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## Test 1425: Ford 4110 (8x4) Diesel 8-speed

Nebraska Tractor Test Lab

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# NEBRASKA TRACTOR TEST 1425 — FORD 4110 (8 X 4) 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)								
49.26 (36.73)	2200	3.165 (11.981)	0.443 (0.270)	15.57 (3.066)	204 (95.4)	59 (14.9)	76 (24.2)	29.000 (97.929)
Standard Power Take-off Speed (540 rpm)—One Hour								
44.06 (32.86)	1799	2.744 (10.387)	0.429 (0.261)	16.06 (3.164)	205 (96.1)	59 (14.9)	75 (23.8)	28.990 (97.895)
VARYING POWER AND FUEL CONSUMPTION—Two Hours								
43.17 (32.19)	2268	2.893 (10.951)	0.462 (0.281)	14.92 (2.939)	192 (89.2)	59 (15.0)	75 (23.9)	..... .....
0.00 (0.00)	2326	1.031 (3.903)	..... .....	..... .....	170 (76.9)	59 (15.0)	75 (23.9)	..... .....
21.87 (16.31)	2300	1.901 (7.196)	0.599 (0.365)	11.51 (2.267)	175 (79.4)	59 (15.0)	75 (23.9)	..... .....
49.83 (37.16)	2199	3.189 (12.072)	0.441 (0.268)	15.63 (3.078)	201 (93.9)	59 (15.0)	75 (23.9)	..... .....
11.01 (8.21)	2312	1.449 (5.485)	0.907 (0.552)	7.60 (1.497)	168 (75.6)	59 (15.0)	75 (23.9)	..... .....
32.61 (24.32)	2284	2.397 (9.074)	0.507 (0.308)	13.60 (2.680)	177 (80.6)	59 (15.0)	75 (23.9)	..... .....
Av Av	26.41 (19.69)	2.143 (8.112)	0.560 (0.340)	12.32 (2.427)	181 (82.6)	59 (15.0)	75 (23.9)	28.997 (97.917)

## 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											
39.80 (29.68)	3023 (13.44)	4.94 (7.95)	2201	6.54	3.081 (11.665)	0.534 (0.325)	12.92 (2.544)	189 (87.2)	61 (16.1)	65 (18.3)	28.790 (97.220)
75% of Pull at Maximum Power—Ten Hours 5th Gear											
32.18 (23.99)	2318 (10.31)	5.21 (8.38)	2279	4.85	2.654 (10.045)	0.569 (0.346)	12.13 (2.389)	178 (80.9)	62 (16.8)	68 (19.7)	28.725 (97.000)
50% of Pull at Maximum Power—Two Hours 5th Gear											
21.76 (16.23)	1546 (6.87)	5.28 (8.50)	2276	3.35	2.085 (7.891)	0.661 (0.402)	10.44 (2.056)	177 (80.3)	68 (20.0)	75 (23.9)	28.760 (97.118)
50% of Pull at Reduced Engine Speed—Two Hours 6th Gear											
21.77 (16.23)	1546 (6.88)	5.28 (8.50)	1563	3.21	1.686 (6.381)	0.534 (0.325)	12.91 (2.543)	174 (78.9)	69 (20.3)	74 (23.3)	28.730 (97.017)

## MAXIMUM POWER IN SELECTED GEARS

29.05 (21.66)	5691 (25.31)	1.91 (3.08)	2272	14.74	2nd Gear		175 (79.2)	59 (15.0)	60 (15.6)	28.760 (97.118)
37.88 (28.24)	5188 (23.08)	2.74 (4.41)	2199	13.82	3rd Gear		190 (87.8)	64 (17.8)	69 (20.6)	28.810 (97.287)
39.65 (29.57)	3480 (15.48)	4.27 (6.88)	2202	7.76	4th Gear		191 (88.1)	65 (18.3)	70 (21.1)	28.800 (97.253)
40.59 (30.27)	3091 (13.75)	4.92 (7.92)	2200	6.79	5th Gear		196 (90.8)	65 (18.3)	71 (21.7)	28.800 (97.253)
39.97 (29.81)	2038 (9.07)	7.36 (11.84)	2200	4.22	6th Gear		193 (89.2)	66 (18.9)	73 (22.8)	28.790 (97.220)

## LUGGING ABILITY IN 5th GEAR

Crankshaft Speed rpm	2200	1993	1762	1546	1323	1110	882
Pull—lbs (kN)	3091 (13.75)	3280 (14.59)	3420 (15.21)	3533 (15.72)	3641 (16.20)	3655 (16.26)	3509 (15.61)
Increase in Pull %	0	6	11	14	18	18	14
Power—Hp (kW)	40.59 (30.27)	38.85 (28.97)	35.66 (26.59)	32.18 (24.00)	28.29 (21.10)	23.79 (17.74)	18.22 (13.59)
Speed—Mph (km/h)	4.92 (7.92)	4.44 (7.15)	3.91 (6.29)	3.42 (5.50)	2.91 (4.69)	2.44 (3.93)	1.95 (3.13)
Slip %	6.79	7.11	7.54	7.86	8.29	8.29	8.08

Department of Agricultural Engineering

Dates of Test: April 23 to May 14, 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°) 0.8282 Fuel weight 6.896 lbs/gal  
(0.826 kg/l) Oil SAE 30 API service classifica-  
tion SE/SF-CC/CD To motor 1.353 gal (5.120 l)  
Drained from motor 1.151 gal (4.357 l) Trans-  
mission and final drive lubricant Ford 134 fluid  
Total time engine was operated 43.0 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 cartridge Fuel filter one paper element  
Muffler vertical Cooling medium temperature  
control one thermostat.

**CHASSIS:** Type standard Serial No.  
\*C681208\* 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 2.2 (3.5) third 3.2 (5.1) fourth 4.7 (7.6)  
fifth 5.4 (8.7) sixth 7.9 (12.7) seventh 11.5 (18.5)  
eighth 16.8 (27.0) reverse 2.0 (3.2), 2.9 (4.7), 4.2  
(6.7), 6.1 (9.8) Clutch single plate dry disc oper-  
ated by foot pedal Brakes wet multiple 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:** The radiator  
fan shroud was replaced following the limber up  
period. All fuel injectors were replaced during  
preliminary PTO tests.

**TRACTOR SOUND LEVEL WITHOUT CAB**

	dB(A)
Maximum Available Power—Two Hours	96.5
75% of Pull at Maximum Power—Ten Hours	95.0
50% of Pull at Maximum Power—Two Hours	94.0
50% of Pull at Reduced Engine Speed—Two Hours	92.0
Bystander in 8th gear	86.0

**TIRES, BALLAST AND WEIGHT**

	With Ballast	Without Ballast
<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)	648 lb (294 kg)	None
—Cast Iron (each)	680 lb (308 kg)	None
<b>Front Tires</b>		
—No., size, ply & psi (kPa)	Two 7.50-16; 6; 40 (275)	Two 7.50-16; 6; 40 (275)
Ballast		
—Liquid (each)	None	None
—Cast Iron (each)	65 lb (29 kg)	None
<b>Height of Drawbar</b>	15.5 in (395 mm)	15.5 in (395 mm)
<b>Static Weight with Operator—Rear</b>	5665 lb (2570 kg)	3010 lb (1366 kg)
—Front	1835 lb (832 kg)	1705 lb (773 kg)
—Total	7500 lb (3402 kg)	4715 lb (2139 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 return was maintained at 151°F (66.0°C). Five gears were chosen between 15% slip and 10 mph (16.1 km/h). The fuel tank level indicator did not function during test.

We, the undersigned, certify that this is a true and correct report of official Tractor Test 1425.

LOUIS I. LEVITICUS

Engineer-in-Charge

K. VON BARGEN

W. E. SPLINTER

L. L. BASHFORD

Board of Tractor Test Engineers



**Ford 4110 (8 X 4) Diesel**