

# 160DLC Excavator Repair

## TECHNICAL MANUAL 160DLC Excavator Repair

TM10091 11JAN08 (ENGLISH)

For complete service information also see:

160DLC Excavator Operation and Tests . . .	TM10088
160DLC Excavator Operator's Manual . . . . .	OMT226911
POWERTECH™ 4.5L/6.8L POWERTECH E™	
6.8L Diesel Engines—Base Engine . . . . .	CTM104
POWERTECH E™ 6.8L Diesel Engines—Level 16 Electronic Fuel System with Denso HPCR . . . . .	CTM502
Alternators and Starter Motors . . . . .	CTM77
Undercarriage Appraisal Manual . . . . .	SP326
Super Caddy Oil Cleanup Procedure . . . . .	CTM310

**Worldwide Construction  
And Forestry Division**

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 operation and tests. Repair sections tell how to repair the components. Operation and tests 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.

Technical Manuals are concise guides for specific machines. They are on-the-job guides containing only the vital information needed for diagnosis, analysis, testing, and repair.

Fundamental service information is available from other sources covering basic theory of operation, fundamentals of troubleshooting, general maintenance, and basic type of failures and their causes.

DX, TMIFC -19-29SEP98-1/1



*Introduction*

**Thanks very much for your reading,  
Want to get more information,  
Please click here, Then get the complete  
manual**

**JustClickHere** 

**NOTE:**

**If there is no response to click on the link above,  
please download the PDF document first, and then  
click on it.**

**Have any questions please write to me:  
[admin@servicemanualperfect.com](mailto:admin@servicemanualperfect.com)**

# Contents

## **SECTION 00—General Information**

- Group 01—Safety
- Group 0003—Torque Values

00

## **SECTION 01—Tracks**

- Group 0130—Track System

01

## **SECTION 02—Axles, Differentials and Suspension Systems**

- Group 0250—Axle Shaft, Bearings, and Reduction Gears
- Group 0260—Hydraulic System

02

## **SECTION 04—Engine**

- Group 0400—Removal and Installation

## **SECTION 05—Engine Auxiliary System**

- Group 0510—Cooling System
- Group 0520—Intake System
- Group 0560—External Fuel Supply System

04

## **SECTION 07—Dampener Drive (Flex Coupling)**

- Group 0752—Elements

05

## **SECTION 17—Frame or Supporting Structure**

- Group 1740—Frame Installation
- Group 1749—Chassis Weights

07

## **SECTION 18—Operator's Station**

- Group 1800—Removal and Installation
- Group 1810—Operator Enclosure
- Group 1821—Seat and Seat Belt
- Group 1830—Heating and Air Conditioning

17

## **SECTION 33—Excavator**

- Group 3302—Buckets
- Group 3340—Frames
- Group 3360—Hydraulic System

18

## **SECTION 43—Swing or Pivoting System**

- Group 4350—Mechanical Drive Elements
- Group 4360—Hydraulic System

43

## **SECTION 99—Dealer Fabricated Tools**

- Group 9900—Dealer Fabricated Tools

33

*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.*

COPYRIGHT © 2008  
DEERE & COMPANY  
Moline, Illinois  
All rights reserved  
A John Deere ILLUSTRATION® Manual  
Previous Editions  
Copyright © 2007

43

Contents

00

01

02

04

05

07

17

18

33

43

Contents

99

INDX



*Contents*

99

INDX

# Section 00 General Information

## Contents

	Page
<b>Group 01—Safety</b> . . . . .	.00-01-1
<b>Group 0003—Torque Values</b>	
Torque Value	
Metric Bolt and Cap Screw . . . . .	.00-0003-1
Additional Metric Cap Screw Torque Values . . . . .	.00-0003-2
Torque Value	
Unified Inch Bolt and Cap Screw . . . . .	.00-0003-4
Service Recommendations for 37° Flare and 30° Cone Seat Connectors . . . . .	.00-0003-5
Service Recommendations for O-Ring Boss Fittings . . . . .	.00-0003-6
Service Recommendation	
O-Ring Boss Fittings In Aluminum Housing—Excavators . . . . .	.00-0003-8
Service Recommendations For Flared Connections—Straight or Tapered Threads . . . . .	.00-0003-10
Service Recommendations For Flat Face O-Ring Seal Fittings . . . . .	.00-0003-11
Service Recommendation	
O-Ring Face Seal Fittings with SAE Inch Hex Nut and Stud End for High Pressure . . . . .	.00-0003-12
O-Ring Face Seal Fittings with Metric Hex Nut and Stud End for Standard Pressure . . . . .	.00-0003-14
O-Ring Face Seal Fittings with Metric Hex Nut and Stud End for High Pressure . . . . .	.00-0003-16
Service Recommendations for Metric Series Four Bolt Flange Fitting . . . . .	.00-0003-18
Service Recommendations For Inch Series Four Bolt Flange Fittings . . . . .	.00-0003-19
Service Recommendation	
Inch Series Four Bolt Flange For High Pressure . . . . .	.00-0003-20

*Contents*

00

## Recognize Safety Information

**This is the safety alert symbol. When this symbol is noticed on the machine or in this manual, be alert for the potential of personal injury.**

Follow the precautions and safe operating practices highlighted by this symbol.

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

On the machine, DANGER signs are red in color, WARNING signs are orange, and CAUTION signs are yellow. DANGER and WARNING signs are located near specific hazards. General precautions are on CAUTION labels.



T133555 -UN-28AUG00

T133588 -19-28AUG00

TX03679.00016CC -19-03JAN07-1/1

## Follow Safety Instructions

Read the safety messages in this manual and on the machine. Follow these warnings and instructions carefully. Review them frequently.

Be sure all operators of this machine understand every safety message. Replace operator's manual and safety labels immediately if missing or damaged.



T133556 -UN-24AUG00

TX03679.00016F9 -19-03JAN07-1/1

## Operate Only If Qualified

Do not operate this machine unless the operator's manual has been read carefully, and you have been qualified by supervised training and instruction.

Operator should be familiar with the job site and surroundings before operating. Try all controls and

machine functions with the machine in an open area before starting to work.

Know and observe all safety rules that may apply to every work situation and work site.

TX03679.00016FA -19-08JAN08-1/1

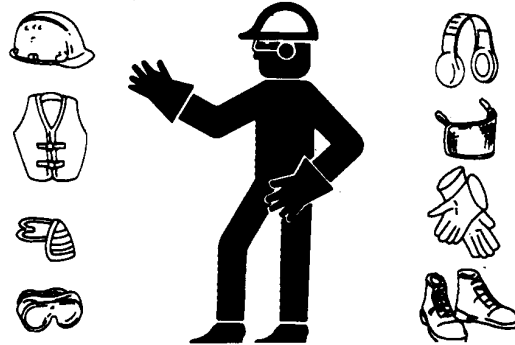
00  
01  
2

## Wear Protective Equipment

Guard against injury from flying pieces of metal or debris; wear goggles or safety glasses.

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

Prolonged exposure to loud noise can cause impairment or loss of hearing. Wear suitable hearing protection such as earmuffs or earplugs to protect against objectionable or uncomfortable loud noises.



TS206 -UN-23AUG88

TX03679,00016D0 -19-03JAN07-1/1

## Avoid Unauthorized Machine Modifications

John Deere recommends using only genuine John Deere replacement parts to ensure machine performance. Never substitute genuine John Deere parts with alternate parts not intended for the application as these can create hazardous situations or hazardous performance. Non-John Deere Parts, or any damage or failures resulting from their use are not covered by any John Deere warranty.

Modifications of this machine, or addition of unapproved products or attachments, may affect

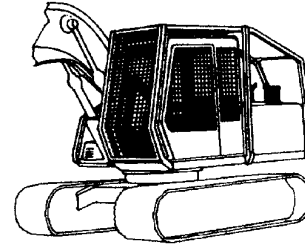
machine stability or reliability, and may create a hazard for the operator or others near the machine. The installer of any modification which may affect the electronic controls of this machine is responsible for establishing that the modification does not adversely affect the machine or its performance.

Always contact an authorized dealer before making machine modifications that change the intended use, weight or balance of the machine, or that alter machine controls, performance or reliability.

AM40430,00000A9 -19-17JUL07-1/1

### Add Cab Guarding for Special Uses

Special work situations or machine attachments may create an environment with falling or flying objects. Working near an overhead bank, doing demolition work, using a hydraulic hammer, or working in a wooded area, for example, may require added guarding to protect the operator.



FOPS (falling object protective structures) and special screens or guarding should be installed when falling or flying objects may enter or damage the machine. Contact your authorized dealer for information on devices intended to provide protection in special work situations.

T1133733 -JUN-15SEP00

TX03679,00016CE -19-03JAN07-1/1

### Inspect Machine

Inspect machine carefully each day by walking around it before starting.

Keep all guards and shields in good condition and properly installed. Fix damage and replace worn or broken parts immediately. Pay special attention to hydraulic hoses and electrical wiring.



T6607AQ -JUN-18OCT88

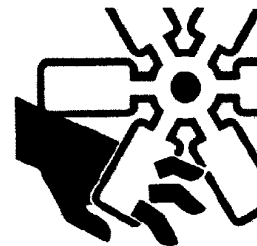
TX03679,0001734 -19-03JAN07-1/1

### Stay Clear of Moving Parts

Entanglements in moving parts can cause serious injury.

Stop engine before examining, adjusting or maintaining any part of machine with moving parts.

Keep guards and shields in place. Replace any guard or shield that has been removed for access as soon as service or repair is complete.



T1133592 -JUN-12SEP01

TX03679,00016D2 -19-03JAN07-1/1

00  
01  
4

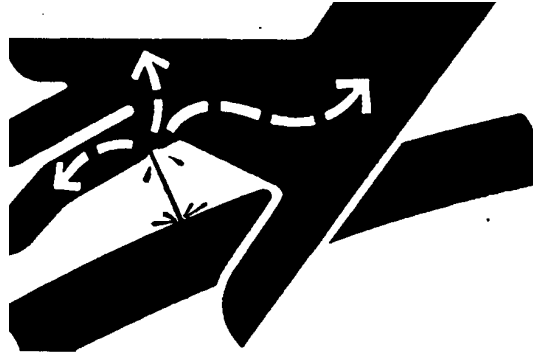
## Avoid High-Pressure Fluids

Escaping fluid under pressure can penetrate the skin causing serious injury.

Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure.

Search for leaks with a piece of cardboard. Protect hands and body from high pressure fluids.

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result. Doctors unfamiliar with this type of injury should reference a knowledgeable medical source. Such information is available from Deere & Company Medical Department in Moline, Illinois, U.S.A.



X9811 -UN-23AUG88

DX,FLUID -19-03MAR93-1/1

## Avoid High-Pressure Oils

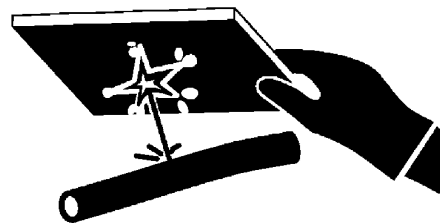
This machine uses a high-pressure hydraulic system. Escaping oil under pressure can penetrate the skin causing serious injury.

**Never search for leaks with your hands.** Protect hands. Use a piece of cardboard to find location of escaping oil. Stop engine and relieve pressure before disconnecting lines or working on hydraulic system.

**If hydraulic oil penetrates your skin, see a doctor immediately. Injected oil must be removed surgically within hours or gangrene may result.** Contact a knowledgeable medical source or the Deere & Company Medical Department in Moline, Illinois, U.S.A.



T133509 -UN-17MAR06



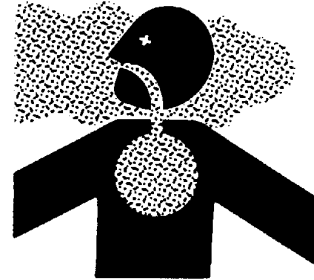
T133840 -UN-20SEP00

TX03679,00016D3 -19-01OCT07-1/1

### Beware of Exhaust Fumes

Prevent asphyxiation. Engine exhaust fumes can cause sickness or death.

If you must operate in a building, provide adequate ventilation. Use an exhaust pipe extension to remove the exhaust fumes or open doors and windows to bring outside air into the area.



T133546 -UN-24AUG00

TX03679.00016D4 -19-03JAN07-1/1

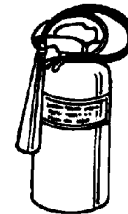
### Prevent Fires

**Handle Fuel Safely:** Store flammable fluids away from fire hazards. Never refuel machine while smoking or when near sparks or flame.

**Clean Machine Regularly:** Keep trash, debris, grease and oil from accumulating in engine compartment, around fuel lines, hydraulic lines and electrical wiring. Never store oily rags or flammable materials inside a machine compartment.

**Maintain Hoses and Wiring:** Replace hydraulic hoses immediately if they begin to leak, and clean up any oil spills. Examine electrical wiring and connectors frequently for damage.

**Keep A Fire Extinguisher Available:** Always keep a multipurpose fire extinguisher on or near the machine. Know how to use extinguisher properly.



T133552 -UN-14SEP00

T133553 -UN-07SEP00

T133554 -UN-07SEP00

TX03679.00016F5 -19-08MAR07-1/1

### Prevent Battery Explosions

Battery gas can explode. Keep sparks, lighted matches, and open flame away from the top of battery.

Never check battery charge by placing a metal object across the posts. Use a voltmeter or hydrometer.

Do not charge a frozen battery; it may explode. Warm battery to 16°C (60°F).



TS204 -UN-23AUG88

TX03679.000174A -19-03JAN07-1/1

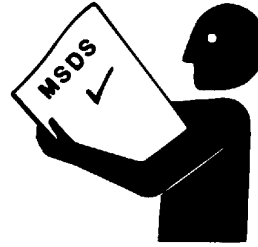


00  
01  
6

### Handle Chemical Products Safely

Exposure to hazardous chemicals can cause serious injury. Under certain conditions, lubricants, coolants, paints and adhesives used with this machine may be hazardous.

If uncertain about safe handling or use of these chemical products, contact your authorized John Deere dealer for a Material Safety Data Sheet (MSDS) or go to internet website <http://www.jdmsds.com>. The MSDS describes physical and health hazards, safe use procedures, and emergency response techniques for chemical substances. Follow MSDS recommendations to handle chemical products safely.



T133580 -UN-25AUG00

TX03679,00016D7 -19-08JAN08-1/1

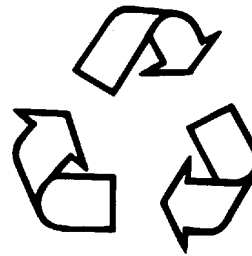
### Dispose of Waste Properly

Improper disposal of waste can threaten the environment. Fuel, oils, coolants, filters and batteries used with this machine may be harmful if not disposed of properly.

Never pour waste onto the ground, down a drain, or into any water source.

Air conditioning refrigerants can damage the atmosphere. Government regulations may require using a certified service center to recover and recycle used refrigerants.

If uncertain about the safe disposal of waste, contact your local environmental or recycling center or your authorized dealer for more information.



T133567 -UN-25AUG00

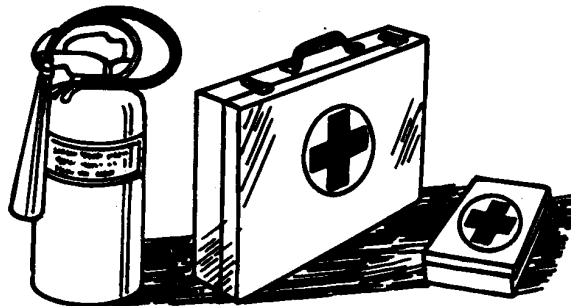
TX03679,0001733 -19-03JAN07-1/1

### Prepare for Emergencies

Be prepared if an emergency occurs or 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.



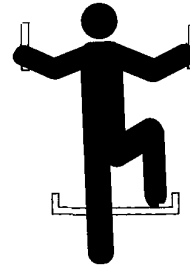
TS291 -UN-23AUG88

TX03679,000174B -19-03JAN07-1/1

### Use Steps and Handholds Correctly

Prevent falls by facing the machine when you get on and off. Maintain 3-point contact with steps and handrails. Never use machine controls as handholds.

Use extra care when mud, snow, or moisture present slippery conditions. Keep steps clean and free of grease or oil. Never jump when exiting machine. Never mount or dismount a moving machine.



T1133468 -UN-30AUG00

TX03679.00016F2 -19-25JAN07-1/1

### Start Only From Operator's Seat

Avoid unexpected machine movement. Start engine only while sitting in operator's seat. Ensure all controls and working tools are in proper position for a parked machine.

Never attempt to start engine from the ground. Do not attempt to start engine by shorting across the starter solenoid terminals.



T1133715 -UN-07SEP00

TX03679.0001799 -19-03JAN07-1/1

### Use and Maintain Seat Belt

**Use seat belt when operating machine.** Remember to fasten seat belt when loading and unloading from trucks and during other uses.

Examine seat belt frequently. Be sure webbing is not cut or torn. Replace seat belt immediately if any part is damaged or does not function properly.

**The complete seat belt assembly should be replaced every three years, regardless of appearance.**



**USE  
SEAT  
BELT**

T1133716 -19-14SEP00

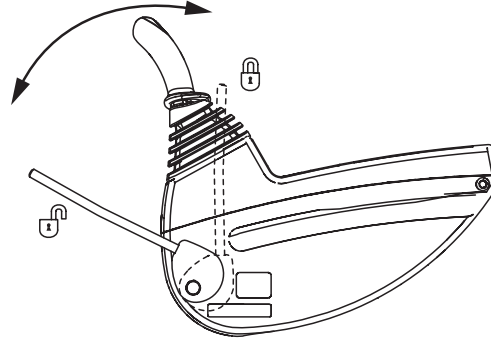
TX03679.00016DD -19-10JAN07-1/1

00  
01  
8

## Prevent Unintended Machine Movement

Be careful not to accidentally actuate control levers when co-workers are present. Pull pilot control shutoff lever to locked position during work interruptions. Pull pilot control shutoff lever to locked position and stop engine before allowing anyone to approach machine.

Always lower work equipment to the ground and pull pilot control shutoff lever to locked position before standing up or leaving the operator's seat. Stop engine before exiting.



T216779 -JUN-22NOV05

DW90712,00002BF -19-26OCT06-1/1