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Test 1577: Steiger Cougar CR 1225 Diesel 20-Speed

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 1577—STEIGER COUGAR CR 1225 DIESEL 20 SPEED

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—999 rpm)								
208.61 (155.56)	2100	12.675 (47.980)	0.426 (0.259)	16.46 (3.242)	179 (81.7)	62 (16.6)	75 (23.9)	29.06 (98.12)

VARYING POWER AND FUEL CONSUMPTION — Two Hours									
	180.36 <i>(134.49)</i>	2135	11.374 <i>(43.054)</i>	0.442 <i>(0.269)</i>	15.86 <i>(3.124)</i>	179 <i>(81.7)</i>	66 <i>(18.6)</i>	75 <i>(23.9)</i>	..... .....
	0.00 <i>(0.00)</i>	2250	3.530 <i>(13.363)</i>	..... .....	..... .....	175 <i>(79.4)</i>	65 <i>(18.1)</i>	73 <i>(22.8)</i>	..... .....
	92.97 <i>(69.32)</i>	2202	7.548 <i>(28.573)</i>	0.569 <i>(0.346)</i>	12.32 <i>(2.426)</i>	176 <i>(80.0)</i>	65 <i>(18.3)</i>	74 <i>(23.1)</i>	..... .....
	210.22 <i>(156.76)</i>	2100	12.734 <i>(48.204)</i>	0.425 <i>(0.258)</i>	16.51 <i>(3.252)</i>	180 <i>(81.9)</i>	66 <i>(18.6)</i>	74 <i>(23.1)</i>	..... .....
	46.86 <i>(34.94)</i>	2225	5.627 <i>(21.300)</i>	0.842 <i>(0.512)</i>	8.33 <i>(1.640)</i>	176 <i>(79.7)</i>	67 <i>(19.2)</i>	75 <i>(23.6)</i>	..... .....
	137.36 <i>(102.43)</i>	2169	9.444 <i>(35.748)</i>	0.482 <i>(0.293)</i>	14.55 <i>(2.865)</i>	178 <i>(81.1)</i>	68 <i>(19.7)</i>	76 <i>(24.2)</i>	..... .....
Av	111.29 <i>(82.99)</i>	2180	8.376 <i>(31.707)</i>	0.528 <i>(0.321)</i>	13.29 <i>(2.617)</i>	177 <i>(80.6)</i>	66 <i>(18.8)</i>	74 <i>(23.4)</i>	29.02 <i>(97.98)</i>

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 10th (5LL) Gear											
181.39 (135.26)	13186 (58.65)	5.16 (8.30)	2101	3.06	12.594 (47.675)	0.487 (0.296)	14.40 (2.837)	182 (83.3)	50 (9.7)	58 (14.4)	28.84 (97.39)
75% of Pull at Maximum Power — Ten Hours 10th (5LL) Gear											
143.07 (106.68)	10083 (44.85)	5.32 (8.56)	2147	2.14	10.630 (40.241)	0.521 (0.317)	13.46 (2.651)	180 (82.2)	46 (7.6)	54 (12.2)	28.94 (97.71)
50% of Pull at Maximum Power — Two Hours 10th (5LL) Gear											
97.78 (72.92)	6722 (29.90)	5.45 (8.78)	2185	1.45	8.544 (32.341)	0.613 (0.373)	11.44 (2.255)	178 (81.1)	48 (8.9)	55 (12.8)	28.87 (97.47)
50% of Pull at Reduced Engine Speed — Two Hours 15th (2HH) Gear											
97.98 (73.06)	6720 (29.89)	5.47 (8.80)	1211	1.33	6.454 (24.432)	0.462 (0.281)	15.18 (2.990)	178 (81.1)	51 (10.6)	58 (14.4)	28.75 (97.08)

MAXIMUM POWER IN SELECTED GEARS

147.16 (109.74)	29570 (131.53)	1.87 (3.00)	2125	14.96	2nd (1LH) Gear			179 (81.7)	45 (7.2)	49 (9.4)	28.74 (97.05)
178.21 (132.89)	23887 (106.25)	2.80 (4.50)	2102	6.56	3rd (2LL) Gear			179 (81.7)	48 (8.9)	51 (10.6)	28.82 (97.32)
180.08 (134.29)	21332 (94.89)	3.17 (5.09)	2101	5.57	4th (3LL) Gear			180 (82.2)	49 (9.4)	52 (11.1)	28.82 (97.32)
180.79 (134.82)	19826 (88.19)	3.42 (5.50)	2100	5.11	5th (2LH) Gear			180 (82.2)	49 (9.4)	52 (11.1)	28.82 (97.32)
181.86 (135.61)	17706 (78.76)	3.85 (6.20)	2099	4.33	6th (3LH) Gear			181 (82.5)	49 (9.4)	53 (11.7)	28.82 (97.32)
182.22 (135.88)	17341 (77.13)	3.94 (6.34)	2099	4.33	7th (4LL) Gear			181 (82.8)	49 (9.4)	53 (11.7)	28.83 (97.35)
183.50 (136.83)	14812 (65.89)	4.65 (7.48)	2100	3.38	8th (1HL) Gear			181 (82.5)	50 (10.0)	54 (12.2)	28.83 (97.35)
181.64 (135.45)	14222 (63.26)	4.79 (7.71)	2101	3.14	9th (4LH) Gear			181 (82.5)	50 (10.0)	54 (12.2)	28.83 (97.35)
184.83 (137.83)	13444 (59.80)	5.16 (8.30)	2100	3.06	10th (5LL) Gear			181 (82.8)	50 (10.0)	58 (14.4)	28.84 (97.39)
182.52 (136.10)	12161 (54.09)	5.63 (9.06)	2100	2.73	11th (1HH) Gear			181 (82.8)	50 (10.0)	57 (13.9)	28.84 (97.39)
178.64 (133.21)	10737 (47.76)	6.24 (10.04)	2099	2.24	12th (5LH) Gear			181 (82.8)	50 (10.0)	56 (13.3)	28.84 (97.39)
181.46 (135.32)	8668 (38.55)	7.85 (12.63)	2099	1.75	13th (2HL) Gear			181 (82.8)	50 (10.0)	55 (12.8)	28.84 (97.39)
180.16 (134.35)	7670 (34.12)	8.81 (14.18)	2099	1.66	14th (3HL) Gear			181 (82.8)	50 (10.0)	55 (12.8)	28.83 (97.35)

Department of Agricultural Engineering

Dates of Test: September 23 to 30, 1985

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)** 0.8420 **Fuel weight** 7.011 lbs/gal (0.840 kg/l) **Oil SAE 15W-40 API service classification** CD, SF, CC **To motor** 5.893 gal (22.308 l) **Drained from motor** 5.237 gal (19.823 l) **Transmission and final drive lubricant** Steiger hydraulic/transmission fluid **Total time engine was operated** 34.0 hours.

ENGINE: Make Caterpillar Diesel **Type** six cylinder vertical with turbocharger **Serial No.** 64Z03886 **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.** C01-05339 **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 partial (2) range operator controlled powershift **Advertised speeds mph (km/h)** first 1.8 (2.9) second 2.1 (3.4) third 2.9 (4.7) fourth 3.3 (5.3) fifth 3.5 (5.6) sixth 3.9 (6.3) seventh 4.0 (6.4) eighth 4.7 (7.6) ninth 4.8 (7.7) tenth 5.2 (8.4) eleventh 5.6 (9.0) twelfth 6.2 (10.0) thirteenth 7.8 (12.6) fourteenth 8.7 (14.0) fifteenth 9.4 (15.1) sixteenth 10.5 (16.9) seventeenth 10.7 (17.2) eighteenth 12.9 (20.8) nineteenth 13.8 (22.2) twentieth 16.6 (26.7) reverse 3.2 (5.2), 3.9 (6.3), 8.7 (14.0), 10.4 (16.8) **Clutch** wet multiple disc hydraulically power actuated and operated 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 499" (12.67 m) left 499" (12.67 m) **Power take-off** 999 rpm at 2100 engine rpm **Unladen tractor mass** 26050 lb (11816 kg).

LUGGING ABILITY IN 10th (5LL) GEAR

Crankshaft Speed rpm	2100	1890	1685	1470	1260	1047
Pull—lbs (kN)	13444 (59.80)	16082 (71.54)	17108 (76.10)	17924 (79.73)	18044 (80.26)	17790 (79.13)
Increase in Pull %	0	20	27	33	34	32
Power—Hp (kW)	184.83 (137.83)	197.52 (147.29)	186.58 (139.14)	170.00 (126.77)	146.57 (109.30)	120.40 (89.78)
Speed—Mph (km/h)	5.16 (8.30)	4.61 (7.41)	4.09 (6.58)	3.56 (5.72)	3.05 (4.90)	2.54 (4.08)
Slip %	3.06	3.86	4.02	4.17	4.33	4.17

TRACTOR SOUND LEVEL WITH CAB

	dB(A)
Maximum Available Power—Two Hours	78.0
75% of Pull at Maximum Power—Ten Hours	79.0
50% of Pull at Maximum Power—Two Hours	78.0
50% of Pull at Reduced Engine Speed—Two Hours	75.0
Bystander in 20th (5HH) gear	90.0

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

Tested 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

14.5 in (370 mm)

12965 lb (5881 kg)

16225 lb (7360 kg)

29190 lb (13241 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 return was maintained at 156°F (68.8°C). Thirteen gears were chosen between 15% slip and 10 mph (16.1 km/h).

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1577**, October 30, 1985.

LOUIS I. LEVITICUS

Engineer-in-Charge

K. VON BARGEN

T. L. THOMPSON

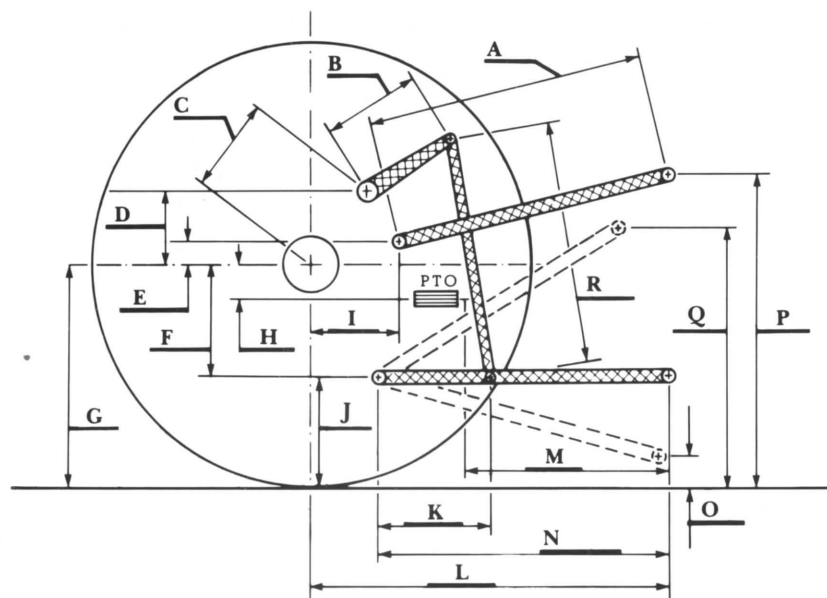
L. L. BASHFORD

Board of Tractor Test Engineers

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi (kPa)	2500 (17240)	
Location	remote outlet	
Hydraulic oil temperature °F (°C)	121 (49)	
Location	hydraulic reservoir	
	Maximum Lift Capacity	Lift Capacity for Transport
QUICK ATTACH	yes	
CATEGORY	III	*not measured
LOAD lbs (kg)	9930 (4504)	
TIME sec	2.64	
HITCH POINT MOVEMENT in (mm)		
Lowest position	12.0 (305)	
Top of timed range	38.0 (965)	
Highest position	40.3 (1024)	
LOAD CG MOVEMENT in (mm)		
Lowest position	12.2 (310)	
Top of timed range	39.3 (998)	
Highest position	42.4 (1077)	

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



Hitch Dimensions as Tested — No Load

	inch	mm
A	29.4	746
B	21.0	533
C	25.8	654
D	25.1	638
E	11.4	289
F	9.9	251
G	32.3	819
H	2.2	56
I	23.3	591
J	22.4	568
K	23.0	584
L	52.7	1338
L'	57.7	1465
M	25.0	635
N	42.0	1067
O	7.9	201
P	44.4	1127
Q	40.4	1026
R	35.3	895
L' to end of quick attach		



Steiger Cougar CR 1225 Diesel