

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

---

Nebraska Tractor Tests

Tractor Test and Power Museum, The Lester F. Larsen

---

January 1938

## Test 301: Oliver 80 Standard KD

Nebraska Tractor Test Lab

University of Nebraska-Lincoln, [tractortestlab@unl.edu](mailto: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 301: Oliver 80 Standard KD" (1938). *Nebraska Tractor Tests*. 499.  
<https://digitalcommons.unl.edu/tractormuseumlit/499>

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. 301

Dates of test: May 16 to 28, 1938.

Name and model of tractor: OLIVER STANDARD 80 KD.

Manufacturer: Oliver Farm Equipment Company, Charles City, Iowa.

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

39.32	1200	4.752	8.27	0.835	0.000	173	79	28.960
-------	------	-------	------	-------	-------	-----	----	--------

TEST C - OPERATING MAXIMUM LOAD - ONE HOUR

37.03	1199	3.281	11.29	0.612	0.000	170	75	28.990
-------	------	-------	-------	-------	-------	-----	----	--------

\*TEST D - ONE HOUR

35.20	1199	3.085	11.41	0.606	0.000	175	71	28.995
-------	------	-------	-------	-------	-------	-----	----	--------

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

35.19	1201	3.074	11.45	0.604	--	174	70	--
0.66	1308	1.046	0.63	10.955	--	199	66	--
18.53	1259	2.093	8.85	0.780	--	187	71	--
35.76	1184	3.178	11.25	0.614	--	167	70	--
9.39	1274	1.528	6.15	1.125	--	194	72	--
27.65	1254	2.544	10.87	0.636	--	175	74	--
21.20	1247	2.244	9.45	0.731	0.000	182	70	29.005

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

TEST F - 100% MAXIMUM LOAD - Second GEAR

28.55	2911	3.68	1201	4.83	----	Not Recorded	----	198	61	28.950
-------	------	------	------	------	------	--------------	------	-----	----	--------

TEST G - OPERATING MAXIMUM LOAD

27.97	3596	2.92	1198	6.54	----	Not Recorded	----	191	73	28.885
26.11	2648	3.70	1200	4.27	----	"	"	192	54	28.980
24.19	1890	4.80	1199	3.70	----	"	"	195	70	28.900

\*TEST H - TEN HOURS - Second GEAR

22.13	2246	3.70	1199	4.25	2.845	7.78	0.888	0.010	188	68	28.800
-------	------	------	------	------	-------	------	-------	-------	-----	----	--------

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

3 Pages-Page 2

UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT  
AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 301

FUEL, OIL, AND TIME

Fuel Distillate Octane 36 Weight per gallon 6.91 pounds  
Oil: S.A.E. No. 30 To motor 3.494 gal. Drained from motor 1.748 gal.  
Total time motor was operated 44 hours

BRIEF SPECIFICATIONS

Advertised speeds, miles per hour (steel wheels): First 2.6  
Second 3.2 Third 4.14 Reverse 3

Belt pulley: Diameter 14 1/2" Face 7 1/4" R.P.M. 731

Clutch: Make Borg & Beck Type Single-plate, dry Operated by foot pedal

Seat Pressed steel

Total weight as tested (with operator) 4950 Pounds

MOTOR: Make Own Serial No. 0425148 Type 4 cylinder, vertical

Head I Mounting Crankshaft lengthwise Lubrication Pressure

Bore and stroke 4 1/2" x 5 1/4" Rated R.P.M. 1200

Port diameter valves: Inlet 1.75" Exhaust 1.5"

Magneto: Make American-Bosch Model MJB4A - 308

Carburetor: Make Schebler Model TTX-18 Size 1 1/4"

Governor: Make Own Type Variable-speed, centrifugal

Air cleaner: Make Donaldson Type Pre-cleaner and oil-washed,  
wire-screen filter

CHASSIS: Type Standard Serial No. 804479 KD Drive Enclosed gear

Tread width: Rear 50" Front 47"

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

Lugs: Type Spade No. per wheel 24 Size 5" high x 3 1/4" wide

Extension rims: Face 10" Lugs per rim 12 Size 5" high x 3 1/4" wide

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

3 Pages-Page 3

UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT  
AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 301

REPAIRS AND ADJUSTMENTS

After approximately 42 hours a small oil leak developed between the valve cover and the cylinder head.

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 94.2% of maximum belt horsepower.
2. Observed maximum horsepower (tests F & B)      Drawbar 28.55    Belt 39.32
3. Sea level (calculated) maximum horsepower      Drawbar 29.55    Belt 41.36  
(based on 60° F. and 29.92" Hg.)
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).      Drawbar 22.16    Belt 35.16

We, the undersigned, certify that the above is a true and correct report of official tractor test No. 301.

Carlton L. Zink  
Engineer-in-charge

E. E. Brackett

Ivan D. Wood

L. W. Hurlbut  
Board of Tractor Test Engineers