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January 2004

Test 1834A: John Deere 7820 Euro Autoquad-Plus Diesel (EU Version 6.8L Engine)

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NEBRASKA TRACTOR TEST 1834A

JOHN DEERE 7820 AUTOQUAD-PLUS DIESEL

20 SPEED

(EU version - 6.8L Engine)

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—1077 rpm)					
156.67 (116.83)	2100	8.86 (33.53)	0.397 (0.241)	17.69 (3.48)	
Standard Power Take-off Speed (1000 rpm)					
171.05 (127.55)	1951	9.27 (35.08)	0.380 (0.231)	18.46 (3.64)	
Maximum Power (2 hours)					
176.64 (131.72)	1650	9.26 (35.06)	0.368 (0.224)	19.07 (3.76)	

VARYING POWER AND FUEL CONSUMPTION

156.67 (116.83)	2100	8.86 (33.53)	0.397 (0.241)	17.69 (3.48)	Air temperature
136.63 (101.89)	2154	8.08 (30.57)	0.415 (0.252)	16.92 (3.33)	75°F (24°C)
102.84 (76.69)	2162	6.54 (24.75)	0.446 (0.271)	15.73 (3.10)	Relative humidity
68.93 (51.40)	2173	5.13 (19.41)	0.522 (0.318)	13.44 (2.65)	37%
34.62 (25.82)	2183	3.63 (13.75)	0.737 (0.448)	9.53 (1.88)	Barometer
1.07 (0.80)	2194	2.22 (8.41)	14.566 (8.860)	0.48 (0.09)	29.05" Hg (98.37 kPa)

Maximum Torque - 624 lb.-ft. (846 Nm) at 1403 rpm
 Maximum Torque Rise - 59.4%
 Torque rise at 1700 engine rpm - 39%

Part loads at different engine speeds

156.67 (116.83)	2100	8.86 (33.53)	0.397 (0.241)	17.69 (3.48)
124.93 (93.16)	2157	7.52 (28.47)	0.423 (0.257)	16.61 (3.27)
125.37 (93.49)	1890	6.96 (26.36)	0.390 (0.237)	18.00 (3.55)
62.76 (46.80)	1888	4.32 (16.34)	0.483 (0.294)	14.54 (2.86)
93.80 (69.95)	1263	5.08 (19.25)	0.381 (0.232)	18.45 (3.63)
62.95 (46.94)	1264	3.72 (14.07)	0.415 (0.252)	16.93 (3.34)

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 710/70R38;***;12 (85)
 Two 600/65R28;***;16 (110)
 20.5 in (520 mm)
 11385 lb (5165 kg)
 9615 lb (4361 kg)
 21000 lb (9525 kg)

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

Dates of Test: April 19-22, 2004

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) 0.8432 Fuel weight 7.021 lbs/gal (0.841 kg/l) Oil SAE 15W-40 API service classification CF-4 Transmission and hydraulic lubricant John Deere Hy-Gard fluid Front axle lubricant John Deere Hy-Gard fluid Total time engine was operated: 8.5 hours

ENGINE: Make John Deere Diesel **Type** six cylinder vertical with turbocharger and air to air intercooler **Serial No. ***PE6068H203797* **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)

ENGINE OPERATING PARAMETERS: Fuel rate: 59.5 - 66.1 lb/h (27.0 - 30.0 kg/h) **High idle:** 2175 - 2225 rpm **Turbo boost:** nominal 16.0-18.8 psi (110-130 kPa) as measured 17.5 psi (121 kPa)

CHASSIS: Type front wheel assist **Serial No. ***RW7820A000126*

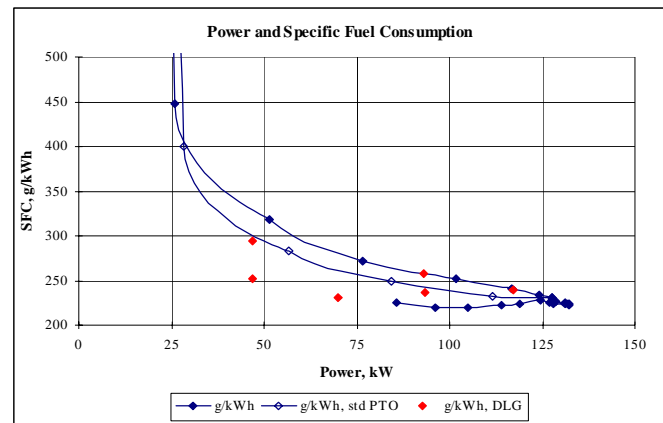
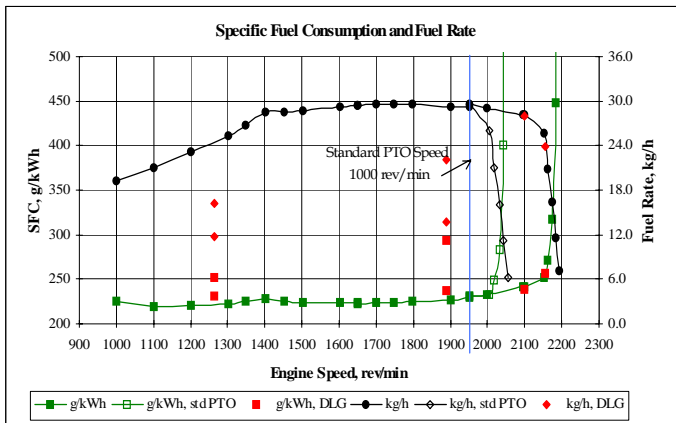
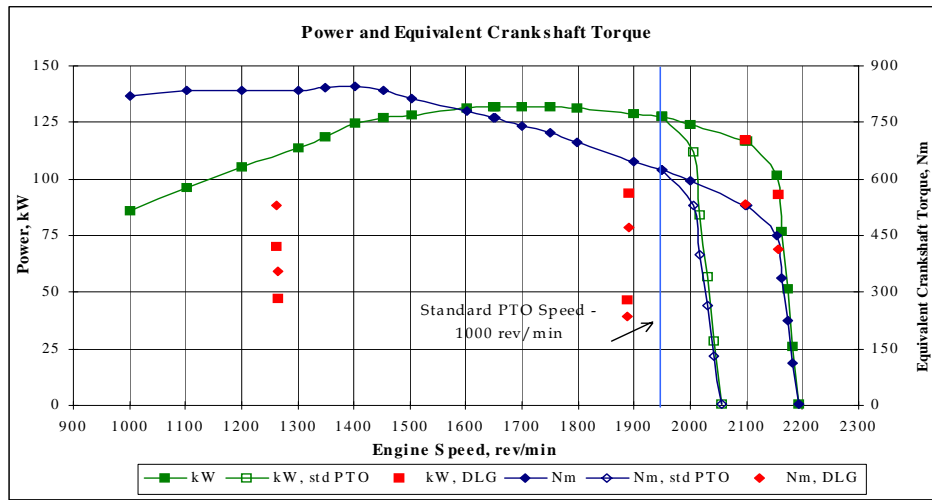
REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: 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. **1834A**, July 19, 2004.

Leonard L. Bashford
 Director

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



THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: III

Quick Attach: Region II lower links

Lift cylinders

Maximum Force Exerted Through Whole Range: $2 \times 90 \text{ mm}$ 13618 lbs (60.6 kN)

$2 \times 100 \text{ mm}$ 16872 lbs (75.1 kN)

i) Opening pressure of relief valve:

NA

NA

Sustained pressure at compensator cutoff:

one outlet set 2850 psi (197 bar)

two outlet sets combined 2845 psi (196 bar)

ii) Pump delivery rate at minimum pressure and rated engine speed:

32.1 GPM (121.4 l/min)

32.2 GPM (121.8 l/min)

iii) Pump delivery rate at maximum

hydraulic power:

31.5 GPM (119.4 l/min)

32.1 GPM (121.6 l/min)

Delivery pressure:

2115 psi (146 bar)

2500 psi (172 bar)

Power:

38.9 HP (29.0 kW)

46.8 HP (34.9 kW)

HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	mm
A	29.6	752
B	16.7	425
C	25.6	650
D	23.9	608
E	11.1	283
F	12.7	323
G	35.6	905
H	4.7	120
I	20.9	530
J	22.9	582
K	28.1	713
L	51.2	1300
M	24.7	628
N	44.1	1120
O	9.0	230
P	50.2	1275
Q	40.4	1025
R	38.4	975

