

NEBRASKA OECD TRACTOR TEST 1989–SUMMARY 757

JOHN DEERE 7130 POWRQUAD-PLUS DIESEL

16 SPEED

CHASSIS SERIAL NUMBERS 20001 AND HIGHER

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—1037 rpm)					
104.35 (77.81)	2301	6.24 (23.60)	0.422 (0.256)	16.74 (3.30)	
Standard Power Take-off Speed (1000 rpm)					
110.24 (82.21)	2219	6.35 (24.03)	0.406 (0.247)	17.37 (3.42)	
Maximum Power (1 hour)					
116.00 (86.50)	2050	6.46 (24.44)	0.393 (0.239)	17.97 (3.54)	

VARYING POWER AND FUEL CONSUMPTION

104.35 (77.81)	2301	6.24 (23.60)	0.422 (0.256)	16.74 (3.30)	Air temperature
91.56 (68.28)	2377	5.79 (21.91)	0.446 (0.271)	15.82 (3.12)	73°F (23°C)
69.68 (51.96)	2408	4.86 (18.39)	0.492 (0.299)	14.34 (2.83)	Relative humidity
47.30 (35.27)	2440	3.92 (14.83)	0.584 (0.355)	12.08 (2.38)	27%
23.76 (17.72)	2460	3.22 (12.19)	0.957 (0.582)	7.38 (1.45)	Barometer
3.81 (2.84)	2460	2.29 (8.66)	4.234 (2.575)	1.67 (0.33)	28.72 Hg (97.26 kPa)

Maximum torque - 338 lb.-ft. (458 Nm) at 1551 rpm
 Maximum torque rise - 41.5%
 Torque rise at 1799 engine rpm - 37%
 Power increase at 2050 engine rpm - 11.1%

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—7th (B3) Gear									
94.79 (70.68)	8338 (37.09)	4.27 (6.86)	2300	3.9	0.467 (0.284)	15.12 (2.98)	184 (84)	56 (13)	29.18 (98.82)
75% of Pull at Maximum Power—7th (B3) Gear									
73.45 (54.77)	6145 (27.33)	4.48 (7.21)	2387	2.6	0.534 (0.325)	13.23 (2.61)	183 (84)	79 (26)	28.39 (96.14)
50% of Pull at Maximum Power—7th (B3) Gear									
50.56 (37.70)	4124 (18.34)	4.60 (7.39)	2424	1.6	0.625 (0.380)	11.29 (2.22)	185 (85)	79 (26)	28.39 (96.14)
75% of Pull at Reduced Engine Speed—10th (C2) Gear									
73.51 (54.81)	6141 (27.32)	4.49 (7.23)	1742	2.6	0.464 (0.282)	15.20 (2.99)	185 (85)	79 (26)	28.37 (96.07)
50% of Pull at Reduced Engine Speed—10th (C2) Gear									
50.67 (37.78)	4127 (18.36)	4.61 (7.41)	1770	1.6	0.517 (0.314)	13.66 (2.69)	184 (84)	79 (26)	28.38 (96.11)

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

Dates of tests: April 28 - May 4, 2011

Manufacturer: John Deere Tractor Works, 3500 East Donald Street, P.O. Box 270, Waterloo Ia, 50704-0270

FUEL, OIL and TIME: Fuel No. 2 Diesel Specific gravity converted to 60°/60°F (15°/15°C) 0.8476 Fuel weight 7.057 lbs/gal (0.846 kg/l) Oil SAE 15W-40 API service classification CJ-4 Transmission and hydraulic lubricant John Deere Hy-Gard fluid Front axle lubricant John Deere Hy-Gard fluid Total time engine was operated: 21.5 hours

ENGINE: Make John Deere Diesel **Type** four cylinder vertical with turbocharger and intercooler **Serial No.** *PE4045L797876* **Crankshaft** lengthwise **Rated engine speed** 2300 **Bore and stroke** 4.19 x 5.00" (106.5 mm x 127.0 mm) **Compression ratio** 17.0 to 1 **Displacement** 276 cu in (4525 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 pump return fuel **Muffler** vertical **Cooling medium temperature control** 2 thermostats and variable speed fan

ENGINE OPERATING PARAMETERS: Fuel rate: 43.7 - 47.4 lb/h (19.8 - 21.5 kg/h) **High idle:** 2410 - 2510 rpm **Turbo boost:** nominal 17.4-20.3 psi (120-140 kPa) as measured 19.0 psi (131 kPa)

CHASSIS: Type front wheel assist **Serial No.** *RW7130H021304* **Tread width** rear 63.0" (1601 mm) to 85.7" (2178 mm) front 59.4" (1510 mm) to 88.0" (2235 mm) **Wheelbase** 104.3" (2650 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (4) range operator controlled power shift **Nominal travel speeds mph (km/h)** first 1.53 (2.46) second 1.84 (2.96) third 2.21 (3.55) fourth 2.70 (4.35) fifth 3.06 (4.93) sixth 3.69 (5.94) seventh 4.42 (7.11) eighth 5.04 (8.11) ninth 5.41 (8.71) tenth 6.07 (9.77) eleventh 7.27 (11.70) twelfth 8.90 (14.33) thirteenth 10.38 (16.70) fourteenth 12.50 (20.11) fifteenth 14.96 (24.09) sixteenth 18.34 (29.51) reverse 1.60 (2.57), 1.92 (3.09), 2.30 (3.70), 2.82 (4.54), 3.20 (5.15), 3.85 (6.20), 4.61 (7.42), 5.26 (8.47), 5.65 (9.09), 6.33 (10.19), 7.59 (12.21), 9.30 (14.96), 10.83 (17.43), 13.04 (20.99), 15.62 (25.14), 19.13 (30.79)

DRAWBAR PERFORMANCE
UNBALLASTED - FRONT DRIVE ENGAGED - 2300 RPM
MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Temp. °F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)	
5th(B1) Gear									
79.96 (59.63)	10850 (48.26)	2.76 (4.44)	2370	12.8	0.532 (0.323)	13.28 (2.62)	184 (84)	48 (9)	29.16 (98.75)
6th(B2) Gear									
90.30 (67.34)	9775 (43.48)	3.47 (5.58)	2300	6.3	0.486 (0.295)	14.53 (2.86)	184 (84)	50 (10)	29.17 (98.78)
7th(B3) Gear									
94.79 (70.68)	8338 (37.09)	4.27 (6.86)	2300	3.9	0.467 (0.284)	15.12 (2.98)	184 (84)	56 (13)	29.18 (98.82)
8th(C1) Gear									
93.88 (70.01)	7198 (32.02)	4.89 (7.87)	2300	3.2	0.469 (0.285)	15.05 (2.96)	184 (84)	55 (13)	29.19 (98.85)
9th(B4) Gear									
90.50 (67.49)	6425 (28.58)	5.28 (8.50)	2300	2.8	0.492 (0.299)	14.36 (2.83)	186 (86)	68 (20)	28.53 (96.61)
10th(C2) Gear									
91.75 (68.42)	5798 (25.79)	5.94 (9.55)	2300	2.5	0.483 (0.293)	14.63 (2.88)	186 (85)	52 (11)	29.19 (98.85)
11th(C3) Gear									
93.44 (69.68)	4904 (21.81)	7.15 (11.50)	2302	2.2	0.476 (0.289)	14.84 (2.92)	185 (85)	52 (11)	29.19 (98.85)
12th(C4) Gear									
88.15 (65.73)	3756 (16.71)	8.80 (14.16)	2299	1.7	0.502 (0.306)	14.04 (2.77)	183 (84)	53 (12)	29.18 (98.82)

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 2143 engine rpm or 1000 rpm at 2220 engine rpm **Unladen tractor mass** 12090 lb (5484 kg)

Note: The performance figures on this report apply to tractors with chassis serial numbers 20001 and higher.

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 fuel pump inlet was maintained at 121°F (49°C). The manufacturer's claims of 35% torque rise with the 2V-CR PowerTech E engine was not verified nor remote flow claim of 21.1 GPM (79.8 l/min) with open center system The performance figures on this summary were taken from a test conducted under the OECD Code 2 test code procedure.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1989**, Nebraska Summary 757, June 13, 2011.

Roger M. Hoy
 Director

M.F. Kocher
 D.R. Keshwani
 P.J. Jasa
 Board of Tractor Test Engineers

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive	
	Engaged dB(A)	Disengaged dB(A)
At no load in 7th (B3) gear	71.2	71.1
Transport speed - no load - 16th (D4) gear		72.2
Bystander in 16th (D4) gear		83.3

TIRES, BALLAST AND WEIGHT

Rear Tires - No., size, ply & psi(kPa)
Front Tires - No., size, ply & psi(kPa)
Height of Drawbar
Static Weight with operator - Rear
 - Front
 - Total

Tested without ballast

Two 480/80R38;***;12(85)
 Two 380/85R28;***;12(85)
 19.5 in (495 mm)
 7665 lb (3476 kg)
 4600 lb (2087 kg)
 12265 lb (5563 kg)

DRAWBAR PERFORMANCE
UNBALLASTED - FRONT DRIVE ENGAGED - 2050 RPM
MAXIMUM POWER IN SELECTED GEARS

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)
5th(B1) Gear									
80.12 (59.74)	10973 (48.81)	2.74 (4.40)	2369	13.6	0.535 (0.326)	13.18 (2.60)	184 (84)	46 (8)	29.14 (98.68)
6th(B2) Gear									
92.93 (69.30)	10477 (46.60)	3.33 (5.36)	2242	7.8	0.482 (0.293)	14.64 (2.88)	184 (84)	52 (11)	29.18 (98.82)
7th(B3) Gear									
103.17 (76.93)	10235 (45.53)	3.78 (6.08)	2081	5.8	0.442 (0.269)	15.98 (3.15)	185 (85)	55 (13)	29.18 (98.82)
8th(C1) Gear									
104.83 (78.17)	9121 (40.57)	4.31 (6.94)	2052	4.5	0.435 (0.265)	16.21 (3.19)	184 (84)	56 (13)	29.18 (98.82)
9th(B4) Gear									
102.33 (76.31)	8246 (36.68)	4.65 (7.48)	2050	3.8	0.445 (0.271)	15.86 (3.12)	186 (85)	52 (13)	29.18 (98.82)
10th(C2) Gear									
102.63 (76.53)	7340 (32.65)	5.25 (8.44)	2050	3.3	0.445 (0.271)	15.86 (3.13)	186 (85)	52 (11)	29.18 (98.82)
11th(C3) Gear									
104.60 (78.00)	6202 (27.59)	6.33 (10.18)	2050	2.7	0.436 (0.265)	16.18 (3.19)	185 (85)	53 (12)	29.18 (98.82)
12th(C4) Gear									
100.37 (74.85)	4825 (21.46)	7.80 (12.55)	2047	2.1	0.454 (0.276)	15.54 (3.06)	185 (85)	53 (12)	29.18 (98.82)

DRAWBAR PERFORMANCE
UNBALLASTED - FRONT DRIVE DISENGAGED
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—8th (C1) Gear									
93.65 (69.83)	7314 (32.53)	4.80 (7.72)	2300	4.0	0.474 (0.288)	14.88 (2.93)	189 (87)	75 (24)	28.44 (96.31)
75% of Pull at Maximum Power—8th(C1) Gear									
73.43 (54.76)	5458 (24.28)	5.05 (8.13)	2387	2.7	0.534 (0.325)	13.23 (2.61)	187 (86)	77 (25)	28.36 (96.04)
50% of Pull at Maximum Power—8th (C1) Gear									
50.88 (37.94)	3677 (16.36)	5.19 (8.34)	2423	1.7	0.625 (0.380)	11.30 (2.23)	186 (86)	79 (26)	28.34 (95.97)
75% of Pull at Reduced Engine Speed—11th(C3) Gear									
73.71 (54.97)	5488 (24.41)	5.04 (8.10)	1651	2.7	0.453 (0.275)	15.59 (3.07)	182 (83)	77 (25)	28.36 (96.04)
50% of Pull at Reduced Engine Speed—11th(C3) Gear									
50.37 (37.56)	3659 (16.28)	5.16 (8.30)	1675	1.7	0.505 (0.307)	13.98 (2.75)	180 (82)	79 (26)	28.33 (95.94)
MAXIMUM POWER IN SELECTED GEARS									
6th(B2) Gear									
75.08 (55.99)	8646 (38.46)	3.26 (5.24)	2374	13.9	0.559 (0.340)	12.63 (2.49)	184 (84)	51 (11)	29.17 (98.78)
7th(B3) Gear									
91.62 (68.32)	8333 (37.06)	4.13 (6.64)	2299	6.0	0.485 (0.295)	14.55 (2.87)	190 (88)	77 (25)	28.41 (96.21)
8th(C1) Gear									
93.65 (69.83)	7314 (32.53)	4.80 (7.72)	2300	4.0	0.474 (0.288)	14.88 (2.93)	189 (87)	75 (24)	28.44 (96.31)
9th(B4) Gear									
91.02 (67.87)	6567 (29.21)	5.20 (8.37)	2300	3.3	0.488 (0.297)	14.46 (2.85)	187 (86)	69 (21)	28.51 (96.55)
10th(C2) Gear									
91.98 (68.59)	5912 (26.30)	5.84 (9.39)	2301	3.2	0.481 (0.292)	14.68 (2.89)	184 (84)	52 (11)	29.19 (98.85)
11th(C3) Gear									
94.17 (70.22)	5019 (22.32)	7.04 (11.33)	2300	2.5	0.470 (0.286)	15.01 (2.96)	184 (84)	52 (11)	29.18 (98.82)
12th(C4) Gear									
89.67 (66.87)	3875 (17.24)	8.68 (13.97)	2299	1.9	0.493 (0.300)	14.31 (2.82)	183 (84)	52 (11)	29.19 (98.85)

HYDRAULIC PERFORMANCE

CATEGORY: II, IIIN

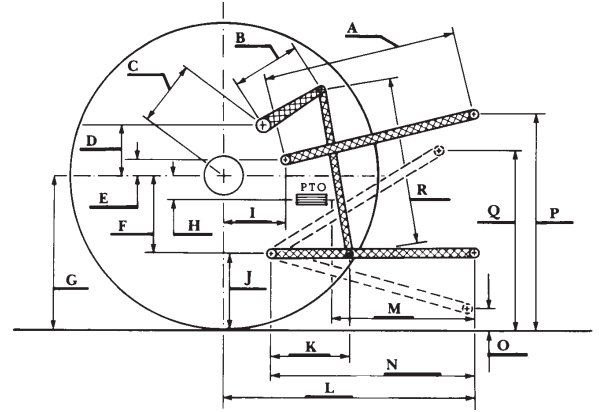
Quick Attach: No

OECD Static test

Maximum force exerted through whole range: 5110 lbs (22.7 kN)(75 mm cylinders)
 8262 lbs (36.8 kN)(90 mm cylinders)
two outlet sets combined
 3015 psi (208 bar)

i) Sustained pressure at compensator cutoff:
 ii) Pump delivery rate at minimum pressure and rated engine speed: 32.0 GPM (121.2 l/min)
 iii) Pump delivery rate at maximum hydraulic power: 31.0 GPM (117.5 l/min)
 Delivery pressure: 2653 psi (183 bar)
 Power: 48.0 HP (35.8 kW)

single outlet set
 2943 psi (203 bar)
 i) Sustained pressure at compensator cutoff:
 ii) Pump delivery rate at minimum pressure and rated engine speed: 28.5 GPM (107.7 l/min)
 iii) Pump delivery rate at maximum hydraulic power: 24.2 GPM (91.5 l/min)
 Delivery pressure: 2289 psi (158 bar)
 Power: 32.3 HP (24.1 kW)



HITCH DIMENSIONS AS TESTED—NO LOAD

	OECD test		SAE test	
	inch	mm	inch	mm
A	25.8	655	24.4	620
B	12.6	320	12.6	320
C	20.0	507	20.0	507
D	23.9	475	23.9	475
E	12.6	320	12.6	320
F	8.7	220	8.7	220
G	32.3	820	32.3	820
H	4.9	125	4.9	125
I	16.9	428	16.9	428
J	23.6	600	23.6	600
K	19.8	502	19.8	502
L	42.3	1076	42.3	1076
M	21.5	546	21.5	546
N	37.2	945	37.2	945
O	7.9	200	7.9	200
P	47.6	1210	42.6	1083
Q	34.6	880	34.6	880
R	31.3	795	31.3	795

THREE POINT HITCH PERFORMANCE(SAE Static test)

Observed maximum pressure psi. (bar)	2990 (206)				
Location:	lift cylinders				
Hydraulic oil temperature: °F (°C)	149 (65)				
Location:	hydraulic sump				
Category:	II, IIIN				
Quick attach:	No				
System pressure 2545 psi (176 Bar) with lift cylinders 2 x 75 mm					
Hitch point distance to ground level in. (mm)	7.9 (201)	14.9 (379)	21.9 (556)	28.9 (735)	36.1 (916)
Lift force on frame lb	6676	7154	7246	7032	6355
" " " " " " (kN)	(29.7)	(31.8)	(32.2)	(31.3)	(28.3)
with lift cylinders 2 x 90 mm					
Hitch point distance to ground level in. (mm)	8.0 (203)	15.9 (403)	23.9 (606)	31.9 (811)	40.0 (1015)
Lift force on frame lb	18196	12491	12253	11980	10875
" " " " " " (kN)	(80.9)	(55.6)	(54.5)	(53.3)	(48.4)



JOHN DEERE 7130 DIESEL

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