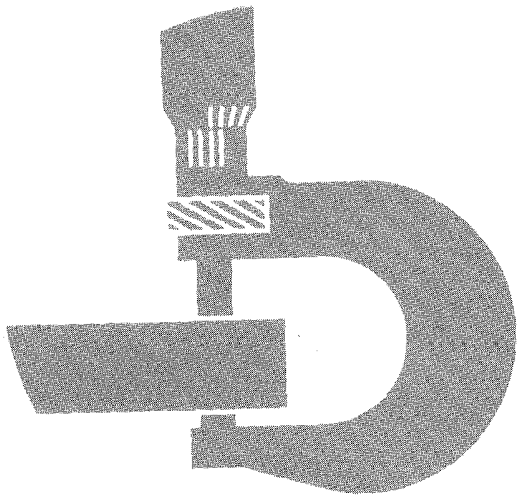
John Deere
JD693-B
Feller-Buncher



TECHNICAL MANUAL

TM-1170

Litho in U.S.A.

SECTION AND GROUP CONTENTS OF THIS MANUAL

Litho in U.S.A.

SECTION AND GROUP CONTENTS OF THIS MANUAL (Continued)

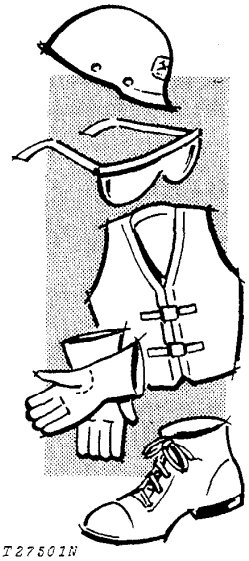
Litho in U.S.A.

MAINTENANCE WITHOUT ACCIDENT WORK SAFELY

T27999N

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

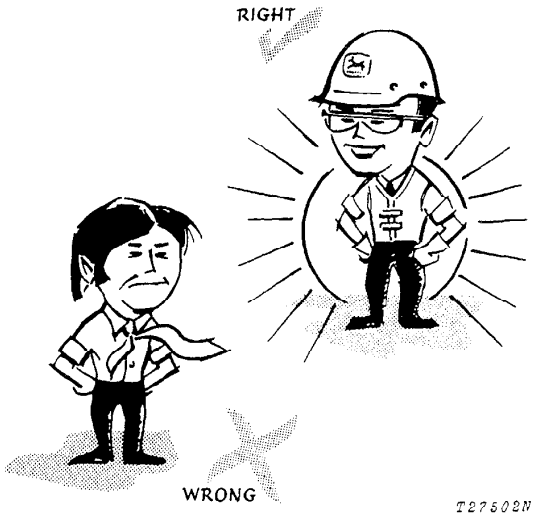
EVERY EMPLOYER HAS A SAFETY PROGRAM. KNOW WHAT IT IS!



T27501N

See your shop supervisor for specific instructions on a job, and the safety equipment required.

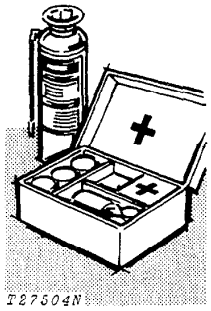
For instance, you may need: Hard hat, safety shoes, safety goggles, heavy gloves, reflector vest, ear protectors, respirator.



T27502N

BE ALERT!

Plan ahead. Work safely. Know how to use a first-aid kit and a fire extinguisher. Know where to get aid.



T27504N

Maintenance Area

Make sure the maintenance area has enough ventilation.

Keep the 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.

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

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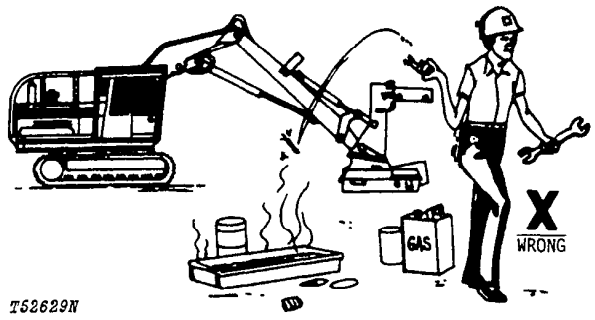
MAINTENANCE WITHOUT ACCIDENT

AVOID FIRE HAZARDS -

Fuel Is Dangerous!



Do not smoke while putting fuel in the fuel tank.

Do not smoke while working with material that will start on fire easily.

Stop the engine before filling the fuel tank.

If the engine is hot, use care when putting fuel in the fuel tank.

Do not use gasoline or diesel fuel for cleaning parts. Use solvents that will not start on fire.

Battery Gas Is Highly Flammable!

When charging batteries, be sure there is enough ventilation.

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

Do not let sparks or open flame near batteries.

Do not smoke near battery.

Flame Is Not a Flashlight!

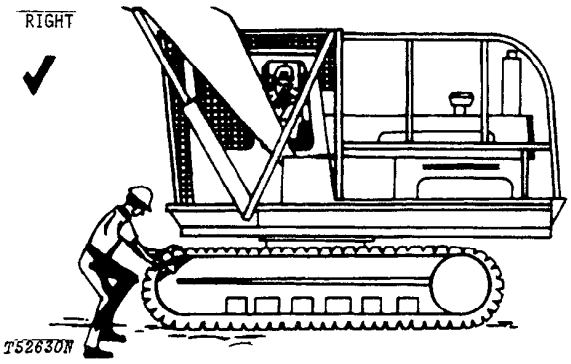
NEVER USE OPEN FLAME AROUND THE MACHINE.

KNOW WHERE FIRE EXTINGUISHERS ARE KEPT!

UNDER ALL MAINTENANCE CONDITIONS -

Do not work on the equipment unless you are approved to do so. Then be sure you know the safe and correct procedure.

Never work on equipment while it is being operated.



When the engine is running, avoid working on equipment.

If you must work on the machine with the engine running, ALWAYS USE TWO service technicians. One must be at the controls. The other must be within sight of the operator.

KEEP HANDS AWAY FROM MOVING PARTS.

Put a support under all raised equipment.

Never work under a raised shear.

Lower the shear to the ground.

If the machine is on a slope, use blocks to hold it in place.

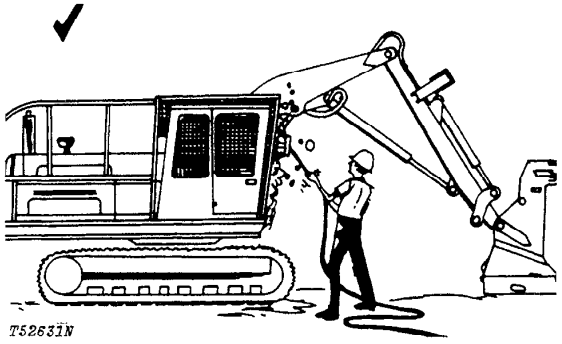
Do not lift heavy parts by yourself. Use hoisting equipment for this.

TAKE CARE! WATCH OUT FOR OTHER PEOPLE IN THE AREA.

When drilling, grinding, or hammering metal, wear safety glasses.

BE CAREFUL DURING SERVICE AND REPAIR

RIGHT



T52631N

Keep ALL equipment free of dirt and oil.

Clean oil, grease, mud, ice or snow from the operator's station, steps and hand rails.

When getting the engine ready for storage, remember that inhibitor changes easily into gas and is dangerous. After adding the inhibitor, seal and tape openings. When you are not using the inhibitor, keep the can tightly closed.

Do not remove the radiator cap unless you can hold your hand on the radiator tank. First, loosen the cap slowly to the stop. Then release all pressure in the cooling system before removing the cap.

Check the exhaust system regularly for leaks.

Release hydraulic pressure before working on the hydraulic system. Stop the engine. Lower the shear to the ground. Move the control levers until the boom and shear do not move.

When checking hydraulic pressure, be sure to use the correct test gauge.

Before working on the fuel system, close the fuel shutoff valve.

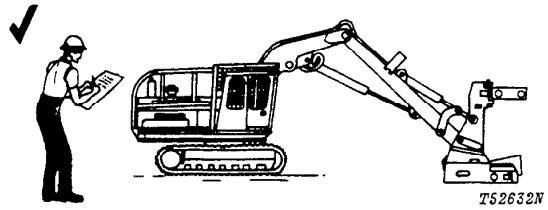
Before working on the electrical system, or making a major overhaul, disconnect the batteries.

Before working on the hydraulic system release hydraulic pressure. Remove the hydraulic reservoir filler cap slowly. Open the diffuser vent.

KNOW EQUIPMENT IS READY!

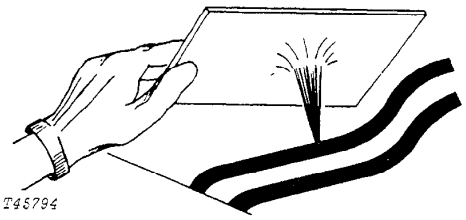
All parts must be in good condition and fastened in place.

RIGHT



T52632N

Carefully inspect all systems for leaks.



T45794

Use a piece of cardboard or wood, rather than hands, to search for suspected leaks.

Escaping fluid under pressure can penetrate the skin.

If injured by escaping fluid, see a doctor at once.

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Group III
GENERAL SPECIFICATIONS

(Specifications and design subject to change without notice. Wherever applicable, specifications are in accordance with SAE Standards. Except where otherwise noted, these specifications are based on a unit equipped with Rome Tree Shear and standard equipment.)

Power (at 2400 engine rpm):	**SAE**	**DIN**
Gross	141 hp (105.1 kW)	
Net	131 hp (97.7 kW)	133 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. Flywheel power ratings are under SAE standard conditions of 500 ft. (152 m) altitude and 85°F (29°C) temperature, and DIN 6270 conditions (non-corrected). No derating is required up to 10,000 ft. (3 000 m) altitude.

Engine: John Deere turbocharged diesel, vertical 6-cylinder, valve-in-head, 4-stroke cycle.

Bore and stroke	4.25x4.75 in. (108x121 mm)
Piston displacement	404 cu. in. (6 620 cm³)
Compression ratio	15.5 to 1
Maximum torque @ 1600 rpm	375 lb-ft (508 Nm) (51.8 kg-m)
NACC or AMA (U.S. Tax) horsepower	43.3
Lubrication	Pressure system w/full-flow filter
Cooling	Pressurized w/thermostat and fixed bypass
Fan	Suction
Air cleaner w/restriction indicator	Dry
Electrical system	12 volt w/alternator
Batteries (2) 12 volt	Reserve capacity: 420 minutes

Hydraulic System:
Two open-center pumps mounted in tandem are coupled directly to the flywheel.
Total flow is 84 gpm (5.3 L/s) at rated engine rpm. System operating pressure is 2500 psi (17 238 kPa) (175.7 kg/cm²).

Relief valves:	
Boom (2)	3000 psi (20 685 kPa) (210.9 kg/cm²)
	3750 psi (25 856 kPa) (263.6 kg/cm²)
Crowd (2)	3000 psi (20 685 kPa) (210.9 kg/cm²)
Tilt (2)	3000 psi (20 685 kPa) (210.9 kg/cm²)
Clamps (2)	3000 psi (20 685 kPa) (210.9 kg/cm²)
Shear (1)	3000 psi (20 685 kPa) (210.9 kg/cm²)
Oil filtration	Three 10 micron filter elements in return lines

Cylinders	**Bore**	**Rod Diameter**
Boom (2)	5 in. (127 mm)	2.75 in. (70 mm)
Crowd and tilt	5.5 in. (140 mm)	3.25 in. (83 mm)

All cylinders have phenolic wear rings. Boom and crowd cylinders have a built-in hydraulic cushion at each end of the stroke. Tilt cylinder has hydraulic cushion at rod end. Full-frontal hydraulic oil cooler is in front of engine coolant radiator.

Swing Mechanism:

Swing	360-degree, continuous
Turntable bearing	Single row, ball. Case-hardened ring and pinion gears run in lubricant.

Undercarriage:
Propel motors (one for each track)...High-torque 2-speed hydraulic motors with planetary drives. Wet multiple-disk brakes automatically release while propelling, and apply when stationary. Independent drive to each track permits counter-rotation.
Undercarriage, car body, and track frame...Each track frame is a formed, reinforced U-channel. Track frames are joined by reinforced boxed car body with swing bearing mount.
A full-length combination chain guide and track support keep the rollers on the track chain and help prevent track shoe bending. Track motors and plumbing are completely enclosed to prevent damage.

Track Rollers and Idlers:
9 rollers and 1 idler per track. All rollers and idlers have metal-faced seals. Idlers have heavy-duty spring recoil mechanisms. Through-hardened steel slides support and guide upper track.

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Track Shoes:

Width	Shoes	Ground Contact	Ground Pressure
24 in. (608 mm)	Triple open-center semi-grousers	6136 sq. in. (39 577 cm²)	8.0 psi (55.2 kPa) (0.56 kg/cm²)
24 in. (608 mm) (optional)	Single-bar open-center	6136 sq. in. (39 577 cm²)	8.0 psi (55.2 kPa) (0.56 kg/cm²)
30 in. (762 mm) (optional)	Triple open-center semi-grousers	7670 sq. in. (49 472 cm²)	6.4 psi (44.1 kPa) (0.45 kg/cm²)

Track adjustment ..... Hydraulic

Cab:
Steel, with urethane soundproofing on ceiling and walls and cushioned neoprene floor mat. Safety glass on all sides and top. Front and rear windows open. Front window is removable.

Seat:
Fully adjustable, foam rubber cushioned seat.

Controls:
Two levers for boom, crowd, tilt, and swing. Two levers control forward and rearward movement of right and left tracks. Two pedals control shear and clamps. Toggle switch controls tree accumulator.

Servicing and Vandal Protection:
Swingaway service doors expose built-in platforms for easy access to engine and hydraulic systems. Crank-operated bolts secure service doors. Cab and access covers to fuel tank, radiator, and air filters lock with ignition key.

Operating Information:
Width ..... 9 ft. 5-1/2 in. (2.88 m)
Swing speed ..... 7 rpm
Gradability ..... 70 percent
Travel (2-speed)..... 0 to 0.9 mph (1.45 km/h)
0 to 1.7 mph (2.74 km/h)

Rome Shear
Maximum cutting radius (from center of swing) ..... 27 ft. 6 in. (8.38 m)
Minimum cutting radius (from center of swing) ..... 12 ft. (3.66 m)
Total cutting area ..... 1923 sq. ft. (178.6 m²)
Lift at 25 ft. (7.62 m)..... 3000 lb. (1 361 kg)
Maximum tree butt diameter ..... 20 in. (51 cm)
Base width..... 41 in. (1.04 m)
Top grab opening ..... 48 in. (1.22 m)
Blade thickness ..... 0.75 in. (19 mm)
Weight ..... 4500 lb. (2 041 kg)

John Deere Shear:
Maximum tree radius (from center of swing) ..... 27.6 ft. (8.4 m)
Minimum cutting radius (from center of swing) ..... 13.9 ft. (4.25 m)
Total cutting area ..... 625 sq. ft. (58.1 m²)
Lift at 25 ft. ..... 3300 lb. (1 485 kg)
Maximum tree butt diameter ..... 18 in. (46 cm)
Top grab opening ..... 19 in. (48 cm)
Blade thickness ..... 0.625 in. (16 mm)
Weight ..... 3400 lb. (1 530 kg)

Capacities:	U.S.	Imp.	Liters
Fuel tank	60 gal.	50.0 gal.	227.1
Cooling system.....	11.25 gal.	9.4 gal.	42.6
Engine lubrication ...	18 qt.	15.0	17.0
Engine lubrication, including filter	20 qt.	16.7 qt.	18.9
Hydraulic system	80 gal.	66.7 gal.	302.8
Planetary propel drive	10 qt.	8.3 qt.	9.4
Swing drive	8 qt.	6.7 qt.	7.5

Additional Standard Equipment:
Electric hour meter
Alternator charge indicator light
Hydraulic oil filter pressure warning light
Engine coolant temperature gauge
Fuel gauge
Hydraulic oil temperature gauge
Engine oil pressure gauge
Key switch
Cold weather starting aid
Horn
Deluxe seat
Positive-position hand throttle
Counterweight 4200 lb. (1 906 kg) each
Cab with heater and soundproofing

Operating weight w/boom and Rome shear..... 49,000 lb. (22 226 kg)

Special Equipment:
2000 lb. (907 kg) counterweight
24 in. (609 mm) single-bar open-center grouser
30 in. (762 mm) triple open-center semigrousers
Air conditioner-heater
Defroster fan
Engine coolant heater

Litho in U.S.A.

JD693-B FELLER-BUNCHER OPERATING DIMENSIONS