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Test 1268: SAME Tiger 100 DSL

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 1268 — SAME TIGER 100 DSL

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—1035 rpm)									
90.45 (67.45)	2200	5.936 (22.470)	0.455 (0.277)	15.24 (3.002)	air cooled	56 (13.5)	75 (23.9)	29.133 (98.379)	
Standard Power Take-off Speed (1000 rpm)—One Hour									
89.42 (66.68)	2125	5.778 (21.872)	0.448 (0.272)	15.48 (3.049)	air cooled	57 (13.7)	76 (24.4)	29.140 (98.401)	
VARYING POWER AND FUEL CONSUMPTION—Two Hours									
79.67 (59.41)	2280	5.058 (19.146)	0.440 (0.268)	15.75 (3.103)	air cooled	56 (13.6)	75 (23.9)	..... .....
0.00 (0.00)	2415	1.594 (6.032)	..... .....	..... .....	air cooled	56 (13.3)	75 (23.9)	..... .....
41.14 (30.67)	2354	3.157 (11.950)	0.532 (0.323)	13.03 (2.567)	air cooled	56 (13.1)	74 (23.6)	..... .....
90.36 (67.38)	2200	6.015 (22.768)	0.461 (0.281)	15.02 (2.959)	air cooled	56 (13.6)	76 (24.2)	..... .....
20.86 (15.55)	2386	2.360 (8.934)	0.784 (0.477)	8.84 (1.741)	air cooled	56 (13.1)	76 (24.2)	..... .....
60.92 (45.43)	2318	3.984 (15.080)	0.453 (0.276)	15.29 (3.013)	air cooled	55 (12.8)	74 (23.6)	..... .....
Av	48.82	2325	3.694	0.524	13.22	air	56	75	29.127
Av	(36.41)		(13.985)	(0.319)	(2.603)	cooled	(13.2)	(23.9)	(98.356)

DRAWBAR PERFORMANCE

(Front Wheel Drive Engaged)

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)	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
Maximum Available Power—Two Hours 8th (4N) Gear											
75.00 (55.93)	5709 (25.39)	4.93 (7.93)	2199	7.07	6.044 (22.880)	0.558 (0.340)	12.41 (2.444)	air cooled	58 (14.2)	62 (16.4)	28.500 (96.240)
75% of Pull at Maximum Power—Ten Hours 8th (4N) Gear											
61.72 (46.02)	4409 (19.61)	5.25 (8.45)	2296	5.22	4.720 (17.867)	0.530 (0.322)	13.08 (2.576)	air cooled	52 (11.3)	63 (17.4)	28.863 (97.466)
50% of Pull at Maximum Power—Two Hours 8th (4N) Gear											
42.67 (31.82)	2933 (13.05)	5.45 (8.78)	2348	3.67	3.789 (14.343)	0.615 (0.374)	11.26 (2.218)	air cooled	55 (12.5)	67 (19.2)	28.880 (97.523)
50% of Pull at Reduced Engine Speed—Two Hours 10th (2V) Gear											
42.88 (31.98)	2957 (13.15)	5.44 (8.75)	1322	3.56	2.797 (10.586)	0.452 (0.275)	15.33 (3.021)	air cooled	60 (15.3)	72 (22.2)	28.870 (97.490)
MAXIMUM POWER IN SELECTED GEARS											
70.04 (52.23)	9116 (40.55)	2.88 (4.64)	2257	14.84	6th (2N) Gear			air cooled	52 (11.1)	62 (16.7)	28.910 (97.625)
76.12 (56.77)	7482 (33.28)	3.82 (6.14)	2200	10.47	7th (3N) Gear			air cooled	53 (11.7)	55 (12.8)	28.550 (96.409)
77.57 (57.84)	5884 (26.17)	4.94 (7.96)	2200	6.76	8th (4N) Gear			air cooled	52 (11.1)	54 (12.2)	28.650 (96.747)
78.84 (58.79)	4653 (20.70)	6.35 (10.23)	2202	5.40	9th (1V) Gear			air cooled	54 (12.2)	56 (13.3)	28.530 (96.342)
75.95 (56.64)	3141 (13.97)	9.07 (14.59)	2204	3.64	10th (2V) Gear			air cooled	55 (12.8)	57 (13.9)	28.500 (96.240)

Department of Agricultural Engineering

Dates of Test: March 31 to April 11, 1978

Manufacturer: SAME S.p.A., Viale Lombardia, 24047 Treviglio, Italy.

FUEL, OIL AND TIME: Fuel No. 2 Diesel Cetane No. 50.4 (rating taken from oil company's typical inspection data) **Specific gravity converted to 60°/60° (15°/15°)** 0.8321 **Fuel weight** 6.928 lbs/gal (0.832 kg/l) **Oil SAE 30 API service classification** SB/SE - CA/CC **To motor** 2.942 gal (11.137 l) **Drained from motor** 2.160 gal (8.176 l) **Transmission and final drive lubricant** SAE 80W **Total time engine was operated** 46 hrs.

ENGINE: Make SAME S.p.A. Diesel **Type** 5 cylinder vertical **Serial No.** *1055-P*1398* **Crankshaft** lengthwise **Rated rpm** 2200 **Bore and stroke** 4.13" x 4.72" (105 mm x 120 mm) **Compression ratio** 17 to 1 **Displacement** 317 cu in (5195 ml) **Cranking system** 12 volt **Lubrication pressure** **Air cleaner** two paper elements **Oil filter** full flow paper cartridge **Oil cooler** radiator for crankcase oil **Fuel filter** paper element **Muffler** vertical **Cooling medium temperature control** air cooled.

CHASSIS: **Type** four wheel drive **Serial No.** TIT 1006 **Tread width** rear 65" (1650 mm) to 88.6" (2250 mm) front 63" (1600 mm) to 90.6" (2300 mm) **Wheel base** 100" (2540 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 39" (990 mm) Vertical distance above roadway 36.2" (920 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 0.8 (1.3) second 1.1 (1.8) third 1.5 (2.4) fourth 1.8 (3.0) fifth 2.3 (3.7) sixth 3.2 (5.2) seventh 4.2 (6.8) eighth 5.2 (8.4) ninth 6.6 (10.7) tenth 9.3 (14.9) eleventh 12.0 (19.3) twelfth 14.9 (24.0) reverse 1.3 (2.1), 3.7 (6.0), 10.6 (17.1) **Clutch** single plate dry disc operated by foot pedal **Brakes** wet disc operated by two pedals which can be locked together and hand lever **Steering** hydrostatic **Turning radius** (on concrete surface with brake applied) right 189" (4.80 m) left 193" (4.90 m) (on concrete surface without brake) right 212.6" (5.40 m) left 214.6" (5.45 m) **Turning space diameter** (on concrete surface with brake applied) right 394" (10.00 m) left 402" (10.20 m) (on concrete surface without brake) right 440" (11.20 m) left 444" (11.30 m) **Power take-off** 1000 rpm at 2125 engine rpm and 540 rpm at 1957 engine rpm.

REPAIRS and ADJUSTMENTS: No repairs or adjustments

LUGGING ABILITY IN RATED GEAR 8th (4N)

Crankshaft Speed rpm	2200	1985	1762	1540	1313	1098
Pull—lbs (kN)	5884 (26.17)	6315 (28.09)	6745 (30.01)	6972 (31.01)	7052 (31.37)	6946 (30.90)
Increase in Pull %	0	7	15	18	20	18
Power—Hp (kW)	77.57 (57.84)	74.56 (55.60)	70.12 (52.29)	62.98 (46.96)	54.26 (40.46)	44.72 (33.35)
Speed—Mph (km/h)	4.94 (7.96)	4.43 (7.13)	3.90 (6.27)	3.39 (5.45)	2.89 (4.64)	2.41 (3.89)
Slip %	6.76	7.66	8.35	8.75	9.02	8.89

TRACTOR SOUND LEVEL WITH CAB dB(A)

Maximum Available Power—Two Hours	89.5
75% of Pull at Maximum Power—Ten Hours	90.5
50% of Pull at Maximum Power—Two Hours	90.5
50% of Pull at Reduced Engine Speed—Two Hours	84.5
Bystander in 12th (4V) gear	90.5

DRAWBAR PERFORMANCE

(Front Wheel Drive Disengaged)

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	
75% of Pull at Maximum Power—Two Hours 8th (4N) Gear											
59.66 (44.49)	4408 (19.61)	5.08 (8.17)	2294	8.21	4.835 (18.304)	0.561 (0.342)	12.34 (2.431)	air cooled	61 (16.1)	66 (18.9)	28.760 (97.118)
50% of Pull at Maximum Power—Two Hours 8th (4N) Gear											
42.02 (31.34)	2946 (13.10)	5.35 (8.61)	2342	5.30	3.753 (14.206)	0.619 (0.376)	11.20 (2.206)	air cooled	63 (16.9)	74 (23.3)	28.800 (97.253)
50% of Pull at Reduced Engine Speed—Two Hours 10th (2V) Gear											
42.05 (31.36)	2948 (13.11)	5.35 (8.61)	1323	5.26	2.869 (10.860)	0.473 (0.288)	14.66 (2.887)	air cooled	65 (18.3)	76 (24.2)	28.750 (97.084)

TIRES, BALLAST AND WEIGHT

		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi (kPa)	Two 18.4-34; 8; 16 (110)	Two 18.4-34; 8; 16 (110)
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	850 lb (386 kg)	None
Front Tires	—No., size, ply & psi (kPa)	Two 13.6-24; 6; 14 (95)	Two 13.6-24; 6; 14 (95)
Ballast	—Liquid (each)	None	None
	—Cast Iron (front end)	800 lb (363 kg) Total	None
Height of Drawbar		19 in (480 mm)	19 in (480 mm)
Static Weight with Operator—Rear		7160 lb (3248 kg)	5460 lb (2477 kg)
	—Front	4460 lb (2023 kg)	3660 lb (1660 kg)
	—Total	11620 lb (5271 kg)	9120 lb (4137 kg)



S.A.M.E. Tiger 100 Dsl

The Agricultural Experiment Station
Institute of Agriculture and Natural Resources
University of Nebraska—Lincoln
H. W. Ottoson, Director

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 return was 163°F (73.0°C). Five gears were chosen between 15% slip and 10 mph (16.1 km/h). Fuel shut off control lever knob broke during drawbar test. A series of vertical scratches were found on cylinder number one during final inspection.

We, the undersigned, certify that this is a true and correct report of official Tractor Test **1268**.

L. I. LEVITICUS
Engineer-in-Charge

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