F912, F915 and F935 Front Mowers

TECHNICAL MANUAL

John Deere
Lawn & Grounds Care Division

TM1350 (Mar-87)

Litho in U.S.A

F912/F915/F935
Front Mowers

TM1350 (Mar-87)

F912/F915/F935 FRONT MOWER TECHNICAL MANUAL TM-1350 (APR-87)

SECTION AND GROUP CONTENTS

All information, illustrations and specifications contained in this technical 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.

M45;;0000C -1 130487

Section 10
GENERAL INFORMATION

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INTRODUCTION

This manual is part of a total service support program.

FOS Manuals—reference

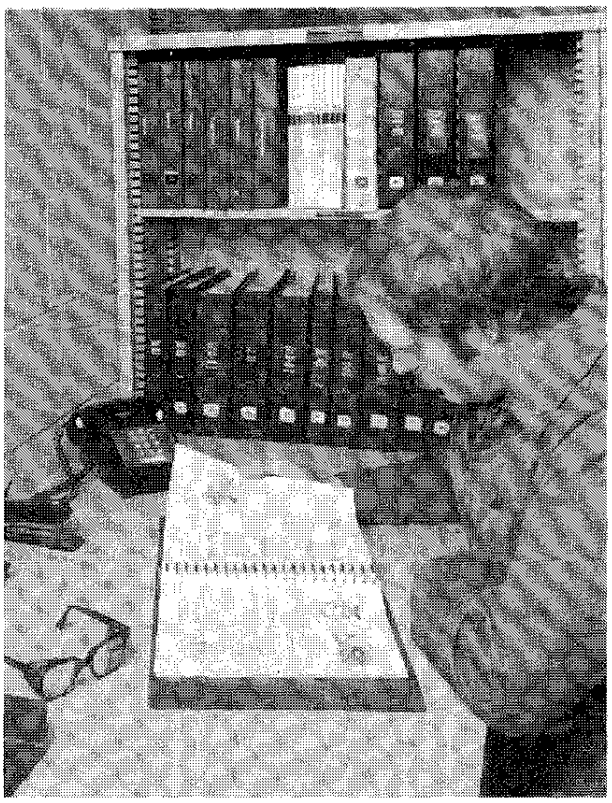
Technical Manuals—machine service

Component Manuals—component service

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

Technical Manuals are concise service guides for specific machines. Technical manuals are on-the-job guides containing only the vital information needed by an experienced service technician.

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



AB6;RW5559 053;INTR02 030785

FEATURES OF THIS TECHNICAL MANUAL

John Deere ILLUSTRUCTION format emphasizing illustrations and concise instructions in easy-to-use modules.

Emphasis on diagnosis, analysis, and testing so you can understand the problem and correct it.

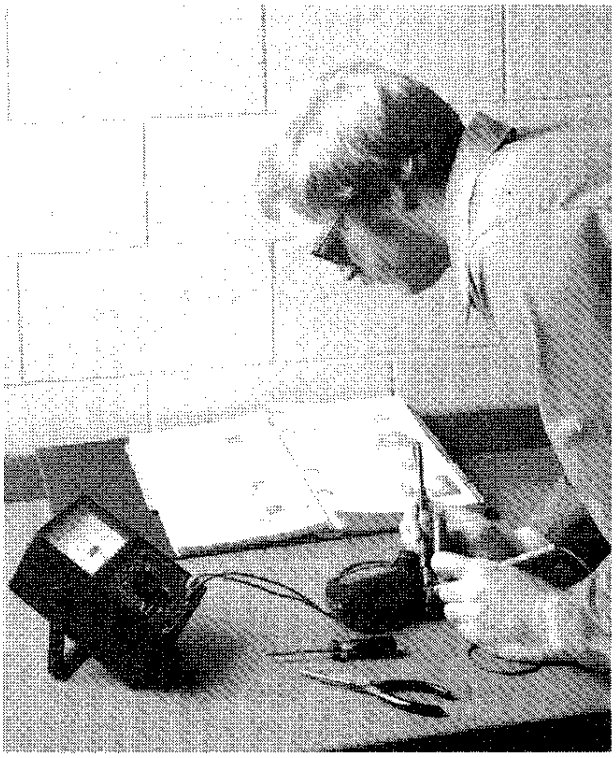
Diagnostic information presented with the most logical and easiest to isolate problems first to help you identify the majority of routine failures quickly.

Step-by-step instructions for teardown and assembly.

Summary listing at the beginning of each group of all applicable specifications, wear tolerances, torque values, essential tools, and materials needed to do the job.

An emphasis throughout on safety—so you do the job right without getting hurt.

This technical manual was planned and written for you—an experienced service technician. Keep it in a permanent binder in the shop where it is handy. Refer to it when you need to know correct service procedures or specifications.



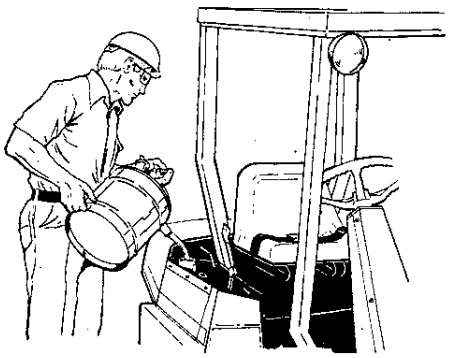
AB6;RW5560 053;INTR03 071085

SAFETY AND YOU

CAUTION: This safety symbol is used for important safety messages. When you see this symbol, follow the safety message to avoid personal injury.

4A9;T81389 M45;;1005A 3 090185

AVOID FIRE HAZARDS



Be prepared if an accident or fire should occur. Know where the first aid kit and the fire extinguishers are located—know how to use them.

Do not smoke while you fill the fuel tank, service fuel system or handle highly flammable material.

Do not remove fuel cap or add fuel to tank when engine is hot or running. Allow engine to cool for several minutes. Do not use open pans of gasoline or diesel fuel for cleaning parts. Use good commercial, nonflammable solvents.

Provide adequate ventilation when charging batteries.

Do not check battery charge by placing metal objects across the posts.

Do not allow sparks or open flame near batteries.

Do not smoke near battery.

Never check fuel or battery electrolyte with an open flame.

Never use an open flame to look for leaks anywhere on the equipment.

Never use an open flame as light anywhere on or around the equipment.

When preparing engine for storage, remember that inhibitor is volatile and therefore dangerous. Seal and tape openings after adding the inhibitor. Keep container tightly closed when not in use.

Inspect electrical wiring for worn or frayed insulation. Install new wiring if wires are damaged.

4A9;M38702 M45;;1005A 4 040286

PREPARE FOR EMERGENCIES

Be prepared if a fire starts.

Keep a first aid kit and fire extinguishers handy.

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

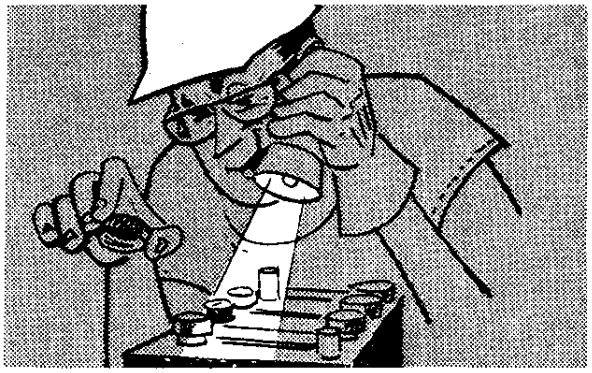
AB6;TS186 053;FIRE2 080785

PREVENT BATTERY EXPLOSIONS

Battery gas can explode. Keep sparks and flames away from batteries. Use a flashlight to check battery electrolyte level.

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

Always remove grounded (-) battery clamp first and replace it last.



AB6;TS181 053;EXPLO. 290186

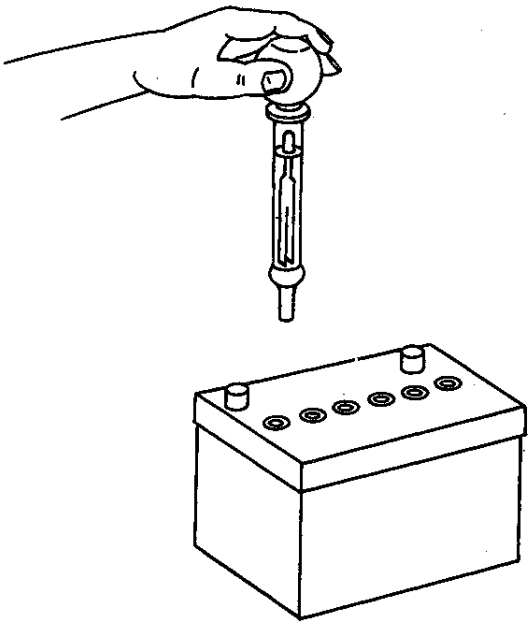
AVOID ACID BURNS

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.

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.

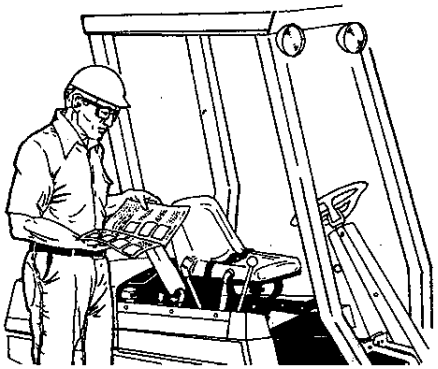


AB6;TSS182 053;ACID. 290186

UNDERSTAND MACHINE OPERATION

Only qualified people should operate the machine.

Carefully read this manual and manuals furnished with attachments. Learn the location and purpose of all controls, instruments, indicators, and labels.



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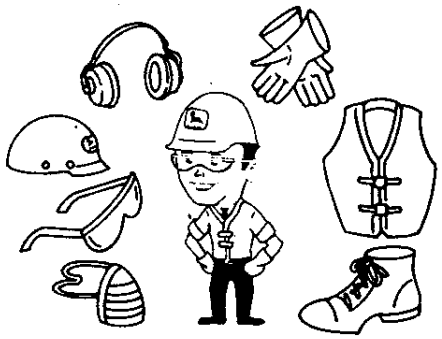
WEAR PROTECTIVE CLOTHING

Wear fairly tight clothing . . . . and safety equipment.



4A9;M34583 M45;;1005A 6 090185

PROTECT AGAINST NOISE

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

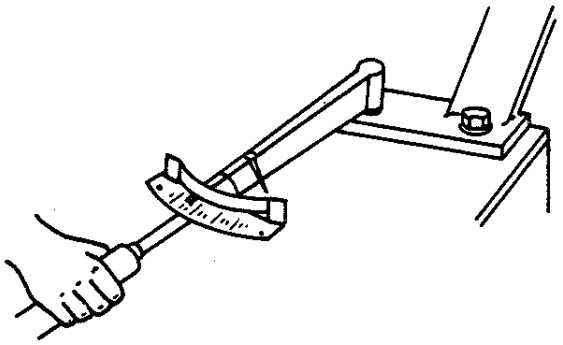
Wear a suitable hearing protective device such as earmuffs (A) or earplugs (B) to protect against objectionable or uncomfortable loud noises.

AB6;X7662 053;NOISE 270886

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.

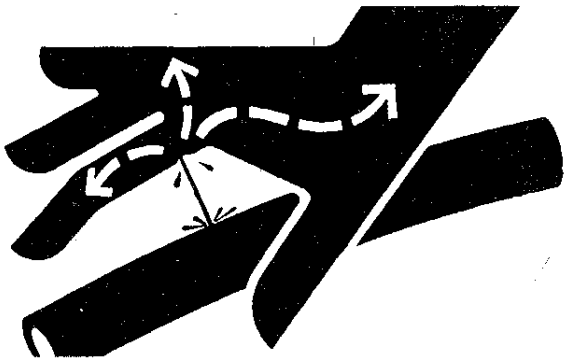


AB6;TS176 053;ROPS3 280186

AVOID HIGH-PRESSURE FLUIDS

Escaping fluid under pressure can penetrate the skin causing serious injury. Relieve pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure. Keep hands and body away from pinholes and nozzles which eject fluids under high pressure. Use a piece of cardboard or paper to search for leaks.

If ANY fluid is injected into the skin, it must be surgically removed within a few hours by a doctor familiar with this type injury or gangrene may result.



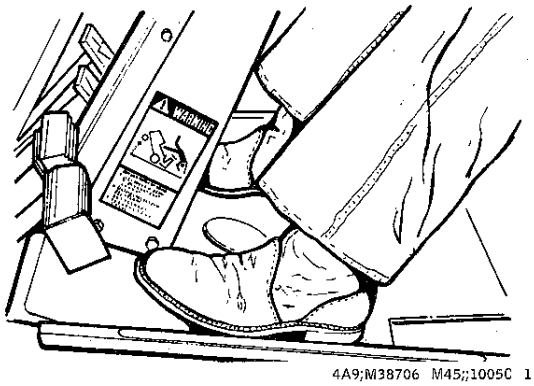
AB6;X9811 053;FLUID. 290186

START ENGINE SAFELY

Avoid possible injury or death from machine runaway.

Do not start engine by shorting across starter terminals.

Before you start the engine:
- Sit on the operators seat.
- Move hydrostatic control to "STOP" position.
- Engage the park brake.
- Lower equipment to the ground.



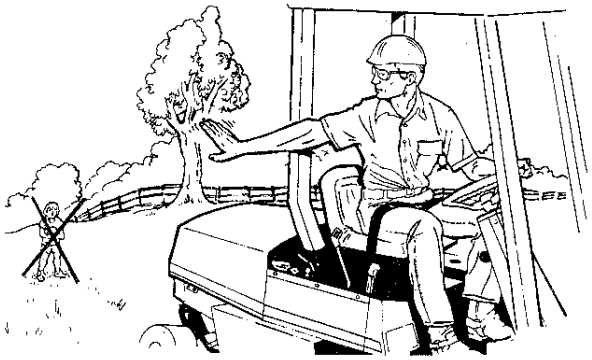
4A9;M38706 M45;;1005C 1 300186

OPERATE MACHINE SAFELY

Before you move any equipment, be sure all persons are away from the machine.

When the machine is operating, ONLY the operator should be on it.

Keep operating area level.



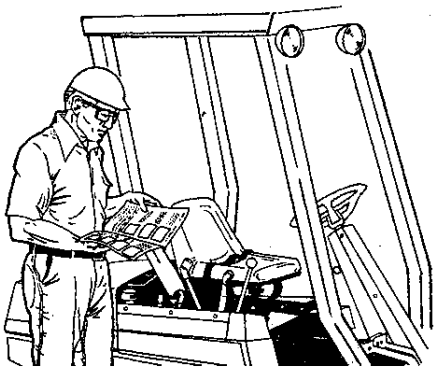
4A9;M38334 M45;;1005C 2 300186

UNDERSTAND CORRECT SERVICE

Be sure you understand a service procedure before you work on the machine.

Unauthorized modifications to the machine may impair the function and/or safety and affect machine life.

If it is necessary to make checks with the engine running, ALWAYS USE TWO PEOPLE—with the operator at the controls, able to see the person doing the checking.

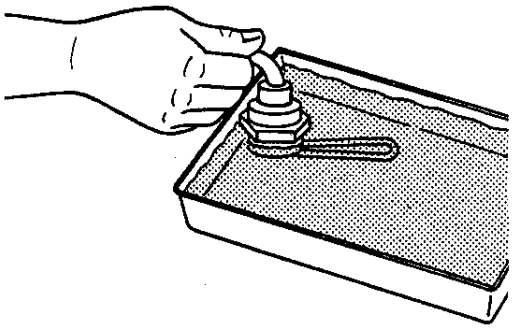


4A9;M34552 M45;;1005A 9 130385

TEST COOLANT HEATER IN LIQUID ONLY

Do not plug coolant heater into electrical power unless heating element is immersed in coolant. Sheath could burst and result in personal injury.

Use a heavy-duty grounded cord to connect coolant heater to electrical power.

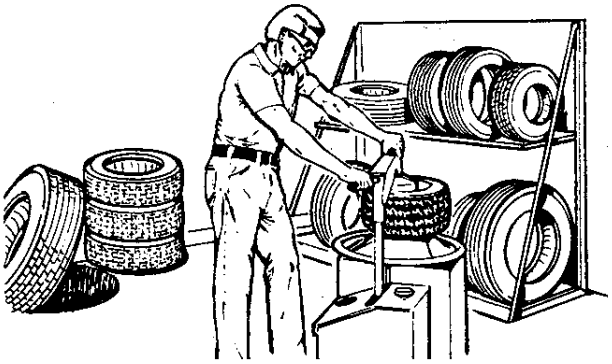


AB6;TS174 053;HEAT. 290186

SERVICE TIRES SAFELY

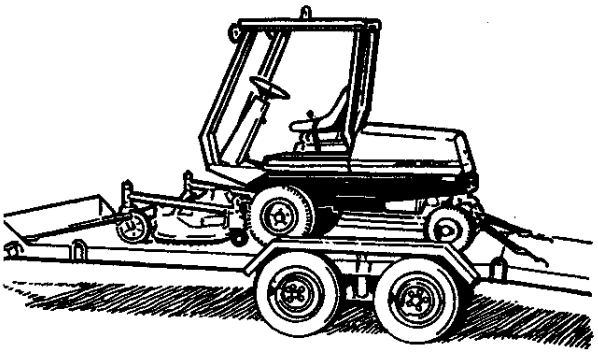
Failure to follow proper procedures when mounting a tire on a wheel or rim can produce an explosion which may result in serious injury or death. Do not attempt to mount a tire unless you have the proper equipment and experience to perform the job. Have it done by your John Deere dealer or a qualified tire repair service.

When sealing tire beads on rims, never exceed 35 psi (241 kPa) (2.4 bar) or maximum inflation pressures specified by tire manufacturers for mounting tires. Inflation beyond this maximum pressure may break the bead, or even the rim, with dangerous explosive force. If both beads are not seated when the maximum recommended pressure is reached, deflate, reposition tire, relubricate bead and reinflate.



AB6;M34163 053;TIRE4 210486

TRANSPORT FRONT MOWER SAFELY



Transport the Front Mower on a heavy-duty trailer.

Do not pull Front Mower behind any other vehicle.

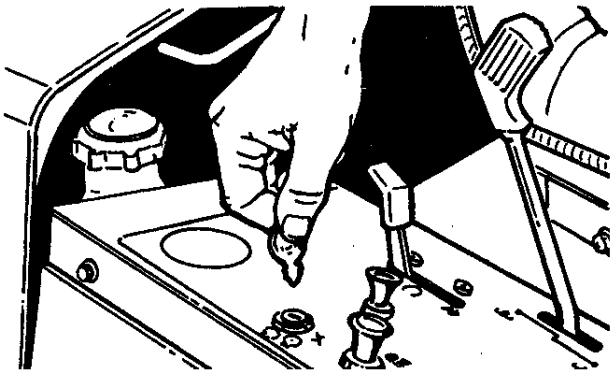
Fasten the Front Mower to the trailer with straps, chains, or cables.

Be sure trailer has all necessary lights and signs required by local, state, provincial, or federal laws.

Be sure Front Mower hood is latched securely.

6MA;M34561 M45;;SAC M 050885

PREPARE MACHINE FOR REPAIR



1. Move hydrostatic control to "STOP" position.
2. Disengage PTO.
3. Lower all equipment to the ground.
4. Engage park brake.
5. Stop the engine.
6. Remove key.
7. Operate all hydraulic control levers to release hydraulic pressure in the system.

Before you leave the operator's seat, wait for engine and attachment parts to stop moving.

4A9;M33731 M45;;1005A 10 121186

F915 FRONT MOWER SPECIFICATIONS

Engine

Manufacturer	Yanmar
Engine Model Number	3TN66UJ
Fuel Type	No. 1 or No. 2 Diesel
Fuel Delivery	Fuel Injection (Yanmar made)
Cylinder	Three
Cycle	Four
Bore	66 mm (2.60 in.)
Stroke	64.2 mm (2.53 in.)
Displacement	658 cm³ (40.3 cu. in.)
Horsepower*	13 kw (17 hp)
Speeds	
Idle	1450 ± 50 rpm
High (No load)	3635 ± 35 rpm

**Horsepower rating is established by engine manufacturer.*

Electrical System

Battery, John Deere (AM100241	Category II, 12-Volt, BCI Group 22 FC, 491 cold cranking amps at −18° C (0° F), 102 minute reserve capacity
Alternator Charging Capacity	20 amps
System Polarity	Negative Ground
Starter	12-Volt Motor, Key and Solenoid
Timing	Index

Power Train

Hydrostatic Transmission Sundstrand 15 Series	(U-Type)
Differential	Peerless Single-Speed (with Differential Lock)
Brakes	Individual Front Wheel (Drum-Type)

Travel Speeds

Forward	Variable 0 to 16 Km/hr. (0 to 10 mph)
Reverse	Variable 0 to 8 Km/hr. (0 to 5 mph)

Hydraulics

Control Valve	2-Spool (open-center)
Outlets	1 Set (front)
Lift Cylinders	Front-mounted

Tire Size

Front	20 x 8.00—10
Rear	16 x 6.50—8

Tire Inflation* (See Operators Manual)

Dimensions

Wheelbase	1.43 m (56.3 in.)
Over-all Length	2.16 m (85.2 in.)
Over-all Width (Max.)	1.09 m (42.8 in.)

Approximate Curb Weight . . . 548 Kg (1209 lb.)

**Inflation will vary with attachment used.*

M45;;1010C -1 090487

F935 FRONT MOWER SPECIFICATIONS

Engine

Manufacturer	Yanmar
Engine Model Number	3TNA72UJ
Fuel Type	No. 1 or No. 2 Diesel
Fuel Delivery	Fuel Injection (Yanmar made)
Cylinder	Three
Cycle	Four
Bore	72 mm (2.84 in.)
Stroke	72 mm (2.84 in.)
Displacement	879 cm^3 (53.8 cu. in.)
Horsepower*	17 kW (22 hp)
Speeds	
Idle	1450 ± 50 rpm
High (No load)	3635 ± 35 rpm

**Horsepower rating is established by engine manufacturer.*

Electrical System

Battery, John Deere (AM100241)	Category II, 12-Volt, BCI Group 22 FC, 491 cold cranking amps at –18° C (0° F), 102 minute reserve capacity
Alternator Charging Capacity	35 amps
System Polarity	Negative Ground
Starter	12-Volt Motor, Key and Solenoid
Timing	Index

Power Train

Hydrostatic Transmission Sundstrand 15 Series	(U-Type)
Differential	Peerless Single-Speed (with Differential Lock)
Brakes	Individual Front Wheel (Drum-Type)

Travel Speeds

Forward	Variable 0 to 17 Km/hr. (0. to 11 mph)
Reverse	Variable 0 to 8 Km/hr. (0 to 5 mph)

Hydraulics

Control Valve	2-Spool (open-center)
Outlets	1 Set (front)
Lift Cylinders	Front-mounted

Tire Size

Front	23 x 8.50—12 Turf
Rear	16 x 6.50—8 Rib

Tire Inflation* (See Operator's Manual)

Dimensions

Wheelbase	1.43 m (56.3 in.)
Over-all Length	2.16 m (85.2 in.)
Over-all Width (Max.)	1.09 m (42.8 in.)

Approximate Curb Weight . . . 645 Kg (1422 lb)

**Inflation will vary with attachment used.*

M45;;1010C -2 190387

F912 FRONT MOWER SPECIFICATIONS

Engine

Manufacturer	Yanmar
Engine Model Number	3TG66UJ
Fuel Type	Gasoline
Cylinder	Three
Cycle	Four
Bore	66 mm (2.60 in.)
Stroke	64.2 mm (2.53 in.)
Displacement	658 cm³ (40.3 cu. in.)
Horsepower*	14.9 kw (20 hp)
Speeds	
Idle	1300 ± 100 rpm
High (No load)	3700 ± 100 rpm

**Horsepower rating is established by engine manufacturer.*

Electrical System

Battery, John Deere (AM100241)	Category II, 12-Volt, BCI Group 22 FC, 491 cold cranking amps at −18°C (0°F), 102 minute reserve capacity
Alternator Charging Capacity	20 amps
System Polarity	Negative Ground
Starter	12-Volt Motor, Key and Solenoid
Timing	Fixed

Power Train

Hydrostatic Transmission	
Sundstrand 15 Series	(U-Type)
Differential	Peerless Single-Speed (with Differential Lock)
Brakes	Individual Front Wheel (Drum-Type)

Travel Speeds

Forward	Variable 0 to 16 Km/hr. (0 to 10 mph)
Reverse	Variable 0 to 8 Km/hr. (0 to 5 mph)

Hydraulic

Control Valve	2-Spool (open-center)
Outlets	1 Set (front)
Lift Cylinders	Front-mounted

Tire Size

Front	20 x 8.00—10
Rear	16 x 6.50—8

Tire Inflation* (See Operators Manual)

Dimensions

Wheelbase	1.43 m (56.3 in.)
Over-all Length	2.16 m (85.2 in.)
Over-all Width (Max.)	1.09 m (42.8 in.)

Approximate Curb Weight . . . 574 kg (1266 lb)

**Inflation will vary with attachment used.*

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