January 2003

Nebraska Summary 441: Fendt 714 Vario Diesel

Tractor Museum
University of Nebraska-Lincoln, TractorMuseumArchives@unl.edu

SUMMARY OF OECD TEST 2137—NEBRASKA SUMMARY 441
FENDT 714 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-1103 rpm)					
127.7 *(95.2)*	2100	7.95 *(30.09)*	0.432 *(0.263)*	16.04 *(3.16)*	
Standard Power Take-off Speed (1000 rpm)					
132.9 *(99.1)*	1903	7.67 *(29.04)*	0.400 *(0.243)*	17.32 *(3.41)*	
Maximum Power (2 hours)					
134.8 *(100.5)*	1798	7.54 *(28.55)*	0.388 *(0.236)*	17.87 *(3.52)*	
VARYING POWER AND FUEL CONSUMPTION					
127.7 *(95.2)*	2100	7.95 *(30.09)*	0.432 *(0.263)*	16.04 *(3.16)*	Air temperature
110.1 *(82.1)*	2123	7.12 *(26.96)*	0.448 *(0.273)*	15.47 *(3.05)*	66°F *(19°C)*
82.8 *(61.8)*	2144	5.77 *(21.85)*	0.483 *(0.294)*	14.35 *(2.83)*	Relative humidity
56.2 *(41.9)*	2167	4.43 *(16.77)*	0.546 *(0.332)*	12.69 *(2.50)*	25%
28.3 *(21.1)*	2186	3.09 *(11.70)*	0.758 *(0.461)*	9.14 *(1.80)*	Barometer
-- --	2204	1.87 *(7.09)*	-- --	-- --	29.4" Hg *(99.4 kPa)*

Maximum Torque - 451 lb.-ft. *(611 Nm)* at 1400 rpm
Maximum Torque Rise - 41.1%
Torque rise at 1700 engine rpm - 25%

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)* cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
Maximum Power—Low Range									
113.4 *(84.5)*	9075 *(40.38)*	4.69 *(7.54)*	2100	3.7	0.500 *(0.304)*	13.81 *(2.72)*	189 *(87)*	41 *(5)*	29.5 *(100.0)*
75% of Pull at Maximum Power—Low Range									
87.3 *(65.1)*	6785 *(30.18)*	4.82 *(7.76)*	2137	2.7	0.518 *(0.315)*	13.32 *(2.62)*	187 *(86)*	41 *(5)*	29.5 *(100.0)*
50% of Pull at Maximum Power—Low Range									
59.3 *(44.2)*	4505 *(20.04)*	4.94 *(7.95)*	2159	1.7	0.597 *(0.363)*	11.57 *(2.28)*	185 *(85)*	41 *(5)*	29.5 *(100.0)*
75% of Pull at Reduced Engine Speed—Low Range									
87.0 *(64.9)*	6785 *(30.17)*	4.81 *(7.74)*	1541	2.6	0.454 *(0.276)*	15.23 *(3.00)*	187 *(86)*	39 *(4)*	29.5 *(100.0)*
50% of Pull at Reduced Engine Speed—Low Range									
59.1 *(44.1)*	4480 *(19.92)*	4.95 *(7.96)*	1560	1.7	0.497 *(0.302)*	13.88 *(2.73)*	180 *(82)*	39 *(4)*	29.5 *(100.0)*

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

Dates of Test: December 2003 to February 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)*** 0.832 **Fuel weight** 6.93 lbs/gal *(0.8305 kg/l)* **Oil SAE** 10W40 **API service classification** CD **Transmission lubricant** SAE 10W30 **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.** 00000861279 **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.** 716/22/0100 **Tread width** rear 60.0" *(1524 mm)* to 121.4" *(3084 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 0-20 *(0-32)*, high range 0-31*(0-50)* reverse: Low range 0-12 *(0-20)*, 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** 14815 lb *(6720 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)*	Hp.hr/gal *(kW.h/l)*	Temp.°F*(°C)* cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
					Low Range				
106.3 *(79.3)*	15215 *(67.69)*	2.62 *(4.22)*	2080	15.1	0.536 *(0.326)*	12.89 *(2.54)*	190 *(88)*	39 *(4)*	29.5 *(99.9)*
					Low Range				
109.2 *(81.4)*	14120 *(62.80)*	2.90 *(4.67)*	1800	10.0	0.486 *(0.296)*	14.21 *(2.80)*	192 *(89)*	39 *(4)*	29.5 *(99.9)*
					Low Range				
111.8 *(83.4)*	10885 *(48.42)*	3.85 *(6.20)*	1800	5.2	0.473 *(0.288)*	14.60 *(2.88)*	192 *(89)*	45 *(7)*	28.9 *(97.8)*
					Low Range				
112.4 *(83.8)*	8765 *(38.98)*	4.81 *(7.74)*	1801	3.7	0.471 *(0.286)*	14.67 *(2.89)*	189 *(87)*	45 *(7)*	28.9 *(97.8)*
					Low Range				
112.2 *(83.7)*	7730 *(34.39)*	5.44 *(8.76)*	1801	3.1	0.472 *(0.287)*	14.62 *(2.88)*	194 *(90)*	45 *(7)*	28.9 *(97.8)*
					Low Range				
111.8 *(83.4)*	6510 *(28.96)*	6.44 *(10.37)*	1802	2.5	0.474 *(0.288)*	14.56 *(2.87)*	194 *(90)*	45 *(7)*	28.9 *(97.9)*
					Low Range				
109.0 *(81.2)*	5400 *(24.02)*	7.57 *(12.18)*	1802	2.0	0.487 *(0.296)*	14.18 *(2.79)*	194 *(90)*	46 *(8)*	28.9 *(97.9)*
					Low Range				
108.9 *(81.2)*	5025 *(22.34)*	8.13 *(13.09)*	1804	2.0	0.487 *(0.296)*	14.18 *(2.79)*	194 *(90)*	46 *(8)*	28.9 *(97.8)*
					High Range				
109.3 *(81.5)*	8910 *(39.64)*	4.60 *(7.40)*	1903	3.9	0.515 *(0.313)*	13.40 *(2.64)*	190 *(88)*	41 *(5)*	29.4 *(99.5)*
					High Range				
112.3 *(83.8)*	7760 *(34.52)*	5.43 *(8.73)*	1802	3.3	0.472 *(0.286)*	14.64 *(2.88)*	192 *(89)*	39 *(4)*	29.5 *(99.9)*
					High Range				
111.7 *(83.3)*	6330 *(28.16)*	6.62 *(10.65)*	1806	2.6	0.474 *(0.289)*	14.56 *(2.87)*	190 *(88)*	37 *(3)*	29.5 *(99.8)*
					High Range				
111.6 *(83.2)*	5535 *(24.61)*	7.56 *(12.17)*	1806	2.2	0.476 *(0.289)*	14.54 *(2.86)*	190 *(88)*	37 *(3)*	29.5 *(99.8)*
					High Range				
111.0 *(82.8)*	4910 *(21.83)*	8.48 *(13.65)*	1805	2.0	0.478 *(0.291)*	14.46 *(2.85)*	190 *(88)*	37 *(3)*	29.5 *(99.9)*

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 716 with the 714 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. **2137**, Nebraska Summary 441, September 17, 2004.

Leonard L. Bashford
Director

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

TIRES AND WEIGHT

	Tested Without Ballast
Rear Tires–No., size, ply & psi *(kPa)*	Two 650/65R38;**; 12 *(80)*
Front Tires–No., size, ply & psi *(kPa)*	Two 540/65R28;**; 12 *(80)*
Height of Drawbar	17.7 in *(450 mm)*
Static Weight with operator– Rear	9250 lb *(4195 kg)*
– Front	5730 lb *(2600 kg)*
– Total	14980 lb *(6795 kg)*

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive Engaged dB(A)	Front Wheel Drive Disengaged dB(A)
Maximum Sound level	72.0	72.5
Sound level at 4.6 mph *(7.5 km/h)* - no load	67.5	65.5
Bystander	--	--

THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: III
Quick Attach: Walterscheid lower links
Maximum force exerted through whole range: 12035 lbs *(53.5 kN)*

	one outlet set	two outlet sets combined
i) Opening pressure of relief valve:	NA	
Sustained pressure of the open relief valve:	2945 psi *(203 bar)*	2945 psi *(203 bar)*
ii) Pump delivery rate at minimum pressure:	21.1 GPM *(79.7 l/min)*	29.6 GPM *(112.0 l/min)*
iii) Pump delivery rate at maximum hydraulic power:	21.5 GPM *(81.5 l/min)*	25.6 GPM *(97.0 l/min)*
Delivery pressure:	2615 psi *(180 bar)*	2755 psi *(190 bar)*
Power:	32.8 HP *(24.5 kW)*	41.1 Hp *(30.7 kW)*

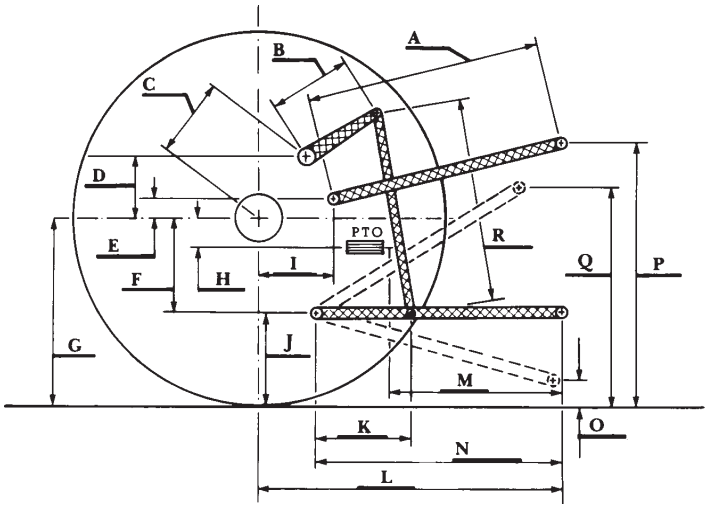
Observed Maximum Pressure psi. *(bar)*	2705 *(186)*
Location:	lift cylinder
Hydraulic oil temperature: °F *(°C)*	148 *(64)*
Location:	hydraulic sump
Category:	III
Quick attach:	No

SAE Static Test—System pressure 2385 psi *(164 Bar)*

Hitch point distance to ground level in. *(mm)*	8.2 *(208)*	14.4 *(366)*	20.8 *(528)*	27.2 *(690)*	33.8 *(858)*	40.0 *(1016)*
Lift force on frame lb	13761	12600	12618	13086	13104	12384
" " " " " " " " *(kN)*	*(61.2)*	*(56.0)*	*(56.1)*	*(58.2)*	*(58.3)*	*(55.1)*

HITCH DIMENSIONS AS TESTED - NO LOAD

	SAE test inch	SAE test *mm*	OECD test inch	OECD test *mm*
A	29.5	*749*	29.3	*745*
B	13.4	*340*	13.4	*340*
C	14.0	*355*	14.0	*355*
D	12.4	*315*	12.4	*315*
E	14.0	*355*	9.4	*240*
F	10.0	*255*	10.0	*255*
G	33.6	*855*	33.6	*855*
H	2.2	*55*	2.2	*55*
I	15.0	*380*	16.1	*410*
J	23.6	*600*	23.6	*600*
K	26.2	*665*	26.2	*665*
L	45.1	*1145*	45.1	*1145*
M	25.0	*635*	25.0	*635*
N	39.4	*1000*	39.4	*1000*
O	8.0	*203*	9.1	*230*
P	45.6	*1158*	50.6	*1285*
Q	37.1	*943*	38.0	*965*
R	29.5	*749*	29.1	*740*



Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Darrell Nelson, Dean and Director