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January 1975

## Test 1179: John Deere 8430 Diesel

Nebraska Tractor Test Lab

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# NEBRASKA TRACTOR TEST 1179 - JOHN DEERE 8430 DIESEL

## 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	
<b>MAXIMUM POWER AND FUEL CONSUMPTION</b>								
<b>Rated Engine Speed—Two Hours (PTO Speed—993 rpm)</b>								
178.16	2100	11.784	0.459	15.12	186	68	75	28.660
<b>VARYING POWER AND FUEL CONSUMPTION</b>								
155.12	2155	10.774	0.482	14.40	185	69	76	.....
0.00	2288	3.574	.....	.....	177	69	76	.....
80.04	2223	7.204	0.625	11.11	181	70	77	.....
178.27	2100	11.828	0.461	15.07	187	72	81	.....
40.67	2259	5.436	0.928	7.48	179	71	80	.....
118.34	2191	8.967	0.526	13.20	183	72	82	.....
<b>Av 95.41</b>	<b>2202</b>	<b>7.964</b>	<b>0.579</b>	<b>11.98</b>	<b>182</b>	<b>70</b>	<b>79</b>	<b>28.675</b>

## 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	
<b>VARYING DRAWBAR POWER AND FUEL CONSUMPTION WITH BALLAST</b>											
<b>Maximum Available Power—Two Hours—6th Gear (C-1)</b>											
155.56	10482	5.56	2100	3.73	11.578	0.517	13.44	187	74	78	28.800
<b>75% of Pull at Maximum Power—Ten Hours—6th Gear (C-1)</b>											
125.69	8133	5.80	2166	2.82	9.941	0.549	12.64	183	64	72	28.860
<b>50% of Pull at Maximum Power—Two Hours—6th Gear (C-1)</b>											
84.76	5353	5.94	2199	1.87	7.905	0.647	10.72	183	77	78	28.790
<b>50% of Pull at Reduced Engine Speed—Two Hours—9th Gear (B-3)</b>											
84.21	5354	5.90	1420	1.83	6.140	0.506	13.71	182	69	79	28.760
<b>MAXIMUM POWER WITH BALLAST</b>											
115.67	22503	1.93	2160	14.86	1st Gear (A-1)		183	68	71	28.800	
154.24	15474	3.74	2102	6.08	3rd Gear (A-3)		186	68	71	28.800	
159.44	12727	4.70	2101	4.65	4th Gear (B-1)		186	65	73	28.800	
160.39	10808	5.56	2101	3.80	6th Gear (C-1)		186	65	73	28.800	
157.99	9572	6.19	2101	3.18	7th Gear (B-2)		187	70	75	28.810	
157.25	6787	8.69	2100	2.31	9th Gear (B-3)		187	71	75	28.810	

### VARYING DRAWBAR PULL AND TRAVEL SPEED WITH BALLAST—6th Gear (C-1)

Pounds Pull	10808	12653	13406	13931	13989	12537
Horsepower	169.39	167.44	157.71	143.10	122.73	91.11
Crankshaft Speed rpm	2101	1888	1684	1475	1260	1035
Miles Per Hour	5.56	4.96	4.41	3.85	3.29	2.73
Slip of Drivers %	3.80	4.73	4.88	5.18	5.18	4.42

### TRACTOR SOUND LEVEL (with Sound-Gard cab)

	dB(A)
Maximum Available Power 2 Hours	80.0
75% of Pull at Max. Power 10 Hours	80.5
50% of Pull at Max. Power 2 Hours	82.0
50% of Pull at Reduced Engine Speed 2 Hours	77.0
Bystander 15th Gear (D-3)	87.0

### TIRES, BALLAST AND WEIGHT

	With Ballast	Without Ballast
<b>Rear Tires</b>	—No., size, ply & psi	Four 20.8-34; 6; 12
<b>Ballast</b>	—Liquid	None
	Cast Iron	10 lb each
<b>Front Tires</b>	—No., size, ply & psi	Four 20.8-34; 6; 12
<b>Ballast</b>	—Liquid	None
	Cast Iron	60 lb each
<b>Height of drawbar</b>	15 inches	15 inches
<b>Static weight with operator—rear</b>	11410 lb	11380 lb
<b>front</b>	11690 lb	11430 lb
<b>total</b>	23100 lb	22810 lb

## Department of Agricultural Engineering

Dates of Test: June 3 to June 10, 1975

Manufacturer: JOHN DEERE WATERLOO TRACTOR WORKS, WATERLOO, IOWA 50704

**FUEL, OIL AND TIME** Fuel No 2 Diesel Cetane No 51.7 (rating taken from oil company's typical inspection data) Specific gravity converted to 60°/60° 0.8337 Weight per gallon 6.942 lb Oil SAE 30 API service classification CD-SD To motor 4.646 gal Drained from motor 4.445 gal Transmission and final drive lubricant John Deere Hy-Gard Total time engine was operated 43.5 hours.

**ENGINE** Make JOHN DEERE Type six cylinder vertical with turbocharger and inter-cooler Serial No 6466AR-01-001136R Crankshaft mounted lengthwise Rated rpm 2100 Bore and stroke 4.5625" x 4.75" Compression ratio 15.5 to 1 Displacement 466 cu in Cranking system 12 volt electric Lubrication pressure Air cleaner replaceable treated paper primary and safety elements Oil filter full flow replaceable pleated paper cartridge Oil cooler engine coolant heat exchanger for crankcase oil, air for transmission and hydraulic system Fuel filter two in parallel impregnated paper cartridges Muffler vertical Cooling medium temperature control two thermostats.

**CHASSIS** Type four-wheel drive Serial No. 8430H001086R Tread width rear 60" to 134" front 60" to 134" Wheel base 125" 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 63" Vertical distance above roadway 40.5" Horizontal distance from center of rear wheel tread 0" to the right/left Hydraulic control system direct engine drive Transmission selective gear fixed ratio with partial operator controlled power shift Advertised speeds mph first 2.0 second 2.6 third 3.7 fourth 4.5 fifth 4.8 sixth 5.3 seventh 5.9 eighth 6.9 ninth 8.2 tenth 8.6 eleventh 9.6 twelfth 10.6 thirteenth 11.2 fourteenth 12.5 fifteenth 15.6 sixteenth 20.3 reverse 3.8, 5.0, 8.5, 11.1 Clutch 4 wet discs operated by foot pedal Brakes wet disc hydraulically power actuated and operated by a single foot pedal Steering hydrostatic Turning radius (on concrete surface without brake) right 214" left 214" Turning space diameter (on concrete surface without brake) right 452" left 452" Power take-off 993 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.

Bystander sound test was run in 15th gear as tractor engine did not reach maximum RPM during acceleration in highest gear.

Fuel temperature at injection pump return was 144 degrees F.

We, the undersigned, certify that this is a true and correct report of official Tractor Test 1179.

LOUIS I. LEVITICUS

Engineer-in-Charge

G. W. STEINBRUEGGE, Chairman

W. E. SPLINTER

D. E. LANE

Board of Tractor Test Engineers