

January 2006

## Test 1891: Kubota L5030 Diesel

Follow this and additional works at: <http://digitalcommons.unl.edu/tractormuseumlit>



Part of the [Applied Mechanics Commons](#)

---

"Test 1891: Kubota L5030 Diesel" (2006). *Nebraska Tractor Tests*. 362.  
<http://digitalcommons.unl.edu/tractormuseumlit/362>

This Article is brought to you for free and open access by the Tractor Test and Power Museum, The Lester F. Larsen at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Nebraska Tractor Tests by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

# NEBRASKA TRACTOR TEST 1891

## KUBOTA L5030 DIESEL

### 12 SPEED

#### POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Mean Atmospheric Conditions
---------------------	--------------------------------	-----------------	-----------------------	-----------------------	--------------------------------

#### MAXIMUM POWER AND FUEL CONSUMPTION

Rated Engine Speed—(PTO speed—572 rpm)					
45.86 (34.20)	2700	3.23 (12.22)	0.493 (0.300)	14.21 (2.80)	
Standard Power Take-off Speed(540 rpm)					
44.80 (33.41)	2550	3.08 (11.68)	0.482 (0.293)	14.52 (2.86)	

#### VARYING POWER AND FUEL CONSUMPTION

45.86 (34.20)	2700	3.23 (12.22)	0.493 (0.300)	14.21 (2.80)	Air temperature
40.31 (30.06)	2804	2.93 (11.08)	0.509 (0.309)	13.77 (2.71)	76°F(24°C)
30.75 (22.93)	2841	2.37 (8.97)	0.540 (0.328)	12.97 (2.56)	Relative humidity
20.77 (15.49)	2867	1.93 (7.30)	0.650 (0.395)	10.77 (2.12)	28%
10.41 (7.76)	2911	1.49 (5.62)	0.999 (0.608)	7.01 (1.38)	Barometer
0.68 (0.51)	2953	1.13 (4.27)	11.546 (7.023)	0.61 (0.12)	28.45"Hg(96.34kPa)

Maximum torque 108 lb.-ft. (146 Nm) at 1701 rpm  
 Maximum torque rise - 20.8%  
 Torque rise at 2206 rpm - 12%

#### TRACTOR SOUND LEVEL WITHOUT CAB

	Front Wheel Drive	
	Disengaged dB(A)	Engaged dB(A)
At no load in 8th gear	87.3	87.7
Bystander	80.2	--

#### 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 17.5L-24; 6; 20 (140)  
 Two 10-16.5; 6; 20 (140)  
 17.0 in (430 mm)  
 2260 lb (1025 kg)  
 1715 lb (778 kg)  
 3975 lb (1803 kg)

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

**Dates of tests:** November 14 -16, 2006

**Manufacturer:** Kubota Corporation, Tsukuba Plant, Sakano-shinden, Tsukubamirairai-City, Ibaraki, Japan

**FUEL, OIL and TIME:** Fuel No. 2 Diesel Specific gravity converted to 60°/60° F (15°/15°C) 0.8409 Fuel weight 7.002 lbs/gal (0.839 kg/l) Oil SAE 15W40 API service classification CF-4/SG Transmission and hydraulic lubricant Kubota UDT fluid Front axle lubricant SAE 90 gear oil Total time engine was operated 10.5 hours

**ENGINE:** Make Kubota Diesel Type four cylinder vertical Serial No. 6J0719 Crankshaft lengthwise Rated engine speed 2700 Bore and stroke 3.425" x 4.031" (87.0 mm x 102.4 mm) Compression ratio 23.8 to 1 Displacement 148 cu in (2434 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 horizontal Cooling medium temperature control one thermostat

**ENGINE OPERATING PARAMETERS:** Fuel rate: 20.9 - 22.7 lb/h (9.5 - 10.3 kg/h) High idle: 2925 - 2975 rpm

**CHASSIS:** Type front wheel assist Serial No. 39939 Tread width rear 53.5" (1360 mm) to 59.1" (1500 mm) front 52.8" (1340 mm) Wheelbase 75.4" (1915 mm) Hydraulic control system direct engine drive Transmission selective gear fixed ratio with full range operator controlled powershift Nominal travel speeds mph (km/h) first 0.92 (1.48) second 1.30 (2.09) third 1.75 (2.82) fourth 2.11 (3.40) fifth 2.58 (4.16) sixth 3.11 (5.01) seventh 3.85 (6.19) eighth 4.64 (7.46) ninth 5.44 (8.76) tenth 6.56 (10.55) eleventh 10.64 (17.13) twelfth 15.71 (25.29) reverse 0.88 (1.41), 1.24(2.00), 2.01 (3.24), 2.98 (4.79), 4.42 (7.12), 6.26(10.07), 10.16(16.35), 15.01 (24.15) Clutch single dry 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 2550 engine rpm Unladen tractor mass 3800 lb (1724 kg)

### THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: I, II

Quick Attach: None

Maximum force exerted through whole range:	3137 lbs (14.0 kN) Category I
	2813 lbs (12.5 kN) Category II
i) Opening pressure of relief valve:	NA
Sustained pressure of the open relief valve:	2691 psi (185 bar)
ii) Pump delivery rate at minimum pressure and rated engine speed:	9.8 GPM (37.1 l/min)
iii) Pump delivery rate at maximum hydraulic power:	9.7 GPM (36.7 l/min)
Delivery pressure:	2200 psi (152 bar)
Power:	12.5 HP (9.3 kW)

### THREE POINT HITCH PERFORMANCE

Observed maximum pressure psi. (bar)	2690 (185)
Location:	lift cylinder
Hydraulic oil temperature: °F (°C)	185 (85)
Location:	hydraulic sump
Category:	I, II
Quick attach:	none

#### Category I

SAE Static Test—System pressure 2420 psi (167 Bar)

Hitch point distance to ground level in. (mm)	8.0 (203)	14.0 (356)	20.0 (511)	26.0 (660)	32.0 (813)
Lift force on frame lb	3159	3308	3339	3578	3348
" " " " " " (kN)	(14.1)	(14.7)	(14.9)	(15.9)	(14.9)

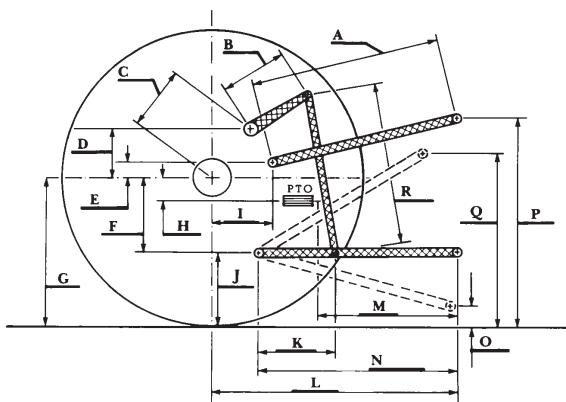
#### Category II

SAE Static Test—System pressure 2420 psi (167 Bar)

Hitch point distance to ground level in. (mm)	8.0 (203)	15.0 (381)	22.0 (559)	29.0 (737)	32.0 (813)
Lift force on frame lb	3119	3249	3231	3348	3231
" " " " " " (kN)	(13.9)	(14.5)	(14.4)	(14.9)	(14.4)

	Category I		Category II	
	inch	mm	inch	mm
A	30.7	781	30.2	767
B	9.1	230	9.1	230
C	11.2	285	11.2	285
D	11.1	282	11.1	282
E	9.0	228	9.0	228
F	5.8	147	5.8	147
G	23.6	600	23.6	600
H	0.4	11	0.4	11
I	2.6	67	2.6	67
J	17.8	453	17.8	453
K	13.8	350	13.4	340
L	32.9	836	32.1	816
M	25.2	641	24.4	621
N	29.5	750	28.7	730
O	6.7	171	6.9	175
P	35.9	913	36.9	938
Q	30.6	778	31.0	787
R	20.9	532	20.9	532

HITCH DIMENSIONS AS TESTED - NO LOAD



**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. For the maximum power tests, the fuel temperature at the injection pump inlet was maintained at 143°F (62°C).

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. 1891, December 15, 2006.

Roger M. Hoy  
Director

M.F. Kocher  
V.I. Adamchuk  
J.A Smith  
Board of Tractor Test Engineers



Kubota L5030 Diesel