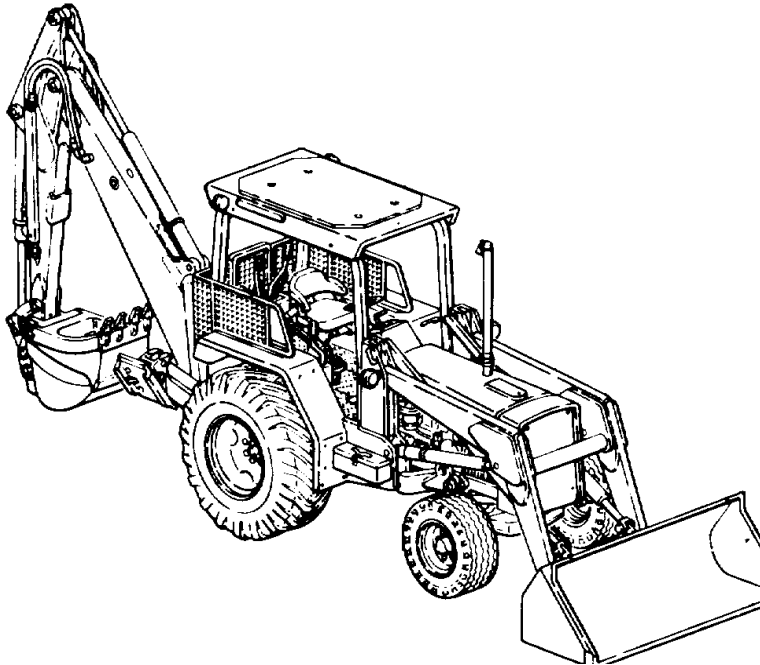

TECHNICAL MANUAL
ORGANIZATIONAL MAINTENANCE MANUAL
VOLUME 1 OF 3



This copy is a reprint which includes current pages from Change 1.

**TRACTOR, WHEELED (DED)
LOADER BACKHOE
W/HYDRAULIC IMPACT TOOL AND
W/HYDRAULIC EARTH AUGER ATTACHMENT
JOHN DEERE MODEL JD410 (CCE)
W/WAIN-ROY BUCKET, HUGHES IMPACTOR
AND DANUSER EARTH DRILL
(NSN 2420-00-5671 035)**

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TECHNICAL MANUAL

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DEPARTMENT OF THE ARMY
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ORGANIZATIONAL MAINTENANCE MANUAL

TRACTOR, WHEELED,
DED, LOADER BACKHOE:
WITH HYDRAULIC IMPACT TOOL AND
WITH HYDRAULIC EARTH AUGER ATTACHMENT
JOHN DEERE MODEL JD410 (CCE)
WITH BUCKET, IMPACTOR,
AND EARTH DRILL
(NSN 2420-00-567-0135)

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual direct to: Commander, US Army Tank-Automotive Command, ATTN: AMSTA-MB, Warren, MI 48397-5000. A reply will be sent to you.

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*This manual supersedes Organizational portion of TM 5-2420-222-14&P1 and TM 5-2420-222-14&P2 dated October 1982, including all changes.

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HOW TO USE THIS MANUAL

This manual is divided into three volumes: TM 5-2420-222-20-1, TM 5-2420-222-20-2 and TM 52220-222-20-3. It is designed to help you maintain the loader backhoe. Front cover Table of Contents for this volume is provided for quick reference to important information. There is also an index located in the final pages of each volume for use in locating specific items of information.

Measurements in this manual are given in both US standards and metric units. Metric to US standard conversion chart can be found on the inside back cover.

Read all preliminary information found at the beginning of each task. It has important information you must have before beginning the task.

Warning pages are located in the front of each volume for warnings used in that volume. You should learn warnings before doing maintenance on equipment.

Subject index appears at the beginning of each chapter listing sections that are included in that chapter. A more specific subject index is located at the beginning of each section to help you find the exact paragraph you're looking for.

CHAPTER 1

INTRODUCTION

OVERVIEW

The purpose of this chapter is to give you general information and equipment specifications, and familiarize you with the principles of operation that you will need to refer to while performing organizational maintenance on the loader backhoe.

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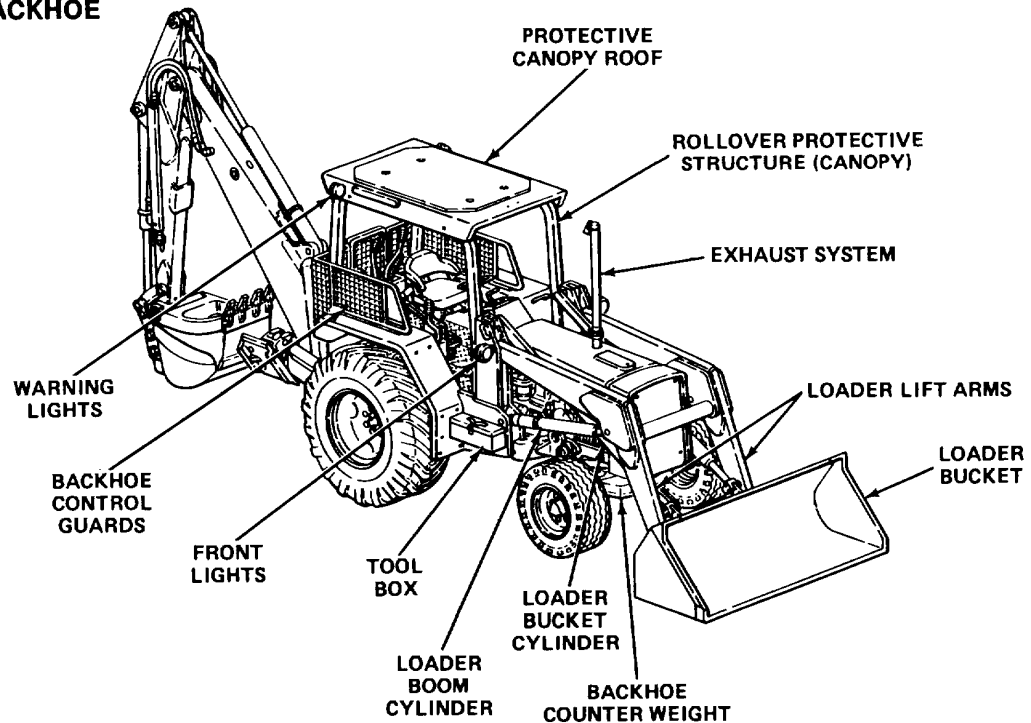
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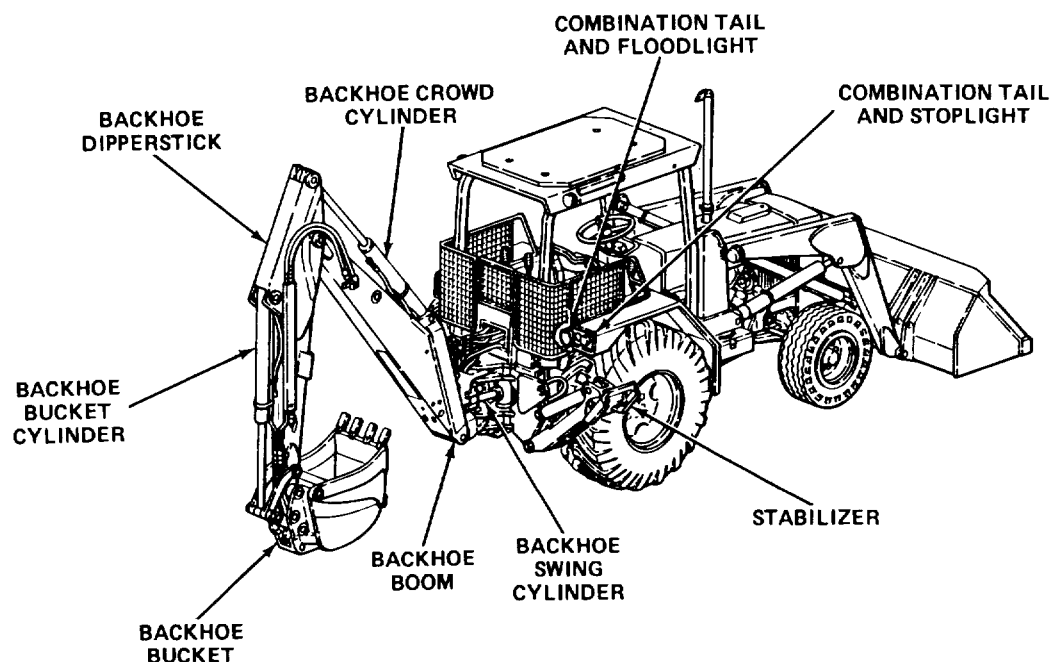
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LOADER BACKHOE



LOADER BACKHOE - CONTINUED

TA242673

SCOPE

Type of Manual: Organizational Maintenance

Model Number and Equipment Name: John Deere Model JD 410, Wheeled Tractor Loader Backhoe with Hydraulic Impact Tool and Hydraulic Earth Auger Attachment.

Short Item Name: Loader backhoe

Purpose of Equipment: Excavation for pipelines, building footings, drainage ditches and fortification, stockpiling, loading, transferring stockpiled materials, backfilling, rock and concrete breaking, tamping, asphalt cutting, earth boring and post driving.

MAINTENANCE FORMS, RECORDS, AND REPORTS

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA PAM 738-750, The Army Maintenance Management System (TAMMS).

DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE

Refer to TM 750-244-3 for instructions on the destruction of Army materiel to prevent enemy use.

EQUIPMENT IMPROVEMENT REPORT AND MAINTENANCE DIGEST (EIR MD)

The quarterly Equipment Improvement Report and Maintenance Digest, TB 43-0001-39 series, contains valuable field information on the equipment covered in this manual. The information in the TB 43-0001-39 series is compiled from some of the Equipment Improvement Reports that you prepared on the vehicles covered in this manual. Many of these articles result from comments, suggestions, and improvement recommendations that you submitted to the EIR program. The TB 43-0001-39 series contains Information on equipment improvements, minor alterations, proposed Modification Work Orders (MWO's), warranties (if applicable), actions taken on some of your DA Form 2028's (Recommended Changes to Publications), and advance information on proposed changes that may affect this manual. The information will help you in doing your job better and will help in keeping you advised of the latest changes to this manual. Also, refer to DA PAM 310-1 (Consolidated Index of Army Publications and Blank Forms) and Appendix A, References (page A-1), of this manual.

PREPARATION FOR STORAGE OR SHIPMENT

Refer to TM 740-90-1 for instructions on the administrative storage of Army materiel. Refer to Section XXV, Preparation for Storage and Shipment (page 2-1897) for special instructions for loader backhoe storage.

QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

Make sure that you do all your work with quality of workmanship in mind. Use the following check list as a guide:

Always use the right tool for the job.

Make sure that calibration stickers on test equipment are current, not out of date.

Fill out all required forms and make sure all in-time inspections are properly stamped.

Have all your work checked by your supervisor.

If you have any doubts about performing a maintenance task, notify your supervisor.

REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR's)

If your loader backhoe needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design or performance. Put it on an SF 368 (Product Quality Deficiency Report). Mail it to us at: Commander, U.S. Army Tank-Automotive Command, Attn.: AMSTA-MP, Warren, MI, 48397-5000. We'll send you a reply.

Section II. EQUIPMENT DESCRIPTION AND DATA

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EQUIPMENT DESCRIPTION

Refer to TM 5-2420-222-10 for a description of the loader backhoe.

DIFFERENCES BETWEEN MODELS

Although all model JD 410 loader backhoes covered by this manual have the same model number, there are significant differences in configuration. There are two basic configurations: early configuration, Serial Numbers 235786 thru 235999, and late configuration, Serial Numbers 319995 thru 342573. These two configurations differ mostly in transmission design and hydraulic line routing.

Throughout this manual, where differences in configuration or equipment affect operation or maintenance, they are shown in detail. If differences are minor and obvious (such as exact appearance or location), and operation and maintenance are not affected, typical equipment is shown.

EQUIPMENT DATA

Refer to TM 5-2420-222-10 for information on loader backhoe identification and data plates, and end item and component specifications.

Section III. PRINCIPLES OF OPERATION

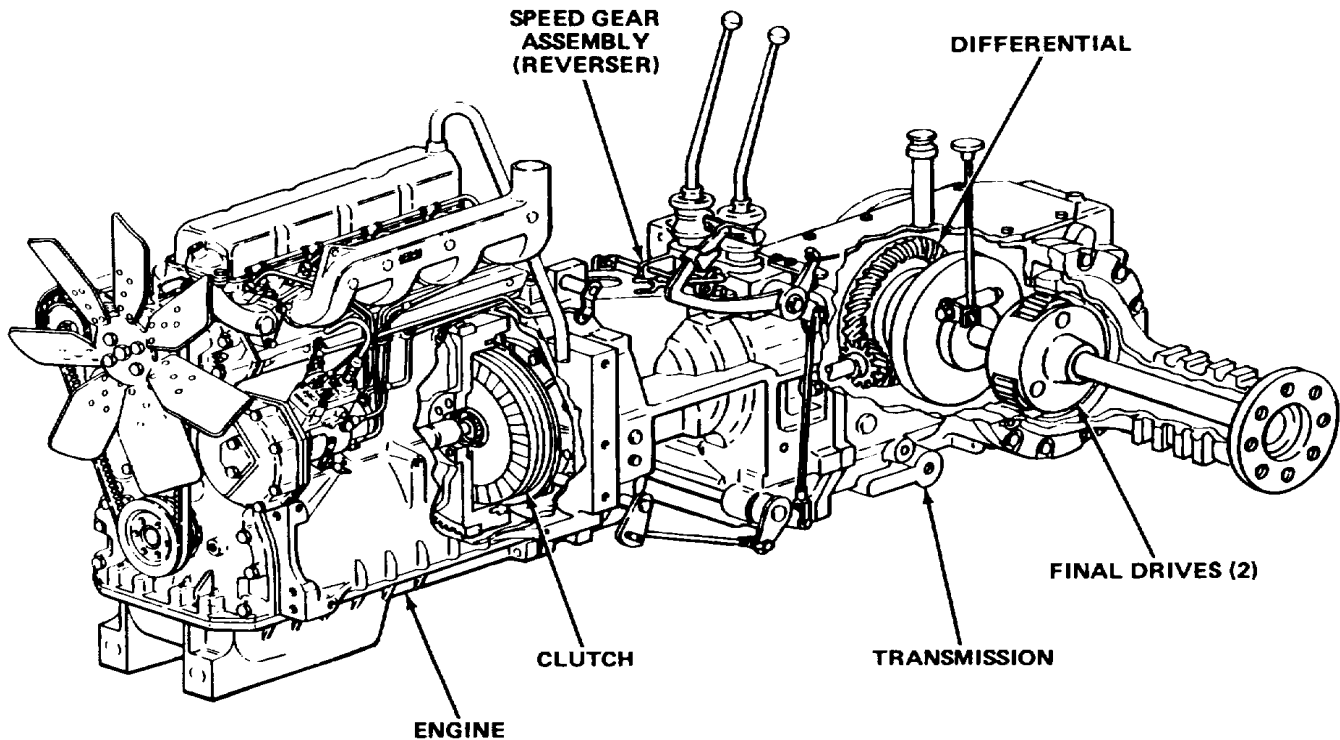
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CAUTION

When Serial Number ranges are given, be sure to use proper parts for replacement. Although parts for both configurations may appear to be interchangeable, they may function differently. Use of wrong parts could cause equipment failure and serious damage.

GENERAL

The loader backhoe is made up of several systems or groups of components. These systems are put together to make an efficient earthmoving machine. Since each system is designed to work with the others, it cannot function on its own. The following paragraphs single out systems for the purpose of discussion.

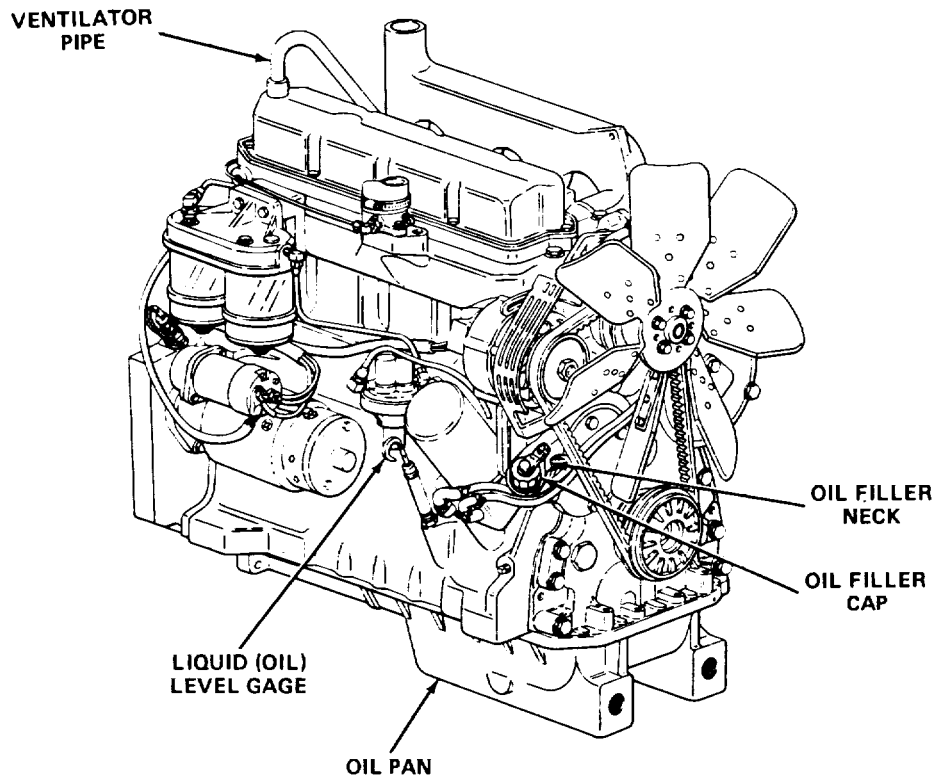


POWER TRAIN

- Engine, clutch, speed gear assembly (reverser), transmission, and drive train systems form the loader backhoe power train.
- Power developed by governed diesel engine speed is transmitted through clutch, speed gear assembly (reverser), transmission, differential, and final drives to drive rear wheels.

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LUBRICATION SYSTEM



OIL FILLER CAP

- Closes end of oil filler neck to keep dirt out of lubrication system.
- Allows access to oil filler neck.

OIL FILLER NECK

- Allows addition of lubricating oil to crankcase.

LIQUID (OIL) LEVEL GAGE

- Dipstick gage shows engine lubricating oil level.

VENTILATOR PIPE

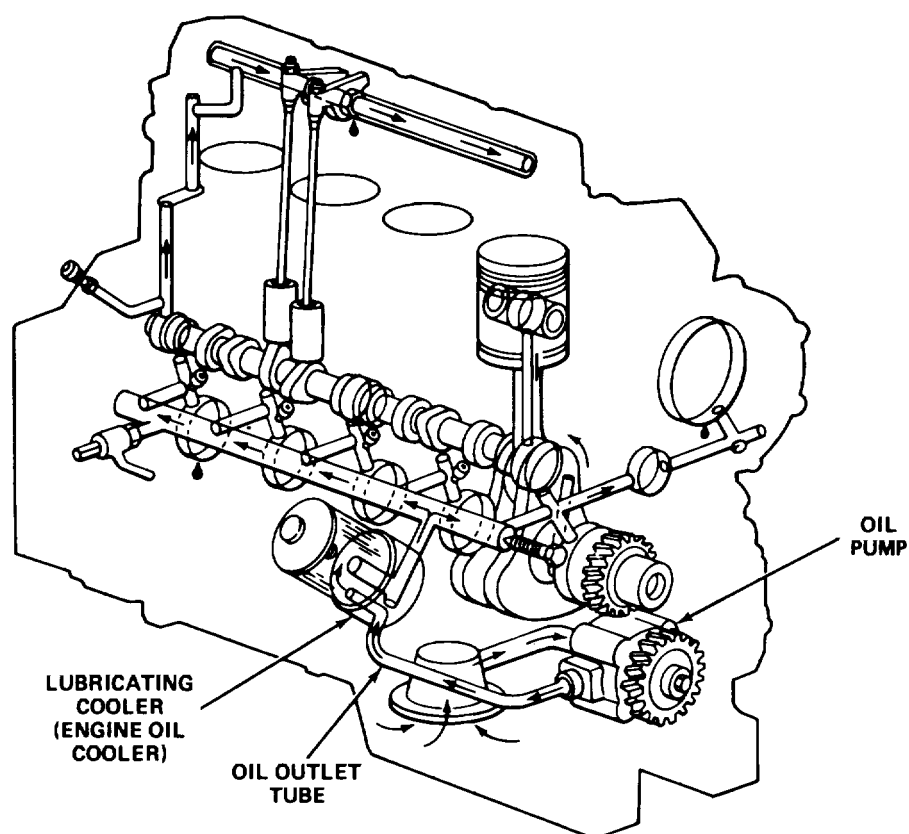
- Allows hot gases to escape from crankcase during engine operation.
- Allows outside air to enter crankcase during engine cool down.
- Keeps pressure in crankcase the same as outside air pressure at all times.

OIL PAN

- Provides reservoir for lubricating oil to be circulated through the lubrication system.

TA242675

LUBRICATION SYSTEM - CONTINUED



OIL PUMP

- Mounted to bottom of engine block at rear of engine.
- Driven directly by crankshaft gear.
- Suction tube is submerged in lubricating oil in oil pan.
- Moves lubricating oil through lubrication system.

OIL OUTLET TUBE

- Routes lubricating oil from oil pump outlet to lubricating cooler (engine oil cooler), engine oil filter, and engine block oil passage.

LUBRICATING COOLER (ENGINE OIL COOLER)

- Uses coolant from engine cooling system to cool lubricating oil.
- Helps keep engine running below maximum operating temperature.
- If cooler clogs, bypass valve opens to keep full flow of lubricating oil through engine lubrication system.

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