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Test 1464: Steiger Pather CP-1400 Diesel 12-Speed

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 1464 — STEIGER PANTHER CP-1400 DIESEL 12 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.h/l)	Cool- ing med	Air wet bulb	Air dry bulb	
Maximum Available Power—Two Hours 7th Gear											
326.50 (243.47)	18085 (80.45)	6.77 (10.90)	2100	2.63	21.885 (82.843)	0.467 (0.284)	14.92 (2.939)	179 (81.7)	50 (10.0)	58 (14.4)	28.515 (96.291)
75% of Pull at Maximum Power—Ten Hours 7th Gear											
262.94 (196.08)	13862 (61.66)	7.11 (11.45)	2202	2.41	18.626 (70.508)	0.494 (0.301)	14.12 (2.781)	175 (79.5)	35 (1.5)	39 (4.0)	28.973 (97.837)
50% of Pull at Maximum Power—Two Hours 7th Gear											
180.39 (134.52)	9242 (41.11)	7.32 (11.78)	2242	1.38	14.948 (56.586)	0.578 (0.352)	12.07 (2.377)	174 (78.9)	31 (-0.6)	32 (0.0)	28.855 (97.439)
50% of Pull at Reduced Engine Speed—Two Hours 9th Gear											
180.49 (134.59)	9241 (41.11)	7.32 (11.79)	1578	1.38	12.224 (46.273)	0.472 (0.287)	14.77 (2.909)	175 (79.4)	36 (1.9)	38 (3.1)	28.835 (97.371)

MAXIMUM POWER IN SELECTED GEARS

274.56 (204.74)	40272 (179.14)	2.56 (4.11)	2157	14.89	2nd Gear			177 (80.3)	37 (2.8)	40 (4.4)	28.810 (97.287)
319.24 (238.06)	38381 (170.72)	3.12 (5.02)	2098	9.90	3rd Gear			177 (80.6)	38 (3.3)	41 (5.0)	28.770 (97.152)
333.69 (248.83)	31921 (141.99)	3.92 (6.31)	2100	5.78	4th Gear			177 (80.6)	39 (3.9)	42 (5.6)	28.760 (97.118)
332.85 (248.21)	26030 (115.78)	4.80 (7.72)	2099	3.97	5th Gear			178 (81.1)	46 (7.8)	51 (10.6)	28.610 (96.612)
330.89 (246.74)	21643 (96.27)	5.73 (9.23)	2100	3.16	6th Gear			178 (81.1)	47 (8.3)	53 (11.7)	28.580 (96.510)
333.94 (249.02)	18482 (82.21)	6.78 (10.90)	2100	2.67	7th Gear			179 (81.4)	50 (10.0)	57 (13.9)	28.500 (96.240)
334.94 (249.77)	15378 (68.40)	8.17 (13.14)	2100	2.10	8th Gear			178 (81.1)	48 (8.9)	55 (12.8)	28.550 (96.409)

LUGGING ABILITY IN 7th GEAR

Crankshaft Speed rpm	2101	1889	1676	1475	1256	1058
Pull—lbs (kN)	18482 (82.21)	21150 (94.08)	22740 (101.15)	24162 (107.48)	25031 (111.34)	24626 (109.54)
Increase in Pull %	0	14	23	31	35	33
Power—Hp (kW)	333.94 (249.02)	342.04 (255.06)	325.07 (242.40)	303.14 (226.05)	266.88 (199.01)	221.36 (165.07)
Speed—Mph (km/h)	6.78 (10.90)	6.06 (9.76)	5.36 (8.63)	4.70 (7.57)	4.00 (6.43)	3.37 (5.42)
Slip %	2.67	3.00	3.33	3.65	3.97	3.81

TRACTOR SOUND LEVEL WITH CAB	1700 RPM dB(A)	1900 RPM dB(A)	2100 RPM dB(A)
Maximum Available Power—Two Hours	73.0	73.0	78.0
75% of Pull at Maximum Power—Ten Hours			77.5
50% of Pull at Maximum Power—Two Hours			77.0
50% of Pull at Reduced Engine Speed—Two Hours			72.5
Bystander in 12th gear			96.0

SUPPLEMENTARY TESTS
DRAWBAR PERFORMANCE AT 1900 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.h/l)	Cool- ing med	Air wet bulb	Air dry bulb	
Maximum Available Power—Two Hours 7th Gear											
338.75 (252.60)	20838 (92.69)	6.10 (9.81)	1900	3.12	21.526 (81.486)	0.443 (0.270)	15.74 (3.100)	178 (81.1)	41 (4.7)	47 (8.3)	28.920 (97.659)
MAXIMUM POWER IN SELECTED GEARS											
309.99 (231.16)	40580 (180.51)	2.86 (4.61)	2026	14.26	3rd Gear			177 (80.6)	38 (3.3)	41 (5.0)	28.780 (97.186)
335.43 (250.13)	36183 (160.95)	3.48 (5.59)	1899	7.67	4th Gear			178 (80.8)	39 (3.9)	42 (5.6)	28.760 (97.118)
338.42 (252.36)	29535 (131.38)	4.30 (6.92)	1898	4.84	5th Gear			179 (81.7)	46 (7.8)	51 (10.6)	28.620 (96.645)
339.90 (253.46)	24719 (109.96)	5.16 (8.30)	1900	3.81	6th Gear			179 (81.7)	46 (7.8)	52 (11.1)	28.590 (96.544)
342.30 (255.26)	21061 (93.68)	6.10 (9.81)	1899	3.16	7th Gear			179 (81.4)	41 (5.0)	48 (8.9)	28.920 (97.659)
343.73 (256.32)	17505 (77.86)	7.36 (11.85)	1899	2.51	8th Gear			179 (81.7)	48 (8.9)	55 (12.8)	28.560 (96.443)
340.62 (254.00)	14596 (64.92)	8.75 (14.08)	1898	2.01	9th Gear			180 (82.2)	43 (6.1)	49 (9.4)	28.920 (97.659)

Department of Agricultural Engineering

Dates of Test: November 17 to December 7, 1982

Manufacturer: STEIGER TRACTOR INC., 406 Main Avenue, Fargo, North Dakota 58126

FUEL, OIL AND TIME: Fuel No. 2 Diesel Cetane No. 46.6 (rating taken from oil company's inspection data) Specific gravity converted to 60°/60° (15°/15°) 0.8376 Fuel weight 6.974 lbs/gal (0.836 kg/l) Oil SAE 15W-40 API service classification CA-CD/SB-SE To motor 7.455 gal (28.218 l) Drained from motor 6.083 gal (23.028 l) Transmission and hydraulic lubricant SAE 10 hydraulic-transmission fluid Final drive lubricant SAE 85W90 Total time engine was operated 39.0 hours.

ENGINE: Make Caterpillar Diesel Type six cylinder vertical with turbocharger and intercooler Serial No. 90U18777 Crankshaft lengthwise Rated rpm 1700 to 2100 Bore and stroke 5.4" × 6.5" (137 mm × 165 mm) Compression ratio 14.5 to 1 Displacement 893 cu in (14636 ml) Starting system 12 volt Lubrication pressure Air cleaner two paper elements with aspirator Oil filter one full flow paper cartridge Oil cooler engine coolant heat exchanger for crankcase oil, radiator for hydraulic and 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. P40000501- Tread width rear 85.5" (2172 mm) to 160.9" (4087 mm) front 85.5" (2172 mm) to 160.9" (4087 mm) Wheel base 141.5" (3594 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 81.6" (2073 mm) Vertical distance above roadway 44.1" (1120 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 full range operator controlled powershift Advertised speeds mph (km/h) first 2.4 (3.9) second 2.9 (4.7) third 3.4 (5.5) fourth 4.1 (6.6) fifth 4.9 (7.9) sixth 5.8 (9.3) seventh 6.8 (10.9) eighth 8.2 (13.2) ninth 9.6 (15.4) tenth 11.6 (18.7) eleventh 14.0 (22.5) twelfth 16.5 (26.5) reverse 3.0 (4.8), 5.1 (8.2) Clutch multiple wet disc hydraulically power actuated and operated by foot pedal Brakes dual caliper disc hydraulically operated by foot pedal and mechanically by hand lever Steering hydrostatic and articulated Turning radius (on concrete surface without brake) right 285" (7.24 m) left 285" (7.24 m) Turning space diameter (on concrete surface without brake) right 602" (15.29 m) left 602" (15.29 m) Power take-off none.

REPAIRS and ADJUSTMENTS: No repairs or adjustments.

DRAWBAR PERFORMANCE AT 1700 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.h/l)	Cool- ing med	Air wet bulb	Air dry bulb	
331.24 (247.01)	22851 (101.64)	5.44 (8.75)	1700	3.45	20.559 (77.822)	0.433 (0.263)	16.11 (3.174)	179 (81.7)	43 (5.8)	49 (9.4)	28.915 (97.642)

MAXIMUM POWER IN SELECTED GEARS

305.72 (227.97)	40323 (179.37)	2.84 (4.58)	2029	14.96	3rd Gear			178 (80.8)	38 (3.3)	41 (5.0)	28.790 (97.220)
316.11 (235.72)	39246 (174.57)	3.02 (4.86)	1702	10.53	4th Gear			178 (81.1)	39 (3.9)	42 (5.6)	28.750 (97.084)
328.83 (245.21)	32293 (143.65)	3.82 (6.15)	1701	5.70	5th Gear			178 (81.1)	46 (7.8)	51 (10.6)	28.630 (96.679)
330.27 (246.28)	26961 (119.93)	4.59 (7.39)	1701	4.21	6th Gear			179 (81.7)	46 (7.8)	52 (11.1)	28.600 (96.578)
333.62 (248.78)	23022 (102.41)	5.43 (8.75)	1699	3.33	7th Gear			179 (81.7)	43 (6.1)	49 (9.4)	28.910 (97.625)
331.87 (247.47)	18925 (84.18)	6.58 (10.58)	1700	2.67	8th Gear			179 (81.7)	47 (8.3)	54 (12.2)	28.570 (96.477)
332.47 (247.92)	15920 (70.81)	7.83 (12.60)	1701	2.18	9th Gear			179 (81.7)	43 (6.1)	49 (9.4)	28.930 (97.692)
326.50 (243.47)	12947 (57.59)	9.46 (15.22)	1701	1.85	10th Gear			179 (81.7)	42 (5.6)	48 (8.9)	28.930 (97.692)

TIRES, BALLAST AND WEIGHT			With Ballast		Without Ballast	
Rear Tires			Four 30.5L-32; 10; inner 14 (95) outer 12 (85)		Four 30.5L-32; 10; inner 14 (95) outer 12 (85)	
Ballast			1910 lb (866 kg)		None	
			None		None	
Front Tires			Four 30.5L-32; 10; inner 14 (95) outer 12 (85)		Four 30.5L-32; 10; inner 14 (95) outer 12 (85)	
Ballast			1672 lb (759 kg)		None	
			None		None	
Height of Drawbar			20.5 in (520 mm)		20.5 in (520 mm)	
Static Weight with Operator			19215 lb (8716 kg)		15395 lb (6983 kg)	
			24400 lb (11068 kg)		21055 lb (9551 kg)	
			43615 lb (19784 kg)		36450 lb (16534 kg)	



Steiger Panther CP-1400 Diesel

The Agricultural Experiment Station
Institute of Agriculture and Natural Resources
University of Nebraska-Lincoln
Irvin T. Omtvedt, Dean and Director

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 was maintained at 122°F (50.0°C). Seven 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. 1464.

LOUIS I. LEVITICUS
Engineer-in-Charge

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