

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

Nebraska Tractor Tests

Tractor Test and Power Museum, The Lester F.
Larsen

January 1972

Test 1111: John Deere 4030 Quad-Range Diesel

Tractor Museum

University of Nebraska-Lincoln, TractorMuseumArchives@unl.edu

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



Part of the [Applied Mechanics Commons](#)

Museum, Tractor, "Test 1111: John Deere 4030 Quad-Range Diesel" (1972). *Nebraska Tractor Tests*. 1434.
<https://digitalcommons.unl.edu/tractormuseumlit/1434>

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 1111 – JOHN DEERE 4030 QUAD-RANGE DIESEL

Department of Agricultural Engineering
 Dates of Test: October 9th to October 13th, 1972
 Manufacturer: John Deere Waterloo Tractor Works, Waterloo, Iowa

POWER TAKE-OFF PERFORMANCE

Hp	Crankshaft speed rpm	Fuel Consumption Gal per hr	Lb per hp-hr	Hp-hr per gal	Temperature Cooling medium	Degrees F Air wet bulb	Air dry bulb	Barometer inches of Mercury	
MAXIMUM POWER TAKE-OFF PERFORMANCE									
Rated Engine Speed—Two Hours (PTO Speed—1186 rpm)									
80.33	2500	5.622	0.486	14.29	186	65	74	29.117	
Standard Power Take-off Speed (1000 rpm)—One Hour									
77.72	2108	5.046	0.451	15.40	187	65	75	29.155	
VARYING POWER AND FUEL CONSUMPTION—Two Hours									
70.93	2595	5.239	0.513	13.54	182	65	75	.....
0.00	2666	2.250	.....	.....	173	65	74	.....
35.97	2632	3.675	0.710	9.79	178	65	76	.....
80.06	2500	5.576	0.484	14.36	186	65	75	.....
17.96	2649	3.006	1.163	5.97	175	65	75	.....
53.40	2611	4.427	0.576	12.06	180	65	76	.....
Av	43.05	2609	4.029	0.650	10.69	179	65	75	29.180

DRAWBAR PERFORMANCE

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

VARYING DRAWBAR POWER AND FUEL CONSUMPTION WITH BALLAST

Maximum Available Power—Two Hours—7th Gear (B2)											
67.03	4805	5.23	2498	7.01	5.722	0.593	11.71	177	49	55	29.365
75% of Pull at Maximum Power—Ten Hours—7th Gear (B2)											
54.63	3670	5.58	2608	4.98	4.970	0.631	10.99	181	50	54	29.002
50% of Pull at Maximum Power—Two Hours—7th Gear (B2)											
37.55	2462	5.72	2634	3.56	4.211	0.778	8.92	174	46	51	29.375
50% of Pull at Reduced Engine Speed—Two Hours—12th Gear (B4)											
37.16	2459	5.67	1559	3.60	2.807	0.524	13.24	185	46	51	29.395

MAXIMUM POWER WITH BALLAST

57.37	7512	2.86	2594	14.82	3rd Gear (A3)	.....	177	54	58	29.230
65.62	6117	4.02	2500	9.34	5th Gear (B1)	.....	183	54	59	29.270
66.72	5304	4.72	2500	7.76	6th Gear (C1)	.....	182	53	58	29.270
68.25	4892	5.23	2500	7.24	7th Gear (B2)	.....	182	54	59	29.270
68.76	4225	6.10	2500	5.92	8th Gear (C2)	.....	182	52	57	29.270
68.69	3670	7.02	2499	5.12	9th Gear (B3)	.....	181	53	58	29.270

VARYING DRAWBAR PULL AND TRAVEL SPEED WITH BALLAST 7th Gear (B2)

Pounds Pull	4892	5448	5728	6058	6295	6450	6281
Horsepower	68.25	67.78	62.62	57.65	51.44	43.78	34.08
Crankshaft Speed rpm	2500	2251	1990	1744	1507	1257	1002
Miles Per Hour	5.23	4.66	4.10	3.57	3.06	2.55	2.05
Slip of Drivers %	7.24	8.01	8.77	9.15	9.77	10.14	9.89

TRACTOR SOUND LEVEL (with Sound-Gard cab) dB (A)

Maximum Available Power 2 Hours	82.0
75% of Pull at Max. Power 10 Hours	83.5
50% of Pull at Max. Power 2 Hours	83.0
50% of Pull at Reduced Engine Speed 2 Hours	79.5
Bystander—16th gear (D4)	90.5

TIRES, BALLAST AND WEIGHT

	With Ballast	Without Ballast
Rear Tires		
—No., size, ply & psi	Two 16.9-34; 8; 16	Two 16.9-34; 8; 16
—Liquid Ballast	465 lb each	None
—Cast Iron	None	None
Front Tires		
—No., size, ply & psi	Two 7.5L-15; 6; 36	Two 7.5L-15; 6; 36
—Liquid Ballast	None	None
—Cast Iron	20 lb each	None
Height of drawbar	18½ inches	19 inches
Static weight with operator—rear	7240 lb	6310 lb
front	2910 lb	2870 lb
total	10150 lb	9180 lb

FUEL, OIL AND TIME Fuel No 2 Diesel Cetane No 54.5 (rating taken from oil company's typical inspection data) Specific gravity converted to 60°/60° 0.8342 Weight per gallon 6.946 lb Oil SAE 30 API service classification John Deere Torq-Gard or CD-SD To motor 4.456 gal Drained from motor 4.287 gal Transmission and final drive lubricant John Deere Special 303 oil Total time engine was operated 41½ hours

ENGINE Make John Deere Diesel Type 6 cylinder vertical Serial No 6329DR-06 231377T Crankshaft Mounted lengthwise Rated rpm 2500 Bore and stroke 4.0" x 4.33" Compression ratio 16.2 to 1 Displacement 329 Cu In Cranking system 12 volt electrical (two 6 volt batteries) Lubrication pressure Air cleaner pre-cleaner and two dry type in series with replaceable treated paper elements Oil filter full flow with replaceable paper cartridge Oil Cooler engine coolant heat exchanger for crankcase oil and radiator for transmission and hydraulic system Fuel filter sediment bowl with screen and replaceable paper primary and secondary filter elements Muffler was used Cooling medium temperature control thermostat

CHASSIS Type standard Serial No. 4030H 001358R Tread width rear 60.0" to 92.6" front 48.0" to 68.0" Wheel base 101" Center of gravity (without operator or ballast, with minimum tread, with fuel tanks filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 31.4" Vertical distance above roadway 35.3" Horizontal distance from center of rear wheel tread 0.1" to the right Hydraulic control system direct engine drive Transmission selective gear fixed ratio with partial range synchro-mesh and power shift Advertised speeds mph first 1.9 second 2.4 third 3.2 fourth 4.0 fifth 4.4 sixth 5.0 seventh 5.5 eighth 6.4 ninth 7.3 tenth 7.7 eleventh 8.4 twelfth 9.2 thirteenth 9.8 fourteenth 10.6 fifteenth 12.9 sixteenth 16.4 reverse 3.1, 3.9, 7.1, 8.1, 9.0 and 10.4 Clutch wet multiple disc operated hydraulically Brakes wet disc hydraulically power actuated by two foot pedals that can be locked together Steering hydrostatic Turning radius (on concrete surface with brake applied) right 129" left 129" (on concrete surface without brake) right 150" left 150" Turning space diameter (on concrete surface with brake applied) right 258" left 258" (on concrete surface without brake) right 300" left 300" Power take-off 531 or 996 rpm at 2100 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 and second gears were not run as it was necessary to limit the puu in third gear to avoid excessive wheel slippage. Fourth, tenth, eleventh, twelfth, thirteenth, fourteenth, fifteenth, and sixteenth gears were not run as test procedure requires only six travel speeds.

We, the undersigned, certify that this is a true and correct report of official Tractor Test 1111.

L. F. LARSEN

Engineer-in-charge

G. W. STEINBRUEGGE, Chairman

W. E. SPLINTER

D. E. LANE

Board of Tractor Test Engineers