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2016

Nebraska Summary: S1065 Challenger MT515E

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SUMMARY OF OECD TEST 2994–NEBRASKA SUMMARY 1065
CHALLENGER MT515E AUTOPOWER IV DIESEL
16 SPEED

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—1034 rpm)						
129.4 *(96.5)*	2098	7.69 *(29.13)*	0.414 *(0.252)*	16.82 *(3.31)*	0.46 *(1.75)*	
Standard Power Take-off Speed (1000 rpm)						
134.4 *(100.2)*	2029	7.84 *(29.66)*	0.406 *(0.247)*	17.15 *(3.38)*	0.46 *(1.76)*	
Maximum Power (1 hour)						
136.8 *(102.0)*	1901	7.74 *(29.30)*	0.395 *(0.240)*	17.67 *(3.48)*	0.47 *(1.78)*	
VARYING POWER AND FUEL CONSUMPTION						
129.4 *(96.5)*	2098	7.69 *(29.13)*	0.414 *(0.252)*	16.82 *(3.31)*	0.46 *(1.75)*	Air temperature
111.0 *(82.8)*	2116	6.83 *(25.84)*	0.429 *(0.261)*	16.24 *(3.20)*	0.50 *(1.88)*	73°F *(23°C)*
83.7 *(62.4)*	2123	5.69 *(21.53)*	0.474 *(0.288)*	14.71 *(2.90)*	0.44 *(1.67)*	Relative humidity
55.9 *(41.7)*	2131	4.48 *(16.97)*	0.558 *(0.340)*	12.49 *(2.46)*	0.33 *(1.26)*	55%
28.1 *(21.0)*	2141	3.37 *(12.77)*	0.837 *(0.509)*	8.35 *(1.64)*	0.25 *(0.93)*	Barometer
-- --	2148	2.37 *(8.97)*	-- --	-- --	0.03 *(0.13)*	30.2" Hg *(102.2 kPa)*

Maximum torque - 441 lb.-ft. *(598 Nm)* at 1501 rpm
Maximum torque rise - 36.1%
Torque rise at 1700 engine rpm - 26%
Power increase at 1901 engine rpm - 5.7%

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)* cooling med	Temp.°F *(°C)* Air dry bulb	Barom. inch Hg *(kPa)*
Power at Rated Engine Speed—9th(3A) Gear									
108.8 *(81.1)*	6970 *(31.0)*	5.85 *(9.41)*	2096	3.2	0.503 *(0.306)*	13.91 *(2.74)*	180 *(82)*	73 *(23)*	30.1 *(101.8)*
75% of Pull at Rated Engine Speed—9th(3A) Gear									
83.4 *(62.2)*	5260 *(23.4)*	5.95 *(9.58)*	2124	3.0	0.553 *(0.337)*	12.64 *(2.49)*	180 *(82)*	73 *(23)*	30.1 *(101.8)*
50% of Pull at Rated Engine Speed—9th(3A) Gear									
56.2 *(41.9)*	3480 *(15.5)*	6.06 *(9.76)*	2127	1.3	0.666 *(0.405)*	10.51 *(2.07)*	180 *(82)*	73 *(23)*	30.1 *(101.8)*
75% of Pull at Reduced Engine Speed—10th(3B) Gear									
83.1 *(62.0)*	5230 *(23.3)*	5.96 *(9.59)*	1722	2.5	0.500 *(0.304)*	13.97 *(2.75)*	180 *(82)*	72 *(22)*	30.1 *(101.8)*
50% of Pull at Reduced Engine Speed—10th(3B) Gear									
55.8 *(41.6)*	3460 *(15.4)*	6.05 *(9.74)*	1729	1.4	0.567 *(0.345)*	12.33 *(2.43)*	178 *(81)*	72 *(22)*	30.1 *(101.8)*

Location of tests: IRSTEA, Centre d'Antony, 1 rue Pierre-Gilles de Gennes CS 10030 Antony, 92163, Cedex, France

Dates of tests: June to July, 2016

Manufacturer: AGCO S.A. BP307, Avenue Blaise Pascal, 60026 Beauvais, France

CONSUMABLE FLUIDS: Fuel No. 2 Diesel **Specific gravity converted to 60°/60°F *(15°/15°C)*** 0.839 **Fuel weight** 6.98 lbs/gal *(0.837 kg/l)* **Diesel Exhaust Fluid (DEF)** 32% aqueous urea solution **DEF weight** 9.10 lbs/gal *(1.091 kg/l)* **Oil SAE** 15W40 **API service classification** CJ-4 **Transmission and hydraulic lubricant** BP Terrac Tractan 9 15W/40 **Front axle lubricant** BP Terrac Tractan 9 15W/40

ENGINE: Make AGCO Power Diesel **Type** six cylinder vertical with turbocharger, air to air intercooler and SCR (selective catalyst reduction) exhaust treatment **Serial No.** Z100 **Crankshaft** lengthwise **Rated engine speed** 2100 **Bore and stroke** 4.252" x 4.724" *(108.0 mm x 120.0 mm)* **Compression ratio** 17.4 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** three paper cartridges **Muffler** vertical **Cooling medium temperature control** thermostat and variable speed fan

CHASSIS: Type front wheel assist **Serial No.** E 006901 **Tread width** rear 52.8" *(1340 mm)* to 87.8" *(2230 mm)* front 52.8" *(1340 mm)* to 87.8" *(2230 mm)* **Wheelbase** 113.2" *(2875 mm)* **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (4) range operator controlled powershift **Nominal travel speeds mph *(km/h)*** first 1.24 *(2.00)* second 1.53 *(2.46)* third 1.86 *(3.00)* fourth 2.29 *(3.69)* fifth 2.95 *(4.74)* sixth 3.62 *(5.83)* seventh 4.42 *(7.11)* eighth 5.43 *(8.74)* ninth 5.98 *(9.62)* tenth 7.36 *(11.84)* eleventh 8.97 *(14.44)* twelfth 11.04 *(17.76)* thirteenth 15.09 *(24.29)* fourteenth 18.56 *(29.87)* fifteenth 22.64 *(36.44)* sixteenth 27.84 *(44.81)* reverse 1.24 *(2.00)*, 1.53 *(2.46)*, 1.86 *(3.00)*, 2.29 *(3.69)*, 2.95 *(4.74)*, 3.62 *(5.83)*, 4.42 *(7.11)*, 5.43 *(8.74)*, 5.98 *(9.62)*, 7.36 *(11.84)*, 8.97 *(14.44)*, 11.04 *(17.76)*, 15.09 *(24.29)*, 18.56 *(29.87)*, 22.64 *(36.40)*, 27.84 *(44.81)* **Clutch** multiple wet disc operated by foot pedal **Brakes** multiple wet disc hydraulically operated by two foot pedals that can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 1982 engine rpm or 1000 rpm at 2030 engine rpm **Unladen tractor mass** 14650 lb *(6645 kg)*

DRAWBAR PERFORMANCE AT 1900 ENGINE RPM

(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)*
					4th(1D) Gear				
68.8	12835	2.01	2118	14.4	0.626	11.17	178	72	30.1
(51.3)	*(57.1)*	*(3.24)*			*(0.381)*	*(2.20)*	*(81)*	*(22)*	*(102.0)*
					5th(2A) Gear				
85.6	12140	2.64	2090	11.0	0.556	12.59	180	73	30.1
(63.8)	*(54.0)*	*(4.25)*			*(0.338)*	*(2.48)*	*(82)*	*(23)*	*(102.0)*
					6th(2B) Gear				
99.4	11960	3.12	1961	9.1	0.510	13.71	180	73	30.1
(74.1)	*(53.2)*	*(5.01)*			*(0.310)*	*(2.70)*	*(82)*	*(23)*	*(101.9)*
					7th(2C) Gear				
104.7	10365	3.79	1898	6.3	0.487	14.35	180	72	30.1
(78.1)	*(46.1)*	*(6.10)*			*(0.297)*	*(2.83)*	*(82)*	*(22)*	*(101.9)*
					8th(2D) Gear				
100.8	7960	4.75	1887	3.9	0.507	13.79	180	73	30.1
(75.2)	*(35.4)*	*(7.65)*			*(0.309)*	*(2.72)*	*(82)*	*(23)*	*(101.8)*
					*9th(3A) Gear				
116.4	8250	5.29	1913	4.2	0.472	14.82	181	73	30.1
(86.8)	*(36.7)*	*(8.52)*			*(0.287)*	*(2.92)*	*(83)*	*(23)*	*(101.8)*
					*10th(3B) Gear				
113.2	6495	6.54	1894	2.7	0.478	14.62	181	72	30.1
(84.4)	*(28.9)*	*(10.53)*			*(0.291)*	*(2.88)*	*(83)*	*(22)*	*(101.8)*
					*11th(3C) Gear				
111.8	5140	8.16	1930	2.1	0.487	14.37	181	72	30.1
(83.4)	*(22.9)*	*(13.13)*			*(0.296)*	*(2.83)*	*(83)*	*(22)*	*(101.8)*
					*12th(3D) Gear				
110.5	4155	9.97	1904	1.8	0.494	14.15	181	72	30.1
(82.4)	*(18.5)*	*(16.05)*			*(0.301)*	*(2.79)*	*(83)*	*(22)*	*(101.8)*

* Powerboost mode

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

NOTE 1: This tractor has a power management system that provides an engine power increase when the PTO is engaged and for travel speeds from gear 3A and higher.

NOTE 2: The data on this summary was obtained from OECD report 2994 conducted on the Massey Ferguson 7714 Dyna 4 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 remote flow claims of 29 GPM *(110 l/min)* (multiple outlets), 26.4 GPM *(100 l/min)* (single outlet), nor 3 point lift claim of 8900 lbs *(4035 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. **2994,** Nebraska Summary 1065, January 9, 2017.

Roger M. Hoy
Director

M.F. Kocher
P.J. Jasa
S.K. Pitla
Board of Tractor Test Engineers

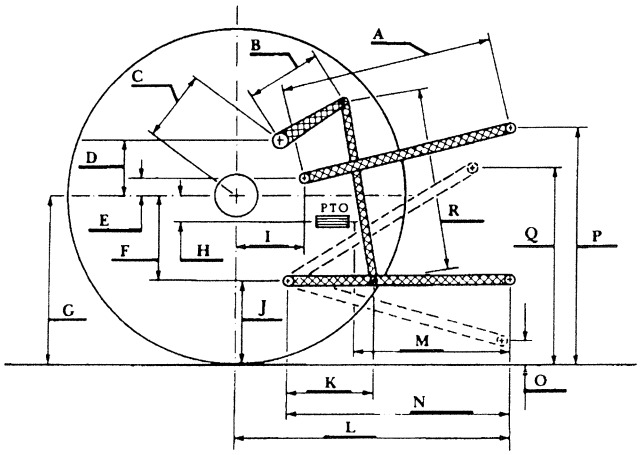
TRACTOR SOUND LEVEL WITH CAB	Front wheel drive Engaged dB(A)	Front wheel drive Disengaged dB(A)
At no load in 7th (2C) gear	69.0	69.0
Bystander		--

TIRES, BALLAST AND WEIGHT	Tested without ballast
Rear Tires - No., size, ply & psi*(kPa)*	Two 580/70R38;**;13*(90)*
Front Tires - No., size, ply & psi*(kPa)*	Two 480/70R28;**;15*(100)*
Height of Drawbar	19.7 in *(500 mm)*
Static Weight with operator - Rear	8200 lb *(3720 kg)*
- Front	6615 lb *(3000 kg)*
- Total	14815 lb *(6720 kg)*

HYDRAULIC PERFORMANCE

CATEGORY: III
Quick Attach: None
OECD Static test

Maximum force exerted through whole range:	8630 lbs *(38.4 kN)*
i) Sustained pressure of the open relief valve:	2875 psi *(198 bar)*
	two outlet sets combined
ii) Pump delivery rate at minimum pressure:	25.2 GPM *(95.5 l/min)*
iii) Pump delivery rate at maximum hydraulic power:	23.8 GPM *(90.0 l/min)*
Delivery pressure:	2380 psi *(164 bar)*
Power:	33.0 HP *(24.6 kW)*
	single outlet set
ii) Pump delivery rate at minimum pressure:	25.3 GPM *(95.6 l/min)*
iii) Pump delivery rate at maximum hydraulic power:	23.9 GPM *(90.5 l/min)*
Delivery pressure:	2160 psi *(149 bar)*
Power:	30.1 HP *(22.5 kW)*



HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	*mm*
A	28.7	*730*
B	11.6	*295*
C	13.9	*354*
D	13.0	*330*
E	9.9	*251*
F	11.0	*280*
G	34.4	*875*
H	1.7	*43*
I	15.5	*394*
J	23.4	*595*
K	21.4	*543*
L	43.3	*1101*
M	24.6	*625*
N	37.0	*940*
O	8.9	*226*
P	50.4	*1280*
Q	36.9	*938*
R	30.3	*770*