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Test 1399: Massey-Ferguson MF 2805 Diesel 8-Speed

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 1399 — MASSEY FERGUSON MF 2805 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—1196 rpm)								
190.81 (142.29)	2500	12.991 (49.176)	0.477 (0.290)	14.69 (2.893)	189 (87.4)	59 (15.1)	75 (23.8)	28.920 (97.659)
Standard Power take-off Speed (1000 rpm)—One Hour								
186.29 (138.92)	2091	11.227 (42.499)	0.422 (0.257)	16.59 (3.269)	190 (87.6)	60 (15.3)	75 (23.8)	28.920 (97.659)
VARYING POWER AND FUEL CONSUMPTION—Two Hours								
168.69 (125.79)	2600	12.357 (46.776)	0.513 (0.312)	13.65 (2.689)	187 (86.1)	60 (15.3)	75 (23.9)	..... .....
0.00 (0.00)	2784	5.081 (19.234)	..... .....	..... .....	178 (81.1)	59 (15.0)	74 (23.3)	..... .....
87.81 (65.48)	2706	8.732 (33.054)	0.697 (0.424)	10.06 (1.981)	185 (84.7)	60 (15.6)	75 (23.9)	..... .....
191.71 (142.96)	2500	13.059 (49.434)	0.477 (0.290)	14.68 (2.892)	191 (88.1)	60 (15.6)	76 (24.2)	..... .....
44.27 (33.01)	2738	6.853 (25.941)	1.085 (0.660)	6.46 (1.273)	182 (83.1)	60 (15.6)	75 (23.9)	..... .....
129.37 (96.47)	2662	10.589 (40.084)	0.574 (0.349)	12.22 (2.407)	186 (85.6)	60 (15.6)	75 (23.9)	..... .....
Av Av	103.64 (77.28)	2665 (35.753)	9.445 (0.389)	0.639 (2.161)	185 (84.8)	60 (15.4)	75 (23.8)	28.910 (97.625)

DRAWBAR PERFORMANCE

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Cool- ing med	Temp. °F (°C)	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
Maximum Available Power—Two Hours 5th Gear												
160.48 (119.67)	11124 (49.48)	5.41 (8.71)	2499	6.73	12.930 (48.945)	0.565 (0.344)	12.41 (2.445)	194 (90.0)	60 (15.6)	81 (26.9)		28.930 (97.692)
75% of Pull at Maximum Power—Ten Hours 5th Gear												
131.84 (98.32)	8555 (38.05)	5.78 (9.30)	2613	4.68	11.539 (43.679)	0.613 (0.373)	11.43 (2.251)	195 (90.7)	74 (23.3)	87 (30.4)		28.806 (97.274)
50% of Pull at Maximum Power—Two Hours 5th Gear												
91.58 (68.29)	5717 (25.43)	6.01 (9.67)	2674	3.08	9.559 (36.185)	0.732 (0.445)	9.58 (1.887)	187 (86.1)	63 (17.2)	86 (29.7)		28.935 (97.709)
50% of Pull at Reduced Engine Speed—Two Hours 6th Gear												
91.53 (68.25)	5701 (25.36)	6.02 (9.69)	1932	3.08	7.134 (27.004)	0.546 (0.332)	12.83 (2.527)	188 (86.7)	65 (18.1)	88 (30.8)		28.930 (97.692)
MAXIMUM POWER IN SELECTED GEARS												
146.88 (109.53)	17647 (78.50)	3.12 (5.02)	2591	14.63	3rd Gear			189 (86.9)	71 (21.7)	79 (26.1)		28.830 (97.355)
163.66 (122.04)	13286 (59.10)	4.62 (7.43)	2500	8.03	4th Gear			192 (88.6)	59 (15.0)	76 (24.4)		28.900 (97.591)
164.58 (122.73)	11397 (50.70)	5.41 (8.71)	2499	6.54	5th Gear			191 (88.3)	59 (15.0)	73 (22.8)		28.890 (97.557)
164.36 (122.57)	8032 (35.73)	7.67 (12.35)	2501	4.45	6th Gear			192 (88.6)	59 (15.0)	77 (25.0)		28.920 (97.659)
LUGGING ABILITY IN 5th GEAR												
Crankshaft Speed rpm				2499	2254	1998	1746	1491	1247			
Pull—lbs (kN)				11397 (50.70)	12669 (56.35)	13594 (60.47)	14155 (62.96)	14166 (63.01)	13375 (59.50)			
Increase in Pull %				0	11	19	24	24	17			
Power—Hp (kW)				164.58 (122.73)	163.44 (121.87)	154.17 (114.96)	139.39 (103.95)	118.90 (88.66)	94.58 (70.52)			
Speed—Mph (km/h)				5.41 (8.71)	4.84 (7.79)	4.25 (6.84)	3.69 (5.94)	3.15 (5.07)	2.65 (4.27)			
Slip %				6.54	7.44	8.17	8.76	9.04	8.32			

Department of Agricultural Engineering

Dates of Test: June 18-24, 1981

Manufacturer: MASSEY FERGUSON, INC.,
1901 Bell Avenue, Des Moines, Iowa 50315

FUEL, OIL AND TIME: Fuel No. 2 Diesel Cetane No. 46.3 (rating taken from oil company's inspection data) **Specific gravity converted to 60°/60° (15°/15°)** 0.8418 **Fuel weight** 7.009 lbs/gal (0.840 kg/l) **Oil SAE 20-20W API service classification** SB/SE-CA/CD **To motor** 5.393 gal (20.415 l) **Drained from motor** 4.924 gal (18.639 l) **Transmission and final drive lubricant** Massey Ferguson Permatran fluid **Total time engine was operated** 32.5 hours.

ENGINE: Make Perkins Diesel Type eight cylinder vee with turbocharger **Serial No.** ZB31068U512277G **Crankshaft** lengthwise **Rated rpm** 2500 **Bore and stroke** 4.63" × 4.75" (117.6 mm × 120.6 mm) **Compression ratio** 15 to 1 **Displacement** 640 cu in (10484 ml) **Starting system** 12 volt **Lubrication pressure** **Air cleaner** two paper elements with aspirator **Oil filter** two full flow cartridges **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** two paper cartridges **Muffler** vertical **Cooling medium temperature control** four thermostats.

CHASSIS: Type standard with duals **Serial No.** 9R010458 **Tread width** rear 71" (1803 mm) to 126" (3200 mm) front 63" (1600 mm) to 83" (2110 mm) **Wheel base** 110" (2794 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 35.9" (912 mm) Vertical distance above roadway 40.6" (1031 mm) Horizontal distance from center of rear wheel tread 0" (0 mm) to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Advertised speeds mph (km/h)** first 1.7 (2.7) second 2.4 (3.9) third 3.4 (5.5) fourth 4.9 (7.9) fifth 5.7 (9.2) sixth 7.9 (12.7) seventh 11.5 (18.5) eighth 16.4 (26.4) reverse 2.0 (3.2), 2.8 (4.5), 4.0 (6.4), 5.8 (9.3), 6.6 (10.6), 9.2 (14.8) **Clutch** double dry disc operated by foot pedal **Brakes** single wet disc hydraulically power actuated and operated by two foot pedals which can be locked together **Steering** hydrostatic **Turning radius** (on concrete surface with brake applied) right 152" (3.86 m) left 152" (3.86 m) (on concrete surface without brake) right 202" (5.13 m) left 202" (5.13 m) **Turning space diameter** (on concrete surface with brake applied) right 330" (8.38 m) left 330" (8.38 m) (on concrete surface without brake) right 428" (10.87 m) left 428" (10.87 m) **Power take-off** 1000 rpm at 2091 engine rpm.

REPAIRS and ADJUSTMENTS: No repairs or adjustments.

TRACTOR SOUND LEVEL WITHOUT CAB

	dB(A)
Maximum Available Power—Two Hours	99.0
75% of Pull at Maximum Power—Ten Hours	100.5
50% of Pull at Maximum Power—Two Hours	100.0
50% of Pull at Reduced Engine Speed—Two Hours	95.5
Bystander in 8th gear	92.5

TIRES, BALLAST AND WEIGHT

		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi (kPa)	Four 20.8-38; 10; 14 (95)	Four 20.8-38; 10; 14 (95)
Ballast	—Liquid (each inner)	1088 lb (493 kg)	None
	—Cast Iron (each inner)	1570 lb (712 kg)	None
Front Tires	—No., size, ply & psi (kPa)	Two 16.5L-16.1; 8; 32 (220)	Two 16.5L-16.1; 8; 32 (220)
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	40 lb (18 kg)	None
Height of Drawbar		21 in (535 mm)	21 in (535 mm)
Static Weight with Operator—Rear		16370 lb (7425 kg)	11055 lb (5014 kg)
	Front	5060 lb (2295 kg)	4980 lb (2259 kg)
	Total	21430 lb (9720 kg)	16035 lb (7273 kg)

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test code or official Nebraska test procedure. Temperature at injection pump return was 162°F (72.2°C). Four 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. 1399.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
W. E. SPLINTER
L. L. BASHFORD

Board of Tractor Test Engineers



Massey Ferguson MF 2805 Diesel