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Test 1224: Ford 6600 Diesel 16-Speed

Nebraska Tractor Test Lab
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NEBRASKA TRACTOR TEST 1224 — FORD 6600 DIESEL, 16-SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temperature °F (°C) Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg (kPa)
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed—Two Hours (PTO Speed—1020 rpm)								
68.10 (50.78)	2100	4.627 (17.515)	0.476 (0.289)	14.72 (2.899)	212 (100.3)	67 (19.6)	75 (23.9)	29.033 (98.041)
Standard Power Take-off Speed (1000 rpm)—One Hour								
68.05 (50.74)	2058	4.546 (17.210)	0.468 (0.284)	14.97 (2.948)	213 (100.7)	68 (20.2)	75 (24.0)	29.045 (98.081)
VARYING POWER AND FUEL CONSUMPTION—Two Hours								
62.26 (46.43)	2258	4.123 (15.609)	0.464 (0.282)	15.10 (2.975)	194 (90.0)	56 (13.6)	74 (23.6)	....
0.00 (0.00)	2344	1.312 (4.965)	....	....	172 (77.5)	56 (13.6)	75 (23.9)	....
31.77 (23.69)	2306	2.606 (9.865)	0.574 (0.349)	12.19 (2.402)	175 (79.4)	56 (13.6)	74 (23.3)	....
69.02 (51.47)	2100	4.681 (17.718)	0.475 (0.289)	14.75 (2.905)	211 (99.4)	56 (13.3)	75 (23.9)	....
16.03 (11.96)	2322	1.907 (7.220)	0.833 (0.507)	8.40 (1.656)	170 (76.9)	56 (13.6)	75 (23.9)	....
47.29 (35.26)	2286	3.288 (12.445)	0.487 (0.296)	14.38 (2.834)	180 (82.5)	57 (13.9)	76 (24.2)	....
Av 37.73	**2270**	**2.986**	**0.554**	**12.64**	**184**	**56**	**75**	**29.043**
Av (28.14)		***(11.304)***	***(0.337)***	***(2.489)***	***(84.3)***	***(13.6)***	***(23.8)***	***(98.075)***

DRAWBAR PERFORMANCE

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 8th (5PD) Gear											
55.73 (41.56)	5095 (22.66)	4.10 (6.60)	2100	8.68	4.626 (17.510)	0.581 (0.353)	12.05 (2.373)	213 (100.3)	64 (17.5)	83 (28.3)	28.780 (97.186)
75% of Pull at Maximum Power—Ten Hours 8th (5PD) Gear											
47.86 (35.69)	3977 (17.69)	4.51 (7.26)	2254	6.45	3.747 (14.184)	0.548 (0.333)	12.77 (2.516)	166 (74.6)	49 (9.4)	59 (15.2)	28.921 (97.662)
50% of Pull at Maximum Power—Two Hours 8th (5PD) Gear											
32.95 (24.57)	2642 (11.75)	4.68 (7.53)	2282	4.21	2.983 (11.290)	0.633 (0.385)	11.05 (2.176)	162 (72.2)	50 (10.0)	56 (13.3)	28.790 (97.220)
50% of Pull at Reduced Engine Speed—Two Hours 12th (6DD) Gear											
32.72 (24.40)	2636 (11.72)	4.66 (7.49)	1414	4.15	2.411 (9.127)	0.516 (0.314)	13.57 (2.673)	172 (77.8)	60 (15.6)	70 (21.1)	28.810 (97.287)
MAXIMUM POWER IN SELECTED GEARS											
50.31 (37.52)	7267 (32.33)	2.60 (4.18)	2241	11.76	5th (3PD) Gear			167 (75.0)	52 (11.1)	58 (14.4)	28.730 (97.017)
56.26 (41.95)	6327 (28.15)	3.33 (5.37)	2100	11.07	7th (4PD) Gear			186 (85.3)	67 (19.4)	71 (21.7)	28.810 (97.287)
57.86 (43.15)	5299 (23.57)	4.09 (6.59)	2100	8.87	8th (5PD) Gear			185 (85.0)	57 (13.9)	71 (21.7)	28.820 (97.321)
58.74 (43.80)	4220 (18.77)	5.22 (8.40)	2101	6.87	10th (6PD) Gear			195 (90.6)	57 (13.9)	72 (22.2)	28.810 (97.287)
57.64 (42.98)	3153 (14.03)	6.85 (11.03)	2100	4.85	12th (6DD) Gear			196 (90.8)	58 (14.4)	72 (22.2)	28.790 (97.220)
54.14 (40.37)	1643 (7.31)	12.36 (19.89)	2103	2.46	14th (7DD) Gear			194 (90.0)	58 (14.4)	73 (22.8)	28.790 (97.220)

LUGGING ABILITY IN RATED GEAR (8th (5PD))

Crankshaft Speed rpm	2100	1886	1682	1470	1262	1046
Pull—lbs (kN)	5299 (23.57)	5638 (25.08)	5852 (26.03)	5889 (26.20)	5960 (26.51)	5767 (25.65)
Increase in Pull %	0	6	10	11	12	9
Power—Hp (kW)	57.86 (43.15)	54.87 (40.92)	50.53 (37.68)	44.41 (33.12)	38.50 (28.71)	30.99 (23.11)
Speed—Mph (km/h)	4.09 (6.59)	3.65 (5.87)	3.24 (5.21)	2.83 (4.55)	2.42 (3.90)	2.02 (3.24)
Slip %	8.87	9.41	10.01	10.13	10.37	10.13

Department of Agricultural Engineering

Dates of Test: September 22 to October12, 1976

Manufacturer: FORD MOTOR COMPANY, Tractor Operations, 2500 East Maple Rd., Troy, Michigan 48084

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 51.8 (rating taken from oil company's typical inspection data) **Specific gravity converted to 60°/60° *(15.6°/15.6°)*** 0.8406 **Fuel weight** 6.999 lbs/gal *(0.841 kg/l)* **Oil SAE** 30 **API service classification** SB/SE-CA/CD **To motor** 1.931 gal *(7.310 l)* **Drained from motor** 1.563 gal *(5.917 l)* **Transmission and final drive lubricant** Ford M-2C53A **Total time engine was operated** 47.5 hours

ENGINE Make Ford Diesel **Type** 4 cylinder vertical **Serial No.** *E081890* **Crankshaft** lengthwise **Rated rpm** 2100 **Bore and stroke** 4.4" × 4.2" *(111.76 mm × 106.68 mm)* **Compression ratio** 16.3 to 1 **Displacement** 255 cu in *(4186 ml)* **Cranking system** 12 volt **Lubrication** pressure **Air cleaner** paper and safety felt elements with centrifugal precleaner and dust evacuator **Oil filter** full flow cotton blend spin-on cartridge **Oil cooler** radiator for hydraulic and transmission oil **Fuel filter** nylon gauze at bottom of tank and paper element **Muffler** vertical **Cooling medium temperature control** thermostat

CHASSIS: Type standard **Serial No.** C510283 **Tread width** rear 56" *(1420 mm)* to 80" *(2030 mm)* front 52" *(1320 mm)* to 80" *(2030 mm)* **Wheel base** 87.5" *(2222 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 27.9" *(709 mm)* Vertical distance above roadway 41.2" *(1046 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 with partial (2 range) operator controlled power shift **Advertised speeds mph *(km/h)*** first 1.2 *(1.9)* second 1.4 *(2.3)* third 1.5 *(2.4)* fourth 1.9 *(3.0)* fifth 2.6 *(4.1)* sixth 3.3 *(5.3)* seventh 3.5 *(5.6)* eighth 4.2 *(6.7)* ninth 4.5 *(7.2)* tenth 5.2 *(8.3)* eleventh 5.3 *(8.6)* twelfth 6.7 *(10.7)* thirteenth 9.1 *(14.6)* fourteenth 11.7 *(18.8)* fifteenth 12.4 *(19.9)* sixteenth 15.9 *(25.6)* reverse 1.7 *(2.7)*, 2.2 *(3.5)*, 6.0 *(9.6)*, 7.7 *(12.4)* **Clutch** single dry disc operated by foot pedal **Brakes** multiple wet disc operated by two foot pedals which can be locked together **Steering** power assist **Turning radius** (on concrete surface with brake applied) right 120" *(3.05 m)* left 120" *(3.05 m)* (on concrete surface without brake) right 138" *(3.51 m)* left 138" *(3.51 m)* **Turning space diameter** (on concrete surface with brake applied) right 252" *(6.40 m)* left 252" *(6.40 m)* (on concrete surface without brake) right 291" *(7.39 m)* left 291" *(7.39 m)* **Belt pulley** 1072 rpm at 2050 engine rpm diameter 11" *(279 mm)* face 6.5" *(165 mm)* **Belt speed** 3087 fpm *(15.7 m/s)* **Power take-off** 540 rpm at 1900 engine rpm and 1000 rpm at 2058 engine rpm.

TRACTOR SOUND LEVEL WITH CAB	dB(A)
Maximum Available Power—Two Hours	82.0
75% of Pull at Maximum Power—Ten Hours	83.5
50% of Pull at Maximum Power—Two Hours	85.5
50% of Pull at Reduced Engine Speed--Two Hours	80.0
Bystander in 16th (8DD) gear	90.5

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi *(kPa)*	Two 18.4-30; 6; 16 *(110)*	Two 18.4-30; 6; 16 *(110)*
Ballast	—Liquid (each)	960 lb *(435 kg)*	None
	—Cast Iron (each)	300 lb *(136 kg)*	None
Front Tires	—No., size, ply & psi *(kPa)*	Two 7.50-16; 6; 40 *(280)*	Two 7.50-16; 6; 40 *(280)*
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	80 lb *(36 kg)*	None
Height of drawbar		23 in *(580 mm)*	23 in *(580 mm)*
Static weight with operator—rear		7300 lb *(3311 kg)*	4780 lb *(2168 kg)*
front		2400 lb *(1089 kg)*	2240 lb *(1016 kg)*
total		9700 lb *(4400 kg)*	7020 lb *(3184 kg)*

REPAIRS and ADJUSTMENTS: Dual power control handle became uncoupled during drawbar tests. This was repaired and tests continued.

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 157°F *(69.4°C)*. Six gears were chosen between stability limit and 15 mph *(24.1 km/h)*.

We, the undersigned, certify that this is a true and correct report of official Tractor Test **1224.**

LOUIS I. LEVITICUS
Engineer-in Charge

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Ford 6600 Diesel

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