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January 1996

Test 1718: Agco Allis 9815 Diesel 18-Speed (Chassis S/N 902001PL and Higher)

Nebraska Tractor Test Lab

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NEBRASKA OECD TRACTOR TEST 1718—SUMMARY 213

AGCO ALLIS 9815 DIESEL

18 SPEED

(CHASSIS SERIAL NUMBERS 902001PL AND HIGHER)

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—1055 rpm)					
216.20 (161.22)	2200	13.64 (51.65)	0.443 (0.269)	15.85 (3.12)	
Standard Power Take-off Speed (1000 rpm)					
220.09 (164.12)	2086	13.31 (50.37)	0.424 (0.258)	16.54 (3.26)	
Maximum Power (2 hours)					
229.21 (170.92)	1800	12.73 (48.20)	0.390 (0.237)	18.00 (3.55)	

VARYING POWER AND FUEL CONSUMPTION

216.20 (161.22)	2200	13.64 (51.65)	0.443 (0.269)	15.85 (3.12)	Air temperature
190.59 (142.12)	2281	12.62 (47.78)	0.464 (0.282)	15.10 (2.97)	75°F (24°C)
144.51 (107.76)	2310	10.35 (39.19)	0.502 (0.306)	13.96 (2.75)	Relative humidity
97.73 (72.88)	2340	8.13 (30.77)	0.583 (0.355)	12.02 (2.37)	40%
49.12 (36.63)	2364	6.25 (23.65)	0.892 (0.542)	7.86 (1.55)	Barometer
1.09 (0.81)	2391	4.11 (15.55)	26.398 (16.057)	0.27 (0.05)	28.78"Hg (97.46 kPa)

Maximum Torque 730 lb.-ft. (989 Nm) at 1500 rpm

Maximum Torque Rise 41.4%

Torque rise at 1800 rpm 30%

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)	Temp. °F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
Maximum Power—11th Gear									
186.16 (138.82)	8971 (39.90)	7.78 (12.52)	2195	2.88	0.516 (0.314)	13.58 (2.67)	186 (86)	52 (11)	29.04 (98.34)
75% of Pull at Maximum Power—11th Gear									
147.27 (109.82)	6698 (29.79)	8.25 (13.27)	2308	1.97	0.568 (0.345)	12.35 (2.43)	185 (85)	53 (12)	29.03 (98.31)
50% of Pull at Maximum Power—11th Gear									
99.92 (74.51)	4459 (19.83)	8.40 (13.53)	2337	1.42	0.671 (0.408)	10.46 (2.06)	183 (84)	55 (13)	29.01 (98.24)
75% of Pull at Reduced Engine Speed—13th Gear									
147.32 (109.85)	6684 (29.73)	8.27 (13.30)	1726	1.97	0.462 (0.281)	15.17 (2.99)	184 (84)	54 (12)	29.02 (98.27)
50% of Pull at Reduced Engine Speed—13th Gear									
100.07 (74.62)	4465 (19.86)	8.40 (13.53)	1743	1.42	0.519 (0.316)	13.52 (2.66)	182 (83)	55 (13)	29.01 (98.24)

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

Dates of Test: October 16-29, 1996

Manufacturer: AGCO Corporation, Duluth,
Georgia 30136

FUEL OIL and TIME: Fuel No. 2 Diesel Cetane No. 50.6 Specific gravity converted to 60°/60° F (15°/15°C) 0.8422 Fuel weight 7.012 lbs/gal (0.840 kg/l) Oil SAE 15W-40 API service classification CE-II, CD To motor 5.708 gal (21.607 l) Drained from motor 5.540 gal (20.973 l) Transmission and hydraulic lubricant AGCO Power Fluid 821XL Front axle lubricant AGCO Gear Lube 715 SAE 80W-90 Total time engine was operated 21.0 hours.

ENGINE: Make Detroit Diesel series 40 Diesel Type six cylinder vertical with turbocharger and air to air intercooler Serial No. *WJ3696W0995704* Crankshaft lengthwise Rated engine speed 2200 Bore and stroke (as specified) 4.59" × 5.35" (116.6 mm × 135.9 mm) Compression ratio 15.8 to 1 Displacement 531 cu in (8700 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 final drive oil, radiator for transmission oil Fuel filter two paper elements Muffler underhood Exhaust vertical Cooling medium temperature control thermostat.

ENGINE OPERATING PARAMETERS: Fuel rate: 92.3-98.4 lb/h (41.9-44.6 kg/h) High idle: 2325-2425 rpm Turbo boost nominal 21.0 psi (140 kPa) as measured 21.2 psi (146 kPa)

CHASSIS: Type front wheel assist Serial No. 902325PTread width rear 64.1" (1560 mm) to 126.6" (3216 mm) front 58.7" (1490 mm) to 89.6" (2276 mm) Wheel base 115.0" (2921 mm) Hydraulic control system direct engine drive Transmission selective gear fixed ratio with full range operator controlled powershift Nominal travel speeds mph (km/h) first 1.64 (2.63) second 1.94 (3.14) third 2.22 (3.54) fourth 2.50 (4.02) fifth 3.00 (4.83) sixth 3.52 (5.58) seventh 4.11 (6.63) eighth 4.89 (7.89) ninth 5.70 (9.18) tenth 6.72 (10.83) eleventh 7.79 (12.55) twelfth 9.16 (14.76) thirteenth 10.64 (17.12) fourteenth 12.54 (20.11) fifteenth 14.60 (23.47) sixteenth 17.09 (27.48) seventeenth 20.32 (32.71) eighteenth 23.79 (38.28) reverse 1.90 (3.06), 2.33 (3.75), 2.70 (4.34), 3.11 (5.00), 3.59 (5.80), 4.24 (6.84), 5.10 (8.20), 5.92 (9.53), 7.03 (11.32) Clutch multiple wet disc electro-hydraulically actuated by foot pedal Brakes wet multiple disc hydraulically actuated by two foot pedals which can be locked together Steering hydrostatic Power take-

**DRAWBAR PERFORMANCE (UNBALLASTED TRACTOR)
MAXIMUM POWER IN SELECTED GEARS**

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)
6th Gear									
165.23 (123.21)	19440 (86.47)	3.19 (5.13)	2256	13.46	0.589 (0.358)	11.91 (2.35)	184 (84)	44 (7)	29.06 (98.41)
7th Gear									
179.48 (133.84)	17989 (80.02)	3.74 (6.03)	2143	9.02	0.528 (0.321)	13.27 (2.61)	184 (84)	48 (9)	29.06 (98.41)
8th Gear									
186.59 (139.14)	16855 (74.97)	4.15 (6.68)	1971	7.26	0.489 (0.297)	14.35 (2.83)	186 (85)	50 (10)	29.06 (98.41)
9th Gear									
191.17 (142.56)	15218 (67.69)	4.71 (7.58)	1881	5.68	0.471 (0.287)	14.89 (2.93)	186 (86)	51 (11)	29.06 (98.41)
10th Gear									
198.60 (148.09)	14101 (62.72)	5.28 (8.50)	1803	4.99	0.449 (0.273)	15.60 (3.07)	187 (86)	52 (11)	29.05 (98.37)
11th Gear									
200.58 (149.57)	11939 (53.11)	6.30 (10.14)	1799	3.95	0.446 (0.271)	15.72 (3.10)	186 (86)	52 (11)	29.05 (98.37)
12th Gear									
198.13 (147.74)	9959 (44.30)	7.46 (12.01)	1905	3.06	0.451 (0.275)	15.54 (3.06)	187 (86)	53 (12)	29.04 (98.34)
13th Gear									
197.54 (147.31)	8620 (38.34)	8.59 (13.83)	1806	2.70	0.455 (0.277)	15.42 (3.04)	187 (86)	53 (12)	29.03 (98.31)

**DRAWBAR PERFORMANCE (BALLASTED TRACTOR)
MAXIMUM POWER IN SELECTED GEARS**

4th Gear									
162.41 (121.11)	25739 (114.49)	2.37 (3.81)	2273	11.39	0.578 (0.352)	12.12 (2.39)	185 (85)	58 (14)	28.68 (97.12)
5th Gear									
179.77 (134.05)	23813 (105.92)	2.83 (4.56)	2193	7.09	0.530 (0.323)	13.22 (2.60)	186 (86)	60 (16)	28.69 (97.16)
6th Gear									
187.75 (140.00)	23000 (102.31)	3.06 (4.93)	2013	6.43	0.494 (0.301)	14.19 (2.80)	188 (87)	62 (17)	28.69 (97.16)
7th Gear									
195.02 (145.43)	21944 (97.61)	3.33 (5.36)	1848	5.76	0.461 (0.280)	15.21 (3.00)	194 (90)	64 (18)	28.69 (97.16)
8th Gear									
195.88 (146.07)	18837 (83.79)	3.90 (6.28)	1803	4.39	0.457 (0.278)	15.34 (3.02)	195 (90)	64 (18)	28.69 (97.16)
9th Gear									
196.18 (146.29)	15935 (70.88)	4.62 (7.43)	1806	3.43	0.455 (0.277)	15.42 (3.04)	194 (90)	66 (19)	28.69 (97.16)
10th Gear									
199.84 (149.02)	13941 (62.01)	5.38 (8.65)	1802	2.89	0.446 (0.271)	15.72 (3.10)	192 (89)	66 (19)	28.69 (97.16)
11th Gear									
200.31 (149.37)	11745 (52.24)	6.40 (10.29)	1804	2.35	0.447 (0.272)	15.70 (3.09)	194 (90)	66 (19)	28.69 (97.16)
12th Gear									
195.46 (145.75)	9785 (43.52)	7.49 (12.06)	1798	2.08	0.457 (0.278)	15.33 (3.02)	194 (90)	66 (19)	28.69 (97.16)
13th Gear									
193.53 (144.32)	8399 (37.36)	8.64 (13.91)	1806	1.71	0.464 (0.283)	15.10 (2.97)	190 (88)	66 (19)	28.69 (97.16)

off 1000 rpm at 2084 engine rpm **Unladen tractor**
mass 19610 lb (8894 kg)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments

NOTE: The performance figures on this report apply to tractor chassis serial numbers 902001PL and higher.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. For the maximum power tests, the fuel temperature at the injection pump return was maintained at 143° F (62°C). The pull in 4th gear (ballasted tractor) was limited to avoid excessive tractor bouncing. The performance results on this summary were taken from OECD tests conducted under the Code II Restricted Standard Test Code procedure.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1718**, Summary 213, November 26, 1996.

LOUIS I. LEVITICUS
Engineer-in-Charge

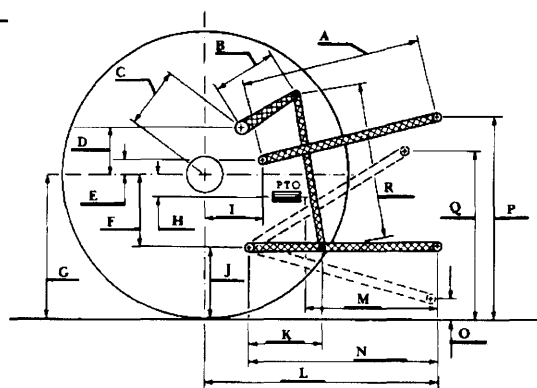
L.L. BASHFORD
G. J. HOFFMAN
M.F. KOCHER
Board of Tractor Test Engineers

TRACTOR SOUND LEVEL WITH CAB**dB(A)**

At 75% load in 8th Gear	77.9
Bystander in 18th Gear	87.1

TIRES, BALLAST AND WEIGHT

	With Ballast	Without Ballast
Rear Tires —No., size, ply & psi (kPa)	Four 20.8R42; **, 14 (95)	Two 20.8R42; **, 20 (140)
Ballast —Liquid (total)	2294 lb (1040 kg)	None
—Duals (total)	1940 lb (880 kg)	None
Front Tires —No., size, ply & psi (kPa)	Two 16.9R30; **, 24 (165)	Two 16.9R30; **, 24 (165)
Ballast —Liquid (total)	None	None
—Cast Iron (total)	1730 lb (785 kg)	None
Height of Drawbar	21.5 in (540 mm)	21.0 in (525 mm)
Static Weight with Operator —Rear	16432 lb (7453 kg)	12674 lb (5749 kg)
—Front	9306 lb (4221 kg)	7100 lb (3220 kg)
—Total	25738 lb (11674 kg)	19774 lb (8969 kg)

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

CATEGORY: III

Quick Attach: None

Maximum Force Exerted Through Whole Range:	13113 lbs (58.3 kN)
i) Opening pressure of relief valve:	NA
Sustained pressure with pump stalled:	2760 psi (190 bar)
ii) Pump delivery rate at minimum pressure and rated engine speed:	27.8 GPM (105.2 l/min)
iii) Pump delivery rate at maximum hydraulic power:	25.1 GPM (95.0 l/min)
Delivery pressure:	2400 psi (165 bar)
Power:	35.1 HP (26.2 kW)

HITCH DIMENSIONS AS TESTED—NO LOAD

	OECD test		SAE test	
	inch	mm	inch	mm
A	26.8	679	27.8	705
B	23.7	603	23.7	603
C	19.8	503	19.8	503
D	18.0	457	18.0	457
E	11.4	289	11.4	289
F	10.6	269	10.6	269
G	36.2	920	36.2	920
H	3.5	89	3.5	89
I	19.4	492	19.4	492
J	25.6	651	25.6	651
K	26.6	676	26.6	676
L	47.0	1195	47.0	1195
M	25.5	647	25.5	649
N	36.5	928	36.5	928
O	9.0	229	8.0	203
P	52.9	1343	47.9	1217
Q	42.0	1067	38.5	978
R	41.0	1041	42.6	1082

THREE POINT HITCH PERFORMANCE (SAE Static Test)

Observed Maximum Pressure psi. (bar)	2650 (183)				
Location	lift cylinder				
Hydraulic oil temperature °F (°C)	140 (60)				
Location	hydraulic pump				
Category	III				
Quick attach	none				
Hitch point distance to ground level in.	8.0	16.0	24.0	32.0	40.0
to ground level (mm)	(203)	(406)	(610)	(813)	(1016)
Lift force on frame lb.	19548	16128	16668	16830	16812
Lift force on frame (kN)	(87.0)	(71.7)	(74.1)	(74.9)	(74.8)

**AGCO ALLIS 9815 DIESEL**

Agricultural Research Division
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