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Test 487: Cockshutt 50*

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

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.

NEBRASKA TRACTOR TEST NO. 487

COCKSHUTT 50*

BELT HORSEPOWER TESTS

Hp	Crank shaft speed rpm	Fuel Consumption: Gal per hour	Fuel Consumption: Hp-hr per gal	Fuel Consumption: Lb per hp-hour	Water used gal per hour	Temp Deg F: Cooling med	Temp Deg F: Air	Barometer inches of mercury
TESTS B and C—100% MAXIMUM LOAD—TWO HOURS								
51.05	1650	3.508	14.55	0.483	0.00	178	66	28.850
TEST D—RATED LOAD—ONE HOUR								
44.45	1651	3.039	14.63	0.481	0.00	172	64	28.845
TEST E—VARYING LOAD—TWO HOURS (20 minute runs; last line average)								
44.41	1651	3.032	14.65	0.480	...	172	64	.....
1.72	1819	1.053	1.63	4.308	...	142	60	.....
23.55	1742	1.931	12.20	0.577	...	157	61	.....
50.20	1542	3.428	14.64	0.480	...	178	62	.....
12.06	1769	1.416	8.52	0.826	...	150	60	.....
33.99	1679	2.443	13.91	0.506	...	162	62	.....
27.66	1700	2.217	12.48	0.564	0.00	160	62	28.840

TORQUE (at dynamometer)

RPM	1650	1544	1446	1346	1250	1152	1050	945	852	753
Lb-ft	318.2	335.1	344.6	340.4	336.0	338.6	338.3	324.6	313.4	281.8

DRAWBAR HORSEPOWER TESTS

Hp	Draw bar pull lb	Speed miles per hr	Crank shaft speed rpm	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 hour	Temp Deg F: Cooling med	Temp Deg F: Air	Barometer inches of mercury
TESTS F and G—100% MAXIMUM LOAD											
24.43	6319	1.45	1651	13.90	..... Not Recorded				154	51	29.150
40.60	6172	2.47	1649	13.32	..... Not Recorded				158	47	29.150
45.39	5062	3.36	1650	12.72	..... Not Recorded				161	46	28.870
46.22	4029	4.30	1654	10.02	..... Not Recorded				160	44	28.870
46.26	2881	6.02	1648	7.68	..... Not Recorded				162	48	28.870
43.50	1566	10.42	1650	4.93	..... Not Recorded				164	53	28.870
TEST H—RATED LOAD—TEN HOURS—4th Gear											
35.74	3048	4.40	1649	7.68	2.793	12.80	0.550	0.00	162	60	28.909
TEST J—OPERATING MAXIMUM LOAD—4th Gear											
38.50	3627	3.98	1650	15.47	..... Not Recorded				163	50	29.150

FUEL, OIL and TIME Diesel Fuel cetane No 50 (rating taken from oil company's typical inspection data); weight per gallon 7.036 lb **Oil** SAE 10 to motor 1.479 gal; drained from motor 0.877 gal **Total time motor was operated** 44½ hours.

CHASSIS Type standard **Serial No** 50-D126 **Tread width** rear 60" front 55" **Wheel Base** 86 9/16" **Hydraulic control system** direct engine drive with independent throwout 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 clutch operated by foot pedal **Seat** spring cushion with padded back rest **Brakes** double disc brakes operated by two foot pedals **Equalized** only by locking brakes together **Power take-off** "live" power take-off with independent clutch.

ENGINE Make Buda **Type** 6 cylinder vertical Diesel **Serial No** 60018 **Crankshaft mounted** lengthwise **Head I Lubrication** pressure **Bore and Stroke** 3¾" x 4⅛" **Rated rpm** 1650 **Compression ratio** 14.3 to 1 **Displacement** 273 cu in **Port Diameter Valves** inlet 1 17/32" exhaust 1 7/32" **Governor** variable speed centrifugal **Starting System** two 6-volt batteries **Air Cleaner** oil washed wire mesh **Muffler** was used **Oil Filter** replaceable waste type **Fuel Filter** two replaceable wound cord filters and one 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 fuel pump set to develop approximately 53 corrected 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 the same setting.

* Also designated as Co-op E5.

TIRES, WHEELS and WEIGHT

	Tests F, G, & H	Test J
Rear wheels		
Type	Cast iron	Cast iron
Liquid ballast	556 lb each	None
Added cast iron	1680 lb each	None
Rear tires		
No. and size	Two 14-34	Two 14-34
Ply	6	6
Air pressure	18 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	17 inches	18 inches
Static weight		
Rear end	8710 lb	4239 lb
Front end	1838 lb	1749 lb
Total weight as tested with operator	10,723 lb	6163 lb

No smaller or lighter wheel equipment recommended by manufacturer.

HORSEPOWER SUMMARY

	Drawbar	Belt
1. Sea level (calculated) maximum horsepower (based on 60° F and 29.92" Hg)	47.16	53.25
2. Observed maximum horsepower (tests F & B)	46.22	51.05
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)	35.37	45.26

We, the undersigned, certify that this is a true and correct report of official tractor test No. 487.

L. F. LARSEN
Engineer in Charge

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