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## Test 1263: John Deere 4840 Diesel

Nebraska Tractor Test Lab

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

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# NEBRASKA TRACTOR TEST 1263 — JOHN DEERE 4840 DIESEL

## 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—1015 rpm)								
180.63 (134.70)	2200	11.530 (43.644)	0.445 (0.270)	15.67 (3.086)	179 (81.6)	57 (13.7)	75 (23.8)	29.217 (98.660)
Standard Power Take-off Speed (1000 rpm)—One Hour								
181.63 (135.44)	2167	11.460 (43.381)	0.440 (0.267)	15.85 (3.122)	180 (82.4)	56 (13.2)	75 (23.7)	29.180 (98.536)
VARYING POWER AND FUEL CONSUMPTION—Two Hours								
156.63 (116.80)	2246	10.543 (39.908)	0.469 (0.285)	14.86 (2.927)	176 (80.0)	56 (13.3)	74 (23.6)	..... .....
0.00 (0.00)	2332	3.325 (12.585)	..... .....	..... .....	158 (70.0)	56 (13.3)	74 (23.3)	..... .....
79.99 (59.65)	2290	6.908 (26.149)	0.602 (0.366)	11.58 (2.281)	168 (75.6)	57 (13.9)	75 (23.9)	..... .....
180.01 (134.23)	2200	11.520 (43.609)	0.446 (0.271)	15.62 (3.078)	180 (82.5)	58 (14.4)	75 (23.9)	..... .....
40.43 (30.15)	2316	5.134 (19.432)	0.884 (0.538)	7.88 (1.552)	160 (71.4)	58 (14.2)	74 (23.3)	..... .....
118.77 (88.57)	2270	8.738 (33.078)	0.512 (0.312)	13.59 (2.678)	172 (77.8)	58 (14.4)	76 (24.4)	..... .....
Av 95.97 Av (71.57)	2276	7.695 (29.127)	0.558 (0.340)	12.47 (2.457)	169 (76.2)	57 (13.9)	75 (23.8)	29.173 (98.514)

## DRAWBAR PERFORMANCE

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 4th Gear											
151.21 (112.76)	11929 (53.06)	4.75 (7.65)	2199	6.67	11.323 (42.862)	0.522 (0.317)	13.35 (2.631)	168 (75.6)	51 (10.3)	56 (13.1)	28.945 (97.743)
75% of Pull at Maximum Power—Ten Hours 4th Gear											
122.99 (91.72)	9257 (41.18)	4.98 (8.02)	2259	4.81	9.808 (37.129)	0.556 (0.338)	12.54 (2.470)	165 (73.7)	57 (13.9)	61 (16.0)	28.725 (97.000)
50% of Pull at Maximum Power—Two Hours 4th Gear											
84.94 (63.34)	6195 (27.56)	5.14 (8.28)	2294	3.18	7.895 (29.888)	0.648 (0.394)	10.76 (2.119)	146 (63.3)	30 (−1.3)	33 (0.3)	28.785 (97.203)
50% of Pull at Reduced Engine Speed—Two Hours 6th Gear											
84.46 (62.98)	6160 (27.40)	5.14 (8.28)	1337	3.18	5.850 (22.144)	0.482 (0.294)	14.44 (2.844)	156 (68.9)	31 (−0.5)	36 (1.9)	29.085 (98.216)

## MAXIMUM POWER IN SELECTED GEARS

102.09 (76.13)	17307 (76.98)	2.21 (3.56)	2279	14.82	2nd Gear		150 (65.3)	34 (1.1)	39 (3.9)	29.080 (98.199)
151.51 (112.98)	16267 (72.36)	3.49 (5.62)	2199	10.88	3rd Gear		167 (75.0)	55 (12.8)	60 (15.6)	28.980 (97.861)
157.09 (117.14)	12382 (55.08)	4.76 (7.66)	2201	6.64	4th Gear		170 (76.4)	54 (12.2)	60 (15.6)	29.030 (98.030)
154.58 (115.27)	9049 (40.25)	6.40 (10.31)	2198	4.68	5th Gear		168 (75.6)	53 (11.7)	56 (13.3)	28.960 (97.794)
154.44 (115.17)	6869 (30.56)	8.43 (13.57)	2199	3.30	6th Gear		169 (76.1)	53 (11.7)	56 (13.3)	28.960 (97.794)

## LUGGING ABILITY IN RATED GEAR (4th)

Crankshaft Speed rpm		2201	1979	1764	1536	1312	1096
Pull—lbs (kN)		12382 (55.08)	14498 (64.49)	15802 (70.29)	16150 (71.84)	15583 (69.32)	14398 (64.04)
Increase in Pull %		0	17	28	30	26	16
Power—Hp (kW)		157.09 (117.14)	162.28 (121.01)	155.30 (115.81)	136.75 (101.97)	114.06 (85.05)	89.24 (66.55)
Speed—Mph (km/h)		4.76 (7.66)	4.20 (6.75)	3.69 (5.93)	3.18 (5.11)	2.74 (4.42)	2.32 (3.74)
Slip %		6.64	8.37	9.82	10.67	9.68	8.37

Department of Agricultural Engineering

Dates of Test: November 2 to 12, 1977

**Manufacturer:** JOHN DEERE WATERLOO TRACTOR WORKS, P.O. Box 270, Waterloo, Iowa 50704

**FUEL, OIL AND TIME:** Fuel No. 2 Diesel Cetane No. 50.8 (rating taken from oil company's typical inspection data) **Specific gravity converted to 60°/60° (15°/15°)** 0.8366 **Fuel weight** 6.966 lbs/gal (0.837 kg/l) **Oil SAE 30 API service classification** CD, CC and SD **To motor** 5.527 gal (20.922 l) **Drained from motor** 5.049 gal (19.113 l) **Transmission and final drive lubricant** John Deere Hy-Gard Transmission and Hydraulic Oil **Total time engine was operated** 47 hours

**ENGINE Make** John Deere Diesel **Type** 6 cylinder vertical with turbocharger and intercooler **Serial No.** 6466AR-05 024332RG **Crankshaft** lengthwise **Rated rpm** 2200 **Bore and stroke** 4.5625" × 4.75" (115.9 mm × 120.7 mm) **Compression ratio** 15.5 to 1 **Displacement** 466 cu in (7636 ml) **Cranking system** 12 volt **Lubrication pressure** **Air cleaner** paper primary and safety elements with dust evacuator **Oil filter** one screw-on cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for transmission and hydraulic oil **Fuel filter** two snap-on paper cartridges **Muffler** vertical **Cooling medium temperature control** two thermostats.

**CHASSIS: Type** standard with duals **Serial No.** 4840P 001175R **Tread width** rear 63" (1600 mm) to 129" (3277 mm) front 63.4" (1610 mm) to 99.5" (2527 mm) **Wheel base** 118.5" (3009 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 36.8" (934 mm) Vertical distance above roadway 41.0" (1040 mm) Horizontal distance from center of rear wheel tread 0.02" (1 mm) to the right **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with full range power shift **Advised speeds mph (km/h)** first 1.7 (2.8) second 2.4 (3.9) third 3.8 (6.2) fourth 5.0 (8.0) fifth 6.6 (10.6) sixth 8.5 (13.7) seventh 10.9 (17.5) eighth 18.6 (30.0) reverse 2.2 (3.5), 3.2 (5.1), 4.9 (7.9), 6.4 (10.3) **Clutch** wet multiple disc hydraulically power actuated and operated by foot pedal **Brakes** wet disc hydraulically power actuated and operated by two foot pedals which can be locked together **Steering** hydrostatic **Turning radius** (on concrete surface with brake applied) right 166" (4.22 m) left 166" (4.22 m) (on concrete surface without brake) right 183" (4.65 m) left 183" (4.65 m) **Turning space diameter** (on concrete surface with brake applied) right 347" (8.81 m) left 347" (8.81 m) (on concrete surface without brake) right 380" (9.65 m) left 380" (9.65 m) **Power take-off** 1000 rpm at 2167 engine rpm.

**REPAIRS and ADJUSTMENTS:** No repairs or adjustments.

TRACTOR SOUND LEVEL WITH CAB		dB(A)
Maximum Available Power—Two Hours		80.0
75% of Pull at Maximum Power—Ten Hours		79.0
50% of Pull at Maximum Power—Two Hours		79.5
50% of Pull at Reduced Engine Speed—Two Hours		75.5
Bystander in 8th gear		90.0
<b>TIRES, BALLAST AND WEIGHT</b>		
<b>Rear Tires</b>		
—No., size, ply & psi (kPa)	With Ballast	Without Ballast
Ballast	Four 20.8-38; 10; 16 (110)	Four 20.8-38; 10; 16 (110)
—Liquid (each inner)	1120 lb (508 kg)	None
—Cast Iron (each)	None	None
<b>Front Tires</b>		
—No., size, ply & psi (kPa)	Two 14L-16.1; 10; 40 (280)	Two 14L-16.1; 10; 40 (280)
Ballast	None	None
—Liquid (each)	None	None
—Cast Iron (each)	None	None
* Height of drawbar	23.5 in (600 mm)	23.5 in (600 mm)
<b>Static weight with operator</b>		
rear	15550 lb (7053 kg)	13310 lb (6036 kg)
front	4820 lb (2186 kg)	4820 lb (2186 kg)
total	20370 lb (9239 kg)	18130 lb (8222 kg)

**REMARKS:** All test results were determined from observed data obtained in accordance with SAE and ASAE test code or official Nebraska test procedure. Temperature at injection pump return was 151°F (66.3°C). Five gears were chosen between 15% slip and 15 mph (24.1 km/h).

We, the undersigned, certify that this is a true and correct report of official Tractor Test **1263**.

LOUIS I. LEVITICUS  
Engineer-in Charge

G. W. STEINBRUEGGE, Chairman  
W. E. SPLINTER  
K. VON BARGEN  
Board of Tractor Test Engineers



John Deere 4840 Diesel