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Test 1430: Ford 6610 and 6710 (16x4) Diesel 8 and 16-Speed

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 1430 — FORD 6610 (16 X 4) DIESEL ALSO FORD 6710 (16 X 4) DIESEL 16 SPEED ALSO 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—596 rpm)							
72.13 (53.79)	2100	4.692 (17.761)	0.449 (0.273)	15.37 (3.029)	195 (90.8)	55 (12.9)	75 (23.9)	28.843 (97.400)
	Standard Power Take-off Speed (540 rpm)—One Hour							
68.27 (50.91)	1901	4.366 (16.527)	0.441 (0.268)	15.64 (3.080)	197 (91.9)	54 (12.4)	75 (23.9)	28.860 (97.456)
VARYING POWER AND FUEL CONSUMPTION—Two Hours								
63.35 (47.24)	2170	4.071 (15.410)	0.443 (0.270)	15.56 (3.066)	183 (83.9)	54 (12.5)	74 (23.6)	..... .....
0.00 (0.00)	2252	1.240 (4.694)	..... .....	..... .....	166 (74.7)	54 (12.2)	74 (23.3)	..... .....
32.38 (24.15)	2218	2.545 (9.634)	0.542 (0.330)	12.73 (2.507)	170 (76.9)	54 (12.2)	74 (23.3)	..... .....
72.46 (54.03)	2102	4.732 (17.913)	0.450 (0.274)	15.31 (3.016)	189 (87.2)	54 (12.2)	74 (23.6)	..... .....
16.35 (12.19)	2240	1.862 (7.048)	0.786 (0.478)	8.78 (1.730)	168 (75.8)	54 (12.2)	75 (23.9)	..... .....
48.17 (35.92)	2199	3.262 (12.348)	0.467 (0.284)	14.77 (2.909)	173 (78.3)	54 (12.5)	75 (23.9)	..... .....
Av Av	38.78 (28.92)	2.952 (11.175)	0.525 (0.319)	13.14 (2.588)	175 (79.5)	54 (12.3)	75 (23.6)	28.903 (97.602)

DRAWBAR PERFORMANCE (Front Wheel Drive Disengaged)

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 10th (6L) Gear											
60.96 (45.46)	4066 (18.08)	5.62 (9.05)	2100	6.22	4.549 (17.220)	0.515 (0.313)	13.40 (2.640)	176 (79.7)	47 (8.3)	61 (15.8)	29.110 (98.300)
75% of Pull at Maximum Power—Ten Hours 10th (6L) Gear											
48.72 (36.33)	3063 (13.63)	5.96 (9.60)	2188	4.52	3.778 (14.300)	0.535 (0.325)	12.90 (2.541)	171 (76.9)	46 (7.8)	54 (12.2)	28.838 (97.382)
50% of Pull at Maximum Power—Two Hours 10th (6L) Gear											
32.78 (24.45)	2001 (8.90)	6.14 (9.89)	2228	3.44	3.045 (11.526)	0.641 (0.390)	10.77 (2.121)	169 (76.1)	47 (8.1)	48 (8.9)	28.685 (96.865)
50% of Pull at Reduced Engine Speed—Two Hours 13th (7L) Gear											
32.66 (24.36)	2000 (8.90)	6.12 (9.86)	1266	3.44	2.682 (10.154)	0.566 (0.345)	12.18 (2.399)	170 (76.4)	45 (6.9)	47 (8.1)	28.735 (97.034)

MAXIMUM POWER IN SELECTED GEARS

54.34 (40.52)	7887 (35.08)	2.58 (4.16)	2161	14.61	5th (3L) Gear			171 (77.2)	35 (1.7)	40 (4.4)	29.170 (98.503)
57.59 (42.94)	6388 (28.42)	3.38 (5.44)	2100	10.66	6th (3H) Gear			177 (80.6)	47 (8.3)	59 (15.0)	29.140 (98.401)
59.84 (44.63)	6242 (27.76)	3.60 (5.79)	2097	10.15	7th (4L) Gear			176 (80.0)	47 (8.3)	59 (15.0)	29.140 (98.401)
61.06 (45.53)	5189 (23.08)	4.41 (7.10)	2097	7.94	8th (5L) Gear			177 (80.3)	47 (8.3)	58 (14.4)	29.160 (98.469)
59.37 (44.27)	4653 (20.70)	4.79 (7.70)	2098	7.00	9th (4H) Gear			177 (80.3)	47 (8.3)	57 (13.9)	29.170 (98.503)
61.17 (45.62)	4084 (18.16)	5.62 (9.04)	2098	6.04	10th (6L) Gear			177 (80.3)	47 (8.3)	61 (16.1)	29.100 (98.266)
60.49 (45.11)	3901 (17.35)	5.82 (9.36)	2100	5.84	11th (5H) Gear			175 (79.4)	46 (7.8)	56 (13.3)	29.190 (98.570)
59.72 (44.53)	3048 (13.56)	7.35 (11.82)	2096	4.49	12th (6H) Gear			175 (79.4)	47 (8.3)	57 (13.9)	29.180 (98.536)

Department of Agricultural Engineering

Dates of Test: April 1 to April 21, 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°) 0.8283 **Fuel weight** 6.897 lbs/gal
(0.827 kg/l) **Oil SAE 30 API service classifica-**
tion SE/SF-CC/CD To motor 1.910 gal (7.232 l)
Drained from motor 1.632 gal (6.179 l) **Trans-**
mission and final drive lubricant Ford 134 fluid
Front axle lubricant Ford EOAZ-19580 fluid
Total time engine was operated 52.5 hours.

ENGINE: Make Ford Diesel **Type** four cylin-
der vertical **Serial No.** *E635576* **Crankshaft**
lengthwise **Rated rpm** 2100 **Bore and stroke** 4.4"
× 4.4" (112 mm × 112 mm) **Compression ratio**
16.3 to 1 **Displacement** 268 cu in (4392 ml) **Start-**
ing system 12 volt **Lubrication pressure** **Air**
cleaner two paper elements **Oil filter** one full
flow paper cartridge **Oil cooler** engine coolant
heat exchanger for crankcase oil, radiator for hyd-
raulic and transmission oil, radiator for power
steering fluid **Fuel filter** one paper element **Muf-**
fler vertical **Cooling medium temperature con-**
trol one thermostat.

CHASSIS: **Type** front wheel assist **Serial No.**
C681211 **Tread width** rear 60" (1525 mm) to
90" (2285 mm) front 60" (1525 mm) to 80" (2032
mm) **Wheel base** 88.8" (2256 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 31.6" (803 mm) Vertical dis-
tance above roadway 32.9" (837 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
powershift **Advertised speeds mph (km/h)** first
1.3 (2.2) second 1.7 (2.7) third 1.7 (2.8) fourth 2.2
(3.5) fifth 2.9 (4.7) sixth 3.8 (6.1) seventh 4.0 (6.5)
eighth 4.8 (7.8) ninth 5.2 (8.4) tenth 6.0 (9.7)
eleventh 6.2 (10.0) twelfth 7.8 (12.5) thirteenth
10.6 (17.0) fourteenth 13.6 (21.8) fifteenth 14.5
(23.4) sixteenth 18.6 (30.0) reverse 1.9 (3.1), 2.5
(4.0), 7.0 (11.2), 8.9 (14.4) **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 194" (4.93 m) left 194" (4.93 m) (on concrete
surface without brake) right 209" (5.30 m) left 209"
(5.30 m) **Turning space diameter** (on concrete
surface with brake applied) right 395" (10.03 m)
left 395" (10.03 m) (on concrete surface without
brake) right 425" (10.79 m) left 425" (10.79 m)
Power take-off 540 rpm at 1901 engine rpm.

LUGGING ABILITY IN 10th (6L) GEAR

Crankshaft Speed rpm	2098	1891	1676	1475	1274	1050
Pull—lbs (kN)	4084 (18.16)	4332 (19.27)	4507 (20.05)	4575 (20.35)	4542 (20.20)	4298 (19.12)
Increase in Pull %	0	6	10	12	11	5
Power—Hp (kW)	61.17 (45.62)	58.31 (43.48)	53.62 (39.99)	47.81 (35.65)	40.99 (30.56)	32.08 (23.92)
Speed—Mph (km/h)	5.62 (9.04)	5.05 (8.12)	4.46 (7.18)	3.92 (6.31)	3.38 (5.45)	2.80 (4.50)
Slip %	6.04	6.46	6.59	6.73	6.87	6.59

TRACTOR SOUND LEVEL WITHOUT CAB	dB(A)	Front Wheel Drive Disengaged dB(A)
Maximum Available Power—Two Hours	97.0	96.5
75% of Pull at Maximum Power—Ten Hours		96.5
50% of Pull at Maximum Power—Two Hours		96.5
50% of Pull at Reduced Engine Speed—Two Hours		93.0
Bystander in 16th (8H) gear		88.5

DRAWBAR PERFORMANCE (Front Wheel Drive Engaged)

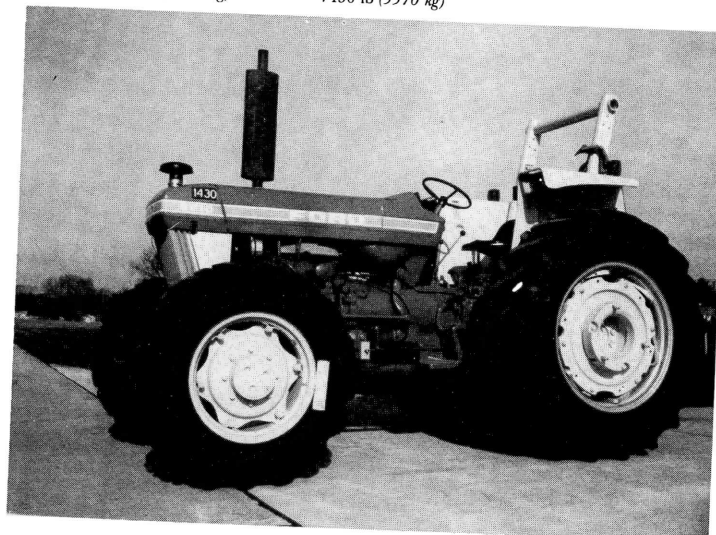
(Front wheel Drive Engaged)											
Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption		Temp. °F (°C)			Barom. inch Hg (kPa)	
					gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Cool- ing med	Air wet bulb		Air dry bulb
Maximum Available Power—Two Hours 10th (6L) Gear											
60.88 (45.40)	3986 (17.73)	5.73 (9.22)	2100	5.06	4.477 (16.946)	0.507 (0.308)	13.60 (2.679)	175 (79.2)	47 (8.1)	62 (16.4)	29.075 (98.182)

MAXIMUM POWER IN SELECTED GEARS

44.47 (33.16)	8708 (38.73)	1.91 (3.08)	2178	14.92	4th (2H) Gear	169 (73.8)	36 (2.2)	42 (5.6)	29.170 (98.503)
62.15 (46.35)	5176 (23.02)	4.50 (7.25)	2101	6.98	8th (5L) Gear	174 (78.9)	47 (8.3)	58 (14.4)	29.150 (98.435)
61.43 (45.81)	4024 (17.90)	5.72 (9.21)	2101	5.24	10th (6L) Gear	174 (78.9)	45 (7.2)	55 (12.8)	29.200 (98.604)

TIRES, BALLAST AND WEIGHT

Rear Tires		With Ballast		Without Ballast	
Ballast	—No., size, ply & psi (kPa)	Two 18.4-34; 6; 16 (110)		Two 18.4-34; 6; 16 (110)	
	—Liquid (each)	730 lb (331 kg)		None	
	—Cast Iron (each)	340 lb (154 kg)		None	
Front Tires		Two 13.6-24; 8; 22 (150)		Two 13.6-24; 8; 22 (150)	
Ballast	—No., size, ply & psi (kPa)	None		None	
	—Liquid (each)	65 lb (29 kg)		None	
	—Cast Iron (each)	20 in (510 mm)		20 in (510 mm)	
Height of Drawbar		6925 lb (3141 kg)		4785 lb (2170 kg)	
Static Weight with Operator—Rear		2775 lb (1259 kg)		2645 lb (1200 kg)	
—Front		9700 lb (4400 kg)		7430 lb (3370 kg)	
—Total					



Ford 6610 (16 X 4) Diesel
The Agricultural Experiment Station
Institute of Agriculture and Natural Resources
University of Nebraska—Lincoln
Robert W. Kleis, Acting Dean and Director

REPAIRS and ADJUSTMENTS: The timing cover gasket was replaced during preliminary PTO tests.

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 160°F (71.1°C). Eight gears were chosen between 15% slip and 10 mph (16.1 km/h). This tractor did not attain the estimated 15.54 HP-HR per gallon fuel economy at rated engine speed as claimed by the manufacturer.

We, the undersigned, certify that this is a true and correct report of official Tractor Test 1430.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
W. E. SPLINTER
L. L. BASHFORD
Board of Tractor Test Engineers