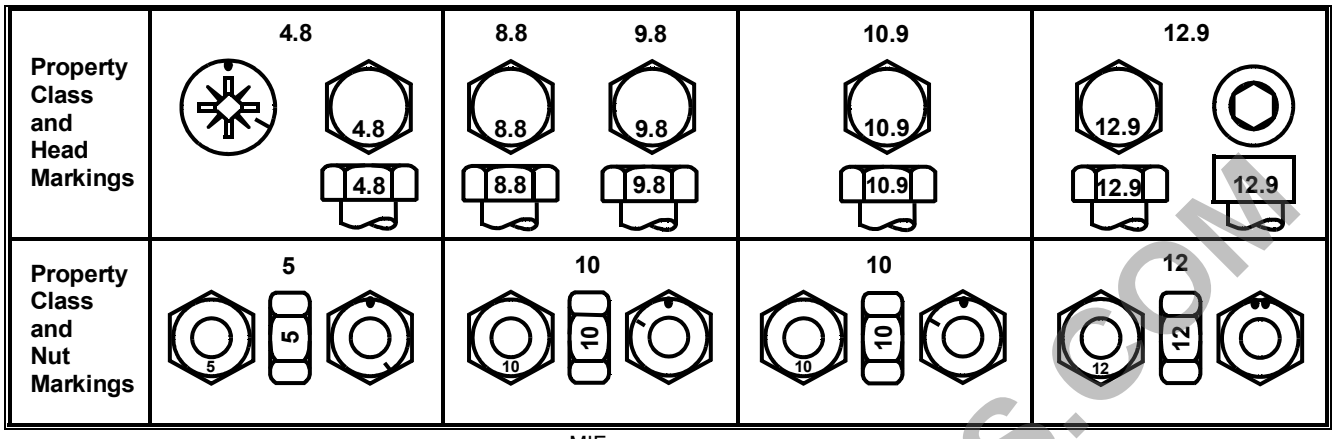
Specifications

Metric Fastener Torque Values



MIF

	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]	
SIZE	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	225	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 hand torque values if a different torque value or tightening procedure is given for a specific application. Torque values listed are for general use only and include a ± 10% variance factor. Check tightness of fasteners periodically. DO NOT use air powered wrenches.
- Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical grade.
- Fasteners should be replaced with the same class. Make sure fastener threads are clean and that you properly start thread engagement. This will prevent them from failing when tightening.
- When bolt and nut combination fasteners are used, torque values should be applied to the **NUT** instead of 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 (yellow dichromate - Specification JDS117) without any lubrication.**

Reference: JDS-200

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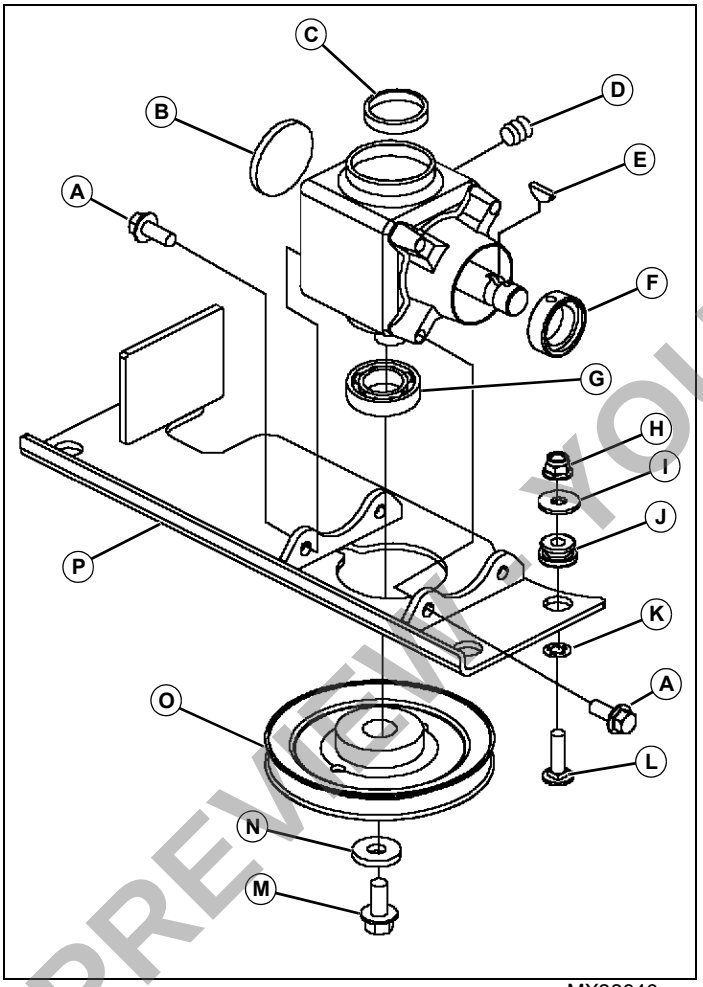
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Gear Case

Model 54C, 54D, 62C and 62D Mowers

These models use a comparable gear case, although mounting varies slightly between models.

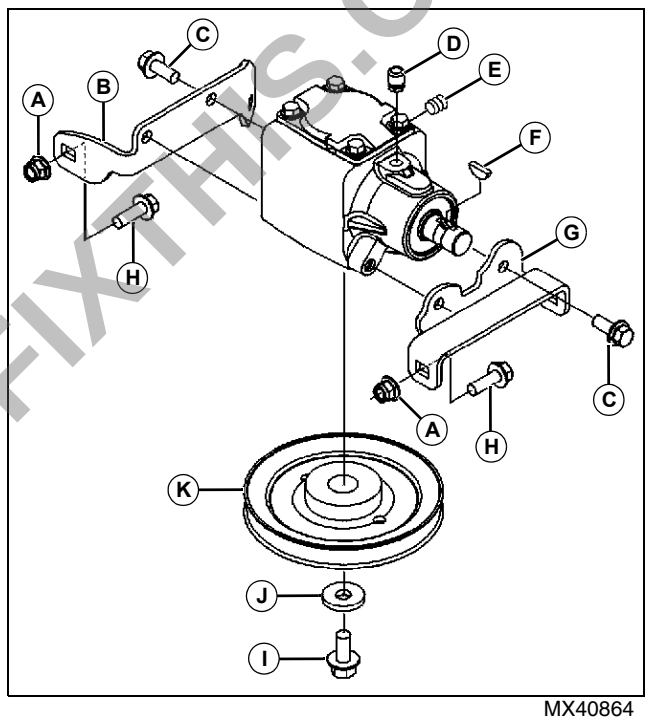
- Two versions of gear cases have been supplied for these models. Shaft seals and access plugs are available for the early version gear case, identified by an access plug at the top of the case. No service parts are available for the current version gear case, identified by a bolted on top cover.
- Inspect all parts for wear or damage. If shafts are worn or damaged, replace gearbox assembly.



MX38646

54D / 62D model shown, with early version gear case.

A- Cap Screw (4 used)
B- Access Plug (Input Shaft)
C- Access Plug (Output Shaft)
D- Fill/Drain Plug
E- Key
F- Shaft Seal (Input Shaft)
G- Shaft Seal (Output Shaft)
H- Lock Nut (4 used)
I- Washer (4 used)
J- Isolator (4 used)
K- Push Nut (4 used)
L- Carriage Bolt (4 used)
M- Cap Screw (Left Hand Thread)
N- Washer
O- Sheave
P- Mounting Plate



MX40864

54C / 62C model shown, with current version gear case.

A- Lock Nut (4 used)
B- Bracket, Front
C- Bolt (4 used)
D- Pressure Relief Fitting
E- Fill/Drain Plug
F- Key
G- Bracket, Rear
H- Bolt (4 used)
I- Bolt (Left Hand Thread)
J- Washer
K- Sheave

Removal and Installation - 54D / 62D:

1. Park machine safely and remove mower deck.

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Specifications

Mower Specifications

Mid-Mount Mowers

54 Inch Mowers:

Cutting Width	137.2 cm (54 in.)
Number of Blades	3
Spindles	20 mm (0.75 in.)
Weight	85 kg (190 lb)
Gear Case Oil Volume	135 mL (4.5 oz)
Input Shaft End Play	0.0 - 0.06 mm (0.0 - 0.006 in.)
Output Shaft End Play	0.0 - 0.03 mm (0.0 - 0.001 in.)

54D Mowers:

Cutting Width	137 cm (54 in.)
Number of Blades	3
Spindles	20 mm (0.75 in.)
Weight	101 kg (222 lb)
Gear Case Oil Volume	135 ml (4.5 oz)
Input Shaft End Play	0.0 - 0.06 mm (0.0 - 0.006 in.)
Output Shaft End Play	0.0 - 0.03 mm (0.0 - 0.001 in.)

60 Inch Mowers:

Cutting Width	152.4 cm (60 in.)
Number of Blades	3
Spindles	25.4 mm (1.0 in.)
Weight	147 kg (325 lb)
Gear Case Oil Volume (Mid-mount Mower)	400 ml (13.5 oz)
Gear Case Oil Volume (3-point Hitch Mower)	0.5 L (1 pt)
Input Shaft End Play	0.0 - 0.06 mm (0.0 - 0.006 in.)
Output Shaft End Play	0.0 - 0.03 mm (0.0 - 0.001 in.)

62D Mowers:

Cutting Width	157 cm (62 in.)
Number of Blades	3
Spindles	20 mm (0.75 in.)
Weight (62D1)	125 kg (275 lb)
Weight (62D2)	128 kg (282 lb)
Gear Case Oil Volume	135 ml (4.5 oz)
Input Shaft End Play	0.0 - 0.06 mm (0.0 - 0.006 in.)
Output Shaft End Play	0.0 - 0.03 mm (0.0 - 0.001 in.)

72 Inch Mowers:

Cutting Width	184.9 cm (72.8 in.)
Number of Blades	3
Spindles	25.4 mm (1.0 in.)
Weight	203 kg (448 lb)

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Manual Description

This technical manual is written for an experienced technician and contains sections that are specifically for this product. It is a part of a total product support program.

The manual is organized so that all the information on a particular system is kept together. The order of grouping is as follows:

- Table of Contents
- Specifications and Information
- Identification Numbers
- Tools and Materials
- Component Location
- Schematics and Harnesses
- Theory of Operation
- Operation and Diagnostics
- Diagnostics
- Tests and Adjustments
- Repair
- Other

NOTE: Depending on the particular section or system being covered, not all of the above groups may be used.

The bleed tabs for the pages of each section will align with the sections listed on this page. Page numbering is consecutive from the beginning of the Safety section through the last section.

We appreciate your input on this manual. If you find any errors or want to comment on the layout of the manual please contact us.

Safety
Specifications
Rotary Mowers
Rotary Tillers
Post Hole Digger
Blades
Rotary Brooms
Snowblowers
iMatch AutoHitch
AutoConnect Mowers
Miscellaneous

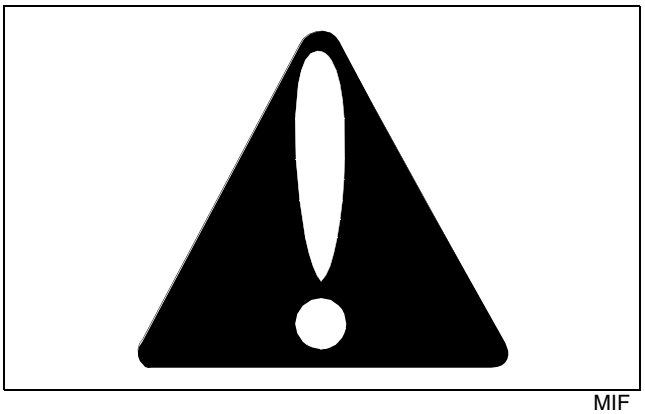
All information, illustrations and specifications in this manual are based on the latest information at the time of publication. The right is reserved to make changes at any time without notice.

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Recognize Safety Information



MIF

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

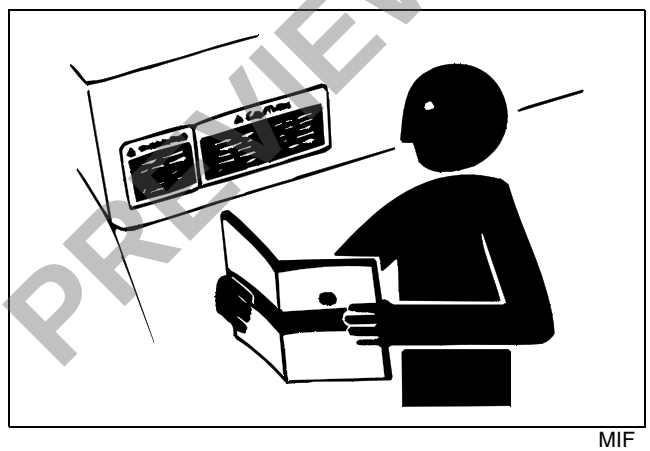
Follow recommended precautions and safe servicing practices.

Understand Signal Words

A signal word - DANGER, WARNING, or CAUTION - is used with the safety-alert symbol. DANGER identifies the most serious hazards.

DANGER or WARNING safety signs are located near specific hazards. General precautions are listed on CAUTION safety signs. CAUTION also calls attention to safety messages in this manual.

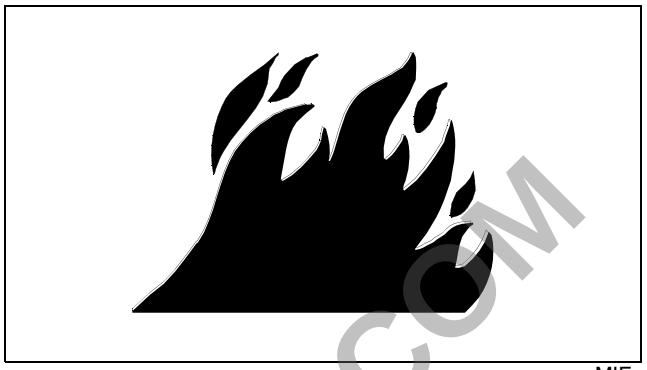
Replace Safety Signs



MIF

Replace missing or damaged safety signs. See the machine operator's manual for correct safety sign placement.

Be Prepared for Emergencies



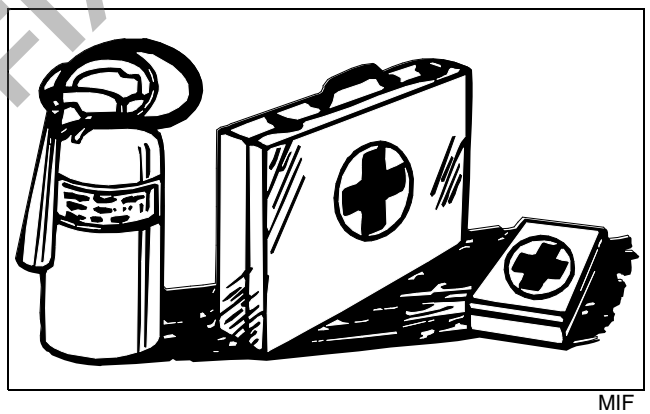
MIF

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.



MIF

Be prepared if a fire starts.

Keep a first aid kit and fire extinguisher handy.

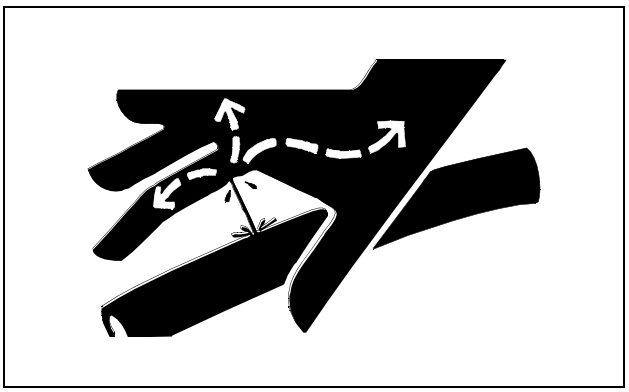
Keep emergency numbers for doctors, ambulance service, hospital, and fire department near your telephone.

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Use Care Around High-Pressure Fluid Lines

Avoid High-Pressure Fluids



MIF

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

Avoid injury from escaping fluid under pressure by stopping the engine and relieving pressure in the system before disconnecting or connecting 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.

Avoid Heating Near Pressurized Fluid Lines

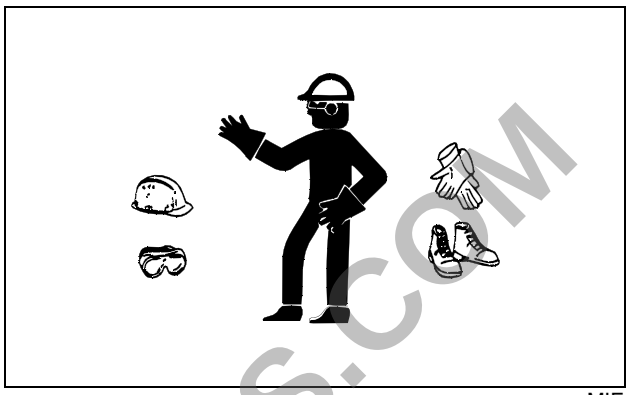


MIF

Flammable spray can be generated by heating near pressurized fluid lines, resulting in severe burns to yourself and bystanders. Do not heat by welding, soldering, or using a torch near pressurized fluid lines or other flammable materials. Pressurized lines can be accidentally cut when heat goes beyond the immediate flame area.

Use Safe Service Procedures

Wear Protective Clothing



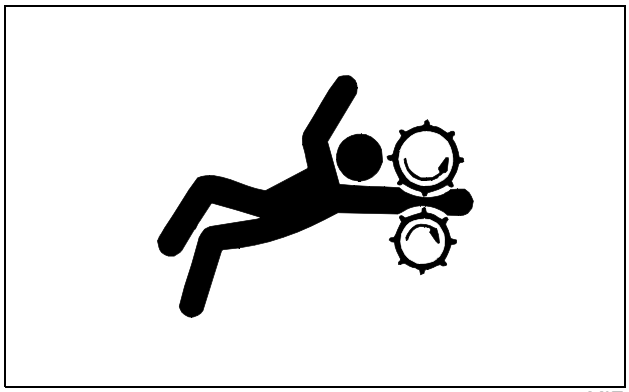
MIF

Wear close fitting clothing and safety equipment appropriate to the job.

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.

Operating equipment safely requires the full attention of the operator. Do not wear radio or music headphones while operating machine.

Service Machines Safely



MIF

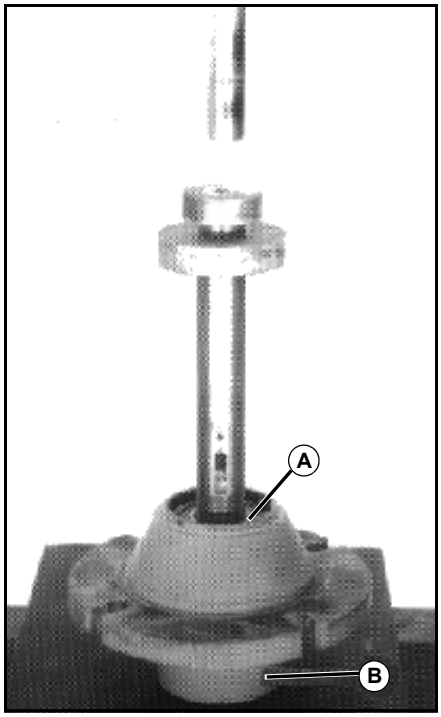
Tie long hair behind your head. Do not wear a necktie, scarf, loose clothing, or necklace when you work near machine tools or moving parts. If these items were to get caught, severe injury could result.

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

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.

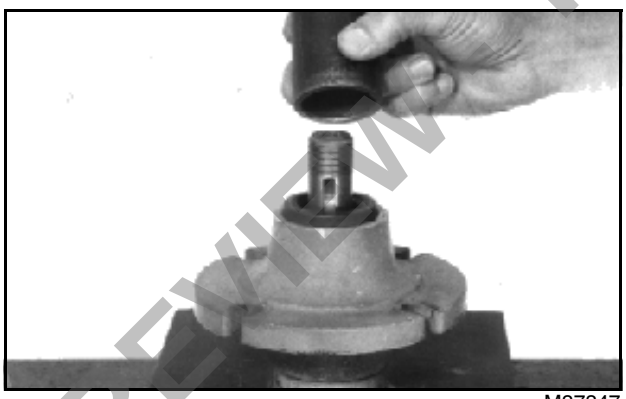
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M37345

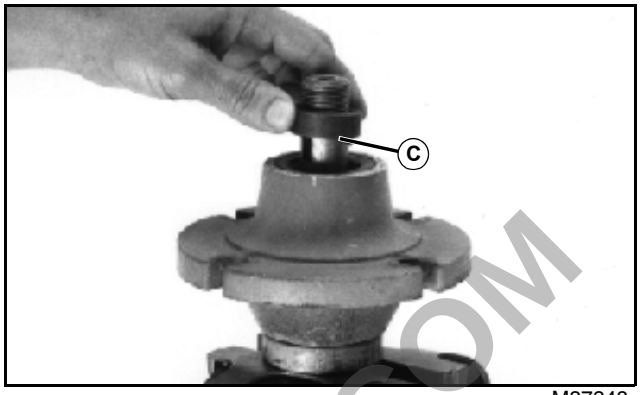
9. Put housing bottom-side-up on a press plate with a 1-1/16 in. hole or gap (A) so the upper bearing is centered over hole or gap.

10.Be sure spacer aligns with the bearings inside housing and the hole or gap of the press plate. Install hub and shaft assembly. Press the shaft through both bearings and spacer until the hub stops against the lower bearing (B).



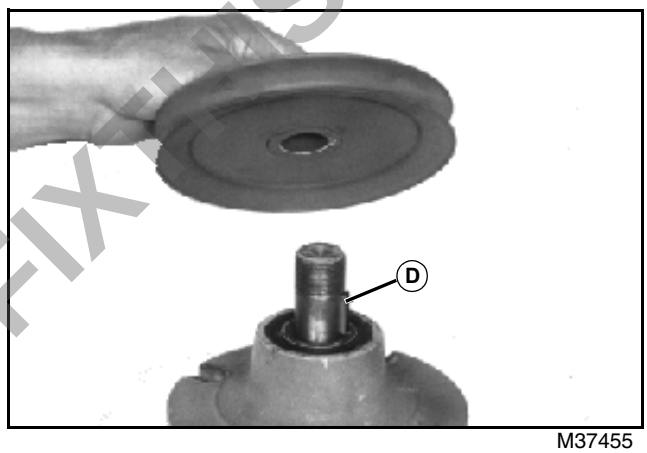
M37347

11.Turn spindle over to install top seal. Use a 1-7/8 in. driver to press the seal flush with the rim of the housing.



M37348

12.Coat outer surface of bushing with grease before you install it with notch (C) toward bearing.



M37455

13.Install key (D). Be sure key is seated to prevent metal shavings from contaminating bearings.

Note: The 60-inch mower has a two-bladed fan (not shown).

14.Install sheave with welded side of hub away from bearing.



M37350

15.Hold spindle assembly in a vise by the lower hub to install nut. Tighten nut to 163 N•m (120 lb-ft).

16.Turn casting on spindle to check for free spin.

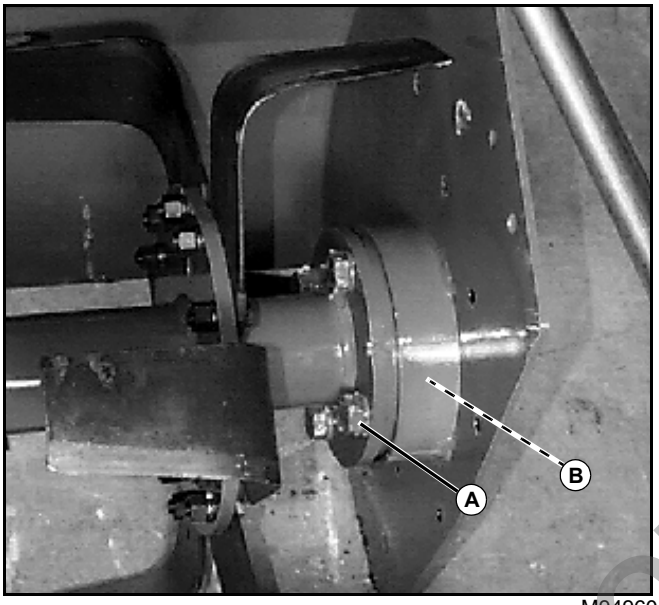
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Filler Pipe Plug . . . . . 10 N•m (89 lb-in.)
PTO Clutch Guard . . . . . 12 N•m (106 lb-in.)
Chain Case Oil Level (approx). . . . . 0.85 L (28 oz)
Gear Oil Level (approx) . . . . . 0.40 L (13.5 oz)

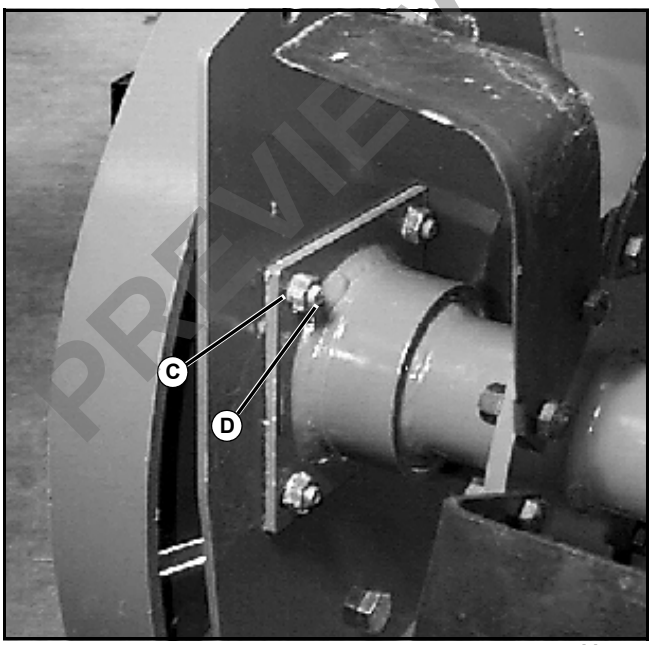
Rotor Bearing Replacement

1. Rotate the tiller backwards so that tines are not in contact with the surface.



M94960

2. Wedge a block of wood between tines and the tiller housing to prevent the rotor from turning. Remove four hex head bolts (A) securing rotor shaft assembly to drive spindle (B).

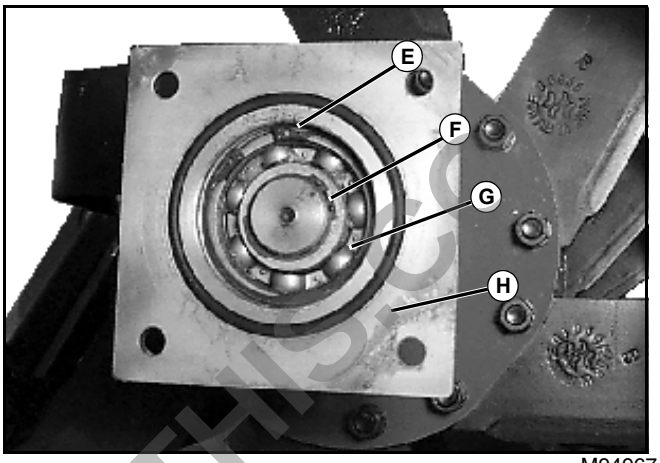


M94971

3. Remove four hex nuts (C) securing idler bearing assembly to tiller side plate.

4. Remove four carriage bolts (D) from tiller side plate.

5. Slide rotor assembly out of tiller housing.



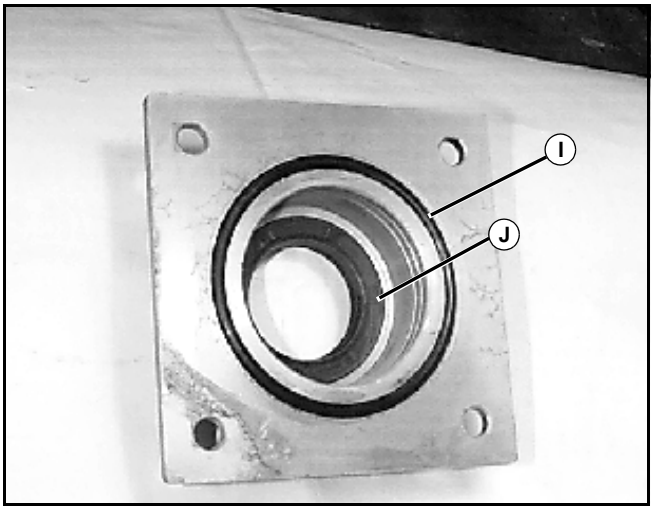
M94967

6. Remove shaft snap ring (E) and housing snap ring (F) securing bearing (G) in place.

7. Pull bearing and mounting block (H) off the rotor shaft as an assembly.

8. Press bearing out of mounting block.

9. Inspect bearing for wear or damage.



M94968

10.Inspect both O-ring (I) and shaft seal (J) for wear or damage.

11.Replace bearing, O-ring and seal, as needed.

12.Assemble and install idler bearing assembly in reverse order of removal and disassembly.

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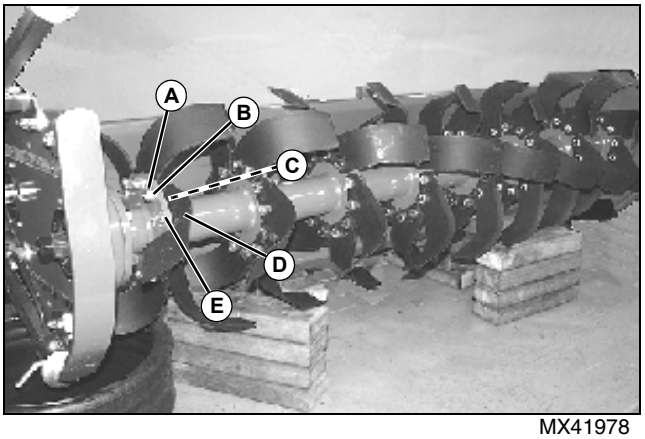
Rotor Shaft - 665 and 673

Rotor Tine Replacement

Note: Make note of installed tine location when replacing tines. Replace tines only in the same pattern and orientation as originally installed.

Replace broken or worn tines only with matching replacement parts.

1. Install a wooden block between rotor tines and tiller housing to prevent rotation of rotor.



MX41978

2. Loosen and remove two hex nuts (A), lock washers (B), and hex head bolts (C) securing each tine (D) to rotor flange (E).

3. Remove tines as needed for replacement.

Note: Secure rotor tines with bolt heads on the tine side of the assembly. Install both left and right tines to the same side of rotor flange.

4. Install replacement rotor tines in the same helical pattern as originally installed.

5. Install replacement tines to drive side of rotor flanges except for tines at drive end of rotor assembly.

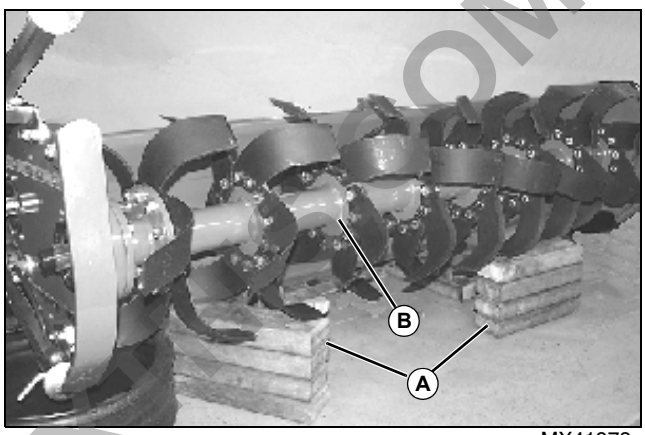
6. Secure tine to rotor flange with two hex head bolts, lock washers, and hex nuts. Install bolts with bolt heads on tine side of assembly. Tighten to specification.

Specifications

Tine to Rotor Flange . . . . . 95 N•m (70 lb-ft)

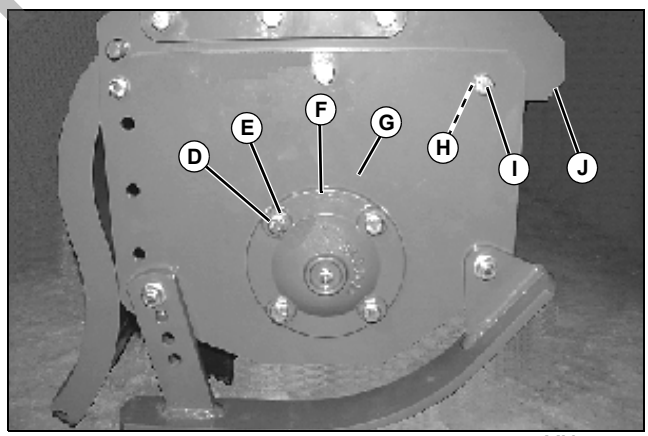
Rotor Removal

Caution: Avoid Injury! Rotor tines may be sharp. Rotor assemblies are heavy, and may cause injury if not properly supported or restrained from movement when disassembled.



MX41978

1. Place blocking (A) under rotor assembly (B) to support assembly and prevent it from turning.



MX42062

2. Secure rotor assembly with slings and hoist.

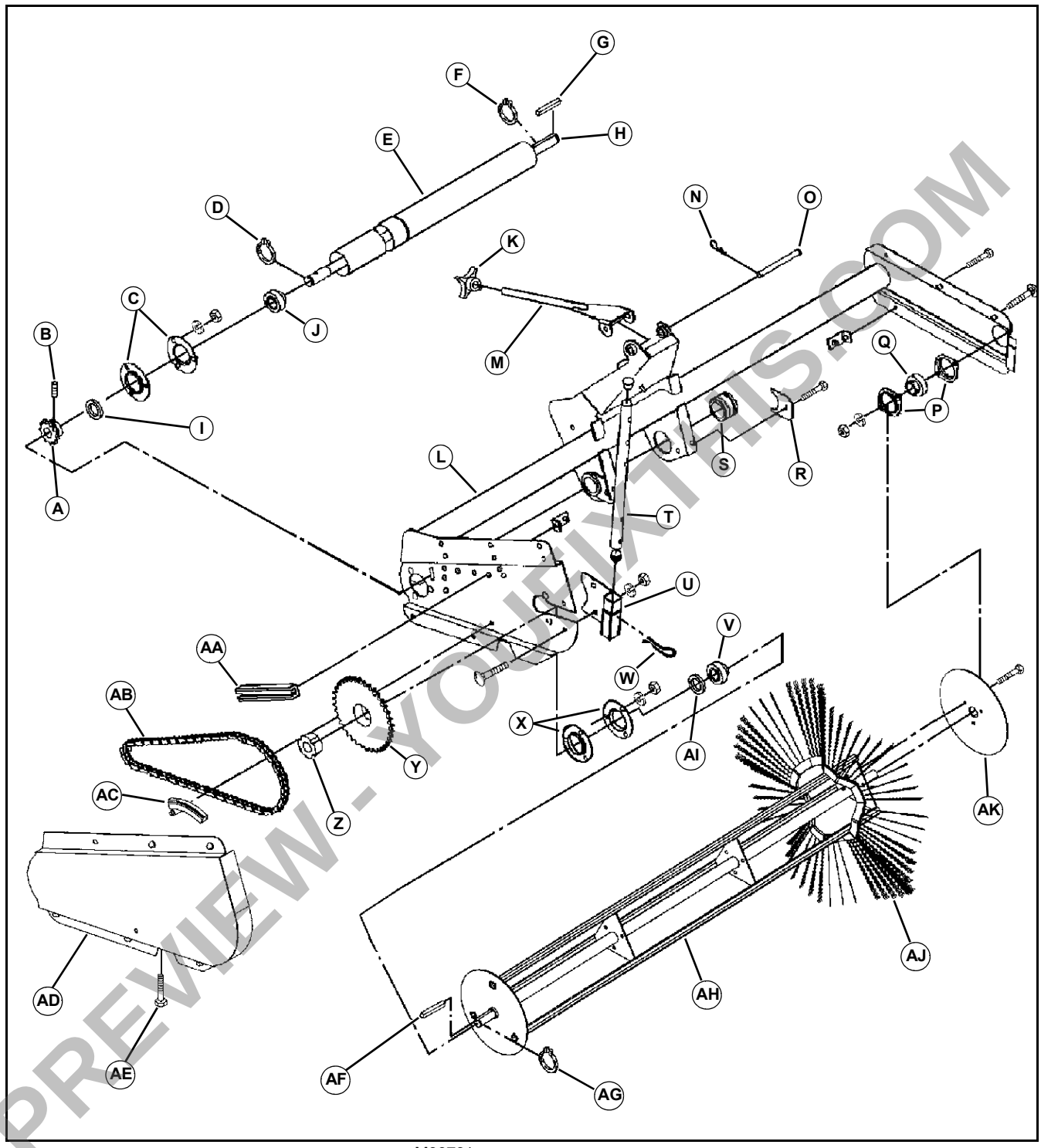
3. Remove hex head bolts (D) and lock washers (E) securing outboard bearing cover (F) to side plate (G). Remove outboard bearing cover.

4. Remove three hex nuts (H) and M12X30mm hex head bolts (I) securing outboard side plate to tiller frame (J). Remove side plate.

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Brush Assembly – 26 Broom

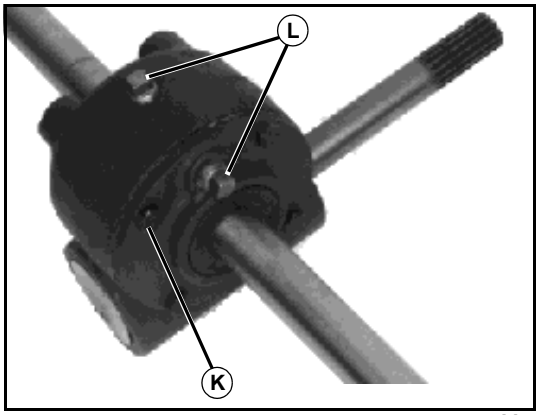


M99721

A- Sprocket (11T)
B- Set Screw
C- Bearing Flange
D- Retaining Ring
E- Drive Shaft Shield
F- Retaining Ring
G- Key (0.25 X 0.25 X 2 in.)
H- Drive Shaft
I- Spacer Washer
J- Bearing
K- Adjustment Knob
L- Broom Frame
M- Broom Adjustment Screw

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M77747

24.Secure cover with four cap screws (K). Tighten to 20-24 N•m (180-216 lb-in.).

25.Add 0.4 L (13.5 oz) of John Deere GL-5® Gear Oil-SAE 80W-90.

26.Apply loctite 592 pipe sealant with teflon to pipe plugs (L). Tighten pipe plugs to 18 N•m (160 lb-in.).

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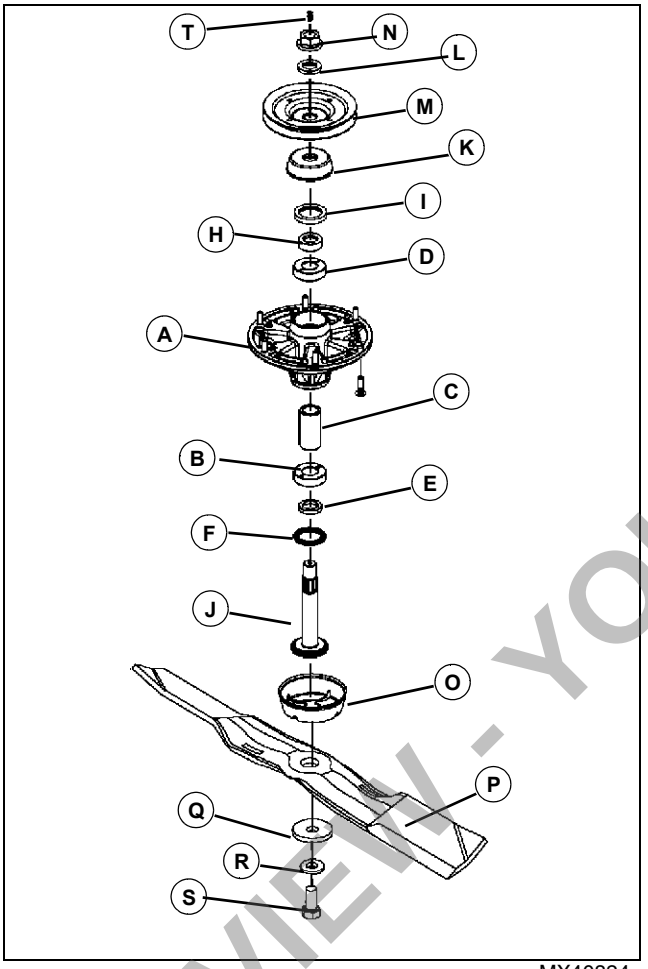
diameter toward bearing.

9. Turn housing upright.

10. Install bushing (G).

11. Using a press and disk, install upper seal (H) with open side toward bearing until the face of the seal is flush with the end of housing (A).

12. Insert upper seal ring (I) with chambered edge of outer diameter toward bearing.



MX40824

13. Install spindle shaft (J) into assembled housing (A).

14. Install deflector (K), sheave (M), and bushing (L) to spindle shaft.

15. Install flanged nut (N) to spindle shaft.

Important: Avoid Damage! Blade (P) must be properly seated on spindle (J), and concave side of blade washer (Q) must face toward blade.

16. Install lower deflector (O), blade (P), blade washer (Q), washer (R), and blade bolt (S) to spindle (J).

17. Center and secure blade in a soft-jawed vise.

18. Tighten blade bolt (S) to **163 N•m (120 lb-ft)**.

19. Tighten flange nut (N) on spindle (J) to **142 N•m 105 lb-ft)**.

20. Remove blade bolt and blade.

21. Apply specified grease to lubrication fitting (T).

22. Install spindle to deck.

Specifications:

Seal Face Distance from Lower End of Housing . . . . . 2.57 mm (0.10 in.)
Blade Bolt Torque . . . . . 122 N•m (90 lb-ft)
Spindle Sheave Flange Nuts . . . . . 142 N•m (105 lb-ft)
Ramp/Belt Guard Lock Nuts . . . . . 30 N•m (22 lb-ft)
Spindle Mounting Lock Nuts. . . . . 30 N•m (22 lb-ft)
Recommended Grease . . . . . John Deere Multi-Purpose SD Grease or John Deere Multi-Purpose Lithium Complex Grease

Spindle Remove and Install - 72D Decks

Caution: Avoid Injury! Mower spindle removal and servicing involves handling of mower cutting blades. Always wear gloves when handling or working with mower blades or spindle assemblies with attached blades.

Spindle Removal:

Detach mower deck from machine. Safely position mower deck in a convenient work area. After relaxing drive belt tension, disassemble as required to remove left, right, or center blade spindles.

Caution: Avoid Injury! Be careful when removing belt from sheave. If fingers are pinched between sheave and belt, personal injury can result.
Idler sheave is under very strong spring tension. Release slowly to prevent personal injury.

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