

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

Nebraska Tractor Tests

Tractor Test and Power Museum, The Lester F.
Larsen

January 1973

Test 1128: International 674 Utility Gasoline and 674 Row Crop Gasoline

Nebraska Tractor Test Lab

University of Nebraska-Lincoln, tractortestlab@unl.edu

Follow this and additional works at: <https://digitalcommons.unl.edu/tractormuseumlit>



Part of the [Energy Systems Commons](#), [History of Science, Technology, and Medicine Commons](#), [Other Mechanical Engineering Commons](#), [Physical Sciences and Mathematics Commons](#), [Science and Mathematics Education Commons](#), and the [United States History Commons](#)

Nebraska Tractor Test Lab, "Test 1128: International 674 Utility Gasoline and 674 Row Crop Gasoline" (1973). *Nebraska Tractor Tests*. 1451.

<https://digitalcommons.unl.edu/tractormuseumlit/1451>

This Article is brought to you for free and open access by the Tractor Test and Power Museum, The Lester F. Larsen at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Nebraska Tractor Tests by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

NEBRASKA TRACTOR TEST 1128 – INTERNATIONAL 674 UTILITY GASOLINE (ALSO INTERNATIONAL 674 ROW CROP GASOLINE)

POWER TAKE-OFF PERFORMANCE

Hp	Crankshaft 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 (PTO Speed—605 rpm)								
58.53	2400	5.677	0.598	10.31	189	59	75	28.927
Standard Power Take-off Speed (540 rpm)—One Hour								
56.01	2142	5.174	0.570	10.83	190	59	74	28.915
VARYING POWER AND FUEL CONSUMPTION—Two Hours								
52.42	2530	5.111	0.601	10.26	190	59	73	.....
0.00	2626	2.111	.....	.....	175	59	73	.....
26.80	2584	3.433	0.790	7.81	185	60	75	.....
58.54	2399	5.685	0.599	10.30	190	60	75	.....
13.46	2599	2.777	1.273	4.85	180	59	72	.....
40.09	2579	4.245	0.653	9.44	185	59	73	.....
Av 31.89	2553	3.894	0.753	8.19	185	59	73	28.877

DRAWBAR PERFORMANCE

Hp	Drawbar pull lbs	Speed miles per hr	Crankshaft 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 (3 Lo)											
51.97	4851	4.02	2397	8.58	5.531	0.656	9.40	177	54	66	29.125
75% of Pull at Maximum Power—Ten Hours—3rd Gear (3 Lo)											
44.09	3735	4.43	2569	6.02	4.838	0.676	9.11	180	58	67	28.754
50% of Pull at Maximum Power—wo Hours—3rd Gear (3 Lo)											
31.79	2610	4.57	2598	3.73	3.789	0.735	8.39	183	65	80	28.700
50% of Pull at Reduced Engine Speed—Two Hours—5th Gear (1 Hi)											
30.89	2554	4.53	1531	3.63	3.221	0.643	9.589	183	62	71	28.680
MAXIMUM POWER WITH BALLAST											
50.00	6583	2.85	2468	14.94	2nd Gear (2 Lo)		179	50	61	29.160	
53.26	4967	4.02	2399	8.61	3rd Gear (3 Lo)		179	52	62	29.160	
52.10	3678	5.31	2398	6.06	4th Gear (4 Lo)		179	52	62	29.160	
53.48	2848	7.04	2400	4.47	5th Gear (1 Hi)		179	52	62	29.160	
51.24	1638	11.73	2402	2.23	6th Gear (2 Hi)		180	52	62	29.160	

VARYING DRAWBAR PULL AND TRAVEL SPEED WITH BALLAST 3rd Gear (3 Lo)

Pounds Pull	4967	5296	5535	5526	5616	5651	5117
Horsepower	53.26	50.60	46.49	40.82	35.36	29.33	21.67
Crankshaft Speed rpm	2399	2157	1910	1681	1437	1187	951
Miles Per Hour	4.02	3.58	3.15	2.77	2.36	1.95	1.59
Slip of Drivers %	8.61	9.42	10.01	10.13	10.58	10.69	9.20

TRACTOR SOUND LEVEL

	dB(A)
Maximum Available Power 2 Hours	98.0
75% of Pull at Max. Power 10 Hours	100.0
50% of Pull at Max Power 2 Hours	98.0
50% of Pull at Reduced Engine Speed 2 Hours	91.5
Bystander 8th Gear (4 Hi)	82.0

TIRES, BALLAST AND WEIGHT

	With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi	Two 16.9-30;6;16
Ballast	—Liquid	934 lb each
	—Cast Iron	584 lb each
Front tires	—No., size, ply & psi	Two 7.50-16;6;20
Ballast	—Liquid	None
	—Cast Iron	None
Height of drawbar	14½ inches	15 inches
Static weight with operator—rear	6780 lb	3745 lb
front	1550 lb	1550 lb
total	8330 lb	5295 lb

Department of Agricultural Engineering

Dates of Test: April 26 to May 17, 1973

Manufacturer: INTERNATIONAL HARVESTER COMPANY, CHICAGO, ILLINOIS

FUEL, OIL AND TIME Fuel lead free gasoline Octane No Motor 82.7 Research 91.6 (rating taken from oil company's typical inspection data) Specific gravity converted to 60°/60° 0.7410 Weight per gallon 6.169 lb Oil SAE 30 API service classification "I.H. low ASH engine oil" SAE 30 recommended or API service classification CD and CC To motor 1.424 gal. Drained from motor 1.274 gal Transmission and final drive lubricant I.H. Hy-Tran fluid Total time engine was operated 47 hours.

Engine Make International Gasoline Type 4 cylinder vertical Serial No. 200CT2U029623 Crankshaft Mounted lengthwise Rated rpm 2400 Bore and stroke 3.812" x 4.390" Compression ratio 7.33 to 1 Displacement 200 cu in Carburetor size 1" Ignition system battery Cranking system 12 volt electric Lubrication pressure Air cleaner dual stage dry type with replaceable pleated paper element and automatic dust unloader Oil filter full flow treated paper screw-on cartridge Oil cooler radiator for transmission and hydraulic fluid Fuel filter screen in sediment bowl Muffler was used Cooling medium temperature control thermostat.

CHASSIS Type standard Serial No. 2430001U100169* Tread width rear 58" to 74" front 54" to 78" Wheel base 84.4" Center of gravity (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 25.5" Vertical distance above roadway 30.5" Horizontal distance from center of rear wheel tread 0" to the right/left Hydraulic control system direct engine drive Transmission selective gear fixed ratio Advertised speeds mph first 1.9 second 3.1 third 4.2 fourth 5.5 fifth 7.1 sixth 11.6 seventh 15.6 eighth 10.1 reverse 2.4, 3.9, 5.3, 6.8 Clutch single plate dry disc operated by foot pedal Brakes wet single disc hydraulically power actuated by two foot pedals that can be locked together with automatic equalizing Steering hydrostatic Turning radius (on concrete surface with brake applied) right 121" left 121" (on concrete surface without brake) right 135" left 135" Turning space diameter (on concrete surface with brake applied) right 251" left 251" (on concrete surface without brake) right 279" left 279" Power take-off 605 rpm at 2400 engine rpm.

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test code or official Nebraska test procedure.

First gear was not run as it was necessary to limit the pull in second gear to avoid excessive wheel slippage. Seventh and eighth gears were not run as they exceed fifteen miles per hour.

We, the undersigned, certify that this is a true and correct report of official Tractor Test 1128.

L. F. LARSEN

Engineer-in-Charge

G. W. STEINBRUEGGE, Chairman

W. E. SPLINTER

D. E. LANE

Board of Tractor Test Engineers

The University of Nebraska Agricultural Experiment Station
E. F. Frolik, Dean; H. W. Ottoson, Director; Lincoln, Nebraska