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2013

Nebraska Summary: S920 Challenger MT485D

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SUMMARY OF OECD TEST 2794–NEBRASKA SUMMARY 920
CHALLENGER MT485D TECHSTAR DIESEL
CONTINUOUSLY VARIABLE 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—1080 rpm)						
119.8 *(89.3)*	2200	7.20 *(27.26)*	0.419 *(0.255)*	16.65 *(3.28)*	0.26 *(0.99)*	
Standard Power Take-off Speed (1000 rpm)						
132.4 *(98.7)*	2034	7.57 *(28.66)*	0.399 *(0.243)*	17.48 *(3.44)*	0.35 *(1.33)*	
Maximum Power (1 hour)						
136.9 *(102.1)*	2001	7.70 *(29.16)*	0.393 *(0.239)*	17.77 *(3.50)*	0.38 *(1.42)*	
VARYING POWER AND FUEL CONSUMPTION						
119.8 *(89.3)*	2200	7.20 *(27.26)*	0.419 *(0.255)*	16.65 *(3.28)*	0.26 *(0.99)*	Air temperature
102.7 *(76.6)*	2220	6.35 *(24.03)*	0.431 *(0.262)*	16.19 *(3.19)*	0.23 *(0.88)*	75°F *(24°C)*
77.2 *(57.6)*	2235	5.10 *(19.32)*	0.461 *(0.280)*	15.14 *(2.98)*	0.20 *(0.74)*	Relative humidity
51.9 *(38.7)*	2245	3.87 *(14.66)*	0.521 *(0.317)*	13.40 *(2.64)*	0.14 *(0.52)*	38%
26.1 *(19.5)*	2252	2.70 *(10.22)*	0.722 *(0.439)*	9.67 *(1.90)*	--- ---	Barometer
--- ---	2260	1.76 *(6.67)*	--- ---	--- ---	--- ---	29.6" Hg *(100.5 kPa)*

Maximum torque - 451 lb.-ft. *(612 Nm)* at 1400 rpm
Maximum torque rise - 57.8%
Torque rise at 1800 engine rpm - 38%
Power increase at 2001 engine rpm - 14%

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 cool-ing med	Temp.°F *(°C)* Air dry bulb	Barom. inch Hg *(kPa)*
Maximum Power—Turtle 8									
87.9 *(65.6)*	6510 *(28.9)*	5.07 *(8.17)*	2202	3.3	0.541 *(0.329)*	12.74 *(2.52)*	185 *(85)*	73 *(23)*	29.9 *(101.3)*
75% of Pull at Maximum Power—Turtle 8									
65.2 *(48.6)*	4835 *(21.5)*	5.06 *(8.15)*	2227	2.3	0.593 *(0.361)*	11.67 *(2.30)*	185 *(85)*	73 *(23)*	29.9 *(101.3)*
50% of Pull at Maximum Power—Turtle 8									
44.4 *(33.1)*	3260 *(14.5)*	5.10 *(8.20)*	2233	1.3	0.699 *(0.425)*	9.90 *(1.95)*	185 *(85)*	75 *(24)*	29.9 *(101.3)*
75% of Pull at Reduced Engine Speed—Turtle 12									
64.8 *(48.3)*	4810 *(21.4)*	5.05 *(8.13)*	1451	2.1	0.478 *(0.291)*	14.47 *(2.85)*	185 *(85)*	75 *(24)*	29.9 *(101.3)*
50% of Pull at Reduced Engine Speed—Turtle 12									
44.9 *(33.5)*	3305 *(14.7)*	5.10 *(8.21)*	1460	1.2	0.539 *(0.328)*	12.84 *(2.53)*	185 *(85)*	75 *(24)*	29.9 *(101.3)*

Location of tests: IRSTEA, Centre d'Antony, 1 rue Pierre-Gilles de Gennes CS 10030, Antony, France 92761

Dates of tests: August to September, 2013

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

CONSUMABLE Fluids 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** CJ-4 **Transmission and hydraulic lubricant** BP Terrac Tractan 9 10W/40 **Front axle lubricant** SAE 85W140 API GL-5

ENGINE: Make AGCO Power Diesel **Type** four cylinder vertical with turbocharger, air to air intercooler and SCR (selective catalyst reduction) exhaust treatment **Serial No.** X00325 **Crankshaft** lengthwise **Rated engine speed** 2200 **Bore and stroke** 4.252" x 5.276" *(108.0 mm x 134.0 mm)* **Compression ratio** 17.8 to 1 **Displacement** 299 cu in *(4910 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** two paper cartridges **Muffler** underhood **Exhaust** vertical **Cooling medium temperature control** thermostat and variable speed fan

CHASSIS: Type front wheel assist **Serial No.** C 123 901 **Tread width** rear 52.8" *(1340 mm)* to 87.8" *(2230 mm)* front 52.8" *(1340 mm)* to 87.8" *(2230 mm)* **Wheelbase** 105.1" *(2670 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 0-11 *(0-17)*, high range 0-18 *(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 2063 engine rpm or 1000 rpm at 2035 engine rpm **Unladen tractor mass** 15765 lb *(7150 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)*
					Turtle 3.5				
83.1 *(61.9)*	13850 *(61.6)*	2.25 *(3.62)*	2095	15.6	0.595 *(0.362)*	11.62 *(2.29)*	183 *(84)*	72 *(22)*	29.9 *(101.3)*
					Turtle 4.5				
98.6 *(73.5)*	12475 *(55.5)*	2.95 *(4.75)*	2024	10.9	0.516 *(0.314)*	13.40 *(2.64)*	185 *(85)*	72 *(22)*	29.9 *(101.3)*
					Turtle 6.5				
104.3 *(77.8)*	9330 *(41.5)*	4.19 *(6.75)*	2012	7.4	0.490 *(0.298)*	14.11 *(2.78)*	185 *(85)*	73 *(23)*	29.9 *(101.3)*
					Turtle 8				
106.3 *(79.3)*	8205 *(36.5)*	4.86 *(7.82)*	2004	4.8	0.483 *(0.294)*	14.31 *(2.82)*	185 *(85)*	73 *(23)*	29.9 *(101.3)*
					Turtle 10				
104.5 *(77.9)*	6340 *(28.2)*	6.18 *(9.95)*	1995	3.3	0.483 *(0.294)*	14.31 *(2.82)*	189 *(87)*	75 *(24)*	29.9 *(101.3)*
					Turtle 12				
102.7 *(76.6)*	5175 *(23.0)*	7.44 *(11.98)*	1993	2.7	0.499 *(0.304)*	13.86 *(2.73)*	189 *(87)*	75 *(24)*	29.9 *(101.3)*
					Turtle 14				
96.4 *(71.9)*	4090 *(18.2)*	8.84 *(14.22)*	2027	2.1	0.532 *(0.323)*	13.01 *(2.56)*	189 *(87)*	75 *(24)*	29.9 *(101.3)*
					Rabbit 9				
101.9 *(76.0)*	6655 *(29.6)*	5.74 *(9.24)*	2000	4.3	0.511 *(0.311)*	13.54 *(2.67)*	187 *(86)*	79 *(26)*	29.9 *(101.3)*
					Rabbit 12				
101.6 *(75.8)*	5035 *(22.4)*	7.57 *(12.18)*	2007	2.6	0.512 *(0.311)*	13.52 *(2.66)*	189 *(87)*	81 *(27)*	29.9 *(101.3)*
					Rabbit 15				
99.6 *(74.3)*	4090 *(18.2)*	9.13 *(14.70)*	1993	2.1	0.530 *(0.322)*	13.06 *(2.57)*	189 *(87)*	81 *(27)*	29.9 *(101.3)*
					Rabbit 17				
96.3 *(71.8)*	3550 *(15.8)*	10.17 *(16.37)*	2032	1.6	0.547 *(0.333)*	12.64 *(2.49)*	189 *(87)*	81 *(27)*	29.9 *(101.3)*

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

NOTE: The data on this summary was obtained from OECD report 2794 conducted on the Massey Ferguson 6615 DYNA-VT Diesel.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD test procedures. The manufacturer's remote hydraulic flow claims of 15 GPM (standard flow) and 26 GPM (combined flow) were 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. **2794,** Nebraska Summary 920, January 21, 2014.

Roger M. Hoy
Director

M.F. Kocher
J.D. Luck
P.J. Jasa
Board of Tractor Test Engineers

TRACTOR SOUND LEVEL WITH CAB	Front wheel drive Engaged dB(A)	Front wheel drive Disengaged dB(A)
At no load in Turtle 8	71.0	71.0
Bystander		--

TIRES, BALLAST AND WEIGHT

	Tested without ballast
Rear Tires - No., size, ply & psi(*kPa)*	Two 580/70R38;**;14(*100)*
Front Tires - No., size, ply & psi(*kPa)*	Two 480/70R28;**;14(*100)*
Height of Drawbar	21.7 in (*550 mm)*
Static Weight with operator - Rear	9295 lb *(4215 kg)*
- Front	6635 lb (*3010 kg)*
- Total	15930 lb (*7225 kg)*

HYDRAULIC PERFORMANCE

CATEGORY: II
Quick Attach: No
OECD Static test

Maximum force exerted through whole range:	11755 lbs *(52.3 kN)*
	two outlet sets combined
i) Sustained pressure at compensator cutoff:	2930 psi *(202 bar)*
ii) Pump delivery rate at minimum pressure:	31.3 GPM *(118.5 l/min)*
iii)Pump delivery rate at maximum hydraulic power:	29.1 GPM *(110.2 l/min)*
Delivery pressure:	2320 psi *(160 bar)*
Power:	39.4 HP *(29.4 kW)*
	single outlet set
i) Sustained pressure at compensator cutoff:	2930 psi *(202 bar)*
ii) Pump delivery rate at minimum pressure:	31.4 GPM *(118.7 l/min)*
iii)Pump delivery rate at maximum hydraulic power:	28.1 GPM *(106.2 l/min)*
Delivery pressure:	1930 psi *(133 bar)*
Power:	31.6 HP *(23.6 kW)*

HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	*mm*
A	31.3	*796*
B	13.4	*340*
C	13.9	*354*
D	11.9	*303*
E	8.8	*223*
F	10.3	*261*
G	34.5	*875*
H	2.4	*60*
I	15.2	*386*
J	24.2	*614*
K	26.1	*662*
L	45.6	*1157*
M	26.1	*662*
N	39.8	*1012*
O	7.9	*201*
P	48.2	*1224*
Q	34.8	*884*
R	29.9	*760*

