

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

---

Nebraska Tractor Tests

Tractor Test and Power Museum, The Lester F. Larsen

---

January 1972

## Test 1109: Long U-550 and U-560 Diesel (Also UTB U-550 Diesel)

Nebraska Tractor Test Lab

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

Follow this and additional works at: <https://digitalcommons.unl.edu/tractormuseumlit>



Part of the [Energy Systems Commons](#), [History of Science, Technology, and Medicine Commons](#), [Other Mechanical Engineering Commons](#), [Physical Sciences and Mathematics Commons](#), [Science and Mathematics Education Commons](#), and the [United States History Commons](#)

---

Nebraska Tractor Test Lab, "Test 1109: Long U-550 and U-560 Diesel (Also UTB U-550 Diesel)" (1972). *Nebraska Tractor Tests*. 1433.

<https://digitalcommons.unl.edu/tractormuseumlit/1433>

This Article is brought to you for free and open access by the Tractor Test and Power Museum, The Lester F. Larsen at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Nebraska Tractor Tests by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

# NEBRASKA TRACTOR TEST 1109 – LONG U-550 DIESEL

(ALSO UTB U-550 DIESEL)

(ALSO LONG U-560 DIESEL)

## POWER TAKE-OFF PERFORMANCE

Hp	Crank-shaft speed rpm	Fuel Consumption Gal per hr	Lb per hp-hr	Hp-hr per gal	Cooling medium	Temperature Degrees F Air wet bulb	Air dry bulb	Barometer inches of Mercury
<b>MAXIMUM POWER AND FUEL CONSUMPTION</b>								
<b>Rated Engine Speed—Two Hours (PTO Speed—659 rpm)</b>								
53.61	2400	3.641	0.473	14.72	219	62	75	28.850
<b>Standard Power Take-off Speed (540 rpm)—One Hour</b>								
47.66	1967	3.156	0.461	15.10	218	63	75	28.845
<b>VARYING POWER AND FUEL CONSUMPTION—Two Hours</b>								
47.18	2485	3.101	0.458	15.21	209	64	75	.....
0.00	2534	1.206	.....	.....	181	64	75	.....
23.85	2514	1.960	0.572	12.17	186	65	76	.....
53.59	2401	3.665	0.476	14.62	219	65	76	.....
12.03	2536	1.439	0.833	8.36	183	65	77	.....
35.51	2494	2.494	0.489	14.24	187	65	76	.....
Av 28.69	2494	2.311	0.561	12.41	193	65	76	28.830

## DRAWBAR PERFORMANCE

Hp	Draw- bar pull lbs	Speed miles per hr	Crank- shaft speed rpm	Slip of drivers %	Fuel Consumption			Temp	Degrees F		
					Gal per hr	Lb per hp-hr	Hp-hr per gal	Cool- ing med	Air wet bulb	Air dry bulb	Barometer inches of Mercury
VARYING DRAWBAR POWER AND FUEL CONSUMPTION WITH BALLAST											
Maximum Available Power—Two Hours—5th Gear(R1)											
46.73	3783	4.63	2396	6.72	3.571	0.532	13.09	195	58	67	29.100
75% of Pull at Maximum Power—Ten Hours—5th Gear (R1)											
37.42	2898	4.84	2472	5.46	2.832	0.527	13.21	182	46	48	29.057
50% of Pull at Maximum Power—Two Hours—5th Gear (R1)											
26.17	1969	4.99	2505	3.95	2.225	0.592	11.76	180	49	58	28.860
50% of Pull at Reduced Engine Speed—Two Hours—6th Gear (R2)											
26.44	1989	4.99	1664	3.79	1.830	0.482	14.45	178	52	64	28.850
MAXIMUM POWER WITH BALLAST											
34.05	6944	1.84	2487	14.59	2nd Gear(I2)			190	67	79	28.770
44.92	6368	2.65	2400	13.07	3rd Gear(I3)			189	51	59	29.100
46.33	4842	3.59	2401	8.80	4th Gear(I4)			191	51	58	29.100
47.88	3869	4.64	2399	6.68	5th Gear(R1)			185	50	57	29.100
48.03	2520	7.15	2398	4.41	6th Gear(R2)			188	52	60	29.100
46.10	1621	10.66	2402	2.76	7th Gear(R3)			184	54	64	29.100
VARYING DRAWBAR PULL AND TRAVEL SPEED WITH BALLAST—5 G(R1)											
Pounds Pull			3869	4055	4248	4344	4458	4378			
Horsepower			47.88	44.88	41.50	37.23	32.61	26.60			
Crankshaft Speed rpm			2399	2154	1913	1680	1440	1193			
Miles Per Hour			4.64	4.15	3.66	3.21	2.74	2.28			
Slip of Drivers %			6.68	7.05	7.66	7.66	8.02	7.90			

## TRACTOR SOUND LEVEL WITHOUT CAB

	dB (A)
Maximum Available Power 2 Hours	98.5
75% of Pull at Max. Power 10 Hours	96.0
50% of Pull at Max. Power 2 Hours	95.0
50% of Pull at Reduced Engine Speed 2 Hours	91.0
Bystander 8th Gear (R4)	87.0

## TIRES, BALLAST AND WEIGHT

	With Ballast	Without Ballast
Rear tires	—No., size, ply & psi	Two 18.4-28;6;16
Ballast	—Liquid	1105 lb each
	Cast iron	910 lb each
Front tires	—No., size, ply & psi	Two 7.50-16;4;28
Ballast	—Liquid	None
	Cast iron	255 lb each
Height of drawbar	20½ inches	21½ inches
Static weight with operator—Rear	6920 lb	2890 lb
Front	2190 lb	1680 lb
Total	9110 lb	4570 lb

## Department of Agricultural Engineering

Dates of Test: September 21st to October 2, 1972

Manufacturer: UZINA TRACTORUL BRASOV (UTB), BRASOV, ROMANIA

**FUEL, OIL AND TIME** Fuel No 2 Diesel Cetane No. 54.5 (rating taken from oil company's typical inspection data) Specific gravity converted to 60°/60° 0.8365 Weight per gallon 6.965 lb Oil SAE 30 API service classification SB/SE-CA/CD To motor 2.162 gal Drained from motor 1.986 gal Transmission and final drive lubricant SAE 90 Total time engine was operated 46 hours.

**ENGINE** Make UZINA Diesel Type 4 cylinder vertical Serial No 181 Crankshaft Mounted lengthwise Rated rpm 2400 Bore and stroke 3.74" x 4.33" Compression ratio 17 to 1 Displacement 190.7 cu. in. Cranking system 12 volt electric Lubrication pressure Air cleaner oil bath with centrifugal precleaner and automatic dust unloader Oil filter replaceable paper cartridge Fuel filter two replaceable paper elements Muffler was used Cooling medium temperature control thermostat

**CHASSIS** Type standard Serial No. 56 Tread width rear 51.4" to 75.0" front 51.4" to 80.0" Wheel base 81½" Center of gravity (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from centerline of rear wheels 31.3" Vertical distance above roadway 29.3" Horizontal distance from center of rear wheel tread 0" to the right/left Hydraulic control system direct engine drive Transmission selective gear fixed ratio Advertised speeds mph first 1.8 second 2.7 third 4.0 fourth 5.1 fifth 6.5 sixth 9.8 seventh 14.2 eighth 18.4 reverse 2.6 and 9.4 Clutch dual dry discs operated by foot pedal and hand lever for PTO Brakes contracting bands operated by two foot pedals that can be locked together and hand lever for parking brake Steering power assist Turning radius (on concrete surface with brake applied) right 127" left 128" (on concrete surface without brake) right 136" left 137" Turning space diameter (on concrete surface with brake applied) right 261" left 262" (on concrete surface without brake) right 280" left 282" Belt pulley 1248 rpm at 2400 engine rpm diam 9.5" face 5.9" Belt speed 3130 fpm Power take-off 540 rpm at 1967 engine rpm.

**REPAIRS AND ADJUSTMENTS:** During the twelve hour break in run one rim bolt was lost. This was replaced and test continued.

**REMARKS:** All test results were determined from observed data obtained in accordance with SAE and ASAE test code or official Nebraska test procedure. Following the two-hour Maximum Available drawbar run the water pump leaked when engine was stopped. This leaking condition occurred only when the engine was stopped. Six gears were chosen between stability limit and 15 mph.

We, the undersigned, certify that this is a true and correct report of official Tractor Test 1109.

L. F. LARSEN

Engineer-In-Charge

G. W. STEINBRUEGGE, Chairman

W. E. SPLINTER

D. E. LANE

Board of Tractor Test Engineers

The University of Nebraska Agricultural Experiment Station  
E. F. Frolik, Dean; H. W. Ottoson, Director; Lincoln, Nebraska