January 1931

Test 193: Allis Chalmers Model EK

Nebraska Tractor Test Lab
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UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT
AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 193

Dates of test: June 18 to June 25, 1931.
Name and model of tractor: ALLIS CHALMERS "EK"
Manufacturer: Allis-Chalmers Mfg. Co., Milwaukee, Wisconsin
Manufacturer's rating: NOT RATED.
Highest rating permissible under the recommendations of the A.S.A.E. and S.A.E. Tractor Rating Codes: Drawbar - 27.16 Belt - 42.58
One carburetor setting (99.5% of maximum) was used thruout this test.

B R A K E 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: Gals. per hour	Fuel Consumption: H. P. hrs. @ lbs. H.P. hour	Water consumption per hour gallons: Cooling	Water consumption per hour gallons: In fuel	Water consumption per hour gallons: Total	Temp. Deg. F.: Cooling medium	Temp. Deg. F.: Air	Barometer Inches of Mercury
OPERATING MAXIMUM LOAD TEST. ONE HOUR									
47.00	999	5.465	8.60	0.795	0.00	0.00	176	89	28.815
RATED LOAD TEST. ONE HOUR									
42.24	1000	4.339	9.73	0.703	0.00	0.00	190	90	28.810
*VARYING LOAD TEST. TWO HOURS									
42.51	1006	4.351	9.77	0.700	--	--	191	91	--
0.67	1095	1.930	0.35	19.701	--	--	195	95	--
22.57	1065	3.035	7.44	0.920	--	--	192	93	--
41.86	974	4.798	8.72	0.784	--	--	182	90	--
11.59	1078	2.417	4.80	1.426	--	--	188	93	--
32.38	1046	3.627	8.93	0.766	--	--	190	94	--
25.93	1044	3.360	7.72	0.886	0.00	0.00	190	92	28.805

*20 minute runs. Last line is average for two hours.

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 hour	Crank shaft speed R.P.M.	Slip on drive wheels %	Fuel Consumption: H.P. Gal. per hour	Fuel Consumption: hr. per gal.	Water: used Lbs. per H.P. hour	Water: used Gal. per hour	Temp.: Cooling medium	Temp.: Air	Barometer Inches of Mercury
RATED LOAD TEST. TEN HOURS. HIGH GEAR.											
27.69	2703	3.84	1000	3.77	4.48	6.18	1.107	0.037	180	91	28.930
MAXIMUM LOAD TEST											
33.82	4133	3.07	1001	5.48	----	Not Recorded	------		177	96	28.800
33.10	3288	3.78	1003	3.71	----	"	"	------	183	100	28.800

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BRIEF SPECIFICATIONS

MOTOR: Make Own Serial No. 15575 Type 4 Cylinder vertical

Head I Mounting Lengthwise

Bore and stroke: 5 x 6 1/2 in. Rated R.P.M. 1000

Port Dia. Valves: Inlet 2" Exhaust 2"

Belt pulley: Diam. 13 in. Face 8 1/2 in. R.P.M. 1000

Magneto: Eisemann Model G 4

Carburetor: Zenith Model C6EV Size 1 1/2"

Governor: Own No. None Type Weight

Air Cleaner: Donaldson & Own Type Centrifugal and Oily fibre

Lubrication: Pressure

CHASSIS: Type 4 wheels, 2 drivers Serial No. 24559 Drive Enclosed gear

Clutch: Own Type expanding shoe operated by hand

Advertised speeds, miles per hour: Low 2 1/2

Intermediate None High 3 1/4 Reverse 3 1/4

Drive wheels: Diameter 50" Face 12 1/4"

Lugs: Type Spade No.per wheel 24 Size 3 1/2" wide, 5" high

Extension rims: Width 8 1/8" No.per rim 8 Size 3 1/2"wide, 5" high

Seat Pressed steel

Total weight as tested (with operator) 7200 pounds.

FUEL AND OIL:

Fuel: Distillate Weight per gallon 6.84 pounds

Oil: S. A. E. Viscosity #40

Total oil to motor 8.091 gallons

Total drained from motor 4.998 gallons

The crankcase was drained twice, once on the completion of the belt runs and again at the end of the test.

Total time motor was operated 48 hours

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REPAIRS AND ADJUSTMENTS

During the preliminary drawbar runs the head gasket on cylinders #3 and #4 was found to be leaking and was replaced at this time.

REMARKS

The tests herein reported were conducted with one carburetor setting which remained unchanged thruout the tests. This condition should be recognized when comparing this test with any Nebraska test conducted prior to 1928.

The drawbar tests were run with drive wheels equipped with spade lugs and extension rims and lugs as listed on Page 2 of this report.

In the advertising literature submitted with the specifications and application for test of this tractor we find no claims and statements, which, in our opinion, are unreasonable or excessive.

We, the undersigned, certify that the above is a true and correct report of official tractor test No. 193 .

Carlton L. Zink
Engineer-in-charge

E. E. Brackett

C. W. Smith

E. B. Lewis
Board of Tractor Test Engineers