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

O.E.C.D. Approval No. 1/1805 **FULL CODE**



Agricultural Tractor
KUBOTA M9000DT (4WD)

Manufactured by:
KUBOTA Corporation, TSUKUBA Plant
Aza, Sakanoshinden, Yawaramura, Tsukubagun, IBARAKI, JAPAN

INSTITUTE OF AGRICULTURAL MACHINERY
BIO-ORIENTED TECHNOLOGY RESEARCH ADVANCEMENT INSTITUTION
(IAM-BRAIN)
OMIYA, 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 (Code I). It does not contain the 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.

Test No.:	H 10-T003
Duration of Test:	October, 1998
Date of Approval:	21 st January, 1999
Make:	KUBOTA
Model:	M9000DT
Type:	4WD
Serial number:	M900-50389
1 st serial number:	M900-50001

In this report all performance characteristics are given corresponding to the international system of units.
The reference to the former used technical systems of units is given by the following relations:

Forces	1 kgf	=	9.80665 N
Powers	1 PS	=	0.7355 kW
	1 HP	=	0.7453 kW
Pressures	1 kgf/cm^2	=	98.0665 kPa

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Printed in **JAPAN**

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GENERALITIES

Tractor manufacturer's name and address:	KUBOTA Corporation, Tsukuba Plant Aza, Sakanoshinden, Yawaramura, Tsukubagun, IBARAKI, JAPAN
Location of tractor assembly:	-Ditto-
Submitted for test by:	The manufacturer
Selected for test by:	The manufacturer with agreement by BRAIN
Place of running-in:	KUBOTA Corporation, Tsukuba Plant
Duration of running-in:	Engine and tractor 53 hours
Location of test:	BRAIN

1. SPECIFICATIONS OF TRACTOR

1.1 IDENTIFICATION

Make:	KUBOTA
Model:	M9000DT
Type:	Four-wheel drive, unit construction Agricultural tractor
Number of driving wheels:	Four
Serial Number:	M900-50389
1st Serial Number:	M900-50001

1.2 ENGINE

Make:	Own make
Model:	V3300-TIE
Type:	4-cycle diesel engine with indirect injection and exhaust turbo super-charger, water cooled
Serial Number:	WN8847

1.2.1 Cylinders

Number:	Four
Disposition:	Vertical, in-line
Bore/Stroke:	98.0/110 mm
Capacity:	3318 cm^3
Compression ratio:	21.8:1
Arrangement of valves:	Valve in head
Cylinder liners:	No cylinder lines

1.2.2 Supercharging

Make:	MITSUBISHI HEAVY INDUSTRIES, LTD
Model:	TD04
Type:	Exhaust gas turbine
Pressure:	0.07 MPa

1.2.3 Fuel System

Fuel feed system:	Forced feed type (diaphragm pump)
Filters	
Make:	TAIYO GIKEN KOGYO Co., LTD.
Model:	16541-43352
Type:	Replaceable metal element, cartridge type
Number:	One
Capacity of fuel tank:	90 dm^3
Injection pump	
Make:	DENSO Corporation
Model:	ND-PFR4M75A1ND706
Type:	Bosch type M
Serial Number:	-
Manufacturer's production setting of injection pump	
Flow rate:	20.6 dm^3/h ± 5 % at rated engine speed and full load
Timing:	15 ~ 17 degrees before T.D.C.
Injectors	
Make:	DENSO Corporation
Model:	DNOPD 31
Type:	Throttle type
Injection pressure:	13.7 ~ 14.7 MPa

1.2.4 Governor

Make:	Own make
Model:	-
Type:	Mechanical (all speed governor)
Governed range of engine speed:	From 750 to 2800 rev/min
Rated engine speed:	2600 rev/min

1.2.5 Air cleaner

Pre-cleaner:	Not fitted
Main cleaner:	
Make:	NIPPON DONALDSON Co., LTD.
Model:	-
Type:	Dry dual paper element
Location of air intake:	Under the bonnet, in front of the radiator
Maintenance indicator:	Mechanical type

1.2.6 Lubrication system

Type of feed pump:	Forced lubrication (trochoidal pump)
Type of filter:	Replaceable paper element
Number:	One

1.2.7 Cooling system

Type of coolant:	50/50 solution of permanent antifreeze and clean water
Type of pump:	Centrifugal
Specification of fan	
Type:	Axial type
Number of fan blades:	Seven
Fan diameter:	430 mm
Coolant capacity:	9.0 dm^3
Type of temperature control:	Wax type thermostat
System pressure:	88.3 kPa

1.2.8 Starting System

Make:	MITSUBISHI ELECTRIC Corporation
Model:	M008T70971
Type:	Solenoid engaged type
Starter motor power rating:	12 V, 2.5 kW
Cold starting aid:	Electrical glow plug
Safety device:	Operable only with shuttle lever in neutral and PTO clutch disengaged

1.2.9 Electrical system

Voltage:	12 V
Generator	
Make:	MITSUBISHI ELECTRIC Corporation
Model:	A7TA1677
Type:	Three phase generator
Power:	45 Amps
Battery	
Number:	One
Rating:	92 Ah at 5 hours rating

1.2.10 Exhaust system

Make:	Calsonic Corporation
Model:	1B814-20000
Type:	Multi chamber absorption-expansion
Location:	Inside of the bonnet

1.3 TRANSMISSION

1.3.1 Clutch (travel alone)

Make:	EXEDY Corporation
Model:	D715 00F
Type:	Dry single plate-single stage
Number of plates:	One
Diameter of plates:	300 mm
Method of disengagement:	Operated by foot pedal

1.3.2 Gear box

Make:	Own make
Model:	-
Type:	Mechanical

Description:

	Forward	Reverse
Number of gears	Main gear shift with 4 speeds: (1 st ~ 4 th) synchromesh 4 speed gears Shuttle gear shift with 2 speed gears: synchromesh 2 speed gears, forward (F)/ reverse (R)	
Number of ranges	Range gear shift with 2 speeds: constant mesh 2 speed gears, low (L)/ high (H)	
Total of arrangements	8 speeds	8 speeds

Available options: Additional one constant mesh creeper gear
Totally 12 forward / 12 reverse speeds

1.3.3 Rear axle and final drives

Make:	Own make
Type:	Bevel gear type differential, planetary gear type final drives
Model:	-
Differential lock	
Type:	Mechanical, dog clutch
Model:	-
Method of engagement:	Operated by foot pedal
Method of disengagement:	Self disengagement

1.3.4 Front axle and final drives

Make:	Own make
Type:	Bevel gear type differential, planetary gear type final drives
Differential lock	
Type:	Mechanical, dog clutch
Model:	-
Method of engagement:	Operated by foot pedal
Method of disengagement:	Self disengagement

1.3.5 Total ratios and travelling speeds (tested tractor)

Gear Number	Range	Number of engine revolutions for one revolution of the driving wheels		Nominal travelling speed(*) at rated engine speed of 2600 rev/min [km/h]	
		Forward	Reverse	Forward	Reverse
1	1-L	288.37	291.06	2.51	2.49
2	2-L	187.06	188.79	3.87	3.84
3	3-L	121.04	122.53	5.99	5.92
4	4-L	89.63	90.47	8.09	8.01
5	1-H	70.15	70.79	10.33	10.24
6	2-H	45.50	45.92	15.93	15.79
7	3-H	29.53	29.81	24.55	24.32
8	4-H	21.80	22.01	33.26	32.94

(*) Calculated with a tyre dynamic radius index (ISO 4251-1:1992) of 740 mm (tyre: 18.4-30).

Number of revolutions of front wheels for one revolution of rear wheels: 1.399

1.3.6 Total ratios and travelling speeds (with creep range; not tested tractor)

Gear Number	Range	Number of engine revolutions for one revolution of the driving wheels		Nominal travelling speed(*) at rated engine speed of 2600 rev/min [km/h]	
		Forward	Reverse	Forward	Reverse
(1)	1-C	1725.99	1742.08	0.42	0.42
(2)	2-C	1119.56	1130.01	0.65	0.64
(3)	3-C	726.68	733.41	1.00	0.99
(4)	4-C	536.46	541.46	1.35	1.34
1	1-L	288.37	291.06	2.51	2.49
2	2-L	187.06	188.79	3.87	3.84
3	3-L	121.04	122.53	5.99	5.92
4	4-L	89.63	90.47	8.09	8.01
5	1-H	70.15	70.79	10.33	10.24
6	2-H	45.50	45.92	15.93	15.79
7	3-H	29.53	29.81	24.55	24.32
8	4-H	21.80	22.01	33.26	32.94

(*) Calculated with a tyre dynamic radius index (ISO 4251-1:1992) of 740 mm (tyre: 18.4-30).

Number of revolutions of front wheels for one revolution of rear wheels: 1.399

1.4 POWER TAKE-OFF

1.4.1 Main power take-off

Type:	Independent PTO
Method of engagement:	By means of hydraulically actuated wet multi-plate clutch with hand lever
Number of shafts:	One, fixed
Method of changing power take-off shafts ends speeds:	Fixed speed

1.4.1.1 Power take-off proportional to engine speed

Power take-off at 540 rev/min (fitted on tested tractor)

Location:	At rear of tractor
Diameter of power take-off shaft end:	35 mm
Number of splines:	Six, in conformity with ISO 500:1991/SAE J1170
Height above ground:	724 mm
Distance from the median plane of the tractor:	0 mm
Distance behind rear axle center:	360 mm
Direction of rotation (viewed from shaft end):	Clockwise

PTO type	PTO speed [rev/min]	Engine speed [rev/min]	Engine/PTO transmission ratio	Power restriction [kW]
540	540 637	2205 2600	4.083	59.7

1.4.1.2 Power take-off proportional to ground speed — Not fitted

1.4.2 Optional power take-off

Type:	Independent PTO
Method of engagement:	By means of hydraulically actuated wet multi-plate clutch with hand lever
Number of shafts:	One, fixed
Method of changing power take-off shafts ends speeds:	Constant mesh 2 speeds

1.4.2.1 Power take-off proportional to engine speed

Power take-off at 540/750 rev/min 2 speeds (not fitted on tested tractor)

Location:	At rear of tractor
Diameter of power take-off shaft end:	35 mm
Number of splines:	Six, in conformity with ISO 500:1991/SAE J1170
Height above ground:	724 mm
Distance from the median plane of the tractor:	0 mm
Distance behind rear axle center:	417 mm
Direction of rotation (viewed from shaft end):	Clockwise

PTO type	PTO speed [rev/min]	Engine speed [rev/min]	Engine/PTO transmission ratio	Power restriction [kW]
540	540 690	2035 2600	3.769	none
750	750 924	2109 2600	2.813	none

1.4.2.2 Power take-off proportional to ground speed — Not fitted

1.5 HYDRAULIC POWER LIFT

Make:	Own make
Type:	Hydraulic 3-point hitch (position, draft and mix control)
Model:	-
Type of hydraulic system:	Open center system
Type and number of cylinders:	Single acting, one
Type of linkage lock for transport:	Hydraulically closed by throttle valve
Relief valve pressure setting (tolerance):	19.1 ~ 19.6 MPa
Opening pressure of cylinder safety valve:	21.1 ~ 22.6 MPa
Lift pump type:	Gear type
Transmission between pump and engine:	Gear drive (gear: injection pump cam shaft drive)
Type and number of filters:	Paper cartridge type, two
Site of oil reservoir:	In rear transmission case
Type, number and location of tapping points	
type:	ISO-5675, SAE-J1036, ASAE R366, hydraulic female coupler
number:	One to three sets
location:	At rear of tractor
Maximum volume of oil available to external cylinders:	Hydraulic oil should be added for external hydraulic circuit

1.6 THREE POINT LINKAGE

Category:	2, in conformity with category 2 of ISO 730-1:1994 and ISO 730-2:1979

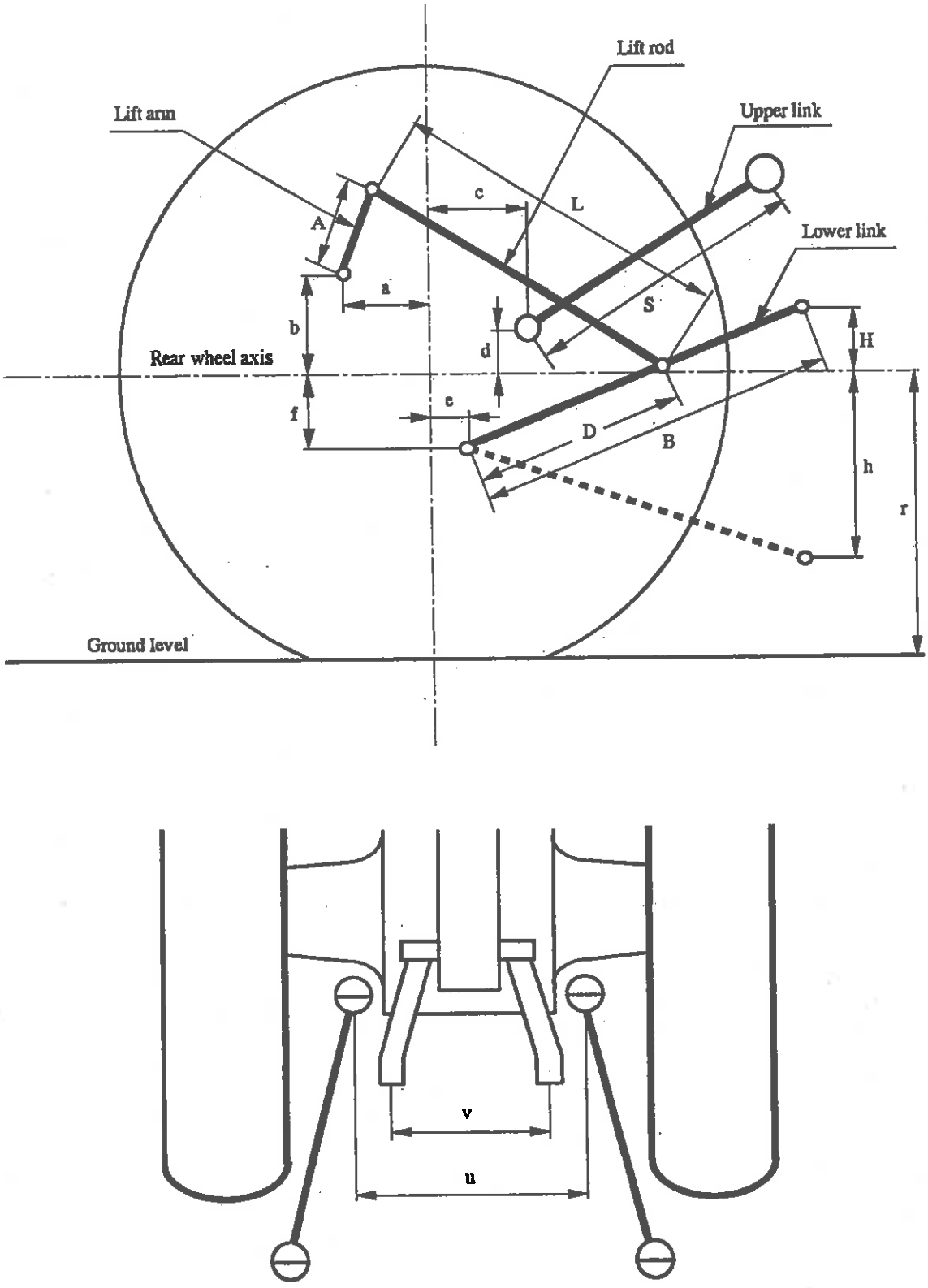


Figure
Lift test - Linkage geometry

		Dimension of range [mm]	Settings used in test [mm]
Length of lift arms	(A)	250	250
Length of lower links	(B)	860	860
Distance of lift arm pivot point from rear-wheel axis:			
- horizontally	(a)	-70	-70
- vertically	(b)	291	291
Horizontal distance between the two lower link points	(u)	403	403
Horizontal distance between the two lift arm end points	(v)	535	535
Length of upper link	(S)	from 590 to 855	668
Distance of upper link pivot point from rear wheel axis:			
- horizontally	(c)	313	313
- vertically	(d)	309 268 237	309
Distance of lower link pivot point from rear wheel axis:			
- horizontally	(e)	115	115
- vertically	(f)	176	176
Distance of lower link pivot points to lift rod pivot points on lower links:	(D)	396	396
Length of lift rods (actual length):	(L)	from 545 to 685	570
Height of lower hitch points relative to the rear wheel axis:			
- in low position	(h)	from 450 to 697	556
- in high position	(H)	from 0 to 254	198
Height above ground of lower hitch points when locked in transport position(*)		from 740 to 994	928
(*) Assuming r = rear tyre dynamic radius index (ISO 4251-1:1992): 740 mm (tyre: 18.4-30)			

Table 1.1
Dimensions of linkage geometry when connected to the standard frame

1.7 SWINGING DRAWBAR

Type:	Bar type, clevis type (as option)
Height above ground	514 mm at top surface of bar (tyre size 18.4-30, r = 740 mm)
Type of adjustment:	-
Distance of hitch point from rear-wheel axis, horizontally:	710 mm
Distance of hitch point from power take-off shaft end vertically:	210 mm at top surface of bar
horizontally:	540 rpm one speed power take-off: 350 mm (540/750 rev/min two speed power take-off: 402 mm)
Lateral adjustment (center of clevis)	
right hand:	103 mm (12 °)
left hand:	103 mm (12 °)
Distance of pivot point from rear-wheel axis, horizontally:	215 mm
Diameter of drawbar pin hole:	33.5 mm
Maximum vertical permissible load:	14.7 kN

1.8 TRAILER HITCH

Not fitted

1.9 HOLED DRAWBAR

Not fitted

1.10 STEERING

Make:	SUMITOMO EATON HYDRAULICS Co., Ltd.
Model:	WVQ150Z23AUD
Type:	Hydrostatic power steering
Method of operation:	Steering wheel operated and full hydraulic power
Pump:	Independent hydraulic pump
Ram:	Balanced type cylinder
Working pressure:	17.5 MPa

1.11 BRAKES

1.11.1 Service brake

Make:	Own make
Model:	-
Type:	Multiple wet disks operated by two foot pedals which can be locked together
Method of operation:	Independent or combined pedal
Trailer breaking take-off:	Not fitted

1.11.2 Parking brake

Type:	Mechanical acting type
Method of operation:	Brake lever type (combined foot pedal)

1.12 WHEELS

Number: Four
Front: Two, steering and driving
Rear: Two, driving
Wheelbase: 2250 mm
Track width adjustment:

	Minimum [mm]	Maximum [mm]	Adjustment method
Front	1520	1620	Changing offset of rims
Rear	1520	1920	Changing by turning wheels and offset of rims

1.13 PROTECTIVE STRUCTURE

Make: Own make
Model: KUBOTA SFM-F90
Type: Two-post foldable ROPS
Protective device: Rear roll bar
OECD approval
Approval number: 4/0 565
Date of approval: 1 st February, 1999

1.14 SEAT

1.14.1 Driver's seat
Make: Seats In Corporated
Model: 163246-6, 176710
Type: -
Seat and steering wheel reversible: No
Type of suspension: Coil spring
Type of dumping: Oil dumping
Range of adjustment
Longitudinal: 127 mm
Vertical: 33.5 mm
Safety belt: Not fitted

1.14.2 Optional driver's seat Not fitted

1.14.3 Passenger seat Not fitted

1.15 LIGHTING

	Height above ground of center [mm]	Size [mm]	Distance from outside edge of lights to median plane of tractor [mm]
Headlights	1038	147 x 90.3	215
Sidelights	-	-	-
Rear lights	1576	190 x 75.3	714
Reflectors	1576	41.7 x 41.7	632
Flashers	1696	ϕ119.7 x 70	765

2. TEST CONDITIONS

2.1 OVERALL DIMENSIONS

	Length [mm]	Width		Height	
		Minimum [mm]	Maximum [mm]	Protective structure [mm]	Exhaust silencer [mm]
Unballasted	3845	2028	2428	2520	2355
Ballasted	4188	2039	2439	2500	2335

2.2 GROUND CLEARANCE

Ground clearance:	450 mm
Clearance-limiting part:	Bracket drawbar

2.3 TRACTOR MASS

	Ballasted		Unballasted	
	Without driver [kg]	With driver [kg]	Without driver [kg]	With driver [kg]
Front	1686	1696	984	994
Rear	2645	2710	1826	1891
Total	4331	4406	2810	2885

2.4 BALLAST

Front:	1 bracket	90 kg
	10 weights, total	450 kg
Rear:	4 weights, total	272 kg
	Water in the tyres	709 kg

2.5 TYRES AND TRACK WIDTH SPECIFICATIONS

		Front	Rear
Tyres:			
- dimension		12.4-24	18.4-30
- ply rating		6	6
- type		cross-ply	cross-ply
- maximum load (tyre manufacture's)	[kN]	10.6	21.2
- inflation pressure	[kPa]	138	108
- dynamic radius index	[mm]	570	740
Chosen track width	[mm]	1520	1520

2.6 FUEL

Type:	Diesel fuel No. 2 in conformity with JIS
Density at 15 °C:	0.839 g/cm^3

2.7 OILS AND LUBRICATION

2.7.1 Capacity and change interval

	Capacity [dm^3]	Oil change [h]	Filter change [h]
Engine	10.7	200	400
Gear box Rear axle Final drive (rear) Hydraulic system Power steering	52.0	600	300
Front differential case	6.0	600	-
Front axle gear case Final drive (front)	3.5	600	-
Service brake	-	-	-

2.7.2 Specifications

	Recommended	Used during test
Engine oil Type: Viscosity: Classification:	API grade CD Below 0 °C: SAE 10W, 10W-30, 10W-40 From 0 °C to 25 °C: SAE 20, 10W-30, 10W-40 Above 25 °C: SAE 30,10W-30, 10W-40	SAE 10W-30
Transmission oils Hydraulic fluid Steering oil Type: Viscosity: Classification:	API grade GL-3 SAE 75W/80 (ISO VG46)	API grade GL-3 SAE 75W/80 (ISO VG46)

2.7.3 Grease

Number of lubrication points:	Eleven, grease nipple
	Multipurpose type grease

3. COMPULSORY TESTS RESULTS

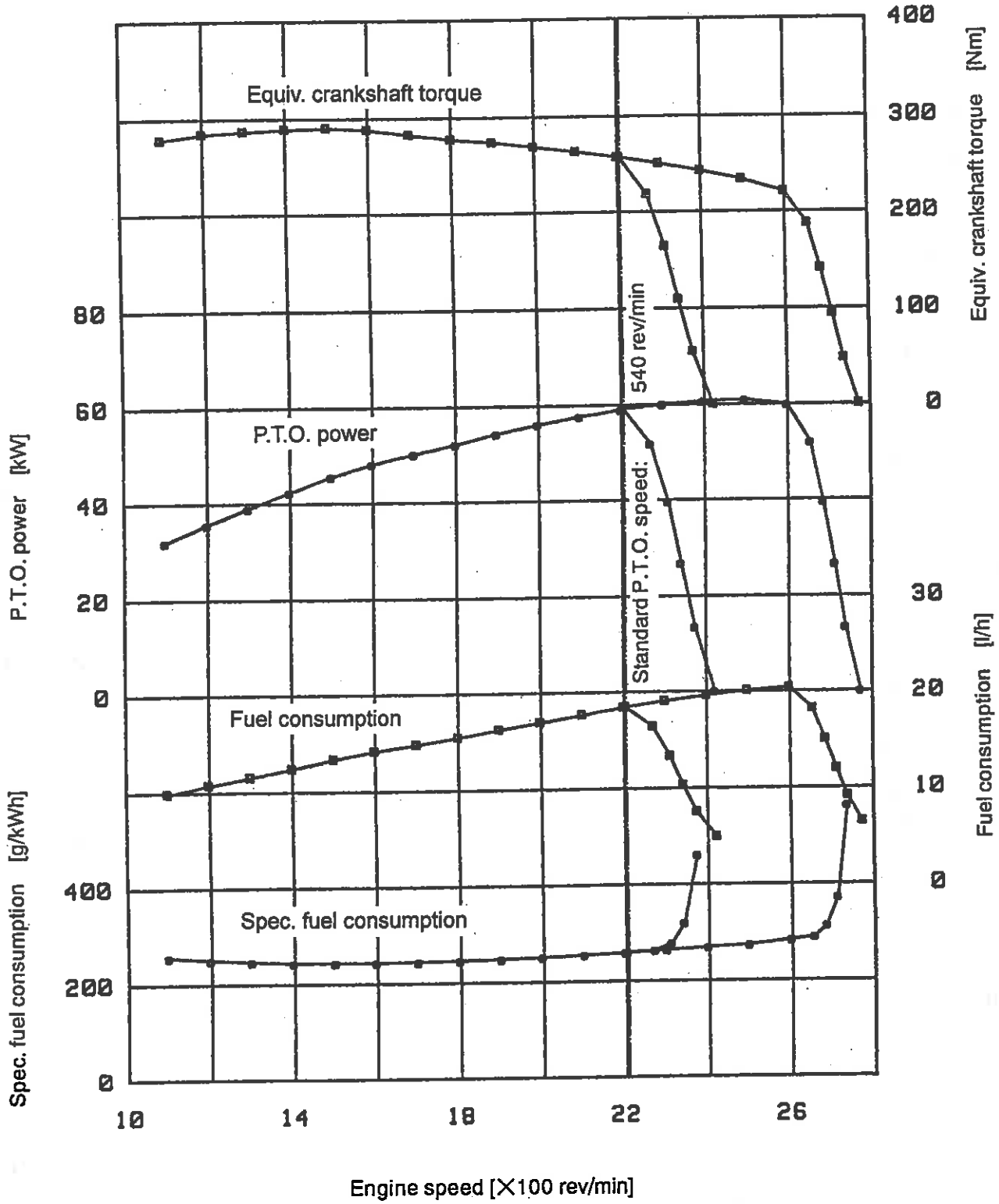
3.1 MAIN POWER TAKE-OFF

Date and location of tests: 22 nd, October, 1998, BRAIN, Omiya
Type of dynamometer: Eddy current, SCHENCK W400

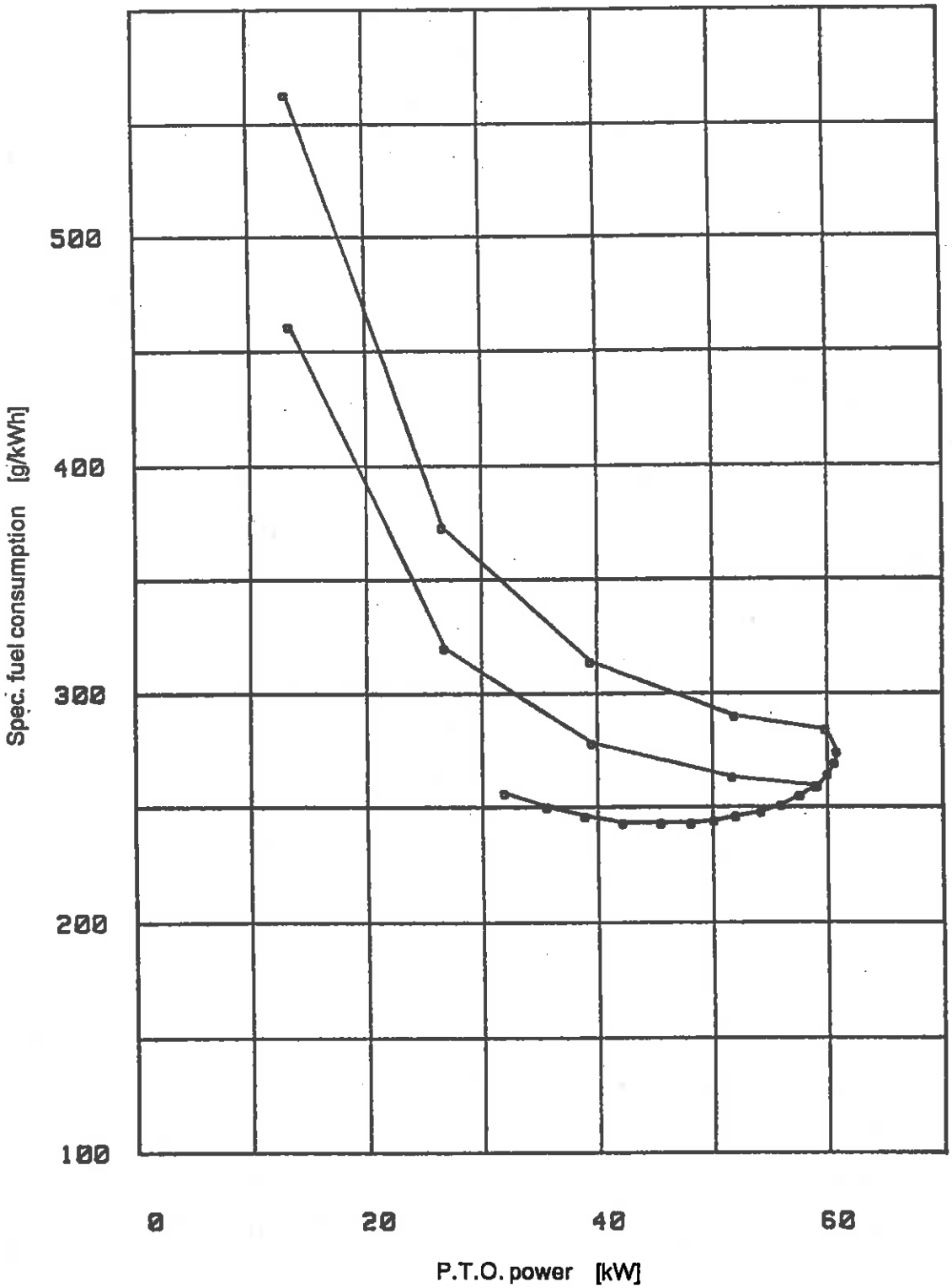
Power	Speed		Fuel Consumption			Specific energy
	Engine	P.T.O.	Hourly		Specific	
[kW]	[rev/min]		[kg/h]	[l/h]	[g/kWh]	[kWh/l]
3.1.1 MAXIMUM POWER - TWO-HOUR TEST						
60.4	2500	612	16.77	19.99	278	3.022
3.1.2 POWER AT RATED ENGINE SPEED						
59.9	2600	637	17.11	20.39	286	2.938
3.1.3 STANDARD POWER TAKE-OFF SPEED (540 rev/min)						
59.2	2205	540	15.45	18.42	261	3.214
3.1.4 PART LOADS AT RATED ENGINE SPEED						
3.1.4.1 The torque corresponding to maximum power at rated engine speed						
59.9	2600	637	17.11	20.39	286	2.938
3.1.4.2 85% of torque obtained in 3.1.4.1						
52.0	2655	650	15.20	18.12	292	2.870
3.1.4.3 75% of torque defined in 3.1.4.2						
39.5	2685	658	12.49	14.89	316	2.653
3.1.4.4 50% of torque defined in 3.1.4.2						
26.5	2712	664	9.97	11.88	376	2.231
3.1.4.5 25% of torque defined in 3.1.4.2						
13.4	2737	670	7.61	9.07	568	1.477
3.1.4.6 Unloaded						
0	2772	679	5.35	6.38	-	-
3.1.5 PART LOADS AT STANDARD POWER TAKE-OFF SPEED (540 rev/min)						
3.1.5.1 The torque corresponding to maximum power at standard power take-off speed						
59.2	2205	540	15.45	18.42	261	3.214
3.1.5.2 85% of torque obtained in 3.1.5.1						
51.8	2271	556	13.70	16.33	264	3.172
3.1.5.3 75% of torque defined in 3.1.5.2						
39.6	2312	566	11.10	13.23	280	2.993
3.1.5.4 50% of torque defined in 3.1.5.2						
26.8	2343	574	8.63	10.29	322	2.604
3.1.5.5 25% of torque defined in 3.1.5.2						
13.5	2375	582	6.27	7.47	464	1.807
3.1.5.6 Unloaded						
0	2422	593	4.06	4.84	-	-

Other results

No load maximum engine speed:	2772 rev/min
Torque (equivalent crankshaft) at maximum power	
At rated engine speed:	220.0 Nm
At 2-hour test:	230.7 Nm
Maximum torque (equivalent crankshaft): (engine speed: 1500 rev/min)	290.1 Nm
Mean atmospheric conditions	
Temperature:	19 °C
Pressure:	100.9 kPa
Relative humidity:	87 %
Maximum temperatures	
Coolant:	99 °C
Engine oil:	111 °C
Fuel:	23 °C
Engine air intake:	20 °C



POWER TAKE-OFF PERFORMANCE



POWER TAKE-OFF PERFORMANCE

3.2 HYDRAULIC POWER AND LIFTING FORCE

Date of tests: 23 rd, October, 1998

3.2.1 HYDRAULIC POWER TEST

Tapping point used for test: Auxiliary service connection
(can be measured by transferring circuit)

Sustained pressure with relief valve open: 19.6 MPa
Pump delivery rate at minimum pressure: 65.0 l/min
Temperature of hydraulic fluid: 64 °C

	Flow rate [l/min]	Pressure [MPa]	Power [kW]
Flow rate corresponding to a hydraulic pressure equivalent to 90 percent of the actual relief valve pressure setting and corresponding hydraulic power	31.6	17.6	9.27
Flow rate and hydraulic pressure corresponding to maximum hydraulic power	58.9	15.2	14.92

3.2.2 POWER LIFT TEST

	At hitch point	On the frame
Height of lower hitch points above ground in down position [mm]	184	135
Vertical movement without lifting forces [mm]	743	908
with lifting forces [mm]	680	817
Maximum corrected force exerted through full range (*) [kN]	17.79	16.00
Corresponding pressure of hydraulic fluid [MPa]	17.6	17.6
Moment about rear wheel axle [kNm]	17.35	25.36
Maximum tilt angle mast from vertical [Degrees]	-	10

Lifting heights(**)[mm]		-418	-400	-369	-300	-200	-100	0	+100	+200	+300	+311	+399
Lifting force (*)	at the hitch point [kN]	-	-	17.79	18.69	20.20	21.27	21.98	22.52	22.95	23.38	23.32	-
	at the frame [kN]	16.00	16.21	-	17.10	17.72	18.03	18.21	17.95	17.59	17.01	-	16.11

(*) The values of force measured are corrected to correspond to a hydraulic pressure equivalent to 90 % of the actual relief valve pressure setting.

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

3.3 DRAWBAR POWER TEST

Date of test: 23 rd, 25 th, 27 th and 28 th October, 1998

Type of track: Concrete

Tyre size: front: 12.4-24 Tyre inflation pressure: unballasted: front 138 kPa rear 108 kPa Height of drawbar above ground: unballasetd: 500 mm

rear: 18.4-30 ballasted: front 138 kPa rear 108 kPa ballasted: 490 mm

Gear number and range	Power [kW]	Drawbar pull [kN]	Speed [km/h]	Engine speed [rev/min]	Slip of wheels [%]	Specific fuel consumption [g/kWh]	Specific energy [kWh/l]	Temperature			Atmospheric conditions		
								Fuel [°C]	Coolant [°C]	Engine oil [°C]	Temperature [°C]	Relative humidity [%]	Pressure [kPa]
3.3.1 MAXIMUM POWER IN TESTED GEARS (unballasted tractor)													
1 – L	17.4	28.06	2.23	2718	15.0	518	1.620	28	83	101	21	60	102.7
2 – L	26.7	28.06	3.42	2690	15.1	426	1.968	29	84	102	21	56	102.7
3 – L	40.5	27.96	5.22	2649	14.9	361	2.322	31	85	102	21	56	102.7
4 – L	52.1	26.71	7.02	2503	10.5	326	2.558	21	84	97	18	63	102.7
1 – H	54.9	21.11	9.36	2504	6.5	310	2.706	23	84	103	19	61	102.7
2 – H	53.8	13.00	14.90	2501	3.2	315	2.659	26	84	106	19	61	102.7
3.3.2 MAXIMUM POWER IN TESTED GEARS (ballasted tractor)													
1 – L	24.7	39.77	2.23	2693	15.0	435	1.927	41	85	104	27	32	101.7
2 – L	37.6	39.96	3.38	2660	15.1	371	2.264	42	85	103	28	30	101.8
3 – L	51.7	36.42	5.11	2503	11.6	330	2.540	43	86	104	28	30	101.8
4 – L	53.4	26.32	7.31	2504	6.1	319	2.631	38	86	103	26	32	101.7
1 – H	54.7	20.63	9.54	2498	4.0	310	2.708	41	89	108	26	32	101.7
2 – H	52.1	12.53	14.98	2496	2.1	331	2.532	43	87	107	26	32	101.7
3.3.3 FIVE HOUR TEST at 75 % of pull at maximum power													
4 - L	43.4	19.74	7.92	2643	3.7	337	2.489	40	85	107	26	32	102.1
3.3.4 FIVE HOUR TEST at pull corresponding to 15 % wheelslip													
2 - L	37.6	39.96	3.38	2660	15.1	371	2.264	27	84	105	20	60	101.6

(*) Oil consumption during ten hours duration of test 3.3.3 and 3.3.4: 23.8 g/h

3.4 TURNING AREA AND TURNING CIRCLE

Front wheel drive disengaged

	With brakes		Without brakes	
	Left-hand [m]	Right-hand [m]	Left-hand [m]	Right-hand [m]
Radius of turning area	3.65	3.68	4.14	4.22
Radius of turning circle	3.41	3.44	3.85	3.93

Front wheel drive engaged

	With brakes		Without brakes	
	Left-hand [m]	Right-hand [m]	Left-hand [m]	Right-hand [m]
Radius of turning area	3.66	3.71	4.64	4.68
Radius of turning circle	3.35	3.40	4.30	4.34

3.5 LOCATION OF CENTER OF GRAVITY

Height above ground: 838 mm
Distance forward from the vertical plane containing the axis of the rear-wheels: 778 mm
Distance from the median plane of the tractor (to the left): 2 mm

3.6 BRAKING (front wheel drive disengaged)

Date of tests: 23 rd, October, 1998

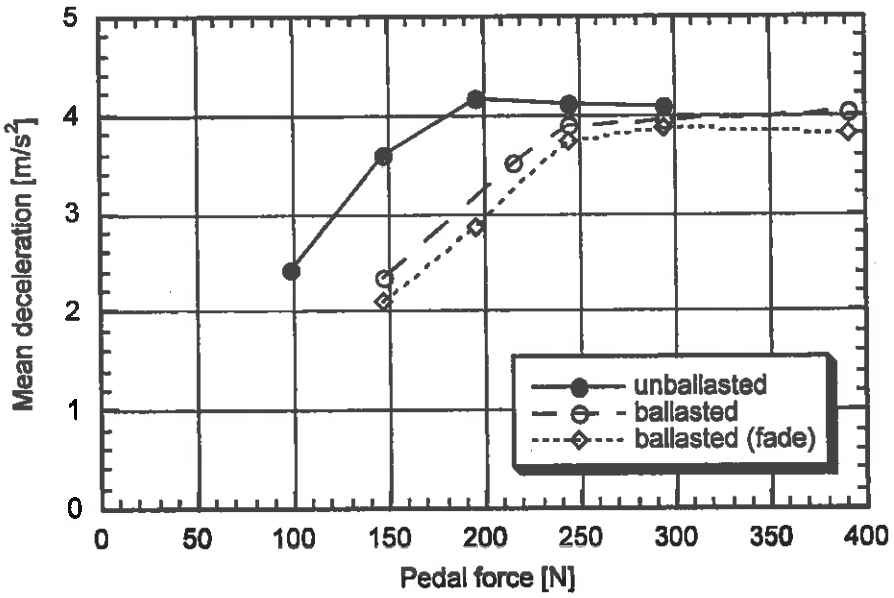


Figure
COLD SERVICE BRAKING DEVICE TEST AND FADE TEST

3.6.1 Cold service braking device test

	Speed before application of brakes [km/h]	Braking device control force [N]	Mean deceleration [m/s²]
Ballasted tractor	34.9	147	2.35
		216	3.50
		245	3.88
		294	3.95
		392	4.03
Unballasted tractor	35.1	98	2.43
		147	3.58
		196	4.17
		245	4.10
		294	4.07

Maximum deviation of tractor from its original course: None
Abnormal vibration: None

3.6.2 Fade test

Speed before application of brakes [km/h]	Braking device control force [N]	Mean deceleration [m/s^2]
34.9	147	2.10
	196	2.86
	245	3.72
	294	3.86
	392	3.81

Maximum deviation of tractor from its original course: None
Abnormal vibration: None
Brake heating method: By means of towing the tractor for 1 km at 27.9 km/h with the towing force of 4.38 kN

3.6.3 Parking braking device test

		Ballasted tractor on 18 % slope	
		Uphill	Downhill
Braking device control force	[kN]	0.353	0.412

3.7 EXTERNAL NOISE LEVEL

Date of tests: 20 th, October, 1998
Sound level meter
- Make: RION Corporation
- Model: NL-14
- Type: Precision integrating sound level meter
- Type of track: Concrete
- Gear number: 4-H
- Travelling speed before acceleration: 26.2 km/h
- Sound level: 82 dB(A)

REPAIRS AND ADJUSTMENTS DURING TESTS

None

REMARKS

None