January 2005

Nebraska Summary 540: AGCO DT180A Diesel

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SUMMARY OF OECD TEST 2321–NEBRASKA SUMMARY 540
AGCO DT 180A 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
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—1082 rpm)					
186.5 *(139.1)*	2201	11.35 *(42.95)*	0.424 *(0.258)*	16.45 *(3.24)*	
Standard Power Take-off Speed(1000 rpm)					
209.9 *(156.5)*	2034	11.49 *(43.49)*	0.381 *(0.232)*	18.27 *(3.60)*	
Maximum Power (2 hours)					
210.4 *(156.9)*	1999	11.28 *(42.69)*	0.373 *(0.227)*	18.68 *(3.68)*	
VARYING POWER AND FUEL CONSUMPTION					
186.5 *(139.1)*	2201	11.35 *(42.95)*	0.424 *(0.258)*	16.45 *(3.24)*	Air temperature
160.9 *(120.0)*	2237	10.04 *(38.04)*	0.436 *(0.265)*	15.99 *(3.15)*	63°F *(17°C)*
121.6 *(90.7)*	2248	8.18 *(30.97)*	0.468 *(0.285)*	14.87 *(2.93)*	Relative humidity
81.4 *(60.7)*	2260	6.07 *(22.96)*	0.519 *(0.316)*	13.40 *(2.64)*	35%
40.8 *(30.4)*	2270	4.12 *(15.58)*	0.704 *(0.428)*	9.90 *(1.95)*	Barometer
-- --	2279	2.45 *(9.27)*	-- --	-- --	29.2" Hg *(98.8 kPa)*

Maximum Torque - 645 lb.-ft. *(875 Nm)* at 1200 rpm
Maximum Torque Rise - 45.1%
Torque rise at 1800 engine rpm - 33%

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—Turtle									
155.2 *(115.7)*	12175 *(54.16)*	4.78 *(7.69)*	2201	4.2	0.507 *(0.308)*	13.71 *(2.70)*	176 *(80)*	61 *(16)*	29.6 *(100.2)*
75% of Pull at Maximum Power—Turtle									
120.3 *(89.7)*	9115 *(40.54)*	4.95 *(7.97)*	2243	3.2	0.543 *(0.330)*	12.79 *(2.52)*	178 *(81)*	61 *(16)*	29.6 *(100.2)*
50% of Pull at Maximum Power—Turtle									
81.3 *(60.6)*	6045 *(26.88)*	5.04 *(8.12)*	2252	2.1	0.616 *(0.375)*	11.27 *(2.22)*	178 *(81)*	61 *(16)*	29.6 *(100.2)*
75% of Pull at Reduced Engine Speed—Turtle									
120.2 *(89.6)*	9105 *(40.50)*	4.95 *(7.97)*	1935	3.1	0.458 *(0.279)*	15.18 *(2.99)*	181 *(83)*	61 *(16)*	29.6 *(100.2)*
50% of Pull at Reduced Engine Speed—Turtle									
81.9 *(61.1)*	6060 *(26.96)*	5.07 *(8.16)*	1949	2.0	0.507 *(0.309)*	13.70 *(2.70)*	181 *(83)*	61 *(16)*	29.6 *(100.2)*

Location of tests: DLG - Test Centre, Technology and Farm inputs, Max-Eyth-Weg 1, D-64823 Gross-Umstadt, Germany

Dates of tests: March - May, 2005

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)*** 0.836 **Fuel weight** 6.96 lbs/gal *(0.8346 kg/l)* **Oil SAE** 10W40 **API service classification** CH4 **Transmission and hydraulic lubricant** BP STOU 10W/40 **Front axle lubricant** SAE 85W90 API GL5

ENGINE: Make Sisu Diesel **Type** six cylinder vertical with turbocharger and air to air intercooler **Serial No.** P08255 **Crankshaft** lengthwise **Rated engine speed** 2200 **Bore and stroke** 4.252" x 5.276" *(108.0 mm x 134.0 mm)* **Compression ratio** 17.5 to 1 **Displacement** 449 cu in *(7365 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** vertical **Cooling medium temperature control** thermostat and variable speed fan

CHASSIS: Type front wheel assist **Serial No.** N174999 **Tread width** rear 66.9" *(1699 mm)* to 91.6" *(2326 mm)* front 72.5" *(1842 mm)* to 78.6" *(1996 mm)* **Wheelbase** 121.1" *(3075 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 - 25 *(0 - 40)* reverse: Low range 0 - 11 *(0 - 18)*, high range 0 - 12 *(0 - 19)* **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 1588 engine rpm or 1000 rpm at 2033 engine rpm **Unladen tractor mass** 19910 lb *(9030 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)*	
151.4 *(112.9)*	19795 *(88.06)*	2.87 *(4.62)*	2096	15.0	0.520 *(0.316)*	13.36 *(2.63)*	178 *(81)*	61 *(16)*	29.6 *(100.2)*	Turtle
169.4 *(126.3)*	19560 *(87.01)*	3.25 *(5.23)*	2002	10.3	0.464 *(0.282)*	14.97 *(2.95)*	176 *(80)*	61 *(16)*	29.6 *(100.2)*	Turtle
175.5 *(130.9)*	17085 *(76.01)*	3.85 *(6.20)*	2000	6.4	0.447 *(0.272)*	15.58 *(3.07)*	181 *(83)*	61 *(16)*	29.6 *(100.2)*	Turtle
174.7 *(130.3)*	15345 *(68.27)*	4.27 *(6.87)*	2001	5.5	0.452 *(0.275)*	15.38 *(3.03)*	180 *(82)*	61 *(16)*	29.6 *(100.2)*	Turtle
176.2 *(131.4)*	12935 *(57.55)*	5.11 *(8.22)*	2003	4.4	0.447 *(0.272)*	15.53 *(3.06)*	180 *(82)*	61 *(16)*	29.6 *(100.2)*	Turtle
175.1 *(130.6)*	11350 *(50.49)*	5.79 *(9.31)*	2002	3.6	0.450 *(0.274)*	15.43 *(3.04)*	181 *(83)*	61 *(16)*	29.6 *(100.2)*	Turtle
174.7 *(130.3)*	9880 *(43.95)*	6.63 *(10.67)*	2002	3.2	0.452 *(0.275)*	15.38 *(3.03)*	181 *(83)*	61 *(16)*	29.6 *(100.2)*	Turtle
173.5 *(129.4)*	8720 *(38.78)*	7.46 *(12.01)*	2003	2.8	0.456 *(0.278)*	15.23 *(3.00)*	183 *(84)*	61 *(16)*	29.6 *(100.2)*	Turtle
170.8 *(127.4)*	7375 *(32.80)*	8.69 *(13.98)*	2003	2.6	0.459 *(0.279)*	15.13 *(2.98)*	180 *(82)*	61 *(16)*	29.6 *(100.2)*	Turtle
166.6 *(124.2)*	14780 *(65.75)*	4.23 *(6.80)*	2000	5.3	0.473 *(0.288)*	14.67 *(2.89)*	180 *(82)*	61 *(16)*	29.6 *(100.2)*	Rabbit
169.6 *(126.5)*	13345 *(59.37)*	4.77 *(7.67)*	2001	4.7	0.464 *(0.282)*	14.97 *(2.95)*	180 *(82)*	61 *(16)*	29.6 *(100.2)*	Rabbit
171.5 *(127.9)*	11975 *(53.26)*	5.37 *(8.65)*	2001	4.0	0.459 *(0.279)*	15.13 *(2.98)*	178 *(81)*	61 *(16)*	29.6 *(100.2)*	Rabbit
171.0 *(127.5)*	10910 *(48.53)*	5.88 *(9.46)*	2002	3.7	0.460 *(0.280)*	15.08 *(2.97)*	183 *(84)*	61 *(16)*	29.6 *(100.2)*	Rabbit
171.6 *(128.0)*	9850 *(43.82)*	6.53 *(10.51)*	2002	3.3	0.458 *(0.279)*	15.18 *(2.99)*	185 *(85)*	61 *(16)*	29.6 *(100.2)*	Rabbit
172.3 *(128.5)*	8380 *(37.27)*	7.71 *(12.41)*	2002	3.1	0.456 *(0.278)*	15.23 *(3.00)*	185 *(85)*	61 *(16)*	29.6 *(100.2)*	Rabbit
170.6 *(127.2)*	7775 *(34.59)*	8.23 *(13.24)*	2005	2.5	0.461 *(0.281)*	15.07 *(2.97)*	178 *(81)*	61 *(16)*	29.6 *(100.2)*	Rabbit

NOTE: The data on this summary was obtained from OECD report 2321 conducted on the Massey Ferguson 8450 Diesel.

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

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 39.0 GPM *(147 lpm)* flow at the remote outlets. 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. **2321,** Nebraska Summary 540, June 16, 2006.

Leonard L. Bashford
Director

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

TIRES, BALLAST AND WEIGHT	**With Ballast**	**Without Ballast**
Rear tires - No.,size, ply & psi*(kPa)*	Four 480/80R46; ***;10 *(65)*	Two 650/85R38;***;12*(80)*
Ballast - Duals(total)	2190 lb *(993 kg)*	None
- Cast iron(total)	1005 lb *(455 kg)*	None
Front tires - No.,size, ply & psi*(kPa)*	Two 14.9R34; ***;30 *(210)*	Two 600/70R28;***;12*(80)*
Ballast - Liquid(total)	None	None
- Cast Iron(total)	1215 lb *(552 kg)*	None
Height of Drawbar	20.5 in *(520 mm)*	20.5 in *(520 mm)*
Static Weight with operator- Rear	15170 lb *(6880 kg)*	12280 lb *(5570 kg)*
- Front	9315 lb *(4225 kg)*	7795 lb *(3535 kg)*
- Total	24485 lb*(11105 kg)*	20075 lb *(9105 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)*	Hp.hr/gal *(kW.h/l)*	Temp.°F *(°C)* cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
Maximum Power—Turtle									
153.0 *(114.1)*	11670 *(51.90)*	4.92 *(7.91)*	2200	4.4	0.507 *(0.309)*	13.70 *(2.70)*	174 *(79)*	54 *(12)*	29.5 *(100.0)*
75% of Pull at Maximum Power—Turtle									
118.0 *(88.0)*	8725 *(38.80)*	5.07 *(8.16)*	2242	3.5	0.550 *(0.335)*	12.63 *(2.49)*	176 *(80)*	54 *(12)*	29.5 *(100.0)*
50% of Pull at Maximum Power—Turtle									
79.5 *(59.3)*	5775 *(25.70)*	5.16 *(8.31)*	2251	2.8	0.639 *(0.389)*	10.86 *(2.14)*	176 *(80)*	54 *(12)*	29.5 *(100.0)*
75% of Pull at Reduced Engine Speed—Turtle									
118.4 *(88.3)*	8725 *(38.82)*	5.09 *(8.19)*	2009	3.5	0.480 *(0.292)*	14.47 *(2.85)*	174 *(79)*	52 *(11)*	29.5 *(100.0)*
50% of Pull at Reduced Engine Speed—Turtle									
79.9 *(59.6)*	5780 *(25.72)*	5.19 *(8.35)*	2017	2.8	0.554 *(0.337)*	12.54 *(2.47)*	171 *(77)*	52 *(11)*	29.5 *(100.0)*
MAXIMUM POWER IN SELECTED GEARS									
					Turtle				
150.3 *(112.1)*	24905 *(110.79)*	2.26 *(3.64)*	2128	15.0	0.523 *(0.318)*	13.30 *(2.62)*	174 *(79)*	48 *(9)*	29.5 *(100.0)*
					Turtle				
167.5 *(124.9)*	23610 *(105.03)*	2.66 *(4.28)*	2001	11.1	0.470 *(0.286)*	14.77 *(2.91)*	174 *(79)*	46 *(8)*	29.5 *(100.0)*
					Turtle				
169.9 *(126.7)*	22115 *(98.37)*	2.88 *(4.64)*	2001	9.1	0.464 *(0.282)*	14.97 *(2.95)*	178 *(81)*	55 *(13)*	29.4 *(99.6)*
					Turtle				
173.9 *(129.7)*	19855 *(88.31)*	3.29 *(5.29)*	2001	7.4	0.452 *(0.275)*	15.38 *(3.03)*	176 *(80)*	55 *(13)*	29.4 *(99.5)*
					Turtle				
174.7 *(130.3)*	16840 *(74.90)*	3.89 *(6.26)*	2000	5.9	0.450 *(0.274)*	15.43 *(3.04)*	178 *(81)*	55 *(13)*	29.4 *(99.5)*
					Turtle				
174.9 *(130.4)*	14410 *(64.09)*	4.55 *(7.32)*	2001	5.2	0.450 *(0.274)*	15.43 *(3.04)*	181 *(83)*	61 *(16)*	29.5 *(100.0)*
					Turtle				
175.0 *(130.5)*	13155 *(58.52)*	4.99 *(8.03)*	2001	4.8	0.450 *(0.274)*	15.43 *(3.04)*	180 *(82)*	61 *(16)*	29.5 *(100.0)*
					Turtle				
172.5 *(128.6)*	11205 *(49.85)*	5.77 *(9.29)*	2001	4.2	0.455 *(0.276)*	15.29 *(3.01)*	180 *(82)*	63 *(17)*	29.5 *(100.0)*
					Turtle				
171.1 *(127.6)*	9775 *(43.47)*	6.56 *(10.57)*	2004	3.6	0.460 *(0.280)*	15.12 *(2.98)*	180 *(82)*	63 *(17)*	29.5 *(100.0)*
					Turtle				
166.2 *(123.9)*	8240 *(36.65)*	7.56 *(12.17)*	2002	3.5	0.472 *(0.287)*	14.71 *(2.90)*	176 *(80)*	59 *(15)*	29.4 *(99.5)*
					Turtle				
163.6 *(122.0)*	7240 *(32.21)*	8.47 *(13.64)*	2002	3.1	0.480 *(0.292)*	14.45 *(2.85)*	180 *(82)*	59 *(15)*	29.4 *(99.5)*
					Rabbit				
165.2 *(123.2)*	14815 *(65.89)*	4.18 *(6.73)*	2000	5.4	0.475 *(0.289)*	14.62 *(2.88)*	180 *(82)*	63 *(17)*	29.5 *(100.0)*
					Rabbit				
169.6 *(126.5)*	13250 *(58.93)*	4.80 *(7.73)*	2002	5.0	0.464 *(0.282)*	14.97 *(2.95)*	178 *(81)*	61 *(16)*	29.5 *(100.0)*
					Rabbit				
169.0 *(126.0)*	11825 *(52.61)*	5.36 *(8.62)*	2001	4.7	0.463 *(0.281)*	15.02 *(2.96)*	176 *(80)*	52 *(11)*	29.6 *(100.2)*
					Rabbit				
169.2 *(126.2)*	10640 *(47.33)*	5.96 *(9.60)*	2002	4.4	0.463 *(0.282)*	15.01 *(2.96)*	180 *(82)*	52 *(11)*	29.6 *(100.1)*
					Rabbit				
169.4 *(126.3)*	9595 *(42.69)*	6.62 *(10.65)*	2001	4.0	0.463 *(0.282)*	15.01 *(2.96)*	181 *(83)*	54 *(12)*	29.6 *(100.1)*
					Rabbit				
167.5 *(124.9)*	8255 *(36.73)*	7.61 *(12.24)*	2002	3.2	0.467 *(0.284)*	14.87 *(2.93)*	180 *(82)*	54 *(12)*	29.6 *(100.1)*
					Rabbit				
166.2 *(123.9)*	7620 *(33.89)*	8.18 *(13.17)*	2004	3.1	0.472 *(0.287)*	14.72 *(2.90)*	178 *(81)*	59 *(15)*	29.6 *(100.1)*

TRACTOR SOUND LEVEL WITH CAB	dB(A)
At no load in Turtle - 4.6 mph *(7.5 km/h)* - no load	71.0
Bystander	---

THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: III
Quick Attach: None

Maximum force exerted through whole range:	14648 lbs *(65.2 kN)*
i) Opening pressure of relief valve:	NA
Sustained pressure of the open relief valve:	2875 psi *(192 bar)*
ii) Pump delivery rate at minimum pressure:	37.4 GPM *(141.5 l/min)*
iii) Pump delivery rate at maximum hydraulic power:	35.3 GPM *(133.7 l/min)*
Delivery pressure:	2320 psi *(160 bar)*
Power:	47.7 HP *(35.6 kW)*

THREE POINT HITCH PERFORMANCE SAE Test

Observed Maximum Pressure psi. *(bar)*	2800 *(193)*
Location:	lift cylinder
Hydraulic oil temperature: °F *(°C)*	150 *(66)*
Location:	hydraulic sump
Category:	III
Quick attach:	None

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

Hitch point distance to ground level in. *(mm)*	8.2 *(208)*	16.1 *(409)*	24.1 *(612)*	32.1 *(815)*	40.0 *(1016)*
Lift force on frame lb	16994	18242	18320	18191	16921
" " " " " " *(kN)*	*(75.6)*	*(81.1)*	*(81.5)*	*(80.9)*	*(75.3)*

	OECD test		SAE test	
	inch	*mm*	inch	*mm*
A	31.9	*809*	30.4	*773*
B	14.2	*360*	14.2	*360*
C	17.7	*449*	17.7	*449*
D	15.4	*390*	15.4	*390*
E	11.8	*300*	8.9	*225*
F	13.0	*330*	13.0	*330*
G	36.2	*920*	36.2	*920*
H	3.4	*85*	3.4	*85*
I	15.7	*400*	18.7	*475*
J	23.2	*590*	23.2	*590*
K	26.8	*680*	26.8	*680*
L	50.4	*1281*	50.4	*1281*
M	27.9	*709*	27.9	*709*
N	41.1	*1045*	41.1	*1045*
O	9.0	*230*	8.0	*203*
P	50.2	*1275*	45.2	*1150*
Q	39.3	*999*	38.5	*978*
R	34.3	*872*	34.8	*886*