

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

Nebraska Tractor Tests

Tractor Test and Power Museum, The Lester F.
Larsen

1-1-1968

Test 996: Ford 5000 Diesel 8-Speed (Also Ford 5000 Diesel 8-Speed Row Crop)

Tractor Museum

University of Nebraska-Lincoln, TractorMuseumArchives@unl.edu

Follow this and additional works at: <http://digitalcommons.unl.edu/tractormuseumlit>



Part of the [Applied Mechanics Commons](#)

Museum, Tractor, "Test 996: Ford 5000 Diesel 8-Speed (Also Ford 5000 Diesel 8-Speed Row Crop)" (1968). *Nebraska Tractor Tests*. Paper 1347.

<http://digitalcommons.unl.edu/tractormuseumlit/1347>

This Article is brought to you for free and open access by the Tractor Test and Power Museum, The Lester F. Larsen at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Nebraska Tractor Tests by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

NEBRASKA TRACTOR TEST 996 – FORD 5000 DIESEL 8-SPEED (ALSO FORD 5000 DIESEL 8-SPEED ROW CROP)

POWER TAKE-OFF PERFORMANCE

Hp	Crankshaft speed rpm	Fuel Consumption			Temperature Degrees F			Barometer inches of Mercury
		Gal per hr	Lb per hp-hr	Hp-hr per gal	Cooling medium	Air wet bulb	Air dry bulb	
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed—Two Hours								
67.23	2100	4.347	0.446	15.47	207	58	75	29.083
Standard Power Take-off Speed (540 rpm)—One Hour								
64.16	1901	3.994	0.429	16.06	208	58	75	29.080
VARYING POWER AND FUEL CONSUMPTION—TWO HOURS								
60.05	2207	3.794	0.436	15.83	204	58	74	.....
0.00	2332	0.979	.....	.....	190	59	76	.....
31.02	2279	2.271	0.505	13.66	195	59	76	.....
67.65	2101	4.372	0.446	15.47	207	59	75	.....
15.63	2298	1.588	0.701	9.84	191	58	73	.....
45.90	2250	3.002	0.451	15.29	200	58	73	.....
Av 36.71	2244	2.667	0.501	13.76	198	58	74	29.080

DRAWBAR PERFORMANCE

Hp	Drawbar pull lbs	Speed miles per hr	Crankshaft speed rpm	Slip of drivers %	Fuel Consumption			Temp Degrees F			Barometer inches of Mercury
					Gal per hr	Lb per hp-hr	Hp-hr per gal	Cooling med	Air wet bulb	Air dry bulb	

VARYING DRAWBAR POWER AND FUEL CONSUMPTION WITH BALLAST

Maximum Available Power—Two Hours—4th Gear											
59.92	5344	4.20	2100	8.52	4.521	0.520	13.25	205	28	30	29.245
75% of Pull at Maximum Power—Ten Hours—4th Gear											
48.98	3950	4.65	2261	6.07	3.656	0.515	13.40	199	37	42	28.715
50% of Pull at Maximum Power—Two Hours—4th Gear											
34.78	2704	4.82	2304	4.39	2.896	0.574	12.01	202	29	31	29.235

MAXIMUM POWER WITH BALLAST

36.13	7283	1.86	2300	11.69	2nd Gear	.....	190	32	33	29.000
56.88	7118	3.00	2101	11.36	3rd Gear	.....	194	32	33	29.000
58.75	5227	4.21	2100	8.23	4th Gear	.....	205	34	38	29.135
60.16	4399	5.13	2102	6.97	5th Gear	.....	206	34	36	29.150
59.54	3436	6.50	2101	5.43	6th Gear	.....	205	32	35	29.160
54.57	1756	11.65	2098	3.19	7th Gear	.....	205	32	35	29.160

MAXIMUM PULL WITHOUT BALLAST

43.21	5167	3.14	2270	14.98	3rd Gear	195	39	46	28.700
-------	------	------	------	-------	----------	-------	-----	----	----	--------

VARYING DRAWBAR PULL AND TRAVEL SPEED WITH BALLAST—4th Gear

Pounds pull	5227	5560	5767	5918	5894	5768
Horsepower	58.75	55.68	51.10	45.66	39.13	31.81
Crankshaft speed rpm	2100	1890	1675	1465	1259	1044
Miles per hour	4.21	3.76	3.32	2.89	2.49	2.07
Slip of drivers, %	8.23	9.34	9.45	9.45	9.68	9.45

TIRES, BALLAST and WEIGHT

		With Ballast	Without Ballast
Rear tires	—No, size, ply & psi	Two 16.9-30; 6; 16	Two 16.9-30; 6; 16
Ballast	—Liquid	787 lb each	None
	—Cast iron	1008 lb each	None
Front tires	—No, size, ply & psi	Two 7.50-16; 4; 24	Two 7.50-16; 4; 20
Ballast	—Liquid	79 lb each	None
	—Cast iron	74 lb each	None
Height of drawbar		22½ inches	24 inches
Static weight with operator	—Rear	7340 lb	3750 lb
	—Front	2350 lb	2045 lb
	—Total	9690 lb	5795 lb

Department of Agricultural Engineering

Date of Test: October 30 to November 25, 1968

Manufacturer: FORD MOTOR COMPANY, FORD TRACTOR OPERATIONS, BIRMINGHAM, MICHIGAN

FUEL, OIL and TIME Fuel No 2 Diesel Cetane No 54.3 (rating taken from oil company's typical inspection data) Specific gravity converted to 60°/60° 0.8283 Weight per gallon 6.896 lb Oil SAE 10W API service classification MS DS To motor 1.868 gal Drained from motor 1.502 gal Transmission lubricant Ford oil ESN-M2C77-A or M-4864-A Final-drive lubricant Ford oil ESN-M2C53-A or M-2C53-B Total time engine was operated 55 hours.

ENGINE Make Ford Diesel Type 4 cylinder vertical Serial No E00 3963 Crankshaft mounted lengthwise Rated rpm 2100 Bore and stroke 4.4" x 4.2" Compression ratio 16.5 to 1 Displacement 256 cu in Cranking system 12 volt electric Lubrication pressure Air cleaner oil washed wire mesh Oil filter full flow replaceable cotton blend element Fuel filter one nylon gauze element in bottom of tank and dual replaceable paper elements with water traps Muffler was used Cooling medium temperature control Thermostat.

CHASSIS Type standard Serial No C209902 Tread width rear 52" to 80" front 52" to 80" Wheel base 87.5 Center of gravity (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from centerline of rear wheels 27.30" Vertical distance above roadway 32.95" Horizontal distance from center of rear wheel tread 0" to the right Hydraulic control system direct engine drive Transmission selective gear fixed ratio Advertised speeds mph first 1.5 second 2.0 third 3.5 fourth 4.7 fifth 5.6 sixth 7.0 seventh 12.4 eighth 16.8 reverse 2.3 and 8.1 Clutch single plate dry disc operated by foot pedal Brakes oil cooled multiple disc mechanically operated by two foot pedals which can be locked Steering mechanical with power assist Turning radius (on concrete surface with brake applied) right 117" left 117" (on concrete surface without brake) right 141" left 141" Turning space diameter (on concrete surface with brake applied) right 249" left 249" (on concrete surface without brake) right 294" left 294" Belt pulley 1072 rpm at 2050 engine rpm diam 11" face 6.5" Belt speed 3087 fpm Power take-off 540 rpm at 1900 engine rpm.

REPAIRS AND ADJUSTMENTS: During preliminary pto runs, all injectors were removed and checked. Injectors 1 and 3 were disassembled, cleaned and reinstalled and the test continued.

REMARKS: During the second gear run, oil was forced out of the range transmission shift lever mounting. First gear was not run as it was necessary to limit the pull in second gear because of the stability formula. Eighth gear was not run because it exceeded 15 mph.

We, the undersigned, certify that this is a true and correct report of official Tractor Test 996.

L. F. LARSEN

Engineer-In-Charge

G. W. STEINBRUEGGE, Chairman

W. E. SPLINTER

D. E. LANE

Board of Tractor Test Engineers