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Test 1569: Versatile 876 Manual Diesel 12-Speed

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 1569—VERSATILE 876 MANUAL DIESEL ALSO FORD VERSATILE 876 MANUAL DIESEL 12 SPEED

Department of Agricultural Engineering

Dates of Test: May 21 to 29, 1985

Manufacturer: VERSATILE FARM EQUIPMENT COMPANY, 1260 Clarence Avenue, Winnipeg, Manitoba, Canada R3T 1T3

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 (2-3) Gear											
228.33 (170.27)	13110 (58.31)	6.53 (10.51)	2099	3.10	13.555 (51.311)	0.414 (0.252)	16.85 (3.318)	183 (83.9)	62 (16.7)	75 (23.9)	28.96 (97.78)
75% of Pull at Maximum Power — Ten Hours 7th (2-3) Gear											
184.52 (137.60)	10075 (44.82)	6.87 (11.05)	2189	2.28	11.766 (44.537)	0.445 (0.271)	15.68 (3.089)	181 (82.9)	64 (17.7)	71 (21.5)	28.81 (97.27)
50% of Pull at Maximum Power — Two Hours 7th (2-3) Gear											
125.61 (93.66)	6717 (29.88)	7.01 (11.29)	2217	1.55	9.200 (34.827)	0.511 (0.311)	13.65 (2.689)	180 (82.2)	67 (19.4)	79 (25.8)	28.90 (97.59)
50% of Pull at Reduced Engine Speed — Two Hours 10th (3-2) Gear											
125.59 (93.65)	6716 (29.87)	7.01 (11.29)	1311	1.47	7.516 (28.453)	0.418 (0.254)	16.71 (3.292)	184 (84.4)	67 (19.4)	82 (27.5)	28.87 (97.49)

MAXIMUM POWER IN SELECTED GEARS

204.16 (152.25)	27703 (123.23)	2.76 (4.45)	2110	14.76	2nd (1-2) Gear			181 (82.8)	60 (15.6)	66 (18.9)	28.62 (96.65)
221.86 (165.44)	24333 (108.24)	3.42 (5.50)	2099	7.87	3rd (1-3) Gear			181 (82.5)	63 (17.2)	70 (21.1)	28.60 (96.58)
226.82 (169.14)	20979 (93.32)	4.05 (6.52)	2099	5.98	4th (1-4) Gear			184 (84.2)	65 (18.3)	81 (27.2)	28.89 (97.56)
232.73 (173.55)	18141 (80.69)	4.81 (7.74)	2100	4.64	5th (2-1) Gear			184 (84.4)	65 (18.3)	81 (27.2)	28.90 (97.59)
232.51 (173.39)	15478 (68.85)	5.63 (9.07)	2098	3.67	6th (2-2) Gear			185 (85.0)	65 (18.3)	81 (27.2)	28.88 (97.52)
233.92 (174.44)	13433 (59.75)	6.53 (10.51)	2099	3.18	7th (2-3) Gear			185 (84.7)	65 (18.3)	79 (26.1)	28.95 (97.76)
230.12 (171.60)	11307 (50.29)	7.63 (12.28)	2100	2.52	8th (2-4) Gear			184 (84.4)	65 (18.3)	80 (26.7)	28.92 (97.66)
227.70 (169.80)	8888 (39.54)	9.61 (15.46)	2097	1.85	9th (3-1) Gear			183 (83.9)	65 (18.3)	80 (26.7)	28.91 (97.62)

LUGGING ABILITY IN 7th (2-3) GEAR

Crankshaft Speed rpm	2099	1888	1679	1467	1250	1044
Pull—lbs (kN)	13433 (59.75)	15537 (69.11)	17117 (76.14)	18752 (83.41)	19769 (87.94)	18496 (82.27)
Increase in Pull %	0	16	27	40	47	38
Power—Hp (kW)	233.92 (174.44)	241.67 (180.22)	235.42 (175.55)	223.48 (166.65)	199.59 (148.83)	156.85 (116.96)
Speed—Mph (km/h)	6.53 (10.51)	5.83 (9.39)	5.16 (8.30)	4.47 (7.19)	3.79 (6.09)	3.18 (5.12)
Slip %	3.18	3.67	4.48	5.12	5.74	5.12

	1750 RPM dB(A)	1900 RPM dB(A)	2100 RPM dB(A)
TRACTOR SOUND LEVEL WITH CAB			
Maximum Available Power—Two Hours	80.0	79.5	84.0
75% of Pull at Maximum Power—Ten Hours			81.0
50% of Pull at Maximum Power—Two Hours			79.0
50% of Pull at Reduced Engine Speed—Two Hours			78.5
Bystander in 12th (3-4) gear			91.5

FUEL, OIL AND TIME: Fuel No. 2 Diesel Cetane No. 48.3 (rating taken from oil company's inspection data) Specific gravity converted to 60/60°F (15/15°C) 0.8381 Fuel weight 6.978 lbs/gal (0.836 kg/l) Oil SAE 15W-40 API service classification SE, SF, CC, CD To motor 6.771 gal (25.632 l) Drained from motor 6.091 gal (23.056 l) Transmission and hydraulic lubricant Versatile HyGear 23 or equivalent Final drive lubricant SAE 85W140 Total time engine was operated 36.0 hours.

ENGINE: Make Cummins Diesel Type six cylinder vertical with turbocharger and intercooler Serial No. 34512116 Crankshaft lengthwise Rated rpm 1750 to 2100 Bore and stroke 4.921" × 5.354" (125 mm × 136 mm) Compression ratio 16.0 to 1 Displacement 611 cu in (10010 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 and transmission oil Fuel filter one paper cartridge Muffler vertical Cooling medium temperature control one thermostat.

CHASSIS: Type four wheel drive with duals Serial No. 876 85 223177 Tread width rear 72" (1830 mm) to 128" (3250 mm) front 72" (1830 mm) to 128" (3250 mm) Wheel base 129.9" (3300 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 75.0" (1905 mm) Vertical distance above roadway 41" (1041 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 2.7 (4.3) second 3.1 (5.0) third 3.5 (5.7) fourth 4.1 (6.7) fifth 4.8 (7.8) sixth 5.6 (9.0) seventh 6.5 (10.4) eighth 7.5 (12.1) ninth 9.4 (15.1) tenth 10.9 (17.6) eleventh 12.6 (20.2) twelfth 14.6 (23.5) reverse 3.4 (5.5), 4.0 (6.5), 4.6 (7.4), 5.4 (8.6) Clutch dual dry disc operated by foot pedal Brakes caliper disc hydraulically operated by foot pedal Steering hydrostatic and articulated Turning radius (on concrete surface without brake) right 239" (6.07 m) left 239" (6.07 m) Turning space diameter (on concrete surface without brake) right 490" (12.45 m) left 490" (12.45 m) Power take-off none Unladen tractor mass 24780 lb (11240 kg).

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)			
					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	Barom. inch Hg (kPa)
Maximum Available Power — Two Hours 7th (2-3) Gear											
238.92 (178.16)	15258 (67.87)	5.87 (9.45)	1900	3.79	13.650 (51.671)	0.399 (0.243)	17.50 (3.448)	183 (83.6)	62 (16.4)	66 (18.9)	28.89 (97.56)

MAXIMUM POWER IN SELECTED GEAR

243.07 (181.26)	15518 (69.03)	5.87 (9.45)	1900	3.67	7th (2-3) Gear			186 (85.6)	65 (18.3)	80 (26.7)	28.94 (97.73)
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DRAWBAR PERFORMANCE AT 1750 RPM

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption			Temp. °F (°C)			
					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	Barom. inch Hg (kPa)
Maximum Available Power — Two Hours 7th (2-3) Gear											
237.45 (177.07)	16540 (73.57)	5.38 (8.66)	1750	4.16	13.435 (50.857)	0.395 (0.240)	17.67 (3.482)	186 (85.3)	65 (18.1)	74 (23.1)	28.90 (97.57)

MAXIMUM POWER IN SELECTED GEAR

241.80 (180.31)	16840 (74.91)	5.38 (8.67)	1750	4.24	7th (2-3) Gear			185 (85.0)	64 (17.8)	72 (22.2)	28.89 (97.56)
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TIRES, BALLAST AND WEIGHT

		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi (kPa)	Four 20.8-38; 8; inner 14 (95) outer 12 (85)	Four 20.8-38; 8; inner 14 (95) outer 12 (85)
Ballast	—Liquid (each inner) —Cast Iron (each)	1005 lb (456 kg) None	None None
Front Tires	—No., size, ply & psi (kPa)	Four 20.8-38; 8; inner 14 (95) outer 12 (85)	Four 20.8-38; 8; inner 14 (95) outer 12 (85)
Ballast	—Liquid (each inner) —Cast Iron (each)	1265 lb (574 kg) None	None None
Height of Drawbar		19.5 in (495 mm)	19.5 in (495 mm)
Static Weight with Operator —Rear		12560 lb (5697 kg)	10550 lb (4786 kg)
—Front		16940 lb (7684 kg)	14410 lb (6536 kg)
—Total		29500 lb (13381 kg)	24960 lb (11322 kg)

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi (kPa)	2500 (17240)	
Location	remote outlet	
Hydraulic oil temperature °F (°C)	118 (48)	
Location	pump inlet	
	Maximum Lift Capacity	Lift Capacity for Transport
QUICK ATTACH	yes	
CATEGORY	IV	*not measured
LOAD lbs (kg)	** 12752 (5784)	
TIME sec	4.10	
HITCH POINT MOVEMENT in (mm)		
Lowest position	14.1 (358)	
Top of timed range	44.2 (1123)	
Highest position	45.0 (1143)	
LOAD CG MOVEMENT in (mm)		
Lowest position	13.2 (335)	
Top of timed range	48.7 (1237)	
Highest position	50.4 (1280)	

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

**The manufacturer's claimed capacity was 21700 lbs (9840 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 125°F (51.4°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. 1569, June 21, 1985.

NOTE: Report reissued, supplemental sales permit for Ford Versatile 876 Manual Diesel December, 1990.

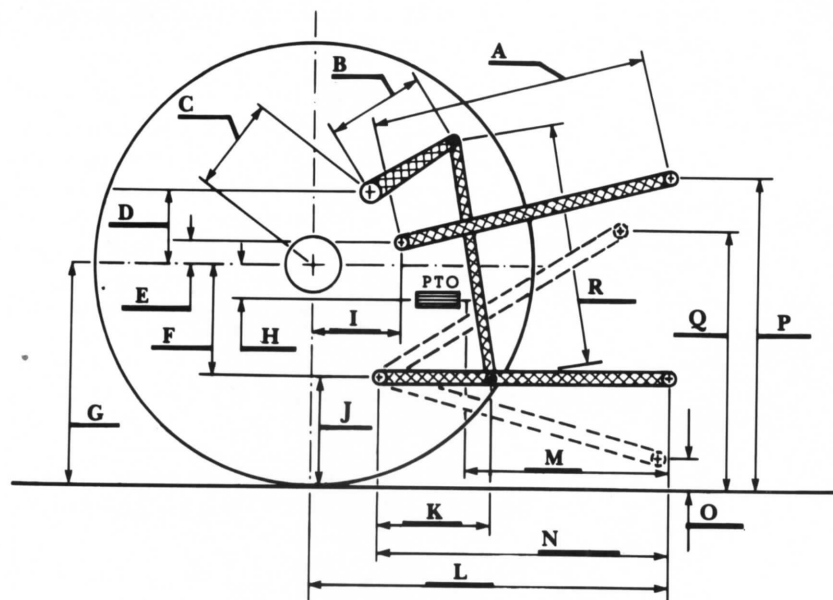
LOUIS I. LEVITICIUS
Engineer-in-Charge

K. VON BARGEN

R.D. GRISSO

G.J. HOFFMAN

Board of Tractor Test Engineers



Hitch Dimensions as Tested — No Load

	inch	mm
A	29.1	740
B	18.6	472
C	20.3	516
D	19.0	483
E	12.6	319
F	10.4	263
G	33.0	838
H	NA	NA
I	24.3	617
J	22.6	575
K	25.0	635
L	53.4	1357
L'	59.9	1521
M	NA	NA
N	43.0	1092
O	8.0	203
P	49.6	1260
Q	41.8	1060
R	33.3	845
L' to end of quick attach		



Versatile 876 Manual Diesel