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January 1949

## Test 426: Massey-Harris Model 44 (Diesel) STD

Nebraska Tractor Test Lab

University of Nebraska-Lincoln, [tractortestlab@unl.edu](mailto:tractortestlab@unl.edu)

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# Department of Agricultural Engineering

Dates of test: September 28 to October 1, 1949

Manufacturer: THE MASSEY-HARRIS COMPANY, Racine Wisconsin

Manufacturer's rating: Not Rated

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

NEBRASKA TRACTOR TEST NO. 426

MASSEY-HARRIS 44 DIESEL STD.

## BELT HORSE POWER TESTS

H. P.	Crank shaft speed R. P. M.	Fuel Consumption			Water used Gal. per hour	Temp. Deg. F.		Barometer Inches of Mercury
		Gal. per hour	H. P. hr. per gal.	Lb. per H. P. hour		Cooling med.	Air	
TEST B and TEST C—100% MAXIMUM LOAD—TWO HOURS								
41.82	1350	2.634	15.88	0.441	0.00	171	56	28.960
*TEST D—ONE HOUR								
36.67	1350	2.281	16.08	0.435	0.00	170	57	28.975
TEST E—VARYING LOAD—TWO HOURS (20 minute runs; last line average)								
36.69	1351	2.276	16.12	0.434	- - -	170	56	-- ---
1.40	1464	0.669	2.09	3.343	- - -	151	56	-- ---
19.30	1416	1.466	13.17	0.532	- - -	164	56	-- ---
43.44	1289	2.757	15.76	0.444	- - -	170	58	-- ---
9.81	1438	1.059	9.26	0.755	- - -	162	60	-- ---
28.38	1391	1.899	14.94	0.468	- - -	168	61	-- ---
23.17	1391	1.688	13.73	0.510	0.00	164	58	28.975

## 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			Water used Gal. per hr.	Temp. Deg. F.		Barometer Inches of Mercury
					Gal. per hour	Hp.-hr. per Gal.	Lb. per Hp.-hr.		Cool- ing med.	Air	
TEST F and TEST G—100% MAXIMUM LOAD—											
22.26	4351	1.92	1352	14.97	Not Recorded				172	78	28.950
34.12	4313	2.97	1352	12.79	" "				175	72	28.960
37.91	3380	4.21	1349	6.79	" "				176	69	28.975
37.35	2509	5.58	1347	4.79	" "				175	70	28.975
35.03	1068	12.30	1353	2.27	" "				172	65	28.810
*TEST H—TEN HOURS— 3rd GEAR											
29.64	2608	4.26	1349	5.50	2.098	14.13	0.495	0.00	174	70	28.904
TEST J—100% MAXIMUM LOAD— 3rd GEAR											
29.38	2881	3.82	1348	15.76	Not Recorded				174	75	28.815

## TIRES, WHEELS and WEIGHT

### Tests F, G & H

### Test J

Rear Wheel: Type (each)	Cast Iron	Cast Iron
	Liquid Ballast	None
	Added Cast Iron	None
Rear Tires: No., Size and Ply	2 13-30 6 ply	2 13-30 6 ply
	Type of Tread	Champion Ground Grip
	Make	Firestone
Front Wheel: Type and Weight (each)	Pressed Steel	Pressed Steel
	Liquid Ballast	None
	Added Cast Iron	None
Front Tires: No., Size and Ply	2 6.00-16 4 ply	2 6.00-16 4 ply
	Type of Tread	R1b
	Make	Goodrich Silvertown
Height of Drawbar	28 lb	28 lb
	Static Weight: Rear End	19 1/2 inches
	Front End	1676 lb
Total Weight as Tested (With operator)	5462 lb	3230 lb
	1676 lb	1680 lb
	7313 lb	5083 lb

\* Formerly called RATED LOAD, see horsepower summary.

FUEL, OIL and TIME Fuel: Diesel fuel; cetane 47 (cetane rating taken from oil company's typical inspection data); weight per gallon 6.998 lb. Oil: SAE 10-10W; to motor 2.731 gal; drained from motor 1.555 gal. Total time motor was operated 35 hours.

SPECIFICATIONS Type standard; Serial No. 44DS1116; Drive enclosed gear. Tread Width: Rear 54"; Front 49". Wheel Base 80". Hydraulic Lift Control not available. Advertised speeds, mph: First 2.21; Second 3.33; Third 4.43; Fourth 5.75; Fifth 12.28; Reverse 2.89. Belt Pulley: Diam 13 1/2"; Face 6 1/2"; RPM 863; Belt Speed 3050 fpm. Clutch: Make Borg & Beck; Type dry disc; Operated by foot pedal. Seat Monroe. Brakes: Make own; Type internal expanding band; Location differential shaft; Gear Reduction (brake drum to rear wheel) 5.077:1; Operated by two foot pedals; Locked by latch; Equalization none, can be locked together.

ENGINE Make own; Serial No. HD2601535; Type 4 cylinder vertical; Head I; Mounting crankshaft lengthwise; Lubrication pressure; Bore and Stroke 3 7/8" x 5 1/2"; Rated RPM 1350; Compression Ratio 15:1. Port Diameter Valves: Inlet 1 5/16"; Exhaust 1 5/16". Governor: Make Bosch; Type centrifugal, variable speed. Fuel Injection System Bosch. Starting System 12 volt, Auto-Lite. Generator Auto-Lite. Battery 2 6 volt batteries. Air Cleaner: Make Donaldson; Type oil washed wire screen. Oil Filter: Make Purolator; Type replaceable paper element. Fuel Filter: Make Zenith and Bosch (1 each); Type permanent brass discs and replaceable filter, respectively. Cooling medium temperature control: Thermostat.

REPAIRS AND ADJUSTMENTS No repairs or adjustments.

REMARKS All test results were determined from observed data and without allowances, additions, or deductions. Tests B and F were made with fuel pumps set by the manufacturer to develop approximately 43 corrected 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 and J were made with the same setting.

## HORSEPOWER SUMMARY

	Draw- bar	Belt
1. Sea level (calculated) maximum horsepower (based on 60° F. and 29.92" Hg.)	39.48	43.04
2. Observed maximum horsepower (tests F & B)	37.91	41.82
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)	29.61	36.58

We, the undersigned, certify that this is a true and correct report of official tractor test No. 426.

L. F. Larsen  
Engineer in Charge

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