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January 2004

## Nebraska Summary 476: AGCO RT 100 Powrmaxx Diesel

Nebraska Tractor Test Lab

University of Nebraska-Lincoln, [tractortestlab@unl.edu](mailto:tractortestlab@unl.edu)

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# SUMMARY OF OECD TEST 2234–NEBRASKA SUMMARY 476

## AGCO RT 100 POWRMXX DIESEL

### CONTINUOUSLY VARIABLE TRANSMISSION

#### 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					
<b>Rated Engine Speed—(PTO speed—1081 rpm)</b>					
102.2 (76.2)	2199	6.95 (26.32)	0.472 (0.287)	14.71 (2.90)	
<b>Maximum Power (2 hours)</b>					
104.3 (77.8)	2034	6.55 (24.78)	0.436 (0.265)	15.94 (3.14)	
<b>Standard Power Take-off Speed(1000 rpm)</b>					
104.3 (77.8)	2034	6.55 (24.78)	0.436 (0.265)	15.94 (3.14)	

#### VARYING POWER AND FUEL CONSUMPTION

102.2 (76.2)	2199	6.95 (26.32)	0.472 (0.287)	14.71 (2.90)	Air temperature
90.0 (67.1)	2276	6.58 (24.89)	0.506 (0.308)	13.69 (2.70)	72°F (22°C)
68.0 (50.7)	2294	5.61 (21.22)	0.572 (0.348)	12.13 (2.39)	Relative humidity
46.1 (34.4)	2335	4.67 (17.67)	0.701 (0.427)	9.88 (1.95)	35%
23.6 (17.6)	2376	3.61 (13.67)	1.062 (0.646)	6.53 (1.29)	Barometer
--	2420	2.64 (10.01)	--	--	29.5" Hg (99.8 kPa)

Maximum Torque - 311 lb.-ft. (422 Nm) at 1501 rpm  
Maximum Torque Rise - 27.5%  
Torque rise at 1800 engine rpm - 18%

#### 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)
<b>Maximum Power—Turtle</b>									
89.6 (66.8)	6970 (31.00)	4.82 (7.76)	2201	1.4	0.545 (0.332)	12.83 (2.53)	153 (67)	54 (12)	29.4 (99.7)
<b>75% of Pull at Maximum Power—Turtle</b>									
70.8 (52.8)	5215 (23.19)	5.09 (8.19)	2296	0.9	0.615 (0.374)	11.37 (2.24)	153 (67)	52 (11)	29.5 (99.8)
<b>50% of Pull at Maximum Power—Turtle</b>									
47.4 (35.3)	3425 (15.24)	5.19 (8.35)	2316	0.5	0.765 (0.466)	9.14 (1.80)	151 (66)	52 (11)	29.5 (99.8)
<b>75% of Pull at Reduced Engine Speed—Turtle</b>									
70.4 (52.5)	5185 (23.06)	5.09 (8.19)	1994	1.0	0.530 (0.323)	13.19 (2.60)	151 (66)	50 (10)	29.5 (99.8)
<b>50% of Pull at Reduced Engine Speed—Turtle</b>									
48.2 (36.0)	3435 (15.28)	5.26 (8.47)	2031	0.4	0.629 (0.383)	11.12 (2.19)	154 (68)	50 (10)	29.5 (99.8)

**Location of tests:** DLG testing station for Agricultural Machinery, Max - Eyth - Weg 1 D-64823, Gros-Umstadt, Germany

**Dates of tests:** July - October, 2004

**Manufacturer:** AGCO S.A., BP 307, Avenue Blaise Pascal, 60026 Beauvais, France

**FUEL and OIL:** Fuel No. 2 Diesel **Specific gravity converted to 60°/60° F (15°/15°C)** 0.834 **Fuel weight** 6.94 lbs/gal (0.8318 kg/l) **Oil SAE** 10W40 **API service classification** CH4 **Transmission and hydraulic lubricant** SAE10W/40 **Front axle lubricant** SAE 85W/90 gear oil

**ENGINE: Make** Cummins **Diesel Type** six cylinder vertical with turbocharger and air to air intercooler **Serial No.** 21600364 **Crankshaft** lengthwise **Rated engine speed** 2200 **Bore and stroke** 4.094" x 5.197" (104.0 mm x 132.0 mm) **Compression ratio** 17.5 to 1 **Displacement** 410 cu in (6728 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** one paper element **Muffler** vertical **Cooling medium temperature control** thermostat and variable speed fan

**CHASSIS: Type** front wheel assist **Serial No.** N119001 **Tread width** rear 69.3" (1760 mm) to 119.1" (3026 mm) front 63.4" (1610 mm) to 72.6" (1844 mm) **Wheelbase** 109.4" (2780 mm) **Hydraulic control system** direct engine drive **Transmission** AGCO CVT. 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 - 25 (0 - 40) reverse: Low range 0 - 10 (0 - 16), high range 0 - 24 (0 - 38) **Clutch** a foot pedal controls the hydrostatic oil flow **Brakes** multiple wet disc hydraulically operated by two foot pedals that can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 2062 engine rpm or 1000 rpm at 2033 engine rpm **Unladen tractor mass** 15055 lb (6830 kg)

## DRAWBAR PERFORMANCE

(Unballasted - Front Drive Engaged)

### MAXIMUM POWER AT SELECTED 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)	Consumption Hp.hr/gal (kW.h/l)	Temp.°F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
64.4 (48.0)	14935 (66.43)	1.62 (2.60)	2099	14.9	Turtle 0.725 (0.441)	9.64 (1.90)	149 (65)	72 (22)	29.5 (100.0)
79.1 (59.0)	14305 (63.64)	2.07 (3.34)	2046	6.5	Turtle 0.572 (0.348)	12.23 (2.41)	147 (64)	72 (22)	29.5 (100.0)
83.4 (62.2)	13030 (57.97)	2.40 (3.86)	2038	4.9	Turtle 0.540 (0.329)	12.94 (2.55)	149 (65)	70 (21)	29.5 (100.0)
84.5 (63.0)	12275 (54.60)	2.58 (4.15)	2043	4.2	Turtle 0.536 (0.326)	13.05 (2.57)	145 (63)	72 (22)	29.6 (100.1)
86.8 (64.7)	10700 (47.59)	3.04 (4.90)	2038	3.2	Turtle 0.523 (0.318)	13.36 (2.63)	147 (64)	68 (20)	29.6 (100.2)
85.4 (63.7)	9140 (40.66)	3.50 (5.64)	2035	2.7	Turtle 0.530 (0.322)	13.20 (2.60)	147 (64)	68 (20)	29.6 (100.1)
86.2 (64.3)	7990 (35.54)	4.05 (6.52)	2034	2.2	Turtle 0.524 (0.319)	13.35 (2.63)	147 (64)	66 (19)	29.6 (100.1)
89.4 (66.7)	7525 (33.47)	4.46 (7.17)	2035	1.7	Turtle 0.512 (0.311)	13.65 (2.69)	154 (68)	52 (11)	29.6 (100.1)
88.9 (66.3)	6560 (29.18)	5.08 (8.18)	2035	1.8	Turtle 0.513 (0.312)	13.64 (2.69)	156 (69)	54 (12)	29.6 (100.1)
88.6 (66.1)	5675 (25.24)	5.85 (9.42)	2037	1.7	Turtle 0.514 (0.313)	13.60 (2.68)	154 (68)	54 (12)	29.6 (100.1)
87.2 (65.0)	4880 (21.70)	6.70 (10.78)	2036	1.5	Turtle 0.523 (0.318)	13.36 (2.63)	154 (68)	63 (17)	29.6 (100.1)
85.3 (63.6)	4170 (18.54)	7.67 (12.35)	2036	1.3	Turtle 0.533 (0.324)	13.11 (2.58)	153 (67)	63 (17)	29.6 (100.1)
83.7 (62.4)	3610 (16.06)	8.69 (13.99)	2034	1.2	Turtle 0.542 (0.329)	12.91 (2.54)	153 (67)	63 (17)	29.6 (100.1)
81.9 (61.1)	2975 (13.23)	10.32 (16.61)	2037	1.0	Turtle 0.555 (0.337)	12.61 (2.48)	153 (67)	63 (17)	29.6 (100.1)
85.9 (64.1)	5835 (25.96)	5.52 (8.89)	2040	1.7	Rabbit 0.526 (0.320)	13.30 (2.62)	151 (66)	70 (21)	29.5 (100.0)
85.8 (63.9)	5325 (23.70)	6.04 (9.72)	2040	1.6	Rabbit 0.527 (0.320)	13.27 (2.61)	153 (67)	72 (22)	29.5 (100.0)
85.1 (63.4)	4905 (21.81)	6.51 (10.47)	2038	1.5	Rabbit 0.530 (0.323)	13.18 (2.60)	153 (67)	68 (20)	29.5 (100.0)
85.2 (63.5)	4125 (18.34)	7.75 (12.46)	2037	1.3	Rabbit 0.529 (0.322)	13.21 (2.60)	153 (67)	68 (20)	29.5 (100.0)
86.1 (64.2)	3600 (16.01)	8.97 (14.44)	2035	0.8	Rabbit 0.532 (0.324)	13.15 (2.59)	151 (66)	79 (26)	29.4 (99.7)
85.6 (63.8)	3305 (14.71)	9.71 (15.63)	2035	0.7	Rabbit 0.536 (0.326)	13.05 (2.57)	153 (67)	72 (22)	29.4 (99.7)

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

**NOTE:** The performance figures on this report are the result of replacing the electronic engine control module of the AGCO RT 120 with the AGCO RT 100 module.

**REMARKS:** All test results were determined from observed data obtained in accordance with official OECD test procedures. This tractor did not meet the manufacturer's claim of 71 dB(A) cab sound level. The performance figures on this summary were taken from a test conducted under the OECD Code II test procedure.

We, the undersigned, certify that this is a true summary of data from OECD Report No. **2234**, Nebraska Summary 476, January 17, 2006.

Leonard L. Bashford  
Director

M.F. Kocher  
V.I. Adamchuk  
J.A. Smith  
Board of Tractor Test Engineers

TRACTOR SOUND LEVEL WITH CAB	Front wheel drive	
	Engaged dB(A)	Disengaged dB(A)
At no load at 4.7 mph (7.5 <i>km/h</i> )	74.0	74.0
Bystander		--

## 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 18.4R38; \*\*; 16(110)

Two 14.9R28; \*\*; 12(80)

16.9 in (430 mm)

10030 lb (4550 kg)

5190 lb (2355 kg)

15220 lb (6905 kg)

## THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: II

Quick Attach: None

Maximum force exerted

through whole range:

10915 lbs (48.55 *kN*) CVT Transmission

8923 lbs (39.7 *kN*) Quadrashift Transmission

i) Opening pressure of relief valve:

NA

Sustained pressure of the open relief valve:

2900 psi (200 bar)

ii) Pump delivery rate at minimum pressure:

33.6 GPM (127.4 *l/min*)

iii) Pump delivery rate at maximum

hydraulic power:

29.3 GPM (110.8 *l/min*)

Delivery pressure:

2740 psi (189 bar)

Power:

46.8 HP (34.9 *kW*)

## THREE POINT HITCH PERFORMANCE QUADRASHIFT TRANSMISSION

Observed Maximum Pressure psi. (bar)

2800 (193)

Location:

lift cylinder

Hydraulic oil temperature: °F (°C)

149 (65)

Location:

hydraulic sump

Category:

II

Quick attach:

none

## SAE Static Test—System pressure 2520 psi (174 Bar)

Hitch point distance to ground level in. (mm) 8.0 (203) 15.1 (384) 22.0 (559) 29.3 (744) 36.2 (919)

Lift force on frame lb

12539

11933

11629

11129

9939

" " " " " " (kN)

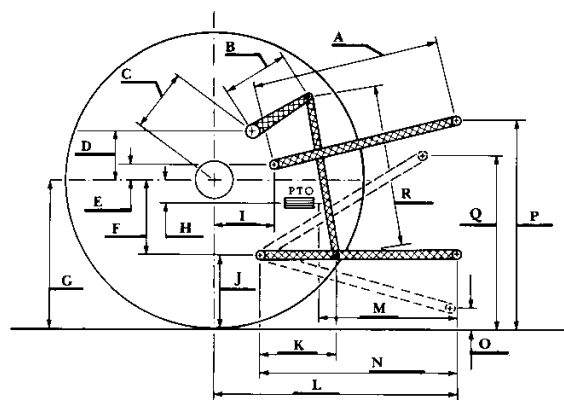
(55.8)

(53.1)

(51.7)

(49.5)

(44.2)



Institute of Agriculture and Natural Resources  
University of Nebraska–Lincoln

## CVT TRANSMISSION HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	mm
A	29.1	740
B	14.0	355
C	13.8	351
D	11.6	295
E	5.5	140
F	9.8	250
G	32.2	820
H	2.8	70
I	17.5	445
J	22.4	570
K	26.2	665
L	45.1	1145
M	26.0	660
N	40.6	1030
O	7.9	200
P	46.5	1180
Q	36.2	920
R	29.3	745

## QUADRASHIFT TRANSMISSION HITCH DIMENSIONS AS TESTED—NO LOAD

	SAE TEST		OECD TEST	
	inch	mm	inch	mm
A	27.6	702	28.2	716
B	11.6	295	11.6	295
C	13.9	354	13.9	354
D	13.0	330	13.0	330
E	7.9	200	7.9	200
F	10.2	260	10.2	260
G	32.3	820	32.3	820
H	0.3	8	0.3	8
I	15.3	389	15.3	389
J	22.1	560	22.1	560
K	21.5	545	21.5	545
L	40.9	1040	40.9	1040
M	22.2	565	22.2	565
N	37.0	940	37.0	940
O	8.0	203	8.0	203
P	41.1	1043	46.1	1170
Q	36.0	914	36.0	914
R	29.4	748	29.4	748