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## Test 1494: Ford 3910 (8x4) Diesel 8-Speed

Nebraska Tractor Test Lab

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# NEBRASKA TRACTOR TEST 1494—FORD 3910 (8x4) DIESEL 8 SPEED

## 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—600 rpm)									
42.67 (31.82)	2000	2.783 (10.535)	0.456 (0.278)	15.33 (3.020)	192 (89.2)	62 (16.8)	76 (24.2)	28.890 (97.537)	
Standard Power Take-off Speed (540 rpm)—One Hour									
41.16 (30.69)	1799	2.632 (9.963)	0.448 (0.272)	15.64 (3.080)	195 (90.8)	62 (16.6)	75 (23.7)	28.840 (97.388)	
VARYING POWER AND FUEL CONSUMPTION—Two Hours									
36.99 (27.58)	2038	2.447 (9.263)	0.463 (0.282)	15.11 (2.977)	188 (86.4)	62 (16.9)	76 (24.2)	..... .....	
0.00 (0.00)	2133	0.827 (3.131)	..... .....	..... .....	182 (83.3)	62 (16.9)	76 (24.2)	..... .....	
18.93 (14.12)	2086	1.556 (5.890)	0.575 (0.350)	12.16 (2.397)	182 (83.3)	62 (16.7)	74 (23.6)	..... .....	
43.25 (32.25)	2000	2.825 (10.694)	0.457 (0.278)	15.31 (3.016)	192 (88.6)	62 (16.7)	74 (23.3)	..... .....	
9.55 (7.12)	2110	1.179 (4.463)	0.864 (0.526)	8.10 (1.595)	182 (83.6)	62 (16.7)	74 (23.1)	..... .....	
28.02 (20.89)	2060	1.989 (7.529)	0.497 (0.302)	14.09 (2.775)	185 (85.0)	62 (16.7)	74 (23.3)	..... .....	
Av Av	22.79 (16.99)	2071	1.804 (6.829)	0.554 (0.337)	12.63 (2.488)	185 (85.0)	62 (16.8)	75 (23.6)	28.820 (97.321)

## DRAWBAR PERFORMANCE

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 5th Gear											
35.06 (26.14)	2248 (10.00)	5.85 (9.41)	1999	5.47	2.665 (10.087)	0.532 (0.324)	13.16 (2.592)	194 (90.0)	60 (15.3)	74 (23.3)	28.910 (97.625)
75% of Pull at Maximum Power—Ten Hours 5th Gear											
27.96 (20.85)	1727 (7.68)	6.07 (9.77)	2049	4.34	2.266 (8.578)	0.567 (0.345)	12.34 (2.431)	185 (84.7)	42 (5.6)	49 (9.3)	29.193 (98.580)
50% of Pull at Maximum Power—Two Hours 5th Gear											
19.07 (14.22)	1152 (5.12)	6.21 (9.99)	2060	2.71	1.800 (6.815)	0.661 (0.402)	10.59 (2.086)	190 (87.8)	73 (22.8)	90 (32.2)	28.585 (96.527)
50% of Pull at Reduced Engine Speed—Two Hours 6th Gear											
19.12 (14.26)	1153 (5.13)	6.22 (10.01)	1418	2.65	1.450 (5.490)	0.531 (0.323)	13.18 (2.597)	189 (87.2)	73 (22.5)	87 (30.6)	28.550 (96.409)
MAXIMUM POWER IN SELECTED GEARS											
28.84 (21.51)	4934 (21.95)	2.19 (3.53)	2021	14.87	2nd Gear			187 (85.8)	42 (5.6)	50 (10.0)	29.190 (98.570)
34.89 (26.02)	3904 (17.37)	3.35 (5.39)	2000	9.99	3rd Gear			192 (88.6)	53 (11.7)	61 (16.1)	28.920 (97.659)
35.10 (26.17)	2592 (11.53)	5.08 (8.17)	1999	6.23	4th Gear			192 (88.9)	53 (11.7)	61 (16.1)	28.920 (97.659)
36.22 (27.01)	2323 (10.33)	5.85 (9.41)	2000	5.49	5th Gear			194 (89.7)	57 (13.9)	69 (20.6)	28.920 (97.659)
35.29 (26.32)	1527 (6.79)	8.67 (13.95)	1999	3.70	6th Gear			193 (89.2)	57 (13.9)	71 (21.7)	28.920 (97.659)

## LUGGING ABILITY IN 5th GEAR

Crankshaft Speed rpm	2000	1802	1595	1401	1201	1001
Pull—lbs (kN)	2323 (10.33)	2525 (11.23)	2635 (11.72)	2760 (12.28)	2752 (12.24)	2708 (12.05)
Increase in Pull %	0	9	13	19	18	17
Power—Hp (kW)	36.22 (27.01)	35.30 (26.33)	32.50 (24.24)	29.78 (22.21)	25.44 (18.97)	20.87 (15.56)
Speed—Mph (km/h)	5.85 (9.41)	5.24 (8.44)	4.63 (7.44)	4.05 (6.51)	3.47 (5.58)	2.89 (4.65)
Slip %	5.49	6.00	6.34	6.67	6.67	6.67

Department of Agricultural Engineering

Dates of Test: September 14-26, 1983

**Manufacturer:** FORD MOTOR COMPANY,  
Ford Tractor Operations, 2500 East Maple  
Road, Troy, Michigan 48084

**FUEL, OIL AND TIME:** Fuel No. 2 Diesel  
Cetane No. 47.0 (rating taken from oil company's  
inspection data) **Specific gravity converted to 60°/**  
**60° (15°/15°)** 0.8406 **Fuel weight** 6.999 lbs/gal  
(0.839 kg/l) **Oil SAE 30 API service classifica-**  
**tion SE-SF, CC-CD To motor** 1.423 gal (5.387 l)  
**Drained from motor** 1.280 gal (4.844 l) **Trans-**  
**mission and final drive lubricant** Ford 134 fluid  
**Total time engine was operated** 48.0 hours.

**ENGINE:** Make Ford Diesel **Type** three cylin-  
der vertical **Serial No.** \*C704785\* **Crankshaft**  
lengthwise **Rated rpm** 2000 **Bore and stroke** 4.4"  
× 4.2" (112 mm × 107 mm) **Compression ratio**  
16.3 to 1 **Displacement** 192 cu in (3147 ml) **Start-**  
**ing system** 12 volt **Lubrication pressure** Air  
cleaner two paper elements **Oil filter** one full  
flow paper cartridge **Fuel filter** one paper ele-  
ment **Muffler** vertical **Cooling medium tempera-**  
**ture control** one thermostat.

**CHASSIS:** **Type** standard **Serial No.**  
\*C699561\* **Tread width** rear 60" (1525 mm) to  
80" (2032 mm) front 52" (1320 mm) to 80" (2032  
mm) **Wheel base** 77.5" (1969 mm) **Center of grav-**  
**ity** (without operator or ballast, with minimum  
tread, with fuel tank filled and tractor serviced for  
operation) Horizontal distance forward from cen-  
ter-line of rear wheels 28.9" (735 mm) Vertical dis-  
tance above roadway 33.2" (842 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 1.7 (2.7)  
second 2.5 (4.0) third 3.7 (5.9) fourth 5.4 (8.7)  
fifth 6.2 (10.0) sixth 9.0 (14.5) seventh 13.2 (21.2)  
eighth 19.2 (31.0) reverse 2.3 (3.7), 3.3 (5.3), 4.8  
(7.7), 7.0 (11.3) **Clutch** single plate dry disc oper-  
ated by foot pedal **Brakes** multiple wet disc oper-  
ated by two foot pedals which can be locked  
together **Steering** power assist **Turning radius**  
(on concrete surface with brake applied) right  
114" (2.89 m) left 114" (2.89 m) (on concrete sur-  
face without brake) right 136" (3.45 m) left 136"  
(3.45 m) **Turning space diameter** (on concrete  
surface with brake applied) right 233" (5.92 m) left  
233" (5.92 m) (on concrete surface without brake)  
right 275" (6.98 m) left 275" (6.98 m) **Power take-**  
**off** 540 rpm at 1799 engine rpm.

**REPAIRS and ADJUSTMENTS:** During the  
PTO tests, the throttle control lever on the injec-  
tion pump was replaced. The high idle limiting  
screw was replaced during drawbar tests.

<b>TRACTOR SOUND LEVEL WITHOUT CAB</b>	<b>dB(A)</b>
Maximum Available Power—Two Hours	95.5
75% of Pull at Maximum Power—Ten Hours	94.5
50% of Pull at Maximum Power—Two Hours	93.5
50% of Pull at Reduced Engine Speed—Two Hours	92.5
Bystander in 8th gear	86.0

<b>TIRES, BALLAST AND WEIGHT</b>	<b>With Ballast</b>	<b>Without Ballast</b>
<b>Rear Tires</b>		
—No., size, ply & psi (kPa)	Two 16.9-24; 6; 16 (110)	Two 16.9-24; 6; 16 (110)
Ballast		
—Liquid (each)	420 lb (191 kg)	None
—Cast Iron (each)	410 lb (186 kg)	None
<b>Front Tires</b>		
—No., size, ply & psi (kPa)	Two 6.50-16; 6; 36 (250)	Two 6.50-16; 6; 36 (250)
Ballast		
—Liquid (each)	None	None
—Cast Iron (each)	38 lb (17 kg)	None
<b>Height of Drawbar</b>	17 in (430 mm)	17 in (430 mm)
<b>Static Weight with Operator</b> —Rear	4645 lb (2107 kg)	2985 lb (1354 kg)
—Front	1790 lb (812 kg)	1715 lb (778 kg)
—Total	6435 lb (2919 kg)	4700 lb (2132 kg)

**REMARKS:** All test results were determined from observed data obtained in accordance with SAE and ASAE test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump was maintained at 142°F (61.2°C). Five gears were chosen between 15% slip and 10 mph (16.1 km/h).

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. 1494.

LOUIS I. LEVITICUS

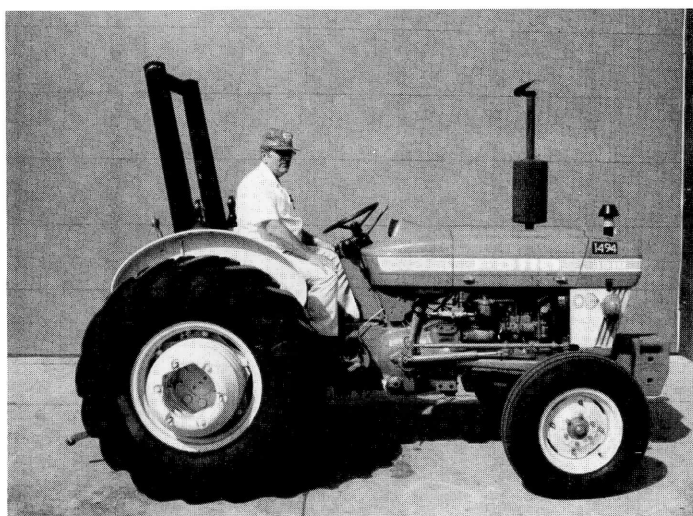
Engineer-in-Charge

K. VON BARGEN

W. E. SPLINTER

L. L. BASHFORD

Board of Tractor Test Engineers



**Ford 3910 (8x4) Diesel**