

# **F911, F915, F925, F932 and F935 Front Mowers**

**Serial No. (010001—)**

## **TECHNICAL MANUAL**

**John Deere  
Lawn & Grounds Care Division  
TM1487 (01OCT95)  
Replaces TM1487 (15JAN93)**

# Introduction

## 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.

**N** 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 diagnostics. Repair sections tell how to repair the components. Diagnostic 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, and service parts kits.

Section 10, Group 15—Repair Specifications, consist of all applicable specifications, near tolerances and specific torque values for various components on each individual machine.

Binders, binder labels, and tab sets can be ordered by John Deere dealers direct from the John Deere Distribution Service Center.

This manual is part of a total product support program.

FOS MANUALS—REFERENCE

TECHNICAL MANUALS—MACHINE SERVICE

COMPONENT MANUALS—COMPONENT SERVICE

Fundamentals of Service (FOS) Manuals cover basic theory of operation, fundamentals of troubleshooting, general maintenance, and basic type of failures and their causes. FOS Manuals are for training new personnel and for reference by experienced technicians.

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

Component Technical Manuals are concise service guides for specific components. Component technical manuals are written as stand-alone manuals covering multiple machine applications.

## NOTES CONCERNING THIS REVISION OF TM1487:

**The 900 Series Front Mowers have three serial number ranges that dictate the correct repair and other procedures to be followed:**

- (S.N. 010001—120000)  
Units with a PTO engagement lever, a water-in-fuel indicator (diesel only) and without a Park Lock Switch
- (S.N. 120001—150000)  
Units with a PTO engagement lever and a Park Lock Switch
- (S.N. 150001— )  
Units with a PTO Solenoid Switch, a PTO Solenoid and Relay, and a Park Lock Switch

**Not all pages have been changed to include references to the F925, please refer to the Contents Page for each Section to find the repair procedures or other information for the F925. Otherwise, for all repair information concerning the F925, use the following as a guide:**

- Same Fuel system as the F915
- All other procedures are the same as the F935

## SERIAL NUMBER RANGES WITH AFFECTED CHANGES

### F911

- 1991—1992 with S.N.'s 10001—120000 have a PTO engagement lever.
- 1993—1995 with S.N.'s 120001—150000 have a park lock switch added.
- 1995—1996 with S.N.'s 150001—150081 have a wiring harness with integrated diodes and a new PTO actuation system.
- 1995—1996 with S.N.'s starting at 150082— have a wiring harness with a diode pack and a new PTO actuation system.

### F915

- 1987—1989 with S.N.'s 420001—750000 are covered by TM1350.
- 1990—1992 with S.N.'s 010001—120000 have a PTO engagement lever.
- 1993—1995 with S.N.'s 120001—150000 have a park lock switch added.

### F925

- 1993—1995 with S.N.'s 120001—150000 have a park lock switch.
- 1995—1996 with S.N.'s 150001—150089 have a wiring harness with integrated diodes and a new PTO actuation system.
- 1995—1996 with S.N.'s starting at 150090— have a wiring harness with a diode pack and a new PTO actuation system.

### F932

- 1988—1989 with S.N.'s 475001—750000 have no Technical Manual available.
- 1990—1992 with S.N.'s 010001—120000 have a PTO engagement lever.
- 1993—1995 with S.N.'s 120001—150000 have a park lock switch added.
- 1995—1996 with S.N.'s 150001—150060 have a wiring harness with integrated diodes and a new PTO actuation system.
- 1995—1996 with S.N.'s starting at 150061— have a wiring harness with a diode pack and a new PTO actuation system.

### F935

- 1986—1989 with S.N.'s 360001—750000 are covered by TM1350.
- 1990—1992 with S.N.'s 010001—120000 have a PTO engagement lever and a water-in-fuel indicator.
- 1993—1995 with S.N.'s 120001—150000 have a park lock switch added and no water-in-fuel indicator.
- 1995—1996 with S.N.'s 150001—150228 have a wiring harness with integrated diodes and a new PTO actuation system.
- 1995—1996 with S.N.'s starting at 150229— have a wiring harness with a diode pack and a new PTO actuation system.

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# GENERAL INFORMATION

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## RECOGNIZE SAFETY INFORMATION

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 operating practices.



DX,ALERT -19-04JUN90

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T81389

## 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.



DX,SIGNAL -19-04JUN90

-19-30SEP88  
TS187

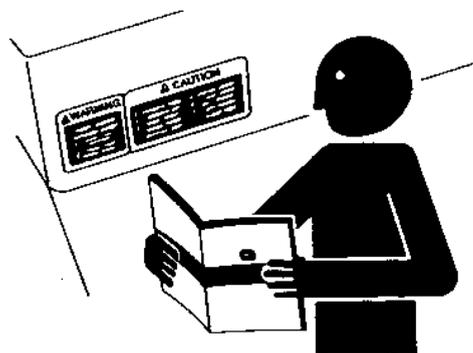
## FOLLOW SAFETY INSTRUCTIONS

Carefully read all safety messages in this manual and on your machine safety signs. Keep safety signs in good condition. Replace missing or damaged safety signs. Be sure new equipment components and repair parts include the current safety signs. Replacement safety signs are available from your John Deere dealer.

Learn how to operate the machine and how to use controls properly. Do not let anyone operate without instruction.

Keep your machine in proper working condition. Unauthorized modifications to the machine may impair the function and/or safety and affect machine life.

If you do not understand any part of this manual and need assistance, contact your John Deere dealer.



DX,READ -19-04JUN90

-UN-23AUG88  
TS201

## 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.



DX,FLAME -19-04JUN90

TS227 -UN-23AUG88

## PREVENT BATTERY EXPLOSIONS

Keep sparks, lighted matches, and open flame away from the top of battery. Battery gas can explode.

Never check battery charge by placing a metal object across the posts. Use a volt-meter or hydrometer.

Do not charge a frozen battery; it may explode. Warm battery to 16°C (60°F).



DX,SPARKS -19-04JUN90

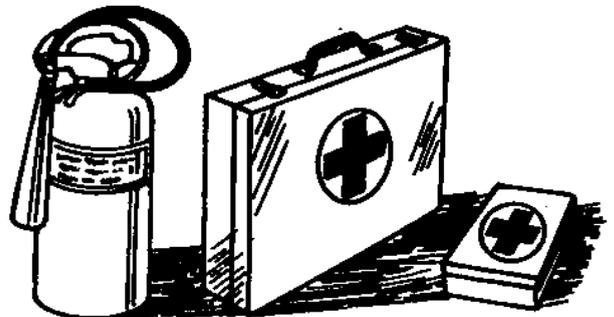
TS204 -UN-23AUG88

## 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.



DX,FIRE2 -19-04JUN90

TS291 -UN-23AUG88

10-05-2

## PREVENT ACID BURNS

Sulfuric acid in battery electrolyte is poisonous. It is strong enough to burn skin, eat holes in clothing, and cause blindness if splashed into eyes.

Avoid the hazard by:

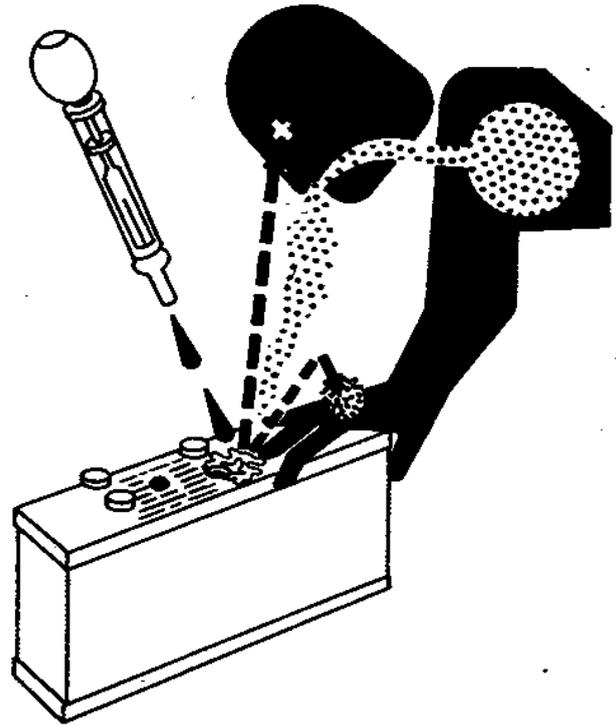
1. Filling batteries in a well-ventilated area.
2. Wearing eye protection and rubber gloves.
3. Avoiding breathing fumes when electrolyte is added.
4. Avoiding spilling or dripping electrolyte.
5. Use proper jump start procedure.

If you spill acid on yourself:

1. Flush your skin with water.
2. Apply baking soda or lime to help neutralize the acid.
3. Flush your eyes with water for 10—15 minutes. Get medical attention immediately.

If acid is swallowed:

1. Drink large amounts of water or milk.
2. Then drink milk of magnesia, beaten eggs, or vegetable oil.
3. Get medical attention immediately.



DX,POISON -19-04JUN90

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TS203

## SERVICE COOLING SYSTEM SAFELY

Explosive release of fluids from pressurized cooling system can cause serious burns.

Shut off engine. Only remove filler cap when cool enough to touch with bare hands. Slowly loosen cap to first stop to relieve pressure before removing completely.



DX,RCAP -19-04JUN90

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TS281

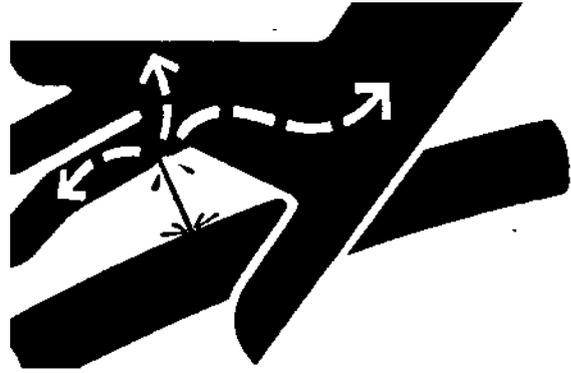
## AVOID HIGH-PRESSURE FLUIDS

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 may call the Deere & Company Medical Department in Moline, Illinois, or other knowledgeable medical source.



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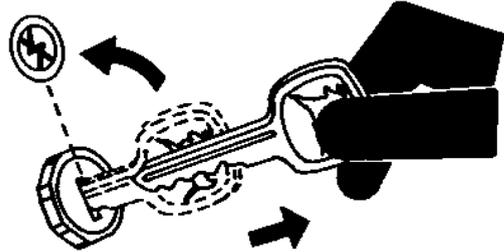
X9811

DX,FLUID,NA -19-11JUN90

## 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.



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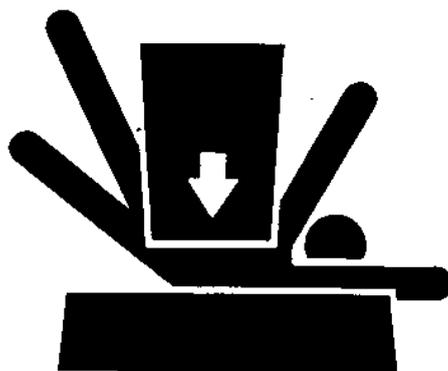
TS230

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.



DX,LOWER -19-04JUN90

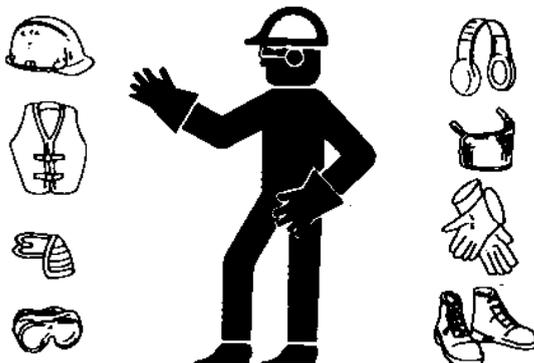
## WEAR PROTECTIVE CLOTHING

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.

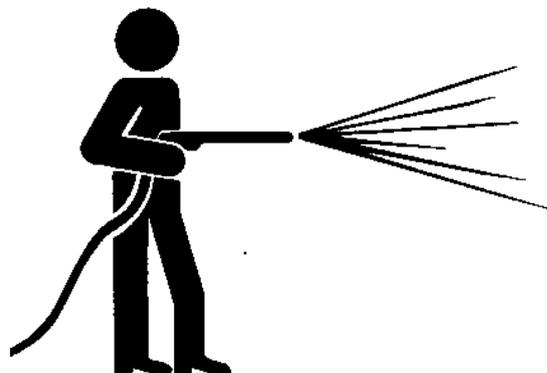


DX,WEAR -19-10SEP90

## 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.

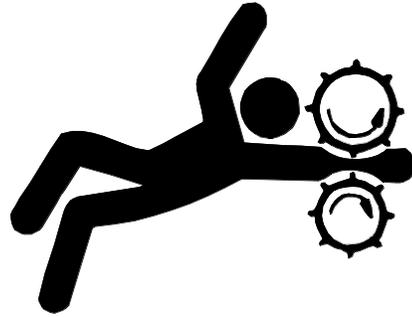


DX,CLEAN -19-04JUN90

## 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.

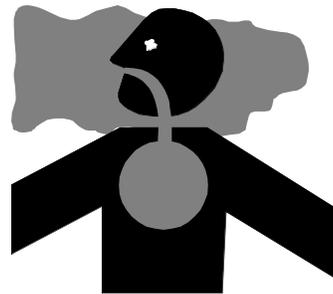


## WORK IN VENTILATED AREA

### WARNING: California Proposition 65 Warning

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

Gasoline engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.



## 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.



## REPLACE SAFETY SIGNS

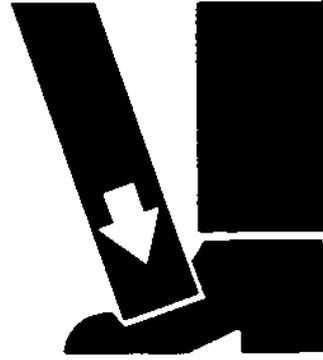
Replace missing or damaged safety signs. See the machine operator's manual for correct safety sign placement.



## USE PROPER LIFTING EQUIPMENT

Lifting heavy components incorrectly can cause severe injury or machine damage.

Follow recommended procedure for removal and installation of components in the manual.



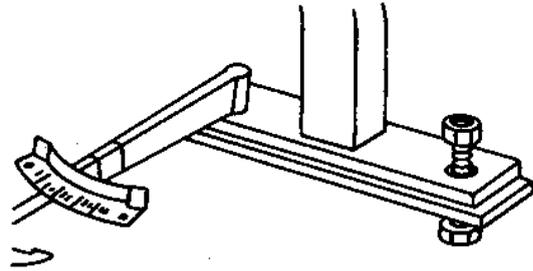
DX,LIFT -19-04JUN90

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TS226

## KEEP ROPS INSTALLED PROPERLY

Make certain all parts are reinstalled correctly if the roll-over protective structure (ROPS) is loosened or removed for any reason. Tighten mounting bolts to proper torque.

The protection offered by ROPS will be impaired if ROPS is subjected to structural damage, is involved in an overturn incident, or is in any way altered by welding, bending, drilling, or cutting. A damaged ROPS should be replaced, not reused.



DX,ROPS3 -19-04JUN90

-UN-23AUG88  
TS212

## SERVICE TIRES SAFELY

Explosive separation of a tire and rim parts can cause serious injury or death.

Do not attempt to mount a tire unless you have the proper equipment and experience to perform the job.

Always maintain the correct tire pressure. Do not inflate the tires above the recommended pressure. Never weld or heat a wheel and tire assembly. The heat can cause an increase in air pressure resulting in a tire explosion. Welding can structurally weaken or deform the wheel.

When inflating tires, use a clip-on chuck and extension hose long enough to allow you to stand to one side and NOT in front of or over the tire assembly. Use a safety cage if available.

Check wheels for low pressure, cuts, bubbles, damaged rims or missing lug bolts and nuts.



DX,TIRECP -19-24AUG90

TS862 -UN-12APR90

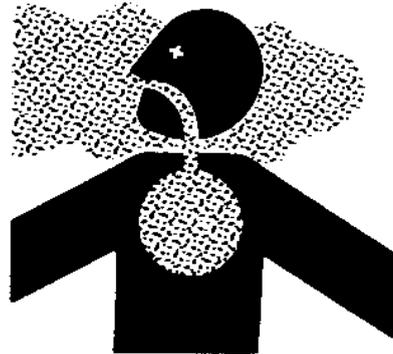
## AVOID HARMFUL ASBESTOS DUST

Avoid breathing dust that may be generated when handling components containing asbestos fibers. Inhaled asbestos fibers may cause lung cancer.

Components in products that may contain asbestos fibers are brake pads, brake band and lining assemblies, clutch plates, and some gaskets. The asbestos used in these components is usually found in a resin or sealed in some way. Normal handling is not hazardous as long as airborne dust containing asbestos is not generated.

Avoid creating dust. Never use compressed air for cleaning. Avoid brushing or grinding of asbestos containing materials. When servicing, wear an approved respirator. A special vacuum cleaner is recommended to clean asbestos. If not available, wet the asbestos containing materials with a mist of oil or water.

Keep bystanders away from the area.



DX,DUST -19-27AUG90

TS220 -UN-23AUG88

## AVOID HEATING NEAR PRESSURIZED FLUID LINES

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.



DX,TORCH -19-05OCT90

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TS963

## REMOVE PAINT BEFORE WELDING OR HEATING

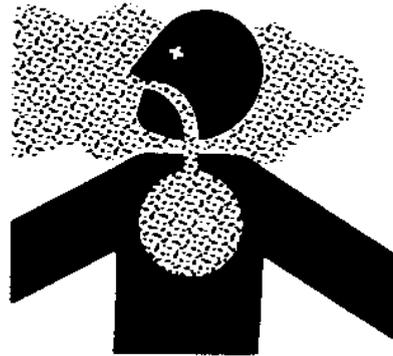
Avoid potentially toxic fumes and dust.

Hazardous fumes can be generated when paint is heated by welding, soldering, or using a torch.

Do all work outside or in a well ventilated area. Dispose of paint and solvent properly.

Remove paint before welding or heating:

- If you sand or grind paint, avoid breathing the dust. Wear an approved respirator.
- If you use solvent or paint stripper, remove stripper with soap and water before welding. Remove solvent or paint stripper containers and other flammable material from area. Allow fumes to disperse at least 15 minutes before welding or heating.



DX,PAINT -19-04JUN90

-UN-23AUG88  
TS220

### 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

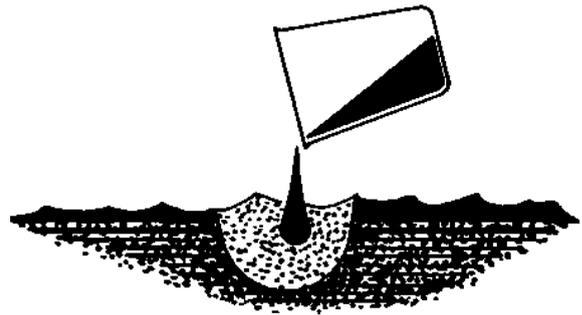
DX,REPAIR -19-04JUN90

### DISPOSE OF FLUIDS PROPERLY

Improperly disposing of fluids can harm the environment and ecology. Before draining any fluids, find out the proper way to dispose of waste from your local environmental agency.

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

DO NOT pour oil into the ground, down a drain, or into a stream, pond, or lake. Observe relevant environmental protection regulations when disposing of oil, fuel, coolant, brake fluid, filters, batteries, and other harmful waste.



TS222 -UN-23AUG88

DX,DRAIN -19-05JUN90

### LIVE WITH SAFETY

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 -19-04JUN90

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**MACHINE SPECIFICATIONS—F911 AND F932**

	F911	F932
<b>ENGINE</b>		
Make	Kawaski	Yanmar
Type	Liquid Cooled Gasoline	Liquid Cooled Gasoline
Model	FD620D-AS00	3TG72UJF
Horsepower	16.4 kW (22 hp)	20.9 kW (28hp)
Number of Cylinders	2	3
Cycle	4	4
Displacement	617 cm <sup>3</sup> (37.7 cu in.)	879 cm <sup>3</sup> (53.6 cu in.)
Bore	76 mm (2.99 in.)	72 mm (2.84 in.)
Stroke	68 mm (2.66 in.)	72 mm (2.84 in.)
Compression Ratio	10.3:1	8.7:1
Speed, Fast (no load)	3650 rpm	3400 rpm
Speed, Idle (no load)	1550 rpm	1700 rpm
Lubrication	Full Pressure	Full Pressure
Cooling System	Water Pump	Water Pump
Oil Filter	Full flow replaceable	Full flow replaceable
Air Cleaner	Dry, replaceable primary and secondary elements	Dry, replaceable primary and secondary elements
<b>FUEL SYSTEM</b>		
Fuel	Unleaded gasoline with a minimum antiknock index of 87	Unleaded gasoline with a minimum antiknock index of 87
Fuel Filter	Replaceable in-line filter	Replaceable in-line filter
Fuel Pump	Electric	Electric
<b>ELECTRICAL SYSTEM</b>		
Type	12 volt, negative ground	12 volt, negative ground
Charging System	Stator	Alternator
Capacity	16 amp Regulator	40 amp
Battery Size	491 CCA @ -18° C (0° F)	491 CCA @ -18° C (0° F)
Capacity at 25 amps	102 min.	102 min.
<b>POWER TRAIN</b>		
Transmission	Hydrostatic U-type	Hydrostatic U-type
Manufacturer	Sundstrand 15 series	Sundstrand 15 series
Number of Speeds	infinite	Infinite
Travel Speeds		
Forward	0—17 km/h (0—10.6 mph)	0—17 km/h (0—10.6 mph)
Reverse	0—8.5 km/h (0—5.3 mph)	0—8.5 km/h (0—5.3 mph)
Differential	Peerless Single Speed (with Differential Lock)	Peerless Single Speed (with Differential Lock)
PTO Clutch	Electric	Electric

*Continued on next page*

*General Specifications/Machine Specifications*

	<b>F911</b>	<b>F932</b>
<b>STEERING/BRAKES</b>		
Steering	Power, Hydrostatic	Power Hydrostatic
Brakes	Independent, shoe and drum	Independent, shoe and drum
<b>HYDRAULIC SYSTEM</b>		
Control Valve	2-Spool (open center)	2-Spool (open center)
Outlets	1 Set (front)	1 Set (front)
Lift Cylinders	Front-mounted	Front-mounted
<b>CAPACITIES</b>		
Fuel Tank	20.8 L (5.5 U.S. gal)	41.6 L (11 U.S. gal)
Transmission	4.4 L (4.6 U.S. qt)	4.4 L (4.6 U.S. qt)
Cooling System	3.5 L (3.7 U.S. qt)	4.93 L (5.21 U.S. qt)
Crankcase (w/filter)	1.7 L (1.8 U.S. qt)	3.2 L (3.4 U.S. qt)
Crankcase (w/o filter)	1.5 L (1.6 U.S. qt)	2.9 L (3.1 U.S. qt)
<b>TIRES</b>		
Standard Equipment		
Front (Drive)	23 x 8.5—12, 4PR	23 x 8.5—12, 4PR
Rear (Steering)	16 x 6.5—8, 4PR	16 x 6.5—8, 4PR
<b>DIMENSIONS</b>		
Overall Height to Top of Steering Wheel	1.28 m (50.5 in.)	1.35 m (53.5 in.)
Overall Height to Top of Hood	0.902 m (35.5 in.)	0.97 m (38.5 in.)
Overall Height w/ROPS	1.92 m (78 in.)	2.0 m (81 in.)
Overall Width	1.09 m (42.8 in.)	1.09 m (42.8 in.)
Overall Length	1.92 m (75.6 in.)	2.16 m (85.2 in.)
with 50 in. mower	2.72 m (107 in.)	N/A
with 60 in. mower	2.68 m (105.5 in.)	2.87 m (112.9 in.)
with 72 in. mower	2.93 m (115.4 in.)	2.93 m (115.4 in.)
with 76 in. mower	N/A	3.3 m (129.7 in.)
Ground Clearance	127 mm (5 in.)	165 mm (6.5 in.)
Wheelbase	1.25 m (49.2 in.)	1.43 m (56.3 in.)
Minimum Turn Radius		
Without Brakes		
-Left-hand	394 mm (15.5 in.)	445 mm (17.5 in.)
-Right-hand	686 mm (27 in.)	737 mm (29 in.)
With Brakes		
-Left-hand	0	0
-Right-hand	0	0
Approximate Shipping Weight	614 kg (1382 lb)	659 kg (1483 lb)

*(Specifications and design subject to change without notice.)*

**MACHINE SPECIFICATIONS—F915, F925 AND F935**

	F915	F925	F935
<b>ENGINE</b>			
Make	Yanmar	Yanmar	Yanmar
Type	Diesel	Diesel	Diesel
Model	3TN66UJF	3TNA72UJ2F	3TNA72UJ2F
Horsepower	11.9 kW (16 hp)	16.4 kW (22 hp)	16.4 kW (22 hp)
Number of Cylinders	3	3	3
Cycle	4	4	4
Displacement	658 cm <sup>3</sup> (40.2 cu in.)	879 cm <sup>3</sup> (53.6 cu in.)	879 cm <sup>3</sup> (53.6 cu in.)
Bore	66 mm (2.60 in.)	72 mm (2.84 in.)	72 mm (2.84 in.)
Stroke	64.2 mm (2.53 in.)	72 mm (2.84 in.)	72 mm (2.84 in.)
Compression Ratio	23.0:1	22.3:1	22.3:1
Speed, Fast (no load)	3650 rpm	3625 rpm	3625 rpm
Speed, Idle (no load)	1300 ± 50 rpm	1450 rpm	1450 rpm
Lubrication	Full Pressure	Full Pressure	Full Pressure
Cooling System	Water Pump	Water Pump	Water Pump
Oil Filter	Full flow replaceable	Full flow replaceable	Full flow replaceable
Air Cleaner	Dry, replaceable primary and secondary elements	Dry, replaceable primary and secondary elements	Dry, replaceable primary and secondary elements
<b>FUEL SYSTEM</b>			
Type	Indirect injection, precombustion chamber	Indirect injection, precombustion chamber	Indirect injection, precombustion chamber
Injection-Pump Type	In-line multi-plunger with electric shut-off	In-line multi-plunger with electric shut-off	In-line multi-plunger with electric shut-off
<b>Fuel Consumption</b>			
Full Load	4.2 L/hr (1.1 gal/hr) @ 3200 rpm	6 L/hr (1.6 gal/hr) @ 3200 rpm	6 L/hr (1.6 gal/hr) @ 3200 rpm
One-half Load	2.3 L/hr (0.6 gal/hr) @ 3200 rpm	3 L/hr (0.8 gal/hr) @ 3200 rpm	3 L/hr (0.8 gal/hr) @ 3200 rpm
Fuel	No. 1 or No. 2 Diesel	No. 1 or No. 2 Diesel	No. 1 or No. 2 Diesel
Fuel/Water Separator	Replaceable paper element	Replaceable filter element	Replaceable filter element
Fuel Pump	Electric	Electric	Electric
<b>ELECTRICAL SYSTEM</b>			
Type	12 volt, negative ground	12 volt, negative ground	12 volt, negative ground
Charging System	Alternator	Alternator	Alternator
Capacity	20 amp	40 amp	40 amp
Battery Size	491 CCA @ -18° C (0° F)	491 CCA @ -18° C (0° F)	491 CCA @ -18° C (0° F)
Capacity at 25 amps	102 min.	102 min.	102 min.
<b>POWER TRAIN</b>			
Transmission	Hydrostatic U-type	Hydrostatic U-type	Hydrostatic U-type
Manufacturer	Sundstrand 15 series	Sundstrand 15 series	Sundstrand 15 series
Number of Speeds	infinite	Infinite	Infinite
<b>Travel Speeds</b>			
Forward	0—16 km/h (0—10 mph)	0—17 km/h (0—10.5 mph)	0—17 km/h (0—10.5 mph)
Reverse	0—8 km/h (0—5 mph)	0—8.5 km/h (0—5.3 mph)	0—8.5 km/h (0—5.3 mph)

*Continued on next page*

*General Specifications/Machine Specifications*

	<b>F915</b>	<b>F925</b>	<b>F935</b>
Differential	Peerless Single Speed (with Differential Lock)	Peerless Single Speed (with Differential Lock)	Peerless Single Speed (with Differential Lock)
PTO Clutch	Electric	Electric	Electric
<b>STEERING/BRAKES</b>			
Steering	Power, Hydrostatic	Power Hydrostatic	Power Hydrostatic
Brakes	Independent, shoe and drum	Independent, shoe and drum	Independent, shoe and drum
<b>HYDRAULIC SYSTEM</b>			
Control Valve	2-Spool (open center)	2-Spool (open center)	2-Spool (open center)
Outlets	1 Set (front)	1 Set (front)	1 Set (front)
Lift Cylinders	Front-mounted	Front-mounted	Front-mounted
<b>CAPACITIES</b>			
Fuel Tank	20.8 L (5.5 U.S. gal)	20.8 L (5.5 U.S. gal)	41.6 L (11 U.S. gal)
Transmission	4.4 L (4.6 U.S. qt)	4.4 L (4.6 U.S. qt)	4.4 L (4.6 U.S. qt)
Cooling System	2.8 L (3.0 U.S. qt)	4.7 L (5.0 U.S. qt)	4.7 L (5.0 U.S. qt)
Crankcase (w/filter)	2.8 L (3.0 U.S. qt)	3.1 L (3.3 U.S. qt)	3.1 L (3.3 U.S. qt)
Crankcase (w/o filter)	2.5 L (2.6 U.S. qt)	2.8 L (3.3 U.S. qt)	2.8 L (3.3 U.S. qt)
<b>TIRES</b>			
Standard Equipment			
Front (Drive)	20 x 8.00—10, 4PR	23 x 8.50—12, 4PR	23 x 8.50—12, 4PR
Rear (Steering)	16 x 6.00—6, 4PR	16 x 6.50—8, 4PR	16 x 6.50—8, 4PR
<b>DIMENSIONS</b>			
Overall Width	1.09 m (42.8 in.)	1.09 m (42.8 in.)	1.09 m (42.8 in.)
Overall Length	2.16 m (85 in.)	2.16 m (85 in.)	2.16 m (85 in.)
with 50 in. mower	2.72 m (107 in.)	N/A	N/A
with 60 in. mower	2.87 m (113 in.)	2.87 m (113 in.)	2.87 m (113 in.)
with 72in. mower	N/A	2.93 m (115.4 in.)	2.93 m (115.4 in.)
with 76in. mower	N/A	3.3 m (129.7 in.)	3.3 m (129.7 in.)
Wheelbase	1246 mm (49.5 in.)	1.43 m (55.1 in.)	1.43 m (55.1 in.)
Minimum Turn Radius			
Without Brakes			
-Left-hand	394 mm (15.5 in.)	394 mm (15.5 in.)	394 mm (15.5 in.)
-Right-hand	686 mm (27 in.)	737 mm (29 in.)	737 mm (29 in.)
With Brakes			
-Left-hand	0	0	0
-Right-hand	0	0	0
Approximate Shipping Weight	544 kg (1266 lb.)	646 kg (1400 lb.)	646 kg (1400 lb.)

*(Specifications and design subject to change without notice.)*

## **F911 FRONT MOWER REPAIR SPECIFICATIONS**

### **SECTION 20—ENGINE REPAIR**

<b>Item</b>	<b>Measurement</b>	<b>Specification</b>
For all repair specifications—Use CTM39		
Engine-to-Frame Cap Screw	Torque	18 N·m (160 lb-in.)
Drive Shaft-to-Engine Cap Screw	Torque	35 N·m (27 lb-ft)
PTO Belt Tension Spring Adjustment New Belts	Spring Length	19 mm (0.750 in.)
After One Hour of Operation	Spring Length	21 mm (0.800 in.)
Cylinder Head Cap Screw	Torque	21 N·m (186 lb-in.)
Outer Sheave Half-to-Flywheel Cap Screw	Torque	13 N·m (115 lb-in.)
Spark Plugs	Torque	20 N·m (177 lb-in.)

### **SECTION 30—FUEL AND AIR REPAIR**

<b>Item</b>	<b>Measurement</b>	<b>Specification</b>
For all repair specifications—Use CTM39		

### **SECTION 40—ELECTRICAL REPAIR**

<b>Item</b>	<b>Measurement</b>	<b>Specification</b>
For all repair specifications—Use CTM39		
PTO Clutch-to-Engine Cap Screw	Torque	73 N·m (54 lb-ft)
PTO Belt Tension Spring Adjustment New Belts	Spring Length	19 mm (0.750 in.)
After One Hour of Operation	Spring Length	21 mm (0.800 in.)

*Continued on next page*

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**SECTION 50—POWER TRAIN REPAIR**

Item	Measurement	Specification
Transmission		
Swashplate	Full movement	25 mm (1 in.)
Meter Shaft Bearing Race	Mounting surface to bearing race	5 mm (0.187 in.)
Spring Pin-to-Swashplate	Depth	6 mm (0.250 in.)
Valve Plate Needle Bearings	Top of bearing to cover surface	3 mm (0.109 in.)
Cover-to-Housing Cap Screws	Torque	35 N·m (28 lb-ft)
Hydraulic Fittings-to-Housing	Torque	24 N·m (215 lb-in.)
Transmission-to-Differential Cap Screws	Torque	45 N·m (35 lb-ft)
Hydraulic Line Fittings	Torque	50 N·m (37 lb-ft)
Charge Pump		
Pump-to-Transmission Cap Screws	Torque	70 N·m (50 lb-ft)
Differential		
Carrier-to-Holder Cap Screw	Torque	52 N·m (37 lb-ft)
Cover-to-Case Cap Screw	Torque	22 N·m (192 lb-in.)
Axle-to-Differential Cap Screw	Torque	81 N·m (60 lb-ft)
Hydraulic Line Fitting	Torque	24 N·m (215 lb-in.)
Differential-to-Frame Cap Screw	Torque	106 N·m (78 lb-ft)
Axles		
Axle-to-Differential Seal	Depth	3 mm (0.125 in.)
Axle-to-Differential Cap Screw	Torque	80 N·m (60 lb-ft)
Hydraulic Line Connector	Torque	24 N·m (215 lb-in.)
Brake Plate-to-Axle Cap Screw	Torque	68 N·m (50 lb-ft)
Brake Drum-to-Axle Shaft Nut	Torque	115—156 N·m (85—115 lb-ft)
Wheel-to-Brake Drum Cap Screw	Torque	99 N·m (70 lb-ft)
Differential-to-Frame Cap Screw	Torque	106 N·m (78 lb-ft)
Drive Shaft		
Drive Shaft-to-Engine Cap Screw	Torque	35 N·m (28 lb-ft)

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**SECTION 50—POWER TRAIN REPAIR—CONTINUED**

Item	Measurement	Specification
PTO Shaft		
Rear Bearing Quill Stud Bolts	Torque	81 N·m (60 lb-ft)
Rear Sheave-to-PTO Shaft Cap Screw	Torque	73 N·m (54 lb-ft)
Belt Tension Springs	Adjustment	21 mm (0.8 in.)

**SECTION 60—STEERING AND BRAKE REPAIR**

Item	Measurement	Specification
<b>Steering</b>		
Steering Wheel-to Column Nut	Torque	14 N·m (132 lb-in.)
Steering Valve		
Rotor-to-Stator	Maximum Clearance	0.08 mm (0.003 in.)
Steering Column Tube		
Bushing	Depth below top of steering tube	2.5 mm (0.100 in.)
Metering Assembly-to-Valve		
Screw	Torque	1.4 N·m (12 lb-in.)
Steering Valve Nuts	Torque	30 N·m (22 lb-ft)
Relief Valve Plug	Torque	14 N·m (124 lb-in.)
Implement Relief Valve	Torque	14 N·m (124 lb-in.)
Steering Link-to-Axle Nut	Torque	75 N·m (55 lb-ft)
<b>Brakes</b>		
Brake Plate-to-Frame Cap Screw	Torque	68 N·m (50 lb-ft)
Brake Drum-to-Axle Shaft Nut	Torque	115—156 N·m (85—115 lb-ft)
Wheel-to-Drum Cap Screws	Torque	95 N·m (70 lb-ft)
<b>Rear Axle</b>		
Steering Link-to-Axle Nut	Torque	75 N·m (55 lb-ft)
Rear Wheel Cap Screws	Torque	81-95 N·m (60—70 lb-ft)
Axle-to-Tie Rod End Nut	Torque	61 N·m (45 lb-ft)

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**SECTION 70—HYDRAULIC REPAIR**

Item	Measurement	Specification
Hydraulic Control Valve Hydraulic Line Fittings	Torque	50 N·m (37 lb-ft)
Small Plugs and Screws	Torque	3.5 N·m (30 lb-in.)
Large Plugs	Torque	24 N·m (215 lb-in.)
Hydraulic Lift Cylinders Hydraulic Line Fittings	Torque	24 N·m (215 lb-in.)

**SECTION 80—MISCELLANEOUS REPAIR**

Item	Measurement	Specification
Mower Gearbox Sheave-to-Gearbox Set Screw	Torque	20 N·m (180 lb-in.)
Gearbox-to-Deck Cap Screw	Torque	55 N·m (40 lb-ft)
Gearbox seals	Depth	250 mm (0.100 in.)
Cover-to-Gear Case Cap Screw	Torque	23 N·m (200 lb-in.)
Output Shaft	Rolling Drag Torque	0.4—1.0 N·m (5—15 oz-in.)
Spindle Assembly 50 in. Mower Blade Cap Screw	Torque	73 N·m (54 lb-ft)
60/72/76 in. Mower Blade Cap Screw	Torque	113 N·m (83 lb-ft)
50 in. Mower Spindle Sheave-to-Spindle Shaft Nut	Torque	140 N·m (103 lb-ft)
60 and 72 in. Mower Spindle Sheave-to-Spindle Shaft Nut	Torque	164 N·m (120 lb-ft)
Drive Belt Gearbox Assembly-to-Deck Cap Screw	Torque	55 N·m (40 lb-ft)
Spindle Sheave-to-Shaft Cap Screw	Torque	164 N·m (120 lb-ft)
<b>ROLL-GARD</b> Rear Mount-to-Frame Cap Screw	Torque	65 N·m (40 lb-ft)
Front Posts-to-Frame Cap Screw	Torque	80 N·m (60 lb-ft)
Rear Post-to-Rear Mount Cap Screw	Torque	108 N·m (80 lb-ft)

## F915 FRONT MOWER REPAIR SPECIFICATIONS

### SECTION 20—ENGINE REPAIR

Item	Measurement	Specification
For all repair specifications—Use CTM3		
Engine-to-Frame Cap Screw	Torque	50 N·m (36 lb-ft)
Drive Shaft/Isolator-to-Engine Cap Screw	Torque	35 N·m (27 lb-ft)
PTO Belt Tension Spring Adjustment New Belts	Spring Length	19 mm (0.750 in.)
After One Hour of Operation	Spring Length	21 mm (0.800 in.)

### SECTION 30—FUEL AND AIR REPAIR

Item	Measurement	Specification
For all repair specifications—Use CTM3		
Air Restriction Indicator	Maximum Vacuum	500 mm (20 in.)

### SECTION 40—ELECTRICAL REPAIR

Item	Measurement	Specification
For all repair specifications—Use CTM3		
PTO Clutch-to-Engine Cap Screw	Torque	73 N·m (54 lb-ft)
PTO Belt Tension Spring Adjustment New Belts	Spring Length	19 mm (0.750 in.)
After One Hour of Operation	Spring Length	21 mm (0.800 in.)

Continued on next page

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**SECTION 50—POWER TRAIN REPAIR**

Item	Measurement	Specification
Transmission		
Swashplate	Full movement	25 mm (1 in.)
Meter Shaft Bearing Race	Mounting surface to bearing race	5 mm (0.187 in.)
Spring Pin-to-Swashplate	Depth	6 mm (0.250 in.)
Valve Plate Needle Bearings	Top of bearing to cover surface	3 mm (0.109 in.)
Cover-to-Housing Cap Screws	Torque	35 N·m (28 lb-ft)
Hydraulic Fittings-to-Housing	Torque	24 N·m (215 lb-in.)
Transmission-to-Differential Cap Screws	Torque	45 N·m (35 lb-ft)
Hydraulic Line Fittings	Torque	50 N·m (37 lb-ft)
Charge Pump		
Pump-to-Transmission Cap Screws	Torque	70 N·m (50 lb-ft)
Differential		
Carrier-to-Holder Cap Screw	Torque	52 N·m (37 lb-ft)
Cover-to-Case Cap Screw	Torque	22 N·m (192 lb-in.)
Axle-to-Differential Cap Screw	Torque	81 N·m (60 lb-ft)
Hydraulic Line Fitting	Torque	24 N·m (215 lb-in.)
Differential-to-Frame Cap Screw	Torque	106 N·m (78 lb-ft)
Axles		
Axle-to-Differential Seal	Depth	3 mm (0.125 in.)
Axle-to-Differential Cap Screw	Torque	80 N·m (60 lb-ft)
Hydraulic Line Connector	Torque	24 N·m (215 lb-in.)
Brake Plate-to-Axle Cap Screw	Torque	68 N·m (50 lb-ft)
Brake Drum-to-Axle Shaft Nut	Torque	115—156 N·m (85—115 lb-ft)
Wheel-to-Brake Drum Cap Screw	Torque	99 N·m (70 lb-ft)
Differential-to-Frame Cap Screw	Torque	106 N·m (78 lb-ft)
Drive Shaft		
Drive Shaft-to-Engine Cap Screw	Torque	35 N·m (28 lb-ft)

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**SECTION 50—POWER TRAIN REPAIR—CONTINUED**

Item	Measurement	Specification
PTO Shaft		
Rear Bearing Quill Stud Bolts	Torque	81 N·m (60 lb-ft)
Rear Sheave-to-PTO Shaft Cap Screw	Torque	73 N·m (54 lb-ft)
Belt Tension Springs	Adjustment	21 mm (0.8 in.)

**SECTION 60—STEERING AND BRAKE REPAIR**

Item	Measurement	Specification
Steering		
Steering Wheel-to Column Nut	Torque	14 N·m (132 lb-in.)
Steering Valve		
Rotor-to-Stator	Maximum Clearance	0.08 mm (0.003 in.)
Steering Column Tube		
Bushing	Depth below top of steering tube	2.5 mm (0.100 in.)
Metering Assembly-to-Valve		
Screw	Torque	1.4 N·m (12 lb-in.)
Steering Valve Nuts	Torque	30 N·m (22 lb-ft)
Relief Valve Plug	Torque	14 N·m (124 lb-in.)
Implement Relief Valve	Torque	14 N·m (124 lb-in.)
Steering Link-to-Axle Nut	Torque	75 N·m (55 lb-ft)
Brakes		
Brake Plate-to-Frame Cap Screw	Torque	68 N·m (50 lb-ft)
Brake Drum-to-Axle Shaft Nut	Torque	115—156 N·m (85—115 lb-ft)
Wheel-to-Drum Cap Screws	Torque	95 N·m (70 lb-ft)
Rear Axle		
Steering Link-to-Axle Nut	Torque	75 N·m (55 lb-ft)
Rear Wheel Cap Screws	Torque	81-95 N·m (60—70 lb-ft)
Axle-to-Tie Rod End Nut	Torque	61 N·m (45 lb-ft)

Continued on next page

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**SECTION 70—HYDRAULIC REPAIR**

Item	Measurement	Specification
Hydraulic Control Valve Hydraulic Line Fittings	Torque	50 N·m (37 lb-ft)
Small Plugs and Screws	Torque	3.5 N·m (30 lb-in.)
Large Plugs	Torque	24 N·m (215 lb-in.)
Hydraulic Lift Cylinders Hydraulic Line Fittings	Torque	24 N·m (215 lb-in.)

**SECTION 80—MISCELLANEOUS REPAIR**

Item	Measurement	Specification
Mower Gearbox Sheave-to-Gearbox Set Screw	Torque	20 N·m (180 lb-in.)
Gearbox-to-Deck Cap Screw	Torque	55 N·m (40 lb-ft)
Gearbox seals	Depth	250 mm (0.100 in.)
Cover-to-Gear Case Cap Screw	Torque	23 N·m (200 lb-in.)
Output Shaft	Rolling Drag Torque	0.4—1.0 N·m (5—15 oz-in.)
Spindle Assembly 50 in. Mower Blade Cap Screw	Torque	73 N·m (54 lb-ft)
60/72/76 in. Mower Blade Cap Screw	Torque	113 N·m (83 lb-ft)
50 in. Mower Spindle Sheave-to-Spindle Shaft Nut	Torque	140 N·m (103 lb-ft)
60 and 72 in. Mower Spindle Sheave-to-Spindle Shaft Nut	Torque	164 N·m (120 lb-ft)
Drive Belt Gearbox Assembly-to-Deck Cap Screw	Torque	55 N·m (40 lb-ft)
Spindle Sheave-to-Shaft Cap Screw	Torque	164 N·m (120 lb-ft)
<b>ROLL-GARD</b> Rear Mount-to-Frame Cap Screw	Torque	65 N·m (40 lb-ft)
Front Posts-to-Frame Cap Screw	Torque	80 N·m (60 lb-ft)
Rear Post-to-Rear Mount Cap Screw	Torque	108 N·m (80 lb-ft)

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