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Test 1674: Agco-Allis 9630 Diesel 18-Speed

Nebraska Tractor Test Lab

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NEBRASKA OECD TRACTOR TEST 1674—SUMMARY 146

AGCO ALLIS 9630 DIESEL

18 SPEED

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

Dates of Test: April 8-May 5, 1994

Manufacturer: AGCO Corporation, Norcross,
Georgia 30092

FUEL OIL and TIME: Fuel No. 2 Diesel/Cetane No. 53.9 **Specific gravity converted to 60°/60° F (15°/15°C)** 0.8400 **Fuel weight** 6.994 lbs/gal (0.838 kg/l) **Oil SAE** 15W-40 **API service classification** SG/CET **motor** 4.121 gal (15.599 l) **Drained from motor** 2.766 gal (10.469 l) **Transmission and hydraulic lubricant** AGCO Power Fluid 821XL **Front axle lubricant** AGCO Gear Lube 715 SAE 80W-90 **Total time engine was operated** 24.0 hours.

ENGINE: Make Klockner-Humboldt-Deutz Ag Diesel **Type** six cylinder vertical with turbocharger and air to air intercooler **Serial No.** *8341385* **Crankshaft** lengthwise **Rated engine speed** 2400 **Bore and stroke** (as specified) 4.016" × 4.921" (102.0 mm × 125.0 mm) **Compression ratio** 15.5 to 1 **Displacement** 374 cu in (6129 ml) **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and aspirator **Oil filter** one full flow cartridge **Oil cooler** radiator 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** air cooled with variable speed fan

ENGINE OPERATING PARAMETERS: Fuel rate: 59.0-63.6 lb/h (26.8-28.8 kg/h) **High idle:** 2550-2600 rpm **Turbo boost** nominal 11.0-13.0 psi (76-90 kPa) as measured 12.0 psi (83 kPa)

CHASSIS: Type front wheel assist **Serial No.** 92092 **Tread width** rear 65.0" (1651 mm) to 124.0" (3150 mm) front 62.6" (1590 mm) to 88.6" (2250 mm) **Wheel base** 117.0" (2972 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 1.71 (2.76) second 2.03 (3.26) third 2.37 (3.81) fourth 2.71 (4.37) fifth 3.21 (5.16) sixth 3.75 (6.04) seventh 4.42 (7.11) eighth 5.22 (8.41) ninth 6.11 (9.83) tenth 7.10 (11.42) eleventh 8.39 (13.50) twelfth 9.82 (15.80) thirteenth 11.24 (18.09) fourteenth 13.29 (21.39) fifteenth 15.54 (25.02) sixteenth 18.30 (29.45) seventeenth 21.62 (34.80) eighteenth 25.31 (40.73) reverse 2.08 (3.34), 2.46 (3.95), 2.87 (4.62), 3.29 (5.30), 3.89 (6.26), 4.55 (7.33), 5.36 (8.63), 6.33 (10.19), 7.41 (11.93) **Clutch** multiple wet disc 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 2227 engine rpm and 1000 rpm at 2200 engine rpm **Unladen tractor mass** 17028 lb (7724 kg)

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—1091 rpm)					
135.76 (101.23)	2399	8.69 (32.91)	0.448 (0.272)	15.62 (3.08)	
Standard Power Take-off Speed (1000 rpm)					
143.81 (107.24)	2199	8.62 (32.63)	0.419 (0.255)	16.69 (3.29)	
Maximum Power (2 hours)					
144.71 (107.91)	2099	8.50 (32.16)	0.411 (0.250)	17.03 (3.36)	

VARYING POWER AND FUEL CONSUMPTION

135.76 (101.23)	2399	8.69 (32.91)	0.448 (0.272)	15.62 (3.08)	Air temperature
117.59 (87.69)	2443	7.94 (30.06)	0.472 (0.287)	14.81 (2.92)	74°F (23°C)
88.81 (66.22)	2466	6.56 (24.84)	0.517 (0.314)	13.53 (2.67)	Relative humidity
59.88 (44.65)	2486	5.32 (20.13)	0.621 (0.378)	11.26 (2.22)	42%
30.11 (22.45)	2520	4.12 (15.59)	0.956 (0.582)	7.31 (1.44)	Barometer
0.70 (0.53)	2542	2.96 (11.20)	29.397 (17.881)	0.24 (0.05)	28.89"Hg (97.84 kPa)

Maximum Torque 408 lb.-ft. (553 Nm) at 1599 rpm
Maximum Torque Rise 37.3%
Torque rise at 1897 engine rpm 29%

DRAWBAR PERFORMANCE

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—7th Gear									
120.01 (89.49)	10572 (47.02)	4.26 (6.85)	2396	4.27	0.509 (0.310)	13.73 (2.70)	air cld	77 (25)	28.92 (97.93)
75% of Pull at Maximum Power—7th Gear									
93.23 (69.52)	7909 (35.18)	4.42 (7.11)	2451	2.64	0.553 (0.337)	12.64 (2.49)	air cld	78 (26)	28.90 (97.87)
50% of Pull at Maximum Power—7th Gear									
63.27 (47.18)	5268 (23.43)	4.50 (7.25)	2472	1.76	0.654 (0.398)	10.70 (2.11)	air cld	78 (26)	28.90 (97.87)
75% of Pull at Reduced Engine Speed—9th Gear									
92.96 (69.32)	7922 (35.24)	4.40 (7.08)	1765	2.55	0.467 (0.284)	14.96 (2.95)	air cld	78 (26)	28.90 (97.87)
50% of Pull at Reduced Engine Speed—9th Gear									
63.35 (47.24)	5271 (23.44)	4.51 (7.25)	1789	1.76	0.526 (0.320)	13.30 (2.62)	air cld	78 (26)	28.90 (97.87)

**DRAWBAR PERFORMANCE
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									
99.93 (74.52)	15815 (70.35)	2.37 (3.81)	2428	14.24	0.592 (0.360)	11.81 (2.33)	air cld	73 (23)	28.95 (98.04)
5th Gear									
111.99 (83.51)	14658 (65.20)	2.86 (4.61)	2384	10.57	0.548 (0.334)	12.75 (2.51)	air cld	75 (24)	28.94 (98.00)
6th Gear									
118.55 (88.40)	14249 (63.38)	3.12 (5.02)	2186	9.30	0.509 (0.309)	13.75 (2.71)	air cld	75 (24)	28.94 (98.00)
7th Gear									
123.88 (92.38)	12729 (56.62)	3.65 (5.87)	2096	6.09	0.478 (0.290)	14.65 (2.89)	air cld	76 (24)	28.93 (97.97)
8th Gear									
123.74 (92.27)	10526 (46.82)	4.41 (7.09)	2099	4.18	0.476 (0.289)	14.70 (2.89)	air cld	78 (26)	28.91 (97.90)
9th Gear									
123.36 (91.99)	8873 (39.47)	5.21 (8.39)	2101	3.16	0.480 (0.292)	14.58 (2.87)	air cld	78 (26)	28.91 (97.90)
10th Gear									
125.13 (93.31)	7720 (34.34)	6.08 (9.78)	2097	2.64	0.474 (0.289)	14.74 (2.90)	air cld	78 (26)	28.91 (97.90)
11th Gear									
125.09 (93.28)	6478 (28.81)	7.24 (11.65)	2103	2.02	0.474 (0.288)	14.76 (2.91)	air cld	78 (26)	28.91 (97.90)
12th Gear									
122.52 (91.36)	5399 (24.02)	8.51 (13.69)	2105	1.76	0.480 (0.292)	14.56 (2.87)	air cld	78 (26)	28.91 (97.90)

**DRAWBAR PERFORMANCE (BALLASTED—FRONT DRIVE ENGAGED)
MAXIMUM POWER IN SELECTED GEARS**

3rd Gear									
105.01 (78.31)	19367 (86.15)	2.03 (3.27)	2381	14.51	0.579 (0.352)	12.09 (2.38)	air cld	60 (16)	28.93 (97.97)
4th Gear									
115.13 (85.85)	17792 (79.14)	2.43 (3.91)	2328	8.96	0.525 (0.320)	13.31 (2.62)	air cld	62 (17)	28.94 (98.00)
5th Gear									
121.52 (90.62)	16507 (73.42)	2.76 (4.45)	2196	7.00	0.497 (0.302)	14.08 (2.77)	air cld	64 (18)	28.94 (98.00)
6th Gear									
123.65 (92.20)	14720 (65.48)	3.15 (5.07)	2113	5.87	0.480 (0.292)	14.56 (2.87)	air cld	65 (18)	28.94 (98.00)
7th Gear									
127.00 (94.71)	12777 (56.83)	3.73 (6.00)	2098	4.79	0.468 (0.285)	14.94 (2.94)	air cld	67 (19)	28.95 (98.04)
8th Gear									
126.01 (93.97)	10602 (47.16)	4.46 (7.17)	2100	3.69	0.472 (0.287)	14.80 (2.92)	air cld	67 (19)	28.95 (98.04)
9th Gear									
125.72 (93.75)	8976 (39.93)	5.25 (8.45)	2100	3.25	0.474 (0.288)	14.75 (2.91)	air cld	68 (20)	28.95 (98.04)
10th Gear									
126.13 (94.06)	7723 (34.35)	6.12 (9.86)	2098	2.47	0.472 (0.287)	14.83 (2.92)	air cld	69 (21)	28.95 (98.04)
11th Gear									
126.52 (94.35)	6523 (29.01)	7.27 (11.71)	2100	2.20	0.471 (0.286)	14.86 (2.93)	air cld	70 (21)	28.95 (98.04)
12th Gear									
123.61 (92.17)	5438 (24.19)	8.52 (13.72)	2096	1.85	0.481 (0.292)	14.55 (2.87)	air cld	71 (22)	28.95 (98.04)

REPAIRS AND ADJUSTMENTS: The hydraulic pump supply hose was replaced following the hydraulic flow test.

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 129° F (54°C). This tractor did not meet manufacturers claim of 24 GPM (90 l/m) hydraulic flow or 3 point lift capacity of 7212 lbs (3271 kg) (optionally—8544 lbs (3875 kg)). 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. **1674**, Summary 146, June 17, 1994.

LOUIS I. LEVITICUS
Engineer-in-Charge

R.D. GRISSO
M.F. KOCHER
K. VON BARGEN
Board of Tractor Test Engineers

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 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—7th Gear									
118.51 (88.37)	10386 (46.20)	4.28 (6.89)	2401	4.47	0.511 (0.311)	13.69 (2.70)	air cld	66 (19)	28.94 (98.00)
75% of Pull at Maximum Power—7th Gear									
92.04 (68.63)	7785 (34.63)	4.43 (7.13)	2456	3.10	0.562 (0.342)	12.44 (2.45)	air cld	72 (22)	28.94 (98.00)
50% of Pull at Maximum Power—7th Gear									
62.62 (46.70)	5192 (23.09)	4.52 (7.28)	2479	2.13	0.667 (0.406)	10.48 (2.06)	air cld	72 (22)	28.94 (98.00)
75% of Pull at Reduced Engine Speed—9th Gear									
92.21 (68.76)	7783 (34.62)	4.44 (7.15)	1780	3.19	0.476 (0.289)	14.70 (2.90)	air cld	72 (22)	28.94 (98.00)
50% of Pull at Reduced Engine Speed—9th Gear									
62.70 (46.75)	5186 (23.07)	4.53 (7.30)	1797	2.13	0.531 (0.323)	13.18 (2.60)	air cld	72 (22)	28.94 (98.00)

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)
3rd Gear									
90.71 (67.64)	16285 (72.44)	2.09 (3.36)	2447	14.66	0.614 (0.373)	11.39 (2.24)	air cld	60 (16)	28.93 (97.97)
4th Gear									
106.65 (79.53)	16045 (71.37)	2.49 (4.01)	2430	10.48	0.560 (0.341)	12.48 (2.46)	air cld	62 (17)	28.94 (98.00)
5th Gear									
114.68 (85.52)	15593 (69.36)	2.76 (4.44)	2280	10.70	0.527 (0.321)	13.27 (2.61)	air cld	64 (18)	28.94 (98.00)
6th Gear									
120.06 (89.53)	14746 (65.59)	3.05 (4.91)	2102	8.28	0.494 (0.301)	14.15 (2.79)	air cld	65 (18)	28.94 (98.00)
7th Gear									
124.41 (92.77)	12660 (56.31)	3.69 (5.93)	2103	6.05	0.477 (0.290)	14.66 (2.89)	air cld	66 (19)	28.94 (98.00)
8th Gear									
124.30 (92.69)	10548 (46.92)	4.42 (7.11)	2102	4.55	0.479 (0.291)	14.61 (2.88)	air cld	68 (20)	28.95 (98.04)
9th Gear									
123.80 (92.32)	8883 (39.51)	5.23 (8.41)	2104	3.62	0.477 (0.290)	14.66 (2.89)	air cld	68 (20)	28.95 (98.04)
10th Gear									
124.63 (92.94)	7673 (34.13)	6.09 (9.80)	2100	3.10	0.477 (0.290)	14.65 (2.89)	air cld	69 (21)	28.95 (98.04)
11th Gear									
125.42 (93.53)	6503 (28.92)	7.23 (11.64)	2099	2.49	0.475 (0.289)	14.72 (2.90)	air cld	70 (21)	28.95 (98.04)
12th Gear									
121.88 (90.89)	5376 (23.91)	8.50 (13.68)	2099	2.13	0.486 (0.296)	14.38 (2.83)	air cld	71 (22)	28.95 (98.04)

Front Wheel Drive
Disengaged Engaged
dB(A) dB(A)

TRACTOR SOUND LEVEL WITH CAB

At 75% load in 9th gear	74.0	74.5
Bystander	—	—

TIRES, BALLAST AND WEIGHT

	With Ballast	Without Ballast
Rear Tires —No., size, ply & psi (kPa)	Four 18.4R42; **, 20 (140)	Two 18.4R42; **, 20 (140)
Ballast —Duals (total)	1700 lb (771 kg)	None
—Test Equip. (total)	160 lb (73 kg)	None
Front Tires —No., size, ply & psi (kPa)	Two 16.9R28; **, 22 (150)	Two 16.9R28; **, 22 (150)
Ballast —Liquid (total)	None	None
—Cast Iron (total)	None	None
Height of Drawbar	22.0 in (560 mm)	20.5 in (520 mm)
Static Weight with Operator —Rear	13294 lb (6030 kg)	11434 lb (5186 kg)
—Front	5762 lb (2614 kg)	5762 lb (2614 kg)
—Total	19056 lb (8644 kg)	17196 lb (7800 kg)

THREE POINT HITCH PERFORMANCE (OECD Static Test)

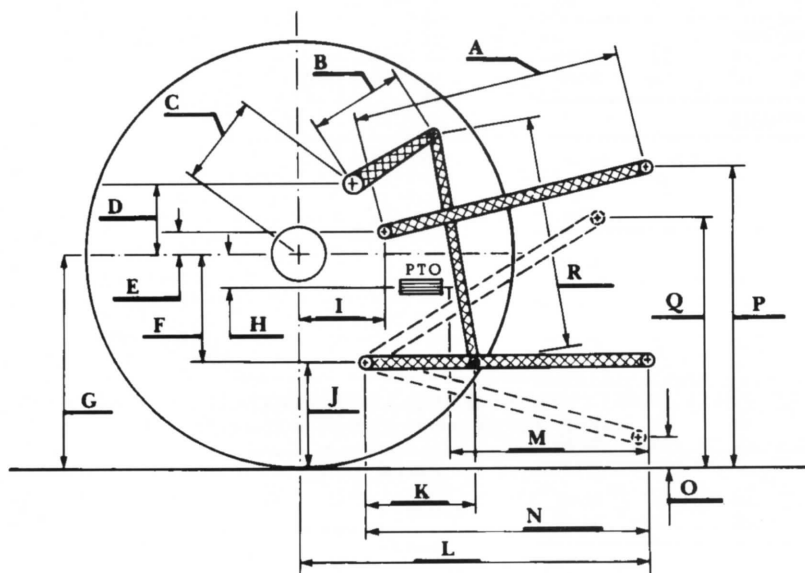
CATEGORY: III

Quick Attach: none

Maximum Force Exerted Through Whole Range: 5913 lbs (26.3 kN)
6962 lbs (31.0 kN) with lift assist cylinder

- i) Opening pressure of relief valve: NA
Sustained pressure with pump stalled: 2250 psi (155 bar)
- ii) Pump delivery rate at minimum pressure: 22.6 GPM (85.6 l/min)
- iii) Pump delivery rate at maximum hydraulic power: 21.9 GPM (82.9 l/min)
Delivery pressure: 2000 psi (138 bar)
Power: 25.5 HP (19.0 kW)

HITCH DIMENSIONS AS TESTED—NO LOAD



	inch	mm
A	25.3	641
B	16.0	406
C	19.8	502
D	18.2	461
E	9.1	230
F	10.2	259
G	35.0	889
H	1.9	48
I	20.1	508
J	24.8	630
K	21.4	543
L	45.3	1150
M	22.4	568
N	34.8	884
O	9.0	229
P	51.8	1316
Q	38.3	972
R	38.7	983



AGCO ALLIS 9630 DIESEL

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