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2016

Nebraska Summary 1020: Challenger MT555E

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SUMMARY OF OECD TEST 2946–NEBRASKA SUMMARY 1020
CHALLENGER MT555E AP6 DIESEL
24 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)*	Gal/hr *(l/h)*	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION						
Rated Engine Speed—(PTO speed—1050 rpm)						
151.8 *(113.2)*	2100	8.67 *(32.82)*	0.398 *(0.242)*	17.51 *(3.46)*	0.63 *(2.38)*	
Standard Power Take-off Speed (1000 rpm)						
170.3 *(127.0)*	2000	9.39 *(35.54)*	0.385 *(0.234)*	18.14 *(3.58)*	0.67 *(2.53)*	
Maximum Power (1 hour)						
177.6 *(132.4)*	1798	9.41 *(35.63)*	0.370 *(0.225)*	18.87 *(3.72)*	0.68 *(2.56)*	
VARYING POWER AND FUEL CONSUMPTION						
151.8 *(113.2)*	2100	8.67 *(32.82)*	0.398 *(0.242)*	17.51 *(3.46)*	0.63 *(2.38)*	Air temperature
130.3 *(97.2)*	2121	7.51 *(28.43)*	0.403 *(0.245)*	17.35 *(3.42)*	0.53 *(2.02)*	72°F *(22°C)*
98.0 *(73.1)*	2126	6.05 *(22.90)*	0.431 *(0.262)*	16.20 *(3.20)*	0.45 *(1.69)*	Relative humidity
65.6 *(48.9)*	2133	4.59 *(17.36)*	0.488 *(0.297)*	14.29 *(2.82)*	0.36 *(1.37)*	40%
33.0 *(24.6)*	2145	3.19 *(12.06)*	0.674 *(0.410)*	10.34 *(2.04)*	0.19 *(0.72)*	Barometer
-- --	2152	2.15 *(8.15)*	-- --	-- --	-- --	30.6" Hg *(103.7 kPa)*

Maximum torque - 581.6 lb.-ft. *(788.6 Nm)* at 1000 rpm
Maximum torque rise - 53.2%
Torque rise at 1700 engine rpm - 40%
Power increase at 1798 engine rpm - 17.0%

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)*
Power at Rated Engine Speed—11th(3A) Gear									
131.7 *(98.2)*	9600 *(42.7)*	5.15 *(8.28)*	2099	3.2	0.464 *(0.283)*	15.05 *(2.97)*	194 *(90)*	45 *(7)*	30.0 *(101.5)*
75% of Pull at Rated Engine Speed—11th(3A) Gear									
101.1 *(75.4)*	7285 *(32.4)*	5.21 *(8.38)*	2120	2.8	0.495 *(0.301)*	14.11 *(2.78)*	194 *(90)*	45 *(7)*	30.0 *(101.5)*
50% of Pull at Rated Engine Speed—11th(3A) Gear									
67.1 *(50.0)*	4790 *(21.3)*	5.25 *(8.45)*	2131	2.0	0.593 *(0.361)*	11.78 *(2.32)*	192 *(89)*	45 *(7)*	30.0 *(101.5)*
75% of Pull at Reduced Engine Speed—13th(3B) Gear									
99.6 *(74.3)*	7150 *(31.8)*	5.23 *(8.41)*	1765	2.6	0.459 *(0.279)*	15.23 *(3.00)*	194 *(90)*	45 *(7)*	30.0 *(101.6)*
50% of Pull at Reduced Engine Speed—13th(3B) Gear									
67.7 *(50.5)*	4820 *(21.4)*	5.27 *(8.48)*	1771	1.9	0.516 *(0.314)*	13.55 *(2.67)*	181 *(83)*	45 *(7)*	30.0 *(101.6)*

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

Dates of tests: February to March, 2016

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

CONSUMABLE FLUIDS: **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** 9.10 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.** A73684 **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.** D 147901 **Tread width** rear 52.8" *(1340 mm)* to 87.8" *(2230 mm)* front 52.8" *(1340 mm)* to 87.8" *(2230 mm)* **Wheelbase** 117.0" *(2973 mm)* **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (6) range operator controlled powershift **Nominal travel speeds mph *(km/h)*** first 1.03 *(1.65)* second 1.23 *(1.98)* third 1.44 *(2.32)* fourth 1.74 *(2.80)* fifth 2.04 *(3.29)* sixth 2.46 *(3.96)* seventh 2.77 *(4.45)* eighth 3.32 *(5.35)* ninth 3.90 *(6.28)* tenth 4.70 *(7.56)* eleventh 5.29 *(8.52)* twelfth 5.52 *(8.89)* thirteenth 6.37 *(10.25)* fourteenth 6.65 *(10.70)* fifteenth 7.48 *(12.03)* sixteenth 8.99 *(14.47)* seventeenth 10.58 *(17.02)* eighteenth 12.73 *(20.48)* nineteenth 14.70 *(23.66)* twentieth 17.67 *(28.44)* twenty-first 20.74 *(33.38)* twenty-second 24.86 *(40.00)* twenty-third 24.86 *(40.00)* twenty-fourth 24.86 *(40.00)* electronically limited reverse 1.03 *(1.65)*, 1.23 *(1.98)*, 1.44 *(2.32)*, 1.74 *(2.80)*, 2.04 *(3.29)*, 2.46 *(3.96)*, 2.77 *(4.45)*, 3.32 *(5.35)*, 3.90 *(6.28)*, 4.70 *(7.56)*, 5.29 *(8.52)*, 5.52 *(8.89)*, 6.37 *(10.25)*, 6.65 *(10.70)*, 7.48 *(12.03)*, 8.99 *(14.47)* 10.58 *(17.02)*, 12.73 *(20.48)*, 14.70 *(23.66)*, 17.67 *(28.44)*, 20.74 *(33.38)*, 24.86 *(40.00)*, 24.86 *(40.00)*, 24.86 *(40.00)* electronically limited

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)*
				5th(1F) Gear					
74.4	15825	1.76	2122	13.5	0.585	11.93	185	48	30.0
(55.5)	*(70.4)*	*(2.84)*			*(0.356)*	*(2.35)*	*(85)*	*(9)*	*(101.7)*
				6th(1F) Gear					
89.7	15645	2.15	2118	12.2	0.560	12.48	183	48	30.0
(66.9)	*(69.6)*	*(3.46)*			*(0.341)*	*(2.46)*	*(84)*	*(9)*	*(101.7)*
				7th(2A) Gear					
102.9	15670	2.46	2113	10.4	0.510	13.69	181	48	30.0
(76.7)	*(69.7)*	*(3.96)*			*(0.311)*	*(2.70)*	*(83)*	*(9)*	*(101.7)*
				8th(2B) Gear					
118.9	15110	2.95	2011	7.6	0.470	14.87	185	50	30.0
(88.7)	*(67.2)*	*(4.75)*			*(0.286)*	*(2.93)*	*(85)*	*(10)*	*(101.7)*
				9th(2C) Gear					
129.7	14435	3.37	1926	6.0	0.436	16.04	189	50	30.0
(96.7)	*(64.2)*	*(5.42)*			*(0.265)*	*(3.16)*	*(87)*	*(10)*	*(101.7)*
				*10th(2D) Gear					
142.4	13600	3.93	1849	5.5	0.451	15.48	198	50	30.0
(106.2)	*(60.5)*	*(6.32)*			*(0.275)*	*(3.05)*	*(92)*	*(10)*	*(101.7)*
				*11th(3A) Gear					
148.7	12655	4.41	1840	5.0	0.445	15.72	192	45	30.0
(110.9)	*(56.3)*	*(7.09)*			*(0.271)*	*(3.10)*	*(89)*	*(7)*	*(101.5)*
				*12th(2E) Gear					
151.8	12545	4.54	1815	4.8	0.431	16.19	198	50	30.1
(113.2)	*(55.8)*	*(7.30)*			*(0.263)*	*(3.19)*	*(92)*	*(10)*	*(101.8)*
				*13th(3B) Gear					
153.5	10925	5.27	1820	4.3	0.433	16.13	194	45	30.0
(114.5)	*(48.6)*	*(8.48)*			*(0.264)*	*(3.18)*	*(90)*	*(7)*	*(101.6)*
				*14th(2F) Gear					
153.4	10500	5.48	1792	3.9	0.434	16.09	199	50	30.1
(114.4)	*(46.7)*	*(8.82)*			*(0.264)*	*(3.17)*	*(93)*	*(10)*	*(101.8)*
				*15th(3C) Gear					
153.9	9395	6.14	1801	3.5	0.433	16.13	198	46	30.0
(114.8)	*(41.8)*	*(9.89)*			*(0.264)*	*(3.18)*	*(92)*	*(8)*	*(101.6)*
				*16th(3D) Gear					
151.3	7555	7.51	1818	3.0	0.438	15.94	198	46	30.0
(112.8)	*(33.6)*	*(12.09)*			*(0.267)*	*(3.14)*	*(92)*	*(8)*	*(101.6)*
				*17th(3E) Gear					
147.5	6270	8.82	1802	2.5	0.450	15.53	199	46	30.0
(110.0)	*(27.9)*	*(14.19)*			*(0.274)*	*(3.06)*	*(93)*	*(8)*	*(101.6)*

* Powerboost mode

TRACTOR SOUND LEVEL WITH CAB	Front wheel drive Engaged dB(A)	Disengaged dB(A)
At no load in 10th (2D) gear	70.0	69.0
Bystander		--

TIRES, BALLAST AND WEIGHT

	Tested without ballast
Rear Tires - No., size, ply & psi*(kPa)*	Two 620/70R42;**;15*(100)*
Front Tires - No., size, ply & psi*(kPa)*	Two 480/70R30;**;15*(100)*
Height of Drawbar	21.7 in *(550 mm)*
Static Weight with operator - Rear	10340 lb *(4690 kg)*
- Front	7770 lb *(3525 kg)*
- Total	18110 lb *(8215 kg)*

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 1890 engine rpm or 1000 rpm at 2000 engine rpm **Unladen tractor mass** 17945 lb *(8140 kg)*

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 2D and higher.

NOTE 2: The data on this summary was obtained from OECD report 2746 conducted on the Massey Ferguson 7719 Dyna 6 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 cab noise level claim of 69 dB(A) with front drive engaged. 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. **2946,** Nebraska Summary 1020, June 16, 2016.

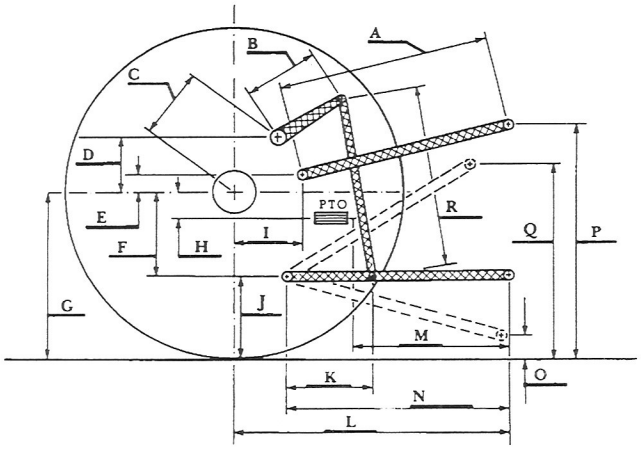
Roger M. Hoy
Director

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

HYDRAULIC PERFORMANCE

CATEGORY: III
Quick Attach: None
OECD Static test

Maximum force exerted through whole range:	13890 lbs *(61.8 kN)*	
i) Sustained pressure of the open relief valve:	2700 psi *(186 bar)*	
	Standard Pump	Optional pump
	29 GPM *(110 l/min)*	39 GPM *(150 l/min)*
	two outlet sets combined	two outlet sets combined
ii) Pump delivery rate at minimum pressure:	30.7 GPM *(116.2 l/min)*	42.1 GPM *(159.2 l/min)*
iii) Pump delivery rate at maximum		
hydraulic power:	29.2 GPM *(110.5 l/min)*	38.6 GPM *(146.3 l/min)*
Delivery pressure:	1990 psi *(137 bar)*	1820 psi *(126 bar)*
Power:	33.9 HP *(25.2 kW)*	41.0 HP *(30.6 kW)*
	single outlet set	single outlet set
ii) Pump delivery rate at minimum pressure:	30.2 GPM *(114.2 l/min)*	29.6 GPM *(112.0 l/min)*
iii) Pump delivery rate at maximum		
hydraulic power:	28.6 GPM *(108.3 l/min)*	27.0 GPM *(102.1 l/min)*
Delivery pressure:	1975 psi *(136 bar)*	1945 psi *(134 bar)*
Power:	32.9 HP *(24.5 kW)*	30.6 HP *(22.8 kW)*



HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	*mm*
A	30.9	*784*
B	15.7	*400*
C	20.7	*525*
D	19.1	*485*
E	8.3	*210*
F	12.2	*310*
G	36.4	*925*
H	2.0	*50*
I	17.7	*450*
J	24.2	*615*
K	23.8	*604*
L	48.2	*1225*
M	24.6	*625*
N	38.1	*967*
O	10.0	*255*
P	51.2	*1300*
Q	39.7	*1009*
R	36.6	*930*