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## Nebraska Summary 389: Fendt 920 Vario Diesel

Nebraska Tractor Test Lab

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# SUMMARY OF OECD TEST 2064—NEBRASKA SUMMARY 389

## FENDT 920 VARIO DIESEL

### POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Gal/ltr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Mean Atmospheric Conditions
<b>MAXIMUM POWER AND FUEL CONSUMPTION</b>					
<b>Rated Engine Speed (PTO speed-1059 rpm)</b>					
184.1 (137.3)	2151	10.08 (38.14)	0.384 (0.233)	18.27 (3.60)	
<b>Standard Power Take-off Speed (1000 rpm)</b>					
189.9 (141.6)	2031	10.08 (38.17)	0.372 (0.227)	18.82 (3.71)	
<b>Maximum Power (2 hours)</b>					
195.0 (145.4)	1802	9.82 (37.18)	0.353 (0.215)	19.85 (3.91)	

VARYING POWER AND FUEL CONSUMPTION					
184.1 (137.3)	2151	10.08 (38.14)	0.383 (0.233)	18.27 (3.60)	Air temperature
162.3 (121.1)	2224	9.05 (34.27)	0.391 (0.238)	17.93 (3.53)	64°F (18°C)
122.5 (91.4)	2248	7.42 (28.10)	0.425 (0.258)	16.51 (3.25)	Relative humidity
82.5 (61.6)	2275	5.64 (21.36)	0.479 (0.291)	14.63 (2.88)	42%
41.7 (31.1)	2297	4.02 (15.21)	0.675 (0.411)	10.38 (2.04)	Barometer
--	2325	2.37 (8.98)	--	--	29.2" Hg (98.8 kPa)

Maximum Torque - 592 lb.-ft. (802 Nm) at 1702 rpm  
 Maximum Torque Rise - 31.4%  
 Torque rise at 1702 engine rpm - 31%

### 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)
<b>Maximum Power—Low Range</b>									
155.4 (115.9)	12585 (35.97)	4.63 (7.45)	2154	5.9	0.459 (0.279)	15.23 (3.00)	185 (85)	66 (19)	29.8 (100.8)
<b>75% of Pull at Maximum Power—Low Range</b>									
122.8 (91.6)	9385 (41.74)	4.91 (7.90)	2237	4.3	0.481 (0.293)	14.54 (2.87)	185 (85)	68 (20)	29.8 (100.8)
<b>50% of Pull at Maximum Power—Low Range</b>									
84.8 (63.2)	6280 (27.93)	5.06 (8.15)	2264	2.8	0.543 (0.331)	12.87 (2.54)	181 (83)	72 (22)	29.8 (100.8)
<b>75% of Pull at Reduced Engine Speed—Low Range</b>									
122.4 (91.3)	9360 (41.63)	4.91 (7.90)	1795	4.2	0.431 (0.262)	16.24 (3.20)	183 (84)	66 (19)	29.8 (100.8)
<b>50% of Pull at Reduced Engine Speed—Low Range</b>									
84.9 (63.3)	6255 (27.83)	5.09 (8.18)	1825	2.8	0.473 (0.288)	14.77 (2.91)	181 (83)	68 (20)	29.8 (100.8)

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

**Dates of Test:** October 2001-April 2002.

**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)** 0.842 **Fuel weight** 7.01 lbs/gal (0.840 kg/l) **Oil SAE 10W40 API service classification** API CD **Transmission lubricant** SAE 10W/30 **Hydraulic lubricant** SAE 10W/40 **Front axle lubricant** 85W/90 gear oil, API GL-5

**ENGINE: Make** MAN Diesel **Type** six cylinder vertical with turbocharger and air to air intercooler **Serial No.** 1649866319271 **Crankshaft** lengthwise **Rated engine speed** 2150 **Bore and stroke** 4.252" x 4.921" (108.0 mm x 125.0 mm) **Compression ratio** 17.0 to 1 **Displacement** 419 cu in (6871 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.** 926/24/3255 **Tread width** rear 64.0" (1625 mm) to 121.7" (3091 mm) front 63.6" (1615 mm) to 87.6" (2225 mm) **Wheel base** 111.8" (2840 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** 1000 rpm at 2031 engine rpm. **Unladen tractor mass** 18860 lb (8555 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. <sup>o</sup> F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
147.8 (110.2)	19210 (85.45)	2.88 (4.64)	1849	15.1	Low Range 0.480 (0.292)	14.57 (2.87)	185 (85)	72 (22)	29.9 (101.3)
156.4 (116.6)	17080 (75.97)	3.43 (5.53)	1802	10.0	Low Range 0.444 (0.270)	15.74 (3.10)	185 (85)	72 (22)	29.9 (101.3)
161.7 (120.6)	13380 (59.52)	4.53 (7.29)	1796	6.1	Low Range 0.427 (0.260)	16.34 (3.22)	187 (86)	70 (21)	29.9 (101.3)
161.9 (120.7)	11210 (49.87)	5.41 (8.71)	1798	5.1	Low Range 0.427 (0.260)	16.34 (3.22)	185 (85)	70 (21)	29.5 (100.0)
160.9 (120.0)	9520 (42.34)	6.34 (10.20)	1794	4.4	Low Range 0.431 (0.262)	16.24 (3.20)	185 (85)	72 (22)	29.5 (100.0)
159.3 (118.8)	8150 (36.24)	7.33 (11.80)	1805	3.7	Low Range 0.435 (0.264)	16.09 (3.17)	185 (85)	73 (23)	29.5 (100.0)
156.1 (116.4)	7105 (31.61)	8.24 (13.26)	1802	3.2	Low Range 0.443 (0.269)	15.79 (3.11)	185 (85)	72 (22)	29.8 (101.0)
153.7 (114.6)	16725 (74.40)	3.45 (5.54)	1798	9.4	High Range 0.453 (0.276)	15.43 (3.04)	185 (85)	61 (16)	29.8 (100.8)
157.4 (117.4)	15000 (66.72)	3.94 (6.33)	1798	7.4	High Range 0.439 (0.267)	15.94 (3.14)	185 (85)	57 (14)	29.8 (100.8)
162.4 (121.1)	13540 (60.22)	4.50 (7.24)	1797	6.3	High Range 0.427 (0.260)	16.39 (3.23)	185 (85)	57 (14)	29.8 (100.8)
164.0 (122.3)	11085 (49.30)	5.55 (8.93)	1801	4.8	High Range 0.424 (0.258)	16.50 (3.25)	183 (84)	54 (12)	29.6 (100.3)
165.9 (123.7)	9585 (42.64)	6.49 (10.44)	1801	4.1	High Range 0.418 (0.254)	16.73 (3.29)	183 (84)	59 (15)	29.6 (100.3)
164.5 (122.7)	8285 (36.84)	7.45 (11.99)	1795	3.5	High Range 0.421 (0.256)	16.60 (3.27)	185 (85)	63 (17)	29.6 (100.3)
164.3 (122.5)	7400 (32.91)	8.33 (13.40)	1790	3.2	High Range 0.419 (0.255)	16.70 (3.29)	185 (85)	63 (17)	29.6 (100.3)
163.2 (121.7)	6925 (30.81)	8.84 (14.22)	1805	3.1	High Range 0.427 (0.259)	16.40 (3.23)	185 (85)	64 (18)	29.6 (100.3)

**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 926 with the 920 module.

**REMARKS:** All test results were determined from observed data obtained in accordance with official OECD test procedures. This tractor did not meet the manufacturer's claims of 40% torque rise, 6% power bulge, 3 point lift at ball ends of 20238 lb (90 kN) nor remote hydraulic flow of 30 gpm (112 l/min). 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. **2064**, Nebraska Summary 389, June 11, 2003.

Leonard L. Bashford  
 Director

M.F. Kocher  
 V.I. Adamchuck  
 W.P. Campell  
 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 480/80R46; \*\*, 23 (160)  
 Two 14.9R38; \*\*, 20 (140)  
 20.9 in (500 mm)  
 11475 lb (5205 kg)  
 7550 lb (3425 kg)  
 19025 lb (8630 kg)

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive	
	Engaged dB(A)	Disengaged dB(A)
Sound level at 4.6 mph (7.5 km/h) - no load	72.0	72.5
Maximum Sound level	77.0	76.5
Bystander	--	--

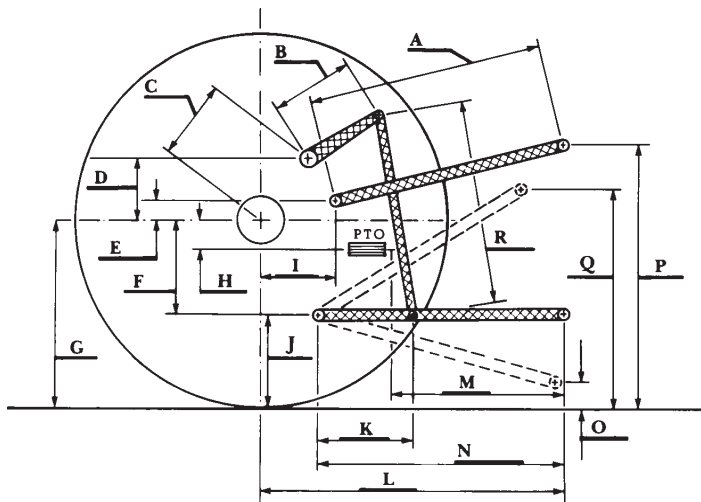
### THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: III

Quick Attach: Walterscheid lower links

Maximum Force Exerted Through Whole Range: 16085 lbs (71.55 kN) (on the frame)  
15175 lbs (67.50 kN) (at the hitch points)

- i) Opening pressure of relief valve: NA  
Sustained pressure of the open relief valve: 2915 psi (201 bar)
- ii) Pump delivery rate at minimum pressure: 29.6 GPM (112.0 l/min)
- iii) Pump delivery rate at maximum  
hydraulic power: 28.7 GPM (108.7 l/min)  
Delivery pressure: 2540 psi (175 bar)  
Power: 42.5 HP (31.7 kW)



### HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	mm
A	32.5	825
B	14.2	360
C	19.3	490
D	15.9	405
E	12.4	315
F	11.8	300
G	36.2	920
H	2.0	50
I	17.9	455
J	24.4	620
K	26.4	670
L	50.6	1285
M	27.0	685
N	40.6	1030
O	9.1	230
P	51.4	1305
Q	38.4	975
R	34.8	885