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Test 1239: Steiger Cougar III ST-250 Diesel

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 1239 — STEIGER COUGAR III ST-250 DIESEL

DRAWBAR PERFORMANCE

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)	Cool- ing med	Temp. °F (°C) Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
Maximum Available Power—Two Hours 6th Gear											
201.95 (150.59)	11882 (52.85)	6.37 (10.26)	2200	2.94	15.858 (60.029)	0.542 (0.330)	12.74 (2.509)	191 (88.1)	61 (16.1)	77 (25.0)	28.800 (97.253)
75% of Pull at Maximum Power—Ten Hours 6th Gear											
168.30 (125.50)	9287 (41.31)	6.80 (10.94)	2326	2.10	14.138 (53.519)	0.580 (0.353)	11.90 (2.345)	184 (84.2)	64 (17.7)	77 (25.0)	28.666 (96.801)
50% of Pull at Maximum Power—Two Hours 6th Gear											
115.75 (86.32)	6178 (27.48)	7.03 (11.31)	2399	1.87	11.169 (42.281)	0.666 (0.405)	10.36 (2.042)	179 (81.7)	57 (13.6)	59 (14.7)	28.965 (97.810)
50% of Pull at Reduced Engine Speed—Two Hours 8th Gear											
114.78 (85.60)	6126 (27.25)	7.03 (11.31)	1451	1.83	8.291 (31.385)	0.499 (0.303)	13.84 (2.727)	177 (80.6)	59 (14.7)	61 (15.8)	28.945 (97.743)

MAXIMUM POWER IN SELECTED GEARS

158.83 (118.44)	26612 (118.38)	2.24 (3.60)	2325	14.64	2nd Gear		182 (83.1)	55 (12.8)	58 (14.4)	28.980 (97.861)
194.25 (144.85)	25605 (113.90)	2.84 (4.58)	2200	11.19	3rd Gear		181 (82.8)	54 (12.2)	59 (15.0)	28.960 (97.794)
203.12 (151.47)	19887 (88.46)	3.83 (6.16)	2197	5.80	4th Gear		184 (84.4)	60 (15.6)	77 (25.0)	28.750 (97.084)
207.72 (154.90)	15717 (69.91)	4.96 (7.98)	2200	3.94	5th Gear		187 (86.1)	61 (16.1)	78 (25.6)	28.740 (97.051)
210.35 (156.86)	12372 (55.04)	6.38 (10.26)	2200	2.81	6th Gear		192 (88.6)	60 (15.6)	77 (25.0)	28.770 (97.152)
207.01 (154.37)	9286 (41.31)	8.36 (13.45)	2200	2.08	7th Gear		186 (85.6)	60 (15.6)	77 (25.0)	28.760 (97.118)

LUGGING ABILITY IN RATED GEAR (6th)

Crankshaft Speed rpm	2200	1978	1762	1538	1315	1102
Pull—lbs (kN)	12372 (55.04)	13822 (61.48)	15037 (66.89)	15767 (70.13)	15332 (68.20)	12133 (53.97)
Increase in Pull %	0	12	22	27	24	-2
Power—Hp (kW)	210.35 (156.86)	210.25 (156.79)	202.94 (151.33)	185.28 (138.16)	154.24 (115.02)	103.34 (77.06)
Speed—Mph (km/h)	6.38 (10.26)	5.70 (9.18)	5.06 (8.14)	4.41 (7.09)	3.77 (6.07)	3.19 (5.14)
Slip %	2.81	3.30	3.78	3.94	3.94	2.98

TRACTOR SOUND LEVEL WITH CAB

Maximum Available Power—Two Hours	78.5
75% of Pull at Maximum Power—Ten Hours	79.0
50% of Pull at Maximum Power—Two Hours	81.0
50% of Pull at Reduced Engine Speed—Two Hours	76.5
Bystander in 10th gear	99.0

TIRES, BALLAST AND WEIGHT

Rear Tires	—No., size, ply & psi (kPa)	Four 23.1-34; 8; inner 14 (100), outer 12 (80)
Ballast	—Liquid (each)	None
	—Cast Iron (each)	None
Front Tires	—No., size, ply & psi (kPa)	Four 23.1-34; 8; inner 14 (100), outer 12 (80)
Ballast	—Liquid (each)	None
	—Cast Iron (each)	None
Height of drawbar		18.0 in (460 mm)
Static weight with operator—rear		12980 lb (5888 kg)
front		16820 lb (7629 kg)
total		29800 lb (13517 kg)

Without Ballast

Department of Agricultural Engineering

Dates of Test: April 21 to May 2, 1977

Manufacturer: Steiger Tractor Inc., 3101 First Ave. North, Fargo, North Dakota 58102

FUEL, OIL AND TIME: Fuel No. 2 Diesel Cetane No. 51.8 (rating taken from oil company's typical inspection data) **Specific gravity converted to 60°/60° (15°/15°)** 0.8293 **Fuel weight** 6.905 lbs/gal (0.829 kg/l) **Oil** SAE 30 **API service classification** SB/SE-CA/CD **To motor** 7.518 gal (28.459 l) **Drained from motor** 5.888 gal (22.289 l) **Transmission and final drive lubricant** IH Hi-tran or equivalent **Total time engine was operated** 34.0 hours

ENGINE Make Caterpillar Diesel **Type** 6 cylinder vertical with turbocharger **Serial No.** 66D 19653 **Crankshaft** lengthwise **Rated rpm** 2200 **Bore and stroke** 4.75" × 6.00" (120.6 mm × 152.4 mm) **Compression ratio** 17.5 to 1 **Displacement** 638 cu in (10454 ml) **Cranking system** 12 volt **Lubrication pressure** **Air cleaner** primary and safety paper elements with centrifugal precleaner and aspirator **Oil filter** full flow paper spin-on cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for transmission oil **Fuel filter** spin-on paper cartridge **Muffler** none **Cooling medium temperature control** thermostat

CHASSIS: **Type** four wheel drive with duals **Serial No.** 104-00114 **Tread width** rear 79.3" (2014 mm) to 139.1" (3533 mm) front 79.3" (2014 mm) to 139.1" (3533 mm) **Wheel base** 128" (3251 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 71.9" (1826 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 1.9 (3.0) second 2.4 (3.9) third 3.1 (5.0) fourth 3.9 (6.3) fifth 4.9 (8.0) sixth 6.4 (10.2) seventh 8.2 (13.3) eighth 10.5 (16.9) ninth 13.2 (21.2) tenth 16.7 (26.9) reverse 1.9 (3.0), 2.4 (3.9) **Clutch** two dry cerametallic plates hydraulically operated by foot pedal **Brakes** dual caliper disc hydraulically operated by foot pedal **Steering** hydrostatic and articulated **Turning radius** (on concrete surface without brake) right 290.5" (7.38 m) left 287.5" (7.30 m) **Turning space diameter** (on concrete surface without brake) right 604" (15.34 m) left 598" (15.19 m).

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. Temperature at injection pump return was 132°F (55.3°C). Six gears were chosen between 15% slip and 15 mph (24.1 km/h). Remote hydraulic outlet couplings leaked during drawbar tests.

We, the undersigned, certify that this is a true and correct report of official Tractor Test **1239**.

LOUIS I. LEVITICUS
Engineer-in Charge

G. W. STEINBRUEGGE, Chairman
W. E. SPLINTER
K. VON BARGEN
Board of Tractor Test Engineers



Steiger Cougar III ST-250 Diesel