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## Test 1220: Deutz D 6806 and D 6807 Diesel (Also Deutz-Fahr D 6807 Diesel) 12-Speed

Nebraska Tractor Test Lab

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# NEBRASKA TRACTOR TEST 1220 — DEUTZ D 6806 DIESEL ALSO DEUTZ D 6807 DIESEL ALSO DEUTZ-FAHR D 6807 DIESEL 12 SPEED

## POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption			Temperature °F (°C)			Barometer inch Hg (kPa)
		gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Cooling medium	Air wet bulb	Air dry bulb	
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed—Two Hours (PTO Speed—614 rpm)								
68.18 (50.85)	2300	4.161 (15.752)	0.427 (0.260)	16.39 (3.228)	air- cooled	67 (19.5)	75 (23.8)	29.077 (98.188)
Standard Power Take-off Speed (540 rpm)—One Hour								
62.52 (46.62)	2025	3.777 (14.298)	0.422 (0.257)	16.55 (3.261)	air- cooled	67 (19.7)	75 (23.8)	29.110 (98.300)
VARYING POWER AND FUEL CONSUMPTION—Two Hours								
59.18 (44.13)	2349	3.420 (12.945)	0.404 (0.246)	17.31 (3.409)	air- cooled	67 (19.4)	75 (23.9)	..... .....
0.00 (0.00)	2422	0.922 (3.492)	..... .....	..... .....	air- cooled	67 (19.4)	75 (23.9)	..... .....
30.06 (22.42)	2384	2.081 (7.877)	0.484 (0.294)	14.45 (2.846)	air- cooled	66 (19.2)	74 (23.6)	..... .....
68.60 (51.16)	2302	4.218 (15.966)	0.430 (0.261)	16.27 (3.204)	air- cooled	66 (18.9)	75 (23.9)	..... .....
15.12 (11.28)	2399	1.480 (5.603)	0.684 (0.416)	10.22 (2.013)	air- cooled	65 (18.3)	74 (23.3)	..... .....
44.75 (33.37)	2368	2.664 (10.086)	0.416 (0.253)	16.80 (3.309)	air- cooled	65 (18.3)	73 (22.8)	..... .....
Av 36.29 (27.06)	2371	2.464 (9.328)	0.475 (0.289)	14.73 (2.901)	air- cooled	66 (18.9)	74 (23.6)	29.120 (98.334)

## DRAWBAR PERFORMANCE

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption			Temp. °F (°C)			Barom. inch Hg (kPa)
					gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Cool- ing med	Air wet bulb	Air dry bulb	
Maximum Available Power—Two Hours 7th (3-Z) Gear											
58.59 (43.69)	4264 (18.97)	5.15 (8.29)	2300	5.33	4.005 (15.159)	0.478 (0.291)	14.63 (2.882)	air- cooled	55 (12.8)	67 (19.2)	29.370 (99.178)
75% of Pull at Maximum Power—Ten Hours 7th (3-Z) Gear											
47.13 (35.14)	3320 (14.77)	5.32 (8.57)	2344	4.00	3.132 (11.856)	0.465 (0.283)	15.05 (2.964)	air- cooled	57 (13.9)	72 (22.4)	29.089 (98.229)
50% of Pull at Maximum Power—Two Hours 7th (3-Z) Gear											
32.86 (24.50)	2258 (10.04)	5.46 (8.78)	2372	2.76	2.431 (9.204)	0.517 (0.315)	13.52 (2.663)	air- cooled	55 (12.8)	71 (21.7)	29.335 (99.060)
50% of Pull at Reduced Engine Speed—Two Hours 9th (4-Z) Gear											
32.82 (24.48)	2258 (10.05)	5.45 (8.77)	1731	2.73	2.092 (7.918)	0.446 (0.271)	15.69 (3.091)	air- cooled	55 (12.8)	72 (22.2)	29.290 (98.908)

## MAXIMUM POWER IN SELECTED GEARS

46.28 (34.51)	9095 (40.46)	1.91 (3.07)	2357	14.53	2nd (2-L) Gear			air- cooled	53 (11.7)	63 (17.2)	28.800 (97.253)
59.70 (44.52)	6444 (28.66)	3.47 (5.59)	2299	8.19	5th (4-L) Gear			air- cooled	52 (11.1)	57 (13.9)	29.350 (99.111)
60.79 (45.33)	4422 (19.67)	5.16 (8.30)	2300	5.23	7th (3-Z) Gear			air- cooled	50 (10.0)	54 (12.2)	29.350 (99.111)
61.18 (45.62)	4139 (18.41)	5.54 (8.92)	2299	4.96	8th (1-S) Gear			air- cooled	53 (11.7)	58 (14.4)	29.360 (99.144)
61.87 (46.14)	3245 (14.44)	7.15 (11.50)	2300	3.86	9th (4-Z) Gear			air- cooled	54 (12.2)	60 (15.6)	29.360 (99.144)
60.36 (45.01)	2618 (11.64)	8.65 (13.92)	2300	3.22	10th (2-S) Gear			air- cooled	54 (12.2)	63 (17.2)	29.370 (99.178)

Department of Agricultural Engineering

Dates of Test: September 3 to 13, 1976

Manufacturer: KLOCKNER-HUMBOLDT  
-DEUTZ, AG, 5 Cologne 80, West Germany

**FUEL, OIL AND TIME:** Fuel No. 2 Diesel Cetane No. 51.8 (rating taken from oil company's typical inspection data) **Specific gravity converted to 60°/60° (15°/15°)** 0.8398 **Fuel weight** 6.992 lbs/gal (0.838 kg/l) **Oil SAE 30 API service classification** SB/SE-CA/CD **To motor** 2.771 gal (10.489 l) **Drained from motor** 2.085 gal (7.893 l) **Transmission and final drive lubricant** SAE 90 **Total time engine was operated** 45.5 hours

**ENGINE:** Make Klockner-Humboldt-Deutz AG Diesel Type 4 cylinder vertical **Serial No.** 56 45 818 **Crankshaft** lengthwise **Rated rpm** 2300 **Bore and stroke** 3.94" × 4.72" (100.0 mm × 120.0 mm) **Compression ratio** 17 to 1 **Displacement** 230 cu in (3770 ml) **Starting system** 12 volt **Lubrication pressure** **Air cleaner** paper and felt elements with centrifugal precleaner and dust evacuation **Oil filter** full flow spin-on paper cartridge **Oil cooler** radiator for crankcase oil **Fuel filter** screw-on paper cartridge **Muffler** vertical **Cooling medium temperature control** air-cooled

**CHASSIS:** Type standard **Serial No.** 7565/8202 **Tread width** rear 59.8" (1519 mm) to 71.6" (1819 mm) front 55.9" (1420 mm) to 75.6" (1920 mm) **Wheel base** 85.4" (2169 mm) **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 27.0" (685 mm) Vertical distance above roadway 34.2" (869 mm) Horizontal distance from center of rear wheel tread 0" (0 mm) to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Advertised speeds mph (km/h)** first 1.3 (2.1) second 2.1 (3.4) third 2.6 (4.2) fourth 2.8 (4.5) fifth 3.7 (5.9) sixth 4.2 (6.8) seventh 5.4 (8.7) eighth 5.9 (9.4) ninth 7.5 (12.0) tenth 9.1 (14.6) eleventh 11.4 (18.3) twelfth 15.5 (25.0) reverse 3.3 (5.4), 5.2 (8.4), 6.6 (10.6), 9.1 (14.6) **Clutch** dry disc dual clutch operated by foot pedal and hand lever for PTO **Brakes** drum and shoe operated by two foot pedals which can be locked together and hand lever **Steering** hydrostatic **Turning radius** (on concrete surface with brake applied) right 130" (3.30 m) left 126" (3.20 m) (on concrete surface without brake) right 147" (3.73 m) left 147" (3.73 m) **Turning space diameter** (on concrete surface with brake applied) right 270" (6.86 m) left 275" (6.98 m) (on concrete surface without brake) right 306" (7.77 m) left 304" (7.72 m) **Power take-off** 540 rpm at 2025 engine rpm and 1000 rpm at 2167 engine rpm.

### LUGGING ABILITY IN 7th (3-Z) GEAR

Crankshaft Speed rpm	2300	2067	1837	1602	1376	1146
Pull—lbs (kN)	4422 (19.67)	4661 (20.73)	4801 (21.35)	4928 (21.92)	4833 (21.50)	4674 (20.79)
Increase in Pull %	0	5	9	11	9	6
Power—Hp (kW)	60.79 (45.33)	57.43 (42.83)	52.43 (39.10)	46.88 (34.96)	39.51 (29.46)	31.90 (23.78)
Speed—Mph (km/h)	5.16 (8.30)	4.62 (7.44)	4.10 (6.59)	3.57 (5.74)	3.07 (4.93)	2.56 (4.12)
Slip %	5.23	5.37	5.77	6.04	5.77	5.64

### TRACTOR SOUND LEVEL WITHOUT CAB

	<b>dB(A)</b>
Maximum Available Power—Two Hours	99.0
75% of Pull at Maximum Power—Ten Hours	99.5
50% of Pull at Maximum Power—Two Hours	98.5
50% of Pull at Reduced Engine Speed—Two Hours	93.0
Bystander in 12th (4-H) gear	89.5

### TIRES, BALLAST AND WEIGHT

	<b>With Ballast</b>	<b>Without Ballast</b>
<b>Rear Tires</b>		
—No., size, ply & psi (kPa)	Two 18.4/15-30; 8; 20 (140)	Two 18.4/15-30; 8; 20 (140)
Ballast		
—Liquid (each)	780 lb (354 kg)	None
—Cast Iron (each)	1410 lb (640 kg)	None
<b>Front Tires</b>		
—No., size, ply & psi (kPa)	Two 7.50-16; 6; 44 (300)	Two 7.50-16; 6; 44 (300)
Ballast		
—Liquid (each)	None	None
—Cast Iron (each)	112 lb (51 kg)	None
<b>Height of Drawbar</b>	16.5 in (420 mm)	16.5 in (420 mm)
<b>Static Weight with Operator—Rear</b>	8800 lb (3992 kg)	4420 lb (2005 kg)
—Front	2200 lb (998 kg)	1975 lb (896 kg)
—Total	11000 lb (4990 kg)	6395 lb (2901 kg)

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

**REMARKS:** All test results were determined from observed data obtained in accordance with SAE and ASAE test codes or official Nebraska test procedure. Temperature at injection pump return was 163°F (72.8°C). Six gears were chosen between stability limit and 15 mph (24.1 km/h).

**NOTE:** 1) Supplemental permit for Deutz D 6807 granted February 1981. 2) Supplemental permit for Deutz-Fahr D 6807 granted November 1982.

We, the undersigned, certify that this is a true and correct report of official Tractor Test **1220**.

LOUIS I. LEVITICUS

Engineer-in Charge

G. W. STEINBRUEGGE, Chairman

W. E. SPLINTER

K. VON BARGEN

Board of Tractor Test Engineers



**Deutz D 6806 Diesel**