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January 1952

Test 488: Cockshutt 50 *

Nebraska Tractor Test Lab

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

NEBRASKA TRACTOR TEST NO. 488

Department of Agricultural Engineering

Dates of test: October 29 to November 6, 1952.

Manufacturer: COCKSHUTT FARM EQUIPMENT
CO. LTD., BRANTFORD, ONTARIO, CANADA.

Manufacturer's rating: Not rated.

COCKSHUTT 50*

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										
55.56	1650	5.003	11.11	0.549	0.00	175	61	28.780		
TEST C—OPERATING MAXIMUM LOAD—ONE HOUR										
52.18	1650	4.263	12.24	0.498	0.00	173	66	28.765		
TEST D—RATED LOAD—ONE HOUR										
49.24	1651	4.106	11.99	0.508	0.00	177	72	28.760		
TEST E—VARYING LOAD—TWO HOURS (20 minute runs; last line average)										
49.40	1654	4.116	12.00	0.508	...	177	72	.....	
1.63	1797	1.713	0.95	6.405	...	158	73	.....	
26.15	1746	2.752	9.50	0.641	...	162	74	.....	
50.16	1571	4.071	12.32	0.495	...	179	74	.....	
13.31	1771	2.112	6.30	0.967	...	160	76	.....	
38.11	1703	3.407	11.19	0.545	...	170	78	.....	
29.79	1707	3.028	9.84	0.620	0.00	168	75	28.760		
TORQUE (at dynamometer)										
RPM	1651	1547	1448	1344	1250	1145	1043	942	844	754
Lb-ft	320.6	329.0	337.2	342.5	346.3	348.4	347.6	343.9	334.4	334.1

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—4th Gear											
51.59	4399	4.40	1651	7.96	.....	Not Recorded	.....	158	40	29.390
TEST G—OPERATING MAXIMUM LOAD											
24.19	6463	1.40	1649	16.68	.....	Not Recorded	.....	154	52	29.385
41.16	6303	2.45	1646	13.98	.....	Not Recorded	.....	156	52	29.390
46.80	5022	3.49	1651	9.53	.....	Not Recorded	.....	159	49	29.400
48.11	4069	4.43	1651	7.16	.....	Not Recorded	.....	156	42	29.400
47.35	2860	6.21	1652	5.15	.....	Not Recorded	.....	157	45	29.400
43.83	1546	10.63	1650	2.84	.....	Not Recorded	.....	158	54	29.405
TEST H—RATED LOAD—TEN HOURS—4th Gear											
38.78	3246	4.48	1650	6.09	3.628	10.69	0.570	0.00	157	60	28.922
TEST J—OPERATING MAXIMUM LOAD—4th Gear											
37.77	3492	4.06	1652	15.59	.....	Not Recorded	.....	148	45	29.140

FUEL, OIL and TIME Gasoline octane No ASTM 76 Research 82 (rating taken from oil company's typical inspection data); weight per gallon 6.094 lb Oil SAE 10 to motor 1.623 gal; drained from motor 0.806 gal Total time motor was operated 46½ hours.

CHASSIS Type standard Serial No 50142 Tread width rear 60" front 55" Wheel Base 86 9/16" Hydraulic control system direct engine drive with independent throw out control Advertised speeds mph first 1.52 second 2.57 third 3.53 fourth 4.32 fifth 5.95 sixth 9.85 reverse 2.1 and 4.75 Belt pulley diam 12" face 8½" rpm 997 Belt speed 3132 fpm Clutch single plate dry disc operated by foot pedal Seat spring cushion with padded back rest Brakes double disc brakes operated by two foot pedals Equalized by locking brakes together Power take-off "live" power take-off with independent clutch.

ENGINE Make Buda Type 6 cylinder vertical Serial No 355263 Crankshaft mounted lengthwise Head I Lubrication pressure Bore and Stroke 3¼" x 4½" Rated rpm 1650 Compression ratio 6.6 to 1 Displacement 273 cu in Port Diameter Valves inlet 1½" exhaust 1½" Governor variable speed centrifugal Carburetor Size 1½" Ignition System battery Starting System 6 volt battery Air Cleaner oil washed wire mesh Muffler was used Oil Filter replaceable paper element 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 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, and J were made with an operating setting of the carburetor (selected by the manufacturer) of 94.4% of maximum belt horsepower.

Engine ran unsteady during no load and ¼ load in Test E.

* Also designated as Co-op E5.

TIRES, WHEELS and WEIGHT

	Tests F, G, & H	Test J	Test K
Rear wheels			
Type	Cast iron	Cast iron	
Liquid ballast	576 lb each	None	
Added cast iron	1960 lb each	None	
Rear tires			
No. and size	Two 14-34	Two 14-34	
Ply	6	6	
Air pressure	20 lb	12 lb	
Front wheels			
Type	Cast iron	Cast iron	
Liquid ballast	None	None	
Added cast iron	None	None	
Front tires			
No. and size	Two 7.50-16	Two 7.50-16	
Ply	4	4	
Air pressure	28 lb	28 lb	
Height of drawbar	16½ inches	18 inches	
Static weight			
Rear end	9186 lb	4115 lb	
Front end	1758 lb	1751 lb	
Total weight as tested with operator	11,119 lb	6041 lb	

No smaller or lighter wheel equipment recommended by manufacturer.

HORSEPOWER SUMMARY

	Draw-bar	Belt
1. Sea level (calculated) maximum horsepower (based on 60° F and 29.92" Hg)	51.51	57.81
2. Observed maximum horsepower (tests F & B)	51.59	55.56
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)	38.63	49.14

We, the undersigned, certify that this is a true and correct report of official tractor test No. 488.

L. F. LARSEN
Engineer in Charge

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