

NEBRASKA OECD TRACTOR TEST 1818—SUMMARY 395

JOHN DEERE 7520 DIESEL INFINITELY VARIABLE TRANSMISSION

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—1003 rpm)					
125.75 (93.77)	2100	7.23 (27.59)	0.402 (0.245)	17.38 (3.42)	
Maximum Power (2 hours)					
143.97 (107.36)	1800	7.63 (28.90)	0.371 (0.226)	18.86 (3.72)	

VARYING POWER AND FUEL CONSUMPTION

125.75 (93.77)	2100	7.23 (27.59)	0.402 (0.245)	17.38 (3.42)	Air temperature
110.46 (82.37)	2170	6.48 (24.52)	0.410 (0.249)	17.05 (3.36)	75°F (24°C)
84.05 (62.67)	2200	5.36 (20.30)	0.446 (0.271)	15.68 (3.09)	Relative humidity
56.72 (42.30)	2227	4.29 (16.24)	0.529 (0.322)	13.22 (2.61)	21%
28.27 (21.08)	2249	3.22 (12.17)	0.796 (0.484)	8.79 (1.73)	Barometer
2.04 (1.52)	2249	2.10 (7.96)	7.189 (4.373)	0.97 (0.19)	28.92" Hg (97.93 kPa)

Maximum Torque - 454 lb.-ft. (616 Nm) at 1503 rpm
 Maximum Torque Rise - 44.5%
 Torque rise at 1706 engine rpm - 36%

DRAWBAR PERFORMANCE UNBALLASTED - FRONT DRIVE ENGAGED FUEL CONSUMPTION CHARACTERISTICS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
Maximum Power—6.8 mph (11.0 km/h)(Manual mode)									
110.88 (82.69)	6606 (29.38)	6.29 (10.13)	2096	2.44	0.465 (0.283)	15.05 (2.96)	186 (86)	59 (15)	28.45 (96.34)
75% of Pull at Maximum Power—6.8 mph (11.0 km/h)(Manual mode)									
87.23 (65.05)	4959 (22.06)	6.60 (10.62)	2182	1.75	0.507 (0.308)	13.80 (2.72)	183 (84)	55 (13)	29.09 (98.51)
50% of Pull at Maximum Power—6.8 mph (11.0 km/h)(Manual mode)									
59.44 (44.33)	3310 (14.72)	6.74 (10.84)	2214	1.15	0.590 (0.359)	11.86 (2.34)	181 (83)	58 (14)	29.06 (98.41)
75% of Pull at Reduced Engine Speed—6.8 mph (11.0 km/h)(Auto mode)									
86.73 (64.68)	4984 (22.17)	6.53 (10.50)	1767	1.75	0.465 (0.283)	15.03 (2.96)	181 (83)	56 (13)	29.09 (98.51)
50% of Pull at Reduced Engine Speed—6.8 mph (11.0 km/h)(Auto mode)									
59.61 (44.45)	3309 (14.72)	6.76 (10.87)	1445	1.15	0.482 (0.293)	14.52 (2.86)	179 (81)	58 (14)	29.05 (98.37)

Location of Test: Nebraska Tractor Test Laboratory, University of Nebraska, Lincoln, Nebraska 68583-0832

Dates of Test: March 25-April 17, 2003

Manufacturer: John Deere Waterloo Works, P.O. Box 270, Waterloo Ia, USA, 50704

FUEL, OIL and TIME: Fuel No. 2 Diesel Specific gravity converted to 60°/60°F (15°/15°C) 0.8400 Fuel weight 6.994 lbs/gal (0.838 kg/l) Oil SAE 15W-40 API service classification CF-4 Transmission and hydraulic lubricant John Deere Hy-Gard fluid Front axle lubricant SAE 85W-140 API GL-5 Total time engine was operated: 34.5 hours

ENGINE: Make John Deere Diesel Type six cylinder vertical with turbocharger and intercooler Serial No. *PE6068H242652* Crankshaft lengthwise Rated engine speed 2100 Bore and stroke 4.19" x 5.00" (106.5 mm x 127.0 mm) Compression ratio 17.0 to 1 Displacement 414 cu in (6788 ml) Starting system 12 volt Lubrication pressure Air cleaner two paper elements and aspirator Oil filter one full flow cartridge Oil cooler engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil Fuel filter one paper element and prestrainer Fuel cooler radiator for returned fuel Muffler underhood Exhaust vertical Cooling medium temperature control 2 thermostats and variable speed fan

ENGINE OPERATING PARAMETERS: Fuel rate: 50.3 - 53.4 lb/h (22.8 - 24.2 kg/h) High idle: 2245 - 2265 rpm Turbo boost: nominal 8.4 - 12.8 psi (58 - 88 kPa) as measured 11.7 psi (80 kPa)

CHASSIS: Type front wheel assist Serial No. *RW7520D001770* Tread width rear 60.0" (1524 mm) to 100.3 (2548 mm) front 59.4" (1510 mm) to 88.0" (2235 mm) Wheelbase 104.3" (2650 mm) Hydraulic control system direct engine drive Transmission Infinity variable with four ranges with automatic shifting between ranges. Nominal travel speeds mph (km/h) forward - 0-25.0 mph, (0-40 km/h) reverse - 0-25.0 mph (0-40 km/h) Clutch wet multiple disc hydraulically actuated by foot pedal Brakes wet multiple disc hydraulically operated by two foot pedals that can be locked together Steering hydrostatic Power take-off 540 rpm at 2080 engine rpm or 1000 rpm at 2093 engine rpm Unladen tractor mass 13280 lb (6024 kg)

DRAWBAR PERFORMANCE
UNBALLASTED - AUTO MODE
MAXIMUM POWER AT SELECTED SPEEDS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
2.5 mph (4.0 km/h)									
75.30 (56.15)	13634 (60.65)	2.07 (3.33)	1722	13.68	0.523 (0.318)	13.38 (2.64)	182 (83)	52 (11)	28.28 (95.78)
3.1 mph (5.0 km/h)									
92.14 (68.71)	13197 (58.70)	2.62 (4.21)	1976	12.41	0.525 (0.319)	13.32 (2.62)	185 (85)	58 (14)	28.28 (95.78)
3.7 mph (6.0 km/h)									
107.51 (80.17)	12965 (57.67)	3.11 (5.00)	1904	9.58	0.501 (0.305)	13.96 (2.75)	186 (86)	57 (14)	28.30 (95.84)
4.3 mph (7.0 km/h)									
113.70 (84.79)	11937 (53.10)	3.57 (5.75)	1829	6.73	0.478 (0.291)	14.64 (2.88)	192 (89)	70 (21)	28.39 (96.14)
5.0 mph (8.0 km/h)									
116.34 (86.76)	11449 (50.93)	3.81 (6.13)	1827	6.26	0.461 (0.281)	15.16 (2.99)	189 (87)	63 (17)	28.42 (96.24)
5.6 mph (9.0 km/h)									
121.17 (90.35)	10398 (46.25)	4.37 (7.03)	1828	4.83	0.448 (0.272)	15.62 (3.08)	188 (86)	61 (16)	28.44 (96.31)
6.2 mph (10.0 km/h)									
123.93 (92.41)	9582 (42.62)	4.85 (7.81)	1827	4.27	0.436 (0.265)	16.06 (3.16)	190 (88)	59 (15)	28.45 (96.34)
6.8 mph (11.0 km/h)									
124.53 (92.86)	8704 (38.72)	5.37 (8.63)	1827	3.53	0.437 (0.266)	16.01 (3.15)	190 (88)	60 (16)	28.46 (96.38)
7.5 mph (12.0 km/h)									
123.81 (92.32)	7715 (34.32)	6.02 (9.68)	1826	3.03	0.439 (0.267)	15.95 (3.14)	189 (87)	63 (17)	28.46 (96.38)
8.1 mph (13.0 km/h)									
122.05 (91.02)	7042 (31.32)	6.50 (10.46)	1826	2.77	0.445 (0.271)	15.72 (3.10)	192 (89)	68 (20)	28.46 (96.38)
8.7 mph (14.0 km/h)									
120.21 (89.64)	6472 (28.79)	6.97 (11.21)	1829	2.44	0.450 (0.274)	15.53 (3.06)	191 (88)	68 (20)	28.46 (96.38)
9.3 mph (15.0 km/h)									
117.02 (87.26)	5919 (26.33)	7.41 (11.93)	1825	2.01	0.462 (0.281)	15.13 (2.98)	192 (89)	68 (20)	28.46 (96.38)
10.0 mph (16.1 km/h)									
119.30 (88.96)	5549 (24.68)	8.06 (12.98)	1825	1.84	0.454 (0.276)	15.42 (3.04)	191 (88)	67 (19)	28.46 (96.38)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. For the maximum power tests the fuel temperature at the injection pump inlet was maintained at 117°F(47°C). The performance figures on this summary were taken from a test conducted under the OECD Code II test code procedure.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1818**, Nebraska Summary 395, July 1, 2003.

Leonard L. Bashford
 Director

M.F. Kocher
 V.I. Adamchuk
 W.P. Campbell
 Board of Tractor Test Engineers

TRACTOR SOUND LEVEL WITH CAB	Auto Mode dB(A)
At no load at 4.6 mph (7.5 km/h)	66.3
Transport speed - no load -	72.5
Bystander	83.1

TIRES, BALLAST AND WEIGHT	With Ballast	Without Ballast
Rear Tires - No., size, ply & psi(kPa)	Two 480/80R42;**,17(115)	Two 480/80R42;**,12(85)
Ballast - Liquid (total)	None	None
- Cast Iron (total)	2290 lb (1039 kg)	None
Front Tires - No., size, ply & psi(kPa)	Two 380/85R30;**,13(90)	Two 380/85R30;**,10(70)
Ballast - Liquid (total)	None	None
- Cast Iron (total)	670 lb (304 kg)	None
Height of Drawbar	21.5 in (545 mm)	22.0 in (560 mm)
Static Weight with operator - Rear	10950 lb (4967 kg)	8860 lb (4019 kg)
- Front	5850 lb (2654 kg)	4980 lb (2259 kg)
- Total	16800 lb (7621 kg)	13840 lb (6278 kg)

DRAWBAR PERFORMANCE
UNBALLASTED - MANUAL MODE
MAXIMUM POWER AT SELECTED SPEEDS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Consumption Hp.hr/gal (kW.h/l)	Temp. °F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
2.5 mph (4.0 km/h)									
78.39 (58.45)	13758 (61.20)	2.14 (3.44)	2182	13.08	0.567 (0.345)	12.33 (2.43)	183 (84)	53 (12)	28.28 (95.77)
3.1 mph (5.0 km/h)									
93.69 (69.86)	13292 (59.12)	2.64 (4.25)	2143	12.34	0.544 (0.331)	12.86 (2.53)	185 (85)	58 (14)	28.28 (95.77)
3.7 mph (6.0 km/h)									
103.12 (76.89)	11669 (51.90)	3.31 (5.33)	2102	5.95	0.502 (0.306)	13.92 (2.74)	186 (85)	57 (14)	28.29 (95.80)
4.3 mph (7.0 km/h)									
102.45 (76.40)	9781 (43.51)	3.93 (6.32)	2099	3.86	0.505 (0.307)	13.86 (2.73)	187 (86)	68 (20)	28.38 (96.11)
5.0 mph (8.0 km/h)									
105.22 (78.46)	8585 (38.19)	4.60 (7.40)	2101	3.53	0.490 (0.298)	14.26 (2.81)	187 (86)	67 (19)	28.40 (96.17)
5.6 mph (9.0 km/h)									
109.04 (81.31)	7936 (35.30)	5.15 (8.29)	2099	3.03	0.473 (0.287)	14.80 (2.92)	187 (86)	61 (16)	28.44 (96.31)
6.2 mph (10.0 km/h)									
110.87 (82.68)	7257 (32.28)	5.73 (9.22)	2099	2.69	0.464 (0.282)	15.08 (2.97)	186 (86)	60 (16)	28.44 (96.31)
6.8 mph (11.0 km/h)									
110.88 (82.69)	6606 (29.38)	6.29 (10.13)	2096	2.44	0.465 (0.283)	15.05 (2.96)	186 (86)	59 (15)	28.45 (96.31)
7.5 mph (12.0 km/h)									
109.35 (81.54)	5815 (25.87)	7.05 (11.35)	2095	2.10	0.469 (0.285)	14.91 (2.94)	188 (86)	61 (16)	28.46 (96.38)
8.1 mph (13.0 km/h)									
106.73 (79.59)	5239 (23.30)	7.64 (12.29)	2100	2.01	0.483 (0.294)	14.48 (2.85)	187 (86)	65 (18)	28.46 (96.38)
8.7 mph (14.0 km/h)									
103.85 (77.44)	4739 (21.08)	8.22 (13.22)	2100	1.58	0.493 (0.300)	14.17 (2.79)	189 (87)	68 (20)	28.46 (96.38)

DRAWBAR PERFORMANCE
UNBALLASTED - 1800 RPM - MANUAL MODE
MAXIMUM POWER AT SELECTED SPEEDS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
79.94 (59.61)	13864 (61.67)	2.16 (3.48)	2181	11.99	0.556 (0.338)	12.59 (2.48)	182 (83)	51 (11)	28.28 (95.78)
94.08 (70.15)	13305 (59.18)	2.65 (4.27)	2146	12.16	0.539 (0.328)	12.98 (2.56)	185 (85)	58 (14)	28.28 (95.78)
105.47 (78.65)	13057 (58.08)	3.03 (4.88)	2008	10.09	0.510 (0.310)	13.73 (2.70)	186 (86)	57 (14)	28.29 (95.80)
110.09 (82.09)	12155 (54.07)	3.40 (5.47)	1874	6.89	0.490 (0.298)	14.28 (2.81)	191 (88)	69 (21)	28.39 (96.14)
116.64 (86.98)	11447 (50.92)	3.82 (6.15)	1797	6.19	0.466 (0.283)	15.01 (2.96)	192 (89)	65 (18)	28.41 (96.21)
121.33 (90.48)	10478 (46.61)	4.34 (6.99)	1802	4.91	0.444 (0.270)	15.74 (3.10)	188 (87)	61 (16)	28.44 (96.31)
124.19 (92.61)	9615 (42.77)	4.84 (7.80)	1801	4.18	0.433 (0.263)	16.16 (3.18)	189 (87)	60 (16)	28.44 (96.31)
124.48 (92.82)	8724 (38.81)	5.35 (8.61)	1802	3.61	0.436 (0.265)	16.04 (3.16)	190 (88)	60 (16)	28.46 (96.38)
123.87 (92.37)	7733 (34.40)	6.01 (9.67)	1800	2.94	0.437 (0.266)	15.99 (3.15)	189 (87)	62 (17)	28.46 (96.38)
122.20 (91.12)	7049 (31.36)	6.50 (10.46)	1799	2.77	0.441 (0.268)	15.86 (3.12)	190 (88)	67 (19)	28.46 (96.38)
119.69 (89.25)	6416 (28.54)	7.00 (11.26)	1799	2.35	0.453 (0.275)	15.45 (3.04)	191 (88)	68 (20)	28.46 (96.38)
118.48 (88.35)	5937 (26.41)	7.48 (12.04)	1798	2.18	0.459 (0.279)	15.23 (3.00)	191 (88)	68 (20)	28.46 (96.38)
120.15 (89.60)	5600 (24.91)	8.05 (12.95)	1798	2.01	0.451 (0.274)	15.50 (3.05)	191 (88)	68 (20)	28.46 (96.38)

DRAWBAR PERFORMANCE
BALLASTED - 1800 RPM - MANUAL MODE
MAXIMUM POWER AT SELECTED SPEEDS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Fuel Consumption Hp.hr/gal (kW.h/l)	Temp. °F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
89.25 (66.55)	16068 (71.47)	2.08 (3.35)	2164	14.65	2.5 mph (4.0 km/h) 0.553 (0.336)		182 (83)	43 (6)	28.80 (97.53)
106.36 (79.31)	15071 (67.04)	2.65 (4.26)	2052	8.29	3.1 mph (5.0 km/h) 0.498 (0.303)		185 (85)	53 (12)	28.93 (97.97)
112.41 (83.82)	14784 (65.76)	2.85 (4.59)	1853	8.38	3.7 mph (6.0 km/h) 0.482 (0.293)		187 (86)	56 (13)	28.92 (97.93)
115.64 (86.23)	13097 (58.26)	3.31 (5.33)	1800	5.68	4.3 mph (7.0 km/h) 0.467 (0.284)		190 (88)	58 (14)	28.92 (97.93)
120.11 (89.56)	11577 (51.50)	3.89 (6.26)	1799	4.56	5.0 mph (8.0 km/h) 0.447 (0.272)		190 (88)	61 (16)	28.91 (97.90)
122.99 (91.72)	10508 (46.74)	4.39 (7.06)	1801	3.99	5.6 mph (9.0 km/h) 0.440 (0.268)		189 (87)	61 (16)	28.91 (97.90)
124.64 (92.95)	9589 (42.65)	4.87 (7.84)	1799	3.49	6.2 mph (10.0 km/h) 0.435 (0.264)		190 (88)	62 (17)	28.90 (97.87)
124.38 (92.75)	8692 (38.66)	5.37 (8.64)	1798	3.07	6.8 mph (11.0 km/h) 0.435 (0.265)		189 (87)	63 (17)	28.90 (97.87)
123.40 (92.02)	7663 (34.08)	6.04 (9.72)	1802	2.57	7.5 mph (12.0 km/h) 0.438 (0.266)		191 (88)	64 (18)	28.89 (97.83)
121.74 (90.78)	6998 (31.13)	6.52 (10.50)	1800	2.23	8.1 mph (13.0 km/h) 0.444 (0.270)		191 (88)	65 (18)	28.89 (97.83)
118.91 (88.67)	6353 (28.26)	7.02 (11.30)	1799	2.06	8.7 mph (14.0 km/h) 0.454 (0.276)		192 (89)	66 (19)	28.89 (97.83)
117.59 (87.68)	5853 (26.03)	7.53 (12.13)	1805	1.80	9.3 mph (15.0 km/h) 0.458 (0.279)		192 (89)	66 (19)	28.88 (97.80)
119.41 (89.04)	5526 (24.58)	8.10 (13.04)	1804	1.72	10.0 mph (16.1 km/h) 0.455 (0.277)		192 (89)	68 (20)	28.88 (97.80)

THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: II

Quick Attach: None
 Maximum Force Exerted Through Whole Range: 7911 lbs (34.6 kN) (2x 80 mm)
 8967 lbs (39.9 kN) (2x 85 mm)

CATEGORY: IIIN

Quick Attach: None
 Maximum Force Exerted Through Whole Range: 7961 lbs (35.4 kN) (2x 80 mm)
 8960 lbs (39.9 kN) (2x 85 mm)

- i) Opening pressure of relief valve: NA
- Sustained pressure at compensator cutoff: 2950 psi (203 bar)
- ii) Pump delivery rate at minimum pressure and rated engine speed: **1 outlet set** **two outlet sets combined**
 29.7 GPM (112.4 l/min) 29.8 GPM (112.8 l/min)
- iii) Pump delivery rate at maximum hydraulic power: 30.0 GPM (113.6 l/min) 29.5 GPM (111.7 l/min)
- Delivery pressure: 2450 psi (169 bar) 2750 psi (190 bar)
- Power: 42.9 HP (32.0 kW) 47.3 HP (35.3 kW)

THREE POINT HITCH PERFORMANCE - SAE TEST

Observed Maximum Pressure psi. (bar)	2910 (201)
Location:	lift cylinders
Hydraulic oil temperature: °F (°C)	140 (60)
Location:	hydraulic sump
Category:	II, IIIN
Quick attach:	No

Category II—80 mm cylinders - System pressure 2545 psi (175 Bar)

Hitch point distance to ground level in. (mm)	7.9 (200)	15.0 (381)	22.0 (559)	29.0 (737)	36.0 (914)
Lift force on frame lb	11901	10993	10190	9420	8354
" " " " " " (kN)	(52.9)	(48.9)	(45.3)	(41.9)	(37.2)

Category II—85 mm cylinders - System pressure 2545 psi (175 Bar)

Hitch point distance to ground level in. (mm)	7.9 (200)	15.0 (381)	22.0 (559)	29.0 (737)	36.0 (914)
Lift force on frame lb	13517	12467	11544	10635	9503
" " " " " " (kN)	(60.1)	(55.5)	(51.4)	(47.3)	(42.3)

Category IIIN—80 mm cylinders - System pressure 2545 psi (175 Bar)

Hitch point distance to ground level in. (mm)	7.9 (200)	16.0 (406)	24.0 (610)	32.0 (813)	40.0 (1016)
Lift force on frame lb	11787	10948	10144	9254	7830
" " " " " " (kN)	(52.4)	(48.7)	(45.1)	(41.2)	(34.8)

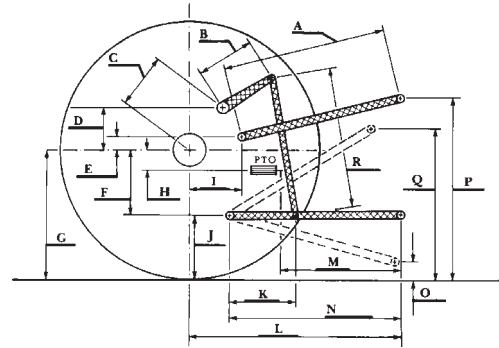
Category IIIN—85 mm cylinders - System pressure 2545 psi (175 Bar)

Hitch point distance to ground level in. (mm)	7.9 (200)	16.0 (406)	24.0 (610)	32.0 (813)	40.0 (1016)
Lift force on frame lb	13393	12433	11485	10297	8913
" " " " " " (kN)	(59.6)	(55.3)	(51.1)	(45.8)	(39.6)

HITCH DIMENSIONS AS TESTED—NO LOAD

Category II

	SAE TEST		OECD TEST	
	inch	mm	inch	mm
A	26.0	660	27.6	700
B	15.7	400	15.7	400
C	21.8	554	21.8	554
D	20.6	523	20.6	523
E	8.6	218	8.6	218
F	9.8	250	9.8	250
G	32.3	820	32.3	820
H	3.1	80	3.1	80
I	18.1	461	18.1	461
J	22.5	570	22.5	570
K	21.5	547	21.5	547
L	44.9	1140	44.9	1140
M	20.5	520	20.5	520
N	38.6	980	38.6	980
O	8.0	203	8.0	203
P	41.5	1054	46.5	1180
Q	34.8	883	34.8	883
R	34.6	880	34.6	880



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