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2021

Test 2244: Fendt 1151 Vario MT

Nebraska Tractor Test Lab

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NEBRASKA OECD TRACTOR TEST 2244-SUMMARY 1204

FENDT 1151 VARIO MT DIESEL

STEPLESS VARIODRIVE TRANSMISSION

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Diesel Consumption		D.E.F. Consumption		Mean Atmospheric Conditions
		Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Gal/hr (l/h)	
MAXIMUM POWER AND FUEL CONSUMPTION						
Rated Engine Speed—(PTO speed—1379 rpm)						
477.67 (356.20)	1730	23.67 (89.60)	0.346 (0.211)	20.18 (3.98)	1.63 (6.17)	
Standard Power Take-off Speed (1300 rpm)						
480.95 (358.65)	1631	23.32 (88.27)	0.339 (0.206)	20.63 (4.06)	1.60 (6.07)	
Maximum Power (1 hour)						
484.60 (361.37)	1501	22.97 (86.94)	0.331 (0.201)	21.10 (4.16)	1.96 (7.41)	

VARYING POWER AND FUEL CONSUMPTION

477.67 (356.20)	1730	23.67 (89.60)	0.346 (0.211)	20.18 (3.98)	1.63 (6.17)	Air temperature
408.93 (304.94)	1743	20.75 (78.55)	0.354 (0.216)	19.71 (3.88)	1.13 (4.28)	73°F (23°C)
308.49 (230.04)	1753	16.31 (61.76)	0.369 (0.225)	18.91 (3.72)	1.03 (3.92)	Relative humidity
207.22 (154.53)	1762	12.12 (45.86)	0.408 (0.248)	17.10 (3.37)	1.08 (4.08)	38%
104.03 (77.58)	1771	8.05 (30.49)	0.541 (0.329)	12.92 (2.54)	0.82 (3.12)	Barometer
2.34 (1.75)	1780	4.66 (17.64)	13.884 (8.445)	0.50 (0.10)	0.05 (0.18)	28.72" Hg (97.27 kPa)

Maximum torque - 1788 lb.-ft. (2424 Nm) at 1201 rpm
 Maximum torque rise - 23.3%
 Torque rise at 1384 engine rpm - 21.0%
 Power increase at 1501 engine rpm - 1.5%

DRAWBAR PERFORMANCE (Unballasted) 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)	D.E.F. Consumption Hp.hr/gal (kW.h/l)	Temp. °F(°C) cool- ing med bulb	Barom. inch Hg (kPa)
Power at Rated Engine Speed—5.6 mph (9.0 km/h)								
398.08 (296.84)	27414 (121.94)	5.45 (8.76)	1730	2.3	0.414 (0.252)	16.87 (3.32)	0.035 (0.021)	199 (93)
75% of Pull at Rated Engine Speed—5.6 mph (9.0 km/h)								
306.88 (228.84)	20602 (91.64)	5.59 (9.00)	1747	1.0	0.429 (0.261)	16.28 (3.21)	0.030 (0.018)	199 (93)
50% of Pull at Rated Engine Speed—5.6 mph (9.0 km/h)								
205.69 (153.38)	13736 (61.10)	5.62 (9.04)	1757	0.5	0.476 (0.289)	14.68 (2.89)	0.041 (0.025)	201 (94)
75% of Pull at Reduced Engine Speed—5.6 mph (9.0 km/h)								
306.32 (228.42)	20550 (91.41)	5.59 (9.00)	1216	1.1	0.387 (0.235)	18.05 (3.56)	0.075 (0.046)	195 (91)
50% of Pull at Reduced Engine Speed—5.6 mph (9.0 km/h)								
205.98 (153.60)	13773 (61.27)	5.61 (9.03)	1170	0.5	0.412 (0.250)	16.96 (3.34)	0.043 (0.026)	196 (91)

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

Dates of tests: October 20 - 28, 2021

Manufacturer: AGCO Corporation, 4205 River Green Parkway, Duluth Ga 30096

CONSUMABLE Fluids, OIL and TIME: Fuel No. 2 Diesel **Specific gravity converted to 60°/60°F (15°/15°C)** 0.8388 **Fuel weight** 6.984 lbs/gal (0.837 kg/l) **Diesel Exhaust Fluid (DEF)** 32% aqueous urea solution **DEF weight** 9.071 lbs/gal (1.087 kg/l) **Oil SAE 10W-40 API service classification CK-4 Transmission and hydraulic lubricant** AGCO Permatran 821 XL fluid **Total time engine was operated:** 24.0 hours

ENGINE: Make MAN **Diesel Type** six cylinder vertical with turbocharger, air to air intercooler and D.E.F. (diesel exhaust fluid) technology **Serial No.** *56859151315930* **Crankshaft** lengthwise **Rated engine speed** 1730 **Bore and stroke** 5.433" x 6.693" (138.0 mm x 170.0 mm) **Compression ratio** 18.0 to 1 **Displacement** 930 cu in (15256 ml) **Starting system** 24 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 and water separator **Fuel cooler** radiator for pump return fuel **Exhaust DOC** (diesel oxidation catalyst) and SCR (selective catalyst reduction) with a vertical muffler **Cooling medium temperature control** 2 thermostats and variable speed fan

ENGINE OPERATING PARAMETERS: Fuel rate: 160.5 - 166.9 lb/h (72.8 - 75.7 kg/h) **High idle:** 1760 - 1800 rpm **Turbo boost:** nominal 29.7 - 32.6 psi (205 - 225 kPa) as measured 31.1 psi (214 kPa)

CHASSIS: Type Tracklayer-rubber tracked **Serial No.** *AGCF1151VMNNG1089* **Trackwidth** 92.5" (2350 mm) to 128.0" (3251 mm) **Length of track on ground** 118.1" (3000 mm) **Hydraulic control system** direct engine drive **Transmission** CVT. Infinitely variable hydrostatic using variable displacement pump and motors **Nominal travel speeds mph (km/h)** forward - 0-25.0 mph (0-40 km/h), reverse - 0-8.7 mph (0-14 km/h) **Clutch** a foot pedal controls the hydrostatic oil flow **Brakes** wet multiple disc hydraulically actuated by foot pedal **Steering** electro-hydraulic differential steering controlled by steering wheel **Power take-off** 1300 rpm at 1630 engine rpm **Unladen tractor mass** 42425 lb (19244 kg)

DRAWBAR PERFORMANCE

MANUAL MODE - 1730 ENGINE RPM DRAWBAR POWER AT SELECTED TRAVEL SPEED SETTINGS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	D.E.F. Consumption lb/hp.hr (kg/kW.h)	Temp. ^o F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)	
3.1 mph (5.0 km/h)										
324.57 (242.03)	44662 (198.67)	2.73 (4.39)	1741	13.2	0.465 (0.283)	15.01 (2.96)	0.030 (0.018)	198 (92)	45 (7)	28.82 (97.60)
3.7 mph (6.0 km/h)										
378.73 (282.42)	41007 (182.41)	3.47 (5.58)	1729	8.1	0.433 (0.263)	16.14 (3.18)	0.034 (0.021)	197 (92)	48 (9)	28.82 (97.58)
4.3 mph (7.0 km/h)										
392.60 (292.76)	35233 (156.72)	4.18 (6.73)	1731	4.6	0.418 (0.254)	16.70 (3.29)	0.034 (0.021)	197 (91)	51 (11)	28.80 (97.53)
4.7 mph (7.5 km/h)										
397.52 (296.43)	32921 (146.44)	4.53 (7.28)	1730	3.6	0.415 (0.252)	16.84 (3.32)	0.034 (0.021)	198 (92)	42 (6)	28.95 (98.02)
5.0 mph (8.0 km/h)										
398.31 (297.02)	30728 (136.68)	4.86 (7.82)	1730	3.0	0.414 (0.252)	16.88 (3.33)	0.034 (0.021)	198 (92)	42 (6)	28.95 (98.04)
5.6 mph (9.0 km/h)										
398.08 (296.84)	27414 (121.94)	5.45 (8.76)	1730	2.3	0.414 (0.252)	16.87 (3.32)	0.035 (0.021)	199 (93)	41 (5)	28.92 (97.93)
6.2 mph (10.0 km/h)										
400.37 (298.55)	24431 (108.67)	6.15 (9.89)	1730	1.7	0.412 (0.250)	16.97 (3.34)	0.037 (0.022)	199 (93)	41 (5)	28.92 (97.93)
6.8 mph (11.0 km/h)										
402.97 (300.49)	22259 (99.01)	6.79 (10.93)	1730	1.3	0.408 (0.248)	17.11 (3.37)	0.037 (0.022)	199 (93)	43 (6)	28.95 (98.04)
7.5 mph (12.0 km/h)										
402.10 (299.84)	20283 (90.22)	7.43 (11.96)	1730	0.9	0.410 (0.249)	17.04 (3.36)	0.036 (0.022)	199 (93)	43 (6)	28.95 (98.04)
8.1 mph (13.0 km/h)										
399.13 (297.63)	18538 (82.46)	8.08 (13.00)	1730	0.8	0.413 (0.251)	16.92 (3.33)	0.035 (0.021)	198 (92)	43 (6)	28.96 (98.07)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

NOTE 1: To facilitate drawbar testing the tractor was operated in manual cruise mode.

NOTE 2. The Fendt 1151 Vario MT T.E.C.U. (Tractor Electronic Control Unit) is compliant with ISOBUS 11783.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. The manufacturer's 3 point lift claim of 15000 lb (66.7 kN) at ball ends with 110 mm lift cylinders was not verified. 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. **2244**, Nebraska Summary 1204, February 21, 2022.

Roger M. Hoy
Director

P.J. Jasa
J.D. Luck
S. Pitla
Board of Tractor Test Engineers

TRACTOR SOUND LEVEL WITH CAB	dB(A)
At no load at 4.6 mph (7.5 km/h) engine speed 1770 rpm	66.6
At no load at 4.6 mph (7.5 km/h) engine speed 1040 rpm	61.1
Bystander	85.8

Horizontal distance of drawbar hitch point behind rear wheel axis - 40.5" (1205 mm)

TRACKS, BALLAST AND WEIGHT	With Ballast	Without Ballast
Track width	30.0 in (760 mm)	30.0 in (760 mm)
Ballast - Cast iron (front end)	5600 lb (2540 kg)	None
- Cast iron (front idlers)	2000 lb (907 kg)	None
- Cast iron (side)	5800 lb (2631 kg)	None
- Cast iron (rear axle)	3000 lb (1361 kg)	None
Height of Drawbar	21.5 in (545 mm)	21.0 in (535 mm)
Static Weight with operator	59000 lb (26762 kg)	42600 lb (19323 kg)

DRAWBAR PERFORMANCE
MANUAL MODE - 1500 ENGINE RPM
DRAWBAR POWER AT SELECTED TRAVEL SPEED SETTINGS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption		D.E.F. Consumption	Temp. ^o F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
					lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	lb/hp.hr (kg/kW.h)			
3.1 mph (5.0 km/h)										
322.35 (240.38)	44248 (196.82)	2.73 (4.39)	1741	12.9	0.463 (0.282)	15.07 (2.97)	0.031 (0.019)	198 (92)	45 (7)	28.82 (97.60)
3.7 mph (6.0 km/h)										
381.47 (284.46)	41861 (186.20)	3.42 (5.50)	1628	9.0	0.427 (0.259)	16.37 (3.23)	0.041 (0.025)	196 (91)	48 (9)	28.81 (97.56)
4.3 mph (7.0 km/h)										
398.06 (296.83)	36966 (164.43)	4.04 (6.50)	1535	5.1	0.404 (0.246)	17.28 (3.40)	0.048 (0.029)	196 (91)	52 (11)	28.80 (97.53)
4.7 mph (7.5 km/h)										
400.67 (298.78)	33276 (148.02)	4.52 (7.27)	1510	3.9	0.400 (0.243)	17.46 (3.44)	0.050 (0.030)	195 (91)	56 (13)	28.78 (97.46)
5.0 mph (8.0 km/h)										
401.81 (299.63)	30930 (137.58)	4.88 (7.85)	1501	3.1	0.396 (0.241)	17.64 (3.48)	0.050 (0.031)	196 (91)	55 (13)	28.78 (97.46)
5.6 mph (9.0 km/h)										
404.32 (301.50)	27471 (122.19)	5.52 (8.88)	1503	2.2	0.395 (0.240)	17.69 (3.48)	0.050 (0.030)	196 (91)	56 (13)	28.77 (97.43)
6.2 mph (10.0 km/h)										
405.53 (302.40)	24605 (109.45)	6.18 (9.95)	1501	1.7	0.394 (0.240)	17.73 (3.49)	0.058 (0.035)	196 (91)	41 (5)	28.93 (97.97)
6.8 mph (11.0 km/h)										
405.23 (302.18)	22219 (98.83)	6.84 (11.01)	1500	1.2	0.395 (0.240)	17.69 (3.49)	0.058 (0.035)	197 (92)	44 (7)	28.96 (98.07)
7.5 mph (12.0 km/h)										
405.01 (302.02)	20394 (90.71)	7.45 (11.98)	1500	0.9	0.395 (0.240)	17.69 (3.48)	0.057 (0.035)	197 (91)	44 (7)	28.96 (98.07)
8.1 mph (13.0 km/h)										
400.50 (298.65)	18521 (82.38)	8.11 (13.05)	1502	0.8	0.398 (0.242)	17.54 (3.46)	0.059 (0.036)	198 (92)	45 (7)	28.96 (98.07)

DRAWBAR PERFORMANCE
BALLASTED AT 1500 ENGINE RPM
DRAWBAR POWER AT SELECTED TRAVEL SPEED SETTINGS

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)	D.E.F. Consumption lb/hp.hr (kg/kW.h)	Temp. °F(°C) cool- ing dry med	Air dry bulb	Barom. inch Hg (kPa)
2.5 mph (4.0 km/h)										
366.92 (273.61)	62213 (276.74)	2.22 (3.56)	1602	11.4	0.447 (0.272)	15.63 (3.08)	0.040 (0.025)	199 (93)	50 (10)	28.51 (96.55)
3.1 mph (5.0 km/h)										
392.77 (292.89)	54154 (240.89)	2.72 (4.38)	1578	6.7	0.412 (0.251)	16.94 (3.34)	0.040 (0.024)	199 (93)	50 (10)	28.52 (96.58)
3.7 mph (6.0 km/h)										
408.27 (304.45)	43385 (198.98)	3.53 (5.68)	1544	3.5	0.394 (0.240)	17.70 (3.49)	0.043 (0.026)	197 (92)	50 (10)	28.53 (96.60)
4.3 mph (7.0 km/h)										
411.12 (306.57)	40312 (179.32)	3.83 (6.16)	1520	2.7	0.390 (0.237)	17.92 (3.53)	0.048 (0.029)	198 (92)	49 (9)	28.53 (96.61)
4.7 mph (7.5 km/h)										
412.34 (307.48)	35204 (156.59)	4.40 (7.07)	1508	2.0	0.388 (0.236)	18.00 (3.55)	0.047 (0.029)	197 (91)	49 (9)	28.53 (96.61)
5.0 mph (8.0 km/h)										
410.23 (305.90)	32103 (142.80)	4.79 (7.71)	1500	1.7	0.389 (0.236)	17.97 (3.54)	0.047 (0.029)	197 (91)	50 (10)	28.54 (96.63)
5.6 mph (9.0 km/h)										
408.42 (304.56)	28410 (126.37)	5.39 (8.67)	1500	1.5	0.390 (0.237)	17.90 (3.53)	0.050 (0.030)	197 (91)	50 (10)	28.55 (96.68)
6.2 mph (10.0 km/h)										
408.27 (304.44)	25068 (111.51)	6.11 (9.83)	1499	1.1	0.391 (0.238)	17.86 (3.52)	0.048 (0.029)	196 (91)	50 (10)	28.55 (96.68)
6.8 mph (11.0 km/h)										
407.60 (303.94)	22688 (100.92)	6.74 (10.85)	1499	0.9	0.391 (0.238)	17.85 (3.52)	0.050 (0.031)	196 (91)	50 (10)	28.55 (96.68)
7.5 mph (12.0 km/h)										
404.25 (301.45)	20495 (91.16)	7.40 (11.90)	1502	0.8	0.395 (0.240)	17.70 (3.49)	0.052 (0.032)	196 (91)	50 (10)	28.55 (96.68)
8.1 mph (13.0 km/h)										
400.12 (298.37)	18589 (82.69)	8.07 (12.99)	1504	0.7	0.398 (0.242)	17.56 (3.46)	0.053 (0.036)	197 (92)	50 (10)	28.55 (96.68)

HYDRAULIC PERFORMANCE

CATEGORY: 4N

Quick Attach: yes

OECD Static test

Maximum force exerted through whole range: with 2 x 130 mm lift cylinders

at 24" (610 mm) behind QC ends: 23359 lbs (103.9 kN)

at QC ends: 22320 lbs (99.3 kN)

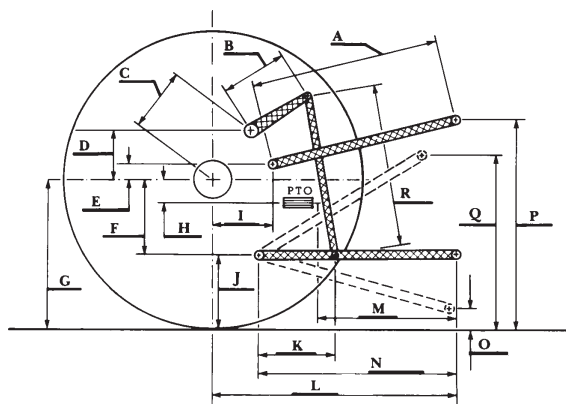
	Pump 1	Pump 2
	3 outlet sets combined	
i) Sustained pressure at compensator cutoff:	3045 psi (210 bar)	3041 psi (210 bar)
ii) Pump delivery rate at minimum pressure and rated engine speed:	61.5 GPM (233.0 l/min)	61.9 GPM (234.4 l/min)
Combined flow:	123.4 GPM (467.4 l/min)	
iii) Pump delivery rate at maximum hydraulic power:	59.8 GPM (226.3 l/min)	59.4 GPM (224.7 l/min)
Delivery pressure:	2807 psi (194 bar)	2773 psi (191 bar)
Power:	97.9 HP (73.0 kW)	96.1 HP (71.6 kW)

	single outlet set	
i) Sustained pressure at compensator cutoff:	3039 psi (210 bar)	3045 psi (210 bar)
ii) Pump delivery rate at minimum pressure and rated engine speed:	37.2 GPM (140.9 l/min)	37.0 GPM (139.9 l/min)
iii) Pump delivery rate at maximum hydraulic power:	34.6 GPM (130.8 l/min)	35.1 GPM (132.8 l/min)
Delivery pressure:	2541 psi (175 bar)	2538 psi (175 bar)
Power:	51.2 HP (38.2 kW)	51.9 HP (38.7 kW)

HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	mm
A	30.1	765
B	21.9	555
C	27.7	678
D	24.8	630
E	15.0	382
F	12.2	310
G	33.7	855
H	0.6	15
I	22.7	576
J	21.5	545
K	25.6	649
L	53.9	1369
*L'	60.4	1534
M	26.1	664
N	43.1	1094
O	9.1	230
P	48.4	1230
Q	42.9	1090
R	46.9	1190

*L' to Quick Attach ends



RECOMMENDED CITATION FORMAT:

NTTL.(2022). Nebraska OECD Tractor test 2244 for Fendt 1151 Vario MT Diesel.

Lincoln, NE:Nebraska Tractor Test Laboratory. Retrieved from <http://tractortestlab.unl.edu>



FENDT 1151 VARIO MT DIESEL
 Institute of Agriculture and Natural Resources
 University of Nebraska–Lincoln