

Tractor Test and Power Museum, The Lester F. Larsen

UNL Larsen Tractor Museum Archives

University of Nebraska - Lincoln

Year 1962

Test 819: Farmall 504 (Gasoline)

Tractor Museum

University of Nebraska-Lincoln, TractorMuseumArchives@unl.edu

NEBRASKA TRACTOR TEST 819 - FARMALL 504 GASOLINE

The University of Nebraska Agricultural Experiment Station

E. F. Frolik, Dean; H. H. Kramer, Director, Lincoln, Nebraska

POWER TAKE-OFF PERFORMANCE

Hp	Crank-shaft speed rpm	Fuel Consumption		Hp-hr per gal	Temperature Degrees F			Barometer inches of Mercury
		Gal per hr	Lb per hp-hr		Cooling medium	Air wet bulb	Air dry bulb	
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed—Two Hours								
46.20	2200	3.747	0.496	12.33	178	65	75	28.905
Standard Power Take-off Speed (540 rpm)—One Hour								
44.05	1970	3.630	0.504	12.13	177	65	75	28.910
VARYING POWER AND FUEL CONSUMPTION—TWO HOURS								
40.84	2289	3.515	0.527	11.62	176	65	75	.....
0.00	2453	1.427	.....	.....	166	65	75	.....
20.99	2353	2.466	0.719	8.51	174	65	75	.....
46.84	2201	3.765	0.492	12.44	176	65	76	.....
10.81	2420	1.946	1.102	5.55	170	64	74	.....
30.93	2310	2.971	0.588	10.41	179	65	75	.....
Av 25.07	2338	2.682	0.655	9.35	174	65	75	28.920

DRAWBAR PERFORMANCE

Hp	Draw-bar pull lbs	Speed miles per hr	Crank-shaft speed rpm	Slip of drivers %	Fuel Consumption		Hp-hr per gal	Temp Degrees F			Barometer inches of Mercury
					Gal per hr	Lb per hp-hr		Cooling med	Air wet bulb	Air dry bulb	

VARYING DRAWBAR POWER AND FUEL CONSUMPTION WITH BALLAST

Maximum Available Power—Two Hours—3rd Gear											
40.41	2787	5.44	2196	4.43	3.696	0.560	10.93	180	64	71	28.720
75% of Pull at Maximum Power—Ten Hours—3rd Gear											
32.70	2129	5.76	2295	3.21	3.305	0.618	9.89	178	67	74	28.702
50% of Pull at Maximum Power—Two Hours—3rd Gear											
22.33	1415	5.92	2337	2.32	2.754	0.755	8.11	177	65	71	28.710

MAXIMUM POWER WITH BALLAST

29.02	6111	1.78	2294	13.83	1st Gear	.....	176	62	81	28.760
40.80	3855	3.97	2201	6.15	2nd Gear	.....	178	60	67	28.750
41.30	2839	5.46	2205	4.67	3rd Gear	.....	176	59	65	28.760
41.04	1965	7.83	2201	3.06	4th Gear	.....	176	60	67	28.750
38.63	5643	2.57	2199	9.91	2nd Gear Torq. Amp.	176	62	74	28.730	
40.03	4176	3.59	2202	6.61	3rd Gear Torq. Amp.	178	62	74	28.730	
40.16	2894	5.20	2198	4.60	4th Gear Torq. Amp.	175	60	67	28.750	
39.54	1258	11.79	2199	1.99	5th Gear Torq. Amp.	175	62	74	28.730	

MAXIMUM POWER WITHOUT BALLAST

39.92	2785	5.38	2199	7.22	3rd Gear	180	65	76	28.510
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VARYING DRAWBAR PULL AND TRAVEL SPEED WITH BALLAST—3rd Gear

Pounds pull	2839	3035	3014	2953	2908	2940	2910
Horsepower	41.30	39.51	35.04	30.05	25.12	21.36	16.65
Miles per hour	5.46	4.88	4.36	3.82	3.24	2.73	2.15
Slip of Drivers, %	4.67	4.80	4.80	4.67	4.67	4.67	4.67

TIRES, BALLAST and WEIGHT

	With Ballast	Without Ballast
Rear tires	—No, size, ply & psi	Two 13.6-38; 6; 16
Ballast	—Liquid	807 lb each
	—Cast iron	288 lb each
Front tires	—No, size, ply & psi	Two 6.00-16; 4; 28
Ballast	—Liquid	None
	—Cast iron	197 lb each
Height of drawbar		20 inches
Static weight	—Rear	5950 lb
	—Front	1745 lb
Total weight with operator		7870 lb

Department of Agricultural Engineering

Dates of Test: May 17 to June 6, 1962

Manufacturer: INTERNATIONAL HARVESTER COMPANY, CHICAGO, ILLINOIS

Manufacturer's Power Rating: Not Rated

FUEL, OIL and TIME Fuel Regular gasoline Octane No Motor 84.6 Research 92.2 (rating taken from oil company's typical inspection data) Specific gravity converted to 60°/60° 0.7351 Weight per gallon 6.119 lb Oil SAE 10W-30 API service classification MS To Motor 1.470 gal Drained from motor 0.863 gal Transmission and final-drive lubricant I.H. Hy-Tran Fluid Total time engine was operated 43½ hours.

ENGINE Make International gasoline Type 4 cylinder vertical Serial No C-153-2147 Crankshaft mounted lengthwise Rated rpm 2200 Bore and stroke 3⅜" x 4¼" Compression ratio 7.70 to 1 Displacement 152.1 cu in Carburetor size 1¼" Ignition system battery Cranking system 12 volt electric Lubrication pressure Air cleaner oil washed wire mesh Oil filter replaceable treated paper element Oil cooler radiator for hydraulic and transmission oil Muffler was used Cooling medium temperature control thermostat.

CHASSIS Type Tricycle Serial No 1435 S-Y Tread width rear 52" to 84" front 8" and 14" Wheel base 89.0" Center of gravity (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from centerline of rear wheels 22.9" Vertical distance above roadway 32.4" Horizontal distance from center of rear wheel tread 0.0" to the right/left Hydraulic control system direct engine drive Transmission selective gear fixed ratio plus partial range operator controlled power shifting Advertised speeds mph first 1.96 second 4.18 third 5.64 fourth 7.99 fifth 17.64 reverse 2.42 (Using T.A.) first 1.32 second 2.82 third 3.81 fourth 5.39 fifth 11.90 reverse 1.64 Clutch single plate dry disc operated by foot pedal Brakes disc brakes operated by two foot pedals which can be locked together Steering power assisted Turning radius (on concrete surface with brake applied) right 98.5" left 98.5" (on concrete surface without brake) right 100" left 100" Turning space diameter (on concrete surface with brake applied) right 206" left 206" (on concrete surface without brake) right 209.5" left 209.5" Belt pulley 1168 rpm at 2200 engine rpm diam 11" face 7.5" Belt speed 3363 fpm Power take-off 548 rpm at 2000 engine rpm.

REPAIRS and ADJUSTMENTS No repairs or adjustments.

REMARKS All test results were determined from observed data obtained in accordance with the SAE and ASAE test code.

First gear Torque Amplifier was not run as it was necessary to limit the pull in first gear direct drive.

Fifth gear direct drive was not run as it exceeded 15 mph.

We, the undersigned, certify that this is a true and correct report of official Tractor Test 819.

L. F. LARSEN
Engineer-in-Charge

L. W. HURLBUT
G. W. STEINBRUEGGE
J. J. SULEK
Board of Tractor Test Engineers