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January 1996

Test 1633: Valmet 8550 Diesel

Nebraska Tractor Test Lab

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SUMMARY OF OECD TEST 1633—NEBRASKA SUMMARY 297

VALMET 8550 DIESEL

36 SPEED

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed (PTO speed-1059 rpm)					
141.6 (105.6)	2200	8.66 (32.8)	0.427 (0.260)	16.34 (3.22)	
Standard Power Take-off Speed (1000 rpm)					
145.0 (108.1)	2077	8.45 (32.0)	0.408 (0.248)	17.16 (3.38)	
Maximum Power (2 hours)					
145.0 (108.1)	2077	8.45 (32.0)	0.408 (0.248)	17.16 (3.38)	

VARYING POWER AND FUEL CONSUMPTION

141.6 (105.6)	2200	8.66 (32.8)	0.427 (0.260)	16.34 (3.22)	Air temperature
125.2 (93.4)	2289	8.18 (30.9)	0.456 (0.278)	15.31 (3.02)	75°F (24°C)
95.4 (71.1)	2325	6.92 (26.2)	0.506 (0.308)	13.81 (2.72)	Relative humidity
64.5 (48.1)	2354	5.62 (21.3)	0.610 (0.371)	11.47 (2.26)	60%
32.5 (24.3)	2383	4.26 (16.1)	0.916 (0.557)	7.63 (1.50)	Barometer
--	2406	2.83 (10.7)	--	--	29.5" Hg (100.0 kPa)
--			--	--	

Maximum Torque - 458 lb.-ft. (621 Nm) at 1246 rpm
Maximum Torque Rise - 35.5%
Torque rise at 1760 engine rpm - 24%

DRAWBAR PERFORMANCE

UNBALLASTED FRONT DRIVE ENGAGED

FUEL CONSUMPTION CHARACTERISTICS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
Maximum Power 27th (2 HI) Gear									
125.8 (93.8)	6480 (28.8)	7.28 (11.7)	2062	6.4	0.477 (0.290)	14.62 (2.88)	178 (81)	57 (14)	29.3 (99.2)
75% of Pull at Maximum Power 27th (2 HI) Gear									
106.7 (79.6)	4850 (21.6)	8.25 (13.3)	2295	4.6	0.547 (0.333)	12.73 (2.51)	178 (86)	66 (19)	29.3 (99.2)
50% of Pull at Maximum Power 27th (2 HI) Gear									
74.8 (55.8)	3280 (14.6)	8.55 (13.8)	2348	3.3	0.628 (0.382)	11.09 (2.19)	187 (86)	66 (19)	29.3 (99.2)
75% of Pull at Reduced Engine Speed 28th (1 H III) Gear									
105.9 (79.0)	4810 (21.4)	8.26 (13.3)	2114	4.1	0.532 (0.324)	13.10 (2.58)	185 (85)	64 (18)	29.3 (99.2)
50% of Pull at Reduced Engine Speed 28th (1 H III) Gear									
74.8 (55.8)	3285 (14.6)	8.54 (13.7)	2175	3.5	0.587 (0.357)	11.88 (2.34)	185 (85)	68 (20)	29.3 (99.2)

Location of Test: Vakola Institute of Agricultural Engineering, Vakolantie 55, Finland

Dates of Test: May- July, 1996

Manufacturer: Sisu Tractors Inc., FIN-44200 Suolahti, Finland

FUEL and OIL: Fuel No. 2 Diesel **Specific gravity converted to 60°/60°F (15°/15°C)** 0.840 **Fuel weight** 6.99 lbs/gal (0.838 kg/l) **Oil SAE** 10W/30 **API service classification** CD **Transmission and hydraulic lubricant** Esso Unifarm SAE 15W/40 API GL-5 **Front axle lubricant** SAE 80W90 API GL-5

ENGINE: Make Valmet Diesel **Type** six cylinder vertical with turbocharger **Serial No.** F2478 **Crankshaft** lengthwise **Rated engine speed** 2200 **Bore and stroke** 4.251" x 5.276" (108.0 mm x 134.0 mm) **Compression ratio** 16.5 to 1 **Displacement** 449 cu in (7365 ml) **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** two paper cartridges **Muffler** underhood **Exhaust** vertical **Cooling medium temperature control** thermostat

CHASSIS: **Type** front wheel assist **Serial No.** F07526 **Tread width** rear 63.4" (1610 mm) to 83.5" (2120 mm) front 57.1" (1450 mm) to 84.6" (2150 mm) **Wheel base** 100.8" (2748 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (3) range operator controlled powershift **Nominal travel speeds mph (km/h)** first 0.37 (0.59) second 0.45 (0.73) third 0.52 (0.84) fourth 0.57 (0.91) fifth 0.65 (1.04) sixth 0.74 (1.19) seventh 0.81 (1.30) eighth 0.91 (1.46) ninth 1.04 (1.68) tenth 1.13 (1.82) eleventh 1.29 (2.07) twelfth 1.60 (2.58) thirteenth 1.83 (2.95) fourteenth 2.26 (3.64) fifteenth 2.62 (4.21) sixteenth 2.82 (4.54) seventeenth 3.23 (5.19) eighteenth 3.67 (5.91) nineteenth 4.02 (6.47) twentieth 4.53 (7.29) twenty-first 5.19 (8.36) twenty-second 5.65 (9.09) twenty-third 5.72 (9.21) twenty-fourth 6.41 (10.31) twenty-fifth 7.06 (11.36) twenty-sixth 7.98 (12.85) twenty-seventh 8.16 (13.13) twenty-eighth 8.79 (14.15) twenty-ninth 10.06 (16.19) thirtieth 11.46 (18.45) thirty-first 12.53 (20.17) thirty-second 14.14 (22.76) thirty-third 16.21 (26.09) thirty-fourth 17.62 (28.35) thirty-fifth 20.00 (32.17) thirty-sixth 24.91 (40.08)

DRAWBAR PERFORMANCE **UNBALLASTED FRONT DRIVE ENGAGED** **MAXIMUM POWER IN SELECTED GEARS**

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Consumption Hp.hr/gal (kW.h/l)	Temp. °F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
19th (2MIII) Gear									
102.3 (76.3)	10565 (47.0)	3.63 (5.8)	2294	14.9	0.573 (0.349)	12.16 (2.40)	181 (83)	61 (16)	29.3 (99.2)
20th (3MII) Gear									
112.4 (83.8)	10475 (46.6)	4.02 (6.5)	2245	14.5	0.531 (0.323)	13.12 (2.59)	181 (83)	61 (16)	29.3 (99.2)
21st (4MI) Gear									
117.5 (87.6)	10230 (45.5)	4.31 (6.9)	2077	13.6	0.507 (0.309)	13.73 (2.71)	180 (82)	63 (17)	29.3 (99.2)
22nd (3MIII) Gear									
119.1 (88.8)	9465 (42.1)	4.72 (7.6)	2052	12.0	0.499 (0.304)	13.96 (2.75)	180 (82)	59 (15)	29.3 (99.2)
23rd (1HI) Gear									
122.8 (91.6)	9640 (42.9)	4.78 (7.7)	2051	12.1	0.485 (0.295)	14.37 (2.83)	180 (82)	61 (16)	29.3 (99.2)
24th (4MII) Gear									
122.6 (91.4)	8275 (36.8)	5.56 (8.9)	2058	9.0	0.486 (0.296)	14.34 (2.83)	180 (82)	63 (17)	29.3 (99.2)
25th (1HII) Gear									
125.0 (93.2)	7655 (34.1)	6.12 (9.9)	2056	8.8	0.477 (0.290)	14.62 (2.88)	180 (82)	61 (16)	29.3 (99.2)
26th (4MIII) Gear									
122.7 (91.5)	6520 (29.0)	7.08 (11.4)	2055	6.9	0.485 (0.295)	14.37 (2.83)	180 (82)	63 (17)	29.3 (99.2)
27th (2HI) Gear									
125.8 (93.8)	6480 (28.8)	7.28 (11.7)	2062	6.4	0.473 (0.288)	14.72 (2.90)	178 (81)	57 (14)	29.3 (99.2)
28th (1HIII) Gear									
124.4 (92.8)	5935 (26.4)	7.86 (12.7)	2058	6.1	0.478 (0.291)	14.57 (2.87)	178 (81)	59 (15)	29.3 (99.2)
29th (2HII) Gear									
123.6 (92.2)	5015 (22.3)	9.25 (14.9)	2090	4.7	0.482 (0.293)	14.47 (2.85)	178 (81)	57 (14)	29.5 (99.2)
30th (3HI) Gear									
124.2 (92.6)	4475 (19.9)	10.41 (16.8)	2059	4.6	0.480 (0.292)	14.52 (2.86)	178 (81)	55 (13)	29.3 (99.2)
31st (2HIII) Gear									
121.6 (90.7)	3910 (17.4)	11.66 (18.8)	2087	3.5	0.489 (0.298)	14.24 (2.81)	178 (81)	55 (13)	29.3 (99.2)

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive	
	Engaged dB(A)	Disengaged dB(A)
Maximum Sound Level	81.5	81.5
Bystander in 36th (4HIII) Gear		84.0

TIRES AND WEIGHT

Rear Tires No., size, ply & psi (kPa)
Front Tires No., size, ply & psi (kPa)
Height of Drawbar
Static Weight with operator Rear
Front
Total

Tested Without Ballast

Two 20.8R38; **, 19 (130)
Two 16.9R28; **, 19 (130)
20.1 in (590 mm)
6405 lb (2905 kg)
5005 lb (2270 kg)
11410 lb (5175 kg)

reverse 0.38 (0.61), 0.47 (0.75), 0.54 (0.87), 0.58 (0.93), 0.66 (1.07), 0.76 (1.22), 0.83 (1.33), 0.93 (1.50), 1.07 (1.72), 1.16 (1.87), 1.32 (2.12), 1.64 (2.64), 1.88 (3.03), 2.32 (3.73), 2.68 (4.31), 2.89 (4.65), 3.31 (5.32), 3.77 (6.06), 4.12 (6.63), 4.64 (7.47), 5.33 (8.57), 5.79 (9.31), 5.87 (9.44), 6.57 (10.57), 7.23 (11.64), 8.18 (13.16), 8.36 (13.46), 9.01 (14.50), 10.32 (16.60), 11.75 (18.91), 12.84 (20.67), 14.50 (23.32), 16.61 (26.73), 18.05 (29.05), 20.49 (32.97), 25.52 (41.07) **Clutch** single dry disc hydraulically operated by foot pedal **Brakes** multiple wet disc hydraulically operated by two foot pedals which can be locked together **Steering** hydrostatic **Power take off** 540 rpm at 1874 engine rpm or 1000 rpm at 2080 engine rpm. **Unladen tractor mass** 11245 lb (5100 kg)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments

REMARKS: All test results were determined from observed data obtained in accordance with official OECD test procedures. This tractor did not meet the manufacturers 3 point lift claim of 15000 lb (7.0 ton) at lower links. The performance results on this summary were taken from OECD tests conducted under the Code 2 Test Code procedure.

We, the undersigned, certify that this is a true summary of data from OECD Report No. **1633**, Nebraska Summary 297, January 5, 2000.

Brent T. Sampson
Test Engineer

L.L. Bashford
M.F. Kocher
R.D. Grisso Jr.
Board of Tractor Test Engineers

THREE POINT HITCH PERFORMANCE (OECD Static Test)

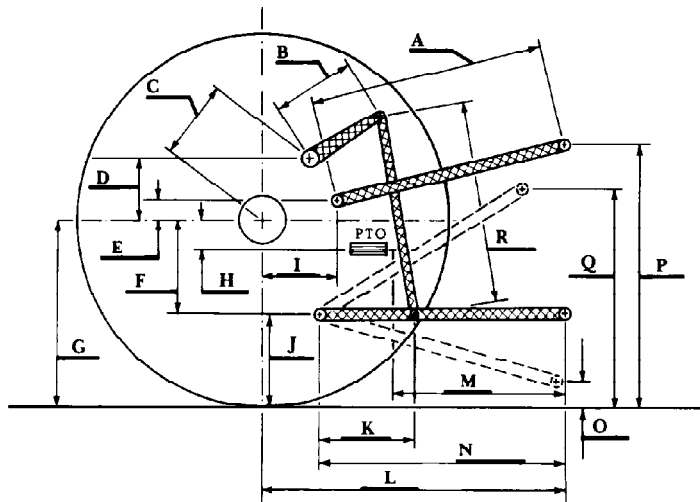
CATEGORY: II

Quick Attach: none

Maximum Force Exerted Through Whole Range: 9755 lbs (43.4 kN) at the frame
13285 lbs (59.1 kN) at lower link ends

- i) Opening pressure of relief valve: NA
Sustained pressure of the open relief valve: 2670 psi (184 bar)
- ii) Pump delivery rate at minimum pressure: 19.4 GPM (73.6 l/min)
- iii) Pump delivery rate at maximum
hydraulic power: 18.8 GPM (71.0 l/min)
Delivery pressure: 2320 psi (160 bar)
Power: 25.4 HP (18.9 kW)

HITCH DIMENSIONS AS TESTED-NO LOAD



	inch	mm
A	29.9	760
B	14.2	360
C	12.0	305
D	11.4	290
E	12.2	311
F	9.7	245
G	33.7	855
H	1.2	30
I	16.2	411
J	24.0	610
K	16.1	410
L	45.2	1148
M	28.5	725
N	37.8	960
O	9.1	230
P	51.0	1295
Q	41.5	1055
R	25.0	635