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## Test 1298: Long 360 Diesel 6 and 8-Speed

Nebraska Tractor Test Lab

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# NEBRASKA TRACTOR TEST 1298 — LONG 360 DIESEL 6 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—659 rpm)									
36.16 (26.96)	2400	2.534 (9.592)	0.488 (0.297)	14.27 (2.811)	196 (91.3)	56 (13.5)	75 (23.9)	29.225 (98.688)	
Standard Power Take-off Speed (540 rpm)—One Hour									
31.06 (23.16)	1966	2.156 (8.161)	0.484 (0.294)	14.41 (2.838)	193 (89.7)	57 (13.7)	74 (23.3)	29.265 (98.824)	
VARYING POWER AND FUEL CONSUMPTION—Two Hours									
31.62 (23.58)	2470	2.162 (8.183)	0.476 (0.290)	14.63 (2.881)	184 (84.7)	58 (14.2)	74 (23.3)	..... .....	
0.00 (0.00)	2542	0.775 (2.934)	..... .....	..... .....	170 (76.9)	57 (13.9)	73 (22.8)	..... .....	
16.09 (12.00)	2512	1.404 (5.314)	0.608 (0.370)	11.46 (2.258)	172 (77.8)	58 (14.2)	74 (23.6)	..... .....	
36.32 (27.09)	2400	2.562 (9.699)	0.491 (0.299)	14.18 (2.793)	194 (90.0)	58 (14.7)	77 (25.0)	..... .....	
8.09 (6.03)	2524	1.068 (4.042)	0.920 (0.560)	7.57 (1.491)	171 (77.2)	59 (15.0)	74 (23.3)	.....	
23.92 (17.84)	2491	1.727 (6.536)	0.503 (0.306)	13.85 (2.729)	178 (81.1)	60 (15.8)	76 (24.4)	..... .....	
Av Av	19.34 (14.42)	2490 (6.118)	1.616 (0.354)	0.582 (0.357)	11.97 (2.357)	178 (81.3)	58 (14.6)	75 (23.8)	29.333 (99.054)

## 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 4th Gear											
31.06 (23.16)	2239 (9.96)	5.20 (8.37)	2401	5.82	2.494 (9.440)	0.559 (0.340)	12.45 (2.453)	183 (83.9)	47 (8.3)	54 (12.2)	28.970 (98.827)
75% of Pull at Maximum Power—Ten Hours 4th Gear											
25.20 (18.79)	1726 (7.68)	5.48 (8.81)	2485	4.22	2.078 (7.865)	0.574 (0.349)	12.13 (2.390)	176 (80.2)	40 (4.4)	46 (7.5)	28.943 (97.736)
50% of Pull at Maximum Power—Two Hours 4th Gear											
17.68 (13.18)	1186 (5.27)	5.59 (9.00)	2511	3.25	1.687 (6.384)	0.665 (0.404)	10.48 (2.065)	175 (79.4)	39 (3.6)	43 (6.1)	29.105 (98.283)
50% of Pull at Reduced Engine Speed—Two Hours 5th Gear											
17.68 (13.19)	1182 (5.26)	5.61 (9.03)	1393	3.22	1.364 (5.162)	0.537 (0.327)	12.97 (2.555)	175 (79.4)	45 (7.2)	52 (11.1)	29.080 (98.199)
MAXIMUM POWER IN SELECTED GEARS											
17.50 (13.05)	4808 (21.39)	1.36 (2.20)	2511	14.94	1st Gear			175 (79.2)	36 (2.2)	39 (3.9)	29.150 (98.435)
29.11 (21.71)	4590 (20.42)	2.38 (3.83)	2400	14.22	2nd Gear			181 (82.8)	48 (8.9)	56 (13.3)	28.970 (97.827)
30.71 (22.90)	2852 (12.69)	4.04 (6.50)	2398	7.45	3rd Gear			184 (84.4)	49 (9.4)	58 (14.4)	29.000 (97.929)
31.91 (23.80)	2300 (10.23)	5.20 (8.37)	2401	5.85	4th Gear			183 (83.9)	48 (8.9)	56 (13.3)	29.020 (97.996)
30.13 (22.46)	1167 (5.19)	9.68 (15.58)	2399	2.98	5th Gear			183 (83.9)	48 (8.9)	57 (13.9)	28.990 (97.895)

## LUGGING ABILITY IN 4th GEAR

Crankshaft Speed rpm	2401	2160	1916	1696	1442	1199
Pull—lbs (kN)	2300 (10.23)	2331 (10.37)	2374 (10.56)	2563 (11.40)	2577 (11.46)	2532 (11.26)
Increase in Pull %	0	1	3	11	12	10
Power—Hp (kW)	31.91 (23.80)	29.03 (21.65)	26.23 (19.56)	24.94 (18.60)	21.28 (15.87)	17.41 (12.98)
Speed—Mph (km/h)	5.20 (8.37)	4.67 (7.52)	4.14 (6.67)	3.65 (5.87)	3.10 (4.98)	2.58 (4.15)
Slip %	5.85	6.08	6.08	6.54	6.66	6.54

Department of Agricultural Engineering

Dates of Test: March 13-20 1979

Manufacturer: UNIVERSAL TRACTOR BRA-  
SOV (UTB) Brasov, Romania

**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°)** 0.8368 **Fuel weight** 6.967 lbs/  
gal (0.835 kg/l) **Oil** SAE 10W30 **API service  
classification** SE-CC **To motor** 1.719 gal  
(6.506 l) **Drained from motor** 1.554 gal (5.882 l)  
**Transmission and final drive lubricant** SAE  
20W40 **Total time engine was operated** 38.0  
hours

**ENGINE:** Make Universal Tractor Brasov  
(UTB) Diesel Type 3 cylinder vertical Serial No.  
115858 **Crankshaft** lengthwise **Rated rpm** 2400  
**Bore and stroke** 3.74" × 4.33" (95.0 mm × 110.0  
mm) **Compression ratio** 17.0 to 1 **Displacement**  
143 cu in (2340 ml) **Cranking system** 12 volt  
**Lubrication pressure** **Air cleaner** oil bath with  
centrifugal precleaner **Oil filter** one full flow  
cartridge **Fuel filter** two paper cartridges **Muf-  
fler** vertical **Cooling medium temperature con-  
trol** thermostat.

**CHASSIS:** Type standard Serial No. 592730  
**Tread width** rear 47.3" (1201 mm) to 74.8" (1900  
mm) front 50.4" (1280 mm) to 77.5" (1969 mm)  
**Wheel base** 75" (1905 mm) **Center of gravity**  
(without operator or ballast, with minimum tread,  
with fuel tank filled and tractor serviced for oper-  
ation) Horizontal distance forward from center-  
line of rear wheels 27.7" (705 mm) Vertical distance  
above roadway 26.2" (665 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 1.5 (2.4)  
second 2.7 (4.3) third 4.2 (6.8) fourth 5.4 (8.7) fifth  
9.7 (15.6) sixth 15.3 (24.6) reverse 2.2 (3.5), 7.9  
(12.7) **Clutch** two dry discs operated by foot  
pedal **Brakes** band and drum operated by two  
foot pedals which can be locked together and  
hand lever **Steering** power assist **Turning radius**  
(on concrete surface with brake applied) right  
109" (2.76 m) left 109" (2.76 m) (on concrete sur-  
face without brake) right 124" (3.15 m) left 124"  
(3.15 m) **Turning space diameter** (on concrete  
surface with brake applied) right 223" (5.66 m) left  
223" (5.66 m) (on concrete surface without brake)  
right 253" (6.44 m) left 253" (6.44 m) **Power take-  
off** 540 rpm at 1966 engine rpm.

**REPAIRS and ADJUSTMENTS:** During ten  
hour test a fuel injection line developed a leak.  
The line was replaced and test rerun.

**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  
151°F (66.3°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		100.0
75% of Pull at Maximum Power—Ten Hours		98.0
50% of Pull at Maximum Power—Two Hours		97.0
50% of Pull at Reduced Engine Speed—Two Hours		91.5
Bystander in 6th gear		88.0
<b>TIRES, BALLAST AND WEIGHT</b>		
<b>Rear Tires</b>		
—No., size, ply & psi (kPa)	Two 14.9-28; 4; 14 (95)	Two 14.9-28; 4; 14 (95)
Ballast	600 lb (272 kg)	None
—Cast Iron (each)	365 lb (166 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	None	None
—Liquid (each)	None	None
—Cast Iron (each)	None	None
Height of Drawbar	18.5 in (470 mm)	18.5 in (470 mm)
<b>Static Weight with Operator</b>		
—Rear	4820 lb (2186 kg)	2890 lb (1311 kg)
—Front	1590 lb (721 kg)	1590 lb (721 kg)
—Total	6410 lb (2907 kg)	4480 lb (2032 kg)

We, the undersigned, certify that this is a true and correct report of official Tractor Test **1298**.

**Report reissued.** Supplemental sales permit for Long 360 with 8 speed transmission, January 15, 1985.

LOUIS I. LEVITICUS  
Engineer-in-Charge

K. VON BARGEN  
L. L. BASHFORD  
T. L. THOMPSON  
Board of Tractor Test Engineers



**Long 360 Diesel**

The Agricultural Experiment Station  
Institute of Agriculture and Natural Resources  
University of Nebraska—Lincoln  
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