

John Deere JD24 Skid-Steer Loader



JOHN DEERE

TECHNICAL MANUAL

John Deere JD24
Skid-Steer Loader

TM1042 (01DEC74) English

John Deere
Lawn & Grounds Care Division
TM1042 (01DEC74)

LITHO IN U.S.A.
ENGLISH



JD24 SKID-STEER LOADER

TECHNICAL MANUAL

TM-1042 (Dec-74)

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SI (International System) UNITS OF MEASURE

Metric equivalents have been included, where applicable, throughout this technical manual.

"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."

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FOR YOUR CONVENIENCE

Vertical lines appear in the margins of many of the pages. These lines identify new material and revised information that affects specifications, procedures, and other important instructions.

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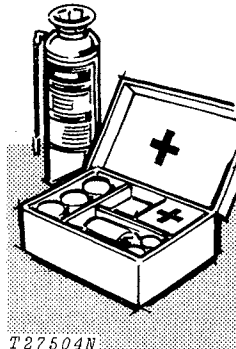
SAFETY AND YOU

INTRODUCTION

 This safety alert symbol identifies important safety messages in this manual and on the skid-steer loader. When you see this symbol, be alert to the possibility of bodily injury and carefully read the message that follows.



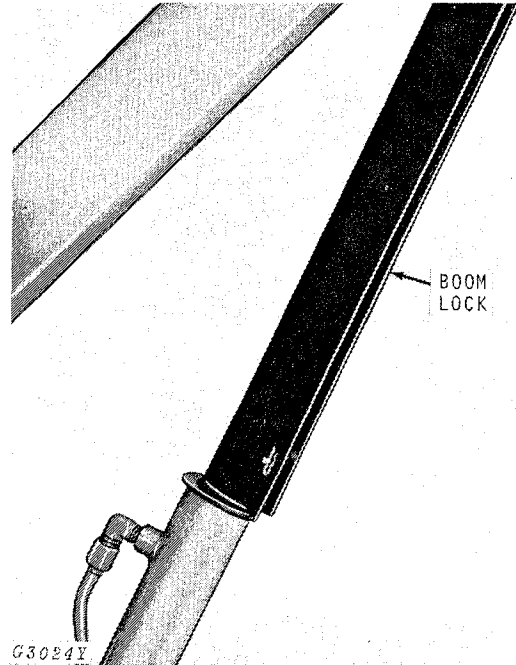
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Be prepared if an accident or fire should occur. Know where the first aid kit and the fire extinguishers are located—know how to use them.

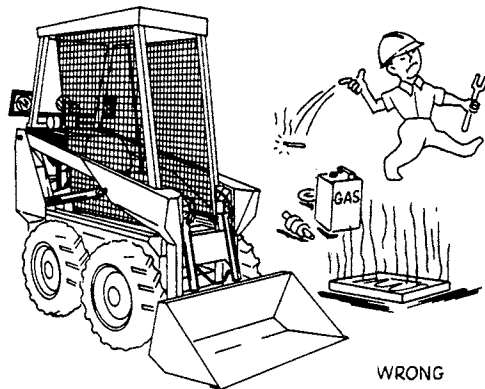
BOOM LOCKS CAUTION



Install the boom locks on the lift cylinders as follows whenever work or repair is being done on the loader with the boom raised:

1. Start the engine and raise the boom to its greatest height. Shut off the engine.
2. Lay the boom locks on the cylinder rods and install the drilled pins and spring pins.
3. Install boom locks on other cylinder rods in the same manner.
4. Lower the boom until it contacts the boom locks.

IMPORTANT: After servicing the loader, raise the boom and remove the boom locks.

AVOID FIRE HAZARDS

G6018N

WRONG

Don't smoke while refueling or handling highly flammable material.

Engine should be shut off when refueling.

Use care in refueling if the engine is hot.

Don't use open pans of gasoline or diesel fuel for cleaning parts. Good commercial, nonflammable solvents are preferred.

Provide adequate ventilation when charging batteries.

Don't check battery charge by placing metal objects across the posts.

Don't allow sparks or open flame near batteries.

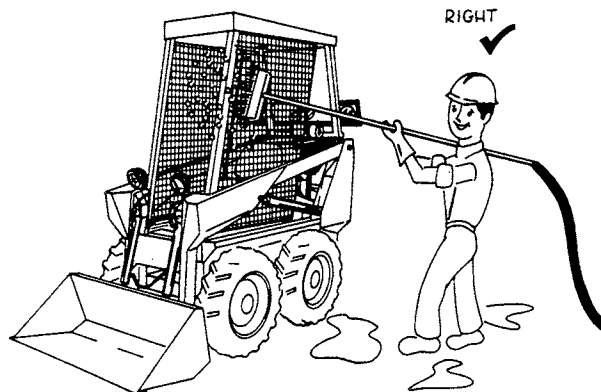
Don't smoke near battery.

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 a light anywhere on or around the equipment.

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

CLEANING THE LOADER

G6019N

Always stop the engine before cleaning the loader.

Keep the operator's platform clean. Do not use it as a storage area.

Keep the engine closure screens free of foreign matter. Avoid a possible fire hazard.

Keep all equipment free of dirt and oil. In freezing weather, beware of snow and ice on operator's platform.

SERVICE AREA

Keep the service area clean and dry. Wet or oily floors are slippery. Wet spots can be dangerous when working with electrical equipment.

Make sure the service area is adequately vented.

Periodically check the shop exhaust system for leakage. Engine exhaust gas is dangerous.

Be sure all electrical outlets and tools are properly grounded.

Use adequate light for the job at hand.

FLUIDS UNDER PRESSURE

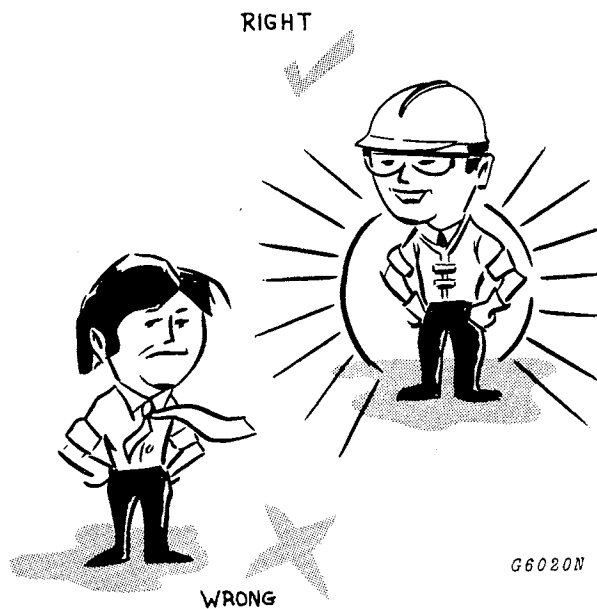
Escaping fluid under pressure can have sufficient force to penetrate the skin, causing serious bodily injury. Before disconnecting lines, be sure to relieve all pressure. Before applying pressure to the system, be sure all connections are tight and that lines, pipes and hoses are not damaged. Fluid escaping from a very small hole can be almost invisible. Use a piece of cardboard or wood, rather than hands, to search for suspected leaks.

If injured by escaping fluid, see a doctor at once. Serious infection or reaction can develop if proper medical treatment is not administered immediately.

Don't forget the hydraulic system may be pressurized! To relieve pressure, follow the technical manual.

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

PERSONAL SAFETY



Always avoid loose clothing—flopping cuffs, dangling neckties and scarves—that can catch in moving parts and put you out of work.

Always wear your safety glasses while on the job.

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

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.

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

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

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

Avoid working on equipment with the engine running. If it is necessary to make checks with the engine running, ALWAYS USE TWO MEN—one, the operator, at the controls, the other checking where the operator can see him. Also, put the transmission in neutral, set the brake, and apply any safety locks provided. KEEP HANDS AWAY FROM MOVING PARTS.

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

Section 10 GENERAL

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Group 5 SPECIFICATIONS

LOADER DESIGN

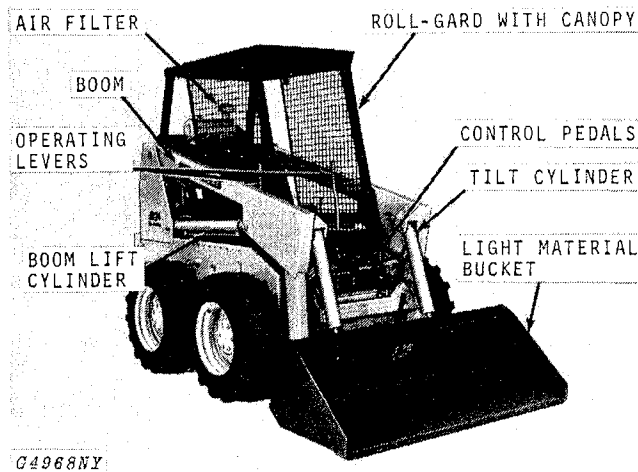


Fig. 1-JD24 Skid-Steer Loader

The JD24 Skid-Steer Loader is a 1700-pound capacity, self-propelled, four-wheel drive loader used for various material handling operations. It also has the ability to maneuver in small, tight areas.

All references in this manual to front, rear, left-hand and right-hand are in relation to the position of the operator seated in the operator's station.

SERIAL NUMBERS

The serial number plate is located on the right-hand side; inside the frame under the boom pivot.

LOADER SPECIFICATIONS

ENGINE (Gasoline)

Flywheel Horsepower at 2400 RPM	37 hp (27.59 Kw)
Number of Cylinders	4
Bore and Stroke	3.50 x 4 in. (8.89 cm x 10.16 cm)
Piston Displacement	154 cu. in. (252.41 cm ³)
Compression Ratio	5.05 to 1
Intake Valve Clearance	.008 in. (0.2032 mm)
Exhaust Valve Clearance	.016 in. (0.4064 mm)
Slow idle	900 RPM
Fast idle	2550 RPM
Starting	Electric
Fuel	Gasoline (Regular Grade)
Governor	Cam Gear Driven

ENGINE: (Diesel)

John Deere (3152D 3-cylinder, 4 stroke, diesel)	
Horsepower	37 (Flywheel) (27.59 Kw) (at 2500 engine rpm)
Displacement	152.0 cu. in. (249.08 cm ³)
Compression ratio	16.3:1
Bore and stroke, inches	3.86 x 4.33
Torque (ft-lbs) max. at 1300 rpm (9.80 x 10.99 cm)	(observed) (nominal) 92.0
N.A.CC or A.M.A. horsepower rating for tax purposes	(120.73 Nm) 17.88 (13.33 Kw)
Intake valve clearance	0.014" (0.357 mm)
Exhaust valve clearance	0.018" (0.457 mm)
Slow idle (rpm)	1200
Fast idle (rpm)	2650
Working speed range (rpm)	1500-2500

COOLING SYSTEM: (Diesel)

Capacity	14 U.S. quarts (13.25 l)
Thermostat	180°F (82°C)
Operating pressure	14 psi (96.52 kPa)

ELECTRICAL SYSTEM

Fuse	AGC 30
Battery Voltage	12-Volt
Battery Terminal Grounded	Negative Ground
Alternator Regulation	Regulator-Rectifier
Alternator	Belt driven, Motorola
Breaker Point Gap (Gasoline)	.020 in. (0.508 mm)
Spark Plugs (Gasoline)	
Size	18 mm
Gap	.030 in. (0.762 mm)

CAPACITIES (U.S. STANDARD MEASURES)

Fuel Tank	25 gal. (94.63 l)
Engine Crankcase (Gasoline)	4-1/2 qts. (4.26 l)
(Diesel)	6 qts. (5.68 l)

DRIVE SYSTEM

Gearbox	Transmits engine power to clutch packs. It drives hydraulic pump and variable drive pulley.
Clutch Packs	Multi-disk type, roller cam actuated with 11 wear surfaces and heavy-duty separator springs.

TRAVEL SPEEDS

Forward or Reverse	0 to 7 mph (11.3 km/hr.) (Gasoline) 0 to 6 mph (9.7 km/hr.) (Diesel)
Turning Radius	360 degrees in its own length

TIRES

Type	Flotation, grip-type
Size	10-16.5 6-ply rated
Type	Solid Rubber (Optional Diesel)
Size	6.50-16

HYDRAULIC SYSTEM:

Pressure 1750 psi
 (12.06 MPa)
 Control Dual pedal, double hydraulic
 system
 Pump Gear, 18 gpm (68.13 l/min.) at
 2,400 engine rpm
 Oil lines Welded JIC steel tubing; single-
 wire braid hose
 Filter 33 micron paper cartridge in
 suction line

HYDRAULIC CYLINDERS:

	Bore	Stroke
Boom (2)	3-inch (7.62 cm)	27.5-inch (69.85 cm)
Bucket (2)	3-inch (7.62 cm)	16.5-inch (41.91 cm)
Grapple (2)	2.5-inch (6.32 cm)	8-inch (20.32 cm)
Cylinder Rods	Ground, heat-treated, chrome plated, polished	
Boom cylinder rods	1.5-in. dia. (3.81 cm)	
Bucket cylinder rods	1.25-in. dia. (3.18 cm)	
Grapple cylinder rods	1.125-in. dia. (2.88 cm)	

LOAD CAPACITY .. Load capacity is 1700 lbs.
 (771.11 kg) Bucket capacities
 vary according to application

SHIPPING WEIGHT 4619 lbs.
 (2095.143 kg)

Distribution Rear - 73-1/2%, Front - 26-1/2%

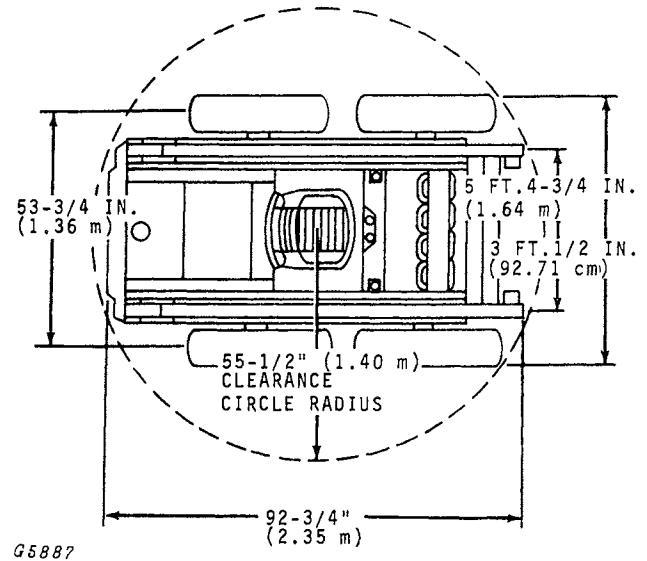
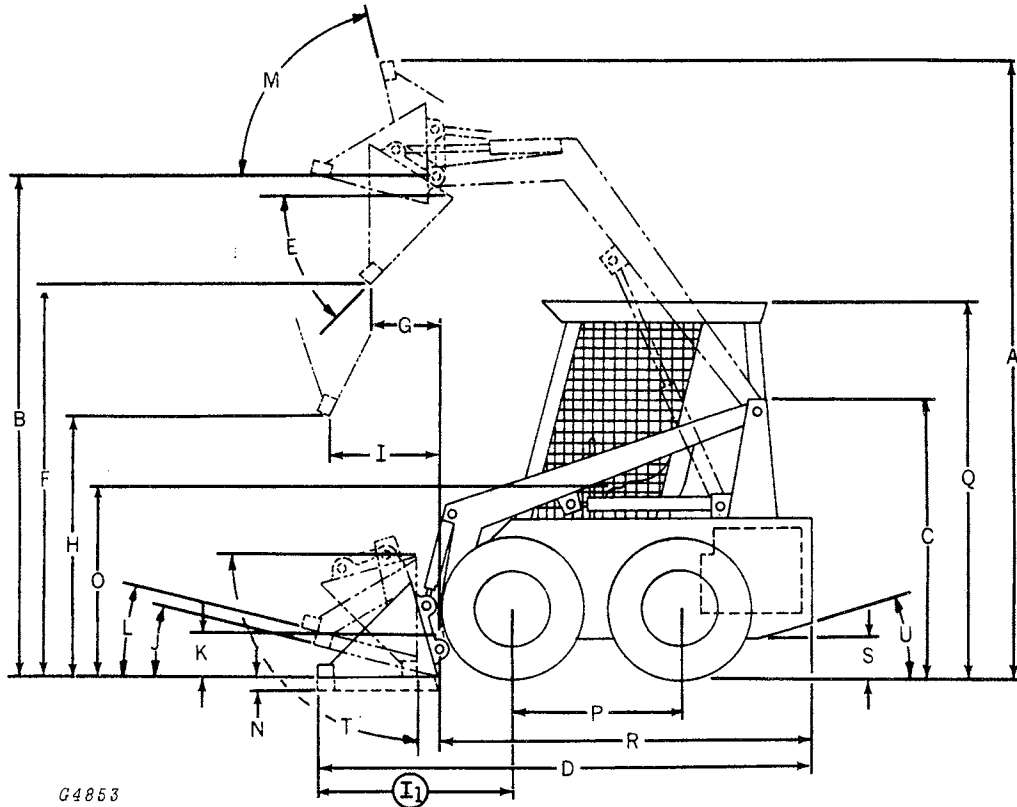


Fig. 2-Turning Radius and Dimensions



Specifications are in accordance with IEMC standards. Dimensions are with the Quik-Tatch Dirt and Foundry bucket.

A. Overall height - lift arms raised	149-1/4" (3.79 m)
B. Height to hinge pin (Maximum)	116" (2.94 m)
C. Overall height	61-1/2" (1.56 m)
D. Overall length - with bucket	122-3/4" (3.11 m)
E. Dump angle	37°
F. Dump height	91" (2.31 m)
G. Reach of maximum height	19-1/4" (48.9 cm)
I. Reach at "H" (25-1/4" [64.14 cm] at 74° dump)	20" (50.8 cm)
(28" [71.12 cm] at 45° dump)	35-3/4" (90.8 cm)
I1. Reach bucket on ground	52-1/4" (1.32 m)
J. Maximum rollback at ground	32°
K. Carry position	9-3/4" (24.77 cm)
L. Maximum rollback at carry position	34°
M. Maximum rollback - fully raised	104°
N. Digging depth	3/4" (1.91 cm)
O. Height to seat	42" (1.07 m)
P. Wheel base	35" (88.9 cm)
Q. Overall height with rollgard	85-1/4" (2.16 m)
R. Overall length - less bucket	91" (2.31 cm)
S. Ground clearance	7-3/4" (19.69 cm)
T. Maximum grading angle	94°
U. Angle of departure	20°

(Specifications and design subject to change without notice)

Group 10

PREDELIVERY, DELIVERY, AND AFTER-SALES SERVICES

PREDELIVERY SERVICE

Service	Specifications	Reference
Check battery for electrolyte level and specific gravity	Use battery hydrometer	See operator's manual
Check battery terminal connections	See operator's manual
Check variable speed drive belt for alignment	2-3/4-inch (6.98 cm)	See operator's manual
Adjust pressure of tires	45 to 50 PSI (310.26 to 344.74 kPa)	See operator's manual
Check nuts for tightness	90 ft-lbs (122.02 Nm) torque	
Check crankcase oil	Fill to top mark on oil level indicator	See operator's manual
Check gearbox oil level	1/4 pt (0.12 l) use SAE 80 gear oil.	See operator's manual
Lubricate grease fittings	John Deere Multi-Purpose Lubricant or an equivalent SAE Multipurpose-Type Grease	See operator's manual
Check hydraulic reservoir level	Fill to top mark on bayonet gauge	See operator's manual

DELIVERY SERVICE

A thorough discussion of the operation and service of a new loader at the time of delivery helps to assure complete customer satisfaction.

Complaints may arise if the owner is not shown how to operate and service his new loader correctly. Devote enough time, at your customer's convenience, to introduce him to his new loader.

The following procedure is recommended before the serviceman delivers the loader to the owner.

Using the operator's manual as a guide, be sure the owner thoroughly understands the following points:

1. Operation and use of controls.
2. Operation of the engine.
3. Operation and functions of the hydraulic system.
4. Importance of lubrication and periodic services.
5. Importance of safety.
6. Terms and conditions of warranty.

After explaining and demonstrating the above points, have the owner sign the delivery receipt and give him his operator's manual.