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January 1949

Test 428: Massey-Harris Model 55K STD

Nebraska Tractor Test Lab

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Department of Agricultural Engineering

Dates of test: October 3, 1949 to October 14, 1949

Manufacturer: MASSEY-HARRIS COMPANY, Racine Wisconsin

Manufacturer's rating: Not Rated

The Experiment Station
University of Nebraska College of Agriculture
W. V. Lambert, Director, Lincoln, Nebraska

NEBRASKA TRACTOR TEST NO. 428

MASSEY-HARRIS 55K STD.

BELT HORSE POWER TESTS

H. P.	Crank shaft speed R.P.M.	Fuel Consumption			Water used Gal. per hour	Temp. Deg. F.		Barometer Inches of Mercury
		Gal. per hour	H.P. hr. per gal.	Lb. per H.P. hour		Cooling med.	Air	
TEST B—100% MAXIMUM LOAD—TWO HOURS								
52.17	1350	5.320	9.81	0.682	0.00	180	64	28.755
TEST C—OPERATING MAXIMUM LOAD—ONE HOUR								
49.09	1350	4.285	11.46	0.584	0.00	177	61	28.765
*TEST D—ONE HOUR								
46.44	1351	4.197	11.07	0.604	0.00	175	60	28.810
TEST E—VARYING LOAD—TWO HOURS (20 minute runs; last line average)								
46.56	1355	4.208	11.06	0.604	- --	175	61	-- ---
1.57	1512	1.391	1.13	5.924	- --	189	63	-- ---
24.88	1439	2.611	9.53	0.702	- --	174	61	-- ---
48.30	1318	4.190	11.53	0.580	- --	177	62	-- ---
12.77	1475	1.965	6.50	1.029	- --	186	60	-- ---
36.42	1405	3.310	11.00	0.608	- --	170	60	-- ---
28.42	1417	2.946	9.65	0.693	0.00	179	61	28.840

DRAWBAR HORSE POWER TESTS

H. P.	Draw bar pull Lbs.	Speed miles per hr.	Crank shaft speed R. P. M.	Slip of drive wheels %	Fuel Consumption			Water used Gal. per hr.	Temp. Deg. F.		Barometer Inches of Mercury
					Gal. per hour	Hp.-hr. per Gal.	Lb. per Hp.-hr.		Cool- ing med.	Air	
TEST F—100% MAXIMUM LOAD— 3rd GEAR											
47.64	3588	4.98	1352	5.91	Not Recorded				180	61	28.830
TEST G—OPERATING MAXIMUM LOAD											
38.10	5546	2.58	1352	14.34	Not Recorded				176	61	28.820
44.69	4222	3.97	1351	7.27	" "				177	60	28.820
4.79	3362	5.00	1350	5.45	" "				178	61	28.820
39.97	1256	11.94	1349	2.26	" "				178	61	28.820
*TEST H—TEN HOURS— 3rd GEAR											
37.25	2782	5.02	1350	5.01	3.667	10.16	0.658	0.00	173	61	28.941
TEST J—OPERATING MAXIMUM LOAD— 3rd GEAR											
43.40	3325	4.89	1350	7.56	Not Recorded				166	70	28.920

TIRES, WHEELS and WEIGHT

Tests F, G & H			Test J	
Rear Wheel: Type (each)	Cast Iron		Cast Iron	
Liquid Ballast	699 lb		None	
Added Cast Iron	420 lb		None	
Rear Tires: No., Size and Ply	2 14-34 6 ply		2 14-34 6 ply	
Type of Tread	Champion Ground Grip		Champion Ground Grip	
Make	Firestone		Firestone	
Air Pressure	14 lb		12 lb	
Front Wheel: Type and Weight (each)	Cast Iron		Cast Iron	
Liquid Ballast	None		None	
Added Cast Iron	None		None	
Front Tires: No., Size and Ply	2 7.50-18 4 ply		2 7.50-18 4 ply	
Type of Tread	Triple rib		Triple rib	
Make	Goodyear		Goodyear	
Air Pressure	28 lb		28 lb	
Height of Drawbar	16 1/2 inches		17 inches	
Static Weight: Rear End	7078 lb		4840 lb	
Front End	2251 lb		2250 lb	
al Weight as Tested (With operator)	9504 lb		7265 lb	

* Formerly called RATED LOAD, see horsepower summary.

FUEL, OIL and TIME Fuel: Tractor fuel, octane 41.5 (octane rating taken from oil company's typical inspection data); weight per gallon 6.688 lb. Oil: SAE 10-10W; to motor 1.974 gal; drained from motor 2.016 gal. Total time motor was operated 40 hours.

SPECIFICATIONS Type standard; Serial No. 55-KS2451; Drive enclosed gear. Tread Width: Rear 57"; Front 52". Wheel Base 89". Hydraulic Lift Control not available. Advertised speeds, mph: First 2.96; Second 4.22; Third 5.22; Fourth 12.07; Reverse 2.54. Belt Pulley: Diam 16"; Face 8"; RPM 730; Belt Speed 3059 fpm. Clutch: Make Borg & Beck; Type dry disc; Operated by foot pedal. Seat Monroe. Brakes: Make own; Type internal expanding band; Location differential brake shaft driven by master gear; Gear Reduction (brake drum to rear wheel) 6.545:1; Operated by foot pedals; Locked by latches; Equalization none.

ENGINE Make own; Serial No. MJA382K8711; Type 4 cylinder vertical; Head I; Mounting crankshaft lengthwise; Lubrication pressure; Bore and Stroke 4 1/2" x 6"; Rated RPM 1350; Compression Ratio 4.5:1. Port Diameter Valves: Inlet 1.609; Exhaust 1.489. Governor: Make own; Type centrifugal, variable speed. Carburetor: Make Zenith; Model 62 AJ 10; Size 1 1/4". Starter Auto-Lite. Generator Auto-Lite. Distributor and Coil Auto-Lite. Battery Exide. Air Cleaner: Make Donaldson; Type oil washed wire screen. Oil Filter: Make Purolator; Type replaceable paper element. Cooling medium temperature control: Thermostat and radiator shutter.

REPAIRS AND ADJUSTMENTS Two spark plugs were replaced during test "D" because engine began to miss fire.

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 93.8% of maximum belt horsepower.

HORSEPOWER SUMMARY

	Draw- bar	Belt
1. Sea level (calculated) maximum horsepower (based on 60° F. and 29.92" Hg.)	49.49	54.49
2. Observed maximum horsepower (tests F & B)	47.64	52.17
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)	37.12	46.32

We, the undersigned, certify that this is a true and correct report of official tractor test No. 428.

L. F. Larsen
Engineer in Charge

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