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2016

Test 2153: Kubota M6-111

Nebraska Tractor Test Lab

University of Nebraska-Lincoln, tractortestlab@unl.edu

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NEBRASKA TRACTOR TEST 2153

KUBOTA M6-111 DIESEL

24 SPEED

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Diesel Consumption Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	D.E.F. Consumption Gal/hr (l/h)	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION						
Rated Engine Speed—(PTO speed—584 rpm)						
93.50 (69.72)	2602	6.09 (23.05)	0.456 (0.278)	15.36 (3.03)	0.11 (0.43)	Fuel used during active exhaust regeneration-0.13 gal (0.49 l) (see note 1, p.2)
Maximum Power (1 hour)						
96.48 (71.95)	2500	6.10 (23.08)	0.443 (0.269)	15.82 (3.12)	0.11 (0.42)	
Standard Power Take-off Speed (540 rpm)						
95.85 (71.48)	2405	5.94 (22.50)	0.435 (0.264)	16.13 (3.18)	0.12 (0.44)	

VARYING POWER AND FUEL CONSUMPTION

93.50 (69.72)	2602	6.09 (23.05)	0.456 (0.278)	15.36 (3.03)	0.11 (0.43)	Air temperature
80.77 (60.23)	2640	5.57 (21.07)	0.483 (0.294)	14.51 (2.86)	0.09 (0.34)	75°F (24°C)
60.75 (45.30)	2650	4.58 (17.35)	0.529 (0.322)	13.25 (2.61)	0.06 (0.23)	Relative humidity
40.47 (30.18)	2650	3.63 (13.74)	0.629 (0.382)	11.15 (2.20)	0.05 (0.18)	42%
20.39 (15.21)	2650	2.74 (10.38)	0.942 (0.573)	7.44 (1.47)	0.05 (0.17)	Barometer
1.63 (1.21)	2650	1.86 (7.03)	7.999 (4.865)	0.88 (0.17)	0.04 (0.14)	28.78" Hg (97.47 kPa)

Maximum torque - 249 lb.-ft. (338 Nm) at 1501 rpm

Maximum torque rise - 32.0%

Torque rise at 2080 engine rpm - 21%

Power increase at 2500 engine rpm - 3.2%

TRACTOR SOUND LEVEL WITH CAB

	Front Wheel Drive Engaged dB(A)	Disengaged dB(A)
At no load in 13th (M5) gear	75.8	75.7
Bystander in 24th (H8) gear	---	80.8

TIRES AND WEIGHT

Rear Tires—No., size, ply & psi (kPa)

Front Tires—No., size, ply & psi (kPa)

Height of Drawbar

Static Weight with operator—Rear

— Front

— Total

Tested without ballast

Two 18.4R34; **, 12 (85)

Two 13.6R24; **, 12 (85)

18.5 in (470 mm)

6415 lb (2910 kg)

3590 lb (1628 kg)

10005 lb (4538 kg)

Location of tests: Nebraska Tractor Test Laboratory, University of Nebraska, Lincoln Nebraska 68583-0832

Dates of tests: June 7 - 13, 2016

Manufacturer: Kubota Corporation, Sakai Plant, 64, Ishizu-Kitamachi, Sakai-ku, Sakai-City, Osaka, Japan

CONSUMABLE FLUIDS, OIL and TIME: Fuel No. 2 Diesel **Specific gravity converted to 60°F (15°/15°C)** 0.8417 **Fuel weight** 7.008 lbs/gal (0.840 kg/l) **Diesel Exhaust Fluid (DEF)** 32% aqueous urea solution **DEF weight** 9.071 lbs/gal (1.087 kg/l) **Oil** SAE 10W30 **API service classification** CJ-4 **Transmission and hydraulic lubricant** Kubota Super UDT2 fluid **Front axle lubricant** SAE 90 gear oil **Total time engine was operated** 8.5 hours

ENGINE: Make Kubota Diesel **Type** four cylinder vertical with turbocharger, air to air intercooler and D.E.F. (diesel exhaust fluid) exhaust treatment **Serial No.** 2FS0199 **Crankshaft** lengthwise **Rated engine speed** 2600 **Bore and stroke** 3.937" x 4.724" (100.0 mm x 120.0 mm) **Compression ratio** 17.0 to 1 **Displacement** 230 cu in (3769 ml) **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and aspirator **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** one paper element **Fuel cooler** radiator for pump return fuel **Exhaust** DOC (diesel oxidation catalyst), SCR (selective catalyst reduction) and regenerative DPF (diesel particulate filter) integrated within a vertical muffler **Cooling medium temperature control** one thermostat and variable speed fan

ENGINE OPERATING PARAMETERS: Fuel rate: 41.7 - 44.3 lb/h (18.9 - 20.1 kg/h) **High idle:** 2630 - 2670 rpm **Turbo boost:** nominal 13.1-16.0 psi (90 - 110 kPa) as measured 14.5 psi (100 kPa)

CHASSIS: **Type** front wheel assist **Serial No.** M6-111-10335 **Tread width** rear 60.2" (1530 mm) to 80.3" (2040 mm) front 62.2" (1580 mm) to 66.1" (1680 mm) **Wheelbase** 95.9" (2435 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (8) range operator controlled power shift **Nominal travel speeds mph (km/h)** first 0.52 (0.83) second 0.63 (1.02) third 0.75 (1.21) fourth 0.91 (1.46) fifth 1.08 (1.73) sixth 1.32 (2.12) seventh 1.56 (2.51) eighth 1.89 (3.04) ninth 2.19 (3.53) tenth 2.69 (4.33) eleventh 3.18 (5.11) twelfth 3.85 (6.20) thirteenth 4.56 (7.35) fourteenth 5.59 (9.00) fifteenth 6.06 (9.76) sixteenth 6.60 (10.62) seventeenth 7.42 (11.95) eighteenth 8.01 (12.90)

HYDRAULIC PERFORMANCE

CATEGORY: II

Quick attach: None

OECD Static test

Maximum force exerted through whole range: 6734 lbs (30.0 kN) (2 x 70 mm)
8613 lbs (38.3 kN) (2 x 80 mm)

lift cylinders

i) Sustained pressure of the open relief valve: 2777 psi (191 bar)

ii) Pump delivery rate at minimum pressure and rated engine speed: 18.9 GPM (71.4 l/min)

iii) Pump delivery rate at maximum

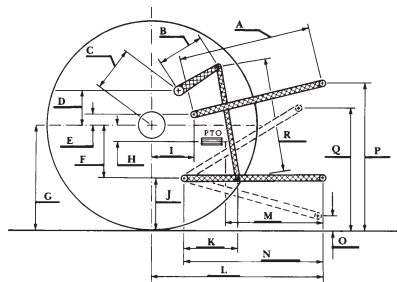
hydraulic power: 16.1 GPM (61.1 l/min)

Delivery pressure: 2433 psi (168 bar)

Power: 22.9 HP (17.1 kW)

HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	mm
A	29.7	755
B	11.8	300
C	17.1	434
D	16.7	425
E	13.6	346
F	6.9	176
G	32.3	820
H	1.0	25
I	10.7	273
J	25.4	644
K	18.4	468
L	40.0	1015
M	23.4	594
N	35.4	900
O	9.1	230
P	49.4	1254
Q	34.6	880
R	28.9	735



Kubota M6-111 Diesel
Institute of Agriculture and Natural Resources
University of Nebraska-Lincoln

nineteenth 8.77 (14.11) twentieth 10.64 (17.13)
twenty-first 12.62 (20.31) twenty-second 15.44
(24.86) twenty-third 18.24 (29.35) twenty-fourth
22.13 (35.62) reverse 0.52 (0.84), 0.64 (1.03), 0.76
(1.22), 0.92 (1.48), 1.09 (1.75), 1.33 (2.14), 1.57
(2.53), 1.91 (3.07), 2.21 (3.56), 2.71 (4.36), 3.20
(5.15), 3.88 (6.25), 4.60 (7.41), 5.64 (9.08), 6.12
(9.85), 6.66 (10.72), 7.49 (12.05), 8.08 (13.01),
8.84 (14.23), 10.73 (17.27), 12.73 (20.48), 15.58
(25.07), 18.39 (29.60) 22.32 (35.93) **Clutch**
multiple wet disc operated by foot pedal **Brakes**
multiple wet disc operated by two foot pedals
which can be locked together **Steering** hydrostatic
Power take-off 540 rpm at 2405 engine rpm or
1000 rpm at 2389 engine rpm **Unladen tractor**
mass 9830 lb (4459 kg)

NOTE 1: The manufacturer declares that the average time between active regenerations is 24 hours. A 6% power loss was observed during the active exhaust regeneration process.

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. The manufacturer's 3 point lift of claims of 6834 lbs (3100 kg) with 2 x 70 mm lift cylinders and 9447 lbs (4285 kg) with 2 x 80 mm lift cylinders as per SAE testing standards were not verified.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **2153**, July 1, 2016.

Roger M. Hoy
Director

M.F. Kocher
P.J. Jasa
J.D. Luck
Board of Tractor Test Engineers