1-1-1978

Test 1289: Ford FW-60 Diesel

Nebraska Tractor Test Lab
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NEBRASKA TRACTOR TEST 1289 — FORD FW-60 DIESEL

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 10th (3LO) Gear											
270.87 *(201.99)*	15469 *(68.81)*	6.57 *(10.57)*	2600	4.61	18.176 *(68.803)*	0.466 *(0.284)*	14.90 *(2.936)*	181 *(82.8)*	51 *(10.6)*	65 *(18.3)*	28.875 *(97.507)*
75% of Pull at Maximum Power—Ten Hours 10th (3LO) Gear											
229.62 *(171.23)*	12068 *(53.68)*	7.14 *(11.48)*	2796	3.57	17.161 *(64.961)*	0.519 *(0.316)*	13.38 *(2.636)*	179 *(81.7)*	45 *(7.4)*	55 *(12.7)*	29.009 *(97.959)*
50% of Pull at Maximum Power—Two Hours 10th (3LO) Gear											
155.99 *(116.32)*	8040 *(35.76)*	7.28 *(11.71)*	2816	2.39	13.839 *(52.386)*	0.616 *(0.375)*	11.27 *(2.220)*	166 *(74.4)*	45 *(7.2)*	50 *(10.0)*	28.730 *(97.017)*
50% of Pull at Reduced Engine Speed—Two Hours 15th (4HS) Gear											
155.76 *(116.15)*	8073 *(35.91)*	7.24 *(11.64)*	1500	2.35	9.862 *(37.331)*	0.440 *(0.268)*	15.79 *(3.111)*	182 *(83.1)*	51 *(10.6)*	60 *(15.3)*	28.690 *(96.882)*
MAXIMUM POWER IN SELECTED GEARS											
229.41 *(171.07)*	29304 *(130.35)*	2.94 *(4.72)*	2716	14.91	4th (1HO) Gear			179 *(81.7)*	44 *(6.7)*	52 *(11.1)*	29.190 *(98.570)*
254.34 *(189.66)*	29135 *(129.60)*	3.27 *(5.27)*	2605	13.68	5th (2LS) Gear			180 *(81.9)*	44 *(6.7)*	54 *(12.2)*	29.190 *(98.570)*
264.53 *(197.26)*	25910 *(115.25)*	3.83 *(6.16)*	2600	10.25	6th (2LO) Gear			181 *(82.8)*	52 *(11.1)*	67 *(19.4)*	28.720 *(96.983)*
274.54 *(204.73)*	23196 *(103.18)*	4.44 *(7.14)*	2599	7.99	7th (2HS) Gear			182 *(83.3)*	53 *(11.7)*	66 *(18.9)*	28.710 *(96.949)*
278.75 *(207.86)*	20599 *(91.63)*	5.07 *(8.17)*	2598	6.47	8th (2HO) Gear			182 *(83.3)*	54 *(12.2)*	66 *(18.9)*	28.710 *(96.949)*
283.10 *(211.11)*	18385 *(81.78)*	5.77 *(9.29)*	2599	5.45	9th (3LS) Gear			182 *(83.1)*	54 *(12.2)*	65 *(18.3)*	28.700 *(96.916)*
281.72 *(210.08)*	16098 *(71.61)*	6.56 *(10.56)*	2600	4.49	10th (3LO) Gear			181 *(82.8)*	55 *(12.8)*	65 *(18.3)*	28.690 *(96.882)*
285.57 *(212.95)*	14377 *(63.95)*	7.45 *(11.99)*	2601	4.08	11th (3HS) Gear			182 *(83.1)*	52 *(11.1)*	67 *(19.4)*	28.720 *(96.983)*
284.19 *(211.92)*	12644 *(56.24)*	8.43 *(13.56)*	2599	3.59	12th (3HO) Gear			181 *(82.8)*	52 *(11.1)*	67 *(19.4)*	28.730 *(97.017)*

LUGGING ABILITY IN RATED GEAR 10th (3LO)

Crankshaft Speed rpm	2600	2345	2080	1805	1541	1290
Pull—lbs *(kN)*	16098 *(71.61)*	18027 *(80.19)*	19563 *(87.02)*	20462 *(91.02)*	19245 *(85.60)*	18260 *(81.23)*
Increase in Pull %	0	12	22	27	20	13
Power—Hp *(kW)*	281.72 *(210.08)*	282.62 *(210.75)*	270.31 *(201.57)*	244.22 *(182.11)*	196.82 *(146.77)*	156.94 *(117.03)*
Speed—Mph *(km/h)*	6.56 *(10.56)*	5.88 *(9.46)*	5.18 *(8.34)*	4.48 *(7.20)*	3.84 *(6.17)*	3.22 *(5.19)*
Slip %	4.49	5.29	5.92	6.23	5.92	5.61

TRACTOR SOUND LEVEL WITH CAB	dB(A)
Maximum Available Power—Two Hours	80.5
75% of Pull at Maximum Power—Ten Hours	81.0
50% of Pull at Maximum Power—Two Hours	79.5
50% of Pull at Reduced Engine Speed—Two Hours	78.0
Bystander in 18th (5LO) gear	100.5

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi *(kPa)*	Four 24.5-32; 10; inner 16 *(110)*; outer 14 *(95)*	Four 24.5-32; 10; inner 16 *(110)*; outer 14 *(95)*
Ballast	—Liquid (each inner)	365 lb *(166 kg)*	None
	—Cast Iron (each)	None	None
Front Tires	—No., size, ply & psi *(kPa)*	Four 24.5-32; 10; inner 16 *(110)*; outer 14 *(95)*	Four 24.5-32; 10; inner 16 *(110)*; outer 14 *(95)*
Ballast	—Liquid (each inner)	1070 lb *(485 kg)*	None
	—Cast Iron (each)	None	None
Height of Drawbar		20.5 in *(520 mm)*	20.5 in *(520 mm)*
Static Weight with Operator—	Rear	14480 lb *(6568 kg)*	13750 lb *(6237 kg)*
	Front	19490 lb *(8841 kg)*	17350 lb *(7870 kg)*
	Total	33970 lb *(15409 kg)*	31100 lb *(14107 kg)*

Department of Agricultural Engineering

Dates of Test: September 28 to October 10, 1978

Manufacturer: STEIGER TRACTOR, INC., 3101 First Avenue North, Fargo North Dakota 58102.

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 50.4 (rating taken from oil company's typical inspection data) **Specific gravity converted to 60°60° *(15°/15°)*** 0.8342 **Fuel weight** 6.946 lbs/gal *(0.834 kg/l)* **Oil SAE** 30 **API service classification** SB/SE-CA/CD **To motor** 4.666 gal *(17.661 l)* **Drained from motor** 3.712 gal *(14.050 l)* **Transmission and drop box lubricant** Ford M2C48-A or equivalent **Final drive lubricant** SAE 90 **Total time engine was operated** 33.5 hours.

ENGINE: Make Cummins Diesel **Type** 8 cylinder vee with turbocharger **Serial No.** 10714480 **Crankshaft** lengthwise **Rated rpm** 2600 **Bore and stroke** 5.5" x 4.75" *(140 mm x 121 mm)* **Compression ratio** 15.5 to 1 **Displacement** 903 cu in *(14800 ml)* **Cranking System** 12 volt **Lubrication** pressure **Air cleaner** primary and secondary paper elements with aspirator **Oil filter** one full flow paper cartridge and one bypass element **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for transmission and dropbox oil **Fuel filter** two paper cartridges **Muffler** none **Cooling medium temperature control** 2 thermostats.

CHASSIS: Type Four wheel drive with duals **Serial No.** X400119 **Tread width** rear 80.0" *(2032 mm)* to 139.4" *(3540 mm)* front 80.0" *(2032 mm)* to 139.4" *(3540 mm)* **Wheel base** 132.5" *(3365 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 75.2" *(1910 mm)* Vertical distance above roadway 47.2" *(1200 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 2.2 *(3.5)* second 2.5 *(4.0)* third 2.8 *(4.5)* fourth 3.1 *(5.0)* fifth 3.6 *(5.8)* sixth 4.0 *(6.5)* seventh 4.6 *(7.3)* eighth 5.1 *(8.2)* ninth 5.8 *(9.3)* tenth 6.5 *(10.5)* eleventh 7.4 *(11.8)* twelfth 8.3 *(13.3)* thirteenth 9.5 *(15.3)* fourteenth 10.7 *(17.3)* fifteenth 12.2 *(19.6)* sixteenth 13.7 *(22.0)* seventeenth 15.2 *(24.5)* eighteenth 17.2 *(27.6)* nineteenth 19.3 *(31.1)* twentieth 21.8 *(35.1)* reverse 2.2 *(3.5)*, 2.5 *(4.0)*, 2.8 *(4.5)*, 3.1 *(5.0)* **Clutch** two dry plates hydraulically operated by foot pedal **Brakes** multiple dry disc hydraulically operated by foot pedal **Steering** hydrostatic and articulated **Turning radius** (on concrete surface without brake applied) right 257" *(6.53 m)* left 261" *(6.63 m)* **Turning space diameter** (on concrete surface without brake applied) right 537" *(13.64 m)* left 546" *(13.87 m)* **Power take-off** none.

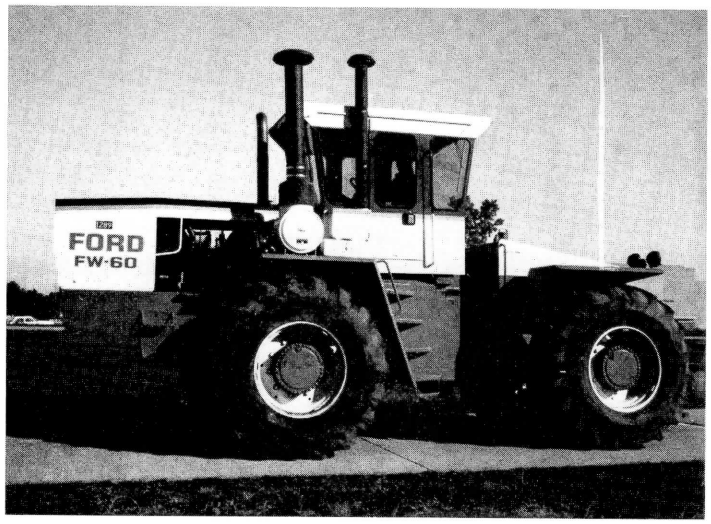
REPAIRS and ADJUSTMENTS: After limber up period a gasket was replaced at the base of the fuel pump.

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 was 137°F *(58.1°C)*. Nine gears were chosen between 15% slip and 10 mph *(16.1 km/h)*. Slight oil leakage was noted from rear axle front seal and one set of remote outlet couplings during drawbar tests.

We, the undersigned, certify that this is a true and correct report of official Tractor Test **1289.**

L. I. LEVITICUS
Engineer-in-Charge

G. W. STEINBRUEGGE
W. E. SPLINTER
K. VON BARGEN
Board of Tractor Test Engineers



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