Prüfstelle für Landmaschinen



REPORT on test in accordance with
OECD STANDARD CODE 2 for the
Official Testing of Agricultural Tractor Performance

OECD No. 2/1930
7th November 2000

Agricultural Tractor

CASE IH MX80C (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 2).

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: 7th November 2000

OECD No. 2/1930
Restricted 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/cm²
	100 kPa	=	1000 mbar	=	750.10	mm Hg

All rights including the right of translation, reprint and photo-mechanical copying - also of excerpts - reserved by the editor.

Printed in Germany, January 2001
DLG-No. 323

TABLE OF CONTENTS

		Page
1	SPECIFICATION OF TRACTOR	4 to 17
2	TEST CONDITIONS	18 to 20
3	COMPULSORY TESTS RESULTS	
3.1	Main power take-off	21 to 24
3.2	Hydraulic power and lifting force	25
3.3	Drawbar power	26 and 27
4	OPTIONAL TESTS RESULTS	28
5	REPAIRS	28
6	REMARKS	28

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 23 h
Location of test:	DLG-Testing Station, D-64823 Groß-Umstadt

1 SPECIFICATION OF TRACTOR

1.1 Identification

- Make:	CASE IH
- Model:	MX 80C, 40 km/h version
- Type:	Wheel tractor, unit construction, four wheel driven
- Number of driving-wheels:	4
- Serial No.:	JJE 1050900
- 1st serial No.:	JJE 1050001

1.2 Engine

Make/Model/Type:	Perkins / 1004-4T HR (Case - model 5616/2200)/ water-cooled 4-stroke Diesel-engine direct injection, supercharged
Serial no.:	U 918706 D

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, without wastegate
- Pressure	Max. 87 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 / 8923 A050T
Type :	DP, distributor pump with timing device
Serial no.:	02828 HRG
Manufacturer's production setting:	67.0 ± 2.4 mm^3/stroke at full load and rated speed;
Flow rate:	17.7 ± 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
- 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 / M050128 / 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

- Available options: 2 levers, 1 toggle switch

  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

CASE IH MX80C (4WD) **DLG-Test No. 2000-62**

1.3.4 Front axle and final drives

- Make/Model/Type: CARRARO / 20.14 / 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

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	2.59
	2	204.93	3.12
	3	165.81	3.85
	4	133.85	4.77
II	1	108.29	5.90
	2	89.91	7.10
	3	72.75	8.78
	4	58.73	10.87
III	1	65.87	9.70
	2	54.69	11.68
	3	44.25	14.43
	4	35.72	17.88
IV	1	33.88	18.85
	2	28.12	22.71
	3	22.75	28.07
	4	18.37	34.76
Reverse Speeds			
I	1	213.31	2.99
	2	177.11	3.61
	3	143.30	4.46
	4	115.68	5.52
II	1	93.61	6.82
	2	77.71	8.22
	3	62.88	10.16
	4	50.75	12.58
III	1	56.94	11.22
	2	47.27	13.51
	3	38.25	16.70
	4	30.87	20.69

*) calculated with a dynamic radius index of 770 mm
(not in conformity with ISO 4251-1:1992)
- Number of revolutions of front wheels for one revolution of rear wheels: 1.407

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: 680 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

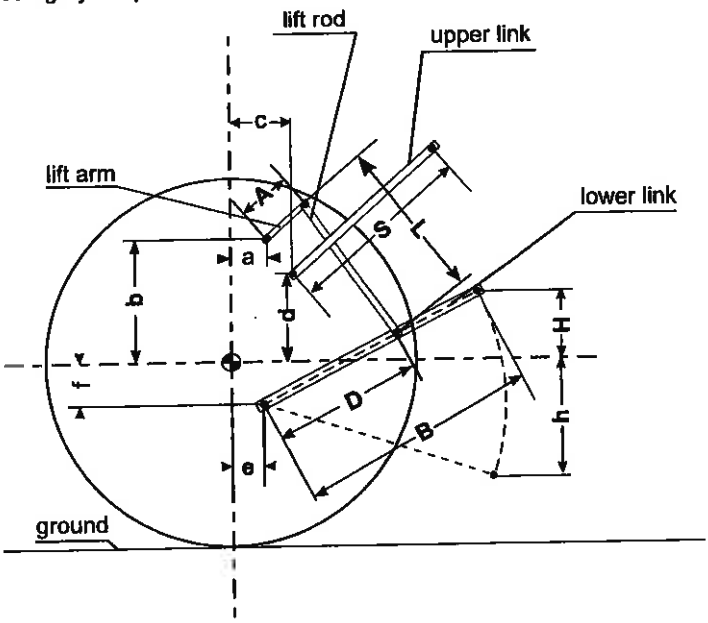
1.5 Hydraulic power lift

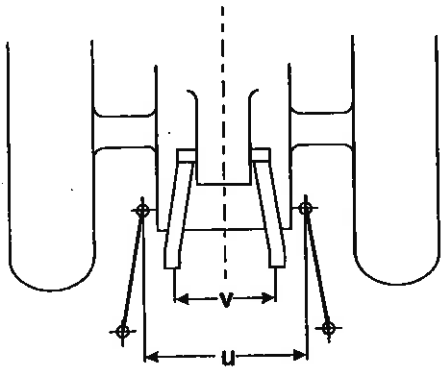
- Make/Model/Type:	CASE / - / electro-hydraulic power lift, lower link sensing
- Type of hydraulic system:	Closed, load sensing, pressure and flow compensated system
- Type and number of cylinders:	1 internal cylinder, single acting, 105 mm bore, 227 mm stroke
- Type of linkage lock for transport:	Hydraulic 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 WALTERSCHEID quick couplers
- Category adapter: None





CASE IH MX80C (4WD) **DLG-Test No. 2000-62**

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') *)	770 560	
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	645

Heights (h, H, H') of lower link hitch points relative to rear wheel axis (situated 770 mm above ground), at different adjustments of L

These data are valid for unloaded power lift

Length of lift rods	(L)	545	645	660
Linkage distance of lift rods	(D)	550		
Lowest position	(h)	370	570	642
Highest position	(H)	270	125	95
Transport position	(H')	270	125	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 m
	- Height above ground:	Centre of clevis adjustable in 8 steps to 400/525/623/697/747/873/923 and	973 mm
	- Distance of hitch point from rear-wheel axis:	horizontal	665 mm
	- Distance of hitch point from power take-off shaft end vertical:	below above	280/155 and 57 mm 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: Pump:	Connected by sequence valve to the hydraulic system of the tractor, 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/31
	- 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:	210 mm
	Vertically:	140 mm
	- Safety belt:	Optional, lap belt
1.14.2	Optional driver's seats	
	- Make/Model/Type:	GRAMMER/MSG95A/731/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	1270	170x100	195
Sidelights	1682	105x32	877
Rearlights	1665	60x50	808
Reflectors, 1st pair	1665	50x50	859
2nd pair	730	155x55	535

2. TEST CONDITIONS

2.1 Overall dimensions

Length	Width	Height at top of	
		protective structure	exhaust silencer pipe
mm	mm	mm	mm
4160	2455	2809	2768

2.2 Ground clearance 340 mm

- Clearance-limiting part: Bracket of trailer hitch

2.3 Tractor mass Unballasted (with cab)

	Without driver kg	With driver kg
Front	1715	1730
Rear	3085	3145
Total	4800	4875

2.5 Tyres and track widths specifications

	Front	Rear
Tyres:	GOODYEAR	GOODYEAR
dimensions	440/65 R 24	520/70 R 34
load index speed index	122 A8	148 A8
type	radial ply	radial ply
maximum load (tyre manufacturer's)	15.00 kN	31.50 kN
at travelling speed	40 km/h	40 km/h
at tyre inflation pressure	160 kPa	160 kPa
radius index (ISO 4251/1-1992)	560 mm	770 mm
Chosen track width:	1710 mm	1930 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 tests 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	5	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. 1 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 min^{-1})

Date of tests: 16th March 2000
Location of tests: DLG-Testing Station Groß-Umstadt
Type of dynamometer: SCHENCK hydraulic dynamometer U1-40

Power	Speed		Fuel consumption			Specific
	Engine	P.t.o.	hourly		specific	energy
kW	min^{-1}	min^{-1}	dm^3/h	kg/h	g/kWh	kWh/dm^3
Maximum power						
3.1.1 at 2-hour test						
50.6	2100	950	17.20	14.36	284	2.94
3.1.2 at rated speed						
50.0	2200	996	17.81	14.87	297	2.81
3.1.3 at standard p.t.o. speed						
50.0	2200	996	17.81	14.87	297	2.81
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						
50.0	2200	996	17.81	14.87	297	2.81
3.1.4.2 85% of the torque obtained in 3.1.4.1						
44.3	2266	1026	16.84	14.06	318	2.63
3.1.4.3 75% of the torque defined in 3.1.4.2						
33.3	2289	1036	14.51	12.12	365	2.29
3.1.4.4 50% of the torque defined in 3.1.4.2						
22.4	2305	1043	11.68	9.75	436	1.91
3.1.4.5 25% of the torque defined in 3.1.4.2						
11.2	2317	1049	8.84	7.38	661	1.26
3.1.4.6 unloaded						
-	2327	1053	5.97	4.98	-	-

Power kW	Speed Engine min^{-1}	Speed P.t.o. min^{-1}	Fuel consumption hourly dm^3/h	Fuel consumption hourly kg/h	Fuel consumption specific g/kWh	Specific energy kWh/dm^3
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						
50.0	2200	996	17.81	14.87	297	2.81
3.1.5.2 85% of the torque obtained in 3.1.5.1						
44.3	2266	1026	16.84	14.06	318	2.63
3.1.5.3 75% of the torque defined in 3.1.5.2						
33.3	2289	1036	14.51	12.12	365	2.29
3.1.5.4 50% of the torque defined in 3.1.5.2						
22.4	2305	1043	11.68	9.75	436	1.91
3.1.5.5 25% of the torque defined in 3.1.5.2						
11.2	2317	1049	8.84	7.38	661	1.26
3.1.5.6 unloaded						
-	2327	1053	5.97	4.98	-	-

No load maximum engine speed:	2327 min^{-1}
Equivalent flywheel torque at rated engine speed:	217 Nm
Equivalent flywheel torque at 2-hour test:	230 Nm
at engine speed:	2100 min^{-1}
Maximum equivalent flywheel torque:	296 Nm
at engine speed:	1305 min^{-1}

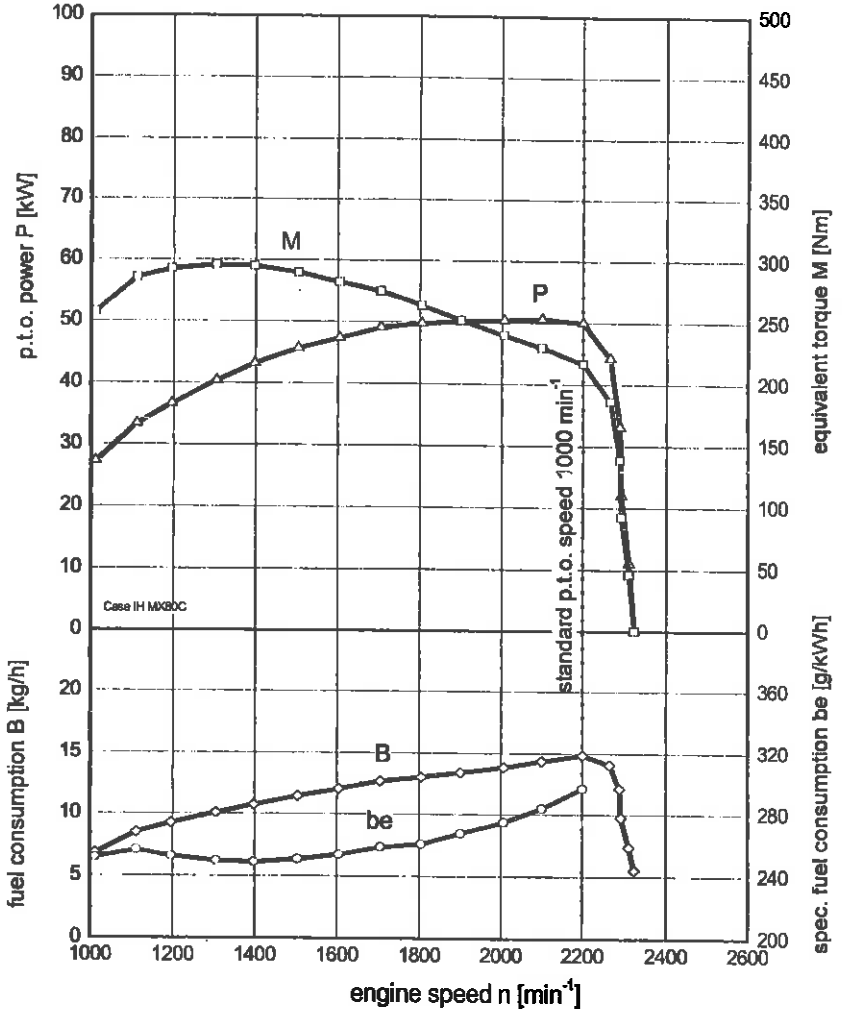
Mean atmospheric conditions

temperature:	20 °C
pressure:	100.5 kPa
relative humidity:	30 %

Maximum temperatures

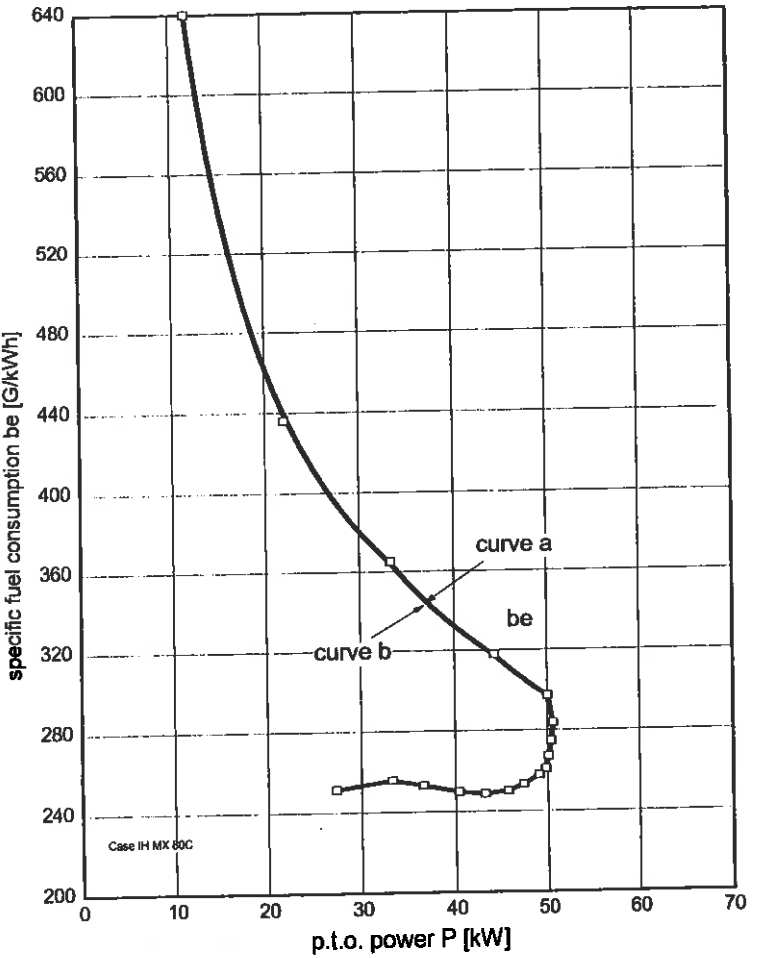
coolant:	74 °C
oil:	116 °C
fuel:	49 °C
air intake:	21 °C

CASE IH MX80C (4WD) **DLG-Test No. 2000-62**



CASE IH MX80C (4WD) **DLG-Test No. 2000-62**

P.T.O. Test



3.2 HYDRAULIC POWER AND LIFTING FORCE

- Date of tests: 27th and 30th March 2000

3.2.1 Hydraulic power test

- Sustained pressure with relief valve open: 20.0 MPa
- Pump stalled: No
- Pump delivery rate at minimum pressure: 95.6 dm³/min

	Hydraulic power kW	Flow rate dm³/min	Pressure MPa	Oil Temperature °C
At 90% of the actual relief valve setting	11.8	39.3	18.0	65
Maximum	22.6	90.4	15.0	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	695 mm 685 mm	825 mm 800 mm
Max. corrected force exerted through full range	42.80 kN	34.70 kN
Corresponding pressure	18.2 MPa	
Moment about rear axle	-	60.0 kNm
Max. tilt angle of mast from vertical		8.5°

Lifting heights relative to horizontal lower links

mm	-370	-325	-300	-200	-100	0	+100	+200	+300	+360	+400	+430
Lifting forces at hitch points, corrected to 18.2 MPa												
kN		42.80	44.40	48.90	50.80	51.30	50.40	49.00	46.80	44.60		
Lifting forces at standard frame, corrected to 18.2 MPa												
kN	38.80		42.00	44.20	45.00	44.30	43.60	41.70	39.30		36.00	34.70

3.3 DRAWBAR PERFORMANCE

Date of test: 20th and 21st March 2000
Type of track: Concrete

Gear number and range	Power	Drawbar pull	Speed	Engine speed	Slip of wheels
	kW	kN	km/h	min-1	%
3.3.1 MAXIMUM POWER IN TESTED GEARS (unballasted tractor)					
I 1	31.5	49.24	2.30	2277	15.1
I 2	37.1	49.28	2.71	2225	15.0
I 3	40.1	42.35	3.41	2101	8.1
I 4	41.7	34.72	4.32	2094	5.5
II 1	42.7	28.27	5.44	2105	4.1
II 2	43.1	23.66	6.56	2091	3.2
II 3	42.8	18.82	8.18	2099	2.9
III 1	43.9	17.46	9.06	2098	2.6
II 4	41.9	14.76	10.23	2100	2.0
III 2	42.4	13.93	10.96	2094	1.9
III 3	40.7	10.74	13.65	2100	1.3
3.3.2 FUEL CONSUMPTION					
3.3.2.1 in selected gear, at maximum power at rated speed					
III 1	41.6	15.77	9.49	2194	2.4
3.3.2.1.1 75 % of pull at maximum power at rated speed					
III 1	32.5	11.79	9.93	2281	1.7
3.3.2.1.2 50 % of pull at maximum power at rated speed					
III 1	22.0	7.88	10.05	2293	1.1
3.3.2.1.3 next higher gear at reduced engine speed; same pull and travelling speed as in 3.3.2.1.1					
II 4	32.6	11.85	9.90	2023	1.7
3.3.2.1.4 next higher gear at reduced engine speed; same pull and travelling speed as in 3.3.2.1.2					
II 4	21.9	7.87	10.03	2042	1.3
3.3.2.2 in selected gear nearest to 7.50 km/h at rated speed					
II 2	42.7	22.24	6.92	2199	3.0
3.3.2.2.1 75 % of pull at maximum power at rated speed					
II 2	33.5	16.69	7.22	2281	2.4
3.3.2.2.2 50 % of pull at maximum power at rated speed					
II 2	22.5	11.03	7.33	2295	1.5
3.3.2.2.3 next higher gear at reduced engine speed; same pull and travelling speed as in 3.3.2.2.1					
II 3	33.6	16.82	7.20	1839	2.4
3.3.2.2.4 next higher gear at reduced engine speed; same pull and travelling speed as in 3.3.2.2.2					
II 3	22.6	11.15	7.29	1845	1.4

CASE IH MX80C (4WD) **DLG-Test No. 2000-62**

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

Specific fuel consumption	Specific energy	Temperature			Atmospheric conditions		
		Fuel	Coolant	Engine oil	Tempe-rature	Relative humidity	Pressure
g/kWh	kWh/l	°C	°C	°C	°C	%	kPa
431	1.91	39	71	112	13	55	101.0
400	2.06	41	72	115	10	55	101.0
358	2.30	42	73	114	11	55	101.0
347	2.38	41	72	114	12	55	101.0
336	2.45	41	72	113	12	55	101.0
336	2.45	42	72	114	12	55	101.0
337	2.45	41	72	114	12	55	101.0
328	2.51	38	71	113	8	83	101.0
343	2.40	41	72	114	12	55	101.0
340	2.42	35	69	113	7	83	101.0
354	2.32	37	70	113	8	83	101.0
357	2.31	42	73	114	14	83	101.0
397	2.07	42	73	115	15	83	101.0
501	1.64	41	71	112	16	83	101.0
364	2.27	41	71	110	16	83	101.0
446	1.85	41	71	110	15	83	101.0
349	2.36	37	70	111	12	83	101.0
401	2.06	38	70	113	11	83	101.0
490	1.68	38	69	112	12	83	101.0
331	2.49	38	69	108	13	83	101.0
378	2.18	37	67	106	12	83	101.0

4	**OPTIONAL TESTS RESULTS**	**None**
5	**REPAIRS**	**None**
6	**REMARKS**	**None**

Head of tractor test section

M. Lober

Dipl.-Ing. Manfred Lober

Deutsche Landwirtschafts-Gesellschaft

Test carried out by

B. Huber

Dipl.-Ing. Bodo Huber

Date: 3rd January 2001



Deutsche Landwirtschafts Gesellschaft e.V.
Fachbereich Landtechnik - Prüfstelle für Landmaschinen
Max-Eyth-Weg 1, D-64823 Groß-Umstadt
Tel. 0 60 78/96 35-0, Fax 0 60 78/96 35 90
E-mail: Tech@dlg-frankfurt.de, Internet: www.dlg-frankfurt.de