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January 1937

## Test 294: Massey-Harris Twin Power Pacemaker

Nebraska Tractor Test Lab

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

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UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT  
 AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 294

Dates of test: October 25 to November 16, 1937.

Name and model of tractor: MASSEY-HARRIS TWIN POWER PACEMAKER

Manufacturer: Massey-Harris Company, Racine, Wisconsin.

Manufacturer's rating: NOT RATED.

B R A K E H O R S E P O W E R T E S T S

H. P.	Crank shaft speed R.P.M.	Fuel Consumption			Water Consumption per hour gallons			Temp. Deg. F.		Barometer Inches of Mercury
		Gal. per hr.	H. P. hr. per gal.	Lb. per H. P. hr.	Cool- ing	In fuel	Total	Cool- ing med.	Air	

1200 R.P.M.

TEST B - 100% MAXIMUM LOAD - TWO HOURS

36.83	1200	3.616	10.19	0.598	0.000	0.000	0.000	180	59	29.430
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TEST C - OPERATING MAXIMUM LOAD - ONE HOUR

35.87	1201	3.356	10.69	0.570	0.000	0.000	0.000	180	63	29.430
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\*TEST D - ONE HOUR

31.94	1199	3.007	10.62	0.573	0.000	0.000	0.000	176	62	29.440
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TEST E - VARYING LOAD - TWO HOURS (20 minute runs; last line average)

32.05	1199	3.005	10.67	0.571	--	--	--	176	62	--
0.66	1303	1.601	0.41	14.773	--	--	--	154	60	--
16.80	1254	2.345	7.16	0.850	--	--	--	168	60	--
33.11	1130	3.143	10.53	0.578	--	--	--	175	59	--
8.69	1271	2.015	4.31	1.412	--	--	--	168	62	--
24.61	1228	2.571	9.57	0.636	--	--	--	172	64	--
19.32	1231	2.447	7.90	0.771	0.000	0.000	0.000	169	61	29.435

1400 R.P.M.

TEST B - 100% MAXIMUM LOAD - TWO HOURS

42.13	1401	4.154	10.14	0.600	0.000	0.000	0.000	185	68	29.360
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TEST C - OPERATING MAXIMUM LOAD - ONE HOUR

41.51	1401	3.847	10.79	0.564	0.000	0.000	0.000	178	62	29.385
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\*TEST D - ONE HOUR

36.88	1402	3.529	10.45	0.583	0.000	0.000	0.000	172	59	29.385
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TEST E - VARYING LOAD - TWO HOURS (20 minute runs; last line average)

36.85	1404	3.527	10.45	0.583	--	--	--	172	60	--
0.74	1508	1.818	0.41	14.959	--	--	--	163	56	--
19.35	1465	2.571	7.53	0.809	--	--	--	170	57	--
39.11	1356	3.768	10.38	0.587	--	--	--	175	61	--
9.89	1489	2.202	4.49	1.356	--	--	--	167	56	--
28.34	1447	3.069	9.23	0.659	--	--	--	170	62	--
22.38	1445	2.826	7.92	0.769	0.000	0.000	0.000	169	59	29.400

\*Formerly called RATED LOAD; See REMARKS 4, page 4.

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D R A W B A R H O R S E P O W E R T E S T S

STEEL WHEELS

H. P.	Draw bar pull pounds	Speed miles per hr.	Crank shaft speed R.P.M.	Slip on drive wheels %	Fuel Consumption			Water used Gal. per hr.	Temp. Deg. F.		Barometer Inches of Mercury
					Gal. per hr.	H. P. hr. gal.	Lb. per H.P. hr.		Cool- ing med.	Air	

TEST F - 100% MAXIMUM LOAD - Second GEAR

26.26	2720	3.62	1201	8.42	----	Not Recorded	----	173	57	28.950
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TEST G - OPERATING MAXIMUM LOAD

24.37	3555	2.57	1202	11.80	----	Not Recorded	----	169	65	28.810
26.17	2669	3.68	1199	6.86	----	"	"	178	65	29.000
25.10	2025	4.65	1203	5.59	----	"	"	180	67	29.000
18.77	700	10.06	1203	1.65	----	"	"	181	73	29.000

\*TEST H - TEN HOURS - Second GEAR

20.26	2048	3.71	1200	5.50	3.038	6.67	0.903	0.000	168	60	29.060
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FUEL ECONOMY TEST - FOUR HOURS - Third GEAR

19.72	1595	4.64	1201	5.11	3.059	6.45	0.934	0.000	167	52	28.970
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RUBBER TIRES

TEST G - OPERATING MAXIMUM LOAD

19.23	3236	2.23	1201	14.37	----	Not Recorded	----	168	62	28.400
25.83	3164	3.06	1203	13.45	----	"	"	171	62	28.375
30.58	2864	4.00	1203	8.94	----	"	"	170	45	28.650
29.63	1254	8.86	1203	3.06	----	"	"	170	47	28.690

FUEL ECONOMY TESTS - FOUR HOURS EACH - Second and Third GEARS

20.12	2282	3.31	1201	6.37	2.485	8.10	0.743	0.000	166	32	28.860
24.01	2173	4.14	1201	5.62	2.871	8.36	0.720	0.000	167	50	28.695

\*Formerly called RATED LOAD; see REMARKS 4, page 4.

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FUEL, OIL, AND TIME

Fuel Gasoline (68-70 octane) Weight per gal. (Belt 6.09 pounds  
(Drawbar 6.02 pounds  
Oil: S.A.E. No. 20 To motor 4.344 gal; Drained from motor 1.965 gal.  
Total time motor was operated 93 hours

BRIEF SPECIFICATIONS

Advertised speeds, miles per hour (steel wheels): First 2.4  
Second 3.3 Third 4.1 Fourth 8.5 Reverse 3.0

Belt pulley: Diam. 12" Face 6 1/4" R.P.M. 832, 969

Clutch: Make Twin Disc Type Single-plate, dry Operated by Hand  
Seat Pressed steel

Total weight as tested (with operator) (Steel 4090 pounds  
(Rubber 5250 pounds

MOTOR: Make Own Serial No. 109067 Type 4 cylinder, vertical

Head I Mounting Crankshaft lengthwise Lubrication Pressure

Bore and stroke: 3 7/8" x 5 1/4" Rated R.P.M. (Drawbar 1200  
(Belt 1200, 1400

Port diameter valves: Inlet 1.375" Exhaust 1.5"

Magneto: Make American Bosch Model MJB4A - 306

Carburetor: Make Zenith Model 62-AX9 Size 1 1/8"

Governor: Make Kingston Type Variable-speed, centrifugal

Air Cleaner: Make Donaldson Type Oil-washed, wire screen filter

CHASSIS: Type Standard Serial No. 109538 Drive Enclosed gear

Tread width: Rear 46" Front 44"

Steel: Drive wheels: Type Standard No. 2 Diameter 44" Face 10"

Lugs: Type Spade No. per wheel 24 Size 5" high x 2 1/2" wide

Front wheels: Type Standard No. 2 Diameter 28" Face 5"

Rubber: Rear tires: No. 2 Size 12.75" x 24" Air pressure 16 pounds

Front tires: No. 2 Size 6" x 16" Air pressure 24 pounds

Added weight per wheel : Iron 725 pounds Water 300 pounds

## REPAIRS AND ADJUSTMENTS

REMARKS

- We, the undersigned, certify that the above is a true and correct report of official tractor test No. 294.

L. W. Hurlbut  
Board of Tractor Test Engineers