

20SR7 Reel Mower



TECHNICAL MANUAL

20SR7 Reel Mower

TM1432 (01APR88) English

John Deere
Lawn & Grounds Care Division
TM1432 (01APR88)

LITHO IN U.S.A.
ENGLISH



20SR7 REEL MOWER TECHNICAL MANUAL TM-1432 (APR-88)

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A John Deere ILLUSTRATION™ Manual

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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 ILLUSTRATION 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.

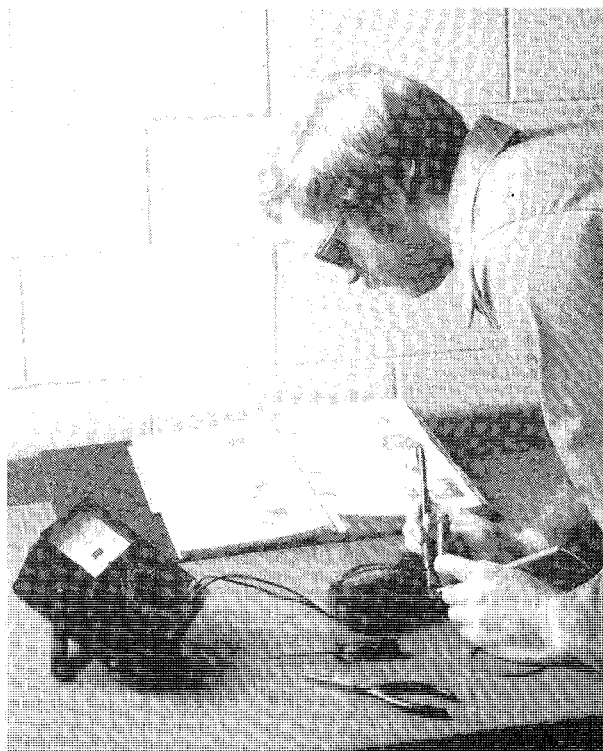
Diagnostic information presented with the most logical and easiest to isolate problems first to help you identify the majority of routine failures quickly.

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.

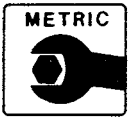
An emphasis throughout on safety—so you do the job right without getting hurt.

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

UNITS OF MEASURE



This machine is of metric design.

For your convenience, most specifications are given in metric measurement with the customary U.S. measurement following.

Some specifications cannot be converted. These appear in metric only.

Most hardware is metric. Specified metric hardware must be used for replacement.

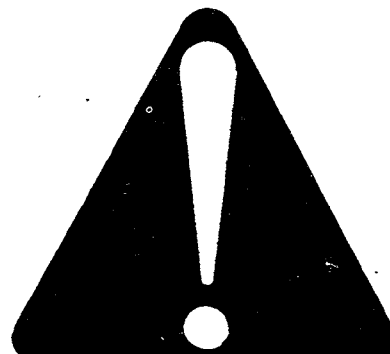
⚠ CAUTION: Use only metric tools. Other tools may not fit properly. They may slip and cause injury.

Throughout this manual, dimensions are shown as follows: 1.75 mm (0.069 in.). The measurement in parentheses is converted from the design dimension.

Y05;GPT C 050885

SAFETY AND YOU

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.



AB6;T81389 053;TMSAFE 071085

UNDERSTAND SIGNAL WORDS

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

Safety signs with signal word DANGER or WARNING are typically near specific hazards.

General precautions are listed on CAUTION safety signs. CAUTION also calls attention to safety messages in this manual.



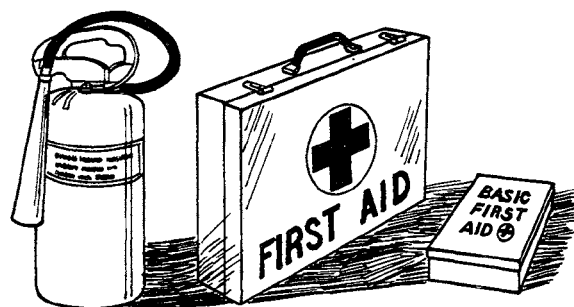
AB6;TS187 053;SIGNAL 071085

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.

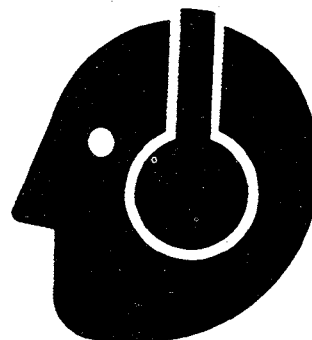


AB6;TS186 053;FIRE2 080785

PROTECT AGAINST NOISE

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.

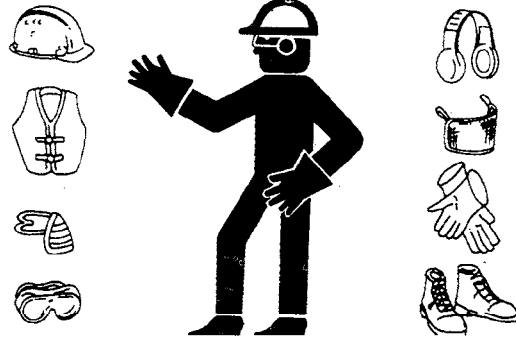


AB6;TS207 053;NOISE 230487

Safety/Avoid Rotating Blade

WEAR PROTECTIVE CLOTHING

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



AB6;TS206 053;WEAR2 230487

FOLLOW SAFETY INSTRUCTIONS

Carefully read all safety messages in this manual and on your mower safety signs. Follow recommended precautions and safe operating practices.

Keep safety signs in good condition. Replace missing or damaged safety signs.

On Left Corner of Mower Deck



082;M41931 6M3;;1010F -A1 200588



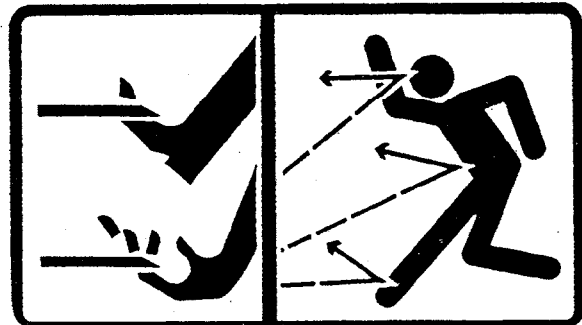
On Top of Support Panel

082;M41932 6M3;;1010F -A2 200588

AVOID ROTATING BLADE

Do not put hands or feet under or into mower when engine is running.

Before you use mower, clear area of people. Pick up objects that may be thrown by blade.



M41447

082;M41447 6M3;;1010F -A3 200588

GENERAL SPECIFICATIONS

Engine	Kawasaki FA130D
	4-cycle, single cylinder air cooled
Displacement	129 cm ³ (7.92 cu. in.)
Horsepower	2.3 kW (3.1 HP)
Ignition	Flywheel magneto capacitor discharge system
Carburetor	Pulse pump
Starter	Auto-rewind
Idle Speed	1600 rpm
Fuel	Regular grade-leaded or unleaded
Tank Capacity	1.7 L (1.8 qt)
Oil	SAE30 or SAE 15W-40
Crankcase Capacity	0.50 L (1 pt)
Spark Plug	NGK-BMR6A, Champion-RCJ8
Gap	0.60—0.70 mm (0.023—0.028 in.)
Torque	15 N·m (130 lb-in.)
Reel Construction	7 blades, 5 support spiders, sealed bearings
Cutting Height	8—52 mm (0.310—2.060 in.)
Length	622 mm (24.5 in.)
Height	1016 mm (40 in.)
Width	559 mm (22 in.)
Weight	46 kg (150 lb)

(Specifications and design subject to change without notice.)

6M3;1015F -A1 070488

EXTREME PRESSURE GREASE

Use grease based on the expected air temperature range during the service interval.

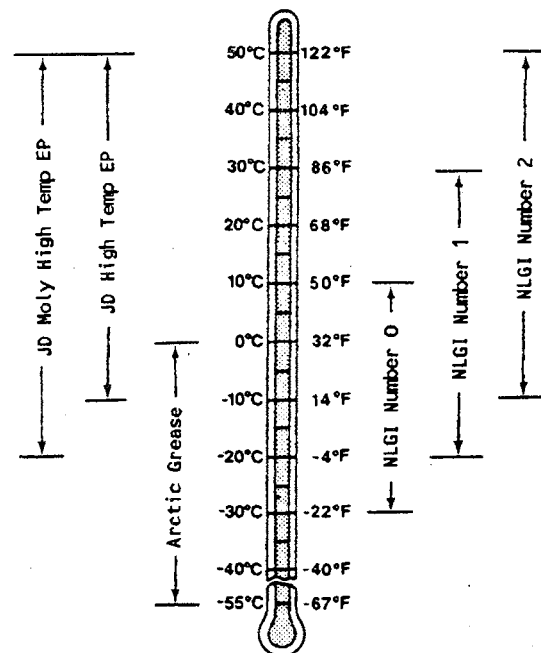
John Deere Moly High Temperature EP Grease and John Deere High Temperature EP Grease are recommended.

Other greases that may be used are:

SAE Multipurpose EP Grease with 3 to 5 percent molybdenum disulfide.

SAE Multipurpose EP Grease

Greases meeting Military Specification MIL-G-10924C may be used as arctic grease.



AB6;TS248 053;GREA1. 080288

Specifications/High Temperature/Extreme Pressure Grease

Group 20 Tune-Up and Adjustment

TUNE-UP AND ADJUSTMENT GUIDE

OPERATION	SERVICE	REFERENCE
Change Oil	After first 20 hours, then every 50 hours	—
Clean and Inspect Air Cleaner	25 hours	—
Clean and Regap Spark Plug	50 hours	Section 40
Remove Blower Housing and Clean Engine	As required	Section 20
Clean Engine Cooling Fins	10 hours	—
Clean Muffler and Exhaust Port	As required	—
Check Reel	As required	Section 80
Adjust Engine Clutch Lever	25 hours	Section 50
Check Throttle Linkage and Cable	25 hours	Section 30
Adjust Carburetor	As required	Section 30
Remove Carbon from Cylinder Head	100—300 hours	Section 20

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Tune-Up and Adjustment/Tune-Up and Adjustment Guide

Section 20 ENGINE

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TEST COMPRESSION

Before checking compression, do the following:

- Torque head bolts to 20.5 N·m (15.25 lb-ft)
- Start and warm-up engine
- Check for leaks around head gasket during warm-up

Remove spark plug.

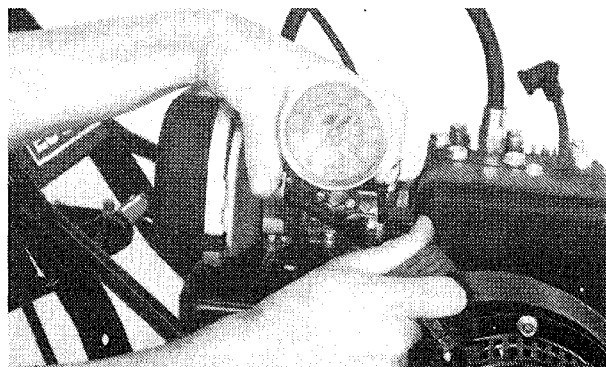
Install JDM-49 Compression Gauge in spark plug hole.

Crank engine with starter until gauge needle stops rising.

If compression reading is below 296 kPa (2.9 bar)(43 psi), squirt motor oil into spark plug hole and repeat the compression check.

If compression does not change when oil is injected into cylinder bore, the problem may be improper valve clearances, worn valve seats, burned valve or cylinder head leak.

If compression increases, the problem may be too much piston-to-cylinder clearance or worn rings and ring grooves.



059;M51851 6M3;;2005F -A1 190588

TEST FUEL SYSTEM

Test operation of fuel system by removing spark plug and noting if plug tip is wet with fuel. If not, check the following:

Be sure cap vent is open and fuel tank is clean and filled with fresh, clean fuel.

Be sure air filter is clean and free from obstruction.

Check carburetor mounting surfaces at engine intake and fuel tank for tightness and no air leaks.

Check carburetor adjustment screw for proper setting.

Check operation of choke and throttle controls.

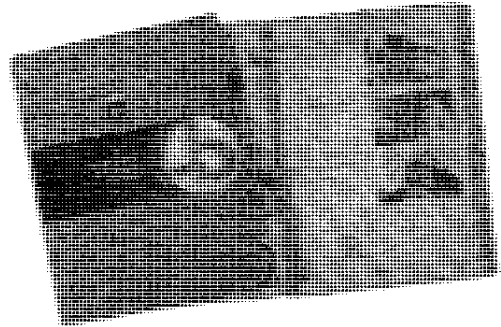
Y05;AC3010 D 020986

Testing/Test Fuel System

**FA130D JOHN DEERE ENGINE REPAIR—USE
CTM-5**

For complete repair information the component technical manual (CTM) is also required.

Use the component manual in conjunction with this machine manual.



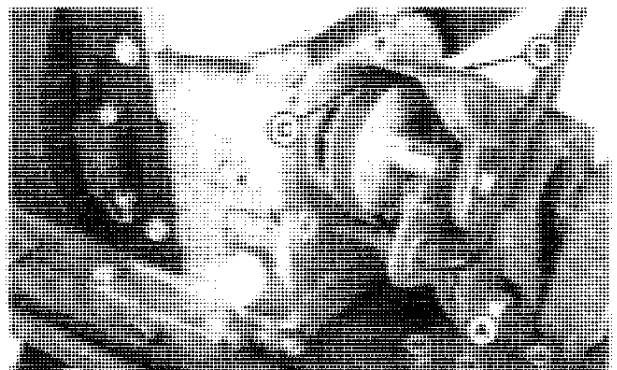
AR6;IS225 Y05;2705AA-A1 250388

REMOVE AND INSTALL ENGINE

1. Disconnect spark plug wire.
2. Remove speed control cable.
3. Remove clutch rod (A) and belt guard (B).
4. Remove belt from engine pulley (C).
5. Remove engine.
6. Install engine, belt and guard.

NOTE: Position drive rod on outside of belt.

7. Install drive rod and throttle cable.
8. Adjust belt guard. (See Section 50, Group 05.)
9. Adjust throttle cable. (See Section 30, Group 10.)



059;M51852 6M3;2010F -A2 070488