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January 1949

## Test 425 Oliver Row-Crop 77 HC

Nebraska Tractor Test Lab

University of Nebraska-Lincoln, tractortestlab@unl.edu

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**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	
<b>TEST B—100% MAXIMUM LOAD—TWO HOURS</b>								
37.17	1601	3.528	10.54	0.582	0.00	176	68	28.865
<b>TEST C—OPERATING MAXIMUM LOAD—ONE HOUR</b>								
34.34	1600	2.930	11.72	0.523	0.00	172	62	28.960
<b>*TEST D—ONE HOUR</b>								
33.02	1599	2.899	11.39	0.538	0.00	172	60	28.965
<b>TEST E—VARYING LOAD—TWO HOURS (20 minute runs; last line average)</b>								
33.03	1599	2.879	11.47	0.534	- -	172	61	-- ---
1.65	1717	1.180	1.40	4.382	- -	161	63	-- ---
17.35	1675	2.042	8.50	0.721	- -	166	64	-- ---
33.24	1526	2.830	11.75	0.522	- -	173	64	-- ---
8.85	1702	1.616	5.48	1.119	- -	164	64	-- ---
25.34	1652	2.463	10.29	0.596	- -	170	65	-- ---
19.91	1645	2.169	9.18	0.668	0.00	168	63	28.968

**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.		Cooling med.	Air	
<b>TEST F—100% MAXIMUM LOAD— 3rd GEAR</b>											
32.89	2904	4.25	1599	4.64	Not Recorded				177	66	28.935
<b>TEST G—OPERATING MAXIMUM LOAD</b>											
28.83	4714	2.29	1599	10.34	Not Recorded				174	78	28.925
29.82	3542	3.16	1598	6.07	"				175	72	28.925
30.19	2652	4.27	1601	4.23	"				174	73	28.935
29.85	1973	5.67	1602	3.28	"				174	74	28.920
29.23	1634	6.71	1608	2.77	"				173	75	28.920
26.46	839	11.83	1606	1.39	"				173	77	28.915
<b>*TEST H—TEN HOURS— 3rd GEAR</b>											
25.75	2260	4.27	1600	4.12	2.600	9.90	0.619	0.00	168	54	29.093
<b>TEST I—OPERATING MAXIMUM LOAD — 3rd GEAR</b>											
22.61	2568	4.18	1599	7.26	Not Recorded				171	61	29.105
<b>TEST K—OPERATING MAXIMUM LOAD — 3rd GEAR</b>											
*Wheels of lightest weight and smallest tires suggested by the manufacturer.											
All added weight removed from tractor (liquid, cast iron, or any other forms.)											
20.86	2193	3.57	1597	14.81	Not Recorded				170	60	29.110

**TIRES, WHEELS and WEIGHT**

	Tests F, G & H		Test I	Test K
Rear Wheel: Type and Weight (each)	Cast Disc	Cast Disc	Cast Disc	Cast Disc
	Liquid Ballast	389 lb	None	None
	Added Cast Iron	1184 lb	None	None
Rear Tires: No., Size and Ply	2 12-38 6 ply	2 12-38 6 ply	2 12-38 6 ply	2 10-38 4 ply
	Type of Tread	Farm Tractor	Farm Tractor	Hi Cleat
	Make	U. S. Royal	U. S. Royal	Goodrich Silvertown
	Air Pressure	20 lb	16 lb	12 lb
Front Wheel: Type and Weight (each)	Pressed Steel	Pressed Steel	Pressed Steel	Pressed Steel
	Liquid Ballast	None	None	None
	Added Cast Iron	None	None	None
Front Tires: No., Size and Ply	2 5.50-16 4 ply	2 5.50-16 4 ply	2 5.50-16 4 ply	2 5.50-16 4 ply
	Type of Tread	Triple Rib	Triple Rib	Triple Rib
	Make	Goodyear	Goodyear	Goodyear
	Air Pressure	28 lb	28 lb	28 lb
Height of Drawbar	19 inches	20 inches	17 inches	
Static Weight: Rear End	6626 lb	3480 lb	2823 lb	
	Front End	1222 lb	1211 lb	1209 lb
Total Weight as Tested (With operator)	8023 lb	4866 lb	4207 lb	

**HORSEPOWER SUMMARY**

	Draw-bar	Belt
1. Sea level (calculated) maximum horsepower (based on 60° F. and 29.92" Hg.)	34.20	38.82
2. Observed maximum horsepower (tests F & B)	32.89	37.17
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)	25.65	33.00

We, the undersigned, certify that this is a true and correct report of official tractor test No. 425.

L. F. Larsen  
Engineer in Charge

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

FUEL, OIL and TIME Fuel: Gasoline, octane 74 (octane rating taken from oil company's typical inspection data); weight per gallon 6.127 lb. Oil: SAE 10-10W; to motor 1.271 gal; drained from motor 1.122 gal. Total time motor was operated 45 hours.

SPECIFICATIONS Type tricycle; Serial No. 325494; Drive enclosed gear. Tread Width: Rear 60" to 92 1/2"; Front 7 1/2" or 12 5/8". Wheel Base 90 7/8". Hydraulic Lift Control not available. Advertised speeds, mph: First 2 1/2; Second 3 1/4; Third 4 1/4; Fourth 5 5/8; Fifth 6 5/8; Sixth 11 1/2; Reverse 2 5/8 and 4 1/2. Belt Pulley: Diam 12"; Face 7 1/4"; RPM 992; Belt Speed 3116 fpm. Clutch: Make Borg & Beck; Type single plate; Operated by foot pedal. Seat pressed steel cushioned by rubber in torsion. Brakes: Make own; Type external contracting band; Location mounted on bull gear pinions; Gear Reduction (brake drum to rear wheel) 4.846:1; Operated by two foot pedals; Locked by latches; Equalization yes, equalizer bar serves as master brake pedal.

ENGINE Make own; Serial No. G2 779367; Type 6 cylinder vertical; Head I; Mounting crankshaft lengthwise; Lubrication pressure; Bore and Stroke 3 5/16" x 3 3/4"; Rated RPM 1600; Compression Ratio 6.75:1. Port Diameter Valves: Inlet 1 3/16"; Exhaust 1". Governor: Make own; Type centrifugal, variable speed. Carburetor: Make Marvel-Schebler; Model TSX 363; Size 7/8". Starter Delco-Remy. Generator Delco-Remy. Distributor and Coil Delco-Remy. Battery Delco-Remy. 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 91.6% of maximum belt horsepower.

\* Formerly called RATED LOAD, see horsepower summary.

