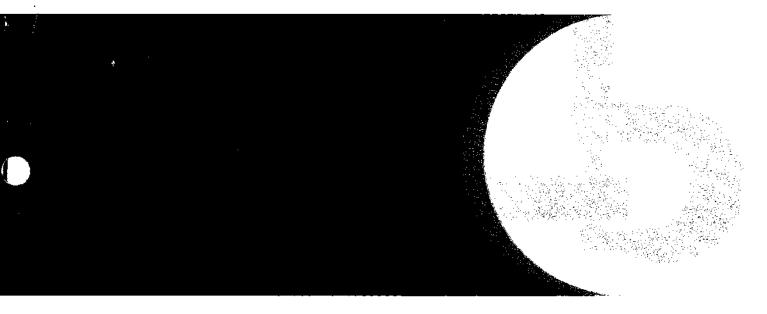
### John Deere 550B Crawler Dozer and 555B Crawler Loader





**TECHNICAL MANUAL** 

TM-1331 (Aug-87)

LITHO IN U.S.A.

# 550B CRAWLER DOZER AND 555B CRAWLER LOADER TECHNICAL MANUAL TM-1331 (AUG-87)

#### SECTION AND GROUP CONTENTS

#### **SECTION I - GENERAL INFORMATION**

Group I - Introduction and Safety Information

Group II - General Specifications

Group III - Torque Specifications Chart for Cap Screws and Hydraulic

Group IV - Lubrication

#### **SECTION 01 - TRACKS**

Group 0130 - Track Systems

**Fittings** 

Track Chain, Track frame, Track Carrier Roller, Front Idler, Track Roller and Track Adjuster

#### SECTION 02 - AXLES AND SUSPEN-SION SYSTEMS

Group 0250 - Axle Shaft, Bearings, and Reduction Gears

Final Drive, Steering Clutch, Brake Band, Steering Clutch Housing and Linkage

#### **SECTION 03 - TRANSMISSION**

Group 0315 - Controls

Group 0350 - Gears, Shafts, Bearings, Power Shift Clutch, and Torque Converter

Group 0360 - Hydraulic System
Oil Pump, Transmission Control Valve,
Selector Valve, Oil Filter

#### **SECTION 04 - ENGINE**

Group 0400 - Removal and Installation

Group 0401 - Crankshaft and Main Bearings

Group 0402 - Camshaft and Valve Actuating Means

Group 0403 - Connecting Rods and Pistons

Group 0404 - Cylinder Block (Liners)

Group 0407 - Engine Oiling System

Group 0409 - Cylinder Head and Valves

Group 0410 - Exhaust Manifold

Group 0413 - Fuel Injection System

Group 0415 - Engine Balancer

Group 0416 - Turbocharger

Group 0417 - Water Pump

Group 0418 - Thermostats, Housing and Piping

Group 0419 - Engine Oil Cooler

Group 0420 - Fuel Filter

Group 0421 - Fuel Transfer Pump

Group 0422 - Starting System

Group 0433 - Flywheel, Housing and Fasteners

### SECTION 05 - ENGINE AUXILIARY SYSTEMS

Group 0505 - Cold Weather Starting Aids

Group 0510 - Cooling Systems

Group 0515 - Speed Controls

Group 0560 - External Fuel Supply Systems

#### **SECTION 06 - TORQUE CONVERTER**

Group 0651 - Converter, Turbine, Gears, and Shafts (See Group 0350)

Continued on next page

All information, illustrations and specifications contained in this technical 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® 1987
DEERE & COMPANY
Moline, Illinois
All rights reserved
A JOHN DEERE ILLUSTRUCTION
Previous Edition
Copywright® 1986 Deere & Company
Copywright® 1985 Deere & Company

T64;1331 16 310787

#### **SECTION AND GROUP CONTENTS - Continued**

#### **SECTION 09 - STEERING SYSTEMS**

Group 0960 - Power Steering

#### SECTION 15 - EQUIPMENT ATTACHING

Group 1511 - Drawbar

#### SECTION 16 - ELECTRICAL SYSTEM

Group 1671 - Batteries, Support, and Cables

Group 1672 - Alternator

Group 1674 - Wiring Harness and Switches

Group 1676 - Instruments and Indicators

#### SECTION 17 - FRAME, CHASSIS, OR SUPPORTING STRUCTURE

Group 1740 - Frame Installation

Group 1746 - Frame Bottom Guards

Group 1749 - Chassis Weights

Sprocket, Rear, and Bottom Counterweights

#### **SECTION 18 - OPERATOR'S STATION**

Group 1810 - Operator Enclosure

ROPS, Cab, Windshield Wiper Motor, Operator Seat, and Backhoe Seat

#### SECTION 19 - SHEET METAL

Group 1910 - Hood or Engine Enclosure
Grille and Grille Housing, Engine Side

Shields, Cowl and Cowl Support

#### **SECTION 30 - WINCH**

Group 3015 - Controls Linkage

Group 3050 - Winch Drive and Clutches

Group 3060 - Winch Hydraulic System

Winch Control Valve and Hydraulic Pump

#### **SECTION 31 - LOADER**

Group 3102 - Buckets

Group 3103 - Forks

Group 3115 - Controls Linkage

Group 3140 - Frames

Group 3160 - Hydraulic System

Loader Cylinders, Hydraulic Pump and Loader Control Valve

#### **SECTION 32 - BULLDOZER**

Group 3201 - Blades

Group 3215 - Controls Linkage

Group 3240 - Frames

Group 3260 - Hydraulic System

Hydraulic Return Filter, Reservoir, Pump, Pump Drive, Dozer Control Valve, Auxiliary Valve, Selector Valve, Flow Divider and

Bulldozer Cylinders

#### SECTION 33A - BACKHOE - 9300

Group 3300A - Removal and Installation

Group 3302A - Bucket

Group 3315A - Controls Linkage

Group 3340A - Frames

Group 3360A - Hydraulic System

Control Valve, lift Check, Anti-Cavitation Valve, Relief Valve, Manifold Block and

Backhoe Cylinders

#### SECTION 33B - BACKHOE - 9550

Group 3300B - Removal and Installation

Group 3302B - Bucket

Group 3315B - Controls Linkage

Group 3340B - Frames

Group 3360B - Hydraulic System

Control Valve, Lift Check, Anti-cavitation Valve, Relief Valve, Manifold Block and

Backhoe Cylinders

#### SECTION 37 - LOG ARCH

Group 3740 - Arch Frames

#### SECTION 40 - WINCH DRIVE

Group 4051 - Gears, Shafts and Bearings

### SECTION 42 - GROUND CONDITIONING TOOL

Group 4201 - Teeth and Shanks

Group 4240 - Frame

Group 4260 - Hydraulic System

#### SECTION 9005 - OPERATIONAL CHECK-OUT PROCEDURE

#### **SECTION 9010 - ENGINE**

Group 9010-05 - Theory of Operation

Group 9010-10 - System Operational Checks

Group 9010-15 - Diagnostic Information

Group 9010-20 - Adjustments

Group 9010-25 - Tests

Continued on next page

T64;1331 17 121185

Thanks very much for your reading,

Want to get more information,

Please click here, Then get the complete
manual



### **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

#### SECTION AND GROUP CONTENTS—Continued

#### **SECTION 9015 - ELECTRICAL SYSTEM**

Group 9015-05 - Theory of Operation

Group 9015-10 - System Operational Checks

Group 9015-15 - Diagnostic Information

Group 9015-25 - Tests

#### **SECTION 9020 - POWER TRAIN**

Group 9020-05 - Theory of Operation

Group 9020-10 - System Operational Checks

Group 9020-15 - Diagnostic Information

Group 9020-20 - Adjustments

Group 9020-25 - Tests

#### **SECTION 9025 - HYDRAULIC SYSTEM**

Group 9025-05 - Theory of Operation

Group 9025-10 - System Operational Checks

Group 9025-15 - Diagnostic Information

Group 9025-25 - Tests

### SECTION 9030 - MISCELLANEOUS COMPONENTS

Group 9030-05 - Theory of Operation

Group 9030-15 - Diagnostic Information

Group 9030-20 - Adjustments

Group 9030-25 - Tests

### SECTION 99 - DEALER FABRICATED TOOLS

#### INTRODUCTION

This technical manual is part of a twin concept of service.

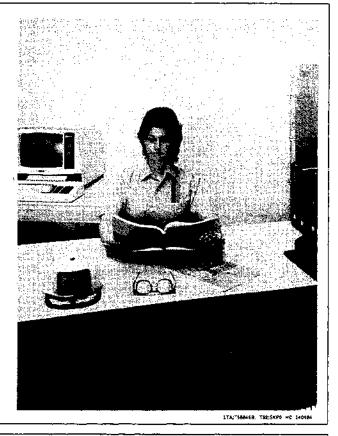
#### FOS Manuals - for reference

#### Technical Manuals - for actual service

The two kinds of manuals work as a team to give you both the general background and technical details of shop 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 service guides for specific machines. Technical manuals are on-the-job guides containing only the vital information needed by an experienced service technician.

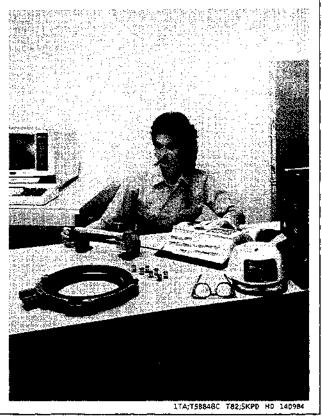


#### FEATURES OF THIS TECHNICAL MANUAL

- •John Deere ILLUSTRUCTION format emphasizing detailed pictures and fewer words in easy-to-use modules.
- Removal and installation groups preceding some repair groups.
- A section of system diagnostic testing.
- Table of contents of all sections at the front of the manual and a listing of all groups and headings at the front of each section.
- Essential tools and specifications listed at the front of each group they are used in.
- Essential tools illustrated in numerical order at end of manual
- Alphabetical listing of all major components, specifications, and essential tools.
- Safety rules, general specifications, and lubrication specificaitons.

This technical manual was planned and written for you - an experienced service technician. Keep it in a permanent binder in the shop where it is handy. Refer to it when you need to know correct service procedures or specifications.

Using the technical manual as a guide will reduce error and costly delay. It will also assure you the best in finished service work.

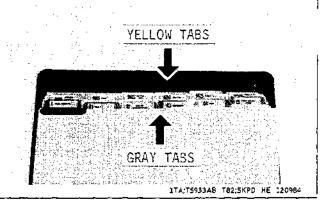


#### **USING TABS**

To fully utilize this technical manual, you must understand how it is organized.

Only two tab colors are used-gray and yellow. Each color represents a different type of information.

Spend a minute reading this now and save many minutes of searching later.



#### **GRAY TAB SECTIONS**

The gray tab sections are repair sections that tell how to repair the components of the various systems.

Repair of a component includes:

Removal from machine (when necessary) Disassembly

Inspection

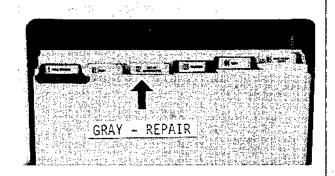
Replacement of parts

Assembly

Adjustment

Installation on machine (when necessary)

The numbers used for the repair (gray tab) sections are part of an overall service publication numbering system. The numbers identify the same sections in the parts catalog, flat rate manual, service information bulletins, and service training courses.



1TA:T5933AC T82:SKPD HF 120984

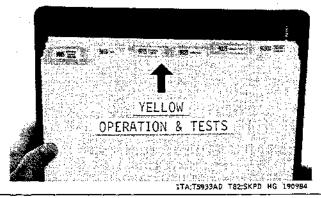
#### YELLOW TAB SECTIONS

Each yellow tab section contains information on:

Groups
--------

05	Theory of Operation
10	System Operational Checks
15	System Diagnostic Information
20	Adjustments

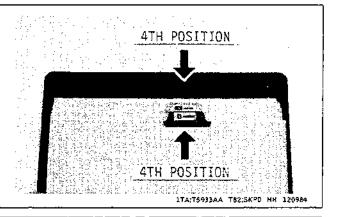
25 Tests



#### TAB POSITIONS

Each gray tab and its corresponding yellow tab have the same tab position. This is to help you quickly locate the related information.

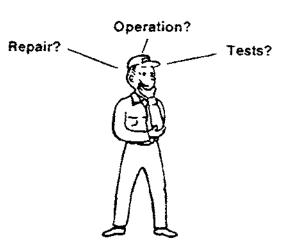
Tab	Tab	Section	Description
Color	Position	No.	
Gray Yellow	4th 4th	03 9020	Transmission Repair Power Train Operation and Tests



#### THREE-STEP PROCEDURE

Use the following three-step procedure to locate the desired information.

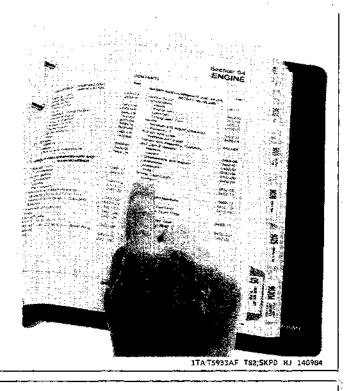
- 1. Determine the type of information you need. Is it repair, operation, or tests?
- Go to the appropriate section tab:
   Gray for Repair
   Yellow for Operation or Tests



TYPE OF INFORMATION?

1TA;T5940AT T82;SKPD HI 120984

3. Use the table of contents on the first page of the section to locate the information.



#### **SAFETY AND YOU**



CAUTION: This safety symbol is used for important safety messages. When you see this symbol, follow the safety message to avoid personal injury.



#### **AVOID FIRE HAZARDS**

Be prepared if an accident or fire should occur. Know where the first aid kit and the fire extinguishers are located — know how to use them.

Do not smoke while refueling or handling highly flammable material.

Shut off the engine when refueling.

Use care in refueling if the engine is hot.

Do not use open pans of gasoline or diesel fuel for cleaning parts. Use good commercial, nonflammable solvents.

Provide adequate ventilation when charging batteries.

Do not check battery charge by placing metal objects across the posts.

Do not allow sparks or open flame near batteries.

Do not smoke near battery.

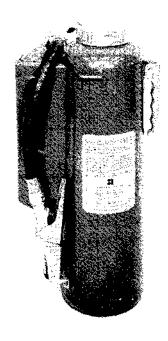
Never check fuel, battery electrolyte, or coolant levels with an open flame.

Never use an open flame to look for leaks anywhere on the equipment.

Never use an open flame as light anywhere on or around the equipment.

When preparing engine for storage, remember that inhibitor is volatile and therefore dangerous. Seal and tape openings after adding the inhibitor. Keep container tightly closed when not in use.

Inspect electrical wiring for worn or frayed insulation. Install new wiring if wires are damaged.



#### UNDERSTAND CORRECT MACHINE OPERA-TION AND SERVICE

Only qualified people should operate and service the machine.

Learn the location and purpose of all controls, instruments, indicators, and labels.

Be sure you understand a service procedure before you work on the machine.

Unauthorized modifications to the machine may impair the function and/or safety and affect machine life.

If it is necessary to make checks with the engine running, ALWAYS USE TWO PEOPLE — with the operator at the controls, able to see the person doing the checking.

KEEP HANDS AWAY FROM MOVING PARTS.



86A;T87358 T82;EXSA AG 130684

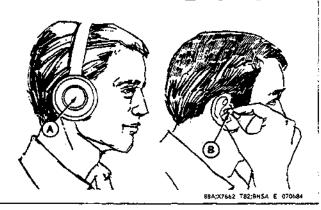
#### **WEAR PROTECTIVE CLOTHING**

Wear fairly tight clothing . . . and safety equipment.



#### PROTECT AGAINST NOISE

Prolonged exposure to loud noise can cause impairment or loss of hearing. Wear a suitable hearing protective device such as earmuffs (A) or earplugs (B) to protect against objectionable or uncomfortable loud noise.



I-I-06

#### **AVOID HIGH-PRESSURE FLUIDS**

Escaping fluid under pressure can penetrate the skin causing serious injury. Relieve pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure. Keep hands and body away from pinholes and nozzles which eject fluids under high pressure. Use a piece of cardboard or paper to search for leaks.

If ANY fluid is injected into the skin, it must be surgically removed within a few hours by a doctor familiar with this type injury or gangrene may result.



#### PREVENT MACHINE RUNAWAY

Avoid possible injury or death from machine runaway.

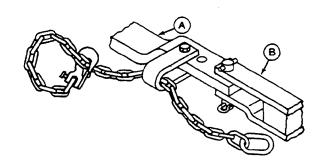
Do not start engine by shorting across starter terminals. Machine will start in gear and will move if normal circuitry is bypassed.

NEVER start engine while standing on ground. Start engine only from operator's seat, with transmission in neutral, neutral-lock lever in LOCK position and brake lock lever engaged.



#### **USE A SAFETY CHAIN**

A safety chain will help control drawn equipment (B) should it accidentally separate from the drawbar (A) while transporting. Using the appropriate adapter parts, attach the chain to the tractor drawbar support or other specified anchor location. Provide only enough slack in the chain to permit turning. See your John Deere dealer for a chain with a strength rating equal to or greater than the gross weight of the towed machine.

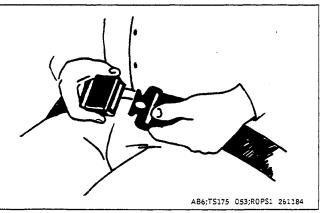


AB6:TS163 053:CHAIN 310884

#### **USE SEAT BELT PROPERLY**

Use a seat belt when you operate with a roll-over protective structure (ROPS) to minimize chance of injury from an accident such as an overturn.

Do not use a seat belt if operating without a ROPS.



#### KEEP RIDERS OFF MACHINE

Only allow the operator on the machine. Keep riders off.

Riders on a machine are subject to injury such as being struck by foreign objects and being thrown off of the machine. Riders also obstruct the operator's view resulting in the machine being operated in an unsafe manner.



A86;TS173 053;RIDER 261184

#### HANDLE STARTING FLUID SAFELY

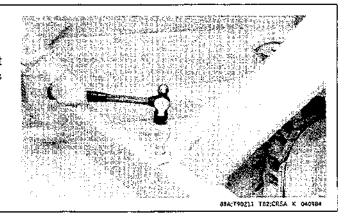
If your machine is equipped with a starting fluid starting aid, remember starting fluid is highly flammable. DO NOT incinerate or puncture a starting fluid container. DO NOT store a starting fluid container in a high-temperature area.



44A;T90207 T82;CRSA G 070684

#### PROTECT AGAINST FLYING DEBRIS

When you drive connecting pins in or out, guard against injury from flying pieces of metal or debris. Wear goggles or safety glasses and hard hat.

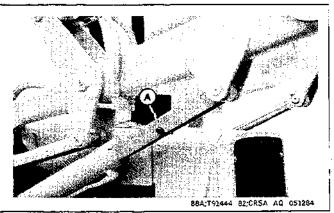


#### SUPPORT RAISED EQUIPMENT

Do not work under raised equipment unless it has a support under it.

On crawler loaders, use the boom safety lock bar (A) stored in the battery compartment.

If a support is not available, lower equipment to the ground.



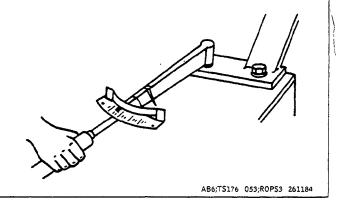
I-I-08

TM-1331 (Apr-85)

#### KEEP ROPS INSTALLED PROPERLY

Make certain all parts are reinstalled correctly if the roll-over protective structure (ROPS) is loosened or removed for any reason. Tighten mounting bolts to proper torque.

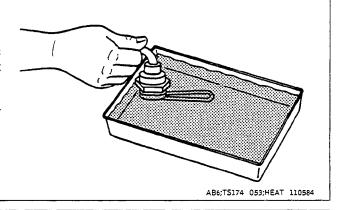
The protection offered by ROPS will be impaired if ROPS is subjected to structural damage, is involved in an overturn incident, or is in any way altered. A damaged ROPS should be replaced, not reused.



#### TEST COOLANT HEATER IN LIQUID ONLY

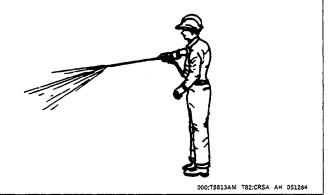
Do not plug coolant heater into electrical power unless heating element is immersed in coolant. Sheath could burst and result in personal injury.

Use a heavy-duty grounded cord to connect coolant heater to electrical power.



#### **CLEAN THE MACHINE REGULARLY**

Remove any grease, oil or debris build-up to avoid possible injury or machine damage.



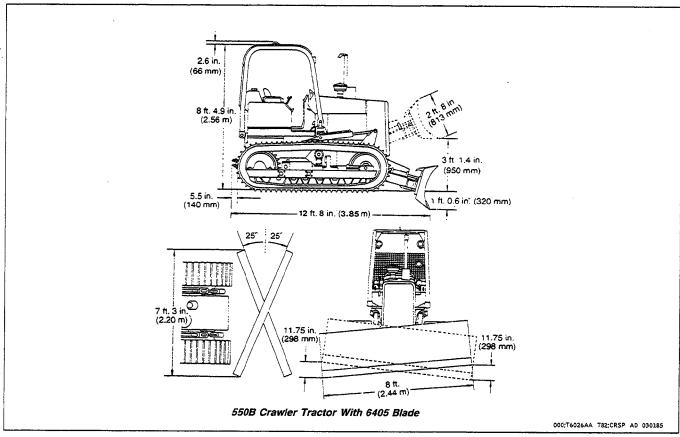
#### PREPARE MACHINE FOR REPAIR

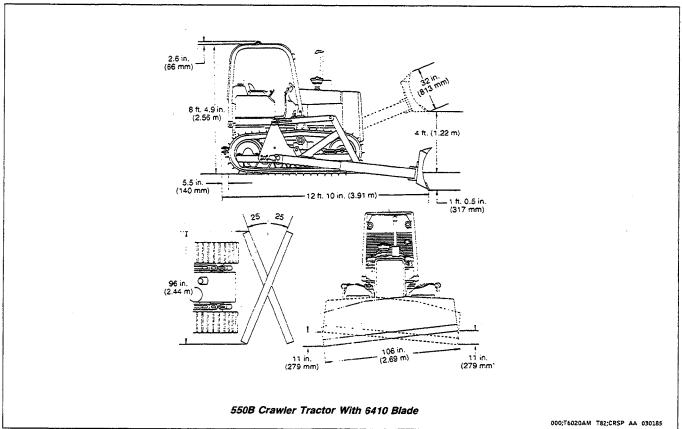
- 1. Lower all equipment to the ground.
- 2. Move gear shift lever to the neutral "N" position.
- 3. Turn neutral lock lever to the lock position.
- 4. Apply and lock foot brake.
- 5. Stop the engine.
- 6. Operate all hydraulic control levers to release hydraulic pressure in the system.
- 7. Disconnect negative (-) battery cable.

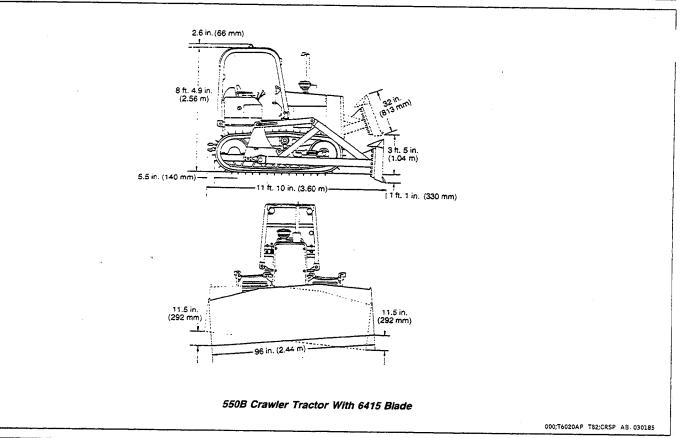


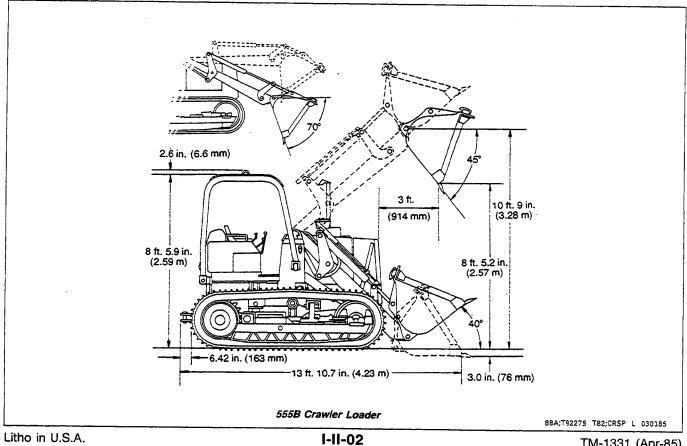
000;T60128AT82;CRSA BA 080165

## Group II Specifications









#### Specifications

#### **CAPACITIES**

	U.S.	Metric
Engine coolant	5 gal	18.9 L
Engine oil including filter		
Transmission		
Hydraulic reservoir (550B)		
Hydraulic reservoir (555B)	7 gal	26.5 L
Hydraulic system (550B):	-	
(6405 dozer)	9.5 gal	36.0 L
(6410 dozer)(6415 dozer)		
Hydraulic system (555B)	13 gal	49.2 L
Steering clutch housing (each side)	3.5 gal	13.2 L
Fuel tank	36 gal	136 L
SAE Operating Weight:		
16 in. (406 mm) grouser shoes		3.510 lb (6126 kg)
6405 dozer and 16 in. (406 mm) grouser shoes		
6410 dozer and 18 in. (457 mm) grouser shoes		
6415 dozer and 18 in. (457 mm) grouser shoes		
SAE Operating Weight (555B):	18	3,800 lb (8 526 kg)
(Outside a state of the state o		!

(Specifications and design subject to change without notice. Wherever applicable, specifications are in accordance with ICED and SAE Standards. Except where otherwise noted, these specifications are based on a unit with roll-over protective structure and standard equipment.)

T82;CRSP AC 030185

#### **GENERAL SPECIFICATIONS**

E	n	a	İ	n	e	:

John Deere 4-cylinder turbocharged diesel SAE net horsepower . . . . . . 78 hp (58 kw) Piston displacement...... 276 cu. in. (4.524 L) Fan ..... Blower Electrical system...... 12 volt with alternator Battery (12 volt) . Reserve capacity: 180 minutes

#### Steering:

Clutches . . . . . Oil-cooled, hydraulically activated, multiple disk, 11 in. (279 mm) disks; 16 friction surfaces per clutch.

#### **Hydraulic Cylinders**

(550B):	Bore	Stroke
Lift (2)	. 3.5 in. (89 mm)	15 in. (381 mm)
Angle (2)	. 3.5 in. (89 mm)	13.375 in.
		(343 mm)
Tilt (1) (6405)	. 3.5 in. (89 mm)	3 in. (76 mm)
Tilt (1) (6415)	. 4.5 in. (114 mm)	3 in. (76 mm)

#### **Hydraulic Cylinders**

,000D) <del>.</del>	Bore	Stroke	
Boom (2).	. 4.25 in. (108 mm	) 28.25 in. (718 m	ım)
Bucket (2)	3.5 in (80 mm)	31.1 in (790 m)	m)

Bucket (2) . 3.5 in. (89 mm) 31.1 in. (790 mm)

#### Hydraulic System:

Pressure:
550B
555B
Pump flow at 2000 rpm (550B):
Large pump New-17.8 gpm (67.2 L/min)
Used-14.9 gpm (56.7 L/min)
Small pump New-13.2 gpm (49.9 L/min)
Used-10.4 gpm (39.4 L/min)

Pump flow at 2000 rpm (555B):

Pump...... New—21.7 gpm (82.0 L/min) Used-18.5 gpm (70.0 L/min)

#### **Undercarriage:**

Track shoes, each side:	
550B	36
555B	
Track gauge	52 in. (1.27 m)
550B Wide Track	
Clearance at rear crossbar 14.	25 in. (362 mm)

T82;CRSP AV 200285