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Test 1238: Steiger Cougar III ST-270 Diesel

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 1238 — STEIGER COUGAR III ST-270 DIESEL

DRAWBAR PERFORMANCE

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption			Temp. °F (°C)			
					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	Barom. inch Hg (kPa)
Maximum Available Power—Two Hours 6th Gear											
218.74 (163.12)	12877 (57.28)	6.37 (10.25)	2200	3.05	16.419 (62.154)	0.518 (0.315)	13.32 (2.642)	186 (85.3)	57 (13.6)	70 (20.8)	29.125 (98.351)
75% of Pull at Maximum Power—Ten Hours 6th Gear											
181.02 (134.99)	10114 (44.99)	6.71 (10.80)	2299	2.31	14.341 (54.287)	0.547 (0.333)	12.62 (2.487)	181 (82.6)	51 (10.3)	60 (15.3)	28.992 (97.902)
50% of Pull at Maximum Power—Two Hours 6th Gear											
124.81 (93.07)	6698 (29.79)	6.99 (11.24)	2375	1.57	11.387 (43.103)	0.630 (0.383)	10.96 (2.159)	180 (81.9)	41 (5.0)	48 (8.6)	28.890 (97.557)
50% of Pull at Reduced Engine Speed—Two Hours 8th Gear											
124.79 (93.06)	6693 (29.77)	6.99 (11.25)	1436	1.41	9.015 (34.126)	0.499 (0.303)	13.84 (2.727)	179 (81.7)	57 (13.9)	65 (18.3)	28.865 (97.473)

MAXIMUM POWER IN SELECTED GEARS

188.02 (140.20)	25371 (112.86)	2.78 (4.47)	2244	14.93	3rd Gear			183 (83.6)	54 (12.2)	58 (14.4)	28.870 (97.490)
215.04 (160.35)	21269 (94.61)	3.79 (6.10)	2200	7.04	4th Gear			184 (84.4)	59 (15.0)	75 (23.9)	29.080 (98.199)
223.99 (167.03)	16995 (75.60)	4.94 (7.95)	2200	4.36	5th Gear			188 (86.7)	59 (15.0)	74 (23.3)	29.090 (98.233)
228.96 (170.74)	13468 (59.91)	6.38 (10.26)	2201	3.09	6th Gear			187 (86.1)	58 (14.4)	72 (22.2)	29.110 (98.300)
226.74 (169.08)	10169 (45.23)	8.36 (13.46)	2199	2.11	7th Gear			187 (86.1)	58 (14.4)	73 (22.8)	29.100 (98.266)

LUGGING ABILITY IN RATED GEAR (6th)

Crankshaft Speed rpm	2201	1980	1763	1538	1321	1100
Pull—lbs (kN)	13468 (59.91)	14774 (65.72)	15846 (70.49)	16276 (72.40)	16145 (71.82)	12493 (55.57)
Increase in Pull %	0	10	18	21	20	-7
Power—Hp (kW)	228.96 (170.74)	225.01 (167.79)	214.09 (159.65)	191.31 (142.66)	163.14 (121.66)	106.37 (79.32)
Speed—Mph (km/h)	6.38 (10.26)	5.71 (9.19)	5.07 (8.15)	4.41 (7.09)	3.79 (6.10)	3.19 (5.14)
Slip %	3.09	3.41	3.73	4.05	3.89	2.93

TRACTOR SOUND LEVEL WITH CAB

	dB(A)
Maximum Available Power—Two Hours	80.0
75% of Pull at Maximum Power—Ten Hours	80.0
50% of Pull at Maximum Power—Two Hours	80.5
50% of Pull at Reduced Engine Speed—Two Hours	77.0
Bystander in 10th gear	100.0

TIRES, BALLAST AND WEIGHT

Rear Tires		Without Ballast	
Ballast	—No., size, ply & psi (kPa)	Four 23.1-34; 8; inner 14 (100), outer 12 (80)	
	—Liquid (each)	None	
	—Cast Iron (each)	None	
Front Tires		Without Ballast	
Ballast	—No., size, ply & psi (kPa)	Four 23.1-34; 8; inner 14 (100), outer 12 (80)	
	—Liquid (each)	None	
	—Cast Iron (each)	None	
Height of drawbar		18 in (460 mm)	
Static weight with operator—rear		13000 lb (5897 kg)	
front		16930 lb (7679 kg)	
total		29930 lb (13576 kg)	

Department of Agricultural Engineering

Dates of Test: April 18 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** 7.001 gal (26.502 l) **Drained from motor** 5.935 gal (22.466 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 and intercooler **Serial No.** 66D 19835 **Crankshaft** lengthwise **Rated rpm** 2200 **Bore and stroke** 4.75" × 6.0" (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.** 105-00186 **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 72.4" (1839 mm) Vertical distance above roadway 47.5" (1206 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), and 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 291.5" (7.40 m) left 294.5" (7.48 m) **Turning space diameter** (on concrete surface without brake) right 606" (15.39 m) left 612" (15.54 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 was 127°F (52.5°C). Five gears were chosen between 15% slip and 15 mph (24.1 km/h). Only one gear permitted over 8 mph (12.9 km/h).

We, the undersigned, certify that this is a true and correct report of official Tractor Test **1238**.

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-270 Diesel