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January 1948

## Test 397: Allis-Chalmers Model HD-19

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. 397

Dates of test: July 2 to July 16, 1948

Name and model of tractor: ALLIS-CHALMERS HD19

Manufacturer: ALLIS-CHALMERS MANUFACTURING COMPANY, Milwaukee, Wisconsin

Manufacturer's rating: Not rated. (Manufacturers claim 36,000 pounds maximum drawbar pull in low gear.)

HORSEPOWER SUMMARY

	DRAWBAR	BELT
1. Sea level (calculated) maximum horsepower (based on 60° F. and 29.92" Hg.)	117.78	136.95
2. Observed maximum horsepower (tests F & B)	110.73	129.08

REMARKS

This tractor is equipped with a hydraulic torque converter which automatically loads the engine by controlling the forward travel speed or the belt pulley speed of the tractor according to the load applied. Therefore, rated load and maximum load are the same.

No repairs or adjustments.

FUEL, OIL, and TIME

Fuel Diesel Fuel      Cetane 44\*      Weight per gallon 7.023 pounds  
Oil SAE No. 30      To motor 6.041 gal.      Drained from motor 5.094 gal.  
Total time motor was operated 38 hours

\* Cetane 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. 397.

L. F. Larsen  
 Engineer in Charge

C. W. Smith

F. D. Yung

L. W. Hurlbut  
 BOARD OF TRACTOR TEST ENGINEERS

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Copy of Report of Official Tractor Test No. 597

All results shown on pages 2 and 3 were determined from observed data and without allowances, additions or deductions. Tests B and C, F and G, and H were made with fuel pumps as set by the manufacturer.

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 and C - 100% MAXIMUM LOAD - 1/2 HOUR\*

129.08	1727	11.717	11.02	0.638	0.00	134	84	28.855
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\* Test limited to 30 minutes as a safety measure for dynamometer installation.

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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

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	

TESTS F and G - 100% MAXIMUM LOAD

Low Gear Range

107.88	37536	1.08	1678	4.91	-----Not Recorded-----				163	73	28.800
*110.73	24791	1.68	1724	2.40	" "				176	86	28.830
100.99	16054	2.36	1753	0.98	" "				167	75	28.870

High Gear Range

101.53	16132	2.36	1638	0.98	-----Not Recorded-----				172	73	28.870
*103.91	12853	3.03	1682	0.68	" "				172	80	28.905
81.39	5087	6.00	1725	0.32	" "				180	86	28.870

TEST H - TEN HOURS - 1st GEAR RANGE

110.64	25111	1.65	1716	2.44	11.648	9.50	0.739	0.00	182	83	28.858
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\* Data shown on this line are for maximum horsepower in this gear range. Other data were obtained in the same gear range at loads selected by the manufacturers representative.

Total weight as tested (with operator) 40,395 pounds