10-9-1984

Test 1543: Steiger Panther IV KM-325 Diesel 20-Speed

Nebraska Tractor Test Lab
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NEBRASKA TRACTOR TEST 1543—STEIGER PANTHER IV KM-325 DIESEL 20 SPEED

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											
276.11 *(205.90)*	15276 *(67.95)*	6.78 *(10.91)*	2100	3.63	17.209 *(65.144)*	0.435 *(0.264)*	16.04 *(3.161)*	182 *(83.1)*	61 *(15.8)*	65 *(18.1)*	29.08 *(98.18)*
75% of Pull at Maximum Power — Ten Hours 10th (3B) Gear											
229.31 *(170.99)*	11853 *(52.73)*	7.25 *(11.67)*	2224	2.73	15.501 *(58.679)*	0.471 *(0.287)*	14.79 *(2.914)*	181 *(82.9)*	62 *(16.4)*	64 *(17.5)*	28.81 *(97.29)*
50% of Pull at Maximum Power — Two Hours 10th (3B) Gear											
156.50 *(116.70)*	7902 *(35.15)*	7.43 *(11.95)*	2257	1.88	12.039 *(45.574)*	0.536 *(0.326)*	13.00 *(2.561)*	180 *(82.2)*	66 *(18.6)*	77 *(24.7)*	28.91 *(97.61)*
50% of Pull at Reduced Engine Speed — Two Hours 14th (4B) Gear											
156.52 *(116.72)*	7901 *(35.15)*	7.43 *(11.96)*	1366	1.80	9.781 *(37.024)*	0.436 *(0.265)*	16.00 *(3.153)*	182 *(83.1)*	64 *(17.5)*	73 *(22.5)*	28.89 *(97.54)*
MAXIMUM POWER IN SELECTED GEARS											
230.36 *(171.78)*	32565 *(144.85)*	2.65 *(4.27)*	2166	14.90	3rd (1C) Gear			180 *(82.2)*	42 *(5.6)*	45 *(7.2)*	28.46 *(96.11)*
251.55 *(187.58)*	31388 *(139.62)*	3.01 *(4.84)*	2100	11.81	4th (1D) Gear			180 *(82.2)*	42 *(5.6)*	45 *(7.2)*	28.47 *(96.14)*
268.17 *(199.98)*	28334 *(126.04)*	3.55 *(5.71)*	2099	8.34	5th (2A) Gear			181 *(82.8)*	60 *(15.6)*	63 *(17.2)*	28.97 *(97.83)*
273.85 *(204.21)*	25240 *(112.27)*	4.07 *(6.55)*	2099	6.79	6th (2B) Gear			181 *(82.8)*	60 *(15.6)*	64 *(17.8)*	28.97 *(97.83)*
274.17 *(204.45)*	21962 *(97.69)*	4.68 *(7.53)*	2099	5.51	7th (2C) Gear			182 *(83.1)*	61 *(16.1)*	66 *(18.9)*	28.97 *(97.83)*
275.16 *(205.18)*	19426 *(86.41)*	5.31 *(8.55)*	2097	4.66	8th (2D) Gear			183 *(83.6)*	63 *(17.2)*	69 *(20.6)*	28.96 *(97.79)*
282.43 *(210.61)*	17674 *(78.62)*	5.99 *(9.64)*	2100	4.11	9th (3A) Gear			183 *(83.6)*	64 *(17.8)*	71 *(21.7)*	28.97 *(97.83)*
285.67 *(213.03)*	15804 *(70.30)*	6.78 *(10.91)*	2100	3.55	10th (3B) Gear			184 *(84.2)*	65 *(18.3)*	73 *(22.8)*	28.99 *(97.89)*
282.55 *(210.70)*	13677 *(60.84)*	7.75 *(12.47)*	2099	3.15	11th (3C) Gear			182 *(83.3)*	65 *(18.3)*	73 *(22.8)*	28.98 *(97.86)*
280.77 *(209.37)*	12016 *(53.45)*	8.76 *(14.10)*	2097	2.58	12th (3D) Gear			182 *(83.3)*	64 *(17.8)*	72 *(22.2)*	28.98 *(97.86)*

LUGGING ABILITY IN 10th (3B) GEAR

Crankshaft Speed rpm	2100	1880	1681	1464	1250	1042
Pull—lbs *(kN)*	15804 *(70.30)*	18412 *(81.90)*	20631 *(91.77)*	22890 *(101.82)*	23545 *(104.73)*	18487 *(82.23)*
Increase in Pull %	0	17	31	45	49	17
Power—Hp *(kW)*	285.67 *(213.03)*	295.86 *(220.63)*	294.04 *(219.26)*	281.54 *(209.94)*	246.09 *(183.51)*	164.19 *(122.44)*
Speed—Mph *(kmh)*	6.78 *(10.91)*	6.03 *(9.70)*	5.34 *(8.60)*	4.61 *(7.42)*	3.92 *(6.31)*	3.33 *(5.36)*
Slip %	3.55	4.42	5.05	5.97	6.42	4.58

TRACTOR SOUND LEVEL WITH CAB	1700 RPM dB(A)	1900 RPM dB(A)	2100 RPM dB(A)
Maximum Available Power—Two Hours	78.0	77.5	79.0
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			76.5
Bystander in 18th (5B) gear			104.0

Department of Agricultural Engineering

Dates of Test: October 9 to 16, 1984

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

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** 8.256 gal *(31.251 l)* **Drained from motor** 7.409 gal *(28.048 l)* **Transmission and hydraulic lubricant** SAE 10 hydraulic oil **Final drive lubricant** SAE 80W-90 **Total time engine was operated** 47.5 hours.

ENGINE: Make Cummins Diesel **Type** six cylinder vertical with turbocharger and intercooler **Serial No.** 18107122 **Crankshaft** lengthwise **Rated rpm** 1700 to 2100 **Bore and stroke** 5.5″ × 6.0″ *(139.7 mm × 152.4 mm)* **Compression ratio** 14.1 to 1 **Displacement** 855 cu in *(14011 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and aspirator **Oil filter** one full flow cartridge and one bypass cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic oil, radiator for transmission and transfer case oil **Fuel filter** two paper cartridges **Muffler** none **Cooling medium temperature control** one thermostat.

CHASSIS: Type four wheel drive with duals **Serial No.** 107- 03838 **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 77.9″ *(1978 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 concrete surface without brake) right 590″ *(14.99 m)* left 600″ *(15.24 m)* **Power take-off** none **Unladen tractor mass** 29580 lb *(13417 kg)*.

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											
291.87 *(217.65)*	17987 *(80.01)*	6.09 *(9.79)*	1899	4.30	17.396 *(65.850)*	0.416 *(0.253)*	16.78 *(3.305)*	184 *(84.2)*	64 *(17.5)*	71 *(21.4)*	29.03 *(98.03)*
MAXIMUM POWER IN SELECTED GEARS											
247.31 *(184.42)*	32507 *(144.60)*	2.85 *(4.59)*	2063	14.71	4th (1D) Gear			180 *(82.2)*	42 *(5.6)*	46 *(7.8)*	28.50 *(96.24)*
259.80 *(193.73)*	32237 *(143.40)*	3.02 *(4.86)*	1902	13.96	5th (2A) Gear			180 *(82.2)*	42 *(5.6)*	45 *(7.2)*	28.48 *(96.17)*
277.51 *(206.94)*	28968 *(128.85)*	3.59 *(5.78)*	1901	9.05	6th (2B) Gear			182 *(83.3)*	61 *(16.1)*	65 *(18.3)*	28.97 *(97.83)*
280.73 *(209.34)*	25161 *(111.92)*	4.18 *(6.73)*	1904	6.87	7th (2C) Gear			182 *(83.3)*	62 *(16.7)*	67 *(19.4)*	28.97 *(97.83)*
286.10 *(213.34)*	22532 *(100.23)*	4.76 *(7.66)*	1901	5.81	8th (2D) Gear			183 *(83.9)*	63 *(17.2)*	70 *(21.1)*	28.96 *(97.79)*
291.07 *(217.05)*	20303 *(90.31)*	5.38 *(8.65)*	1902	4.81	9th (3A) Gear			183 *(83.9)*	64 *(17.8)*	71 *(21.7)*	28.97 *(97.83)*
299.30 *(223.19)*	18426 *(81.96)*	6.09 *(9.80)*	1901	4.34	10th (3B) Gear			184 *(84.4)*	65 *(18.3)*	73 *(22.8)*	28.99 *(97.89)*
296.85 *(221.36)*	15973 *(71.05)*	6.97 *(11.22)*	1900	3.63	11th (3C) Gear			183 *(83.9)*	64 *(17.8)*	72 *(22.2)*	28.98 *(97.86)*
296.58 *(221.16)*	14071 *(62.59)*	7.90 *(12.72)*	1902	3.07	12th (3D) Gear			184 *(84.2)*	64 *(17.8)*	72 *(22.2)*	28.98 *(97.86)*
293.86 *(219.13)*	12109 *(53.86)*	9.10 *(14.65)*	1900	2.58	13th (4A) Gear			183 *(83.9)*	64 *(17.8)*	72 *(22.2)*	28.97 *(97.83)*

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											
289.58 *(215.94)*	20122 *(89.51)*	5.40 *(8.68)*	1700	5.28	16.757 *(63.434)*	0.404 *(0.245)*	17.28 *(3.404)*	182 *(83.1)*	45 *(7.2)*	51 *(10.6)*	28.59 *(96.54)*
MAXIMUM POWER IN SELECTED GEARS											
263.43 *(196.44)*	32700 *(145.46)*	3.02 *(4.86)*	1697	14.34	6th (2B) Gear			182 *(83.1)*	43 *(6.1)*	47 *(8.3)*	28.52 *(96.31)*
274.21 *(204.48)*	28016 *(124.62)*	3.67 *(5.91)*	1702	8.77	7th (2C) Gear			182 *(83.3)*	62 *(16.7)*	68 *(20.0)*	28.96 *(97.79)*
282.41 *(210.59)*	25169 *(111.96)*	4.21 *(6.77)*	1701	7.02	8th (2D) Gear			184 *(84.2)*	64 *(17.8)*	72 *(22.2)*	28.96 *(97.79)*
290.89 *(216.92)*	22930 *(102.00)*	4.76 *(7.66)*	1700	5.97	9th (3A) Gear			185 *(84.7)*	64 *(17.8)*	71 *(21.7)*	28.97 *(97.83)*
298.04 *(222.25)*	20673 *(91.96)*	5.41 *(8.70)*	1700	5.12	10th (3B) Gear			185 *(85.0)*	65 *(18.3)*	73 *(22.8)*	28.98 *(97.86)*
296.55 *(221.14)*	17932 *(79.77)*	6.20 *(9.98)*	1701	4.26	11th (3C) Gear			185 *(84.7)*	64 *(17.8)*	72 *(22.2)*	28.98 *(97.86)*
298.41 *(222.52)*	15899 *(70.72)*	7.04 *(11.33)*	1701	3.63	12th (3D) Gear			185 *(84.7)*	64 *(17.8)*	72 *(22.2)*	28.98 *(97.86)*
297.32 *(221.71)*	13742 *(61.13)*	8.11 *(13.06)*	1701	2.99	13th (4A) Gear			185 *(85.0)*	64 *(17.8)*	71 *(21.7)*	28.97 *(97.83)*

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)	1258 lb *(570 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)	720 lb *(327 kg)*	None
	—Cast Iron (each)	None	None
Height of Drawbar		18 in *(455 mm)*	18 in *(455 mm)*
Static Weight with Operator	—Rear	14315 lb *(6493 kg)*	11800 lb *(5352 kg)*
	—Front	19400 lb *(8800 kg)*	17960 lb *(8147 kg)*
	—Total	33715 lb *(15293 kg)*	29760 lb *(13499 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 inlet was maintained at 122°F *(50.0°C)*. Ten gears were chosen between 15% slip and 10 mph *(16.1 km/h)* The engine oil pressure guage did not function properly during drawbar tests.

We, the undersigned, certify that this is as true and correct report of official Tractor Test No. **1543**, December 3, 1984.

LOUIS I. LEVITICUS
Engineer-in-Charge

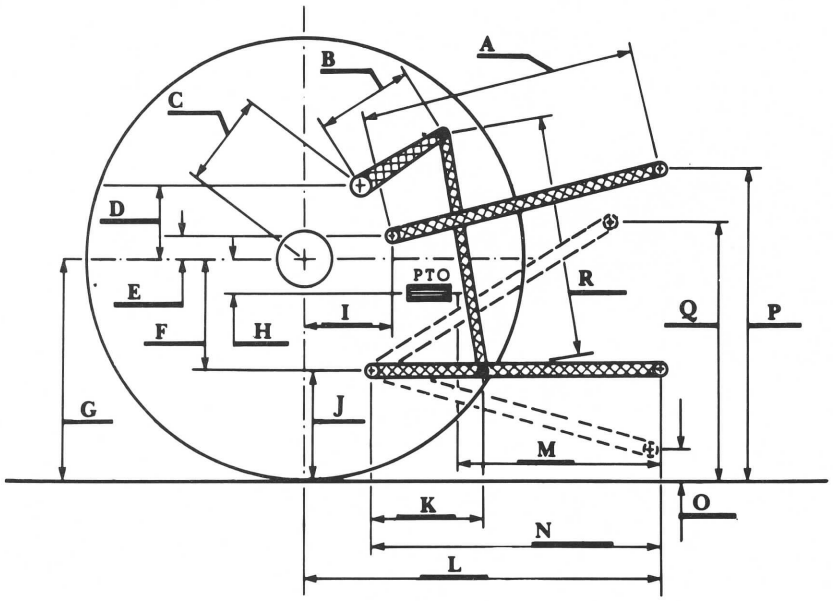
K. VON BARGEN
W. E. SPLINTER
L. L. BASHFORD
Board of Tractor Test Engineers

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi *(kPa)*	2300	*15860*
Location	remote	
Hydraulic oil temperature °F *(°C)*	129	*54*
Location	hydraulic reservoir	

	Maximum Lift Capacity		Lift Capacity for Transport
QUICK ATTACH	yes		
CATEGORY	III		*not measured
LOAD lbs *(kg)*	12752	*5784*	
TIME sec	3.47		
HITCH POINT MOVEMENT in *(mm)*			
Lowest position	14.9	*378*	
Top of timed range	40.9	*1038*	
Highest position	41.4	*1051*	
LOAD CG MOVEMENT in *(mm)*			
Lowest position	14.5	*368*	
Top of timed range	43.4	*1102*	
Highest position	44.0	*1118*	

*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	32.1	*816*
H	NA	*NA*
I	18.1	*460*
J	18.6	*473*
K	15.0	*381*
L	50.1	*1273*
L'	56.6	*1438*
M	NA	*NA*
N	32.0	*813*
O	8.0	*203*
P	40.6	*1032*
Q	35.8	*908*
R	34.5	*876*

L' to end of quick attach

Steiger Panther IV KM-325 Diesel

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University of Nebraska–Lincoln
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