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Test 1592: Steiger Bearcat 1000 12-Speed (Caterpillar Diesel)

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 1592—STEIGER BEARCAT 1000 DIESEL 12 SPEED (CATERPILLAR ENGINE)

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 — 1001 rpm)								
218.00 (162.56)	2100	13.126 (49.688)	0.422 (0.257)	16.61 (3.272)	186 (85.6)	63 (17.4)	76 (24.4)	28.74 (97.03)

VARYING POWER AND FUEL CONSUMPTION — Two Hours

190.59 (142.12)	2160	12.047 (45.603)	0.443 (0.270)	15.82 (3.116)	183 (83.6)	69 (20.3)	77 (25.0)	.....
0.00 (0.00)	2271	3.698 (13.997)	.....	.....	180 (82.2)	69 (20.3)	76 (24.2)	.....
98.16 (73.19)	2223	7.708 (29.176)	0.550 (0.335)	12.74 (2.509)	181 (82.5)	69 (20.6)	76 (24.2)	.....
218.76 (163.13)	2100	13.100 (49.588)	0.420 (0.255)	16.70 (3.290)	186 (85.6)	74 (23.3)	78 (25.6)	.....
49.45 (36.88)	2248	5.919 (22.405)	0.839 (0.510)	8.36 (1.646)	180 (82.2)	70 (21.1)	77 (25.0)	.....
145.22 (108.29)	2196	9.890 (37.438)	0.477 (0.290)	14.68 (2.893)	181 (82.8)	70 (20.8)	78 (25.6)	.....
Av 117.03 Av (87.27)	2200	8.727 (33.035)	0.523 (0.318)	13.41 (2.642)	182 (83.1)	70 (21.1)	77 (24.9)	28.70 (96.93)

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 Gear											
192.82 (143.79)	10935 (48.64)	6.61 (10.64)	2100	2.40	13.138 (49.734)	0.478 (0.291)	14.68 (2.891)	186 (85.6)	65 (18.1)	73 (22.8)	28.63 (96.66)
75% of Pull at Maximum Power — Ten Hours 7th Gear											
152.40 (113.65)	8302 (36.93)	6.88 (11.08)	2173	1.87	11.228 (42.504)	0.516 (0.314)	13.57 (2.674)	183 (83.9)	64 (17.8)	72 (22.0)	28.78 (97.17)
50% of Pull at Maximum Power — Two Hours 7th Gear											
103.76 (77.37)	5535 (24.62)	7.03 (11.31)	2207	1.27	8.944 (33.858)	0.604 (0.368)	11.60 (2.285)	182 (83.3)	66 (18.9)	74 (23.1)	28.73 (97.00)
50% of Pull at Reduced Engine Speed — Two Hours 9th Gear											
103.81 (77.41)	5536 (24.62)	7.03 (11.32)	1494	1.31	7.118 (26.946)	0.481 (0.292)	14.58 (2.873)	181 (82.8)	68 (20.0)	79 (25.8)	28.72 (96.98)

MAXIMUM POWER IN SELECTED GEARS

169.55 (126.44)	28566 (127.07)	2.23 (3.58)	2139	14.54	2nd Gear			181 (82.8)	63 (17.2)	67 (19.4)	28.71 (96.95)
187.98 (140.17)	24088 (107.15)	2.93 (4.71)	2101	7.11	3rd Gear			183 (83.9)	64 (17.8)	73 (22.8)	28.63 (96.68)
193.53 (144.32)	19809 (88.11)	3.66 (5.90)	2101	4.97	4th Gear			183 (83.9)	64 (17.8)	73 (22.8)	28.61 (96.61)
195.49 (145.78)	16472 (73.27)	4.45 (7.16)	2101	3.86	5th Gear			185 (85.0)	64 (17.8)	73 (22.8)	28.66 (96.78)
194.51 (145.05)	13213 (58.77)	5.52 (8.88)	2098	2.89	6th Gear			185 (84.7)	64 (17.8)	73 (22.8)	28.69 (96.88)
195.08 (145.47)	11069 (49.24)	6.61 (10.64)	2098	2.40	7th Gear			186 (85.6)	64 (17.8)	73 (22.8)	28.63 (96.68)
193.66 (144.41)	9107 (40.51)	7.97 (12.83)	2100	1.90	8th Gear			186 (85.3)	67 (19.4)	76 (24.4)	28.69 (96.88)
190.05 (141.72)	7231 (32.17)	9.86 (15.86)	2101	1.48	9th Gear			185 (84.7)	66 (18.9)	75 (23.9)	28.69 (96.88)

Department of Agricultural Engineering

Dates of Test: May 6 to 13, 1986

Manufacturer: STEIGER TRACTOR, INC., 406 Main Avenue, Fargo, North Dakota 58126

FUEL, OIL AND TIME: Fuel No. 2 Diesel Cetane No. 46.9 (rating taken from oil company's inspection data) Specific gravity converted to 60/60°F (15/15°C) 0.8419 Fuel weight 7.010 lbs/gal (0.840 kg/l) Oil SAE 15W-40 API service classification CD-SF-CC To motor 5.892 gal (22.303 l) Drained from motor 5.237 gal (19.824 l) Transmission and hydraulic lubricant Steiger hydraulic transmission oil Final drive lubricant SAE 80W-90 gear oil API GL-5 Total time engine was operated 39.0 hours.

ENGINE: Make Caterpillar Diesel Type six cylinder vertical with turbocharger Serial No. 64Z04445 Crankshaft lengthwise Rated rpm 2100 Bore and stroke 4.75" × 6.00" (120.7 mm × 152.4 mm) Compression ratio 15.0 to 1 Displacement 638 cu in (10455 ml) Starting system 12 volt Lubrication pressure Air cleaner two paper elements and aspirator Oil filter one full flow cartridge Oil cooler engine coolant heat exchanger for crankcase oil, radiator for hydraulic oil, radiator for transmission oil Fuel filter one paper cartridge and prestrainer Muffler vertical Cooling medium temperature control one thermostat.

CHASSIS: Type four wheel drive with duals Serial No. C09-6091 Tread width rear 64" (1625 mm) to 130" (3302 mm) front 64" (1625 mm) to 130" (3302 mm) Wheel base 130" (3302 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 72.0" (1829 mm) Vertical distance above roadway 46.0" (1168 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 full range operator controlled powershift Advertised speeds mph (km/h) first 2.0 (3.3) second 2.5 (3.9) third 3.0 (4.9) fourth 3.7 (5.9) fifth 4.4 (7.1) sixth 5.5 (8.8) seventh 6.5 (10.5) eighth 7.8 (12.5) ninth 9.6 (15.4) tenth 11.7 (18.9) eleventh 14.1 (22.7) twelfth 17.3 (27.9) reverse 2.7 (4.3), 4.8 (7.8) Clutch wet multiple disc hydraulically power actuated by foot pedal Brakes caliper disc hydraulically operated by foot pedal Steering hydrostatic and articulated Turning radius (on concrete surface without brake) right 240" (6.1 m) left 240" (6.1 m) Turning space diameter (on concrete surface without brake) right 501" (12.7 m) left 501" (12.7 m) Power take-off 1001 rpm at 2100 engine rpm Unladen tractor mass 25395 lb (11519 kg).

LUGGING ABILITY IN 7th GEAR

Crankshaft Speed rpm	2098	1887	1684	1466	1253	1049
Pull—lbs (kN)	11069 (49.24)	12821 (57.03)	14339 (63.78)	14851 (66.06)	14873 (66.16)	14199 (63.16)
Increase in Pull %	0	16	30	34	34	28
Power—Hp (kW)	195.08 (145.47)	202.37 (150.91)	201.10 (149.96)	181.05 (135.01)	154.99 (115.58)	124.03 (92.49)
Speed—Mph (km/h)	6.61 (10.64)	5.92 (9.53)	5.26 (8.46)	4.57 (7.36)	3.91 (6.29)	3.28 (5.27)
Slip %	2.40	2.89	3.22	3.38	3.38	3.38

TRACTOR SOUND LEVEL WITH CAB

	dB(A)
Maximum Available Power—Two Hours	78.5
75% of Pull at Maximum Power—Ten Hours	77.0
50% of Pull at Maximum Power—Two Hours	77.5
50% of Pull at Reduced Engine Speed—Two Hours	76.0
Bystander in 12th gear	89.5

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 —Liquid (each)
—Cast Iron (each)

Height of Drawbar

Static Weight with Operator—Rear
—Front
—Total

Without Ballast

Four 23.1-34; 8; inner
14 (95) outer 12 (85)
None
None

Four 23.1-34; 8; inner
14 (95) outer 12 (85)
None
None

19 in (485 mm)

12880 lb (5842 kg)
15695 lb (7119 kg)
28575 lb (12961 kg)

REPAIRS AND ADJUSTMENTS: Before starting the drawbar tests, the brake clearance was adjusted.

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 return was maintained at 145°F (62.8°C). Eight gears were chosen between 15% slip and 10 mph (16.1 km/h). The performance figures on this report apply to Bearcat 1000 models equipped with Caterpillar Diesel engines.

We, the undersigned, certify that this is as true and correct report of official Tractor Test No. 1592, June 13, 1986.

LOUIS I. LEVITICUS

Engineer-in-Charge

K. VON BARGEN

W. E. SPLINTER

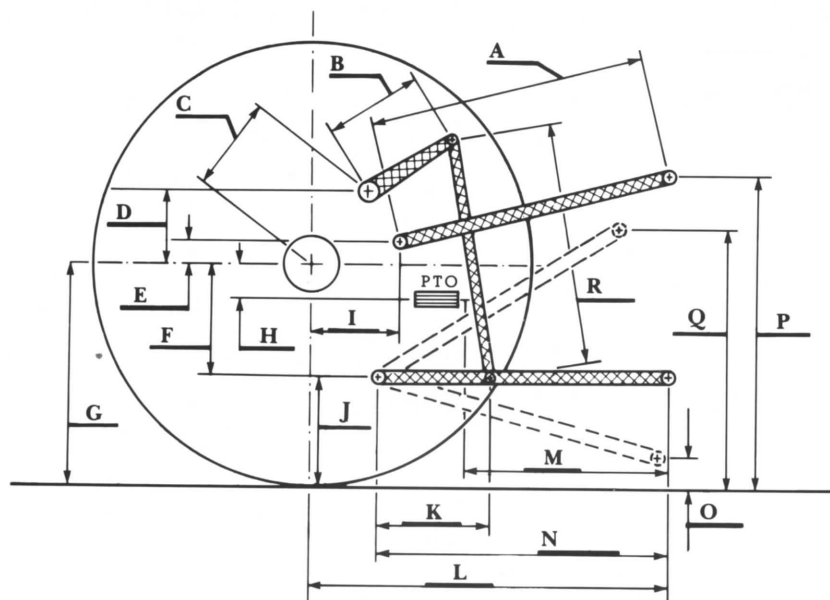
L. L. BASHFORD

Board of Tractor Test Engineers

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi (kPa)	2500	(17240)
Location	remote outlet	
Hydraulic oil temperature °F (°C)	133	(56)
Location	charge pump inlet	
	Maximum Lift Capacity	Lift Capacity for Transport
QUICK ATTACH	yes	
CATEGORY	3	*not measured
LOAD lbs (kg)	12764	(5790)
TIME sec	3.93	
HITCH POINT MOVEMENT in (mm)		
Lowest position	14.4	(366)
Top of timed range	40.4	(1026)
Highest position	40.5	(1029)
LOAD CG MOVEMENT in (mm)		
Lowest position	14.6	(371)
Top of timed range	42.3	(1074)
Highest position	42.4	(1077)

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



	inch	mm
A	29.1	740
B	21.0	533
C	25.8	654
D	25.1	638
E	11.4	289
F	9.9	251
G	32.7	829
H	9.6	243
I	23.3	591
J	22.8	578
K	23.0	584
L	52.7	1338
L'	57.7	1465
M	25.0	635
N	42.0	1067
O	8.0	203
P	44.8	1137
Q	39.6	1006
R	35.5	902

Hitch Dimensions as Tested — No Load



Steiger Bearcat 1000 Diesel