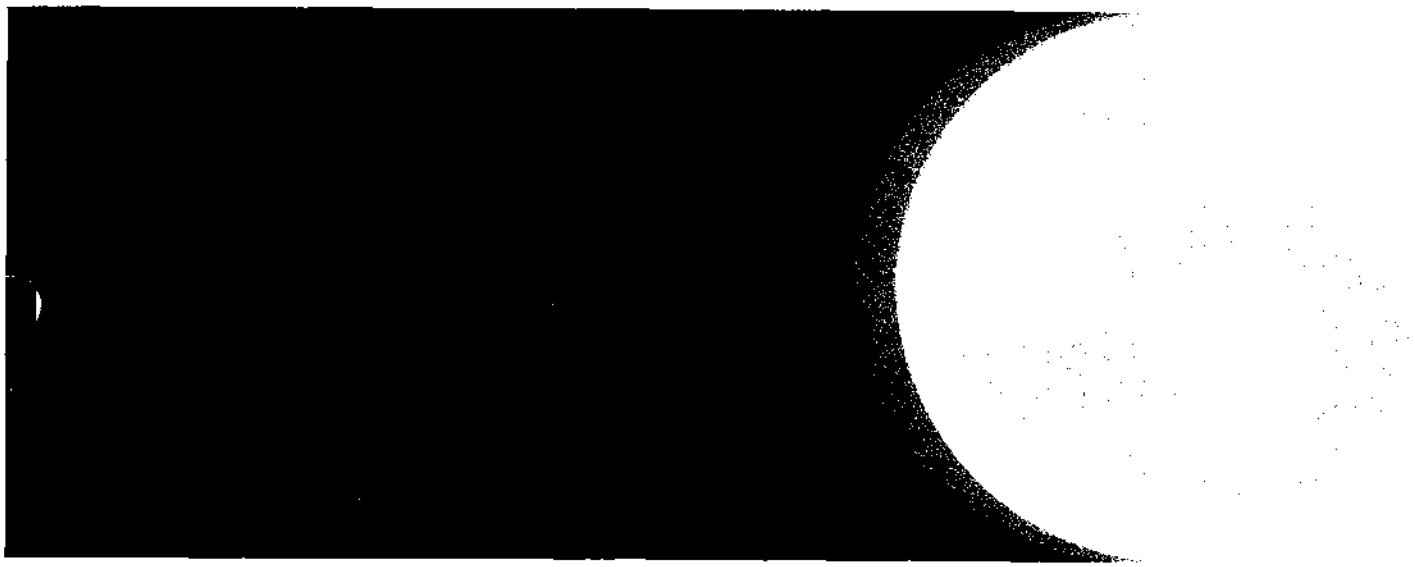
# John Deere
# JD555
# Crawler Loader



# TECHNICAL MANUAL

John Deere Dubuque Works
TM-1111

Litho in U.S.A.

# JD555 Crawler Loader

**Technical Manual**
**TM-1111 (Nov-86)**

## SECTIONAL CONTENTS OF THIS MANUAL



*continued on page 3*



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## SECTIONAL CONTENTS (Continued)



*The specifications and design information contained in this manual were correct at the time it was printed. It is John Deere's policy to continually improve and update our machines. Therefore, the specifications and design information are subject to change without notice. Wherever applicable, specifications and design information are in accordance with SAE and IEMC standards.*

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## SECTION AND GROUP CONTENTS OF THIS MANUAL



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# Group II
# INTRODUCTION AND SAFETY INFORMATION
# INTRODUCTION

*Use FOS Manuals for Reference*

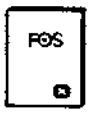
*Use Technical Manuals for Actual Service*

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

The two kinds of manuals work as a team to give you both the general background and technical details of shop service.

**•FOS Manuals—for reference**

*Fundamentals of Service (FOS) Manuals* cover basic theory of operation, *fundamentals* of trouble shooting, *general* maintenance, and *basic* types of failures and their causes. FOS Manuals are for training new personnel and for reference by experienced service technicians.




When a service technician should refer to a FOS Manual for more information, a FOS symbol like the one at the left is used in the TM to identify the reference.

**•Technical Manuals—for actual service**

*Technical Manuals are concise* service guides for a *specific* machine. Technical manuals are on-the-job guides containing only the vital information needed by an experienced mechanic.

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 whenever in doubt about correct service procedures or specifications.

Some features of this manual:

- Inside front cover - "Table of Contents".
- Section I - Contents, safety information, general specifications and general services.
- Sections 1 through 42 - Removal, repair, testing (components removed), installation, and adjustment.
- Section 90 - Detailed explanation of system operation, diagnosis, visual inspection, testing, and adjustments.
- Specifications grouped and illustrated at the end of each section.

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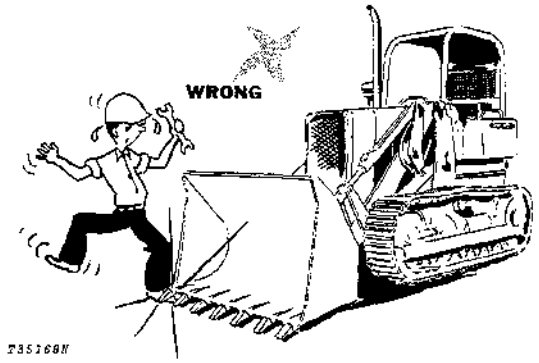
# MAINTENANCE WITHOUT ACCIDENT

Before servicing, adjusting, or repairing crawlers which have attachments such as buckets, etc.—**LOWER** attachments to the ground—or, if necessary to raise them for access to certain parts, **SECURELY SUPPORT** by external means. **DO NOT** rely on controls to support or position attachments for maintenance.

Never allow **ANYONE** to walk under equipment that is raised and not properly blocked.

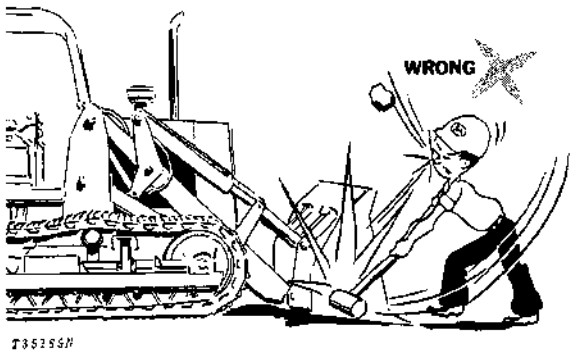



Avoid working directly under raised and blocked equipment unless absolutely necessary.

If the machine is on an incline, block it securely.

Use hoisting equipment for lifting heavy parts. **TAKE CARE! WATCH OUT FOR OTHER PEOPLE IN THE VICINITY.**

Use extreme caution in removing radiator caps, drain plugs, grease fittings, or hydraulic pressure caps.




Wear safety glasses when drilling, grinding, or hammering metal.

Make sure the maintenance area is adequately vented.

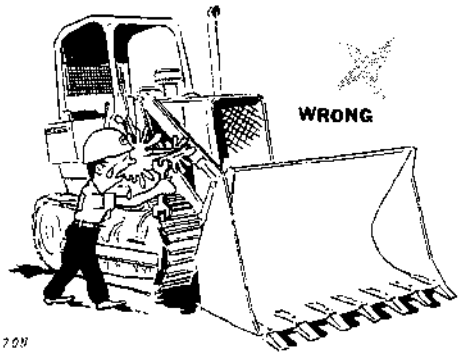
Keep maintenance area CLEAN AND DRY. Oily and wet floors are slippery; greasy rags are a fire hazard; wet spots are dangerous when working with electrical equipment.

Store starting aids in a cool and well-ventilated place, out of the reach of unauthorized personnel.

## SERVICING PRECAUTIONS

Stop the engine before cleaning or lubricating the equipment.

Lower mounted equipment and tools to the ground *carefully.*




Engine coolant gets hot! Don't remove the radiator cap until coolant temperature is below the boiling point. Then turn cap slightly to relieve pressure before removing.

Exhaust gases are dangerous! Periodically check exhaust system for excessive leakage.

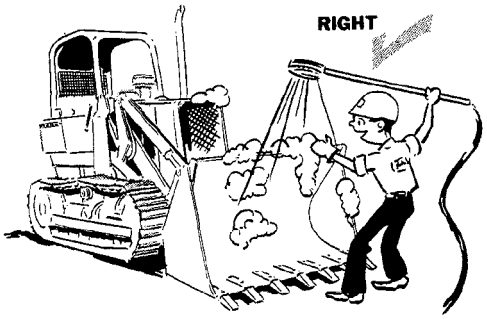
Don't forget a hydraulic system may be pressurized! To relieve pressure, shut off engine and move control levers until hydraulic functions do not respond.

When checking hydraulic pressure, be sure to use the correct test gauge for the pressure in the particular system.

# MAINTENANCE WITHOUT ACCIDENT

Keep ALL equipment free of dirt and oil. This attention will minimize fire hazards and facilitate spotting of loose or defective parts.

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.

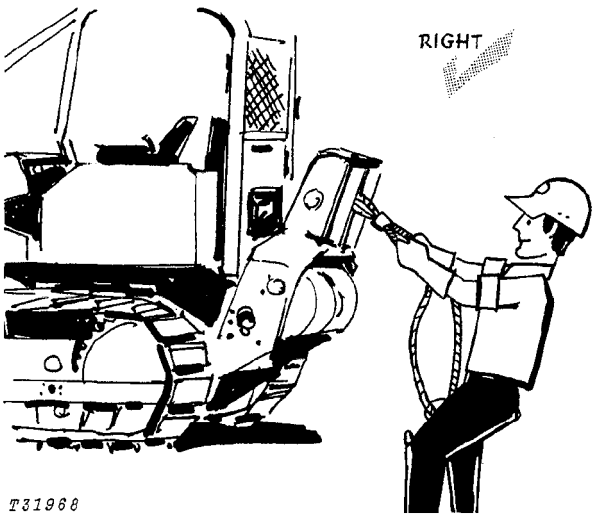



T35171N

## ADJUSTING PRECAUTIONS

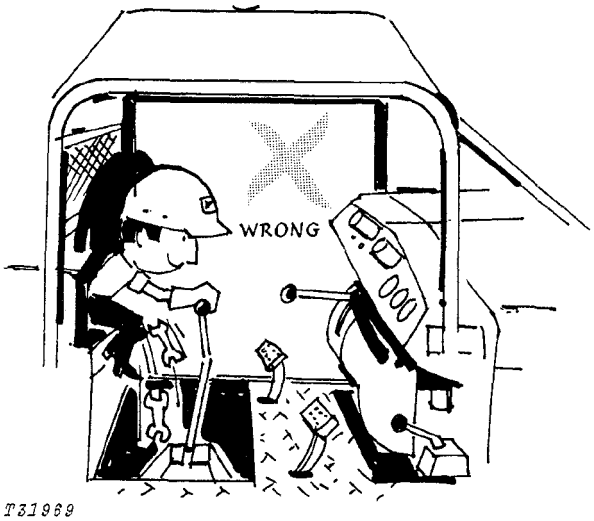
*....for Operating Adjustments*

Keep clutch and brake control units properly adjusted at all times. Before making adjustments, stop engine.




T31968

**Always Wear Gloves When Handling Cable.**

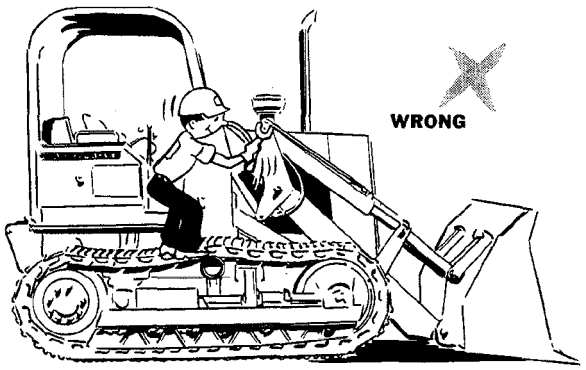



T31969

Before removing any housing covers, stop engine. Take all objects from your pockets which could fall into the opened housings. Don't let adjusting wrenches fall into opened housings.

*....for Maintenance Adjustments*

Don't attempt to check belt tension while the engine is running.




T35172N

Don't adjust the fuel system while the machine is in motion.

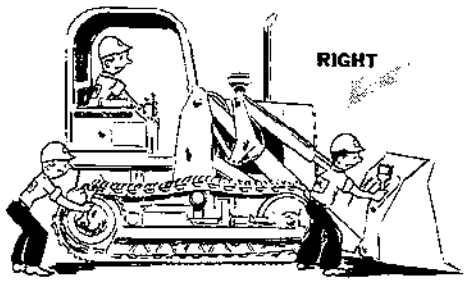
# MAINTENANCE WITHOUT ACCIDENT

## PRECAUTIONS DURING REPAIR

Before working on the engine fuel system—close fuel shutoff valve.

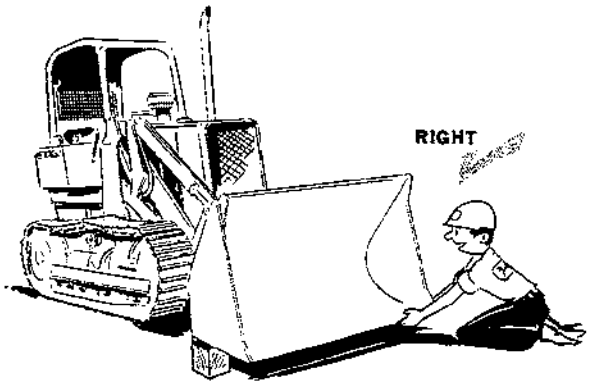
Before working on hydraulic system—make sure engine is not running and the system pressure is relieved by working the control levers in all directions with the engine shut off.

Before repairing the electrical system, or performing a major overhaul, make sure the batteries are disconnected.




T35173N

Keep all equipment free of dirt and oil. This attention will minimize fire hazards and facilitate spotting of loose or defective parts.




T35174N

When changing cutting edges on the bucket—

Stop the engine and securely block the bucket.

Never let your bare hands come in contact with the sharp edges. WEAR GLOVES.


T27508N

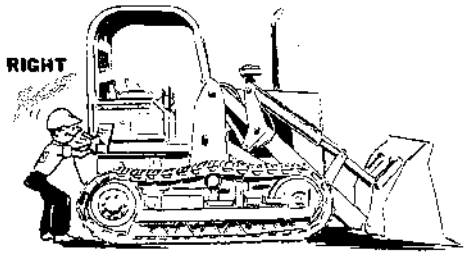
# MAINTENANCE WITHOUT ACCIDENT

## KNOW EQUIPMENT IS READY!

Check guards, ROPS, safety bars—all protective devices installed on the crawler. Every one should be in place and secure.

## CHECK IT OUT!

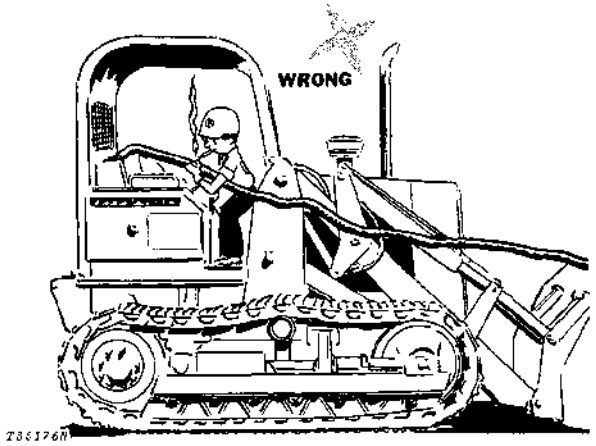
- ☐ GUARDS
- ☐ SHIELDS
- ☐ PROTECTIVE DEVICES
- ☐ ROLL-OVER PROTECTIVE STRUCTURES
- ☐ SEAT BELTS, ETC.




T351753

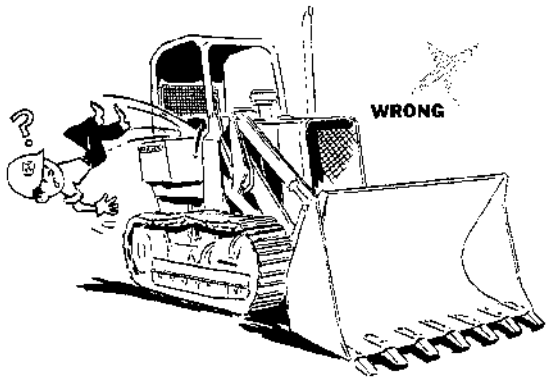
Carefully inspect equipment for visual defects—leaks in fuel, lubrication, and hydraulic systems. Do not search for pressurized fluid leaks with your hands. Use cardboard or wood to search for leaks.

Check and secure all caps and filler plugs for fuel, oils, radiator, etc.




T351760

Check levels of fuel, coolant, hydraulic fluid, and lubricating oil. If fuel must be added—**FIRST, PUT OUT THAT CIGARET.**




T351770

Be sure to clean any oil, grease or mud accumulation from floor of operator's compartment, stepping points, and grab rails to minimize the danger of slipping.

In freezing weather beware of snow or ice deposits on stepping points, grab rails, and floor.

Remove loose bolts, tools, or other objects from floor of operator's compartment.

Although it is impractical to try to cover every possible maintenance situation, the safety precautions recommended here should serve to develop and promote safe maintenance procedures.

The information contained in this manual is not intended to replace safety codes, insurance requirements, federal, state, and local laws, rules and regulations. In particular, your service area or jobsite activities may be subject to state safety rules and/or federal regulation under the Occupational Safety and Health Act (OSHA). Familiarize yourself with all regulations applicable to your situation in order to avoid possible safety violations.

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# Group III
# GENERAL SPECIFICATIONS

*(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 equipped with 1-1/4 cu. yd. (0.96 m³) digging bucket with teeth, roll-over protective structure and standard equipment.)*

| Power (@ 2,200 engine rpm): | SAE | DIN |
|---|---|---|
| Gross | 80 hp (59.7 kW*) | |
| Net | 72 hp (53.7 kW*) | 73 PS |

Net engine flywheel power is for an engine equipped with fan, air cleaner, water pump, lubricating oil pump, fuel pump, alternator and muffler. The gross engine power is without fan. Gross and net flywheel power ratings are under SAE standard conditions of 500-ft. (152 m) altitude and 85°F (29°C) temperature and DIN 70 020 conditions (non-corrected). No derating is required up to 10,000 feet (3000 m) altitude.

**In the international system of units (SI), power is expressed in Kilowatts (kW).*

ENGINE:
John Deere, 4-cylinder, turbocharged diesel, 4-stroke cycle

Bore and stroke ..... 4.19 x 5.00 in. (106.4 x 127 mm)
Piston displacement .....276 cu. in. (4 523 cm³)
Compression ratio ..... 16.2 to 1
Maximum torque @ 1,200 rpm ..... 230 lb-ft (31.8 kg-m)
NACC or AMA (U.S. Tax) horsepower ..... 28
Lubrication ..... Pressure system with full-flow filter and cooler
Main bearings ..... 5
Cooling ..... Pressurized with dual thermostat and controlled bypass
Fan ..... Blower
Air cleaner with restriction indicator ..... Dry
Electrical system ..... 12-volt
Battery .....Reserve capacity: 180 minutes

TRANSMISSION:
Converter-driven, 3-speed forward and reverse, Power Shift.

STEERING:
Steering clutches and brakes are controlled by a single pedal for each track. A separate pedal provides braking, and lockdown for parking.
Clutches.....Oil-cooled, hydraulically-actuated, multiple-disk, 11-in. (279 mm) disks; 16 friction surfaces per clutch.
Brakes...Self-adjusting, self-energizing, oil-cooled contracting band with bonded lining.

TRAVEL SPEEDS:

| | Forward | | Reverse | |
|---|---|---|---|---|
| | mph | km/h | mph | km/h |
| 1st | 2.01 | 3.23 | 2.42 | 3.89 |
| 2nd | 3.26 | 5.25 | 3.90 | 6.28 |
| 3rd | 5.63 | 9.06 | 6.75 | 10.86 |

HYDRAULIC SYSTEM:
Control ..... Triple hydraulic valve with single-lever bucket control and third function control
Pump ..... Gear, 28 gpm (106 Lpm)
Pressure..... 2,250 psi (158.2 kg/cm²)
Oil lines ..... Seamless steel tubing; double-wire braid hose
Filter ..... Micronic in return line

HYDRAULIC CYLINDERS:

| | Bore | Stroke |
|---|---|---|
| Boom, two | 4.25-in. (108 mm) | 28.25-in. (718 mm) |
| Bucket, two | 3.5 in. (89 mm) | 31.1-in. (790 mm) |
| Cylinder rods | Ground, heat-treated, chrome-plated, polished | |
| Boom cylinder rods | 2.25-in. (57 mm) dia. | |
| Bucket cylinder rods | 1.75 in. (44.5 mm) dia. | |

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TRACKS (5-roller track frames with rock guards):
Triple semi-grouser, open-center ..... 14-in. (356 mm)
Track shoes, each side ..... 37
Ground contact area ..... 2,128 sq. in. (13 729 $cm^2$)
Ground pressure ..... 8.2 psi (0.58 $kg/cm^2$)
Length of track on ground ..... 76 in. (1.93 m)
Track gauge ..... 52 in. (1.32 m)
Carrier roller ..... 1
Adjustment ..... Hydraulic
Clearance at rear crossbar ..... 14.25 in. (362 mm)

| BUCKETS: | SAE Heaped Capacity | Width |
|---|---|---|
| Digging | 1-1/4 cu. yd. ($0.96\ m^3$) | 72.25 in. (1.84 m) |
| Light Materials | 1-3/4 cu. yd. ($1.34\ m^3$) | 78.25 in. (1.99 m) |
| Multi-purpose | 1-1/4 cu. yd. ($0.96\ m^3$) | 73 in. (1.85 m) |

OPERATING INFORMATION:
Breakout force ..... 15,750 lb. (7 144 kg)
Lifting capacity, full height .... 10,600 lb. (4 808 kg)
Maximum dumping angle ..... 50 deg.
Raising time ..... 7.0 sec.
Dumping time ..... 1.6 sec.
Lowering time ..... 4.0 sec.

| CAPACITIES: | U.S. | Litres |
|---|---|---|
| Cooling system | 5 gal. | 18.9 |
| Fuel tank | 36 gal. | 136.3 |
| Crankcase including filter | 15 qt. | 14.2 |
| Transmission (total capacity) | 13.5 gal. | 51.1 |
| Final drive (each) | 7 qt. | 6.6 |
| Hydraulic reservoir | 7 gal. | 26.5 |
| Hydraulic system | 13 gal. | 49.2 |
| Steering clutch housing (each side) | 28 qt. | 26.5 |
| Winch reservoir | 9 qt. | 8.5 |
| SAE operating weight with ROPS | 18,225 lb. (8 267 kg) | |

ADDITIONAL STANDARD EQUIPMENT:
Front bottom guard
Front hitch
Cushion seat with arm rests
Key switch with push-button start switch
Precleaner
Electric hour meter
Cigar lighter
Vandal protection
Bottom guard counterweight with fixed drawbar
Bucket level indicator
Radiator sand shield
Sprocket weights
Lights
Enclosed alternator with solid state regulator
Engine side shields
Boom safety lock bar
Muffler
Tachometer
Cold weather starting aid
Front idler shields
Master electrical disconnect switch
Return-to-dig
Decelerator
Pedal steering

SPECIAL EQUIPMENT:
13-in. (330 mm) rubber shoes
Cab (includes ROPS)
Winch drive
Two batteries
Rear counterweight for multi-purpose bucket or log loader
Brush screens
Limb risers with overhead exhaust

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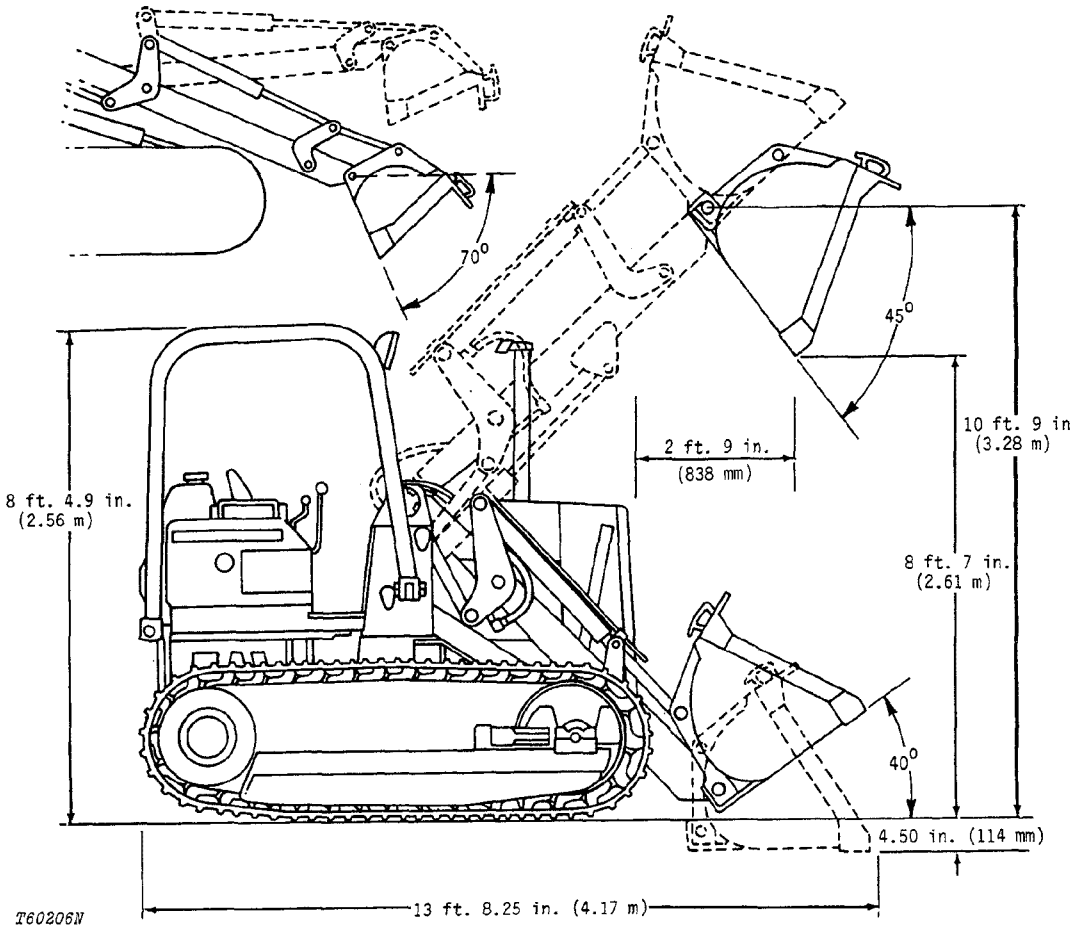
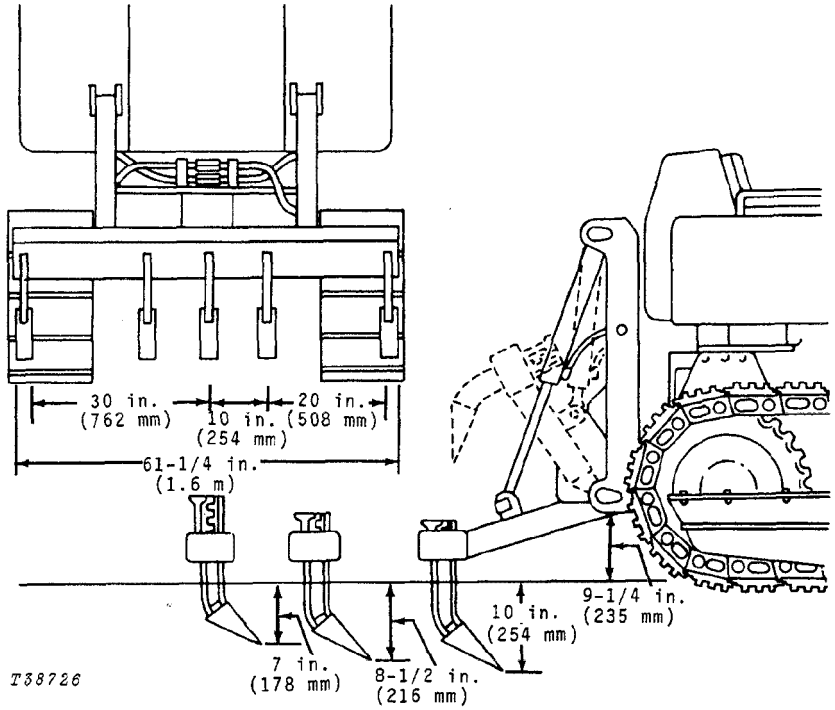
## LOADER OPERATING DIMENSIONS

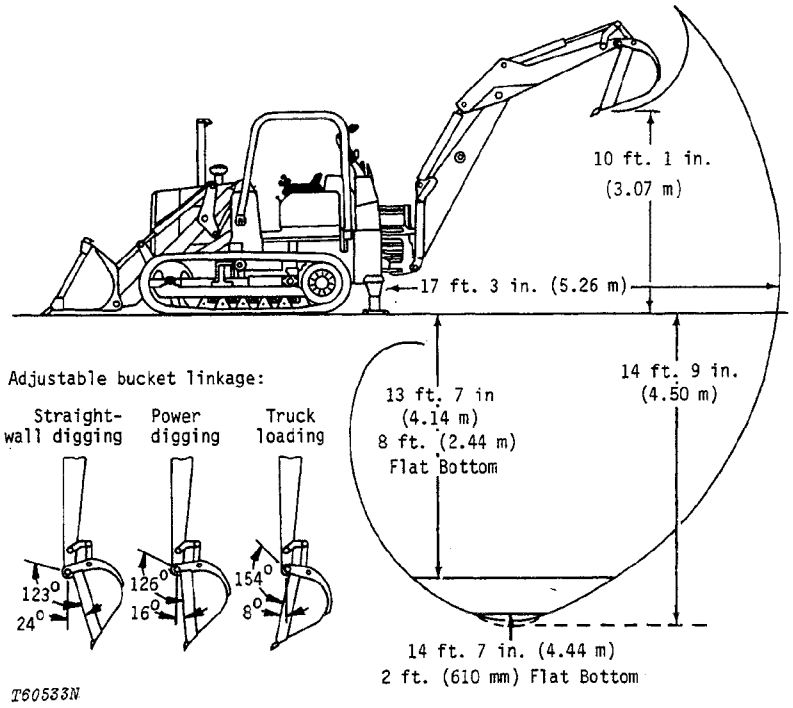


## 3110 RIPPER DIMENSIONS




| | |
|---|---|
| Width (overall) | 66 inches (1.7 m) |
| Working width (max.) | 61-1/4 inches (1.6 m) |
| Penetration (Adjustable) | 7, 8-1/2, 10 inches (178, 216 and 254 mm) |
| Cylinders | Double-Acting |
| Bore | 2-1/2 inches (63.5 mm) |
| Stroke | 15 inches (381 mm) |
| Weight with three teeth | 685 pounds (311 kg) |
| Ground clearance at frame | 9-1/4 inches (235 mm) |

# 9300 BACKHOE SPECIFICATIONS




**Operating Information:**

**Digging Depth (ICED):**

| | |
|---|---|
| Maximum | 14 ft. 9 in. (4.50 m) |
| 2-ft. (610 mm) flat bottom | 14 ft. 7 in. (4.44 m) |
| 8-ft. (2.44 m) flat bottom | 13 ft. 7 in. (4.14 m) |
| Swing arc | 180 deg. |
| Digging force (bucket cylinder), ICED | 9226 lb. (41.35 kN) (4185 kg) |
| Digging force, crowd cylinder | 5835 lb. (26.15 kN) (2647 kg) |
| Reach from center of swing mast, ICED | 17 ft. 3 in. (5.26 m) |
| Loading height, ICED | 10 ft. 1 in. (3.07 m) |
| Transport height | 11 ft. 1 in. (3.38 m) |

**Hydraulic System**

| | |
|---|---|
| Pressure | 2250 psi (155.1 bar) (158.2 kg/cm²) |
| Pump | 28 gpm (106 L/min) @ 2500 engine rpm |

**Hydraulic Cylinders:**

| | Bore | Stroke | Rod Diameter |
|---|---|---|---|
| Boom | 4.5-in. (114 mm) | 34-in. (864 mm) | 2.25-in. (57 mm) |
| Crowd | 4-in. (102 mm) | 33-in. (838 mm) | 2-in. (51 mm) |
| Bucket | 3.5-in. (89 mm) | 27.37-in. (695 mm) | 2.25-in. (57 mm) |
| Stabilizer | 4-in. (102 mm) | 16.62-in. (422 mm) | 2-in. (51 mm) |

Swing cylinder Rotary vane-type; built-in automatic swing cushion
Cylinder rods Ground, heat-treated, chrome-plated, polished

**Stabilizer Width:**

| | |
|---|---|
| Transport position | 7 ft. 3 in. (2.21 m) |
| Operating position (overall) | 10 ft. 6 in. (3.20 m) |
| Operating position (ICED) | 9 ft. 1 in. (2.77 m) |

| Buckets: | Width | | Struck Capacity | |
|---|---|---|---|---|
| | in. | mm | cu. ft. | m³ |
| Standard | 12 | 305 | 2.5 | 0.071 |
| | 16 | 406 | 3.6 | 0.102 |
| | 18 | 457 | 4.4 | 0.125 |
| | 24 | 610 | 6.0 | 0.170 |
| | 30 | 762 | 7.6 | 0.215 |
| | 36 | 914 | 7.2 | 0.204 |
| Heavy-duty | 18 | 457 | 4.4 | 0.125 |
| | 24 | 610 | 6.0 | 0.170 |
| | 30 | 762 | 7.6 | 0.215 |
| Ejector | 24 | 610 | 4.2 | 0.119 |

**Attachments:**

Ripper tooth replaces backhoe bucket. Cast steel, 225 lb. (102 kg) tooth has hardened replaceable tip. Bolt-on rubber street pads for stabilizer pads.

**Shipping Weight:**

Exclusive of mounting parts, bucket, and front counterweights ..... 3200 lb. (1452 kg)