920 and 930 Mower-Conditioners

JOHN DEERE

TECHNICAL MANUAL

920 and 930
Mower-Conditioners

TM1548 (12JAN96) English

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John Deere Ottumwa Works
TM1548 (12JAN96)

LITHO IN U.S.A.
ENGLISH

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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.



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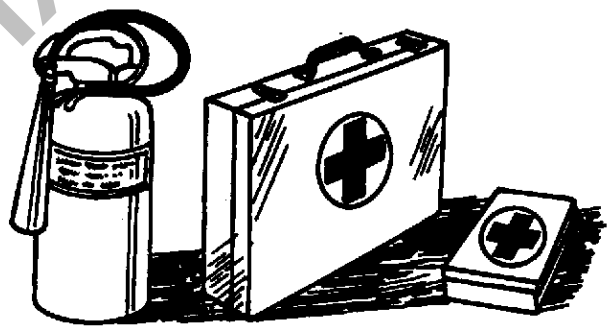
DX,FLAME -19-04JUN90

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.



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DX,FIRE2 -19-03MAR93

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MACHINE SPECIFICATIONS—920

	Urethane-Roll	Impeller
TRACTOR REQUIREMENTS:		
Horsepower @ 540 rpm	48.5—55.9 kW (65—75 hp)	48.5—55.9 kW (65—75 hp)
Horsepower @ 1000 rpm	48.5—108 kW (65—145 hp)	48.5—108 kW (65—145 hp)
Hydraulic Pressure to Lift Platform	13,790 kPa (138 bar) (2,000 psi)	13,790 kPa (138 bar) (2,000 psi)
Operator Station	Cab enclosure, (windows closed)	Cab enclosure, (windows closed)
MACHINE WIDTH:		
Transport	3.6 m (11 ft. 8 in.)	3.6 m (11 ft. 8 in.)
Operating	4.5 m (14 ft. 10 in.)	4.5 m (14 ft 10 in.)
MACHINE LENGTH*:		
Transport	5.5 m (17 ft. 11 in.)	5.5 m (17 ft. 11 in.)
Operating	5.4 m (17 ft. 9 in.)	5.4 m (17 ft. 9 in.)
MACHINE HEIGHT:		
Transport	1.7 m (5 ft. 8 in.)	1.7 m (5 ft. 8 in.)
Operating	1.3 m (4 ft. 3 in.)	3 m (4 ft. 3 in.)
MACHINE WEIGHT	1,868 kg (4,150 lb.)	1841 kg (4090 lb.)
PLATFORM:		
Cutting Height	37—157 mm (1.25—6.20 in.)	32—157 mm (1.25—6.20 in.)
Width of Cut	3 m (9 ft. 9 in.)	3 m (9 ft. 9 in.)
Windrow Width**	0.9—2.3 m (34—90 in.)	0.9—2.3 m (34—90 in.)
Float Range	—51 to +203 mm (—2 to +8 in.)	—51 to +203 mm (—2 to +8 in.)
Gauge Shoes	Adjustable	Adjustable
TIRES	9.5 L-14, 6 PR 12.5 L-15, 8 PR	9.5 L-14, 6 PR 12.5 L-15, 8 PR

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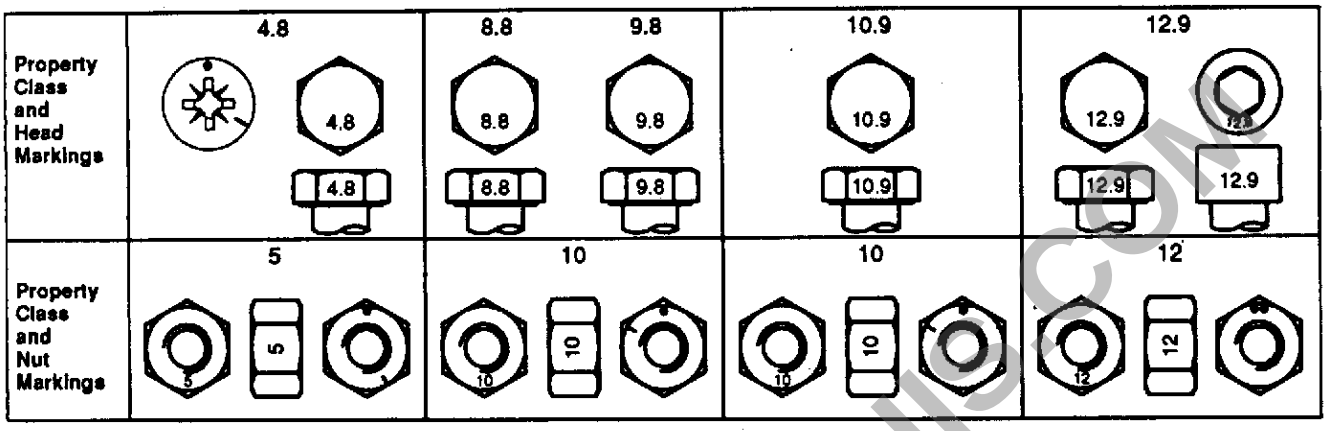
** Measured from center of hitch pin hole.*

*** Depending on crop conditions.*

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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	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

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DIAGNOSE DRIVELINE MALFUNCTIONS

Symptom	Problem	Solution
PTO Hookup Will Not Telescope Correctly	Tractor drawbar not correctly installed.	Install drawbar correctly.
	Hookup tube or shaft bent or twisted.	Straighten or replace.
PTO Hookup Vibrates Excessively	Hookup tube or shaft bent or twisted.	Straighten or replace.
	Tractor operating at an excessive angle to mower-conditioner.	Check hookup dimensions. Decrease angle.
	Universal-joint cross bearings worn.	Replace U-joint bearings. (See procedure in Group 15 of this section.)
PTO Hookup Will Not Stay Connected	Splines on tractor yoke worn.	Replace yoke. (See procedure in Group 15 of this section.)
Rear Driveline Will Not Telescope Correctly	Rear Driveline bent or twisted.	Straighten or replace.
Rear Driveline Vibrates Excessively	Rear Driveline bent or twisted.	Straighten or replace.
	Universal-joint cross bearings worn.	Replace U-joint cross and bearings. (See procedure in Group 20 of this section.)
Slip Clutch Slips Excessively During Operation	Ground speed too high.	Reduce speed.
	Slip clutch bolts loose.	Adjust slip clutch. (See procedure in Group 25 of this section.)
	Grease or oil on clutch linings. Clutch linings glazed.	Clean or replace linings. (See Replace Slip Clutch Lining in Group 25 of this section.)
Excessive Power Required at the PTO	Incorrect setting of slip clutch.	Adjust slip clutch. (See procedure in Group 25 of this section.)
Excessive Noise	Drawbar set incorrectly.	Adjust drawbar. (See operator's manual.)
	PTO too fast.	Reduce PTO speed to 540 rpm.

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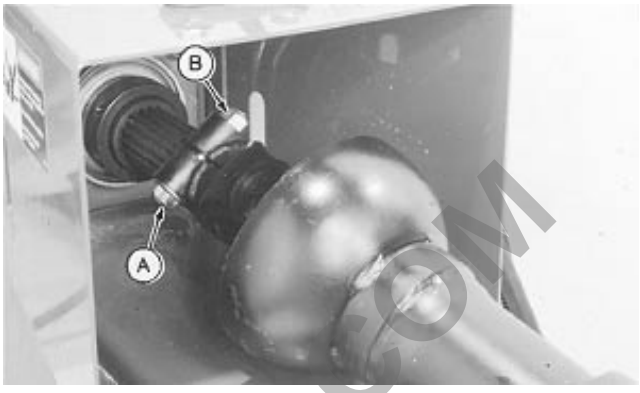
REPLACE POWER-CUSHION DRIVE SHAFT AND BEARINGS

IMPORTANT: Whenever lock nuts (B) are removed, discard and replace with new lock nuts.

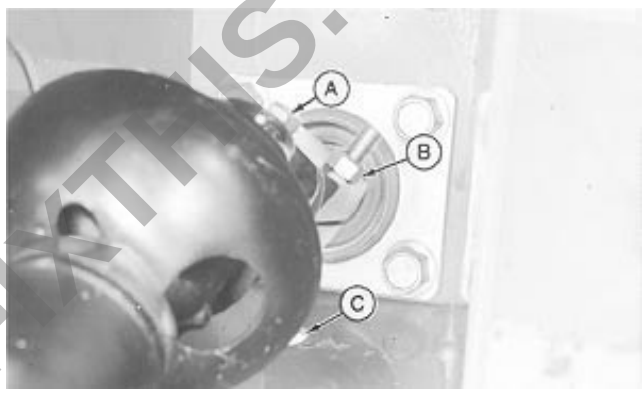
NOTE: The Power-Cushion drive shaft is a non-serviceable item. Do not disassemble.

1. Remove cap screws (A) and lock nuts (B). Discard lock nuts.

2. Remove PTO hookup and disconnect rear driveline.



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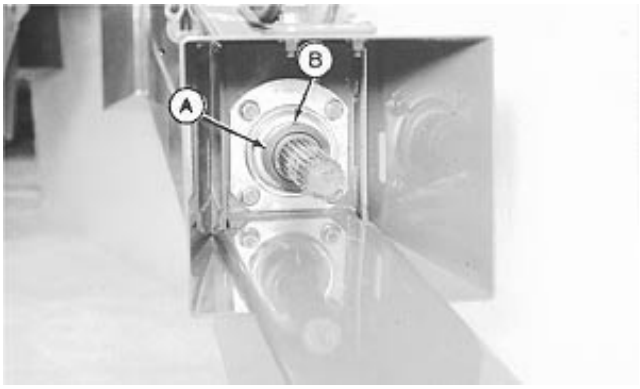
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EX,1548,2020,A1-19-13DEC95

4. Loosen set screw (B).

NOTE: Loosen lock collar by rotating collar in opposite direction of shaft rotation. (Shaft rotates counterclockwise looking from front of machine.)

5. Loosen lock collar (A) using a hammer and punch. Remove collar.

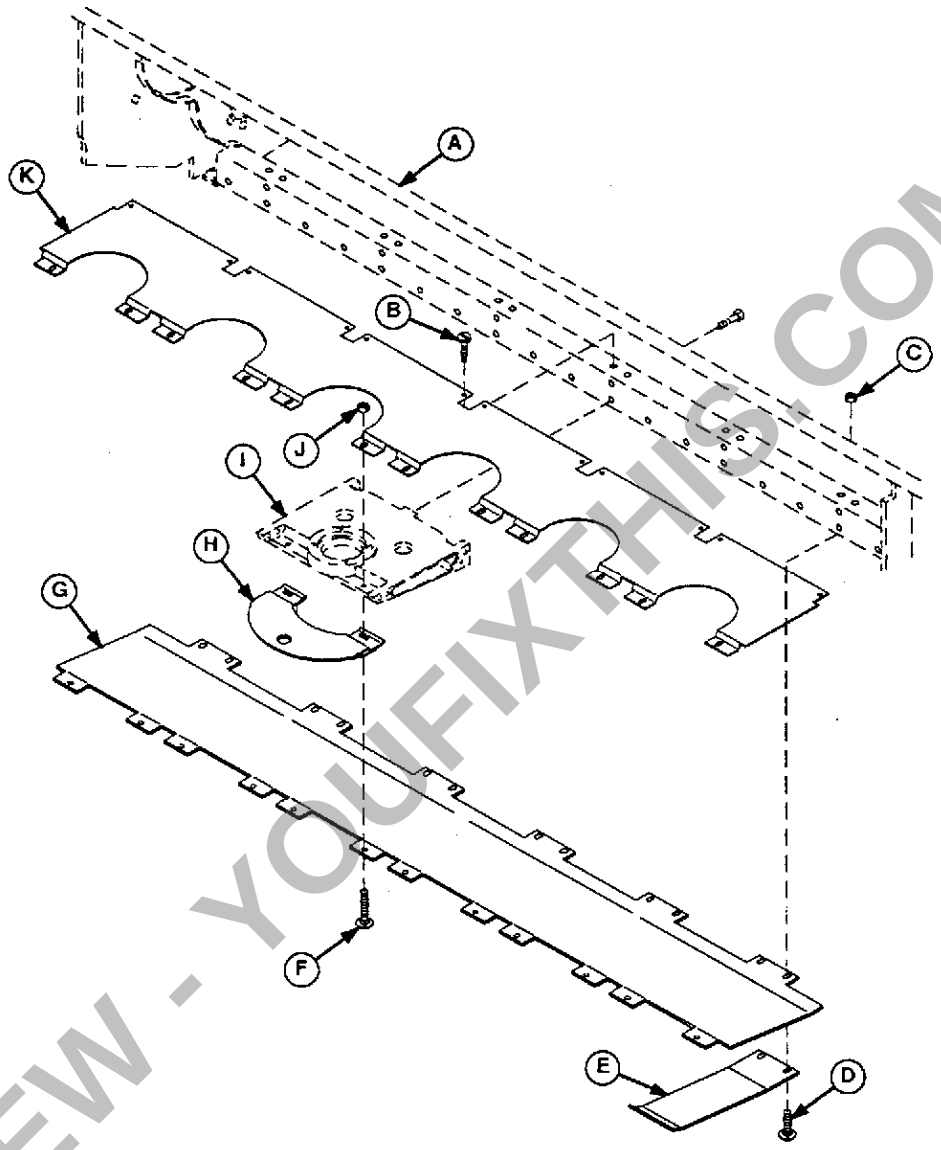


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E37551 -UN-07FEB94

A—Platform Frame (Reference)
B—Small Cap Screw (920; 10 used) (930; 12 used)
C—Nut (920; 12 used) (930; 14 used)
D—Round-Head Bolt (920; 12 used) (930;14 used)
E—Skid Plate (920; 6 used) (930; 7 used)
F—Round-Head Bolt (920; 12 used) (930; 14 used)
G—Bottom Plate
H—Disk Protector (920; 6 used) (930; 7 used)
I—Cutterbar (Reference)
J—Nut (920; 12 used) (930; 14 used)
K—Top Cover

17. Remove gauge shoes (if equipped).

18. Support bottom plate (G) using floor jacks or a forklift.

19. Remove nuts (C) and bolts (D) from rear of each skid plate (E) to remove skid plates.

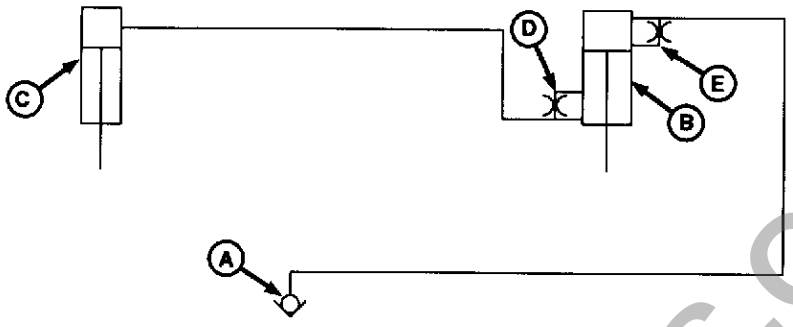
20. Remove nuts (J) and bolts (F) to remove disk protectors (H) and the bottom plate (G).

21. Remove small cap screws (B) to remove top cover (K).

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HYDRAULIC LIFT CYLINDERS OPERATION



E37839 -UN-28FEB94

A—Hose Couplers
B—Master Cylinder
C—Slave Cylinder
D—Phasing Orifice
E—Phasing Orifice

Platform lift is controlled by tractor hydraulics. Oil from tractor hydraulic outlet (A) operates the single acting master cylinder (B) and slave cylinder (C) to raise the machine. A phasing orifice (D) on the rod end of the master cylinder allows the slave cylinder to fully extend when the tractor SCV lever is held in the extend position. The phasing orifice (E) on the barrel end of the master cylinder allows the slave cylinder to fully retract when the tractor SCV lever is held in the retract position. These orifices keep the platform level during operation.

Minimum pressure required to raise platform:

- 920 Mo-Co
  —13,740 kPa (130 bar) (2000 psi)
- 930 Mo-Co
  —For (Serial No. —986000) 14,490 kPa (145 bar) (2100 psi)
  —For (Serial No. 986001— 0) 13,100 kPa (131 bar) (1900 psi)

Tongue positioning can be accomplished hydraulically by use of an optional hydraulic cylinder which is controlled by the tractor hydraulics.

EX,1548,7005,A -19-12JAN96

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INDX 1

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6. Position the other disks as illustrated.

NOTE: Mark the location of pinion timing mark (C) and quill notch (B) to aid in assembly.

Do not rotate the other disks after quill assembly has been removed.

7. Put a mark on module housing adjacent to quill notch (B).

8. Put a mark on quill housing adjacent to pinion timing mark (C).

9. Remove cap screws (D) to remove quill assembly (A).

10. Inspect pinion gear for damage or wear. Rotate gear to check for smooth operation of bearing.

Replace pinion gear or bearing if necessary. (See Disassemble and Assemble Quill Assembly in this group.)

11. Lubricate and install new O-ring on bottom of quill.

IMPORTANT: Pinion and quill must be properly timed or damage to machine will result.

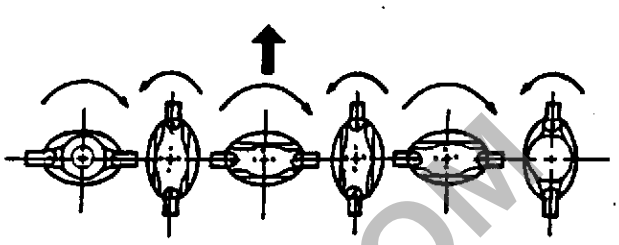
NOTE: If quill housing and module housing were not marked, refer to Cutterbar Pinion Gear Timing Detail in this group.

12. Align quill notch (B) with the mark* on module housing, then align pinion timing mark (C) with the mark* on quill housing. Install quill assembly.

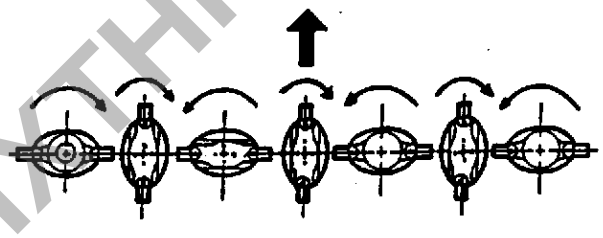
IMPORTANT: Do not overtighten quill cap screws (D).

13. Apply a maximum of one small drop of medium strength thread lock on third thread from end of cap screws (D). Install cap screws and tighten to 102 N·m (75 lb-ft) torque.

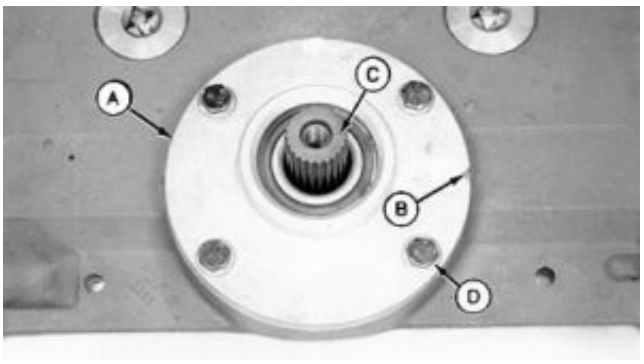
A—Quill Assembly
B—Notch
C—Pinion Timing Mark
D—Cap Screws
(4 used; S.N. —986000)
(6 used; S.N. 986001—)



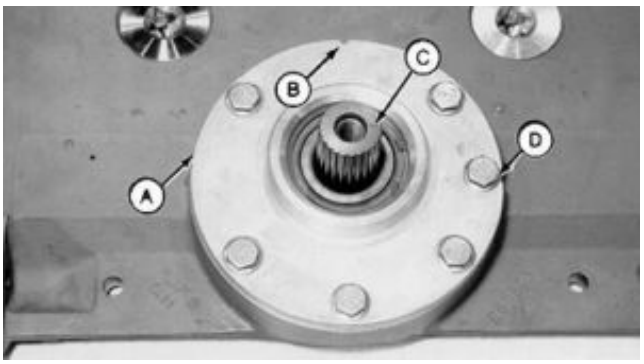
920 Mo-Co



930 Mo-Co



Left Quill (SN —986000)



Left Quill (SN 986001—)

** Inscribed on housing before quill assembly was removed. (See steps 7 and 8.)*

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