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Test 1424: Ford 4110 (8x2) Diesel 8-Speed

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 1424 — FORD 4110 (8 X 2) 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—660 rpm)								
48.33 (36.04)	2200	3.065 (11.602)	0.437 (0.266)	15.77 (3.106)	201 (93.7)	54 (12.1)	75 (24.0)	29.220 (98.672)
Standard Power Take-off Speed (540 rpm)—One Hour								
42.65 (31.80)	1799	2.605 (9.861)	0.421 (0.256)	16.37 (3.225)	204 (95.5)	54 (12.0)	75 (23.9)	29.205 (98.621)
VARYING POWER AND FUEL CONSUMPTION—Two Hours								
42.61 (31.77)	2282	2.814 (10.652)	0.456 (0.277)	15.14 (2.983)	192 (89.2)	56 (13.1)	76 (24.7)	..... .....
0.00 (0.00)	2320	0.966 (3.657)	..... .....	..... .....	170 (76.9)	54 (12.2)	74 (23.6)	..... .....
21.46 (16.00)	2298	1.823 (6.901)	0.586 (0.356)	11.77 (2.319)	173 (78.3)	54 (11.9)	74 (23.6)	..... .....
48.78 (36.38)	2201	3.080 (11.659)	0.435 (0.265)	15.84 (3.120)	200 (93.3)	54 (12.5)	76 (24.7)	..... .....
10.87 (8.11)	2325	1.388 (5.254)	0.881 (0.536)	7.83 (1.544)	169 (76.1)	54 (11.9)	75 (23.9)	..... .....
32.20 (24.01)	2300	2.262 (8.563)	0.484 (0.295)	14.24 (2.804)	177 (80.6)	54 (11.9)	74 (23.6)	..... .....
Av Av	25.99 (19.38)	2.288 (7.779)	2.055 (0.332)	0.546 (2.491)	12.64 (82.4)	180 (12.3)	54 (24.1)	75 (98.413)

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											
40.60 (30.28)	3370 (14.99)	4.52 (7.27)	2202	7.87	3.063 (11.594)	0.520 (0.316)	13.26 (2.611)	195 (90.3)	50 (9.7)	68 (19.7)	28.945 (97.743)
75% of Pull at Maximum Power—Ten Hours 5th Gear											
33.18 (24.74)	2570 (11.43)	4.84 (7.79)	2303	5.67	2.690 (10.183)	0.559 (0.340)	12.34 (2.430)	183 (83.7)	53 (11.7)	70 (20.8)	28.733 (97.027)
50% of Pull at Maximum Power—Two Hours 5th Gear											
22.81 (17.01)	1715 (7.63)	4.99 (8.03)	2330	4.03	2.120 (8.027)	0.641 (0.390)	10.76 (2.119)	174 (78.6)	65 (18.1)	73 (22.8)	28.085 (94.839)
50% of Pull at Reduced Engine Speed—Two Hours 6th Gear											
22.81 (17.01)	1716 (7.63)	4.99 (8.02)	1864	3.86	1.849 (6.999)	0.559 (0.340)	12.34 (2.431)	178 (80.8)	63 (17.2)	78 (25.6)	27.975 (94.467)

MAXIMUM POWER IN SELECTED GEARS

23.22 (17.31)	5681 (25.27)	1.53 (2.47)	2314	14.91	2nd Gear		173 (78.1)	63 (17.2)	67 (19.4)	28.180 (95.160)
37.47 (27.94)	5449 (24.24)	2.58 (4.15)	2200	14.13	3rd Gear		191 (88.3)	64 (17.8)	69 (20.6)	28.150 (95.058)
40.29 (30.05)	4080 (18.15)	3.70 (5.96)	2203	9.52	4th Gear		194 (89.7)	48 (8.9)	65 (18.3)	28.950 (97.760)
41.25 (30.76)	3426 (15.24)	4.51 (7.27)	2199	7.85	5th Gear		192 (88.9)	47 (8.3)	63 (17.2)	28.980 (97.860)
40.88 (30.48)	2664 (11.85)	5.75 (9.26)	2202	6.01	6th Gear		192 (88.6)	48 (8.9)	64 (17.8)	28.960 (97.794)

LUGGING ABILITY IN 5th GEAR

Crankshaft Speed rpm	2199	1992	1769	1534	1317	1099	889
Pull—lbs (kN)	3426 (15.24)	3571 (15.88)	3714 (16.52)	3794 (16.88)	3864 (17.19)	3974 (17.68)	3929 (17.48)
Increase in Pull %	0	4	8	11	13	16	15
Power—Hp (kW)	41.25 (30.76)	38.78 (28.92)	35.65 (26.58)	31.49 (23.48)	27.43 (20.46)	23.47 (17.50)	18.80 (14.02)
Speed—Mph (km/h)	4.51 (7.27)	4.07 (6.55)	3.60 (5.79)	3.11 (5.01)	2.66 (4.28)	2.21 (3.56)	1.79 (2.89)
Slip %	7.85	8.32	8.64	8.85	9.16	9.46	9.46

Department of Agricultural Engineering

Dates of Test: March 18 to April 8, 1982

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

FUEL, OIL AND TIME: Fuel No. 2 Diesel
Cetane No. 46.5 (rating taken from oil company's
inspection data) Specific gravity converted to 60°
60° (15°/15°) 0.8284 Fuel weight 6.897 lbs/gal
(0.827 kg/l) Oil SAE 30 API service classifica-
tion SE/SF-CC/CD To motor 1.476 gal (5.586 l)
Drained from motor 1.247 gal (4.721 l) Trans-
mission and final drive lubricant Ford 134 fluid
Total time engine was operated 45.5 hours.

ENGINE: Make Ford Diesel Type three cylin-
der vertical Serial No. *K629779* Crankshaft
lengthwise Rated rpm 2200 Bore and stroke 4.4"
× 4.4" (112 mm × 112 mm) Compression ratio
16.3 to 1 Displacement 201 cu in (3294 ml) Start-
ing system 12 volt Lubrication pressure Air
cleaner two paper elements Oil filter one full
flow paper cartridge Fuel filter one paper
element Muffler vertical Cooling medium
temperature control one thermostat.

CHASSIS: Type standard Serial No.
C680986 Tread width rear 64" (1625 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 28.8" (732 mm) Vertical dis-
tance above roadway 28.3" (719 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 1.4 (2.2)
second 1.7 (2.8) third 3.1 (5.0) fourth 4.2 (6.7)
fifth 5.0 (8.0) sixth 6.2 (10.0) seventh 11.0 (17.7)
eighth 14.9 (24.0) reverse 2.0 (3.2), 7.2 (11.6)
Clutch single plate dry disc operated by foot
pedal Brakes wet multiple disc operated 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 surface 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: No repairs or
adjustments.

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 return was
maintained at 150°F (65.3°C). Five gears were
chosen between 15% slip and 10 mph (16.1 km/h).

TRACTOR SOUND LEVEL WITHOUT CAB	dB(A)
Maximum Available Power—Two Hours	97.5
75% of Pull at Maximum Power—Ten Hours	97.5
50% of Pull at Maximum Power—Two Hours	95.5
50% of Pull at Reduced Engine Speed—Two Hours	94.5
Bystander in 8th gear	88.5

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi (<i>kPa</i>)	Two 16.9-24; 6; 16 (<i>110</i>)	Two 16.9-24; 6; 16 (<i>110</i>)
Ballast	—Liquid (each)	685 lb (<i>311 kg</i>)	None
	—Cast Iron (each)	680 lb (<i>308 kg</i>)	None
Front Tires	—No., size, ply & psi (<i>kPa</i>)	Two 7.50-16; 6; 40 (<i>275</i>)	Two 7.50-16; 6; 40 (<i>275</i>)
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	60 lb (<i>27 kg</i>)	None
Height of Drawbar		15.5 in (<i>395 mm</i>)	15.5 in (<i>395 mm</i>)
Static Weight with Operator—Rear		5700 lb (<i>2586 kg</i>)	2970 lb (<i>1347 kg</i>)
—Front		1800 lb (<i>816 kg</i>)	1680 lb (<i>762 kg</i>)
—Total		7500 lb (<i>3402 kg</i>)	4650 lb (<i>2109 kg</i>)

We, the undersigned, certify that this is a true and correct report of official Tractor Test **1424**.

LOUIS I. LEVITICUS

Engineer-in-Charge

K. VON BARGEN

W. E. SPLINTER

L. L. BASHFORD

Board of Tractor Test Engineers



Ford 4110 (8 X 2) Diesel