

**John Deere
540D Skidder
548D Grapple Skidder
Repair**



TECHNICAL MANUAL

TM-1438 (Apr-88)

LITHO IN U.S.A.

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 types 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 technicals manuals are written as stand-alone manuals covering multiple machine applications.

JOHN DEERE DEALERS

IMPORTANT: Please remove this page and route through your service department.

This is a complete revision for TM-1438, 540D Skidder and 548D Grapple Skidder.

Binder and tabs from old manual may be saved and used with this bound manual.

The new pages are dated (Apr-88). Listed below is a brief explanation of "WHAT" was changed and "WHY" it was changed.

This manual was revised:

1. Inspection procedure group added in Section I.
2. Repair story for seals in oscillating support.
3. Cross section drawing of planetary pack added.
4. Engine repair story is removed. For complete repair information, see the component technical manual.
5. Repair story for new park brake seals and installation of seals with brake on unit.
6. Main pump repair story is removed. For complete repair information see the component technical manual.
7. Artwork for blade and grapple control valve revised to include external seal design for the spools.
8. Pressure control valve (priority valve) setting change to 8600 ± 345 kPa (85 ± 3.4 bar) (1250 ± 50 psi).
9. General updating.

540D SKIDDER 548D GRAPPLE SKIDDER TECHNICAL MANUAL TM-1438 (APR-88)

SECTION AND GROUP CONTENTS

NOTE: This manual covers repair. For operation and tests, see TM-1439, Operation and Tests.

SECTION I—GENERAL INFORMATION

- Group I—Safety Information
- Group II—General Specifications
- Group III—Torque Values
- Group IV—Fuels and Lubricants
- Group V—Inspection Procedure

SECTION 01—WHEELS

- Group 0110—Powered Wheels and Fastenings

SECTION 02—AXLES AND SUSPENSION SYSTEMS

- Group 0200—Removal and Installation
- Group 0210—Differential or Bevel Drive
- Group 0225—Input Drive Shafts and U-Joints
- Group 0250—Axle Shafts, Bearings and Reduction Gears
- Group 0260—Hydraulic System
 - Differential Lock Valve, Accumulator
 - Return Oil Screen, Air Assisted
 - Differential Lock Oil Return System

SECTION 03—TRANSMISSION

- Group 0300—Removal and Installation
- Group 0315—Controls Linkage
- Group 0350—Gears, Shafts, Bearings and Power Shift Clutch

SECTION 03—TRANSMISSION—Continued

- Group 0360—Hydraulic System
 - Suction Screen, Transmission Filter, Filter Relief Valve, Pressure Regulating Valve, Cooler Relief Valve, Oil Cooler, Transmission Control Valve C1-C2 Accumulator, and Oil Pump.

SECTION 04—ENGINE

- Group 0400—Removal and Installation

SECTION 05—ENGINE AUXILIARY SYSTEMS

- Group 0505—Cold Weather Starting Aids
- Group 0510—Cooling System
- Group 0515—Speed Controls
- Group 0520—Intake System
- Group 0530—External Exhaust System
- Group 0560—External Fuel Supply System

SECTION 07—DISCONNECT CLUTCH

- Group 0715—Controls Linkage
- Group 0752—Elements

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SECTION 09—STEERING SYSTEM

- Group 0930—Secondary Steering
 - Check Valve, Pressure Switch,
 - Control Valve, Accumulator
- Group 0960—Hydraulic System
 - Steering Valve, Cylinders,
 - Port Mounted Crossover Relief Valve
 - with Check Valve

SECTION 10—SERVICE BRAKES

- Group 1011—Active Elements
- Group 1060—Hydraulic System
 - Brake Valve, Accumulator

SECTION 11—PARK BRAKE

- Group 1111—Active Elements
- Group 1115—Controls Linkage
- Group 1160—Hydraulic System
 - Brake Valve, Accumulator,
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SECTION 16—ELECTRICAL SYSTEMS

- Group 1671—Batteries, Support and Cables
- Group 1672—Alternator, Regulator and Charging System Wiring
- Group 1673—Lighting System
- Group 1674—Wiring Harness and Switches
- Group 1676—Instruments and Indicators

SECTION 17—FRAME, CHASSIS, OR SUPPORTING STRUCTURE

- Group 1740—Frame Installation
 - Pivot Repair
- Group 1746—Frame Bottom Guards

SECTION 18—OPERATOR'S STATION

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- Group 1810—Operator Enclosure
 - Wiper Motor, Windshield Washer,
 - and Windows
- Group 1821—Seat and Seat Belt
- Group 1830—Heating and Air Conditioning

SECTION 19—SHEET METAL AND STYLING

- Group 1910—Hood or Engine Enclosure
- Group 1921—Grille and Grille Housing

SECTION 20—SAFETY, CONVENIENCE AND MISCELLANEOUS

- Group 2004—Horn and Warning Devices

SECTION 21—MAIN HYDRAULIC SYSTEM

- Group 2160—Hydraulic System
 - Hydraulic Manifold (Surge Relief Valve, Priority Valve, System Relief Valve), Pump Drive,
 - Filter, System Check Valve,
 - Hydraulic System Oil Filter

SECTION 30—WINCH

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- Group 3050—Drive and Clutches
- Group 3060—Hydraulic System
 - Winch Valve, Winch Warm-Up Valve,
 - Check Valve

SECTION 32—BULLDOZER (STACKING BLADE)

- Group 3200—Removal and Installation
- Group 3215—Controls Linkage
- Group 3260—Hydraulic System
 - Blade Valve, Cylinders

SECTION 37—ARCH OR BOOM

- Group 3740—Frames

SECTION 38—GRAPPLE

- Group 3803—Grapple Mechanism
- Group 3815—Controls Linkage
- Group 3840—Frames
- Group 3860—Hydraulic System
 - Grapple Valve, Crossover Relief Valve, Rotate Motor, Rotary Manifold, Grapple and Boom Cylinders

SECTION 40—PTO OR WINCH DRIVE

- Group 4025—Input Drive Shafts

SECTION 99—DEALER FABRICATED TOOLS

- Group 9900—Dealer Fabricated Tools

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.



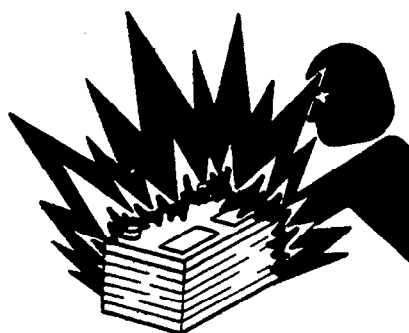
AB6;TS227 053;FLAME 050188

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).



ABT;TS204 053;SPARKS 050188

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

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