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Test 1414: Steiger Bearcat III ST-225 Diesel (S/N 109-00328 and higher) Also Steiger Bearcat IV CM-225 Diesel 20-Speed

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 1414

STEIGER BEARCAT III ST-225 DIESEL

(SERIAL NUMBERS 109-00328 and HIGHER)

ALSO STEIGER BEARCAT IV CM-225 DIESEL

20 SPEED

DRAWBAR PERFORMANCE AT 2100 RPM

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/hl)	Cool- ing med	Air wet bulb	Air dry bulb	
Maximum Available Power—Two Hours 11th Gear											
186.21 (138.86)	11254 (50.06)	6.20 (9.99)	2099	2.54	13.307 (50.372)	0.493 (0.300)	13.99 (2.757)	177 (80.6)	60 (15.6)	69 (20.6)	28.585 (96.527)
75% of Pull at Maximum Power—Ten Hours 11th Gear											
153.50 (114.47)	8903 (39.60)	6.47 (10.41)	2179	2.18	11.338 (42.919)	0.509 (0.310)	13.54 (2.667)	176 (79.8)	48 (9.0)	59 (15.0)	29.190 (98.570)
50% of Pull at Maximum Power—Two Hours 11th Gear											
105.18 (78.43)	5953 (26.48)	6.63 (10.66)	2222	1.70	9.028 (34.176)	0.592 (0.360)	11.65 (2.295)	176 (79.7)	55 (12.5)	55 (12.8)	29.020 (97.996)
50% of Pull at Reduced Engine Speed—Two Hours 16th Gear											
104.23 (77.72)	5936 (26.41)	6.58 (10.60)	1186	1.66	7.125 (26.970)	0.471 (0.287)	14.63 (2.882)	174 (78.6)	57 (13.9)	58 (14.4)	29.040 (98.064)

MAXIMUM POWER IN SELECTED GEARS

161.79 (120.64)	28805 (128.13)	2.11 (3.39)	2159	14.92	3rd Gear			179 (81.7)	48 (8.9)	49 (9.4)	28.900 (97.591)
176.52 (131.63)	28313 (125.94)	2.34 (3.76)	2101	13.83	4th Gear			178 (81.1)	45 (7.2)	46 (7.8)	28.910 (97.625)
186.28 (138.91)	24368 (108.39)	2.87 (4.61)	2100	7.80	5th Gear			177 (80.6)	59 (15.0)	64 (17.8)	28.890 (97.557)
191.57 (142.86)	21865 (97.26)	3.29 (5.29)	2099	6.06	6th Gear			177 (80.6)	59 (15.0)	64 (17.8)	28.880 (97.523)
195.03 (145.43)	19473 (86.62)	3.76 (6.04)	2101	4.97	7th Gear			178 (80.8)	60 (15.6)	65 (18.3)	28.860 (97.456)
195.51 (145.79)	17223 (76.61)	4.26 (6.85)	2096	4.17	8th Gear			177 (80.6)	60 (15.6)	65 (18.3)	28.840 (97.388)
196.25 (146.34)	15239 (67.79)	4.83 (7.77)	2100	3.53	9th Gear			177 (80.6)	60 (15.6)	66 (18.9)	28.820 (97.321)
197.69 (147.42)	13562 (60.33)	5.47 (8.80)	2100	3.12	10th Gear			178 (80.8)	59 (15.0)	65 (18.3)	28.810 (97.287)
195.82 (146.02)	11855 (52.73)	6.19 (9.97)	2099	2.79	11th Gear			178 (80.8)	58 (14.4)	63 (17.2)	28.760 (97.118)
195.58 (145.84)	10483 (46.63)	7.00 (11.26)	2097	2.37	12th Gear			178 (81.1)	59 (15.0)	64 (17.8)	28.780 (97.186)
193.11 (144.00)	8919 (39.67)	8.12 (13.07)	2101	1.96	13th Gear			178 (80.8)	59 (15.0)	64 (17.8)	28.790 (97.220)

LUGGING ABILITY IN 11th GEAR

Crankshaft Speed rpm	2099	1889	1678	1469	1260	1054
Pull—lbs (kN)	11855 (52.73)	13367 (59.46)	14377 (63.95)	15683 (69.76)	15564 (69.23)	14424 (64.16)
Increase in Pull %	0	13	21	32	31	22
Power—Hp (kW)	195.82 (146.02)	197.97 (147.62)	188.52 (140.58)	179.53 (133.88)	152.74 (113.90)	118.76 (88.56)
Speed—Mph (km/h)	6.19 (9.97)	5.55 (8.94)	4.92 (7.91)	4.29 (6.91)	3.68 (5.92)	3.09 (4.97)
Slip %	2.79	2.95	3.28	3.61	3.61	3.44

TRACTOR SOUND LEVEL WITH CAB	1700 RPM dB(A)	2100RPM dB(A)
Maximum Available Power—Two Hours	77.0	77.5
75% of Pull at Maximum Power—Ten Hours		77.5
50% of Pull at Maximum Power—Two Hours		76.5
50% of Pull at Reduced Engine Speed—Two Hours		74.5
Bystander in 19th gear		98.0

Department of Agricultural Engineering

Dates of Test: October 19 to November 4, 1981

Manufacturer: STEIGER TRACTOR, INC.,
1701 Westview Drive, Fargo, North Dakota
58103

FUEL, OIL AND TIME: Fuel No. 2 Diesel
Cetane No. 46.3 (rating taken from oil company's
inspection data) **Specific gravity converted to 60°/**
60° (15°/15°) 0.8281 **Fuel weight** 6.895 lbs/gal
(0.826 kg/l) **Oil** SAE 15W-40 **API service classi-**
fication CC, CD, SE **To motor** 5.736 gal
(21.713 l) **Drained from motor** 4.682 gal
(17.722 l) **Transmission and hydraulic lubricant**
SAE 10 hydraulic oil **Final drive lubricant** SAE
85W90 **Total time engine was operated** 37.0
hours.

ENGINE: Make Caterpillar Diesel **Type** six
cylinder vertical with turbocharger **Serial No.**
64Z00412 **Crankshaft** lengthwise **Rated rpm**
1700 to 2100 **Bore and stroke** 4.75" × 6.0" (120.6
mm × 152.4 mm) **Compression ratio** 15.0 to 1
Displacement 638 cu in (10455 ml) **Starting sys-**
tem 12 volt **Lubrication pressure** **Air cleaner** two
paper elements with aspirator **Oil filter** one full
flow cartridge **Oil cooler** engine coolant heat ex-
changer for crankcase oil, radiator for hydraulic
oil, radiator for transmission and transfer case oil
Fuel filter one paper cartridge **Muffler** none
Cooling medium temperature control one ther-
mostat.

CHASSIS: **Type** four wheel drive with duals
Serial No. 109-00349 81 **Tread width** rear 79.0"
(2007 mm) to 136.4" (3464 mm) front 79.0" (2007
mm) to 136.4" (3464 mm) **Wheel base** 128" (3251
mm) **Center of gravity** (without operator or bal-
last, with minimum tread, with fuel tank filled and
tractor serviced for operation) Horizontal distance
forward from center-line of rear wheels 73.4"
(1867 mm) Vertical distance above roadway 44.6"
(1132 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 1.8 (2.9) second 2.0 (3.3) third 2.3 (3.7)
fourth 2.6 (4.2) fifth 3.0 (4.8) sixth 3.3 (5.4)
seventh 3.8 (6.1) eighth 4.2 (6.8) ninth 4.8 (7.7)
tenth 5.4 (8.6) eleventh 6.1 (9.8) twelfth 6.8 (11.0)
thirteenth 7.9 (12.7) fourteenth 8.8 (14.2) fif-
teenth 10.1 (16.2) sixteenth 11.3 (18.1) seven-
teenth 12.6 (20.3) eighteenth 14.1 (22.7)
nineteenth 16.0 (25.8) twentieth 17.9 (28.8) re-
verse 1.8 (2.9), 2.0 (3.3), 2.3 (3.7), 2.6 (4.2) **Clutch**
dual dry disc hydraulically operated by foot pedal
Brakes multiple dry disc hydraulically operated by
foot pedal or mechanically by hand lever **Steering**
hydrostatic and articulated **Turning radius** (on
concrete surface without brake) right 283" (7.19
m) left 288" (7.32 m) **Turning space diameter** (on
concrete surface without brake) right 590" (14.99
m) left 600" (15.24 m) **Power take-off** none.

DRAWBAR PERFORMANCE AT 1700 RPM

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) Cool- ing med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
Maximum Available Power—Two Hours 11th Gear											
184.69 (137.73)	13888 (61.78)	4.99 (8.03)	1701	3.32	11.965 (45.293)	0.447 (0.272)	15.44 (3.041)	176 (80.0)	57 (13.9)	62 (16.7)	28.730 (97.017)

MAXIMUM POWER IN SELECTED GEARS

173.51 (129.39)	28593 (127.19)	2.28 (3.66)	1803	14.73	5th Gear			178 (81.1)	46 (7.8)	47 (8.3)	28.910 (97.625)
177.69 (132.50)	25818 (114.84)	2.58 (4.15)	1701	8.90	6th Gear			176 (80.0)	59 (15.0)	64 (17.8)	28.890 (97.557)
183.42 (136.77)	23021 * (102.40)	2.99 (4.81)	1700	6.52	7th Gear			176 (80.0)	59 (15.0)	65 (18.3)	28.870 (97.490)
185.56 (138.37)	20441 (90.93)	3.40 (5.48)	1697	5.36	8th Gear			176 (80.0)	60 (15.6)	65 (18.3)	28.850 (97.422)
188.88 (140.85)	18306 (81.43)	3.87 (6.23)	1699	4.57	9th Gear			176 (80.0)	60 (15.6)	66 (18.9)	28.830 (97.355)
189.85 (141.57)	16212 (72.11)	4.39 (7.07)	1700	3.93	10th Gear			176 (80.0)	60 (15.6)	66 (18.9)	28.810 (97.287)
189.51 (141.32)	14278 (63.51)	4.98 (8.01)	1698	3.28	11th Gear			176 (80.0)	59 (15.0)	64 (17.8)	28.770 (97.152)
189.44 (141.27)	12601 (56.05)	5.64 (9.07)	1699	2.87	12th Gear			176 (80.0)	59 (15.0)	64 (17.8)	28.780 (97.186)
189.85 (141.57)	10888 (48.43)	6.54 (10.52)	1700	2.37	13th Gear			176 (80.0)	59 (15.0)	65 (18.3)	28.790 (97.220)
190.64 (142.16)	9673 (43.03)	7.39 (11.89)	1700	2.04	14th Gear			176 (80.0)	59 (15.0)	65 (18.3)	28.800 (97.253)
187.92 (140.13)	8423 (37.47)	8.37 (13.46)	1700	1.87	15th Gear			176 (80.0)	59 (15.0)	65 (18.3)	28.800 (97.253)

TIRES, BALLAST AND WEIGHT

Rear Tires			—No., size, ply & psi (kPa)	With Ballast	Without Ballast
				Four 23.1-34; 8; inner	Four 23.1-34; 8; inner
				14 (95) outer 12 (85)	14 (95) outer 12 (85)
Ballast			—Liquid (each)	None	None
			—Test Equip. (each)	54 lb (25 kg)	None
Front Tires			—No., size, ply & psi (kPa)	Four 23.1-34; 8; inner	Four 23.1-34; 8; inner
				14 (95) outer 12 (85)	14 (95) outer 12 (85)
Ballast			—Liquid (each)	None	None
			—Test equip. (each)	62 lb (28 kg)	None
Height of Drawbar				18 in (455 mm)	18 in (455 mm)
Static Weight with Operator—Rear				12815 lb (5813 kg)	12600 lb (5715 kg)
			—Front	17190 lb (7797 kg)	16940 lb (7684 kg)
			—Total	30005 lb (13610 kg)	29540 lb (13399 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 or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump return was maintained at 131°F (55.0°C). Eleven gears were chosen between 15% slip and 10 mph (16.1 km/h). The performance figures on this report apply to tractor chassis Serial No. 109-00328 and higher.

NOTE: Supplemental permit for Bearcat IV CM-225 granted October, 1983.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. 1414.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
W. E. SPLINTER
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Board of Tractor Test Engineers



Steiger Bearcat III ST-225 Diesel

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