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Test 1544: Steiger Panther IV CM-360 Diesel 20-Speed

Nebraska Tractor Test Lab
University of Nebraska-Lincoln, tractortestlab@unl.edu

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NEBRASKA TRACTOR TEST 1544—STEIGER PANTHER IV CM-360 DIESEL 20 SPEED

Department of Agricultural Engineering

Dates of Test: October 13 to 24, 1984

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

DRAWBAR PERFORMANCE AT 2100 RPM

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 10th (3B) Gear											
315.12 *(234.99)*	17573 *(78.17)*	6.72 *(10.82)*	2099	4.39	19.748 *(74.753)*	0.437 *(0.266)*	15.96 *(3.144)*	183 *(83.6)*	46 *(7.8)*	47 *(8.3)*	28.88 *(97.51)*
75% of Pull at Maximum Power — Ten Hours 10th (3B) Gear											
255.29 *(190.37)*	13571 *(60.37)*	7.05 *(11.35)*	2175	3.22	16.849 *(63.781)*	0.460 *(0.280)*	15.15 *(2.985)*	182 *(83.6)*	40 *(4.7)*	48 *(8.9)*	29.31 *(98.97)*
50% of Pull at Maximum Power — Two Hours 10th (3B) Gear											
171.96 *(128.23)*	8967 *(39.88)*	7.19 *(11.57)*	2196	2.27	12.943 *(48.994)*	0.525 *(0.319)*	13.29 *(2.617)*	181 *(82.5)*	40 *(4.2)*	45 *(6.9)*	29.24 *(98.74)*
50% of Pull at Reduced Engine Speed — Two Hours 14th (4B) Gear											
171.80 *(128.11)*	8966 *(39.88)*	7.19 *(11.56)*	1325	2.10	10.605 *(40.145)*	0.430 *(0.262)*	16.20 *(3.191)*	184 *(84.2)*	42 *(5.6)*	48 *(8.9)*	29.26 *(98.79)*
MAXIMUM POWER IN SELECTED GEARS											
285.08 *(212.58)*	32328 *(143.80)*	3.31 *(5.32)*	2108	14.97	5th (2A) Gear			184 *(84.4)*	37 *(2.8)*	40 *(4.4)*	29.12 *(98.33)*
307.87 *(229.58)*	29281 *(130.25)*	3.94 *(6.35)*	2099	9.63	6th (2B) Gear			183 *(83.6)*	42 *(5.6)*	53 *(11.7)*	29.20 *(98.60)*
313.17 *(233.53)*	25525 *(113.54)*	4.60 *(7.40)*	2099	7.25	7th (2C) Gear			183 *(83.6)*	45 *(7.2)*	54 *(12.2)*	29.20 *(98.60)*
320.44 *(238.95)*	22878 *(101.76)*	5.25 *(8.45)*	2099	5.90	8th (2D) Gear			183 *(83.6)*	46 *(7.8)*	55 *(12.8)*	29.20 *(98.60)*
323.84 *(241.49)*	20483 *(91.11)*	5.93 *(9.54)*	2100	5.06	9th (3A) Gear			182 *(83.3)*	46 *(7.8)*	55 *(12.8)*	29.20 *(98.60)*
324.84 *(242.24)*	18102 *(80.52)*	6.73 *(10.83)*	2100	4.43	10th (3B) Gear			183 *(83.9)*	44 *(6.7)*	52 *(11.1)*	29.23 *(98.71)*
322.29 *(240.33)*	15707 *(69.87)*	7.69 *(12.38)*	2099	3.72	11th (3C) Gear			183 *(83.9)*	44 *(6.7)*	53 *(11.7)*	29.22 *(98.67)*
320.37 *(238.90)*	13788 *(61.33)*	8.71 *(14.02)*	2099	3.16	12th (3D) Gear			183 *(83.9)*	45 *(7.2)*	54 *(12.2)*	29.21 *(98.64)*

LUGGING ABILITY IN 10th (3B) GEAR

Crankshaft Speed rpm	2100	1881	1679	1466	1252	1043
Pull—lbs *(kN)*	18102 *(80.52)*	20964 *(93.25)*	22598 *(100.52)*	23668 *(105.28)*	24269 *(107.95)*	23081 *(102.67)*
Increase in Pull %	0	16	25	31	34	28
Power—Hp *(kW)*	324.84 *(242.24)*	333.64 *(248.80)*	319.35 *(238.14)*	290.32 *(216.49)*	253.00 *(188.66)*	201.35 *(150.14)*
Speed—Mph *(kmh)*	6.73 *(10.83)*	5.97 *(9.60)*	5.30 *(8.53)*	4.60 *(7.40)*	3.91 *(6.29)*	3.27 *(5.26)*
Slip %	4.43	5.37	5.82	6.43	6.88	6.43

TRACTOR SOUND LEVEL WITH CAB	1700 RPM dB(A)	1900 RPM dB(A)	2100 RPM dB(A)
Maximum Available Power—Two Hours	79.0	78.5	78.5
75% of Pull at Maximum Power—Ten Hours			79.0
50% of Pull at Maximum Power—Two Hours			78.5
50% of Pull at Reduced Engine Speed—Two Hours			76.0
Bystander in 19th (5C) gear			102.0

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 46.8 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F** *(15/15°C)* 0.8375 **Fuel weight** 6.973 lbs/gal *(0.836 kg/l)* **Oil SAE** 10W-30 **API service classification** SE-SF, CC-CD **To motor** 7.941 gal *(30.059 l)* **Drained from motor** 6.879 gal *(26.040 l)* **Transmission and hydraulic lubricant** SAE 10 hydraulic oil **Final drive lubricant** SAE 80W-90 **Total time engine was operated** 38.0 hours.

ENGINE: Make Caterpillar Diesel **Type** six cylinder with turbocharger and intercooler **Serial No.** 6TB01189 **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 and aspirator **Oil filter** one full flow paper cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic oil, radiator for transmission and transfer case oil **Fuel filter** one paper cartridge and prestrainer **Muffler** none **Cooling medium temperature control** one thermostat.

CHASSIS: Type four wheel drive with duals **Serial No.** 115-03418 **Tread width** rear 79″ *(2007 mm)* to 136.3″ *(3462 mm)* front 79″ *(2007 mm)* to 136.3″ *(3462 mm)* **Wheel base** 129″ *(3277 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 79.1″ *(2010 mm)* Vertical distance above roadway 45.5″ *(1156 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 2.3 *(3.7)* second 2.6 *(4.2)* third 3.0 *(4.8)* fourth 3.4 *(5.5)* fifth 3.8 *(6.1)* sixth 4.3 *(6.9)* seventh 4.9 *(7.9)* eighth 5.5 *(8.8)* ninth 6.1 *(9.8)* tenth 7.0 *(11.3)* eleventh 7.8 *(12.5)* twelfth 8.9 *(14.3)* thirteenth 10.2 *(16.4)* fourteenth 11.5 *(18.5)* fifteenth 13.0 *(20.9)* sixteenth 14.8 *(23.8)* seventeenth 15.8 *(25.4)* eighteenth 18.0 *(29.0)* nineteenth 20.3 *(32.7)* twentieth 23.1 *(37.2)* reverse 2.3 *(3.7)*, 2.6 *(4.2)*, 3.0 *(4.8)*, 3.4 *(5.5)* **Clutch** dual dry disc hydraulically operated by foot pedal **Brakes** dual caliper, single disc hydraulically actuated 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

DRAWBAR PERFORMANCE AT 1900 RPM

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 10th (3B) Gear											
324.32 *(241.85)*	20162 *(89.68)*	6.03 *(9.71)*	1899	5.21	19.805 *(74.970)*	0.426 *(0.259)*	16.38 *(3.226)*	184 *(84.4)*	56 *(13.1)*	57 *(13.6)*	28.83 *(97.34)*
MAXIMUM POWER IN SELECTED GEARS											
301.24 *(224.64)*	32320 *(143.76)*	3.50 *(5.63)*	1970	14.66	6th (2B) Gear			183 *(83.9)*	39 *(3.9)*	44 *(6.7)*	29.13 *(98.37)*
314.50 *(234.52)*	29006 *(129.03)*	4.07 *(6.54)*	1901	9.49	7th (2C) Gear			183 *(83.9)*	45 *(7.2)*	53 *(11.7)*	29.20 *(98.60)*
321.48 *(239.73)*	25720 *(114.41)*	4.69 *(7.54)*	1901	7.32	8th (2D) Gear			183 *(83.9)*	45 *(7.2)*	54 *(12.2)*	29.20 *(98.60)*
332.50 *(247.94)*	23483 *(104.46)*	5.31 *(8.55)*	1900	6.13	9th (3A) Gear			183 *(83.9)*	46 *(7.8)*	55 *(12.8)*	29.20 *(98.60)*
334.37 *(249.34)*	20796 *(92.50)*	6.03 *(9.70)*	1898	5.21	10th (3B) Gear			184 *(84.4)*	44 *(6.7)*	53 *(11.7)*	29.22 *(98.67)*
332.89 *(248.24)*	18049 *(80.28)*	6.92 *(11.13)*	1900	4.43	11th (3C) Gear			184 *(84.4)*	44 *(6.7)*	53 *(11.7)*	29.21 *(98.64)*
333.45 *(248.66)*	15930 *(70.86)*	7.85 *(12.63)*	1902	3.80	12th (3D) Gear			184 *(84.4)*	45 *(7.2)*	54 *(12.2)*	29.21 *(98.64)*
330.24 *(246.26)*	13709 *(60.98)*	9.03 *(14.54)*	1898	3.32	13th (4A) Gear			184 *(84.4)*	46 *(7.8)*	55 *(12.8)*	29.20 *(98.60)*

DRAWBAR PERFORMANCE AT 1700 RPM

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 10th (3B) Gear											
314.38 *(234.43)*	22007 *(97.89)*	5.36 *(8.62)*	1700	5.86	18.909 *(71.577)*	0.419 *(0.255)*	16.63 *(3.275)*	184 *(84.4)*	53 *(11.4)*	54 *(12.2)*	28.82 *(97.30)*
MAXIMUM POWER IN SELECTED GEARS											
298.85 *(222.85)*	32299 *(143.67)*	3.47 *(5.58)*	1965	14.97	6th (2B) Gear			183 *(83.9)*	38 *(3.3)*	42 *(5.6)*	29.13 *(98.37)*
297.10 *(221.55)*	31725 *(141.12)*	3.51 *(5.65)*	1699	12.48	7th (2C) Gear			183 *(83.9)*	39 *(3.9)*	45 *(7.2)*	29.13 *(98.37)*
306.23 *(228.36)*	27834 *(123.81)*	4.13 *(6.64)*	1698	8.63	8th (2D) Gear			183 *(83.9)*	45 *(7.2)*	54 *(12.2)*	29.20 *(98.60)*
316.40 *(235.94)*	25211 *(112.14)*	4.71 *(7.57)*	1701	6.95	9th (3A) Gear			184 *(84.2)*	46 *(7.8)*	55 *(12.8)*	29.20 *(98.60)*
322.14 *(240.22)*	22538 *(100.25)*	5.36 *(8.63)*	1698	5.82	10th (3B) Gear			183 *(83.9)*	44 *(6.7)*	53 *(11.7)*	29.22 *(98.67)*
322.36 *(240.38)*	19638 *(87.35)*	6.16 *(9.91)*	1699	4.75	11th (3C) Gear			184 *(84.2)*	45 *(7.2)*	54 *(12.2)*	29.21 *(98.64)*
322.31 *(240.35)*	17295 *(76.93)*	6.99 *(11.25)*	1700	4.20	12th (3D) Gear			184 *(84.4)*	45 *(7.2)*	54 *(12.2)*	29.20 *(98.60)*
324.35 *(241.87)*	15069 *(67.03)*	8.07 *(12.99)*	1702	3.56	13th (4A) Gear			184 *(84.4)*	46 *(7.8)*	55 *(12.8)*	29.20 *(98.60)*

TIRES, BALLAST AND WEIGHT		**With Ballast**	**Without Ballast**
Rear Tires	—No., Size, ply & psi *(kPa)*	Four 23.1-34; 8; inner 14 *(95)* outer 12 *(85)*	Four 23.1-34; 8; inner 14 *(95)* outer 12 *(85)*
Ballast	—Liquid (each inner)	1275 lb *(578 kg)*	None
	—Cast Iron (each)	None	None
Front Tires	—No., Size, ply & psi *(kPa)*	Four 23.1-34; 8; inner 14 *(95)* outer 12 *(85)*	Four 23.1-34; 8; inner 14 *(95)* outer 12 *(85)*
Ballast	—Liquid (each inner)	632 lb *(287 kg)*	None
	—Cast Iron (each)	None	None
Height of Drawbar		18.5 in *(470 mm)*	18.5 in *(470 mm)*
Static Weight with Operator	—Rear	14115 lb *(6402 kg)*	11565 lb *(5246 kg)*
	—Front	19625 lb *(8902 kg)*	18360 lb *(8328 kg)*
	—Total	33740 lb *(15304 kg)*	29925 lb *(13574 kg)*

concrete surface without brake) right 590″ *(14.99 m)* left 600″ *(15.24 m)* **Power take-off** none **Unladen tractor mass** 29750 lb *(13495 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 was maintained at 132°F *(55.6°C)*. Eight gears were chosen between 15% slip and 10 mph *(16.1 km/h)*.

We, the undersigned, certify that this is as true and correct report of official Tractor Test No. **1544**, December 3, 1984.

LOUIS I. LEVITICUS
Engineer-in-Charge

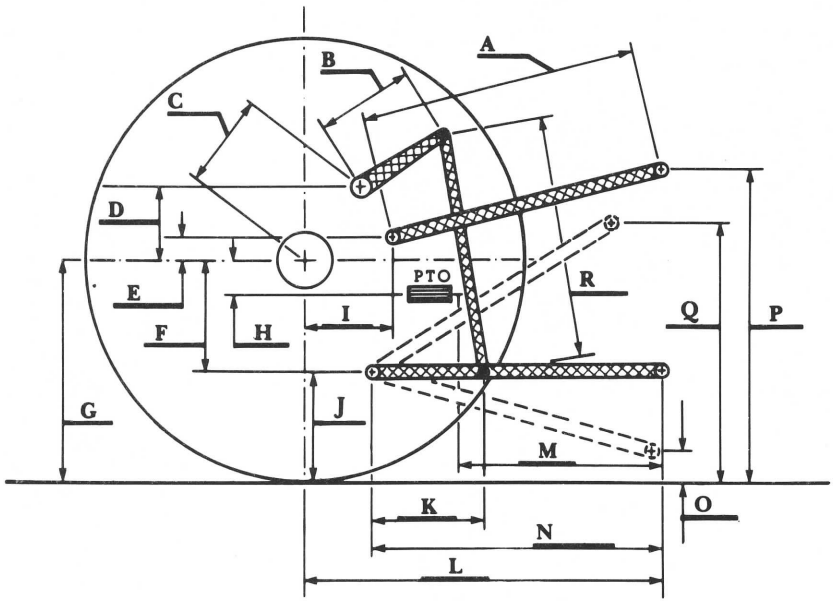
K. VON BARGEN
W. E. SPLINTER
L. L. BASHFORD
Board of Tractor Test Engineers

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi *(kPa)*	2400	*16550*
Location	remote	
Hydraulic oil temperature °F *(°C)*	123	*51*
Location	hydraulic reservoir	

	Maximum Lift Capacity		Lift Capacity for Transport
QUICK ATTACH	yes		
CATEGORY	III		*not measured
LOAD lbs *(kg)*	13320	*6042*	
TIME sec	3.86		
HITCH POINT MOVEMENT in *(mm)*			
Lowest position	14.1	*359*	
Top of timed range	40.1	*1019*	
Highest position	40.4	*1026*	
LOAD CG MOVEMENT in *(mm)*			
Lowest position	13.5	*343*	
Top of timed range	42.6	*1081*	
Highest position	43.0	*1092*	

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



Hitch Dimensions as Tested — No Load

	inch	*mm*
A	31.4	*797*
B	15.0	*381*
C	26.8	*681*
D	22.3	*566*
E	5.7	*145*
F	13.5	*343*
G	31.9	*810*
H	NA	*NA*
I	18.1	*460*
J	18.4	*467*
K	15.0	*381*
L	50.1	*1273*
L'	56.6	*1438*
M	NA	*NA*
N	32.0	*813*
O	8.0	*203*
P	40.4	*1026*
Q	35.9	*911*
R	34.0	*864*

L' to end of quick attach

Steiger Panther IV CM-360 Diesel

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