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Test 1278: Massey-Ferguson 2775 Diesel

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NEBRASKA TRACTOR TEST 1278 — MASSEY-FERGUSON 2775 DIESEL

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—1244 rpm)								
165.95 (123.75)	2600	11.110 (42.057)	0.465 (0.283)	14.94 (2.943)	190 (87.9)	62 (16.6)	76 (24.2)	28.760 (97.118)
Standard Power Take-off Speed (1000 rpm)—One Hour								
149.86 (111.75)	2090	9.335 (35.337)	0.433 (0.263)	16.05 (3.162)	191 (88.3)	62 (16.7)	75 (24.0)	28.780 (97.186)
VARYING POWER AND FUEL CONSUMPTION—Two Hours								
147.22 (109.78)	2716	10.314 (39.042)	0.487 (0.296)	14.27 (2.812)	189 (87.2)	62 (16.9)	77 (25.0)	....
0.00 (0.00)	2828	4.278 (16.195)	....	....	183 (83.9)	62 (16.7)	76 (24.2)	....
75.14 (56.03)	2772	7.007 (26.523)	0.648 (0.394)	10.72 (2.113)	186 (85.3)	62 (16.7)	74 (23.6)	....
167.28 (124.74)	2600	11.138 (42.163)	0.463 (0.281)	15.02 (2.959)	191 (88.3)	62 (16.9)	75 (23.9)	....
37.91 (28.27)	2798	5.643 (21.359)	1.034 (0.629)	6.72 (1.324)	184 (84.4)	62 (16.7)	74 (23.6)	....
111.52 (83.16)	2744	8.513 (32.227)	0.530 (0.323)	13.10 (2.580)	188 (86.7)	62 (16.7)	75 (23.9)	....
Av 89.85	**2743**	**7.816**	**0.604**	**11.50**	**187**	**62**	**75**	**28.783**
Av (67.00)		***(29.585)***	***(0.368)***	***(2.265)***	***(86.0)***	***(16.8)***	***(24.0)***	***(97.197)***

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											
139.30 (103.88)	9157 (40.73)	5.70 (9.18)	2600	5.73	11.081 (41.945)	0.553 (0.336)	12.57 (2.476)	193 (89.4)	55 (12.8)	64 (17.5)	28.990 (97.895)
75% of Pull at Maximum Power—Ten Hours 14th (5I) Gear											
112.17 (83.65)	6858 (30.51)	6.13 (9.87)	2747	4.10	9.739 (36.865)	0.603 (0.367)	11.52 (2.269)	189 (87.2)	58 (14.3)	60 (15.7)	28.813 (97.297)
50% of Pull at Maximum Power—Two Hours 14th (5I) Gear											
79.53 (59.31)	4730 (21.04)	6.31 (10.15)	2784	2.77	8.077 (30.574)	0.706 (0.429)	9.85 (1.940)	188 (86.4)	58 (14.4)	67 (19.2)	28.975 (97.844)
50% of Pull at Reduced Engine Speed—Two Hours 19th (6H) Gear											
79.33 (59.16)	4722 (21.00)	6.30 (10.14)	1568	2.85	5.954 (22.539)	0.522 (0.317)	13.32 (2.625)	187 (86.1)	53 (11.7)	61 (15.8)	28.060 (98.131)
MAXIMUM POWER IN SELECTED GEARS											
132.60 (98.88)	17407 (77.43)	2.86 (4.60)	2709	14.92	7th (2H) Gear			188 (86.7)	51 (10.6)	55 (12.8)	29.050 (98.097)
135.77 (101.24)	15929 (70.85)	3.20 (5.14)	2601	13.27	8th (3I) Gear			192 (88.9)	53 (11.7)	60 (15.6)	29.010 (97.962)
137.49 (102.53)	15490 (68.90)	3.33 (5.36)	2599	11.62	9th (4L) Gear			193 (89.2)	53 (11.7)	60 (15.6)	29.010 (97.962)
140.62 (104.86)	13231 (58.85)	3.99 (6.41)	2602	8.34	10th (5L) Gear			192 (88.9)	52 (11.1)	59 (15.0)	29.010 (97.962)
139.98 (104.38)	12004 (53.40)	4.37 (7.04)	2600	7.39	11th (3H) Gear			192 (88.9)	52 (11.1)	59 (15.0)	29.010 (97.962)
142.29 (106.10)	10892 (48.45)	4.90 (7.88)	2599	6.49	12th (4I) Gear			193 (89.4)	52 (11.1)	58 (14.4)	29.010 (97.962)
142.41 (106.20)	9379 (41.72)	5.69 (9.16)	2598	5.43	13th (6L) Gear			193 (89.2)	52 (11.1)	57 (13.9)	29.010 (97.962)
143.70 (107.16)	9417 (41.89)	5.72 (9.21)	2601	5.50	14th (5I) Gear			193 (89.2)	51 (10.6)	56 (13.3)	29.010 (97.962)
139.68 (104.16)	8185 (36.41)	6.40 (10.30)	2602	4.73	15th (4H) Gear			193 (89.2)	53 (11.7)	60 (15.6)	29.010 (97.962)
142.06 (105.93)	7161 (31.85)	7.44 (11.97)	2600	4.10	16th (5H) Gear			193 (89.2)	53 (11.7)	60 (15.6)	29.010 (97.962)
142.93 (106.58)	6637 (29.52)	8.08 (13.00)	2600	3.78	17th (6I) Gear			193 (89.2)	53 (11.7)	60 (15.6)	29.010 (97.962)

Department of Agricultural Engineering

Dates of Test: May 26 to June 2, 1978

Manufacturer: Massey-Ferguson Inc., 1901 Bell Avenue, Des Moines, Iowa 50315

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 50.4 (rating taken from oil company's typical inspection data) **Specific gravity converted to 60°/60° *(15°/15°)*** 0.8346 **Fuel weight** 6.949 lbs/gal *(0.835 kg/l)* **Oil SAE** 20-20W **API service classification** SB/SE-CA/CC **To motor** 5.406 gal *(20.464 l)* **Drained from motor** 4.879 gal *(18.469 l)* **Transmission and final drive lubricant** MF Permatran oil **Total time engine was operated** 44.5 hours

ENGINE Make Perkins Diesel **Type** V-8 **Serial No.** 640 UA 1554 **Crankshaft** lengthwise **Rated rpm** 2600 **Bore and stroke** 4.63" × 4.75" *(117.6 mm × 120.7 mm)* **Compression ratio** 16.0 to 1 **Displacement** 640 cu in *(10484 ml)* **Cranking system** 12 volt **Lubrication** pressure **Air cleaner** primary and secondary paper elements with aspirator **Oil filter** two full flow spin-on cartridges **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for transmission and hydraulic oil **Fuel filter** two parallel paper elements **Muffler** vertical **Cooling medium temperature control** 4 thermostats

CHASSIS: Type standard with duals **Serial No.** 9R 001001 **Tread width** rear 71" *(1803 mm)* to 161" *(4089 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 39.9" *(1013 mm)* Vertical distance above roadway 41.4" *(1051 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 1.3 *(2.1)* second 1.8 *(2.9)* third 1.8 *(2.9)* fourth 2.3 *(3.7)* fifth 2.5 *(4.0)* sixth 2.6 *(4.2)* seventh 3.2 *(5.1)* eighth 3.6 *(5.8)* ninth 3.7 *(6.0)* tenth 4.3 *(6.9)* eleventh 4.7 *(7.5)* twelfth 5.2 *(8.3)* thirteenth 5.9 *(9.6)* fourteenth 6.0 *(9.6)* fifteenth 6.6 *(10.7)* sixteenth 7.6 *(12.3)* seventeenth 8.3 *(13.3)* eighteenth 8.7 *(14.0)* nineteenth 10.6 *(17.1)* twentieth 12.1 *(19.5)* twenty-first 12.4 *(19.9)* twenty-second 15.5 *(25.0)* twenty-third 17.2 *(27.7)* twenty-fourth 22.1 *(35.5)* reverse 2.3 *(3.7)*, 3.2 *(5.1)*, 4.7 *(7.5)*, 6.6 *(10.7)* **Clutch** dual dry disc operated by foot pedal **Brakes** single wet disc power actuated and operated by two foot pedals which can be locked together **Steering** hydrostatic **Turning radius** (on concrete surface without 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 2090 engine rpm.

REPAIRS and ADJUSTMENTS: No repairs or adjustments.

LUGGING ABILITY IN RATED GEAR 14th (5I)

Crankshaft Speed rpm	2601	2341	2085	1816	1558	1299
Pull—lbs *(kN)*	9417 *(41.89)*	10031 *(44.62)*	10702 *(47.61)*	11083 *(49.30)*	11163 *(49.65)*	11002 *(48.94)*
Increase in Pull %	0	7	14	18	19	17
Power—Hp *(kW)*	143.70 *(107.16)*	137.19 *(102.30)*	129.76 *(96.76)*	116.57 *(86.92)*	100.71 *(75.10)*	82.75 *(61.70)*
Speed—Mph *(km/h)*	5.70 *(9.21)*	5.13 *(8.25)*	4.55 *(7.32)*	3.94 *(6.35)*	3.38 *(5.44)*	2.82 *(4.54)*
Slip %	5.50	5.96	6.27	6.72	6.72	6.72

TRACTOR SOUND LEVEL WITH CAB	dB(A)
Maximum Available Power—Two Hours	81.5
75% of Pull at Maximum Power—Ten Hours	82.0
50% of Pull at Maximum Power—Two Hours	81.0
50% of Pull at Reduced Engine Speed—Two Hours	80.5
Bystander in 23rd (8I) gear	96.0

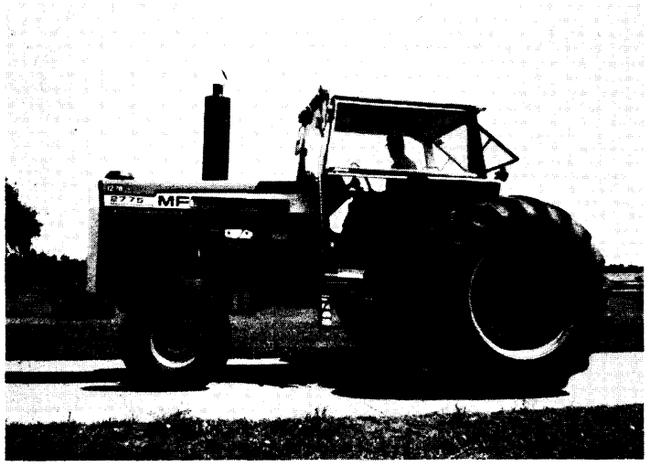
TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi *(kPa)*	Four 20.8-38; 10; 14 *(95)*	Four 20.8-38; 10; 14 *(95)*
Ballast	—Liquid (each)	1053 lb *(477 kg)*	None
	—Cast Iron (each)	None	None
Front Tires	—No., size, ply & psi *(kPa)*	Two 11.00-16; 8; 40 *(275)*	Two 11.00-16; 8; 40 *(275)*
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	None	None
Height of Drawbar		22 in *(560 mm)*	22 in *(560 mm)*
Static Weight with Operator—Rear		15400 lb *(6985 kg)*	11190 lb *(5075 kg)*
—Front		5040 lb *(2286 kg)*	5040 lb *(2286 kg)*
—Total		20440 lb *(9271 kg)*	16230 lb *(7361 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 174°F *(79.0°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 **1278.**

LOUIS I. LEVITICUS
Engineer-in Charge

G. W. STEINBRUEGGE, Chairman
W. E. SPLINTER
K. VON BARGEN
Board of Tractor Test Engineers



Massey-Ferguson 2775 Diesel

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