

NEBRASKA OECD TRACTOR TEST 2044-SUMMARY 835

JOHN DEERE 9560R DIESEL

18 SPEED

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

Dates of Test: October 9 - 26, 2012

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) 0.8455 Fuel weight 7.040 lbs/gal (0.844 kg/l) Oil SAE 15W-40 API service classification CH-4 Transmission, hydraulic and final drive lubricant John Deere Hy-Gard fluid Total time engine was operated: 41.0 hours

ENGINE: Make John Deere Diesel **Type** six cylinder vertical with two turbochargers and air to air aftercooler **Serial No.** *RG6135R002758* **Crankshaft** lengthwise **Rated engine speed** 2100 **Bore and stroke** 5.197" x 6.496" (132.0 mm x 165.0 mm) **Compression ratio** 16.0 to 1 **Displacement** 826 cu in (13548 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 oil, radiator for transmission, front and rear axle oil **Fuel filter** two paper cartridges **Fuel cooler** radiator for returned 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: Stationary PTO operation 141.5 - 153.4 lb/h (64.2 - 69.6 kg/h), (435 engine hp) 153.2 - 166.0 lb/h (69.5 - 75.3 kg/h), (460 engine hp) 161.8 - 175.2 lb/h (73.4 - 79.5 kg/h), (485 engine hp) 168.7 - 182.8 lb/h (76.5 - 82.9 kg/h), (510 engine hp) 177.2 - 192.0 lb/h (80.4 - 87.1 kg/h), (560 engine hp) 192.6 - 208.7 lb/h (87.4 - 94.7 kg/h) **High idle:** 2150 - 2250 rpm (2160 - 2200 rpm with PTO engaged) **Turboboost:** (560 engine hp) nominal 36.2 - 42.0 psi (250 - 290 kPa) as measured 39.0 psi (270 kPa)

CHASSIS: Type four wheel drive with triples **Serial No.** *1RW9560RCCP002443* **Tread width** rear 59.1" (1500 mm) to 163.8" (4160 mm), front 59.1" (1500 mm) to 163.8" (4160 mm) **Wheelbase** 137.8" (3500 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 2.37 (3.81) second 2.91 (4.69) third 3.23 (5.19) fourth 3.60 (5.79) fifth 3.96 (6.38) sixth 4.42 (7.12) seventh 4.90 (7.89) eighth 5.47 (8.81) ninth 6.03 (9.71) tenth 6.74 (10.84) eleventh 7.46 (12.00) twelfth 8.25 (13.27) thirteenth 9.18 (14.77) fourteenth 10.15 (16.33) fifteenth 12.54 (20.18) sixteenth 15.43 (24.83) seventeenth 19.08 (30.70) eighteenth 23.48 (37.78) reverse 2.37 (3.81), 3.23 (5.19), 3.60 (5.79), 4.90 (7.89), 5.47 (8.81), 7.46 (12.00)

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 SEE NOTE 1 - PAGE 2					
Rated Engine Speed—(PTO speed—1108 rpm)					
321.78 (239.95)	2099	21.10 (79.86)	0.462 (0.281)	15.25 (3.00)	Fuel used during active exhaust regeneration - 2.67 gal (10.11 l) (see Note 2 p.2)
Standard Power Take-off Speed—(PTO speed—1000 rpm)					
357.53 (266.61)	1895	21.28 (80.56)	0.419 (0.255)	16.80 (3.31)	
Maximum Power (1 hour)					
364.23 (271.61)	1749	21.10 (79.86)	0.408 (0.248)	17.26 (3.40)	

VARYING POWER AND FUEL CONSUMPTION

321.78 (239.95)	2099	21.10 (79.86)	0.462 (0.281)	15.25 (3.00)	Air temperature
273.60 (204.02)	2101	18.94 (71.70)	0.487 (0.296)	14.45 (2.85)	74°F (23°C)
207.00 (154.36)	2121	16.15 (61.12)	0.549 (0.334)	12.82 (2.53)	Relative humidity
139.70 (104.17)	2144	13.00 (49.20)	0.655 (0.398)	10.75 (2.12)	24%
70.50 (52.57)	2166	9.98 (37.78)	0.997 (0.606)	7.06 (1.39)	Barometer
1.80 (1.34)	2180	7.09 (26.84)	27.733 (16.870)	0.25 (0.05)	28.86" Hg (97.73 kPa)

Maximum Torque - 1193 lb.-ft. (1618 Nm) at 1401 rpm
Maximum Torque Rise - 48.3%
Torque rise at 1679 engine rpm - 40%
Power increase at 1749 engine rpm - 13.1%

DRAWBAR PERFORMANCE (Unballasted) FUEL CONSUMPTION CHARACTERISTICS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crankshaft 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—7th Gear									
454.33 (338.79)	35438 (157.63)	4.81 (7.74)	2101	3.8	0.450 (0.274)	15.64 (3.08)	192 (89)	55 (13)	28.72 (97.26)
75% of Pull at Maximum Power—7th Gear									
357.16 (266.33)	26653 (118.56)	5.03 (8.09)	2165	2.3	0.483 (0.294)	14.58 (2.87)	187 (86)	55 (13)	28.72 (97.26)
50% of Pull at Maximum Power—7th Gear									
243.25 (181.39)	17766 (79.03)	5.14 (8.26)	2188	1.2	0.547 (0.333)	12.87 (2.54)	185 (85)	56 (13)	28.73 (97.29)
75% of Pull at Reduced Engine Speed—10th Gear									
357.16 (266.33)	26752 (119.00)	5.01 (8.05)	1576	2.2	0.421 (0.256)	16.74 (3.30)	192 (89)	55 (13)	28.72 (97.26)
50% of Pull at Reduced Engine Speed—10th Gear									
243.41 (181.51)	17753 (78.97)	5.15 (8.28)	1603	1.2	0.443 (0.269)	15.90 (3.13)	186 (86)	56 (13)	28.74 (97.33)

DRAWBAR PERFORMANCE

(Unballasted at 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)	Temp. °F (°C) cool- ing med	Barom. inch Hg (kPa)	Hp.hr/gal (kW.h/l)	Air dry bulb
1st Gear									
261.08 (194.68)	44000 (195.72)	2.23 (3.58)	2157	10.1	0.581 (0.353)	12.13 (2.39)	186 (86)	56 (13)	28.78 (97.46)
2nd Gear									
313.08 (233.46)	42996 (191.25)	2.73 (4.39)	2104	8.1	0.526 (0.320)	13.40 (2.64)	188 (87)	59 (15)	28.79 (97.49)
3rd Gear									
342.63 (255.50)	42379 (188.51)	3.04 (4.88)	2100	7.5	0.500 (0.304)	14.08 (2.77)	189 (87)	60 (16)	28.80 (97.53)
4th Gear									
374.23 (279.06)	40357 (179.52)	3.48 (5.59)	2100	5.2	0.482 (0.293)	14.60 (2.88)	188 (86)	54 (12)	28.76 (97.39)
5th Gear									
394.38 (294.09)	38587 (171.64)	3.83 (6.16)	2101	5.1	0.478 (0.291)	14.72 (2.90)	190 (88)	60 (16)	28.81 (97.56)
6th Gear									
446.35 (332.84)	38895 (173.01)	4.31 (6.93)	2100	4.6	0.459 (0.279)	15.33 (3.02)	192 (89)	55 (13)	28.73 (97.29)
7th Gear									
454.33 (338.79)	35438 (157.63)	4.81 (7.74)	2101	3.8	0.450 (0.274)	15.64 (3.08)	192 (89)	55 (13)	28.72 (97.26)
8th Gear									
457.75 (341.34)	31905 (141.92)	5.38 (8.66)	2101	3.2	0.446 (0.271)	15.80 (3.11)	192 (89)	56 (13)	28.72 (97.26)
9th Gear									
457.53 (341.18)	28646 (127.42)	5.99 (9.64)	2100	2.6	0.446 (0.272)	15.77 (3.11)	192 (89)	55 (13)	28.73 (97.29)
10th Gear									
456.84 (340.66)	25615 (113.94)	6.69 (10.76)	2100	2.1	0.446 (0.271)	15.80 (3.11)	196 (91)	55 (13)	28.73 (97.29)
11th Gear									
457.96 (341.50)	23199 (103.19)	7.41 (11.92)	2101	1.9	0.446 (0.271)	15.80 (3.11)	194 (90)	54 (12)	28.72 (97.26)
12th Gear									
461.57 (344.19)	20946 (93.17)	8.27 (13.30)	2101	1.6	0.441 (0.268)	15.98 (3.15)	196 (91)	55 (13)	28.71 (97.22)

Clutch wet multiple disc hydraulically actuated by foot pedal **Brakes** wet multiple disc hydraulically actuated foot pedal **Steering** hydrostatic and articulated **Power take-off** 1000 rpm at 1895 engine rpm **Unladen tractor mass** 43410 lb (19690 kg)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

NOTE 1. The engine on this model operates in a derated mode when the PTO is engaged. This run was done with the field cruise system engaged.

NOTE 2: The manufacturer declares that the average time between active regenerations is 15 hours, while operated in Auto Filter Cleaning Mode, at rated speed, full PTO load, under steady state conditions.

NOTE 3: The 9560R engine has an electronic control system which provides a vehicle protection system to avoid overloading the drive train. This system provides several different engine power levels. At 2100 rpm the engine produces up to 435 hp when the transmission is in forward gears 1 and 2. The engine produces 460 hp in gear 3, 485 hp in gear 4 and 510 hp in gear 5. The engine produces 560 hp at 2100 rpm for all other gears.

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 primary fuel filter was maintained at 104°F (40°C). The performance figures on this summary were taken from a test conducted under the OECD Code 2 test procedure.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **2044**, Nebraska Summary 835, February 20, 2013.

Roger M. Hoy
Director

M.R. Riley
P.J. Jasa
J.D. Luck
Board of Tractor Test Engineers

TRACTOR SOUND LEVEL WITH CAB

dB(A)

At no load in 6th gear	73.8
Transport speed-no load-18th gear	75.3
Bystander in 18th gear	87.4

TIRES, BALLAST AND WEIGHT

	With Ballast	Without Ballast
Rear Tires - No., size, ply & psi(kPa)	Six 480/80R46;***;12(85)	Six 480/80R46;***;12(85)
Ballast - Cast iron (on axles)	4500 lb (2041 kg)	None
- Cast Iron (rear end)	2120 lb (962 kg)	None
Front Tires - No., size, ply & psi(kPa)	Six 480/80R46;***;21(145)	Six 480/80R46;***;16(110)
Ballast - Cast iron (on axles)	4700 lb (2133 kg)	None
- Cast Iron (front end)	2920 lb (1323 kg)	None
Height of Drawbar	22.0 in (560 mm)	22.5 in (570 mm)
Static Weight with operator - Rear	22140 lb (10043 kg)	16985 lb (7704 kg)
- Front	35685 lb (16186 kg)	26600 lb (12066 kg)
- Total	57825 lb (26229 kg)	43585 lb (19770 kg)

DRAWBAR PERFORMANCE
(Unballasted at 1900 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)	
261.54 (195.03)	43973 (195.60)	2.23 (3.59)	2157	9.9	1st Gear 0.577 (0.351)	12.20 (2.40)	187 (86)	57 (14)	28.78 (97.46)
313.62 (233.86)	43068 (191.58)	2.73 (4.39)	2104	8.1	2nd Gear 0.530 (0.323)	13.28 (2.62)	187 (86)	58 (14)	28.79 (97.49)
348.82 (260.12)	42601 (189.50)	3.07 (4.94)	2100	6.4	3rd Gear 0.493 (0.300)	14.29 (2.82)	187 (86)	50 (10)	28.76 (97.39)
377.99 (281.87)	41662 (185.32)	3.41 (5.48)	2073	6.0	4th Gear 0.484 (0.294)	14.55 (2.87)	188 (87)	54 (12)	28.77 (97.43)
396.68 (295.80)	39986 (177.87)	3.72 (5.99)	2067	6.3	5th Gear 0.482 (0.293)	14.62 (2.88)	191 (88)	62 (16)	28.81 (97.56)
446.25 (332.76)	39945 (177.68)	4.19 (6.74)	2072	5.9	6th Gear 0.466 (0.283)	15.12 (2.98)	194 (90)	63 (17)	28.80 (97.53)
475.15 (354.32)	39888 (177.43)	4.47 (7.19)	1998	5.8	7th Gear 0.446 (0.271)	15.80 (3.11)	200 (93)	64 (18)	28.80 (97.53)
482.75 (359.99)	38109 (169.51)	4.75 (7.64)	1900	5.3	8th Gear 0.442 (0.269)	15.91 (3.13)	208 (98)	63 (17)	28.81 (97.56)
496.61 (370.32)	34917 (155.32)	5.34 (8.59)	1896	3.9	9th Gear 0.431 (0.262)	16.32 (3.22)	210 (99)	66 (19)	28.80 (97.53)
495.32 (369.36)	31067 (138.19)	5.98 (9.62)	1900	3.2	10th Gear 0.432 (0.263)	16.31 (3.21)	215 (101)	66 (19)	28.82 (97.60)
505.52 (376.96)	28520 (126.86)	6.65 (10.70)	1901	2.6	11th Gear 0.423 (0.257)	16.65 (3.28)	211 (99)	66 (19)	28.85 (97.70)
505.11 (376.66)	25499 (113.42)	7.43 (11.96)	1901	2.2	12th Gear 0.421 (0.256)	16.74 (3.30)	215 (101)	66 (19)	28.85 (97.70)
502.09 (374.41)	22834 (101.57)	8.25 (13.27)	1900	1.9	13th Gear 0.427 (0.260)	16.48 (3.25)	213 (101)	66 (19)	28.85 (97.70)

Lugging ability in 11th gear

Crankshaft speed rpm	2101	1999	1900	1799	1701	1600	1501	1105
Pull-lbs (kN)	23199 (103.19)	26289 (116.94)	28474 (126.66)	30051 (133.67)	31298 (139.22)	32055 (142.59)	32213 (143.29)	29979 (133.35)
Increase in pull%	0	13	23	29	35	38	39	29
Power-Hp (kW)	457.96 (341.50)	492.47 (367.23)	505.01 (376.59)	503.38 (375.37)	494.96 (369.09)	476.89 (355.62)	448.31 (334.30)	308.02 (229.69)
Speed-mph (km/h)	7.41 (11.92)	7.02 (11.30)	6.65 (10.70)	6.28 (10.11)	5.93 (9.54)	5.58 (8.98)	5.22 (8.40)	3.85 (6.20)
Slip %	1.9	2.2	2.5	2.7	3.0	3.1	3.2	2.8

DRAWBAR PERFORMANCE
(Ballasted at 1900 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)	
					1st Gear				
325.07 (242.40)	59733 (265.70)	2.04 (3.28)	2025	12.1	0.523 (0.318)	13.45 (2.65)	189 (87)	52 (11)	28.34 (95.97)
					2nd Gear				
368.15 (274.53)	54713 (243.37)	2.53 (4.06)	1900	6.0	0.465 (0.283)	15.14 (2.98)	192 (89)	52 (11)	28.34 (95.97)
					3rd Gear				
383.73 (286.15)	51845 (230.62)	2.78 (4.47)	1910	6.8	0.465 (0.283)	15.14 (2.98)	206 (97)	72 (22)	28.35 (96.00)
					4th Gear				
411.27 (306.68)	49274 (219.18)	3.13 (5.04)	1900	5.6	0.456 (0.278)	15.43 (3.04)	207 (97)	70 (21)	28.36 (96.04)
					5th Gear				
438.15 (326.73)	47395 (210.82)	3.47 (5.58)	1900	4.9	0.447 (0.272)	15.77 (3.11)	210 (99)	68 (20)	28.34 (95.97)
					6th Gear				
479.61 (357.64)	46232 (205.65)	3.89 (6.26)	1900	4.6	0.445 (0.271)	15.82 (3.12)	212 (100)	66 (19)	28.36 (96.04)
					7th Gear				
491.96 (366.85)	42382 (188.52)	4.36 (7.01)	1902	3.6	0.432 (0.263)	16.30 (3.21)	211 (99)	65 (18)	28.36 (96.04)
					8th Gear				
495.28 (369.33)	38231 (170.06)	4.86 (7.81)	1900	2.9	0.429 (0.261)	16.40 (3.23)	213 (100)	62 (17)	28.36 (96.04)
					9th Gear				
496.97 (370.59)	34347 (152.78)	5.43 (8.73)	1901	2.4	0.427 (0.259)	16.51 (3.25)	211 (99)	52 (11)	28.34 (95.97)
					10th Gear				
501.91 (374.27)	31159 (138.60)	6.04 (9.72)	1901	2.1	0.425 (0.259)	16.55 (3.26)	207 (97)	52 (11)	28.33 (95.94)
					11th Gear				
504.50 (376.20)	28238 (125.61)	6.70 (10.78)	1900	1.8	0.424 (0.258)	16.60 (3.27)	204 (96)	52 (11)	28.34 (95.97)
					12th Gear				
502.69 (374.86)	25263 (112.38)	7.46 (12.01)	1898	1.6	0.421 (0.256)	16.74 (3.30)	209 (98)	51 (11)	28.34 (95.97)
					13th Gear				
492.74 (367.44)	22351 (99.42)	8.27 (13.30)	1899	1.5	0.430 (0.261)	16.39 (3.23)	212 (100)	52 (11)	28.34 (95.97)

HYDRAULIC PERFORMANCE

CATEGORY: 4

Quick Attach: Yes

OECD Static test

Maximum force exerted through whole range: 15959 lbs(71.0kN) (1 x 90 mm and 1x100 mm)
21123 lbs(94.0kN) (2 x 110 mm)

lift cylinders
High flow pump Base pump
three outlet sets combined

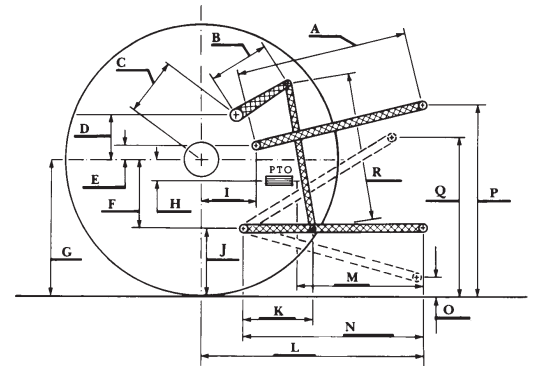
i) Sustained pressure at compensator cutoff:	2912 psi (201 bar)	2938 psi (203 bar)
ii) Pump delivery rate at minimum pressure and rated engine speed:	53.3 GPM (201.8 l/min)	32.0 GPM (121.1 l/min)
Combined flow:	85.3 GPM (322.9 l/min)	
iii) Pump delivery rate at maximum hydraulic power:	51.8 GPM (196.0 l/min)	31.5 GPM (119.2 l/min)
Delivery pressure:	2517 psi (173 bar)	2765 psi (191 bar)
Power:	76.0 HP (56.7 kW)	50.8 HP (37.9 kW)

single outlet set		
i) Sustained pressure at compensator cutoff:	2915 psi (201 bar)	2938 psi (203 bar)
ii) Pump delivery rate at minimum pressure and rated engine speed:	38.3 GPM (144.9 l/min)	31.8 GPM (120.2 l/min)
iii) Pump delivery rate at maximum hydraulic power:	36.5 GPM (138.2 l/min)	31.5 GPM (119.2 l/min)
Delivery pressure:	2149 psi (148 bar)	2414 psi (166 bar)
Power:	45.8 HP (34.1 kW)	44.3 HP (33.1 kW)

HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	mm
A	31.5	800
B	19.7	500
C	25.0	635
D	24.4	620
E	12.8	325
F	13.8	350
G	37.6	955
H	4.2	106
I	18.7	474
J	23.8	605
K	30.9	785
L	52.8	1342
*L'	59.6	1515
M	35.5	901
N	45.6	1159
O	9.0	230
P	50.8	1291
Q	39.8	1010
R	48.0	1220

*L' to Quick Attach ends



JOHN DEERE 9560R DIESEL