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January 1998

Nebraska Summary 278: Massey Ferguson 4345, 4245 and 4243 Diesel 12-Speed

Nebraska Tractor Test Lab

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SUMMARY OF OECD TEST 1802-NEBRASKA SUMMARY 278

MASSEY FERGUSON 4245 DIESEL

ALSO MASSEY FERGUSON 4243 DIESEL

ALSO MASSEY FERGUSON 4345 DIESEL

12 SPEED

POWER TAKE-OFF PERFORMANCE (540 RPM Shaft)

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-625 rpm)					
73.1 (54.5)	2201	5.07 (19.18)	0.485 (0.295)	14.42 (2.84)	
Maximum Power (2 hours)					
75.2 (56.1)	1941	4.74 (17.94)	0.440 (0.268)	15.88 (3.13)	
Standard Power Take-off Speed (540 rpm)					
74.8 (55.8)	1903	4.67 (17.66)	0.435 (0.265)	16.04 (3.16)	
VARYING POWER AND FUEL CONSUMPTION					
73.1 (54.5)	2201	5.07 (19.18)	0.485 (0.295)	14.42 (2.84)	Air temperature
63.6 (47.4)	2250	4.70 (17.78)	0.517 (0.314)	13.52 (2.66)	82°F (28°C)
48.3 (36.0)	2280	4.01 (15.17)	0.580 (0.353)	12.03 (2.37)	Relative humidity
32.5 (24.2)	2299	3.38 (12.79)	0.727 (0.442)	9.60 (1.89)	34%
16.4 (12.2)	2316	2.63 (9.96)	1.125 (0.684)	6.22 (1.22)	Barometer
--	2333	1.77 (6.69)	--	--	30.1" Hg (101.8 kPa)
Maximum Torque -232.8 lb.-ft. (315.7 Nm) at 1288 rpm Maximum Torque Rise -33.5% Torque rise at 1800 engine rpm -26%					

POWER TAKE-OFF PERFORMANCE (1000 RPM Shaft)

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)					
75.2 (56.1)	2197	5.06 (19.17)	0.471 (0.286)	14.84 (2.92)	
Standard Power Take-off Speed (1001 rpm)					
77.5 (57.8)	2002	4.84 (18.32)	0.436 (0.265)	16.02 (3.16)	
Maximum Power (2 hours)					
77.9 (58.1)	1944	4.76 (18.00)	0.426 (0.259)	16.38 (3.23)	
VARYING POWER AND FUEL CONSUMPTION					
75.2 (56.1)	2197	5.06 (19.17)	0.471 (0.286)	14.84 (2.92)	Air temperature
65.4 (48.8)	2249	4.70 (17.80)	0.503 (0.306)	13.88 (2.74)	79°F (26°C)
49.6 (37.0)	2278	4.00 (15.16)	0.564 (0.343)	12.39 (2.44)	Relative humidity
33.5 (25.0)	2299	3.38 (12.81)	0.706 (0.429)	9.90 (1.95)	32%
16.9 (12.6)	2316	2.64 (10.00)	1.093 (0.665)	6.39 (1.26)	Barometer
--	2332	1.82 (6.90)	--	--	30.1" Hg (101.8 kPa)
Maximum Torque -241.3 lb.-ft. (327.1 Nm) at 1290 rpm Maximum Torque Rise -34.2% Torque rise at 1800 engine rpm -26%					

Location of Test: Silsoe Research Institute, Wrest Park, Silsoe, Bedford, England MK45 4HS

Dates of Test: June to November, 1998

Manufacturer: AGCO Limited, P.O. Box 62, Banner Lane, Coventry, West Midlands, England CV4 9GF

FUEL and OIL: Fuel No. 2 Diesel **Specific gravity converted to 60°/60°F (15°/15°C)** 0.839 **Fuel weight** 6.98 lbs/gal (0.837 kg/l) **Oil** SAE 15W-30 **API service classification** CD **Transmission and hydraulic lubricant** SAE 15W-30 **Front axle lubricant** SAE 15W-30

ENGINE: Make Perkins Diesel **Type** four cylinder vertical with turbocharger **Serial No.** U818783C **Crankshaft** lengthwise **Rated engine speed** 2200 **Bore and stroke** 3.937" x 5.00" (100.0 mm x 127.0 mm) **Compression ratio** 17.3 to 1 **Displacement** 243 cu in (3990 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** underhood **Exhaust** vertical **Cooling medium temperature control** thermostat

CHASSIS: **Type** front wheel assist **Serial No.** ABCD24ABXAE11999 **Tread width** rear 60.4" (1535 mm) to 83.9" (2130 mm) front 63.4" (1610 mm) to 75.4" (1915 mm) **Wheelbase** 92.5" (2350 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Nominal travel speeds mph (km/h)** first 1.37 (2.21) second 1.80 (2.89) third 2.36 (3.80) fourth 3.09 (4.97) fifth 3.88 (6.24) sixth 5.07 (8.16) seventh 6.66 (10.71) eighth 8.71 (14.02) ninth 10.48 (16.86) tenth 13.69 (22.03) eleventh 17.96 (28.91) twelfth 23.53 (37.86) reverse 1.40 (2.25), 1.83 (2.94), 2.40 (3.86), 3.14 (5.06), 3.95 (6.35), 5.16 (8.30), 6.77 (10.90), 8.87 (14.27), 10.65 (17.15), 13.93 (22.41), 18.28 (29.42), 23.94 (38.53) **Clutch** single dry 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** single speed - 540 rpm at 1789 engine rpm, dual speed - 540 rpm at 1902 engine rpm or 1000 rpm at 2000 engine rpm **Unladen tractor mass** 8225 lb (3730 kg)

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)	Consumption Hp.hr/gal (kW.h/l)	Temp.°F cool- ing med	Temp.°C Air dry bulb	Barom. inch Hg (kPa)
Maximum Power 6th(2M) Gear									
63.2 (47.1)	4775 (21.2)	4.96 (7.98)	2202	4.1	0.573 (0.349)	12.18 (2.40)	185 (85)	46 (8)	29.6 (100.3)
75% of Pull at Maximum Power 6th(2M) Gear									
48.9 (36.5)	3565 (15.9)	5.15 (8.28)	2261	3.1	0.648 (0.394)	10.77 (2.12)	185 (85)	46 (8)	29.6 (100.3)
50% of Pull at Maximum Power 6th(2M) Gear									
33.4 (24.9)	2385 (10.6)	5.25 (8.45)	2289	2.2	0.794 (0.483)	8.79 (1.73)	185 (85)	46 (8)	29.6 (100.3)
75% of Pull at Reduced Engine Speed 7th(3M) Gear									
48.9 (36.5)	3565 (15.9)	5.15 (8.28)	1725	3.1	0.523 (0.318)	13.35 (2.63)	182 (83)	45 (7)	29.6 (100.3)
50% of Pull at Reduced Engine Speed 7th(3M) Gear									
33.3 (24.8)	2385 (10.6)	5.24 (8.44)	1742	2.2	0.603 (0.367)	11.57 (2.28)	184 (84)	45 (7)	29.6 (100.3)

MAXIMUM POWER IN SELECTED GEARS

1st (1L) Gear									
29.7 (22.2)	8950 (39.8)	1.24 (2.00)	2294	15.0	0.866 (0.527)	8.06 (1.59)	185 (85)	46 (8)	29.6 (100.3)
2nd (2L) Gear									
39.0 (29.1)	8790 (39.1)	1.66 (2.68)	2281	12.4	0.736 (0.448)	9.49 (1.87)	185 (85)	46 (8)	29.6 (100.3)
3rd (3L) Gear									
50.6 (37.7)	8630 (38.4)	2.20 (3.53)	2255	10.8	0.649 (0.395)	10.76 (2.12)	185 (85)	46 (8)	29.6 (100.3)
4th (4L) Gear									
61.4 (45.8)	8070 (35.9)	2.85 (4.59)	2182	8.5	0.583 (0.354)	11.99 (2.36)	185 (85)	46 (8)	29.6 (100.3)
5th (1M) Gear									
65.2 (48.6)	7260 (32.3)	3.37 (5.42)	2004	6.3	0.527 (0.321)	13.25 (2.61)	183 (84)	46 (8)	29.6 (100.3)
6th (2M) Gear									
66.0 (49.2)	5720 (25.4)	4.33 (6.96)	1935	4.7	0.511 (0.311)	13.65 (2.69)	183 (84)	46 (8)	29.6 (100.3)
7th (3M) Gear									
65.4 (48.8)	4250 (18.9)	5.77 (9.28)	1942	3.6	0.517 (0.315)	13.50 (2.66)	183 (84)	48 (9)	29.6 (100.3)
8th (4M) Gear									
64.4 (48.0)	3180 (14.2)	7.59 (12.22)	1936	2.8	0.525 (0.319)	13.30 (2.62)	183 (84)	46 (8)	29.6 (100.3)
9th (1H) Gear									
63.6 (47.4)	2600 (11.6)	9.17 (14.76)	1937	2.3	0.533 (0.324)	13.10 (2.58)	183 (84)	46 (8)	29.6 (100.3)

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 manufacturers 3 point lift capacity claim of 6614 lbs (3000 kg) at lower link ends. The performance results on this summary were taken from OECD tests conducted under the Code 2 test code procedure.

Report reissued: Supplemental sales permit for Massey Ferguson 4243 Diesel , July, 2000.

Report reissued: Supplemental sales permit for Massey Ferguson 4345 Diesel, April, 2002.

We, the undersigned, certify that this is a true summary of data from OECD Report No. **1802**, Nebraska Summary 278, April 16, 2002.

Brent T. Sampson
Test Engineer

L.L. Bashford
M.F. Kocher
V.I. Adamchuk
Board of Tractor Test Engineers

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

Tested Without Ballast

Two 18.4R34; **,12(83)
Two 14.9R24; **,15(103)

20.7 in (525 mm)
5010 lb (2272 kg)
3380 lb (1533 kg)
8390 lb (3805 kg)

DRAWBAR PERFORMANCE
(Unballasted - Front Drive Disengaged)
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	Air dry bulb	Barom. inch Hg (kPa)
Maximum Power 6th(2M) Gear									
63.0 (47.0)	4900 (21.8)	4.82 (7.76)	2198	4.5	0.573 (0.349)	12.18 (2.40)	185 (85)	48 (9)	29.7 (100.5)
75% of Pull at Maximum Power 6th(2M) Gear									
49.2 (36.7)	3665 (16.3)	5.03 (8.10)	2265	3.3	0.644 (0.392)	10.84 (2.13)	185 (85)	50 (10)	29.7 (100.5)
50% of Pull at Maximum Power 6th(2M) Gear									
33.7 (25.1)	2460 (10.9)	5.14 (8.27)	2290	2.3	0.784 (0.477)	8.90 (1.75)	185 (85)	48 (9)	29.7 (100.5)
75% of Pull at Reduced Engine Speed 7th(3M) Gear									
49.2 (36.7)	3665 (16.3)	5.03 (8.10)	1728	3.4	0.517 (0.314)	13.51 (2.66)	183 (84)	54 (12)	29.6 (100.4)
50% of Pull at Reduced Engine Speed 7th(3M) Gear									
33.5 (25.0)	2450 (10.9)	5.13 (8.26)	1744	2.5	0.591 (0.359)	11.83 (2.33)	181 (83)	54 (12)	29.6 (100.4)
MAXIMUM POWER IN SELECTED GEARS									
1st (1L) Gear									
21.9 (16.3)	6745 (30.0)	1.22 (1.96)	2302	14.9	1.045 (0.636)	6.68 (1.32)	185 (85)	52 (11)	29.6 (100.4)
2nd (2L) Gear									
29.0 (21.6)	6565 (29.2)	1.66 (2.67)	2290	11.0	0.860 (0.523)	8.12 (1.60)	185 (85)	52 (11)	29.6 (100.4)
3rd (3L) Gear									
38.0 (28.3)	6520 (29.0)	2.18 (3.51)	2276	10.2	0.730 (0.444)	9.57 (1.88)	185 (85)	52 (11)	29.6 (100.4)
4th (4L) Gear									
48.5 (36.2)	6360 (28.3)	2.86 (4.60)	2255	9.4	0.655 (0.399)	10.66 (2.10)	185 (85)	54 (12)	29.6 (100.4)
5th (1M) Gear									
59.5 (44.4)	6315 (28.1)	3.53 (5.68)	2217	9.5	0.598 (0.364)	11.67 (2.30)	185 (85)	52 (11)	29.7 (100.5)
6th (2M) Gear									
64.1 (47.8)	5560 (24.7)	4.32 (6.96)	2009	6.4	0.531 (0.323)	13.15 (2.59)	185 (85)	54 (12)	29.6 (100.4)
7th (3M) Gear									
64.7 (48.3)	4325 (19.2)	5.61 (9.03)	1938	4.0	0.519 (0.316)	13.45 (2.65)	183 (84)	50 (10)	29.7 (100.5)
8th (4M) Gear									
64.0 (47.7)	3215 (14.3)	7.46 (12.01)	1946	2.9	0.526 (0.320)	13.29 (2.62)	183 (84)	50 (10)	29.7 (100.5)
9th (1H) Gear									
63.5 (47.4)	2665 (11.8)	8.94 (14.39)	1933	2.5	0.527 (0.321)	13.25 (2.61)	183 (84)	50 (10)	29.7 (100.5)

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive	
	Disengaged dB(A)	Engaged dB(A)
Maximum sound level in 6th(2M) gear	83.0	83.0
Bystander in 12th (4H) gear	85.0	--

THREE POINT HITCH PERFORMANCE (OECD Static Test)

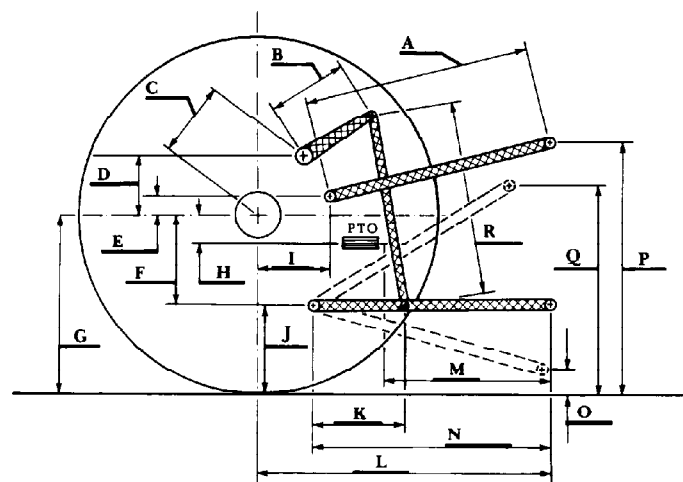
CATEGORY: II

Quick Attach: None

Maximum Force Exerted Through Whole Range: 5620 lbs (25.0 kN) (at the frame)
6270 lbs (27.9 kN) (at the hitch points)

- i) Opening pressure of relief valve: NA
Sustained pressure of the open relief valve: 3135 psi (216 bar)
- ii) Pump delivery rate at minimum pressure: 10.2 GPM (38.8 l/min)
- iii) Pump delivery rate at maximum hydraulic power: 9.6 GPM (36.3 l/min)
Delivery pressure: 2755 psi (190 bar)
Power: 15.4 HP (11.5 kW)

HITCH DIMENSIONS AS TESTED NO LOAD



	inch	mm
A	32.1	815
B	12.2	310
C	12.0	304
D	9.2	233
E	8.1	205
F	8.3	212
G	30.3	770
H	5.5	140
I	7.3	186
J	22.0	558
K	24.8	630
L	40.1	1018
M	27.0	685
N	41.3	1050
O	7.6	192
P	46.0	1168
Q	35.0	890
R	29.9	760