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## Test 1326: Ford 1900 Diesel 12-Speed

Nebraska Tractor Test Lab

University of Nebraska-Lincoln, [tractortestlab@unl.edu](mailto:tractortestlab@unl.edu)

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# NEBRASKA TRACTOR TEST 1326 — FORD 1900 DIESEL 12 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—616 rpm)									
26.88 (20.04)	2800	2.162 (8.184)	0.565 (0.343)	12.43 (2.449)	218 (103.4)	59 (15.0)	75 (24.0)	29.100 (98.266)	
Standard Power Take-off Speed (540 rpm)—One Hour									
25.68 (19.15)	2452	2.042 (7.728)	0.558 (0.339)	12.58 (2.478)	223 (106.2)	58 (14.6)	75 (23.9)	29.090 (98.233)	
VARYING POWER AND FUEL CONSUMPTION—Two Hours									
23.65 (17.63)	2898	1.868 (7.070)	0.554 (0.337)	12.66 (2.494)	206 (96.4)	58 (14.7)	74 (23.6)	..... .....	
0.00 (0.00)	2960	0.684 (2.589)	..... .....	..... .....	171 (77.2)	59 (15.0)	75 (23.9)	..... .....	
11.96 (8.92)	2932	1.197 (4.530)	0.702 (0.427)	10.00 (1.969)	176 (80.0)	59 (15.0)	76 (24.2)	..... .....	
27.21 (20.29)	2798	2.184 (8.268)	0.563 (0.343)	12.46 (2.454)	214 (101.4)	59 (15.0)	75 (23.9)	..... .....	
6.00 (4.48)	2944	0.919 (3.479)	1.074 (0.653)	6.53 (1.287)	174 (78.9)	60 (15.3)	76 (24.4)	..... .....	
17.88 (13.33)	2921	1.504 (5.695)	0.591 (0.359)	11.88 (2.341)	188 (86.4)	60 (15.6)	77 (25.0)	..... .....	
Av Av	14.45 (10.78)	2909	1.393 (5.272)	0.676 (0.411)	10.38 (2.044)	188 (86.7)	59 (15.1)	76 (24.2)	29.083 (98.210)

## 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 8th (3-2) Gear											
22.06 (16.45)	1703 (7.57)	4.86 (7.82)	2800	7.26	2.119 (8.022)	0.674 (0.410)	10.41 (2.051)	207 (96.9)	61 (16.1)	75 (23.6)	28.850 (97.422)
75% of Pull at Maximum Power—Ten Hours 8th (3-2) Gear											
18.27 (13.62)	1336 (5.94)	5.13 (8.25)	2890	5.19	1.678 (6.350)	0.645 (0.392)	10.89 (2.145)	190 (87.7)	62 (16.7)	78 (25.3)	28.901 (97.594)
50% of Pull at Maximum Power—Two Hours 8th (3-2) Gear											
12.29 (9.16)	880 (3.91)	5.24 (8.43)	2910	3.79	1.318 (4.989)	0.753 (0.458)	9.32 (1.837)	177 (80.6)	63 (16.9)	79 (25.8)	28.825 (97.338)
50% of Pull at Reduced Engine Speed—Two Hours 10th (4-1) Gear											
12.20 (9.10)	873 (3.88)	5.24 (8.43)	1969	3.63	1.069 (4.045)	0.615 (0.374)	11.41 (2.249)	178 (81.1)	62 (16.7)	78 (25.6)	28.840 (97.388)
MAXIMUM POWER IN SELECTED GEARS											
20.33 (15.16)	2964 (13.18)	2.57 (4.14)	2866	14.87	6th (2-3) Gear			184 (84.4)	52 (11.1)	64 (17.8)	28.920 (97.659)
22.35 (16.67)	2432 (10.82)	3.45 (5.55)	2801	10.88	7th (3-1) Gear			200 (93.3)	60 (15.6)	70 (21.1)	28.840 (97.388)
23.00 (17.15)	1773 (7.89)	4.86 (7.83)	2800	7.21	8th (3-2) Gear			196 (91.1)	58 (14.4)	66 (18.9)	28.820 (97.321)
23.49 (17.52)	1421 (6.32)	6.20 (9.98)	2800	5.59	9th (3-3) Gear			200 (93.3)	60 (15.6)	70 (21.1)	28.840 (97.388)
23.47 (17.50)	1194 (5.31)	7.37 (11.87)	2800	4.53	10th (4-1) Gear			200 (93.1)	60 (15.6)	71 (21.7)	28.840 (97.388)
LUGGING ABILITY IN 8th (3-2) GEAR											
Crankshaft Speed rpm				2800	2518	2248	1948	1681	1395		
Pull—lbs (kN)				1773 (7.89)	1939 (8.62)	2014 (8.96)	2012 (8.95)	2009 (8.93)	2000 (8.89)		
Increase in Pull %				0	9	14	13	13	13		
Power—Hp (kW)				23.00 (17.15)	22.42 (16.72)	20.68 (15.42)	17.90 (13.35)	15.43 (11.51)	12.76 (9.52)		
Speed—Mph (km/h)				4.86 (7.83)	4.34 (6.98)	3.85 (6.20)	3.34 (5.37)	2.88 (4.64)	2.39 (3.85)		
Slip %				7.21	8.03	8.40	8.50	8.40	8.31		

Department of Agricultural Engineering

Dates of Test: September 24 to October 1, 1979

Manufacturer: ISHIKAWAJIMA-SHIBAURA  
MACHINERY CO. Ltd., Tokyo, Japan

**FUEL, OIL AND TIME:** Fuel No. 2 Diesel  
Cetane No. 49.0 (rating taken from oil company's  
typical inspection data) **Specific gravity converted  
to 60°60° (15°/15°)** 0.8430 **Fuel weight** 7.019 lbs/  
gal (0.841 kg/l) **Oil SAE 30 API service classification**  
SB/SE-CA/CD **To motor** 1.782 gal (6.745 l)  
**Drained from motor** 1.620 gal (6.132 l) **Transmission  
and final drive lubricant** Ford M2C134A  
fluid **Total time engine was operated** 33.0 hours.

**ENGINE:** Make Shibaura Diesel **Type** three  
cylinder vertical **Serial No.** LEM853-15539  
**Crankshaft** lengthwise **Rated rpm** 2800 **Bore and  
stroke** 3.35" × 3.31" (85 mm × 84 mm) **Compression  
ratio** 21 to 1 **Displacement** 87.2 cu in (1429  
ml) **Starting system** 12 volt **Lubrication pressure**  
**Air cleaner** oil bath steel wool **Oil filter** one paper  
cartridge **Fuel filter** one paper cartridge **Muffler**  
vertical **Cooling medium temperature control** one  
thermostat.

**CHASSIS:** Type standard **Serial No.** U-901206  
**Tread width** rear 45.7" (1160 mm) to 61.0" (1550  
mm) front 43.5" (1105 mm) to 57.5" (1460 mm)  
**Wheel base** 63.0" (1600 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 27.1" (688 mm) Vertical distance  
above roadway 27.9" (709 mm) Horizontal distance  
from center of rear wheel tread 0.2" (5 mm) to the  
right **Hydraulic control system** direct engine  
drive **Transmission** selective gear fixed ratio **Ad-  
vertised speeds mph (km/h)** first 0.8 (1.2) second  
1.0 (1.7) third 1.3 (2.1) fourth 1.8 (2.9) fifth 2.4  
(3.9) sixth 3.0 (4.8) seventh 4.0 (6.4) eighth 5.4 (8.6)  
ninth 6.7 (10.8) tenth 7.9 (12.7) eleventh 10.7 (17.2)  
twelfth 13.4 (21.6) reverse 0.9 (1.4), 2.1 (3.3), 4.6  
(7.4), 9.2 (14.8) **Clutch** single dry disc operated by  
foot pedal **Brakes** expanding shoe operated by two  
foot pedals which can be locked together **Steering  
mechanical** **Turning radius** (on concrete surface  
with brake applied) right 94.5" (2.4 m) left 94.5" (2.4  
m) (on concrete surface without brake) right 102.4"  
(2.6 m) left 102.4" (2.6 m) **Turning space diameter**  
(on concrete surface with brake applied) right  
196.8" (5.0 m) left 196.8" (5.0 m) (on concrete sur-  
face without brake) right 220.4" (5.6 m) left 220.4"  
(5.6 m) **Power take-off** 540 rpm at 2452 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 code or official Nebraska test  
procedure. Temperature at injection pump was  
181°F (82.5°C). Five gears were chosen between  
15% and 10 mph (16.1 km/h).

TRACTOR SOUND LEVEL WITHOUT CAB		dB(A)
Maximum Available Power—Two Hours		94.5
75% of Pull at Maximum Power—Ten Hours		92.5
50% of Pull at Maximum Power—Two Hours		92.5
50% of Pull at Reduced Engine Speed—Two Hours		87.5
Bystander in 12th (4-3) gear		82.0

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi (kPa)	Two 12.4-24; 4; 14 (95)	Two 12.4-24; 4; 14 (95)
	—Liquid (each)	323 lb (147 kg)	None
	—Cast Iron (each)	130 lb (59 kg)	None
Front Tires	—No., size, ply & psi (kPa)	Two 5.00-15; 4; 40 (275)	Two 5.00-15; 4; 40 (275)
	—Liquid (each)	None	None
	—Cast Iron (each)	160 lb (73 kg)	None
Height of Drawbar		17 in (430 mm)	17 in (430 mm)
Static Weight with Operator—Rear		2680 lb (1216 kg)	1775 lb (805 kg)
	Front	1480 lb (671 kg)	1160 lb (526 kg)
	Total	4160 lb (1887 kg)	2935 lb (1331 kg)

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. 1326.

L. I. LEVITICUS  
Engineer-in-Charge

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



Ford 1900 Diesel