

NEBRASKA OECD TRACTOR TEST 1988—SUMMARY 756

JOHN DEERE 6430 PREMIUM DIESEL 16 SPEED

CHASSIS SERIAL NUMBERS 634684 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-1036 rpm)					
105.57 (78.72)	2299	6.51 (24.64)	0.435 (0.265)	16.22 (3.19)	
Standard Power Take-off Speed (1000 rpm)					
110.69 (82.54)	2219	6.61 (25.02)	0.421 (0.256)	16.75 (3.30)	
Maximum Power (1 hour)					
117.32 (87.49)	1899	6.60 (24.99)	0.397 (0.242)	17.77 (3.50)	

VARYING POWER AND FUEL CONSUMPTION					
105.57 (78.72)	2299	6.51 (24.64)	0.435 (0.265)	16.22 (3.19)	Air temperature
92.78 (69.19)	2376	6.09 (23.07)	0.463 (0.282)	15.23 (3.00)	73°F (23°C)
70.38 (52.48)	2406	5.16 (19.51)	0.517 (0.314)	13.65 (2.69)	Relative humidity
47.63 (35.52)	2436	4.25 (16.09)	0.630 (0.383)	11.20 (2.21)	14%
24.18 (18.03)	2460	3.17 (11.99)	0.924 (0.562)	7.63 (1.50)	Barometer
4.24 (3.16)	2460	2.48 (9.39)	4.125 (2.509)	1.71 (0.34)	28.54" Hg (96.65 kPa)

Maximum Torque - 352 lb.-ft. (477 Nm) at 1548 rpm
 Maximum Torque rise - 45.8%
 Torque rise at 1797 engine rpm - 40%
 Power increase at 1899 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		Temp. °F (°C)		Barom. inch Hg (kPa)
					lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	cool- ing med	Air dry bulb	
Maximum Power—7th (B3) Gear									
92.10 (68.68)	7894 (35.11)	4.38 (7.04)	2299	6.4	0.499 (0.303)	14.15 (2.79)	184 (84)	61 (16)	28.64 (96.99)
75% of Pull at Maximum Power—7th (B3) Gear									
73.20 (54.59)	5924 (26.35)	4.63 (7.45)	2389	4.4	0.559 (0.340)	12.63 (2.49)	184 (84)	63 (17)	28.66 (97.05)
50% of Pull at Maximum Power—7th (B3) Gear									
50.20 (37.43)	3931 (17.49)	4.79 (7.71)	2424	2.8	0.661 (0.402)	10.68 (2.10)	184 (84)	63 (17)	28.66 (97.05)
75% of Pull at Reduced Engine Speed—10th (C2) Gear									
73.45 (54.77)	5896 (26.22)	4.67 (7.52)	1747	4.1	0.470 (0.286)	15.01 (2.96)	183 (84)	64 (18)	28.66 (97.05)
50% of Pull at Reduced Engine Speed—10th (C2) Gear									
50.30 (37.51)	3953 (17.58)	4.77 (7.68)	1759	2.7	0.519 (0.316)	13.60 (2.68)	182 (83)	64 (18)	28.65 (97.02)

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

Dates of tests: April 5 - 15, 2011

Manufacturer: Deere & Company, Moline, Illinois, USA

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 II fluid Front axle lubricant John Deere Hy-Gard II fluid Total time engine was operated 19.5 hours.

ENGINE: Make John Deere Diesel Type four cylinder vertical with turbocharger and water to air intercooler Serial No. CD4045L168980 Crankshaft lengthwise Rated engine speed 2300 Bore and stroke 4.19" x 5.00" (106.5 mm x 127.0 mm) Compression ratio 16.7 to 1 Displacement 276 cu in (4525 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, engine coolant heat exchanger for hydraulic and transmission oil Fuel filter one paper element Fuel cooler radiator for pump return fuel Muffler underhood Exhaust vertical Cooling medium temperature control thermostat and variable speed fan

ENGINE OPERATING PARAMETERS: Fuel rate: 43.0 - 46.7 lb/h (19.5 - 21.2 kg/h) High idle: 2410 - 2510 rpm Turbo boost: nominal 19.6-21.0 psi (135-145 kPa) as measured 20.3 psi (140 kPa)

CHASSIS: Type front wheel assist Serial No. L06430H659954 Tread width rear 56.9" (1446 mm) to 75.4" (1916 mm) front 59.9" (1522 mm) to 79.3" (2014 mm) Wheel base 94.5" (2400 mm) Hydraulic control system direct engine drive Transmission selective gear fixed ratio with partial (4) range operator controlled powershift Nominal travel speeds mph (km/h) first 1.60 (2.57) second 1.92 (3.09) third 2.30 (3.70) fourth 2.81 (4.53) fifth 3.20 (5.15) sixth 3.85 (6.20) seventh 4.61 (7.42) eighth 5.26 (8.46) ninth 5.65 (9.09) tenth 6.33 (10.19) eleventh 7.58 (12.20) twelfth 9.29 (14.95) thirteenth 10.83 (17.43) fourteenth 13.04 (20.98) fifteenth 15.62 (25.13) sixteenth 19.13 (30.78) reverse 1.67 (2.68), 2.01 (3.23), 2.40 (3.86), 2.94 (4.73), 3.34 (5.37), 4.02 (6.47), 4.82 (7.75), 5.49 (8.84), 5.90 (9.49), 6.61 (10.64), 7.92 (12.74), 9.69 (15.60), 11.31 (18.20), 13.61 (21.90), 16.30 (26.23), 19.96 (32.12)

DRAWBAR PERFORMANCE
Unballasted-Front Drive Engaged-2300 Engine 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)	Fuel Consumption Hp.hr/gal (kW.h/l)	Temp.°F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
5th (B1) Gear									
83.95 (62.60)	10855 (48.28)	2.90 (4.67)	2363	12.8	0.548 (0.333)	12.89 (2.54)	185 (85)	52 (11)	28.70 (97.19)
6th (B2) Gear									
91.10 (67.93)	9565 (42.55)	3.57 (5.75)	2300	8.4	0.510 (0.310)	13.84 (2.73)	184 (84)	53 (11)	28.70 (97.19)
7th (B3) Gear									
92.10 (68.68)	7894 (35.11)	4.38 (7.04)	2299	6.4	0.499 (0.303)	14.15 (2.79)	184 (84)	61 (16)	28.64 (96.99)
8th (C1) Gear									
91.05 (67.90)	6716 (29.87)	5.09 (8.18)	2300	4.7	0.504 (0.306)	14.01 (2.76)	183 (84)	60 (15)	28.63 (96.95)
9th (B4) Gear									
90.25 (67.30)	6192 (27.54)	5.47 (8.80)	2299	4.3	0.509 (0.310)	13.86 (2.73)	184 (84)	64 (18)	28.65 (97.02)
10th (C2) Gear									
92.25 (68.79)	5616 (24.98)	6.16 (9.91)	2301	3.9	0.496 (0.302)	14.23 (2.80)	185 (85)	65 (18)	28.66 (97.05)
11th (C3) Gear									
92.40 (68.90)	4658 (20.72)	7.44 (11.97)	2300	3.3	0.498 (0.303)	14.17 (2.79)	185 (85)	65 (18)	28.67 (97.09)
12th (C4) Gear									
90.00 (67.11)	3671 (16.33)	9.20 (14.80)	2301	2.7	0.515 (0.313)	13.71 (2.70)	183 (84)	66 (19)	28.66 (97.05)

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive	
	Engaged dB(A)	Disengaged dB(A)
At no load in 7th(B3) Gear	74.0	74.0
Transport in 16th(D4) gear	--	74.1
Bystander in 16th(D4) gear	--	83.7

TIRES 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 460/85R38;**, 12 (80)
 Two 420/85R24;**, 12 (80)
 20.0 in (510 mm)
 6540 lb (2967 kg)
 4075 lb (1848 kg)
 10615 lb (4815 kg)

Clutch multiple wet disc hydraulically operated by foot pedal **Brakes** wet disc hydraulically operated by two foot pedals which 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** 10440 lb (4735 kg)

Note: The performance figures on this report apply to tractors with chassis serial numbers 634684 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. This tractor did not meet the manufacturer's claim of 73.0 dB(A) cab sound level. For the maximum power tests the fuel temperature at the injection pump inlet was maintained at 118°F(48°C). 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. **1988**, Nebraska Summary 756, May 19, 2011.

Roger M. Hoy
 Director

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

DRAWBAR PERFORMANCE
Unballasted-Front Drive Engaged-1900 Engine 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)	Fuel Consumption Hp.hr/gal (kW.h/l)	Temp. °F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
5th(B1) Gear									
84.00 (62.64)	10837 (48.20)	2.91 (4.68)	2362	12.6	0.552 (0.335)	12.80 (2.52)	185 (85)	52 (11)	28.70 (97.19)
6th(B2) Gear									
92.80 (69.20)	10376 (46.15)	3.36 (5.40)	2233	11.4	0.507 (0.308)	13.92 (2.74)	184 (84)	53 (12)	28.70 (97.19)
7th(B3) Gear									
98.00 (73.08)	9684 (43.08)	3.80 (6.11)	2079	10.0	0.487 (0.296)	14.48 (2.85)	184 (84)	62 (17)	28.65 (97.02)
8th(C1) Gear									
99.40 (74.12)	9263 (41.20)	4.02 (6.47)	1900	8.5	0.464 (0.283)	15.19 (2.99)	184 (84)	61 (16)	28.64 (96.99)
9th(B4) Gear									
100.55 (74.98)	8576 (38.15)	4.40 (7.07)	1899	7.0	0.462 (0.281)	15.28 (3.01)	185 (85)	65 (18)	28.66 (97.05)
10th(C2) Gear									
101.15 (75.43)	7608 (33.84)	4.99 (8.02)	1899	5.8	0.458 (0.279)	15.40 (3.03)	184 (84)	65 (19)	28.66 (97.05)
11th(C3) Gear									
102.75 (76.62)	6351 (28.25)	6.07 (9.76)	1903	4.7	0.451 (0.274)	15.64 (3.08)	184 (84)	65 (18)	28.66 (97.05)
12th(C4) Gear									
101.05 (75.35)	5041 (22.42)	7.52 (12.10)	1901	3.5	0.458 (0.279)	15.40 (3.03)	185 (85)	66 (19)	28.66 (97.05)

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 cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
Maximum Power—8th (C1) Gear									
89.60 (66.81)	6815 (30.31)	4.93 (7.93)	2300	6.5	0.512 (0.312)	13.77 (2.71)	183 (84)	60 (16)	28.64 (96.99)
75% of Pull at Maximum Power—8th (C1) Gear									
71.45 (53.28)	5107 (22.72)	5.25 (8.44)	2391	4.5	0.566 (0.344)	12.48 (2.46)	184 (84)	56 (13)	28.68 (97.12)
50% of Pull at Maximum Power—8th (C1) Gear									
49.05 (36.58)	3423 (15.22)	5.38 (8.66)	2423	3.1	0.673 (0.410)	10.48 (2.06)	183 (84)	52 (11)	28.68 (97.12)
75% of Pull at Reduced Engine Speed—11th (C3) Gear									
71.25 (53.13)	5104 (22.70)	5.24 (8.42)	1658	4.4	0.457 (0.278)	15.45 (3.04)	182 (83)	55 (13)	28.68 (97.12)
50% of Pull at Reduced Engine Speed—11th (C3) Gear									
48.95 (36.50)	3403 (15.14)	5.40 (8.68)	1685	3.1	0.507 (0.309)	13.91 (2.74)	178 (81)	51 (11)	28.67 (97.09)
MAXIMUM POWER IN SELECTED GEARS									
6th (B2) Gear									
78.15 (58.28)	8509 (37.85)	3.44 (5.54)	2374	13.4	0.569 (0.346)	12.39 (2.44)	184 (84)	55 (13)	28.68 (97.12)
7th (B3) Gear									
89.75 (66.93)	8073 (35.91)	4.17 (6.71)	2305	9.9	0.515 (0.314)	13.69 (2.70)	183 (84)	54 (12)	28.69 (97.16)
8th (C1) Gear									
89.60 (66.81)	6815 (30.31)	4.93 (7.93)	2300	6.5	0.512 (0.312)	13.77 (2.71)	183 (84)	60 (16)	28.64 (96.99)
9th (B4) Gear									
89.20 (66.52)	6272 (27.90)	5.34 (8.59)	2301	5.7	0.515 (0.313)	13.71 (2.70)	184 (84)	65 (18)	28.66 (97.05)
10th (C2) Gear									
91.80 (68.46)	5709 (25.39)	6.03 (9.70)	2300	5.0	0.501 (0.305)	14.08 (2.77)	184 (84)	65 (18)	28.66 (97.05)
11th (C3) Gear									
92.10 (68.68)	4735 (21.06)	7.29 (11.73)	2298	4.0	0.499 (0.303)	14.15 (2.79)	184 (84)	66 (19)	28.67 (97.09)
12th (C4) Gear									
90.35 (67.37)	3755 (16.70)	9.03 (14.52)	2299	3.1	0.506 (0.308)	13.94 (2.75)	184 (84)	66 (19)	28.66 (97.05)

HYDRAULIC PERFORMANCE

CATEGORY: II

Quick Attach: none

OECD Static test

Maximum force exerted through whole range: 5110 lbs (22.7 kN) (75 mm cylinders)
6398 lbs (28.5 kN) (80 mm cylinders)

i) Sustained pressure of the open relief valve: 2977 psi (205 bar)

ii) Pump delivery rate at minimum pressure and rated engine speed: 32.8 GPM (124.2 l/min)

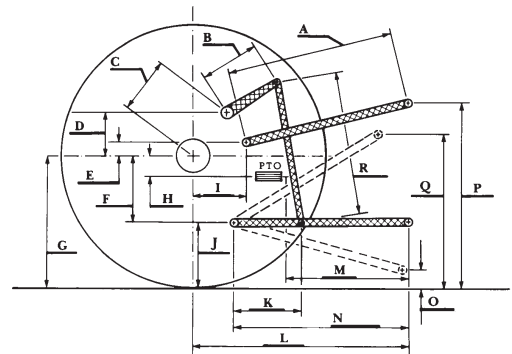
iii) Pump delivery rate at maximum hydraulic power: 32.0 GPM (121.3 l/min)
Delivery pressure: 2662 psi (184 bar)
Power: 49.8 HP (37.1 kW)

THREE POINT HITCH PERFORMANCE (SAE static test)

Observed maximum pressure psi. (bar)	2990 (206)				
Location:	lift cylinder				
Hydraulic oil temperature: °F (°C)	149 (65)				
Location:	hydraulic valve				
Category:	II				
Quick attach:	none				
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 (917)
Lift force on frame lb	6676	7154	7246	7032	6355
" " " " " " (kN)	(29.7)	(31.8)	(32.2)	(31.3)	(28.3)
System pressure - 2480 psi (171 Bar) - with lift cylinders 2 x 80 mm					
Hitch point distance to ground level in. (mm)	8.0 (203)	16.4 (417)	24.0 (610)	31.9 (810)	40.0 (1016)
Lift force on frame lb	15683	9566	9428	9212	8322
" " " " " " (kN)	(69.8)	(42.6)	(41.9)	(41.0)	(37.0)

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	9.7	245	9.7	245
F	8.7	220	8.7	220
G	32.3	820	32.3	820
H	4.9	125	4.9	125
I	17.6	448	17.6	448
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



JOHN DEERE 6430 PREMIUM DIESEL

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