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## Test 1447: Allis-Chalmers and Deutz-Allis 8030 Powershift Diesel

Nebraska Tractor Test Lab

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# NEBRASKA TRACTOR TEST 1447

## ALLIS CHALMERS 8030 POWERSHIFT DIESEL

## ALSO DEUTZ ALLIS 8030 POWERSHIFT 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—1021 rpm)									
133.75 (99.74)	2300	8.882 (33.622)	0.463 (0.282)	15.06 (2.967)	188 (86.5)	66 (18.8)	75 (23.9)	29.030 (98.030)	
Standard Power Take-off Speed (1000 rpm)—One Hour									
134.42 (100.24)	2252	8.814 (33.365)	0.457 (0.278)	15.25 (3.004)	190 (87.8)	66 (18.8)	75 (23.9)	29.025 (98.013)	
VARYING POWER AND FUEL CONSUMPTION—Two Hours									
119.84 (89.36)	2423	8.337 (31.559)	0.485 (0.295)	14.38 (2.832)	187 (86.1)	65 (18.3)	75 (23.9)	..... .....	
0.00 (0.00)	2583	3.037 (11.496)	..... .....	..... .....	171 (77.5)	66 (18.9)	78 (25.3)	..... .....	
61.84 (46.11)	2500	5.657 (21.414)	0.638 (0.388)	10.93 (2.153)	180 (82.2)	65 (18.3)	74 (23.3)	..... .....	
133.77 (99.75)	2300	8.857 (33.527)	0.462 (0.281)	15.10 (2.975)	188 (86.7)	65 (18.3)	74 (23.6)	..... .....	
31.34 (23.37)	2534	4.315 (16.334)	0.960 (0.584)	7.26 (1.431)	175 (79.4)	66 (18.9)	76 (24.7)	..... .....	
91.43 (68.18)	2464	6.995 (26.479)	0.534 (0.325)	13.07 (2.575)	182 (83.6)	65 (18.3)	75 (23.9)	..... .....	
Av 73.04 Av (54.47)	2467	6.199 (23.466)	0.592 (0.360)	11.78 (2.321)	181 (82.6)	65 (18.5)	75 (24.1)	29.010 (97.962)	

#### 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 (2F) Gear											
115.22 (85.92)	6816 (30.32)	6.34 (10.20)	2299	4.67	8.908 (33.721)	0.539 (0.328)	12.93 (2.548)	189 (86.9)	71 (21.4)	75 (23.6)	29.045 (98.081)
75% of Pull at Maximum Power—Ten Hours 7th (2F) Gear											
93.86 (69.99)	5165 (22.98)	6.81 (10.97)	2440	3.52	7.904 (29.921)	0.587 (0.357)	11.87 (2.339)	186 (85.3)	72 (21.9)	75 (24.1)	28.872 (97.496)
50% of Pull at Maximum Power—Two Hours 7th (2F) Gear											
64.17 (47.85)	3443 (15.32)	6.99 (11.25)	2470	2.18	6.417 (24.290)	0.697 (0.424)	10.00 (1.970)	185 (85.0)	73 (22.8)	79 (26.1)	29.005 (97.946)
50% of Pull at Reduced Engine Speed—Two Hours 9th (3F) Gear											
64.16 (47.84)	3443 (15.32)	6.99 (11.25)	1792	2.18	5.431 (20.558)	0.590 (0.359)	11.81 (2.327)	189 (87.2)	76 (24.2)	82 (27.5)	28.980 (97.861)

#### MAXIMUM POWER IN SELECTED GEARS

103.58 (77.24)	13348 (59.37)	2.91 (4.68)	2315	14.93	3rd (3S) Gear		185 (85.0)	66 (18.9)	71 (21.7)	28.680 (96.848)
112.81 (84.13)	10791 (48.00)	3.92 (6.31)	2301	8.47	4th (4S) Gear		187 (85.8)	68 (20.0)	70 (21.1)	29.070 (98.165)
116.52 (86.89)	9743 (43.34)	4.48 (7.22)	2302	7.03	5th (1F) Gear		187 (85.8)	68 (20.0)	70 (21.1)	29.070 (98.165)
110.36 (82.29)	8273 (36.80)	5.00 (8.05)	2300	5.85	6th (5S) Gear		186 (85.6)	68 (20.0)	69 (20.6)	29.070 (98.165)
116.65 (86.99)	6886 (30.63)	6.35 (10.22)	2299	4.63	7th (2F) Gear		187 (85.8)	68 (20.0)	69 (20.6)	29.070 (98.165)
111.64 (83.25)	6526 (29.03)	6.42 (10.32)	2302	4.32	8th (6S) Gear		186 (85.6)	67 (19.4)	68 (20.0)	29.070 (98.165)
114.69 (85.53)	4837 (21.51)	8.89 (14.31)	2301	3.07	9th (3F) Gear		186 (85.6)	67 (19.4)	68 (20.0)	29.070 (98.165)

Department of Agricultural Engineering

Dates of Test: August 31-September 13, 1982

Manufacturer: ALLIS CHALMERS CORPORATION, P.O. Box 512, Milwaukee, Wisconsin 53201

**FUEL, OIL AND TIME:** Fuel No. 2 Diesel Cetane No. 46.6 (rating taken from oil company's inspection data) Specific gravity converted to 60°/60° (15°/15°) 0.8376 Fuel weight 6.974 lbs/gal (0.836 kg/l) Oil SAE 15W-40 API service classification SF-CD To motor 4.000 gal (15.141 l) Drained from motor 3.731 gal (14.122 l) Transmission and final drive lubricant Allis Chalmers Power Fluid 821 Total time engine was operated 36.0 hours.

**ENGINE:** Make Allis Chalmers Diesel Type six cylinder vertical with turbocharger Serial No. 70-22901 Crankshaft lengthwise Rated rpm 2300 Bore and stroke 4.25" × 5.00" (107.9 mm × 127.0 mm) Compression ratio 15.5 to 1 Displacement 426 cu in (6981 ml) Starting system 12 volt Lubrication pressure Air cleaner two paper elements Oil filter two full flow cartridges Oil cooler engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil Fuel filter two paper cartridges Muffler underhood Exhaust vertical Cooling medium temperature control two thermostats.

**CHASSIS:** Type standard with duals Serial No. 8030S 1422 Tread width rear 59" (1499 mm) to 123" (3124 mm) front 62" (1574 mm) to 90" (2286 mm) Wheel base 106" (2692 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 28.4" (721 mm) Vertical distance above roadway 41.2" (1047 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 with partial (6) range operator controlled powershift Advertised speeds mph (km/h) first 1.8 (2.9) second 2.5 (4.0) third 3.5 (5.6) fourth 4.4 (7.1) fifth 4.9 (7.9) sixth 5.4 (8.7) seventh 6.8 (11.0) eighth 6.8 (11.0) ninth 9.3 (15.0) tenth 11.8 (19.0) eleventh 14.6 (23.5) twelfth 18.4 (30.0) reverse 2.9 (4.7), 7.9 (12.7) Clutch multiple wet disc hydraulically power actuated and operated by foot pedal Brakes multiple wet disc hydraulically power actuated and operated by two foot pedals which can be locked together Steering hydrostatic Turning radius (on concrete surface with brake applied) right 149.7" (3.80 m) left 149.7" (3.80 m) (on concrete surface without brake) right 167.5" (4.25 m) left 168.4" (4.28 m) Turning space diameter (on concrete surface with brake applied) right 320.0" (8.13 m) left 320.0" (8.13 m) (on concrete surface without brake) right 355.5" (9.03 m)

### LUGGING ABILITY IN 7th (2F) GEAR

Crankshaft Speed rpm	2299	2073	1847	1614	1381	1153
Pull—lbs (kN)	6886 (30.63)	7846 (34.90)	8252 (36.71)	8240 (36.65)	8040 (35.76)	7161 (31.85)
Increase in Pull %	0	14	20	20	17	4
Power—Hp (kW)	116.65 (86.99)	118.91 (88.67)	110.97 (82.75)	96.83 (72.21)	80.92 (60.35)	60.55 (45.16)
Speed—Mph (km/h)	6.35 (10.22)	5.68 (9.15)	5.04 (8.12)	4.41 (7.09)	3.77 (6.07)	3.17 (5.10)
Slip %	4.63	5.32	5.62	5.77	5.62	4.86

### TRACTOR SOUND LEVEL WITH CAB

	dB(A)
Maximum Available Power—Two Hours	78.0
75% of Pull at Maximum Power—Ten Hours	79.5
50% of Pull at Maximum Power—Two Hours	79.5
50% of Pull at Reduced Engine Speed—Two Hours	76.0
Bystander in 12th (6F) gear	90.0

### TIRES, BALLAST AND WEIGHT

	With Ballast	Without Ballast
<b>Rear Tires</b>		
—No., size, ply & psi (kPa)	Inner Two 18.4-38; 8; 14 (95)	Inner Two 18.4-38; 8; 14 (95)
	Outer Two 18.4-38; 6; 14 (95)	Outer Two 18.4-38; 6; 14 (95)
Ballast	None	None
—Liquid (each)	910 lb (413 kg)	None
—Cast Iron (each inner)	None	None
<b>Front Tires</b>		
—No., size, ply & psi (kPa)	Two 11.00-16; 8; 40 (275)	Two 11.00-16; 8; 40 (275)
Ballast	None	None
—Liquid (each)	133 lb (60 kg)	None
—Cast Iron (each)	20.5 in (520 mm)	20.5 in (520 mm)
<b>Height of Drawbar</b>		
Static Weight with Operator—Rear	12820 lb (5815 kg)	11000 lb (4990 kg)
—Front	4280 lb (1941 kg)	4015 lb (1821 kg)
—Total	17100 lb (7756 kg)	15015 lb (6811 kg)

left 357.0" (9.07 m) **Power take-off** 540 rpm at 2230 engine rpm and 1000 rpm at 2252 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. For the maximum power tests, the fuel temperature at the injection pump return was maintained at 178°F (81.3°C). Seven gears were chosen between 15% slip and 10 mph (16.1 km/h).

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. 1447.

Report reissued. Supplemental sales permit for Deutz Allis 8030 Powershift Diesel, September, 1985.

LOUIS I. LEVITICUS  
Engineer-in-Charge

K. VON BARGEN  
W. E. SPLINTER  
L. L. BASHFORD

Board of Tractor Test Engineers



Allis Chalmers 8030 Powershift Diesel