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Test 1271: Allis-Chalmers 5030 DSL

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 1271 — ALLIS-CHALMERS 5030 DSL

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—580 rpm)								
26.42 (19.70)	2500	1.959 (7.415)	0.514 (0.312)	13.49 (2.657)	183 (83.6)	60 (15.6)	75 (23.9)	28.760 (97.118)
Standard Power Take-off Speed (540 rpm)—One Hour								
25.61 (19.10)	2326	1.853 (7.016)	0.501 (0.305)	13.82 (2.723)	181 (83.0)	59 (15.2)	75 (23.8)	28.730 (97.017)
VARYING POWER AND FUEL CONSUMPTION—Two Hours								
23.12 (17.24)	2575	1.663 (6.294)	0.498 (0.303)	13.91 (2.739)	173 (78.3)	59 (15.0)	75 (23.9)	..... .....
0.00 (0.00)	2705	0.602 (2.278)	..... .....	..... .....	169 (76.1)	59 (15.0)	75 (23.9)	..... .....
11.83 (8.82)	2634	1.104 (4.180)	0.647 (0.393)	10.72 (2.111)	171 (77.2)	59 (15.0)	75 (23.9)	..... .....
26.78 (19.97)	2500	1.992 (7.540)	0.515 (0.313)	13.44 (2.648)	182 (83.3)	59 (15.0)	74 (23.6)	..... .....
5.97 (4.45)	2662	0.857 (3.246)	0.994 (0.605)	6.97 (1.373)	169 (76.1)	58 (14.4)	75 (23.9)	..... .....
17.44 (13.01)	2590	1.334 (5.049)	0.530 (0.322)	13.08 (2.576)	172 (77.8)	58 (14.4)	75 (23.9)	..... .....
Av 14.19 Av (10.58)	2611	1.259 (4.765)	0.614 (0.374)	11.28 (2.221)	173 (78.1)	59 (14.8)	75 (23.8)	28.730 (97.017)

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 (1H) Gear											
22.47 (16.75)	1976 (8.79)	4.26 (6.86)	2499	7.58	1.931 (7.308)	0.595 (0.362)	11.64 (2.293)	173 (78.3)	47 (8.3)	61 (15.8)	29.005 (97.946)
75% of Pull at Maximum Power—Ten Hours 5th (1H) Gear											
18.90 (14.09)	1594 (7.09)	4.45 (7.16)	2569	6.27	1.645 (6.229)	0.603 (0.367)	11.48 (2.262)	170 (76.8)	43 (6.0)	48 (8.7)	29.075 (98.182)
50% of Pull at Maximum Power—Two Hours 5th (1H) Gear											
12.93 (9.64)	1052 (4.68)	4.61 (7.41)	2608	4.29	1.335 (5.054)	0.715 (0.435)	9.68 (1.908)	169 (76.1)	42 (5.6)	43 (5.8)	28.585 (96.527)
50% of Pull at Reduced Engine Speed—Two Hours 6th (2H) Gear											
13.07 (9.75)	1064 (4.73)	4.61 (7.42)	1850	4.32	1.046 (3.961)	0.555 (0.337)	12.49 (2.461)	167 (74.7)	43 (6.1)	44 (6.7)	28.570 (96.477)
MAXIMUM POWER IN SELECTED GEARS											
14.81 (11.04)	3389 (15.07)	1.64 (2.64)	2590	14.64	3rd (3L) Gear			167 (74.7)	41 (5.0)	47 (8.3)	28.900 (97.591)
20.99 (15.65)	3364 (14.96)	2.34 (3.77)	2501	14.88	4th (4L) Gear			172 (77.5)	43 (6.1)	51 (10.6)	28.900 (97.591)
23.92 (17.84)	2108 (9.38)	4.26 (6.85)	2499	7.74	5th (1H) Gear			172 (77.5)	44 (6.7)	54 (12.2)	29.060 (98.131)
23.73 (17.69)	1442 (6.42)	6.17 (9.93)	2499	5.22	6th (2H) Gear			173 (78.1)	45 (7.2)	57 (13.9)	29.050 (98.097)
23.07 (17.21)	1056 (4.70)	8.19 (13.18)	2500	3.81	7th (3H) Gear			173 (78.1)	46 (7.8)	59 (15.0)	29.040 (98.064)

Department of Agricultural Engineering

Dates of Test: April 6-21, 1978

Manufacturer: TOYOSHA CO., LTD, 55, Joshoji-16, Kadoma City, Osaka, Japan

FUEL, OIL AND TIME: Fuel No. 2 Diesel Cetane No. 50.4 (rating taken from oil company's typical inspection data) **Specific gravity converted to 60°/60° (15°/15°)** 0.8321 **Fuel weight** 6.928 lbs/gal (0.832 kg/l) **Oil SAE 30 API service classification** SE-CD **To motor** 1.031 gal (3.903 l) **Drained from motor** 0.889 gal (3.365 l) **Transmission and final drive lubricant** A-C Power Fluid 821 **Total time engine was operated** 34.5 hours.

ENGINE: Make Toyosha Diesel **Type** 2 cylinder vertical **Serial No.** 8A 00238 **Crankshaft** lengthwise **Rated rpm** 2500 **Bore and stroke** 3.82" x 3.94" (97 mm x 100 mm) **Compression ratio** 23.0 to 1 **Displacement** 90.1 cu in (1477 ml) **Cranking System** 12 volt **Lubrication pressure** **Air cleaner** one paper element **Oil filter** full flow paper cartridge **Fuel filter** one paper element **Muffler** vertical **Cooling medium temperature control** thermostat.

CHASSIS: **Type** standard **Serial No.** 5030-1004 **Tread width** rear 40.9" (1040 mm) to 62.5" (1588 mm) front 40.9" (1040 mm) to 51.1" (1298 mm) **Wheel base** 61.8" (1570 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 21.7" (551 mm) Vertical distance above roadway 22.9" (582 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 **Advertised speeds mph (km/h)** first 1.0 (1.7) second 1.5 (2.3) third 1.9 (3.1) fourth 2.8 (4.5) fifth 4.7 (7.6) sixth 6.7 (10.7) seventh 8.7 (14.0) eighth 13.0 (20.8) reverse 2.0 (3.2), 9.2 (14.8) **Clutch** single dry disc operated by foot pedal **Brakes** drum and shoe operated by two foot pedals which can be locked together **Steering mechanical** **Turning radius** (on concrete surface with brake applied) right 92.0" (2.34 m) left 92.0" (2.34 m) (on concrete surface without brake) right 101.5" (2.58 m) left 102.0" (2.59 m) **Turning space diameter** (on concrete surface with brake applied) right 192.0" (4.88 m) left 192.0" (4.88 m) (on concrete surface without brake) right 211.0" (5.36 m) left 212.0" (5.38 m) **Power take-off** 540 rpm at 2326 engine rpm.

REPAIRS and ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with

LUGGING ABILITY IN RATED GEAR 5th (1H)

Crankshaft Speed rpm	2499	2253	1997	1746	1494	1237
Pull—lbs (kN)	2108 (9.38)	2169 (9.65)	2212 (9.84)	2279 (10.14)	2241 (9.97)	2100 (9.34)
Increase in Pull %	0	3	5	8	6	0
Power—Hp (kW)	23.92 (17.84)	22.13 (16.50)	19.95 (14.88)	17.93 (13.37)	15.09 (11.26)	11.79 (8.79)
Speed—Mph (km/h)	4.26 (6.85)	3.83 (6.16)	3.38 (5.44)	2.95 (4.75)	2.53 (4.06)	2.10 (3.39)
Slip %	7.74	7.93	8.21	8.49	8.30	7.74

	TRACTOR SOUND LEVEL WITHOUT CAB	dB(A)
Maximum Available Power—Two Hours		94.0
75% of Pull at Maximum Power—Ten Hours		92.5
50% of Pull at Maximum Power—Two Hours		91.0
50% of Pull at Reduced Engine Speed—Two Hours		88.0
Bystander in 8th (4H) gear		82.0

TIRES, BALLAST AND WEIGHT

		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi (kPa)	Two 12.4-24; 4; 14 (95)	Two 12.4-24; 4; 14 (95)
Ballast	—Liquid (each)	332 lb (150 kg)	None
	—Cast Iron (each)	290 lb (132 kg)	None
Front Tires	—No., size, ply & psi (kPa)	Two 5.00-15; 4; 44 (300)	Two 5.00-15; 4; 44 (300)
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	51 lb (23 kg)	None
Height of Drawbar		14 in (355 mm)	14 in (355 mm)
Static Weight with Operator—Rear		2893 lb (1312 kg)	1650 lb (748 kg)
	—Front	983 lb (446 kg)	880 lb (400 kg)
	—Total	3876 lb (1758 kg)	2530 lb (1148 kg)

SAE and ASAE test code or official Nebraska test procedure. Temperature at injection pump was 143°F (61.9°C). Five 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 1271.

L. I. LEVITICUS
Engineer-in-charge

G. W. STEINBRUEGGE
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Board of Tractor Test Engineers



Allis-Chalmers 5030 Dsl

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