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January 2004

Nebraska Summary 513: Massey Ferguson 5460 Diesel 16-Speed

Nebraska Tractor Test Lab

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SUMMARY OF OECD TESTS 2269 & 2270—NEBRASKA SUMMARY 513

MASSEY FERGUSON 5460 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)
70.1 (52.3)	8385 (37.3)	3.14 (5.05)	2091	15.2	5th(3TC)Gear 0.590 (0.359)	12.03 (2.37)	192 (89)	54 (12)	30.0 (101.7)
77.0 (57.4)	7555 (33.6)	3.82 (6.15)	1895	9.9	6th(3TD)Gear 0.542 (0.329)	13.10 (2.58)	190 (88)	54 (12)	30.0 (101.7)
78.0 (58.2)	7485 (33.3)	3.91 (6.29)	1805	9.5	7th(4TC) Gear 0.516 (0.314)	13.76 (2.71)	190 (88)	54 (12)	30.0 (101.7)
79.7 (59.4)	6010 (26.7)	4.97 (8.00)	1803	7.0	8th(1LC) Gear 0.512 (0.311)	13.86 (2.73)	194 (90)	55 (13)	30.0 (101.7)
78.3 (58.4)	5780 (25.7)	5.08 (8.18)	1800	6.8	9th(4TD) Gear 0.524 (0.319)	13.54 (2.67)	194 (90)	55 (13)	30.0 (101.7)
78.4 (58.5)	4610 (20.5)	6.38 (10.27)	1801	5.5	10th(1LD)Gear 0.512 (0.311)	13.86 (2.73)	190 (88)	57 (14)	30.0 (101.7)
78.0 (58.2)	3800 (16.9)	7.70 (12.39)	1801	5.0	11th(2LC)Gear 0.518 (0.315)	13.71 (2.70)	194 (90)	57 (14)	30.0 (101.7)

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. **2269 & 2270**, Nebraska Summary 513, 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

Rear tires - No.,size, ply & psi(kPa)

Front tires - No.,size, ply & psi(kPa)

Height of Drawbar

Static Weight with operator- Rear

- Front

- Total

Front Wheel Assist

Two 18.4R38; **,15(100)

Two 14.9R28; **,16(110)

22.8 in (580 mm)

6160 lb (2795 kg)

3945 lb (1790 kg)

10105 lb (4585 kg)

2WD

Two 18.4R38; **,15(100)

Two 10.00-16; 8; 30 (200)

30.7 in (780 mm)

6065 lb (2750 kg)

3285 lb (1490 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)
Maximum Power—10th(1LD) Gear									
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)
75% of Pull at Maximum Power—10th(1LD) Gear									
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)
50% of Pull at Maximum Power—10th(1LD) Gear									
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)
75% of Pull at Reduced Engine Speed—11th(2LC) Gear									
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)
50% of Pull at Reduced Engine Speed—11th(2LC) Gear									
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)
MAXIMUM POWER IN SELECTED GEARS									
5th(3TC) Gear									
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)
6th(3TD) Gear									
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)
7th(4TC) Gear									
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)
8th(1LC) Gear									
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)
9th(4TD) Gear									
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)
10th(1LD) Gear									
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)
11th(2LC) Gear									
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)
12th(2LD) Gear									
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

