

*Tractor Test and Power Museum, The Lester F. Larsen*

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University of Nebraska - Lincoln

Year 1955

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Test 537: McCormick Farmall Model 100

Tractor Museum

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

Department of Agricultural Engineering  
Dates of test: April 18 to April 29, 1955  
Manufacturer: INTERNATIONAL HARVESTER  
COMPANY, CHICAGO, ILLINOIS  
Manufacturer's rating: Drawbar 18.5 Hp, Belt 21.0 Hp  
(Corrected to standard conditions)

NEBRASKA TRACTOR TEST NO. 537

McCORMICK FARMALL 100

**BELT HORSEPOWER TESTS**

Hp	Crank shaft speed rpm	Fuel Consumption			Water used gal per hour	Temp Deg F		Barometer inches of mercury		
		Gal per hour	Hp-hr per gal	Lb per hp-hour		Cooling med	Air			
<b>TEST B—100% MAXIMUM LOAD—TWO HOURS</b>										
20.13	1401	2.057	9.79	0.618	0.00	175	67	28.773		
<b>TEST C—OPERATING MAXIMUM LOAD—ONE HOUR</b>										
18.34	1401	1.675	10.95	0.553	0.00	174	73	28.520		
<b>TEST D—RATED LOAD—ONE HOUR</b>										
17.95	1400	1.720	10.44	0.580	0.00	174	71	28.500		
<b>TEST E—VARYING LOAD—TWO HOURS (20 minute runs; last line average)</b>										
17.96	1400	1.720	10.44	0.580	...	173	71	.....		
1.48	1583	0.853	1.74	3.486	...	185	70	.....		
9.62	1491	1.309	7.35	0.823	...	180	70	.....		
17.18	1299	1.557	11.03	0.548	...	175	69	.....		
5.01	1549	1.046	4.79	1.263	...	184	69	.....		
14.03	1453	1.581	8.87	0.682	...	183	70	.....		
10.88	1462	1.344	8.10	0.748	0.00	180	70	28.490		
<b>TORQUE (At Dynamometer)</b>										
Eng rpm	1396	1319	1246	1176	1104	1025	949	872	795	727
Lb-ft	137.4	138.1	140.9	143.2	145.4	146.7	146.5	144.6	142.6	140.9
Dyn rpm	696	657	621	586	549	510	472	434	396	361

**DRAWBAR HORSEPOWER TESTS**

Hp	Draw bar pull lb	Speed miles per hr	Crank shaft speed rpm	Slip of drive wheels %	Fuel Consumption			Water used gal per hour	Temp Deg F		Barometer inches of mercury
					Gal per hour	Hp-hr per gal	Lb per hp-hr		Cooling med	Air	
<b>TEST H—RATED LOAD—TEN HOURS—2nd Gear</b>											
14.52	1376	3.96	1400	4.41	1.603	9.06	0.668	0.00	178	75	28.449
<b>TEST F—100% MAXIMUM LOAD</b>											
17.83	1719	3.89	1400	5.95	2nd Gear	.....	.....	0.00	176	79	28.600
<b>TEST G—OPERATING MAXIMUM LOAD</b>											
15.76	2503	2.36	1400	9.47	1st Gear	.....	.....	0.00	171	84	28.380
16.45	1564	3.94	1401	4.79	2nd Gear	.....	.....	0.00	172	83	28.390
16.01	1142	5.26	1399	34.1	3rd Gear	.....	.....	0.00	173	84	28.400
14.53	488	11.16	1401	1.38	4th Gear	.....	.....	0.00	180	79	28.620
<b>TEST J—OPERATING MAXIMUM LOAD</b>											
16.19	1594	3.81	1404	9.45	2nd Gear	.....	.....	0.00	170	69	29.180
<b>TEST K—OPERATING MAXIMUM LOAD</b>											
13.33	1593	3.14	1402	16.64	2nd Gear (Part Throttle)	.....	.....	0.00	170	75	29.150

**TIRES, WHEELS AND WEIGHT**

	Tests F, G, & H	Test J	Test K
<b>Rear wheels</b>	Pressed steel & cast iron	Pressed steel & cast iron	Pressed steel & cast iron
Type			
Liquid ballast	370 lb each	None	None
Added cast iron	280 lb each	None	None
<b>Rear tires</b>			
No. and size	Two 11-24	Two 11-24	Two 9-24
Ply	4	4	4
Air pressure	12 lb	12 lb	12 lb
<b>Front wheels</b>			
Type	Cast iron	Cast iron	Cast iron
Liquid ballast	None	None	None
Added cast iron	None	None	None
<b>Front tires</b>			
No. and size	Two 5.00-15	Two 5.00-15	Two 5.00-15
Ply	4	4	4
Air pressure	28 lb	28 lb	28 lb
<b>Height of drawbar</b>	19 inches	21 inches	17½ inches
<b>Static weight</b>			
Rear end	3166 lb	1867 lb	1800 lb
Front end	992 lb	996 lb	988 lb
<b>Total weight as tested with operator</b>	4333 lb	3038 lb	2963 lb

**FUEL, OIL and TIME** Gasoline Octane No. ASTM 80.8 Research 85.9 (rating taken from oil company's typical inspection data); weight per gallon 6.052 lb OIL SAE 20; to motor 1.101 gal; drained from motor 0.864 gal; Total time motor was operated 46 hours.

**CHASSIS** Type Standard Serial No. 2643 Tread width rear 40" to 68" front 44" to 70" Wheel base 71" Hydraulic control system direct engine drive Advertised speeds mph first 2.32 second 3.68 third 4.84 fourth 10.05 reverse 2.90 Belt pulley diam 8½" face 6" rpm 1157 Belt speed 2574 fpm Clutch single plate dry disc operated by foot pedal Seat upholstered seat on leaf springs. Brakes contracting band Equalized by locking pedals together Power take-off conventional type.

**ENGINE** Make International Harvester Type 4 cylinder vertical Serial No. ECM204711 Crankshaft mounted lengthwise Head I Lubrication pressure Bore and stroke 3½" x 4" Rated rpm 1400 Compression ratio 6.5 to 1 Displacement 123 cu. in. Port diameter valves inlet 13/16" exhaust 1" Governor variable speed centrifugal Carburetor size ¾" Ignition system battery Starting system 6 volt battery Air cleaner oil washed wire screen Muffler was used Oil filter replaceable radial fin treated paper element Cooling medium temperature control thermostat and shutter.

**REPAIRS AND ADJUSTMENTS** No repairs or adjustments.

**REMARKS** All test results were determined from observed data and without allowances, additions or deductions. Tests B and F were made with carburetor set for 100% maximum belt horsepower and data from these tests were used in determining the horsepower to be developed in tests D and H, respectively. Tests C, D, E, G, H, J & K were made with an operating setting of the carburetor (selected by the manufacturer) of 92.5% of maximum belt horsepower.

**HORSEPOWER SUMMARY**

- |  | Drawbar | Belt  |
|--|---------|-------|
| 1. Sea level (calculated) maximum horsepower (based on 60°F and 29.92" HG)   | 18.99   | 21.07 |
| 2. Observed maximum horsepower (tests F and B)   | 17.83   | 20.13 |
| 3. Seventy-five per cent of calculated maximum drawbar horsepower and eighty-five per cent of calculated maximum belt horsepower (formerly ASAE and SAE ratings) | 14.24   | 17.91 |

We, the undersigned, certify that this is a true and correct report of official tractor test No. 537.

L. F. LARSEN  
Engineer-in-Charge

C. W. SMITH  
L. W. HURLBUT  
F. D. YUNG  
Board of Tractor  
Test Engineers