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Test 1362: John Deere 4240 Power Shift Diesel 8-Speed

Nebraska Tractor Test Lab

University of Nebraska-Lincoln, tractortestlab@unl.edu

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NEBRASKA TRACTOR TEST 1362 — JOHN DEERE 4240 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)									
111.06 (82.82)	2200	7.822 (29.608)	0.492 (0.299)	14.20 (2.797)	193 (89.3)	62 (16.7)	75 (23.9)	29.030 (98.030)	
Standard Power Take-off Speed (1000 rpm)—One Hour									
111.43 (83.09)	2176	7.744 (29.315)	0.485 (0.295)	14.39 (2.834)	193 (89.4)	62 (16.7)	75 (23.9)	29.050 (98.097)	
VARYING POWER AND FUEL CONSUMPTION—Two Hours									
97.40 (72.63)	2272	7.064 (26.740)	0.506 (0.308)	13.79 (2.716)	189 (87.2)	62 (16.7)	75 (23.9)	..... .....
0.00 (0.00)	2365	2.685 (10.166)	..... .....	..... .....	178 (80.8)	62 (16.7)	75 (23.6)	..... .....
49.98 (37.37)	2333	4.744 (17.956)	0.663 (0.403)	10.54 (2.076)	183 (83.6)	62 (16.7)	75 (23.9)	..... .....
111.93 (83.47)	2200	7.824 (29.619)	0.488 (0.297)	14.31 (2.818)	193 (89.4)	62 (16.7)	76 (24.4)	..... .....
25.20 (18.79)	2350	3.717 (14.069)	1.030 (0.626)	6.78 (1.336)	179 (81.4)	62 (16.7)	75 (23.9)	..... .....
74.13 (55.28)	2305	5.848 (22.137)	0.551 (0.335)	12.68 (2.497)	186 (85.3)	62 (16.7)	75 (23.9)	..... .....
Av Av	59.77 (44.57)	2304 (20.114)	5.314 (0.378)	0.621 (0.378)	11.25 (2.216)	184 (84.6)	62 (16.7)	75 (23.9)	29.040 (98.064)

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											
92.70 (69.12)	7692 (34.21)	4.52 (7.27)	2199	6.38	7.645 (28.938)	0.576 (0.350)	12.13 (2.389)	195 (90.6)	73 (22.5)	78 (25.3)	28.965 (97.810)
75% of Pull at Maximum Power—Ten Hours 4th Gear											
76.14 (56.77)	5961 (26.51)	4.79 (7.71)	2286	4.60	6.535 (24.738)	0.599 (0.365)	11.65 (2.295)	193 (89.2)	71 (21.4)	86 (29.8)	28.836 (97.375)
50% of Pull at Maximum Power—Two Hours 4th Gear											
52.79 (39.36)	4001 (17.80)	4.95 (7.96)	2323	3.09	5.210 (19.721)	0.689 (0.419)	10.13 (1.996)	185 (84.7)	73 (22.8)	79 (25.8)	28.940 (97.726)
50% of Pull at Reduced Engine Speed—Two Hours 6th Gear											
52.50 (39.15)	3982 (17.71)	4.94 (7.96)	1374	2.98	3.795 (14.367)	0.505 (0.307)	13.83 (2.725)	187 (86.1)	75 (23.6)	82 (27.5)	28.915 (97.642)

MAXIMUM POWER IN SELECTED GEARS

70.93 (52.89)	12450 (55.38)	2.14 (3.44)	2298	14.77	2nd Gear		185 (84.7)	64 (17.8)	70 (21.1)	28.890 (97.557)
93.57 (69.78)	10365 (46.11)	3.39 (5.45)	2200	9.29	3rd Gear		193 (89.2)	68 (20.0)	72 (22.2)	28.980 (97.861)
95.65 (71.33)	7947 (35.35)	4.51 (7.26)	2197	6.48	4th Gear		193 (89.4)	67 (17.4)	70 (21.1)	28.980 (97.861)
93.89 (70.01)	5854 (26.04)	6.01 (9.68)	2200	4.58	5th Gear		193 (89.4)	69 (20.6)	73 (22.8)	28.980 (97.861)
93.79 (69.94)	4464 (19.86)	7.88 (12.68)	2200	3.35	6th Gear		194 (90.0)	71 (21.7)	75 (23.9)	28.980 (97.861)

LUGGING ABILITY IN 4th GEAR

Crankshaft Speed rpm		2197	1981	1757	1541	1317	1095
Pull—lbs (kN)		7947 (35.35)	8694 (38.67)	9252 (41.16)	9304 (41.39)	9331 (41.51)	9258 (41.18)
Increase in Pull %		0	9	16	17	17	16
Power—Hp (kW)		95.65 (71.33)	93.57 (69.77)	87.72 (65.41)	77.28 (57.62)	66.17 (49.34)	54.61 (40.72)
Speed—Mph (km/h)		4.51 (7.26)	4.04 (6.50)	3.56 (5.72)	3.11 (5.01)	2.66 (4.28)	2.21 (3.56)
Slip %		6.48	7.23	7.77	8.04	8.17	8.04

Department of Agricultural Engineering

Dates of Test: August 20 to September 3, 1980,
Cab sound test No. 80-5, November 20, 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°)** 0.8386 **Fuel weight** 6.982 lbs/gal
(0.837 kg/l) **Oil SAE 30 API service classifica-
tion** CD, CC and SD **To motor** 4.372 gal
(16.548 l) **Drained from motor** 3.743 gal
(14.167 l) **Transmission and final drive lubricant**
John Deere Hy-Gard **Total time engine was op-
erated** 32.5 hours

ENGINE: Make John Deere Diesel **Type** six
cylinder vertical **Serial No.** 6466DR-02
144778RG **Crankshaft** lengthwise **Rated rpm**
2200 **Bore and stroke** 4.56" × 4.75" (115.8 mm ×
120.6 mm) **Compression ratio** 17.0 to 1 **Dis-
placement** 466 cu in (7636 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 ele-
ment **Muffler** vertical **Cooling medium tempera-
ture control** two thermostats.

CHASSIS: **Type** standard with duals **Serial
No.** 4240P 019519R **Tread width** rear 60" (1524
mm) to 118.4" (3004 mm) front 56" (1422 mm) to 82"
(2083 mm) **Wheel base** 106.7" (2709 mm) **Center
of gravity** (without operator or ballast, with
minimum tread, with fuel tank filled and tractor
serviced for operation) Horizontal distance for-
ward from center-line of rear wheels 30.1" (765
mm) Vertical distance above roadway 40.1" (1019
mm) Horizontal distance from center of rear wheel
tread 0.1" (2 mm) to the left **Hydraulic control
system** direct engine drive **Transmission** selec-
tive gear fixed ratio with full range power shift
Advertised speeds mph (km/h) first 1.7 (2.7) sec-
ond 2.4 (3.9) third 3.8 (6.0) fourth 4.8 (7.8) fifth
6.3 (10.2) sixth 8.2 (13.2) seventh 10.7 (17.2)
eighth 18.1 (29.1) reverse 2.1 (3.3), 2.9 (4.7), 4.6
(7.4), 5.9 (9.5) **Clutch** wet multiple disc hydraul-
ically 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
143.9" (3.66 m) left 143.9" (3.66 m) (on concrete
surface without brake) right 161.8" (4.11 m) left
161.8" (4.11 m) **Turning space diameter** (on con-
crete surface with brake applied) right 293.3"
(7.45 m) left 293.3" (7.45 m) (on concrete surface
without brake) right 334.6" (8.50 m) left 334.6"
(8.50 m) **Power take-off** 1000 rpm at 2176 engine
rpm and 540 rpm at 2182 engine rpm.

REPAIRS and ADJUSTMENTS: During pre-
liminary PTO test, the hydraulic pump seal drain

TRACTOR SOUND LEVEL		With Cab dB(A)	W/O Cab dB(A)
Maximum Available Power—Two Hours		79.0	96.5
75% of Pull at Maximum Power—Ten Hours		79.0	96.5
50% of Pull at Maximum Power—Two Hours		78.0	96.5
50% of Pull at Reduced Engine Speed—Two Hours		74.5	92.0
Bystander in 8th gear		91.0	89.5
TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi (kPa)	Four 18.4-34; 6; 12 (85)	Four 18.4-34; 6; 12 (85)
Ballast	—Liquid (each inner)	1000 lb (454 kg)	None
	—Cast Iron (each)	110 lb (50 kg)	None
Front Tires	—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)	None	None
Height of Drawbar		21 in (535 mm)	21 in (535 mm)
Static Weight with Operator—Rear		10880 lb (4935 kg)	8440 lb (3828 kg)
	—Front	3380 lb (1533 kg)	3380 lb (1533 kg)
	—Total	14260 lb (6468 kg)	11820 lb (5361 kg)

tube failed. This tube was replaced following the PTO tests.

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 144°F (62.2°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 **1362**.

LOUIS I. LEVITICUS
Engineer-in-Charge

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



John Deere 4240 Power Shift Diesel