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2019

Nebraska Summary: S1180 Fendt 939

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SUMMARY OF OECD TEST 3195 - NEBRASKA SUMMARY 1180

FENDT 939 GEN 6 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.l/l)	Gal/hr (l/h)	
MAXIMUM POWER AND FUEL CONSUMPTION						
Rated Engine Speed—(PTO speed—1060 rpm)						
346.5 (258.4)	1700	17.20 (65.10)	0.347 (0.211)	20.15 (3.97)	1.68 (6.37)	
Standard Power Take-off Speed (1000 rpm)						
345.6 (257.7)	1604	16.92 (64.05)	0.342 (0.208)	20.43 (4.02)	1.66 (6.28)	

VARYING POWER AND FUEL CONSUMPTION

346.5 (258.4)	1700	17.20 (65.10)	0.347 (0.211)	20.15 (3.97)	1.68 (6.37)	Air temperature
300.1 (223.8)	1732	15.16 (57.40)	0.353 (0.215)	19.80 (3.90)	1.51 (5.72)	68°F (20°C)
228.1 (170.1)	1756	12.13 (45.93)	0.372 (0.226)	18.80 (3.70)	1.08 (4.07)	Relative humidity
153.4 (114.4)	1771	9.05 (34.25)	0.413 (0.251)	16.95 (3.34)	0.77 (2.93)	22%
77.2 (57.6)	1783	6.08 (23.03)	0.551 (0.335)	12.69 (2.50)	0.40 (1.53)	Barometer
--	1796	3.30 (12.53)	--	--	0.18 (0.67)	29.8" Hg (101.0 kPa)

Maximum torque - 1257 lb.-ft. (1704 Nm) at 1300 rpm
 Maximum torque rise - 17.4%
 Torque rise at 1400 engine rpm - 17%
 Power increase at 1604 engine rpm - 0.0%

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		D.E.F. Consumption	Temp. °F(°C)	Barom. inch Hg (kPa)	
					lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.l/l)	lb/hp.hr (kg/kW.h)	cool- ing med	Air dry bulb	
Power at Rated Engine Speed—Speed setting 9										
296.9 (221.4)	20040 (89.14)	5.56 (8.94)	1690	2.5	0.405 (0.246)	17.08 (3.36)	0.049 (0.030)	190 (88)	72 (22)	29.2 (98.8)
75% of Pull at Rated Engine Speed—Speed setting 9										
232.9 (173.7)	15050 (66.95)	5.80 (9.34)	1744	1.5	0.422 (0.257)	16.40 (3.23)	0.053 (0.032)	196 (91)	72 (22)	29.2 (98.8)
50% of Pull at Rated Engine Speed—Speed setting 9										
159.8 (119.2)	10015 (44.56)	5.98 (9.63)	1767	1.1	0.465 (0.283)	14.87 (2.93)	0.051 (0.031)	192 (89)	72 (22)	29.2 (98.8)
75% of Pull at Reduced Engine Speed—Speed setting 11										
232.5 (173.4)	15035 (66.88)	5.80 (9.34)	1421	1.5	0.399 (0.243)	17.31 (3.41)	0.046 (0.028)	185 (85)	70 (21)	29.2 (98.8)
50% of Pull at Reduced Engine Speed—Speed setting 11										
159.6 (119.0)	10010 (44.54)	5.98 (9.62)	1432	1.1	0.423 (0.257)	16.34 (3.22)	0.044 (0.027)	189 (87)	70 (21)	29.2 (98.8)

Location of tests: DLG TestService, GmbH, Max-Eyth-Weg 1, D-64823 Gross-Umstadt, Germany

Dates of tests: September to December 2019

Manufacturer: AGCO GmbH Johann Georg Fendt Str 4 D 87616 Marktobendorf Germany

CONSUMABLE Fluids: Fuel No. 2 Diesel Specific gravity converted to 60°/60°F (15°/15°C) 0.8408 Fuel weight 7.01 lbs/gal (0.840 kg/l) Diesel Exhaust Fluid (DEF) 32% aqueous urea solution DEF weight 9.071 lbs/gal (1.087 kg/l) Oil SAE 5W-30 API service classification CK-4 Transmission and hydraulic lubricant AGCO Permatran 821 XL fluid Front axle lubricant AGCO Permatran 821 XL fluid

ENGINE: Make MAN Diesel **Type** six cylinder vertical with turbocharger, air to air intercooler and D.E.F. (diesel exhaust fluid) exhaust treatment **Serial No.** 42254301225417 **Crankshaft** lengthwise **Rated engine speed** 1700 **Bore and stroke** 4.528 x 5.709" (115.0 mm x 145.0 mm) **Compression ratio** 20.0 to 1 **Displacement** 551 cu in (9037 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 prestrainer **Fuel cooler** radiator for pump return fuel **Exhaust** DOC (diesel oxidation catalyst)/DPF (diesel particulate filter) System and SCR (selective catalyst reduction) with a vertical muffler **Cooling medium temperature control** thermostat

CHASSIS: Type front wheel assist with independent drive to each axle **Serial No.** WAM96123T00F01032 **Tread width** rear 74.8" (1900 mm) to 88.6" (2250 mm) front 78.7" (2000 mm) to 88.6" (2250 mm) **Wheelbase** 124.0" (3150 mm) **Hydraulic control system** direct engine drive **Transmission** CVT. A combination of mechanical and hydrostatic sections allow an infinite speed adjustment. **Nominal travel speeds mph (km/h)** forward: 0-37 (0-60), reverse: 0-21 (0-33) **Clutch** a foot pedal controls the hydrostatic oil flow **Brakes** wet multiple disc hydraulically operated by foot pedal **Steering** hydrostatic **Power take-off** 1000 rpm at 1604 engine rpm **Unladen tractor mass** 28210 lb (12795 kg)

DRAWBAR PERFORMANCE

UNBALLASTED - FRONT DRIVE ENGAGED - 1700 ENGINE RPM 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)	D.E.F. Consumption lb/hp.hr (kg/kW.h)	Temp. °F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)	
Speed setting 5										
238.1 (177.6)	29350 (130.55)	3.04 (4.90)	1729	13.6	0.473 (0.288)	14.72 (2.90)	0.058 (0.035)	192 (89)	68 (20)	29.2 (98.8)
Speed setting 6										
282.6 (210.7)	28280 (125.80)	3.75 (6.03)	1692	6.2	0.426 (0.259)	16.37 (3.22)	0.051 (0.031)	183 (84)	66 (19)	29.2 (98.8)
Speed setting 7.5										
294.1 (219.3)	23875 (106.20)	4.62 (7.44)	1696	3.1	0.410 (0.249)	17.01 (3.35)	0.051 (0.031)	181 (83)	64 (18)	29.2 (98.8)
Speed setting 9										
297.4 (221.8)	20040 (89.15)	5.57 (8.96)	1690	2.4	0.403 (0.245)	17.31 (3.41)	0.049 (0.030)	181 (83)	63 (17)	29.2 (98.8)
Speed setting 11										
298.2 (222.4)	16240 (72.24)	6.89 (11.09)	1692	1.7	0.403 (0.245)	17.31 (3.41)	0.049 (0.030)	187 (86)	61 (16)	29.2 (98.8)
Speed setting 13										
297.2 (221.6)	13895 (61.82)	8.02 (12.91)	1693	1.4	0.404 (0.246)	17.26 (3.40)	0.049 (0.030)	185 (85)	63 (17)	29.2 (98.8)
Speed setting 15										
295.7 (220.5)	11915 (52.99)	9.31 (14.98)	1693	1.3	0.405 (0.247)	17.21 (3.39)	0.049 (0.030)	181 (83)	59 (15)	29.2 (98.8)
Speed setting 17										
293.5 (218.9)	10385 (46.19)	10.60 (17.06)	1697	1.2	0.410 (0.250)	16.99 (3.35)	0.051 (0.031)	189 (87)	61 (16)	29.2 (98.8)
Speed setting 19										
287.6 (214.5)	9235 (41.08)	11.68 (18.79)	1704	1.0	0.417 (0.254)	16.74 (3.30)	0.053 (0.032)	198 (92)	63 (17)	29.2 (98.8)

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 942 Gen 6 Vario with the Fendt 939 Gen 6 Vario module.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD test procedures. This tractor fell 9.9% short of meeting the manufacturer's 3 point lift capacity claim of 21500 lb (9750 kg) at ball ends. This tractor fell 8.3% short of meeting the manufacturer's hydraulic pump flow claim of 113.5 GPM (430 l/min) with 2 pumps. 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 summary of data from OECD Report No. **3195**, Nebraska Summary 1180, December 14, 2020.

Roger M. Hoy
Director

M.F. Kocher
P.J. Jasa
J.D. Luck
Board of Tractor Test Engineers

TRACTOR SOUND LEVEL WITH CAB

dB(A)

At no load at speed setting 4.7 mph (7.5 km/h)	69.5
Transport at speed setting 37 mph (60 km/h)	75.5
Bystander	--

Horizontal distances of drawbar hitch point behind rear wheel axis - 38.2 in (970 mm), 40.2 in (1020 mm), 44.1 in (1120 mm), 46.5 in (1180 mm)

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 900/65R42;***;12(80)
Two 710/60R34;***;12(80)
25.6 in (630 mm)
15995 lb (7255 kg)
12380 lb (5615 kg)
28375 lb (12870 kg)

HYDRAULIC PERFORMANCE

CATEGORY: 3

Quick Attach: No, Walterscheid quick couplers

Maximum force exerted through whole range: 18635 lbs (82.9 kN) (at 24" (610 mm) behind hitch points)
19380 lbs (86.2 kN) at ball ends

i) Sustained pressure at compensator cutoff: 2870 psi (198 bar)
three outlet sets combined

ii) Pump delivery rate at minimum pressure: 104.1 GPM (394.0 l/min)

iii) Pump delivery rate at maximum

hydraulic power: 97.3 GPM (368.2 l/min)

Delivery pressure: 2325 psi (160 bar)

Power: 131.9 HP (98.3 kW)

single outlet set

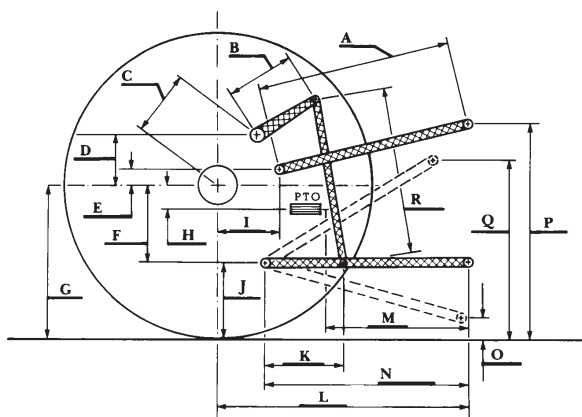
ii) Pump delivery rate at minimum pressure: 46.2 GPM (175.0 l/min)

iii) Pump delivery rate at maximum

hydraulic power: 44.6 GPM (168.8 l/min)

Delivery pressure: 2220 psi (153 bar)

Power: 57.8 HP (43.1 kW)



HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	mm
A	33.3	845
B	15.0	380
C	18.6	476
D	15.3	388
E	7.7	195
F	14.3	362
G	40.4	1025
H	2.4	60
I	21.3	540
J	26.1	663
K	24.8	630
L	54.0	1372
M	29.7	755
N	43.0	1093
O	9.1	230
P	53.1	1348
Q	43.9	1116
R	36.6	930

RECOMMENDED CITATION FORMAT:

NTTL.(2020). OECD tractor test 3195 for Fendt 939 Gen 6 Diesel.

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