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2012

Nebraska Summary: S876 Challenger MT685D

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SUMMARY OF OECD TEST 2722–NEBRASKA SUMMARY 876
CHALLENGER MT685D DIESEL
TECHSTAR TRANSMISSION

POWER TAKE-OFF PERFORMANCE

Power HP *(kW)*	Crank shaft speed rpm	Diesel Consumption Gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	D.E.F. Consumption Hp.hr/gal *(kW.h/l)*	D.E.F. Consumption Gal/hr *(l/h)*	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION						
Rated Engine Speed—(PTO speed—1067 rpm)						
305.4 *(227.7)*	2100	16.79 *(63.55)*	0.386 *(0.234)*	18.18 *(3.58)*	1.12 *(4.23)*	
Standard Power Take-off Speed (1000 rpm)						
331.0 *(246.8)*	1967	17.62 *(66.69)*	0.373 *(0.227)*	18.78 *(3.70)*	1.18 *(4.46)*	
Maximum Power (1 hour)						
333.2 *(248.5)*	1950	17.65 *(66.82)*	0.372 *(0.226)*	18.88 *(3.72)*	1.21 *(4.59)*	
VARYING POWER AND FUEL CONSUMPTION						
305.4 *(227.7)*	2100	16.79 *(63.55)*	0.386 *(0.234)*	18.18 *(3.58)*	1.12 *(4.23)*	Air temperature
261.8 *(195.2)*	2118	14.64 *(55.41)*	0.392 *(0.238)*	17.89 *(3.52)*	0.85 *(3.22)*	70°F *(21°C)*
197.2 *(147.0)*	2127	11.39 *(43.10)*	0.405 *(0.246)*	17.31 *(3.41)*	0.63 *(2.37)*	Relative humidity
132.0 *(98.4)*	2136	8.31 *(31.47)*	0.441 *(0.268)*	15.88 *(3.13)*	0.41 *(1.54)*	35%
66.2 *(49.4)*	2145	5.37 *(20.33)*	0.568 *(0.345)*	12.33 *(2.43)*	0.23 *(0.88)*	Barometer
---- ----	2153	2.70 *(10.23)*	---- ----	---- ----	0.06 *(0.22)*	30.2" Hg *(102.4 kPa)*

Maximum torque - 1042 lb.-ft. *(1413 Nm)* at 1500 rpm
Maximum torque rise - 36.5%
Torque rise at 1700 engine rpm - 30%
Power increase at 1950 engine rpm - 9.1%

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)*	Fuel Consumption Hp.hr/gal *(kW.h/l)*	Temp.°F *(°C)* cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
Maximum Power—Turtle 9									
245.7 *(183.2)*	16630 *(73.98)*	5.54 *(8.92)*	2101	3.9	0.465 *(0.282)*	14.90 *(2.93)*	158 *(70)*	73 *(23)*	29.0 *(98.1)*
75% of Pull at Maximum Power—Turtle 9									
188.1 *(140.3)*	12300 *(54.72)*	5.74 *(9.23)*	2123	2.6	0.476 *(0.289)*	14.50 *(2.85)*	165 *(74)*	73 *(23)*	29.3 *(99.3)*
50% of Pull at Maximum Power—Turtle 9									
128.2 *(95.6)*	8205 *(36.49)*	5.86 *(9.44)*	2134	1.7	0.514 *(0.312)*	13.47 *(2.65)*	156 *(69)*	73 *(23)*	29.3 *(99.3)*
75% of Pull at Reduced Engine Speed—Turtle 11									
187.9 *(140.1)*	12310 *(54.75)*	5.72 *(9.21)*	1762	2.7	0.443 *(0.269)*	15.60 *(3.07)*	163 *(73)*	72 *(22)*	29.3 *(99.3)*
50% of Pull at Reduced Engine Speed—Turtle 11									
129.3 *(96.4)*	8250 *(36.69)*	5.88 *(9.46)*	1771	1.8	0.461 *(0.280)*	14.99 *(2.95)*	156 *(69)*	73 *(23)*	29.3 *(99.3)*

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

Dates of tests: January - July, 2012.

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

CONSUMABLE FLUIDS: Fuel No. 2 Diesel **Specific gravity converted to 60°/60°F *(15°/15°C)*** 0.841 **Fuel weight** 6.99 lbs/gal *(0.840 kg/l)* **Diesel Exhaust Fluid (DEF)** 32% aqueous urea solution **DEF weight** 9.10 lbs/gal *(1.093 kg/l)* **Oil SAE** 10W40 **API service classification** CI4 **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, air to air intercooler and D.E.F(diesel exhaust fluid) technology **Serial No.** W423 **Crankshaft** lengthwise **Rated engine speed** 2100 **Bore and stroke** 4.370" x 5.709" *(111.0 mm x 145.0 mm)* **Compression ratio** 16.7 to 1 **Displacement** 513 cu in *(8419 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.** V319022 **Tread width** rear 72.8" *(1850 mm)* to 74.8" *(1900 mm)* front 70.9" *(1800 mm)* to 76.8" *(1950 mm)* **Wheelbase** 122.2" *(3105 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 0-18 *(0-30)*, high range 0-25 *(0-40)* reverse: Low range 0-12 *(0-19)*, high range 0-12 *(0-39)* **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** 1000 rpm at 1970 engine rpm **Unladen tractor mass** 25200 lb *(11430 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)*	Hp.hr/gal *(kW.h/l)*	Temp.°F*(°C)* cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
					Turtle 6				
219.5 *(163.7)*	25170 *(111.97)*	3.27 *(5.26)*	2084	15.0	0.523 *(0.318)*	13.22 *(2.60)*	165 *(74)*	73 *(23)*	29.6 *(100.3)*
					Turtle 7.5				
262.9 *(196.1)*	22845 *(101.63)*	4.32 *(6.94)*	1947	7.0	0.455 *(0.276)*	15.20 *(2.99)*	158 *(70)*	73 *(23)*	29.6 *(100.4)*
					Turtle 9				
266.5 *(198.7)*	19200 *(85.41)*	5.21 *(8.38)*	1952	4.9	0.448 *(0.272)*	15.45 *(3.04)*	162 *(72)*	70 *(21)*	29.6 *(100.3)*
					Turtle 11				
268.7 *(200.4)*	15905 *(70.76)*	6.34 *(10.20)*	1954	3.5	0.447 *(0.272)*	15.48 *(3.05)*	154 *(68)*	68 *(20)*	29.6 *(100.3)*
					Turtle 13				
264.9 *(197.5)*	13640 *(60.68)*	7.28 *(11.72)*	1950	2.9	0.453 *(0.276)*	15.28 *(3.01)*	156 *(69)*	68 *(20)*	29.6 *(100.3)*
					Turtle 15				
260.2 *(194.0)*	11395 *(50.70)*	8.56 *(13.78)*	1953	2.4	0.461 *(0.281)*	15.00 *(2.96)*	163 *(73)*	68 *(20)*	29.6 *(100.3)*
					Turtle 17				
256.9 *(191.6)*	9800 *(43.60)*	9.83 *(15.82)*	1961	2.0	0.466 *(0.284)*	14.85 *(2.93)*	163 *(73)*	68 *(20)*	29.6 *(100.3)*
					Rabbit 9				
244.1 *(182.0)*	17800 *(79.18)*	5.14 *(8.27)*	1950	4.4	0.481 *(0.292)*	14.39 *(2.83)*	156 *(69)*	70 *(21)*	29.6 *(100.3)*
					Rabbit 11				
256.4 *(191.2)*	15360 *(68.32)*	6.26 *(10.08)*	1951	3.4	0.465 *(0.283)*	14.87 *(2.93)*	158 *(70)*	70 *(21)*	29.6 *(100.3)*
					Rabbit 13				
264.9 *(197.5)*	13635 *(60.66)*	7.28 *(11.72)*	1953	2.9	0.450 *(0.273)*	15.38 *(3.03)*	163 *(73)*	68 *(20)*	29.6 *(100.3)*
					Rabbit 15				
263.9 *(196.8)*	11475 *(51.04)*	8.62 *(13.88)*	1954	2.4	0.448 *(0.273)*	15.43 *(3.04)*	163 *(73)*	68 *(20)*	29.6 *(100.3)*
					Rabbit 17				
266.2 *(198.5)*	10070 *(44.80)*	9.91 *(15.95)*	1956	2.1	0.450 *(0.274)*	15.38 *(3.03)*	163 *(73)*	66 *(19)*	29.6 *(100.3)*
					Rabbit 19				
263.8 *(196.7)*	9205 *(40.94)*	10.75 *(17.30)*	1962	1.8	0.451 *(0.275)*	15.33 *(3.02)*	158 *(70)*	66 *(19)*	29.6 *(100.3)*

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

NOTE: The data on this summary was obtained from OECD report 2722 conducted on the Massey Ferguson 8690 Diesel.

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 claims of 38% torque rise, 29 hp power bulge, nor 3 point lift capacity of 22760 lbs *(10323 kg)*. 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. **2722,** Nebraska Summary 876, 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	dB(A)
At no load in Turtle - 4.6 mph *(7.5 km/h)* - no load	70.0
Bystander	---

TIRES AND WEIGHT	Tested Without Ballast
Rear Tires - No., size, ply & psi*(kPa)*	Two 710/75R42;***;12*(80)*
Front Tires -No., size, ply & psi*(kPa)*	Two 600/65R34;**;12*(80)*
Height of Drawbar	22.2 in *(565 mm)*
Static Weight with operator - Rear	14100 lb *(6395 kg)*
- Front	11265 lb *(5110 kg)*
- Total	25365 lb*(11505 kg)*

HYDRAULIC PERFORMANCE

CATEGORY: III	
Quick Attach: No, Yes	
OECD Static test	
Maximum force exerted through whole range:	17850 lbs *(79.4 kN)* (claw type lower links)
	20345 lbs *(90.5 kN)* (Quick hitch)
i) Sustained pressure at compensator cutoff:	2755 psi *(190 bar)*
	two outlet sets combined
ii) Pump delivery rate at minimum pressure:	46.2 GPM *(174.9 l/min)*
iii)Pump delivery rate at maximum	
hydraulic power:	37.9 GPM *(143.6 l/min)*
Delivery pressure:	2380 psi *(164 bar)*
Power:	52.6 HP *(39.3 kW)*
	single outlet set
ii) Pump delivery rate at minimum pressure:	28.9 GPM *(109.3 l/min)*
iii)Pump delivery rate at maximum	
hydraulic power:	26.1 GPM *(103.2 l/min)*
Delivery pressure:	2290 psi *(158 bar)*
Power:	34.9 HP *(27.2 kW)*

HITCH DIMENSIONS AS TESTED—NO LOAD

	Claw lower links		Quick Hitch	
	inch	*mm*	inch	*mm*
A	31.9	*810*	31.9	*810*
B	14.6	*370*	14.6	*370*
C	19.1	*484*	19.1	*484*
D	15.9	*405*	15.9	*405*
E	12.4	*315*	12.4	*315*
F	13.0	*330*	13.0	*330*
G	40.4	*1025*	40.4	*1025*
H	2.0	*50*	2.0	*50*
I	17.7	*450*	17.7	*450*
J	27.4	*695*	27.4	*695*
K	24.8	*630*	24.8	*630*
L	52.4	*1330*	52.4	*1330*
*L'	--	--	56.3	*1430*
M	29.8	*757*	33.7	*857*
N	42.9	*1090*	42.9	*1090*
O	9.1	*230*	9.8	*250*
P	54.3	*1380*	50.4	*1280*
Q	41.5	*1055*	41.2	*1046*
R	37.0	*940*	37.0	*940*

*L' to Quick Attach ends

