Report on test in accordance with O.E.C.D. STANDARD CODE for the Official Testing of Agricultural Tractors

O.E.C.D. Approval No.

1030

KUBOTA L3750D

Manufactured by: KUBOTA, Ltd.
TSUKUBA Plant
Ibaraki, JAPAN



Test No.: 86001/OECD
Date of Test: May, 1986
Date of Approval: 24th October, 1986

Bio-oriented Technology Research Advancement Institution

1-40-2 Nisshin Omiya Saitama 331 JAPAN

This bulletin is based on engineering tests in accordance with the O.E.C.D. STANDARD CODE for the official Testing of Agricultural Tractor Performance. It does not contain an evaluation of the tractor performance on practical work. This report has been approved by the O.E.C.D. Coordinating Center (C.E.M.A. G.R.E.F., France) as being in accordance with the O.E.C.D. STANDARD CODE.

In this report all performance characteristics are given corresponding to the International System of Units.
The reference to the former used Technical System of Units is given by the following relations:

Forces	1 kgf = 9.80665 N
Powers	1 PS = 0.7355 kW
Pressures	1 kgf/cm^2 = 98.0665 kPa
	1000 hPa = 750.1 mmHg

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Tractor manufacturer:	KUBOTA, Ltd. TSUKUBA Plant Yawara, Tsukuba-gun, Ibaraki, Japan
Submitted for test by:	The manufacturer
Selected for test by:	The manufacturer with agreement by BRAIN
Place of running-in:	KUBOTA, Ltd. TSUKUBA Plant
Duration of running-in:	83 hours

I. SPECIFICATIONS OF TRACTOR

TRACTOR	
Make:	KUBOTA
Trade name:	KUBOTA L3750D
Model:	L3750D
Type:	Wheeled tractor, four-wheel driven, unit construction
Serial No.:	L3750D-51465
1st Serial No.:	L3750DT-50001
ENGINE	
Make:	Own make
Model:	F2302-DI-L-DC
Type:	4-cycle diesel engine with direct injection, water cooled
Serial No.:	F2302-DI-L-DC-38883
Cylinders	
Number and disposition:	5, Vertical, in-line
Bore/stroke:	85 mm × 82 mm
Capacity:	2326 cm^3
Compression ratio:	18 : 1
Arrangement of valves:	Over head
Cylinder liners:	Replaceable, dry
Fuel system	
Feed system:	Forced feed type
Filters	
Make:	TAIYO GIKEN
Type:	Replaceable paper element with sediment bowl
Model:	DI-100B
Number:	1
Capacity of fuel tank:	58 ℓ
Injection pump	
Make:	DIESEL KIKI

Type:	BOSCH type K, in-line
Model:	NP-PFR5KD75/2NP2
Serial No.:	—
Manufacturer's production setting of injection pump	
flow rate:	20.5 to 23.5 mm^3/stroke at rated engine speed and full load
Injection timing:	18° before TDC
Injection nozzles	
Make:	STANADYNE
Type:	Hole type
Model:	27836
Injection pressure:	22.4 $^{+1.0}_{-0}$ MPa
Governor	
Make:	Own make
Type:	Mechanical
Model:	—
Governed range of speed:	850 to 2730 rev/min
Rated engine speed	2500 rev/min
Air cleaner	
Pre-cleaner	Optional, not fitted in tests
Make:	NIPPON ROKAKI
Model:	794037-6000
Type:	Cyclone type
Location of air intake:	Above the bonnet
Main	
Make:	NIPPON DONALDSON
Model:	FHG06-8154
Type:	Dry paper element cyclone type
Oil capacity:	—
Location:	Above the engine under the bonnet
Maintenance indicator:	Not fitted
Lubrication system	
Type of feed pump:	Trochoid
Model of feed pump:	Not specified
Total oil capacity including filter:	9 ℓ
Oil filters	
Type:	Full flow replaceable cartridge paper element type
Number:	1
Changing period:	400 hrs

Oil changing period:	200 hrs
Oil specifications:	See end of chapter "Fuel and lubricants used in tests"
Cooling system	
Coolant:	Water
Specification of pump	
Type:	Centrifugal
Model:	—
Specification of fan	
Type:	Axial type
Number of fan blades:	5
Fan diameter:	380 mm
Coolant capacity:	7.6 ℓ
Type of temperature control:	Wax type thermostat
System pressure:	88 ± 15 kPa
Starting system	
Safety device:	Operable only with clutch pedal operated
Make:	NIPPON DENSO
Type:	Solenoid engaged type
Model and starter motor power rating:	ND 128000-1160, 12 V, 1.4 kW
Cold starting aid:	Electrical glow plug
Electrical equipment	
Voltage:	12 V
Generator	
Make:	NIPPON DENSO
Type:	Three phase alternator
Model:	ND 121000-0980
Power:	35 A, 420 W
Battery	
Number:	1
Rating:	100 Ah at 20 hours rating
Exhaust system	
Make:	Own make
Type:	Multi-chamber absorption-expansion type
Model:	—
Location:	Vertical on the left side of tractor
Height of outlet above ground:	2200 mm

TRANSMISSION

Clutch

Make:	DAIKIN SEISAKUSHO
Type:	Double-acting with 2 plates; Dry dual disk
Model:	—
Number of disks:	2
Diameter of disks:	Drive train 275 mm, PTO train 240 mm
Method of operation:	Operated by foot pedal

Gear box

Make:	Own make
Type:	Mechanical
Model:	—
Arrangement:	4 speed gears with main lever, 1st and 2nd gears with constant mesh and 3rd and 4th with synchromesh; 2 speed gears with sub lever, H and L gears with constant mesh; Foward-reverse change lever fitted; Totally 8 forward and 8 reverse speeds

Rear axle and final drives

Make:	Own make
Type:	Bevel gear type differential and planetary gear type final drives
Model:	—
Differential lock	
Type:	Mechanical
Model:	—
Method of engagement:	Operated by foot pedal
Method of disengagement:	Self disengaged

Front axle and final drives

Make:	Own make
Type:	Bevel gear type differential and final drives
Model:	—
Differential lock:	Not fitted

Transmission oils

Gear box, rear axle and final drives

Capacity:	43 ℓ in common with power lift
Changing period:	300 hrs
Type of filter:	Metal strainer

Filter changing period:	150 hrs
Power lift:	In common with gear box
Front axle and final drives:	
Capacity:	5.5 ℓ in front axle differential case 2.7 ℓ each in final gear cases
Changing period:	300 hrs
Recommended oil:	See end of chapter "Fuel and lubricants used in tests"

Total ratios and speeds

Gear No.	Group	Number of engine revolutions for one revolution of driving wheel	Nominal travelling speed (km/h) at rated engine speed 2500 (rev/min)*) km/h
Forward			
1	L 1	377.19	1.58
2	L 2	281.18	2.12
3	L 3	171.45	3.48
4	L 4	111.82	5.33
5	H 1	88.20	6.76
6	H 2	65.75	9.07
7	H 3	40.09	14.87
8	H 4	26.15	22.80
Reverse			
1	L 1	380.25	1.57
2	L 2	283.46	2.10
3	L 3	172.84	3.45
4	L 4	112.72	5.29
5	H 1	88.92	6.71
6	H 2	66.29	9.00
7	H 3	40.42	14.75
8	H 4	26.36	22.62

*) Calculated with 13.6-28 tyre rolling radius of 633 mm

POWER TAKE-OFF

Main power take-off

Type:	Semi-independent PTO
Method of engagement:	Operated by foot pedal
Number of shafts:	1
Method of changing power take-off speeds:	Changing gears with hand lever

Power take-off proportional to engine speed

540 rev/min

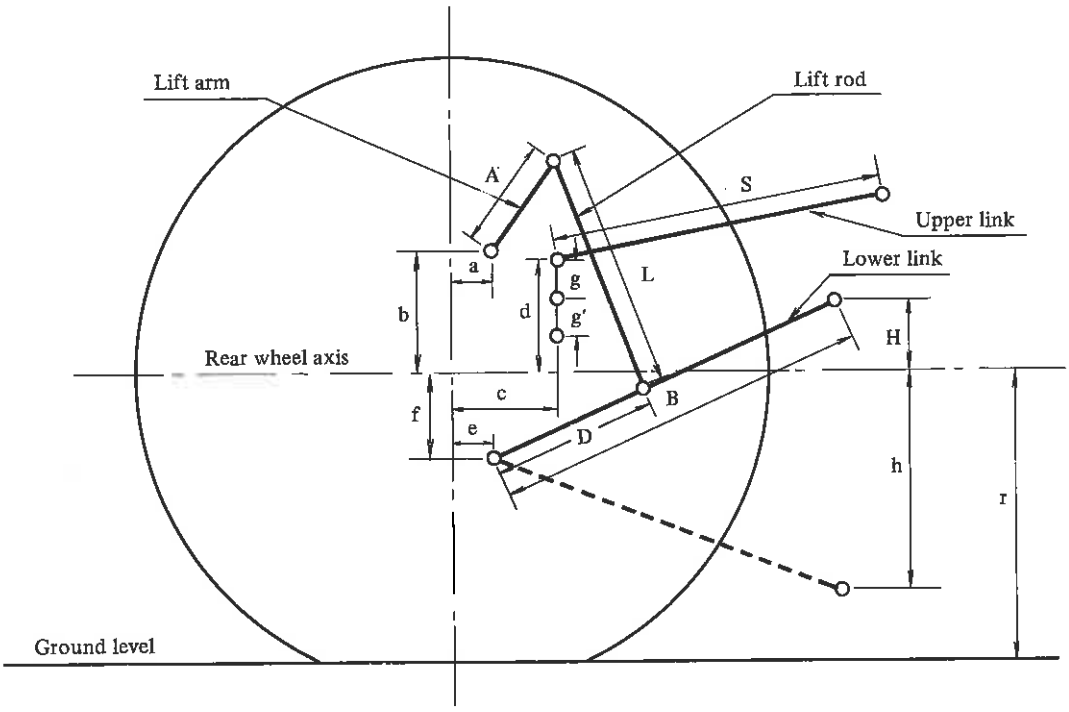
Position:	At rear of tractor in median plane
Diameter of power take-off shaft end:	35 mm
Number of splines:	6 to ISO 500/SAE J1170
Height above ground with tyre size:	612 mm with 13.6—28 tyres
Distance from the median plane of the tractor:	0 mm
Distance behind rear axle center:	378 mm
Power take-off speed at rated engine speed (2500 rev/min):	602 rev/min
Engine speed at standard power take-off speed (540 rev/min):	2243 rev/min
Ratio of rotation speed (engine/PTO):	4.154
Power restriction and maximum torque:	29.8 kW and 599 Nm
Direction of rotation (viewed from shaft end):	Clockwise

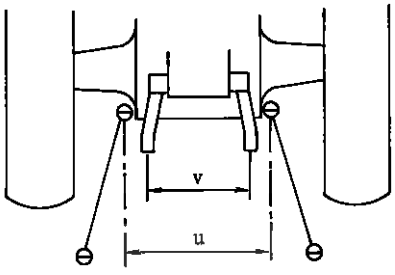
750 rev/min

Position:	At rear of tractor in median plane
Diameter of power take-off shaft end:	35 mm
Number of splines:	6 to ISO 500/SAE J1170
Height above ground with tyre size:	612 mm with 13.6-28 tyres
Distance from the median plane of tractor:	0 mm
Distance behind rear axle center:	378 mm
Power take-off speed at rated engine speed:	784 rev/min
Engine speed at standard power take-off speed (750 rev/min):	2391 rev/min
Ratio of rotation speed (engine/PTO):	3.188
Direction of rotation (viewed from shaft end):	Clockwise

Power take-off proportional to ground speed	
	Not fitted
POWER LIFT	
Make:	Own make
Type:	Hydraulic, open center system, position and draft control
Make and number of cylinders:	Own make, 1 cylinder, single acting
Type of linkage lock for transport:	Hydraulically closed by throttle valve
Relief valve pressure setting:	$17.2\ ^{+0.5}_{-0}$ MPa
Opening pressure of cylinder safety valve:	$19.6\ ^{+1.0}_{-0}$ MPa
Lift pump type:	Gear type
Transmission between pump and engine:	Gear
Type and number of filters:	Metal strainer, 1
Oil changing period:	300 hrs
Filter changing period:	150 hrs
Oil capacity:	43 ℓ in common with transmission
Site of oil reservoir:	In rear transmission case
Type and number of oil tapping points:	Flange type, 2
Location of the oil tapping:	One is on the right side of mid transmission case and another is on the left side of hydraulic cylinder case
Maximum volume of oil available to external cylinders:	Hydraulic oil should be added for external hydraulic circuit
Recommended oil:	See end of chapter "Fuel and lubricants used in tests"
Three point linkage	
Category	1 to ISO 730/SAE J715

Detailed figures of power lift





Specify the setting for the lifting test

Rear tyre (size 13.6-28) radius index		(r) 610 mm
Front tyre (size 9.5-16) radius index		383 mm[1)]
Length of lift arms		(A) 240 mm
Length of lower links		(B) 790 mm
Distance of lift arm pivot point from rear wheel center line	horizontally	(a) 95 mm
	vertically	(b) 279 mm
Horizontal distance between the 2 lower link points		(u) 414 mm
Horizontal distance between the 2 lift arm end points		(v) 463 mm
Length of upper link		(S) 556 to 820 mm, 585 mm
Distance of upper link pivot point from rear wheel center line	horizontally	(c) 301 mm
	vertically	(d,g,g′) 271 mm, 50 mm, 40 mm
Distance of lower link pivot point from rear wheel center	horizontally	(e) 104 mm
	vertically	(f) 180 mm
Distance of lower link pivot points to lift rod pivot points on lower links		(D) 370 mm
Length of lift rods		(L) 470 to 545 mm, 496 mm
Height of lower hitch points:		
— in low position		(h) 370 to 555 mm, 418 mm
— in high position		(H) 110 to 250 mm, 192 mm
relative to the rear wheel center line situated 610 mm above the ground level		
Height of lower hitch points when locked in transport position		Any height within lift range

[1)] Front tyre radius index 383 mm is in National regulation (JIS)

SWINGING DRAWBAR	
Type:	Clevis type
Height above ground (tyre size 13.6-28)	
maximum:	442 mm at the center of clevis
minimum:	360 mm at the center of clevis
Type of adjustment:	Changing by turning clevis
Distance of hitch point from rear axle axis, horizontally:	655 and 779 mm
Distance of hitch point from power take-off shaft end	
vertically:	170 and 252 mm at the center of clevis
horizontally:	277 and 401 mm
Lateral adjustment (center of clevis)	
right:	155 mm
left:	155 mm
Distance of pivot point from rear axle axis, horizontally:	181 mm
Diameter of drawbar pin hole:	24 mm
HOLED DRAWBAR	Optional, not fitted in tests
Number of holes:	7
Distance between holes:	80 mm
Hole diameter:	29 mm
Thickness/width of the drawbar:	25 mm thickness and 75 mm width
Height above ground, minimum:	68 mm at the surface of the bar
maximum:	873 mm at the surface of the bar
Horizontal distance to power take-off shaft end (rear):	517 mm
TRAILER HITCH	
Type:	Clevis type
Height above ground:	637, 743 and 796 mm at the center of clevis
Distance of hitch point from rear axle axis, horizontally:	553 mm
Distance of hitch point from power take-off shaft end, vertically:	25, 131 and 184 mm above
horizontally:	175 mm behind
Diameter of pin hole:	32 mm
Maximum vertical permissible load:	17.7 kN
STEERING	
Make:	NIPPON POWER STEERING

Type:	Integral type with single drag link
Model:	PQH 1120
Method of operation:	Steering wheel operated and hydraulically power assisted
Pump:	Gear type
Ram:	Integral type
Working pressure:	14.2 MPa
Oil capacity:	2.5 ℓ
Oil changing period:	400 hrs
Filter changing period:	Not specified
Recommended oil:	See end of chapter "Fuel and lubricants used in tests"

BRAKES

Service brake

Make:	Own make
Type:	Mechanical acting oil-immersed disk type; 3 disks on each differential half shaft; Each 244 mm disk diameter
Model:	—
Method of operation:	Independent or combined pedal operated
Trailer braking take-off:	Not fitted

Parking brake:

Type:	In common with service brake
Method of operation:	Depressed by brake pedals and latched by hand lever

STEERING WHEELS

Number:	2
Position:	Front
Tyres	
Size:	9.5—16
Ply rating:	6
Type of casing:	Crossply
Maximum permissible load on each tyre:	725 kg
Corresponding inflation pressure:	220 kPa
Track width:	1320 mm only
Method of adjustment:	—

DRIVING WHEELS

Number:	2

Position:		Rear
Tyres		
Size:		13.6-28
Ply rating:		6
Type of casing:		Crossply
Maximum permissible load on each tyre:		1355 kg
Corresponding inflation pressure:		100 kPa
Track widths:		1320, 1420, 1520, 1620, 1725, 1820 and 1920 mm
Method of adjustment:		Changing by turning wheels and offset of rims
WHEELBASE		1940 mm
DRIVER'S SEAT		
Make:		BOSTROM
Type of suspension:		Torsion bar type
Type of damping:		Air damping
Range of adjustment,	longitudinal:	150 mm
	vertical:	50 mm
MISCELLANEOUS		
Mudguard seat:		Not fitted

Addendum of specification on the tractor established by the testing station

Bio-oriented Technology Research Advancement Institution
(Institute of Agricultural Machinery)

Approval No. : 1030
Model of tractor : KUBOTA L3750D

I. SPECIFICATION OF THE TRACTOR

PROTECTIVE STRUCTURE

Make: BUISARD
Model: 292 115
Type: Frame, Not tiltable
OECD approval No.: CSD 0939/3

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LIGHTING

In accordance with EEC directives

	Height above ground of center with tyres 9.5—16 front 13.6—28 rear mm	Size mm	Distance from outside edge of tractor to center at 1320 mm track width mm
Head lights	1085	150x90	640
Side lights	1500	120x40	235
Rear lights	1505	120x40	235
Flashers	F:1555, R:1560	120x70	F:235, R:235
Reflectors	1345, 1345 835	65x45, 65x45 60 dia.	250, 350 490

TEST CONDITIONS

Overall dimensions

with tyre size: 9.5—16 at front, 13.6—28 at rear

Length: 3485 mm (front bumper — lower links, without ballast)
3685 mm (bumper ballast — lower links, with ballast)

Width minimum: 1680 mm at 1320 mm rear track width (without ballast)
1814 mm at 1320 mm rear track width (with ballast)

maximum: 2280 mm at 1920 mm rear track width (without ballast)
2414 mm at 1920 mm rear track width (with ballast)

Overall height at the top of exhaust silencer: 2220 mm (without ballast)
2216 mm (with ballast)

Overall height at the top of safety frame (CSD 0939/3): 2320 mm (without ballast)
2305 mm (with ballast)

Ground clearance: 305 mm

Clearance-limiting part: Front differential case

Track setting

Front: 1320 mm

Rear: 1320 mm

Tractor mass (without driver and with tanks full)

	without ballast	with ballast
Front:	770 kg	1036 kg
Rear:	1235 kg	1639 kg
Total:	2005 kg	2675 kg

Ballast

	Number of weights	Water kg	Total mass kg
At front bumper:	8 (25kg each)	—	200
At front tyres:	—	—	—
At rear tyres:	4 (50kg each)	270	470

Fuel and lubricants used in tests

Fuel

Type:	Diesel fuel No.2 JIS
Density at 15°C:	0.836

Oils

	Used during tests	Recommended
Engine oil		
Type:	API grade CC	API grade CC or CD
Viscosity:	SAE 10W-30	Below 0°C SAE 10W or 10W-30
		0°C to 25°C SAE 20 or 10W-30
		Above 25°C SAE 30 or 10W-30
Transmission oil		
Type:	API grade GL-4	API grade GL-4
Viscosity:	SAE 75W	SAE 75W
Hydraulic fluid:	In common with transmission oil	
Steering oil		
Type:	API grade GL-4	API grade GL-4
Viscosity:	SAE 75W	SAE 75W
Recommended grease:		NLGI grade No.1
Number of lubrication points:		9

II. TEST RESULTS

A. COMPULSORY TEST RESULTS

(1) MAIN POWER TAKE-OFF PERFORMANCE

— Date and location of tests: 12th May, 1986, BRAIN, Omiya
— Type of dynamometer: DC electrical, MEIDENSHA EB-DH1
— Gear number of PTO: L (540 rev/min)

Power kW	Speed		Fuel consumption			Specific Energy kWh/ℓ
	Engine rev/min	PTO rev/min	Hourly ℓ/h	Hourly kg/h	Specific g/kWh	
MAXIMUM POWER —2— hour test						
27.5	2500	602	8.19	6.85	249	3.36
POWER AT RATED ENGINE SPEED						
27.5	2500	602	8.19	6.85	249	3.36
STANDARD POWER TAKE-OFF SPEED (540 rev/min)						
27.4	2243	540	7.76	6.49	237	3.53
PART LOADS						
i) the torque corresponding to the maximum power at rated engine speed (1)						
27.5	2500	602	8.19	6.85	249	3.36
ii) 85% of torque obtained in i)						
24.2	2590	624	7.47	6.25	258	3.24
iii) 75% of torque defined in ii)						
18.3	2612	629	6.07	5.08	277	3.01
iv) 50% of torque defined in ii)						
12.3	2634	635	4.82	4.03	327	2.55
v) 25% of torque defined in ii)						
6.28	2681	645	3.64	3.05	485	1.73
vi) unloaded						
0.00	2724	656	2.54	2.12	—	—

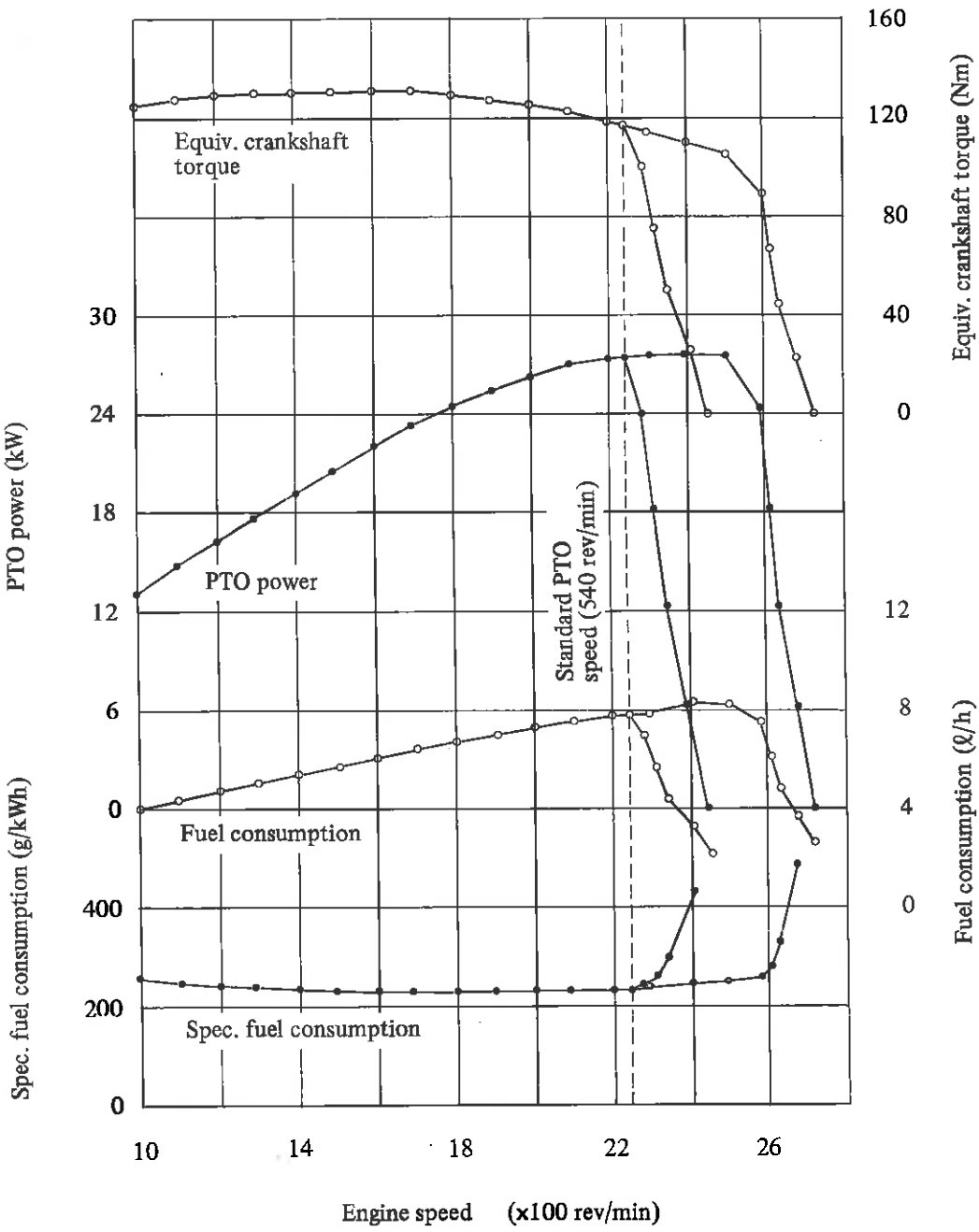
PART LOADS AT STANDARD POWER TAKE-OFF SPEED

Power kW	Speed		Fuel consumption			Specific Energy kWh/ℓ
	Engine rev/min	PTO rev/min	Hourly ℓ/h	Hourly kg/h	Specific g/kWh	
i) the torque corresponding to maximum power available						
27.4	2243	540	7.76	6.49	237	3.53
ii) 85% of torque obtained at maximum power						
23.9	2288	551	6.91	5.78	242	3.46
iii) 75% of torque defined in ii)						
18.2	2318	558	5.63	4.71	259	3.23
iv) 50% of torque defined in ii)						
12.3	2350	566	4.37	3.65	297	2.81
v) 25% of torque defined in ii)						
6.31	2408	579	3.23	2.70	428	1.95
vi) unloaded						
0.00	2456	592	2.11	1.76	—	—

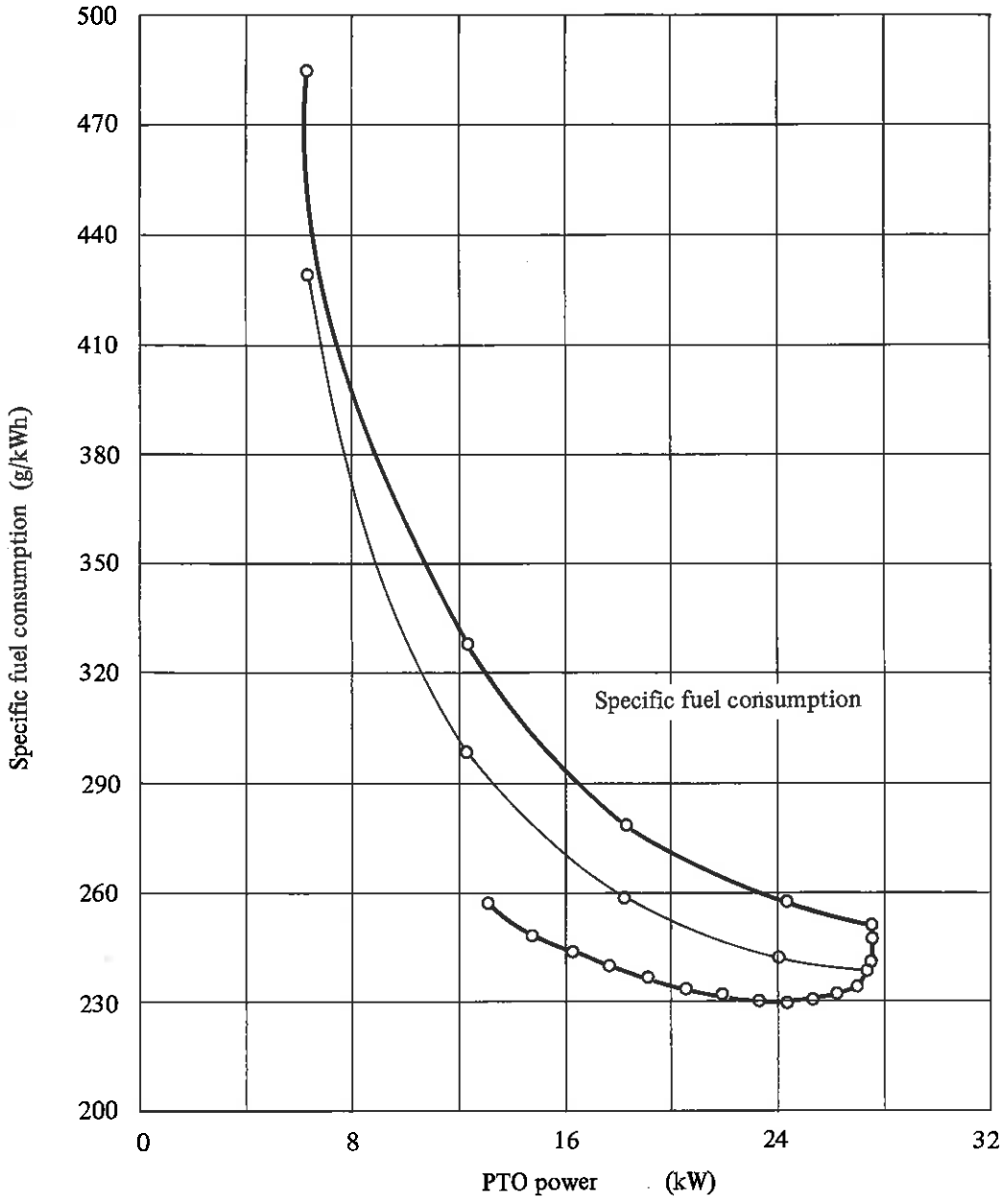
— Standard specific fuel consumption: 258/327/242/297 g/kWh
— No load maximum engine speed: 2724 rev/min
— Torque (1) at maximum power: 105.0 Nm
— Maximum torque (1) (engine speed: 1600 rev/min): 131.0 Nm
— Mean atmospheric conditions: Temperature: 21 °C
Pressure: 1016 hPa
Relative humidity: 55 %
— Maximum temperatures: Coolant: 100 °C
Engine oil: 104 °C
Fuel: 44 °C
Engine air intake: 32 °C

(1) The torque is the equivalent crankshaft torque.

PTO PERFORMANCE



PTO PERFORMANCE



(2) DRAWBAR PERFORMANCE

Date of tests: 25th to 29th May, 1986
Tyre size: 9.5—16 at front, 13.6—28 at rear
Type of track: Concrete
Tread bar height at the beginning of drawbar tests in per cent of the value when new: 78% at front, 81% at rear
Height of drawbar above ground: 422mm at the center of clevis
Tyre inflation pressure: 220 kPa at front, 100 kPa at rear

Gear No.	Speed	Power	Drawbar pull	Engine speed	Slip of wheels	Specific fuel consumption	Specific energy	Temperature			Atmospheric conditions		
								Fuel	Coolant	Engine oil	Temperature	Relative humidity	Pressure
	km/h	kW	kN	rev/min	%	kg/kWh	kWh/ℓ	°C	°C	°C	°C	%	hPa
(I) MAXIMUM POWER (without ballast)													
L1	1.40	6.38	16.38	2676	15.0	0.545	1.534	27	80	92	18	62	1018
L2	1.87	8.52	16.38	2650	15.0	0.471	1.775	26	80	92	18	62	1018
L3	3.02	13.75	16.38	2593	15.0	0.387	2.162	27	80	93	18	62	1018
L4	4.61	20.96	16.38	2572	15.0	0.341	2.451	27	80	92	18	62	1018
H1	5.94	21.84	13.24	2498	10.8	0.322	2.597	27	80	93	18	62	1018
H2	8.35	22.29	9.61	2502	6.7	0.311	2.686	27	85	85	18	62	1018
H3	14.33	20.69	5.20	2507	2.6	0.343	2.440	24	85	82	18	62	1018

Height of drawbar above ground: 407 mm at the center of clevis
Tyre inflation pressure: 220 kPa at front, 100 kPa at rear

Gear No.	Speed	Power	Drawbar pull	Engine speed	Slip of wheels	Specific fuel consumption	Specific energy	Temperature			Atmospheric conditions		
								Fuel	Coolant	Engine oil	Temperature	Relative humidity	Pressure
	km/h	kW	kN	rev/min	%	kg/kWh	kWh/ℓ	°C	°C	°C	°C	%	hPa
(II) MAXIMUM POWER (with ballast)													
L1	1.37	7.75	20.40	2629	15.0	0.495	1.692	27	81	92	23	83	1019
L2	1.84	10.40	20.40	2600	15.0	0.407	2.051	28	81	93	23	83	1019
L3	2.99	16.93	20.40	2582	15.0	0.351	2.385	28	81	92	25	70	1019
L4	4.68	21.68	16.67	2504	10.5	0.323	2.593	28	81	90	25	70	1019
H1	6.12	22.34	13.14	2498	7.4	0.311	2.692	28	81	94	25	61	1019
H2	8.46	21.66	9.22	2505	4.9	0.317	2.635	28	81	93	25	61	1019
H3	14.15	20.04	5.10	2495	2.6	0.345	2.423	28	81	89	25	61	1019
(III) FIVE HOUR TEST at 75% of pull at maximum power													
H2	8.82	16.82	6.86	2549	2.3	0.378	2.213	29	83	94	23	67	1019
(IV) FIVE HOUR TEST at pull corresponding to 15% wheel slip in test (II)													
*L3	2.99	—	20.40	—	—	—	—	28	81	100	24	83	1017

*Those figures not quoted are irrelevant due to the additional ballast.
Total oil consumption during ten hours duration of tests (III) and (IV) 10.4 g/h

(3) TURNING SPACE AND TURNING CIRCLE

Wheel equipment	front:	9.5—16
	rear:	13.6—28
Track of wheels	front:	1320 mm
	rear:	1320 mm

	With brakes		Without brakes	
	left-hand m	right-hand m	left-hand m	right-hand m
Radius of turning space	3.18	3.17	3.97	4.00
Radius of turning circle	2.86	2.85	3.65	3.68

(4) LOCATION OF CENTER GRAVITY

Height above ground	784 mm
Distance forward from the vertical plane containing the axis of the rear wheels	732 mm
Distance from the median plane, to the right	4 mm

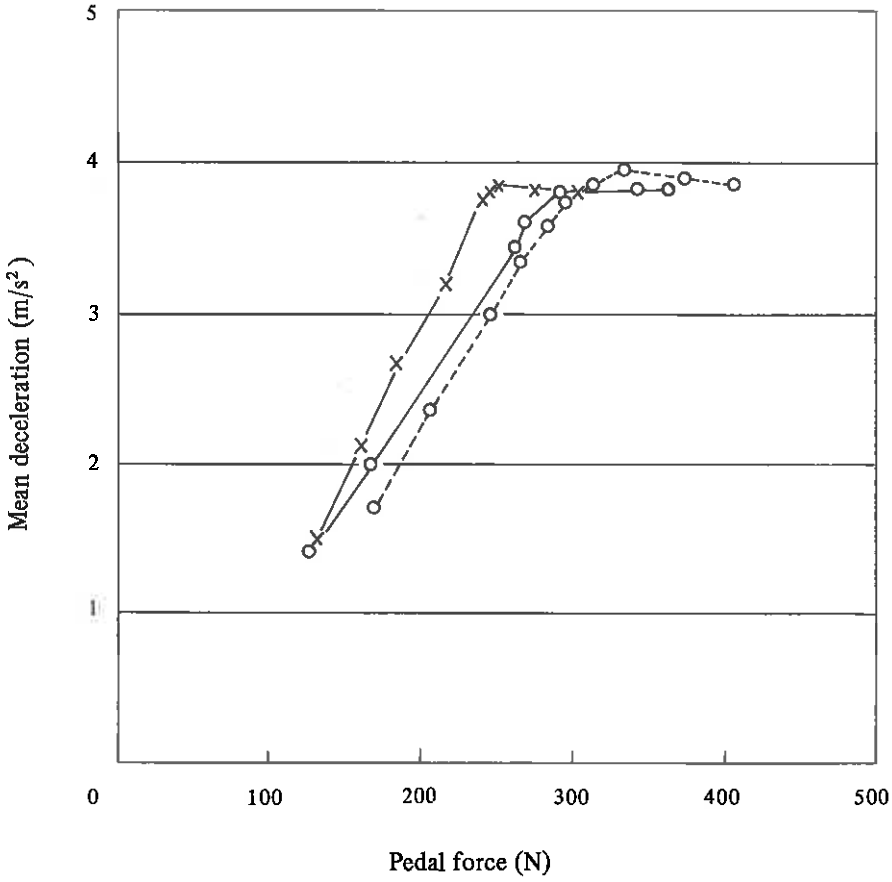
(5) BRAKING (Front wheel drive disengaged)

Date of tests: 19th and 21st May, 1986

Tractor masses during tests with driver:	front kg	rear kg	total kg
without ballast	766	1390	2156
with ballast	1035	1962	2997

A) Service brake

Type — 0 — test (without ballast) — X —
Type — 0 — test (with ballast) — O —
Type — I — test (fade) --- O ---



Speed before application of brakes, without ballast: 23.5 km/h
with ballast: 23.3 km/h
The brakes were heated by towing of the tractor for 1 km
Comments on deviation and vibration: None

B) Parking brake

Method of operation: Depressed by brake pedals and latched by hand lever

1) Ballasted tractor on 18% — slope

a) Minimum pedal force for stop of tyre rotating: up 275 N
down 206 N

b) Minimum pedal force for hand lever latched and tyre stopped:
up 804 N
down 804 N

c) Minimum hand lever force latched for pedal force maintaining above a): up 559 N
down 530 N

2) Unballasted tractor on 12% — slope with trailer of 2076 kg

a) Minimum pedal force for stop of tyre rotating: up 206 N
down 177 N

b) Minimum pedal force for hand lever latched and tyre stopped:
up 559 N
down 569 N

c) Minimum hand lever force latched for pedal force maintaining above a): up 559 N
down 579 N

(6) MEASUREMENT OF EXTERNAL NOISE LEVEL

Date of test: 21st May, 1986
Type of track: Concrete
Type of sound level meter: RION NA 61

Results of test

Gear: High 4
Travelling speed before acceleration 17.6 km/h
Sound level 84 dB(A)

(7) NOISE MEASUREMENT AT THE DRIVER'S EAR LEVEL

Date of tests: 26th May, 1986
Type of track: Concrete
Type of sound level meter: RION NA61

Results of tests

Gear	Drawbar pull at which the tractor develops the max. sound level kN	Measured travelling speed km/h	Sound level dB (A)
L-1	18.6	1.3	88
L-2	18.6	1.7	89
L-3	12.5	3.3	90
L-4	14.2	4.8	91
H-1*)	12.3	6.2	91
H-1*)	Light load	7.2	87
H-2	8.8	8.7	92
H-3	5.0	14.7	92
H-4	2.2	23.0	90
H-4	Light load	23.3	90

*) The H-1 gear corresponds to the nominal travelling speed nearest to 7.5 km/h

(8) LIFTING FORCE AND HYDRAULIC POWER

Date and location of tests: 13th May, 1986; BRAIN, Omiya, JAPAN

HYDRAULIC FLUID

Make and type:	COSMO SEKIYU, API Grade GL-4
Viscosity:	56.31 cSt at 40°C
Viscosity index:	75W
Type of hydraulic system:	Open center system
Hydraulic fluid temperature at beginning of test:	61°C

POWER LIFT TEST

	Height of lower hitch point above ground in down pos. mm	Vertical movement mm	Max. corrected force exerted through full range kN	Corresp. pressure of hydraulic fluid MPa	Moment about rear axle kNm	Max. tilt angle of mast over range of lift Degrees
at hitch points	192	610	12.20	15.6	—	—
on the frame	192	631	12.05	15.6	10.77	7

Main linkage dimensions — See attached drawings and table in specification chapter.

Lifting heights relative to the horizontal plane including the lower link pivot points.

mm	−238	−231	−200	−100	0	+100	+200	+300	+372	+400

Lifting forces at hitch points (corresponding pressure 15.6 MPa)

kN	12.20		13.45	14.86	15.48	15.59	16.19	16.17	12.98	

Lifting forces on the test frame (corresponding pressure 15.6 MPa)

kN		14.29	14.66	15.02	15.63	14.77	14.07	13.05		12.05

HYDRAULIC POWER TEST

Sustained pressure with relief valve open: (Pump not stalled)		17.4	MPa
Pump delivery rate at minimum pressure:		37.5	ℓ/min
Flow rate corresponding to a hydraulic pressure equivalent to 90 percent of the actual relief valve pressure setting and corresponding hydraulic power;	Flow rate:	35.5	ℓ/min
	Pressure:	15.6	MPa
	Power:	9.25	kW
Flow rate and hydraulic pressure corresponding to maximum hydraulic power;	Flow rate:	34.9	ℓ/min
	Pressure:	16.6	MPa
	Power:	9.64	kW
Tapping point used for test:	beside the gear box		

REPAIRS AND ADJUSTMENT DURING TEST: None

REMARKS: None

Addendum of specification on the tractor established by the testing station

Bio-oriented Technology Research Advancement Institution
(Institute of Agricultural Machinery)

Approval No. : 1030
Model of tractor : KUBOTA L3750D

I. SPECIFICATION OF THE TRACTOR

PROTECTIVE STRUCTURE

Make: BUISARD
Model: 292 115
Type: Frame, Not tiltable
OECD approval No.: CSD 0939/3

Bio-oriented Technology Research Advancement Institution
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