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January 2004

## Tests 2269 & 2270: Challenger MT465B Diesel

Nebraska Tractor Test Lab

University of Nebraska-Lincoln, [tractortestlab@unl.edu](mailto:tractortestlab@unl.edu)

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# SUMMARY OF OECD TESTS 2269 & 2270—NEBRASKA SUMMARY 517 CHALLENGER MT465B 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—1101 rpm)					
90.8 (67.7)	2202	6.18 (23.41)	0.483 (0.294)	14.68 (2.89)	
Standard Power Take-off Speed(1000 rpm)					
96.2 (71.7)	2000	5.83 (22.06)	0.430 (0.262)	16.50 (3.25)	
Maximum Power (2 hours)					
98.6 (73.5)	1802	5.60 (21.19)	0.403 (0.245)	17.61 (3.47)	

## VARYING POWER AND FUEL CONSUMPTION

90.8 (67.7)	2202	6.18 (23.41)	0.483 (0.294)	14.68 (2.89)	Air temperature
79.5 (59.3)	2269	5.83 (22.07)	0.519 (0.316)	13.65 (2.69)	73°F (23°C)
60.9 (45.4)	2296	5.06 (19.16)	0.590 (0.359)	12.03 (2.37)	Relative humidity
40.4 (30.1)	2310	4.35 (16.47)	0.766 (0.466)	9.26 (1.83)	52%
20.4 (15.2)	2336	3.11 (11.79)	1.083 (0.659)	6.55 (1.29)	Barometer
--	2356	2.17 (8.22)	--	--	29.7" Hg (100.5 kPa)

Maximum Torque - 326.1 lb.-ft. (442.1 Nm) at 1373 rpm  
Maximum Torque Rise - 50.6%  
Torque rise at 1750 engine rpm - 36%

## 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)
Maximum Power—8th(11C) Gear									
73.0 (54.4)	4410 (19.6)	6.20 (9.98)	2200	4.9	0.603 (0.367)	11.77 (2.32)	192 (89)	64 (18)	30.0 (101.7)
75% of Pull at Maximum Power—8th(11C) Gear									
56.7 (42.3)	3305 (14.7)	6.43 (10.35)	2262	4.1	0.689 (0.419)	10.30 (2.03)	192 (89)	64 (18)	30.0 (101.7)
50% of Pull at Maximum Power—8th(11C) Gear									
38.5 (28.7)	2200 (9.8)	6.56 (10.56)	2277	3.0	0.957 (0.582)	7.41 (1.46)	192 (89)	64 (18)	30.0 (101.7)
75% of Pull at Reduced Engine Speed—10th(11D) Gear									
56.7 (42.3)	3285 (14.6)	6.47 (10.42)	1799	3.9	0.570 (0.347)	12.44 (2.45)	187 (86)	64 (18)	30.0 (101.7)
50% of Pull at Reduced Engine Speed—10th(11D) Gear									
38.2 (28.5)	2180 (9.7)	6.57 (10.58)	1813	3.3	0.710 (0.432)	9.99 (1.97)	187 (86)	64 (18)	30.0 (101.7)

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

**Dates of tests:** April - May, 2004

**Sound tests:** January 19, 2006

**Manufacturer:** AGCOS.A. BP 307, Avenue Blaise Pascal, 60026 Beauvais, France

**FUEL and OIL:** Fuel No. 2 Diesel **Specific gravity converted to 60°/60° F (15°/15°C)** 0.852  
**Fuel weight** 7.09 lbs/gal (0.850 kg/l) **Oil SAE** 15W40 **API service classification** CH4  
**Transmission and hydraulic lubricant** BP Terrac Tractan 9 fluid **Front axle lubricant** API GL5 - SAE 85W140

**ENGINE:** Make Perkins Diesel **Type** four cylinder vertical with turbocharger and air to air intercooler  
**Serial No.** U091827K **Crankshaft** lengthwise **Rated engine speed** 2200 **Bore and stroke** 4.134" x 5.00" (105.0 mm x 127.0 mm) **Compression ratio** 17.5 to 1 **Displacement** 268 cu in (4400 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** vertical **Cooling medium temperature control** thermostat

**CHASSIS:** **Type** 2WD and FWA **Serial No.** N176101 **Tread width** rear 59.8" (1518 mm) to 67.0" (1703 mm) front 2WD - 53.0" (1345 mm) to 87.3" (2217 mm), FWA - 55.7" (1415 mm) to 64.8" (1646 mm) **Wheelbase** 2WD - 101.5" (2577 mm) FWA - 100.5" (2553 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (2) range operator controlled powershift **Nominal travel speeds mph (km/h)** first 1.69 (2.72) second 2.13 (3.43) third 2.55 (4.10) fourth 3.22 (5.18) fifth 3.77 (6.07) sixth 4.77 (7.68) seventh 5.11 (8.22) eighth 6.33 (10.18) ninth 6.46 (10.39) tenth 7.99 (12.86) eleventh 9.56 (15.38) twelfth 12.07 (19.43) thirteenth 14.14 (22.76) fourteenth 17.87 (28.76) fifteenth 19.15 (30.82) sixteenth 24.18 (38.91) reverse 1.69 (2.72), 2.13 (3.43), 2.55 (4.10), 3.22 (5.18), 3.77 (6.07), 4.77 (7.68), 5.11 (8.22), 6.33 (10.18), 6.46 (10.39), 7.99 (12.86), 9.56 (15.38), 12.07 (19.43), 14.14 (22.76), 17.87 (28.76), 19.15 (30.82), 24.18 (38.91) **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 1980 engine rpm or 1000 rpm at 2000 engine rpm **Unladen tractor mass** 2WD - 9170 lb (4160 kg), FWA - 9975 lb (4525 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. °F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
5th (3TC) Gear									
70.1 (52.3)	8385 (37.3)	3.14 (5.05)	2091	15.2	0.590 (0.359)	12.03 (2.37)	192 (89)	54 (12)	30.0 (101.7)
6th(3TD)Gear									
77.0 (57.4)	7555 (33.6)	3.82 (6.15)	1895	9.9	0.542 (0.329)	13.10 (2.58)	190 (88)	54 (12)	30.0 (101.7)
7th(4TC) Gear									
78.0 (58.2)	7485 (33.3)	3.91 (6.29)	1805	9.5	0.516 (0.314)	13.76 (2.71)	190 (88)	54 (12)	30.0 (101.7)
8th(1LC) Gear									
79.7 (59.4)	6010 (26.7)	4.97 (8.00)	1803	7.0	0.512 (0.311)	13.86 (2.73)	194 (90)	55 (13)	30.0 (101.7)
9th(4TD) Gear									
78.3 (58.4)	5780 (25.7)	5.08 (8.18)	1800	6.8	0.524 (0.319)	13.54 (2.67)	194 (90)	55 (13)	30.0 (101.7)
10th (1LD)Gear									
78.4 (58.5)	4610 (20.5)	6.38 (10.27)	1801	5.5	0.512 (0.311)	13.86 (2.73)	190 (88)	57 (14)	30.0 (101.7)
11th(2LC)Gear									
78.0 (58.2)	3800 (16.9)	7.70 (12.39)	1801	5.0	0.518 (0.315)	13.71 (2.70)	194 (90)	57 (14)	30.0 (101.7)

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

**NOTE :** The test results on this Summary were obtained from tests carried out on the Massey Ferguson 5460 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 claims of 26.4 GPM (100 lpm) remote hydraulic flow, nor 72 dB(A) cab sound level. The performance figures on this summary were taken from a test conducted under the OECD Code II test procedure.

We, the undersigned, certify that this is a true summary of data from OECD Reports No. **2269 & 2270**, Nebraska Summary 517, March 17,2006.

Leonard L. Bashford  
Director

M.F. Kocher  
V.I. Adamchuk  
J.A. Smith  
Board of Tractor Test Engineers

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive	
	2WD dB(A)	Engaged dB(A)
At no load in 7th (4TC) gear	79.5	79.4
Bystander in 16th (4LD) gear	86.2	--

Tested Without Ballast		
TIRES AND WEIGHT	Front Wheel Assist	2WD
Rear tires - No.,size, ply & psi(kPa)	Two 18.4R38; **,15(100)	Two 18.4R38; **,15(100)
Front tires - No.,size, ply & psi(kPa)	Two 14.9R28; **,16(110)	Two 10.00-16; 8; 30 (200)
Height of Drawbar	22.8 in (580 mm)	30.7 in (780 mm)
Static Weight with operator- Rear	6160 lb (2795 kg)	6065 lb (2750 kg)
- Front	3945 lb (1790 kg)	3285 lb (1490 kg)
- Total	10105 lb (4585 kg)	9350 lb (4240 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)	Hp.hr/gal (kW.h/l)	Temp. °F cool- ing med	Temp. °C Air dry bulb	Barom. inch Hg (kPa)
<b>Maximum Power—10th(1LD) Gear</b>									
77.4 (57.7)	3675 (16.3)	7.90 (12.72)	2203	5.0	0.575 (0.350)	12.33 (2.43)	192 (89)	64 (18)	29.9 (101.1)
<b>75% of Pull at Maximum Power—10th(1LD) Gear</b>									
60.2 (44.9)	2770 (12.3)	8.15 (13.12)	2259	4.0	0.678 (0.412)	10.47 (2.06)	192 (89)	64 (18)	29.9 (101.1)
<b>50% of Pull at Maximum Power—10th(1LD) Gear</b>									
40.9 (30.5)	1845 (8.2)	8.31 (13.38)	2281	3.0	0.862 (0.524)	8.23 (1.62)	190 (88)	64 (18)	29.9 (101.1)
<b>75% of Pull at Reduced Engine Speed—11th(2LC) Gear</b>									
60.2 (44.9)	2755 (12.3)	8.20 (13.19)	1903	4.0	0.555 (0.338)	12.78 (2.52)	189 (87)	64 (18)	29.9 (101.1)
<b>50% of Pull at Reduced Engine Speed—11th(2LC) Gear</b>									
41.4 (30.9)	1870 (8.3)	8.31 (13.38)	1905	3.0	0.663 (0.403)	10.71 (2.11)	187 (86)	64 (18)	29.9 (101.1)
<b>MAXIMUM POWER IN SELECTED GEARS</b>									
<b>5th(3TC) Gear</b>									
63.0 (47.0)	6900 (30.7)	3.42 (5.51)	2256	15.0	0.693 (0.422)	10.23 (2.02)	189 (87)	59 (15)	29.9 (101.1)
<b>6th(3TD) Gear</b>									
76.2 (56.8)	6800 (30.2)	4.20 (6.76)	2089	11.0	0.566 (0.344)	12.54 (2.47)	192 (89)	57 (14)	29.9 (101.1)
<b>7th(4TC) Gear</b>									
78.0 (58.2)	6790 (30.2)	4.31 (6.93)	2013	11.0	0.505 (0.307)	14.06 (2.77)	189 (87)	59 (15)	29.9 (101.1)
<b>8th(1LC) Gear</b>									
81.1 (60.5)	6285 (28.0)	4.84 (7.79)	1802	10.0	0.499 (0.304)	14.21 (2.80)	194 (90)	59 (15)	29.9 (101.1)
<b>9th(4TD) Gear</b>									
80.5 (60.0)	6000 (26.7)	5.03 (8.10)	1817	9.0	0.482 (0.293)	14.72 (2.90)	192 (89)	59 (15)	29.9 (101.1)
<b>10th(1LD) Gear</b>									
82.9 (61.8)	4880 (21.7)	6.37 (10.25)	1806	6.0	0.473 (0.288)	14.97 (2.95)	190 (88)	59 (15)	29.9 (101.1)
<b>11th(2LC) Gear</b>									
82.3 (61.4)	4050 (18.0)	7.62 (12.27)	1801	6.0	0.471 (0.287)	15.06 (2.97)	192 (89)	57 (14)	29.9 (101.1)
<b>12th(2LD) Gear</b>									
80.1 (59.7)	3075 (13.7)	9.76 (15.70)	1804	5.0	0.499 (0.303)	14.22 (2.80)	194 (90)	57 (14)	29.9 (101.1)

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

CATEGORY: II

Quick Attach: None

Maximum force exerted through whole range: 7285 lbs (32.4 kN)

i) Opening pressure of relief valve: NA

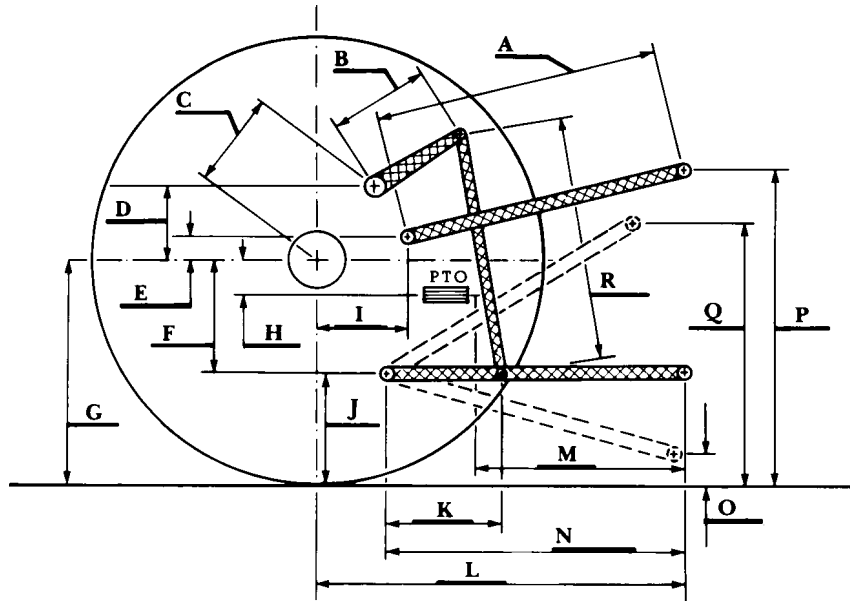
Sustained pressure of the open relief valve: one outlet set 2815 psi (194 bar) two outlet sets combined 2815 psi (194 bar)

ii) Pump delivery rate at minimum pressure: 15.3 GPM (58.0 l/min) 16.6 GPM (63.0 l/min)

iii) Pump delivery rate at maximum hydraulic power: 13.8 GPM (52.3 l/min) 13.7 GPM (51.9 l/min)

Delivery pressure: 2310 psi (159 bar) 2395 psi (165 bar)

Power: 18.6 hp (13.9 kW) 19.2 Hp (14.3 kW)



### HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	mm
A	25.6	650
B	11.6	295
C	13.9	354
D	13.0	330
E	7.9	200
F	10.2	260
G	30.5	775
H	1.9	48
I	16.3	413
J	20.3	515
K	25.2	640
L	41.2	1046
M	22.5	571
N	37.2	946
O	8.1	205
P	44.3	1125
Q	31.5	801
R	30.1	765