

NEBRASKA OECD TRACTOR TEST 1815-SUMMARY 381

CHALLENGER MT865 DIESEL

16 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
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—1061 rpm)					
444.19 (331.24)	2100	25.48 (96.45)	0.403 (0.245)	17.43 (3.43)	
Standard Power Take-off Speed - (PTO speed - 1000 rpm)					
490.93 (366.09)	1980	26.80 (101.45)	0.383 (0.233)	18.32 (3.61)	
Maximum Power (2 hours)					
523.60 (390.45)	1750	27.01 (102.24)	0.362 (0.220)	19.39 (3.82)	

VARYING POWER AND FUEL CONSUMPTION

444.19 (331.24)	2100	25.48 (96.45)	0.403 (0.245)	17.43 (3.43)	Air temperature
393.39 (293.35)	2185	23.98 (90.77)	0.428 (0.260)	16.41 (3.23)	75°F (24°C)
296.68 (221.23)	2199	19.83 (75.07)	0.469 (0.285)	14.96 (2.95)	Relative humidity
197.78 (147.49)	2199	14.83 (56.14)	0.526 (0.320)	13.34 (2.63)	40%
98.89 (73.74)	2199	10.26 (38.83)	0.728 (0.443)	9.64 (1.90)	Barometer
1.06 (0.79)	2199	5.98 (22.65)	39.710 (24.155)	0.18 (0.03)	28.92" Hg (97.93 kPa)

Maximum Torque - 1757 lb.-ft. (2383 Nm) at 1398 rpm

Maximum Torque Rise - 58.3%

Torque rise at 1699 engine rpm - 46%

DRAWBAR PERFORMANCE (Unballasted)

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 cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
Maximum Power—6th Gear									
378.75 (282.43)	32240 (143.41)	4.41 (7.09)	2097	3.67	0.472 (0.287)	14.88 (2.93)	178 (81)	46 (8)	28.93 (97.97)
75% of Pull at Maximum Power—6th Gear									
305.04 (227.47)	24222 (107.74)	4.72 (7.60)	2200	1.52	0.520 (0.316)	13.50 (2.66)	179 (81)	55 (13)	29.03 (98.31)
50% of Pull at Maximum Power—6th Gear									
204.93 (152.82)	16142 (71.80)	4.76 (7.66)	2200	0.81	0.610 (0.371)	11.51 (2.27)	177 (81)	59 (15)	29.01 (98.24)
75% of Pull at Reduced Engine Speed—9th Gear									
304.61 (227.15)	24210 (107.69)	4.72 (7.59)	1539	1.60	0.442 (0.269)	15.89 (3.13)	179 (82)	57 (14)	29.02 (98.27)
50% of Pull at Reduced Engine Speed—9th Gear									
204.94 (152.83)	16156 (71.87)	4.76 (7.66)	1539	0.73	0.478 (0.291)	14.69 (2.89)	178 (81)	62 (17)	28.99 (98.17)

Location of Test: Nebraska Tractor Test Laboratory, University of Nebraska, Lincoln, Nebraska 68583-0832

Dates of Test: October 7-November 21, 2002

Manufacturer: AGCO Corp, 4205 River Green Parkway, Duluth Ga 30096

FUEL, OIL and TIME: Fuel No. 2 Diesel Specific gravity converted to 60°/60°F (15°/15°C) 0.8430 Fuel weight 7.019 lbs/gal (0.841 kg/l) Oil SAE 10W-30 API service classification CH-4 Transmission and hydraulic lubricant Caterpillar MTO fluid Total time engine was operated: 51.0 hours

ENGINE: Make Caterpillar Diesel Type six cylinder vertical with turbocharger and air to air aftercooler Serial No.*GDA00284* Crankshaft lengthwise Rated engine speed 2100 Bore and stroke 5.512" x 6.732" (140.0 mm x 171.0 mm) Compression ratio 15.5 to 1 Displacement 964 cu in (15794 ml) Starting system 12 volt 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 two paper elements and water separator Fuel cooler radiator for returned fuel Muffler vertical Cooling medium temperature control 1 thermostat

ENGINE OPERATING PARAMETERS: Fuel rate: 170.2 - 185.6 lb/h (77.2 - 84.2 kg/h) High idle: 2175 - 2225 rpm Turbo boost: nominal 21.0 - 25.4 psi (145 - 175 kPa) as measured 22.5 psi (155 kPa)

CHASSIS: Type tracklayer-rubber tracked Serial No.*AGCMT865CBDS20396* Track width 100.0" (2540 mm) to 120.0 (3048 mm) Length of track on ground 122.4" (3110 mm) Hydraulic control system direct engine drive Transmission selective gear fixed ratio with full range operator controlled power shift Nominal travel speeds mph (km/h) first 1.67 (2.69) second 2.13 (3.43) third 2.68 (4.31) fourth 3.41 (5.48) fifth 4.06 (6.54) sixth 4.58 (7.37) seventh 5.16 (8.31) eighth 5.80 (9.34) ninth 6.53 (10.51) tenth 7.34 (11.82) eleventh 8.29 (13.34) twelfth 9.33 (15.02) thirteenth 11.02 (17.87) fourteenth 14.11 (22.71) fifteenth 17.86 (28.75) sixteenth 24.86 (40.00) at 2300 rpm, reverse 1.34 (2.16), 3.24 (5.22), 3.66 (5.89), 8.89 (14.30) Clutch wet multiple disc hydraulically actuated by foot pedal Brakes wet multiple disc hydraulically actuated foot pedal Steering electro-hydraulic differential steering controlled by steering wheel Power take-off 1000 rpm at 1980 engine rpm Unladen tractor mass 44220 lb (20058 kg)

DRAWBAR PERFORMANCE

Unballasted at 2100 RPM

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	Temp. °F (°C) Air dry bulb	Barom. inch Hg (kPa)	
3rd Gear									
283.66 (211.53)	43213 (192.22)	2.46 (3.96)	2199	12.64	0.591 (0.359)	11.88 (2.34)	177 (81)	43 (6)	28.91 (97.90)
4th Gear									
337.08 (251.36)	41430 (184.29)	3.05 (4.91)	2111	11.14	0.530 (0.322)	13.25 (2.61)	178 (81)	45 (7)	28.91 (97.90)
5th Gear									
368.76 (274.98)	35888 (159.64)	3.85 (6.20)	2100	5.22	0.482 (0.293)	14.56 (2.87)	179 (82)	46 (8)	28.91 (97.90)
6th Gear									
378.75 (282.43)	32240 (143.41)	4.41 (7.09)	2097	3.67	0.472 (0.287)	14.88 (2.93)	178 (81)	46 (8)	28.93 (97.97)
7th Gear									
376.12 (280.47)	28008 (124.59)	5.04 (8.10)	2095	2.30	0.480 (0.292)	14.62 (2.88)	179 (82)	46 (8)	28.93 (97.97)
8th Gear									
380.51 (283.75)	24944 (110.96)	5.72 (9.21)	2099	1.52	0.467 (0.284)	15.04 (2.96)	178 (81)	46 (8)	28.94 (98.00)
9th Gear									
376.60 (280.83)	21854 (97.21)	6.46 (10.40)	2100	1.21	0.475 (0.289)	14.78 (2.91)	179 (82)	46 (8)	28.94 (98.00)
10th Gear									
375.06 (279.68)	19282 (85.77)	7.29 (11.74)	2101	0.97	0.472 (0.287)	14.86 (2.93)	179 (81)	44 (7)	29.08 (98.48)
11th Gear									
357.57 (266.64)	16291 (72.47)	8.23 (13.25)	2098	0.81	0.500 (0.304)	14.05 (2.77)	178 (81)	50 (10)	29.06 (98.41)

REPAIRS AND ADJUSTMENTS: A steel hydraulic line was replaced during the hydraulic flow test. Tests continued after repair.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. For the maximum power tests the fuel temperature at the injection pump inlet was maintained at 103°F(39°C). The performance figures on this summary were taken from a test conducted under the OECD Code II test code procedure.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1815**, Nebraska Summary 381, January 8, 2003.

Leonard L. Bashford
Director

M.F. Kocher
V.I. Adamchuk
W.P. Campbell
Board of Tractor Test Engineers

TRACTOR SOUND LEVEL WITH CAB

dB(A)

At no load in 6th gear	76.7
Bystander	--

TIRES, BALLAST AND WEIGHT

	With Ballast	Without Ballast
Track width	36.0 in (915 mm)	36.0 in (915 mm)
Ballast - Cast iron(front)	3280 lb (1488 kg)	None
- Cast iron(front idlers)	2325 lb (1055 kg)	None
Height of Drawbar	22.5 in (560 mm)	22.0 in (560 mm)
Static Weight with operator	50000 lb(22680 kg)	44395 lb(20137 kg)

DRAWBAR PERFORMANCE
(Unballasted at 1750 RPM)
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)	Fuel Consumption Hp.hr/gal (kW.h/l)	Temp. °F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
3rd Gear									
286.86 (213.91)	42859 (190.65)	2.51 (4.04)	2199	10.89	0.553 (0.336)	12.69 (2.50)	178 (81)	65 (18)	28.97 (98.10)
4th Gear									
339.21 (252.95)	41389 (184.11)	3.07 (4.95)	2113	10.62	0.534 (0.325)	13.14 (2.59)	178 (81)	45 (7)	28.91 (97.90)
5th Gear									
380.03 (283.39)	40471 (180.02)	3.52 (5.67)	2025	10.24	0.478 (0.291)	14.68 (2.89)	179 (82)	46 (8)	28.92 (97.93)
6th Gear									
411.13 (306.58)	40034 (178.08)	3.85 (6.20)	1931	8.51	0.450 (0.273)	15.61 (3.08)	179 (82)	46 (8)	28.91 (97.90)
7th Gear									
426.84 (318.30)	38905 (173.06)	4.11 (6.62)	1814	7.83	0.445 (0.271)	15.76 (3.10)	180 (82)	46 (8)	28.92 (97.93)
8th Gear									
442.47 (329.95)	36068 (160.44)	4.60 (7.40)	1754	5.37	0.430 (0.262)	16.31 (3.21)	180 (82)	46 (8)	28.94 (98.00)
9th Gear									
444.77 (331.67)	31594 (140.54)	5.28 (8.50)	1753	3.29	0.426 (0.259)	16.47 (3.24)	180 (82)	46 (8)	28.95 (98.04)
10th Gear									
450.15 (335.67)	28099 (124.99)	6.01 (9.67)	1752	2.15	0.419 (0.255)	16.77 (3.30)	180 (82)	46 (8)	28.94 (98.00)
11th Gear									
443.74 (330.90)	24322 (108.19)	6.84 (11.01)	1757	1.60	0.425 (0.258)	16.52 (3.25)	180 (82)	45 (7)	29.08 (98.48)
12th Gear									
443.11 (330.42)	21500 (95.63)	7.73 (12.44)	1755	1.13	0.424 (0.258)	16.57 (3.26)	180 (82)	48 (9)	29.07 (98.44)
13th Gear									
435.26 (324.57)	17680 (78.64)	9.23 (14.86)	1756	0.89	0.429 (0.261)	16.36 (3.22)	180 (82)	51 (11)	29.05 (98.37)

DRAWBAR PERFORMANCE
(Ballasted to 50000 lbs at 1750 RPM)
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)	Fuel Consumption Hp.hr/gal (kW.h/l)	Temp. °F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
3rd Gear									
325.68 (242.86)	50734 (225.67)	2.41 (3.87)	2146	12.47	0.546 (0.332)	12.86 (2.53)	178 (81)	51 (11)	28.75 (97.36)
4th Gear									
377.88 (281.79)	46693 (207.70)	3.03 (4.88)	2038	8.59	0.475 (0.289)	14.79 (2.91)	179 (82)	52 (11)	28.75 (97.36)
5th Gear									
410.15 (305.85)	44447 (197.71)	3.46 (5.57)	1943	8.10	0.454 (0.276)	15.45 (3.04)	179 (82)	61 (16)	28.71 (97.22)
6th Gear									
435.51 (324.76)	43576 (193.84)	3.75 (6.03)	1840	6.65	0.432 (0.263)	16.24 (3.20)	180 (82)	60 (16)	28.72 (97.26)
7th Gear									
441.91 (329.54)	40365 (179.55)	4.11 (6.61)	1755	4.93	0.426 (0.259)	16.48 (3.25)	180 (82)	62 (17)	28.71 (97.22)
8th Gear									
449.61 (335.27)	35807 (159.28)	4.71 (7.58)	1758	3.30	0.419 (0.255)	16.75 (3.30)	181 (83)	63 (17)	28.70 (97.19)
9th Gear									
447.54 (333.73)	31342 (139.41)	5.35 (8.62)	1757	2.23	0.420 (0.256)	16.71 (3.29)	181 (83)	63 (17)	28.69 (97.16)
10th Gear									
454.96 (339.27)	28190 (125.39)	6.05 (9.74)	1753	1.52	0.413 (0.251)	16.99 (3.35)	181 (83)	63 (17)	28.68 (97.12)
11th Gear									
451.53 (336.70)	24753 (110.11)	6.84 (11.01)	1749	1.21	0.419 (0.255)	16.75 (3.30)	180 (82)	46 (8)	28.79 (97.49)
12th Gear									
453.31 (338.03)	21978 (97.76)	7.73 (12.45)	1755	1.13	0.414 (0.252)	16.94 (3.34)	181 (83)	59 (15)	28.68 (97.12)
13th Gear									
442.05 (329.64)	17994 (80.04)	9.21 (14.83)	1750	0.81	0.428 (0.260)	16.40 (3.23)	181 (83)	57 (14)	28.68 (97.12)

DRAWBAR PERFORMANCE
(Ballasted to 56000 lbs at 1750 RPM)
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)	Fuel Consumption Hp.hr/gal (kW.h/l)	Temp. °F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
2nd Gear									
307.18 (229.06)	58031 (258.13)	1.99 (3.19)	2195	10.79	0.557 (0.339)	12.60 (2.48)	178 (81)	40 (4)	28.95 (98.04)
3rd Gear									
354.45 (264.32)	53350 (237.31)	2.49 (4.01)	2108	7.86	0.504 (0.307)	13.93 (2.74)	179 (82)	43 (6)	28.95 (98.04)
4th Gear									
400.17 (298.41)	51065 (227.15)	2.94 (4.73)	1961	8.13	0.477 (0.290)	14.72 (2.90)	179 (82)	51 (11)	28.85 (97.70)
5th Gear									
427.85 (319.05)	47813 (212.68)	3.36 (5.40)	1852	6.46	0.448 (0.273)	15.66 (3.09)	180 (82)	57 (14)	28.83 (97.63)
6th Gear									
439.95 (328.07)	45575 (202.73)	3.62 (5.83)	1753	5.39	0.431 (0.262)	16.30 (3.21)	181 (83)	58 (14)	28.84 (97.66)
7th Gear									
445.03 (331.86)	40165 (178.66)	4.16 (6.69)	1747	3.54	0.428 (0.261)	16.38 (3.23)	180 (83)	59 (15)	28.85 (97.70)
8th Gear									
449.22 (334.99)	35517 (157.99)	4.74 (7.63)	1752	2.40	0.423 (0.257)	16.59 (3.27)	181 (83)	59 (15)	28.86 (97.73)
9th Gear									
446.32 (332.82)	31197 (138.77)	5.37 (8.63)	1752	1.86	0.423 (0.258)	16.58 (3.27)	181 (83)	59 (15)	28.86 (97.73)
10th Gear									
451.66 (336.80)	27928 (124.23)	6.06 (9.76)	1750	1.23	0.423 (0.257)	16.61 (3.27)	181 (83)	59 (15)	28.86 (97.73)
11th Gear									
444.37 (331.37)	24341 (108.27)	6.85 (11.02)	1747	1.07	0.430 (0.261)	16.34 (3.22)	181 (83)	59 (15)	28.87 (97.77)
12th Gear									
442.11 (329.68)	21377 (95.09)	7.76 (12.48)	1755	0.99	0.433 (0.263)	16.23 (3.20)	181 (83)	59 (15)	28.87 (97.77)
13th Gear									
436.22 (325.29)	17743 (78.92)	9.22 (14.84)	1749	0.75	0.439 (0.267)	16.00 (3.15)	181 (83)	59 (15)	28.88 (97.80)

TIRES, BALLAST AND WEIGHT

Track width

Ballast - Cast iron(front end)
- Cast iron(front idlers)
- Cast iron(side)

Height of Drawbar

Static Weight with operator

With Ballast

36.0 in (915 mm)
4280 lb (1941 kg)
4625 lb (2098 kg)
2700 lb (1225 kg)
22.5 in (570 mm)
56000 lb(25401 kg)

Without Ballast

36.0 in (915 mm)
None
None
None
22.0 in (560 mm)
44395 lb(20137 kg)

THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: IVN

Quick Attach: yes

Maximum Force Exerted Through Whole Range: 20936 lbs (93.1 kN)

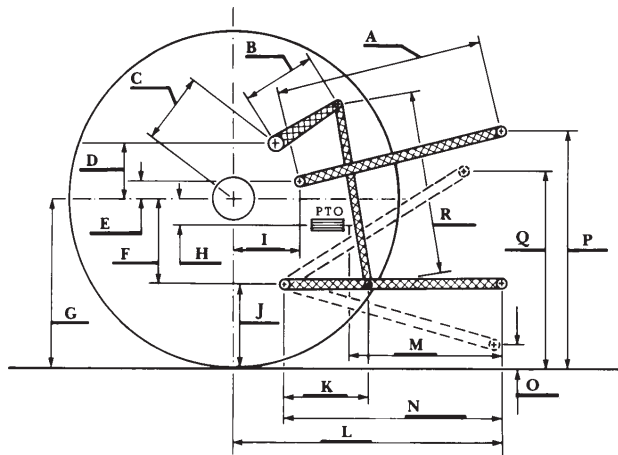
i) Opening pressure of relief valve: NA
Sustained pressure at compensator cutoff: 2930 psi (202 bar)

High flow option

ii) Pump delivery rate at minimum pressure and rated engine speed: 43.5 GPM (164.7 l/min) 58.8 GPM (222.5 l/min)
at 2200 engine rpm: 45.6 GPM (172.6 l/min) 60.9 GPM (230.5 l/min)

iii) Pump delivery rate at maximum hydraulic power: 42.2 GPM (159.7 l/min) 54.6 GPM (206.8 l/min)
Delivery pressure: 2755 psi (190 bar) 2674 psi (184 bar)
Power: 67.9 Hp (50.6 kW) 85.2 Hp (63.5 kW)

HITCH DIMENSIONS AS TESTED—NO LOAD



	inch	mm
A	30.2	768
B	21.7	550
C	41.4	1051
D	39.4	1000
E	12.4	315
F	11.8	300
G	35.0	890
H	0.4	10
I	23.0	585
J	23.2	590
K	29.0	737
L	53.9	1369
*L'	60.4	1534
M	26.6	676
N	36.6	929
O	9.0	230
P	50.2	1275
Q	46.5	1181
R	55.9	1421

*L' to Quick Attach ends



CHALLENGER MT865 DIESEL

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