January 1977

Test 1235: Steiger Panther III ST-310 Diesel

Nebraska Tractor Test Lab
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NEBRASKA TRACTOR TEST 1235 — STEIGER PANTHER III ST-310 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)	Temp. °F (°C) Cool-ing med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
Maximum Available Power—Two Hours 6th Gear											
246.79 (184.03)	15375 (68.39)	6.02 (9.69)	2099	3.88	17.688 (66.958)	0.500 (0.304)	13.95 (2.748)	182 (83.3)	62 (16.7)	80 (26.7)	28.960 (97.794)
75% of Pull at Maximum Power—Ten Hours 6th Gear											
204.19 (152.26)	12018 (53.46)	6.37 (10.25)	2199	2.78	15.601 (59.056)	0.533 (0.324)	13.09 (2.578)	176 (79.9)	63 (17.1)	74 (23.2)	28.955 (97.777)
50% of Pull at Maximum Power—Two Hours 6th Gear											
140.11 (104.48)	8000 (35.59)	6.57 (10.57)	2248	1.85	12.711 (48.117)	0.633 (0.385)	11.02 (2.171)	173 (78.3)	54 (11.9)	58 (14.2)	29.015 (97.979)
50% of Pull at Reduced Engine Speed—Two Hours 8th Gear											
140.54 (104.80)	8029 (35.71)	6.56 (10.56)	1357	1.73	9.149 (34.631)	0.455 (0.276)	15.36 (3.026)	175 (79.2)	57 (13.6)	62 (16.7)	29.005 (97.946)

MAXIMUM POWER IN SELECTED GEARS

196.33 (146.40)	26757 (119.02)	2.75 (4.43)	2209	14.33	3rd Gear	173 (78.3)	47 (8.3)	50 (10.0)	29.040 (98.064)
240.29 (179.18)	25514 (113.49)	3.53 (5.68)	2100	8.91	4th Gear	178 (81.1)	61 (16.1)	80 (26.7)	28.930 (97.692)
252.16 (188.04)	20303 (90.31)	4.66 (7.50)	2099	5.13	5th Gear	180 (81.9)	61 (16.1)	80 (26.7)	28.940 (97.726)
257.12 (191.74)	16027 (71.29)	6.02 (9.68)	2099	3.88	6th Gear	181 (82.8)	61 (16.1)	80 (26.7)	28.940 (97.726)
261.78 (195.21)	12420 (55.25)	7.90 (12.72)	2099	2.75	7th Gear	182 (83.1)	60 (15.6)	79 (26.1)	28.930 (97.692)
257.37 (191.92)	9526 (42.38)	10.13 (16.30)	2100	2.02	8th Gear	179 (81.4)	60 (15.6)	79 (26.1)	28.920 (97.659)

LUGGING ABILITY IN RATED GEAR (6th)

Crankshaft Speed rpm	2099	1890	1679	1470	1260	1046
Pull—lbs (kN)	16027 (71.29)	17495 (77.82)	18317 (81.48)	19024 (84.62)	18266 (81.25)	15835 (70.44)
Increase in Pull %	0	9	14	19	14	−1
Power—Hp (kW)	257.12 (191.74)	251.40 (187.47)	233.11 (173.83)	211.61 (157.80)	174.32 (129.99)	126.50 (94.33)
Speed—Mph (km/h)	6.02 (9.68)	5.39 (8.67)	4.77 (7.68)	4.17 (6.71)	3.58 (5.76)	3.00 (4.82)
Slip %	3.88	4.43	4.58	4.90	4.74	3.80

TRACTOR SOUND LEVEL WITH CAB	dB(A)
Maximum Available Power—Two Hours	81.0
75% of Pull at Maximum Power—Ten Hours	81.0
50% of Pull at Maximum Power—Two Hours	83.0
50% of Pull at Reduced Engine Speed—Two Hours	79.0
Bystander in 10th gear	105.0

TIRES, BALLAST AND WEIGHT		Without Ballast
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		18.5 in (470 mm)
Static weight with operator—rear		12670 lb (5747 kg)
	front	18180 lb (8246 kg)
	total	30850 lb (13993 kg)

Department of Agricultural Engineering

Dates of Test: April 4 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°)** 0.8386 **Fuel weight** 6.982 lbs/gal (0.839 kg/l) **Oil SAE** 30 **API service classification** SB/SE-CA/CD **To motor** 11.455 gal (43.362 l) **Drained from motor** 9.334 gal (35.333 l) **Transmission and final drive lubricant** IH Hi-tran or equivalent **Total time engine was operated** 41.0 hours

ENGINE **Make** Cummins Diesel **Type** 6 cylinder vertical with turbocharger **Serial No.** 10542648 **Crankshaft** lengthwise **Rated rpm** 2100 **Bore and stroke** 5.5" × 6.0" (139.7 mm × 152.4 mm) **Compression ratio** 14.1 to 1 **Displacement** 855 cu in (14016 ml) **Cranking system** 12 volt **Lubrication** pressure **Air cleaner** dry primary and safety paper elements with centrifugal precleaner and aspirator **Oil filter** one screw-on cartridge and one by-pass element **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for transmission oil **Fuel filter** two full flow spin-on cartridges **Muffler** none **Cooling medium temperature control** thermostat

CHASSIS: **Type** four wheel drive with duals **Serial No.** 10700114 **Tread width** rear 76.1" (1933 mm) to 135.9" (3452 mm) front 76.1" (1933 mm) to 135.9" (3452 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 77.9" (1979 mm) Vertical distance above roadway 45.4" (1153 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 2.3 (3.7) third 3.0 (4.8) fourth 3.8 (6.1) fifth 4.7 (7.6) sixth 6.1 (9.8) seventh 7.9 (12.7) eighth 10.0 (16.2) ninth 12.6 (20.2) tenth 16.0 (25.7) reverse 1.8 (2.9), 2.3 (3.7) **Clutch** two cerametallic dry 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 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).

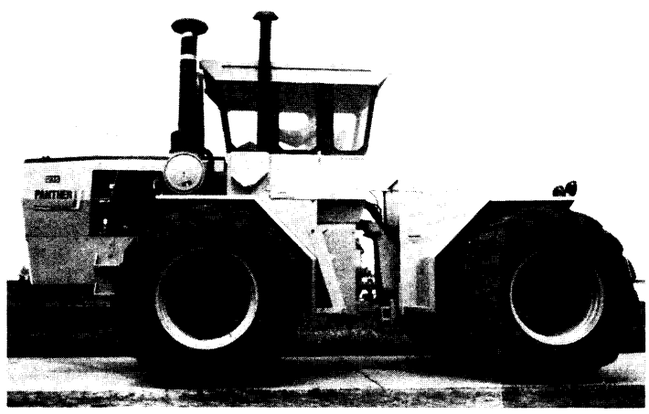
REPAIRS and ADJUSTMENTS: At the conclusion of the 10 hr. test one brake line fitting was found to be leaking and a pipe fitting on the inlet manifold was broken. These were repaired and the test continued.

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 150°F *(65.6°C)*. Six gears were chosen between 15% slip and 15 mph *(24.1 km/h)*.

We, the undersigned, certify that this is a true and correct report of official Tractor Test **1235.**

LOUIS I. LEVITICUS
Engineer-in Charge

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



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