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January 1995

Test 1700: Agco Allis 9695 Diesel 18-Speed

Nebraska Tractor Test Lab

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NEBRASKA OECD TRACTOR TEST 1700—SUMMARY 188

AGCO ALLIS 9695 DIESEL

18 SPEED

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

Dates of Test: September 8-21, 1995

Manufacturer: AGCO Corporation, Duluth, Georgia 30136

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—1056 rpm)					
196.57 (146.58)	2199	12.13 (45.93)	0.433 (0.264)	16.20 (3.19)	
Standard Power Take-off Speed (999 rpm)					
204.47 (152.48)	2082	12.11 (45.83)	0.416 (0.253)	16.89 (3.33)	
Maximum Power (2 hours)					
211.46 (157.68)	1903	11.96 (45.26)	0.397 (0.242)	17.69 (3.48)	

VARYING POWER AND FUEL CONSUMPTION

196.57 (146.58)	2199	12.13 (45.93)	0.433 (0.264)	16.20 (3.19)	Air temperature
174.47 (130.10)	2300	11.45 (43.34)	0.461 (0.280)	15.24 (3.00)	78°F (26°C)
132.22 (98.59)	2333	9.44 (35.74)	0.501 (0.305)	14.01 (2.76)	Relative humidity
89.76 (66.93)	2366	7.56 (28.62)	0.592 (0.360)	11.87 (2.34)	58%
45.36 (33.82)	2391	5.77 (21.83)	0.893 (0.543)	7.87 (1.52)	Barometer
2.20 (1.64)	2412	3.97 (15.04)	12.654 (7.697)	0.56 (0.11)	28.97"Hg (98.10 kPa)

Maximum Torque 654 lb.-ft. (887 Nm) at 1402 rpm

Maximum Torque Rise 39.4%

Torque rise at 1804 engine rpm 30%

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—11th Gear									
170.15 (126.88)	8035 (35.74)	7.94 (12.78)	2196	2.49	0.503 (0.306)	13.97 (2.75)	197 (91)	74 (23)	29.02 (98.27)
75% of Pull at Maximum Power—11th Gear									
134.80 (100.52)	5997 (26.68)	8.43 (13.57)	2316	1.94	0.548 (0.333)	12.81 (2.52)	192 (89)	77 (25)	29.00 (98.21)
50% of Pull at Maximum Power—11th Gear									
91.61 (68.31)	4000 (17.79)	8.59 (13.82)	2346	1.37	0.648 (0.394)	10.83 (2.13)	190 (88)	77 (25)	29.00 (98.21)
75% of Pull at Reduced Engine Speed—13th Gear									
135.03 (100.69)	5978 (26.59)	8.47 (13.63)	1736	1.94	0.467 (0.284)	15.04 (2.96)	194 (90)	77 (25)	29.00 (98.21)
50% of Pull at Reduced Engine Speed—13th Gear									
91.68 (68.36)	4007 (17.82)	8.58 (13.81)	1748	1.37	0.514 (0.313)	13.66 (2.69)	188 (87)	77 (25)	29.00 (98.21)

FUEL OIL and TIME: Fuel No. 2 Diesel **Ce-tane No. 50.6** **Specific gravity converted to 60°/60° F (15°/15°C)** 0.8435 **Fuel weight** 7.023 lbs/gal (0.842 kg/l) **Oil SAE 15W-40 API service classification** CD-II, CG **To motor** 5.571 gal (21.089 l) **Drained from motor** 5.259 gal (19.908 l) **Transmission and hydraulic lubricant** AGCO Power Fluid 821XL **Front axle lubricant** AGCO Gear Lube 715 SAE 80W-90 **Total time engine was operated** 20.0 hours.

ENGINE: Make Detroit Diesel series 40 Diesel **Type** six cylinder vertical with turbocharger **Serial No.** *WH3325N938431* **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 **Lubrica-tion** 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: 78.3-86.4 lb/h (35.5-39.2 kg/h) **High idle:** 2325-2425 rpm **Turbo boost** nominal 20.3 psi (140 kPa) as measured 20.4 psi (140 kPa)

CHASSIS: Type front wheel assist **Serial No.** 991513PL **Tread width** rear 62.0" (1575 mm) to 124.0" (3150 mm) front 62.6" (1590 mm) to 88.6" (2250 mm) **Wheel base** 116.0" (2946 mm) **Hydrau-lic control system** direct engine drive **Transmis-sion** selective gear fixed ratio with full range operator controlled powershift **Nominal travel speeds mph (km/h)** first 1.56 (2.69) second 1.98 (3.18) third 2.31 (3.71) fourth 2.65 (4.26) fifth 3.13 (5.03) sixth 3.65 (5.88) seventh 4.31 (6.93) eighth 5.09 (8.19) ninth 5.95 (9.58) tenth 6.92 (11.13) eleventh 8.17 (13.15) twelfth 9.56 (15.39) thirteenth 10.95 (17.62) fourteenth 12.94 (20.83) fifteenth 15.14 (24.37) six-teenth 17.82 (28.68) seventeenth 21.07 (33.91) eigh-teenth 24.66 (39.68) reverse 2.03 (3.26), 2.39 (3.85), 2.80 (4.50), 3.21 (5.16), 3.79 (6.10), 4.44 (7.14), 5.22 (8.40), 6.17 (9.93), 7.22 (11.62) **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 **Steer-ing** hydrostatic **Power take-off** 1000 rpm at 2083 engine rpm **Unladen tractor mass** 18592 lb (8433 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)	Hp.hr/gal (kW.h/l)	Temp.°F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
6th Gear									
147.79 (110.21)	17583 (78.21)	3.15 (5.07)	2221	14.55	0.575 (0.350)	12.20 (2.40)	189 (87)	58 (14)	28.91 (97.90)
7th Gear									
167.14 (124.63)	16011 (71.22)	3.91 (6.30)	2157	7.15	0.509 (0.310)	13.78 (2.72)	193 (89)	58 (14)	28.92 (97.93)
8th Gear									
178.09 (132.80)	15540 (69.13)	4.30 (6.92)	1989	6.56	0.479 (0.291)	14.66 (2.89)	196 (91)	58 (14)	28.93 (97.97)
9th Gear									
179.79 (134.07)	13906 (61.86)	4.85 (7.80)	1898	5.62	0.467 (0.284)	15.04 (2.96)	196 (91)	72 (22)	29.03 (98.31)
10th Gear									
182.75 (136.28)	11993 (53.35)	5.71 (9.20)	1899	4.31	0.461 (0.280)	15.25 (3.00)	196 (91)	73 (23)	29.02 (98.27)
11th Gear									
185.81 (138.56)	10220 (45.46)	6.82 (10.97)	1901	3.41	0.455 (0.277)	15.43 (3.04)	196 (91)	74 (23)	29.02 (98.27)
12th Gear									
183.59 (136.91)	8576 (38.15)	8.03 (12.92)	1900	2.86	0.459 (0.279)	15.29 (3.01)	196 (91)	75 (24)	29.01 (98.24)

**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)	Hp.hr/gal (kW.h/l)	Temp.°F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
4th Gear									
142.18 (106.02)	21206 (94.33)	2.51 (4.05)	2303	9.34	0.574 (0.349)	12.23 (2.41)	187 (86)	62 (17)	28.90 (97.87)
5th Gear									
157.84 (117.70)	20544 (91.38)	2.88 (4.64)	2219	8.69	0.536 (0.326)	13.11 (2.58)	190 (88)	65 (18)	28.92 (97.93)
6th Gear									
167.07 (124.58)	19705 (87.65)	3.18 (5.12)	2068	7.63	0.504 (0.307)	13.92 (2.74)	193 (89)	67 (19)	28.93 (97.97)
7th Gear									
177.26 (132.18)	19253 (85.64)	3.45 (5.56)	1909	7.71	0.476 (0.290)	14.75 (2.91)	196 (91)	69 (21)	28.93 (97.97)
8th Gear									
179.09 (133.55)	16058 (71.43)	4.18 (6.73)	1901	5.07	0.469 (0.285)	14.99 (2.95)	196 (91)	71 (22)	28.93 (97.97)
9th Gear									
181.11 (135.05)	13693 (60.91)	4.96 (7.98)	1905	3.91	0.466 (0.283)	15.08 (2.97)	196 (91)	72 (22)	28.92 (97.93)
10th Gear									
183.78 (137.05)	11922 (53.03)	5.78 (9.30)	1900	3.37	0.457 (0.278)	15.38 (3.03)	196 (91)	73 (23)	28.92 (97.93)
11th Gear									
185.49 (138.32)	10080 (44.84)	6.90 (11.11)	1908	2.64	0.456 (0.277)	15.41 (3.04)	195 (91)	75 (24)	28.92 (97.93)
12th Gear									
182.46 (136.06)	8474 (37.69)	8.07 (12.99)	1899	2.27	0.463 (0.281)	15.18 (2.99)	196 (91)	76 (24)	28.93 (97.97)

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 142° F (61°C). The tractor did not meet manufacturers claim of 22 GPM (83 l/m) hydraulic flow. 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. **1700**, Summary 188, December 20, 1995.

LOUIS I. LEVITICUS
Engineer-in-Charge

L.L. BASHFORD
K. VON BARGEN
M.F. KOCHER
Board of Tractor Test Engineers

TRACTOR SOUND LEVEL WITH CAB

	dB(A)
At 75% load in 7th gear	76.5
Bystander	—

TIRES, BALLAST AND WEIGHT

Rear Tires—No., size, ply & psi (*kPa*)

Ballast—Duals (total)

—Test Equip. (total)

Front Tires—No., size, ply & psi (*kPa*)

Ballast—Liquid (total)

—Cast Iron (total)

Height of Drawbar

Static Weight with Operator—Rear

—Front

—Total

With Ballast

Four 18.4R46; ***, 20 (140)

1824 lb (827 kg)

174 lb (79 kg)

Two 14.9R34; ***, 24 (165)

None

None

25.5 in (650 mm)

14026 lb (6362 kg)

6730 lb (3053 kg)

20756 lb (9415 kg)

Without Ballast

Two 18.4R46; ***, 20 (140)

None

None

Two 14.9R34; ***, 24 (165)

None

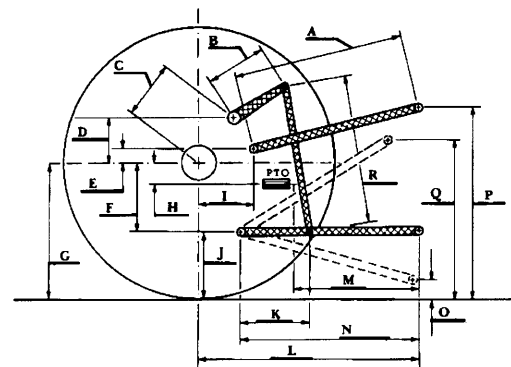
None

24.5 in (620 mm)

12028 lb (5456 kg)

6730 lb (3053 kg)

18758 lb (8509 kg)



THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: III

Quick Attach: None

Maximum Force Exerted Through Whole Range:

8172 lbs (36.4 kN)

i) Opening pressure of relief valve:

NA

Sustained pressure with pump stalled:

2530 psi (174 bar)

ii) Pump delivery rate at minimum pressure and rated engine speed:

20.6 GPM (78.0 l/min)

iii) Pump delivery rate at maximum

hydraulic power:

17.8 GPM (67.4 l/min)

Delivery pressure:

2280 psi (157 bar)

Power:

23.7 HP (17.7 kW)

The following values apply to tractors with chassis S/N 992300 and higher.

THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: III

Quick Attach: no

Maximum Force Exerted Through Whole Range:

8622 lbs (38.4 kN)

THREE POINT LIFT PERFORMANCE

Observed Maximum Pressure psi. (bar)

2725 (157)

Location

lift cylinder

Hydraulic oil temperature °F (°C)

149 (65)

Location

hydraulic sump

Category

III

Quick attach

no

As per current SAE test procedures

Hitch point distance

to ground level in.

8.0

13.3

18.6

24.0

29.3

34.7

40.0

to ground level (mm)

(203)

(338)

(472)

(610)

(744)

(881)

(1016)

Lift force on frame lb.

10980

10602

10944

10998

10638

10260

9684

Lift force on frame (kN)

(48.8)

(47.2)

(48.7)

(48.9)

(47.3)

(45.6)

(43.1)

As per current ASAE test procedures

Hitch point distance

to ground level in.

8.0

13.3

18.6

24.0

29.3

34.7

40.0

to ground level (mm)

(203)

(338)

(472)

(610)

(744)

(881)

(1016)

Lift force on frame lb.

12088

11672

12048

12108

11712

11400

10861

Lift force on frame (kN)

(53.8)

(51.9)

(53.6)

(53.9)

(52.1)

(50.7)

(48.3)



AGCO ALLIS 9695 DIESEL

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