

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

---

Nebraska Tractor Tests

Tractor Test and Power Museum, The Lester F.  
Larsen

---

2021

## Nebraska Summary 1218S: FENDT 724 VARIO GEN6

Nebraska Tractor Test Lab

University of Nebraska-Lincoln, tractortestlab@unl.edu

Follow this and additional works at: <https://digitalcommons.unl.edu/tractormuseumlit>



Part of the [Energy Systems Commons](#), [History of Science, Technology, and Medicine Commons](#), [Other Mechanical Engineering Commons](#), [Physical Sciences and Mathematics Commons](#), [Science and Mathematics Education Commons](#), and the [United States History Commons](#)

---

Nebraska Tractor Test Lab, "Nebraska Summary 1218S: FENDT 724 VARIO GEN6" (2021). *Nebraska Tractor Tests*. 3514.

<https://digitalcommons.unl.edu/tractormuseumlit/3514>

This Article is brought to you for free and open access by the Tractor Test and Power Museum, The Lester F. Larsen at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Nebraska Tractor Tests by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

# SUMMARY OF OECD TEST 3314 - NEBRASKA SUMMARY 1218 FENDT 724 VARIO GEN6 DIESEL

## 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)	
<b>MAXIMUM POWER AND FUEL CONSUMPTION</b>						
<b>Rated Engine Speed—(PTO speed—1104 rpm)</b>						
204.5 (152.5)	2100	12.28 (46.49)	0.416 (0.253)	16.65 (3.28)	0.34 (1.29)	
<b>Standard Power Take-off Speed (1000 rpm)</b>						
217.8 (162.4)	1902	12.66 (47.91)	0.402 (0.244)	17.20 (3.39)	0.41 (1.54)	
<b>Maximum Power (1 hour)</b>						
221.3 (165.0)	1700	12.18 (46.11)	0.381 (0.231)	18.17 (3.58)	0.33 (1.26)	

## VARYING POWER AND FUEL CONSUMPTION

204.5 (152.5)	2100	12.28 (46.49)	0.416 (0.253)	16.65 (3.28)	0.34 (1.29)	Air temperature
175.8 (131.1)	2123	10.89 (41.25)	0.429 (0.261)	16.13 (3.18)	0.30 (1.13)	70°F (21°C)
132.9 (99.1)	2140	8.94 (33.86)	0.465 (0.283)	14.86 (2.93)	0.21 (0.80)	Relative humidity
89.3 (66.6)	2159	6.72 (25.42)	0.519 (0.316)	13.30 (2.62)	0.08 (0.31)	49%
45.2 (33.7)	2180	4.56 (17.25)	0.698 (0.424)	9.90 (1.95)	0.07 (0.27)	Barometer
--	2204	2.54 (9.60)	--	--	0.00 (0.00)	30.2" Hg (102.4 kPa)

Maximum torque - 735 lb.-ft. (997 Nm) at 1400 rpm  
 Maximum torque rise - 43.7%  
 Torque rise at 1700 engine rpm - 34%  
 Power increase at 1700 engine rpm - 8.2%

## 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)	D.E.F. Consumption lb/hp.hr (kg/kW.h)	Temp. °F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)	
<b>Power at Rated Engine Speed—Speed setting Low range 9</b>										
175.9 (131.2)	11810 (52.53)	5.59 (8.99)	2094	3.7	0.483 (0.294)	14.06 (2.77)	0.016 (0.010)	201 (94)	77 (25)	29.5 (99.9)
<b>75% of Pull at Rated Engine Speed—Speed setting Low range 9</b>										
136.8 (102.0)	8860 (39.42)	5.79 (9.31)	2128	2.5	0.482 (0.293)	14.11 (2.78)	0.015 (0.009)	198 (92)	77 (25)	29.5 (99.9)
<b>50% of Pull at Rated Engine Speed—Speed setting Low range 9</b>										
92.8 (69.2)	5890 (26.21)	5.91 (9.50)	2148	2.0	0.578 (0.351)	11.75 (2.31)	0.015 (0.009)	198 (92)	77 (25)	29.5 (99.9)
<b>75% of Pull at Reduced Engine Speed—Speed setting Low range 11</b>										
137.3 (102.4)	8850 (39.36)	5.82 (9.36)	1776	2.5	0.436 (0.265)	15.58 (3.07)	0.016 (0.010)	198 (92)	77 (25)	29.5 (99.9)
<b>50% of Pull at Reduced Engine Speed—Speed setting Low range 11</b>										
93.1 (69.4)	5900 (26.24)	5.92 (9.52)	1779	1.9	0.500 (0.304)	13.60 (2.68)	0.015 (0.009)	198 (92)	75 (24)	29.5 (99.9)

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

**Dates of tests:** July to September, 2021

**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)** 0.8303  
**Fuel weight** 6.93 lbs/gal (0.829 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 CJ-4 Transmission and hydraulic lubricant** Extra Trans/STOU fluid  
**Front axle lubricant** Extra Trans/STOU fluid

**ENGINE: Make** Deutz Diesel **Type** six cylinder vertical with turbocharger, air to air intercooler and D.E.F. (diesel exhaust fluid) exhaust treatment  
**Serial No.** 12605656 **Crankshaft** lengthwise **Rated engine speed** 2100 **Bore and stroke** 3.976" x 4.961" (101.0 mm x 126.0 mm) **Compression ratio** 18.0 to 1 **Displacement** 369 cu in (6056 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 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 and variable speed fan

**CHASSIS: Type** front wheel assist **Serial No.** WAM76521H00F01072 **Tread width** rear 60.0" (1524 mm) to 88.0" (2235 mm) front 60.0" (1524 mm) to 88.0" (2235 mm) **Wheelbase** 109.6" (2783 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 0-17 (0-28), high range 0-31 (0-50) reverse: Low range 0-11 (0-17), high range 0-20 (0-33) **Clutch** a foot pedal controls the hydrostatic oil flow **Brakes** wet multiple disc hydraulically operated by two foot pedals that can be locked together **Steering** hydrostatic **Power take-off** 1000 rpm at 1903 engine rpm **Unladen tractor mass** 18365 lb (8330 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)	Hp.hr/gal (kW.l/l)	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 Low range 6										
170.3 (127.0)	19695 (87.60)	3.24 (5.22)	1919	11.8	0.494 (0.301)	13.78 (2.72)	0.023 (0.014)	194 (90)	70 (21)	29.5 (99.9)
Speed setting Low range 7.5										
169.5 (126.4)	17495 (77.82)	3.63 (5.85)	1701	7.5	0.455 (0.276)	14.95 (2.94)	0.021 (0.013)	201 (94)	79 (26)	29.6 (100.2)
Speed setting Low range 9										
173.5 (129.4)	14630 (65.08)	4.45 (7.16)	1701	5.0	0.446 (0.271)	15.20 (2.99)	0.018 (0.011)	203 (95)	82 (28)	29.6 (100.3)
Speed setting Low range 11										
172.5 (128.6)	11785 (52.42)	5.49 (8.83)	1704	2.5	0.436 (0.266)	15.61 (3.08)	0.020 (0.012)	205 (96)	72 (22)	29.6 (100.3)
Speed setting Low range 13										
173.1 (129.1)	10195 (45.34)	6.37 (10.25)	1702	2.1	0.441 (0.269)	15.43 (3.04)	0.020 (0.012)	205 (96)	77 (25)	29.6 (100.3)
Speed setting Low range 15										
170.7 (127.3)	8665 (38.54)	7.39 (11.89)	1700	1.7	0.462 (0.281)	14.72 (2.90)	0.018 (0.011)	205 (96)	75 (24)	29.6 (100.3)
Speed setting Low range 17										
171.1 (127.6)	7635 (33.97)	8.40 (13.53)	1704	1.3	0.433 (0.264)	15.71 (3.10)	0.016 (0.010)	205 (96)	73 (23)	29.6 (100.3)
Speed setting Low range 19										
175.3 (130.7)	7135 (31.74)	9.21 (14.82)	1697	1.1	0.430 (0.262)	15.84 (3.12)	0.018 (0.011)	207 (97)	73 (23)	29.6 (100.3)
Speed setting High range 11										
160.8 (119.9)	11210 (49.86)	5.38 (8.66)	1701	2.8	0.485 (0.295)	14.01 (2.76)	0.021 (0.013)	203 (95)	79 (26)	29.6 (100.3)
Speed setting High range 13										
168.7 (125.8)	9905 (44.06)	6.39 (10.28)	1703	2.4	0.448 (0.272)	15.18 (2.99)	0.021 (0.013)	205 (96)	75 (24)	29.6 (100.3)
Speed setting High range 15										
172.7 (128.8)	8795 (39.13)	7.36 (11.85)	1702	1.9	0.431 (0.262)	15.79 (3.11)	0.018 (0.011)	205 (96)	77 (25)	29.6 (100.3)
Speed setting High range 17										
169.4 (126.3)	7550 (33.58)	8.41 (13.54)	1701	1.4	0.426 (0.259)	15.99 (3.15)	0.020 (0.012)	205 (96)	75 (24)	29.6 (100.3)
Speed setting High range 19										
180.0 (134.2)	7120 (31.68)	9.48 (15.25)	1707	1.1	0.440 (0.267)	15.48 (3.05)	0.016 (0.010)	205 (96)	73 (23)	29.6 (100.3)

**REPAIRS AND ADJUSTMENTS:** No repairs or adjustments.

**REMARKS:** All test results were determined from observed data obtained in accordance with official OECD test procedures. This tractor fell 2.6% short meeting the manufacturer's optional remote hydraulic flow claim of 51.0 GPM (193 l/min). This tractor fell 21.0% short meeting the manufacturer's 3 point lift claim at ball ends of 19310 lbs (8759 kg). The manufacturer's remote hydraulic flow claim of 40 GPM (152 l/h) 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 summary of data from OECD Report No. **3314**, Nebraska Summary 1218, December 20, 2022.

Roger M. Hoy  
Director

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

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive	
	Engaged dB(A)	Disengaged dB(A)
At no load at speed setting 4.7 mph (7.5 km/h)	64.5	64.5
Transport speed - at speed setting 31 mph (50 km/h)		67.0
Bystander		--

Horizontal distances of drawbar hitch point behind rear wheel axis - 35.4 in (900 mm), 39.4 in (1000 mm)  
41.3 in (1050 mm), 45.3 in (1150 mm), 47.2 in (1200 mm), 51.2 in (1300 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 710/70R38;\*\*\*;12(80)  
Two 600/65R28;\*\*\*;12(80)  
22.8 in (580 mm)  
11445 lb (5190 kg)  
7085 lb (3215 kg)  
18530 lb (8405 kg)

## HYDRAULIC PERFORMANCE

CATEGORY: 3

Quick Attach: No

Lift cylinders:

Maximum force exerted through whole range:

on the frame: 14655 lbs (65.2 kN)

at hitch points: 15960 lbs (71.0 kN)

i) Sustained pressure at compensator cutoff: 2830 psi (195 bar)

**three outlet sets combined**

ii) Pump delivery rate at minimum pressure: 49.7 GPM (188.2 l/min)

iii) Pump delivery rate at maximum

hydraulic power: 47.7 GPM (180.7 l/min)

Delivery pressure: 2515 psi (173 bar)

Power: 70.0 HP (52.2 kW)

**single outlet set**

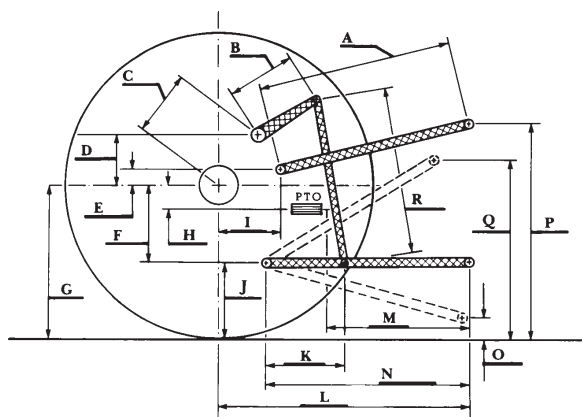
ii) Pump delivery rate at minimum pressure: 26.8 GPM (101.4 l/min)

iii) Pump delivery rate at maximum

hydraulic power: 26.3 GPM (99.7 l/min)

Delivery pressure: 2320 psi (160 bar)

Power: 35.7 HP (26.6 kW)



HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	mm
A	31.7	805
B	14.8	375
C	16.5	419
D	14.0	355
E	8.8	223
F	10.9	276
G	36.4	925
H	1.6	40
I	18.5	471
J	25.5	649
K	26.3	667
L	49.1	1247
M	25.5	647
N	41.6	1057
O	9.1	230
P	52.5	1334
Q	42.2	1072
R	31.3	795

## RECOMMENDED CITATION FORMAT:

NTTL.(2022). OECD tractor test 3314 for Fendt 724 Vario Gen6 Diesel.

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