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January 2004

Nebraska Summary 511: Massey Ferguson 5445 Diesel 16-Speed

Nebraska Tractor Test Lab

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SUMMARY OF OECD TESTS 2290 & 2291—NEBRASKA SUMMARY 511

MASSEY FERGUSON 5445 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—1100 rpm)					
70.7 (52.7)	2200	4.99 (18.88)	0.501 (0.305)	14.16 (2.79)	
Standard Power Take-off Speed(1000 rpm)					
73.4 (54.7)	2000	4.77 (18.05)	0.460 (0.280)	15.40 (3.03)	
Maximum Power (2 hours)					
75.9 (56.6)	1851	4.71 (17.83)	0.441 (0.268)	16.10 (3.17)	

VARYING POWER AND FUEL CONSUMPTION

70.7 (52.7)	2200	4.99 (18.88)	0.501 (0.305)	14.16 (2.79)	Air temperature
61.4 (45.8)	2252	4.63 (17.53)	0.535 (0.325)	13.26 (2.61)	70°F (21°C)
46.5 (34.7)	2272	3.98 (15.06)	0.607 (0.369)	11.68 (2.30)	Relative humidity
31.1 (23.2)	2283	3.24 (12.28)	0.739 (0.449)	9.60 (1.89)	44%
15.7 (11.7)	2297	2.40 (9.10)	1.090 (0.663)	6.52 (1.28)	Barometer
--	2307	1.75 (6.62)	--	--	29.3" Hg (99.2 kPa)

Maximum Torque -250.7 lb.-ft. (339.9 Nm) at 1303 rpm
Maximum Torque Rise -48.7%
Torque rise at 1750 engine rpm -32%

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									
60.5 (45.1)	3690 (16.4)	6.15 (9.89)	2202	4.9	0.580 (0.353)	12.23 (2.41)	189 (87)	59 (15)	29.9 (101.3)
75% of Pull at Maximum Power—8th(11C) Gear									
46.8 (34.9)	2770 (12.3)	6.34 (10.20)	2247	3.2	0.674 (0.410)	10.52 (2.07)	189 (87)	59 (15)	29.9 (101.3)
50% of Pull at Maximum Power—8th(11C) Gear									
31.5 (23.5)	1840 (8.2)	6.42 (10.33)	2260	2.0	0.872 (0.530)	8.14 (1.60)	189 (87)	59 (15)	29.9 (101.3)
75% of Pull at Reduced Engine Speed—10th(11D) Gear									
47.2 (35.2)	2785 (12.4)	6.36 (10.24)	1790	4.7	0.563 (0.343)	12.59 (2.48)	183 (84)	59 (15)	29.9 (101.3)
50% of Pull at Reduced Engine Speed—10th(11D) Gear									
32.1 (23.9)	1865 (8.3)	6.46 (10.40)	1797	3.5	0.706 (0.430)	10.04 (1.98)	183 (84)	59 (15)	29.9 (101.3)

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

Dates of tests: September, 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 **Serial No.** 0090535J **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.** N005101 **Tread width** rear 59.8" (1518 mm) to 67.0" (1703 mm) front 2WD - 53.0" (1345 mm) to 87.3" (2217 mm), FWA - 53.4" (1357 mm) to 64.8" (1646 mm) **Wheelbase** 2WD - 97.0" (2463 mm) FWA - 97.0" (2463 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 1.63 (2.63) second 2.07 (3.33) third 2.47 (3.98) fourth 3.13 (5.03) fifth 3.66 (5.89) sixth 4.62 (7.44) seventh 4.95 (7.97) eighth 6.13 (9.87) ninth 6.26 (10.07) tenth 7.75 (12.47) eleventh 9.28 (14.93) twelfth 11.71 (18.84) thirteenth 13.71 (22.07) fourteenth 17.34 (27.90) fifteenth 18.57 (29.89) sixteenth 23.45 (37.74) reverse 1.59 (2.56), 2.01 (3.23), 2.40 (3.87), 3.04 (4.89), 3.55 (5.72), 4.50 (7.24), 4.81 (7.74), 5.96 (9.59), 6.08 (9.79), 7.53 (12.12), 9.01 (14.50), 11.38 (18.31), 13.33 (21.45), 16.84 (27.10), 18.05 (29.04), 22.79 (36.67) **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 - 8630 lb (3915 kg), FWA - 9305 lb (4220 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)	Hp.hr/gal (kW.h/l)	Temp. °F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
51.5 (38.4)	8680 (38.6)	2.22 (3.58)	2233	14.4	0.665 (0.404)	10.67 (2.10)	185 (85)	57 (14)	29.9 (101.3)
60.6 (45.2)	7890 (35.1)	2.88 (4.64)	2142	8.4	0.577 (0.351)	12.28 (2.42)	185 (85)	57 (14)	29.9 (101.3)
62.6 (46.7)	8060 (35.8)	2.91 (4.69)	1858	9.1	0.535 (0.326)	13.25 (2.61)	189 (87)	57 (14)	29.9 (101.3)
64.4 (48.0)	6295 (28.0)	3.84 (6.18)	1856	5.7	0.520 (0.317)	13.63 (2.69)	189 (87)	57 (14)	29.9 (101.3)
64.6 (48.2)	5930 (26.4)	4.09 (6.58)	1848	6.2	0.515 (0.313)	13.77 (2.71)	187 (86)	59 (15)	29.9 (101.3)
65.7 (49.0)	4800 (21.4)	5.13 (8.26)	1855	5.8	0.514 (0.313)	13.81 (2.72)	189 (87)	59 (15)	29.9 (101.3)
65.4 (48.8)	4695 (20.9)	5.23 (8.41)	1847	5.1	0.511 (0.311)	13.89 (2.74)	189 (87)	59 (15)	29.9 (101.3)
64.1 (47.8)	3695 (16.4)	6.51 (10.47)	1846	4.8	0.519 (0.316)	13.65 (2.69)	189 (87)	59 (15)	29.9 (101.3)
62.9 (46.9)	3010 (13.4)	7.84 (12.62)	1853	3.4	0.533 (0.324)	13.30 (2.62)	189 (87)	59 (15)	29.9 (101.3)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments

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 claim of 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. **2290 & 2291**, Nebraska Summary 511, 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 Engaged	
	2WD dB(A)	dB(A)
At no load in 7th (4TC) gear	77.3	77.3
Bystander in 16th (4LD) gear	88.2	--

Tested Without Ballast		
TIRES AND WEIGHT	Front Wheel Assist	2WD
Rear tires - No., size, ply & psi (kPa)	Two 480/70R38; **, 16 (110)	Two 480/70R38; **, 16 (110)
Front tires - No., size, ply & psi (kPa)	Two 13.6R28; **, 16 (110)	Two 10.00-16; 8; 32 (220)
Height of Drawbar	20.9 in (530 mm)	33.5 in (850 mm)
Static Weight with operator- Rear	5795 lb (2630 kg)	5730 lb (2600 kg)
- Front	3650 lb (1655 kg)	3110 lb (1410 kg)
- Total	9445 lb (4285 kg)	8840 lb (4010 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 cool- ing med	Temp. °C Air dry bulb	Barom. inch Hg (kPa)	
Maximum Power—6th(3TD) Gear									
55.8 (41.6)	4745 (21.1)	4.41 (7.10)	2200	8.2	0.561 (0.341)	12.64 (2.49)	187 (86)	55 (13)	30.1 (101.8)
75% of Pull at Maximum Power—6th(3TD) Gear									
43.2 (32.2)	3580 (15.9)	4.52 (7.28)	2231	7.1	0.709 (0.431)	10.00 (1.97)	187 (86)	55 (13)	30.1 (101.8)
50% of Pull at Maximum Power—6th(3TD) Gear									
29.4 (21.9)	2385 (10.6)	4.62 (7.43)	2251	6.1	0.880 (0.536)	8.05 (1.59)	187 (86)	55 (13)	30.1 (101.8)
75% of Pull at Reduced Engine Speed—7th(4TC) Gear									
43.0 (32.1)	3575 (15.9)	4.52 (7.27)	2078	7.0	0.665 (0.405)	10.66 (2.10)	187 (86)	57 (14)	30.1 (101.8)
50% of Pull at Reduced Engine Speed—7th(4TC) Gear									
29.1 (21.7)	2385 (10.6)	4.58 (7.37)	2087	6.1	0.805 (0.490)	8.81 (1.74)	185 (85)	57 (14)	30.1 (101.8)
MAXIMUM POWER IN SELECTED GEARS									
4th(2TD) Gear									
53.5 (39.9)	7255 (32.3)	2.77 (4.45)	2195	14.7	0.655 (0.398)	10.83 (2.13)	185 (85)	55 (13)	30.1 (101.8)
5th(3TC) Gear									
59.0 (44.0)	6900 (30.7)	3.21 (5.16)	2105	11.9	0.591 (0.359)	12.00 (2.36)	185 (85)	55 (13)	30.1 (101.8)
6th(3TD) Gear									
62.1 (46.3)	6405 (28.5)	3.64 (5.85)	1854	10.1	0.534 (0.325)	13.29 (2.62)	189 (87)	55 (13)	30.1 (101.8)
7th(4TC) Gear									
61.4 (45.8)	5890 (26.2)	3.91 (6.30)	1854	9.6	0.542 (0.330)	13.09 (2.58)	187 (86)	57 (14)	30.1 (101.8)
8th(1LC) Gear									
62.6 (46.7)	4790 (21.3)	4.90 (7.90)	1850	8.3	0.532 (0.324)	13.34 (2.63)	189 (87)	57 (14)	30.1 (101.8)
9th(4TD) Gear									
61.6 (45.9)	4615 (20.5)	5.00 (8.05)	1839	8.0	0.539 (0.328)	13.15 (2.59)	189 (87)	57 (14)	30.1 (101.8)
10th(1LD) Gear									
62.1 (46.3)	3730 (16.6)	6.24 (10.04)	1855	7.9	0.519 (0.316)	13.65 (2.69)	189 (87)	57 (14)	30.1 (101.8)
11th(2LC) Gear									
60.8 (45.3)	3035 (13.5)	7.51 (12.09)	1850	7.3	0.546 (0.332)	12.99 (2.56)	187 (86)	57 (14)	30.1 (101.8)

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

one outlet set two outlet sets combined

Sustained pressure of the open relief valve: 2800 psi (193 bar) 2800 psi (193 bar)

ii) Pump delivery rate at minimum pressure: 15.6 GPM (59.2 l/min) 15.6 GPM (59.1 l/min)

iii) Pump delivery rate at maximum

hydraulic power: 14.8 GPM (56.1 l/min) 15.2 GPM (57.6 l/min)

Delivery pressure: 2295 psi (158 bar) 2305 psi (159 bar)

Power: 19.8 hp (14.8 kW) 20.5 Hp (15.3 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

