

# **130, 160, 165, 175, 180, and 185 Lawn Tractors**

## **TECHNICAL MANUAL**

**John Deere  
Lawn & Grounds Care Division  
TM1351 (Apr-88)**

# 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.



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, service parts kits, specifications, wear tolerances, and torque values.

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.

# Contents

## SECTION 10—General Information

- Group 05—Safety
- Group 10—General Specifications
- Group 15—Cap Screw Torque
- Group 20—Tune-Up
- Group 25—Fuel and Lubrication
- Group 30—Serial Numbers

## SECTION 20—Engine

- Group 05—Remove and Install
- Group 10—Muffler

## SECTION 30—Fuel and Air System

- Group 05—Fuel Pump and Fuel Tank

## SECTION 40—Electrical

- Group 05—Electric PTO Clutch

## SECTION 50—Power Train

- Group 05—Powered Wheels
- Group 10—Traction Drive Clutch
- Group 15—5-Speed Transaxle
- Group 20—Hydrostatic Transmission—Eaton
- Group 21—Hydrostatic Transmission—Sundstrand
- Group 25—Hydrostatic Differential—Peerless
- Group 26—hydrostatic Differential—Kanzaki

## SECTION 60—Steering and Brakes

- Group 05—Steering System
- Group 10—Front Axle
- Group 15—Brakes and Linkages

## Contents

## SECTION 80—MISCELLANEOUS

- Group 05—Mower Spindles
- Group 10—Mower Lift Linkage

## SECTION 210—SPECIFICATIONS/OPERATIONAL CHECKOUT PROCEDURE

- Group 01—Test and Adjustment
- Group 05—Machine Operational Checkout

*All information, illustrations and specifications in this 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.*

TM1351-19-18APR90

## SECTION 220—ENGINE/FUEL OPERATION AND TESTS

- Group 05—Engine System Checkout
- Group 10—Engine System Diagnosis

## SECTION 240—ELECTRICAL OPERATION AND TESTS

- Group 05—Electrical System Checkout
- Group 10—Electrical System Diagnosis
- Group 15—Electrical System Component Tests
- Group 20—Theory of Operation

## SECTION 250—POWER TRAIN OPERATION AND TESTS

- Group 05—Hydrostatic Power Train System Checkout
- Group 06—Gear Power Train System Checkout
- Group 10—Hydrostatic Power Train System Diagnosis
- Group 11—Gear Power Train System Diagnosis
- Group 15—Hydrostatic Power Train
- Group 16—Gear Drive Power Train

## Index

COPYRIGHT© 1990  
DEERE & COMPANY  
Moline, Illinois

All rights reserved  
A John Deere ILLUSTRATION™ Manual  
Previous Editions  
Copyright 1989, 1988, 1987, 1986 Deere & Company

*Contents*

10

20

30

40

50

60

80

210

220

240

250

INDX

250

INDX

## TO JOHN DEERE DEALERS

### FILING INSTRUCTIONS

TM-1351 (APR-88)  
130, 160, 165, 175, 180, and 185 Lawn Tractors

Discard TM-1351 dated (Feb-87) and replace with this manual dated (Apr-88).

New information added to this manual includes:

- All repair specifications moved to Section 10, Group 10
- All test and adjustments specifications moved to Section 210, Group 01
- Sunstrand hydrostatic transmission repair and adjustment.
- Kanzaki differential repair
- Engine symptom/problem diagnostic charts in Section 220, Group 10
- New wiring schematic for new ground system.

The following service information bulletins apply to the 130, 160, 165, 175, 180 and 185 tractors:

TY87-70-6	M87-12-6
TY87-70-1	M87-12-5
M87-12-11	M87-12-4
M87-12-10	M87-12-3
M87-12-9	M87-12-2
M87-12-8	M87-12-1

MX,DEALER -19-07JUN89





# Section 10 General Information

## Contents

### Page

**Group 05—Safety** . . . . . 10-05-1

**Group 10—General Specifications**

Repair Specifications . . . . . 10-10-1

Tractor Specifications . . . . . 10-10-3

Mower Specifications . . . . . 10-10-4

**Group 15—Cap Screw Torque**

Inch Series Torque Chart . . . . . 10-15-1

Metric Series torque Chart . . . . . 10-15-2

**Group 20—Tune-Up**

Specifications . . . . . 10-20-1

Adjustments . . . . . 10-20-1

**Group 25—Fuel and Lubrication**

Fuel . . . . . 10-25-1

Engine Oil . . . . . 10-25-2

Peerless Differential Oil . . . . . 10-25-2

Kanzaki Differential Oil . . . . . 10-25-3

Eaton Hydrostatic Transmission Oil . . . . . 10-25-3

Substrand Hydrostatic Transmission Oil . . . . . 10-25-3

General Purpose grease . . . . . 10-25-4

**Group 30—Serial Numbers**

Product Identification Numbers . . . . . 10-30-1

Engine Serial Number . . . . . 10-30-1



## 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.



O53,ALERT -19-16JUN87

10  
05  
1  
-UN-07DEC88  
T81389

## 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.



O53,SIGNAL -19-07OCT85

-19-30SEP88  
TS187

## HANDLE FUEL SAFELY—AVOID FIRES

Handle fuel with care: it is highly flammable. Do not refuel the machine while smoking or when near open flame or sparks.

Always stop engine before refueling machine. Fill fuel tank outdoors.

Prevent fires by keeping machine clean of accumulated trash, grease, and debris. Always clean up spilled fuel.



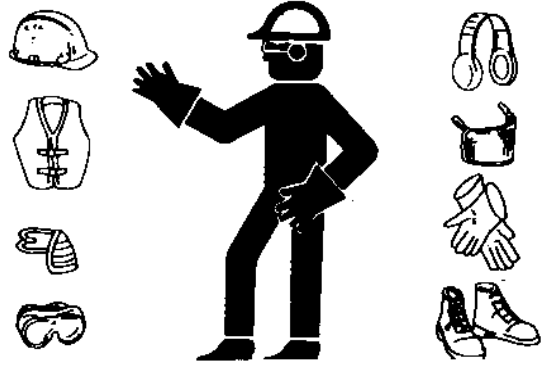
O53,FIRE1 -19-23APR87

-UN-23AUG88  
TS202

10  
05  
2

### WEAR PROTECTIVE CLOTHING

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



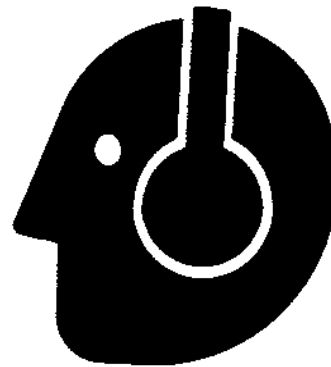
O53,WEAR2 -19-23APR87

TS206 -UN-23AUG88

### 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.



O53,NOISE -19-23APR87

TS207 -UN-23AUG88

### PRACTICE SAFE MAINTENANCE

Understand service procedure before doing work. Keep area clean and dry.

Never lubricate or service machine while it is moving. Keep hands, feet, and clothing from power-driven parts. Disengage all power and operate controls to relieve pressure. Lower equipment to the ground. Stop the engine. Remove the key. Allow machine to cool.

Securely support any machine elements that must be raised for service work.

Keep all parts in good condition and properly installed. Fix damage immediately. Replace worn or broken parts. Remove any buildup of grease, oil, or debris.

Disconnect battery ground cable (-) before making adjustments on electrical systems or welding on machine.



O53,SERV -19-21DEC87

TS218 -UN-23AUG88

Click on the image link below for the full version of the service manual

