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Test 1448: Allis-Chalmers and Deutz-Allis 8050 Powershift Diesel 12-Speed

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 1448

ALLIS CHALMERS 8050 POWERSHIFT DIESEL

ALSO DEUTZ ALLIS 8050 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)									
152.40 (113.64)	2300	9.730 (36.832)	0.445 (0.271)	15.66 (3.085)	189 (87.4)	68 (19.8)	75 (24.0)	29.160 (98.469)	
Standard Power Take-off Speed (1000 rpm)—One Hour									
155.15 (115.70)	2252	9.772 (36.991)	0.439 (0.267)	15.88 (3.128)	190 (87.8)	68 (19.9)	75 (23.7)	29.170 (98.503)	
VARYING POWER AND FUEL CONSUMPTION—Two Hours									
133.88 (99.83)	2376	8.879 (33.611)	0.462 (0.281)	15.08 (2.970)	185 (85.0)	68 (20.0)	75 (23.9)	..... .....
0.00 (0.00)	2574	2.985 (11.299)	..... .....	..... .....	174 (78.9)	68 (20.0)	75 (23.9)	..... .....
69.64 (51.93)	2476	5.977 (22.701)	0.601 (0.365)	11.61 (2.288)	180 (82.5)	67 (19.4)	74 (23.3)	..... .....
152.54 (113.75)	2300	9.748 (36.900)	0.446 (0.271)	15.65 (3.083)	188 (86.9)	68 (20.0)	75 (23.9)	..... .....
35.37 (26.38)	2516	4.474 (16.936)	0.882 (0.537)	7.91 (1.558)	176 (79.7)	68 (20.0)	75 (23.9)	..... .....
102.67 (76.56)	2428	7.408 (28.042)	0.503 (0.306)	13.86 (2.730)	184 (84.2)	68 (20.0)	76 (24.4)	..... .....
Av Av	82.35 (61.41)	2445	6.582 (24.916)	0.557 (0.339)	12.51 (2.465)	181 (82.9)	68 (19.9)	75 (23.9)	29.177 (98.525)

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 5th (1F) Gear											
131.44 (98.01)	10072 (44.80)	4.89 (7.88)	2300	6.02	9.589 (36.299)	0.509 (0.309)	13.71 (2.700)	185 (85.0)	58 (14.2)	61 (15.8)	29.055 (98.114)
75% of Pull at Maximum Power—Ten Hours 5th (1F) Gear											
105.06 (78.35)	7575 (33.70)	5.20 (8.37)	2398	4.20	8.252 (31.238)	0.548 (0.333)	12.73 (2.508)	187 (86.3)	73 (22.9)	82 (27.7)	28.706 (96.936)
50% of Pull at Maximum Power—Two Hours 5th (1F) Gear											
72.62 (54.15)	5050 (22.46)	5.39 (8.68)	2450	2.76	6.721 (25.443)	0.645 (0.393)	10.80 (2.128)	185 (84.7)	74 (23.3)	85 (29.2)	28.685 (96.865)
50% of Pull at Reduced Engine Speed—Two Hours 7th (2F) Gear											
72.78 (54.27)	5050 (22.46)	5.40 (8.70)	1779	2.67	5.754 (21.779)	0.551 (0.335)	12.65 (2.492)	190 (87.5)	76 (24.4)	88 (31.1)	28.670 (96.814)
MAXIMUM POWER IN SELECTED GEARS											
106.81 (79.65)	16728 (74.41)	2.39 (3.85)	2380	13.18	2nd (2S) Gear			179 (81.7)	52 (11.1)	55 (12.8)	29.100 (98.266)
128.67 (95.95)	14515 (64.56)	3.32 (5.35)	2300	9.29	3rd (3S) Gear			185 (84.7)	55 (12.8)	58 (14.4)	29.080 (98.199)
130.62 (97.40)	11357 (50.52)	4.31 (6.94)	2300	6.68	4th (4S) Gear			186 (85.3)	55 (12.8)	57 (13.9)	29.090 (98.233)
134.13 (100.02)	10281 (45.73)	4.89 (7.87)	2299	6.14	5th (1F) Gear			184 (84.4)	53 (11.7)	55 (12.8)	29.120 (98.334)
125.60 (93.66)	8663 (38.53)	5.44 (8.75)	2300	4.96	6th (5S) Gear			184 (84.4)	53 (11.7)	55 (12.8)	29.120 (98.334)
132.41 (98.74)	7218 (32.11)	6.88 (11.07)	2298	4.07	7th (2F) Gear			185 (85.0)	54 (12.2)	56 (13.3)	29.110 (98.300)
124.72 (93.00)	6731 (29.94)	6.95 (11.18)	2300	3.83	8th (6S) Gear			185 (85.0)	54 (12.2)	56 (13.3)	29.100 (98.266)
127.41 (95.01)	4970 (22.11)	9.61 (15.47)	2301	2.76	9th (3F) Gear			184 (84.4)	55 (12.8)	57 (13.9)	29.090 (98.233)

Department of Agricultural Engineering

Dates of Test: September 1-17, 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 4.052 gal (15.337 l) Drained from motor 3.325 gal (12.587 l) Transmission and final drive lubricant Allis Chalmers Power Fluid 821 Total time engine was operated 41 hours.

ENGINE: Make Allis Chalmers Diesel Type six cylinder vertical with turbocharger and inter-cooler Serial No. 70-22331 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 and one bypass cartridge Oil cooler engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil Fuel filter two paper cartridges Muffler under-hood Exhaust vertical Cooling medium temperature control two thermostats.

CHASSIS: Type standard with duals Serial No. 8050 S 1417 Tread width rear 61" (1549 mm) to 123" (3124 mm) front 63" (1600 mm) to 91" (2311 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 27.7" (704 mm) Vertical distance above roadway 39.9" (1014 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 2.0 (3.2) second 2.7 (4.3) third 3.7 (6.0) fourth 4.7 (7.6) fifth 5.3 (8.5) sixth 5.8 (9.3) seventh 7.3 (11.7) eighth 7.3 (11.7) ninth 10.0 (16.1) tenth 12.6 (20.3) eleventh 15.6 (25.1) twelfth 19.7 (31.7) reverse 3.2 (5.1), 8.5 (13.7) 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 145.0" (3.68 m) left 147.7" (3.75 m) (on concrete surface without brake) right 168.2" (4.27 m) left 169.1" (4.30 m) Turning space diameter (on concrete surface with brake applied) right 323.0" (8.20 m) left 328.5" (8.34 m) (on concrete surface without brake) right 369.5" (9.39 m)

LUGGING ABILITY IN 5th (1F) GEAR

Crankshaft Speed rpm	2299	2073	1840	1617	1377	1156
Pull—lbs (kN)	10281 (45.73)	11806 (52.52)	11901 (52.94)	11509 (51.19)	11318 (50.34)	10606 (47.18)
Increase in Pull %	0	15	16	12	10	3
Power—Hp (kW)	134.13 (100.02)	137.35 (102.43)	122.74 (91.52)	104.58 (77.99)	87.63 (65.35)	69.28 (51.66)
Speed—Mph (km/h)	4.89 (7.87)	4.36 (7.02)	3.87 (6.22)	3.41 (5.48)	2.90 (4.67)	2.45 (3.94)
Slip %	6.14	7.06	7.06	6.76	6.76	6.45

TRACTOR SOUND LEVEL WITH CAB

	dB(A)
Maximum*Available Power—Two Hours	79.0
75% of Pull at Maximum Power—Ten Hours	79.0
50% of Pull at Maximum Power—Two Hours	79.0
50% of Pull at Reduced Engine Speed—Two Hours	76.0
Bystander in 11th (5F) gear	88.0

TIRES, BALLAST AND WEIGHT

		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi (kPa)	Inner Two 20.8-38; 10; 14 (95) Outer Two 20.8-38; 8; 14 (95)	Inner Two 20.8-38; 10; 14 (95) Outer Two 20.8-38; 8; 14 (95)
Ballast	—Liquid (each inner) —Cast Iron (each inner)	938 lb (425 kg) 930 lb (422 kg)	None None
Front Tires	—No., size, ply & psi (kPa)	Two 14L-16.1; 6; 28 (195)	Two 14L-16.1; 6; 28 (195)
Ballast	—Liquid (each) —Cast Iron (each)	None 170 lb (77 kg)	None None
Height of Drawbar		22 in (560 mm)	22 in (560 mm)
Static Weight with Operator—Rear		15040 lb (6822 kg)	11305 lb (5128 kg)
—Front		4340 lb (1969 kg)	4000 lb (1814 kg)
—Total		19380 lb (8791 kg)	15305 lb (6942 kg)

left 371.2" (9.43 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 168°F (75.8°C). Eight gears were chosen between stability limit and 10 mph (16.1 km/h).

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. 1448.

Report reissued. Supplemental sales permit for Deutz Allis 8050 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 8050 Powershift Diesel

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