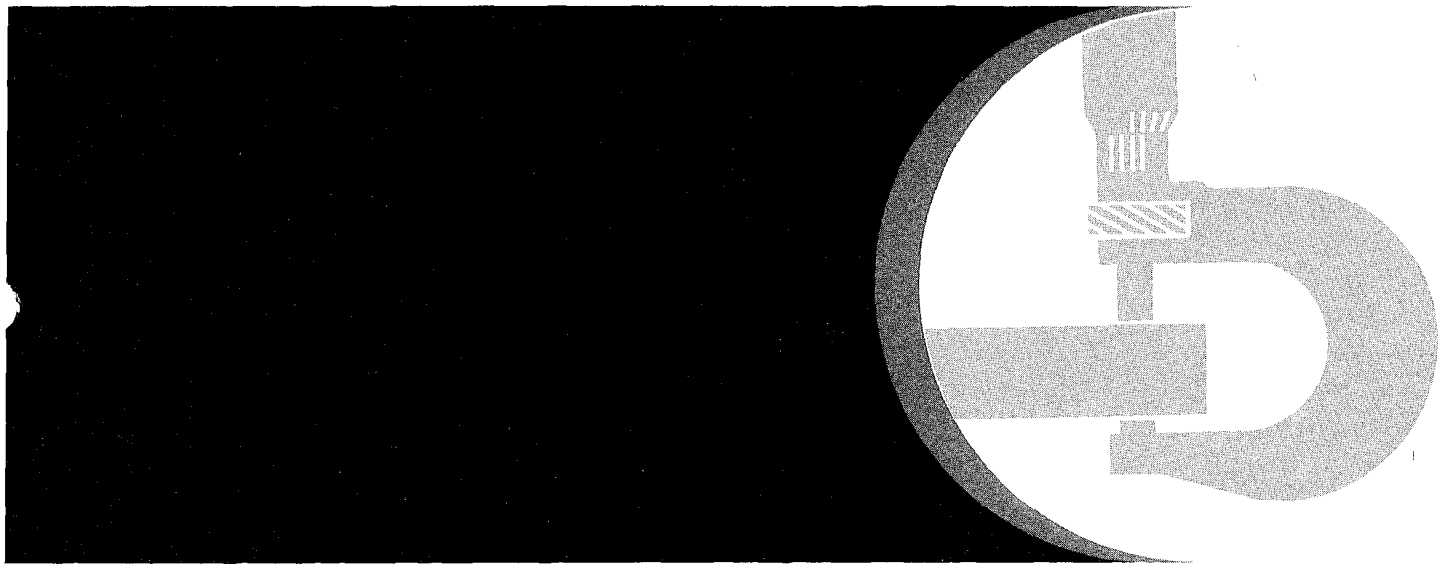
John Deere
JD450B
Crawler Tractor



TECHNICAL MANUAL

John Deere Dubuque Works
TM-1033 (May-87)

Litho in U.S.A.

JD450-B CRAWLER TRACTORS AND CRAWLER LOADERS

Technical Manual TM-1033 (May-87)

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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.

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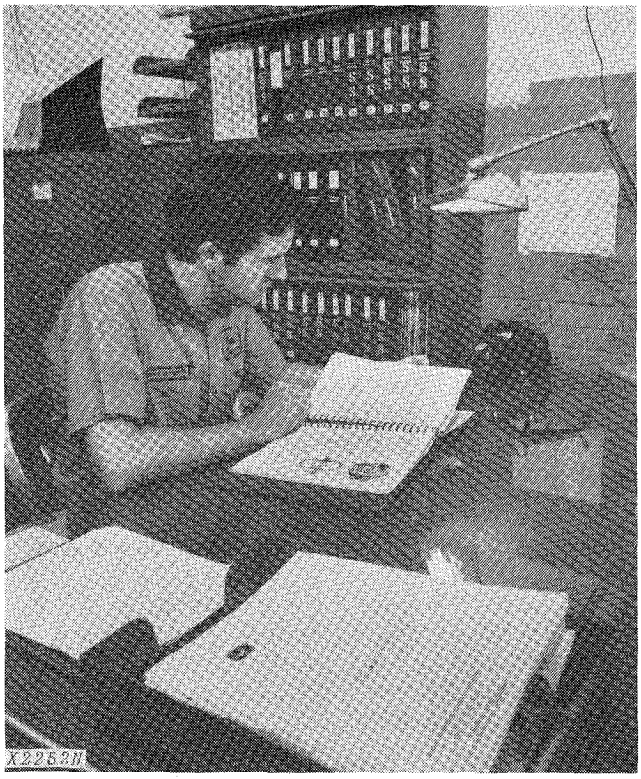
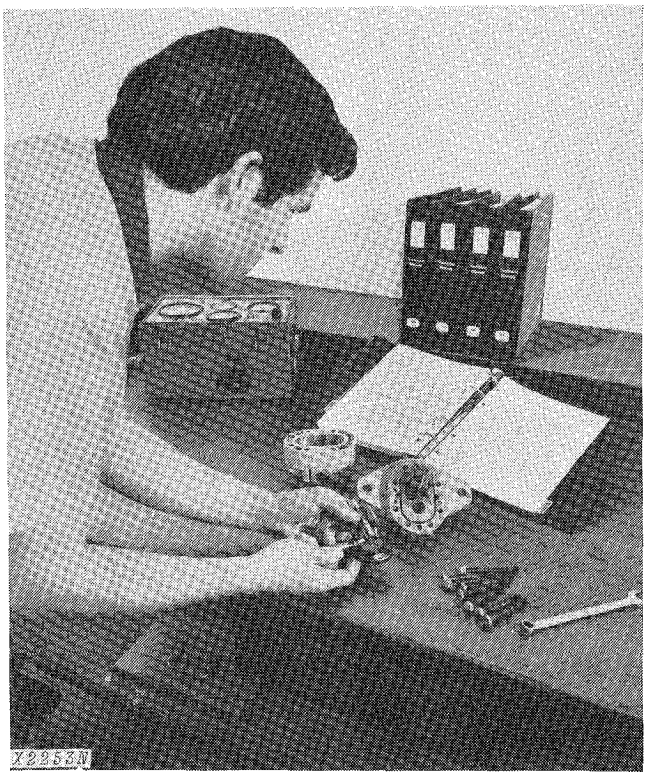
INTRODUCTION



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 service technician.

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:

- *Table of contents at front of manual*
- *Exploded views showing parts relationship*
- *Photos showing service techniques*
- *Specifications grouped for easy reference*

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

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GENERAL

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Group 5
SPECIFICATIONS

Engine

Type	4-cylinder in-line, valve-in-head, 4-stroke cycle diesel
Flywheel horsepower (observed) at 2500 rpm	65
Drawbar horsepower (observed)	48.6
Torque (ft-lbs) max. at 1300 rpm (observed) (nominal)	164.5
Bore and stroke, inches	4.02 x 4.33
Displacement, cubic inches	219
Compression ratio	16.2:1
Firing order	1,3,4,2
Governed speed range (rpm)	800 - 2650
Engine disconnect clutch	11-inch, single disk, foot-operated

Electrical System

Battery voltage (nominal)	12 volts
Ground battery terminal	Negative

Hydraulic System

Type	Open-center; includes power steering, brakes, loader, dozer, ripper, backhoe, and rotoboom.

Transmission

Type ..... Manual selection, H-L-R with eight forward speeds and four reverse

Travel speeds, mph (no slip, 2500 engine rpm):

Range	High	Low	Reverse
1st	1.8	1.3	1.7
2nd	2.8	2.0	2.7
3rd	4.3	3.0	4.1
4th	6.7	4.7	6.4

Steering-Brakes

Type.....Multiple-disk clutches and contracting band with integral reservoir (early models), hydraulic pump and cylinders.

Power Take-Off

Type....Transmission-driven, rear, 1000 rpm at 1900 rpm engine speed.

Track and Track Frame

Five rollers non-oscillating, one carrier roller each side. Hydraulic track adjusters. 36 track shoes per side (Dozer). 37 track shoes per side (Loader).

Track Shoes

Type	Size (Inches)
Grouser	14, 16, 18
Rubber	13
Notched Open-Center Grouser	16
Triple Semi-Grouser	13, 14, 16
Open Center Grouser	14, 16, 18

Capacities (U.S. Standard Measures)

Fuel tank	31 gal.
Cooling system	16 qts.
Engine crankcase (including filter)	9 qts.
Transmission case	32 qts.
Final drives (each)	6.5 qts.
Crawler loader hydraulic system	13 gal.
(with fork and single clamp)	15 gal.
(with fork and dual clamps)	16 gal.
Crawler tractor hydraulic system	8 gal.
Winch housing reservoir	9 qts.
Winch drum:	
(with 1/2-inch cable)	195 ft.
(with 5/8-inch cable)	125 ft.
(with 3/4-inch cable)	100 ft.

Weight Distribution

		Bulldozers		
	Loader	6405	6410	6415
SAE Operating Weight (lbs.)*	16,700	14,250	14,250	14,500
Ground Contact (Sq. In.)	2,128	2,328	2,328	2,328
Ground Pressure (psi)	7.8	6.1	6.1	6.2
Track on Ground (inches)	76	72.75	72.75	72.75

* *1973 Representative Tractor*
Includes fully serviced tractor, 175 lb. operator, and R.O.P.S.

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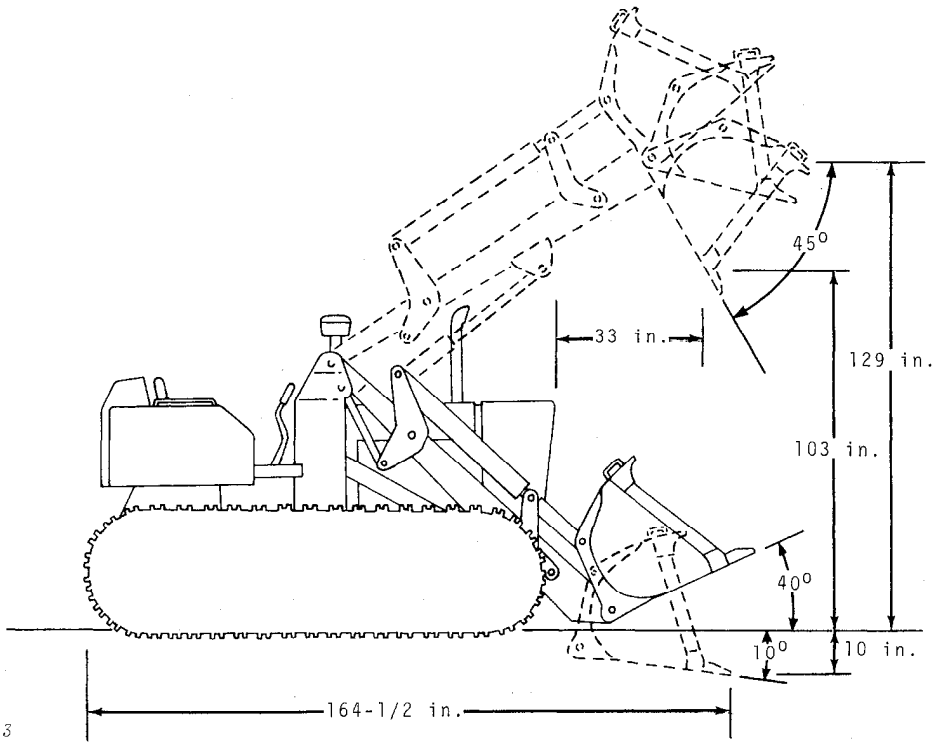

JD450-B Operating Dimensions

DIMENSIONS (Crawler Tractor)
Height to top of hood ..... 57 in.
Over-all height (with exhaust stack) ..... 89 in.
Over-all width, minimum (with 14 in. shoes) ..... 65-3/4 in.
Over-all length ..... 109-1/4 in.
Ground clearance (at rear crossbar) ..... 14-1/4 in.
Shipping weight (approx.) ..... 11,600 lbs.

DIMENSIONS (Crawler Loader)
Over-all length ..... 164-1/4 in.
Over-all height (with exhaust stack) ..... 89 in.
Over-all width (minimum) (with 14 in. shoes) ..... 72-1/4 in.
Ground clearance (at rear crossbar) ..... 14-1/4 in.
Dumping reach (full height) (bucket at 45° angle) ..... 33 in.
Dumping clearance (full height) (bucket at 45° angle) ..... 103 in.
Maximum lift (bucket at full height) ..... 129 in.
Digging depth below ground (10 degrees) ..4-1/2 in.
Bucket width (1-1/4 yd. bucket) .....72-1/4 in.
Maximum dump angle
Full height ..... 50° from horizontal
Ground level ..... 70° from horizontal
Bucket roll-back (ground level) ..... 40°
Operating weight, approximate .....16,390 lbs.
Hydraulic lift capacity (full height) .....9,000 lbs.
Breakout force .....14,360 lbs.

Thank you very much for your reading. Please Click Here Then Get More Information.

NOTE:

If there is no response to click on the link above, please download the PDF document first and then click on it.

Group 10
PREDELIVERY, DELIVERY, AND AFTER-SALES SERVICES

PREDELIVERY SERVICE

Because of the shipping factors involved, plus extra finishing touches that are necessary to promote customer satisfaction, proper predelivery service is of prime importance to the dealer.

A tag pointing out the factory-recommended procedure for predelivery service is attached to each new crawler before it leaves the factory.

After completing the factory-recommended dealer checks and services listed on the predelivery tag, remove the tag from the crawler and file it with the job shop order. The tag will then serve as a basis for certifying that the crawler has received the proper predelivery service when that portion of the customer's John Deere Delivery Receipt is completed.

TEMPORARY CRAWLER STORAGE

Service	Specification	Reference
Check radiator for coolant loss and antifreeze protection.	.....	Section 10, Group 15
Fill fuel tank	.....	Operator's Manual
Check crankcase oil level.	.....	Operator's Manual
Relieve hydraulic pressure.	Stop engine, lower equipment to ground.	.....
Cover crawler for protection and cleanliness.	.....	.....

BEFORE DELIVERING CRAWLER

Electrical System

Inspect electrolyte	.....	Operator's Manual
Check alternator belt tension	3/4-inch deflection with 20 lb. force.	Operator's Manual
Clean terminals and check battery cable connections.	.....	Operator's Manual

Cooling System

Inspect radiator for coolant loss.	Midway between core and filler neck.	Operator's Manual
Check antifreeze protection.	.....	Operator's Manual

Track

Check track tension.	.....	Section 80
Check front idler, track carrier roller and track roller oil level.	To oil level check hole.	.....

Lubrication

Check crankcase oil level.	Between marks on dipstick.	Operator's Manual
Check transmission oil level.	Between marks on gauge.	Operator's Manual

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BEFORE DELIVERING CRAWLER (Continued)

Service	Specification	Reference
Lubrication (Continued)		
Check final drive oil level.	To level of filler holes.	Operator's Manual
Check hydraulic reservoir oil level.	Halfway up on window glass	Operator's Manual
Check winch reservoir oil level.	To level of oil level hole.	Operator's Manual
Lubricate grease fittings.	.....	Operator's Manual
Engine		
Check air cleaner.	.....	Operator's Manual
Fill fuel tank and start engine.	.....	Operator's Manual
Check operation of lights and gauges.	.....	Operator's Manual
Check speed control linkage for free operation.	.....	Section 20
Check engine idle speeds.	.....	Section 20
Operation		
Check engine clutch operation.	.....	Section 50
Check brake operation.	.....	Section 60
Shift transmission through all ranges.	.....	Operator's Manual
Check power take-off operation.	.....	Operator's Manual
Check operation of attached equipment.	.....	Operator's Manual
Check hydraulic system operation.	.....	Operator's Manual
Check steering operation.	.....	Section 60
Check bucket level indicator and electrical return-to-dig mechanism (if present).	.....	Operator's Manual
General		
Tighten accessible nuts and cap screws.	Standard torque chart.	Section 10
Clean crawler and touch up paint.	.....	.....

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DELIVERY SERVICE

A thorough discussion of the operation and service of a new machine at the time of delivery helps to assure complete customer satisfaction. Proper delivery should be an important phase of a dealer's program. A portion of the John Deere Delivery Receipt emphasizes the importance of proper delivery service.

It is a well-known fact that many complaints have arisen simply because the owner was not shown how to operate and service his new machine properly. Enough time should be devoted, at the customer's convenience, to introducing the owner to his new machine and explaining to him how to operate and service it.

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

1. Controls and instruments.
2. How to start and stop the engine.
3. The importance of the break-in period.
4. How to use cast-iron ballast.
5. All functions of the hydraulic system.
6. The importance of safety.
7. The importance of lubrication and periodic services.

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

AFTER-SALES SERVICE

The purchaser of a new John Deere machine is entitled to a free inspection at some mutually agreeable time within the warranty period after the equipment has been "run in."

The purpose of this inspection is to make sure that the customer is receiving satisfactory performance from his machine. At the same time, the inspection should reveal whether or not the machine is being operated, lubricated, and serviced properly.

If the recommended after-sales service inspection is followed, the dealer can eliminate a needless volume of service work by preventing minor irregularities from developing into service problems later on. This will promote strong dealer-customer relations and give the dealer an opportunity to answer questions that may have arisen during the first few days of operation. During the inspection service, the dealer has the additional opportunity of promoting the possible sales of other new equipment.

The following is a recommended inspection program.

INSPECTION PROCEDURE

Service	Specification	Reference
Cooling System		
Check radiator coolant level.	Midway between core and filler neck	Operator's Manual
Check external surface of radiator core.	.....	Operator's Manual
Check hoses and connections for leaks.	.....	.....
Fuel System		
Remove water and foreign matter from fuel filter sediment bowls.	.....	Operator's Manual
Bleed fuel system.	.....	Operator's Manual
Tighten loose connections and check entire system for leaks. Correct if necessary	.....	.....
Check air cleaner cup, element, and unloading valve. Clean element if necessary.	.....	Operator's Manual

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INSPECTION PROCEDURE—Continued

Service	Specification	Reference
Electrical System		
Check specific gravity of battery.	1.215 to 1.270 at 80°F	Operator's Manual
Check level of battery electrolyte.	To bottom of filler neck above plates.	Operator's Manual
Check alternator belt tension.	3/4-inch deflection with 20-pound force.	Operator's Manual
Start engine and check action of starter, lights and gauges.	.....	Operator's Manual
Lubrication		
Check crankcase oil level.	Between marks on dipstick	Operator's Manual
Check transmission oil level.	Between marks on gauge.	Operator's Manual
Check final drive oil level.	To level of filler holes.	Operator's Manual
Check hydraulic reservoir oil level.	Halfway up on window glass.	Operator's Manual
Check winch reservoir oil level.	To level of oil level hole.	Operator's Manual
Lubricate grease fittings.	.....	Operator's Manual
Engine		
Check valve clearance.	Intake-0.014 inch Exhaust-0.018 inch	Operator's Manual
Check engine speed under load and horsepower (Dynamometer test).	65 hp at 2500 rpm	FOS-ENGINES
General		
Check clutch pedal free travel.	.....	Operator's Manual
Check transmission linkage adjustment.	.....	Section 50
Check power take-off operation.	.....	Operator's Manual
Check hydraulic system.	.....	Section 70
Check steering clutches and brakes.	.....	Section 60
Check track tension.	.....	Section 80
Check winch operation.	.....	Section 80
Tighten accessible nuts and cap screws.	.....	Section 10, Group 25

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Group 15
TUNE-UP AND ADJUSTMENT

Before tuning up a tractor, determine whether a tune-up will restore operating efficiency. When there is doubt, the following preliminary tests will help to determine if the engine can be tuned up. If the condition is satisfactory, proceed with the tune-up. Choose from the following procedures only those necessary to restore the unit.

PRELIMINARY ENGINE TESTING

Operation	Specification	Reference
Dynamometer Test (at 2500 engine rpm)	Compare with "SPECIFICATIONS"; compare with output after tune-up.	FOS-ENGINES
Compression Test	350 psi. The difference between cylinders should be no more than 50 psi.	FOS-ENGINES
Intake Vacuum Test	11 to 25 inches of water at fast idle	FOS-ENGINES
Engine Coolant Check	No air bubbles or oil film in radiator	FOS-ENGINES

ENGINE TUNE-UP

Operation	Specification	Reference
Air Intake System		
Service air cleaner and check system for leaks		FOS-ENGINES
Check restriction indicator operation	23 to 27 inches of water at 2500 rpm (full load)	FOS-ENGINES
Check crankcase breather for restriction		FOS-ENGINES
Exhaust System		
Check system for leaks		FOS-ENGINES
Check muffler and exhaust pipe for restriction		FOS-ENGINES
Cooling System		
Check radiator for coolant loss	Midway between core and filter neck	
Clean grille, radiator core and oil cooler case		FOS-ENGINES
Check pressure cap	6.25 to 7.50 psi release pressure	FOS-ENGINES
Clean and flush system, check thermostat.	Starts to Open / Fully Open	FOS-ENGINES
180°	177°F. to 184°F. / 202°F.	
205°	201°F. to 207°F. / 213°F.	

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ENGINE TUNE-UP—Continued

Operation	Specification	Reference
Cylinder Head and Valves		
Tighten cylinder head cap screws	110 ft-lbs. torque, in sequence	Section 20, Group 10
Check valve clearance	Intake, 0.014-inch Exhaust, 0.018-inch	Section 20, Group 10
Fuel System		
Check fuel tank sump for water		FOS - ENGINES
Check fuel transfer pump pressure	3-1/2 to 4-1/2 psi at slow idle	FOS - ENGINES
Clean sediment bowls and change filter		FOS - ENGINES
Service injection nozzles		SM-2045
Injection Pump:		
Service and check timing		Section 30, Group 25
Advance		Section 30, Group 25
Adjust throttle linkage	Slow idle (rpm) 800 Fast idle (rpm) 2650	Section 20, Group 20
Lubrication System		
Check engine oil pressure	45 to 65 psi at 2500 rpm (180°F. to 220°F.)	Section 20, Group 10
Charging System		
Check battery specific gravity		FOS - ELECTRICAL SYSTEMS
Check electrolyte level		FOS - ELECTRICAL SYSTEMS
Check alternator belt tension	3/4-inch belt deflection with 20 lbs. force.	FOS - ELECTRICAL SYSTEMS
Check alternator output	22 amps.	FOS - ELECTRICAL SYSTEMS
Check alternator regulated voltage		FOS - ELECTRICAL SYSTEMS
Starting System		
Check start-safety switch operation		FOS - ELECTRICAL SYSTEMS
Check starter current draw	Approx. 150 amps.	Section 40, Group 15
Check operation of ammeter, oil pressure and air filter restriction indicator		FOS - ELECTRICAL SYSTEMS

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FINAL ENGINE TEST

Operation	Specification	Reference
Dynamometer	Compare with previous recorded output. Record for future use.	FOS - ENGINES

CRAWLER ADJUSTMENTS

Operation	Specification	Reference
Engine clutch pedal adjustment		Section 50, Group 10
Steering clutch adjustment		Section 60, Group 25
Steering linkage adjustment		Section 60, Group 25
Brake band adjustment		Section 60, Group 25
Foot brake linkage adjustment		Section 60, Group 25
Track adjustment		Section 80, Group 10
Track alignment		Section 80, Group 10
H-L-R system adjustment		Section 50, Group 20
Winch Adjustments:		
Control lever	1/2-inch between front edge of lever and top edge of lever guard	Section 80, Group 15
Brake band	4-11/16 inches between bottom edge of spring pin and bottom edge of spring anchor	Section 80, Group 15
Loader Adjustments:		
Bucket level indicator		Section 80, Group 25
Electric return-to-dig		Section 70, Group 20
Boom alignment		Section 80, Group 25
Loader hydraulic system		Section 70, Group 5