5-8-1979

Test 1309: Massey-Ferguson 2675 Diesel 24-Speed

Nebraska Tractor Test Lab
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NEBRASKA TRACTOR TEST 1309 — MASSEY-FERGUSON 2675 DIESEL 24 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temperature °F (°C) Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg (kPa)
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed—Two Hours (PTO Speed—1196 rpm)								
103.29 (77.02)	2500	7.240 (27.407)	0.488 (0.297)	14.27 (2.810)	194 (89.9)	59 (14.8)	75 (23.8)	29.013 (97.974)
Standard Power Take-off Speed (1000 rpm)—One Hour								
96.67 (72.08)	2091	6.266 (23.718)	0.451 (0.274)	15.43 (3.039)	196 (90.9)	58 (14.7)	75 (23.8)	29.005 (97.946)
VARYING POWER AND FUEL CONSUMPTION—Two Hours								
92.62 (69.07)	2641	6.589 (24.942)	0.495 (0.301)	14.06 (2.769)	190 (87.8)	56 (13.3)	74 (23.6)	....
0.00 (0.00)	2758	2.436 (9.223)	....	....	180 (82.2)	58 (14.4)	75 (23.9)	....
47.46 (35.39)	2706	4.325 (16.372)	0.634 (0.386)	10.97 (2.162)	184 (84.4)	58 (14.4)	75 (23.9)	....
104.37 (77.83)	2500	7.288 (27.587)	0.486 (0.295)	14.32 (2.821)	194 (89.7)	58 (14.7)	76 (24.2)	....
23.91 (17.83)	2725	3.320 (12.569)	0.966 (0.588)	7.20 (1.418)	182 (83.3)	58 (14.7)	75 (23.9)	....
70.37 (52.48)	2676	5.339 (20.208)	0.528 (0.321)	13.18 (2.597)	186 (85.6)	58 (14.4)	76 (24.2)	....
Av 56.45	**2668**	**4.883**	**0.602**	**11.56**	**186**	**58**	**75**	**29.000**
Av (42.10)		***(18.484)***	***(0.366)***	***(2.278)***	***(85.5)***	***(14.4)***	***(23.9)***	***(97.929)***

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)	Temp. °F (°C) Cool-ing med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
Maximum Available Power—Two Hours 14th (5I) Gear											
84.29 (62.85)	6226 (27.69)	5.08 (8.17)	2499	7.28	7.169 (27.138)	0.592 (0.360)	11.76 (2.316)	197 (91.7)	58 (14.4)	76 (24.2)	29.085 (98.216)
75% of Pull at Maximum Power—Ten Hours 14th (5I) Gear											
71.13 (53.04)	4839 (21.53)	5.51 (8.87)	2651	5.01	6.188 (23.424)	0.605 (0.368)	11.49 (2.264)	194 (89.8)	64 (17.9)	81 (27.1)	28.814 (97.301)
50% of Pull at Maximum Power—Two Hours 14th (5I) Gear											
49.18 (36.67)	3234 (14.38)	5.70 (9.18)	2698	3.42	4.941 (18.704)	0.699 (0.425)	9.95 (1.961)	188 (86.7)	64 (17.5)	78 (25.3)	28.930 (97.692)
50% of Pull at Reduced Engine Speed—Two Hours 19th (6H) Gear											
48.90 (36.47)	3225 (14.35)	5.69 (9.15)	1514	3.46	3.540 (13.399)	0.504 (0.306)	13.82 (2.722)	193 (89.4)	66 (18.6)	83 (28.3)	28.875 (97.507)
MAXIMUM POWER IN SELECTED GEARS											
77.63 (57.88)	9674 (43.03)	3.01 (4.85)	2596	14.94	9th (4L) Gear			194 (90.0)	63 (17.2)	69 (20.6)	28.770 (97.152)
81.51 (60.78)	8875 (39.48)	3.44 (5.54)	2500	12.47	10th (5L) Gear			197 (91.4)	59 (15.0)	70 (21.1)	28.950 (97.760)
83.97 (62.61)	8191 (36.44)	3.84 (6.19)	2498	9.99	11th (3H) Gear			196 (91.1)	59 (15.0)	69 (20.6)	28.950 (97.760)
86.21 (64.29)	7454 (33.16)	4.34 (6.98)	2500	8.55	12th (4I) Gear			196 (90.8)	58 (14.4)	68 (20.0)	28.950 (97.760)
85.19 (63.52)	6299 (28.02)	5.07 (8.16)	2499	6.78	13th (6L) Gear			195 (90.6)	57 (13.9)	67 (19.4)	28.950 (97.760)
87.47 (65.23)	6446 (28.67)	5.09 (8.19)	2501	7.07	14th (5I) Gear			196 (90.8)	55 (12.8)	63 (17.2)	28.960 (97.794)
86.16 (64.25)	5690 (25.31)	5.68 (9.14)	2498	6.49	15th (4H) Gear			197 (91.4)	60 (15.6)	71 (21.7)	28.950 (97.760)
86.76 (64.69)	4901 (21.80)	6.64 (10.68)	2500	5.32	16th (5H) Gear			196 (91.1)	60 (15.6)	72 (22.2)	28.950 (97.760)
86.99 (64.87)	4522 (20.12)	7.21 (11.61)	2498	4.87	17th (6I) Gear			196 (91.1)	61 (16.1)	73 (22.8)	28.950 (97.760)
86.69 (64.64)	4270 (18.99)	7.61 (12.25)	2498	4.49	18th (7L) Gear			196 (91.1)	61 (16.1)	74 (23.3)	28.950 (97.760)
84.39 (62.93)	3380 (15.03)	9.36 (15.03)	2499	3.49	19th (6H) Gear			196 (91.1)	61 (16.1)	73 (22.8)	28.950 (97.760)

Department of Agricultural Engineering

Dates of Test: May 8-18,1979

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

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 49.0 (rating taken from oil company's typical inspection data) **Specific gravity converted to 60°/60° *(15°/15°)*** 0.8356 **Fuel weight** 6.957 lbs/gal *(0.834 kg/l)* **Oil SAE** 20-20W **API service classification** SB/SE - CA/CC **To motor** 4.137 gal *(15.660 l)* **Drained from motor** 3.519 gal *(13.321 1)* **Transmission and final drive lubricant** MF Permatran **Total time engine was operated** 38.0 hours

ENGINE Make Perkins Diesel **Type** Six cylinder vertical **Serial No.** TW31008N28496F **Crankshaft** lengthwise **Rated rpm** 2500 **Bore and stroke** 3.875″ × 5.0″ *(98.4 mm × 127.0 mm)* **Compression ratio** 16 to 1 **Displacement** 354 cu in *(5801 ml)* **Cranking system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements with aspirator **Oil filter** one paper cartridge **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** two thermostats

CHASSIS: Type standard **Serial No.** 9R 002625 **Tread width** rear 65″ *(1651 mm)* to 95″ *(2413 mm)* front 60″ *(1524 mm)* to 80″ *(2032 mm)* **Wheel base** 105.4″ *(2677 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from centerline of rear wheels 34.4″ *(874 mm)* Vertical distance above roadway 43.3″ *(1100 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 with partial (3) range operator controlled power shift **Advertised speeds mph *(km/h)*** first 1.2 *(1.9)* second 1.6 *(2.6)* third 1.6 *(2.6)* fourth 2.1 *(3.3)* fifth 2.3 *(3.6)* sixth 2.4 *(3.8)* seventh 2.9 *(4.6)* eighth 3.3 *(5.3)* ninth 3.4 *(5.4)* tenth 3.9 *(6.2)* eleventh 4.2 *(6.8)* twelfth 4.7 *(7.5)* thirteenth 5.4 *(8.7)* fourteenth 5.4 *(8.7)* fifteenth 6.0 *(9.7)* sixteenth 6.9 *(11.2)* seventeenth 7.5 *(12.1)* eighteenth 7.9 *(12.7)* nineteenth 9.6 *(15.5)* twentieth 11.0 *(17.7)* twenty-first 11.2 *(18.0)* twenty-second 14.1 *(22.6)* twenty-third 15.6 *(25.1)* twenty-fourth 20.0 *(32.2)* reverse 2.1 *(3.3)*, 2.9 *(4.6)*, 4.2 *(6.8)*, 6.0 *(9.7)* **Clutch** single dry disc operated by foot pedal **Brakes** single wet disc hydraulically operated by two foot pedals which can be locked together **Steering** hydrostatic **Turning radius** (on concrete surface with brake applied) right 135″ *(3.44 m)* left 135″ *(3.44 m)* (on concrete surface without brake) right 180″ *(4.57 m)* left 180″ *(4.57 m)* **Turning space diameter** (on concrete surface with brake applied) right 294″ *(7.46 m)* left 294″ *(7.46 m)* (on concrete surface without brake) right 381″ *(9.69 m)* left 381″ *(9.69 m)* **Power take-off** 1000 rpm at 2091 engine rpm and 540 rpm at 1992 engine rpm.

LUGGING ABILITY IN 14th (5I) GEAR

Crankshaft Speed rpm	2501	2255	1998	1742	1497	1244
Pull—lbs	6446	6944	7361	7746	7761	7612
(kN)	*(28.67)*	*(30.89)*	*(32.74)*	*(34.45)*	*(34.52)*	*(33.86)*
Increase in Pull %	0	8	14	20	20	18
Power—Hp	87.47	84.42	78.78	71.80	61.74	50.40
(kW)	*(65.23)*	*(62.95)*	*(58.75)*	*(53.54)*	*(46.04)*	*(37.58)*
Speed—Mph	5.09	4.56	4.01	3.48	2.98	2.48
(km/h)	*(8.19)*	*(7.34)*	*(6.46)*	*(5.59)*	*(4.80)*	*(4.00)*
Slip %	7.07	7.64	8.20	8.90	9.03	8.76

TRACTOR SOUND LEVEL WITH CAB	**dB(A)**
Maximum Available Power—Two Hours	81.5
75% of Pull at Maximum Power—Ten Hours	83.0
50% of Pull at Maximum Power—Two Hours	82.0
50% of Pull at Reduced Engine Speed—Two Hours	79.0
Bystander in 23rd (8I) gear	91.0

TIRES, BALLAST AND WEIGHT		**With Ballast**	**Without Ballast**
Rear Tires	—No., size, ply & psi *(kPa)*	Two 18.4-38; 10; 22 *(150)*	Two 18.4-38; 10; 22 *(150)*
Ballast	—Liquid (each)	1032 lb *(468 kg)*	None
	—Cast Iron (each)	None	None
Front Tires	—No., size, ply & psi *(kPa)*	Two 11.00-16; 6; 32 *(220)*	Two 11.00-16; 6; 32 *(220)*
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	None	None
Height of Drawbar		21.5 in *(545 mm)*	21.5 in *(545 mm)*
Static Weight with Operator—Rear		10635 lb *(4824 kg)*	8570 lb *(3887 kg)*
Front		3860 lb *(1751 kg)*	3860 lb *(1751 kg)*
Total		14495 lb *(6575 kg)*	12430 lb *(5638 kg)*

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 procedure. Temperature at injection pump was 147°F *(63.8°C)*. Eleven 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 **1309.**

LOUIS I. LEVITICUS
Engineer-in-Charge

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Massey-Ferguson 2675 Diesel

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