January 1939

Test 328: Farmall M Gasoline

UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT
AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 328

Dates of test: September 11 to 21, 1939
Name and model of tractor: McCORMICK- DEERING FARMALL H (Gasoline)
Manufacturer: International Harvester Company, Chicago, Illinois
Manufacturer's rating: NOT RATED

B E L T 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: Gal. per hr.	Fuel Consumption: H. P. hr. per gal.	Fuel Consumption: Lb. per H. P. hr.	Water used gal. per hr.	Temp. Deg. F.: Cooling med.	Temp. Deg. F.: Air	Barometer Inches of Mercury
TEST B - 100% MAXIMUM LOAD - TWO HOURS								
36.66	1451	2.996	12.24	0.502	0.000	198	95	28.875
TEST C - OPERATING MAXIMUM LOAD - ONE HOURS								
36.07	1451	2.966	12.16	0.505	0.000	200	100	28.880
*TEST D - ONE HOUR								
33.46	1451	2.834	11.81	0.520	0.000	203	97	28.885
TEST E - VARYING LOAD - TWO HOURS (20 minute runs; last line average)								
33.48	1453	2.834	11.81	0.520	--	203	97	--
1.51	1530	1.221	1.24	4.967	--	206	96	--
17.12	1491	1.998	8.57	0.717	--	203	96	--
35.82	1426	2.932	12.22	0.503	--	200	95	--
8.86	1530	1.588	5.58	1.100	--	198	94	--
25.34	1474	2.419	10.48	0.586	--	193	93	--
20.36	1484	2.165	9.40	0.653	0.000	201	95	28.890

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 hr.	Crank shaft speed R.P.M.	Slip on drive wheels %	Fuel Consumption: Gal. per hr.	Fuel Consumption: H.P. hr. per gal.	Fuel Consumption: Lb. per H.P. hr.	Water used gal. per hr.	Temp. Deg. F.: Cooling med.	Temp. Deg. F.: Air	Barometer Inches Mercury
TEST F - 100% MAXIMUM LOAD - Second - GEAR											
33.05	4060	3.05	1446	10.46	------Not Recorded-------				187	77	29.190
TEST G - OPERATING MAXIMUM LOAD											
24.49	4233	2.17	1452	15.57	------Not Recorded-------				182	83	29.170
32.52	3963	3.08	1454	10.17	------ " " -------				188	72	29.205
31.70	3120	3.81	1449	8.69	------ " " -------				192	92	28.870
32.02	2503	4.80	1453	5.54	------" " -------				185	100	28.840
*TEST H - TNE HOURS - Second - GEAR											
26.23	3102	3.17	1450	7.22	2.495	10.51	0.584	0.000	190	89	29.115

* Formerly called RATED LOAD: see REMARKS 4, page 3.

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FUEL, OIL, AND TIME

Fuel Gasoline Octane 70 Weight per gallon 6.14 pounds

Oil: S.A.E. No. 20 To motor 2.090 gal. Drained from motor 1.722 gal.

Total time motor was operated 53 hours

BRIEF SPECIFICATIONS

Advertised speeds, miles per hour: First 2 5/8 Second 3 1/2
Third 4 1/4 Fourth 5 1/8 Fifth 16 3/8 Reverse 3 1/8

Belt pulley: Diam. 11" Face 7 1/2 " R.P.M. 899 Belt speed 2587 f.p.m.

Clutch: Make Rockford Type Single plate, dry disc Operated by foot

Seat Pressed steel with sponge rubber pad

Total weight as tested (with operator) 6770 pounds

MOTOR

Make Own Serial No. FBK-ME 533 Type 4 cylinder, vertical

Head I Mounting Crankshaft lengthwise Lubrication Pressure

Bore and stroke 3 7/8" x 5 1/4" Rated R.P.M. 1450

Port diameter valves: Inlet 1.594" Exhaust 1.438"

Magneto: Make Own Model H-4

Carburetor: Make Own Model E - 12 Size 1 1/4"

Governor: Make Own Type Variable speed, centrifugal

Air Cleaner: Make Donaldson Type Oil-washed, wire screen filter

Oil Filter: Make Purolator Type Partial flow, with replaceable bake-lite impregnated paper element

Cooling medium temperature control: Bishop and Babcock thermostat and Pines radiator shutters

CHASSIS

Type Tricycle Serial No. FBK-ME 533 Drive Enclosed gear

Tread width: Rear 52" - 88" Front: Top 13 1/2" Bottom 8 1/2 "

Rear tires: No. 2 Size 11.25" x 36" - 6 ply Air Pressure 16 pounds

Front tires: No. 2 Size 6.00" x 16" - 4 ply Air Pressure 25 pounds

Added weight: Per rear wheel (Cast iron 710 pounds
(Water 246 pounds

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REPAIRS AND ADJUSTMENTS

During the rated load drawbar test the cooling medium temperature indicator became in-operative.

REMARKS

1. All results shown on page 1 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, And h were made with an operating setting of the carburetor (selected by the manufacturer) of 98.9% of maximum belt horsepower.

		DRAWBAR	BELT
2.	Observed maximum horsepower (tests F & B)	33.05	36.66
3.	Sea level (calculated) maximum horsepower (based on 60° F. and 29.92" hg.)	34.44	39.23
4.	Seventy-five per cent of calculated maximum drawbar horsepower and eighty-five per cent of calculated maximum belt horsepower (formerly A.S.A.E. and S.A.E. ratings)	25.83	33.35

We, the undersigned, certify that the above is a true and correct report of official tractor test No. 328.

Carlton L. Zink
Engineer-in-charge

E. E. Brackett

C. W. Smith

L. W. Hurlbut
Board of Tractor Test Engineers