Prüfstelle für Landmaschinen



REPORT on test in accordance with OECD STANDARD CODE 1 for the Official Testing of Agricultural Tractor Performance

OECD No. 1/1939
8th November 2000

Agricultural Tractor

CASE IH MX100C (4WD), 40 km/h version

Manufacturer

CASE United Kingdom Limited
Doncaster, DN2 4PG, England

This is a report on a tractor test in accordance with OECD STANDARD CODE for the Official Testing of Agricultural Tractor Performance (C(2000)59(FINAL), Code 1).

It does not contain an evaluation of the tractor on practical work.

Duration of tests: March and April 2000

DLG-Testing Station for Agricultural Machinery, Max-Eyth-Weg 1,
D-64823 Groß-Umstadt

This report has been approved by the OECD Co-Ordinating Centre (CEMAGREF, France) as being in accordance with the OECD STANDARD CODE.

Date of approval: 8th November 2000

OECD No. 1/1939
Full 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 kN	=	1000 N	=	102	kp
Powers			1 kW	=	1.36	PS
Pressures	1 MPa	=	10 bar	=	10.2	kp/cm^2
	100 kPa	=	1000 mbar	=	750.10	mm Hg

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Tractor manufacturer's name and address:	Case United Kingdom Limited Doncaster, DN2 4PG, England
Location of tractor assembly:	Doncaster, DN2 4PG, England
Submitted for test by:	CASE United Kingdom Limited
Selected for test by:	Manufacturer with agreement by DLG
Place of running-in:	Doncaster and Groß-Umstadt
Duration of running-in:	Engine and tractor approximate 75 h
Location of test:	DLG-Testing Station, D-64823 Groß-Umstadt

1 SPECIFICATION OF TRACTOR

1.1 Identification

- Make:	CASE IH
- Model:	MX100C, 40 km/h version
- Type:	Wheel tractor, unit construction, four wheel driven
- Number of driving-wheels:	4
- Serial No.:	JJE 1053546
- 1st serial No.:	JJE 1050001

1.2 Engine

Make/Model/Type:	Perkins / 1004-4T HR (Case - model 5586/2200) water-cooled 4-stroke Diesel-engine direct injection, supercharged
Serial no.:	U 055965 F

1.2.1 Cylinders

Number/disposition:	4 / in line
Bore/stroke:	100 / 127 mm
Capacity:	3990 cm^3
Compression ratio:	17.25 : 1
Arrangement of valves:	Overhead valves
Cylinder liners:	Dry

1.2.2 Supercharging

- Make / Model / Type:	GARRETT / GT 2052 / exhaust driven supercharger, wastegate
- Pressure	Max. 110 kPa

1.2.3 Fuel system

- Fuel feed system:	Diaphragm fuel supply pump, fuel cooler in front of engine's water cooler
- Fuel filter	
Make/Model:	PERKINS / - /
Type :	1 replaceable filter, water separator
- Capacity of fuel tank:	189 dm^3
- Injection pump	
Make/Model:	LUCAS / 8920 A031T
Type :	DP, distributor pump with timing device
Serial no.:	00244 KSG
Manufacturer's production setting:	81.4 ± 2.4 mm^3/stroke at full load and rated speed;
Flow rate:	21.5 ± 0.6 dm^3/h at 2200 min^{-1} and full load
Timing:	Commencement of delivery: Static at TDC ± 2°
- Injectors	
Make/Model:	LUCAS / KN L 063 PBA
Type :	multi hole
Injection pressure:	29.4 ± 0.5 MPa

1.2.4 Governor

- Make/Model/Type:	LUCAS / - / mechanical, centrifugal variable speed governor, integral with injection pump, with supercharge pressure compensating device
- Governed range of engine speed:	1000 ± 50 to 2360 - 50 min^{-1}
- Rated engine speed:	2200 min^{-1}

1.2.5	Air cleaner	
	- Pre-cleaner	
	Make/Model:	CASE-DONALDSON / - /
	Type:	Cyclone type, integrated in main cleaner housing
	Location of air intake:	In front of engine, below bonnet
	- Main cleaner	
	Make/Model:	CASE-DONALDSON / 222 421 A1
	Type:	Dry paper element filter with additional safety cartridge
	- Maintenance indicator:	Warning light on dashboard
1.2.6	Lubrication system	Pressure lubrication with engine oil / cooling water heat exchanger in filter socket
	- Type of feed pump:	Internal gear pump
	- Type of filter:	Full flow, replaceable (metallic cartridge)
	- Number of filters:	1
1.2.7	Cooling system	
	- Type of coolant:	Water cooling
	- Type of pump:	Impeller pump
	- Specification of fan	
	Number of fan blades:	7
	Fan diameter:	470 mm
	- Coolant capacity:	17.5 dm^3
	- Type of temperature control:	Thermostat and by-pass circuit, viscous drive fan, belt driven; variable fan speed controlled by air flow temperature
	- Superpressure system:	110 kPa

1.2.8	Starting system	
	- Make/Model/Type:	ISKRA / - / electrical, solenoid pre-engaged drive starter motor
	- Starter motor power rating:	3.0 kW
	- Cold starting aid:	Flame glow plug in air intake manifold
	- Safety device:	Forward/reverse lever in neutral position p.t.o. clutch disengaged
1.2.9	Electrical system	
	- Voltage:	12 V
	- Generator:	
	Make/Model/Type:	BOSCH / K1-14V 20 - 95 A / 3-phase alternator
	Power:	1.33 kW
	- Battery:	1 lead acid battery, 90 Ah at 20 hours rating
1.2.10	Exhaust system	
	- Make/Model/Type:	CASE-DONALDSON / M050123 / multi-chamber absorption type silencer, 118 mm dia, 1000 mm long
	- Location:	On the right, beside the engine, in front of the steps, vertical stack, mouth showing upwards 45°
1.2.11	Operating hours meter:	Electronic, counts real hours when engine is running

1.3 Transmission

1.3.1 Clutch (travel alone)

- Make/Model/Type: CASE / - / wet multi-plate, integrated into gearbox
- Number of plates: 6
- Diameter of plates: 127 mm
- Method of operation: Hydraulically operated by pedal, or electro-hydraulically controlled by forward/neutral/reverse lever

1.3.2 Gear box

- Make/Model/Type: CASE / - / mechanical, power shift; 40 km/h version
- Description: power shift speed gear change with 4 speeds

range gear with 4 synchronized ranges (I, II, III, IV)

power shifted reversing gear (F/R), range IV locked out in reverse operation

	forward	reverse
no. of gears	4	4
no. of ranges	4	3
total	16	12

2 levers, 1 toggle switch

- Available options:
  1. synchronized creeper range (CR), acting on all range gears, provides total 32 forward and 24 reverse speeds
  2. CASE, mechanical, power shift, 30 km/h version, additionally available with creeper

1.3.3 Rear axle and final drives

- Make/Model/Type: CASE / - / bevel gear drive with bevel gear differential and planetary final drives
- Differential lock:
  - Type: Multi-plate, wet
  - Engagement: By toggle switch or automatic; electro-hydraulically operated (through low pressure hydraulic circuit)
  - Disengagement: By switch or automatic by service brake operation or engine cut off

1.3.4 Front axle and final drives

- Make/Model/Type: CARRARO / 20.19 / driven by wet multi plate clutch, central shaft and bevel gear; clutch electro-hydraulically operated by toggle switch or engaged by service brake operation; planetary final drives
- Differential lock:
  - Type: Limited slip multi-disc type
  - Engagement: Automatic
  - Disengagement: Automatic

1.3.5 Total ratios and travelling speeds

Group or range	Gear no.	Number of engine revolutions for one revolution of the driving wheels	Nominal travelling speed*) at rated engine speed 2200 min^{-1} km/h
Forward Speeds			
I	1	246.82	2.76
	2	204.93	3.32
	3	165.81	4.10
	4	133.85	5.08
II	1	108.29	6.28
	2	89.91	7.56
	3	72.75	9.35
	4	58.73	11.58
III	1	65.87	10.32
	2	54.69	12.44
	3	44.25	15.37
	4	35.72	19.04
IV	1	33.88	20.07
	2	28.12	24.19
	3	22.75	29.89
	4	18.37	37.02
Reverse Speeds			
I	1	213.31	3.19
	2	177.11	3.84
	3	143.30	4.75
	4	115.68	5.88
II	1	93.61	7.27
	2	77.71	8.75
	3	62.88	10.82
	4	50.75	13.40
III	1	56.94	11.94
	2	47.27	14.39
	3	38.25	17.78
	4	30.87	22.03

*) calculated with a dynamic radius index of 820 mm
- (not in conformity with ISO 4251-1:1992)
- Number of revolutions of front wheels for one revolution of rear wheels: 1.3199

1.4 Power take-off

1.4.1 Main power take-off

- Type: Independent
- Method of engagement: Driven by wet multi-plate clutch with 125 mm dia; by lever through switch electro-hydraulically operated
- Number of shafts: 1
- Method of changing power take-off shaft ends and speeds: Shaft, reversible, 2 different standard speeds shiftable by separate lever

1.4.1.1 Power take-off proportional to engine speed, 540 and 1000 min^{-1}

- Location: At rear of tractor
- Diameter of p.t.o. shaft end: 35 mm
- Number of splines: 6 in conformity with ISO 500:1991, type 1
  21 in conformity with ISO 500:1991, type 2
- Height above ground: 730 mm
- Distance from the median plane of the tractor: 0 mm
- Distance behind rear-wheel axis: 500 mm

p.t.o. type	p.t.o. transmission ratio	p.t.o. speed min^{-1}	Engine Speed min^{-1}	power restriction*) kW
540	3.4720	540 634	1875 2200	63
1000	2.2095	1000 996	2210 2200	-

*) Maximum torque transmissible: Not specified

- Direction of rotation (viewed from behind tractor): Clockwise

1.4.1.2 Power take-off proportional to ground speed: None

1.4.2 Optional power take-off: Front p.t.o., independent, not fitted to tractor

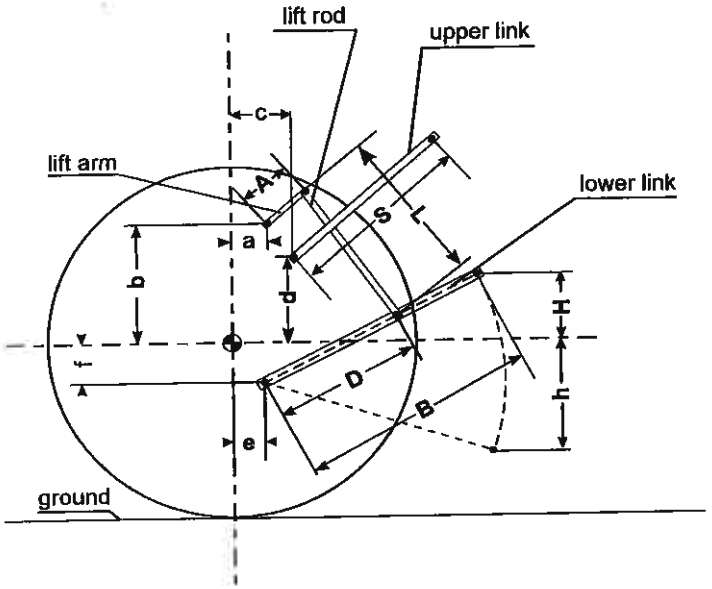
1.5 Hydraulic power lift

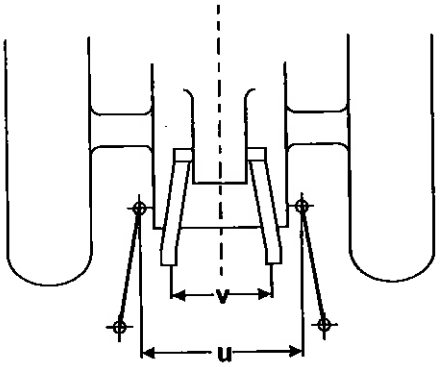
- Make/Model/Type:	CASE / - / electro-hydraulic power lift, lower link sensing
- Type of hydraulic system:	Closed, load sensing, pressure and flow compensated system
- Type and number of cylinders:	1 internal cylinder, single acting, 105 mm bore, 227 mm stroke
- Type of linkage lock for transport:	Hydraulic locking of power lift
- Relief valve pressure setting:	20.2 ± 0.4 MPa
- Opening pressure of cylinder safety valve:	23.5 ± 0.7 MPa
- Lift pump type:	VICKERS, variable displacement axial-piston pump, max. delivery 109 dm^3/min at rated engine speed
- Transmission between pump and engine:	Pump driven by gearbox
- Type and number of filters:	1 filter in feeding line of hydraulic pump
- Site of oil reservoir:	Transmission housing, oil cooler in front of engine's coolant radiator
- Type number and location of tapping points:	2 pairs, double acting, at rear of tractor
- Maximum volume of oil available to external cylinders:	30 dm^3 42 dm^3 with overfill

The hydraulic pump further provides hydraulic pressure for actuating of steering, p.t.o. clutch, power-shift gear, rear axle differential lock and for shifting the front axle drive clutch

1.6 Three-point linkage:

- Category: 2, In conformity with ISO 730-1:1994 + Cor. 1:1995 with CBM quick couplers
- Category adapter: None





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Dimensions of rear implement linkage			projected lengths in mm: dimensions and range	projected lengths in mm: settings used in test-page 25
Rear tyres 520/70 R 38 Front tyres 420/70 R 28		(r) *) (r') *)	820 640	
Length of lift arms		(A)	230	230
Length of lower links		(B)	890	890
Distance of lift arm pivot points from rear wheel axis	horizontal vertical	(a) (b)	245 190	245 190
Horizontal distance between the 2 lower link pivot points		(u)	530	530
Horizontal distance between the 2 lift arm end points		(v)	695	695
Length of upper link		(S)	from 640 to 900	780
Distance of upper link pivot point from rear wheel axis	horizontal vertical	(c) (d)	360/330 235/301	360 235
Distance of lower link pivot points from rear wheel axis	horizontal vertical	(e) (f)	230 245	230 245
Distance of lower link pivot points from lift rod pivot points on lower links		(D)	550	550
Length of lift rods		(L)	from 545 to 660	655

Heights (h, H, H') of lower link hitch points relative to rear wheel axis (situated 820 mm above ground), at different adjustments of L

These data are valid for unloaded power lift

Length of lift rods	(L)	545	655	660
Linkage distance of lift rods	(D)	550		
Lowest position	(h)	370	620	642
Highest position	(H)	270	120	95
Transport position	(H')	270	120	95

*) Assuming r resp. r' = tyre dynamic radius Index not in conformity with ISO 4251-1:1992

1.7	**Swinging drawbar**	Available, not fitted	
1.8	**Hitches**		
1.8.1	Trailer hitch		
	- Make/Model/Type:	CRAMER / KU 2000 A / automatic	
	- Hitch pin diameter:		32 mm
	- Height above ground:	Centre of clevis adjustable in 8 steps to 450/575/673/747/797/923/973 and	1023 mm
	- Distance of hitch point from rear-wheel axis	horizontal	665 mm
	- Distance of hitch point from power take-off shaft end		
	vertical	below	280/155 and 57 mm
		above	17/67/193/243 and 293 mm
	horizontal		165 mm
	- Maximum vertically permissible load		19.6 kN
1.8.2	Hitch hook	Available, not fitted	
1.9	**Holed drawbar**	Available, not fitted	
1.10	**Steering**		
	- Make/Model/Type:	REXROTH / LAGC 160-12 / hydrostatic	
	- Method of operation	Connected by sequence valve to the hydraulic system of the tractor	
	Pump:	See on page 11	
	Ram:	WEBER, integrated cylinder of symmetrical design; 240 mm stroke, 72 mm bore, 38 mm dia of piston rod	
	- Working pressure:	18.3 ± 0.35 MPa	

1.11 Brakes

1.11.1 Service brake

- Make/Model/ Type: CASE / - / muscle power brake with hydraulic transmission
- Method of operation: Pedal operated, acting on rear wheels, front axle drive is automatically engaged when braking, oil-immersed disc brake with 1 ring-piston on each differential half shaft, disc 300 mm dia
- Trailer braking take-off: Available, not fitted; optionally hydraulic trailer braking take-off or couplings for compressed air braking system

1.11.2 Parking brake

- Type: Mechanical, separate wet disc brake on drive shaft of rear axle; 2 lining discs with 143 mm dia each
- Method of operation: Hand lever with ratchet

1.12 Wheels

- Number
  - Front: 2, driving and steering
  - Rear. 2, driving
- Wheel base: 2422 mm
- Track width adjustment:

	Minimum	Maximum	Adjustment method
Front	1530	2230	adjustable rims
Rear	1630	2230	adjustable rims

1.13 Protective structure

- Make/Model/Type:	CASE IH / MX12, 2-door / Standard Cab
- Manufacturer's name and address:	CASE France S.A. BP 109 59964 Croix Cedex France
- Protective device:	
Cab/frame/rollguard/other:	Cab, has an all-steel welded frame, which is bolted to the chassis with four rubber antivibration (A/V) isolators
Tiltable/not tiltable:	not tiltable
- OECD approval	
Approval number:	CSS 0451
Date of approval:	18th September 1997
- Nos. of minor modification certificates:	MOD1 (24th August 1999)
- Optional protective device:	Not fitted
- Make/Model/Type:	CASE IH / MX12, 2-door / Low Profile Cab
- Manufacturer's name and address:	CASE France S.A. BP 109 59964 Croix Cedex France
- Protective device:	
Cab/frame/rollguard/other:	Cab
Tiltable/not tiltable:	not tiltable
- OECD approval	
Approval number:	4/0 451/1
Date of approval:	26th October 1998
- Nos. of minor modification certificates:	MOD 1 (24th August 1999)

1.14 Seat

1.14.1	Driver's seat	Fitted to tractor
	- Make/Model:	Grammer/MSG95A/731
	- Type:	Air suspended upholstered seat with back rest and arm rests
	- Seat and steering wheel reversible:	No
	- Type of suspension:	Pneumatic
	- Type of damping:	Hydraulic
	- Range of adjustment Longitudinally: Vertically:	 210 mm 140 mm
	- Safety belt:	Optional, lap belt, not fitted
1.14.2	Optional driver's seats	
	- Make/Model/Type:	GRAMMER/MSG95A/31/air suspension GRAMMER/DS85H/7L/mechanical suspension GRAMMER/DS85H/90A/mechanical suspension GRAMMER/MSG85A/731/mechanical suspension
1.14.3	Passenger seat:	Optional, fitted to tractor tested
	- Location:	On the mudguard, to the left hand side of the driver
	- Capacity:	1

1.15 Lighting

Electrical, 12 Volt

	Height above ground of centre mm	Size mm	Distance from outside edge of lights to median plane of tractor mm
Headlights	1350	170x100	195
Sidelights	1756	105x32	877
Rearlights	1660	60x50	808
Reflectors, 1st pair 2nd pair	1660 760	50x50 155x55	859 535

2. TEST CONDITIONS

2.1 Overall dimensions

	Length	Width	Height at top of	
			protective structure	exhaust silencer pipe
	mm	mm	mm	mm
Ballasted	5270	2357	2855	2825
Unballasted	4450	2357	2855	2825

2.2 Ground clearance 385 mm

- Clearance-limiting part: Bracket of trailer hitch

2.3 Tractor mass (with cab)

	Ballasted		Unballasted	
	Without driver kg	With driver kg	Without driver kg	With driver kg
Front	3290	3300	1980	1995
Rear	4450	4515	3095	3155
Total	7740	7815	5075	5150

2.4 Ballast

	Weights		Water
	Number	Total mass kg	kg
Front	12	1134	200
Rear	1	737	594
Optional	-	-	-

2.5 Tyres and track widths specifications

	Front	Rear
Tyres:	GOODYEAR	GOODYEAR
dimensions	420/70 R 28	520/70 R 38
load index speed index	133 A8	150 A8
type	radial ply	radial ply
maximum load (tyre manufacturer's)	20.21 kN	32.86 kN
at travelling speed	40 km/h	40 km/h
at tyre inflation pressure	160 kPa	160 kPa
radius index (ISO 4251/1-1992)	640 mm	820 mm
Chosen track width:	1835 mm	1835 mm
Technically permissible axle load:	32.4 kN	61.3 kN
Technically permissible total weight:	76.7 kN	

2.6 Fuel

- Type: ARAL-Diesel-fuel, in conformity with DIN 51601
- Density at 15°C: At p.t.o. tests 0.835 g/cm³
  at drawbar power test 0.824 g/cm³

2.7 Oils and lubrication

2.7.1 Capacity and change interval

	Capacity dm³	Oil change h	Filter-change h
Engine	7	250	250
Gear box	71	1000	1000
Front axle	6	1000	-
Rear axle	common with gearbox		
Final drives (front each)	0.6	1000	-
Final drives (rear) Hydraulic system, Steering	common with gearbox		

2.7.2 Specifications:

	Recommended	Used during test
Engine oil: Used in engine Type Viscosity Classification	 Multi-grade oil SAE 15W-40 API CG-4 or CF-4	 MS1121*) Case No SAE 15W-40 API CG-4 or CF-4
Transmission oil: Used gearbox, rear axle, hydraulic- and steering system Type Viscosity Classification Used in front axle and front final drives Type Viscosity Classification	 CASE HY-TRAN ULTRA ISO-VG-46 MS 1209*) Gear oil SAE 84W-140 API-GL5 or MS 1316*)	 CASE HY-TRAN ULTRA ISO-VG-46 MS 1209*) CASE Gear oil SAE 84W-140 MS 1316*)

*) MS 1121, MS 1209 and MS 1316 are CASE specifications

2.7.3 Grease Multi purpose grease

- number of lubrication points: 10

3 COMPULSORY TESTS RESULTS

3.1 MAIN POWER TAKE OFF PERFORMANCE (1000 rev/min)

Date of tests: March 9th, 2000
Location of tests: DLG-Testing Station Groß-Umstadt
Type of dynamometer: SCHENCK hydraulic dynamometer U1-40

Power kW	Speed Engine rev/min	Speed P.t.o. rev/min	Fuel consumption hourly dm³/h	Fuel consumption hourly kg/h	Fuel consumption specific g/kWh	Specific energy kWh/dm³
Maximum power						
3.1.1 at 2-hour test						
61.4	2200	996	21.62	18.05	294	2.84
3.1.2 at rated speed						
61.4	2200	996	21.62	18.05	294	2.84
3.1.3 at standard p.t.o. speed						
61.4	2200	996	21.62	18.05	294	2.84
3.1.4 Part loads, the governor hand lever in the position corresponding to maximum power at full load (curve a)						
3.1.4.1 the torque corresponding to maximum power at rated speed						
61.4	2200	996	21.62	18.05	294	2.84
3.1.4.2 85% of the torque obtained in 3.1.4.1						
53.7	2255	1021	20.01	16.71	311	2.68
3.1.4.3 75% of the torque defined in 3.1.4.2						
40.7	2273	1029	16.89	14.10	346	2.41
3.1.4.4 50% of the torque defined in 3.1.4.2						
27.2	2295	1039	13.35	11.15	409	2.04
3.1.4.5 25% of the torque defined in 3.1.4.2						
13.7	2317	1049	9.99	8.34	610	1.37
3.1.4.6 unloaded						
-	2334	1056	6.77	5.65	-	-

CASE IH MX100C (4WD)

DLG-Test No. 2000-60

Power kW	Speed Engine rev/min	Speed P.t.o. rev/min	Fuel consumption hourly dm³/h	Fuel consumption hourly kg/h	Fuel consumption specific g/kWh	Specific energy kWh/dm³
3.1.5 Part loads, the governor hand lever in the position corresponding to standard p.t.o. speed at full load (curve b)						
3.1.5.1 the torque corresponding to maximum power						
61.4	2200	996	21.62	18.05	294	2.84
3.1.2 85% of the torque obtained in 3.1.5.1						
53.7	2255	1021	20.01	16.71	311	2.68
3.1.5.3 75% of the torque defined in 3.1.5.2						
40.7	2273	1029	16.89	14.10	346	2.41
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27.2	2295	1039	13.35	11.15	409	2.04
3.1.5.5 25% of the torque defined in 3.1.5.2						
13.7	2317	1049	9.99	8.34	610	1.37
3.1.5.6 unloaded						
-	2334	1056	6.77	5.65	-	-

No load maximum engine speed:	2334 rev/min
Equivalent flywheel torque at rated engine speed:	267 Nm
Equivalent flywheel torque at 2-hour test:	267 Nm
at engine speed:	2200 rev/min
Maximum equivalent flywheel torque:	352 Nm
at engine speed:	1398 rev/min

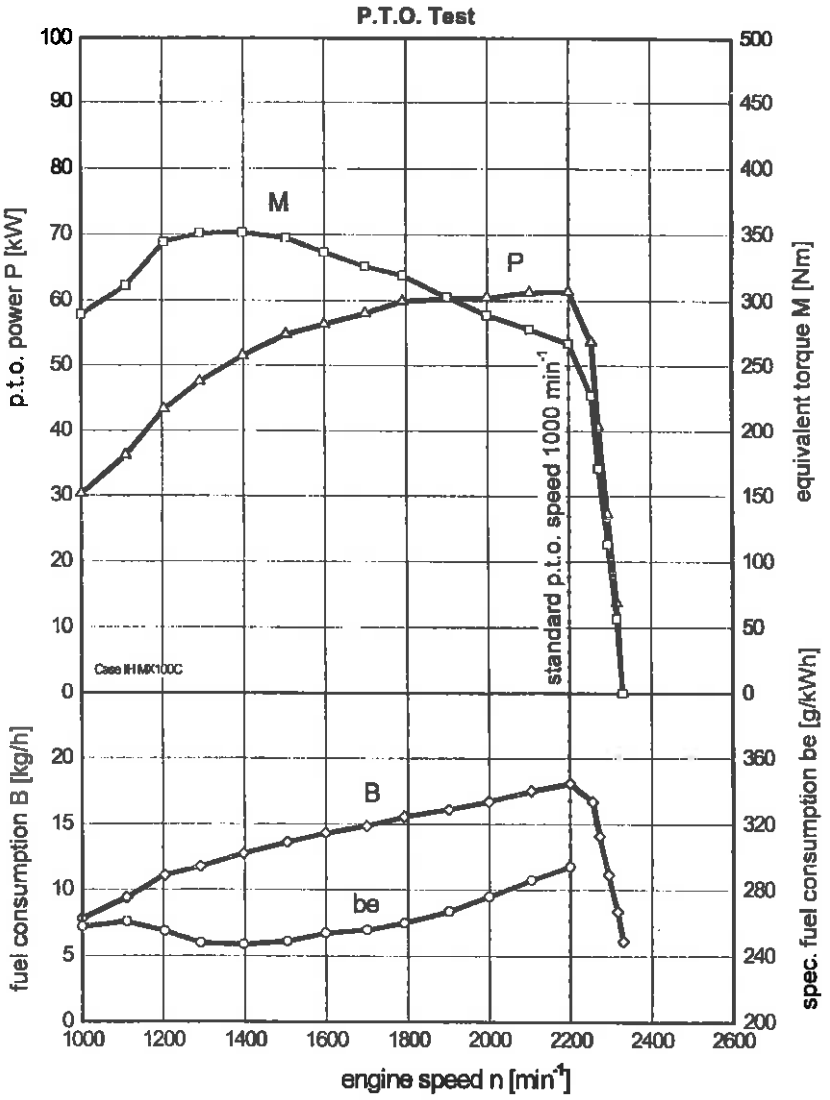
Mean atmospheric conditions

temperature:	20 °C
pressure:	100.7 kPa
relative humidity:	28 %

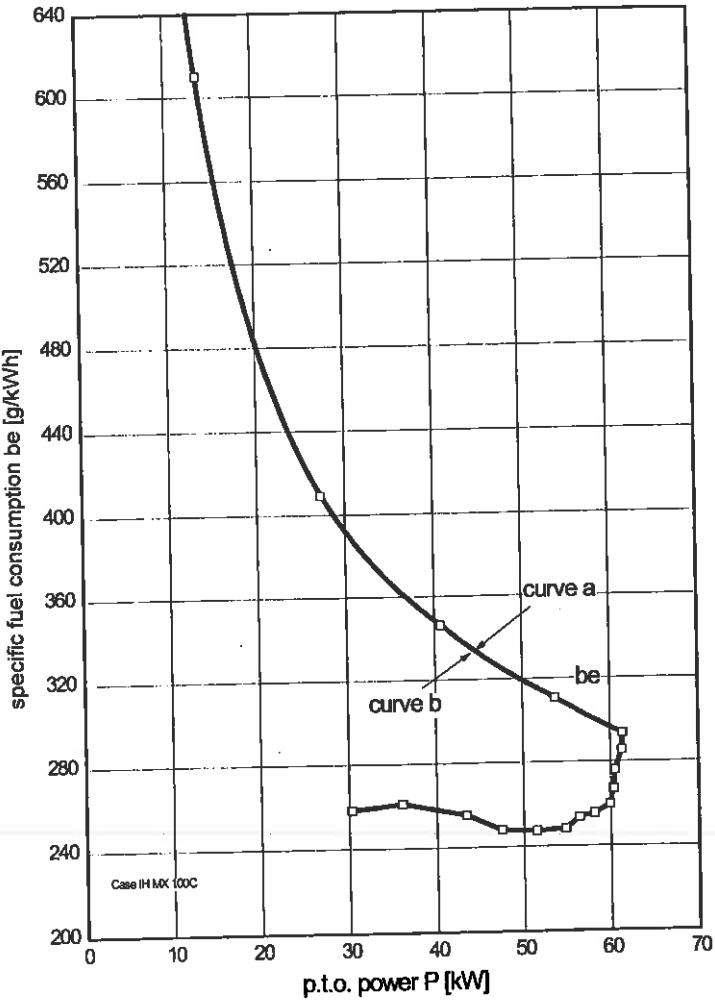
Maximum temperatures

coolant:	78 °C
oil:	122 °C
fuel:	51 °C
air intake:	20 °C

CASE IH MX100C (4WD) **DLG-Test No. 2000-60**



P.T.O. Test


specific fuel consumption be [g/kWh]
640
600
560
520
480
440
400
360
320
280
240
200
0
10
20
30
40
50
60
70
p.t.o. power P [kW]
curve a
be
curve b
Case IH MX 100C

3.2 HYDRAULIC POWER AND LIFTING FORCE

- Date of tests: March 14th till 20th, 2000

3.2.1 Hydraulic power test

- Sustained pressure with relief valve open: 19.2 MPa
- Pump stalled: No
- Pump delivery rate at minimum pressure: 88.4 dm³/min

	Hydraulic power kW	Flow rate dm³/min	Pressure MPa	Oil Temperature °C
At 90% of the actual relief valve setting	16.4	57.0	17.3	65
Maximum	21.6	81.0	16.0	65

- Tapping point used for test: At rear of tractor, connected to additional control valve no. 1
- Opening/closing pressure of the unloading valve: Not applicable

3.2.2 Power lift test: maximum pressure in lift cylinder 20.2 MPa

	At the hitch points	On the frame
Height of lower hitch points above ground in down position	200 mm	
Vertical movement without lifting forces with lifting forces	740 mm 730 mm	850 mm 816 mm
Max. corrected force exerted through full range	40.10 kN	32.90 kN
Corresponding pressure	18.2 MPa	
Moment about rear axle	-	56.9 kNm
Max. tilt angle of mast from vertical		7°

Lifting heights relative to horizontal lower links												
mm	-435	-400	-375	-300	-200	-100	0	+100	+200	+300	+355	+380
Lifting forces at hitch points. Corrected to 18.2 MPa												
kN			40.10	45.90	50.00	51.30	51.30	50.40	49.10	47.30	45.50	
Lifting forces at standard frame. corrected to 18.2 MPa												
kN	37.40	39.60		42.80	44.10	43.70	42.80	41.00	38.70	36.00		32.90

3.3 DRAWBAR PERFORMANCE

Date of test: March 27th till April 10th, 2000
Type of track: Concrete

Gear number and range	Power kW	Drawbar pull kN	Speed km/h	Engine speed rev/min	Slip of wheels %
3.3.1 MAXIMUM POWER IN TESTED GEARS (unballasted tractor)					
I 1	36.3	54.41	2.40	2272	15.1
I 2	43.7	54.65	2.88	2260	14.9
I 3	50.8	48.99	3.73	2202	8.4
I 4	52.3	39.53	4.76	2205	5.9
II 1	54.0	32.70	5.94	2196	4.6
II 2	53.2	26.49	7.23	2198	3.7
II 3	52.7	21.09	9.00	2199	2.9
III 1	53.2	19.14	10.00	2202	2.6
II 4	52.8	16.88	11.25	2200	2.3
III 2	52.5	15.69	12.05	2194	2.1
III 3	51.4	12.31	15.02	2201	1.6
3.3.2 MAXIMUM POWER IN TESTED GEARS (ballasted tractor)					
I 1	50.2	75.58	2.39	2198	12.4 *)
I 2	52.5	62.23	3.04	2199	7.3
I 3	54.6	50.77	3.87	2203	5.0
I 4	55.0	40.91	4.84	2199	3.7
II 1	54.8	32.64	6.04	2200	2.8
II 2	53.3	26.19	7.32	2201	2.1
II 3	53.1	21.10	9.06	2196	1.8
III 1	54.3	19.50	10.02	2194	1.6
II 4	52.8	16.84	11.29	2198	1.4
III 2	53.4	15.83	12.14	2197	1.3
3.3.3 FIVE-HOUR TESTS					
3.3.3.1 FIVE-HOUR-TEST at 75% of the pull corresponding to maximum power					
II 2	41.5	19.65	7.60	2273	1.6
3.3.3.2 FIVE-HOUR TEST at pull corresponding to 15% wheel slip					
I 1	50.0	75.60	2.38	2198	12.5*)

*) 15% wheel slip could not be reached in the lowest gear due to the high tractor mass

Oil consumption during ten hours duration of tests 3.3.3.1 and 3.3.3.2 : 17.5 g/h

CASE IH MX100C (4WD) **DLG-Test No. 2000-60**

	Height of drawbar above ground	Tyre inflation pressure	
		Front	Rear
unballasted	380 mm	80 kPa	80 kPa
ballasted	380 mm	120 kPa	120 kPa

Specific fuel consumption	Specific energy	Temperatures			Atmospheric conditions		
		Fuel	Coolant	Engine oil	Tempe-rature	Relative humidity	Pressure
g/kWh	kWh/dm³	°C	°C	°C	°C	%	kPa
434	1.90	36	70	112	7	60	99.3
403	2.04	38	70	113	8	60	99.3
358	2.30	39	73	116	7	60	99.3
347	2.37	38	74	115	8	60	99.3
336	2.45	38	73	116	9	60	99.3
339	2.43	37	71	113	13	60	99.3
344	2.40	40	73	114	16	60	99.3
340	2.43	43	75	118	14	60	99.3
343	2.40	40	74	116	15	60	99.3
344	2.39	37	72	116	9	60	99.3
353	2.33	37	72	116	9	60	99.3
360	2.29	37	72	117	4	53	100.7
345	2.39	36	72	115	7	53	100.7
332	2.48	39	73	117	8	65	101.0
329	2.51	41	74	117	9	65	101.0
329	2.51	40	72	116	9	65	101.0
340	2.43	41	74	115	12	53	100.7
339	2.43	42	75	117	11	53	100.7
332	2.48	41	74	116	12	53	100.7
342	2.41	42	74	116	11	53	100.7
339	2.43	42	75	117	12	53	100.7
at rated speed							
365	2.26	43	73	115	13	65	101.0
with additional ballast: - kg							
361	2.28	45	76	120	9	65	101.0

3.4 TURNING AREA AND TURNING CIRCLE
(front wheel drive disengaged)

	Without steering brakes	
	right-hand m	left-hand m
Radius of turning area	4.99	4.95
Radius of turning circle	4.60	4.60

3.5 LOCATION OF CENTRE OF GRAVITY

Height above ground	953 mm
Distance forward from the vertical plane containing the axis of the rear-wheels	940 mm
Distance from the median longitudinal plane of the tractor	7 mm to the right

3.6 BRAKING (front wheel drive disengaged)
- Date of tests: 3rd and 4th April, 2000

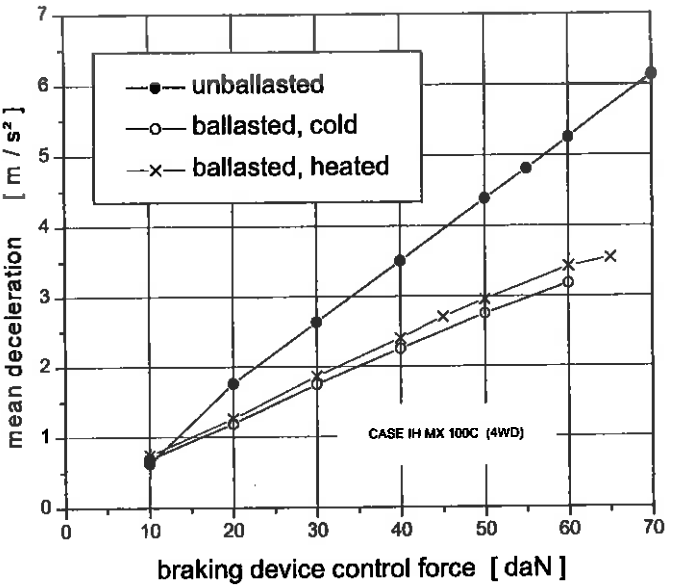
3.6.1 Cold service braking device test
3.6.2 Fade test

Braking device control force [kN]	Mean deceleration [m/s²]		
	cold service braking test according to 3.6.1		fade test according to 3.6.2
	ballasted tractor	unballasted tractor	ballasted tractor
10	0.69	0.62	0.74
20	1.19	1.76	1.26
30	1.75	2.63	1.86
40	2.25	3.51	2.40
50	2.75	4.39	2.96
60	3.19	5.25	3.43

	Speed before application of brakes [km/h]	Braking device control force [kN]	Minimum stopping distance without locking the wheels [m]
Ballasted tractor			
cold brakes	38.5	60	17.93
heated brakes		60	16.67
Unballasted tractor			
cold brakes	39.3	60	11.35

- Maximum deviation of tractor from its original course: No deviation
- Abnormal vibration: No vibration
- Brake heating method: Actuating of brake over 1 km distance with pedal force corresponding to mean deceleration of 1 m/s²

Graph of
cold service braking device test and
fade test



3.6.3 Parking braking device test

	ballasted tractor on 18%-slope	
	uphill	downhill
braking device control force	4.3 kN	3.5 kN

3.7 MEASUREMENT OF EXTERNAL NOISE

- Date of test:	3rd April 2000
- Sound level meter make/model/type:	BRÜEL & KJAER / 2233/ precision quality sound level meter
- Type of track:	Concrete
- Gear number:	IV 4
- Travelling speed before acceleration:	29.9 km/h
- Sound level:	79.5 dB(A)

7	**OPTIONAL TESTS RESULTS**	**None**
8	**REPAIRS**	**None**
9	**REMARKS**	**None**

Head of tractor test section

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Test carried out by

Dipl.-Ing. Bodo Huber

Date: 31st January 2001



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