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Test 1596: Kubota M6030DT and M6030 Diesel 16-Speed

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 1596—KUBOTA M6030DT DIESEL ALSO KUBOTA M6030 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 — 643 rpm)									
57.74 (43.06)	2400	3.635 (13.761)	0.442 (0.269)	15.88 (3.129)	184 (84.2)	63 (17.1)	75 (23.9)	29.05 (98.10)	
Standard Power Take-off Speed (540 rpm) — One Hour									
53.57 (39.95)	2017	3.158 (11.956)	0.413 (0.252)	16.96 (3.341)	184 (84.4)	63 (17.4)	75 (23.9)	29.04 (98.06)	
VARYING POWER AND FUEL CONSUMPTION — Two Hours									
49.75 (37.10)	2433	3.106 (11.756)	0.438 (0.266)	16.02 (3.155)	181 (82.8)	64 (17.5)	75 (23.6)	..... .....
0.00 (0.00)	2513	1.138 (4.307)	..... .....	..... .....	169 (75.8)	64 (17.8)	75 (23.9)	..... .....
25.31 (18.87)	2475	1.925 (7.287)	0.533 (0.324)	13.15 (2.590)	176 (79.7)	65 (18.1)	76 (24.2)	..... .....
57.76 (43.07)	2401	3.589 (13.586)	0.436 (0.265)	16.09 (3.170)	184 (84.2)	65 (18.1)	76 (24.2)	..... .....
12.72 (9.48)	2492	1.544 (5.846)	0.851 (0.518)	8.24 (1.622)	169 (75.8)	65 (18.1)	75 (23.9)	..... .....
37.54 (28.00)	2448	2.438 (9.230)	0.455 (0.277)	15.40 (3.033)	179 (81.4)	65 (18.1)	75 (23.9)	..... .....
Av Au	30.51 (22.75)	2460	2.290 (8.669)	0.526 (0.320)	13.32 (2.625)	176 (80.0)	64 (17.9)	75 (23.9)	29.02 (98.01)

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											
47.25 (35.23)	3204 (14.25)	5.53 (8.90)	2400	8.12	3.558 (13.467)	0.528 (0.321)	13.28 (2.616)	187 (85.8)	61 (15.8)	75 (23.6)	28.70 (96.90)
75% of Pull at Maximum Power — Ten Hours 13th (H-H-1) Gear											
37.70 (28.11)	2441 (10.86)	5.79 (9.32)	2441	5.44	2.829 (10.709)	0.526 (0.320)	13.32 (2.625)	183 (83.9)	57 (13.6)	64 (17.9)	28.83 (97.36)
50% of Pull at Maximum Power — Two Hours 13th (H-H-1) Gear											
25.89 (19.31)	1629 (7.24)	5.96 (9.60)	2466	3.63	2.217 (8.393)	0.601 (0.365)	11.68 (2.301)	175 (79.4)	59 (15.0)	62 (16.4)	28.90 (97.57)
50% of Pull at Reduced Engine Speed — Two Hours 14th (H-H-2) Gear											
25.95 (19.35)	1628 (7.24)	5.98 (9.62)	1995	3.50	1.925 (7.287)	0.520 (0.316)	13.48 (2.655)	176 (80.0)	60 (15.6)	64 (17.8)	28.88 (97.51)

MAXIMUM POWER IN SELECTED GEARS

40.84 (30.45)	5330 (23.71)	2.87 (4.62)	2417	14.92	11th (H-L-3) Gear			182 (83.3)	58 (14.4)	60 (15.6)	28.87 (97.49)
45.94 (34.26)	4194 (18.66)	4.11 (6.61)	2399	10.36	12th (H-L-4) Gear			182 (83.3)	58 (14.4)	62 (16.7)	28.87 (97.49)
48.11 (35.88)	3255 (14.48)	5.54 (8.92)	2400	7.97	13th (H-H-1) Gear			186 (85.3)	58 (14.4)	71 (21.7)	28.72 (96.98)
48.01 (35.80)	2575 (11.45)	6.99 (11.25)	2398	6.15	14th (H-H-2) Gear			186 (85.6)	59 (15.0)	73 (22.8)	28.71 (96.95)

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

Crankshaft Speed rpm	2400	2160	1913	1678	1439	1198
Pull—lbs (kN)	3255 (14.48)	3494 (15.54)	3727 (16.58)	3876 (17.24)	3958 (17.61)	3909 (17.39)
Increase in Pull %	0	7	15	19	22	20
Power—Hp (kW)	48.11 (35.88)	45.99 (34.29)	43.14 (32.17)	39.09 (29.15)	34.10 (25.43)	28.08 (20.94)
Speed—Mph (km/h)	5.54 (8.92)	4.94 (7.94)	4.34 (6.98)	3.78 (6.09)	3.23 (5.20)	2.69 (4.34)
Slip %	7.97	8.86	9.56	10.13	10.47	10.47

Department of Agricultural Engineering

Dates of Test: May 14 to 28, 1986

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) 0.8423 Fuel weight 7.013 lbs/gal (0.840 kg/l) Oil SAE 10W-30 API service classification SF-SE-CC To motor 2.483 gal (9.399 l) Drained from motor 2.367 gal (8.960 l) Transmission and final drive lubricant Shell Donax TD or equivalent Front axle lubricant SAE 80/90 gear oil Total time engine was operated 42.0 hours.

ENGINE: Make Kubota Diesel Type three cylinder vertical Serial No. D3200-2A-40426 Crankshaft lengthwise Rated rpm 2400 Bore and stroke 4.29" × 4.53" (109 mm × 115 mm) Compression ratio 17 to 1 Displacement 196.4 cu in (3219 ml) Starting system 12 volt Lubrication pressure Air cleaner two paper elements Oil filter one full flow cartridge Fuel filter one paper element and water separator Muffler vertical Cooling medium temperature control one thermostat.

CHASSIS: Type front wheel assist Serial No. M6030DT-50035 Tread width rear 62.9" (1598 mm) to 75.6" (1920 mm) front 52.4" (1330 mm) to 59.8" (1520 mm) Wheel base 79.1" (2010 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 32.2" (818 mm) Vertical distance above roadway 35.7" (906 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 (0.4) second 0.3 (0.5) third 0.6 (0.9) fourth 0.8 (1.2) fifth 1.0 (1.6) sixth 1.3 (2.0) seventh 1.6 (2.6) eighth 2.0 (3.2) ninth 2.1 (3.4) tenth 2.9 (4.7) eleventh 3.3 (5.3) twelfth 4.5 (7.3) thirteenth 5.9 (9.6) fourteenth 7.4 (11.8) fifteenth 12.4 (19.9) sixteenth 18.2 (29.2) reverse 0.4 (0.6), 1.4 (2.2), 2.1 (3.4), 7.9 (12.8) 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 126" (3.2 m) left 126" (3.2 m) (on concrete surface without brake) right 150" (3.8 m) left 150" (3.8 m) Turning space diameter (on concrete surface with brake applied) right 268" (6.8 m) left 268" (6.8 m) (on concrete surface without brake) right 311" (7.9 m) left 311" (7.9 m) Power take-off 540 rpm at 2017 engine rpm Unladen tractor mass 5205 lb (2361 kg).

TRACTOR SOUND LEVEL WITHOUT CAB

	Front Wheel Drive Engaged dB(A)	Disengaged dB(A)
Maximum Available Power—Two Hours	96.5	96.0
75% of Pull at Maximum Power—Ten Hours		96.0
50% of Pull at Maximum Power—Two Hours		94.0
50% of Pull at Reduced Engine Speed—Two Hours		91.0
Bystander in 16th (H-H-4) gear		86.5

**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)	Cool- ing med	Temp. °F (°C) Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
Maximum Available Power — Two Hours 13th (H-H-1) Gear											
48.28 (36.01)	3180 (14.15)	5.69 (9.16)	2399	5.04	3.551 (13.440)	0.516 (0.314)	13.60 (2.679)	187 (85.8)	61 (16.1)	75 (23.6)	28.69 (96.86)

MAXIMUM POWER IN SELECTED GEARS

34.85 (25.98)	7052 (31.37)	1.85 (2.98)	2431	14.84	9th (L-H-3) Gear			179 (81.7)	60 (15.6)	66 (18.9)	28.88 (97.52)
47.70 (35.57)	4200 (18.68)	4.26 (6.85)	2398	6.57	12th (H-L-4) Gear			183 (83.6)	59 (15.0)	64 (17.8)	28.88 (97.52)
49.01 (36.55)	3229 (14.36)	5.69 (9.16)	2398	5.08	13th (H-H-1) Gear			186 (85.3)	58 (14.4)	70 (21.1)	28.72 (96.98)

TIRES, BALLAST AND WEIGHT

		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi (kPa)	Two 16.9-28; 6; 22 (150)	Two 16.9-28; 6; 22 (150)
Ballast	—Liquid (each)	610 lb (277 kg)	None
	—Cast Iron (each)	480 lb (218 kg)	None
Front Tires	—No., size, ply & psi (kPa)	Two 9.5-22; 6; 29 (200)	Two 9.5-22; 6; 29 (200)
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	705 lb (320 kg)	None
Height of Drawbar		17.5 in (445 mm)	17.5 in (445 mm)
Static Weight with Operator —Rear		5420 lb (2459 kg)	3240 lb (1469 kg)
—Front		3550 lb (1610 kg)	2140 lb (971 kg)
—Total		8970 lb (4069 kg)	5380 lb (2440 kg)

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi (kPa)	2625 (18100)	
Location	remote outlet	
Hydraulic oil temperature °F (°C)	189 (87)	
Location	pump inlet	
	Maximum Lift Capacity	Lift Capacity for Transport
QUICK ATTACH	no	
CATEGORY	1	*not measured
LOAD lbs (kg)	3318 (1505)	
TIME sec	1.18	
HITCH POINT MOVEMENT in (mm)		
Lowest position	8.0 (203)	
Top of timed range	30.0 (762)	
Highest position	34.3 (871)	
LOAD CG MOVEMENT in (mm)		
Lowest position	10.0 (254)	
Top of timed range	29.7 (754)	
Highest position	34.4 (874)	

*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 140°F (60.2°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. **1596**, July 8, 1986.

LOUIS I. LEVITICUS

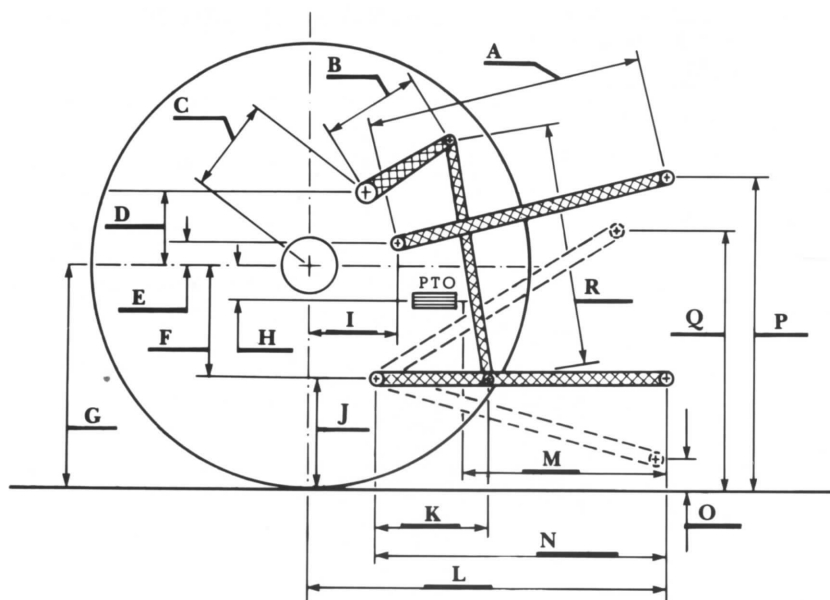
Engineer-in-Charge

K. VON BARGEN

W. E. SPLINTER

L. L. BASHFORD

Board of Tractor Test Engineers



Hitch Dimensions as Tested — No Load

	inch	mm
A	26.1	664
B	9.0	230
C	12.2	311
D	11.9	303
E	12.6	321
F	6.9	176
G	26.5	674
H	0.8	21
I	12.3	313
J	19.6	498
K	16.4	416
L	37.9	962
M	22.2	564
N	33.3	845
O	8.0	203
P	37.6	956
Q	35.0	889
R	22.5	572



Kubota M6030DT Diesel

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 Irvin T. Omtvedt, Dean and Director