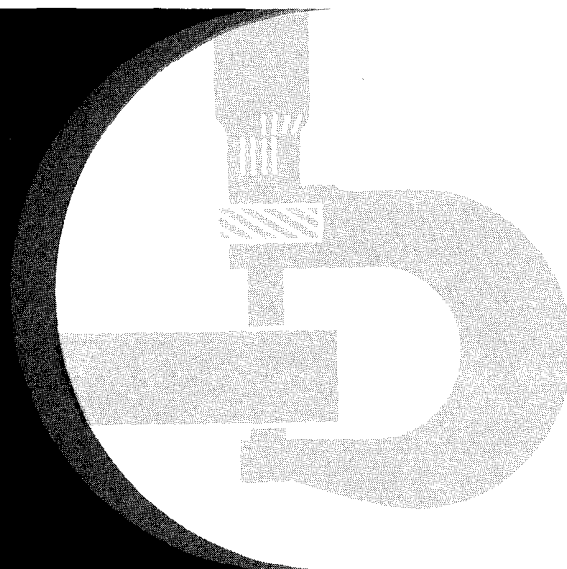


John Deere 860 and 860A Scrapers



TECHNICAL MANUAL

John Deere Dubuque Works
TM-1014 (May-78)

LITHO IN U.S.A.

JD860 AND JD860-A SCRAPERS

Technical Manual
TM-1014 (May-78)

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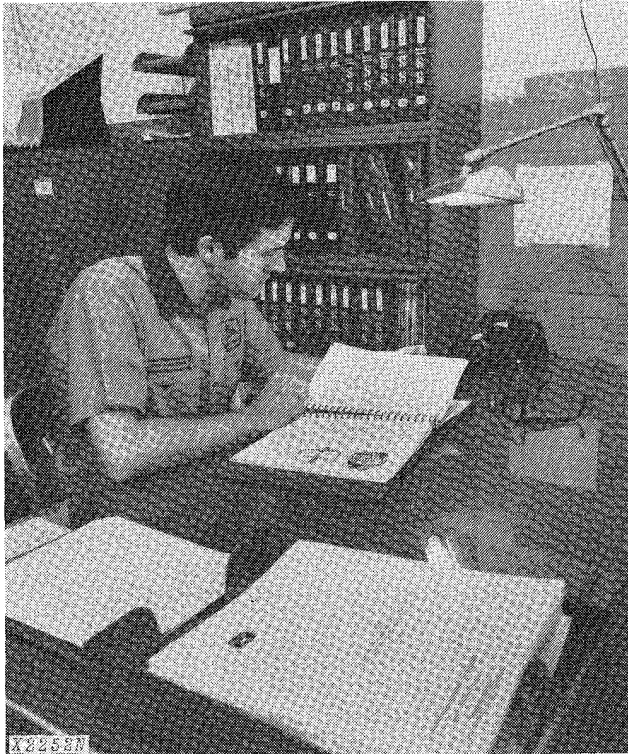
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The specifications and design information contained in this manual were correct at the time this machine was manufactured. It is John Deere's policy to continually improve and update our machines. Therefore, the specifications and design information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

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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:

- **FOS Manuals—for reference**
- **Technical Manuals—for actual service**

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

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.

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



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.

Some features of this technical manual:

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

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.

Using the technical manual as a guide will reduce error and costly delay. It will also assure you the best in finished service work.



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.

Section 10 GENERAL

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Group 5 SPECIFICATIONS

Engine

Type 2-stroke-cycle, diesel
Number of cylinders 6
Bore and stroke 4.25 x 5 in. (108 x 127 mm)
Displacement 426 cu. in. (6982 cm³)
Net rated power, 2100 engine
rpm 215 horsepower
160 kilowatts

Engine speed:
Fast idle 2280 rpm
Slow idle 800 rpm
Governed speed 2100 rpm

Torque Converter

Type Single-stage, lockup,
free-wheel stator

Transmission

Type Full powershift, 5 speeds
forward and one reverse

Electrical System

Voltage (direct current) 24-volt
Batteries (2) 12-volt
Ground Negative

Brakes

Type
Tractor Wet disk, piston-actuated
Scraper Dry-shoe, internal expanding
Pump Steering pump-mounted and driven
Type Gear
Filters (2) 25 micron
Parking brake Hand-operated

Steering

Type Position-responsive
Cylinders Four, external mounted
Pump:
Primary Engine mounted, belt driven
Secondary Converter mounted and driven

Main Hydraulic System

Type Open-center
Pump:
Type Gear, double
Location Converter mounted and driven
Elevator Hydraulic Motor
Type Vane, bi-directional
Cylinders Five, double-acting

Ground Speeds (calculated at 2100 engine rpm with 26.5-25 tires)

1st 1.9 mph (3 km/h)
2nd 3.9 mph (6.3 km/h)
3rd 7.1 mph (11.4 km/h)
4th 15.5 mph (25 km/h)
5th 27.9 mph (44.9 km/h)
Rev. 7.1 mph (11.4 km/h)

Capacities

Fuel tank 90 U.S. gals. (341 L)
Crankcase (with filter) 25 U.S. qts. (23.7 L)
Hydraulic system:
Reservoir 25 U.S. gals. (95 L)
System capacity 50 U.S. gals. (189 L)
Cooling system 15 U.S. gals. (57 L)
Elevator gearbox 6 U.S. qts. (5.7 L)
Transmission (with filter) 12 U.S. gals. (45 L)
Differential (with filters) 15 U.S. gals. (57 L)
Differential (without filters) 13 U.S. gals. (49 L)

Dimensions

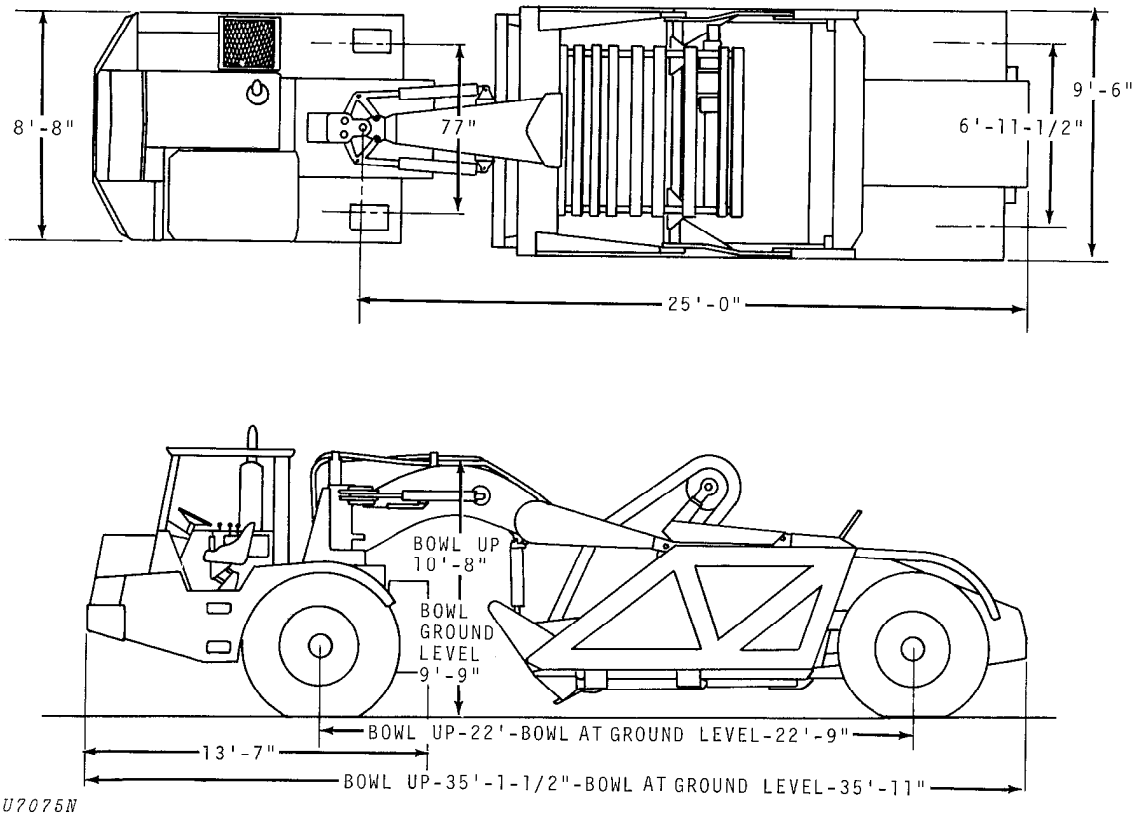


Fig. 1-Scraper Overall Dimensions

	Bowl Up	Bowl Down
Length	35 ft. 1-1/2 in. (10.706 m)	35 ft. 11 in. (10.947 m)
Width	9 ft. 6 in. (2.895 m)	9 ft. 6 in. (2.895 m)
Height (to top of muffler)	11 ft. 2 in. (3.404 m)	11 ft. 5 in. (3.480 m)
Ground clearance	17 ft. 1/4 in. (5.188 m)	.....
Wheelbase.....	22 ft. (6.705 m)	22 ft. 9 in. (6.934 m)
Turning circle (Curb to curb).....	31 ft. 10-1/2 in. (9.715 m)	.....
Capacity (Heaped).....	15 cu. yd. (11.47 m ³)	.....
Maximum Load.....	37,500 lbs. (17 010 kg)	.....

Weight distribution with standard elevator, ROPS, front and rear fenders, full fuel tank to qualify under OSHA requirements.

Empty:

Front Axle (JD860)	28,501 lbs. (12 928 kg)
(JD860-A)	30,043 lbs. (13 627 kg)
Rear Axle (JD860)	14,773 lbs. (6 701 kg)
(JD860-A)	14,753 lbs. (6 692 kg)
Total Weight (JD860)	44,562 lbs. (20 213 kg)
(JD860-A)	44,796 lbs. (20 319 kg)

Loaded:

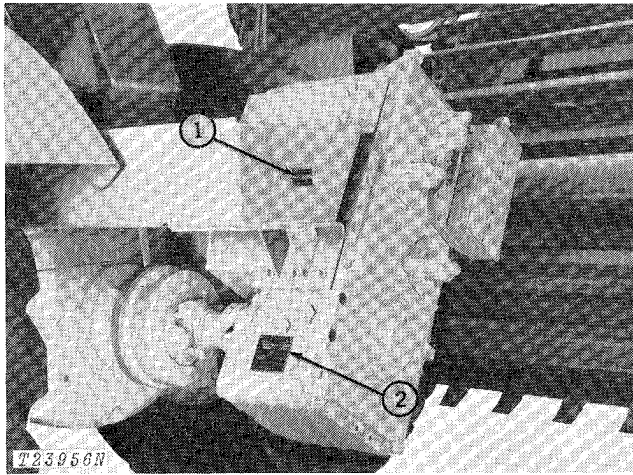
Front Axle (JD860)	40,421 lbs. (18 335 kg)
(JD860-A)	41,963 lbs. (19 034 kg)
Rear Axle (JD860)	40,353 lbs. (18 304 kg)
(JD860-A)	40,333 lbs. (18 295 kg)
Total Weight (JD860)	82,060 lbs. (37 222 kg)
(JD860-A)	82,296 lbs. (37 329 kg)

(Specifications and design are subject to change without notice. Wherever applicable, specifications are in accordance with ICED and SAE Standards and Recommended Practices.)

Serial Numbers

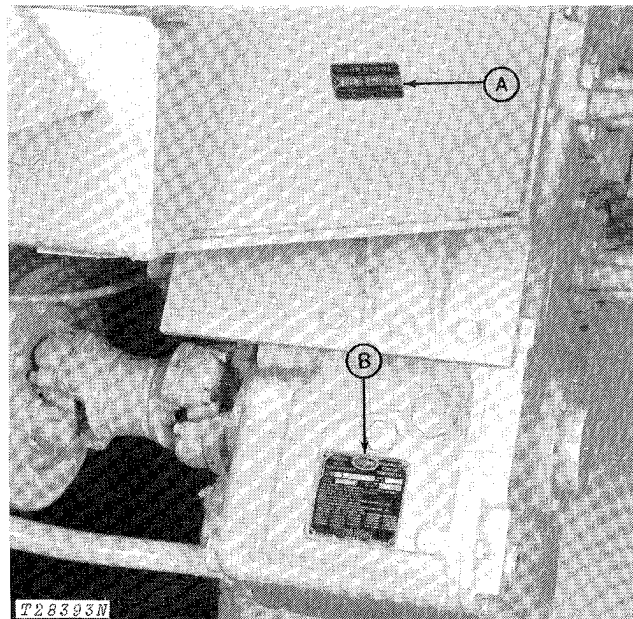
The engine is identified by a serial number plate on the right-hand side. Use the appropriate number when ordering replacement parts for the engine.

The transmission is identified by a serial number plate on the left-hand side of the case (Figs. 2 and 3). Use this number when ordering replacement parts for the transmission.



1—Scraper Serial Number 2—Transmission Serial Number

Fig. 2-Scraper and Transmission Serial Numbers (JD860)



A—Scraper Serial Number B—Transmission Serial Number

Fig. 3-Scraper and Transmission Serial Numbers (JD860-A)

The torque converter is identified by a serial number plate on the rear of the case (Fig. 4).

The scraper serial number is located on the rear of transmission support bracket (Figs. 2 and 3).

NOTE: Be sure to use all the digits in the model number or serial number when ordering replacement parts.

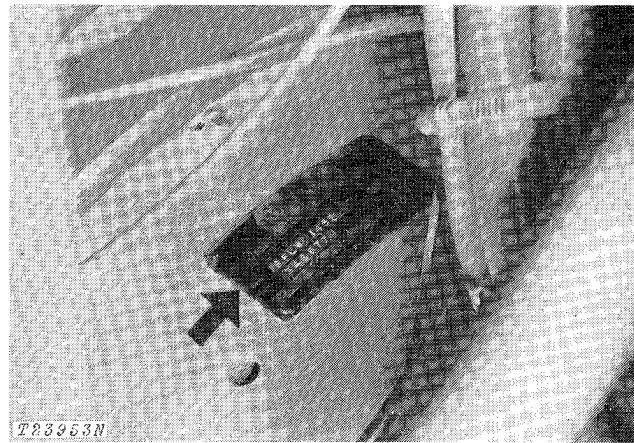


Fig. 4-Torque Converter Serial Number

The differential is identified by a sequence number stamped on the rear surface of the differential housing.

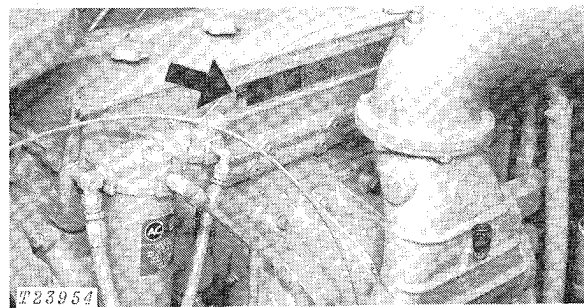


Fig. 5-Engine Serial Number

**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

Shipping factors, in addition to extra finishing touches needed for customer satisfaction, necessitate proper predelivery service by the dealer.

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

After completing the factory-recommended checks and services listed on the predelivery tag, remove and file the tag with the job shop order. The tag and the customer's John Deere Delivery Receipt certify proper predelivery service when that section of his receipt is completed.

TEMPORARY MACHINE STORAGE

Service	Specifications	Reference
Check radiator for coolant loss and antifreeze protection.	Fill to 1-1/2 in. (38.1 mm) below bottom of filler top. Open vent while filling.	Operator's Manual
Operate engine for 2 minutes at 2100 rpm with no load.	.....	.....
Check oil and fill fuel tank.	.....	Operator's Manual
Complete machine storage.	See "Storage."	Operator's Manual
Relieve hydraulic pressure.	Stop engine, lower scraper bowl and operate cylinders and brakes to relieve pressure.	.....
Remove and store batteries.	Store at room temperature.	.....
Cover scraper and tires for protection and cleanliness.	.....	.....

BEFORE DELIVERING MACHINE

Electrical System

Charge batteries and check terminals to be sure they are tight.	.....	Operator's Manual
Punch warranty tag on top of each battery.	.....	.....

Cooling System

Inspect radiator for coolant loss.	Fill to 1-1/2 in. (38.1 mm) below bottom of filler top. Open vent while filling.	Operator's Manual
Check Antifreeze protection.	.....	Operator's Manual

BEFORE DELIVERING MACHINE—Continued

Service	Specifications	Reference
Tires and Wheels		
Adjust pressure of tires.	.....	Operator's Manual
Check wheel nuts.	.....	Operator's Manual
Lubrication		
Check crankcase oil level.	To upper mark on dipstick.	Operator's Manual
Check transmission, differential, and main hydraulic reservoir oil levels.	To middle of sight windows.	Operator's Manual
Check primary steering pump oil reservoir oil level.	Fill to full mark.	Operator's Manual
Check elevator gearbox oil level.	.....	Operator's Manual
Lubricate grease fittings.	John Deere Multi-Purpose Lubricant or an equivalent.	Operator's Manual
Engine		
Remove vapor-proof material.	See "Storage."	Operator's Manual
Check air cleaner.	.....	Operator's Manual
Fill fuel tank and start engine.	.....	Operator's Manual
Check operation of lights, gauges, and indicator lamps.	.....	Operator's Manual
Check throttle linkage for free operation.	.....	.....
Check engine idle speeds.	2280 rpm fast idle speed, 800 rpm slow idle speed.	.....
Operation		
Shift transmission through all speeds.	.....	Operator's Manual
Check elevator, ejection, and lift operation.	.....	Operator's Manual
Check differential lock operation.	.....	Operator's Manual
Check steering and hydraulic operations.	.....	Operator's Manual

BEFORE DELIVERING MACHINE—Continued

Service	Specifications	Reference
Check power brakes and accumulators.	With engine stopped, pedal should not bottom for minimum of 5 applications.	Operator's Manual
Check seat operation.	.....	Operator's Manual
General		
Notify Detroit Diesel of scraper sale	Form 17SE8	Received from factory
Tighten oscillation hitch screws.	.....	Operator's Manual
Tighten accessible nuts and cap screws.	.....	Section 10, Group 25
Tighten scraper axle housing cap screws.	300 lb-ft (407 Nm) (41 kg-m)	Section 80, Group 35
Install seat belts if not installed.	.....	.....
Clean scraper and touch up paint.	.....	.....

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 is an important phase of a dealer's program. One section of the John Deere Delivery Receipt emphasizes the importance of proper delivery service.

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

The following procedure is recommended before the service technician and owner complete the delivery acknowledgments section of the delivery receipt.

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

1. Importance of safety.
2. Operation and use of controls and instruments.
3. Operation of the engine.
4. Importance of the break-in period.
5. Terms and conditions of warranty.
6. Operation and functions of the hydraulic system.
7. Operation and use of the power shift transmission.
8. Importance of lubrication and periodic services.

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