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January 1935

Test 238: Allis-Chalmers Model UC

Nebraska Tractor Test Lab

University of Nebraska-Lincoln, tractortestlab@unl.edu

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UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT
 AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 238

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	: Speed	: Crank	: Slip	: Fuel Consumption	: Water	: Temp.	:
:	: bar	: miles	: shaft	: on	: H. P.	: Lbs.	: used	:
:	: pull	: per	: speed	: drive	: Gal.	: hour	: per	: Gal.
:	: pounds	: hour	: R.P.M.	: wheels	: per	: per	: H.P.	: per
:	:	:	:	: %	: hour	: gal.	: hour	: hour
:	:	:	:	:	:	:	: med.	:

TEST F 100% MAXIMUM LOAD. Second GEAR.

23.67 : 2297 : 3.86 : 1200 : 4.07:-----Not Recorded-----; 194 : 99: 28.805

TEST G OPERATING MAXIMUM LOAD.

24.17	: 3422	: 2.65	: 1196	: 6.87	:-----Not Recorded-----	: 204	: 102	: 28.700
22.53	: 2176	: 3.86	: 1201	: 4.15	:-----"-----	: 197	: 96	: 28.795
18.75	: 1178	: 5.92	: 1203	: 2.78	:-----"-----	: 190	: 96	: 28.580

TEST H RATED LOAD. TEN HOURS. Second GEAR.

18.90 : 1808 : 3.92 : 1201 : 2.76:3.062 : 6.18 : 1.132:0.000: 194 : 94: 28.780

FUEL ECONOMY TEST. Four HOURS. Third GEAR.

16.19 : 1021 : 5.95 : 1202 : 2.10:3.027 : 5.35 : 1.307:0.000: 198 : 103: 28.510

RUBBER TIRES

H. P.	: Draw	: Speed	: Crank	: Slip	: Fuel Consumption	: Water	: Temp.	:
:	: bar	: miles	: shaft	: on	: H. P.	: Lbs.	: used	:
:	: pull	: per	: speed	: drive	: Gal.	: hour	: per	: Gal.
:	: pounds	: hour	: R.P.M.	: Wheels	: per	: per	: H.P.	: per
:	:	:	:	: %	: hour	: gal.	: hour	: hour
:	:	:	:	:	:	:	: med.	:

TEST G OPERATING MAXIMUM LOAD.

14.69	: 2566	: 2.15	: 1195	: 17.20	:-----Not Recorded-----	: 191	: 85	: 28.650
21.14	: 2593	: 3.06	: 1203	: 16.49	:-----"-----	: 196	: 99	: 28.645
28.44	: 2121	: 5.03	: 1201	: 17.26	:-----"-----	: 204	: 101	: 28.650
28.85	: 995	: 10.87	: 1200	: 2.10	:-----"-----	: 190	: 101	: 28.625

FUEL ECONOMY TEST. Four HOURS. Second GEAR.

11.00 : 8.14:2.284: 7.91 : 0.884 : 0.000: 190 : 95: 28.703

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BRIEF SPECIFICATIONS

MOTOR: Make Own Serial No. UM2364 Type 4 cylinder, vertical
Hoad I Mounting Crankshaft lengthwise
Bore and stroke: 4 3/8" x 5" Rated R.P.M. 1200
Port Diam. Valves: Inlet 1 3/4" Exhaust 1 1/2"
Belt pulley: Diam. 10" Face 7 1/2" R.P.M. 1094
Magneto: Bendix-Scintilla Model C-4
Carburetor: Zenith Model K-5 Size 1 1/4"
Governor: Own No. None Type Centrifugal
Air Cleaner: Vortex Type Oil washed wire filter
Lubrication: Pressure

CHASSIS: Type 4 wheels, 2 drivers Serial No. UC1704 Drive Enclosed gear
Clutch: Rockford Type Single plate Operated by foot
Advertised speeds, miles per hour: First 2.33 Second 3.33
Third 5.00 *Fourth 10.00 Reverse 2.67

Steel: Drive wheels: Diameter 42" Face 2"
Lugs: Type Spade No. per wheel 9 Size 5" high x 2" face
Extension rims: Width 6" Lugs per rim 9 Size 5" high x 3 1/2" face

Rubber: Drive wheel tires 12.75" x 24" Air Pressure 16 pounds
Front wheel tires 6.00" x 16" Air Pressure 24 pounds
Weights per drive wheel 3 Average total weight 422 pounds
Seat Pressed steel

Total weight as tested (with operator) (Steel 5710 pounds)
(Rubber 6115 pounds)
FUEL AND OIL: (6.92 Belt - Steel (Maximums))
Fuel: Distillate Weight per gallon (6.99 Steel (Rated Fuel Economy)
(and all rubber tests)

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REPAIRS AND ADJUSTMENTS

During the maximum drawbar tests on rubber tires, gear grease began to leak from the final drive. This continued to the end of the test (15 hours). Over the same period of time, grease leaked through the seal around the steering gear worm shaft.

REMARKS

All results shown on pages 1 and 2 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 horsepower and these figures were used in determining the ratings recommended by the A.S.A.E. and S.A.E. tractor rating codes. Tests C, D, E, G, and H were made with an operating setting of the carburetor (selected by the manufacturer) of 98.3% of maximum horsepower.

Observed maximum horsepower (tests B & F) Drawbar 23.67 Belt 34.09

Sea level (calculated) maximum horsepower Drawbar 25.49 Belt 36.31
(Based on 60° F. and 29.92" Hg.)

Highest permissible horsepower ratings *Drawbar 19.12 Belt 30.86
(As recommended by A.S.A.E. and S.A.E.
codes)

*Drawbar rating based on results of tests using stool wheels.

The 100% maximum belt and drawbar tests were not included in reports issued from 1928 to 1934 inclusive, except in those cases where the 100% maximum setting was used throughout the complete test.

We, the undersigned, certify that the above is a true and correct report of official tractor test No. 238.

Carlton L. Zink

Engineer-in-charge

E. E. Brackett

C. W. Smith

E. B. Lewis

Board of Tractor Test Engineers