

NEBRASKA OECD TRACTOR TEST 1861 – SUMMARY 488

CHALLENGER MT845B DIESEL

16 SPEED

POWER TAKE-OFF PERFORMANCE

| Power HP (kW) | Crank shaft 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) | | | | | |
| 359.53 (268.10) | 2100 | 23.26 (88.05) | 0.456 (0.277) | 15.46 (3.04) | |
| Standard Power Take-off Speed - (PTO speed - 1000 rpm) | | | | | |
| 387.05 (288.62) | 1979 | 23.76 (89.93) | 0.433 (0.263) | 16.29 (3.21) | |
| Maximum Power (1 hour) | | | | | |
| 402.32 (300.01) | 1800 | 23.46 (88.81) | 0.411 (0.250) | 17.15 (3.38) | |

VARYING POWER AND FUEL CONSUMPTION

| | | | | | |
|--------------------|------|------------------|--------------------|-----------------|----------------------|
| 359.53 (268.10) | 2100 | 23.26 (88.05) | 0.456 (0.277) | 15.46 (3.04) | Air temperature |
| 321.00 (239.37) | 2199 | 21.81 (82.57) | 0.479 (0.291) | 14.72 (2.90) | 75°F(24°C) |
| 240.57 (179.39) | 2199 | 18.28 (69.20) | 0.536 (0.326) | 13.16 (2.59) | Relative humidity |
| 159.66 (119.05) | 2199 | 14.22 (53.85) | 0.628 (0.382) | 11.22 (2.21) | 44% |
| 79.33 (59.15) | 2199 | 9.90 (31.66) | 0.880 (0.535) | 8.01 (1.58) | Barometer |
| 2.12 (1.58) | 2199 | 6.30 (23.84) | 20.990 (12.767) | 0.34 (0.07) | 29.04" Hg(98.34 kPa) |

Maximum Torque - 1423 lb.-ft. (1929 Nm) at 1300 rpm
 Maximum Torque Rise - 58.2%
 Torque rise at 1700 engine rpm - 38%

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 (°C) cool- ing med | Air dry bulb | Barom. inch Hg (kPa) |
|---|--------------------------------|------------------------|---------------------------------|-----------|---|-----------------------|-------------------------------------|--------------------|-------------------------------|
| Maximum Power—6th Gear | | | | | | | | | |
| 313.27 (233.61) | 26013 (115.71) | 4.52 (7.27) | 2105 | 2.03 | 0.530 (0.322) | 13.30 (2.62) | 190 (88) | 54 (12) | 28.85 (97.70) |
| 75% of Pull at Maximum Power—6th Gear | | | | | | | | | |
| 249.58 (186.11) | 19614 (87.25) | 4.77 (7.68) | 2199 | 0.93 | 0.575 (0.350) | 12.26 (2.42) | 189 (87) | 54 (12) | 28.85 (97.70) |
| 50% of Pull at Maximum Power—6th Gear | | | | | | | | | |
| 167.37 (124.80) | 13094 (58.25) | 4.79 (7.71) | 2196 | 0.35 | 0.690 (0.420) | 10.22 (2.01) | 189 (87) | 54 (12) | 28.85 (97.70) |
| 75% of Pull at Reduced Engine Speed—9th Gear | | | | | | | | | |
| 249.52 (186.07) | 19717 (87.71) | 4.75 (7.64) | 1533 | 0.96 | 0.459 (0.279) | 15.36 (3.03) | 190 (88) | 54 (12) | 28.85 (97.70) |
| 50% of Pull at Reduced Engine Speed—9th Gear | | | | | | | | | |
| 167.17 (124.66) | 13082 (58.19) | 4.79 (7.71) | 1538 | 0.33 | 0.529 (0.321) | 13.34 (2.63) | 188 (87) | 55 (13) | 28.84 (97.66) |

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

Dates of test: October 4 - 26, 2005

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)** 0.8468
Fuel weight 7.051 lbs/gal (0.845 kg/l) **Oil SAE** 10W-30 **API service classification** CI-4
Transmission and hydraulic lubricant AGCO Trandraulic 821 XL fluid **Total time engine was operated:** 50.5 hours

ENGINE: Make Caterpillar Diesel **Type** six cylinder vertical with turbocharger and air to air aftercooler **Serial No.** *JAS00105* **Crankshaft** lengthwise **Rated engine speed** 2100 **Bore and stroke** 5.402" x 6.752" (137.2 mm x 171.5 mm) **Compression ratio** 16.5 to 1 **Displacement** 928 cu in (15213 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** 2 thermostats

ENGINE OPERATING PARAMETERS: Fuel rate: 159.0 - 168.0 lb/h (72.1 - 76.2 kg/h) **High idle:** 2175 - 2225 rpm **Turbo boost:** nominal 23.2 - 27.6 psi (160 - 190 kPa) as measured 25.8 psi (178 kPa)

CHASSIS: Type tracklayer-rubber tracked **Serial No.** *AGCMT845EBBP60473* **Track width** 100.0" (2540 mm) to 120.0" (3048 mm) **Length of track on ground** 124.3" (3157 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 11.10 (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 dis 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** 42900 lb (19459 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) | Consumption Hp.hr/gal (kW.h/l) | Temp.°F (°C) cool- ing med | Air dry bulb | Barom. inch Hg (kPa) |
|---------------------|--------------------------------|------------------------|---------------------------------|-----------|---|--------------------------------------|-------------------------------------|--------------------|-------------------------------|
| 3rd Gear | | | | | | | | | |
| 277.87 (207.21) | 42532 (189.19) | 2.45 (3.94) | 2116 | 9.13 | 0.596 (0.362) | 11.84 (2.33) | 189 (87) | 43 (6) | 28.96 (98.07) |
| 4th Gear | | | | | | | | | |
| 297.55 (221.88) | 33856 (150.60) | 3.30 (5.30) | 2099 | 3.83 | 0.559 (0.340) | 12.61 (2.48) | 189 (87) | 44 (7) | 28.97 (98.10) |
| 5th Gear | | | | | | | | | |
| 311.33 (232.16) | 29366 (130.63) | 3.98 (6.40) | 2099 | 2.68 | 0.536 (0.326) | 13.15 (2.59) | 189 (87) | 48 (9) | 28.99 (98.17) |
| 6th Gear | | | | | | | | | |
| 313.27 (233.61) | 26013 (115.71) | 4.52 (7.27) | 2105 | 2.03 | 0.530 (0.322) | 13.30 (2.62) | 190 (88) | 54 (12) | 28.85 (97.70) |
| 7th Gear | | | | | | | | | |
| 310.01 (231.17) | 22744 (101.17) | 5.11 (8.23) | 2098 | 1.40 | 0.538 (0.327) | 13.12 (2.58) | 190 (88) | 50 (10) | 28.87 (97.77) |
| 8th Gear | | | | | | | | | |
| 309.20 (230.57) | 20076 (89.30) | 5.78 (9.29) | 2097 | 0.98 | 0.538 (0.327) | 13.11 (2.58) | 190 (88) | 50 (10) | 28.87 (97.77) |
| 9th Gear | | | | | | | | | |
| 302.44 (225.53) | 17392 (77.36) | 6.52 (10.50) | 2101 | 0.70 | 0.545 (0.332) | 12.94 (2.55) | 190 (88) | 52 (11) | 28.86 (97.73) |
| 10th Gear | | | | | | | | | |
| 303.50 (226.32) | 15479 (68.85) | 7.35 (11.83) | 2099 | 0.49 | 0.541 (0.329) | 13.04 (2.57) | 190 (88) | 53 (12) | 28.86 (97.73) |
| 11th Gear | | | | | | | | | |
| 292.67 (218.24) | 13218 (58.79) | 8.30 (13.36) | 2099 | 0.32 | 0.564 (0.343) | 12.50 (2.46) | 191 (88) | 54 (12) | 28.86 (97.73) |

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

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 118°F(48°C). 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 and correct report of official Tractor Test No. **1861**, Nebraska Summary 488, January 27, 2006.

Leonard L. Bashford
Director

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

TRACTOR SOUND LEVEL WITH CAB

dB(A)

| | |
|------------------------|------|
| At no load in 6th gear | 74.0 |
| Bystander | -- |

TIRES, BALLAST AND WEIGHT

| | With Ballast | Without Ballast |
|--------------------------------|--------------------|--------------------|
| Track width | 30.0 in (760 mm) | 30.0 in (760 mm) |
| Ballast - Cast iron(front end) | 4280 lb (1941 kg) | None |
| - Cast iron(front idlers) | 2645 lb (1200 kg) | None |
| Height of Drawbar | 20.0 in (510 mm) | 19.5 in (495 mm) |
| Static Weight with operator | 50000 lb(22679 kg) | 43075 lb(19538 kg) |

DRAWBAR PERFORMANCE
(Unballasted at 1800 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) | Consumption Hp.hr/gal (kW.h/l) | Temp. °F(°C) cool- ing med | Air dry bulb | Barom. inch Hg (kPa) |
|---------------------|--------------------------------|------------------------|---------------------------------|-----------|---|--------------------------------------|-------------------------------------|--------------------|-------------------------------|
| 3rd Gear | | | | | | | | | |
| 277.50 (206.93) | 42490 (189.00) | 2.45 (3.94) | 2116 | 9.31 | 0.596 (0.363) | 11.83 (2.33) | 189 (87) | 43 (6) | 28.96 (98.07) |
| 4th Gear | | | | | | | | | |
| 308.38 (229.96) | 38095 (169.45) | 3.04 (4.89) | 2011 | 7.95 | 0.552 (0.336) | 12.78 (2.52) | 190 (88) | 60 (16) | 29.00 (98.21) |
| 5th Gear | | | | | | | | | |
| 338.71 (252.58) | 36345 (161.67) | 3.49 (5.62) | 1896 | 5.69 | 0.507 (0.308) | 13.91 (2.74) | 190 (88) | 50 (10) | 28.99 (98.17) |
| 6th Gear | | | | | | | | | |
| 346.26 (258.20) | 34480 (153.38) | 3.77 (6.06) | 1800 | 4.50 | 0.484 (0.294) | 14.57 (2.87) | 191 (88) | 52 (11) | 29.00 (98.21) |
| 7th Gear | | | | | | | | | |
| 346.82 (258.63) | 30160 (134.16) | 4.31 (6.94) | 1799 | 2.94 | 0.483 (0.294) | 14.60 (2.88) | 191 (88) | 51 (11) | 28.87 (97.77) |
| 8th Gear | | | | | | | | | |
| 350.76 (261.56) | 26818 (119.29) | 4.90 (7.89) | 1800 | 2.13 | 0.476 (0.290) | 14.81 (2.92) | 191 (88) | 50 (10) | 28.87 (97.77) |
| 9th Gear | | | | | | | | | |
| 348.35 (259.77) | 23572 (104.85) | 5.54 (8.92) | 1800 | 1.54 | 0.479 (0.291) | 14.72 (2.90) | 191 (88) | 53 (12) | 28.86 (97.73) |
| 10th Gear | | | | | | | | | |
| 350.80 (261.59) | 20989 (93.36) | 6.27 (10.09) | 1800 | 1.10 | 0.475 (0.289) | 14.83 (2.92) | 191 (88) | 54 (12) | 28.86 (97.73) |
| 11th Gear | | | | | | | | | |
| 344.15 (256.63) | 18152 (80.74) | 7.11 (11.44) | 1805 | 0.77 | 0.485 (0.295) | 14.54 (2.87) | 191 (88) | 54 (12) | 28.85 (97.70) |
| 12th Gear | | | | | | | | | |
| 342.91 (255.71) | 16037 (71.34) | 8.02 (12.90) | 1804 | 0.55 | 0.483 (0.294) | 14.58 (2.87) | 191 (88) | 54 (12) | 28.85 (97.70) |

DRAWBAR PERFORMANCE
(Ballasted at 1800 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 | | | | | | | | | |
| 258.06 (192.43) | 48440 (215.47) | 2.00 (3.22) | 2179 | 9.89 | 0.619 (0.377) | 11.39 (2.24) | 189 (87) | 50 (10) | 29.16 (98.75) |
| 3rd Gear | | | | | | | | | |
| 295.86 (220.62) | 45327 (201.63) | 2.45 (3.94) | 2073 | 8.00 | 0.566 (0.344) | 12.46 (2.45) | 189 (87) | 50 (10) | 29.16 (98.75) |
| 4th Gear | | | | | | | | | |
| 332.82 (248.19) | 43215 (192.23) | 2.89 (4.65) | 1882 | 6.26 | 0.515 (0.313) | 13.69 (2.70) | 190 (88) | 50 (10) | 29.15 (98.71) |
| 5th Gear | | | | | | | | | |
| 348.34 (259.76) | 39008 (173.52) | 3.35 (5.39) | 1799 | 4.71 | 0.481 (0.293) | 14.66 (2.89) | 190 (88) | 51 (11) | 29.14 (98.68) |
| 6th Gear | | | | | | | | | |
| 353.69 (263.75) | 34672 (154.23) | 3.83 (6.16) | 1801 | 3.08 | 0.474 (0.289) | 14.86 (2.93) | 191 (88) | 52 (11) | 29.13 (98.64) |
| 7th Gear | | | | | | | | | |
| 352.80 (263.08) | 30374 (135.11) | 4.36 (7.01) | 1801 | 2.19 | 0.473 (0.288) | 14.91 (2.94) | 191 (88) | 52 (11) | 29.12 (98.61) |
| 8th Gear | | | | | | | | | |
| 355.32 (264.97) | 27037 (120.27) | 4.93 (7.93) | 1800 | 1.59 | 0.467 (0.284) | 15.11 (2.98) | 191 (90) | 53 (12) | 29.12 (98.61) |
| 9th Gear | | | | | | | | | |
| 350.02 (261.01) | 23567 (104.83) | 5.57 (8.96) | 1800 | 1.09 | 0.475 (0.289) | 14.84 (2.92) | 191 (88) | 54 (12) | 29.11 (98.58) |
| 10th Gear | | | | | | | | | |
| 350.16 (261.11) | 20900 (92.97) | 6.28 (10.11) | 1798 | 0.80 | 0.475 (0.289) | 14.84 (2.92) | 191 (88) | 55 (13) | 29.10 (98.54) |
| 11th Gear | | | | | | | | | |
| 341.68 (254.79) | 18019 (80.15) | 7.11 (11.44) | 1800 | 0.58 | 0.486 (0.296) | 14.50 (2.86) | 191 (88) | 55 (13) | 29.10 (98.54) |
| 12th Gear | | | | | | | | | |
| 340.09 (253.61) | 15909 (70.77) | 8.02 (12.90) | 1799 | 0.45 | 0.486 (0.295) | 14.52 (2.86) | 191 (88) | 56 (13) | 29.09 (98.51) |

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: 2943 psi (203 bar)

High flow option

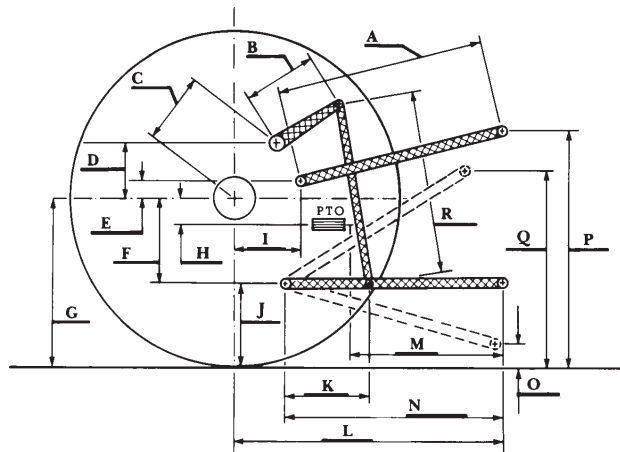
ii) Pump delivery rate at minimum pressure and rated engine speed: 44.5 GPM (168.5 l/min) 59.0 GPM (223.3 l/min)

iii) Pump delivery rate at maximum hydraulic power: 43.0 GPM (162.8 l/min) 57.1 GPM (216.1 l/min)

Delivery pressure: 2692 psi (186 bar) 2479 psi (171 bar)

Power: 67.5 HP (50.4 kW) 82.6 HP (61.6 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 MT845B DIESEL