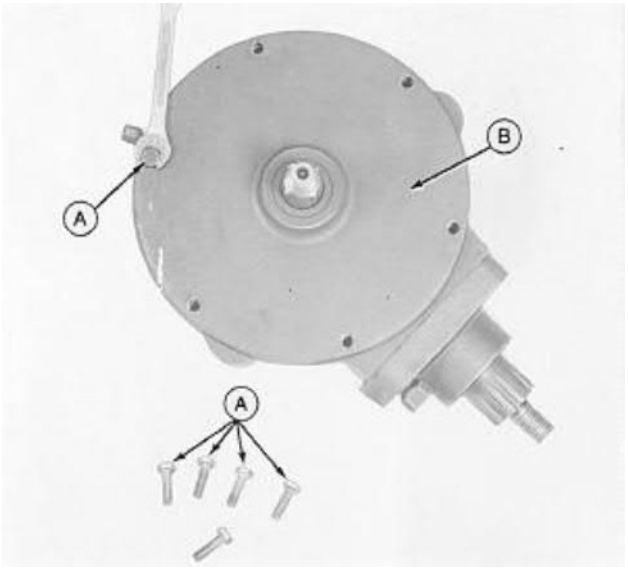
TM1581,HX100,CK-19-18AUG94

7. Install cap assembly on housing. Tighten bolts to 271 N·m (200 lb-ft) torque.

E26494 -UN-04OCT89

8. Apply TY15130 Form-In-Place Gaskets on housing cover (B) and install on housing. Torque bolts (A) to 45 N·m (30 lb-ft).

9. Install sheave and washer. Tighten nut to 150 N·m (110 lb-ft) torque. Tap nut with hammer and re-torque to 150 N·m (110 lb-ft).



E13174 -UN-07JUN89

TM1581,HX100,CL-19-18AUG94

INSTALLATION

1. Locate drive arm with counterweight in mounting.

2. Attach mounting to drive case with four cap screws (A). Tighten cap screws to 271 N·m (200 lb-ft) torque.

3. Attach drive arm to yoke shaft with washer and slotted nut (B). Tighten slotted nut to 270 N·m (200 lb-ft) torque. Strike knife arm several times with hammer to seat knife arm on tapered shaft and retighten to one slot past 270 N·m (200 lb-ft) torque. Insert and spread cotter pin.

4. Place drive case with mounting on platform and secure to skid plate with three round head bolts (C).

5. Attach cutterbar angle to mounting with five round head bolts (D). Tighten round head bolts to 45 N·m (35 lb-ft) torque.

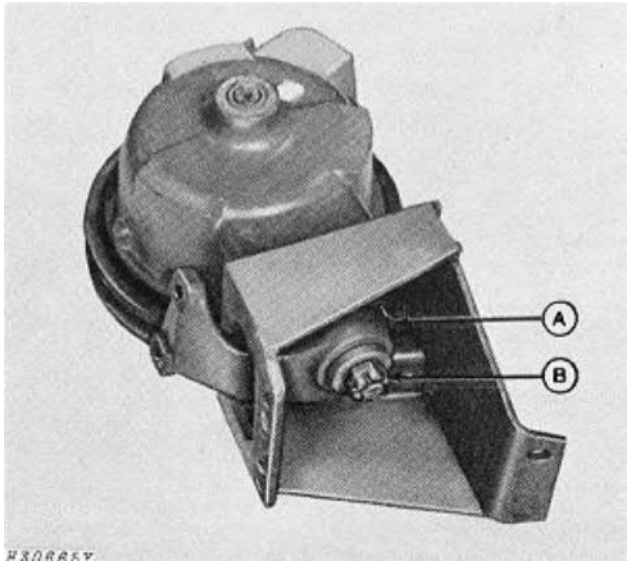
6. Attach knife head to drive arm (E) with two cap screws. Tighten cap screws to 115 N·m (85 lb-ft) torque.

7. Fill drive case with approximately 0.95 L (one quart) of John Deere API GL-5 Gear Lubricant to 89 mm (3-1/2 in.) below breather hole (F).

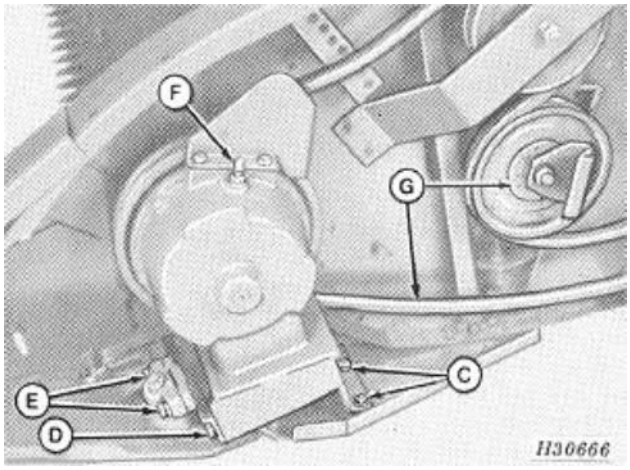
IMPORTANT: Overfilling can cause leakage, overheating and internal damage.

8. Install drive belt on sheaves (G).

NOTE: Procedure is same for counterbalance knife arm.



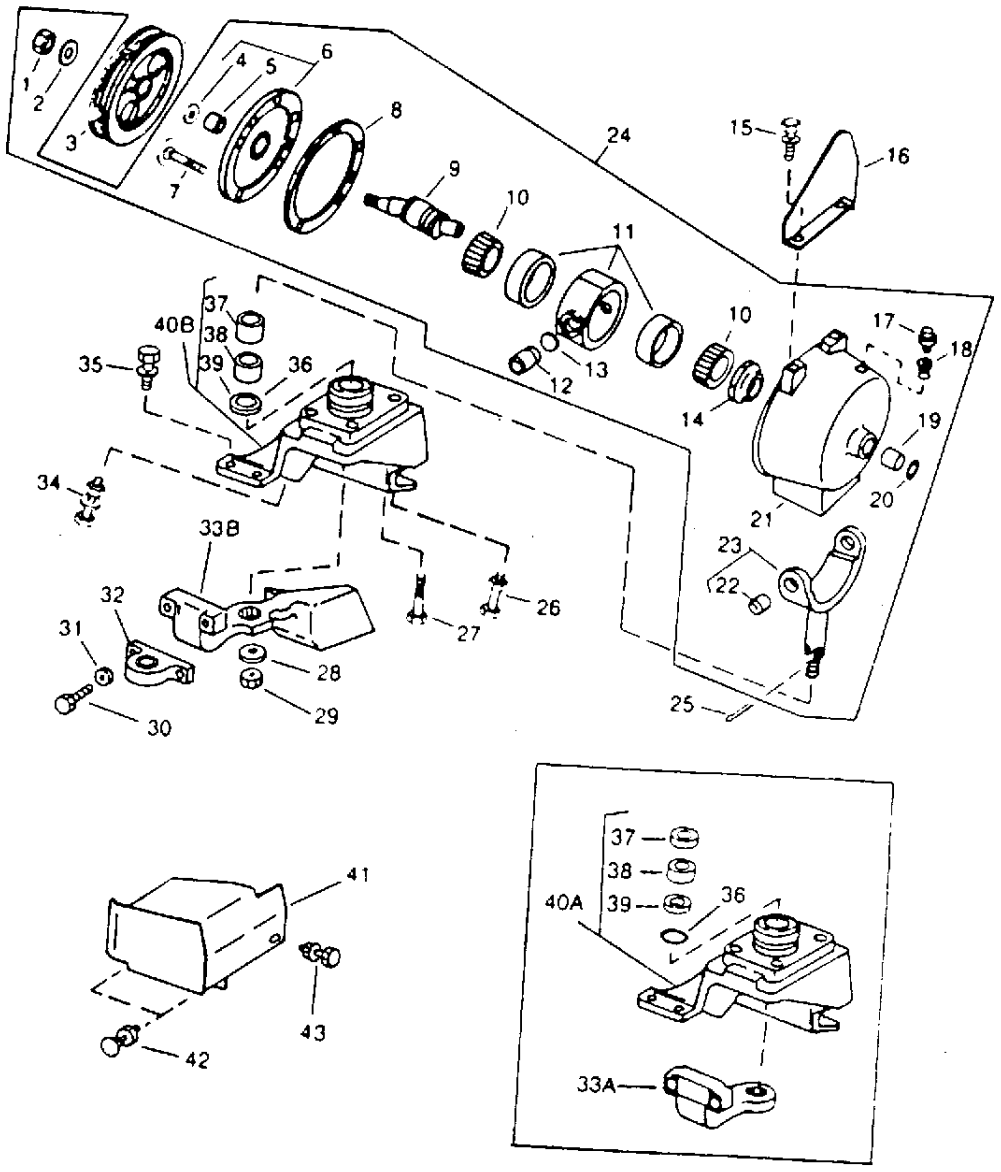
H30665 -UN-15JUN89



H30666 -UN-05DEC91

1581,10005,ZC -19-03OCT94

KNIFE DRIVE CASE



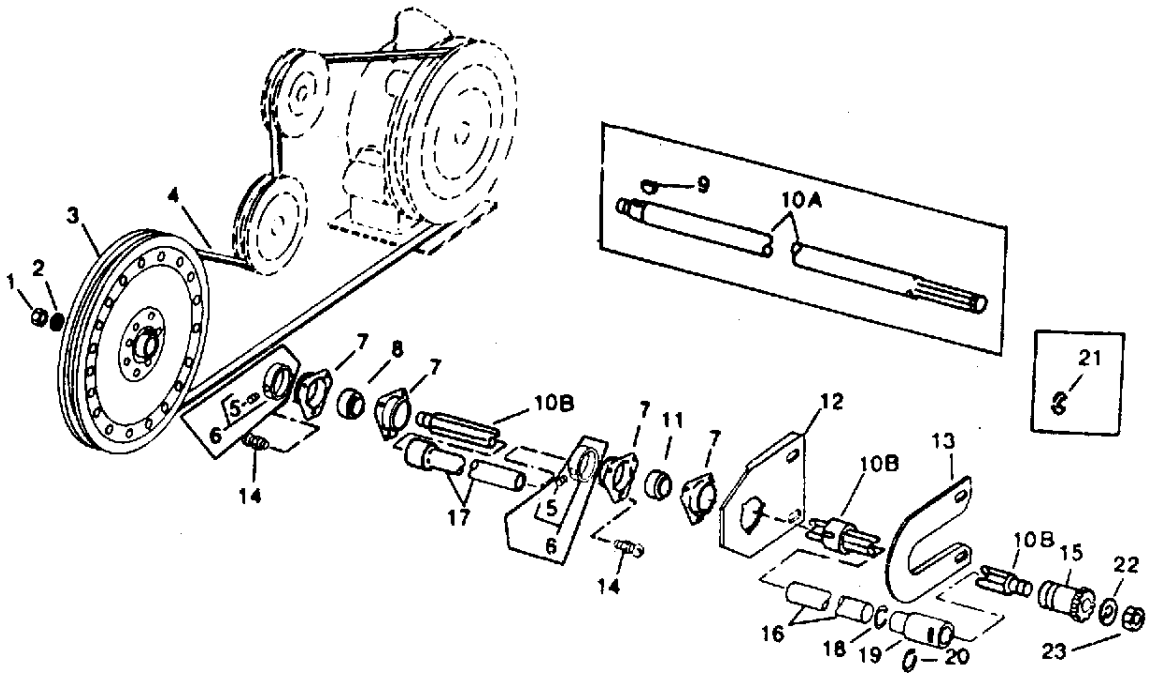
H44796 -UN-03AUG92

HX,1401,1005,AR-19-16DEC92

1—Lock Nut
2—Washer
3—Sheave
4—Seal
5—Bearing
6—Cover
7—Cap Screw, 5/16 x 1 in. (6 used)
8—Sealant
9—Shaft
10—Bearing Cone (2 used)
11—Housing
12—Spindle (2 used)
13—Disk (2 used)
14—Nut
15—Cap Screw, 5/16 x 5/8 in. (2 used)
16—Shield
17—Relief Valve
18—Bushing, 3/8 x 1/8 in.
19—Needle Bearing
20—Seal
21—Housing
22—Bushing (2 used)
23—Yoke
24—Drive
25—Cotter Pin, 5 x 50 mm
26—Screw, 1/2 x 1-1/2 in. (2 used)
27—Bolt, 5/8 x 2 in. (4 used)
28—Washer
29—Nut
30—Cap Screw, 1/2 x 1-3/4 in.
31—Washer
32—Clamp
33A—Arm
33B—Arm
34—Cap Screw, 1/2 x 1-1/4 in. (3 used) Flex
35—Cap Screw, 1/2 x 1 in. (2 used) Flex
36—O-Ring
37—Bearing, Inner
38—Bearing, Outer
39—Seal
40A—Support
40B—Support
41—Shield
42—Bolt (2 used)
43—Bolt (3 used)

TM1581,HX100,S -19-03OCT94

CUTTERBAR DRIVE SHAFT



1—Nut, 3/4 in.
2—Washer, 25/32 x 1-5/8 x 0.180 in.
3—Drive Sheave
4—Belt
5—Set Screw, 1/4 x 1/4 in. (2 used)
6—Locking Collar
7—Bearing Flange (4 used)
8—Ball Bearing
9—Woodruff Key, 1/4 x 7/8 in.
10A—Drive Shaft
10B—Drive Shaft
11—Ball Bearing
12—Support
13—Support Bracket
14—Bolt, 1/8 x 3/4 in.
15—Sprocket
16—Shield
17—Drive Shaft Shield
18—Snap Ring
19—Shield
20—Bearing
21—Snap Ring (—635100)
22—Lock Washer (635101—)
23—Lock Nut (635101—)

Exploded View of Cutterbar Drive

TM1581,HX100,T -19-03OCT94

REPLACING CUTTERBAR DRIVE BELT

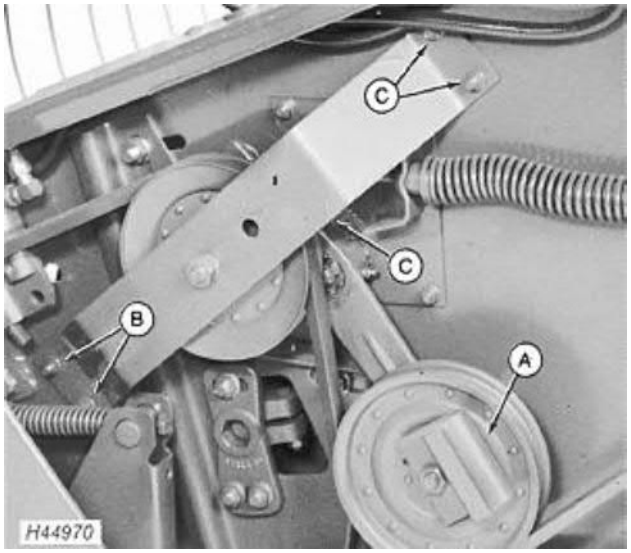
1. Remove left-hand long divider point from flex platforms. Remove belt by pulling handle (A) rearward and slipping belt from under tightener.

2. Loosen nuts (B) and remove bolts (C).

3. Slip new belt behind support.

4. Position belt in sheave grooves. Pull handle (A) rearward and slip belt under tightener.

5. Replace bolts (C) and tighten nuts (B).



H44970 -UN-03DEC92

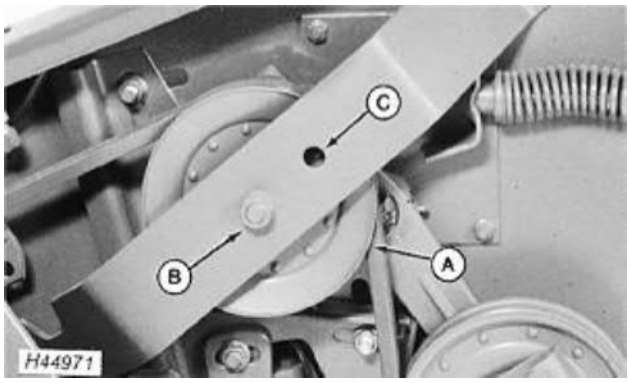
TM1581,HX100,U -19-03OCT94

ADJUSTING FIXED IDLER POSITION

When operating a rigid platform with the cutterbar fully extended or in the mid position, idler (A) must be installed in hole (B).

When cutterbar on a rigid platform is in its rearward position, idler (A) must be installed in hole C).

On flex platforms, the idler must always be installed in hole (B).



H44971 -UN-03DEC92

900CP,SE,O -19-04DEC92

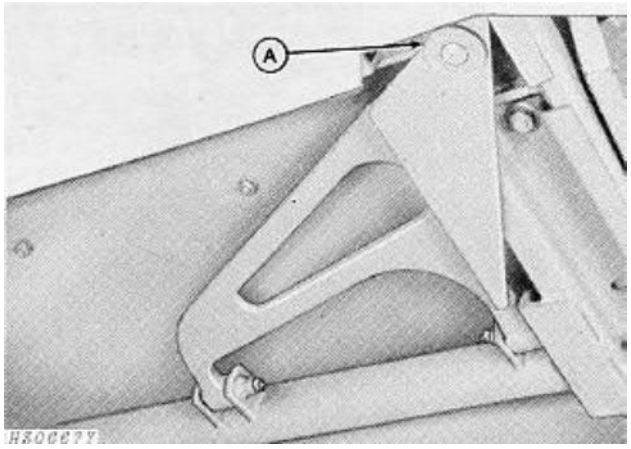
LEFT-HAND STABILIZER SOCKET (FLEX PLATFORMS ONLY)

Use the following procedure to adjust a new socket for the left-hand stabilizer.

1. Start engine, raise platform all the way and shut off engine.

2. Lower safety stop.

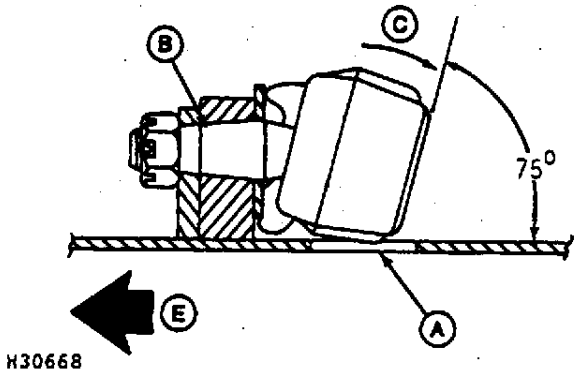
3. Remove lock-out washer. Save hardware. Reinstall washer by inserting a 3/8 x 2 in. cap screw from the top (A). Place 1-1/4 in. O.D. washer and nut on cap screw and tighten.



H30667 -UN-15JUN89

TM1581,HX100,V -19-03OCT94

4. Insert a small pry bar in plug access hole (A) and rotate socket (B) to the correct position (C) shown. Socket is correctly positioned when the grease plug is over the FRONT half of the hole (A).



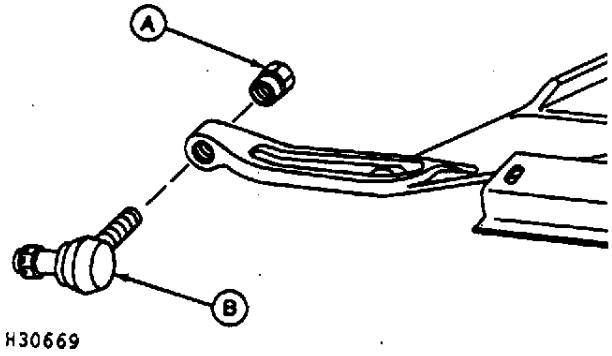
TM1581,HX100,W -19-03OCT94

100
05
32

NOTE: Step 5 requires two service technicians.

5. Use 1 in. socket on an extension 508 to 660 mm (20 to 26 in.) long to tighten nut (A) to 135 N·m (100 lb-ft.) torque. Keep socket (B) from rotating while tightening by inserting the small pry bar in the plug access hole.

6. Remove lock-out washer and reinstall with the original hardware provided.

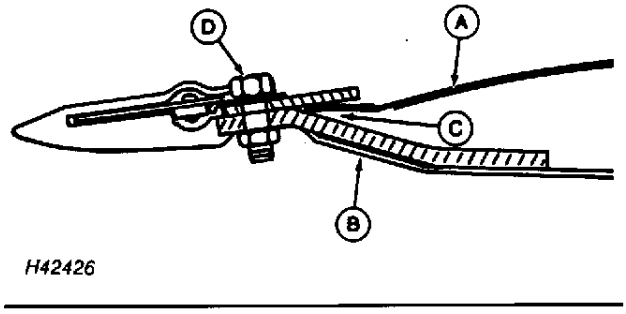


1401,10005,B4 -19-12SEP91

CLEANING DIRT FROM UNDER FLEXIBLE SEALS

At the end of each season, or more often as necessary, clean out the dirt from between flexible seals (A) and skid shoes (B) in area (C). Bolts (D) may have to be taken out to remove packed dirt.

CAUTION: Lower feeder house safety stop when working under platform. Turn off engine and remove key.

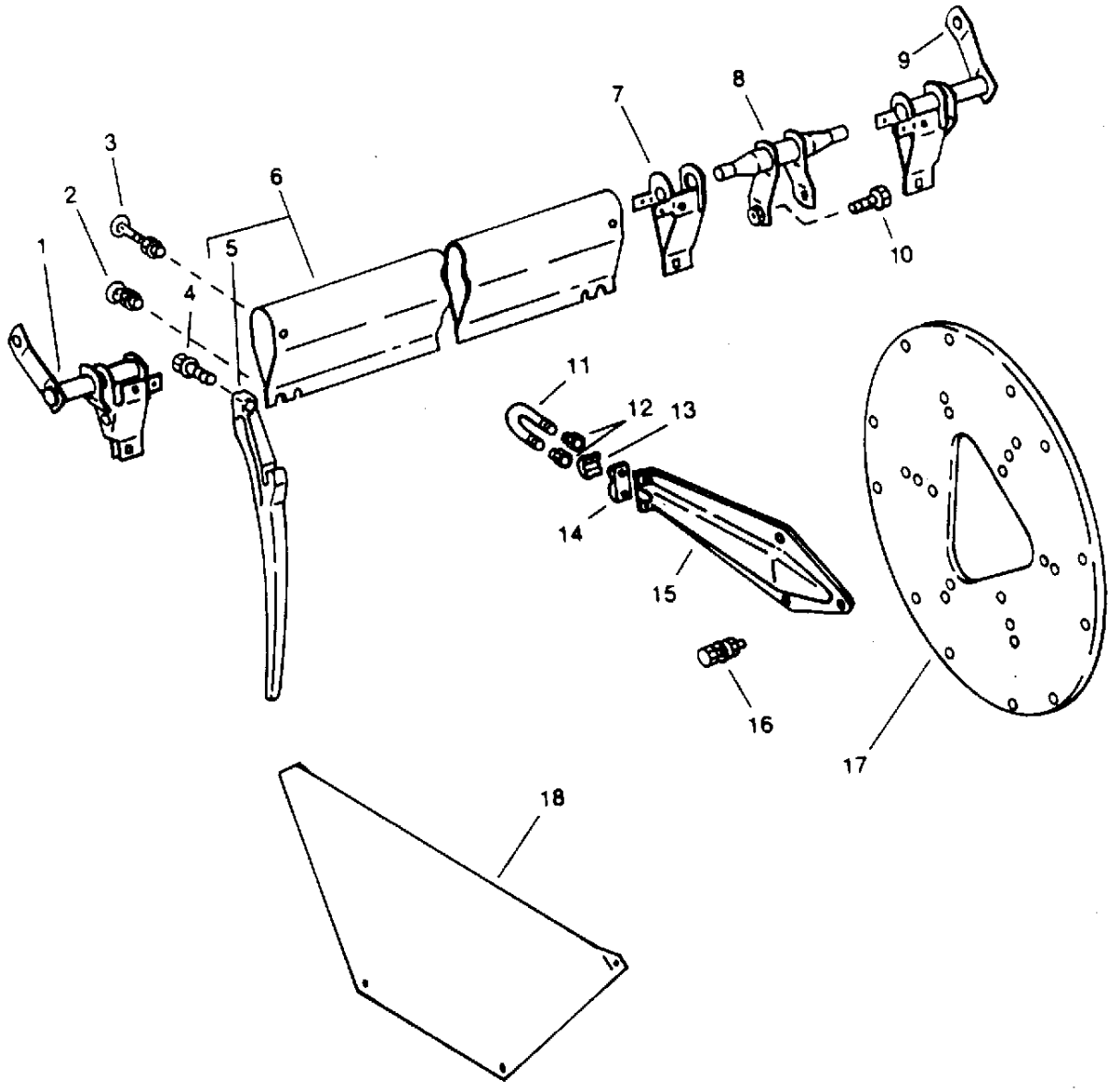


Hit the skid shoes with a hammer to “jar” dirt free.

A build-up of dirt in this area can restrict the movement of flex seals (A) and cause the skid shoes and cutterbar assembly to become heavier than normal, causing pushing of dirt.

900CP,SE,P -19-24JAN91

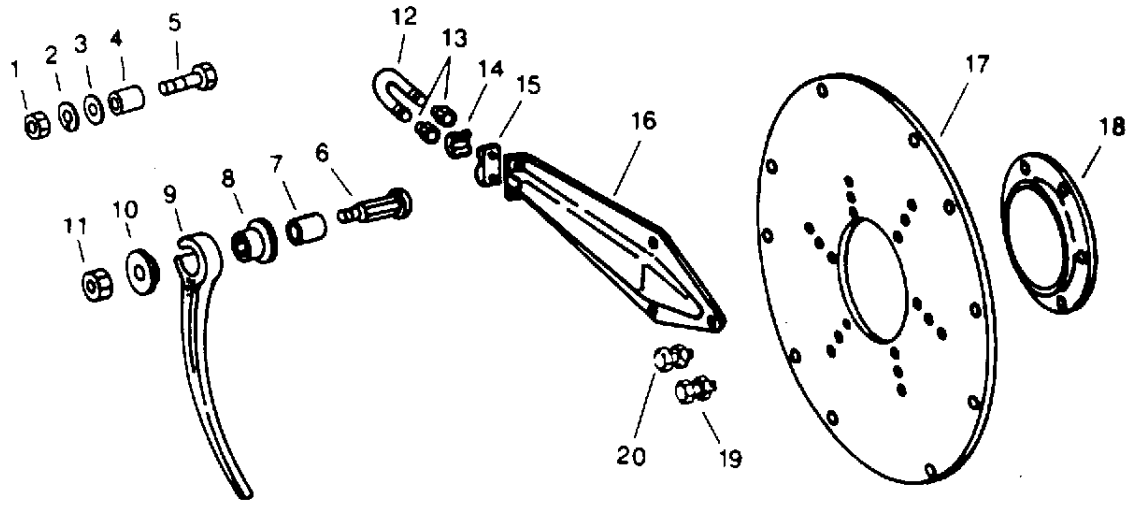
PICKUP REEL



1—Bracket (6 used)	5—Finger	10—Bolt	15—Arm
2—Bolt, 5/16 x 5/8 in. (6 used)	6—Finger (12 used)	11—U-Bolt	16—Cap Screw, 5/16 x 1/2 in.
3—Bolt, 5/16 x 2-1/2 in. (6 used)	7—Retainer	12—Lock Nut, 1/4 in.	17—Plate
4—Screw, No. 8 x 3/4 in.	8—Bracket, Center	13—Cap	18—Shield
	9—Bracket, L.H. (6 used)	14—Base	

Legend for Pickup Reel

TM1581,HX100,X -19-03OCT94



H44800 -UN-03AUG92

1—Nut, 1/2 in. (Flex)
2—Lock Washer, 1/2 in. (Flex)
3—Washer, 17/32 X 1-1/4 x 0.060 in. (Flex)
4—Spacer (6 used) (Flex)
5—Cap Screw, 1/2 x 2 in. (Flex)
6—Bolt (6 used) (Rigid)
7—Spacer (6 used) (Rigid)
8—Bracket (6 used) (Rigid)
9—Finger (6 used) (Rigid)
10—Retainer (6 used) (Rigid)
11—Lock Nut, 1/2 in. (6 used) (Rigid)
12—U-Bolt (6 used)
13—Lock Nut, 1/4 in. (12 used)
14—Cap (6 used)
15—Base (6 used)
16—Arm (6 used)
17—Plate
18—Ring
19—Cap Screw, 5/16 x 1/2 in. (12 used)
20—Cap Screw, 5/16 x 3/4 in. (6 used)

Legend for Pickup Reel (640501—)

TM1581,HX100,Y -19-03OCT94

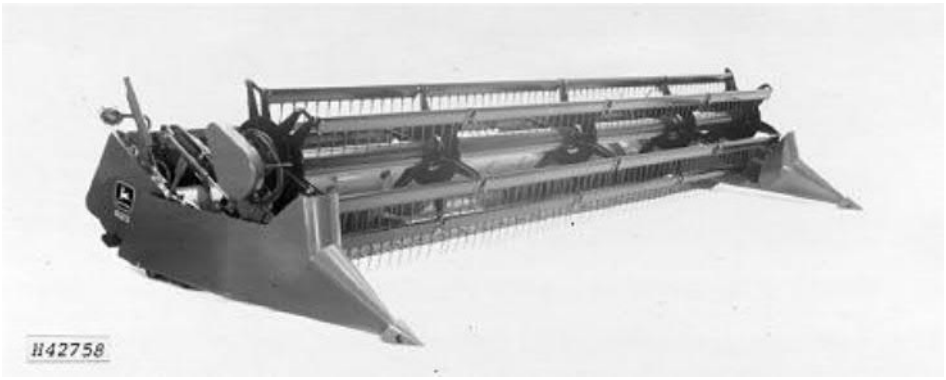
GENERAL INFORMATION

The reel gathers the crop, holds it until it is cut by the cutterbar, and then moves it into the platform auger.

The pickup reel has steel fingers attached to the slats. These fingers reach down into the crop and lift it so the cutterbar can get under it.

1401,10005,B6 -19-12SEP91

REEL REMOVAL AND DISASSEMBLY



1. Position the first bat to be removed in its uppermost position.

CAUTION: Leave reel drive chain in place to prevent reel from accidentally turning.

2. Refer to exploded views and remove lock nuts (12 or 13), U-bolt (11 or 12), bearing cups (13 or 14) and bearing bases (14 or 15) from reel arms (15 or 16). Lift bat off reel arms. To balance reel, remove the next bat opposite the first one removed.

3. Remove cap screws (16 or 20) and remove reel arms (15 or 16) from spider plate (17).

4. Inspect all parts of the reel for damage or excessive wear. Replace parts as necessary.

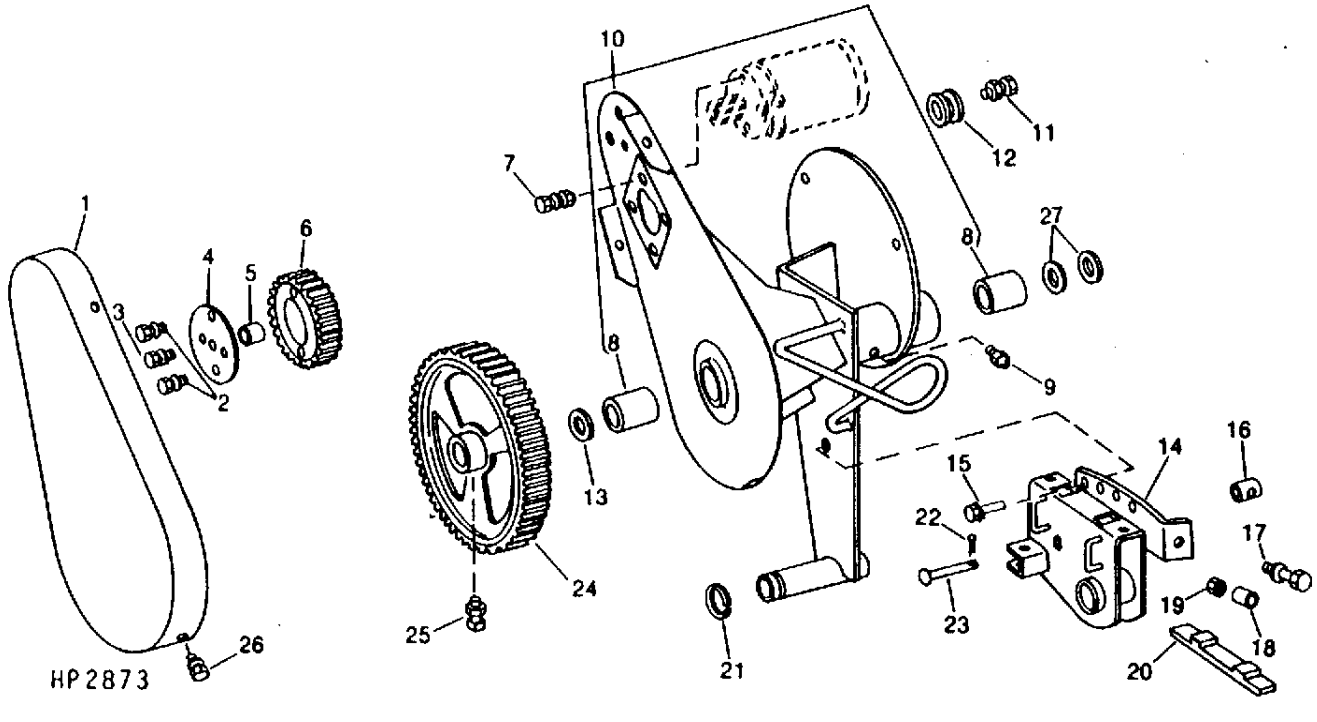
TM1581,HX100,Z -19-03OCT94

ASSEMBLY

Refer to exploded view when assembling reel parts.

1401,10005,C3 -19-12SEP91

REEL DRIVE (900 SERIES)

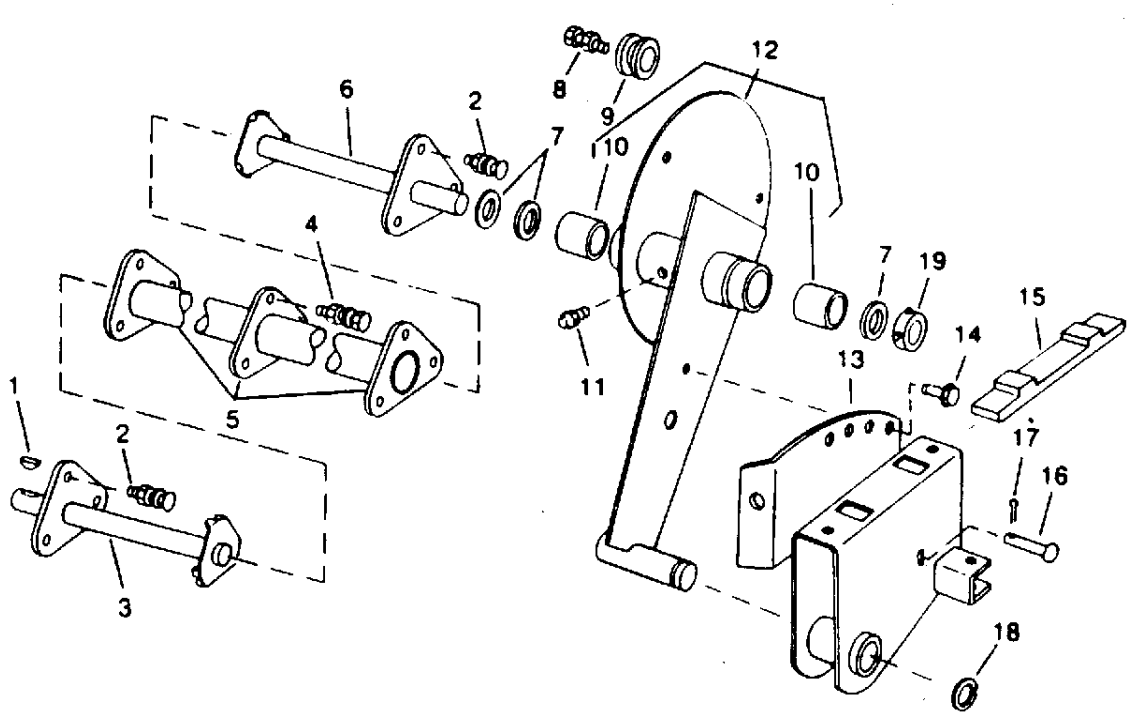


1—Shield
2—Cap Screw, 5/16 x 1/2 in.
3—Cap Screw, 5/16 x 1-3/4 in.
4—Plate
5—Spacer
6—Drive Gear
7—Cap Screw, 3/8 x 3/4 in.
8—Bushing
9—Grease Fitting
10—Mounting
11—Cap Screw, 3/8 x 1-3/4 in.
12—Ball Bearing
13—Washer, 1-15/32 x 2 x 0.105 in.
14—Support
15—Cap Screw, 1/2 x 1 in.
16—Trunnion
17—Cap Screw, 1/2 x 7-1/2 in.
18—Bushing
19—Lock Nut, 1/2 in.
20—Plastic Slide
21—Snap Ring
22—Cotter Pin, 1/8 x 1-1/4 in.
23—Pin
24—Drive Gear
25—Set Screw, 3/8 x 1 in. (2 used)
26—Self-Tapping Screw, 5/16 x 1/2 in. (3 used)

R.H. Mountings and Gears

Align gears with a slight amount of backlash. Refer to TM1401, Section 70 for repair of hydraulic motor. The drive for a pickup reel is illustrated, but service for either pickup or slat reel is the same.

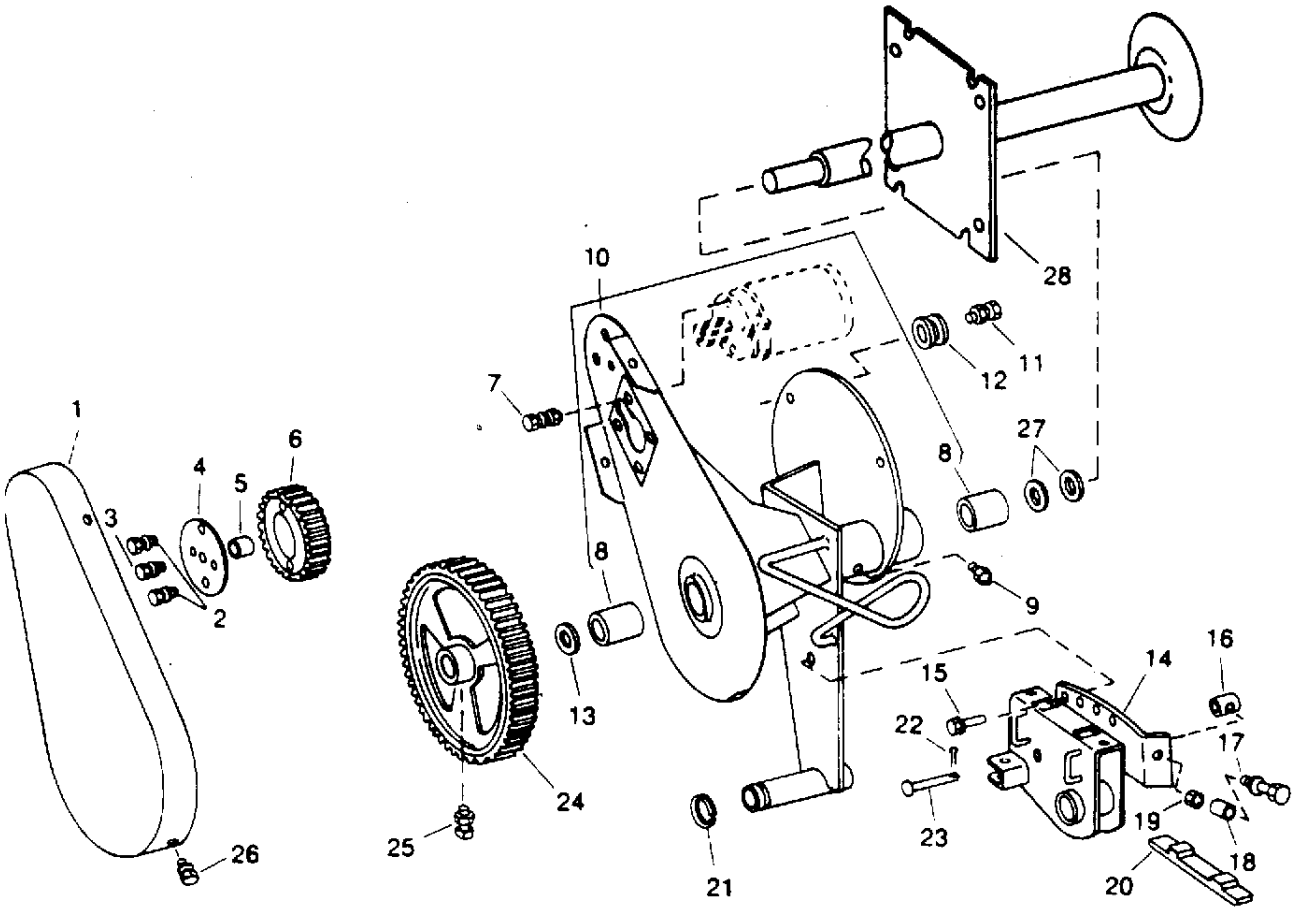
TM1581,HX100,AA-19-03OCT94



1—Shaft Key
2—Bolt, 3/8 x 1 in.
3—Shaft, R.H.
4—Cap Screw, 3/8 x 3/4 in. (6 used)
5—Shaft, Center
6—Shaft, L.H.
7—Washer
8—Cap Screw, 3/8 x 3/4 in. (3 used)
9—Ball Bearing (3 used)
10—Bushing (2 used)
11—Support
12—Support, L.H.
13—Support, L.H.
14—Self-Locking Screw
15—Pad
16—Pin
17—Cotter Pin, 1/8 x 1-1/4 in.
18—Snap Ring
19—Locking Collar

L.H. Mountings (—640500)

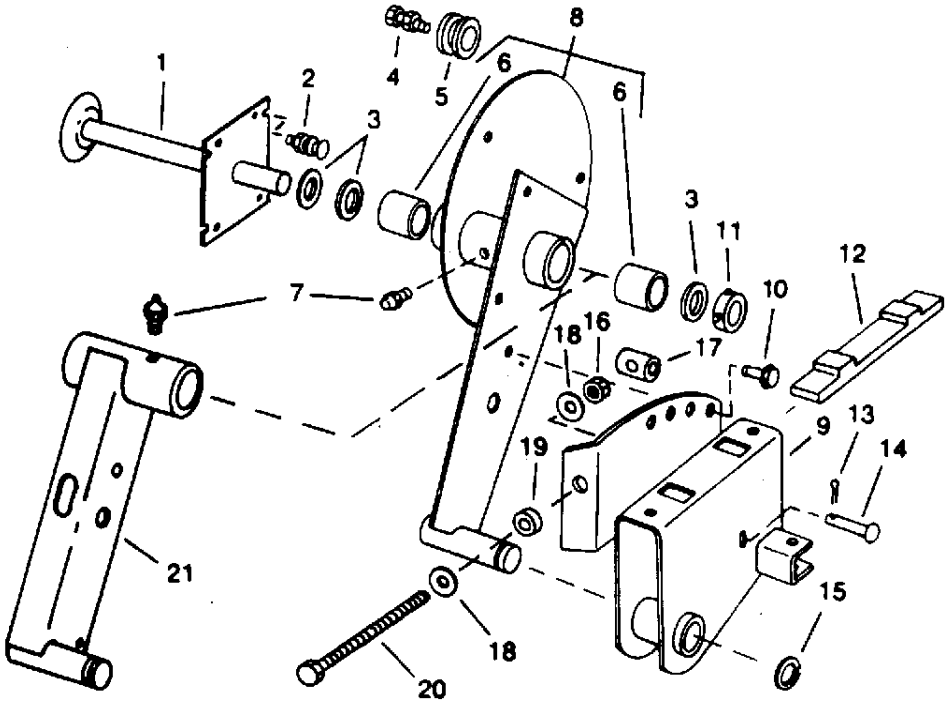
HX,1401,1005,BB-19-16DEC92



1—Shield
2—Cap Screw, 5/16 x 1/2 in. (2 used)
3—Cap Screw, 5/16 x 1-3/4 in.
4—Plate
5—Spacer
6—Pinion
7—Cap Screw, 3/8 x 3/4 in. (4 used)
8—Bushings (2 used)
9—Lubrication Fitting
10—Support
11—Cap Screw, 3/8 x 1-3/4 in. (3 used)
12—Ball Bearing
13—Washer
14—Support, R.H.
15—Self-Locking Screw
16—Pin
17—Cap Screw, M10 x 220
18—Bushing
19—Lock Nut
20—Pad
21—Snap Ring
22—Cotter Pin, 1/8 x 1-1/4 in.
23—Pin
24—Spur Gear
25—Set Screw, 3/8 x 1 in. (2 used)
26—Screw, 5/16 x 1/2 in. (3 used)
27—Washer (2 used)
28—Drive Shaft

R.H. Mountings and Gears

HX,1401,1005,BC-19-03OCT94



-UN-03AUG92
H44864

1—Shaft
2—Bolt, 3/8 x 1 in.
3—Washer
4—Cap Screw, 3/8 x 1-3/4 in. (3 used)
5—Ball Bearings (3 used)
6—Bushings (2 used)
7—Lubrication Filling, 1/8 in. Straight
8—Support
9—Support
10—Self-Locking Screw, 1/2 x 1 in.
11—Deflector
12—Pad
13—Cotter Pin, 1/8 x 1-1/4 in.
14—Pin
15—Snap Ring
16—Lock Nut
17—Pin
18—Washer (2 used)
19—Bushing
20—Cap Screw
21—Support

L.H. Mountings (645301—)

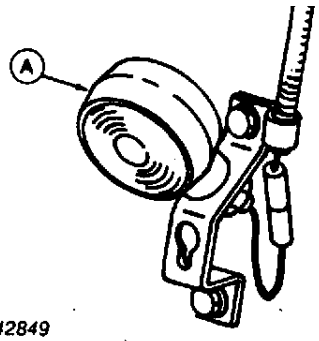
HX,1401,1005,BD-19-03OCT94

STUBBLE LIGHT BULB REPLACEMENT

Remove nut securing housing (A).

Unscrew housing from base.

Push AD2062R (1156) bulb in and turn to remove.



H42849

-UN-29NOV90
H42849

TM1581,HX100,CN-19-18AUG94

HEADER WARNING LIGHT BULB REPLACEMENT

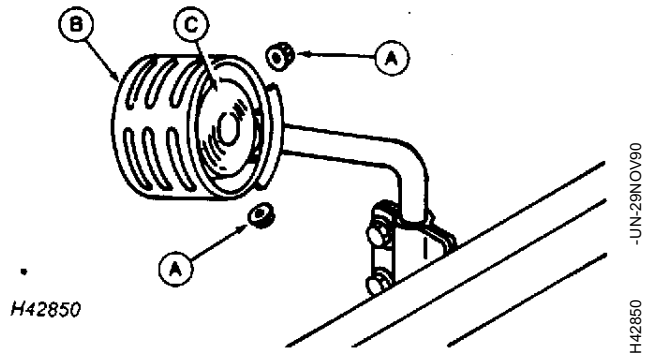
Remove nuts (A).

Remove shield (B).

100 05 40

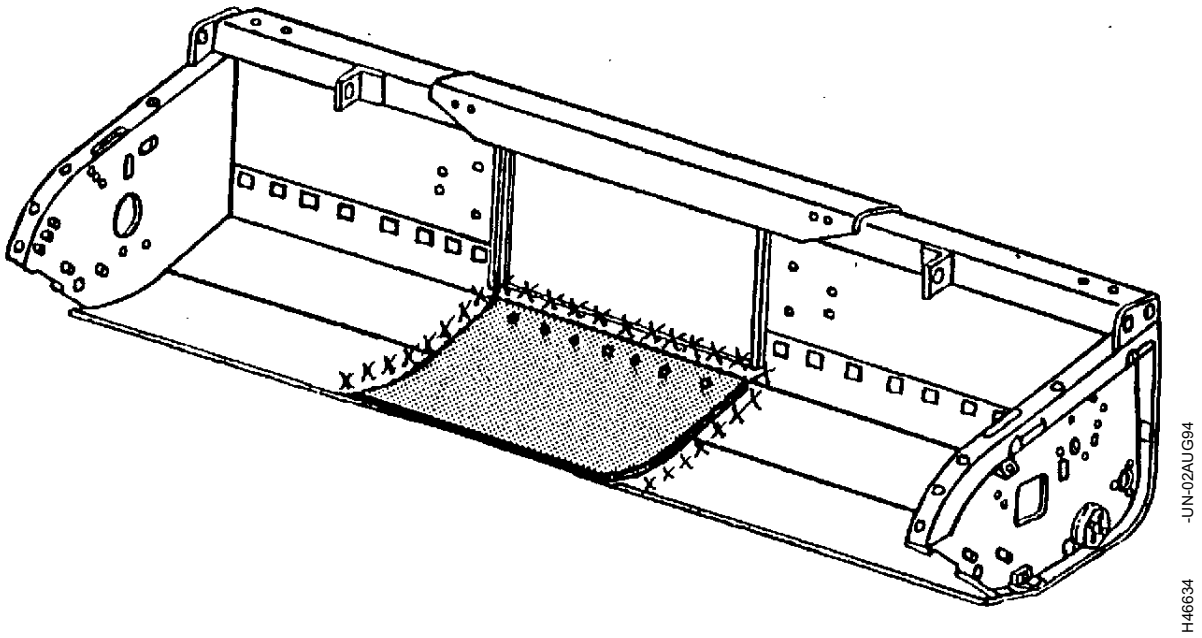
Unscrew housing (C) from bulb base.

Push AD2062R (1156) bulb in and turn to remove.



TM1581,HX100,CO-19-18AUG94

INSTALLING NEW REPAIR FLOOR SHEET ON 200 AND 900 SERIES PLATFORMS



IMPORTANT: Do not cut out bottom sheet on platform. This center floor repair sheet is made to be welded on top of existing sheets.

NOTE: Repair sheet was designed for use in center section of platform but can be used in any location on floor of platform. Additional holes may have to be drilled when used in other locations.

1. New repair sheet must lay flat on floor of platform. Smooth out any material that will hold sheet up and remove all hardware.

2. Lay sheet on platform floor in center of feeder house opening then align holes in sheet to holes in floor and reinstall hardware.

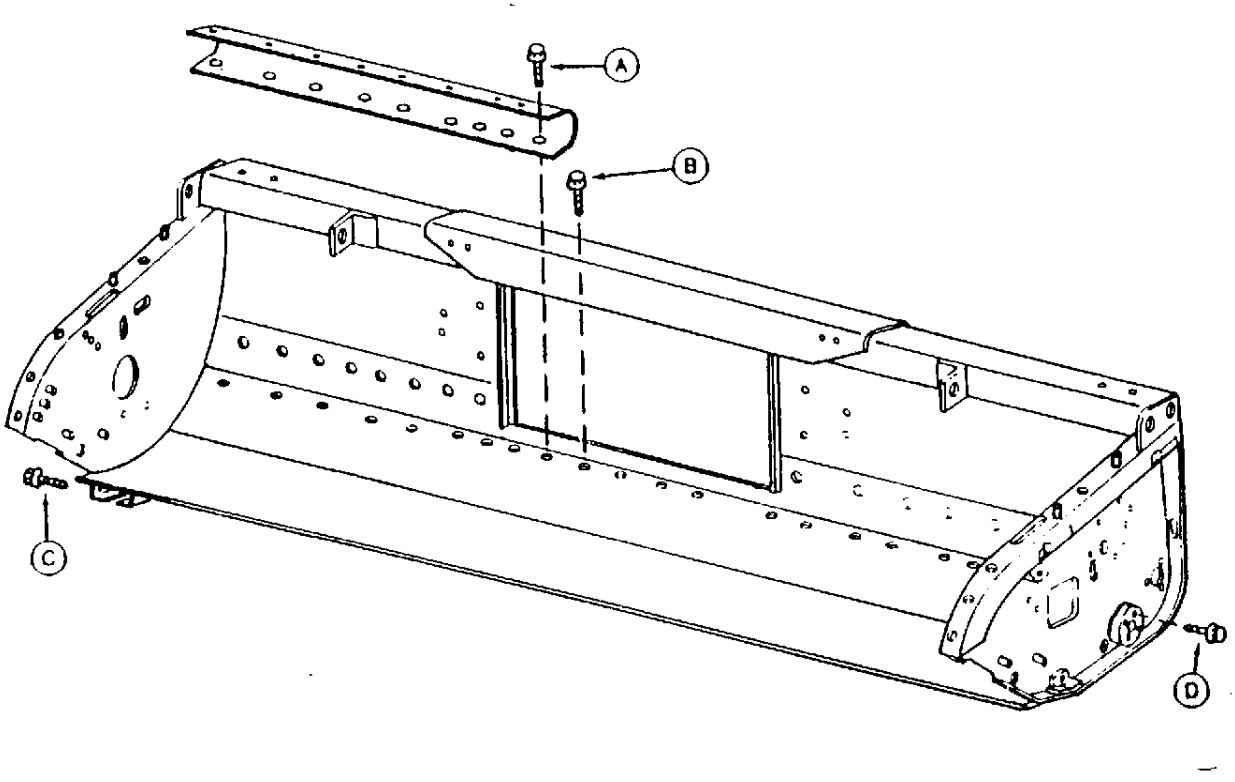
3. Weld around as shown with X's.

4. Plug weld all the remaining holes that do not have hardware in them.

5. Smooth any rough spots in weld so crop flows smoothly across floor.

1581,10005,ZI -19-28SEP94

INSTALLING FRAME METRIC HARDWARE



NOTE: Metric hardware MUST be used in the following application on 1993 and later platform frames. 1993 platforms (650001—) already include metric hardware. When NEW frames are substituted for platforms prior to 1993 (—650000) the hardware listed below MUST be used (included in AH141977).

(A)—19M7867 - M8 x 25 hex flange head cap screw used at center of platform to bolt stripper supports to tapped holes in floor (4 to 8 used depending on stripper position).

(B)—19M7139 - M8 x 20 hex head cap screw used at center of platform to plug unused tapped holes (0 to 4 used depending on stripper position).

(C)—37M7087 - M10 x 25 self tapping screw used to attach sensing box support to right-hand tilt channel (1 used flex only).

(D)—37M7087 - M10 x 25 self tapping screw used to attach long divider supports to lower tube cap (2 used on right-hand end; 3 used on left-hand end, flex only). Used to attach right-hand shield bracket to lower tube cap (2 used on right-hand end, rigid only).

HX1581,10005,EA-19-03OCT94

TORQUE VALUES

	Torque N·m (Lb-Ft.)
Countersunk head cap screws by gathering chain sprockets	110 N·m (80)
Gatherer chain guide cap screws	115 N·m (85)
Trash knife cap screws	115 N·m (85)
Stalk roll to shaft F grade cap screws	150 N·m (110)

HX1581,10010,A -19-03OCT94

SPECIAL TOOLS

The following JDC400 series tools are required to properly service the corn head gear case. They are not offered as a complete set, but must be ordered individually. In addition, some of the various drivers in D01045AA Driver Set are also required for use with the JDC400 series tools.

HX,1401,10010,A-19-03OCT94

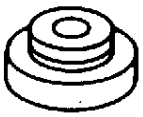
H45090 -UN-08SEP92

Number: *JDC400-1 Seal Installer
Use: To install gatherer shaft seals.

HX,1401,10010CC-19-03OCT94

H45091 -UN-08SEP92

Number: *JDC400-2 Plug Installer
Use: To install expansion plugs.



HX,1401,10010CD-19-03OCT94

H45092 -UN-08SEP92

Number: *JDC400-3 Spacer
Use: To install gatherer drive shaft bushings.

HX,1401,10010CE-19-03OCT94

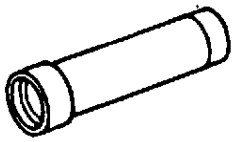
H45093 -UN-08SEP92

Number: *JDC400-4 Spacer
Use: To install input shaft needle bearing.

HX,1401,10010CF-19-03OCT94

H45094 -UN-08SEP92

Number: *JDC400-5 Seal Installer
Use: To install barrel seals.



HX,1401,10010CG-19-03OCT94

H45095 -UN-08SEP92

Number: *JDC400-6 Seal Driver
Use: To install input shaft seal

*Order from:
Service Tools, Box 314, Owatonna, MN 55060

HX,1401,10010CH-19-03OCT94

H45096 -UN-08SEP92

Number: *JDC400-7 Handle
Use: Used with various drivers and spacers.

HX,1401,10010CI-19-03OCT94

H45097 -UN-08SEP92

Number: *JDC400-8 Spacer
Use: To install barrel bearings.

HX,1401,10010CJ-19-03OCT94

H45098 -UN-08SEP92

Number: *JDC400-9 Deck Plate Spacing Tool
Use: To set correct spacing of deck plates.

HX,1401,10010CK-19-03OCT94

H45099 -UN-08SEP92

Number: *JDC400-10 Stalk Roll Timing Tool
Use: To set correct timing of stalk rolls.

HX,1401,10010CL-19-03OCT94

Number: *D01045AA Master Bushing and Seal Driver Set
Use: Some of the drivers in this set are required for use with the JDC400 series tools.

Number: *D01046AA Tool Organizer Board
Use: Keeps D01045AA set components in proper order and safe from loss. Tools not included.

Number: *JDG450 Mechanical Puller or JDG610 hydraulic puller
Use: To pull stalk rolls (not shown).

*Order from:
Service Tools, Box 314, Owatonna MN 55060

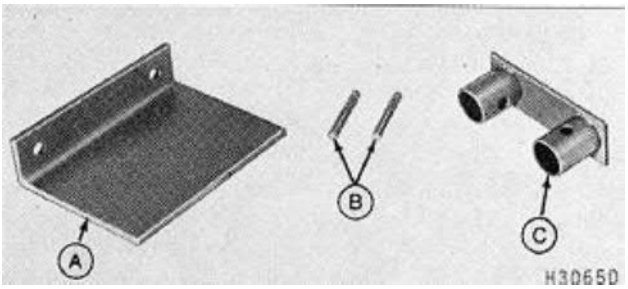
-UN-16JUN89
H36476

HX1581,10010,EA-19-03OCT94

MAKING SPECIAL TOOLS

In addition to the JDC400 series tools, the following tools can be made in the dealer shop for servicing the corn head gear case.

A—Gear Case Support
B—Locating Dowel Studs
C—Timing Tool

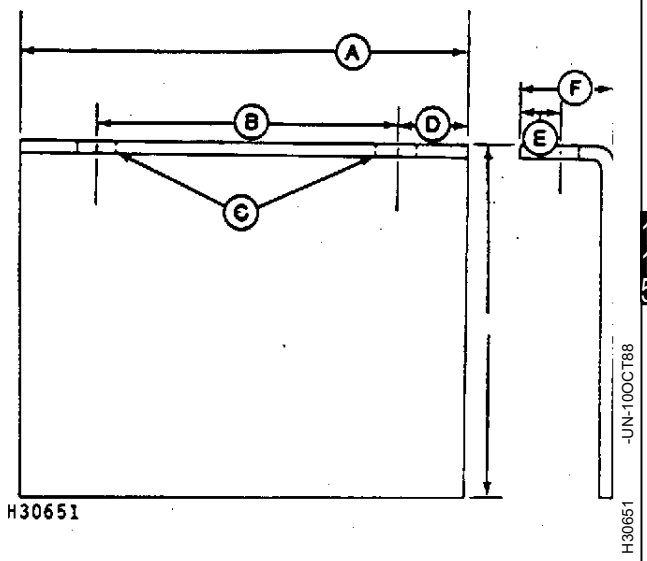


-UN-15JUN89
H30650

HX,1401,10010,C-19-03OCT94

The gear case support bracket is used for mounting the gear case in a vise. Make it from 6.4 mm (1/4 in.) steel plate.

A—203 mm (8 in.)
B—152 mm (6 in.)
C—Two Holes,
13 mm (17/32 in.) dia.
D—25 mm (1 in.)
E—25 mm (1 in.)
F—51 mm (2 in.)



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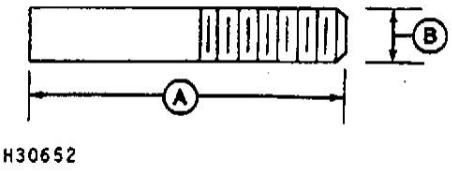
H30651

HX,1401,10010,D-19-16DEC92

Barrel assembly locating dowel studs are used to assist in mounting the barrel assembly on the gear case. Make two studs by cutting off the heads of two 19H2530 3/8 x 3 in. cap screws.

A—76 mm (3 in.)
B—9.6 mm (3/8 in.)

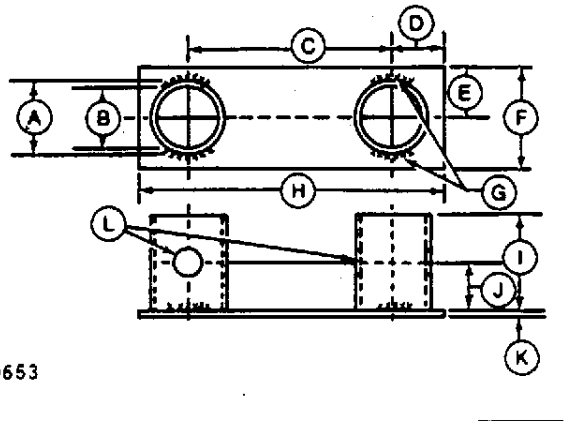


-UN-10OCT88
H30652

HX,1401,10010,E-19-16DEC92

If the JDC400-10 tool is not available, a stalk roll timing tool can be made.

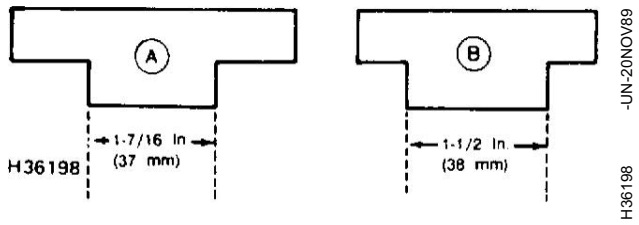
A—37 mm (1-7/16 in.)
B—32 mm (1-9/32 in.)
C—102 mm (4 in.)
D—25 mm (1 in.)
E—25 mm (1 in.)
F—51 mm (2 in.)
G—Weld
H—152 mm (6 in.)
I—37 mm (1-7/8 in.)
J—24 mm (15/16 in.)
K—3 mm (1/8 in.)
L—13 mm (17/32 in.)
Diameter Holes. Time as shown.



-UN-10OCT88
H30653

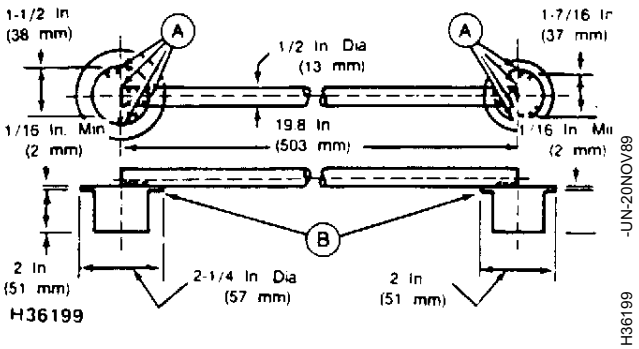
HX,1401,10010,F-19-03OCT94

Wood Gauge
A-Front
B-Rear



Metal Gauge
A-Weld
B-Do Not Weld

If the JDC400-9 gauge is not available, a gauge for deck plate spacing can be made from wood or metal.



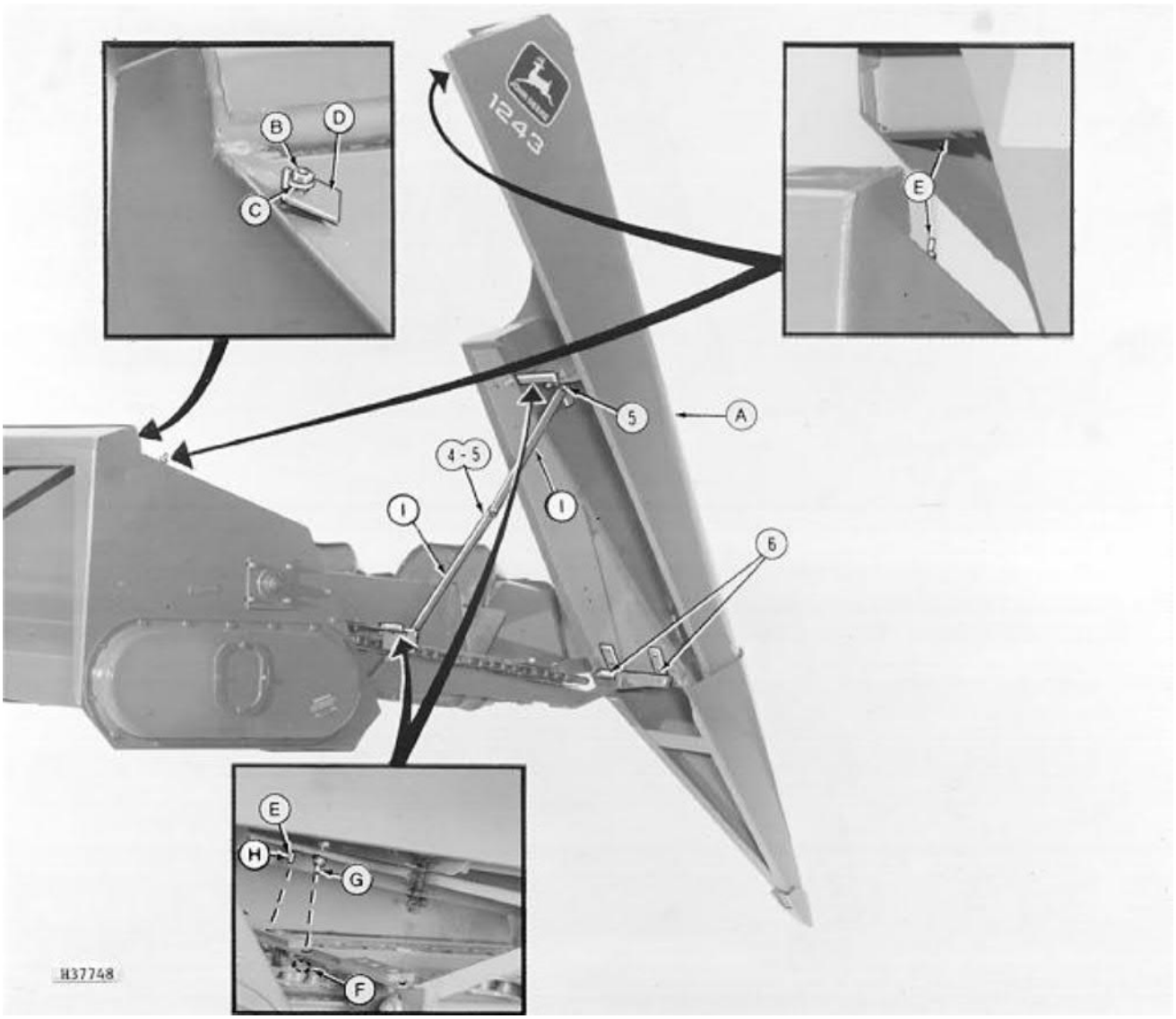
TM1581,HX100,AD-19-03OCT94

GENERAL INFORMATION

As the combine moves through the field, the gatherer points are positioned between the rows of corn. The stalk rolls pull the corn stalks down so the ear will be snapped on the deck plates. Trash knives prevent weeds and trash from wrapping around the stalk rolls. The gatherer chains catch the ears and move them up to the auger. The auger then moves the ears to the front of the feeder house where two rubber paddles feed the ears into the feeder house.

1401,10010,A -19-12SEP91

AUGER REMOVAL



NOTE: The corn head auger can be removed without removing the center shields.

CAUTION: Outer gatherer sheet (A) and point weigh approximately 45 kg. (100 pounds).

To raise outer gatherer sheet:

1. Remove nut (B), lock washer (C) and square washer (D) from bolt (E).

2. Remove lock nut (F) from bolt (G).

CAUTION: Support strap must be locked into position shown when outer gatherer sheet is raised.

3. Raise gatherer sheet (A) and lock support straps (I) into position.

TM1581,HX100,AE-19-03OCT94

CAUTION: When corn head is raised and cylinder safety stop is in safety position, the outer gatherer sheet and point assembly will be free to become unhooked after safety strap is removed and can fall forward.

To remove:

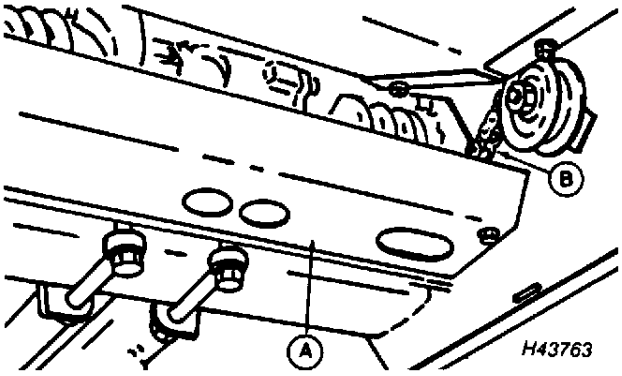
4. With outer gatherer sheet (A) raised, remove hardware lock nut, carriage bolt and lock washer attaching support strap (I) to gatherer sheet (A).

CAUTION: Outer gatherer sheet with gatherer point is heavy and awkward to handle.

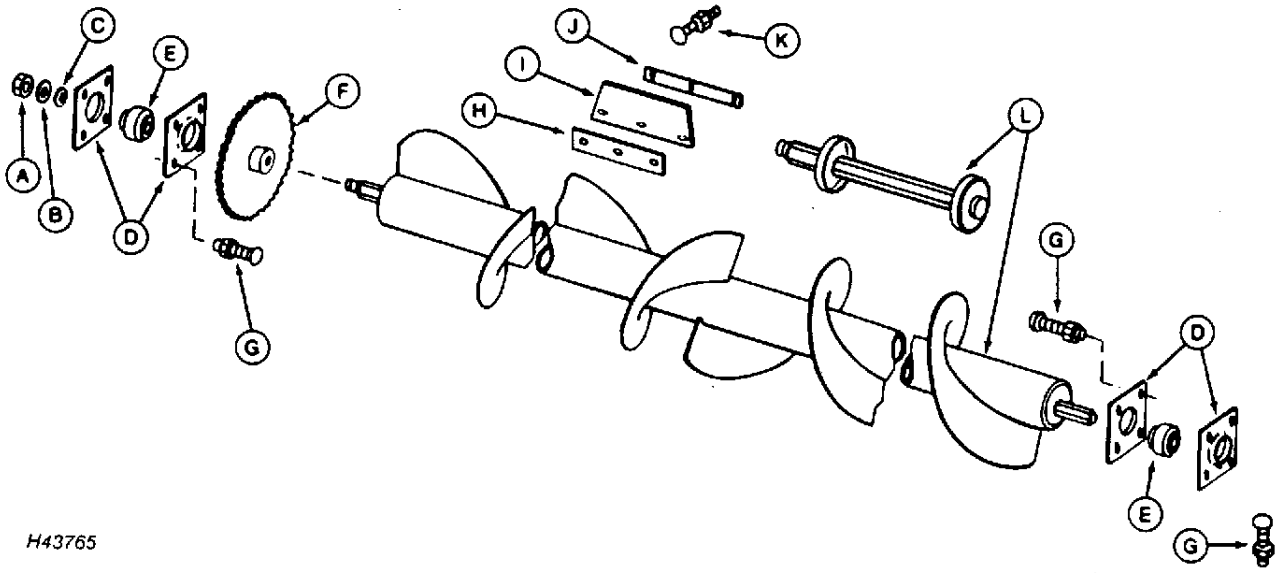
5. Lift outer gatherer sheet (A) and point assembly off row unit at hinge points.

6. Remove row unit drive shaft shield (A).

7. Turn auger by hand and disconnect auger drive chain (B). Wedge auger securely by placing a wood block under auger, aligning at each end.



TM1581,HX100,AF-19-03OCT94



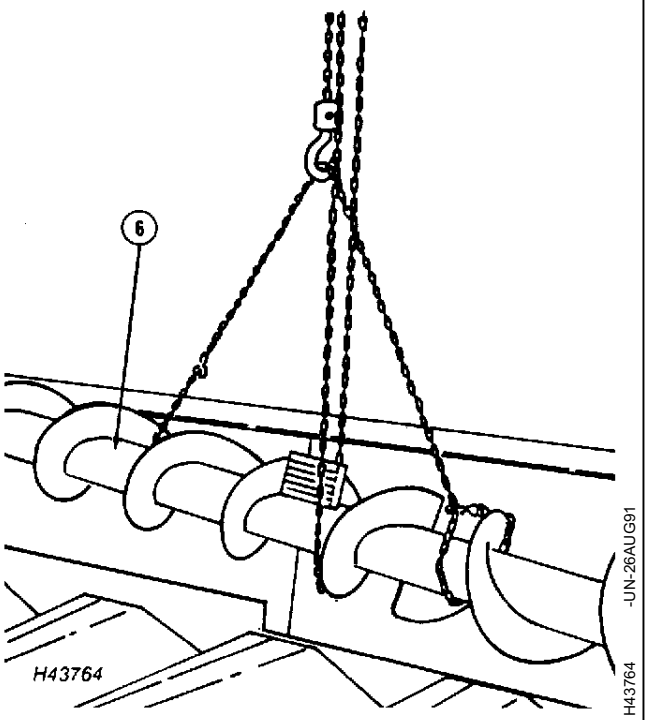
8. Remove nut (A) and washer (B). Disconnect and remove chain on sprocket (F).

9. Remove cap screws (G), housings (D), and bearing (E) on left-hand end of auger.

10. Use a safe hoist and remove by lifting right-hand end of auger up and out of corn head first. Complete removal by swinging auger out and over center shields.

Inspect all parts for damage or excessive wear and replace as required.

A—Nut, 3/4 In.
B—Washer, Lock, 3/4 In.
C—Washer, 25/32 x 1-5/8 x 0.180 In.
D—Housing (4 Used)
E—Bearing (2 Used)
F—Sprocket
G—Bolt, 3/8 x 3/4 In.
H—Paddle (2 Used)
I—Strap
J—Strap
K—Bolt, 3/8 x 1-1/4 In.
L—Auger



1401,HX,1010,C -19-16DEC92

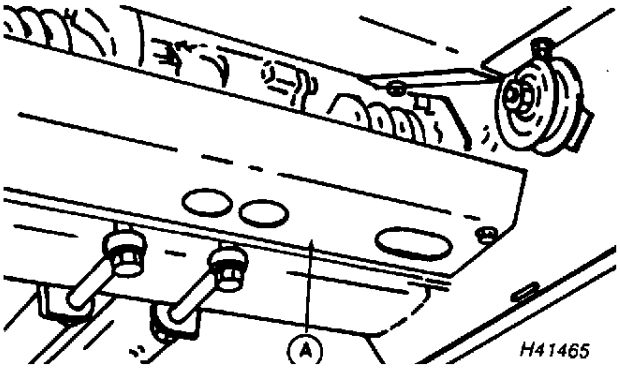
ASSEMBLY AND INSTALLATION

1. Reinstall in reverse order.

IMPORTANT: Be certain to place hub side of sprocket against the auger to insure sprocket alignment.

2. Install row unit drive shaft shield (A).

3. Install right-hand outer gatherer sheet and point.



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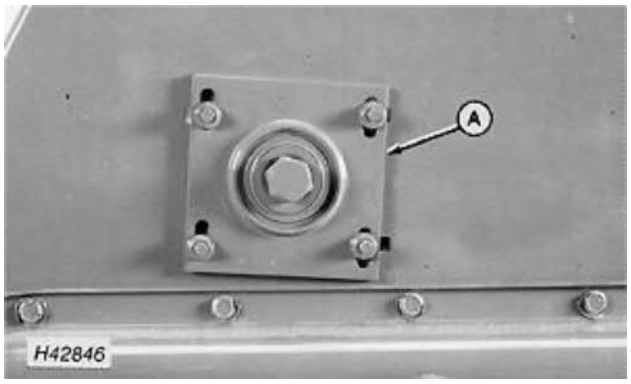
H41465

TM1581,HX100,AG-19-03OCT94

4. Both sides of the corn head main frame and auger bearing carriers (A) are slotted for adjusting the auger. The auger can be adjusted up and down and fore and aft for proper clearance with bottom of feed bed.

5. Keep the auger adjusted down and to the rear as far as possible in normal dry conditions. In damp, sticky or heavy trash conditions, adjust the auger up and forward to move material away from the row unit.

6. In normal conditions, keep a minimum of 6 mm (1/4 in.) clearance between auger and auger stripper.



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H42846

1581,10010,ZD -19-03OCT94

ROW UNIT FRAME, GATHERER CHAINS, TRASH KNIVES AND DECK PLATES

Removal:

NOTE: If one of the outer row unit frames is to be removed, it will be necessary to remove the outer gatherer sheet. See "Auger Removal".

1. To raise center shield (A) forward as shown, first start engine and raise the corn head as high as possible.

2. Lower hydraulic cylinder safety stop (B) and shut off engine.

CAUTION: When corn head is raised and cylinder safety stop is in safety position, the center shield extension and point assembly will be free to become unhooked.

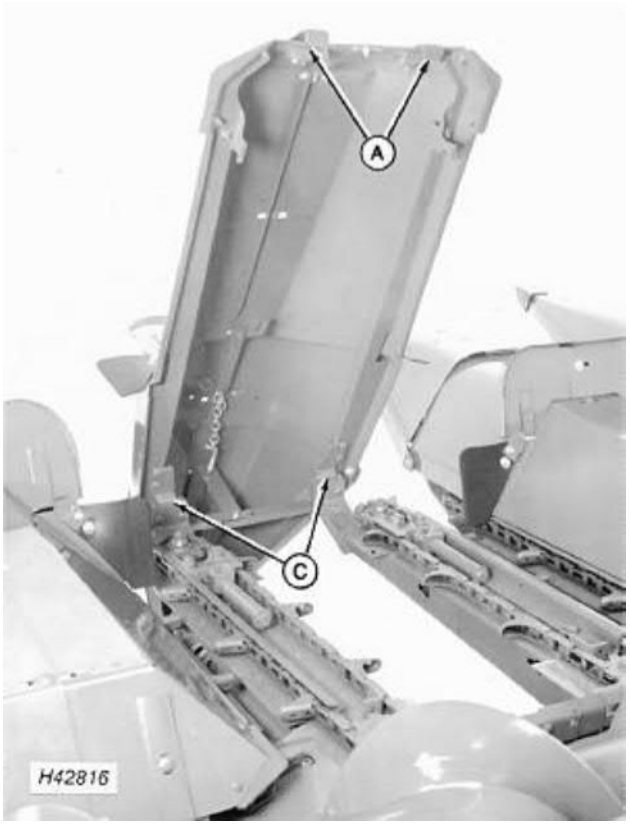
3. Release the center shield latches from their attaching points and raise center shield.

CAUTION: Center shield with extension and point is heavy and awkward to handle.

4. With center shield raised, lift assembly off row unit at hinge point (C).

5. Repeat above steps in reverse order to install center shield, shield extension and gatherer point assembly.

NOTE: When installing, center shield latches require a force of 11.3 kg (25 pounds) to snap latch closed.



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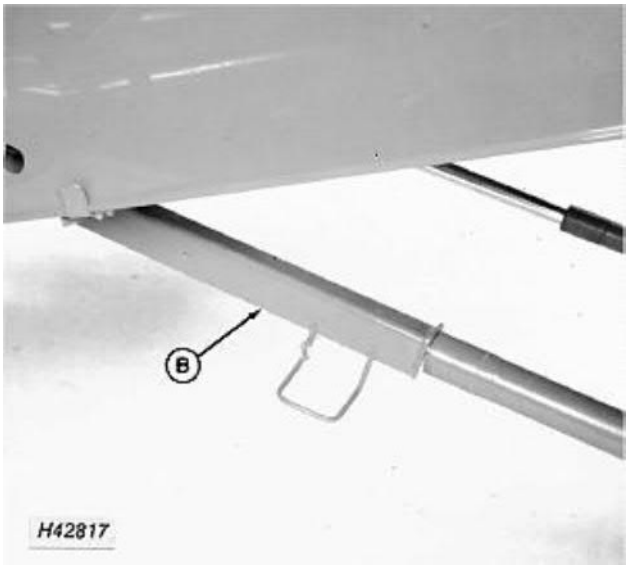
H42816



-UN-26NOV90
H42817

TM1581,HX100,AH-19-03OCT94

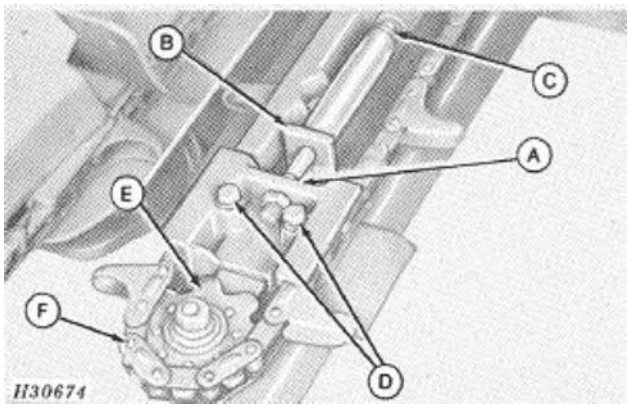
CAUTION: Never service any part of the gatherer chain mechanism or idler sprocket until nut (A) is tight against the leg of the idler support strap.

6. Relieve gatherer chain tension by turning nut (A) until it is against the leg of the idler support strap (B).

7. Loosen bolt (C) until tension is off gatherer chain.

8. Remove bolts (D). This will allow the idler sprocket (E) to move back so the gatherer chain (F) can be removed.

NOTE: If idler sprocket will not slide back, remove entire idler assembly and clean idler support strap and the slot in the idler support bracket.



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H30674

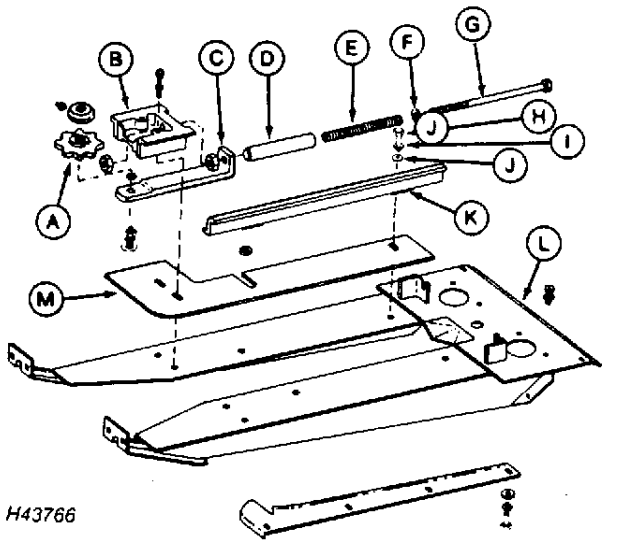
100
10
13

1401,10010,H -19-12SEP91

9. Remove idler sprocket (A), idler support (B), idler support strap (C), idler stop (D), spring (E), flat washer (F) and machine bolt (G).

10. Remove two cap screws (H), lock washers (I) and flat washers (J), attaching chain guide (K) to row unit frame (L).

11. Remove deck plate (M).



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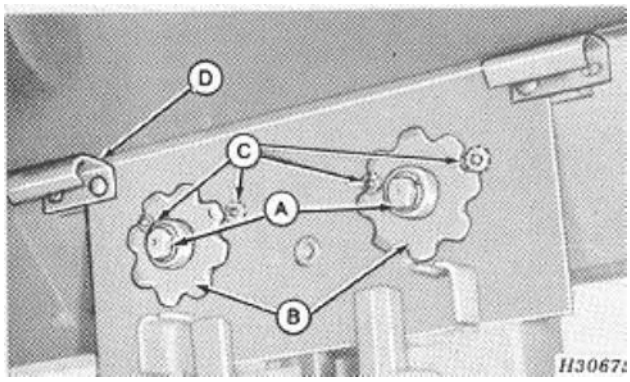
H43766

TM1581,HX100,CR-19-18AUG94

12. Remove snap ring (A) and remove drive sprocket (B).

13. Remove countersunk head cap screws (C) and upper latches (D).



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H30675

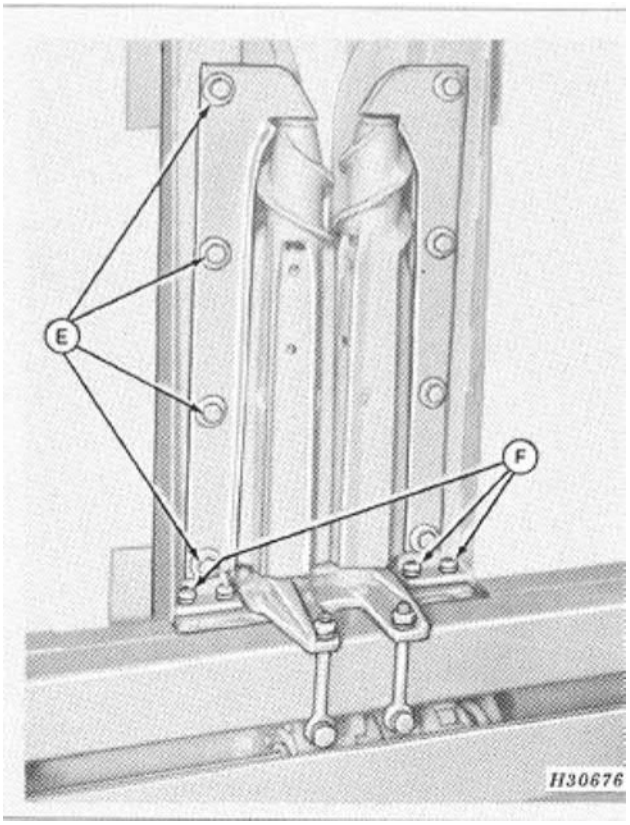
1401,10010,J -19-12SEP91

14. Remove attaching cap screws (E) and remove trash knives.

CAUTION: Approximate weight of row unit frame is 23 kg (50 pounds); use two people to remove it from the corn head.

15. Remove four row unit attaching cap screws (F) and lift row unit frame off stalk rolls and gear case.

NOTE: Refer to "Gear Case Removal" for information concerning removal, service and installation.



1401,10010,K -19-12SEP91

INSPECTION AND REPAIR

Inspect all parts removed from the row unit frame for damage and excessive wear. Replace parts as necessary.

1401,10010,L -19-12SEP91

ASSEMBLY AND INSTALLATION

1. Install gear case if it has been removed for service. Refer to Gearcase Removal in this Section.

2. Install stalk rolls on gear case. Refer to Gearcase Removal in this section.

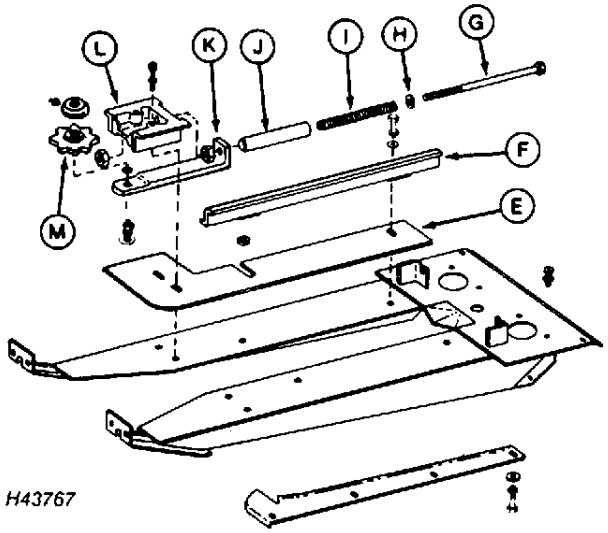
3. Install row unit frame with four countersunk head cap screws (C). After all cap screws are installed, tighten to 11 N·m (11 kg) (80 lb-ft) torque.

4. Install upper latches (D).

5. Install drive sprockets (B) on hex. shafts and secure with snap rings (A).

6. Install deck plates (E) and chain guides (F). Do not tighten cap screws at this time.

7. Install machine bolt (G), flat washer (H), spring (I), idler stop (J), idler support strap (K), idler support (L) and idler sprocket (M).



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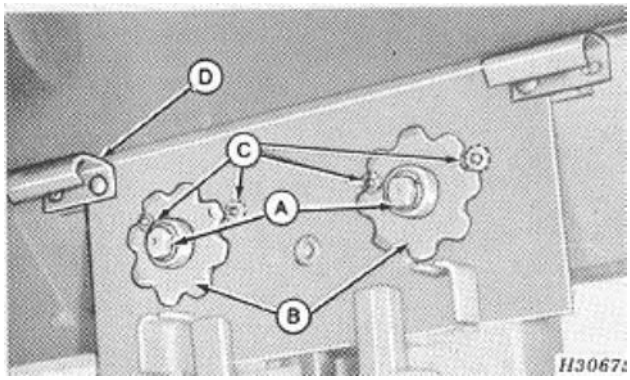


-UN-05DEC91 H30675

TM1581,HX100,AJ-19-03OCT94

ADJUSTING DECK PLATES AND GATHERER CHAIN GUIDES

Adjust the deck plates (A) as follows:

1. Raise the center shields.

100
10
16

2. Loosen four bolts (C) on both deck plates.

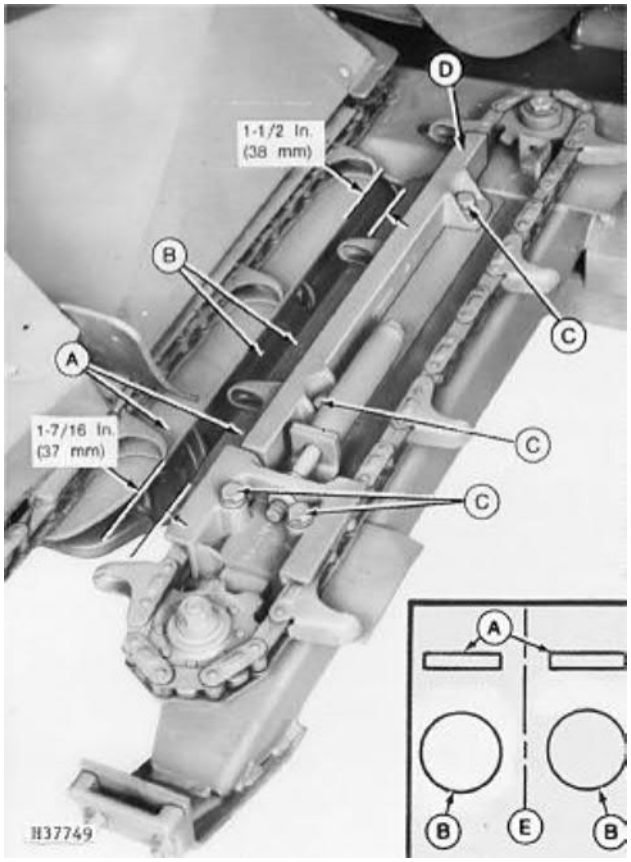
3. Position deck plates so the center space between the edge of the deck plates is located over the center space between the gatherer chains.

4. Adjust gatherer guides (D) in until they are just touching the gatherer chains.

5. Torque bolts (C) on guides and deck plates to 95 N·m (70 lb-ft).

NOTE: Deck plates must be spaced 1.6 mm (1/16 in.) wider apart at the rear than at the front.

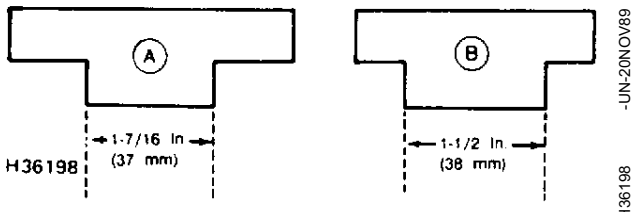
IMPORTANT: The center of space (E) between deck plates must be located over the center of space (E) between stalk rolls.



TM1581,HX100,AK-19-03OCT94

A gauge for deck plate spacing can be made from wood or metal.

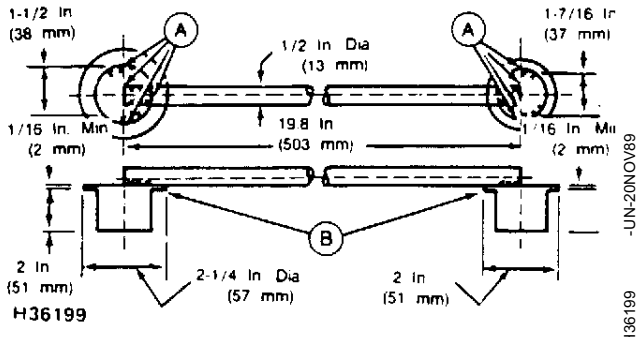
A—Front
B—Rear



Wood Gauge

1401,10010,O -19-12SEP91

A—Weld
B—Do Not Weld

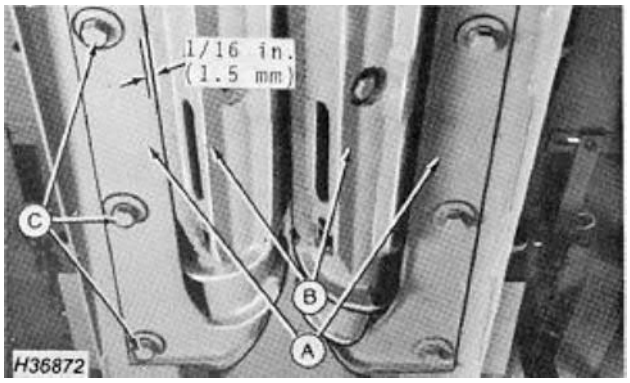


Metal Gauge

1401,10010,P -19-12SEP91

ADJUSTING TRASH KNIVES

Loosen knife attaching bolts (C) and adjust each trash knife (A) to a maximum of 1.6 mm (1/16 in.) of the highest flute on the stalk roll (B). Torque bolts to 95 N·m (70 lb-ft).



TM1581,HX100,AL-19-03OCT94

STALK ROLLS

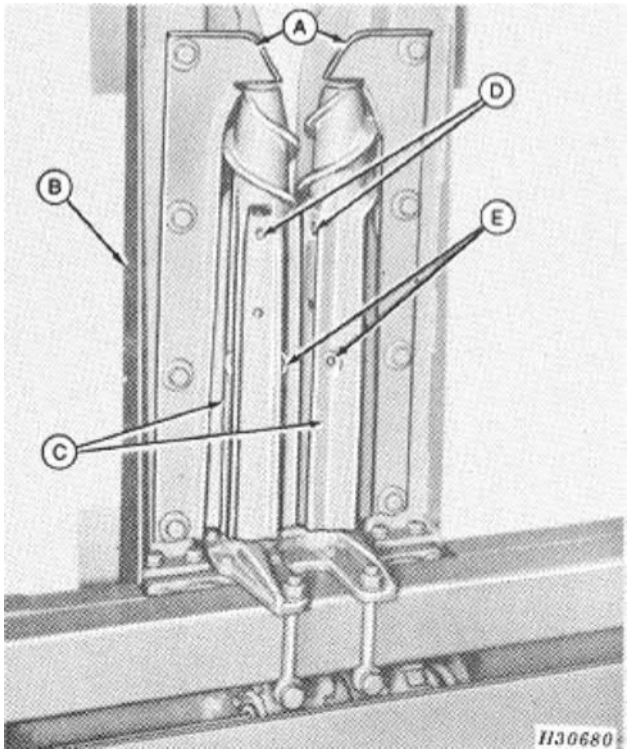
To remove:

CAUTION: Lower hydraulic cylinder safety stop before working under corn head.

100
10
18

1. Remove trash knives (A) from underside of row unit frame.

2. Remove stalk roll (C) from shafts by driving out double spring pins (D) and removing F grade cap screws (E). Clean out slots in stalk rolls to permit installing puller.



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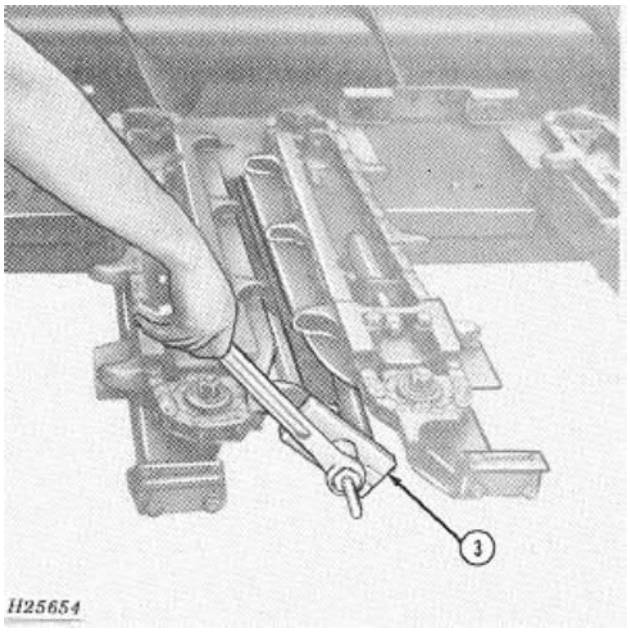
H30680

TM1581,HX100,AM-19-03OCT94

3. Use JDG450 puller or JDG610 hydraulic puller to pull stalk roll off gear case shaft.



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H25654

1581,10010,ZS -19-03OCT94

INSPECTION

Inspect stalk rolls for wear or damage. Hard-faced stalk rolls are available as service parts.

IMPORTANT: Be certain to replace stalk rolls in pairs. Do not install hard-faced stalk roll with a soft one.

1401,10010,T -19-12SEP91

INSTALLATION

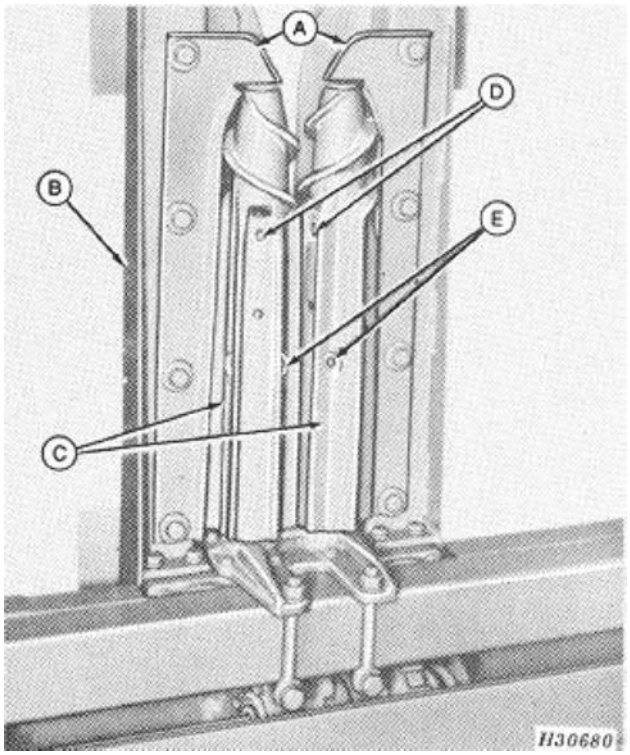
1. Clean stalk roll shaft and outside of barrel. Coat shaft with grease before sliding on new roll.

NOTE: The spirals on the FRONT rotate to move material to the rear of the stalk roll. The flutes turn down and toward the opposite stalk roll.

2. Secure stalk roll (C) to shaft with double spring pins (D) and two F grade cap screws (E). Tighten cap screws to 150 N·m (15 kg) (110 lb-ft) torque.

IMPORTANT: If stalk roll cap screws are replaced, use only 19H2735 1/2 x 2 in. F grade cap screws.

3. Refer to “Adjusting Trash Knives” and adjust the trash knives (A).



H30680 -UN-05DEC91

1401,10010,U -19-12SEP91

ROW UNIT GEAR CASE

General Information:

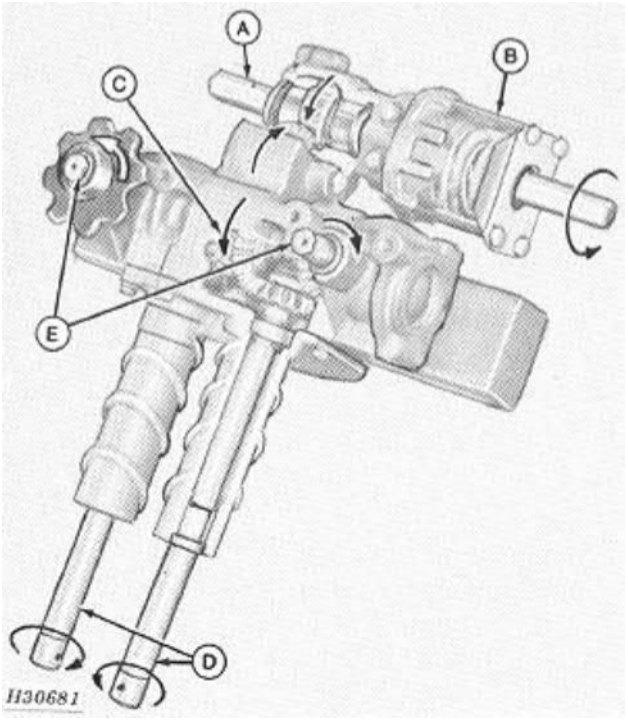
On the 40 Series Corn Heads, each row unit is driven by its own gear-type drive.The drive is a fully enclosed case located under each row unit.

100
10
20

A row unit input shaft (A) is driven from the feeder house. This shaft drives the slip clutch (B), which in turn drives the input gear located in the gear case.

This input gear drives an idler spur gear which drives the main countershaft (C). The main countershaft has two sets of bevel gears. The inner set, which consists of two bevel gears welded to the driving spur gear, drives the stalk roll shafts (D). The outer set of bevel gears drive the gatherer shafts (E).

Each gear case is protected by a slip clutch (B) located on the input shaft at the upper end of the gear case.



H30681 -UN-05DEC91

TM1581,HX100,AN-19-03OCT94

DIAGNOSING MALFUNCTIONS

• Stalk Rolls Clashing

Stalk roll shafts not properly timed.
Stalk rolls striking trash knives.

• Gearcase Noisy

Lack of lubricant.
Gears not meshing properly.
Excessive backlash.
Binding of gears.

• Gearcase or Barrel Assembly Excessively Hot

Seal failure causing loss of grease.
Lack of lubricant.
Binding of gears.
Defective bearings or bushings.
Improperly installed bearing caps.
Dirt packed in stalk roll and on barrel.

• Barrel Assembly Leaking Grease

Defective seal under stalk roll.
Defective bearing.

1401,10010,W -19-12SEP91

REMOVAL

1. Remove gatherer chains and sprockets. (See Removing Gathering Chains in this Section.)

2. Remove upper sprockets and latches. (See Removing Gathering Chains in this Section.)

3. Remove both trash knives (A) from under side of row unit.

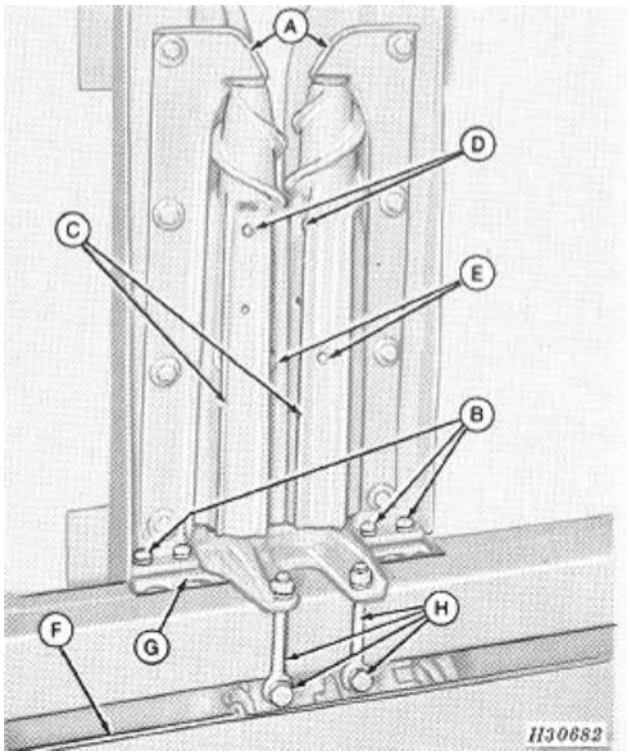
4. Remove four cap screws and four countersunk screws (B) and remove row unit frame.

5. Remove stalk rolls. (See Stalk Roll Removal in this Section.)

6. Pull out row unit hex drive shaft (F). To do this, remove the protective shield and row unit drive chain at the outer end of the corn head. Remove three bolts securing bearing carrier to the corn head frame and pull out drive shaft.

NOTE: The drive shaft is split and only one shaft need be removed to remove gearcase. Be certain to remove the correct shaft for the gearcase to be serviced.

7. Remove gearcase (G) by removing two cap screws and two eyebolts (H) which secure the gearcase to the corn head frame.

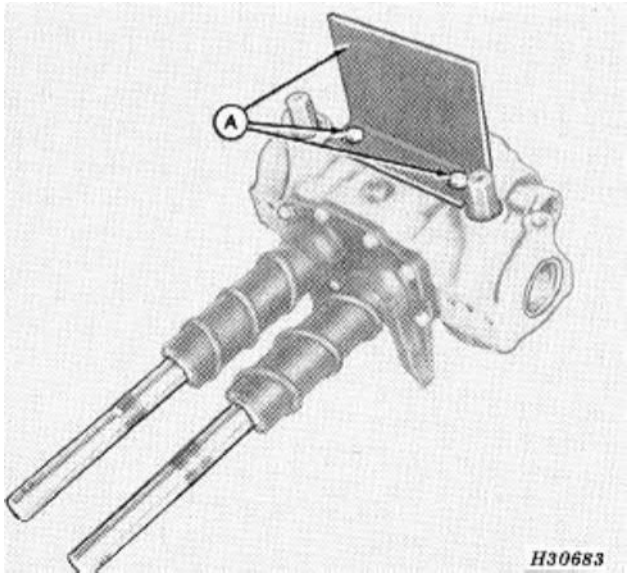


H30682 -UN-05DEC91

HX,1401,10010,J-19-16DEC92

DISASSEMBLY

1. Clean outside of gearcase thoroughly. Attach support bracket (A) (See Special Tools) to gearcase with two 1/2 x 1 in. cap screws.

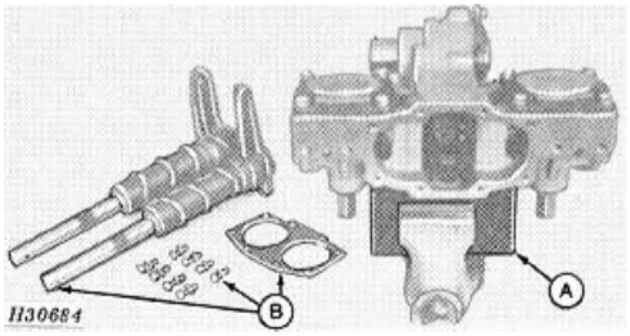


-UN-05DEC91
H30683

HX,1401,10010,K-19-16DEC92

2. Set gearcase with support in vise (A) and remove slip clutch.

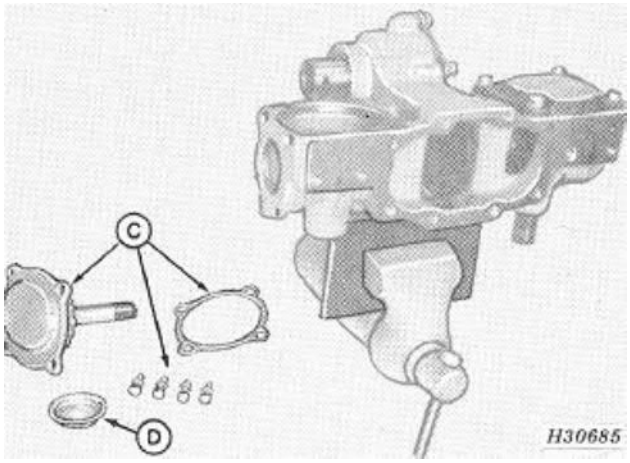
3. Remove barrel assembly with stalk roll shafts and gasket (B) from gearcase and set assembly to one side. If only the barrel assembly or stalk roll shafts are to be serviced, refer to “Servicing Barrel Assembly and Stalk Roll Shafts”.



-UN-05DEC91
H30684

4. Remove gatherer drive shaft assemblies (C). Mark shafts so they can be reinstalled correctly to maintain proper gear wear.

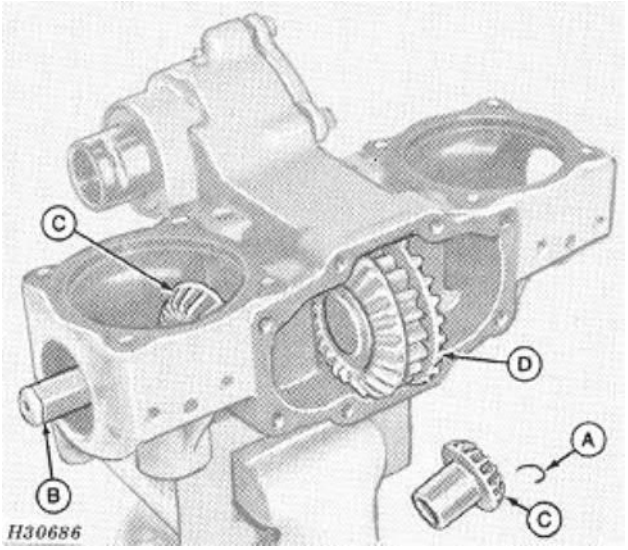
5. Remove end caps (D) from each end of gearcase. Drive out from the inside of gearcase and pry out with a screwdriver. Be careful not to damage sealing surface of cap.



-UN-05DEC91
H30685

1401,10010,Z -19-12SEP91

6. Remove snap ring (A) from either end of hex. countershaft. Remove countershaft and both bevel (C) gears. Roll stalk roll drive gear cluster (D) out front of gearcase.

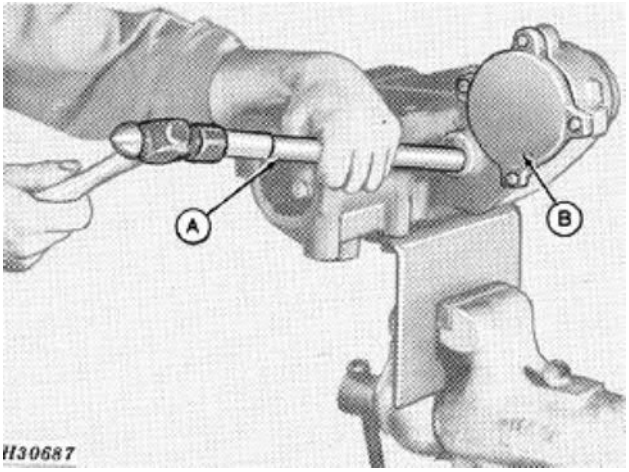


1401,10010,A1 -19-12SEP91

7. Drive in one plug with JDC400-7 handle (A) until the opposite one is loose. Drive shaft back until the remaining plug is loose.

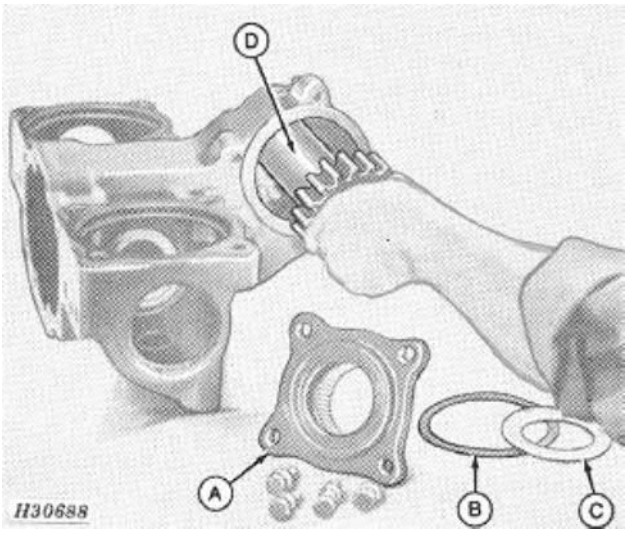
8. Be careful not to damage tolerance ring on shaft. Do not drive ring through idler gear bearings. Drive out idler shaft (B).

9. Remove idler gear out front of gearcase.



HX,1401,10010,L-19-03OCT94

10. Remove input shaft cap (A) with bearings, seal, and gasket (B). Remove thrust washer (C) and input gear and shaft (D).



1401,10010,A3 -19-12SEP91

INSPECTION

Wash all parts thoroughly in a clean, safe solvent. Clean all grease out of gearcase.

Inspect all parts for wear or damage, especially bushings, bearings and seals.

If bushings or bearings need replacement, use the instructions on the following pages.

1401,10010,A4 -19-12SEP91

REPLACING BEARINGS AND BUSHINGS

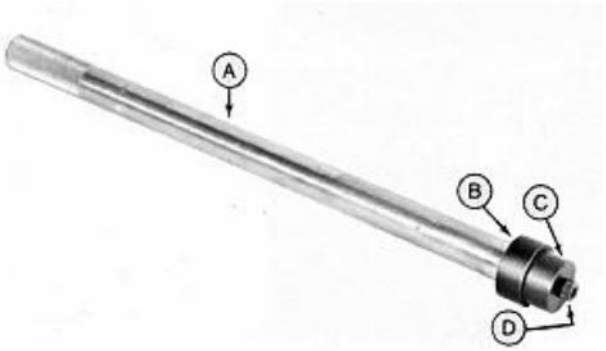
NOTE: The part number is stamped into each special tool.

1401,10010,F7 -19-12SEP91

GATHERER DRIVE SHAFT BUSHING AND SEAL

1. Assemble special tools (A to D) for driving out gatherer drive shaft bushing and seal.

A—JDC400-7 Handle
B—27502, 1-3/16 in. Disk
C—27499, 1 in. Disk
D—10020 Screw



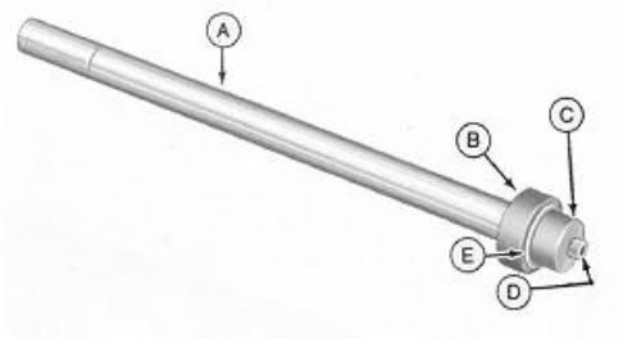
HX,1401,10010,M-19-03OCT94

2. Use tool (A) as shown and drive through gatherer cap opening in gear case against bushing (B). Drive out both bushings and seal.

HX,1401,10010,N-19-16DEC92

3. Assemble tools (A to E) for installing gatherer drive shaft bearing.

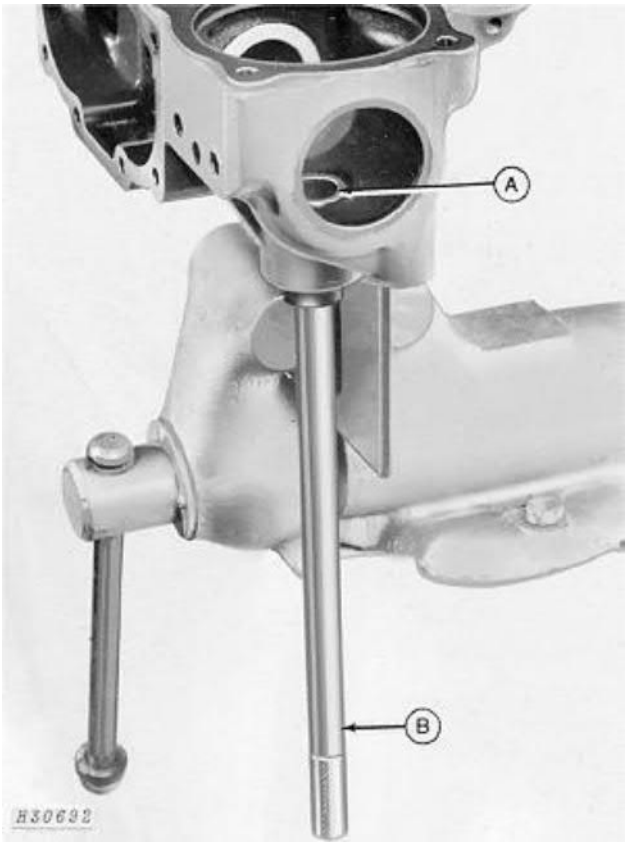
A—JDC400-7 Handle
B—27506, 1-7/16 in. Disk
C—27499, 1 in. Disk
D—10020 Screw
E—JDC400-3 Spacer



HX,1401,10010,O-19-03OCT94

4. Use tools (A) as shown to install bushing. Drive bushing (B) from bottom to obtain proper location of bushing in case.

NOTE: Do not install seal at this time.



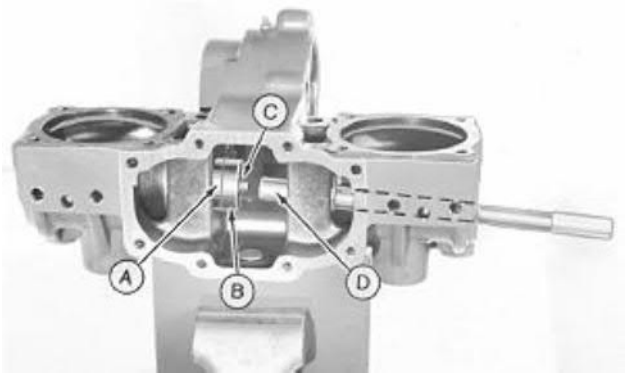
-UN-15JUN89
H30692

HX,1401,10010,P-19-16DEC92

REPLACING COUNTERSHAFT BUSHINGS

1. Assemble plates (A and B) on screw (C) and insert through opening in front of gear case. Insert handle (D) through opening in end of gearcase and assemble tool inside gearcase.

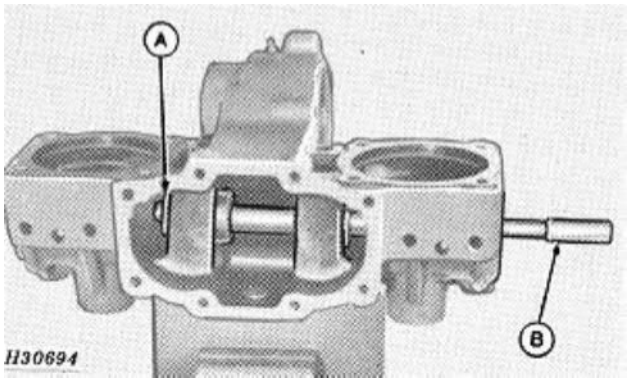
A—27507, 1-1/2 in. Disk
B—27512, 1-13/16 in. Disk
C—10020 Screw
D—JDC400-7 Handle



-UN-15JUN89
H30693

HX,1401,10010,Q-19-03OCT94

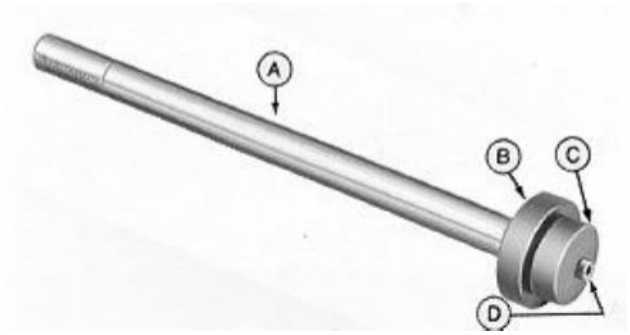
2. Drive out bushing (A), then disassemble tool (B) for removal. If remaining bushing is to be removed, follow the above procedure from the opposite end of the gearcase.



1401,10010,B1 -19-12SEP91

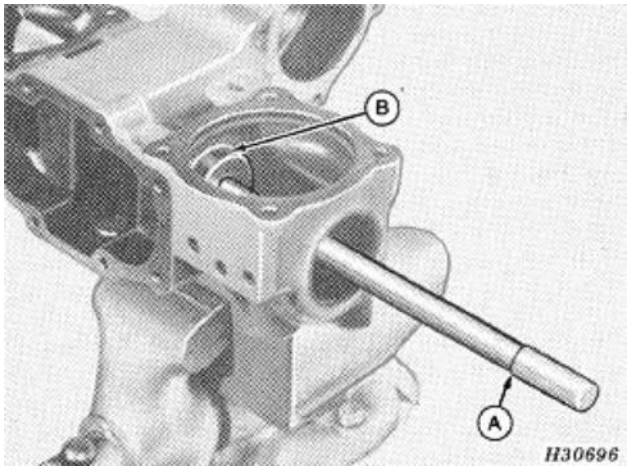
3. Assemble tools (A to D) for installing countershaft bushing.

A—JDC400-7 Handle
B—27520, 2 in. Disk
C—27507, 1-1/2 in. Disk
D—10020 Screw



HX,1401,10010,R-19-03OCT94

4. Use tools (A) to install new bushing (B).

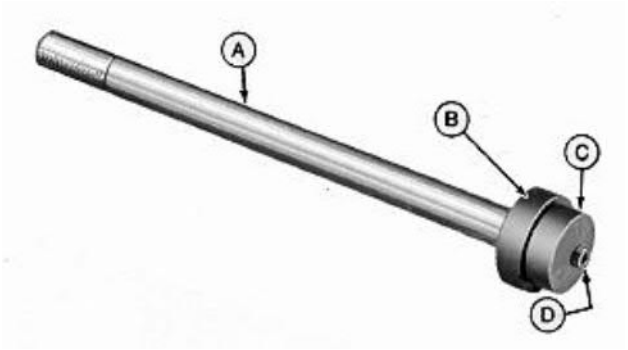


HX,1401,10010,S-19-28JAN93

REPLACING INPUT SHAFT (IN GEARCASE AND INPUT SHAFT CAP) NEEDLE BEARINGS AND SEALS

1. Assemble tool as illustrated.

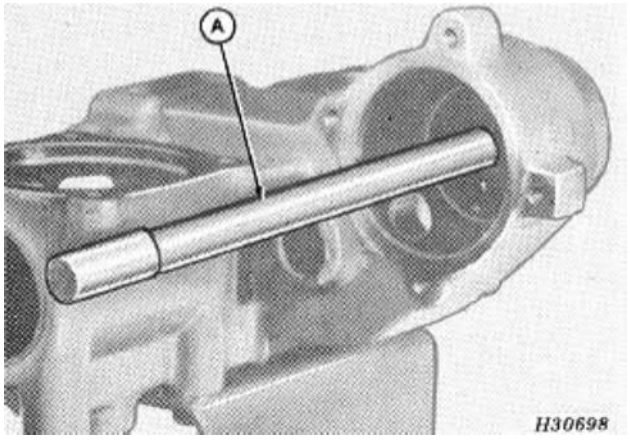
A—JDS400-7 Handle
B—27520, 2-5/16 in. Disk
C—27515, 2 in. Disk
D—10020 Screw



H30697 -UN-15JUN89

HX,1401,10010,T-19-03OCT94

2. Drive tool (A) against inner end of bearing to remove both seal and bearing.

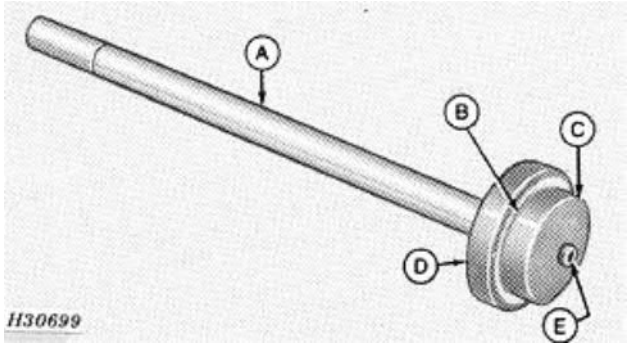


H30698 -UN-05DEC91

1401,10010,B5 -19-12SEP91

3. Assemble tools (A to E) for installing input shaft needle bearing.

A—JDC400-7 Handle
B—JDC400-4 Spacer
C—27515, 2 in. Disk
D—27525, 2-5/8 in. Disk
E—10020 Screw



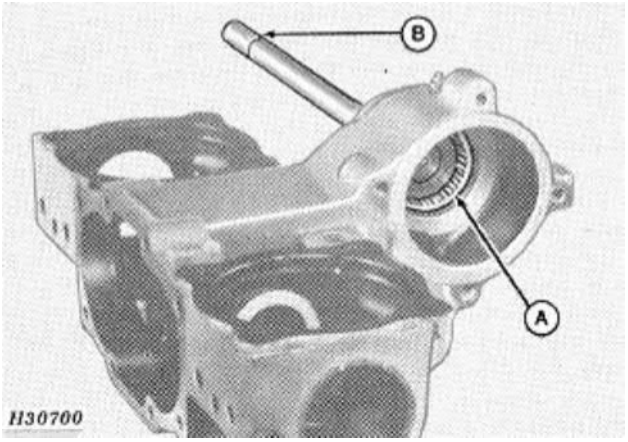
H30699 -UN-05DEC91

HX,1401,10010,U-19-03OCT94

4. Use tools (B) drive bearing (A) from outside of gearcase (or outside of input cap). Install rounded edge of needle bearing in bore and drive against flat edge of bearing.

NOTE: Flat edge of bearing has manufacturer's name and part number stamped into it. Do NOT drive against rounded edge of bearing.

5. Do not install seals until after gears are all installed so proper backlash can be determined.

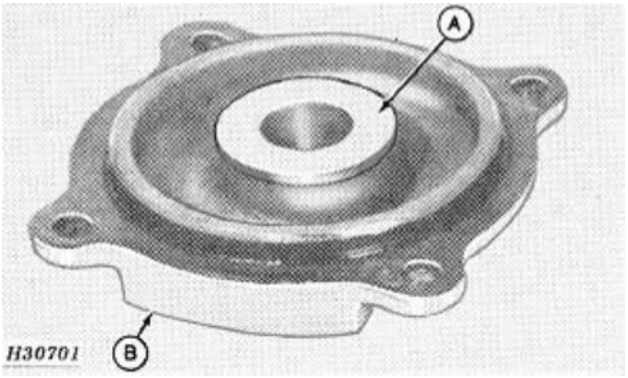


-UN-05DEC91 H30700

HX,1401,10010,V-19-16DEC92

REPLACING GATHERER CAP BUSHINGS

1. Use a screwdriver or slide hammer puller to remove bushing (A) from gatherer cap (B).

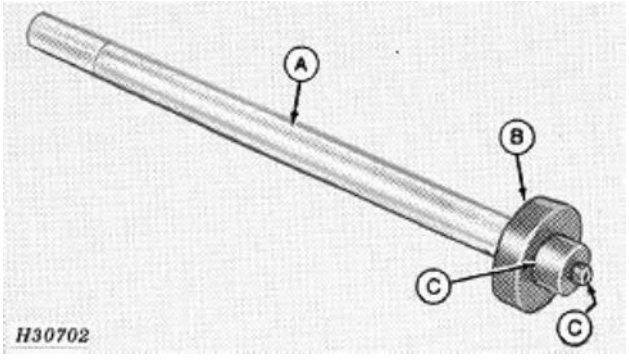


-UN-05DEC91 H30701

HX,1401,10010,W-19-16DEC92

2. Assemble special tool to install bushing.

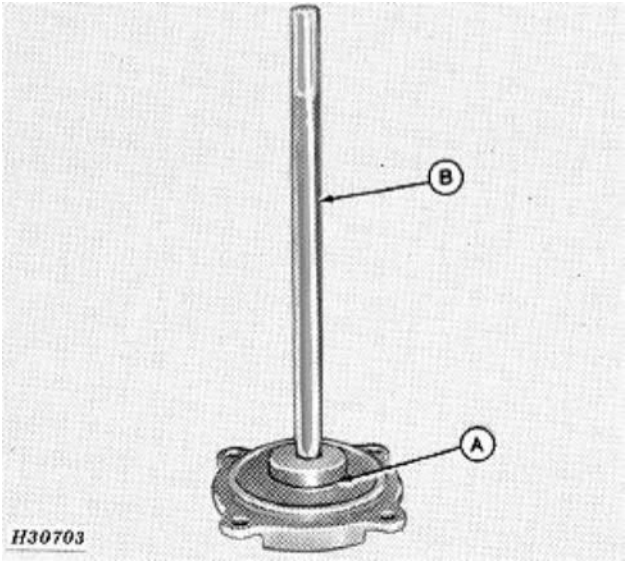
A—JDC400-7 Handle
B—27515, 2 in. Disk
C—27499, 1 in. Disk
D—10020 Screw



-UN-05DEC91 H30702

HX,1401,10010,X-19-03OCT94

3. Install bushing (A) with special tool (B). Be certain shoulder of bushings (A) is tight against edge of bore in cap.



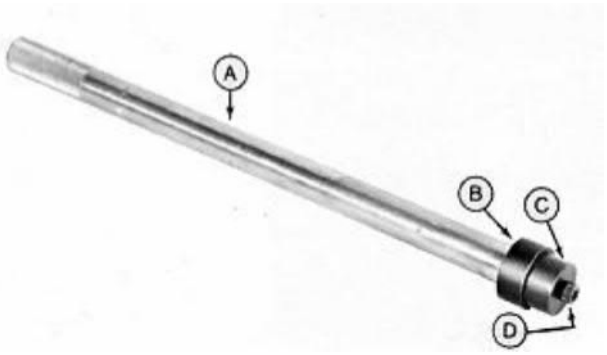
-UN-05DEC91
H30703

HX,1401,10010,Y-19-16DEC92

REPLACING IDLER GEAR NEEDLE BEARINGS

1. Assemble special tool.

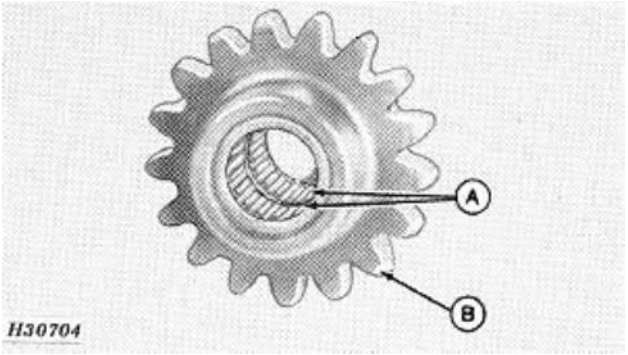
A—JDC400-7 Handle
B—27502, 1-3/16 in. Disk
C—27499, 1 in. Disk
D—10020 Screw



-UN-15JUN89
H30689

HX,1401,10010,Z-19-03OCT94

2. Remove needle bearings (A) from idler gear (B).

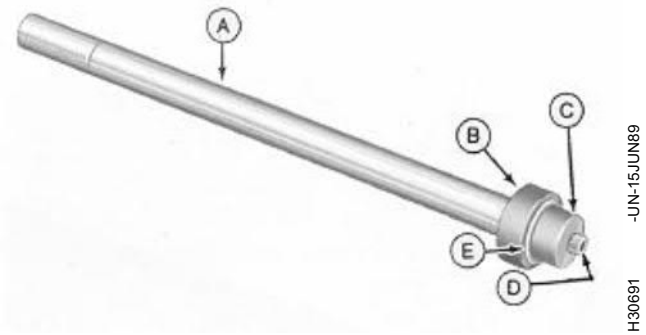


-UN-05DEC91
H30704

HX,1401,10010AC-19-16DEC92

3. Assemble special tool to install NEW needle bearings.

A—JDC400-7 Handle
B—27506, 1-7/16 in. Disk
C—27499, 1 in. Disk
D—10020 Screw
E—JDC400-3 Spacer

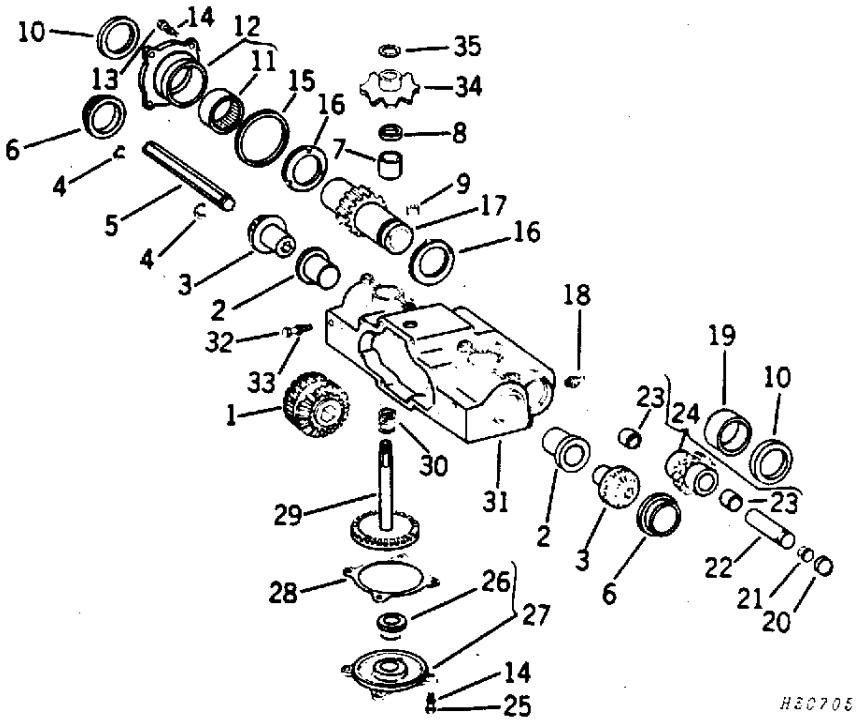


HX,1401,10010AA-19-03OCT94

4. Drive against the flat end (end with vendor number) of the bearing and install one from each end. Do NOT install bearing by driving one bearing in against the other.

HX,1401,10010AB-19-16DEC92

ASSEMBLY



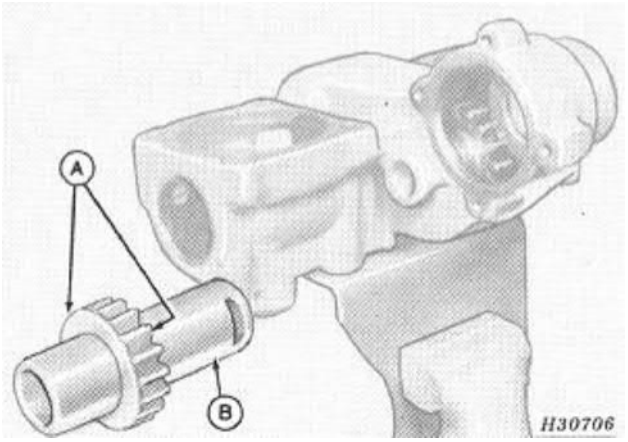
1—Stack Roll Drive Gear Cluster
2—Bushing (2 Used)
3—Bevel Pinion Gear (2 Used)
4—Snap Ring (2 Used)
5—Countershaft
6—Grease Cap (2 Used)
7—Bushing (2 Used)
8—Grease Seal (2 Used)
9—Pipe Plug, 3/4 In.
10—Oil Seal (2 Used)
11—Needle Bearing
12—Input Cap W/Bearing
13—Cap Screw, 3/8 x 1-1/8 In.
14—Lock Washer, 3/8 In.
15—Gasket
16—Thrust Washer (2 Used)
17—Input Gear
18—Grease Fitting, 1/8 In.
19—Needle Bearing
20—Expansion Ring (2 Used)
21—Tolerance Ring
22—Idler Shaft
23—Needle Bearing (2 Used)
24—Idler Gear Assembly
25—Cap Screw, 3/8 x 1 In.
26—Bushing (2 Used)
27—Gatherer Cap W/Bearing
28—Gasket
29—Gatherer Drive Shaft (2 Used)
30—Oil Slinger Spring (2 Used)
31—Gearcase
32—Cap Screw, 1/2 x 1-1/4 In.
33—Lock Washer, 1/2 In.
34—Drive Sprocket (2 Used)
35—Snap Ring (2 Used)

1401,1010,HX,A -19-16DEC92

1. Use John Deere Corn Head Lube and lubricate all bushings and bearings prior to assembly of gearcase. Also pack seals with this grease prior to installation.

IMPORTANT: This special high-pressure lubricant is available in a 0.4 kg (14-1/2 oz.) tube (AN102562), or a 16 kg (35 lb.) pail (AH80490).

2. Coat only one side of each thrust washer (A) with corn head grease and place greased side of each washer against each side of input shaft gear (B). The grease is used to hold the thrust washers against the gear for ease of installation. The lugs on the washers fit between the gear teeth.



3. Install input shaft with thrust washers in gearcase.

IMPORTANT: Turn input shaft to be certain lugs on both thrust washers fit between teeth on input gear.

1401,10010,C6 -19-12SEP91

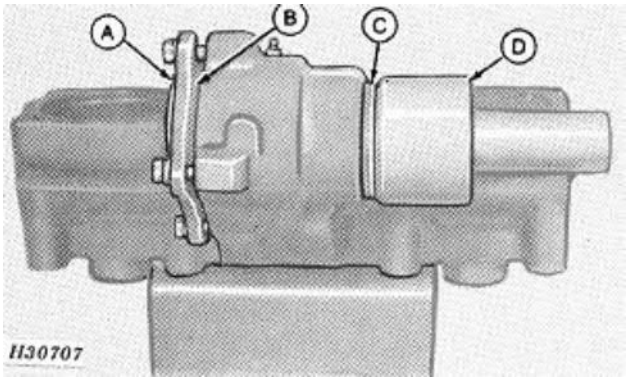
4. Install input cap (A) and gaskets (B) and secure with hardware previously removed.

NOTE: Input cap can be installed only one way.

5. Visually check that thrust washer lugs are in gear teeth. Check end play of input shaft; end play should be 0.13 to 0.38 mm (0.005 to 0.15 in.). End play must not exceed 0.38 mm (0.15 in.) Bump ends of shaft with rubber hammer to check. Input shaft must rotate freely. Add or remove gaskets as necessary to achieve proper end play.

NOTE: Always use at least one, but no more than six, gaskets.

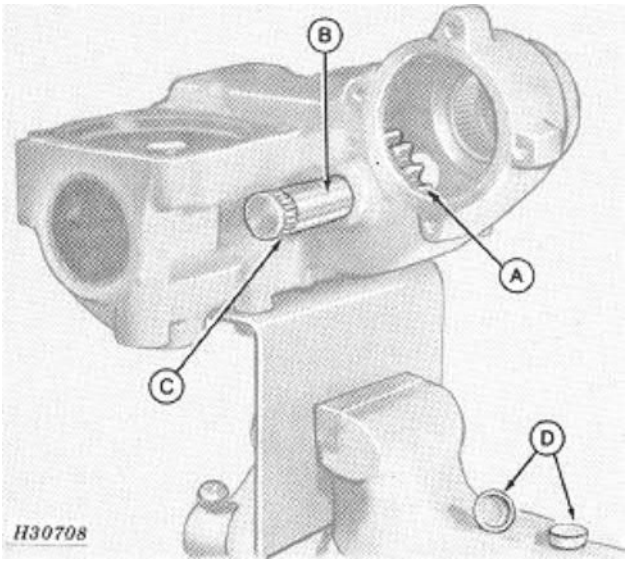
6. Install seal (C) with seal drives (D).



TM1581,HX100,AO-19-03OCT94

7. Assemble idler gear (A) and shaft (B) in gearcase. Install new tolerance ring (C) on shaft prior to assembly. To facilitate assembly, insert gear through opening in front of gearcase; then insert shaft.

NOTE: Start end of idler shaft (without tolerance ring) into bore first.

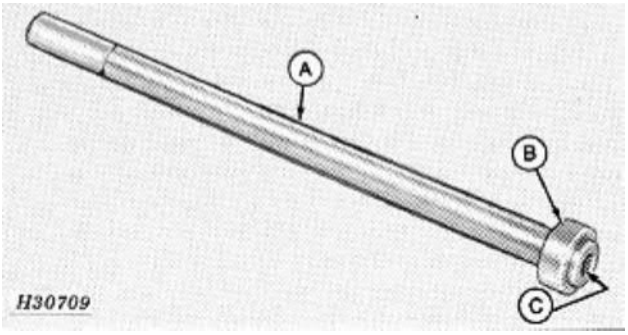


-UN-05DEC91
H30708

TM1581,HX100,AP-19-03OCT94

8. Assemble tools (A, B and C) to install expansion plugs (D), above.

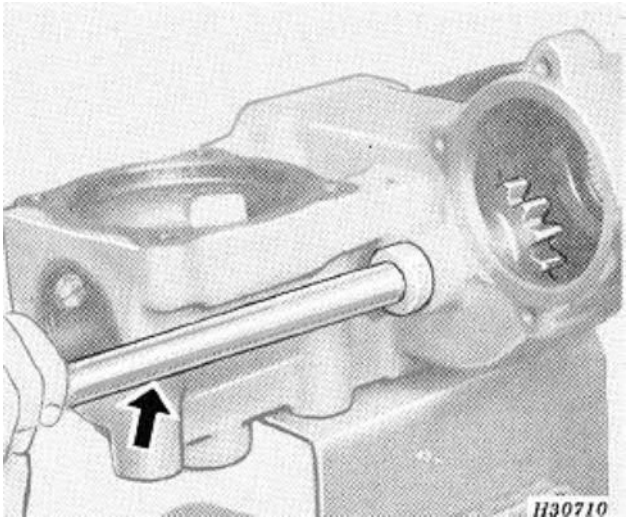
A—JDC400-7 Handle
B—JDC400-2 Plug Installer
C—10020 Screw



-UN-05DEC91
H30709

TM1581,HX100,AQ-19-03OCT94

9. Center idler shaft in bores and install both expansion plugs. Use tools illustrated to install plugs.



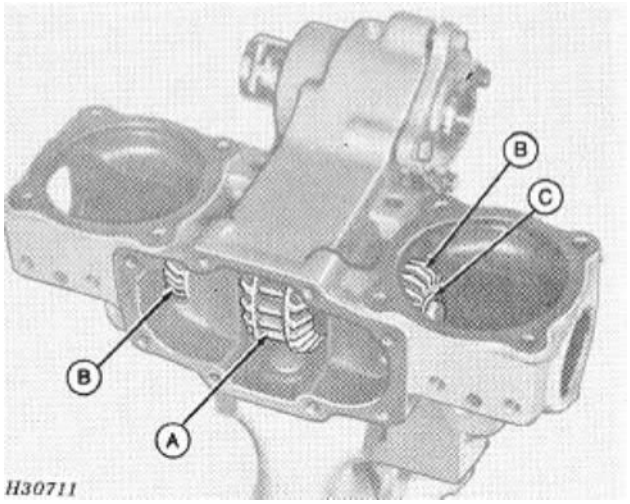
-UN-05DEC91
H30710

TM1581,HX100,AR-19-03OCT94

10. Coat gatherer bevel gears with corn head grease on flange surface only. Place bevel gears in gearcase. Install snap ring on one end of countershaft and insert countershaft through only the first bevel gear in the case.

11. Insert stalk roll drive gear assembly through opening in front of gearcase. Pass countershaft through stock roll gear assembly and bevel gears. Insert other snap ring on end of countershaft.

A—Stalk Roller Drive
B—Gear Assembly
C—Snap Ring

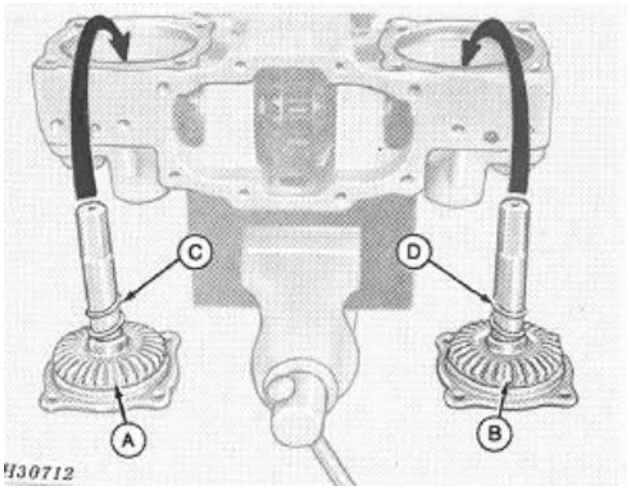


-UN-05DEC91
H30711

TM1581,HX100,AS-19-03OCT94

12. Leave NEW shafts dry, or clean OLD shafts. Assemble gatherer drive shafts in gatherer caps. Be certain shafts bottom in caps. Tap on shafts and turn to be certain they are free. Recheck end play.

IMPORTANT: With gatherer drive shafts turning toward each other (as viewed from barrel assembly opening), oil slinger springs must throw grease away from gears and toward bronze bushings for efficient lubrication. Shafts should be reinstalled on same side of case to maintain proper gear wear. The spring for the right-hand shaft has a left-hand spiral and spring for left-hand shaft has a right-hand spiral. For repairs, right-hand spiral springs are colored RED and the left-hand spiral springs are colored BLUE.



-UN-05DEC91
H30712

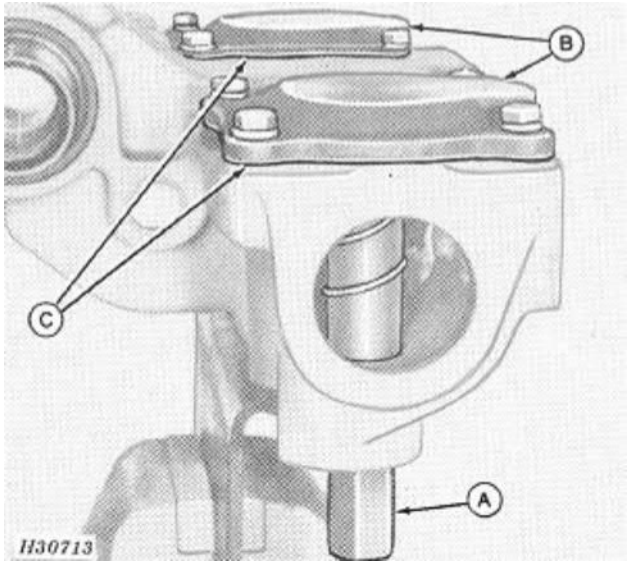
A—L.H. Gatherer Drive Shaft with Gear
B—R.H. Gatherer Drive
C—R.H. Spiral Oil Slinger Spring
D—L.H. Spiral Oil Slinger Spring

TM1581,HX100,AT-19-03OCT94

13. Install both shafts (A), caps (B) and gaskets (C) dry (without grease) and tighten cap screws securely. Check gatherer drive shafts for proper backlash, 0.20 to 0.36 mm (0.008 to 0.014 in.).

14. Add or remove gaskets as necessary to achieve proper backlash. Tap end of shaft to make certain it is bottomed in cap.

NOTE: Gaskets are available in two thicknesses, 0.18 to 0.25 mm (0.007 and 0.010 in.).



-UN-05DEC91
H30713

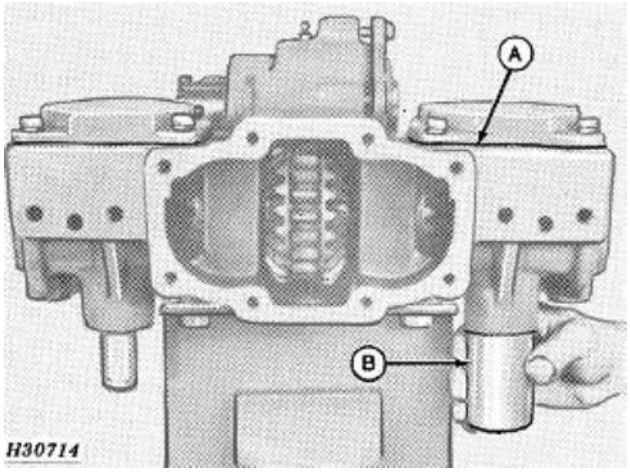
TM1581,HX100,AU-19-03OCT94

15. After obtaining proper backlash, remove gatherer caps and shafts and coat gatherer cap bushing and shaft with John Deere Corn—Head Lube.

16. To be certain everything turns fully, turn input shaft by hand when all parts are assembled.

17. Coat shoulders of gatherer caps and gaskets with Permatex (A) and install in gearcase. Coat threads of cap screws with Permatex and install and tighten to 45 N·m (35 lb-ft).

18. Pack gatherer shaft and input shaft seals with corn head grease and install on shafts (B). Be careful NOT to cut lips of seal on groove of shaft. Cover grooves with tape.



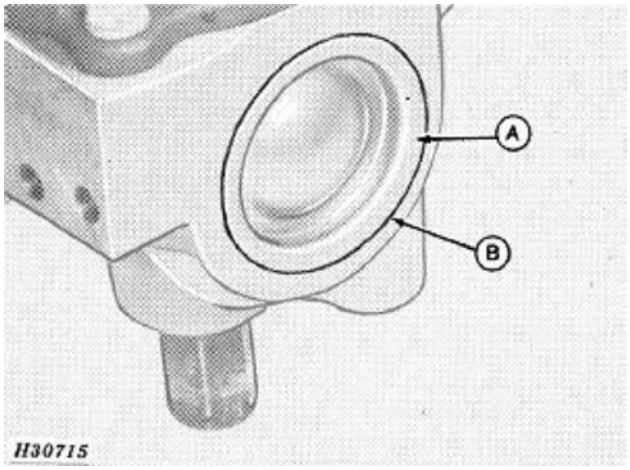
-UN-05DEC91
H30714

TM1581,HX100,AV-19-03OCT94

19. Coat edges of end caps (A) with Permatex (B) and tap end caps into gearcase. Be certain caps are securely seated in gearcase.

20. This completes the disassembly and assembly of the gearcase. If work is not required on the barrel assembly and stalk roll shaft, see “Attaching Barrel Assembly to Gearcase” for assembly of these parts to the gearcase.

21. If work is required on the barrel assembly and stalk roll shafts, proceed on the following pages.



TM1581,HX100,AW-19-03OCT94

SERVICING BARREL ASSEMBLY AND STALK ROLL SHAFTS

Disassembly

NOTE: If only the barrel assembly and/or stalk roll shafts are to be serviced, remove barrel assembly with shafts from gearcase. Set gearcase assembly to one side and cover opening to keep dirt out of gearcase.

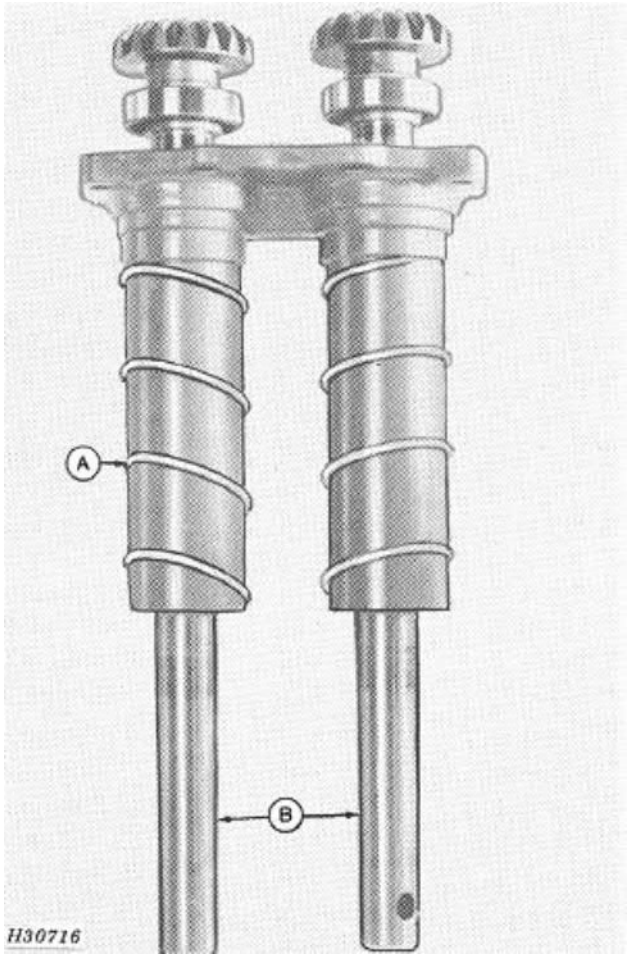
The slip clutch does NOT need to be removed.

1. Hold barrel assembly (A) and tap stalk roll shafts (B) on a solid surface to separate shafts from barrel assembly.

2. Clean all grease off stalk roll shafts and gears and out of barrel assembly.

3. Remove seal from end of barrel and discard.

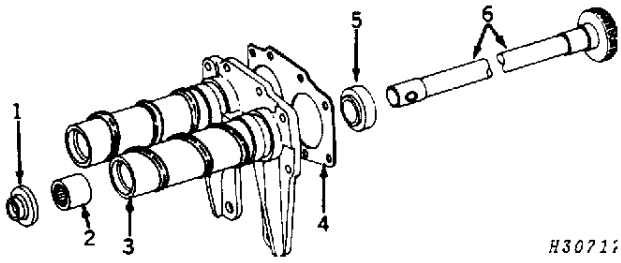
NOTE: Use NEW SEALS after installing barrel assembly on gearcase.



HX,1401,10010AK-19-16DEC92

INSPECTION AND REPAIR

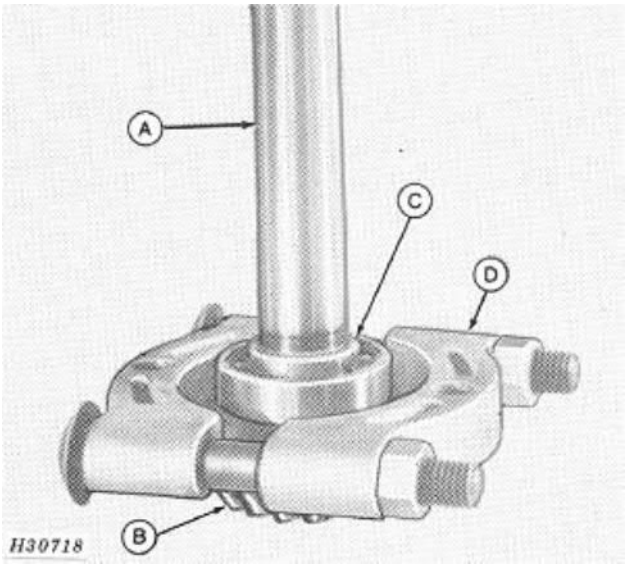
1—Grease Seal
2—Needle Bearing
3—Barrel
4—Gasket
5—Bearing
6—Stalk Roll Shaft



-UN-26AUG91
H30717

1401,10010,D8 -19-12SEP91

1. Examine stalk roll shaft (A), gear (B) and bearing (C) for wear. If it is necessary to remove bearing, use a split puller (D) as illustrated and press bearing off shaft. Install new bearing with a press. Be sure to seat inner face of bearing against gear hub.

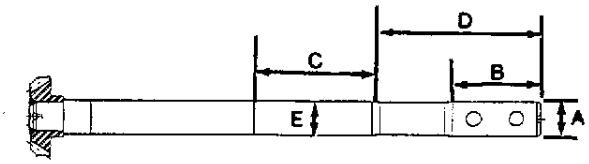


-UN-05DEC91
H30718

1401,10010,D9 -19-12SEP91

2. Measure the stalk roll shaft at surfaces specified. If measurements are below the given dimensions or shaft has signs of wear, replace the shaft.

A—31.47 mm (1.239 in.)
B—81.30 mm (3.20 in.)
C—76 mm (2.99 in.)
D—189.4 mm (7.46 in.)
E—31.72 mm (1.249 in.)

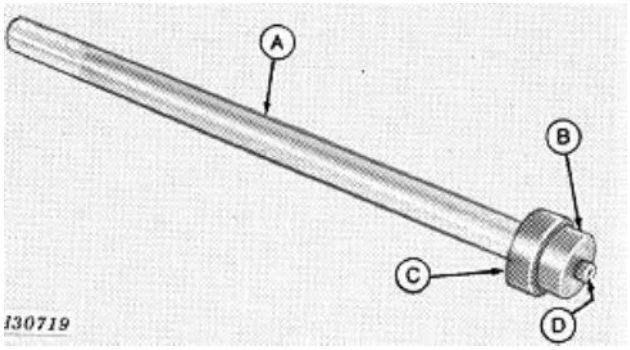


-UN-01MAY94
H46413

TM1581,HX100,CS-19-18AUG94

3. Assemble tool for removing bearing and seal in barrel assembly.

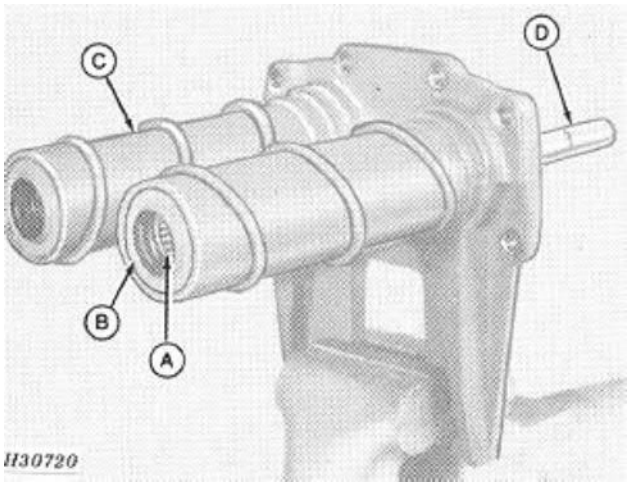
A—JDC400-7 Handle
B—27502, 1-3/16 in. Disk
C—27507, 1-1/2 in. Disk
D—10020 Screw



-UN-05DEC91
H30719

HX1581,10010,AA-19-03OCT94

4. Use tool (D) and drive out needle bearing (A) and seal (B) in barrel assembly (C).

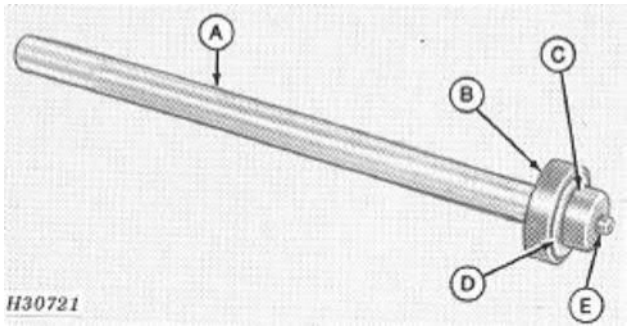


-UN-05DEC91
H30720

TM1581,HX100,CU-19-18AUG94

5. Assemble tool for installing bearing in assembly.

A—JDC400-7 Handle
B—27515, 2 in. Disk
C—JDC400-8 Spacer
D—27502, 1-3/16 in. Disk
E—10020 Screw



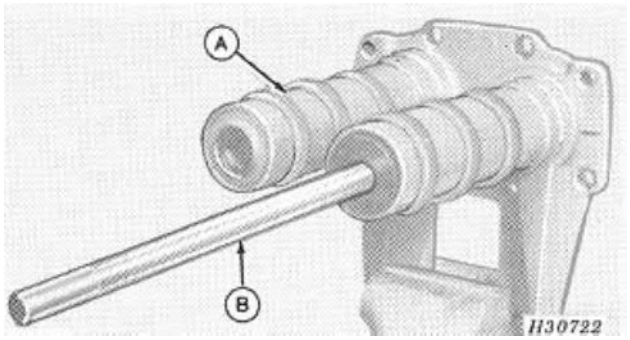
-UN-05DEC91
H30721

HX1581,10010,AB-19-03OCT94

6. Use tool (B) to install needle bearing in barrel assembly. Be certain to drive against flat end of needle bearing only.

NOTE: Do NOT install seals until after barrel assembly (A) with stalk roll shafts has been attached to gearcase. Coat needle bearings with Corn-Head grease.

7. Install stalk roll shafts in barrel assembly and strike on ends of gear with a lead hammer to seat shaft bearing shafts on barrel assembly. Rotate shafts. They must turn freely.



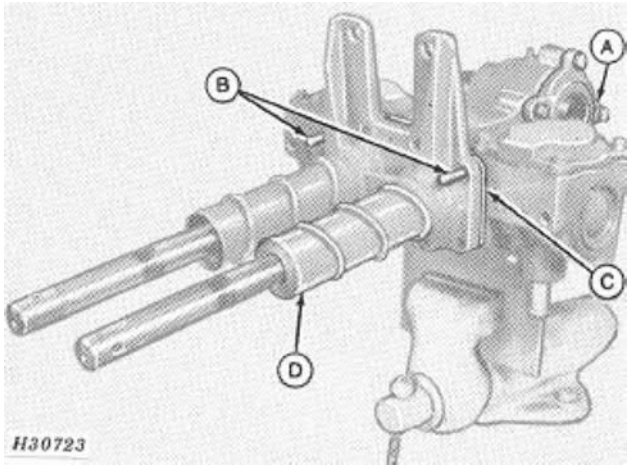
-UN-05DEC91
H30722

TM1581,HX100,CW-19-18AUG94

ATTACHING BARREL ASSEMBLY TO GEARCASE

1. With gearcase assembly (A) mounted in a vise, insert the two barrel assembly locating dowel studs (B) in upper corner holes as illustrated. (See “Special Tools”.)

2. Assemble new gasket (C) over locating dowel studs and set barrel assembly (D) with shafts on studs.

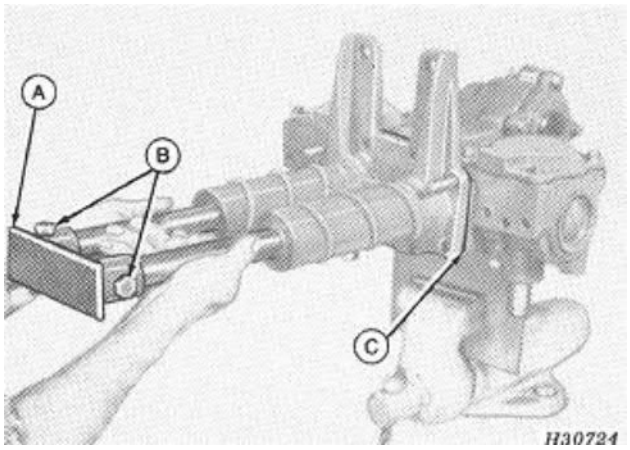


-UN-05DEC91
H30723

HX,1401,10010AP-19-16DEC92

3. Install stalk roll shaft timing tool (A) (see Special Tools) on end of shafts. Use 1/2 x 1-3/4 in bolts (B) or 1/2 in. rods to secure timing tool to shafts. It is not necessary to put nuts on the bolts.

4. Push against stalk roll shafts and barrel assembly. If inner surface of barrel assembly will not fit tight against surface of gearcase (C), stalk roll shafts are not properly timed and must be timed.



1401,10010,E6 -19-12SEP91

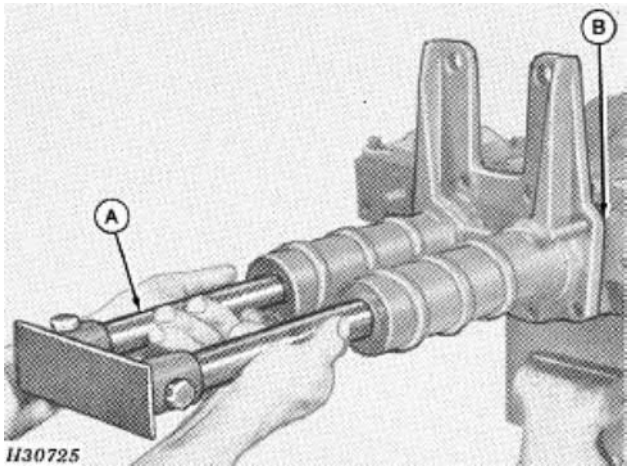
5. Grasp stalk roll shafts and pull barrel assembly away from gearcase about 25 mm (1 in.), remove one bolt from timing tool (A) and rotate one stalk roll shaft 180 degrees. Reinstall bolt and check to be certain barrel assembly is flush (B) against gearcase.

NOTE: If the fit is still not tight, repeat above procedure, rotating other stalk roll shaft.

6. When barrel assembly fits tight against gearcase, secure assembly with four bolts and check stalk roll backlash by holding one shaft and rotating the other. Backlash should be 0.20 to 0.36 mm (0.008 to 0.014 in.). Add or remove gaskets as necessary to obtain proper backlash.

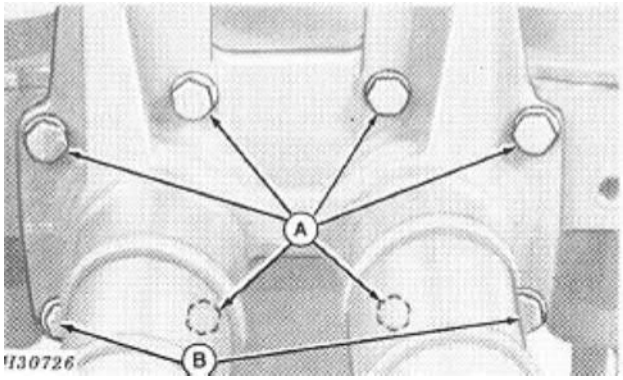
NOTE: Gaskets are available in two thicknesses, 0.18 to 0.25 mm (0.007 to 0.010 in.). Rotate shafts to check for tight spots.

7. When proper backlash has been obtained, remove barrel assembly and pack around gears and in barrel with John Deere Corn-Head Lube™, or equivalent. Use four ounces of grease to each barrel, total 56 ounces for the gearcase. After filling gearcase, pump grease through grease fitting while turning by hand.



1581,10010,ZE -19-03OCT94

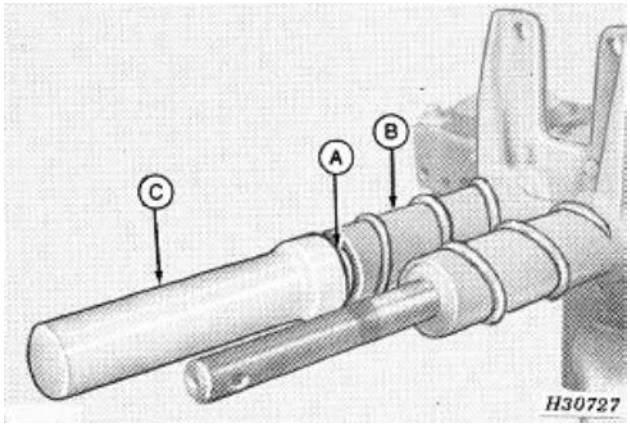
8. Install barrel assembly and secure with hardware previously removed (A). Coat the two special dowel bolts (B) with Permatex and install in lower corners of barrel assembly. Tighten all bolts.



H30726 -UN-05DEC91

1401,10010,E8 -19-12SEP91

9. Using tool (C), install seals (A) on ends of barrel assembly (B) over stalk roll shaft. Use tape over all spring pin holes to avoid cutting seal. Also, be certain seal spring does not rotate out of seal during installation.



H30727 -UN-05DEC91

HX,1401,10010AR-19-16DEC92

INSTALLATION

1. Remove special mounting bracket from gearcase and install gearcase on corn head.

2. Reverse removal procedure to install gearcase, stalk rolls, row-unit frame, gatherer chains, gatherer shields and associated parts.

3. Adjust gatherer chains, trash knives and deck plates as outlined.

4. Tighten trash knife bolts and stalk rolls clamping bolts to specified torques.

5. After complete assembly and installation of the corn head gearcase and component parts, with corn head attached to combine, start engine and engage corn head drive.

6. Operate corn head with gatherer points on the ground at low idle speed for four minutes.

7. Increase combine engine to fast idle and run corn head for six minutes.

CAUTION: Shut off combine engine.

8. Check for hot bearings and lubricate. Correct as necessary.

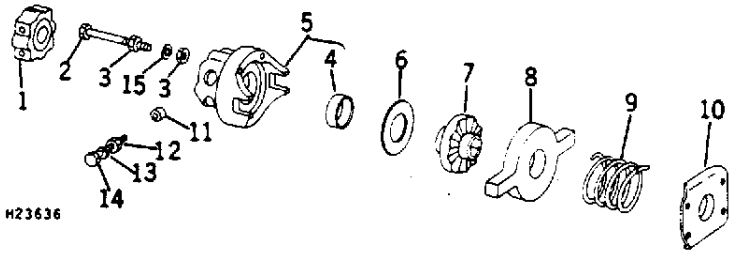
HX,1401,10010AS-19-16DEC92

ROW UNIT SLIP CLUTCH

General Information

The slip clutches protect the corn head drives. Each row unit drive and the auger drive have a slip clutch.

TM1581,HX100,AZ-19-03OCT94



-UN-26AUG91

H23636

1—Coupler
2—Cap Screw, 1/2 x 5-3/4 in. (4 used)
3—Jam Nut, 1/2 in. (8 used)
4—Bushing
5—Retainer
6—Thrust Washer
7—Hub
8—Jaw
9—Spring
10—Spring Retainer
11—Spacer (4 used)
12—Nut, 3/8 in. (2 used)
13—Lock Washer, 3/8 in. (2 used)
14—Cap Screw, 3/8 x 3-3/4 in. (2 used)
15—Internal Tooth Lock Washer, 1/2 in. (4 used)

HX,1401,10010AT-19-16DEC92

REPAIR

Remove two 3/8 x 3-3/4 in. cap screws (14) to remove slip clutch. Refer to the above illustration for disassembly.

Inspect hub (7) and jaw (8) for wear. Inspect spring (9) for breakage. Inspect all other parts and replace parts as necessary.

HX,1401,10010AU-19-16DEC92

ASSEMBLY

Use the exploded view (See “Row Unit Slip Clutch”) as a guide when assembling shift clutch.

1. Coat entire thrust washer (6) with multipurpose grease prior to assembly. Do not grease facing of hub (7) and jaw (8).

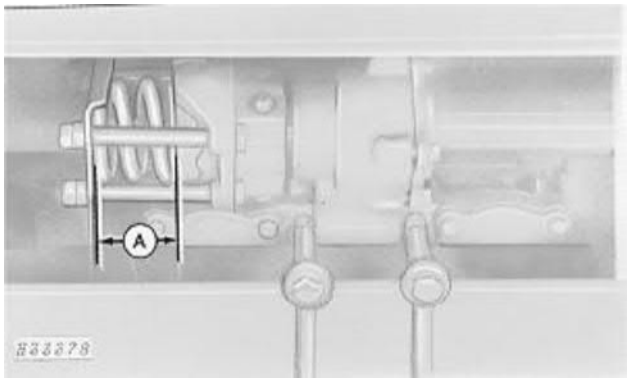
2. Reassemble slip clutch.

HX,1401,10010AV-19-16DEC92

3. Tighten four cap screws in slip clutch to obtain a 71 mm (2-13/16 in.) dimension (A).

NOTE: The auger slip clutch is non-adjustable.

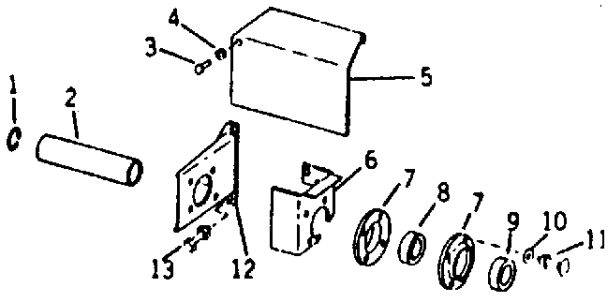
4. Do NOT tighten the nuts on the four cap screws to the point where the clutch will NOT slip. Jam the two nuts on each cap screw together and then tighten to 75 N·m (7.5 kg) (55 lb-ft) torque.



-UN-25OCT89

HX,1401,10010AW-19-16DEC92

1—Snap Ring
2—Shield
3—Rivet, 5/16 x 1/2 in. (2 used)
4—Nut
5—Shield
6—Support
7—Housing (2 used)
8—Bearing
9—Locking Collar
10—Lock Washer, 1/2 in. (4 used)
11—Bolt, 1/2 x 1-1/4 in. (4 used)
12—Support
13—Self-Tapping Screw (3 used)

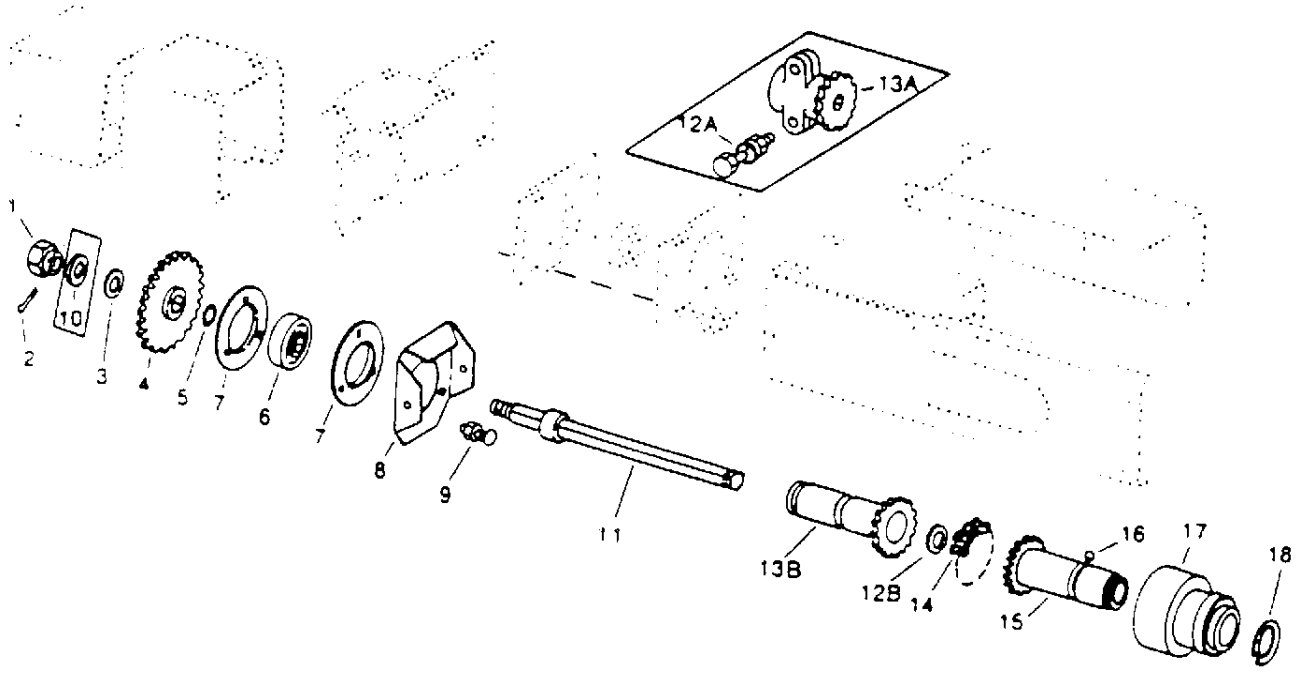


-UN-06AUG92

H44873

HX,1401,10010AX-19-03OCT94

MAIN DRIVE SHAFT AND COUPLER
443, 444, 546, 642, 643, 644, 645, 842, 843, 844 AND 1243 (SN —635100)
543 (SN —380600) (62081—635100)
642 AND 842 (SN —332700)

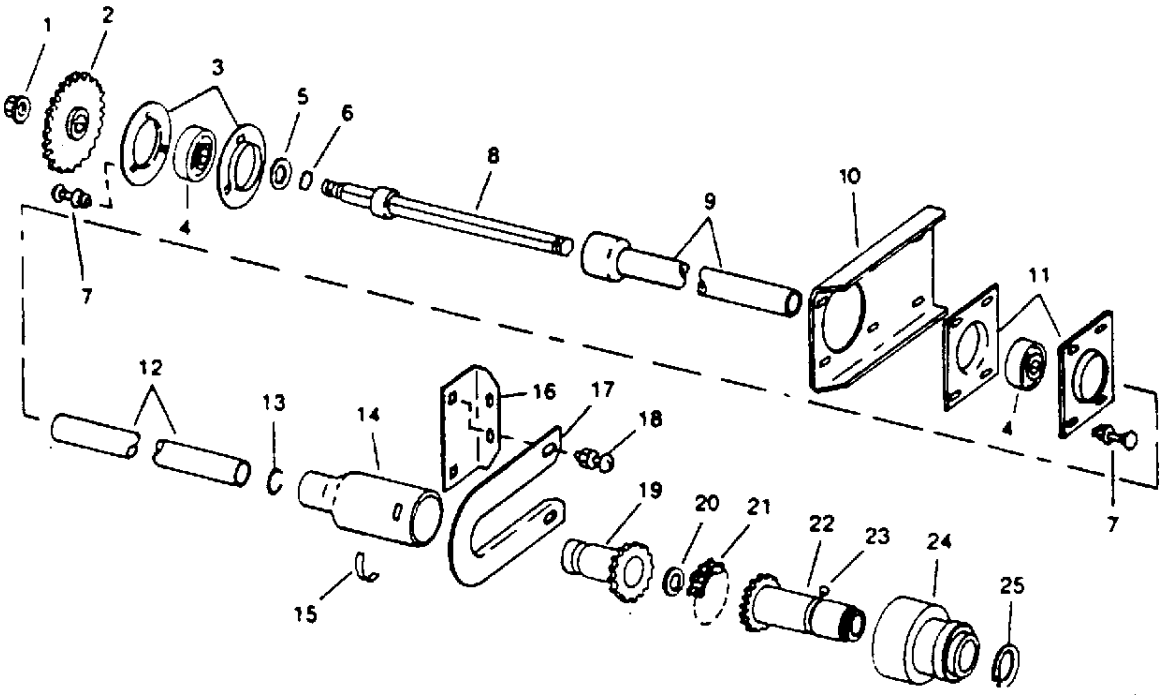


H44865 -UN-06AUG92

1—Nut, 3/4 in.
2—Cotter Pin, 5 x 50 mm
3—Washer, 25/32 x 1-5/8 x 1/4 in.
4—Sprocket, 24 Tooth
5—O-Ring (2 used)
6—Bearing
7—Housing
8—Holder
9—Bolt, 3/8 x 1 in.
10—Lock Washer, 3/4 in. (S.N. —416850)
11—Shaft
12A—Cap Screw, 1/2 x 2-1/2 in.
12B—Snap Ring
13A—Coupling
13B—Sprocket, 14 Tooth
14—Link Chain (2 used)
15—Sprocket, 14 Tooth (2 used)
16—Ball (6 used)
17—Coupler (2 used)
18—Snap Ring

TM1581,HX100,BA-19-03OCT94

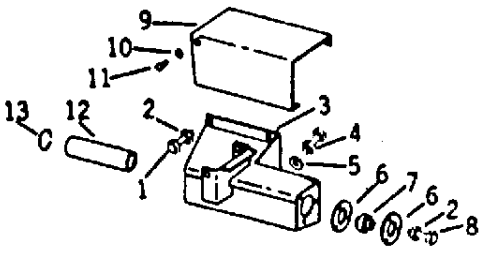
MAIN DRIVE SHAFT AND COUPLER
443, 444, 546, 643, 644, 645, 843, 844 AND 1243 (SN 635001—)



1—Lock Nut, 3/4 in.
2—Sprocket, 28 Tooth
3—Housing
4—Bearing
5—Retainer
6—Seal
7—Bolt, 3/8 x 1 in.
8—Shaft
9—Shield
10—Bracket (2 used)
11—Housing (4 used)
12—Shield
13—Snap Ring
14—Shield
15—Bearing
16—Angle
17—Bracket
18—Bolt, 3/8 x 3/4 in. (2 used)
19—Sprocket, 14 Tooth
20—Snap Ring
21—Chain
22—Sprocket, 14 Tooth
23—Ball (3 used)
24—Coupler
25—Snap Ring

HX,1401,10010AZ-19-03OCT94

MAIN DRIVE SHAFT AND COUPLER
343

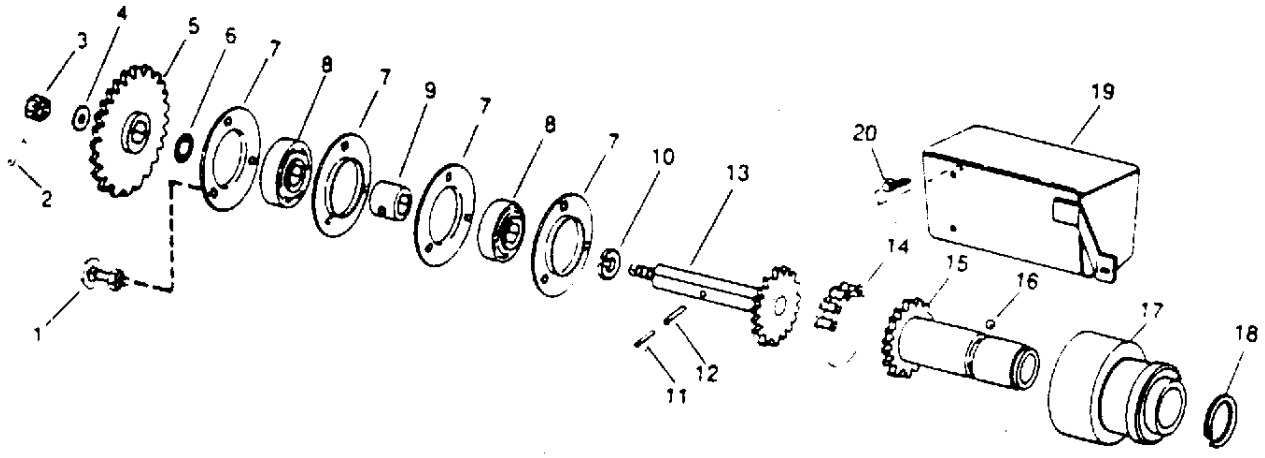


H44872 -UN-06AUG92

1—Self-Locking Screw (4 used)
2—Flange Nut (7 used)
3—Bracket
4—Cap Screw, 1/2 x 1 in.
5—Washer, 17/32 x 15/16 x 0.060 in.
6—Housing
7—Bearing
8—Bolt, 3/8 x 3/4 (3 used)
9—Shield
10—Nut (2 used)
11—Rivet, 5/16 x 1/2 in. (2 used)
12—Shield
13—Snap Ring

HX,1401,10010BA-19-28JAN93

MAIN DRIVE SHAFT AND COUPLER
344

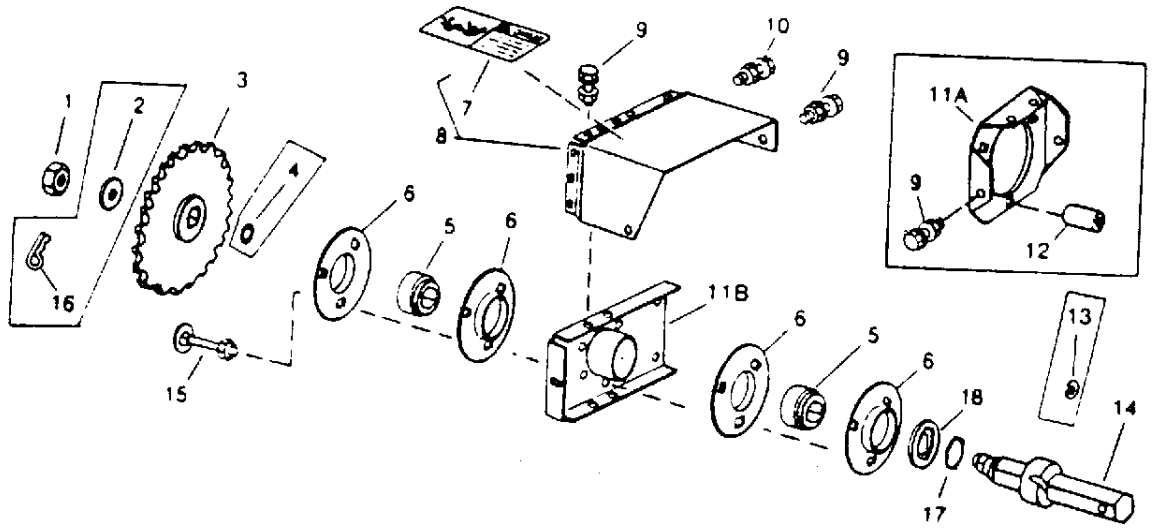


H44867 -UN-06AUG92

1—Screw, 3/8 x 3-3/4 (3 used)
2—Cotter Pin, 5 x 50 mm
3—Nut, 3/4 in.
4—Washer, 25/32 x 1-5/8 x 1/4 in.
5—Sprocket, 24 Tooth
6—O-Ring
7—Housing (4 used)
8—Bearing (2 used)
9—Bushing
10—Washer, 3/4 in. (S.N. —416850)
11—Spring Pin, 3/16 x 1-3/4 in.
12—Spring Pin, 5/16 x 1-3/4 in.
13—Shaft
14—Chain
15—Sprocket, 14 Tooth
16—Ball
17—Quick Coupler
18—Snap Ring
19—Shield, L.H.
20—Screw (2 used)

HX,1401,10010BB-19-16DEC92

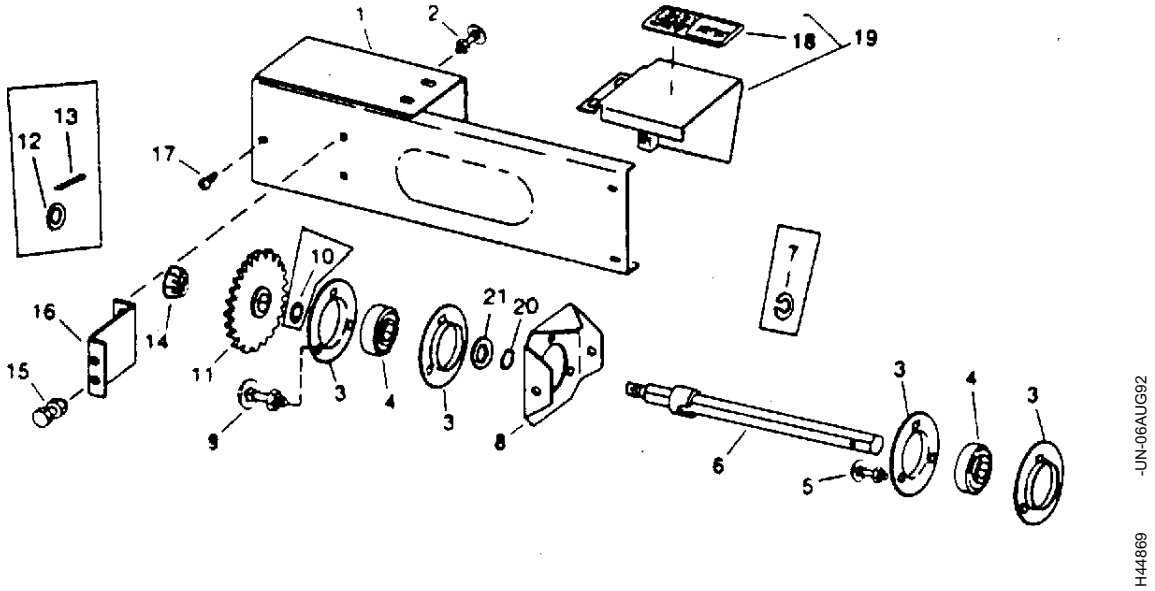
MAIN DRIVE SHAFT AND COUPLER
444 (R.H. AND L.H.) (—466450)
444 (R.H.) (466451—600000)
444 (R.H. AND L.H.) (600001—640500)



1—Nut
2—Washer, 25/32 x 1-5/8 x 1/4 in. (S.N. —630300)
3—Sprocket, 24 Tooth (S.N. —620350)
Sprocket, 28 Tooth (S.N. 620351—)
4—O-Ring (S.N. —630300)
5—Bearing (2 used)
6—Housing (4 used)
7—Decal, "Danger"
8A—Guard
8B—Shield
9—Self-Locking Screw
10—Self-Locking Screw
11A—Bracket (S.N. —383768)
11B—Bracket
12—Spacer, 3/8 x 2 in. (3 used) (S.N. —383768)
13—Lock Washer, 3/4 in. (S.N. —416850)
14—Shaft
15—Bolt, 3/8 x 3-1/4 in.
16—Cotter Pin, 5 x 50 mm (S.N. 516351—630300)
17—Seal (S.N. 46650—)
18—Retainer (S.N. 46650—)

HX,1401,10010BC-19-16DEC92

MAIN DRIVE SHAFT AND COUPLER
643 (—640500)



1—Shield
2—Bolt, 5/16 x 3/4 in.
3—Housing (4 used)
4—Bearing (2 used)
5—Bolt, 3/8 x 3/4 in. (3 used)
6—Shaft
7—Lock Washer, 3/4 in. (S.N. —416850)
8—Holder (S.N. —630300)
9—Bolt, 3/8 x 1 in. (3 used)
10—O-Ring (S.N. —630300)
11—Sprocket, 24 Tooth (S.N. 620504)
Sprocket, 28 Tooth (S.N. 620505—)
12—Washer, 25/32 x 1-5/8 x 1-1/4 in. (S.N. —630300)
13—Cotter Pin (S.N. 516351—630300)
14—Nut, 3/4 in.
15—Self-Locking Screw (2 used)
16—Support
17—Screw
18—Decal, “Danger”
19—Shield
20—Seal (S.N. 46650—)
21—Retainer (S.N. 46650—)

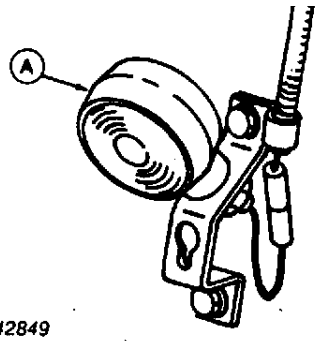
HX,1401,10010BD-19-16DEC92

STUBBLE LIGHT BULB REPLACEMENT

Remove nut securing housing (A).

Unscrew housing from base.

Push AD2062R (1156) bulb in and turn to remove.



TM1581,HX100,CX-19-18AUG94

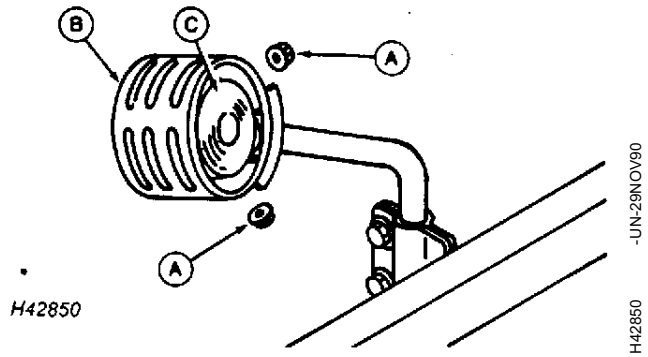
HEADER WARNING LIGHT BULB REPLACEMENT

Remove nuts (A).

Remove shield (B).

100 10 52 Unscrew housing (C) from bulb base.

Push AD2062R (1156) bulb in and turn to remove.



1581,10010,YA -19-03OCT94

TORQUE VALUES

	Torque N·m (Lb-Ft.)
Countersunk head cap screws by gathering chain sprockets	110 N·m (80 lb-ft.)
Gatherer chain guide cap screws	95 N·m (70 lb-ft.)
Trash knife cap screws	95 N·m (70 lb-ft.)
Idler support block cap screws	95 N·m (70 lb-ft.)
Fluted stalk roll class 10.9 cap screws	140 N·m (100 lb-ft.)
Knife stalk roll:	
Casting to shaft	40 N·m (30 lb-ft.)
Front knife cap screws	80 N·m (60 lb-ft.)
Rear knife cap screws	40 N·m (30 lb-ft.)
Eargate cap screws	20 N·m (15 lb-ft.)
Deckcover wear plate	20 N·m (15 lb-ft.)
Cover locking angle	20 N·m (15 lb-ft.)

1581,10015,ZT -19-03OCT94

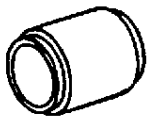
SPECIAL TOOLS

The following JDC400 series tools are required to properly service the corn head gear case. They are not offered as a complete set, but must be ordered individually. In addition, some of the various drivers in D01045AA Driver Set are also required for use with the JDC400 series tools.

HX,1401,10010,A-19-03OCT94

H45090 -UN-08SEP92

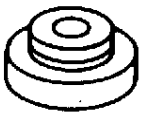
Number: *JDC400-1 Seal Installer
Use: To install gatherer shaft seals.



HX,1401,10010CC-19-03OCT94

H45091 -UN-08SEP92

Number: *JDC400-2 Plug Installer
Use: To install expansion plugs.



HX,1401,10010CD-19-03OCT94

H45092 -UN-08SEP92

Number: *JDC400-3 Spacer
Use: To install gatherer drive shaft bushings.

HX,1401,10010CE-19-03OCT94

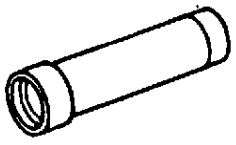
H45093 -UN-08SEP92

Number: *JDC400-4 Spacer
Use: To install input shaft needle bearing.

HX,1401,10010CF-19-03OCT94

H45094 -UN-08SEP92

Number: *JDC400-5 Seal Installer
Use: To install barrel seals.



HX,1401,10010CG-19-03OCT94

H45095 -UN-08SEP92

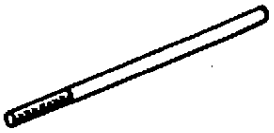
Number: *JDC400-6 Seal Driver
Use: To install input shaft seal

*Order from:
Service Tools, Box 314, Owatonna, MN 55060

HX,1401,10010CH-19-03OCT94

H45096 -UN-08SEP92

Number: *JDC400-7 Handle
Use: Used with various drivers and spacers.



HX,1401,10010CI-19-03OCT94

H45097 -UN-08SEP92

Number: *JDC400-8 Spacer
Use: To install barrel bearings.

HX,1401,10010CJ-19-03OCT94

H45099 -UN-08SEP92

Number: *JDC400-10 Stalk Roll Timing Tool
Use: To set correct timing of stalk rolls.

HX,1401,10010CL-19-03OCT94

Number: *D01045AA Master Bushing and Seal Driver Set
Use: Some of the drivers in this set are required for use with JDC400 series tools.

Number: *D01046AA Tool Organizer Board
Use: Keeps D01045AA set components in proper order and safe from loss. Tools not included.

Number: *JDG450 Mechanical Puller or JDG610 hydraulic puller
Use: To pull stalk rolls (not shown).

*Order from:
Service Tools, Box 314, Owatonna MN 55060

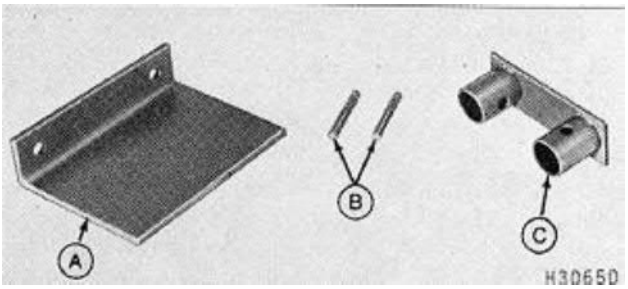
-UN-16JUN89
H36476

HX1581,10015,FA-19-03OCT94

MAKING SPECIAL TOOLS

In addition to the JDC400 series tools, the following tools can be made in the dealer shop for servicing the corn head gear case.

A—Gear Case Support
B—Locating Dowel Studs
C—Timing Tool

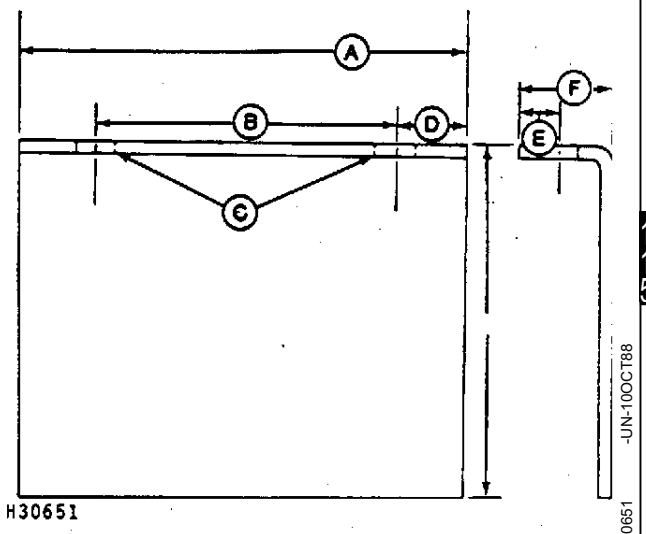


-UN-15JUN89
H30650

HX,1401,10010,C-19-03OCT94

The gear case support bracket is used for mounting the gear case in a vise. Make it from 6.4 mm (1/4 in.) steel plate.

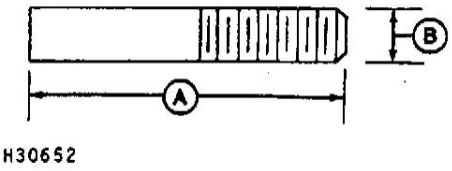
A—203 mm (8 in.)
B—152 mm (6 in.)
C—Two Holes,
13 mm (17/32 in.) dia.
D—25 mm (1 in.)
E—25 mm (1 in.)
F—51 mm (2 in.)



HX,1401,10010,D-19-16DEC92

Barrel assembly locating dowel studs are used to assist in mounting the barrel assembly on the gear case. Make two studs by cutting off the heads of two 19H2530 3/8 x 3 in. cap screws.

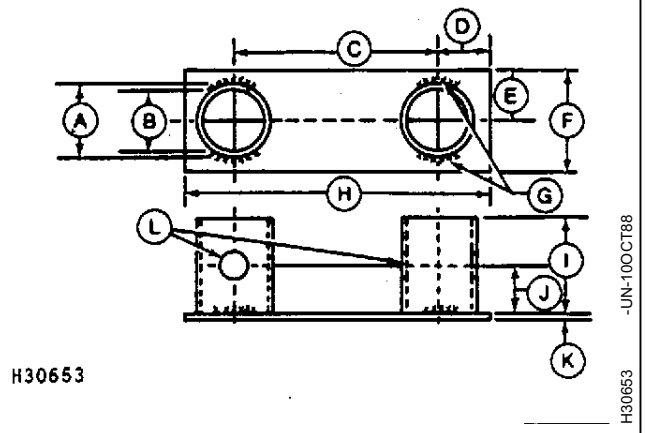
A—76 mm (3 in.)
B—9.6 mm (3/8 in.)



HX,1401,10010,E-19-16DEC92

If the JDC400-10 tool is not available, a stalk roll timing tool can be made.

A—37 mm (1-7/16 in.)
B—32 mm (1-9/32 in.)
C—102 mm (4 in.)
D—25 mm (1 in.)
E—25 mm (1 in.)
F—51 mm (2 in.)
G—Weld
H—152 mm (6 in.)
I—37 mm (1-7/8 in.)
J—24 mm (15/16 in.)
K—3 mm (1/8 in.)
L—13 mm (17/32 in.)
Diameter Holes. Time as shown.



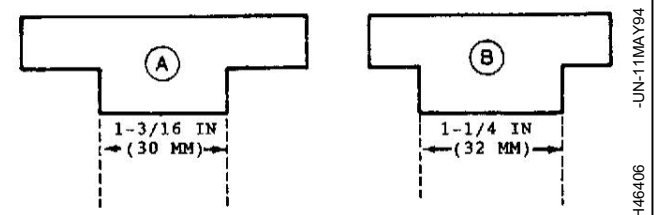
HX,1401,10010,F-19-03OCT94

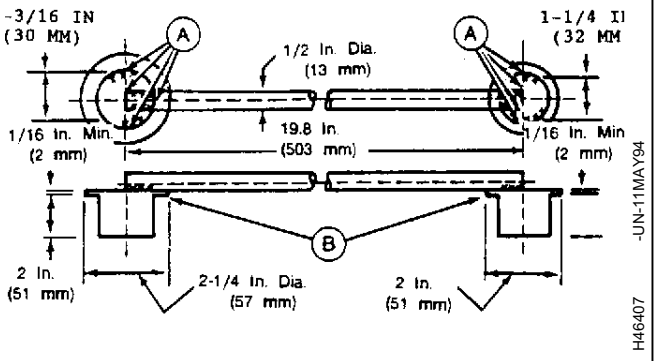
Wood Gauge
A-Front
B-Rear

Metal Gauge
A-Weld
B-Do Not Weld

100
15
6

If the JDC400-9 gauge is not available, a gauge for deck plate spacing can be made from wood or metal.





HX1581,10015,CA-19-03OCT94

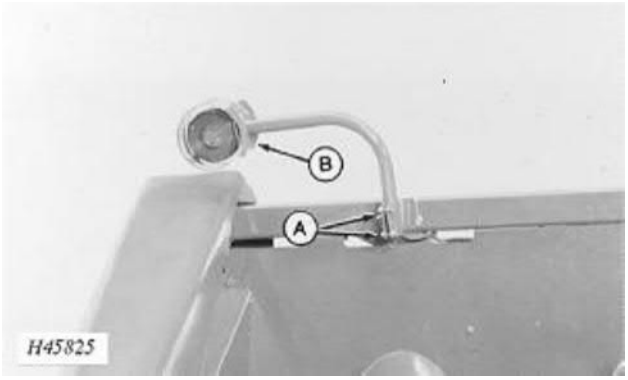
GENERAL INFORMATION

As the combine moves through the field, the gatherer points are positioned between the rows of corn. The stalk rolls pull the corn stalks down so the ear will be snapped on the deck plates. Trash knives prevent weeds and trash from wrapping around the stalk rolls. The gatherer chains catch the ears and move them up to the auger. The auger then moves the ears to the front of the feeder house where the rubber paddles feed the ears into the feeder house.

TM1581,10015,C -19-03OCT94

REMOVE AUGER

1. Loosen cap screws (A) and rotate header warning light (B) rearward.



TM1581,10015,D -19-03OCT94

2. Remove spring locking pin (A) securing rear of end fenders to support.

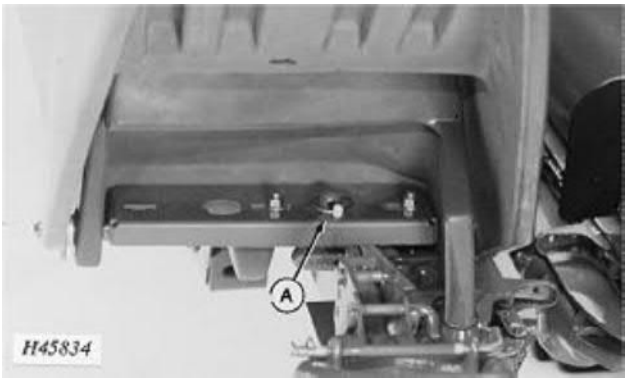
HX1581,10015,G -19-03OCT94

3. Raise point and remove quick-lock pin (A).

CAUTION: Outer point and shield is heavy and awkward to handle.

4. Raise point and shield and slide shield off of hinge pins.

5. Lift end fender and point assembly off of row unit.



-UN-22JUL93
H45834

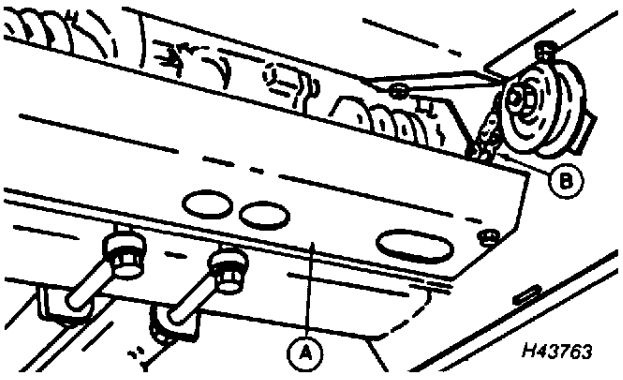
-UN-10FEB94
H46184

TM1581,10015,F -19-03OCT94

To remove:

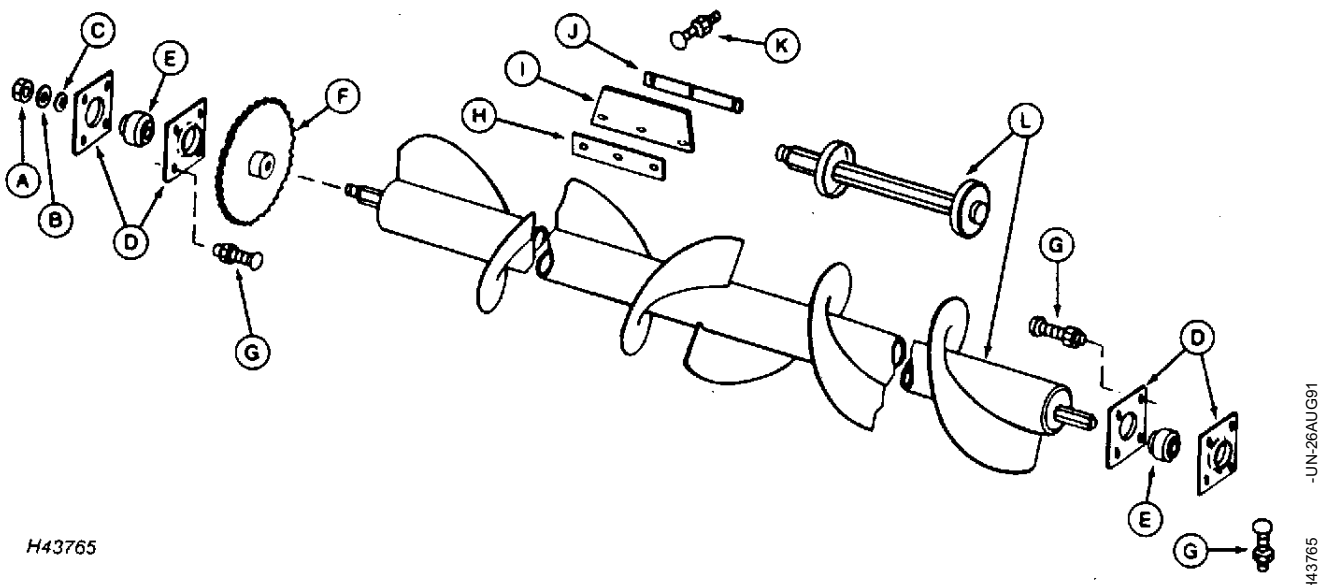
6. Remove row unit drive shaft shield (A).

7. Turn auger by hand and disconnect auger drive chain (B). Wedge auger securely by placing a wood block under auger, aligning at each end.



-UN-26AUG91
H43763

TM1581,10015,G -19-03OCT94



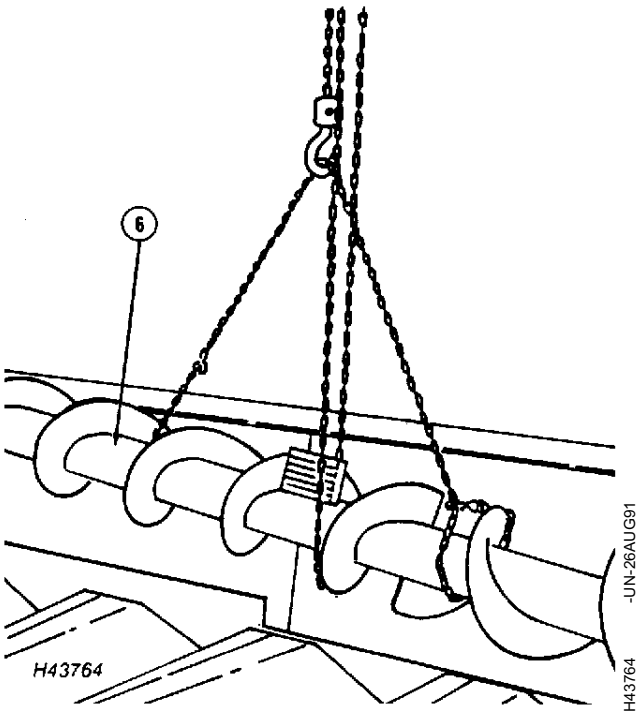
8. Remove nut (A) and washer (B). Disconnect and remove chain on sprocket (F).

9. Remove cap screws (G), housings (D) and bearing (E) on left-hand end of auger.

10. Use a safe hoist and remove by lifting right-hand end of auger up and out of corn head first. Complete removal by swinging auger out and over center shields.

Inspect all parts for damage or excessive wear and replace as required.

A—Nut, M20 (8 used)
B—Washer, Lock, 3/4 in. (8 used)
C—Washer, 25/32 x 1-5/8 x 0.180 in. (8 used)
D—Housing (4 used)
E—Bearing (2 used)
F—Sprocket
G—Bolt, M10 x 20 (8 used)
H—Strap
I—Paddle
J—Strap
K—Bolt, M10 x 20 (3 used)
L—Auger



TM1581,10015,H -19-03OCT94

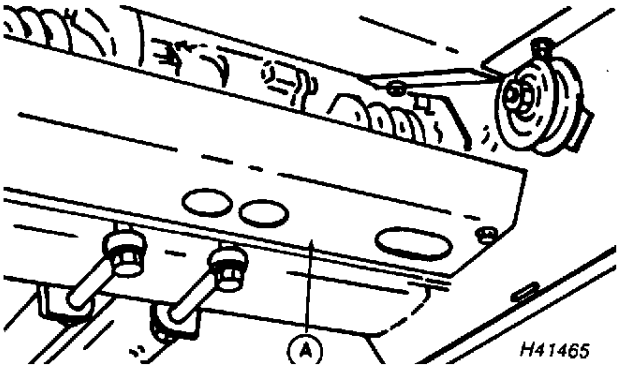
ASSEMBLY AND INSTALLATION

1. Reinstall in reverse order.

IMPORTANT: Be certain to place hub side of sprocket against the auger to insure sprocket alignment.

2. Install row unit drive shaft shield (A).

3. Install right-hand outer gatherer sheet and point.



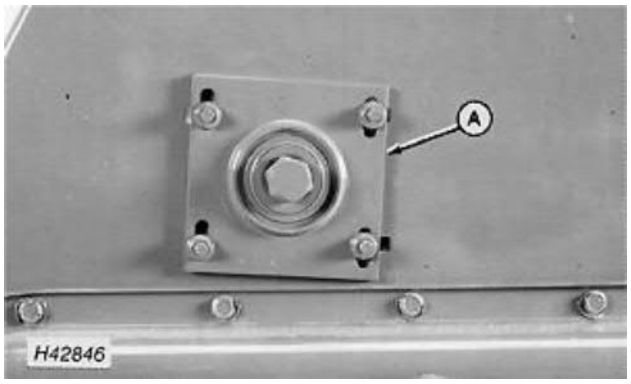
-UN-20NOV89
H41465

TM1581,10015,I -19-03OCT94

4. Both sides of the corn head main frame and auger bearing carriers (A) are slotted for adjusting the auger. The auger can be adjusted up and down and fore and aft for proper clearance with bottom of feed bed.

5. Keep the auger adjusted down and to the rear as far as possible in normal dry conditions. In damp, sticky or heavy trash conditions, adjust the auger up and forward to move material away from the row unit.

6. In normal conditions, keep a minimum of 6 mm (1/4 in.) clearance between auger and auger stripper.



-UN-29NOV90
H42846

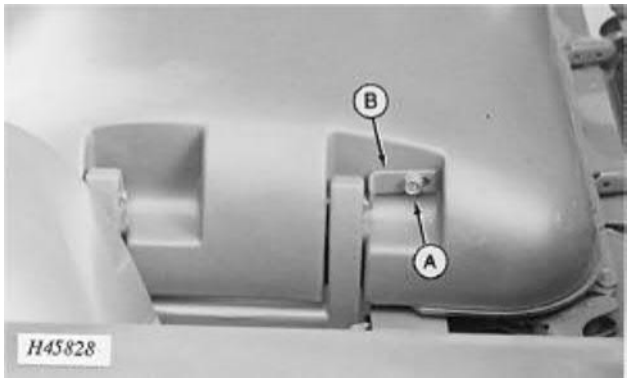
1581,10015,ZH -19-03OCT94

ROW UNIT FRAME, GATHERER CHAINS, TRASH KNIVES AND DECK PLATES

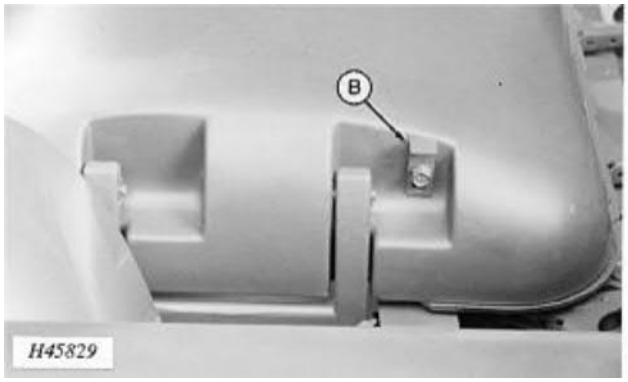
CAUTION: Never run corn head with center shields raised or removed. Always shut off engine before leaving machine.

1. Loosen cap screw (A) on the rear of the gatherer shield and raise stop (B) to the vertical position.

NOTE: Do not torque bolt (A) over 20 N·m (15 lb-ft).



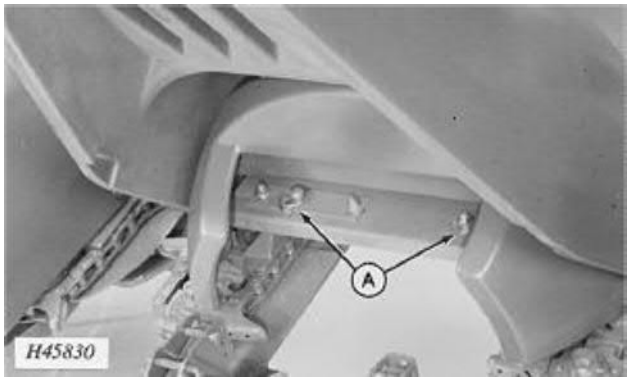
-UN-22JUL93
H45828



-UN-22JUL93
H45829

HX1581,10015,H -19-03OCT94

2. Raise the point and remove quick-lock pins (A).



-UN-22JUL93
H45830

TM1581,10015,K -19-03OCT94

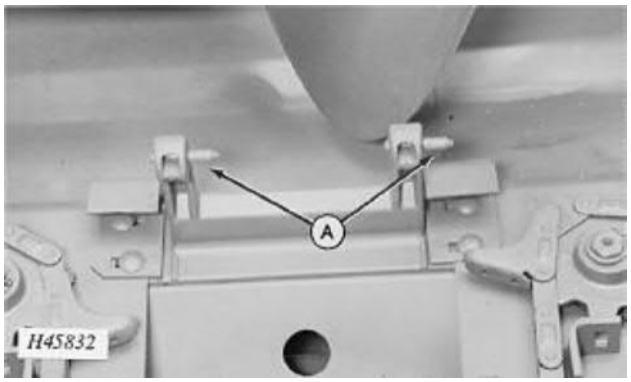
3. Lift the point and gatherer shield.

4. Slide the gatherer shield to the right until the shield is free of support pins (A).

CAUTION: The center shield and point assembly is heavy and awkward to handle.

5. Lift off point and gatherer shield assembly.

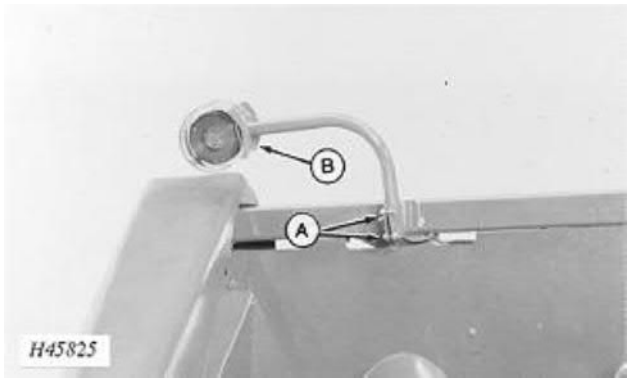
H45831 -UN-22JUL93



H45832 -UN-22JUL93

TM1581,10015,L -19-03OCT94

6. Loosen cap screws (A) and rotate header warning light (B) rearward.



H45825 -UN-22JUL93

TM1581,10015,M -19-03OCT94

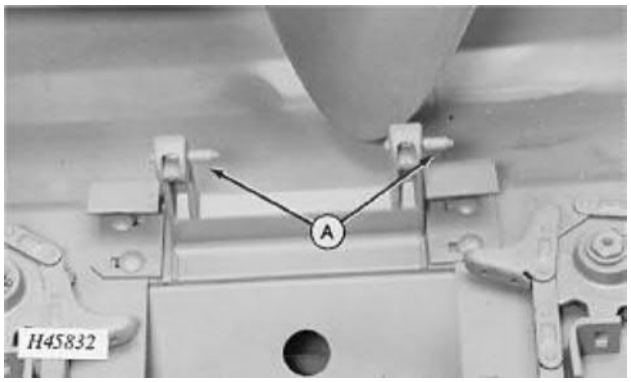
7. Lift the point and gatherer shield.

8. Slide the gatherer shield to the right until the shield is free of support pins (A).

CAUTION: The center shield and point assembly is heavy and awkward to handle.

9. Lift off point and gatherer shield assembly.

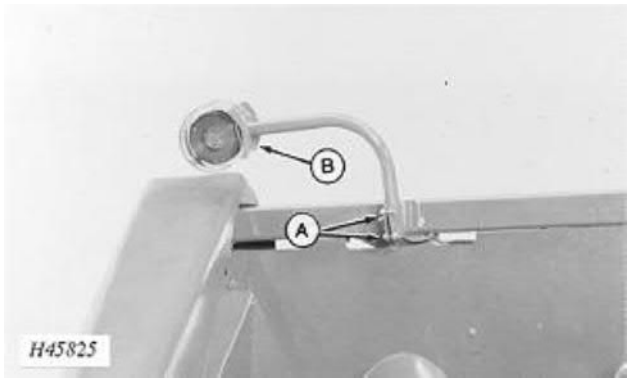
H45831 -UN-22JUL93



H45832 -UN-22JUL93

TM1581,10015,N -19-03OCT94

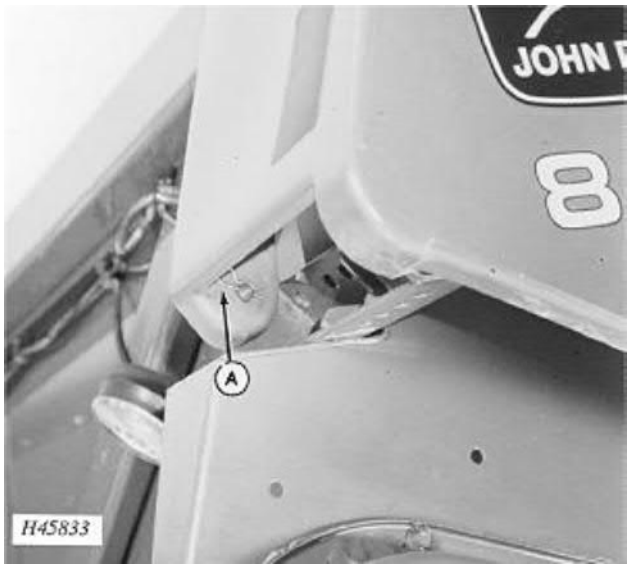
10. Loosen cap screws (A) and rotate header warning light (B) rearward.



H45825 -UN-22JUL93

TM1581,10015,O -19-03OCT94

11. Remove spring locking pin (A) securing outer gatherer shield to support.



H45833 -UN-22JUL93

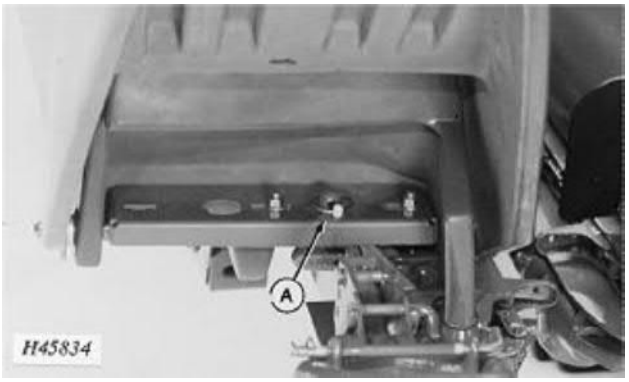
TM1581,HX100,DC-19-18AUG94

12. Raise point and remove quick-lock pin (A).

CAUTION: Outer point and shield is heavy and awkward to handle.

13. Raise point and shield and slide shield off of hinge pins.

14. Lift outer gatherer shield and point assembly off of row unit.



-UN-22JUL93
H45834

-UN-22JUL93
H45835

TM1581,10015,Q -19-03OCT94

CAUTION: Never service any part of the gatherer chain mechanism or idler sprocket until nut (G) is tight against the leg of the idler support strap.

15. Loosen nut (D).

100
15
16

16. Relieve gatherer chain tension by turning nuts (G) until it is against the leg of the idler support strap.

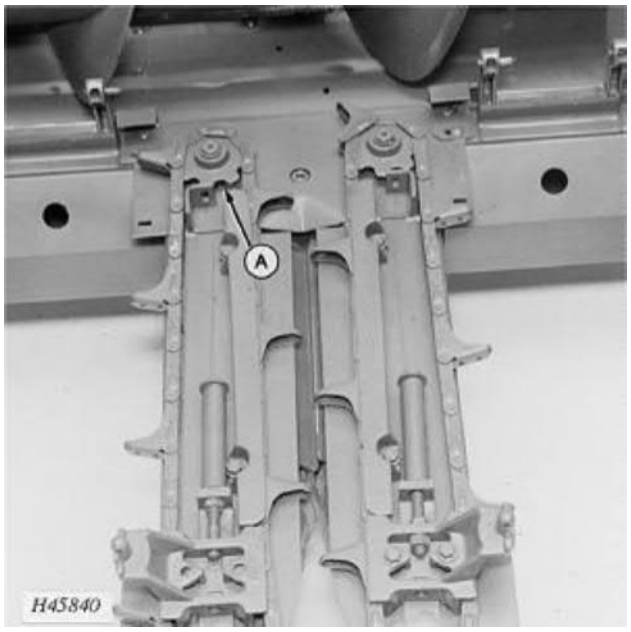
17. Loosen bolt (F) until tension is off gatherer chain and tube (E).

18. Remove bolts (C). This will allow the idler sprocket to move back so the gatherer chain (B) can be removed.

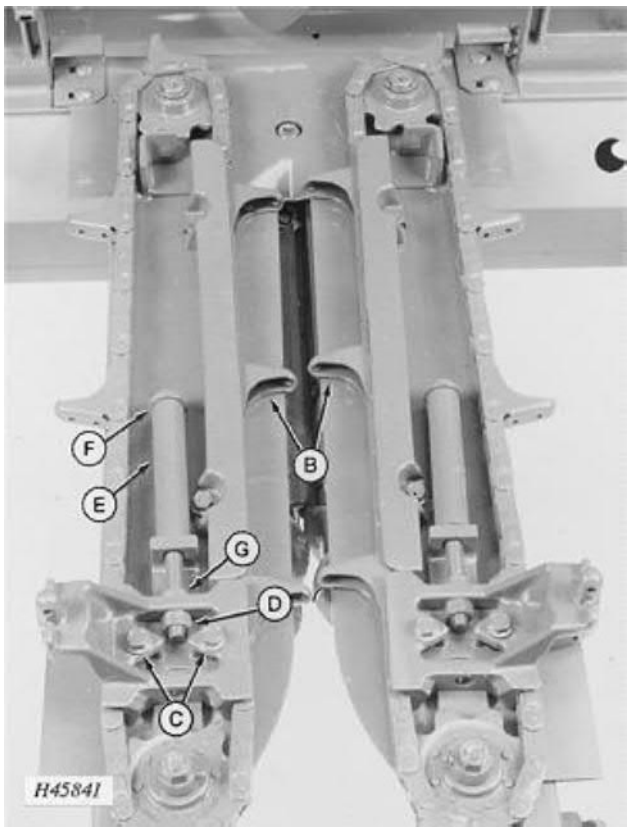
NOTE: If idler sprocket will not slide back, remove entire idler assembly and clean idler support strap and the slot in the idler support bracket.

19. Remove chain (B) from sprocket (A).

A—Sprocket
B—Chain
C—Bolts
D—Nut
E—Tube
F—Bolt



H45840 -UN-03AUG93



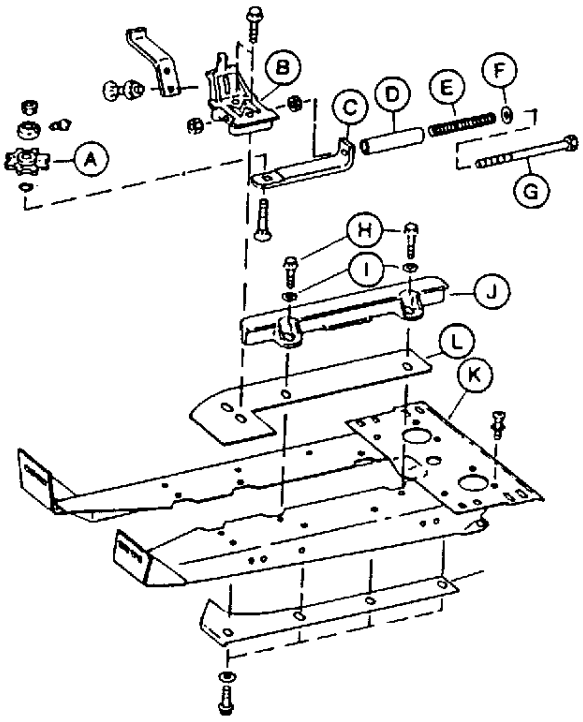
H45841 -UN-03AUG93

TM1581,10015,R -19-03OCT94

20. Remove idler sprocket (A), idler support (B), idler support strap (C), idler stop (D), spring (E), flat washer (F) and machine bolt (G).

21. Remove two cap screws (H) and flat washers (I), attaching chain guide (J) to row unit frame (K).

22. Remove deck plate (L).

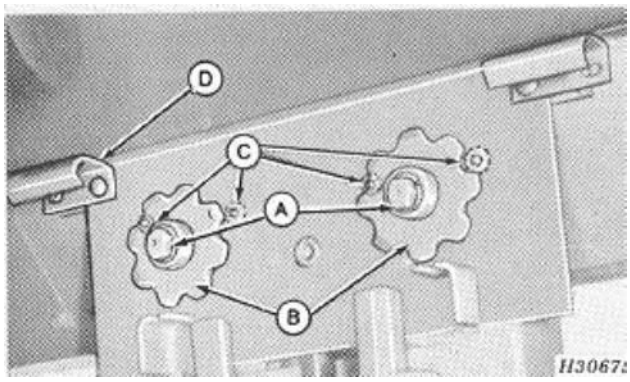


H46402 -UN-11MAY94

TM1581,10015,S -19-03OCT94

23. Remove snap ring (A) and remove drive sprocket (B).

24. Remove countersunk head cap screws (C) and deflectors (D).



H30675 -UN-05DEC91

TM1581,10015,T -19-03OCT94

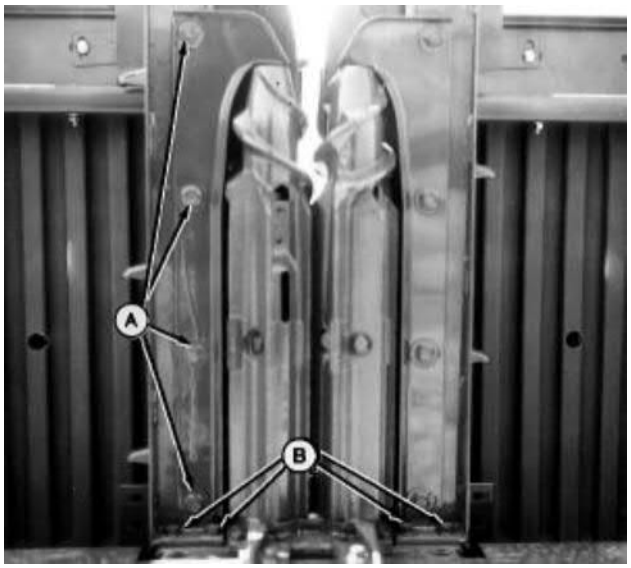
25. Remove attaching cap screws (A) and remove trash knives.

CAUTION: Approximate weight of row unit frame is 23 kg (50 pounds); use two people to remove it from the corn head.

100
15
18

26. Remove four row unit attaching cap screws (B) and lift row unit frame off stalk rolls and gearcase.

NOTE: Refer to "Gear Case Removal" for information concerning removal, service and installation.



TM1581,10015,U -19-03OCT94

INSPECTION AND REPAIR

Inspect all parts removed from the row unit frame for damage and excessive wear. Replace parts as necessary.

1401,10010,L -19-12SEP91

ASSEMBLY AND INSTALLATION

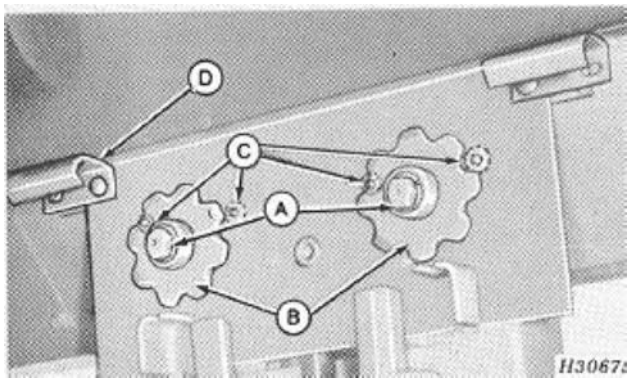
1. Install gear case if it has been removed for service. Refer to Gearcase Removal in this Section.

2. Install stalk rolls on gear case. Refer to Gearcase Removal in this Section.

3. Install row unit frame with four countersunk head cap screws (C). After all cap screws are installed, tighten to 110 N·m (80 lb-ft) torque.

4. Install deflectors (D).

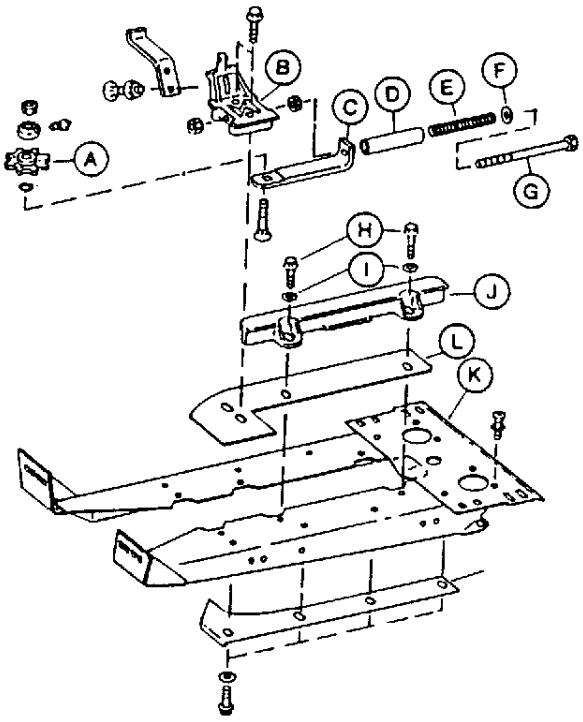
5. Install drive sprockets (B) on hex shafts and secure with snap rings (A).



HX1581,10015,J -19-03OCT94

6. Install deck plates (L) and chain guides (J) with flat washers (I) and cap screws (H). Do not tighten cap screws at this time. See Adjusting Deck Plates.

7. Install machine bolt (G), flat washer (F), spring (E), idler stop (D), idler support strap (C), idler support (B) and idler sprocket (A).



HX1581,10015,K -19-03OCT94

ADJUSTING DECK PLATES AND GATHERER CHAIN GUIDES

The deck plates (A) snap ears from the stalks as the stalks are pulled down by the stalk rolls (B).

The corn head is shipped from the factory with the deck plates spaced 30 mm (1-3/16-in.) apart at the front and 32 mm (1-1/4-in.) apart at the rear to cover most conditions. The deck plates can be adjusted for different varieties of corn and varying field conditions.

To minimize the amount of trash and stalk intake, the deck plates must be open as far as possible without causing shelling.

1. Raise the center shields.

2. Loosen four bolts (C) on both deck plates.

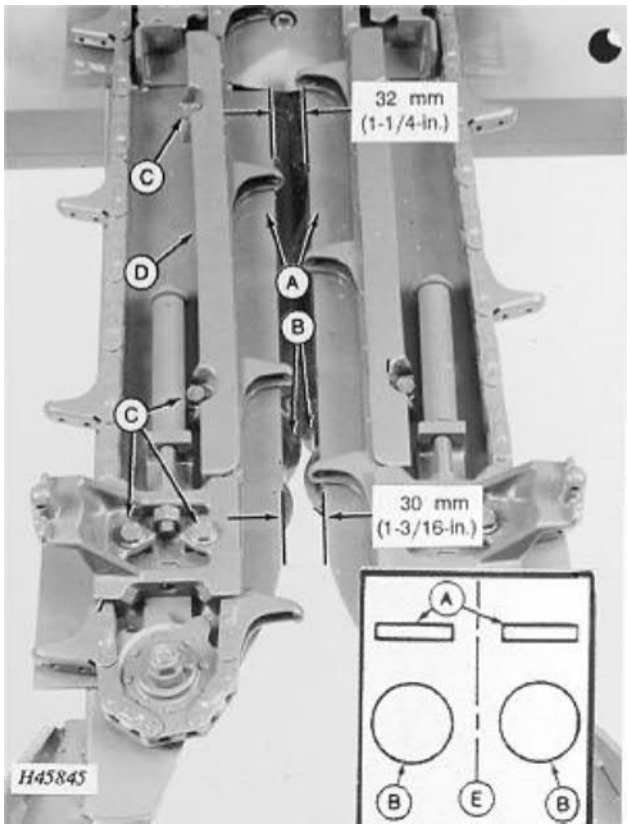
3. Position deck plates so the center space between the edge of the deck plates is located over the center space between the stalk rolls (B).

4. Adjust gatherer chain guides (D) in until they are just touching the gatherer chains.

5. Torque bolts (C) on guides and deck plates to 95 N·m (70 lb-ft).

NOTE: Deck plates must be spaced 1.5 to 2 mm (1/16- to 5/64-in.) wider apart at the rear than at the front.

IMPORTANT: The center of space (E) between deck plates must be located over the center of space (E) between stalk rolls.

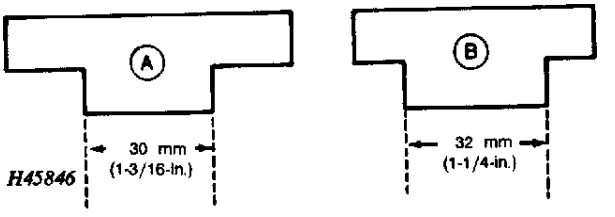


A—Deck Plates
B—Stalk Rolls
C—Bolts
D—Gatherer Chain Guide
E—Center Line

TM1581,10015,W -19-03OCT94

A gauge for deck plate spacing can be made from wood or metal.

A—Front
B—Rear



Wood Gauge

CRNHD,90OCH,AD -19-14SEP93

ROW UNITS

The row unit houses the trash knives, gathering chains, deck plates, and stalk rolls. Ears of corn are snapped from the stalk and conveyed to the auger by the row unit. Row unit speed and combine travel speed are directly related.

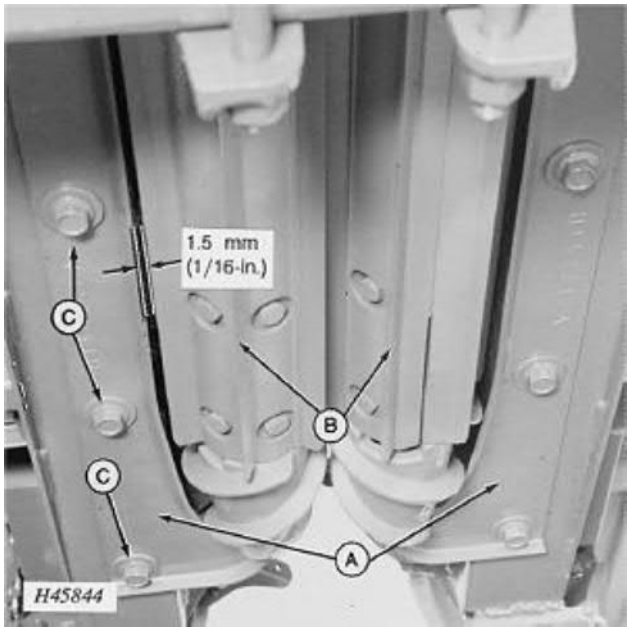
CRNHD,90OCH,AA -19-14SEP93

ADJUSTING TRASH KNIVES

1. Trash knives (A) prevent weeds and trash from wrapping around stalk rolls (B).

2. Knives must be set as close as possible to the rolls without striking the flutes.

3. Loosen knife attaching bolts (C) and adjust each trash knife to a maximum of 1.5 mm (1/16-in.) of the highest flute on the stalk roll. Torque bolts to 95 N·m (70 lb-ft).



-UN-03AUG93
H45844

TM1581,10015,X -19-03OCT94

STALK ROLLS

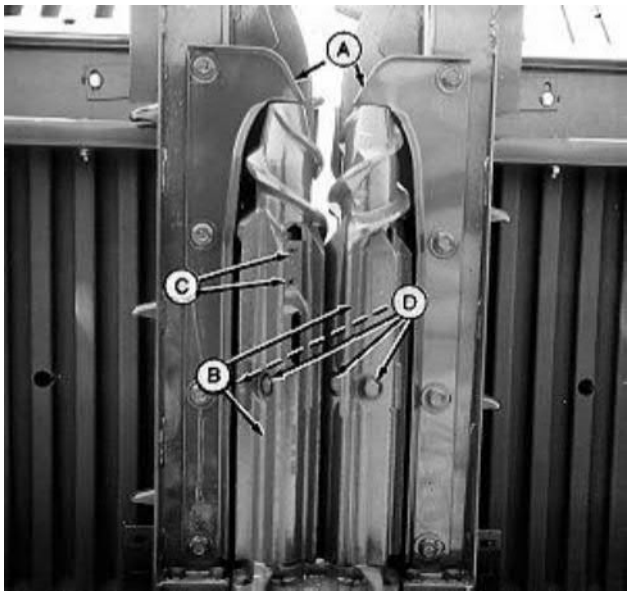
To remove:

CAUTION: Lower hydraulic cylinder safety stop before working under corn head.

100
15
22

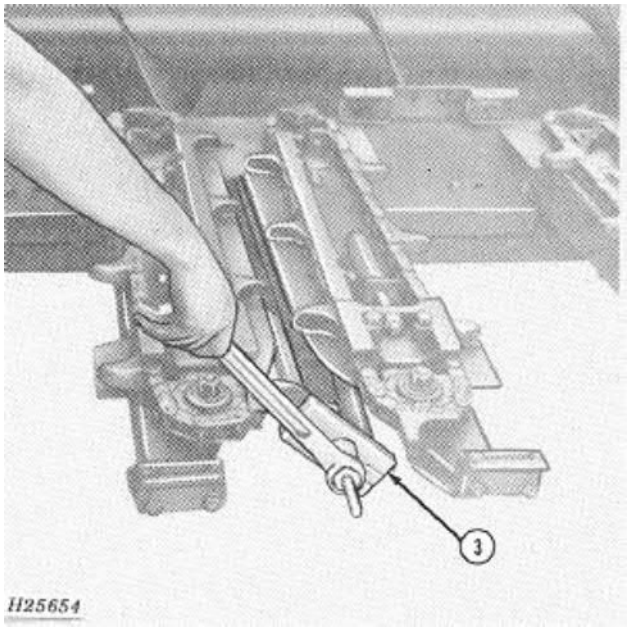
1. Remove trash knives (A) from underside of row unit frame.

2. Remove stalk roll (B) from shafts by driving out double spring pins (C) and removing class 10.9 cap screws (D). Clean out slots in stalk rolls to permit installing puller.



TM1581,10015,Y -19-03OCT94

3. Use JDG450 puller (3) or JDG610 hydraulic puller to pull stalk roll off gear case shaft.



TM1581,10015,Z -19-03OCT94

INSPECTION

Inspect stalk rolls for wear or damage. Stalk rolls are available as service parts.

TM1581,10015,AA-19-03OCT94

INSTALLATION

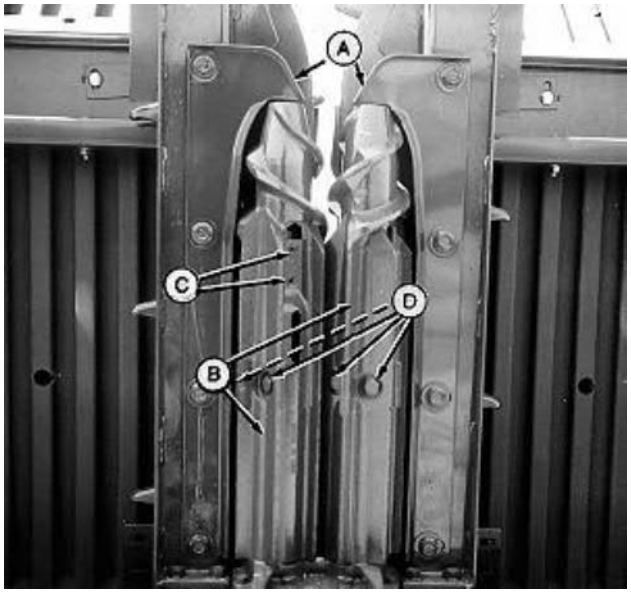
1. Clean stalk roll shaft and outside of barrel. Coat shaft with grease before sliding on new roll.

NOTE: The spirals on the FRONT rotate to move material to the rear of the stalk roll. The flutes turn down and toward the opposite stalk roll.

2. Secure stalk roll (B) to shaft with double spring pins (C) and two class 10.9 cap screws (D). Tighten cap screws to 150 N·m (110 ft-lbs.).

IMPORTANT: If stalk roll cap screws are replaced, use only 19M7361 M12 x 50 class 10.9 cap screws.

3. Refer to “Adjusting Trash Knives” and adjust the trash knives (A).



H46409 -UN-01MAY94

TM1581,HX100,DF-19-18AUG94

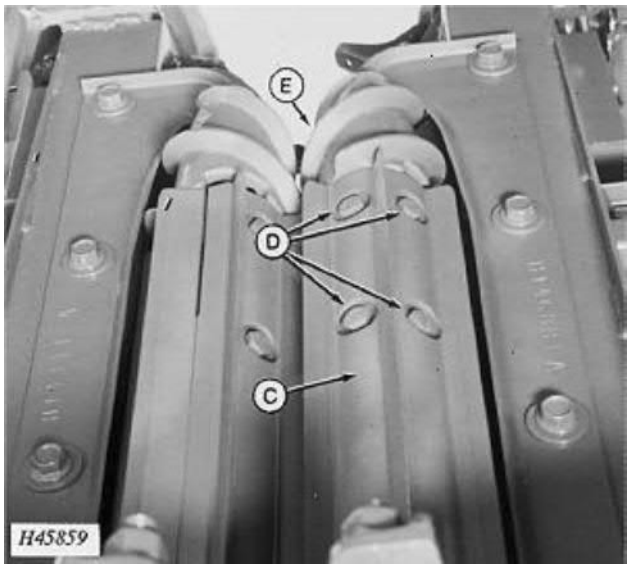
KNIFE STALK ROLLS

CAUTION: Keep hands and feet away from stalk rolls.

Knife Stalk Rolls (Optional) The stalk roll knives (C) are attached to the stalk roll casting with M8 x 55 cap screws and M10 x 16 cap screws (D). Torque M8 cap screws to 40 N·m (30 lb-ft). Torque M10 cap screws to 80 N·m (60 lb-ft).

The stalk roll castings (E) are attached to the shaft with M10 x 30 six lobe head screws and a double spring pin. Torque M10 screws to 40 N·m (30 lb-ft).

IMPORTANT: Check after first eight to twelve hours of operation when corn head is new or when stalk rolls are replaced.



H45859 -UN-14SEP93

Knife Stalk Rolls (Optional)

TM1581,HX100,DG-19-18AUG94

ADJUSTABLE DECK PLATES
REMOVE ADJUSTABLE DECK PLATES

1. Remove two M12 x 65 cap screws (A) from left-hand idler support (B).

2. Remove gatherer chain from left-hand side of row unit.

3. Remove idler support (B) and chain tensioner assembly from row unit.

4. Remove two M12 x 50 cap screws (C) with washers from chain guide (D).

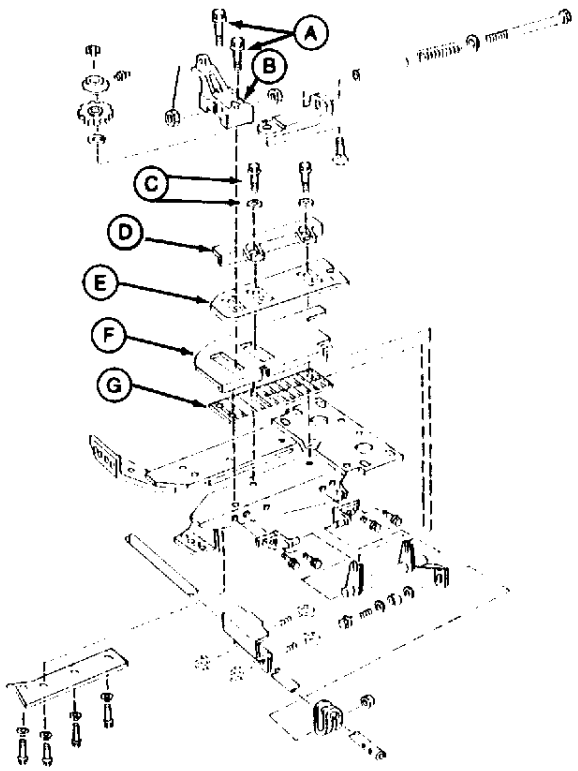
5. Remove chain guide.

6. Remove cover plate (E).

7. Remove deck plate (F).

8. Remove slide (G).

9. Clean and inspect parts. Replace as necessary.



A—Cap Screws, M12 x 65 (2 used)
B—Idler Support
C—Cap Screws, M12 x 50 (2 used)
D—Chain Guide
E—Cover Plate
F—Deck Plate
G—Slide

HX1581,10015,AA-19-03OCT94

INSTALL ADJUSTABLE DECK PLATES

1. Be sure ALL parts are clean and free of dirt and trash.

2. Place slide (G) on left-hand row unit leg. Align holes.

3. Install deck plate on row unit on top of slide (G). Pins of plate must engage ears of pivot arm.

4. Install spacer plate (E) with tabs down through slots in deck plate (F) to slide (G).

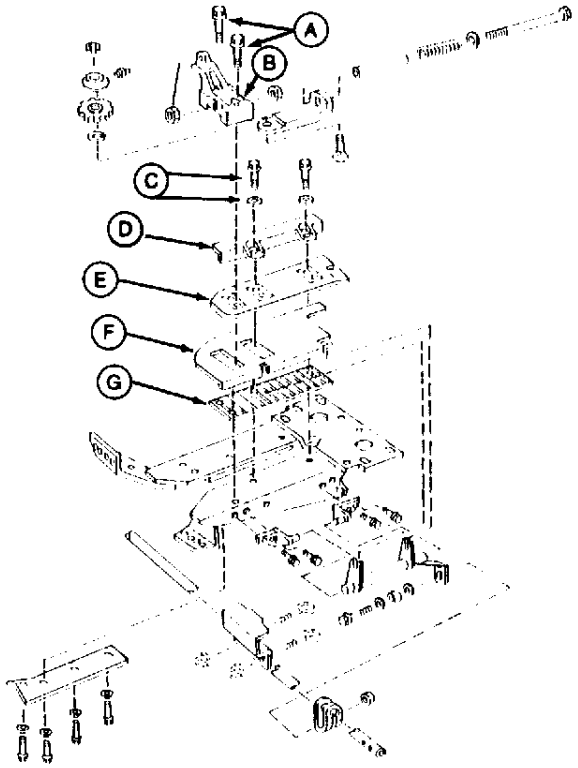
5. Install chain guide (D) with two M12 x 50 cap screws and washers (C).

6. Install gatherer chain and tightener.

7. Install idler support (B) and chain tensioner assembly to row unit with two M12 x 65 cap screws (A).

8. Torque bolts (C) and (A) to 95 N·m (70 lb-ft).

A—Cap Screw, M12 x 65 (2 used)
B—Idler Support
C—Cap Screw, M12 x 50 (2 used)
D—Chain Guide
E—Cover Plate
F—Deck Plate
G—Slide



H46694 -UN-18SEP94

HX1581,10015,AB-19-03OCT94

ADJUSTABLE DECK PLATES, TIE BAR, PIVOT ARMS AND CYLINDER

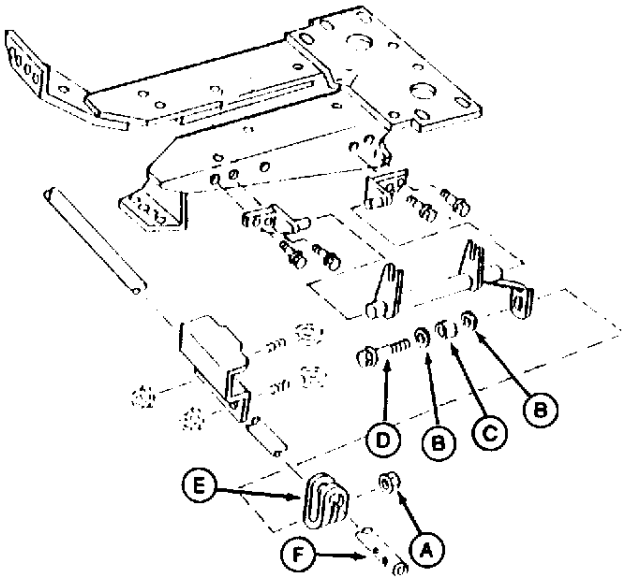
REMOVE TIE BAR

1. Remove nut (A), washers (B) and spacer (C) from bolt (D).

2. Remove bolt (D) from clamp (E) on each row unit.

3. Spread each clamp (E) to slide clamp (E) on tie bar (F).

A—Nut
B—Washers (2 used)
C—Spacer
D—Bolt
E—Clamp
F—Tie Bar



H46695 -UN-18SEP94

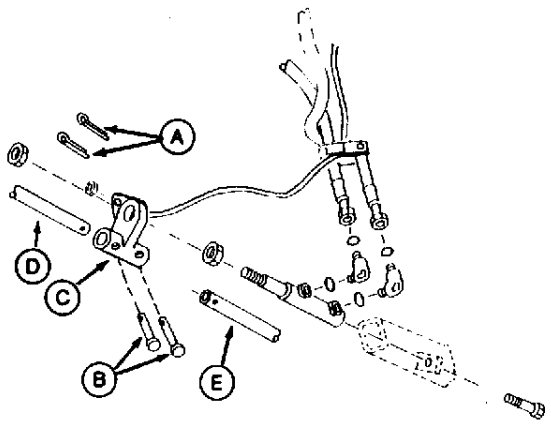
HX1581,10015,AC-19-03OCT94

4. Remove cotter pins (A) and drilled pins (B) from tie bar coupler (C).

5. Separate left-hand tie bar (D) and right-hand tie bar (E) from coupler (C).

6. Remove left-hand tie bar (D) and right-hand tie bar (E).

A—Cotter Pin
B—Drilled Pin
C—Coupler
D—Left-Hand Tie Bar
E—Right-Hand Tie Bar



H46705 -UN-22SEP94

HX1581,10015,AD-19-03OCT94

INSTALL TIE BAR

1. Install left-hand tie bar (A) and right-hand tie bar (B) through supports (C).

NOTE: Install clamps (D) loose on tie bars.

100 15 28

2. Connect tie bars (A) and (B); one on each row unit.

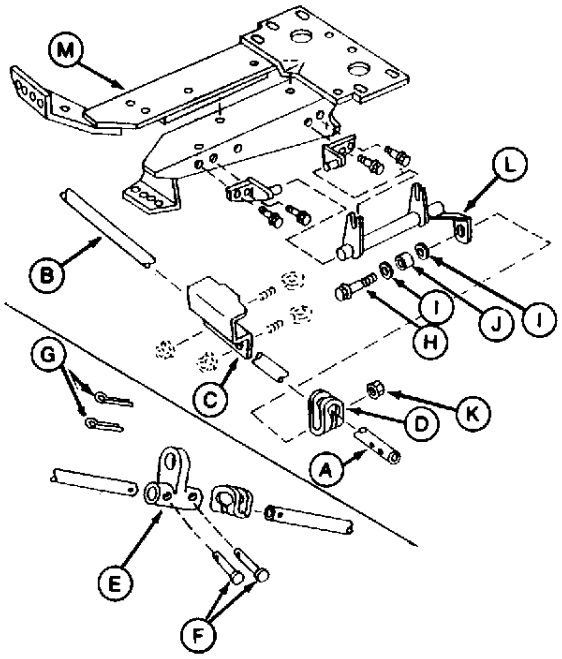
3. Install drilled pins (F) and cotter pins (G).

4. Retract deck plate hydraulic cylinder.

5. Install bolt (H) with washer (I), spacer (J), washer (I) and nut (K) through tie bar clamp (D) and pivot arm (L). Do NOT tighten at this time.

6. Close deck plates until 3 mm clearance is obtained between pivot arm (L) and row unit frame (M).

7. Tighten nut (K) until clamp (D) is closed tight.



H46697 -UN-18SEP94

A—Tie Bar, Left-Hand
B—Tie Bar, Right-Hand
C—Support
D—Clamps
E—Coupler
F—Pins, Drilled
G—Pins, Cotter
H—Bolt
I—Washer
J—Spacer
K—Nut
L—Pivot Arm
M—Frame, Row Unit

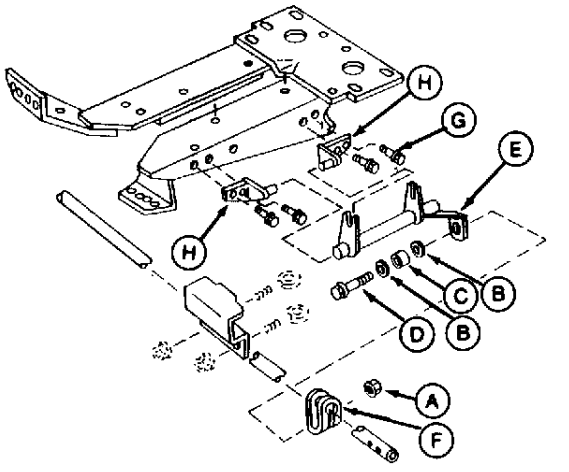
HX1581,10015,AE-19-03OCT94

REMOVE PIVOT ARMS

1. Remove nut (A), washers (B), spacer (C) and bolt (D) from pivot arm (E) and tie bar clamp (F).

2. Remove M12 x 25 cap screws (G) from pivot arm support (H).

3. Remove pivot arm (E).



H46698 -UN-18SEP94

A—Nut
B—Washer
C—Spacer
D—Bolt
E—Pivot Arm
F—Clamp
G—Cap Screw, M12 x 25
H—Pivot Arm Support

HX1581,10015,AF-19-03OCT94

INSTALL PIVOT ARMS

1. Install pivot arms (E) on pivot supports (H).

2. Install four M12 x 25 cap screws (G) through pivot arm supports (H) onto row unit. Torque to 95 N·m (70 lb-ft).

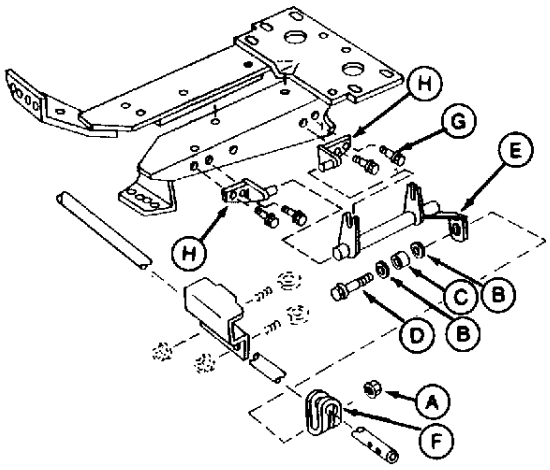
3. Install washer (B) and spacer (C) on bolt (D). Place through large slot on pivot arm (E).

4. Install washer (B) on bolt and insert bolt through bar clamp (F).

5. Install nut (A) on bolt (D). Do NOT tighten at this time.

6. Adjust deck plate CLOSED and cylinder RETRACTED so that there is 3 mm clearance between pivot arm and row unit frame.

7. Tighten bolt (D) and nut (A) until clamp (F) is closed and tie bar is crimped by clamp (F).



H46698 -UN-18SEP94

A—Nut
B—Washer (2 used)
C—Spacer
D—Bolt
E—Pivot Arm
F—Clamp
G—Cap Screw, M12 x 25
H—Pivot Arm Support

HX1581,10015,AG-19-03OCT94

REMOVE CYLINDER

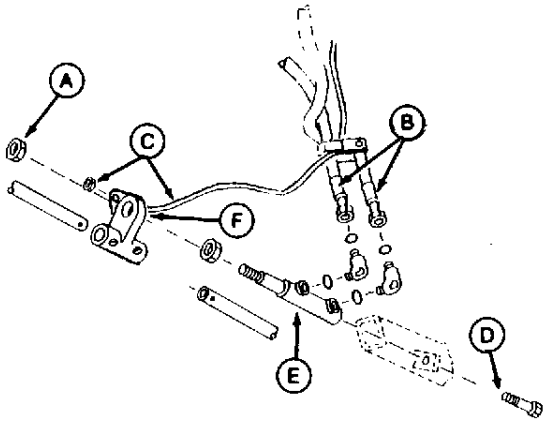
1. Remove outer nut (A).

2. Remove hoses (B).

3. Remove nut (C) from cable and remove cable.

4. Remove bolt (D).

5. Remove cylinder (E) and coupler (F).



H46703 -UN-22SEP94

A—Nut, M20
B—Hoses
C—Nut, M5
D—Bolt
E—Cylinder
F—Coupler

HX1581,10015,AH-19-03OCT94

INSTALL CYLINDER

1. Install cylinder rod (A) with jam nut through coupler (B).

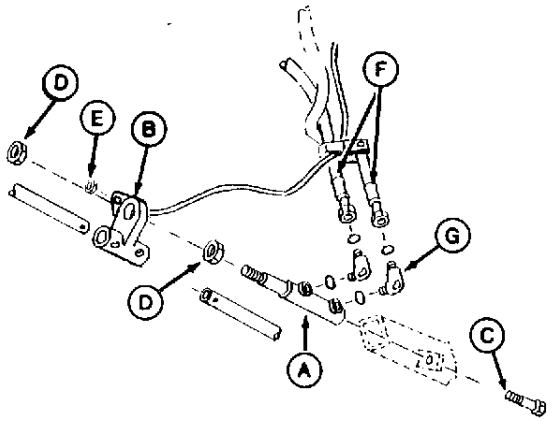
2. Install M20 x 45 cap screw (C) through coupler (B).

3. With cylinder RETRACTED, adjust pivot arms to 3 mm clearance between pivot arm and row unit frame. Tighten nuts (D) on cylinder rod against coupler (B).

4. Install cable and secure with nut (E).

5. Install hoses (F) to fittings (G).

A—Cylinder Rod
B—Coupler
C—Cap Screw, M20 x 45
D—Nuts
E—Nut
F—Hoses
G—Fittings



H46704 -UN-22SEP94

HX1581,10015,AI-19-03OCT94

GEARCASE

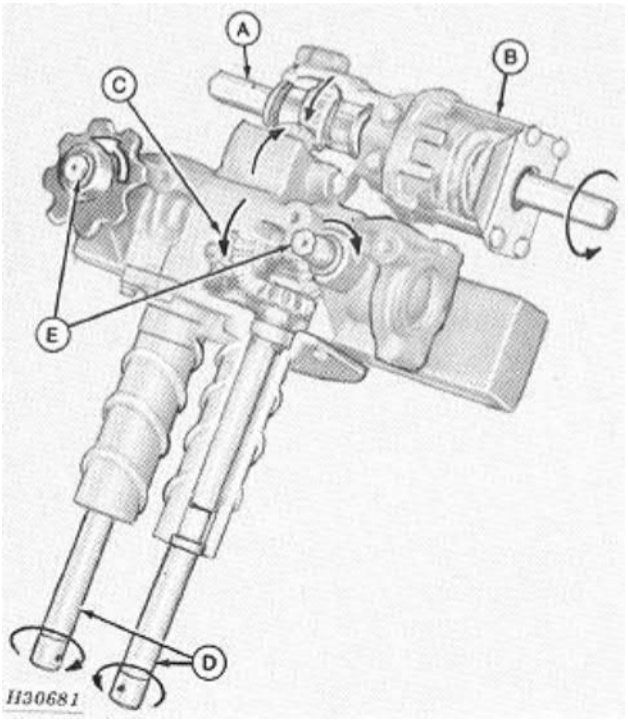
General Information:

On the 90 Series Corn Heads, each row unit is driven by its own gear-type drive. The drive is a fully enclosed case located under each row unit.

A row unit input shaft (A) is driven from the feeder house. This shaft drives the slip clutch (B), which in turn drives the input gear located in the gearcase.

This input gear drives an idler spur gear which drives the main countershaft (C). The main countershaft has two sets of bevel gears. The inner set, which consists of two bevel gears welded to the driving spur gear, drives the stalk roll shafts (D). The outer set of bevel gears drive the gatherer shafts (E).

Each gearcase is protected by a slip clutch (B) located on the input shaft at the upper end of the gearcase.



H30681 -UN-05DEC91

HX1581,10015,GA-19-03OCT94

DIAGNOSING MALFUNCTIONS

• Stalk Rolls Clashing

Stalk roll shafts not properly timed.
Stalk rolls striking trash knives.

• Gearcase Noisy

Lack of grease.
Gears not meshing properly.
Excessive backlash.
Binding of gears.

• Gearcase or Barrel Assembly Excessively Hot

Seal failure causing loss of grease.
Lack of grease.
Binding of gears.
Defective bearings or bushings.
Improperly installed bearing caps.
Dirt packed in stalk roll and on barrel.

• Barrel Assembly Leaking Grease

Defective seal under stalk roll.
Defective bearing.

TM1581,10015,AD-19-03OCT94

REMOVAL

1. Remove gatherer chains and sprockets. (See Removing Gathering Chains in this Section.)

2. Remove upper sprockets and latches. (See Removing Gathering Chains in this Section.)

3. Remove both trash knives (A) from under side of row unit.

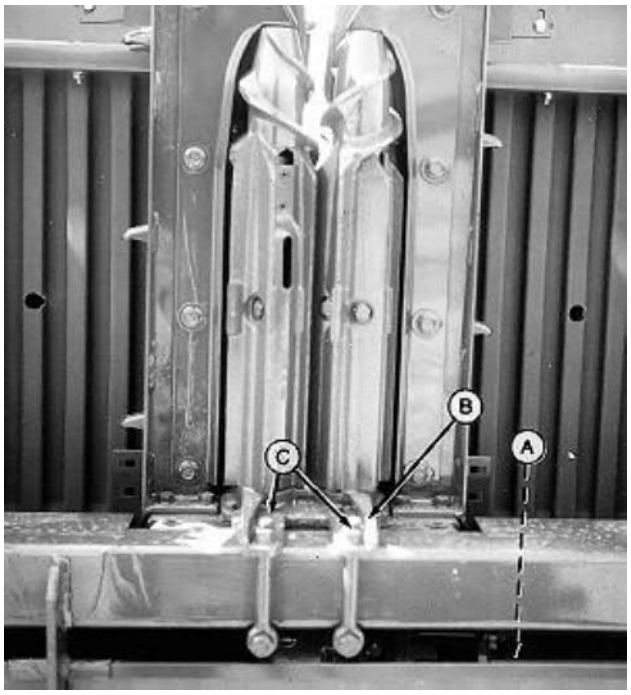
4. Remove row unit frame. (See Row Unit Frame in this Section.)

5. Remove stalk rolls. (See Stalk Roll Removal in this Section.)

6. Pull out row unit hex drive shaft (A). To do this, remove the protective shield and row unit drive chain at the outer end of the corn head. Remove three bolts securing bearing carrier to the corn head frame and pull out drive shaft.

NOTE: There are two drive shafts. One for the right-hand half and one for the left-hand half. Be certain to remove the correct shaft for the gearcase to be serviced.

7. Remove gearcase (B) by removing two cap screws and two eyebolts (C) which secure the gearcase to the corn head frame.

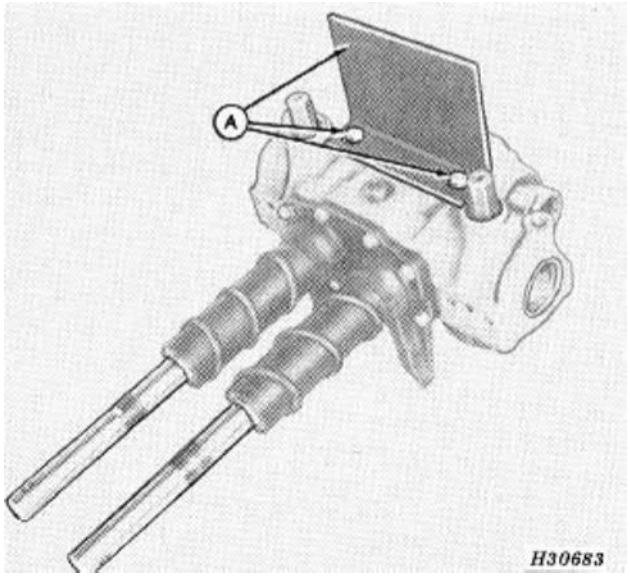


H46410 -UN-01MAY94

TM1581,10015,AE-19-03OCT94

DISASSEMBLY

1. Clean outside of gearcase thoroughly. Attach support bracket (A) (See Special Tools) to gearcase with two 1/2 x 1 in. cap screws.

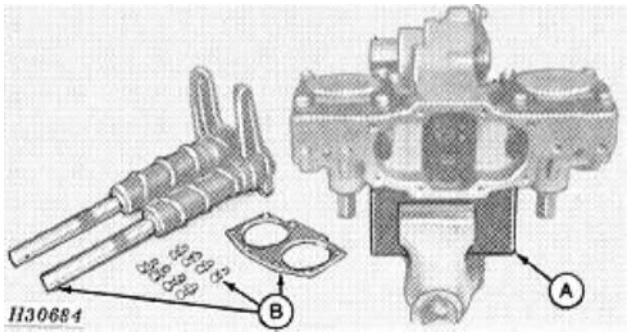


H30683 -UN-05DEC91

HX,1401,10010,K-19-16DEC92

2. Set gearcase with support in vise (A) and remove slip clutch.

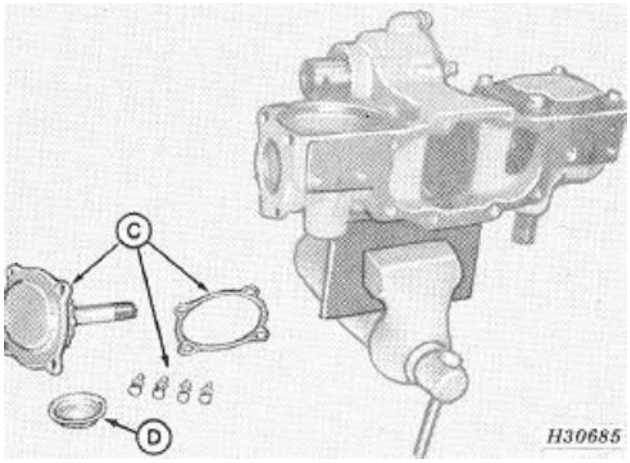
3. Remove barrel assembly with stalk roll shafts and gasket (B) from gearcase and set assembly to one side. If only the barrel assembly or stalk roll shafts are to be serviced, refer to “Servicing Barrel Assembly and Stalk Roll Shafts”.



H30684 -UN-05DEC91

4. Remove gatherer drive shaft assemblies (C). Mark shafts so they can be reinstalled correctly to maintain proper gear wear.

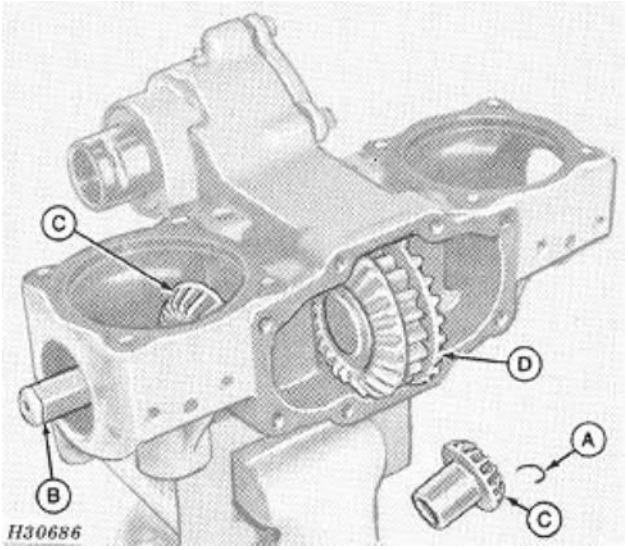
5. Remove end caps (D) from each end of gearcase. Drive out from the inside of gearcase and pry out with a screwdriver. Be careful not to damage sealing surface of cap.



H30685 -UN-05DEC91

1401,10010,Z -19-12SEP91

6. Remove snap ring (A) from either end of hex. countershaft. Remove countershaft and both bevel (C) gears. Roll stalk roll drive gear cluster (D) out front of gearcase.

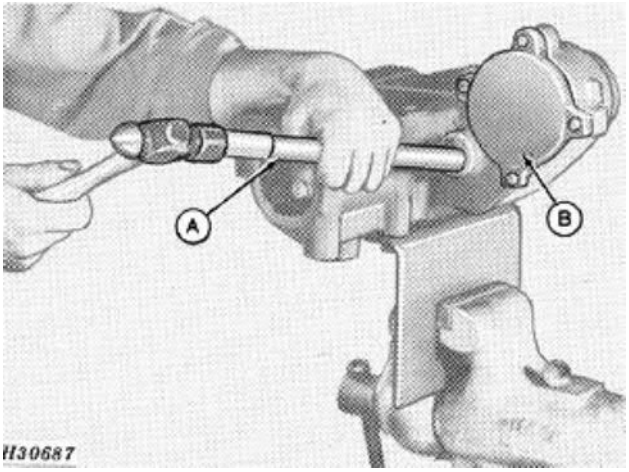


1401,10010,A1 -19-12SEP91

7. Drive in one plug with JDC400-7 handle (A) until the opposite one is loose. Drive shaft back until the remaining plug is loose.

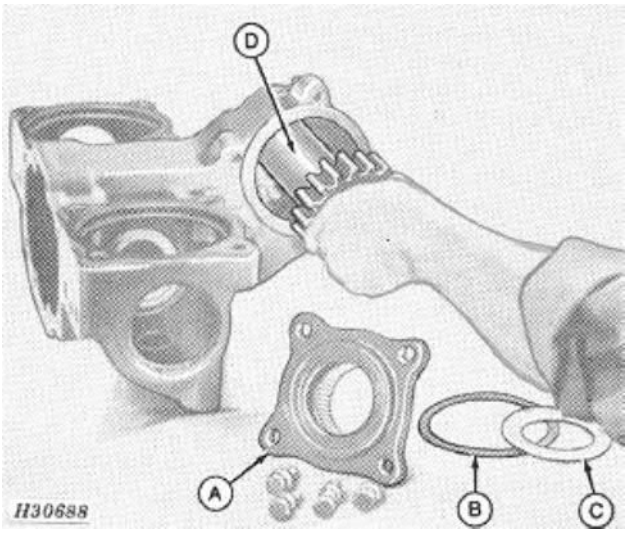
8. Be careful not to damage tolerance ring on shaft. Do not drive ring through idler gear bearings. Drive out idler shaft (B).

9. Remove idler gear out front of gearcase.



HX,1401,10010,L-19-03OCT94

10. Remove input shaft cap (A) with bearings, seal, and gasket (B). Remove thrust washer (C) and input gear and shaft (D).



1401,10010,A3 -19-12SEP91

INSPECTION

Wash all parts thoroughly in a clean, safe solvent. Clean all grease out of gearcase.

Inspect all parts for wear or damage, especially bushings, bearings and seals.

If bushings or bearings need replacement, use the instructions on the following pages.

1401,10010,A4 -19-12SEP91

REPLACING BEARINGS AND BUSHINGS

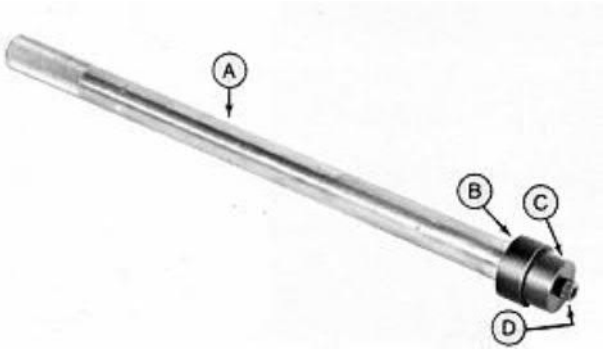
NOTE: The part number is stamped into each special tool.

1401,10010,F7 -19-12SEP91

GATHERER DRIVE SHAFT BUSHING AND SEAL

1. Assemble special tools (A to D) for driving out gatherer drive shaft bushing and seal.

A—JDC400-7 Handle
B—27502, 30.2 mm (1-3/16 in.) Disk
C—27499, 25.4 mm (1 in.) Disk
D—10020 Screw



-UN-15JUN89
H30689

TM1581,10015,AH-19-03OCT94

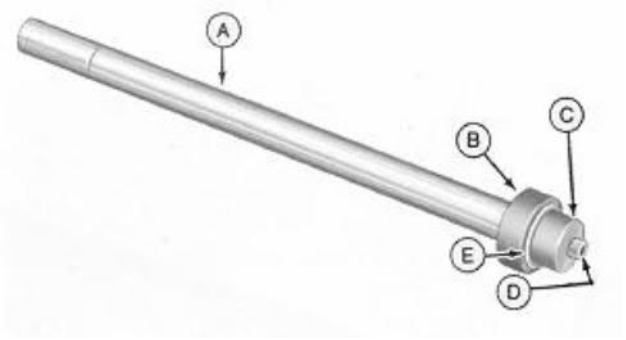
2. Use tool (A) as shown and drive through gatherer cap opening in gear case against bushing (B). Drive out both bushings and seal.

-UN-15JUN89
H30690

HX,1401,10010,N-19-16DEC92

3. Assemble tools (A to E) for installing gatherer drive shaft bearing.

A—JDC400-7 Handle
B—27506, 36.5 mm (1-7/16 in.) Disk
C—27499, 25.4 mm (1 in.) Disk
D—10020 Screw
E—JDC400-3 Spacer

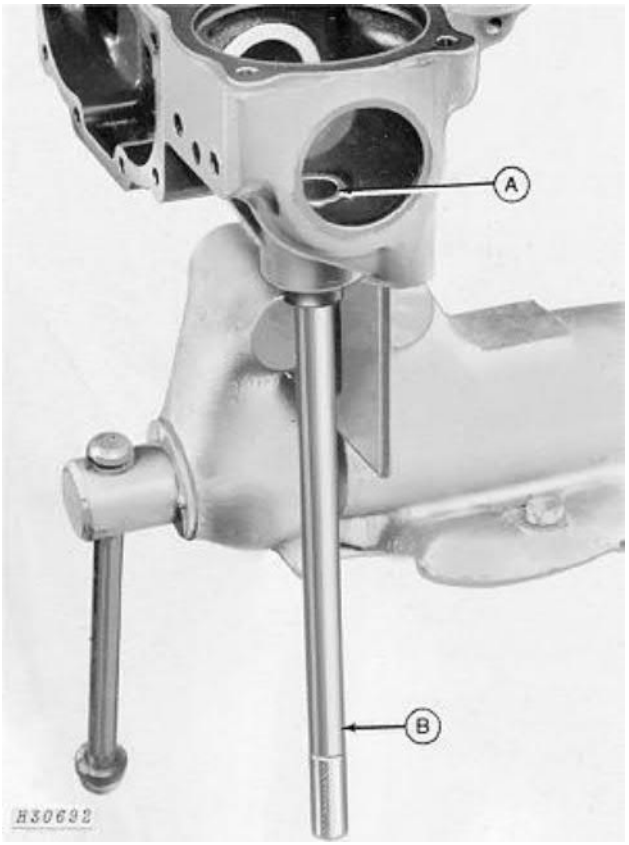


-UN-15JUN89
H30691

TM1581,10015,AI-19-03OCT94

4. Use tools (B) as shown to install bushing. Drive bushing (A) from bottom to obtain proper location of bushing in case.

NOTE: Do not install seal at this time.



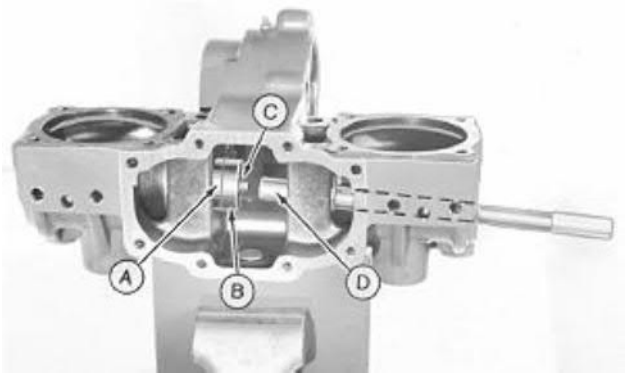
-UN-15JUN89
H30692

TM1581,10015,AJ-19-03OCT94

REPLACING COUNTERSHAFT BUSHINGS

1. Assemble plates (A and B) on screw (C) and insert through opening in front of gear case. Insert handle (D) through opening in end of gearcase and assemble tool inside gearcase.

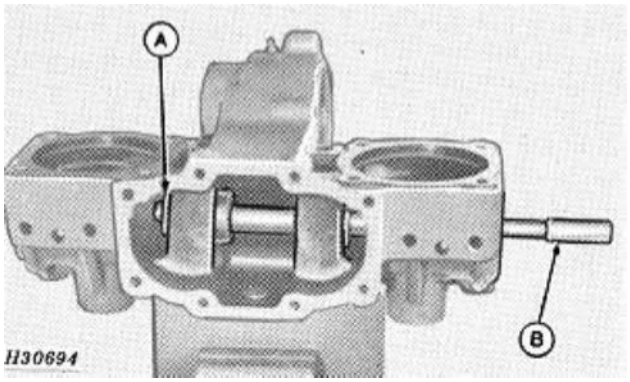
A—27507, 38.1 mm (1-1/2 in.) Disk
B—27512, 46.0 mm (1-13/16 in.) Disk
C—10020 Screw
D—JDC400-7 Handle



-UN-15JUN89
H30693

TM1581,10015,AK-19-03OCT94

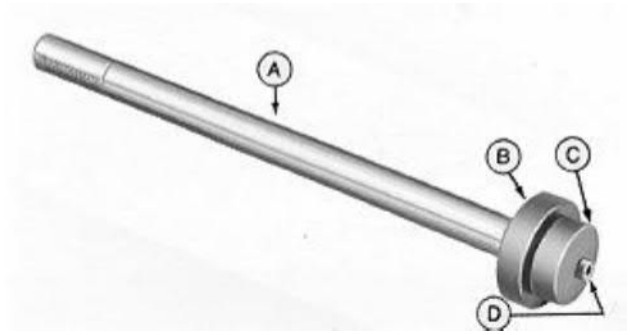
2. Drive out bushing (A), then disassemble tool (B) for removal. If remaining bushing is to be removed, follow the above procedure from the opposite end of the gearcase.



1401,10010,B1 -19-12SEP91

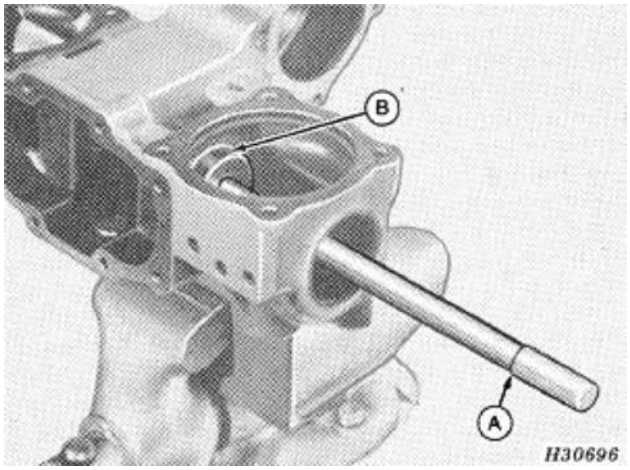
3. Assemble tools (A to D) for installing countershaft bushing.

A—JDC400-7 Handle
B—27520, 50.8 mm (2 in.) Disk
C—27507, 38.1 mm (1-1/2 in.) Disk
D—10020 Screw



TM1581,10015,AC-19-03OCT94

4. Use tools (A) to install new bushing (B).

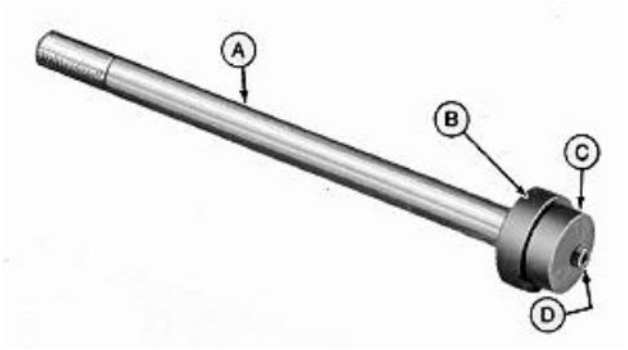


HX,1401,10010,S-19-28JAN93

REPLACING INPUT SHAFT (IN GEARCASE AND INPUT SHAFT CAP) NEEDLE BEARINGS AND SEALS

1. Assemble tool as illustrated.

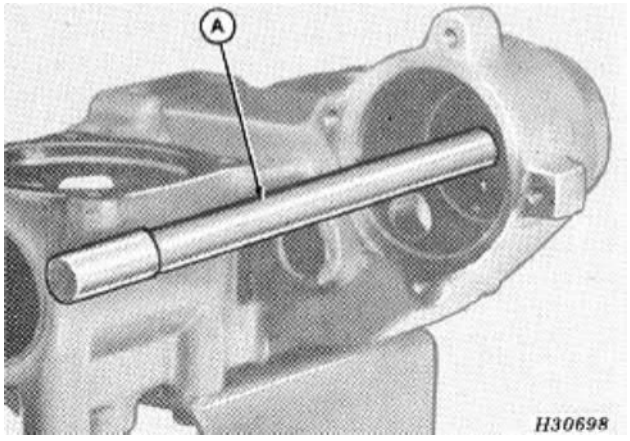
A—JDS400-7 Handle
B—27520, 33.4 mm (2-5/16 in.) Disk
C—27515, 50.8 mm (2 in.) Disk
D—10020 Screw



H30697 -UN-15JUN89

TM1581,10015,AM-19-03OCT94

2. Drive tool (A) against inner end of bearing to remove both seal and bearing.

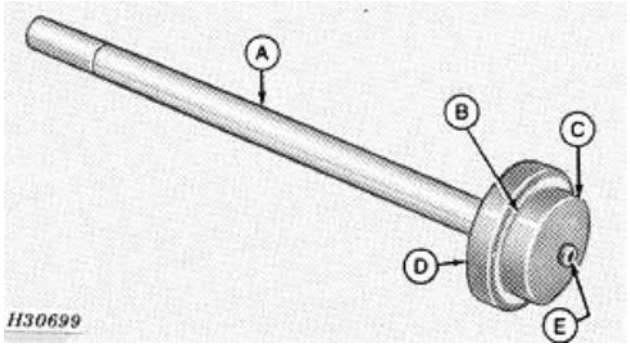


H30698 -UN-05DEC91

1401,10010,B5 -19-12SEP91

3. Assemble tools (A to E) for installing input shaft needle bearing.

A—JDC400-7 Handle
B—JDC400-4 Spacer
C—27525, 66.7 mm (2-5/8 in.) Disk
D—27525, 66.7 (2-5/8 in.) Disk
E—10020 Screw



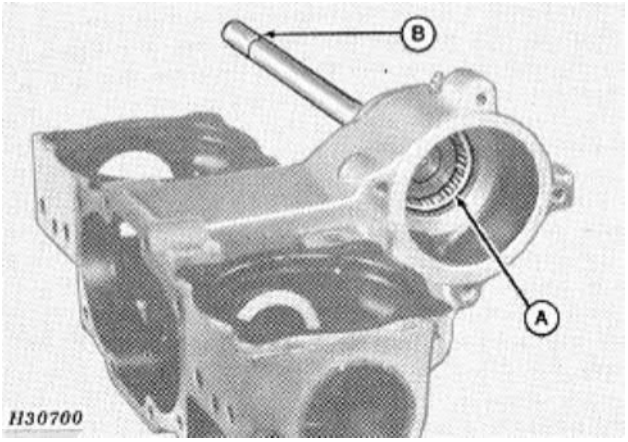
H30699 -UN-05DEC91

TM1581,10015,AN-19-03OCT94

4. Use tools (B) drive bearing (A) from outside of gearcase (or outside of input cap). Install rounded edge of needle bearing in bore and drive against flat edge of bearing.

NOTE: Flat edge of bearing has manufacturer's name and part number stamped into it. Do NOT drive against rounded edge of bearing.

5. Do not install seals until after gears are all installed so proper backlash can be determined.

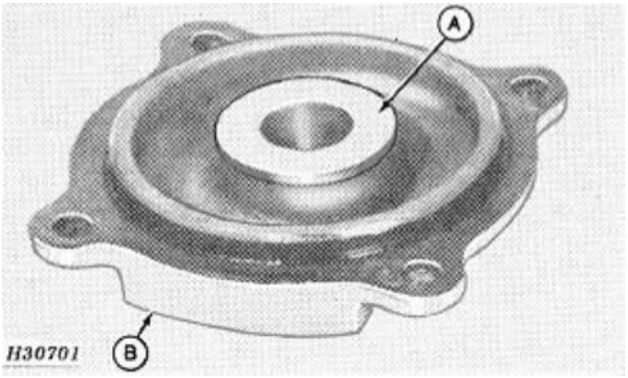


-UN-05DEC91
H30700

HX,1401,10010,V-19-16DEC92

REPLACING GATHERER CAP BUSHINGS

1. Use a screwdriver or slide hammer puller to remove bushing (A) from gatherer cap (B).

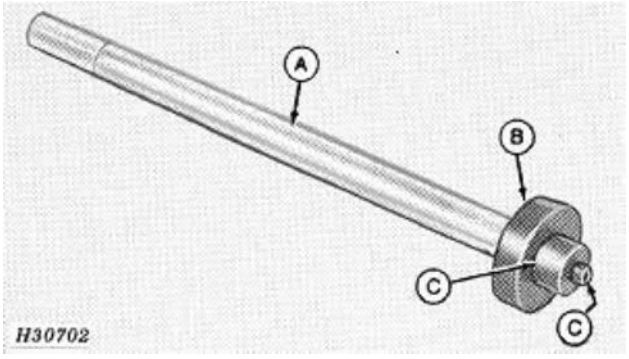


-UN-05DEC91
H30701

HX,1401,10010,W-19-16DEC92

2. Assemble special tool to install bushing.

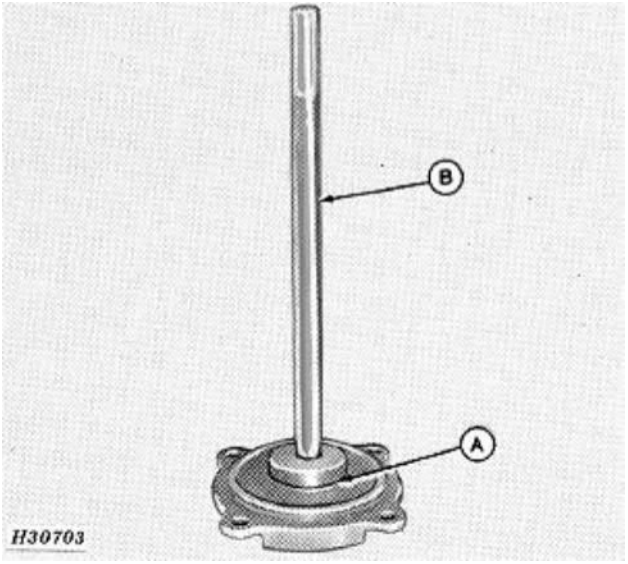
A—JDC400-7 Handle
B—27515, 50.8 mm (2 in.) Disk
C—27499, 25.4 mm (1 in.) Disk
D—10020 Screw



-UN-05DEC91
H30702

TM1581,10015,AO-19-03OCT94

3. Install bushing (A) with special tool (B). Be certain shoulder of bushings (A) is tight against edge of bore in cap.



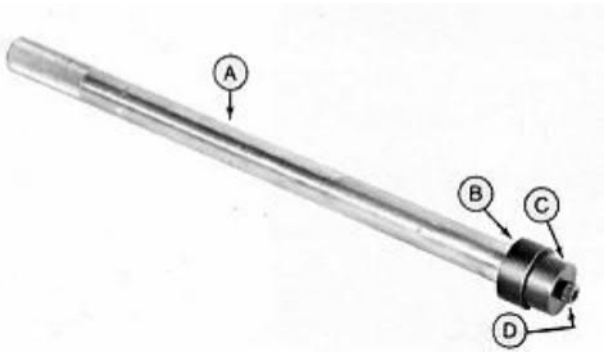
-UN-05DEC91
H30703

HX,1401,10010,Y-19-16DEC92

REPLACING IDLER GEAR NEEDLE BEARINGS

1. Assemble special tool.

A—JDC400-7 Handle
B—27502, 30.2 mm (1-3/16 in.) Disk
C—27499, 25.4 mm (1 in.) Disk
D—10020 Screw



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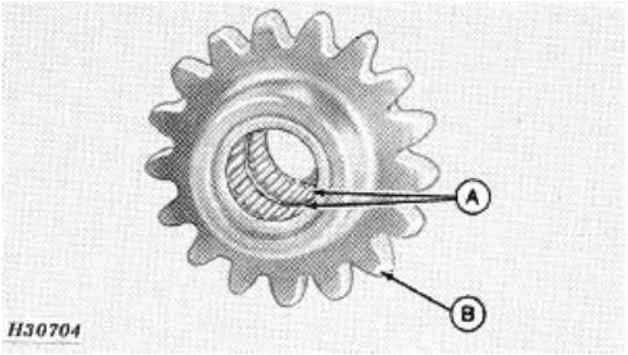
H30689

TM1581,10015,AP-19-03OCT94

2. Remove needle bearings (A) from idler gear (B).

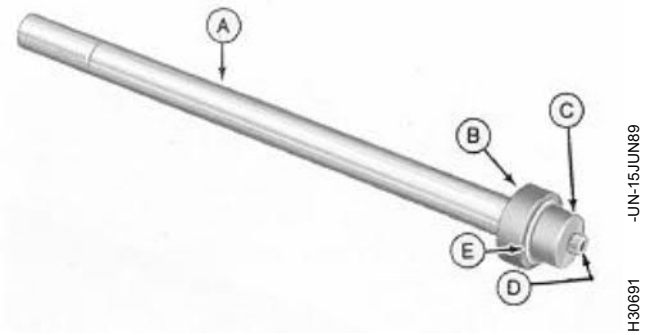


-UN-05DEC91
H30704

HX,1401,10010AC-19-16DEC92

3. Assemble special tool to install NEW needle bearings.

A—JDC400-7 Handle
B—27506, 36.5 mm (1-7/16 in.) Disk
C—27499, 25.4 mm (1 in.) Disk
D—10020 Screw
E—JDC400-3 Spacer

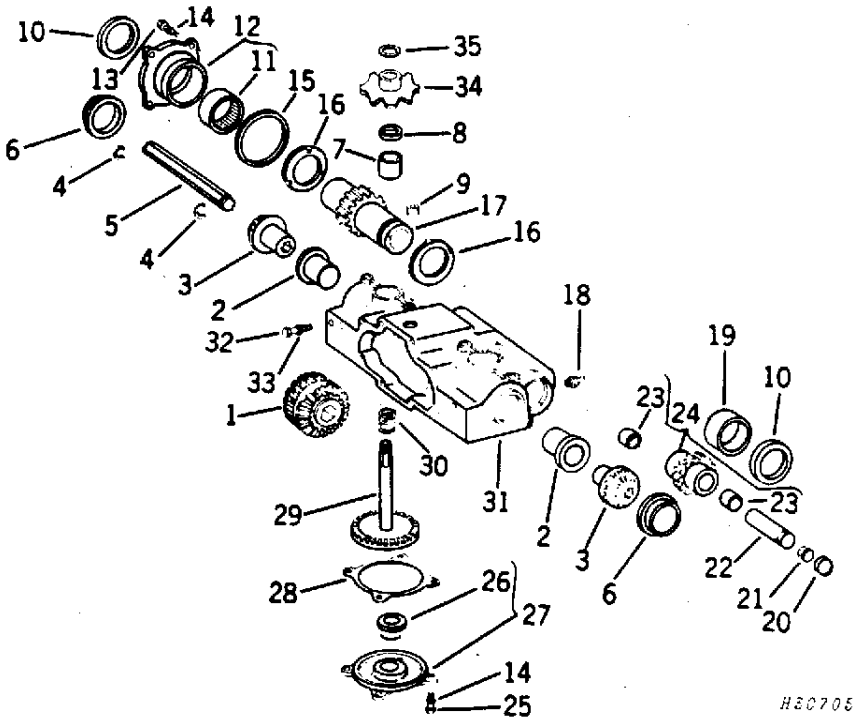


TM1581,10015,AQ-19-03OCT94

4. Drive against the flat end (end with vendor number) of the bearing and install one from each end. Do NOT install bearing by driving one bearing in against the other.

HX,1401,10010AB-19-16DEC92

ASSEMBLY



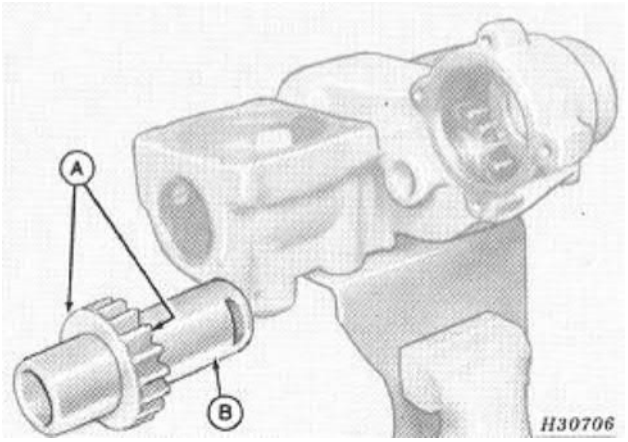
1—Stack Roll Drive Gear Cluster
2—Bushing (2 Used)
3—Bevel Pinion Gear (2 Used)
4—Snap Ring (2 Used)
5—Countershaft
6—Grease Cap (2 Used)
7—Bushing (2 Used)
8—Grease Seal (2 Used)
9—Pipe Plug, 3/4 In.
10—Oil Seal (2 Used)
11—Needle Bearing
12—Input Cap W/Bearing
13—Cap Screw, 3/8 x 1-1/8 In.
14—Lock Washer, 3/8 In.
15—Gasket
16—Thrust Washer (2 Used)
17—Input Gear
18—Grease Fitting, 1/8 In.
19—Needle Bearing
20—Expansion Ring (2 Used)
21—Tolerance Ring
22—Idler Shaft
23—Needle Bearing (2 Used)
24—Idler Gear Assembly
25—Cap Screw, 3/8 x 1 In.
26—Bushing (2 Used)
27—Gatherer Cap W/Bearing (2 used)
28—Gasket (2 used)
29—Gatherer Drive Shaft (2 Used)
30—Oil Slinger Spring (2 Used)
31—Gearcase
32—Cap Screw, 1/2 x 1-1/4 In.
33—Lock Washer, 1/2 In.
34—Drive Sprocket (2 Used)
35—Snap Ring (2 Used)

TM1581,10015,AR-19-03OCT94

1. Use John Deere Corn Head Grease and lubricate all bushings and bearings prior to assembly of gearcase. Also pack seals with this grease prior to installation.

IMPORTANT: This special high-pressure grease is available in a 0.4 kg (14-1/2 oz.) tube (AN102562), or a 16 kg (35 lb.) pail (AH80490).

2. Coat only one side of each thrust washer (A) with corn head grease and place greased side of each washer against each side of input shaft gear (B). The grease is used to hold the thrust washers against the gear for ease of installation. The lugs on the washers fit between the gear teeth.



3. Install input shaft with thrust washers in gearcase.

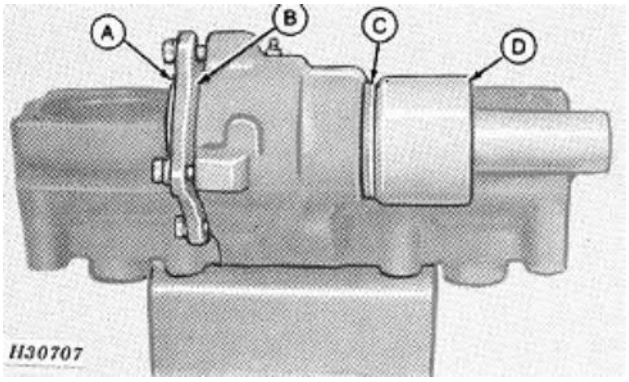
IMPORTANT: Turn input shaft to be certain lugs on both thrust washers fit between teeth on input gear.

TM1581,10015,AS-19-03OCT94

4. Install input cap (A) and gaskets (B) and secure with hardware previously removed.

NOTE: Input cap can be installed only one way.

5. Visually check that thrust washer lugs are in gear teeth. Check end play of input shaft; end play should be 0.13 to 0.38 mm (0.005 to 0.15 in.). End play must not exceed 0.38 mm (0.15 in.) Bump ends of shaft with rubber hammer to check. Input shaft must rotate freely. Add or remove gaskets as necessary to achieve proper end play.



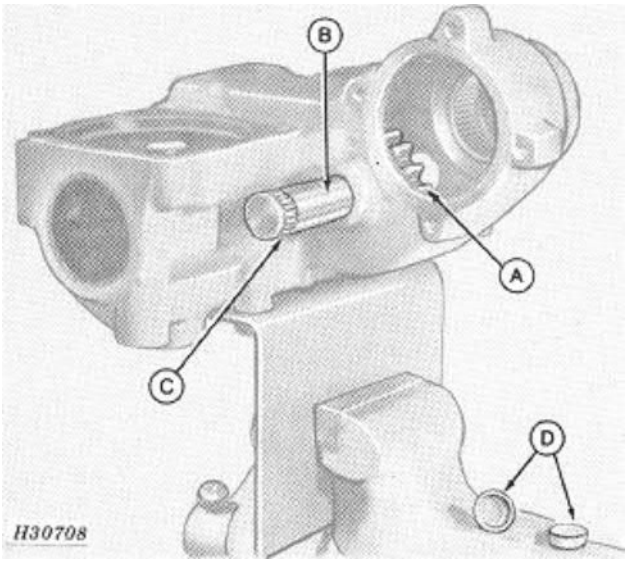
NOTE: Always use at least one, but no more than six, gaskets.

6. Install seal (C) with seal driver (D).

TM1581,10015,AT-19-03OCT94

7. Assemble idler gear (A) and shaft (B) in gearcase. Install new tolerance ring (C) on shaft prior to assembly. To facilitate assembly, insert gear through opening in front of gearcase; then insert shaft.

NOTE: Start end of idler shaft (without tolerance ring) into bore first.

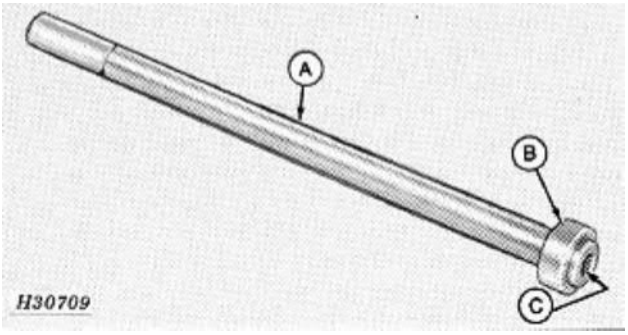


-UN-05DEC91
H30708

TM1581,10015,AU-19-03OCT94

8. Assemble tools (A, B and C) to install expansion plugs (D), above.

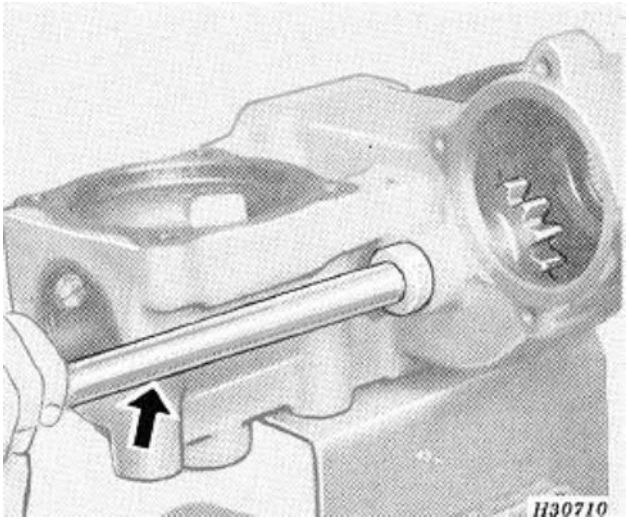
A—JDC400-7 Handle
B—JDC400-2 Plug Installer
C—10020 Screw



-UN-05DEC91
H30709

TM1581,10015,AV-19-03OCT94

9. Center idler shaft in bores and install both expansion plugs. Use tools illustrated to install plugs.



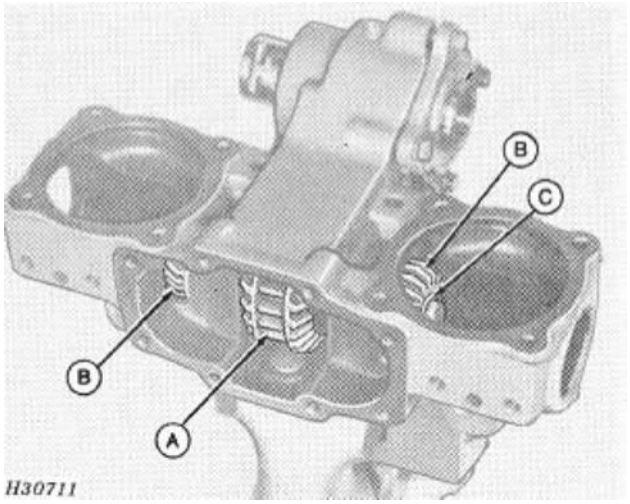
-UN-05DEC91
H30710

TM1581,10015,AW-19-03OCT94

10. Coat gatherer bevel gears with corn head grease on flange surface only. Place bevel gears in gearcase. Install snap ring on one end of countershaft and insert countershaft through only the first bevel gear in the case.

11. Insert stalk roll drive gear assembly through opening in front of gearcase. Pass countershaft through stock roll gear assembly and bevel gears. Insert other snap ring on end of countershaft.

A—Stalk Roller Drive
B—Gear Assembly
C—Snap Ring

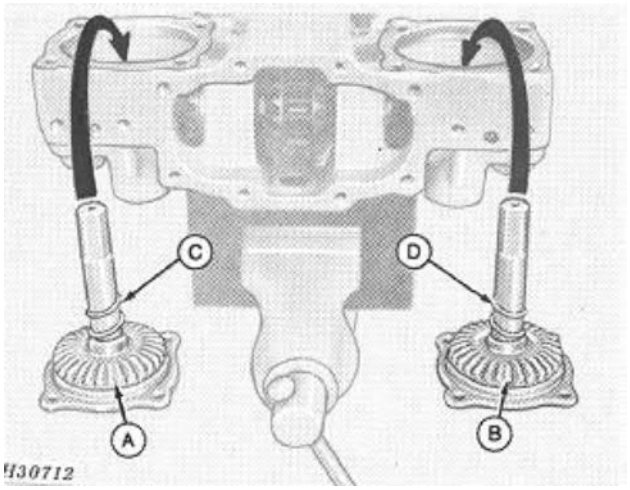


-UN-05DEC91
H30711

TM1581,10015,AX-19-03OCT94

12. Leave NEW shafts dry, or clean OLD shafts. Assemble gatherer drive shafts in gatherer caps. Be certain shafts bottom in caps. Tap on shafts and turn to be certain they are free. Recheck end play.

IMPORTANT: With gatherer drive shafts turning toward each other (as viewed from barrel assembly opening), oil slinger springs must throw grease away from gears and toward bronze bushings for efficient lubrication. Shafts should be reinstalled on same side of case to maintain proper gear wear. The spring for the right-hand shaft has a left-hand spiral and spring for left-hand shaft has a right-hand spiral. For repairs, right-hand spiral springs are colored RED and the left-hand spiral springs are colored BLUE.



-UN-05DEC91
H30712

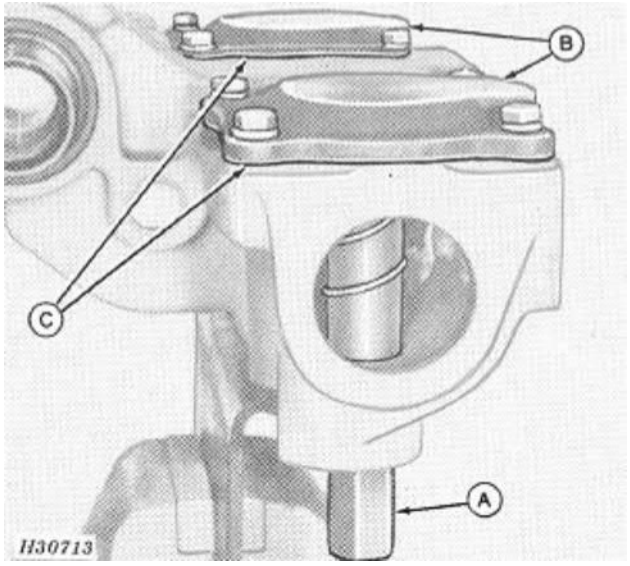
A—L.H. Gatherer Drive Shaft with Gear
B—R.H. Gatherer Drive
C—R.H. Spiral Oil Slinger Spring
D—L.H. Spiral Oil Slinger Spring

TM1581,10015,AY-19-03OCT94

13. Install both shafts (A), caps (B) and gaskets (C) dry (without grease) and tighten cap screws securely. Check gatherer drive shafts for proper backlash, 0.20 to 0.36 mm (0.008 to 0.014 in.).

14. Add or remove gaskets as necessary to achieve proper backlash. Tap end of shaft to make certain it is bottomed in cap.

NOTE: Gaskets are available in two thicknesses, 0.18 and 0.25 mm (0.007 and 0.010 in.).



-UN-05DEC91 H30713

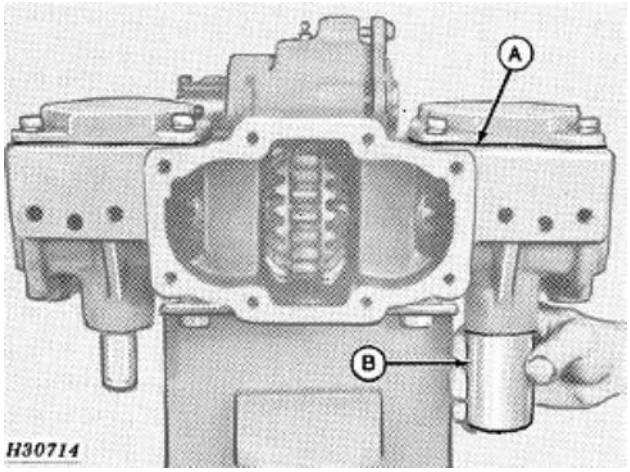
TM1581,10015,AZ-19-03OCT94

15. After obtaining proper backlash, remove gatherer caps and shafts and coat gatherer cap bushing and shaft with John Deere Corn Head Grease.

16. To be certain everything turns fully, turn input shaft by hand when all parts are assembled.

17. Coat shoulders of gatherer caps and gaskets with Permatex (A) and install in gearcase. Coat threads of cap screws with Permatex and install and tighten to 45 N·m (35 lb-ft).

18. Pack gatherer shaft and input shaft seals with corn head grease and install on shafts (B). Be careful NOT to cut lips of seal on groove of shaft. Cover grooves with tape.



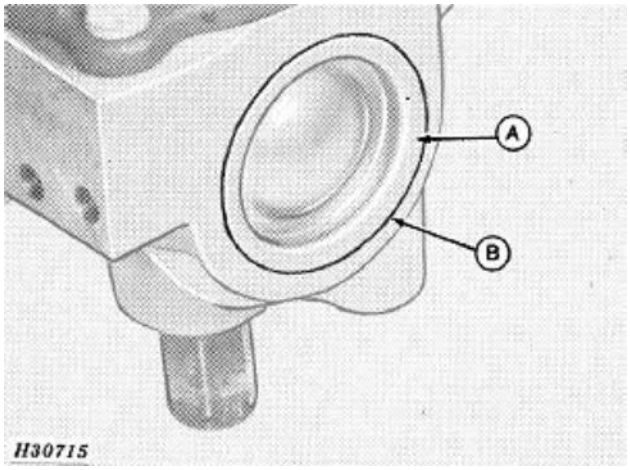
-UN-05DEC91 H30714

TM1581,10015,BA-19-03OCT94

19. Coat edges of end caps (A) with Permatex (B) and tap end caps into gearcase. Be certain caps are securely seated in gearcase.

20. This completes the disassembly and assembly of the gearcase. If work is not required on the barrel assembly and stalk roll shaft, see “Attaching Barrel Assembly to Gearcase” for assembly of these parts to the gearcase.

21. If work is required on the barrel assembly and stalk roll shafts, proceed on the following pages.



TM1581,10015,BB-19-03OCT94

SERVICING BARREL ASSEMBLY AND STALK ROLL SHAFTS

Disassembly

NOTE: If only the barrel assembly and/or stalk roll shafts are to be serviced, remove barrel assembly with shafts from gearcase. Set gearcase assembly to one side and cover opening to keep dirt out of gearcase.

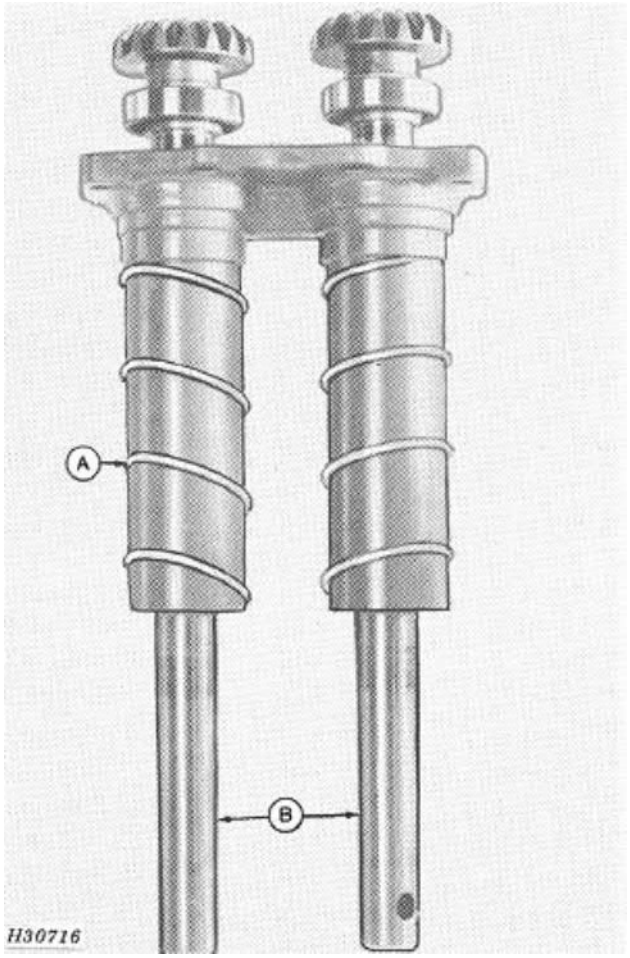
The slip clutch does NOT need to be removed.

1. Hold barrel assembly (A) and tap stalk roll shafts (B) on a solid surface to separate shafts from barrel assembly.

2. Clean all grease off stalk roll shafts and gears and out of barrel assembly.

3. Remove seal from end of barrel and discard.

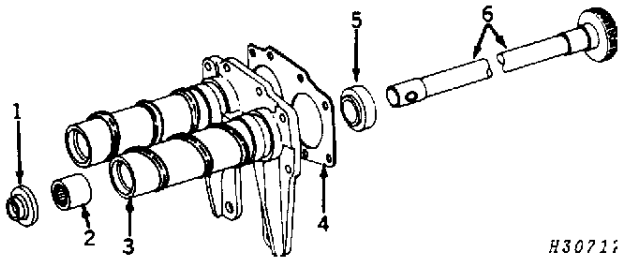
NOTE: Install NEW SEALS AFTER installing barrel assembly on gearcase.



TM1581,10015,BC-19-03OCT94

INSPECTION AND REPAIR

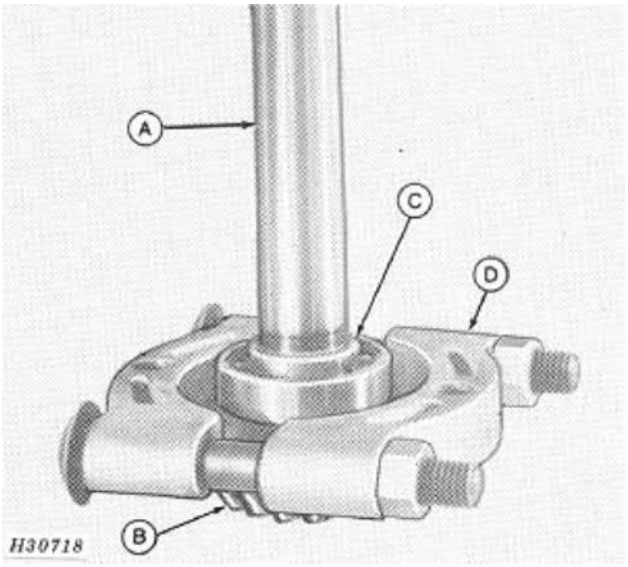
1—Grease Seal
2—Needle Bearing
3—Barrel
4—Gasket
5—Bearing
6—Stalk Roll Shaft



-UN-26AUG91 H30717

1401,10010,D8 -19-12SEP91

1. Examine stalk roll shaft (A), gear (B) and bearing (C) for wear. If it is necessary to remove bearing, use a split puller (D) as illustrated and press bearing off shaft. Install new bearing with a press. Be sure to seat inner face of bearing against gear hub.

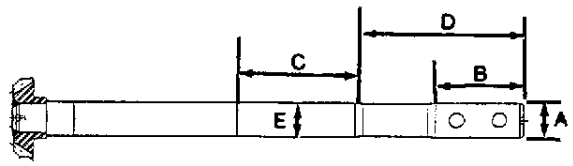


-UN-05DEC91 H30718

1401,10010,D9 -19-12SEP91

2. Measure the stalk roll shaft at surfaces specified. If measurements are below the given dimensions or shaft has signs of wear, replace the shaft.

A—31.47 mm (1.239 in.)
B—81.30 mm (3.20 in.)
C—76 mm (2.99 in.)
D—189.4 mm (7.46 in.)
E—31.72 mm (1.249 in.)

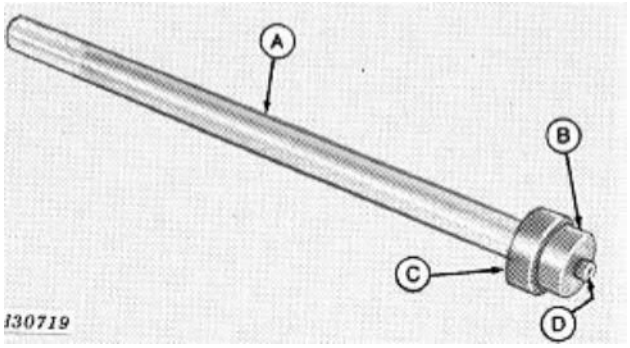


-UN-01MAY94 H46413

TM1581,HX100,DI-19-18AUG94

3. Assemble tool for removing bearing and seal in barrel assembly.

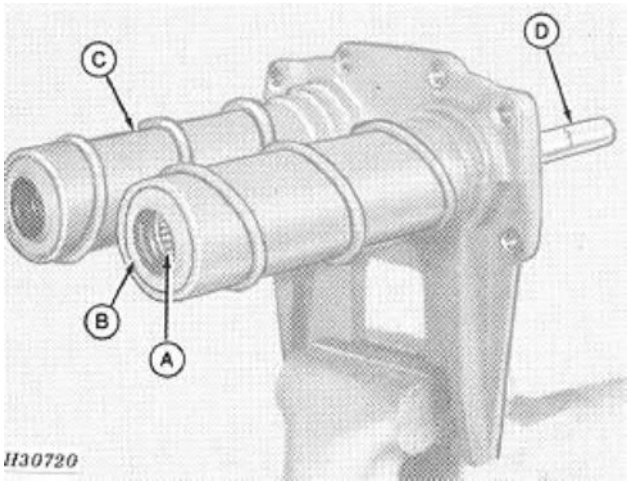
A—JDC400-7 Handle
B—27502, 30.2 mm (1-3/16 in.) Disk
C—27507, 38.1 mm (1-1/2 in.) Disk
D—10020 Screw



-UN-05DEC91
H30719

TM1581,10015,BE-19-03OCT94

4. Use tool (D) and drive out needle bearing (A) and seal (B) in barrel assembly (C).

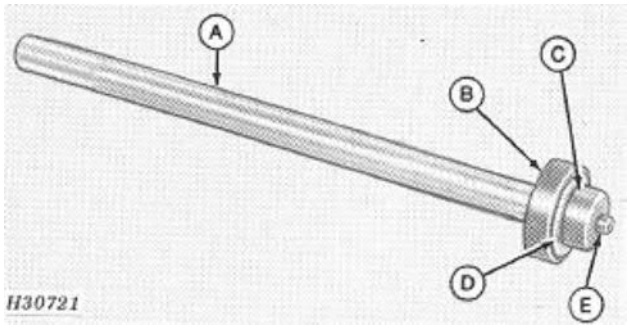


-UN-05DEC91
H30720

TM1581,10015,BF-19-03OCT94

5. Assemble tool for installing bearing in barrel assembly.

A—JDC400-7 Handle
B—27515, 50.8 mm (2 in.) Disk
C—JDC400-8 Spacer
D—27502, 30.2 mm (1-3/16 in.) Disk
E—10020 Screw



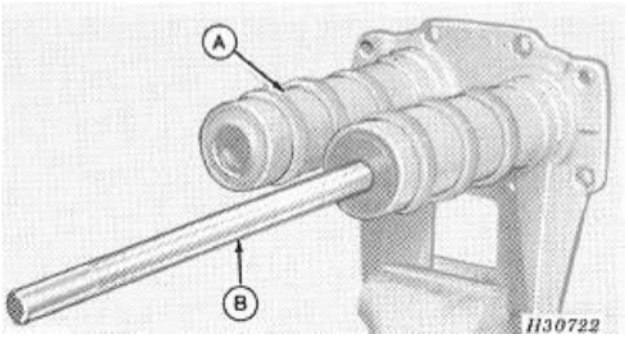
-UN-05DEC91
H30721

TM1581,10015,BG-19-03OCT94

6. Use tool (B) to install needle bearing in barrel assembly. Be certain to drive against flat end of needle bearing only.

NOTE: Do not install seals until after barrel assembly (A) with stalk roll shafts has been attached to gearcase. Coat needle bearings with Corn-Head grease.

7. Install stalk roll shafts in barrel assembly and strike on ends of gear with a lead hammer to seat shaft bearing shafts on barrel assembly. Rotate shafts. They must turn freely.



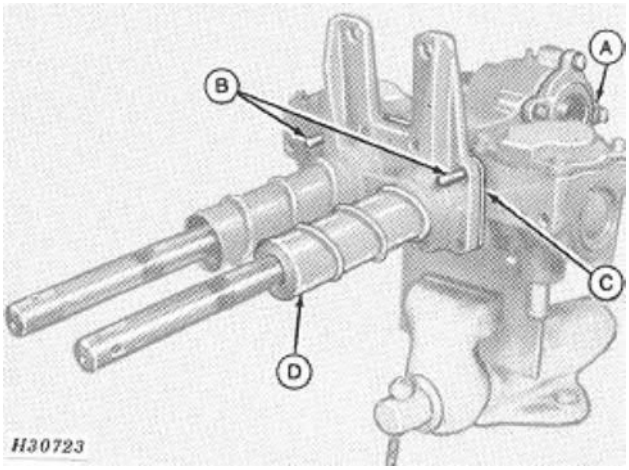
-UN-05DEC91
H30722

TM1581,10015,BH-19-03OCT94

ATTACHING BARREL ASSEMBLY TO GEARCASE

1. With gearcase assembly (A) mounted in a vise, insert the two barrel assembly locating dowel studs (B) in upper corner holes as illustrated. (See “Special Tools”.)

2. Assemble new gasket (C) over locating dowel studs and set barrel assembly (D) with shafts on studs.

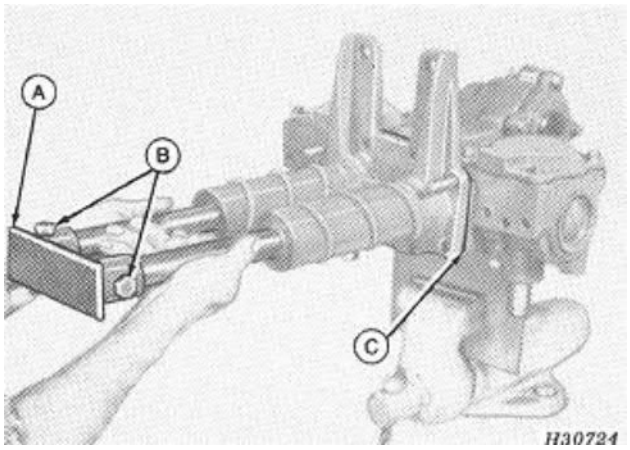


-UN-05DEC91
H30723

HX,1401,10010AP-19-16DEC92

3. Install stalk roll shaft timing tool (A) (see Special Tools) on end of shafts. Use 1/2 x 1-3/4 in bolts (B) or 1/2 in. rods to secure timing tool to shafts. It is not necessary to put nuts on the bolts.

4. Push against stalk roll shafts and barrel assembly. If inner surface of barrel assembly will not fit tight against surface of gearcase (C), stalk roll shafts are not properly timed and must be timed.



-UN-05DEC91
H30724

1401,10010,E6 -19-12SEP91

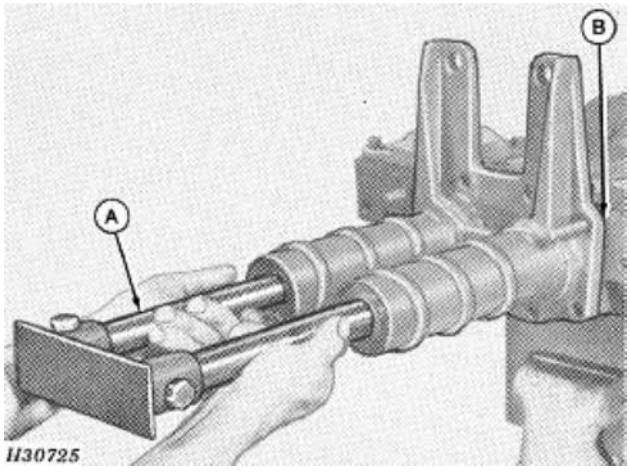
5. Grasp stalk roll shafts and pull barrel assembly away from gearcase about 25 mm (1 in.), remove one bolt from timing tool (A) and rotate one stalk roll shaft 180 degrees. Reinstall bolt and check to be certain barrel assembly is flush (B) against gearcase.

NOTE: If the fit is still not tight, repeat above procedure, rotating other stalk roll shaft.

6. When barrel assembly fits tight against gearcase, secure assembly with four bolts and check stalk roll backlash by holding one shaft and rotating the other. Backlash should be 0.20 to 0.36 mm (0.008 to 0.014 in.). Add or remove gaskets as necessary to obtain proper backlash.

NOTE: Gaskets are available in two thicknesses, 0.18 and 0.25 mm (0.007 and 0.010 in.). Rotate shafts to check for tight spots.

7. When proper backlash has been obtained, remove barrel assembly and pack around gears and in barrel with John Deere Corn Head grease, or equivalent. Use four ounces of grease to each barrel, total 56 ounces for the gearcase. After filling gearcase, pump grease through grease fitting while turning by hand.



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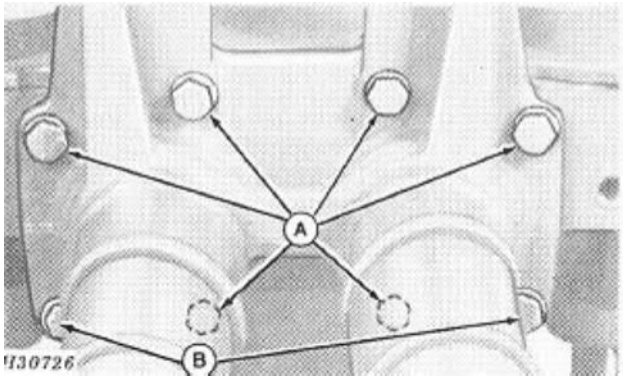
H30725

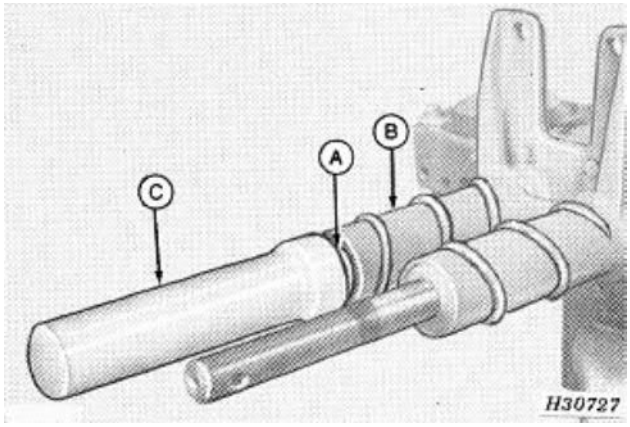
TM1581,10015,BI-19-03OCT94

8. Install barrel assembly and secure with hardware previously removed (A). Coat the two special dowel bolts (B) with Permatex and install in lower corners of barrel assembly. Tighten all bolts.



1401,10010,E8 -19-12SEP91

9. Using tool (C), install seals (A) on ends of barrel assembly (B) over stalk roll shaft. Use tape over all spring pin holes to avoid cutting seal. Also, be certain seal spring does not rotate out of seal during installation.



HX,1401,10010AR-19-16DEC92

INSTALLATION

1. Remove special mounting bracket from gearcase and install gearcase on corn head.

2. Reverse removal procedure to install gearcase, stalk rolls, row-unit frame, gatherer chains, gatherer shields and associated parts.

3. Adjust gatherer chains, trash knives and deck plates as outlined.

4. Tighten trash knife bolts and stalk rolls clamping bolts to specified torques.

5. After complete assembly and installation of the corn head gearcase and component parts, with corn head attached to combine, start engine and engage corn head drive.

6. Operate corn head with gatherer points on the ground at low idle speed for four minutes.

7. Increase combine engine to fast idle and run corn head for six minutes.

CAUTION: Shut off combine engine.

8. Check for hot bearings and lubricate. Correct as necessary.

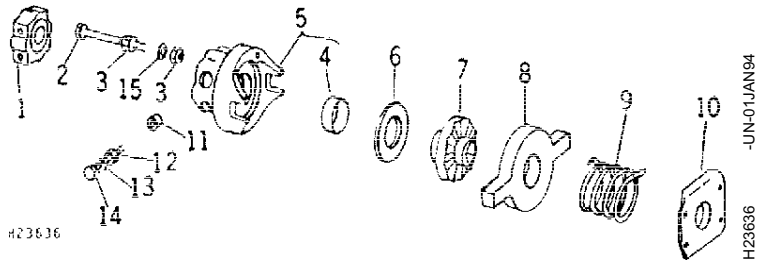
HX,1401,10010AS-19-16DEC92

ROW UNIT SLIP CLUTCH

General information

The slip clutches protect the corn head drives. Each row unit drive and the auger drive have a slip clutch.

TM1581,10015,BJ-19-03OCT94



1—Coupler
2—Cap Screw, M12 x 150 (4 used)
3—Jam Nut, M12 (8 used)
4—Bushing
5—Retainer
6—Thrust Washer
7—Hub
8—Jaw
9—Spring
10—Spring Retainer
11—Spacer (4 used)
12—Nut, M10 (2 used)
13—Lock Washer 9.5 mm (3/8 in.) (2 used)
14—Cap Screw, M10 x 100 (2 used)
15—Internal Tooth Lock Washer, 12.7 mm (1/2 in.) (4 used)

TM1581,10015,BK-19-03OCT94

REPAIR

Remove drive chain cover, chain row unit drive sprocket and triangle bearing flange. (May not be necessary when at end of shaft.)

Remove two M10 x 100 cap screws (14) to remove slip clutch. Refer to the above illustration for disassembly.

Inspect hub (7) and jaw (8) for wear. Inspect spring (9) for breakage. Inspect all other parts and replace parts as necessary.

TM1581,HX100,DJ-19-18AUG94

ASSEMBLY

Use the exploded view (See “Row Unit Slip Clutch”) as a guide when assembling shift clutch.

1. Coat entire thrust washer (6) with multipurpose grease prior to assembly. Do not grease facing of hub (7) and jaw (8).

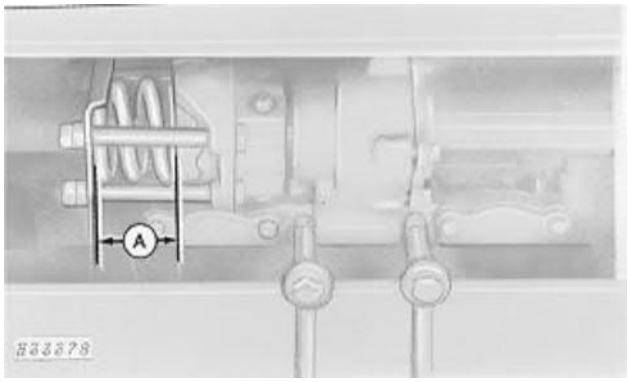
2. Reassemble slip clutch.

HX,1401,10010AV-19-16DEC92

3. Tighten four cap screws in slip clutch to obtain a 67 mm (2-5/8 in.) dimension (A).

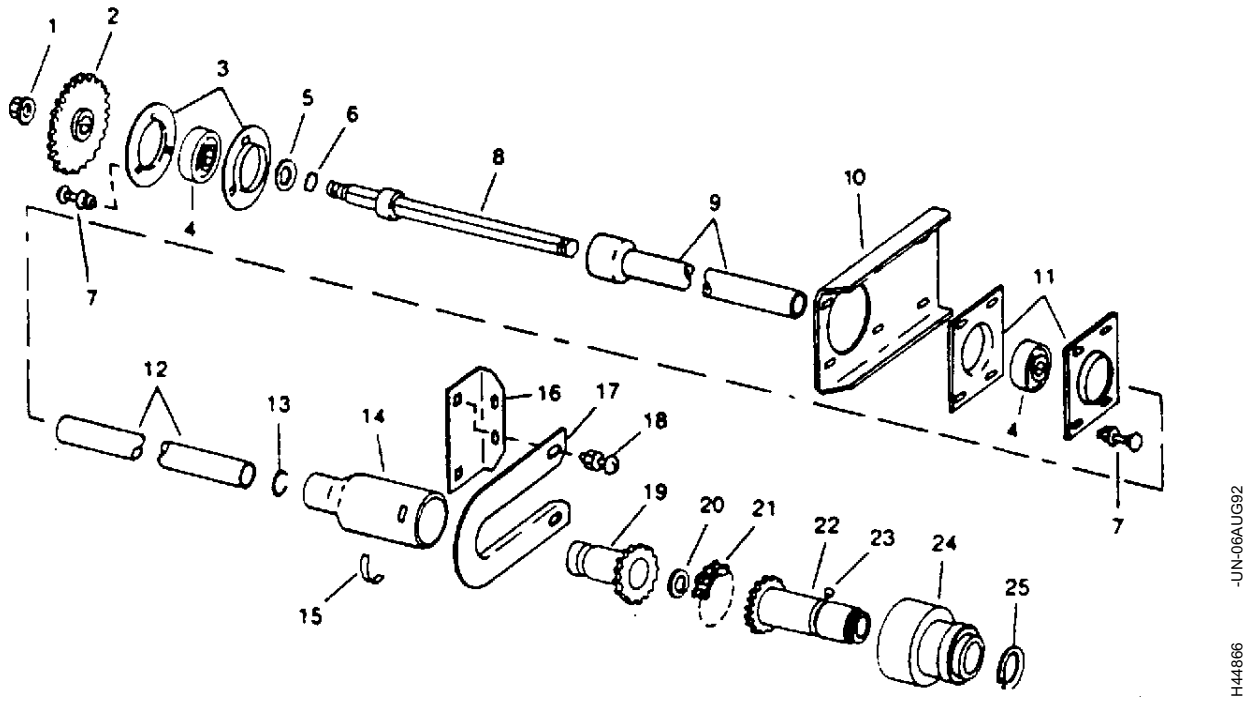
NOTE: The auger slip clutch is non-adjustable.

4. Do NOT tighten the nuts on the four cap screws to the point where the clutch will NOT slip. Jam the two nuts on each cap screw together and then tighten to 75 N·m (55 ft-lb) torque.



TM1581,10015,BM-19-03OCT94

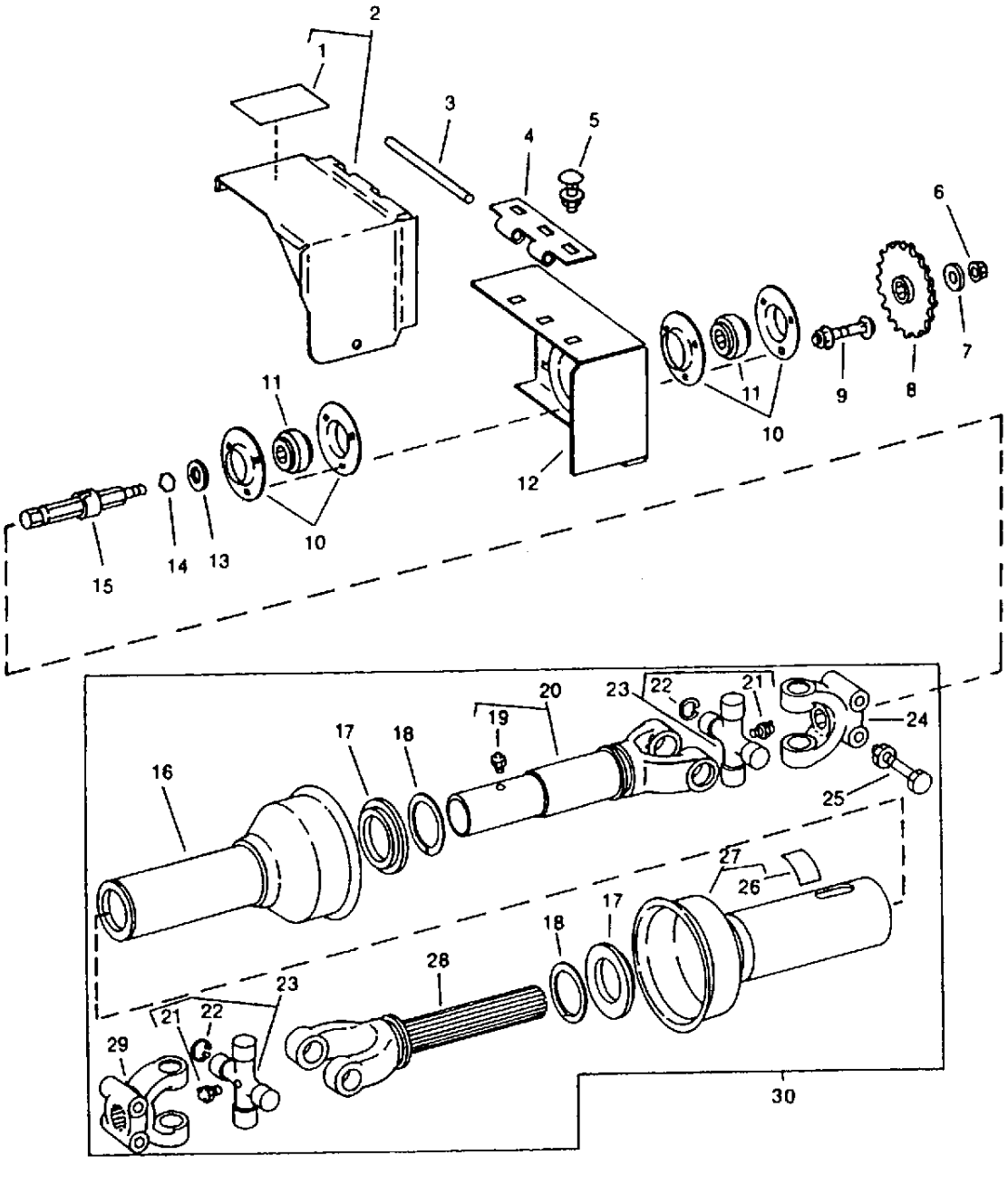
MAIN DRIVE SHAFT AND COUPLER 493, 494, 594, 693, 694, 893, 894, 1293 (655201—)



1—Lock Nut, M20
2—Sprocket, 28 Tooth
3—Housing
4—Bearing
5—Retainer
6—Seal
7—Bolt, M10 x 25
8—Shaft
9—Shield
10—Bracket (2 used)
11—Housing (4 used)
12—Shield
13—Snap Ring
14—Shield
15—Bearing
16—Angle
17—Bracket
18—Bolt, M10 x 20 (2 used)
19—Sprocket, 14 Tooth
20—Snap Ring
21—Chain
22—Sprocket, 14 Tooth
23—Ball (3 used)
24—Coupler
25—Snap Ring

TM1581,10015,BN-19-03OCT94

MAIN DRIVE SHAFTS AND SHIELDS—494 SIDEHILL

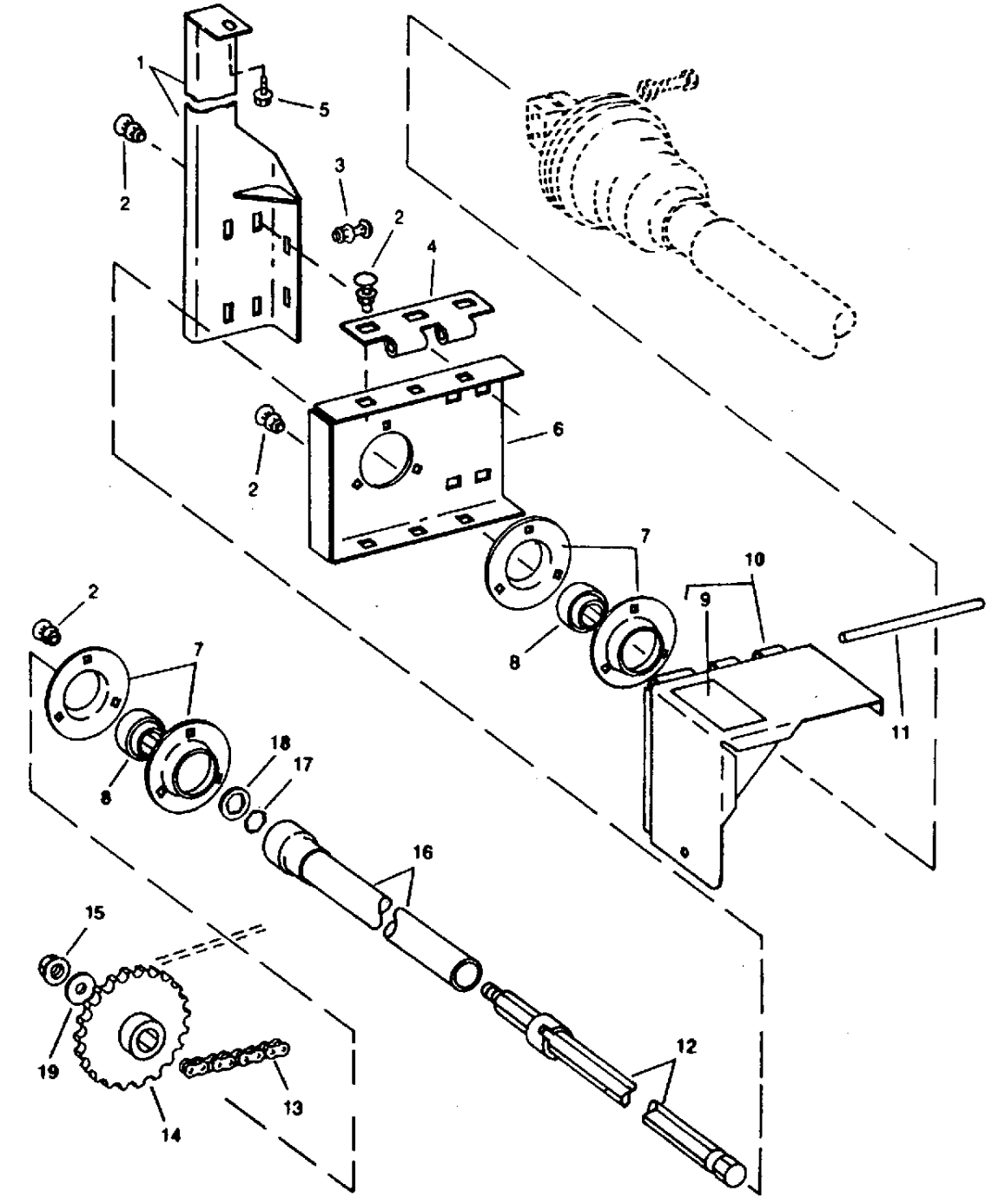


TM1581,10015,BO-19-03OCT94

1—Decal
2—Shield
3—Pin
4—Hinge
5—Bolt, M10 x 20 (3 used)
Nut, M10 (3 used)
6—Lock Nut, M20
7—Washer, 21 x 42 x 5 mm
8—Sprocket
9—Bolt, M10 x 80 (3 used)
Nut, M10 (3 used)
10—Flange (4 used)
11—Bearing (2 used)
12—Bracket
13—Retainer
14—Seal
15—Shaft
16—Shield
17—Snap Ring (2 used)
18—Bearing (2 used)
19—Lube Fitting
20—Yoke Tube
21—Lube Fitting (2 used)
22—Snap Ring (2 used)
23—Cross and Bearings (2 used)
24—Yoke
25—Bolt, M12 x 70 (4 used)
Lock Nut, M12 (4 used)
26—Decal
27—Shield
28—Yoke Shaft
29—Yoke
30—Drive Shaft Assembly

TM1581,10015,BP-19-03OCT94

MAIN DRIVE SHAFT AND SHIELDS—693, 694, 893 AND 894 SIDEHILL

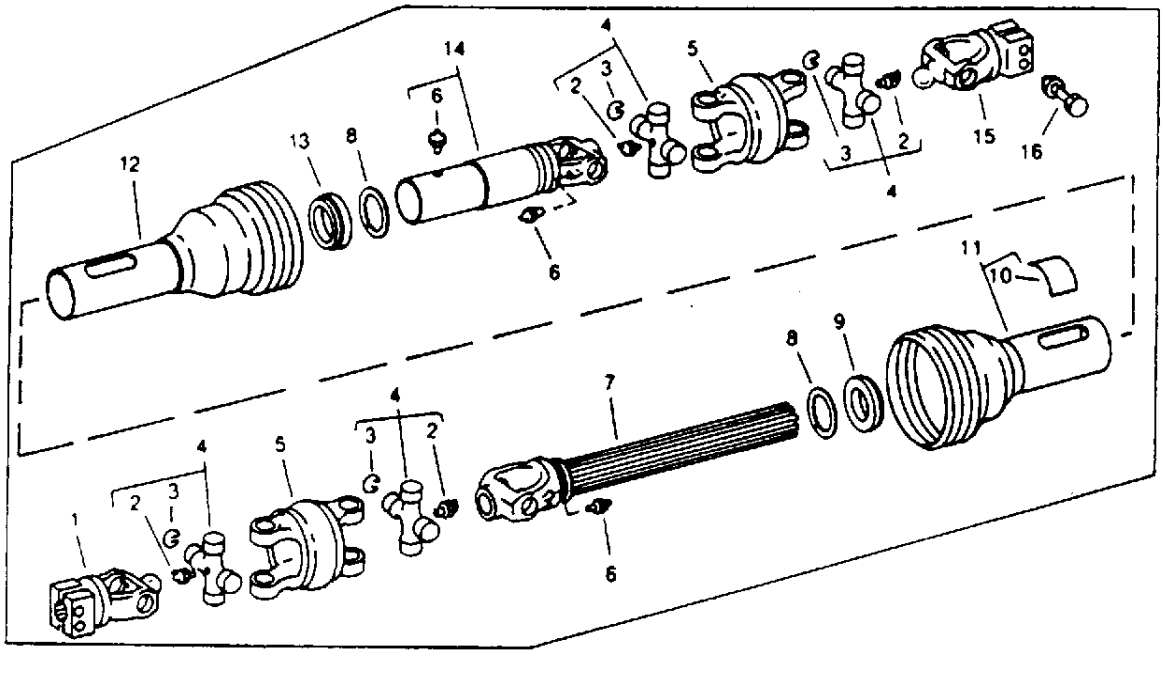


TM1581,10015,BQ-19-03OCT94

1—Bracket
2—Bolt, M10 x 20 (13 used)
Flange Nut, M10 (13 used)
3—Bolt, M8 x 20 (2 used)
Flange Nut, M8 (2 used)
4—Hinge
5—Bolt, M8 x 20 (4 used)
6—Bracket (2 used)
7—Flange (4 used)
8—Bearing (2 used)
9—Decal
10—Shield
11—Dowel Pin
12—Shaft (2 used)
13—Chain
14—Sprocket (2 used)
15—Lock Nut
16—Shield
17—Seal
18—Retainer
19—Washer, 21 x 42 x 5 mm

TM1581,10015,BR-19-03OCT94

693, 694, 893, AND 894 C-V DRIVESHAFT SIDEHILL



1—Yoke
2—Lube Fitting
3—Snap Ring
4—Cross and Bearings
(4 used)
5—Yoke (2 used)
6—Lube Fitting (3 used)
7—Yoke Shaft (2 used)
8—Snap Ring (2 used)
9—Shield Retainer
10—Decal
11—Shield
12—Shield
13—Bearing
14—Yoke Tube
15—Yoke
16—Bolt, M12 x 70 (4 used)
Lock Nut, M12 (4 used)

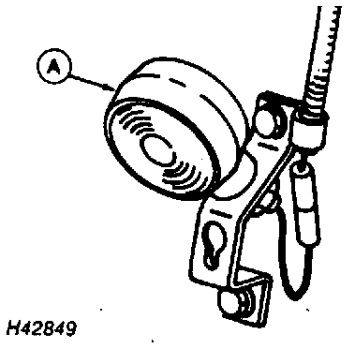
TM1581,HX100,DK-19-18AUG94

STUBBLE LIGHT BULB REPLACEMENT

Remove nut securing housing (A).

Unscrew housing from base.

Push AD2062R (1156) bulb in and turn to remove.



-UN-29NOV90
H42849

TM1581,HX100,DL-19-18AUG94

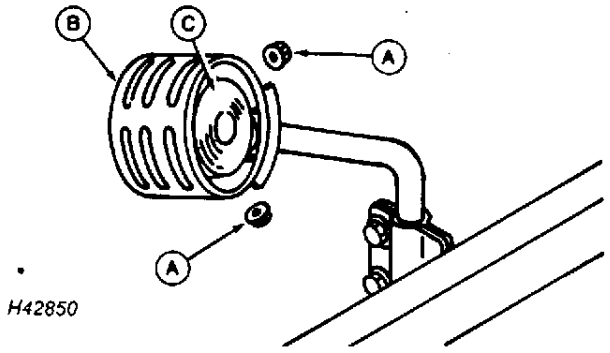
HEADER WARNING LIGHT BULB REPLACEMENT

Remove nuts (A).

Remove shield (B).

Unscrew housing (C) from bulb base.

Push AD2062R (1156) bulb in and turn to remove.



-UN-29NOV90
H42850

TM1581,HX100,DM-19-18AUG94

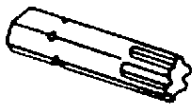
TORQUE VALUES

	Torque N·m (Lb-Ft.)
Auger finger crank cap screws	70 N·m (50)
Auger fingers in plastic bearings	16 N·m (12)
Slip clutch nuts	45 N·m (35)
Gatherer chain idler nut	Initial 110 N·m (80 lb-ft.) then 205 N·m (150 lb-ft.)

1581,10020,ZV -19-03OCT94

50 AND 50A SERIES ROW-CROP HEAD—SPECIAL TOOLS

H45100 -UN-08SEP92

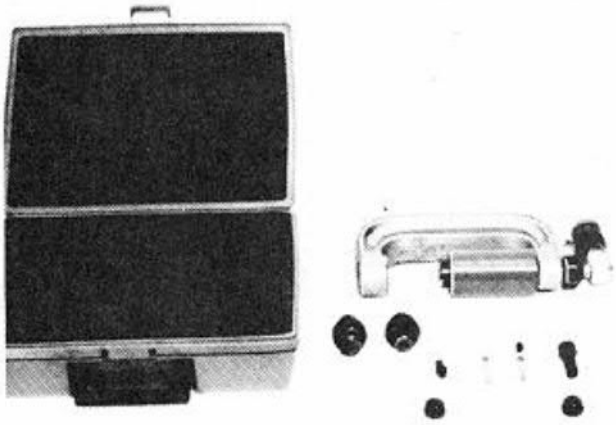


Number: *JDC3 Fluted Driver
Use: To remove and install the special six-point 5/16 in. screws in the auger finger guides.

NOTE: To use JDC3 driver with a 1/4 in. socket, a common 1/4 to 3/8 in. adapter is required for use with a 3/8 in. ratchet.

Number: *D01170AA Press
Use: To remove and install rivets when replacing rotary knife sections.

Order from:
Service Tools, Box 314, Owatonna MN 55060



H45301 -UN-13OCT92

HX1581,10020,FA-19-03OCT94

AUGER

-UN-10JAN91
H42441

GENERAL INFORMATION

As the combine moves through the field, the row crop gatherer points are positioned between the rows. These gatherer points lift and guide the crop into the gathering belts.

The gathering belts extend forward of the rotary knife to grip each stalk before it is cut. Each row unit has its own rotary knife, equipped with six high-carbon cutting sections.

After the roary knives have cut the stalks, the gathering belts then convey the stalks to the sump-type auger. A trough, located under the gathering belts, reduces crop loss due to shatter.

HX1581,10020,A -19-03OCT94

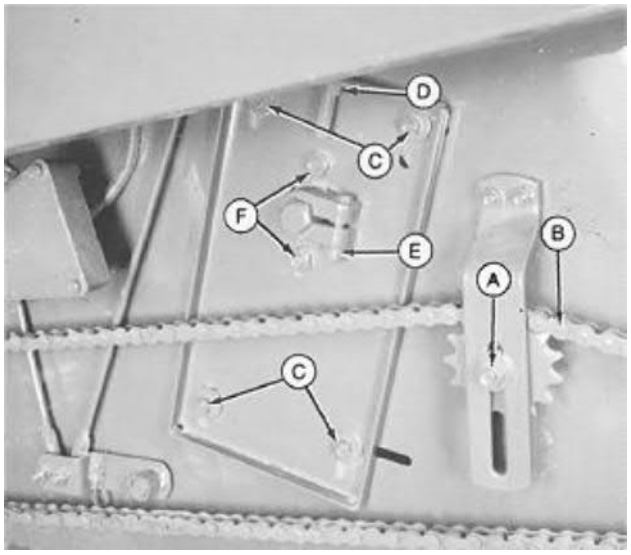
CROSS AUGER REMOVAL

1. Place a chain under center of auger and attach chain to hoist or lift fork.

2. Remove shield, loosen tightener (A) and disconnect and remove chain (B).

3. Remove nuts (C) and turn nut (D) off eyebolt to lower auger down on chain.

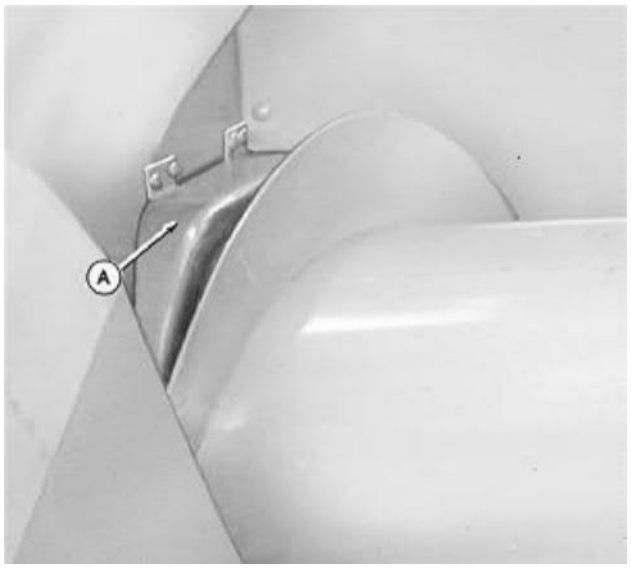
4. Remove nut (D) on eyebolt, loosen nut (E), and remove nuts (F). Remove auger adjusting bracket.



-UN-03AUG92
H44852

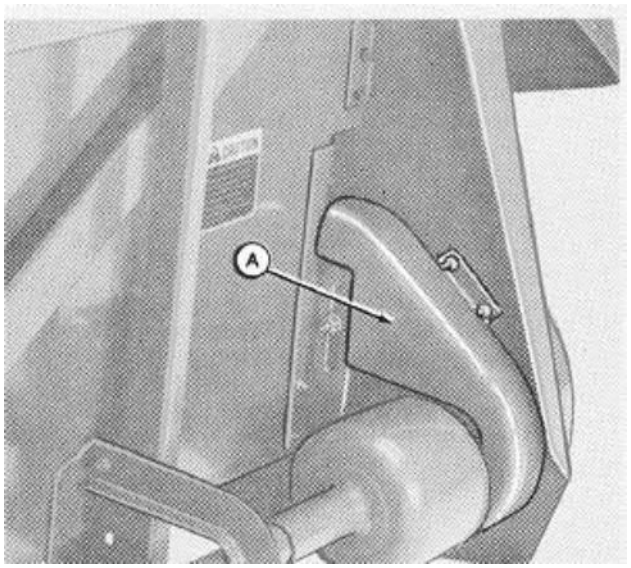
TM1581,HX100,DN-19-18AUG94

5. Remove seven bolts and remove front auger drive chain shield (A).

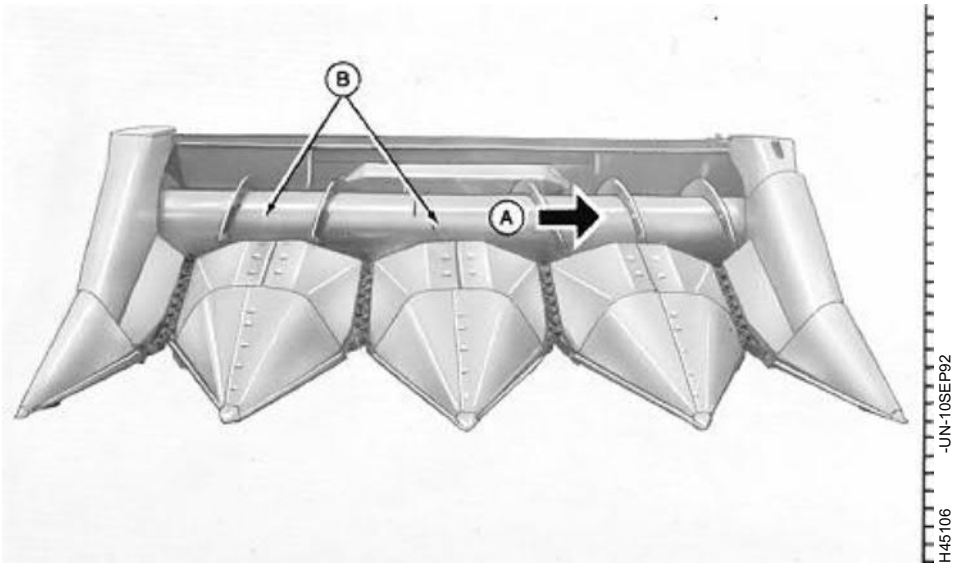


HX,1401,10015,D-19-16DEC92

6. Remove four bolts and remove rear auger drive chain shield (A).



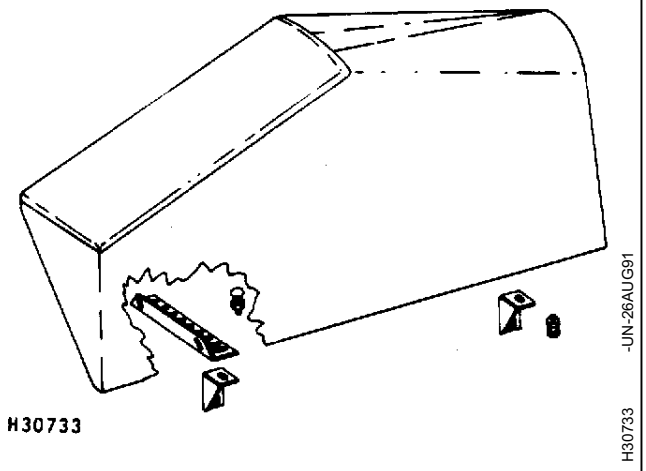
HX,1401,10015,E-19-16DEC92



7. Slide auger all the way to the left (A).

8. Use hoist to lift right-hand end of auger up and out and remove auger from header (B).

NOTE: Due to various row spacings, it may be necessary to remove two round head bolts and lift the right-hand outer gatherer shield off to provide additional clearance for auger removal.



HX,1401,10015,F-19-16DEC92

INSPECTION AND REPAIR

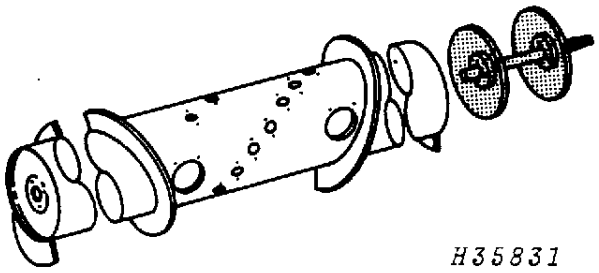
Inspect all parts of the auger for damage or excessive wear. Replace parts as necessary. Refer to “Replacing Auger Hub”.

See “Auger Shafts, Cranks and Fingers” for additional information concerning the row-crop head auger.

1401,10015,E -19-12SEP91

REPLACING AUGER HUB

Replacement auger hub must be accurately centered in the auger tube or excessive auger run out may result.

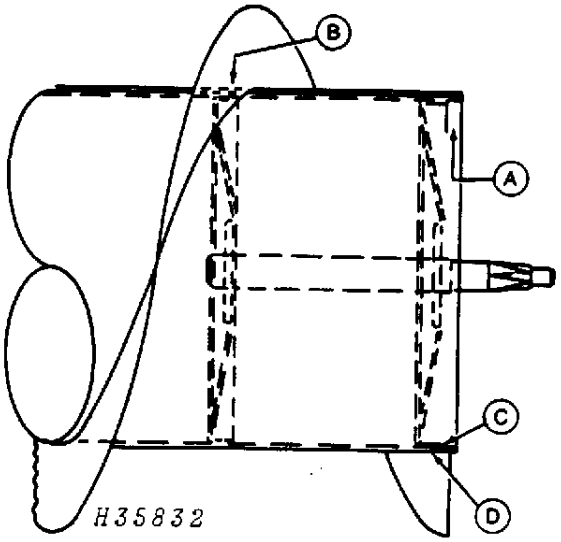


-UN-26AUG91
H35831

1. Measure and record dimension (A).
2. Drill out spot welds (B).
3. Grind out welds (C).

NOTE: Early auger had spot welds at (D) instead of welds at (C).

4. Place new hub in auger tube.
5. Center hub in tube according to dimension (A).
6. Use holes drilled in step 1 as a guide to weld NEW hub in tube.
7. Weld outer hub head to tube at (C).



-UN-26AUG91
H35832

HX,1401,10015,G-19-16DEC92

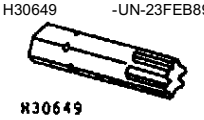
INSTALLING AUGER

Center auger between end sheets before following the steps described under “Removing Auger” in the reverse order to installing the auger.

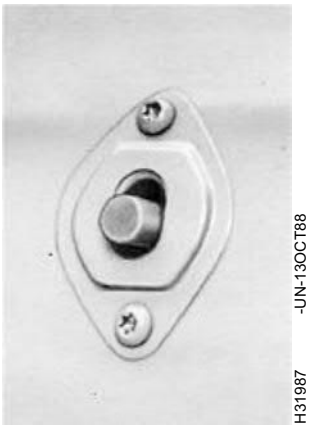
TM1581,10020,B -19-03OCT94

REPLACING AUGER FINGERS

H30649 -UN-23FEB89



H30649



-UN-13OCT88

H31987

1. Use JDC3 driver to remove two finger guide screws and remove guide.

NOTE: Order JDC3 from your John Deere dealer. Use drive with 1/4 to 3/8 in. adapter.

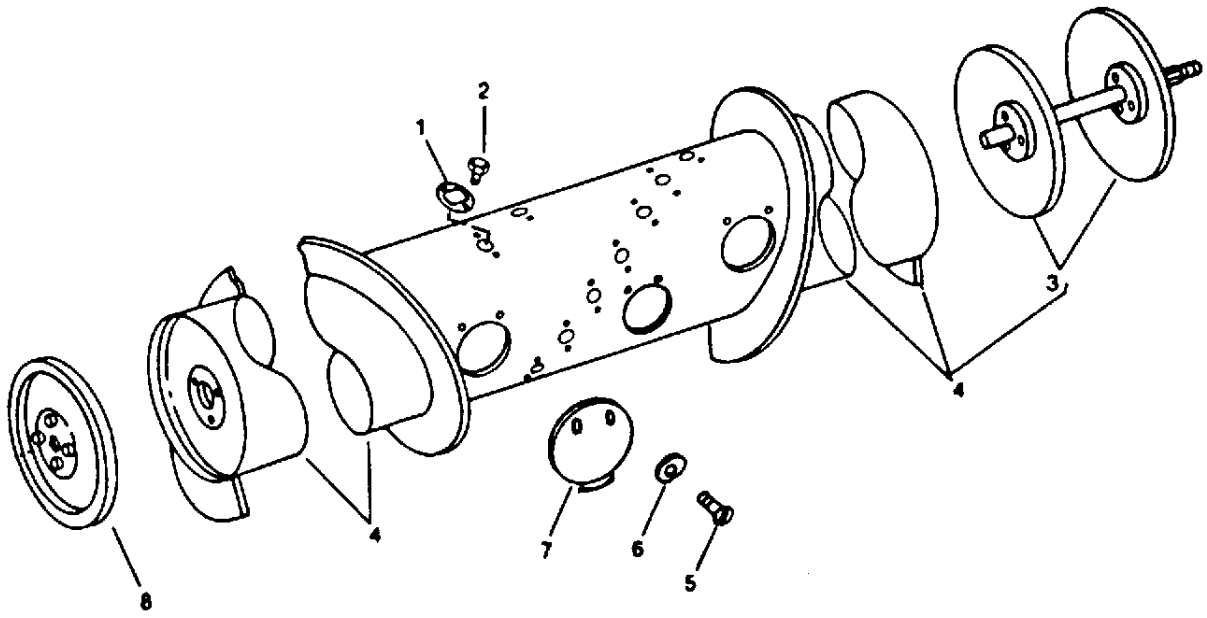
100
20
6

2. Remove access hole covers in auger.

3. Remove broken parts and install new parts. Pull out on finger when installing nut on cap screw, to keep cap screw from turning. Torque cap screw to 16 N·m (12 lb-ft). Install guide.

TM1581,10020,C -19-03OCT94

AUGER



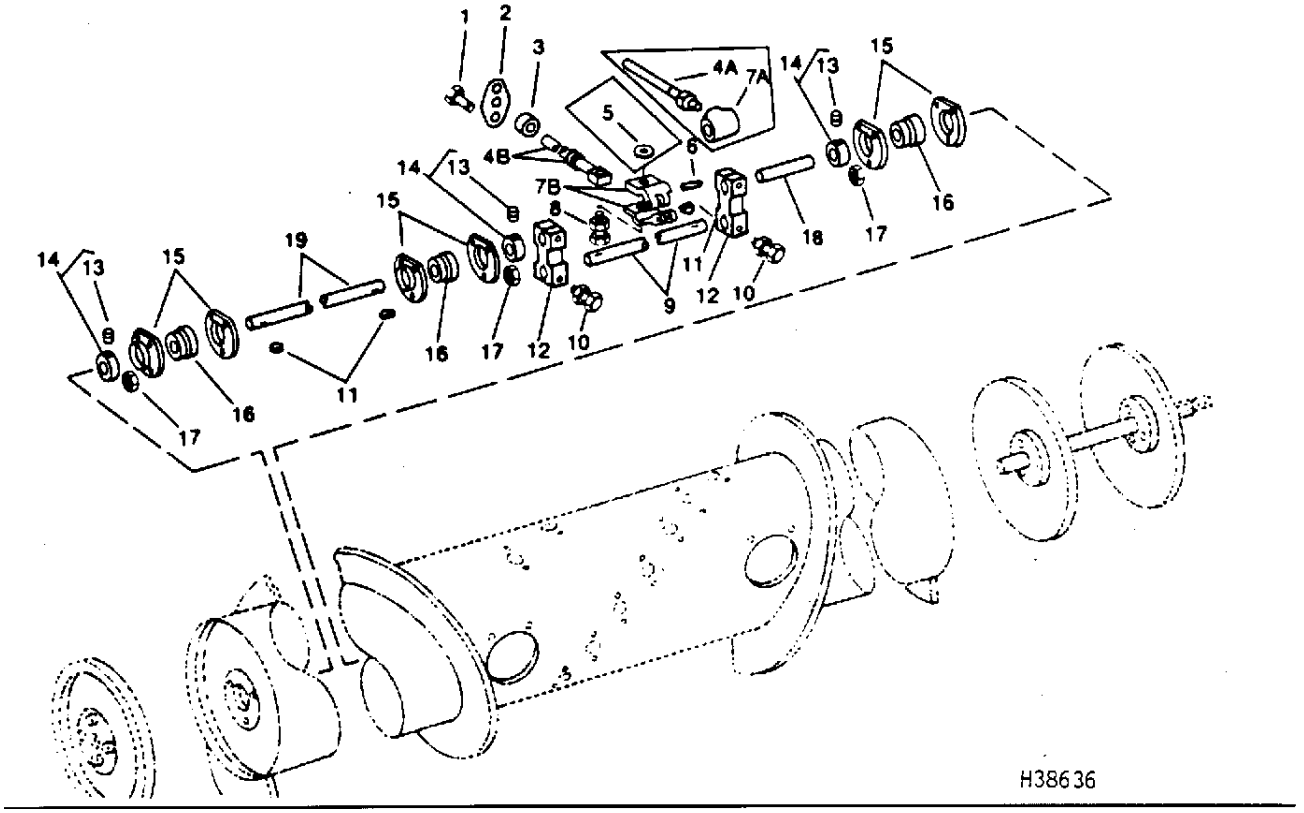
-UN-10SEP92

H45107

1—Guide Cap
2—Screw, 5/16 x 0.560 in.
3—Hub
4—Auger
5—Cap Screw, 1/4 x 5/8 in.
6—Nut, 6 mm
7—Cover
8—Hub (SN —635100)

TM1581,10020,D -19-03OCT94

AUGER SHAFTS, CRANKS AND FINGERS
453, 453A, 454, 454A, 653, 653A, 654, 654A, 655, 655A, 853 AND 853A



1—Screw, 5/16 x 0.560 in.
2—Guide Cap
3—Guide
4A—Finger (—426350)
4B—Finger (426351—)
5—Washer, 11/32 x 3/4 x 0.075 in. (426351—535210) (426351—535210)
6—Spring Pin
7A—Bearing (—426350)
7B—Bearing (426351—)
8—Screw, 5/16 x 1-3/4 in.
9—Shaft
10—Cap Screw, 3/8 x 2-1/4 in.
11—Shaft Key, 3/16 x 3/4 in.
12—Crank
13—Set Screw, 1/4 x 1/4 in.
14—Locking Collar
15—Bearing Flange
16—Ball Bearing
17—Lock Nut, 3/8 in.
18—Pin
19—Shaft

1. The auger does not have to be removed to repair shafts, cranks and fingers.

2. Use JDC3 fluted driver for removal of finger guide screws (1) (see “Special Tools”).

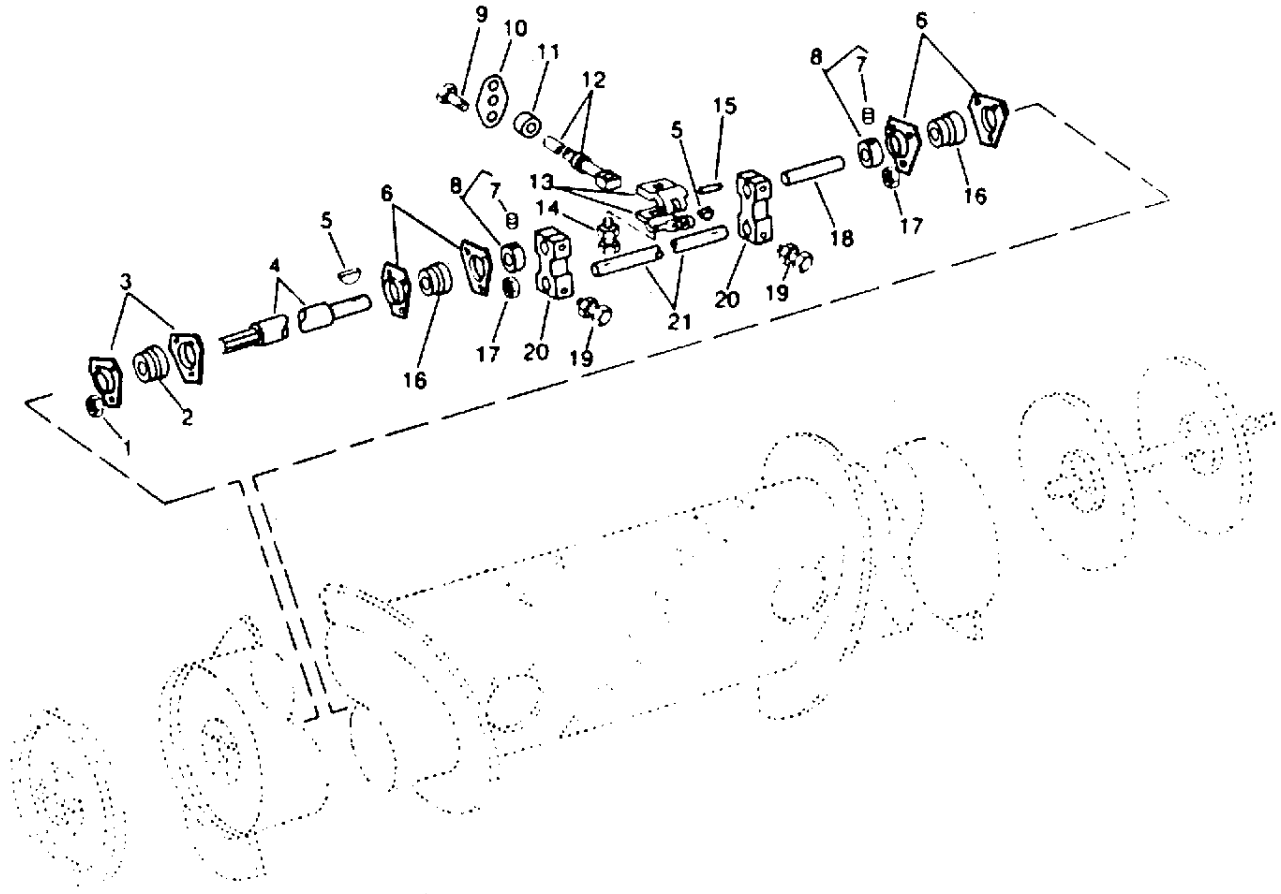
3. When assembling parts in the auger, tighten parts to the following specification:

Cap screws (10) in cranks (12) - 70 N·m (50 lb-ft)

Auger fingers in plastic bearings - 16 N·m (12 lb-ft)

1581,10020,ZJ -19-03OCT94

AUGER SHAFTS, CRANKS AND FINGERS
854, 854A AND 1253A

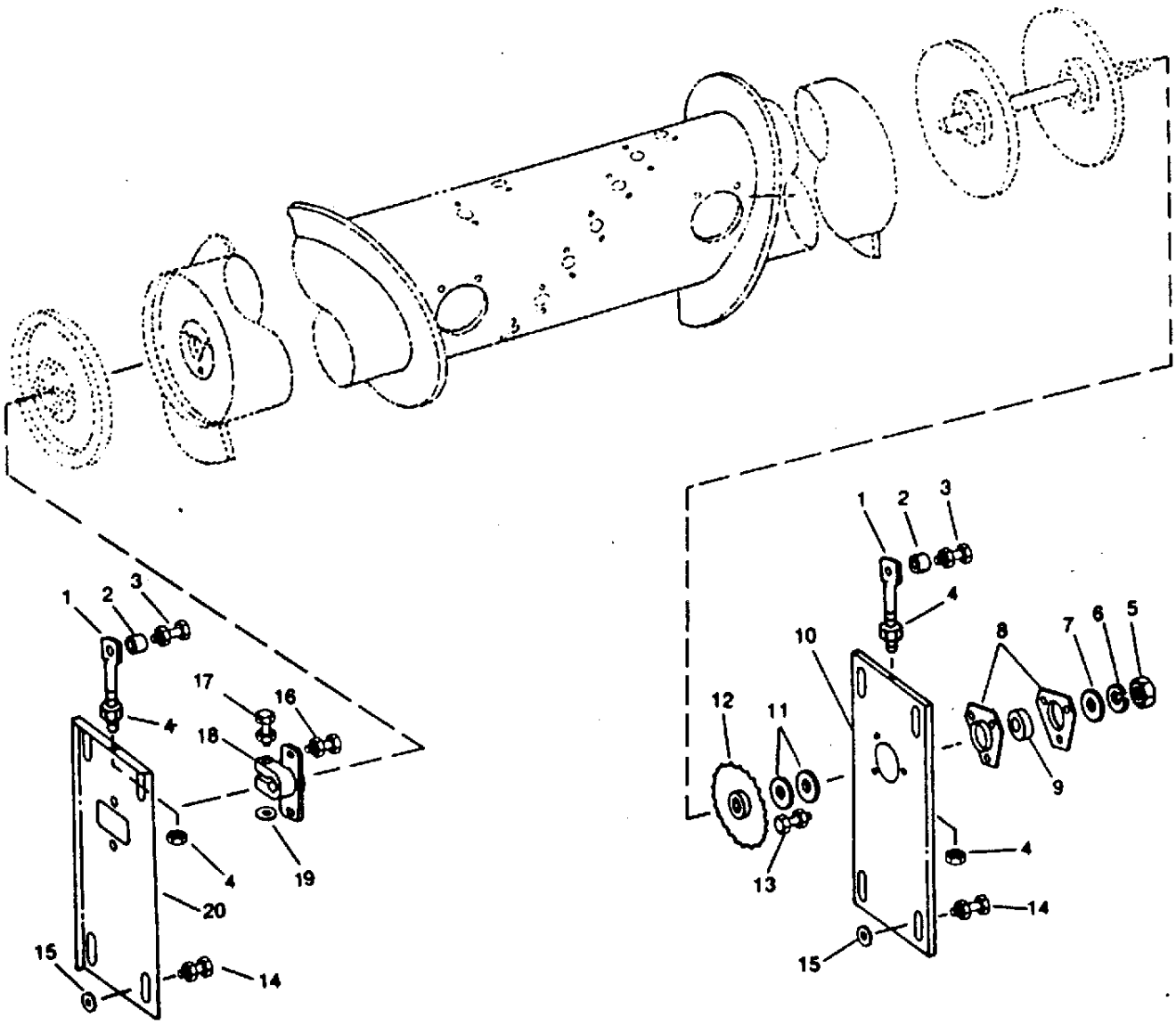


H44874 -UN-06AUG92

1—Lock Nut, 3/8 in. (3 used)
2—Bearing
3—Housing (2 used)
4—Shaft
5—Shaft Key (4 used)
6—Housing (4 used)
7—Set Screw, 1/4 x 1/4 in. (2 used)
8—Locking Collar (2 used)
9—Screw, 5/16 x 0.560 in. (36 used)
10—Cap (18 used)
11—Guide (18 used)
12—Finger (18 used)
13—Bearing
14—Screw, 5/16 x 1-3/4 in.
15—Spring Pin, 1/4 x 1-7/8 in.
16—Bearing (2 used)
17—Flange Nut, 3/8 in. (6 used)
18—Pin
19—Cap Screw, 3/8 x 2-1/4 (4 used)
20—Crank
21—Shaft

1581,10020,ZK -19-03OCT94

AUGER BRACKETS



1—Eyebolt
2—Bushing
3—Bolt, 3/8 x 1-1/4 in.
4—Nut 1/2 in.
5—Nut, 3/4 in.
6—Lock Washer, 3/4 in.
7—Washer, 25/32 x 1-5/8 x 0.180 in.
8—Bearing Flange
9—Bearing
10—Bracket
11—Washer, 1-13/32 x 2 x 0.060 in.
12—Sprocket (60 teeth)
13—Bolt, 3/8 x 3/4 in.
14—Bolt, 3/8 x 1 in.
15—Washer, 13/32 X 13/16 X 0.065 in.
(—576110)
16—Bolt, 1/2 x 1-1/4 in.
17—Cap Screw, 3/8 x 2-1/4 in.
18—Support
19—Washer
20—Bracket

TM1581,10020,G -19-03OCT94

ROW UNIT DRIVES

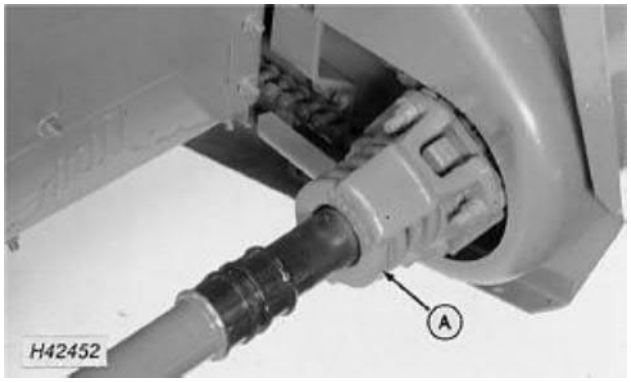
All drives on the row-crop head are protected by either two or three slip clutches.

454 and 454A Row-Crop Heads are equipped with two slip clutches. The auger slip clutch (A) is located on the drive shaft on the right-hand side of the header. The row-unit clutch is located on the right-hand end of the row unit drive shaft.

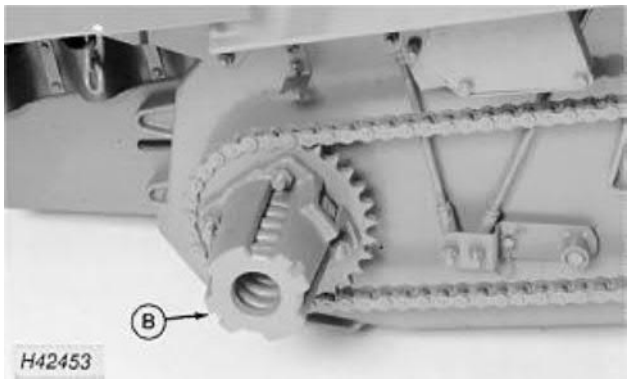
653, 653A, 654, 654A, 655, 655A, 853, and 853A Row-Crop Heads are equipped with three slip clutches. The auger slip clutch (A) is located on the main drive shaft on the right-hand side of the header. The row-unit clutches (B) are located on the right-hand end and left-hand end of each row unit drive shaft, outside the respective end sheets.

When replacing slip clutch springs or jaws, the four bolts used to compress the spring must be tight. Tighten nuts in the auger clutch to 45 N·m (35 lb-ft) torque and the row unit clutch to 108.5 N·m (80 lb-ft).

A 24H1571 1-25/32 x 2-7/8 x 0.120 in. washer can be added between the spring and the clutch carrier to increase torque capacity of clutch. Add as required to a maximum of two washers.



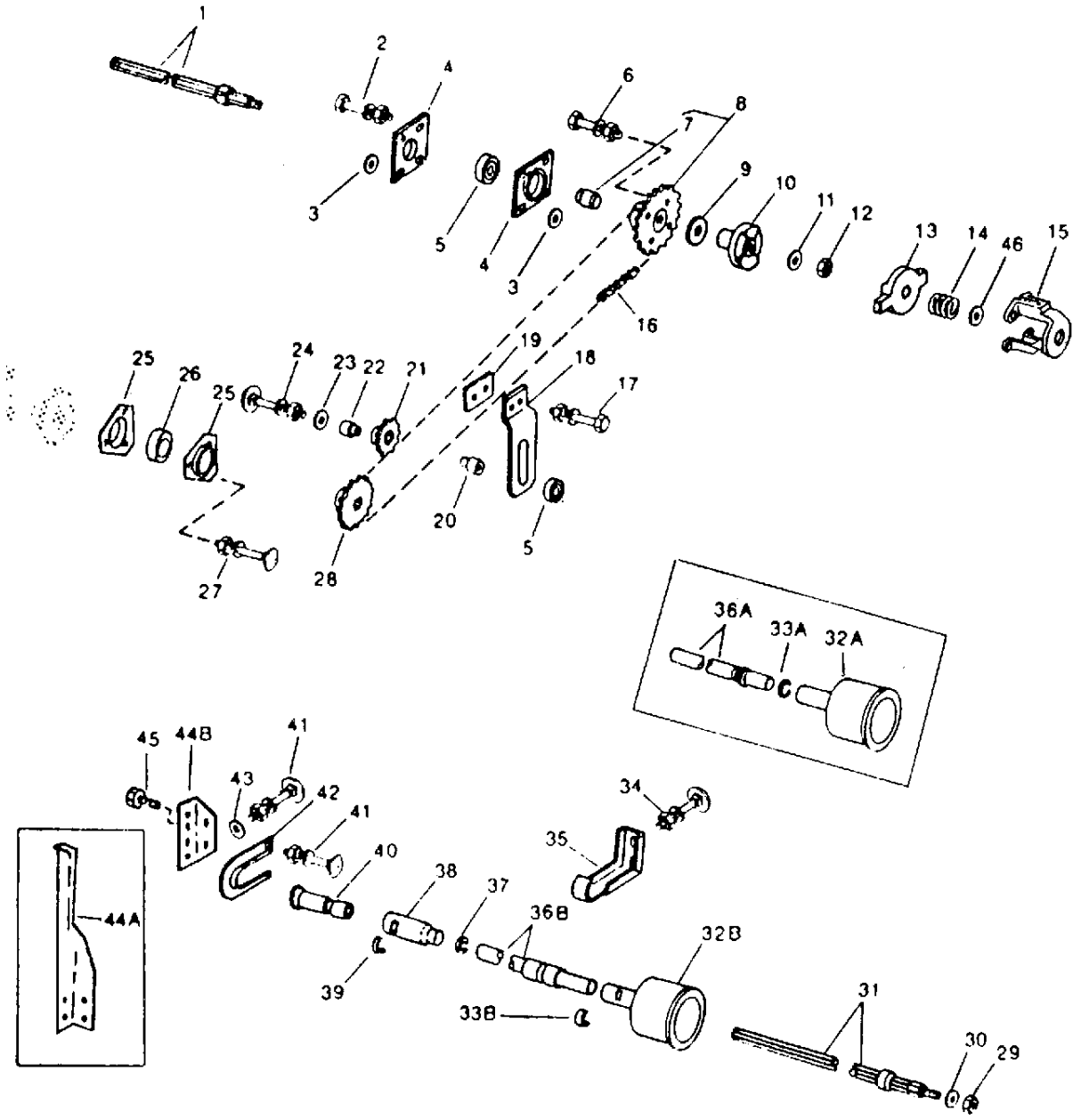
(Auger Drive Slip Clutch)



(Row Unit Drive Slip Clutch)

1581,10020,ZL -19-03OCT94

ROW UNIT DRIVES
453, 453A, 454, 454A, 653, 653A, 654, 654A, 655, 655A, 853, AND 853A



H44875 -UN-06AUG92

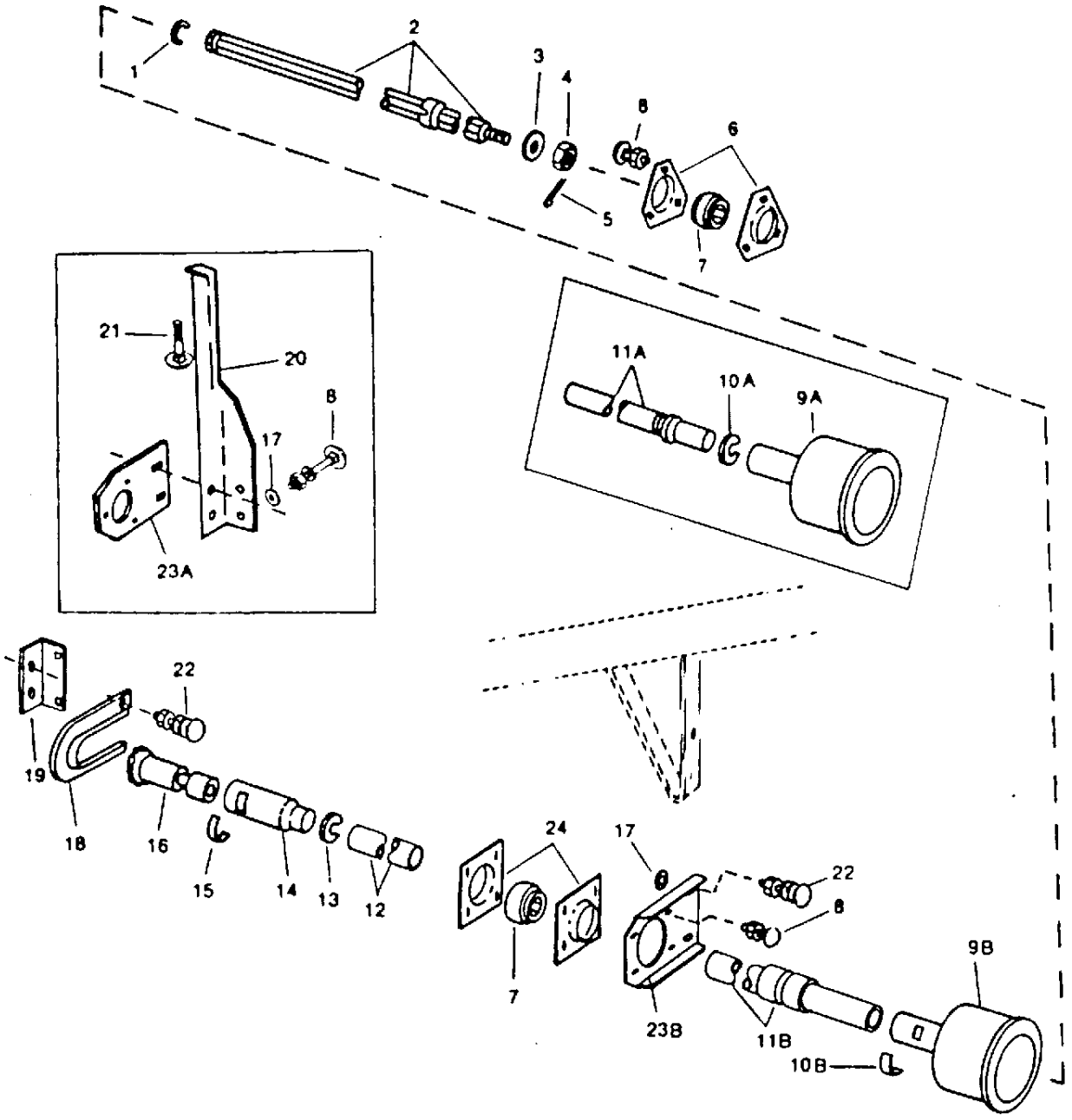
TM1581,HX100,DR-19-18AUG94

1—Shaft, Outer
2—Cap Screw, 3/8 x 1 (4 used)
3—Washer, 13/32 x 13/16 x 0.065 in.
4—Housing (2 used)
5—Bearing
6—Cap Screw, 1/2 x 2-1/2 in. (4 used)
7—Bushing
8—Sprocket, 30 Tooth Drive
9—Washer, 1.840 x 3.560 x 0.134 in.
10—Hub
11—Washer, 25/32 x 1-3/4 x 0.194 in. (2 used)
12—Nut, 3/4 in. (2 used)
13—Jaw
14—Spring
15—Housing
16—Chain
17—Cap Screw, 3/8 x 1-1/4 (2 used)
18—Strap (2 used)
19—Strap
20—Bushing (3 used)
21—Sprocket, 15 Tooth (2 used)
22—Spacer, 0.516 x 0.623 x 0.551 in.
23—Washer, 17/32 x 1-1/4 x 0.180 in. (2 used)
24—Bolt, 1/2 x 2-3/4 in.
25—Housing (2 used)
26—Bearing
27—Bolt, 3/8 x 3/4 in.
28—Sprocket, 13 Tooth
29—Nut, 3/4 in.
30—Washer, 25/32 x 1-3/4 x 0.194 in.
31—Shaft
32A—Shield (S.N. —630252)
32B—Shield
33A—Snap Ring (S.N. —630252)
33B—Bearing
34—Bolt, 3/8 x 3/4 in. (2 used)
35—Support
36A—Shield
36B—Shield
37—Snap Ring
38—Shield
39—Bearing
40—Sprocket
41—Bolt, 3/8 x 3/4 in.
42—Bracket
43—Washer, 13/32 x 13/16 x 0.065 in. (2 used)
44A—Support (S.N. —344700)
44B—Angle (S.N. 344701—)
45—Screw, 5/16 x 3/4 in.
46—Washer, 25/32 x 2-7/8 x 0.120 in.

Right-Hand Illustrated

TM1581,10020,I -19-03OCT94

ROW UNIT DRIVES
854, 854A AND 1253A



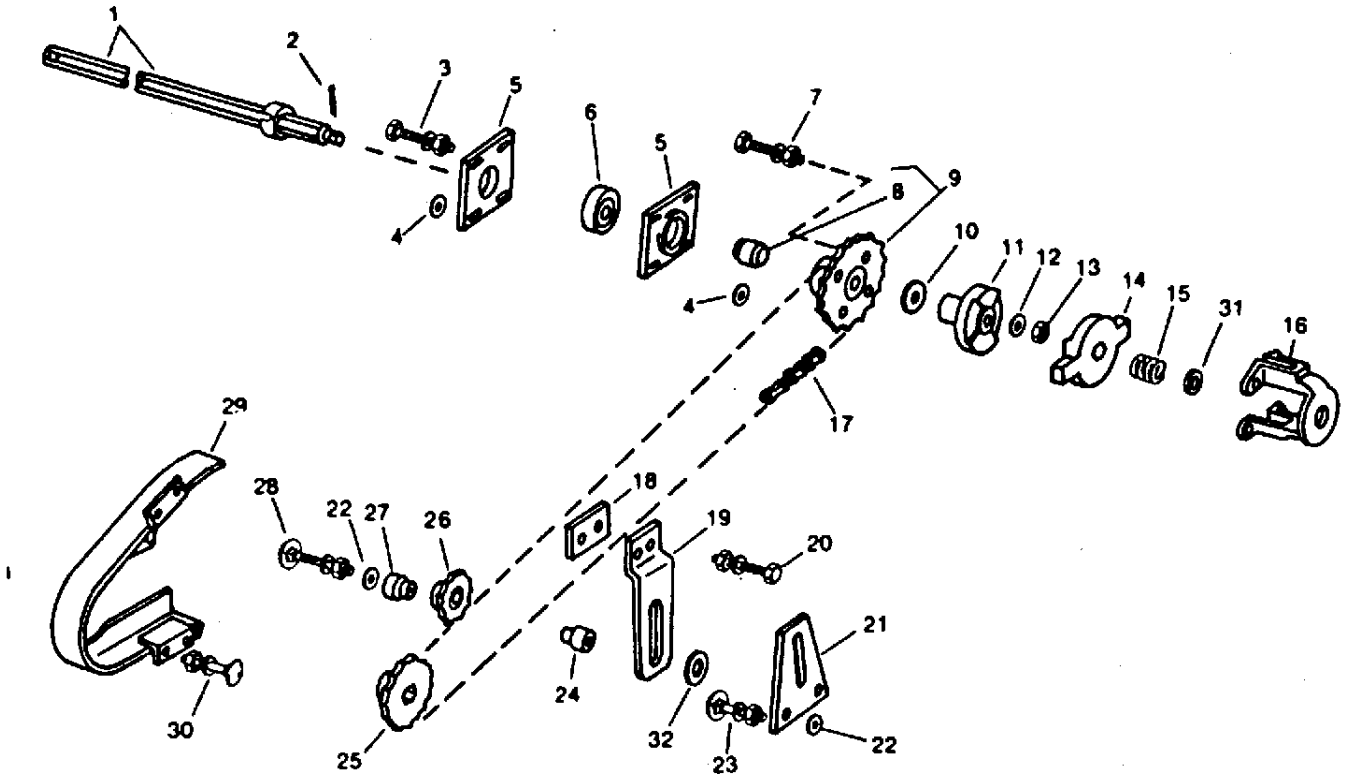
TM1581,HX100,DS-19-18AUG94

1—Snap Ring
2—Shaft
3—Washer, 25/32 x 1-3/4 x 0.194 in.
4—Nut, Slotted, M20
5—Cotter Pin, 5 x 40 mm
6—Housing (4 used)
7—Bearing (2 used)
8—Bolt, 3/8 x 3/4 in.
9A—Shield (S.N. —635100)
9B—Shield
10A—Snap Ring (S.N. —635100)
10B—Bearing
11A—Shield, (S.N. —620463) (854A)
(S.N. 620464—635100) (854A)
(S.N. —620511) (1253A)
(S.N. 620511—635100) (1253A)
11B—Shield (2 used)
12—Shield
13—Snap Ring
14—Shield
15—Bearing
16—Sprocket, 14 Tooth
17—Washer, 13/32 x 13/16 x 0.065 in. (3 used)
18—Bracket
19—Angle
20—Support
21—Screw, M8 X 20
22—Bolt, 3/8 x 3/4 in. (4 used)
23A—Support
23B—Bracket
24—Housing (2 used)

Right-Hand Illustrated

TM1581,10020,J -19-03OCT94

ROW UNIT DRIVES
854, 854A, AND 1253A



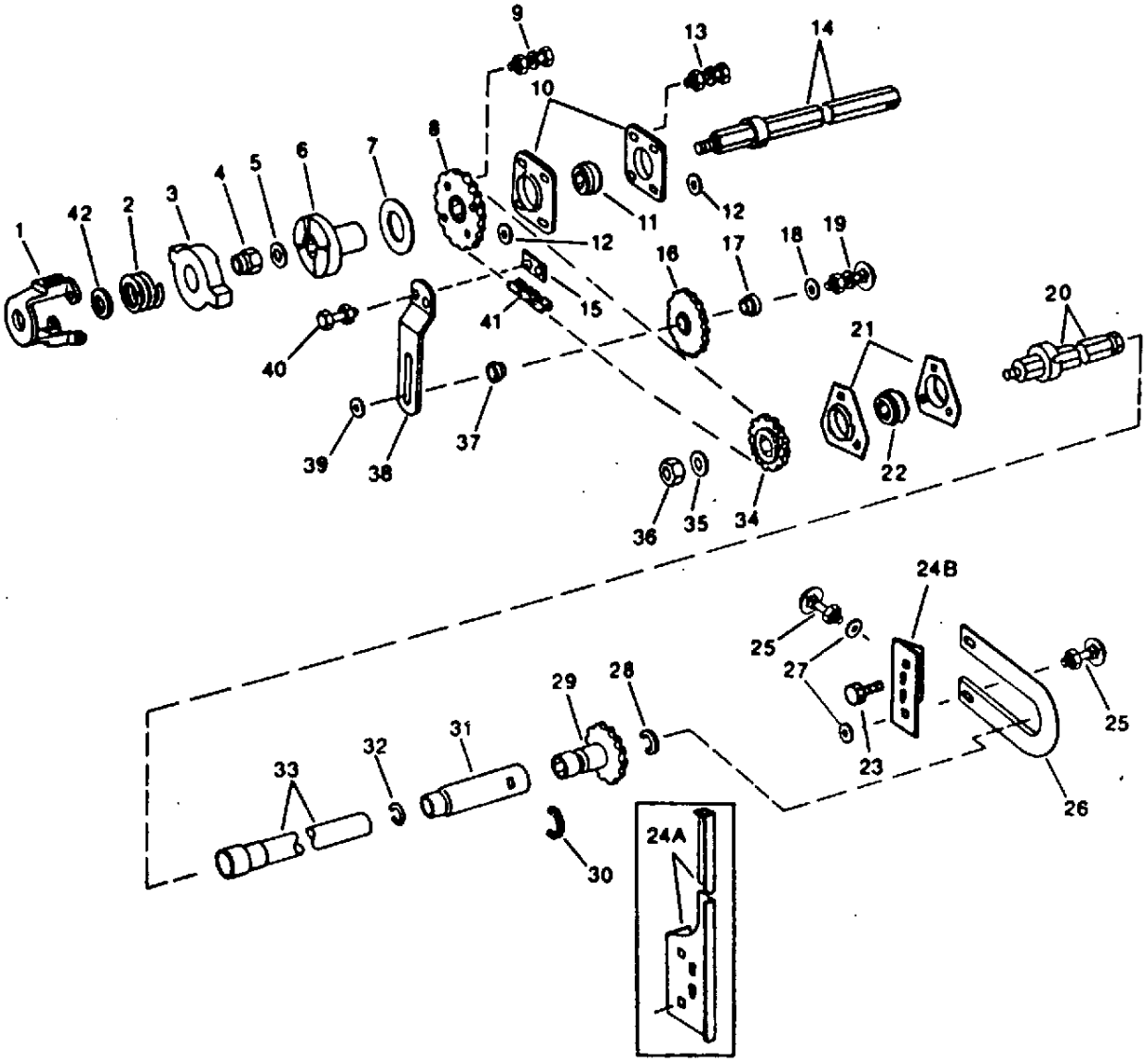
H44877 -UN-06AUG92

1—Shaft
2—Cotter Pin, 5 x 40 mm
3—Cap Screw, 3/8 x 1 in. (4 used)
4—Washer, 13/32 x 13/16 x 0.056 in. (8 used)
5—Housing (2 used)
6—Bearing
7—Cap Screw, 1/2 x 2-1/2 in. (4 used)
8—Bushing
9—Sprocket, 30 Tooth (854A)
Sprocket, 38 Tooth (1253A)
10—Washer, 1.84 x 3.560 x 0.134 in.
11—Hub
12—Washer, 25/32 x 1 5/8 x 0.180 in. (2 used)
13—Nut, Slotted, M20
14—Jaw
15—Spring
16—Housing
17—Chain
18—Strap (854A)
19—Strap (854A)
20—Cap Screw, M10 x 30 (2 used)
21—Strap (1253A)
22—Washer, 17/32 x 1-1/4 x 0.180 in. (2 used)
23—Bolt, 1/2 x 1-1/4 in. (2 used)
24—Bushing
25—Sprocket, 13 Tooth (854A)
Sprocket, 17 Tooth (1253H)
26—Sprocket, 15 Tooth
27—Bushing
28—Bolt, 1/2 x 2 3/4 in.
29—Shield
30—Self-Locking Screw M20 x 45 (4 used)
31—Washer, 25/32 x 2-7/8 x 0.120 in.
32—Washer, 17/32 x 1-1/8 x 0.060 in.

Right-Hand Illustrated

1581,10020,ZM -19-03OCT94

ROW UNIT DRIVES
653, 653A, 654, 654A, 655, AND 655A



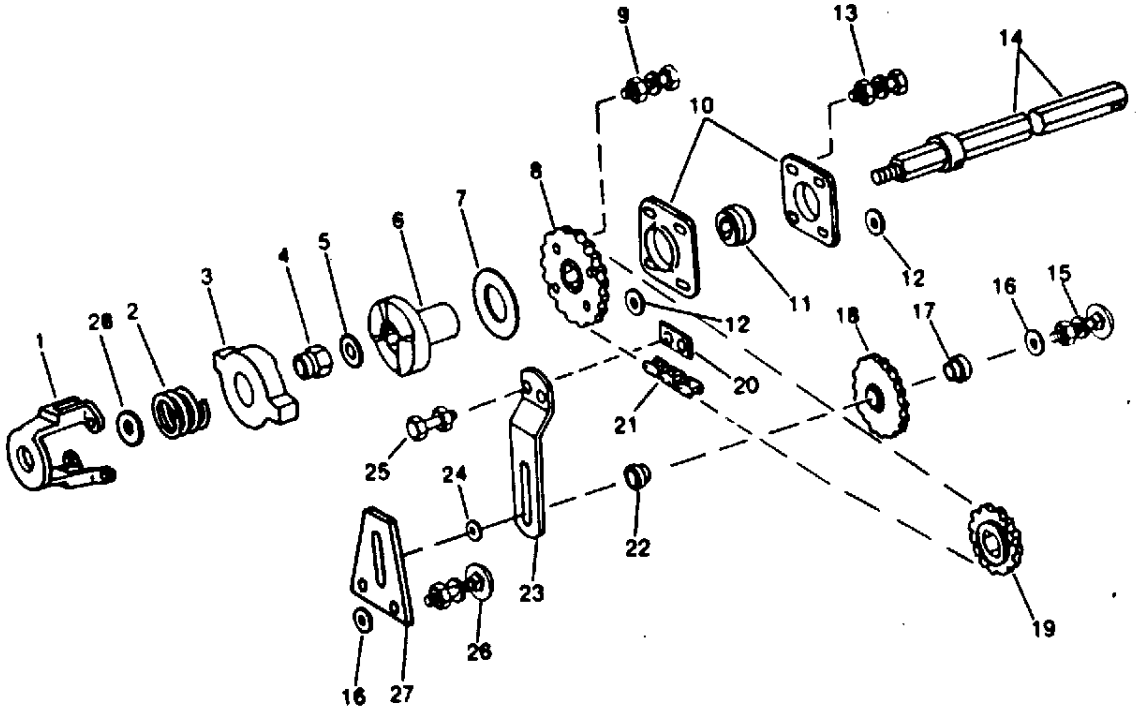
TM1581,HX100,DU-19-18AUG94

1—Housing
2—Spring
3—Jaw
4—Nut, 3/4 in.
5—Washer, 25/32 x 1-5/8 x 0.180 in.
6—Hub
7—Washer, 1.84 x 3.356 x 0.134 in.
8—Sprocket, 30 Tooth
9—Cap Screw, 1/2 x 2-1/2 in. (4 used)
10—Housing (2 used)
11—Bearing
12—Washer, 13/32 x 13/16 x 0.065 in. (8 used)
13—Cap Screw, 3/8 x 1 (4 used)
14—Shaft
15—Strap
16—Sprocket, 15 Tooth
17—Bushing
18—Washer, 17/32 x 1-1/4 x 0.180 in.
19—Bolt, 1/2 x 2-3/4 in.
20—Shaft
21—Housing (2 used)
22—Bearing
23—Screw, 5/16 x 3/4 in.
24A—Support
24B—Angle
25—Bolt, 3/8 x 3/4 (4 used)
26—Bracket
27—Washer, 13/32 x 13/16 x 0.065 in.
28—Snap Ring
29—Sprocket, 14 Tooth
30—Bearing
31—Shield
32—Snap Ring
33—Shield
34—Sprocket, 13 Tooth
35—Washer, 25/32 x 1-5/8 x 0.180 in.
36—Nut, 3/4 in.
37—Bushing
38—Strap
39—Washer, 17/32 x 1-1/4 x 0.180 in.
40—Cap Screw, 3/8 x 1 in. (2 used)
41—Chain
42—Washer, 25/32 x 2-7/8 x 0.120 in.

Left-Hand Illustrated

TM1581,10020,L -19-03OCT94

ROW UNIT DRIVES
854, 854A AND 1253A



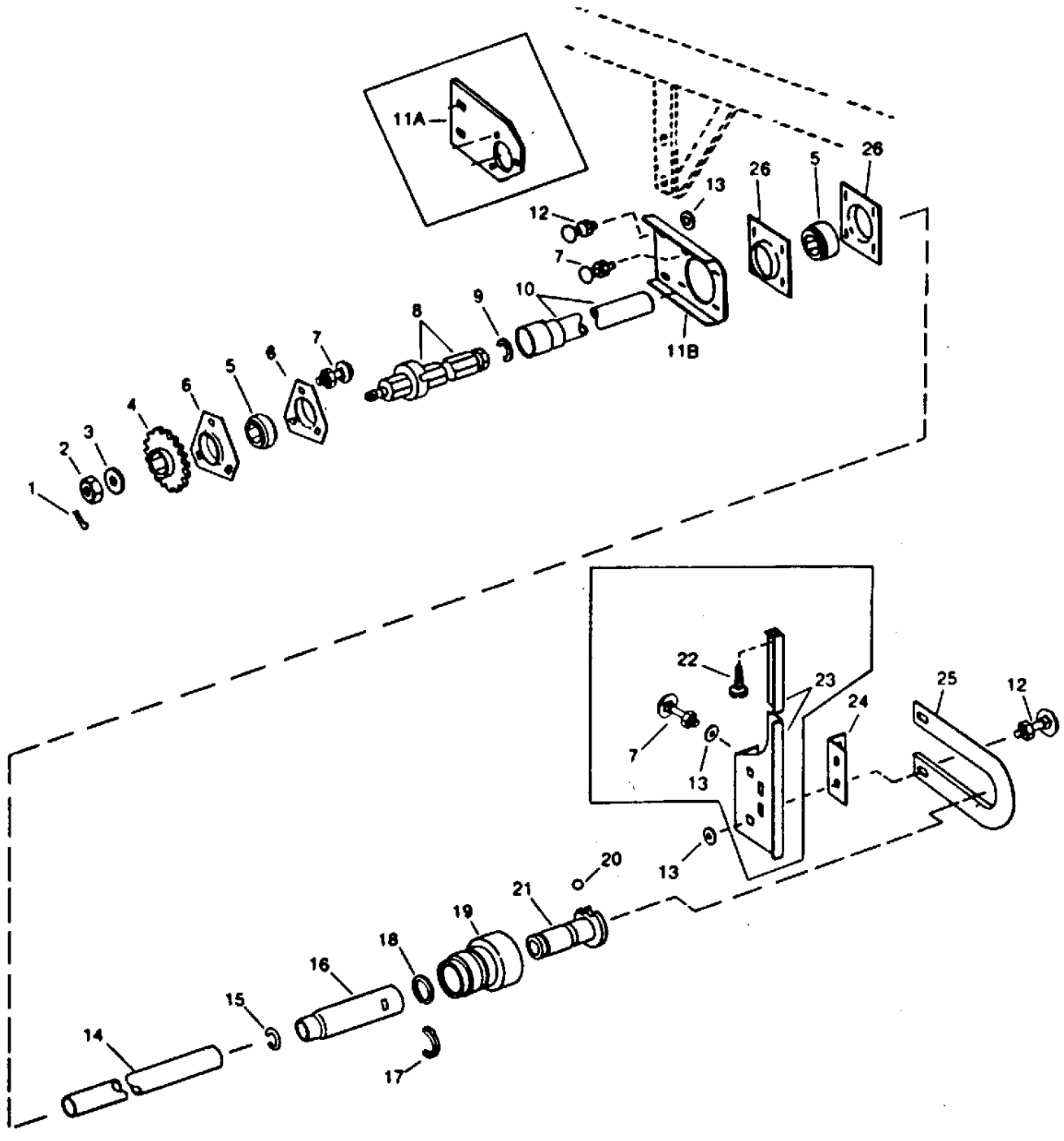
H44879 -UN-06AUG92

1—Housing
2—Spring
3—Jaw
4—Nut
5—Washer, 25/32 x 1-5/8 x 0.180 in.
6—Hub
7—Washer
8—Sprocket, 30 Tooth (854A) Sprocket, 39 Tooth (1253A)
9—Cap Screw, 1/2 x 2-1/2 in. (4 used)
10—Housing (2 used)
11—Bearing
12—Washer, 13/32 x 13/16 x 0.065 in. (8 used)
13—Cap Screw, 3/8 x 1 in. (4 used)
14—Shaft
15—Bolt, 1/2 x 2-3/4 in.
16—Washer, 17/32 x 1-1/4 x 0.180 in. (2 used)
17—Spacer
18—Sprocket, 15 Tooth
19—Sprocket, 13 Tooth (854A) Sprocket, 17 Tooth (1253A)
20—Strap
21—Chain
22—Bushing
23—Strap
24—Washer, 17/32 x 1-1/8 x 0.068 in.
25—Flange Nut
26—Bolt, 1/2 x 1-1/4 in. (2 used)
27—Strap
28—Washer, 25/32 x 2-7/8 x 0.120 in.

Left-Hand Illustrated

1581,10020,ZN -19-03OCT94

ROW UNIT DRIVES
854, 854A AND 1253A



TM1581,HX100,DW-19-18AUG94

1—Cotter Pin, 5 x 40 in.
2—Nut, Slotted, M20
3—Washer, 25/32 x 1-3/4 x 0.194 in.
4—Sprocket, 13 Tooth (854A) Sprocket, 17 Tooth (1253A)
5—Bearing (2 used)
6—Housing
7—Bolt, 3/8 x 3/4 in. (8 used)
8—Shaft
9—Snap Ring
10—Tube
11A—Support
11B—Bracket
12—Bolt, 3/8 x 3/4 in. (4 used)
13—Washer, 13/32 x 13/16 x 0.065 in. (5 used)
14—Shield, Inner
15—Snap Ring
16—Shield
17—Bearing
18—Snap Ring
19—Quick Coupler
20—Ball (3 used)
21—Sprocket, 14 Tooth
22—Screw, M8 x 20
23—Support
24—Angle
25—Bracket
26—Housing

Left-Hand Illustrated

TM1581,10020,M -19-03OCT94

HYDRAULIC CYLINDER SAFETY STOP

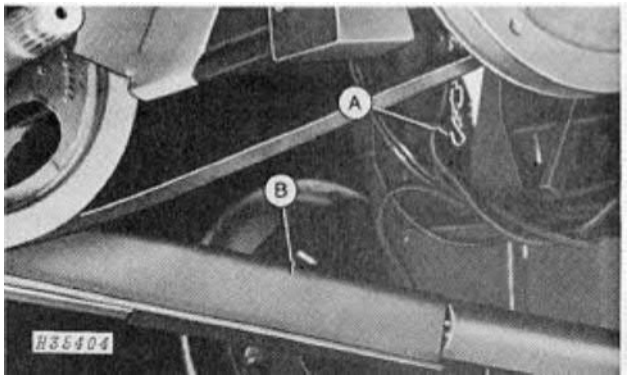
CAUTION: When working under the row-crop head, always place the hydraulic cylinder safety stop in safety position to prevent header from lowering.

1. Start engine, raise feeder house and fully extend hydraulic cylinder to place safety stop in safety position.

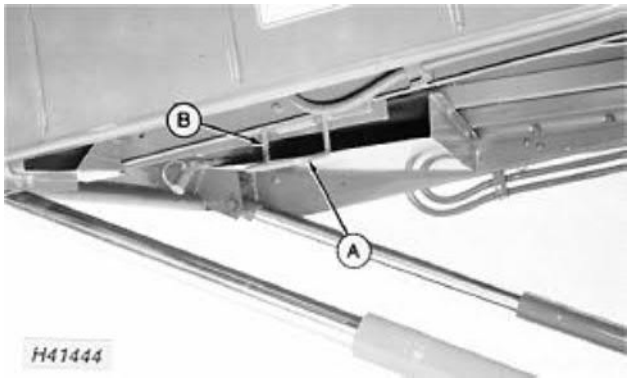
2. (20 Series Combines) Disconnect support chain (A) from safety stop (B) and lower safety stop onto the cylinder rod.

3. (Maximizer Combines) Hold handle (A) and release safety stop by removing pin (B) and lifting stop up and in and lowering it down onto the cylinder rod.

After completing work on the row crop head, place safety stop in storage position.



20 Series Combines



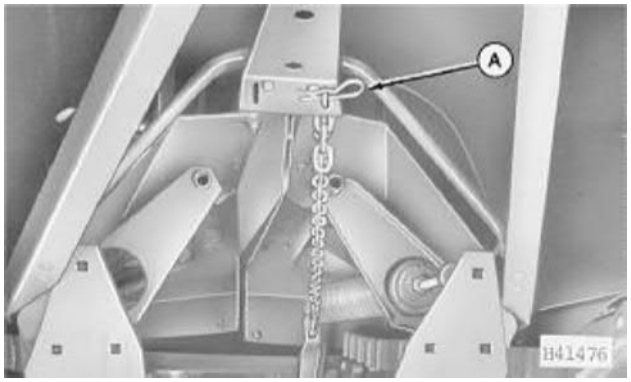
Maximizer Combines

1581,10020,ZO -19-03OCT94

REMOVING GATHERER SHEETS

1. Raise row-crop head and lower hydraulic cylinder safety stop.

2. Pull spring locking pin (A) and lower point to ground. Store pin in same chain link.



-UN-05DEC89
H41476

TM1581,10020,N -19-03OCT94

3. Open gatherer sheets.

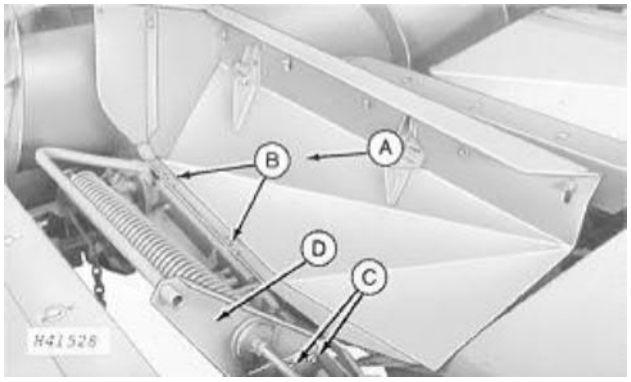
-UN-05DEC89
H41477

HX,1401,10015AG-19-16DEC92

4. Remove two cotter pins (B) and lift off sheet (A). Do not mix sheets. They have been adjusted for each row unit.

5. Remove round head bolts (C) and remove bracket (D).

A—Gatherer Sheet
B—Cotter Pins
C—Round Head Bolts
D—Bracket



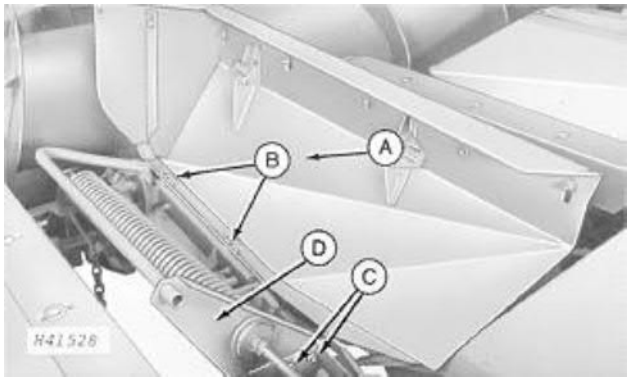
-UN-18DEC89
H41528

HX,1401,10015AH-19-16DEC92

REMOVING AND REPAIRING GATHERING BELTS

1. After lowering gatherer point, swing up sheet (A), remove two cotter pins (B) and lift off sheet. Do not mix sheets. They have been adjusted for each row unit.

2. Remove two round head bolts (C) and remove bracket (D).



-UN-18DEC89
H41528

1581,10020,WA -19-03OCT94

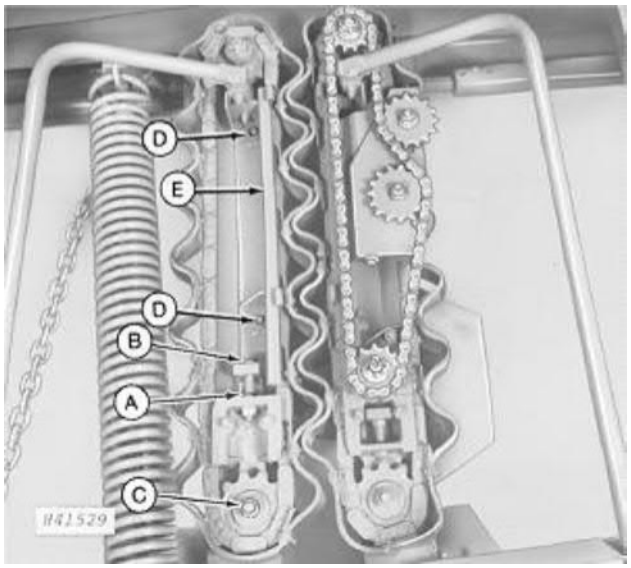
3. Loosen jam nut (A) and back off bolt (B) to loosen belt.

4. Remove nut and washer on idler (C).

5. Remove two cap screws (D) and remove chain guide (E).

NOTE: Remove only the right-hand chain guide to remove either belt. "Right-hand" and "left-hand" sides are determined by facing in the direction the row-crop head will travel when in use.

6. Lift off gathering belt with idler. Set idler aside.



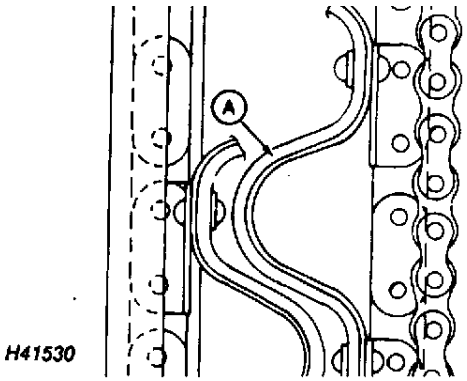
-UN-20DEC89
H41529

HX,1401,10015AJ-19-16DEC92

NOTE: A gatherer chain can be repaired by replacing the 2-ply rubber fabric. One of the fabric plies is thicker than the other. Install the THICKER ply (A) so it contacts the crop.

7. Install gathering belt, idler, and chain guide.

NOTE: A new gatherer belt and chain from service parts will be stiff and chain rollers will not turn freely. This condition is normal for new parts. Chain will wear and loosen during operation.



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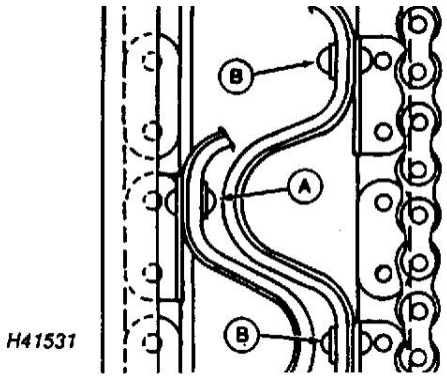
H41530

HX,1401,10015AK-19-03OCT94

8. Position belt on sprockets so the lug attachment link (A) of the chain is centered between the attachment links (B) of the mating chain within 9.6 mm (3/8 in.).



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H41531

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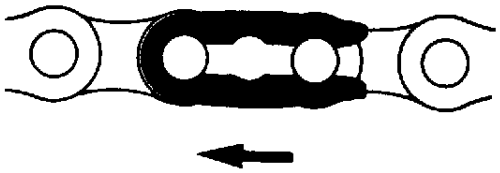
9. Connecting link on chain must be attached with the trailing edge away from the direction of travel.



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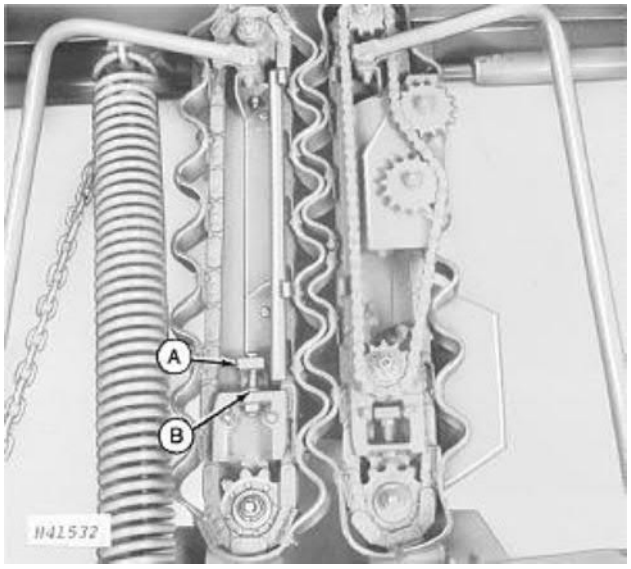
HX,1401,10015AM-19-16DEC92

10. Tighten bolt (A) until a 88 N (20 lb) force applied midway between the drive and idler sprockets will deflect the belt 13 to 25 mm (1/2 to 1 in.).

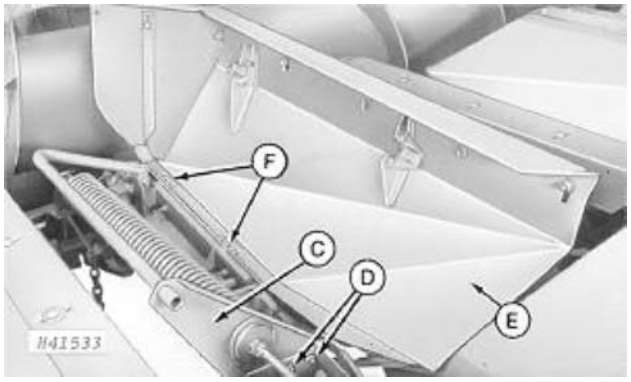
11. Tighten jam nut (B).

12. Attach bracket (C) with round head bolts (D).

13. Attach gatherer sheet (E) with cotter pins (F).



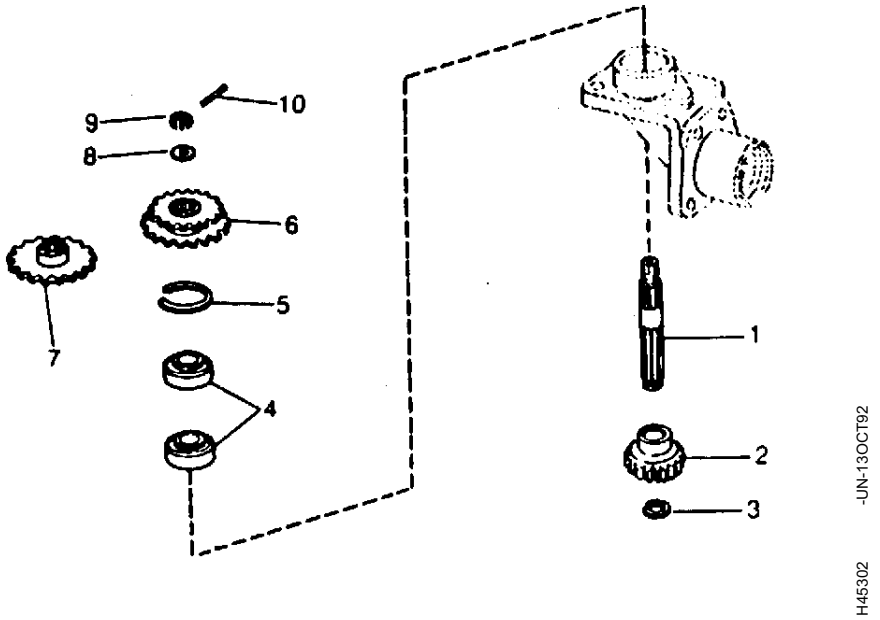
H41532 -UN-18DEC89



H41533 -UN-20DEC89

1581,10020,ZQ -19-03OCT94

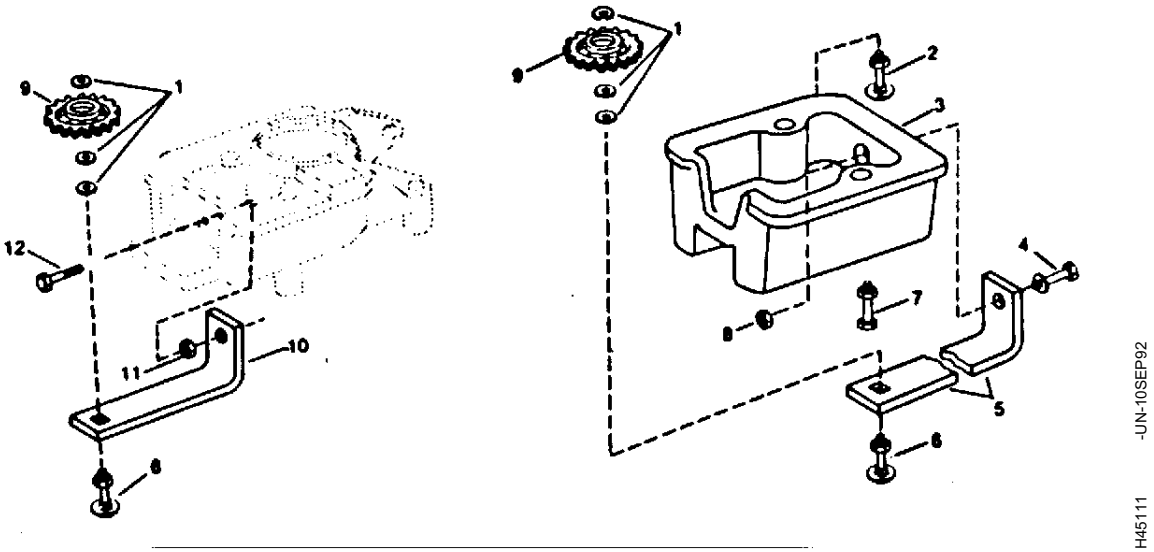
GATHERER CHAIN DRIVE—EXPLODED VIEW



1—Shaft
2—Gear (18 Teeth)
3—Snap Ring
4—Ball Bearing
5—Snap Ring
6—Left-Hand Sprocket (11 Teeth and 12 Teeth)
7—Right-Hand Sprocket (11 Teeth)
8—Washer, 25/32 x 1-3/8 x 0.180 in.
9—Slotted Nut, 3/4 in.
10—Cotter Pin, 3.2 x 5.0 mm

TM1581,10020,O -19-03OCT94

RIGHT-HAND AND LEFT-HAND GATHERER CHAIN DRIVE IDLER



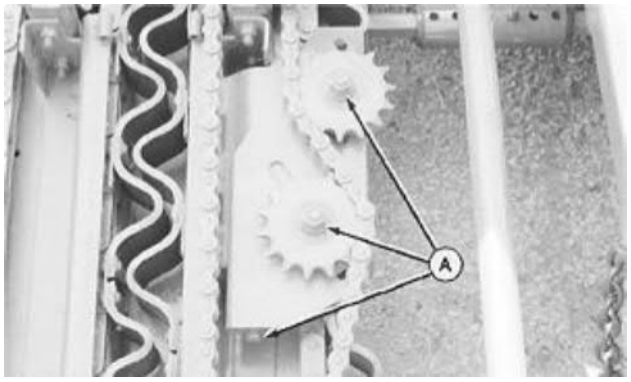
1—Washer, 21/32 x 1-3/8 x 0.134 in.
2—Bolt, 3/8 x 4 in.
3—Support
4—Cap Screw, 1/2 x 3-1/4 in.
5—Right-Hand Strap
6—Bolt, 5/8 x 3 in.
7—Cap Screw, 3/8 x 3-3/4 in.
8—Nut, 1/2 in.
9—Sprocket (11 Teeth)
10—Left-Hand Strap
11—Nut, 1/2 in.
12—Cap Screw, 1/2 x 2-1/2 in.

HX,1401,10015AP-19-16DEC92

REMOVING ROTARY KNIFE

1. Remove gatherer sheets. See “Removing Gatherer Sheets” in this Group.

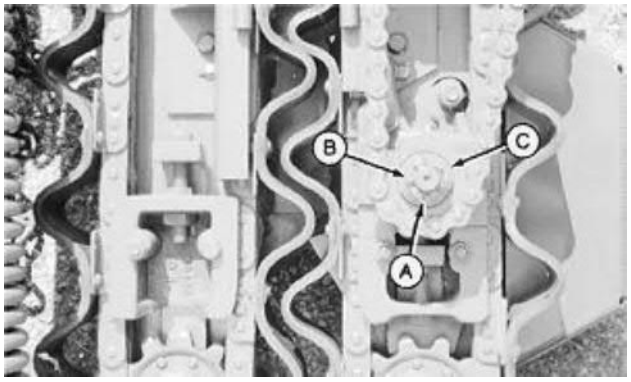
2. Loosen chain tightener (A).



TM1581,10020,P -19-03OCT94

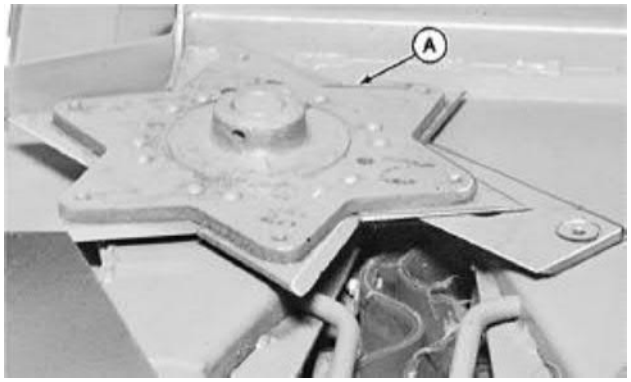
CAUTION: Rotary knife with shaft will drop when slotted nut is removed.

3. Remove cotter pin (A), slotted nut (B) and flat washer (C).



HX,1401,10015AR-19-16DEC92

4. Remove rotary knife (A).



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H45114

HX,1401,10015AS-19-16DEC92

REPLACING ROTARY KNIFE SECTIONS

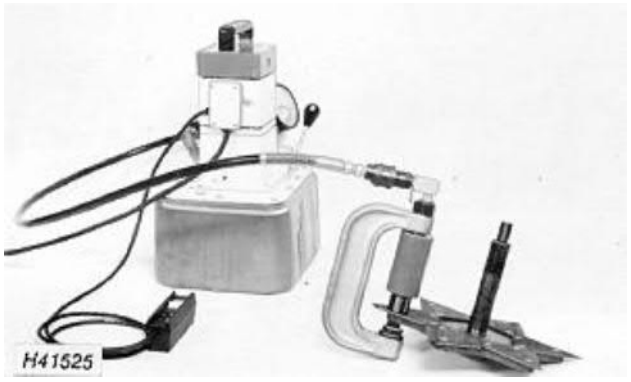
1. Use *D01170AA Press to remove and install rivets when replacing knife sections. Instructions are included with the press.

IMPORTANT: Replace knife sections with special high carbon steel sections having hard surface treatment on the beveled edges.

2. For good knife section and stationary knife contact, remove all burrs from attaching rivets with a file or electric sander.

CAUTION: Wear suitable eye protection when using sander to remove burrs.

*Order from:
Service Tools, Box 314, Owatonna MN 55060



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HX,1401,10015AT-19-03OCT94

ADJUSTING ROTARY KNIFE SECTIONS

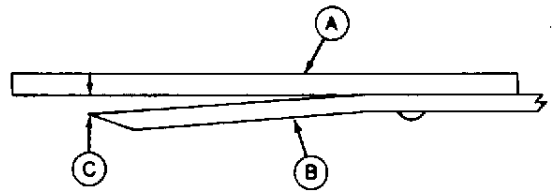
1. For a good cut and to keep wear of stationary knife blade (A) and rotary knife (B) sections to a minimum, the highest rotary knife section must contact the stationary knife evenly.

100
20
30

2. Check cutting surfaces of each rotary knife section. Clearance between highest knife section and stationary knife must not be more than 0.20 mm (0.008 in.) (C). Maximum clearance on other five sections is 76 mm (0.030 in.).

3. If clearance is too much, slotted nut on rotary knife must be tightened or shim stationary knife with H100293 as required to bring clearance to 0.20 mm (0.008 in.). See your John Deere dealer for purchase of H100293.

IMPORTANT: When knife sections are replaced, there must not be more than 0.20 mm (0.008 in.) clearance at the highest section. Riveting process can cause knife sections to deflect. Rotary knife is correctly set when highest knife section is warm (not hot) to the touch after operation.



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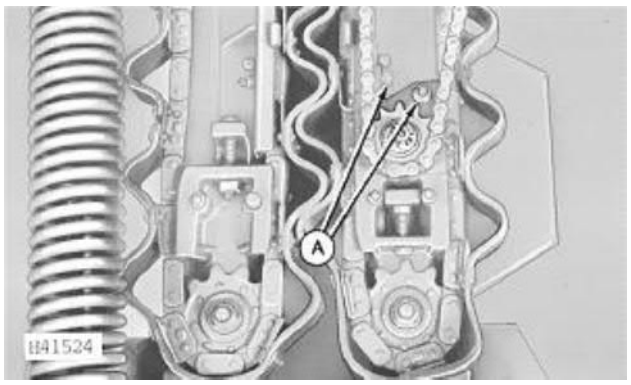
HX,1401,10015AU-19-03OCT94

REMOVING STATIONARY KNIFE

Raise row-crop head to maximum height and lower safety stop.

1. Remove nuts from plow bolts (A) attaching bearing housing to row unit frame.



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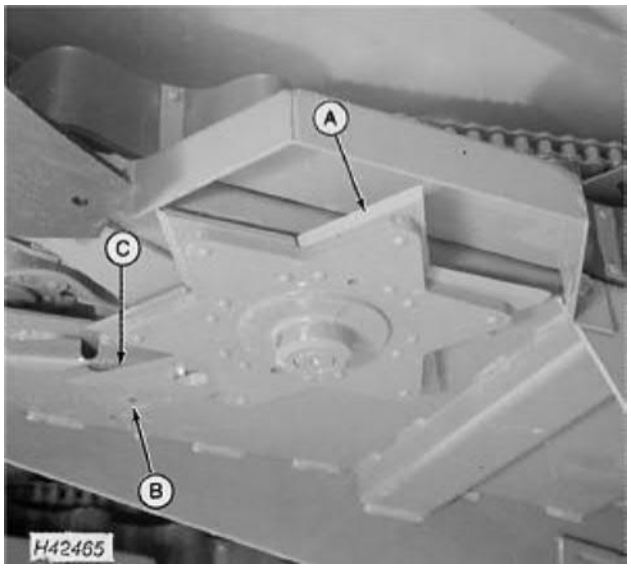
TM1581,10020,Q -19-03OCT94

2. Remove rotary knife (A). (See “Rotary Knives”.)

3. Remove socket head plow bolt (B) and remove stationary knife (C).

NOTE: When stationary knife becomes worn, it can be reversed to double its life. Do NOT turn stationary knife over or cutting edge will not match rotary knife.



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HX,1401,10015AW-19-16DEC92

INSTALLING ROTARY KNIFE

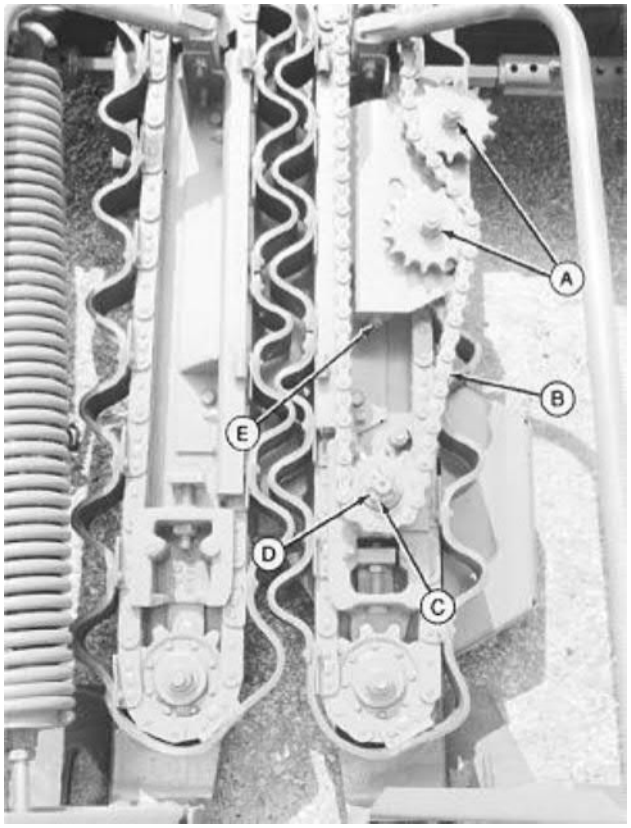
1. Turn slotted nut (D) until the rotary knife can be rotated by hand. A slight drag or shearing action must be felt as the rotary knife passes across the stationary knife. See “Adjusting Rotary Knife” in this Group.

2. Replace cotter pin (C).

3. Replace rotary knife chain (B).

4. Tighten adjusting bolt (E) until an 8 N (20 lb) force applied midway between the sprockets at point (B) will deflect chain 5-8 mm (3/16—5/16 in.).

5. Tighten nuts (A) to 115 N·m (85 lb-ft).



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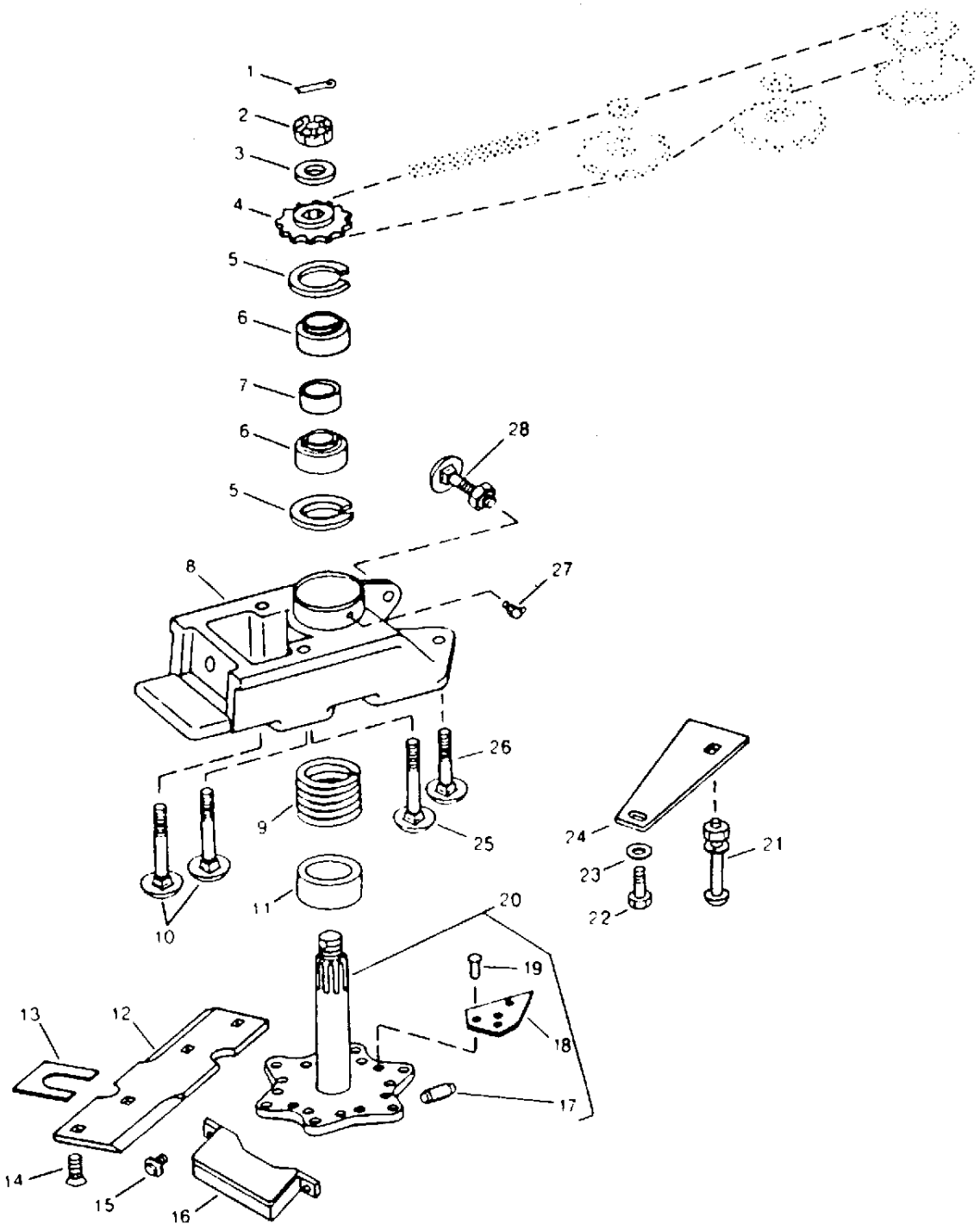
HX,1401,10015AX-19-16DEC92

KNIFE DRIVE AND BEARINGS— 453, 453A, 454, 454A, 653, 653A, 654, 654A, 655, 655A, 853 AND 853A

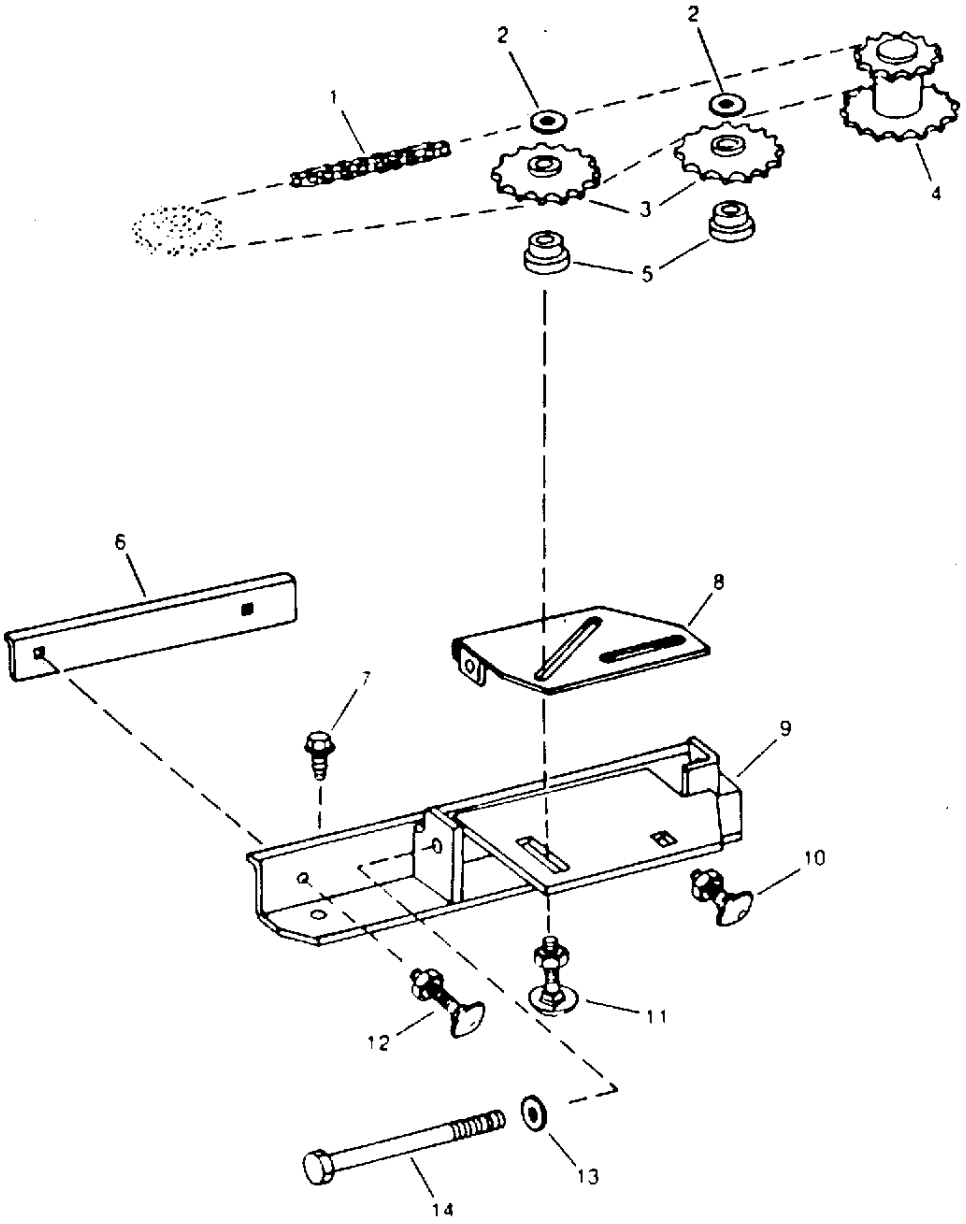


1581,10020,XA -19-03OCT94

1—Cotter Pin, 3 x 50 mm
2—Nut, Slotted, 3/4 in.
3—Washer, 25/32 x 1-3/8 x 0.180 in.
4—Sprocket, 12 Tooth
5—Snap Ring (2 used)
6—Bearing (2 used)
7—Spacer
8—Housing
9—Spring
10—Bolt, 3/8 x 4 in. (2 used)
11—Spacer
12—Knife, Stationary
13—Shim
14—Screws, 1/2 x 1 in.
15—Screw (2 used)
16—Shield
17—Spring Pin, 3/8 x 2 in.
18—Section (6 used)
19—Plow Bolt and Nut
20—Knife
21—Bolt, 3/8 x 4-1/2 in.
22—Cap Screw, 3/8 x 1-1/4 in.
23—Washer, 13/32 x 7/8 x 0.120 in.
24—Plate
25—Bolt, 1/2 x 4-1/2 in.
26—Bolt, 1/2 x 2-1/2 in.
27—Lubrication Fitting
28—Bolt, 3/8 x 1-1/4 in.

1581,10020,ZR -19-03OCT94

KNIFE DRIVE
453, 453A, 454, 454A, 653, 653A, 654, 654A, 655, 655A, 853 AND 853A

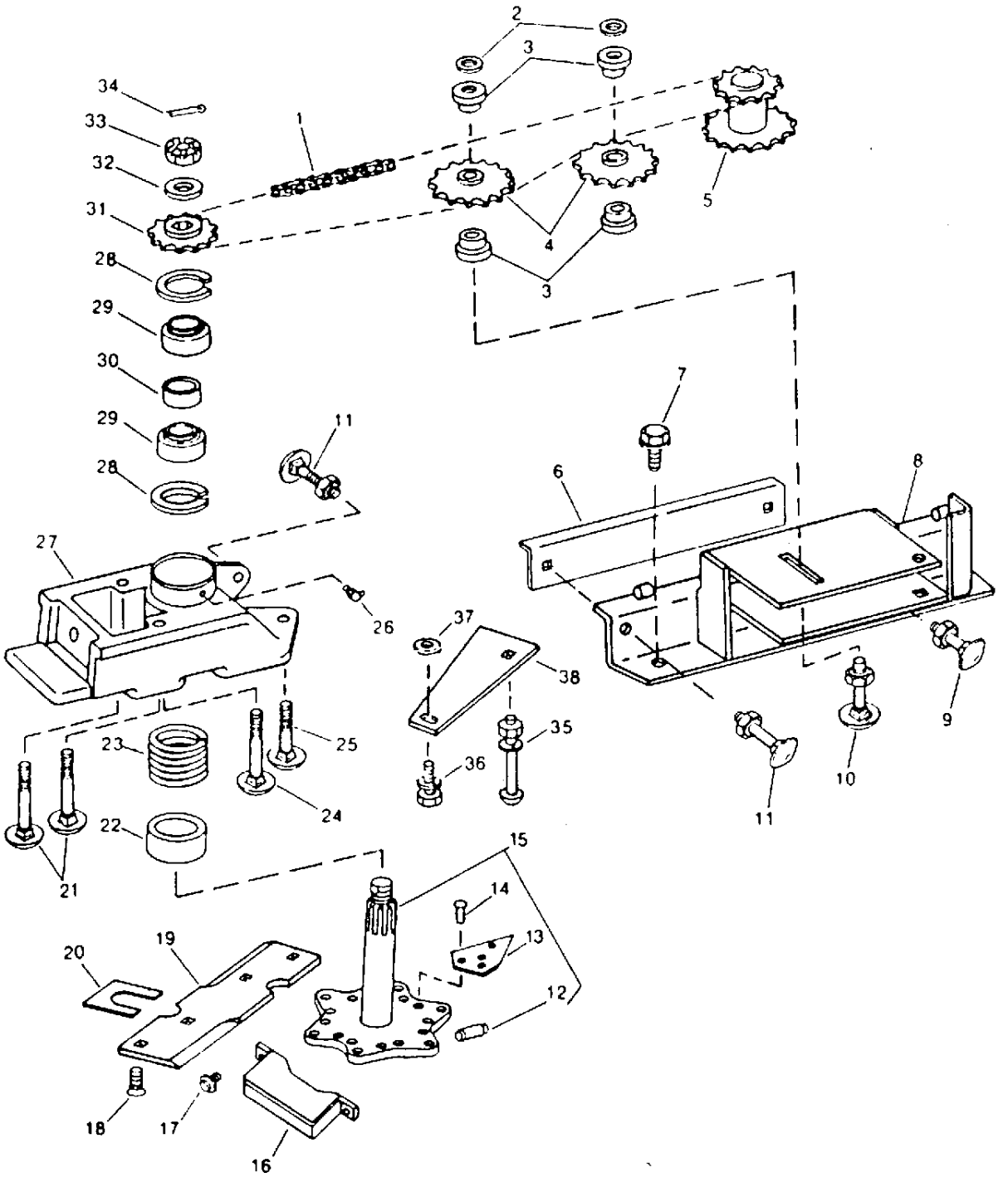


H44884 -UN-06AUG92

TM1581,HX100,DZ-19-18AUG94

1—Chain, 74 links
2—Washer, 33/64 x 7/8 x 0.048 (2 used)
3—Sprocket, 15 Teeth (2 used)
4—Sprocket, 11 and 12 Teeth
5—Bushing
6—Strip
7—Screw, 3/8 x 1 in.
8—Tightener
9—Rail
10—Bolt, 3/8 x 1 in.
11—Bolt, 1/2 x 2 in. (2 used)
12—Bolt, 3/8 x 1-1/4 in.
13—Washer, 13/32 x 13/16 x 0.065 in.
14—Cap Screw, 3/8 x 4-1/2 in.

TM1581,10020,T -19-03OCT94



HX,1401,10015BC-19-16DEC92

1—Chain, 74 Links
2—Washer, 17/32 x 1-1/4 x 0.180 in. (2 used)
3—Spacer
4—Sprocket, 15 Tooth
5—Sprocket, 11 and 15 Tooth
6—Strap
7—Screw, M10 x 25 (2 used)
8—Rail
9—Bolt, 3/8 x 1 in.
10—Bolt, 1/2 x 2-3/4 in. (2 used)
11—Bolt, 3/8 x 1-1/4 in. (2 used)
12—Spring Pin, 3/8 x 2 in.
13—Section (6 used)
14—Rivet, 1/4 x 7/8 in. (18 used)
15—Knife
16—Shield
17—Screw, M10 x 25 (2 used)
18—Screw, 1/2 x 1 in.
19—Knife, Stationary
20—Shim
21—Bolt, 3/8 x 4 in.
22—Spacer
23—Spring
24—Bolt, 1/2 x 4-1/2 in.
25—Bolt, 1/2 x 2-1/2 in.
26—Lubrication Fitting
27—Housing
28—Snap Ring (2 used)
29—Bearing (2 used)
30—Spacer
31—Sprocket, 15 Teeth
32—Washer, 25/32 x 1-5/8 x 0.180 in.
33—Nut, Slotted, M20
34—Cotter Pin, 3 x 50 mm
35—Bolt, 3/8 x 4-1/2 in.
36—Cap Screw, 3/8 x 1-1/4 in.
37—Washer, 13/32 x 7/8 x 0.120 in.
38—Plate

Rotating Knife and Drives

TM1581,10020,U -19-03OCT94

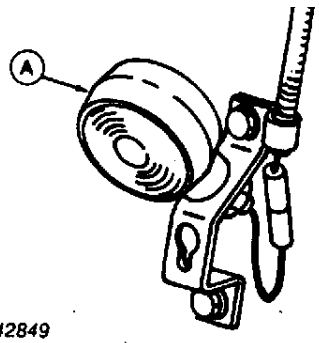
If the rotary knife drive must be disassembled, refer to the previous exploded views for relationship of ports.

HX,1401,10015BE-19-16DEC92

STUBBLE LIGHT BULB REPLACEMENT

Unscrew housing (A) from base.

Push AD2062R (1156) bulb in and turn to remove.



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1581,10020,XC -19-03OCT94

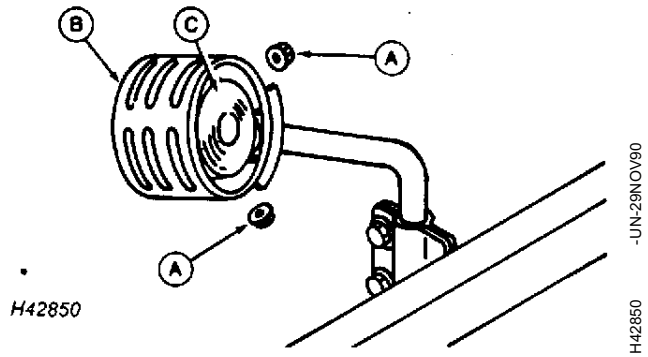
HEADER WARNING LIGHT BULB REPLACEMENT

Remove nuts (A).

Remove shield (B).

Unscrew housing (C) from bulb base.

Push bulb in and turn to remove.



TM1581,HX100,EB-19-18AUG94

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GENERAL

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INDX

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