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5-27-1980

## Test 1350: John Deere 2040 Diesel 8-Speed

Nebraska Tractor Test Lab

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# NEBRASKA TRACTOR TEST 1350 — JOHN DEERE 2040 DIESEL

## 8 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—567 rpm)								
41.25 (30.76)	2500	2.692 (10.190)	0.461 (0.280)	15.32 (3.019)	190 (87.9)	66 (19.1)	75 (24.1)	28.553 (96.420)

Standard Power Take-off Speed (540 rpm)—One Hour								
40.53 (30.22)	2382	2.594 (9.820)	0.452 (0.275)	15.62 (3.078)	191 (88.3)	67 (19.4)	77 (24.8)	28.570 (96.477)

### VARYING POWER AND FUEL CONSUMPTION—Two Hours

35.68 (26.60)	2546	2.417 (9.150)	0.478 (0.291)	14.76 (2.908)	188 (86.7)	67 (19.4)	76 (24.4)	.....
0.00 (0.00)	2620	1.062 (4.020)	.....	.....	181 (82.8)	67 (19.4)	76 (24.7)	.....
18.14 (13.53)	2587	1.657 (6.271)	0.645 (0.392)	10.95 (2.157)	184 (84.4)	68 (19.7)	77 (25.0)	.....
40.93 (30.52)	2500	2.664 (10.083)	0.460 (0.280)	15.37 (3.027)	190 (88.1)	67 (19.4)	77 (25.0)	.....
9.13 (6.80)	2602	1.342 (5.082)	1.039 (0.632)	6.80 (1.339)	182 (83.3)	66 (18.9)	77 (25.0)	.....
27.00 (20.14)	2566	2.014 (7.622)	0.527 (0.320)	13.41 (2.642)	187 (86.1)	66 (19.2)	78 (25.6)	.....
Av 21.81 Av (16.27)	2570	1.859 (7.038)	0.602 (0.366)	11.73 (2.311)	185 (85.2)	67 (19.4)	77 (25.0)	28.610 (96.612)

### 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 5th Gear											
31.07 (23.17)	2074 (9.23)	5.62 (9.04)	2496	5.22	2.584 (9.782)	0.587 (0.357)	12.02 (2.368)	189 (87.2)	60 (15.6)	68 (20.0)	28.860 (97.456)
75% of Pull at Maximum Power—Ten Hours 5th Gear											
25.52 (19.03)	1646 (7.32)	5.81 (9.36)	2550	3.98	2.248 (8.509)	0.622 (0.378)	11.35 (2.236)	187 (85.8)	62 (16.6)	72 (21.9)	28.686 (96.868)
50% of Pull at Maximum Power—Two Hours 5th Gear											
17.26 (12.87)	1098 (4.89)	5.89 (9.48)	2557	2.88	1.912 (7.236)	0.782 (0.476)	9.03 (1.779)	189 (86.9)	72 (21.9)	89 (31.4)	28.625 (96.662)
50% of Pull at Reduced Engine Speed—Two Hours 6th Gear											
17.22 (12.84)	1101 (4.90)	5.87 (9.44)	1779	2.70	1.487 (5.628)	0.610 (0.371)	11.58 (2.282)	189 (87.2)	73 (22.5)	89 (31.4)	28.555 (96.426)

### MAXIMUM POWER IN SELECTED GEARS

24.26 (18.09)	4873 (21.68)	1.87 (3.00)	2537	14.89	2nd Gear		186 (85.3)	68 (20.0)	70 (21.1)	28.720 (96.983)
31.38 (23.40)	4175 (18.57)	2.82 (4.54)	2497	11.91	3rd Gear		196 (91.1)	68 (20.0)	78 (25.6)	28.690 (96.882)
32.11 (23.94)	2904 (12.92)	4.15 (6.67)	2499	7.34	4th Gear		193 (89.2)	69 (20.6)	77 (25.0)	28.700 (96.916)
33.31 (24.84)	2220 (9.88)	5.63 (9.05)	2500	5.16	5th Gear		188 (86.7)	59 (15.0)	65 (18.3)	28.890 (97.557)
31.38 (23.40)	1444 (6.42)	8.15 (13.11)	2499	3.74	6th Gear		193 (89.2)	67 (19.4)	79 (26.1)	28.690 (96.882)

### LUGGING ABILITY IN 5th GEAR

Crankshaft Speed rpm	2500	2249	2000	1749	1505	1251	1008
Pull—lbs (kN)	2220 (9.88)	2361 (10.50)	2468 (10.98)	2578 (11.47)	2652 (11.79)	2650 (11.79)	2575 (11.46)
Increase in Pull %	0	6	11	16	19	19	16
Power—Hp (kW)	33.31 (24.84)	31.64 (23.59)	29.30 (21.85)	26.66 (19.88)	23.52 (17.54)	19.56 (14.58)	15.33 (11.43)
Speed—Mph (km/h)	5.63 (9.05)	5.03 (8.09)	4.45 (7.16)	3.88 (6.24)	3.33 (5.35)	2.77 (4.45)	2.23 (3.59)
Slip %	5.16	5.86	6.21	6.55	6.89	6.78	6.66

Department of Agricultural Engineering

Dates of Test: May 27 to June 3, 1980

Manufacturer: JOHN DEERE WERKE  
MANNHEIM, Mannheim, West Germany

**FUEL, OIL AND TIME:** Fuel No. 2 Diesel Cetane No. 47.9 (rating taken from oil company's inspection data) Specific gravity converted to 60°/60° (15°/15°) 0.8482 Fuel weight 7.062 lbs/gal (0.846 kg/l) Oil SAE 30 API service classification SD/CC-CD To motor 1.677 gal (6.347 l) Drained from motor 1.429 gal (5.409 l) Transmission and final drive lubricant John Deere Hy-Gard Total time engine was operated 49.0 hours

**ENGINE Make** John Deere Dsl **Type** three cylinder vertical **Serial No.** 3179DL06 435306CD **Crankshaft** lengthwise **Rated rpm** 2500 **Bore and stroke** 4.19" × 4.33" (106.5 mm × 110 mm) **Compression ratio** 16.8 to 1 **Displacement** 179 cu in (2934 ml) **Starting system** 12 volt **Lubrication pressure** **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil **Fuel filter** one paper element and one mesh strainer **Muffler** vertical **Cooling medium temperature control** one thermostat.

**CHASSIS: Type** standard **Serial No.** 2040-369570L **Tread width** rear 53.5" (1360 mm) to 73.5" (1870 mm) front 49.6" (1260 mm) to 79.5" (2020 mm) **Wheel base** 74.4" (1890 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 30.6" (778 mm) Vertical distance above roadway 30.9" (785 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 1.5 (2.4) second 2.1 (3.4) third 3.2 (5.1) fourth 4.4 (7.1) fifth 5.8 (9.4) sixth 8.3 (13.4) seventh 12.4 (19.9) eighth 17.3 (27.8) reverse 1.7 (2.8), 2.5 (4.0), 3.7 (5.9), 5.1 (8.2) **Clutch** single 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 110" (2.79 m) left 110" (2.79 m) (on concrete surface without brake) right 122" (3.10 m) left 122" (3.10 m) **Turning space diameter** (on concrete surface with brake applied) right 244" (6.20 m) left 244" (6.20 m) (on concrete surface without brake) right 268" (6.81 m) left 268" (6.81 m) **Power take-off** 540 rpm at 2382 engine rpm.

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

**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 was 151°F (66.1°C). Five gears were chosen between 15% slip and 10 mph (16.1 km/h).

<b>TRACTOR SOUND LEVEL WITHOUT CAB</b>	<b>dB(A)</b>
Maximum Available Power—Two Hours	95.5
75% of Pull at Maximum Power—Ten Hours	95.0
50% of Pull at Maximum Power—Two Hours	95.0
50% of Pull at Reduced Engine Speed—Two Hours	91.0
Bystander in 7th gear	85.5

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi ( <i>kPa</i> )	Two 14.9-28; 6; 64 14 (95)	Two 14.9-28; 6; 14 (95)
	—Liquid (each)	558 lb (253 kg)	None
	—Cast Iron (each)	150 lb (68 kg)	None
Front Tires	—No., size, ply & psi ( <i>kPa</i> )	Two 7.50-16; 6; 36 (250)	Two 7.50-16; 6; 36 (250)
	—Liquid (each)	None	None
	—Cast Iron (each)	25 lb (11 kg)	None
Height of Drawbar		16.5 in (420 mm)	16.5 in (420 mm)
Static Weight with Operator—Rear		4450 lb (2019 kg)	3035 lb (1377 kg)
	Front	2050 lb (929 kg)	2000 lb (907 kg)
	Total	6500 lb (2948 kg)	5035 lb (2284 kg)

We, the undersigned, certify that this is a true and correct report of official Tractor Test **1350**.

LOUIS I. LEVITICUS  
Engineer-in Charge

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



**John Deere 2040 Diesel**

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