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January 1947

## Test 388 Oliver Row-Crop 88 HC

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: October 20, 1947 to October 31, 1947  
 Manufacturer: THE OLIVER CORPORATION, CHARLES CITY, IOWA  
 Manufacturer's rating: None

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

NEBRASKA TRACTOR TEST NO. 388

OLIVER ROW CROP 88 HC

## 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—100% MAXIMUM LOAD—TWO HOURS								
41.99	1501	3.712	11.31	0.524	0.00	198	87	28.853
TEST C—OPERATING MAXIMUM LOAD—ONE HOUR								
41.07	1601	3.556	11.55	0.513	0.00	192	85	28.840
*TEST D—ONE HOUR								
38.02	1599	3.434	11.07	0.535	0.00	189	81	28.845
TEST E—VARYING LOAD—TWO HOURS (20 minute runs; last line average)								
38.06	1601	3.434	11.08	0.534	- - -	188	79	-- ---
1.64	1698	1.459	1.12	5.268	- - -	175	83	-- ---
19.53	1640	2.411	8.10	0.731	- - -	183	84	-- ---
39.65	1530	3.429	11.56	0.512	- - -	192	79	-- ---
10.00	1672	1.975	5.06	1.170	- - -	179	84	-- ---
28.85	1613	2.938	9.82	0.603	- - -	188	85	-- ---
22.96	1626	2.608	8.804	0.672	0.00	184	82	28.850

## DRAWBAR HORSE POWER TESTS

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—100% MAXIMUM LOAD— 3rd GEAR											
36.97	3023	4.59	1604	5.37	Not Recorded				181	63	28.885
TEST G—OPERATING MAXIMUM LOAD											
34.57	5173	2.51	1603	11.08	Not Recorded				179	59	28.885
34.57	3898	3.33	1601	8.73	" "				180	57	29.050
35.20	2900	4.55	1604	6.07	" "				180	58	29.050
34.53	2166	6.00	1601	4.31	" "				179	57	29.050
33.96	1705	7.47	1601	3.08	" "				180	66	28.880
30.06	861	13.09	1606	1.44	" "				180	65	28.880
*TEST H—TEN HOURS— 3rd GEAR											
28.96	2328	4.66	1601	3.57	3.057	9.47	0.625	0.00	176	58	28.925
TEST J—OPERATING MAXIMUM LOAD— 3rd GEAR											
35.95	3007	4.48	1603	8.91	Not Recorded				179	57	28.945
TEST K—OPERATING MAXIMUM LOAD — 3rd GEAR											
*Wheels of lightest weight and smallest tires suggested by the manufacturer.											
29.74	2804	3.98	1602	13.10	Not Recorded				179	67	28.835

## TIRES, WHEELS and WEIGHT

		Tests F, G & H		Test J	Test K
Rear Wheel: Type and Weight (each)	Cast Disc 448 lb	Cast Disc 448 lb		Cast Disc 448 lb	Cast Disc 448 lb
	Liquid Ballast	710 lb		None	None
	Added Cast Iron	891 lb		None	None
Rear Tires: No., Size and Ply	2 13-38 6 ply	2 13-38 6 ply		2 11-38 6 ply	2 11-38 6 ply
	Type of Tread	Farm Tractor Lug Tread		Farm Tractor Lug Tread	Champion Ground Grip
	Make	U. S. Royal		U. S. Royal	Firestone
Front Wheel: Type and Weight (each)	16 lb	14 lb		16 lb	16 lb
	Cast Disc 89 lb	Cast Disc 89 lb		Cast Disc 89 lb	Cast Disc 89 lb
	Liquid Ballast	None		None	None
Front Tires: No., Size and Ply	None	None		None	None
	2 6.00-16 4 ply	2 6.00-16 4 ply		2 6.00-16 4 ply	2 6.00-16 4 ply
	Type of Tread	Guide Grip		Guide Grip	Guide Grip
Height of Drawbar	Firestone	Firestone		Firestone	Firestone
	28 lb	28 lb		28 lb	28 lb
	Air Pressure	28 lb		28 lb	28 lb
Static Weight: Rear End	17 1/4 inches	18 1/4 inches		15 1/4 inches	15 1/4 inches
	6844 lb	3645 lb		3507 lb	3507 lb
	1455 lb	1455 lb		1455 lb	1455 lb
Total Weight as Tested (With operator)		8484 lb		5285 lb	5147 lb

\* Formerly called RATED LOAD, see horsepower summary.

FUEL, OIL and TIME Fuel: Gasoline, octane 74 (octane rating taken from oil company's typical inspection data); weight per gallon 5.923 lb. Oil: SAE 20-20W; to motor 1.499 gal; drained from motor 1.123 gal. Total time motor was operated 52 hours.

SPECIFICATIONS Type tricycle; Serial No. 120003; Drive enclosed gear. Tread Width: Rear 47" to 91"; Front 8 1/2 and 12 1/16. Advertised speeds, mph: First 2.62; Second 3.39; Third 4.50; Fourth 5.83; Fifth 7.17; Sixth 12.32; Reverse 2.68 and 4.60. Belt Pulley: Diam 11 7/8"; Face 7 1/4"; RPM 992; Belt Speed 3084 fpm. Clutch: Make Borg & Beck; Type single plate dry; Operated by foot pedal. Seat upholstered type with back rest. Brakes: Make own; Type external contracting band; Location mounted on bull gear pinions; Gear Reduction (brake drum to rear wheel) 4.6923:1; Operated by two foot pedals; Locked by latches; Equalization yes, equalizer bar serves as master brake pedal.

ENGINE Make own; Serial No. 707053; Type 6 cylinder vertical; Head I; Mounting crankshaft lengthwise; Lubrication pressure; Bore and Stroke 3 1/2" x 4"; Rated RPM 1600. Port Diameter Valves: Inlet 1 5/16"; Exhaust 1 3/16. Governor: Make own; Type centrifugal, variable speed. Carburetor: Make Marvel-Schebler; Model TSX-181; Size 1". Distributor and Coil Delco-Remy. Battery Delco. Air Cleaner: Make Donaldson; Type oil washed wire screen. Oil Filter: Make Michiana; Type replaceable, waste-packed 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, J and K were made with an operating setting of the carburetor (selected by the manufacturer) of 97.6% of maximum belt horsepower.

## HORSEPOWER SUMMARY

	Draw- bar	Belt
1. Sea level (calculated) maximum horsepower (based on 60° F. and 29.92" Hg.)	38.40	44.66
2. Observed maximum horsepower (tests F & B)	36.97	41.99
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)	28.80	37.96

We, the undersigned, certify that this is a true and correct report of official tractor test No. 388.

L. F. Larsen  
 Engineer in Charge

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

