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2021

Test 2247: Fendt 1167 Vario MT

Nebraska Tractor Test Lab

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NEBRASKA OECD TRACTOR TEST 2247–SUMMARY 1207

FENDT 1167 VARIO MT DIESEL

STEPLESS VARIODRIVE TRANSMISSION

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Diesel	D.E.F.			Mean Atmospheric Conditions
		Consumption Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Consumption Hp/hr/gal (kW/h/l)	Gal/hr (l/h)	
MAXIMUM POWER AND FUEL CONSUMPTION						
Rated Engine Speed—(PTO speed—1379 rpm)						
598.71 (446.46)	1730	29.90 (113.17)	0.349 (0.212)	20.03 (3.95)	2.33 (8.82)	
Standard Power Take-off Speed (1300 rpm)						
602.27 (449.11)	1631	29.61 (112.08)	0.343 (0.209)	20.34 (4.01)	2.04 (7.72)	
Maximum Power (1 hour)						
604.95 (451.11)	1600	29.52 (111.76)	0.341 (0.207)	20.49 (4.04)	2.09 (7.92)	

VARYING POWER AND FUEL CONSUMPTION

598.71 (446.46)	1730	29.90 (113.17)	0.349 (0.212)	20.03 (3.95)	2.33 (8.82)	Air temperature
512.44 (382.13)	1742	25.79 (97.62)	0.351 (0.214)	19.87 (3.91)	1.98 (7.49)	74°F (23°C)
385.61 (287.55)	1752	20.28 (76.76)	0.367 (0.223)	19.02 (3.75)	1.26 (4.78)	Relative humidity
258.98 (193.12)	1761	14.95 (56.60)	0.403 (0.245)	17.32 (3.41)	1.10 (4.16)	39%
130.17 (97.07)	1770	10.06 (38.08)	0.540 (0.328)	12.94 (2.55)	0.68 (2.58)	Barometer
2.37 (1.77)	1779	5.26 (19.91)	15.493 (9.424)	0.45 (0.09)	0.07 (0.26)	28.52" Hg (96.59 kPa)

Maximum torque - 2099 lb.-ft. (2846 Nm) at 1050 rpm

Maximum torque rise - 15.5%

Torque rise at 1384 engine rpm - 14.0%

Power increase at 1600 engine rpm - 1.0%

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)	Hp.hr/gal (kW.h/l)	D.E.F. Consumption lb/hp.hr (kg/kW.h)	Temp. °F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
Power at Rated Engine Speed—5.6 mph (9.0 km/h)										
490.73 (365.94)	33935 (150.95)	5.43 (8.73)	1730	4.3	0.412 (0.251)	16.93 (3.34)	0.038 (0.023)	194 (90)	43 (6)	29.19 (98.85)
75% of Pull at Rated Engine Speed—5.6 mph (9.0 km/h)										
377.15 (281.24)	25456 (113.23)	5.56 (8.94)	1748	1.9	0.413 (0.252)	16.89 (3.33)	0.036 (0.022)	201 (94)	48 (9)	29.12 (98.61)
50% of Pull at Rated Engine Speed—5.6 mph (9.0 km/h)										
253.75 (189.22)	16966 (75.47)	5.61 (9.03)	1758	0.8	0.457 (0.278)	15.28 (3.01)	0.040 (0.024)	203 (95)	47 (8)	29.11 (98.58)
75% of Pull at Reduced Engine Speed—5.6 mph (9.0 km/h)										
377.06 (281.17)	25433 (113.13)	5.57 (8.96)	1242	1.9	0.383 (0.233)	18.25 (3.59)	0.062 (0.038)	193 (89)	47 (8)	29.11 (98.58)
50% of Pull at Reduced Engine Speed—5.6 mph (9.0 km/h)										
253.78 (189.24)	16942 (75.36)	5.62 (9.04)	1186	0.7	0.394 (0.240)	17.71 (3.49)	0.072 (0.044)	194 (90)	48 (9)	29.11 (98.58)

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

Dates of tests: October 26 to November 9, 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:** 24.5 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.** *58859600765946* **Crankshaft** lengthwise **Rated engine speed** 1730 **Bore and stroke** 5.591" x 6.693" (142.0 mm x 170.0 mm) **Compression ratio** 18.0 to 1 **Displacement** 986 cu in (16154 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: 205.2 - 213.4 lb/h (93.1 - 96.8 kg/h) **High idle:** 1760 - 1800 rpm **Turbo boost:** nominal 29.7 - 32.6 psi (205 - 225 kPa) as measured 31.2 psi (215 kPa)

CHASSIS: Type Tracklayer-rubber tracked **Serial No.** *AGCF1167LMNNG1082* **Track width** 98.5" (2502 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** 43665 lb (19806 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)	Hp.hr/gal (kW.h/l)	D.E.F. Consumption lb/hp.hr (kg/kW.h)	Temp.°F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
3.7 mph (6.0 km/h)										
409.95 (305.70)	46628 (207.41)	3.30 (5.31)	1741	12.8	0.451 (0.274)	15.48 (3.05)	0.042 (0.026)	199 (93)	43 (6)	29.11 (98.56)
4.3 mph (7.0 km/h)										
470.68 (350.98)	44384 (197.43)	3.98 (6.41)	1737	9.9	0.435 (0.265)	16.06 (3.16)	0.041 (0.025)	197 (92)	44 (7)	29.10 (98.54)
4.7 mph (7.5 km/h)										
485.08 (361.72)	41777 (185.83)	4.36 (7.01)	1737	7.9	0.421 (0.256)	16.59 (3.27)	0.041 (0.025)	197 (92)	47 (8)	29.15 (98.71)
5.0 mph (8.0 km/h)										
490.03 (365.41)	38996 (173.46)	4.71 (7.58)	1730	6.6	0.420 (0.255)	16.63 (3.28)	0.040 (0.024)	197 (92)	47 (8)	29.15 (98.70)
5.6 mph (9.0 km/h)										
490.73 (365.94)	33935 (150.95)	5.43 (8.73)	1730	4.3	0.412 (0.251)	16.93 (3.34)	0.038 (0.023)	194 (90)	43 (6)	29.19 (98.85)
6.2 mph (10.0 km/h)										
496.16 (369.98)	30650 (136.34)	6.08 (9.78)	1729	3.4	0.411 (0.250)	17.00 (3.35)	0.038 (0.023)	194 (90)	44 (7)	29.19 (98.85)
6.8 mph (11.0 km/h)										
503.22 (375.25)	28055 (124.79)	6.73 (10.83)	1731	2.7	0.406 (0.247)	17.22 (3.39)	0.038 (0.023)	195 (91)	48 (9)	29.14 (98.68)
7.5 mph (12.0 km/h)										
508.31 (379.04)	25831 (114.88)	7.38 (11.88)	1731	2.1	0.404 (0.246)	17.29 (3.41)	0.039 (0.024)	196 (91)	48 (9)	29.14 (98.68)
8.1 mph (13.0 km/h)										
506.80 (377.92)	23579 (104.88)	8.06 (12.97)	1730	1.6	0.409 (0.249)	17.06 (3.36)	0.039 (0.024)	194 (90)	48 (9)	29.13 (98.63)

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 1167 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. This tractor fell 0.5% short of meeting the manufacturer's claim of 16% torque rise. 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. **2247**, Nebraska Summary 1207, 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	69.5
At no load at 4.6 mph (7.5 km/h) engine speed 1040 rpm	61.6
Bystander	88.5

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

TRACKS, BALLAST AND WEIGHT	With Ballast	Without Ballast
Track width	36.0 in (915 mm)	36.0 in (915 mm)
Ballast - Cast iron (front end)	5600 lb (2540 kg)	None
- Cast iron (front idlers)	1760 lb (799 kg)	None
- Cast iron (side)	5800 lb (2631 kg)	None
- Cast iron (rear axle)	2000 lb (907 kg)	None
Height of Drawbar	21.5 in (545 mm)	21.0 in (535 mm)
Static Weight with operator	59000 lb (26762 kg)	43840 lb (19885 kg)

DRAWBAR PERFORMANCE
MANUAL MODE - 1600 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. °F(°C)		Barom. inch Hg (kPa)
					lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	lb/hp.hr (kg/kW.h)	cool- ing med	Air dry bulb	
3.7 mph (6.0 km/h)										
408.32 (304.48)	46607 (207.32)	3.29 (5.29)	1741	13.3	0.454 (0.276)	15.39 (3.03)	0.043 (0.026)	199 (93)	43 (6)	29.11 (98.56)
4.3 mph (7.0 km/h)										
469.24 (349.91)	44240 (196.79)	3.98 (6.41)	1737	9.9	0.433 (0.263)	16.13 (3.18)	0.041 (0.025)	198 (92)	44 (7)	29.10 (98.54)
4.7 mph (7.5 km/h)										
481.67 (359.18)	41273 (183.59)	4.38 (7.05)	1720	7.3	0.420 (0.255)	16.64 (3.28)	0.038 (0.023)	197 (92)	46 (8)	29.10 (98.54)
5.0 mph (8.0 km/h)										
483.09 (360.24)	38009 (169.07)	4.77 (7.68)	1680	5.2	0.414 (0.252)	16.89 (3.33)	0.037 (0.023)	197 (91)	46 (8)	29.10 (98.54)
5.6 mph (9.0 km/h)										
493.83 (368.25)	34155 (151.93)	5.42 (8.72)	1634	4.0	0.403 (0.245)	17.35 (3.42)	0.035 (0.021)	197 (92)	47 (8)	29.10 (98.54)
6.2 mph (10.0 km/h)										
496.08 (369.93)	30617 (136.19)	6.08 (9.78)	1599	3.3	0.402 (0.244)	17.38 (3.42)	0.037 (0.023)	192 (89)	46 (8)	29.18 (98.81)
6.8 mph (11.0 km/h)										
501.45 (373.93)	27843 (123.85)	6.76 (10.87)	1601	2.5	0.402 (0.244)	17.39 (3.43)	0.036 (0.022)	194 (90)	48 (9)	29.13 (98.63)
7.5 mph (12.0 km/h)										
504.74 (376.38)	25621 (113.97)	7.39 (11.89)	1600	2.1	0.399 (0.243)	17.51 (3.45)	0.035 (0.021)	194 (90)	48 (9)	29.12 (98.61)
8.1 mph (13.0 km/h)										
495.06 (369.17)	23073 (102.63)	8.05 (12.95)	1599	1.6	0.404 (0.246)	17.28 (3.40)	0.036 (0.022)	194 (90)	48 (9)	29.12 (98.61)

DRAWBAR PERFORMANCE
BALLASTED AT 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)	Hp.hr/gal (kW.h/l)	D.E.F. Consumption lb/hp.hr (kg/kW.h)	Temp. °F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
2.5 mph (4.0 km/h)										
368.86 (275.06)	62858 (279.61)	2.20 (3.54)	1744	13.3	0.469 (0.285)	14.89 (2.93)	0.045 (0.028)	200 (93)	50 (10)	28.84 (97.66)
3.1 mph (5.0 km/h)										
440.05 (328.14)	57252 (254.67)	2.89 (4.64)	1740	8.7	0.435 (0.265)	16.05 (3.16)	0.040 (0.024)	198 (92)	51 (10)	28.84 (97.66)
3.7 mph (6.0 km/h)										
494.42 (368.69)	52282 (232.36)	3.55 (5.71)	1730	6.5	0.417 (0.254)	16.74 (3.30)	0.037 (0.022)	198 (92)	51 (11)	28.83 (97.63)
4.3 mph (7.0 km/h)										
508.89 (379.48)	45230 (201.19)	4.22 (6.79)	1730	4.3	0.407 (0.248)	17.16 (3.38)	0.036 (0.022)	196 (91)	53 (12)	28.82 (97.60)
4.7 mph (7.5 km/h)										
508.79 (379.40)	41841 (186.12)	4.56 (7.34)	1730	3.6	0.406 (0.247)	17.20 (3.39)	0.036 (0.022)	197 (92)	54 (12)	28.82 (97.60)
5.0 mph (8.0 km/h)										
512.33 (382.04)	39347 (175.02)	4.88 (7.85)	1730	3.1	0.405 (0.247)	17.23 (3.39)	0.036 (0.022)	197 (91)	55 (13)	28.82 (97.60)
5.6 mph (9.0 km/h)										
506.98 (378.05)	34294 (152.55)	5.54 (8.92)	1730	2.4	0.406 (0.247)	17.22 (3.39)	0.036 (0.022)	197 (91)	58 (14)	28.83 (97.63)
6.2 mph (10.0 km/h)										
508.11 (378.90)	30812 (137.06)	6.19 (9.95)	1731	1.9	0.405 (0.246)	17.24 (3.40)	0.036 (0.022)	195 (91)	57 (14)	28.83 (97.63)
6.8 mph (11.0 km/h)										
512.65 (382.28)	28285 (125.82)	6.80 (10.94)	1729	1.6	0.404 (0.246)	17.29 (3.41)	0.036 (0.022)	197 (91)	58 (14)	28.83 (97.63)
7.5 mph (12.0 km/h)										
511.80 (381.65)	25803 (114.78)	7.44 (11.97)	1730	1.2	0.408 (0.248)	17.10 (3.37)	0.037 (0.023)	197 (92)	59 (15)	28.82 (97.60)
8.1 mph (13.0 km/h)										
505.00 (376.57)	23447 (104.30)	8.08 (13.00)	1730	1.0	0.411 (0.250)	16.98 (3.34)	0.037 (0.023)	197 (92)	59 (15)	28.82 (97.60)

HYDRAULIC PERFORMANCE

CATEGORY: 4N

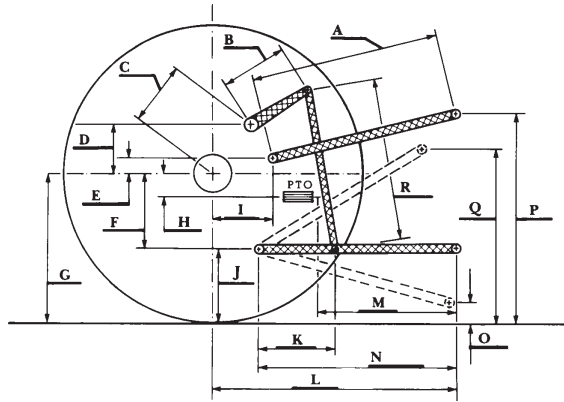
Quick Attach: yes

OECD Static test

Maximum force exerted through whole range:
at 24" (610 mm) behind QC ends:
at QC ends:

with 2 x 130 mm lift cylinders
23359 lbs (103.9 kN)
22320 lbs (99.3 kN)

	Pump 1	Pump 2
	3 outlet sets combined	
i) Sustained pressure at compensator cutoff:	3035 psi (209 bar)	3041 psi (210 bar)
ii) Pump delivery rate at minimum pressure and rated engine speed:	61.7 GPM (233.5 l/min)	61.9 GPM (234.4 l/min)
Combined flow:	123.6 GPM (467.9 l/min)	
iii) Pump delivery rate at maximum hydraulic power:	60.3 GPM (228.2 l/min)	59.4 GPM (224.7 l/min)
Delivery pressure:	2757 psi (190 bar)	2773 psi (191 bar)
Power:	97.0 HP (72.3 kW)	96.1 HP (71.6 kW)
	single outlet set	
i) Sustained pressure at compensator cutoff:	3046 psi (210 bar)	3045 psi (210 bar)
ii) Pump delivery rate at minimum pressure and rated engine speed:	37.5 GPM (141.8 l/min)	37.0 GPM (139.9 l/min)
iii) Pump delivery rate at maximum hydraulic power:	35.8 GPM (135.6 l/min)	35.1 GPM (132.8 l/min)
Delivery pressure:	2502 psi (173 bar)	2538 psi (175 bar)
Power:	52.3 HP (39.0 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 2247 for Fendt 1167 Vario MT Diesel.

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



FENDT 1167 VARIO MT DIESEL

Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln