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January 1971

Test 1086: Massey-Ferguson MF 1500 Diesel

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 1086 – MASSEY-FERGUSON MF 1500 DIESEL

DRAWBAR PERFORMANCE

Hp	Draw-bar pull lbs	Speed miles per hr	Crank-shaft speed rpm	Slip of drivers %	Fuel Consumption Gal per hr	Lb per hp-hr	Hp-hr per gal	Temp Cool-ing med	Degrees F Air wet bulb	Air dry bulb	Barometer inches of Mercury
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VARYING DRAWBAR POWER AND FUEL CONSUMPTION WITH BALLAST

Maximum Available Power—Two Hours—5th Gear (Lo 3 Std)											
147.88	10477	5.29	2997	4.72	11.384	0.531	12.99	195	53	68	28.970

75% of Pull at Maximum Power—Ten Hours—5th Gear (Lo 3 Std)											
121.43	8186	5.56	3100	3.24	9.722	0.552	12.49	190	51	63	28.728

50% of Pull at Maximum Power—Two Hours—5th Gear (Lo 3 Std)											
84.91	5486	5.80	3196	2.11	7.787	0.633	10.90	193	54	72	28.905

50% of Pull at Reduced Engine Speed—Two Hours—8th Gear (Hi 1 Ov'D)											
85.23	5515	5.79	1916	2.15	5.795	0.469	14.71	199	50	61	28.890

MAXIMUM POWER WITH BALLAST

112.11	17295	2.43	3107	14.81	2nd Gear (Lo 1 Ov'D)			190	41	47	29.040
147.91	15448	3.59	2997	8.95	3rd Gear (Lo 2 Std)			197	52	68	29.010
152.94	13219	4.34	2996	6.39	4th Gear (Lo 2 Ov'D)			196	52	70	29.010
152.77	10809	5.30	2996	4.57	5th Gear (Lo 3 Std)			198	53	71	29.010
151.20	9006	6.30	2996	3.68	6th Gear (Lo 3 Ov'D)			200	54	73	29.010
153.85	7529	7.66	3001	2.76	7th Gear (Hi 1 Std)			198	54	73	29.010

MAXIMUM PULL WITHOUT BALLAST

136.14	14960	3.41	3028	14.98	3rd Gear (Lo 2 Std)			175	63	71	28.870
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VARYING DRAWBAR PULL AND TRAVEL SPEED WITH BALLAST 5th Gear (Lo 3 Std)

Pounds Pull	10809	11599	12028	12409	12722	13049	13103	12166
Horsepower	152.77	146.22	135.19	121.14	107.69	89.95	72.51	50.62
Crankshaft Speed rpm	2996	2688	2402	2094	1820	1487	1194	892
Miles Per Hour	5.30	4.73	4.21	3.66	3.17	2.58	2.08	1.56
Slip of Drivers %	4.57	5.16	5.31	5.60	6.03	6.32	6.32	5.74

TRACTOR SOUND LEVEL (with cab)

	dB(A)
Maximum Available Power 2 Hours	84.5
75% of Pull at Max. Power 10 Hours	88.5
50% of Pull at Max. Power 2 Hours	88.5
50% of Pull at Reduced Engine Speed 2 Hours	83.5
Bystander 12th Gear (Hi 3 Ov'D)	91.0

TIRES, BALLAST and WEIGHT

	With Ballast	Without Ballast
Rear tires	—No, size, ply & psi	Two 23.1-30; 8; 16
Ballast	—Liquid	1235 lb each
	Cast iron	290 lb each
Front tires	—No, size, ply & psi	Two 23.1-30; 8; 16
Ballast	—Liquid	None
	Cast iron	153 lb each

Height of drawbar	20 inches	21½ inches
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Static weight with operator—rear	9000 lb	5950 lb
front	11555 lb	11250 lb
total	20555 lb	17200 lb

Department of Agricultural Engineering

Dates of Test: November 2 to November 15, 1971

Manufacturer: MASSEY-FERGUSON INC., DETROIT, MICHIGAN

FUEL, OIL and TIME Fuel No 2 Diesel Cetane No 53.5 (rating taken from oil company's typical inspection data) Specific gravity converted to 60°/60° 0.8290 Weight per gallon 6.902 lb Oil SAE 20-20W API service classification MS DS To motor 2.416 gal Drained from motor 1.502 gal Transmission and final drive lubricant MF Special M-1129A and EP-90 Hypoid (MS M-2105B) Total time engine was operated 41 hours.

ENGINE Make Caterpillar Diesel Type eight cylinder Vee Serial No 98M1539 Crankshaft Mounted lengthwise Rated rpm 3000 Bore and stroke 4.5" x 4.5" Compression ratio 17 to 1 Displacement 573 cu in Cranking system 12 volt electric Lubrication pressure Air cleaner dry type with replaceable pleated paper element Oil filter full flow with two replaceable screw-on paper cartridges Oil Cooler engine coolant heat exchanger Fuel filter replaceable pleated screw-on cartridge Muffler was used Cooling medium temperature control two thermostats.

CHASSIS Type four wheel drive Serial No 9C001441 Tread width rear 68" to 88" front 68" to 88" Wheel base 120" 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 44.6" Vertical distance above roadway 40.8" Horizontal distance from center of rear wheel tread 0" to the right/left Hydraulic control system direct engine drive Transmission selective gear fixed ratio Advertised speeds mph first 2.26 second 2.66 third 3.80 fourth 4.48 fifth 5.37 sixth 6.31 seventh 7.61 eighth 8.95 ninth 12.85 tenth 15.06 eleventh 18.08 twelfth 21.25 reverse 1.5, 1.71, 5.88 and 6.75 Clutch single dry disc operated by a foot pedal Brakes internal expanding shoe actuated hydraulically by a foot pedal Steering hydrostatic Turning radius (on concrete surface without brake) right 204" left 204" Turning space diameter (on concrete surface without brake) right 431" left 431" Power take-off none.

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. First gear was not run as it was necessary to limit the pull in second gear due to excessive slippage. Eighth, ninth, tenth, eleventh and twelfth gears were not run as test procedure requires only six gears.

We, the undersigned, certify that this is a true and correct report of official Tractor Test 1086.

L. F. LARSEN

Engineer-in-charge

G. W. STEINBRUEGGE, Chairman

W. E. SPLINTER

D. E. LANE

Board of Tractor Test Engineers

The University of Nebraska Agricultural Experiment Station
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