

January 1935

Test 238: Allis-Chalmers Model UC

Tractor Museum

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 AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 238

Dates of test: July 16 to August 8, 1935.
 Name and model of tractor: ALLIS-CHALMERS "UC"
 Manufacturer; Allis-Chalmers Manufacturing Co., Milwaukee, Wis.
 Manufacturer's rating: NOT RATED.

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

H. P.	:Crank : :shaft :	Fuel Consumption :Gals. :	H. P. :H. P. :	:Lbs.per: :H. P. :	Cool- :ing :	In :fuel :	Total :Total :	:Cool-: :ing :	Air :Air :	:Barometer :Inches of :Mercury
TEST B 100% MAXIMUM LOAD. TWO HOURS										
34.09	: 1199	: 4.096	: 8.32	: 0.831	: 0.000	: 0.000	: 0.000	: 189	: 92	: 28.955
TEST C OPERATING MAXIMUM LOAD. ONE HOUR										
33.52	: 1203	: 3.410	: 9.83	: 0.704	: 0.000	: 0.000	: 0.000	: 203	: 98	: 28.945
TEST D RATED LOAD. ONE HOUR										
30.93	: 1199	: 3.032	: 10.20	: 0.678	: 0.000	: 0.000	: 0.000	: 196	: 98	: 28.930
TEST E *VARYING LOAD. TWO HOURS										
30.84	: 1201	: 3.022	: 10.21	: 0.678	: --	: --	: --	: 196	: 99	: --
0.77	: 1392	: 1.301	: 0.59	: 11.688	: --	: --	: --	: 194	: 98	: --
17.45	: 1337	: 2.389	: 7.30	: 0.947	: --	: --	: --	: 188	: 98	: --
31.42	: 1150	: 3.178	: 9.88	: 0.700	: --	: --	: --	: 194	: 97	: --
8.77	: 1370	: 1.834	: 4.79	: 1.447	: --	: --	: --	: 190	: 98	: --
24.27	: 1304	: 2.667	: 9.09	: 0.760	: --	: --	: --	: 186	: 97	: --
18.92	: 1292	: 2.400	: 7.88	: 0.877	: 0.000	: 0.000	: 0.000	: 191	: 97	: 28.890
*20 minute runs. Last line is average for two hours.										

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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

STEEL WHEELS

H. P.	Draw : bar : pull : pounds	Speed : miles : per : hour	Crank : shaft : R.P.M.	Slip : on : drive : wheels : %	Fuel Consumption : Gal. : hour : per : gal.	Water: : used : Gal. : per : hour	Temp. : ; : Cool- : ing : med.	: : Barometer : Inches of : Mercury
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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 : bar : pull : pounds	Speed : miles : per : hour	Crank : shaft : R.P.M.	Slip : on : drive : wheels : %	Fuel Consumption : Gal. : hour : per : gal.	Water: : used : Gal. : per : hour	Temp. : ; : Cool- : ing : med.	: : Barometer : Inches of : Mercury
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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.

11.99 : 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: Fuel: Distillate Weight per gallon (6.92 Belt - Steel (Maximums)
(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