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Test 1092: Duetz D130 06 Diesel

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 1092 – DEUTZ D130 06 DIESEL

Department of Agricultural Engineering
 Dates of Test: March 23 to April 6, 1972
 Manufacturer: KLOCKNER-HUMBOLDT-
 DEUTZ A. G., COLOGNE, WEST GERMANY

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—1067 rpm)								
125.71	2400	7.343	0.402	17.12	air-cooled	55	75	28.883
Standard Power Take-off Speed (1000 rpm)—One Hour								
133.27	2250	7.662	0.395	17.39	air-cooled	55	73	28.850
VARYING POWER AND FUEL CONSUMPTION—Two Hours								
107.61	2415	6.582	0.421	16.35	air-cooled	58	76	.....
0.00	2516	1.810	.....	.....	air-cooled	58	75	.....
54.65	2458	4.048	0.509	13.50	air-cooled	57	74	.....
120.29	2400	7.249	0.414	16.59	air-cooled	58	75	.....
27.51	2476	2.835	0.709	9.70	air-cooled	57	75	.....
81.56	2439	5.252	0.443	15.53	air-cooled	58	76	.....
Av. 65.27	2451	4.629	0.488	14.10	air-cooled	57	75	28.823

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—11th Gear (Z4)											
101.24	7395	5.14	2399	8.01	7.051	0.479	14.36	A-cooled	53	73	28.785
75% of Pull at Maximum Power—Ten Hours—11th Gear (Z4)											
83.21	5825	5.36	2435	5.52	6.001	0.496	13.87	A-cooled	58	82	28.387
50% of Pull at Maximum Power—Two Hours—11th Gear (Z4)											
52.65	3603	5.48	2443	3.62	4.361	0.569	12.07	A-cooled	45	59	28.800
50% of Pull at Reduced Engine Speed—Two Hours—12th Gear (N4)											
52.80	3616	5.48	1891	3.39	3.725	0.485	14.17	A-cooled	57	81	28.700
MAXIMUM POWER WITH BALLAST											
88.18	10677	3.10	2406	14.74	9th Gear (Z3)		air-cooled	40	54	29.040	
103.98	9333	4.18	2400	10.52	10th Gear (N3)		air-cooled	56	78	28.750	
106.22	7768	5.13	2402	8.22	11th Gear (Z4)		air-cooled	56	79	28.730	
111.25	6186	6.74	2400	6.23	12th Gear (N4)		air-cooled	57	82	28.720	
114.85	5086	8.47	2400	4.83	13th Gear (Z5)		air-cooled	58	82	28.730	
102.48	3459	11.11	2401	3.24	14th Gear (N5)		air-cooled	58	84	28.725	

VARYING DRAWBAR PULL AND TRAVEL SPEED WITH BALLAST 11th Gear (Z4)

Pounds Pull	7768	9201	9374	9185	8986	8180
Horsepower	106.22	110.55	99.19	85.43	72.50	55.58
Crankshaft Speed rpm	2402	2160	1907	1673	1447	1201
Miles Per Hour	5.13	4.51	3.97	3.49	3.03	2.55
Slip of Drivers %	8.22	10.46	10.59	10.32	10.19	8.84

TRACTOR SOUND LEVEL

	dB(A)
Maximum Available Power 2 Hours	98.0
75% of Pull at Max. Power 10 Hours	97.0
50% of Pull at Max. Power 2 Hours	96.0
50% of Pull at Reduced Engine Speed 2 Hours	95.5
Bystander 16th gear (N6)	88.0

TIRES, BALLAST and WEIGHT

	With Ballast	Without Ballast
Rear tires	—No., size, ply & psi	Two 18.4-38; 8; 18
Ballast	—Liquid	633 lb each
	—Cast iron	1800 lb each
Front tires	—No., size, ply & psi	Two 11.00-16; 6; 28
Ballast	—Liquid	None
	—Cast iron	755 lb each
Height of drawbar		21 inches
Static weight with operator—rear		10950 lb
	front	5030 lb
	total	15980 lb

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° 0.8261 Weight per gallon 6.878 lb OIL SAE 30 API service classification MS DG DM DS To motor 4.084 gal Drained from Motor 2.667 gal. Transmission and final drive lubricant SAE 20 Total time engine was operated 43½ hours.

ENGINE Make Deutz Diesel Type 6 cylinder air-cooled with turbo-charger Serial No. 5121684 Crankshaft Mounted Lengthwise Rated rpm 2400 Bore and stroke 3.94" x 4.72" Compression ratio 17 to 1 Displacement 345 cu. in. Cranking system 12 volt electric Lubrication pressure Air cleaner dry replaceable paper element with automatic dust unloader Oil filter replaceable pleated paper cartridge Oil Cooler radiator in cooling system Fuel filter replaceable primary paper element and replaceable secondary paper cartridge Muffler was used Cooling medium temperature control air-cooled.

CHASSIS Type Standard Serial No. 7937/3 Tread width rear 68" to 84" front 61" to 84" Wheel base 100.4" 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 33" Vertical distance above roadway 35" 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 2nd, 3rd, 4th, 5th, and 6th synchronized Advertised speeds mph first 0.62 second 0.75 third 0.93 fourth 1.24 fifth 1.49 sixth 1.93 seventh 2.30 eighth 2.98 ninth 2.98 tenth 4.60 eleventh 5.53 twelfth 7.15 thirteenth 8.82 fourteenth 11.27 fifteenth 13.98 sixteenth 18.02 reverse 1.30, 2.05, 3.17, 4.91, 7.58 and 12.12 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 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" Belt pulley 1380 rpm at 2400 engine rpm diam. 11" face 8.66" Belt speed 3980 fpm Power take-off 1000 rpm at 2250 engine rpm.

REPAIRS and ADJUSTMENTS: Following the one hour maximum (1000 pto rpm) pto run it was necessary to replace a push rod cover seal to stop an oil leak at the number six cylinder.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test code or official Nebraska test procedure. First, second, third, fourth, fifth, sixth, seventh and eighth gears were not run as it was necessary to limit the pull in ninth gear because of excessive slippage. Fifteenth and sixteenth gears were not run as test procedure requires only 6 gears.

We, the undersigned, certify that this is a true and correct report of official Tractor Test 1092.

L. F. LARSEN
 Engineer-in-Charge

G. W. STEINBRUEGGE, Chairman
 W. E. SPLINTER
 D. E. LANE
 Board of Tractor Test Engineers

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