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## Test 1360: John Deere 4040 Power Shift Diesel 8-Speed

Nebraska Tractor Test Lab

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# NEBRASKA TRACTOR TEST 1360 — JOHN DEERE 4040 POWER SHIFT 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—1011 rpm)									
90.79 (67.70)	2200	6.745 (25.533)	0.519 (0.316)	13.46 (2.651)	194 (90.1)	68 (20.1)	75 (23.9)	29.020 (97.996)	
Standard Power Take-off Speed (1000 rpm)—One Hour									
90.88 (67.77)	2177	6.712 (25.406)	0.516 (0.314)	13.54 (2.667)	194 (90.1)	68 (20.0)	75 (23.9)	29.035 (98.047)	
VARYING POWER AND FUEL CONSUMPTION—Two Hours									
79.56 (59.33)	2268	5.908 (22.364)	0.519 (0.315)	13.47 (2.653)	190 (87.5)	68 (19.7)	75 (23.6)	..... .....	
0.00 (0.00)	2349	2.368 (8.962)	..... .....	..... .....	177 (80.6)	68 (20.0)	75 (23.6)	..... .....	
40.55 (30.24)	2320	3.983 (15.077)	0.686 (0.417)	10.18 (2.006)	186 (85.3)	68 (19.7)	75 (23.9)	..... .....	
91.11 (67.94)	2200	6.759 (25.585)	0.518 (0.315)	13.48 (2.655)	195 (90.3)	68 (19.7)	75 (23.9)	..... .....	
20.42 (15.23)	2334	3.167 (11.987)	1.083 (0.659)	6.45 (1.271)	179 (81.7)	68 (19.7)	76 (24.2)	..... .....	
60.20 (44.89)	2294	4.855 (18.379)	0.563 (0.343)	12.40 (2.442)	189 (86.9)	68 (19.7)	75 (23.9)	..... .....	
Av Av	48.64 (36.27)	2294	4.507 (17.059)	0.647 (0.394)	10.79 (2.126)	186 (85.4)	68 (19.8)	75 (23.8)	29.037 (98.052)

## DRAWBAR PERFORMANCE

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) Cool- ing med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
Maximum Available Power—Two Hours 4th Gear											
76.56 (57.09)	6464 (28.75)	4.44 (7.15)	2200	8.59	6.660 (25.211)	0.607 (0.369)	11.50 (2.265)	192 (88.6)	53 (11.7)	63 (16.9)	29.265 (98.824)
75% of Pull at Maximum Power—Ten Hours 4th Gear											
62.81 (46.84)	4959 (22.06)	4.75 (7.64)	2289	6.07	5.536 (20.955)	0.615 (0.374)	11.35 (2.235)	191 (88.2)	57 (13.7)	68 (20.2)	29.189 (98.567)
50% of Pull at Maximum Power—Two Hours 4th Gear											
43.07 (32.12)	3309 (14.72)	4.88 (7.86)	2308	4.25	4.512 (17.078)	0.731 (0.445)	9.55 (1.881)	187 (85.8)	54 (12.2)	64 (17.8)	29.265 (98.824)
50% of Pull at Reduced Engine Speed—Two Hours 6th Gear											
43.12 (32.15)	3307 (14.71)	4.89 (7.87)	1368	4.14	3.402 (12.876)	0.551 (0.335)	12.68 (2.497)	189 (86.9)	57 (13.9)	68 (19.7)	29.240 (98.739)
MAXIMUM POWER IN SELECTED GEARS											
52.67 (39.28)	9195 (40.90)	2.15 (3.46)	2297	14.76	2nd Gear			184 (84.2)	56 (13.3)	61 (16.1)	29.230 (98.705)
74.52 (55.57)	8576 (38.15)	3.26 (5.24)	2202	13.24	3rd Gear			191 (88.3)	56 (13.3)	61 (16.1)	29.260 (98.807)
78.54 (58.57)	6620 (29.45)	4.45 (7.16)	2200	8.39	4th Gear			192 (88.6)	55 (12.8)	60 (15.6)	29.240 (98.739)
75.84 (56.55)	4770 (21.22)	5.96 (9.59)	2200	6.00	5th Gear			191 (88.3)	56 (13.3)	61 (16.1)	29.260 (98.807)
75.93 (56.62)	3633 (16.16)	7.84 (12.61)	2201	4.36	6th Gear			191 (88.3)	56 (13.3)	62 (16.7)	29.270 (98.840)
LUGGING ABILITY IN 4th GEAR											
Crankshaft Speed rpm				2200	1981	1758	1546	1314	1092	871	
Pull—lbs (kN)				6620 (29.45)	7177 (31.66)	7354 (32.71)	7580 (33.72)	7625 (33.92)	7832 (34.84)	7774 (34.58)	
Increase in Pull %				0	8	11	15	15	18	17	
Power—Hp (kW)				78.54 (58.57)	75.42 (56.24)	68.70 (51.23)	62.04 (46.26)	52.92 (39.46)	44.96 (33.52)	35.60 (26.55)	
Speed—Mph (km/h)				4.45 (7.16)	3.97 (6.40)	3.50 (5.64)	3.07 (4.94)	2.60 (4.19)	2.15 (3.46)	1.72 (2.76)	
Slip %				8.39	9.11	9.76	10.15	10.28	10.66	10.66	

## Department of Agricultural Engineering

**Dates of Test:** August 20 to September 11, 1980,  
Cab sound test No. 80-3 November 19, 1980

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

**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°)** Fuel weight 6.982 lbs/gal (0.837  
kg/l) Oil SAE 30 API service classification CD,  
CC and SD To motor 4.396 gal (16.639 l)  
**Drained from motor** 3.973 gal (15.039 l) **Trans-**  
**mission and final drive lubricant** John Deere  
Hy-Gard **Total time engine was operated** 36.5  
hours

**ENGINE:** Make John Deere Diesel Type six  
cylinder vertical Serial No. 6404DR-26  
582887RG Crankshaft lengthwise **Rated rpm**  
2200 **Bore and stroke** 4.25" × 4.75" (108 mm ×  
120.7 mm) **Compression ratio** 16.6 to 1 **Dis-**  
**placement** 404 cu in (6620 ml) **Starting system** 12  
volt **Lubrication pressure** Air cleaner two paper  
elements with dust evacuator Oil filter one full  
flow cartridge Oil cooler engine coolant heat ex-  
changer for crankcase oil, radiator for transmis-  
sion and hydraulic oil Fuel filter one paper car-  
tridge Muffler vertical Cooling medium temper-  
ature control two thermostats.

**CHASSIS:** Type standard Serial No. 4040P-  
008517R Tread width rear 60" (1524 mm) to 90.0"  
(2286 mm) front 56" (1422 mm) to 82" (2083 mm)  
**Wheel base** 104" (2642 mm) **Center of gravity**  
(without operator or ballast, with minimum tread,  
with fuel tank filled and tractor serviced for oper-  
ation) Horizontal distance forward from center-  
line of rear wheels 31.3" (794 mm) Vertical distance  
above roadway 38.2" (971 mm) Horizontal distance  
from center of rear wheel tread 0.1" (2.0 mm) to  
the left Hydraulic control system direct engine  
drive Transmission selective gear fixed ratio with  
full range power shift **Advertised speeds mph**  
**(km/h)** first 1.7 (2.7) second 2.4 (3.9) third 3.7 (6.0)  
fourth 4.7 (7.6) fifth 6.1 (9.8) sixth 7.9 (12.7)  
seventh 10.5 (16.9) eighth 17.5 (28.2) reverse 1.9  
(3.1), 2.8 (4.5), 4.3 (6.9), 5.5 (8.9) **Clutch** wet mul-  
tiple disc hydraulically power actuated and oper-  
ated by foot pedal **Brakes** wet disc hydraulically  
power actuated and operated by two foot pedals  
which can be locked together **Steering** hydrosta-  
tic **Turning radius** (on concrete surface with  
brake applied) right 143" (3.63 m) left 143" (3.63  
m) (on concrete surface without brake) right  
158.5" (4.03 m) left 158.5" (4.03 m) **Turning space**  
**diameter** (on concrete surface with brake applied)  
right 295.8" (7.51 m) left 295.8" (7.51 m) (on con-  
crete surface without brake) right 326.9" (8.30 m)  
left 326.9" (8.30 m) **Power take-off** 1000 rpm at  
2177 engine rpm and 540 rpm at 2182 engine  
rpm.

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

<b>TRACTOR SOUND LEVEL</b>		<b>With Cab dB(A)</b>	<b>W/O Cab dB(A)</b>
Maximum Available Power—Two Hours		78.0	95.5
75% of Pull at Maximum Power—Ten Hours		77.5	95.5
50% of Pull at Maximum Power—Two Hours		77.0	95.5
50% of Pull at Reduced Engine Speed—Two Hours		75.5	90.0
Bystander in 8th gear		90.5	90.5
<b>TIRES, BALLAST AND WEIGHT</b>		<b>With Ballast</b>	<b>Without Ballast</b>
<b>Rear Tires</b>	—No., size, ply & psi (kPa)	Two 18.4-34; 8; 20 (140)	Two 18.4-34; 8; 20 (140)
Ballast	—Liquid (each)	750 lb (340 kg)	None
	—Cast Iron (each)	None	None
<b>Front Tires</b>	—No., size, ply & psi (kPa)	Two 10.00-16; 6; 32 (220)	Two 10.00-16; 6; 32 (220)
* Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	45 lb (20 kg)	None
<b>Height of Drawbar</b>		18.5 in (470 mm)	18.5 in (470 mm)
<b>Static Weight with Operator—Rear</b>		8930 lb (4050 kg)	7430 lb (3370 kg)
	—Front	3150 lb (1429 kg)	3060 lb (1388 kg)
	—Total	12080 lb (5479 kg)	10490 lb (4758 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 154°F (67.6°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 **1360**.

LOUIS I. LEVITICUS  
Engineer-in-Charge

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



**John Deere 4040 Power Shift Diesel**