

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

---

Nebraska Tractor Tests

Tractor Test and Power Museum, The Lester F. Larsen

---

5-13-1982

## Test 1437: John Deere 1250 Diesel 9-Speed

Nebraska Tractor Test Lab

University of Nebraska-Lincoln, [tractortestlab@unl.edu](mailto:tractortestlab@unl.edu)

Follow this and additional works at: <https://digitalcommons.unl.edu/tractormuseumlit>



Part of the [Energy Systems Commons](#), [History of Science, Technology, and Medicine Commons](#), [Other Mechanical Engineering Commons](#), [Physical Sciences and Mathematics Commons](#), [Science and Mathematics Education Commons](#), and the [United States History Commons](#)

---

Nebraska Tractor Test Lab, "Test 1437: John Deere 1250 Diesel 9-Speed" (1982). *Nebraska Tractor Tests*. 1752.

<https://digitalcommons.unl.edu/tractormuseumlit/1752>

This Article is brought to you for free and open access by the Tractor Test and Power Museum, The Lester F. Larsen at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Nebraska Tractor Tests by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

# NEBRASKA TRACTOR TEST 1437 — JOHN DEERE 1250 DIESEL 9 SPEED

## POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption		Temperature °F (°C)			Barometer inch Hg (kPa)		
		gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Cooling medium	Air wet bulb		Air dry bulb	
MAXIMUM POWER AND FUEL CONSUMPTION									
Rated Engine Speed—Two Hours (PTO Speed—588 rpm)									
40.70 (30.35)	2500	2.439 (9.233)	0.417 (0.254)	16.69 (3.287)	189 (87.2)	64 (18.0)	76 (24.2)	28.820 (97.321)	
Standard Power Take-off Speed (540 rpm)—One Hour									
40.98 (30.56)	2294	2.411 (9.127)	0.410 (0.249)	17.00 (3.348)	189 (87.4)	63 (17.4)	75 (23.8)	28.820 (97.321)	
VARYING POWER AND FUEL CONSUMPTION—Two Hours									
35.57 (26.52)	2570	2.206 (8.351)	0.432 (0.263)	16.13 (3.176)	186 (85.3)	63 (17.2)	76 (24.2)	..... .....	
0.00 (0.00)	2650	0.732 (2.771)	..... .....	..... .....	182 (83.3)	64 (17.8)	76 (24.2)	..... .....	
17.95 (13.39)	2595	1.413 (5.349)	0.548 (0.334)	12.70 (2.503)	185 (85.0)	64 (17.8)	75 (23.9)	..... .....	
40.96 (30.54)	2500	2.434 (9.214)	0.414 (0.252)	16.83 (3.315)	188 (86.9)	64 (17.8)	76 (24.4)	..... .....	
9.06 (6.76)	2618	1.034 (3.914)	0.795 (0.483)	8.76 (1.727)	183 (83.9)	64 (17.8)	76 (24.4)	..... .....	
26.64 (19.87)	2566	1.783 (6.749)	0.466 (0.284)	14.94 (2.944)	185 (85.0)	64 (17.8)	76 (24.2)	..... .....	
Av Av	21.70 (16.18)	2583	1.600 (6.057)	0.514 (0.313)	13.56 (2.671)	185 (84.9)	64 (17.7)	76 (24.2)	28.817 (97.310)

## DRAWBAR PERFORMANCE (Front Wheel Drive Disengaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption			Temp. °F (°C)			Barom. inch Hg (kPa)
					gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Cool- ing med	Air wet bulb	Air dry bulb	
Maximum Available Power—Two Hours 6th (II-3) Gear											
33.44 (24.93)	2326 (10.35)	5.39 (8.68)	2499	6.29	2.405 (9.105)	0.501 (0.305)	13.90 (2.739)	190 (87.8)	66 (18.9)	76 (24.4)	28.705 (96.932)
75% of Pull at Maximum Power—Ten Hours 6th (II-3) Gear											
26.66 (19.88)	1775 (7.90)	5.63 (9.06)	2579	5.07	2.096 (7.936)	0.548 (0.333)	12.71 (2.505)	187 (86.0)	64 (18.0)	68 (19.9)	28.630 (96.679)
50% of Pull at Maximum Power—Two Hours 6th (II-3) Gear											
18.21 (13.58)	1183 (5.26)	5.77 (9.29)	2592	3.21	1.705 (6.455)	0.652 (0.397)	10.68 (2.104)	192 (88.6)	65 (18.3)	69 (20.3)	28.665 (96.797)
50% of Pull at Reduced Engine Speed—Two Hours 7th (III-1) Gear											
18.23 (13.59)	1183 (5.26)	5.78 (9.30)	1883	3.06	1.364 (5.164)	0.521 (0.317)	13.36 (2.632)	185 (84.7)	67 (19.2)	73 (22.5)	28.705 (96.932)
MAXIMUM POWER IN SELECTED GEARS											
25.86 (19.29)	3750 (16.68)	2.59 (4.16)	2581	14.63	4th (II-1) Gear			186 (85.3)	64 (17.8)	64 (17.8)	28.610 (96.612)
33.04 (24.64)	3221 (14.33)	3.85 (6.19)	2498	10.02	5th (II-2) Gear			189 (86.9)	62 (16.7)	66 (18.9)	28.680 (96.848)
34.01 (25.36)	2366 (10.52)	5.39 (8.68)	2497	6.15	6th (II-3) Gear			189 (86.9)	63 (17.2)	68 (20.0)	28.690 (96.882)
33.51 (24.99)	1654 (7.36)	7.60 (12.23)	2502	4.11	7th (III-1) Gear			188 (86.7)	63 (17.2)	69 (20.6)	28.700 (96.916)
LUGGING ABILITY IN 6th (II-3) GEAR											
Crankshaft Speed rpm				2497	2253	1996	1751	1492	1242		
Pull—lbs (kN)				2366 (10.52)	2640 (11.74)	2767 (12.31)	2838 (12.62)	2912 (12.95)	2903 (12.91)		
Increase in Pull %				0	12	17	20	23	23		
Power—Hp (kW)				34.01 (25.36)	33.87 (25.26)	31.25 (23.31)	28.05 (20.92)	24.39 (18.19)	20.24 (15.10)		
Speed—Mph (km/h)				5.39 (8.68)	4.81 (7.74)	4.24 (6.82)	3.71 (5.97)	3.14 (5.06)	2.61 (4.21)		
Slip %				6.15	7.27	7.82	7.93	8.58	8.48		

## Department of Agricultural Engineering

**Dates of Test:** May 13 to June 1, 1982

**Manufacturer:** YANMAR DIESEL ENGINE COMPANY LTD., Osaka, Japan

**FUEL, OIL AND TIME:** Fuel No. 2 Diesel Cetane No. 46.6 (rating taken from oil company's inspection data) **Specific gravity converted to 60°/60° (15°/15°)** 0.8364 **Fuel weight** 6.964 lbs/gal (0.835 kg/l) **Oil** SAE 15W40 **API service classification** CD CC SD **To motor** 2.264 gal (8.569 l) **Drained from motor** 2.042 gal (7.731 l) **Transmission and hydraulic lubricant** John Deere Hy Gard transmission and hydraulic oil **Front axle lubricant** SAE 90 **Total time engine was operated** 42.5 hours.

**ENGINE:** Make Yanmar Diesel Type three cylinder vertical **Serial No.** 3T95J-00162 **Crankshaft** lengthwise **Rated rpm** 2500 **Bore and stroke** 3.74" × 4.33" (95 mm × 110 mm) **Compression ratio** 16.4 to 1 **Displacement** 143 cu in (2339 ml) **Starting system** 12 volt **Lubrication pressure** **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Fuel filter** one paper cartridge and one mesh strainer **Muffler** vertical **Cooling medium temperature control** one thermostat.

**CHASSIS:** Type front wheel assist **Serial No.** 1250 A 001080 CH **Tread width** rear 51.1" (1300 mm) to 78.7" (2000 mm) front 55.1" (1400 mm) to 74.8" (1900 mm) **Wheel base** 78.1" (1983 mm) **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 35.0" (888 mm) Vertical distance above roadway 27.1" (688 mm) Horizontal distance from center of rear wheel tread 0" (0 mm) to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Advertised speeds mph (km/h)** first 1.2 (2.0) second 1.8 (2.9) third 2.4 (3.9) fourth 2.9 (4.7) fifth 4.3 (6.9) sixth 5.7 (9.2) seventh 7.9 (12.6) eighth 11.5 (18.4) ninth 15.4 (24.8) reverse 1.9 (3.0), 4.3 (6.9) **Clutch** single plate dry disc operated by foot pedal **Brakes** wet disc hydraulically operated by two foot pedals which can be locked together **Steering** power assist **Turning radius** (on concrete surface with brake applied) right 122" (3.1 m) left 122" (3.1 m) (on concrete surface without brake) right 142" (3.6 m) left 142" (3.6 m) **Turning space diameter** (on concrete surface with brake applied) right 254" (6.44 m) left 254" (6.44 m) (on concrete surface without brake) right 293" (7.44 m) left 293" (7.44 m) **Power take-off** 540 rpm at 2294 engine rpm.

**REPAIRS and ADJUSTMENTS:** The throttle lever friction disc was tightened after the 10 hour drawbar test.

TRACTOR SOUND LEVEL WITHOUT CAB	Front Wheel Drive	
	dB(A)	Disengaged dB(A)
Maximum Available Power—Two Hours	95.5	95.5
75% of Pull at Maximum Power—Ten Hours		94.5
50% of Pull at Maximum Power—Two Hours		94.0
50% of Pull at Reduced Engine Speed—Two Hours		91.5
Bystander in 9th (III-3) gear		83.5

### DRAWBAR PERFORMANCE (Front Wheel Drive Engaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption			Temp. °F (°C)			
					gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Cool- ing med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
<b>Maximum Available Power—Two Hours 6th (II-3) Gear</b>											
33.36 (24.88)	2232 (9.93)	5.61 (9.02)	2499	4.23	2.441 (9.241)	0.510 (0.310)	13.67 (2.692)	189 (87.2)	67 (19.4)	79 (25.8)	28.685 (96.865)

### MAXIMUM POWER IN SELECTED GEARS

30.16 (22.49)	5164 (22.97)	2.19 (3.52)	2555	14.68	3rd (I-3) Gear			188 (86.4)	64 (17.8)	65 (18.3)	28.620 (96.645)
33.62 (25.07)	4749 (21.12)	2.65 (4.27)	2500	11.14	4th (II-1) Gear			188 (86.7)	64 (17.8)	66 (18.9)	28.640 (96.713)
34.09 (25.42)	3128 (13.91)	4.09 (6.58)	2500	6.21	5th (II-2) Gear			189 (86.9)	61 (16.1)	65 (18.3)	28.680 (96.848)
33.85 (25.24)	2263 (10.07)	5.61 (9.03)	2500	4.32	6th (II-3) Gear			189 (86.9)	67 (19.4)	78 (25.6)	28.690 (96.882)
33.14 (24.71)	1585 (7.05)	7.84 (12.62)	2502	2.79	7th (III-1) Gear			189 (86.9)	63 (17.2)	69 (20.6)	28.710 (96.949)

### TIRES, BALLAST AND WEIGHT

		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi (kPa)	Two 14.9-28; 6; 14 (95)	Two 14.9-28; 6; 14 (95)
	—Liquid (each)	None	None
	—Test Equip. (each)	27 lb (12 kg)	None
Front Tires	—No., size, ply & psi (kPa)	Two 9.5-24; 4; 16 (110)	Two 9.5-24; 4; 16 (110)
	—Liquid (each)	None	None
	—Test Equip. (each)	18 lb (8 kg)	None
Height of Drawbar		17 in (430 mm)	17 in (430 mm)
Static Weight with Operator—Rear		2955 lb (1340 kg)	2900 lb (1316 kg)
		2225 lb (1009 kg)	2190 lb (993 kg)
		5180 lb (2349 kg)	5090 lb (2309 kg)

**REMARKS:** All test results were determined from observed data obtained in accordance with SAE and ASAE test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump return was maintained at 136°F (57.6°C). Five gears were chosen between 15% slip and 10 mph (16.1 km/h).

We, the undersigned, certify that this is a true and correct report of official Tractor Test 1437.

LOUIS I. LEVITICUS

Engineer-in-Charge

K. VON BARGEN

W. E. SPLINTER

L. L. BASHFORD

Board of Tractor Test Engineers



John Deere 1250 Diesel

The Agricultural Experiment Station  
Institute of Agriculture and Natural Resources  
University of Nebraska—Lincoln  
Robert W. Kleis, Acting Dean and Director