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2008

Nebraska Summary: S605 Challenger MT555B

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SUMMARY OF OECD TEST 2413 - NEBRASKA SUMMARY 605 CHALLENGER MT555B AUTOPOWER VI DIESEL 24 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—1098 rpm) | | | | | |
| 154.4 (115.1) | 2196 | 10.02 (37.92) | 0.462 (0.281) | 15.41 (3.04) | |
| Standard Power Take-off Speed(1000 rpm) | | | | | |
| 168.0 (125.3) | 2000 | 9.93 (37.39) | 0.421 (0.256) | 16.92 (3.33) | |
| Maximum Power (1 hour) | | | | | |
| 171.4 (127.8) | 1900 | 9.86 (37.31) | 0.410 (0.249) | 17.38 (3.42) | |

VARYING POWER AND FUEL CONSUMPTION

| | | | | | |
|------------------|------|------------------|------------------|-----------------|----------------------|
| 154.4 (115.1) | 2196 | 10.02 (37.92) | 0.462 (0.281) | 15.41 (3.04) | Air temperature |
| 131.6 (98.1) | 2202 | 9.06 (34.30) | 0.490 (0.298) | 14.52 (2.86) | 72°F (21°C) |
| 99.0 (73.8) | 2210 | 7.39 (27.97) | 0.531 (0.323) | 13.40 (2.64) | Relative humidity |
| 66.4 (49.5) | 2220 | 5.46 (20.67) | 0.585 (0.356) | 12.17 (2.40) | 31% |
| 33.5 (25.0) | 2232 | 3.47 (13.15) | 0.738 (0.449) | 9.65 (1.90) | Barometer |
| -- | 2243 | 1.99 (7.53) | -- | -- | 30.3" Hg (102.5 kPa) |

Maximum Torque - 531.7 lb.-ft. (720.9 Nm) at 1450 rpm
Maximum Torque Rise - 44.0%
Torque rise at 1750 engine rpm - 38%

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 | Barom. inch Hg (kPa) |
|--|--------------------------------|------------------------|---------------------------------|-----------|---|-----------------------|--------------------------------------|-------------------------------|
| Maximum Power—11th(3A) Gear | | | | | | | | |
| 119.6 (89.2) | 8070 (35.9) | 5.56 (8.94) | 2197 | 3.7 | 0.527 (0.321) | 13.50 (2.66) | 181 (83) | 48 (9) |
| 75% of Pull at Maximum Power—11th(3A) Gear | | | | | | | | |
| 90.5 (67.5) | 6025 (26.8) | 5.63 (9.06) | 2203 | 2.3 | 0.590 (0.359) | 12.07 (2.38) | 176 (80) | 48 (9) |
| 50% of Pull at Maximum Power—11th(3A) Gear | | | | | | | | |
| 61.7 (46.0) | 4055 (18.0) | 5.70 (9.18) | 2215 | 1.5 | 0.652 (0.396) | 10.92 (2.15) | 176 (80) | 48 (9) |
| 75% of Pull at Reduced Engine Speed—13th(3B) Gear | | | | | | | | |
| 90.3 (67.3) | 6015 (26.8) | 5.63 (9.06) | 1833 | 1.8 | 0.510 (0.310) | 13.96 (2.75) | 176 (80) | 48 (9) |
| 50% of Pull at Reduced Engine Speed—13th(3B) Gear | | | | | | | | |
| 61.4 (45.8) | 4040 (18.0) | 5.70 (9.18) | 1835 | 1.1 | 0.568 (0.345) | 12.54 (2.47) | 174 (79) | 48 (9) |

Location of tests: Groupement d'Antony, Parc de Touvoie, BP 44 Antony, Cedex, France 92163
Dates of tests: February - March, 2008

Manufacturer: AGCOS.A. BP307, Avenue Blaise Pascal, 60026 Beauvais, France

FUEL and OIL: Fuel No. 2 Diesel Specific gravity converted to 60°/60°F (15°/15°C) 0.855
Fuel weight 7.12 lbs/gal (0.853 kg/l) **Oil SAE** 15W40 **API service classification** CH4
Transmission and hydraulic lubricant BPTerrac Tractan 9 fluid **Front axle lubricant** API GL5 - SAE 85W140

ENGINE: Make Perkins Diesel **Type** six cylinder vertical with turbocharger and air to air intercooler
Serial No. 28851766602430 **Crankshaft** lengthwise
Rated engine speed 2200 **Bore and stroke** 4.134" x 5.00" (105.0 mm x 127.0 mm) **Compression ratio** 16.2 to 1 **Displacement** 402 cu in (6600 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 and variable speed fan

CHASSIS: Type Front wheel assist **Serial No.** S117 010 **Tread width** rear 61.7" (1567 mm) to 70.8" (1798 mm) front 68.8" (1747 mm) to 75.4" (1915 mm) **Wheelbase** 120.1" (2996 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (6) range operator controlled powershift **Nominal travel speeds mph (km/h)** first 1.07 (1.72) second 1.29 (2.07) third 1.51 (2.43) fourth 1.82 (2.93) fifth 2.14 (3.44) sixth 2.57 (4.14) seventh 2.90 (4.66) eighth 3.49 (5.61) ninth 4.09 (6.58) tenth 4.92 (7.92) eleventh 5.55 (8.93) twelfth 5.79 (9.31) thirteenth 6.67 (10.73) fourteenth 6.97 (11.21) fifteenth 7.83 (12.60) sixteenth 9.42 (15.16) seventeenth 11.08 (17.83) eighteenth 12.60 (20.27) nineteenth 13.34 (21.46) twentieth 15.14 (24.37) twenty-first 17.78 (28.61) twenty-second 21.39 (34.42) twenty-third 25.15 (40.48) twenty-fourth 24.86 (40.00) (engine speed 1800 rpm) reverse 1.07 (1.72), 1.29 (2.07), 1.51 (2.43), 1.82 (2.93), 2.14 (3.44), 2.57 (4.14), 2.90 (4.66), 3.49 (5.61), 4.09 (6.58), 4.92 (7.92), 5.55 (8.93), 5.79 (9.31), 6.67 (10.73), 6.97 (11.21), 7.83 (12.60), 9.42 (15.16), 11.08 (17.83), 12.60 (20.27), 13.34 (21.46), 15.14 (24.37), 17.78 (28.61), 21.39 (34.42), 25.15 (40.48), 24.86 (40.00)

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) |
|---------------------|--------------------------------|------------------------|---------------------------------|-----------|--|--------------------------------------|-------------------------------------|--------------------|-------------------------------|
| 4th(1D) Gear | | | | | | | | | |
| 64.5 (48.1) | 14905 (66.3) | 1.62 (2.61) | 2204 | 14.6 | 0.704 (0.428) | 10.12 (1.99) | 172 (78) | 46 (8) | 29.9 (101.3) |
| 5th(1E) Gear | | | | | | | | | |
| 75.4 (56.2) | 14815 (65.9) | 1.91 (3.07) | 2202 | 14.0 | 0.687 (0.418) | 10.36 (2.04) | 171 (77) | 46 (8) | 29.9 (101.3) |
| 6th(1F) Gear | | | | | | | | | |
| 91.7 (68.4) | 14535 (64.7) | 2.37 (3.81) | 2193 | 11.1 | 0.629 (0.382) | 11.32 (2.23) | 176 (80) | 46 (8) | 29.9 (101.3) |
| 7th(2A) Gear | | | | | | | | | |
| 102.9 (76.7) | 14275 (63.5) | 2.70 (4.35) | 2194 | 9.6 | 0.575 (0.350) | 12.35 (2.44) | 174 (79) | 46 (8) | 29.9 (101.3) |
| 8th(2B) Gear | | | | | | | | | |
| 123.9 (92.4) | 14320 (63.7) | 3.24 (5.22) | 2180 | 10.2 | 0.541 (0.329) | 13.15 (2.59) | 176 (80) | 46 (8) | 29.9 (101.3) |
| 9th(2C) Gear | | | | | | | | | |
| 133.8 (99.8) | 14120 (62.8) | 3.55 (5.71) | 2031 | 9.2 | 0.497 (0.302) | 14.31 (2.82) | 176 (80) | 46 (8) | 29.9 (101.3) |
| 10th(2D) Gear | | | | | | | | | |
| 141.0 (105.1) | 12365 (55.0) | 4.28 (6.88) | 1963 | 6.6 | 0.472 (0.287) | 15.08 (2.97) | 174 (79) | 48 (9) | 29.9 (101.3) |
| 11th(3A) Gear | | | | | | | | | |
| 153.9 (114.8) | 12365 (55.0) | 4.67 (7.51) | 1896 | 5.3 | 0.461 (0.281) | 15.43 (3.04) | 181 (83) | 48 (9) | 29.9 (101.3) |
| 12th(2E) Gear | | | | | | | | | |
| 138.5 (103.3) | 10430 (46.4) | 4.98 (8.02) | 1908 | 3.8 | 0.466 (0.284) | 15.28 (3.01) | 183 (84) | 48 (9) | 29.9 (101.3) |
| 13th(3B) Gear | | | | | | | | | |
| 156.1 (116.4) | 10205 (45.4) | 5.74 (9.23) | 1904 | 4.2 | 0.452 (0.275) | 15.74 (3.10) | 183 (84) | 50 (10) | 29.9 (101.3) |
| 14th(2F) Gear | | | | | | | | | |
| 138.9 (103.6) | 8610 (38.3) | 6.05 (9.74) | 1908 | 2.7 | 0.466 (0.283) | 15.28 (3.01) | 181 (83) | 46 (8) | 29.9 (101.3) |
| 15th(3C) Gear | | | | | | | | | |
| 157.0 (117.1) | 8720 (38.8) | 6.75 (10.86) | 1900 | 3.8 | 0.450 (0.274) | 15.83 (3.12) | 183 (84) | 48 (9) | 29.9 (101.3) |
| *16th(3D) Gear | | | | | | | | | |
| 155.7 (116.1) | 7230 (32.2) | 8.08 (13.00) | 1908 | 3.2 | 0.457 (0.278) | 15.58 (3.07) | 183 (84) | 48 (9) | 29.9 (101.3) |
| *17th(3E) Gear | | | | | | | | | |
| 150.9 (112.5) | 5920 (26.3) | 9.56 (15.38) | 1903 | 2.9 | 0.471 (0.286) | 15.13 (2.98) | 181 (83) | 48 (9) | 29.9 (101.3) |

* Front Drive disengaged

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 2000 engine rpm or 1000 rpm at 2000 engine rpm
Unladen tractor mass -16835 lb (7635 kg)

NOTE: The engine on this tractor is electronically controlled to give 2 power levels. A "boosted" level is available when the PTO is engaged, under load, and when the tractor is operated in ranges 3 and 4.

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.

We, the undersigned, certify that this is a true summary of data from OECD Report No. **2413**, Nebraska Summary 605, August 21, 2008.

Roger M. Hoy
 Director

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

TIRES, BALLAST AND WEIGHT

| | With Ballast | Without Ballast |
|--|--------------------------|--------------------------|
| Rear Tires - No., size, ply & psi(kPa) | Four 480/80R46;**,12(80) | Two 480/80R46;**,15(100) |
| Ballast - Duals (total) | 1795 lb (815 kg) | None |
| - Cast Iron (total) | 1145 lb (520 kg) | None |
| Front Tires - No., size, ply & psi(kPa) | Two 16.9R30;**,15(100) | Two 16.9R30;**,15(100) |
| Ballast - Liquid (total) | None | None |
| - Cast Iron (total) | 1325 lb (600 kg) | None |
| Height of Drawbar | 25.2 in (640 mm) | 24.4 in (620 mm) |
| Static Weight with operator - Rear | 12060 lb (5470 kg) | 9810 lb (4450 kg) |
| - Front | 9205 lb (4175 kg) | 7190 lb (3260 kg) |
| - Total | 21265 lb (9645 kg) | 17000 lb (7710 kg) |

DRAWBAR PERFORMANCE
(Ballasted - 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) | |
|---------------------|--------------------------------|------------------------|---------------------------------|-----------|--|------------------------------------|--------------------|-------------------------------|-----------------|
| 6th(1F) Gear | | | | | | | | | |
| 110.5 (82.4) | 18725 (83.3) | 2.21 (3.56) | 2151 | 13.9 | 0.604 (0.367) | 11.79 (2.32) | 179 (82) | 46 (8) | 29.9 (101.1) |
| 7th(2A) Gear | | | | | | | | | |
| 124.4 (92.8) | 17535 (78.0) | 2.66 (4.28) | 2136 | 8.1 | 0.532 (0.324) | 13.38 (2.64) | 179 (82) | 46 (8) | 29.9 (101.1) |
| 8th(2B) Gear | | | | | | | | | |
| 135.4 (101.0) | 16885 (75.1) | 3.01 (4.85) | 1992 | 7.3 | 0.491 (0.299) | 14.49 (2.86) | 181 (83) | 46 (8) | 29.9 (101.1) |
| 9th(2C) Gear | | | | | | | | | |
| 138.5 (103.3) | 14645 (65.2) | 3.55 (5.71) | 1960 | 5.1 | 0.480 (0.292) | 14.82 (2.92) | 179 (82) | 46 (8) | 29.9 (101.1) |
| 10th(2D) Gear | | | | | | | | | |
| 140.4 (104.7) | 12275 (54.6) | 4.29 (6.91) | 1947 | 4.0 | 0.467 (0.284) | 15.23 (3.00) | 179 (82) | 46 (8) | 29.9 (101.1) |
| 11th(3A) Gear | | | | | | | | | |
| 153.1 (114.2) | 12125 (53.9) | 4.74 (7.62) | 1901 | 3.7 | 0.462 (0.281) | 15.39 (3.03) | 185 (85) | 46 (8) | 29.9 (101.1) |
| 12th(2E) Gear | | | | | | | | | |
| 136.6 (101.9) | 10295 (45.8) | 4.98 (8.01) | 1906 | 3.7 | 0.475 (0.289) | 14.97 (2.95) | 181 (83) | 46 (8) | 29.9 (101.1) |
| 13th (3B) Gear | | | | | | | | | |
| 153.5 (114.5) | 10070 (44.8) | 5.72 (9.20) | 1901 | 3.3 | 0.461 (0.281) | 15.43 (3.04) | 185 (85) | 46 (8) | 29.9 (101.1) |
| 14th (2F) Gear | | | | | | | | | |
| 136.2 (101.6) | 8490 (37.8) | 6.02 (9.69) | 1908 | 2.8 | 0.478 (0.291) | 14.87 (2.93) | 183 (84) | 46 (8) | 29.9 (101.1) |
| 15th(3C) Gear | | | | | | | | | |
| 153.1 (114.2) | 8500 (37.8) | 6.75 (10.87) | 1907 | 3.0 | 0.462 (0.281) | 15.39 (3.03) | 185 (85) | 46 (8) | 29.9 (101.1) |
| *16th(3D) Gear | | | | | | | | | |
| 152.5 (113.7) | 7105 (31.6) | 8.05 (12.96) | 1902 | 3.1 | 0.466 (0.283) | 15.28 (3.01) | 185 (85) | 46 (8) | 29.9 (101.1) |

*Front Drive disengaged

| TRACTOR SOUND LEVEL WITH CAB | Front Wheel Drive | |
|------------------------------|---------------------|------------------|
| | Disengaged dB(A) | Engaged dB(A) |
| At no load in 10th (2D) gear | 67.0 | 68.0 |
| Bystander | -- | -- |

THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: II

Quick Attach: None

| | | |
|---|------------------------|---------------------------------|
| Maximum force exerted through whole range: | 14565 lbs (64.8 kN) | |
| | <u>one coupler set</u> | <u>two outlet sets combined</u> |
| i) Sustained pressure of the open relief valve: | 2845 psi (196 bar) | 2845 psi (196 bar) |
| ii) Pump delivery rate at minimum pressure: | 27.5 GPM (104.0 l/min) | 30.7 GPM (116.4 l/min) |
| iii) Pump delivery rate at maximum | | |
| hydraulic power: | 25.8 GPM (97.7 l/min) | 28.5 GPM (107.9 l/min) |
| Delivery pressure: | 1915 psi (132 bar) | 2205 psi (152 bar) |
| Power: | 28.8 hp (21.5 kW) | 36.6 Hp (27.3 kW) |

THREE POINT HITCH PERFORMANCE

| | |
|--------------------------------------|----------------|
| Observed maximum pressure psi. (bar) | 2845 (196) |
| Location: | lift cylinders |
| Hydraulic oil temperature: °F (°C) | 151 (66) |
| Location: | hydraulic sump |
| Category: | II |
| Quick attach: | No |

SAE Static Test—System pressure 2555 psi (176 Bar)

| | | | | | |
|---|------------|------------|------------|------------|-------------|
| Hitch point distance to ground level in. (mm) | 12.8 (326) | 18.6 (473) | 23.9 (607) | 36.9 (938) | 42.4 (1076) |
| Lift force on frame lb | 17400 | 17375 | 17470 | 17625 | 17155 |
| " " " " " " (kN) | (77.4) | (77.3) | (77.7) | (78.4) | (76.3) |

HITCH DIMENSIONS AS TESTED - NO LOAD

| | OECD test | | SAE test | |
|---|-----------|------|----------|------|
| | inch | mm | inch | mm |
| A | 29.9 | 760 | 30.5 | 775 |
| B | 15.7 | 400 | 15.7 | 400 |
| C | 20.7 | 525 | 20.7 | 525 |
| D | 19.1 | 485 | 19.1 | 485 |
| E | 8.3 | 210 | 11.6 | 295 |
| F | 12.2 | 310 | 12.2 | 310 |
| G | 36.4 | 925 | 36.4 | 925 |
| H | 2.0 | 50 | 2.0 | 50 |
| I | 17.7 | 450 | 16.9 | 430 |
| J | 24.2 | 615 | 24.2 | 615 |
| K | 21.8 | 554 | 21.8 | 554 |
| L | 47.2 | 1200 | 47.2 | 1200 |
| M | 22.0 | 560 | 22.0 | 560 |
| N | 37.1 | 942 | 37.1 | 942 |
| O | 9.2 | 238 | 12.8 | 326 |
| P | 48.2 | 1225 | 43.2 | 1098 |
| Q | 41.9 | 1065 | 42.4 | 1076 |
| R | 36.3 | 923 | 34.4 | 873 |

