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## Test 1598: Kubota M8030DT and M8030 Diesel 16-Speed

Nebraska Tractor Test Lab

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# NEBRASKA TRACTOR TEST 1598—KUBOTA M8030DT DIESEL ALSO KUBOTA M8030 DIESEL 16 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 — 637 rpm)								
76.91 (57.35)	2400	4.663 (17.653)	0.425 (0.259)	16.49 (3.249)	200 (93.3)	68 (19.7)	75 (23.9)	28.90 (97.60)
Standard Power Take-off Speed (540 rpm) — One Hour								
70.47 (52.55)	2036	4.090 (15.481)	0.407 (0.248)	17.23 (3.395)	201 (93.7)	68 (19.9)	75 (24.1)	28.88 (97.52)
VARYING POWER AND FUEL CONSUMPTION — Two Hours								
66.96 (49.93)	2458	4.051 (15.335)	0.424 (0.258)	16.53 (3.256)	186 (85.6)	70 (20.8)	77 (25.0)	..... .....
0.00 (0.00)	2546	1.442 (5.457)	..... .....	..... .....	174 (78.6)	70 (20.8)	77 (24.7)	..... .....
34.20 (25.50)	2512	2.575 (9.748)	0.528 (0.321)	13.28 (2.616)	180 (82.2)	69 (20.3)	76 (24.4)	..... .....
76.66 (57.17)	2401	4.611 (17.456)	0.422 (0.257)	16.62 (3.275)	196 (91.1)	70 (20.8)	77 (24.7)	..... .....
17.24 (12.85)	2531	2.002 (7.578)	0.815 (0.496)	8.61 (1.696)	179 (81.4)	71 (21.4)	78 (25.6)	..... .....
50.73 (37.83)	2484	3.243 (12.274)	0.448 (0.273)	15.64 (3.082)	182 (83.1)	71 (21.7)	78 (25.6)	..... .....
Av Av	40.96 (30.55)	2.987 (11.308)	0.511 (0.311)	13.71 (2.701)	183 (83.7)	70 (21.0)	77 (25.0)	28.84 (97.40)

## 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 13th (H-H-1) Gear											
62.81 (46.84)	4293 (19.09)	5.49 (8.83)	2400	8.84	4.584 (17.354)	0.512 (0.311)	13.70 (2.699)	191 (88.1)	63 (16.9)	73 (22.5)	28.99 (97.89)
75% of Pull at Maximum Power — Ten Hours 13th (H-H-1) Gear											
50.91 (37.97)	3285 (14.61)	5.81 (9.35)	2465	6.00	3.760 (14.234)	0.518 (0.315)	13.54 (2.667)	186 (85.3)	69 (20.3)	78 (25.4)	28.87 (97.49)
50% of Pull at Maximum Power — Two Hours 13th (H-H-1) Gear											
35.35 (26.36)	2190 (9.74)	6.05 (9.74)	2512	3.92	2.959 (11.200)	0.587 (0.357)	11.95 (2.354)	183 (83.6)	63 (17.2)	80 (26.4)	28.94 (97.71)
50% of Pull at Reduced Engine Speed — Two Hours 14th (H-H-2) Gear											
35.31 (26.33)	2188 (9.73)	6.05 (9.74)	2027	3.82	2.545 (9.635)	0.506 (0.308)	13.87 (2.733)	182 (83.3)	74 (23.1)	83 (28.3)	28.81 (97.27)

## MAXIMUM POWER IN SELECTED GEARS

50.48 (37.64)	6503 (28.93)	2.91 (4.68)	2453	14.87	11th (H-L-3) Gear		183 (83.6)	68 (20.0)	72 (22.2)	28.80 (97.25)
60.02 (44.76)	5561 (24.73)	4.05 (6.51)	2400	11.45	12th (H-L-4) Gear		188 (86.4)	69 (20.6)	74 (23.3)	28.81 (97.29)
64.19 (47.87)	4380 (19.48)	5.50 (8.85)	2398	8.56	13th (H-H-1) Gear		187 (85.8)	60 (15.6)	69 (20.6)	28.99 (97.89)
64.37 (48.00)	3462 (15.40)	6.97 (11.22)	2399	6.33	14th (H-H-2) Gear		186 (85.3)	59 (15.0)	67 (19.4)	28.98 (97.86)

## LUGGING ABILITY IN 13th (H-H-1) GEAR

Crankshaft Speed rpm		2398	2166	1912	1679	1432	1193
Pull—lbs (kN)		4380 (19.48)	4609 (20.50)	4944 (21.99)	5136 (22.85)	5204 (23.15)	5193 (23.10)
Increase in Pull %		0	5	13	17	19	19
Power—Hp (kW)		64.19 (47.87)	60.57 (45.16)	56.94 (42.46)	51.47 (38.38)	44.34 (33.06)	36.81 (27.45)
Speed—Mph (km/h)		5.50 (8.85)	4.93 (7.93)	4.32 (6.95)	3.76 (6.05)	3.20 (5.14)	2.66 (4.28)
Slip %		8.56	9.30	9.91	10.86	11.10	11.10

Department of Agricultural Engineering

Dates of Test: May 15 to June 4, 1986

Manufacturer: KUBOTA LTD, 2-47 Shikitsuhigashi, 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) 0.8423 Fuel weight 7.013 lbs/gal (0.840 kg/l) Oil SAE 10W-30 API service classification SF-SE-CC To motor 2.458 gal (9.306 l) Drained from motor 2.259 gal (8.550 l) Transmission and final drive lubricant Shell Donax TD or equivalent Front axle lubricant SAE 80/90 gear oil Total time engine was operated 38.0 hours.

**ENGINE:** Make Kubota Diesel Type four cylinder vertical Serial No. V4300-1A-40407 Crankshaft lengthwise Rated rpm 2400 Bore and stroke 4.29" × 4.53" (109 mm × 115 mm) Compression ratio 17 to 1 Displacement 262 cu in (4292 ml) Starting system 12 volt Lubrication pressure Air cleaner two paper elements Oil filter one full flow paper cartridge Fuel filter one paper element and water separator Muffler vertical Cooling medium temperature control one thermostat.

**CHASSIS** Type front wheel assist Serial No M8030DT-50044 Tread width rear 63.5" (1613 mm) to 76.4" (1940 mm) front 57.9" (1470 mm) to 61.8" (1570 mm) Wheel base 89.0" (2260 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 37.7" (958 mm) Vertical distance above roadway 41.0" (1041 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 0.3 (0.5) second 0.4 (0.6) third 0.6 (0.9) fourth 0.8 (1.3) fifth 1.1 (1.7) sixth 1.3 (2.1) seventh 1.6 (2.6) eighth 2.0 (3.3) ninth 2.2 (3.5) tenth 3.0 (4.8) eleventh 3.4 (5.5) twelfth 4.7 (7.5) thirteenth 6.2 (9.9) fourteenth 7.6 (12.2) fifteenth 12.8 (20.6) sixteenth 18.8 (30.2) reverse 0.3 (0.5), 1.3 (2.0), 1.9 (3.1), 7.3 (11.8) Clutch single dry disc operated by foot pedal Brakes multiple wet disc operated by two foot pedals which can be locked together Steering hydrostatic Turning radius (on concrete surface with brake applied) right 138" (3.5 m) left 138" (3.5 m) (on concrete surface without brake) right 165" (4.2 m) left 165" (4.2 m) Turning space diameter (on concrete surface with brake applied) right 287" (7.3 m) left 287" (7.3 m) (on concrete surface without brake) right 343" (8.7 m) left 343" (8.7 m) Power take-off 540 rpm at 2036 engine rpm Unladen tractor mass 6155 lb (2792 kg).

TRACTOR SOUND LEVEL WITHOUT CAB	Front Wheel Drive Engaged	Disengaged
	dB(A)	dB(A)
Maximum Available Power—Two Hours	95.0	94.5
75% of Pull at Maximum Power—Ten Hours		94.5
50% of Pull at Maximum Power—Two Hours		94.0
50% of Pull at Reduced Engine Speed—Two Hours		90.5
Bystander in 16th (H-H-4) gear		87.0

### 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)
<b>Maximum Available Power — Two Hours 13th (H-H-1) Gear</b>											
63.20 (47.13)	4130 (18.37)	5.74 (9.23)	2399	6.27	4.563 (17.273)	0.506 (0.308)	13.85 (2.728)	198 (91.9)	63 (17.2)	79 (25.8)	28.97 (97.81)
<b>MAXIMUM POWER IN SELECTED GEARS</b>											
55.43 (41.34)	8102 (36.04)	2.57 (4.13)	2420	14.95	10th (L-H-4) Gear			188 (86.7)	72 (22.2)	78 (25.6)	28.82 (97.32)
60.96 (45.46)	5346 (23.78)	4.28 (6.88)	2400	7.97	12th (H-L-4) Gear			192 (88.9)	71 (21.7)	76 (24.4)	28.81 (97.29)
64.65 (48.21)	4226 (18.80)	5.74 (9.23)	2398	6.20	13th (H-H-1) Gear			186 (85.6)	58 (14.4)	65 (18.3)	28.98 (97.86)

### TIRES, BALLAST AND WEIGHT

		With Ballast	Without Ballast
<b>Rear Tires</b>	—No., size, ply & psi (kPa)	Two 18.4-30; 6; 16 (110)	Two 18.4-30; 6; 16 (110)
<b>Ballast</b>	—Liquid (each)	735 lb (333 kg)	None
	—Cast Iron (each)	505 lb (229 kg)	None
<b>Front Tires</b>	—No., size, ply & psi (kPa)	Two 11.2-24; 6; 26 (180)	Two 11.2-24; 6; 26 (180)
<b>Ballast</b>	—Liquid (each)	None	None
	—Cast Iron (each)	580 lb (263 kg)	None
<b>Height of Drawbar</b>		18.5 in (470 mm)	18.5 in (470 mm)
<b>Static Weight with Operator—Rear</b>		6230 lb (2826 kg)	3750 lb (1701 kg)
	—Front	3740 lb (1696 kg)	2580 lb (1170 kg)
	—Total	9970 lb (4522 kg)	6330 lb (2871 kg)

### THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi (kPa)	2630 (18130)	
Location	remote outlet	
Hydraulic oil temperature °F (°C)	197 (92)	
Location	pump inlet	
	<b>Maximum Lift Capacity</b>	<b>Lift Capacity for Transport</b>
QUICK ATTACH	no	
CATEGORY	2	*not measured
LOAD lbs (kg)	4480 (2032)	
TIME sec	2.12	
HITCH POINT MOVEMENT in (mm)		
Lowest position	11.8 (300)	
Top of timed range	35.8 (909)	
Highest position	36.4 (925)	
LOAD CG MOVEMENT in (mm)		
Lowest position	12.6 (320)	
Top of timed range	36.5 (927)	
Highest position	37.1 (942)	

\*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 was maintained at 142°F (61.3°C). Four gears were chosen between 15% slip and 10 mph (16.1 km/h).

We, the undersigned, certify that this is as true and correct report of official Tractor Test No. **1598**, July 8, 1986.

LOUIS I. LEVITICUS

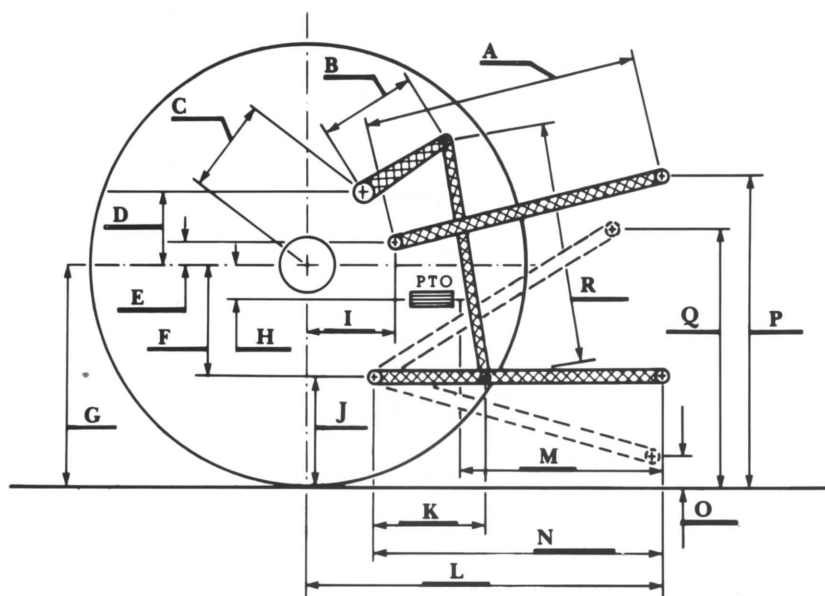
Engineer-in-Charge

K. VON BARGEN

W. E. SPLINTER

L. L. BASHFORD

Board of Tractor Test Engineers



Hitch Dimensions as Tested — No Load

	inch	mm
A	27.6	702
B	9.8	250
C	12.2	311
D	11.9	303
E	12.6	321
F	6.9	176
G	28.2	716
H	0.8	21
I	12.3	313
J	21.3	540
K	18.4	468
L	40.0	1015
M	24.1	613
N	35.6	903
O	8.0	203
P	40.3	1022
Q	34.6	879
R	24.8	629



Kubota M8030DT Diesel