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January 1973

## Test 1132: Massey-Ferguson 1105 Diesel

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# NEBRASKA TRACTOR TEST 1132 - MASSEY-FERGUSON 1105 DIESEL

## CORRECTED COPY

### 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—1100 rpm)</b>								
100.72	2200	6.798	0.474	14.82	188	68	75	28.620
<b>Standard Power Take-off Speed (1000 rpm)—One Hour</b>								
96.43	2000	6.251	0.455	15.43	187	69	75	28.600
<b>VARYING POWER AND FUEL CONSUMPTION—Two Hours</b>								
89.26	2300	6.456	0.508	13.83	186	70	75	.....
0.00	2380	2.185	.....	.....	177	70	74	.....
45.71	2342	4.339	0.666	10.53	180	70	75	.....
100.83	2200	6.828	0.475	14.77	187	70	75	.....
23.04	2362	3.194	0.973	7.21	177	70	75	.....
67.67	2320	5.327	0.552	12.70	182	70	75	.....
<b>Av 54.42</b>	<b>2317</b>	<b>4.721</b>	<b>0.609</b>	<b>11.53</b>	<b>181</b>	<b>70</b>	<b>75</b>	<b>28.600</b>

### DRAWBAR PERFORMANCE

Hp	Drawbar pull lbs	Speed miles per hr	Crankshaft speed rpm	Fuel Consumption			Hp-hr per gal	Temp Degrees F			Barometer inches of Mercury
				Slip of drivers %	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—5th Gear (3 Lo Lo MP)</b>											
83.52	7209	4.34	2200	8.17	6.751	0.567	12.37	189	66	79	28.950
<b>75% of Pull at Maximum Power—Ten Hours—5th Gear (3 Lo Lo MP)</b>											
68.95	5538	4.67	2305	5.75	5.967	0.607	11.55	186	70	81	28.830
<b>50% of Pull at Maximum Power—Two Hours—5th Gear (3 Lo Lo MP)</b>											
47.37	3682	4.82	2334	3.93	4.827	0.715	9.81	183	71	87	28.910
<b>50% of Pull at Reduced Engine Speed—Two Hours—7th Gear (1 Hi Lo MP)</b>											
46.88	3639	4.83	1747	4.01	3.776	0.565	12.41	184	71	81	28.835
<b>MAXIMUM POWER WITH BALLAST</b>											
74.36	11365	2.45	2284	14.89	2nd Gear (1 Hi Lo MP)		187	69	78	28.850	
80.73	9987	3.03	2202	12.85	3rd Gear (2 Lo Lo MP)		188	65	75	28.970	
82.05	7674	4.01	2199	8.52	4th Gear (2 Lo Hi MP)		188	65	75	28.970	
86.26	7415	4.36	2200	7.75	5th Gear (3 LoLo MP)		190	65	75	28.970	
86.01	5381	5.99	2200	5.34	7th Gear (1 Hi Lo MP)		188	64	74	28.970	
81.69	3165	9.68	2202	3.12	9th Gear (2 Lo Lo MP)		189	65	76	28.960	
<b>VARYING DRAWBAR PULL AND TRAVEL SPEED WITH BALLAST</b>											
<b>5th Gear (3 Lo Lo MP)</b>											
Pounds Pull			7415	7921	8453	8932	9034	8593			
Horsepower			86.26	82.09	77.01	70.78	61.05	49.07			
Crankshaft Speed rpm			2200	1978	1754	1541	1318	1105			
Miles Per Hour			4.36	3.89	3.41	2.97	2.53	2.14			
Slip of Drivers %			7.75	8.59	9.28	10.37	10.64	9.97			

### TRACTOR SOUND LEVEL (with cab)

	db (A)
Maximum Available 2 Hours	85.0
75% of Pull at Max. Power 10 Hours	82.5
50% of Pull at Max. Power 2 Hours	83.0
50% of Pull at Reduced Engine Speed 2 Hours	81.0
Bystander 12 Gear (3 Hi Hi MP)	87.0

<b>TIRES, BALLAST AND WEIGHT</b>		With Ballast	Without Ballast
<b>Rear Tires</b>	—No., size, ply & psi	Two 18.4-38;10;24	Two 18.4-38;10;24
<b>Ballast</b>	—Liquid	1193 lb each	None
	—Cast Iron	1000 lb each	None
<b>Front Tires</b>	—No., size, ply & psi	Two 11.00-16;6;28	Two 11.00-16;6;28
<b>Ballast</b>	—Liquid	None	None
	—Cast Iron	None	None
<b>Height of drawbar</b>		20½ inches	21½ inches
<b>Static weight with operator—Rear</b>		12835 lb	8450 lb
	Front	3890 lb	3870 lb
	Total	16725 lb	12320 lb

### Department of Agricultural Engineering

Dates of Test: May 29 to June 8, 1973

Manufacturer: MASSEY-FERGUSON, INC., DETROIT, MICHIGAN

**FUEL, OIL AND TIME** Fuel No 2 Diesel Cetane No 50.1 (rating taken from oil company's typical inspection data) Specific gravity converted to 60°/60° 0.8427 Weight per gallon 7.017 lb Oil SAE 20-20W API service classification SB/SE-CA/CD (Formerly MS DS) To motor 3.940 gal Drained from motor 3.191 gal Transmission and final drive lubricant Massey-Ferguson Oil M-1127 Total time engine was operated 47 hours.

**ENGINE** Make Perkins Diesel Type 6 cylinder vertical with turbo-charger Serial No 354UA684TS Crankshaft Mounted lengthwise Rated rpm 2200 Bore and stroke 3.875" x 5.0" Compression ratio 16 to 1 Displacement 354 cu in Cranking system 12 volt electric Lubrication pressure Air cleaner dual dry type with replaceable pleated paper element 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 pleated paper element Muffler was used Cooling medium temperature control thermostat.

**CHASSIS** Type Standard Serial No 9B 37859 Tread width rear 60" to 100" front 60" to 88" Wheel base 109" 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 41.3" Vertical distance above roadway 33.3" Horizontal distance from center of rear wheel tread 0" to the right/left Hydraulic control system direct engine drive Transmission selective gear fixed ratio with partial range operator controlled power shifting Advertised speed mph first 2.2 second 2.7 third 3.4 fourth 4.3 fifth 4.6 sixth 5.8 seventh 6.2 eighth 7.8 ninth 9.8 tenth 12.3 eleventh 13.3 twelfth 16.7 reverse 1.8, 2.2, 5.1, & 6.4 Clutch single plate dry disc operated by foot pedal Brakes double disc hydraulically actuated by two foot pedals which can be locked together Steering hydrostatic Turning radius (on concrete surface with brake applied) right 144" left 144" (on concrete surface without brake) right 168" left 168" Turning space diameter (on concrete surface with brake applied) right 288" left 288" (on concrete surface without brake) right 336" left 336" Power take-off 1000 rpm at 2000 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.

First gear was not run as it was necessary to limit the pull in second gear to avoid excessive wheel slippage.

Sixth, tenth, eleventh and twelfth gears were not run as test procedure requires only six travel speeds.

We, the undersigned, certify that this is a true and correct report of official Tractor Test 1132.

L. F. LARSEN

Engineer-in-Charge

G. W. STEINBRUEGGE, Chairman

W. E. SPLINTER

D. E. LANE

Board of Tractor Test Engineers