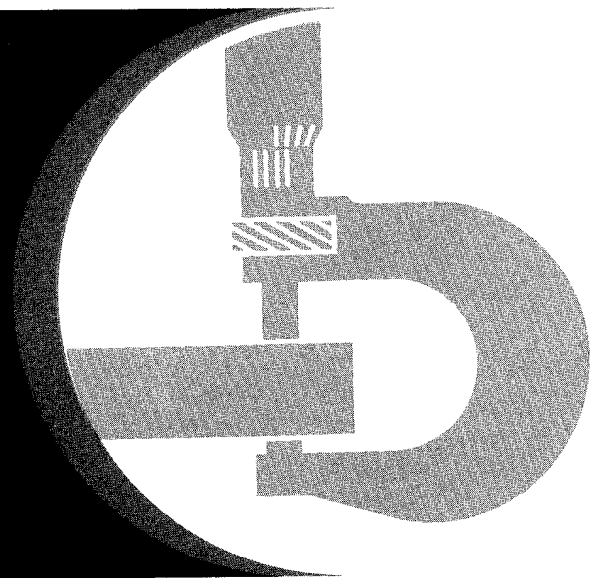


**John Deere  
JD570 and JD570A  
Motor Grader**



**TECHNICAL MANUAL**

**TM-1001 (Dec-87)**

# JD570 AND JD570-A MOTOR GRADERS

**Technical Manual  
TM-1001 (Dec-87)**

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# Section 10 GENERAL

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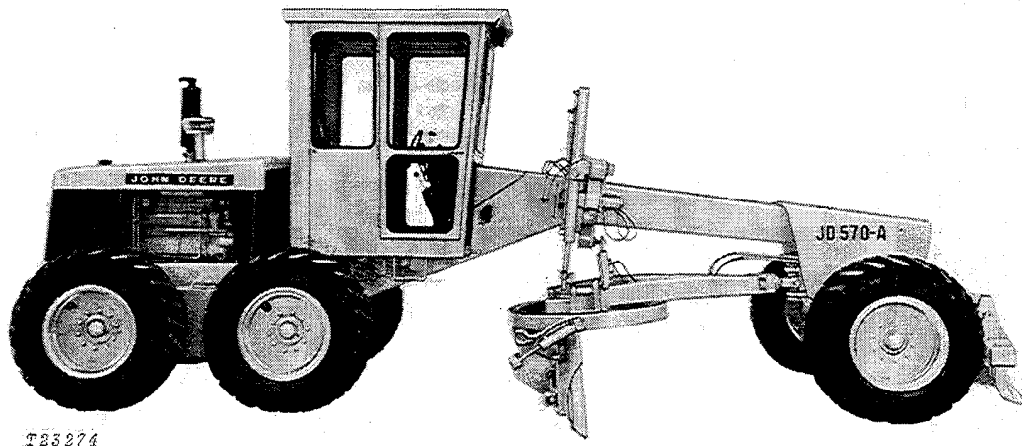


Fig. 1-JD570-A Motor Grader

# Group 5 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, 8-ply-rating, tubeless tires and standard equipment.)

## JD570-A

<b>Power</b> (at 2300 engine rpm):	<b>SAE</b>	<b>DIN</b>
Gross .....	92 hp (68.6 kW*)	
Net .....	85 hp (63.4 kW)	86.2 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. altitude and 85°F. temperature, and DIN 70 020 conditions (non-corrected). No derating is required up to 10,000 feet (3000 m) altitude.

\*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 ..... 4.02x4.33 in. (102x110 mm)  
 Piston displacement ..... 329 cu. in. (5392 cm<sup>3</sup>)  
 Compression ratio ..... 16.2 to 1  
 Maximum torque @ 1300 rpm ... 238 lb-ft (323 Nm) (32.8 kg-m)  
 NACC or AMA (U.S. Tax) horsepower ..... 38.6  
 Main bearings ..... 7  
 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) ..... Reserve capacity: 360 minutes

**Transmission**... Power Shift, 8 forward and 4 reverse selections

**Differential Lock**..... Foot-operated, hydraulically actuated

**Travel Speeds** (2300 engine rpm, no tire slip):

Shift Lever Position	mph	km/h
Forward 1	2.0	3.3
2	2.9	4.6
3	4.5	7.2
4	5.8	9.4
5	7.6	12.2
6	9.8	15.8
7	12.8	20.6
8	21.6	34.8
Reverse 1	2.5	4.0
2	3.5	5.6
3	5.5	8.8
4	7.1	11.4

**Final Drives** ..... Inboard planetary

### Brakes:

Service ..... Foot-operated, hydraulically actuated, wet-disk, effective on 4 tandem wheels  
 Parking ..... Hand-operated, mechanical, expanding dry shoe, effective on 4 tandem wheels

### Steering:

Front ..... Full hydraulic power system  
 Rear ..... Hydraulically articulated frame steering (22 deg. left or right)  
 Turning radius ..... 18 ft. (5.49 m)  
 Range ..... 51 deg. left or right

### Hydraulic System: Closed-center

Pressure ..... 2000 psi (137.9 bar) (140.6 kg/cm<sup>2</sup>)  
 Pump ..... Variable displacement, 27 gpm (102 L/min) @ 2300 engine rpm

**Circle:** 5.50x1x4.62x1 in. (140x25x117x25 mm) welded angle, 4 ft. 6 in. (1.37 m) dia.

Rotation ..... 360 deg.  
 Drive ..... Hydraulic motor and worm gear

**Drawbar**..... Tapered box, max. 3x7x0.375 in. (76x178x9.5 mm) wall, w/universal swivel

### Blade:

	Standard	Optional
Length .....	12 ft. (3.66 m)	12 ft. (3.66 m)
Height .....	22 in. (559 mm)	22 in. (559 mm)
Thickness.....	0.62 in. (15.8 mm)	0.75 in. (19.1 mm)

### Blade Lifting Mechanism:

Control ..... Dual-lever, hydraulic  
 Cylinders (2) ..... 3 in. (76 mm) dia. bore; 42 in. (1.07 m) stroke

### Blade Range:

Lift above ground ..... 1 ft. 1 in. (330 mm)  
 Blade side-shift:  
 Right ..... 2 ft. 2.75 in. (679 mm)  
 Left ..... 2 ft. 7.25 in. (794 mm)  
 Shoulder reach outside wheels:  
 Right ..... 5 ft. 11.5 in. (1.82 m)  
 Left ..... 6 ft. 5.25 in. (1.96 m)  
 Pitch ..... 32 deg. total

**JD570-A**

**Saddle:**

Rotation ..... 45 deg. right or left, 5 positions  
Control ..... Single foot-operated release hydraulically controls tapered locking pins

**Frame: Tapered box**

Section size, max..... 16.5x8 in. (419x203 mm)  
min..... 12.5x8 in. (318x203 mm)  
Weight per ft. max..... 99 lb. (147.3 kg/m)  
av..... 91 lb. (135.4 kg/m)

**Tandems:** Welded steel box section 1 ft. 9.75 in. (552 mm)x6.5 in. (165 mm)

Drive ..... 1.75 in. (44 mm) pitch roller chain  
Axle dia. at bearings ..... 3.25 in. (83 mm)  
2.62 in. (67 mm)

**Front Axle:** Fabricated steel A-frame with cast alloy-steel spindles, tapered roller bearings

Diameter at bearing seats ..... 2.62 in. (67 mm)  
2.06 in. (52 mm)  
Total oscillation..... 30 deg.  
Wheel lean (either direction) ..... 20 deg.

**Rear Drive Axle:** Full floating with tapered roller bearings

Diameter at bearings..... 3.28 in. (83 mm)

**Scarifier (Special Equipment):** V-type for 46 in. (1.17 m) cut with 3 manual pitch positions

Number of teeth..... 5 standard, 9 optional  
Lift above ground..... 1 ft. 10.5 in. (572 mm)  
Penetration ..... 8.75 in. (222 mm)  
Maximum pressure—down..... 7000 lb. (31.37 kN) (3175 kg)  
up ..... 20,000 lb. (89.64 kN) (9072 kg)  
Shank size..... 1x3 in. (25x76 mm)

**Bulldozer** ..... (Special Equipment): Mounts on scarifier linkage. Angles 22 deg. left or right by articulating machine.

Length ..... 93 in. (2.36 m)  
Height ..... 23.5 in. (597 mm)  
Lift above ground..... 27 in. (686 mm)  
Penetration ..... 4 in. (102 mm)

**Capacities:**

	U.S.	Imp	Liters
Fuel tank	50 gal.	41.7 gal.	189.3
Cooling system	5.6 gal.	4.7 gal.	21.2
Engine lubrication, including filter	3 gal.	2.5 gal.	11.4
Engine lubrication, without filter	10 qt.	2.1 gal.	9.5
Transmission and hydraulic system	21 gal.	17.5 gal.	79.5
Tandem housings (each)	5 gal.	4.2 gal.	18.9
Worm gearbox	1.5 qt.	1.3 qt.	1.4

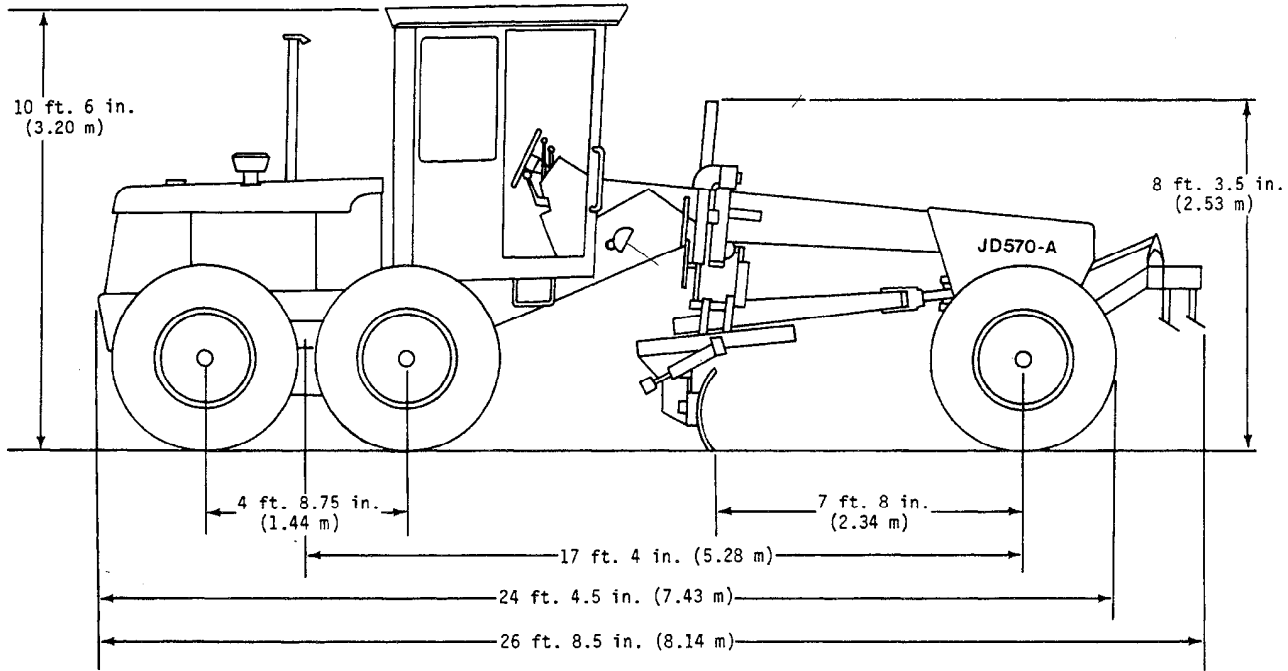
**Additional Standard Equipment:**

	Gauges:
Transistorized voltage regulator	Coolant temperature
Lights	Transmission temperature
Turn signals	Engine oil pressure
Electric hour meter	Fuel
Cigar lighter	Cold weather starting aid
Horn	Precleaner
Deluxe seat	ROPS cab and seat belt
Transmission bottom guard	Work lights
	Cab heater
	Front windshield wiper
	Rear windshield wiper

**Special Equipment:**

Scarifier	12 ft. (3.66 m) heavy-duty blade
Cab defroster fan	Engine side shields
Floor mat	Overlay end bits
ROPS canopy and seat belt	Bulldozer
2 ft. (610 mm) moldboard extensions, right or left	Wheel weights for 24 in. (610 mm) tires
Disconnect clutch	Heavy-duty cutting edges
	Automatic blade control

**JD570-A MOTOR GRADER DIMENSIONS**



T62257N

Height to top of steering wheel ..... 7 ft. 5 in. (2.26 m)

Tires ..... 13.00-24, 8-ply-rating; 15.5-25, 8-ply-rating; 13.00-24, 10-ply-rating

**DIMENSIONS:**

Tire Size	Wheel Tread		Width		Ground Clearance (Front Axle)
	Front	Rear	Front	Rear	
13.00-24	78.75 in. (2.00 m)	81.125 in. (2.06 m)	7 ft. 10.75 in. (2.41 m)	7 ft. 10.25 in. (2.39 m)	1 ft. 11.5 in. (597 mm)
15.5-25	81.375 in. (2.07 m)	83.75 in. (2.13 m)	8 ft. 3.75 in. (2.53 m)	8 ft. 3.25 in. (2.52 m)	1 ft. 10.9 in. (582 mm)

**SAE Operating Weight**

	On Front Wheels	On Rear Wheels	Total
Standard equipment .....	5705 lb. (2608 kg)	14,320 lb. (6495 kg)	20,025 lb. (9083 kg)
Standard equipment and scarifier .....	6755 lb. (3063 kg)	14,148 lb. (6418 kg)	20,903 lb. (9481 kg)
Standard equipment and wheel weights .....	5705 lb. (2608 kg)	14,920 lb. (6768 kg)	20,625 lb. (9355 kg)
Standard equipment, scarifier, and wheel weights .....	6755 lb. (3063 kg)	14,748 lb. (6690 kg)	21,503 lb. (9753 kg)

**IMPORTANT: Rear axle weight must not exceed 16,700 lb (7575 kg). If equipped with ripper or snow wing, do not add full liquid ballast. Maximum allowable rear end weight could be exceeded with full ballast.**

(Unit Equipped w/13.00 - 24, 8-ply Rating Tubeless Tires)

## JD570

### HORSEPOWER (at 2300 rpm)

Net engine flywheel at 500 ft.  
altitude and 85 deg. F. temperature .....83

### ENGINE

NACC or AMA taxable horsepower .....35.9  
Cycle ..... 4  
No. of Cylinders ..... 6  
Rated RPM .....2300  
Bore and Stroke .....3.86 in. × 4.33 in.  
Piston Displacement .....303 Cu. in.  
Electric System .....12 volts  
Starting ..... Electric

### TRANSMISSION

Description .....Power Shift Transmission  
Lock-Unlock Differential

### GROUND SPEEDS

1st ..... 2.04 mph  
2nd ..... 2.88 mph  
3rd ..... 4.49 mph  
4th ..... 5.81 mph  
5th ..... 7.42 mph  
6th ..... 9.67 mph  
7th ..... 12.80 mph  
8th ..... 21.40 mph  
1st Rev..... 2.36 mph  
2nd Rev. .... 3.36 mph  
3rd Rev..... 5.24 mph  
4th Rev..... 6.77 mph

### STEERING

Type  
Front ..... Full Hydraulic Power Steering  
Rear ..... Hydraulic-Articulated  
Frame Steering  
Turning Radius .....18 ft.

### BRAKES

Service .....Foot-operated, hydraulic-ac-  
tuated, wet-disk type, effec-  
tive on 4 tandem wheels

Parking ..... Hand-operated mechanical ex-  
panding dry-shoe type, effective  
on 4 tandem wheels

### CIRCLE

Diameter .....54 in.  
Type of Drive .....Hydraulic Motor and  
Worm Gear  
Rotation .....360 deg.

### BLADE RANGE

Lift above Ground .....13 in.  
Blade Side Shift  
Right .....26.75 in.  
Left .....31.25 in.  
Shoulder Reach, Outside Wheels  
Right .....71.50 in.  
Left .....77.25 in.  
Bank Cutting Angle (Right and Left) ..90 deg.  
Pitch .....32 deg.

### BLADE LIFTING MECHANISM

Saddle (Hydraulically  
Actuated) .....5 position - 22.5 deg.  
Increment Rotations  
Total Rotation Right  
or Left 45 deg.  
Cylinders .....3 in. bore × 42 in. stroke

### BLADE ASSEMBLY

Length .....10 ft. or 12 ft.  
Height .....22 in.  
Thickness .....standard 0.62 in.  
heavy-duty 0.75 in.

### AXLE FRONT

Front Wheel Lean .....20 deg. left and right  
Steering Range .....51 deg. left and right  
Ground Clearance  
with 10.00-24 Tires  
(Early Units) .....21.75 in.  
with 13.00-24 Tires .....23.5 in.  
with 15.50-25 Tires .....23.0 in.  
Oscillation .....30 deg.

### HYDRAULIC SYSTEM

Type .....Closed center  
Pump .....Variable displacement piston type

**JD570**

**CAPACITIES**

Fuel Tank .....	50 gal.
Cooling System .....	22.4 quarts
Crankcase (with Filter) .....	10 quarts
Transmission (with Filters) (Includes Hydraulic System) .....	21 gal.
Tandem Housings (Each) .....	5 gal.
Worm Gear Box .....	1.5 quarts

**SCARIFIER**

Weight (without Teeth) .....	652 lbs.
(with Teeth) .....	878 lbs.
No. of Teeth .....	11
Lift Above Ground .....	22-1/2 in.
Penetration .....	8-3/4 in.
Pitch Positions .....	3
Controls .....	Hydraulic
Max. Force. 7,000 lbs. Down—20,000 lbs. Up	
Width of Cut .....	50 in.
Shank Size .....	1 in. x 3 in.
Type .....	"V"

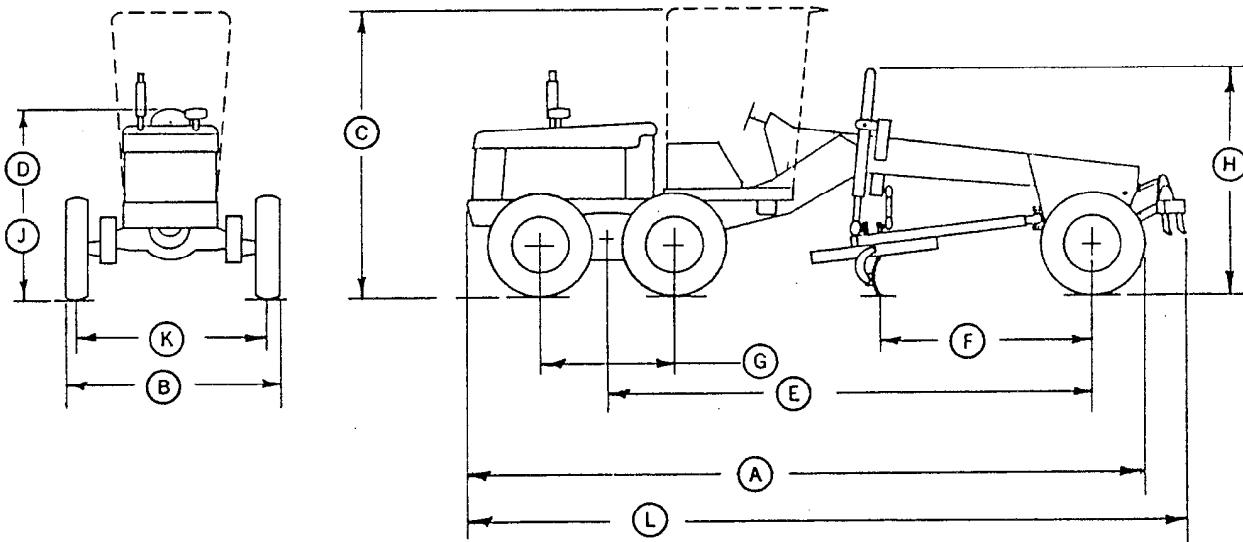


Fig. 2- JD570 Dimensions Specifications

Over-All Dimensions	Inches	Over-All Dimensions	Inches
A. Length .....	24 ft. 4.5 in.	G. Tandems (Center Line) .....	4 ft. 8.75 in.
B. Width (13.00-24 tires) .....	7 ft. 10.75 in.	H. Height (Top Lift Cylinders) .....	8 ft. 3.5 in.
(15.50-25 tires) .....	8 ft. 3.75 in.	J. Height (Top Air Cleaner) .....	7 ft. 5.5 in.
C. Height (with Cab) .....	10 ft. 6 in.	K. Tread (Front) 13.00-24 tires) ....	6 ft. 6.75 in.
D. Height (without Cab - To Top of Steering Wheel) .....	7 ft. 5 in.	(Front) (15.50-25 tires) .....	6 ft. 9.12 in.
E. Wheelbase .....	17 ft. 4 in.	(Rear) (13.00-24 tires) .....	6 ft. 9.12 in.
F. Bladebase .....	7 ft. 8 in.	(Rear) (15.50-25 tires) ....	6 ft. 11.75 in.
		L. Length with Scarifier (In Up Position) .....	26 ft. 8.5 in.



**JD570**

**WEIGHT**

Operating - Total  
(standard equipment  
without cab) ..... 18625 lbs.  
(standard equipment  
with cab) ..... 19925 lbs.  
(standard equipment  
and scarifier) ..... 20803 lbs.

On Front Wheels  
(standard equipment  
without cab) ..... 5505 lbs.  
(with cab) ..... 5705 lbs.  
(standard equipment  
and scarifier) ..... 6755 lbs.

On Rear Wheels  
(standard equipment  
without cab) ..... 13120 lbs.  
(with cab) ..... 14220 lbs.  
(standard equipment  
and scarifier) ..... 14048 lbs.

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

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