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January 1973

## Test 1130: Deutz D 13006 Diesel

Nebraska Tractor Test Lab

University of Nebraska-Lincoln, [tractortestlab@unl.edu](mailto:tractortestlab@unl.edu)

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# NEBRASKA TRACTOR TEST 1130—DEUTZ D 13006 DIESEL 16 SPEED

## 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—1067 rpm)</b>									
125.77	2400	7.361	0.409	17.09	air-cooled	58	75	28.920	
<b>Standard Power Take-off Speed (1000 rpm)—One Hour</b>									
126.19	2250	7.124	0.395	17.71	air-cooled	59	76	28.900	
<b>VARYING POWER AND FUEL CONSUMPTION—Two Hours</b>									
112.47	2523	6.908	0.430	16.28	air-cooled	59	75	.....	
0.00	2590	1.960	.....	.....	air-cooled	59	76	.....	
56.70	2551	4.267	0.526	13.29	air-cooled	58	77	.....	
126.64	2401	7.419	0.410	17.07	air-cooled	61	78	.....	
28.60	2575	3.083	0.754	9.28	air-cooled	60	77	.....	
84.79	2536	5.587	0.461	15.18	air-cooled	61	78	.....	
<b>Av</b>	<b>68.20</b>	<b>2529</b>	<b>4.871</b>	<b>0.500</b>	<b>14.00</b>	<b>air-cooled</b>	<b>60</b>	<b>77</b>	<b>28.847</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—11th Gear (Z-4)</b>											
108.57	7084	5.75	2401	4.97	7.254	0.467	14.97	air-cld.	64	72	28.655
<b>75% of Pull at Maximum Power—Ten Hours—11th Gear (Z-4)</b>											
88.31	5412	6.12	2523	3.85	6.386	0.506	13.83	air-cld.	58	68	28.570
<b>50% of Pull at Maximum Power—Two Hours—11th Gear (Z-4)</b>											
59.58	3566	6.27	2549	2.48	4.985	0.585	11.95	air-cld.	65	82	28.735
<b>50% of Pull at Reduced Engine Speed—Two Hours—12th Gear (N-4)</b>											
60.17	3599	6.27	1979	2.40	4.109	0.478	14.64	air-cld.	70	92	28.535
<b>MAXIMUM POWER WITH BALLAST</b>											
102.80	13509	2.85	2406	12.68	8th Gear (N-2)		air-cooled	60	65	28.770	
106.14	11114	3.58	2399	8.62	9th Gear (Z-3)		air-cooled	60	65	28.750	
107.52	8519	4.73	2398	6.24	10th Gear (N-3)		air-cooled	64	77	28.720	
110.24	7207	5.74	2399	5.21	11th Gear (Z-4)		air-cooled	62	76	28.720	
107.28	5356	7.51	2401	3.74	12th Gear (N-4)		air-cooled	64	80	28.750	
103.08	4116	9.39	2403	2.57	13th Gear (Z-5)		air-cooled	65	81	28.750	

## VARYING DRAWBAR PULL AND TRAVEL SPEED WITH BALLAST 11th Gear (Z-4)

Pounds pull	7207	7732	8009	8072	7763	6965
Horsepower	110.24	105.54	96.85	85.64	71.29	53.24
Crankshaft speed, rpm	2399	2148	1911	1678	1449	1198
Miles per hour	5.74	5.12	4.53	3.98	3.44	2.87
Slip of drivers, %	5.21	5.53	5.85	6.01	5.69	5.21

## TRACTOR SOUND LEVEL (with cab) dB(A)

Maximum Available Power 2 Hours	92.0
75% of Pull at Max. Power 10 Hours	89.0
50% of Pull at Max. Power 2 Hours	88.5
50% of Pull at Reduced Engine Speed 2 Hours	87.0
Bystander 16th Gear (N-6)	84.5

## TIRES, BALLAST and WEIGHT

		With Ballast	Without Ballast
<b>Rear Tires</b>	—No., size, ply & psi	Inner two 20.8-38; 8; 18 Outer two 20.8-38; 8; 16	Inner two 20.8-38; 8; 18 Outer two 20.8-38; 8; 16
Ballast	—Liquid	954 lb each	None
	—Cast iron	None	None
<b>Front Tires</b>	—No., size, ply & psi	Two 11.00-16; 8; 32	Two 11.00-16; 8; 32
Ballast	—Liquid	None	None
	—Cast iron	130 lb each	None
<b>Height of Drawbar</b>		24 inches	24½ inches
<b>Static weight with operator</b>	—Rear	12085 lb	8270 lb
	—Front	4040 lb	3780 lb
	—Total	16125 lb	12050 lb

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

Department of Agricultural Engineering

Dates of Test: May 15 to 26, 1973

Manufacturer: KLOCKNER-HUMBOLDT-DEUTZ A.G., Cologne, West Germany

**FUEL, OIL AND TIME:** Fuel No 2 Diesel Cetane No 50.1 (rating taken from oil company's typical inspection data) Specific gravity converted to 60°/60° 0.8402 Weight per gallon 6.996 lb Oil SAE 30 API service classification SB/SE-CA/CD (formerly MS DS) To motor 4.020 gal Drained from motor 2.873 gal Transmission and final drive lubricant SAE 20 Total time engine was operated 54½ hours

**ENGINE:** Make Deutz Diesel Type 6 cylinder vertical with turbo-charger Serial No 5173861 Crankshaft mounted lengthwise Rated rpm 2400 Bore and stroke 3.94" × 4.72" Compression ratio 15.5 to 1 Displacement 345 cu in Cranking system 12 volt electric Lubrication pressure Air cleaner dry replaceable paper element with centrifugal precleaner Oil filter one paper cartridge Oil cooler radiator for crankcase oil Fuel filter replaceable primary paper element and replaceable secondary paper cartridge Muffler was used Cooling medium temperature control air-cooled.

**CHASSIS:** type standard with duals Serial No 7937/477 Tread width rear 68" to 120" front 61" to 84" Wheel base 100.4" Center of gravity (with-out operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 31.9" Vertical distance above roadway 36" 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 0.6, second 0.8, third 1.0, fourth 1.2, fifth 1.6, sixth 2.0, seventh 2.4, eighth 3.1, ninth 3.8, tenth 4.9, eleventh 5.8, twelfth 7.5, thirteenth 9.2, fourteenth 11.9, fifteenth 14.5, sixteenth 18.8 reverse 0.9, 1.4, 2.1, 3.3, 5.2, 7.9, & 12.6 Clutch dry disc dual clutch operated by foot pedal and hand lever for PTO Brakes internal expanding shoes operated hydraulically by two foot pedals that can be locked together and mechanically by hand lever Steering hydrostatic Turning radius (on concrete surface with brake applied) right 165" left 167" (on concrete surface without brake) right 182" left 184" Turning space diameter (on concrete surface with brake applied) right 346" left 350" (on concrete surface without brake) right 374" left 376" Power take-off 1000 rpm at 2250 engine rpm.

**REPAIRS and ADJUSTMENTS:** No repairs of adjustments.

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

Six gears were chosen between stability limit and 15 mph.

We, the undersigned, certify that this is a true and correct report of official Tractor Test 1130.

L. F. LARSEN

Engineer-in-Charge

G. W. STEINBRUEGGE, Chairman

W. E. SPLINTER

D. E. LANE

Board of Tractor Test Engineers