

NEBRASKA OECD TRACTOR TEST 2003A - SUMMARY 786A

JOHN DEERE 8285R DIESEL

16 SPEED

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

Dates of tests: September 27 - October 5, 2011

Manufacturer: John Deere Tractor Works, 3500 East Donald St., 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) 0.8409 Fuel weight 7.002 lbs/gal (0.839 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: 23.5 hours

ENGINE: Make John Deere Diesel Type six cylinder vertical with two turbochargers and air to air aftercooler Serial No.*RG6090R001362* Crankshaft lengthwise Rated engine speed 2100 Bore and stroke 4.661" x 5.354" (118.4 mm x 136.0 mm) Compression ratio 16.0 to 1 Displacement 548 cu in (8984 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 water separator Fuel cooler radiator for pump return fuel Exhaust regenerative particulate filter integrated within a vertical muffler Cooling medium temperature control 2 thermostats and variable speed fan

ENGINE OPERATING PARAMETERS: Fuel rate: 95.4 - 103.4 lb/h (43.3 - 46.9 kg/h) High idle: 2150 - 2250 rpm Turbo boost: nominal 29.1 - 31.9 psi (200 - 220 kPa) as measured 30.2 psi (208 kPa)

CHASSIS: Type front wheel assist with duals Serial No.*1RW8285RTBP042572* Tread width rear 60.0" (1524 mm) to 132.6" (3368 mm) front 60.0" (1524 mm) to 88.0" (2235 mm) Wheelbase 118.9" (3020 mm) Hydraulic control system direct engine drive Transmission selective gear fixed ratio with full range operator controlled power shift Nominal travel speeds mph (km/h) first 1.17 (1.88) second 1.57 (2.52) third 2.09 (3.36) fourth 2.80 (4.50) fifth 3.14 (5.05) sixth 3.62 (5.82) seventh 4.20 (6.76) eighth 4.84 (7.79) ninth 5.59 (9.00) tenth 6.45 (10.38) eleventh 7.49 (12.06) twelfth 8.64 (13.90) thirteenth 10.17 (16.38) fourteenth 13.63 (21.94) fifteenth 18.15 (29.21) sixteenth 24.31 (39.13) reverse 1.09 (1.76), 2.93 (4.72), 3.70 (5.96), 6.80 (10.95)@1500 engine rpm 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 1000 rpm at 2004 engine rpm Unladen tractor mass 25330 lb (11489 kg)

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—1049 rpm)					
257.34 (191.90)	2099	14.49 (54.85)	0.394 (0.240)	17.76 (3.50)	
Standard Power Take-off Speed(1000 rpm)					
276.45 (206.15)	2003	15.18 (57.46)	0.384 (0.234)	18.21 (3.59)	
Maximum Power (1 hour)					
287.52 (214.40)	1700	15.51 (58.71)	0.378 (0.230)	18.54 (3.65)	

VARYING POWER AND FUEL CONSUMPTION

257.34 (191.90)	2099	14.49 (54.85)	0.394 (0.240)	17.76 (3.50)	Air temperature
224.54 (167.44)	2154	13.01 (49.24)	0.406 (0.247)	17.26 (3.40)	74°F (23°C)
168.88 (125.93)	2164	10.31 (39.02)	0.427 (0.260)	16.38 (3.23)	Relative humidity
113.21 (84.42)	2175	7.75 (29.34)	0.479 (0.292)	14.61 (2.88)	21%
57.02 (42.52)	2185	5.33 (20.18)	0.655 (0.398)	10.70 (2.11)	Barometer
3.96 (2.95)	2193	4.67 (17.68)	8.265 (5.027)	0.85 (0.17)	28.99" Hg (98.17 kPa)

Maximum Torque - 926 lb.-ft. (1256 Nm) at 1551 rpm
Maximum Torque Rise - 43.8%
Torque rise at 1700 engine rpm - 38%
Power increase at 1700 rpm - 11.7%

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) cooling med	Air dry bulb	Barom. inch Hg (kPa)
Maximum Power—8th Gear									
222.70 (166.06)	17487 (77.79)	4.78 (7.68)	2100	5.6	0.457 (0.278)	15.33 (3.02)	211 (99)	67 (20)	29.12 (98.61)
75% of Pull at Maximum Power—8th Gear									
174.68 (130.26)	13119 (58.35)	4.99 (8.03)	2158	3.9	0.479 (0.291)	14.63 (2.88)	196 (91)	72 (22)	29.05 (98.37)
50% of Pull at Maximum Power—8th Gear									
118.78 (88.57)	8761 (38.97)	5.09 (8.18)	2170	2.6	0.534 (0.325)	13.11 (2.58)	188 (87)	72 (22)	29.05 (98.37)
75% of Pull at Reduced Engine Speed—11th Gear									
174.80 (130.35)	13135 (58.43)	4.99 (8.03)	1394	3.9	0.423 (0.257)	16.55 (3.26)	209 (98)	72 (22)	29.05 (98.37)
50% of Pull at Reduced Engine Speed—11th Gear									
118.97 (88.71)	8726 (38.81)	5.11 (8.22)	1410	2.6	0.442 (0.269)	15.83 (3.12)	195 (91)	72 (22)	29.05 (98.37)

DRAWBAR PERFORMANCE
UNBALLASTED - FRONT DRIVE ENGAGED - 2100 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)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
5th Gear									
182.24 (135.90)	22560 (100.35)	3.03 (4.88)	2155	9.8	0.496 (0.302)	14.10 (2.78)	192 (89)	63 (17)	29.15 (98.71)
6th Gear									
203.08 (151.44)	21935 (97.57)	3.48 (5.59)	2138	9.6	0.487 (0.296)	14.39 (2.83)	198 (92)	64 (18)	29.14 (98.68)
7th Gear									
220.28 (164.26)	20286 (90.24)	4.08 (6.56)	2100	7.2	0.463 (0.282)	15.13 (2.98)	202 (94)	66 (19)	29.13 (98.65)
8th Gear									
222.70 (166.06)	17487 (77.79)	4.78 (7.68)	2100	5.6	0.457 (0.278)	15.33 (3.02)	211 (99)	67 (20)	29.12 (98.61)
9th Gear									
224.45 (167.37)	15075 (67.05)	5.58 (8.98)	2099	4.7	0.454 (0.276)	15.42 (3.04)	210 (99)	69 (20)	29.11 (98.58)
10th Gear									
223.37 (166.57)	12958 (57.64)	6.46 (10.40)	2100	4.3	0.456 (0.277)	15.37 (3.03)	214 (101)	69 (21)	29.10 (98.54)
11th Gear									
219.78 (163.89)	10901 (48.49)	7.56 (12.17)	2100	3.3	0.464 (0.282)	15.10 (2.97)	208 (98)	70 (21)	29.08 (98.48)
12th Gear									
216.28 (161.28)	9227 (41.04)	8.79 (14.15)	2101	3.0	0.470 (0.286)	14.90 (2.94)	214 (101)	71 (22)	29.07 (98.44)

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive	
	Engaged dB(A)	Disengaged dB(A)
At no load in 8th gear	71.1	71.1
Transport speed-no load-16th gear		72.0
Bystander in 16th gear		81.8

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

Four 480/80R50;***;12(85)
Two 420/85R34;***;23(160)
21.0 in (535 mm)
15475 lb (7019 kg)
10030 lb (4550 kg)
25505 lb(11569 kg)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

NOTE 1: During testing the engine was operated for 23.5 hours. During this period, the tractor experienced one active exhaust filter cleaning while operated in Auto Filter Cleaning Mode. This occurred after 17.0 hours of operation.

NOTE 2: The manufacturer declared that the active exhaust filter cleanings consume an average of 0.04 gal/hr (0.15 l/hr) across total tractor use. Fuel consumed during the active exhaust filter cleanings will normally be less than 1% of the total fuel consumed. The manufacturer declared that no active exhaust filter cleanings occurred during 12 hours of continuous operation of the tractor in the Auto Filter Cleaning Mode at 30% loading and the engine speed at which the maximum torque occurs.

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 initial claims of 44% torque rise nor 12% power bulge. For the maximum power tests the fuel temperature at the injection pump inlet was maintained at 110°F (43°C). The pull in 5th gear was limited to avoid excessive tractor power hop. The performance figures on this summary were taken from a test conducted under the OECD Code 2 test code procedure.

Report reissued. Three point lift data for tractors denoted Model Year 12 added July, 2012.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **2003A**, Nebraska Summary 786A, August 6, 2012.

Roger M. Hoy
Director

M.A. Hanna
P.J. Jasa
J.D. Luck
Board of Tractor Test Engineers

DRAWBAR PERFORMANCE
UNBALLASTED-FRONT DRIVE ENGAGED - 1700 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 Gear									
182.67 (136.22)	22662 (100.81)	3.02 (4.86)	2154	10.0	0.495 (0.301)	14.14 (2.79)	192 (89)	63 (17)	29.14 (98.68)
6th Gear									
204.63 (152.59)	22111 (98.35)	3.48 (5.59)	2134	9.5	0.486 (0.296)	14.41 (2.84)	198 (92)	64 (18)	29.14 (98.68)
7th Gear									
223.79 (166.88)	21393 (95.16)	3.92 (6.31)	2062	8.8	0.464 (0.282)	15.09 (2.97)	205 (96)	66 (19)	29.13 (98.65)
8th Gear									
240.44 (179.30)	21029 (93.54)	4.29 (6.90)	1946	8.5	0.449 (0.273)	15.59 (3.07)	213 (100)	68 (20)	29.11 (98.58)
9th Gear									
247.21 (184.34)	20082 (89.33)	4.62 (7.44)	1791	7.6	0.435 (0.264)	16.12 (3.17)	213 (101)	69 (21)	29.10 (98.54)
10th Gear									
248.95 (185.64)	18236 (81.12)	5.12 (8.24)	1700	6.4	0.439 (0.267)	15.94 (3.14)	214 (101)	70 (21)	29.09 (98.51)
11th Gear									
251.35 (187.43)	15624 (69.50)	6.04 (9.71)	1700	4.8	0.435 (0.264)	16.11 (3.17)	213 (101)	70 (21)	29.08 (98.48)
12th Gear									
250.75 (186.98)	13403 (59.62)	7.02 (11.29)	1700	4.2	0.434 (0.264)	16.15 (3.18)	214 (101)	71 (22)	29.06 (98.41)
13th Gear									
248.32 (185.17)	11198 (49.81)	8.32 (13.39)	1700	3.4	0.437 (0.266)	16.01 (3.15)	215 (101)	72 (22)	29.06 (98.41)

HYDRAULIC PERFORMANCE

CATEGORY: III/IVN
 Quick Attach: Yes
 OECD Static test

		Lift cylinders	Category
Maximum force exerted through whole range:	14191 lbs (63.1 kN)	1x90 mm & 1x100 mm	III
	17719 lbs (78.8 kN)	1x100 mm & 1x112 mm	III
	18326 lbs (81.5 kN)	2x100 mm	IVN

	63 cc pump	85 cc pump
i) Sustained pressure at compensator cutoff:	2898 psi (200 bar)	2924 psi (202 bar)
three outlet sets combined		
ii) Pump delivery rate at minimum pressure and rated engine speed:	48.0 GPM (181.7 l/min)	64.0 GPM (242.3 l/min)
iii) Pump delivery rate at maximum hydraulic power:	47.8 GPM (180.9 l/min)	64.1 GPM (242.8 l/min)
Delivery pressure:	2590 psi (179 bar)	2404 psi (166 bar)
Power:	72.2 HP (53.9 kW)	90.0 HP (67.1 kW)
single outlet set		
ii) Pump delivery rate at minimum pressure and rated engine speed:	38.0 GPM (143.9 l/min)	36.7 GPM (138.9 l/min)
iii) Pump delivery rate at maximum hydraulic power:	37.4 GPM (141.7 l/min)	36.6 GPM (138.4 l/min)
Delivery pressure:	2131 psi (147 bar)	2183 psi (150 bar)
Power:	46.5 HP (34.7 kW)	46.6 HP (34.7 kW)

The following data applies to tractor chassis S/N's 1RW8285RVBP053109 and higher.

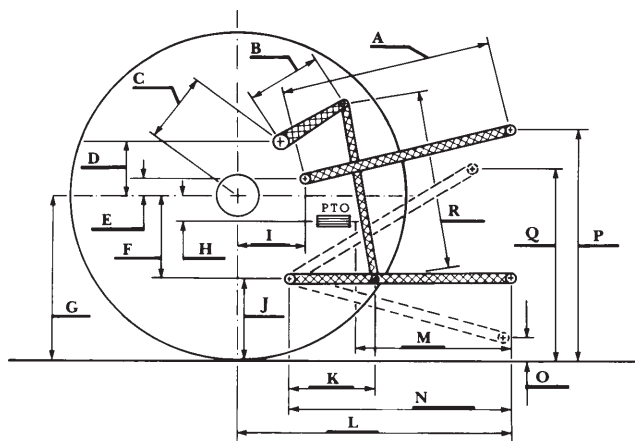
	Lift cylinders	Category
14590 lbs (64.9 kN)	1x90 mm & 1x100 mm	III
18839 lbs (83.8 kN)	1x100 mm & 1x115 mm	III
20000 lbs (89.0 kN)	2x115 mm	IVN

HITCH DIMENSIONS AS TESTED—NO LOAD

	category III	category IVN
	inch	mm

	inch	mm	inch	mm
A	28.9	735	27.9	710
B	20.5	520	20.5	520
C	20.9	532	20.9	532
D	18.9	480	18.9	480
E	12.0	304	12.0	304
F	14.4	365	14.4	365
G	37.4	950	37.4	950
H	7.9	200	7.9	200
I	21.9	555	21.9	555
J	23.0	585	23.0	585
K	28.9	733	28.9	734
L	49.3	1252	49.7	1262
*L'	53.4	1357	55.6	1412
M	22.4	569	22.8	579
N	38.4	976	38.8	986
O	9.0	230	9.0	230
P	50.1	1272	50.1	1272
Q	42.1	1070	43.1	1095
R	45.3	1150	44.9	1140

*L' to Quick Attach ends



JOHN DEERE 8285R DIESEL