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## Test 1071: Kubota L-210 Diesel 6-Speed

Nebraska Tractor Test Lab

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# NEBRASKA TRACTOR TEST 1071 – KUBOTA L-210 DIESEL 6-SPEED

## POWER TAKE-OFF PERFORMANCE

Hp	Crankshaft speed rpm	Fuel Consumption		Hp-hr per gal	Temperature Degrees F			Barometer inches of Mercury
		Gal per hr	Lb per hp-hr		Cooling medium	Air wet bulb	Air dry bulb	
<b>MAXIMUM POWER AND FUEL CONSUMPTION</b>								
<b>Rated Engine Speed—Two Hours (PTO Speed—650 rpm)</b>								
19.10	2700	1.427	0.519	13.38	230	67	75	28.993
<b>Standard Power Take-off Speed (540 rpm)—One Hour</b>								
16.49	2243	1.250	0.527	13.19	231	67	77	28.980
<b>VARYING POWER AND FUEL CONSUMPTION—Two Hours</b>								
16.47	2740	1.222	0.515	13.48	220	68	77	.....
0.00	2820	0.483	.....	.....	170	68	76	.....
8.36	2778	0.790	0.657	10.58	195	68	76	.....
19.32	2700	1.468	0.528	13.16	233	68	76	.....
4.21	2806	0.613	1.012	6.87	183	67	75	.....
12.48	2766	0.984	0.548	12.68	207	67	75	.....
Av 10.14	2768	0.927	0.635	10.94	201	68	76	28.980

## DRAWBAR PERFORMANCE

Hp	Drawbar pull lbs	Speed miles per hr	Crankshaft speed rpm	Slip of drivers %	Fuel Consumption		Hp-hr per gal	Temp Degrees F			Barometer inches of Mercury
					Gal per hr	Lb per hp-hr		Cooling med	Air wet bulb	Air dry bulb	

### VARYING DRAWBAR POWER AND FUEL CONSUMPTION WITH BALLAST

<b>Maximum Available Power—Two Hours—5th Gear (3 Lo)</b>											
14.06	1049	5.02	2693	7.57	1.294	0.639	10.86	228	68	87	28.715
<b>75% of Pull at Maximum Power—Ten Hours—5th Gear (3 Lo)</b>											
11.47	831	5.18	2725	5.83	1.086	0.657	10.56	214	66	84	28.829
<b>50% of Pull at Maximum Power—Two Hours—5th Gear (3 Lo)</b>											
8.24	579	5.34	2750	3.87	0.899	0.757	9.17	201	70	87	28.730

### MAXIMUM POWER WITH BALLAST

12.67	2020	2.35	2699	14.97	4th Gear (2 Hi) ....			206	63	67	28.900
14.69	1095	5.03	2697	7.51	5th Gear (3 Lo) ....			211	65	72	28.900
11.58	418	10.39	2699	3.50	6th Gear (3 Hi) ....			212	67	74	28.900

### MAXIMUM PULL WITHOUT BALLAST

9.16	1428	2.41	2735	14.87	4th Gear (1 Hi) ..			208	70	90	28.900
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### VARYING DRAWBAR PULL AND TRAVEL SPEED WITH BALLAST 5th Gear (3 Lo)

Pounds Pull	1095	1224	1218	1187	1117	1008
Horsepower	14.69	14.57	12.83	11.03	9.01	6.82
Crankshaft Speed rpm	2697	2419	2142	1884	1628	1355
Miles Per Hour	5.03	4.46	3.95	3.49	3.03	2.54
Slip of Drivers %	7.51	8.49	8.57	8.32	7.81	7.03

### TRACTOR SOUND LEVEL WITHOUT CAB dB(A)

Maximum Available Power 2 Hours	96.5
75% of Pull at Max. Power 10 Hours	95.5
50% of Pull at Max. Power 2 Hours	95.5
Bystander 6th gear (3 Hi)	80.0

### TIRES, BALLAST and WEIGHT

		With Ballast	Without Ballast
Rear tires	—No, size, ply & psi	Two 9.5-24; 4; 14	Two 9.5-24; 4; 12
	Ballast	—Liquid Cast iron	None None
Front tires	—No, size, ply & psi	Two 4.00-15; 4; 36	Two 4.00-15; 4; 36
	Ballast	—Liquid Cast iron	None None
Height of drawbar		18 inches	18½ inches
Static weight with operator—	rear	2570 lb	1540 lb
	front	1040 lb	780 lb
	total	3610 lb	2320 lb

Department of Agricultural Engineering

Dates of Test: June 4 to June 16, 1971

Manufacturer: KUBOTA LTD., Osaka, Japan

**FUEL, OIL and TIME** Fuel No 2 Diesel Cetane No 53.5 (rating taken from oil company's typical inspection data) Specific gravity converted to 60°/60° 0.8347 Weight per gallon 6.950 lb Oil SAE 30 API service classification MS/DS To motor 1.192 gal Drained from motor 1.051 gal Transmission and final drive lubricant SAE 90 gear lube Total time engine was operated 42 hours.

**ENGINE Make** Kubota Diesel **Type** two cylinder vertical **Serial No** Z1100A-10502 **Crankshaft Mounted lengthwise Rated rpm** 2700 **Bore and stroke** 3.46" x 3.46" **Compression ratio** 20 to 1 **Displacement** 65.3 cu in **Cranking system** 12 volt electric **Lubrication pressure Air cleaner oil bath** with cyclone type precleaner **Oil filter** steel net and replaceable treated paper element **Fuel filter** replaceable paper element **Muffler** was used **Cooling medium temperature control** thermo-siphon.

**CHASSIS Type** standard **Serial No** L210-19452 **Tread width rear** 35.8" to 49.3" **front** 36.2" to 52.0" **Wheel base** 59" **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 26.2" Vertical distance above roadway 23.4" 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 0.97 second 1.37 third 1.91 fourth 2.74 fifth 5.39 sixth 10.68 reverse 1.39 and 2.75 **Clutch** single plate dry disc operated by foot pedal **Brakes** internal expanding shoes operated by two foot pedals that can be locked together **Steering mechanical Turning radius** (on concrete surface with brake applied) right 84" left 84" (on concrete surface without brake) right 94" left 94" **Turning space diameter** (on concrete surface with brake applied) right 178" left 178" (on concrete surface without brake) right 198" left 198" **Power take-off** 540 rpm at 2243 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 Nebraska test procedure. Available gear ratios did not permit running 50% of pull at reduced engine speed. First, second and third gears were not run as it was necessary to limit the pull in fourth gear to avoid excessive wheel slippage.

We, the undersigned, certify that this is a true and correct report of official Tractor Test 1071.

L. F. LARSEN

Engineer-in-Charge

G. W. STEINBRUEGGE, Chairman

W. E. SPLINTER

D. E. LANE

Board of Tractor Test Engineers