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Nebraska Summary 490: Fendt 815 Vario Diesel

Nebraska Tractor Test Lab

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SUMMARY OF OECD TEST 2261—NEBRASKA SUMMARY 490

FENDT 815 VARIO DIESEL

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-1104 rpm)					
132.8 (99.0)	2100	8.52 (32.27)	0.443 (0.269)	15.58 (3.07)	
Standard Power Take-off Speed (1000 rpm)					
148.0 (110.4)	1903	8.75 (33.12)	0.408 (0.248)	16.92 (3.33)	
Maximum Power (2 hours)					
151.3 (112.8)	1800	8.67 (32.83)	0.395 (0.241)	17.45 (3.44)	

VARYING POWER AND FUEL CONSUMPTION

132.8 (99.0)	2100	8.52 (32.27)	0.443 (0.269)	15.58 (3.07)	Air temperature
114.1 (85.1)	2125	7.48 (28.32)	0.453 (0.275)	15.25 (3.00)	68°F (20°C)
86.6 (64.6)	2144	6.15 (23.28)	0.490 (0.298)	14.07 (2.77)	Relative humidity
58.2 (43.4)	2167	4.53 (17.14)	0.537 (0.326)	12.86 (2.53)	32%
29.4 (21.9)	2184	3.16 (11.97)	0.743 (0.452)	9.29 (1.83)	Barometer
--	2201	1.98 (7.49)	--	--	29.6" Hg (100.3 kPa)
Maximum torque - 521 lb.-ft. (707 Nm) at 1299 rpm					
Maximum torque rise - 57.1%					
Torque rise at 1700 engine rpm - 41%					

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 cool- ing med	°C Air dry bulb	Barom. inch Hg (kPa)
Maximum Power—Low Range									
113.5 (84.6)	9155 (40.72)	4.65 (7.48)	2101	2.0	0.518 (0.315)	13.50 (2.66)	149 (65)	55 (13)	29.5 (99.8)
75% of Pull at Maximum Power—Low Range									
86.8 (64.7)	6850 (30.48)	4.75 (7.65)	2132	1.4	0.560 (0.340)	12.50 (2.46)	145 (63)	55 (13)	29.5 (99.8)
50% of Pull at Maximum Power—Low Range									
58.7 (43.8)	4560 (20.28)	4.83 (7.78)	2154	0.9	0.650 (0.395)	10.76 (2.12)	136 (58)	55 (13)	29.5 (99.8)
75% of Pull at Reduced Engine Speed—Low Range									
87.4 (65.2)	6850 (30.48)	4.78 (7.70)	1486	1.4	0.460 (0.280)	15.18 (2.99)	144 (62)	59 (15)	29.5 (99.8)
50% of Pull at Reduced Engine Speed—Low Range									
59.0 (44.0)	4575 (20.35)	4.84 (7.79)	1482	0.8	0.496 (0.301)	14.11 (2.78)	140 (60)	61 (16)	29.5 (99.8)

Location of Test: DLG Testing Station for Agricultural Machinery Max - Eyth - Weg 1, D-64823, Gros-Umstadt, Germany

Dates of Test: March to May, 2004

Manufacturer: AGCO GmbH & Co. D-87616 Marktoberdorf, Germany

FUEL and OIL: Fuel No. 2 Diesel Specific gravity converted to 60°/60° F (15°/15°C) 0.829 Fuel weight 6.90 lbs/gal (0.8269 kg/l) Oil SAE 10W40 API service classification CD Transmission lubricant SAE 10W40 Hydraulic lubricant SAE 10W40 Front axle lubricant 85W/90 gear oil, API GL-5

ENGINE: Make Deutz Diesel Type six cylinder vertical with turbocharger and air to air intercooler Serial No. 00000860836 Crankshaft lengthwise Rated engine speed 2100 Bore and stroke 3.858" x 4.961" (98.0 mm x 126.0 mm) Compression ratio 18.0 to 1 Displacement 348 cu in (5702 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 Fuel cooler radiator for pump return fuel Muffler underhood Exhaust vertical Cooling medium temperature control thermostat and variable speed fan

CHASSIS: Type front wheel assist Serial No. 718/22/0018 Tread width rear 60.0" (1524 mm) to 120.0" (3048 mm) front 60.0" (1524 mm) to 88.0" (2235 mm) Wheel base 106.3" (2700 mm) Hydraulic control system direct engine drive Transmission Fendt Vario. A combination of mechanical and hydrostatic sections allow an infinite speed adjustment within the ranges noted. The transmission has two mechanical ranges. Nominal travel speeds mph (km/h) forward: Low range 0-17 (0-28), high range 0-31 (0-50) reverse: Low range 0-11 (0-17), high range 0-25 (0-40) Clutch a foot pedal controls the hydrostatic oil flow Brakes wet disc hydraulically operated by two foot pedals which can be locked together Steering hydrostatic Power take-off 540 rpm at 1931 engine rpm or 1000 rpm at 1903 engine rpm. Unladen tractor mass 15960 lb (7240 kg)

DRAWBAR PERFORMANCE
(Unballasted–Front Drive Engaged)
MAXIMUM POWER AT SELECTED TRAVEL SPEEDS

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)
107.5 (80.2)	16870 (75.04)	2.39 (3.85)	1856	14.9	Low Range 0.549 (0.334)	12.74 (2.51)	153 (67)	52 (11)	29.5 (99.8)
123.5 (92.1)	15010 (66.77)	3.09 (4.97)	1800	4.7	Low Range 0.478 (0.291)	14.62 (2.88)	153 (67)	52 (11)	29.5 (99.8)
125.3 (93.4)	12965 (57.68)	3.62 (5.83)	1799	3.3	Low Range 0.473 (0.288)	14.77 (2.91)	154 (68)	52 (11)	29.5 (99.8)
125.9 (93.9)	9990 (44.44)	4.73 (7.61)	1801	2.1	Low Range 0.470 (0.286)	14.87 (2.93)	151 (66)	52 (11)	29.5 (99.8)
125.3 (93.4)	8430 (37.50)	5.57 (8.97)	1801	1.8	Low Range 0.473 (0.288)	14.77 (2.91)	151 (66)	50 (10)	29.5 (99.8)
123.1 (91.8)	6770 (30.12)	6.82 (10.97)	1801	1.2	Low Range 0.480 (0.292)	14.57 (2.87)	149 (65)	50 (10)	29.5 (99.8)
122.7 (91.5)	6220 (27.66)	7.40 (11.92)	1803	1.2	Low Range 0.483 (0.294)	14.47 (2.85)	149 (65)	50 (10)	29.5 (99.8)
121.5 (90.6)	5425 (24.14)	8.40 (13.51)	1803	1.0	Low Range 0.490 (0.298)	14.26 (2.81)	147 (64)	50 (10)	29.5 (99.8)
114.9 (85.7)	9380 (41.73)	4.59 (7.39)	1801	2.0	High Range 0.514 (0.312)	13.61 (2.68)	154 (68)	54 (12)	29.5 (99.8)
121.5 (90.6)	8045 (35.79)	5.66 (9.12)	1801	1.6	High Range 0.485 (0.295)	14.42 (2.84)	154 (68)	54 (12)	29.5 (99.8)
123.9 (92.4)	6820 (30.35)	6.81 (10.96)	1802	1.3	High Range 0.476 (0.289)	14.70 (2.89)	149 (65)	54 (12)	29.5 (99.8)
124.0 (92.5)	5955 (26.49)	7.81 (12.58)	1803	1.1	High Range 0.476 (0.289)	14.70 (2.89)	151 (66)	55 (13)	29.5 (99.8)
124.1 (92.5)	5555 (24.72)	8.38 (13.48)	1802	1.0	High Range 0.475 (0.289)	14.72 (2.90)	149 (65)	55 (13)	29.5 (99.8)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

NOTE: The performance figures on this report are the result of replacing the electronic engine control module of the Fendt 818 with the 815 module.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD test procedures. The performance results on this summary were taken from OECD tests conducted under the Code II Test Code procedure.

We, the undersigned, certify that this is a true summary of data from OECD Report No. **2261**, Nebraska Summary 490, December 15, 2005.

Leonard L. Bashford
Director

M.F. Kocher
V.I. Adamchuk
J.A. Smith
Board of Tractor Test Engineers

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 650/65R42; **, 12 (80)
Two 540/65R30; **, 12 (80)
19.7 in (500 mm)
9765 lb (4430 kg)
6360 lb (2885 kg)
16125 lb (7315 kg)

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive	
	Engaged dB(A)	Disengaged dB(A)
Maximum Sound level	76.0	75.0
Sound level at 4.6 mph (7.5 km/h) - no load	68.0	68.0
Bystander	--	--

THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: III

Quick Attach: Walterscheid lower links

Maximum force exerted through whole range: 13250 lbs (58.9 kN)

i) Opening pressure of relief valve: NA

	<u>one outlet set</u>	<u>two outlet sets combined</u>
Sustained pressure of the open relief valve:	2900 psi (200 bar)	2900 psi (200 bar)

ii) Pump delivery rate at minimum pressure: 20.9 GPM (79.1 l/min) 29.5 GPM (111.5 l/min)

iii) Pump delivery rate at maximum

hydraulic power: 20.5 GPM (77.5 l/min) 26.3 GPM (99.6 l/min)

Delivery pressure: 2465 psi (170 bar) 2685 psi (185 bar)

Power: 29.4 HP (21.9 kW) 41.2 Hp (30.7 kW)

HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	mm
A	29.1	740
B	13.8	350
C	19.3	390
D	15.4	315
E	9.4	240
F	10.0	255
G	35.6	905
H	2.2	55
I	16.1	410
J	25.6	650
K	26.2	665
L	45.1	1145
M	25.0	635
N	39.4	1000
O	9.1	230
P	52.6	1335
Q	38.6	980
R	30.5	775

