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SECTION 120—SEPARATOR

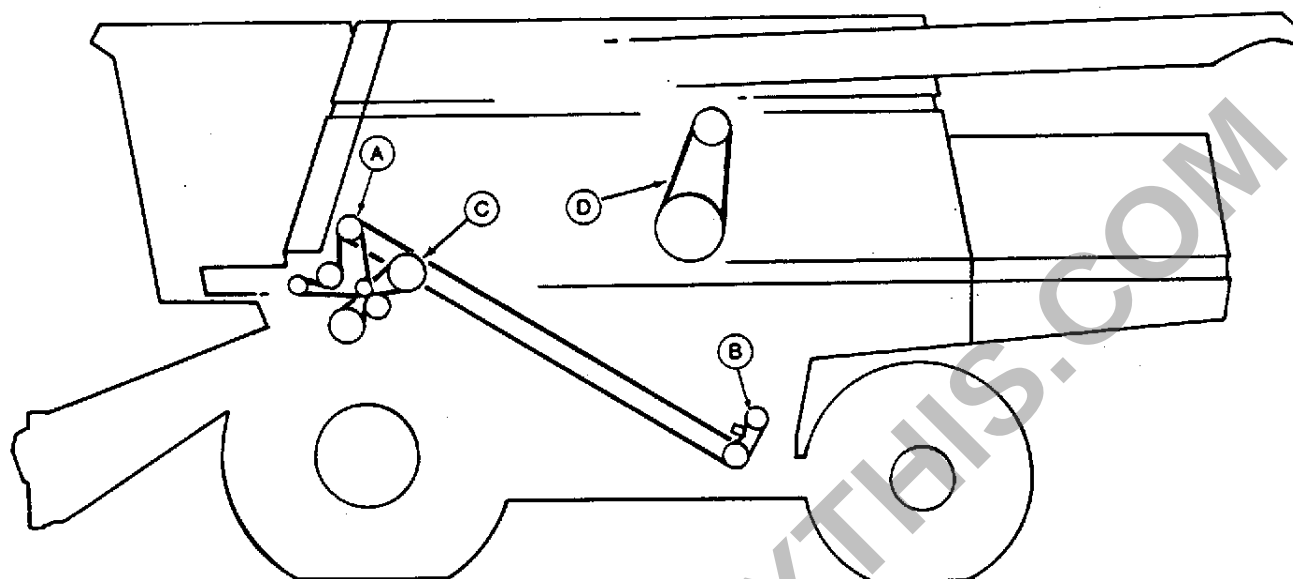
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Continued on next page

All information, illustrations and specifications in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

TM1401-19-28JUL97

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H39435

H39435
-UN-11OCT88

A—Upper Tailings Auger

B—Lower Tailings Auger

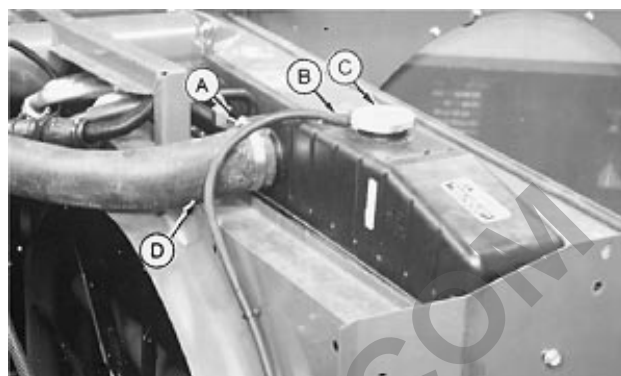
C—Beater; Regular
(100%), AH139436,
Optional (75%), AH131960

D—Unloading System,
AH127886

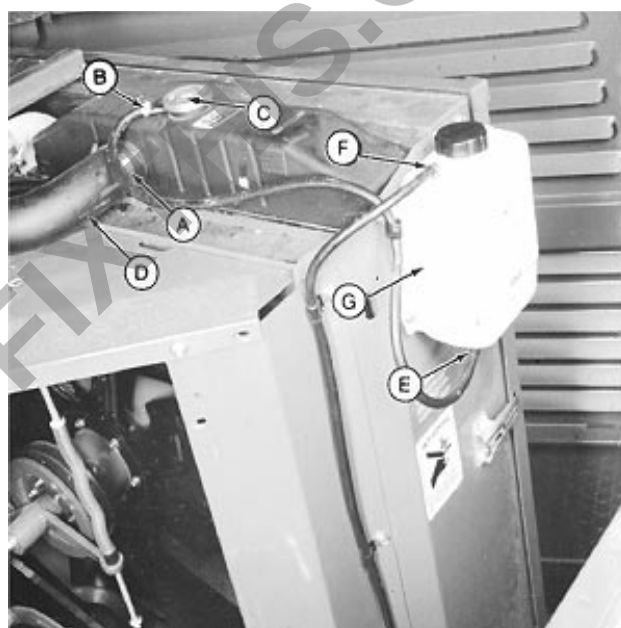
HX,1401,1015I -19-11DEC92

5. Remove clamp (A) overflow hose (B) and hose (D).
6. Remove hose (E) from bottom of recovery tank, top of recovery tank (F) and drain tank.
7. Remove recovery tank (G).

A—Clamp
B—Overflow Hose
C—Radiator Cap
D—Hose
E—Recovery Tank Hose
F—Top of Recovery Tank
G—Recovery Tank



9400 (—640100); 9500 (—650200)



* 9400 (650101—); 9500 (650201—); 9600 (650301—)

HX,1401,20,DA -19-28JAN93

H40403 -UN-08AUG89

H45435 -UN-02DEC92

HARVESTRAK CIRCUIT BOARD

BRIEF DESCRIPTION

The grain loss monitor system allows the combine operator to monitor the amount of grain loss in either the walker section, the shoe section or both sections at once.

The grain loss monitor system is adjustable to monitor different sized crops under different crop conditions.

HX,1401,4010,BW-19-20OCT92

1. Remove three knobs from face of the HarvesTrak control panel.

2. Remove six screws (A) securing overhead display panel. Lower panel slowly until bonding cables are supporting the panels weight.



HX,1401,4010,BX-19-29AUG96

3. Disconnect the 9-pin connector (A)(C511) from the back of the HarvesTrak printed circuit board.

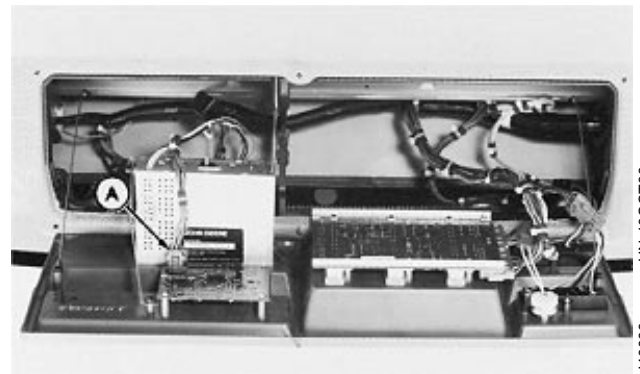
4. Remove four mount screws and remove circuit board.

5. To install, position circuit board onto back of cab overhead display panel and align mount holes.

6. Install and tighten four mount screws and connect the 9-pin connector to the back of the circuit board.

7. Position overhead display panel into cab ceiling, install and tighten six screws.

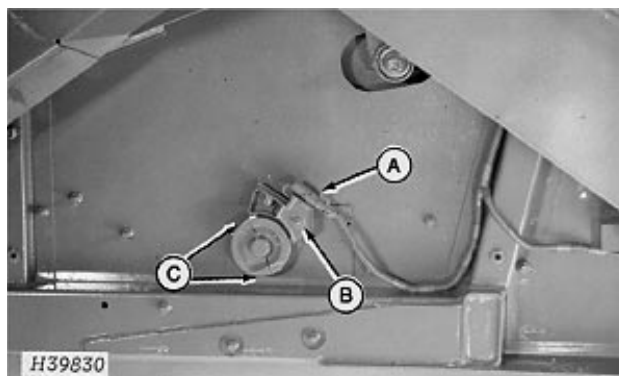
8. Install three knobs onto face of HarvesTrak control panel.



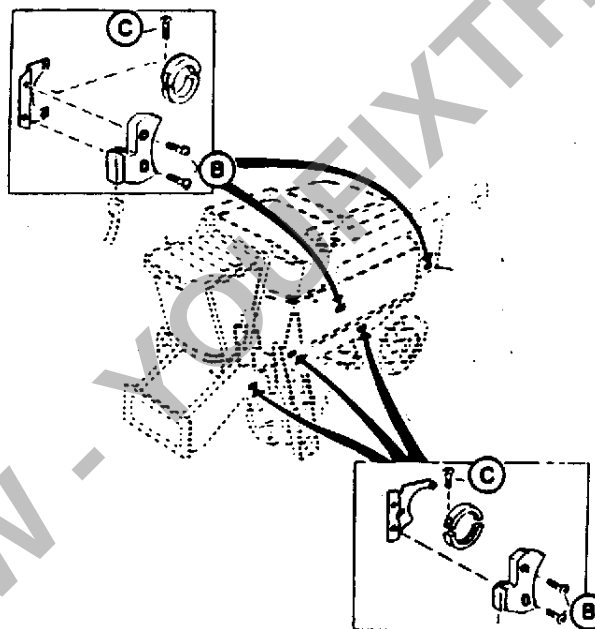
HARVESTRAK Console Connector

HX,1401,4010,BY-19-29AUG96

LOW SHAFT SPEED MONITOR SENSOR REMOVAL



Clean Grain Elevator Sensor Shown

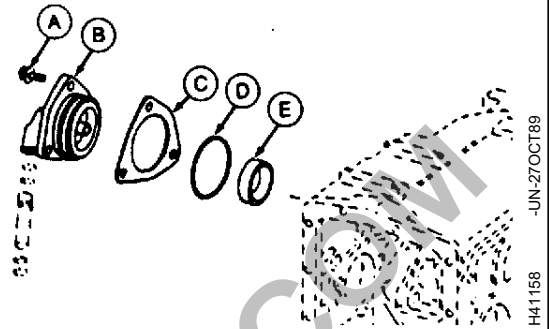


1. Remove debris buildup and unplug wires (A).
2. Remove two screws (B) and sensor.

3. Remove two screws (C) and magnet. Refer to TM-1402 to test the sensor.

HX,1401,4025,AD-19-20OCT92

7. Install bearing cap (B). Leave O-ring (D) off at this time.
8. Evenly tighten cap screws to 2.2 N·m (20 lb-in.)
9. Rotate pinion shaft at least two complete revolutions. Again evenly tighten cap screws to 2.2 N·m (20 lb-in.).
10. Measure gap between bearing cap (B) and housing at two places exactly 180° apart. Install shim pack (C) equal to average of these two readings. This shim pack will provide 0.127 mm (0.005 in.) preload.
11. Install O-ring on carrier and install shim pack and carrier.
12. Apply Thread Lock and Sealer (Medium Strength) to cap screw threads. Install cup screws and tighten to 73 N·m (55 lb-ft).



A—Cap Screw (3 used)
 B—Bearing Cap
 C—Shim (as required)
 D—O-Ring
 E—Bearing Cup

HX,1401,5005,L -19-08APR92

13. Install input shaft assembly in transmission.
14. Apply form-in-place gasket to face of hydrostatic motor mount. Install on transmission. Tighten cap screws to 320 N·m (235 lb-ft).
15. Install lube pump. (See procedure in this group.)
16. Adjust lube pump shim pack to provide 0.01—0.2 mm (0.0005—0.008 in.) axial end play of input shaft assembly.
17. Install hydrostatic motor. (See procedure in Group 20 of this section.)

HX1401,5005,O -19-13SEP94

3. Disconnect lines (A). Plug lines or cover with plastic bags.

CAUTION: The approximate weight of motor is 40 kg (90 lb).

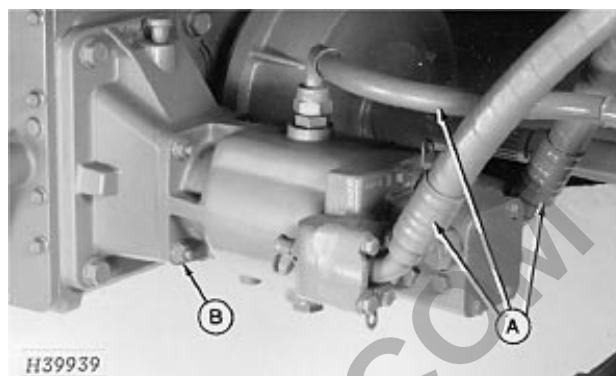
4. Remove four cap screws (B) and pull motor away from transmission mount.

5. Repair motor as necessary.

6. Attach motor to mount with four cap screws (B). Tighten to 115 N·m (85 lb-ft).

7. Replace O-rings in hoses (A). Connect hoses to motor.

8. Check oil levels. Start engine and bleed system. (See procedure in this group.)



H39939 -UN-10OCT88

1401,5020,L -19-12SEP91

DISASSEMBLE HYDROSTATIC MOTOR

1. Set motor on a sleeve, at least 50 mm (2 in.) high or wooden support.

IMPORTANT: Do not drop block on motor end cover while removing.

2. Remove the four bolts (A) that hold valve block (B) to motor (C).

3. Remove valve block.



N32841 -UN-21SEP88

HX,1401,5020,EA-19-11DEC92

Hydrostatic System/Assemble Drive Pump

1—Swashplate Assembly	13—O-Ring (3 used)	24—Pump Housing	35—End Cover Bolt (2 used)
2—Retaining Ring (8 used)	14—O-Ring (2 used)	25—Plug and O-Ring	36—End Cover
3—Pin (4 used)	15—Servo Sleeve (2 used)	26—Plug and O-Ring	37—O-Ring
4—Thrust Plate	16—Servo Piston Assembly (2 used)	27—End Cover Bearing	38—O-Ring
5—Piston and Slipper Assembly	17—Trunnion Bolt (6 used)	28—Shaft Shims (as required)	39—Shaft Seal Kit
6—Slipper Retaining Plate	18—Trunnion Assembly (2 used)	29—End Cover Gasket	40—Mounting Flange Bolt (12 used)
7—Cylinder Barrel	19—Bearing (as required)	30—Check Valve Assembly (2 used)	41—Bearing Kit (as required)
8—Dowel Pin (9 used)	20—O-Ring (2 used)	31—O-Ring (2 used)	42—Mounting Flange Assembly
9—Bearing Plate	21—Trunnion Shims (as required)	32—Back-Up Ring (2 used)	43—Bearing Cup
10—Retaining Strap and Bolts (2 used)	22—Cap Screw (6 used)	33—Spring Strap (2 used)	44—Mounting Flange Gasket
11—Rotating Group	23—Servo Sleeve Retainer (2 used)	34—End Cover Bolt (6 used)	45—Drive Shaft Assembly
12—Valve Plate			

Legend for Drive Pump

HX,1401,5020,EK-19-11DEC92

1. Wash pump body and parts with clean solvent. Dry with compressed air. Keep parts clean.

NOTE: Refer to "Inspect Parts", which follows pump repair procedure, for examples of parts damage and probable causes.

2. Inspect middle land of slippers on pistons (50, exploded view) for nicks and scratches.

3. Inspect the following for wear or damage:

- Races in Swashplate (22)
- Bearing Plate (59)
- Valve Plate (60)
- Ball Guide (52)
- Bearings (4, 5, 23, 48)
- Internal Splines of Cylinder Barrel (53)

Replace parts as necessary.

NOTE: If bearing plate (59) is scored, eroded or smeared, replace it.

4. Assemble pump using exploded view. Install O-rings and gaskets. Apply petroleum jelly to O-rings and finished surfaces. Apply clean hydraulic oil to parts when specified in following instructions.

1401,5020,DR -19-12SEP91

TM1401 (28JUL97)

50-20-58

9400 Thru 9600 Combine Repair

280797
PN=333

DRIVE WHEEL BOLT TORQUE

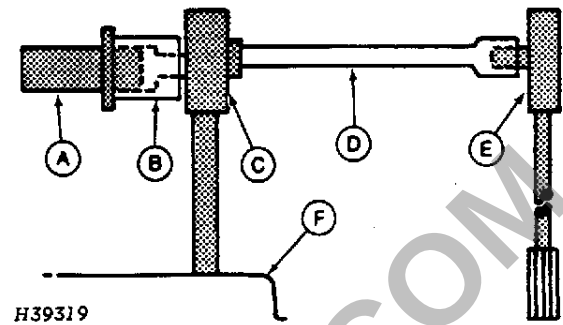
IMPORTANT: Wheel bolts must be clean and free of lube before installing. Torque value is for clean, dry bolt. Lubricating reduces friction and overloads the bolts.

NOTE: Use JDG674 M20 x 1.5 Metric Tap to restore threads in lug bolt holes in final drive hubs if necessary.

1. Each time a drive wheel is repositioned or replaced, torque wheel bolts to 200 N·m (150 lb-ft) without using a torque multiplier. Tighten bolts in a criss/cross pattern.

2. Use a 4 to 1 torque multiplier and turn bolt head 1/4 turn (ratchet or torque wrench will make a full turn). Pull multiplier handle against inside of wheel when tightening.

NOTE: If the combine is equipped with 100 mm (4 in.) axle spacers, turn each bolt head 1/2 turn (ratchet or torque wrench will make two full turns).



- A—Wheel Bolt
- B—30 mm Socket (3/4 in. Drive)
- C—4 to 1 Multiplier (1000 lb-ft capacity) (1/2 in. Input Drive, 3/4 in. Output Drive)
- D—1/2 in. Drive x 18 in. Long Extension
- E—Torque Wrench
- F—Wheel

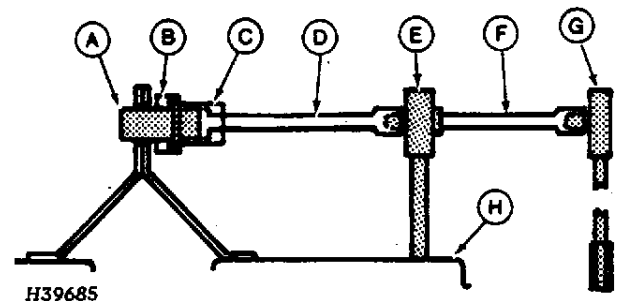
HX,1401,5030,B -19-21OCT92

DUAL WHEELS BOLT TORQUE

IMPORTANT: Wheel bolts must be clean and free of lube before installing. Torque value is for clean, dry bolt. Lubricating reduces friction and overloads the bolts.

1. Each time a dual wheel is repositioned or replaced, torque wheel bolts to 200 N·m (150 lb-ft) without using a torque multiplier. Tighten bolts in a criss/cross pattern.

2. Use a 4 to 1 torque multiplier and turn bolt head 1/4 turn (ratchet or torque wrench will make a full turn). Pull multiplier handle against inside of wheel when tightening.



- A—Wheel Bolt
- B—Bolt Spacer
- C—30 mm Socket (3/4 in. Drive)
- D—3/4 in. x 16 in. Extension
- E—4 to 1 Multiplier
- F—1/2 in. x 10 in. Extension
- G—Torque Wrench
- H—Outside Dual Wheel

1401,5030,G -19-12SEP91

SERVICE EQUIPMENT AND TOOLS

NOTE: Order tools from the U.S. SERVICEGARD™ Catalog or from the European Microfiche Tool Catalog (MTC). Some tools may be available from a local supplier.

Name	Use
Oil Transfer Unit	To flush hydraulic/hydrostatic systems.
10 Micron Filter (2)	For use with oil transfer unit.

1401,DV478 -19-16JAN97

OTHER MATERIAL

Number	Name	Use
SAE 10W or HY-GARD J20B	Hydraulic Oil	To Service/Flush Hydraulic/Hydrostatic Systems

1401,DV479 -19-02DEC96

SPECIFICATIONS

Item	Measurement	Specification
Hydraulic Reservoir	Capacity	34 L (36 qt)
	Approximate Weight (Empty) . . .	18 kg (40 lb)

1401,7005,A -19-12SEP91

DISASSEMBLE AND ASSEMBLE REEL FORE/AFT CYLINDER

1. Remove paint and rust from rod with fine emery cloth. Wash cylinder and dry.
2. Install a repair kit in the cylinder.
3. If these cylinders become unevenly extended during operation, rephase by extending them all the way out and then back.



H39859 -UN-10OCT88

1401,7020,L -19-12SEP91

REFRIGERANT (R-12) CAUTIONS

 **CAUTION:** DO NOT allow liquid refrigerant (R-12) to contact eye or skin. Liquid refrigerant (R-12) will freeze eye or skin on contact. Wear goggles, gloves, and protective clothing.

If liquid refrigerant (R-12) contacts eye or skin, do not rub the area. Splash large amounts of cool water on affected area. Go to a physician or hospital immediately for treatment.

Do not allow refrigerant (R-12) to contact open flames or very hot surfaces such as electric welding arc, electric heating element, and lighted smoking materials. Refrigerant (R-12), exposed to high temperature, forms phosgene gas.

Inhaling toxic phosgene gas may result in serious illness or death. Phosgene gas has an odor like new mown hay or green corn.

If you inhale phosgene gas, go to a physician or hospital immediately for treatment.

Do not heat refrigerant (R-12) over 52°C (125°F) in a closed container. Heated refrigerant (R-12) will develop high pressure which can burst the container.

Keep refrigerant (R-12) containers away from heat sources. Store refrigerant (R-12) in a cool place.

Do not handle damp refrigerant (R-12) container with your bare hands. Skin may freeze to container. Wear gloves.

If skin freezes to container, pour cool water over container to free skin. Go to a physician or hospital immediately for treatment.

NX,CST9005,J -19-05MAY92

CHECK AND ADD COMPRESSOR OIL

 **CAUTION:** All new compressors are charged with a mixture of nitrogen, refrigerant (R-12), and 525 viscosity oil. To avoid possible injury, wear safety goggles.

NX,CST9005,K -19-05MAY92

REMOVE THERMOSTAT

9400 (650421—)
9500 and Sidehill 9500
(651650—)
9600 (652143—)
CTS (650525—)

1. Remove passenger seat from cab.
2. Disconnect harness from thermostat.
3. Remove two screws (A).
4. Pull capillary tube (B) from evaporator housing.



H46370
-UN-23APR94

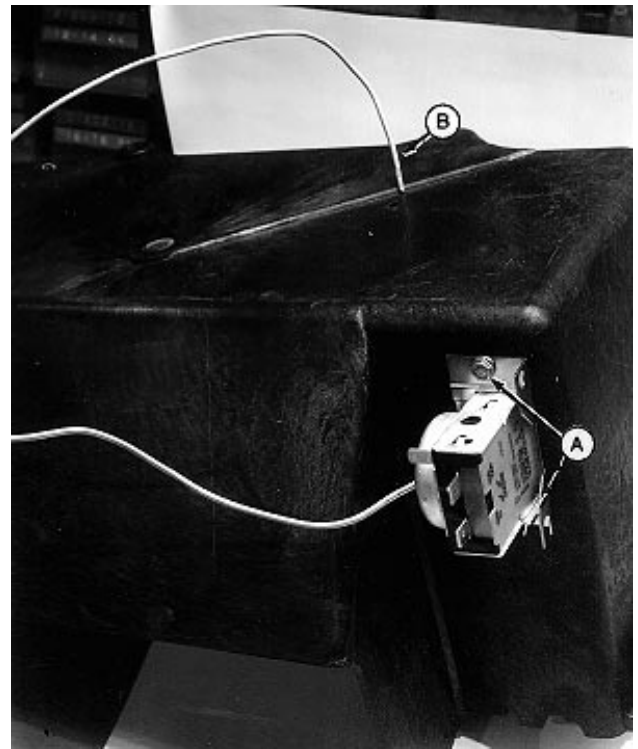
HX1401,9010,C -19-13SEP94

INSTALL THERMOSTAT

1. Push straight length of capillary tube (B) into evaporator cover.

NOTE: Do not force tube (A) into evaporator.

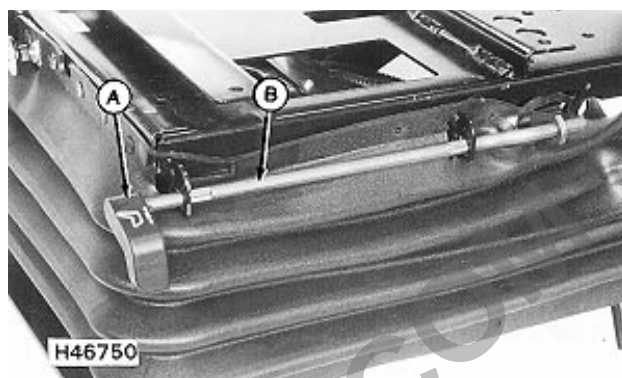
2. Install switch with two screws (A).
3. Connect harness.
4. Install passenger seat.



H46370
-UN-23APR94

HX1401,9010,D -19-13SEP94

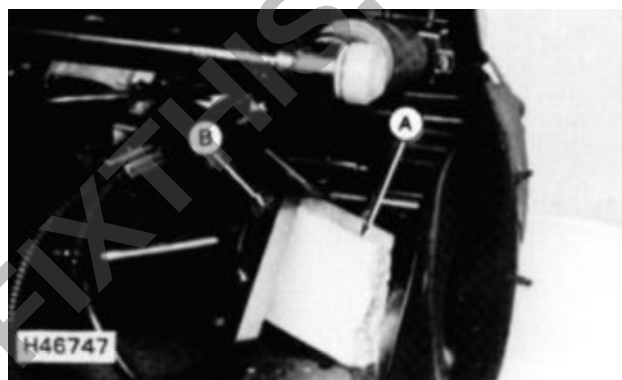
12. Install plastic isolator knob (A) on isolator rod (B) using a plastic or hard rubber hammer.



1401,DV612 -19-12DEC96

-UN-13FEB95
H46750

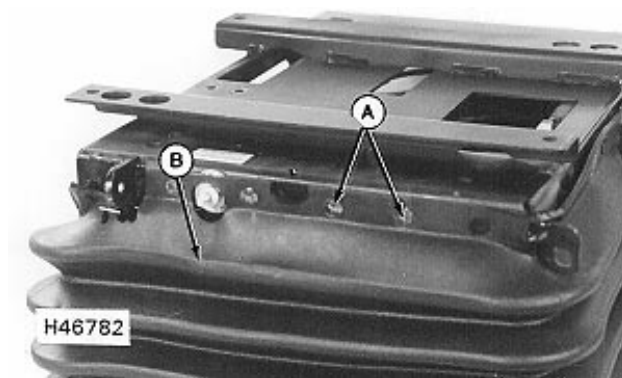
13. Remove suspension support block (A) from scissors frame (B).



1401,DV565 -19-09SEP96

-UN-25SEP96
H46747

14. Install all rubber boot clips (A) in upper housing (B).



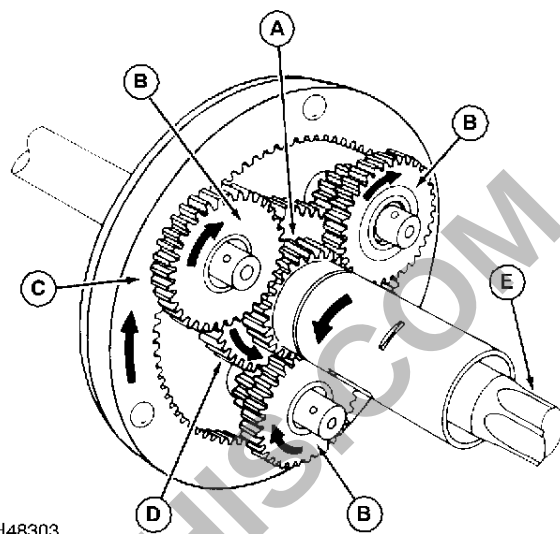
1401,DV566 -19-09SEP96

-UN-13FEB95
H46782

In the forward or normal operating position, the input gear (A) on the feeder house shaft is driven counterclockwise by the spring loaded sheave. The planetary pinion gears (B) and the ring gear (C) are turned clockwise.

The output gear (D) is connected to the feeder house lower shaft (E) by the shift collar.

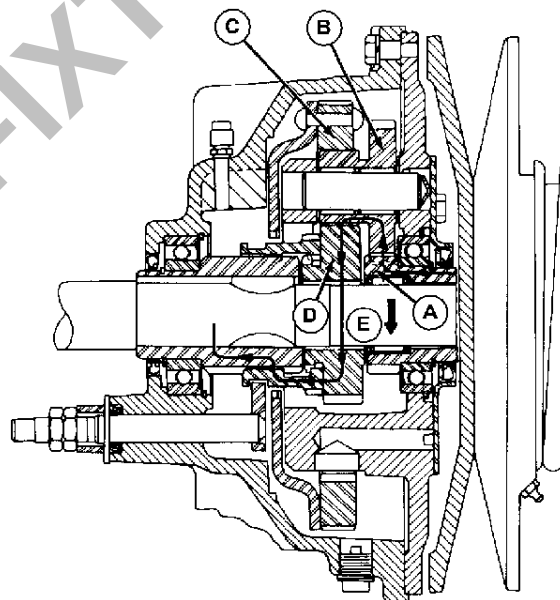
- A—Input Gear
- B—Planetary Pinion Gear (3 used)
- C—Ring Gear
- D—Output Gear
- E—Lower Shaft



H48303

-UN-15JAN97

H48303



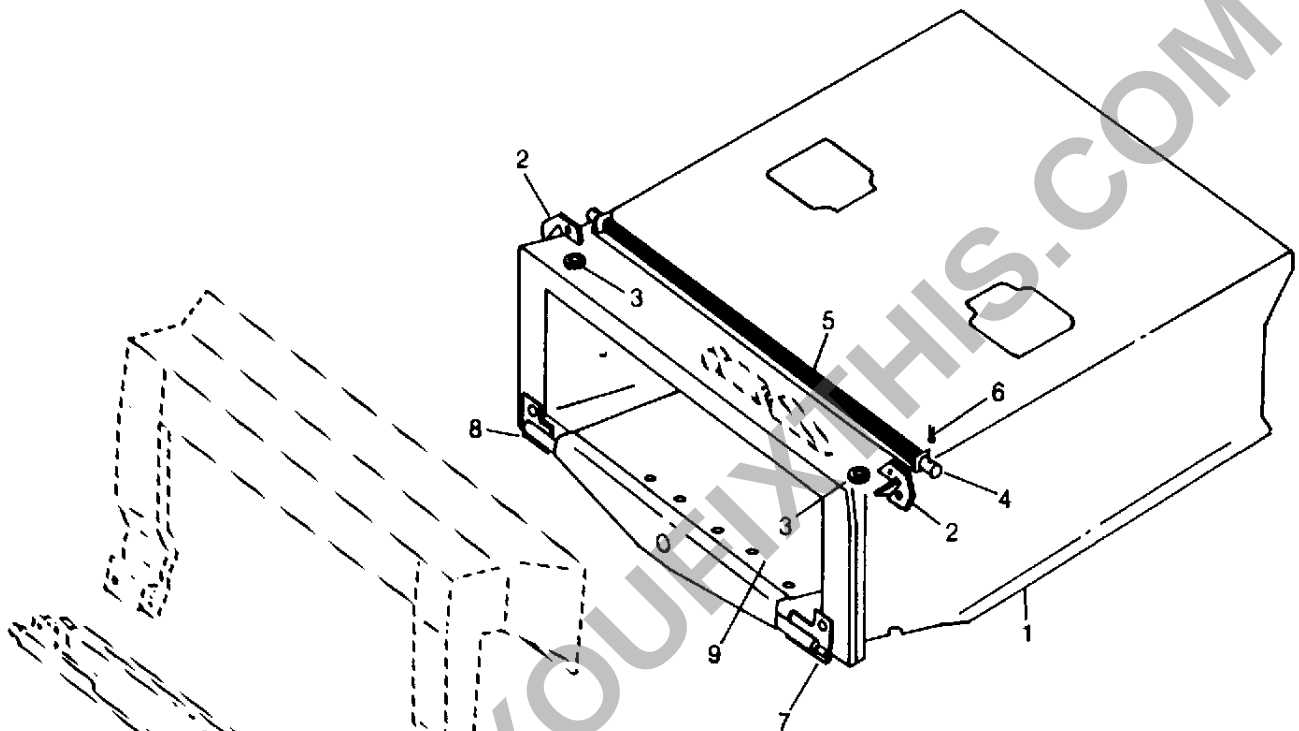
H48000

-UN-15JAN97

H48000

1401,DV716 -19-03DEC96

FEEDER HOUSE SHELL, WEAR PLATE AND SEAL LOCATION DRAWINGS



H46832

1—Feeder House
2—Plate, Wear (2 used)
3—O-Ring (2 used)

4—Pipe
5—Seal
6—Pin, Spring Locking (2 used)

7—Plate, Wear, L.H. Lower
8—Plate, Wear, R.H. Lower

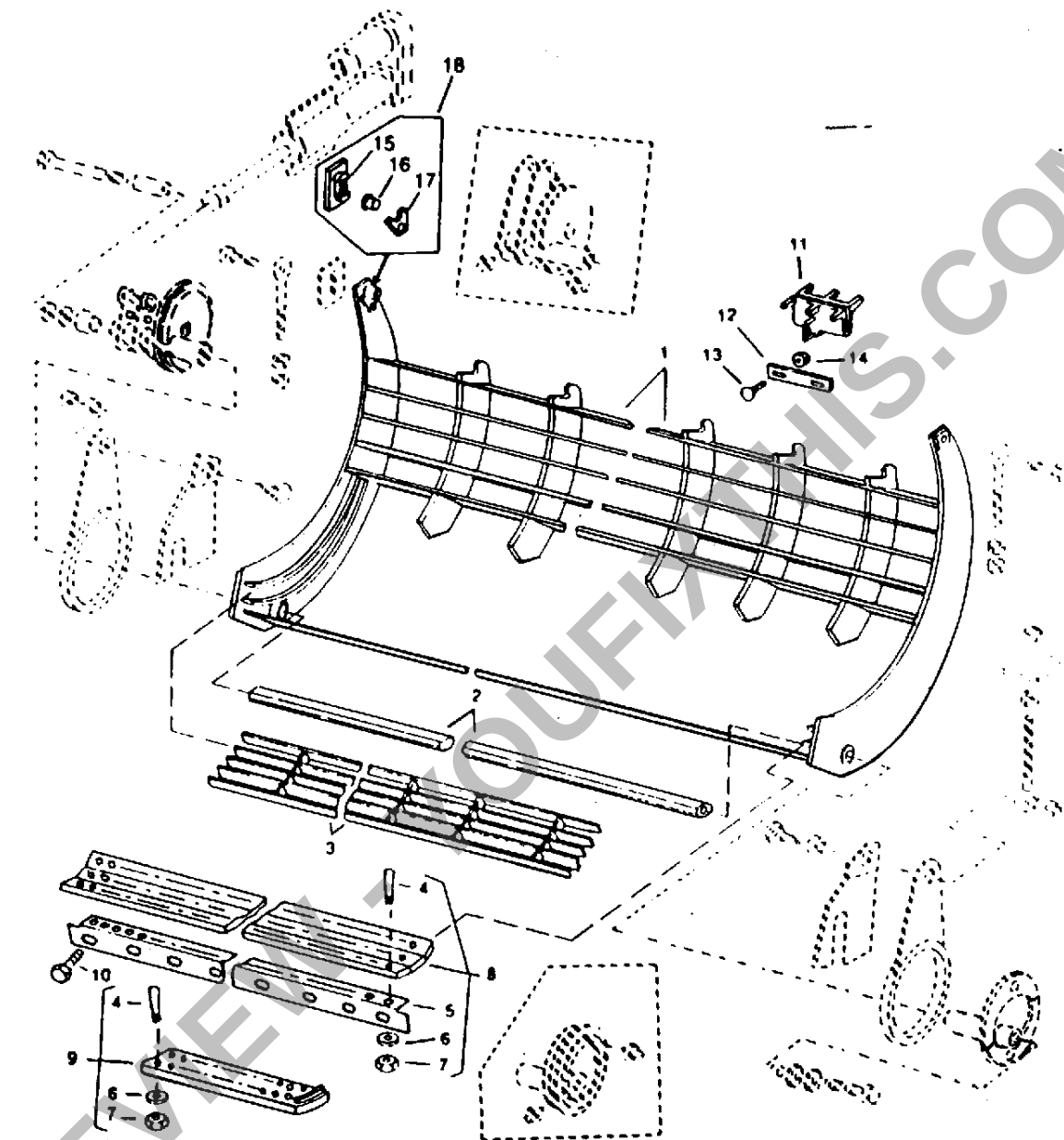
9—Plate

1402S,11005,H -19-26MAY95

H46832 -UN-17JAN95

110
35
2

Separator Repair/Remove Concave



-UN-16JUL92

H44342

HX,1401,12005,I-19-30APR92

17. Install hub (A), sheave (B) and cam. Tighten bolts (C) to 72 N·m (53 lb-ft). (130 N·m (95 lb-ft) for combines with serial numbers: 9400 (645134—); 9500 (645331—); 9600 (645325—). Install hub assembly on shaft (D).

18. Install washer (E), housing with ball bearing (F) and cap screw and washer (G). Tighten to 192 N·m (142 lb-ft).



HX,1401,1210,BG-19-16DEC92

120
10
27

-UN-21DEC92

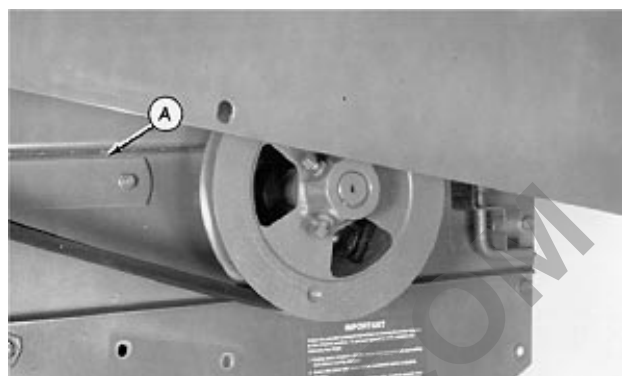
H45371

-UN-21DEC92

H45372

2. Move chopper toward front of combine to release belt tension.

3. Remove guard. Remove belt (A).



1401,12020,D -19-12SEP91

H40459 -UN-16AUG89

CAUTION: The approximate weight of straw chopper is 162 kg (357 lb).

4. Attach hoist to chopper.

5. Remove rails (A) from both sides.

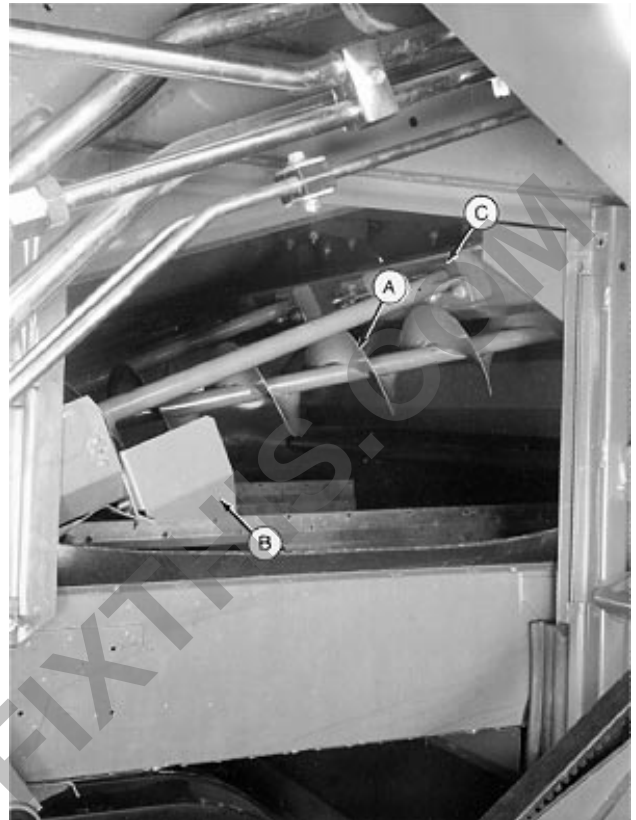
6. Remove chopper (B).



HX1401,12020,A -19-13SEP94

H40460 -UN-16AUG89

2. Install bearings (C).
3. Install augers (A) by moving forward in trough and then backward into bearings.
4. Install guard (B) on both sides.

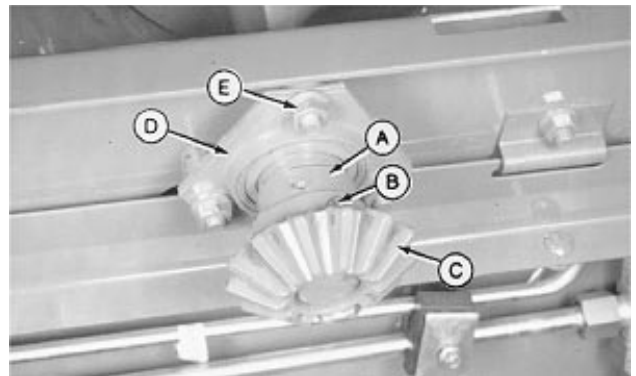


1401,12025,N -19-12SEP91

5. Install flanged housings, shim with bearing (D) using three nuts (E).
6. Install locking collar (A).
7. Install gear (C) with spring pin (B).

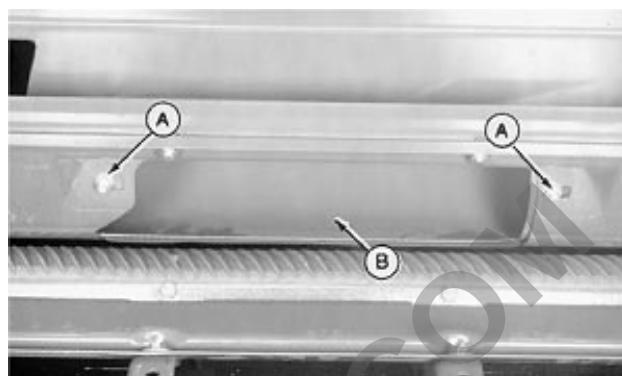
NOTE: (1995—) Assembly will have a shim between flanged housings which improves bearing alignment.

- A—Locking Collar
B—Spring Pin
C—Gear
D—Flanged Housing with Bearing
E—Nut (3 used)



1402STM,12025,G-19-26MAY95

9. Secure auger tube (B) using nuts and bolts (A).



1401,12030,AA -19-12SEP91

H41305
-UN-01AUG89

10. Install auger (A).



1401,12030,AB -19-12SEP91

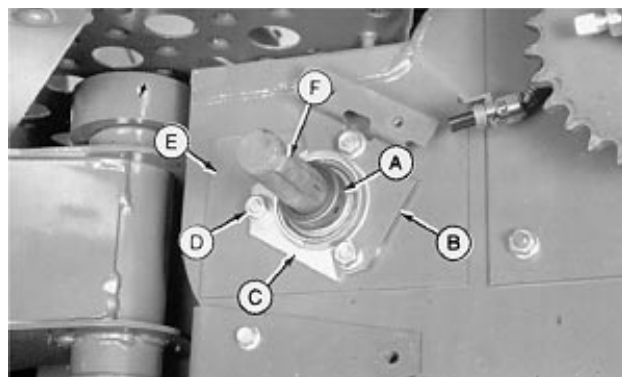
H41304
-UN-01AUG89

11. Install cover (E), flanged cover with bearing (C), and bracket (B) using nuts and bolts (D).

12. Install locking collar (A).

13. Install key (F).

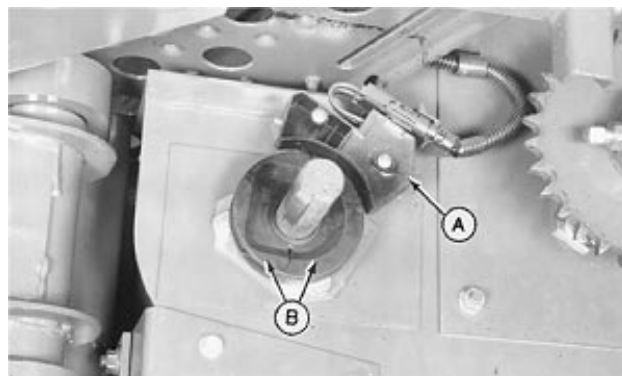
- A—Locking Collar
- B—Bracket
- C—Flanged Housing with Bearing
- D—Nut and Bolt (3 used)
- E—Cover
- F—Key



1401,12030,AC -19-12SEP91

H41303
-UN-01AUG89

14. Install actuators (B) and sensor (A).

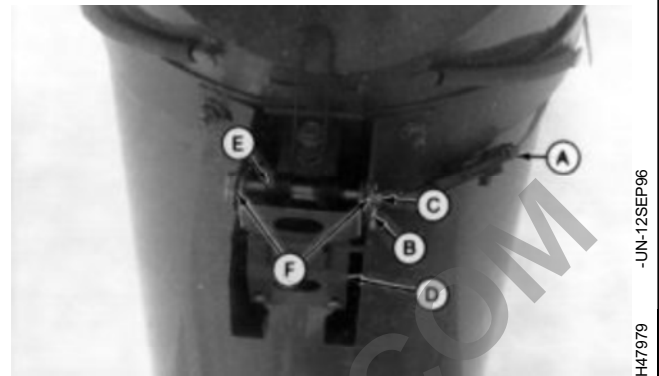


1401,12030,AD -19-12SEP91

H41302
-UN-01AUG89

REPLACING UNLOADING AUGER GRAIN SAVER DOOR SWITCH

1. Disconnect 2-pin connector (C813) (A) at end of unloading auger.
2. Remove cotter pin (B) from end of flapper hinge pin (C). Remove hinge pin, flapper (D), spring (E) and washers (F).
3. Remove two screws and remove sensor from bracket on unloading auger.
4. To install, position sensor on bracket and align mount holes. Install and tighten two screws securing sensor to bracket.
5. Position flapper (D) onto bracket and install hinge pin (C), spring (E) and washers (F). Once assembled, secure hinge pin using a cotter pin (B).
6. Connect the 2-pin connector (C813)(A).



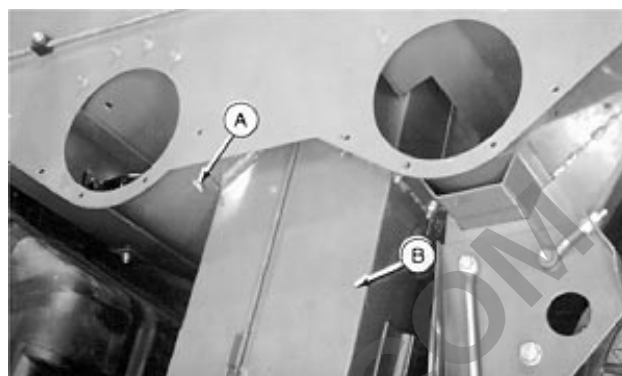
A—Connector
B—Cotter Pin
C—Hinge Pin
D—Flapper
E—Spring
F—Washer (4 used)

1401,DV577 -19-02DEC96

H47979 -UN-12SEP96

130
10
11

4. Remove 14 nuts and bolts (A) around elevator (B).



HX1401,13025,D -19-13SEP94

H41064 -UN-01SEP89

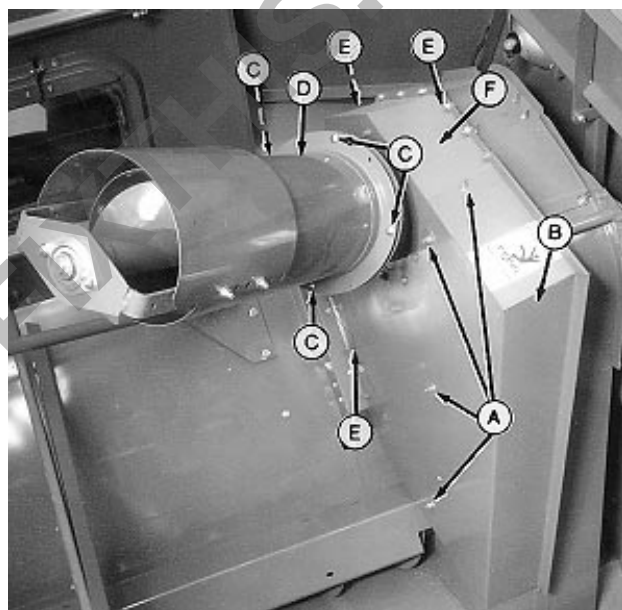
5. Loosen four nuts (A) to remove shields (B and C).

CAUTION: The approximate weight of auger assembly is 34 kg (75 lb).

6. Remove four nuts and bolts (C) to remove auger assembly (D).

7. Remove 12 bolts (F) to remove shield (G).

- A—Nut (4 used)
- B—Shield
- C—Nut and Bolt (4 used)
- D—Auger Assembly
- E—Bolt (12 used)
- F—Shield



HX1401,13025,E -19-13SEP94

H46432 -UN-25MAY94

SPECIAL OR ESSENTIAL TOOLS

NOTE: Order tools according to information given in the
U.S. SERVICEGARD™ Catalog or in the
European Microfiche Tool Catalog (MTC).

DX,TOOLS -19-20JUL95

Air Test Plug JDG185

To release clutch piston from housing.

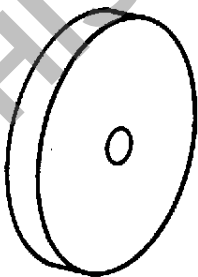
T6557CI -UN-01NOV88



H49,14005,BX -19-12SEP91

Seal Driver Disk (2-7/8 in. dia.) 27529
(Part of D01044AA set.)

H50039



H49,14005,B -19-12SEP91

Spanner Wrench JDG666

To remove and tighten slotted nuts

H40101

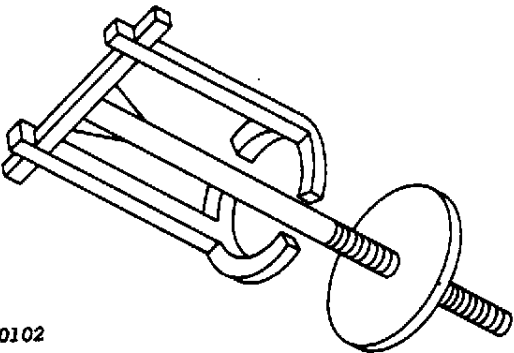


H49,14005,C -19-12SEP91

Spring Washer Compressor JDT24A

To remove and install wet clutch piston snap ring.

H40102



H49,14005,D -19-12SEP91

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