

# SUMMARY OF OECD TEST 2197-NEBRASKA SUMMARY 521

## AGCO RT 140A CVT DIESEL POWERMAXX 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
<b>MAXIMUM POWER AND FUEL CONSUMPTION</b>					
<b>Rated Engine Speed—(PTO speed—1082 rpm)</b>					
143.2 (106.8)	2201	9.36 (35.44)	0.455 (0.276)	15.28 (3.01)	
<b>Standard Power Take-off Speed(1000rpm)</b>					
153.1 (114.2)	2034	9.06 (34.31)	0.411 (0.250)	16.90 (3.33)	
<b>Maximum Power (2 hours)</b>					
154.4 (115.1)	1900	8.78 (33.23)	0.395 (0.240)	17.57 (3.46)	
<b>VARYING POWER AND FUEL CONSUMPTION</b>					
143.2 (106.8)	2201	9.36 (35.44)	0.455 (0.276)	15.28 (3.01)	Air temperature
123.2 (91.9)	2237	8.54 (32.32)	0.482 (0.293)	14.42 (2.84)	66°F(19°C)
94.0 (70.1)	2264	6.72 (25.43)	0.496 (0.302)	14.01 (2.76)	Relative humidity
63.2 (47.1)	2286	5.39 (20.40)	0.593 (0.361)	11.71 (2.31)	27%
32.1 (23.9)	2315	3.82 (14.46)	0.827 (0.503)	8.39 (1.65)	Barometer
--	2335	2.49 (9.41)	--	--	29.7" Hg(100.6 kPa)
Maximum Torque - 500 lb.-ft. (679 Nm) at 1096 rpm					
Maximum Torque Rise - 46.7%					
Torque rise at 1800 engine rpm - 29%					

### 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>									
115.1 (85.8)	9020 (40.12)	4.78 (7.70)	2201	4.3	0.561 (0.341)	12.39 (2.44)	160 (71)	72 (22)	29.2 (99.0)
<b>75% of Pull at Maximum Power—Turtle</b>									
89.7 (66.9)	6785 (30.18)	4.96 (7.98)	2247	3.0	0.598 (0.364)	11.61 (2.29)	158 (70)	70 (21)	29.2 (99.0)
<b>50% of Pull at Maximum Power—Turtle</b>									
61.6 (45.9)	4550 (20.23)	5.08 (8.17)	2273	1.9	0.707 (0.430)	9.82 (1.93)	156 (69)	70 (21)	29.2 (99.0)
<b>75% of Pull at Reduced Engine Speed—Turtle</b>									
89.8 (67.0)	6775 (30.14)	4.97 (8.00)	1681	3.0	0.495 (0.301)	14.02 (2.76)	154 (68)	73 (23)	29.2 (99.0)
<b>50% of Pull at Reduced Engine Speed—Turtle</b>									
61.4 (45.8)	4565 (20.30)	5.04 (8.11)	1673	2.0	0.528 (0.321)	13.15 (2.59)	156 (69)	73 (23)	29.2 (99.0)

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

**Dates of tests:** December 2003 to May, 2004  
Sound tests: January 19, 2006

**Manufacturer:** AGCO S.A. BP 60307, 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 (0.8322 kg/l) Oil SAE 10W40 API service classification CF4 Transmission and hydraulic lubricant BPTerrac Tractan 9 10W/40 Frontaxle lubricant SAE 85W140 API GL-5

**ENGINE:** Make Sisu Diesel Type six cylinder vertical with turbocharger and air to air intercooler Serial No. M20369 Crankshaft lengthwise Rated engine speed 2200 Bore and stroke 4.252" x 4.724" (108.0 mm x 120.0 mm) Compression ratio 18.5 to 1 Displacement 402 cu in (6596 ml) Starting system 12 volt Lubrication pressure Air cleaner two paper elements Oil filter one full flow cartridge Oil cooler engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil Fuel filter one paper element Muffler underhood Exhaust vertical Cooling medium temperature control thermostat and variable speed fan

**CHASSIS:** Type front wheel assist Serial No. M309065 Tread width rear 63.1" (1604 mm) to 70.8" (1798 mm) front 67.0" (1702 mm) to 75.4" (1915 mm) Wheelbase 118.4" (3008 mm) Hydraulic control system direct engine drive Transmission AGCO CVT. A combination of mechanical and hydrostatic sections are electronically controlled to give the travel speeds shown. The transmission has two mechanical ranges. Nominal travel speeds mph (km/h) forward: Low range 0-17 (0-28), high range 0-31 (0-50) 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 15145 lb (6870 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)	Consumption Hp.hr/gal (kW.h/l)	Temp. °F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
113.7 (84.8)	14565 (64.79)	2.93 (4.71)	1908	14.8	Turtle 0.532 (0.323)	13.06 (2.57)	158 (70)	66 (19)	29.2 (99.0)
120.8 (90.1)	13025 (57.94)	3.48 (5.60)	1897	8.9	Turtle 0.495 (0.301)	14.03 (2.76)	160 (71)	66 (19)	29.2 (99.0)
123.1 (91.8)	11610 (51.65)	3.98 (6.40)	1905	6.8	Turtle 0.487 (0.296)	14.26 (2.81)	158 (70)	61 (16)	29.2 (99.0)
123.8 (92.3)	9555 (42.50)	4.86 (7.82)	1903	4.9	Turtle 0.485 (0.295)	14.31 (2.82)	158 (70)	64 (18)	29.2 (99.0)
123.5 (92.1)	8545 (38.02)	5.42 (8.72)	1906	4.2	Turtle 0.487 (0.296)	14.26 (2.81)	160 (71)	68 (20)	29.2 (99.0)
123.4 (92.0)	7580 (33.71)	6.10 (9.82)	1898	3.6	Turtle 0.487 (0.296)	14.26 (2.81)	160 (71)	64 (18)	29.2 (99.0)
121.4 (90.5)	6435 (28.63)	7.07 (11.38)	1897	2.9	Turtle 0.495 (0.301)	14.03 (2.76)	160 (71)	64 (18)	29.2 (99.0)
120.0 (89.5)	5570 (24.78)	8.08 (13.00)	1901	2.4	Turtle 0.499 (0.304)	13.91 (2.74)	160 (71)	63 (17)	29.2 (99.0)
117.1 (87.3)	4975 (22.13)	8.83 (14.21)	1902	2.1	Turtle 0.509 (0.309)	13.65 (2.69)	158 (70)	64 (18)	29.2 (99.0)
121.2 (90.4)	8430 (37.50)	5.39 (8.68)	1904	4.0	Rabbit 0.495 (0.301)	14.02 (2.76)	158 (70)	61 (16)	29.2 (99.0)
122.5 (91.4)	7370 (32.78)	6.23 (10.03)	1903	3.4	Rabbit 0.490 (0.298)	14.16 (2.79)	156 (69)	64 (18)	29.2 (99.0)
121.9 (90.9)	6460 (28.73)	7.08 (11.39)	1895	2.8	Rabbit 0.489 (0.297)	14.19 (2.79)	158 (70)	64 (18)	29.2 (99.0)
121.1 (90.3)	5835 (25.96)	7.78 (12.52)	1892	2.5	Rabbit 0.494 (0.300)	14.06 (2.77)	160 (71)	66 (19)	29.2 (99.0)
120.8 (90.1)	5065 (22.52)	8.95 (14.40)	1896	2.1	Rabbit 0.496 (0.302)	14.01 (2.76)	160 (71)	64 (18)	29.2 (99.0)

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

**NOTE 1:** The data on this summary was obtained from OECD report 2197 conducted on the Massey Ferguson 7490 Diesel.

**NOTE 2:** The engine of the AGCO RT140A has two different injection pump characteristics. Power boosted - for travel speeds above 9.3 mph (15.0 kmh) or above 5.0 mph (8.0 kmh) with PTO engaged. Standard for all other conditions.

**REMARKS:** All test results were determined from observed data obtained in accordance with official OECD test procedures. 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. **2197**, Nebraska Summary 521, May, 22, 2006.

Leonard L. Bashford  
 Director

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 Board of Tractor Test Engineers

**TIRES, BALLAST AND WEIGHT**

	<b>With Ballast</b>	<b>Without Ballast</b>
<b>Rear tires</b> - No., size, ply & psi(kPa)	Four 480/80R42; **,6 (40)	Two 520/85R42; **,12(80)
Ballast - Duals(total)	1770 lb (803 kg)	None
- Liquid(none)	None	None
<b>Front tires</b> - No., size, ply & psi(kPa)	Two 380/85R30; **,12 (80)	Two 540/65R30; **,12(80)
Ballast - Liquid(total)	None	None
- Cast Iron(total)	None	None
<b>Height of Drawbar</b>	21.7 in (550 mm)	21.7 in (550 mm)
<b>Static Weight with operator</b> - Rear	11330 lb (5140 kg)	9635 lb (4370 kg)
- Front	5535 lb (2510 kg)	5675 lb (2575 kg)
- Total	16865 lb (7650 kg)	15310 lb (6945 kg)

**DRAWBAR PERFORMANCE**  
**(Ballasted - 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)	Fuel Consumption Hp.hr/gal (kW.h/l)	Temp. <sup>o</sup> F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
<b>Maximum Power—Turtle</b>									
114.6 (85.4)	8810 (39.20)	4.88 (7.85)	2198	3.9	0.564 (0.343)	12.28 (2.42)	158 (70)	66 (19)	29.4 (99.6)
<b>75% of Pull at Maximum Power—Turtle</b>									
88.7 (66.1)	6600 (29.36)	5.04 (8.11)	2244	3.1	0.618 (0.376)	11.22 (2.21)	158 (70)	66 (19)	29.4 (99.6)
<b>50% of Pull at Maximum Power—Turtle</b>									
60.7 (45.3)	4410 (19.62)	5.16 (8.31)	2271	2.3	0.725 (0.441)	9.59 (1.89)	154 (68)	66 (19)	29.4 (99.6)
<b>75% of Pull at Reduced Engine Speed—Turtle</b>									
89.9 (67.0)	6675 (29.69)	5.05 (8.13)	1960	3.2	0.524 (0.319)	13.25 (2.61)	156 (69)	70 (21)	29.4 (99.6)
<b>50% of Pull at Reduced Engine Speed—Turtle</b>									
60.7 (45.3)	4395 (19.55)	5.18 (8.34)	1960	2.3	0.615 (0.374)	11.30 (2.23)	153 (67)	70 (21)	29.4 (99.6)
<b>MAXIMUM POWER IN SELECTED GEARS</b>									
108.1 (80.6)	16960 (75.44)	2.39 (3.85)	2065	15.0	Turtle 0.582 (0.354)	11.93 (2.35)	160 (71)	68 (20)	29.4 (99.6)
121.6 (90.7)	13990 (62.22)	3.26 (5.24)	1897	7.3	Turtle 0.492 (0.299)	14.11 (2.78)	160 (71)	68 (20)	29.4 (99.6)
122.8 (91.6)	12815 (57.00)	3.59 (5.79)	1899	5.9	Turtle 0.487 (0.296)	14.26 (2.81)	158 (70)	68 (20)	29.4 (99.6)
122.6 (91.4)	11290 (50.23)	4.07 (6.55)	1900	5.2	Turtle 0.487 (0.296)	14.31 (2.82)	160 (71)	66 (19)	29.4 (99.6)
120.6 (89.9)	9480 (42.17)	4.77 (7.67)	1901	4.5	Turtle 0.498 (0.303)	13.96 (2.75)	160 (71)	64 (18)	29.4 (99.6)
120.3 (89.7)	8125 (36.15)	5.55 (8.94)	1903	3.5	Turtle 0.496 (0.302)	13.96 (2.75)	160 (71)	66 (19)	29.4 (99.6)
118.3 (88.2)	7240 (32.21)	6.13 (9.86)	1896	3.2	Turtle 0.505 (0.307)	13.71 (2.70)	158 (70)	66 (19)	29.4 (99.6)
118.1 (88.1)	6275 (27.92)	7.06 (11.36)	1896	2.9	Turtle 0.506 (0.308)	13.71 (2.70)	158 (70)	64 (18)	29.4 (99.6)
113.2 (84.4)	5195 (23.12)	8.17 (13.15)	1896	2.3	Turtle 0.523 (0.318)	13.30 (2.62)	160 (71)	66 (19)	29.4 (99.6)
111.8 (83.4)	4640 (20.64)	9.04 (14.54)	1900	2.1	Turtle 0.533 (0.324)	13.05 (2.57)	158 (70)	66 (19)	29.4 (99.6)
117.9 (87.9)	8065 (35.87)	5.48 (8.83)	1895	3.6	Rabbit 0.505 (0.307)	13.76 (2.71)	156 (69)	66 (16)	29.4 (99.6)
117.3 (87.5)	7005 (31.16)	6.28 (10.11)	1905	3.3	Rabbit 0.510 (0.311)	13.60 (2.68)	153 (67)	66 (16)	29.4 (99.6)
117.5 (87.6)	6305 (28.05)	6.99 (11.24)	1895	3.2	Rabbit 0.509 (0.309)	13.65 (2.69)	154 (68)	59 (15)	29.4 (99.6)
115.9 (86.4)	5535 (24.61)	7.85 (12.63)	1897	2.6	Rabbit 0.514 (0.313)	13.50 (2.66)	156 (69)	63 (17)	29.4 (99.6)
116.9 (87.2)	4870 (21.66)	9.00 (14.49)	1892	2.6	Rabbit 0.512 (0.312)	13.55 (2.67)	154 (68)	63 (17)	29.4 (99.6)

**TRACTOR SOUND LEVEL WITH CAB**

**dB(A)**

At no load in Turtle-4.6 mph (7.5 km/h)- no load	70.4
Bystander in Rabbit	86.4

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

CATEGORY: III

Quick Attach: None

Maximum force exerted through whole range: 14283 lbs (63.5 kN)

i) Opening pressure of relief valve: NA

Sustained pressure of the open relief valve: 2875 psi (198 bar)

ii) Pump delivery rate at minimum pressure: 32.2 GPM (122.0 l/min)

iii) Pump delivery rate at maximum

hydraulic power: 29.0 GPM (109.7 l/min)

Delivery pressure: 2610 psi (180 bar)

Power: 44.1 HP (32.9 kW)

	SAE TEST		OECD TEST	
	inch	mm	inch	mm
A	30.3	768	29.7	754
B	14.0	355	14.0	355
C	13.7	347	13.7	347
D	12.0	305	12.0	305
E	12.6	321	12.6	321
F	10.0	255	10.0	255
G	34.2	870	34.2	870
H	2.4	60	2.4	60
I	18.7	476	18.7	476
J	24.2	615	24.2	615
K	27.2	690	27.2	690
L	46.3	1175	46.3	1175
M	26.2	665	26.2	665
N	40.6	1030	40.6	1030
O	8.0	203	9.0	230
P	46.2	1173	51.2	1300
Q	37.3	947	39.5	1003
R	29.9	759	29.3	744

**THREE POINT HITCH PERFORMANCE - SAE Test**

Observed Maximum Pressure psi. (bar)	2850 (197)
Location:	lift cylinder
Hydraulic oil temperature: °F (°C)	148 (64)
Location:	hydraulic sump
Category:	III
Quick attach:	None

**SAE Static Test**—System pressure 2665 psi (177 Bar)

Hitch point distance to ground level in. (mm)	8.2 (208)	14.4 (366)	20.8 (528)	27.2 (691)	33.6 (853)	40.0 (1016)
Lift force on frame lb	19719	17748	17721	18009	17874	16992
" " " " " " (kN)	(87.7)	(78.9)	(78.8)	(79.5)	(79.5)	(75.6)

