

January 1952

Test 475: McCormick Farmall Super M

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Department of Agricultural Engineering

Dates of test: June 25 to July 2, 1952

Manufacturer: INTERNATIONAL HARVESTER
CO., CHICAGO, ILLINOIS

Manufacturer's rating: 42.0 drawbar hp, 47.5 belt hp
(Maximum hp corrected to standard conditions)

MCCORMICK FARMALL SUPER M

BELT HORSEPOWER TESTS

Hp	Crank shaft speed rpm	Fuel Consumption			Water used gal per hour	Temp Deg F		Barometer inches of mercury		
		Gal per hour	Hp-hr per gal	Lb per hp-hour		Cooling med	Air			
TEST B—100% MAXIMUM LOAD—TWO HOURS										
46.26	1451	3.907	11.84	0.513	0.00	190	72	28.830		
TEST C—OPERATING MAXIMUM LOAD—ONE HOUR										
43.92	1450	3.657	12.01	0.505	0.00	199	85	28.850		
TEST D—RATED LOAD—ONE HOUR										
41.33	1452	3.508	11.78	0.515	0.00	200	89	28.850		
TEST E—VARYING LOAD—TWO HOURS (20 minute runs; last line average)										
41.45	1455	3.533	11.73	0.517	...	199	90	.....	
1.59	1575	1.527	1.04	5.830	...	199	90	.....	
21.64	1510	2.481	8.72	0.696	...	202	91	.....	
41.81	1352	3.489	11.98	0.507	...	205	92	.....	
11.06	1543	2.006	5.51	1.101	...	193	93	.....	
31.49	1472	2.940	10.71	0.567	...	200	94	.....	
24.84	1485	2.663	9.33	0.651	0.00	200	92	28.850		
TORQUE (at dynamometer)										
Eng RPM	1452	1369	1299	1227	1160	1064	991	923	845	770
Lb-ft	326.2	335.5	344.2	354.7	362.3	365.1	364.9	362.8	362.8	355.3

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 inches of mercury
					Gal per hour	Hp-hr per gal	Lb per hp-hr		Cooling med	Air	
TEST F—100% MAXIMUM LOAD—3rd Gear											
41.79	3192	4.91	1452	5.53	.....	Not Recorded	.....	191	81	28.830
TEST G—OPERATING MAXIMUM LOAD											
37.03	5676	2.45	1451	12.53	.....	Not Recorded	.....	164	92	28.900
39.81	4024	3.71	1453	7.11	.....	Not Recorded	.....	184	81	28.850
40.08	3054	4.92	1453	5.18	.....	Not Recorded	.....	200	80	28.840
39.66	2166	6.87	1453	3.89	.....	Not Recorded	.....	185	81	28.860
35.88	772	17.43	1457	0.67	.....	Not Recorded	.....	201	81	28.870
TEST H—RATED LOAD—TEN HOURS—3rd Gear											
33.33	2520	4.96	1449	4.24	3.236	10.30	0.589	0.00	190	89	28.932
TEST J—OPERATING MAXIMUM LOAD—3rd Gear											
38.71	3092	4.69	1452	10.66	.....	Not Recorded	.....	194	98	28.900
TEST K—OPERATING MAXIMUM LOAD—3rd Gear											
33.59	3058	4.12	1453	15.46	.....	Not Recorded	.....	180	100	28.900

TIRES, WHEELS and WEIGHT

	Tests F, G, & H	Test J	Test K
Rear wheels			
Type	Cast spoke	Cast spoke	Cast spoke
Liquid ballast	963 lb each	None	None
Added cast iron	700 lb each	None	None
Rear tires			
No. and size	Two 13-38	Two 13-38	Two 11-38
Ply	6	6	4
Air pressure	16 lb	12 lb	12 lb
Front wheels			
Type	Cast spoke	Cast spoke	Cast spoke
Liquid ballast	None	None	None
Added cast iron	None	None	None
Front tires			
No. and size	Two 6.00-16	Two 6.00-16	Two 6.00-16
Ply	4	4	4
Air pressure	28 lb	28 lb	28 lb
Height of drawbar	21½ inches	23 inches	20½ inches
Static weight			
Rear end	7083 lb	3758 lb	3559 lb
Front end	1667 lb	1670 lb	1654 lb
Total weight as tested with operator	8925 lb	5603 lb	5388 lb

HORSEPOWER SUMMARY

	Draw-bar	Belt
1. Sea level (calculated) maximum horsepower (based on 60° F and 29.92" Hg)	44.24	48.56
2. Observed maximum horsepower (tests F & B)	41.79	46.26
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)	33.18	41.28

We, the undersigned, certify that this is a true and correct report of official tractor test No. 475.

L. F. LARSEN
Engineer in Charge

C. W. SMITH
F. D. YUNG
L. W. HURLBUT
Board of Tractor
Test Engineers

FUEL, OIL and TIME Gasoline octane No. ASTM 76 Research 82 (rating taken from oil company's typical inspection data); weight per gallon 6.071 lb Oil SAE 20 to motor 2.163 gal; drained from motor 1.804 gal Total time motor was operated 45 hours

CHASSIS Type tricycle Serial No F1947J Tread width rear 52" to 88" front 8½" to 17½" Wheel Base 89¼" Hydraulic control system driven by clutch Advertised speeds mph first 2½ second 3¼ third 5 fourth 6¼ fifth 16¾ reverse 3¾ Belt pulley diam 11" face 7½" rpm 899 Belt speed 2588 fpm Clutch single plate dry disc operated by foot pedal Seat upholstered seat on conical spring with shock absorber Brakes double disc brakes operated by two foot pedals Equalized by locking two brake pedals together Power take-off standard type.

ENGINE Make International Harvester Type 4 cylinder vertical Serial No 2029 Crankshaft mounted lengthwise Head I Lubrication pressure Bore and Stroke 4" x 5½" Rated rpm 1450 Compression ratio 5.9 to 1 Displacement 264 cu in Port Diameter Valves inlet 1 19/32" exhaust 1 7/16" Governor variable speed centrifugal Carburetor Size 1¼" Ignition System battery Starting System 6 volt battery Air Cleaner oil washed wire mesh Muffler was used Oil Filter replaceable treated paper element Cooling medium temperature control thermostat and radiator shutters.

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 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 an operating setting of the carburetor (selected by the manufacturer) of 96.1% of maximum belt horsepower.