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Test 437: Minneapolis-Moline G

Nebraska Tractor Test Laboratory Submitted by Larsen Museum
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BELT HORSEPOWER TESTS

Hp	Crank shaft speed rpm	Fuel Consumption			Water used gal per hour	Temp Deg F		Barometer in Hg
		Gal per hour	Hp-hr per gal	Lb per hp-hour		Cooling med	Air	
TEST B—100% MAXIMUM LOAD—TWO HOURS								
58.03	1100	5.276	11.00	0.552	0.03	163	54	29.010
TEST C—OPERATING MAXIMUM LOAD—ONE HOUR								
55.94	1099	4.893	11.43	0.531	0.02	168	63	28.985
TEST D—RATED LOAD—ONE HOUR								
50.64	1100	4.575	11.07	0.548	0.01	168	64	28.975
TEST E—VARYING LOAD—TWO HOURS (20 minute runs; last line average)								
50.61	1100	4.552	11.12	0.546	...	167	64
1.17	1211	2.012	0.58	10.436	...	150	65
26.77	1158	3.198	8.37	0.725	...	156	64
53.84	1060	4.755	11.32	0.536	...	171	66
13.86	1195	2.639	5.25	1.156	...	152	64
39.05	1127	3.885	10.05	0.604	...	160	63
30.88	1142	3.507	8.81	0.689	0.02	159	64	28.945

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	
TEST F—100% MAXIMUM LOAD—3rd GEAR											
49.53	4769	3.89	1104	7.89	Not Recorded			172	70	28.845	
TEST G—OPERATING MAXIMUM LOAD											
36.30	6410	2.12	1101	16.61	Not Recorded			160	69	28.830	
48.17	5558	3.25	1101	9.77	" "			163	67	28.835	
48.60	4687	3.89	1101	7.76	" "			169	68	28.840	
48.92	3174	5.78	1103	4.86	" "			166	68	28.840	
42.63	1162	13.76	1099	2.35	" "			163	71	28.825	
TEST H—RATED LOAD—TEN HOURS—3rd GEAR											
39.20	3715	3.96	1100	6.00	4.034	9.72	0.625	0.02	169	77	28.790
TEST J—OPERATING MAXIMUM LOAD—3rd GEAR											
37.31	3945	3.55	1098	15.97	Not Recorded			160	65	28.780	

FUEL, OIL and TIME Gasoline octane No ASTM 76 Research 82 (rating taken from oil company's typical inspection data); weight per gal 6.070 lb Oil SAE 30; to motor 2.450 gal; drained from motor 2.170 gal Total time motor was operated 44½ hours.

CHASSIS Type standard Serial No 0164900686 Tread width rear 62" front 53¼" Wheel Base 82½" Hydraulic control system direct engine drive Advertised speeds, mph first 2.5 second 3.5 third 4.1 fourth 6.0 fifth 13.8 reverse 2.0 Belt pulley diam 16" face 7" rpm 627 Belt speed 2630 fpm Clutch single plate over center hand operated Seat swinging seat with air cushion and padded back rest Brakes internal expanding shoe operated by foot pedal for each and master brake pedal Equalized by linkage adjustment Power take-off standard type

ENGINE Make Minneapolis-Moline Type 4 cylinder vertical Serial No 0204000646 Crankshaft mounted lengthwise Head I Lubrication pressure Bore and Stroke 4¼ x 6" Rated rpm 1100 Compression ratio 5.38-1 Displacement 403.2 cu in Port Diameter Valves inlet 1½" exhaust 1½" Governor fly ball variable speed Carburetor Size 1¼" Ignition System 6 volt battery Air Cleaner oil washed wire screen Muffler used Oil Filter with replaceable cartridge Cooling medium temperature control thermostat.

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 and J were made with an operating setting of the carburetor (selected by the manufacturer) of 97% of maximum belt horsepower.

TIRES, WHEELS and WEIGHT

	Tests F, G & H	Test J	Test K
Rear wheels	Cast iron	Cast iron	
Type			
Liquid ballast	547 lb each	None	
Added cast iron	1230 lb each	None	
Rear tires	Two 14-34	Two 14-34	
No. and size			
Ply	6	6	
Air pressure	16 lb	12 lb	
Front wheels	Cast iron	Cast iron	
Type			
Liquid ballast	None	None	
Added cast iron	85 lb each	None	
Front tires	Two 7.50-18	Two 7.50-18	
No. and size			
Ply	4	4	
Air pressure	28 lb	28 lb	
Height of drawbar	15½ inches	16 inches	
Static weight			
Rear end	8328 lb	4774 lb	
Front end	2442 lb	2271 lb	
Total weight as tested with operator	10,955 lb	7230 lb	

No smaller tires suggested by manufacturer.

HORSEPOWER SUMMARY

	Draw-bar	Belt
1. Sea level (calculated) maximum horsepower (based on 60° F. and 29.92" Hg)	51.87	59.50
2. Observed maximum horsepower (tests F and B)	49.53	58.03
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)	38.90	50.58

We, the undersigned, certify that this is a true and correct report of official tractor test No. 437.

L. F. Larsen
Engineer in Charge

C. W. Smith
F. D. Yung
L. W. Hurlbut
Board of Tractor
Test Engineers