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Test 1519: Massey-Ferguson 240 Diesel 8-Speed

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 1519 — MASSEY FERGUSON 240 DIESEL 8 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption			Temperature °F (°C)			Barometer inch Hg (kPa)	
		gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Cooling medium	Air wet bulb	Air dry bulb		
MAXIMUM POWER AND FUEL CONSUMPTION									
Rated Engine Speed—Two Hours (PTO Speed—604 rpm)									
34.77 (25.93)	2000	2.173 (8.226)	0.438 (0.266)	16.00 (3.152)	186 (85.4)	61 (16.0)	75 (24.0)	29.17 (98.50)	
Standard Power Take-off Speed (540 rpm) — One hour									
31.89 (23.78)	1788	1.981 (7.496)	0.435 (0.265)	16.10 (3.172)	186 (85.6)	64 (17.5)	75 (24.0)	29.16 (98.45)	
VARYING POWER AND FUEL CONSUMPTION—Two Hours									
30.27 (22.57)	2050	1.928 (7.297)	0.466 (0.271)	15.70 (3.093)	183 (83.9)	65 (18.1)	75 (23.6)	..... .....
0.00 (0.00)	2135	0.630 (2.384)	..... .....	..... .....	177 (80.3)	65 (18.3)	76 (24.2)	..... .....
15.46 (11.53)	2095	1.225 (4.638)	0.555 (0.338)	12.62 (2.486)	179 (81.7)	66 (18.6)	76 (24.4)	..... .....
34.36 (25.62)	2000	2.155 (8.157)	0.439 (0.267)	15.94 (3.141)	186 (85.6)	66 (18.9)	76 (24.4)	..... .....
7.81 (5.82)	2113	0.921 (3.486)	0.826 (0.502)	8.48 (1.670)	178 (81.1)	66 (18.6)	76 (24.2)	..... .....
22.98 (17.13)	2073	1.555 (5.886)	0.474 (0.288)	14.78 (2.911)	181 (82.8)	66 (18.9)	75 (23.9)	..... .....
Av Av	18.48 (13.78)	2077	1.402 (5.308)	0.531 (0.323)	13.18 (2.596)	181 (82.5)	65 (18.6)	75 (24.1)	29.14 (98.38)

DRAWBAR PERFORMANCE

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption			Temp. °F (°C)			Barom. inch Hg (kPa)
					gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Cool- ing med	Air wet bulb	Air dry bulb	
Maximum Available Power—Two Hours 5th (1H) Gear											
28.69 (21.40)	2027 (9.02)	5.31 (8.54)	2000	6.06	2.092 (7.919)	0.511 (0.311)	13.72 (2.702)	191 (88.3)	67 (19.2)	76 (24.4)	28.68 (96.83)
75% of Pull at Maximum Power—Ten Hours 5th (1H) Gear											
22.97 (17.13)	1560 (6.94)	5.52 (8.89)	2042	4.30	1.721 (6.514)	0.525 (0.319)	13.35 (2.630)	187 (86.2)	58 (14.3)	69 (20.3)	29.02 (97.99)
50% of Pull at Maximum Power—Two Hours 5th (1H) Gear											
15.80 (11.78)	1041 (4.63)	5.70 (9.17)	2076	2.87	1.364 (5.162)	0.604 (0.368)	11.59 (2.283)	187 (85.8)	68 (20.0)	81 (26.9)	28.67 (96.81)
50% of Pull at Reduced Engine Speed—Two Hours 6th (2H) Gear											
15.78 (11.77)	1039 (4.62)	5.70 (9.17)	1413	2.69	1.121 (4.243)	0.497 (0.303)	14.08 (2.774)	187 (85.8)	70 (21.1)	84 (28.9)	28.68 (96.85)

MAXIMUM POWER IN SELECTED GEARS

18.62 (13.89)	3824 (17.01)	1.83 (2.94)	2067	14.80	2nd (2L) Gear		186 (85.3)	61 (16.1)	67 (19.4)	28.69 (96.88)
28.25 (21.07)	3100 (13.79)	3.42 (5.50)	2000	10.06	3rd (3L) Gear		189 (87.2)	62 (16.7)	69 (20.6)	28.68 (96.85)
28.45 (21.21)	2477 (11.02)	4.31 (6.93)	2000	7.57	4th (4L) Gear		190 (87.8)	63 (17.2)	70 (21.1)	28.68 (96.85)
29.39 (21.92)	2080 (9.25)	5.30 (8.53)	1999	6.17	5th (1H) Gear		190 (87.8)	64 (17.8)	73 (22.8)	28.67 (96.81)
29.05 (21.67)	1369 (6.09)	7.96 (12.81)	2002	4.03	6th (2H) Gear		190 (87.8)	63 (17.2)	71 (21.7)	28.67 (96.81)

LUGGING ABILITY IN 5th (1H) GEAR

Crankshaft Speed rpm		1999	1797	1602	1397	1197	1000
Pull—lbs (kN)		2080 (9.25)	2179 (9.77)	2292 (10.27)	2342 (10.50)	2357 (10.56)	2324 (10.42)
Increase in Pull %		0	5	10	13	13	12
Power—Hp (kW)		29.39 (21.92)	27.59 (20.58)	25.76 (19.21)	22.89 (17.07)	19.69 (14.68)	16.27 (12.13)
Speed—Mph (km/h)		5.30 (8.53)	4.75 (7.64)	4.21 (6.78)	3.66 (5.90)	3.13 (5.04)	2.62 (4.22)
Slip %		6.17	6.38	6.93	7.14	7.36	7.14

Department of Agricultural Engineering

Dates of Test: May 9 to June 4, 1984

Manufacturer: MASSEY FERGUSON MANUFACTURING CO., P.O. Box 62 Banner Lane, Coventry CV4 9GF Warwickshire, England

FUEL, OIL AND TIME: Fuel No. 2 Diesel Cetane No. 46.0 (rating taken from oil company's inspection data) Specific gravity converted to 60°/60° (15°/15°) 0.8410 Fuel weight 7.003 lbs/gal (0.839 kg/l) Oil SAE 15W-40 API service classification SE, SF, CC, CD To motor 1.750 gal (6.624 l) Drained from motor 1.061 gal (4.017 l) Transmission and final drive lubricant Massey Ferguson Permatran III fluid Total time engine was operated 41.0 hours.

ENGINE: Make Perkins Diesel Type three cylinder vertical Serial No. CE31106U731446K Crankshaft lengthwise Rated rpm 2000 Bore and stroke 3.6" × 5.0" (91.4 mm × 127 mm) Compression ratio 18.5 to 1 Displacement 152 cu in (2491 ml) Starting system 12 volt Lubrication pressure Air cleaner two paper elements Oil filter one full flow cartridge Fuel filter two paper elements Muffler vertical Cooling medium temperature control one thermostat.

CHASSIS: Type standard Serial No. 552212 Tread width rear 52" (1321 mm) to 72" (1829 mm) front 52" (1321 mm) to 72" (1829 mm) Wheel base 76" (1930 mm) Center of gravity (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 28.5" (724 mm) Vertical distance above roadway 27.0" (685 mm) Horizontal distance from center of rear wheel tread 0" (0 mm) to the right/left Hydraulic control system constant running except when PTO clutch is disengaged Transmission selective gear fixed ratio Advertised speeds mph (km/h) first 1.4 (2.3) second 2.1 (3.4) third 3.8 (6.2) fourth 4.7 (7.6) fifth 5.7 (9.2) sixth 8.4 (13.4) seventh 15.3 (24.7) eighth 18.8 (30.3) reverse 1.9 (3.1), 7.8 (12.5) Clutch single dry disc operated by foot pedal Brakes drum and shoe operated by two foot pedals which can be locked together and hand lever Steering power assist Turning radius (on concrete surface with brake applied) right 117" (2.97 m) left 118" (3.00 m) (on concrete surface without brake) right 131" (3.32 m) left 128" (3.25 m) Turning space diameter (on concrete surface with brake applied) right 240" (6.10 m) left 242" (6.15 m) (on concrete surface without brake) right 268" (6.82 m) left 262" (6.66 m) Power take-off 540 rpm at 1788 engine rpm.

REPAIRS and ADJUSTMENTS: No repairs or adjustments.

TRACTOR SOUND LEVEL WITHOUT CAB	dB(A)
Maximum Available Power—Two Hours	95.5
75% of Pull at Maximum Power—Ten Hours	94.0
50% of Pull at Maximum Power—Two Hours	93.5
50% of Pull at Reduced Engine Speed—Two Hours	91.0
Bystander in 7th (3H) gear	85.0

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi (kPa)	Two 13.6-28; 4; 14 (95)	Two 13.6-28; 4; 14 (95)
	—Liquid (each)	342 lb (155 kg)	None
	—Cast Iron (each)	None	None
Front Tires	—No., size, ply & psi (kPa)	Two 6.00-16; 4; 32 (220)	Two 6.00-16; 4; 32 (220)
	—Liquid (each)	None	None
	—Cast Iron (each)	43 lb (19 kg)	None
Height of Drawbar		14 in (355 mm)	14 in (355 mm)
Static Weight with Operator—Rear		3350 lb (1519 kg)	2665 lb (1209 kg)
—Front		1635 lb (742 kg)	1550 lb (703 kg)
—Total		4985 lb (2261 kg)	4215 lb (1912 kg)

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump was maintained at 139°F (59.3°C). Five gears were chosen between 15% slip and 10 mph (16.1 km/h).

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1519**, July 3, 1984.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
W. E. SPLINTER
L. L. BASHFORD
Board of Tractor Test Engineers



Massey Ferguson 240 Diesel