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January 1975

## Test 1171: Massey-Ferguson MF 285 Diesel 12-Speed

Nebraska Tractor Test Lab

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

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# NEBRASKA TRACTOR TEST 1171 — MASSEY-FERGUSON MF 285 DIESEL 12 SPEED

## POWER TAKE-OFF PERFORMANCE

Hp	Crankshaft speed rpm	Fuel Consumption		Hp-hr per gal	Temperature Degrees F			Barometer inches of Mercury	
		Gal per hr	Lb per hp-hr		Cooling medium	Air wet bulb	Air dry bulb		
<b>MAXIMUM POWER AND FUEL CONSUMPTION</b>									
<b>Rated Engine Speed—Two Hours (PTO Speed—1000 rpm)</b>									
81.96	2000	5.473	0.462	14.98	201	58	75	29.130	
<b>VARYING POWER AND FUEL CONSUMPTION—Two Hours</b>									
72.69	2082	4.737	0.451	15.35	186	59	75	.....	
0.00	2200	1.599	.....	.....	168	60	75	.....	
37.35	2135	3.051	0.565	12.24	168	59	75	.....	
82.50	2000	5.491	0.461	15.02	201	60	75	.....	
18.93	2177	2.332	0.853	8.12	167	60	74	.....	
54.74	2090	3.779	0.478	14.49	172	61	76	.....	
<b>Av</b>	<b>44.37</b>	<b>2114</b>	<b>3.498</b>	<b>0.546</b>	<b>12.68</b>	<b>177</b>	<b>60</b>	<b>75</b>	<b>29.130</b>

## DRAWBAR PERFORMANCE

Hp	Drawbar pull lbs	Speed miles per hr	Crankshaft speed rpm	Slip of drivers %	Fuel Consumption		Hp-hr per gal	Temp Degrees F			Barometer inches of Mercury
					Gal per hr	Lb per hp-hr		Cooling med	Air wet bulb	Air dry bulb	
<b>VARYING DRAWBAR POWER AND FUEL CONSUMPTION WITH BALLAST</b>											
<b>Maximum Available Power—Two Hours 7th Gear (1 Hi Lo MP)</b>											
69.46	5061	5.15	2000	7.44	5.407	0.540	12.85	191	56	64	29.115
<b>75% of Pull at Maximum Power—Ten Hours 7th Gear (1 Hi Lo MP)</b>											
56.08	3831	5.49	2082	5.24	4.348	0.537	12.90	173	61	65	28.595
<b>50% of Pull at Maximum Power—Two Hours 7th Gear (1 Hi Lo MP)</b>											
39.31	2590	5.69	2125	3.67	3.467	0.611	11.34	171	59	68	28.935
<b>50% of Pull at Reduced Engine Speed—Two Hours 9th Gear (2Hi Lo MP)</b>											
39.14	2578	5.69	1449	3.64	2.745	0.485	14.26	171	64	76	28.820

## MAXIMUM POWER WITH BALLAST

54.74	8846	2.32	2063	13.74	4th Gear (2 Lo Hi MP)		173	56	59	28.800
67.09	7901	3.18	1999	12.93	5th Gear (3 Lo Lo MP)		187	55	63	29.130
68.40	5856	4.38	2001	8.49	6th Gear (3 Lo Hi MP)		190	53	61	29.130
70.07	5096	5.16	1999	7.24	7th Gear (1 Hi Lo MP)		188	52	59	29.130
70.13	3819	6.89	2001	5.33	8th Gear (1 Hi Hi MP)		189	52	59	29.130
70.53	3405	7.77	2000	4.71	9th Gear (2 Hi Lo MP)		189	53	60	29.130

## VARYING DRAWBAR PULL AND TRAVEL SPEED WITH BALLAST 7th GEAR (1 Hi Lo MP)

Pounds Pull	5096	5443	5740	5825	5942	5768
Horsepower	70.07	66.89	62.43	55.44	48.27	39.00
Crankshaft Speed rpm	1999	1797	1599	1405	1200	996
Miles Per Hour	5.16	4.61	4.08	3.57	3.05	2.54
Slip of Drivers %	7.24	7.77	8.29	8.55	8.68	8.42

## TRACTOR SOUND LEVEL

	w/o cab dB(A)	w/cab dB(A)
Maximum Available Power—Two Hours	98.5	83.0
75% of Pull at Max. Power 10 Hours	97.5	82.0
50% of Pull at Max. Power 2 Hours	96.5	82.0
50% of Pull at Reduced Engine Speed 2 Hours	93.5	78.5
Bystander in 12th Gear (3 Hi Hi MP)	89.0	91.0

## TIRES, BALLAST AND WEIGHT

	With Ballast	Without Ballast
<b>Rear Tires</b>	Two 18.4-34; 6: 16	Two 18.4-34; 6: 16
Ballast	1079 lb each	None
Cast Iron	776 lb each	None
<b>Front Tires</b>	Two 9.5L-15; 6: 28	Two 9.5L-15; 6: 28
Ballast	None	None
Cast Iron	200 lb each	None
<b>Height of drawbar</b>	22 inches	23 inches
<b>Static weight with operator</b> —rear	8980 lb	5270 lb
front	2780 lb	2380 lb
total	11760 lb	7650 lb

The Agricultural Experiment Station  
Institute of Agriculture and Natural Resources  
University of Nebraska—Lincoln  
Roy G. Arnold, Director

Department of Agricultural Engineering

Dates of Test: April 2 to April 24, 1975  
Cab Sound Test #81-5, October 13, 1981

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

**FUEL, OIL AND TIME:** Fuel No. 2 Diesel Cetane No. 51.7 (rating taken from oil company's inspection data) Specific gravity converted to 60°/60° 0.8314 Weight per gallon 6.922 lb Oil SAE 20-20W API service classification SB/SE-CA/CC (MS-DM) To motor 2.888 gal Drained from motor 1.938 gal Transmission and final drive lubricant Massey-Ferguson oil M-1129A Total time engine was operated 48.5 hours

**ENGINE:** Make Perkins Diesel Type 4 cylinder vertical Serial No. 318 UA 20804 L Crankshaft Mounted lengthwise Rated rpm 2000 Bore and stroke 4.5" × 5.0" Compression ratio 17.5 to 1 Displacement 318 cu in Cranking system 12 volt electric Lubrication pressure Air cleaner two paper elements Oil filter full flow with replaceable pleated paper element Oil cooler radiator for transmission and hydraulic oil Fuel filter primary and secondary filters with replaceable paper elements Muffler vertical Cooling medium temperature control one thermostat.

**CHASSIS:** Type standard Serial No. 9A 210980 Tread width rear 60" to 96" front 56" to 80" Wheel base 88.8" 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 30.8" Vertical distance above roadway 36.6" Horizontal distance from center of rear wheel tread 0.4" to the left Hydraulic control system direct engine drive Transmission selective gear fixed ratio with partial (2) range operator controlled power shifting Advertised speeds mph first 1.4 second 1.8 third 2.0 fourth 2.6 fifth 3.7 sixth 4.8 seventh 5.6 eighth 7.3 ninth 8.2 tenth 10.7 eleventh 15.0 twelfth 19.6 reverse 1.9, 2.4, 7.6, and 9.9 Clutch single plate dry disc operated by foot pedal Brakes double disc operated by two foot pedals which can be locked together Steering hydrostatic Turning radius (on concrete surface with brake applied) right 134" left 149" (on concrete surface without brake) right 162" left 174" Turning space diameter (on concrete surface with brake applied) right 284" left 311" (on concrete surface without brake) right 340" left 361" Power take-off 1000 rpm at 2000 engine rpm and 540 rpm at 1718 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 procedure.

Six gears were chosen between tire tangential pull limit and 10 mph.

Fuel temperature at injection pump return was 169 degrees F.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. 1171.

LOUIS I. LEVITICUS  
Engineer-in-Charge

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

Board of Tractor Test Engineers