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January 1973

Test 1120: Allis-Chalmers 7050 Diesel

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 1120 – ALLIS-CHALMERS 7050 DIESEL

POWER TAKE-OFF PERFORMANCE

Hp	Crankshaft speed rpm	Fuel Consumption Gal per hr	Lb per hp-hr	Hp-hr per gal	Cooling medium	Temperature Degrees F Air wet bulb	Air dry bulb	Barometer inches of Mercury
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed—Two Hours (PTO Speed—1021 rpm)								
156.49	2300	9.826	0.436	15.93	195	58	76	28.993
Standard Power Take-off Speed (1000 rpm)—One Hour								
156.63	2253	9.762	0.432	16.04	195	58	75	289.60
VARYING POWER AND FUEL CONSUMPTION—Two Hours								
138.18	2390	9.049	0.454	15.27	193	59	77	.....
0.00	2530	3.039	.....	.....	175	57	74	.....
71.63	2474	6.096	0.591	11.75	184	58	75	.....
157.14	2301	9.827	0.434	15.99	197	59	77	.....
36.27	2504	4.574	0.875	7.93	179	59	77	.....
105.58	2436	7.527	0.495	14.03	188	59	76	.....
Av 84.80	2439	6.685	0.547	12.69	186	58	76	28.927

DRAWBAR PERFORMANCE

Hp	Drawbar pull lbs	Speed miles per hr	Crankshaft speed rpm	Slip of drivers %	Fuel Consumption Gal per hr	Lb per hp-hr	Hp-hr per gal	Temp Degrees F Cool-ing med	Air wet bulb	Air dry bulb	Barometer inches of Mercury
VARYING DRAWBAR POWER AND FUEL CONSUMPTION WITH BALLAST											
Maximum Available Power—Two Hours—9th Gear (4 SL)											
131.54	9028	5.46	2293	4.96	9.763	0.515	13.47	185	47	58	28.900
75% of Pull at Maximum Power—Ten Hours—9th Gear (4 SL)											
107.64	6935	5.82	2406	3.50	8.495	0.547	12.67	178	52	58	28.757
50% of Pull at Maximum Power—Two Hours—9th Gear (4 SL)											
73.99	4614	6.01	2461	2.62	7.025	0.658	10.53	181	41	45	28.800
50% of Pull at Reduced Engine Speed—Two Hours—13th Gear (2 FH)											
74.68	4666	6.00	1563	2.49	5.512	0.512	13.55	177	48	54	28.780
MAXIMUM POWER WITH BALLAST											
129.99	16206	3.01	2388	10.53	3rd Gear (2 SL)	193	40	42	28.960		
133.84	12129	4.14	2299	6.99	6th Gear (3 SL)	182	50	61	28.910		
135.01	9570	5.29	2297	5.28	8th Gear (3 SH)	182	50	61	28.950		
135.11	9265	5.47	2298	5.12	9th Gear (4 SL)	182	49	58	28.950		
134.98	7309	6.92	2300	3.91	10th Gear (2 FL)	182	50	62	28.930		
129.61	5496	8.84	2300	2.83	14th Gear (5 SH)	182	47	57	28.930		
VARYING DRAWBAR PULL AND TRAVEL SPEED WITH BALLAST											
9th Gear (4 SL)											
Pounds Pull			9265		10044	10613	10719	10391	9756		
Horsepower			135.11		130.75	122.37	108.34	90.63	71.03		
Crankshaft Speed rpm			2298		2062	1835	1609	1387	1152		
Miles Per Hour			5.47		4.88	4.32	3.79	3.27	2.73		
Slip of Drivers %			5.12		5.59	6.06	5.91	5.91	5.43		

TRACTOR SOUND LEVEL (with OCS CAB)

	db(A)
Maximum Available Power 2 Hours	79.5
75% of Pull at Max. Power 10 Hours	80.5
50% of Pull at Max. Power 2 Hours	80.0
50% of Pull at Reduced Engine Speed 2 Hours	76.0
Bystander 20th Gear (5 FH)	89.5

TIRES, BALLAST AND WEIGHT

	With Ballast	Without Ballast
Rear tires	—No., size, ply & psi	Four 20.8-38; 10; 16
Ballast	—Liquid	1138 lb each
	Cast iron	None
Front tires	—No., size, ply & psi	Two 14L-16.1; 6; 24
Ballast	—Liquid	None
	Cast iron	23 lb each
Height of drawbar	23 inches	23½ inches
Static weight with operator—Rear	15130 lb	10580 lb
	Front	4400 lb
	Total	19530 lb
		14525 lb

Department of Agricultural Engineering

Dates of Test: March 14 to March 30, 1973

Manufacturer: ALLIS-CHALMERS CORPORATION, MILWAUKEE, WISCONSIN

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°** 0.8334 **Weight per gallon** 6.939 lb **Oil SAE 30 API service classification** SB/SE-CA/CD (Formerly MS-DS) **To motor** 3.891 gal **Drained from motor** 3.427 gal **Transmission and final drive lubricant** ALLIS-CHALMERS Power Fluid 821 **Total time engine was operated** 55½ hours

ENGINE Make ALLIS-CHALMERS Diesel **Type** 6 cylinder vertical with turbo-charger and inter-cooler **Serial No** 3D-17800 **Crankshaft** Mounted lengthwise **Rated rpm** 2300 **Bore and Stroke** 4.25" x 5.0" **Compression ratio** 16 to 1 **Displacement** 426 cu in **Cranking system** 12 volt electric four 12 volt batteries **Lubrication pressure** Air cleaner single stage dry type with replaceable pleated paper element **Oil filter** two full flow replaceable cartridges and one by-pass type with replaceable element **Oil Cooler** engine coolant heat exchanger for crankcase oil and radiator for transmission and hydraulic fluid **Fuel filter** replaceable cartridge **Muffler** was used **Cooling medium temperature control** 2 thermostats

CHASSIS Type standard **Serial No.** 7050-1001 **Tread width** rear 112" to 128" front 65½" to 89½" **Wheel base** 106" **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 25.4" **Vertical distance** above roadway 37.6" **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 partial range operator controlled power shifting **Advertised speeds mph** first 1.6 second 2.0 third 3.2 fourth 4.0 fifth 3.5 sixth 4.3 seventh 4.4 eighth 5.5 ninth 5.6 tenth 7.0 eleventh 7.1 twelfth 7.1 thirteenth 8.8 fourteenth 8.9 fifteenth 9.7 sixteenth 12.1 seventeenth 12.5 eighteenth 15.7 nineteenth 15.7 twentieth 19.8 reverse 2.9, 3.7, 6.5, 8.2 **Clutch** multiple plate wet disc hydraulically actuated by foot pedal **Brakes** wet multiple discs operated hydraulically by two foot pedals that can be locked together **Steering** hydrostatic **Turning radius** (on concrete surface with brake applied) right 144" left 144" (on concrete surface without brake) right 197" left 197" **Turning space diameter** (on concrete surface with brake applied) right 293" left 293" (on concrete surface without brake) right 417" left 417" **Power take-off** 1000 rpm at 2253 engine rpm 1021 at 2300 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. First and second gears were not run as it was necessary to limit the pull in third gear due to the stability formula. Fourth, fifth, seventh, eleventh, twelfth, fifteenth, sixteenth, seventeenth, eighteenth, nineteenth, and twentieth gears were not run as test procedure requires only six gears.

We the undersigned, certify that this is a true and correct report of official Tractor Test 1120.

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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