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Test 1479: Massey-Ferguson 274 Diesel 12-Speed

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 1479—MASSEY FERGUSON 274 DIESEL 12 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—611 rpm)								
55.39 (41.30)	2200	3.411 (12.912)	0.432 (0.263)	16.24 (3.199)	186 (85.6)	57 (13.7)	75 (24.0)	28.910 (97.625)
Standard Power Take-off Speed (540 rpm)—One Hour								
54.26 (40.46)	1944	3.146 (11.909)	0.406 (0.247)	17.25 (3.397)	187 (86.1)	56 (13.1)	75 (23.7)	28.890 (97.557)
VARYING POWER AND FUEL CONSUMPTION—Two Hours								
48.92 (36.48)	2286	3.159 (11.958)	0.453 (0.275)	15.48 (3.051)	183 (83.9)	56 (13.6)	76 (24.7)	..... .....
0.00 (0.00)	2389	1.164 (4.406)	..... .....	..... .....	150 (65.6)	58 (14.7)	75 (23.9)	..... .....
25.04 (18.67)	2342	2.080 (7.874)	0.582 (0.354)	12.04 (2.371)	165 (73.9)	56 (13.6)	77 (25.0)	..... .....
55.64 (41.49)	2200	3.412 (12.916)	0.430 (0.261)	16.31 (3.212)	187 (86.1)	58 (14.2)	76 (24.7)	..... .....
12.66 (9.44)	2364	1.622 (6.140)	0.898 (0.546)	7.80 (1.537)	154 (67.5)	56 (13.3)	73 (22.8)	..... .....
37.14 (27.70)	2315	2.581 (9.770)	0.487 (0.296)	14.39 (2.835)	170 (76.4)	57 (13.9)	74 (23.3)	..... .....
Av Av	29.90 (22.30)	2.316 (8.847)	0.548 (0.333)	12.80 (2.521)	168 (75.6)	57 (13.9)	75 (24.1)	28.873 (97.501)

DRAWBAR PERFORMANCE (Front Wheel Drive Disengaged)

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 8th Gear											
46.13 (34.40)	2637 (11.73)	6.56 (10.56)	2200	7.05	3.353 (12.694)	0.509 (0.310)	13.76 (2.710)	189 (86.9)	56 (13.1)	72 (21.9)	28.975 (97.844)
75% of Pull at Maximum Power—Ten Hours 8th Gear											
37.31 (27.83)	2006 (8.92)	6.98 (11.23)	2292	5.09	2.947 (11.154)	0.553 (0.337)	12.66 (2.495)	185 (84.9)	65 (18.3)	78 (25.5)	28.802 (97.260)
50% of Pull at Maximum Power—Two Hours 8th Gear											
25.51 (19.02)	1337 (5.95)	7.15 (11.51)	2309	3.37	2.408 (9.115)	0.662 (0.402)	10.59 (2.087)	162 (71.9)	49 (9.2)	59 (15.0)	29.040 (98.064)
50% of Pull at Reduced Engine Speed—Two Hours 10th Gear											
25.56 (19.06)	1337 (5.95)	7.17 (11.54)	1479	3.20	1.784 (6.752)	0.489 (0.297)	14.33 (2.823)	164 (73.3)	53 (11.4)	65 (18.3)	29.025 (98.013)
MAXIMUM POWER IN SELECTED GEARS											
38.60 (28.78)	4719 (20.99)	3.07 (4.94)	2280	14.90	5th Gear			165 (73.6)	46 (7.8)	55 (12.8)	29.040 (98.064)
44.02 (32.83)	4271 (19.00)	3.87 (6.22)	2200	13.54	6th Gear			186 (85.6)	52 (11.1)	66 (18.9)	29.000 (97.929)
45.61 (34.01)	3246 (14.44)	5.27 (8.48)	2198	8.59	7th Gear			185 (84.7)	53 (11.7)	64 (17.8)	28.990 (97.895)
46.76 (34.87)	2674 (11.89)	6.56 (10.56)	2198	7.02	8th Gear			188 (86.4)	56 (13.3)	72 (22.2)	28.970 (97.827)
44.79 (33.40)	2088 (9.29)	8.05 (12.95)	2201	5.40	9th Gear			187 (85.8)	54 (12.2)	68 (20.0)	29.000 (97.929)

Department of Agricultural Engineering

Dates of Test: May 12-26, 1983

Manufacturer: MASSEY FERGUSON S.p.A
Landini Division, Via Matteotti 17, 42042 Fab-
brico (RE) Italy

FUEL, OIL AND TIME: Fuel No. 2 Diesel
Cetane No. 47.0 (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 20-20W API service classi-**
fication SE, SF, CC **To motor** 1.986 gal (7.518 l)
Drained from motor 1.764 gal (6.676 l) **Trans-**
mission and final drive lubricant Massey Fergu-
son Permatran oil **Total time engine was oper-**
ated 44.5 hours.

ENGINE: Make Perkins Diesel **Type** four
cylinder vertical **Serial No.** LD22573U840084J
Crankshaft lengthwise **Rated rpm** 2200 **Bore**
and stroke 3.875" × 5" (98.4 mm × 127 mm) **Com-**
pression ratio 16 to 1 **Displacement** 236 cu in
(3865 ml) **Starting system** 12 volt **Lubrication**
pressure **Air cleaner** oil bath with centrifugal
precleaner **Oil filter** one full flow paper car-
tridge **Fuel filter** one paper element **Muffler**
vertical **Cooling medium temperature control**
one thermostat.

CHASSIS: **Type** front wheel assist **Serial No.**
22111958 **Tread width** rear 59.1" (1500 mm) to
75" (1905 mm) front 59.5" (1511 mm) **Wheel base**
87.5" (2222 mm) **Center of gravity** (without oper-
ator or ballast, with minimum tread, with fuel tank
filled and tractor serviced for operation) **Horizon-**
tal distance forward from center-line of rear
wheels 36.5" (928 mm) **Vertical distance** above
roadway 36.1" (918 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 1.1 (1.8)
second 1.8 (2.9) third 2.3 (3.7) fourth 2.8 (4.5)
fifth 3.4 (5.4) sixth 4.3 (7.0) seventh 5.6 (9.0)
eighth 6.8 (11.0) ninth 8.3 (13.3) tenth 10.7 (17.2)
eleventh 13.8 (22.2) twelfth 20.3 (32.7) reverse 3.0
(4.8), 4.6 (7.4), 6.0 (9.6), 8.8 (14.1) **Clutch** dry disc
operated by foot pedal **Brakes** dry disc operated
by two foot pedals which can be locked together
and hand lever **Steering** hydrostatic **Turning**
radius (on concrete surface with brake applied)
right 169" (4.29 m) left 186" (4.72 m) (on concrete
surface without brake) right 191" (4.85 m) left 207"
(5.26 m) **Turning space diameter** (on concrete
surface with brake applied) right 354" (8.99 m) left
388" (9.85 m) (on concrete surface without brake)
right 398" (10.11 m) left 430" (10.92 m) **Power**
take-off 540 rpm at 1944 engine rpm.

LUGGING ABILITY IN 8th GEAR

Crankshaft Speed rpm	2198	1980	1760	1543	1326	1096	880
Pull—lbs (kN)	2674 (11.89)	2944 (13.10)	3143 (13.98)	3255 (14.48)	3394 (15.10)	3414 (15.19)	3276 (14.57)
Increase in Pull %	0	10	18	22	27	28	23
Power—Hp (kW)	46.76 (34.87)	45.99 (34.29)	43.25 (32.25)	39.04 (29.12)	34.79 (25.95)	28.96 (21.60)	22.40 (16.71)
Speed—Mph (km/h)	6.56 (10.56)	5.86 (9.43)	5.16 (8.30)	4.50 (7.24)	3.84 (6.19)	3.18 (5.12)	2.56 (4.13)
Slip %	7.02	7.78	8.65	9.02	9.62	9.50	9.02

TRACTOR SOUND LEVEL WITHOUT CAB		Front Wheel Drive dB(A) Disengaged dB(A)	
Maximum Available Power—Two Hours		99.5	99.5
75% of Pull at Maximum Power—Ten Hours			98.5
50% of Pull at Maximum Power—Two Hours			98.0
50% of Pull at Reduced Engine Speed—Two Hours			95.5
Bystander in 11th gear			87.0

DRAWBAR PERFORMANCE (Front Wheel Drive Engaged)

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 8th Gear											
47.02 (35.06)	2610 (11.61)	6.76 (10.87)	2199	5.57	3.389 (12.829)	0.505 (0.307)	13.88 (2.733)	189 (87.2)	58 (14.4)	76 (24.2)	28.930 (97.692)

MAXIMUM POWER IN SELECTED GEARS

42.13 (31.41)	6194 (27.55)	2.55 (4.10)	2269	14.87	4th Gear			168 (75.3)	45 (7.2)	53 (11.7)	29.020 (97.996)
47.42 (35.36)	2637 (11.73)	6.74 (10.85)	2198	5.67	8th Gear			185 (85.0)	54 (12.2)	68 (20.0)	29.000 (97.929)

TIRES, BALLAST AND WEIGHT

Rear Tires		With Ballast		Without Ballast	
Ballast	—No., size, ply & psi (kPa)	Two 16.9-30; 6; 22 (150)		Two 16.9-30; 6; 22 (150)	
	—Liquid (each)	878 lb (398 kg)		None	
	—Cast Iron (each)	None		None	
Front Tires		With Ballast		Without Ballast	
Ballast	—No., size, ply & psi (kPa)	Two 11.2-24; 6; 20 (140)		Two 11.2-24; 6; 20 (140)	
	—Liquid (each)	225 lb (102 kg)		None	
	—Cast Iron (each)	None		None	
Height of Drawbar		17.5 in (445 mm)		17.5 in (445 mm)	
Static Weight with Operator—Rear		5240 lb (2377 kg)		3485 lb (1581 kg)	
		2950 lb (1338 kg)		2500 lb (1134 kg)	
		8190 lb (3715 kg)		5985 lb (2715 kg)	



Massey Ferguson 274 Diesel

REPAIRS and ADJUSTMENTS: The tube in the left rear tire was replaced following the break in period.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump was maintained at 158°F (70.1°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. 1479.

LOUIS I. LEVITICUS
Engineer-in-Charge

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

Board of Tractor Test Engineers