

January 2000

## Test 1930: Case IH MX 80C Diesel

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# SUMMARY OF OECD TEST 1930—NEBRASKA SUMMARY 356

## CASE IH MX 80C DIESEL

### 16 SPEED

#### POWER TAKE-OFF PERFORMANCE

| Power<br>HP<br>(kW)                           | Crank<br>shaft<br>rpm | Gal/hr<br>(l/h) | lb/hp.hr<br>(kg/kW.h) | Hp.hr/gal<br>(kW.h/l) | Mean Atmospheric<br>Conditions |
|-----------------------------------------------|-----------------------|-----------------|-----------------------|-----------------------|--------------------------------|
| <b>MAXIMUM POWER AND FUEL CONSUMPTION</b>     |                       |                 |                       |                       |                                |
| <b>Rated Engine Speed (PTO speed-996 rpm)</b> |                       |                 |                       |                       |                                |
| 67.1<br>(50.0)                                | 2200                  | 4.70<br>(17.81) | 0.488<br>(0.297)      | 14.26<br>(2.81)       |                                |
| <b>Maximum Power (2 hours)</b>                |                       |                 |                       |                       |                                |
| 67.8<br>(50.6)                                | 2100                  | 4.55<br>(17.20) | 0.467<br>(0.284)      | 14.92<br>(2.94)       |                                |
| <b>VARYING POWER AND FUEL CONSUMPTION</b>     |                       |                 |                       |                       |                                |
| 67.1<br>(50.0)                                | 2200                  | 4.70<br>(17.81) | 0.488<br>(0.297)      | 14.26<br>(2.81)       | Air temperature                |
| 59.4<br>(44.3)                                | 2266                  | 4.45<br>(16.84) | 0.522<br>(0.318)      | 13.34<br>(2.63)       | 70°F (20°C)                    |
| 44.6<br>(33.3)                                | 2289                  | 3.83<br>(14.51) | 0.599<br>(0.365)      | 11.63<br>(2.29)       | Relative humidity              |
| 30.0<br>(22.4)                                | 2305                  | 3.09<br>(11.68) | 0.717<br>(0.436)      | 9.70<br>(1.91)        | 30%                            |
| 15.0<br>(11.2)                                | 2317                  | 2.34<br>(8.84)  | 1.087<br>(0.661)      | 6.40<br>(1.26)        | Barometer                      |
| --                                            | 2327                  | 1.58<br>(5.97)  | --                    | --                    | 29.5" Hg (100.5 kPa)           |

Maximum Torque - 218 lb.-ft. (296 Nm) at 1305 rpm  
 Maximum Torque Rise - 36.4%  
 Torque rise at 1800 engine rpm - 20%

#### DRAWBAR PERFORMANCE (Unballasted Front Drive Engaged)

#### FUEL CONSUMPTION CHARACTERISTICS

| Power<br>Hp<br>(kW)                                       | Drawbar<br>pull<br>lbs<br>(kN) | Speed<br>mph<br>(km/h) | Crank-<br>shaft<br>speed<br>rpm | Slip<br>% | Fuel Consumption<br>lb/hp.hr<br>(kg/kW.h) | Hp.hr/gal<br>(kW.h/l) | Temp. °F (°C)<br>cool-<br>ing<br>med | Air<br>dry<br>bulb | Barom.<br>inch<br>Hg<br>(kPa) |
|-----------------------------------------------------------|--------------------------------|------------------------|---------------------------------|-----------|-------------------------------------------|-----------------------|--------------------------------------|--------------------|-------------------------------|
| <b>Maximum Power 6th (II2) Gear</b>                       |                                |                        |                                 |           |                                           |                       |                                      |                    |                               |
| 57.3<br>(42.7)                                            | 5000<br>(22.24)                | 4.30<br>(6.92)         | 2199                            | 3.0       | 0.574<br>(0.349)                          | 11.98<br>(2.36)       | 158<br>(70)                          | 53<br>(12)         | 29.8<br>(101.0)               |
| <b>75% of Pull at Maximum Power 6th (II2) Gear</b>        |                                |                        |                                 |           |                                           |                       |                                      |                    |                               |
| 44.9<br>(33.5)                                            | 3750<br>(16.69)                | 4.49<br>(7.22)         | 2281                            | 2.4       | 0.659<br>(0.401)                          | 10.44<br>(2.06)       | 158<br>(70)                          | 52<br>(11)         | 29.8<br>(101.0)               |
| <b>50% of Pull at Maximum Power 6th (II2) Gear</b>        |                                |                        |                                 |           |                                           |                       |                                      |                    |                               |
| 30.1<br>(22.5)                                            | 2480<br>(11.03)                | 4.55<br>(7.33)         | 2295                            | 1.5       | 0.806<br>(0.490)                          | 8.53<br>(1.68)        | 156<br>(69)                          | 53<br>(12)         | 29.8<br>(101.0)               |
| <b>75% of Pull at Reduced Engine Speed 7th (II3) Gear</b> |                                |                        |                                 |           |                                           |                       |                                      |                    |                               |
| 45.1<br>(33.6)                                            | 3780<br>(16.82)                | 4.47<br>(7.20)         | 1839                            | 2.4       | 0.544<br>(0.331)                          | 12.64<br>(2.49)       | 156<br>(69)                          | 55<br>(13)         | 29.8<br>(101.0)               |
| <b>50% of Pull at Reduced Engine Speed 7th (II3) Gear</b> |                                |                        |                                 |           |                                           |                       |                                      |                    |                               |
| 30.3<br>(22.6)                                            | 2505<br>(11.15)                | 4.53<br>(7.29)         | 1845                            | 1.4       | 0.621<br>(0.378)                          | 11.07<br>(2.18)       | 153<br>(67)                          | 53<br>(12)         | 29.8<br>(101.0)               |

**Location of Test:** DLG Testing Station for Agricultural Machinery Max - Eyth - Weg 1, D-64823 Gros-Umstadt, Germany

**Dates of Test:** March, 2000

**Manufacturer:** Case United Kingdom Limited, Doncaster, DN2 4PG, England

**FUEL and OIL:** Fuel No. 2 Diesel **Specific gravity converted to 60°/60° F (15°/15°C)** 0.837 **Fuel weight** 6.97 lbs/gal (0.835 kg/l) **Oil SAE 15W-40 API service classification** CF-4 **Transmission and hydraulic lubricant** Case Hy-Tran Ultra fluid **Front axle lubricant** SAE 84W-140 gear oil

**ENGINE:** Make Perkins Diesel **Type** four cylinder vertical with turbocharger **Serial No.** U918706D **Crankshaft** lengthwise **Rated engine speed** 2200 **Bore and stroke** 3.937" x 5.00" (100.0 mm x 127.0 mm) **Compression ratio** 17.25 to 1 **Displacement** 243 cu in (3990 ml) **Starting system** 12 volt **Lubrication pressure** **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** one paper element **Fuel cooler** radiator for pump return fuel **Muffler** vertical **Cooling medium temperature control** thermostat and variable speed fan

**CHASSIS:** **Type** front wheel assist **Serial No.** JJE1050900 **Tread width** rear 64.2" (1630 mm) to 87.8" (2230 mm) front 60.2" (1530 mm) to 87.8" (2230 mm) **Wheel base** 92.8" (2422 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (4) range operator controlled powershift **Nominal travel speeds mph (km/h)** first 1.61 (2.59) second 1.94 (3.12) third 2.39 (3.85) fourth 2.96 (4.77) fifth 3.67 (5.90) sixth 4.41 (7.10) seventh 5.46 (8.78) eighth 6.03 (9.70) ninth 6.75 (10.87) tenth 7.26 (11.68) eleventh 8.91 (14.34) twelfth 11.11 (17.88) thirteenth 11.71 (18.85) fourteenth 14.11 (22.71) fifteenth 17.44 (28.07) sixteenth 21.60 (34.76) reverse 1.86 (2.99), 2.24 (3.61), 2.77 (4.46), 3.43 (5.52), 4.24 (6.82), 5.11 (8.22), 6.31 (10.16), 6.97 (11.22), 7.82 (12.58), 8.39 (13.51), 10.38 (16.70), 12.86 (20.69) **Clutch** multiple wet disc hydraulically operated by foot pedal **Brakes** wet disc hydraulically operated by two foot pedals which can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 1875 engine rpm and 1000 rpm at 2210 engine rpm **Unladen tractor mass** 10580 lb (4800 kg)

**DRAWBAR PERFORMANCE**  
**(Unballasted Front Drive Engaged)**  
**MAXIMUM POWER IN SELECTED GEARS**

| Power<br>Hp<br>(kW) | Drawbar<br>pull<br>lbs<br>(kN) | Speed<br>mph<br>(km/h) | Crank-<br>shaft<br>speed<br>rpm | Slip<br>% | Fuel Consumption<br>lb/hp.hr<br>(kg/kW.h) | Consumption<br>Hp.hr/gal<br>(kW.h/l) | Temp. °F<br>cool-<br>ing<br>med | Temp. °C<br>Air<br>dry<br>bulb | Barom.<br>inch<br>Hg<br>(kPa) |
|---------------------|--------------------------------|------------------------|---------------------------------|-----------|-------------------------------------------|--------------------------------------|---------------------------------|--------------------------------|-------------------------------|
| 2nd (I 2) Gear      |                                |                        |                                 |           |                                           |                                      |                                 |                                |                               |
| 49.7<br>(37.1)      | 11080<br>(49.28)               | 1.68<br>(2.71)         | 2225                            | 15.0      | 0.658<br>(0.400)                          | 10.46<br>(2.06)                      | 162<br>(72)                     | 50<br>(10)                     | 29.8<br>(101.0)               |
| 3rd (I 3) Gear      |                                |                        |                                 |           |                                           |                                      |                                 |                                |                               |
| 53.8<br>(40.1)      | 9520<br>(42.35)                | 2.12<br>(3.41)         | 2101                            | 8.1       | 0.589<br>(0.358)                          | 11.67<br>(2.30)                      | 163<br>(73)                     | 52<br>(11)                     | 29.8<br>(101.0)               |
| 4th (I 4) Gear      |                                |                        |                                 |           |                                           |                                      |                                 |                                |                               |
| 55.9<br>(41.7)      | 7805<br>(34.72)                | 2.69<br>(4.32)         | 2094                            | 5.5       | 0.570<br>(0.347)                          | 12.07<br>(2.38)                      | 162<br>(72)                     | 54<br>(12)                     | 29.8<br>(101.0)               |
| 5th (II 1) Gear     |                                |                        |                                 |           |                                           |                                      |                                 |                                |                               |
| 57.3<br>(42.7)      | 6355<br>(28.27)                | 3.38<br>(5.44)         | 2105                            | 4.1       | 0.553<br>(0.336)                          | 12.44<br>(2.45)                      | 162<br>(72)                     | 54<br>(12)                     | 29.8<br>(101.0)               |
| 6th (II 2) Gear     |                                |                        |                                 |           |                                           |                                      |                                 |                                |                               |
| 57.8<br>(43.1)      | 5320<br>(23.66)                | 4.07<br>(6.56)         | 2091                            | 3.2       | 0.553<br>(0.336)                          | 12.44<br>(2.45)                      | 162<br>(72)                     | 54<br>(12)                     | 29.8<br>(101.0)               |
| 7th (II 3) Gear     |                                |                        |                                 |           |                                           |                                      |                                 |                                |                               |
| 57.3<br>(42.8)      | 4230<br>(18.82)                | 5.08<br>(8.18)         | 2099                            | 2.9       | 0.554<br>(0.337)                          | 12.42<br>(2.45)                      | 162<br>(72)                     | 54<br>(12)                     | 29.8<br>(101.0)               |
| 8th (III 1) Gear    |                                |                        |                                 |           |                                           |                                      |                                 |                                |                               |
| 58.9<br>(43.9)      | 3925<br>(17.46)                | 5.63<br>(9.06)         | 2098                            | 2.6       | 0.540<br>(0.328)                          | 12.74<br>(2.51)                      | 160<br>(71)                     | 47<br>(8)                      | 29.8<br>(101.0)               |
| 9th (II 4) Gear     |                                |                        |                                 |           |                                           |                                      |                                 |                                |                               |
| 56.2<br>(41.9)      | 3315<br>(14.76)                | 6.36<br>(10.23)        | 2100                            | 2.0       | 0.564<br>(0.343)                          | 12.18<br>(2.40)                      | 162<br>(72)                     | 54<br>(12)                     | 29.8<br>(101.0)               |
| 10th (III 2) Gear   |                                |                        |                                 |           |                                           |                                      |                                 |                                |                               |
| 56.9<br>(42.4)      | 3130<br>(13.93)                | 6.81<br>(10.96)        | 2094                            | 1.9       | 0.560<br>(0.340)                          | 12.28<br>(2.42)                      | 157<br>(69)                     | 45<br>(7)                      | 29.8<br>(101.0)               |
| 11th (III 3) Gear   |                                |                        |                                 |           |                                           |                                      |                                 |                                |                               |
| 54.6<br>(40.7)      | 2415<br>(10.74)                | 8.48<br>(13.65)        | 2100                            | 1.3       | 0.583<br>(0.354)                          | 11.80<br>(2.32)                      | 158<br>(70)                     | 47<br>(8)                      | 29.8<br>(101.0)               |

**REPAIRS AND ADJUSTMENTS:** No repairs or adjustments

**REMARKS:** All test results were determined from observed data obtained in accordance with official OECD test procedures. This tractor did not meet the manufacturer's claims of 37% torque rise, nor 3 point lift capacity of 8393 lbs. The performance results on this summary were taken from OECD tests conducted under the Code II Test Code procedure.

We, the undersigned, certify that this is a true summary of data from OECD Report No. **1930**, Nebraska Summary 356, July 13, 2000.

Brent T. Sampson  
 Test Engineer

L.L. Bashford  
 M.F. Kocher  
 G.J. Hoffman  
 Board of Tractor Test Engineers

| TRACTOR SOUND LEVEL WITH CAB           | Front Wheel Drive |                     |
|----------------------------------------|-------------------|---------------------|
|                                        | Engaged<br>dB(A)  | Disengaged<br>dB(A) |
| Maximum Sound Level in 6th (II 2) gear | 72.0              | 72.5                |
| At no load in 6th (II 2) Gear          | 72.0              | 72.0                |
| Bystander                              |                   |                     |

**TIRES AND WEIGHT**

**Rear Tires** No., size, ply & psi (kPa)  
**Front Tires** No., size, ply & psi (kPa)  
**Height of Drawbar**  
**Static Weight with operator** Rear  
 Front  
 Total

**Tested Without Ballast**

Two 520/70R34;\*\*, 12 (80)  
 Two 440/65R24;\*\*, 12 (80)  
 15.0 in (380 mm)  
 6935 lb (3145 kg)  
 3815 lb (1730 kg)  
 10750 lb (4875 kg)

## THREE POINT HITCH PERFORMANCE (OECD Static Test)

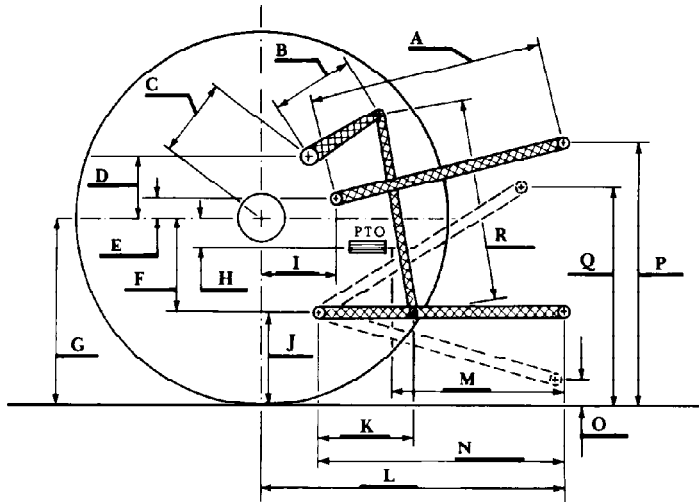
CATEGORY: II

Quick Attach: none

Maximum Force Exerted Through Whole Range: 7800 lbs (34.70 kN)

- i) Opening pressure of relief valve: NA
- Sustained pressure of the open relief valve: 2900 psi (200 bar)
- ii) Pump delivery rate at minimum pressure: 25.3 GPM (95.6 l/min)
- iii) Pump delivery rate at maximum
  - hydraulic power: 23.9 GPM (90.4 l/min)
  - Delivery pressure: 2175 psi (150 bar)
  - Power: 30.3 HP (22.6 kW)

### HITCH DIMENSIONS AS TESTED NO LOAD



|   | inch | mm   |
|---|------|------|
| A | 30.7 | 780  |
| B | 9.1  | 230  |
| C | 12.2 | 310  |
| D | 7.5  | 190  |
| E | 9.3  | 235  |
| F | 9.6  | 245  |
| G | 30.3 | 770  |
| H | 3.5  | 90   |
| I | 14.2 | 360  |
| J | 20.7 | 525  |
| K | 21.7 | 550  |
| L | 44.1 | 1120 |
| M | 24.4 | 620  |
| N | 35.0 | 890  |
| O | 7.9  | 200  |
| P | 44.7 | 1135 |
| Q | 35.2 | 895  |
| R | 25.4 | 645  |