

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

Nebraska Tractor Tests

Tractor Test and Power Museum, The Lester F. Larsen

January 1939

Test 318: Massey-Harris Model "101" R Junior

Nebraska Tractor Test Lab

University of Nebraska-Lincoln, tractortestlab@unl.edu

Follow this and additional works at: <https://digitalcommons.unl.edu/tractormuseumlit>



Part of the [Energy Systems Commons](#), [History of Science, Technology, and Medicine Commons](#), [Other Mechanical Engineering Commons](#), [Physical Sciences and Mathematics Commons](#), [Science and Mathematics Education Commons](#), and the [United States History Commons](#)

Nebraska Tractor Test Lab, "Test 318: Massey-Harris Model "101" R Junior" (1939). *Nebraska Tractor Tests*. 914.

<https://digitalcommons.unl.edu/tractormuseumlit/914>

This Article is brought to you for free and open access by the Tractor Test and Power Museum, The Lester F. Larsen at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Nebraska Tractor Tests by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT
 AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 318

Dates of test: May 22 to 26, 1939.

Name and model of tractor: MASSEY-HARRIS "101" R JUNIOR

Manufacturer: The Massey-Harris Company, Racine, Wisconsin.

Manufacturer's rating: NOT RATED.

B E L T 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 used gal. per hr.	Temp. Deg. F.		Barometer Inches of Mercury
		Gal. per hr.	H. P. hr. per gal.	Lb. per H. P. hr.		Cool- ing med.	Air	

TEST B - 100% MAXIMUM LOAD - TWO HOURS

26.27	1800	2.414	10.88	0.561	0.000	175	77	28.600
-------	------	-------	-------	-------	-------	-----	----	--------

TEST C - OPERATING MAXIMUM LOAD - ONE HOUR

25.39	1800	2.255	11.26	0.543	0.000	191	91	28.655
-------	------	-------	-------	-------	-------	-----	----	--------

*TEST D - ONE HOUR

23.78	1798	2.129	11.17	0.547	0.000	191	96	28.670
-------	------	-------	-------	-------	-------	-----	----	--------

TEST E - VARYING LOAD - TWO HOURS (20 minute runs; last line average)

23.71	1798	2.136	11.10	0.550	--	191	96	--
1.28	1893	0.884	1.45	4.219	--	148	97	--
12.02	1816	1.424	8.44	0.724	--	165	97	--
25.07	1767	2.268	11.05	0.553	--	200	100	--
6.07	1833	1.075	5.65	1.082	--	159	98	--
17.96	1804	1.782	10.08	0.606	--	180	99	--
14.35	1819	1.594	9.00	0.679	0.000	174	97	28.685

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

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. per gal.	Lb. per H.P. hr.		Cool- ing med.	Air	

TEST F - 100% MAXIMUM LOAD - Third - GEAR

20.47	1738	4.42	1500	5.80	-----	Not Recorded	-----	190	86	28.800
-------	------	------	------	------	-------	--------------	-------	-----	----	--------

TEST G - OPERATING MAXIMUM LOAD

17.02	3079	2.07	1501	17.36	-----	Not Recorded	-----	169	80	28.740
20.11	2362	3.19	1502	8.93	-----	"	"	197	90	28.735
20.69	1761	4.41	1500	6.00	-----	"	"	180	79	28.770

*TEST H - TEN HOURS - Third - GEAR

16.44	1384	4.45	1500	4.98	1.686	9.75	0.627	0.000	163	79	28.815
-------	------	------	------	------	-------	------	-------	-------	-----	----	--------

*Formerly called RATED LOAD; see REMARKS 4, page 3.

UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT
AGRICULTURAL COLLEGE, LINCOLN

3 pages-page 2

Copy of Report of Official Tractor Test No. 318

FUEL, OIL, AND TIME

Fuel Gasoline Octane 70 Weight per gallon 6.11 pounds

Oil: S.A.E. No. 10 To motor 1.048 gal. Drained from motor 0.964 gal.

Total time motor was operated 45 hours

BRIEF SPECIFICATIONS

Advertised speeds, miles per hour: First 2.6 Second 3.6

Third 4.9 Fourth (1800 r.p.m.) 17.4 Reverse 2.3

Belt pulley: Diam. 13 1/2" Face 6 1/4" R.P.M. 837 Belt Speed 2958 f.p.m

Clutch: Make Borg and Beck Type Single plate, dry Operated by foot

Seat Pressed steel

Total weight as tested (with operator) 4612 pounds

MOTOR

Make Continental Serial No. MFAl245190 Type 4 cylinder, vertical

Head L Mounting Crankshaft lengthwise Lubrication Pressure

Bore and stroke 3" x 4 3/8" Rated R.P.M. (Drawbar 1500
(Belt 1500 - 1800)

Port diameter valves: Inlet 1 3/8" Exhaust 1 3/32"

Ignition: Type Battery Make Auto-Lite Distributor Model I.G.W.-4139-A

Generator: Make Auto-Lite Model GBM - 4617

Starter: Make Auto-Lite Model MZ-4072

Carburetor: Make Schebler Model TSX-28 Size 7/8"

Governor: Make Pierce Type Centrifugal

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

Oil Filter: Make Purolator Type Renewable element

Cooling medium temperature control: Harrison thermostat

CHASSIS

Type Tricycle Serial No. 375186 Drive Enclosed gear

Tread width: Rear 52" - 90" Front: Top 12" Bottom 8"

Rear tires: No. 2 Size 10 x 36" - 4 ply Air Pressure 16 pounds

Front tires: No. 2 Size 5.00" x 15" - 4 ply Air Pressure 28 pounds

Added weight: Per rear wheel (Cast Iron 268 pounds
(Water 225 pounds)

UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT
 AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 318

REPAIRS AND ADJUSTMENTS

No repairs or adjustments.

REMARKS

1. All results shown on page 1 of this report 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, and H were made with an operating setting of the carburetor (selected by the manufacturer) of 97.7% of maximum belt horsepower.

	<u>DRAWBAR</u>	<u>BELT</u>
2. Observed maximum horsepower (tests F and B)	20.47	26.27
3. Sea level (calculated) maximum horsepower (based on 60° F. and 29.92" Hg.)	21.80	27.93
4. Seventy-five per cent of calculated maximum drawbar horsepower and eighty-five per cent of calculated maximum belt horsepower (formerly A.S.A.E. and S.A.E. ratings)	16.35	23.74

We, the undersigned, certify that the above is a true and correct report of official tractor test No. 318.

 Carlton L. Zink
 Engineer-in-charge

 E. E. Brackett

 C. W. Smith

 L. W. Hurlbut
 Board of Tractor Test Engineers