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2012

## Nebraska Summary: S845 Challenger MT585D

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# SUMMARY OF OECD TEST 2706—NEBRASKA SUMMARY 845

## CHALLENGER MT585D TECHSTAR DIESEL

### CONTINUOUSLY VARIABLE TRANSMISSION

#### POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Diesel Consumption		D.E.F. Consumption		Mean Atmospheric Conditions
		Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.l)	Gal/hr (l/h)	
<b>MAXIMUM POWER AND FUEL CONSUMPTION</b>						
<b>Rated Engine Speed—(PTO speed—1031 rpm)</b>						
187.5 (139.8)	2098	10.86 (41.10)	0.404 (0.246)	17.26 (3.40)	0.59 (2.23)	
<b>Standard Power Take-off Speed (1000 rpm)</b>						
201.2 (150.0)	2034	11.16 (42.25)	0.387 (0.236)	18.03 (3.55)	0.68 (2.56)	
<b>Maximum Power (1 hour)</b>						
212.0 (158.1)	1950	11.55 (43.72)	0.380 (0.231)	18.36 (3.62)	0.73 (2.77)	

#### VARYING POWER AND FUEL CONSUMPTION

187.5 (139.8)	2098	10.86 (41.10)	0.404 (0.246)	17.26 (3.40)	0.59 (2.23)	Air temperature
160.4 (119.6)	2119	9.39 (35.55)	0.408 (0.249)	17.08 (3.36)	0.52 (1.96)	72°F (22°C)
120.5 (89.9)	2131	7.64 (28.93)	0.442 (0.269)	15.77 (3.11)	0.43 (1.61)	Relative humidity
80.3 (59.9)	2139	5.71 (21.63)	0.496 (0.302)	14.06 (2.77)	0.28 (1.06)	64%
40.6 (30.3)	2149	3.97 (15.01)	0.682 (0.415)	10.23 (2.02)	0.20 (0.75)	Barometer
---	2153	2.37 (8.97)	---	---	---	30.3" Hg (102.5 kPa)

Maximum torque - 723 lb.-ft. (980 Nm) at 1451 rpm  
 Maximum torque rise - 54.0%  
 Torque rise at 1700 engine rpm - 40%  
 Power increase at 1950 engine rpm - 13%

#### 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.l)	Temp. °F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
<b>Maximum Power—Turtle 8</b>									
158.5 (118.2)	12115 (53.9)	4.91 (7.89)	2093	6.1	0.438 (0.266)	15.89 (3.13)	183 (84)	46 (8)	30.4 (103.0)
<b>75% of Pull at Maximum Power—Turtle 8</b>									
118.5 (88.4)	9105 (40.5)	4.88 (7.86)	2111	5.0	0.481 (0.292)	14.48 (2.85)	181 (83)	46 (8)	30.4 (103.0)
<b>50% of Pull at Maximum Power—Turtle 8</b>									
79.8 (59.5)	6025 (26.8)	4.97 (7.99)	2129	4.1	0.547 (0.333)	12.72 (2.51)	181 (83)	46 (8)	30.4 (103.0)
<b>75% of Pull at Reduced Engine Speed—Turtle 10</b>									
118.1 (88.1)	9105 (40.5)	4.87 (7.83)	1390	4.9	0.402 (0.244)	17.32 (3.41)	181 (83)	48 (9)	30.1 (102.0)
<b>50% of Pull at Reduced Engine Speed—Turtle 10</b>									
79.7 (59.4)	6045 (26.9)	4.94 (7.95)	1405	4.2	0.431 (0.262)	16.14 (3.18)	176 (80)	48 (9)	30.1 (102.0)

**Location of tests:** Centre d'Antony, 1 rue Pierre-Giles de Gennes, CS 10030 92761 Antony, Cedex France

**Dates of tests:** January - May, 2012

**Manufacturer:** AGCO S.A. ZA, n2, BP 60307, Avenue Blaise Pascal, 60026 Beauvais, Cedex, France

**FUEL and OIL:** Fuel No. 2 Diesel **Specific gravity converted to 60°/60°F (15°/15°C)** 0.838 **Fuel weight** 6.98 lbs/gal (0.836 kg/l) **Diesel Exhaust Fluid (DEF)** 32% aqueous urea solution **DEF weight** 9.08 lbs/gal (1.091 kg/l) **Oil SAE 15W40 API service classification CH4 Transmission and hydraulic lubricant** BPTerrac Tractan 910W/40 **Front axle lubricant** SAE 85W140 API GL-5

**ENGINE:** Make Sisu Diesel **Type** six cylinder vertical with turbocharger, air to air intercooler and SCR (selective catalyst reduction) technology **Serial No.** W00450 **Crankshaft** lengthwise **Rated engine speed** 2100 **Bore and stroke** 4.252" x 5.276" (108.0 mm x 134.0 mm) **Compression ratio** 17.8 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** underhood **Exhaust** vertical **Cooling medium temperature control** thermostat and variable speed fan

**CHASSIS:** **Type** front wheel assist **Serial No.** T318901 **Tread width** rear 52.8" (1340 mm) to 87.8" (2230 mm) front 52.8" (1340 mm) to 87.8" (2230 mm) **Wheelbase** 117.8" (2993 mm) **Hydraulic control system** direct engine drive **Transmission** 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 0-19 (0-30), high range 0-25 (0-40) reverse: Low range 0-11 (0-17), high range 0-19 (0-30) **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 1932 engine rpm or 1000 rpm at 2035 engine rpm **Unladen tractor mass** 18695 lb (8480 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 lb/hp.hr (kg/kW.h)	Consumption Hp.hr/gal (kW.h/l)	Temp. <sup>o</sup> F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
Turtle 4.5									
120.2 (89.6)	16750 (74.5)	2.69 (4.33)	2128	14.4	0.492 (0.299)	14.16 (2.79)	181 (83)	50 (10)	30.1 (102.0)
Turtle 5.5									
133.7 (99.7)	15850 (70.5)	3.16 (5.09)	2115	11.1	0.488 (0.297)	14.26 (2.81)	183 (84)	45 (7)	30.4 (103.0)
Turtle 6.5									
159.7 (119.1)	15850 (70.5)	3.78 (6.08)	2035	10.0	0.452 (0.275)	15.38 (3.03)	183 (84)	45 (7)	30.4 (103.0)
Turtle 8									
166.7 (124.3)	13240 (58.9)	4.72 (7.60)	2011	9.1	0.431 (0.262)	16.14 (3.18)	183 (84)	46 (8)	30.4 (103.0)
Turtle 10									
167.9 (125.2)	11535 (51.3)	5.46 (8.79)	2002	7.5	0.432 (0.263)	16.09 (3.17)	181 (83)	46 (8)	30.4 (103.0)
Turtle 11									
165.2 (123.2)	9915 (44.1)	6.25 (10.06)	2024	5.1	0.436 (0.265)	15.95 (3.14)	185 (85)	49 (9)	30.1 (102.0)
Turtle 13									
163.5 (121.9)	7945 (35.3)	7.72 (12.43)	2015	4.3	0.442 (0.268)	15.76 (3.10)	185 (85)	52 (11)	30.1 (102.0)
Turtle 15									
159.7 (119.1)	7035 (31.3)	8.51 (13.70)	1996	3.0	0.451 (0.274)	15.43 (3.04)	187 (86)	54 (12)	30.1 (102.0)
Rabbit 8									
151.0 (112.6)	11490 (51.1)	4.93 (7.93)	2035	7.4	0.474 (0.288)	14.68 (2.89)	181 (83)	41 (5)	30.1 (102.0)
Rabbit 9									
155.7 (116.1)	10545 (46.9)	5.54 (8.91)	2019	5.8	0.464 (0.282)	14.98 (2.95)	183 (84)	41 (5)	30.1 (102.0)
Rabbit 10									
156.8 (116.9)	9350 (41.6)	6.29 (10.12)	2011	5.1	0.461 (0.280)	15.10 (2.97)	181 (83)	41 (5)	30.1 (102.0)
Rabbit 12									
162.9 (121.5)	8095 (36.0)	7.55 (12.15)	2025	4.0	0.445 (0.271)	15.63 (3.08)	183 (84)	43 (6)	30.1 (102.0)
Rabbit 14									
164.4 (122.6)	7015 (31.2)	8.79 (14.05)	2007	3.3	0.439 (0.267)	15.84 (3.12)	185 (85)	43 (6)	30.1 (102.0)
Rabbit 16									
159.6 (119.0)	6025 (26.8)	9.93 (15.99)	2035	3.0	0.451 (0.274)	15.43 (3.04)	185 (85)	45 (7)	30.1 (102.0)

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

**NOTE:** The data on this summary was obtained from testing conducted on the Massey Ferguson 7624 Diesel.

**REMARKS:** All test results were determined from observed data obtained in accordance with official OECD test procedures. The manufacturer's claim of 39 GPM (150 lpm) remote hydraulic flow, with optional pump, was not verified. The performance figures on this summary were taken from a test conducted under the OECD Code 2 test procedure.

We, the undersigned, certify that this is a true summary of data from OECD Report No. **2706**, Nebraska Summary 845, January 30, 2013.

Roger M. Hoy  
Director

M.R. Riley  
P.J. Jasa  
J.D. Luck  
Board of Tractor Test Engineers

TRACTOR SOUND LEVEL WITH CAB	Front wheel drive	
	Engaged dB(A)	Disengaged dB(A)
At no load in Turtle 8	70.0	70.0
Bystander		--

#### TIRES, BALLAST 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 460/85R38;\*\*,14(100)

Two 480/70R30;\*\*,14(100)

21.7 in (550 mm)

10725 lb (4865 kg)

8135 lb (3690 kg)

18860 lb (8555 kg)

## HYDRAULIC PERFORMANCE

CATEGORY: III

Quick Attach: None

OECD Static test

Maximum force exerted through whole range:	13715 lbs (61.0 kN)
i) Sustained pressure of the open relief valve:	2890 psi (199 bar)
	<u>two outlet sets combined</u>
ii) Pump delivery rate at minimum pressure:	30.0 GPM (113.4 l/min)
iii) Pump delivery rate at maximum	
hydraulic power:	26.9 GPM (101.9 l/min)
Delivery pressure:	2305 psi (159 bar)
Power:	36.2 HP (27.0 kW)
	<u>one outlet set</u>
ii) Pump delivery rate at minimum pressure:	29.6 GPM (112.2 l/min)
iii) Pump delivery rate at maximum	
hydraulic power:	27.2 GPM (103.0 l/min)
Delivery pressure:	1945 psi (134 bar)
Power:	30.9 HP (23.1 kW)

### HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	mm
A	31.9	810
B	14.0	355
C	14.4	365
D	12.0	305
E	8.8	223
F	10.9	276
G	36.4	925
H	2.4	60
I	16.4	416
J	25.5	649
K	26.2	665
L	47.6	1209
M	26.9	684
N	40.6	1030
O	8.5	216
P	49.6	1259
Q	39.7	1008
R	31.1	790

