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## Test 1389: Massey-Ferguson MF 2775 Diesel 8-speed

Nebraska Tractor Test Lab

University of Nebraska-Lincoln, [tractortestlab@unl.edu](mailto:tractortestlab@unl.edu)

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# NEBRASKA TRACTOR TEST 1389 — MASSEY FERGUSON MF 2775 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—1243 rpm)									
162.09 (120.87)	2600	11.054 (41.844)	0.478 (0.291)	14.66 (2.889)	185 (85.2)	61 (16.1)	75 (23.9)	28.893 (97.568)	
Standard Power take-off Speed (1000 rpm)—One Hour									
146.87 (109.52)	2091	9.309 (35.238)	0.444 (0.270)	15.78 (3.108)	187 (86.1)	61 (15.9)	75 (23.7)	28.920 (97.639)	
VARYING POWER AND FUEL CONSUMPTION—Two Hours									
141.05 (105.18)	2664	10.039 (38.002)	0.499 (0.303)	14.05 (2.768)	183 (83.9)	61 (16.1)	75 (23.9)	..... .....	
0.00 (0.00)	2813	4.388 (16.610)	..... .....	..... .....	175 (79.2)	61 (15.8)	74 (23.3)	..... .....	
73.01 (54.44)	2752	7.033 (26.623)	0.675 (0.411)	10.38 (2.045)	180 (81.9)	61 (15.8)	75 (23.6)	..... .....	
163.37 (121.82)	2599	11.113 (42.067)	0.477 (0.290)	14.70 (2.896)	186 (85.3)	62 (16.4)	76 (24.2)	..... .....	
36.77 (27.42)	2784	5.655 (21.407)	1.078 (0.656)	6.50 (1.281)	176 (80.0)	62 (16.4)	75 (23.6)	..... .....	
107.73 (80.33)	2710	8.433 (31.922)	0.549 (0.334)	12.77 (2.516)	181 (82.8)	62 (16.7)	76 (24.2)	..... .....	
Av Av	86.99 (64.87)	2720	7.777 (29.439)	0.627 (0.381)	11.19 (2.204)	180 (82.2)	61 (16.2)	75 (23.8)	28.943 (97.737)

## 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 Gear											
136.54 (101.82)	8924 (39.69)	5.74 (9.23)	2599	5.19	10.970 (41.524)	0.563 (0.342)	12.45 (2.452)	188 (86.7)	66 (18.9)	77 (25.0)	28.800 (97.250)
75% of Pull at Maximum Power—Ten Hours 5th Gear											
110.42 (82.34)	6860 (30.51)	6.04 (9.71)	2694	3.71	9.457 (35.799)	0.600 (0.365)	11.68 (2.300)	184 (84.6)	64 (17.5)	74 (23.4)	28.842 (97.400)
50% of Pull at Maximum Power—Two Hours 5th Gear											
76.21 (56.83)	4568 (20.32)	6.26 (10.07)	2759	2.50	7.973 (30.181)	0.733 (0.446)	9.56 (1.883)	182 (83.1)	65 (18.3)	70 (21.1)	28.815 (97.300)
50% of Pull at Reduced Engine Speed—Two Hours 6th Gear											
76.47 (57.03)	4578 (20.36)	6.26 (10.08)	1992	2.66	6.279 (23.767)	0.575 (0.350)	12.18 (2.399)	183 (83.6)	67 (19.2)	72 (22.2)	28.805 (97.270)

## MAXIMUM POWER IN SELECTED GEARS

99.67 (74.33)	16766 (74.58)	2.23 (3.59)	2709	14.92	2nd Gear		183 (83.9)	64 (17.8)	67 (19.4)	28.820 (97.320)
132.00 (98.43)	15079 (67.07)	3.28 (5.28)	2600	10.96	3rd Gear		186 (85.3)	63 (17.2)	69 (20.6)	28.580 (96.510)
138.34 (103.16)	10565 (46.99)	4.91 (7.90)	2600	6.39	4th Gear		188 (86.7)	67 (19.4)	80 (26.7)	28.800 (97.250)
139.68 (104.16)	9139 (40.65)	5.73 (9.22)	2599	5.23	5th Gear		188 (86.7)	66 (18.9)	76 (24.4)	28.790 (97.220)
135.51 (101.05)	6272 (27.90)	8.10 (13.04)	2601	3.40	6th Gear		186 (85.3)	64 (17.8)	70 (21.1)	28.570 (96.480)

## LUGGING ABILITY IN 5th GEAR

Crankshaft Speed rpm		2599	2340	2083	1818	1559	1293
Pull—lbs (kN)		9139 (40.65)	9802 (43.60)	10362 (46.09)	10611 (47.20)	10680 (47.51)	10626 (47.27)
Increase in Pull %		0	7	13	16	17	16
Power—Hp (kW)		139.68 (104.16)	134.28 (100.13)	125.80 (93.81)	112.17 (83.65)	96.74 (72.14)	79.83 (59.53)
Speed—Mph (km/h)		5.73 (9.22)	5.14 (8.27)	4.55 (7.33)	3.96 (6.38)	3.40 (5.47)	2.82 (4.53)
Slip %		5.23	5.70	6.01	6.16	6.32	6.32

## Department of Agricultural Engineering

Dates of Test: May 13-June 1, 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°)** 0.8417 **Fuel weight** 7.008 lbs/gal (0.840 kg/l) **Oil** SAE 20W-20 **API service classification** SE-SF, CC **To motor** 5.056 gal (19.139 l) **Drained from motor** 4.319 gal (16.349 l) **Transmission and final drive lubricant** M. F. Permatran Fluid **Total time engine was operated** 40.5 hours

**ENGINE:** Make Perkins Diesel **Type** eight cylinder vee **Serial No.** ZA31067U512373G **Crankshaft** lengthwise **Rated rpm** 2600 **Bore and stroke** 4.63" × 4.75" (117.6 mm × 120.7 mm) **Compression ratio** 16 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 spin on cartridges **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** two paper elements **Muffler** vertical **Cooling medium temperature control** 4 thermostats.

**CHASSIS:** **Type** standard with duals **Serial No.** 9R 010434 **Tread width** rear 71" (1803 mm) to 126" (3200 mm) front 60" (1524 mm) to 80" (2032 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 34.0" (864 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 1.8 (2.8) second 2.5 (4.0) third 3.6 (5.8) fourth 5.0 (8.0) fifth 5.9 (9.5) sixth 8.2 (13.2) seventh 12.0 (19.3) eighth 17.1 (27.5) reverse 2.1 (3.4), 2.9 (4.7), 4.2 (6.8), 6.0 (9.6), 6.9 (11.1), 9.6 (15.5), **Clutch** dual 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.

**REMARKS:** All test results were determined from observed data obtained in accordance with SAE and ASAE test code or official Nebraska test

**TRACTOR SOUND LEVEL WITHOUT CAB**

	dB(A)
Maximum Available Power—Two Hours	102.0
75% of Pull at Maximum Power—Ten Hours	101.5
50% of Pull at Maximum Power—Two Hours	101.5
50% of Pull at Reduced Engine Speed—Two Hours	99.0
Bystander in 8th gear	96.0

**TIRES, BALLAST AND WEIGHT**

		With Ballast	Without Ballast
<b>Rear Tires</b>	—No., size, ply & psi (kPa)	Four 20.8-38; 10; 14 (95)	Four 20.8-38; 10; 14 (95)
Ballast	—Liquid (each inner)	1143 lb (518 kg)	None
	—Cast Iron (each inner)	1000 lb (454 kg)	None
<b>Front Tires</b>	—No., size, ply & psi (kPa)	Two 14L-16.1; 6; 28 (195)	Two 14L-16.1; 6; 28 (195)
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	40 lb (18 kg)	None
<b>Height of Drawbar</b>		22 in (560 mm)	22 in (560 mm)
<b>Static Weight with Operator</b> —Rear		15205 lb (6897 kg)	10920 lb (4953 kg)
	Front	4965 lb (2252 kg)	4885 lb (2216 kg)
	Total	20170 lb (9149 kg)	15805 lb (7169 kg)

procedure. Temperature at injection pump return was 164°F (73.2°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. 1389.

LOUIS I. LEVITICUS

Engineer-in Charge

K. VON BARGEN

W. E. SPLINTER

L. L. BASHFORD

Board of Tractor Test Engineers



**Massey Ferguson MF 2775 Diesel**