

# SUMMARY OF OECD TEST 1898—NEBRASKA SUMMARY 328

## McCORMICK C 90 & CX 90 DIESEL

## ALSO McCORMICK CX 95 DIESEL

### 16 SPEED

#### POWER TAKE-OFF PERFORMANCE

| Power<br>HP<br>(kW)                             | Crank<br>shaft<br>speed<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-1100 rpm)</b>  |                                |                 |                       |                       |                                |
| 79.7<br>(59.4)                                  | 2200                           | 4.97<br>(18.81) | 0.439<br>(0.267)      | 16.04<br>(3.16)       |                                |
| <b>Standard Power Take-off Speed (1000 rpm)</b> |                                |                 |                       |                       |                                |
| 81.1<br>(60.5)                                  | 2000                           | 4.76<br>(18.00) | 0.413<br>(0.251)      | 17.05<br>(3.36)       |                                |
| <b>VARYING POWER AND FUEL CONSUMPTION</b>       |                                |                 |                       |                       |                                |
| 79.7<br>(59.4)                                  | 2200                           | 4.97<br>(18.81) | 0.439<br>(0.267)      | 16.04<br>(3.16)       | Air temperature                |
| 69.7<br>(52.0)                                  | 2272                           | 4.62<br>(17.47) | 0.466<br>(0.283)      | 15.10<br>(2.97)       | 70°F (21°C)                    |
| 52.9<br>(39.4)                                  | 2294                           | 3.90<br>(14.78) | 0.521<br>(0.317)      | 13.50<br>(2.66)       | Relative humidity              |
| 35.4<br>(26.4)                                  | 2314                           | 3.21<br>(12.14) | 0.636<br>(0.387)      | 11.07<br>(2.18)       | 33%                            |
| 17.8<br>(13.3)                                  | 2336                           | 2.51<br>(9.49)  | 0.986<br>(0.600)      | 7.13<br>(1.41)        | Barometer                      |
| --  | 2361                           | 1.57<br>(5.96)  | --                    | --                    | 29.2" Hg (98.9 kPa)            |

Maximum Torque - 235 lb.-ft. (319 Nm) at 1400 rpm  
 Maximum Torque Rise - 23.6%  
 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—7th (1HiTA) Gear</b>                       |                                |                        |                                 |           |   |                       |                                      |                    |                               |
| 69.2<br>(51.6)  | 5450<br>(24.24)                | 4.76<br>(7.67)         | 2190                            | 3.6       | 0.510<br>(0.310)                          | 13.81<br>(2.72)       | 179<br>(82)                          | 49<br>(9)          | 29.4<br>(99.7)                |
| <b>75% of Pull at Maximum Power—7th (1HiTA) Gear</b>        |                                |                        |                                 |           |   |                       |                                      |                    |                               |
| 54.5<br>(40.6)  | 4105<br>(18.27)                | 4.98<br>(8.01)         | 2268                            | 2.6       | 0.569<br>(0.346)                          | 12.35<br>(2.43)       | 178<br>(81)                          | 49<br>(9)          | 29.4<br>(99.7)                |
| <b>50% of Pull at Maximum Power—7th (1HiTA) Gear</b>        |                                |                        |                                 |           |   |                       |                                      |                    |                               |
| 36.8<br>(27.4)  | 2720<br>(12.10)                | 5.07<br>(8.16)         | 2291                            | 1.9       | 0.711<br>(0.432)                          | 9.89<br>(1.95)        | 174<br>(79)                          | 49<br>(9)          | 29.4<br>(99.7)                |
| <b>75% of Pull at Reduced Engine Speed—8th (4LoTA) Gear</b> |                                |                        |                                 |           |   |                       |                                      |                    |                               |
| 53.8<br>(40.1)  | 4085<br>(18.18)                | 4.94<br>(7.95)         | 2066                            | 2.6       | 0.549<br>(0.334)                          | 12.80<br>(2.52)       | 176<br>(80)                          | 49<br>(9)          | 29.4<br>(99.7)                |
| <b>50% of Pull at Reduced Engine Speed—8th (4LoTA) Gear</b> |                                |                        |                                 |           |   |                       |                                      |                    |                               |
| 36.6<br>(27.3)  | 2710<br>(12.04)                | 5.06<br>(8.15)         | 2093                            | 1.5       | 0.648<br>(0.394)                          | 10.86<br>(2.14)       | 176<br>(80)                          | 49<br>(9)          | 29.4<br>(99.7)                |

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

**Dates of Test:** October - November, 1998

**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)** 0.845 **Fuel weight** 7.03 lbs/gal (0.843 kg/l) **Oil SAE 15W-40 API service classification** CF-4 **Transmission and hydraulic lubricant** Case Hy-Tran Plus fluid **Front axle lubricant** SAE 85W-140 gear oil

**ENGINE:** Make Perkins Diesel **Type** four cylinder vertical with turbocharger **Serial No.** AQU873802D **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.** JJE 100 2103 **Tread width** rear 55.9" (1420 mm) to 75.7" (1922 mm) front 53.7" (1364 mm) to 76.0" (1930 mm) **Wheel base** 92.8" (2356 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (2) range operator controlled powershift **Nominal travel speeds mph (km/h)** first 1.32 (2.12) second 1.59 (2.56) third 2.32 (3.73) fourth 2.80 (4.50) fifth 3.44 (5.53) sixth 4.14 (6.67) seventh 4.94 (7.95) eighth 5.39 (8.67) ninth 5.96 (9.59) tenth 6.50 (10.46) eleventh 8.70 (14.00) twelfth 10.49 (16.88) thirteenth 12.89 (20.75) fourteenth 15.55 (25.02) fifteenth 20.21 (32.52) sixteenth 24.37 (39.22) reverse 1.44 (2.31), 2.53 (4.07), 3.75 (6.04), 5.39 (8.67), 5.88 (9.46), 9.49 (15.28), 14.06 (22.63), 22.05 (35.48) **Clutch** multiple dry 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 1994 engine rpm and 1000 rpm at 2000 engine rpm **Unladen tractor mass** 8170 lb (3705 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<br>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 | °C<br>Air<br>dry<br>bulb | Barom.<br>inch<br>Hg<br>(kPa) |
|---------------------|--------------------------------|------------------------|---------------------------------|-----------|--|--------------------------------------|---------------------------------|--------------------------|-------------------------------|
| 3rd (2LoTA) Gear    |                                |                        |                                 |           |  |                                      |                                 |                          |                               |
| 49.5<br>(36.9)      | 9220<br>(41.02)                | 2.01<br>(3.24)         | 2232                            | 14.9      | 0.704<br>(0.428)                             | 10.00<br>(1.97)                      | 181<br>(83)                     | 57<br>(14)               | 29.4<br>(99.5)                |
| 4th (2LoDD) Gear    |                                |                        |                                 |           |  |                                      |                                 |                          |                               |
| 56.2<br>(41.9)      | 9105<br>(40.50)                | 2.31<br>(3.72)         | 1990                            | 9.3       | 0.601<br>(0.366)                             | 11.71<br>(2.31)                      | 183<br>(84)                     | 55<br>(13)               | 29.4<br>(99.5)                |
| 5th (3LoTA) Gear    |                                |                        |                                 |           |  |                                      |                                 |                          |                               |
| 65.0<br>(48.5)      | 8365<br>(37.22)                | 2.91<br>(4.69)         | 1991                            | 6.8       | 0.519<br>(0.315)                             | 13.56<br>(2.67)                      | 183<br>(84)                     | 57<br>(14)               | 29.4<br>(99.5)                |
| 6th (3LoDD) Gear    |                                |                        |                                 |           |  |                                      |                                 |                          |                               |
| 66.4<br>(49.5)      | 6915<br>(30.75)                | 3.60<br>(5.80)         | 1993                            | 4.5       | 0.506<br>(0.308)                             | 13.90<br>(2.74)                      | 181<br>(83)                     | 55<br>(13)               | 29.4<br>(99.5)                |
| 7th (1HiTA) Gear    |                                |                        |                                 |           |  |                                      |                                 |                          |                               |
| 70.8<br>(52.8)      | 6135<br>(27.30)                | 4.33<br>(6.96)         | 1999                            | 4.0       | 0.476<br>(0.290)                             | 14.77<br>(2.91)                      | 181<br>(83)                     | 49<br>(9)                | 29.4<br>(99.5)                |
| 8th (4LoTA) Gear    |                                |                        |                                 |           |  |                                      |                                 |                          |                               |
| 68.7<br>(51.2)      | 5410<br>(24.06)                | 4.76<br>(7.66)         | 2002                            | 3.3       | 0.492<br>(0.299)                             | 14.31<br>(2.82)                      | 180<br>(82)                     | 50<br>(10)               | 29.4<br>(99.5)                |
| 9th (1HiDD) Gear    |                                |                        |                                 |           |  |                                      |                                 |                          |                               |
| 68.0<br>(50.7)      | 4850<br>(21.57)                | 5.26<br>(8.47)         | 1995                            | 2.9       | 0.496<br>(0.302)                             | 14.16<br>(2.79)                      | 180<br>(82)                     | 54<br>(12)               | 29.4<br>(99.5)                |
| 10th (4LoDD) Gear   |                                |                        |                                 |           |  |                                      |                                 |                          |                               |
| 66.0<br>(49.2)      | 4305<br>(19.15)                | 5.75<br>(9.25)         | 1992                            | 2.8       | 0.511<br>(0.311)                             | 13.76<br>(2.71)                      | 181<br>(83)                     | 55<br>(13)               | 29.4<br>(99.5)                |

**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 3 point lift capacity of 4497 lbs, optionally - 6425 lbs. The performance results on this summary were taken from OECD tests conducted under the Code II Test Code procedure.

**NOTE:** The data on this summary was obtained from OECD report 1898 conducted on the Case IH CX 90 Diesel.

**NOTE:** Report reissued. Supplemental permit for McCormick C90 & CX 90 Diesels, July 2002.

**NOTE:** Report reissued. Supplemental permit for McCormick CX 95 Diesel, November, 2003.

We, the undersigned, certify that this is a true summary of data from OECD Report No. **1898**, Nebraska Summary 328, November 12, 2003.

Leonard L. Bashford  
Director

M.F. Kocher  
V.I. Adamchuk  
W.P. Campbell  
Board of Tractor Test Engineers

| TRACTOR SOUND LEVEL WITH CAB  | Front Wheel Drive |                     |
|-------------------------------|-------------------|---------------------|
|                               | Engaged<br>dB(A)  | Disengaged<br>dB(A) |
| Maximum Sound Level           | 77.0              | 77.5                |
| At no load in 7th(1HiTA) gear | 75.0              | 73.5                |
| Bystander                     | -                 | -                   |

| TRACTOR SOUND LEVEL WITHOUT CAB | Front Wheel Drive |                     |
|---------------------------------|-------------------|---------------------|
|                                 | Engaged<br>dB(A)  | Disengaged<br>dB(A) |
| At no load in 7th(1HiTA) gear   | 85.5              | 85.5                |
| 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 18.4R34;\*\*, 12 (80)  
 Two 13.6R24;\*\*, 12 (80)  
 15.7 in (400 mm)  
 4950 lb (2245 kg)  
 3385 lb (1535 kg)  
 8335 lb (3780 kg)

## THREE POINT HITCH PERFORMANCE (OECD Static Test)

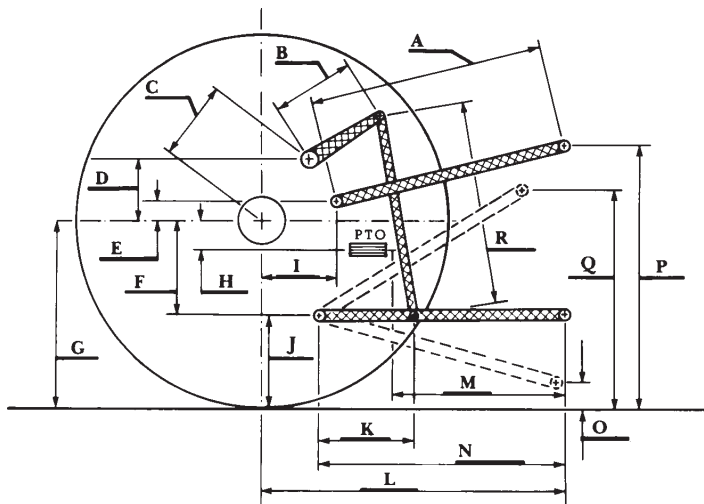
CATEGORY: II

Quick Attach: None

Maximum Force Exerted Through Whole Range: 2610 lbs (11.30 kN)  
 4000 lbs (17.80 kN) (with boost cylinder)

- i) Opening pressure of relief valve: NA
- Sustained pressure of the open relief valve: 2585 psi (178 bar)
- ii) Pump delivery rate at minimum pressure: 17.0 GPM (64.3 l/min)
- iii) Pump delivery rate at maximum
  - hydraulic power: 14.1 GPM (53.2 l/min)
  - Delivery pressure: 2320 psi (160 bar)
  - Power: 19.1 HP (14.2 kW)

### HITCH DIMENSIONS AS TESTED—NO LOAD



|   | inch | mm   |
|---|------|------|
| A | 28.2 | 716  |
| B | 11.7 | 298  |
| C | 11.6 | 295  |
| D | 11.3 | 288  |
| E | 7.9  | 200  |
| F | 6.7  | 170  |
| G | 30.3 | 770  |
| H | 4.8  | 122  |
| I | 11.8 | 300  |
| J | 23.6 | 600  |
| K | 21.7 | 550  |
| L | 38.4 | 975  |
| M | 21.3 | 540  |
| N | 32.0 | 814  |
| O | 7.9  | 200  |
| P | 47.6 | 1210 |
| Q | 34.1 | 865  |
| R | 29.5 | 750  |