January 1949

Test 421: Farmaster FG-33

Nebraska Tractor Test Lab
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Department of Agricultural Engineering
Dates of test: August 3 to August 23, 1949
Manufacturer: FARMASTER CORPORATION, Clifton, New Jersey
Manufacturer's rating: Belt, 33 H P Drawbar, 28 H P

The Experiment Station
University of Nebraska College of Agriculture
W. V. Lambert, Director, Lincoln, Nebraska

NEBRASKA TRACTOR TEST NO. 421
FARMASTER FG-33

BELT HORSE POWER TESTS

H. P.	Crank shaft speed R.P.M.	Fuel Consumption: Gal. per hour	Fuel Consumption: H.P. hr. per gal.	Fuel Consumption: Lb. per H.P. hour	Water used Gal. per hour	Temp. Deg. F.: Cooling med.	Temp. Deg. F.: Air	Barometer Inches of Mercury
TEST B and TEST C—100% MAXIMUM LOAD—TWO HOURS								
28.36	1650	2.914	9.73	0.631	0.00	174	79	28.865
***TEST D—ONE HOUR**								
25.44	1648	2.690	9.46	0.649	0.00	167	82	28.865
TEST E—VARYING LOAD—TWO HOURS (20 minute runs; last line average)								
25.41	1649	2.693	9.44	0.651	- --	167	82	-- ---
1.63	1775	1.349	1.21	5.080	- --	140	82	-- ---
13.22	1709	1.921	6.88	0.892	- --	151	79	-- ---
26.59	1527	2.664	9.98	0.615	- --	175	79	-- ---
6.94	1755	1.613	4.30	1.427	- --	144	79	-- ---
19.71	1689	2.356	8.37	0.734	- --	159	80	-- ---
15.58	1684	2.099	7.42	0.827	0.00	156	80	28.865

DRAWBAR HORSE POWER TESTS

H.P.	Draw bar pull Lbs.	Speed miles per hr.	Crank shaft speed R.P.M.	Slip of drive wheels %	Fuel Consumption: Gal. per hour	Fuel Consumption: Hp.-hr. per Gal.	Fuel Consumption: Lb. per Hp.-hr.	Water used Gal. per hr.	Temp. Deg. F.: Cooling med.	Temp. Deg. F.: Air	Barometer Inches of Mercury
TEST F and TEST G—100% MAXIMUM LOAD—											
20.59	3202	2.41	1651	14.75	Not Recorded				171	85	28.875
25.26	2519	3.76	1650	7.88	"	"			173	74	28.960
25.53	1768	5.42	1650	4.49	"	"			174	82	28.800
24.34	837	10.91	1649	2.83	"	"			162	94	28.945
***TEST H—TEN HOURS— 2nd GEAR**											
19.60	1893	3.88	1652	5.04	2.442	8.03	0.765	0.00	170	83	28.920
TEST J—100% MAXIMUM LOAD— - 2nd GEAR											
19.74	2108	3.51	1653	15.33	Not Recorded				170	87	28.935
TEST K—100% MAXIMUM LOAD— - 2nd GEAR											
16.41	1817	3.39	1652	15.73	Not Recorded				170	87	28.915

*Wheels of lightest weight and smallest tires suggested by the manufacturer.

TIRES, WHEELS and WEIGHT

		Tests F, G & H	Test J	Test K
Rear Wheel: (each)	Type	Pressed Steel	Pressed Steel	Pressed Steel
	Liquid Ballast	None	None	None
	Added Cast Iron	841 lb	None	None
Rear Tires:	No., Size and Ply	2 11-38 4 ply	2 11-38 4 ply	2 10-38 4 ply
	Type of Tread	Sure Grip	Sure Grip	Sure Grip
	Make	Goodyear	Goodyear	Goodyear
	Air Pressure	12 lb	12 lb	12 lb
Front Wheel: (each)	Type and Weight	Cast Iron	Cast Iron	Cast Iron
	Liquid Ballast	None	None	None
	Added Cast Iron	None	None	None
Front Tires:	No., Size and Ply	2 5.50-16 4 ply	2 5.50-16 4 ply	2 5.50-16 4 ply
	Type of Tread	Multi-Ring	Multi-Ring	Multi-Ring
	Make	B. F. Goodrich	B. F. Goodrich	B. F. Goodrich
	Air Pressure	28 lb	28 lb	28 lb
Height of Drawbar		16 1/2 inches	17 1/2 inches	16 1/2 inches
Static Weight: Rear End		3940 lb	2258 lb	2182 lb
	Front End	1080 lb	1074 lb	1070 lb
Total Weight as Tested (With operator)		5195 lb	3507 lb	3427 lb

* Formerly called RATED LOAD, see horsepower summary.

FUEL, OIL and TIME Fuel: Gasoline, octane 74 (octane rating taken from oil company's typical inspection data); weight per gallon 6.138 lb. Oil: SAE 30; to motor 1.226 gal; drained from motor 0.710 gal. Total time motor was operated 52 hours.

SPECIFICATIONS Type tricycle; Serial No. none; Drive enclosed gear. Tread Width: Rear 56" to 84"; Front 9". Wheel Base 86". Hydraulic Lift Control not available. Advertised speeds, mph: First 2.75; Second 4.00; Third 5.50; Fourth 11.00; Reverse 3.50. Belt Pulley: Diam 8 1/4"; Face 6 1/2"; RPM 1349; Belt Speed 2914 fpm. Clutch: Make Borg & Beck; Type dry disc; Operated by foot pedal. Seat pressed steel. Brakes: Make Wisconsin Axle; Type external and internal shoe; Location differential shaft; Gear Reduction (brake drum to rear wheel) 5.100:1; Operated by foot pedals; Locked by latches on tractor frame; Equalization none. (brakes may be locked together).

ENGINE Make Buda; Serial No. 318238; Type 4 cylinder vertical; Head I; Mounting crankshaft lengthwise; Lubrication pressure; Bore and Stroke 3 7/16" x 4 1/8"; Rated RPM 1650; Compression Ratio 6.18:1. Port Diameter Valves: Inlet 1 3/8"; Exhaust 1 1/8". Governor: Make Novi; Type centrifugal, variable speed. Carburetor: Make Zenith; Model 162J9; Size 1". Starter Delco-Remy. Generator Delco-Remy. Distributor and Coil Delco-Remy. Battery Exide, 6 volt. Air Cleaner: Make Donaldson; Type oil washed wire screen. Oil Filter: Make Fram; Type replaceable laminated paper element. Cooling medium temperature control: Thermostat.

REPAIRS AND ADJUSTMENTS Flange supporting exhaust pipe came loose during test H. One air cleaner supporting band broke during drawbar tests. Number four spark plug was replaced during Test A.

REMARKS All test results 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, H, J and K were made with the same setting.

HORSEPOWER SUMMARY

	Drawbar	Belt
1. Sea level (calculated) maximum horsepower (based on 60° F. and 29.92" Hg.)	26.44	29.93
2. Observed maximum horsepower (tests B & F)	25.26	28.36
3. Seventy-five per cent of calculated maximum drawbar horsepower and eighty-five per cent of calculated maximum belt horsepower (formerly ASAE and SAE ratings)	19.83	25.44

We, the undersigned, certify that this is a true and correct report of official tractor test No. 421.

L. F. Larsen
Engineer in Charge

C. W. Smith
F. D. Yung
L. W. Hurlbut
Board of Tractor Test Engineers