

# **CTS II Combine Repair, Diagnosis and Tests**

**For complete service information also see:**

|   |               |
|---|---------------|
| <b>9410, 9510 and 9610 Combines Repair . . . . .</b>                  | <b>TM1701</b> |
| <b>9410, 9510 and 9610 Combines Diagnosis and<br/>Tests . . . . .</b> | <b>TM1702</b> |
| <b>Cutting Platforms, Corn Heads and Row Crop<br/>Heads . . . . .</b> | <b>TM1581</b> |
| <b>6081 Engine . . . . .</b>  | <b>CTM86</b>  |
| <b>Cam Lobe Motors . . . . .</b>                                      | <b>CTM19</b>  |

**John Deere Harvester Works  
TM1752 (08DEC97)**


LITHO IN U.S.A.  
ENGLISH

# 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.

HX,INTR,SD6 -19-23OCT97-1/1

This technical manual covers information unique to the CTS II Combine:

- Separator Repair (Beaters, Chaffer, Sieve Frame, Tine Separator, Engine Gearcase and Module Drive)
- Straw Chopper, Straw Spreader, Chaff Spreader Drives and Upper Clean Grain Elevator Repair
- Grain Tank Extensions
- Electrical Diagnostics and Tests

See TM1701; 9410, 9510 and 9610 Combines Repair for information on the following:

|  |             |
|--|-------------|
| Engine   | Section 20  |
| Fuel and Air   | Section 30  |
| Electrical   | Section 40  |
| Power Train Repair   | Section 50  |
| Power Steering and Brakes  | Section 60  |
| Hydraulic Repair   | Section 70  |
| Feeder House   | Section 110 |
| Separator (Except for beaters, Chaffer and Sieve Frame, Straw Chopper, Straw Spreader and Chaff Spreader Drives) | Section 120 |
| Grain Tank Unloading System Repair   | Section 130 |
| Engine Gearcase  | Section 140 |
| DIAL-A-MATIC™ Header Height Control  | Section 160 |

See TM1702; 9410, 9510 and 9610 Combines Diagnosis and Tests for information on the following:

|   |             |
|---|-------------|
| Engine Operation and Tests                      | Section 220 |
| Fuel/Air Operation and Test                     | Section 230 |
| Electrical System Operation and Test            | Section 240 |
| Power Train Operation and Tests                 | Section 250 |
| Four-Wheel Drive                                | Section 255 |
| Service Brakes System Operation and Test        | Section 260 |
| Hydraulic Operation and Test                    | Section 270 |
| Main Engine Gearcase Systems Operation and Test | Section 275 |
| DIAL-A-MATIC™ System Operation and Tests        | Section 280 |
| Heating/Air Conditioning Operation and Tests    | Section 290 |

See TM1581 for header repair, operation and test information.

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

**JustClickHere** 

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**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)**



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INDX

# Section 10 General

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## 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.



T81389 -UN-07DEC88

DX.ALERT -19-03MAR93-1/1

## UNDERSTAND SIGNAL WORDS

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

DANGER or WARNING safety signs are located near specific hazards. General precautions are listed on CAUTION safety signs. CAUTION also calls attention to safety messages in this manual.



**▲ WARNING**

**▲ CAUTION**

TS187 -19-30SEP88

DX.SIGNAL -19-03MAR93-1/1

## 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.



TS227 -UN-23AUG88

DX.FLAME -19-04JUN90-1/1

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## 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 voltmeter or hydrometer.

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



TS204 -UN-23AUG88

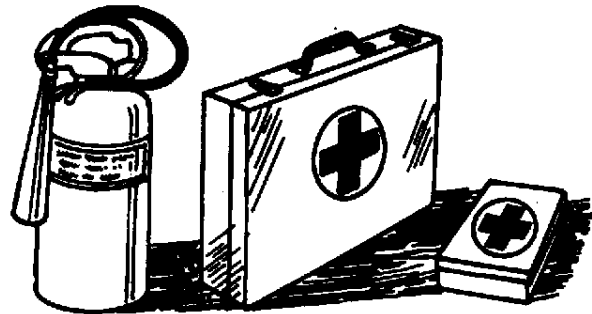
DX,SPARKS -19-03MAR93-1/1

## 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.



TS291 -UN-23AUG88

DX,FIRE2 -19-03MAR93-1/1

## PREVENT ACID BURNS

Sulfuric acid in battery electrolyte is poisonous. It is strong enough to burn skin, eat holes in clothing, and cause blindness if splashed into eyes.

Avoid the hazard by:

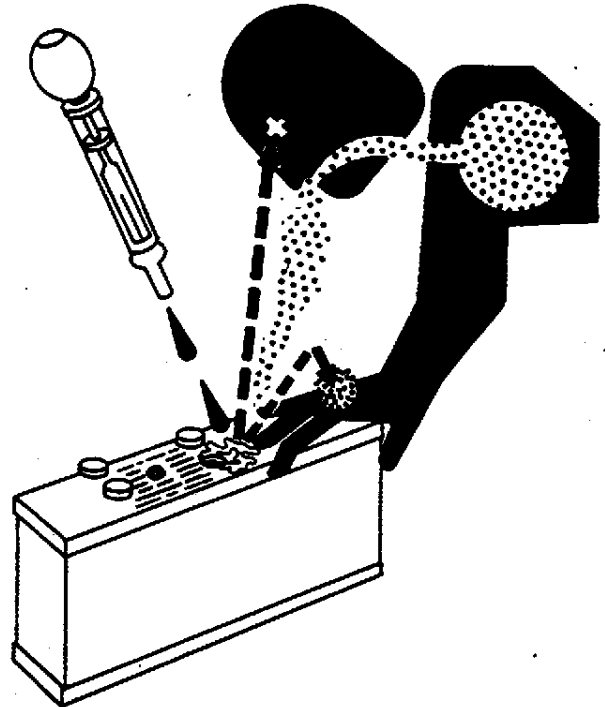
1. Filling batteries in a well-ventilated area.
2. Wearing eye protection and rubber gloves.
3. Avoiding breathing fumes when electrolyte is added.
4. Avoiding spilling or dripping electrolyte.
5. Use proper jump start procedure.

If you spill acid on yourself:

1. Flush your skin with water.
2. Apply baking soda or lime to help neutralize the acid.
3. Flush your eyes with water for 15—30 minutes. Get medical attention immediately.

If acid is swallowed:

1. Do not induce vomiting.
2. Drink large amounts of water or milk, but do not exceed 2 L (2 quarts).
3. Get medical attention immediately.



TS203 -UN-23AUG88

DX,POISON -19-21APR93-1/1

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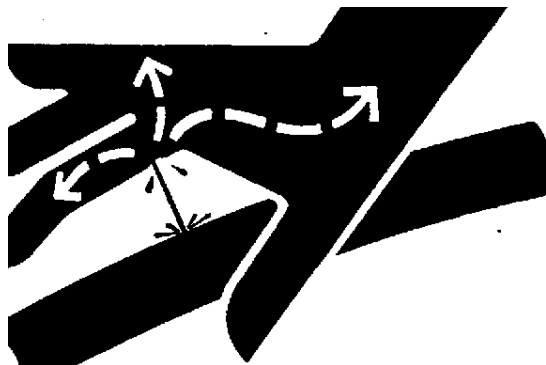
### AVOID HIGH-PRESSURE FLUIDS

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.



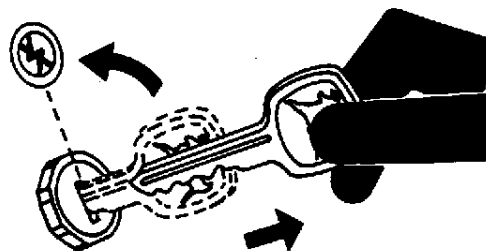
X9811 -JUN-23AUG88

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

### PARK MACHINE SAFELY

Before working on the machine:

- Lower all equipment to the ground.
- Stop the engine and remove the key.
- Disconnect the battery ground strap.
- Hang a "DO NOT OPERATE" tag in operator station.



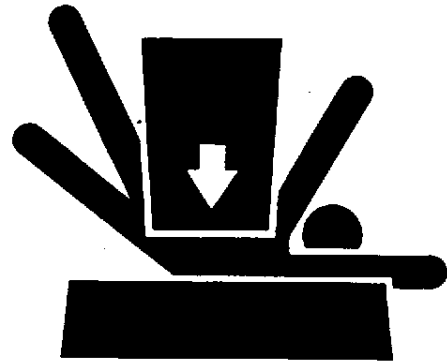
TS230 -JUN-24MAY89

DX,PARK -19-04JUN90-1/1

### SUPPORT MACHINE PROPERLY

Always lower the attachment or implement to the ground before you work on the machine. If you must work on a lifted machine or attachment, securely support the machine or attachment.

Do not support the machine on cinder blocks, hollow tiles, or props that may crumble under continuous load. Do not work under a machine that is supported solely by a jack. Follow recommended procedures in this manual.



TS229 -UN-23AUG88

DX,LOWER -19-04JUN90-1/1

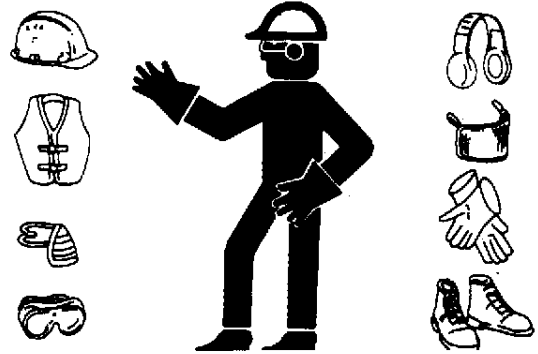
### WEAR PROTECTIVE CLOTHING

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

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.

Operating equipment safely requires the full attention of the operator. Do not wear radio or music headphones while operating machine.



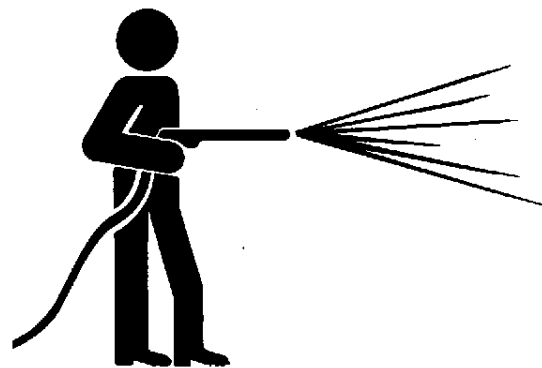
TS206 -UN-23AUG88

DX,WEAR -19-10SEP90-1/1

### WORK IN CLEAN AREA

Before starting a job:

- Clean work area and machine.
- Make sure you have all necessary tools to do your job.
- Have the right parts on hand.
- Read all instructions thoroughly; do not attempt shortcuts.



T6642EJ -UN-18OCT88

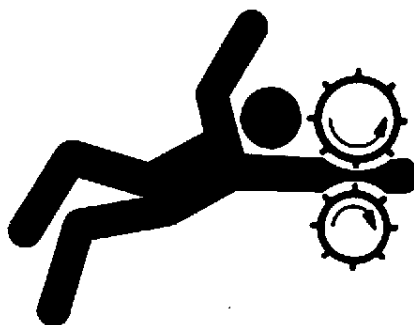
DX,CLEAN -19-04JUN90-1/1

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6

### SERVICE MACHINES SAFELY

Tie long hair behind your head. Do not wear a necktie, scarf, loose clothing, or necklace when you work near machine tools or moving parts. If these items were to get caught, severe injury could result.

Remove rings and other jewelry to prevent electrical shorts and entanglement in moving parts.



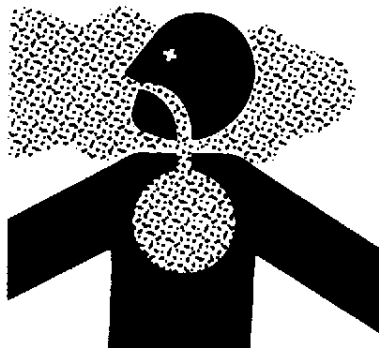
DX, LOOSE -19-04JUN90-1/1

TS228 -UN-23AUG88

### WORK IN VENTILATED AREA

Engine exhaust fumes can cause sickness or death. If it is necessary to run an engine in an enclosed area, remove the exhaust fumes from the area with an exhaust pipe extension.

If you do not have an exhaust pipe extension, open the doors and get outside air into the area.

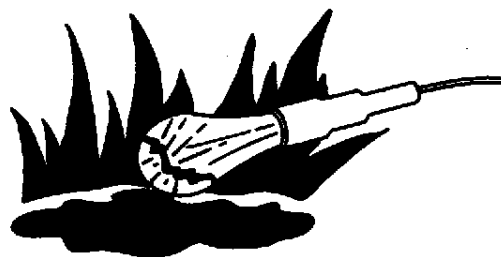


DX, AIR -19-04JUN90-1/1

TS220 -UN-23AUG88

### ILLUMINATE WORK AREA SAFELY

Illuminate your work area adequately but safely. Use a portable safety light for working inside or under the machine. Make sure the bulb is enclosed by a wire cage. The hot filament of an accidentally broken bulb can ignite spilled fuel or oil.

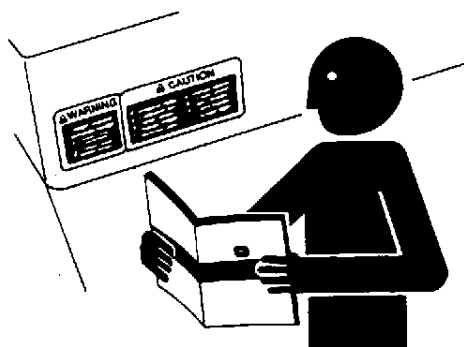


DX, LIGHT -19-04JUN90-1/1

TS223 -UN-23AUG88

### REPLACE SAFETY SIGNS

Replace missing or damaged safety signs. See the machine operator's manual for correct safety sign placement.



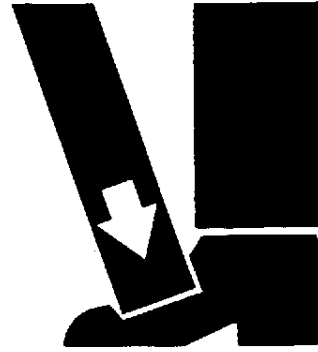
DX, SIGNS1 -19-04JUN90-1/1

TS201 -UN-23AUG88

### USE PROPER LIFTING EQUIPMENT

Lifting heavy components incorrectly can cause severe injury or machine damage.

Follow recommended procedure for removal and installation of components in the manual.



DX,LIFT -19-04JUN90-1/1

TS226 -UN-23AUG88

### AVOID HEATING NEAR PRESSURIZED FLUID LINES

Flammable spray can be generated by heating near pressurized fluid lines, resulting in severe burns to yourself and bystanders. Do not heat by welding, soldering, or using a torch near pressurized fluid lines or other flammable materials. Pressurized lines can be accidentally cut when heat goes beyond the immediate flame area.



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

TS953 -UN-15MAY90