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January 1998

Test 1752: Agco Allis 9745 Diesel 18-Speed

Nebraska Tractor Test Lab

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NEBRASKA OECD TRACTOR TEST 1752—SUMMARY 270

AGCO ALLIS 9745 DIESEL

18 SPEED

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—1052 rpm)					
146.00 (108.87)	2200	9.39 (35.54)	0.455 (0.277)	15.55 (3.06)	
Standard Power Take-off speed (1000 rpm)					
152.21 (113.50)	2092	9.43 (35.69)	0.439 (0.267)	16.14 (3.18)	
Maximum Power (2 hours)					
157.90 (117.75)	1950	9.17 (34.70)	0.411 (0.250)	17.23 (3.39)	

VARYING POWER AND FUEL CONSUMPTION

146.00 (108.87)	2200	9.39 (35.54)	0.455 (0.277)	15.55 (3.06)	Air temperature
127.78 (93.28)	2262	8.68 (32.87)	0.481 (0.293)	14.71 (2.90)	80°F (26°C)
97.48 (72.69)	2301	7.16 (27.10)	0.520 (0.316)	13.62 (2.68)	Relative humidity
65.93 (49.16)	2336	5.55 (21.01)	0.596 (0.363)	11.88 (2.34)	28%
33.23 (24.78)	2355	4.15 (15.71)	0.885 (0.538)	8.00 (1.58)	Barometer
1.08 (0.81)	2372	2.88 (10.89)	8.896 (11.487)	0.37 (0.08)	28.88"Hg (97.80 kPa)

Maximum Torque 498 lb.-ft. (675 Nm) at 1201 rpm

Maximum Torque Rise 42.7%

Torque rise at 1800 engine rpm - 28%

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)	Hp-hr/gal (kW-h/l)	Temp. °F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
Maximum Power—10th Gear									
131.75 (98.25)	8480 (37.72)	5.83 (9.38)	2198	4.28	0.509 (0.310)	13.91 (2.74)	191 (88)	60 (16)	29.10 (98.54)
75% of Pull at Maximum Power—10th Gear									
103.46 (77.15)	6363 (28.30)	6.10 (9.81)	2272	3.16	0.560 (0.341)	12.64 (2.49)	189 (87)	64 (18)	28.10 (98.54)
50% of Pull at Maximum Power—10th Gear									
71.20 (53.10)	4244 (18.88)	6.29 (10.13)	2322	2.11	0.625 (0.380)	11.33 (2.23)	184 (84)	65 (18)	28.11 (98.58)
75% of Pull at Reduced Engine Speed—12th Gear									
103.21 (76.97)	6370 (28.33)	6.08 (9.78)	1755	3.16	0.463 (0.282)	15.29 (3.01)	185 (85)	64 (18)	28.10 (98.54)
50% of Pull at Reduced Engine Speed—12th Gear									
71.33 (53.19)	4254 (18.92)	6.29 (10.12)	1798	2.11	0.512 (0.311)	13.83 (2.72)	180 (82)	65 (18)	28.11 (98.58)

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

Dates of Test: October 6-10, 1998

Manufacturer: AGCO Corporation, Duluth, Georgia 30096

FUEL OIL AND TIME: Fuel No. 2 Diesel Specific gravity converted to 60°/60° F (15°/15°C) 0.8506 Fuel weight 7.082 lbs/gal (0.849 kg/l) Oil SAE 15W-40 API service classification CF-4/CE/CD-II Transmission and hydraulic lubricant AGCO Power Fluid 821XL Front axle lubricant AGCO Gear Lube 715 SAE 80W90 Total time engine was operated 23.0 hours.

ENGINE: Make Sisu Diesel Type six cylinder vertical with turbocharger and intercooler Serial No. 2H 09847 Crankshaft lengthwise Rated engine speed 2200 Bore and stroke 4.251" × 4.72" (108.0 mm × 120.0 mm) Compression ratio 16.5 to 1 Displacement 402 cu in (6600 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 and water separator Muffler vertical Cooling medium temperature control two thermostats and variable speed fan.

ENGINE OPERATING PARAMETERS: fuel rate: 63.7-69.0 lb/h (28.9-31.3 kg/h) high idle: 2300-2400 rpm Turbo boost nominal 18.0-22.0 psi (124-152 kPa) as measured 18.6 psi (128 kPa)

CHASSIS: Type front wheel assist Serial No. G 177004 Tread width rear 62.1" (1577 mm) to 107.6" (2734 mm) front 60.3" (1532 mm) to 88.3" (2244 mm) Wheel base 117.5" (2985 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 1.44 (2.31) second 1.86 (3.00) third 2.40 (3.86) fourth 2.73 (4.39) fifth 3.10 (4.99) sixth 3.53 (5.68) seventh 3.99 (6.42) eighth 4.55 (7.32) ninth 5.16 (8.30) tenth 5.88 (9.47) eleventh 6.67 (10.73) twelfth 7.60 (12.23) thirteenth 8.60 (13.84) fourteenth 9.82 (15.80) fifteenth 11.10 (17.86) sixteenth 14.37 (23.13) seventeenth 18.54 (29.84) eighteenth 23.97 (38.57) reverse 1.44 (2.32), 2.40 (3.86), 2.74 (4.40), 3.98 (6.41), 4.55 (7.33), 6.66 (10.72) 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-off 540 rpm at 1993 engine rpm or 1000 rpm at 2091 engine rpm Unladen tractor mass 16760 lb (7602 kg).

DRAWBAR PERFORMANCE (Unballasted—Front Drive Engaged)
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)	Temp. °F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)	
5th Gear									
112.06 (83.56)	15017 (66.80)	2.80 (4.50)	2243	14.44	0.585 (0.356)	12.10 (2.38)	186 (86)	50 (10)	29.10 (98.54)
6th Gear									
123.15 (91.83)	14175 (63.05)	3.26 (5.24)	2211	11.28	0.545 (0.331)	13.00 (2.56)	187 (86)	55 (13)	29.10 (98.54)
7th Gear									
129.37 (96.47)	13838 (61.55)	3.51 (5.64)	2077	10.62	0.515 (0.313)	13.75 (2.71)	189 (87)	56 (13)	29.10 (98.54)
8th Gear									
132.75 (98.99)	13006 (57.85)	3.83 (6.16)	1953	8.50	0.486 (0.295)	14.58 (2.87)	190 (88)	57 (14)	29.10 (98.54)
9th Gear									
135.36 (100.94)	11444 (50.90)	4.44 (7.14)	1953	6.60	0.476 (0.289)	14.88 (2.93)	191 (88)	58 (14)	29.10 (98.54)
10th Gear									
137.41 (102.47)	10080 (44.84)	5.11 (8.23)	1952	5.44	0.469 (0.286)	15.09 (2.97)	191 (88)	59 (15)	29.10 (98.54)
11th Gear									
135.64 (101.15)	8676 (38.59)	5.86 (9.44)	1956	4.36	0.479 (0.292)	14.78 (2.91)	192 (89)	59 (15)	29.10 (98.54)
12th Gear									
138.18 (103.04)	7724 (34.36)	6.71 (10.80)	1954	3.85	0.467 (0.284)	15.18 (2.99)	191 (88)	60 (16)	29.10 (98.54)
13th Gear									
136.78 (102.00)	6674 (29.69)	7.69 (12.37)	1962	3.25	0.475 (0.289)	14.92 (2.94)	191 (88)	60 (16)	29.10 (98.54)
14th Gear									
135.88 (101.32)	5809 (25.84)	8.77 (14.12)	1957	2.81	0.477 (0.290)	14.84 (2.92)	191 (88)	60 (16)	29.10 (98.54)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

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 162° F (72° 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 test code procedure.

We, the undersigned, certify that this is a true and correct report of official Tractor No. **1752**, Summary 270, November 24, 1998.

LEONARD L. BASHFORD
 Director

M.F. KOCHER
 R.D. GRISSO
 G.J. HOFFMAN
 Board of Tractor Test Engineers

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive	
	Disengaged dB(A)	Engaged dB(A)
At 75% load in 8th Gear	74.1	74.9
Bystander	—	—

TIRES, BALLAST AND WEIGHT	With Ballast	Without Ballast
Rear Tires —No., size, ply & psi (kPa)	Four 18.4R42; ***, 12(85)	Two 18.4R42; ***, 20(140)
Ballast —Duals (total)	1720 lb (780 kg)	None
—Test Equip (total)	120 lb (54 kg)	None
Front Tires —No., size, ply & psi (kPa)	Two 14.9R30; ***, 22(150)	Two 14.9R30; ***, 22(150)
Ballast —Liquid (total)	None	None
—Test Equip (total)	40 lb (18 kg)	None
Height of Drawbar	20.0 in (510 mm)	19.5 in (495 mm)
Static Weight with Operator —Rear	12855 lb (5831 kg)	11015 lb (4996 kg)
—Front	5960 lb (2703 kg)	5920 lb (2685 kg)
—Total	18815 lb (8534 kg)	16935 lb (7681 kg)

DRAWBAR PERFORMANCE(Ballasted—Front Drive Disengaged)
FUEL CONSUMPTION CHARACTERISTICS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption		Temp. °F (°C)		Barom. inch Hg (kPa)
					lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	cool- ing med	Air dry bulb	
Maximum Power—10th Gear									
129.45 (96.53)	8349 (37.14)	5.81 (9.36)	2199	3.93	0.517 (0.314)	13.70 (2.70)	191 (88)	70 (21)	28.95 (98.04)
75% of Pull at Maximum Power—10th Gear									
101.44 (75.65)	6253 (27.81)	6.08 (9.79)	2277	2.90	0.570 (0.347)	12.42 (2.45)	191 (88)	74 (23)	28.90 (97.87)
50% of Pull at Maximum Power—10th Gear									
69.69 (51.97)	4168 (18.54)	6.27 (10.09)	2326	2.20	0.637 (0.387)	11.13 (2.19)	184 (84)	74 (23)	28.90 (97.87)
75% of Pull at Reduced Engine Speed—12th Gear									
101.51 (75.69)	6255 (27.82)	6.09 (9.79)	1765	2.90	0.468 (0.285)	15.12 (2.98)	186 (85)	74 (23)	28.90 (97.87)
50% of Pull at Reduced Engine Speed—12th Gear									
69.54 (51.86)	4183 (18.61)	6.23 (10.03)	1793	2.20	0.516 (0.314)	13.73 (2.70)	181 (83)	74 (23)	28.90 (97.87)

MAXIMUM POWER IN SELECTED GEARS

5th Gear									
109.85 (81.91)	14816 (65.90)	2.78 (4.47)	2244	14.43	0.591 (0.359)	11.99 (2.36)	187 (86)	57 (14)	28.98 (98.14)
6th Gear									
124.32 (92.70)	14116 (62.79)	3.30 (5.32)	2216	9.67	0.537 (0.327)	13.18 (2.60)	190 (88)	59 (15)	28.98 (98.14)
7th Gear									
131.35 (97.94)	13196 (58.70)	3.73 (6.01)	2155	7.36	0.510 (0.310)	13.88 (2.73)	190 (88)	63 (17)	28.99 (98.17)
8th Gear									
133.88 (99.83)	13029 (57.96)	3.85 (6.20)	1958	7.52	0.482 (0.293)	14.70 (2.90)	191 (88)	64 (18)	28.97 (98.10)
9th Gear									
135.88 (101.32)	11447 (50.92)	4.45 (7.16)	1956	5.84	0.474 (0.288)	14.94 (2.94)	193 (89)	67 (19)	28.96 (98.07)
10th Gear									
136.58 (101.85)	9994 (44.45)	5.13 (8.25)	1956	4.77	0.472 (0.287)	15.02 (2.96)	193 (89)	69 (21)	28.95 (98.04)
11th Gear									
134.93 (100.62)	8639 (38.43)	5.86 (9.43)	1959	3.93	0.477 (0.290)	14.85 (2.93)	194 (90)	73 (23)	28.94 (98.00)
12th Gear									
137.61 (102.61)	7687 (34.19)	6.71 (10.80)	1960	3.50	0.471 (0.287)	15.02 (2.96)	193 (89)	73 (23)	28.93 (97.97)
13th Gear									
136.12 (101.50)	6676 (29.69)	7.65 (12.31)	1960	2.98	0.475 (0.289)	14.92 (2.94)	194 (90)	73 (23)	28.92 (97.93)
14th Gear									
134.57 (100.35)	5754 (25.60)	8.77 (14.11)	1964	2.63	0.482 (0.293)	14.70 (2.90)	194 (90)	74 (23)	28.90 (97.87)

DRAWBAR PERFORMANCE(Ballasted—Front Drive Engaged)
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)	Consumption Hp.hr/gal (kW.h/l)	Temp. °F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
4th Gear									
122.74 (91.53)	18005 (80.09)	2.56 (4.11)	2222	10.08	0.545 (0.332)	12.98 (2.56)	186 (85)	55 (13)	28.98 (98.14)
5th Gear									
128.27 (95.65)	16609 (73.88)	2.90 (4.66)	2168	8.10	0.525 (0.319)	13.50 (2.66)	188 (87)	58 (14)	28.98 (98.14)
6th Gear									
133.69 (99.69)	16081 (71.53)	3.12 (5.02)	2039	7.63	0.494 (0.300)	14.34 (2.83)	192 (89)	61 (16)	28.99 (98.17)
7th Gear									
136.22 (101.58)	14896 (66.26)	3.43 (5.52)	1954	6.43	0.472 (0.287)	15.01 (2.96)	191 (88)	64 (18)	28.98 (98.14)
8th Gear									
136.71 (101.95)	12910 (59.43)	3.97 (6.39)	1960	4.88	0.472 (0.287)	14.99 (2.95)	191 (88)	64 (18)	28.97 (98.10)
9th Gear									
138.20 (103.06)	11430 (50.84)	4.53 (7.30)	1955	4.29	0.466 (0.283)	15.20 (2.99)	193 (89)	66 (19)	28.96 (98.07)
10th Gear									
137.57 (102.58)	9918 (44.12)	5.20 (8.37)	1957	3.61	0.467 (0.284)	15.16 (2.99)	193 (89)	68 (20)	28.96 (98.07)
11th Gear									
134.77 (100.50)	8541 (37.99)	5.92 (9.52)	1955	3.18	0.478 (0.290)	14.83 (2.92)	194 (90)	71 (22)	28.94 (98.00)
12th Gear									
137.78 (102.74)	7623 (33.91)	6.78 (10.91)	1958	2.75	0.473 (0.288)	14.98 (2.95)	194 (90)	73 (23)	28.93 (97.97)
13th Gear									
136.25 (101.60)	6630 (29.49)	7.71 (12.40)	1957	2.39	0.472 (0.287)	15.01 (2.96)	193 (89)	73 (23)	28.92 (97.93)
14th Gear									
134.33 (100.17)	5721 (25.45)	8.81 (14.17)	1955	2.13	0.481 (0.293)	14.72 (2.90)	193 (89)	73 (23)	28.91 (97.90)

THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: III

Quick Attach: None

Maximum Force Exerted Through Whole Range:	14760 lbs	(65.7 kN)
i) Opening pressure of relief valve:	NA	
Sustained pressure of the open relief valve:	2860 psi	(197 bar)
ii) Pump delivery rate at minimum pressure and rated engine speed:	29.7 GPM	(112.4 l/min)
iii) Pump delivery rate at maximum hydraulic power:	24.3 GPM	(92.0 l/min)
Delivery pressure:	2650 psi	(183 bar)
Power:	37.6 HP	(28.0 kW)

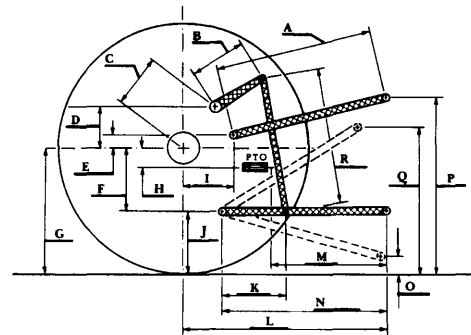
THREE POINT HITCH PERFORMANCE (SAE Static Test)

Observed Maximum Pressure psi. (bar)	2990 (206)
Location	lift cylinder
Hydraulic oil temperature °F (°C)	148(64)
Location	hydraulic sump
Category	III
Quick attach	No

SAE Static test—system pressure-2690 psi (186 bar)

Hitch point distance to ground level	10.0 (254)	16.0 (406)	24.0 (610)	32.0 (813)	39.7 (1008)
Lift force on frame lb	19665	18945	18621	18135	17379
Lift force on frame (kN)	(87.5)	(84.3)	(82.8)	(80.7)	(77.3)

HITCH DIMENSIONS AS TESTED—NO LOAD



	inch	mm
A	30.7	781
B	15.2	385
C	20.7	527
D	17.9	455
E	10.8	275
F	12.6	320
G	34.3	870
H	1.5	39
I	17.7	450
J	21.7	550
K	21.6	548
L	49.0	1245
M	24.8	629
N	39.0	991
O	10.0	254
P	48.6	1235
Q	39.1	994
R	33.5	851



AGCO Allis 9745 Diesel

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