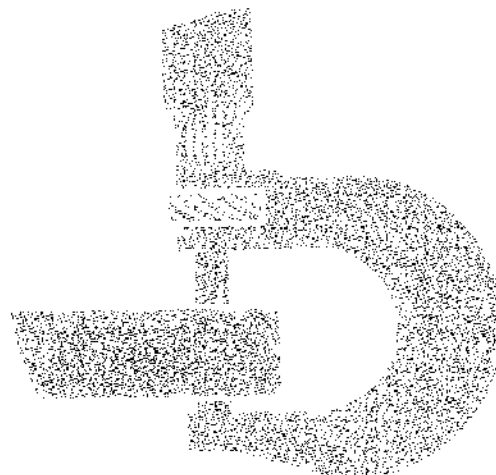


**John Deere
JD770
Motor Grader**

**TECHNICAL
MANUAL**



TM-1123

LITHO IN U.S.A.

JD770 MOTOR GRADER

Technical Manual
TM-1123 (Dec-82)

SECTIONAL CONTENTS OF THIS MANUAL

Section 1 - General Information	[REDACTED]
Section 1 - Wheels and Tires	[REDACTED]
Section 2 - Axles and Suspension Systems	[REDACTED]
Section 3 - Transmission	[REDACTED]
Section 4 - Engine	[REDACTED]
Section 5 - Engine Auxiliary Systems	[REDACTED]
Section 7 - Disconnect Clutch	NOT USED
Section 8 - Transfer Drive	[REDACTED]
Section 9 - Steering Systems	[REDACTED]
Section 10 - Service Brakes	[REDACTED]
Section 11 - Parking - Emergency Brakes	[REDACTED]
Section 15 - Equipment Attaching	[REDACTED]
Section 16 - Electrical Systems	[REDACTED]
Section 17 - Frame, Chassis or Supporting Structure	[REDACTED]
Section 18 - Operator's Station	[REDACTED]
Section 19 - Sheet Metal	[REDACTED]

**Thanks very much for your reading,
Want to get more information,
Please click here, Then get the complete
manual**

JustClickHere 

NOTE:

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

**Have any questions please write to me:
admin@servicemanualperfect.com**

<https://www.servicemanualperfect.com/downloads/john-deere-jd770-motor-grader-service-technical-manual%ef%bc%88tm1123%ef%bc%89/>

SECTIONAL CONTENTS (Continued)

Section 21 - Main Hydraulic System	_____	_____
Section 34 - Grading Device	_____	_____
Section 42 - Ground Conditioning Tool	_____	_____
Section 90 - System Testing	_____	_____
Section II - Index	_____	_____
Section 46 - Automatic Controls	_____	_____

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. Wherever applicable, specifications and design information are in accordance with SAE and ICED standards.

SECTION AND GROUP CONTENTS OF THIS MANUAL

SECTION I - GENERAL INFORMATION

- Group I - Contents
- Group II - Introduction and Safety Information
- Group III - General Specifications
- Group IV - Predelivery, Delivery and After-Sale Services
- Group V - Lubrication

SECTION 1 - WHEELS AND TIRES

- Group 0110 - Powered Wheels, Tires and Fastenings
- Group 0120 - Non-Powered Wheels, Tires and Fastenings
- Group 0199 - Specifications and Special Tools

SECTION 2 - AXLES AND SUSPENSION SYSTEMS

- Group 0201 - Drive Axle Housings
- Group 0210 - Differential
- Group 0230 - Non-Powered Wheel Axles
- Group 0250 - Axle Shaft, Bearings and Reduction Gears
- Group 0299 - Specifications and Special Tools

SECTION 3 - TRANSMISSION

- Group 0315 - Controls
- Group 0341 - Housings and Covers
- Group 0350 - Gears, Shafts, Bearings and Power Shift Clutch
- Group 0360 - Transmission Hydraulics
- Group 0370 - Clutch Disconnect and Controls
- Group 0399 - Specifications and Special Tools

SECTION 4 - ENGINES

- Group 0400 - Engine Removal and Installation
- Group 0401 - Crankshaft and Main Bearings
- Group 0402 - Camshafts and Valve Actuating Means
- Group 0403 - Connecting Rods and Pistons
- Group 0404 - Cylinder Block
- Group 0407 - Engine Oiling System
- Group 0408 - Ventilating System
- Group 0409 - Cylinder Head and Valves
- Group 0410 - Exhaust Manifold
- Group 0413 - Fuel Injection System
- Group 0414 - Intake Manifold
- Group 0416 - Turbocharger
- Group 0417 - Water Pump
- Group 0418 - Thermostats, Housings and Piping
- Group 0419 - Engine Oil Cooler
- Group 0420 - Fuel Filter
- Group 0422 - Starting Motor and Fastenings
- Group 0433 - Flywheel, Housing and Fasteners
- Group 0499 - Specifications and Special Tools

SECTION 5 - ENGINE AUXILIARY SYSTEMS

- Group 0505 - Cold Weather Starting Aids
- Group 0510 - Engine Cooling Systems
- Group 0515 - Speed Controls
- Group 0520 - Intake System
- Group 0560 - External Fuel Supply Systems
- Group 0599 - Specifications and Special Tools

SECTION 8 - TRANSFER DRIVE

- Group 0841 - Housings and Covers
- Group 0851 - Gears, Shafts and Bearings
- Group 0899 - Specifications and Special Tools

SECTION 9 - STEERING SYSTEM

- Group 0960 - Power Steering
- Group 0999 - Specifications and Special Tools

SECTION 10 - SERVICE BRAKES

- Group 1011 - Service Brakes Active Elements
- Group 1015 - Controls Linkage
- Group 1066 - Brakes Hydraulics
- Group 1099 - Specifications and Special Tools

SECTION 11 - PARKING-EMERGENCY BRAKES

- Group 1111 - Parking Brake Active Elements
- Group 1115 - Controls Linkage
- Group 1199 - Specifications and Special Tools

SECTION 15 - EQUIPMENT ATTACHING

- Group 1511 - Drawbar

SECTION 16 - ELECTRICAL SYSTEMS

- Group 1671 - Batteries, Support and Cables
- Group 1672 - Alternator, Regulator and Charging System Wiring
- Group 1673 - Vehicle Lighting System
- Group 1674 - Wiring Harness and Switches
- Group 1675 - Automatic Control Systems and Controls
- Group 1676 - Instruments and Indicators
- Group 1699 - Specifications and Special Tools

SECTION 17 - FRAME, CHASSIS OR SUPPORTING STRUCTURE

- Group 1740 - Frame Installation
- Group 1746 - Bottom Guards
- Group 1747 - Vehicle Bumpers
- Group 1799 - Specifications and Special Tools

SECTION 18 - OPERATOR'S STATION

- Group 1806 - Safety Equipment
- Group 1808 - Comfort and Convenience Items
- Group 1810 - Operator Enclosure
- Group 1821 - Seat
- Group 1830 - Heating and Air Conditioning
- Group 1899 - Specifications and Special Tools

SECTION 19 - SHEET METAL

- Group 1910 - Hood or Engine Enclosure
- Group 1921 - Grille and Grille Housing

SECTION 21 - MAIN HYDRAULIC SYSTEM

- Group 2160 - Hydraulic System
- Group 2199 - Specifications and Special Tools

SECTION 34 - GRADING DEVICE

- Group 3401 - Blade
- Group 3415 - Controls Linkage
- Group 3440 - Grading Device Frames
- Group 3450 - Circle Gearbox
- Group 3460 - Hydraulic System
- Group 3499 - Specifications and Special Tools

SECTION 42 - Ground Conditioning Tools

- Group 4201 - Teeth and Shanks
- Group 4240 - Frames
- Group 4260 - Hydraulic System
- Group 4299 - Specifications and Special Tools

SECTION 46 - AUTOMATIC CONTROLS

- Group 4615 - Linkages
- Group 4640 - Frames and Housings
- Group 4660 - Hydraulic Components
- Group 4670 - Electrical Components
- Group 4699 - Specifications and Special Tools

SECTION 90 - SYSTEM TESTING

- Group 9005 - General Information - Seven Basic Steps of Testing and Diagnosis
- Group 9010 - Engine
- Group 9015 - Electrical System
- Group 9020 - Power Train
- Group 9025 - Hydraulic System
- Group 9030 - Miscellaneous Components
- Group 9032 - Automatic Blade Control
- Group 9035 - Specifications and Special Tools

II INDEX



**COMPLETE PAGE LISTING
 WITH LATEST DATE LINES**

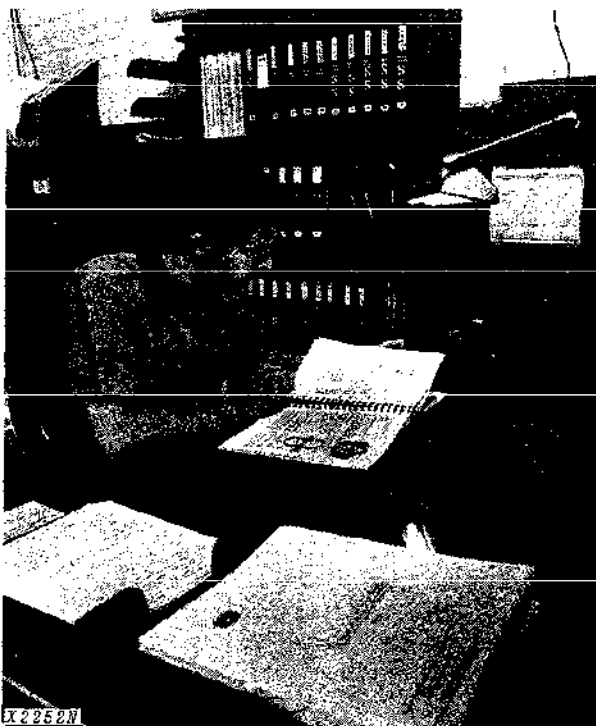
I I-1,2	(Dec-82)	2-0210-17,18	(Mar-80)	3-0399-3,4	(Nov-79)
I I-3,4	(Nov-79)	2-0210-19,20	(Nov-79)	3-0399-5,6	(Nov-79)
I I-5,6	(Nov-79)	2-0230-1,2	(Nov-79)	3-0399-7,8	(Nov-79)
I I-7,8	(Dec-82)	2-0230-3,4	(Nov-79)	3-0399-9,10	(Nov-79)
I I-9,10	(Dec-82)	2-0230-5,6	(Nov-79)	3-0399-11,12	(Nov-79)
I II-1,2	(Nov-79)	2-0230-7,8	(Nov-79)	3-0399-13,14	(Nov-79)
I II-3,4	(Nov-79)	2-0250-1,2	(Mar-80)	3-0399-15,16	(Nov-79)
I III-1,2	(Nov-79)	2-0250-3,4	(Nov-79)	3-0399-17,18	(Nov-79)
I III-3,4	(Nov-79)	2-0250-5,6	(Nov-79)		
I IV-1,2	(Nov-79)	2-0250-7,8	(Dec-82)	4-0400-1,2	(Nov-79)
I IV-3,4	(Nov-79)	2-0250-9,10	(Dec-82)	4-0400-3,4	(Nov-79)
I IV-5,6	(Nov-79)	2-0299-1,2	(Nov-79)	4-0401-1,2	(Nov-79)
I IV-7,8	(Nov-79)	2-0299-3,4	(Nov-79)	I 4-0401-3,4	(Dec-82)
I IV-9,10	(Nov-79)	2-0299-5,6	(Nov-79)	4-0401-5,6	(Nov-79)
I IV-11,12	(Nov-79)	2-0299-7,8	(Nov-79)	I 4-0401-7,8	(Dec-82)
I IV-13,14	(Nov-79)	2-0299-9,10	(Nov-79)	4-0401-9,10	(Nov-79)
I IV-15,16	(Nov-79)			4-0401-11,12	(Nov-79)
I IV-17,18	(Nov-79)	3-0315-1,2	(Nov-79)	4-0402-1,2	(Nov-79)
I IV-19,20	(Nov-79)	3-0315-3,4	(Nov-79)	4-0402-3,4	(Nov-79)
I IV-21,22	(Nov-79)	3-0315-5,6	(Nov-79)	4-0402-5,6	(Nov-79)
I IV-23,24	(Nov-79)	3-0341-1,2	(Nov-79)	4-0403-1,2	(Nov-79)
I IV-25,26	(Nov-79)	I 3-0341-3,4	(Dec-82)	4-0403-3,4	(Nov-79)
I IV-27,28	(Nov-79)	3-0341-5,6	(Mar-80)	4-0403-5,6	(Nov-79)
I IV-29,30	(Nov-79)	I 3-0341-7,8	(Dec-82)	4-0403-7,8	(Nov-79)
I IV-31,32	(Nov-79)	3-0350-1,2	(Nov-79)	I 4-0404-1,2	(Dec-82)
I IV-33,34	(Nov-79)	3-0350-3,4	(Nov-79)	4-0404-3,4	(Nov-79)
I V-1,2	(Nov-79)	3-0350-5,6	(Nov-79)	4-0404-5,6	(Nov-79)
		3-0350-7,8	(Nov-79)	I 4-0404-7,8	(Dec-82)
1-0110-1,2	(Nov-79)	3-0350-9,10	(Nov-79)	4-0404-9,10	(Nov-79)
1-0110-3,4	(Nov-79)	3-0350-11,12	(Nov-79)	4-0407-1,2	(Nov-79)
1-0120-1,2	(Nov-79)	3-0350-13,14	(Nov-79)	4-0407-3,4	(Nov-79)
1-0199-1,2	(Nov-79)	3-0350-15,16	(Nov-79)	4-0408-1,2	(Nov-79)
		3-0350-17,18	(Nov-79)	4-0409-1,2	(Nov-79)
2-0201-1,2	(Dec-82)	3-0350-19,20	(Nov-79)	4-0409-3,4	(Nov-79)
2-0201-3,4	(Dec-82)	I 3-0350-21,22	(Dec-82)	4-0409-5,6	(Mar-80)
2-0201-5,6	(Dec-82)	3-0350-23,24	(Nov-79)	4-0409-7,8	(Mar-80)
2-0201-7,8	(Dec-82)	I 3-0360-1,2	(Dec-82)	4-0410-1,2	(Nov-79)
2-0201-9,10	(Dec-82)	3-0360-3,4	(Nov-79)	4-0413-1,2	(Nov-79)
2-0201-11,12	(Nov-79)	3-0360-5,6	(Nov-79)	4-0413-3,4	(Nov-79)
2-0201-13,14	(Dec-82)	3-0360-7,8	(Nov-79)	4-0413-5,6	(Nov-79)
2-0201-15,16	(Dec-82)	3-0360-9,10	(Mar-80)	4-0413-7,8	(Nov-79)
2-0210-1,2	(Dec-82)	3-0360-11,12	(Mar-80)	4-0413-9,10	(Nov-79)
2-0210-3,4	(Nov-79)	3-0360-13,14	(Nov-79)	4-0413-11,12	(Nov-79)
2-0210-5,6	(Nov-79)	3-0360-15,16	(Nov-79)	4-0413-13,14	(Nov-79)
2-0210-7,8	(Nov-79)	3-0360-17,18	(Nov-79)	4-0414-1,2	(Nov-79)
2-0210-9,10	(Nov-79)	3-0370-1,2	(Nov-79)	4-0416-1,2	(Nov-79)
I 2-0210-11,12	(Dec-82)	3-0370-3,4	(Nov-79)	4-0416-3,4	(Nov-79)
2-0210-13,14	(Nov-79)	3-0370-5,6	(Nov-79)	4-0416-5,6	(Nov-79)
2-0210-15,16	(Nov-79)	3-0370-7,8	(Nov-79)	4-0416-7,8	(Nov-79)
		3-0399-1,2	(Nov-79)	I 4-0417-1,2	(Dec-82)

4-0417-3,4	(Nov-79)	9-0960-1,2	(Nov-79)	16-1673-1,2	(Nov-79)
4-0418-1,2	(Mar-80)	9-0960-3,4	(Nov-79)	16-1673-3,4	(Nov-79)
4-0419-1,2	(Nov-79)	9-0960-5,6	(Nov-79)	16-1674-1,2	(Nov-79)
4-0420-1,2	(Nov-79)	9-0960-7,8	(Nov-79)	16-1674-3,4	(Nov-79)
4-0422-1,2	(Nov-79)	9-0960-9,10	(Nov-79)	16-1675-1,2	(Nov-79)
4-0422-3,4	(Nov-79)	9-0960-11,12	(Nov-79)	16-1675-3,4	(Nov-79)
4-0422-5,6	(Nov-79)	9-0960-13,14	(Nov-79)	16-1675-5,6	(Nov-79)
4-0422-7,8	(Nov-79)	9-0960-15,16	(Nov-79)	16-1676-1,2	(Nov-79)
4-0422-9,10	(Nov-79)	9-0960-17,18	(Nov-79)	16-1676-3,4	(Nov-79)
4-0433-1,2	(Nov-79)	9-0960-19,20	(Nov-79)	16-1676-5,6	(Nov-79)
4-0499-1,2	(Nov-79)	9-0999-1,2	(Nov-79)	16-1676-7,8	(Nov-79)
4-0499-3,4	(Nov-79)	9-0999-3,4	(Nov-79)	16-1699-1,2	(Nov-79)
4-0499-5,6	(Nov-79)			16-1699-3,4	(Nov-79)
4-0499-7,8	(Nov-79)	10-1011-1,2	(Nov-79)	16-1699-5,6	(Mar-80)
4-0499-9,10	(Mar-80)	10-1011-3,4	(Nov-79)	16-1699-7,8	(Nov-79)
4-0499-11,12	(Nov-79)	10-1015-1,2	(Nov-79)	16-1699-9,10	(Nov-79)
4-0499-13,14	(Nov-79)	10-1060-1,2	(Nov-79)		
4-0499-15,16	(Nov-79)	10-1060-3,4	(Nov-79)	17-1740-1,2	(Nov-79)
4-0499-17,18	(Nov-79)	10-1060-5,6	(Nov-79)	17-1740-3,4	(Nov-79)
4-0499-19,20	(Mar-80)	10-1060-7,8	(Nov-79)	17-1740-5,6	(Nov-79)
4-0499-21,22	(Nov-79)	10-1060-9,10	(Mar-80)	17-1746-1,2	(Nov-79)
4-0499-23,24	(Nov-79)	10-1099-1,2	(Nov-79)	17-1747-1,2	(Nov-79)
4-0499-25,26	(Nov-79)	10-1099-3,4	(Nov-79)	17-1799-1,2	(Nov-79)
4-0499-27,28	(Nov-79)				
4-0499-29,30	(Nov-79)	11-1111-1,2	(Nov-79)	18-1806-1,2	(Nov-79)
4-0499-31,32	(Mar-80)	11-1111-3,4	(Nov-79)	18-1806-3,4	(Nov-79)
4-0499-33,34	(Mar-80)	11-1111-5,6	(Nov-79)	18-1808-1,2	(Nov-79)
4-0499-35,36	(Dec-82)	11-1111-7,8	(Nov-79)	18-1810-1,2	(Nov-79)
4-0499-37,38	(Mar-80)	11-1111-9,10	(Nov-79)	18-1810-3,4	(Nov-79)
		11-1115-1,2	(Nov-79)	18-1810-5,6	(Nov-79)
5-0505-1,2	(Nov-79)	11-1115-3,4	(Nov-79)	18-1810-7,8	(Nov-79)
5-0505-3,4	(Nov-79)	11-1199-1,2	(Nov-79)	18-1810-9,10	(Nov-79)
5-0510-1,2	(Nov-79)			18-1810-11,12	(Nov-79)
5-0515-1,2	(Nov-79)	15-1511-1,2	(Nov-79)	18-1821-1,2	(Nov-79)
5-0520-1,2	(Nov-79)	15-1511-3,4	(Nov-79)	18-1821-3,4	(Nov-79)
5-0560-1,2	(Nov-79)			18-1830-1,2	(Nov-79)
5-0560-3,4	(Nov-79)	16-1671-1,2	(Nov-79)	18-1899-1,2	(Nov-79)
5-0599-1,2	(Nov-79)	16-1671-3,4	(Nov-79)		
		16-1671-5,6	(Nov-79)	19-1910-1,2	(Nov-79)
8-0841-1,2	(Nov-79)	16-1671-7,8	(Nov-79)	19-1910-3,4	(Nov-79)
8-0841-3,4	(Mar-80)	16-1672-1,2	(Nov-79)	19-1910-5,6	(Nov-79)
8-0841-5,6	(Nov-79)	16-1672-3,4	(Nov-79)	19-1921-1,2	(Nov-79)
8-0851-1,2	(Nov-79)	16-1672-5,6	(Nov-79)		
8-0851-3,4	(Mar-80)	16-1672-7,8	(Nov-79)		
8-0851-5,6	(Nov-79)	16-1672-9,10	(Nov-79)		
8-0851-7,8	(Nov-79)	16-1672-11,12	(Nov-79)		
8-0851-9,10	(Nov-79)	16-1672-13,14	(Nov-79)		
8-0899-1,2	(Nov-79)				
8-0899-3,4	(Nov-79)				

21-2160-1,2	(Nov-79)	34-3499-1,2	(Nov-79)	90-9015-1,2	(Nov-79)
21-2160-3,4	(Nov-79)	34-3499-3,4	(Nov-79)	90-9015-3,4	(Nov-79)
21-2160-5,6	(Nov-79)	34-3499-5,6	(Nov-79)	90-9015-5,6	(Nov-79)
21-2160-7,8	(Nov-79)	34-3499-7,8	(Nov-79)	90-9015-7,8	(Nov-79)
21-2160-9,10	(Nov-79)	34-3499-9,10	(Nov-79)	90-9015-9,10	(Nov-79)
21-2160-11,12	(Mar-80)			90-9015-11,12	(Nov-79)
21-2160-13,14	(Nov-79)	42-4201-1,2	(Nov-79)	90-9015-13,14	(Nov-79)
21-2160-15,16	(Nov-79)	42-4201-3,4	(Nov-79)	90-9015-15,16	(Nov-79)
21-2160-17,18	(Nov-79)			90-9015-17,18	(Nov-79)
21-2199-1,2	(Nov-79)	42-4240-1,2	(Nov-79)	90-9015-19,20	(Nov-79)
21-2199-3,4	(Nov-79)	42-4240-3,4	(Nov-79)	90-9015-21,22	(Nov-79)
21-2199-5,6	(Mar-80)	42-4260-1,2	(Nov-79)	90-9015-23,24	(Nov-79)
21-2199-7,8	(Nov-79)	42-4260-3,4	(Nov-79)	90-9015-25,26	(Nov-79)
21-2199-9,10	(Nov-79)	42-4260-5,6	(Mar-80)	90-9015-27,28	(Nov-79)
21-2199-11,12	(Mar-80)	42-4260-7,8	(Nov-79)	90-9015-29,30	(Nov-79)
		42-4260-9,10	(Nov-79)	90-9015-31,32	(Nov-79)
34-3401-1,2	(Nov-79)	42-4260-11,12	(Nov-79)	90-9015-33,34	(Nov-79)
34-3401-3,4	(Nov-79)	42-4260-13,14	(Mar-80)	90-9015-35,36	(Nov-79)
34-3401-5,6	(Nov-79)	42-4260-15,16	(Nov-79)	90-9015-37,38	(Nov-79)
34-3415-1,2	(Nov-79)	42-4260-17,18	(Nov-79)	90-9015-39,40	(Nov-79)
34-3415-3,4	(Nov-79)	42-4260-19,20	(Nov-79)	90-9015-41,42	(Nov-79)
34-3440-1,2	(Nov-79)	42-4299-1,2	(Nov-79)	90-9015-43,44	(Nov-79)
34-3440-3,4	(Nov-79)	42-4299-3,4	(Nov-79)	90-9015-45,46	(Nov-79)
34-3440-5,6	(Nov-79)	42-4299-5,6	(Nov-79)	90-9015-47,48	(Nov-79)
34-3440-7,8	(Nov-79)			90-9015-49,50	(Nov-79)
34-3450-1,2	(Nov-79)	46-4615-1,2	(Mar-80)	90-9015-51,52	(Nov-79)
34-3460-1,2	(Nov-79)	46-4615-3,4	(Nov-79)	90-9015-53,54	(Nov-79)
34-3460-3,4	(Nov-79)	46-4615-5,6	(Dec-82)	90-9015-55,56	(Nov-79)
34-3460-5,6	(Nov-79)	46-4615-7,8	(Nov-79)	90-9020-1,2	(Nov-79)
34-3460-7,8	(Nov-79)	46-4615-9,10	(Mar-80)	90-9020-3,4	(Nov-79)
34-3460-9,10	(Nov-79)	46-4615-11,12	(Mar-80)	90-9020-5,6	(Nov-79)
34-3460-11,12	(Nov-79)	46-4615-13,14	(Nov-79)	90-9020-7,8	(Nov-79)
34-3460-13,14	(Nov-79)	46-4640-1,2	(Nov-79)	90-9020-9,10	(Nov-79)
34-3460-15,16	(Nov-79)	46-4660-1,2	(Nov-79)	90-9020-11,12	(Nov-79)
34-3460-17,18	(Nov-79)	46-4660-3,4	(Nov-79)	90-9020-13,14	(Nov-79)
34-3460-19,20	(Nov-79)	46-4660-5,6	(Nov-79)	90-9020-15,16	(Nov-79)
34-3460-21,22	(Nov-79)	46-4660-7,8	(Nov-79)	90-9025-1,2	(Nov-79)
34-3460-23,24	(Mar-80)	46-4670-1,2	(Mar-80)	90-9025-3,4	(Nov-79)
34-3460-25,26	(Nov-79)	46-4670-3,4	(Mar-80)	90-9025-5,6	(Mar-80)
34-3460-27,28	(Mar-80)	46-4670-5,6	(Mar-80)	90-9025-7,8	(Nov-79)
34-3460-29,30	(Nov-79)	46-4699-1,2	(Nov-79)	90-9025-9,10	(Nov-79)
34-3460-31,32	(Nov-79)			90-9025-11,12	(Nov-79)
34-3460-33,34	(Mar-80)	90-9005-1,2	(Nov-79)	90-9025-13,14	(Nov-79)
34-3460-35,36	(Mar-80)	90-9005-3,4	(Nov-79)	90-9025-15,16	(Nov-79)
34-3460-37,38	(Nov-79)	90-9010-1,2	(Nov-79)	90-9025-17,18	(Nov-79)
34-3460-39,40	(Nov-79)	90-9010-3,4	(Nov-79)	90-9025-19,20	(Nov-79)
34-3460-41,42	(Nov-79)	90-9010-5,6	(Nov-79)	90-9025-21,22	(Nov-79)
34-3460-43,44	(Nov-79)	90-9010-7,8	(Nov-79)	90-9025-23,24	(Nov-79)
34-3460-45,46	(Nov-79)	90-9010-9,10	(Nov-79)	90-9025-25,26	(Nov-79)
34-3460-47,48	(Nov-79)	90-9010-11,12	(Mar-80)	90-9025-27,28	(Nov-79)
34-3460-49,50	(Nov-79)	90-9010-13,14	(Mar-80)	90-9025-29,30	(Nov-79)
34-3460-51,52	(Nov-79)	90-9010-15,16	(Mar-80)	90-9025-31,32	(Nov-79)

90-9025-33,34	(Nov-79)
90-9025-35,36	(Nov-79)
90-9025-37,38	(Nov-79)
90-9025-39,40	(Nov-79)
90-9025-41,42	(Nov-79)
90-9025-43,44	(Mar-80)
90-9025-45,46	(Nov-79)
90-9025-47,48	(Mar-80)
90-9025-49,50	(Mar-80)
90-9025-51,52	(Mar-80)
90-9025-53,54	(Mar-80)
90-9025-55,56	(Mar-80)
90-9025-57,58	(Mar-80)
90-9025-59,60	(Mar-80)
90-9030-1,2	(Nov-79)
90-9030-3,4	(Nov-79)
90-9030-5,6	(Nov-79)
90-9032-1,2	(Nov-79)
90-9032-3,4	(Nov-79)
90-9032-5,6	(Nov-79)
90-9032-7,8	(Nov-79)
90-9032-9,10	(Dec-82)
90-9032-11,12	(Nov-79)
90-9032-13,14	(Nov-79)
90-9032-15,16	(Mar-80)
90-9032-17,18	(Nov-79)
90-9032-19,20	(Mar-80)
90-9032-21,22	(Mar-80)
90-9032-23,24	(Mar-80)
90-9032-25,26	(Mar-80)
90-9032-27,28	(Mar-80)
90-9032-29,30	(Mar-80)
90-9035-1,2	(Mar-80)
90-9035-3,4	(Mar-80)
90-9035-5,6	(Nov-79)
90-9035-7,8	(Nov-79)
90-9035-9,10	(Mar-80)
90-9035-11,12	(Nov-79)
90-9035-13,14	(Nov-79)
90-9035-15,16	(Nov-79)
90-9035-17,18	(Nov-79)
90-9035-19,20	(Nov-79)
90-9035-21,22	(Mar-80)
90-9035-23,24	(Mar-80)
90-9035-25,26	(Mar-80)
Index-1,2	(Dec-82)
Index-3,4	(Mar-80)
Index-5,6	(Mar-80)

Group II INTRODUCTION AND SAFETY INFORMATION INTRODUCTION



Use FOS Manuals for Reference

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 failure 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.

Litho in U.S.A.



Use Technical Manuals for Actual Service

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:

- Inside front cover - "Table of Contents".
- Section I - General specifications and services.
- Sections 1 through 42 - Removal, repair, testing (components removed), installation, and adjustment.
- Section 90 - Detailed explanation of system operation, diagnosis, visual inspection, testing, and adjustments.
- Specifications grouped and illustrated at the end of each section.

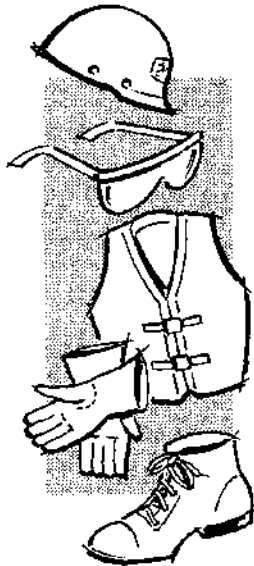
MAINTENANCE WITHOUT ACCIDENT WORK SAFELY



T27899H

 This safety alert symbol identifies important safety messages in this manual and on the motor grader. 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

Consult your shop foreman 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 vests, ear protectors, respirators.

Litho in U.S.A.



T27502N

BE ALERT!

Plan ahead—work safely—know how to use a first-aid kit and a fire extinguisher—and where to get aid and assistance.



T27504H

Maintenance Area

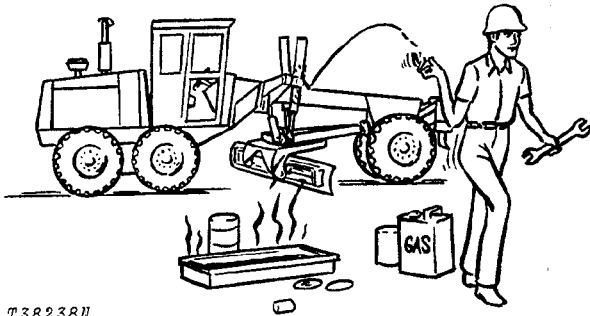
Make sure the maintenance area is adequately vented.

Keep 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.

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

MAINTENANCE WITHOUT ACCIDENT

AVOID FIRE HAZARDS— Fuel Is Dangerous!



T38238N

Don't smoke while refueling.

Don't smoke while 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.

Battery Gas Is Highly Flammable!

Provide adequate ventilation when charging batteries.



T27506N

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.

Flame Is Not a Flashlight!

NEVER USE OPEN FLAME AROUND THE MACHINE.

KNOW WHERE FIRE EXTINGUISHERS ARE KEPT!

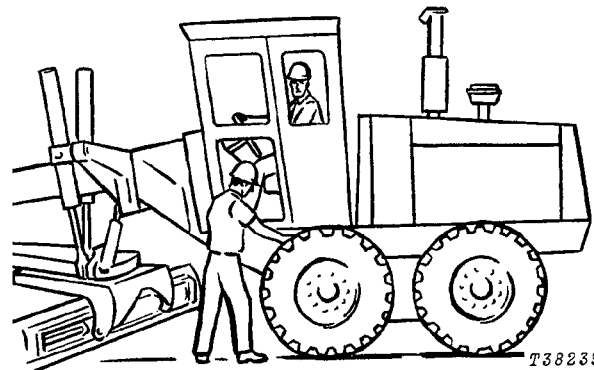
Litho in U.S.A.

UNDER ALL MAINTENANCE CONDITIONS—

Do not perform any work on the equipment unless authorized to do so. Then be sure you know the safe and proper procedure.

Follow recommended procedures.

Never service the equipment while it is being operated.



T38239N

Avoid working on equipment with the engine running.

If it is necessary to make checks with the engine running, **ALWAYS USE TWO** service technicians—one, the operator, at the controls, the other checking within sight of the operator.

KEEP HANDS AWAY FROM MOVING PARTS

Support all raised equipment.

Never work under raised blade, ripper, or scarifier.

Lower all equipment to ground.

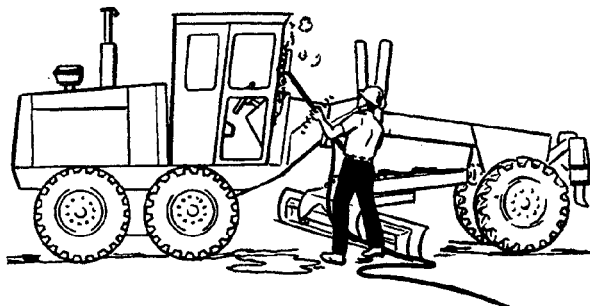
If the machine is on an incline, block it securely.

Use hoisting equipment for lifting heavy parts.

TAKE CARE! WATCH OUT FOR OTHER PEOPLE IN THE VICINITY

Wear safety glasses when drilling, grinding, or hammering metal.

SERVICING PRECAUTIONS



T38242N

Keep ALL equipment free of dirt and oil.

Be sure to clean any oil, grease, mud, ice, or snow from floor of operator's compartment, stepping points, and grab rails.

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

Don't remove the radiator cap until coolant temperature is below the boiling point. Then turn cap slightly to relieve pressure before removing.

Periodically check exhaust system for excessive leakage.

Relieve hydraulic pressure before working on hydraulic system: shut off engine, lower all equipment to ground, and move control levers until no response is felt.

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

PRECAUTIONS DURING REPAIR

Before working on hydraulic system relieve hydraulic pressure.

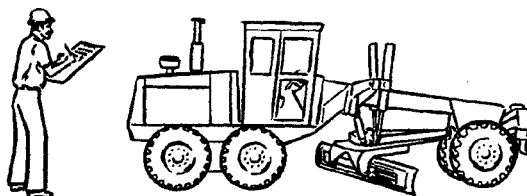
Before repairing the electrical system, or performing a major overhaul, disconnect batteries.

KNOW EQUIPMENT IS READY!

Check guards, safety bars—all protective devices installed on the grader. Every one should be in place and secure.

CHECK IT OUT!

- GUARDS
- SHIELDS
- PROTECTIVE DEVICES
- SEAT BELTS, ETC.



T38243N

Carefully inspect equipment for visual defects—leaks in fuel, lubrication, and hydraulic systems. Do not search for pressurized fluid leaks with your hands. Use cardboard or wood to search for leaks.

Group III

GENERAL SPECIFICATIONS

(Specifications and design subject to change without notice. Wherever applicable, specifications are in accordance with ICED and SAE Standards. Except where otherwise noted, these specifications are based on a unit equipped with 13.00-24, 10-ply-rating, tubeless tires, 13-ft. (3.96 m) moldboard, and standard equipment.

Power (@ 2200 engine rpm): **SAE**
Gross 152 (113.5 kW*)
Net 142 (106 kW*) 144 PS

*Net engine flywheel power is for an engine equipped with fan, air cleaner, water pump, lubricating-oil pump, fuel pump, alternator, and muffler. Gross engine power is without fan. Flywheel power ratings are under SAE standard conditions of 500 ft. (150 m) altitude and 85° F (20°C) temperature and DIN 70 020 conditions (non-corrected). No derating is required up to 10,000 ft. (3 000 m)

*In the international system of units (SI), power is expressed in kilowatts (kW).

Engine: John Deere Turbocharged diesel, vertical 6-cylinder, valve-in-head, 4-stroke cycle.
Bore and stroke .. 4.75 x 5.00 in. (120.6 x 127 mm)
Piston displacement 531 cu. in (8 702 cm³)
Compression ratio 15.8 to 1
Maximum torque
 @ 1,400 rpm 440 lb-ft (597 Nm)
NACC or AMA (U.S. Tax) horsepower 54.15
Main bearings 7
Lubrication Pressure system with full-flow filter
Cooling Pressurized with thermostat and fixed bypass
Fan Suction
Air cleaner with restriction indicator Dry
Electrical system 24 volt (24 V) with alternator
Batteries (2) Reserve capacity: 360 minutes
Transmission Power Shift, 8 forward and 4 reverse selections
Differential Lock Foot-operated, hydraulically-actuated
Final Drives Inboard planetary

Travel Speeds (2,200 engine rpm, no tire slip, 14.00 - 24 tires)

Shift Lever Position	mph	km/h
Forward 1	2.3	3.7
2	3.3	5.3
3	5.2	8.9
4	6.7	10.8
5	8.8	14.2
6	11.5	18.5
7	14.6	23.6
8	25.1	40.4
Reverse 1	3.0	4.8
2	4.2	6.8
3	6.6	10.6
4	8.6	13.9

Brakes:
Service Foot-operated, hydraulically-actuated, wet-disk, effective on 4 tandem wheels
Parking Foot-operated, mechanical, dry-disk effective on 4 tandem wheels

Steering:
Front Full hydraulic power system
Rear Hydraulically-articulated frame steering (25 deg. left or right)
Turning radius 22 ft. (6.7 m)
Range 47.5 deg. left or right

Hydraulic System: Closed-center
Pressure 2,000 psi (138 bar)
Pressure (stand-by) 2,350 psi (162 bar)
Pump Variable-displacement, 57 gpm (216 L/min. @ 2,200 engine rpm)

Circle: Welded angle, 5 ft. (1.5 m) dia.
Rotation 360 deg.
Drive Hydraulic motor and worm gear

Drawbar Welded box, 3.5x7x0.5 in. (89x178x13 mm) wall, w/ball and socket pivot

Blade:	Standard	Optional
Length	13 ft. (3.96 m)	12 ft. (3.66 m)
Height	24 in. (610 mm)	24 in. (610 mm)
Thickness	0.88 in. (22 mm)	0.88 in. (22 mm)

Blade Lifting Mechanism:
 Control Dual lever, hydraulic
 Cylinders (2) 3.5 in. (89 mm) dia. bore;
 49 in. (1.25 m) stroke

Blade Range:
 Lift above ground 17 in. (432 mm)
 Blade side-shift:
 Right or left 26.9 in. (683 mm)
 Shoulder reach outside wheels:
 Right 92.5 in. (2 350 mm)
 Left 92 in. (2 337 mm)
 Pitch 35 deg. total

Lift arms:
 Positions 7
 Control Hydraulic, foot operated

Frame:
 Rear main frame Flanged box section from
 articulation joint to main frame arch
 Top and bottom plate,
 width 14 in. (356 mm)
 thickness 0.875 in. (22 mm)
 Side plates, minimum height. . 10.25 in. (260 mm)
 thickness .0.50 in. (13 mm)
 Weight per ft., min. 112 lb. (51 kg)
 Minimum vertical-section
 modulus. 127 inches cubed
 (323 cm cubed)

Front main frame. Formed box section from main
 frame arch to front hood
 Width. 10 in. (254 mm)
 Height, min. 13 in. (330 mm)
 Thickness 0.625 in. (16 mm)
 Weight per ft., min. 92.3 lb. (42 kg)
 Minimum vertical section
 modulus. 100 inches cubed
 (254 cm cubed)

Tandems: Welded steel box section 2 ft. 3 in. (686
 mm) x 7.56 in. (192 mm)
 Drive 2.00 in. (51 mm) pitch roller chain
 Axle dia. at bearings 3.63 in. (92.2 mm)
 3.35 in. (85.1 mm)

Front Axle: Fabricated steel box frame with steel
 spindles, tapered roller bearings
 Diameter at bearing seats 3.5 in. (90 mm)
 1.87 in. (48 mm)

Total oscillation 30 deg.
 Wheel lean (either direction) 20 deg.

Rear Drive Axle: Full floating with tapered roller bear-
 ings
 Diameter at bearings 3.63 in. (92.2 mm)

Tires 13.00 - 24, 10 and 12 ply-rating
 8 in. (203 mm) rim
 14.00 - 24, 8, 10 and 12 ply-rating
 8 or 10 in. (203 or 254 mm) rim
 17.5 - 25 and 12 ply-rating
 14 in. (356 mm) rim

Scarifier (Special Equipment): V-type for 4 ft. (1.22 m)
 cut with 3 manual pitch positions
 Number of teeth 5 (standard), 9 (possible)
 Lift above ground 22 in. (559 mm)
 Penetration 12 in. (305 mm)
 Shank size 1.25x4.0 in. (31.7x102 mm)

Ripper (Special Equipment): 8 ft. (2.44 m) cut width,
 parallelogram linkage, 2 manual shank vertical posi-
 tions.
 Number of shank pockets 5
 Number of shanks 3
 Lift above ground 14.5 in. (368 mm)
 Penetration 14 in. (356 mm)
 Shank size 2x5 in. (51x127 mm)
 Lift above ground
 (shank in upper position) 23.5 in. (597 mm)

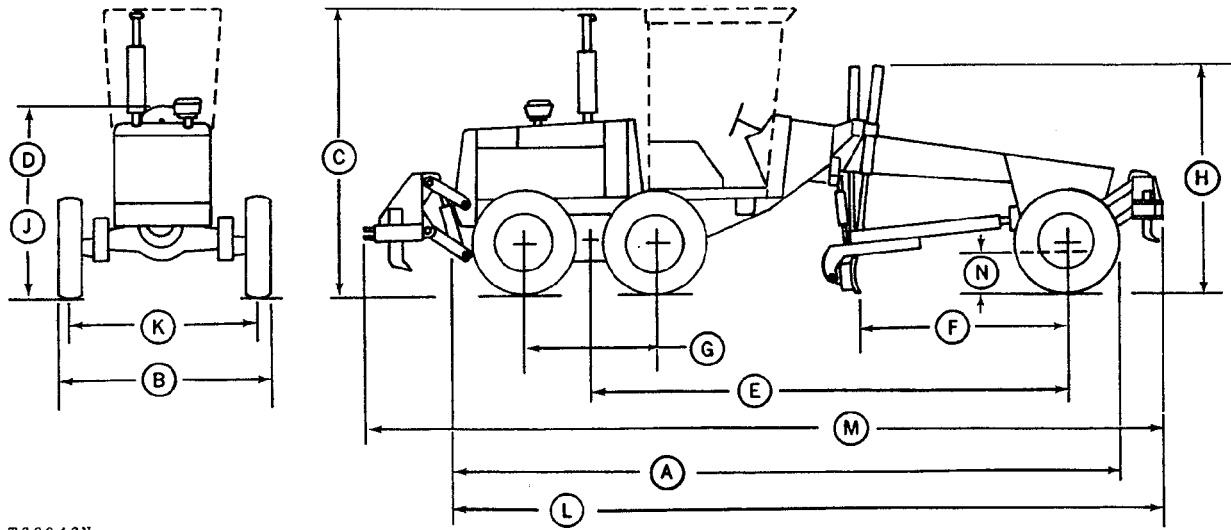
Capacities:	U.S.	Litres
Fuel tank	70 gal.	265
Cooling system	10 gal.	37.8
Engine lubrication, including filter	22 qt.	21
*Transmission-hydraulic system	31 gal.	117
Tandem housings (each)	4 gal.	15
Worm gearbox	3 qt.	2.8

SAE			
Operating	On Front	On Rear	Total
Weight	Wheels	Wheels	
Standard	8,220 lb.	21,625 lb.	29,845 lb.
equipment	(3 729 kg)	(9 809 kg)	(13 538 kg)

Standard equipment, and scarifier	9,434 lb.	21,626 lb.	31,059 lb.
	(4 279 kg)	(9 809 kg)	(14 038 kg)

Standard equipment, scarifier and ripper . . .	8,637 lb.	24,922 lb.	15,222 lb.
	(3 918 kg)	(11 304 kg)	(6 905 kg)

*Includes approximately 8 gal. (30 L) for hydraulic
 cylinders, lines, filters, etc.



T38246N

OVER-ALL DIMENSIONS

- A. Length 27 ft. 9.5 in. (8.47 m)
- B. Width (13.00 - 24 tires)
 (Front and rear) 7 ft. 10 in. (2.38 m)
 Width (17.5 - 25 tires)
 (Front and rear) 8 ft. 6 in. (2.59 m)
 Width (14.00 - 24 tires)
 (Front and rear) 8 ft. (2.44 m)
- C. Height (with Cab) 10 ft. 6 in. (3.2 m)
- D. Height (w/o Cab - To Top of
 Steering Wheel) 90 in. (2.3 m)
- E. Wheel Base 19 ft. 7 in. (5.97 m)
- F. Blade Base 8 ft. 11 in. (2.72 m)
- G. Tandems (Center Line) 5 ft. 0.7 ft. (1.54 m)
- H. Height (Top Lift Cylinders) ... 9 ft. 7 in. (2.92 m)
- J. Height (Top Air Cleaner) 96 in. (2.4 m)

OVER-ALL DIMENSIONS

- K. Tread
 (Front) (13.00 - 24 tires) 76.6 in. (1.94 m)
 (Front) (17.5 - 25 tires) 79.36 in. (2.01 m)
 (Front) (14.00 - 24 tires) 76.6 in. (1.94 m)
 (Rear) (13.00 - 24 tires).... 79.61 in. (2.02 m)
 (Rear) (17.5 - 25 tires).... 82.37 in. (2.09 m)
 (Rear) (14.00 - 24 tires).... 79.61 in. (2.02 m)
- L. Length with Scarifier (In Up
 Position) 29 ft. 9 in. (9.07 m)
- M. Length with Scarifier and
 Ripper (Both in Up
 Position) 32 ft. 1 in. (9.78 m)
- N. Front axle ground clearance
 with 13.00 - 24 tires 22 in. (559 mm)
 with 17.5 - 25 tires 23.2 in. (589 mm)
 with 14.00 - 24 tires 22.5 in. (571 mm)

Additional Standard Equipment:

- | | |
|---|---|
| Transistorized voltage regulator | Gauges: |
| Lights (2 white front with stop and tail-light) | Water temperature |
| Cigaret lighter | Transmission temperature |
| Horn | Transmission pressure |
| Deluxe bucket seat | Engine-oil pressure |
| Front windshield wiper | Transmission lube |
| Floor mat | Fuel |
| Engine side shields | Pre-cleaner |
| Horn | ROPS with cab and seat belt |
| Turn signals | Air filter indicator |
| Mechanical hour meter | Rear windshield wiper |
| Cold weather starting aid | Work lights (2 front and 2 rear floods) |

Special Equipment:

- | | |
|--|---|
| Scarifier | Heavy-duty batteries (2)
(620 min. reserve capacity) |
| Cab heater | Coolant heater |
| Cab defroster fan | Bench seat |
| ROPS canopy with seat belt | 2 ft. (610 mm) moldboard extensions, right or left |
| Rear mounted ripper with drawbar hitch | 13 ft. (3.96 m) moldboard |
| Below-cab blade lights | 14 ft. (4.27 m) moldboard |
| Reverse warning system | Engine disconnect |
| 3-in. seat belt | Overlay end bits |
| Articulation indicator | Transmission bottom guard |
| | Drawbar hitch |
| | Tool box |
| | Sound-baffled engine side shields |