

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

Nebraska Tractor Tests

Tractor Test and Power Museum, The Lester F. Larsen

January 1948

Test 402: Centaur Model KV-48

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 402: Centaur Model KV-48" (1948). *Nebraska Tractor Tests*. 978.
<https://digitalcommons.unl.edu/tractormuseumlit/978>

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. 402

Dates of test: September 27 to October 6, 1948

Name and model of tractor: CENTAUR KV-48

Manufacturer: THE LEROI COMPANY, CENTAUR DIVISION, Greenwich, Ohio

Manufacturer's rating: Not rated

Manufacturer's claim maximum performance corrected to standard conditions:

Drawbar horsepower (approximately) 20

Belt horsepower (approximately) 25

Drawbar pull 2200 pounds in 2nd gear

HORSEPOWER SUMMARY

	DRAWBAR	BELT
1. Sea level (calculated) maximum horsepower (based on 60°F. and 29.92" Hg.)	21.38	25.04
2. Observed maximum horsepower (tests F & B)	20.28	24.00
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)	16.04	21.28

REMARKS

No repairs or adjustments

FUEL, OIL, and TIME

Fuel Gasoline Octane 74* Weight per gallon 6.098 pounds
Oil SAE No. 30 To Motor 1.071 Drained from motor 0.983 gal.
Total time motor was operated 41 1/2 hours

*Octane rating taken from oil company's typical inspection data.

We, the undersigned, certify that this is a true and correct report of official tractor test No. 402.

L. F. Larsen
 Engineer in Charge

C. W. Smith

L. W. Hurlbut

F. D. Yung

Board of Tractor Test Engineers

UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT
 AGRICULTURAL COLLEGE, Lincoln

Copy of Report of Official Tractor Test No. 402

All results shown on pages 2 and 3 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, H, and J were made with the same setting of the carburetor.

B E L T H O R S E P O W E R T E S T S

Horse- power	Crank shaft speed rpm	Fuel Consumption			Water used gal per hr	Temperature		Barometer Inches of Mercury
		gal per hr	hp-hr per gal	lb per hp-hr		Cool- ing med °F	Air °F	

TESTS B & C - 100% MAXIMUM LOAD - TWO HOURS

24.00	1502	2.571	9.33	0.653	0.00	164	72	29.010
-------	------	-------	------	-------	------	-----	----	--------

*TEST D - ONE HOUR

21.34	1502	2.253	9.47	0.644	0.00	165	76	29.000
-------	------	-------	------	-------	------	-----	----	--------

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

21.41	1507	2.283	9.38	0.650	- --	166	76	-- ---
1.49	1659	0.974	1.53	3.987	- --	134	76	-- ---
11.47	1609	1.633	7.02	0.868	- --	146	78	-- ---
21.90	1363	2.406	9.10	0.670	- --	171	78	-----
5.83	1631	1.215	4.80	1.271	- --	141	79	-- ---
16.66	1560	1.958	8.51	0.717	- --	155	80	-- ---
13.13	1555	1.745	7.52	0.810	0.00	152	78	28.955

*Formerly called RATED LOAD, see HORSEPOWER SUMMARY 3, page 1.

UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT
 AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 402

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

Horse- power	Draw bar pull lb	Speed mph	Crank shaft speed rpm	Slip on drive wheels %	Fuel Consumption			Water used gal per hr	Temperature		Barometer Inches of Mercury
					gal per hr	hp-hr per gal	lb per hp-hr		Cool- ing med °F	Air °F	

Rear wheels, tires and added weight used in Tests F, G, and H; Pressed Steel wheels; 9-24, 4 ply tires and 460 lb. added weight per wheel.

TESTS F & G - 100% MAXIMUM LOAD

10.73	2109	1.91	1502	15.10	----- Not Recorded -----				146	80	28.900
20.28	2035	3.74	1499	10.59	----- Not Recorded -----				164	79	28.895
19.72	1126	6.57	1502	4.38	----- Not Recorded -----				160	78	28.890
16.63	428	14.57	1511	1.88	----- Not Recorded -----				152	80	28.893

*TEST H - TEN HOURS - 2nd Gear

16.21	1566	3.88	1497	7.07	1.917	8.46	0.721	0.00	146	65	29.225
-------	------	------	------	------	-------	------	-------	------	-----	----	--------

TEST J - OPERATING MAXIMUM LOAD - 2nd GEAR

13.79	1468	3.52	1494	15.20	----- Not Recorded -----				149	66	28.895
-------	------	------	------	-------	--------------------------	--	--	--	-----	----	--------

*Formerly called RATED LOAD; see POWER SUMMARY 3, page 1

UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT
 AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 402

TIRES, WHEELS, and WEIGHT

	Tests F, G, & H	Test J
Rear Wheel: Type	Pressed Steel	Pressed Steel
(each)		
Liquid Ballast	20 1/4 lb	None
Added Cast Iron	25 1/2 lb	None
Rear Tires: No. Size & Ply	2 9-24 4 ply	2 9-24 4 ply
Type of Tread	Sure Grip	Sure Grip
Make	Goodyear	Goodyear
Air Pressure	14 lb	12 lb
Front Wheel: Type	Pressed Steel	Pressed Steel
(each)		
Liquid Ballast	None	None
Added Cast Iron	None	None
Front Tires: No. Size & Ply	2 5.00-15 4 ply	2 5.00-15 4 ply
Type of Tread	Triple rib	Triple rib
Make	Goodyear	Goodyear
Air Pressure	23 lb	28 lb
Height of Drawbar	13 1/2 inches	14 1/2 inches
Static Weight: Rear End	2626 lb	1706 lb
Front End	938 lb	938 lb
Total Weight as Tested (with Operator)	3744 lb	2824 lb

UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT
 AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 402

SPECIFICATIONS

Type Standard Serial No. 4482355 Drive Enclosed Gear & Chain
Tread width: Rear 48 in. to 59 in. Front 48 in.
Advertised speeds, miles per hour: First 2.4 Second 4.5 Third 7.4
 Fourth 15.9 Reverse 1.9
Belt pulley: Diam. 6 in. Face 6 1/4 in. RPM 1500 Belt speed 2756 fpm
Clutch: Make Auburn Thelander Type Dry Disc Operated by Foot pedal
Seat Pressed steel with canvas covered pad
Brakes: Make Own
 Location Differential shaft
 Gear reduction (brake drum to rear wheel) 2 to 1
 Operated by Hand lever
 Locked by Latches on levers
 Equalization None
Engine: Make Le Roi Serial No. 19X1513 Type 4 cylinder vertical
 Head I Mounting Lengthwise Lubrication Pressure
 Bore and stroke 3 1/2 in x 3 5/8 in. Rated rpm 1500
 Port diameter valves: Inlet 1 3/16 in Exhaust 1 3/16 in
 Starter: Make Auto-Lite
 Distributor & Coil: Make Auto-Lite Battery 6 Volt Bower
 Generator: Make Auto-Lite
 Carburetor: Make Zenith Model 161X7 Size 7/8"
 Governor: Make Novi Type Flyball, Variable Speed
 Precleaner: Make Vortox Type Screen
 Air Cleaner: Make Vortox Type Oil bath
 Oil Filter: Make Purolator Type Replaceable element
 Cooling medium temperature control: Thermostat