

# SUMMARY OF OECD TEST 2704—NEBRASKA SUMMARY 843

## CHALLENGER MT565D 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)	Hp.hr/gal (kW.h/l)	D.E.F. Consumption Gal/hr (l/h)	Mean Atmospheric Conditions
<b>MAXIMUM POWER AND FUEL CONSUMPTION</b>						
<b>Rated Engine Speed—(PTO speed—1032 rpm)</b>						
162.3 (121.0)	2100	9.29 (35.17)	0.399 (0.243)	17.46 (3.44)	0.43 (1.63)	
<b>Standard Power Take-off Speed (1000 rpm)</b>						
169.1 (126.1)	2034	9.59 (36.29)	0.396 (0.241)	17.64 (3.47)	0.45 (1.70)	
<b>Maximum Power (1 hour)</b>						
183.2 (136.6)	1951	9.94 (37.63)	0.378 (0.230)	18.43 (3.63)	0.52 (1.98)	
<b>VARYING POWER AND FUEL CONSUMPTION</b>						
162.3 (121.0)	2100	9.29 (35.17)	0.399 (0.243)	17.46 (3.44)	0.43 (1.63)	Air temperature
138.7 (103.4)	2107	8.22 (31.11)	0.414 (0.252)	16.87 (3.32)	0.34 (1.27)	72°F (22°C)
104.3 (77.8)	2120	6.38 (24.15)	0.427 (0.260)	16.34 (3.22)	0.27 (1.03)	Relative humidity
69.9 (52.1)	2130	4.80 (18.15)	0.479 (0.291)	14.57 (2.87)	0.21 (0.78)	58%
34.7 (25.9)	2139	3.34 (12.65)	0.671 (0.408)	10.39 (2.05)	0.14 (0.52)	Barometer
---	2149	2.04 (7.72)	---	---	---	30.3" Hg (102.5 kPa)

Maximum torque - 599 lb.-ft. (812 Nm) at 1450 rpm  
 Maximum torque rise - 47.6%  
 Torque rise at 1700 engine rpm - 34%  
 Power increase at 1951 engine rpm - 12%

#### 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)
<b>Power at Rated Engine Speed—Turtle 8</b>									
124.4 (92.8)	10095 (44.9)	4.62 (7.44)	2099	5.6	0.476 (0.290)	14.62 (2.88)	174 (79)	39 (4)	30.1 (102.0)
<b>75% of Pull at Rated Engine Speed—Turtle 8</b>									
94.9 (70.8)	7575 (33.7)	4.70 (7.56)	2125	4.0	0.509 (0.309)	13.68 (2.69)	172 (78)	39 (4)	30.1 (102.0)
<b>50% of Pull at Rated Engine Speed—Turtle 8</b>									
63.6 (47.4)	5060 (22.5)	4.71 (7.58)	2148	3.8	0.584 (0.355)	11.93 (2.35)	171 (77)	39 (4)	30.1 (102.0)
<b>75% of Pull at Reduced Engine Speed—Turtle 10</b>									
94.7 (70.6)	7510 (33.4)	4.73 (7.61)	1405	4.1	0.417 (0.253)	16.70 (3.29)	169 (76)	39 (4)	30.1 (102.0)
<b>50% of Pull at Reduced Engine Speed—Turtle 10</b>									
64.1 (47.8)	5105 (22.7)	4.71 (7.58)	1412	3.5	0.468 (0.284)	14.88 (2.93)	167 (75)	39 (4)	30.1 (102.0)

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

**Dates of tests:** January to March, 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) 0.838 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 9 10W/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. W00454 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 one paper element Muffler underhood Exhaust vertical Cooling medium temperature control thermostat and variable speed fan

**CHASSIS:** Type front wheel assist Serial No. B013901 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 18495 lb (8390 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)	Consumption Hp.hr/gal (kW.h/l)	Temp. <sup>o</sup> F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
Turtle 3									
74.2 (55.3)	16995 (75.6)	1.64 (2.63)	2126	14.0	0.592 (0.360)	11.77 (2.32)	169 (76)	37 (3)	30.1 (102.0)
Turtle 4.5									
112.4 (83.8)	16320 (72.6)	2.58 (4.16)	2092	13.8	0.519 (0.316)	13.40 (2.64)	169 (76)	37 (3)	30.1 (102.0)
Turtle 6.5									
147.6 (110.1)	13760 (61.2)	4.02 (6.48)	1959	10.3	0.442 (0.269)	15.74 (3.10)	176 (80)	39 (4)	30.1 (102.0)
Turtle 8									
148.3 (110.6)	11915 (53.0)	4.67 (7.51)	1946	6.3	0.441 (0.268)	15.79 (3.11)	176 (80)	39 (4)	30.1 (102.0)
Turtle 10									
146.4 (109.2)	9665 (43.0)	5.68 (9.14)	1949	5.5	0.450 (0.273)	15.48 (3.05)	178 (81)	39 (4)	30.1 (102.0)
Turtle 12									
146.4 (109.2)	7530 (33.5)	7.29 (11.73)	1945	4.6	0.443 (0.269)	15.71 (3.09)	178 (81)	41 (5)	30.1 (102.0)
Turtle 14.5									
143.2 (106.8)	6050 (26.9)	8.88 (14.29)	1964	3.1	0.456 (0.278)	15.25 (3.00)	180 (82)	41 (5)	30.1 (102.0)
Rabbit 9									
137.9 (102.8)	9890 (44.0)	5.23 (8.41)	1950	5.3	0.455 (0.277)	15.28 (3.01)	176 (80)	41 (5)	30.1 (102.0)
Rabbit 12									
145.4 (108.4)	7575 (33.7)	7.20 (11.58)	1952	4.6	0.448 (0.272)	15.55 (3.06)	177 (81)	43 (6)	30.1 (102.0)
Rabbit 15.5									
146.6 (109.3)	5910 (26.3)	9.30 (14.96)	1941	4.1	0.436 (0.265)	15.95 (3.14)	180 (82)	43 (6)	30.1 (102.0)
Rabbit 17									
145.0 (108.1)	5530 (24.6)	9.83 (15.82)	1951	3.1	0.439 (0.267)	15.84 (3.12)	180 (82)	43 (6)	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 7620 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. **2704**, Nebraska Summary 843, 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 650/65R38; \*\*; 14(100)  
 Two 540/65R30; \*\*; 14(100)  
 23.6 in (600 mm)  
 10570 lb (4795 kg)  
 8090 lb (3670 kg)  
 18660 lb (8465 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:	2900 psi (200 bar)
	<u>two outlet sets combined</u>
ii) Pump delivery rate at minimum pressure:	31.0 GPM (117.5 l/min)
iii) Pump delivery rate at maximum	
hydraulic power:	29.2 GPM (110.5 l/min)
Delivery pressure:	2250 psi (155 bar)
Power:	38.3 HP (28.5 kW)
	<u>one outlet set</u>
ii) Pump delivery rate at minimum pressure:	30.6 GPM (116.1 l/min)
iii) Pump delivery rate at maximum	
hydraulic power:	27.7 GPM (104.7 l/min)
Delivery pressure:	1945 psi (134 bar)
Power:	31.4 HP (23.4 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

