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John Deere 450B

User Guide for John Deere 450B Technical Service Shop Manual

Comprehensive Instructions for Your Crawler Tractor Service Manual

1. Introduction

This document serves as a user guide for the John Deere 450B Technical Service Shop Manual. The service manual itself is an essential resource for mechanics and owners performing maintenance, repairs, and complete overhauls on the John Deere 450B Crawler Tractor. This guide will help you navigate and utilize the service manual effectively to ensure accurate and safe service procedures.

2. How to Use This Manual

The John Deere 450B Technical Service Shop Manual is designed to provide detailed, step-by-step instructions for various service operations. To maximize its utility:

- **Read Thoroughly:** Before beginning any repair, read the relevant section completely to understand the entire procedure and necessary precautions.
- **Follow Sequence:** Adhere to the specified sequence of steps to prevent damage or injury.
- **Consult Diagrams:** Pay close attention to all diagrams and illustrations, as they provide visual guidance for component identification and assembly.
- **Use Proper Tools:** Ensure you have the correct tools and equipment as specified in the manual for each task.

3. Manual Structure and Content

The John Deere 450B Service Manual is organized into various sections, each dedicated to a specific system or component of the crawler tractor. Typical sections include:

- General Information
- Engine
- Fuel System

- Electrical System
- Power Train (Transmission, Final Drives)
- Hydraulic System
- Steering and Brakes
- Chassis and Loader Frame
- Attachments

Each section contains detailed descriptions, operational principles, diagnostic procedures, disassembly and assembly instructions, and specifications.

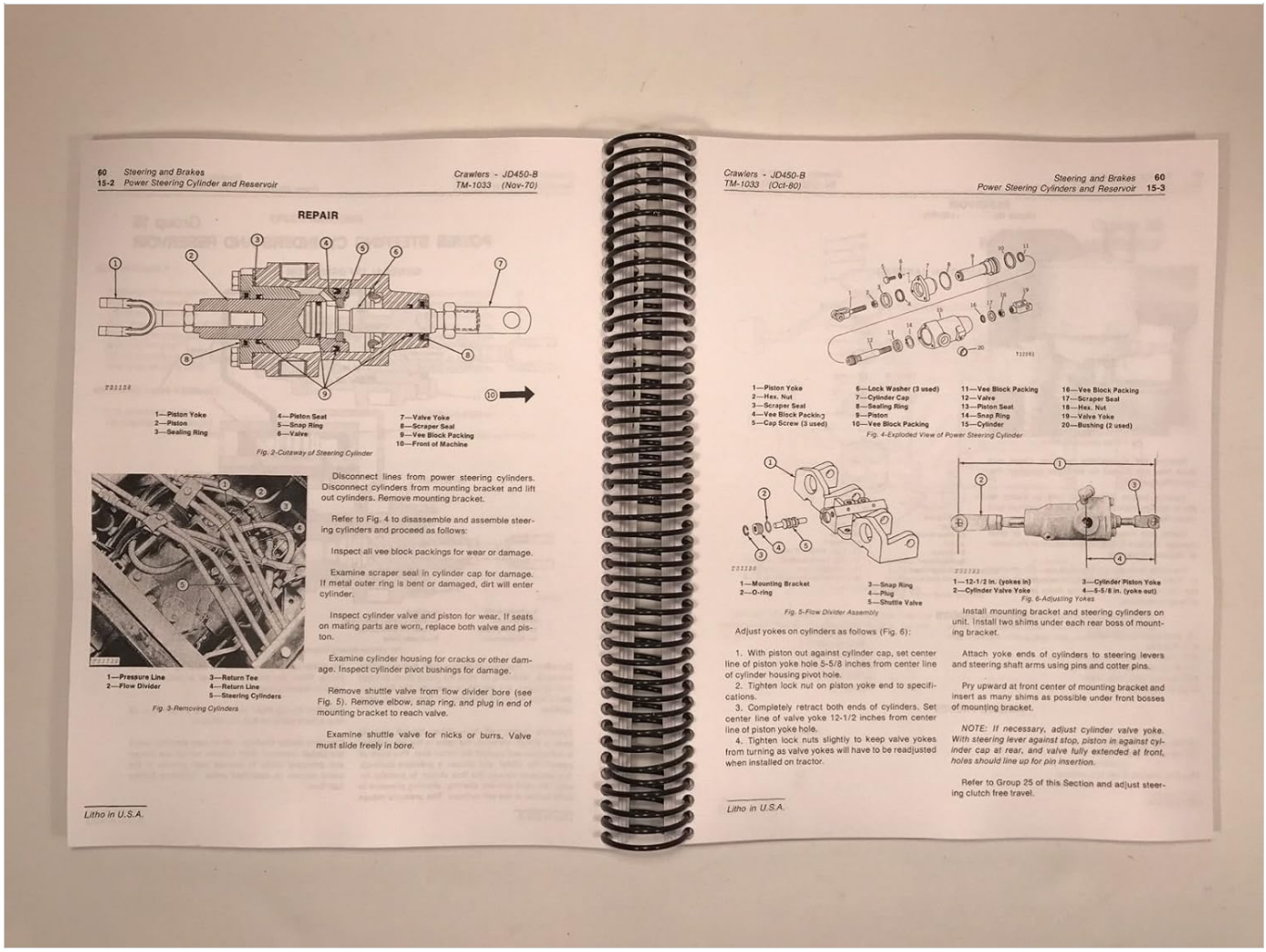
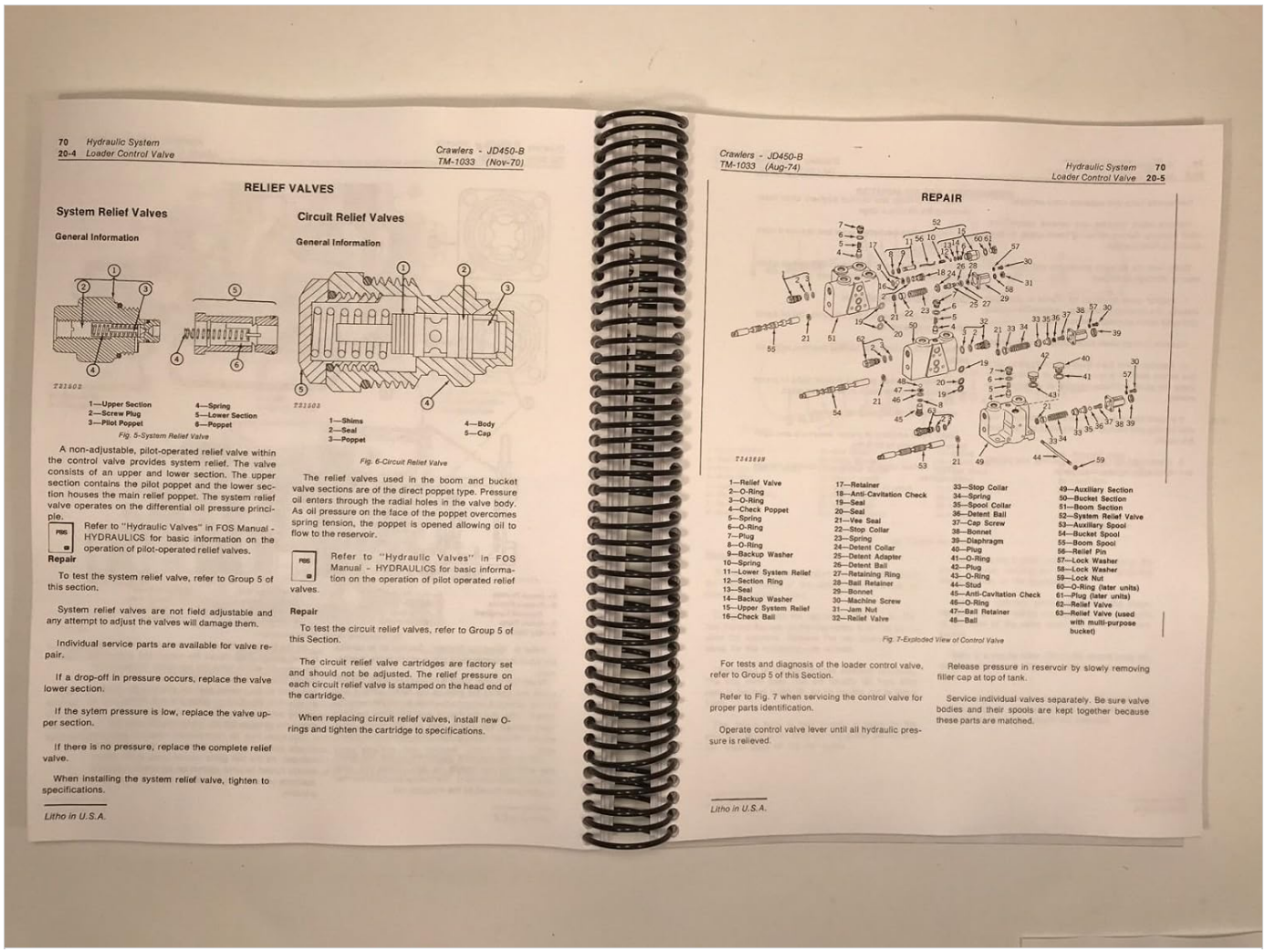


Figure 1: Example pages from the John Deere 450B Service Manual, illustrating detailed diagrams and repair instructions for steering, brakes, and hydraulic components.



70 Hydraulic System
20-4 Loader Control Valve
Crawlers - JD450-B
TM-1033 (Nov-70)

RELIEF VALVES

System Relief Valves

General Information

T21502

1—Upper Section
2—Screw Plug
3—Pilot Poppet
4—Spring
5—Lower Section
6—Poppet

Fig. 5-System Relief Valve

A non-adjustable, pilot-operated relief valve within the control valve provides system relief. The valve consists of an upper and lower section. The upper section contains the pilot poppet and the lower section houses the main relief poppet. The system relief valve operates on the differential oil pressure principle.

Refer to "Hydraulic Valves" in FOS Manual - HYDRAULICS for basic information on the operation of pilot-operated relief valves.

Repair

To test the system relief valve, refer to Group 5 of this section.

System relief valves are not field adjustable and any attempt to adjust the valves will damage them.

Individual service parts are available for valve repair.

If a drop-off in pressure occurs, replace the valve lower section.

If the sytem pressure is low, replace the valve upper section.

If there is no pressure, replace the complete relief valve.

When installing the system relief valve, tighten to specifications.

Litho in U.S.A.

Circuit Relief Valves

General Information

T21503

1—Shims
2—Seal
3—Poppet
4—Body
5—Cap

Fig. 6-Circuit Relief Valve

The relief valves used in the boom and bucket valve sections are of the direct poppet type. Pressure oil enters through the radial holes in the valve body. As oil pressure on the face of the poppet overcomes spring tension, the poppet is opened allowing oil to flow to the reservoir.

Refer to "Hydraulic Valves" in FOS Manual - HYDRAULICS for basic information on the operation of pilot operated relief valves.

Repair

To test the circuit relief valves, refer to Group 5 of this Section.

The circuit relief valve cartridges are factory set and should not be adjusted. The relief pressure on each circuit relief valve is stamped on the head end of the cartridge.

When replacing circuit relief valves, install new O-rings and tighten the cartridge to specifications.

Crawlers - JD450-B
TM-1033 (Aug-74)
Hydraulic System 70
Loader Control Valve 20-5

REPAIR

T243689

1—Relief Valve
2—O-Ring
3—O-Ring
4—Check Poppet
5—Spring
6—O-Ring
7—Plug
8—O-Ring
9—Backup Washer
10—Spring
11—Lower System Relief
12—Section Ring
13—Seal
14—Backup Washer
15—Upper System Relief
16—Check Ball
17—Retainer
18—Anti-Cavitation Check
19—Seal
20—Seal
21—Vee Seal
22—Stop Collar
23—Spring
24—Detent Collar
25—Detent Adapter
26—Detent Ball
27—Retaining Ring
28—Ball Retainer
29—Bonnet
30—Machine Screw
31—Jam Nut
32—Relief Valve
33—Stop Collar
34—Spring
35—Spool Collar
36—Detent Ball
37—Cap Screw
38—Bonnet
39—Diaphragm
40—Plug
41—O-Ring
42—Plug
43—O-Ring
44—Stud
45—Anti-Cavitation Check
46—O-Ring
47—Ball Retainer
48—Ball
49—Auxiliary Section
50—Bucket Section
51—Boom Section
52—System Relief Valve
53—Auxiliary Spool
54—Bucket Spool
55—Boom Spool
56—Relief Pin
57—Lock Washer
58—Lock Washer
59—Lock Nut
60—O-Ring (later units)
61—Plug (later units)
62—Relief Valve
63—Relief Valve (used with multi-purpose bucket)

Fig. 7-Exploded View of Control Valve

For tests and diagnosis of the loader control valve, refer to Group 5 of this Section.

Refer to Fig. 7 when servicing the control valve for proper parts identification.

Operate control valve lever until all hydraulic pressure is relieved.

Release pressure in reservoir by slowly removing filler cap at top of tank.

Service individual valves separately. Be sure valve bodies and their spools are kept together because these parts are matched.

Litho in U.S.A.

Figure 2: Additional example pages from the manual, showing intricate diagrams for hydraulic relief valves and circuit layouts, crucial for system diagnostics and repair.

4. Finding Information

To quickly locate specific information within the service manual:

- **Section Headings:** Use the main section headings to navigate to the general area of interest (e.g., 'Hydraulic System' for hydraulic issues).
- **Sub-sections:** Within each main section, look for sub-headings that detail specific components or procedures (e.g., 'Relief Valves' under 'Hydraulic System').
- **Diagrams and Part Breakdowns:** Many sections include exploded views and part diagrams with numbered components, which are invaluable for identification and reassembly.

5. Safety Information

While this guide is for the service manual, it is crucial to emphasize that the John Deere 450B Service Manual contains critical safety warnings and precautions that must be observed when working on the crawler tractor. Always:

- **Read Safety Sections:** Familiarize yourself with all safety information at the beginning of the service manual and within relevant sections.
- **Wear Protective Gear:** Use appropriate personal protective equipment (PPE) such as safety glasses, gloves, and hearing protection.

- **Ensure Machine Stability:** Always ensure the tractor is safely supported and secured before performing any work.
- **Disconnect Power:** Disconnect the battery or other power sources before working on electrical components.
- **Relieve Pressure:** Safely relieve hydraulic system pressure before disconnecting lines or components.

6. Maintenance of the Manual

To ensure the longevity and readability of your John Deere 450B Technical Service Shop Manual:

- **Keep Clean:** Store the manual in a clean, dry environment away from excessive dust, moisture, and direct sunlight.
- **Handle with Care:** Avoid tearing pages or bending the spiral binding excessively.
- **Protect from Spills:** When using the manual in a workshop, consider placing it in a protective cover or using clean hands to prevent grease and fluid stains.

7. Troubleshooting Information

The service manual is a primary tool for troubleshooting. When encountering an issue with your John Deere 450B Crawler Tractor:

- **Identify Symptoms:** Clearly define the problem and its symptoms.
- **Consult Relevant Section:** Go to the section of the manual that corresponds to the affected system (e.g., 'Engine' for engine problems).
- **Follow Diagnostic Charts:** Many sections include diagnostic flowcharts or tables to guide you through a systematic troubleshooting process.
- **Check Specifications:** Compare component readings or measurements against the specifications provided in the manual to identify deviations.

8. Specifications of the Manual

Feature	Detail
Title	John Deere 450B Technical Service Shop Manual (Loader)
Format	Spiral-bound, digitally enhanced reproduction
Page Count	332 pages
Language	English
Purpose	Provides detailed technical information and instruction for major repairs and complete overhauls of the John Deere 450B Crawler Tractor.

9. Support

For questions regarding the content or specific procedures within the John Deere 450B Technical Service Shop Manual, it is recommended to consult with a certified John Deere service technician or contact the manual's publisher for clarification. This user guide is intended to assist in the navigation of the service manual, not to replace professional advice or the service manual itself.

Ask a question about this manual

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

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Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

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