

Tractor Test and Power Museum, The Lester F. Larsen

UNL Larsen Tractor Museum Archives

University of Nebraska - Lincoln

Year 1949

Test 429: John Deere AR

Tractor Test Museum
University of Nebraska

Dates of test: October 11 to October 15, 1949

Manufacturer: JOHN DEERE WATERLOO TRACTOR WORKS OF DEERE MANUFACTURING CO. Waterloo, Iowa

JOHN DEERE AR GASOLINE

Manufacturer's rating: Not Rated

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								
37.87	975	3.545	10.68	0.572	0.00	197	57	28.897
TEST C—OPERATING MAXIMUM LOAD—ONE HOUR								
36.13	975	3.077	11.74	0.521	0.00	194	57	28.922
*TEST D—ONE HOUR								
33.28	975	2.889	11.52	0.531	0.00	195	62	28.925
TEST E—VARYING LOAD—TWO HOURS (20 minute runs; last line average)								
33.22	974	2.874	11.56	0.529	---	194	62	---
1.81	1041	1.094	1.65	3.696	---	207	62	---
17.53	1015	1.957	8.96	0.683	---	199	64	---
35.28	936	2.982	11.83	0.517	---	202	66	---
9.06	1033	1.535	5.90	1.036	---	201	66	---
25.67	1000	2.413	10.64	0.575	---	202	68	---
20.43	1000	2.143	9.53	0.641	0.00	201	65	28.953

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	
TEST F—100% MAXIMUM LOAD— 4th GEAR											
34.03	2999	4.26	976	6.08	Not Recorded			184	52	28.960	
TEST G—OPERATING MAXIMUM LOAD											
12.64	4372	1.08	969	18.34	Not Recorded			168	61	29.300	
25.44	4431	2.15	973	16.57	" "			190	60	29.300	
31.39	3915	3.01	976	9.64	" "			186	55	28.960	
32.79	2885	4.26	975	5.87	" "			197	50	28.960	
31.62	1921	6.17	974	4.04	" "			202	67	28.960	
28.07	957	11.00	975	2.01	" "			195	70	28.960	
*TEST H—TEN HOURS— 4th GEAR											
26.24	2279	4.32	976	4.71	2.662	9.86	0.620	0.03	197	69	28.967
TEST J—OPERATING MAXIMUM LOAD— 4th GEAR											
31.96	2886	4.15	976	9.11	Not Recorded			201	62	29.210	

TIRES, WHEELS and WEIGHT

Tests F, G & H Test J

Rear Wheel: (each)	Type and Weight	Cast Iron	Cast Iron
	Liquid Ballast	285 lb	None
	Added Cast Iron	600 lb	None
Rear Tires:	No., Size and Ply	2 13-26 6 ply	2 13-26 6 ply
	Type of Tread	Champion Ground Grip	Champion Ground Grip
	Make	Firestone	Firestone
	Air Pressure	14 lb	12 lb
	Front Wheel: (each)	Type and Weight	Pressed Steel
Front Wheel: (each)	Liquid Ballast	None	None
	Added Cast Iron	None	None
	Front Tires:	No., Size and Ply	2 6.00-16 4 ply
Front Tires:	Type of Tread	Guide Grip	Guide Grip
	Make	Firestone	Firestone
	Air Pressure	28 lb	28 lb
	Height of Drawbar	14 1/2 inches	14 1/2 inches
	Tie Weight:	Rear End	5572 lb
Front End		1620 lb	1620 lb
Total Weight as Tested (With operator)		7367 lb	5597 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 6.116 lb. Oil: SAE 20; to motor 2.655 gal; drained from motor 2.458 gal. Total time motor was operated 50 hours.

SPECIFICATIONS Type standard; Serial No. 272197; Drive enclosed gear. Tread Width; Rear 53 7/16" and 57 7/16"; Front 47 1/4". Wheel Base 75 3/4" Hydraulic Lift Control yes. Advertised speeds, mph: First 1 1/4; Second 2 1/2; Third 3 1/4; Fourth 4 3/8; Fifth 6 1/4; Sixth 11; Reverse 2 3/4. Belt Pulley: Diam 12 13/16"; Face 7 3/8"; RPM 975; Belt Speed 3270 fpm. Clutch: Make own; Type dry disc; Operated by hand lever. Seat spring cushion with padded back rest. Brakes: Make own; Type internal expanding shoe; Location on independent shafts geared to each rear axle; Gear Reduction (brake drum to rear wheel) 6.8:1; Operated by one foot pedal on each brake; Locked by latches; Equalization none.

ENGINE Make own; Serial No. 272197; Type 2 cylinder horizontal; Head I; Mounting crankshaft crosswise; Lubrication pressure; Bore and Stroke 5 1/2" x 6 3/4"; Rated RPM 975; Compression Ratio 5.57:1. Port Diameter Valves: Inlet 1 15/16"; Exhaust 1 49/64". Governor: Make own; Type centrifugal, variable speed. Carburetor: Make Marvel-Schebler; Model D LTX 71; Size 1 1/2". Starting System Delco-Remy, 12 volt. Generator Delco-Remy. Magneto Wico. Battery Delco 6 volt (2 used). Air Cleaner: Make Donaldson; Type oil washed wire screen. Oil Filter: Make Purolator; Type full flow filter with by-pass using replaceable impregnated paper element. Cooling medium temperature control: Radiator shutter.

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 95.3% of maximum belt horsepower.

HORSEPOWER SUMMARY

	Draw-bar	Belt
1. Sea level (calculated) maximum horsepower (based on 60° F. and 29.92" Hg.)	34.88	39.10
2. Observed maximum horsepower (tests F & B)	34.03	37.87
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)	26.16	33.24

We, the undersigned, certify that this is a true and correct report of official tractor test No. 429.

L. F. Larsen
Engineer in Charge

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

