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Test 1545: Allis-Chalmers 6070 and Deutz-Allis 6070 Deisels 12-Speeds

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 1545—ALLIS-CHALMERS 6070 DIESEL ALSO DEUTZ ALLIS 6070 DIESEL 12 SPEED

Department of Agricultural Engineering

Dates of Test: October 19 to 26, 1984

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

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—558 rpm)								
70.78 (52.78)	2300	4.373 (16.555)	0.431 (0.262)	16.18 (3.189)	187 (85.8)	63 (17.1)	75 (23.8)	29.25 (98.78)

Standard Power Take-off Speed (540 rpm) — One Hour								
71.01 (52.93)	2228	4.315 (16.336)	0.424 (0.258)	16.45 (3.242)	187 (86.0)	65 (18.5)	76 (24.2)	29.25 (98.77)

VARYING POWER AND FUEL CONSUMPTION — Two Hours								
63.22 (47.14)	2417	4.142 (15.679)	0.457 (0.278)	15.26 (3.007)	184 (84.4)	66 (18.6)	75 (23.9)	..... .....
0.00 (0.00)	2568	1.461 (5.530)	..... .....	..... .....	178 (80.8)	67 (19.2)	77 (24.7)	..... .....
32.63 (24.33)	2494	2.793 (10.572)	0.598 (0.364)	11.68 (2.302)	181 (82.8)	66 (18.9)	75 (23.6)	..... .....
70.48 (52.55)	2300	4.353 (16.476)	0.431 (0.262)	16.19 (3.190)	188 (86.4)	67 (19.2)	77 (25.0)	..... .....
16.54 (12.34)	2531	2.135 (8.084)	0.901 (0.548)	7.75 (1.526)	178 (81.1)	65 (18.1)	73 (22.8)	..... .....
48.12 (35.88)	2456	3.446 (13.045)	0.500 (0.304)	13.96 (2.751)	183 (83.9)	68 (20.0)	76 (24.4)	..... .....
Av 38.50 Av (28.71)	2461	3.055 (11.564)	0.554 (0.337)	12.60 (2.482)	182 (83.2)	66 (19.0)	75 (24.1)	29.23 (98.69)

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 7th (3I) Gear											
58.35 (43.51)	5081 (22.60)	4.31 (6.93)	2300	8.00	4.361 (16.509)	0.522 (0.317)	13.38 (2.636)	186 (85.3)	44 (6.7)	54 (12.2)	29.06 (98.13)
75% of Pull at Maximum Power — Ten Hours 7th (3I) Gear											
47.68 (35.56)	3836 (17.06)	4.66 (7.50)	2435	5.91	3.877 (14.676)	0.568 (0.345)	12.30 (2.423)	185 (85.0)	46 (7.7)	50 (10.1)	29.04 (98.07)
50% of Pull at Maximum Power — Two Hours 7th (3I) Gear											
33.15 (24.72)	2557 (11.37)	4.86 (7.83)	2482	3.76	3.187 (12.063)	0.671 (0.408)	10.40 (2.049)	184 (84.4)	47 (8.3)	50 (10.0)	28.88 (97.51)
50% of Pull at Reduced Engine Speed — Two Hours 9th (1H) Gear											
33.23 (24.78)	2556 (11.37)	4.88 (7.85)	1410	3.58	2.378 (9.000)	0.500 (0.304)	13.98 (2.753)	185 (85.0)	54 (11.9)	60 (15.6)	28.82 (97.32)

MAXIMUM POWER IN SELECTED GEARS

53.53 (39.91)	7997 (35.57)	2.51 (4.04)	2395	14.89	5th (1I) Gear			184 (84.4)	44 (6.7)	46 (7.8)	28.87 (97.49)
57.35 (42.77)	6493 (28.88)	3.31 (5.33)	2297	10.70	6th (2I) Gear			185 (85.0)	43 (6.1)	52 (11.1)	29.10 (98.27)
58.81 (43.86)	5114 (22.75)	4.31 (6.94)	2303	7.90	7th (3I) Gear			185 (85.0)	45 (7.2)	55 (12.8)	29.07 (98.17)
59.22 (44.16)	4034 (17.94)	5.51 (8.86)	2300	5.94	8th (4I) Gear			186 (85.3)	44 (6.7)	54 (12.2)	29.08 (98.20)
59.56 (44.42)	2828 (12.58)	7.90 (12.71)	2297	4.10	9th (1H) Gear			186 (85.3)	43 (6.1)	53 (11.7)	29.09 (98.23)

FUEL, OIL AND TIME: Fuel No. 2 Diesel Cetane No. 46.8 (rating taken from oil company's inspection data) Specific gravity converted to 60/60°F (15/15°C) 0.8385 Fuel weight 6.982 lbs/gal (0.837 kg/l) Oil SAE 15W-40 API service classification SF-CD To motor 2.678 gal (10.139 l) Drained from motor 2.502 gal (9.470 l) Transmission and final drive lubricant Allis Chalmers Power Fluid 821 Total time engine was operated 32.0 hours.

ENGINE: Make Allis Chalmers Diesel Type four cylinder vertical with turbocharger Serial No. 33K20023 Crankshaft lengthwise Rated rpm 2300 Bore and stroke 3.875" × 4.25" (98.4 mm × 107.9 mm) Compression ratio 15.1 to 1 Displacement 200 cu in (3285 ml) Starting system 12 volt Lubrication pressure Air cleaner one paper element and centrifugal precleaner Oil filter one full flow cartridge Oil cooler engine coolant heat exchanger for crankcase oil Fuel filter one paper cartridge Muffler vertical Cooling medium temperature control one thermostat.

CHASSIS: Type standard Serial No. 6070 1004 Tread width rear 57.4" (1460 mm) to 80.0" (2030 mm) front 56" (1422 mm) to 79" (2006 mm) Wheel base 92.6" (2352 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 28.3" (719 mm) Vertical distance above roadway 36.4" (925 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 (1.6) second 1.3 (2.1) third 1.6 (2.6) fourth 2.0 (3.3) fifth 2.9 (4.7) sixth 3.8 (6.1) seventh 4.7 (7.6) eighth 5.9 (9.5) ninth 8.5 (13.6) tenth 11.0 (17.7) eleventh 13.8 (22.2) twelfth 17.2 (27.7) reverse 0.9 (1.5), 2.7 (4.4), 8.0 (12.8) Clutch single dry disc operated by foot pedal Brakes multiple wet disc hydraulically operated by two foot pedals which can be locked together Steering hydrostatic Turning radius (on concrete surface with brake applied) right 124.6" (3.17 m) left 122.8" (3.12 m) (on concrete surface without brake) right 141.0" (3.58 m) left 144.0" (3.66 m) Turning space diameter (on concrete surface with brake applied) right 266.8" (6.78 m) left 263.0" (6.68 m) (on concrete surface without brake) right 299.5" (7.61 m) left 305.5" (7.76 m) Power take-off 540 rpm at 2228 engine rpm Unladen tractor mass 7285 lb (3304 kg).

LUGGING ABILITY IN 7th (3I) GEAR

Crankshaft Speed rpm	2303	2075	1841	1613	1378	1153
Pull—lbs (kN)	5114 (22.75)	5668 (25.21)	5995 (26.67)	6094 (27.11)	6324 (28.13)	5817 (25.88)
Increase in Pull %	0	11	17	19	24	14
Power—Hp (kW)	58.81 (43.86)	58.00 (43.25)	54.07 (40.32)	47.96 (35.76)	42.23 (31.49)	32.91 (24.54)
Speed—Mph (kmh)	4.31 (6.94)	3.84 (6.18)	3.38 (5.44)	2.95 (4.75)	2.50 (4.03)	2.12 (3.41)
Slip %	7.90	9.04	9.66	9.91	10.52	9.42

TRACTOR SOUND LEVEL WITH CAB						dB(A)
Maximum Available Power—Two Hours						80.5
75% of Pull at Maximum Power—Ten Hours						81.5
50% of Pull at Maximum Power—Two Hours						80.5
50% of Pull at Reduced Engine Speed—Two Hours						77.5
Bystander in 12th (4H) gear						85.5

TIRES, BALLAST AND WEIGHT

Rear Tires	—No., size, ply & psi (kPa)
Ballast	—Liquid (each)
	—Cast Iron (each)
Front Tires	—No. size, ply & psi (kPa)
Ballast	—Cast Iron (each)

With Ballast

Two 16.9-34; 6; 18 (125)
703 lb (318 kg)
760 lb (345 kg)
Two 7.50-16; 6; 36 (250)
None
65 lb (29 kg)
19.5 in (495 mm)
8105 lb (3676 kg)
2410 lb (1093 kg)
10515 lb (4769 kg)

Without Ballast

Two 16.9-34; 6; 18 (125)
None
None
Two 7.50-16; 6; 36 (250)
None
None
19.5 in (495 mm)
5180 lb (2350 kg)
2280 lb (1034 kg)
7460 lb (3384 kg)

Height of Drawbar

Static Weight with Operator —Rear
—Front
—Total

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi (kPa)	2325	16030
Location	remote	
Hydraulic oil temperature °F (°C)	182	83
Location	pump inlet	

	Maximum Lift Capacity	Lift Capacity for Transport
QUICK ATTACH CATEGORY	no II	*not measured
LOAD lbs (kg)	**3160	1433
TIME sec	5.29	

HITCH POINT MOVEMENT in (mm)

Lowest position	9.8	248
Top of timed range	33.8	857
Highest position	36.1	918

LOAD CG MOVEMENT in (mm)

Lowest position	9.1	230
Top of timed range	35.9	911
Highest position	39.5	1003

*Implement load capacity for transport purposes not specified by manufacturer.

**The manufacturers advertised capacity is 3200 lb (1451 kg).

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump was maintained at 128°F (53.3°C). Five gears were chosen between 15% slip and 10 mph (16.1 km/h).

We, the undersigned, certify that this is as true and correct report of official Tractor Test No. 1545, December 3, 1984.

LOUIS I. LEVITICUS

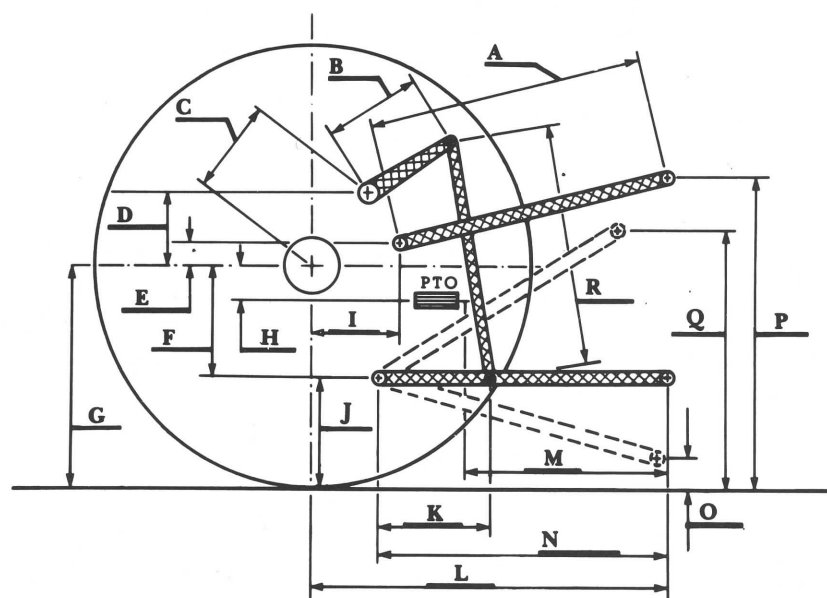
Engineer-in-Charge

K. VON BARGEN

W. E. SPLINTER

L. L. BASHFORD

Board of Tractor Test Engineers



Hitch Dimensions as Tested — No Load

	inch	mm
A	26.3	667
B	9.1	230
C	15.5	393
D	14.1	359
E	8.1	206
F	9.3	236
G	28.0	712
H	1.3	33
I	14.5	367
J	18.7	476
K	17.0	431
L	40.9	1038
M	21.3	540
N	35.6	905
O	8.0	203
P	37.8	959
Q	35.9	911
R	27.0	686



Allis-Chalmers 6070 Diesel