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Test 1588: Kubota L3350 2WD and 4WD Diesel 8-Speed

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 1588—KUBOTA L3350 4WD DIESEL ALSO KUBOTA L3350 DIESEL 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 — 626 rpm)								
32.86 (24.50)	2600	1.990 (7.534)	0.425 (0.258)	16.51 (3.252)	183 (83.9)	59 (14.8)	75 (23.8)	28.73 (97.01)
Standard Power Take-off Speed (540 rpm) — One Hour								
33.29 (24.82)	2243	1.943 (7.356)	0.409 (0.249)	17.13 (3.374)	185 (85.2)	59 (15.2)	76 (24.3)	28.65 (96.75)

VARYING POWER AND FUEL CONSUMPTION — Two Hours

28.61 (21.33)	2662	1.762 (6.671)	0.432 (0.263)	16.23 (3.198)	181 (82.5)	60 (15.3)	74 (23.3)	.....
0.00 (0.00)	2839	0.624 (2.364)	.....	.....	178 (81.1)	59 (15.0)	74 (23.1)	.....
14.71 (10.97)	2740	1.133 (4.291)	0.541 (0.329)	12.98 (2.556)	180 (82.2)	59 (15.0)	74 (23.3)	.....
33.36 (24.88)	2599	2.010 (7.610)	0.423 (0.257)	16.60 (3.269)	184 (84.2)	60 (15.3)	75 (23.6)	.....
7.51 (5.60)	2802	0.885 (3.351)	0.826 (0.503)	8.49 (1.672)	179 (81.7)	60 (15.6)	76 (24.2)	.....
21.80 (16.26)	2709	1.424 (5.392)	0.458 (0.279)	15.31 (3.015)	181 (82.5)	60 (15.6)	75 (23.9)	.....
Av 17.67 Av (13.17)	2725	1.307 (4.946)	0.519 (0.316)	13.52 (2.663)	180 (82.4)	60 (15.3)	74 (23.6)	28.63 (96.66)

DRAWBAR PERFORMANCE (Front Wheel Drive Disengaged)

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 6th Gear											
26.49 (19.75)	2026 (9.01)	4.90 (7.89)	2600	7.61	1.989 (7.529)	0.527 (0.320)	13.32 (2.623)	185 (85.0)	40 (4.4)	46 (7.5)	28.75 (97.07)
75% of Pull at Maximum Power — Ten Hours 6th Gear											
21.72 (16.19)	1572 (6.99)	5.18 (8.34)	2692	5.78	1.699 (6.433)	0.549 (0.334)	12.78 (2.517)	185 (84.8)	33 (0.4)	34 (1.2)	29.13 (98.35)
50% of Pull at Maximum Power — Two Hours 6th Gear											
14.95 (11.15)	1048 (4.66)	5.35 (8.61)	2724	3.86	1.349 (5.108)	0.633 (0.385)	11.08 (2.183)	185 (85.0)	46 (7.8)	54 (11.9)	28.57 (96.48)
50% of Pull at Reduced Engine Speed — Two Hours 7th Gear											
14.94 (11.14)	1047 (4.66)	5.35 (8.61)	1658	3.69	1.131 (4.280)	0.531 (0.323)	13.21 (2.603)	186 (85.6)	43 (5.8)	49 (9.2)	28.58 (96.51)

MAXIMUM POWER IN SELECTED GEARS

24.82 (18.51)	3434 (15.27)	2.71 (4.36)	2655	15.00	4th Gear			185 (85.0)	38 (3.3)	42 (5.6)	28.78 (97.19)
26.61 (19.85)	2826 (12.57)	3.53 (5.68)	2599	10.79	5th Gear			186 (85.3)	46 (7.8)	59 (15.0)	28.79 (97.22)
27.49 (20.50)	2096 (9.32)	4.92 (7.92)	2600	7.33	6th Gear			185 (85.0)	43 (6.1)	55 (12.8)	28.80 (97.25)
25.28 (18.85)	1132 (5.04)	8.37 (13.48)	2600	3.86	7th Gear			185 (85.0)	45 (7.2)	58 (14.4)	28.79 (97.22)

LUGGING ABILITY IN 6th GEAR

Crankshaft Speed rpm	2600	2330	2077	1813	1558	1296
Pull—lbs (kN)	2096 (9.32)	2376 (10.57)	2635 (11.72)	2741 (12.19)	2643 (11.76)	2577 (11.46)
Increase in Pull %	0	13	26	31	26	23
Power—Hp (kW)	27.49 (20.50)	27.58 (20.57)	26.92 (20.07)	24.28 (18.11)	20.20 (15.06)	16.44 (12.26)
Speed—Mph (km/h)	4.92 (7.92)	4.35 (7.01)	3.83 (6.17)	3.32 (5.35)	2.87 (4.61)	2.39 (3.85)
Slip %	7.33	8.63	9.70	10.27	9.99	9.70

Department of Agricultural Engineering

Dates of Test: October 30 to November 12, 1985

Manufacturer: KUBOTA, LTD., 2-47, Shikitsu-higashi 1-chome Naniwaku, Osaka, Japan

FUEL, OIL AND TIME: Fuel No. 2 Diesel Cetane No. 46.9 (rating taken from oil company's inspection data) Specific gravity converted to 60/60°F (15/15°C) 0.8424 Fuel weight 7.014 lbs/gal (0.841 kg/l) Oil SAE 20W API service classification CC-CD-SE To motor 1.717 gal (6.499 l) Drained from motor 1.527 gal (5.781 l) Transmission and final drive lubricant Shell Donax TD or equivalent Front axle lubricant SAE 80-90 gear oil Total time engine was operated 37.5 hours.

ENGINE: Make Kubota Diesel Type four cylinder vertical Serial No. V1902-DI-A-10456 Crankshaft lengthwise Rated rpm 2600 Bore and stroke 3.35" × 3.23" (85 mm × 82 mm) Compression ratio 18 to 1 Displacement 113.6 cu in (1861 ml) Starting system 12 volt Lubrication pressure Air cleaner two paper elements Oil filter one full flow cartridge Fuel filter one paper element Muffler underhood Exhaust vertical Cooling medium temperature control one thermostat.

CHASSIS: Type front wheel assist Serial No. L3350DT-50477 Tread width rear 48" (1220 mm) to 68" (1720 mm) front 50" (1265 mm) Wheel base 72.6" (1845 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 29.5" (750 mm) Vertical distance above roadway 29.0" (737 mm) Horizontal distance from center of rear wheel tread 0.4" (10 mm) to the right Hydraulic control system direct engine drive Transmission selective gear fixed ratio Advertised speeds mph (km/h) first 0.9 (1.5) second 1.2 (2.0) third 2.0 (3.3) fourth 3.2 (5.0) fifth 4.0 (6.4) sixth 5.4 (8.6) seventh 8.8 (14.2) eighth 13.5 (21.7) reverse 0.9 (1.5), 1.2 (2.0), 2.0 (3.3), 3.1 (5.0), 3.9 (6.4), 5.3 (8.6), 8.7 (14.1), 13.4 (21.6) Clutch dual dry disc in combination with PTO operated by foot pedal Brakes multiple wet disc operated by two foot pedals which can be locked together Steering power assist Turning radius (on concrete surface with brake applied) right 106" (2.7 m) left 106" (2.7 m) (on concrete surface without brake) right 126" (3.2 m) left 126" (3.2 m) Turning space diameter (on concrete surface with brake applied) right 228" (5.8 m) left 228" (5.8 m) (on concrete surface without brake) right 263" (6.7 m) left 263" (6.7 m) Power take-off 540 rpm at 2243 engine rpm Unladen tractor mass 4010 lb (1819 kg).

TRACTOR SOUND LEVEL WITHOUT CAB

	Front Wheel Drive Engaged dB(A)	Disengaged
Maximum Available Power—Two Hours	92.5	92.0
75% of Pull at Maximum Power—Ten Hours		92.0
50% of Pull at Maximum Power—Two Hours		91.0
50% of Pull at Reduced Engine Speed—Two Hours		88.5
Bystander in 8th gear		83.5

**DRAWBAR PERFORMANCE
(Front Wheel Drive Engaged)**

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 6th Gear											
26.66 (19.88)	1967 (8.75)	5.08 (8.18)	2598	5.35	1.975 (7.475)	0.519 (0.316)	13.50 (2.660)	186 (85.6)	44 (6.7)	51 (10.3)	28.66 (96.76)

MAXIMUM POWER IN SELECTED GEARS

21.39 (15.95)	4430 (19.71)	1.81 (2.91)	2687	14.94	3rd Gear			185 (84.7)	35 (1.7)	39 (3.9)	28.79 (97.22)
27.36 (20.40)	2768 (12.31)	3.71 (5.97)	2600	7.42	5th Gear			186 (85.3)	46 (7.8)	60 (15.6)	28.79 (97.22)
27.53 (20.53)	2028 (9.02)	5.09 (8.19)	2600	5.22	6th Gear			185 (85.0)	44 (6.7)	57 (13.9)	28.80 (97.25)

TIRES, BALLAST AND WEIGHT

	With Ballast	Without Ballast
Rear Tires	Two 13.6-24; 6; 22 (150)	Two 13.6-24; 6; 22 (150)
Ballast	256 lb (116 kg)	None
—Liquid (each)	207 lb (94 kg)	None
—Cast Iron (each)		
Front Tires	Two 8-16; 6; 34 (235)	Two 8-16; 6; 34 (235)
Ballast	None	None
—Liquid (each)	115 lb (52 kg)	None
—Cast Iron (each)		
Height of Drawbar	14 in (355 mm)	14 in (355 mm)
Static Weight with Operator —Rear	3455 lb (1567 kg)	2530 lb (1147 kg)
—Front	1885 lb (855 kg)	1655 lb (751 kg)
—Total	5340 lb (2422 kg)	4185 lb (1898 kg)

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi (kPa)	2525 (17410)	
Location	remote outlet	
Hydraulic oil temperature °F (°C)	178 (81)	
Location	pump inlet	
	Maximum Lift Capacity	Lift Capacity for Transport
QUICK ATTACH	no	
CATEGORY	I	*not measured
LOAD lbs (kg)	2652 (1203)	
TIME sec	1.39	
HITCH POINT MOVEMENT in (mm)		
Lowest position	8.7 (221)	
Top of timed range	30.7 (780)	
Highest position	32.0 (813)	
LOAD CG MOVEMENT in (mm)		
Lowest position	8.5 (216)	
Top of timed range	32.5 (826)	
Highest position	34.5 (876)	

*Implement load capacity for transport purposes not specified by manufacturer.

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump inlet was maintained at 122°F (49.8°C). Four gears were chosen between 15% slip and 10 mph (16.1 km/h).

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. 1588, December 4, 1985.

LOUIS I. LEVITICUS

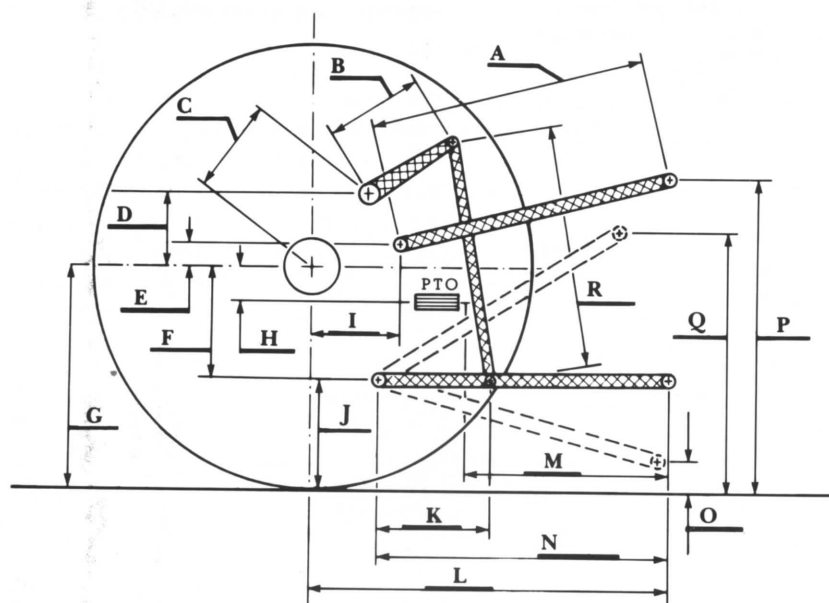
Engineer-in-Charge

K. VON BARGEN

W. E. SPLINTER

L. L. BASHFORD

Board of Tractor Test Engineers



Hitch Dimensions as Tested — No Load

	inch	mm
A	23.5	597
B	9.5	240
C	11.6	294
D	11.0	279
E	10.6	269
F	7.1	180
G	22.1	561
H	0.5	13
I	11.9	301
J	15.0	381
K	14.6	370
L	35.2	894
M	20.3	517
N	31.1	790
O	8.0	203
P	33.0	838
Q	32.1	816
R	18.5	470



Kubota L3350 4WD Diesel