675 and 675B Skid Steer Loaders

TECHNICAL MANUAL

John Deere
Lawn & Grounds Care Division
TM1374 (Sept 94)

Litho in U.S.A

Contents

All information, illustrations and specifications in this 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.

TM1374-19-24APR90

Section 10
GENERAL INFORMATION

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INTRODUCTION

This manual is part of a total service support program.

FOS MANUALS—REFERENCE

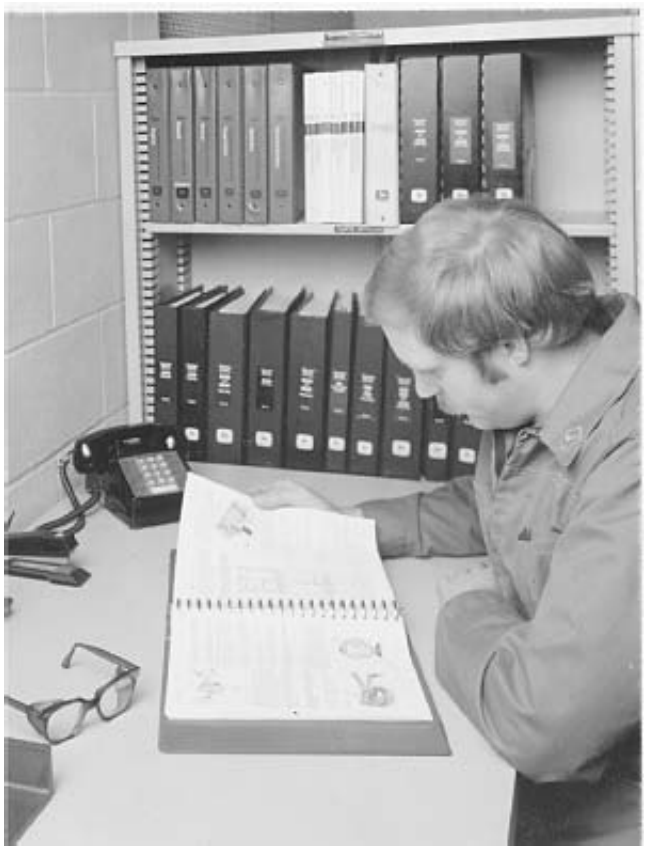
TECHNICAL MANUALS—MACHINE SERVICE

COMPONENT MANUALS—COMPONENT 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.

Component Technical Manuals are concise service guides for specific components. Component Technical Manuals are written as stand alone manuals covering multiple machine applications.



O53,INTRO2 -19-03JUL85

FEATURES OF THIS TECHNICAL MANUAL

John Deere ILLUSTRUCTION format emphasizing illustrations and concise instructions in easy-to-use modules.

Emphasis on diagnosis, analysis, and testing so you can understand the problem and correct it.

Diagnostic information presented with the most logical and easiest to isolate problems first to help you identify the majority of routine failures quickly.

Step-by-step instructions for teardown and assembly.

Summary listing at the beginning of each group of all applicable specifications, wear tolerances, torque values, essential tools, and materials needed to do the job.

An emphasis throughout on safety—so you do the job right without getting hurt.

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.

O53,INTRO3 -19-07OCT85

SAFETY AND YOU

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.

TJ1039 -JN-07OCT88

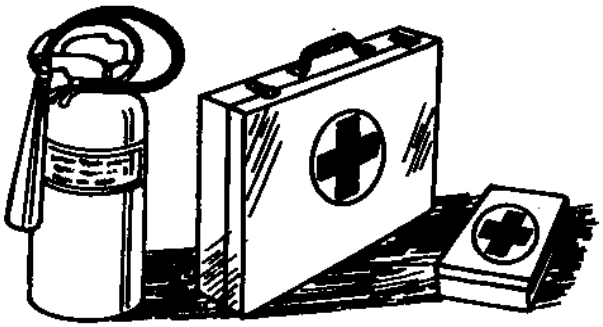
O53,TMSAFE -19-07OCT85

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.



O53,FIRE2 -19-26JAN90

HANDLE FUEL SAFELY—AVOID FIRES

Handle fuel with care: it is highly flammable. Do not refuel the machine while smoking or when near open flame or sparks.

Always stop engine before refueling machine. Fill fuel tank outdoors.

Prevent fires by keeping machine clean of accumulated trash, grease, and debris. Always clean up spilled fuel.

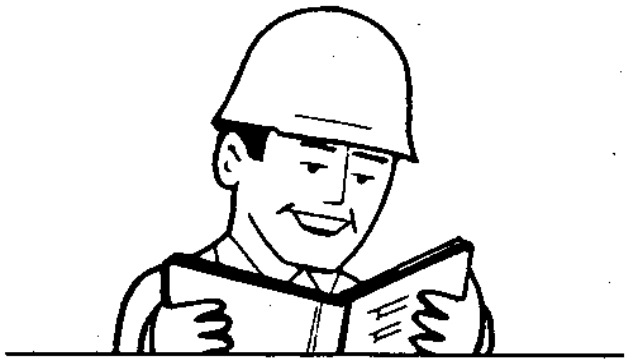
O53,FIRE1 -19-26JAN90

LEARN MACHINE SAFETY

Carefully read this manual. Learn how to operate the machine and how to use the controls properly.

Do not let anyone operate this machine without proper instruction.

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



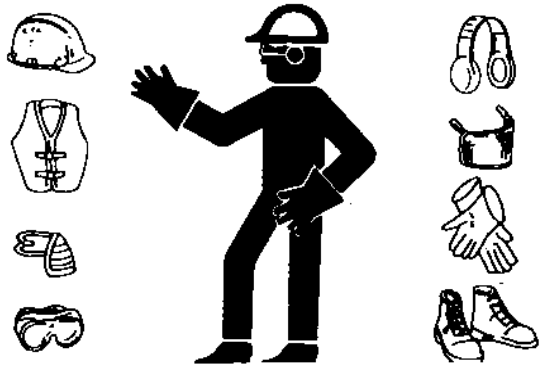
O53,READ1 -19-08JUL85

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.

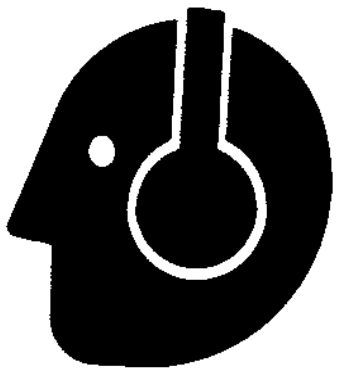


O53,WEAR -19-26JAN90

PROTECT AGAINST NOISE

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.



O53,NOISE -19-26JAN90

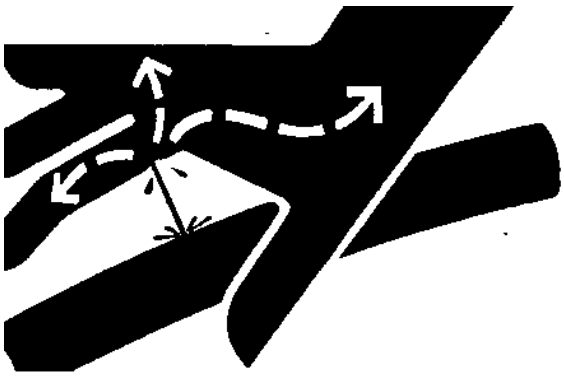
AVOID HIGH-PRESSURE FLUIDS

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.

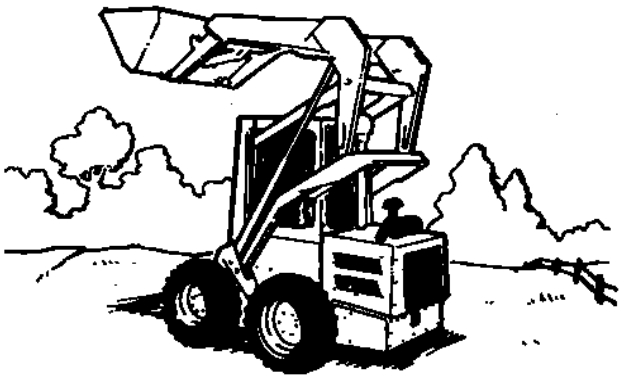
Search for leaks with a piece of cardboard. Protect hands and body from high pressure fluids.

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 may call the Deere & Company Medical Department in Moline, Illinois, or other knowledgeable medical source.



O53,FLUID -19-26JAN90

SERVICE LOADER SAFELY



Do not work under lift arms unless they are resting on lift arm stops.

Before you work on loader or any attached equipment:
—Lower attachments to ground, or
—Rest lift arms on lift arm stops.

Lower lift arms all the way and stop engine before you install or remove attachments.

Before you make repairs or adjustments, stop the engine.

Do not change engine governor settings or overspeed engine.

Keep the loader and attachments in good operating condition.

Keep safety devices in place and in working condition.

Keep all nuts, bolts, and screws tight so equipment is in safe working condition.

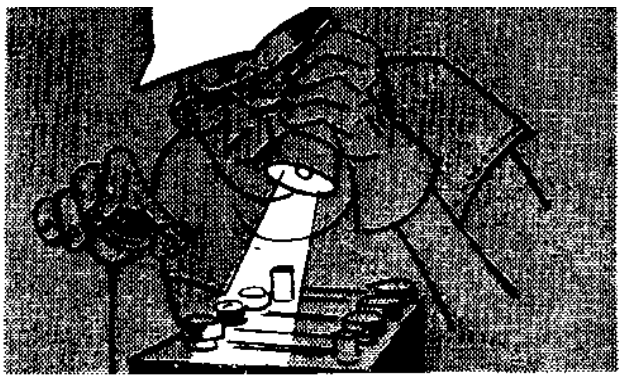
Before you work on any part of the engine, stop the engine, and let it cool. Hot engine parts can burn skin on contact.

Do not run engine unless park brake is locked.

Be careful to prevent clothing, jewelry, or long hair from getting caught in the fan blades, belts, or any other moving parts.

M21,SAU,I -19-09SEP85

PREVENT BATTERY EXPLOSIONS



Battery gas can explode. Keep sparks and flames away from batteries. Use a flashlight to check battery electrolyte level.

Never check battery charge by placing a metal object across the posts. Use a voltmeter or hydometer.

Always remove grounded (-) battery clamp first and replace it last.

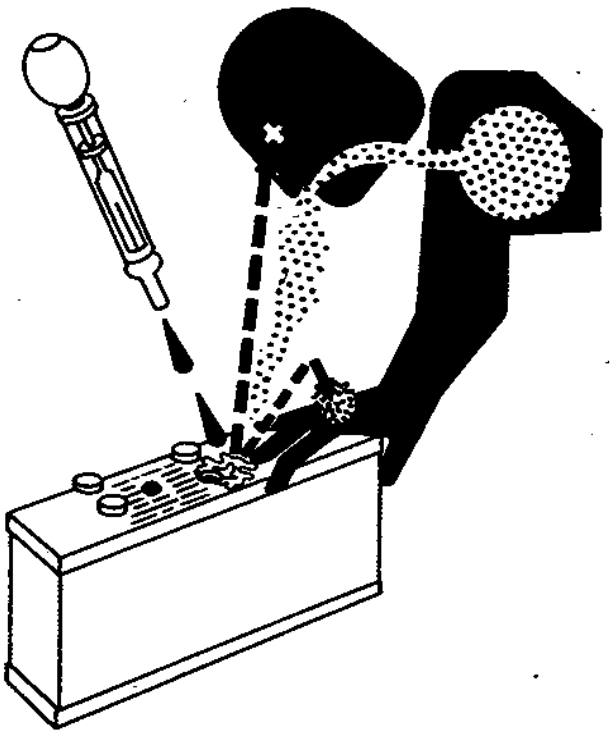
O53,EXPLO -19-29JAN86

CAUTION: 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 10—15 minutes. Get medical attention immediately.

If acid is swallowed:
1. Drink large amounts of water or milk.
2. Then drink milk of magnesia, beaten eggs, or vegetable oil.
3. Get medical attention immediately.



O53,ACID -19-29JAN86

SERVICE TIRES SAFELY

Failure to follow proper procedures when mounting a tire on a wheel or rim can produce an explosion which may result in serious injury or death. Do not attempt to mount a tire unless you have the proper equipment and experience to perform the job. Have it done by your John Deere dealer or a qualified tire repair service.

When sealing tire beads on rims, never exceed 35 psi (241 kPa) (2.4 bar) or maximum inflation pressures specified by tire manufacturers for mounting tires. Inflation beyond this maximum pressure may break the bead, or even the rim, with dangerous explosive force. If both beads are not seated when the maximum recommended pressure is reached, deflate, reposition tire, relubricate bead and reinflate.

O53,TIRE4 -19-21APR86

ENGINE

Make and model	Yanmar 4TN82ESP
Cooling system	Water Cooled
Fuel	Diesel
Cylinders	4
Horsepower (mfg. rating)	@3600 (32.8 kW)
Operating hp at governed rpm	38.8 @ 2800 (28.9 kW)
Bore	3.23 in. (82 mm)
Stroke	3.39 in. (86 mm)
Displacement	110.8 cu. in. (1816 cm^3
RPM speeds:	
Fast (no load)	2915/2975
Slow (no load)	900/1000
Fuel tank capacity	16.1 gal (61 L)
Crankcase capacity	W/O filter 6 qt. (5.7 L)
Regulator	Solid-state

TRANSMISSION

Type	Hydrostatic
Capacity	17 gal (64.4 L)

TRAVEL SPEEDS

(forward/reverse)	(0 to 6.7 mph (0 to 10.8 km/h)

BOOM CYLINDERS

Type	Double acting

PERFORMANCE RATINGS*

Operating load, SAE (per SAEJ818)	1650 lb (748 kg)
Timing load, SAE	3330 lb (1510 kg)
Breakout force, SAE IEMC	2820 lb
Slow (no load)	900/1000
Fuel tank capacity	16.1 gal (61 L)
Crankcase capacity	8.4 qt (8 L)
Regulator	Solid-state

WEIGHTS

Operating weight, SAE	4379 lb (991 kg)
Shipping weight (less tires and attachments)	3530 lb (1605 kg)

CYCLE TIMES (seconds):

Boom raised	4.3
Boom lowered	2.1
Bucket rollback	1.8
Bucket dumping	1.7

HYDRAULIC SYSTEM

Pump Type	Gear
Pump Manufacturer	Cessna
Output	14 gpm (52.9 LPM @2800 rpm)
Displacement	1.24 cu in. per rev (20.3 cm^3)

*Performance ratings taken with 10.00-16.5 tires, 66-inch dirt and foundry bucket, 175 pound operator and full fuel tank.

(Specifications and design subject to change without notice.)

BUCKET CAPACITIES AND WEIGHTS

Bucket Size in. (cm)	Struck Capacity cu ft (M^3)	Heaped Capacity cu ft (M^3)	Weight lb (kg)
62 (157) Dirt and Foundry Bucket	11.7 (0.3)	14.9 (0.4)	325 (147)
62 (157) Utility and Fertilizer Bucket	19.1 (0.54)	23 (0.65)	355 (161)
62 (157) Low Profile Bucket	11.3 (0.32)		
84 (213) Light Materials Bucket	25.3 (0.72)	29.9 (0.85)	415 (189)
70 (178) Manure and Fertilizer Bucket	15.9 (0.45)	19.5 (0.55)	405 (184)

(Specifications and design subject to change without notice.)

M21,SPX,B -19-03JAN86

BOLT TORQUE CHART

Grade of Bolt		SAE-2	SAE-5	SAE-8		
Min. Tensile Strength		64,000 PSI	105,000 PSI	150,000 PSI		
Grade Marking on Bolt					Socket or Wrench Size	
U.S. Standard					U.S. Regular	
Bolt Dia.	U.S. Dec. Equiv.		TORQUE IN FOOT POUNDS		Bolt Head	Nut
1/4	0.250	(8.14 N-m) 6	(13.56 N-m) 10	(18.98 N-m) 14	7/16	7/16
5/16	0.3125	(17.63 N-m) 13	(27.12 N-m) 20	(40.68 N-m) 30	1/2	1/2
3/8	0.375	(31.19 N-m) 23	(47.46 N-m) 35	(67.80 N-m) 50	9/16	9/16
7/16	0.4375	(47.46 N-m) 35	(74.58 N-m) 55	(108.48 N-m) 80	5/8	11/16
1/2	0.500	(74.58 N-m) 55	(115.26 N-m) 85	(162.72 N-m) 120	3/4	3/4
9/16	0.5625	(101.70 N-m) 75	(176.28 N-m) 130	(237.30 N-m) 175	13/16	7/8
5/8	0.625	(142.38 N-m) 105	(230.52 N-m) 170	(325.44 N-m) 240	15/16	15/16
3/4	0.750	(250.86 N-m) 185	(406.80 N-m) 300	(576.30 N-m) 425	1-1/8	1-1/8
7/8	0.875	*(216.96 N-m) 160	(616.98 N-m) 445	(928.86 N-m) 685	1-5/16	1-5/16
1	1.000	(339.00 N-m) 250	(908.52 N-m) 670	(1396.68 N-m) 1030	1-1/2	1-1/2

Multiply readings by 12 for inch-pound values.

** "B" Grade bolts larger than 3/4-inch (19.1 mm) are sometimes formed hot rather than cold, which accounts fo the lower recommended torque.*

NOTE: Allow a tolerance of plus or minus 10 per cent on all torques given in this chart.

SET SCREW SEATING TORQUE CHART

Screw Size	Cup Point	Square Head
	Torque in Inch Pounds	
#5	(1.02 N-m) 9	—
#6	(1.02 N-m) 9	—
#8	(2.26 N-m) 20	—
#10	(3.73 N-m) 33	—
1/4	(9.83 N-m) 87	(23.96 N-m) 212
5/16	(18.65 N-m) 165	(47.46 N-m) 420
3/8	(32.77 N-m) 290	(93.79 N-m) 830
7/16	(48.59 N-m) 430	—
1/2	(70.06 N-m) 620	(237.30 N-m) 2100
9/16	(70.06 N-m) 620	—
5/8	(138.43 N-m) 1225	(480.25 N-m) 4250
3/4	(240.13 N-m) 2125	(870.10 N-m) 7700

Divide readings by 12 for foot-pound values
NOTE: Allow a tolerance of plus or minus 10 per cent on all torques given in this chart.

M21,1010K,C -19-25AUG82

METRIC HARDWARE TORQUE SPECIFICATIONS

Metric Standard Thread

Thread	8.8		10.9		12.9	
	N·m	(lb-ft)	N·m	(lb-ft)	N·m	(lb-ft)
M5	5.9	(4.4)	7.9	(5.8)	9.8	(7.2)
M6	9.8	(7.2)	13.8	(10.2)	16.7	(12.3)
M8	24.6	(18.1)	34.4	(25.4)	40.2	(29.6)
M10	48.1	(35.5)	67.8	(50.0)	81.5	(60.1)
M12	84.4	(62.2)	118.0	(87.0)	142.0	(105.0)
M14	133.0	(98.0)	187.0	(138.0)	226.0	(187.0)
M16	206.0	(152.0)	290.0	(214.0)	348.0	(257.0)
M18	285.0	(210.0)	398.0	(294.0)	476.0	(351.0)
M20	402.0	(296.0)	570.0	(420.0)	677.0	(499.0)
M22	540.0	(398.0)	765.0	(564.0)	914.0	(674.0)
M24	697.0	(514.0)	980.0	(723.0)	1180.0	(870.0)

Metric Fine Thread

Thread	8.8		10.9		12.9	
	N·m	(lb-ft)	N·m	(lb-ft)	N·m	(lb-ft)
M8 x 1	26.5	(19.5)	37.3	(27.5)	44.2	(32.6)
M10 x 1	47.1	(34.7)	68.8	(50.7)	81.5	(60.1)
M12 x 1.5	88.4	(65.2)	123.0	(91.0)	147.0	(106.0)
M14 x 1.5	147.0	(108.0)	206.0	(152.0)	246.0	(181.0)
M16 x 1.5	221.0	(163.0)	309.0	(228.0)	373.0	(275.0)
M18 x 1.5	319.0	(235.0)	451.0	(333.0)	540.0	(398.0)
M20 x 1.5	451.0	(333.0)	628.0	(463.0)	755.0	(557.0)
M22 x 1.5	599.0	(442.0)	845.0	(623.0)	1030.0	(760.0)
M24 x 2	765.0	(564.0)	1080.0	(796.0)	1275.0	(940.0)
M26 x 2	1130.0	(833.0)	1570.0	(1158.0)	1915.0	(1412.0)

O53,TORQUE -19-13MAR85

TUNE-UP SPECIFICATIONS

675 SKID-STEER LOADER

Fast Idle	2915/2 975 rpm
Slow Idle	900/1000 rpm
Horsepower (mfg. Rating)	44 (32.8 kW) at 3600 rpm
Operating Horsepower	38.8 (28.9 kW) at 2800 rpm
Intake Valve Clearance (Cold)	0.008 in. (0.2 mm)
Exhaust Valve Clearance (Cold)	0.008 in. (0.2 mm)
Gradability	
(Maximum Angle for Engine Operation on Intermittent Basis)	30°
(Maximum Angle for Engine Operation on Continuous Basis)	25°

CAPACITIES

Engine Oil with Filter	6 qt (5.8 L)
Fuel Tank	16 gal (60.5 L)
Cooling System	3.4 gal (12.9 L)
Hydraulic System	17 gal (64.3 L)

M21,1020X,A -19-30JUN86