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January 1973

## Test 1120: Allis-Chalmers 7050 Diesel

Tractor Museum

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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	Temperature Cooling medium	Degrees F Air wet bulb	Degrees F Air dry bulb	Barometer inches of Mercury	
<b>MAXIMUM POWER AND FUEL CONSUMPTION</b>									
<b>Rated Engine Speed—Two Hours (PTO Speed—1021 rpm)</b>									
156.49	2300	9.826	0.436	15.93	195	58	76	28.993	
<b>Standard Power Take-off Speed (1000 rpm)—One Hour</b>									
156.63	2253	9.762	0.432	16.04	195	58	75	289.60	
<b>VARYING POWER AND FUEL CONSUMPTION—Two Hours</b>									
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	.....	
<b>Av</b>	<b>84.80</b>	<b>2439</b>	<b>6.685</b>	<b>0.547</b>	<b>12.69</b>	<b>186</b>	<b>58</b>	<b>76</b>	<b>28.927</b>

## 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
<b>VARYING DRAWBAR POWER AND FUEL CONSUMPTION WITH BALLAST</b>											
<b>Maximum Available Power—Two Hours—9th Gear (4 SL)</b>											
131.54	9028	5.46	2293	4.96	9.763	0.515	13.47	185	47	58	28.900
<b>75% of Pull at Maximum Power—Ten Hours—9th Gear (4 SL)</b>											
107.64	6935	5.82	2406	3.50	8.495	0.547	12.67	178	52	58	28.757
<b>50% of Pull at Maximum Power—Two Hours—9th Gear (4 SL)</b>											
73.99	4614	6.01	2461	2.62	7.025	0.658	10.53	181	41	45	28.800
<b>50% of Pull at Reduced Engine Speed—Two Hours—13th Gear (2 FH)</b>											
74.68	4666	6.00	1563	2.49	5.512	0.512	13.55	177	48	54	28.780
<b>MAXIMUM POWER WITH BALLAST</b>											
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
Static weight with operator—Rear		15130 lb
	Front	4400 lb
	Total	19530 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

The University of Nebraska Agricultural Experiment Station  
 E. F. Frolik, Dean; H. W. Ottoson, Director; Lincoln, Nebraska