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## Test 1262: Allis-Chalmers 8550 Diesel

Nebraska Tractor Test Lab

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

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# NEBRASKA TRACTOR TEST 1262 — ALLIS-CHALMERS 8550 DIESEL

## 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—998 rpm)								
253.88 (189.32)	2500	17.428 (65.971)	0.475 (0.289)	14.57 (2.870)	184 (84.4)	61 (16.1)	75 (23.8)	28.843 (97.400)
VARYING POWER AND FUEL CONSUMPTION—Two Hours								
224.51 (167.42)	2599	16.468 (62.340)	0.508 (0.309)	13.63 (2.686)	183 (83.9)	62 (16.9)	75 (23.9)	..... .....
0.00 (0.00)	2762	6.822 (25.825)	..... .....	..... .....	180 (82.2)	62 (16.4)	73 (22.8)	..... .....
115.50 (86.13)	2675	11.461 (43.385)	0.687 (0.418)	10.08 (1.985)	181 (82.8)	63 (17.2)	75 (23.9)	..... .....
255.22 (190.32)	2501	17.482 (66.176)	0.474 (0.289)	14.60 (2.876)	185 (85.0)	63 (17.2)	76 (24.2)	..... .....
58.80 (43.85)	2725	9.200 (34.826)	1.084 (0.659)	6.39 (1.259)	179 (81.7)	63 (17.2)	76 (24.2)	..... .....
171.22 (127.68)	2644	13.999 (52.994)	0.566 (0.344)	12.23 (2.409)	181 (82.8)	63 (17.2)	76 (24.7)	..... .....
<b>Av 137.54</b> <i>Av (102.57)</i>	<b>2651</b>	<b>12.572</b> <i>(47.591)</i>	<b>0.633</b> <i>(0.385)</i>	<b>10.94</b> <i>(2.155)</i>	<b>182</b> <i>(83.1)</i>	<b>63</b> <i>(17.0)</i>	<b>75</b> <i>(23.9)</i>	<b>28.835</b> <i>(97.371)</i>

## 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 10th (5SL) Gear											
217.92 (162.51)	14015 (62.34)	5.83 (9.38)	2500	3.64	17.470 (66.133)	0.555 (0.338)	12.47 (2.457)	181 (82.8)	58 (14.4)	68 (19.7)	28.855 (97.439)
75% of Pull at Maximum Power—Ten Hours 10th (5SL) Gear											
178.54 (133.13)	10825 (48.15)	6.18 (9.95)	2623	2.64	15.590 (59.015)	0.608 (0.370)	11.45 (2.256)	179 (81.5)	58 (14.3)	68 (19.7)	28.793 (97.230)
50% of Pull at Maximum Power—Two Hours 10th (5SL) Gear											
121.62 (90.69)	7183 (31.95)	6.35 (10.22)	2671	1.87	13.010 (49.247)	0.745 (0.453)	9.35 (1.842)	179 (81.4)	56 (13.3)	59 (15.0)	28.870 (97.490)
50% of Pull at Reduced Engine Speed—Two Hours 14th (2FH) Gear											
122.04 (91.01)	7204 (32.05)	6.35 (10.22)	1804	1.78	9.618 (36.409)	0.549 (0.334)	12.69 (2.500)	179 (81.7)	59 (15.0)	64 (17.5)	28.870 (97.490)

## MAXIMUM POWER IN SELECTED GEARS

174.83 (130.37)	26220 (116.63)	2.50 (4.02)	2620	14.98	3rd (2SL) Gear			181 (82.5)	57 (13.9)	61 (16.1)	28.880 (97.523)
218.31 (162.80)	18904 (84.09)	4.33 (6.97)	2499	5.43	7th (3SH) Gear			181 (82.5)	56 (13.3)	65 (18.3)	28.900 (97.591)
222.67 (166.04)	16014 (71.23)	5.21 (8.39)	2499	4.38	9th (1FL) Gear			181 (82.5)	56 (13.3)	63 (17.2)	28.910 (97.625)
224.18 (167.17)	14429 (64.18)	5.83 (9.38)	2500	3.81	10th (5SL) Gear			181 (82.8)	58 (14.4)	68 (20.0)	28.870 (97.490)
222.73 (166.09)	13190 (58.67)	6.33 (10.19)	2499	3.39	11th (1FH) Gear			181 (82.8)	57 (13.9)	66 (18.9)	28.880 (97.523)
223.39 (166.58)	11577 (51.50)	7.24 (11.64)	2500	3.06	13th (2FL) Gear			181 (82.8)	58 (14.4)	67 (19.4)	28.870 (97.490)

Department of Agricultural Engineering

Dates of Test: October 15 to 28, 1977

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

**FUEL, OIL AND TIME:** Fuel No. 2 Diesel Cetane No. 50.8 (rating taken from oil company's typical inspection data) **Specific gravity converted to 60°/60° (15°/15°)** 0.8318 **Fuel weight** 6.926 lbs/gal (0.832 kg/l) **Oil SAE 30 API service classification** CD/SE **To motor** 14.892 gal (56.372 l) **Drained from motor** 7.816 gal (29.587 l) **Transmission and final drive lubricant** Allis-Chalmers Power Fluid 821 **Total time engine was operated** 51 hours

**ENGINE Make** Allis-Chalmers Diesel **Type** 6 cylinder vertical with two turbochargers **Serial No.** 12-00004 **Crankshaft** lengthwise **Rated rpm** 2500 **Bore and stroke** 5.25" × 5.625" (133.4 mm × 142.9 mm) **Compression ratio** 16.25 to 1 **Displacement** 731 cu in (11972 ml) **Cranking system** 12 volt **Lubrication pressure** **Air cleaner** primary and safety paper elements with centrifugal precleaner and aspirator **Oil filter** two full flow and one by-pass paper elements **Oil cooler** engine coolant heat exchanger for crankcase oil and radiator for transmission and hydraulic fluid **Fuel filter** two parallel cartridges and one element **Muffler** two vertical **Cooling medium temperature control** thermostat

**CHASSIS: Type** four-wheel drive with duals **Serial No.** 8550-1005 **Tread width** rear 65" (1651 mm) to 115" (2921 mm) front 65" (1651 mm) to 115" (2921 mm) **Wheel base** 126" (3200 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 79.4" (2017 mm) Vertical distance above roadway 45.0" (1143 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 (2) range operator controlled power shift **Advised speeds mph (km/h)** first 2.0 (3.2) second 2.5 (4.0) third 2.8 (4.5) fourth 3.4 (5.5) fifth 3.8 (6.1) sixth 4.2 (6.8) seventh 4.6 (7.4) eighth 5.0 (8.0) ninth 5.4 (8.7) tenth 6.0 (9.7) eleventh 6.5 (10.5) twelfth 7.3 (11.7) thirteenth 7.4 (11.9) fourteenth 8.9 (14.3) fifteenth 10.1 (16.3) sixteenth 11.2 (18.0) seventeenth 12.1 (19.5) eighteenth 13.4 (21.6) nineteenth 16.0 (25.7) twentieth 19.3 (31.1) reverse 3.8 (6.1), 4.5 (7.2), 10.0 (16.1), 12.0 (19.3)

# LUGGING ABILITY IN RATED GEAR 10th (5SL)

Crankshaft Speed rpm	2500	2248	1997	1756	1507	1249
Pull—lbs (kN)	14429 (64.18)	15938 (70.89)	16841 (74.91)	17244 (76.71)	16884 (75.11)	16262 (72.34)
Increase in Pull %	0	10	17	20	17	13
Power—Hp (kW)	224.18 (167.17)	221.25 (164.99)	207.15 (154.47)	185.97 (138.68)	156.56 (116.74)	125.05 (93.25)
Speed—Mph (km/h)	5.83 (9.38)	5.21 (8.38)	4.61 (7.42)	4.04 (6.51)	3.48 (5.60)	2.88 (4.64)
Slip %	3.81	4.46	4.79	4.95	4.46	4.46

# TRACTOR SOUND LEVEL WITH CAB

dB(A)

Maximum Available Power—Two Hours	84.5
75% of Pull at Maximum Power—Ten Hours	85.0
50% of Pull at Maximum Power—Two Hours	84.5
50% of Pull at Reduced Engine Speed—Two Hours	80.5
Bystander in 19th (5FL) gear	94.5

# TIRES, BALLAST AND WEIGHT

		With Ballast	Without Ballast
<b>Rear Tires</b>	—No., size, ply & psi (kPa)	Four 20.8-38; 8; 16 (110)	Four 20.8-38; 8; 16 (110)
Ballast	—Liquid (each inner)	990 lb (449 kg)	None
	—Cast Iron (each)	None	None
<b>Front Tires</b>	—No., size, ply & psi (kPa)	Four 20.8-38; 8; 16 (110)	Four 20.8-38; 8; 16 (110)
Ballast	—Liquid (each inner)	170 lb (77 kg)	None
	—Cast Iron (each)	None	None
<b>Height of drawbar</b>		21 in (530 mm)	21 in (530 mm)
<b>Static weight with operator—rear</b>		11980 lb ( 5434 kg)	10000 lb ( 4536 kg)
front		17380 lb ( 7883 kg)	17040 lb ( 7729 kg)
total		29360 lb (13317 kg)	27040 lb (12265 kg)

**Clutch** multiple wet disc power actuated and operated by foot pedal **Brakes** multiple wet disc power actuated and operated by foot pedal **Steering** hydrostatic and articulated **Turning radius** (on concrete surface without brake) right 245" (6.22 m) left 246.8" (6.27 m) **Turning space diameter** (on concrete surface without brake) right 518.5" (13.17 m) left 523" (13.28 m) **Power take-off** 998 rpm at 2500 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. Temperature at injection pump return was 136°F (58.0°C). Six gears were chosen between 15% slip and 15 mph (24.1 km/h). The tractor did not develop 230 maximum drawbar horsepower as advertised by the manufacturer. The advertised cab sound rating of 82.0 dB(A) was obtained only on the 50% Reduced Engine Speed Test.

We, the undersigned, certify that this is a true and correct report of official Tractor Test 1262.

LOUIS I. LEVITICUS

Engineer-in Charge

G. W. STEINBRUEGGE, Chairman

W. E. SPLINTER

K. VON BARGEN

Board of Tractor Test Engineers



Allis-Chalmers 8550 Diesel