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## Tests 1847 & 1848: Challenger MT 565 Diesel

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# SUMMARY OF OECD TESTS 1847 & 1848—NEBRASKA SUMMARY 319A CHALLENGER MT 565 DIESEL 18 SPEED

## POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Mean Atmospheric Conditions
<b>MAXIMUM POWER AND FUEL CONSUMPTION</b>					
<b>Rated Engine Speed—(PTO speed—1050 rpm)</b>					
146.2 (109.0)	2196	9.26 (35.07)	0.450 (0.274)	15.79 (3.11)	
<b>Standard Power Take-off Speed (999 rpm)</b>					
152.6 (113.7)	2090	9.20 (34.81)	0.428 (0.260)	16.59 (3.27)	
<b>Maximum Power (2 Hours)</b>					
155.2 (115.7)	2004	9.06 (34.28)	0.415 (0.252)	17.13 (3.37)	

VARYING POWER AND FUEL CONSUMPTION					
146.2 (109.0)	2196	9.26 (35.07)	0.450 (0.274)	15.79 (3.11)	Air temperature
125.8 (93.8)	2249	8.44 (31.96)	0.477 (0.290)	14.90 (2.93)	72°F (22°C)
95.9 (71.5)	2285	7.15 (27.07)	0.529 (0.322)	13.41 (2.64)	Relative humidity
65.0 (48.5)	2317	5.68 (21.51)	0.621 (0.378)	11.44 (2.25)	60%
32.3 (24.1)	2342	4.27 (16.15)	0.938 (0.571)	7.57 (1.49)	Barometer
--	2360	2.80 (10.59)	--	--	30.4" Hg (102.9 kPa)

Maximum Torque - 493.6 lb.-ft. (669.2 Nm) at 1400 rpm  
Maximum Torque Rise - 40.4%  
Torque rise at 1780 engine rpm - 27%

## 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) med	Temp.°F (°C) cool- ing bulb	Air dry (kPa)	Barom. inch Hg
<b>Maximum Power—10th Gear</b>									
141.1 (105.2)	9730 (43.3)	5.44 (8.75)	1979	5	0.451 (0.275)	15.74 (3.10)	189 (87)	72 (22)	29.8 (100.9)
<b>75% of Pull at Maximum Power—10th Gear</b>									
107.3 (80.0)	6345 (28.2)	6.34 (10.20)	2261	3	0.534 (0.325)	13.30 (2.62)	187 (86)	72 (22)	29.8 (100.9)
<b>50% of Pull at Maximum Power—10th Gear</b>									
73.1 (54.5)	4205 (18.7)	6.52 (10.49)	2300	2	0.640 (0.389)	11.09 (2.18)	181 (83)	72 (22)	29.8 (100.9)
<b>75% of Pull at Reduced Engine Speed—11th Gear</b>									
107.7 (80.3)	6360 (28.3)	6.35 (10.22)	2001	3	0.487 (0.296)	14.58 (2.87)	183 (84)	72 (22)	29.8 (100.9)
<b>50% of Pull at Reduced Engine Speed—11th Gear</b>									
69.3 (51.7)	3985 (17.7)	6.52 (10.50)	2056	3	0.573 (0.349)	12.39 (2.44)	181 (83)	72 (22)	29.8 (100.9)

**Location of Test:** Groupement d'Antony, Parc de Touvoie, BP 44 Antony, France 92163

**Dates of Test:** February - June, 1999

**Manufacturer:** AGCO S.A. Z.A.-No.2 BP 60307, Avenue Blaise Pascal, 60026 Beauvais, France

**FUEL and OIL:** Fuel No. 2 Diesel **Specific gravity converted to 60°/60° F (15°/15°C)** 0.853  
**Fuel weight** 7.10 lbs/gal (0.851 kg/l) **Oil SAE** 10W40 **API service classification** CD/CE  
**Transmission and hydraulic lubricant** BP Terrac Extra 10W/30 **Front axle lubricant** API GL5 -SAE 85W140

**ENGINE: Make** Sisu Diesel **Type** six cylinder vertical with turbocharger and air to air intercooler **Serial No.** ZU644841B **Crankshaft lengthwise Rated engine speed** 2200 **Bore and stroke** 4.251" x 4.724" (108.0 mm x 120.0 mm) **Compression ratio** 16.5 to 1 **Displacement** 402 cu in (6596 ml) **Starting system** 12volt **Lubrication pressure** **Air cleaner** two paper elements and aspirator **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** 2WD & front wheel assist **Serial No.** G 085 10 **Treadwidth** rear 63.4" (1610 mm) to 74.8" (1900 mm) front: 2WD - 64.8" (1645 mm) to 88.6" (2250 mm), FWA - 63.4" (1630 mm) to 74.8" (2030 mm) **Wheelbase** 117.5" (2985 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with full range operator controlled powershift **Nominal travel speeds mph (km/h)** first 1.50 (2.41) second 1.94 (3.12) third 2.50 (4.02) fourth 2.85 (4.58) fifth 3.23 (5.19) sixth 3.68 (5.91) seventh 4.17 (6.70) eighth 4.75 (7.63) ninth 5.39 (8.66) tenth 6.13 (9.85) eleventh 6.94 (11.16) twelfth 7.91 (12.72) thirteenth 8.96 (14.41) fourteenth 10.21 (16.42) fifteenth 11.57 (18.60) sixteenth 14.94 (24.02) seventeenth 19.27 (30.99) eighteenth 24.89 (40.03) reverse 1.50 (2.41), 2.50 (4.02), 2.85 (4.58), 4.17 (6.70), 4.75 (7.63), 6.94 (11.16), 7.91 (12.72), 11.57 (18.60), 19.27 (30.99) **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 1993 engine rpm or 1000 rpm at 2091 engine rpm **Unladen tractor mass** 2WD - 15390 lb (6980 kg), FWA - 16305 lb (7395 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)	Temp. °F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)	
83.4 (62.2)	13945 (62.0)	2.24 (3.61)	2276	15	3rd Gear 0.646 (0.393)	11.00 (2.17)	185 (85)	72 (22)	29.4 (100.9)
100.3 (74.8)	13885 (61.8)	2.71 (4.36)	2262	11	4th Gear 0.569 (0.346)	12.49 (2.46)	183 (84)	72 (22)	29.4 (100.9)
113.0 (84.3)	13755 (61.2)	3.08 (4.96)	2239	9	5th Gear 0.542 (0.330)	13.10 (2.58)	185 (85)	72 (22)	29.4 (100.9)
126.9 (94.6)	13725 (61.1)	3.47 (5.58)	2218	9	6th Gear 0.514 (0.312)	13.83 (2.72)	183 (84)	72 (22)	29.4 (100.9)
135.6 (101.1)	13120 (58.4)	3.88 (6.24)	2154	8	7th Gear 0.489 (0.298)	14.52 (2.86)	187 (86)	72 (22)	29.4 (100.9)
137.6 (102.6)	11630 (51.7)	4.44 (7.14)	2120	6	8th Gear 0.478 (0.291)	14.86 (2.93)	180 (82)	72 (22)	29.4 (100.9)
140.1 (104.5)	10970 (48.8)	4.79 (7.71)	2002	6	9th Gear 0.457 (0.278)	15.53 (3.06)	180 (82)	72 (22)	29.4 (100.9)
141.1 (105.2)	9735 (43.3)	5.44 (8.75)	1979	5	10th Gear 0.451 (0.275)	15.73 (3.10)	185 (85)	72 (22)	29.4 (100.9)
140.8 (105.0)	8340 (37.1)	6.33 (10.19)	2017	4	11th Gear 0.457 (0.278)	15.53 (3.06)	185 (85)	72 (22)	29.4 (100.9)
138.8 (103.5)	7215 (32.1)	7.21 (11.61)	2003	3	12th Gear 0.459 (0.279)	15.48 (3.05)	183 (84)	72 (22)	29.4 (100.9)
139.7 (104.2)	6475 (28.8)	8.09 (13.02)	2003	4	13th Gear 0.455 (0.277)	15.62 (3.08)	183 (84)	72 (22)	29.4 (100.9)
136.7 (101.9)	5585 (24.8)	9.18 (14.77)	1983	3	14th Gear 0.463 (0.282)	15.33 (3.02)	187 (86)	72 (22)	29.4 (100.9)

**REPAIRS AND ADJUSTMENTS:** No repairs or adjustments

**REMARKS:** All test results were determined from observed data obtained in accordance with official OECD test procedures. The performance figures on this summary were taken from a test conducted under the OECD Code II test procedure.

**NOTE:** The data on this summary was obtained from OECD reports 1847 & 1848 conducted on the Massey Ferguson 8240 Diesel(2WD & FWA).

**Report reissued:** Supplemental sales permit for Challenger MT565 Diesel, July 2003.

We, the undersigned, certify that this is a true summary of data from OECD Reports No. **1847 & 1848**, Nebraska Summary 319A, June 23, 2003.

Leonard L. Bashford  
Director

W.P. Campbell  
M.F. Kocher  
G.J. Hoffman  
Board of Tractor Test Engineers

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive	
	2WD dB(A)	Engaged dB(A)
At no load in 8th gear	74.0	74.0
Bystander	--	--

#### Tested Without Ballast

TIRES AND WEIGHT	FWA		2WD	
	FWA		2WD	
Rear tires - No., size, ply & psi(kPa)	Two 20.8R42; **,15(100)		Two 20.8R42; **,15(100)	
Front tires - No., size, ply & psi(kPa)	Two 16.9R30; **,15(100)		Two 14L-16.1; 10; 36(250)	
Height of Drawbar	23.2 in (590 mm)		29.5 in (750 mm)	
Static Weight with operator- Rear	10460 lb (4745 kg)		10650 lb (4830 kg)	
- Front	6005 lb (2725 kg)		4905 lb (2225 kg)	
- Total	16465 lb (7470 kg)		15555 lb (7055 kg)	

**DRAWBAR PERFORMANCE**  
**(Unballasted - 2WD)**  
**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)	Temp.°F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)	
<b>Maximum Power—10th Gear</b>									
138.3 (103.1)	9635 (42.9)	5.38 (8.66)	1994	6	0.460 (0.280)	15.43 (3.04)	187 (86)	63 (17)	28.8 (97.6)
<b>75% of Pull at Maximum Power—10th Gear</b>									
100.4 (74.9)	6000 (26.7)	6.28 (10.10)	2260	4	0.547 (0.333)	12.99 (2.56)	185 (85)	63 (17)	28.8 (97.6)
<b>50% of Pull at Maximum Power—10th Gear</b>									
69.0 (51.4)	3990 (17.8)	6.48 (10.43)	2306	3	0.635 (0.386)	11.18 (2.20)	181 (83)	63 (17)	28.8 (97.6)
<b>75% of Pull at Reduced Engine Speed—11th Gear</b>									
100.4 (74.9)	5965 (26.5)	6.31 (10.15)	2009	4	0.507 (0.308)	14.01 (2.76)	183 (84)	63 (17)	28.8 (97.6)
<b>50% of Pull at Reduced Engine Speed—11th Gear</b>									
69.3 (51.7)	3985 (17.7)	6.52 (10.50)	2056	3	0.573 (0.349)	12.39 (2.44)	181 (83)	63 (17)	28.8 (97.6)
<b>MAXIMUM POWER IN SELECTED GEARS</b>									
2nd Gear									
60.8 (45.3)	12915 (57.5)	1.76 (2.84)	2314	16	0.703 (0.428)	10.10 (1.99)	187 (86)	63 (17)	28.8 (97.6)
3rd Gear									
77.5 (57.8)	12680 (56.4)	2.29 (3.69)	2291	14	0.635 (0.386)	11.18 (2.20)	189 (87)	63 (17)	28.8 (97.6)
4th Gear									
89.2 (66.5)	12395 (55.1)	2.70 (4.34)	2276	11	0.588 (0.357)	12.08 (2.38)	187 (86)	63 (17)	28.8 (97.6)
5th Gear									
99.6 (74.3)	12080 (53.7)	3.09 (4.97)	2258	9	0.566 (0.344)	12.54 (2.47)	189 (87)	63 (17)	28.8 (97.6)
6th Gear									
112.8 (84.1)	12005 (53.4)	3.52 (5.67)	2255	9	0.528 (0.321)	13.45 (2.65)	185 (85)	63 (17)	28.8 (97.6)
7th Gear									
126.9 (94.6)	11980 (53.3)	3.97 (6.39)	2223	9	0.514 (0.313)	13.81 (2.72)	185 (85)	63 (17)	28.8 (97.6)
8th Gear									
135.2 (100.8)	11410 (50.8)	4.44 (7.15)	2168	8	0.496 (0.302)	14.31 (2.82)	187 (86)	63 (17)	28.8 (97.6)
9th Gear									
136.0 (101.4)	10740 (47.8)	4.75 (7.64)	2026	8	0.476 (0.290)	14.92 (2.94)	189 (87)	63 (17)	28.8 (97.6)
10th Gear									
138.3 (103.1)	9645 (42.9)	5.38 (8.66)	1994	6	0.460 (0.280)	15.43 (3.04)	189 (87)	63 (17)	28.8 (97.6)
11th Gear									
137.3 (102.4)	8380 (37.3)	6.14 (9.89)	1989	5	0.460 (0.280)	15.43 (3.04)	187 (86)	63 (17)	28.8 (97.6)
12th Gear									
137.7 (102.7)	7380 (32.8)	7.00 (11.26)	1977	4	0.457 (0.278)	15.53 (3.06)	185 (85)	63 (17)	28.8 (97.6)
13th Gear									
138.0 (102.9)	6450 (28.7)	8.02 (12.91)	1983	4	0.458 (0.279)	15.51 (3.06)	187 (86)	63 (17)	28.8 (97.6)
14th Gear									
137.6 (102.6)	5580 (24.8)	9.25 (14.88)	1999	3	0.462 (0.281)	15.38 (3.03)	185 (85)	63 (17)	28.8 (97.6)

### THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: III

Quick Attach: None

Maximum Force Exerted

Through Whole Range: 14760 lbs (65.7 kN)

- i) Opening pressure of relief valve: NA
- Sustained pressure of the open relief valve: 2880 psi (199 bar)
- ii) Pump delivery rate at minimum pressure and rated engine speed: 30.2 GPM (114.3 l/min)
- iii) Pump delivery rate at maximum hydraulic power: 26.1 GPM (98.8 l/min)
- Delivery pressure: 2650 psi (183 bar)
- Power: 40.4 HP (30.1 kW)

### THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi.(bar) 2990 (206)  
 Location: lift cylinder  
 Hydraulic oil temperature: °F(°C) 148 (64)  
 Location: hydraulic sump  
 Category: III  
 Quick attach: No

#### SAE Static Test—System pressure 2690 psi (186 Bar)

Hitch point distance to ground level in.(mm)	10.0 (254)	16.0 (406)	24.0 (610)	32.0 (813)	39.7 (1008)
Lift force on frame lb	19665	18945	18621	18135	17379
" " " " " " (kN)	(87.5)	(84.3)	(82.8)	(80.7)	(77.3)

#### HITCH DIMENSIONS AS TESTED—NO LOAD

	SAE TEST		OECD TEST	
	inch	mm	inch	mm
A	30.7	781	30.7	781
B	15.2	385	15.2	385
C	20.7	527	20.7	527
D	17.9	455	17.9	455
E	10.8	275	10.8	275
F	12.6	320	12.6	320
G	34.3	870	34.3	870
H	1.5	39	1.5	39
I	17.7	450	17.7	450
J	21.7	550	21.7	550
K	21.6	548	21.6	548
L	49.0	1245	49.0	1245
M	24.8	629	24.8	629
N	39.0	991	39.0	991
O	10.0	254	10.0	254
P	43.7	1110	48.6	1235
Q	39.1	994	39.1	994
R	33.5	851	33.5	851

