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Test 448: John Deere MC

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Department of Agricultural Engineering

Dates of test: July 20 to July 26, 1950.

Manufacturer: JOHN DEERE DUBUQUE

TRACTOR WORKS, DUBUQUE, IOWA

Manufacturer's rating: Not rated.

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

NEBRASKA TRACTOR TEST NO. 448
JOHN DEERE MC

BELT HORSEPOWER TESTS

Hp	Crank shaft speed rpm	Fuel Consumption			Water used gal per hour	Temp Deg F		Barometer in Hg
		Gal per hour	Hp-hr per gal	Lb per hp-hour		Cooling med	Air	
TEST B—100% MAXIMUM LOAD—TWO HOURS								
21.24	1651	2.057	10.33	0.593	0.01	190	77	29.060
TEST C—OPERATING MAXIMUM LOAD—ONE HOUR								
20.12	1649	1.771	11.36	0.539	0.01	183	72	29.060
TEST D—RATED LOAD—ONE HOUR								
18.91	1651	1.699	11.13	0.551	0.01	179	70	29.060
TEST E—VARYING LOAD—TWO HOURS (20 minute runs; last line average)								
18.90	1655	1.699	11.12	0.551	...	178	70
1.85	1739	0.827	2.24	2.741	...	160	70
9.80	1705	1.156	8.48	0.722	...	169	71
19.67	1632	1.738	11.32	0.541	...	182	71
4.96	1723	0.940	5.28	1.161	...	171	71
14.58	1694	1.425	10.23	0.599	...	177	71
11.63	1691	1.298	8.96	0.684	0.01	173	71	29.058

DRAWBAR HORSEPOWER TESTS

Hp	Draw bar pull lb	Speed miles per hr	Crank shaft speed rpm	Slip of drive wheels %	Fuel Consumption			Water used gal per hour	Temp Deg F		Barometer in Hg
					Gal per hour	Hp-hr per gal	Lb per hp-hr		Cooling med	Air	
TEST F—100% MAXIMUM LOAD—3rd GEAR											
17.49	2309	2.84	1651	1.93	Not Recorded			205	73	29.010	
TEST G—OPERATING MAXIMUM LOAD											
9.44	4226	0.84	1654	5.11	Not Recorded			196	76	28.990	
16.76	2921	2.15	1653	1.93	" "			203	75	28.990	
16.88	2228	2.84	1652	1.96	" "			203	75	29.000	
16.32	1304	4.69	1649	1.29	" "			204	75	28.990	
TEST H—RATED LOAD—TEN HOURS—3rd GEAR											
13.88	1833	2.84	1650	1.92	1.590	8.73	0.702	0.01	203	70	28.994

FUEL, OIL and TIME Gasoline octane No. ASTM 76 Research 82 (rating taken from oil company's typical inspection data); weight per gallon 6.127 lb Oil SAE 10; to motor 1.269 gal; drained from motor 1.115 gal Total time motor was operated 50 hours.

CHASSIS Type tracklayer Serial No MC11444 Tread width 38 1/2" and 44 1/2" in Measured length of track 16 ft Cleats integral with shoes Cleats per track 28 Size of cleats 1 1/4" x 1 1/4" Hydraulic control system direct engine drive Advertised speeds mph first 0.9 second 2.2 third 2.9 fourth 4.7 reverse 1.0 Belt pulley diam 7 1/4 in face 6 1/2 in rpm 1575 Belt speed 2990 fpm Clutch single plate operated by foot pedal Seat air cushion with back rest Brakes contracting bands operated by steering levers or one foot pedal that can be locked by latch Steering hand levers controlling multiple disc clutches and brakes.

ENGINE Make John Deere Type 2 cylinder vertical Serial No 26365 Crankshaft mounted lengthwise Head I Lubrication pressure Bore and Stroke 4" x 4" Rated rpm 1650 Compression ratio 6.0 to 1 Displacement 101 cu in Port Diameter Valves inlet 1 31/64" exhaust 1 23/64" Governor centrifugal, variable speed Carburetor Size 1" Ignition System 6 volt battery Air Cleaner oil washed wire screen Muffler was used Oil Filter by-pass using impregnated replaceable paper element Cooling medium temperature control thermosiphon.

TOTAL WEIGHT AS TESTED (with operator) 4,293 lbs.

REPAIRS AND ADJUSTMENTS During test "B" a decrease in horsepower occurred. The engine head was removed, fuel deposit removed, and test was resumed with improved performance.

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 and H were made with an operating setting of the carburetor (selected by the manufacturer) of 94.3% of maximum belt horsepower.

HORSEPOWER SUMMARY

	Draw-bar	Belt
1. Sea level (calculated) maximum horsepower (based on 60° F. and 29.92" Hg)	18.26	22.22
2. Observed maximum horsepower (tests F and B)	17.49	21.24
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)	13.70	18.89

We, the undersigned, certify that this is a true and correct report of official tractor test No. 448.

L. F. Larsen
Engineer in Charge

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

